STUDER
professional audio equipment

Studer OnAir 2000M2

Digital Mixing Console, SW Version 4.0/4.02

1. Part One – Operating Instructions
2. Part Two – Service Instructions
3. Part Three – Diagrams Center Section
4. Part Four – Diagrams Fader Section
5. Part Five – Accessories

Operating and Service Instructions

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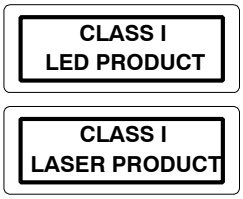
A Safety Information

	To reduce the risk of electric shock, do not remove covers (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.
	This symbol is intended to alert the user to presence of un-insulated *dangerous voltage"* within the equipment that may be of sufficient magnitude to constitute a risk of electric shock to a person.
	This symbol is intended to alert the user to the presence of *important instructions* for operating and maintenance in the enclosed documentation.
	Assemblies or sub-assemblies of this product can contain opto-electronic devices. As long as these devices comply with Class I of laser or LED products according to EN 60825-1:1994, they will not be expressly marked on the product. If a special design should be covered by a higher class of this standard, the device concerned will be marked directly on the assembly or sub-assembly in accordance with the above standard.

A1 First Aid

In Case of Electric Shock:

Separate the person as quickly as possible from the electric power source:
- By switching off the equipment,
- By unplugging or disconnecting the mains cable, or
- By pushing the person away from the power source, using dry insulating material (such as wood or plastic).
- After having sustained an electric shock, *always* consult a doctor.

Warning! ***Do not touch the person or his clothing before the power is turned off, otherwise you stand the risk of sustaining an electric shock as well!***

If the Person is Unconscious:

- Check the pulse,
- Reanimate the person if respiration is poor,
- Lay the body down, turn it to one side, call for a doctor immediately.

B General Installation Hints

Please consider besides these general hints also any product-specific hints in the "Installation" chapter of this manual.

B1 Unpacking

Check the equipment for any transport damage. A unit that is mechanically damaged or that has been penetrated by liquids or foreign objects must not be connected to the AC power outlet or must be immediately disconnected by unplugging the power cable. Repairs must only be performed by trained personnel in accordance with the applicable regulations.

B2 Installation Site

Install the unit in a place where the following conditions are met:

- The temperature and the relative humidity of the environment must be within the specified limits during operation of the unit. Relevant air values are the ones at the air inlets of the unit.
- Condensation must be avoided. If the unit is installed in a location with large variation of ambient temperature (e.g. in an OB-van), feasible measures must be taken before and after operation (for details on this subject, refer to Appendix 1).
- Unobstructed air flow is essential for proper operation. Air vents of the unit are a functional part of the design and must not be blocked in any way during operation (e.g. by objects placed upon them or placement of the unit on a soft support).
- The unit must not be heated up by external sources of heat radiation (sunlight, spot lights).

B3 Earthing and Power Supply

Earthing of units with mains supply (class I equipment) is performed via the protective earth (PE) conductor integrated in the mains cable. Units with battery operation (< 60 V, class III equipment) must be earthed separately.

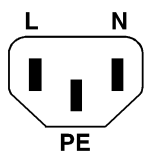
Earthing the unit is one of the measures for protection against electrical shock hazard (dangerous body currents). Hazardous voltage may not only be caused by a defective power supply insulation, but may also be introduced by the connected audio or control cables.

If the unit is installed with one or several external connections, its earthing must be provided during operation as well as while the unit is inoperative. If the earthing could be interrupted via the power supply (e.g. by pulling the mains plug), an additional, permanent earthing must be installed using the provided earth terminal.

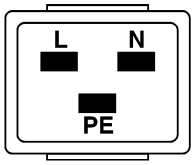
Avoid ground loops (hum loops) by keeping the loop surface as small as possible (by consequently guiding the earth conductors in a narrow, parallel way), and reduce the noise current flowing through the loop by inserting an additional impedance (common-mode choke).

Class I Equipment (Mains Operation)

Should the equipment be delivered without a matching mains cable, the latter has to be prepared by a trained person using the attached female plug (IEC320/C13 or IEC320/C19) with respect to the applicable regulations in your country.
Before connecting the equipment to the AC power outlet, check that the local line voltage matches the equipment rating (voltage, frequency) within the admissible tolerance. The equipment fuses must be rated in accordance with the specifications on the equipment.
Equipment supplied with a 3-pole appliance inlet (protection conforming to class I equipment) *must* be connected to a 3-pole AC power outlet so that the equipment cabinet is connected to the protective earth.
For information on mains cable strain relief please refer to Appendix 2.



IEC 320 / C13



IEC 320 / C19

Female plug (IEC320), front-side view:		*National American Standard:*
L (Live)	Brown	*Black*
N (Neutral)	Blue	*White*
PE (Protective Earth	Green/Yellow	*Green*

Class III Equipment (Battery Operation up to 60 V_{DC})

Equipment of this protection class must be earthed using the provided earth terminal, if one or more external signals are connected to the unit (see explanation at the beginning of this paragraph).

B4 Electromagnetic Compatibility (EMC)

The unit conforms to the protection requirements relevant to electromagnetic phenomena that are listed in the guidelines 89/336/EC and FCC, part 15.

- The electromagnetic interference generated by the unit is limited in such a way that other equipment and systems can be operated normally.
- The unit is adequately protected against electromagnetic interference so that it can operate properly.

The unit has been tested and conforms to the EMC standards of the specified electromagnetic environment, as listed in the following declaration. The limits of these standards ensure protection of the environment and corresponding noise immunity of the equipment with appropriate probability. However, a professional installation and integration within the system are imperative prerequisites for operation without EMC problems.
For this purpose, the following measures must be followed:

- Install the equipment in accordance with the operating instructions. Use the supplied accessories.
- In the system and in the vicinity where the equipment is installed, use only components (systems, equipment) that also fulfill the EMC standards for the given environment.
- Use a system grounding concept that satisfies the safety requirements (class I equipment must be connected with a protective ground conduc-

tor) and that also takes into consideration the EMC requirements. When deciding between radial, surface, or combined grounding, the advantages and disadvantages should be carefully evaluated in each case.
- Use shielded cables where shielding is specified. The connection of the shield to the corresponding connector terminal or housing should have a large surface and be corrosion-proof. Please note that a cable shield connected only single-ended can act as a transmitting or receiving antenna within the corresponding frequency range.
- Avoid ground loops or reduce their adverse effects by keeping the loop surface as small as possible, and reduce the noise current flowing through the loop by inserting an additional impedance (e.g. common-mode choke).
- Reduce electrostatic discharge (ESD) of persons by installing an appropriate floor covering (e.g. a carpet with permanent electrostatic filaments) and by keeping the relative humidity above 30%. Further measures (e.g. conducting floor) are usually unnecessary and only suitable if used together with corresponding personal equipment.
- When using equipment with touch-sensitive operator controls, please take care that the surrounding building structure allows for sufficient capacitive coupling of the operator. This coupling can be improved by an additional, conducting surface in the operator's area, connected to the equipment housing (e.g. metal foil underneath the floor covering, carpet with conductive backing).

C Maintenance

All air vents and openings for operating elements (faders, rotary knobs) must be checked on a regular basis, and cleaned in case of dust accumulation. For cleaning, a soft paint-brush or a vacuum cleaner is recommended.
Cleaning the surfaces of the unit is performed with a soft, dry cloth or a soft brush.
Persistent contamination can be treated with a cloth that is slightly humidified with a mild cleaning solution (soap-suds).
For cleaning display windows, commercially available computer/TV screen cleaners are suited. Use only a slightly damp (never wet) cloth.
Never use any solvents for cleaning the exterior of the unit! Liquids must never be sprayed or poured on directly!
For equipment-specific maintenance information please refer to the corresponding chapter in the Operating and Service Instructions manuals.

D Electrostatic Discharge during Maintenance and Repair

Caution:

Observe the precautions for handling devices sensitive to electrostatic discharge!
Many semiconductor components are sensitive to electrostatic discharge (ESD). The life-span of assemblies containing such components can be drastically reduced by improper handling during maintenance and repair work. Please observe the following rules when handling ESD sensitive components:
- ESD sensitive components should only be stored and transported in the packing material specifically provided for this purpose.
- *When performing a repair by replacing complete assemblies, the removed assembly must be sent back to the supplier in the same packing*

material in which the replacement assembly was shipped. If this should not be the case, any claim for a possible refund will be null and void.

- Unpacked ESD sensitive components should only be handled in ESD protected areas (EPA, e.g. area for field service, repair or service bench) and only be touched by persons who wear a wristlet that is connected to the ground potential of the repair or service bench by a series resistor. The equipment to be repaired or serviced as well as all tools and electrically semi-conducting work, storage, and floor mats should also be connected to this ground potential.
- The terminals of ESD sensitive components must not come in uncontrolled contact with electrostatically chargeable (voltage puncture) or metallic surfaces (discharge shock hazard).
- To prevent undefined transient stress of the components and possible damage due to inadmissible voltages or compensation currents, electrical connections should only be established or separated when the equipment is switched off and after any capacitor charges have decayed.

E Repair

Removal of housing parts, shields, etc. exposes energized parts. For this reason the following precautions must be observed:

- Maintenance may only be performed by trained personnel in accordance with the applicable regulations.
- The equipment must be switched off and disconnected from the AC power outlet before any housing parts are removed.
- Even if the equipment is disconnected from the power outlet, parts with hazardous charges (e.g. capacitors, picture tubes) must not be touched until they have been properly discharged. Do not touch hot components (power semiconductors, heat sinks, etc.) before they have cooled off.
- If maintenance is performed on a unit that is opened and switched on, no un-insulated circuit components and metallic semiconductor housings must be touched, neither with your bare hands nor with un-insulated tools.

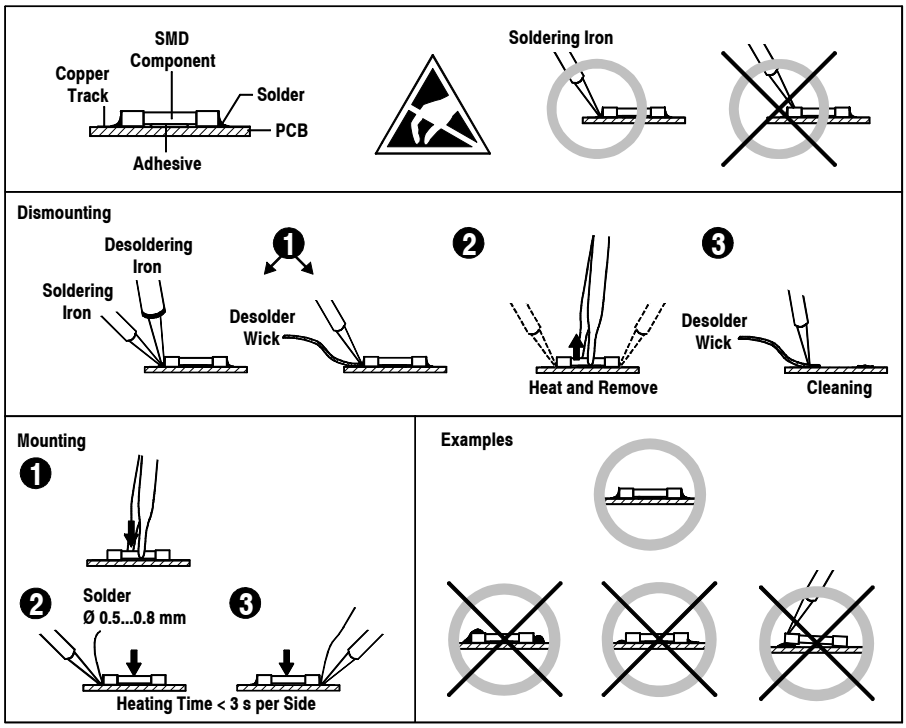
Certain components pose additional hazards:

- *Explosion hazard* from lithium batteries, electrolytic capacitors and power semiconductors (watch the component's polarity. Do not short battery terminals. Replace batteries only by the same type).
- *Implosion hazard* from evacuated display units.
- *Radiation hazard* from laser units (non-ionizing), picture tubes (ionizing).
- *Caustic effect* of display units (LCD) and components containing liquid electrolyte.

Such components should only be handled by trained personnel who are properly protected (e.g. safety goggles, gloves).

E1 SMD Components

Studer does not keep any commercially available SMD components in stock. For repair the corresponding devices should be purchased locally. The specifications of special components can be found in the service manual.
SMD components should only be replaced by skilled specialists using appropriate tools. No warranty claims will be accepted for circuit boards that have been damaged. Proper and improper SMD soldering joints are illustrated below.



F Disposal

Disposal of Packing Materials

The packing materials have been selected with environmental and disposal issues in mind. All packing material can be recycled. Recycling packing saves raw materials and reduces the volume of waste.
If you need to dispose of the transport packing materials, please try to use recyclable means.

Disposal of Used Equipment

Used equipment contains valuable raw materials as well as materials that must be disposed of professionally. Please return your used equipment via an authorized specialist dealer or via the public waste disposal system, ensuring any material that can be recycled is.
Please take care that your used equipment cannot be abused. To avoid abuse, delete sensitive data from any data storage media. After having disconnected your used equipment from the mains supply, make sure that the mains connector and the mains cable are made useless.

G Declarations of Conformity

G1 Class A Equipment - FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide a reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Caution: *Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment. Also refer to relevant information in this manual.*

G2 CE Declaration of Conformity

We,
Studer Professional Audio GmbH,
CH-8105 Regensdorf,
declare under our sole responsibility that the product
Studer On-Air 2000, Digital Mixing System
(starting with serial no. 1001)
to which this declaration relates, according to following regulations of EU directives and amendments

- Low Voltage (LVD):
  73/23/EEC + 93/68/EEC
- Electromagnetic Compatibility (EMC):
  89/336/EEC + 92/31/EEC + 93/68/EEC

is in conformity with the following standards or other normative documents:

- Safety:
  EN 60950:2000 (Class I equipment)
- Safety of laser products:
  EN 60825-1:1994 + A11 + A2, EN60825-2:2000
- EMC:
  EN 55103-1/-2:1996, electromagnetic environments E2 and E4.

Regensdorf, February 27, 2002

B. Hochstrasser, President

P. Fiala, Manager QA

Appendix 1: Air Temperature and Humidity

General

Normal operation of the unit or system is warranted under the following ambient conditions defined by *EN 60721-3-3, set IE32, value 3K3.*
This standard consists of an extensive catalogue of parameters, the most important of which are: ambient temperature +5...+40 °C, relative humidity 5...85% (i.e., no formation of condensation or ice); absolute humidity 1...25 g/m³; rate of temperature change < 0.5 °C/min. These parameters are dealt with in the following paragraphs.
Under these conditions the unit or system starts and works without any problem. Beyond these specifications, possible problems are described in the following paragraphs.

Ambient Temperature

Units and systems by Studer are generally designed for an ambient temperature range (i.e. temperature of the incoming air) of +5...+40 °C. When rack mounting the units, the intended air flow and herewith adequate cooling must be provided. The following facts must be considered:

- The admissible ambient temperature range for operation of the semiconductor components is 0 °C to +70 °C (commercial temperature range for operation).
- The air flow through the installation must provide that the outgoing air is always cooler than 70 °C.
- Average heat increase of the cooling air shall be 20 K, allowing for an additional maximum 10 K increase at the hot components.
- In order to dissipate 1 kW with this admissible average heat increase, an air flow of 2.65 m³/min is required.

Example: A rack dissipating *P = 800 W* requires an air flow of *0.8 * 2.65 m³/min* which corresponds to *2.12 m³/min.*

- If the cooling function of the installation must be monitored (e.g. for fan failure or illumination with spot lamps), the outgoing air temperature must be measured directly above the modules at several places within the rack. The trigger temperature of the sensors should be 65 to 70 °C.

Frost and Dew

The unsealed system parts (connector areas and semiconductor pins) allow for a minute formation of ice or frost. However, formation of dew visible with the naked eye will already lead to malfunctions. In practice, reliable operation can be expected in a temperature range above –15 °C, if the following general rule is considered for putting the cold system into operation:
If the air within the system is cooled down, the relative humidity rises. If it reaches 100%, condensation will arise, usually in the boundary layer between the air and a cooler surface, together with formation of ice or dew at sensitive areas of the system (contacts, IC pins, etc.). Once internal condensation occurs, trouble-free operation cannot be guaranteed, independent of temperature.

Before putting into operation, the system must be checked for internal formation of condensation or ice. Only with a minute formation of ice, direct evaporation (sublimation) may be expected; otherwise the system must be heated and dried while switched off.

A system without visible internal formation of ice or condensation should be heated up with its own heat dissipation, as homogeneously (and subsequently as slow) as possible; the ambient temperature should then always be lower than the one of the outgoing air.

If it is absolutely necessary to operate the cold system immediately within warm ambient air, this air must be dehydrated. In such a case, the absolute humidity must be so low that the relative humidity, related to the coldest system surface, always remains below 100%.

Ensure that the enclosed air is as dry as possible when powering off (i.e. before switching off in winter, aerate the room with cold, dry air, and remove humid objects as clothes from the room).

These relationships are visible from the following climatogram. For a controlled procedure, thermometer and hygrometer as well as a thermometer within the system will be required.

Example 1: An OB-van having an internal temperature of 20 °C and relative humidity of 40% is switched off in the evening. If temperature falls below +5 °C, dew or ice will be forming.

Example 2: An OB-van is heated up in the morning with air of 20 °C and a relative humidity of 40%. On all parts being cooler than +5 °C, dew or ice will be forming.

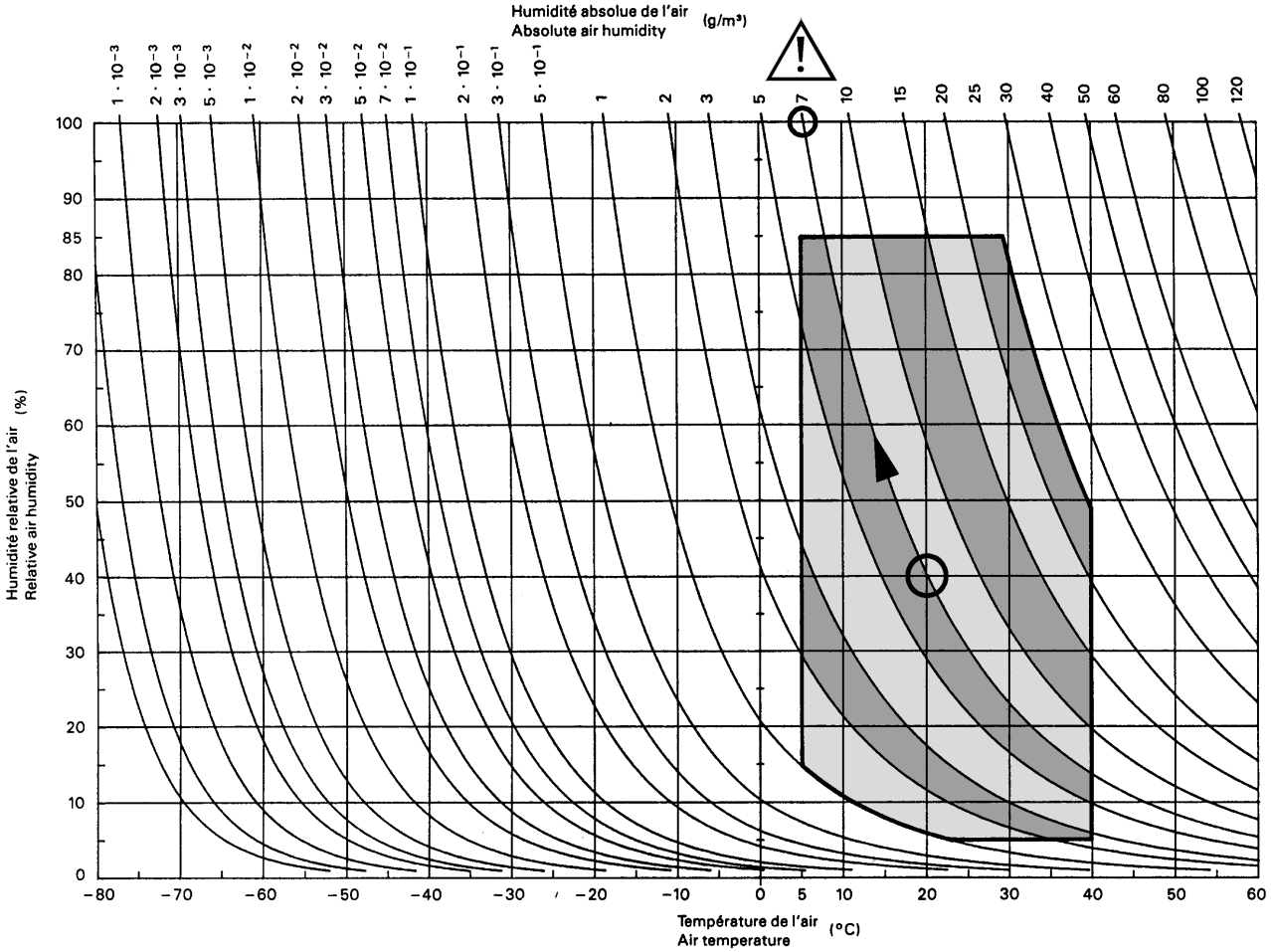
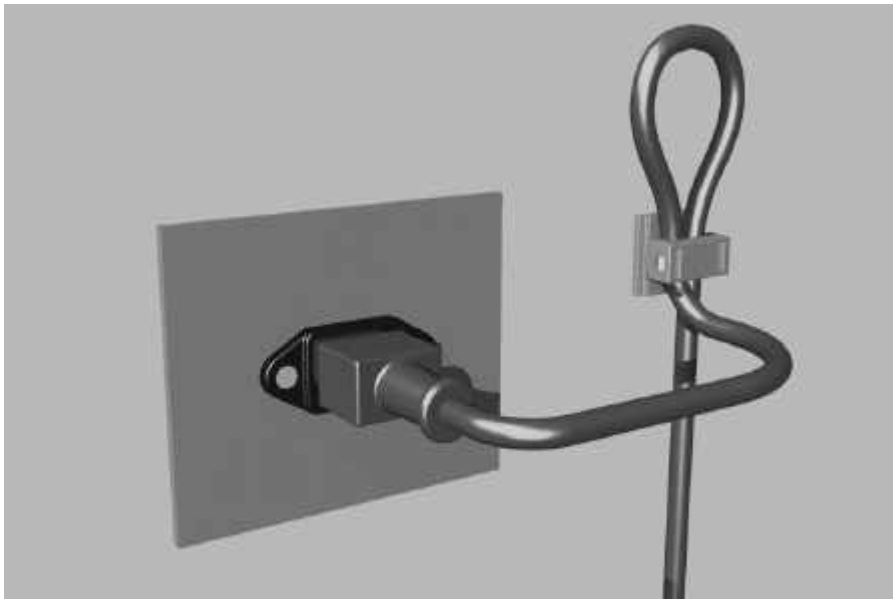


Figure B.3 – Climatogramme pour catégorie 3K3
Climatogram for class 3K3

Appendix 2: Mains Connector Strain Relief

For anchoring connectors without a mechanical lock (e.g. IEC mains connectors), we recommend the following arrangement:



Procedure: The cable clamp shipped with your unit is auto-adhesive. For mounting please follow the rules below:

- The surface to be adhered to must be clean, dry, and free from grease, oil, or other contaminants. Recommended application temperature range is 20...40 °C.
- Remove the plastic protective backing from the rear side of the clamp and apply it firmly to the surface at the desired position. Allow as much time as possible for curing. The bond continues to develop for as long as 24 hours.
- For improved stability, the clamp should be fixed with a screw. For this purpose, a self-tapping screw and an M4 bolt and nut are included.
- Place the cable into the clamp as shown in the illustration above and firmly press down the internal top cover until the cable is fixed.

Appendix 3: Software License

Use of the software is subject to the Studer Professional Audio Software License Agreement set forth below. Using the software indicates your acceptance of this license agreement. If you do not accept these license terms, you are not authorized to use this software.

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Principle

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Warranty, Disclaimer, and Liability

For all issues not covered herewithin, please refer to the "General Terms and Conditions of Sale and Delivery" that are part of the sales contract.

NEW FEATURES WITH SW V4.02

1 Momentary/Latching Key Functions

1.1 PFL and Talkback Keys

Latching: If a PFL key or one of the talkback keys (N–1 A, N–1 B, AUX 1, AUX 2, or STUDIO) is pressed for less than 0.2 s, the function is now latching, and the key is illuminated. To release the function, an other short press of the key is required.
The same functionality applies for the F1...F5 keys if configured as additional talkback keys.

Momentary: When pressing a PFL or TB key longer than 0.2 s, it acts as a momentary key, i.e., the function is automatically canceled upon releasing the key.

Basic information on this subject to be found in chapters: 3.1.4 / 7.1 / 7.3 / 12.2.11 (Operating Instructions)

1.2 Monitoring Keys

Mutually Releasing / Latching: If one of the Monitoring Selector keys is pressed for less than 0.2 s, the former monitoring source selection is canceled, and the new monitoring source selection becomes active. The selection is latching and the key is illuminated until any other Monitoring Selector key is pressed.

Mutually Releasing / Momentary: If one of the Monitoring Selector keys is pressed for longer than 0.2 s, it acts as a momentary key. The former monitoring source selection is canceled, and the new monitoring source selection becomes active. Upon releasing the key, the former monitoring source selection is reactivated.

Uhm... *This may sound a bit confusing, but in everyday use it is a very convenient feature – just give it a try!*

2 Talkback and PFL Signaling

2.1 Talkback Signaling from CR to Studio, and Vice Versa

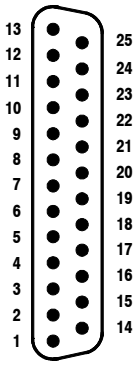
CR to Studio: When talkback from the control room (CR) to the studio is activated, pin 23 of the STUDIO MON CTRL connector is activated (i.e. pulled to ground). This pin was formerly labeled as “Spare OUT 1”. Now it can be used for illuminating the CR lamp on an external talkback box.
Please refer to the pin assignment diagram and table on the next page.

Studio to CR: When talkback from the studio to the CR is activated (e.g. when using the external talkback box), the TALK BACK STUDIO key in the console’s central section is illuminated.

Basic information on this subject to be found in chapters: 3.1.4 / 7.3 / 15.13 (Operating Instructions)

2.2 PFL Signaling

When a PFL key is activated, pin 11 of the STUDIO MON CTRL connector is activated (i.e. pulled to ground). This pin was formerly labeled as "Spare OUT 2".

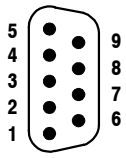


STUDIO MON CTRL (D-type, 25 pin, male):

Pin	Signal	Pin	Signal	Pin	Signal
1	+5 V SUPPLY	10	Lamp EXTERN	19	Switch TB TO TEL2
2	COMMON	11	Lamp PFL SIGN.	20	Lamp PGM
3	Switch AUX1	12	n.c.	21	Lamp AUX2
4	Switch OFF AIR	13	GND	22	Lamp PFL
5	Switch EXTERN	14	+5 V SUPPLY	23	Lamp TB TO STUDIO
6	Switch TB TO TEL1	15	Switch PGM	24	Lamp STUDIO MIC ON
7	n.c.	16	Switch AUX2		
8	Lamp AUX1	17	Switch PFL	25	GND
9	Lamp OFF AIR	18	Switch TB TO CR		

3 Additional REC Signaling Output

An additional REC signaling output has been provided on pin 9 of the SIGN. connector (formerly labeled as "Spare OUT") to extend the on-air signaling features.



SIGN. (D-type, 9 pin, male):

Pin	Signal	Pin	Signal
1	+5 V SUPPLY	6	COMMON
2	ON AIR IN –	7	Spare IN – or Ext. CR DIM IN – *
3	CR MIC OUT	8	STUDIO MIC OUT
4	PGM OUT	9	REC OUT
5	GND	**** depending on Customer Code setting***	

For the ON AIR INDICATION setting on the COMMON SETTINGS page, a fourth selection item (ΣPROGRAM/ΣREC) was created. Depending on this setting, the two signaling outputs are active according to the following table:

ON AIR INDICATION setting	PROGRAM output on-air	REC output on-air	SIGN output: Pin 4 (PGM OUT)	SIGN output: Pin 9 (REC OUT) *(new output)*
1) SPROGRAM AND SREC	0 1 0 1	0 0 1 1	0 1 1 1	0 1 1 1
2) SPROGRAM	0 1	x x	0 1	0 0
3) SREC	x x	0 1	0 0	0 1
4) SPROGRAM / SREC *(new setting)*	0 1 0 1	0 0 1 1	0 1 0 1	0 0 1 1

In other words:

- For the 1st setting, both signaling outputs are active whenever any audio signal is routed either to the program or the record output (or both).
- For the 2nd setting, only the PGM OUT signaling output is active while an audio signal is routed to the program output. An audio signal routed to the record output has no effect.
- For the 3rd setting, only the REC OUT signaling output is active while an audio signal is routed to the record output. An audio signal routed to the program output has no effect.
- For the 4th (new) setting, only the PGM OUT signaling output is active while an audio signal is routed to the program output, and only the REC OUT signaling output is active while an audio signal is routed to the record output. If audio signals are routed to both the program and the record outputs, both the PGM OUT and REC OUT signaling outputs are active.

Basic information on this subject to be found in chapter 12.2.2 (Operating Instructions)

4 Additional Customer Codes

Code 0x00000800: Used to disable dimming of the CR monitor speakers during talkback from the studio to the control room.

Code 0x00001000: Used to disable dimming of the studio monitor speakers during talkback from the control room to the studio.

Code 0x00002000: Used to swap the functions of the PFL and the OFF keys next to the faders, regardless whether they are used for the standard PFL and OFF functions, or whether other functions are configured for any of these keys.
Basic information on this subject to be found in chapter 9 (Operating Instructions)

Code 0x00004000: If this code is active, whenever a channel is activated by moving its fader up from its lower stop while it is switched ON (or the other way round, by switching the channel ON while its fader is positioned above the lower stop), this channel's Channel Control page pops up automatically and allows for immediate changes of the channel settings. This Channel Control page remains displayed until another channel is activated, or until another page is selected using one of the five buttons next to the clock dial.

Code 0x00008000: If this code is active, the status of the channel ON/OFF switch of channels currently not routed to the console surface will be saved in the flash memory when powering the console off. At power on, the ON or OFF status of these channels will automatically be re-established.
If this code is inactive, the channels not routed to the console surface will always be set to OFF at power on.

Basic information on Customer Code to be found in chapter 12.2.12 (Operating Instructions)

CONTENTS PART ONE – OPERATING INSTRUCTIONS

1 INTRODUCTION

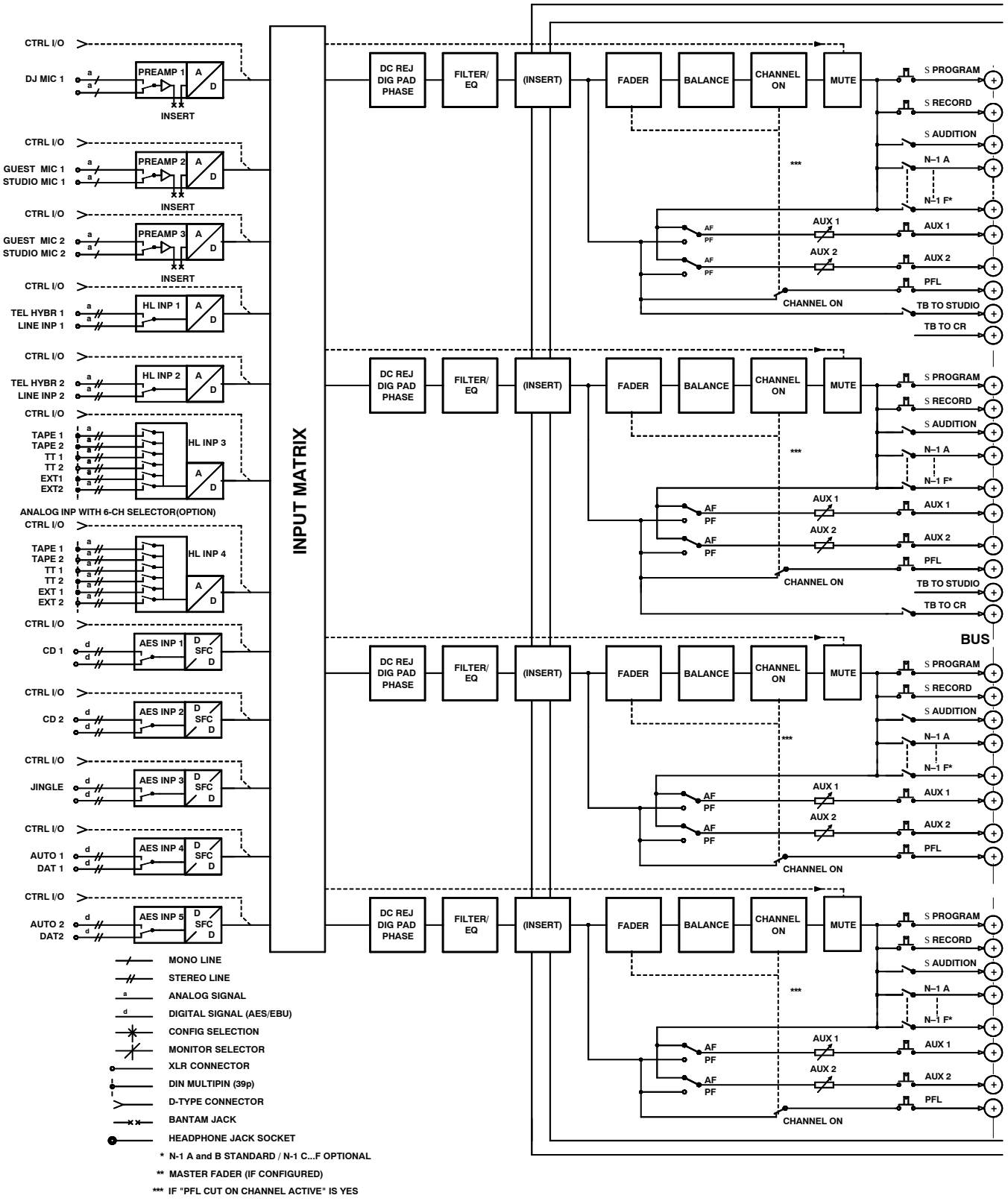
OnAir 2000M2 is a smart yet powerful digital mixing console for “on-air” and small recording and editing studio applications. It has a modularity of 6 fader strips; the maximum console size is limited to 24 fader strips (stereo or mono).

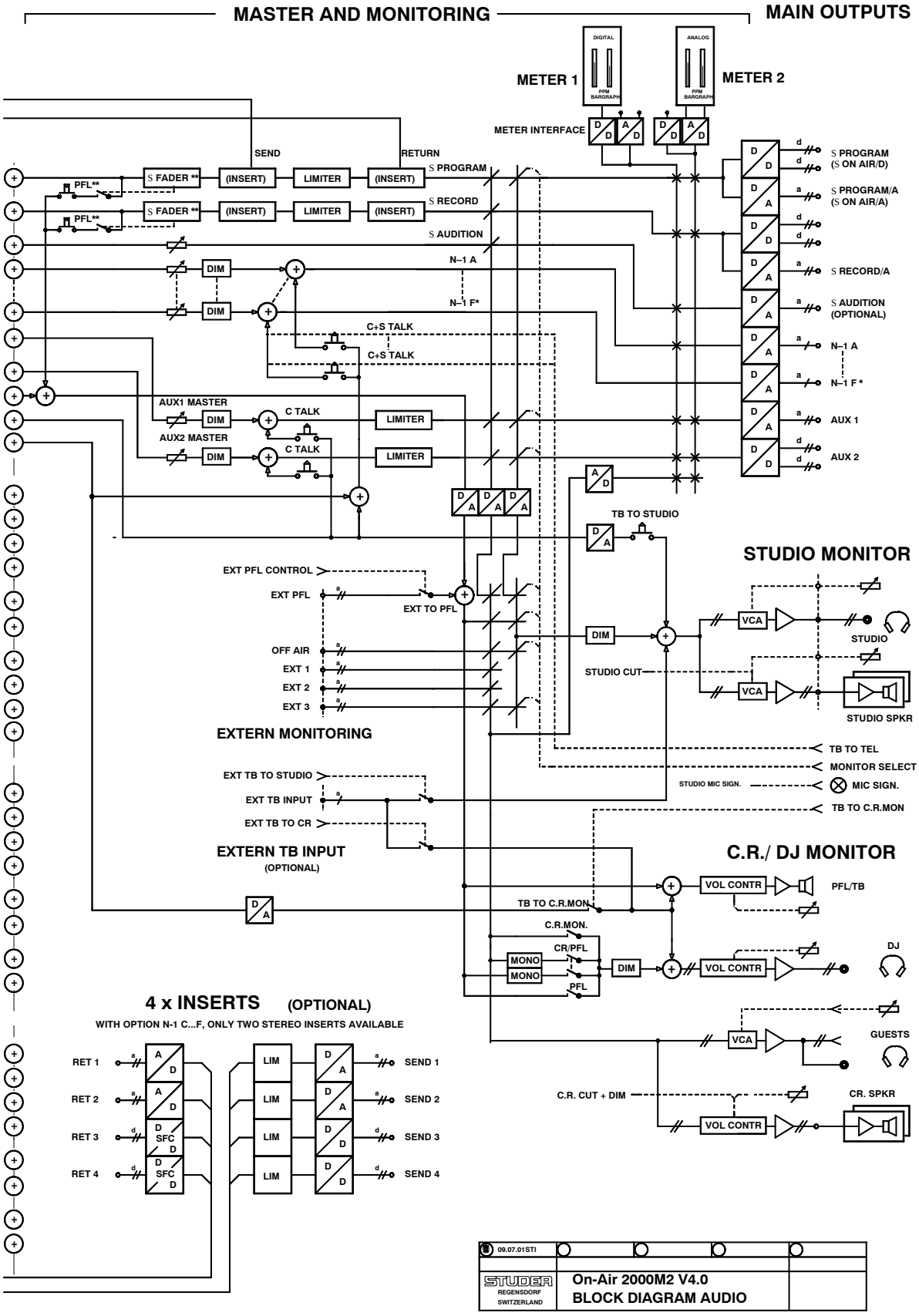
OnAir 2000M2 is based on a touch-screen user surface. Only the most important functions have hardware control elements. Unlike other digital mixing consoles, OnAir 2000M2 does not need external racks and power supply (however, versions for external power supply with redundancy as well as Input Module Extension Box are optionally available – refer to chapter 5.8). Everything is integrated in a single, lightweight console.

Since it is fully digital, it can be adapted to the current user using snapshot automation. Extensive configuration possibilities allow OnAir 2000M2 to be integrated into almost any broadcast studio environment.

For an overview, please refer to the OnAir 2000M2 block diagram located on the following two pages.

1.1 Block Diagram V4.0




MASTER AND MONITORING
MAIN OUTPUTS
METER 1
METER 2
METER INTERFACE
SEND
RETURN
S FADER **
PFL**
(INSERT)
LIMITER
S PROGRAM
S RECORD
S AUDITION
DIM
N–1 A
N–1 F*
C+S TALK
AUX1 MASTER
AUX2 MASTER
C TALK
S PROGRAM (S ON AIR/D)
S PROGRAM/A (S ON AIR/A)
S RECORD/A
S AUDITION (OPTIONAL)
AUX 1
AUX 2
TB TO STUDIO
STUDIO MONITOR
EXT PFL CONTROL
EXT PFL
EXT TO PFL
OFF AIR
EXT 1
EXT 2
EXT 3
STUDIO CUT
VCA
STUDIO
STUDIO SPKR
EXTERN MONITORING
TB TO TEL
MONITOR SELECT
STUDIO MIC SIGN.
MIC SIGN.
TB TO C.R.MON
EXT TB TO STUDIO
EXT TB INPUT
EXT TB TO CR
EXTERN TB INPUT
(OPTIONAL)
C.R./ DJ MONITOR
VOL CONTR
PFL/TB
C.R.MON.
CR/PFL
MONO
PFL
DJ
GUESTS
C.R. CUT + DIM
CR. SPKR
4 x INSERTS (OPTIONAL)
WITH OPTION N-1 C...F, ONLY TWO STEREO INSERTS AVAILABLE
RET 1
RET 2
RET 3
RET 4
LIM
SEND 1
SEND 2
SEND 3
SEND 4
09.07.01STI
STUDER REGENSDORF SWITZERLAND
On-Air 2000M2 V4.0
BLOCK DIAGRAM AUDIO

1.2 Definition of Terms

Terms used in this manual:

Input: The physical input connector of the input module; standard input modules have two selectable (mono or stereo) inputs, while the hex line input modules have six selectable stereo inputs.
These inputs are equipped either with 3-pin XLR connectors or, for the hex input modules, with 39-pin Siemens connectors.
On Digital Input Modules, there is a selection of two AES/EBU inputs on XLR connectors and two S/PDIF inputs on Cinch connectors and on optical (TOSlink) connectors available.

Input Module: Hardware module, containing two (or six) mono or stereo inputs.
Microphone Input Modules have two transformer-balanced mono inputs on XLRs with selectable 48 V phantom supply.
Analog Line Input Modules have two stereo inputs on XLRs, they are available with electronically or transformer-balanced input configuration.
On Digital Line Input Modules, there is a selection of two AES/EBU inputs on XLR connectors and two S/PDIF inputs with Cinch and optical (TOSlink) connectors available.
Analog Hex Line Input Modules have six stereo inputs on 39-pin Siemens connectors, while the Digital Hex Input Modules have six AES/EBU inputs on 39-pin Siemens connectors as well.
Each input of an input module is equipped with control inputs and outputs (GPIO) used for fader start, mute, signaling, etc.; these control inputs and outputs are available on D-type connectors.

Channel: A channel is the combination of all signal processing functions that can be assigned to a fader strip, as A/B (or one-out-of-six) input selection, gain, filter, EQ, pan/balance etc.; each channel can be routed to any fader strip thanks to the channel routing performed in the DSP section of the console.

Fader Strip: A fader strip contains the operating elements of a channel, as linear fader, ON, OFF, and PFL key, as well as a section of the channel touch screen next to the hardware operating elements.
As the number of operating elements is reduced to a minimum, the adjustment of some less often used channel functions, as e.g. EQ setting, is performed on the center touch screen and the rotary encoders located next to this screen.

2 GENERAL

2.1 Utilization for the Purpose Intended

The OnAir 2000M2 mixing console is intended for professional use.
It is presumed that the unit is operated only by trained personnel. Servicing is reserved to skilled technicians.

The electrical connections may be connected only to the voltages and signals designated in this manual.

2.2 First Steps

2.2.1 Unpacking and Inspection

Your new mixing console is shipped in a special packing which protects the units against mechanical shock during transit. Care should be exercised when unpacking so that the surfaces do not get marred.
Verify that the content of the packing agrees with the items listed on the enclosed shipping list.
Check the condition of the equipment for signs of shipping damage. If there should be any complaints you should immediately notify the forwarding agent and your nearest Studer distributor.
Please retain the original packing material because it offers the best protection in case your equipment ever needs to be transported.

2.2.2 Installation

Primary Voltage: The power supply unit is auto-ranging; it can be used for mains voltages in a range of 100 to 240 V_{AC}, 50 to 60 Hz.

General Precautions: Do not use the unit in conditions of excessive heat or cold, near any source of moisture, in excessively humid environments, or in positions where it is likely to be subjected to vibration or dust. The ambient temperature range for normal operation of the unit is +5...+40° C.

Unobstructed air flow is essential for proper operation. The air vents at the rear and the bottom of the unit are a functional part of the design and must not be blocked in any way. Never remove the rubber feet of the unit when placing it on a flat surface!

Cleaning: Do not use any liquids to clean the exterior of the unit. A soft, dry cloth or brush will usually do.

For cleaning the touch-screen display windows, most of the commercially available window or computer/TV screen cleaners are suited. *Use only a slightly damp (never wet) cloth. Never use any solvent!*

Power Connection: The attached female IEC 320/C13 mains cable socket has to be connected to an appropriate mains cable by a trained technician, respecting your local regulations. Refer to the "Installation, Operation, and Waste Disposal" section at the beginning of this manual.

Earthing: *This equipment must be earthed, due to the mains input filter network being connected to the mains earth.*

Some consideration should be given to the earthing arrangement of the system; the console *must* be in its center, i.e. in the system's star point.
The console chassis is earthed to the mains earth via the power supply. Ground loops may occur where signal processing equipment, patched to the console, has its signal earth commoned to the equipment chassis.

2.2.3 Adjustments, Repair

Danger:

All internal adjustments as well as repair work on this product must be performed by trained technicians!

Replacing the Supply Unit:

The primary fuse is located inside the power supply module and cannot be changed. In case of failure, the complete supply unit must be replaced. Please ask your nearest Studer representative.

2.2.4 PC-Card

The OnAir 2000M2 mixing console is equipped with a PC-Card socket. Using the industry-standard SRAM PC-Cards, the user can save important console information on a card. This information can then be used to restore the console to the same state at a later moment. Since the information stored on the card is DOS compatible, it is easily transferred to an IBM-compatible PC for data storage and backup.

Note: Although it is possible to format an SRAM card in a PC, the card must be re-formatted in the OnAir 2000; therefore, the write protect tab must be set to OFF when the card is used in the mixing console for the first time.

It is also possible for new software releases to be downloaded from an SRAM PC-Card. This feature is only available for users in possession of the correct files. For more information on this subject, refer to chapter 13.

The mixing console PC-Card support is restricted to 5 V, Type 1, SRAM memory cards with a capacity of 64 kbytes to 32 Mbytes. Hot-swapping is supported, too.

2.3 Technical Specifications (subject to change without notice)

General

Level specs, digital, in dB_{FS}:	dB, referenced to full modulation (dB_{FS}, dB Full Scale)
Level specs, analog, in dBu:	0 dBu ≙ 0.775 V_{rms}
Level specs, analog, in dBu_{FS}:	Level in dBu for full modulation (≙ 0 dB_{FS})
Sampling rate:	48 kHz ±100 ppm (internally synchronized)
Headroom adjustable:	0 to 20 dB
Default setting:	9 dB
Output level:	15 dBu @ 0 dB_{FS}

All input faders set to their 0 dB position. External analog sources: Source impedance < 200 Ω. Frequency range: 20 Hz to 20 kHz, if not stated otherwise.

Microphone Inputs

Microphone input modules have A/B-switchover and are equipped with a balancing transformer and XLR connectors. The signal is routed to an electronically balanced, analog insert point before the A/D-converter.

Input sensitivity	–60 to +20 dBu_{FS} (with 9 dB headroom: –69 to +11 dBu)
Gain setting	in steps of 1 dB
Phantom power, switchable	48 V
Frequency response	±0.5 dB
High-pass filter (12 dB/Octave)	–3 dB @ 75 Hz ±5 Hz, switchable
Input impedance	> 1 kΩ
Insert level	+15 dBu_{FS} (with 9 dB headroom: +6 dBu)
A/D converter	24 bit (Delta-Sigma, 64 × oversampling)
Dynamics	typ. 102 dB (unweighted)
THD+N	< –85 dB_{FS}, 20 Hz to 20 kHz, @ –1 dB_{FS}
THD+N	< –100 dB_{FS}, 20 Hz to 20 kHz, @ –30 dB_{FS}
Noise figure	typ. < 4 dB @ max. gain, bandwidth 20 kHz, R_s = 200 Ω
Common mode rejection	> 50 dB @ 15 kHz, > 75 dB @ 50 Hz

Line Level Inputs

Analog line level input modules are available in three versions:

- Stereo input with A/B switching, balancing transformer, XLR connectors
- Stereo input with A/B switching, electronically balanced inputs, XLR connectors
- Stereo input with 6-input selector, balancing transformer. On this module the sources are connected via a 39-pin DIN connector.

Input sensitivity for 0 dB_{FS}	0 to +24 dBu_{FS} (with 9 dB headroom: –9 to +15 dBu)
Gain setting	in steps of 1 dB
Frequency response	±0.1 dB
Input impedance	> 10 kΩ
A/D converter	24 bit (Delta-Sigma, 64 × oversampling)
Dynamics	typ. 102 dB @ +15 dBu_{FS} (unweighted)
THD+N	< –94 dB_{FS}, 20 Hz to 20 kHz @ –1 dB_{FS}
THD+N	< –100 dB_{FS}, 20 Hz to 20 kHz @ –30 dB_{FS}
Common mode rejection	> 50 dB @ 50 Hz to 15 kHz, with transformer; > 47 dB @ 50 Hz to 15 kHz, electronically balanced

Digital Inputs

Digital input modules are available either with A/B switching or with a 6-input selector.
The module with A/B switching supports the AES/EBU (AES3-1992) and S/PDIF (IEC 958) formats. It is equipped with XLR, Cinch, and TOSLINK connectors.
The 6-input selector supports the AES/EBU (AES3-1992) format and is equipped with a 39-pin DIN connector for source connection.
All digital inputs are equipped with a sampling frequency converter (SFC).

SFC resolution	20 Bit
Input sampling rate	30 to 54 kHz
THD+N	< –105 dB_{FS} @ 1 kHz, 0 dB_{FS}
Frequency response	±0.1 dB
Input impedance	110 Ω (XLR and DIN inputs); 75 Ω (Cinch input)

Analog Outputs

Analog output modules are available with balancing transformers or with electronically balanced outputs, XLR connectors.

Output level	(transformer-balanced) +4 to +24 dBu @ R_L = 100 kΩ; +4 to +23 dBu @ R_L = 300 Ω
Output level	(electronically balanced) +4 to +23 dBu @ R_L = 100 kΩ; +4 to +22 dBu @ R_L = 300 Ω
D/A converter	24 bit (Delta-Sigma, 128 × oversampling)
Dynamics	typ. 101 dB (unweighted)
THD+N	< –90 dB_{FS} @ 1 kHz, –1 dB_{FS}
Frequency response	±0.2 dB
Output impedance	< 40 Ω

Digital Outputs

Digital output modules are equipped with two independent outputs according to the AES/EBU standard (AES3-1992). On each of these outputs, the same signal is fed to two XLR sockets with individual buffers.

Output level	2 to 5 V
Output impedance	110 Ω

Equalizer

Treble control (High)	5 kHz/10 kHz: ±15 dB (depending on Customer Code setting; refer to 12.2.12)
Equalizer (Mid)	200 Hz to 10 kHz: ±15 dB
Bass control (Low)	200 Hz/400 Hz: ±15 dB

Crosstalk Attenuation

Between channels	> 90 dB
Input fader attenuation	> 100 dB

Power Supply

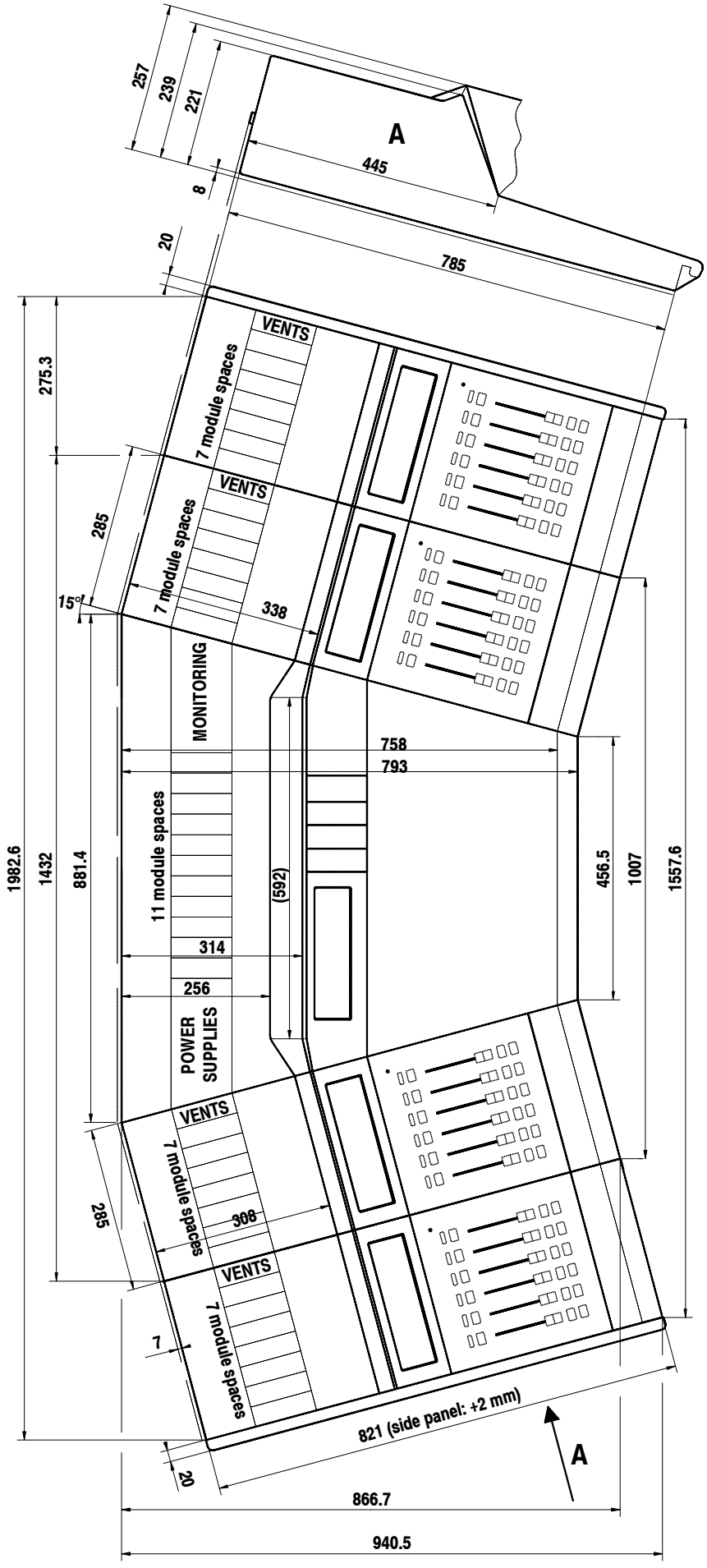
Mains voltage	100 to 240 V, 50/60 Hz (auto-ranging)
Power consumption	150 VA typ. (OnAir 2000/24/4) Redundant power supply available on request.

Weight

OnAir 2000M2 6/4	34 kg
OnAir 2000M2 12/4	44 kg
OnAir 2000M2 18/4	55 kg
OnAir 2000M2 24/4	63 kg

Note: Depending on the application, the on-air mixing consoles can have different configurations. For this reason the abovementioned values are applicable only to a typical configuration; in an individual case, the values may differ. We reserve the right to make changes as technological progress may warrant.

Dimensions:


257
239
221
A
445
8
20
785
VENTS
7 module spaces
275.3
VENTS
7 module spaces
285
15°
338
MONITORING
758
793
1982.6
1432
881.4
11 module spaces
(592)
456.5
1007
1557.6
314
256
POWER SUPPLIES
VENTS
7 module spaces
285
308
VENTS
7 module spaces
1
821 (side panel: +2 mm)
A
20
866.7
940.5

3 OPERATING CONCEPT

The normal operation of the console is as simple as possible. This has been achieved by reducing the number of operating elements to the minimum. Nevertheless, high flexibility has been achieved thanks to the use of touch-screen technology which just shows those operating elements which are needed at a certain time.

A linear fader and three buttons (ON, OFF, PFL) are the only hardware operating elements in a fader strip. All other functions are available through the touch-screens. To maintain a good console overview these touch-screens (channel screens) are located right above the fader strips. Symbols on the screens show the current settings on every channel. Touching one of the symbols assigns the center touch-screen (control screen) to this function. Parameters can now be entered via the four rotary encoders (e.g. equalizer parameters), or directly through the assigned touch-screen (e.g. equalizer on/off). On the screen above the fader strips, the new settings are immediately updated. The OnAir 2000M2 concept has all current settings for every channel visible at any time. This innovative user surface is called the "Touch'n'Action" concept and is patented by Studer.

In broadcast applications many DJs and operators without a special technical education work on the same mixing console. Every DJ has his preferred console settings, mainly EQ parameters for his microphone. In the OnAir 2000, individual settings can be stored; by simply pressing a few keys, every operator can recall his particular, tailor-made setting and concentrate afterwards upon his essential task – presenting a radio program meeting the needs of the listeners.
Radio stations often use the same mixing console type for on-air and production. The "Snapshot" feature easily turns the production console into an on-air console within seconds, if required.

Thanks to the integrated input router the user/administrator can place any input module's signal to any fader strip on the console surface at his convenience. Through a straightforward representation of the available signals and faders on the screen, the input channel routing is easily done.

3.1 Operating Elements

3.1.1 Power Switch

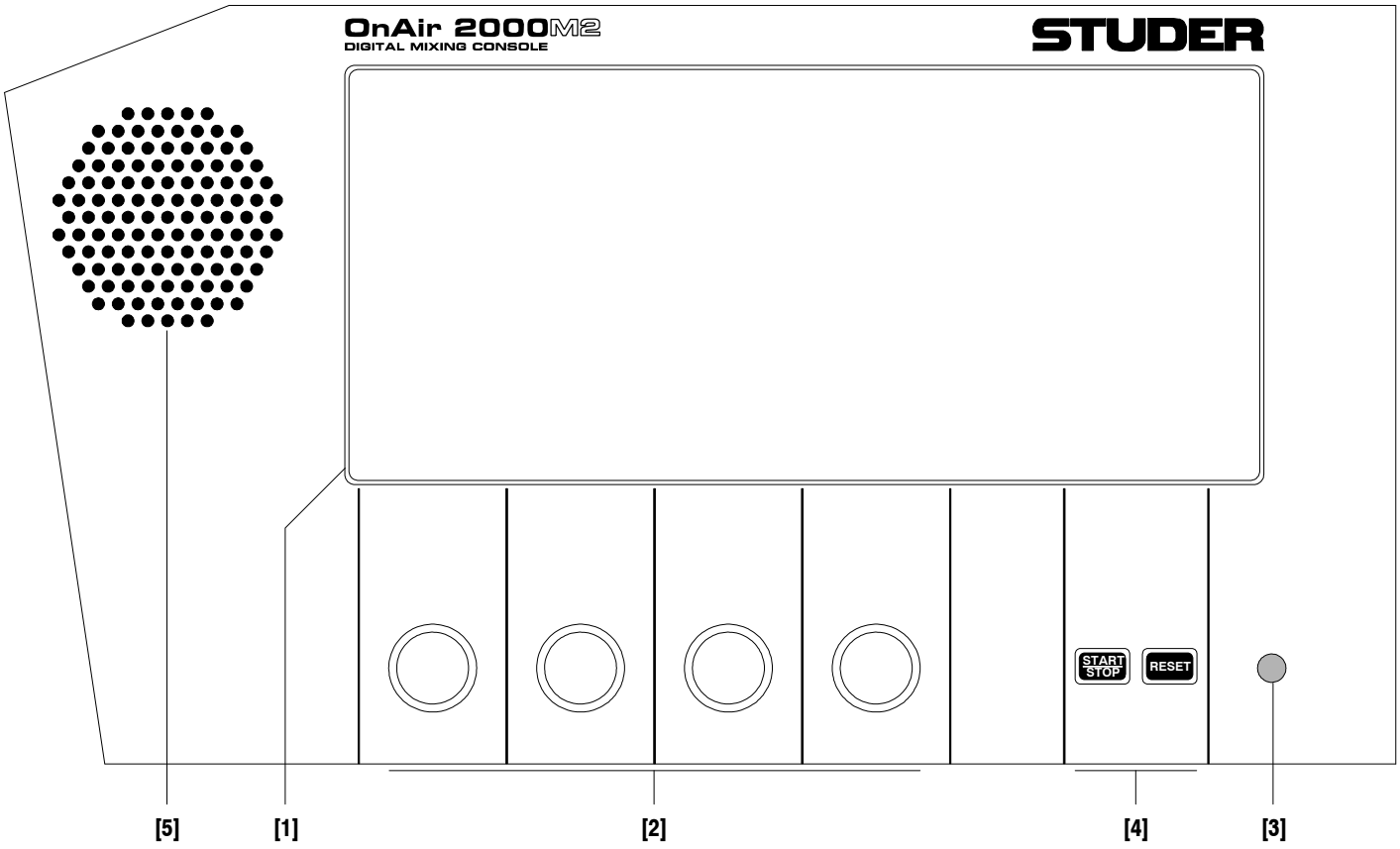
Standard Versions: The power switch is located on the rear side of the console next to the power inlet.

Ext. Supply Versions: If an OnAir 2000M2 is equipped with the optional, dual external power supply for redundancy, no power switch is at the rear of the console. Instead, each of the two power supply units has its own power switch.

Please note that the two external power supply units should be connected to different phases of the mains for improved redundancy.

For operation and service details of the external power supply units, an additional, separate manual is shipped with the power supply units.

3.1.2 Central Section , Display Unit



[1] Central Touch-Screen — The central touch-screen display is used for parameter entries (refer to chapters 4, 5, 10, 12, and 13 for details) and displays the current time and date in digital and analog formats (except when the keyboard or routing pages are active). Besides, the fader stopwatch and the user stopwatch are displayed.

[2] Rotary Encoders — Depending on the current status, the rotary encoders are used for parameter settings.

[3] Contrast Knob — For setting the LC display contrast, depending on the desired viewing angle and the ambient light conditions.

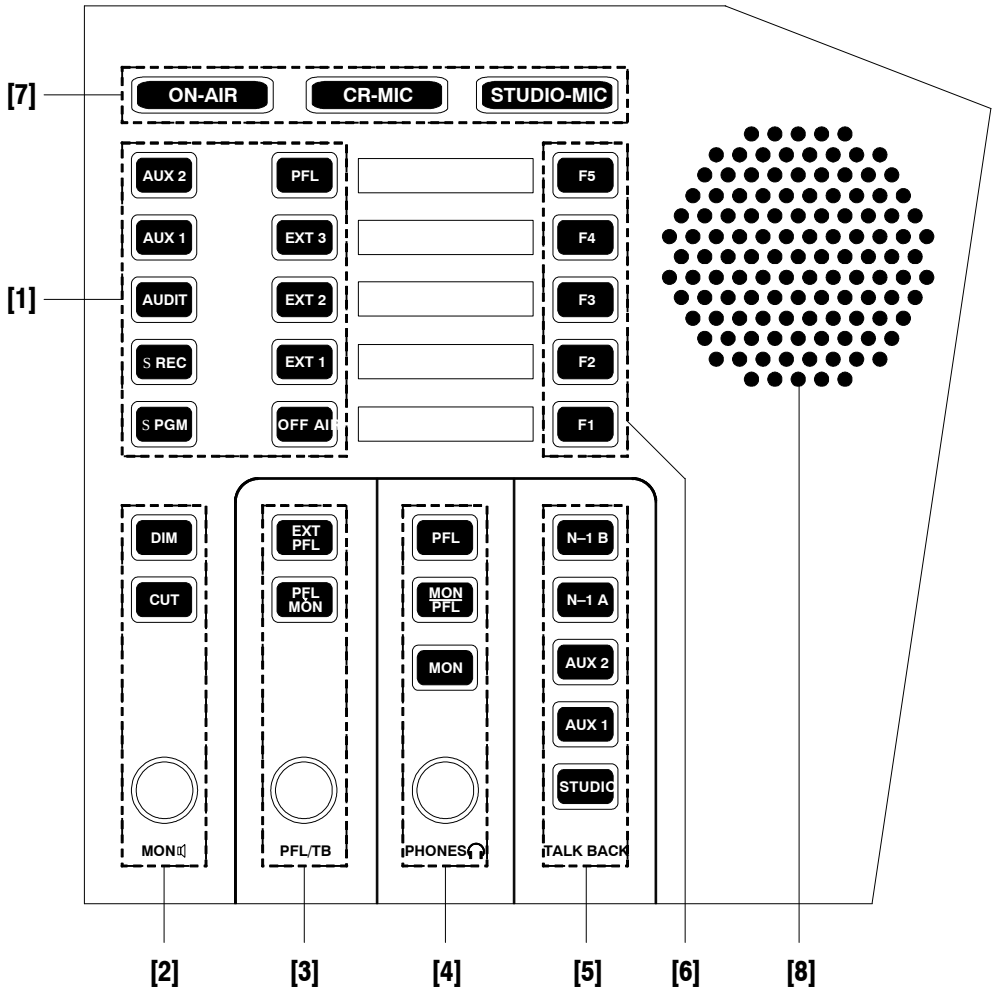
[4] User Stopwatch Control — Keys to control the user stopwatch (lower). Refer to chapter 5.13.

[5] Loudspeaker — for PFL and talkback signals.

3.1.3 Central Section, Meter Unit

The central meter section allows the installation of up to four 190 × 40 mm meter modules. The level meters and/or groups of keys can be installed according to the customer's specification. Therefore, no universally valid statement can be given here.

3.1.4 Central Section, Monitoring and Talkback



[1] Control Room Monitoring Selector

Ten mutually releasing keys for selecting the control room monitoring signal from the following sources:

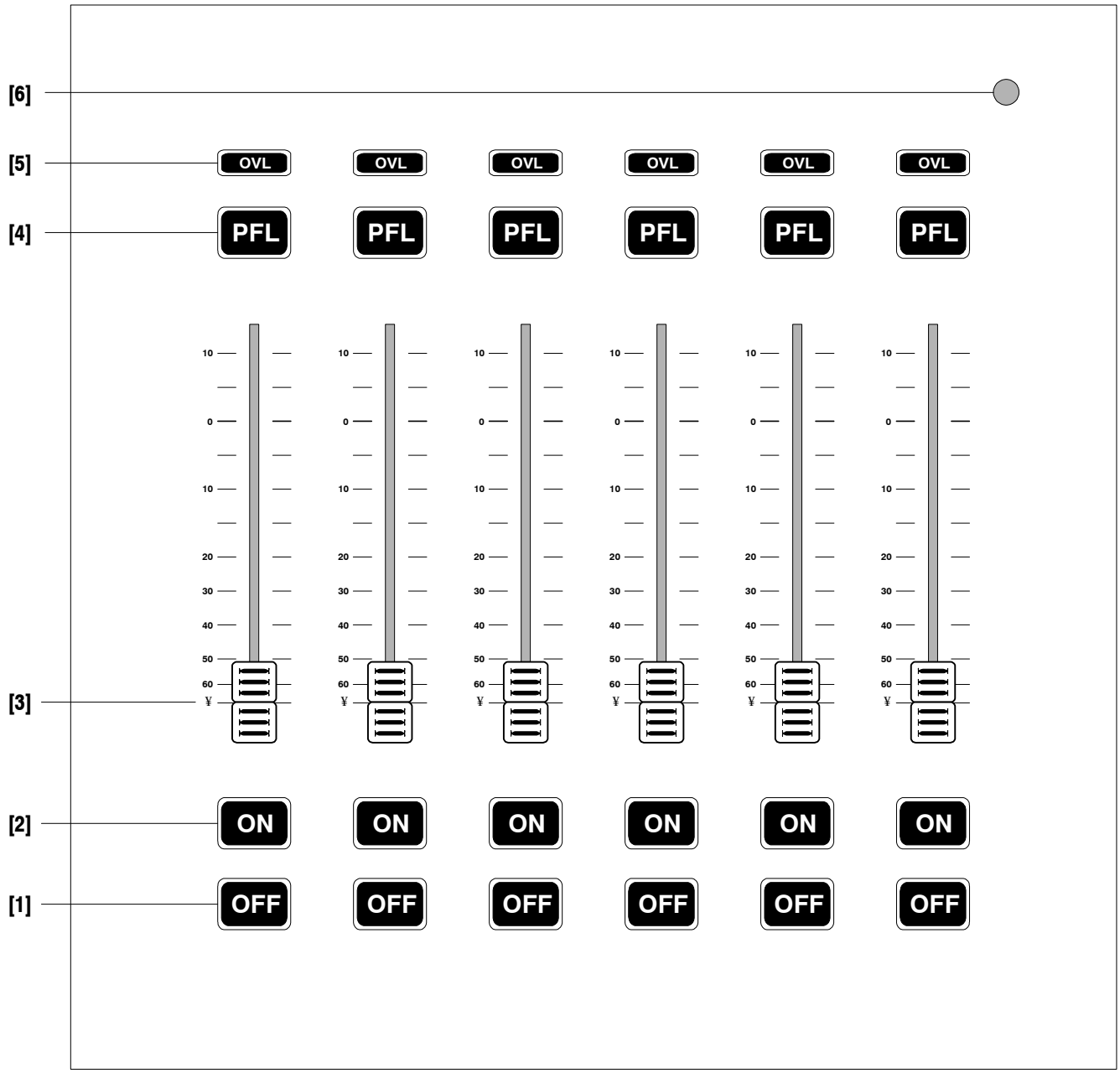
AUX 2/AUX 1: Auxiliary, general purpose outputs;
AUDIT: Auxiliary, general purpose output with configurable inputs;
ΣREC: Recorder output;
ΣPGM: Program output (on-air);
PFL: PFL (pre-fader listening);
EXT 3: External analog input signal;
EXT 2: External analog input signal;
EXT 1: External analog input signal;
OFF AIR: External analog input signal (e.g. tuner for off-air listening).

[2] CR Monitor Speaker Control

MON 🔊: Monitoring volume control.
DIM: If pressed, the monitor speaker level is reduced by 20 dB.
The DIM function is activated automatically if one of the TALK BACK keys is pressed. If "CR DIM WHEN AUDITION SEL" is active (details: refer to chapter 12.2.2), the monitoring source is AUDIT, and the DJ microphone is on, the AUDIT level is not muted but reduced by 20 dB.
If DIM is active, the key is illuminated.

	CUT:	If pressed, the monitor speakers are muted, and the CUT key is illuminated. As long as one of the CR or DJ microphones is on, the monitor speakers are automatically muted, and the CUT key is illuminated.
[3] PFL/TB	**PFL/TB:**	Volume control for the built-in PFL/TB speakers.
	EXT PFL:	The EXT PFL input can be used as an external PFL input to the monitoring unit. If pressed, the key is illuminated, the external signal is routed to the PFL bus, and the external PFL control output is active.
	PFL>MON:	If PFL is active on any channel, the PFL signal is routed to the main monitor speakers. If no PFL is selected, the monitoring signal is the stereo CR signal as selected. The PFL>MON key is illuminated if active.
[4] Headphones	**PHONES:**	Headphones volume control. The headphones socket (6.3 mm TRS jack) is located below the hand rest of the central console part. Three keys allow different monitoring modes:
	PFL:	PFL and TB signals are routed to the headphones.
	MON/PFL:	The left-channel headphones signal is the mono PFL signal, while the right-channel headphones signal is the mono CR signal as selected by the monitoring source selector [1]. If no PFL is selected, the headphones signal is the stereo CR signal as selected.
	MON:	The headphones signal is the same stereo signal as selected by the monitoring source selector [1]. It is, however, not affected by the DIM and CUT functions.
[5] Talkback		Selector for five talkback targets:
	N–1 B/N–1 A:	Connection between the DJ microphone* in the control room and the corresponding cleanfeed (N–1) output; this allows talking e.g. to the connected telephone hybrid(s) or communication lines.
	AUX 2/AUX 1:	Connection between the DJ microphone* in the control room and the AUX 2 or AUX 1 outputs.
	STUDIO:	Connection between the DJ microphone* in the control room and the studio speakers and headphones. The built-in PFL/TB loudspeakers and/or the headphones are used for talkback listening in the control room.
	*	If a console is equipped with an additional talkback microphone, this microphone is used instead of the DJ microphone.
[6] F1...F5		Programmable function keys, e.g. for additional CR monitor selector keys (with optional Monitor Expander unit, refer to 12.2.11).
[7] Signaling Lamps	**ON-AIR**	Is turned on by a control signal on the “SIGN.” control connector on the monitoring module.
	CR-MIC	Is on if at least one microphone in the control room is routed to the program or to the record output (i.e. the corresponding output is selected, the channel is ON, and the fader is opened).
	STUDIO-MIC	Is on if at least one microphone in the studio is routed to the program or to the record output (i.e. the corresponding output is selected, the channel is ON, and the fader is opened).
[8] Loudspeaker		For PFL and talkback signals.

3.1.5 Fader Units



[1] OFF (“key no. 3”)
[2] ON (“key no. 2”)
Keys for deactivating or activating a channel. Can be reconfigured. For details please refer to chapters 9 and 15.1.

[3] Linear Fader
The audio path is fully digital, therefore the signal does not pass through the fader; the stroke length is 104 mm. For details concerning fader start control please refer to chapters 9, 14.3, and 15.1.

[4] PFL (“key no. 1”)
Key for activating/deactivating the PFL (pre-fader listening) function.

[5] OVL
Channel overload indicator.

[6] Contrast Knob
For setting the contrast of the LC display located above the fader panel, depending on the desired viewing angle and the ambient light conditions.

4 CHANNEL FUNCTIONS

The OnAir 2000M2 hardware is modular in groups of 6 channels; the maximum number of channels is 24. Each channel group consists of a touch-screen, 6 faders, 18 keys (3 per channel) and 6 overload indication LEDs.

Input Router: Through the input router, the output signal of every individual input module can be assigned to any fader strip on the console surface (see chapter 5.8). The channel parameters relate to the input module and not to the fader strip. They will be re-routed when the input module is assigned to another fader.

4.1 Keys

The channel key functions are configurable; this configuration is valid for the whole console (and not per channel). The different configuration possibilities are:

Configuration	Key 1	Key 2	Key 3
1	PFL	ON	OFF
2	PFL	ON/OFF	LOCATE
3	PFL	ON	LOCATE
4	PFL	ON/OFF	NEXT

For details on the configuration see chapter 9.

4.2 Faders

Since the audio path is fully digital, the signal does not pass through the faders. Therefore linear-track mono faders are used. The stroke length is 104 mm. When opening the fader, fader start or signaling commands can be released, depending on the configuration (see chapter 9).

Master Faders: Any of the faders can be configured as master fader(s) for the program and/or the record output (see chapter 5.14).

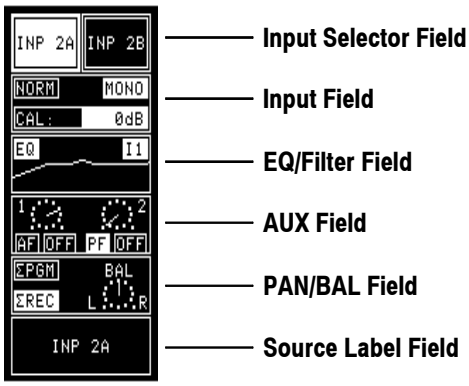
4.3 Overload Indicator

A red OVL indicator per channel signalizes an overload condition anywhere within the channel's signal processing path.

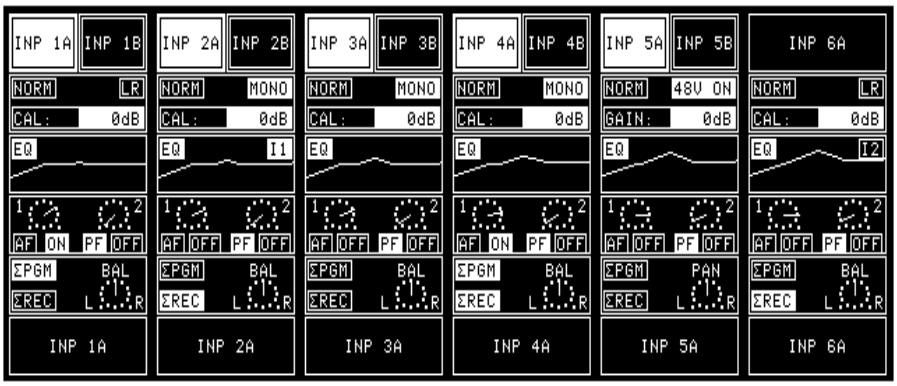
Signals in the OnAir 2000M2 are processed with sufficient digital headroom through the entire signal processing chain. Besides, most outputs (PGM, REC, AUX1, AUX2, SEND1...4) are equipped with limiters in order to prevent overloads. All limiters are set to 0 dB_{FS} with fixed attack and release times.
Overload in a channel is indicated if the signal level reaches 0 dB_{FS}. Due to the output limiters, normally distortion can be avoided even in case of an overload.

4.4 Channel Screen

A channel screen is located above each group of six fader strips. The channel screen has a touch matrix with 2 × 6 switch fields per fader strip as shown below.



The channel screen always maintains system overview by displaying the relevant settings of the six fader strips. When touching one of the switching fields, the central control screen automatically displays the attached operating field and allows parameter entry. In the channel screen, the status display is immediately updated.



In the following chapters we assume that the user has access permission to all functions, unless otherwise noted. Access permission may be limited, causing that certain screen parts are blank. For a description of how to set up access permission, refer to chapter 11.

4.4.1 Channel Screen Fields

Input Selector Field:

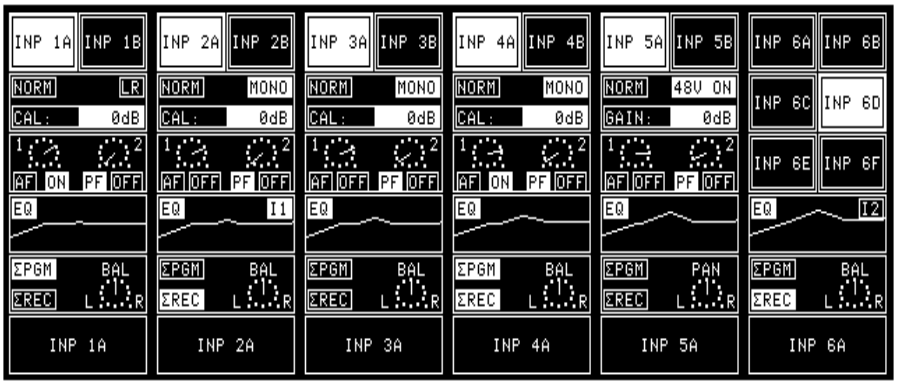
For microphone and analog/digital line input modules, the Input selector field directly selects one of two physical input signals routed to this fader strip. The field of the selected input is highlighted, and the source name appears in the source label field. While the channel is active (i.e. channel ON, fader opened and output selected), the input selection is disabled.
If a hex-input module is routed to this fader strip, the source selection can be made in two different ways depending on the Customer Code setting (for more information on Customer Codes, refer to chapter 12.2.12):

Code 0x00000001 inactive:

When touching the input selector field, a Source Selector page appears on the central control screen that allows selecting one of the six connected sources. The input selector field displays the currently selected input of the

channel (in the channel screen on the previous page: “INP 6A” at the far right,).

Code 0x00000001 active: The six input selection fields are always displayed on the channel screen; the Input and AUX fields are omitted (in the channel screen below: “INP 6A...INP 6F” at the far right).



If the channel is connected to an automation system, the input selector field shows “ON AIR” while the channel is on-air, or it shows “NEXT” if this is the next channel to be switched on-air. For more details on this topic, please refer to chapter 10.

Input Field: The input field gives an overview of the channel’s relevant front-end parameters. The underlined settings are the default values. If a parameter setting is different from its default value, it is highlighted on the channel screen field.

For a line or digital input module, these parameters are:

Phase: NORM/INV (normal, or left channel inverted).

Stereo Mode: LR/RL/LL/RR/MONO (normal stereo, channels swapped, left input to both outputs, right input to both outputs, or mono signal to both outputs).

Calibration: ±15 dB (deviation of nominal level).

The microphone input modules have the following parameters:

Phase: NORM/INV (normal or inverted).

Phantom Power: 48 V OFF/48 V ON.

Gain: –5...+75 dB (microphone input amplifier gain).

A touch on the Input field does not change a parameter, but opens the Channel Control page on the central control screen. Parameters can now be entered with the four rotary encoders and the control screen touch switches.

EQ/Filter Field: The *EQ/filter field* is a graphical display of the equalizer setting. “EQ” is highlighted if a filter or the equalizer is on. Touching this field opens the EQ/Filter page on the control screen. If an insert is assigned to this channel, a small “Ix” window is indicated within the EQ/Filter field that is highlighted if the insert is ON.

AUX Field: The potentiometer symbols in the *AUX field* show the auxiliary settings. Both auxiliaries can be independently set as “AF” (post-fader), “PF” (pre-fader), “ON”, or “OFF”. “PF” and “ON” are highlighted if selected. When touching the “AUX” field, the Channel Control page opens on the central control screen where the auxiliary settings can be changed.

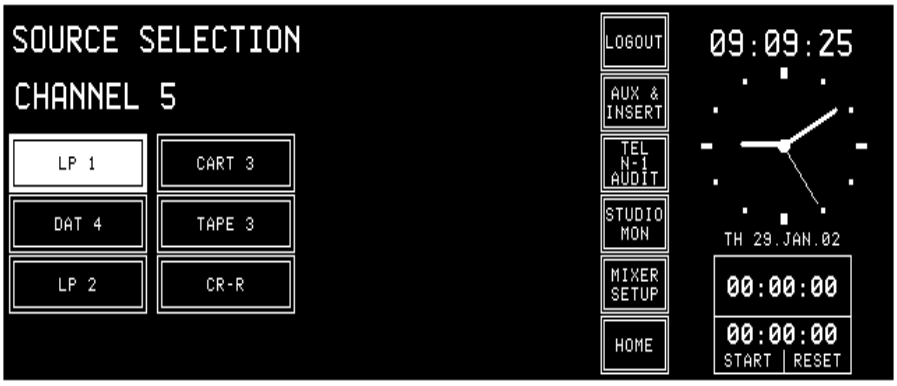
PAN/BAL Field: The *PAN/BAL field* gives an overview of the current panorama or balance setting and shows the bus assignment. The output sum symbol (Σ) is highlighted if the channel is assigned to the program output (ΣPGM) or to the recording output (ΣREC). The Channel Control page on the central control screen is opened by touching the PAN/BAL field.

Source Label Field: The *Source label field* shows the name of the selected input channel.

"Next" Function: This function allows highlighting the source label of the channel that is the next to go on-air. For this purpose, just touch the desired channel's source label. Only one source label can be highlighted at a time. The tag is automatically removed when the fader of this channel is opened while the channel is ON. This function has no influence neither on control output signals nor on the internal functionality of the console.

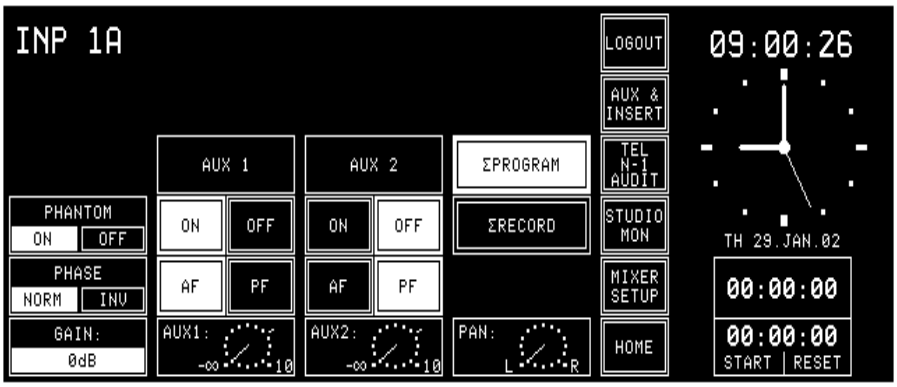
4.4.2 Multi-Source Selector Page

The SOURCE SELECTION page on the central control screen is opened by touching the Input Selector field of a channel, provided the channel is equipped with a hex-input module. On this page, one of the six inputs can be selected and then becomes highlighted. The input name is shown on the channel label field on the channel screen. The source selection page appears only if the hex input modules are configured for central selection (i.e. Customer Code 0x00000001 is inactive).



4.4.3 Channel Control Page, Microphone Input

The Channel Control page for a microphone input is opened if either the AUX, the PAN, or the Input field on the channel screen is touched, provided that the selected input module is a mic input.



PHANTOM Touching the "ON" part of the PHANTOM field turns the 48 V phantom power on; a touch on the "OFF" part of the field turns it off again. The status is indicated by highlighting the corresponding field.

PHASE The phase of the microphone signal is inverted by touching the "INV" part of the PHASE touch-screen field; "INV" is highlighted. Touching "NORM" de-activates the phase inversion.

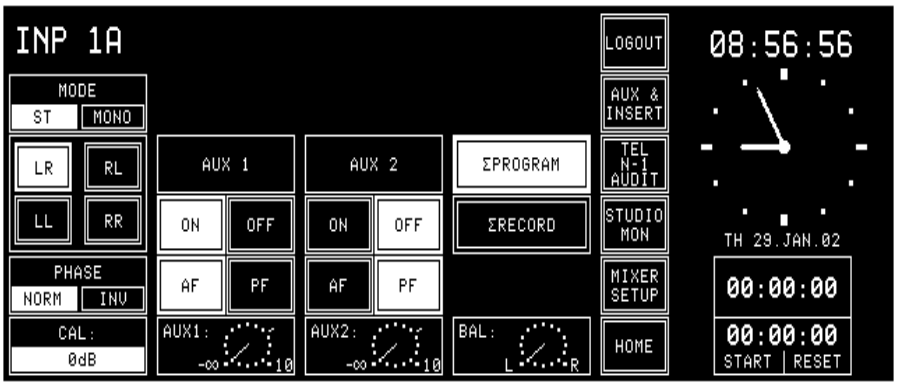
GAIN The microphone preamp's gain is set with the first rotary encoder (in a –5...+75 dB range); the adjusted value is indicated in the GAIN field.

AUX 1 / AUX 2 The AUX 1/2 ON and OFF touch-screen fields route the channel signal to the corresponding auxiliary bus, if "ON" is selected (and highlighted).
The AF/PF touch-screen fields allow selection whether the signal is taken after- (AF) or pre-fader (PF). The current selections are highlighted.
The AUX levels (–∞...+10 dB; 0 dB position is marked with a dash) are adjusted with the second and the third rotary encoder. The settings are shown in the fields right above the rotary encoders as well as on the corresponding symbols on the channel screen.
The output routing of this particular channel is performed with the "ΣPROGRAM" and "ΣRECORD" touch-screen fields.

PAN The fourth rotary encoder positions the source within the stereo image, the PAN (-ning) indicator shows the adjusted position.

4.4.4 Channel Control Page, Line Input

The Channel Control page for a line input is opened if either the AUX, the PAN, or the Input touch-screen field on the channel screen is touched, provided that the selected input module is an analog line input or a digital input.



MODE Line level inputs have a MODE field which defines whether the input is processed in "ST"(-ereo) or in "MONO" mode. In mono mode the stereo input signal from the input module is added to a mono signal and attenuated by 3 dB.
Stereo signals are processed in the following modes:
LR: Normal stereo mode;
RL: Left/right channel swapped;
LL: Left signal on both channels;
RR: Right signal on both channels.

PHASE The phase (*of the left input path only*) is inverted by touching the "INV" part of the PHASE touch-screen field; "INV" is highlighted. Touching "NORM" de-activates the phase inversion. Only in the "RR" case, the phase inversion takes place in the R input path.

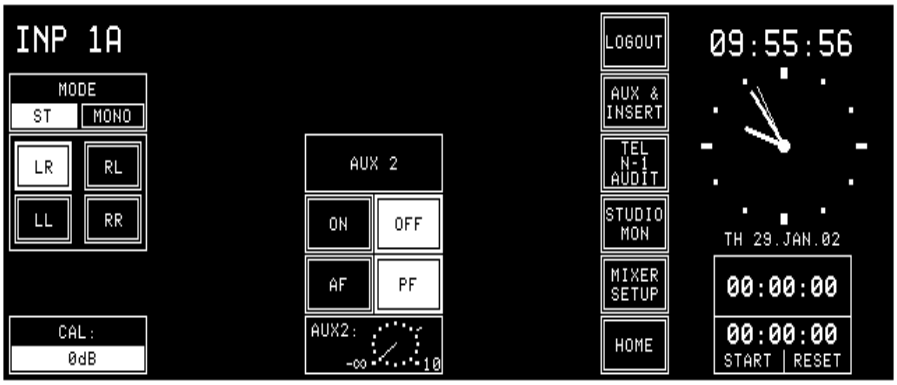
CAL In the CAL field, the gain deviation referred to nominal level setting is displayed; max. deviation: ±15 dB, adjustment with the first rotary encoder.

AUX 1 / AUX 2 The AUX 1/2 "ON" and "OFF" touch-screen fields route the channel signal to the corresponding auxiliary bus, if "ON" is selected (and highlighted).
The "AF" / "PF" touch-screen fields allow selection whether the signal is tapped after- (AF) or pre-fader (PF). The current selections are highlighted.
The AUX levels (–∞...+10 dB; 0 dB position is marked with a dash) are adjusted with the second and third rotary encoder. The settings are shown in the fields right above the rotary encoders as well as on the corresponding symbols on the channel screen.
The bus assignment is performed with the "ΣPROGRAM" and "ΣRECORD" touch-screen fields.

BAL The fourth rotary encoder adjusts the position of the stereo image, the BAL indicator shows the adjusted position.

Access Permission: Depending on the access permission (see chapter 11) of the user currently logged in, the functions not available to this user will not be displayed on the Channel Control page; an example is given below. This user cannot access the following parameters:

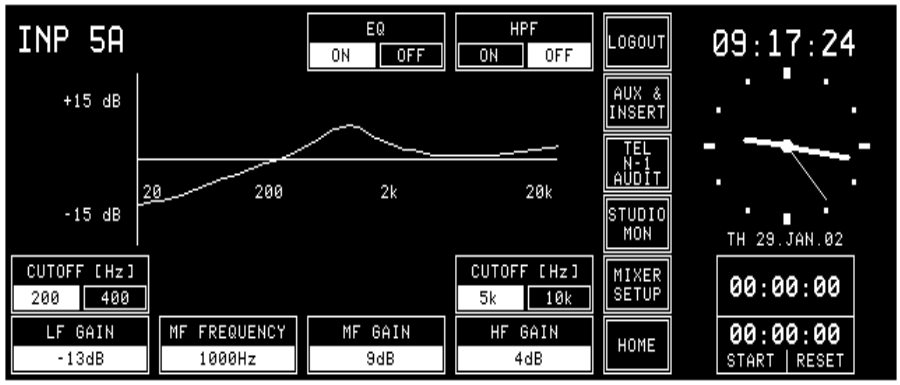
- PHASE
- AUX 1
- Output summing busses (ΣPROGRAM, ΣRECORD)
- PAN/BAL.



If the user has no access permission at all, the Channel Control page will not be displayed.

4.4.5 EQ/Filter Page, Microphone Input

The EQ/Filter page for microphone input modules is opened if the EQ/Filter touch-screen field of the channel screen is touched, provided that the selected input module is a microphone input. If the user has no access permission to the EQ parameters, the EQ/Filter page will not be displayed.



HPF The HPF "ON" / "OFF" touch-screen field is a high-pass filter switch. The filter is part of the analog front end and is available on microphone inputs only. "ON" is highlighted if the filter is active.

EQ The EQ "ON" / "OFF" touch-screen fields activate or bypass the equalizer. If the EQ is bypassed (i.e. set to "OFF"), the preset frequency curve is displayed on the central control screen nevertheless. In the EQ/Filter field of the channel screen, however, the current, linear frequency response is displayed.
The four rotary encoders are the control elements for the equalizer. The low-frequency section is a shelving-type filter with two selectable turnover frequencies and variable boost/cut. The frequency is selected by the left-hand "CUTOFF" touch-screen fields, the gain is set with the leftmost rotary encoder. The next rotary encoder sets the frequency of the mid-frequency section which is a peaking-type filter. The third rotary encoder controls the mid-frequency gain. The rightmost rotary encoder controls the gain of the high-frequency section which again is a shelving-type filter with two turnover frequencies. The right-hand "CUTOFF" touch-screen fields allow frequency selection of the high-frequency shelving filter. The current EQ frequency response curve is displayed on the page.

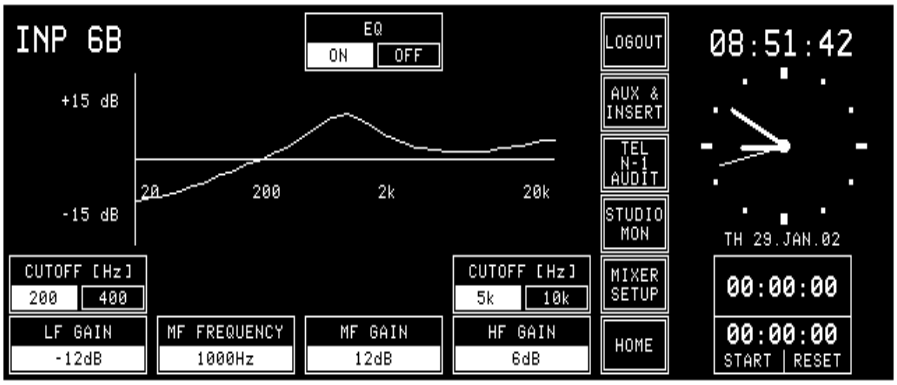
Note: The HF cutoff frequencies can be reduced by approx. one octave (resulting in an increased filter effect) when activating Customer Code 0x00000002; refer to chapter 12.2.12.

EQ Specs:

Filter	Mode	Frequency	Gain range	Comment
High-pass filter	HPF	–3 dB @ 80 Hz	ON/OFF	Analog, 12 dB/oct., mic inputs only
EQ low-frequency	Shelving	200 Hz/400 Hz	–15 dB...+15 dB, 1 dB steps	-
EQ mid-frequency	Peaking	200 Hz...10 kHz, 1/6 octave steps	–15 dB...+15 dB, 1 dB steps	Q = 0.7
EQ high-frequency	Shelving	5 kHz/10 kHz	–15 dB...+15 dB, 1 dB steps	see Customer Code (12.2.12)

4.4.6 EQ/Filter Page, Analog Line/Digital Input

The EQ/Filter page for analog line and digital input modules is opened if the EQ/Filter touch-screen field on the channel screen is touched, provided that the selected input module is an analog line or digital input. If the user has no access permission to the EQ parameters, the EQ/Filter page will not be displayed at all.



The only difference between the analog line/digital and the microphone EQ/Filter pages is the missing HPF high-pass filter switch on analog line/digital inputs.

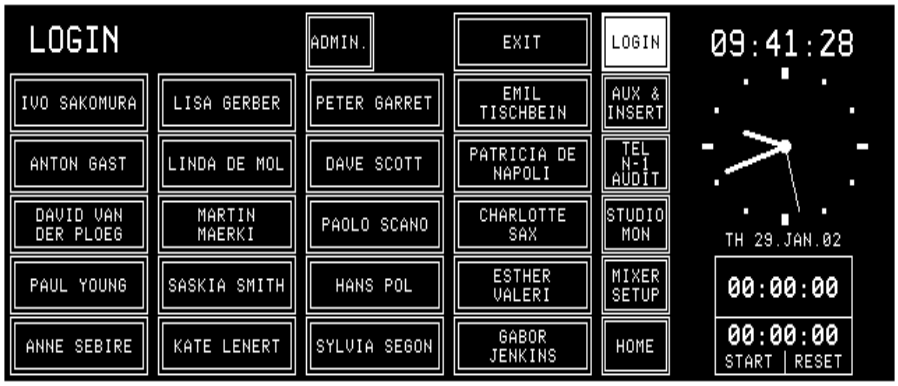
5 MASTER FUNCTIONS

Master functions are not channel-related but global functions. These are audio functions (AUX master level, studio monitoring), non-audio functions (telephone hybrid control, clock, stopwatch), snapshot management, and system configuration.

Touching one of the LOGIN, AUX & INSERT, TEL, STUDIO MON, MIXER SETUP, or HOME-CHN ON/OFF fields will always lead to the corresponding page.

5.1 Login/Logout

The console always starts up in default user mode. If the user is a registered user who wants to work in his own environment, he must log-in. He has to touch the LOGIN field on the central screen. The LOGIN page will appear where the user can touch the field with his own name.



More information on the login procedure can be found in chapter 11.5.

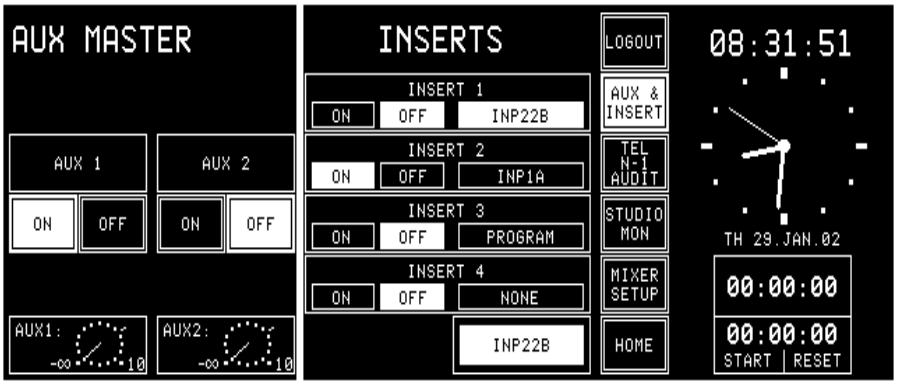
After having logged in, the LOGIN field changes to LOGOUT; when the user leaves the console, this field must be used. After having touched LOGOUT, a dialog box appears, asking for confirmation. This is used as a protection against logging out inadvertently.

If a console is operated by one person only, the system administrator simply can enable all access rights for the default user. This is the way the user can control all console functions (except the administration functions) without having to log-in. A default user is always defined in the User ad-

ministration table, his name is DEFAULT USER. The access permissions of this user can be edited. His record cannot, however, be deleted, and no password can be defined for him.

5.2 AUX and Insert Control

The AUX MASTER/INSERTS page is entered by touching the AUX & INSERT field on the central control screen.
If the user has no access permission for the AUX and/or insert parameters, there will appear a text next to AUX MASTER and/or INSERTS, telling the user that he cannot modify the parameters.



AUX MASTER: The two rotary encoders below the AUX 1 and AUX 2 gain indication symbols are used to adjust the desired level of the corresponding AUX master. The gain can be adjusted in a range of –∞ to +10 dB; the 0 dB position is marked with a dash.
ON/OFF selection of the AUX master buses is done by touching the corresponding fields on the screen. A highlighted background indicates the current status.
The AUX 1 and AUX 2 gain indication symbols are always displayed, even if no output module is installed for AUX 1 and/or AUX 2.

INSERTS: On the same page, the four insert points can be assigned. Assignment is possible to any of the following signals:

- Input CH1 to input CH24,
- PROGRAM bus,
- RECORD bus,
- Talkback to Studio and/or Control Room output (if an optional TB Mic Input Module is installed within the console configuration),
- NONE.

An insert can only be assigned while it is set to OFF, by touching the channel/bus label field of the insert box. The label field is highlighted and can be changed with the rightmost rotary encoder. If the insert is set to ON, the channel/bus label field cannot be highlighted, and the insert assignment cannot be changed.
When an insert is assigned to a channel, a small “Ix” symbol appears in the EQ/Filter field of this fader strip's channel screen section; it is highlighted if the insert is set to ON (see left).
The insert send always follows the setting as displayed on the screen; it remains active while the insert is OFF. If the insert is switched ON, a switchover from the internal connection to the insert return is performed.

Each insert can be assigned to one signal only. If an insert is already assigned to a signal, this signals name will no more appear in the channel/bus label field during signal selection for another insert.
Inserts are assigned per input module and not per physical input, which means that an insert assignment is always valid for all inputs of the input module. When the input module-to-fader strip assignment is modified, the inserts are re-routed accordingly.
Insert assignment and insert ON/OFF setting are included in snapshots.
If an insert module is removed, the insert assignments are disconnected (OFF, NONE) and will no more be visible on the AUX MASTER/INSERTS page and in the channel screen.

5.3 N–1/Audition Bus and Telephone Hybrid Control

Two clean-feeds (N–1A, N–1B) are provided (for software V3.0 and up, up to six clean-feeds N–1A... N–1F; refer to chapter 5.3.1). The clean-feeds can be used as mono outputs to telephone hybrids, or as mono line outputs. The audition bus can either be used as a special stereo monitoring bus (for information on the special CUT and DIM conditions, please refer to chapter 12.2.2, “CR DIM WHEN AUDITION SELECTED”), or as a third, mono or stereo clean-feed.
If the user has no access permission for the clean-feed and/or audition bus parameters, there will appear a text next to the corresponding field, telling the user that he cannot modify the parameters.

The clean-feeds as well as the audition bus have master level controls which can be accessed on the N–1/audition master and telephone hybrid page (opened by touching the TEL/N–1/AUDIT field). The output levels are controlled with the rotary encoders; the output gain range is –∞ to +10 dB, the 0 dB position is marked with a dash.

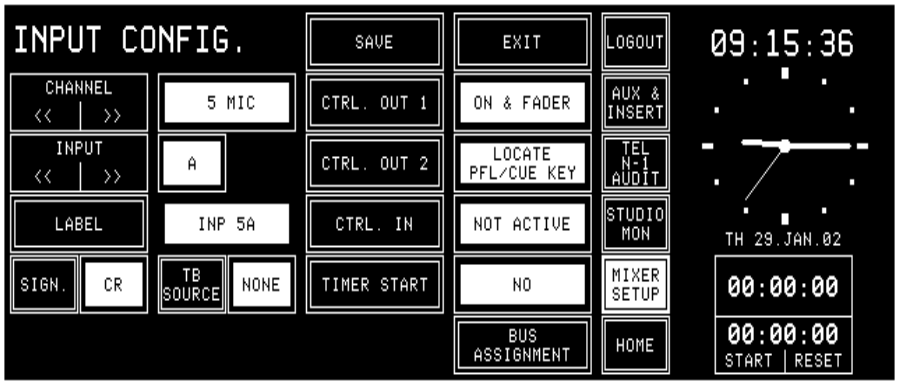
Two telephone hybrid units to which the clean-feeds are fed can be controlled from the OnAir 2000M2 user surface, if an (optional) telephone hybrid control module is installed. In such a case the ON-AIR, HOLD, and TELEPHONE fields appear on this page. TELEPHONE switches the telephone line to the telephone. By touching HOLD, the telephone line is connected to the telephone hybrid unit; the return signal is routed to the console, but the incoming signal is not. Only when touching ON-AIR, both the return and the incoming signals are routed to the console.

5.3.1 Additional N–1 Outputs

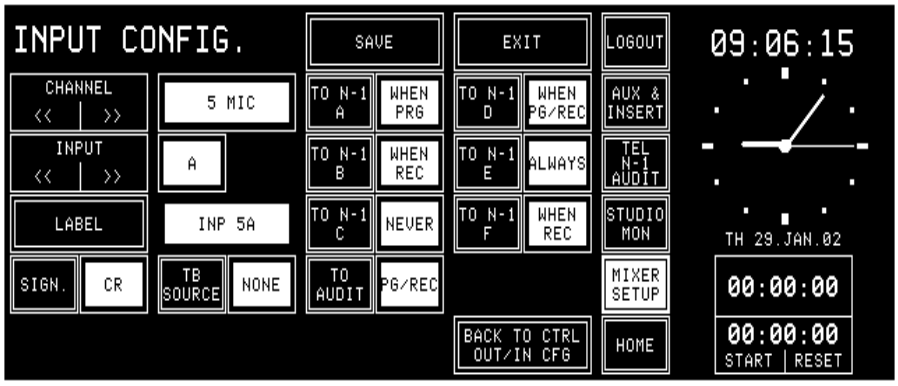
Starting with SW V3.0, four additional N–1 outputs (N–1C...F) are available, *provided that no Insert 3/4 module is installed in the console*. Their respective levels are also part of a snapshot. *When upgrading from a SW version earlier than V3.0, a hardware modification is required on the DSP Board – please ask your Studer distributor for additional information*.

Conditions:

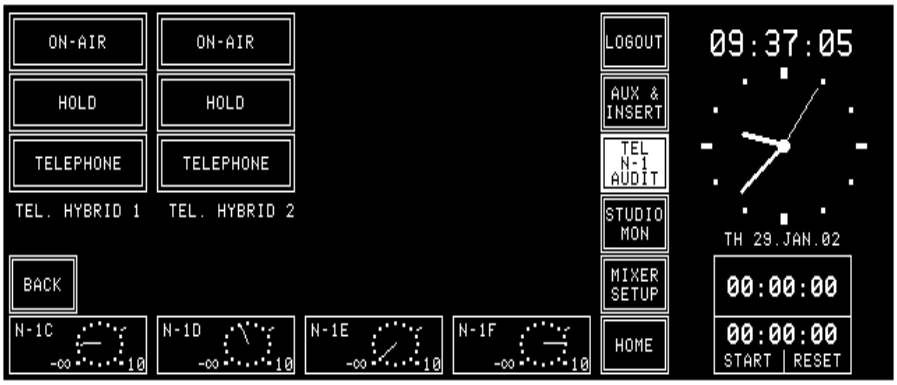
- A Dual Analog Output Module or a Digital Output Module must be installed in order to output the four additional N–1C...F signals;
- On the Dual Analog Output Module, output mode must be set to “Stereo” (jumper setting), refer to chapter 16.5.
- For the Digital Output Module, this selection is not required.
- For bus assignment on the Dual Analog Output Module (jumper setting), also refer to chapter 16.5; plug the jumper for output A to position OUT1, the jumper for output B to position OUT2.
  Then, the four N–1 signals are output on the following connectors:
  N–1C on output A, left channel; N–1D on output A, right channel
  N–1E on output B, left channel; N–1F on output B, right channel.
- For bus assignment on the Digital Output Module (DIP switch setting), refer to chapter 16.6; set DIP switch A to N–1C/D, and DIP switch B to N–1E/F according to the table in chapter 16.6.
  Then, the four N–1 signals are output on the following connectors:
  N–1C/D on output A, left/right channel
  N–1E/F on output B, left/right channel.



When touching BUS ASSIGNMENT on this page, it changes as follows, allowing to select the six N–1 and the audition bus assignments:



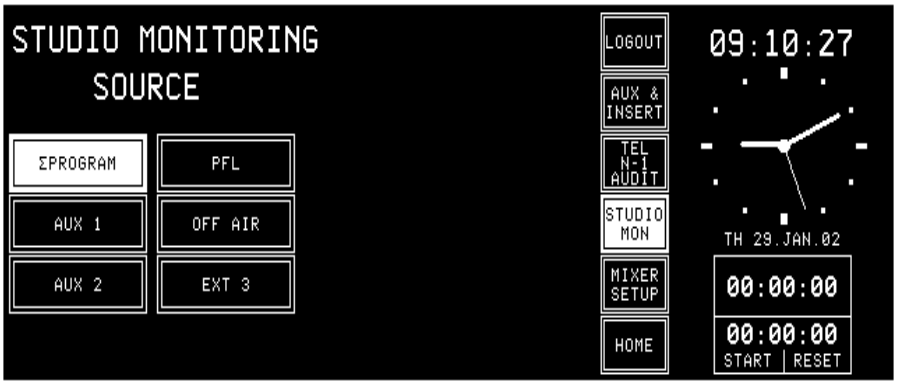
The TEL/N–1/AUDIT page allows to control the N–1 outputs A and B and the audition output using the rotary encoders, as described earlier. After touching “MORE N–1”, the additional N–1 outputs (C to F) can be controlled, as shown below. With “BACK”, the previous page is displayed again.



Note: If the console is configured for N–1C...F outputs without removing an Insert 3/4 Module, the N–1C...F outputs are not available; however, talkback with fixed level to these outputs is possible.

5.4 Studio Monitoring

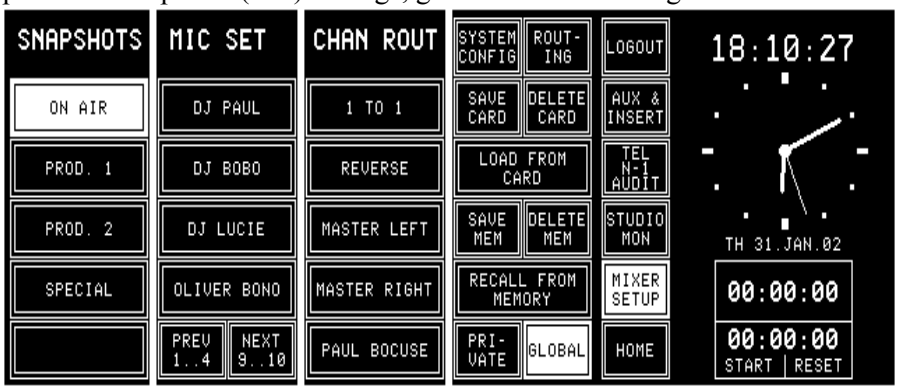
The STUDIO MONITORING SOURCE page is opened by touching the STUDIO MON field. This page allows selecting one of six signals to be routed to the studio monitoring loudspeakers and headphones. This selection can also be done via a pushbutton remote control from the studio (optional accessory “Studio Talkback Box” available). The field of the currently selected signal source is highlighted.
The signal selected with the EXT3 field is the same as the one selected with EXT3 on the CR monitor selector in the central console section; this signal is fed to the console via the 39-pin EXTERN MONITOR (INPUT) connector on the monitoring module.



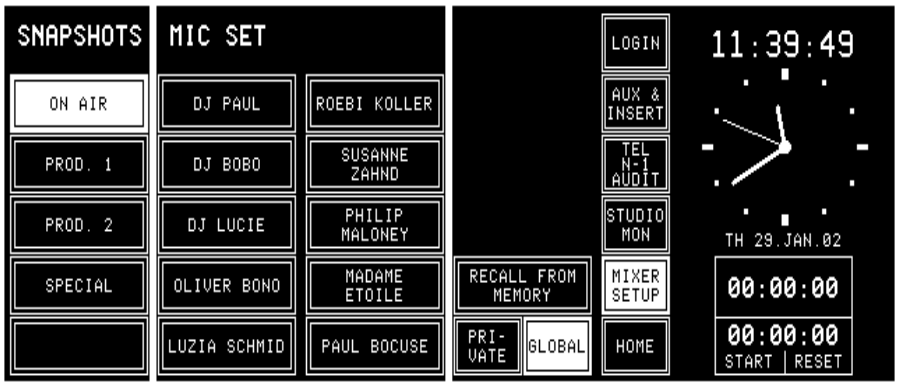
For a more detailed description of the monitoring system, see chapter 7.

5.5 Mixer Setup

The Mixer Setup page gives access to several function groups used for setting the general status of the console. These are:
Global snapshots, private snapshots, global microphone (mic) settings, private microphone (mic) settings, global channel routings.



At the left of the Mixer Setup page there is the SNAPSHOTS area. The five fields allow snapshot selection.
Up to ten mic settings can be selected in the MIC SET area; either all of them are displayed, or – if the CHAN ROUT section is visible on this page as well – they are displayed in groups of four and can be browsed using the NEXT... and/or PREV... fields, as shown above.
Five global channel routings are accessible in the CHAN ROUT area. If no global channel routings should have been defined by the system administrator, the CHAN ROUT area is not displayed, as shown below.



The right part of the Mixer Setup page also provides the following command fields:

PRIVATE/GLOBAL: Users can select between private and global snapshots and mic settings.

SYSTEM CONFIG: This field leads to the second level of mixer setup functions. These are accessible only for users having the corresponding parameter set in the user configuration. A new page is displayed, allowing to select from several groups of configuration parameters.

ROUTING: This field leads to the CHANNEL ROUTING. page. This page is only accessible for users having the corresponding access right set in the user configuration.

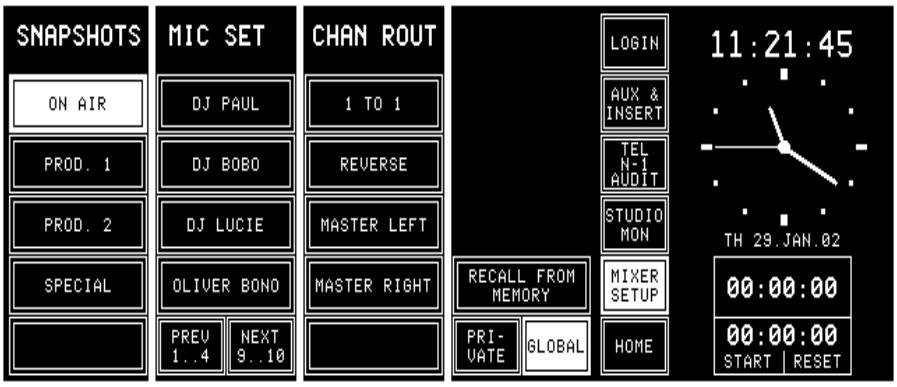
The use of snapshots, mic settings, and channel routings is described in the following chapters, followed by some information on user administration and the watch/stopwatch functions.

5.6 Snapshots

A snapshot is a copy of a momentary console setup. It contains all parameters (as input selection, input gain, phase, phantom power, balance or panorama setting, EQ settings, AUX settings, channel ON/OFF, and insert assignment), except fader positions and PFL. A snapshot does *not* contain any parameters being part of the console configuration (input channel routing, channel labels, control signal functions, clean-feed bus assignment, level meter assignment, etc.).
Each user having a personal password can store up to four private snapshots (max. 20 users), and up to five global snapshots (available for every user) can be saved in the console's flash memory. More snapshots can be saved on a PC-Card (refer to chapter 5.8) and loaded from the card into the console's flash memory if required.
A name can be given to every snapshot which is displayed in the leftmost field column.
Also refer to chapter 5.10.1 for information on snapshot access rights.

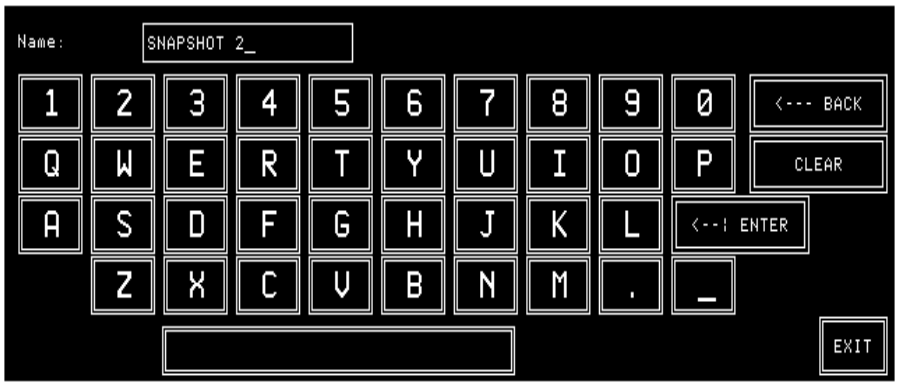
5.6.1 Recall a Snapshot from Memory

Select a snapshot by touching one of the name fields. The name of the selected snapshot is highlighted. When touching the RECALL FROM MEMORY field, the snapshot will immediately be recalled from the console's internal flash memory, except if the current channel is active (switched to the program or the record bus); then the recall operation is delayed until the channel is closed.
During execution of the snapshot RECALL function, the system compares the configuration parameters of each channel with the configuration parameters saved together with the snapshot. If there is a mismatch, the snapshot will not be executed for this channel.



5.6.2 Save a Snapshot to Memory

Saving a snapshot is done by touching a snapshot field, followed by SAVE MEM. The keyboard page appears where the snapshot name can be entered or edited (max. 20 characters). If the existing name is to be kept, just touch the <--¦ ENTER field.



CLEAR is used to clear the text field for entering a new name with the keyboard.
<--- BACK is used to delete one character to the left of the cursor.
EXIT is used to leave the keyboard page without saving the new name.
When touching <--¦ ENTER, the keyboard page is left and the snapshot data are saved.

Note: Global snapshots can be saved by the system administrator only. Logged-in users only can save their private snapshots.

5.6.3 Delete a Snapshot from Memory

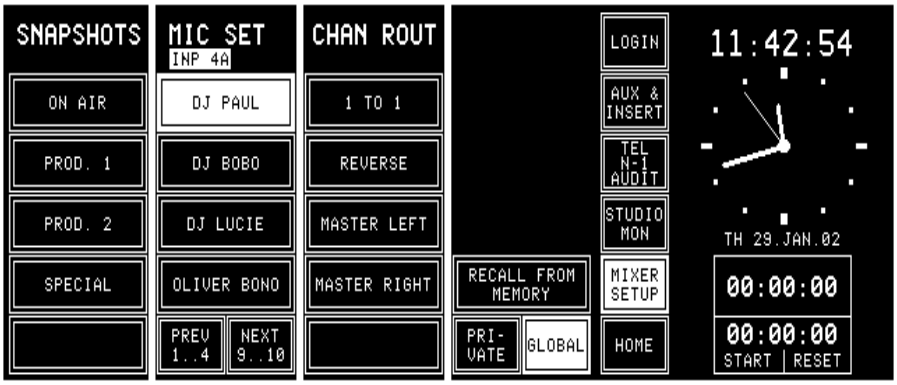
When saving a snapshot, the previously saved snapshot data are overwritten. A snapshot can be deleted, too, without overwriting it with new data.
For deleting a snapshot from the console's internal flash memory, the desired snapshot has to be selected. The selected field is highlighted. After touching the DELETE MEM field a dialog box appears. If it is confirmed, the snapshot will be permanently removed from the memory, and the name within the selected field is cleared.

5.7 Mic Settings

A mic (microphone) setting is a set of parameters (EQ, gain, phantom power) for a single microphone channel. Thus, every DJ or announcer can store his preferred mic settings and recall them at any time. Up to four private mic settings for each user (max. 20 users), and up to ten global mic settings can be stored in the console's flash memory; additional mic settings can be stored on a PC-Card as well (refer to chapter 5.8).
If the CHAN ROUT section is also displayed on the Mixer Setup page, the global mic settings are displayed in groups of four. To display the other groups, use the NEXT... and/or PREV... fields below the MIC SET label fields.
Mic settings can be named, as the snapshots; these names are displayed on the corresponding touch field columns on the Mixer Setup page.

5.7.1 Recall a Mic Setting from Memory

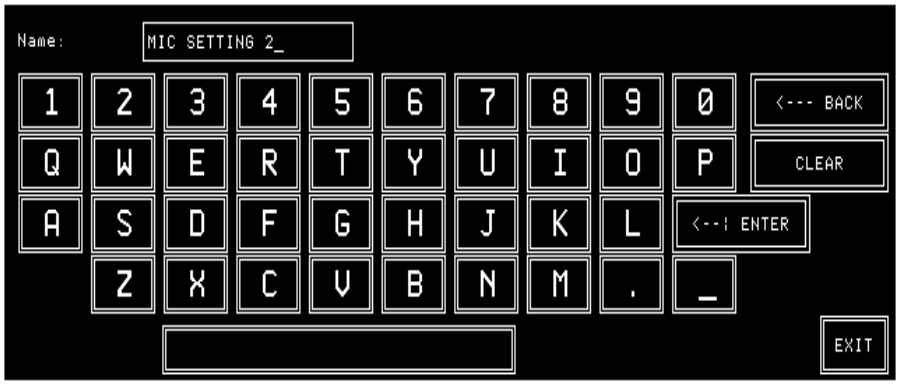
To recall a mic setting from the console's internal flash memory, first open the Mixer Setup page by touching the MIXER SETUP field, then select a microphone input channel by touching its label field in the channel screen, followed by the corresponding field in the MIC SET area. The name of the selected mic setting is highlighted.
Then touch the RECALL FROM MEMORY field. The selected channel's parameters are immediately set to the values of the mic setting.
Selection of another type of input (line or digital) is treated as an error and will not be accepted by the system.



If the last modification was made on a microphone channel, this channel is automatically selected and displayed in the top line of the Mixer Setup page. To change the input selection, just touch the label field of the desired channel in the channel screen. The input being currently active (A or B) of this channel is now selected and shown in the top line of the Mixer Setup page.

5.7.2 Save a Mic Setting to Memory

Creating a mic setting means saving a set of equalizer and gain parameters for a single microphone channel under a given name into the console's internal flash memory. This is done by first selecting the microphone channel to be stored, then touching a MIC SET field, followed by SAVE MEM. The keyboard page appears where the mic setting's name can be edited. Any MIC SET field (also one of these that have already been used and have a name assigned) can be selected. It will, however, be overwritten by the new mic setting.



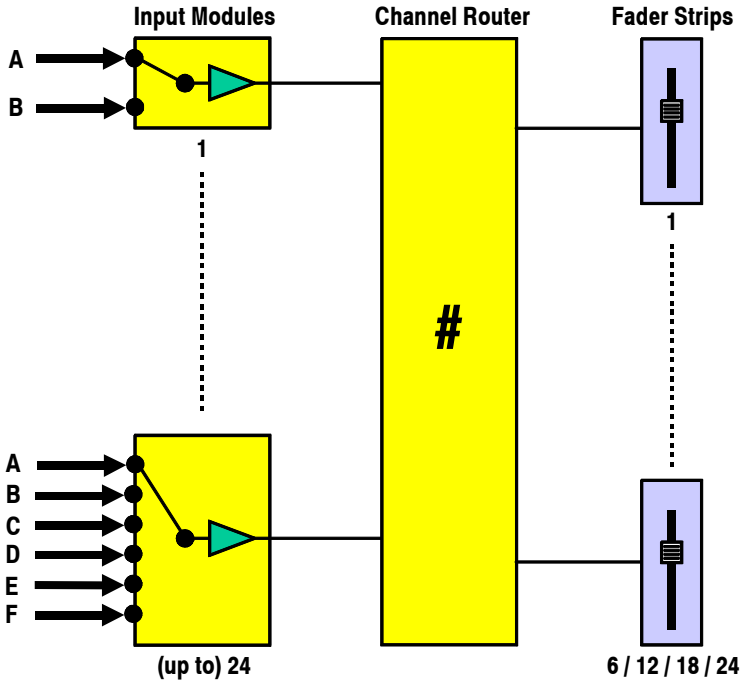
Now a new name can be generated, or the already present name can be overwritten or edited. When touching <--¦ ENTER, the mic setting data and its new name are saved.

5.7.3 Delete a Mic Setting from Memory

When saving a mic setting the previously stored data are overwritten. A mic setting can be deleted, too, without overwriting it with new data.
For deleting a mic setting from the console's internal flash memory, the desired mic setting has to be selected. The selected field is highlighted. After touching the DELETE MEM field, a dialog box will appear. If it is confirmed, the mic setting will be permanently removed from the memory, and the text within the selected field is cleared.

5.8 Routing

The OnAir 2000M2 features a channel router that allows to route the output of any input module (including the complete parameter set, as stereo mode, gain, filter, sends, bus assignment) to any fader strip. Please note that the inputs of the same input module *cannot* be assigned to different fader strips, as the input selector switch is located before the preamplifier. An input module signal *cannot* be routed to more than one fader strip.



The console can be equipped with 6, 12, 18, or 24 fader strips (1...4 fader modules) and with the same number of input modules (with A/B inputs or hex inputs) installed in the console. The Input Module Extension Box (optionally available) allows to increase the number of input modules for smaller console versions.

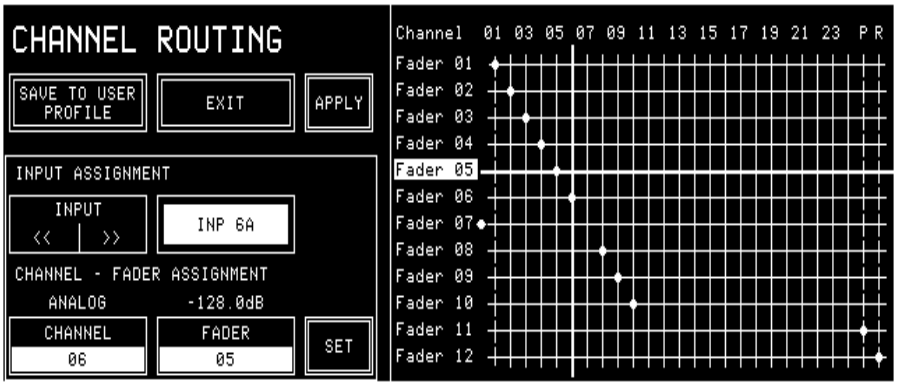
The following combinations are allowed:

No. of Fader Strips	No. of Input Modules	No. of Extension Boxes
6	6	–
6	12	1
6	18	2
6	24	3
12	12	–
12	18	1
12	24	2
18	18	–
18	24	1
24	24	–

The maximum number of input signals is 64, which means that up to twenty input modules (with A/B switching) plus four hex input modules can be installed, regardless of the number of fader strips.

5.8.1 Channel Routing

The channel routing, i.e. the input module-to-fader strip assignment, is accessed on the CHANNEL ROUTING page. There is only one user-specific channel routing per logged-in user available. Should the user have no access permission to the channel routing, this page is not displayed.



The right part of the CHANNEL ROUTING page displays a matrix with the corresponding number of faders and input channels. In case the number of faders and/or input modules is higher than 12, only every other number is displayed due to limited space. The current input module-to-fader strip assignment is indicated by the crosspoints.
Program and Record masters can also be assigned to a fader; they are positioned at the far right of the grid ("P" and "R").

Making a Crosspoint

On the left part of the CHANNEL ROUTING page, the input module-to-fader strip assignment is performed with the two left rotary encoders below the center screen. When turning these encoders, the highlighted horizontal and vertical lines are moved within the grid. The input channel and fader numbers are displayed above the two rotary encoders, as well as the type of the selected input module (MIC/ANALOG/DIGITAL) and the position of the currently selected fader.
Above the input module-to-fader strip assignment, the input labels are displayed. For hex input modules, the left box shows left-and-right arrows for selection, and the right box displays the current label out of the six.
The channel routing relates to the physical input. This means that, for example, input B can be selected; when loading this set-up later, input B is automatically selected with all its input parameters (as input gain, EQ settings, etc.). These parameters are input-related and will be automatically re-routed when the input channel is assigned to a different fader.
When the desired crosspoint is found, touch the SET field. A dot appears at this crosspoint in the grid, indicating the established connection.
The fader to which this input channel had been assigned before is free now, and its dot jumps outside the grid to the left (fader 07 in the picture above). The same happens when the CLEAR field is touched after having selected a connection.
When all settings are done, touch the APPLY field. The new channel routing is loaded to the work memory. There are two ways to proceed now:

Temporary Routing

When touching the EXIT field, the page is left without saving, and the user can work with the new channel routing.

However, the new routing is not stored in the user's profile. When the user logs out, the temporary channel routing is lost, and his original channel routing will be loaded when logging in the next time.

Permanent Routing To store the new channel routing within the user's profile, the SAVE TO USER PROFILE field has to be touched before exiting the page with EXIT.

Clearing a Crosspoint When the CLEAR field is touched after having selected a connection, then this fader strip is free now, and its dot jumps outside the grid to the left.

Protected Connections One or several connections can be protected by the administrator from being modified, even by users having access permission to the CHANNEL ROUTING page. In such a case, a *dashed vertical line* is displayed for the corresponding input module (channels 01, P, and R in the picture above).

Input Modules not Connected to a Fader Strip

There are cases where the signals must be routed “to the background”, i.e., it is possible for channels to be active, but without operating elements on the console surface. Either the user deliberately decides that some channels must be in the background, or the console just has more input modules than fader strips, which may also be the case when a master output (PGM and/or REC) is assigned to a fader. In the fader screen, the channel section of a channel routed to the background is either blank, or it displays a master fader.

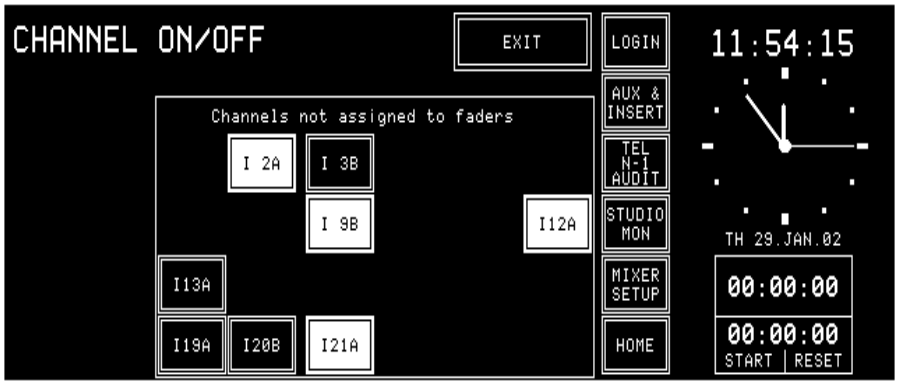
All channels currently routed to the background can be displayed in the CHANNEL ON/OFF page; this page is selected by touching CHN ON/OFF in the HOME page.

When routing an input module signal to the background, the audio path remains open, and the audio passes through the console with the fader level set at the moment of routing the signal to the background. This can be used, for example, for channels being controlled in the background by a broadcast automation system (e.g. DigiMedia) using the serial port. In this way, a channel fader is made free for another signal or for the PGM or REC master.

External MUTE control for the channel is still available. In such a case, this channel may also be used as a talkback mic input channel; please note that the TB SOURCE parameter of this input must then be set to “CR” in the INPUT CONFIG. page.

Notes: This could be dangerous for a new user taking over the console or for unexperienced users. Therefore being in the HOME page, the HOME field toggles to CHN ON/OFF. When touching this field, the CHANNEL ON/OFF page is opened (see below), displaying all channels not assigned to fader strips (i.e., being in the background); the ones that are highlighted are open for audio signals (“ON”). Now, the user can switch any channel ON or OFF on this page directly by touching the corresponding field on the screen.

When the PFL function is active at the moment of routing a channel to the background, it is automatically switched off.



When powering the console off and on again, the channels in the background are always set to OFF, to prevent audio from being played out unintentionally.

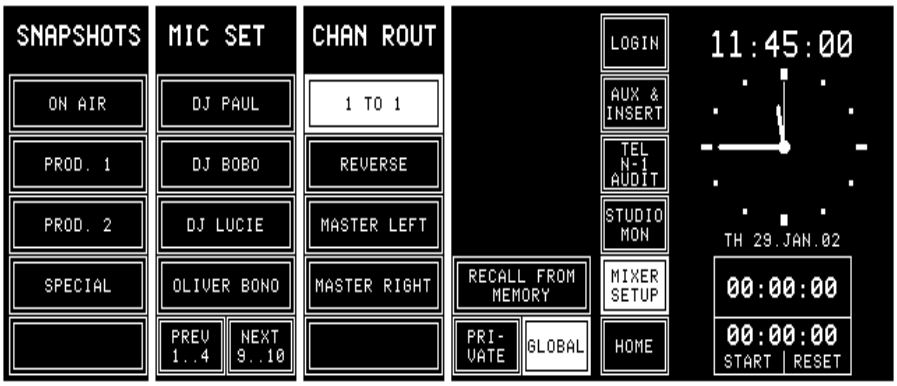
Auto Takeover

When a new channel routing is loaded or when a user logs in, the input module-to-fader strip assignment is modified. In this moment, the audio level of an input signal may not correspond to the physical position of the new fader. As the OnAir 2000M2 does not feature motorized faders, the Auto Takeover symbol is displayed in the corresponding channel section of the fader screen. By moving the fader knob up or down in the indicated direction, the audio level is caught, and control is gained over the signal again.

5.8.2 Recall a Channel Routing from Memory

Automatical Recall: Every logged-in user has his own user channel routing that is loaded either automatically when logging-in, or manually. This is defined by customer code 0x00000200 (see chapter 12.2.12).
Usually it is easier to load the user-specific channel routing automatically at log-in; in some cases, however, the channel routing must not be changed (e.g. when the administrator makes some changes in a user domain).
When the console is switched on, the last channel routing (i.e. the one that was active before power off) is automatically loaded.

Manual Recall: A user can recall one of the five global channel routings or, when logged in, his own user channel routing at any time. This is done in the Mixer Setup page, either after selection of GLOBAL (up to five channel routings can be recalled by selecting one of them and touching RECALL FROM MEMORY), or PRIVATE (only one user channel routing can be recalled for logged-in users by selecting RECALL USER ROUTING).
When the console is switched on, the last channel routing (i.e. the one that was active before power off) is automatically loaded.



5.8.3 Save a Channel Routing to Memory

After having configured the channel routing as desired (see chapter 5.8.1), touch the APPLY field. The new channel routing is loaded to the work memory. When touching the EXIT field, the CHANNEL ROUTING page is left, and the user can work with the new channel routing. However, this routing is not yet stored in the user's profile. When the user logs out, the temporary channel routing is lost; if customer code 0x00000200 is set (see chapter 12.2.12), his original channel routing will be loaded when logging in the next time.
To store a modified channel routing within the user's profile, the SAVE TO USER PROFILE field has to be touched before exiting the page with EXIT.

Note: The system administrator can set and save his own user channel routing as described above.
For administrator setting and saving of global channel routings or user channel routings, please refer to chapter 5.8.5 and chapter 5.10.2.

5.8.4 Delete a Channel Routing from Memory (Administrator Only)

When saving a channel routing, the previously stored data are overwritten. A global channel routing can be deleted, too, without overwriting it by new data. To do this, first the desired channel routing has to be selected. The selected field is highlighted. After touching the DELETE MEM field, a dialog box will appear. If it is confirmed, the channel routing will be permanently removed from the memory, and the text within the selected field is cleared.
For more information on deleting global channel routings please refer to chapter 5.10.2.

5.8.5 Channel Routing Administration

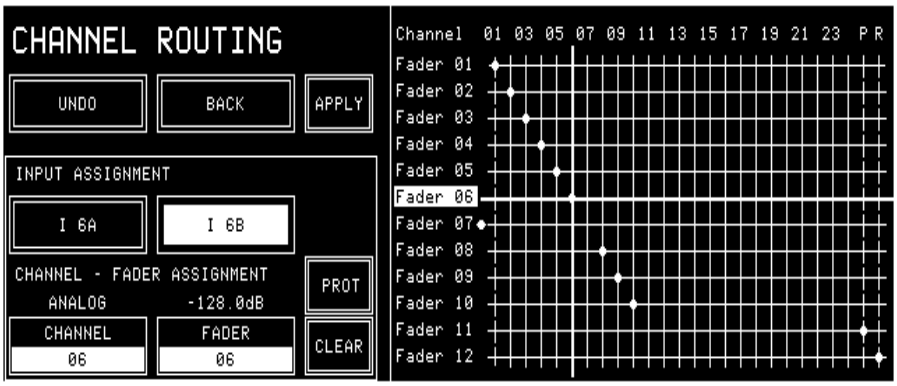
In addition to the user's own user channel routing, the administrator can save the current channel routing to one of the five globally-accessible channel routings. These can be recalled in the Mixer Setup page. The default and global channel routings can be saved or edited by the administrator; the default user's user routing can also be saved or edited by any user not logged-in (i.e. the default user), if access permission is given.

Channel Routings:

User Channel Routing The procedure for the system administrator changing a user's channel routing is described in chapter 5.10.2.

Global Channel Routings Five globally accessible channel routings can only be created by the administrator, allowing users to set-up the channel routing for specific transmissions, e.g. news broadcasts or sports events. Users do not have access to the global channel routings configuration. However, access permission given, a user could load a global channel routing, edit it, and store it in his own user profile.

Administrator Protection: The administrator can protect specific connections within the channel routing by selecting the desired cross-point with the horizontal and vertical lines, and then touching the PROT field. A protected connection is indicated by a dashed vertical line in the grid (see below); this connection cannot be changed by the users, even if they are allowed to change their channel routing. Only the administrator can UNPROT this connection again.



However, the user can change the input selection A/B (or A...F in case of a hex input module) of this input module, if he has the INPUT SEL access permission.

5.9 Using PC-Cards

Snapshots, mic settings, and global channel routings can be saved to a PC-Card or loaded from the card into the console's flash memory. Using PC-Cards, parameter settings of a console can also be copied to an other console, provided that both have the same configuration.
A PC-Card with a capacity of 64 kB can hold about 20 snapshots.

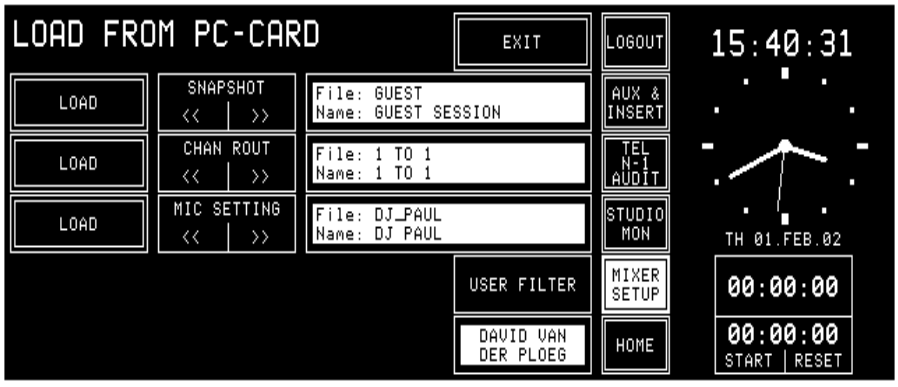
Notes: Using PC-Cards, it is also possible to exchange snapshot, mic setting, and/or channel routing data between OnAir 2000, OnAir 2000M2, and OnAir 1000 consoles. However, some restrictions must be considered if the consoles have different hardware configuration (e.g. number of channels, number of fader strips, different input module types).
Only the administrator is allowed to load, save, and delete global channel routings from/to PC-Card.

File Name Extensions: The three-character DOS file name extensions on the PC-Card will be generated automatically. The relationship between the file name extension and the file content is shown in the following table.

Data type	File name extension
Global snapshot	.gss
Private snapshot	.pss
Global mic setting	.mis
Private mic setting	.mip
Global channel routing	.gfm

5.9.1 Load a Snapshot/Mic Setting/Channel Routing from PC-Card

To load a snapshot, a mic setting, or a global channel routing from a PC-Card, touch MIXER SETUP followed by LOAD FROM CARD. The page below will be displayed *(please note that the CHAN ROUT area is only displayed for the administrator)*. The USER FILTER allows to select different user's data with the fourth rotary encoder.



Snapshots, mic settings, or a global channel routing can only be loaded as long as there is sufficient empty space available in the console's flash memory; if not, some of them must be deleted first. They can be selected for loading by scrolling with the corresponding << or >> fields, followed by LOAD. After having loaded a snapshot, a mic setting, or a channel routing, it is not automatically active, but it is available in the Mixer Setup page and must be recalled with RECALL FROM MEMORY, as described in chapters 5.6.1, and 5.7.1, or 5.8.2, respectively.

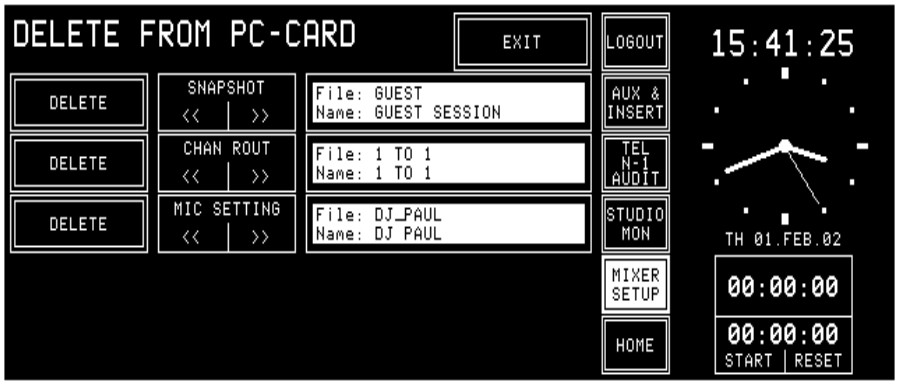
5.9.2 Save a Snapshot/Mic Setting/Channel Routing to PC-Card

To save a snapshot, a mic setting, or a channel routing to a PC-Card, first select a snapshot, a mic setting, or a channel routing in the Mixer Setup page. Then touch the SAVE CARD field. A keyboard appears for entering a file name (max. 8 characters, no dots, no spaces), as described in chapters 5.6.2 and 5.7.2 .
After confirmation with ENTER, the snapshot, the mic setting, or the channel routing is saved on the card.
If an empty file name is entered or if EXIT is touched, the action is cancelled without saving anything to the PC-Card.
Please note that only the administrator is allowed to save channel routings on the PC-Card.

Exceptions: If the file name already exists on the PC-Card, the action must be confirmed before the file is overwritten.
If a user tries to store a file under a file name that is already existing but has been given by an other user, the existing file will (after confirmation) be overwritten; it will no more be visible for the initial user.
If the card is full, a dialog box appears, telling that the file cannot be saved.

5.9.3 Delete a Snapshot/Mic Setting/Channel Routing from PC-Card

To delete a snapshot, a mic setting, or a channel routing from the PC-Card, DELETE CARD must be touched. The page below is displayed; *(please note that the CHAN ROUT area is only displayed for the administrator).*



A snapshot, a mic setting, or a channel routing can be selected for deleting by scrolling with the corresponding << or >> fields. The selected file and the snapshot, mic setting, or channel routing name which is contained in this file are displayed to the right of the << / >> fields. When touching DELETE, the console asks for confirmation. After confirmation, the file is deleted permanently. *Once deleted, the data cannot be recovered.*

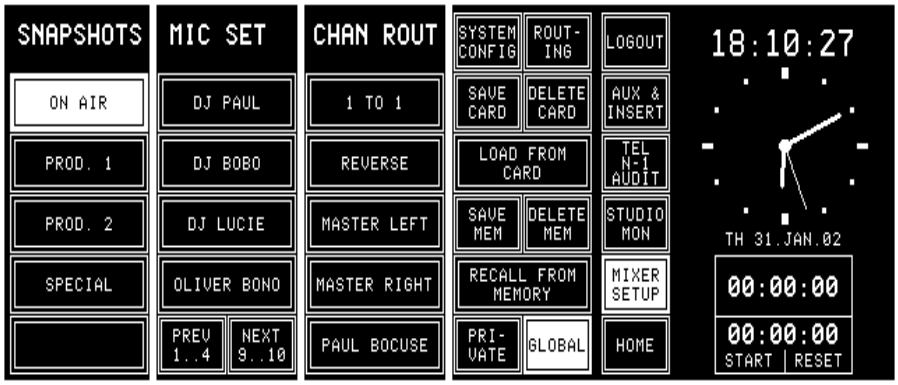
A user can only delete his own, private data from the card. The administrator, however, has access to all (global and private) files on the card. Depending on what selection the administrator has made in the Setup page, either only the global or only the private files are displayed for him.

The DELETE FROM PC-CARD page remains until either EXIT or one of the main menu fields is touched.

5.10 Administrator

5.10.1 Features

- The administrator has access to *all* private and global snapshots, mic settings, and channel routings.
- *The administrator has no private snapshots or mic settings, but one user channel routing.*



The administrator's Mixer Setup page is shown above. In this case all SAVE, DELETE, RECALL, and LOAD actions correspond to *global* snapshots, mic settings, and channel routings.
When the administrator touches the PRIVATE field and selects one of the users, he can modify the private settings of this user (see chapter 5.10.2).

Summary: The displayed private snapshots, private mic settings, and user channel routing depend on the user logged-in to the console; global snapshots, global mic settings, and global channel routings are the same for all users. When a user is not logged-in, i.e. he has not entered any password, he is automatically treated as the default user. The default user, too, has private settings; these will, however, not be password-protected, so they can be overwritten by any other user that is *not* logged-in to the console.
Global parameter settings can be recalled by any user, but modified by the system administrator only.

Access Rights:	Global Snapshots	Private Snapshots	Global Mic Settings	Private Mic Settings	Global Channel Routings	User Channel Routings
Administrator	read/write	read/write*	read/write	read/write*	read/write	read/write
Logged-in user, default user	read	read/write	read	read/write	read	read/write

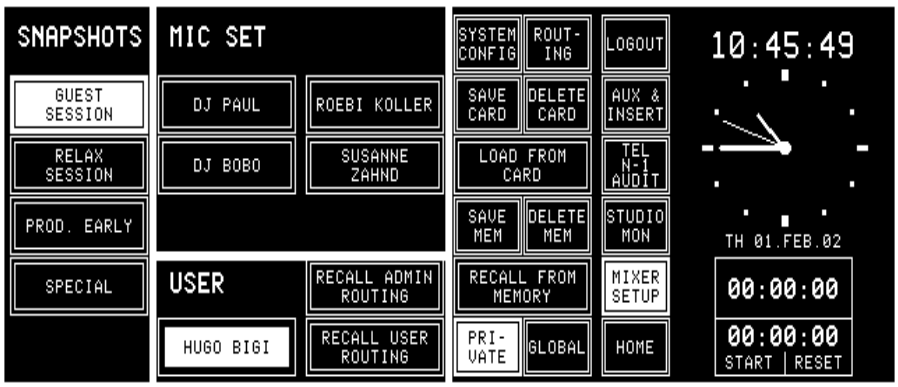
* The administrator can read and write the private snapshots and mic settings of any user, but he has no own snapshots or mic settings.

Number of Parameter Sets:			
Data Type	**Number**	**Multiplied by**	**Total Data Records**
Global snapshots	5	1	5
Global mic settings	10	1	10
Global channel routings	5	1	5
Private snapshots	4 per user	20	80
Private mic settings	4 per user	20	80
User channel routings	1 per user	22	22

5.10.2 Admin Selection of Snapshots/Mic Settings/Channel Routings

The system administrator can display and modify the private snapshot, mic setting, and channel routing data of any user.
This feature has been implemented in order to enable the setting of parameters in a private snapshot, mic setting, or channel routing to which the particular user has no access. All actions, such as RECALL FROM MEMORY, SAVE (to) MEM, DELETE (from) MEM, LOAD FROM CARD, SAVE (to) CARD, and DELETE (from) CARD, concern the selected user's data. No other actions on the console can be affected.

Snapshots and Mic Settings: After selecting PRIVATE in the Mixer Setup page, the second rotary encoder from the left (the one below the user's name label) allows to select the user's name. In this mode the system administrator can LOAD, RECALL, SAVE, or DELETE all the data being displayed.

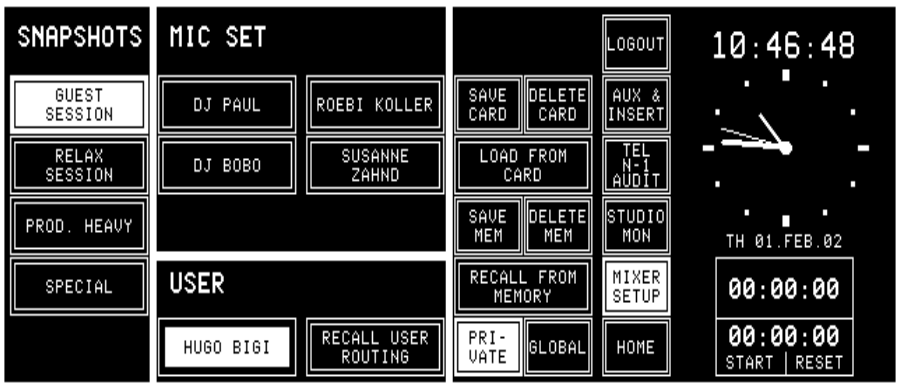


Channel Routing: With RECALL USER ROUTING, the system administrator can activate the user channel routing of the user selected with the rotary encoder. With RECALL ADMIN ROUTING he activates his own user channel routing.

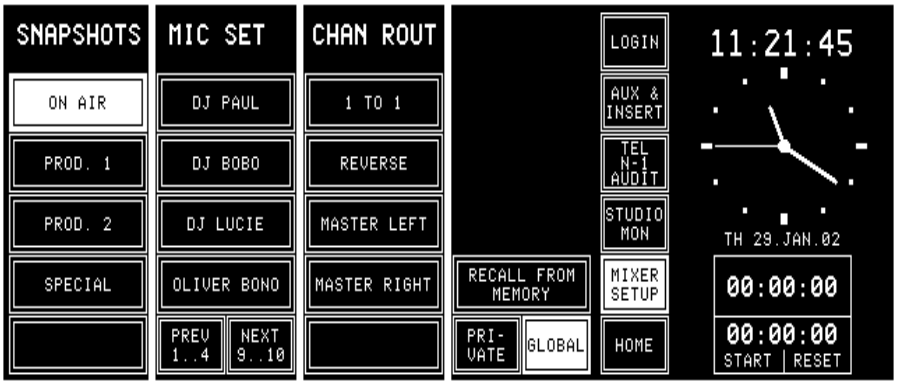
The procedure for changing a user's channel routing is as follows:
- Log-in as administrator,
- touch MIXER SETUP,
- SYSTEM CONFIG,
- USER ADMIN,
- select the desired user,
- touch EDIT,
- SET CHANNEL ROUTING,
- modify the channel routing,
- touch BACK,
- SAVE,
- EXIT.

5.10.3 Users with and without a Password

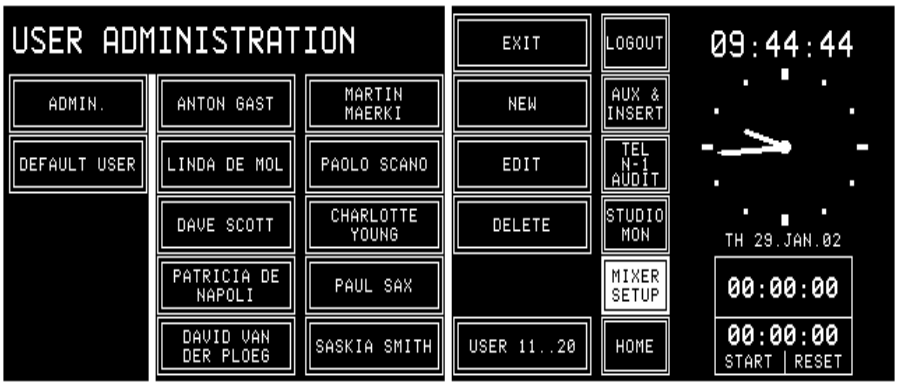
When a normal user enters the Mixer Setup page before logging-in (which means he is treated as the *default user*), he works with the default user's data. He can LOAD, RECALL, SAVE, or DELETE all of the default user's data in the console's memory or on the PC-Card. These data can, however, be used, saved, overwritten, or deleted by any other user who is not logged in.
The Mixer Setup page offers a PRIVATE field next to the GLOBAL field, allowing the user – after having logged-in – to access his own, protected private snapshots and mic settings.
A user can recall his user channel routing in the Mixer Setup page, after selection of PRIVATE (only one user channel routing can be recalled by selecting RECALL USER ROUTING); for more information on this subject please refer to chapter 5.8.2.
Should the user have access permission to the system configuration and/or channel routing, the corresponding SYSTEM CONF./ROUTING fields would be displayed here as well.



A user can decide to work with the global data although he is already logged-in. If the GLOBAL field is touched, the Mixer Setup page will look as shown below, where he can recall (but not modify) the global snapshots, mic settings, and channel routings; the CHAN ROUT area is suppressed if no global channel routings are available. Should the user have access permission to the system configuration and/or channel routing, the corresponding SYSTEM CONF./ROUTING fields would be displayed here as well.



5.11 User Administration



USER ADMINISTRATION is only accessible by the system administrator. Refer to chapter 11 for details on how to set up function access permission and new user accounts.

5.12 System Configuration

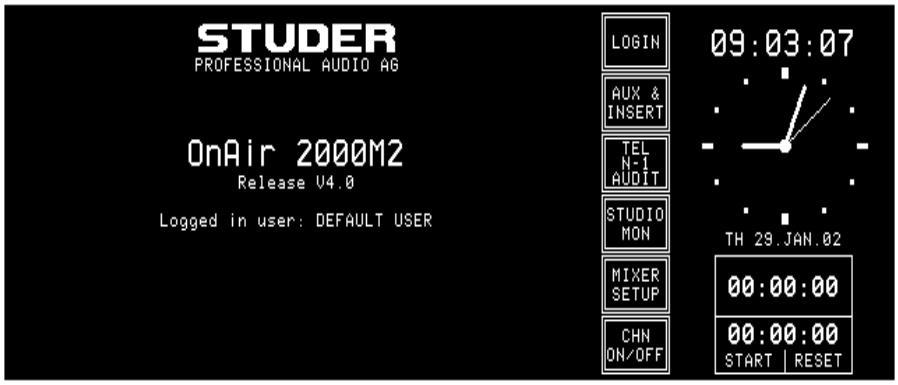
System configuration is a separate function group which can be accessed only by the system administrator or by users having access permission. It is separately described in detail (refer to chapter 12).

5.13 Watch and Stopwatch

The watch and stopwatch functions are continuously displayed on the right-hand side of the central screen (except when the keyboard or routing pages are active).

The term “watch” refers to the time-of-day in analog and digital format, the day-of-week, and the date in an abbreviated format.
The term “stopwatch” refers to both the fader and the user stopwatches. The fader stopwatch measures the time the most recently used channel fader has been opened. The user stopwatch works like a normal stopwatch with START/STOP and RESET keys located directly below the central screen.

Below, the HOME page with the watch and stopwatch displays and functions is shown.



5.13.1 Watch

The watch gives a time, day-of-week, and date display. The normal time reference is an internal, battery-buffered real-time clock (RTC). The RTC continues to run even when the console is switched off. Therefore it is unnecessary to set the watch at power-up. The RTC can also by synchronized by an optional Time Sync Module connected to the control module bus. If synchronization is established, the top right corner of the central screen shows a small “S” (Sync OK).
Changes to the internal time reference and the time and date formats can be made by the system administrator on the TIME page (MIXER SETUP, SYSTEM CONFIG., TIME). For details, refer to chapter 12.2.5.

Both time and date can be displayed in two formats, as shown below:

Time Format	Digital Time Indication
05:00:00 p.m.	12 hour time format
17:00:00	24 hour time format

Date Format	Example
DD.MMM.YY	MO 20.MAR.02
MMM-DD-YY	MO MAR-20-02

5.13.2 Fader Stopwatch

The upper one of the two stopwatches is called the fader stopwatch. It always restarts at 00:00:00 when a new audio channel is activated (e.g. channel ON, fader open, and output bus selected). In other words, it displays the elapsed time of the audio channel opened last.
This function can be enabled or disabled for any desired audio channel via the MIXER SETUP/SYSTEM CONFIG./INPUT menu, item TIMER START YES/NO.
The counter stops when the audio channel that has started the stopwatch is switched OFF, or its fader is closed.

Note: If more than one audio channel has caused the fader stopwatch to restart, only the last audio channel's time is displayed.

5.13.3 User Stopwatch

The user stopwatch is located just below the fader stopwatch. It is controlled by two keys on the console's surface located below the digits of the display. One key starts and stops the timer, the other resets the timer.

Key	Label	Description
START STOP	START	Start timer if stopped
	STOP	Stop timer if running
RESET	RESET	Reset timer regardless whether stopped or running

5.14 Master Fader for PGM and REC Outputs

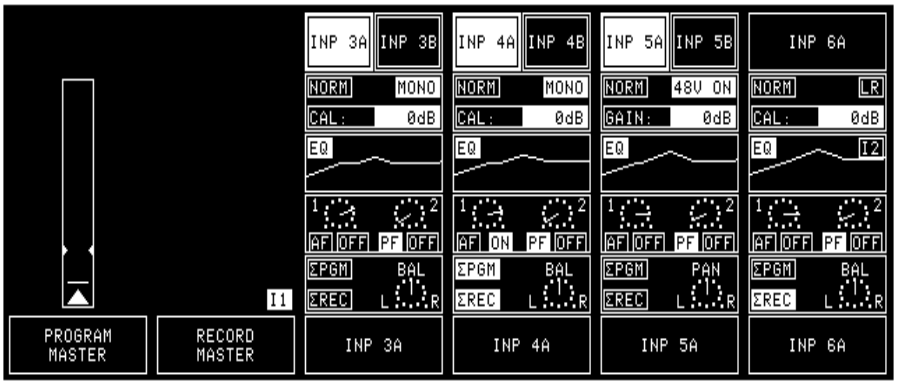
Any of the installed faders can be configured as master fader(s) for the program and/or the record bus. This selection is performed in the CHANNEL ROUTING page. Instead of a physical input module, either the PGM Master or the REC Master is assigned to a fader (also refer to chapter 5.8).

The corresponding input channel can still be used, however it is routed "to the background", i.e. without any means for direct control on the operating surface. Any input channel not being on the surface can be switched on or off in the ON/OFF page (access located alternating with the HOME field). External MUTE and Monitora control for the channel is still available. In such a case, this channel may also be used as a talkback mic input channel; please note that the TB SOURCE parameter of this input must then be set to "CR" in the INPUT CONFIG. page.

Specifications:

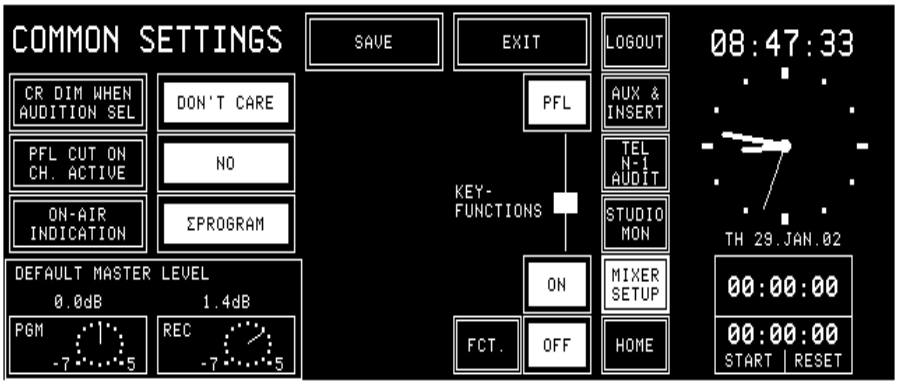
- In the audio path, the master fader(s) is/are located before the insert points (also refer to the block diagram in chapter 1); if an insert is assigned to the master channel, a small "Ix" window is indicated next to the master channel label; it is highlighted if the insert is ON.
- No ON/OFF function is available for the master buses;
- PFL function is available;
- Overload indication is available;
- Master level can be controlled by Monitora extended commands;
- Signaling (ON-AIR, CR-MIC, and STUDIO-MIC), as well as CR/Studio CUT/DIM, and input selection are logically linked to the master faders.

Corresponding Channel Screen:



5.14.1 Default Master Level

If a fixed level offset of the PGM and/or REC main output signal(s) is required, it is possible to enter this offset in the DEFAULT MASTER LEVEL window on the COMMON SETTINGS page in a range of –7...+5 dB.
The level offset for a master output becomes active when the corresponding master output is de-assigned from a fader strip.



Important: *This setting may directly affect the level of the main output signals. Please be careful when changing this parameter.*

6 LEVEL METERS

The OnAir 2000M2 mixing consoles can be equipped with one or two stereo level meters, according to customer's specification.
For the two meters, the sources can be selected in the configuration menu and are available in analog and digital (AES/EBU) form for the meters:

Meter 1	Meter 2	Source
X	X	CR MONITOR
X	X	PROGRAM
X	X	RECORD
X	X	AUX 1
X	X	AUX 2
X		AUDIT
X		N–1 A

For configuration details refer to chapter 12.2.4.

6.1 Standard Level Meters

The following level meters can be installed as standard:

Digital input	Dual bar graph, PPM, with correlator	RTW 11519D STU
	Stereo display, dual PM, with correlator	RTW 1069 STU
Analog input	Dual bar graph, PPM, with correlator	RTW 1119E STU
	Dual bar graph, PPM	Studer 1.913.611
	Dual bar graph, VU	Studer 1.913.612
	Dual 30-LED, PPM	Studer 1.913.605
	Dual 30-LED, VU	Studer 1.913.606
	Dual 30-LED + Dual 10-LED, PPM	Studer 1.913.610
	Correlator, 30-LED, 2-CH	Studer 1.913.609
	Correlator, 30-LED, 4-CH, switchable to meter 1 and 2	Studer 1.913.600

7 MONITORING

7.1 Control Room Monitoring

The CR monitoring source selector has 10 keys to select one out of six internal and 4 analog external sources. The key of the selected source is illuminated.
The F1 to F5 keys can act as additional "to all ..." talkback target selectors (refer to chapter 7.3) or, if the optional Monitor Extension 1 is installed and configured accordingly, as additional source selectors. F1 to F5 then select two digital and three analog external sources. The functionality of these keys is configured in the Monitor Expander screen.

Key	Source	Description
AUX 2	Auxiliary 2	General purpose output bus. AUX2 is illuminated if selected.
AUX 1	Auxiliary 1	General purpose output bus. AUX1 is illuminated if selected.
AUDIT	Audition	General purpose output bus. The input channels to the audition bus are configurable. AUDIT is illuminated if selected.
Σ REC	Record output	Output signal of the record master output. ΣREC is illuminated if selected.
Σ PGM	Program output (on-air)	Output signal of the on-air master output. ΣPGM is illuminated if selected.
PFL	PFL	PFL sum. PFL is illuminated if selected.
EXT 3	External 3	General purpose analog stereo input signal. EXT3 is illuminated if selected.
EXT 2	External 2	General purpose analog stereo input signal. EXT2 is illuminated if selected.
EXT 1	External 1	General purpose analog stereo input signal. EXT1 is illuminated if selected.
OFF AIR	Off-air	General purpose analog stereo input signal (e.g. tuner). OFF AIR is illuminated if selected.
F 5	TB.../External 8*	TB target selector, or General purpose digital (AES/EBU) stereo input signal. F5 is illuminated if selected.
F 4	TB.../External 7*	TB target selector, or General purpose digital (AES/EBU) stereo input signal. F4 is illuminated if selected.
F 3	TB.../External 6*	TB target selector, or General purpose analog stereo input signal. F3 is illuminated if selected.
F 2	TB.../External 5*	TB target selector, or General purpose analog stereo input signal. F2 is illuminated if selected.
F 1	TB.../External 4*	TB target selector, or General purpose analog stereo input signal. F1 is illuminated if selected.

* see Talkback, chapter 7.3, and Monitor Expander module configuration, chapter 12.2.11.

Two additional keys are used to control the monitoring loudspeakers in the control room. The functions of these keys are described in the table below.

Key	Function	Description
DIM	–20 dB	The output level to the CR monitor loudspeakers is reduced by 20 dB. DIM is illuminated if selected.
CUT	Mute	The output to the CR monitor loudspeakers is muted. CUT is illuminated if selected.

A volume control knob (MON) is used to set the level sent to the CR monitor speakers.
As long as one of the microphones in the control room (DJ or guest microphone) is on, the monitor speakers are muted. In this case the CUT key is illuminated.
If the monitoring source is AUDIT (audition bus), the monitor speakers are either dimmed (DIM key illuminated), muted (CUT key illuminated), or not affected at all, according to the configuration (see chapter 12.2.2 for details).
If talkback is active, the level of the monitor speakers is dimmed by 20 dB and the DIM key is illuminated.

External CR DIM: Starting with SW V2.02, an additional control input has been implemented, allowing to reduce the level of the CR monitor speakers by 20 dB by an external signal; for this purpose, the corresponding Customer Code must be activated, too (see chapters 12.2.12 and 15.13 for details).

The signal on the PFL bus is reproduced by the console's built-in speakers (mono). The same speakers are used for talkback. The volume is adjusted with the PFL/TB potentiometer.

For monitoring purposes, a headphones connector is provided below the hand rest of the central console part. Three keys allow different monitoring modes, as described below:

Key	Function	Description
PFL	PFL	The headphones signal is the stereo PFL signal. PFL is illuminated if selected.
MON PFL	PFL/CR monitor	The left headphones signal is the mono PFL signal, while the right headphones signal is the mono CR signal as selected by the monitor source selector. If no PFL is selected, the headphones signal is the stereo CR signal as selected. MON/PFL is illuminated if selected.
MON	CR monitor	The headphones signal is the same stereo signals as selected by the source selector for the monitor speaker. MON is illuminated if selected.

The CUT and DIM keys have no effect on the headphones signal. The headphones output is not muted if one of the control room microphones is on. The incoming talkback signal from the studio is mixed to the headphones output. For improved intelligibility, the monitoring signal is attenuated by 20 dB.

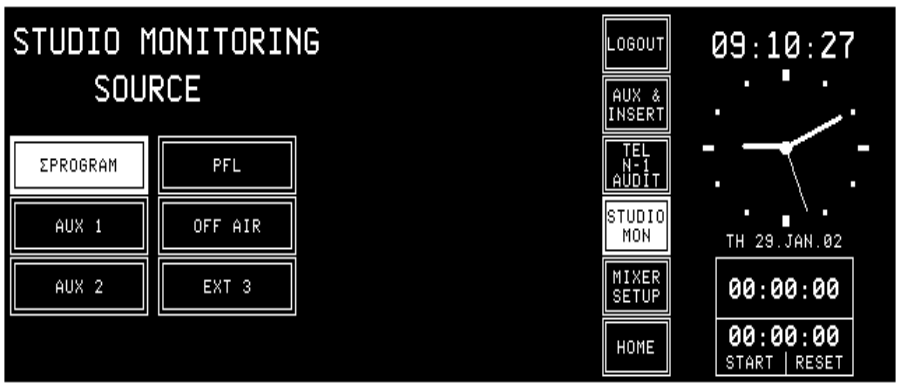
The PFL to MONITOR function feeds the PFL signal to the monitor loudspeakers, if PFL is selected on any channel. The normal monitoring signal is muted for as long as any PFL keys are active.

Key	Function	Description
PFL MON	PFL to MONITOR	The PFL signal is routed to the monitor speakers if PFL on any channel is active. If no PFL is selected, the monitoring signal is the stereo CR signal as selected. PFL > MON is illuminated if active.

A volume control knob (PHONES 🎧) adjusts the headphones listening level.

7.2 Studio Monitoring

The built-in studio monitoring functions are based on a touch-screen menu on the control screen. The STUDIO MONITORING SOURCE page allows one of six sources to be selected for routing to the studio speakers and headphones.



The table below lists the available sources.

Label	Function	Description
ΣPROGRAM	Program output (on-air)	Output signal to the transmitter. PROGRAM is highlighted if selected.
AUX 1	Auxiliary output 1	General purpose output sum. AUX1 is highlighted if selected.
AUX 2	Auxiliary output 2	General purpose output sum. AUX2 is highlighted if selected.
PFL	Pre-fader listening output	PFL sum. PFL is highlighted if selected.
OFF AIR	External Off-air input	General purpose input signal, usually from receiver. OFF AIR is highlighted if selected.
EXT 3	External input	General purpose input signal. EXT 3 is highlighted if selected.

As soon as one of the fields is touched, the corresponding signal is routed to the studio, and the field is highlighted.

The monitoring source selection can be controlled from the studio via external pushbuttons thanks to the parallel interface. The monitor speaker and headphones levels can independently be controlled by two potentiometers located in the studio.
The studio monitoring speakers are muted if one of the studio microphones is on. The headphones are not muted in this case.

During talkback from the CR to the studio, the volume for the studio speakers is reduced by 20 dB. The talkback signal from the CR to the studio is not reduced and has therefore the normal listening level on both the studio monitor speakers and the studio monitor headphones.

7.3 Talkback

There is a choice among several talkback targets from the DJ microphone. A key is assigned for each target as can be seen in the table below.

Key	Function	Description
N–1 B	TB to Telephone 2	The connection between DJ mic and Cleanfeed B (N–1B, e.g. telephone 2) is established for as long as this key is pressed.
N–1 A	TB to Telephone 1	The connection between DJ mic and Cleanfeed A (N–1A, e.g. telephone 1) is established for as long as this key is pressed.
AUX 2	TB to Auxiliary 2	The connection between DJ mic and Auxiliary 2 is established for as long as this key is pressed.
AUX 1	TB to Auxiliary 1	The connection between DJ mic and Auxiliary 1 is established for as long as this key is pressed.
STUDIO	TB to Studio	The connection between DJ mic and the Studio is established for as long as this key is pressed.

On the MONITOR EXPANDER page, any of the function keys F1 to F5 can be configured as additional talkback target keys. This allows, together with the optional Monitor extension, e.g. talkback to the audition bus. This bus could therefore be used as a third Cleanfeed bus (N–1 C).

The DJ microphone usually is the source for talkback from the CR.
For mixing consoles with less than 24 channels, a separate talkback microphone is optionally available, including preamplifier, limiter, and A/D converter. Its main application is in production and editing control rooms where no DJ microphone is required; for details, refer to chapter 15.6.

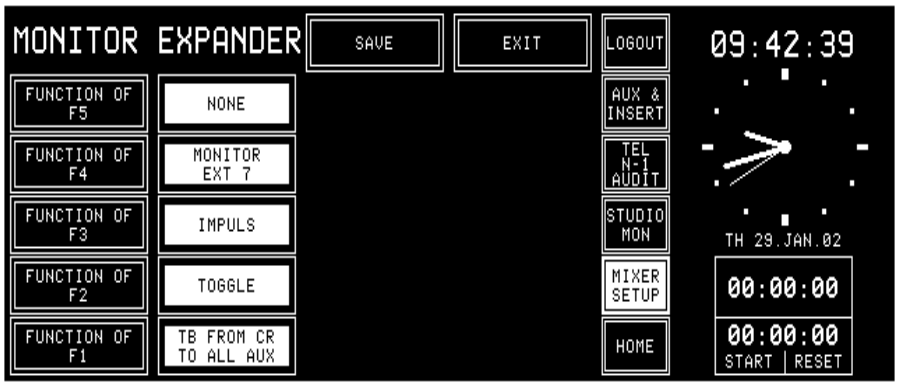
The parallel studio interface on the “STUDIO MON CTRL” connector allows the connection of three external pushbuttons for talkback target selection. The possible targets are: CR, Cleanfeed 1 (N–1 A/TEL1), and Cleanfeed 2 (N–1 B/TEL2). For talkback from the studio, the studio microphones are used (“TB SOURCE” is set to “STUDIO”).

The console’s built-in PFL/TB loudspeakers and the headphones are used for talkback listening in the CR, while in the studio the monitoring speakers and the headphones are used.

7.3.1 Additional Talkback Functions

The *Monitoring Module w. TB return 1.942.180.20* as well as the *Extended Monitoring Module w. TB return 1.942.181.20* both provide an additional electronically balanced TB line input on the “STUDIO MONITOR AUDIO” connector, as well as additional Talkback to CR and to Studio control inputs on the “EXT PFL CTRL” connector. Please refer to the pin assignment tables and the connection diagram in chapter 15.13.

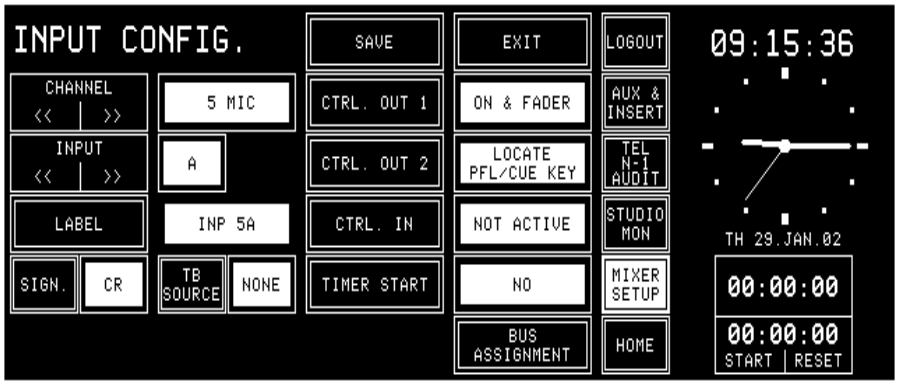
For ease of operation, the F1...F5 keys can also be configured as “TB FROM CR TO ALL N–1”, “TB FROM CR TO ALL AUX”, or “TB FROM CR TO ALL” (N–1 *and* AUX) keys.



If e.g. the TB FROM CR TO ALL AUX function is configured on the F1 key as shown above, pressing this key activates talkback from the DJ microphone to all AUX outputs, and the two AUX1 and AUX2 keys are illuminated as well; pressing both AUX1 and AUX2 keys simultaneously then also illuminates the F1 key.

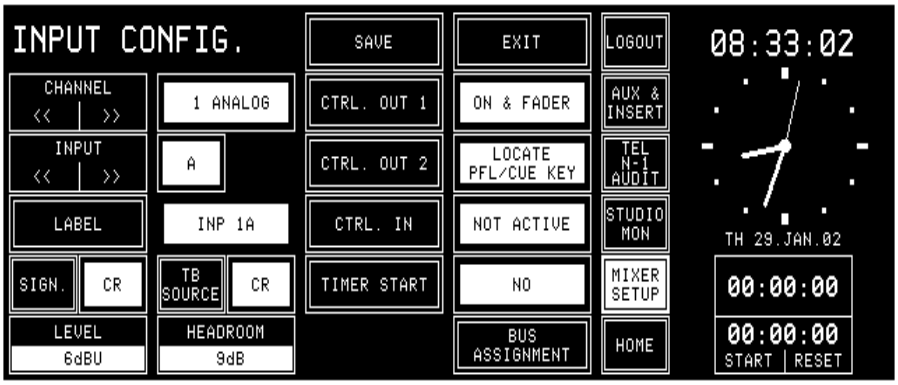
7.3.2 Talkback Settings

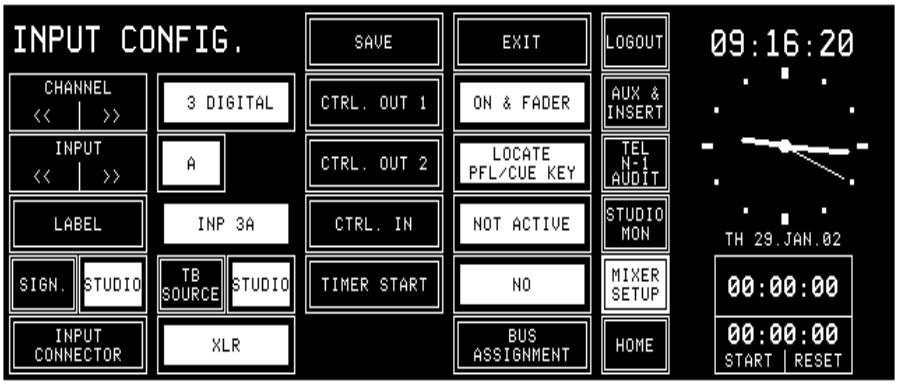
Starting with SW V3.0, talkback and signaling can be configured independently. The “SIGN.” setting (formerly labeled “MIC LOCATION”) in the INPUT CONFIG. page is used only for signaling (red light) and monitoring (cut and dim).
The additional “TB SOURCE” parameter in the INPUT CONFIG. page sets the assignment of the talkback source, i.e. the input to the TB bus (NONE, from CR, or from Studio).



During talkback from the Studio, the studio speakers are dimmed only if at least one input is configured as “SIGN.” = STUDIO *and* “TB SOURCE” = STUDIO. The same applies for talkback from the control room.

Note: Configuration of talkback and signaling is also possible for analog line or digital inputs as well as for a TB mic input, as shown by the following screenshots.





When installing an optional TB Mic Input module, two different cases must be distinguished:

Console configuration	TB Source	Signaling
TB Mic Input module *within* channel configuration (e.g. input module no. 13 of an 18-input-module console)	configurable	configurable
TB Mic Input module *outside* channel configuration (e.g. input module no. 13 of a 12-input-module console)	must be set to CR, else no function	don't care, no signaling available

7.4 External PFL

The OnAir 2000M2 provides an external PFL audio input. If the EXT PFL key is pressed, the key is illuminated, and the signal at the EXT PFL input is routed to the PFL bus. A control output is activated if EXT PFL is active. In addition, the EXT PFL function can be activated by a dedicated control input on the "EXT PFL CTRL" connector (refer to chapter 15.13). With this feature, the OnAir 2000M2 is well-suited for the integration with a broadcast automation (CAB, computer-assisted broadcasting) system. These systems need a separate PFL input that can be activated by the CAB system itself.

Key	Function	Description
EXT PFL	External PFL	Switches the EXT PFL OUT control output on and off, and routes the EXT PFL audio input signal to the PFL bus. The key is illuminated if active, or if a control signal is applied to the EXT PFL input.

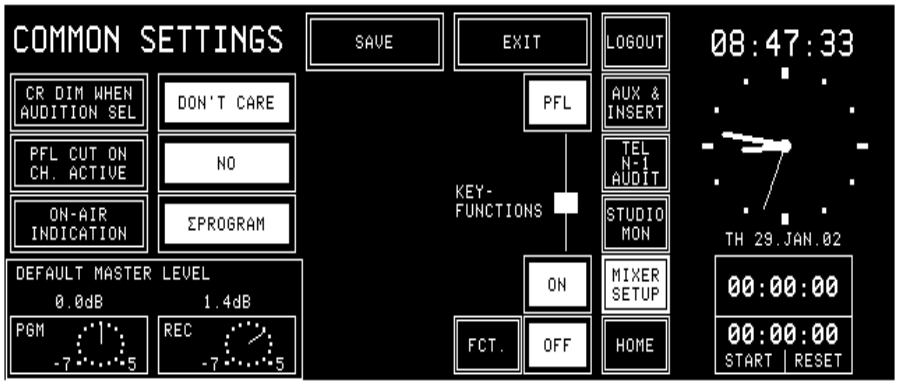
8 SIGNALING

For control room and studio, signaling is provided by means of open-collector outputs (9-pin D-type "SIGN." connector on the Monitoring module; for connection details, refer to chapter 15.13).
One output is available for each of the following statuses:

- Control Room microphone is on-air,
- Studio microphone is on-air, and
- Any signal from the console is on-air (i.e., a fader is open, this channel's ON key is active, its signal is routed to the PROGRAM and/or the RECORD bus, and, if configured, the corresponding master fader is open).

The CR-MIC and STUDIO-MIC indicators in the central operating section of the console are illuminated when the corresponding control output is active. Signaling always refers to the input module and not to the fader strip.

SIGN. Output	Active if:
CR MIC OUT	At least one input of a CR or DJ microphone is active (channel ON, fader open, assigned to program or record bus, corresponding master fader open).
STUDIO MIC OUT	At least one input of a studio microphone is active (channel ON, fader open, assigned to program or record bus, corresponding master fader open).
PGM OUT	Depending on ON-AIR INDICATION condition selected in the COMMON SETTINGS page: • ΣPROGRAM AND ΣRECORD – at least one channel is active (channel ON, fader open, assigned to program or record bus, corresponding master fader open). • ΣPROGRAM – at least one channel is active (channel ON, fader open, assigned to program bus, PGM master fader open). • ΣRECORD – at least one channel is active (channel ON, fader open, assigned to record bus, REC master fader open).



The ON AIR INDICATION condition for the PGM OUT control signal can be set in the COMMON SETTINGS page (which is reached by pressing MIXER SETUP followed by COMMON), if access permission is available.

An additional ON AIR IN opto-coupler input on the SIGN. connector can be used for illuminating the ON-AIR indicator in the monitoring section of the console.

Note: For information on the DEFAULT MASTER LEVEL window on the COMMON SETTINGS page, please refer to chapter 5.14.1.

9 MACHINE CONTROL

The OnAir 2000M2 provides different control inputs and outputs. These can be used e.g. for switching a channel on and off, or for starting, stopping, and cueing of the connected source unit (as CD/cartridge/MD players, tape recorders, or a CAB system). The control inputs and outputs are input-related and are re-assigned together with the input signal to the respective fader strip if the channel routing is changed.

Each audio input holds two control outputs and one control input on D-type connectors. The signals are:

- CTRL OUT 1 (normally used for fader start, but configurable for other functions; see chapter 9.2.1)
- CTRL OUT 2 (configurable functions see chapter 9.2.2)
- CTRL IN (configurable functions see chapter 9.3.1)

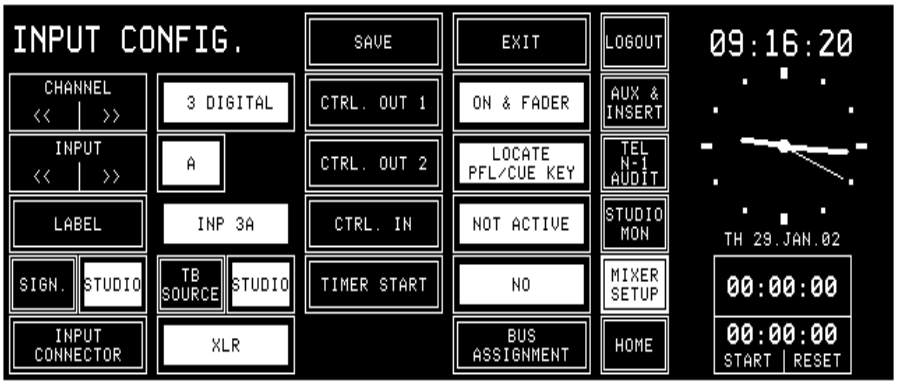
The status of the output signals depends on the control elements of the fader strip (keys 1 to 3, fader, input selection, channel routing, and output bus assignment), as well as on the console configuration.

Each channel consists of either two (A/B input module) or six (hex input module) audio inputs. Each audio input has its own control input and two control outputs allowing to control every external source separately.

9.1 Keys and LEDs

Key 1/LED 1

The first key (labeled “PFL”) is always used to activate/deactivate the PFL function; if active, LED 1 is illuminated.
The PFL function can affect the CTRL OUT1 and/or CTRL OUT2 control signals, depending on the configuration. This configuration is performed in the center part of the INPUT CONFIG. page and is identical for all types of input modules.

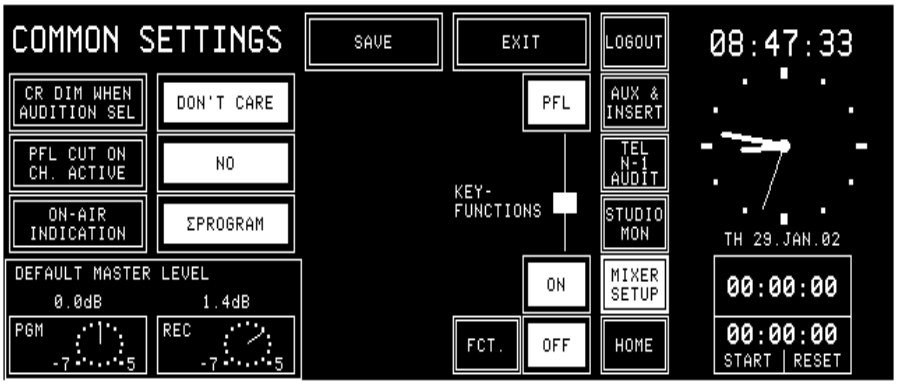


Key 2/LED 2

The second key (labeled “ON”) is used either to switch the channel ON or to toggle the channel ON/OFF, depending on the configuration of key 3. This function affects the CTRL OUT1 control signal. LED 2 always indicates the channel's ON/OFF status.

Key 3/LED 3

The functionality of the third key (labeled “OFF”) depends on the console configuration. It can act as channel OFF key or trigger a LOCATE function. The key 3 functionality is set in the COMMON SETTINGS page:



Console configuration (valid for all channels):	
Key 3 (“OFF”) function	**Key 2 (“ON”) function**
(Channel) OFF	(Channel) ON
LOCATE	(Channel) ON/OFF
LOCATE	(Channel) ON *

Channel ON/OFF affects the CTRL OUT1 control signal of the selected input, and the LOCATE function defines the status of the CTRL OUT2 control signal of the selected input.

* This additional configuration possibility has been introduced with SW V3.0; to protect a channel from being switched off inadvertently, the OFF function can be disabled. This setting is performed in the COMMON SETTINGS page; *it is valid for all channels of the console simultaneously*.

Note: If this setting is selected, no channel can be switched off by pressing a key – therefore, either closing the fader must do, or an external pushbutton per channel has to be added. For this purpose, a CTRL IN control input per channel is provided; please refer to chapter 9.3.1. Select the option “CTRL. IN – EXT. ON/OFF” in the INPUT CONFIG. page.

LED 3 is illuminated if an external device indicates ready status using the CTRL IN input signal of the selected input, or if the CAB system indicates “ready for playback” via the (optional) serial interface (“Monitora” protocol, refer to chapter 10).

9.2 Control Outputs

9.2.1 CTRL OUT1

This open-collector output is normally used to start external devices, such as CD players or a CAB system, to play the next track. On the INPUT CONFIG. page (see chapter 9.1), other functions can be assigned individually for each audio input.

Input configuration (for each channel individually):	
CTRL OUT1 mode	**CTRL OUT1 signal**
NOT ACTIVE	Output always open (inactive).
PFL/ON & FADER	Active if either PFL key is pressed (independent of fader position), or if ON key is pressed and fader is open (fader start function, causing the source to be started as well when PFL key is pressed).
ON & FADER	Active if ON key is pressed and fader is open (standard fader start function).
ON LAMP	Active if channel is ON; used as acknowledgement if the channel is remotely controlled.

9.2.2 CTRL OUT2

This open-collector output can be used to re-park an external device, such as a CD player, after cueing, or for signaling, or as an acknowledgement for ON status. It can be configured individually for each input in the INPUT CONFIG. page (see chapter 9.1).

Input configuration (for each channel individually):	
CTRL OUT2 mode	**CTRL OUT2 signal**
NOT ACTIVE	Output always open (inactive).
LOCATE KEY	Active if key 3 (“OFF”, configured as LOCATE key) is pressed while the channel is closed (fader closed or channel OFF). Using this function, a source which has been pre-listened before can be reset to the start point.
PREVIEW	Active as long as key 1 (“PFL”) is pressed while the channel is closed (fader closed or channel OFF). Using this function, a source can be started for pre-listening.
LOCATE PFL KEY	Active for approx. 0.3 s when key 1 (“PFL”) is switched off while the channel is closed (fader closed or channel OFF). Using this function, a source can be given a locate command to return to the start point.
LOCATE PFL / LOC KEY	Combination of the LOCATE KEY and LOCATE PFL KEY functions: • Output is active for approx. 0.3 s when key 1 (“PFL”) is switched off while the channel is closed (fader closed or channel OFF). Using this function, a source can be given a locate command to return to the start point. • Output is active if key 3 (“OFF”, configured as LOCATE key) is pressed while the channel is closed (fader closed or channel OFF). Using this function, a source which has been pre-listened before can be reset to the start point.
ATTENTION	Active as long as key 3 (“OFF”, configured as LOCATE key) is pressed; can be used for “ready” signaling.
ON LAMP	Active if channel is ON; used as acknowledgement if the channel is remotely controlled.
FADER STOP_PULSE	Generates a fader start pulse (approx. 0.2 s) at CTRL OUT 1 and a fader stop pulse (approx. 0.3 s) at CTRL OUT 2, but only if CTRL OUT 1 is configured as ON & FADER or PFL/ON & FADER.

9.3 Control Inputs

9.3.1 CTRL IN

A CTRL IN control input is available for each audio input. This input's function can be selected in the INPUT CONFIG. page (see chapter 9.1).

Input configuration (for each channel individually):	
CTRL IN mode	**CTRL IN signal**
NOT ACTIVE	No function (input signal is ignored)
READY	Key 3 ("OFF") is illuminated as long as CTRL IN is active
EXT. MUTE	Channel is muted as long as CTRL IN is active (e.g. cough key)
EXT. ON/OFF	Toggles the channel ON/OFF; used e.g. for ON/OFF button on speaker's desk, or for remote control through CAB system

Note: An optional, external control interface (1.942.803.xx) can be used for the following functions of a single channel:

- Electrical isolation between CTRL OUT and the connected source (relay with make contact);
- Conversion from the continuous fader start signal to electrically isolated start and stop pulses;
- Remote control of a channel using separate ON and OFF keys, logically linked with the ON LAMP signal. The ON and OFF keys in the console remain functional;
- Remote control of a channel through a CAB system which gives a continuous signal as long as a channel must be on, logically linked with the ON LAMP signal. The external command is overridden by the ON and OFF keys in the console.

Additional information on this interface can be found in the circuit diagrams chapter of the OnAir 2000M2 Service Manual.

9.3.2 EXTERN PFL Input

An external PFL control input is available on the "EXT PFL CTRL" connector on the monitoring module (refer to chapter 15.13). It allows e.g. to open the EXTERN PFL pre-listening audio path by a CAB system.

9.4 CTRL OUT1/2 & CTRL IN Application Examples

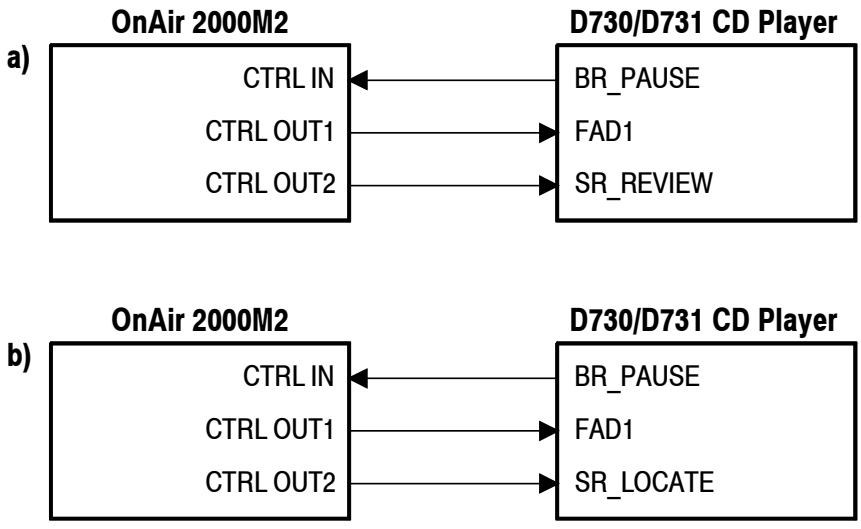
Application	Configuration CTRL OUT1; *see Note 4*	Configuration CTRL OUT2; *see Note 4*	Configuration of key 3 ("OFF"/LOCATE); *see Note 4*	Connection(s) OnAir 2000M2 –> controlled source (e.g. CD player, cart/tape recorder
Fader start/stop with: Fader open/close, or channel ON/OFF	ON & FADER	—	—	CTRL OUT1 –> remote control input "fader start"
Fader start/stop with: Fader open/close, or channel ON/OFF, or PFL ON/OFF	PFL / ON & FADER	—	—	CTRL OUT1 –> remote control input "fader start"
Review function of Studer D730/D731: pre-listening with PFL and subsequent locate to the last cue address. Afterwards: PLAY with fader start; ***see Notes 1 and 2***	ON & FADER	PREVIEW	—	CTRL OUT2 –> Studer D730/ D731, remote control input "SR_REVIEW"; ***see fig. a)***
Pre-listening with PFL and subsequent locate to the start; console sends an 0.2 s locate pulse on CTRL OUT2. Afterwards: PLAY with fader start; ***see Note 1***	PFL / ON & FADER	LOCATE PFL KEY	—	CTRL OUT1 –> remote control input "fader start", CTRL OUT2 –> remote control input "locate"; ***see fig. b)***
Manual locate to the start, using OFF/LOCATE key 3; ***see Note 1***	—	LOCATE KEY	LOCATE	CTRL OUT2 –> remote control input "locate"; ***see fig. b)***
Pre-listening with PFL and subsequent locate to the start. Manual locate also available; ***see Note 1***	PFL / ON & FADER	LOCATE PFL / LOC KEY	LOCATE	CTRL OUT1 –> remote control input "fader start"; CTRL OUT2 –> remote control input "locate"; ***see fig. b)***
Fader start pulse and fader stop pulse (on different control outputs)	ON & FADER or PFL / ON & FADER	FADER STOP PULSE	—	CTRL OUT1 –> fader start pulse, CTRL OUT2 –> fader stop pulse; used for any remote control input using pulses instead of a static signal
Control of any external signal with key 3 ("OFF")	—	ATTENTION	LOCATE	CTRL OUT2 –> any control input
Reflects the ON lamp status to CTRL OUT1	ON LAMP	—	—	CTRL OUT1 –> any control input
Reflects the ON lamp status to CTRL OUT2	—	ON LAMP	—	CTRL OUT2 –> any control input

Note 1: Function is available only if the corresponding console channel is ***not*** active; "channel active" = fader open ***and*** channel ON ***and*** channel assigned to PGM or REC bus.

Note 2: D730/D731 configuration checksum example, suited for this function: **4050631164470**. For more information on this subject, please refer to the D730/D731 operating instructions manual, order no. 10.27.1672

Note 3: Combination of different applications is possible if allowed by the CTRL OUT1/2 wiring.

Note 4: *DO NOT change the settings while any of the control output signals is active!*



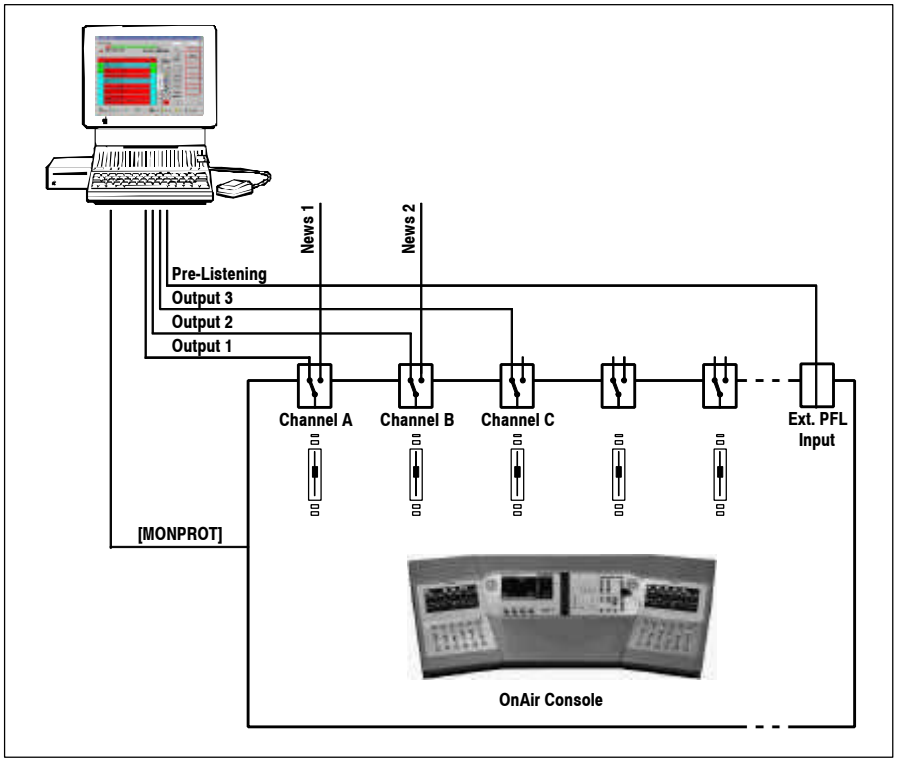
10 AUTOMATION

10.1 Introduction

The OnAir 2000M2 supports external CAB (computer-assisted broadcasting) systems. Starting with software version V3.04, also a serial interface (RS232/RS422) can be used for communication with the CAB system.

Studer DigiMedia System: Information on how to connect and operate the OnAir 2000M2 mixing console with a DigiMedia CAB system is given in the current DigiMedia operating instructions.
The serial interface protocol is based on the "Schnittstellen-Spezifikationen Regiepult" of DSA (Digitale Steuerungs- und Automationstechnik, Thomas Volgmann) furthermore called [MONPROT], which was defined by VCS and Siemens.
The implementation in the OnAir 2000M2 is a subset of [MONPROT].
For detailed information on the telegrams implemented in the OnAir 2000M2, please refer to the "Communication Protocol for Broadcast Automation" document [BCACOM] (available on request).

10.2 Features of the OnAir 2000M2 CAB Support

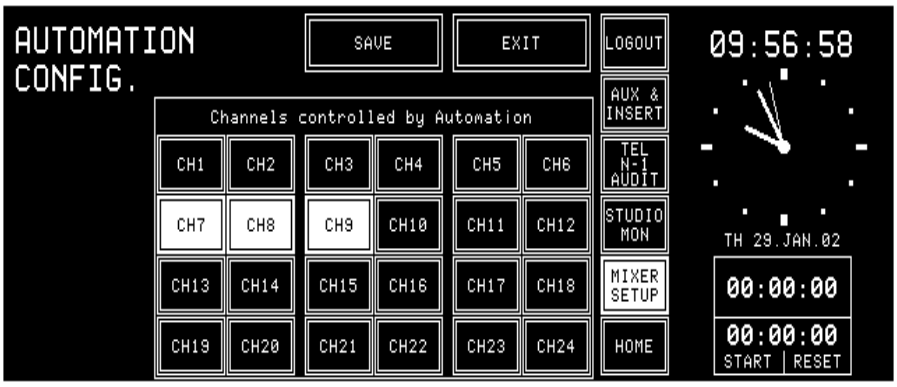


- Serial interface: Serial RS232/RS422 standard communication interface based on [MONPROT].
- 2 x 12 character text display per channel.
- Music and speech output:
  The CAB can control the output assignment (program/record bus) of the currently selected input of a channel.

10.3 Application Handling

10.3.1 Configuration for Automation Control

Channels must be assigned to the automation system in the console configuration in order to be controlled by an external CAB system. AUTOMATION CONFIG. is reached from the SYSTEM CONFIG. page:



The AUTOMATION CONFIG. page allows each channel to be assigned to the CAB system.
Please note that these channels' labels *must* be named “DIGI 1” through “DIGI 3”. Normally three channels are used with the CAB system; a fourth “DIGI 4” channel is possible, but unusual.

10.3.2 Communication Time-out

If no valid telegram is received from the CAB within approx. 30 seconds, the OnAir 2000M2 assumes that the communication is interrupted.

In this case it stops sending telegrams and the following actions are performed:
- All channels are deselected;
- The channel screens are re-drawn (name of selected input source will be indicated again) which might have been overwritten;
- A warning: “Communication to Broadcast Automation lost!” is displayed.

After the next or first telegram from the CAB, communication will be re-established.
The information: “Communication to Broadcast Automation established!” is generated.

10.3.3 Output Selection

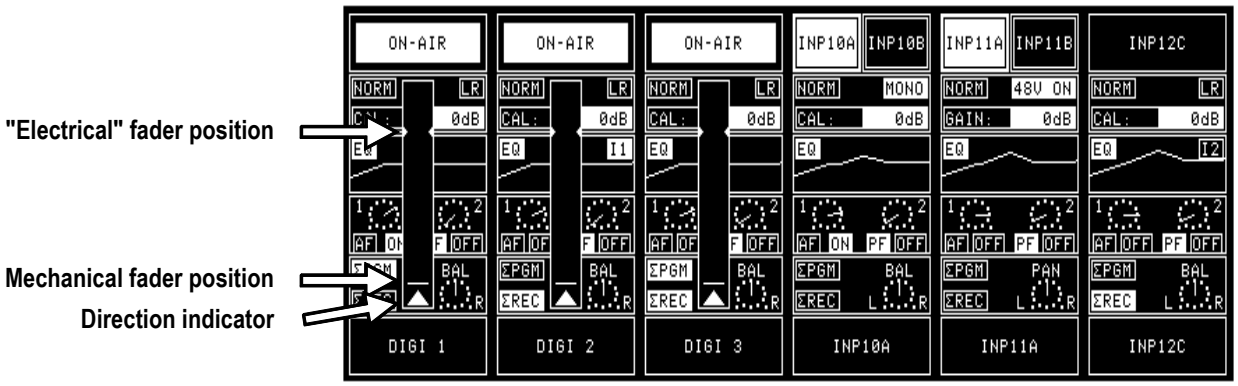
The CAB is able to control the output assignment (program/record bus) of the currently selected input of any channel. This allows, for instance, to route speech to the program output, and music to the record output.

10.3.4 Start a New Title from Schedule

In automatic mode, the CAB can start a new title automatically (it is also possible to start new titles manually; then, the operator opens the fader while the channel is already switched ON, or switches the desired channel ON while the fader is already open).

Automatic New Title Start: The CAB can control the console automatically. This automatic mode must be activated from within the CAB and can, for example, be used for controlling a program during the night without any assistance.
If the CAB runs in automatic mode, it starts playback of the source and opens the appropriate channel with the pre-defined level and fade-in time. This will send a new audio level to the DSP, and switch the channel ON in any case.
If a take ends, the CAB performs a cross-fade on its audio card, the selected channels on the console remain open.

If the CAB changes the audio level, the mechanical position of the fader knob differs from the “electrical” fader position, i.e. the level set by the CAB. Moving the fader knob will have no effect on the level unless the electrical fader position is “caught” with the fader knob.
This is simplified by the touch screen indication, as shown below.



The large arrow at the bottom (or top) indicates the direction in which the fader has to be moved. The narrow horizontal line indicates the current mechanical fader position. It follows the fader knob when it is moved towards the two small left-and-right arrows indicating the electrical fader position.

10.3.5 Indication of the Currently Playing Input Line

As the OnAir 2000M2 is not equipped with motor faders, a clear indication of the channel currently “playing” is visible on the screen of the CAB system.

Under the following conditions the selector field on the channel screen indicates “ON-AIR” (refer to the figure above), and the selection of another input is inhibited:

- The channel is switched ON;
- The channel is assigned to program and/or record bus (as defined in the Common Settings page);
- The channel is selected by the CAB.

10.3.6 Pre-Listening

When starting the pre-listening function in the CAB system by clicking on the LISTEN button on the CAB screen, followed by selecting a title, the CAB system immediately sends the desired title over the fourth channel of its audio card. At the same time, it opens the external PFL input, so that the desired title is audible in the console's PFL loudspeakers.

10.3.7 Time Synchronization

The CAB is able to set the console's internal clock (time and date) if TIME SYNC. is set to AUTOMATION in the TIME & DATE FORMAT page; refer to chapter 12.2.5.

11 USER MODES

11.1 Purpose of User Modes

The console is used in different studios with different working practice and different personnel structure. A large part of users in broadcast studios is not technically oriented. A mixing console meeting their requirements must be simple to use, reliable and free of "unnecessary" controls and displays. Setting of a wider range of console parameters, saving of console settings (snapshots), and modifications of the console configuration have to be left for technically more competent users (studio technicians, chief engineer). It is also necessary to protect parts of system data and give the permission to change them only to a restricted number of users. In order to satisfy these needs, the OnAir 2000M2 console supports individual user access rights.

Three classes of users are defined for the OnAir 2000M2; these are:

Default User:
- No password required;
- Private snapshots and mic settings;
- User channel routing;
- Function access rights according to the configuration.

Normal User:
- Password-protected;
- Private snapshots and mic settings;
- User channel routing;
- Function access rights according to the configuration.

System Administrator:
- Password-protected;
- User channel routing;
- Unlimited access rights to all functions;
- Defines new users;
- Defines access rights for all users;
- Stores global snapshots, global mic settings, and global channel routings.
- Stores private snapshots, private mic settings, and user channel routings for all users.

The table in chapter 11.2 shows the functions to which access is configurable in the OnAir 2000M2.

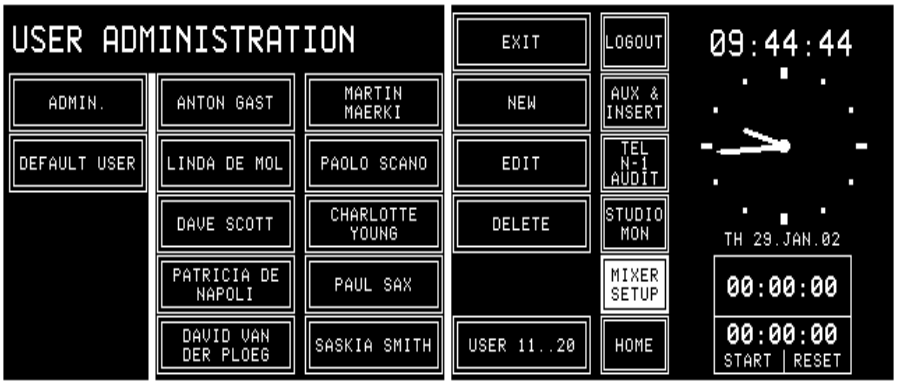
11.2 Access Configurable Functions of the Console

Function Description	Default User	Normal User	Adminis-trator
Loglist management			
Accept an entry (delete entry from list)	configurable	configurable	accessible
View the log list	accessible	accessible	accessible
Aux Master			
Inserts on AUX page	configurable	configurable	accessible
Aux 1 and 2 parameters	configurable	configurable	accessible
AUDIT master			
AUDIT level on TEL N–1 AUDIT page	configurable	configurable	accessible
N–1 master			
N–1A/N–1B levels on TEL N–1 AUDIT page	configurable	configurable	accessible
Channel input parameters			
Aux 1 parameters: Set channel input as AF for Aux 1 Set channel input as PF for Aux 1 Add channel input to Aux 1 Remove channel input from Aux 1 Aux 1 level	configurable	configurable	accessible
Aux 2 parameters: Set channel input as AF for Aux 2 Set channel input as PF for Aux 2 Add channel input to Aux 2 Remove channel input from Aux 2 Aux 2 level	configurable	configurable	accessible
Phase parameters: Set phase to invert Set phase to normal	configurable	configurable	accessible
Phantom parameters: Set phantom to ON Set phantom to OFF	configurable	configurable	accessible
Stereo mode parameters: Set channel to stereo mode Set channel to mono mode Set stereo mode to LR Set stereo mode to LL Set stereo mode to RL Set stereo mode to RR	configurable	configurable	accessible
Gain/cal parameters:	configurable	configurable	accessible
Pan/balance parameters:	configurable	configurable	accessible
Sum selection: Add/remove chn to/from ON-AIR bus Add/remove chn to/from RECORD bus	configurable	configurable	accessible

Function Description	Default User	Normal User	Adminis-trator
EQ parameters: Switch EQ for this channel input on Switch EQ for this channel input off Set EQ high shelving corner freq. to low Set EQ high shelving corner freq. to high Switch high-pass filter off Switch high-pass filter on Set EQ low shelving corner freq. to low Set EQ low shelving corner freq. to high Switch phantom power off Switch phantom power on Set the low filter gain Set the peak filter corner frequency Set the peak filter gain Set the high filter gain	configurable	configurable	accessible
Channel common parameters			
Input selection	configurable	configurable	accessible
All other parameters	accessible	accessible	accessible
Mixer setup			
Delete selected global snapshot/mic setting/ channel routing	–	–	accessible
Create global snapshot/mic setting/ channel routing	–	–	accessible
Recall global snapshot/mic setting/ channel routing	accessible	accessible	accessible
Delete selected private snapshot/mic setting	accessible*	accessible*	accessible
Create private snapshot/mic setting	accessible*	accessible*	accessible
Recall private snapshot/mic setting	accessible*	accessible*	accessible
Recall user channel routing	accessible*	accessible*	accessible
Channel routings			
Enter channel routing page	configurable	configurable	accessible
User administration			
Enter user administration	–	–	accessible
System configuration			
Display system configuration page	configurable	configurable	accessible
*** accessible for a user = his own data only**			

11.3 User Administration

The described access permission allows different functionality ranges to important console functions for each user. By assigning an appropriate access permission to each user, it is possible to fit the OnAir 2000M2 console to very different working environments.
This user administration is done with the help of a User Administration table that is part of the console configuration. This table can be edited by the system administrator only.
The users supposed to use the console with basic functionality do not need an account. To adjust the console to differently trained staff, it is possible to change the access permissions of the default user.
A user who wants to store his own, private data (snapshots, mic settings and/or channel routing) must have an account containing his name, his access permission table, and an optional password.

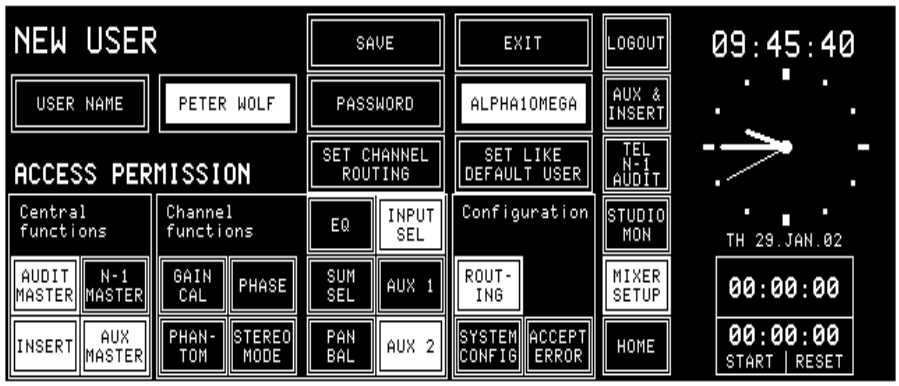


The USER ADMINISTRATION page can only be opened by the system administrator, by touching USER ADMIN in the SYSTEM CONFIG. page. Ten users will be listed. With the USER 11..20 field, the administrator can list the remaining users. When the second block of users is displayed, the USER 11..20 field changes to USER 1..10.

11.4 Administration Functions

By the system administrator, a user record can be created (NEW), changed (EDIT), or deleted (DELETE).

Create User Record: To create a new user record, touch NEW in the USER ADMINISTRATION page. The NEW USER page appears with empty input fields:

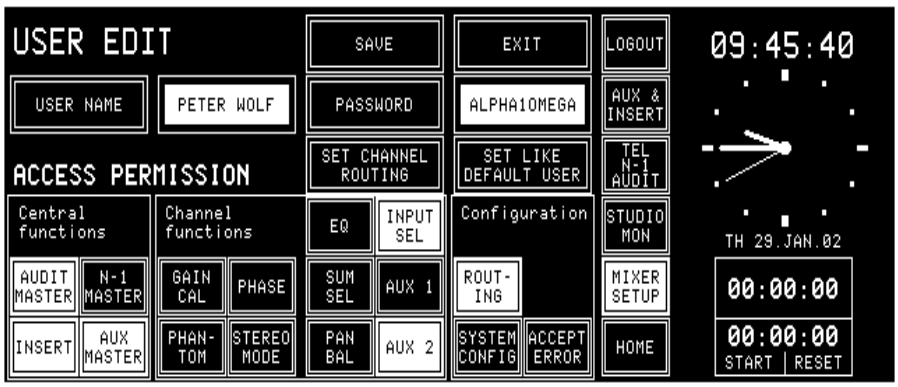


The USER NAME and PASSWORD fields are filled in, using the KEYBOARD page. The maximum length of the password is 22 characters. The user name may consist of up to 20 characters. If the new user is not accepted (e.g. because the user name already exists), an error message tells the system administrator that the new user will not be registered. A user name can be entered without a password, too.

Access permission is configured by touching the corresponding function fields on the NEW USER page. With SET LIKE DEFAULT USER, the access permission setting and the channel routing of the default user are copied to the user currently being edited and can subsequently be edited again. The new user record is stored with SAVE.

Two users are already predefined: The default user and the administrator. Both can only be edited, *but not created or deleted.*

Change User Record: A user record is selected by touching the appropriate name field in the USER ADMINISTRATION page, followed by EDIT. The USER EDIT page, containing the user's individual data, appears.

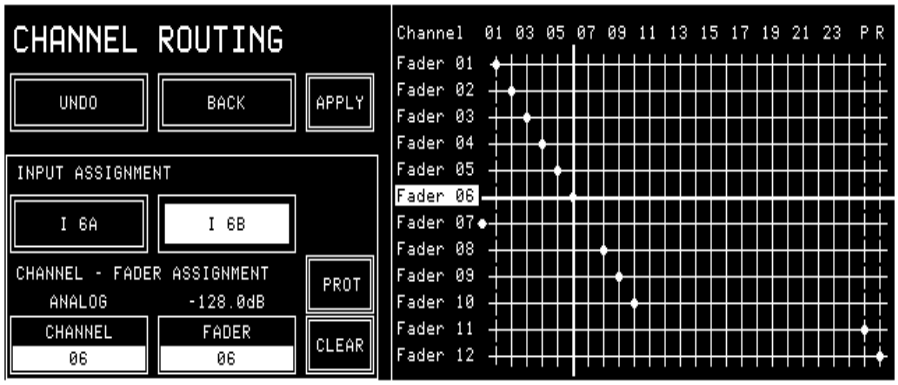


The data can be edited in the same way as described above, except that the user name is displayed but cannot be modified. The only way to rename a

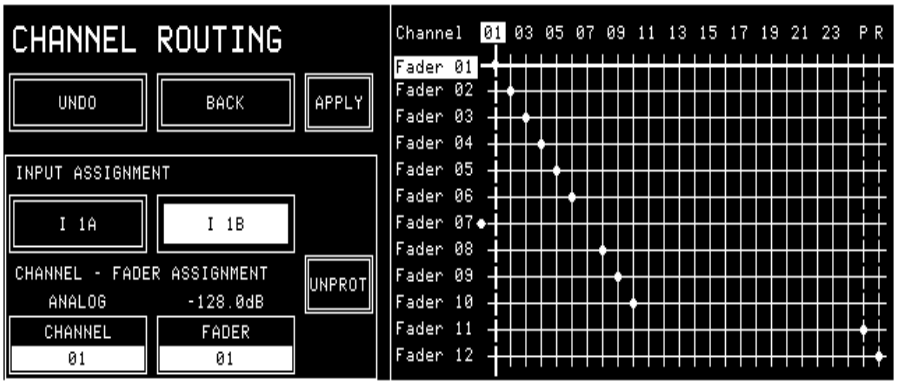
user while preserving his snapshots, mic settings, and channel routings is to save them to a PC-card, delete the user, create a new one with the desired name, and then reload the snapshots, mic settings, and channel routing from the card. After touching SAVE, the old record is replaced by the new one. This procedure has to be performed this way in order to avoid name conflicts in the console's memory and on the PC-card.

When editing the default user, the USER EDIT page looks similar, except that no password field is displayed.
When editing the administrator, the USER EDIT page neither displays the access permission fields nor the USER NAME field, but the password field is enabled.

Set User Channel Routing: The system administrator can define the user channel routing (surface definition) for every user by touching the SET CHANNEL ROUTING field in the USER EDIT page. In addition, the administrator can allow a user to change his own channel routing.
When the SET CHANNEL ROUTING field is touched, the CHANNEL ROUTING page appears and displays this specific user's channel routing. Instead of the SAVE TO USER PROFILE field, a BACK field is displayed, leading back to the USER EDIT page.



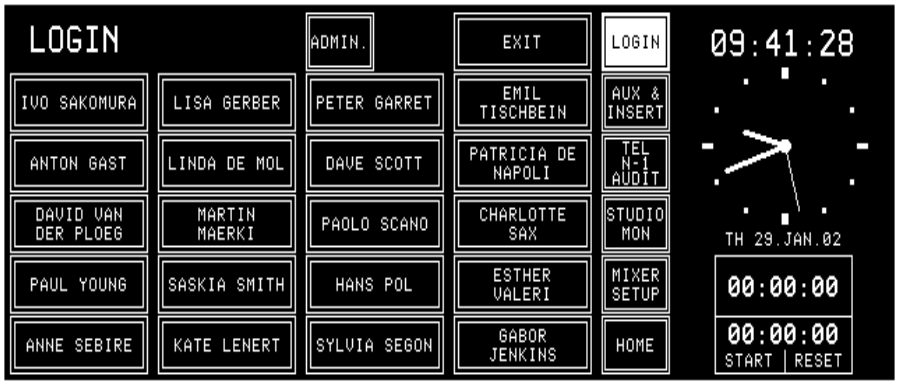
The system administrator can protect specific connections within the channel routing by selecting the desired cross-point with the horizontal and vertical lines, and then touching the PROT(ect) field. A protected connection is indicated by a dashed vertical line in the grid (see below); this connection cannot be changed by the user, even if he might be allowed to change his channel routing. Only the administrator can UNPROT(ect) this connection again. However, the user can change the input selection (A/B or A...F) of this input module, if he has the INPUT SEL access right.



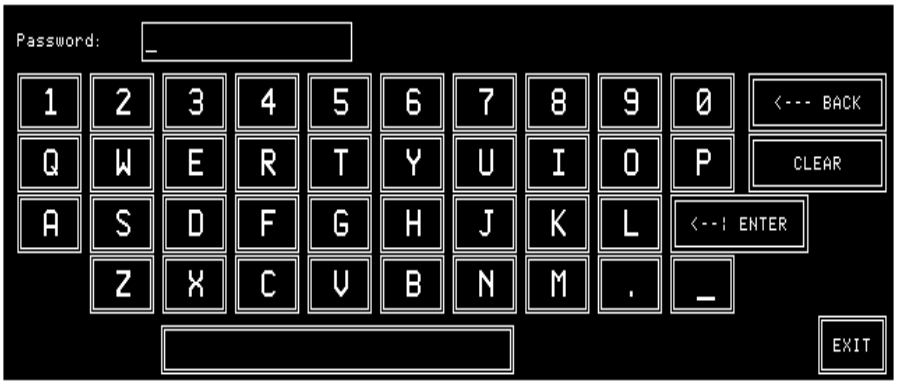
Delete User Record: To delete a user record from the user administration table, a record must be selected by touching the desired name field. A dialog box appears; if deleting the user is confirmed there, the selected user is permanently removed from the memory, and the user record disappears from the USER ADMINISTRATION page.
The default user and the administrator can be edited only, but not deleted.

11.5 Log-in Procedure and Defaults

The console always starts up in default user mode. The default user's access permission is activated automatically when a user logs out. If the corresponding customer code is activated (refer to chapter 12.2.12), the default user's channel routing is also recalled automatically.
If the user is a registered user, and if he wants to work in his own, private environment, he must log-in. After touching the LOGIN field, the LOGIN page will appear where the user can touch the field with his own name.



If a password is defined for this user, he has to enter it on the keyboard page.



If the password is correct, the system automatically returns to the page on which the user touched the LOGIN field. If the password is not valid, a dialog box will appear on the LOGIN page telling the user that the password was not correct. The user can leave the LOGIN page via the EXIT field which brings him back to the previous page.

If no password is defined for a user, the system does not show the keyboard page after a touch on a name field in the LOGIN page. The system directly jumps back to the page where the LOGIN field was touched. As

the system does not check for a password in this case, this user's private data are not protected, and any other user can access them.

If a console is operated by one person only, the system administrator simply has to enable all access rights for the default user. This is the way the user can control all console functions (except the user administration functions) without having to log-in.

A default user is always defined in the user administration table. His name is DEFAULT USER. The access permission of this user can be edited, but the record cannot be deleted, and no login code can be defined for this user.

12 CONFIGURATION

In order to meet the requirements for different studio environments, the OnAir 2000M2 is highly configurable.
Depending on the connected audio equipment, different input and output modules can be installed. Some optional modules (Time Sync, RS232/422, Clock Sync, etc.) can also be installed to allow for extended functionality. All these hardware modules are automatically detected by the OnAir 2000M2 software.
According to the installed hardware modules, the system offers corresponding software configuration options. This software configuration is described in this chapter.
A configuration is "static", which means that it cannot be changed during normal operation. Although snapshots rely on a certain configuration, the configuration data are not stored together with the snapshots. Therefore, snapshots cannot change the console configuration.

12.1 Configuration Handling

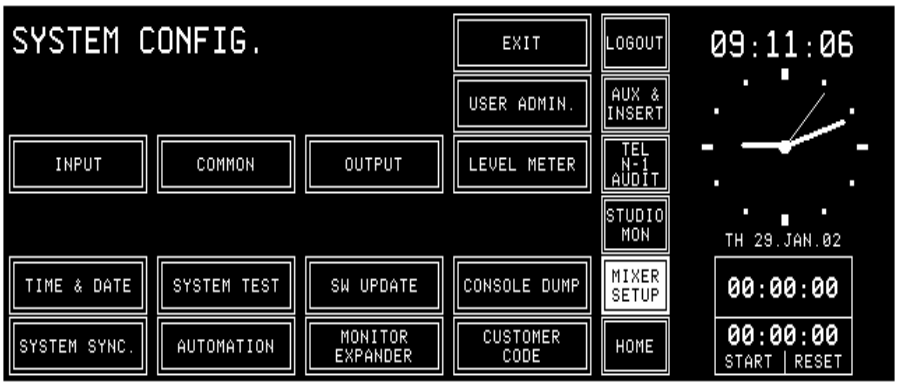
At system startup, each installed module is identified. The list of detected modules is compared with the list of modules which had been installed at the last power-down. If a hardware configuration change is found, a message is displayed in the central screen. This is very important, since e.g. snapshots may not be compatible if the type of an input module has changed.

Hardware configuration can only be changed if the console is switched off. *Modules must not be replaced or added while the console is running; "hot-patching" of modules will make the system hang.*

System configuration can be changed by the system administrator, or by any user with access right to the SYSTEM CONFIG. page. System configuration includes data for:
- Channel labels
- Control signal modes
- Nominal input levels
- Level meter assignment, etc.

An OnAir 2000M2 configuration can be stored on a PC-Card, or loaded from the PC-Card into the console.

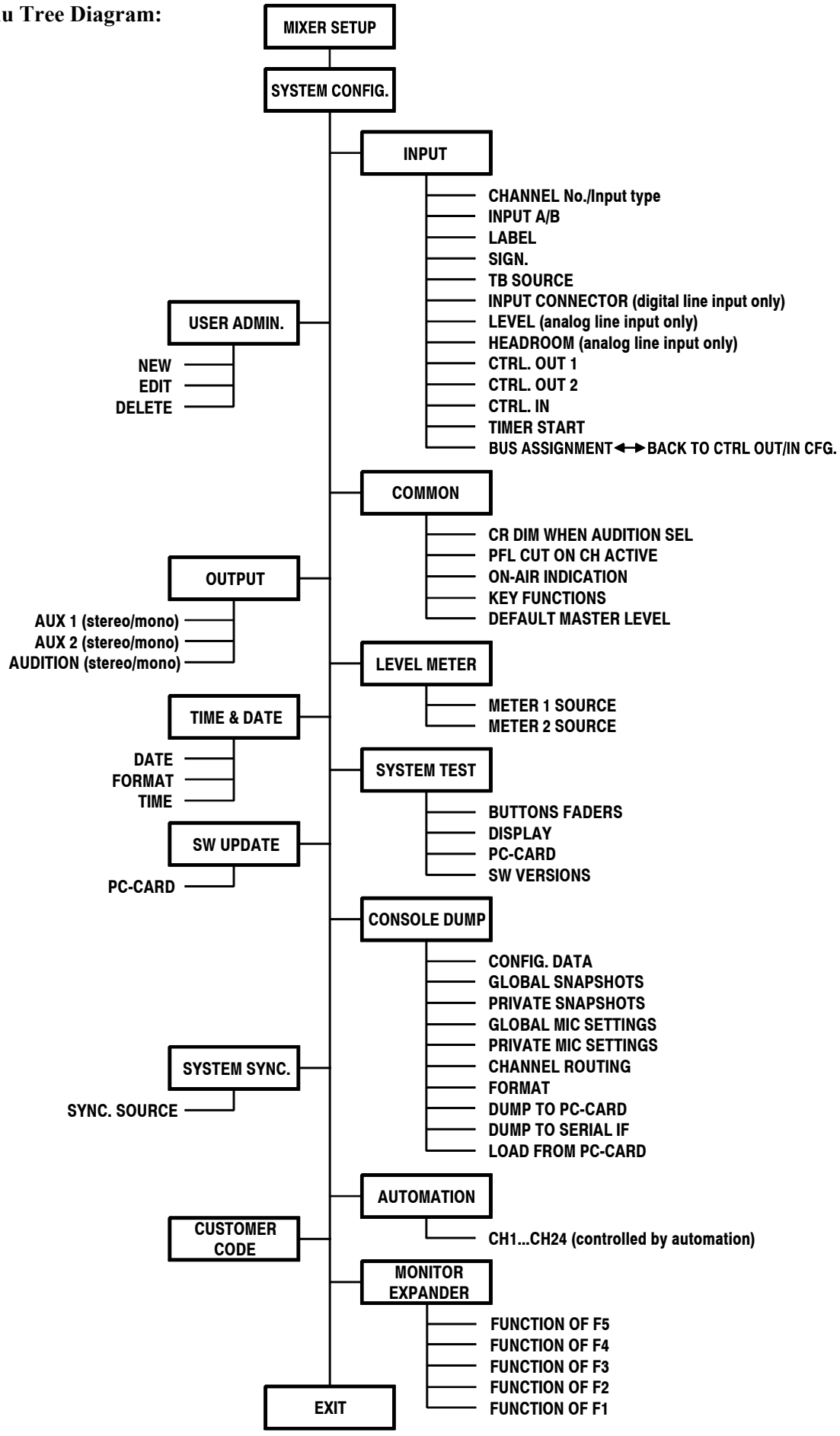
12.2 Configuration Procedure



The console configuration can be changed in the SYSTEM CONFIG. page. This page can only be reached from the Mixer Setup page by an operator with system administrator permission.

The configuration parameters are subdivided in groups. Each group is edited on a separate page accessed from the SYSTEM CONFIG. page.

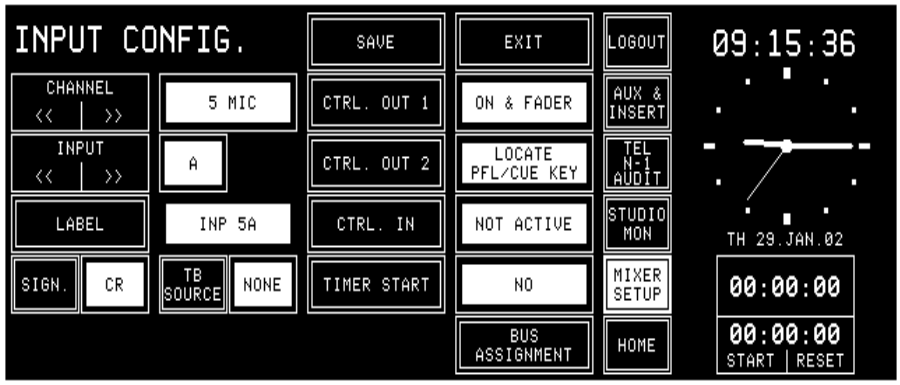
Configuration Menu Tree Diagram:



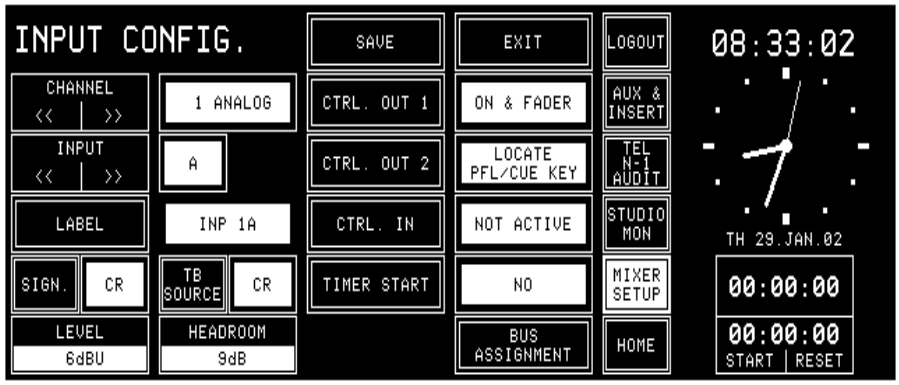
12.2.1 Input

There are three slightly different INPUT CONFIG. pages for editing input configurations, depending on the type of input module identified by the hardware. The pages for microphone, analog line, and digital line inputs are shown below.

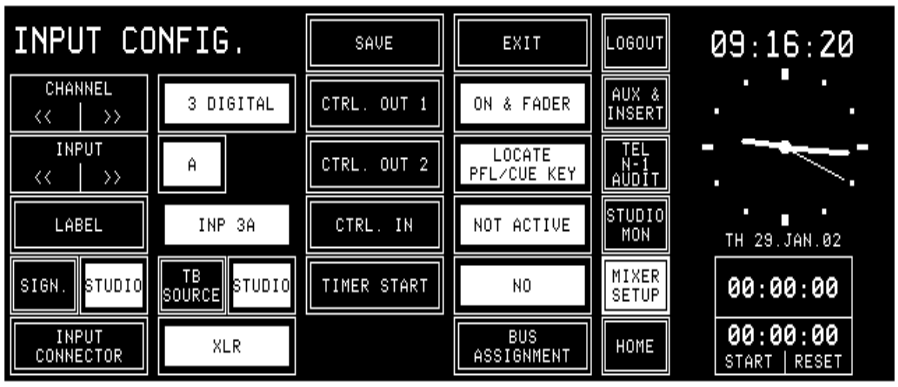
Microphone Input



Analog Line Input



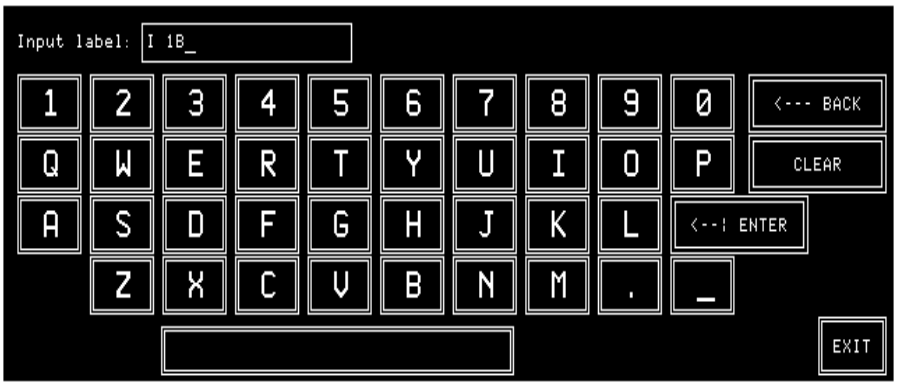
Digital Input



Channel and input are selected with the CHANNEL and INPUT forward (>>) and backward (<<) fields. Channel and input can also be selected by touching the Label field on the channel screen. The display will show the current configuration data for the selected input and channel. To change a parameter, the corresponding field must be touched; it will change to the next possible value. Consecutive touching toggles through all the options.

Exceptions: Touching the LABEL field will open the KEYBOARD page where an input label can be edited. The values in the LEVEL and HEADROOM fields (analog line inputs only) can be adjusted with the rotary encoders next to these fields. Touching BUS ASSIGNMENT opens the BUS ASSIGNMENT page where the channel routing to all N–1 and to the AUDIT buses is performed.

LABEL The LABEL field is used for giving a name to a channel. Touching this field, the keyboard page opens.



The source label field on the channel screen can display long labels (up to 2 × 12 characters), while the input selector fields can display short labels only (up to 2 × 6 characters).
The following rules apply to the display of the labels in the fields:
The upper line contains the first word plus every following word which completely fits into the field. If the first word is longer than 6 or 12 characters, it is cut after 6 or 12 characters. The lower line is filled up with as many characters (6 or 12) as possible, i.e. the last word is cut if it does not fit completely into the field. The separation character is the space character. If the label consists of one long word only, it is cut after 6 or 12 characters and displayed on one single line. The following table illustrates the different possibilities:

Name	Short label	Long label
ABC 12	ABC 12	ABC 12
ABC 1234	ABC 1234	ABC 1234
ABCDEFG 1234567	ABCDEF 123456	ABCDEFG 1234567
ABCDEFG 1234567 ABC	ABCDEF 123456	ABCDEFG 1234567 ABC
ABC EFGHIJK MN 1234	ABC EFGHIJ	ABC EFGHIJK MN 1234
ABC EFGHIJKLMN 1234	ABC EFGHIJ	ABC EFGHIJKLMN 1

When completed, touch <--¦ ENTER followed by SAVE (to keep the changes) or EXIT (to cancel without changes).

SIGN. / TB SOURCE Signaling and talkback can be configured individually (in software versions earlier than V3.0, these settings were allowed for microphone inputs only; there, this function was called “MIC LOCATION”).
SIGN. is used for signaling (red light) and monitoring (cut and dim), the available options are NONE, CR, and STUDIO.
The TB SOURCE parameter in the INPUT CONFIG. page sets the assignment of the input to the TB bus (NONE, from CR, or from STUDIO).
During talkback from the studio, the studio speakers are dimmed only if at least one input is configured as SIGN. = STUDIO *and* TB SOURCE = STUDIO. *The same applies for talkback from the control room.*

INPUT CONNECTOR *(Digital input modules only)*
Each (A and B) input of a digital input module has three different input connectors (XLR, RCA/Cinch, and optical/TOSLINK). This option selects independently for the A and the B inputs which connector is used.

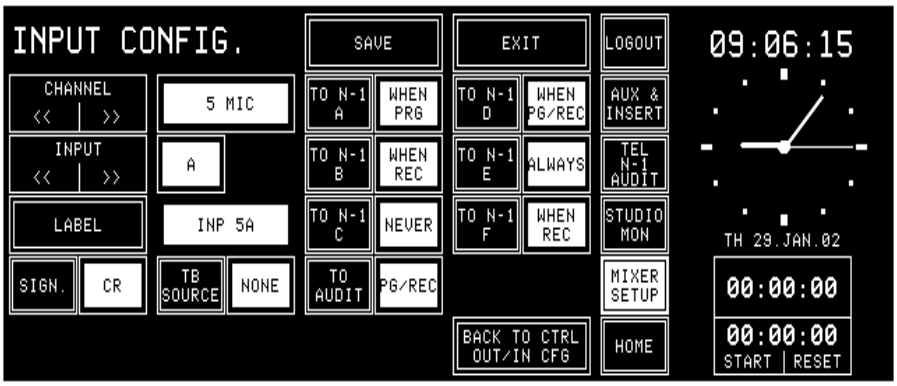
LEVEL *(Analog line input modules only)*
"Level" is the nominal studio level expressed in dBu.

HEADROOM *(Analog line input modules only)*
"Headroom" is the difference between the A/D converter's clipping level and the nominal studio level.
Example: An input with a level setting of +6 dBu and a headroom setting of 9 dB will accept a +15 dBu signal before the A/D converter comes into overload.

CTRL. OUT 1/2 Please refer to chapter 9 for more information on this subject.

CTRL. IN Please refer to chapter 9 for more information on this subject.

BUS ASSIGNMENT When touching the BUS ASSIGNMENT field, the display changes as follows, allowing to select the N–1 and the audition bus assignments:



The TO... fields allow routing the input signal to the corresponding N–1 (A...B or A...F) or to the Audition bus. The Audition bus is similar to the N–1 buses, but it is a stereo bus that can be selected as a monitoring source in the control room.
N–1 and Audition bus assignment is related to the input signal and is re-routed with the input signal when the input module assignment is changed.
Talkback to the Audition bus is possible only on the analog outputs of the optional monitoring extension.

N–1/AUDIT Configuration:

Setting	Meaning
NEVER	The channel is never routed to N–1 or AUDIT
WHEN PG/REC	The channel is routed to N–1 and/or AUDIT if the channel is either assigned to the program or to the record bus
WHEN PGM	The channel is routed to N–1 and/or AUDIT if the channel is assigned to the program bus
WHEN REC	The channel is routed to N–1 and/or AUDIT if the channel is assigned to the record bus
ALWAYS	The channel is always routed to N–1 and/or AUDIT, regardless of the bus assignment

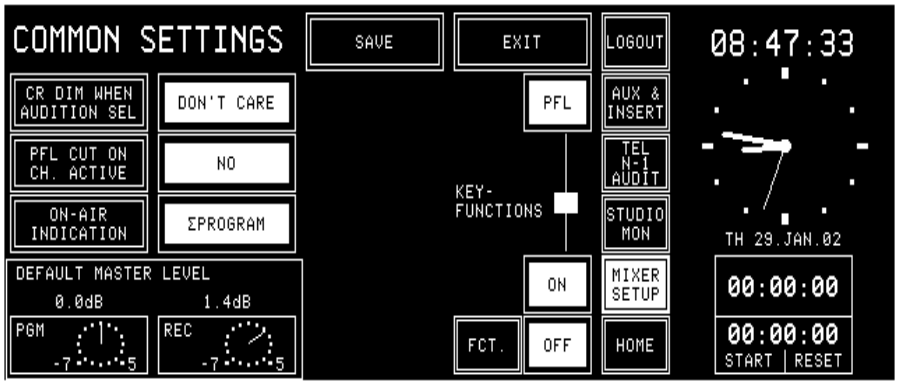
Notes: If the console is equipped with an Insert 3/4 Module, the N–1C to F outputs are not available; however, talkback to the OUT1/2 buses is possible.

The N–1 bus and the Audition bus output levels are controlled on the TEL/N–1/AUDIT page using the rotary encoders. For details, please refer to chapter 5.3.1.
When touching BACK TO CTRL OUT/IN CFG, the display switches back from the bus assignment option to the standard INPUT CONFIG. page.

TIMER START If TIMER START is set to YES, the fader stop watch will be started/reset by the corresponding fader, if the channel is ON and the fader is opened. TIMER START is related to the input signal and will be re-routed when the input module assignment is changed.

SAVE / EXIT The Input Configuration must be saved for each input channel. If the user switches to a different channel, a dialog box will call his attention to the fact that the changes will be cancelled if he does not save the current Input Configuration. The program remains in the Input Configuration page when saving a channel. Once a change has been saved, it will not be cancelled when leaving the Input configuration page with EXIT.

12.2.2 Common Settings



The COMMON SETTINGS page contains the following configuration possibilities:

CR DIM WHEN AUDITION SEL When the Audition bus is selected as a CR monitoring source, and a CR microphone channel is ON, the CR monitor speaker level will be attenuated (DIM), muted (CUT), or nothing happens at all (DON'T CARE).

PFL CUT ON CH. ACTIVE If YES is selected, the signal of a channel is taken off the PFL bus when the channel is ON, although the PFL function is active (the PFL function remains active).

ON AIR INDICATION Three possibilities are available: ΣPROGRAM, ΣRECORD, or ΣPROGRAM AND ΣRECORD.
The ON-AIR signaling is only active if at least one channel is ON, if this channel's fader is open, and if this channel is assigned to the selected bus (ΣPROGRAM, ΣRECORD, or either of them).
In automation operation, ON-AIR is indicated in the input selection field of the channel selected by the automation system. FADERSTATUS is ON-AIR if the input is assigned to the selected bus (ΣPROGRAM, ΣRECORD, or either of them).

KEY FUNCTIONS Functions of the channel keys labeled ON and OFF.
The ON key either switches the channel ON or has an ON/OFF toggle function, depending on the function selected for the OFF key.

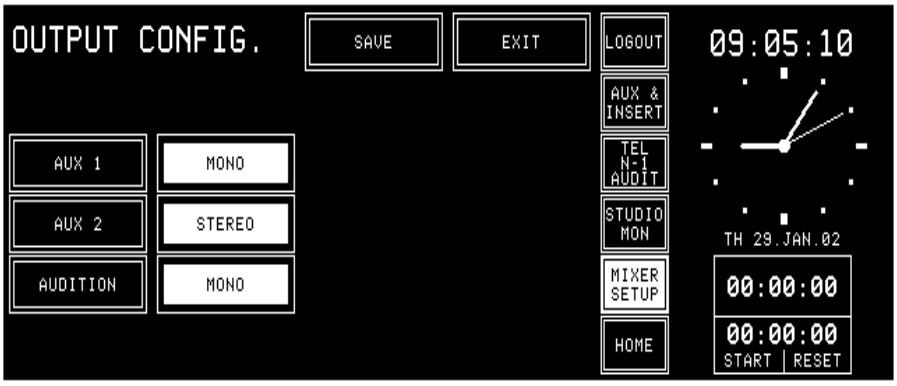
If the OFF function is selected for the OFF key, the channel is switched off by pressing this key; if LOCATE is selected, the ON function automatically changes to a channel ON/OFF toggle function (also refer to chapters 9.2 and 9.3).

DEFAULT MASTER LEVEL: The level of the ΣPGM and ΣREC outputs can be biased in a range of –7 to +5 dB using the two rotary encoders below the corresponding fields. This setting is only valid if no fader strips are assigned to the ΣPGM and/or ΣREC outputs; please note that this setting must be done with care, as it directly affects the level of the main outputs.

Note: The MASTER FADER ASSIGNMENT function for PGM and REC outputs that was available on this page in earlier software versions is located on the CHANNEL ROUTINGS page now; please refer to chapter 5.9.

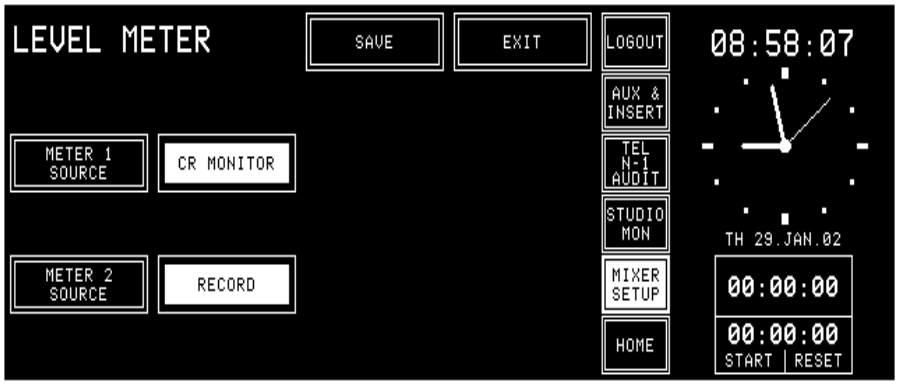
12.2.3 Output

On the OUTPUT CONFIG. page, the types of the output signals on the AUX 1, AUX 2, and AUDITION buses can be set.



12.2.4 Level Meter

The LEVEL METER configuration page defines the signal sources for the level meters no. 1 and no. 2.



Available signal sources:

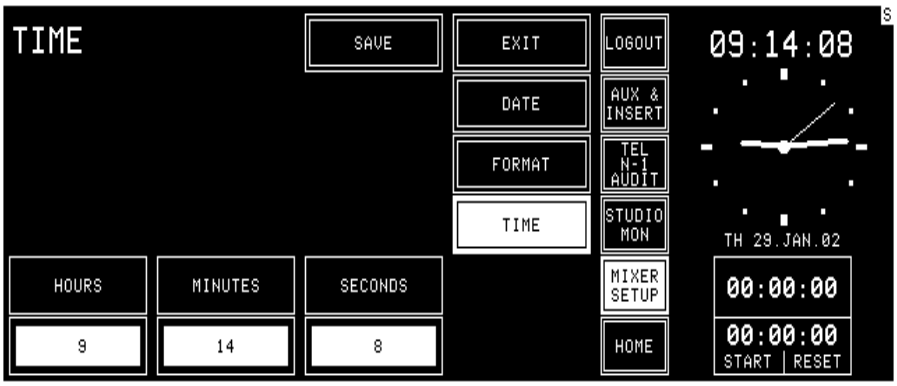
METER 1 SOURCE CR MONITOR, PROGRAM, RECORD, AUX 1, AUX 2, AUDIT, N–1 A.

METER 2 SOURCE CR MONITOR, PROGRAM, RECORD, AUX 1, AUX 2.

12.2.5 Time & Date

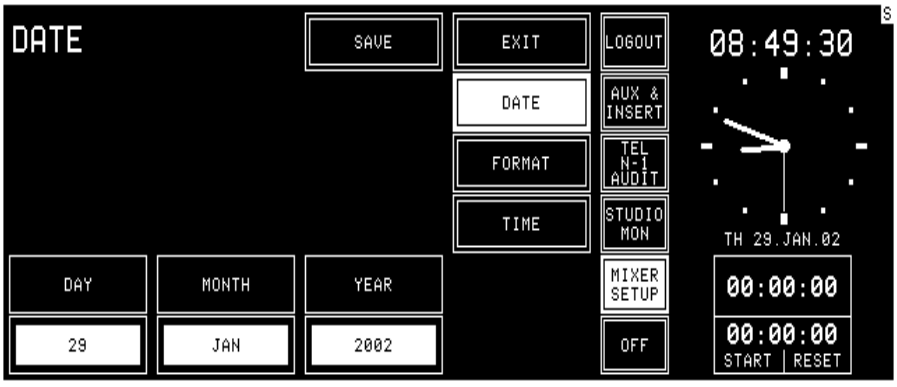
The watch gives a time, day-of-week, and date display. The standard time reference is an internal battery-buffered real-time clock (RTC). The RTC continues to run even when the console is switched off. Therefore it is unnecessary to set the watch at power-up.
The RTC may also be synchronized by a time signal on the Time Sync Module's input or by a broadcast automation system (CAB). If time synchronization is established, the top right corner of the center screen shows an “S”.
Changes to the time or date settings are made on the TIME page. Access permission to the SYSTEM CONFIG. page is required.
From the HOME page, this page is found by selecting MIXER SETUP, followed by SYSTEM CONFIG., TIME & DATE, and TIME.

An example of the TIME page is given below:



The hours, minutes, and seconds are adjusted with three of the rotary encoders located next to the corresponding fields. By touching “SAVE”, the parameters are updated. If they are invalid, the parameter changes are ignored.

The DATE page is shown below. This page is displayed by touching the “DATE” field on either the TIME or the FORMAT page.



The day, month, and year is adjusted with three of the rotary encoders located next to the corresponding fields. By touching “SAVE”, the parameters are updated. If they are invalid, the parameter changes are ignored.

The watch configuration is done in the TIME & DATE FORMAT page. This page is displayed after touching the "FORMAT" field on either the TIME or the DATE page.

Both time and date can be displayed in two formats (select with TIME FORMAT or DATE FORMAT, respectively), as shown below:

Time Format	Digital Time Indication
05:00:00 p.m.	12 hour time format
17:00:00	24 hour time format

Date Format	Example
DD.MMM.YY	MO 20.MAR.02
MMM-DD-YY	MO MAR-20-02

TIME SYNC. defines the means to set and maintain time and date. The following settings are available:

Time Sync	Sync Reference	Date Setting	Time Setting
INTERNAL	Internal quartz	By user	By user
TIME SYNC. MODULE	Internal quartz, periodically updated by the external time reference signal	By user, periodically reset by ext. time reference signal (century never overwritten by ext. ref.)	By user, periodically reset by the external time reference signal
AUTOMATION	Internal quartz, periodically updated by automation time reference	By user, periodically reset by automation time reference	By user, periodically reset by automation time reference

The Time Sync module can process different time reference signal formats, the current format is selected with a DIP switch on the Time Sync module. The setting of this switch is displayed in hexadecimal in the TIME SYNC. PROTOCOL field for easy verification. For details please refer to chapter 16.10.

The time zone offset can always be set, regardless whether it makes sense to set an offset in conjunction with the time sync source or not.

Offset	Watch Function
–12:00 to +12:00 (resolution: 1 h)	Compensates the sync time by the given offset before setting (synchronizing) the internal watch.

12.2.6 System Test

More information on this subject can be found in chapter 14.

12.2.7 Software Update

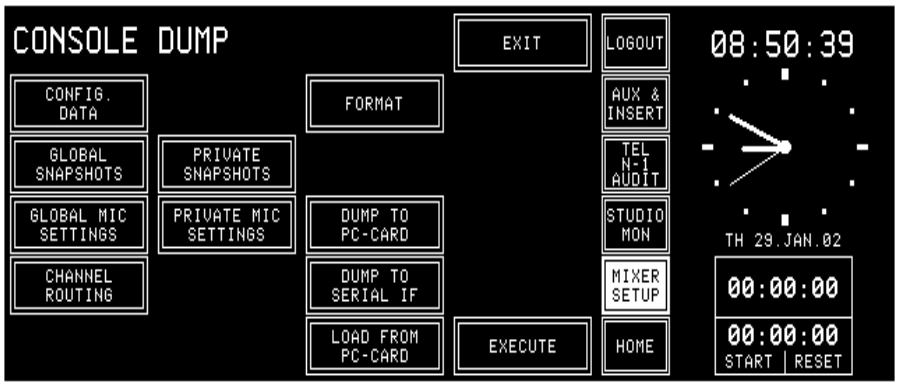
More information on this subject can be found in chapter 13.

12.2.8 Console Dump

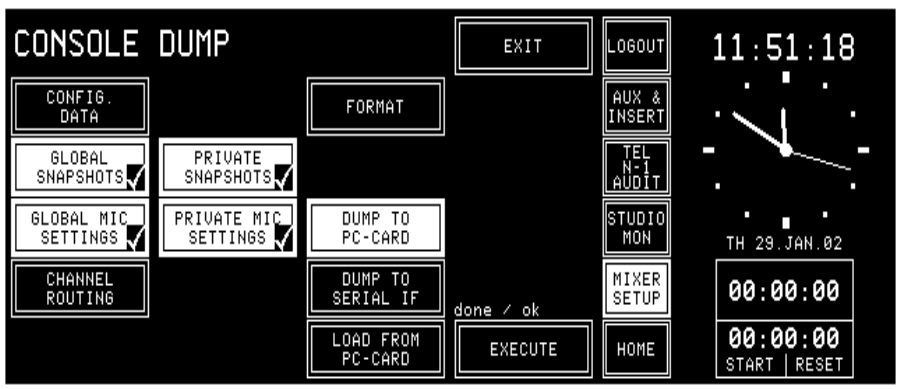
A “console dump” consists of configuration data (CONFIG. DATA), snapshots (global and private), mic settings (global and private), and channel routings.

Formatting the PC-Card

Before dumping any data, the PC-Card has to be formatted. This is done in the console's PC-Card slot (or, if the console is equipped with two slots, in the lower one, slot 0). Touch FORMAT followed by EXECUTE. A dialog box appears where the user can confirm the formatting (i.e. erasing the card completely). While formatting, the EXECUTE field flashes.



The CONSOLE DUMP page allows the user to save mixer setup data on a PC-Card, to send them to the serial port, or to load mixer setup data from a PC-Card. This feature can be used for back-up purposes, for copying data from one console to another, or for diagnostics. A PC-Card can contain one console dump only. It is possible to dump or to load the mixer setup data completely or partially only. The selection is done with the CONFIG. DATA, GLOBAL and PRIVATE SNAPSHOTS, GLOBAL and PRIVATE MIC SETS, and CHANNEL ROUTING fields. The function can then be selected with the fields in the center of the page and will be started by touching the EXECUTE field.



A checkmark appears in the corresponding field when done, and “done / ok” is displayed after the selected operation(s) have been successfully completed, as shown above (or “done / error” if there is a problem).

When loading data from the PC-Card, the console data will be overwritten. Therefore this procedure has to be confirmed in a dialog box.
The EXIT field returns to the SYSTEM CONFIG. page.

A Configuration is loaded into the console by selecting CONFIG. DATA, LOAD FROM PC-CARD, and EXECUTE. An error message is displayed if the configuration cannot be loaded completely (e.g. Channel Type Mismatch).

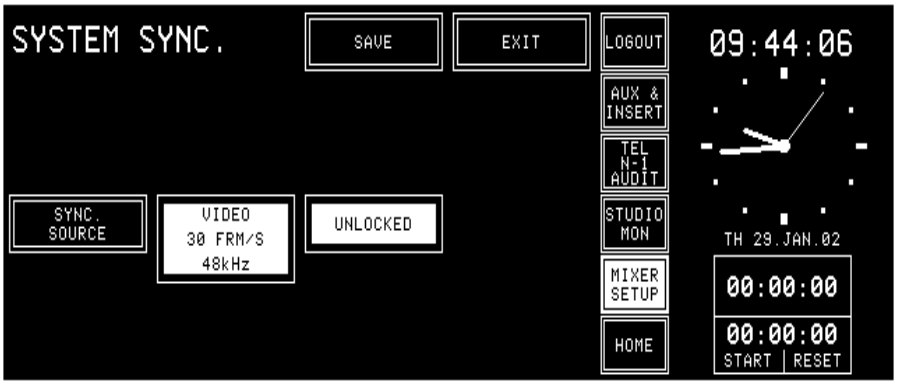
Snapshots are loaded into the console by selecting GLOBAL (or PRIVATE) SNAPSHOTS, LOAD FROM PC-CARD, and EXECUTE. Snapshots existing in the console will be overwritten.

Mic Settings are loaded into the console by selecting GLOBAL (or PRIVATE) MIC SETS, LOAD FROM PC-CARD, and EXECUTE. Mic settings already existing in the console will be overwritten.

Channel Routings are loaded into the console by selecting CHANNEL ROUTING, LOAD FROM PC-CARD, and EXECUTE. Channel routings already existing in the console will be overwritten.

12.2.9 System Synchronization

On this page the system synchronization is configured. The synchronization source can be internal or external; for an external source, the sync signal type must be defined.



All possible sync modes are listed below. If the optional clock sync module is not installed, only INTERNAL can be selected.

Sync source	Sampling rate
INTERNAL 48 kHz	48 kHz ±100 ppm default, or 48 kHz, precision adjustable on sync module (if installed); adjustment range approx. ±1000 ppm
WORDCLOCK 32/44.1/48 kHz	32/44.1/48 kHz
AES/EBU 32/44.1/48 kHz	32/44.1/48 kHz
VIDEO 25 FRM/S 48 kHz	48 kHz
VIDEO 30 FRM/S 48 kHz	48 kHz
VIDEO 29.97 FRM/S 47.952 kHz	47.952... kHz
VIDEO 29.97 FRM/S 48 kHz	48 kHz

Note: The OnAir 2000M2 is designed to run at a sampling rate of 48 kHz. Due to this fact, filter parameters are accurate at 48 kHz only. If the console is synchronized to 44.1 kHz, the actual center and turnover frequencies of the EQ are lower by 8.125 %; if the clock frequency is 32 kHz, the frequencies will be lower by approx. 33.3 %.

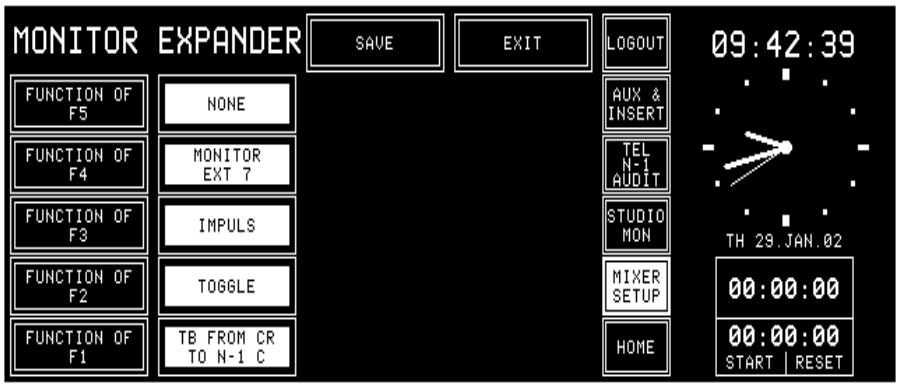
If the console is synchronized to an external signal, a message box is displayed if synchronization is lost; a “Missing External Clock” warning is added to the error list.
If the console was synchronized to either WORDCLOCK or AES/EBU and a “no sync” condition is detected, the console automatically selects the INTERNAL mode; however, the external clock selection in the SYSTEM SYNC page is not changed. As soon as a valid external clock signal is available, the console will be re-synchronized.
If synchronization to a video source is lost, only a message box is displayed. The sync source remains in VIDEO mode.

If the Clock Sync module is removed, sync source selection changes to INTERNAL mode, and no other sync source can be selected.

12.2.10 Automation

More information on this subject can be found in chapter 10.

12.2.11 Monitor Extension (Optional)

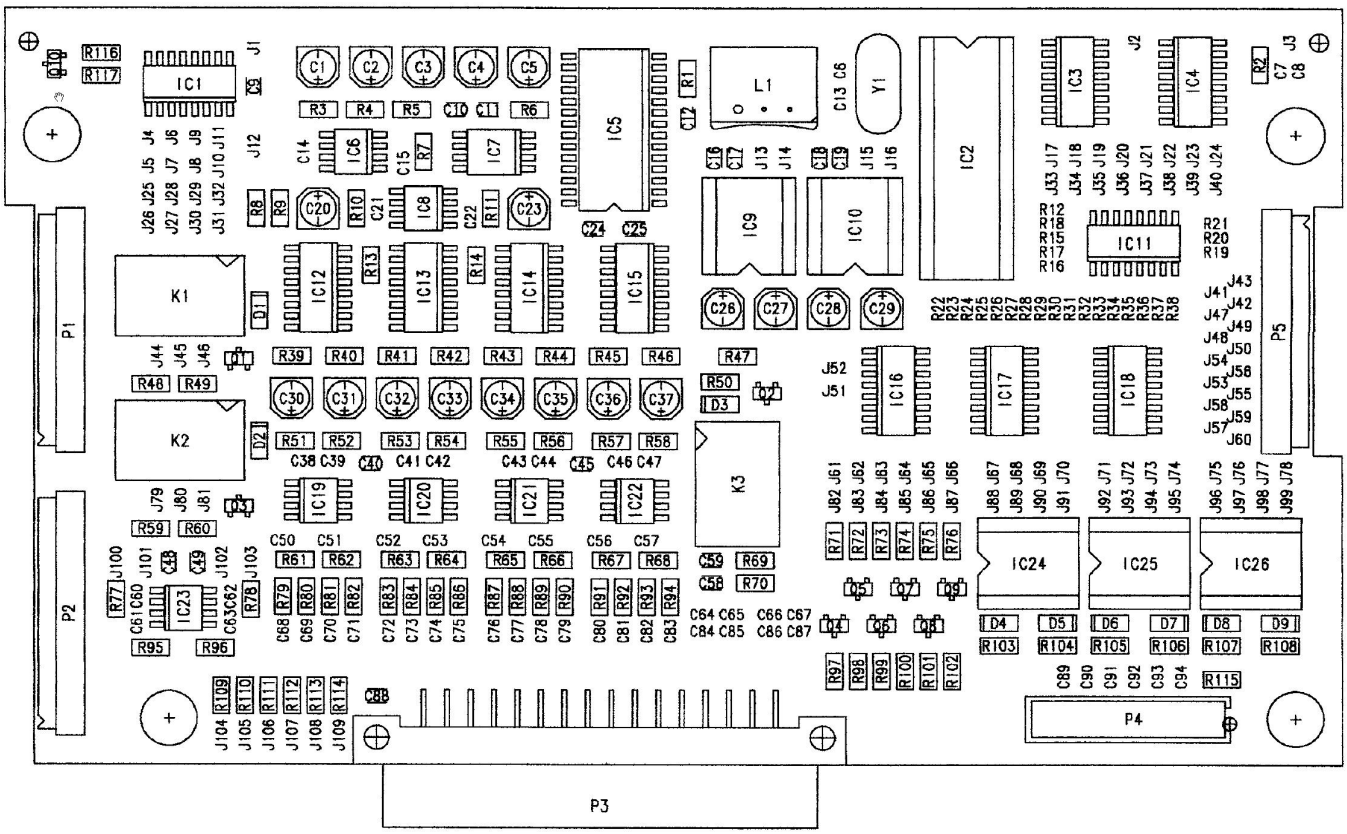


The MONITOR EXPANDER page allows to configure the functionality of the F1 to F5 keys. The different possible functions are described on the next pages and refer to the screenshot above. *For additional information on the monitor extension see the block diagram in chapter 15.14.*

Modification: Please note that for the functions IMPULS, TOGGLE, and TB FROM CR TO... described later, a modification is required on the Monitor Expander Board 1 (1.942.136.xx); this allows to send the F1...5 (Fx) output signals to the EXTENSION CTRL1 connector of the Monitoring Module.

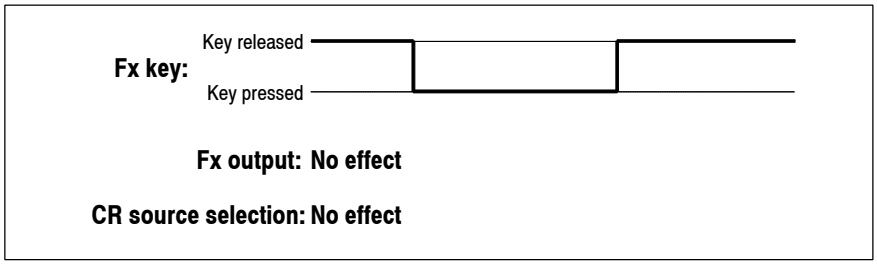
Signal Name	F1 / CTRL OUT1	F2 / CTRL OUT 2	F3 / CTRL OUT 3	F4 / CTRL OUT 4	F5 / CTRL OUT 5
Cut	J62-J83, J32-J31	J63-J84, J11-J10	J64-J85	J65-J86	J66-J87
Connect	J32-J83	J11-J84	J51-J85	J52-J86	IC2 pin16-J87
Output Pin on EXTENSION CTRL1	3	4	5	6	7

In addition, switch no. 8 of the DIP switch on the Monitor Expander Board 2 (1.942.137.xx) must be set to OFF.



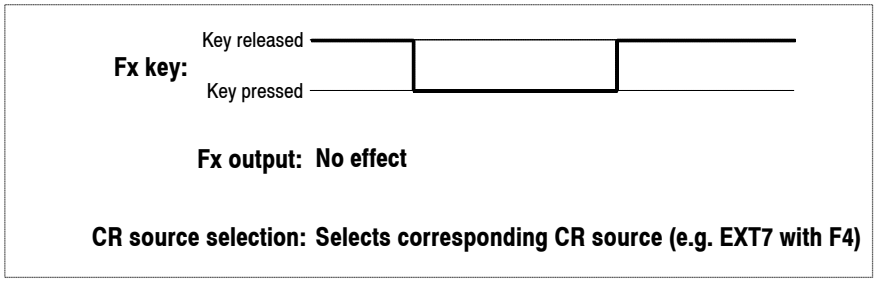
NONE

If one of the F1 to F5 keys is configured to NONE, pressing this key has no effect at all – neither for the F1 to F5 output, nor for the CR source selection. The key LED is not illuminated unless the system is in test mode.



MONITOR EXT 7

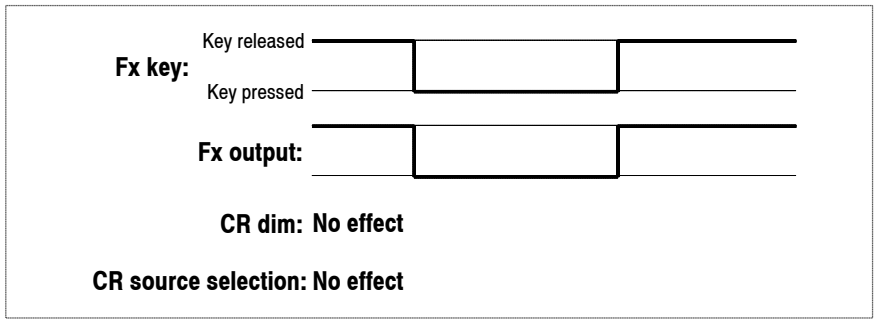
According to the first table in chapter 7, each of the F1 to F5 keys is related to one of the external control room monitoring inputs. In our example, F4 is configured to act as CR monitoring selector with EXT7 being the corresponding input. The key LED is on if the corresponding source is selected.



The relationship between the F1 to F5 keys and the EXT4 to EXT8 inputs is given through hardware wiring. The table in chapter 7.1 gives information on the default wiring.

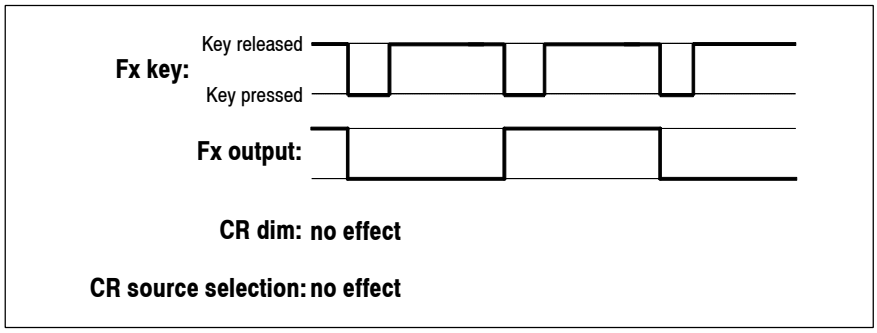
IMPULS

If one of the F1 to F5 keys is configured as “IMPULS”, the output is active for as long as the key is pressed. Neither the CR monitoring level nor the CR source selection are affected. The key LED is on for as long as the key is pressed.



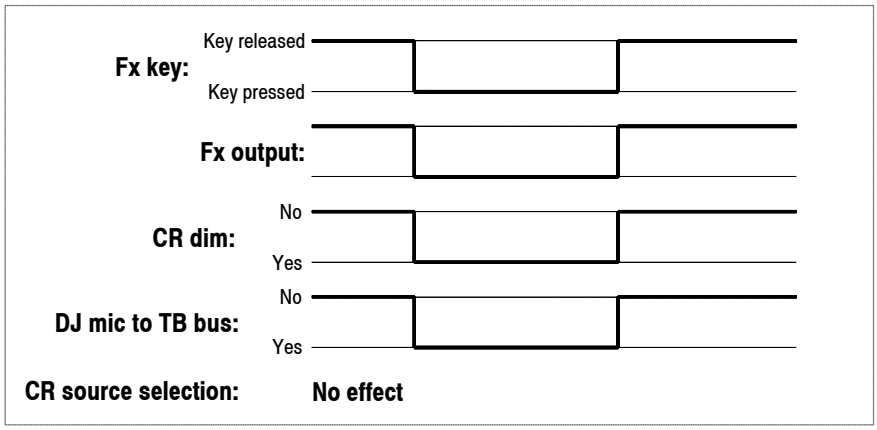
TOGGLE

If one of the F1 to F5 keys is configured as “TOGGLE”, the output changes its status each time the key is pressed. Neither the CR monitoring level nor the CR source selection are affected. The key LED is on for as long as the output is active.



TB FROM CR TO...

If one of the F1 to F5 keys is configured as “TB FROM CR TO...”, the output is active and the key LED is on as long as the key is pressed, the CR monitor speakers are dimmed, and the outputs of all microphone input modules with the configuration “TB SOURCE” = CR and “SIGNALING” = CR are routed to the TB bus. (The TB bus signal can be selected with an appropriate jumper or DIP switch setting on the output modules).



Additional Talkback Targets:

In addition to the standard talkback targets (selected with the STUDIO, AUX 1/2, and N–1 A/B keys), the following talkback targets can be configured as well for the F1 to F5 keys:

TB FROM CR TO	N–1 C (if installed) N–1 D (if installed) N–1 E (if installed) N–1 F (if installed) ALL N–1 ALL AUX ALL

For further information on this subject, please refer to chapter 7.3.

12.2.12 Customer Code

Starting with software version 2.0.1, there is a possibility to activate optional, customer-specific functions as, for instance, the hex source selector fields on the touch-panel of the fader strip. For this purpose, a feature called Customer Code is used. *Please note that the customer codes are displayed and entered in hexadecimal.*

Code 0x00000000 **Default Setting**

Code 0x00000001 **Permanent Hex Input Selection**
For permanent display of the hex input selection field in the channel screen, refer to chapter 4.4.1.

Code 0x00000002 **High Shelving Filter Modification**
When selected, the turnover frequency of the high-shelving filter is reduced by approx. one octave, resulting in increased filter effect. For more information on EQ and filters, please refer to chapters 4.4.5 and 4.4.6.

Code 0x00000004 **External CR DIM Function**
The spare control input on the Monitoring Module ("SIGN." connector P4, 9-pin D-type) can be used as CR DIM control input. If activated by an external control signal, the CR monitor speakers are attenuated by 20 dB.
Please refer to the pin assignment table and connection diagram in chapter 15.13.

Code 0x00000008 **MONITORA: SAS_INPUTROUTING**
Allows to ask for the SAS_INPUTROUTING, even if no SOURCE was selected for that fader.

Code 0x00000010 **MONITORA: SET_FADER_LEVEL**
If the broadcast automation system sets a level (SET_FADER_LEVEL) to 0 dB and the current physical position of the corresponding fader is between +4.5 dB and –4.5 dB, then the channel's level is set according to the physical fader position instead of 0 dB.
This avoids the console to enter the Auto Takeover mode.
Note: *Not implemented for the SET_FADER_LEVEL_ONLY command.*

Code 0x00000020 **Shift Studio TB to N–1**
Allows talkback from the studio to the outputs N–1C and N–1D, instead of to N–1A and N–1B.

Code 0x00000040 **Longer Reverb Time**
Increases the delay for the switching from CR Cut or CR Dim to CHANNEL ON, or from CHANNEL OFF to CR UnCut or CR UnDim from 40...50 ms to 160...170 ms.
This delay is used to avoid acoustical feedback noise from the CR monitor speakers to a microphone channel being opened (CHANNEL ON), when the control room has an unusually long reverb time.

Code 0x00000080 **Faders 0 dB on Top**
For applications where the 0 dB point of the faders is desired to be at the fader's upper end position, this code can be used. It shifts the DSP gain setting with respect to the mechanical fader position by –10 dB.

Code 0x00000100 **Fader Start and Stop Pulse**
When CTRL OUT1 mode is set to "ON & FADER" in the INPUT CONFIG. page (refer to chapter 9.2), 200 ms pulses are generated instead

of a static signal at the CTRL OUT1 output when the status is activated (fader open and channel ON) and when it is de-activated (fader closed and channel OFF).

Note: *There is a second possibility to generate start and stop pulses without activating this customer code; using this feature, however, different outputs are used for the two pulses. For this purpose, set CTRL OUT1 mode to "ON & FADER", and CTRL OUT2 mode to "STOP PULSE" in the INPUT CONFIG. page (refer to chapter 9.2).*

Code 0x00000200 **Automatic Channel Routing**
When activated, the user's own channel routing is automatically activated during log-in. Otherwise, the channel routing has to be manually loaded after having logged-in.

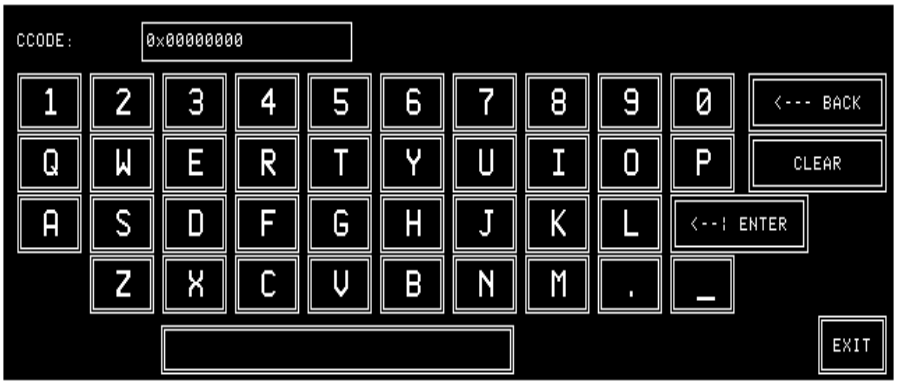
Code 0x00000400 **Higher Attenuation of Sum Signal During Talkback**
Allows to attenuate the “N” content of the N–1 signal by a further 10 dB, improving the intelligibility of the TB voice.

Customer Code Combinations:

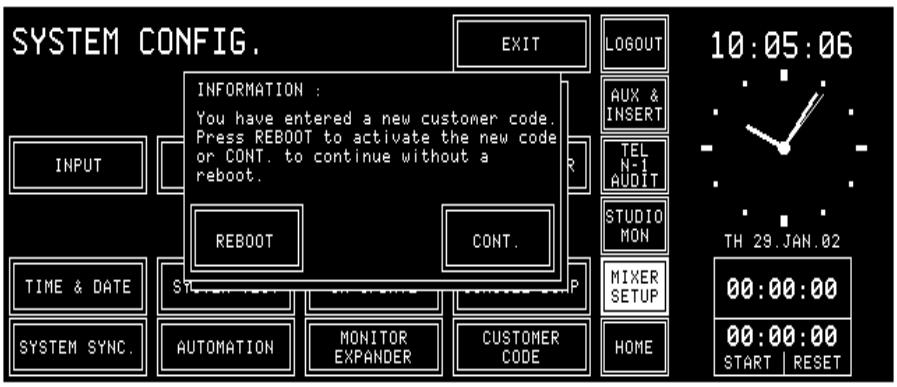
If more than one of the Customer Code functions are desired, the corresponding codes can be accumulated by just adding the code numbers. *Please note that the customer codes are displayed and entered in hexadecimal.*
For activating both the 0x00000004 and 0x00000008 codes, enter a customer code sum of 0x0000000C.

Customer Code Setting:

After touching CUSTOMER CODE on the SYSTEM CONFIG. page, the KEYBOARD page appears where the new code can be entered.



After confirmation with ENTER, the following dialog box appears. Now, you can either re-boot the system (REBOOT) which is necessary for the new code to become active, or continue (CONT.), then the code modification becomes active at the next power up of the console:



13 SW UPDATE

13.1 Software Structure

The OnAir 2000M2 software consists of the following packages:
- CPU software
- DSP software
- Peripheral modules and surface control software.
- Control Front Board software.

13.1.1 The CPU Software Package

Boot Software

The boot software part is installed in an EPROM and consists of:
- Hardware initialization
- Elementary hardware tests
- Start-up (or loading) of the application.

Application Software

The application part of the software package covers the remaining console functions. Program and data (current status, snapshots, configuration...) remain stored in memory after power-off, so that neither program nor data have to be loaded during normal operation. This is achieved by using a Flash memory.
The application software is loaded at the first start-up of the console (in the factory), and afterwards due to new releases and upgrades only. Program and data are installed in a Flash memory.
The application software is loaded from PC-Cards. For this purpose, read-only cards can be used.

13.1.2 DSP Software Package

The DSP software package is treated the same way as the CPU software package (application software).

13.1.3 Important Information for Software Update to V4.0

Software V4.0 requires compatible Control Front Board I firmware.
If software V4.0 is loaded without the corresponding firmware, the console will be blocked and cannot be used. In this case, either the former main software has to be re-loaded, the new Control Front Board I firmware must be installed, or the Control Front Board has to be replaced.

Studer will not take any responsibility nor accept warranty claims for not following this procedure.

Please note that the software upgrade to V4.0 is only possible from an existing version V3.0 or later. Should your console be equipped with an earlier software version (i.e. below V3.0), you must upgrade to V3.0 first due to a different memory structure and a hardware modification on the Controller Board. Please contact your distributor.

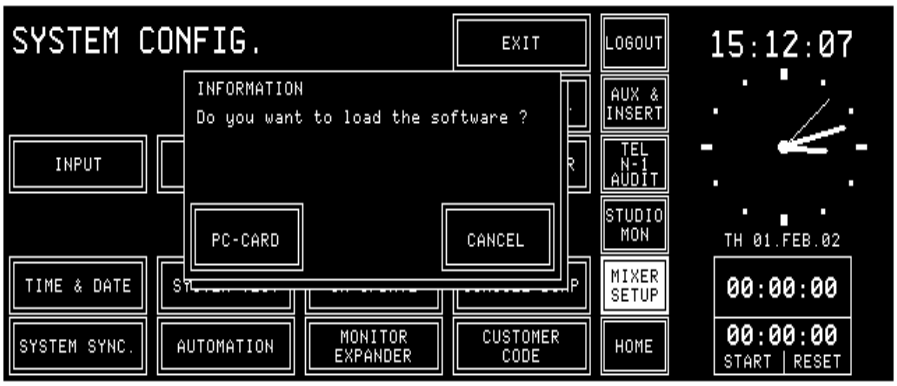
If your console should still be equipped with software V1.0, the DSP Board must be upgraded as well. Please contact your distributor.

If your console should be equipped with an early Power Supply PCB 1.942.105.00, the smoothing capacitors C11 and C16 (22'000 µF) must be modified to 33'000 µF (order no. 59.29.0323). Otherwise, after powering the console off and on again, a warning message "Flash Verification – Console Configuration corrupted!" or "Flash Verification – Current Console State corrupted!" could be displayed. In this case, normally the console can be operated as usual, without restrictions, but configuration changes might get lost from time to time.

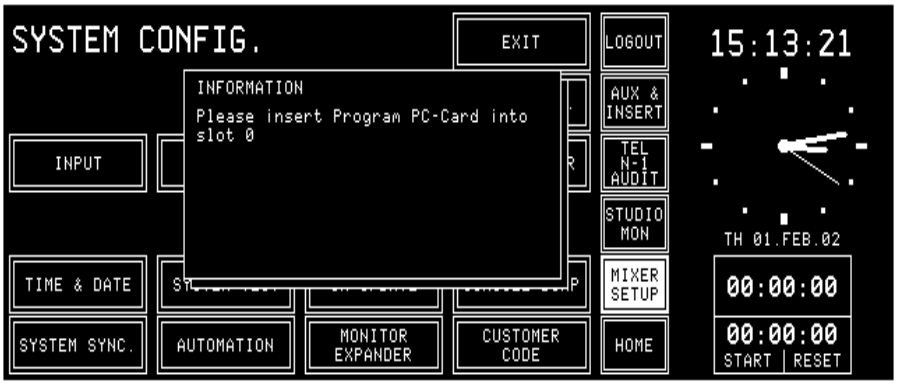
Please make sure that the console data are backed-up prior to any modification as the internal data structure is different. Note the current customer code setting (refer to chapter 12.2.12).

13.2 SW Update Procedure

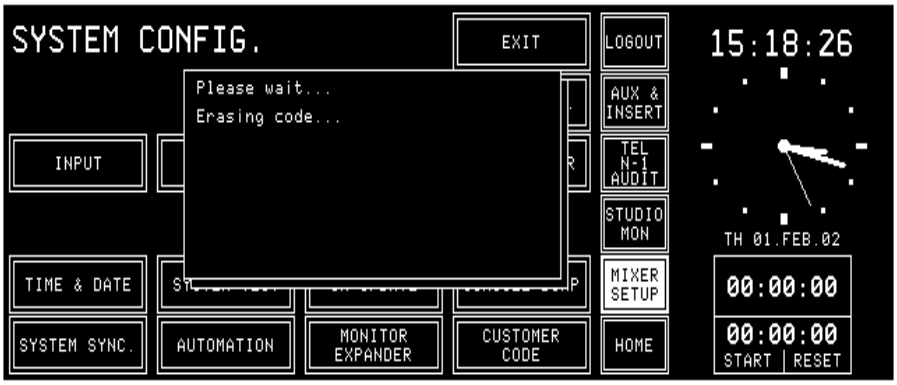
After touching the SW UPDATE field in the SYSTEM CONFIG. page, a dialog box appears, where the user can decide whether he wants to load the software (PC-CARD), or whether he wants to stop the software update procedure (CANCEL).



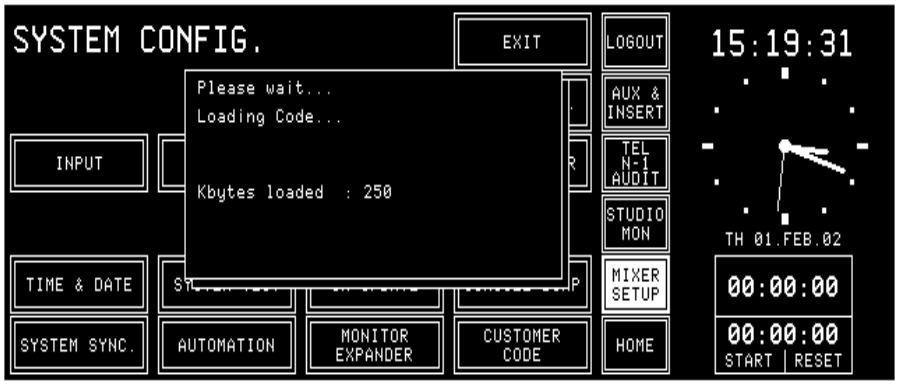
When canceling the software update, the program returns to the SYSTEM CONFIG. page. After touching the PC-CARD button in the dialog box, the next dialog box appears.



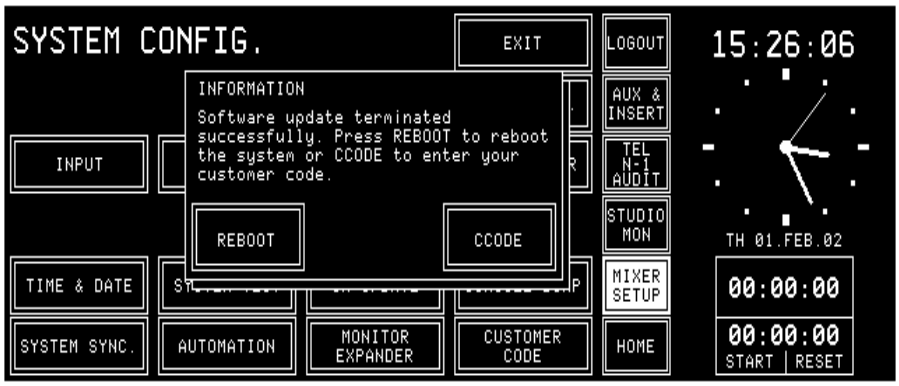
As soon as the software has detected a PC-Card in slot 0, the card is checked. If the PC-Card contains valid code, the software download starts. In a first step, the previous program of the console is erased.



Then the new software is copied from the PC-Card into the console's Flash EPROM. This will take several minutes.

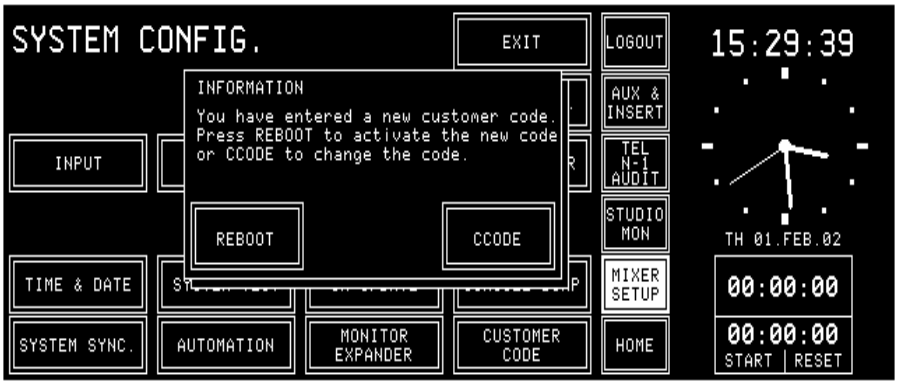


Finally the last dialog box appears. The system can now be re-booted (REBOOT) with the new software, or, if required and available, an optional customer code (CCODE) can be entered.



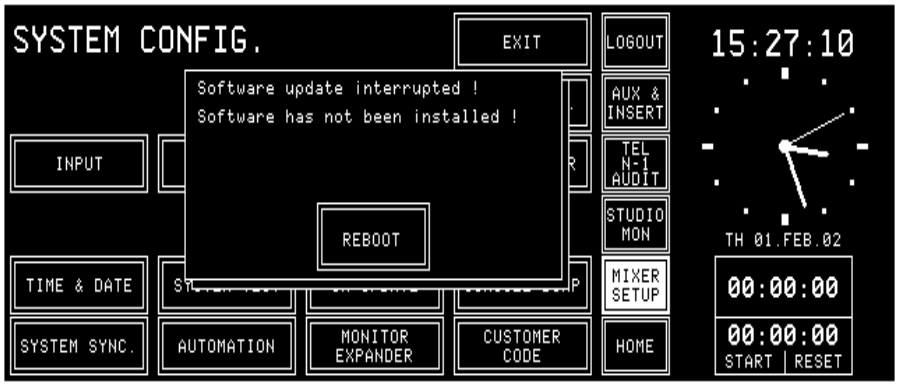
Any customer code (see chapter 12.2.12) will be reset to the default value (0x00000000) when updating the system software. This means that if your system had a customer code before, you need to re-enter it in order to have the particular features again.

After confirmation with ENTER, the following dialog box appears. Now, you can either re-boot the system (REBOOT) or touch CCODE to change the customer code:

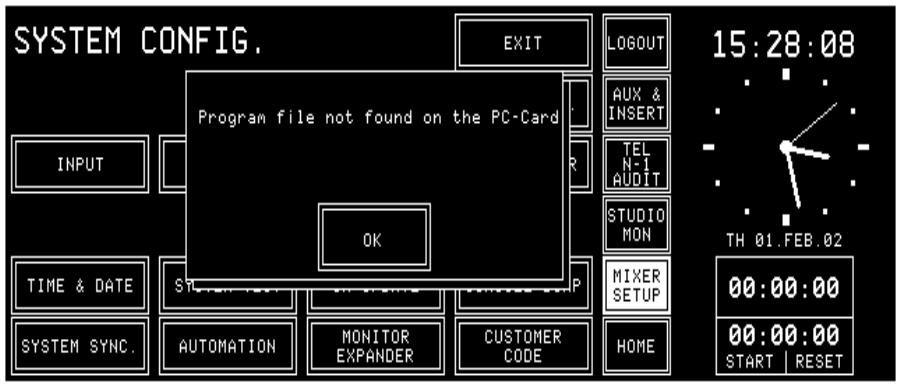


13.2.1 Error Handling

If the software update is interrupted by any reason, the system has to be rebooted. Afterwards, a message box appears with the message that the system software must be updated.



Should the PC-Card not contain valid code, the following dialog box appears. Insert a PC-Card with a valid software version; the download will then be restarted. If the download cannot be terminated correctly, the console can no more be used.



14 SYSTEM DIAGNOSTICS AND ERROR HANDLING

The OnAir 2000M2 error system concept consists of three topics:

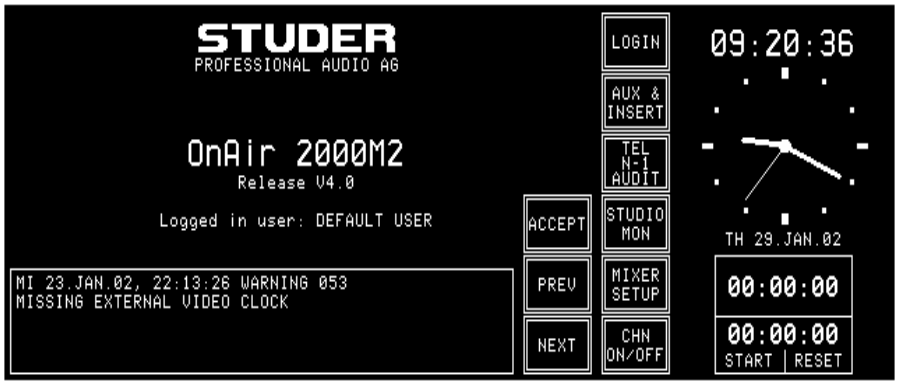
Diagnostics and Error Handling The system diagnostics software works completely in the background. The user takes notice of the diagnostics only in case of an irregularity. The system diagnostics consists of finding out the console's hardware configuration and detecting discrepancies to the system configuration. It also effects a hardware performance check during power-up. The error handling describes indications and actions on occurrence of errors and irregular behavior of the console detected by the system diagnostics software.

Failure of Restricted Functions Most of the OnAir 2000M2's functions do not have any restriction. However, there exist several functions which are restricted in some situations, e.g. loading a snapshot into a console the channel types of which do not match the ones of the snapshot (Mic/Line Inputs). The behavior of the console in case of restrictions is defined at the place where the function is described. The way the user is told about failures is defined globally in the following.

System Tests They are executed on the service engineer's demand to run some specific performance controls, e.g. to check the function of touch fields and faders. The console is switched to a special test mode for this purpose.

14.1 Error, Warning, and Information Messages

A message field in the HOME page is used by the system diagnostics software to indicate any messages.



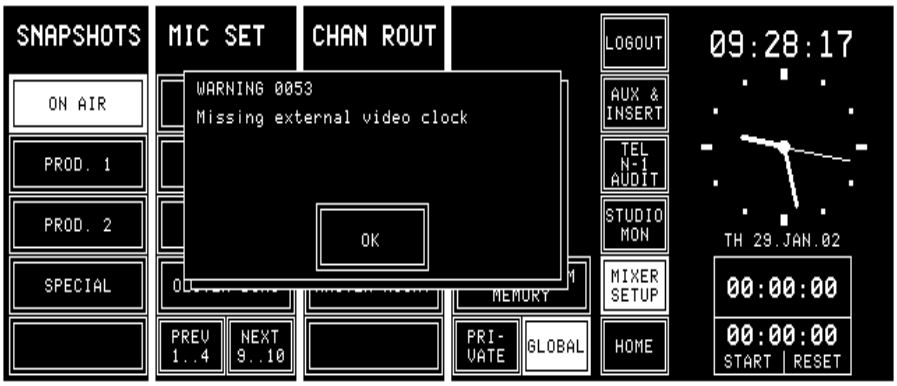
There are three types of messages: *Errors*, *Warnings*, and *Information*.

Errors are serious problems detected by the diagnostics software. Error messages are generated if a problem prevents the console from normal operation. In case of an error, the error handler cannot solve the problem.

Warnings are given to the user if the action required by the occurrence of a problem automatically changes any settings of the console so that operation is no longer the same, e.g. if the input type of a channel has changed since last power-off.

Information An information-type message is used by the system diagnostics telling the user that an action required by any conflict automatically changes console settings, but the console can at least be operated as it could before (e.g. if a 6-channel module has been added).

As more than one system message can occur at the same time, the diagnostics software manages a Log List containing one entry for each system message, completed by time and date of occurrence. If the Log List contains more than one entry, the PREV and NEXT fields appear on the central screen. This allows scrolling through different messages.
The Log List will be lost on power-down.
Warning and information messages can be acknowledged by the user, provided he has got access permission. This causes the diagnostics software to remove the message from the Log List.
Some entries in the Log List need to be indicated to the user immediately on their occurrence. A dialog box does this, regardless of the page currently selected on the central screen.



System diagnostics is performed during power-up as well as during operation. For more information see chapters 14.1.1 and 14.2.

14.1.1 System Diagnostics

Hardware Performance Check On power-up the diagnostics software executes some hardware device checks which may result in conflicts.

Communication Check On power-up the diagnostics software tries to establish communication to other microprocessors. If communication fails, an error message is displayed.

Configuration Check On power-up the diagnostics software finds out the current physical hardware configuration. Any difference to the hardware configuration before the last power-down (missing or additional options) results in a warning or information.

Diagnostics and Error Handling – System Configuration Detection				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
000	Information	no	no	Module for Channels [n] - [m] installed!
001	Information	yes	no	Module for Channels [n] - [m] added!
002	Warning	yes	no	Module for Channels [n] - [m] removed!
003	Information	no	no	Central Module installed!
004	Information	no	no	Central Module added!
005	Error	yes	yes	No communication to Central Module!
006	Information	no	no	Input Module for Channel [n] installed!
007	Information	yes	no	Input Module for Channel [n] added!
008	Warning	yes	no	Input Module for Channel [n] removed!
009	Information	yes	no	Channel [n] Input Type changed to Mic Input!
010	Information	yes	no	Channel [n] Input Type changed to Analog Line Input!
011	Information	yes	no	Channel [n] Input Type changed to Digital Line Input!
012	Information	yes	no	Channel [n] Input Selector changed to A/B!
013	Information	yes	no	Channel [n] Input Selector changed to 1/2/3/4/5/6!
014	Information	no	no	Digital Output Module for [output] installed!
015	Information	yes	no	Digital Output Module for [output] added!
016	Warning	yes	no	Digital Output Module for [output] removed!
017	Information	yes	no	Insert [n/m] Input Type changed to Analog Line Input!
018	Information	yes	no	Insert [n/m] Input Type changed to Digital Line Input!
019	Information	no	no	Monitoring Module installed!
020	Information	yes	no	Monitoring Module added!
021	Error	yes	yes	No communication to Monitoring Module!
022	Information	no	no	Time Sync Module installed!
023	Information	yes	no	Time Sync Module added!
024	Warning	yes	no	Time Sync Module removed!
025	Information	no	no	Insert [n/m] Module installed!
026	Information	yes	no	Insert [n/m] Module added!
027	Warning	yes	no	Insert [n/m] Module removed!
028	Information	no	no	Sync Module installed!
029	Information	yes	no	Sync Module added!
030	Warning	yes	no	Sync Module removed - Now Running on 48 kHz internal Clock Reference!
031	Information	no	no	Telephone Hybrid Control Module installed!
032	Information	yes	no	Telephone Hybrid Control Module added!
033	Warning	yes	no	Telephone Hybrid Control Module removed!
034	Information	no	no	Channel DSP for Channel [m/n] installed!
035	Information	yes	no	Channel DSP for Channel [m/n] added!
036	Warning	yes	yes	No communication to Channel DSP for Channel [m/n]!
038	Information	yes	no	Number of Channels increased to [n]!
039	Warning	yes	no	Number of Channels decreased to [n]!
043	Information	no	no	Sum DSP installed!
044	Warning	yes	yes	No communication to Sum DSP!
045	Information	no	no	Insert DSP installed!
046	Warning	yes	yes	No communication to Insert DSP!
047	Information	no	no	Aux DSP installed!
048	Warning	yes	yes	No communication to Aux DSP!
049	Information	yes	no	Channel Front Board type is OnAir 2000!
050	Information	yes	no	Channel Front Board type is OnAir 1000!
156	Information	yes	no	Number of Faders increased to [n]! *(n in hexadecimal)*
157	Information	yes	no	Number of Faders decreased to [n]! *(n in hexadecimal)*
158	Information	yes	no	Channel Routing reset to 1:1 mapping, since the number of Channels has been changed!
159	Information	yes	no	Channel Routing reset to 1:1 mapping, since the number of Faders has been changed!

Diagnostics and Error Handling – Hardware Performance				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
051	Warning	yes	yes	Watch RTC Failure! - RTC Device Missing - Device Faulty - Battery Low
052	Warning	yes	no	Missing External Clock - Now Running on 48 kHz internal Clock Reference!
053	Warning	yes	no	Missing External Video Clock

Diagnostics and Error Handling – Flash Checksum Tests				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
054	Warning	yes	yes	Flash verification - All Snapshots, Mic Settings and Channel Routings lost due to software version mismatch!
055	Warning	yes	yes	Flash verification - Customer Configuration corrupted!
056	Warning	yes	yes	Flash Verification - Console Configuration corrupted!
057	Warning	yes	yes	Flash Verification - Current Console State corrupted!
058	Warning	yes	yes	Flash Verification - Snapshot Block Checksum Verification Failure! [n] of [m] Global Snapshots loaded.
059	Warning	yes	yes	Flash Verification - Mic Setting Block Checksum Verification Failure! [n] of [m] Global Mic Settings loaded.
072	Warning	yes	yes	Flash verification - Channel Routing Block Checksum Verification failure! [n] of [m] channel routings loaded.

Diagnostics and Error Handling – PC-Card Battery Tests				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
060	Information	yes	yes	PC-Card Slot [%] – Card battery low. Replace battery immediately!
061	Warning	yes	yes	PC-Card Slot [%] – Card battery dead. Replace battery immediately!

Diagnostics and Error Handling – Flash Checksum Tests				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
062	Warning	yes	yes	Flash verification – Snapshot Block Checksum Verification failure! [n] of [m] Private Snapshots loaded.
063	Warning	yes	yes	Flash verification – Snapshot Block Checksum Verification failure! [n] of [m] Private Mic Settings loaded.

Configurator				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
064	Information	yes	yes	Load Configuration Failure due to channel type mismatch! Channel [n] input parameters not reconfigured.
065	Information	yes	yes	Load Configuration Failure due to missing Channel Data in Configuration File! Channel [n] - [m] not reconfigured.
066	Information	yes	yes	Load Configuration Failure due to missing Input Data in Configuration File! Channel [n] Input 3 - 6 not reconfigured.
067	Information	yes	yes	Restore Configuration Failure due to channel type mismatch! Channel [n] not restored during EXIT.
068	Information	yes	yes	Restore Configuration Failure due to number of channels mismatch! Channel [n] - [m] not restored during EXIT.
069	Information	yes	yes	Restore Configuration Failure due to number of inputs mismatch! Channel [n] Input 3 - 6 not restored during EXIT.
073	Information	yes	yes	Input Selection for Channel [n] not activated, since the number of Inputs is 2 instead 6!
074	Information	yes	yes	New Channel Routing not activated, since the number of Channels or the number of Fader strips doesn't match the current configuration!
075	Information	yes	yes	Global Channel Routing not activated, since the number of Channels or the number of Fader strips doesn't match the current configuration!

Snapshot Controller				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
080	Information	yes	yes	Snapshot Recall not completed due to missing Input Data in Snapshot! Channel [n] Input 3 - 6 not recalled.
081	Information	yes	yes	Snapshot Recall not possible due to corrupted Snapshot Data!
096	Information	yes	yes	All Global Channel Routings used. - Only [n] of [m] Global Channel Routings loaded!
097	Information	yes	yes	All Global Snapshots used.- Only [n] of [m] Global Snapshots loaded!
098	Information	yes	yes	All Private Snapshots used.- Only [n] of [m] Private Snapshots loaded!
099	Information	yes	yes	Snapshot Recall Failure due to channel type mismatch! Channel [n] not recalled.
100	Information	yes	yes	Snapshot Recall not completed due to missing Channel Data in Snapshot! Channel [n] - [m] not recalled.
101	Information	yes	yes	All Global Mic Settings used.- Only [n] of [m] Global Mic Settings loaded!
102	Information	yes	yes	Mic Setting not created - Input must be of type microphone!
103	Information	yes	yes	Mic Setting not recalled - Input must be of type microphone!

Snapshot Controller (cont.)				
104	Information	yes	yes	Mic Setting not recalled due to corrupted Mic Setting Data!
105	Information	yes	yes	Snapshot not loaded because user [%s] (owner of the Snapshot) is not defined on this mixing console!
106	Information	yes	yes	Mic Setting not loaded because user [%s] (owner of the Mic Setting) is not defined on this mixing console!
107	Information	yes	yes	All Private Mic Settings used.- Only [n] of [m] Private Mic Settings loaded!
108	Information	yes	yes	Recall not possible as selected Snapshot is not defined!
109	Information	yes	yes	Recall not possible as selected Mic Setting is not defined!
110	Information	yes	yes	Snapshot recall failure - channel [n] not available for insert assignment! Insert [m] not recalled.

PC-Card Controller				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
113	Information	yes	yes	PC-Card Slot [%] - Empty!
114	Information	yes	yes	PC-Card Slot [%] - Card not supported!
115	Information	yes	yes	PC-Card Slot [%] - Card not formatted!
116	Information	yes	yes	PC-Card Slot [%] - File not found!
117	Information	yes	yes	PC-Card Slot [%] - Card already formatted!
118	Information	yes	yes	PC-Card Slot [%] - Card write protected!
119	Information	yes	yes	PC-Card Slot [%] - Please wait, formatting in progress!
120	Information	yes	yes	PC-Card Slot [%] - Card formatted!
121	Information	yes	yes	PC-Card Slot [%] - Card write error, IFX errorcode = [n]
122	Information	yes	yes	PC-Card Slot [%] - Card read error, IFX errorcode = [n]
123	Information	yes	yes	PC-Card Slot [%] - Volume not mounted, no IFX workspace.
124	Information	yes	yes	PC-Card Slot [%] - Volume not mounted, bad BIOS Parameter Block.
127	Information	yes	yes	PC-Card Slot [%] - File Empty!
128	Information	yes	yes	PC-Card Slot [%] - Snapshot Block Checksum Failure! [n] of [m] Snapshots loaded.
129	Information	yes	yes	PC-Card Slot [%] - Mic Setting Block Checksum Failure! [n] of [m] Mic Settings loaded.
130	Information	yes	yes	PC-Card Slot [%] - Configuration Checksum Failure! Configuration not loaded.
131	Information	yes	yes	PC-Card Slot [%] - Snapshot Block Software Version mismatch!
132	Information	yes	yes	PC-Card Slot [%] - Mic Setting Block Software Version mismatch!
133	Information	yes	yes	PC-Card Slot [%] - Configuration Software Version mismatch!
134	Information	yes	yes	PC-Card Slot [%] – SW Update Prolib Version mismatch! SW not loaded.
136	Information	yes	yes	PC-Card slot [%] - Channel Routing Block Checksum failure! [n] of [m] Channel Routings loaded.
137	Information	yes	yes	PC-Card slot [%] - Channel Routing Block software version mismatch!
138	Information	yes	yes	PC-Card slot [%] - SW update central Module firmware incompatibility! Software not loaded.

Flash Programming				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
144	Error	yes	yes	Flash: Sector is protected. AMD error code = [n]
145	Error	yes	yes	Flash: Programming failure. Addr = [adr], prevData = [x], newData = [y], AMD error code = [n]
146	Error	yes	yes	Flash: Erase failure. AMD error code = [n]
147	Error	yes	yes	Flash: Odd address invalid with word access
148	Error	yes	yes	Flash: Memory access failed at address = [adr]
149	Error	yes	yes	Flash: AMD error code = [n]

User Interface				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
176	Information	yes	no	Due to insufficient memory the first 10 messages have been removed from the loglist

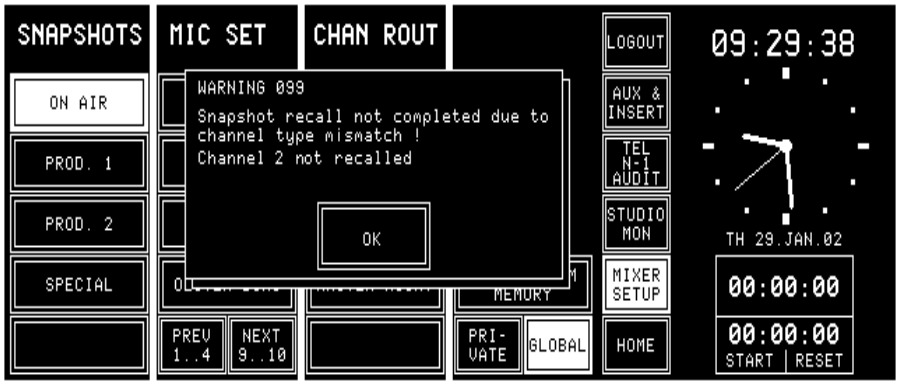
Automation Interface				
Error ID	**Type**	**Indication**	**Diag. Box**	**Error Text (Conflict)**
192	Warning	yes	no	Communication to Broadcast Automation lost!
193	Information	yes	no	Communication to Broadcast Automation established!

14.2 Indication on Failure of Restricted Functions

Usually, there is no indication of any error or warning if the execution of functions is prohibited in case of restrictions, because the user immediately notices whether the desired function is performed correctly. Nevertheless, some warnings need to be indicated to the user as a feedback, e.g. if a complete console dump fails because of a write-protected memory card.
The means to indicate to the user a failure during function execution is a dialog box appearing always at the same position on the central screen. It displays a system message and will disappear when the user acknowledges the message by touching the "OK" field in the box.
Each of these system messages is also entered to the Log List. To be removed from the Log List, it has to be acknowledged by the user.

To prevent from annoying the user with lots of warning and error message dialog boxes, they are generated only where it is not possible to notice function execution failure. In these cases an error message is generated if the function execution fails completely. A warning is given to the user if a function might be executed partially only.

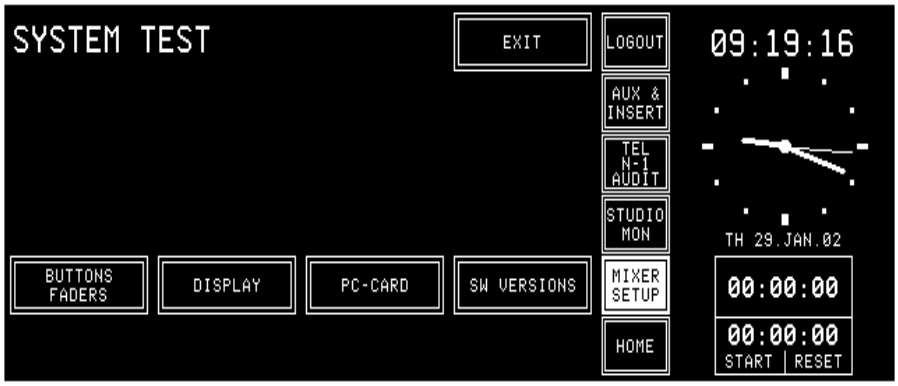
Example: The snapshot recall function could not set all channels due to different input types:



The user has to acknowledge the dialog box before any other action on the Central screen will be accepted. Touching the Channel screens, which would lead to a different page on the Central screen, will also be ignored as long as the dialog box has not been acknowledged.

14.3 System Test

The system test can be activated by touching the SYSTEM TEST field on the SYSTEM CONFIG. page. The SYSTEM TEST selection page appears on the central screen:

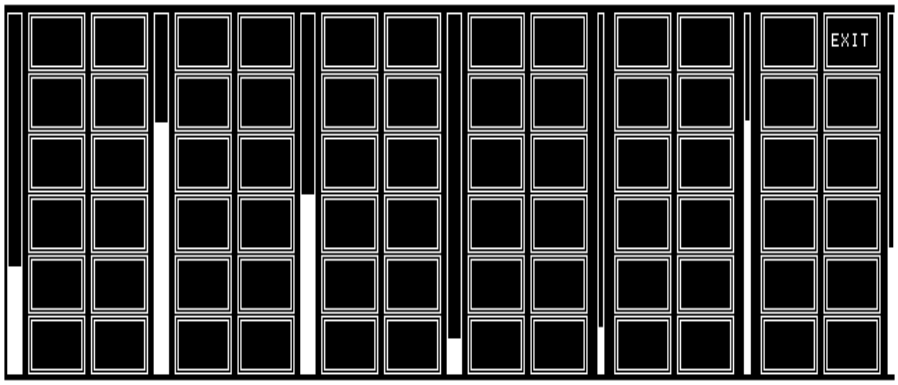


14.3.1 Buttons/Faders Test

Selecting the BUTTONS/FADERS test brings the console into a mode where the controls of the console can be checked. To return to the SYSTEM TEST selection page, the EXIT field has to be touched.

Keys and Lamps Test:

The PFL, ON, and OFF keys can be checked. If one of these keys is pressed, the corresponding LED lights; if PFL is pressed, also the OVL LED is on together with the LED in the PFL key.



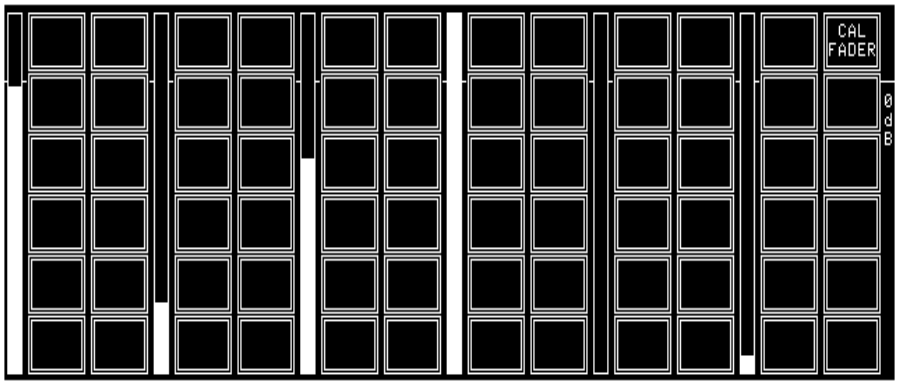
Central Screen Test:

If a field is touched on the central screen, it is highlighted.

Rotary Encoders Test:

If the rotary encoder is turned clockwise, the bar graph next to the rotary encoder increases. The three narrow bar graphs in the right-hand part of the screen are used for the MON, PFL/TB, and PHONES knobs. The full length of the bar graph corresponds to a complete turn of the rotary encoder.

Channel Screen Test: If a field is touched on one of the channel screens, it is highlighted.



For each fader, a bar graph indicates the current position.

14.3.2 Fader Calibration

SW V1.0 through 2.01: For calibrating the fader's zero position, set all fader knobs to their "0" mark and press the CAL FADER field (see screenshot above).

SW V2.02 and up: After having upgraded the channel front board software 1.942.920.21, it might be possible that fader start is always active. In such a case, the fader start trigger point needs to be calibrated. Please proceed as follows:

Fader Calibration: Enter the SYSTEM CONFIG. - SYSTEM TEST – BUTTONS/FADERS menu (if using the service terminal, *`enter the commands printed in italics`*).

0 dB Point: (always required!)

- Move all faders not to be calibrated to their –20 dB position (this position is ignored during calibration).
- Move the fader(s) to be calibrated to the 0 dB position.

Note: We strongly recommend to perform this adjustment for all the faders at the same time.

- Touch CAL FADER or, on the service terminal (only V2.0.1 and up), enter: *`call all <return>`*.

Fader Start Trigger Point: The fader start trigger point must be calibrated only for two reasons:

1. If using the optional kit from Penny&Giles (allows a mechanical detent when the fader is closed), or
2. In case of problems with the fader start control output signal, i.e. if fader start is active even if the fader is completely closed.

- Move all faders not to be calibrated to their –20 dB position (this position is ignored during calibration).
- Move the fader(s) to be calibrated, starting from the lower end, and set them to a position about 1 to 2 mm above the lower end (or just above the mechanical detent, if installed). This will be the point where the fader start output gets active after calibration.

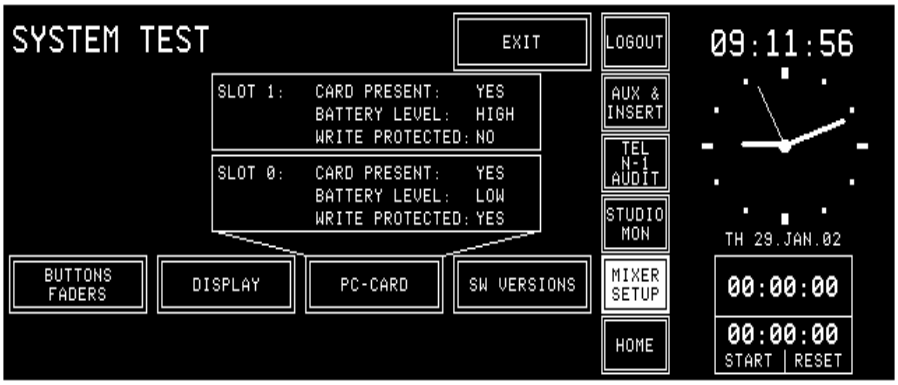
Note: We strongly recommend to perform this adjustment for *all* the faders at the same time.

- Touch CAL FADER or, on the service terminal (only V2.0.1 and up), enter:
  call all <return>.
- Close the fader(s) which just has/have been calibrated; the corresponding fader bar(s) on the channel screen should disappear.

14.3.3 Display Test

Selecting DISPLAY generates a test pattern on all available displays, allowing to check for faulty LCD pixels. This mode remains on until the central screen is touched again.

14.3.4 PC-Card Test



Two types of PC-Cards are used with the console:
- Program card, used for software upgrade
- Data card, used for storing and recalling console configuration, snapshot data, and mic settings

When having touched PC-CARD, the inserted PC-Card is checked for battery voltage and write protection.

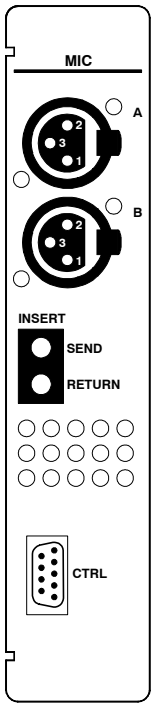
14.3.5 SW Versions Display

When having touched SW VERSIONS, the current software versions are displayed for every module.

With the PREV and NEXT fields, all available pages can be browsed.

15 HARDWARE MODULES

15.1 Mic Input Module 1.942.220.xx



Module with two inputs and A/B input selector. Inputs A and B are transformer-balanced mono microphone inputs. The maximum input level is such that also mono line level signals can be processed if required.
The analog path has an insert point right after the preamplifier stage. Both the insert send and insert return signals are electronically balanced. The nominal send and return levels are +6 dBu, with 9 dB headroom for 0 dB_{FS}.
The module address depends on the input channel number given to the module and is set with a DIP switch; refer to chapter 16.1. *Two modules must not have the same address.*

Pin Assignments:

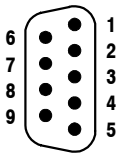
Microphone inputs A/B (XLR, 3pin, female):

Pin	Signal
1	Chassis
2	Input +
3	Input –

INSERT connectors (Bantam jacks):

Pin	Signal
T	Signal +
R	Signal –
S	Chassis

CTRL connector (D-type, 9pin, male):



Pin	Signal	Pin	Signal
1	CTRL OUT 1A	6	COMMON
2	+5 V SUPPLY	7	CTRL OUT 2B
3	CTRL OUT 2A	8	CTRL IN B
4	CTRL IN A	9	GND
5	CTRL OUT 1B		

Two control outputs (CTRL OUT xA/B) are available for each individual input, which can be used to start and/or cue external devices such as CD players, R-DAT units, or a radio automation system, or for redlight signaling. The control signals can be triggered by various functions and depend on the selected fader start mode (INPUT CONFIG. page). For details please refer to chapter 9. The CTRL OUT xA/B configuration is related to the input channel and not to the fader strip.

For CTRL OUT 1A/B, four operating modes are available:

NOT ACTIVE Output is always open.

ON & FADER Output is closed (i.e. pulled to GND) when the ON key is pressed *and* the fader is open.

PFL/ON & FADER Output is closed when *either* PFL is active (independent of the fader position), *or* when the ON key is pressed *and* the fader is open.

ON LAMP Output is closed while the ON lamp is illuminated.

For CTRL OUT 2A/B, eight operating modes are available:

NOT ACTIVE Output is always open.

LOCATE KEY Output is closed (i.e. pulled to GND) when the OFF key is pressed and the channel is active.

PREVIEW Output is closed when the PFL key is active and the PREVIEW function has been activated; the channel must be switched off.

LOCATE PFL KEY Output produces a pulse when the PFL key is deactivated (LOCATE function is activated).

ATTENTION Output is closed as long as the OFF key is pressed, independent of whether the channel is open or closed.

ON LAMP Output is closed while the ON lamp is illuminated.

LOCATE PFL/LOC KEY Combination of the LOCATE KEY and LOCATE PFL KEY functions.

STOP PULSE Output produces a pulse when the channel is switched off (OFF key and/or fader closed).

For details please refer to chapter 9.

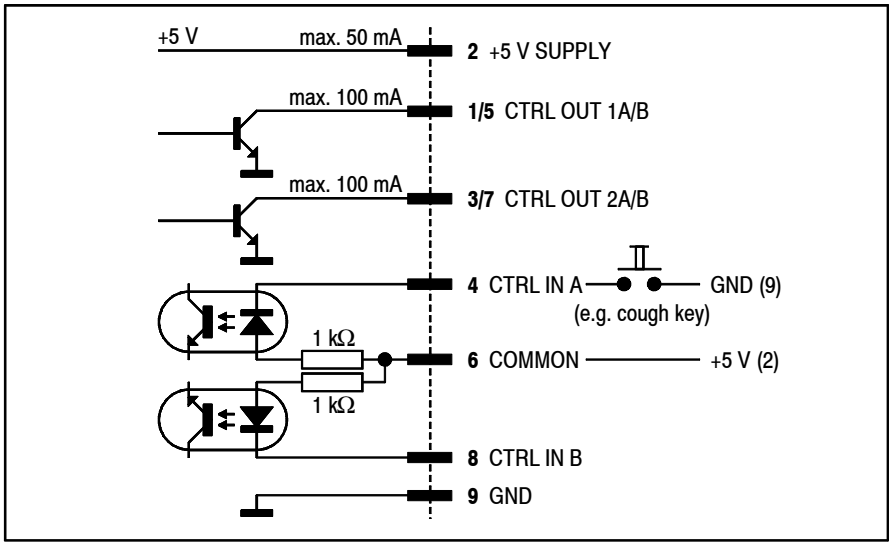
CTRL IN A/B can be used for muting the channel, for remote control of the ON/OFF key, or for entering ready status. Four operating modes are available:

NOT ACTIVE Input is inactive.

READY Acknowledgement of a ready signal.

EXT. MUTE Channel is muted (e.g. cough key).

EXT. ON/OFF External ON/OFF switchover.



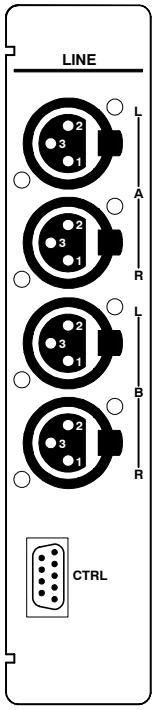
Notes: "COMMON" can be wired either to "+5 V SUPPLY" or to an external power supply (max. +15 V_{DC}). An active low control signal is connected between "CTRL IN A" or "CTRL IN B" and "GND". The inputs are opto-coupler inputs with internal 1 kΩ current limiting resistors.

All outputs are open-collector outputs. Small loads such as LEDs, opto-couplers, or relays can be driven directly. *Maximum current per open-collector output must not exceed 100 mA.*

The "+5 V" output can supply up to 50 mA for opto-couplers or relays. *The sum of all "+5 V" outputs for all input modules of a complete console must not exceed 800 mA!*

15.2 Analog Line Input Module

1.942.230.xx (w. transf.); 1.942.232.xx (el. bal.)



The analog line input module has an input selector for two stereo input sources (A and B). Inputs A and B are equivalent.
The module address depends on the input channel number given to the module and is set with a DIP switch; refer to chapter 16.1. *Two modules must not have the same address.*

Pin Assignments:

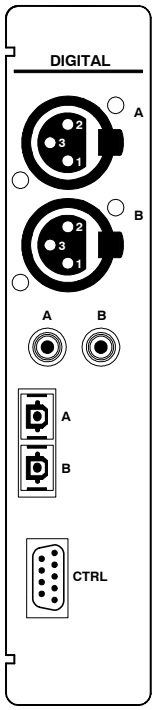
Line inputs A/B (XLR, 3pin, female):

Pin	Signal
1	Chassis
2	Input +
3	Input –

CTRL connector (D-type, 9pin, male): Please refer to chapter 15.1 for details.

15.3 Digital Input Module

1.942.240.xx



The digital input module has an input selector for two digital signals A and B. Each of the inputs has all connectors (XLR, Cinch, TOSLINK) required for supporting the AES/EBU and S/PDIF standards.
The most important C-bits (Professional, Audio, Emphasis, Sampling rate, Stereo) are read on the interface and transferred to the host controller. Audio and Emphasis bits are processed. The digital source needs not being synchronized to the console since the digital input module is equipped with a 20 bit sampling frequency converter (SFC).
The module address depends on the input channel number given to the module and is set with a DIP switch; refer to chapter 16.1. *Two modules must not have the same address.*

Pin Assignments:

AES/EBU inputs A/B (3pin, female):

Pin	Signal
1	Chassis
2	Input +
3	Input –

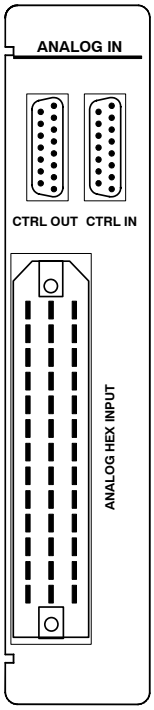
S/PDIF connectors A/B (RCA/Cinch):

Pin	Signal
Inner	Input
Outer	GND

Optical connectors A/B (TOSLINK): For optical-fibre cables.

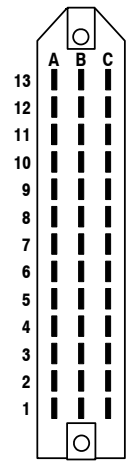
CTRL connector (D-type, 9pin, male): Please refer to chapter 15.1 for details

15.4 Analog Hex Input Module 1.942.245.xx (Option)



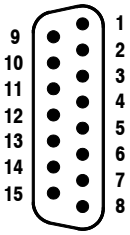
The analog hex line input module has an input selector for six stereo input sources (A...F). All inputs A...F are equivalent.
The module address depends on the input channel number given to the module and is set with a DIP switch; refer to chapter 16.1. *Two modules must not have the same address.*

Pin Assignments: **ANALOG HEX INPUT** (Siemens, 39pin, male):



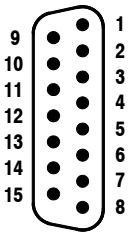
Pin	Signal	Pin	Signal	Pin	Signal
1A	Input A + left	1B	Input A – left	1C	Chassis
2A	Input A + right	2B	Input A – right	2C	Chassis
3A	Input B + left	3B	Input B – left	3C	Chassis
4A	Input B + right	4B	Input B – right	4C	Chassis
5A	Input C + left	5B	Input C – left	5C	Chassis
6A	Input C + right	6B	Input C – right	6C	Chassis
7A	Input D + left	7B	Input D – left	7C	Chassis
8A	Input D + right	8B	Input D – right	8C	Chassis
9A	Input E + left	9B	Input E – left	9C	Chassis
10A	Input E + right	10B	Input E – right	10C	Chassis
11A	Input F + left	11B	Input F – left	11C	Chassis
12A	Input F + right	12B	Input F – right	12C	Chassis
13A	n.c.	13B	n.c.	13C	n.c.

CTRL IN (D-type, 15pin, male):



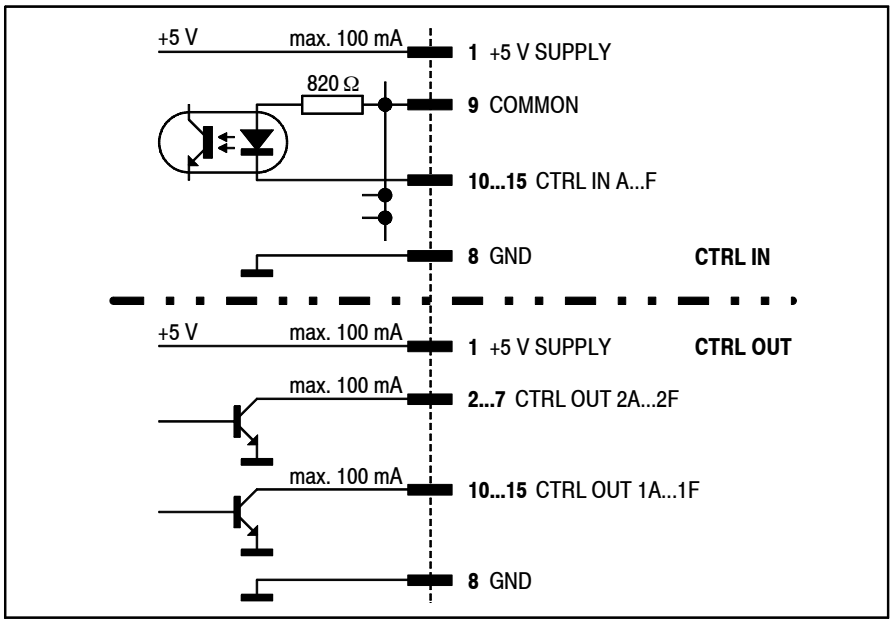
Pin	Signal	Pin	Signal	Pin	Signal
1	+5 V SUPPLY	6	n.c.	11	CTRL IN E
2	n.c.	7	n.c.	12	CTRL IN D
3	n.c.	8	GND	13	CTRL IN C
4	n.c.	9	COMMON	14	CTRL IN B
5	n.c.	10	CTRL IN F	15	CTRL IN A

CTRL OUT (D-type, 15pin, male):



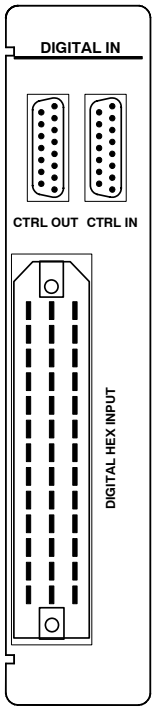
Pin	Signal	Pin	Signal	Pin	Signal
1	+5 V SUPPLY	6	CTRL OUT 2B	11	CTRL OUT 1E
2	CTRL OUT 2F	7	CTRL OUT 2A	12	CTRL OUT 1D
3	CTRL OUT 2E	8	GND	13	CTRL OUT 1C
4	CTRL OUT 2D	9	n.c.	14	CTRL OUT 1B
5	CTRL OUT 2C	10	CTRL OUT 1F	15	CTRL OUT 1A

The inputs are opto-coupler inputs with internal 820 Ω current limiting resistors.
All outputs are open-collector outputs. Small loads, such as LEDs, opto-couplers, or relays can be driven directly. *Maximum current per open-collector output must not exceed 100 mA.*
The "+5 V" output can supply up to 100 mA for opto-couplers or relays.
The sum of all "+5 V" outputs for all input modules of a complete console must not exceed 800 mA!



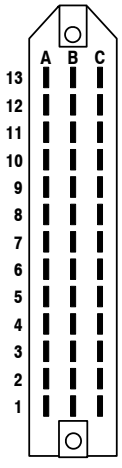
15.5 Digital Hex Input Module

1.942.250.xx (Option)



The digital hex input module has an input selector for six AES/EBU input sources (A...F). All inputs A...F are equivalent.
The module address depends on the input channel number given to the module and is set with a DIP switch; refer to chapter 16.1. *Two modules must not have the same address.*

Pin Assignments:



DIGITAL HEX INPUT (Siemens, 39pin, male):

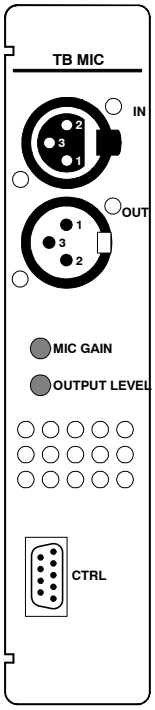
Pin	Signal	Pin	Signal	Pin	Signal
1A	Input A +	1B	Input A –	1C	Chassis
2A	Input B +	2B	Input B –	2C	Chassis
3A	Input C +	3B	Input C –	3C	Chassis
4A	Input D +	4B	Input D –	4C	Chassis
5A	Input E +	5B	Input E –	5C	Chassis
6A	Input F +	6B	Input F –	6C	Chassis
7A	n.c.	7B	n.c.	7C	Chassis
8A	n.c.	8B	n.c.	8C	Chassis
9A	n.c.	9B	n.c.	9C	Chassis
10A	n.c.	10B	n.c.	10C	Chassis
11A	n.c.	11B	n.c.	11C	Chassis
12A	n.c.	12B	n.c.	12C	Chassis
13A	n.c.	13B	n.c.	13C	n.c.

The input impedance is 110 Ω. The input also accepts S/PDIF signals. A 240 Ω resistor in parallel to the input pins may be required to adjust the input impedance to 75 Ω as defined by the S/PDIF standard.

CTRL IN (D-type, 15pin, male), **CTRL OUT** (D-type, 15pin, male):
Please refer to chapter 15.4.

15.6 TB Mic Input Module

1.942.219.xx (Option)



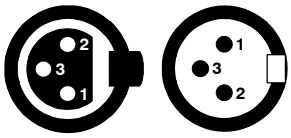
The TB Mic Input Module is used for connecting an internal or external talkback microphone (jumper-selectable). It offers a supply voltage for the internal unbalanced goose-neck electret microphone (order no. 1.942.218.xx), and a transformer-balanced XLR input for an external mic with jumper-selectable 48 V phantom power. The balanced input is available on a 3-pin AMP connector on the PCB as well. The input gain is set with a jumper (LO/HI) and is adjustable with a rear-panel trimmer potentiometer. An on-board limiter protects the output from an accidental overload.

The analog TB output is transformer-balanced and fed to an XLR (at the rear panel) and an AMP connector (on the PCB); an unbalanced AMP output is available on the PCB. The level of the balanced output is adjusted with a rear-panel trimmer potentiometer. The analog TB output must be activated by an external control signal or by a wire bridge in a dummy plug on the CTRL connector (connect pins 2-6 and 4-9)

For information on installation of an optional TB Mic Input Module and on configuration of the console as well as for jumper settings and pin assignment of the on-board connectors please refer to chapter 16.2.

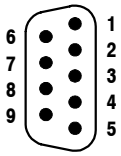
Pin Assignments:

TB MIC IN/OUT (XLR, 3pin, female/male)



Pin	Signal
1	Chassis
2	Input +/Output +
3	Input –/Output –

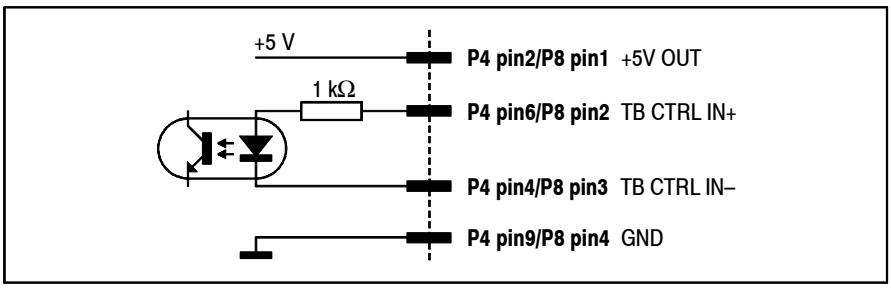
CTRL connector P4 (D-type, 9pin, male), P8 (on PCB AMP, 4pin, male)



P4, pin	P8, pin	Signal	P4, pin	P8, pin	Signal
1	-	n.c.	6	2	TB CTRL IN +
2	1	+5 V OUT	7	-	n.c.
3	-	n.c.	8	-	n.c.
4	3	TB CTRL IN –	9	4	GND
5	-	n.c.			

Control Input:

If a control signal is applied to “TB CTRL IN+” and “TB CTRL IN–”, the EXT TB MIC OUTPUT is activated.



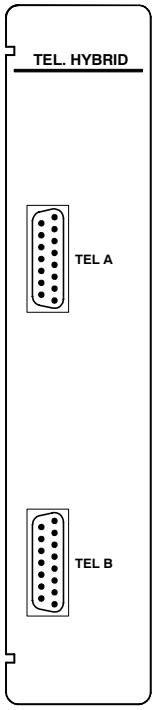
Notes:

“TB CTRL IN +” can be wired either to “+5 V OUT” or to an external supply (max. +15 V_{DC}). An active low control signal is connected between “TB CTRL IN – ” and “GND”. The input is an opto-coupler input with an internal 1 kΩ current limiting resistor.

The “+5 V OUT” output can supply up to 50 mA.

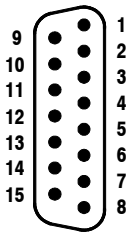
15.7 Telephone Hybrid Module

1.942.140.xx (Option)



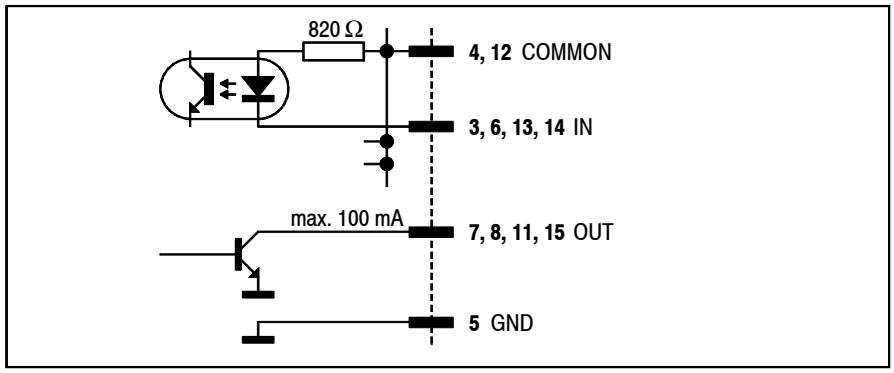
The telephone hybrid module is used to control two telephone hybrids from the console.
The module address *must always be set to the same value* by means of DIP switches; refer to chapter 16.3.

Pin Assignment:



TEL A/B (D-type, 15pin, male):

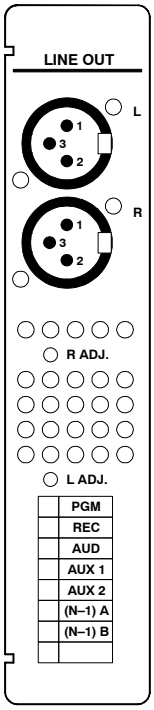
Pin	Signal	Pin	Signal	Pin	Signal
1	n.c.	6	Hold IN	11	Spare OUT
2	n.c.	7	Studio OUT	12	COMMON
3	Spare IN	8	Tel OUT	13	Tel IN
4	COMMON	9	n.c.	14	Studio IN
5	GND	10	n.c.	15	Hold OUT



The inputs are opto-coupler inputs with internal 820 Ω current limiting resistors.
All outputs are open-collector outputs. Small loads, such as LEDs, opto-couplers, or relays can be driven directly. *Maximum current per open-collector output must not exceed 100 mA.*

15.8 Analog Output Module

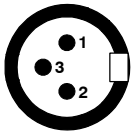
1.942.120.xx (with balancing transformers)



The analog output module provides a transformer-balanced, stereo or mono output signal (jumper-selectable).
The output signal selection is performed on the PCB by means of labeled jumpers.

Note: In mono mode, the output signals of the stereo DAC are added in the analog domain to increase the converters' dynamic range. Therefore, if the DAC input signal is a stereo signal, the resulting mono output level is increased by 3 dB referred to the stereo output, and if the DAC input signal is a mono signal, the resulting mono output level is increased by 6 dB. These level differences have to be compensated by adjusting the output level with the two trimmer potentiometers “R ADJ.” and “L ADJ.” accessible from the rear of the module.

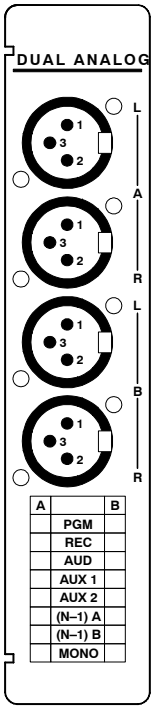
Pin Assignment: **Line output** (XLR, 3pin, male):



Pin	Signal
1	Chassis
2	Output +
3	Output –

15.9 Dual Analog Output Module

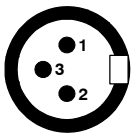
1.942.121.xx (with balancing transformers)



The dual analog output module provides a transformer-balanced, dual stereo or mono output signal (jumper-selectable).
The output signal selection is performed on the PCB by means of jumpers; refer to chapter 16.5.

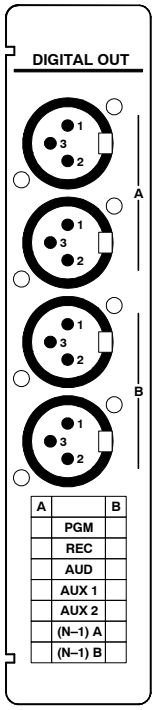
Note: In mono mode, the output signals of the stereo DAC are added in the analog domain to increase the converters' dynamic range. Therefore, if the DAC input signal is a stereo signal, the resulting mono output level is increased by 3 dB referred to the stereo output, and if the DAC input signal is a mono signal, the resulting mono output level is increased by 6 dB. These level differences have to be compensated by adjusting the output level with trimmer potentiometers located on the PCB; refer to chapter 16.5 for component locations.

Pin Assignment: **Line outputs A/B** (XLR, 3pin, male):



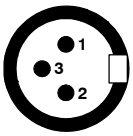
Pin	Signal
1	Chassis
2	Output +
3	Output –

15.10 Digital Output Module 1.942.124.xx



Each digital output module delivers two independent AES/EBU output signals. The most important C-bits (Professional, Audio, Emphasis, Sampling rate, Stereo) are set by the host controller. The output sampling rate is that of the console.
A pair of XLR connectors with separate signal drivers are provided for each of the two AES/EBU output signals.
The output signal selection is performed on the PCB by means of jumpers; refer to chapter 16.6.

Pin Assignment: **AES/EBU outputs A/B** (XLR, 3pin, male):



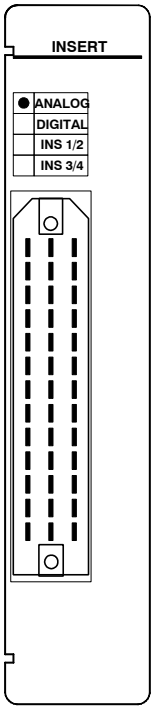
Pin	Signal
1	Chassis
2	Output +
3	Output –

C-Bits: The abovementioned C-bits are set as follows:

Professional:	PRO
Audio:	AUDIO
Emphasis:	NO EMPHASIS
Stereo:	depending on output configuration
Sampling rate:	According to the internal sampling rate measurement.

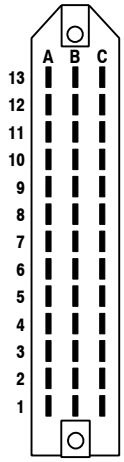
15.11 Analog Insert Module

1.942.160.xx (Option)



The analog insert module has two electronically balanced, stereo insert sends and insert returns that can be assigned to any of the input channels, or to the program or the record bus.
Selection of the channel to be assigned to the insert is performed on the AUX MASTER/INSERTS page by means of the fourth rotary encoder. Selection is possible only if the corresponding insert is set to OFF (i.e., the return signal is not routed to the output).
The insert assignment is related to an input and not to a fader. If the input signal is re-routed, the insert is re-assigned accordingly.
The insert send is always active; the return, however, is only active if the ON field of the corresponding insert (on the AUX MASTER/INSERT page) is activated.
The sends are equipped with an internal limiter located before the D/A converter to avoid overloads. Nominal insert level is +6 dBu with 9 dB headroom (i.e. maximum level is +15 dBu for 0 dB_{FS}).
Up to two insert modules (analog, digital, or mixed) can be installed in a console. The insert 1/2 (1st module) or insert 3/4 (2nd module) selection is performed with a DIP switch for each module; refer to chapter 16.7.

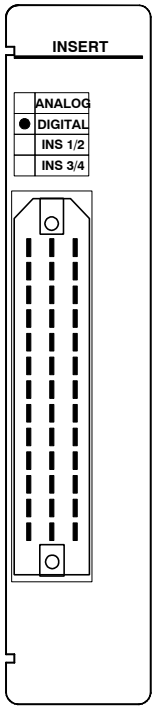
Pin Assignment: **INSERT** (Siemens, 39pin, male):



Pin	Signal	Pin	Signal	Pin	Signal
1A	Send 1/3 + left	1B	Send 1/3 – left	1C	Chassis
2A	Return 1/3 + left	2B	Return 1/3 – left	2C	Chassis
3A	Send 1/3 + right	3B	Send 1/3 – right	3C	Chassis
4A	Return 1/3 + right	4B	Return 1/3 – right	4C	Chassis
5A	Send 2/4 + left	5B	Send 2/4 – left	5C	Chassis
6A	Return 2/4 + left	6B	Return 2/4 – left	6C	Chassis
7A	Send 2/4 + right	7B	Send 2/4 – right	7C	Chassis
8A	Return 2/4 + right	8B	Return 2/4 – right	8C	Chassis
9A	n.c.	9B	n.c.	9C	Chassis
10A	n.c.	10B	n.c.	10C	Chassis
11A	n.c.	11B	n.c.	11C	Chassis
12A	n.c.	12B	n.c.	12C	Chassis
13A	n.c.	13B	n.c.	13C	n.c.

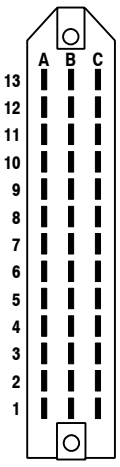
15.12 Digital Insert Module

1.942.165.xx (Option)



The digital insert module has two transformer-coupled AES/EBU insert sends and insert returns, which can be assigned to any of the input channels, or to the program or the record bus.
Selection of the channel to be assigned to the insert is performed on the AUX MASTER/INSERTS page by means of the fourth rotary encoder. Selection is possible only if the corresponding insert is set to OFF (i.e., the return signal is not routed to the output).
The insert assignment is related to an input and not to a fader. If the input signal is re-routed, the insert is re-assigned accordingly.
The insert send is always active; the return, however, is only active if the ON field of the corresponding insert (on the AUX MASTER/INSERT page) is activated.
The sends are equipped with an internal limiter which is located before the AES/EBU driver stage in order to avoid overloads. Nominal insert level is 9 dB below full modulation (0 dB_{FS}).
The sends are synced to the console's clock, while the returns are equipped with sampling frequency converters.
Up to two insert modules (analog, digital, or mixed) can be installed in a console. The insert 1/2 (1st module) or insert 3/4 (2nd module) selection is performed with a DIP switch for each module; refer to chapter 16.7.

Pin Assignment: **INSERT** (Siemens, 39pin, male):



Pin	Signal	Pin	Signal	Pin	Signal
1A	Send 1/3 +	1B	Send 1/3 –	1C	Chassis
2A	Return 1/3 +	2B	Return 1/3 –	2C	Chassis
3A	Send 2/4 +	3B	Send 2/4 –	3C	Chassis
4A	Return 2/4 +	4B	Return 2/4 –	4C	Chassis
5A	n.c.	5B	n.c.	5C	Chassis
6A	n.c.	6B	n.c.	6C	Chassis
7A	n.c.	7B	n.c.	7C	Chassis
8A	n.c.	8B	n.c.	8C	Chassis
9A	n.c.	9B	n.c.	9C	Chassis
10A	n.c.	10B	n.c.	10C	Chassis
11A	n.c.	11B	n.c.	11C	Chassis
12A	n.c.	12B	n.c.	12C	Chassis
13A	n.c.	13B	n.c.	13C	n.c.

15.13 Monitoring Module 1.942.134.xx /1.942.180.xx

The monitoring module is a (mainly analog) monitoring unit. It has five external analog inputs in addition to the console's internal buses. It provides analog output signals for headphones and loudspeakers in the control room and the studio.
The *Monitoring Module w. TB return 1.942.180.xx* provides an additional TB line input, as well as additional CR and studio control inputs.
For details refer to the block diagram in chapter 1, which is an overview over the complete signal processing functionality.

The parallel "STUDIO MON CTRL" interface (25-pin D-Type, male) allows the construction of a studio monitoring unit. The signals on this interface are:

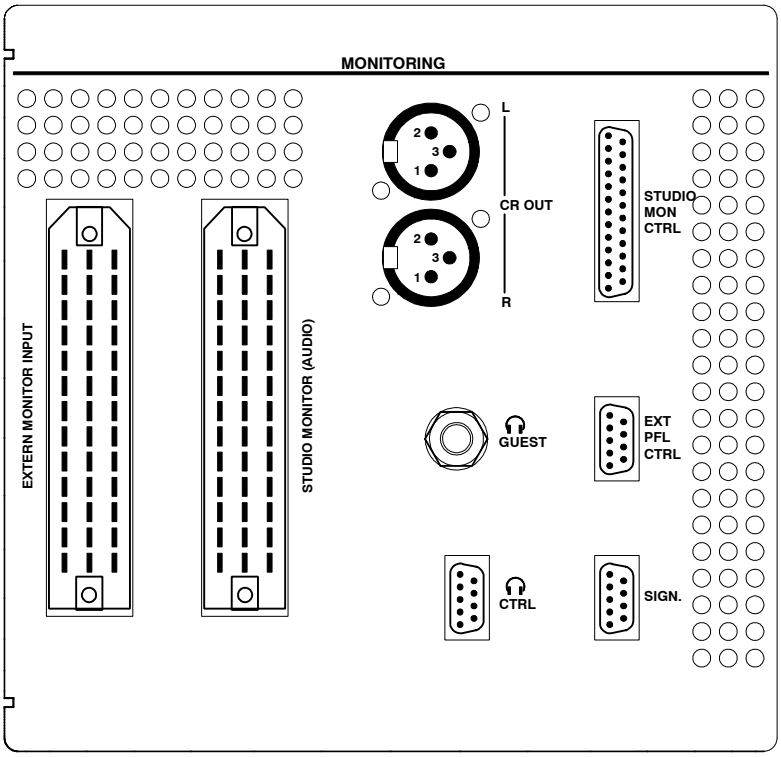
- 6 × monitor source selector in (opto-coupler inputs)
- 3 × talkback target in (opto-coupler inputs)
- 6 × source selector feedback out (open collector outputs)

The monitor sources and talkback targets are described in chapter 7, "Monitoring".

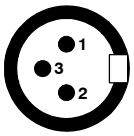
One of the external analog inputs on the module is used as a PFL input provided for a CAB (radio automation) system.
The following control signals are available for this purpose:

- 1 × External PFL IN (opto-coupler input)
- 1 × External PFL OUT (open-collector output)

The "EXT PFL CTRL" D-Type connector (9-pin, male) is used for the control signals from and to the CAB system. If "External PFL IN" is activated, the "EXT PFL" audio signal on the "EXTERN MONITOR INPUT" connector is routed to the PFL bus.
When pressing the "EXT PFL" key in the monitoring section, the "External PFL OUT" control signal on the "EXT PFL CTRL" connector is active, and the "EXT PFL" audio signal on the "EXTERN MONITOR INPUT" connector is routed to the PFL bus as well.

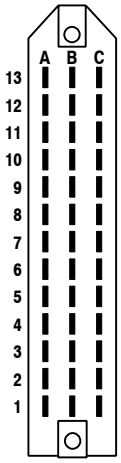


Pin Assignments: **CR OUT L/R** (XLR, 3pin, male):



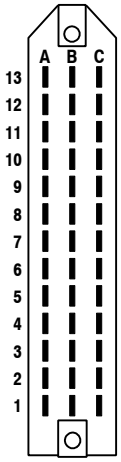
Pin	Signal
1	Chassis
2	Output +
3	Output –

EXTERN MONITOR INPUT (39-pin Siemens, male):



Pin	Signal	Pin	Signal	Pin	Signal
1A	EXT1 + left	1B	EXT1 – left	1C	Chassis
2A	EXT1 + right	2B	EXT1 – right	2C	Chassis
3A	EXT2 + left	3B	EXT2 – left	3C	Chassis
4A	EXT2 + right	4B	EXT2 – right	4C	Chassis
5A	OFF AIR + left	5B	OFF AIR – left	5C	Chassis
6A	OFF AIR + right	6B	OFF AIR – right	6C	Chassis
7A	EXT3 + left	7B	EXT3 – left	7C	Chassis
8A	EXT3 + right	8B	EXT3 – right	8C	Chassis
9A	EXT PFL + left	9B	EXT PFL – left	9C	Chassis
10A	EXT PFL + right	10B	EXT PFL – right	10C	Chassis
11A	n.c.	11B	n.c.	11C	Chassis
12A	n.c.	12B	n.c.	12C	Chassis
13A	n.c.	13B	n.c.	13C	n.c.

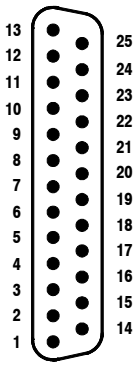
STUDIO MONITOR (AUDIO) output (39-pin Siemens, male):



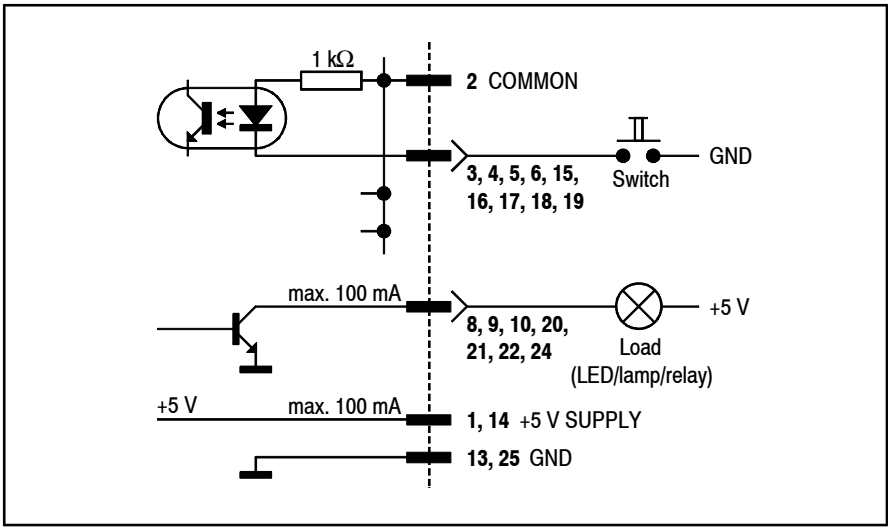
Pin	Signal	Pin	Signal	Pin	Signal
1A	Phones left	1B	GND	1C	Chassis
2A	Phones right	2B	GND	2C	Chassis
3A	Loudspeaker + left	3B	Loudspeaker – left	3C	Chassis
4A	Loudspeaker + right	4B	Loudspeaker – right	4C	Chassis
5A	n.c.	5B	n.c.	5C	Chassis
6A	n.c.	6B	n.c.	6C	Chassis
7A	n.c. / Ext. TB in + ***(note 3)***	7B	n.c. / Ext. TB in – ***(note 3)***	7C	Chassis
8A	n.c.	8B	n.c.	8C	Chassis
9A	Phones volume pot, wiper ***(note 1)***	9B	n.c.	9C	Chassis
10A	+5 V ***(note 2)***	10B	GND	10C	Chassis
11A	Speakers volume pot, wiper ***(note 1)***	11B	n.c.	11C	Chassis
12A	+5 V ***(note 2)***	12B	GND	12C	Chassis
13A	n.c.	13B	n.c.	13C	n.c.

Note 1: *10 kW lin. volume control potentiometers connected between +5 V and GND. Volume is maximum if wiper voltage is +5 V.*
Note 2: *100 W series resistors provided internally for short-circuit protection.*
Note 3: *Electronically balanced audio input available on 1.942.180.xx and 1.942.181.xx only.*

STUDIO MON CTRL (D-type, 25 pin, male):



Pin	Signal	Pin	Signal	Pin	Signal
1	+5 V SUPPLY	10	Lamp EXTERN	19	Switch TB TO TEL2
2	COMMON	11	Spare OUT2	20	Lamp PGM
3	Switch AUX1	12	n.c.	21	Lamp AUX2
4	Switch OFF AIR	13	GND	22	Lamp PFL
5	Switch EXTERN	14	+5 V SUPPLY	23	Spare OUT1
6	Switch TB TO TEL1	15	Switch PGM	24	Lamp STUDIO MIC ON
7	n.c.	16	Switch AUX2		
8	Lamp AUX1	17	Switch PFL	25	GND
9	Lamp OFF AIR	18	Switch TB TO CR		

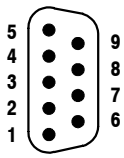


Notes: "COMMON" can be connected either to "+5 V SUPPLY" or to an external power supply (max. +15 V_{DC}). An active-low control signal is, for example, connected between "Switch AUX1" and "GND". The Switch inputs are opto-coupler inputs with an internal 1 kΩ current limiting resistor each.

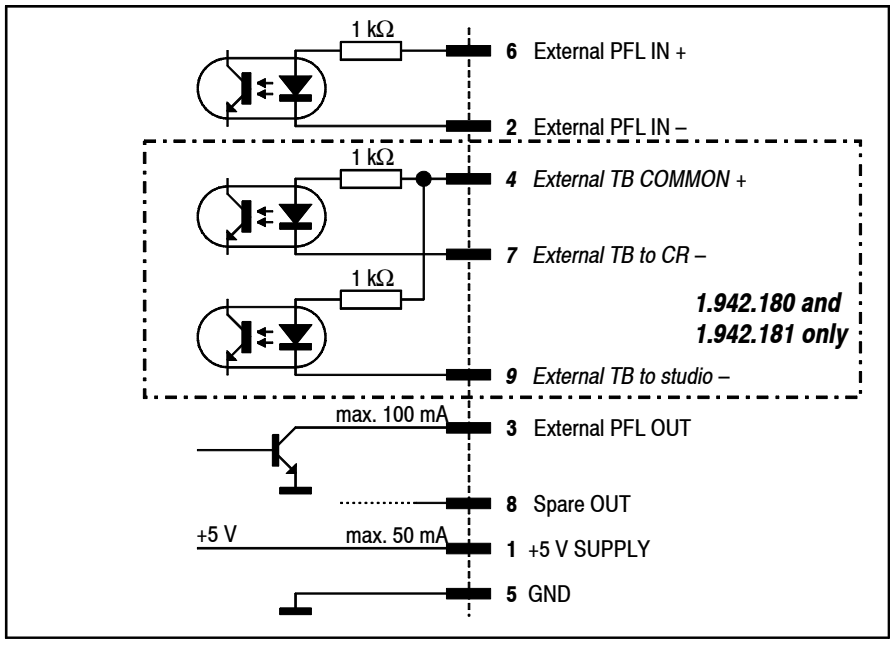
The outputs are open-collector outputs; small loads, such as LEDs, opto-couplers, or relays, can be driven directly. *The current must not exceed 100 mA per output.*

The "+5 V" supply current for LEDs or relays must not exceed 100 mA in total.

EXT PFL CTRL (D-type, 9 pin, male):

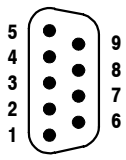


Pin	Signal	Pin	Signal
1	+5 V SUPPLY	6	External PFL IN +
2	External PFL IN –	7	n.c. / External TB to CR – ***(note 1)***
3	External PFL OUT	8	Spare OUT
4	External TB COMMON + ***(note 1)***	9	n.c. / Ext. TB to Studio – ***(note 1)***
5	GND		
Note 1:	*Available on 1.942.180.xx and 1.942.181.xx only.*		

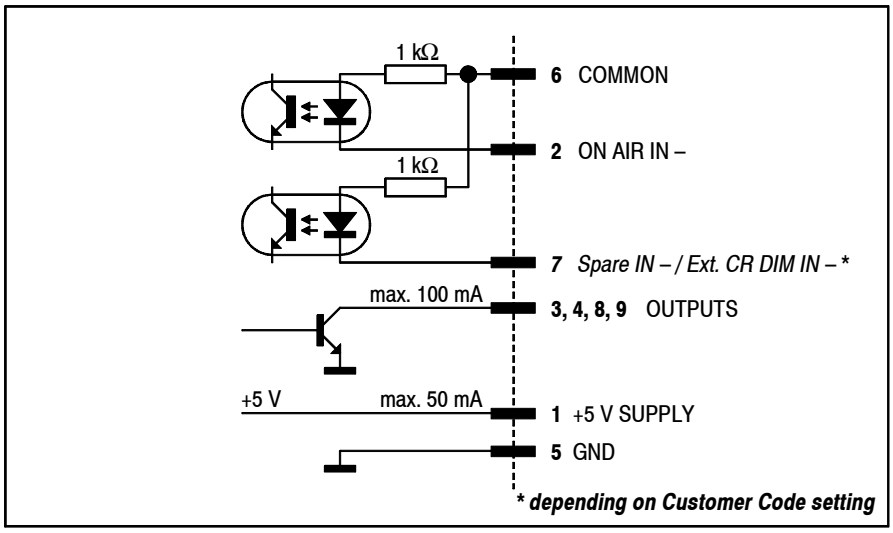


Notes: "External PFL IN +" and/or "External TB COMMON" can be connected either to "+5 V SUPPLY" or to an external power supply (max. +15 V_{DC}).
A pushbutton or an active-low control signal from a radio automation system is connected between the „ – " control inputs and "GND". The inputs are opto-coupler inputs with internal 1 kΩ current limiting resistors.
The "External PFL OUT" output is an open-collector output; small loads, such as an LED, an opto-couplers, or a relay can be driven directly. *The current must not exceed 100 mA.*
The "+5 V" supply current for an opto-coupler or a relay must not exceed 50 mA.

SIGN. (D-type, 9 pin, male):



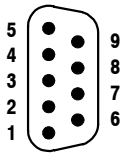
Pin	Signal	Pin	Signal
1	+5 V SUPPLY	6	COMMON
2	ON AIR IN –	7	Spare IN – or Ext. CR DIM IN – *
3	CR MIC OUT	8	STUDIO MIC OUT
4	PGM OUT	9	Spare OUT
5	GND	* depending on Customer Code setting	



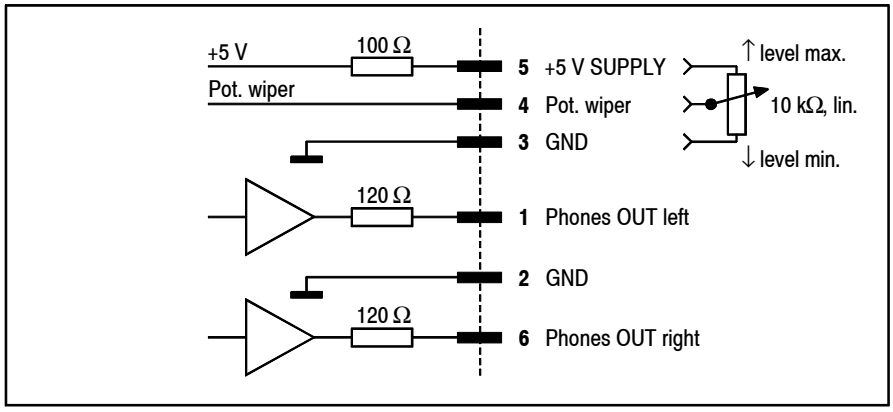
The “ON AIR IN – ” signal turns on the “ON AIR” lamp on the console's monitoring section.
The “CR MIC OUT” output is active if any microphone in the control room is on (i.e. fader open, ON pushbutton active, signal routed to the PROGRAM or RECORD bus).
The “STUDIO MIC OUT” output is active if any microphone in the studio is on (i.e. fader open, ON pushbutton active, signal routed to the PROGRAM or RECORD bus).
The “PGM OUT” output is active if any input channel is on (i.e. fader open, ON pushbutton active, signal routed to the PROGRAM or RECORD bus).
If set with the Customer Code (refer to chapter 12.2.12), an external control signal at the “Ext. CR DIM IN – ” input reduces (dims) the level of the CR monitor speakers by 20 dB.

Notes: “COMMON” can be connected either to “+5 V SUPPLY” or to an external power supply (max. +15 V_{DC}). Active-low control signals are connected between the control inputs and “GND”. The inputs are opto-coupler inputs with internal 1 kΩ current limiting resistors.
The outputs are open-collectors; small loads, such as LEDs, opto-couplers, or relays can be driven directly. *The current must not exceed 100 mA per output.*
The “+5 V” supply current must not exceed 50 mA.

🎧 **CTRL** (D-type, 9 pin, male):
This connector provides all the signals required for a guest headphone. The "Phones OUT" signal is the same as the one on the GUEST jack socket on the same module.



Pin	Signal	Pin	Signal
1	Phones OUT left	6	Phones OUT right
2	GND	7	n.c.
3	GND	8	n.c.
4	Potentiometer wiper	9	n.c.
5	+5 V SUPPLY		



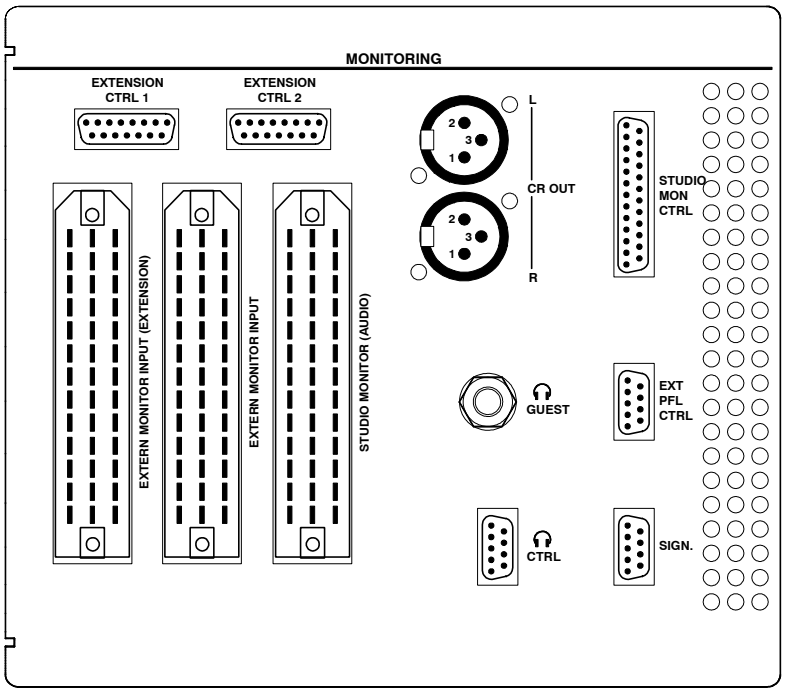
Notes: A linear 10 kΩ volume control potentiometer can be connected between "+5 V SUPPLY" and "GND". The volume is maximum if the wiper voltage is at +5 V.
The signal on pins 1 and 6 is the same as the one on the GUEST headphones jack socket.

15.14 Monitoring Module w. Extension 1.942.138.xx/1.942.181.xx (Option)

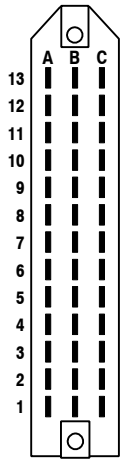
The monitoring module can be extended in two stages; in both cases, the basic functions of the monitoring module as described in chapter 15.13 will be maintained. The basic unit can be extended by one or two PCBs; in addition, a modified connector panel is required as well.

Monitor Extension 1: The extension 1.942.136.xx allows five more sources to be monitored, two of them being digital. Selection is made with the mutually releasing spare keys F1...F5 in the monitoring section or by external control signals via opto-couplers. Depending on the configuration, these keys can control other functions, too, such as relays or signaling functions etc. Two summing amplifiers and two relays used with the monitor extension 1+2 complete the functionality.

Monitor Extension 1+2: All functions mentioned above are included; in addition, two VCA modules, two electronically balanced line outputs, a D/A converter and two relays are installed on one more PCB (1.942.137.xx). These components allow the implementation of customer-specific circuits.

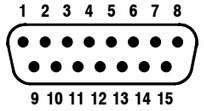


Pin Assignments: **EXTERN MONITOR INPUT (EXT.)** (39-pin Siemens, male):

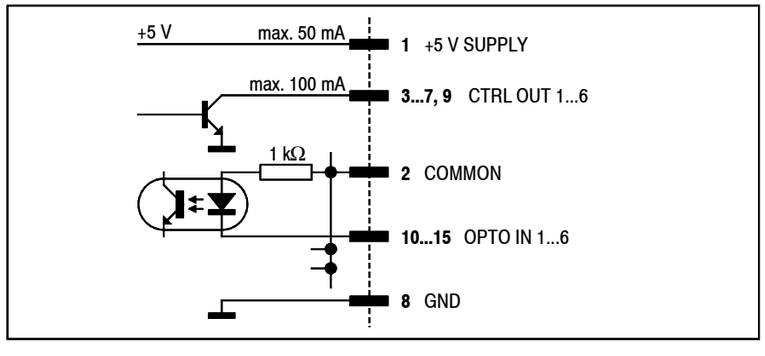


Pin	Signal	Pin	Signal	Pin	Signal
1A	EXT1 IN + left	1B	EXT1 IN – left	1C	Chassis
2A	EXT1 IN + right	2B	EXT1 IN – right	2C	Chassis
3A	EXT4 IN + left	3B	EXT4 IN – left	3C	Chassis
4A	EXT4 IN + right	4B	EXT4 IN – right	4C	Chassis
5A	EXT5 IN + left	5B	EXT5 IN – left	5C	Chassis
6A	EXT5 IN + right	6B	EXT5 IN – right	6C	Chassis
7A	EXT6 IN + left	7B	EXT6 IN – left	7C	Chassis
8A	EXT6 IN + right	8B	EXT6 IN – right	8C	Chassis
9A	EXT7 IN + (digital)	9B	EXT7 IN – (digital)	9C	Chassis
10A	EXT8 IN + (digital)	10B	EXT8 IN – (digital)	10C	Chassis
11A	EXT OUT + left	11B	EXT OUT – left	11C	Chassis
12A	EXT OUT + right	12B	EXT OUT – right	12C	Chassis
13A	n.c.	13B	n.c.	13C	n.c.

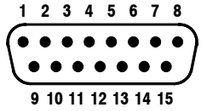
EXTENSION CTRL 1 (D-type, 15pin, male):



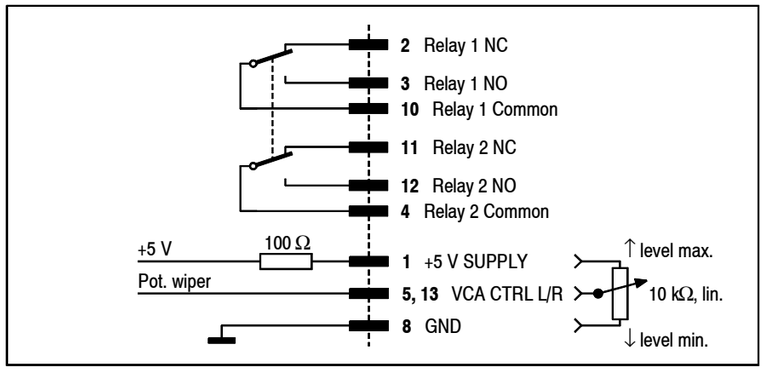
Pin	Signal	Pin	Signal	Pin	Signal
1	+5V SUPPLY	6	CTRL OUT 4	11	OPTO IN 2
2	COMMON	7	CTRL OUT 5	12	OPTO IN 3
3	CTRL OUT 1	8	GND	13	OPTO IN 4
4	CTRL OUT 2	9	CTRL OUT 6	14	OPTO IN 6
5	CTRL OUT 3	10	OPTO IN 1	15	OPTO IN 5



EXTENSION CTRL 2 (D-type, 15pin, male):

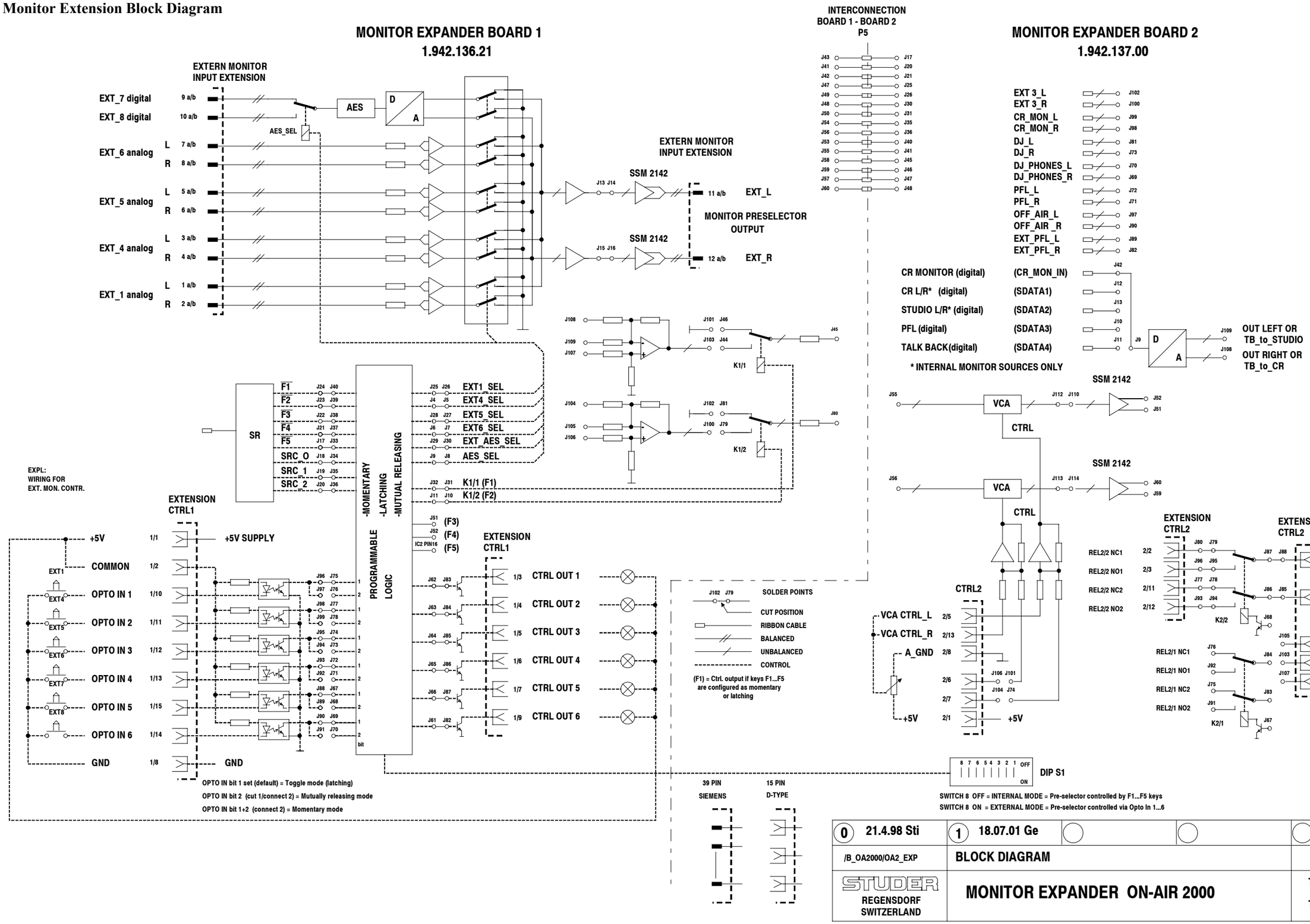


Pin	Signal	Pin	Signal	Pin	Signal
1	+5V SUPPLY	6	n.c.	11	Relay 2 NC
2	Relay 1 NC	7	n.c.	12	Relay 2 NO
3	Relay 1 NO	8	GND	13	VCA CTRL R (pot. wiper)
4	Relay 2 COMMON	9	n.c.	14	n.c.
5	VCA CTRL L (pot. wiper)	10	Relay 1 COMMON	15	n.c.



Note: The EXTENSION CTRL 2 connector is active for the monitor extension 1+2 only.

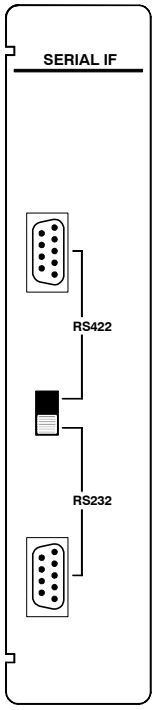
Monitor Extension Block Diagram



0 21.4.98 Sti	1 18.07.01 Ge			
/B_OA2000/OA2_EXP	BLOCK DIAGRAM			
STUDER REGENSDORF SWITZERLAND	MONITOR EXPANDER ON-AIR 2000			1.942.136.21 1.942.137.00

15.15 Serial Interface Module

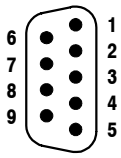
1.942.145.xx (Option)



This module provides a serial communication link according to either RS232 or RS422 specification (switch-selectable). It is used for the connection to and communication with a computer-assisted broadcasting system (CAB); for details on CAB systems refer to chapter 10.

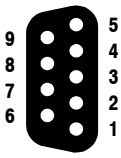
Pin Assignments:

RS422 (D-type, 9 pin, male):



Pin	Signal	Pin	Signal
1	GND	6	n.c.
2	RX + (PC to console)	7	RX – (PC to console)
3	TX – (console to PC)	8	TX + (console to PC)
4	n.c.	9	n.c.
5	n.c.	TX: transmit; RX: receive	

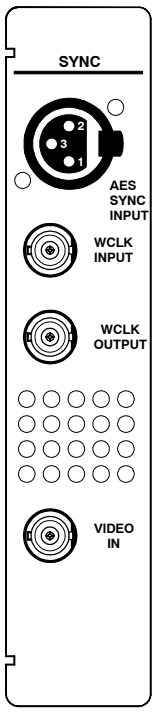
RS232 (D-type, 9 pin, female):



Pin	Signal	Pin	Signal
1	DCD ***(Note 1)***	6	DSR ***(Note 1)***
2	TX (console to PC)	7	RTS ***(Note 2)***
3	RX (PC to console)	8	CTS ***(Note 2)***
4	DTR ***(Note 1)***	9	n.c.
5	GND	TX: transmit; RX: receive	
Note 1: DCD, DTR, and DSR are connected internally ***Note 2:*** RTS and CTS are connected internally			

15.16 Clock Sync Module

1.942.135.xx (Option)



The OnAir 2000M2 console can be equipped with a clock sync module which allows the console to be synchronized to external clock sources. Synchronizing to the following external signals is provided:

AES/EBU 32 kHz, 44.1 kHz, 48 kHz;

Word clock 32 kHz, 44.1 kHz, 48 kHz;

Video sync 25 frames/s, 29.97 frames/s, 30 frames/s. The termination is jumper-selectable, refer to chapter 16.9. If synchronized to video sync, the sampling rate is either 48 kHz or, for 29.97 frames/s, 47.952 kHz.

If no clock sync module is installed or if no valid external clock signal is available, the console runs from its own internal 48 kHz clock reference.

Pin Assignments:

AES SYNC INPUT (3pin, female):

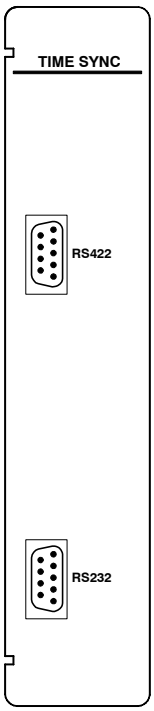
Pin	Signal
1	Chassis
2	Input +
3	Input –

WCLK INPUT, WCLK OUTPUT, VIDEO IN (BNC, 75 Ω):

Pin	Signal
Inner	Input
Outer	GND

15.17 Time Sync Module

1.942.150.xx (Option)



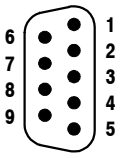
With a time sync module, the console's internal clock can be synchronized to an external time reference unit, such as a DCF77 or GPS receiver, or a Mobatime clock providing a serial output signal. The current software of the module supports AFNOR and Seiko protocols as well as SMPTE bi-phase timecode (Leitch).

For either of these time reference units (except AFNOR and SMPTE) the connector labeled RS232 is used. For ANOR and SMPTE signals, a transformer-balanced input is available on the RS422 connector. Please note the configuration (chapter 12.2.5) and the DIP switch and jumper setting (chapter 16.10), depending on the type of reference unit being used.

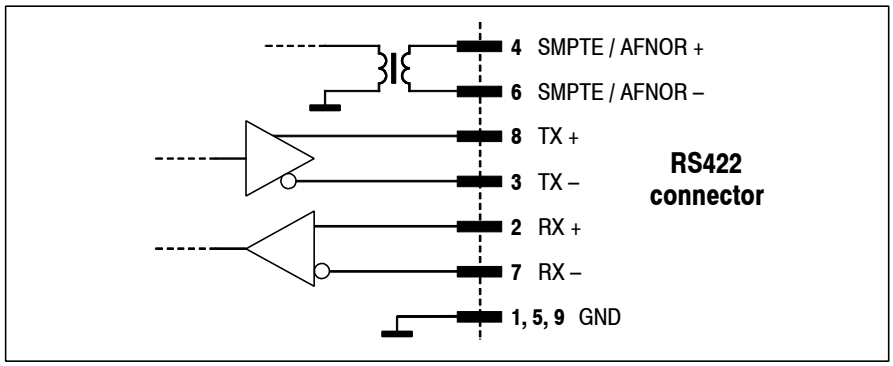
Note: The Time Sync Module software version is completely independent of the console software; this means that a Time Sync Module with the most recent software version supports all time sources available, even if installed in a console with the earliest software version.

Pin Assignments:

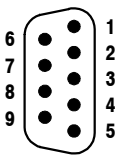
RS422 (D-type, 9 pin, male):



Pin	Signal	Pin	Signal
1	GND	6	SMPTE/AFNOR –
2	RX + (unit to console)	7	RX – (PC to console)
3	TX – (console to unit)	8	TX + (console to PC)
4	SMPTE/AFNOR +	9	GND
5	GND	TX: transmit; RX: receive	



RS232 (D-type, 9 pin, male):



Pin	Signal	Pin	Signal
1	+12 V ***(Note 1)***	6	+12 V ***(Note 1)***
2	RX (unit to console)	7	–12 V ***(Note 1)***
3	TX (console to unit)	8	–12 V ***(Note 1)***
4	+12 V ***(Note 1)***	9	n.c.
5	GND	TX: transmit; RX: receive	
Note 1: These voltages are available if jumpers 12-13 and 10-11 are inserted. *These outputs are very high-Z and must not be used, except for the specified DCF77 and MOBA receivers only!*			

16 DIP SWITCHES AND JUMPERS

Note: The DIP switch and jumper positions are printed on the PCBs, except for the TB Mic Input Module and the Analog Output Module; for these two assemblies, drawings have been included in the following chapters for component location.

16.1 Input Modules (Mic, Line, Digital)

Input Module Address:

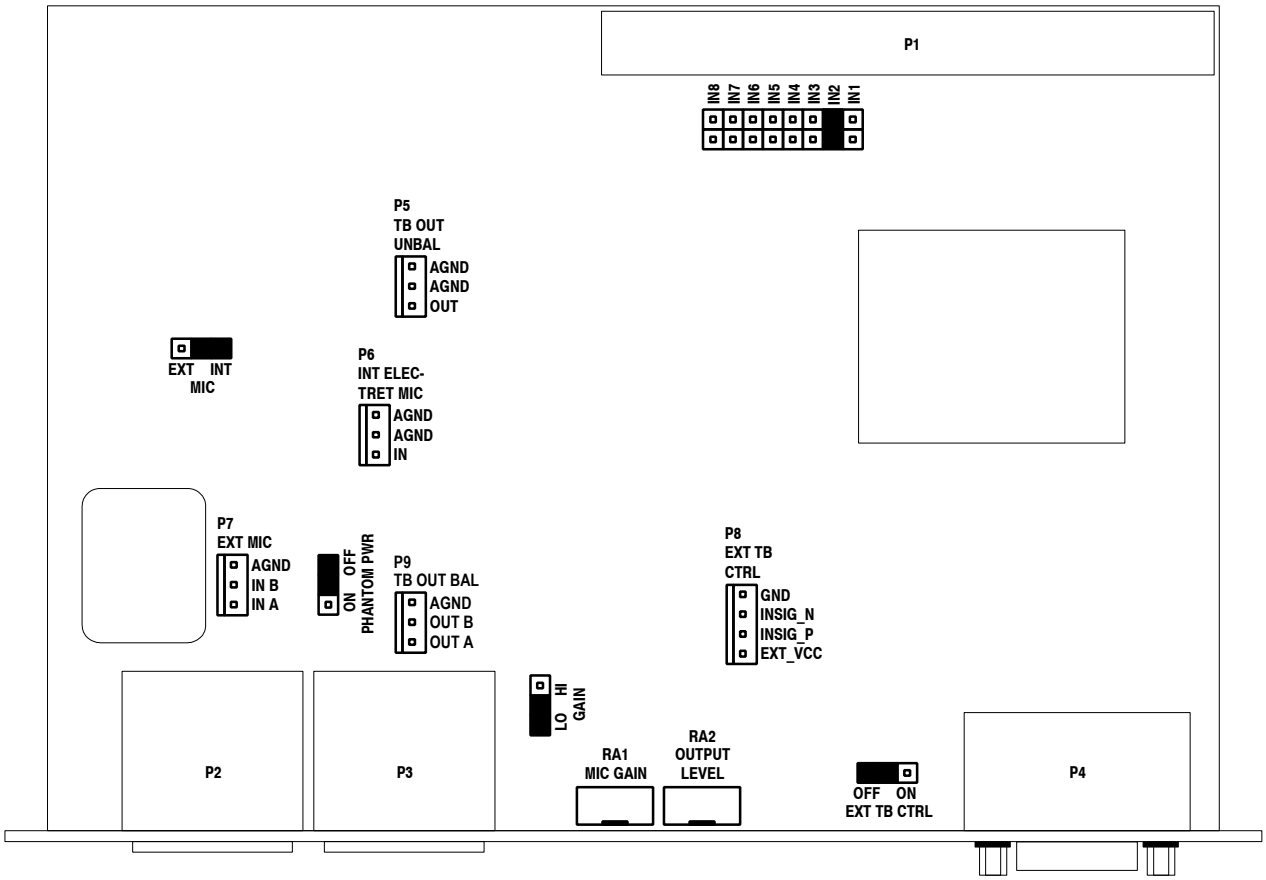
The physical input module's input channel number is defined with DIP switches or jumpers. The assignment of the input module relative to the fader strip, however, is done dynamically in the CHANNEL ROUTING page.

On the Mic, Line, and Digital Input Modules, the input channel number is set with DIP switches, according to the following table:

Input Channel No.:	DIP Switch No.: 1	2	3	4	5	6	7	8
1, 7, 13, 19	OFF	ON	ON	ON	ON	ON	ON	OFF
2, 8, 14, 20	ON	OFF	ON	ON	ON	ON	ON	OFF
3, 9, 15, 21	OFF	OFF	ON	ON	ON	ON	ON	OFF
4, 10, 16, 22	ON	ON	OFF	ON	ON	ON	ON	OFF
5, 11, 17, 23	OFF	ON	OFF	ON	ON	ON	ON	OFF
6, 12, 18, 24	ON	OFF	OFF	ON	ON	ON	ON	OFF

On the Talkback Mic Input Module, however, the address is set with a jumper (see chapter 16.2).

16.2 TB Mic Input Module



Jumper for Module Position:

When installing the TB Mic Input Module in an OnAir 2000M2 console, the console configuration must be updated.

6-Channel Console

- Configure as 12-channel console (on DSP Board: only CFG1 inserted).
- Connect the module to IMB2 of the DSP Board; any desired board address can be selected; *factory jumper setting is IN2 (see Note 1)*.
- Select MIXER SETUP / SYSTEM CONFIG. / INPUT, select CHANNEL 8, and set TB SOURCE to CR.

12-Channel Console

- Configure as 18-channel console (on DSP Board: only CFG0 inserted).
- Connect the module to IMB3 of the DSP Board; any desired board address can be selected; *factory jumper setting is IN2 (see Note 1)*.
- Select MIXER SETUP / SYSTEM CONFIG. / INPUT, select CHANNEL 14, and set TB SOURCE to CR.

18-Channel Console

- Configure as 24-channel console (on DSP Board: neither CFG0 nor CFG1 inserted).
- Connect the module to IMB4 of the DSP Board; any desired board address can be selected; *factory jumper setting is IN2 (see Note 1)*.
- Select MIXER SETUP / SYSTEM CONFIG. / INPUT, select CHANNEL 20, and set TB SOURCE to CR.

Note 1: The INx jumper position is related to one of the 6-channel sections of the console, as shown in the table:

Jumper position on TB Mic Input Module	IN1	IN2	IN3	IN4	IN5	IN6
On 6-ch console, select channel no.	7	8	9	10	11	12
On 12-ch console, select channel no.	13	14	15	16	17	18
On 18-ch console, select channel no.	19	20	21	22	23	24
factory setting						

24-Channel Console

- One of the input modules being already installed must be sacrificed when installing a TB Mic Input Module.
- Make sure that the correct address is set on the TB Mic Input Module; e.g., if the removed input module was no. 12 (or 18, or 24), setting the jumper to position “IN6” is correct (see table above).
- Connect the TB Mic Input Module to the same daisy-chain connector as the removed input module was connected to.
- Select MIXER SETUP / SYSTEM CONFIG. / INPUT, select CHANNEL “x”, and set TB SOURCE to CR (“x” is the number of the input module that was removed).

Remaining Jumpers:

MIC INT/EXT Input selection – either internal unbalanced microphone (i.e. the standard electret TB mic with fixed supply voltage), connected to P6, or external balanced microphone with switchable phantom power, connected to P2 or P7.

PHANTOM PWR ON/OFF Selection of 48 V phantom power for the balanced mic input (P2 or P7).

GAIN HI/LO For the internal standard electret TB mic, the LO position (nominal input level: –60 dBu) is used. In HI position, the mic input gain is increased by 20 dB, i.e. nominal input level –80 dBu.

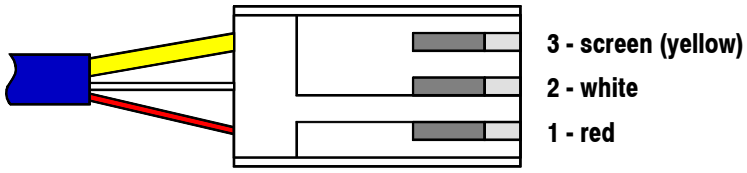
EXT. TB CTRL ON/OFF Activates or deactivates the external TB control input on P4 or P8.

IN1...8 Address selection – refer to the “Jumper for Module Position” paragraph above; factory setting: IN1.

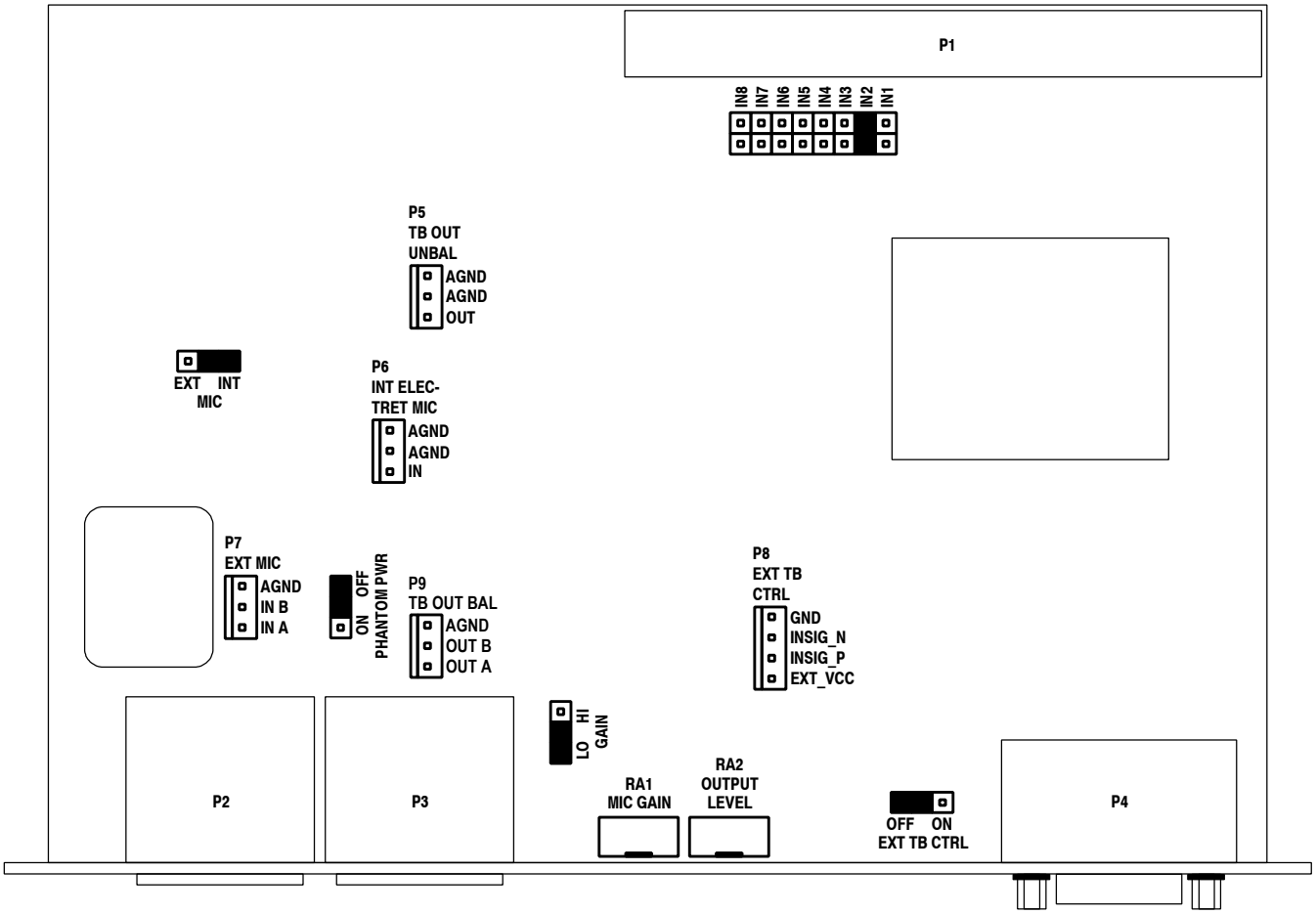
Connections:

TB Mic Input Module Connect the flat cable to the IMB connector on the DSP Board which corresponds to the selected console configuration. In a 24-channel console the TB Mic Input Module is connected to the same daisy-chain connector as the removed input module was connected to.

TB Mic Insert the contacts of the microphone cable into the AMP connector housing contained in the set, and make sure that the contact retaining springs engage:



Then plug the AMP connector to P6 of the TB Mic Input Unit.



PCB Connectors:

- **P6** Internal electret TB mic input (unbalanced)
- **P7** External, transformer-balanced mic input (parallel to P2)
- **P5** Unbalanced TB output
- **P9** Transformer-balanced TB output (parallel to P3)
- **P8** External TB control input (parallel to P4)

Adjustments:

- **RA1** MIC GAIN; the factory setting is performed for the electret TB mic. The integrated limiter just starts limiting at input levels above –60 dBu (GAIN jumper in LO position).
- **RA2** OUTPUT LEVEL; the factory setting corresponds to the customer-specified line level (adjustment range –10...+14 dBu).

16.3 Telephone Hybrid Interface

The DIP Switch on the Telephone Hybrid Control Module must *always* be set as follows:

DIP switch no.:							
1	2	3	4	5	6	7	8
OFF	OFF	ON	ON	ON	ON	ON	OFF

16.4 Analog Output Module

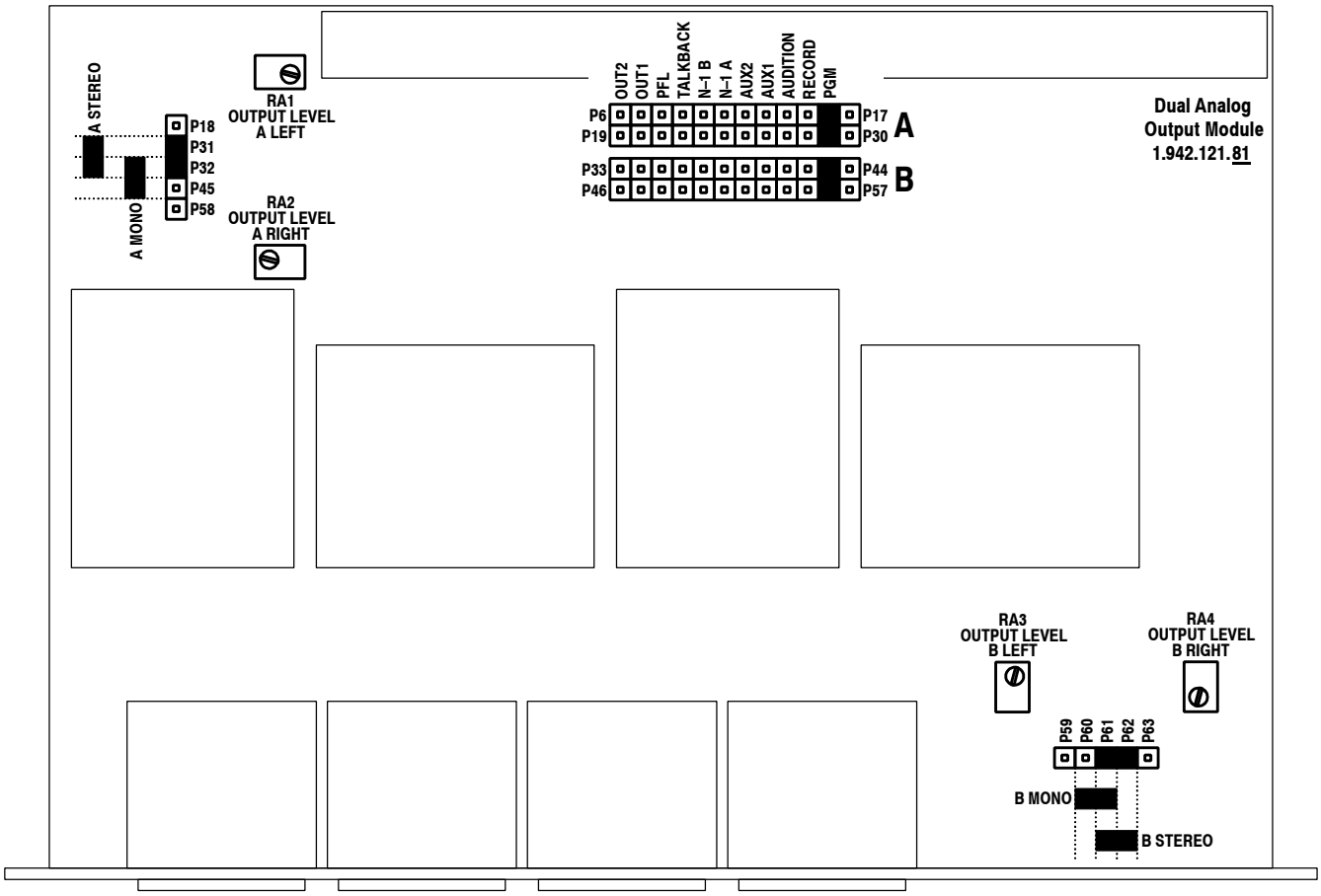
The Analog Output Module has labeled jumpers located on the PCB for mono/stereo selection and output signal selection.

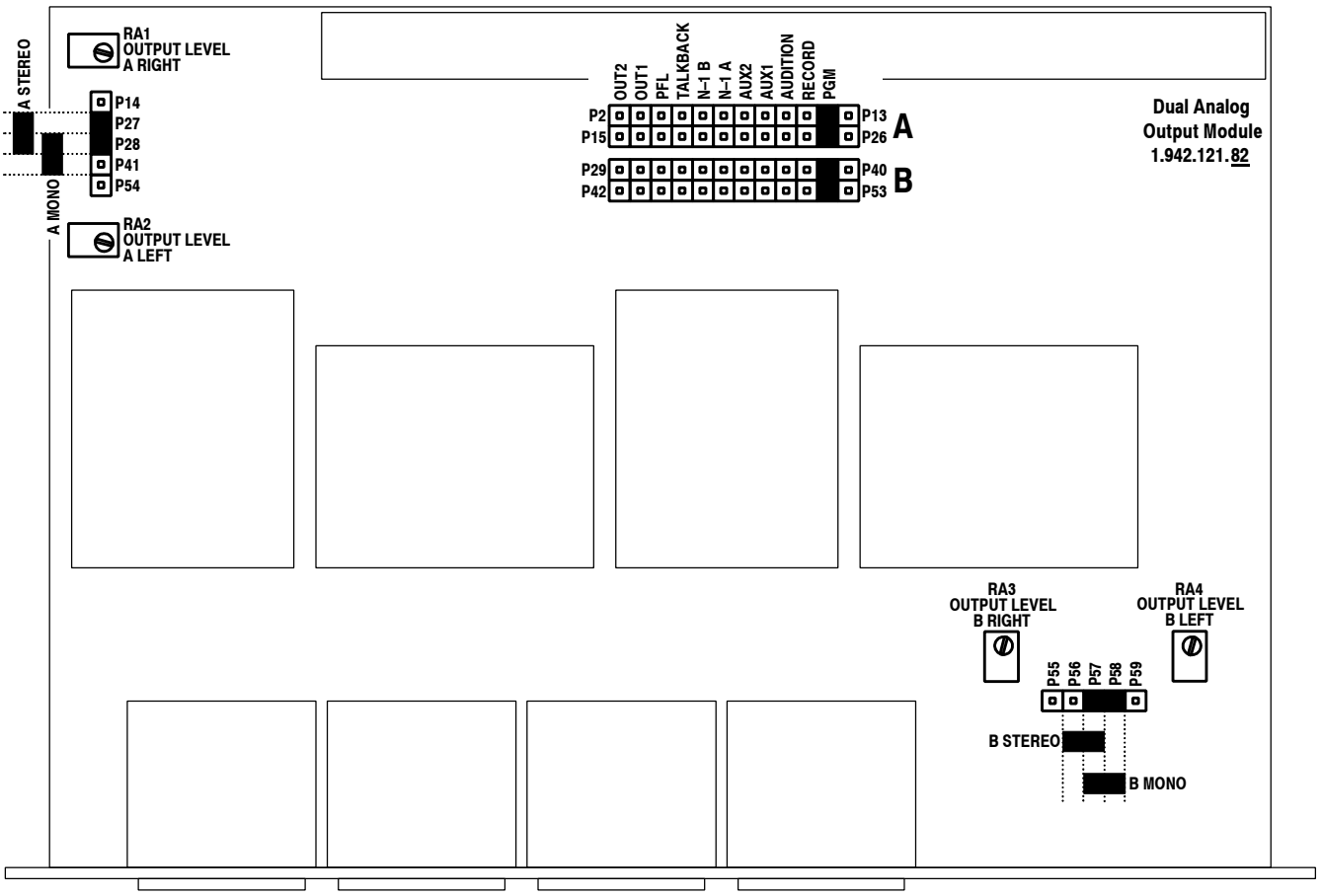
16.5 Dual Analog Output Module

Dual Analog Output Modules have jumpers for mono/stereo selection and output signal selection, individually for each output A and B.

Notes: *Jumper and trimmer potentiometer locations are different for the two PCB versions ...81 and ...82, as indicated in the two drawings below.*

Jumper positions OUT1 and OUT2 can be used for assignment of four additional N–1 outputs C...F; refer to chapter 5.3.1.





16.6 Digital Output Module

Digital Output Modules have two DIP switches (A and B) for output signal selection for each of the two independent outputs A and B. Selection is done according to the following table:

Output signal	DIP switch no.:							
	1	2	3	4	5	6	7	8
PROGRAM (PGM, ON-AIR)	ON	OFF	OFF	ON	ON	ON	ON	OFF
RECORD (REC)	OFF	OFF	OFF	ON	ON	ON	ON	OFF
AUDITION (AUD)	ON	ON	ON	OFF	ON	ON	ON	OFF
N–1 A	OFF	ON	ON	OFF	ON	ON	ON	OFF
N–1 B	ON	OFF	ON	OFF	ON	ON	ON	OFF
AUX 1	OFF	OFF	ON	OFF	ON	ON	ON	OFF
AUX 2	ON	ON	OFF	OFF	ON	ON	ON	OFF
OUT1 (N–1 C/D)	ON	OFF	ON	ON	OFF	ON	ON	OFF
OUT2 (N–1 E/F)	OFF	OFF	ON	ON	OFF	ON	ON	OFF

16.7 Analog/Digital Insert Module

The insert 1/2 or 3/4 address selection is performed with a DIP switch:

Module address	DIP switch no.:							
	1	2	3	4	5	6	7	8
Insert 1/2	ON	ON	OFF	ON	ON	ON	ON	OFF
Insert 3/4	OFF	ON	OFF	ON	ON	ON	ON	OFF

16.8 Monitoring Module

On the Monitoring Controller PCB, *all* DIP switches must be set to their OFF position.

16.9 Clock Sync Module

If P7 and P8 are connected with a jumper, the 75 Ω termination of the VIDEO IN input is active. If this jumper is removed, the input is terminated with 110 Ω.

16.10 Time Sync Module

DIP Switch

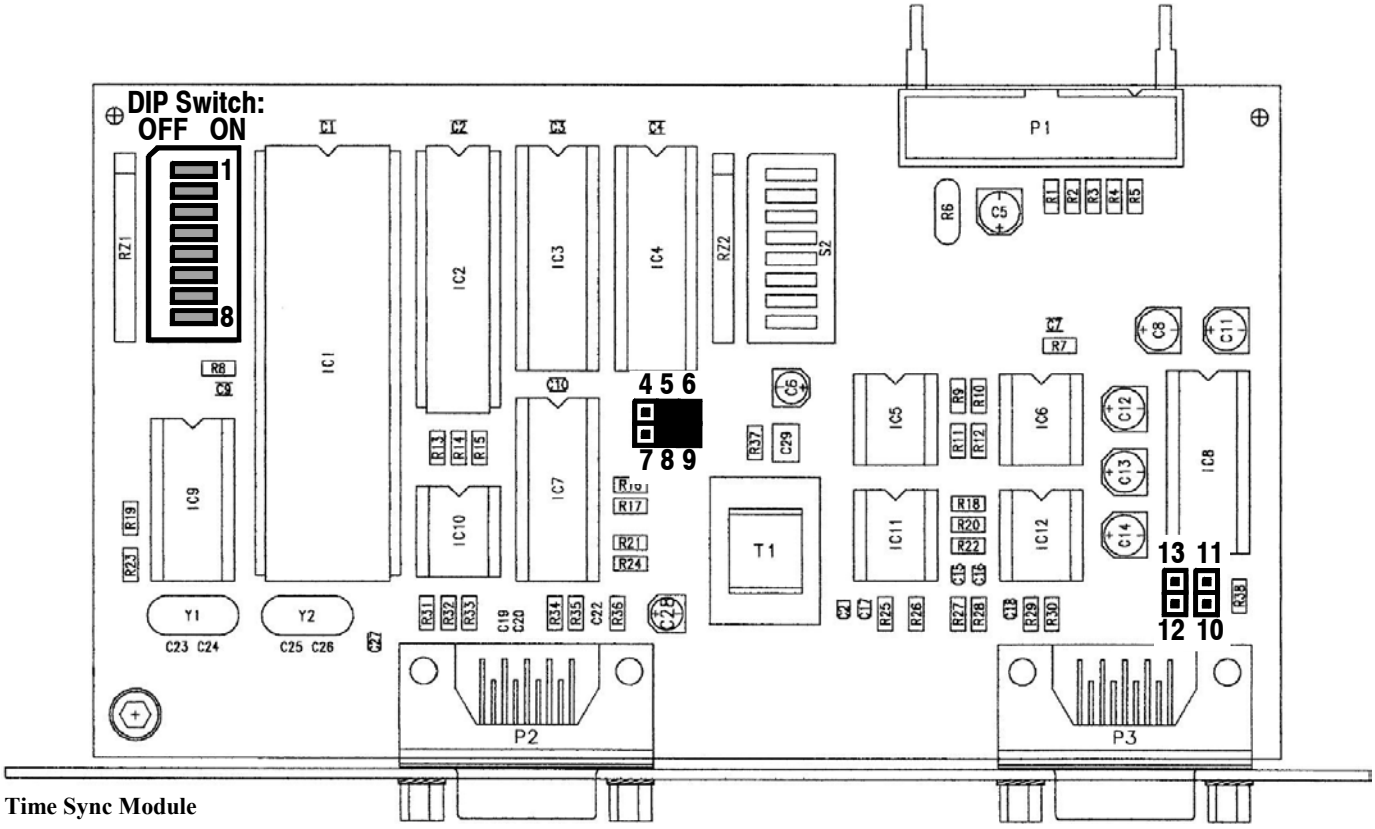
The external time reference signal for the Time Sync Module is selected with a DIP switch. The DIP switch setting is displayed in hexadecimal on the TIME & DATE FORMAT page (TIME SYNC. PROTOCOL field) for easy verification.

Time source	Hex Display	DIP switch no.: 1	2	3	4	5	6	7	8
NONE	NONE	ON	ON	ON	ON	ON	ON	ON	ON*
AFNOR NFS87-500	1	OFF	ON	ON	ON	ON	ON	ON	ON*
DCF77 (expert mouse clock)	2	ON	OFF	ON	ON	ON	ON	ON	ON*
MOBATIME (IF482; 9600 baud)	3	OFF	OFF	ON	ON	ON	ON	ON	ON*
GPS (NMEA 0183 V1.5, V2.0; 4800 baud)	4	ON	ON	OFF	ON	ON	ON	ON	ON*
SEIKO serial clock (RS485; 2400 baud)	5	OFF	ON	OFF	ON	ON	ON	ON	ON*
RCC 8000A (9600 baud)	6	ON	OFF	OFF	ON	ON	ON	ON	ON*
HOPF 6021 telegram (9600 baud)	7	OFF	OFF	OFF	ON	ON	ON	ON	ON*
VORTEX 482D (9600 baud), opt. "0"	8	ON	ON	ON	OFF	ON	ON	ON	ON*
LEITCH CSD-5300 (300 baud) (SMPTE bi-phase TC)	9	OFF	ON	ON	OFF	ON	ON	ON	ON*
SMPTE bi-phase input (LEITCH format)	A	ON	OFF	ON	OFF	ON	ON	ON	ON*
SEIKO QC-7CF2	B	OFF	OFF	ON	OFF	ON	ON	ON	ON*
SIPRONIKA SAT520 protocol (9600, 7E2)	C	ON	ON	OFF	OFF	ON	ON	ON	ON*
GORGY ASCII format (2400 baud)	D	OFF	ON	OFF	OFF	ON	ON	ON	ON*
Reserved for future use		all remaining combinations							
		* Standard setting: ON This switch can be set to OFF in order to mask out the validity bits in some data formats (e.g. it is possible to use Mobatime data from a Mobatime clock that has no DCF reception and thus sends "M" instead of "A")							

Jumper Setting

IF type	Jumper setting	Used for:
RS232C	8-9, 5-6	DCF77, Hopf, MOBA, RCC8000A, Seiko
RS422/RS485	7-8, 4-5	GPS, Leitch (SMPTE TC), AFNOR
Supply (high-Z)	10-11, 12-13	***DCF77 or MOBA only!***

Note: For DIP switch and jumper locations refer to the drawing on the next page.



Time Sync Module

16.11 Console Size Selection

Jumper Setting The console size must be set with the two jumpers CFG0 (P20-P23) and CFG1 (P21-P24) on the DSP board (1.942.102.xx):

Console size	CFG0 inserted	CFG1 inserted
6 channels	yes	yes
12 channels (or 6 ch with TB Mic Input Unit option)	no	yes
18 channels (or 12 ch with TB Mic Input Unit option)	yes	no
24 channels (or 18 ch with TB Mic Input Unit option)	no	no

16.12 Control Front Board I

DIP Switches On the Control Front Board I (1.942.110.xx), *all* DIP switches must be set to their OFF position.

17 INDEX

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Y

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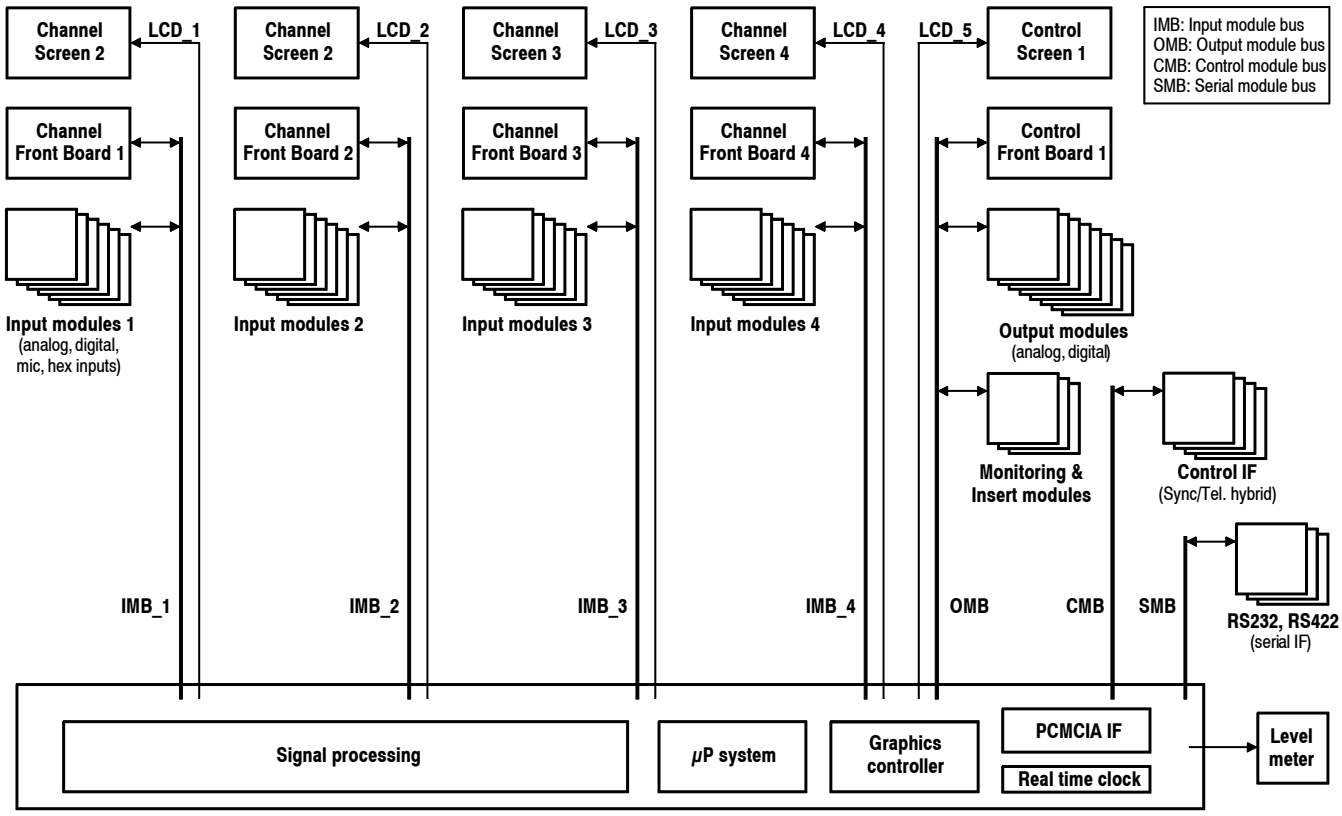
CONTENTS PART TWO – SERVICE INSTRUCTIONS

1 FEATURES

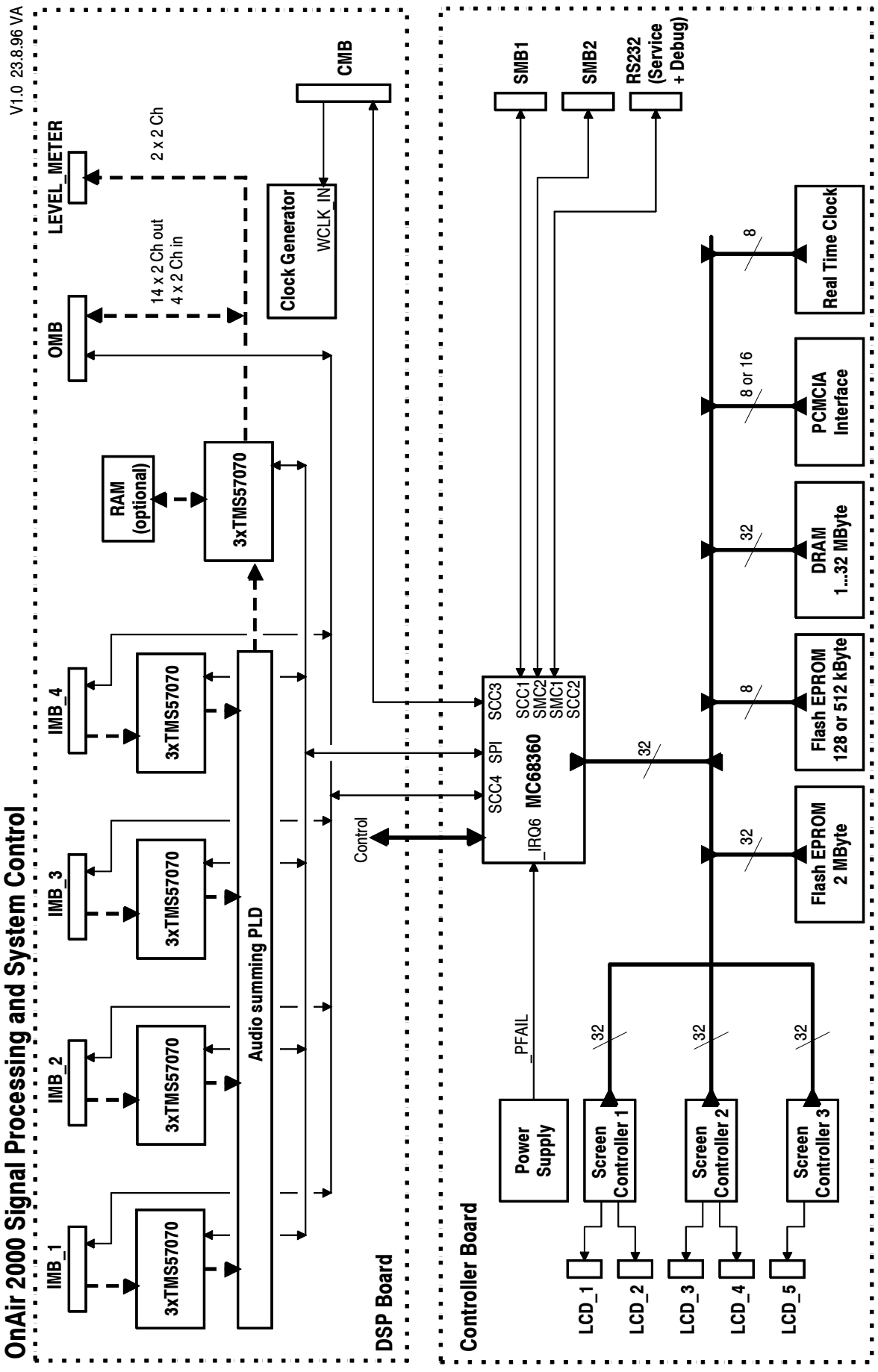
- Fully digital mixing console
- Touch-screen based user interface (“Touch’n’action”)
- Context-sensitive rotary encoders with tactile feedback
- 6, 12, 18, or 24 channels
- Flexible configuration
- Snapshots
- PC-Cards for snapshots, configuration, and software update
- Modular interfacing
- Compact, no external racks required
- Low power consumption
- Excellent price/performance ratio

1.1 System Architecture

OnAir 2000 System Block Diagram



1.2 Signal Processing



The signal processing is based on 24-bit DSPs from Texas Instruments (TMS57070). The input channels are processed by 12 DSPs (i.e. two stereo channels per DSP. The summing bus is a PLD (programmable logic device) design and can handle up to 32 bit. The resulting sums are further processed by three additional DSPs.

A serial communication link between the host controller and the DSPs downloads the algorithms at the startup and sets new parameters during operation.

1.3 Audio Buses

PGM: Main output bus, stereo or mono, analog and/or digital
REC: Main output bus, stereo or mono, analog and/or digital
AUX 1: Auxiliary output, stereo or mono, analog and/or digital
AUX 2: Auxiliary output, stereo or mono, analog and/or digital
N–1 A: Clean-feed output, mono, analog and/or digital
N–1 B: Clean-feed output, mono, analog and/or digital
AUDITION: Audition output (clean-feed), stereo or mono, analog and/or digital.

Internal buses:
PFL: Pre-fader listening bus, stereo
TB: Talkback from control room, talkback from studio.

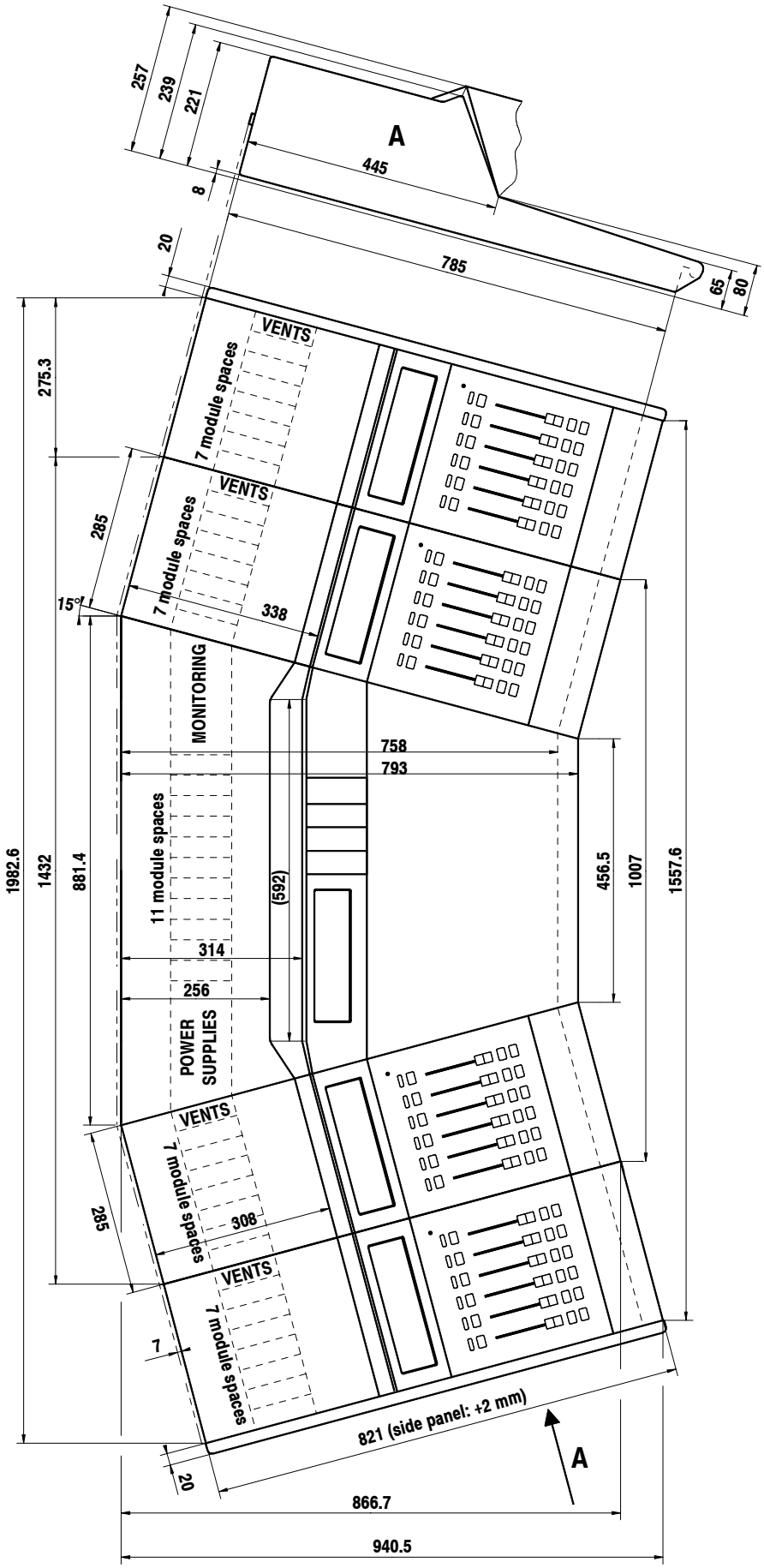
1.4 Host Controller

The host controller is a Motorola MC68360 running at 25 MHz. The tasks performed by the controller are:

- SW download to the DSPs
- SW download to the graphics controller
- Communication with the user surface
- Communication with DSPs
- Communication with modules
- Logic functions
- Graphics
- System test and error handling
- Flash EPROM handling

The software is based on a VRTX real-time operating system. VRTX was originally designed for industrial applications and is very reliable. The complete application is written in the “C” programming language.

2 HARDWARE


257
239
221
A
445
8
20
785
65
80
VENTS
7 module spaces
275.3
VENTS
7 module spaces
285
15°
338
MONITORING
758
793
1982.6
1432
881.4
11 module spaces
(592)
456.5
1007
1557.6
314
256
POWER SUPPLIES
VENTS
7 module spaces
285
308
VENTS
7 module spaces
7
821 (side panel: +2 mm)
A
20
866.7
940.5

2.1 Input Modules

Each input can be equipped with one of the following modules:

- Mic Input Module (1.942.220)
- Line Input Module, transformer-balanced (1.942.230)
- Line Input Module, electronically balanced (1.942.232)
- Digital Input Module (1.942.240)
- Analog Hex Line Input Module (1.942.245)
- Digital Hex Line Input Module (1.942.250)

All inputs have A/B switchover, except the hex input modules which have a one-out-of-six input selector.

For details on input modules refer to the Operating Instructions, chapters 15 and 16.

Restrictions: The maximum number of inputs on the OnAir 2000M2 is limited to 64. Therefore a 12-channel console can be equipped with a maximum of 10 Hex Input Modules (10 × 6 inputs) plus e.g. two Mic Input Modules (2 × 2 inputs).

2.2 Output Modules

Each output can be equipped with analog or digital output modules. Available output modules are:

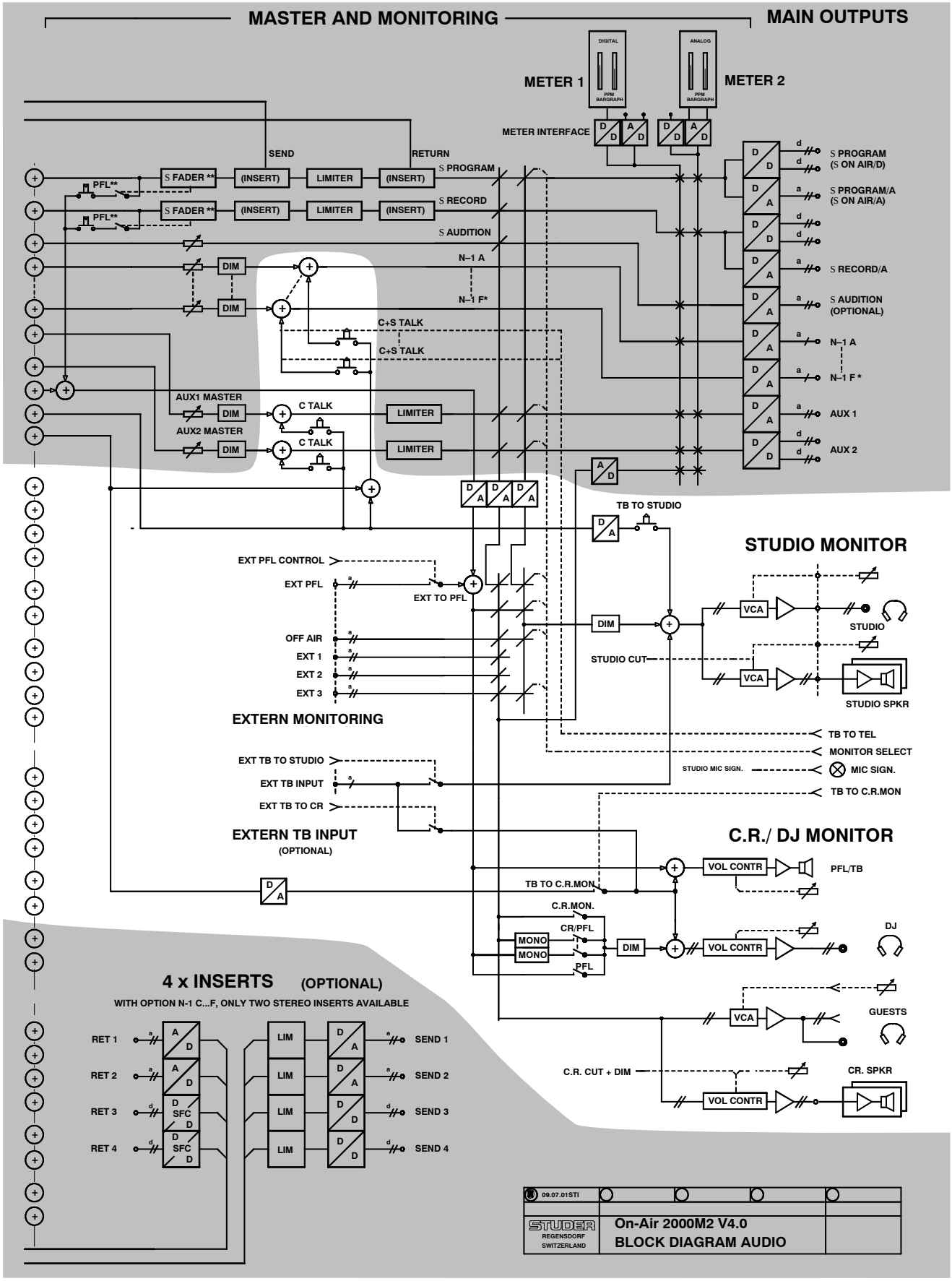
- Analog Output Module, transformer-balanced (1.942.120)
- Dual Analog Output Module, transformer-balanced (1.942.121)
- Analog Output Module, electronically balanced (1.942.122)
- Digital Output Module (1.942.124)

For details on output modules refer to the Operating Instructions, chapters 15 and 16.

2.3 Monitoring

The Monitoring Module includes monitoring functions for control room (CR) and studio. Audio and control signals are handled by this module. The CR monitoring functions are controlled from the central section of the user surface. The studio monitoring functions can be controlled either from the central section of the user surface (source selection) or from a dedicated, simple studio monitor unit (“TB box”, 1.924.555).

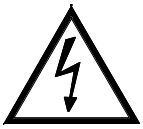
For details on the Monitoring Module and the available extensions refer to the Operating Instructions, chapters 15 and 16.


MASTER AND MONITORING
MAIN OUTPUTS
METER 1
METER 2
METER INTERFACE
SEND
RETURN
S FADER **
(INSERT)
LIMITER
PFL**
S PROGRAM
S RECORD
S AUDITION
N–1 A
N–1 F*
C+S TALK
DIM
AUX1 MASTER
AUX2 MASTER
C TALK
S PROGRAM (S ON AIR/D)
S PROGRAM/A (S ON AIR/A)
S RECORD/A
S AUDITION (OPTIONAL)
AUX 1
AUX 2
TB TO STUDIO
STUDIO MONITOR
EXT PFL CONTROL
EXT PFL
EXT TO PFL
OFF AIR
EXT 1
EXT 2
EXT 3
EXTERN MONITORING
VCA
STUDIO
STUDIO CUT
STUDIO SPKR
TB TO TEL
MONITOR SELECT
STUDIO MIC SIGN.
MIC SIGN.
TB TO C.R.MON
EXT TB TO STUDIO
EXT TB INPUT
EXT TB TO CR
EXTERN TB INPUT
(OPTIONAL)
C.R./ DJ MONITOR
VOL CONTR
PFL/TB
C.R.MON.
CR/PFL
MONO
PFL
DJ
GUESTS
C.R. CUT + DIM
CR. SPKR
4 x INSERTS (OPTIONAL)
WITH OPTION N-1 C...F, ONLY TWO STEREO INSERTS AVAILABLE
RET 1
RET 2
RET 3
RET 4
SFC
LIM
SEND 1
SEND 2
SEND 3
SEND 4
09.07.01STI
STUDER REGENSDORF SWITZERLAND
On-Air 2000M2 V4.0
BLOCK DIAGRAM AUDIO

2.4 Touch Screens

Each of the LC displays has a resolution of 640 × 200 pixels. A cold cathode fluorescent lamp (CFL) provides the back light, having a typical lifetime (50% brightness) of 10'000 to 15'000 hours (meaning about 13 to 20 months of continuous operation). CFL replacement is very easy, and spare parts are available.

Caution!



The CFL supply voltage is about 400...600 V. Switch the console OFF before opening it!

A touch matrix with 12 × 6 active fields is mounted on the LCD. The touch switches are pressure sensitive and can only switch if a certain force is applied. Therefore the touch matrix function is not influenced by contamination (as fingerprints etc.).

The touch-screen surface consists of a PET foil. Never use any solvents as acetone to clean the surface. Most glass or PC monitor cleaners do a good job.

2.5 User Surface

On the channel sections there is only one PCB (Channel Front Board 1.942.210) that reads the touch matrix, all keys, and the faders.

The center section consists of three PCBs:
Control Front Board I (1.942.610) is the controller for the center section. It is mounted in the back of the LCD and reads the touch matrix, the rotary encoders, as well as all keys and the potentiometers of the monitoring control section.
Control Front Board II (1.942.111) is the PCB with the control elements for the monitoring (volume controls, keys).
Control Front Board III (1.942.112) carries the rotary encoders.

2.6 Signal Processing and System Control

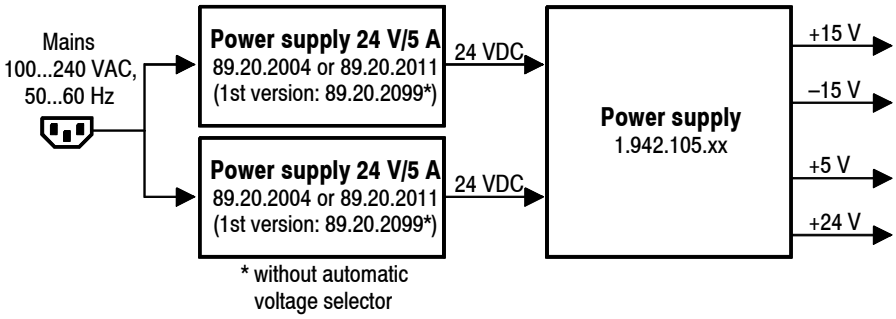
The DSP Board (1.942.102) performs the audio functions for the console. All input modules are connected to this board via the ribbon cable connectors labeled IMB-1...IMB-4 (IMB = input module bus). Each IMB consists of an entire six-channel module (Channel Front Board + 6 input modules).

The output modules are connected to the output module bus (OMB). All output modules, the monitoring module and the Control Front Boards are connected to the OMB.

For more details refer to the Operating Instructions, chapter 1.

2.7 Power Supply

For optimum efficiency, switching regulators are used throughout the whole power supply.
The power supply is made of two identical primary switching power supply units, delivering each a 24 V_{DC} voltage to the secondary power supply, which converts this voltage to the required ±15 V, +5 V, and +24 V.



Some primary supply units of the first production lot of the OnAir 2000 (89.20.2099) do not have automatic full-range mains voltage selection. With these power supplies, a jumper cable per unit must be set to the correct mains voltage range (100...140 or 200...240 V_{AC}). The correct position of this jumper wire is labeled on the PCB.
On the current primary supply units (89.20.2004 or 89.20.2011) the mains voltage selection is performed automatically.

All the abovementioned primary supply units are short-circuit proof. The fuses, however, are soldered into the circuit and must not be replaced in the field. In case of a failure, the complete power supply unit must be replaced.

The secondary Power Supply (1.942.105.xx) generates all required voltages for the console except the +48 V phantom power, which is generated on the Controller Board.

Power consumption of an OnAir 2000M2/24/4 console is about 150 VA.

2.8 Redundant Power Supply (optional)

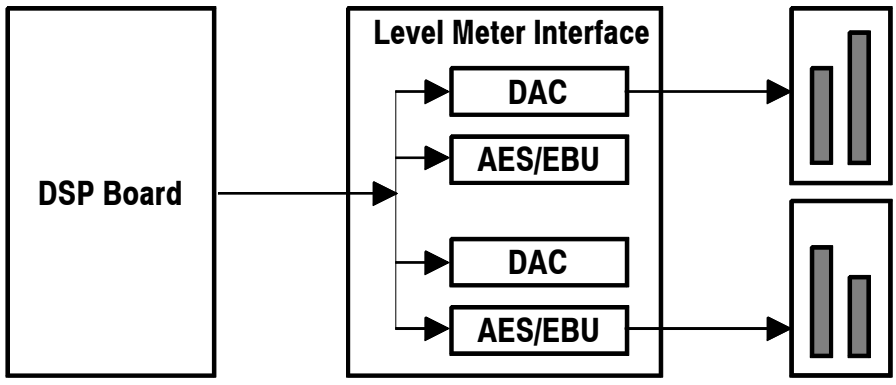
The optional external power supply unit for the OnAir 2000M2 console is installed in a 19" 2U housing. Two of these supply units are used if redundancy is desired (order no. 1.942.109.00). In such a case, the internal power supply of the console is replaced by a connection unit equipped with two 30-pin Siemens connectors. Each of these allows connection to one of the external supply units.

	Pcs	Order no.	Designation
Redundancy PSU Set (1.942.109.xx), consisting of:	2	* 1.918.220.xx	Power Supply
	2	1.918.225.xx	Cable 2 m (longer cables on request)
	1	** 1.942.106.xx	Connection Unit
* Power Supply (1.918.220.xx), consisting of:	2	89.20.2011	Power Supply Main (earlier Versions)
	or 1	89.20.2017	Power Supply Main (current Versions)
	1	1.942.105.xx	Power Supply
	1	1.918.221.xx	Sub Board PSU
** Connection Unit (1.942.106.xx), consisting of:	1	1.942.107.xx	Redundancy PSU Connection Board
			Cables to DSP and Level Meter Interface + miscellaneous mounting hardware

Note: For operation with the external redundancy PSU, please refer to the manual shipped with the PSU.

2.9 Level Meters

Since the audio signals on the level meter connector have an internal, so-called "left-justified" format, an interface is required for connecting the meters. This Level Meter Interface (1.942.113) provides conversion for two stereo channels from the internal format to analog as well as to AES/EBU. Therefore almost any level meter can be used with the OnAir 2000M2.



3 CONFIGURATION

The console configuration is divided into hardware and software configuration.

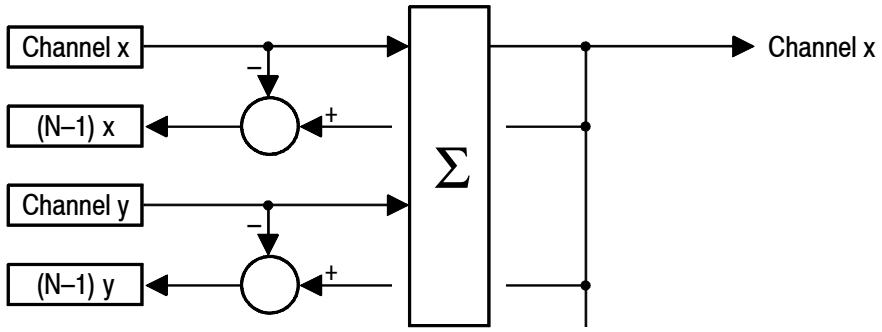
3.1 Software Configuration

The software configuration defines the functionality of the console. SW configuration is described in chapter 12 of the OnAir 2000M2 Operating Instructions manual.

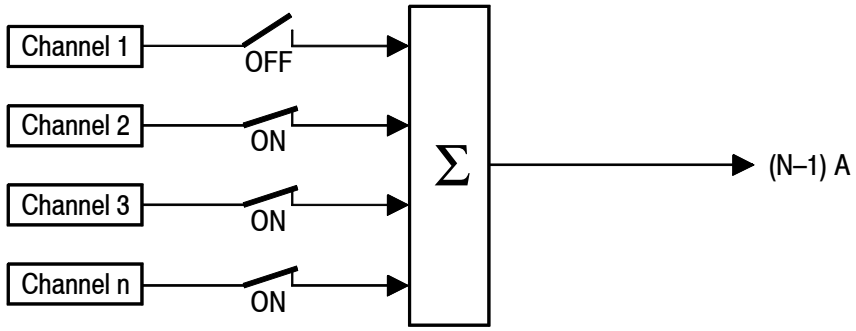
3.1.1 N–1 Configuration

Unlike in analog mixing consoles (where the N–1 signal is derived from the output sum by subtracting a channel signal), the N–1 are separate buses in the OnAir 2000M2.

N–1 in Analog Mixing Consoles:



N–1 in Digital Mixing Consoles:



The number of N–1 buses is limited by the maximum number of output buses which can be handled by the signal processing. The OnAir 2000M2 has two N–1 buses (N–1A, N–1B), and four additional N–1C...F buses available as an option. All of them are mono buses.
If a certain channel shall be routed to an N–1 bus, the corresponding field in the input configuration page must be defined (refer to chapter 12.2.1 of the OnAir 2000M2 Operating Instructions). Talkback to both N–1 buses is possible from the control room and from the studio.

3.1.2 Audition Configuration

The audition bus is similar to the N–1 buses. Configuration is identical. Talkback to the audition bus is not allowed, but it can be selected as a monitoring source in the control room. Therefore it can be used like an N–1 bus where all CR microphones are inhibited. If Audition is selected as the monitoring source, the microphones can be open while the loudspeakers are on, allowing to work without headphones.

The audition bus is a stereo bus, and it can be used as a stereo or mono N–1 bus if talkback is not required.

3.2 Hardware

The hardware needs some configuration in order to allow the software to communicate with the installed modules. At power-on the software detects all available modules and checks if the hardware configuration has changed since the last power-off. In case of a configuration mismatch, an information message is displayed to inform the user on the changes.

3.2.1 Input Module Configuration

All input modules are software controlled and need a configuration DIP switch for the module addressing. Within a six-channel block, each input module must have an individual address setting between 0x81 and 0x86 (hex). The module with address 0x81 is always controlled by the leftmost channel strip.

For details, refer to chapter 16 of the OnAir 2000M2 Operating Instructions.

3.2.2 Output Module Configuration

Analog Output Modules have a row of jumper pins to select the output bus on the module. Each jumper position is labeled on the PCB.

Dual Analog Output Modules have a row of jumper pins to select an output bus for each of the two independent outputs. Due to the high component count on the PCB, the jumper pins could not be labeled – for information, please refer to chapter 16 of the OnAir 2000M2 Operating Instructions.

Possible output signals for the analog output modules are:

PGM	Main output bus
REC	Main output bus
AUDI	Audition bus
AUX1	Auxiliary output bus no. 1
AUX2	Auxiliary output bus no. 2
N–1 A	Cleanfeed output N–1 A (same as CF1 on some modules)
N–1 B	Cleanfeed output N–1 B (same as CF2 on some modules)
TB	Talkback bus
PFL	PFL bus
OUT1	Additional cleanfeed outputs N–1 C (left) and N–1 D (right)*
OUT2	Additional cleanfeed outputs N–1 E (left) and N–1 F (right)*
*	Please note that the additional cleanfeed outputs are only available with SW V3.0 and up; when upgrading from SW versions earlier than V3.0, also a hardware upgrade is required. For details, please refer to chapters 5.3.1 and 16.5 of the OnAir 2000M2 Operating Instructions. When using the additional cleanfeed outputs, no Insert 3/4 can be installed in the console.

Digital Output Modules have two independent digital outputs conforming to the AES3-1992 standard. Each of these has two parallel output drivers. Since the digital output modules are software-controlled, DIP switches are used for the bus assignment. For details, please refer to chapter 16 of the OnAir 2000M2 Operating Instructions.

3.2.3 DSP Board

The console size (i.e. the number of input channels) must be configured with two jumpers on the DSP board. These jumpers are labeled CFG0 and CFG1. For details, please refer to chapter 16 of the OnAir 2000M2 Operating Instructions.

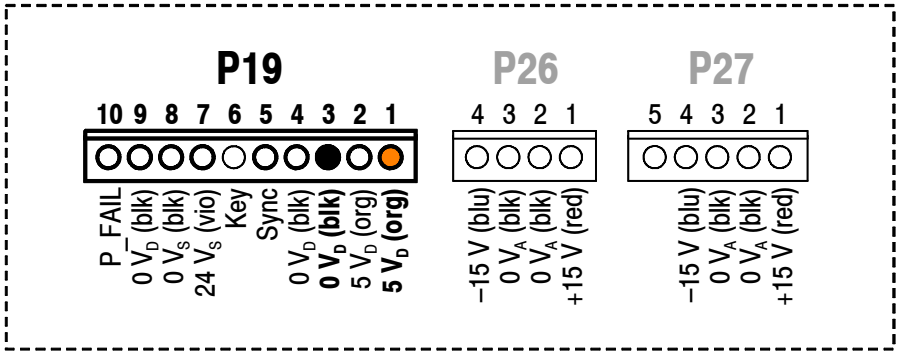
4 ALIGNMENT

There are only few elements in the OnAir 2000M2 requiring adjustment.

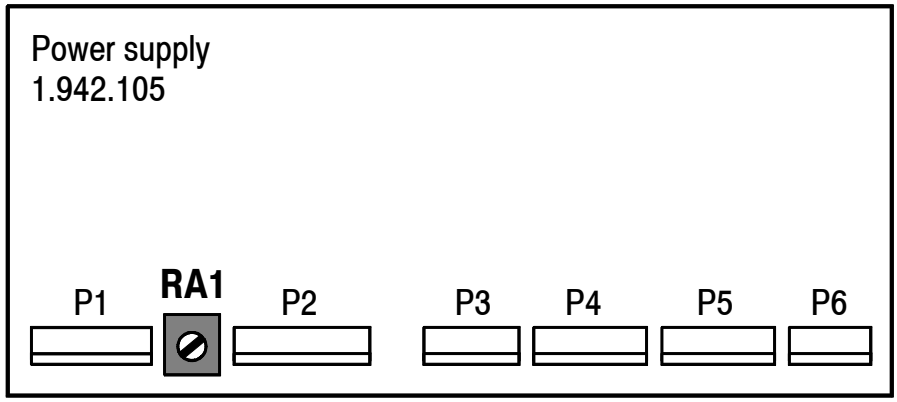
4.1 Power Supply

The +5 V_D (digital) is the only voltage which can be aligned.

Procedure Measure the +5 V_D supply between pin1 and pin3 of P19 on the DSP board according to the drawing below.



Set the measured voltage to exactly **+5,2 V** with RA1 on the Power Supply Board 1.942.105, as indicated below:



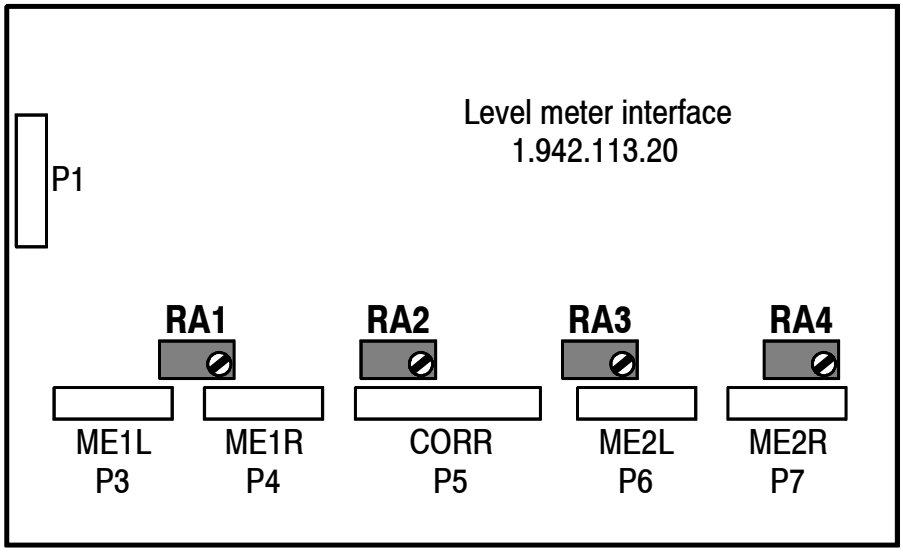
Note: The Power Supply Board 1.942.105 is installed either within the console or within the optional external PSU 1.918.220 (single or dual).

4.2 Level Meters

- Feed a test signal with your particular nominal level (e.g. +6 dBu) to an analog or digital line input.
- Set the fader of the corresponding channel to the 0 dB position.
- Route the signal to the corresponding output.
- Connect an AF voltmeter to the selected output (typically: PROGRAM output).
- Turn the BAL knob fully to the side of the channel where the AF voltmeter is connected.
- Adjust for 0 dB indication on the meters according to the table below:

Meter no.:	Adjust with:
Meter 1 left	RA1
Meter 1 right	RA2
Meter 2 left	RA3
Meter 2 right	RA4

Note: The correlator units do not require any adjustments.

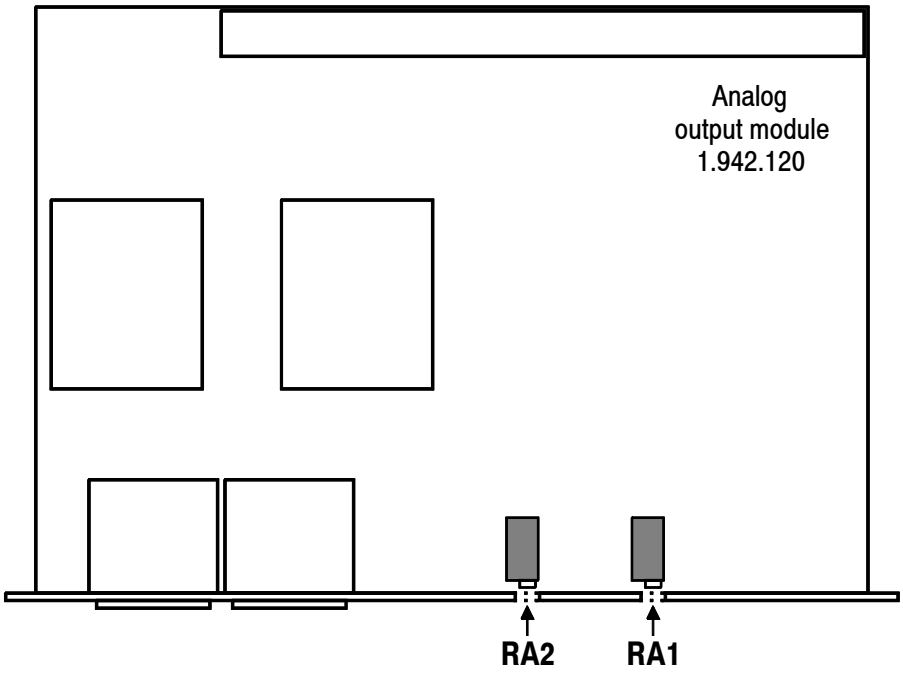


4.3 Output Levels

4.3.1 Analog Output Module 1.942.120/.122

- Feed a test signal with your particular nominal level (e.g. +6 dBu) to the input of an analog or digital line input module.
- Set the fader of the corresponding channel to the 0 dB position.
- Route the signal to the output which is to be adjusted.
- Connect an AF voltmeter to this output.
- Adjust for a reading of your particular nominal level (e.g. +6 dBu) on the AF voltmeter according to the table below:

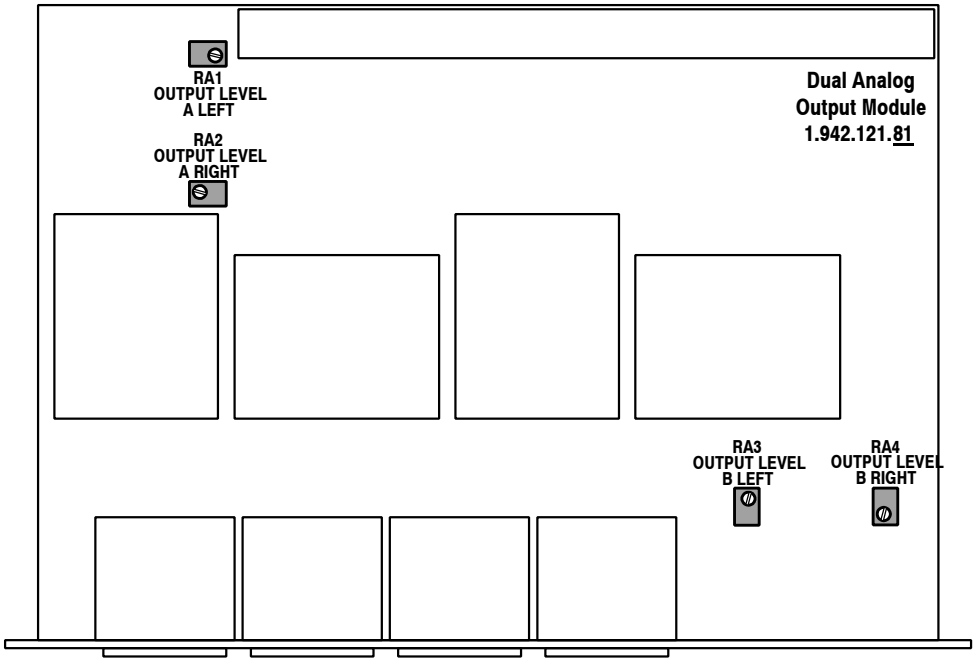
Output:	Adjust with:
Left	RA1
Right	RA2

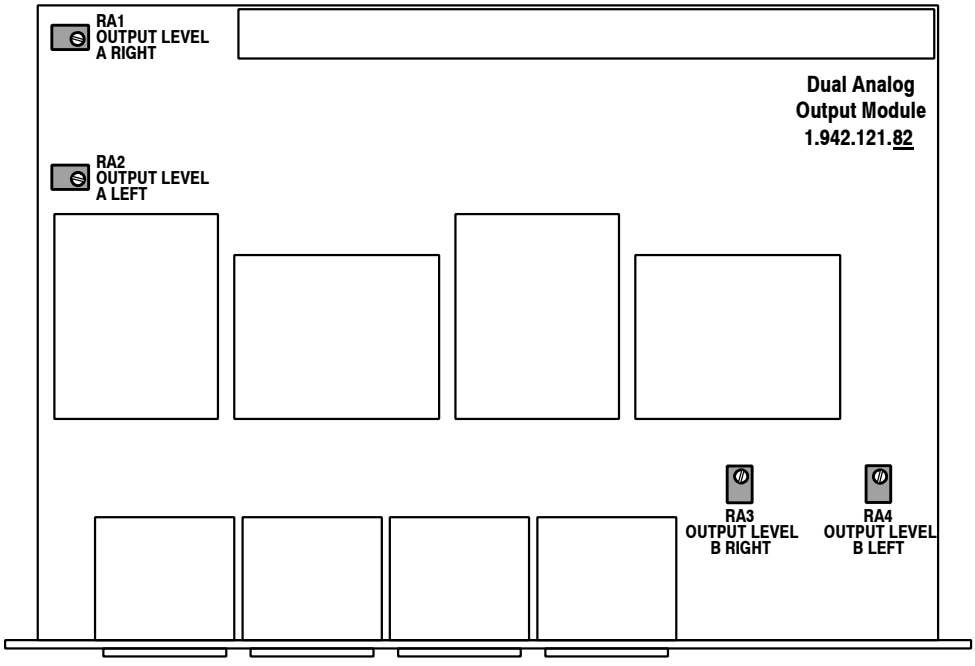


4.3.2 Dual Analog Output Module 1.942.121

Notes: *Trimmer potentiometer locations are different for the two PCB versions ...81 and ...82, as indicated in the two drawings below.*

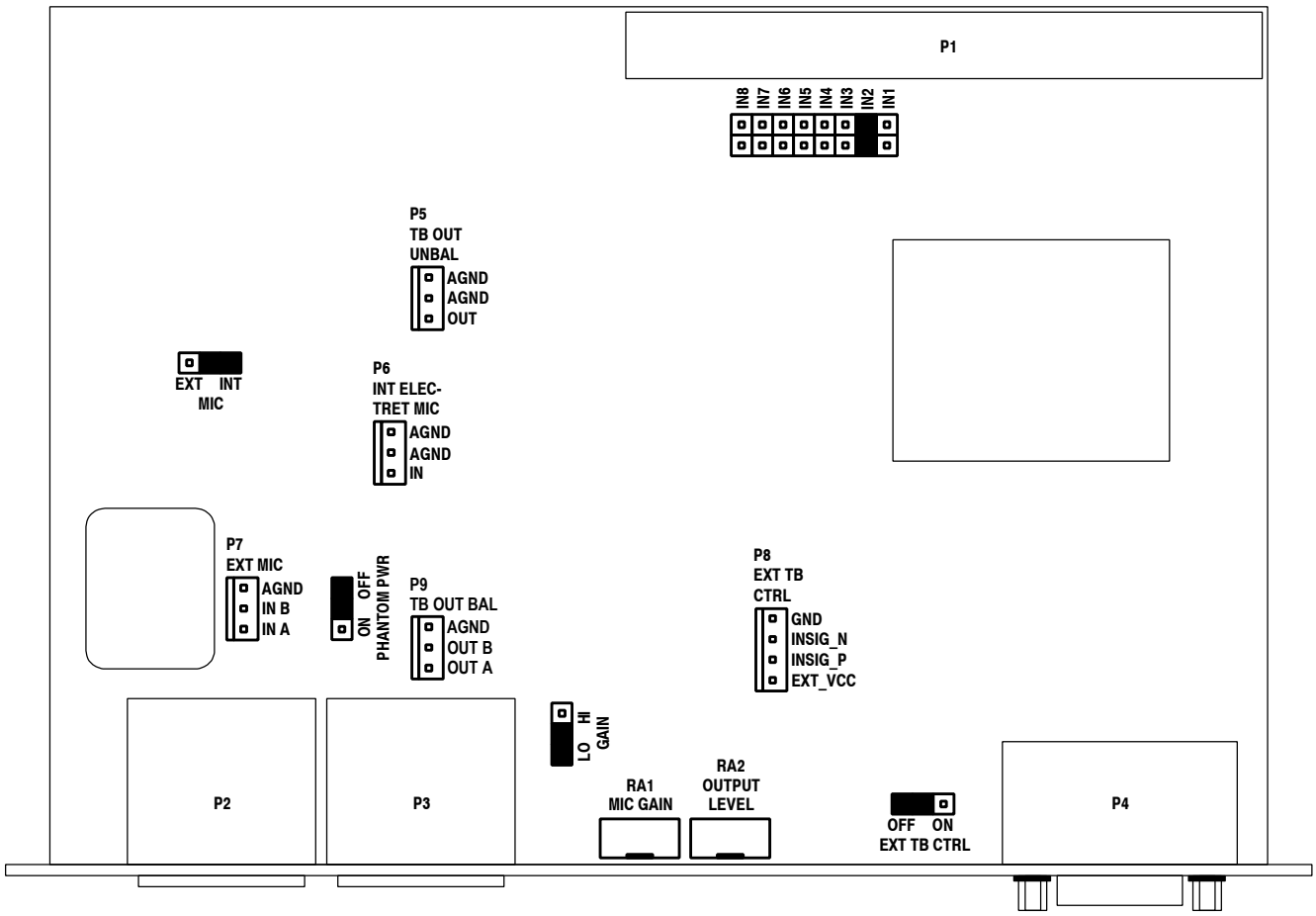
- Feed a test signal with your particular nominal level (e.g. +6 dBu) to the input of an analog or digital line input module.
- Set the fader of the corresponding channel to the 0 dB position.
- Route the signal to the output which is to be adjusted.
- Connect an AF voltmeter to this output.
- Adjust for a reading of your particular nominal level (e.g. +6 dBu) on the AF voltmeter according to the drawings.





4.4 Talkback Mic Input Unit (optional) 1.942.219

On the TB Mic Input Module, only few adjustments are made. First, check the jumper settings according to chapter 16 of the OnAir 2000M2 Operating Manual, depending on which kind of microphone is used.



Jumpers:

MIC INT/EXT: Input selection – either internal unbalanced microphone (i.e. the standard electret TB mic 1.942.218 with fixed supply voltage), connected to P6, or external balanced microphone with switchable phantom power, connected to P2 or P7.

PHANTOM PWR ON/OFF: Selection of 48 V phantom power for the balanced mic input (P2 or P7).

GAIN HI/LO: For the internal standard electret TB mic, the LO position (nominal input level: –60 dBu) is used. In HI position, the mic input gain is increased by 20 dB, i.e., the nominal input level is –80 dBu.

EXT. TB CTRL ON/OFF: Activates or deactivates the external TB control input on P4 or P8.

IN1...8: Address selection – please refer to the "Jumper for Module Position" paragraph in chapter 16.2 of the OnAir 2000M2 Operating Manual; factory setting: IN2.

Settings:

MIC GAIN: Depending on the output level of the microphone used, the limiter threshold is adjusted with the MIC GAIN trimmer potentiometer (RA1). For the internal standard electret TB mic (nominal output level –60 dBu), the MIC INT/EXT jumper is set to the INT position, the GAIN jumper is set to the LO position. Connect an AF voltmeter to the unbalanced TB OUT connector (P5 on the PCB). Then a sine-wave signal (approx. 1 kHz) with a fixed level of –60 dBu is fed to the INT ELECTRET MIC connector (P6

on the PCB), and the MIC GAIN trimmer potentiometer is adjusted to a level just below the point where no more output level increase is measured.
If an other microphone is used, the appropriate input connector, jumper settings and input signal level must be used.

OUTPUT LEVEL: After the MIC GAIN adjustment, the balanced TB mic output – available at the XLR connector OUT (P3), or at the AMP connector TB OUT SYM (P9) on the PCB – is adjusted with the OUTPUT LEVEL trimmer potentiometer (RA2) to the desired nominal level.

5 SERVICE TERMINAL

A service terminal connector is provided for servicing the OnAir 2000M2.

The Service Terminal Task enables the user to bypass the “normal” user interface and approach the system in a more direct way. This is used in two specific cases:

Service and Maintenance (normal user mode)

- Enable/disable the output of errors, warnings, and information on the service terminal. (Filter for errors, warnings, and information).
- System data (current console status, console configuration, etc.) can be dumped to the service terminal.
- For integration test use, parts of the system data can be transferred to the service terminal.
- Shutdown or reset the console.

Debugging and Testing (extended user mode)

There are some software debugging functions that are hidden to the normal user. In addition to the normal user mode, these functions can also read and write memory contents, and communicate with other tasks directly (i.e. not through the command interpreter).

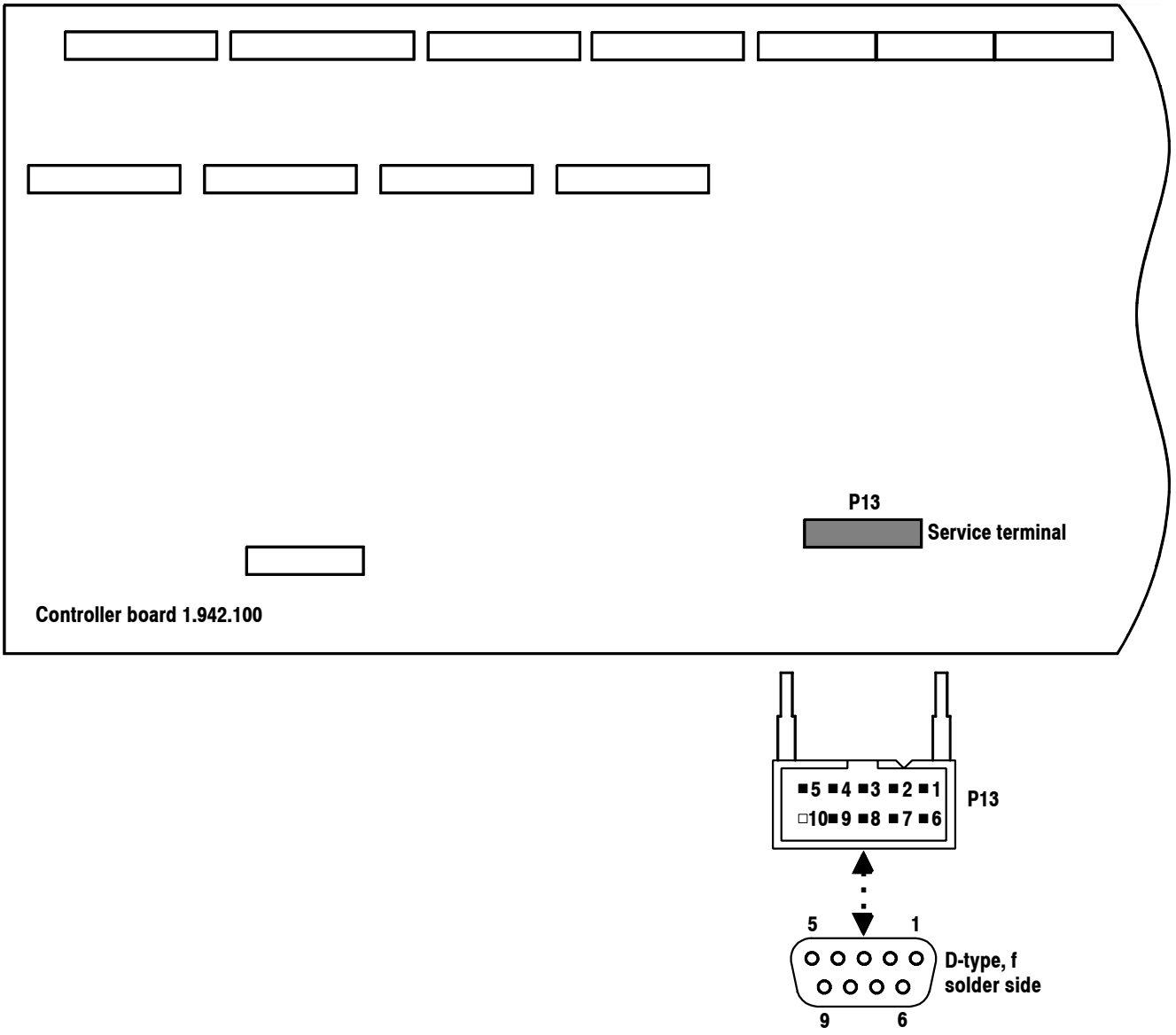
- System data (current console status, console configuration, etc.) can be displayed on the service terminal.
- Any message can be generated and sent to any task in the system.
- Task message communication can be displayed individually on the service terminal.
- Telegrams to any bus can be generated and posted.
- Telegram flow can be displayed on the service terminal for each bus (input/output, DSP bus...) individually.
- Telegram polling period can be determined, or telegram polling can be suppressed by time-out 0.
- Any memory position can be displayed and written.
- Any flash-memory position (bit range, section no., address) can be displayed and written.

It is important to notice that the service terminal must not be used during the normal operation of the console. Functions and modes activated from the service terminal can strongly affect the console performance. Some debug and test functions can even corrupt the system data and cause a system crash.

The service terminal command structure is similar to the DOS directory level structure; if a service terminal command is not finished, the header of the next command line indicates the level reached. Extended user mode (i.e. debug) is a level, too, in this context. The command for leaving a level is similar to the DOS command (“..”).

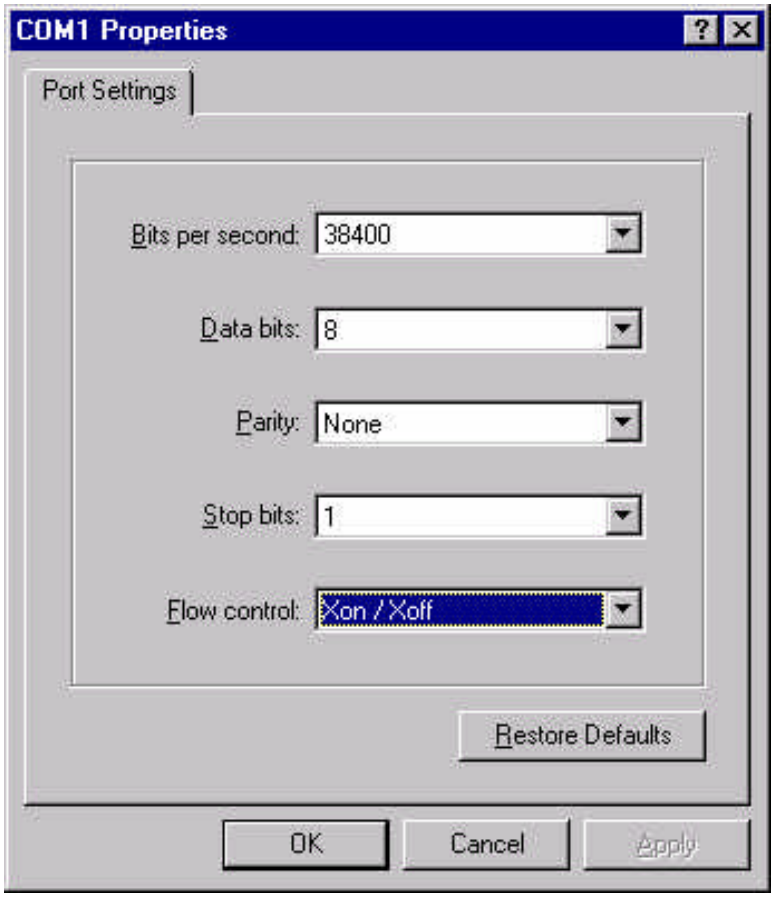
5.1 Connecting Cable

The terminal is connected to the 10-pin header connector (P13) labeled "SERVICE TERMINAL" on the Controller Board. The connecting cable is a straight 10-pin header to 9-pin D-type cable, where wire no. 10 is not used at the D-type connector side; a ribbon cable works fine, provided that its length does not exceed 2...3 m.



Almost any ASCII terminal capable of handling 38.4 kbaud will work; the Windows95 "HyperTerminal" or "Procomm" have been tested.

The following terminal settings must be used:



5.2 SW Update via the Service Terminal

Procedure

1. Dump all snapshots, mic settings, and configuration data to a PC-Card or to the service terminal (refer to chapter “Dump mode”).
2. Connect the cable between the PC (COM1 or COM2) and the OnAir 2000M2 (“service terminal” on the controller board). For this, you have to open the center section of the console by loosening five screws.
   After pressing ENTER or switching the console on, you will see the message
   `ServIf:\`
   on the terminal.
   If you enter **`?`** followed by ENTER, you will see a list of all possible debug commands; refer to chapter 5.5

   To download the new software you need to type
   `startdownload serviceterminal`, followed by ENTER at the prompt.
   Then send the file OA2000.ABS as a text file.

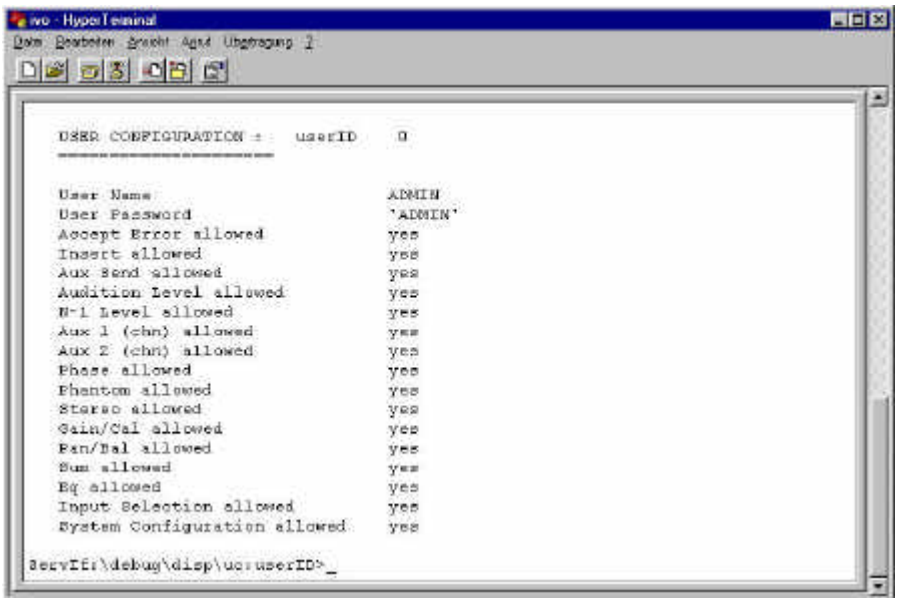
   This procedure will take about 10...15 min to complete the download.

3. Reload all snapshots, mic settings, and configuration data from the PC-Card or the service terminal (refer to chapter “Dump mode”).

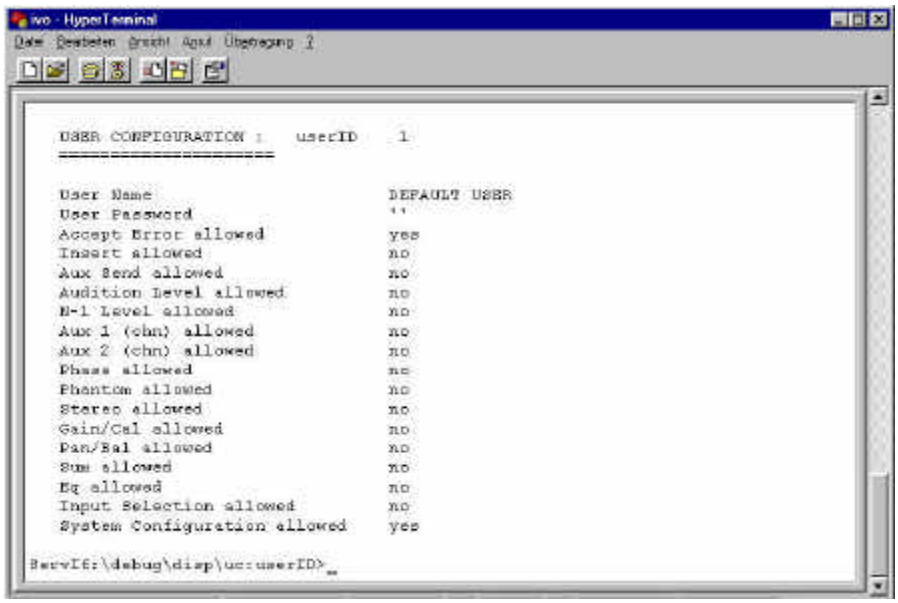
5.3 If the Admin Password is Lost

Recommended Procedure

After entering the following commands *(each followed by ENTER)*:
`debug`
`disp`
`UC`
`ø`
a listing as given below will appear:



By entering characters from **`1`** to **`20`**, the access permission of each user can be displayed:



5.4 Service Terminal Commands

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Debug user mode	ServIf:\>deb[ug]	yes	Service	P: enter extended (Debug) User Mode H: ServIf:\debug>
Back to the next higher level	ServIf:\debug>..	yes	Service or Debug	P: return to Service User Mode H: ServIf:\>
Display help	ServIf:\>h[elp] (possible in any level) or e.g. ServIf:\>help init	yes	Service	P: Display and explain commands of Service mode H: same (because the command is finished)
	ServIf:\debug>h[elp] or ServIf:\>help debug	yes	Debug	P: Display and explain commands of Service and Debug mode (all commands) H: same
Default initialisation	ServIf:\>init ServIf:\debug>init	no	Service or Debug	P: Reset Console Configuration and Current Console Status to Factory Pre-set. Send following messages to Channel Controller: ResetChannel; ResetChannelInput; ResetAuxSend; ResetInsert; ResetMonitor; ResetTelHybrid; HoldReset H: same
Examine IFX workspace	ServIf:\>ifxws ServIf:\debug>ifxws	yes	Service or Debug	P: Call ifx_gwksize(&wksize, &actsize, &errcount) and display IFX workspace size, actual workspace in use and number of workspace Tau small H: same
Fader calibration	ServIf:\>cal 1/2/3/4/all ServIf:\debug>cal 1/2/3/4/all	yes	Service or Debug	P: Send a Fader Calibration message to the Surface Controller H: same
Reboot	ServIf:\>reboot ServIf:\debug>reboot	yes	Service or Debug	P: Sends the Reboot message to Diagnostics and Error Handling task to reboot the console from flash H: same
Init PGMasks	ServIf:\>pgminit ServIf:\debug>pgminit	yes	Service or Debug	P: Call fnInitMasks (UNCONDITIONAL) H: same
Start SW update	ServIf:\>startdownload ServIf:\debug>startdownload	yes	Service, Debug or Message	P: Poll PC-Card and SMC1 for 'incoming' data and send SwUpdateState message to Surface Controller. Clear PGMASKs-, Data-, Snapshot and Master Sections. Passes Data from PC-Card or SMC1 to the code loader until it indicates 'completed' or no more data are received, send SwUpdateState to Surface Controller and indicate the status on ServiceIf. If download completes successfully {Calculate the checksum over the complete Master Section and write it into its last word. Reboot the Console by SW RESET} H: same
Cancel SW update	ServIf:\>stopdownload ServIf:\debug>stopdownload	yes	Service, Debug or Message	P: Stops polling or receiving data from PC-Card or SMC1 H: same
Power down	ServIf:\>down ServIf:\debug>down	yes	Service or Debug	P: Simulates a powerdown. Puts a PowerFail telegram in the input queue of DiagnosticsandErrorHandling task. H: same
Customer code	ServIf:\>ccode 0x00...0xFFFFFFFF ServIf:\debug>ccode	yes	Service, Debug or Message	P: Write the Customer Code into prevVersion of CUC, and ask the user to reboot the console. H: same

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Display mode	ServIf:\debug>disp[lay]	yes	Debug	P: enter Display Mode H: ServIf:\disp>
Display global console configuration	ServIf:\debug\disp>gcc	yes	Debug	P: Structure and display the desired part of CC on the Service Terminal. H: same
Display surface configuration	ServIf:\debug\disp>sc	yes	Debug	P: Structure and display the desired part of CC on the Service Terminal. H: same
Display system identification	ServIf:\debug\disp>si	yes	Debug	P: Structure and display the desired part of CC on the Service Terminal. H: same
Display channel configuration	ServIf:\debug\disp>cc	yes	Debug	P: Structure and display the desired part of CC on the Service Terminal. H: same
Display channel input parameters	ServIf:\debug\disp>cic	yes	Debug	P: Structure and display the desired part of CC on the Service Terminal. H: same
Display customer configuration	ServIf:\debug\disp>cuc	yes	Debug	P: Structure and display the whole CUC on the Service Terminal. H: same
Display channel common parameters	ServIf:\debug\disp>ccp	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. H: same
Display channel input parameters	ServIf:\debug\disp>cip	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. H: same
Display monitoring parameters	ServIf:\debug\disp>mp	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. H: same
Display profanity delay parameters	ServIf:\debug\disp>pdp	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. H: same
Display telephone hybrid parameters	ServIf:\debug\disp>thp	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. H: same
Display AUX send parameters	ServIf:\debug\disp>asp	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. H: same
Display insert assign parameters	ServIf:\debug\disp>iap	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. H: same
Display snapshot control parameters	ServIf:\debug\disp>scp	yes	Debug	P: Structure and display the desired part of CCS on the Service Terminal. No processing in Master Software V1.x H: same
Display jingle player parameters	ServIf:\debug\disp>jpp	no	Debug	P: Structure and display the desired part of CCS on the Service Terminal. No processing in Master Software V1.x H: same

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Dump mode	ServIf:\>dump ServIf:\debug>dump	yes	Debug	P: enter Display Mode H: ServIf:\dump>
Dump Mode	ServIf:\>dump ServIf:\debug>dump	yes	Service or Debug	P: enter Dump Mode H: ServIf:\dump>
Dump Console Configuration to SMC1	ServIf:\dump>cc ServIf:\debug\dump>cc	yes	Service or Debug (or Message)	P: Structure and dump Console Configuration to SMC1 H: same
Dump Presets to SMC1	ServIf:\dump>pr ServIf:\debug\dump>pr	no	Service or Debug (or Message	P: Structure and dump Presets to SMC1 H: same
Dump Global Snapshots to SMC1	ServIf:\dump>gs ServIf:\debug\dump>gs	yes	Service or Debug (or Message	P: Structure and dump Global Snapshots to SMC1 H: same
Dump Private Snapshots to SMC1	ServIf:\dump>ps ServIf:\debug\dump>ps	no	Service or Debug (or Message	P: Structure and dump Private Snapshots to SMC1 H: same
Dump Mic Settings to SMC1	ServIf:\dump>ms ServIf:\debug\dump>ms	yes	Service or Debug (or Message	P: Structure and dump Mic Settings to SMC1 H: same

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Check Mode	ServIf:\>check ServIf:\debug>check	yes	Service or Debug	P: enter Check Mode (for Integration use) H: ServIf:\check> H: ServIf:\debug\check>
Transfer SW Version	ServIf:\check>swv ServIf:\debug\check>swv	yes	Service or Debug	P: transfer SW Version to SMC1 (zero terminated String) H: same
Transfer Number of Channels	ServIf:\check>nooch ServIf:\debug\check>nooch	yes	Service or Debug	P: transfer Number of Channels to SMC1 (0, 1...24) H: same
Check Channel / Module Mode	ServIf:\check> ServIf:\debug\check> 1...24: channel 1...24 input module pgm: program digital output rec: record digital output aux1: aux 1 digital output aux2: aux 2 digital output tel1: tel 1 digital output tel2: tel 2 digital output audit: audition digital output	yes	Service or Debug	P: enter Check Channel / Module Mode H: ServIf:\check\xx> H: ServIf:\debug\check\xx> xx: 1...24, pgm, rec, aux1, aux2, tel1, tel2, audit
Transfer Channel / Module Present	ServIf:\check\xx >present ServIf:\debug\check\xx>present	yes	Service or Debug	P: transfer Channel / Module Present (yes/no: 1/0) to SMC1 H: same
Transfer Channel Input Typ	ServIf:\check\ch1...ch24 >typ ServIf:\debug\check\ch1...ch24>typ	yes	Service or Debug	P: transfer Channel Input Type (not present/Mic/anaLine/digLine: 0/1/2/3) to SMC1 H: same
Transfer Number of Inputs	ServIf:\check\ch1...ch24 >nooinp ServIf:\debug\check\ch1...ch24>nooinp	yes	Service or Debug	P: transfer Number of Inputs (2/6) to SMC1 H: same

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Filter Mode	ServIf:\>filt[er] ServIf:\debug>filt[er]	yes	Service or Debug	P: enter Filter Mode H: ServIf:\filter> H: ServIf:\debug\filter>
Display Filter Settings	ServIf:\filter>? ServIf:\debug\filter>?	Yes	Service or Debug	P: displays filter settings for error/warning/information H: same
Filter Error Mode	ServIf:\filter>error ServIf:\debug\filter>error	yes	Service or Debug	P: enter Filter Error ModeH: ServIf:\filter\error> H: ServIf:\debug\filter\error>
Filter Warning Mode	ServIf:\filter>warn[ing] ServIf:\debug\filter>warn[ing]	yes	Service or Debug	P: enter Filter Warning ModeH: ServIf:\filter\warning> H: ServIf:\debug\filter\warning>
Filter Information Mode	ServIf:\filter>info ServIf:\debug\filter>info	yes	Service or Debug	P: enter Filter Information ModeH: ServIf:\filter\info> H: ServIf:\debug\filter\info>
Filter All Mode	ServIf:\filter>all ServIf:\debug\filter>all	yes	Service or Debug	P: enter Filter All Mode (Error & Warning & Information) H: ServIf:\filter\all>H: ServIf:\debug\filter\all>
Display Error/ Warning/ Info Filter Settings	ServIf:\filter\...>? ServIf:\debug\..>? or ServIf:\>filter error/warn/info/all ? ServIf:\debug>filter error/warn/info/all ?	yes	Service or Debug	P: Display if Filter of Error/Warning/Information is on/off H: same
Switch Error/ Warning/ Info/ All Filter on/off	ServIf:\filter\...>on/off ServIf:\debug\filter\..>on/off or ServIf:\>filter err/warn/info/all on/off ServIf:\debug>filter err/warn/info on/off	yes	Service or Debug	P: switch Error/Warning/Info/All Filter on => Errors/Warnings/Infos /All are displayed switch Error/Warning/Info/All Filter off => Errors/Warnings/Infos/ All are suppressed H: same

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Post Message Mode	ServIf:\debug>msend	yes	Debug	P: enter Post Message Mode H: ServIf:\debug\msend>
Post Message Task Mode	ServIf:\debug\msend>taskname	yes	Debug	P: enter Post Message Taskname Mode H: ServIf:\debug\msend\taskname>
Post Message to Task	ServIf:\debug\msend\taskname> data1...n or ServIf:\>debug msend taskname data1...n	yes	Debug	P: Send <data1> ... <data n> to the input queue of task taskname H: same
Message Debug Mode	ServIf:\debug>mdeb	yes	Debug	P: enter Message Debug Mode H: ServIf:\debug\mdeb>
Display Message Debug All	ServIf:\debug\mdeb>?	Yes	Debug	P: display Message Debug Mode for all Tasks H: same
Message Debug Task Mode	ServIf:\debug\mdeb>taskname	yes	Debug	P: enter Message Debug Taskname Mode H: ServIf:\debug\mdeb\taskname>
Message Debug all Tasks Mode	ServIf:\debug\mdeb>all	yes	Debug	P: enter Message Debug all Tasks Mode H: ServIf:\debug\mdeb\all>
Message Debug Task Input Queue on/off	ServIf:\debug\mdeb\taskname> on/off or ServIf:\>debug mdeb taskname on/off	yes	Debug	P: enable/disable the indication of each message received by task (tname) H: same
Display Message Debug Task Input Queue	ServIf:\debug\mdeb\taskname>? or ServIf:\>debug mdeb taskname ?	yes	Debug	P: display if debug of each message received by task (tname) is on/off H: same

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Send Telegram Mode	ServIf:\debug>tsend	yes	Debug	P: enter Telegram Send Mode H: ServIf:\debug\tsend>
Send Telegram Busid Mode	ServIf:\debug\tsend>busid name	yes	Debug	P: enter Send Telegram Busid Mode H: ServIf:\debug\tsend\busid>
Send Telegram to Hardware (busid)	ServIf:\debug\tsend\busid>data1 ...n or ServIf:\>debug tsend busid data1...n	yes	Debug	P: Send data1 ...n to the external device addressed by busid H: same
Telegram Debug Mode	ServIf:\debug>tdeb	yes	Debug	P: enter Telegram Debug Mode H: ServIf:\debug\tdeb>
Display Telegram Debug for All	ServIf:\debug\tdeb>? or ServIf:>debug tdeb ?	yes	Debug	P: display Telegram Debug Mode for all Bus Ids H: same
Telegram Debug BusId Mode	ServIf:\debug\tdeb>busidname ServIf:\debug\tdeb>all	yes	Debug	P: enter Telegram Debug Bus Id Mode H: ServIf:\debug\tdeb\busidname> or ..tdeb\all>
Telegram Debug BusId on/off	ServIf:\debug\tdeb\busidname>on/ off or ServIf:\>debug tdeb busidname on/off	yes	Debug	P: enable/disable the indication of each telegram H: same
Display Telegram Debug for BusId	ServIf:\debug\tdeb\busidname>? or ServIf:\>debug tdeb busidname ?	yes	Debug	P: display enable/disable the indication of each telegram H: same
Telegram Poll Mode	ServIf:\debug>tpoll	yes	Debug	P: enter Telegram Poll Mode H: ServIf:\debug\tpoll>
Telegram Poll BusId Mode	ServIf:\debug\tpoll>busidname	yes	Debug	P: enter Telegram Poll Bus Id Mode H: ServIf:\debug\tpoll\busidname>
Send Message to suppress Polling	ServIf:\debug\tpoll\busidname> 0x0123 or ServIf:\>debug tpoll busidname 0x0123	yes	Debug	P: send a Message to suppress Polling (value 1 = 1 0ms) H: same

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Memory Mode	ServIf:\debug>mem	yes	Debug	P: enter Memory ModeH: ServIf:\debug\mem>
Display Memory Mode	ServIf:\debug\mem> 0x01234567_	yes	Debug	P: display memory at address 0x01234567 H: ServIf:\debug\mem>0x01234567_0x00
Display next Address	ServIf:\debug\mem> 0x01234567_0x00 _	yes	Debug	P: increment address and display memory H: ServIf:\debug\mem>0x01234567_0x00_ 0x01234568 0x00
Write Memory Mode	..f:\debug\mem> 0x01234567_0x00 0x11_	yes	Debug	P: write memory H: ServIf:\debug\mem>0x01234567_0x00 0x11_ 0x01234568 0x00
End Display Memory or End Write Memory	ServIf:\debug\mem> 0x01234567_0x00cr	yes	Debug	P: leave Display Memory Mode H: ServIf:\debug\mem>0x01234567_0x00cr ServIf:\debug\mem> or after writing ServIf:\debug\mem>0x01234567_0x00 0x11_0x01234568 0x00cr ServIf:\debug\mem>
Flash Memory Mode	ServIf:\debug>flash	yes	Debug	P: enter Flash Memory Mode H: ServIf:\debug\flash>
Flash32 Sector Erase	ServIf:\debug\flash\32bit> 1 through 8	yes	Debug	P: enter Flash Memory Section-No Mode H: ServIf:\debug\flash\32bit\sec1>
Flash8 Sector Erase	ServIf:\debug\flash\8bit> 1 through 4	yes	Debug	P: enter Flash Memory Section-No Mode H: ServIf:\debug\flash\8bit\sec1>
Debug DSP Mode	ServIf:\debug>dsp	yes	Debug	P: enter Debug DSP Mode H: ServIf:\debug\DSP>

Command	Syntax	Impl.	User mode	P: Processing H: Header of next line (Level)
Stop DSP Asking Overloads	ServIf:\debug\dsp>lqstop	yes	Debug	P: Sends StopLevelQuery message to DSP Bus Controller: Stops asking Overloads for all DSPs H: same
Start DSP Asking Overloads	ServIf:\debug\dsp>lqstart	yes	Debug	P: Sends StartLevelQuery message to DSP Bus Controller: Stops asking Overloads for all DSPs H: same

5.5 Examples of Service Terminal Commands

5.5.1 Displaying the List of Basic Commands (?)

```
ServIf:\>
ServIf:\>?

   Orthography :
   =============
   Service-Monitor operation is modelled on DOS-Command
   and -Directory Structure.
   - command-line-header indicates the state(-level)
   - several commands (separated by ' ' or '\') are possible
   - if a command is not finished, then the next level is achieved
   - '..' is used to get one level back

   ENTER             exec command
   SPACE or \        separate commands
   BS                backspace
   ESC               delete line
   CTRL_V            insert mode on/off
   CTRL_X            repeat(exec) last command
   CTRL_N            restore last line
   CTRL_L            cursor one character left
   CTRL_R            cursor one character right
   CTRL_B            cursor one word left
   CTRL_F            cursor one word right

   Commands :
   ==========

   DOWN              simulates a PowerDown : puts a PowerFail-
                     Telegram in the Inp-Queue of Diagnostics-And-
                     Error-Handling-Task
   FILTER            change to FILTER-mode : suppress/display
                     ERROR-, INFO- and WARNING- messages
   CAL               change to CALIBRATE-mode : send a FaderCal-
                     Message to Surface Controller 1/2/3/4/all
   IFXWS             Examines IFX Workspace and displays WorkspaceSize,
                     ActualUsedWorkspace and NumberWorkspaceTooSmall
   STARTDOWNLOAD     change to STARTDOWNLOAD-mode (Start SW Update)
                     SW from SERVICE TERMINAL or PC CARD
   STOPDOWNLOAD      Cancel SW Update
   PGMASKSINIT       Init PGMasks
   DUMP              change to DUMP-mode (dump ConsoleConfiguration,
                     GlobalSnapshots, PrivateSnapshots.. to Service Terminal)
   CHECK             change to CHECK-mode (for Integration use)
   CCODE             0xFFFFFFFF  Enter your customer code
```

5.5.2 Displaying the Console Configuration Header (CCH)

```
ServIf:\debug\disp>
ServIf:\debug\disp>cch

   CONSOLE CONFIGURATION HEADER :
   ==============================

   SW-Version                          V2.0.2b 24.11.1998
   Number of Channels                                  24
   Checksum                                       0xfb8e
```

5.5.3 Displaying the Global Console Configuration (GCC)

```
ServIf:\debug\disp>
ServIf:\debug\disp>gcc

   GLOBAL CONSOLE CONFIGURATION :
   ==============================

   PFL Bus Source              PF (PFL)
   PFL Cut when Chn active           no   CR DIM when Audition     don't care
   Insert 1/2 Type              digital   Insert 3/4 Type              digital
   Meter 1 Source               monitor   Meter 2 Source               record
   Service Term. baudrate    38400 baud   SerModuleBus2 baudrate    38400 baud
   Program digital standard     aes/ebu   Record digital standard      aes/ebu
   Aux 1 digital standard       aes/ebu   Aux 1 output type             stereo
   Aux 2 digital standard       aes/ebu   Aux 2 output type             stereo
   N-1 A digital standard       aes/ebu   N-1 A output type               mono
   N-1 B digital standard       aes/ebu   N-1 B output type               mono
   Audition digital std         aes/ebu   Audition output type          stereo
   Sync source                 internal
   Sampling rate                 48 kHz   Watch sync source  time sync module
   Daylight saving change           yes   MEST Offset                        0
   Profanity delay time             0 s   Profanity Delay Option            no
   ON-AIR Indication                pgm   Billing Enable                    no
   DCF 77 Option                     no
```

5.5.4 Displaying the Administrator's Configuration Data (UC 0)

```
ServIf:\debug\disp>
ServIf:\debug\disp>uc
ServIf:\debug\disp\uc:userID>0

   USER CONFIGURATION :   userID    0
   ====================

   User Name                        ADMIN
   User Password                    'ADMIN'
   Accept Error allowed             yes
   Insert allowed                   yes
   Aux Send allowed                 yes
   Audition Level allowed           yes
   N-1 Level allowed                yes
   Aux 1 (chn) allowed              yes
   Aux 2 (chn) allowed              yes
   Phase allowed                    yes
   Phantom allowed                  yes
   Stereo allowed                   yes
   Gain/Cal allowed                 yes
   Pan/Bal allowed                  yes
   Sum allowed                      yes
   Eq allowed                       yes
   Input Selection allowed          yes
   System Configuration allowed     yes
```

5.5.5 Displaying the Default User's Configuration Data (UC 1)

```
ServIf:\debug\disp>
ServIf:\debug\disp>uc
ServIf:\debug\disp\uc:userID>1

   USER CONFIGURATION :   userID    1
   ====================

   User Name                        DEFAULT USER
   User Password                    ''
   Accept Error allowed             yes
   Insert allowed                   yes
   Aux Send allowed                 yes
   Audition Level allowed           yes
   N-1 Level allowed                yes
   Aux 1 (chn) allowed              yes
   Aux 2 (chn) allowed              yes
   Phase allowed                    yes
   Phantom allowed                  yes
   Stereo allowed                   yes
   Gain/Cal allowed                 yes
   Pan/Bal allowed                  yes
   Sum allowed                      yes
   Eq allowed                       no
   Input Selection allowed          yes
   System Configuration allowed     yes
```

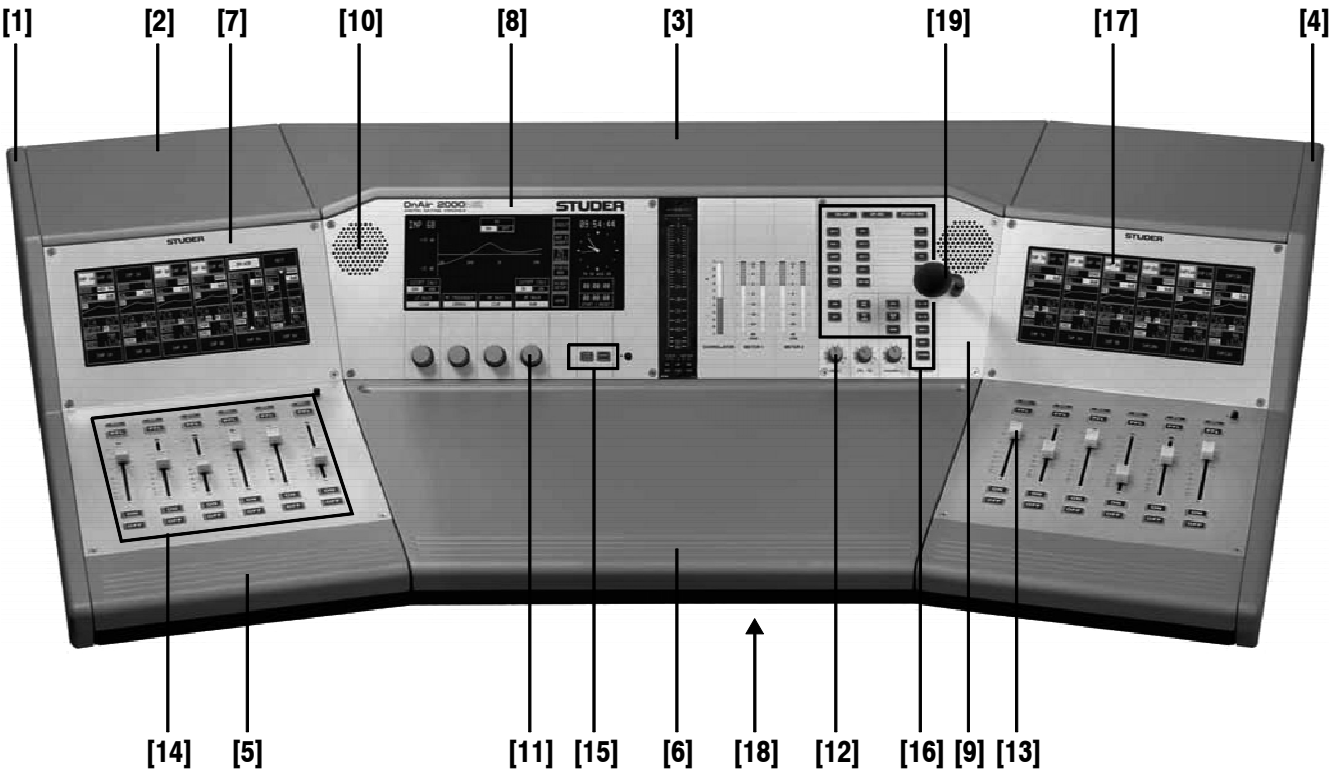
5.5.6 Displaying the Configuration Data of a Normal User (e.g. UC 2)

```
ServIf:\debug\disp>
ServIf:\debug\disp>uc
ServIf:\debug\disp\uc:userID>2

   USER CONFIGURATION :   userID    2
   ====================

   User Name                        JACKIE B.
   User Password                    'FILOU'
   Accept Error allowed             no
   Insert allowed                   no
   Aux Send allowed                 yes
   Audition Level allowed           yes
   N-1 Level allowed                no
   Aux 1 (chn) allowed              yes
   Aux 2 (chn) allowed              yes
   Phase allowed                    no
   Phantom allowed                  no
   Stereo allowed                   no
   Gain/Cal allowed                 yes
   Pan/Bal allowed                  yes
   Sum allowed                      no
   Eq allowed                       yes
   Input Selection allowed          no
   System Configuration allowed     no
```

6 SPARE PARTS



Item	OnAir 2000 (dark version) Order No.:	OnAir 2000M2 (bright version) Order No.:	OnAir 2000M2 Modulo Order No.:	Designation
1	1.942.020.14	1.942.021.14	-	Side panel, left
2	1.942.020.06	1.942.021.06	-	Top cover, fader section
3	1.942.010.06	1.942.011.06	-	Top cover, central section
4	1.942.020.15	1.942.021.15	-	Side panel, right
5	1.942.020.10	1.942.021.10	-	Hand rest, fader section
6	1.942.010.10	1.942.011.10	-	Hand rest, central section
7	1.942.020.04	1.942.021.04		Front panel, fader section
8	1.942.010.03	1.942.011.03	1.942.411.03	Front panel, central section, left part
9	1.942.010.04	1.942.011.04	1.942.411.04	Front panel, central section, right part
10	71.01.0174			Loudspeaker, 15 /1 W
11	42.01.0414			Rotary knob large, dark grey
	42.01.0464			Knob cover large, light grey
12	42.01.0209			Rotary knob small, dark grey
	42.01.0257			Knob cover small, light grey, with dash
13	1.960.035.00			Fader 104 mm, 10 k lin.
	1.911.000.48			Fader knob, light grey
14	1.942.020.07			Keyboard/lamp rubber mat, fader section, rear part (PFL/OVL)
	1.942.020.08			Keyboard rubber mat, fader section, front part (ON/OFF)
15	1.942.010.08			Keyboard rubber mat (START-STOP/RESET) for Stopwatch
16	1.942.010.07			Keyboard/lamp rubber mat for Monitoring section
17	1.942.082.00			Touch-screen/LC display module (incl. CFL backlight lamp)
	10.942.161.00			CFL backlight lamp
18	89.20.0302			PC-Card, 4 MB
	89.20.0301			PC-Card, 2 MB
19	1.942.218.00			Talkback microphone w. gooseneck

Accessory Sets:

1.942.096.00	(one set per unit):
consisting of:	Mains cable socket IEC320 Mains cable strain relief 14 connectors XLR3f 3 connectors D-type f, 9 pin, with cover 1 connector D-type f, 25 pin, with cover 2 connectors Siemens f, 39 pin, with cover and accessories Fader knobs: 2 each - red, orange, yellow, green, blue Hex socket screwdrivers no. 2, no. 2.5 Mouse pad
1.942.097.00	(one set per fader bay)
consisting of:	12 connectors XLR3m 6 connectors D-type f, 9 pin, with cover

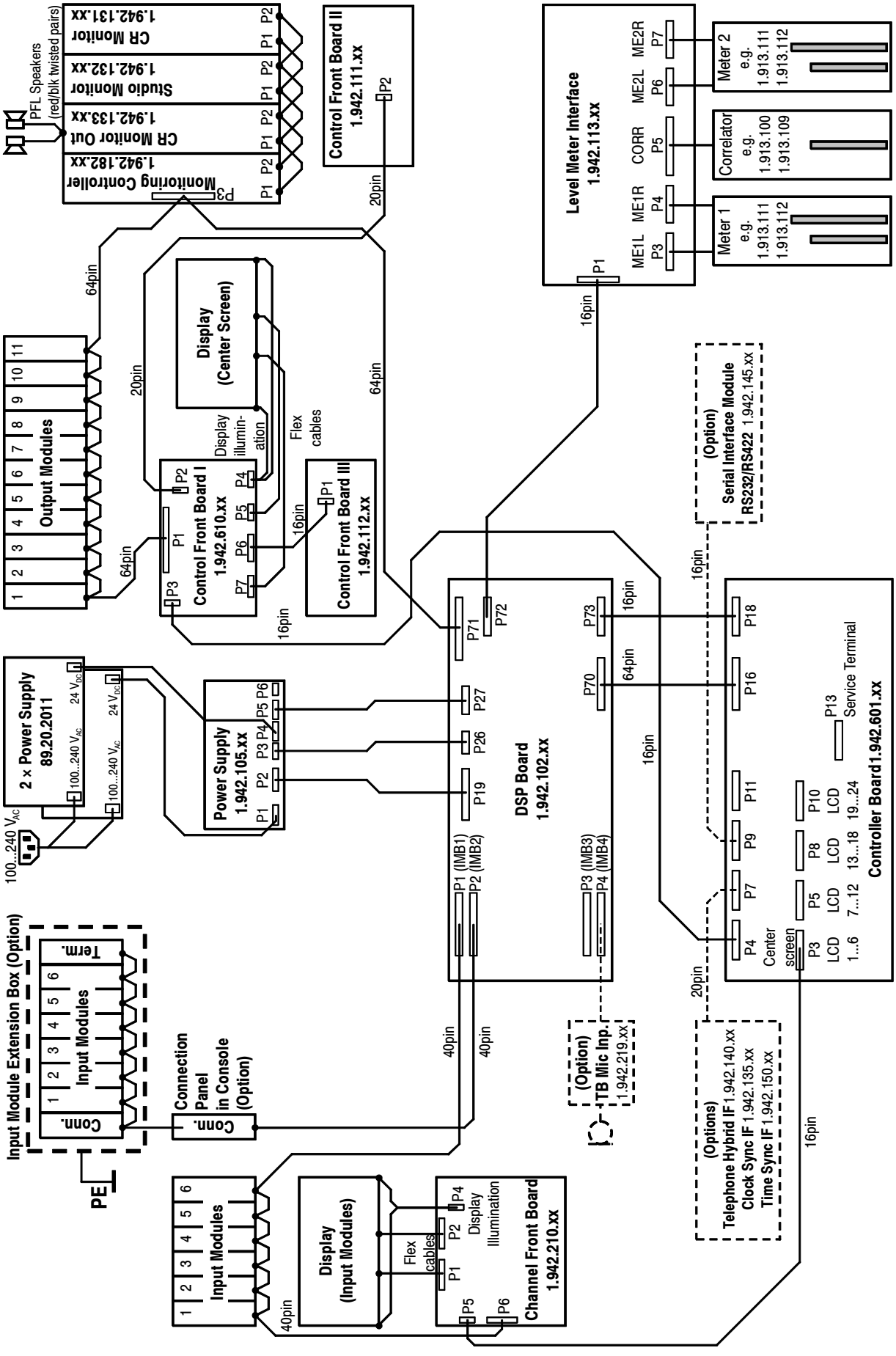
CONTENTS PART THREE – DIAGRAMS CENTER SECTION

Continued on next page...

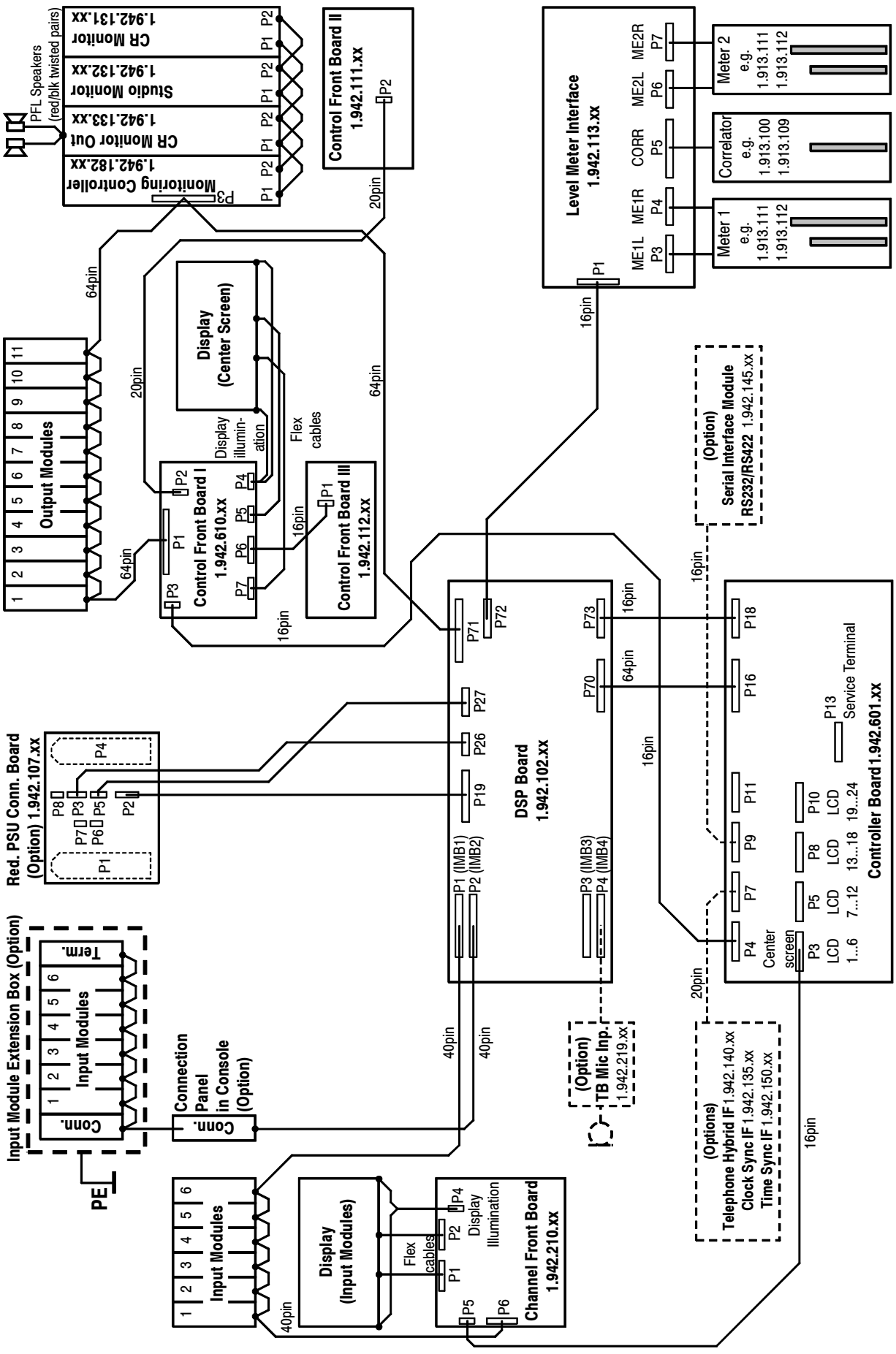
Level Meter	Assembly No.	Diagram	Component Layout	Parts List
Level Meter Interface	1.942.113.21	.21	.20	.21
Dual Bargraph PPM (optional)	1.913.111	***	***	***
Dual Bargraph VU (optional)	1.913.112	***	***	***
Dual 30-LED PPM (optional)	1.913.105	***	***	***
Dual 30-LED VU (optional)	1.913.106	***	***	***
Correlator, 30-LED, switchable 1/2	1.913.100.00	.00	.00	.00
Correlator, 30-LED	1.913.109.00		.00	.00
*** depends on the actually installed meter assemblies				

Options	Assembly No.	Diagram	Component Layout	Parts List
Sync Module	1.942.135.20	.20	.20	.20
Telephon Hybrid CTR Module	1.942.140.21	.20	.20	.21
RS232 Module	1.942.145.81	.00	.81	.81
Time Sync Module	1.942.150.26	.20	.20	.26
Analog Insert Module	1.942.160.20	-	.20	-
Insert Controller	1.942.161.00	.00	.00	.00
Analog Insert	1.942.162.00	.00	.00	.00
Connection Board 39 Pol.	1.942.247.00	.00	.00	.00
Digital Insert Module	1.942.165.20	-	.20	-
Insert Controller (see Analog Insert Module above)	1.942.161.00	.00	.00	.00
Digital Insert	1.942.164.20	.20	.20	.20
Connection Board 39 Pol. (see Analog Insert Module above)	1.942.247.00	.00	.00	.00
TB Mic Input Module	1.942.219.81	.81	.00	.81

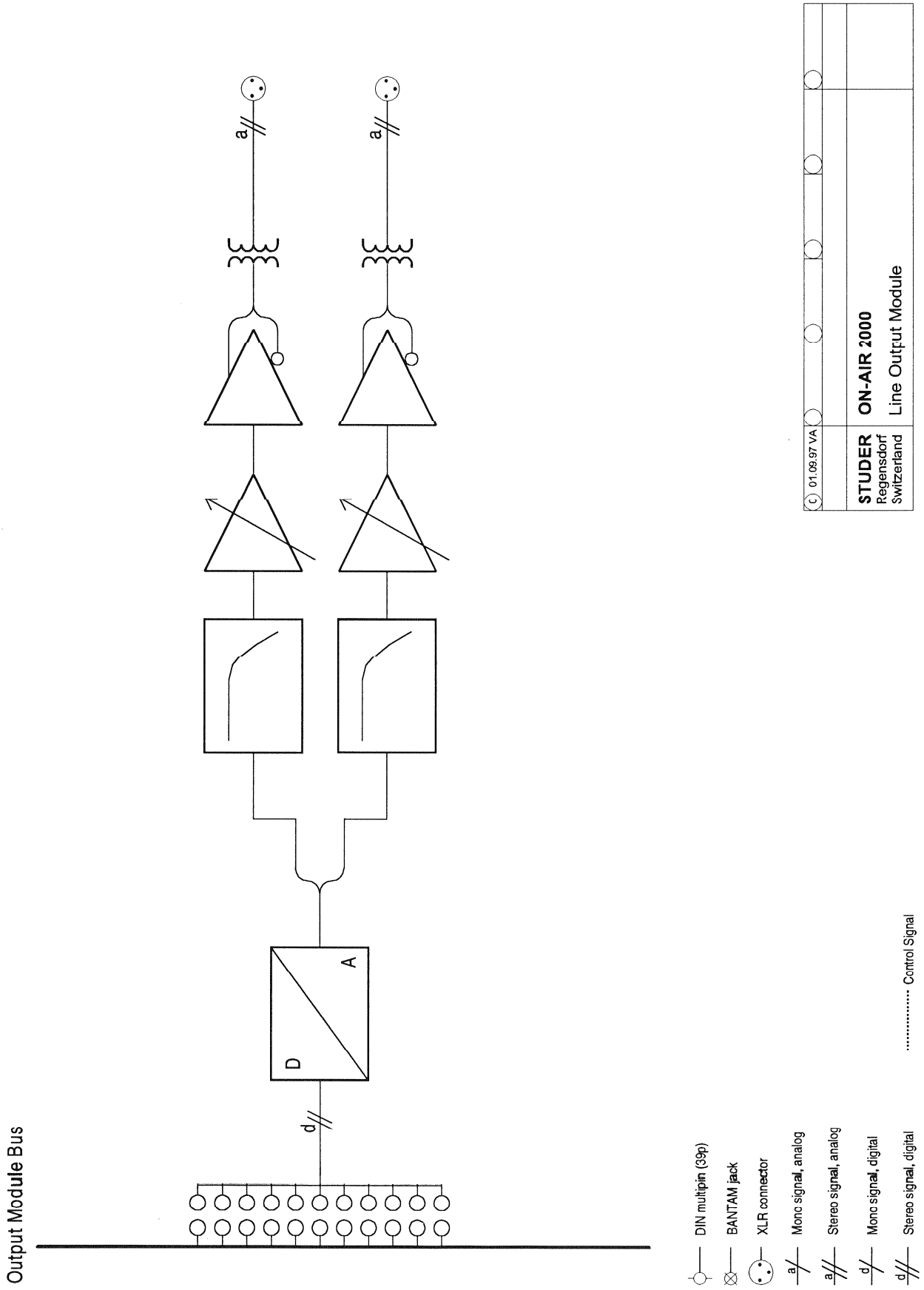
System Wiring (for a 6-Ch Console, w. Optional Input Module Extension Box)



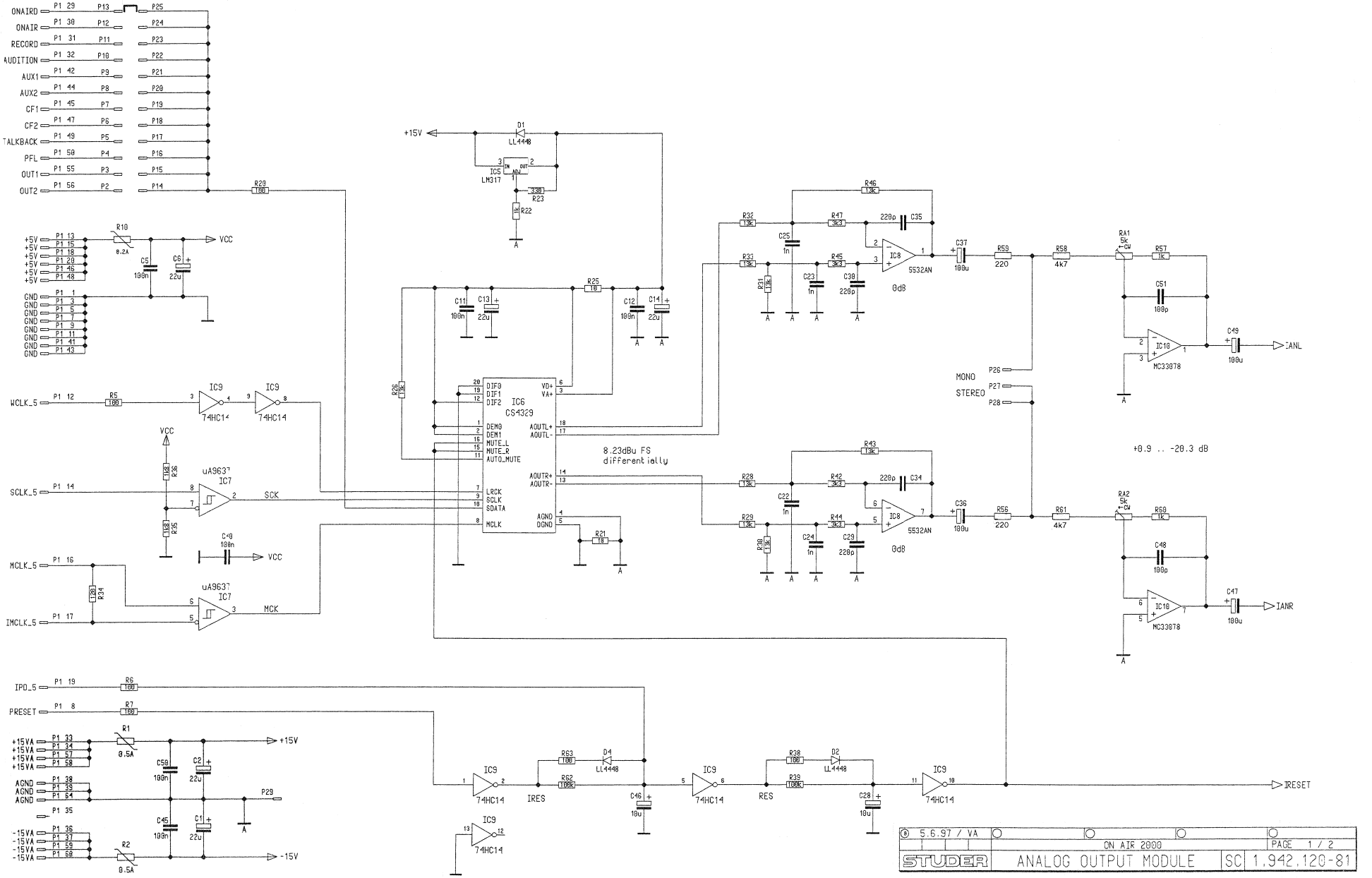
System Wiring (for a 6-Ch Console, w. Ext. Supply Option)



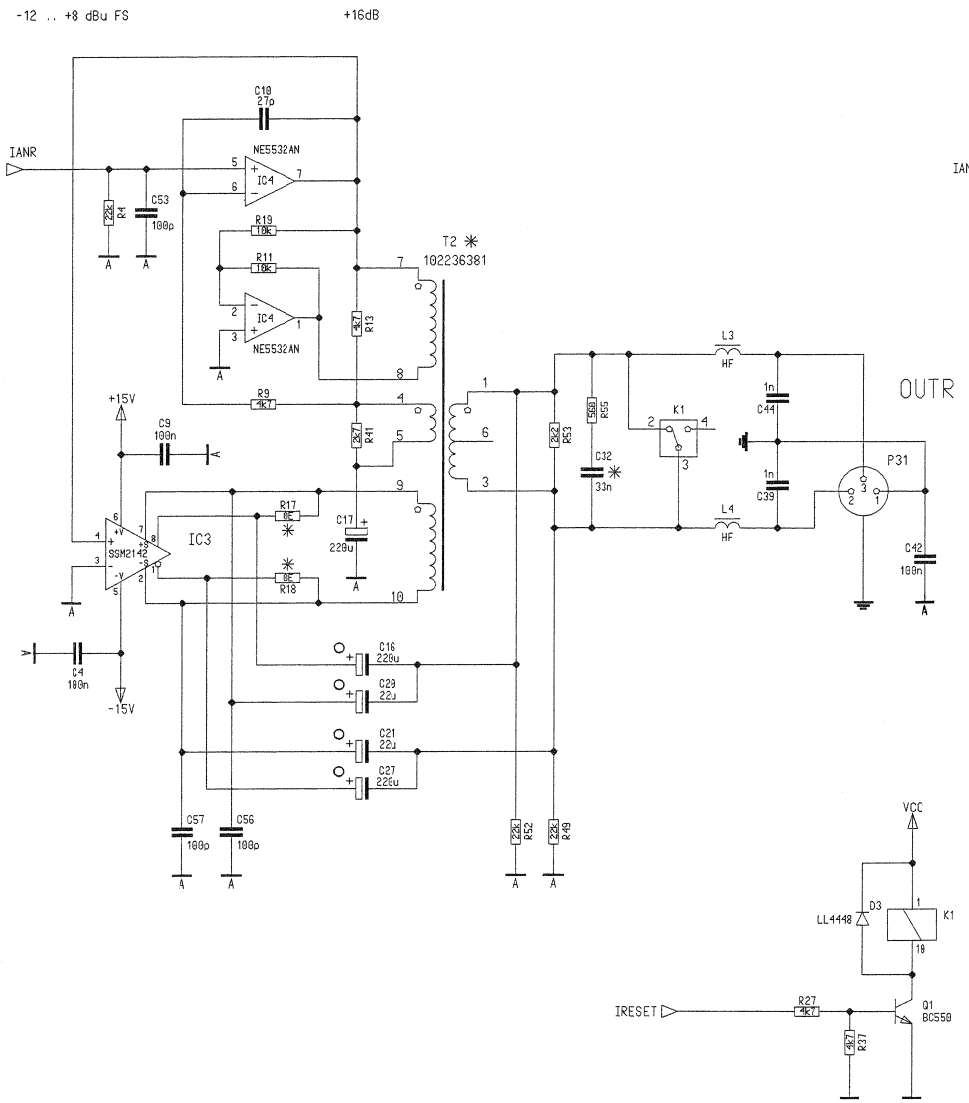
Block diagram Analog Output Module

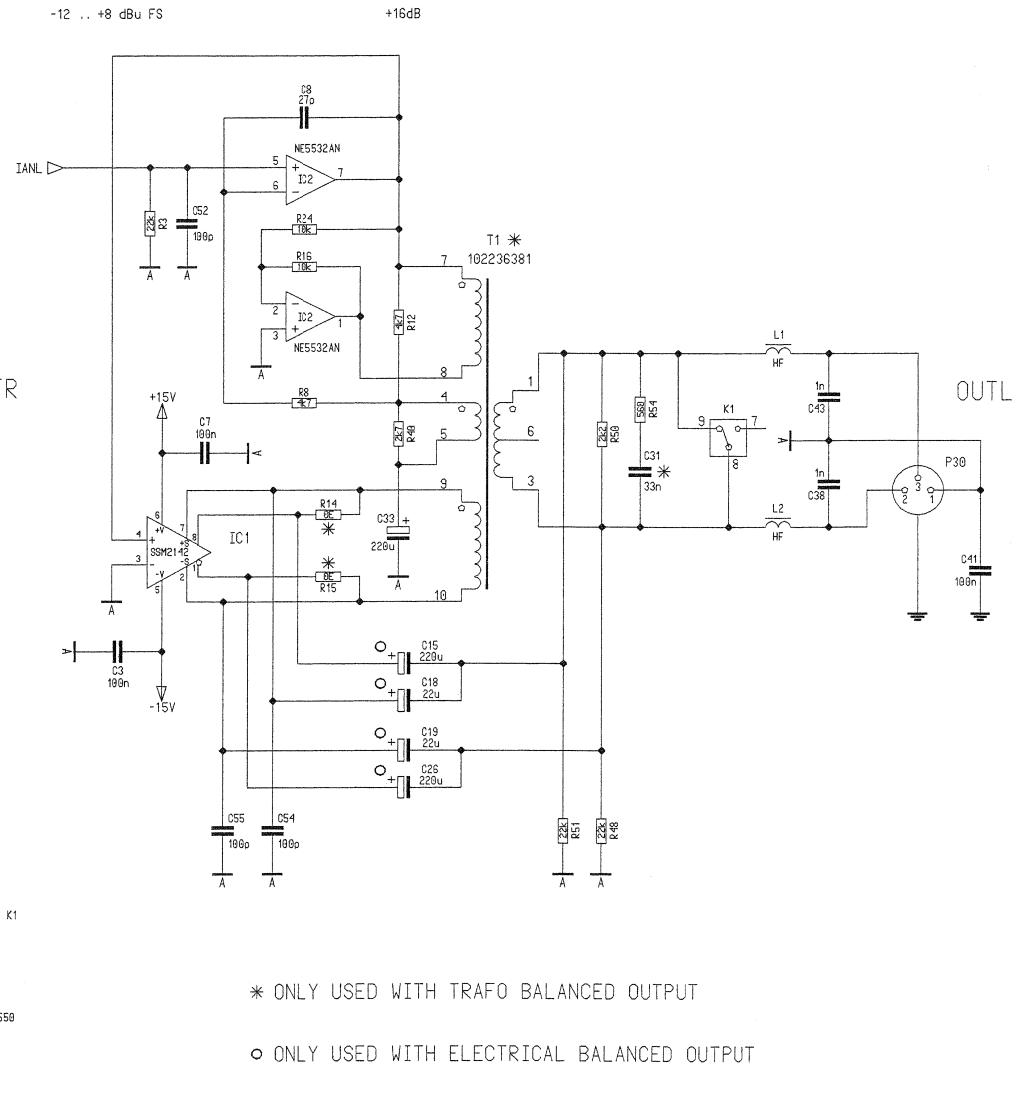


Analog Output Module Transformer Balanced 1.942.120.81
Analog Output Module Electronically Balanced 1.942.122.81



Analog Output Module Transformer Balanced 1.942.120.81
Analog Output Module Electronically Balanced 1.942.122.81





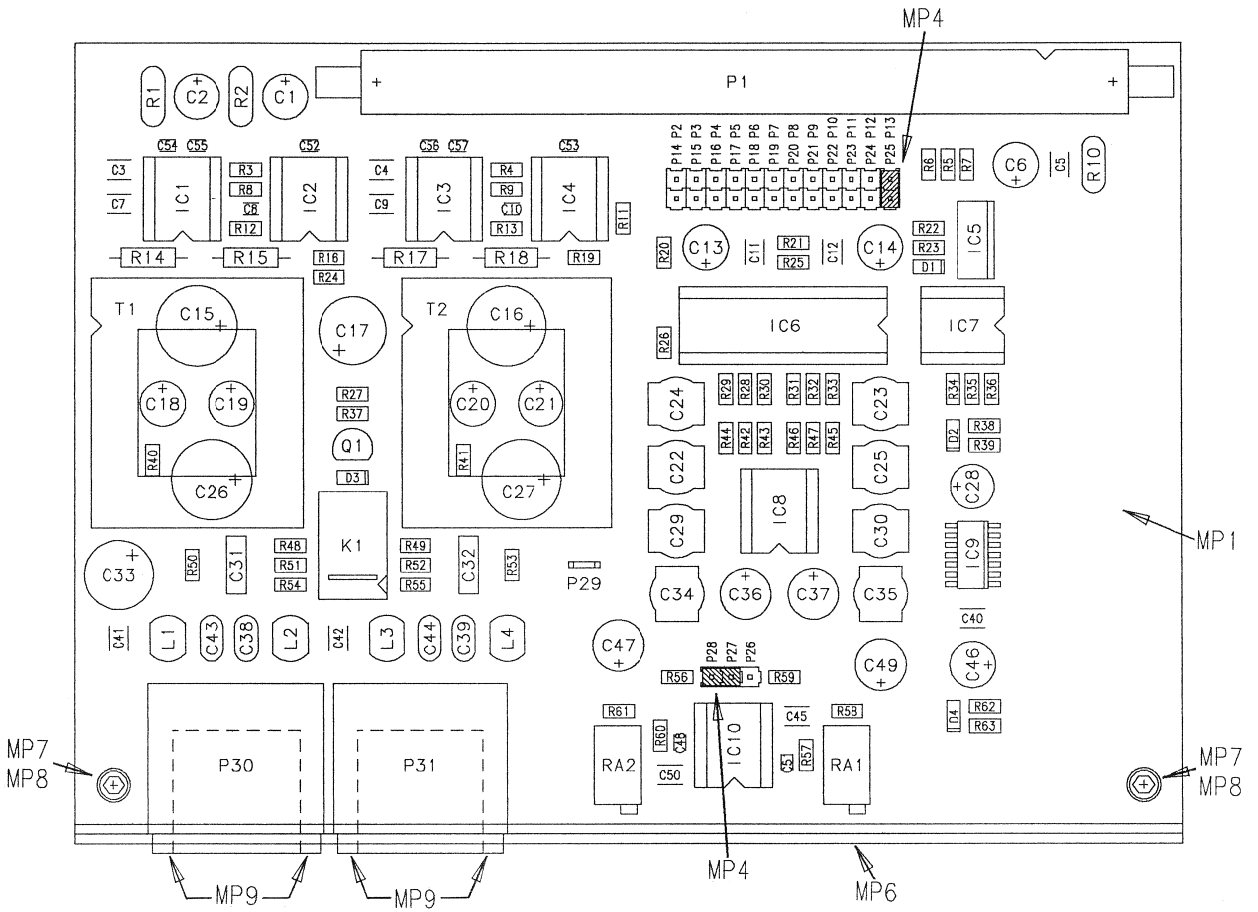
* ONLY USED WITH TRAFO BALANCED OUTPUT

o ONLY USED WITH ELECTRICAL BALANCED OUTPUT

9 5.6.97 / VA				
	ON AIR 2000			PAGE 2 / 2
STUDER	ANALOG OUTPUT MODULE		SC	1.942.120-81

Analog Output Module Transformer Balanced 1.942.120.81
Analog Output Module Electronically Balanced 1.942.122.81

Analog Output Module Transformer Balanced 1.942.120.81



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.5220		22u	EL 25V, 20%, RM5
0	C 2	59.22.5220		22u	EL 25V, 20%, RM5
0	C 3	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 4	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 5	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 6	59.22.5220		22u	EL 25V, 20%, RM5
0	C 7	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 8	59.60.0270		27p	CER 63V, 5%, C0G, 0805
0	C 9	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 10	59.60.0270		27p	CER 63V, 5%, C0G, 0805
0	C 11	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 12	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 13	59.22.5220		22u	EL 25V, 20%, RM5
0	C 14	59.22.5220		22u	EL 25V, 20%, RM5
0	C 15	not used		220u	EL 16V, 20%, RM5
0	C 16	not used		220u	EL 16V, 20%, RM5
0	C 17	59.22.3221		220u	EL 10V, 20%, RM5
0	C 18	not used		22u	EL 25V, 20%, RM5
0	C 19	not used		22u	EL 25V, 20%, RM5
0	C 20	not used		22u	EL 25V, 20%, RM5
0	C 21	not used		22u	EL 25V, 20%, RM5
0	C 22	59.05.1102		1n	PP, 1%, 630V
0	C 23	59.05.1102		1n	PP, 1%, 630V
0	C 24	59.05.1102		1n	PP, 1%, 630V
0	C 25	59.05.1102		1n	PP, 1%, 630V
0	C 26	not used		220u	EL 16V, 20%, RM5
0	C 27	not used		220u	EL 16V, 20%, RM5
0	C 28	59.22.6100		10u	EL 35V, 20%, RM5
0	C 29	59.05.1221		220p	PP, 1%, 630V
0	C 30	59.05.1221		220p	PP, 1%, 630V
0	C 31	59.06.5333		33n	PETP, 63V, 5%, RM5
0	C 32	59.06.5333		33n	PETP, 63V, 5%, RM5
0	C 33	59.22.3221		220u	EL 10V, 20%, RM5
0	C 34	59.05.1221		220p	PP, 1%, 630V
0	C 35	59.05.1221		220p	PP, 1%, 630V
0	C 36	59.22.3101		100u	EL 10V, 20%, RM5
0	C 37	59.22.3101		100u	EL 10V, 20%, RM5
0	C 38	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 39	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 40	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 41	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 42	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 43	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 44	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 45	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 46	not used		10u	EL 35V, 20%, RM5
0	C 47	59.22.3101		100u	EL 10V, 20%, RM5
0	C 48	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 49	59.22.3101		100u	EL 10V, 20%, RM5
0	C 50	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 51	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 52	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 53	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 54	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 55	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 56	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 57	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	D 1	50.60.8001		4448	D LL 4448 SOD 80
0	D 2	50.60.8001		4448	D LL 4448 SOD 80
0	D 3	50.60.8001		4448	D LL 4448 SOD 80
0	D 4	50.60.8001		4448	D LL 4448 SOD 80
0	IC 1	50.09.0124		2142	IC SSM 2142 P
0	IC 2	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, ,A
0	IC 3	50.09.0124		2142	IC SSM 2142 P
0	IC 4	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, ,A
0	IC 5	50.10.0104		LM317SP	IC LM 317 SP, ..T,
0	IC 6	50.19.0114		D/A Conv	IC CS 4329-KP,
0	IC 7	50.15.0114		9637	Dual diff Line Receiver
0	IC 8	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, ,A
0	IC 9	50.62.1014		74HC 14	74 HC 14
0	IC 10	50.09.0117		MC33078	IC MC 33078 P
0	K 1	56.04.0198		2u	5V, 125V/2A, AG/AU
0	L 1	62.01.0301		110MHz	Breitband-Drossel
0	L 2	62.01.0301		110MHz	Breitband-Drossel
0	L 3	62.01.0301		110MHz	Breitband-Drossel
0	L 4	62.01.0301		110MHz	Breitband-Drossel
0	MP 1	1.942.120.12	1 pce		ANALOG OUTPUT PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.120.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	54.01.0021	2 pcs	Jumper	0.63 * 0.63mm
0	MP 6	1.942.120.02	1 pce		BLENDE ANALOG OUTPUT MODUL
0	MP 7	24.16.2030	2 pcs		FAECHERSCHEIBE A D 3.2
0	MP 8	21.53.0353	2 pcs		Z - SCHR. IS , ZN , M 3 * 5

Edition / Ausgabe	Date / Datum	Visa / Gez.	Dépôt / Dépôt	Seen / Ges.	Index
	21.5.97	PZ			

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Kopie fuer:

STUDER REGENSDORF — Description / Bezeichnung: ANALOG OUTPUT MODULE "ESE" — Number / Nummer: 1.942.120-81

Analog Output Module Transformer Balanced 1.942.120.81

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	MP 9	20.24.7623	4 pcs		LK-Formschr 2.9*8, KS, Zn gb
0	P 1	54.14.2056		64p	P STECKER 64 P , AU, GERADE
0	P 2	54.01.0020		1p	Pin 0.63*0.63
0	P 3	54.01.0020		1p	Pin 0.63*0.63
0	P 4	54.01.0020		1p	Pin 0.63*0.63
0	P 5	54.01.0020		1p	Pin 0.63*0.63
0	P 6	54.01.0020		1p	Pin 0.63*0.63
0	P 7	54.01.0020		1p	Pin 0.63*0.63
0	P 8	54.01.0020		1p	Pin 0.63*0.63
0	P 9	54.01.0020		1p	Pin 0.63*0.63
0	P 10	54.01.0020		1p	Pin 0.63*0.63
0	P 11	54.01.0020		1p	Pin 0.63*0.63
0	P 12	54.01.0020		1p	Pin 0.63*0.63
0	P 13	54.01.0020		1p	Pin 0.63*0.63
0	P 14	54.01.0020		1p	Pin 0.63*0.63
0	P 15	54.01.0020		1p	Pin 0.63*0.63
0	P 16	54.01.0020		1p	Pin 0.63*0.63
0	P 17	54.01.0020		1p	Pin 0.63*0.63
0	P 18	54.01.0020		1p	Pin 0.63*0.63
0	P 19	54.01.0020		1p	Pin 0.63*0.63
0	P 20	54.01.0020		1p	Pin 0.63*0.63
0	P 21	54.01.0020		1p	Pin 0.63*0.63
0	P 22	54.01.0020		1p	Pin 0.63*0.63
0	P 23	54.01.0020		1p	Pin 0.63*0.63
0	P 24	54.01.0020		1p	Pin 0.63*0.63
0	P 25	54.01.0020		1p	Pin 0.63*0.63
0	P 26	54.01.0020		1p	Pin 0.63*0.63
0	P 27	54.01.0020		1p	Pin 0.63*0.63
0	P 28	54.01.0020		1p	Pin 0.63*0.63
0	P 29	not used		1p	Flatpin, 2.8*0.8mm
0	P 30	54.21.2202		3p	XLR 3p PCB WINKEL
0	P 31	54.21.2202		3p	XLR 3p PCB WINKEL
0	Q 1	50.03.0491		BC546B	BC 546 B NPN
0	R 1	57.92.7013		0.5A	POLY- PTC, 60V
0	R 2	57.92.7013		0.5A	POLY- PTC, 60V
0	R 3	57.60.1223		22K	MF, 1%, 0204, E24
0	R 4	57.60.1223		22K	MF, 1%, 0204, E24
0	R 5	57.60.1101		100R	MF, 1%, 0204, E24
0	R 6	57.60.1101		100R	MF, 1%, 0204, E24
0	R 7	57.60.1101		100R	MF, 1%, 0204, E24
0	R 8	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 9	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 10	57.92.7011		0.2A	POLY- PTC, 60V
0	R 11	57.60.1103		10K	MF, 1%, 0204, E24
0	R 12	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 13	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 14	57.11.3008		0R0	MF, 0207
0	R 15	57.11.3008		0R0	MF, 0207
0	R 16	57.60.1103		10K	MF, 1%, 0204, E24
0	R 17	57.11.3008		0R0	MF, 0207
0	R 18	57.11.3008		0R0	MF, 0207
0	R 19	57.60.1103		10K	MF, 1%, 0204, E24
0	R 20	57.60.1101		100R	MF, 1%, 0204, E24
0	R 21	57.60.1100		10R	MF, 1%, 0204, E24
0	R 22	57.60.1102		1K	MF, 1%, 0204, E24
0	R 23	57.60.1331		330R	MF, 1%, 0204, E24
0	R 24	57.60.1103		10K	MF, 1%, 0204, E24
0	R 25	57.60.1100		10R	MF, 1%, 0204, E24
0	R 26	57.60.1133		13K	MF, 1%, 0204, E24
0	R 27	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 28	57.60.1133		13K	MF, 1%, 0204, E24
0	R 29	57.60.1133		13K	MF, 1%, 0204, E24
0	R 30	57.60.1133		13K	MF, 1%, 0204, E24
0	R 31	57.60.1133		13K	MF, 1%, 0204, E24
0	R 32	57.60.1133		13K	MF, 1%, 0204, E24
0	R 33	57.60.1133		13K	MF, 1%, 0204, E24
0	R 34	not used		120R	MF, 1%, 0204, E24
0	R 35	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 36	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 37	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 38	57.60.1101		100R	MF, 1%, 0204, E24
0	R 39	57.60.1104		100K	MF, 1%, 0204, E24
0	R 40	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 41	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 42	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 43	57.60.1133		13K	MF, 1%, 0204, E24
0	R 44	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 45	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 46	57.60.1133		13K	MF, 1%, 0204, E24
0	R 47	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 48	57.60.1223		22K	MF, 1%, 0204, E24
0	R 49	57.60.1223		22K	MF, 1%, 0204, E24
0	R 50	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 51	57.60.1223		22K	MF, 1%, 0204, E24
0	R 52	57.60.1223		22K	MF, 1%, 0204, E24
0	R 53	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 54	57.60.1561		560R	MF, 1%, 0204, E24
0	R 55	57.60.1561		560R	MF, 1%, 0204, E24
0	R 56	57.60.1221		220R	MF, 1%, 0204, E24
0	R 57	57.60.1102		1K	MF, 1%, 0204, E24
0	R 58	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 59	57.60.1221		220R	MF, 1%, 0204, E24
0	R 60	57.60.1102		1K	MF, 1%, 0204, E24
0	R 61	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 62	57.60.1104		100K	MF, 1%, 0204, E24
0	R 63	not used		100R	MF, 1%, 0204, E24
0	RA 1	58.05.0502		5k	10%, 0.5W, Cermet
0	RA 2	58.05.0502		5k	10%, 0.5W, Cermet
0	T 1	1.922.363.81			LINE OUTPUT TRAFO 1:0,761
0	T 2	1.922.363.81			LINE OUTPUT TRAFO 1:0,761

End of List

Comments:

Analog Output Module Electronically Balanced 1.942.122.81

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.5220		22u	EL 25V, 20%, RM5
0	C 2	59.22.5220		22u	EL 25V, 20%, RM5
0	C 3	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 4	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 5	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 6	59.22.5220		22u	EL 25V, 20%, RM5
0	C 7	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 8	59.60.0270		27p	CER 63V, 5%, C0G, 0805
0	C 9	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 10	59.60.0270		27p	CER 63V, 5%, C0G, 0805
0	C 11	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 12	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 13	59.22.5220		22u	EL 25V, 20%, RM5
0	C 14	59.22.5220		22u	EL 25V, 20%, RM5
0	C 15	59.22.4221		220u	EL 16V, 20%, RM5
0	C 16	59.22.4221		220u	EL 16V, 20%, RM5
0	C 17	59.22.3221		220u	EL 10V, 20%, RM5
0	C 18	59.22.5220		22u	EL 25V, 20%, RM5
0	C 19	59.22.5220		22u	EL 25V, 20%, RM5
0	C 20	59.22.5220		22u	EL 25V, 20%, RM5
0	C 21	59.22.5220		22u	EL 25V, 20%, RM5
0	C 22	59.05.1102		1n	PP, 1%, 630V
0	C 23	59.05.1102		1n	PP, 1%, 630V
0	C 24	59.05.1102		1n	PP, 1%, 630V
0	C 25	59.05.1102		1n	PP, 1%, 630V
0	C 26	59.22.4221		220u	EL 16V, 20%, RM5
0	C 27	59.22.4221		220u	EL 16V, 20%, RM5
0	C 28	59.22.6100		10u	EL 35V, 20%, RM5
0	C 29	59.05.1221		220p	PP, 1%, 630V
0	C 30	59.05.1221		220p	PP, 1%, 630V
0	C 31	not used		33n	PETP, 63V, 5%, RM5
0	C 32	not used		33n	PETP, 63V, 5%, RM5
0	C 33	59.22.3221		220u	EL 10V, 20%, RM5
0	C 34	59.05.1221		220p	PP, 1%, 630V
0	C 35	59.05.1221		220p	PP, 1%, 630V
0	C 36	59.22.3101		100u	EL 10V, 20%, RM5
0	C 37	59.22.3101		100u	EL 10V, 20%, RM5
0	C 38	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 39	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 40	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 41	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 42	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 43	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 44	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 45	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 46	not used		10u	EL 35V, 20%, RM5
0	C 47	59.22.3101		100u	EL 10V, 20%, RM5
0	C 48	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 49	59.22.3101		100u	EL 10V, 20%, RM5
0	C 50	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 51	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 52	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 53	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 54	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 55	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 56	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 57	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	D 1	50.60.8001		4448	D LL 4448 SOD 80
0	D 2	50.60.8001		4448	D LL 4448 SOD 80
0	D 3	50.60.8001		4448	D LL 4448 SOD 80
0	D 4	50.60.8001		4448	D LL 4448 SOD 80
0	IC 1	50.09.0124		2142	IC SSM 2142 P
0	IC 2	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, A
0	IC 3	50.09.0124		2142	IC SSM 2142 P
0	IC 4	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, A
0	IC 5	50.10.0104		LM317SP	IC LM 317 SP, T,
0	IC 6	50.19.0114		D/A Conv	IC CS 4329-KP,
0	IC 7	50.15.0114		9637	Dual diff Line Receiver
0	IC 8	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, A
0	IC 9	50.62.1014		74HC 14	74 HC 14
0	IC 10	50.09.0117		MC33078	IC MC 33078 P
0	K 1	56.04.0198		2u	5V, 125V/2A, AG/AU
0	L 1	62.01.0301		110MHz	Breitband-Drossel
0	L 2	62.01.0301		110MHz	Breitband-Drossel
0	L 3	62.01.0301		110MHz	Breitband-Drossel
0	L 4	62.01.0301		110MHz	Breitband-Drossel
0	MP 1	1.942.120.12	1 pce		ANALOG OUTPUT PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.122.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	54.01.0021	2 pcs	Jumper	0.63 * 0.63mm
0	MP 6	1.942.120.02	1 pce		BLENDE ANALOG OUTPUT MODUL
0	MP 7	24.16.2030	2 pcs		FAECHERSCHEIBE A D 3.2
0	MP 8	21.53.0353	2 pcs		Z - SCHR. IS , ZN , M 3 * 5
0	MP 9	20.24.7623	4 pcs		LK-Formschr 2.9*8, KS, Zn gb
0	P 1	54.14.2056		64p	P STECKER 64 P , AU, GERADE
0	P 2	54.01.0020		1p	Pin 0.63*0.63
0	P 3	54.01.0020		1p	Pin 0.63*0.63
0	P 4	54.01.0020		1p	Pin 0.63*0.63
0	P 5	54.01.0020		1p	Pin 0.63*0.63
0	P 6	54.01.0020		1p	Pin 0.63*0.63
0	P 7	54.01.0020		1p	Pin 0.63*0.63
0	P 8	54.01.0020		1p	Pin 0.63*0.63
0	P 9	54.01.0020		1p	Pin 0.63*0.63
0	P 10	54.01.0020		1p	Pin 0.63*0.63
0	P 11	54.01.0020		1p	Pin 0.63*0.63
0	P 12	54.01.0020		1p	Pin 0.63*0.63
0	P 13	54.01.0020		1p	Pin 0.63*0.63
0	P 14	54.01.0020		1p	Pin 0.63*0.63
0	P 15	54.01.0020		1p	Pin 0.63*0.63
0	P 16	54.01.0020		1p	Pin 0.63*0.63
0	P 17	54.01.0020		1p	Pin 0.63*0.63
0	P 18	54.01.0020		1p	Pin 0.63*0.63
0	P 19	54.01.0020		1p	Pin 0.63*0.63
0	P 20	54.01.0020		1p	Pin 0.63*0.63
0	P 21	54.01.0020		1p	Pin 0.63*0.63
0	P 22	54.01.0020		1p	Pin 0.63*0.63
0	P 23	54.01.0020		1p	Pin 0.63*0.63
0	P 24	54.01.0020		1p	Pin 0.63*0.63
0	P 25	54.01.0020		1p	Pin 0.63*0.63
0	P 26	54.01.0020		1p	Pin 0.63*0.63
0	P 27	54.01.0020		1p	Pin 0.63*0.63
0	P 28	54.01.0020		1p	Pin 0.63*0.63
0	P 29	not used		1p	Flatpin, 2.8*0.8mm
0	P 30	54.21.2202		3p	XLR 3p PCB WINKEL
0	P 31	54.21.2202		3p	XLR 3p PCB WINKEL
0	Q 1	50.03.0491		BC546B	BC 546 B NPN
0	R 1	57.92.7013		0.5A	POLY- PTC, 60V
0	R 2	57.92.7013		0.5A	POLY- PTC, 60V
0	R 3	57.60.1223		22K	MF, 1%, 0204, E24
0	R 4	57.60.1223		22K	MF, 1%, 0204, E24
0	R 5	57.60.1101		100R	MF, 1%, 0204, E24
0	R 6	57.60.1101		100R	MF, 1%, 0204, E24
0	R 7	57.60.1101		100R	MF, 1%, 0204, E24
0	R 8	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 9	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 10	57.92.7011		0.2A	POLY- PTC, 60V
0	R 11	57.60.1103		10K	MF, 1%, 0204, E24
0	R 12	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 13	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 14	not used		0R0	MF, 0207
0	R 15	not used		0R0	MF, 0207
0	R 16	57.60.1103		10K	MF, 1%, 0204, E24
0	R 17	not used		0R0	MF, 0207
0	R 18	not used		0R0	MF, 0207
0	R 19	57.60.1103		10K	MF, 1%, 0204, E24
0	R 20	57.60.1101		100R	MF, 1%, 0204, E24
0	R 21	57.60.1100		10R	MF, 1%, 0204, E24
0	R 22	57.60.1102		1K	MF, 1%, 0204, E24
0	R 23	57.60.1331		330R	MF, 1%, 0204, E24
0	R 24	57.60.1103		10K	MF, 1%, 0204, E24
0	R 25	57.60.1100		10R	MF, 1%, 0204, E24
0	R 26	57.60.1133		13K	MF, 1%, 0204, E24
0	R 27	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 28	57.60.1133		13K	MF, 1%, 0204, E24
0	R 29	57.60.1133		13K	MF, 1%, 0204, E24
0	R 30	57.60.1133		13K	MF, 1%, 0204, E24
0	R 31	57.60.1133		13K	MF, 1%, 0204, E24
0	R 32	57.60.1133		13K	MF, 1%, 0204, E24
0	R 33	57.60.1133		13K	MF, 1%, 0204, E24
0	R 34	not used		120R	MF, 1%, 0204, E24
0	R 35	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 36	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 37	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 38	57.60.1101		100R	MF, 1%, 0204, E24
0	R 39	57.60.1104		100K	MF, 1%, 0204, E24
0	R 40	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 41	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 42	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 43	57.60.1133		13K	MF, 1%, 0204, E24
0	R 44	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 45	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 46	57.60.1133		13K	MF, 1%, 0204, E24
0	R 47	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 48	57.60.1223		22K	MF, 1%, 0204, E24
0	R 49	57.60.1223		22K	MF, 1%, 0204, E24
0	R 50	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 51	57.60.1223		22K	MF, 1%, 0204, E24
0	R 52	57.60.1223		22K	MF, 1%, 0204, E24

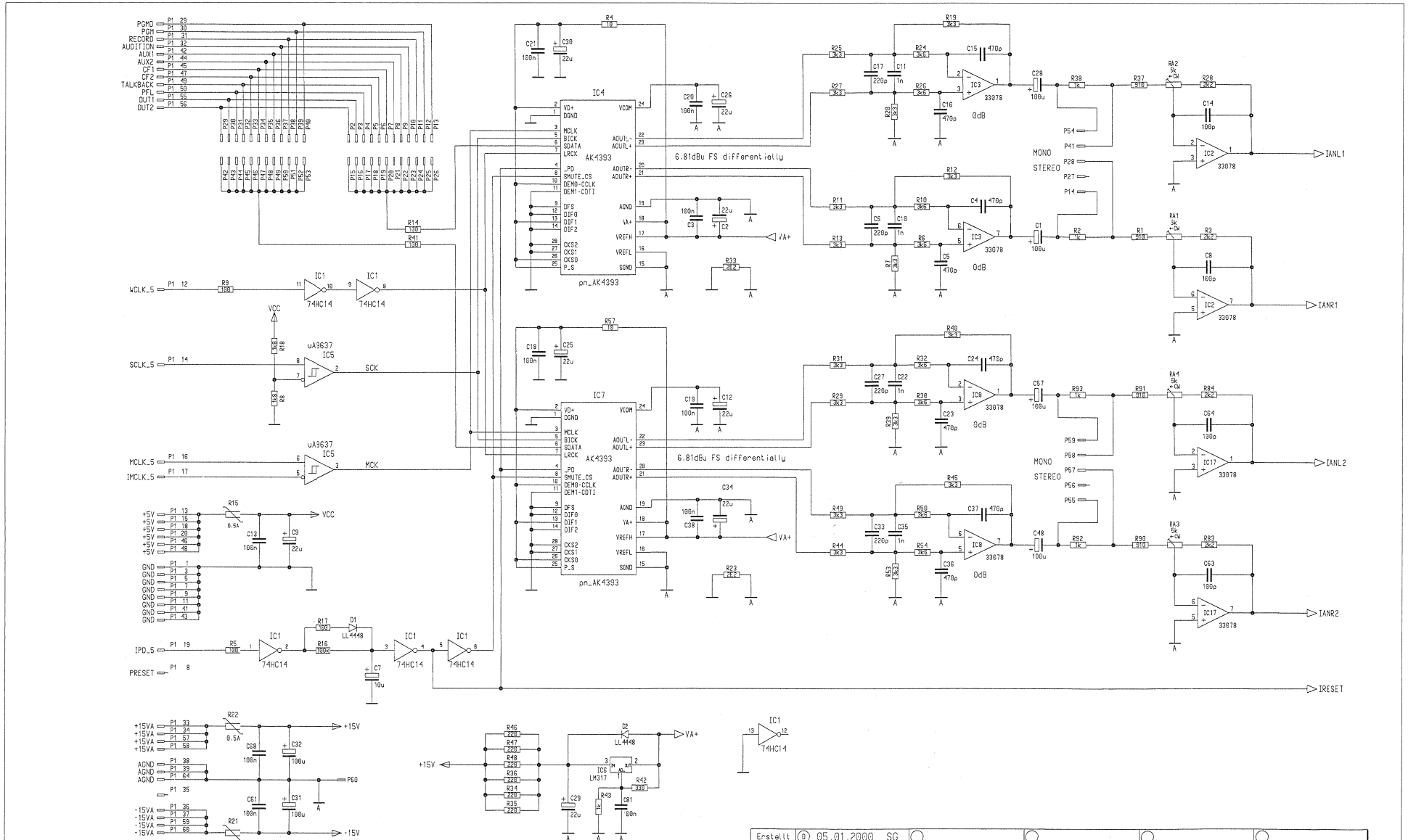
Analog Output Module Electronically Balanced 1.942.122.81

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 53	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 54	57.60.1561		560R	MF, 1%, 0204, E24
0	R 55	57.60.1561		560R	MF, 1%, 0204, E24
0	R 56	57.60.1221		220R	MF, 1%, 0204, E24
0	R 57	57.60.1102		1K	MF, 1%, 0204, E24
0	R 58	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 59	57.60.1221		220R	MF, 1%, 0204, E24
0	R 60	57.60.1102		1K	MF, 1%, 0204, E24
0	R 61	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 62	57.60.1104		100K	MF, 1%, 0204, E24
0	R 63	not used		100R	MF, 1%, 0204, E24
0	RA 1	58.05.0502		5k	10%, 0.5W, Cermet
0	RA 2	58.05.0502		5k	10%, 0.5W, Cermet
0	T 1	not used			LINE OUTPUT TRAFO 1:0,761
0	T 2	not used			LINE OUTPUT TRAFO 1:0,761

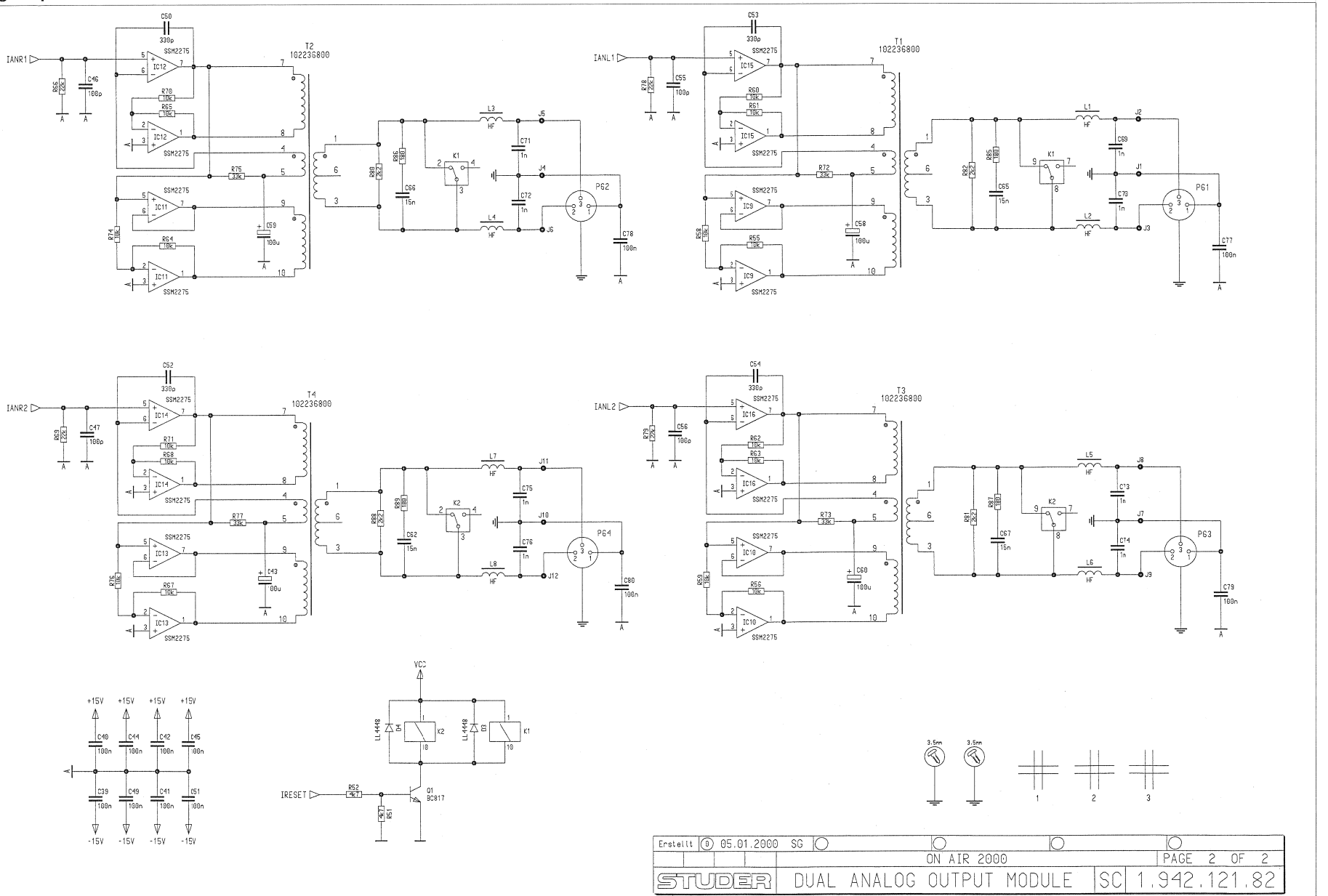
End of List

Comments:

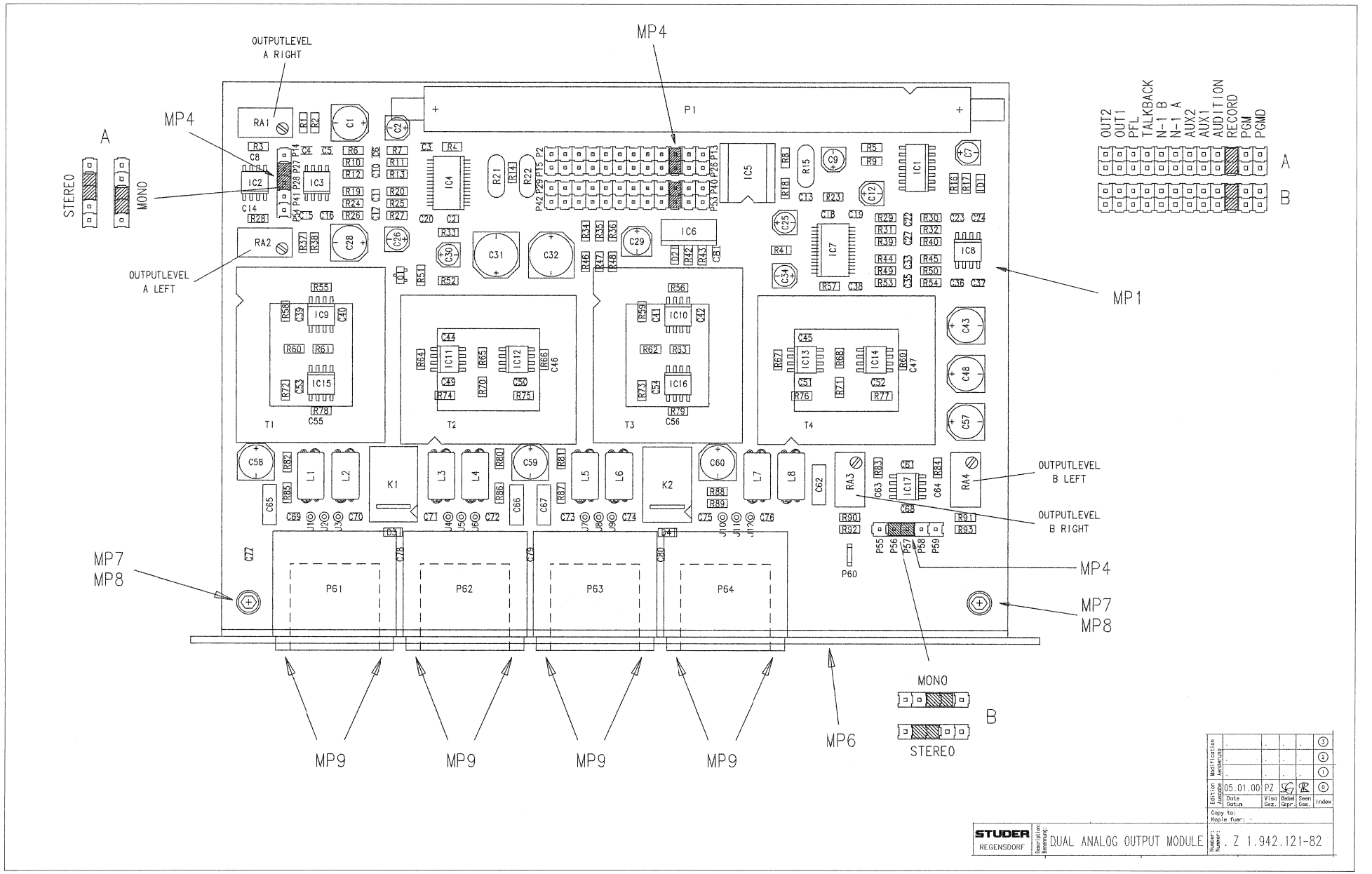
Dual Analog Output Module 1.942.121.82



Dual Analog Output Module 1.942.121.82



Dual Analog Output Module 1.942.121.82



Dual Analog Output Module 1.942.121.82

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 2	59.68.0025		22u	EL 6V, 4.0*5.7
0	C 3	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 4	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 5	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 6	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 7	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 8	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 9	59.68.0025		22u	EL 6V, 4.0*5.7
0	C 10	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 11	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 12	59.68.0025		22u	EL 6V, 4.0*5.7
0	C 13	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 15	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 16	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 17	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 18	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 23	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 24	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 25	59.68.0025		22u	EL 6V, 4.0*5.7
0	C 26	59.68.0025		22u	EL 6V, 4.0*5.7
0	C 27	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 28	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 29	59.68.0067		22u	EL 16V, 5.0*5.7
0	C 30	59.68.0025		22u	EL 6V, 4.0*5.7
0	C 31	59.68.0071		100u	EL 16V, 8.0*6.3
0	C 32	59.68.0071		100u	EL 16V, 8.0*6.3
0	C 33	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 34	59.68.0025		22u	EL 6V, 4.0*5.7
0	C 35	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 36	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 37	59.63.1109		470p	PPS 50V, 2%, 0805
0	C 38	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 39	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 40	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 42	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 43	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 44	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 45	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 46	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 47	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 48	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 49	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 50	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 51	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 52	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 53	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 54	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 55	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 56	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 57	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 58	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 59	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 60	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 61	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 62	59.06.0153		15n	PETF, 63V, 10%, RM5
0	C 63	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 64	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 65	59.06.0153		15n	PETF, 63V, 10%, RM5
0	C 66	59.06.0153		15n	PETF, 63V, 10%, RM5
0	C 67	59.06.0153		15n	PETF, 63V, 10%, RM5
0	C 68	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 69	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 70	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 71	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 72	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 73	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 74	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 75	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 76	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 77	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 78	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 79	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 80	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 81	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.62.1014		74HC 14	Hex Schmitt trigger inverter
0	IC 2	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 3	50.61.0204		MC33078	Dual Op-Amp low noise

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	IC 4	50.61.8005		AK4353	D/A Converter 24bit DS SOP28
0	IC 5	50.15.0114		9637	Dual diff Line Receiver
0	IC 6	50.10.0104		LM317SP	Series regulator 1.5A ...+37V
0	IC 7	50.61.8005		AK4353	D/A Converter 24bit DS SOP28
0	IC 8	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 9	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 10	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 11	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 12	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 13	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 14	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 15	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 16	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 17	50.61.0204		MC33078	Dual Op-Amp low noise
0	K 1	56.04.0198		2u	5V 125V 2A Ag/Au
0	K 2	56.04.0198		2u	5V 125V 2A Ag/Au
0	L 1	62.60.0902			SMD Wideband choke
0	L 2	62.60.0902			SMD Wideband choke
0	L 3	62.60.0902			SMD Wideband choke
0	L 4	62.60.0902			SMD Wideband choke
0	L 5	62.60.0902			SMD Wideband choke
0	L 6	62.60.0902			SMD Wideband choke
0	L 7	62.60.0902			SMD Wideband choke
0	L 8	62.60.0902			SMD Wideband choke
0	MP 1	1.942.121.13	1 pce		DUAL ANALOG CUTPUT PCB
0	MP 2	1.942.121.10	1 pce		NR.ETIKETTE 5X20
0	MP 3	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 4	54.01.0021	4 pcs	Jumper	0.63 * 0.63mm
0	MP 6	1.942.121.01	1 pce		BLENDE DUAL ANALOG OUTPUT MOD.
0	MP 7	24.16.2030	2 pcs		FAECHERSCHEIBE A D 3.2
0	MP 8	21.53.0353	2 pcs	M3*5	Z-Schraube Inbus Zn gb chr
0	MP 9	20.24.8754	8 pcs	2.9*6	L -Formschr,K-Torx, Zn bl
0	P 1	54.14.2056		64p	Stecker gerade Au
0	P 2	54.01.0020		1p	Pin 0.63*0.63
0	P 3	54.01.0020		1p	Pin 0.63*0.63
0	P 4	54.01.0020		1p	Pin 0.63*0.63
0	P 5	54.01.0020		1p	Pin 0.63*0.63
0	P 6	54.01.0020		1p	Pin 0.63*0.63
0	P 7	54.01.0020		1p	Pin 0.63*0.63
0	P 8	54.01.0020		1p	Pin 0.63*0.63
0	P 9	54.01.0020		1p	Pin 0.63*0.63
0	P 10	54.01.0020		1p	Pin 0.63*0.63
0	P 11	54.01.0020		1p	Pin 0.63*0.63
0	P 12	54.01.0020		1p	Pin 0.63*0.63
0	P 13	54.01.0020		1p	Pin 0.63*0.63
0	P 14	54.01.0020		1p	Pin 0.63*0.63
0	P 15	54.01.0020		1p	Pin 0.63*0.63
0	P 16	54.01.0020		1p	Pin 0.63*0.63
0	P 17	54.01.0020		1p	Pin 0.63*0.63
0	P 18	54.01.0020		1p	Pin 0.63*0.63
0	P 19	54.01.0020		1p	Pin 0.63*0.63
0	P 20	54.01.0020		1p	Pin 0.63*0.63
0	P 21	54.01.0020		1p	Pin 0.63*0.63
0	P 22	54.01.0020		1p	Pin 0.63*0.63
0	P 23	54.01.0020		1p	Pin 0.63*0.63
0	P 24	54.01.0020		1p	Pin 0.63*0.63
0	P 25	54.01.0020		1p	Pin 0.63*0.63
0	P 26	54.01.0020		1p	Pin 0.63*0.63
0	P 27	54.01.0020		1p	Pin 0.63*0.63
0	P 28	54.01.0020		1p	Pin 0.63*0.63
0	P 29	54.01.0020		1p	Pin 0.63*0.63
0	P 30	54.01.0020		1p	Pin 0.63*0.63
0	P 31	54.01.0020		1p	Pin 0.63*0.63
0	P 32	54.01.0020		1p	Pin 0.63*0.63
0	P 33	54.01.0020		1p	Pin 0.63*0.63
0	P 34	54.01.0020		1p	Pin 0.63*0.63
0	P 35	54.01.0020		1p	Pin 0.63*0.63
0	P 36	54.01.0020		1p	Pin 0.63*0.63
0	P 37	54.01.0020		1p	Pin 0.63*0.63
0	P 38	54.01.0020		1p	Pin 0.63*0.63
0	P 39	54.01.0020		1p	Pin 0.63*0.63
0	P 40	54.01.0020		1p	Pin 0.63*0.63
0	P 41	54.01.0020		1p	Pin 0.63*0.63
0	P 42	54.01.0020		1p	Pin 0.63*0.63
0	P 43	54.01.0020		1p	Pin 0.63*0.63
0	P 44	54.01.0020		1p	Pin 0.63*0.63
0	P 45	54.01.0020		1p	Pin 0.63*0.63
0	P 46	54.01.0020		1p	Pin 0.63*0.63
0	P 47	54.01.0020		1p	Pin 0.63*0.63
0	P 48	54.01.0020		1p	Pin 0.63*0.63
0	P 49	54.01.0020		1p	Pin 0.63*0.63
0	P 50	54.01.0020		1p	Pin 0.63*0.63
0	P 51	54.01.0020		1p	Pin 0.63*0.63
0	P 52	54.01.0020		1p	Pin 0.63*0.63
0	P 53	54.01.0020		1p	Pin 0.63*0.63
0	P 54	54.01.0020		1p	Pin 0.63*0.63
0	P 55	54.01.0020		1p	Pin 0.63*0.63

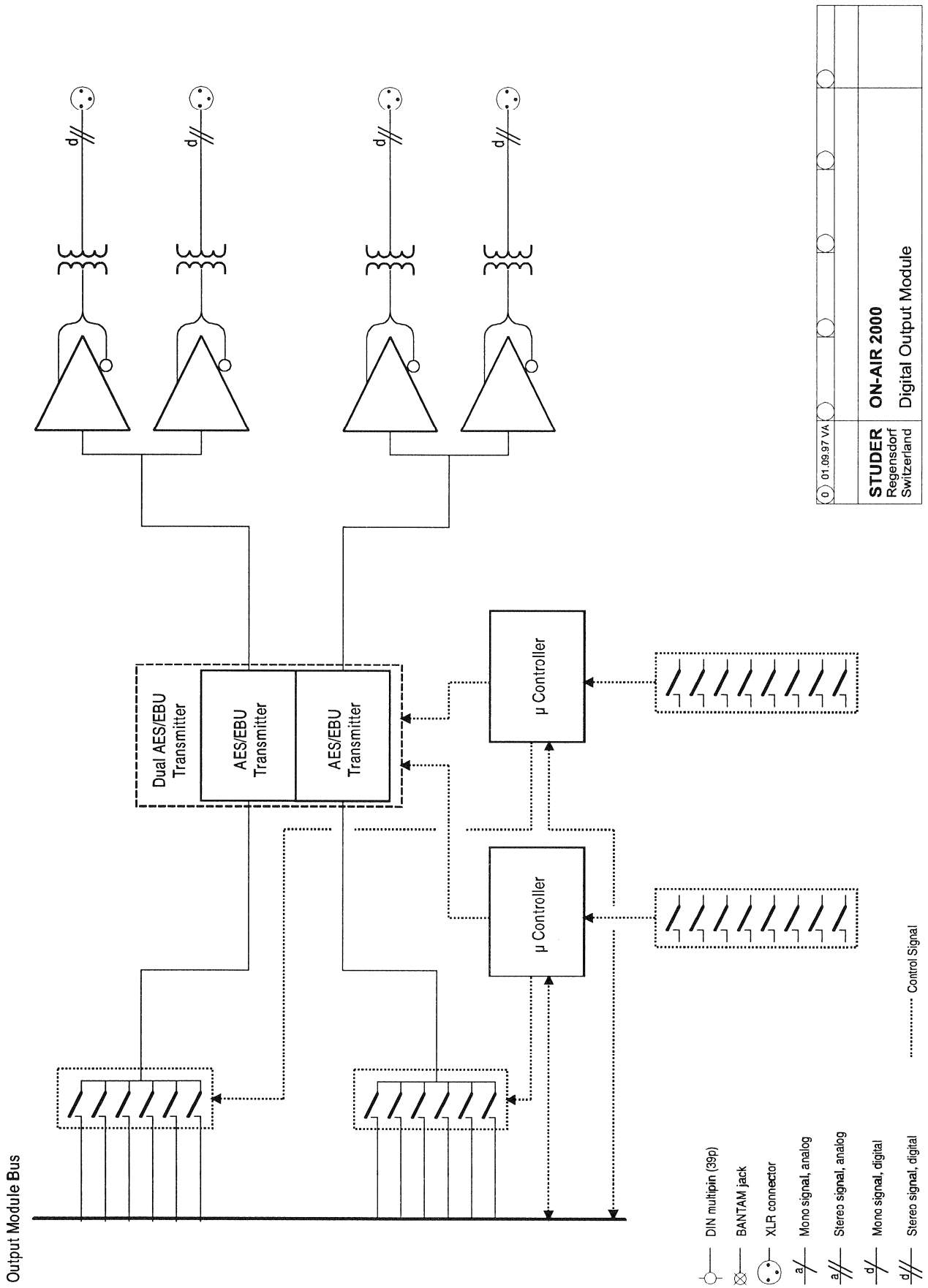
Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	P 56	54.01.0020		1p	Pin 0.63*0.63
0	P 57	54.01.0020		1p	Pin 0.63*0.63
0	P 58	54.01.0020		1p	Pin 0.63*0.63
0	P 59	54.01.0020		1p	Pin 0.63*0.63
0	P 60	not used		1p	PCB-Flachst 2.8*0.8, gerade
0	P 61	54.21.2202		3p	XLR PCB Winkel
0	P 62	54.21.2202		3p	XLR PCB Winkel
0	P 63	54.21.2202		3p	XLR PCB Winkel
0	P 64	54.21.2202		3p	XLR PCB Winkel
0	Q 1	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	R 1	57.60.1911		910R	MF, 1%, 0204, E24
0	R 2	57.60.1102		1K	MF, 1%, 0204, E24
0	R 3	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 4	57.60.1100		10R	MF, 1%, 0204, E24
0	R 5	57.60.1101		100R	MF, 1%, 0204, E24
0	R 6	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 7	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 8	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 9	57.60.1101		100R	MF, 1%, 0204, E24
0	R 10	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 11	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 12	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 13	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 14	57.60.1101		100R	MF, 1%, 0204, E24
0	R 15	57.92.7013		0.5A	PTC 60V
0	R 16	57.60.1104		100K	MF, 1%, 0204, E24
0	R 17	57.60.1101		100R	MF, 1%, 0204, E24
0	R 18	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 19	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 20	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 21	57.92.7013		0.5A	PTC 60V
0	R 22	57.92.7013		0.5A	PTC 60V
0	R 23	57.60.1229		2R2	MF, 1%, 0204, E24
0	R 24	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 25	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 26	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 27	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 28	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 29	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 30	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 31	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 32	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 33	57.60.1229		2R2	MF, 1%, 0204, E24
0	R 34	57.60.1221		220R	MF, 1%, 0204, E24
0	R 35	57.60.1221		220R	MF, 1%, 0204, E24
0	R 36	57.60.1221		220R	MF, 1%, 0204, E24
0	R 37	57.60.1911		910R	MF, 1%, 0204, E24
0	R 38	57.60.1102		1K	MF, 1%, 0204, E24
0	R 39	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 40	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 41	57.60.1101		100R	MF, 1%, 0204, E24
0	R 42	57.60.1331		330R	MF, 1%, 0204, E24
0	R 43	57.60.1102		1K	MF, 1%, 0204, E24
0	R 44	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 45	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 46	57.60.1221		220R	MF, 1%, 0204, E24
0	R 47	57.60.1221		220R	MF, 1%, 0204, E24
0	R 48	57.60.1221		220R	MF, 1%, 0204, E24
0	R 49	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 50	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 51	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 52	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 53	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 54	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 55	57.60.1103		10K	MF, 1%, 0204, E24
0	R 56	57.60.1103		10K	MF, 1%, 0204, E24
0	R 57	57.60.1100		10R	MF, 1%, 0204, E24
0	R 58	57.60.1103		10K	MF, 1%, 0204, E24
0	R 59	57.60.1103		10K	MF, 1%, 0204, E24
0	R 60	57.60.1103		10K	MF, 1%, 0204, E24
0	R 61	57.60.1103		10K	MF, 1%, 0204, E24
0	R 62	57.60.1103		10K	MF, 1%, 0204, E24
0	R 63	57.60.1103		10K	MF, 1%, 0204, E24
0	R 64	57.60.1103		10K	MF, 1%, 0204, E24
0	R 65	57.60.1103		10K	MF, 1%, 0204, E24
0	R 66	57.60.1223		22K	MF, 1%, 0204, E24
0	R 67	57.60.1103		10K	MF, 1%, 0204, E24
0	R 68	57.60.1103		10K	MF, 1%, 0204, E24
0	R 69	57.60.1223		22K	MF, 1%, 0204, E24
0	R 70	57.60.1103		10K	MF, 1%, 0204, E24
0	R 71	57.60.1103		10K	MF, 1%, 0204, E24
0	R 72	57.60.1333		33K	MF, 1%, 0204, E24
0	R 73	57.60.1333		33K	MF, 1%, 0204, E24
0	R 74	57.60.1103		10K	MF, 1%, 0204, E24
0	R 75	57.60.1333		33K	MF, 1%, 0204, E24
0	R 76	57.60.1103		10K	MF, 1%, 0204, E24
0	R 77	57.60.1333		33K	MF, 1%, 0204, E24
0	R 78	57.60.1223		22K	MF, 1%, 0204, E24

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 79	57.60.1223		22K	MF, 1%, 0204, E24
0	R 80	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 81	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 82	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 83	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 84	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 85	57.60.1181		180R	MF, 1%, 0204, E24
0	R 86	57.60.1181		180R	MF, 1%, 0204, E24
0	R 87	57.60.1181		180R	MF, 1%, 0204, E24
0	R 88	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 89	57.60.1181		180R	MF, 1%, 0204, E24
0	R 90	57.60.1911		910R	MF, 1%, 0204, E24
0	R 91	57.60.1911		910R	MF, 1%, 0204, E24
0	R 92	57.60.1102		1K	MF, 1%, 0204, E24
0	R 93	57.60.1102		1K	MF, 1%, 0204, E24
0	RA 1	58.05.1502		5k	10%, 0.5W, Cermet
0	RA 2	58.05.1502		5k	10%, 0.5W, Cermet
0	RA 3	58.05.1502		5k	10%, 0.5W, Cermet
0	RA 4	58.05.1502		5k	10%, 0.5W, Cermet
0	T 1	1.022.368.00			Line Output Trafo 6 dB
0	T 2	1.022.368.00			Line Output Trafo 6 dB
0	T 3	1.022.368.00			Line Output Trafo 6 dB
0	T 4	1.022.368.00			Line Output Trafo 6 dB

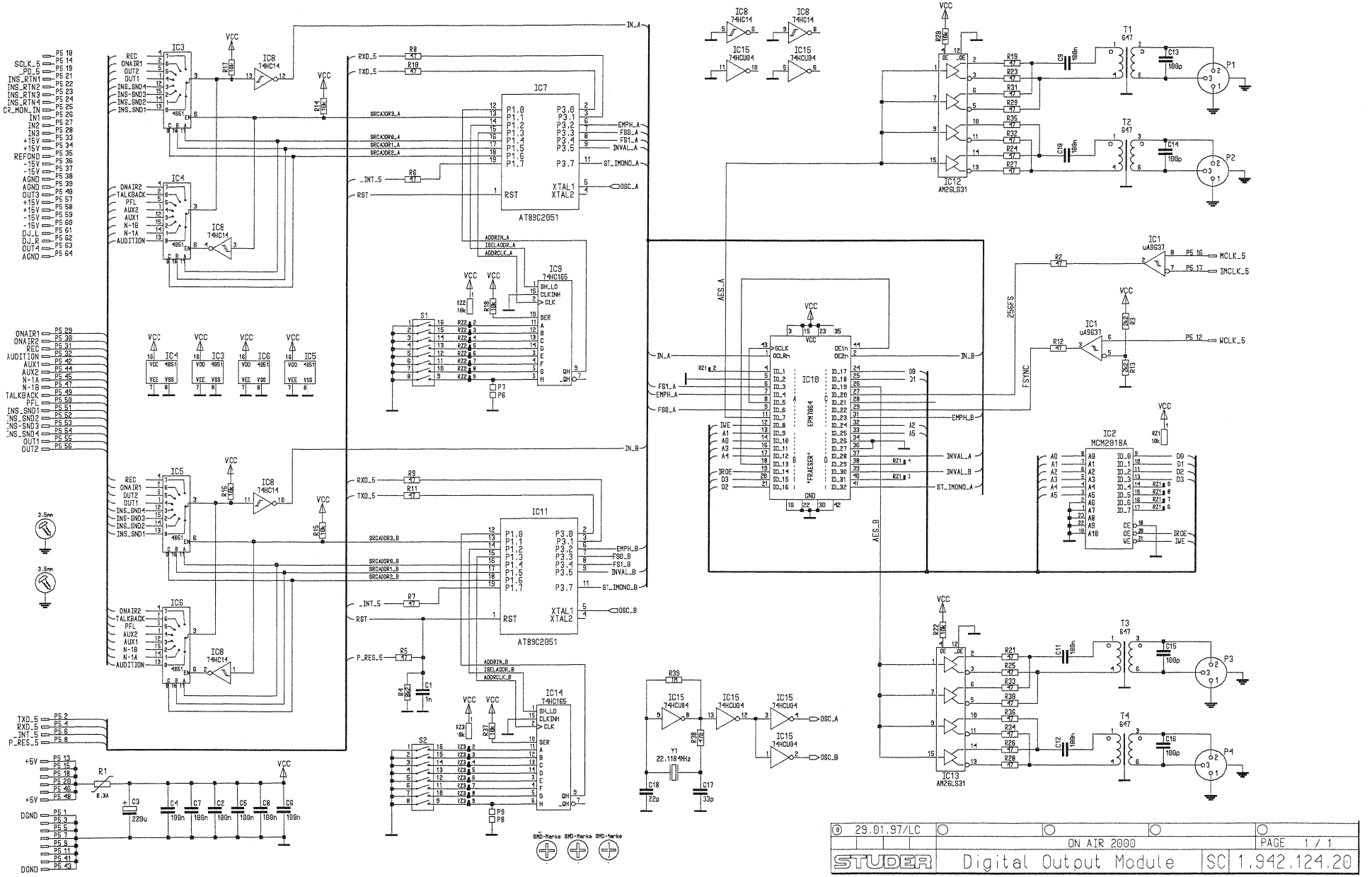
End of List

Comments

Block diagram Digital Output Module



Digital Output Module 1.942.124.20



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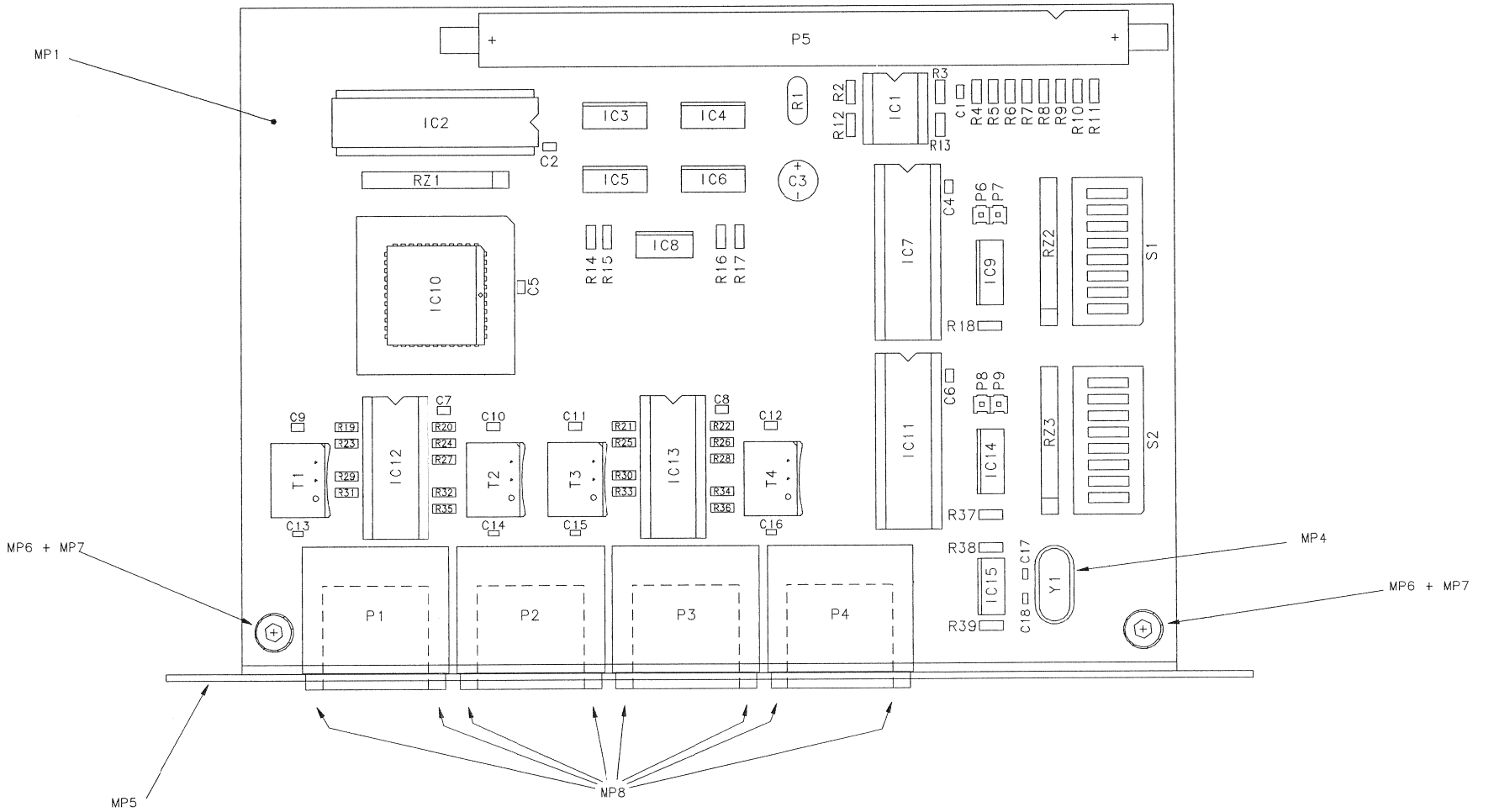
STUDER	Digital Output Module	SC	1.942.124.20

Digital Output Module 1.942.124.20



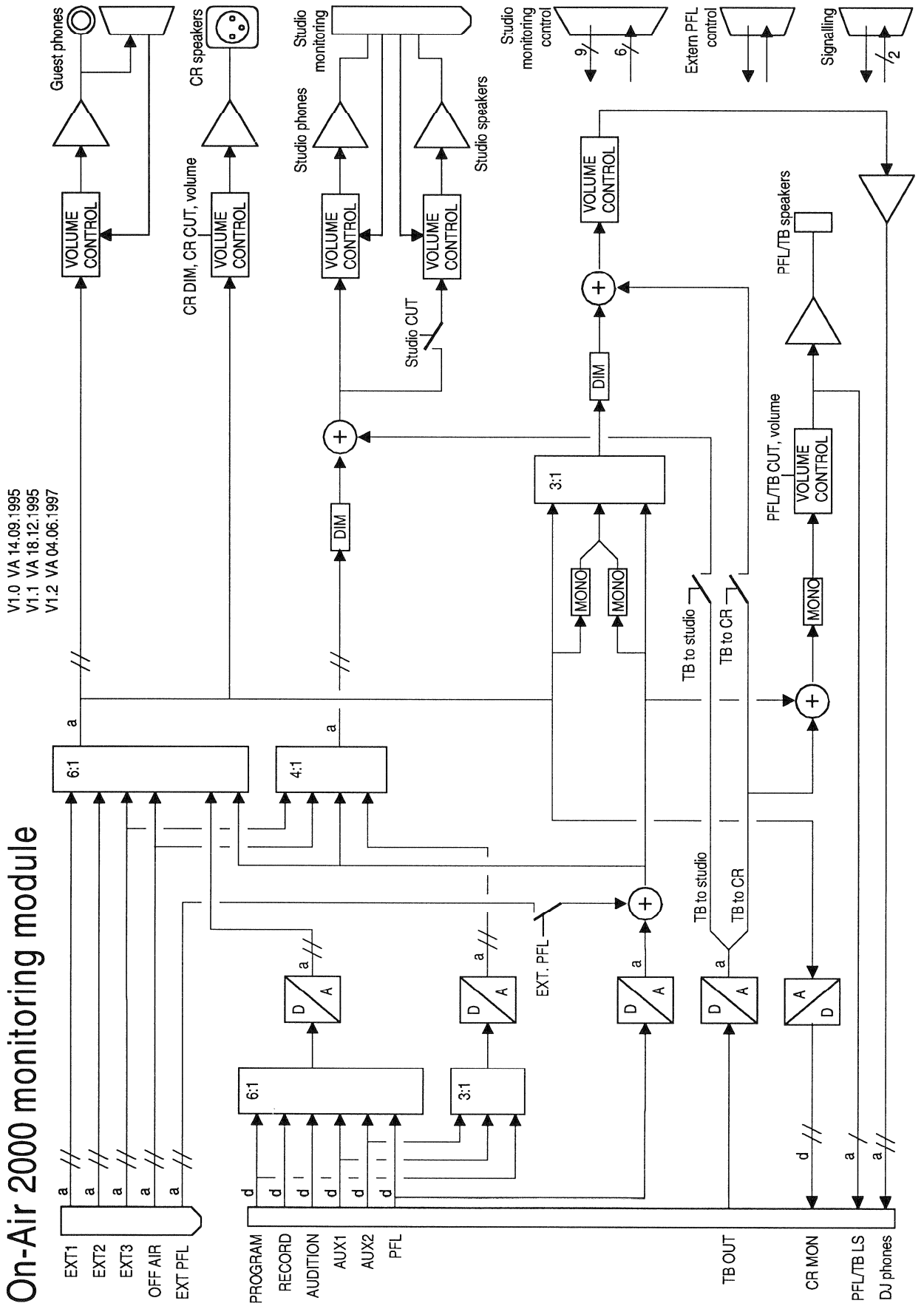
STUDER REGENSDORF DIGITAL OUTPUT MODULE, ESE 1.942.124.20

DIGITAL OUTPUT MODULE 1.942.124.22 (0)

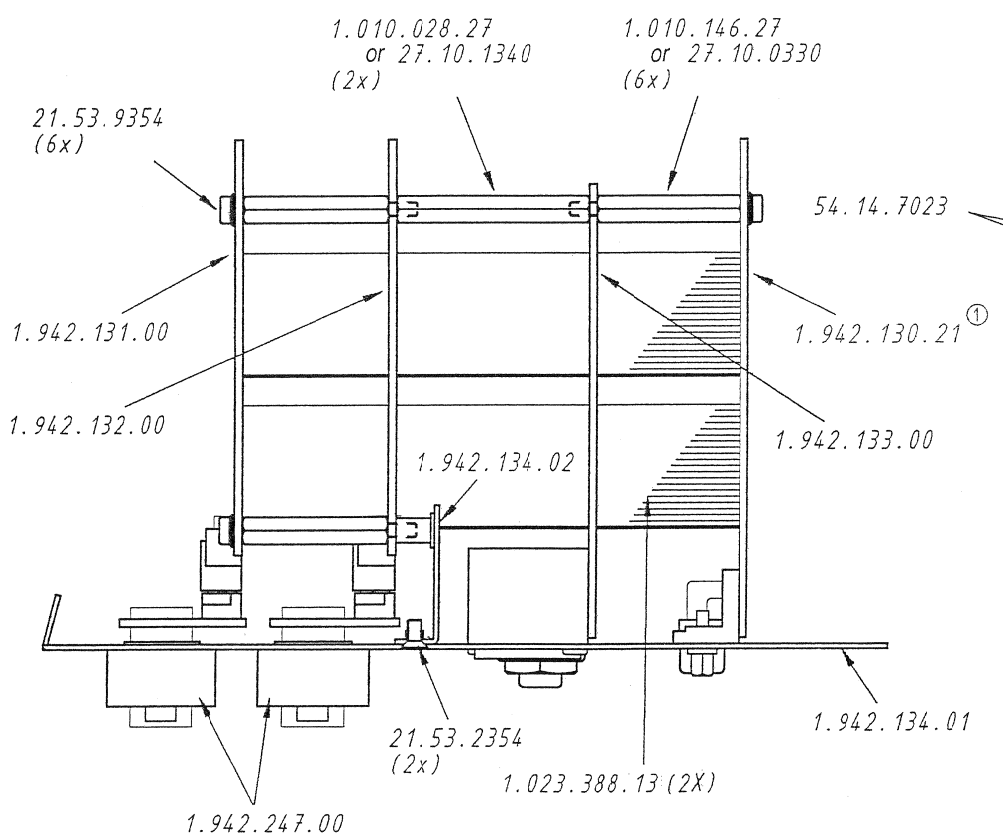
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 2	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 3	59.22.3003		220u	EL 10V 20% RM5
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 6	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 7	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 8	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 9	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 14	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 15	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 16	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 17	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 18	59.60.2233		22p	CER 50V, 5%, C0G, 0603
0	IC 1	50.15.0114		9637	Dual diff Line Receiver
0	IC 2	50.14.1009		7C128A	SRAM 2K*8 35ns
0	IC 3	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 4	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 5	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 6	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 7	1.942.912.22			SW.124 DIGITAL OUT. MOD., uP
				50160313. 89C2051	
0	IC 8	50.62.1014		74HC 14	Hex Schmitt trigger inverter
0	IC 9	50.62.1165		74HC165	8bit shift register
0	IC 10	1.942.927.20			SW.124 DIGITAL OUT. MOD., PLD
				50634202. EPLD 7064	
0	IC 11	1.942.912.22			SW.124 DIGITAL OUT. MOD., uP
				50160313. 89C2051	
0	IC 12	50.15.0108		26LS31	Quad diff line driver
0	IC 13	50.15.0108		26LS31	Quad diff line driver
0	IC 14	50.62.1165		74HC165	8bit shift register
0	IC 15	50.62.1904		74HCU04	Hex inverter unbuffered
0	MP 1	1.942.124.11			DIGITAL OUTPUT MODULE PCB
0	MP 2	43.01.0108		Label	ESE-WARNSCHILD
0	MP 3	1.942.124.10			NR.ETIKETTE 5X20
0	MP 4	89.01.1499			QUARZ - ISOLIERPLATTE
0	MP 5	1.942.124.01			BLENDE DIGITAL OUTPUT MODUL
0	MP 6	21.53.0353	2 pcs	M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	24.16.2030	2 pcs	3.2/6.0	Fächerscheibe Form A
0	MP 8	20.24.8754	8 pcs	2.9*6	L - Formschr. K-Torx, Zn bl
0	P 1	54.21.2202		3p	XLR PCB Winkel
0	P 2	54.21.2202		3p	XLR PCB Winkel
0	P 3	54.21.2202		3p	XLR PCB Winkel
0	P 4	54.21.2202		3p	XLR PCB Winkel
0	P 5	54.14.2056		64p	Stecker gerade Au
0	P 6	54.01.0020		1p	Pin, 1reihig, gerade
0	P 7	54.01.0020		1p	Pin, 1reihig, gerade
0	P 8	54.01.0020		1p	Pin, 1reihig, gerade
0	P 9	54.01.0020		1p	Pin, 1reihig, gerade
0	R 1	57.92.7012		0.3A	PTC 60V
0	R 2	57.60.1470		47R	MF, 1%, 0204, E24
0	R 3	57.60.1222		2k2	MF, 1%, 0204, E24
0	R 4	57.60.1822		8k2	MF, 1%, 0204, E24
0	R 5	57.60.1470		47R	MF, 1%, 0204, E24
0	R 6	57.60.1470		47R	MF, 1%, 0204, E24
0	R 7	57.60.1470		47R	MF, 1%, 0204, E24
0	R 8	57.60.1470		47R	MF, 1%, 0204, E24
0	R 9	57.60.1470		47R	MF, 1%, 0204, E24
0	R 10	57.60.1470		47R	MF, 1%, 0204, E24
0	R 11	57.60.1470		47R	MF, 1%, 0204, E24
0	R 12	57.60.1470		47R	MF, 1%, 0204, E24
0	R 13	57.60.1222		2k2	MF, 1%, 0204, E24
0	R 14	57.60.1103		10k	MF, 1%, 0204, E24
0	R 15	57.60.1103		10k	MF, 1%, 0204, E24
0	R 16	57.60.1103		10k	MF, 1%, 0204, E24
0	R 17	57.60.1103		10k	MF, 1%, 0204, E24
0	R 18	57.60.1103		10k	MF, 1%, 0204, E24
0	R 19	57.60.1470		47R	MF, 1%, 0204, E24
0	R 20	57.60.1103		10k	MF, 1%, 0204, E24
0	R 21	57.60.1470		47R	MF, 1%, 0204, E24
0	R 22	57.60.1103		10k	MF, 1%, 0204, E24
0	R 23	57.60.1470		47R	MF, 1%, 0204, E24
0	R 24	57.60.1470		47R	MF, 1%, 0204, E24
0	R 25	57.60.1470		47R	MF, 1%, 0204, E24
0	R 26	57.60.1470		47R	MF, 1%, 0204, E24
0	R 27	57.60.1470		47R	MF, 1%, 0204, E24
0	R 28	57.60.1470		47R	MF, 1%, 0204, E24
0	R 29	57.60.1470		47R	MF, 1%, 0204, E24
0	R 30	57.60.1470		47R	MF, 1%, 0204, E24
0	R 31	57.60.1470		47R	MF, 1%, 0204, E24
0	R 32	57.60.1470		47R	MF, 1%, 0204, E24
0	R 33	57.60.1470		47R	MF, 1%, 0204, E24
0	R 34	57.60.1470		47R	MF, 1%, 0204, E24
0	R 35	57.60.1470		47R	MF, 1%, 0204, E24
0	R 36	57.60.1470		47R	MF, 1%, 0204, E24
0	R 37	57.60.1103		10k	MF, 1%, 0204, E24
0	R 38	57.60.1471		470R	MF, 1%, 0204, E24
0	R 39	57.60.1105		1M	MF, 1%, 0204, E24
0	RZ 1	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 3	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	DIL-Switch, PCB
0	S 2	55.01.0168		8*a	DIL-Switch, PCB
0	T 1	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 2	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 3	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 4	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	XIC 7	53.03.0165		20p	DIL 0.3", löt, gerade
0	XIC 10	53.03.2244		44p	PLCC-Socket
0	XIC 11	53.03.0165		20p	DIL 0.3", löt, gerade
0	XIC 12	53.03.0168		16p	DIL 0.3", löt, gerade
0	XIC 13	53.03.0168		16p	DIL 0.3", löt, gerade
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

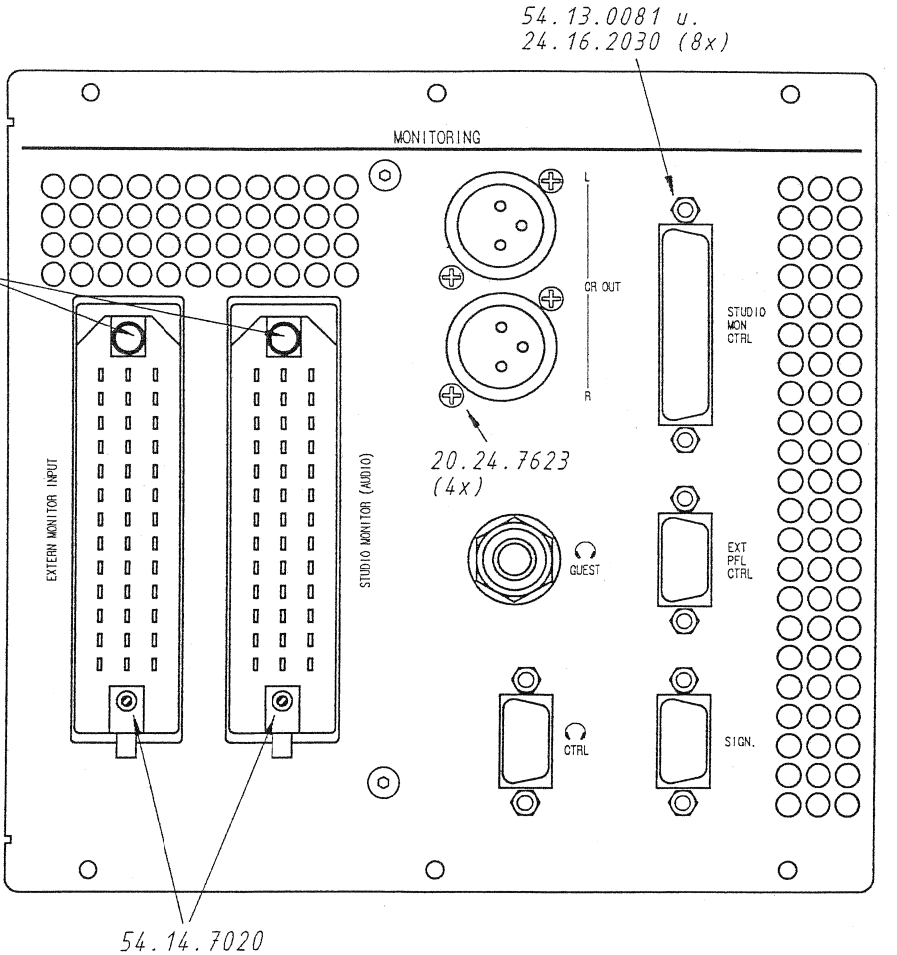
End of List

Block diagram Monitoring Module



Monitoring Module 1.942.134.20





Edition Ausgabe	Modification Änderung				
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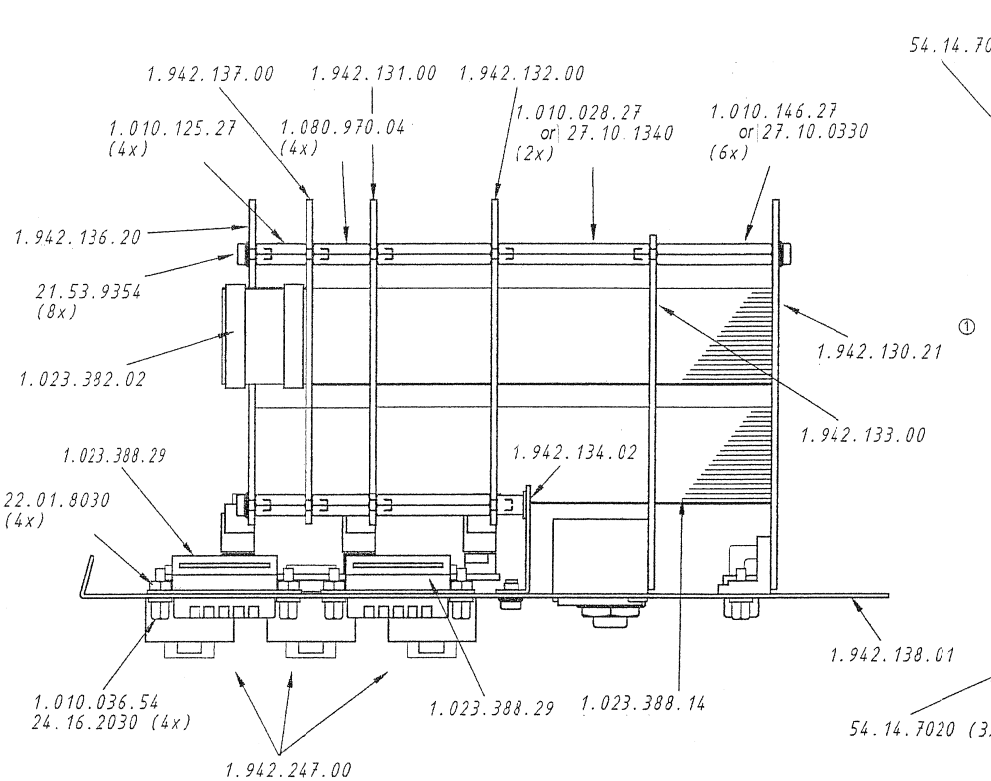
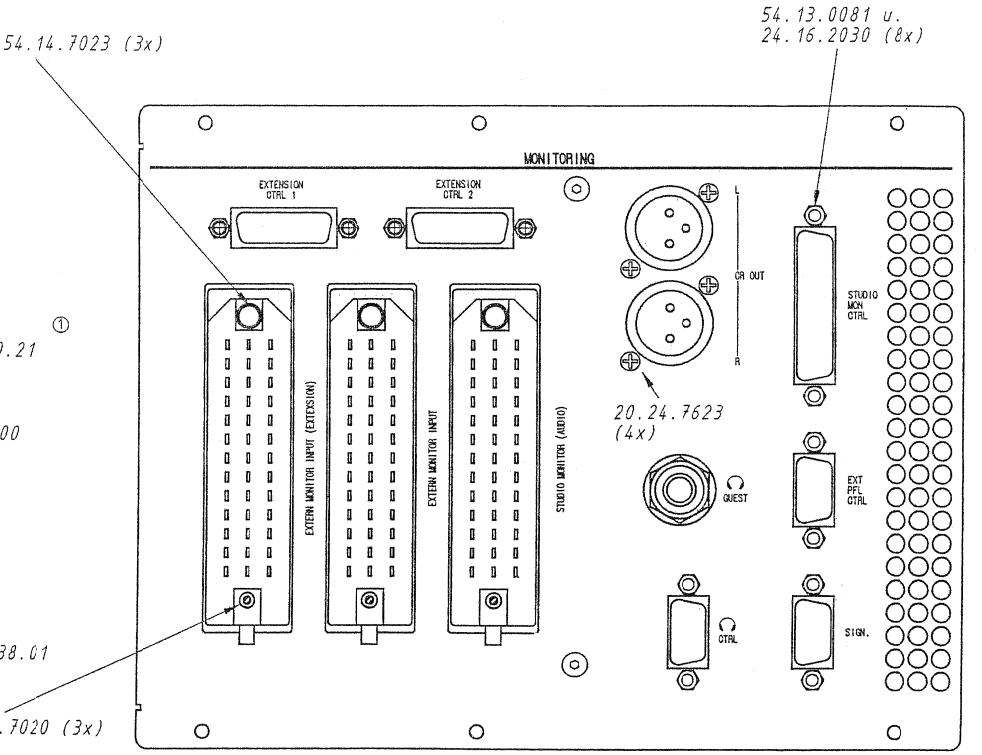
	.	.	.	.	②
	18.2.98	Ro	AO	SW	①
	08.04.97	WR	DV	SW	⓪
	Date Datum	Visa Gez.	Dated Gepr.	Seen Ges.	Index

Copy to: Kopie für: .

STUDER REGENSDORF — Description Benennung: Monitoring Modul ESE — Numbers Nummern: 1.942.134.20

Extended Monitoring Module 1.942.138.20 (Option)





Edition Ausgabe	Date Datum	Visa Ges.	Dated Gepr.	Seen Ges.	Index
Modification Änderung	.	.	.	.	③
	.	.	.	.	②
	18.2.98	RO	AO	SW	①
	20.01.98	WR	OY	SW	0

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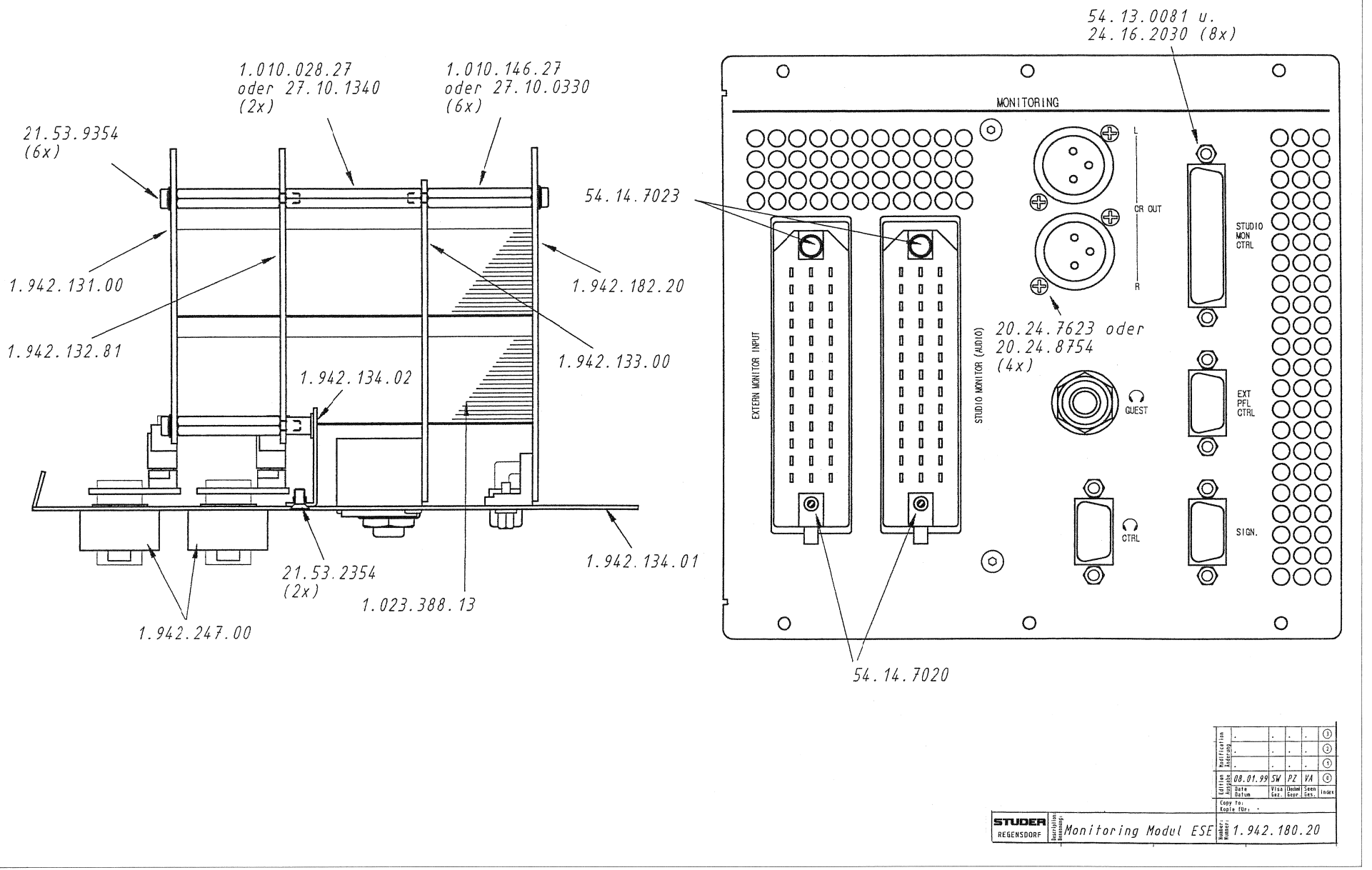
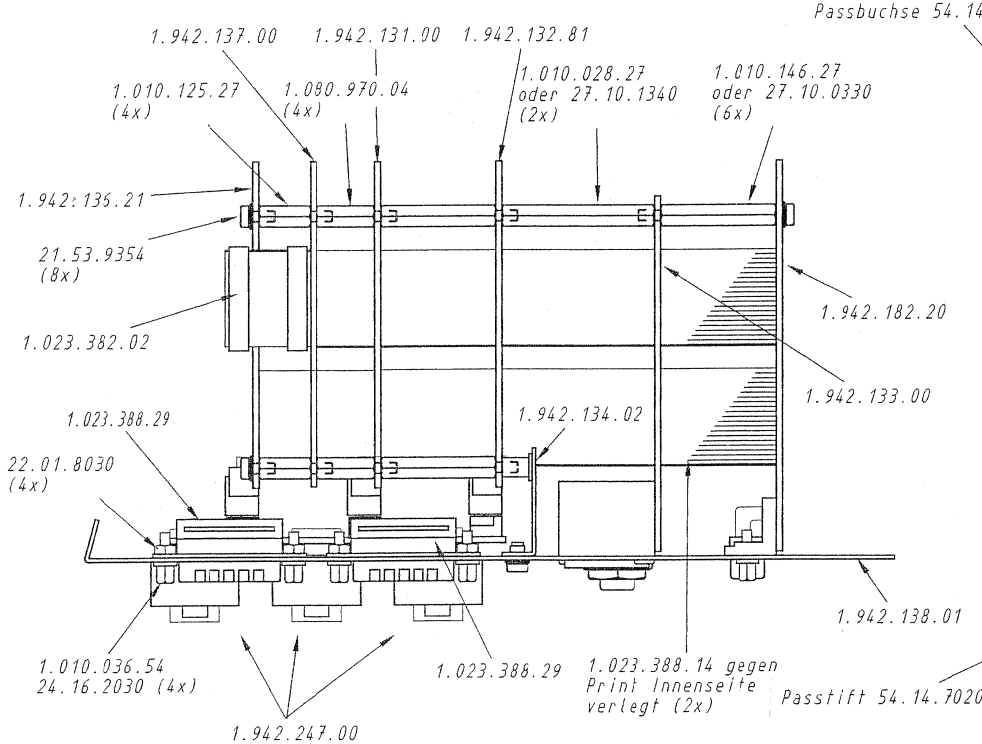
STUDER REGENSDORF Description Benennung: Exteded Monitoring Module

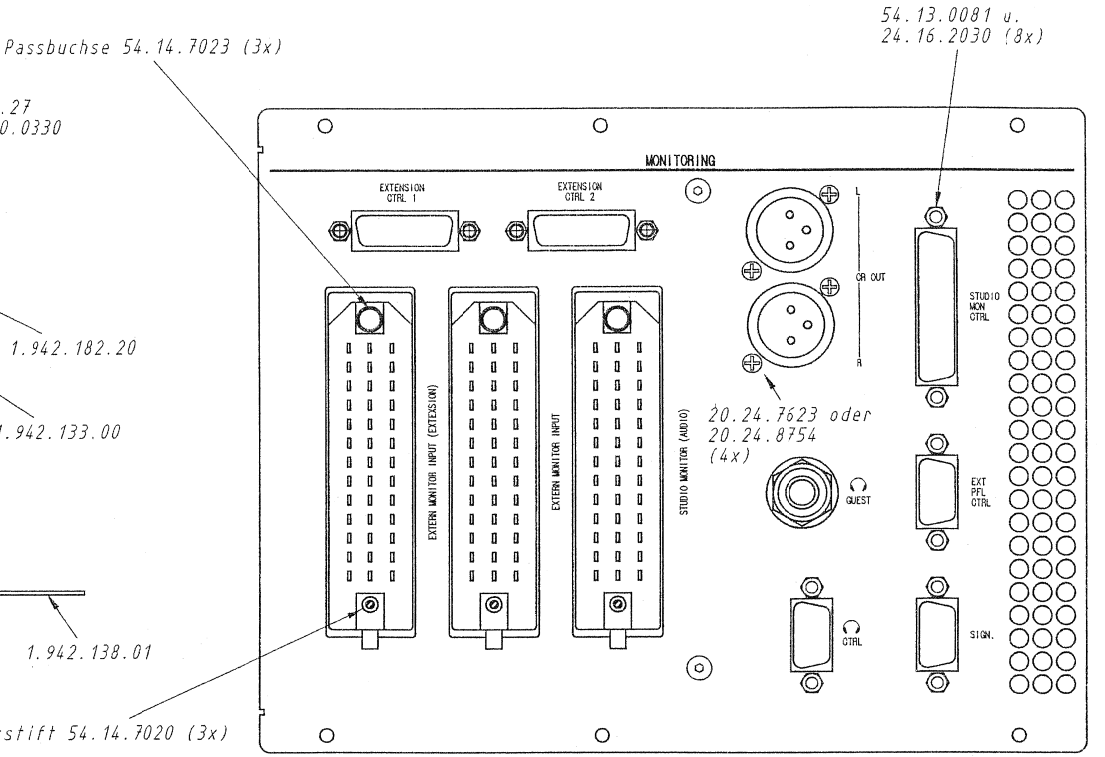
Number Nummer: 1.942.138.20

Monitoring Module 1.942.180.20



Extended Monitoring Module 1.942.181.20 (Option)





Edition / Ausgabe	Modification / Änderung				
	.	.	.	.	3
	.	.	.	.	2
	.	.	.	.	1
	08.01.99	WR	PZ	VA	0
	Date / Datum	Visa Ges.	Checked Geprf	Sanct Ges.	Index

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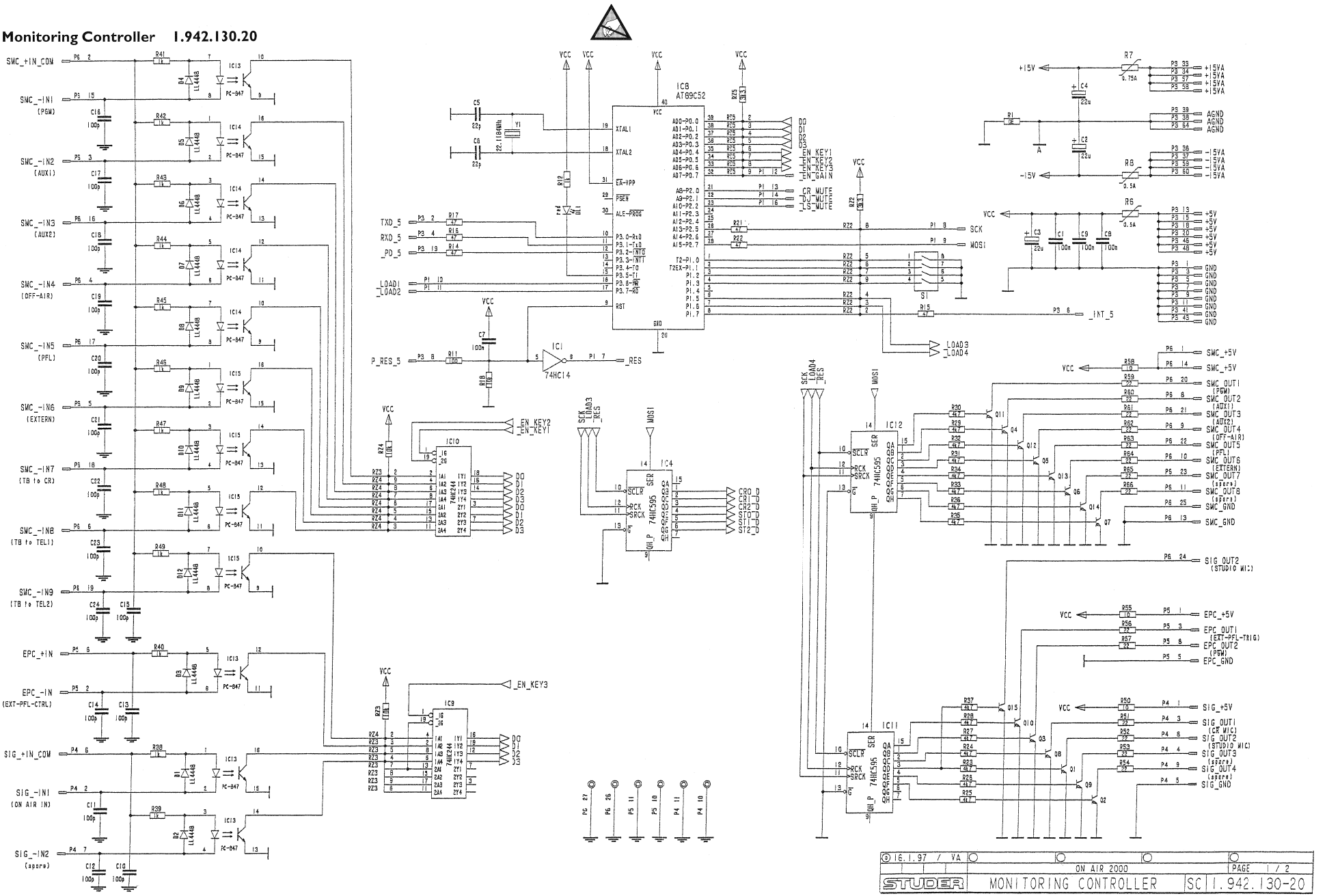
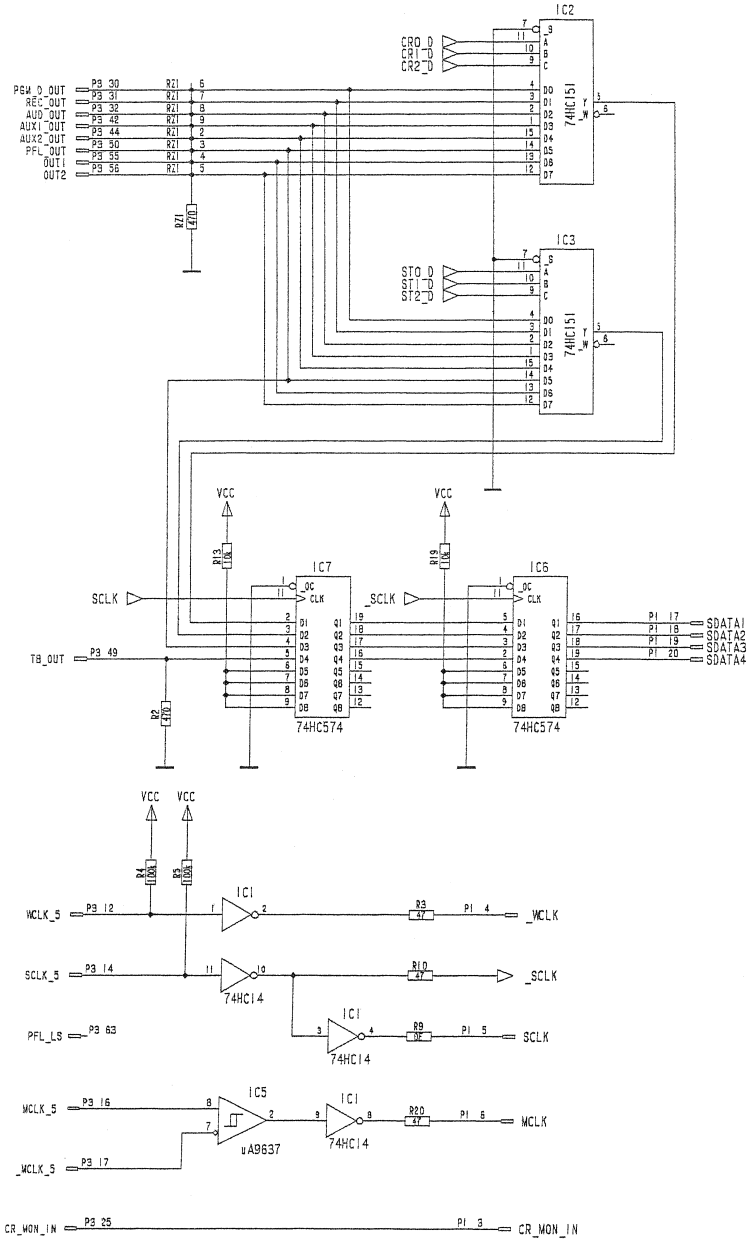
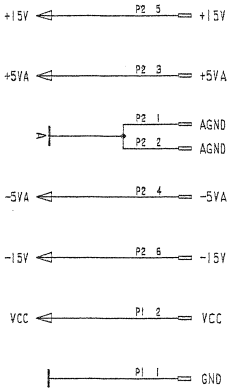
STUDER REGENSDORF | Description / Benennung: Exteded Monitoring Module ESE | Number / Nummer: 1.942.181.20

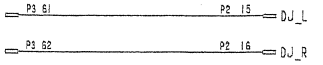
Monitoring Controller 1.942.130.20

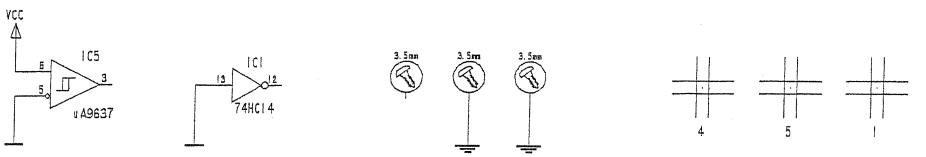


Monitoring Controller 1.942.130.20



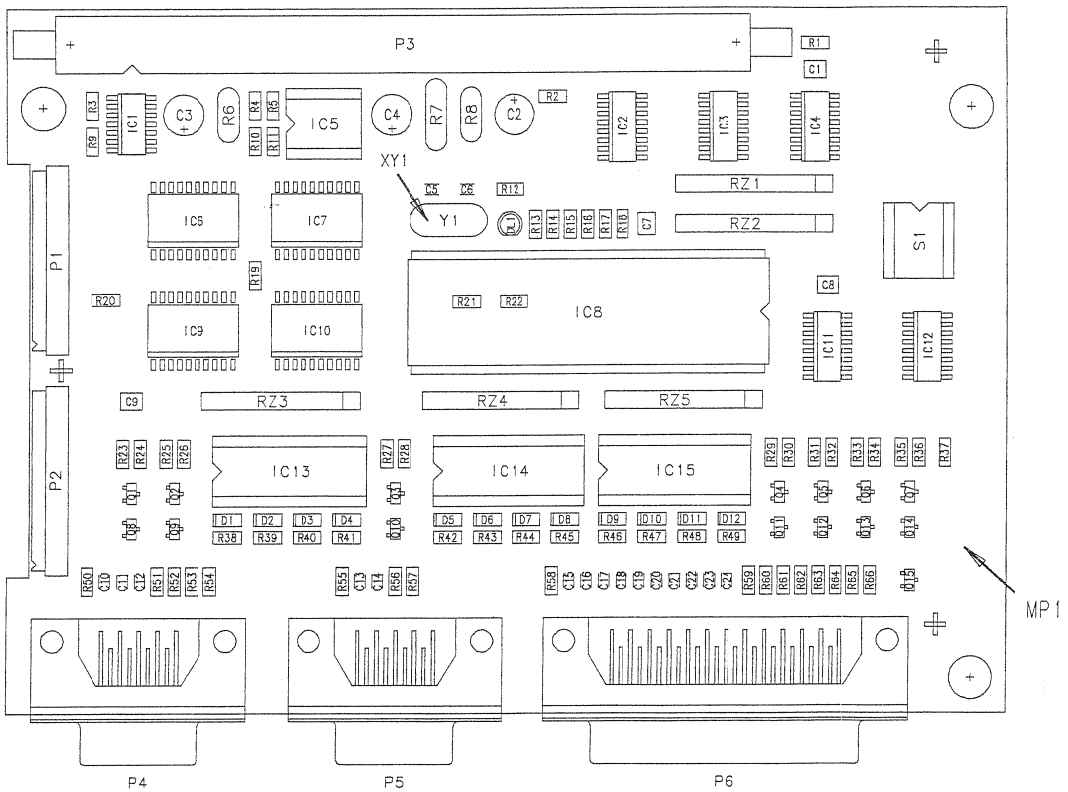






16.1.97 / VA			
	ON AIR 2000		PAGE 2 / 2
STUDER	MONITORING CONTROLLER	SC	1.942.130-20

Monitoring Controller 1.942.130.20



Edition Ausgabe	Modification Aenderung	Index
17.1.97	PZ	①
Date Datum	Visa Gez.	Dessé Gepr.
Copy to: Kopie fuer:		

STUDER REGENSDORF — MONITORING CONTROLLER — Number Nummer: 1.942.130-20

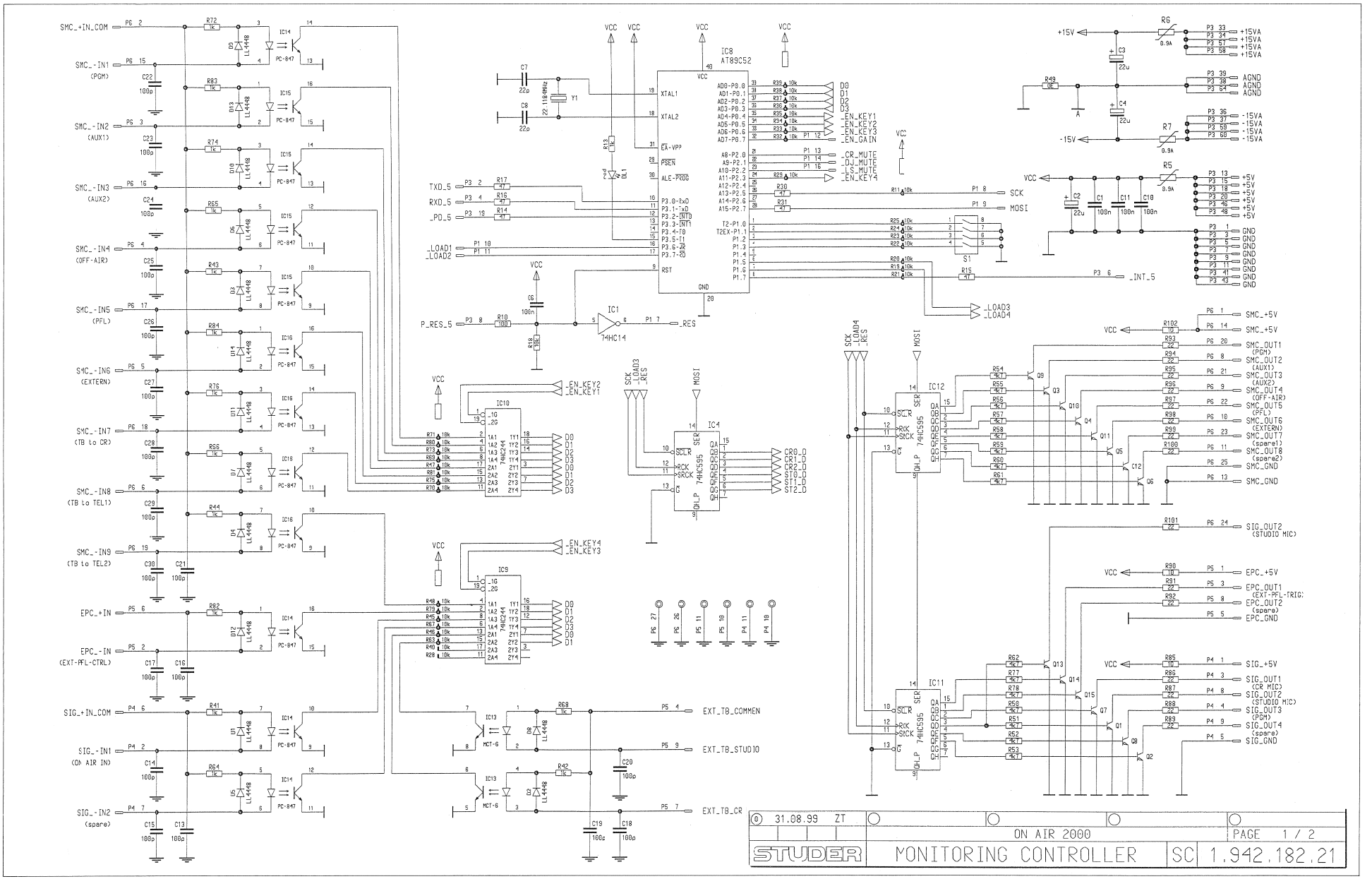
MONITORING CONTROLLER 1.942.130.24 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 2	59.22.5220		22u	EL 25V 20% RM5
0	C 3	59.22.5220		22u	EL 25V 20% RM5
0	C 4	59.22.5220		22u	EL 25V 20% RM5
0	C 5	59.60.2333		22p	CER 50V, 5%, C0G, 0805
0	C 6	59.60.2333		22p	CER 50V, 5%, C0G, 0805
0	C 7	59.60.2333		22p	CER 50V, 5%, C0G, 0805
0	C 8	59.60.2333		22p	CER 50V, 5%, C0G, 0805
0	C 9	59.60.2333		22p	CER 50V, 5%, C0G, 0805
0	C 10	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 11	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 12	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 13	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 14	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 15	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 16	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 17	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 18	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 19	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 20	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 21	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 22	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 23	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 24	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 6	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 7	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 8	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 9	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 10	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 11	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 12	50.60.8001		4448	200mA 75V 4ns SOD 80
0	DL 1	50.04.2141		LR3360	LED 3.18mm, rot
0	IC 1	50.62.1014		74HC 14	Hex Schmitt trigger inverter
0	IC 2	50.62.1151		74HC151	8 channel multiplexer
0	IC 3	50.62.1151		74HC151	8 channel multiplexer
0	IC 4	50.62.1595		74HC595	8bit shift/output register
0	IC 5	50.15.0114		9637	Dual diff Line Receiver
0	IC 6	50.62.1574		74HC574	Octal D-FF
0	IC 7	50.62.1574		74HC574	Octal D-FF
0	IC 8	1.942.913.24			SW.130 MON MODULE (50.16.0311)
				50160311 (AT89C52)	
0	IC 9	50.62.1244		74HC244	Octal buffer line driver/recei
0	IC 10	50.62.1244		74HC244	Octal buffer line driver/recei
0	IC 11	50.62.1595		74HC595	8bit shift/output register
0	IC 12	50.62.1595		74HC595	8bit shift/output register
0	IC 13	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	IC 14	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	IC 15	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	MP 1	1.942.130.11 1 pce			MONITORING CONTROLLER PCB
0	MP 2	43.01.0108 1 pce		Label	ESE-WARNSCHILD
0	MP 3	1.942.130.10 1 pce			NR. ETIKETTE 5X20
				(olus Hardware-Etikette 1.101.001.20)	
0	P 1	54.14.5540		20p	PCB-Buchse winkel
0	P 2	54.14.5540		20p	PCB-Buchse winkel
0	P 3	54.14.2056		64p	Stecker gerade Au
0	P 4	54.13.0078		9p	D-Sub, PCB, Winkel
0	P 5	54.13.0078		9p	D-Sub, PCB, Winkel
0	P 6	54.13.0078		25p	D-Sub, PCB, Winkel
0	Q 1	50.60.0050		BC8'7-25	NPN 45V 800mA SOT 23
0	Q 2	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 3	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 4	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 5	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 6	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 7	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 8	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 9	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 10	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 11	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 12	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 13	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 14	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 15	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	R 1	57.60.1000		0R0	MF, 0204
0	R 2	57.60.1471		470R	MF, 1%, 0204, E24
0	R 3	57.60.1470		47R	MF, 1%, 0204, E24
0	R 4	57.60.1104		100k	MF, 1%, 0204, E24
0	R 5	57.60.1104		100k	MF, 1%, 0204, E24
0	R 6	57.92.7013		0,5A	PTC 60V
0	R 7	57.92.7020		0,75A	PTC 60V
0	R 8	57.92.7013		0,5A	PTC 60V
0	R 9	57.60.1000		0R0	MF, 0204

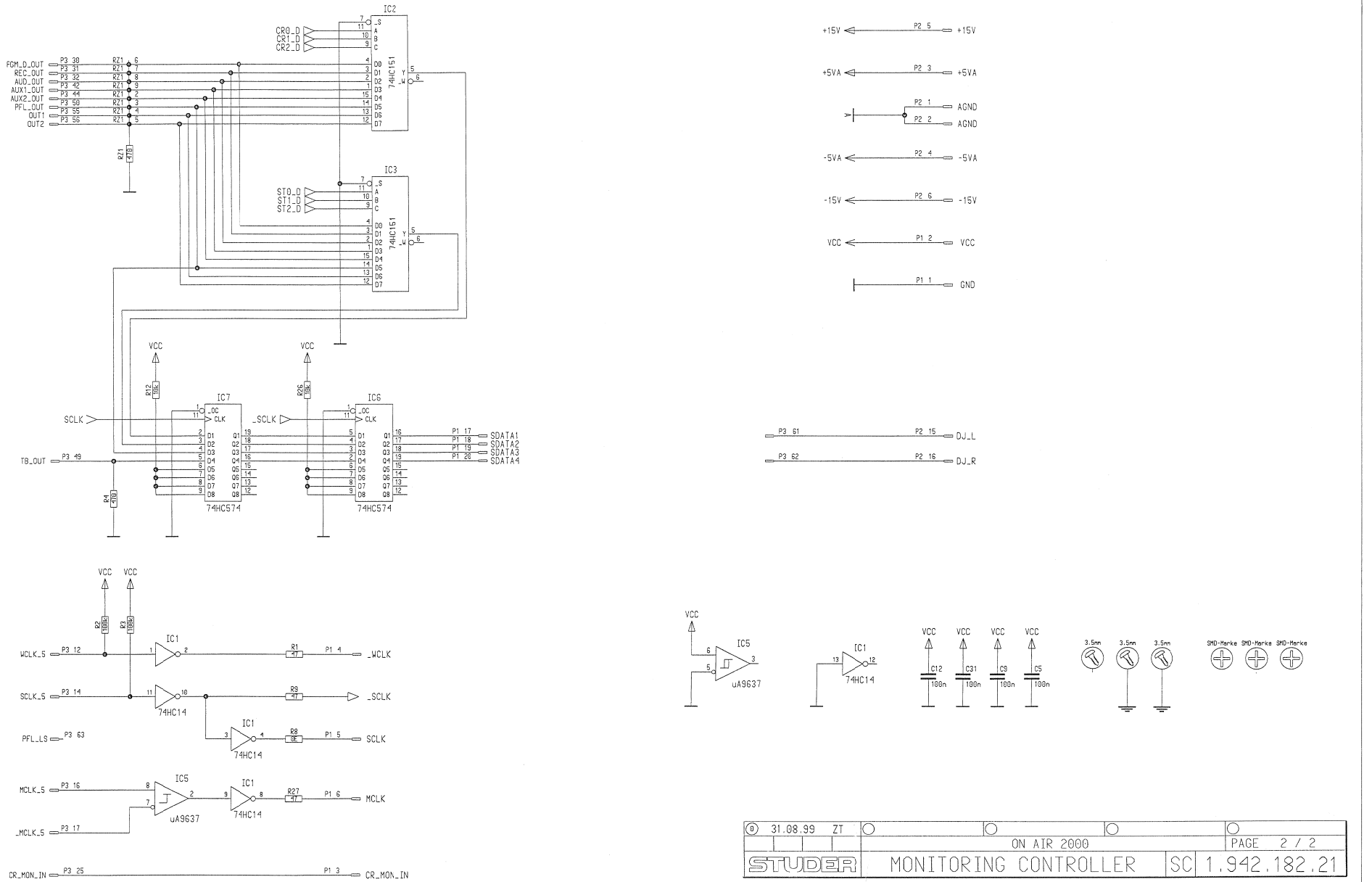
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 10	57.60.1470		47R	MF, 1%, 0204, E24
0	R 11	57.60.1101		100R	MF, 1%, 0204, E24
0	R 12	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 13	57.60.1103		10k	MF, 1%, 0204, E24
0	R 14	57.60.1470		47R	MF, 1%, 0204, E24
0	R 15	57.60.1470		47R	MF, 1%, 0204, E24
0	R 16	57.60.1470		47R	MF, 1%, 0204, E24
0	R 17	57.60.1470		47R	MF, 1%, 0204, E24
0	R 18	57.60.1103		10k	MF, 1%, 0204, E24
0	R 19	57.60.1103		10k	MF, 1%, 0204, E24
0	R 20	57.60.1470		47R	MF, 1%, 0204, E24
0	R 21	57.60.1470		47R	MF, 1%, 0204, E24
0	R 22	57.60.1470		47R	MF, 1%, 0204, E24
0	R 23	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 24	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 25	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 26	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 27	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 28	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 29	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 30	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 31	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 32	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 33	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 34	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 35	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 36	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 37	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 38	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 39	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 40	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 41	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 42	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 43	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 44	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 45	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 46	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 47	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 48	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 49	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 50	57.60.1100		10R	MF, 1%, 0204, E24
0	R 51	57.60.1220		22R	MF, 1%, 0204, E24
0	R 52	57.60.1220		22R	MF, 1%, 0204, E24
0	R 53	57.60.1220		22R	MF, 1%, 0204, E24
0	R 54	57.60.1220		22R	MF, 1%, 0204, E24
0	R 55	57.60.1100		10R	MF, 1%, 0204, E24
0	R 56	57.60.1220		22R	MF, 1%, 0204, E24
0	R 57	57.60.1220		22R	MF, 1%, 0204, E24
0	R 58	57.60.1100		10R	MF, 1%, 0204, E24
0	R 59	57.60.1220		22R	MF, 1%, 0204, E24
0	R 60	57.60.1220		22R	MF, 1%, 0204, E24
0	R 61	57.60.1220		22R	MF, 1%, 0204, E24
0	R 62	57.60.1220		22R	MF, 1%, 0204, E24
0	R 63	57.60.1220		22R	MF, 1%, 0204, E24
0	R 64	57.60.1220		22R	MF, 1%, 0204, E24
0	R 65	57.60.1220		22R	MF, 1%, 0204, E24
0	R 66	57.60.1220		22R	MF, 1%, 0204, E24
0	RZ 1	57.88.4471		470R	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4332		3k3	8*R Resistor-Netw 2% SIP9
0	RZ 3	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 4	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 5	57.88.4332		3k3	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0164		4*a	DIL-Switch, PCB
0	XIC 8	53.03.0172		40p	DIL 0.6", Idl, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

End of List

Montoring Controller 1.942.182.21

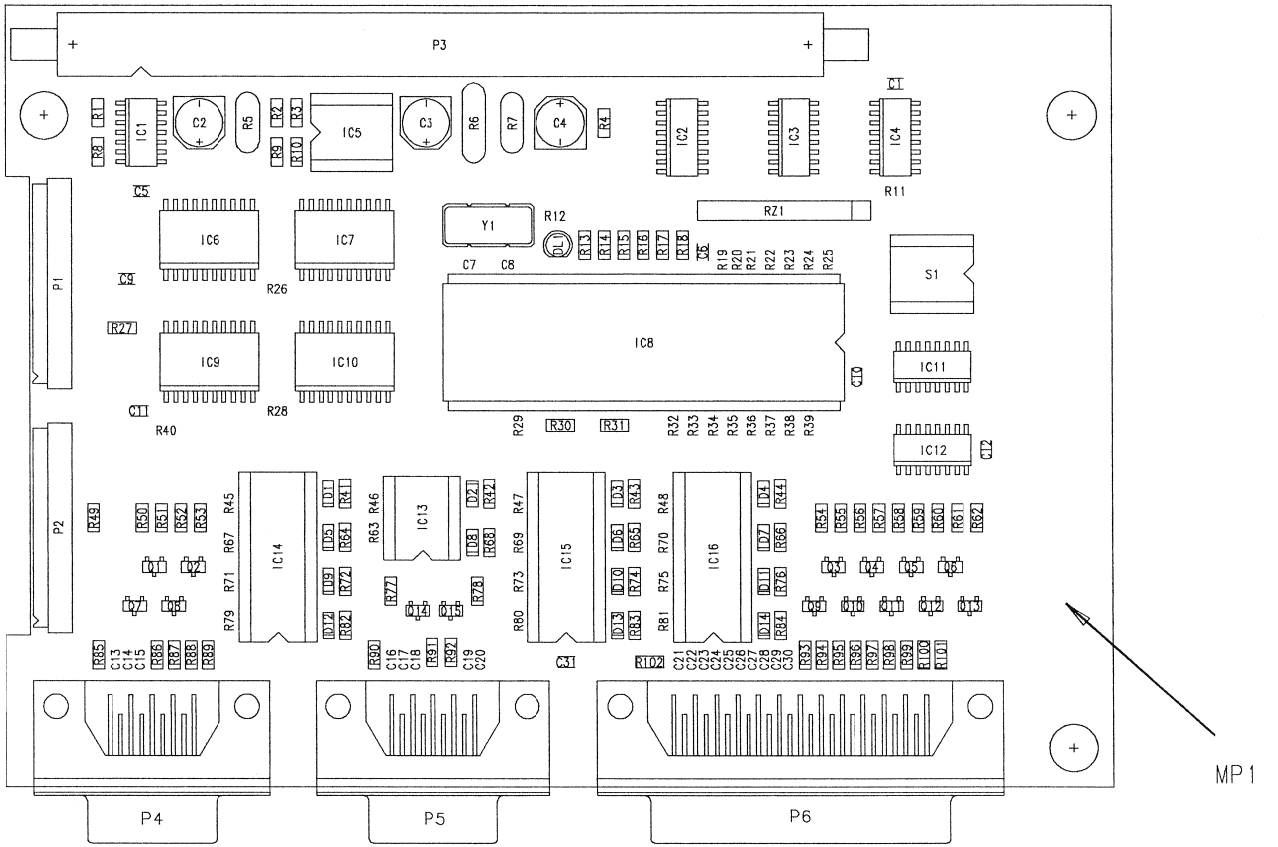


Montoring Controller 1.942.182.21



0	31.08.99 ZT				
		ON AIR 2000			PAGE 2 / 2
STUDER	MONITORING CONTROLLER			SC	1.942.182.21

Montoring Controller 1.942.182.21



Edition Ausgabe	Modification Aenderung				
					3
					2
					1
15.12.98	PZ				0
Date Datum	Visa Gez.	Dekkel Oppr.	Seen Ges.	Index	

Copy to: Kopie fuer:

STUDER REGENSDORF | Description: Bezeichnung: MONITORING CONTROLLER | Number: Nummer: 1.942.132-21

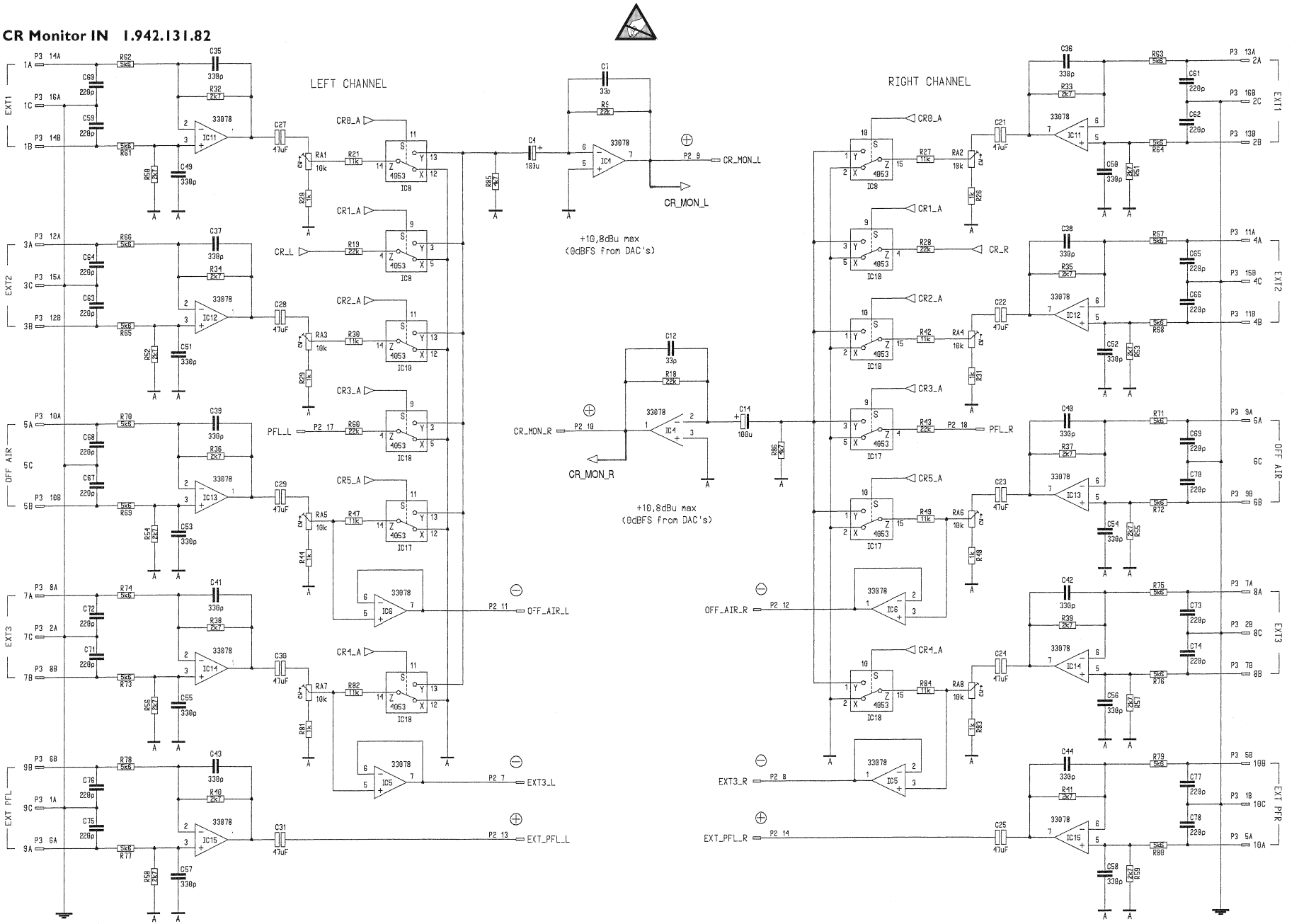
Montoring Controller 1.942.182.21

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 2	59.68.0111		22u	C-EL 35V, 6.3*5.7
0	C 3	59.68.0111		22u	C-EL 35V, 6.3*5.7
0	C 4	59.68.0111		22u	C-EL 35V, 6.3*5.7
0	C 5	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 6	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 7	59.60.2233		22p	CER 50V, 5%, C0G, 0603
0	C 8	59.60.2233		22p	CER 50V, 5%, C0G, 0603
0	C 9	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 14	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 15	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 16	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 17	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 18	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 19	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 20	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 21	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 22	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 23	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 24	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 25	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 26	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 27	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 28	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 29	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 30	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 31	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 6	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 7	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 8	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 9	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 10	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 11	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 12	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 13	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 14	50.60.8001		4448	200mA 75V 4ns SOD 80
0	DL 1	50.04.2141		LR3360	LED 3.18mm, rot
0	IC 1	50.62.1014		74HC 14	Hey Schmitt trigger inverter
0	IC 2	50.62.1151		74HC151	8 channel multiplexer
0	IC 3	50.62.1151		74HC151	8 channel multiplexer
0	IC 4	50.62.1595		74HC595	8bit shift/output register
0	IC 5	50.15.0114		9637	Dual diff Line Receiver
0	IC 6	50.62.1574		74HC574	Octal D-FF
0	IC 7	50.62.1574		74HC574	Octal D-FF
0	IC 8	1.942.913.24			SW.130 MONITORING MODULE
					(50150311, AT89C52)
0	IC 9	50.62.1244		74HC244	Octal buffer line driver/recei
0	IC 10	50.62.1244		74HC244	Octal buffer line driver/recei
0	IC 11	50.62.1595		74HC595	8bit shift/output register
0	IC 12	50.62.1595		74HC595	8bit shift/output register
0	IC 13	50.99.0111		MCT6	DLQ ILD-74, MCT 6, TLP 504 A
0	IC 14	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	IC 15	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	IC 16	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	MP 1	1.942.130.12	1 pce		MONITORING CONTROLLER PCB
0	MP 2	43.01.8108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.182.10	1 pce		NR. ETIKETTE 5X20
0	MP 4	1.101.001.20	1 pce	Label	TEXT-ETIK. 5*20 HARDWARE -20
0	P 1	54.14.5540		20p	PCB-Buchse winkel
0	P 2	54.14.5540		20p	PCB-Buchse winkel
0	P 3	54.14.2056		64p	Stecker gerade Au
0	P 4	54.13.0078		9p	D-Sub, PCB, Winkel
0	P 5	54.13.0078		9p	D-Sub, PCB, Winkel
0	P 6	54.13.0078		25p	D-Sub, PCB, Winkel
0	Q 1	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 2	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 3	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 4	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 5	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 6	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 7	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 8	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 9	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 10	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 11	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 12	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 13	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 14	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 15	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	R 1	57.60.1470		47R	MF, 1%, 0204, E24
0	R 2	57.60.1104		100K	MF, 1%, 0204, E24
0	R 3	57.60.1104		100K	MF, 1%, 0204, E24
0	R 4	57.60.1471		470R	MF, 1%, 0204, E24
0	R 5	57.92.7021		0.9A	POLY- PTC, 60V
0	R 6	57.92.7021		0.9A	POLY- PTC, 60V
0	R 7	57.92.7021		0.9A	POLY- PTC, 60V
0	R 8	57.60.1000		0R0	MF, 0204
0	R 9	57.60.1470		47R	MF, 1%, 0204, E24
0	R 10	57.60.1101		100R	MF, 1%, 0204, E24
0	R 11	57.69.1097		10k	CF 5% 0603
0	R 12	57.69.1097		10k	CF 5% 0603
0	R 13	57.60.1102		1K	MF, 1%, 0204, E24
0	R 14	57.60.1470		47R	MF, 1%, 0204, E24
0	R 15	57.60.1470		47R	MF, 1%, 0204, E24
0	R 16	57.60.1470		47R	MF, 1%, 0204, E24
0	R 17	57.60.1470		47R	MF, 1%, 0204, E24
0	R 18	57.60.1103		10K	MF, 1%, 0204, E24
0	R 19	57.69.1097		10k	CF 5% 0603
0	R 20	57.69.1097		10k	CF 5% 0603
0	R 21	57.69.1097		10k	CF 5% 0603
0	R 22	57.69.1097		10k	CF 5% 0603
0	R 23	57.69.1097		10k	CF 5% 0603
0	R 24	57.69.1097		10k	CF 5% 0603
0	R 25	57.69.1097		10k	CF 5% 0603
0	R 26	57.69.1097		10k	CF 5% 0603
0	R 27	57.60.1470		47R	MF, 1%, 0204, E24
0	R 28	57.69.1097		10k	CF 5% 0603
0	R 29	57.69.1097		10k	CF 5% 0603
0	R 30	57.60.1470		47R	MF, 1%, 0204, E24
0	R 31	57.60.1470		47R	MF, 1%, 0204, E24
0	R 32	57.69.1097		10k	CF 5% 0603
0	R 33	57.69.1097		10k	CF 5% 0603
0	R 34	57.69.1097		10k	CF 5% 0603
0	R 35	57.69.1097		10k	CF 5% 0603
0	R 36	57.69.1097		10k	CF 5% 0603
0	R 37	57.69.1097		10k	CF 5% 0603
0	R 38	57.69.1097		10k	CF 5% 0603
0	R 39	57.69.1097		10k	CF 5% 0603
0	R 40	57.69.1097		10k	CF 5% 0603
0	R 41	57.60.1102		1K	MF, 1%, 0204, E24
0	R 42	57.60.1102		1K	MF, 1%, 0204, E24
0	R 43	57.60.1102		1K	MF, 1%, 0204, E24
0	R 44	57.60.1102		1K	MF, 1%, 0204, E24
0	R 45	57.69.1097		10k	CF 5% 0603
0	R 46	57.69.1097		10k	CF 5% 0603
0	R 47	57.69.1097		10k	CF 5% 0603
0	R 48	57.69.1097		10k	CF 5% 0603
0	R 49	57.60.1000		0R0	MF, 0204
0	R 50	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 51	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 52	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 53	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 54	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 55	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 56	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 57	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 58	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 59	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 60	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 61	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 62	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 63	57.69.1097		10k	CF 5% 0603
0	R 64	57.60.1102		1K	MF, 1%, 0204, E24
0	R 65	57.60.1102		1K	MF, 1%, 0204, E24
0	R 66	57.60.1102		1K	MF, 1%, 0204, E24
0	R 67	57.69.1097		10k	CF 5% 0603
0	R 68	57.60.1102		1K	MF, 1%, 0204, E24
0	R 69	57.69.1097		10k	CF 5% 0603
0	R 70	57.69.1097		10k	CF 5% 0603
0	R 71	57.69.1097		10k	CF 5% 0603
0	R 72	57.60.1102		1K	MF, 1%, 0204, E24
0	R 73	57.69.1097		10k	CF 5% 0603
0	R 74	57.60.1102		1K	MF, 1%, 0204, E24
0	R 75	57.69.1097		10k	CF 5% 0603
0	R 76	57.60.1102		1K	MF, 1%, 0204, E24
0	R 77	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 78	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 79	57.69.1097		10k	CF 5% 0603
0	R 80	57.69.1097		10k	CF 5% 0603
0	R 81	57.69.1097		10k	CF 5% 0603
0	R 82	57.60.1102		1K	MF, 1%, 0204, E24
0	R 83	57.60.1102		1K	MF, 1%, 0204, E24
0	R 84	57.60.1102		1K	MF, 1%, 0204, E24
0	R 85	57.60.1100		10R	MF, 1%, 0204, E24
0	R 86	57.60.1220		22R	MF, 1%, 0204, E24
0	R 87	57.60.1220		22R	MF, 1%, 0204, E24
0	R 88	57.60.1220		22R	MF, 1%, 0204, E24
0	R 89	57.60.1220		22R	MF, 1%, 0204, E24
0	R 90	57.60.1100		10R	MF, 1%, 0204, E24
0	R 91	57.60.1220		22R	MF, 1%, 0204, E24
0	R 92	57.60.1220		22R	MF, 1%, 0204, E24
0	R 93	57.60.1220		22R	MF, 1%, 0204, E24
0	R 94	57.60.1220		22R	MF, 1%, 0204, E24
0	R 95	57.60.1220		22R	MF, 1%, 0204, E24
0	R 96	57.60.1220		22R	MF, 1%, 0204, E24
0	R 97	57.60.1220		22R	MF, 1%, 0204, E24
0	R 98	57.60.1220		22R	MF, 1%, 0204, E24
0	R 99	57.60.1220		22R	MF, 1%, 0204, E24
0	R 100	57.60.1220		22R	MF, 1%, 0204, E24
0	R 101	57.60.1220		22R	MF, 1%, 0204, E24
0	R 102	57.60.1100		10R	MF, 1%, 0204, E24
0	RZ 1	57.88.4471		470R	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0164		4*a	SZ , 4*A, DIL
0	XIC 8	53.03.0172		40p	DIL 0.6", löt, gerade
0	Y 1	89.60.1004		22.1184MHz	SMD Quartz

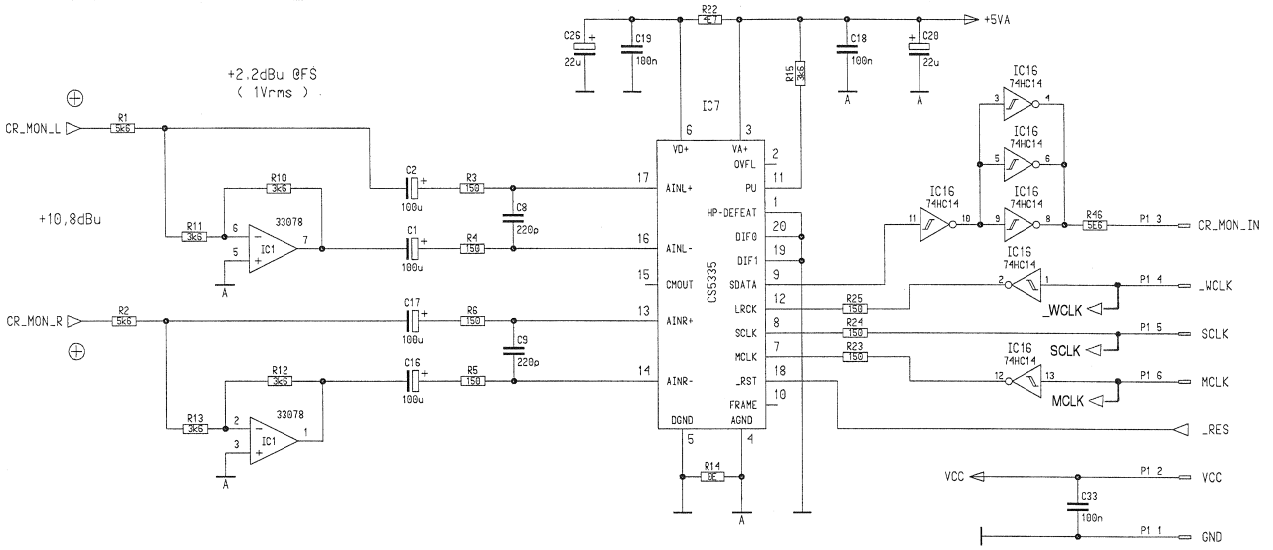
End of List

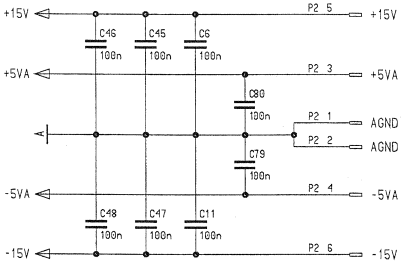
Comments

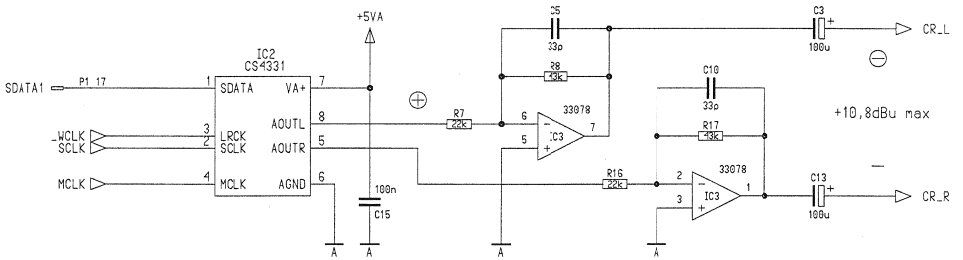
CR Monitor IN 1.942.131.82

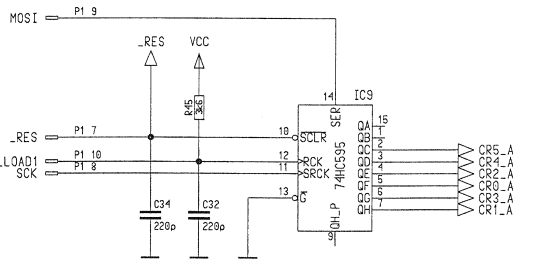


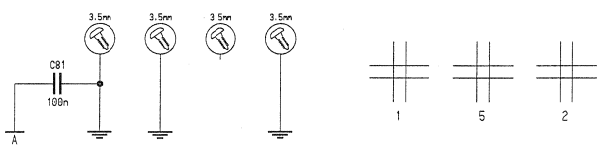
CR Monitor IN 1.942.131.82



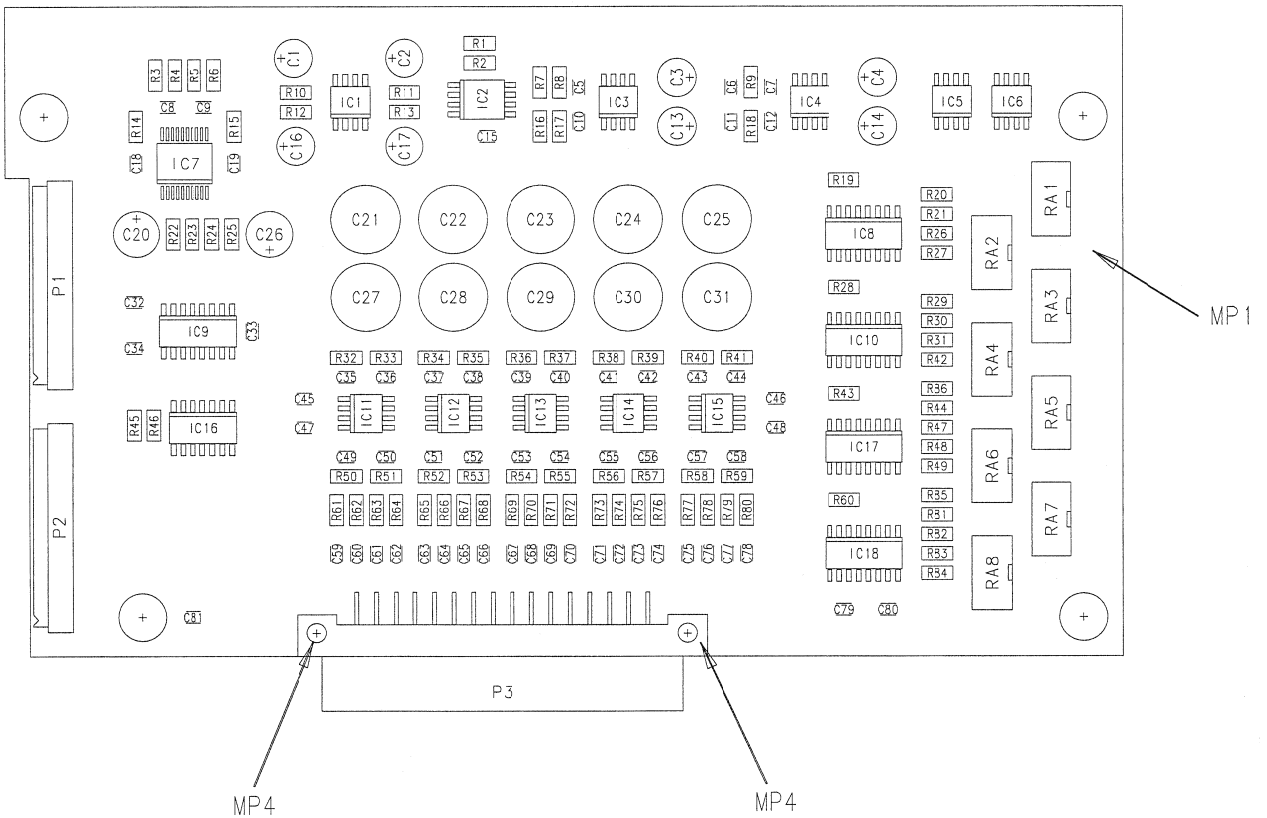








CR Monitor IN 1.942.131.82



Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.4002		100u	EL 16V, 20%, RM5
0	C 2	59.22.4002		100u	EL 16V, 20%, RM5
0	C 3	59.22.4002		100u	EL 16V, 20%, RM5
0	C 4	59.22.4002		100u	EL 16V, 20%, RM5
0	C 5	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 6	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 7	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 8	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 9	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 10	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 12	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 13	59.22.4002		100u	EL 16V, 20%, RM5
0	C 14	59.22.4002		100u	EL 16V, 20%, RM5
0	C 15	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 16	59.22.4002		100u	EL 16V, 20%, RM5
0	C 17	59.22.4002		100u	EL 16V, 20%, RM5
0	C 18	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.22.5220		22u	EL 25V, 20%, RM5
0	C 21	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 22	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 23	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 24	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 25	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 26	59.22.5220		22u	EL 25V, 20%, RM5
0	C 27	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 28	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 29	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 30	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 31	59.99.2401		47u	C 47 U ,BIPOL,16 V , EL
0	C 32	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 33	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 34	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 35	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 36	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 37	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 38	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 39	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 40	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 41	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 42	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 43	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 44	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 45	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 46	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 47	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 48	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 49	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 50	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 51	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 52	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 53	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 54	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 55	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 56	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 57	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 58	59.60.0331		330p	CER 63V, 5%, C0G, 0805
0	C 59	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 60	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 61	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 62	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 63	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 64	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 65	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 66	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 67	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 68	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 69	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 70	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 71	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 72	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 73	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 74	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 75	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 76	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 77	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 78	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 79	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 80	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 81	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	IC 1	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 2	50.61.8003		CS4331	D/A Converter 18bit Ste SO 8

CR Monitor IN 1.942.131.82

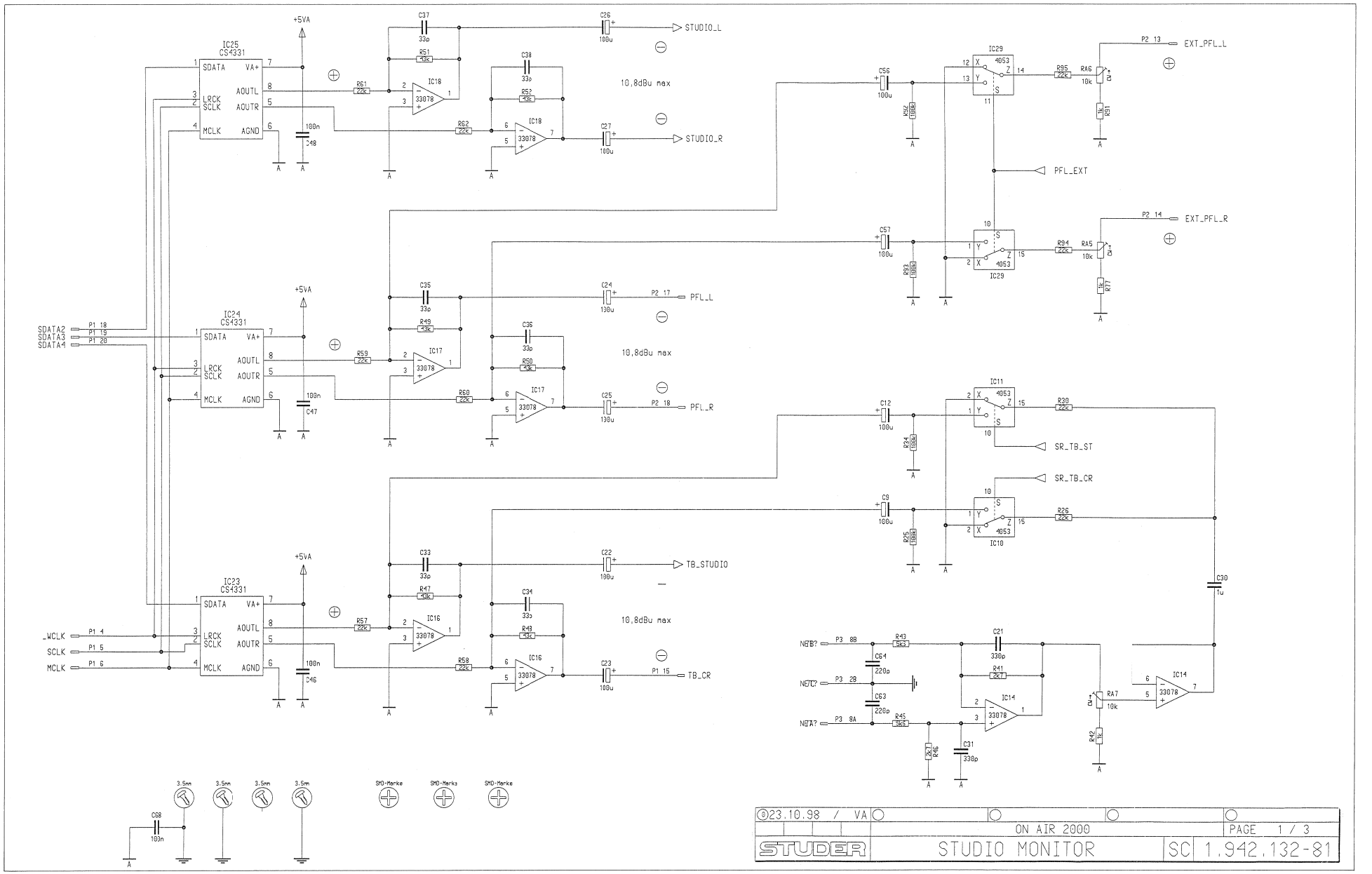
Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	IC 3	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 4	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 5	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 6	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 7	50.61.8103		CS5360	A/D Converter 24bit Sta SSOP20
0	IC 8	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 9	50.62.1595		74HC595	8bit shift/output register
0	IC 10	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 11	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 12	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 13	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 14	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 15	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 16	50.62.1014		74HC 14	Hex Schmitt trigger inverter
0	IC 17	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 18	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	MP 1	1.942.131.13	1 pce		CR MONITOR IN PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.131.10	1 pce		NR. ETIKETTE 5X20
0	MP 4	28.99.0119	2 pcs		ROHRNIETE D 2.5*0.15* 9
0	P 1	54.14.5540		20p	PCB-Buchse winkel
0	P 2	54.14.5540		20p	PCB-Buchse winkel
0	P 3	54.11.2013		32p	EU-BK 2*16p
0	R 1	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 2	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 3	57.60.1151		150R	MF, 1%, 0204, E24
0	R 4	57.60.1151		150R	MF, 1%, 0204, E24
0	R 5	57.60.1151		150R	MF, 1%, 0204, E24
0	R 6	57.60.1151		150R	MF, 1%, 0204, E24
0	R 7	57.60.1223		22K	MF, 1%, 0204, E24
0	R 8	57.60.1433		43K	MF, 1%, 0204, E24
0	R 9	57.60.1223		22K	MF, 1%, 0204, E24
0	R 10	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 11	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 12	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 13	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 14	57.60.1000		0R0	MF, 0204
0	R 15	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 16	57.60.1223		22K	MF, 1%, 0204, E24
0	R 17	57.60.1433		43K	MF, 1%, 0204, E24
0	R 18	57.60.1223		22K	MF, 1%, 0204, E24
0	R 19	57.60.1223		22K	MF, 1%, 0204, E24
0	R 20	57.60.1102		1K	MF, 1%, 0204, E24
0	R 21	57.60.1113		11K	MF, 1%, 0204, E24
0	R 22	57.60.1479		4R7	MF, 1%, 0204, E24
0	R 23	57.60.1151		150R	MF, 1%, 0204, E24
0	R 24	57.60.1151		150R	MF, 1%, 0204, E24
0	R 25	57.60.1151		150R	MF, 1%, 0204, E24
0	R 26	57.60.1102		1K	MF, 1%, 0204, E24
0	R 27	57.60.1113		11K	MF, 1%, 0204, E24
0	R 28	57.60.1223		22K	MF, 1%, 0204, E24
0	R 29	57.60.1102		1K	MF, 1%, 0204, E24
0	R 30	57.60.1113		11K	MF, 1%, 0204, E24
0	R 31	57.60.1102		1K	MF, 1%, 0204, E24
0	R 32	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 33	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 34	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 35	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 36	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 37	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 38	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 39	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 40	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 41	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 42	57.60.1113		11K	MF, 1%, 0204, E24
0	R 43	57.60.1223		22K	MF, 1%, 0204, E24
0	R 44	57.60.1102		1K	MF, 1%, 0204, E24
0	R 45	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 46	57.60.1569		5R6	MF, 1%, 0204, E24
0	R 47	57.60.1113		11K	MF, 1%, 0204, E24
0	R 48	57.60.1102		1K	MF, 1%, 0204, E24
0	R 49	57.60.1113		11K	MF, 1%, 0204, E24
0	R 50	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 51	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 52	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 53	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 54	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 55	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 56	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 57	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 58	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 59	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 60	57.60.1223		22K	MF, 1%, 0204, E24
0	R 61	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 62	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 63	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 64	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 65	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 66	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 67	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 68	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 69	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 70	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 71	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 72	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 73	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 74	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 75	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 76	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 77	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 78	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 79	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 80	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 81	57.60.1102		1K	MF, 1%, 0204, E24
0	R 82	57.60.1113		11K	MF, 1%, 0204, E24
0	R 83	57.60.1102		1K	MF, 1%, 0204, E24
0	R 84	57.60.1113		11K	MF, 1%, 0204, E24
0	R 85	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 86	57.60.1472		4K7	MF, 1%, 0204, E24
0	RA 1	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 2	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 3	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 4	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 5	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 6	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 7	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 8	58.01.9103		10k	Cermet, 10%, 0.5W, vertical

End of List

Comments

(82: Production reason

Studio Monitor 1.942.132.81



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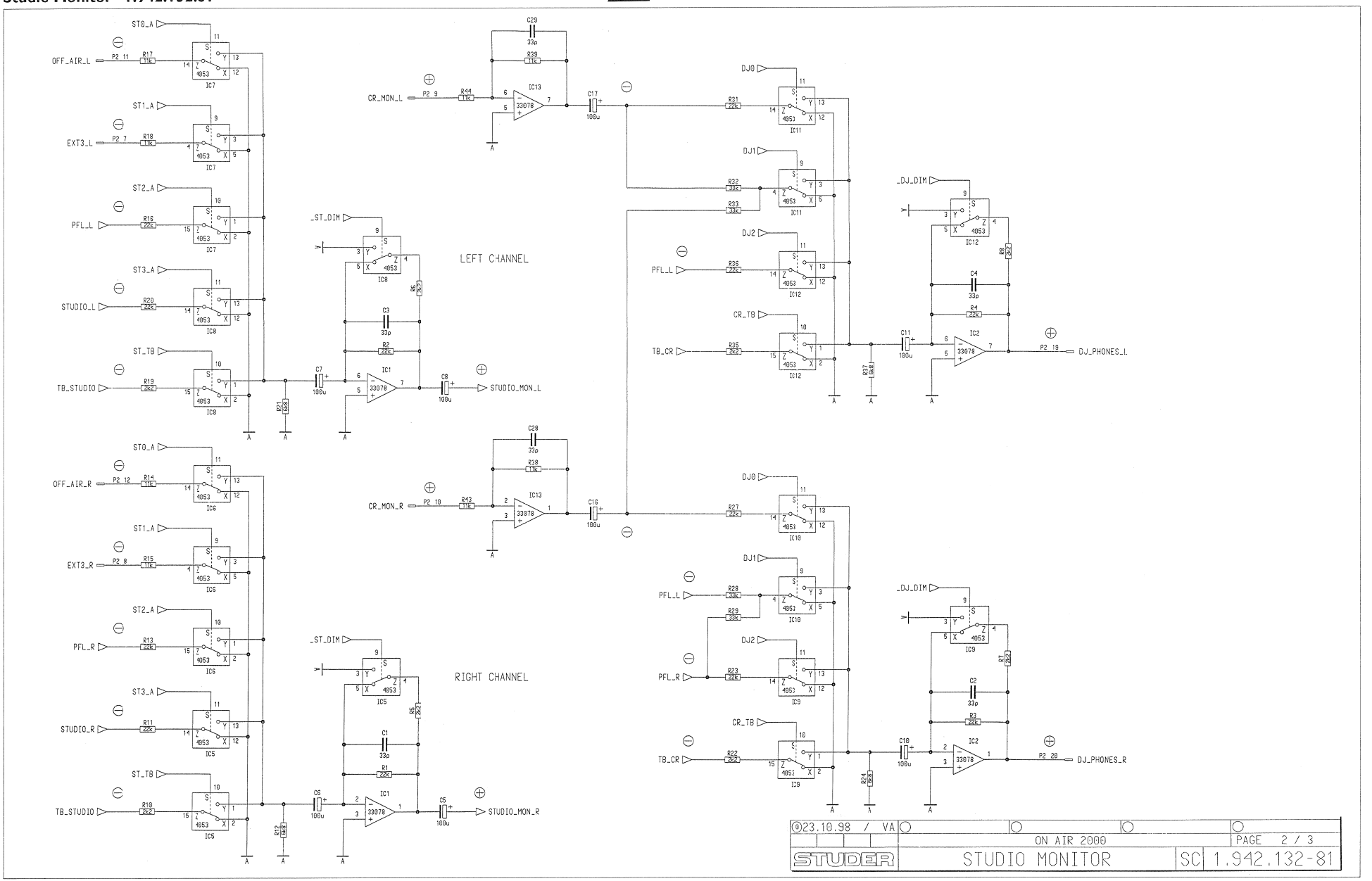
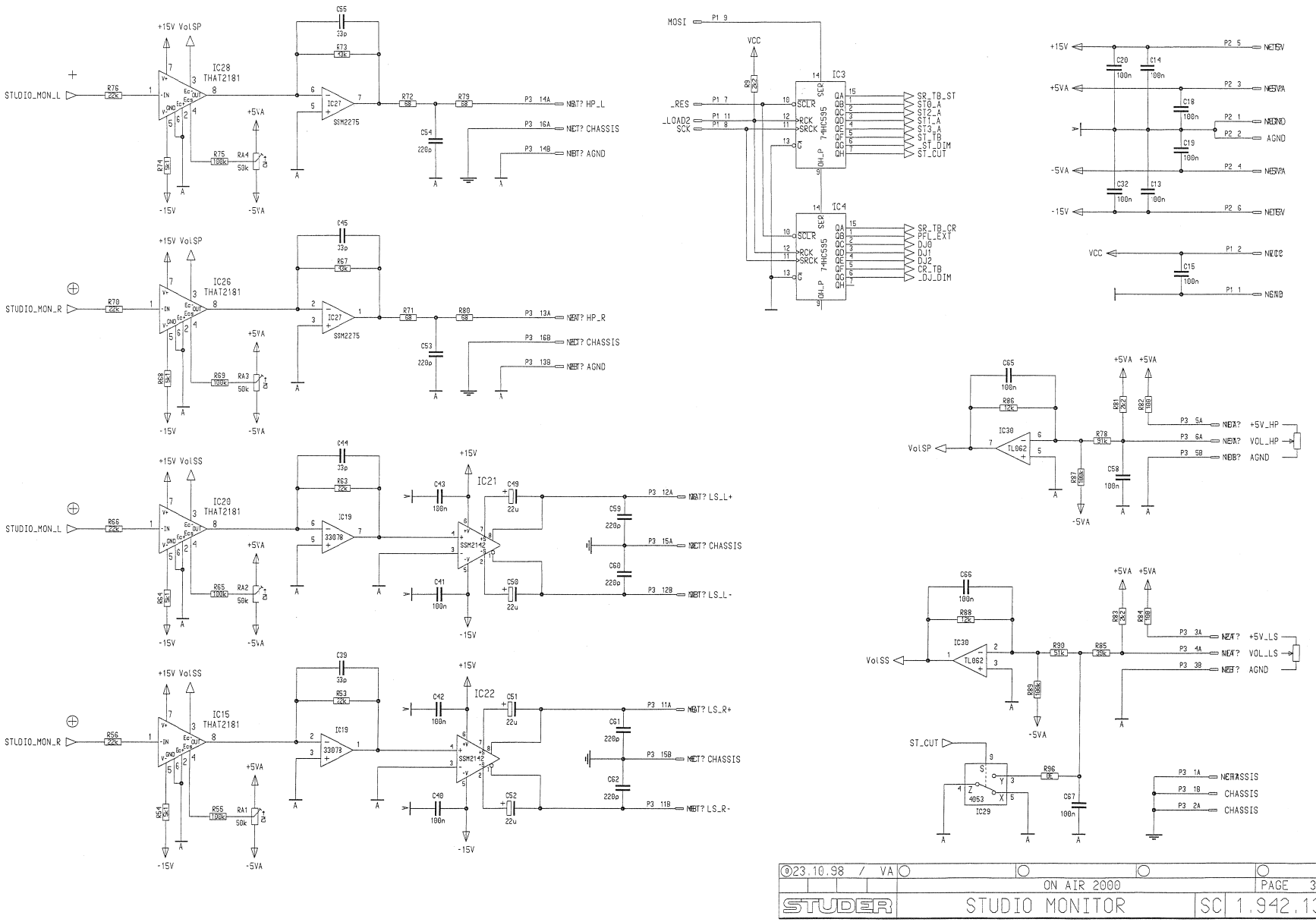
STUDER	STUDIO MONITOR	SC 1.942.132-81	ON AIR 2000 PAGE 1 / 3

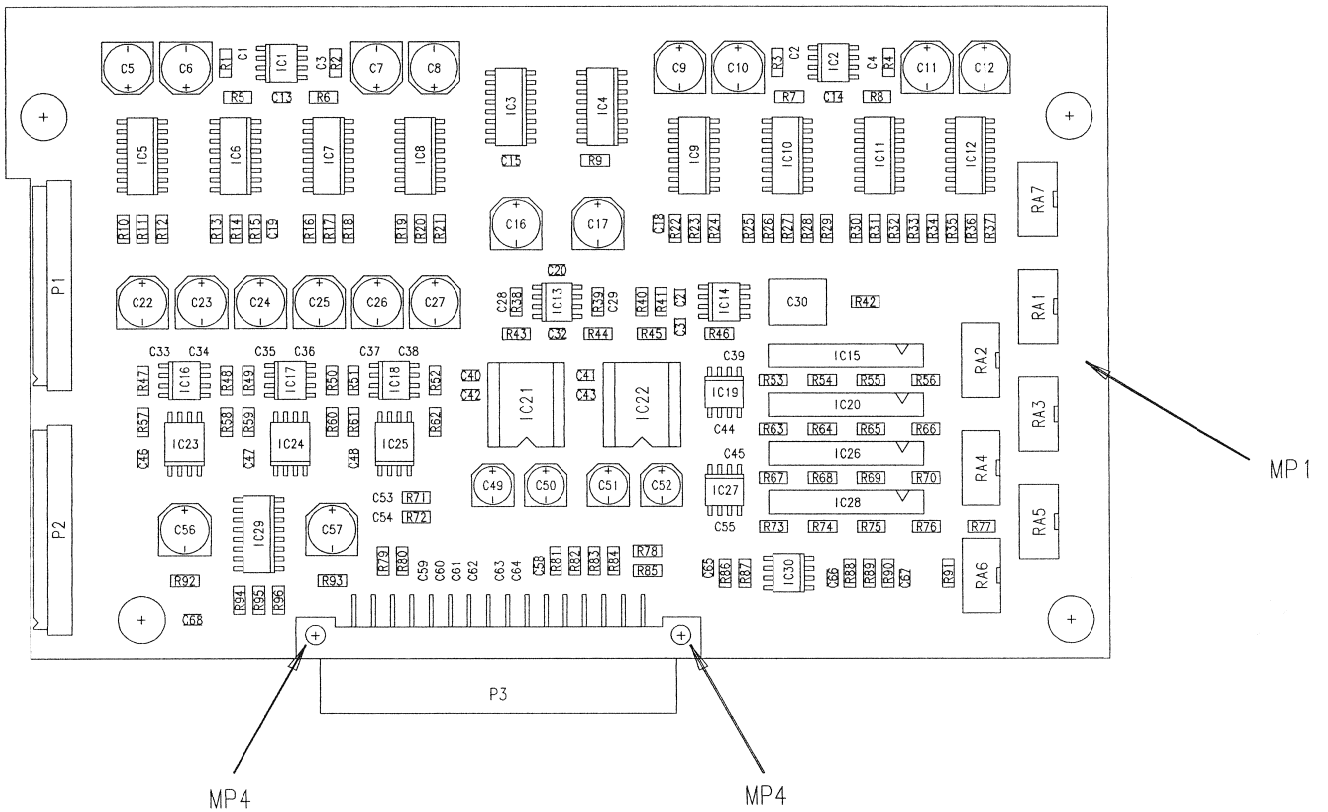
Studio Monitor 1.942.132.81



Studio Monitor 1.942.132.81



Studio Monitor 1.942.132.81



Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 2	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 3	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 4	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 5	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 6	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 7	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 8	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 9	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 10	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 11	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 12	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 13	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 15	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 16	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 17	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 18	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 21	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 22	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 23	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 24	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 25	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 26	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 27	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 28	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 29	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 30	59.06.0105		1u0	PETP, 50V, 10%, RM5
0	C 31	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 32	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 33	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 34	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 35	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 36	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 37	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 38	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 39	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 40	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 42	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 43	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 44	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 45	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 46	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 47	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 48	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 49	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 50	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 51	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 52	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 53	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 54	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 55	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 56	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 57	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 58	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 59	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 60	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 61	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 62	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 63	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 64	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 65	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 66	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 67	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 68	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	IC 1	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 2	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 3	50.62.1595		74HC595	8bit shift/output register
0	IC 4	50.62.1595		74HC595	8bit shift/output register
0	IC 5	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 6	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 7	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 8	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 9	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 10	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 11	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 12	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 13	50.61.0204		MC33078	Dual Op-Amp low noise

Modification / Abänderung

Edition / Ausgabe: 23.10.98 | PZ

Date / Datum | Visa / Gez. | Checked / Gepr. | Appr. / Gen. | Index

Copy to: / Kopie fuer:

STUDER REGENSDORF | Description / Benennung: STUDIO MONITOR "ESE" | Number / Nummer: 1.942.132-81

Studio Monitor 1.942.132.81

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	IC 14	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 15	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 16	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 17	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 18	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 19	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 20	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 21	50.09.0124		2142	IC SSM 2142 P
0	IC 22	50.09.0124		2142	IC SSM 2142 P
0	IC 23	50.61.8003		CS4331	D/A Converter 18bit Ste SO 8
0	IC 24	50.61.8003		CS4331	D/A Converter 18bit Ste SO 8
0	IC 25	50.61.8003		CS4331	D/A Converter 18bit Ste SO 8
0	IC 26	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 27	50.61.0206		SSM2275S	Dual Op-Amp, rail-to-rail SO 8
0	IC 28	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 29	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 30	50.61.0201		TL062	Dual FET Op-Amp
0	MP 1	1.942.132.13	1 pce		STUDIO MONITOR PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.132.10	1 pce		NR. ETIKETTE 5X20
0	MP 4	28.99.0119	2 pcs		ROHRNIETE D 2.5*0.15* 9
0	P 1	54.14.5540		20p	PCB-Buchse winkel
0	P 2	54.14.5540		20p	PCB-Buchse winkel
0	P 3	54.11.2013		32p	EU-BK 2*16p
0	R 1	57.60.1223		22K	MF, 1%, 0204, E24
0	R 2	57.60.1223		22K	MF, 1%, 0204, E24
0	R 3	57.60.1223		22K	MF, 1%, 0204, E24
0	R 4	57.60.1223		22K	MF, 1%, 0204, E24
0	R 5	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 6	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 7	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 8	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 9	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 10	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 11	57.60.1223		22K	MF, 1%, 0204, E24
0	R 12	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 13	57.60.1223		22K	MF, 1%, 0204, E24
0	R 14	57.60.1113		11K	MF, 1%, 0204, E24
0	R 15	57.60.1113		11K	MF, 1%, 0204, E24
0	R 16	57.60.1223		22K	MF, 1%, 0204, E24
0	R 17	57.60.1113		11K	MF, 1%, 0204, E24
0	R 18	57.60.1113		11K	MF, 1%, 0204, E24
0	R 19	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 20	57.60.1223		22K	MF, 1%, 0204, E24
0	R 21	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 22	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 23	57.60.1223		22K	MF, 1%, 0204, E24
0	R 24	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 25	57.60.1104		100K	MF, 1%, 0204, E24
0	R 26	57.60.1223		22K	MF, 1%, 0204, E24
0	R 27	57.60.1223		22K	MF, 1%, 0204, E24
0	R 28	57.60.1333		33K	MF, 1%, 0204, E24
0	R 29	57.60.1333		33K	MF, 1%, 0204, E24
0	R 30	57.60.1223		22K	MF, 1%, 0204, E24
0	R 31	57.60.1223		22K	MF, 1%, 0204, E24
0	R 32	57.60.1333		33K	MF, 1%, 0204, E24
0	R 33	57.60.1333		33K	MF, 1%, 0204, E24
0	R 34	57.60.1104		100K	MF, 1%, 0204, E24
0	R 35	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 36	57.60.1223		22K	MF, 1%, 0204, E24
0	R 37	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 38	57.60.1113		11K	MF, 1%, 0204, E24
0	R 39	57.60.1113		11K	MF, 1%, 0204, E24
0	R 40	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 41	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 42	57.60.1102		1K	MF, 1%, 0204, E24
0	R 43	57.60.1113		11K	MF, 1%, 0204, E24
0	R 44	57.60.1113		11K	MF, 1%, 0204, E24
0	R 45	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 46	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 47	57.60.1433		43K	MF, 1%, 0204, E24
0	R 48	57.60.1433		43K	MF, 1%, 0204, E24
0	R 49	57.60.1433		43K	MF, 1%, 0204, E24
0	R 50	57.60.1433		43K	MF, 1%, 0204, E24
0	R 51	57.60.1433		43K	MF, 1%, 0204, E24
0	R 52	57.60.1433		43K	MF, 1%, 0204, E24
0	R 53	57.60.1223		22K	MF, 1%, 0204, E24
0	R 54	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 55	57.60.1104		100K	MF, 1%, 0204, E24
0	R 56	57.60.1223		22K	MF, 1%, 0204, E24
0	R 57	57.60.1223		22K	MF, 1%, 0204, E24
0	R 58	57.60.1223		22K	MF, 1%, 0204, E24
0	R 59	57.60.1223		22K	MF, 1%, 0204, E24
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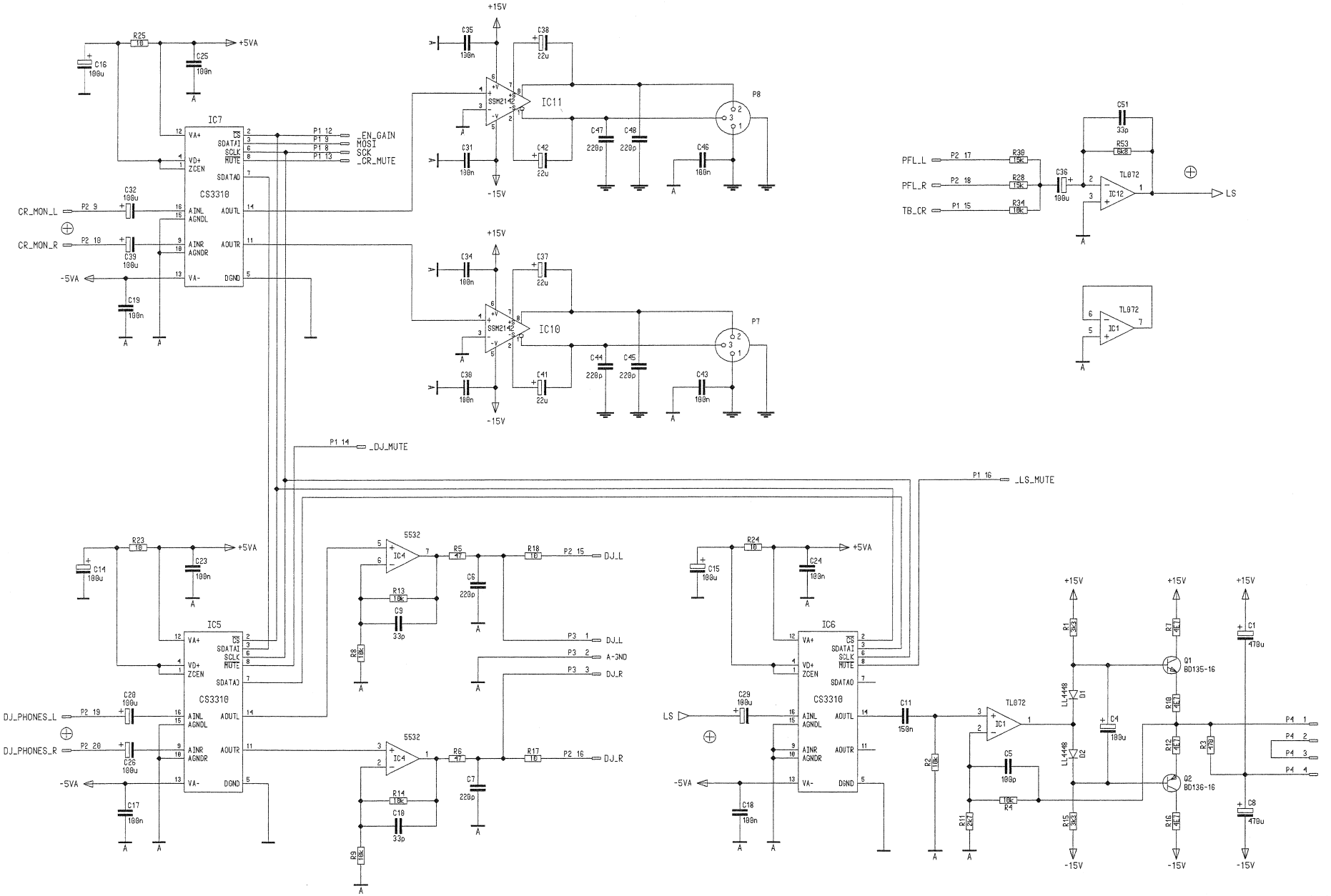
0	R 64	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 65	57.60.1104		100K	MF, 1%, 0204, E24
0	R 66	57.60.1223		22K	MF, 1%, 0204, E24
0	R 67	57.60.1433		43K	MF, 1%, 0204, E24
0	R 68	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 69	57.60.1104		100K	MF, 1%, 0204, E24
0	R 70	57.60.1223		22K	MF, 1%, 0204, E24
0	R 71	57.60.1680		68R	MF, 1%, 0204, E24
0	R 72	57.60.1680		68R	MF, 1%, 0204, E24
0	R 73	57.60.1433		43K	MF, 1%, 0204, E24
0	R 74	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 75	57.60.1104		100K	MF, 1%, 0204, E24
0	R 76	57.60.1223		22K	MF, 1%, 0204, E24
0	R 77	57.60.1102		1K	MF, 1%, 0204, E24
0	R 78	57.60.1913		91K	MF, 1%, 0204, E24
0	R 79	57.60.1680		68R	MF, 1%, 0204, E24
0	R 80	57.60.1680		68R	MF, 1%, 0204, E24
0	R 81	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 82	57.60.1101		100R	MF, 1%, 0204, E24
0	R 83	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 84	57.60.1101		100R	MF, 1%, 0204, E24
0	R 85	57.60.1393		39K	MF, 1%, 0204, E24
0	R 86	57.60.1123		12K	MF, 1%, 0204, E24
0	R 87	57.60.1104		100K	MF, 1%, 0204, E24
0	R 88	57.60.1123		12K	MF, 1%, 0204, E24
0	R 89	57.60.1104		100K	MF, 1%, 0204, E24
0	R 90	57.60.1513		51K	MF, 1%, 0204, E24
0	R 91	57.60.1102		1K	MF, 1%, 0204, E24
0	R 92	57.60.1104		100K	MF, 1%, 0204, E24
0	R 93	57.60.1104		100K	MF, 1%, 0204, E24
0	R 94	57.60.1223		22K	MF, 1%, 0204, E24
0	R 95	57.60.1223		22K	MF, 1%, 0204, E24
0	R 96	57.60.1000		0R0	MF, 0204
0	RA 1	58.01.9503		50k	Cermet, 10%, 0.5W, vertical
0	RA 2	58.01.9503		50k	Cermet, 10%, 0.5W, vertical
0	RA 3	58.01.9503		50k	Cermet, 10%, 0.5W, vertical
0	RA 4	58.01.9503		50k	Cermet, 10%, 0.5W, vertical
0	RA 5	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 6	58.01.9103		10k	Cermet, 10%, 0.5W, vertical
0	RA 7	58.01.9103		10k	Cermet, 10%, 0.5W, vertical

End of List

Comments

CR Monitor OUT 1.942.133.00



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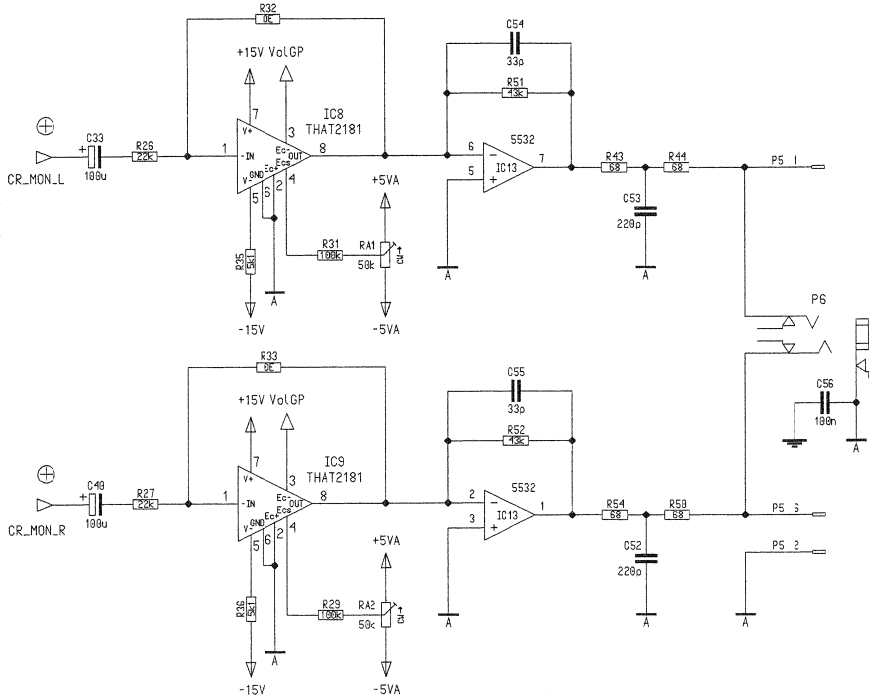
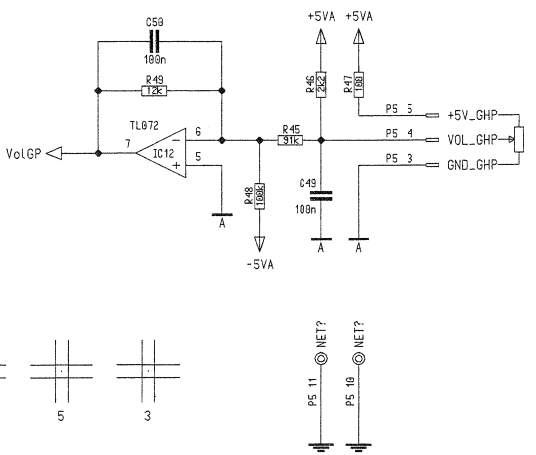
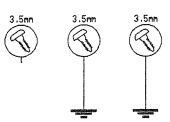
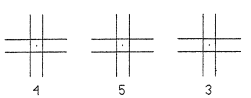
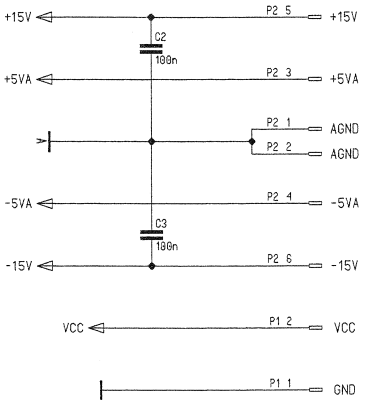
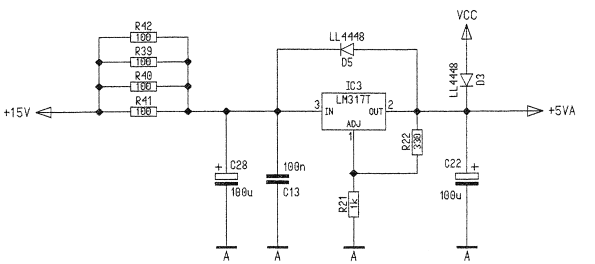


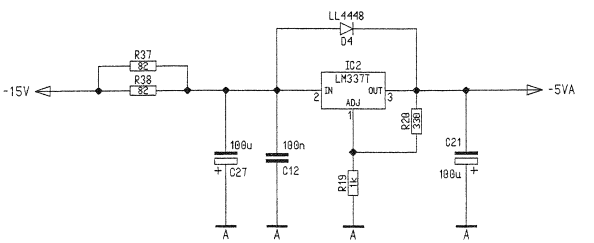




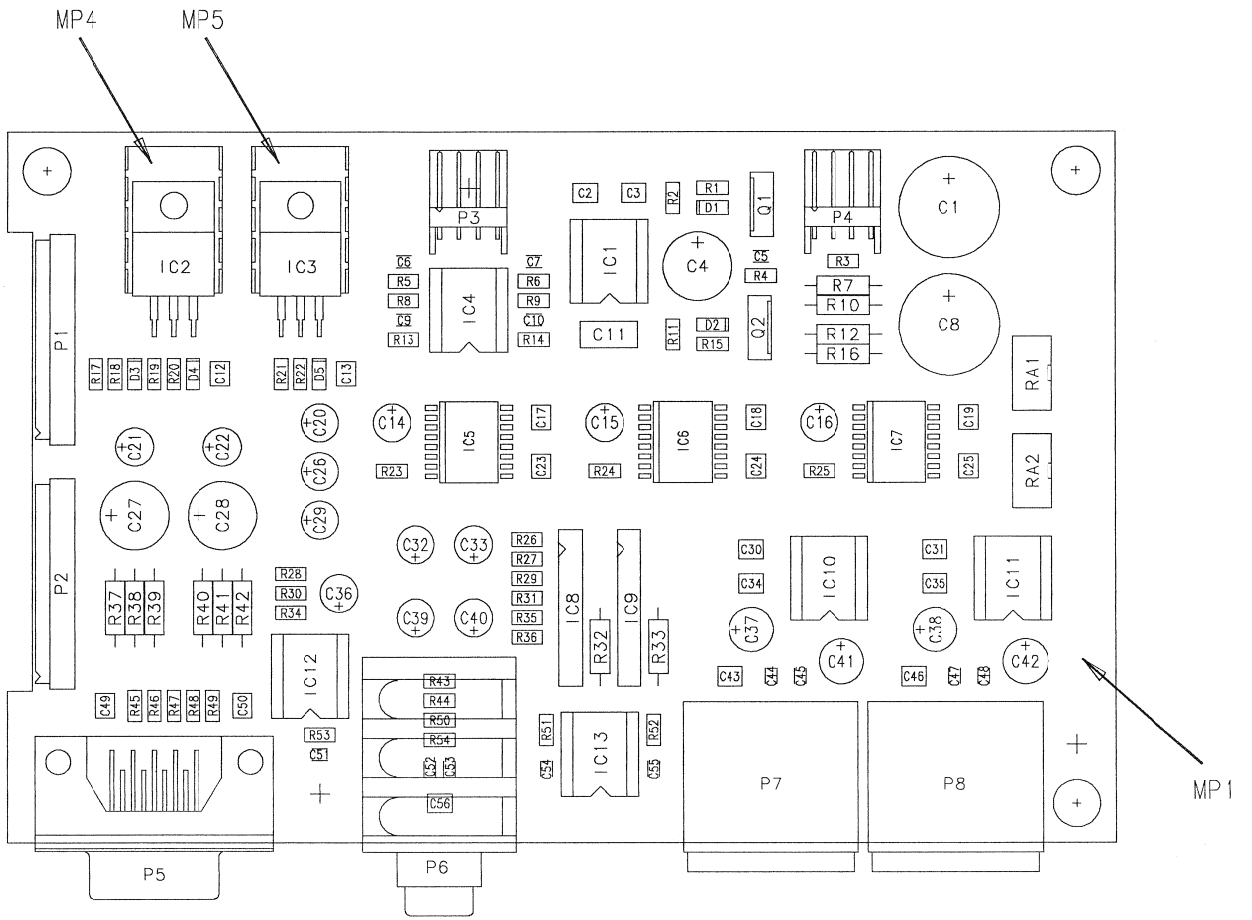








CR Monitor OUT 1.942.133.00



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.5471		470u	EL 25V, 20%, RM5
0	C 2	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 3	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 4	59.22.5101		100u	EL 25V, 20%, RM5
0	C 5	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 6	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 7	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 8	59.22.5471		470u	EL 25V, 20%, RM5
0	C 9	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 10	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 11	59.06.0154		150n	PETP, 63V, 10%, RM5
0	C 12	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 13	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 14	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 15	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 16	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 17	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 18	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 19	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 20	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 21	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 22	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 23	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 24	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 25	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 26	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 27	59.22.5101		100u	EL 25V, 20%, RM5
0	C 28	59.22.5101		100u	EL 25V, 20%, RM5
0	C 29	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 30	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 31	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 32	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 33	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 34	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 35	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 36	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 37	59.22.5220		22u	EL 25V, 20%, RM5
0	C 38	59.22.5220		22u	EL 25V, 20%, RM5
0	C 39	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 40	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 41	59.22.5220		22u	EL 25V, 20%, RM5
0	C 42	59.22.5220		22u	EL 25V, 20%, RM5
0	C 43	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 44	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 45	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 46	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 47	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 48	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 49	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 50	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 51	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 52	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 53	59.60.0221		220p	CER 63V, 5%, C0G, 0805
0	C 54	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 55	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 56	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	D 1	50.60.8001		4448	D LL 4448 SOD 80
0	D 2	50.60.8001		4448	D LL 4448 SOD 80
0	D 3	50.60.8001		4448	D LL 4448 SOD 80
0	D 4	50.60.8001		4448	D LL 4448 SOD 80
0	D 5	50.60.8001		4448	D LL 4448 SOD 80
0	IC 1	50.09.0101		TL072	IC TL 072 CN ,A
0	IC 2	50.10.0105		LM337KC	IC LM 337 KC, .SP, .T,
0	IC 3	50.10.0104		LM317SP	IC LM 317 SP, .T,
0	IC 4	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, ,A
0	IC 5	50.61.8301		CS3310	IC CS 3310-KS
0	IC 6	50.61.8301		CS3310	IC CS 3310-KS
0	IC 7	50.61.8301		CS3310	IC CS 3310-KS
0	IC 8	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 9	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 10	50.09.0124		2142	IC SSM 2142 P
0	IC 11	50.09.0124		2142	IC SSM 2142 P
0	IC 12	50.09.0101		TL072	IC TL 072 CN ,A
0	IC 13	50.09.0106		5532AN	IC NE 5532 AN, NE 5532 AN, ,A
0	MP 1	1.942.133.11			CR MONITOR OUT PCB
0	MP 2	43.01.0108		Label	ESE-WARNSC-IILD
0	MP 3	1.942.133.10			NR. ETIKETTE 5X20
0	MP 4	50.20.3004	1 pce		Kühlkörper, TO 220, horizontal
0	MP 5	50.20.3004	1 pce		Kühlkörper, TO 220, horizontal
0	P 1	54.14.5540		20p	J PCB-BUCHSE WINKEL 20 P
0	P 2	54.14.5540		20p	J PCB-BUCHSE WINKEL 20 P
0	P 3	54.12.0724		4p	Stecker winkel PCB *

Edition Ausgabe	Modification Aenderung	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index
		16.1.97	PZ			0

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STUDER REGENSDORF Description Benennung: CR MONITOR OUT "ESE" Number Nummer: 1.942.133-00

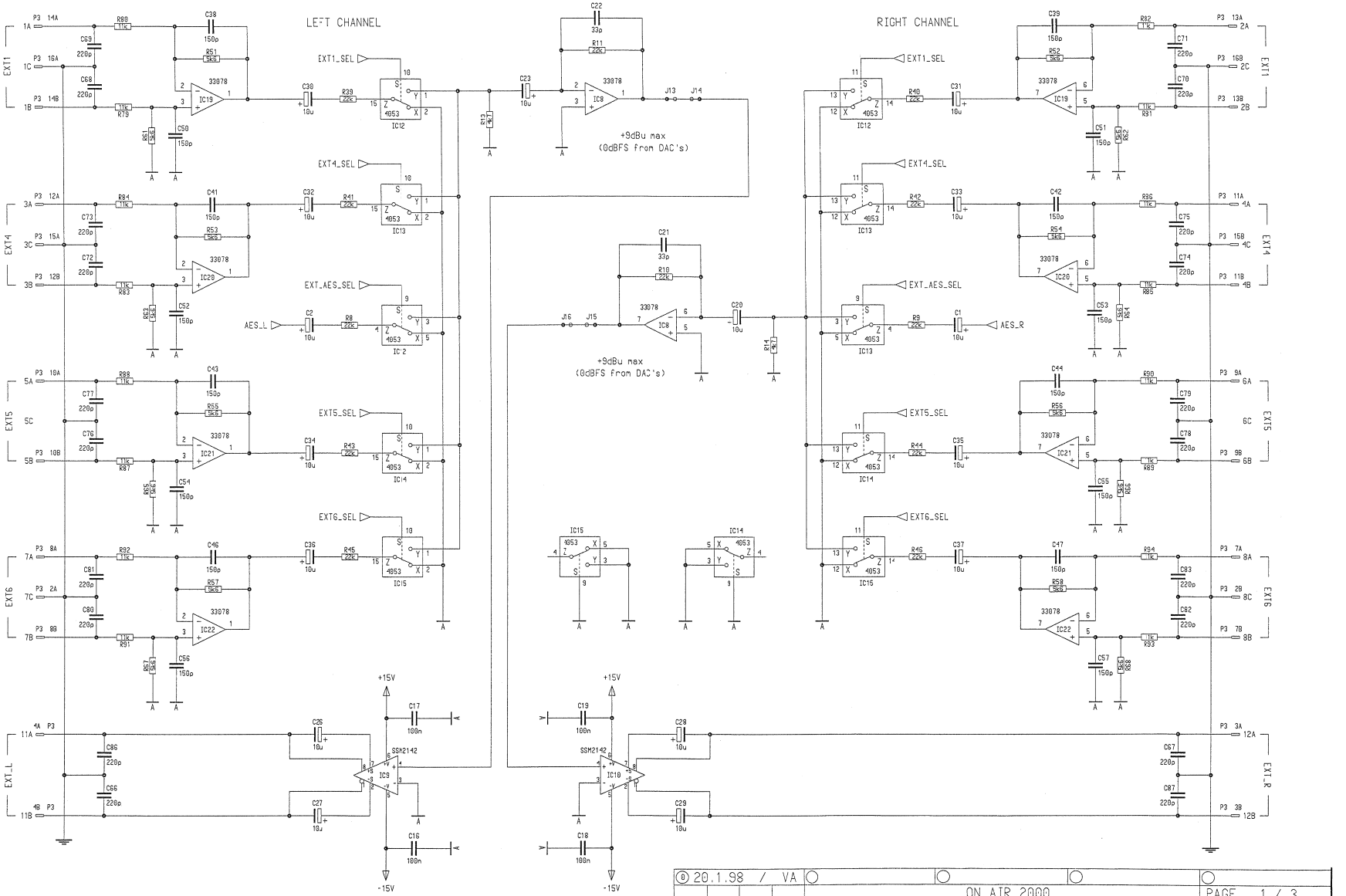
CR Monitor OUT 1.942.133.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	P 4	54.12.0724		4p	Stecker winkel PCB
0	P 5	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 6	54.24.0123			J JACK-SOCKET, 6.3MM, PCB
0	P 7	54.21.2202		3p	XLR 3p PCB WINKE..
0	P 8	54.21.2202		3p	XLR 3p PCB WINKE..
0	Q 1	50.03.0495		BD135-16	BD 135-16 NPN
0	Q 2	50.03.0510		BD136-16	BD 136-16, ..-K, -L, -M
0	R 1	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 2	57.60.1103		10K	MF, 1%, 0204, E24
0	R 3	57.60.1471		470R	MF, 1%, 0204, E24
0	R 4	57.60.1103		10K	MF, 1%, 0204, E24
0	R 5	57.60.1470		47R	MF, 1%, 0204, E24
0	R 6	57.60.1470		47R	MF, 1%, 0204, E24
0	R 7	57.19.0479		4R7	5%, 0207, Fuse
0	R 8	57.60.1103		10K	MF, 1%, 0204, E24
0	R 9	57.60.1103		10K	MF, 1%, 0204, E24
0	R 10	57.19.0479		4R7	5%, 0207, Fuse
0	R 11	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 12	57.19.0479		4R7	5%, 0207, Fuse
0	R 13	57.60.1103		10K	MF, 1%, 0204, E24
0	R 14	57.60.1103		10K	MF, 1%, 0204, E24
0	R 15	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 16	57.19.0479		4R7	5%, 0207, Fuse
0	R 17	57.60.1100		10R	MF, 1%, 0204, E24
0	R 18	57.60.1100		10R	MF, 1%, 0204, E24
0	R 19	57.60.1102		1K	MF, 1%, 0204, E24
0	R 20	57.60.1331		330R	MF, 1%, 0204, E24
0	R 21	57.60.1102		1K	MF, 1%, 0204, E24
0	R 22	57.60.1331		330R	MF, 1%, 0204, E24
0	R 23	57.60.1100		10R	MF, 1%, 0204, E24
0	R 24	57.60.1100		10R	MF, 1%, 0204, E24
0	R 25	57.60.1100		10R	MF, 1%, 0204, E24
0	R 26	57.60.1223		22K	MF, 1%, 0204, E24
0	R 27	57.60.1223		22K	MF, 1%, 0204, E24
0	R 28	57.60.1153		15K	MF, 1%, 0204, E24
0	R 29	57.60.1134		100K	MF, 1%, 0204, E24
0	R 30	57.60.1153		15K	MF, 1%, 0204, E24
0	R 31	57.60.1134		100K	MF, 1%, 0204, E24
0	R 32	not used		0R0	MF, 0207
0	R 33	not used		0R0	MF, 0207
0	R 34	57.60.1103		10K	MF, 1%, 0204, E24
0	R 35	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 36	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 37	57.11.3820		82R	MF, 1%, 0207
0	R 38	57.11.3820		82R	MF, 1%, 0207
0	R 39	57.11.3101		100R	MF, 1%, 0207
0	R 40	57.11.3101		100R	MF, 1%, 0207
0	R 41	57.11.3101		100R	MF, 1%, 0207
0	R 42	57.11.3101		100R	MF, 1%, 0207
0	R 43	57.60.1680		68R	MF, 1%, 0204, E24
0	R 44	57.60.1680		68R	MF, 1%, 0204, E24
0	R 45	57.60.1913		91K	MF, 1%, 0204, E24
0	R 46	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 47	57.60.1101		100R	MF, 1%, 0204, E24
0	R 48	57.60.1104		100K	MF, 1%, 0204, E24
0	R 49	57.60.1123		12K	MF, 1%, 0204, E24
0	R 50	57.60.1680		68R	MF, 1%, 0204, E24
0	R 51	57.60.1433		43K	MF, 1%, 0204, E24
0	R 52	57.60.1433		43K	MF, 1%, 0204, E24
0	R 53	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 54	57.60.1680		68R	MF, 1%, 0204, E24
0	RA 1	58.01.9503		50k	Cermet, 10%, 0.5W, vertical
0	RA 2	58.01.9503		50k	Cermet, 10%, 0.5W, vertical

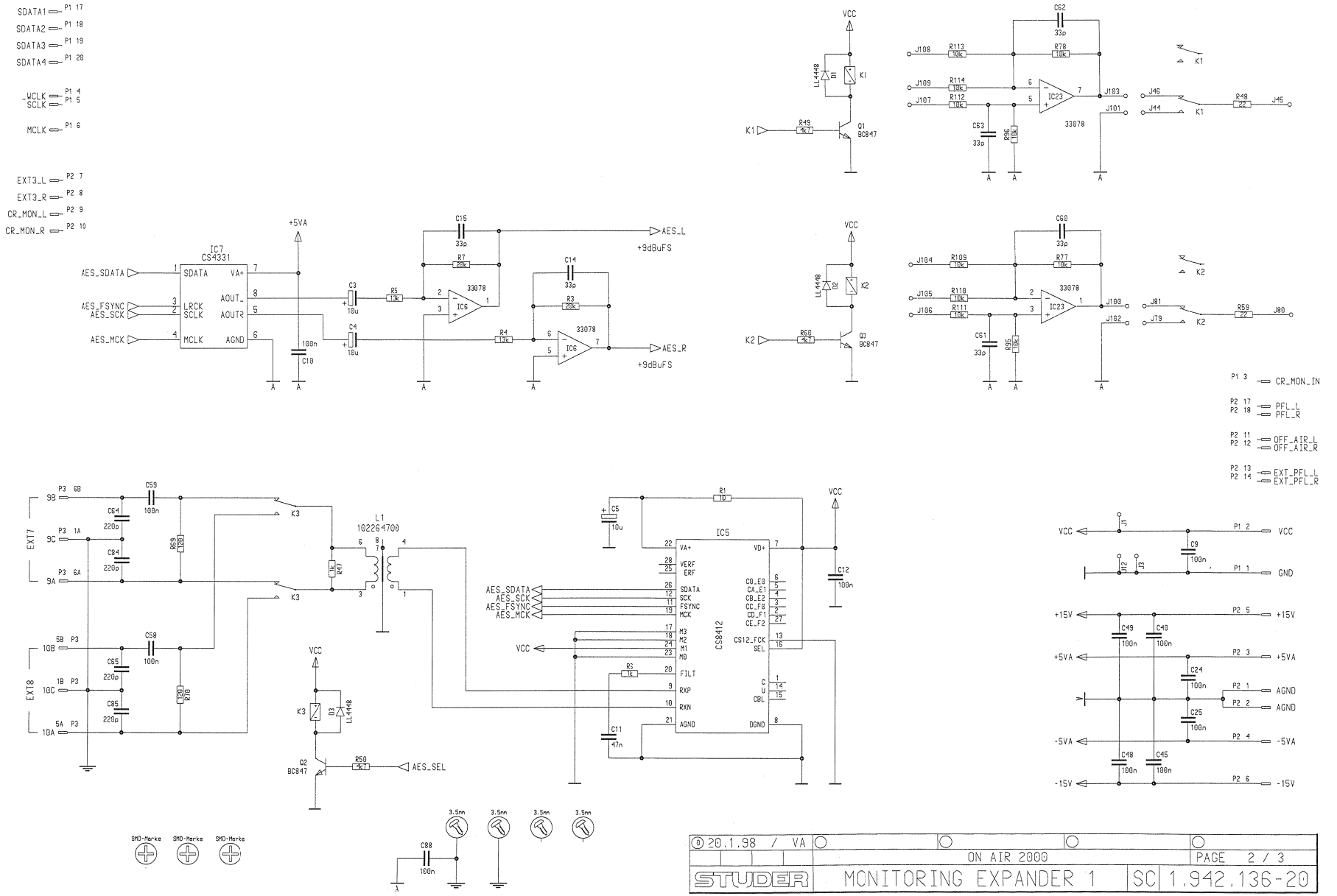
End of List

Comments:

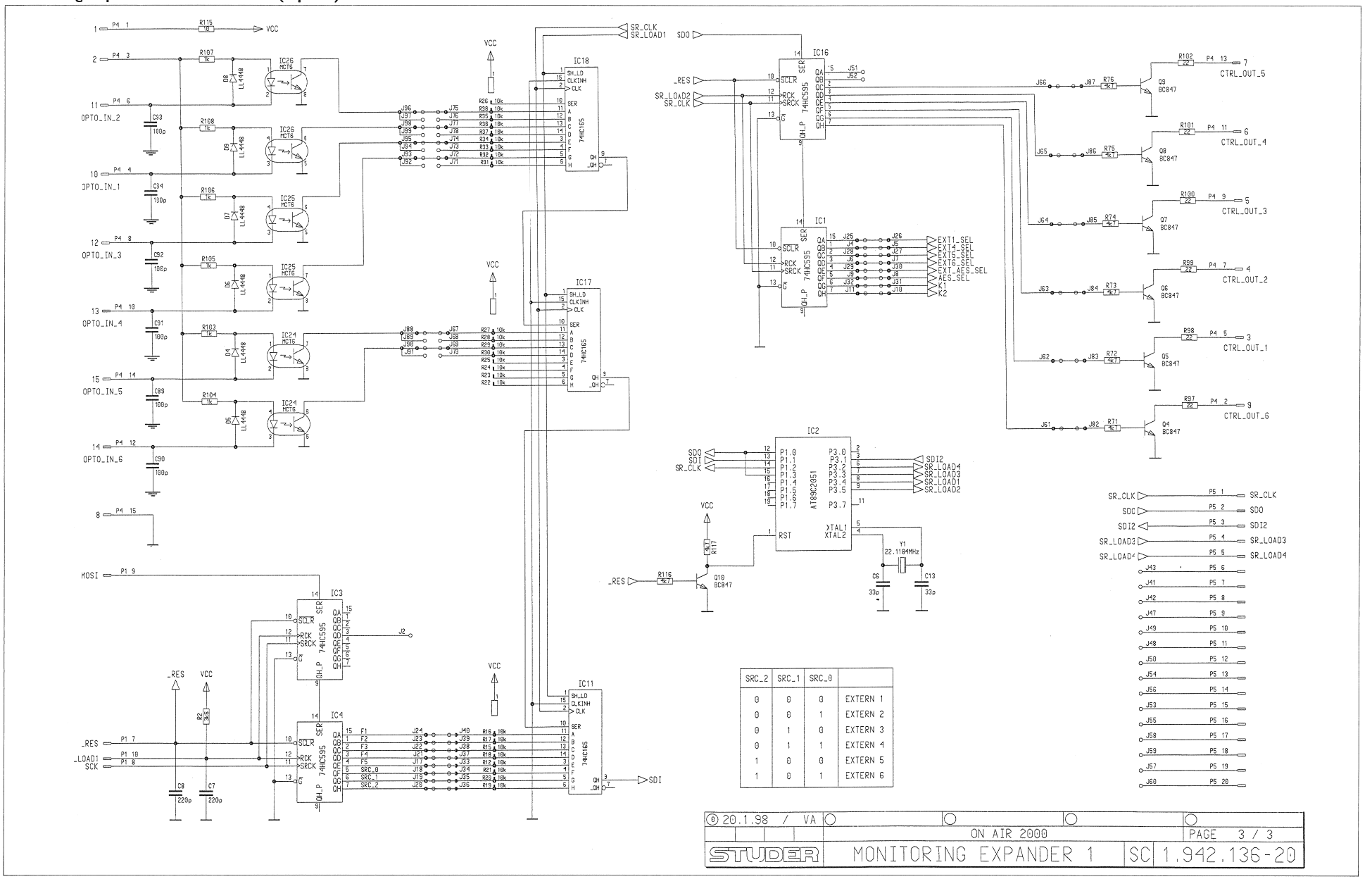
Monitoring Expander 1 1.942.136.20 (Option)



Monitoring Expander 1 1.942.136.20 (Option)



Monitoring Expander 1 1.942.136.20 (Option)



SRC_2	SRC_1	SRC_0	
0	0	0	EXTERN 1
0	0	1	EXTERN 2
0	1	0	EXTERN 3
0	1	1	EXTERN 4
1	0	0	EXTERN 5
1	0	1	EXTERN 6

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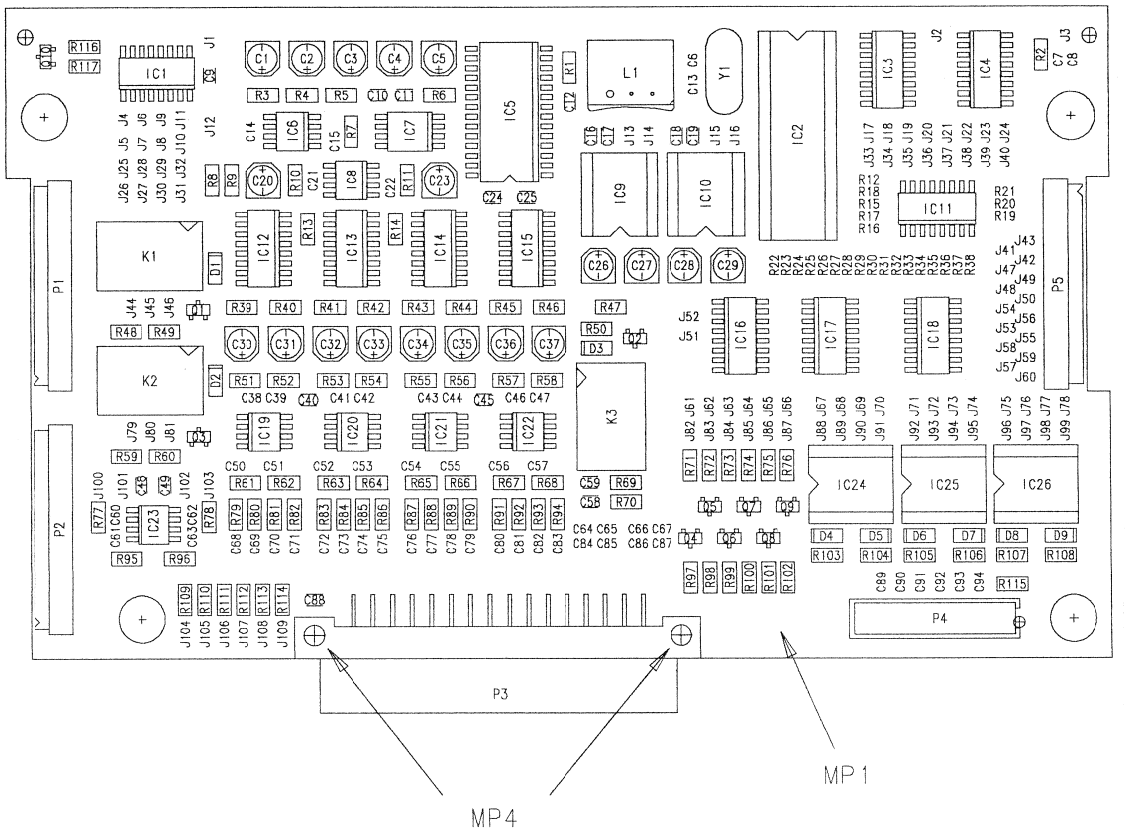
	ON AIR 2000		PAGE 3 / 3
STUDER	MONITORING EXPANDER 1	SC	1.942.136-20

Monitoring Expander I 1.942.136.20 (Option)



Edition Ausgabe	Modification Aenderung				
		.	.	.	①
		.	.	.	①
		.	.	.	①
	Date Datum	Visa Gez.	Checked Gepr.	Sheet Ges.	Index
	19.1.98	PZ			①

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STUDER REGENSDORF — Description Benennung: MONITORING EXPANDER 1 "ESE" — Number Nummer: 1.942.136-20

Monitoring Expander 1 1.942.136.21 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 2	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 3	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 4	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 5	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 6	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 7	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 8	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 9	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.60.3333		47n	CER 50V, 10%, X7R, 0805
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 14	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 15	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 16	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 17	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 18	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 21	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 22	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 23	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 24	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 25	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 26	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 27	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 28	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 29	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 30	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 31	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 32	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 33	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 34	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 35	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 36	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 37	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 38	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 39	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 40	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 41	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 42	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 43	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 44	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 45	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 46	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 47	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 48	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 49	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 50	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 51	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 52	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 53	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 54	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 55	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 56	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 57	59.60.2253		150p	CER 50V, 5%, C0G, 0603
0	C 58	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 59	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 60	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 61	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 62	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 63	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 64	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 65	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 66	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 67	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 68	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 69	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 70	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 71	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 72	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 73	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 74	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 75	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 76	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 77	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 78	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 79	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 80	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 81	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 82	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 83	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 84	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 85	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 86	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 87	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 88	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 89	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 90	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 91	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 92	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 93	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 94	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 6	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 7	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 8	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 9	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.62.1595		74HC595	8bit shift/output register
0	IC 2	1.942.929.21			SW.136 MONITOR EXPANDER MOD
					(50160313, 89C2051)
0	IC 3	50.62.1595		74HC595	8bit shift/output register
0	IC 4	50.62.1595		74HC595	8bit shift/output register
0	IC 5	50.62.0913		CS8412	AES-Receiver
0	IC 6	50.61.0204		MC33078	Dual Op Amp low noise
0	IC 7	50.61.8003		CS4331	D/A Converter 18bit Ste SO 8
0	IC 8	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 9	50.09.0124		2142	Audio balanced line driver
0	IC 10	50.09.0124		2142	Audio balanced line driver
0	IC 11	50.62.1165		74HC165	8bit shift register
0	IC 12	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 13	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 14	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 15	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	IC 16	50.62.1595		74HC595	8bit shift/output register
0	IC 17	50.62.1165		74HC165	8bit shift register
0	IC 18	50.62.1165		74HC165	8bit shift register
0	IC 19	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 20	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 21	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 22	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 23	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 24	50.99.0111		MCT6	DLQ ILD-74, MCT 6, TLP 504 A
0	IC 25	50.99.0111		MCT6	DLQ ILD-74, MCT 6, TLP 504 A
0	IC 26	50.99.0111		MCT6	DLQ ILD-74, MCT 6, TLP 504 A
0	K 1	56.04.0198		2*u	5V 125V 2A Ag/Au
0	K 2	56.04.0198		2*u	5V 125V 2A Ag/Au
0	K 3	56.04.0198		2*u	5V 125V 2A Ag/Au
0	L 1	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	MP 1	1.942.136.11	1 pce		Monitoring Expander 1 PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.136.10	1 pcc		NR.ETIKETTE 5X20
					(plus Hardware-Etikette 1.101.001.20)
0	MP 4	28.99.0119	2 pcs		ROHRNIETE D 2.5*0.15* 9
0	P 1	54.14.5540		20p	PCB-Buchse winkel
0	P 2	54.14.5540		20p	PCB-Buchse winkel
0	P 3	54.11.2013		2*16p	EU-BK 2*16p male
0	P 4	54.14.5516		16p	PCB-Buchse gerade
0	P 5	54.14.5540		20p	PCB-Buchse winkel
0	Q 1	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 2	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 3	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 4	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 5	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 6	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 7	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 8	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 9	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 10	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	R 1	57.60.1100		10R	MF, 1%, 0204, E24
0	R 2	57.60.1362		3k6	MF, 1%, 0204, E24
0	R 3	57.60.1203		20k	MF, 1%, 0204, E24
0	R 4	57.60.1133		13k	MF, 1%, 0204, E24
0	R 5	57.60.1133		13k	MF, 1%, 0204, E24
0	R 6	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 7	57.60.1203		20k	MF, 1%, 0204, E24
0	R 8	57.60.1223		22k	MF, 1%, 0204, E24
0	R 9	57.60.1223		22k	MF, 1%, 0204, E24
0	R 10	57.60.1223		22k	MF, 1%, 0204, E24
0	R 11	57.60.1223		22k	MF, 1%, 0204, E24
0	R 12	57.69.1097		10k	CF 5% 0603
0	R 13	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 14	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 15	57.69.1097		10k	CF 5% 0603
0	R 16	57.69.1097		10k	CF 5% 0603
0	R 17	57.69.1097		10k	CF 5% 0603
0	R 18	57.69.1097		10k	CF 5% 0603
0	R 19	57.69.1097		10k	CF 5% 0603
0	R 20	57.69.1097		10k	CF 5% 0603
0	R 21	57.69.1097		10k	CF 5% 0603

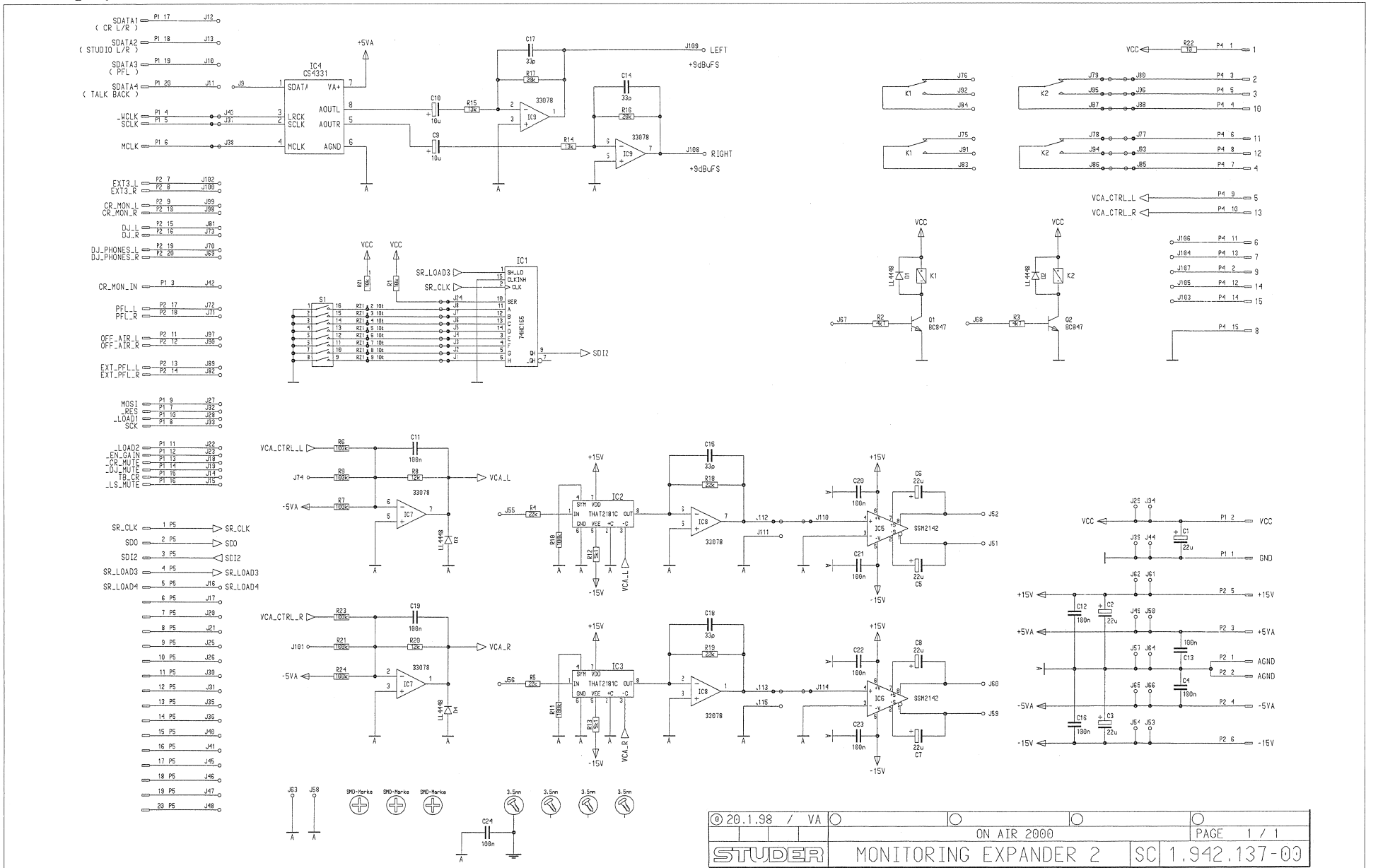
Monitoring Expander 1 1.942.136.21 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 22	57.69.1097		10k	CF 5% 0603
0	R 23	57.69.1097		10k	CF 5% 0603
0	R 24	57.69.1097		10k	CF 5% 0603
0	R 25	57.69.1097		10k	CF 5% 0603
0	R 26	57.69.1097		10k	CF 5% 0603
0	R 27	57.69.1097		10k	CF 5% 0603
0	R 28	57.69.1097		10k	CF 5% 0603
0	R 29	57.69.1097		10k	CF 5% 0603
0	R 30	57.69.1097		10k	CF 5% 0603
0	R 31	57.69.1097		10k	CF 5% 0603
0	R 32	57.69.1097		10k	CF 5% 0603
0	R 33	57.69.1097		10k	CF 5% 0603
0	R 34	57.69.1097		10k	CF 5% 0603
0	R 35	57.69.1097		10k	CF 5% 0603
0	R 36	57.69.1097		10k	CF 5% 0603
0	R 37	57.69.1097		10k	CF 5% 0603
0	R 38	57.69.1097		10k	CF 5% 0603
0	R 39	57.60.1223		22k	MF, 1%, 0204, E24
0	R 40	57.60.1223		22k	MF, 1%, 0204, E24
0	R 41	57.60.1223		22k	MF, 1%, 0204, E24
0	R 42	57.60.1223		22k	MF, 1%, 0204, E24
0	R 43	57.60.1223		22k	MF, 1%, 0204, E24
0	R 44	57.60.1223		22k	MF, 1%, 0204, E24
0	R 45	57.60.1223		22k	MF, 1%, 0204, E24
0	R 46	57.60.1223		22k	MF, 1%, 0204, E24
0	R 47	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 48	57.60.1220		22R	MF, 1%, 0204, E24
0	R 49	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 50	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 51	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 52	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 53	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 54	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 55	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 56	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 57	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 58	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 59	57.60.1220		22R	MF, 1%, 0204, E24
0	R 60	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 61	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 62	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 63	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 64	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 65	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 66	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 67	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 68	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 69	57.60.1121		120R	MF, 1%, 0204, E24
0	R 70	57.60.1121		120R	MF, 1%, 0204, E24
0	R 71	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 72	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 73	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 74	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 75	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 76	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 77	57.60.1103		10k	MF, 1%, 0204, E24
0	R 78	57.60.1103		10k	MF, 1%, 0204, E24
0	R 79	57.60.1113		11k	MF, 1%, 0204, E24
0	R 80	57.60.1113		11k	MF, 1%, 0204, E24
0	R 81	57.60.1113		11k	MF, 1%, 0204, E24
0	R 82	57.60.1113		11k	MF, 1%, 0204, E24
0	R 83	57.60.1113		11k	MF, 1%, 0204, E24
0	R 84	57.60.1113		11k	MF, 1%, 0204, E24
0	R 85	57.60.1113		11k	MF, 1%, 0204, E24
0	R 86	57.60.1113		11k	MF, 1%, 0204, E24
0	R 87	57.60.1113		11k	MF, 1%, 0204, E24
0	R 88	57.60.1113		11k	MF, 1%, 0204, E24
0	R 89	57.60.1113		11k	MF, 1%, 0204, E24
0	R 90	57.60.1113		11k	MF, 1%, 0204, E24
0	R 91	57.60.1113		11k	MF, 1%, 0204, E24
0	R 92	57.60.1113		11k	MF, 1%, 0204, E24
0	R 93	57.60.1113		11k	MF, 1%, 0204, E24
0	R 94	57.60.1113		11k	MF, 1%, 0204, E24
0	R 95	57.60.1103		10k	MF, 1%, 0204, E24
0	R 96	57.60.1103		10k	MF, 1%, 0204, E24
0	R 97	57.60.1220		22R	MF, 1%, 0204, E24
0	R 98	57.60.1220		22R	MF, 1%, 0204, E24
0	R 99	57.60.1220		22R	MF, 1%, 0204, E24
0	R 100	57.60.1220		22R	MF, 1%, 0204, E24
0	R 101	57.60.1220		22R	MF, 1%, 0204, E24
0	R 102	57.60.1220		22R	MF, 1%, 0204, E24
0	R 103	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 104	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 105	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 106	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 107	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 108	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 109	57.60.1103		10k	MF, 1%, 0204, E24
0	R 110	57.60.1103		10k	MF, 1%, 0204, E24
0	R 111	57.60.1103		10k	MF, 1%, 0204, E24
0	R 112	57.60.1103		10k	MF, 1%, 0204, E24
0	R 113	57.60.1103		10k	MF, 1%, 0204, E24
0	R 114	57.60.1103		10k	MF, 1%, 0204, E24
0	R 115	57.60.1100		10R	MF, 1%, 0204, E24
0	R 116	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 117	57.60.1472		4k7	MF, 1%, 0204, E24
0	XIC 2	53.03.0165		20p	DIL 0.3", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

End of List

Comments:

Monitoring Expander 2 1.942.137.00 (Option)



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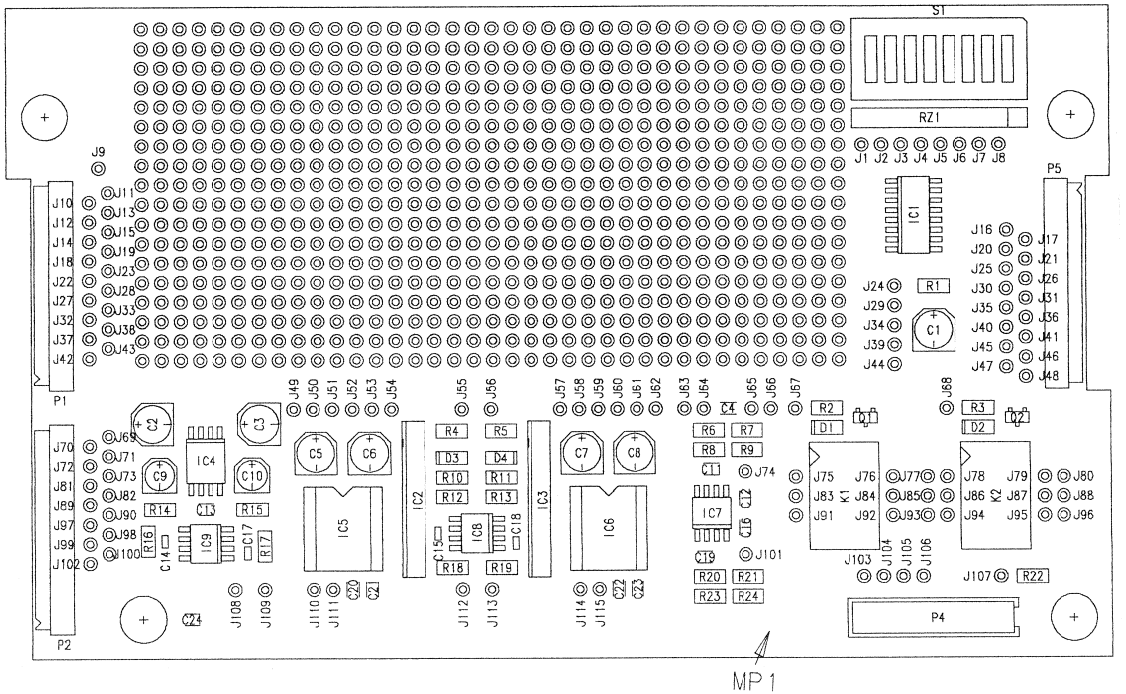
	ON AIR 2000		PAGE 1 / 1
STUDER	MONITORING EXPANDER 2	SC	1.942.137-00

Monitoring Expander 2 1.942.137.00 (Option)



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 2	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 3	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 6	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 7	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 8	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 9	59.68.0065		10u	C-EL 16V, 4.0*5.7
0	C 10	59.68.0065		10u	C-EL 16V, 4.0*5.7
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 15	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 16	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 17	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 18	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 23	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 24	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	D 1	50.60.8001		4448	D LL 4448 SOD 80
0	D 2	50.60.8001		4448	D LL 4448 SOD 80
0	D 3	50.60.8001		4448	D LL 4448 SOD 80
0	D 4	50.60.8001		4448	D LL 4448 SOD 80
0	IC 1	50.62.1165		74HC165	74 HC 165
0	IC 2	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 3	50.11.0140		THAT2181C	IC VCA THAT 2181C
0	IC 4	50.61.8003		CS4331	D/A Converter 18bit Ste SO 8
0	IC 5	50.09.0124		2142	IC SSM 2142 P
0	IC 6	50.09.0124		2142	IC SSM 2142 P
0	IC 7	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 8	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 9	50.61.0204		MC33078	IC MC 33078 P ,A
0	K 1	56.04.0198		2u	5V 125V 2A Ag/Au
0	K 2	56.04.0198		2u	5V 125V 2A Ag/Au
0	MP 1	1.942.137.11	1 pce		Monitoring Expander 1 PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.137.10	1 pce		NR.ETIKETTE 5X20
0	P 1	54.14.5540		20p	PCB-Buchse winkel
0	P 2	54.14.5540		20p	PCB-Buchse winkel
0	P 4	54.14.5516		16p	PCB-Buchse gerade
0	P 5	54.14.5540		20p	PCB-Buchse winkel
0	Q 1	50.60.0001		BC847B	Q BC 847 B, SOT 23
0	Q 2	50.60.0001		BC847B	Q BC 847 B, SOT 23
0	R 1	57.60.1103		10K	MF, 1%, 0204, E24
0	R 2	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 3	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 4	57.60.1223		22K	MF, 1%, 0204, E24
0	R 5	57.60.1223		22K	MF, 1%, 0204, E24
0	R 6	57.60.1104		100K	MF, 1%, 0204, E24
0	R 7	57.60.1104		100K	MF, 1%, 0204, E24
0	R 8	57.60.1123		12K	MF, 1%, 0204, E24
0	R 9	57.60.1104		100K	MF, 1%, 0204, E24
0	R 10	57.60.1104		100K	MF, 1%, 0204, E24
0	R 11	57.60.1104		100K	MF, 1%, 0204, E24
0	R 12	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 13	57.60.1512		5K1	MF, 1%, 0204, E24
0	R 14	57.60.1133		13K	MF, 1%, 0204, E24
0	R 15	57.60.1133		13K	MF, 1%, 0204, E24
0	R 16	57.60.1203		20K	MF, 1%, 0204, E24
0	R 17	57.60.1203		20K	MF, 1%, 0204, E24
0	R 18	57.60.1223		22K	MF, 1%, 0204, E24
0	R 19	57.60.1223		22K	MF, 1%, 0204, E24
0	R 20	57.60.1123		12K	MF, 1%, 0204, E24
0	R 21	57.60.1104		100K	MF, 1%, 0204, E24
0	R 22	57.60.1100		10R	MF, 1%, 0204, E24
0	R 23	57.60.1104		100K	MF, 1%, 0204, E24
0	R 24	57.60.1104		100K	MF, 1%, 0204, E24
0	RZ 1	57.88.4103		8*10k	2%, SIP 9
0	S 1	55.01.0168		8*a	SZ , 8*A, DIL

End of List

Comments:

Edition Ausgabe	Modification Aenderung	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index
		.	.	.	.	3
		.	.	.	.	2
		.	.	.	.	1
		20.1.98	PZ			0

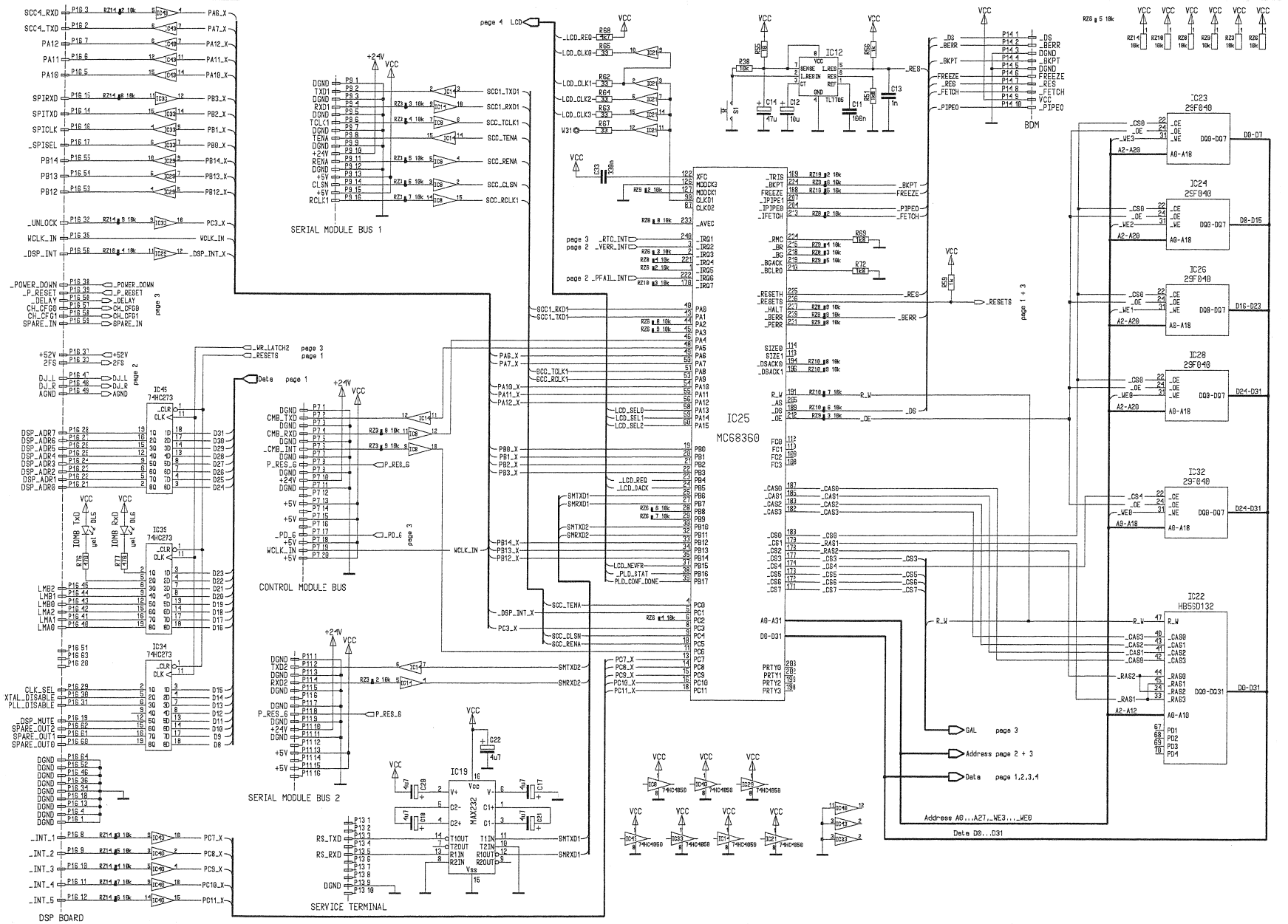
Copy to:
Kopie fuer:

STUDER REGENSDORF

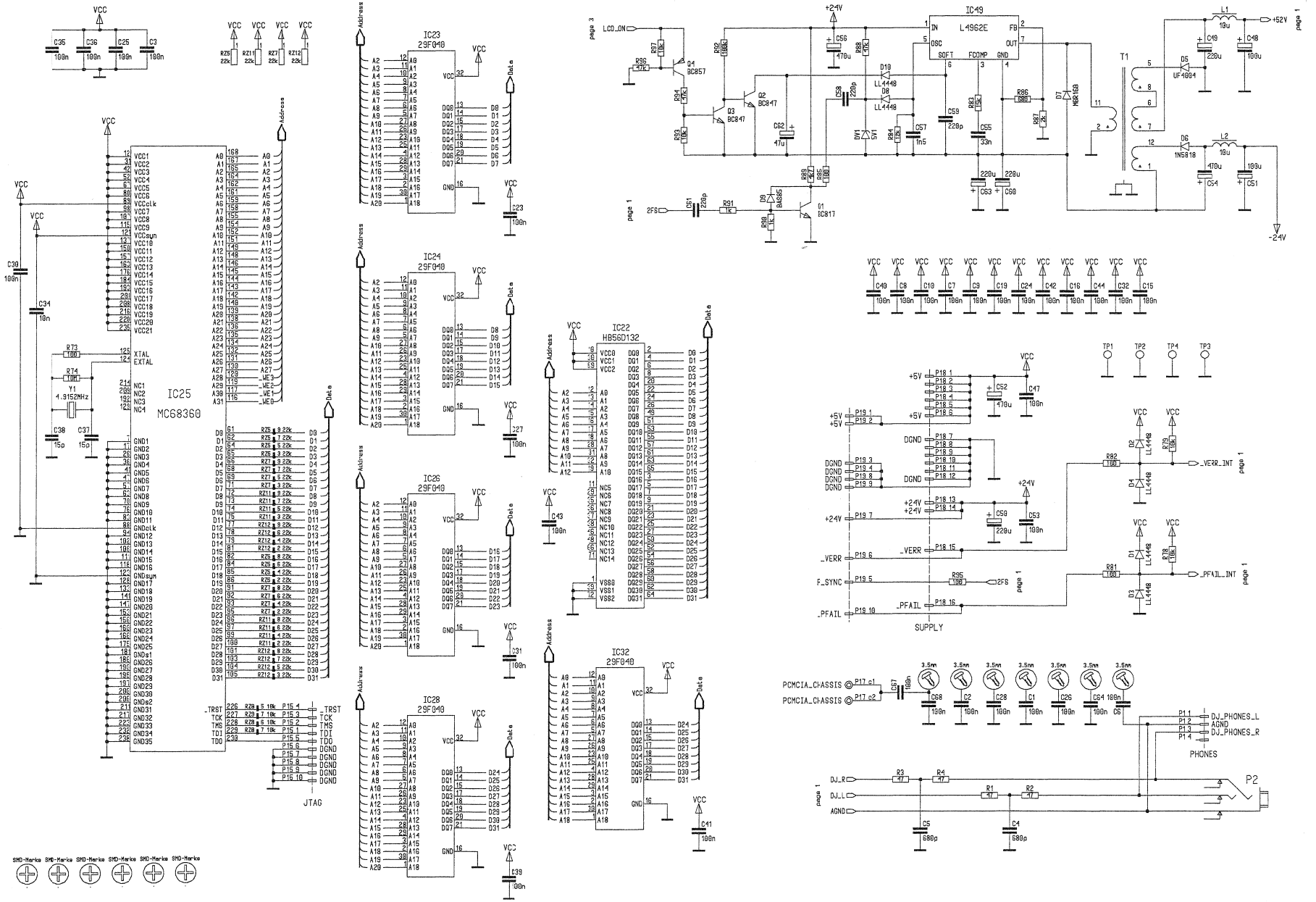
Description: MONITORING EXPANDER 2 'ESE'

Number: 1.942.137-00

Controller Board 1.942.100.20



Controller Board 1.942.100.20



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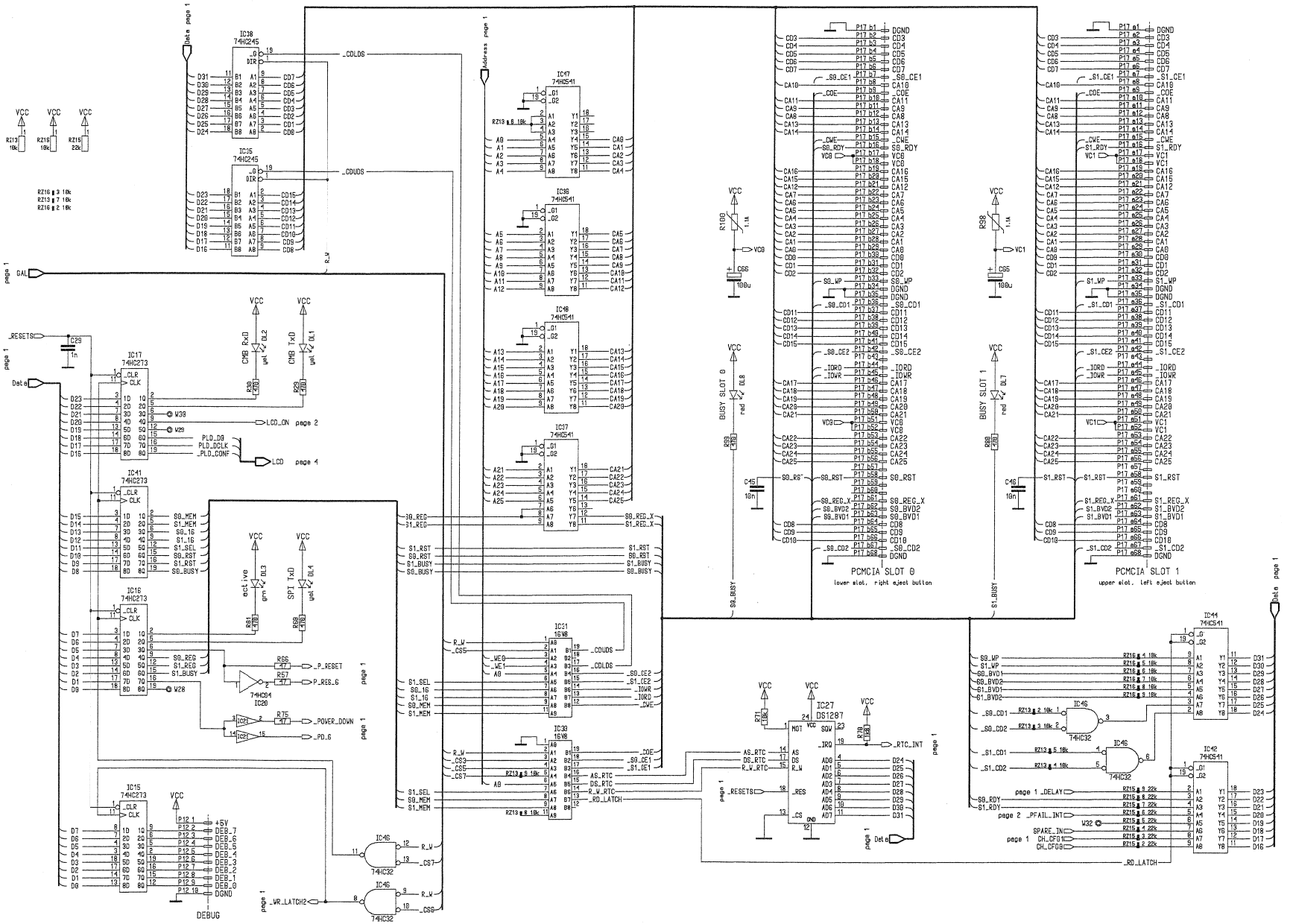
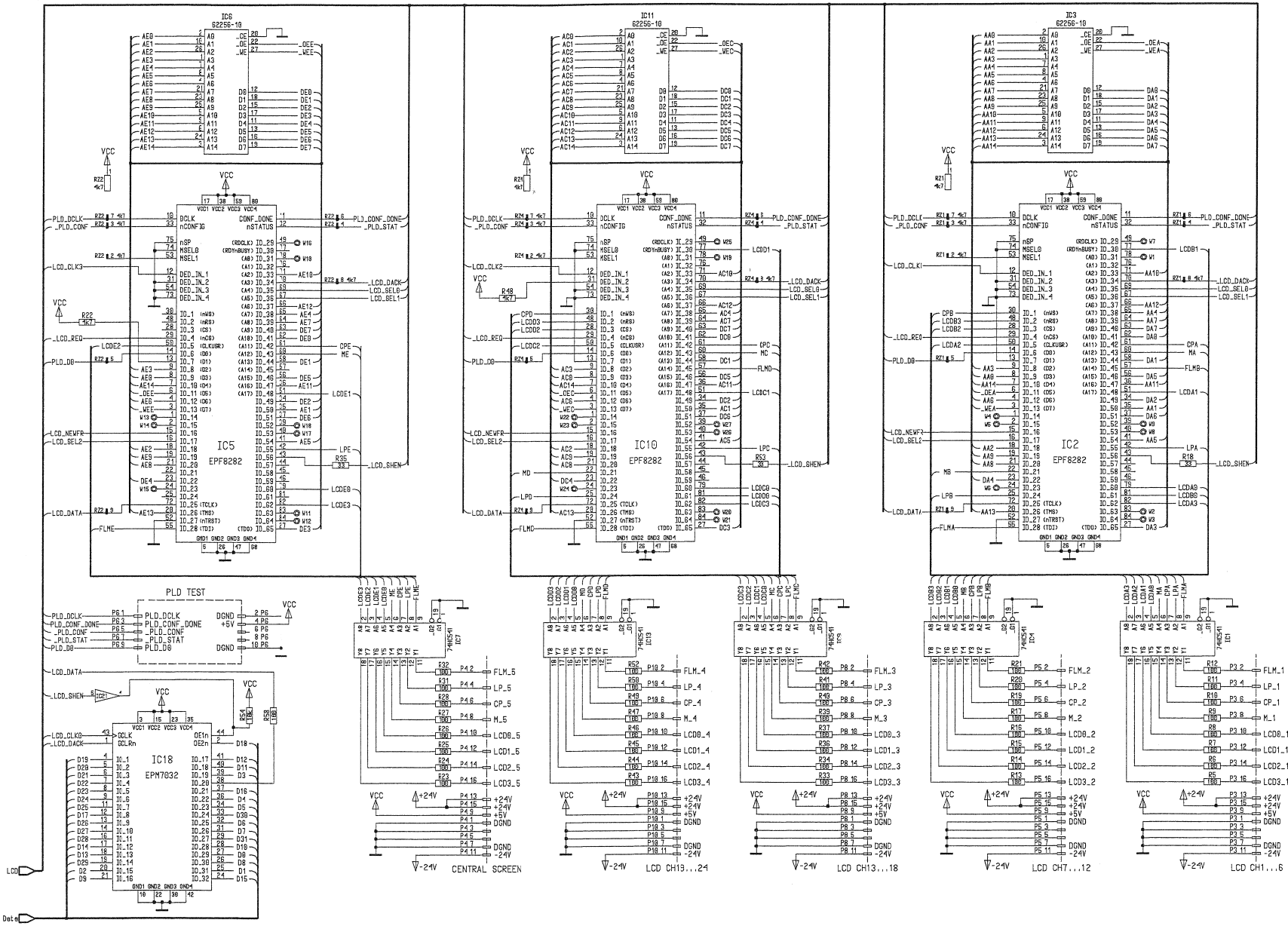
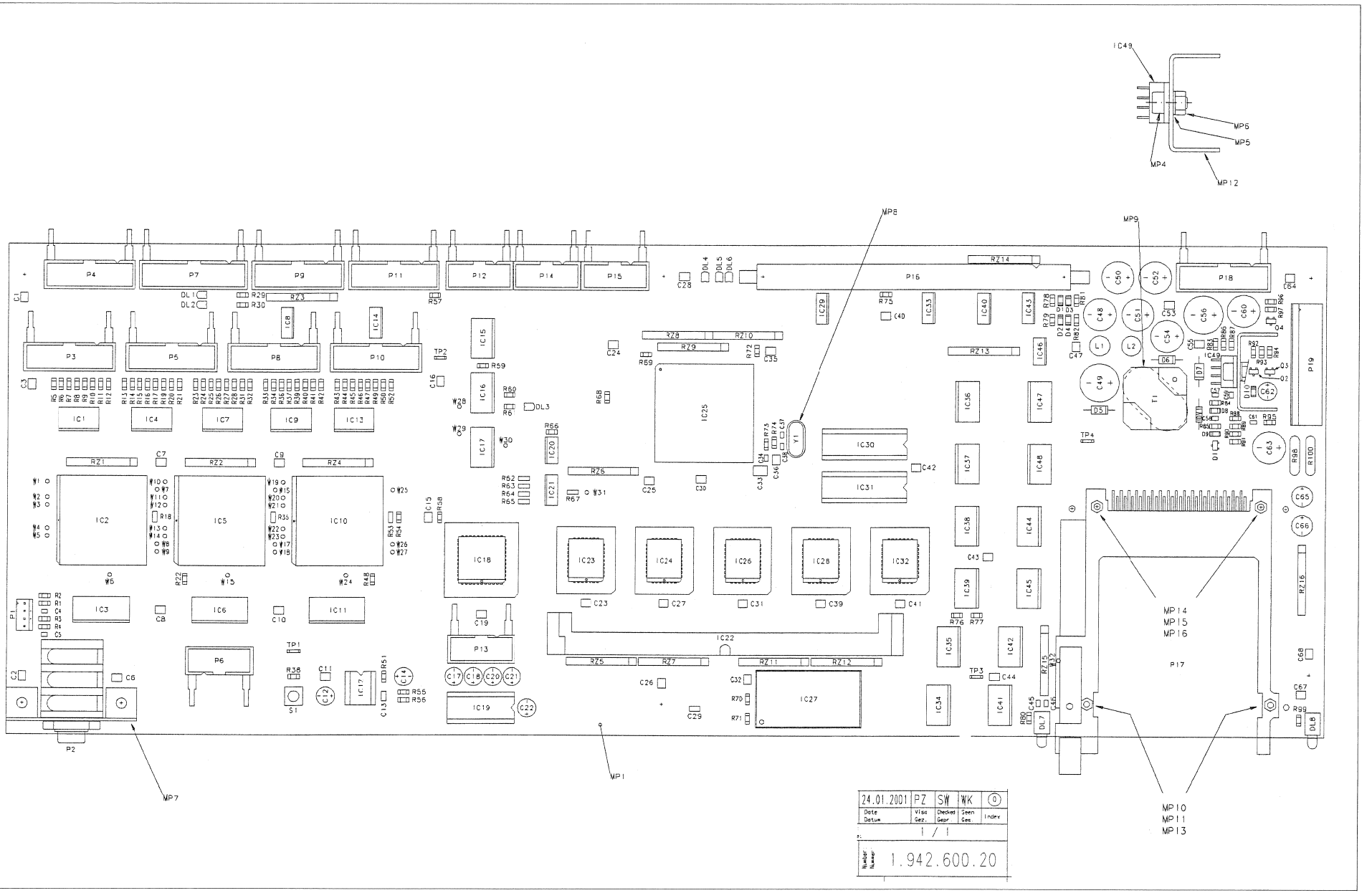


Controller Board 1.942.100.20



Controller Board 1.942.600.20



CONTROLLER BOARD 1.942.601.20 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 2	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 3	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 4	59.60.2369		680p	CER 50V, 5%, C0G, 0805
0	C 5	59.60.2369		680p	CER 50V, 5%, C0G, 0805
0	C 6	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 7	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 8	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 9	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 10	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 11	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 12	59.22.6100		10u	EL 35V 20% RM5
0	C 13	59.60.2473		1n	CER 50V, 5%, C0G, 1206
0	C 14	59.22.3470		47u	EL 10V 20% RM5
0	C 15	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 16	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 17	59.22.8479		4u7	EL 50V 20% RM5
0	C 18	59.22.8479		4u7	EL 50V 20% RM5
0	C 19	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 20	59.22.8479		4u7	EL 50V 20% RM5
0	C 21	59.22.8479		4u7	EL 50V 20% RM5
0	C 22	59.22.8479		4u7	EL 50V 20% RM5
0	C 23	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 24	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 25	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 26	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 27	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 28	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 29	59.60.2473		1n	CER 50V, 5%, C0G, 1206
0	C 30	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 31	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 32	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 33	59.60.3743		330n	CER 50V, 10%, X7R, 1812
0	C 34	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 35	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 36	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 37	59.60.2329		15p	CER 50V, 5%, C0G, 0805
0	C 38	59.60.2329		15p	CER 50V, 5%, C0G, 0805
0	C 39	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 40	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 41	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 42	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 43	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 44	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 45	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 46	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 47	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 48	59.22.8101		100u	EL 63V 20% RM5
0	C 49	59.22.8221		220u	EL 63V 20% RM5
0	C 50	59.22.6221		220u	EL 40V 20% RM5
0	C 51	59.22.6101		100u	EL 40V 20% RM5
0	C 52	59.22.3471		470u	EL 10V 20% RM5
0	C 53	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 54	59.22.4471		470u	EL 16V 20% RM5
0	C 55	59.60.3531		33n	CER 50V, 10%, X7R, 1210
0	C 56	59.22.6471		470u	EL 40V 20% RM5
0	C 57	59.60.3315		1n5	CER 50V, 10%, X7R, 0805
0	C 58	59.60.2357		220p	CER 50V, 5%, C0G, 0805
0	C 59	59.60.2357		220p	CER 50V, 5%, C0G, 0805
0	C 60	59.22.5221		220u	EL 25V 20% RM5
0	C 61	59.60.2357		220p	CER 50V, 5%, C0G, 0805
0	C 62	59.22.3470		47u	EL 10V 20% RM5
0	C 63	59.22.5221		220u	EL 25V 20% RM5
0	C 64	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 65	59.22.3101		100u	EL 10V 20% RM5
0	C 66	59.22.3101		100u	EL 10V 20% RM5
0	C 67	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 68	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.04.0138		UF4004	D BYT 01-400, UF 4004
0	D 6	50.04.0512		1N5818	D 1N 5818, 1N 5819,
0	D 7	50.04.0527		MBR160	MBR 160, SB 160, 11 DQ 06,
0	D 8	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 9	50.60.8101		BAS85	200mA 30V Schottky SOD 80
0	D 10	50.60.8001		4448	200mA 75V 4ns SOD 80
0	DL 1	50.04.2133		TLUY 2401	DL TLUY 2401 GB MATT
0	DL 2	50.04.2133		TLUY 2401	DL TLUY 2401 GB MATT
0	DL 3	50.04.2132		TLUG 2401	DL TLUG 2401 GN MATT
0	DL 4	50.04.2133		TLUY 2401	DL TLUY 2401 GB MATT
0	DL 5	50.04.2133		TLUY 2401	DL TLUY 2401 GB MATT
0	DL 6	50.04.2133		TLUY 2401	DL TLUY 2401 GB MATT
0	DL 7	50.04.2750		red	LED mit Halter
0	DL 8	50.04.2750		red	LED mit Halter
0	DV 1	50.04.1112		5V1	Zener. 5%, 0.5W. DO-35

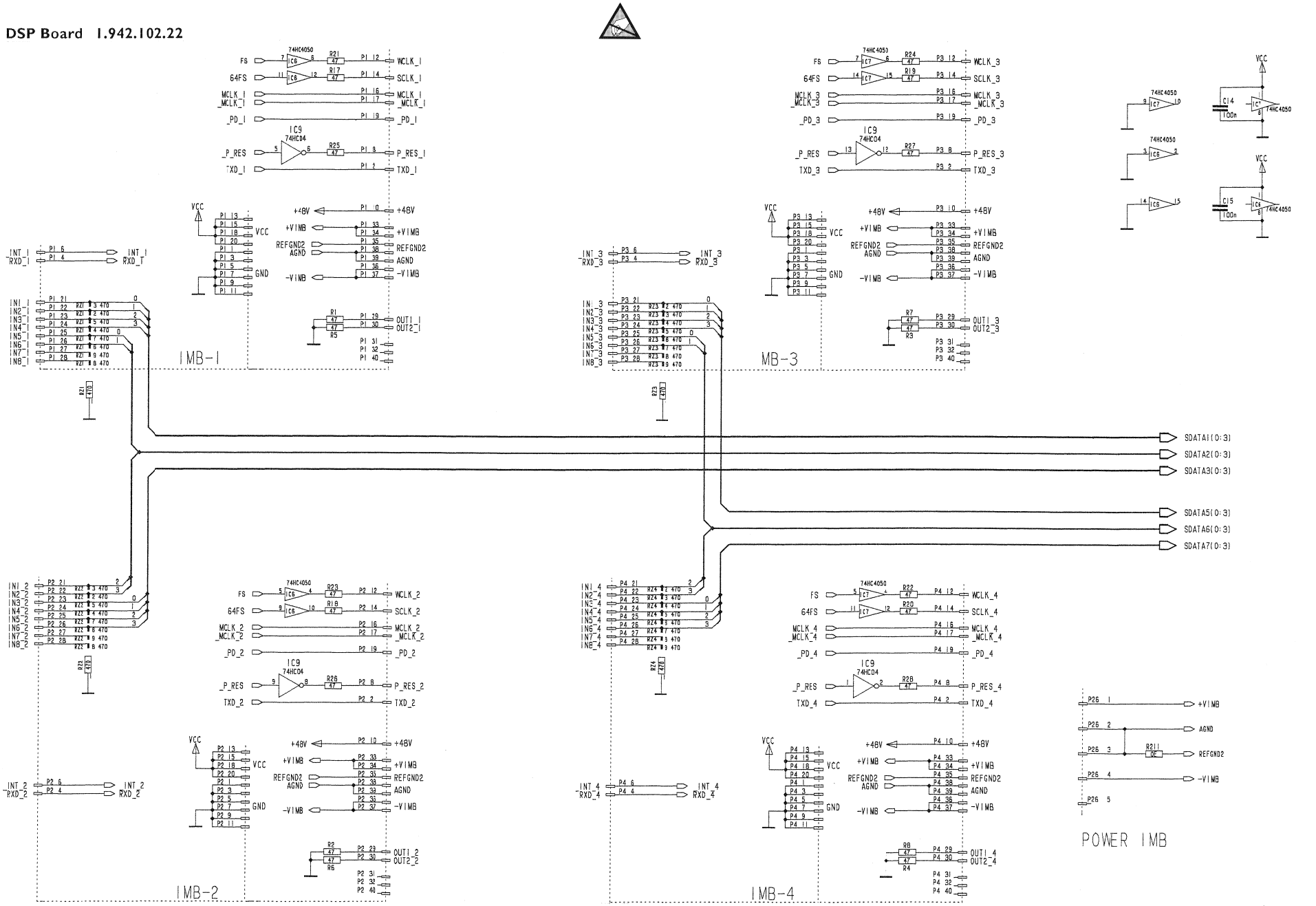
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	IC 1	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 2	50.63.4203		EPLD8282	EPLD 2500 PLCC84
0	IC 3	50.63.1503		62256	SRAM 32K*8, 100ns
0	IC 4	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 5	50.63.4203		EPLD8282	EPLD 2500 PLCC84
0	IC 6	50.63.1503		62256	SRAM 32K*8, 100ns
0	IC 7	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 8	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 9	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 10	50.63.4203		EPLD8282	EPLD 2500 PLCC84
0	IC 11	50.63.1503		62256	SRAM 32K*8, 100ns
0	IC 12	50.11.0157		TL7705B	IC TL 7705 BCP,
0	IC 13	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 14	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 15	50.62.1273		74HC273	Octal D-FF with reset
0	IC 16	50.62.1273		74HC273	Octal D-FF with reset
0	IC 17	50.62.1273		74HC273	Octal D-FF with reset
0	IC 18	1.942.926.20			SW.100 CONTROLLER BOARD
				50634201	
0	IC 19	50.15.0120		MAX232	IC MAX 232 CPE
0	IC 20	50.62.1004		74HC 04	Hex inverter
0	IC 21	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 22	50.63.1652		1M*32	DRAM 1M*32, SIMM 72
0	IC 23	1.942.960.20			SW.601 CONTROLLER BOARD
				50631301	
0	IC 24	1.942.960.20			SW.601 CONTROLLER BOARD
				50631301	
0	IC 25	50.63.0201		68EN360	Communication Controller
0	IC 26	1.942.960.20			SW.601 CONTROLLER BOARD
				50631301	
0	IC 27	50.16.0801		DS12887	Real Time Clock
0	IC 28	1.942.960.20			SW.601 CONTROLLER BOARD
				50631301	
0	IC 29	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 30	1.942.904.20			SW.100 CONTROLLER BOARD
				50180103	
0	IC 31	1.942.905.20			SW.100 CONTROLLER BOARD
				50180103	
0	IC 32	50.63.1301		29F040B	Flash Memory 512K*8
0	IC 33	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 34	50.62.1273		74HC273	Octal D-FF with reset
0	IC 35	50.62.1245		74HC245	Octal bus transceiver
0	IC 36	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 37	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 38	50.62.1245		74HC245	Octal bus transceiver
0	IC 39	50.62.1273		74HC273	Octal D-FF with reset
0	IC 40	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 41	50.62.1273		74HC273	Octal D-FF with reset
0	IC 42	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 43	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 44	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 45	50.62.1273		74HC273	Octal D-FF with reset
0	IC 46	50.62.1032		74HC 32	Quad 2input OR
0	IC 47	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 48	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 49	50.10.0118		L4962	IC L 4962 E,
0	L 1	62.02.3100		10uH	10%, radial RM 5
0	L 2	62.02.3100		10uH	10%, radial RM 5
0	MP 1	1.942.100.11			CONTROLLER BOARD PCB
0	MP 2	1.942.600.10			NR.ETIKETTE 5X20
0	MP 3	43.01.0108		Label	ESE-WARNSCHILD
0	MP 4	21.53.0354		M3*6	Z-Schraube Inbus Zn gb chr
0	MP 5	24.16.1030		3.2/5.5	Rippenscheibe
0	MP 6	22.01.8030		M3	6kt-Mutter 0.8d St gb
0	MP 7	1.942.100.01			HALTEBLECH JACK SOCKET
0	MP 8	89.01.1499			QUARZ - ISOLIERPLATTE
0	MP 9	1.010.002.61			UNTERLAGE ZU 61.01.0281
0	MP 10	21.01.0205	2 pcs	M2*8	Z - Schraube Zn gb chr
0	MP 11	24.16.2020	2 pcs	2.2/4.5	Fächerscheibe Form A
0	MP 12	50.03.9934		TO220	Kühlkörper
0	MP 13	22.01.8020	2 pcs	M2	6kt-Mutter 0.8d St gb
0	MP 14	not used	2 pcs	M2*8	Z - Schraube Zn gb chr
0	MP 15	not used	2 pcs	2.2/4.5	Fächerscheibe Form A
0	MP 16	not used	2 pcs	M2	6kt-Mutter 0.8d St gb
0	MP 17	1.101.001.20		Label	TEXT-ETIK. 5*20 HARDWARE -20
0	P 1	54.12.0704		4p	Stecker gerade PCB
0	P 2	54.24.0123			J JACK-SOCKET, 6.3MM, PCB
0	P 3	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 4	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 5	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 6	not used		10p	1/20" Au, gerade, Verrieg
0	P 7	54.14.2103		20p	1/20" Au, gerade, Verrieg
0	P 8	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 9	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 10	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 11	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 12	54.14.2101		10p	1/20" Au, gerade, Verrieg
0	P 13	54.14.2101		10p	1/20" Au, gerade, Verrieg
0	P 14	54.14.2101		10p	1/20" Au, gerade, Verrieg

CONTROLLER BOARD 1.942.601.20 (0)

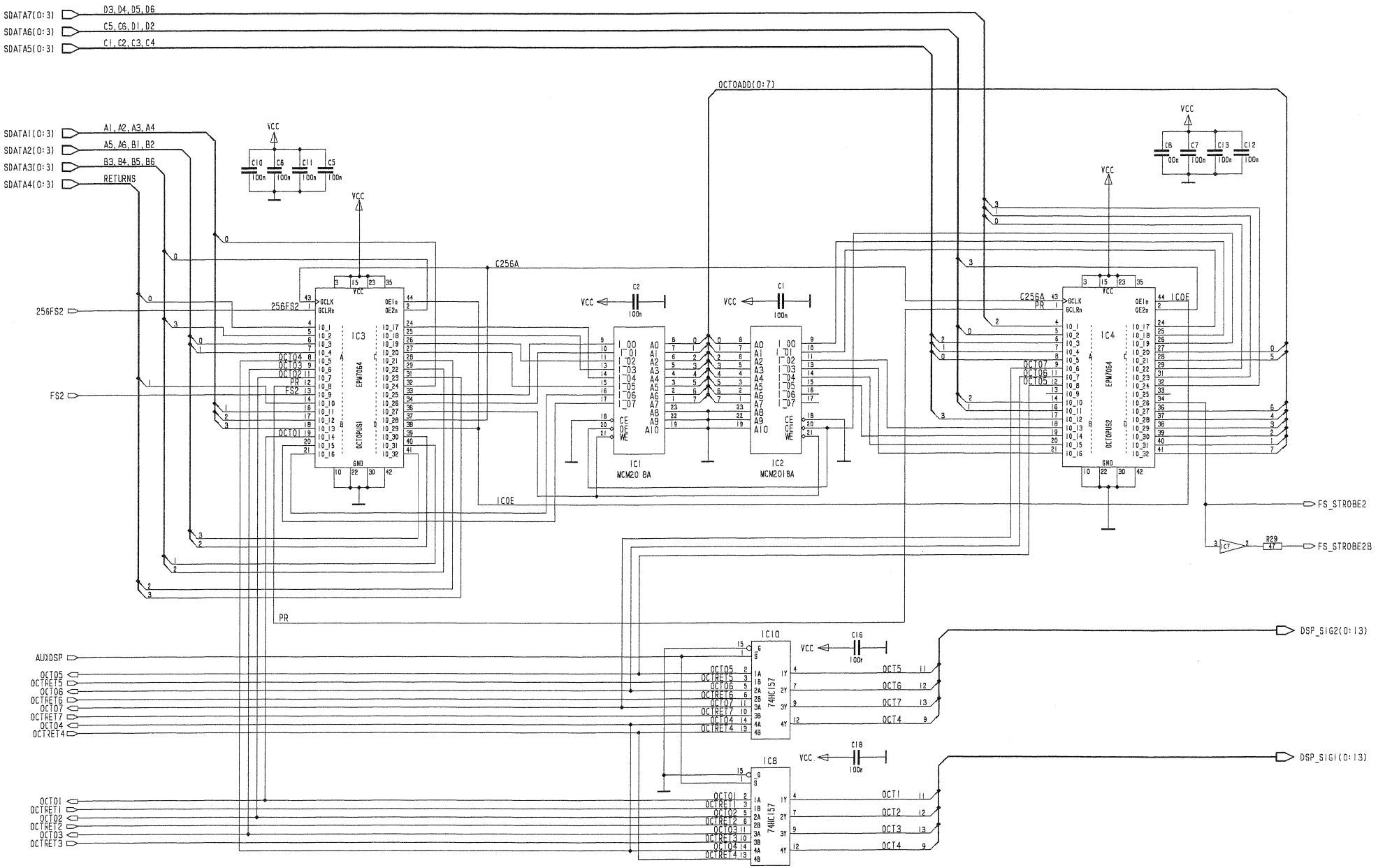
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	P 15	54.14.2101		10p	1/20" Au, gerade, Verrieg
0	P 16	54.14.2056		64p	Stecker gerade Au
0	P 17	54.99.0347		68p	1 slot PCMCIA-III connector
0	P 18	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 19	not used		10p	Power-Pin Stecker
0	Q 1	50.60.0050		BC817-25	NPN 45V 800mA SOT 23
0	Q 2	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 3	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	Q 4	50.60.1001		BC857B	PNP 45V 100mA SOT 23
0	R 1	57.60.1470		47R	MF, 1%, 0204, E24
0	R 2	57.60.1470		47R	MF, 1%, 0204, E24
0	R 3	57.60.1470		47R	MF, 1%, 0204, E24
0	R 4	57.60.1470		47R	MF, 1%, 0204, E24
0	R 5	57.60.1101		100R	MF, 1%, 0204, E24
0	R 6	57.60.1101		100R	MF, 1%, 0204, E24
0	R 7	57.60.1101		100R	MF, 1%, 0204, E24
0	R 8	57.60.1101		100R	MF, 1%, 0204, E24
0	R 9	57.60.1101		100R	MF, 1%, 0204, E24
0	R 10	57.60.1101		100R	MF, 1%, 0204, E24
0	R 11	57.60.1101		100R	MF, 1%, 0204, E24
0	R 12	57.60.1101		100R	MF, 1%, 0204, E24
0	R 13	57.60.1101		100R	MF, 1%, 0204, E24
0	R 14	57.60.1101		100R	MF, 1%, 0204, E24
0	R 15	57.60.1101		100R	MF, 1%, 0204, E24
0	R 16	57.60.1101		100R	MF, 1%, 0204, E24
0	R 17	57.60.1101		100R	MF, 1%, 0204, E24
0	R 18	57.60.1330		33R	MF, 1%, 0204, E24
0	R 19	57.60.1101		100R	MF, 1%, 0204, E24
0	R 20	57.60.1101		100R	MF, 1%, 0204, E24
0	R 21	57.60.1101		100R	MF, 1%, 0204, E24
0	R 22	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 23	57.60.1101		100R	MF, 1%, 0204, E24
0	R 24	57.60.1101		100R	MF, 1%, 0204, E24
0	R 25	57.60.1101		100R	MF, 1%, 0204, E24
0	R 26	57.60.1101		100R	MF, 1%, 0204, E24
0	R 27	57.60.1101		100R	MF, 1%, 0204, E24
0	R 28	57.60.1101		100R	MF, 1%, 0204, E24
0	R 29	57.60.1471		470R	MF, 1%, 0204, E24
0	R 30	57.60.1471		470R	MF, 1%, 0204, E24
0	R 31	57.60.1101		100R	MF, 1%, 0204, E24
0	R 32	57.60.1101		100R	MF, 1%, 0204, E24
0	R 33	57.60.1101		100R	MF, 1%, 0204, E24
0	R 34	57.60.1101		100R	MF, 1%, 0204, E24
0	R 35	57.60.1330		33R	MF, 1%, 0204, E24
0	R 36	57.60.1101		100R	MF, 1%, 0204, E24
0	R 37	57.60.1101		100R	MF, 1%, 0204, E24
0	R 38	57.60.1103		10k	MF, 1%, 0204, E24
0	R 39	57.60.1101		100R	MF, 1%, 0204, E24
0	R 40	57.60.1101		100R	MF, 1%, 0204, E24
0	R 41	57.60.1101		100R	MF, 1%, 0204, E24
0	R 42	57.60.1101		100R	MF, 1%, 0204, E24
0	R 43	57.60.1101		100R	MF, 1%, 0204, E24
0	R 44	57.60.1101		100R	MF, 1%, 0204, E24
0	R 45	57.60.1101		100R	MF, 1%, 0204, E24
0	R 46	57.60.1101		100R	MF, 1%, 0204, E24
0	R 47	57.60.1101		100R	MF, 1%, 0204, E24
0	R 48	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 49	57.60.1101		100R	MF, 1%, 0204, E24
0	R 50	57.60.1101		100R	MF, 1%, 0204, E24
0	R 51	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 52	57.60.1101		100R	MF, 1%, 0204, E24
0	R 53	57.60.1330		33R	MF, 1%, 0204, E24
0	R 54	57.60.1103		10k	MF, 1%, 0204, E24
0	R 55	57.60.1100		10R	MF, 1%, 0204, E24
0	R 56	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 57	57.60.1470		47R	MF, 1%, 0204, E24
0	R 58	57.60.1101		100R	MF, 1%, 0204, E24
0	R 59	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 60	57.60.1471		470R	MF, 1%, 0204, E24
0	R 61	57.60.1471		470R	MF, 1%, 0204, E24
0	R 62	57.60.1330		33R	MF, 1%, 0204, E24
0	R 63	57.60.1330		33R	MF, 1%, 0204, E24
0	R 64	57.60.1330		33R	MF, 1%, 0204, E24
0	R 65	57.60.1330		33R	MF, 1%, 0204, E24
0	R 66	57.60.1470		47R	MF, 1%, 0204, E24
0	R 67	57.60.1330		33R	MF, 1%, 0204, E24
0	R 68	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 69	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 70	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 71	57.60.1103		10k	MF, 1%, 0204, E24
0	R 72	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 73	57.60.1101		100R	MF, 1%, 0204, E24
0	R 74	57.60.1106		10M	MF, 1%, 0204, E24
0	R 75	57.60.1470		47R	MF, 1%, 0204, E24
0	R 76	57.60.1471		470R	MF, 1%, 0204, E24
0	R 77	57.60.1471		470R	MF, 1%, 0204, E24
0	R 78	57.60.1103		10k	MF, 1%, 0204, E24
0	R 79	57.60.1103		10k	MF, 1%, 0204, E24
0	R 80	57.60.1471		470R	MF, 1%, 0204, E24
0	R 81	57.60.1101		100R	MF, 1%, 0204, E24
0	R 82	57.60.1101		100R	MF, 1%, 0204, E24
0	R 83	57.60.1153		15k	MF, 1%, 0204, E24
0	R 84	57.60.1123		12k	MF, 1%, 0204, E24
0	R 85	57.60.1101		100R	MF, 1%, 0204, E24
0	R 86	57.60.1681		680R	MF, 1%, 0204, E24
0	R 87	57.60.1202		2k0	MF, 1%, 0204, E24
0	R 88	57.60.1473		47k	MF, 1%, 0204, E24
0	R 89	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 90	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 91	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 92	57.60.1104		100k	MF, 1%, 0204, E24
0	R 93	57.60.1103		10k	MF, 1%, 0204, E24
0	R 94	57.60.1473		47k	MF, 1%, 0204, E24
0	R 95	57.60.1101		100R	MF, 1%, 0204, E24
0	R 96	57.60.1473		47k	MF, 1%, 0204, E24
0	R 97	57.60.1103		10k	MF, 1%, 0204, E24
0	R 98	57.92.7015		1.1A	PTC 50V
0	R 99	57.60.1471		470R	MF, 1%, 0204, E24
0	R 100	57.92.7015		1.1A	PTC 50V
0	RZ 1	57.88.4472		4k7	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4472		4k7	8*R Resistor-Netw 2% SIP9
0	RZ 3	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 4	57.88.4472		4k7	8*R Resistor-Netw 2% SIP9
0	RZ 5	57.88.4223		22k	8*R Resistor-Netw 2% SIP9
0	RZ 6	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 7	57.88.4223		22k	8*R Resistor-Netw 2% SIP9
0	RZ 8	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 9	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 10	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 11	57.88.4223		22k	8*R Resistor-Netw 2% SIP9
0	RZ 12	57.88.4223		22k	8*R Resistor-Netw 2% SIP9
0	RZ 13	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 14	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 15	57.88.4223		22k	8*R Resistor-Netw 2% SIP9
0	RZ 16	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	S 1	55.15.0138		1*A	S 1 TASTE, 1*A,IMPULS,1.0 N
0	T 1	1.022.655.00			48V ON AIR 2000 TRAFO
0	TP 1	54.02.0320		1p	PCB-Flachst 2.8*0.8, gerade
0	TP 2	54.02.0320		1p	PCB-Flachst 2.8*0.8, gerade
0	TP 3	54.02.0320		1p	PCB-Flachst 2.8*0.8, gerade
0	TP 4	54.02.0320		1p	PCB-Flachst 2.8*0.8, gerade
0	XIC 18	53.03.2244		44p	PLCC-Socket
0	XIC 19	53.03.0168		16p	DIL 0.3", löt, gerade
0	XIC 22	54.10.3772		72p	SIMM-Socket 72p
0	XIC 23	53.03.2232		32p	PLCC-Socket
0	XIC 24	53.03.2232		32p	PLCC-Socket
0	XIC 26	53.03.2232		32p	PLCC-Socket
0	XIC 27	53.03.0169		24p	DIL 0.6", löt, gerade
0	XIC 28	53.03.2232		32p	PLCC-Socket
0	XIC 30	53.03.0165		20p	DIL 0.3", löt, gerade
0	XIC 31	53.03.0165		20p	DIL 0.3", löt, gerade
0	XIC 32	53.03.2232		32p	PLCC-Socket
0	Y 1	89.01.0560		4.9152MHz	XTAL

End of List

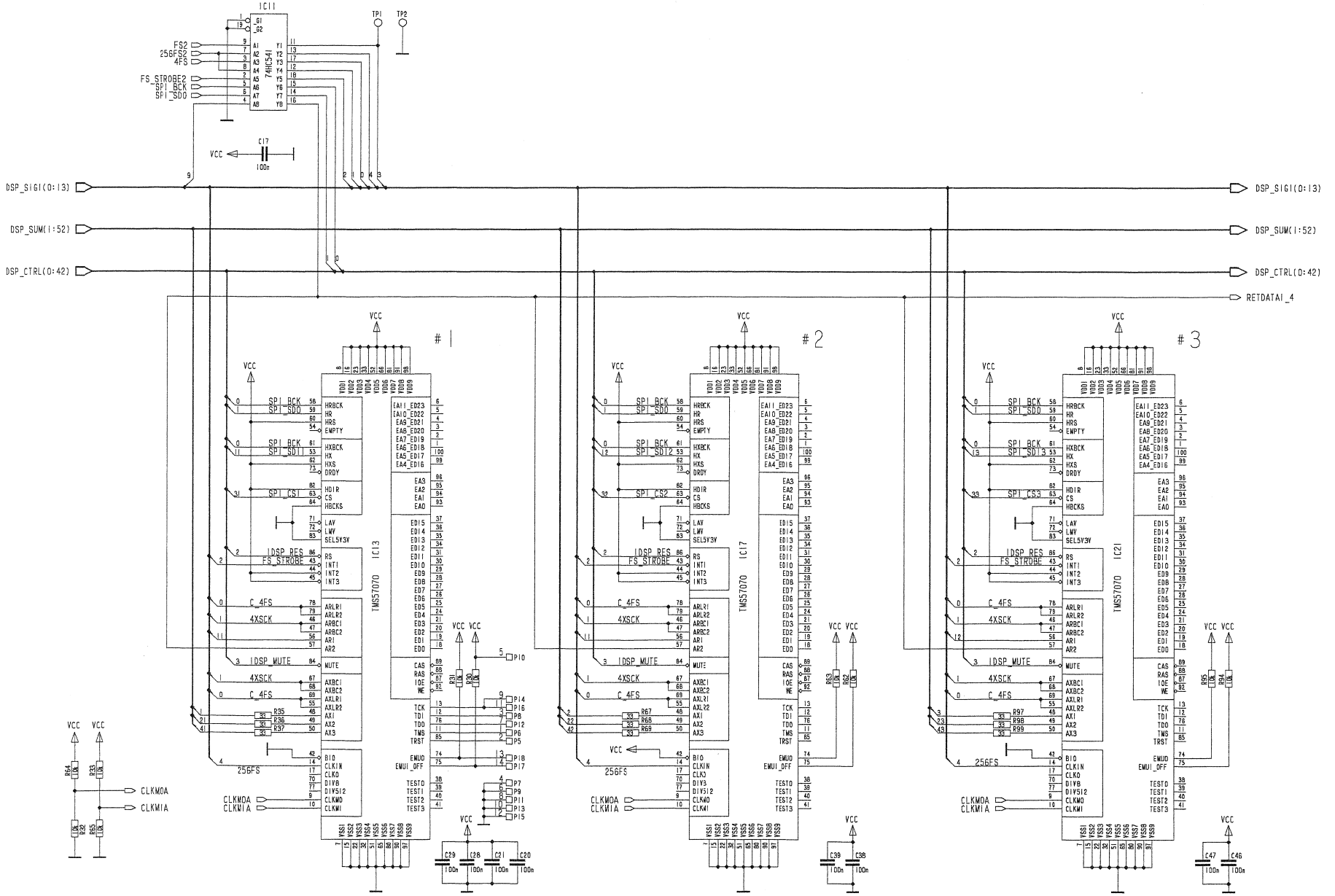
DSP Board 1.942.102.22



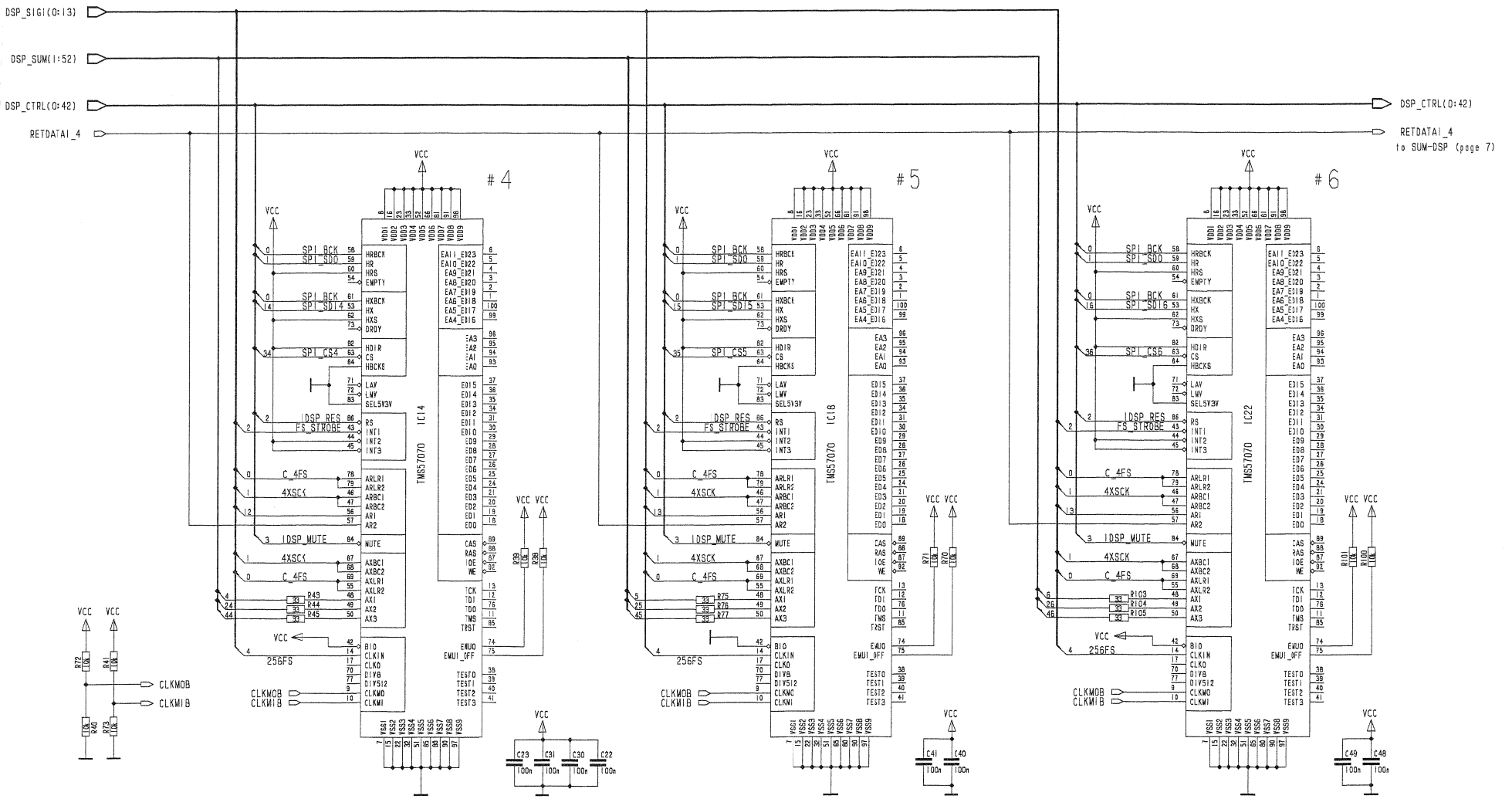
DSP Board 1.942.102.22



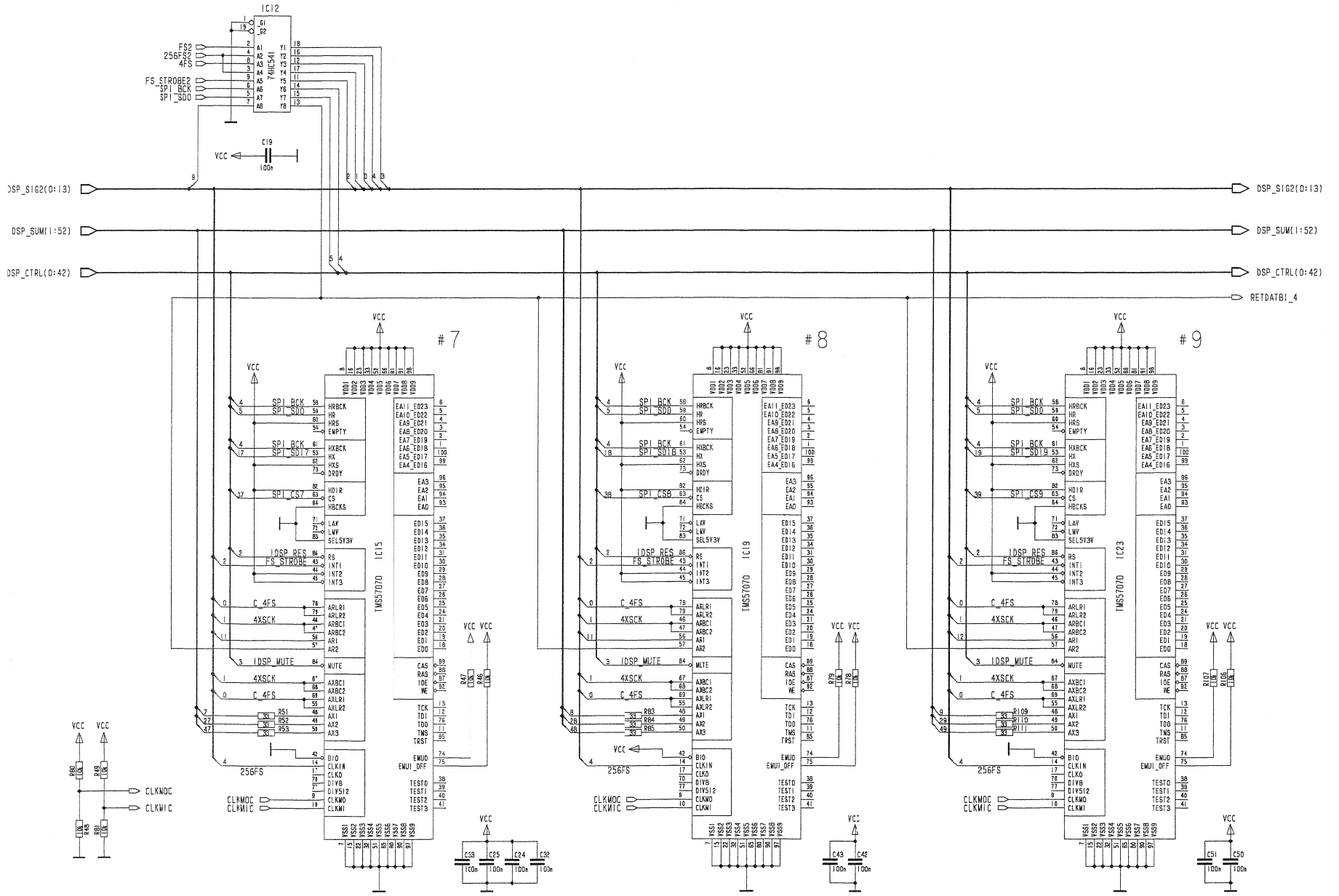
DSP Board 1.942.102.22



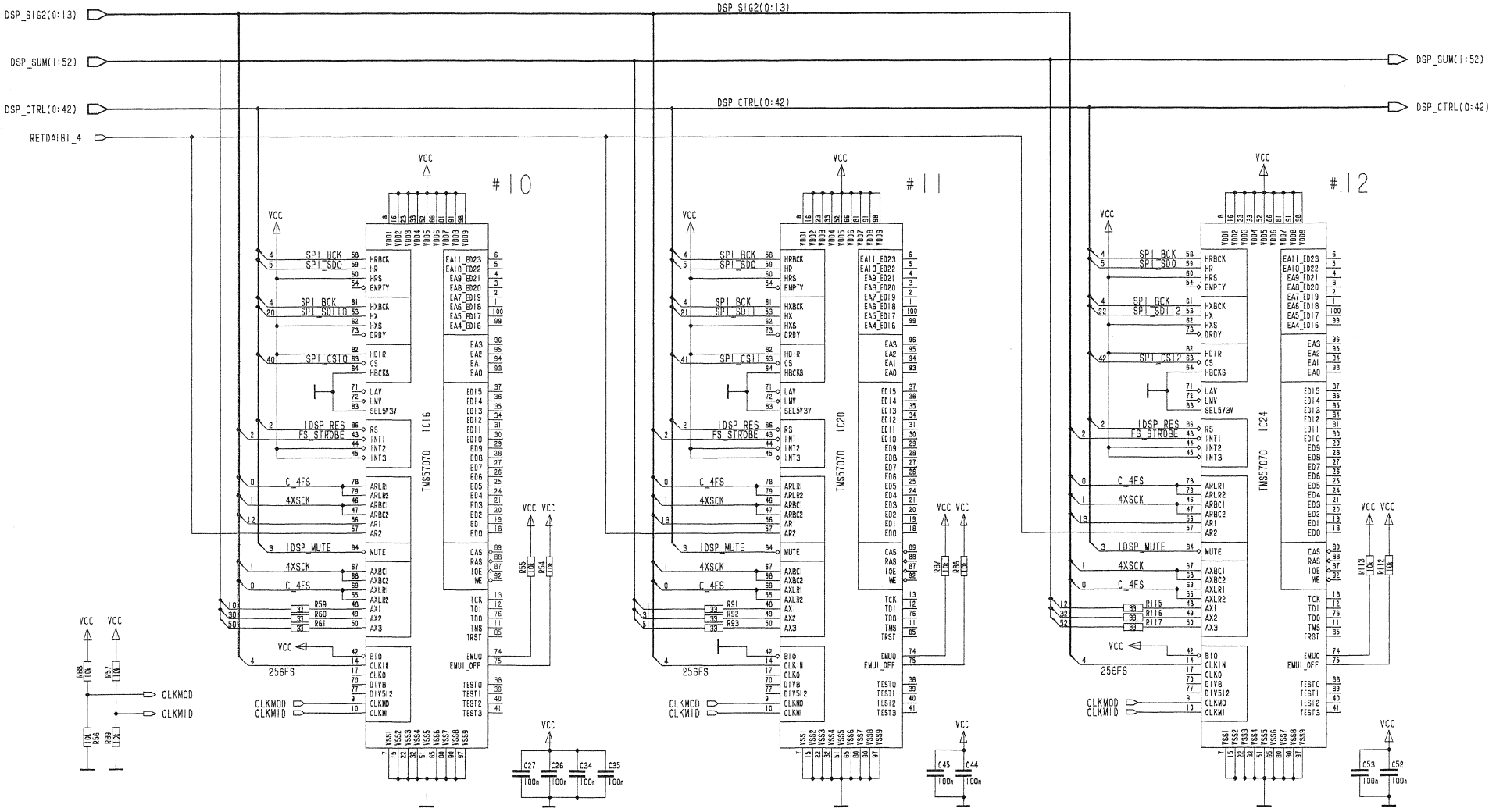
DSP Board 1.942.102.22



DSP Board 1.942.102.22



DSP Board 1.942.102.22



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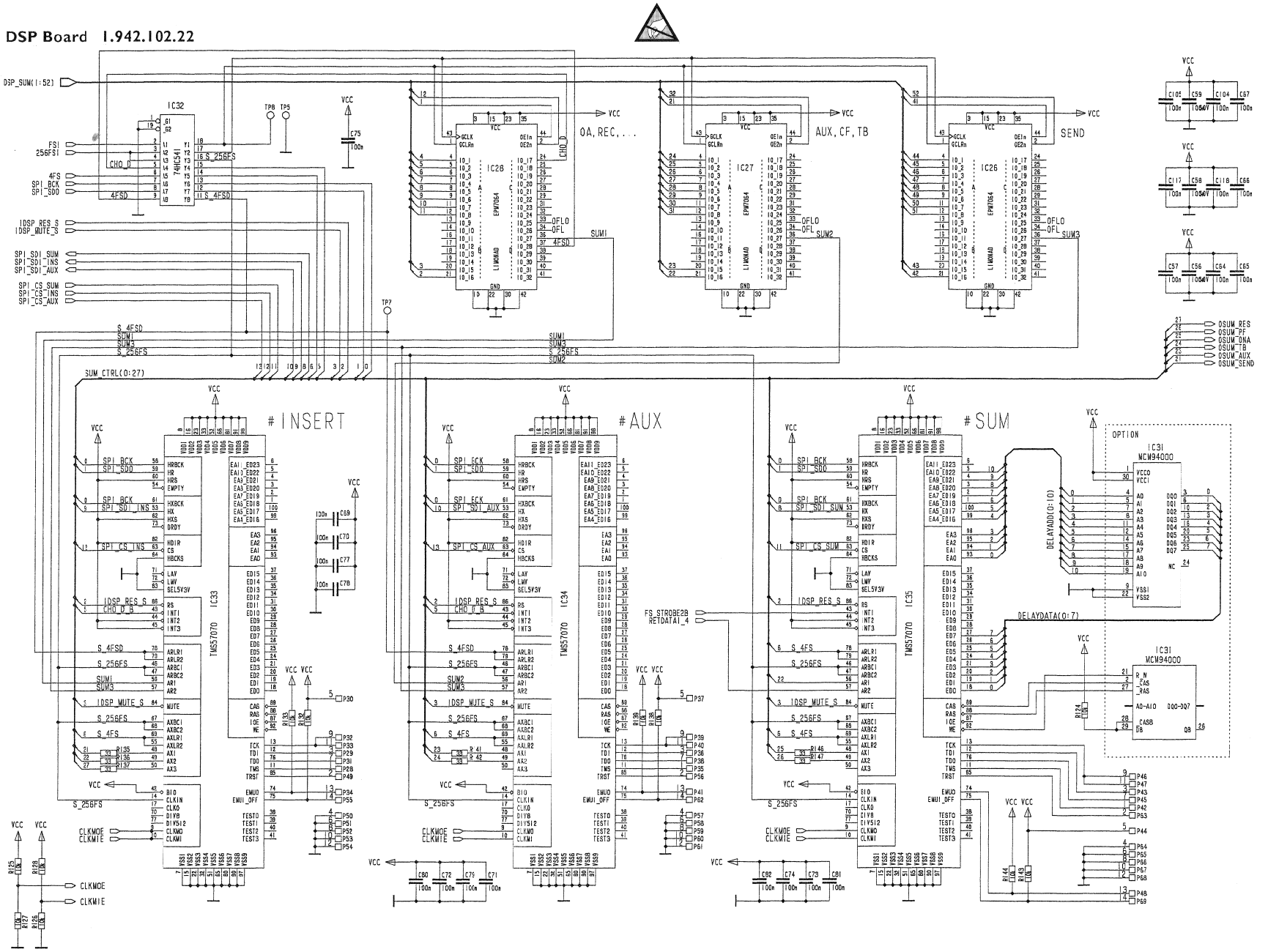

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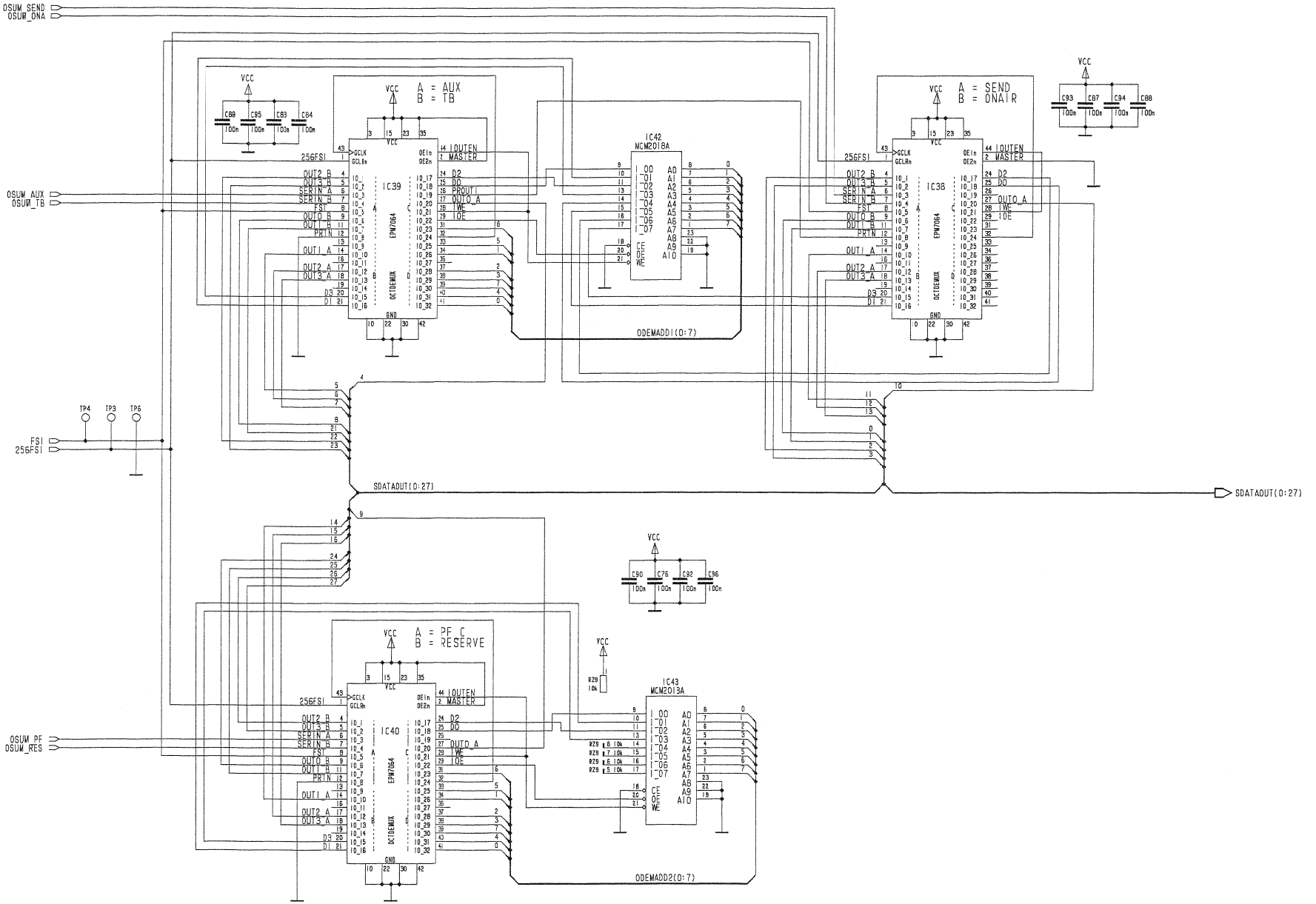

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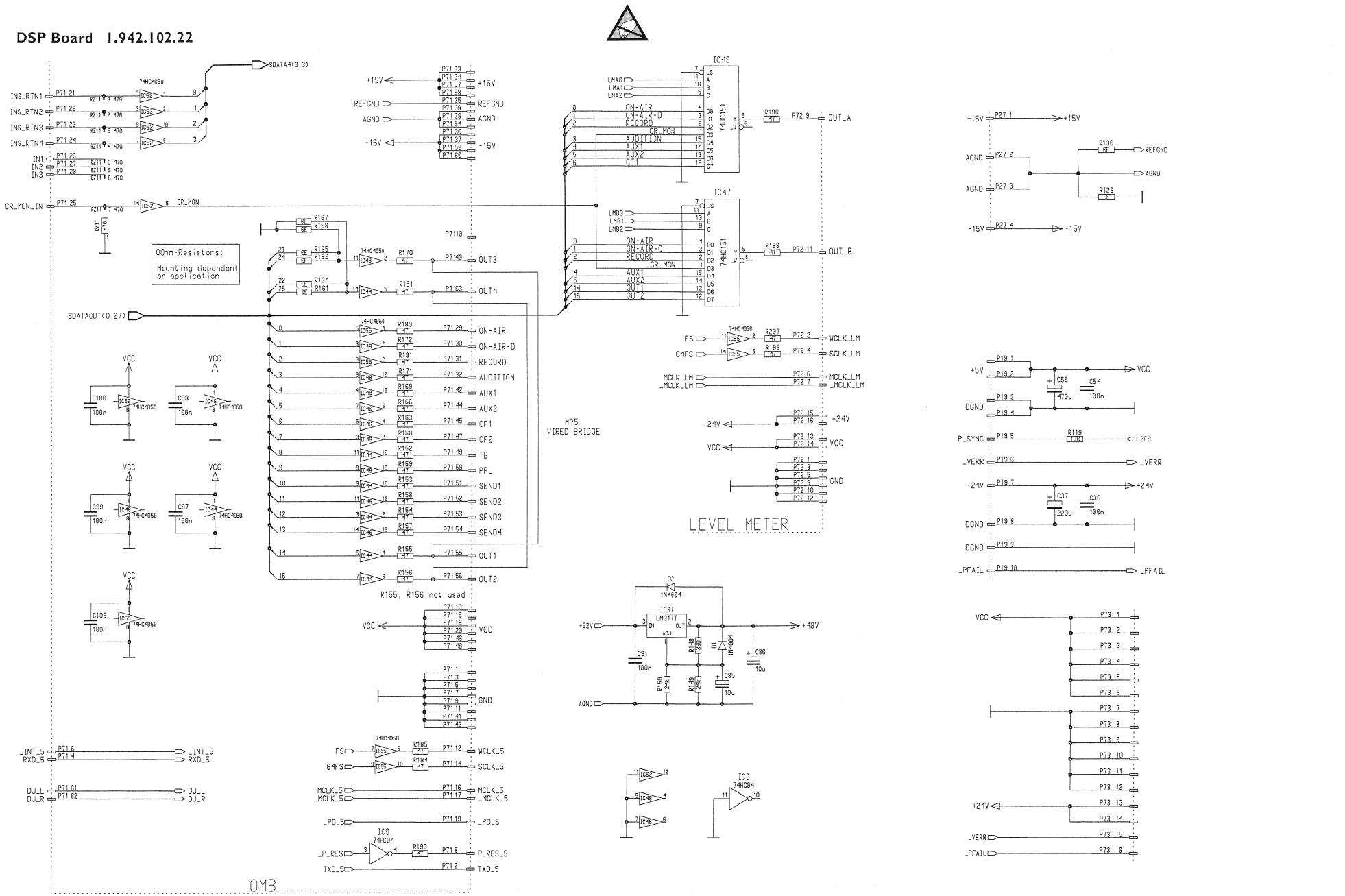

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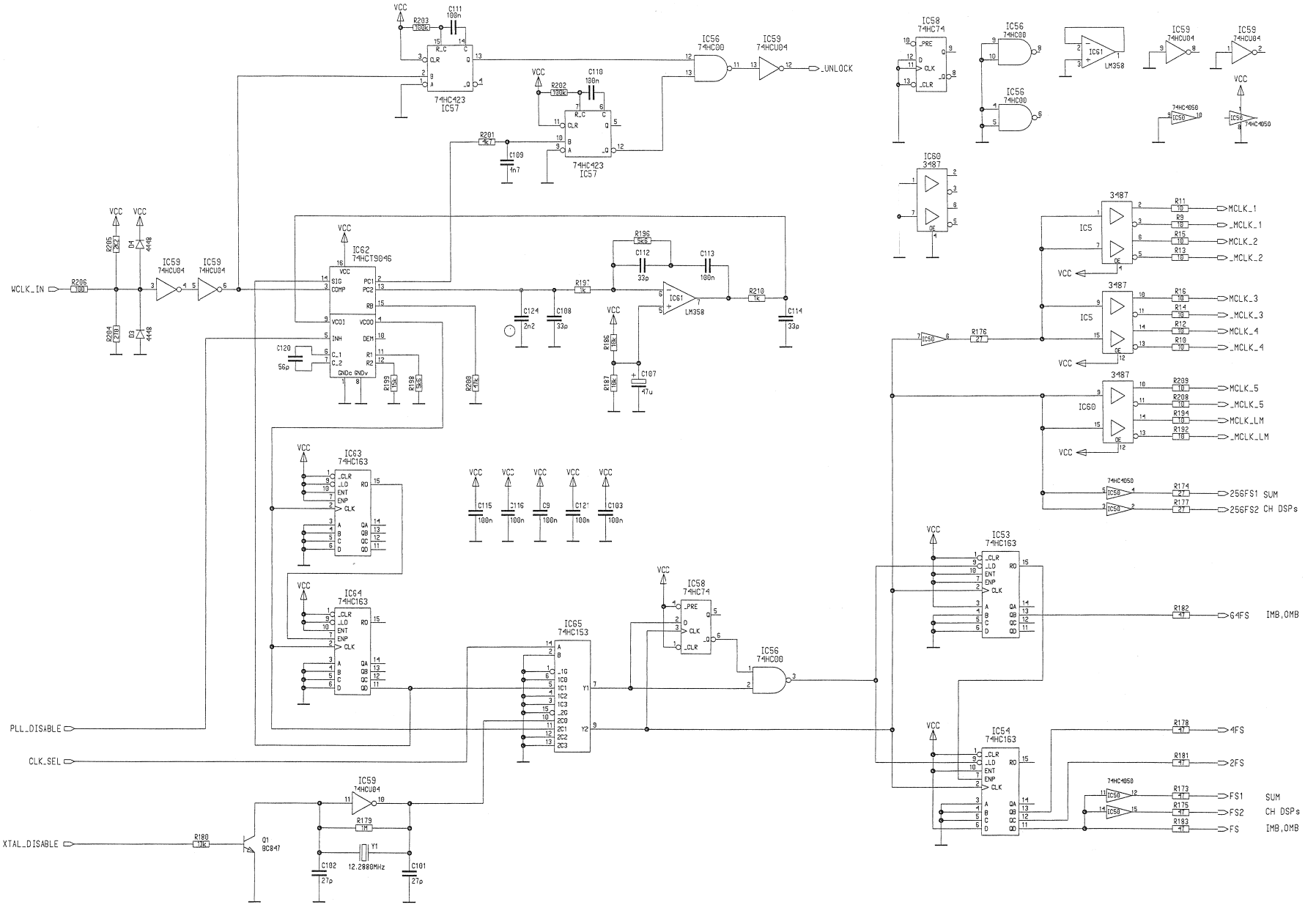

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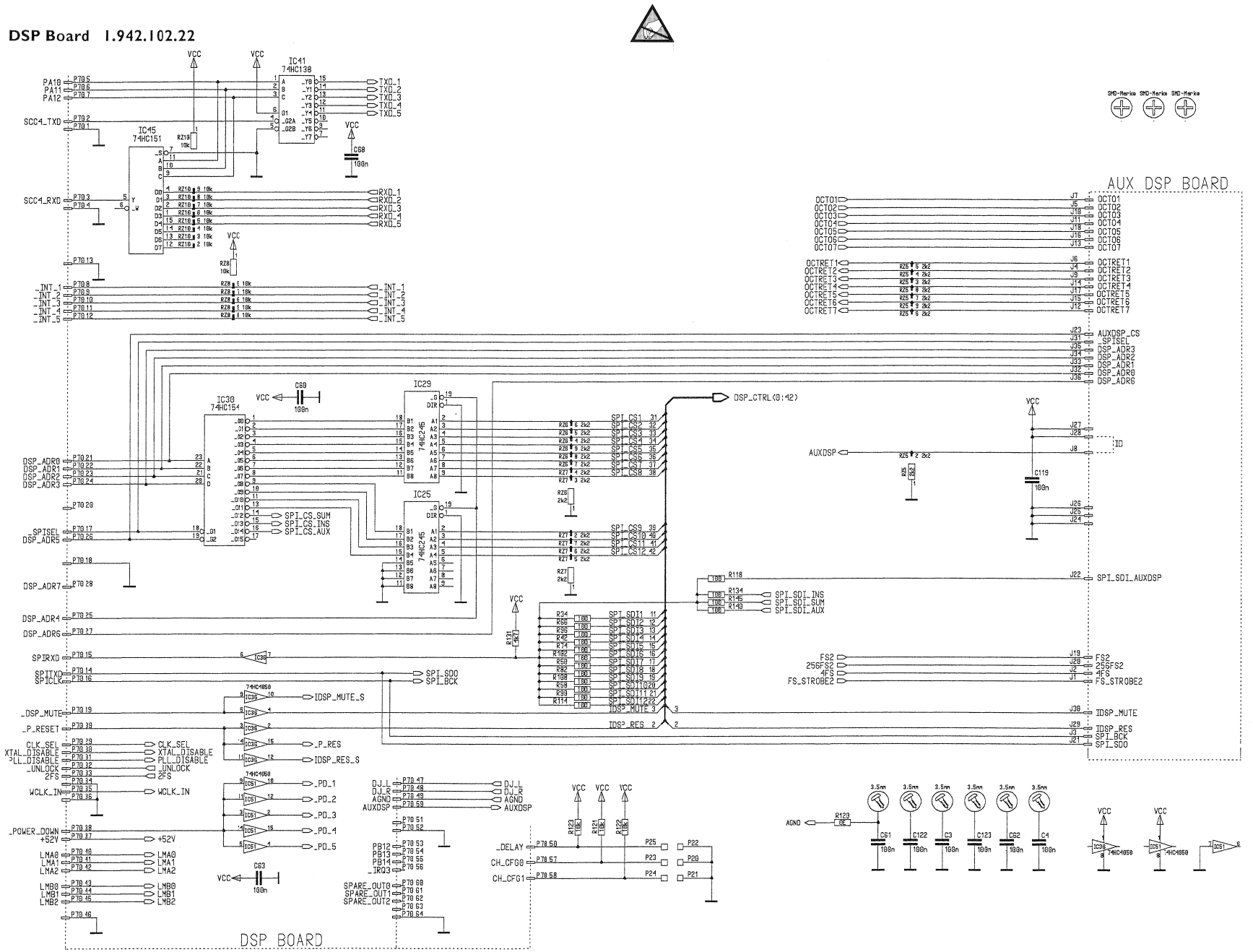

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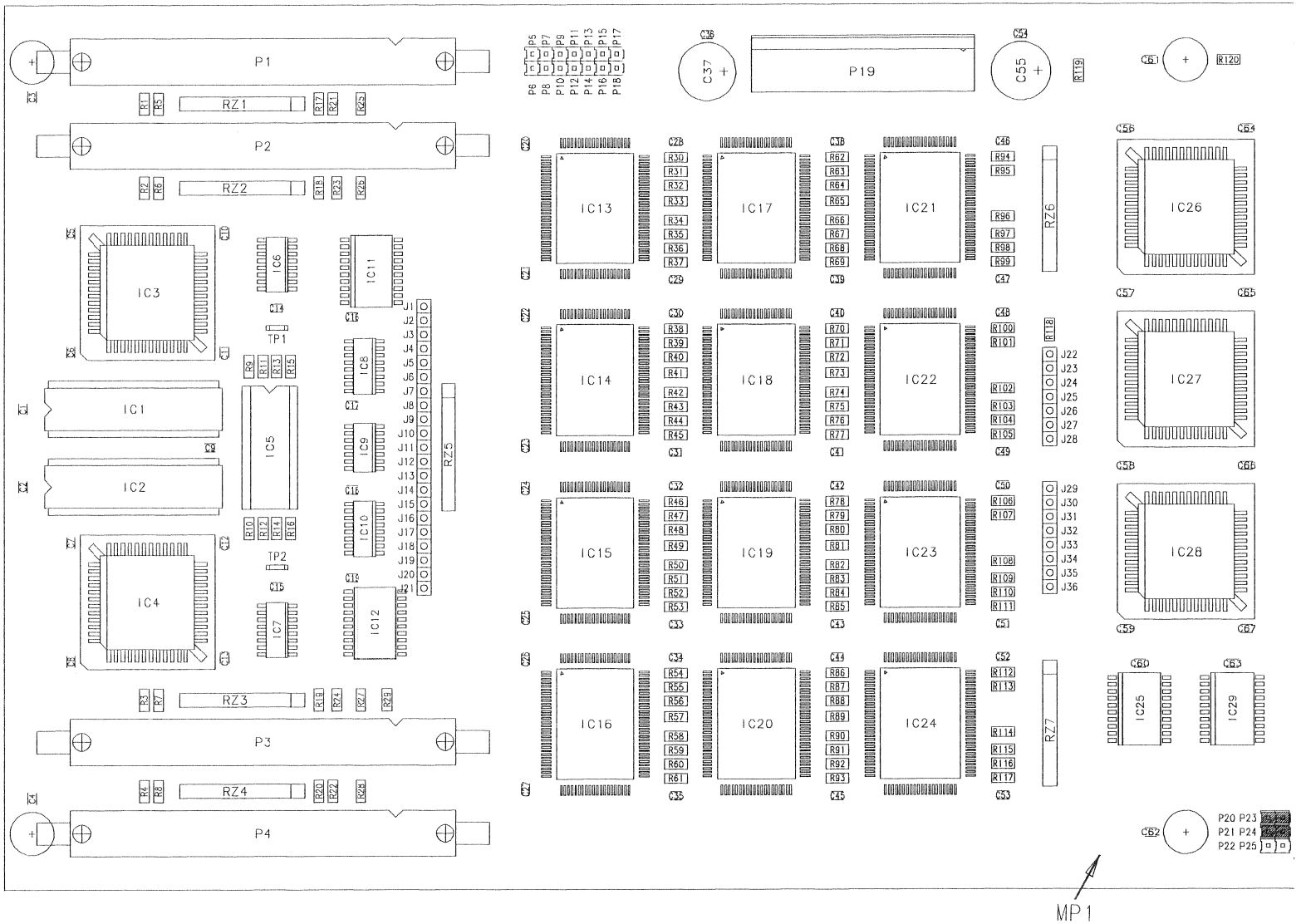

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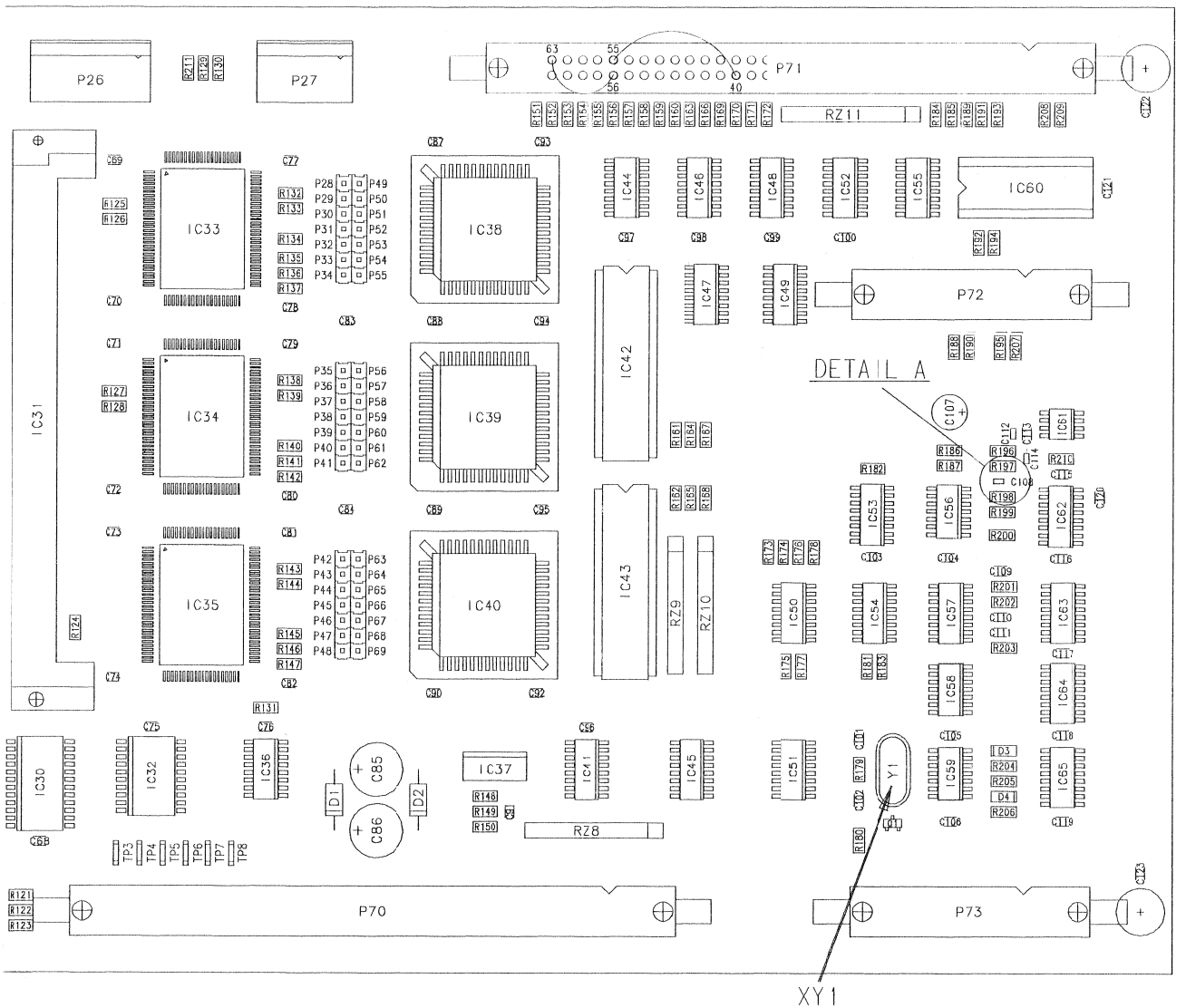
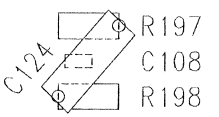


MP5
zwei Verbindungen
Pin 63 und Pin 56
Pin 40 und Pin 55

DETAIL A



Edition Ausgabe	Modification Aenderung					
	09.03.99	PZ				
	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index	

Copy to: Kopie fuer:

STUDER REGENSDORF | Description Benennung: DSP BOARD 'ESE' | Number Nummer: Z 1.942.102-22

DSP Board 1.942.102.22

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 2	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 3	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 6	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 7	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 8	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 9	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 13	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 15	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 16	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 23	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 35	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 36	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 37	59.22.6221		220u	EL 40V, 20%, RM5
0	C 38	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 40	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 42	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 43	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 45	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 46	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 47	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 48	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 49	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 51	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 53	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 54	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 55	59.22.3471		470u	EL 10V, 20%, RM5
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0	C 67	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 68	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 69	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 70	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 71	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 73	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 74	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 75	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 76	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 77	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 81	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 82	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 83	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 84	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 85	59.22.8100		10u	EL 63V, 20%, RM5
0	C 86	59.22.8100		10u	EL 63V, 20%, RM5
0	C 87	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 88	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 89	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 100	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 101	59.60.0470		47p	CER 63V, 5%, C0G, 0805
0	C 102	59.60.0470		47p	CER 63V, 5%, C0G, 0805
0	C 103	59.60.3337		100n	CER 50V, 10%, X7R, 0805
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0	C 105	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 106	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 107	59.22.3470		47u	EL 10V, 20%, RM5
0	C 108	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 109	59.60.1472		4n7	CER 63V, 10%, X7R, 0805
0	C 110	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 111	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 112	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 113	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 114	59.60.2237		33p	CER 50V, 5%, C0G, 0603
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0	C 117	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 118	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 119	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 120	59.60.0560		56p	CER 63V, 5%, C0G, 0805
0	C 121	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 122	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 123	59.60.3337		100n	CER 50V, 10%, X7R, 0805
1	C 124	59.06.0222		2n2	PETP, 63V, 10%, RM5
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0	D 2	50.04.0105		1N4004	D 1 N 4004 ... 1 N 4007
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.14.1009		7C128A	SRAM 2K*8 35ns
0	IC 2	50.14.1009		7C128A	SRAM 2K*8 35ns
0	IC 3	1.942.906.20			SW.102 DSP BOARD, OCTOPUS1
0	IC 4	1.942.907.20			SW.102 DSP BOARD, OCTOPUS2
0	IC 5	50.15.0105		3487	IC MC 3487 P, DS 3487 N,
0	IC 6	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 7	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 8	50.62.1157		74HC157	74 HC 157
0	IC 9	50.62.1004		74HC 04	74 HC 04
0	IC 10	50.62.1157		74HC157	74 HC 157
0	IC 11	50.62.1541		74HC541	74 HC 541
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0	IC 13	50.63.0407		TMS57070	DSP 24 bit
0	IC 14	50.63.0407		TMS57070	DSP 24 bit
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0	IC 16	50.63.0407		TMS57070	DSP 24 bit
0	IC 17	50.63.0407		TMS57070	DSP 24 bit
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0	IC 19	50.63.0407		TMS57070	DSP 24 bit
0	IC 20	50.63.0407		TMS57070	DSP 24 bit
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0	IC 22	50.63.0407		TMS57070	DSP 24 bit
0	IC 23	50.63.0407		TMS57070	DSP 24 bit
0	IC 24	50.63.0407		TMS57070	DSP 24 bit
0	IC 25	50.62.1245		74HC245	74 HC 245
0	IC 26	1.942.908.20			SW.102 DSP BOARD, LIMONAD
		50634202, EPLD 7064			
0	IC 27	1.942.908.20			SW.102 DSP BOARD, LIMONAD
		50634202, EPLD 7064			
0	IC 28	1.942.908.20			SW.102 DSP BOARD, LIMONAD
		50634202, EPLD 7064			
0	IC 29	50.62.1245		74HC245	74 HC 245
0	IC 30	50.62.1154		74HC154	74 HC 154
0	IC 31	not used		not used	not used
0	IC 32	50.62.1541		74HC541	74 HC 541
0	IC 33	50.63.0407		TMS57070	DSP 24 bit
0	IC 34	50.63.0407		TMS57070	DSP 24 bit
0	IC 35	50.63.0407		TMS57070	DSP 24 bit
0	IC 36	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 37	50.10.0104		LM317SP	IC LM 317 SP, .T,
0	IC 38	1.942.909.20			SW.102 DSP BOARD, OCTDEMUX
		50634202, EPLD 7064			
0	IC 39	1.942.909.20			SW.102 DSP BOARD, OCTDEMUX
		50634202, EPLD 7064			
0	IC 40	1.942.909.20			SW.102 DSP BOARD, OCTDEMUX
		50634202, EPLD 7064			
0	IC 41	50.62.1138		74HC138	74 HC 138
0	IC 42	50.14.1009		CY7C128-35	IC MCM 2018 A - 35 ,A
0	IC 43	50.14.1009		CY7C128-35	IC MCM 2018 A - 35 ,A
0	IC 44	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 45	50.62.1151		74HC151	74 HC 151
0	IC 46	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 47	50.62.1151		74HC151	74 HC 151
0	IC 48	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 49	50.62.1151		74HC151	74 HC 151
0	IC 50	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 51	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 52	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 53	50.62.1163		74HC163	74 HC 163
0	IC 54	50.62.1163		74HC163	74 HC 163
0	IC 55	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 56	50.62.1000		74HC 00	74 HC 00
0	IC 57	50.62.1423		74HC423	74 HC 423
0	IC 58	50.62.1074		74HC 74	74 HC 74
0	IC 59	50.62.1904		74HCU04	IC .. 74 HCU 04 ,A
0	IC 60	50.15.0105		3487	IC MC 3487 P, DS 3487 N,
0	IC 61	50.61.0202		LM353	IC LM 358 D ,A
0	IC 62	50.62.4946		74HCT9046	IC .. 74 HCT 9046 ,A
0	IC 63	50.62.1163		74HC163	74 HC 163
0	IC 64	50.62.1163		74HC163	74 HC 163
0	IC 65	50.62.1153		74HC153	74 HC 153
0	J 1	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 2	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 3	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 4	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 5	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 6	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 7	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 8	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 9	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 10	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 11	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 12	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 13	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 14	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 15	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 16	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 17	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 18	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 19	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 20	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 21	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 22	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 23	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 24	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 25	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 26	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 27	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 28	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 29	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 30	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 31	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 32	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 33	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 34	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 35	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	J 36	53.03.0218		1p	XIC SINGLE, IN-LINE 1PIN=1STK
0	JP 1	54.01.0021		Jumper	0.63 * 0.63mm
0	JP 2	54.01.0021		Jumper	0.63 * 0.63mm
0	MP 1	1.942.102.11	1 pce		DSP BOARD PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.102.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	1.101.001.22	1 pce		TEXT-ETIK. 5*20 HARDWARE -22
0	MP 5	1.0*0.108.64	2 pcs		WIRE WRAP DRAHT D .255 L= 80
1	MP 6	43.10.0110	1 pce	A	Revisions-Etikette 5mm h'blau
0	P 2	54.14.2054		40p	P STECKER 40 P , AU, GERADE
0	P 3	54.14.2054		40p	P STECKER 40 P , AU, GERADE
0	P 4	54.14.2054		40p	P STECKER 40 P , AU, GERADE
0	P 5	not used		1p	Pin 0.63*0.63
0	P 6	not used		1p	Pin 0.63*0.63
0	P 7	not used		1p	Pin 0.63*0.63
0	P 8	not used		1p	Pin 0.63*0.63
0	P 9	not used		1p	Pin 0.63*0.63
0	P 10	not used		1p	Pin 0.63*0.63
0	P 11	not used		1p	Pin 0.63*0.63
0	P 12	not used		1p	Pin 0.63*0.63
0	P 13	not used		1p	Pin 0.63*0.63
0	P 14	not used		1p	Pin 0.63*0.63
0	P 15	not used		1p	Pin 0.63*0.63
0	P 16	not used		1p	Pin 0.63*0.63
0	P 17	not used		1p	Pin 0.63*0.63
0	P 18	not used		1p	Pin 0.63*0.63
0	P 19	54.12.0510		10p	P Stecker 10p Power-Pin
0	P 20	54.01.0020		1p	Pin 0.63*0.63
0	P 21	54.01.0020		1p	Pin 0.63*0.63
0	P 22	54.01.0020		1p	Pin 0.63*0.63
0	P 23	54.01.0020		1p	Pin 0.63*0.63
0	P 24	54.01.0020		1p	Pin 0.63*0.63
0	P 25	54.01.0020		1p	Pin 0.63*0.63
0	P 26	54.12.0505		5p	P Stecker 5p Power-Pin
0	P 27	54.12.0504		4p	P Stecker 4p Power-Pin
0	P 28	not used		1p	Pin 0.63*0.63
0	P 29	not used		1p	Pin 0.63*0.63
0	P 30	not used		1p	Pin 0.63*0.63
0	P 31	not used		1p	Pin 0.63*0.63
0	P 32	not used		1p	Pin 0.63*0.63
0	P 33	not used		1p	Pin 0.63*0.63
0	P 34	not used		1p	Pin 0.63*0.63
0	P 35	not used		1p	Pin 0.63*0.63
0	P 36	not used		1p	Pin 0.63*0.63
0	P 37	not used		1p	Pin 0.63*0.63
0	P 38	not used		1p	Pin 0.63*0.63
0	P 39	not used		1p	Pin 0.63*0.63
0	P 40	not used		1p	Pin 0.63*0.63
0	P 41	not used		1p	Pin 0.63*0.63
0	P 42	not used		1p	Pin 0.63*0.63
0	P 43	not used		1p	Pin 0.63*0.63
0	P 44	not used		1p	Pin 0.63*0.63
0	P 45	not used		1p	Pin 0.63*0.63
0	P 46	not used		1p	Pin 0.63*0.63
0	P 47	not used		1p	Pin 0.63*0.63
0	P 48	not used		1p	Pin 0.63*0.63
0	P 49	not used		1p	Pin 0.63*0.63
0	P 50	not used		1p	Pin 0.63*0.63
0	P 51	not used		1p	Pin 0.63*0.63
0	P 52	not used		1p	Pin 0.63*0.63
0	P 53	not used		1p	Pin 0.63*0.63
0	P 54	not used		1p	Pin 0.63*0.63
0	P 55	not used		1p	Pin 0.63*0.63
0	P 56	not used		1p	Pin 0.63*0.63
0	P 57	not used		1p	Pin 0.63*0.63
0	P 58	not used		1p	Pin 0.63*0.63
0	P 59	not used		1p	Pin 0.63*0.63
0	P 60	not used		1p	Pin 0.63*0.63
0	P 61	not used		1p	Pin 0.63*0.63
0	P 62	not used		1p	Pin 0.63*0.63
0	P 63	not used		1p	Pin 0.63*0.63
0	P 64	not used		1p	Pin 0.63*0.63
0	P 65	not used		1p	Pin 0.63*0.63
0	P 66	not used		1p	Pin 0.63*0.63
0	P 67	not used		1p	Pin 0.63*0.63
0	P 68	not used		1p	Pin 0.63*0.63
0	P 69	not used		1p	Pin 0.63*0.63
0	P 70	54.14.2056		64p	Stecker gerade Au
0	P 71	54.14.2056		64p	Stecker gerade Au
0	P 72	54.14.2052		16p	Stecker gerade Au
0	P 73	54.14.2052		16p	Stecker gerade Au
0	Q 1	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	R 1	57.60.1470		47R	MF, 1%, 0204, E24
0	R 2	57.60.1470		47R	MF, 1%, 0204, E24
0	R 3	57.60.1470		47R	MF, 1%, 0204, E24
0	R 4	57.60.1470		47R	MF, 1%, 0204, E24
0	R 5	57.60.1470		47R	MF, 1%, 0204, E24
0	R 6	57.60.1470		47R	MF, 1%, 0204, E24
0	R 7	57.60.1470		47R	MF, 1%, 0204, E24
0	R 8	57.60.1470		47R	MF, 1%, 0204, E24
0	R 9	57.60.1100		10R	MF, 1%, 0204, E24
0	R 10	57.60.1100		10R	MF, 1%, 0204, E24
0	R 11	57.60.1100		10R	MF, 1%, 0204, E24
0	R 12	57.60.1100		10R	MF, 1%, 0204, E24
0	R 13	57.60.1100		10R	MF, 1%, 0204, E24
0	R 14	57.60.1100		10R	MF, 1%, 0204, E24
0	R 15	57.60.1100		10R	MF, 1%, 0204, E24
0	R 16	57.60.1100		10R	MF, 1%, 0204, E24
0	R 17	57.60.1470		47R	MF, 1%, 0204, E24
0	R 18	57.60.1470		47R	MF, 1%, 0204, E24
0	R 19	57.60.1470		47R	MF, 1%, 0204, E24
0	R 20	57.60.1470		47R	MF, 1%, 0204, E24
0	R 21	57.60.1470		47R	MF, 1%, 0204, E24
0	R 22	57.60.1470		47R	MF, 1%, 0204, E24
0	R 23	57.60.1470		47R	MF, 1%, 0204, E24

DSP Board 1.942.102.22

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 24	57.60.1470		47R	MF, 1%, 0204, E24
0	R 25	57.60.1470		47R	MF, 1%, 0204, E24
0	R 26	57.60.1470		47R	MF, 1%, 0204, E24
0	R 27	57.60.1470		47R	MF, 1%, 0204, E24
0	R 28	57.60.1470		47R	MF, 1%, 0204, E24
0	R 29	57.60.1470		47R	MF, 1%, 0204, E24
0	R 30	57.60.1103		10K	MF, 1%, 0204, E24
0	R 31	57.60.1103		10K	MF, 1%, 0204, E24
0	R 32	not used		10K	MF, 1%, 0204, E24
0	R 33	not used		10K	MF, 1%, 0204, E24
0	R 34	57.60.1101		100R	MF, 1%, 0204, E24
0	R 35	57.60.1330		33R	MF, 1%, 0204, E24
0	R 36	57.60.1330		33R	MF, 1%, 0204, E24
0	R 37	57.60.1330		33R	MF, 1%, 0204, E24
0	R 38	57.60.1103		10K	MF, 1%, 0204, E24
0	R 39	57.60.1103		10K	MF, 1%, 0204, E24
0	R 40	not used		10K	MF, 1%, 0204, E24
0	R 41	not used		10K	MF, 1%, 0204, E24
0	R 42	57.60.1101		100R	MF, 1%, 0204, E24
0	R 43	57.60.1330		33R	MF, 1%, 0204, E24
0	R 44	57.60.1330		33R	MF, 1%, 0204, E24
0	R 45	57.60.1330		33R	MF, 1%, 0204, E24
0	R 46	57.60.1103		10K	MF, 1%, 0204, E24
0	R 47	57.60.1103		10K	MF, 1%, 0204, E24
0	R 48	not used		10K	MF, 1%, 0204, E24
0	R 49	not used		10K	MF, 1%, 0204, E24
0	R 50	57.60.1101		100R	MF, 1%, 0204, E24
0	R 51	57.60.1330		33R	MF, 1%, 0204, E24
0	R 52	57.60.1330		33R	MF, 1%, 0204, E24
0	R 53	57.60.1330		33R	MF, 1%, 0204, E24
0	R 54	57.60.1103		10K	MF, 1%, 0204, E24
0	R 55	57.60.1103		10K	MF, 1%, 0204, E24
0	R 56	not used		10K	MF, 1%, 0204, E24
0	R 57	not used		10K	MF, 1%, 0204, E24
0	R 58	57.60.1101		100R	MF, 1%, 0204, E24
0	R 59	57.60.1330		33R	MF, 1%, 0204, E24
0	R 60	57.60.1330		33R	MF, 1%, 0204, E24
0	R 61	57.60.1330		33R	MF, 1%, 0204, E24
0	R 62	57.60.1103		10K	MF, 1%, 0204, E24
0	R 63	57.60.1103		10K	MF, 1%, 0204, E24
0	R 64	57.60.1103		10K	MF, 1%, 0204, E24
0	R 65	57.60.1103		10K	MF, 1%, 0204, E24
0	R 66	57.60.1101		100R	MF, 1%, 0204, E24
0	R 67	57.60.1330		33R	MF, 1%, 0204, E24
0	R 68	57.60.1330		33R	MF, 1%, 0204, E24
0	R 69	57.60.1330		33R	MF, 1%, 0204, E24
0	R 70	57.60.1103		10K	MF, 1%, 0204, E24
0	R 71	57.60.1103		10K	MF, 1%, 0204, E24
0	R 72	57.60.1103		10K	MF, 1%, 0204, E24
0	R 73	57.60.1103		10K	MF, 1%, 0204, E24
0	R 74	57.60.1101		100R	MF, 1%, 0204, E24
0	R 75	57.60.1330		33R	MF, 1%, 0204, E24
0	R 76	57.60.1330		33R	MF, 1%, 0204, E24
0	R 77	57.60.1330		33R	MF, 1%, 0204, E24
0	R 78	57.60.1103		10K	MF, 1%, 0204, E24
0	R 79	57.60.1103		10K	MF, 1%, 0204, E24
0	R 80	57.60.1103		10K	MF, 1%, 0204, E24
0	R 81	57.60.1103		10K	MF, 1%, 0204, E24
0	R 82	57.60.1101		100R	MF, 1%, 0204, E24
0	R 83	57.60.1330		33R	MF, 1%, 0204, E24
0	R 84	57.60.1330		33R	MF, 1%, 0204, E24
0	R 85	57.60.1330		33R	MF, 1%, 0204, E24
0	R 86	57.60.1103		10K	MF, 1%, 0204, E24
0	R 87	57.60.1103		10K	MF, 1%, 0204, E24
0	R 88	57.60.1103		10K	MF, 1%, 0204, E24
0	R 89	57.60.1103		10K	MF, 1%, 0204, E24
0	R 90	57.60.1101		100R	MF, 1%, 0204, E24
0	R 91	57.60.1330		33R	MF, 1%, 0204, E24
0	R 92	57.60.1330		33R	MF, 1%, 0204, E24
0	R 93	57.60.1330		33R	MF, 1%, 0204, E24
0	R 94	57.60.1103		10K	MF, 1%, 0204, E24
0	R 95	57.60.1103		10K	MF, 1%, 0204, E24
0	R 96	57.60.1101		100R	MF, 1%, 0204, E24
0	R 97	57.60.1330		33R	MF, 1%, 0204, E24
0	R 98	57.60.1330		33R	MF, 1%, 0204, E24
0	R 99	57.60.1330		33R	MF, 1%, 0204, E24
0	R 100	57.60.1103		10K	MF, 1%, 0204, E24
0	R 101	57.60.1103		10K	MF, 1%, 0204, E24
0	R 102	57.60.1101		100R	MF, 1%, 0204, E24
0	R 103	57.60.1330		33R	MF, 1%, 0204, E24
0	R 104	57.60.1330		33R	MF, 1%, 0204, E24
0	R 105	57.60.1330		33R	MF, 1%, 0204, E24
0	R 106	57.60.1103		10K	MF, 1%, 0204, E24
0	R 107	57.60.1103		10K	MF, 1%, 0204, E24
0	R 108	57.60.1101		100R	MF, 1%, 0204, E24
0	R 109	57.60.1330		33R	MF, 1%, 0204, E24
0	R 110	57.60.1330		33R	MF, 1%, 0204, E24
0	R 111	57.60.1330		33R	MF, 1%, 0204, E24
0	R 112	57.60.1103		10K	MF, 1%, 0204, E24
0	R 113	57.60.1103		10K	MF, 1%, 0204, E24
0	R 114	57.60.1101		100R	MF, 1%, 0204, E24
0	R 115	57.60.1330		33R	MF, 1%, 0204, E24
0	R 116	57.60.1330		33R	MF, 1%, 0204, E24
0	R 117	57.60.1330		33R	MF, 1%, 0204, E24
0	R 118	57.60.1101		100R	MF, 1%, 0204, E24
0	R 119	57.60.1101		100R	MF, 1%, 0204, E24
0	R 120	57.60.1000		0R0	MF, 0204
0	R 121	57.60.1103		10K	MF, 1%, 0204, E24
0	R 122	57.60.1103		10K	MF, 1%, 0204, E24
0	R 123	57.60.1103		10K	MF, 1%, 0204, E24
0	R 124	57.60.1103		10K	MF, 1%, 0204, E24
0	R 125	57.60.1103		10K	MF, 1%, 0204, E24
0	R 126	57.60.1103		10K	MF, 1%, 0204, E24
0	R 127	not used		10K	MF, 1%, 0204, E24
0	R 128	not used		10K	MF, 1%, 0204, E24
0	R 129	57.60.1000		0R0	MF, 0204
0	R 130	57.60.1000		0R0	MF, 0204
0	R 131	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 132	57.60.1103		10K	MF, 1%, 0204, E24
0	R 133	57.60.1103		10K	MF, 1%, 0204, E24
0	R 134	57.60.1101		100R	MF, 1%, 0204, E24
0	R 135	57.60.1330		33R	MF, 1%, 0204, E24
0	R 136	57.60.1330		33R	MF, 1%, 0204, E24
0	R 137	57.60.1330		33R	MF, 1%, 0204, E24
0	R 138	57.60.1103		10K	MF, 1%, 0204, E24
0	R 139	57.60.1103		10K	MF, 1%, 0204, E24
0	R 140	57.60.1101		100R	MF, 1%, 0204, E24
0	R 141	57.60.1330		33R	MF, 1%, 0204, E24
0	R 142	57.60.1330		33R	MF, 1%, 0204, E24
0	R 143	57.60.1103		10K	MF, 1%, 0204, E24
0	R 144	57.60.1103		10K	MF, 1%, 0204, E24
0	R 145	57.60.1101		100R	MF, 1%, 0204, E24
0	R 146	57.60.1330		33R	MF, 1%, 0204, E24
0	R 147	57.60.1330		33R	MF, 1%, 0204, E24
0	R 148	57.60.1331		330R	MF, 1%, 0204, E24
0	R 149	57.60.1243		24K	MF, 1%, 0204, E24
0	R 150	57.60.1243		24K	MF, 1%, 0204, E24
0	R 151	57.60.1470		47R	MF, 1%, 0204, E24
0	R 152	57.60.1470		47R	MF, 1%, 0204, E24
0	R 153	57.60.1470		47R	MF, 1%, 0204, E24
0	R 154	57.60.1470		47R	MF, 1%, 0204, E24
0	R 155	not used		47R	MF, 1%, 0204, E24
0	R 156	not used		47R	MF, 1%, 0204, E24
0	R 157	57.60.1470		47R	MF, 1%, 0204, E24
0	R 158	57.60.1470		47R	MF, 1%, 0204, E24
0	R 159	57.60.1470		47R	MF, 1%, 0204, E24
0	R 160	57.60.1470		47R	MF, 1%, 0204, E24
0	R 161	not used		0R0	MF, 0204
0	R 162	not used		0R0	MF, 0204
0	R 163	57.60.1470		47R	MF, 1%, 0204, E24
0	R 164	57.60.1000		0R0	MF, 0204
0	R 165	57.60.1000		0R0	MF, 0204
0	R 166	57.60.1470		47R	MF, 1%, 0204, E24
0	R 167	not used		0R0	MF, 0204
0	R 168	not used		0R0	MF, 0204
0	R 169	57.60.1470		47R	MF, 1%, 0204, E24
0	R 170	57.60.1470		47R	MF, 1%, 0204, E24
0	R 171	57.60.1470		47R	MF, 1%, 0204, E24
0	R 172	57.60.1470		47R	MF, 1%, 0204, E24
0	R 173	57.60.1470		47R	MF, 1%, 0204, E24
0	R 174	57.60.1270		27R	MF, 1%, 0204, E24
0	R 175	57.60.1470		47R	MF, 1%, 0204, E24
0	R 176	57.60.1270		27R	MF, 1%, 0204, E24
0	R 177	57.60.1270		27R	MF, 1%, 0204, E24
0	R 178	57.60.1470		47R	MF, 1%, 0204, E24
0	R 179	57.60.1105		1M	MF, 1%, 0204, E24
0	R 180	57.60.1103		10K	MF, 1%, 0204, E24
0	R 181	57.60.1470		47R	MF, 1%, 0204, E24
0	R 182	57.60.1470		47R	MF, 1%, 0204, E24
0	R 183	57.60.1470		47R	MF, 1%, 0204, E24
0	R 184	57.60.1470		47R	MF, 1%, 0204, E24
0	R 185	57.60.1470		47R	MF, 1%, 0204, E24
0	R 186	57.60.1103		10K	MF, 1%, 0204, E24
0	R 187	57.60.1103		10K	MF, 1%, 0204, E24
0	R 188	57.60.1470		47R	MF, 1%, 0204, E24
0	R 189	57.60.1470		47R	MF, 1%, 0204, E24
0	R 190	57.60.1470		47R	MF, 1%, 0204, E24
0	R 191	57.60.1470		47R	MF, 1%, 0204, E24
0	R 192	57.60.1100		10R	MF, 1%, 0204, E24
0	R 193	57.60.1470		47R	MF, 1%, 0204, E24
0	R 194	57.60.1100		10R	MF, 1%, 0204, E24
0	R 195	57.60.1470		47R	MF, 1%, 0204, E24
0	R 196	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 197	57.60.1102		1K	MF, 1%, 0204, E24

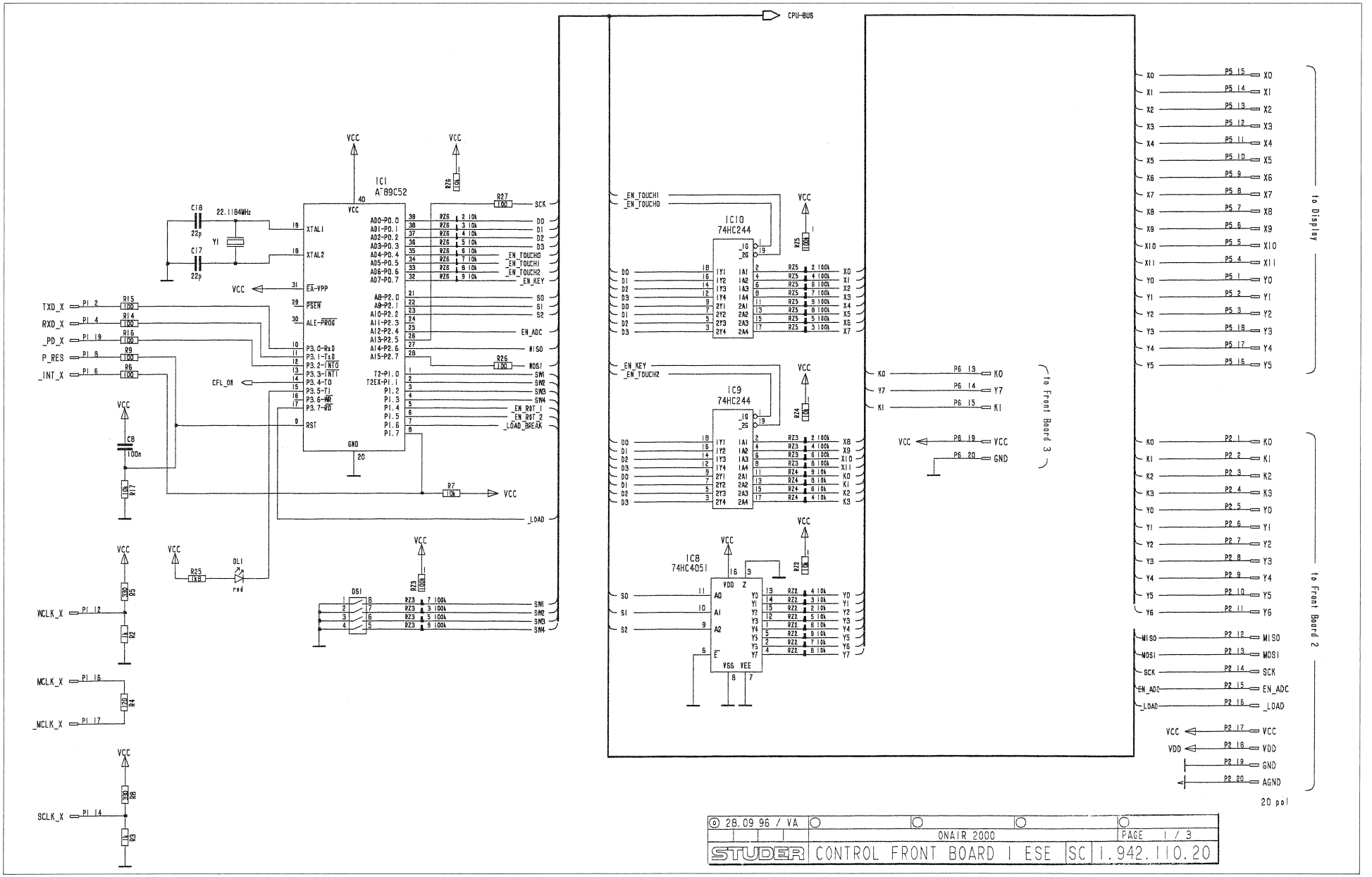
DSP Board 1.942.102.22

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 198	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 199	57.60.1153		15K	MF, 1%, 0204, E24
0	R 200	57.60.1473		47K	MF, 1%, 0204, E24
0	R 201	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 202	57.60.1104		100K	MF, 1%, 0204, E24
0	R 203	57.60.1104		100K	MF, 1%, 0204, E24
0	R 204	not used		270R	MF, 1%, 0204, E24
0	R 205	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 206	57.60.1101		100R	MF, 1%, 0204, E24
0	R 207	57.60.1470		47R	MF, 1%, 0204, E24
0	R 208	57.60.1100		10R	MF, 1%, 0204, E24
0	R 209	57.60.1100		10R	MF, 1%, 0204, E24
0	R 210	57.60.1102		1K	MF, 1%, 0204, E24
0	R 211	57.60.1000		0R0	MF, 0204
0	RZ 1	57.88.4331		8*330R	2%, SIP 9
0	RZ 2	57.88.4331		8*330R	2%, SIP 9
0	RZ 3	57.88.4331		8*330R	2%, SIP 9
0	RZ 4	57.88.4331		8*330R	2%, SIP 9
0	RZ 5	57.88.4222		8*2k2	2%, SIP 9
0	RZ 6	57.88.4222		8*2k2	2%, SIP 9
0	RZ 7	57.88.4222		8*2k2	2%, SIP 9
0	RZ 8	57.88.4103		8*10k	2%, SIP 9
0	RZ 9	57.88.4103		8*10k	2%, SIP 9
0	RZ 10	57.88.4103		8*10k	2%, SIP 9
0	RZ 11	57.88.4471		8*470R	2%, SIP 9
0	TP 1	not used		1p	Flatpin, 2.8*0.8mm
0	TP 2	not used		1p	Flatpin, 2.8*0.8mm
0	TP 3	not used		1p	Flatpin, 2.8*0.8mm
0	TP 4	not used		1p	Flatpin, 2.8*0.8mm
0	TP 5	not used		1p	Flatpin, 2.8*0.8mm
0	TP 6	not used		1p	Flatpin, 2.8*0.8mm
0	TP 7	not used		1p	Flatpin, 2.8*0.8mm
0	TP 8	not used		1p	Flatpin, 2.8*0.8mm
0	XIC 1	53.03.0182		24p	DIL 0.3", löt, gerade
0	XIC 2	53.03.0182		24p	DIL 0.3", löt, gerade
0	XIC 3	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 4	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 5	53.03.0168		16p	DIL 0.3", löt, gerade
0	XIC 26	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 27	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 28	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 31	not used		30p	SIMM-Socket 30p
0	XIC 38	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 39	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 40	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XIC 42	53.03.0182		24p	DIL 0.3", löt, gerade
0	XIC 43	53.03.0182		24p	DIL 0.3", löt, gerade
0	XIC 60	53.03.0168		16p	DIL 0.3", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1015		12.288MHz	12.288 000 MHz, HC 49/U

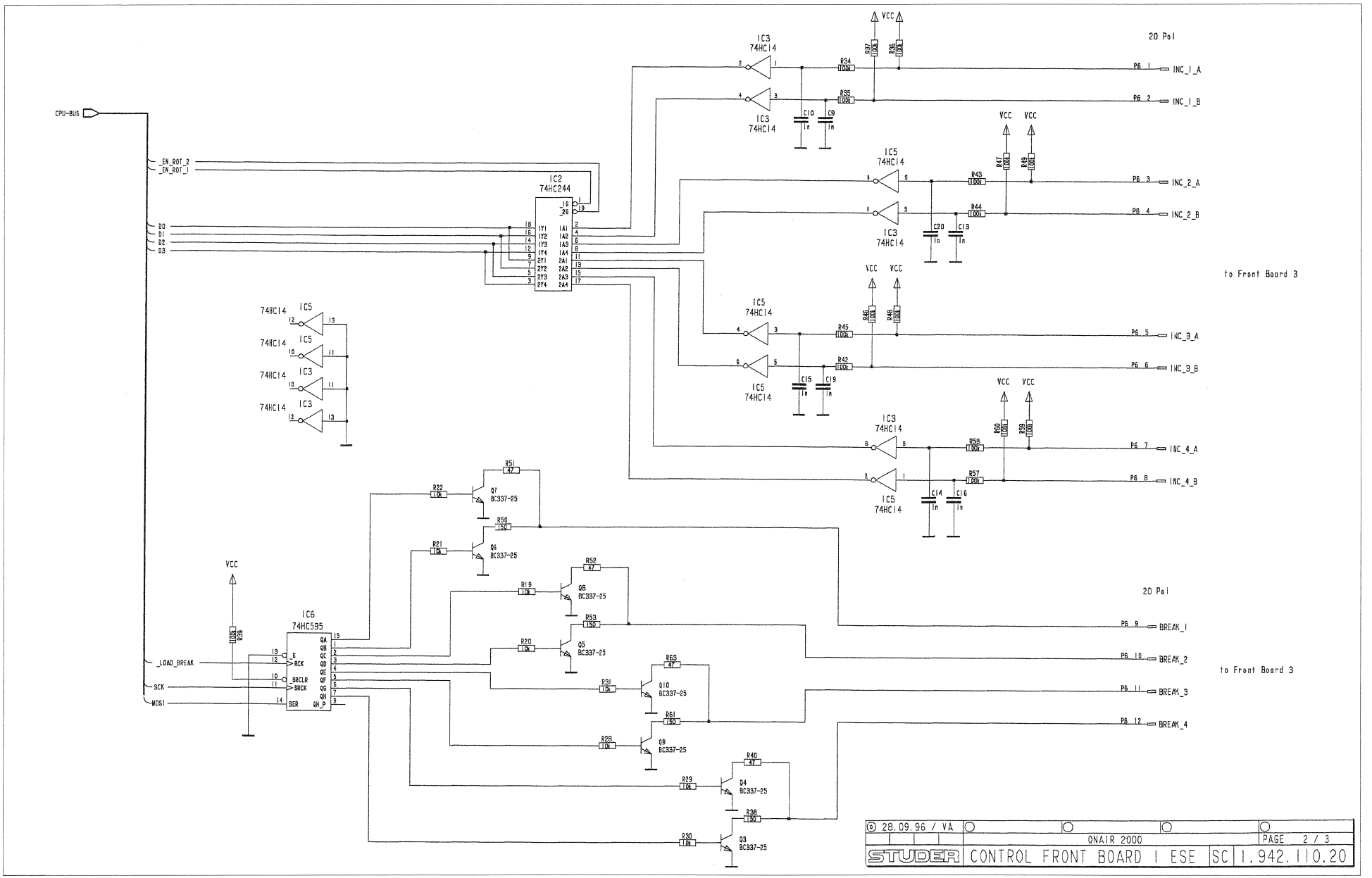
End of List

Comments:

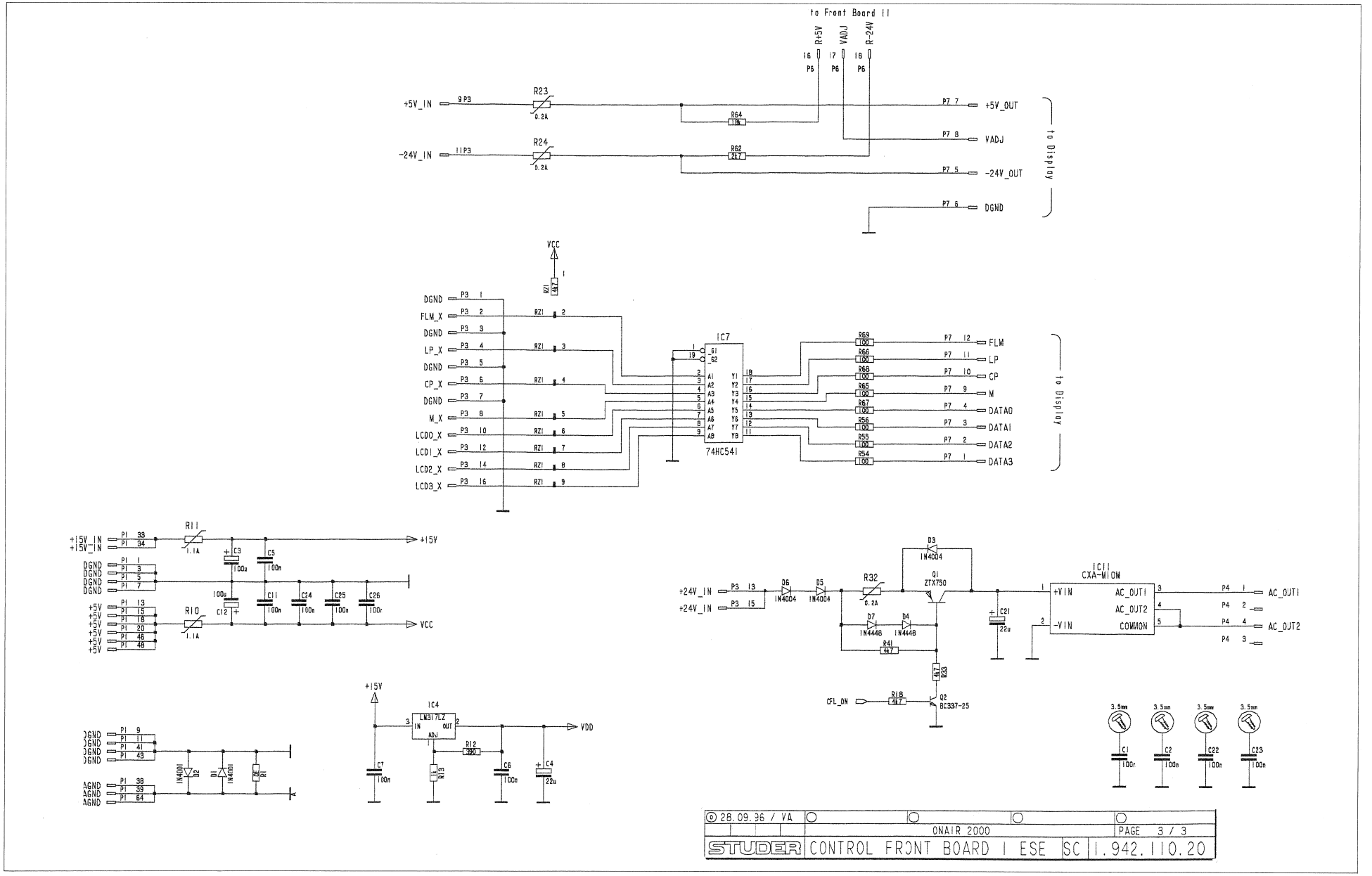
Control Front Board I 1.942.110.20



Control Front Board I 1.942.110.20



Control Front Board I 1.942.110.20



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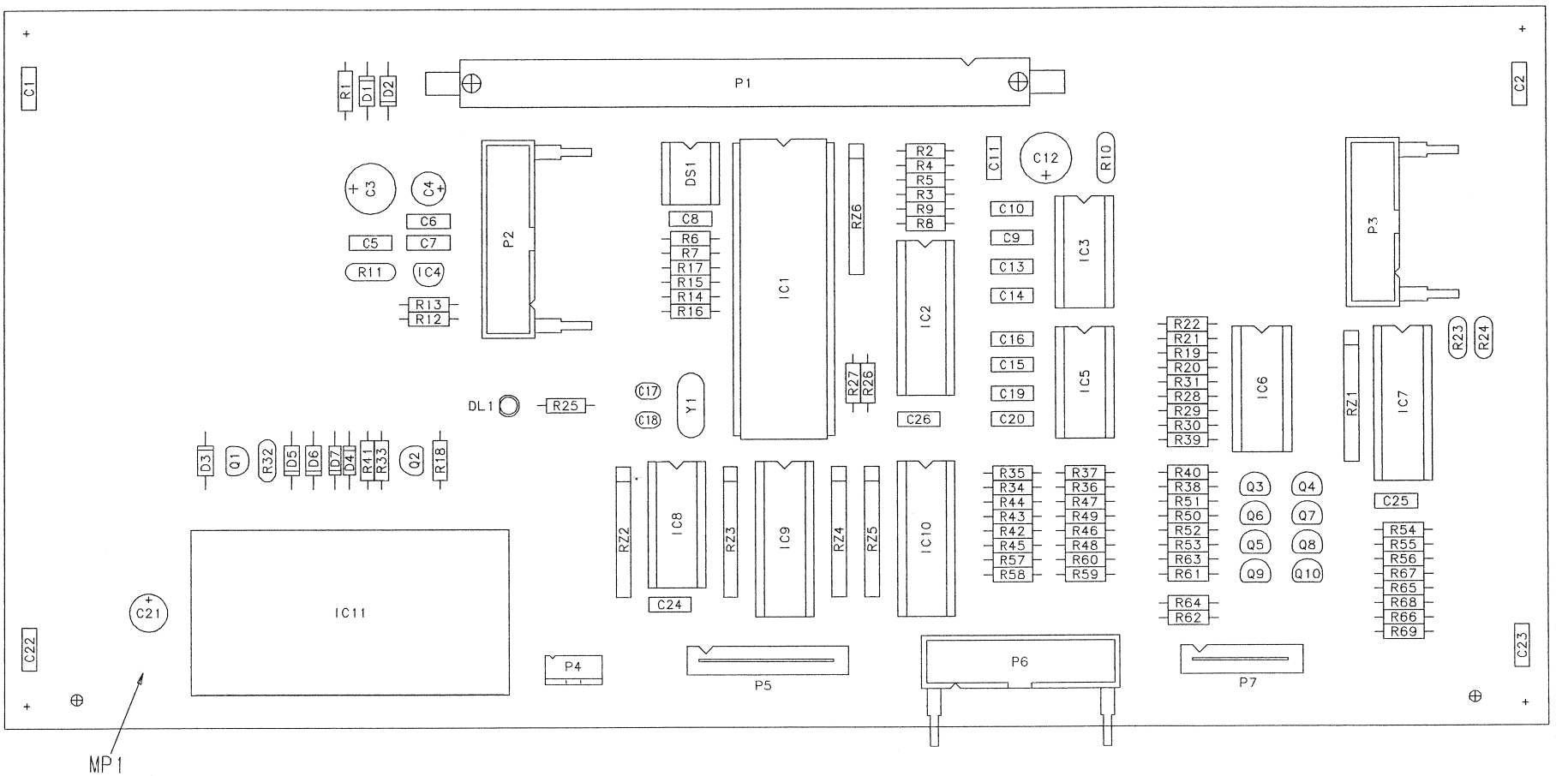
		ONAIR 2000		PAGE 3 / 3
STUDER	CONTROL FRONT BOARD I ESE	SC	1.942.110.20	

Control Front Board 1 1.942.110.20



Edition / Ausgabe	Modification / Aenderung				
27.9.96	PZ				
Date / Datum		Visa / Gez.	Checked / Gepr.	Seen / Ges.	Index

Copy to / Kopie fuer:

STUDER REGENSDORF | Description / Benennung: CONTROL FRONT BOARD 1 ESE | Number / Nummer: 1.942.110.20

CONTROL FRONT BOARD 1 (earlier Version) 1.942.110.22 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 3	59.22.5101		100u	EL 25V 20% RM5
0	C 4	59.22.5220		22u	EL 25V 20% RM5
0	C 5	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 6	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 7	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 8	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 9	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 10	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 11	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 12	59.22.5101		100u	EL 25V 20% RM5
0	C 13	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 14	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 15	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 16	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 17	59.34.2220		22p	CER 63V, 5%, N150
0	C 18	59.34.2220		22p	CER 63V, 5%, N150
0	C 19	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 20	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 21	59.22.6220		22u	EL 35V 20% RM5
0	C 22	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 23	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 24	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 25	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 26	59.06.0104		100n	PETP, 63V, 10%, RM5
0	D 1	50.04.0122		1N4001	1A, DO 41
0	D 2	50.04.0122		1N4001	1A, DO 41
0	D 3	50.04.0105		1N4004	1A, DO 41
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.0105		1N4004	1A, DO 41
0	D 6	50.04.0105		1N4004	1A, DO 41
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	DL 1	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DS 1	55.01.0164		4*a	DIL-Switch, PCB
0	IC 1	1.942.910.22			SW.110 CONTROL FRONT BOARD 1
				(50160314. DS87C520)	
0	IC 2	50.17.1244		74HC244	IC ... 74 HC 244 ., ,A
0	IC 3	50.17.1014		74HC 14	IC ... 74 HC 14 ., ,A
0	IC 4	50.10.0108		LM317L	Series regulator 100mA ...+37V
0	IC 5	50.17.1014		74HC 14	IC ... 74 HC 14 ., ,A
0	IC 6	50.17.1595		74HC595	IC ... 74 HC 595 ., ,A
0	IC 7	50.17.1541		74HC541	Octal buffer/line driver tri
0	IC 8	50.17.4051		HC4051	IC ... 74 HC 4051 ., ,A
0	IC 9	50.17.1244		74HC244	IC ... 74 HC 244 ., ,A
0	IC 10	50.17.1244		74HC244	IC ... 74 HC 244 ., ,A
0	IC 11	89.20.2201		600VAC	DC / AC Converter
0	MP 1	1.942.110.11	1 pce		CONTOL FRONT BOARD 1 PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.110.10	1 pce		NR.ETIKETTE 5X20
				(plus Hardware-Etikette 1.101.001.21)	
0	MP 4	43.01.0104	1 pce		WARNSCHILD (BLITZ)
0	P 1	54.14.2056		64p	Stecker gerade Au
0	P 2	54.14.2103		20p	1/20" Au, gerade, Verrieg
0	P 3	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 4	54.99.0337		4p	P 4p Pin-Row vertical
0	P 5	54.10.4018		18p	Flex-ZIF gerade, PCB
0	P 6	54.14.2103		20p	1/20" Au, gerade, Verrieg
0	P 7	54.10.4012		12p	Flex-ZIF gerade, PCB
0	Q 1	50.03.0631		ZTX750	ZTX 750
0	Q 2	50.03.0340		BC337-25	NPN, 800mA
0	Q 3	50.03.0340		BC337-25	NPN, 800mA
0	Q 4	50.03.0340		BC337-25	NPN, 800mA
0	Q 5	50.03.0340		BC337-25	NPN, 800mA
0	Q 6	50.03.0340		BC337-25	NPN, 800mA
0	Q 7	50.03.0340		BC337-25	NPN, 800mA
0	Q 8	50.03.0340		BC337-25	NPN, 800mA
0	Q 9	50.03.0340		BC337-25	NPN, 800mA
0	Q 10	50.03.0340		BC337-25	NPN, 800mA
0	R 1	57.11.3000		0R0	MF, 0207
0	R 2	57.11.3102		1k0	MF, 1%, 0207
0	R 3	57.11.3102		1k0	MF, 1%, 0207
0	R 4	57.11.3121		120R	MF, 1%, 0207
0	R 5	57.11.3331		330R	MF, 1%, 0207
0	R 6	57.11.3101		100R	MF, 1%, 0207
0	R 7	57.11.3103		10k	MF, 1%, 0207
0	R 8	57.11.3331		330R	MF, 1%, 0207
0	R 9	57.11.3101		100R	MF, 1%, 0207
0	R 10	57.92.7015		1.1A	PTC 50V
0	R 11	57.92.7015		1.1A	PTC 50V
0	R 12	57.11.3391		390R	MF, 1%, 0207
0	R 13	57.11.3102		1k0	MF, 1%, 0207
0	R 14	57.11.3101		100R	MF, 1%, 0207
0	R 15	57.11.3101		100R	MF, 1%, 0207
0	R 16	57.11.3101		100R	MF, 1%, 0207
0	R 17	57.11.3103		10k	MF, 1%, 0207
0	R 18	57.11.3472		4k7	MF, 1%, 0207
0	R 19	57.11.3103		10k	MF, 1%, 0207
0	R 20	57.11.3103		10k	MF, 1%, 0207
0	R 21	57.11.3103		10k	MF, 1%, 0207
0	R 22	57.11.3103		10k	MF, 1%, 0207
0	R 23	57.92.7011		0.2A	PTC 60V
0	R 24	57.92.7011		0.2A	PTC 60V
0	R 25	57.11.3182		1k8	MF, 1%, 0207
0	R 26	57.11.3101		100R	MF, 1%, 0207
0	R 27	57.11.3101		100R	MF, 1%, 0207
0	R 28	57.11.3103		10k	MF, 1%, 0207
0	R 29	57.11.3103		10k	MF, 1%, 0207
0	R 30	57.11.3103		10k	MF, 1%, 0207
0	R 31	57.11.3103		10k	MF, 1%, 0207
0	R 32	57.92.7011		0.2A	PTC 60V
0	R 33	57.11.3472		4k7	MF, 1%, 0207
0	R 34	57.11.3104		100k	MF, 1%, 0207
0	R 35	57.11.3104		100k	MF, 1%, 0207
0	R 36	57.11.3104		100k	MF, 1%, 0207
0	R 37	57.11.3104		100k	MF, 1%, 0207
0	R 38	57.11.3151		150R	MF, 1%, 0207
0	R 39	57.11.3104		100k	MF, 1%, 0207
0	R 40	57.11.3470		47R	MF, 1%, 0207
0	R 41	57.11.3472		4k7	MF, 1%, 0207
0	R 42	57.11.3104		100k	MF, 1%, 0207
0	R 43	57.11.3104		100k	MF, 1%, 0207
0	R 44	57.11.3104		100k	MF, 1%, 0207
0	R 45	57.11.3104		100k	MF, 1%, 0207
0	R 46	57.11.3104		100k	MF, 1%, 0207
0	R 47	57.11.3104		100k	MF, 1%, 0207
0	R 48	57.11.3104		100k	MF, 1%, 0207
0	R 49	57.11.3104		100k	MF, 1%, 0207
0	R 50	57.11.3151		150R	MF, 1%, 0207
0	R 51	57.11.3470		47R	MF, 1%, 0207
0	R 52	57.11.3470		47R	MF, 1%, 0207
0	R 53	57.11.3151		150R	MF, 1%, 0207
0	R 54	57.11.3101		100R	MF, 1%, 0207
0	R 55	57.11.3101		100R	MF, 1%, 0207
0	R 56	57.11.3101		100R	MF, 1%, 0207
0	R 57	57.11.3104		100k	MF, 1%, 0207
0	R 58	57.11.3104		100k	MF, 1%, 0207
0	R 59	57.11.3104		100k	MF, 1%, 0207
0	R 60	57.11.3104		100k	MF, 1%, 0207
0	R 61	57.11.3151		150R	MF, 1%, 0207
0	R 62	57.11.3272		2k7	MF, 1%, 0207
0	R 63	57.11.3470		47R	MF, 1%, 0207
0	R 64	57.11.3183		18k	MF, 1%, 0207
0	R 65	57.11.3101		100R	MF, 1%, 0207
0	R 66	57.11.3101		100R	MF, 1%, 0207
0	R 67	57.11.3101		100R	MF, 1%, 0207
0	R 68	57.11.3101		100R	MF, 1%, 0207
0	R 69	57.11.3101		100R	MF, 1%, 0207
0	RZ 1	57.88.4472		4k7	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 3	57.88.4104		100k	8*R Resistor-Netw 2% SIP9
0	RZ 4	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 5	57.88.4104		100k	8*R Resistor-Netw 2% SIP9
0	RZ 6	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	XIC 1	53.03.0172		40p	DIL 0.6", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

End of List

Comments:

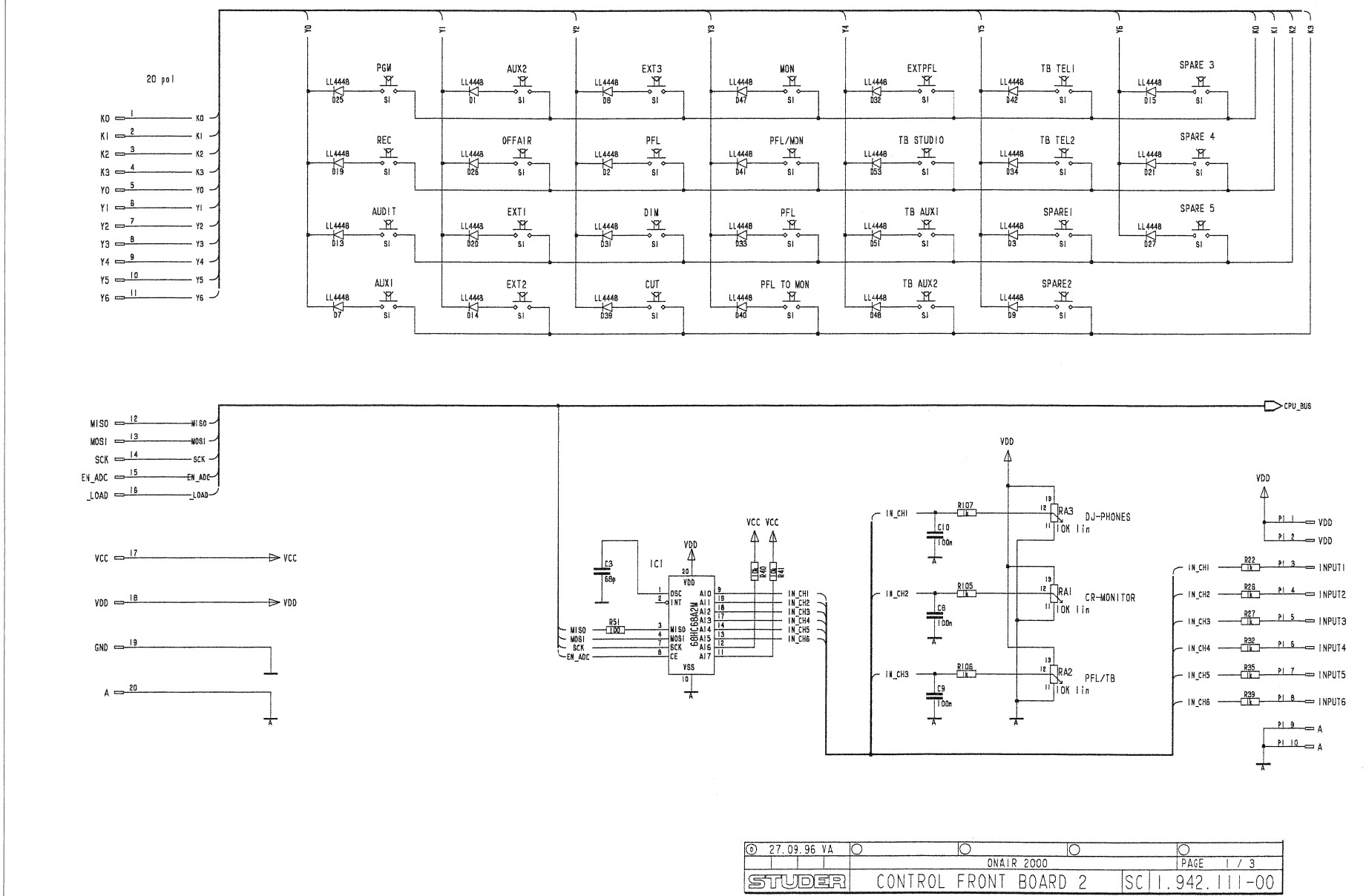
(22) IC1 Software change

CONTROL FRONT BOARD 1 (for M2 Version) 1.942.610.20 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 3	59.22.5101		100u	EL 25V 20% RM5
0	C 4	59.22.5220		22u	EL 25V 20% RM5
0	C 5	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 6	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 7	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 8	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 9	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 10	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 11	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 12	59.22.5101		100u	EL 25V 20% RM5
0	C 13	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 14	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 15	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 16	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 17	59.34.2220		22p	CER 63V, 5%, N150
0	C 18	59.34.2220		22p	CER 63V, 5%, N150
0	C 19	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 20	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 21	59.22.6220		22u	EL 35V 20% RM5
0	C 22	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 23	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 24	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 25	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 26	59.06.0104		100n	PETP, 63V, 10%, RM5
0	D 1	50.04.0122		1N4001	1A, DO 41
0	D 2	50.04.0122		1N4001	1A, DO 41
0	D 3	50.04.0105		1N4004	1A, DO 41
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.0105		1N4004	1A, DO 41
0	D 6	50.04.0105		1N4004	1A, DO 41
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	DL 1	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DS 1	55.01.0164		4*a	DIL-Switch, PCB
0	IC 1	1.942.966.20			SW.610,V4.0 CONTR.FRONT BOARD
0	IC 2	50.17.1244		74HC244	IC ... 74 HC 244 ., ,A
0	IC 3	50.17.1014		74HC 14	IC ... 74 HC 14 ., ,A
0	IC 4	50.10.0108		LM317L	Series regulator 100mA ...+37V
0	IC 5	50.17.1014		74HC 14	IC ... 74 HC 14 ., ,A
0	IC 6	50.17.1595		74HC595	IC ... 74 HC 595 ., ,A
0	IC 7	50.17.1541		74HC541	Octal buffer/line driver tri
0	IC 8	50.17.4051		HC4051	IC ... 74 HC 4051 ., ,A
0	IC 9	50.17.1244		74HC244	IC ... 74 HC 244 ., ,A
0	IC 10	50.17.1244		74HC244	IC ... 74 HC 244 ., ,A
0	IC 11	89.20.2201		600VAC	DC / AC Converter
0	MP 1	1.942.110.11	1 pce		CONTOL FRONT BOARD 1 PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.110.10	1 pce		NR.ETIKETTE 5X20
				(plus Hardware-Etikette 1.101.001.21)	
0	MP 4	43.01.0104	1 pce		WARNSCHILD (BLITZ)
0	P 1	54.14.2056		64p	Stecker gerade Au
0	P 2	54.14.2103		20p	1/20" Au, gerade, Verrieg
0	P 3	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 4	54.99.0337		4p	P 4p Pin-Row vertical
0	P 5	54.10.4018		18p	Flex-ZIF gerade, PCB
0	P 6	54.14.2103		20p	1/20" Au, gerade, Verrieg
0	P 7	54.10.4012		12p	Flex-ZIF gerade, PCB
0	Q 1	50.03.0631		ZTX750	ZTX 750
0	Q 2	50.03.0340		BC337-25	NPN, 800mA
0	Q 3	50.03.0340		BC337-25	NPN, 800mA
0	Q 4	50.03.0340		BC337-25	NPN, 800mA
0	Q 5	50.03.0340		BC337-25	NPN, 800mA
0	Q 6	50.03.0340		BC337-25	NPN, 800mA
0	Q 7	50.03.0340		BC337-25	NPN, 800mA
0	Q 8	50.03.0340		BC337-25	NPN, 800mA
0	Q 9	50.03.0340		BC337-25	NPN, 800mA
0	Q 10	50.03.0340		BC337-25	NPN, 800mA
0	R 1	57.11.3000		0R0	MF, 0207
0	R 2	57.11.3102		1k0	MF, 1%, 0207
0	R 3	57.11.3102		1k0	MF, 1%, 0207
0	R 4	57.11.3121		120R	MF, 1%, 0207
0	R 5	57.11.3331		330R	MF, 1%, 0207
0	R 6	57.11.3101		100R	MF, 1%, 0207
0	R 7	57.11.3103		10k	MF, 1%, 0207
0	R 8	57.11.3331		330R	MF, 1%, 0207
0	R 9	57.11.3101		100R	MF, 1%, 0207
0	R 10	57.92.7015		1.1A	PTC 50V
0	R 11	57.92.7015		1.1A	PTC 50V
0	R 12	57.11.3391		390R	MF, 1%, 0207
0	R 13	57.11.3102		1k0	MF, 1%, 0207
0	R 14	57.11.3101		100R	MF, 1%, 0207
0	R 15	57.11.3101		100R	MF, 1%, 0207
0	R 16	57.11.3101		100R	MF, 1%, 0207
0	R 17	57.11.3103		10k	MF, 1%, 0207
0	R 18	57.11.3472		4k7	MF, 1%, 0207
0	R 19	57.11.3103		10k	MF, 1%, 0207
0	R 20	57.11.3103		10k	MF, 1%, 0207
0	R 21	57.11.3103		10k	MF, 1%, 0207
0	R 22	57.11.3103		10k	MF, 1%, 0207
0	R 23	57.92.7011		0.2A	PTC 60V
0	R 24	57.92.7011		0.2A	PTC 60V
0	R 25	57.11.3182		1k8	MF, 1%, 0207
0	R 26	57.11.3101		100R	MF, 1%, 0207
0	R 27	57.11.3101		100R	MF, 1%, 0207
0	R 28	57.11.3103		10k	MF, 1%, 0207
0	R 29	57.11.3103		10k	MF, 1%, 0207
0	R 30	57.11.3103		10k	MF, 1%, 0207
0	R 31	57.11.3103		10k	MF, 1%, 0207
0	R 32	57.92.7011		0.2A	PTC 60V
0	R 33	57.11.3472		4k7	MF, 1%, 0207
0	R 34	57.11.3104		100k	MF, 1%, 0207
0	R 35	57.11.3104		100k	MF, 1%, 0207
0	R 36	57.11.3104		100k	MF, 1%, 0207
0	R 37	57.11.3104		100k	MF, 1%, 0207
0	R 38	57.11.3151		150R	MF, 1%, 0207
0	R 39	57.11.3104		100k	MF, 1%, 0207
0	R 40	57.11.3470		47R	MF, 1%, 0207
0	R 41	57.11.3472		4k7	MF, 1%, 0207
0	R 42	57.11.3104		100k	MF, 1%, 0207
0	R 43	57.11.3104		100k	MF, 1%, 0207
0	R 44	57.11.3104		100k	MF, 1%, 0207
0	R 45	57.11.3104		100k	MF, 1%, 0207
0	R 46	57.11.3104		100k	MF, 1%, 0207
0	R 47	57.11.3104		100k	MF, 1%, 0207
0	R 48	57.11.3104		100k	MF, 1%, 0207
0	R 49	57.11.3104		100k	MF, 1%, 0207
0	R 50	57.11.3151		150R	MF, 1%, 0207
0	R 51	57.11.3470		47R	MF, 1%, 0207
0	R 52	57.11.3470		47R	MF, 1%, 0207
0	R 53	57.11.3151		150R	MF, 1%, 0207
0	R 54	57.11.3101		100R	MF, 1%, 0207
0	R 55	57.11.3101		100R	MF, 1%, 0207
0	R 56	57.11.3101		100R	MF, 1%, 0207
0	R 57	57.11.3104		100k	MF, 1%, 0207
0	R 58	57.11.3104		100k	MF, 1%, 0207
0	R 59	57.11.3104		100k	MF, 1%, 0207
0	R 60	57.11.3104		100k	MF, 1%, 0207
0	R 61	57.11.3151		150R	MF, 1%, 0207
0	R 62	57.11.3272		2k7	MF, 1%, 0207
0	R 63	57.11.3470		47R	MF, 1%, 0207
0	R 64	57.11.3183		18k	MF, 1%, 0207
0	R 65	57.11.3101		100R	MF, 1%, 0207
0	R 66	57.11.3101		100R	MF, 1%, 0207
0	R 67	57.11.3101		100R	MF, 1%, 0207
0	R 68	57.11.3101		100R	MF, 1%, 0207
0	R 69	57.11.3101		100R	MF, 1%, 0207
0	RZ 1	57.88.4472		4k7	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 3	57.88.4104		100k	8*R Resistor-Netw 2% SIP9
0	RZ 4	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 5	57.88.4104		100k	8*R Resistor-Netw 2% SIP9
0	RZ 6	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	XIC 1	53.03.0172		40p	DIL 0.6", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

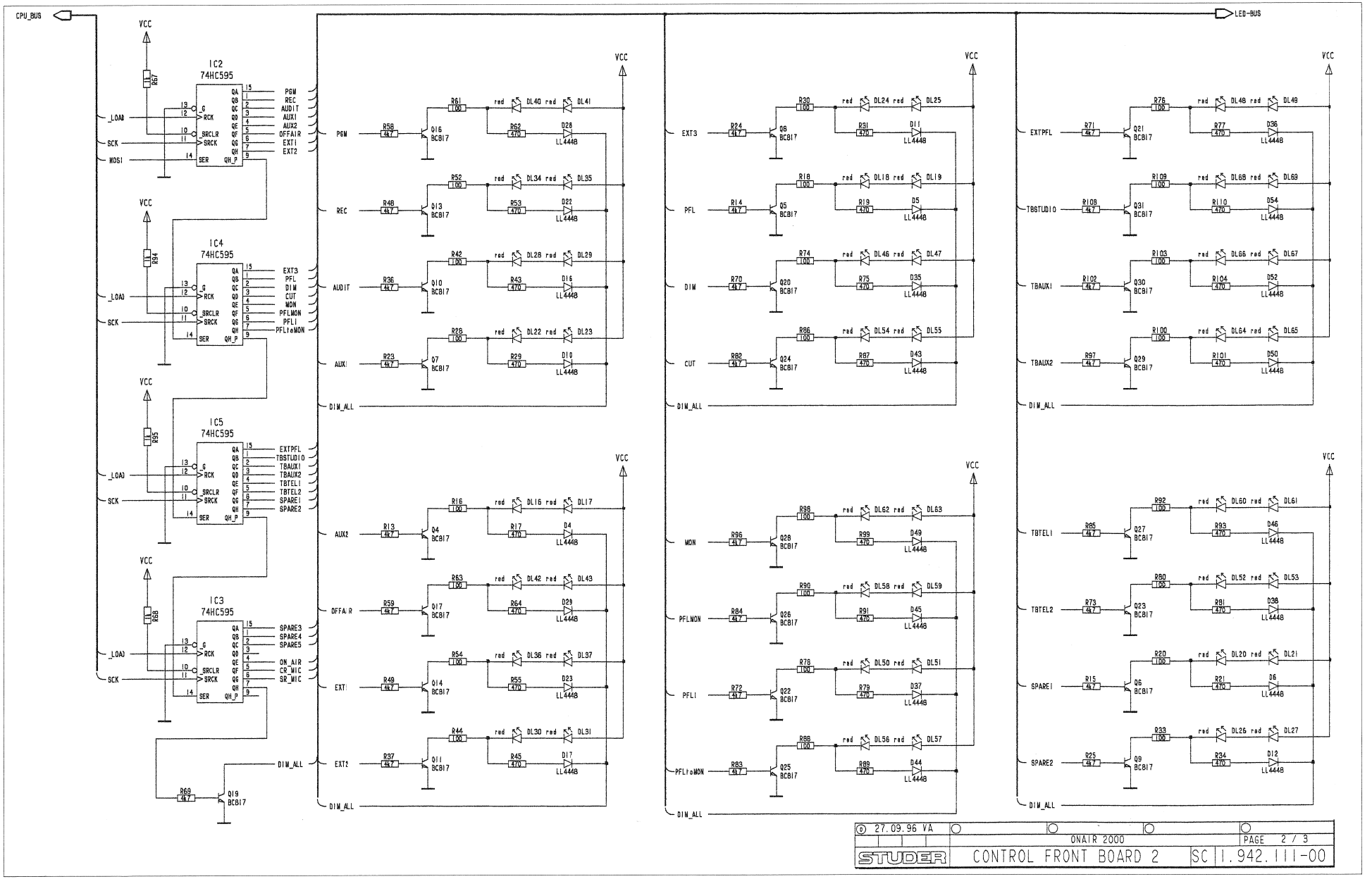
End of List

Control Front Board II 1.942.111.00

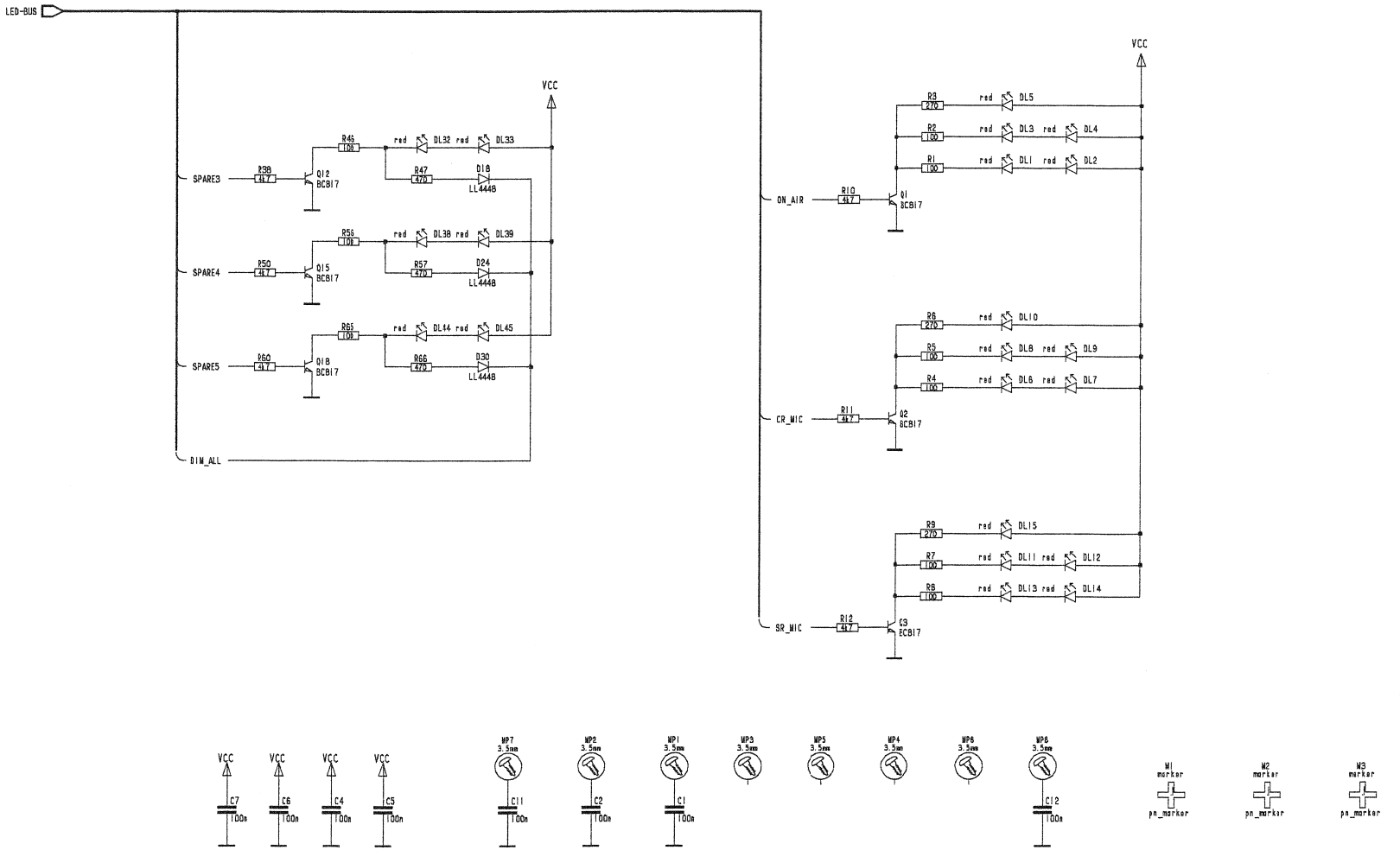


27.09.96 VA			
	ONAIR 2000		PAGE 1 / 3
STUDER	CONTROL FRONT BOARD 2	SC	1.942.111-00

Control Front Board II 1.942.111.00



Control Front Board II 1.942.111.00



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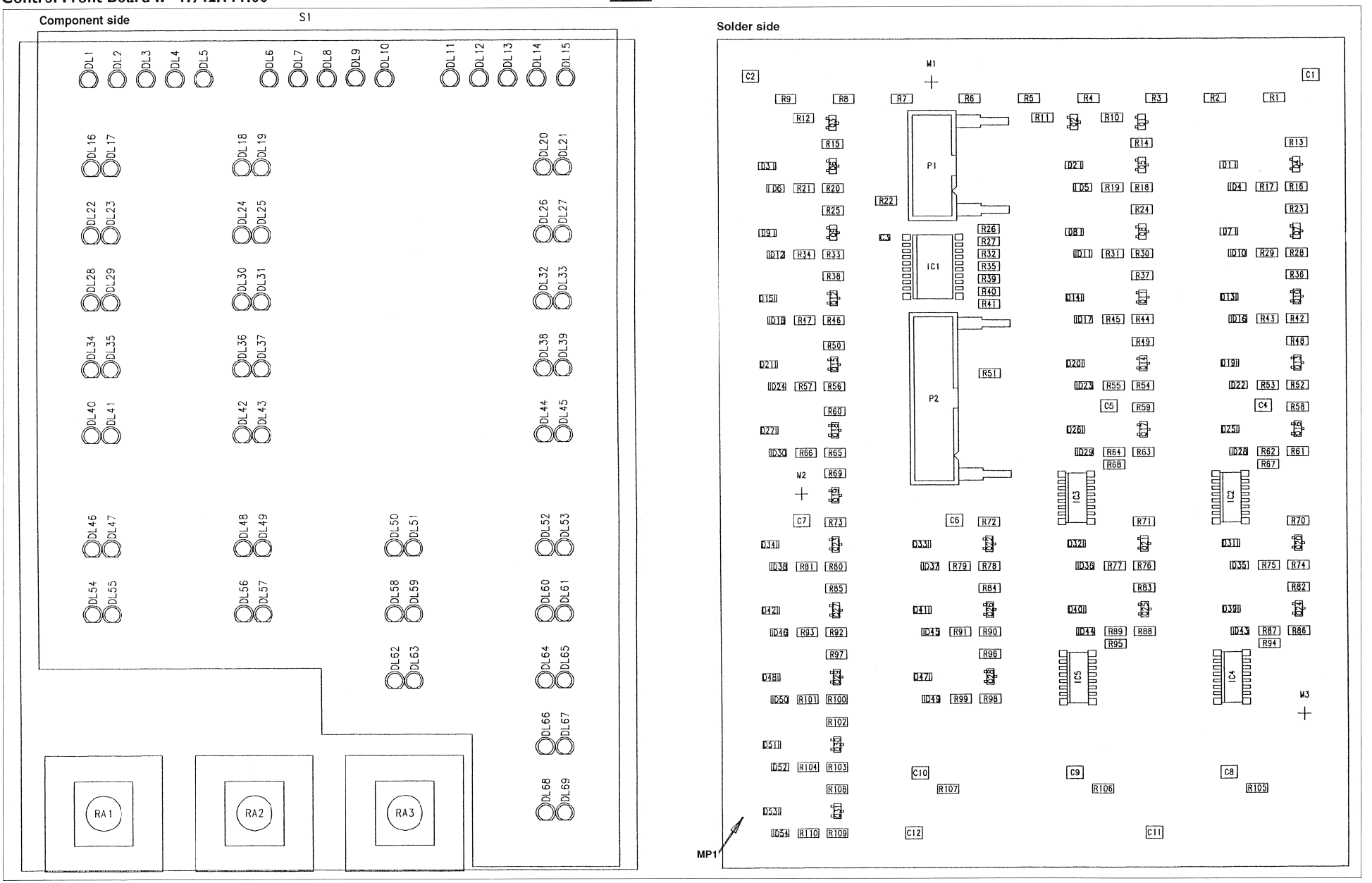
		ONAIR 2000		PAGE 3 / 3
STUDER	CONTROL FRONT BOARD 2		SC	1.942.111-00

Control Front Board II 1.942.111.00



Control Front Board II 1.942.111.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 2	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 3	59.60.0680		68p	CER 63V, 5%, C0G, 0805
0	C 4	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 5	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 6	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 7	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 8	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 9	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 10	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 11	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 12	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	D 1	50.60.8001		4448	D LL 4448 SOD 80
0	D 2	50.60.8001		4448	D LL 4448 SOD 80
0	D 3	50.60.8001		4448	D LL 4448 SOD 80
0	D 4	50.60.8001		4448	D LL 4448 SOD 80
0	D 5	50.60.8001		4448	D LL 4448 SOD 80
0	D 6	50.60.8001		4448	D LL 4448 SOD 80
0	D 7	50.60.8001		4448	D LL 4448 SOD 80
0	D 8	50.60.8001		4448	D LL 4448 SOD 80
0	D 9	50.60.8001		4448	D LL 4448 SOD 80
0	D 10	50.60.8001		4448	D LL 4448 SOD 80
0	D 11	50.60.8001		4448	D LL 4448 SOD 80
0	D 12	50.60.8001		4448	D LL 4448 SOD 80
0	D 13	50.60.8001		4448	D LL 4448 SOD 80
0	D 14	50.60.8001		4448	D LL 4448 SOD 80
0	D 15	50.60.8001		4448	D LL 4448 SOD 80
0	D 16	50.60.8001		4448	D LL 4448 SOD 80
0	D 17	50.60.8001		4448	D LL 4448 SOD 80
0	D 18	50.60.8001		4448	D LL 4448 SOD 80
0	D 19	50.60.8001		4448	D LL 4448 SOD 80
0	D 20	50.60.8001		4448	D LL 4448 SOD 80
0	D 21	50.60.8001		4448	D LL 4448 SOD 80
0	D 22	50.60.8001		4448	D LL 4448 SOD 80
0	D 23	50.60.8001		4448	D LL 4448 SOD 80
0	D 24	50.60.8001		4448	D LL 4448 SOD 80
0	D 25	50.60.8001		4448	D LL 4448 SOD 80
0	D 26	50.60.8001		4448	D LL 4448 SOD 80
0	D 27	50.60.8001		4448	D LL 4448 SOD 80
0	D 28	50.60.8001		4448	D LL 4448 SOD 80
0	D 29	50.60.8001		4448	D LL 4448 SOD 80
0	D 30	50.60.8001		4448	D LL 4448 SOD 80
0	D 31	50.60.8001		4448	D LL 4448 SOD 80
0	D 32	50.60.8001		4448	D LL 4448 SOD 80
0	D 33	50.60.8001		4448	D LL 4448 SOD 80
0	D 34	50.60.8001		4448	D LL 4448 SOD 80
0	D 35	50.60.8001		4448	D LL 4448 SOD 80
0	D 36	50.60.8001		4448	D LL 4448 SOD 80
0	D 37	50.60.8001		4448	D LL 4448 SOD 80
0	D 38	50.60.8001		4448	D LL 4448 SOD 80
0	D 39	50.60.8001		4448	D LL 4448 SOD 80
0	D 40	50.60.8001		4448	D LL 4448 SOD 80
0	D 41	50.60.8001		4448	D LL 4448 SOD 80
0	D 42	50.60.8001		4448	D LL 4448 SOD 80
0	D 43	50.60.8001		4448	D LL 4448 SOD 80
0	D 44	50.60.8001		4448	D LL 4448 SOD 80
0	D 45	50.60.8001		4448	D LL 4448 SOD 80
0	D 46	50.60.8001		4448	D LL 4448 SOD 80
0	D 47	50.60.8001		4448	D LL 4448 SOD 80
0	D 48	50.60.8001		4448	D LL 4448 SOD 80
0	D 49	50.60.8001		4448	D LL 4448 SOD 80
0	D 50	50.60.8001		4448	D LL 4448 SOD 80
0	D 51	50.60.8001		4448	D LL 4448 SOD 80
0	D 52	50.60.8001		4448	D LL 4448 SOD 80
0	D 53	50.60.8001		4448	D LL 4448 SOD 80
0	D 54	50.60.8001		4448	D LL 4448 SOD 80
0	DL 1	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 2	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 3	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 4	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 5	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 6	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 7	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 8	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 9	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 10	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 11	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 12	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 13	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 14	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 15	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 16	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 17	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 18	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 19	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 20	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 21	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 22	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 23	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 24	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 25	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 26	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 27	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 28	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 29	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 30	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 31	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 32	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 33	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 34	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 35	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 36	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 37	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 38	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 39	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 40	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 41	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 42	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 43	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 44	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 45	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 46	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 47	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 48	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 49	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 50	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 51	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 52	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 53	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 54	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 55	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 56	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 57	50.04.2152		HLMP1440	LED 3mm, gelb klar
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0	DL 61	50.04.2152		HLMP1440	LED 3mm, gelb klar
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0	DL 63	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 64	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 65	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 66	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 67	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 68	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 69	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	IC 1	50.61.8101			IC CDP 68 HC 68 A2M ,A
0	IC 2	50.62.1595		74HC595	IC .. 74 HC 595 . ,A
0	IC 3	50.62.1595		74HC595	IC .. 74 HC 595 . ,A
0	IC 4	50.62.1595		74HC595	IC .. 74 HC 595 . ,A
0	IC 5	50.62.1595		74HC595	IC .. 74 HC 595 . ,A
0	MP 1	1.942.111.11	1 pce		CONTOL FRONT BOARD 2 PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.111.10	1 pce		NR.ETIKETTE 5X20
0	P 1	54.14.2101		10p	P STECKER 10 P,AU,VR,GERADE
0	P 2	54.14.2103		20p	P STECKER 20 P,AU,VR,GERADE
0	Q 1	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 2	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 3	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 4	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 5	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 6	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 7	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 8	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 9	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 10	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 11	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 12	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 13	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 14	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 15	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 16	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 17	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 18	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 19	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 20	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 21	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 22	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 23	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 24	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 25	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23

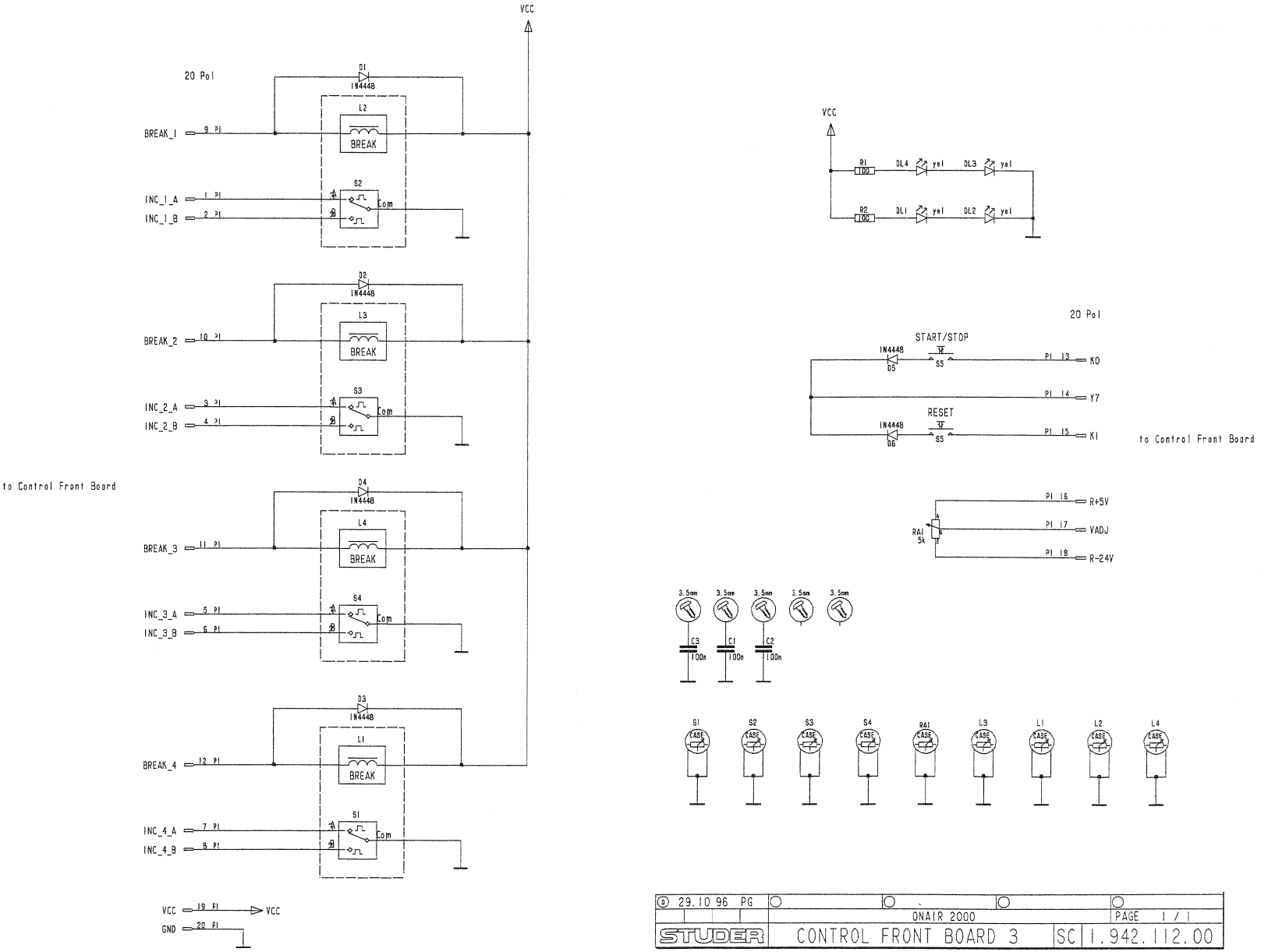
Control Front Board II 1.942.111.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	Q 26	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 27	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 28	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 29	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 30	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 31	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	R 1	57.60.1101		100R	MF, 1%, 0204, E24
0	R 2	57.60.1101		100R	MF, 1%, 0204, E24
0	R 3	57.60.1271		270R	MF, 1%, 0204, E24
0	R 4	57.60.1101		100R	MF, 1%, 0204, E24
0	R 5	57.60.1101		100R	MF, 1%, 0204, E24
0	R 6	57.60.1271		270R	MF, 1%, 0204, E24
0	R 7	57.60.1101		100R	MF, 1%, 0204, E24
0	R 8	57.60.1101		100R	MF, 1%, 0204, E24
0	R 9	57.60.1271		270R	MF, 1%, 0204, E24
0	R 10	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 11	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 12	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 13	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 14	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 15	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 16	57.60.1101		100R	MF, 1%, 0204, E24
0	R 17	57.60.1471		470R	MF, 1%, 0204, E24
0	R 18	57.60.1101		100R	MF, 1%, 0204, E24
0	R 19	57.60.1471		470R	MF, 1%, 0204, E24
0	R 20	57.60.1101		100R	MF, 1%, 0204, E24
0	R 21	57.60.1471		470R	MF, 1%, 0204, E24
0	R 22	57.60.1102		1K	MF, 1%, 0204, E24
0	R 23	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 24	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 25	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 26	57.60.1102		1K	MF, 1%, 0204, E24
0	R 27	57.60.1102		1K	MF, 1%, 0204, E24
0	R 28	57.60.1101		100R	MF, 1%, 0204, E24
0	R 29	57.60.1471		470R	MF, 1%, 0204, E24
0	R 30	57.60.1101		100R	MF, 1%, 0204, E24
0	R 31	57.60.1471		470R	MF, 1%, 0204, E24
0	R 32	57.60.1102		1K	MF, 1%, 0204, E24
0	R 33	57.60.1101		100R	MF, 1%, 0204, E24
0	R 34	57.60.1471		470R	MF, 1%, 0204, E24
0	R 35	57.60.1102		1K	MF, 1%, 0204, E24
0	R 36	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 37	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 38	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 39	57.60.1102		1K	MF, 1%, 0204, E24
0	R 40	57.60.1103		10K	MF, 1%, 0204, E24
0	R 41	57.60.1103		10K	MF, 1%, 0204, E24
0	R 42	57.60.1101		100R	MF, 1%, 0204, E24
0	R 43	57.60.1471		470R	MF, 1%, 0204, E24
0	R 44	57.60.1101		100R	MF, 1%, 0204, E24
0	R 45	57.60.1471		470R	MF, 1%, 0204, E24
0	R 46	57.60.1101		100R	MF, 1%, 0204, E24
0	R 47	57.60.1471		470R	MF, 1%, 0204, E24
0	R 48	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 49	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 50	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 51	57.60.1101		100R	MF, 1%, 0204, E24
0	R 52	57.60.1101		100R	MF, 1%, 0204, E24
0	R 53	57.60.1471		470R	MF, 1%, 0204, E24
0	R 54	57.60.1101		100R	MF, 1%, 0204, E24
0	R 55	57.60.1471		470R	MF, 1%, 0204, E24
0	R 56	57.60.1101		100R	MF, 1%, 0204, E24
0	R 57	57.60.1471		470R	MF, 1%, 0204, E24
0	R 58	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 59	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 60	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 61	57.60.1101		100R	MF, 1%, 0204, E24
0	R 62	57.60.1471		470R	MF, 1%, 0204, E24
0	R 63	57.60.1101		100R	MF, 1%, 0204, E24
0	R 64	57.60.1471		470R	MF, 1%, 0204, E24
0	R 65	57.60.1101		100R	MF, 1%, 0204, E24
0	R 66	57.60.1471		470R	MF, 1%, 0204, E24
0	R 67	57.60.1102		1K	MF, 1%, 0204, E24
0	R 68	57.60.1102		1K	MF, 1%, 0204, E24
0	R 69	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 70	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 71	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 72	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 73	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 74	57.60.1101		100R	MF, 1%, 0204, E24
0	R 75	57.60.1471		470R	MF, 1%, 0204, E24
0	R 76	57.60.1101		100R	MF, 1%, 0204, E24
0	R 77	57.60.1471		470R	MF, 1%, 0204, E24
0	R 78	57.60.1101		100R	MF, 1%, 0204, E24
0	R 79	57.60.1471		470R	MF, 1%, 0204, E24
0	R 80	57.60.1101		100R	MF, 1%, 0204, E24
0	R 81	57.60.1471		470R	MF, 1%, 0204, E24
0	R 82	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 83	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 84	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 85	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 86	57.60.1101		100R	MF, 1%, 0204, E24
0	R 87	57.60.1471		470R	MF, 1%, 0204, E24
0	R 88	57.60.1101		100R	MF, 1%, 0204, E24
0	R 89	57.60.1471		470R	MF, 1%, 0204, E24
0	R 90	57.60.1101		100R	MF, 1%, 0204, E24
0	R 91	57.60.1471		470R	MF, 1%, 0204, E24
0	R 92	57.60.1101		100R	MF, 1%, 0204, E24
0	R 93	57.60.1471		470R	MF, 1%, 0204, E24
0	R 94	57.60.1102		1K	MF, 1%, 0204, E24
0	R 95	57.60.1102		1K	MF, 1%, 0204, E24
0	R 96	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 97	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 98	57.60.1101		100R	MF, 1%, 0204, E24
0	R 99	57.60.1471		470R	MF, 1%, 0204, E24
0	R 100	57.60.1101		100R	MF, 1%, 0204, E24
0	R 101	57.60.1471		470R	MF, 1%, 0204, E24
0	R 102	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 103	57.60.1101		100R	MF, 1%, 0204, E24
0	R 104	57.60.1471		470R	MF, 1%, 0204, E24
0	R 105	57.60.1102		1K	MF, 1%, 0204, E24
0	R 106	57.60.1102		1K	MF, 1%, 0204, E24
0	R 107	57.60.1102		1K	MF, 1%, 0204, E24
0	R 108	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 109	57.60.1101		100R	MF, 1%, 0204, E24
0	R 110	57.60.1471		470R	MF, 1%, 0204, E24
0	RA 1	58.20.7102		10k	1*R, lin
0	RA 2	58.20.7102		10k	1*R, lin
0	RA 3	58.20.7102		10k	1*R, lin
0	S 1	1.942.010.07			KONTAKTMATTE,27 TASTEN

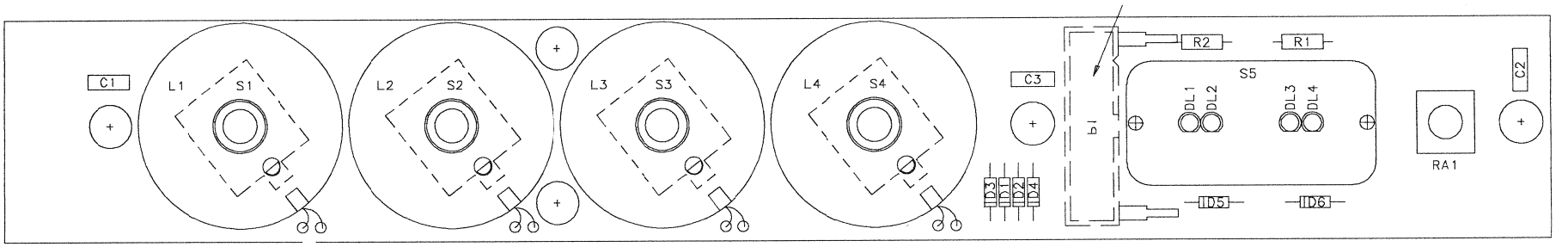
End of List

Comments

Control Front Board III 1.942.112.00



Control Front Board 3 1.942.112.00



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 3	59.06.0104		100n	PETP, 63V, 10%, RM5
0	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 2	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 3	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 6	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	DL 1	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 2	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 3	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 4	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	L 1	1.942.015.00			INCREMENTAL ENCODER BREMSE
0	L 2	1.942.015.00			INCREMENTAL ENCODER BREMSE
0	L 3	1.942.015.00			INCREMENTAL ENCODER BREMSE
0	L 4	1.942.015.00			INCREMENTAL ENCODER BREMSE
0	MP 1	1.942.112.11	1 pce		CONTOL FRONT BOARD 3 PCB
0	MP 3	1.942.112.10	1 pce		NR ETIKETTE 5X20
0	P 1	54.14.2103		20p	P STECKER 20 P,AU,VR,GERADE
0	R 1	57.11.3101		100R	MF, 1%, 0207
0	R 2	57.11.3101		100R	MF, 1%, 0207
0	RA 1	58.20.7101		5k	1*R, lin
0	S 1	55.12.1302			DREHGEBER 16 * 21, N=24,
0	S 2	55.12.1302			DREHGEBER 16 * 21, N=24,
0	S 3	55.12.1302			DREHGEBER 16 * 21, N=24,
0	S 4	55.12.1302			DREHGEBER 16 * 21, N=24,
0	S 5	1.942.010.08			KONTAKTMATTE,2 TASTEN

End of List

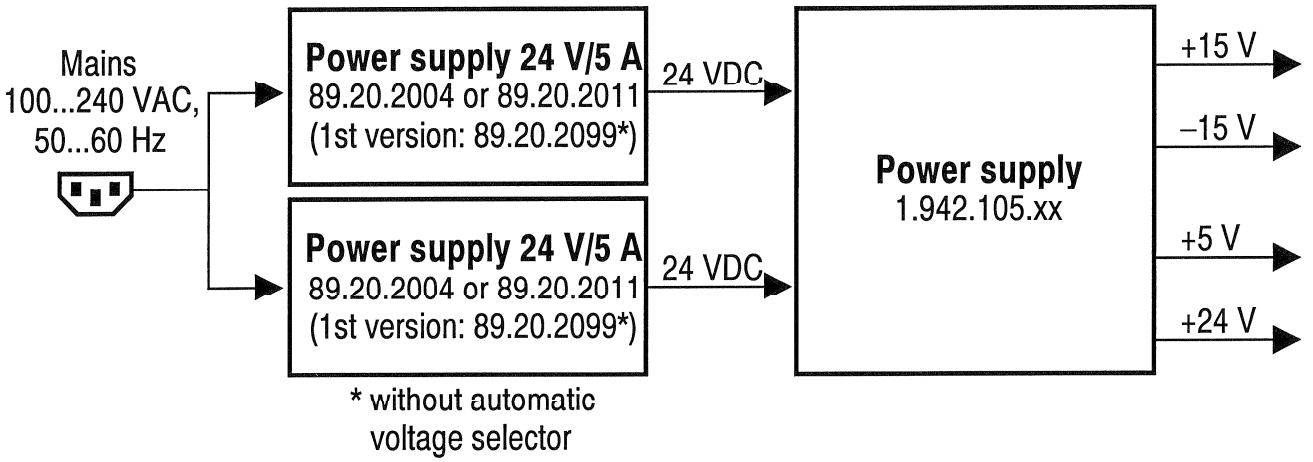
Comments

Modification / Aenderung					
Edition / Ausgabe	Date / Datum	Visa / Gez.	Checked / Gepr.	Seen / Ges.	Index
	29.10.96	PZ	VA	GCL	6

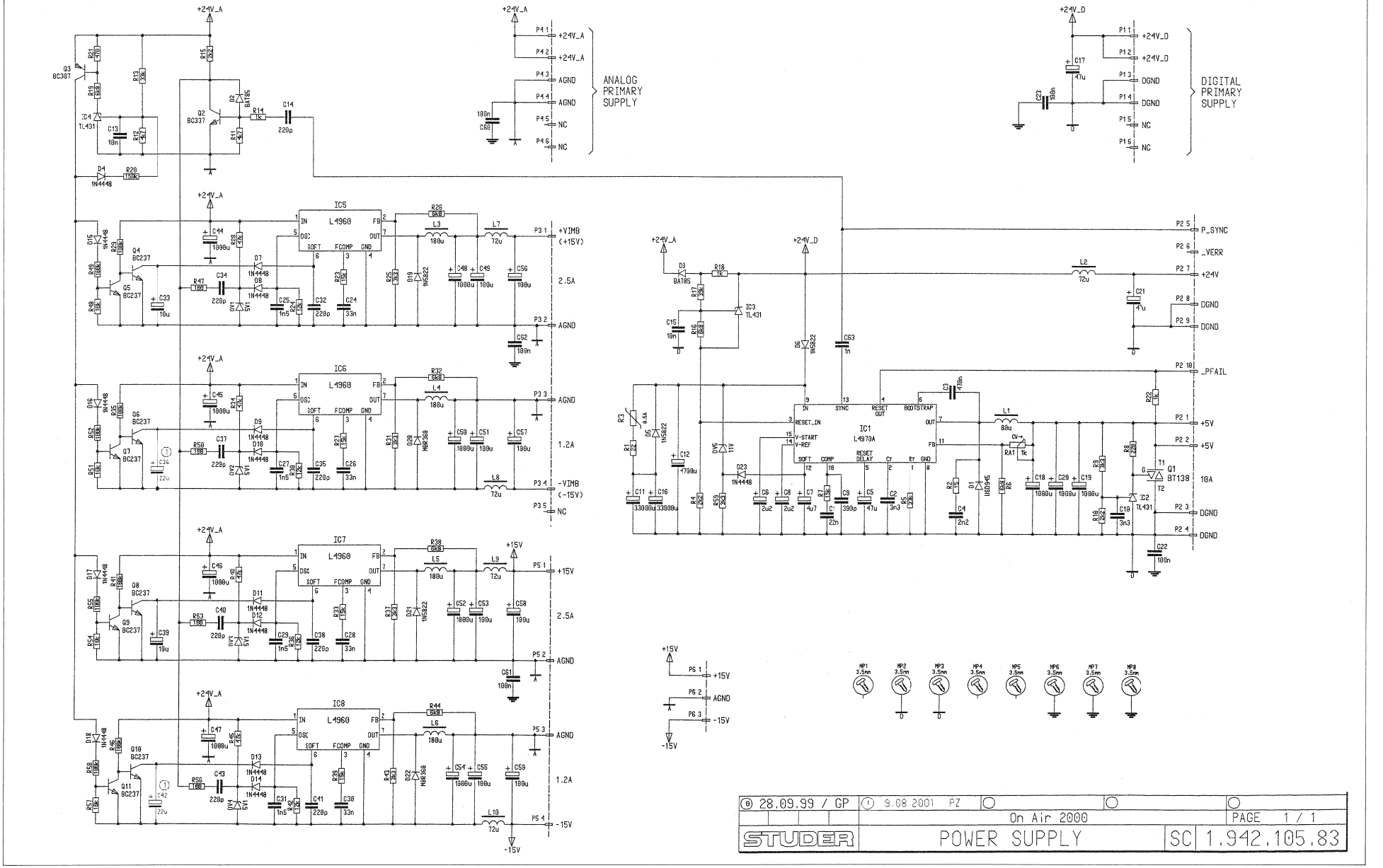
Copy to: / Kopie fuer:

STUDER REGENSDORF | Description / Benennung: CONTROL FRONT BOARD 3 | Number / Nummer: 1.942.112.00

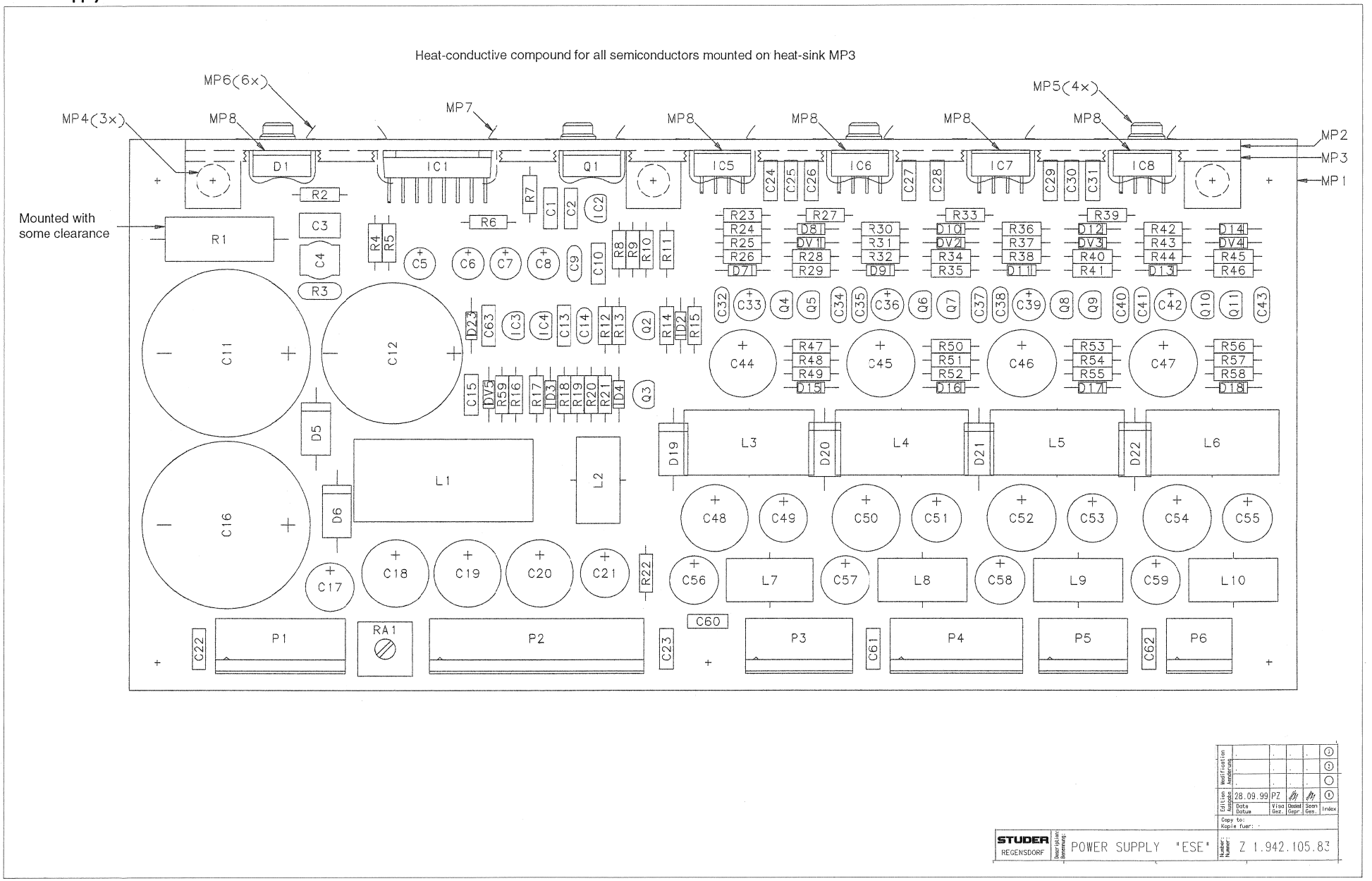
Power Supply Block Diagram



Power Supply 1.942.105.83



Power Supply 1.942.105.83



Power Supply 1.942.105.83

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.5223		22n	PETP, 63V, 5%, RM5
0	C 2	59.06.5332		3n3	PETP, 63V, 5%, RM5
0	C 3	59.06.0474		470n	PETP, 63V, 10%, RM5
0	C 4	59.05.2222		2n2	PP, 2.5%, 160V
0	C 5	59.22.3470		47u	EL 10V, 20%, RM5
0	C 6	59.22.8229		2u2	EL 50V, 20%, RM5
0	C 7	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 8	59.22.8229		2u2	EL 50V, 20%, RM5
0	C 9	59.34.5391		390p	CER 63V, 5%, N1500
0	C 10	59.06.5332		3n3	PETP, 63V, 5%, RM5
0	C 11	59.29.0323		33m	EL 25V RM10 radial
0	C 12	59.29.4472		4m7	C 4700 U 20% 35 V, EL
0	C 13	59.06.0103		10n	PETP, 63V, 10%, RM5
0	C 14	59.34.4221		220p	CER 63V, 5%, N750
0	C 15	59.06.0103		10n	PETP, 63V, 10%, RM5
0	C 16	59.29.0323		33m	EL 25V RM10 radial
0	C 17	59.22.6470		47u	EL 40V, 20%, RM5
0	C 18	59.22.4102		1m0	EL 16V, 20%, RM5
0	C 19	59.22.4102		1m0	EL 16V, 20%, RM5
0	C 20	59.22.4102		1m0	EL 16V, 20%, RM5
0	C 21	59.22.6470		47u	EL 40V, 20%, RM5
0	C 22	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 23	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 24	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 25	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 26	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 27	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 28	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 29	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 30	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 31	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 32	59.34.4221		220p	CER 63V, 5%, N750
0	C 33	59.22.6100		10u	EL 35V, 20%, RM5
0	C 34	59.34.4221		220p	CER 63V, 5%, N750
0	C 35	59.34.4221		220p	CER 63V, 5%, N750
1	C 36	59.22.6220		22u	EL 35V, 20%, RM5
0	C 37	59.34.4221		220p	CER 63V, 5%, N750
0	C 38	59.34.4221		220p	CER 63V, 5%, N750
0	C 39	59.22.6100		10u	EL 35V, 20%, RM5
0	C 40	59.34.4221		220p	CER 63V, 5%, N750
0	C 41	59.34.4221		220p	CER 63V, 5%, N750
1	C 42	59.22.6220		22u	EL 35V, 20%, RM5
0	C 43	59.34.4221		220p	CER 63V, 5%, N750
0	C 44	59.99.1708		1m0	EL 35V 20% RM5
0	C 45	59.99.1708		1m0	EL 35V 20% RM5
0	C 46	59.99.1708		1m0	EL 35V 20% RM5
0	C 47	59.99.1708		1m0	EL 35V 20% RM5
0	C 48	59.99.1708		1m0	EL 35V 20% RM5
0	C 49	59.22.5101		100u	EL 25V, 20%, RM5
0	C 50	59.99.1708		1m0	EL 35V 20% RM5
0	C 51	59.22.5101		100u	EL 25V, 20%, RM5
0	C 52	59.99.1708		1m0	EL 35V 20% RM5
0	C 53	59.22.5101		100u	EL 25V, 20%, RM5
0	C 54	59.99.1708		1m0	EL 35V 20% RM5
0	C 55	59.22.5101		100u	EL 25V, 20%, RM5
0	C 56	59.22.5101		100u	EL 25V, 20%, RM5
0	C 57	59.22.5101		100u	EL 25V, 20%, RM5
0	C 58	59.22.5101		100u	EL 25V, 20%, RM5
0	C 59	59.22.5101		100u	EL 25V, 20%, RM5
0	C 60	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 61	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 62	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 63	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	D 1	50.04.0516		USD945	D USD 945,
0	D 2	50.04.0127		BAT85	200mA, Schottky
0	D 3	50.04.0127		BAT85	200mA, Schottky
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.0519		1N5822	3A, Schottky
0	D 6	50.04.0519		1N5822	3A, Schottky
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 8	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 9	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 10	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 11	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 12	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 13	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 14	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 15	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 16	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 17	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 18	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 19	50.04.0519		1N5822	3A, Schottky
0	D 20	50.04.0526		MBR360	D MBR 360, SB 360, 31 DQ 06,
0	D 21	50.04.0519		1N5822	3A, Schottky
0	D 22	50.04.0526		MBR360	D MBR 360, SB 360, 31 DQ 06,
0	D 23	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	DV 1	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 2	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 3	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 4	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 5	50.04.1147		11V	Zener, 5%, 0.5W, DO-35
0	IC 1	50.10.0125		L4970A	Switching Regulator 10A
0	IC 2	50.10.0106		TL431	IC TL 431 CLP,
0	IC 3	50.10.0106		TL431	IC TL 431 CLP,
0	IC 4	50.10.0106		TL431	IC TL 431 CLP,
0	IC 5	50.10.0122		L4960	L 4960,
0	IC 6	50.10.0122		L4960	L 4960,
0	IC 7	50.10.0122		L4960	L 4960,
0	IC 8	50.10.0122		L4960	L 4960,
0	L 1	62.03.0045		80uH	10A Toroid Chocke
0	L 2	62.03.0015		72uH	2A Toroid Chocke
0	L 3	62.03.0035		180uH	3A Toroid Chocke
0	L 4	62.03.0035		180uH	3A Toroid Chocke
0	L 5	62.03.0035		180uH	3A Toroid Chocke
0	L 6	62.03.0035		180uH	3A Toroid Chocke
0	L 7	62.03.0015		72uH	2A Toroid Chocke
0	L 8	62.03.0015		72uH	2A Toroid Chocke
0	L 9	62.03.0015		72uH	2A Toroid Chocke
0	L 10	62.03.0015		72uH	2A Toroid Chocke
0	MP 1	1.942.105.12			POWER SUPPLY PCB
0	MP 2	1.942.105.01			Kühlkörper
0	MP 3	1.942.105.02			Kühlkörper
0	MP 4	21.38.0354	3 pcs	M3*6	Z - Schraube KS A2 blank
0	MP 5	21.53.9354	4 pcs	M3*6	Z-Schraube Inbus-Ripp Zn gb ch
0	MP 6	50.20.2003	6 pcs		Montageclip zu TO 220, N/ISOL.
0	MP 7	50.20.2005			Montageclip zu SOT 93
0	MP 8	50.20.0318	5 pcs	TO220	Glimmerscheibe, zu Clip
0	MP 9	1.942.105.10			NR.ETIKETTE 5X20
0	MP 10	43.01.0108		Label	ESE-WARNSCHILD
0	P 1	54.12.0506		6p	P Stecker 6p Power-Pin
0	P 2	54.12.0510		10p	P Stecker 10p Power-Pin
0	P 3	54.12.0505		5p	P Stecker 5p Power-Pin
0	P 4	54.12.0506		6p	P Stecker 6p Power-Pin
0	P 5	54.12.0504		4p	P Stecker 4p Power-Pin
0	P 6	54.12.0503		3p	P Stecker 3p Power-Pin
0	Q 1	50.99.0106		BT138	Q BT 138 - 500 TRIAC
0	Q 2	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 3	50.03.0515		BC307B	BC 307 B , BC 557 B ,PNP
0	Q 4	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 10	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 11	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	R 1	57.56.5220		22R	WW, 10%, 4 W
0	R 2	57.11.3150		15R	MF, 1%, 0207
0	R 3	57.92.7013		0.5A	POLY- PTC, 60V
0	R 4	57.11.3222		2k2	MF, 1%, 0207
0	R 5	57.11.3333		33k	MF, 1%, 0207
0	R 6	57.11.3682		6k8	MF, 1%, 0207
0	R 7	57.11.3153		15k	MF, 1%, 0207
0	R 8	57.11.3221		220R	MF, 1%, 0207
0	R 9	57.11.3332		3k3	MF, 1%, 0207
0	R 10	57.11.3222		2k2	MF, 1%, 0207
0	R 11	57.11.3472		4k7	MF, 1%, 0207
0	R 12	57.11.3472		4k7	MF, 1%, 0207
0	R 13	57.11.3333		33k	MF, 1%, 0207
0	R 14	57.11.3102		1k0	MF, 1%, 0207
0	R 15	57.11.3222		2k2	MF, 1%, 0207
0	R 16	57.11.3682		6k8	MF, 1%, 0207
0	R 17	57.11.3393		39k	MF, 1%, 0207
0	R 18	57.11.3102		1k0	MF, 1%, 0207
0	R 19	57.11.3682		6k8	MF, 1%, 0207
0	R 20	57.11.3154		150k	MF, 1%, 0207
0	R 21	57.11.3471		470R	MF, 1%, 0207
0	R 22	57.11.3102		1k0	MF, 1%, 0207
0	R 23	57.11.3153		15k	MF, 1%, 0207
0	R 24	57.11.3123		12k	MF, 1%, 0207
0	R 25	57.11.3332		3k3	MF, 1%, 0207
0	R 26	57.11.3682		6k8	MF, 1%, 0207
0	R 27	57.11.3153		15k	MF, 1%, 0207
0	R 28	57.11.3473		47k	MF, 1%, 0207
0	R 29	57.11.3104		100k	MF, 1%, 0207
0	R 30	57.11.3123		12k	MF, 1%, 0207

Power Supply 1.942.105.83

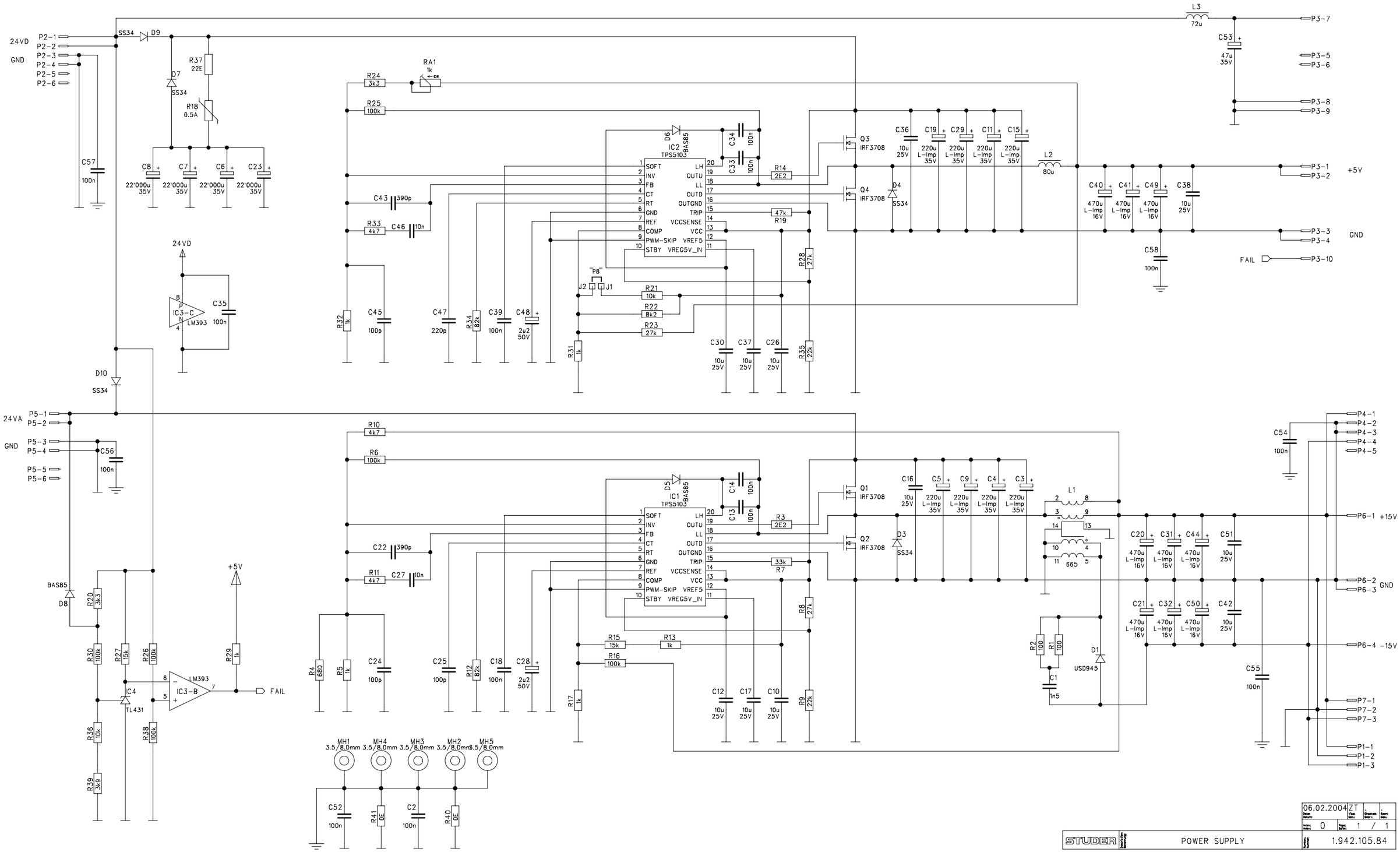
Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 31	57.11.3332		3k3	MF, 1%, 0207
0	R 32	57.11.3682		6k8	MF, 1%, 0207
0	R 33	57.11.3153		15k	MF, 1%, 0207
0	R 34	57.11.3473		47k	MF, 1%, 0207
0	R 35	57.11.3104		100k	MF, 1%, 0207
0	R 36	57.11.3123		12k	MF, 1%, 0207
0	R 37	57.11.3332		3k3	MF, 1%, 0207
0	R 38	57.11.3682		6k8	MF, 1%, 0207
0	R 39	57.11.3153		15k	MF, 1%, 0207
0	R 40	57.11.3473		47k	MF, 1%, 0207
0	R 41	57.11.3104		100k	MF, 1%, 0207
0	R 42	57.11.3123		12k	MF, 1%, 0207
0	R 43	57.11.3332		3k3	MF, 1%, 0207
0	R 44	57.11.3682		6k8	MF, 1%, 0207
0	R 45	57.11.3473		47k	MF, 1%, 0207
0	R 46	57.11.3104		100k	MF, 1%, 0207
0	R 47	57.11.3101		100R	MF, 1%, 0207
0	R 48	57.11.3103		10k	MF, 1%, 0207
0	R 49	57.11.3104		100k	MF, 1%, 0207
0	R 50	57.11.3101		100R	MF, 1%, 0207
0	R 51	57.11.3103		10k	MF, 1%, 0207
0	R 52	57.11.3104		100k	MF, 1%, 0207
0	R 53	57.11.3101		100R	MF, 1%, 0207
0	R 54	57.11.3103		10k	MF, 1%, 0207
0	R 55	57.11.3104		100k	MF, 1%, 0207
0	R 56	57.11.3101		100R	MF, 1%, 0207
0	R 57	57.11.3103		10k	MF, 1%, 0207
0	R 58	57.11.3104		100k	MF, 1%, 0207
0	R 59	57.11.3332		3k3	MF, 1%, 0207
0	RA 1	58.01.8102		1k	Cermet, 10%, 0.5W, horizontal

End of List

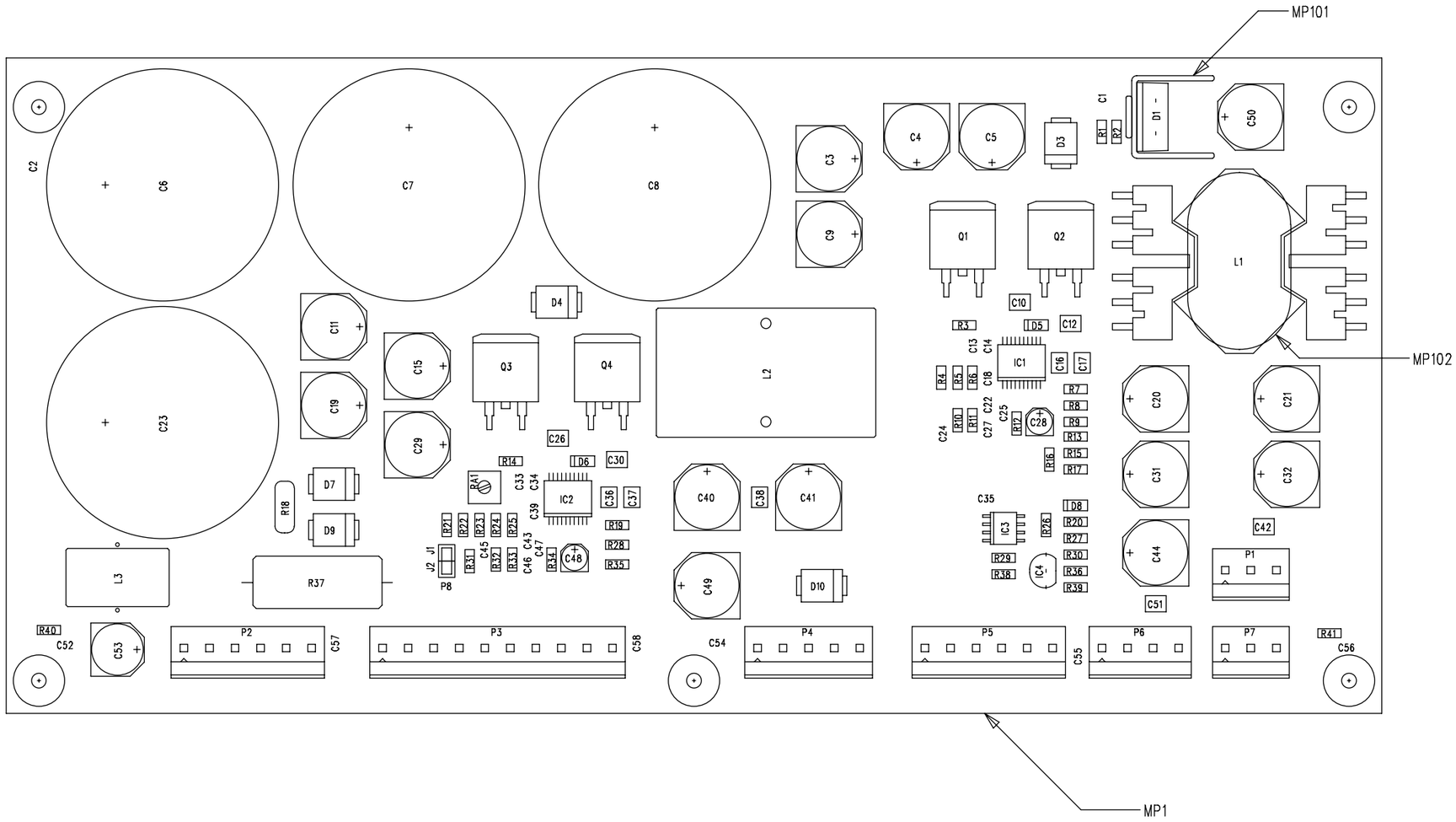
Comments

(01) C36, C42: 10uF->22uF; Revisionlabel->"A" added

Power Supply 1.942.105.84 (0)



Power Supply 1.942.105.84 (0)



		06.02.2004	ZT	ML	HW
		0	1 / 1		
STUDER	POWER SUPPLY, ESE		1.942.105.84		

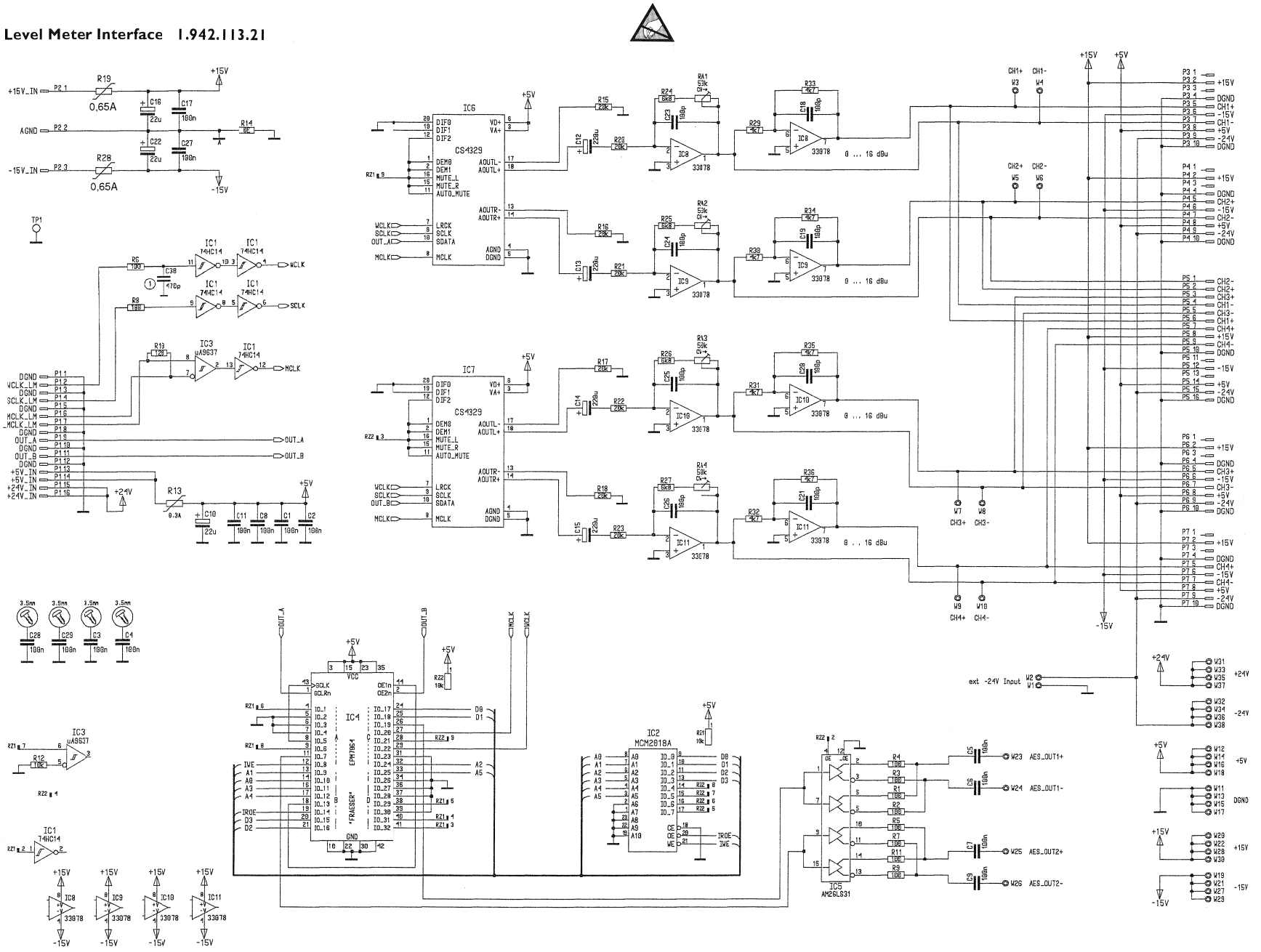
Power Supply 1.942.105.84 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3315	1 pce	1n5	CER 50V, 10%, X7R, 0805
0	C 2	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 3	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 4	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 5	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 6	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 7	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 8	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 9	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 10	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 11	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 12	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 13	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 15	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 16	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 17	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 18	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 19	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 20	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 21	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 22	59.60.2363	1 pce	390p	CER 50V, 5%, C0G, 0805
0	C 23	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 24	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603
0	C 25	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603
0	C 26	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 27	59.60.3325	1 pce	10n	CER 50V, 10%, X7R, 0805
0	C 28	59.68.0129	1 pce	2u2	EL 50V, 4.0*5.7
0	C 29	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 30	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 31	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 32	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 33	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 34	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 35	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 36	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 37	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 38	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 39	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 40	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 41	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 42	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 43	59.60.2363	1 pce	390p	CER 50V, 5%, C0G, 0805
0	C 44	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 45	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603
0	C 46	59.60.3325	1 pce	10n	CER 50V, 10%, X7R, 0805
0	C 47	59.60.2257	1 pce	220p	CER 50V, 5%, C0G, 0603
0	C 48	59.68.0129	1 pce	2u2	EL 50V, 4.0*5.7
0	C 49	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 50	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 51	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 52	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 53	59.68.0113	1 pce	47u	EL 35V, 8.0*6.3
0	C 54	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 55	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 56	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 57	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 58	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	D 1	50.04.0516	1 pce	USD945	Schottky Rect 16A, 45V
0	D 3	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 4	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 5	50.60.8101	1 pce	BAS85	200mA 30V Schottky SOD 80
0	D 6	50.60.8101	1 pce	BAS85	200mA 30V Schottky SOD 80
0	D 7	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 8	50.60.8101	1 pce	BAS85	200mA 30V Schottky SOD 80
0	D 9	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 10	50.60.8102	1 pce	SS34	3A 40V Schottky
0	IC 1	50.61.2004	1 pce	TPS 5103	Sync step down converter
0	IC 2	50.61.2004	1 pce	TPS 5103	Sync step down converter
0	IC 3	50.61.9001	1 pce	LM393	Dual voltage comp. SO 8
0	IC 4	50.10.0106	1 pce	TL431	Shunt regulator
0	J 1	54.01.0020	1 pce	1p	Pin, 1reihig, gerade
0	J 2	54.01.0020	1 pce	1p	Pin, 1reihig, gerade
0	L 1	1.022.665.00	1 pce		Trafo +/-15V
0	L 2	62.03.0045	1 pce	80uH	10A Toroid Chocke
0	L 3	62.03.0015	1 pce	72uH	2A Toroid Chocke
0	MP 1	1.942.105.14	1 pce		POWER SUPPLY PCB
0	MP 2	1.942.105.10	1 pce		NR.ETIKETTE 5X20
0	MP 3	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 101	50.20.3011	1 pce		Kühlkörper, TO 220, vertikal
0	MP 102	1.010.005.61	1 pce		UNTERLAGE ZU RM 10
0	P 1	54.12.0503	1 pce	3p	Power-Pin Stecker
0	P 2	54.12.0506	1 pce	6p	Power-Pin Stecker
0	P 3	54.12.0510	1 pce	10p	Power-Pin Stecker
0	P 4	54.12.0505	1 pce	5p	Power-Pin Stecker
0	P 5	54.12.0506	1 pce	6p	Power-Pin Stecker
0	P 6	54.12.0504	1 pce	4p	Power-Pin Stecker
0	P 7	54.12.0503	1 pce	3p	Power-Pin Stecker
0	P 8	not used	1 pce	Jumper	0.63*0.63mm, Au
0	Q 1	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	Q 2	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	Q 3	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	Q 4	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	R 1	57.60.1101	1 pce	100R	MF, 1%, 0204, E24
0	R 2	57.60.1101	1 pce	100R	MF, 1%, 0204, E24
0	R 3	57.60.1229	1 pce	2R2	MF, 1%, 0204, E24
0	R 4	57.60.1681	1 pce	680R	MF, 1%, 0204, E24
0	R 5	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 6	not used	1 pce	100k	MF, 1%, 0204, E24
0	R 7	57.60.1333	1 pce	33k	MF, 1%, 0204, E24
0	R 8	57.60.1273	1 pce	27k	MF, 1%, 0204, E24
0	R 9	57.60.1223	1 pce	22k	MF, 1%, 0204, E24
0	R 10	57.60.1472	1 pce	4k7	MF, 1%, 0204, E24
0	R 11	57.60.1472	1 pce	4k7	MF, 1%, 0204, E24
0	R 12	57.60.1823	1 pce	82k	MF, 1%, 0204, E24
0	R 13	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 14	57.60.1229	1 pce	2R2	MF, 1%, 0204, E24
0	R 15	57.60.1153	1 pce	15k	MF, 1%, 0204, E24
0	R 16	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 17	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 18	57.92.7013	1 pce	0.5A	PTC 60V
0	R 19	57.60.1473	1 pce	47k	MF, 1%, 0204, E24
0	R 20	57.60.1332	1 pce	3k3	MF, 1%, 0204, E24
0	R 21	57.60.1103	1 pce	10k	MF, 1%, 0204, E24
0	R 22	57.60.1822	1 pce	8k2	MF, 1%, 0204, E24
0	R 23	57.60.1273	1 pce	27k	MF, 1%, 0204, E24
0	R 24	57.60.1332	1 pce	3k3	MF, 1%, 0204, E24
0	R 25	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 26	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 27	57.60.1153	1 pce	15k	MF, 1%, 0204, E24
0	R 28	57.60.1273	1 pce	27k	MF, 1%, 0204, E24
0	R 29	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 30	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 31	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 32	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 33	57.60.1472	1 pce	4k7	MF, 1%, 0204, E24
0	R 34	57.60.1823	1 pce	82k	MF, 1%, 0204, E24
0	R 35	57.60.1223	1 pce	22k	MF, 1%, 0204, E24
0	R 36	57.60.1103	1 pce	10k	MF, 1%, 0204, E24
0	R 37	57.56.5220	1 pce	22R	WW, 10%, 4 W
0	R 38	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 39	57.60.1392	1 pce	3k9	MF, 1%, 0204, E24
0	R 40	57.60.1000	1 pce	0R0	MF, 0204
0	R 41	57.60.1000	1 pce	0R0	MF, 0204
0	RA 1	58.60.0113	1 pce	1k0	SMD 20%, 0.25W, Cermet

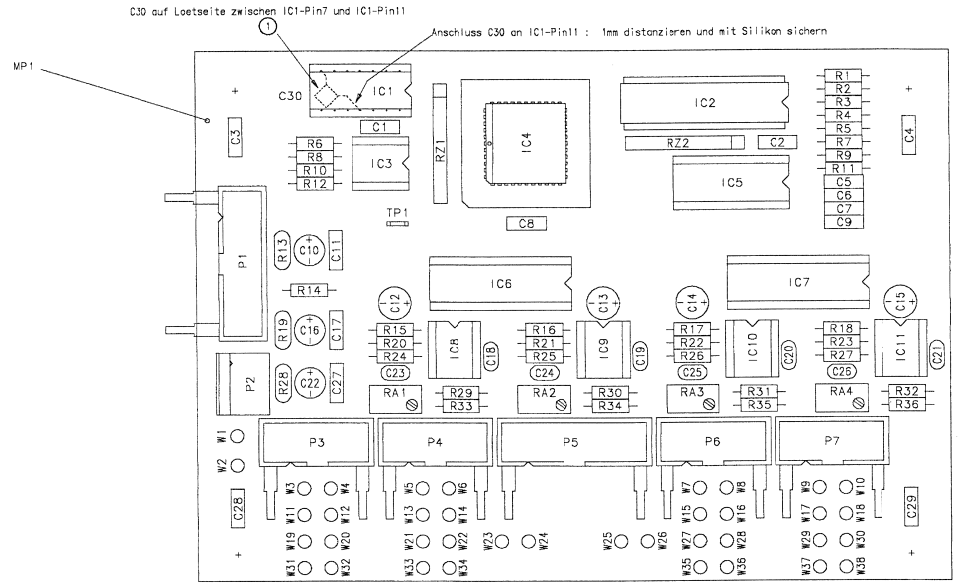
End of List

Comments:

Level Meter Interface 1.942.113.21



Level Meter Interface 1.942.113.20



Edition Ausgabe	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index
Modification Aenderung	.	.	.	.	3
	.	.	.	.	2
	24.10.97	LC	.	.	1
	10.03.97	LC	.	.	0

Copy to:
Kopie fuer:

STUDER REGENSDORF | Description: Benennung: LEVEL METER INTERFACE, ESE | Number: Nummer: 1.942.113.20

Level Meter Interface 1.942.113.21

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 3	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 4	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 5	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 6	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 7	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 8	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 9	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 10	59.22.5220		22u	EL 25V 20% RM5
0	C 11	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 12	59.22.3003		220u	EL 10V 20% RM5
0	C 13	59.22.3003		220u	EL 10V 20% RM5
0	C 14	59.22.3003		220u	EL 10V 20% RM5
0	C 15	59.22.3003		220u	EL 10V 20% RM5
0	C 16	59.22.5220		22u	EL 25V 20% RM5
0	C 17	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 18	59.34.4101		100p	CER 63V, 5%, N750
0	C 19	59.34.4101		100p	CER 63V, 5%, N750
0	C 20	59.34.4101		100p	CER 63V, 5%, N750
0	C 21	59.34.4101		100p	CER 63V, 5%, N750
0	C 22	59.22.5220		22u	EL 25V 20% RM5
0	C 23	59.34.4101		100p	CER 63V, 5%, N750
0	C 24	59.34.4101		100p	CER 63V, 5%, N750
0	C 25	59.34.4101		100p	CER 63V, 5%, N750
0	C 26	59.34.4101		100p	CER 63V, 5%, N750
0	C 27	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 28	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 29	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 30	59.32.1471		470p	CER 10%, 400V
0	IC 1	50.17.1014		74HC 14	IC ... 74 HC 14 ., ,A
0	IC 2	50.14.1009		7C128A	SRAM 2K*8 35ns
0	IC 3	50.15.0114		9637	Dual diff Line Receiver
0	IC 4	1.942.927.20			SW.124 DIGITAL OUT. MOD., PLD
				50634202, EPLD 7064	
0	IC 5	50.15.0108		26LS31	Quad diff line driver
0	IC 6	50.19.0114		CS4390	D/A Converter 24bit stereo
0	IC 7	50.19.0114		CS4390	D/A Converter 24bit stereo
0	IC 8	50.09.0117		33078	IC MC 33078 P
0	IC 9	50.09.0117		33078	IC MC 33078 P
0	IC 10	50.09.0117		33078	IC MC 33078 P
0	IC 11	50.09.0117		33078	IC MC 33078 P
0	MP 1	1.942.113.11			LEVEL METER INTERFACE PCB
0	MP 2	43.01.0108		Label	ESE-WARNSCHILD
0	MP 3	1.942.113.10			NR.ETIKETTE 5X20
0	MP 4	1.101.001.21			TEXT-ETIK. 5*20 HARDWARE -21
0	P 1	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 2	54.12.0503		3p	Power-Pin Stecker
0	P 3	54.14.2101		10p	1/20" Au, gerade, Verrieg
0	P 4	54.14.2101		10p	1/20" Au, gerade, Verrieg
0	P 5	54.14.2102		16p	1/20" Au, gerade, Verrieg
0	P 6	54.14.2101		10p	1/20" Au, gerade, Verrieg
0	P 7	54.14.2101		10p	1/20" Au, gerade, Verrieg
0	R 1	57.11.3101		100R	MF, 1%, 0207
0	R 2	57.11.3101		100R	MF, 1%, 0207
0	R 3	57.11.3101		100R	MF, 1%, 0207
0	R 4	57.11.3101		100R	MF, 1%, 0207
0	R 5	57.11.3101		100R	MF, 1%, 0207
0	R 6	57.11.3101		100R	MF, 1%, 0207
0	R 7	57.11.3101		100R	MF, 1%, 0207
0	R 8	57.11.3101		100R	MF, 1%, 0207
0	R 9	57.11.3101		100R	MF, 1%, 0207
0	R 10	57.11.3121		120R	MF, 1%, 0207
0	R 11	57.11.3101		100R	MF, 1%, 0207
0	R 12	57.11.3103		10k	MF, 1%, 0207
0	R 13	57.92.7012		0.3A	PTC 60V
0	R 14	57.11.3000		0R0	MF, 0207
0	R 15	57.11.3203		20k	MF, 1%, 0207
0	R 16	57.11.3203		20k	MF, 1%, 0207
0	R 17	57.11.3203		20k	MF, 1%, 0207
0	R 18	57.11.3203		20k	MF, 1%, 0207
0	R 19	57.92.7014		0.65A	PTC 60V
0	R 20	57.11.3203		20k	MF, 1%, 0207
0	R 21	57.11.3203		20k	MF, 1%, 0207
0	R 22	57.11.3203		20k	MF, 1%, 0207
0	R 23	57.11.3203		20k	MF, 1%, 0207
0	R 24	57.11.3682		6k8	MF, 1%, 0207
0	R 25	57.11.3682		6k8	MF, 1%, 0207
0	R 26	57.11.3682		6k8	MF, 1%, 0207
0	R 27	57.11.3682		6k8	MF, 1%, 0207
0	R 28	57.92.7014		0.65A	PTC 60V
0	R 29	57.11.3472		4k7	MF, 1%, 0207
0	R 30	57.11.3472		4k7	MF, 1%, 0207
0	R 31	57.11.3472		4k7	MF, 1%, 0207
0	R 32	57.11.3472		4k7	MF, 1%, 0207
0	R 33	57.11.3472		4k7	MF, 1%, 0207
0	R 34	57.11.3472		4k7	MF, 1%, 0207
0	R 35	57.11.3472		4k7	MF, 1%, 0207
0	R 36	57.11.3472		4k7	MF, 1%, 0207
0	RA 1	58.05.1503		50k	10%, 0.5W, Cermet
0	RA 2	58.05.1503		50k	10%, 0.5W, Cermet
0	RA 3	58.05.1503		50k	10%, 0.5W, Cermet
0	RA 4	58.05.1503		50k	10%, 0.5W, Cermet
0	RZ 1	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	TP 1	54.02.0320		1p	PCB-Flachst 2.8*0.8, gerade
0	XIC 4	53.03.2244		44p	PLCC-Socket

End of List

[21] R19, R28: 0.3A->0.65A

Bargraph Display

Contents

page

REFERENCE

This manual refers to the following units:

Dual Bar Graph PPM	1.913.111
Dual Bar Graph VU	1.913.112
8 Channel Bar Graph PPM	1.913.411
8 Channel Bar Graph VU	1.913.412

1. Technical Description

The output meter, whatever it may be called, is one of the most important tools in audio engineering. Wherever audio signals are being processed, it is an essential, because the output level is an important criterion. On the one hand, maximum output level is needed for achieving the best signal-to-noise ratio, on the other hand the reference level should not be exceeded, particularly in digital recordings, otherwise distortion will increase dramatically.

Two types of output meters with different dynamic characteristics have proven themselves useful in recording studios:

Volume Unit Meter (VU)

The most frequently used instrument for measuring audio frequency signal levels is the VU-meter. In the ANSI standard (American National Standards Institute, Inc.), the mechanical and electrical behavior of the VU-meter was already defined in 1954. The rule is that the indication shall be 99% of the ultimate value (0 VU) when a signal of 0.3 s (300 ms) duration is applied. The overshooting of the indication shall be between 1...1.5%. The rise and decay time are identical in the VU-meter.

In the conventional version a VU-meter consists of a suitable moving coil instrument and a full-wave rectifier connected to the input.

Peak Program Meter (PPM)

The PPM is a more recent instrument. Its behavior is defined in the applicable DIN or IEC standards. The principal difference to the VU-meter is in the integration time: the PPM is a quasi peak value instrument with a long release time. A peak value will be indicated even for very short peaks in a music program.

If a sine wave voltage is applied for 10 ms that yields a level of 0dB, the indication should be -1dB. A release time of 1.7 s is desired for levels down to -20dB (IEC).

Instrument Types

An advanced alternative to electromechanical analog displays are the gas discharge bargraph displays. Neon gas that is induced to glow between two glass plates emits visible light. The plasma display has some decisive advantages over all the other displays. For example: large reading angle and high contrast combined with low power consumption and long life. Its disadvantages are: high anode voltage (250 V), high price, and sophisticated electronic circuitry. Despite these drawbacks this excellent type of display has become the de-facto standard in professional studio applications.

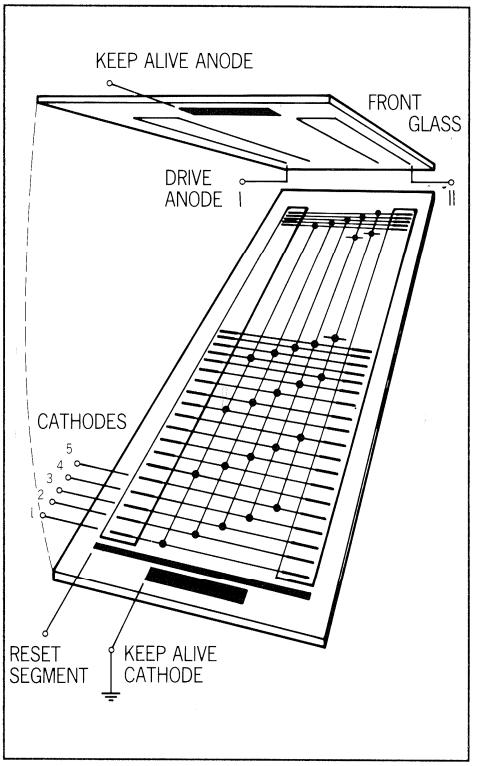
Implementation of the Studer Bargraph Output Meters

The design specifications for a precision metering instrument that would not be too costly but still have a modular design resulted in the following arrangement; two individual circuit boards, one for the two-channel signal processing paths and one for the digital section with the switching power supply. In this way it became feasible to achieve a modular design: four signal modules for eight channels but only one digital module.

The operating principle of the individual elements that make up the bargraph display is depicted in the following picture:

Plasma Tube

After the 250 VDC supply voltage has been applied, a continuous glow discharge is triggered between the pre-ionization anode and cathode. Since the area around the pre-ionization segment is not physically isolated from the neighboring segments, the charge carriers diffuse into the area of the reset cathode. When the latter is energized first, a glow discharge occurs also here. The same effect causes the first segment to light up (ignite), if the reset cathode is switched off while cathode 1 is switched on. Although each 5th segment is electrically interconnected, only the lowest one glows because sufficient charge carriers are located in its vicinity.
The cathodes 1-2-3-4-5 / 1-2-3-4...etc. are now controlled in this order. The glow discharge migrates segment by segment to the last segment. A new cycle is then initiated by means of the reset segment.



Plasma tube

The length of the bargraph is controlled by the power-on duration of the corresponding anode while the cathodes are controlled cyclically in the dark segment. This design requires only 8 connections or driver stages (2 anodes, 1 reset cathode and 5 write cathodes) for controlling the 2 x 200 segments. In order to create a flicker-free bargraph the refresh rate must be at least 70 Hz. Unnoticeable to the viewer is, however, that only one segment glows at any one moment!

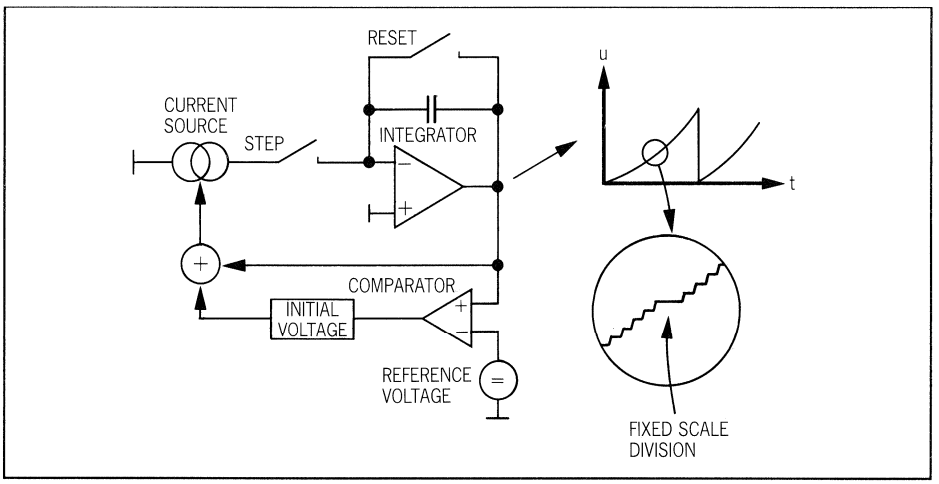
Analog Electronics

The audio section is shown in the block diagram (see p.12). The isolated AF signal is taken to the level stage; the large working range permits the connection of almost any level. For very small levels a +20 dB amplifier is provided. The low-pass filter of the 3rd order attenuates frequencies of over 20 kHz. This circuit is followed by a sophisticated rectifier stage that compensates very carefully with respect to the offset voltages.

For the VU representation, the rectified signal is fed to a filter that duplicates the characteristic of mechanical moving coil instruments. For the PPM representation, the peak value of the rectified signal is formed.

Digital Electronics

The digital section performs various functions. Not only does it process the signals for the plasma tube, it also is responsible for generating the ramp. A totally new approach has been selected for the ramp generation. Normally the audio signal is converted to logarithmic characteristic in an amplifier in order to achievedB representation. The resulting signal is subsequently compared with a time-linear ramp. However, the same can be accomplished by comparing the linear AF signal with an exponential ramp, without the typical problems of a logarithmic circuit (temperature dependence, offset). In addition, more instruments can be controlled by means of a ramp (in the digital section); no logarithmic circuits are required.



Ramp generator

While a capacitor is charged with a constant current, the terminal voltage rises linearly. If this source is equipped with a positive feedback that converts the continually rising voltage to a continually increasing current, we obtain an exponentially progressing terminal voltage.
If the capacitor is discharged after a while, the initial voltage for starting the cycle is missing. A control circuit is available that prepares the initial voltage in such a way that a reference value is achieved after a certain time.
For inserting fixed scale divisions, the capacitor charging is interrupted during three cycle units. As a result the corresponding segment glows three times longer and consequently appears to be brighter.

By disconnecting the above mentioned positive feedback, the linear ramp is again obtained for representing VU values or representable DC values.
The ramp oscillator also supplies the input signal for a binary counter that increments until reset. The outputs of the counter are address lines for an EPROM which generates the 5-phase signal and a reset signal for creating the fixed scale divisions as well as a reset signal for the counter. With the two remaining address lines it is possible to insert different scale divisions.

Future Application

The new bargraph instrument also features a LED column for indicating limiter or compressor gain reduction signals. With the externally controllable selection of VU or PPM characteristic it is also possible to display DC voltages on linear or logarithmic scale. The built-in switching power supply supports a large range of DC supply voltages.

For PCM recordings a faster response time (t = 0.1 ms) may be selected by a switch.

2. Technical Data

PEAK PROGRAM METER SPECIFICATION

Reference Indication 0 dB = 0 dBu .... + 15 dBu

Indicating Range + 5 dB .... - 40 dB

Error ± 0.2 dB (± 2 segments) within + 5 dB and - 40 dB

Frequency Response ± 0.5 dB between 31.5 Hz and 16 kHz at 0° C .... 50° C

Dynamic Response according to IEC publication 268-10 1974:

SINGLE BURST	FREQUENCY	DEFLECTION SLOW VALUE	DEFLECTION SLOW TOLERANCE	DEFLECTION FAST
10 ms	3 kHz	- 1 dB	± 0.5 dB	-0,3 dB
5 ms	3 kHz	- 2 dB	± 1 dB	-0,6 dB
3 ms	3 kHz	- 4 dB	± 1 dB	-0,8 dB
0.4 ms	10 kHz	- 15 dB	± 3 dB	-1,0 dB

Overswing none

Return Time 0 dB .... - 20 dB: 1.7 ± 0.3 seconds

VU-METER SPECIFICATION

Reference Indication 0 VU = - 4 dBu .... + 11 dBu

Indicating Range + 3 VU .... - 20 VU, voltage linear

Frequency Response + 1.0/- 0.0 dB at 0 VU and 31.5 Hz; Temperature range 0° C .... 50° C

Response Time 207 ms (± 30 ms) to - 1 VU of reference indication

Overswing 1 ... 1.5 %

Return Time 207 ms (± 30 ms).

DC METER SPECIFICATION

Display Range

INDICATION	NORMAL			REVERSE
TOP END	0 V	0 V	- 1 V	+ 1 V
BOTTOM	+ 10 V	+ 6 V	+ 6 V	- 10 V

There is mutual influence between the alignment of 'Top End' and 'Bottom' indication. The values in the row 'Normal' are ment to be examples for possible settings.

GENERAL SPECIFICATIONS

Input Impedance > 10 kOhm

Source Impedance < 1 kOhm

Reversibility Error < 0.5 dB

Temperature Range error ± 0.5 dB in the range - 10° C .... + 60° C
(reference: 1 kHz at 25° C)

Supply Voltage 24 V ... 34 V (or ± 15 V)

Power Consumption dual unit: 3.5 W typ., 5.0 W max.
8 channels: 9.5 W typ., 14.5 W max.

Mechanical Dimensions dual unit: 40 mm(W) x 170 mm(H) x 130 mm(D)
8 channel unit: 160 mm(W) x 170 mm(H) x 130 mm(D)

Weight dual unit: 640 g
8 channel unit: 1600 g

GR METER SPECIFICATION

Input Range ± 2 V .... ± 5 V for + 20 dB indication

3. Alignments and Settings

Note: The Analog Print 1.913.117 contains two channels, so each adjustment pot exists twice. All adjustments have to be performed on all channels.

The Digital Print 1.913.118 exists only once per unit, be it a two or eight channel device.

3.1 Adjustments

Level Setting

For adaptation to different line levels only the folllowing adjustment is necessary:

- Feed reference level 1 kHz (e.g. +6 dBu)
- adjust 0 dB indication on bargraph with R 5 (R 105) Potentiometer is marked **AUDIO GAIN**

Complete Adjustment

In case of part exchange a full adjustment procedure may be necessary. In this case proceed in the following steps:

AC Input: Set unit to "PPM", "+20 dB off", and "Not fast" (see below)

- Disconnect input, terminate input with 200 Ohm
- adjust minimal level (0 ±1 mV) at pin 7 of IC 6 (internal potentiometer)

- Feed reference level 1 kHz (e.g. +6 dBu)
- adjust 0 dB indication on bargraph with R 5 (R 105).
  Potentiometer is marked **AUDIO GAIN**

- Feed 20 dB below reference level 1 kHz (e.g. -14 dBu)
- adjust -20 dB indication with R 64 (potentiometer on digital print; do not readjust after the first channel has been properly adjusted)

- Feed 30 dB below reference level 1 kHz (e.g. -24 dBu)
- adjust -30 dB indication with R 30 (R 130). Potentiometer is marked **AUDIO OFFSET**

- Repeat all steps until all indications are correct.

DC Iput: Set unit to "DC" and adjust the wanted input phase configuration (see below).

- Feed maximum DC voltage.
- Adjust maximum indication with R 55 (R 155). Potentiometer is marked **DC GAIN**

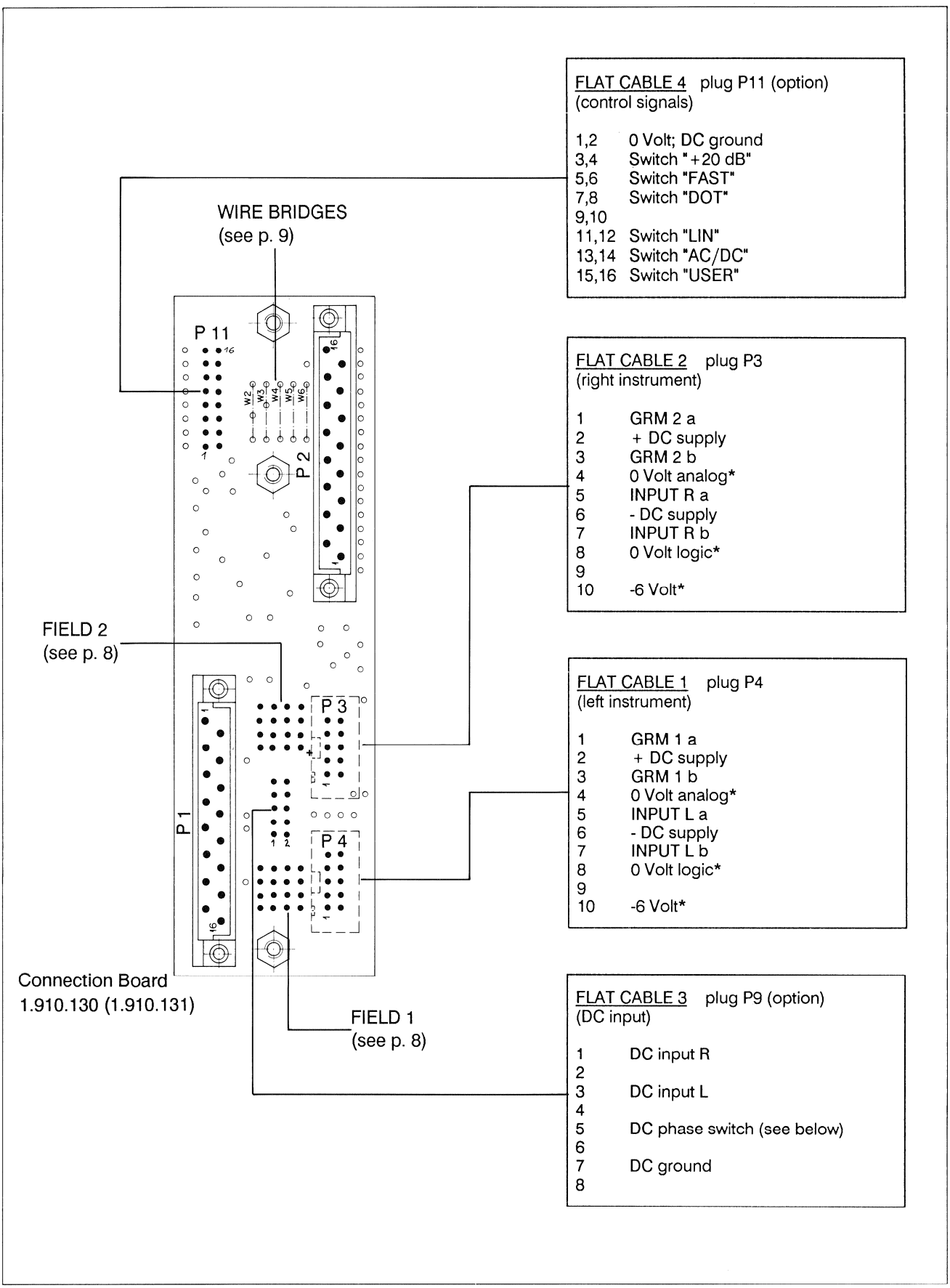
- Feed minimum DC voltage
- Adjust minimum indication with R 63 (R 163). Potentiometer is marked **DC REF**

- Repeat all steps until all indications are correct.

GRM Input:

- Feed level 1 kHz required for a indication of +20 dB on the gain reduction meter.
- Adjust indication with R 60 (R 160). Potentiometer is marked **GRM**

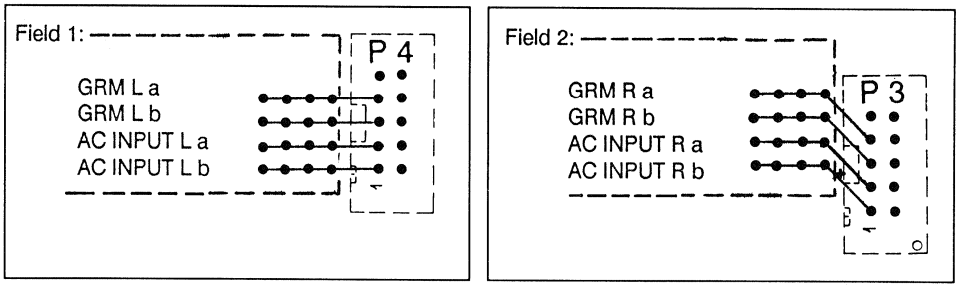
3.2 Connections



If the unit is powered by an unstabilized DC supply, an additional C may be installed (1000 μF, 40 Volt, Order No. 59.22.6102).

Signals marked with an asterisk (*) are not required for the bargraph.

The lines carrying the AC bargraph input and the GRM input signals may also be soldered to the unit (instead of feeding those signals via the flat cables; especially useful for operation outside STUDER mixers). The connection points are:



DC Supply

DC can be fed either via flat cable 1 or 2 or directly to the pins marked "+" and "–".

3.3 Function Settings

Some functions can be set both by wire bridges and by external switches. Do not duplicate!

Wire Bridges

BRIDGE	ON	OFF	
W2	■		INSTRUMENT ATTACK TIME 0.1 ms
		■	STANDARD ATTACK TIME (10 ms in PPM mode)
W3	■		GRM INDICATION AS SINGLE DOT
		■	GRM INDICATION AS BAR
W4			(reserved for future use)
W5		■	PPM INDICATION
W6		■	
W5	■		VU INDICATION
W6		■	
W5		■	DC LOG INDICATION
W6	■		
W5	■		DC LIN INDICATION
W6	■		

External Switches

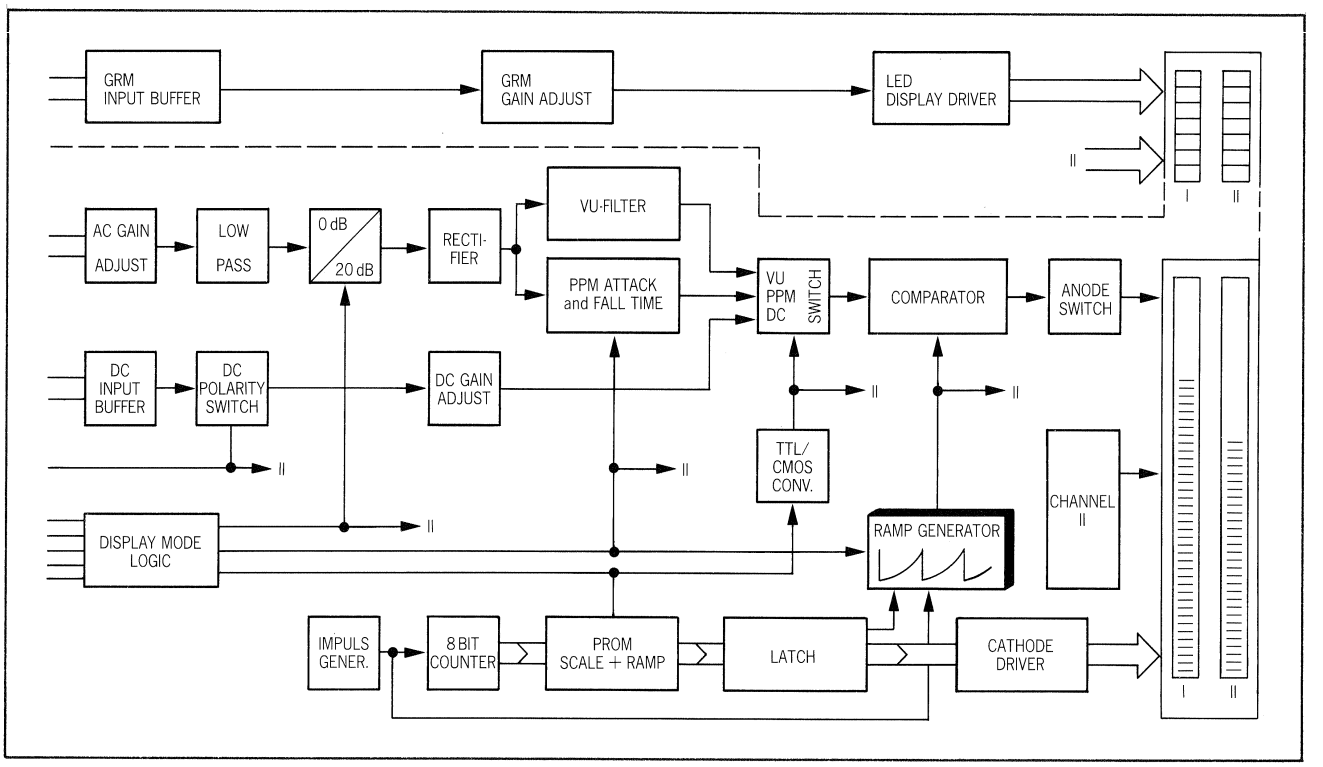
"ON" means that either the pin is connected to ground (pin 1/2) or that a TTL low level is connected. "OFF" means that either the switch is open (internal pull-up resistor) or that a TTL high level is connected.

All external switches are connected via flat cable 4 (see above).

PIN	ON	OFF	
1,2			0 VOLT
3,4	■		AC GAIN +20 dB
		■	AC GAIN 0 dB
5,6	■		INSTRUMENT ATTACK TIME 0.1 ms
		■	STANDARD ATTACK TIME (10 ms in PPM mode)
7,8	■		GRM INDICATION AS SINGLE DOT
		■	GRM INDICATION AS BAR
11,12	■		LIN INDICATION (if DC selected), VU INDICATION (if AC selected, see 13/14)
		■	LOG INDICATION (if DC selected), PPM INDICATION (if AC selected, see 13/14)
13,14	■		DC
		■	AC
15,16	■		USER SWITCH: LED ON FRONT PLATE ON
		■	LED ON FRONT PLATE OFF

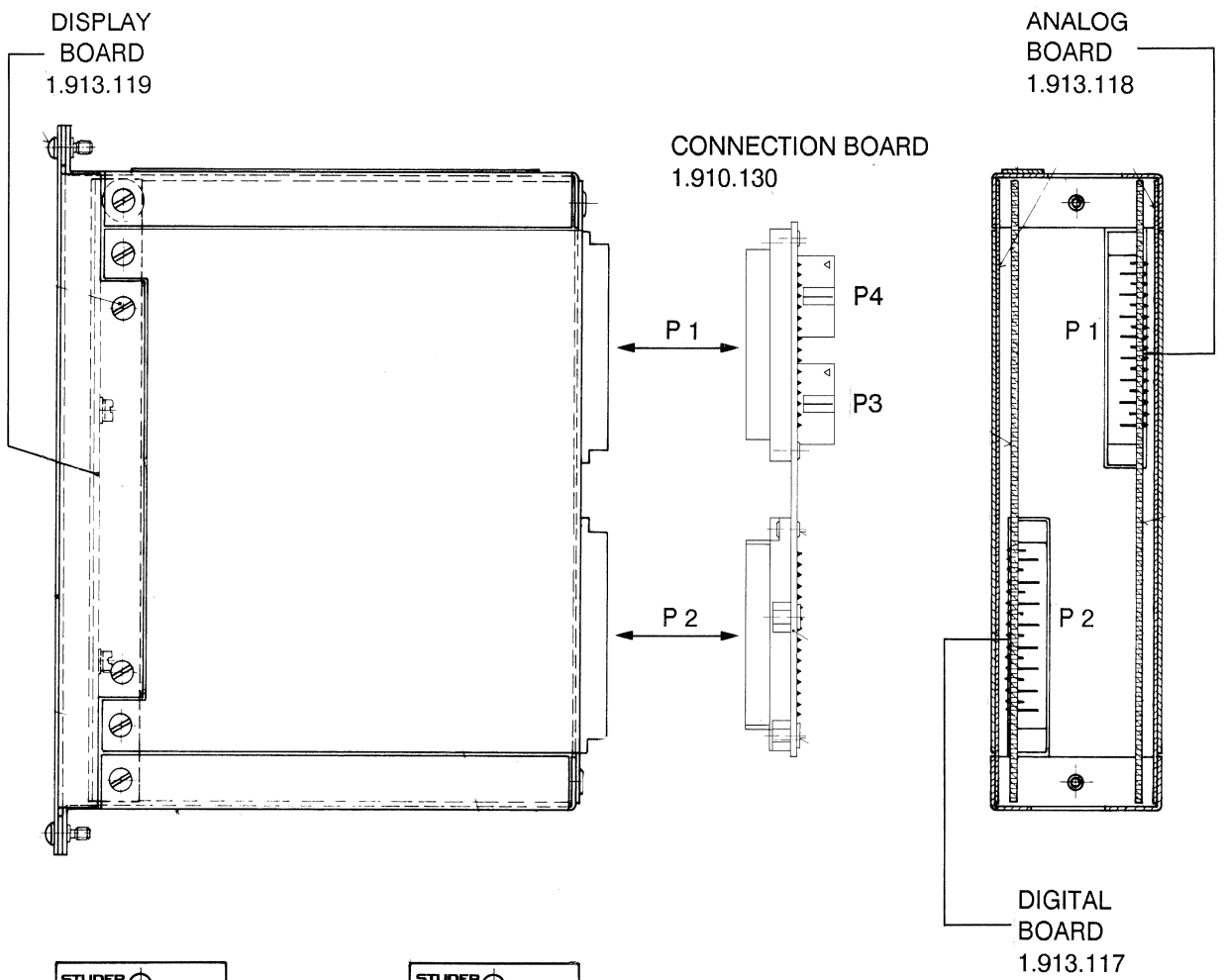
4. Block Diagram

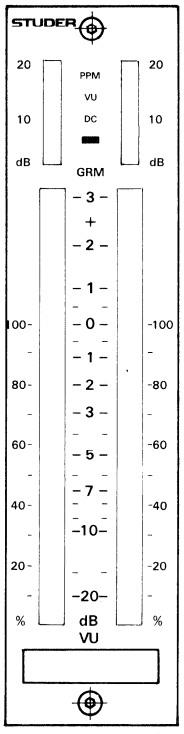
Block Diagram for Channel I

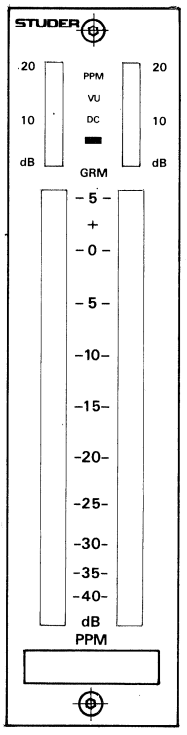


5. SCHEMATICS

Bargraph 1 Unit (PPM or VU) 1.913.111.81 / 112.81

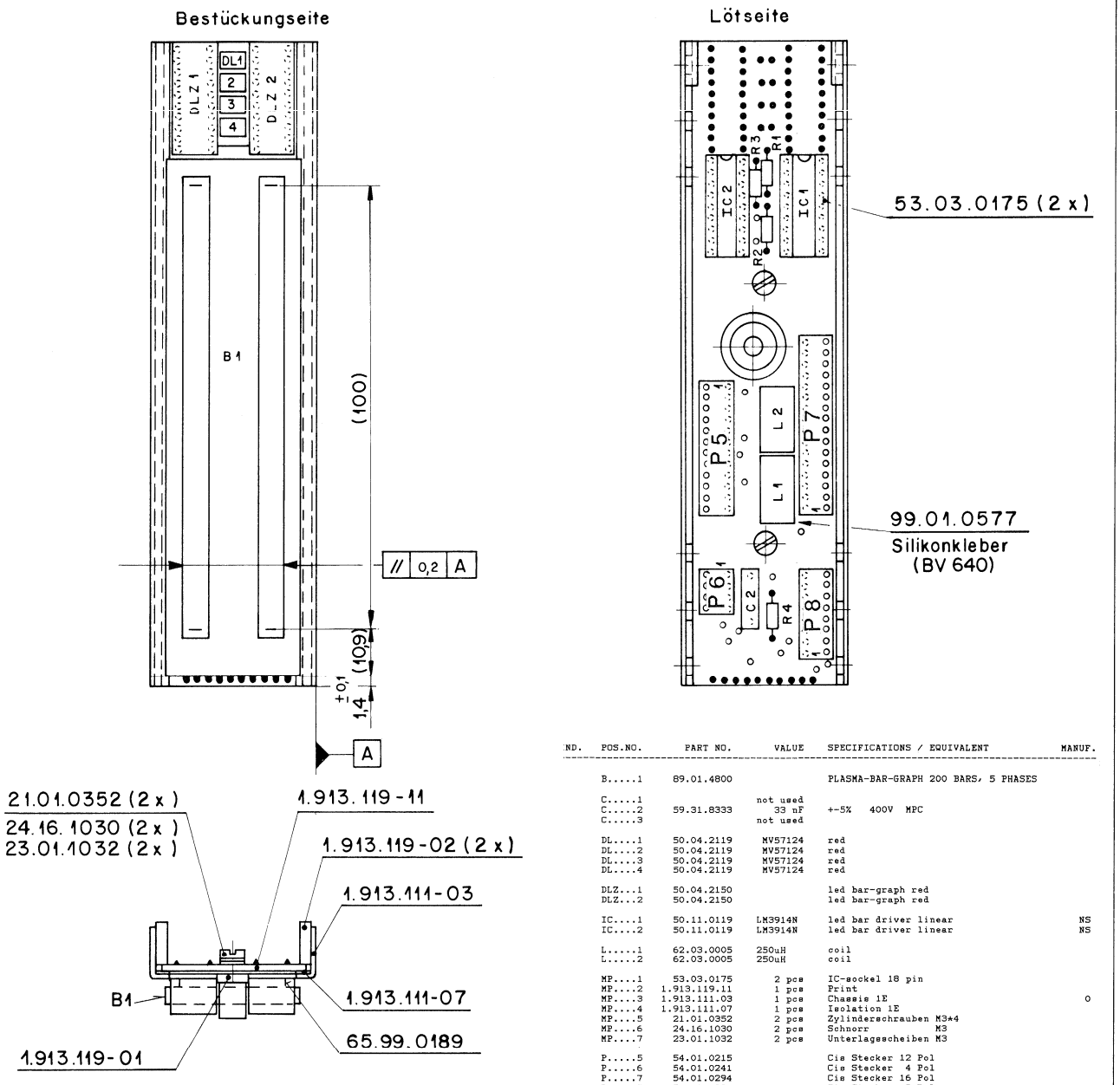






BARGRAPH

Display Board 1 Unit 1.913.119.00



ND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	B.....1	89.01.4800		PLASMA-BAR-GRAPH 200 BARS, 5 PHASES	
	C.....1		not used		
	C.....2	59.31.8333	33 nF	+-5% 400V MPC	
	C.....3		not used		
	DL....1	50.04.2119	MV57124	red	
	DL....2	50.04.2119	MV57124	red	
	DL....3	50.04.2119	MV57124	red	
	DL....4	50.04.2119	MV57124	red	
	DLZ...1	50.04.2150		led bar-graph red	
	DLZ...2	50.04.2150		led bar-graph red	
	IC....1	50.11.0119	LM3914N	led bar driver linear	NS
	IC....2	50.11.0119	LM3914N	led bar driver linear	NS
	L.....1	62.03.0005	250uH	coil	
	L.....2	62.03.0005	250uH	coil	
	MP....1	53.03.0175	2 pcs	IC-sockel 18 pin	
	MP....2	1.913.119.11	1 pcs	Print	
	MP....3	1.913.111.03	1 pcs	Chassis 1E	0
	MP....4	1.913.111.07	1 pcs	Isolation 1E	
	MP....5	21.01.0352	2 pcs	Zylinderschrauben M3*4	
	MP....6	24.16.1030	2 pcs	Schnorr M3	
	MP....7	23.01.1032	2 pcs	Unterlagsscheiben M3	
	P.....5	54.01.0215		Cis Stecker 12 Pol	
	P.....6	54.01.0241		Cis Stecker 4 Pol	
	P.....7	54.01.0294		Cis Stecker 16 Pol	
	P.....8	54.01.0289		Cis Stecker 8 Pol	
	R.....1	57.11.3472	4.7 kOhm	5% 0.25W	
	R.....2	57.11.3242	2.4 kOhm	5% 0.25W	
	R.....3	57.11.3472	4.7 kOhm	5% 0.25W	
	R.....4	57.11.3105	1 MOhm	5% 0.25W	

S T U D E R (00) 87/11/24 AE DISPLAY UNIT 1E PL 1.913.119.00 PAGE 1

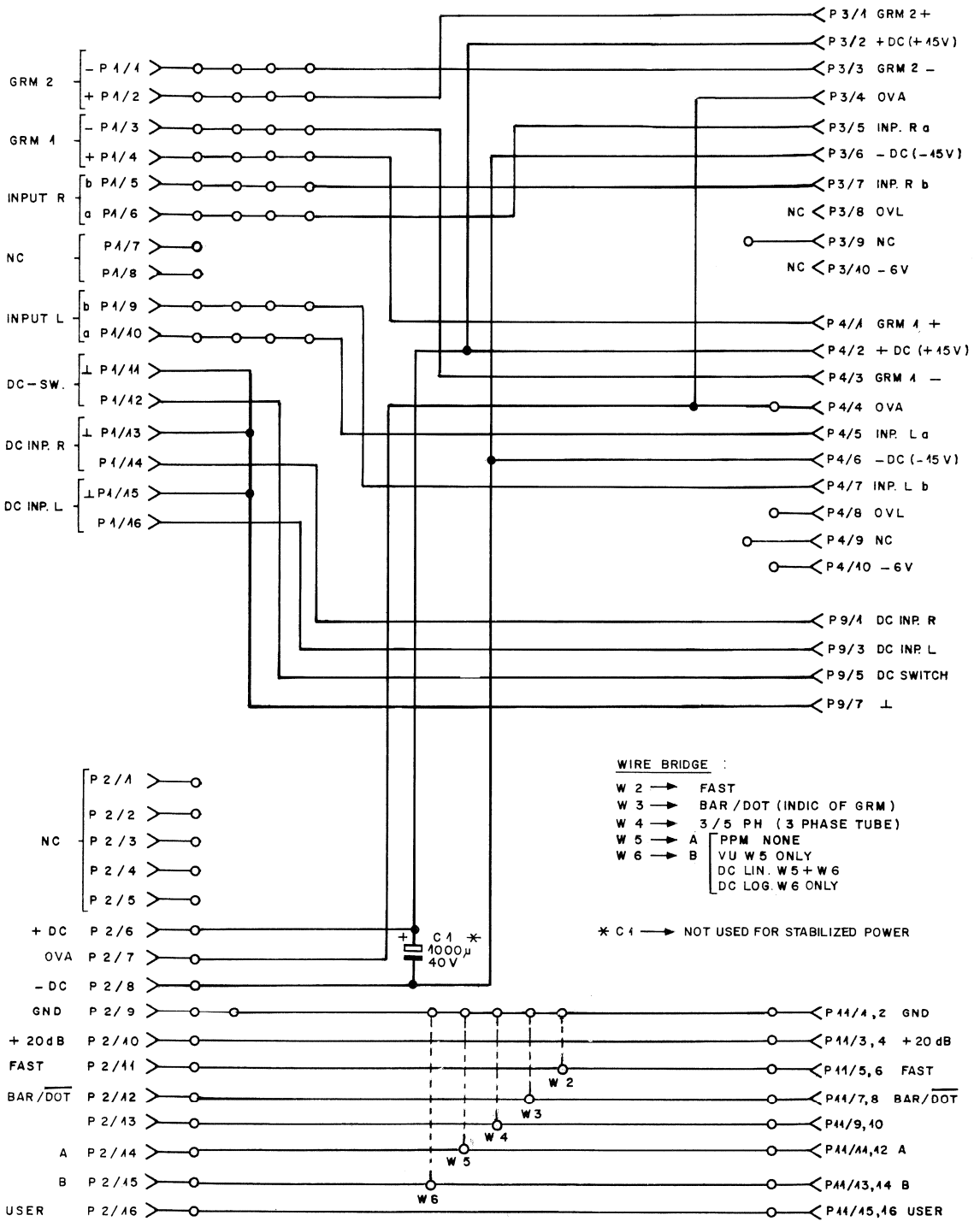
IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.

MANUFACTURER: Bu=Burndy, Ex=Exar, Fc=Fairchild, GI=General Instrument
HP=Hewlett Packard, ITT=Intermetall, Mot=Motorola, Nat=National
(Matsushita), NS=National Semiconductors, Ph=Philips,
Ra=Raytheon, Sig=Signetics, Six=Siliconix, St=Studer,
TI=Texas Instrument, Sie=Siemens, Is=Intersil, Un=Unitrode

ORIG 87/11/24

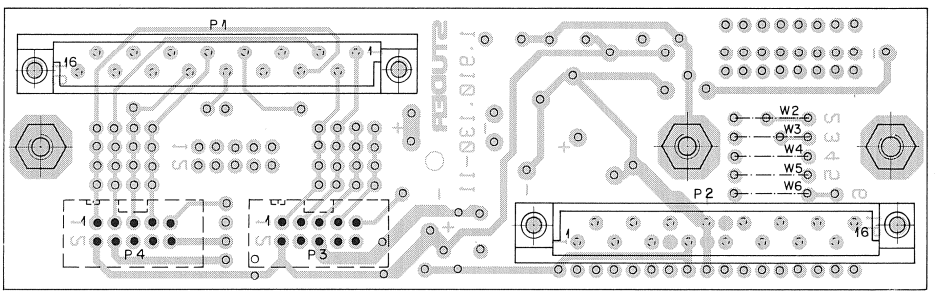
S T U D E R (00) 87/11/24 AE DISPLAY UNIT 1E PL 1.913.119.00 PAGE 2

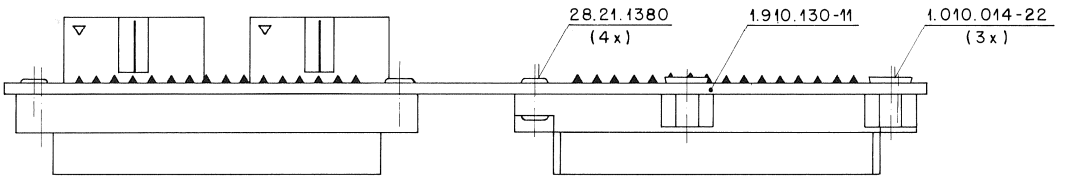
Bargraph Connection Board 1 Unit 1.913.130.00



BARGRAPH

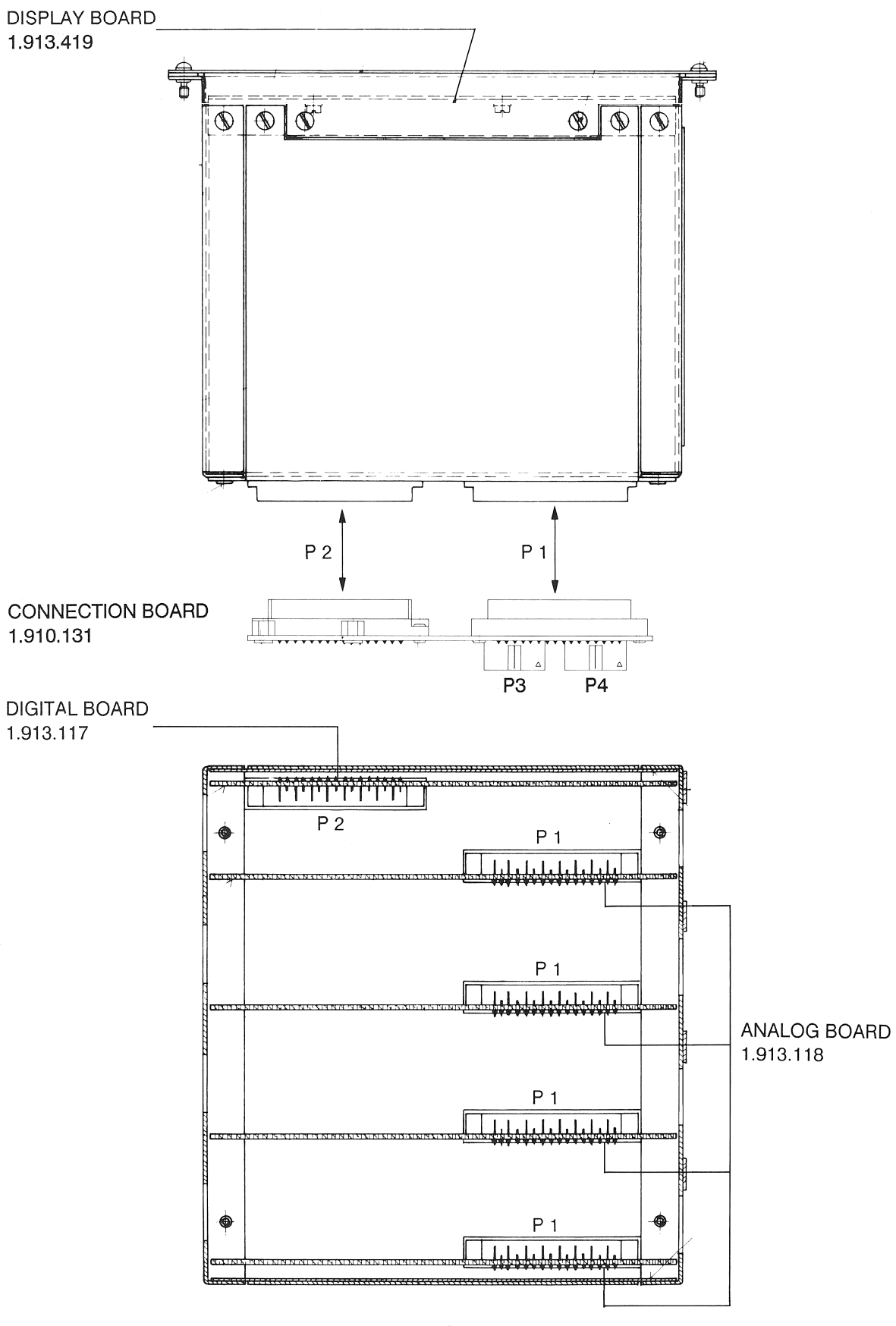
Bargraph Connection Board 1 Unit 1.913.130.00





W2 bis W6 nach Angabe Studio-Projektierung

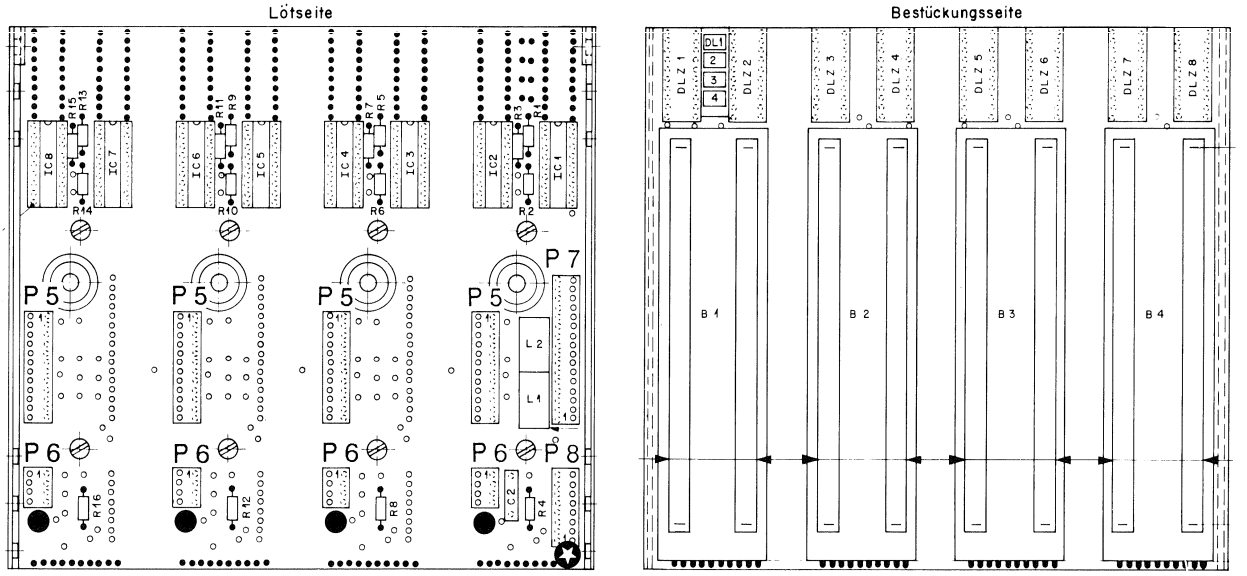
Bargraph 4 Units (PPM or VU) 1.913.411.81 / 412.81



BARGRAPH

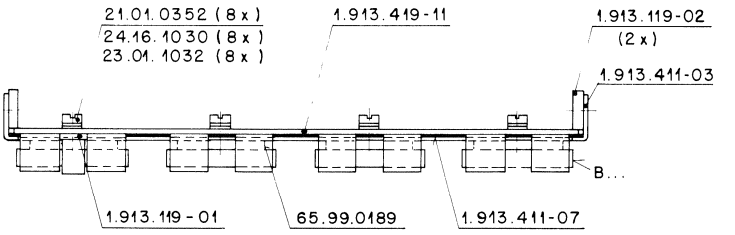
Display Board 4 Units 1.913.419.00

The Display Board 4 Units is adequate to four display boards for one unit each.
For details see schematic number 1.913.119.



● ANALOG BOARD
1.913.118

✪ DIGITAL BOARD
1.913.117



Bargraph Connection Board 4 Units 1.910.131

This Board combines four connection boards for one unit on a single print.
For details please see 'Connection Board 1 Unit 1.910.130'.

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	B.....1	89.01.4800		PLASMA-BAR-GRAPH 200 BARS, 5 PHASES	
	B.....2	89.01.4800		PLASMA-BAR-GRAPH 200 BARS, 5 PHASES	
	B.....3	89.01.4800		PLASMA-BAR-GRAPH 200 BARS, 5 PHASES	
	B.....4	89.01.4800		PLASMA-BAR-GRAPH 200 BARS, 5 PHASES	
	C.....1		not used		
	C.....2	59.31.8333	33 nF	+-5% 400V MPC	
	C.....3		not used		
	DL....1	50.04.2119	MV57124	red	
	DL....2	50.04.2119	MV57124	red	
	DL....3	50.04.2119	MV57124	red	
	DL....4	50.04.2119	MV57124	red	
	DLZ...1	50.04.2150		led bar-graph red	
	DLZ...2	50.04.2150		led bar-graph red	
	DLZ...3	50.04.2150		led bar-graph red	
	DLZ...4	50.04.2150		led bar-graph red	
	DLZ...5	50.04.2150		led bar-graph red	
	DLZ...6	50.04.2150		led bar-graph red	
	DLZ...7	50.04.2150		led bar-graph red	
	DLZ...8	50.04.2150		led bar-graph red	
	IC....1	50.11.0119	LM3914N	led bar driver linear	NS
	IC....2	50.11.0119	LM3914N	led bar driver linear	NS
	IC....3	50.11.0119	LM3914N	led bar driver linear	NS
	IC....4	50.11.0119	LM3914N	led bar driver linear	NS
	IC....5	50.11.0119	LM3914N	led bar driver linear	NS
	IC....6	50.11.0119	LM3914N	led bar driver linear	NS
	IC....7	50.11.0119	LM3914N	led bar driver linear	NS
	IC....8	50.11.0119	LM3914N	led bar driver linear	NS
	L.....1	62.03.0005	250uH	coil	
	L.....2	62.03.0005	250uH	coil	
	MP....1	53.03.0175	8 pcs	IC-sockel 18 pin	
	MP....2	1.913.419.11	1 pcs	Print	

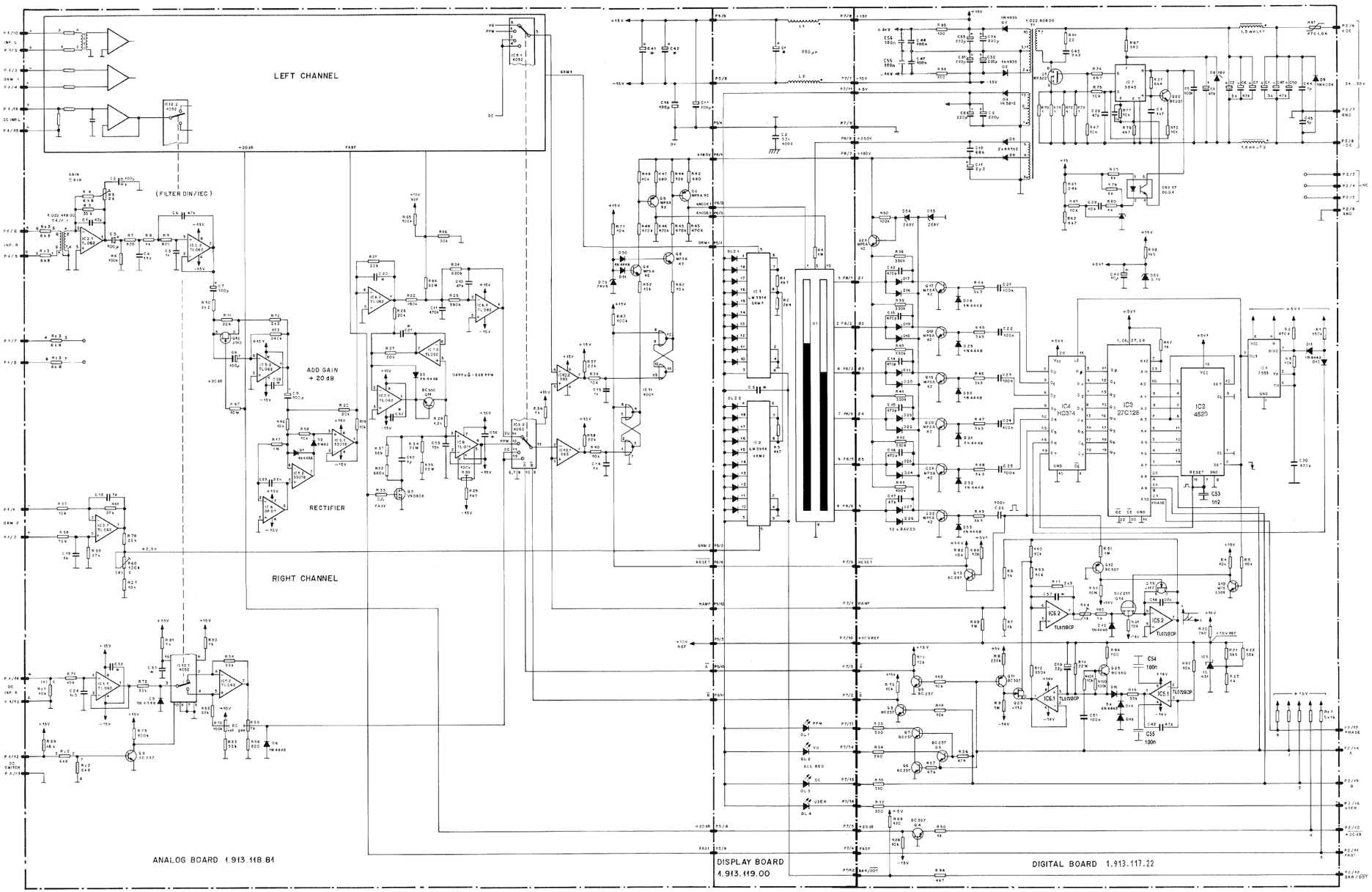
S T U D E R (00) 87/11/24 AE DISPLAY UNIT 4E PL 1.913.419.00 PAGE 1

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	MP....3		1 pcs	Chassis 4E	
	MP....4		1 pcs	Isolation 4E	
	MP....5	21.01.0352	2 pcs	Zylinderschrauben M3*4	
	MP....6	24.16.1030	2 pcs	Schnorr M3	
	MP....7	23.01.1032	2 pcs	Unterlagsscheiben M3	
	P.....5	54.01.0215		Cis Stecker 12 Pol	4 Stueck
	P.....6	54.01.0241		Cis Stecker 4 Pol	4 Stueck
	P.....7	54.01.0294		Cis Stecker 16 Pol	1 Stueck
	P.....8	54.01.0289		Cis Stecker 8 Pol	1 Stueck
	R.....1	57.11.3472	4.7 kOhm	5% 0.25W	
	R.....2	57.11.3242	2.4 kOhm	5% 0.25W	
	R.....3	57.11.3472	4.7 kOhm	5% 0.25W	
	R.....4	57.11.3105	1 MOhm	5% 0.25W	
	R.....5	57.11.3472	4.7 kOhm	5% 0.25W	
	R.....6	57.11.3242	2.4 kOhm	5% 0.25W	
	R.....7	57.11.3472	4.7 kOhm	5% 0.25W	
	R.....8	57.11.3105	1 MOhm	5% 0.25W	
	R.....9	57.11.3472	4.7 kOhm	5% 0.25W	
	R....10	57.11.3242	2.4 kOhm	5% 0.25W	
	R....11	57.11.3472	4.7 kOhm	5% 0.25W	
	R....12	57.11.3105	1 MOhm	5% 0.25W	
	R....13	57.11.3472	4.7 kOhm	5% 0.25W	
	R....14	57.11.3242	2.4 kOhm	5% 0.25W	
	R....15	57.11.3472	4.7 kOhm	5% 0.25W	
	R....16	57.11.3105	1 MOhm	5% 0.25W	

MANUFACTURER: Bu=Burndy, Ex=Exar, Fc=Fairchild, GI=General Instrument
HP=Hewlett Packard, ITT=Intermetall, Mot=Motorola, Nat=National
(Matsushita), NS=National Semiconductors, Ph=Philips,
Ra=Raytheon, Sig=Signetics, Six=Siliconix, St=Studer,
TI=Texas Instrument, Sie=Siemens, Is=Intersil, Un=Unitrode

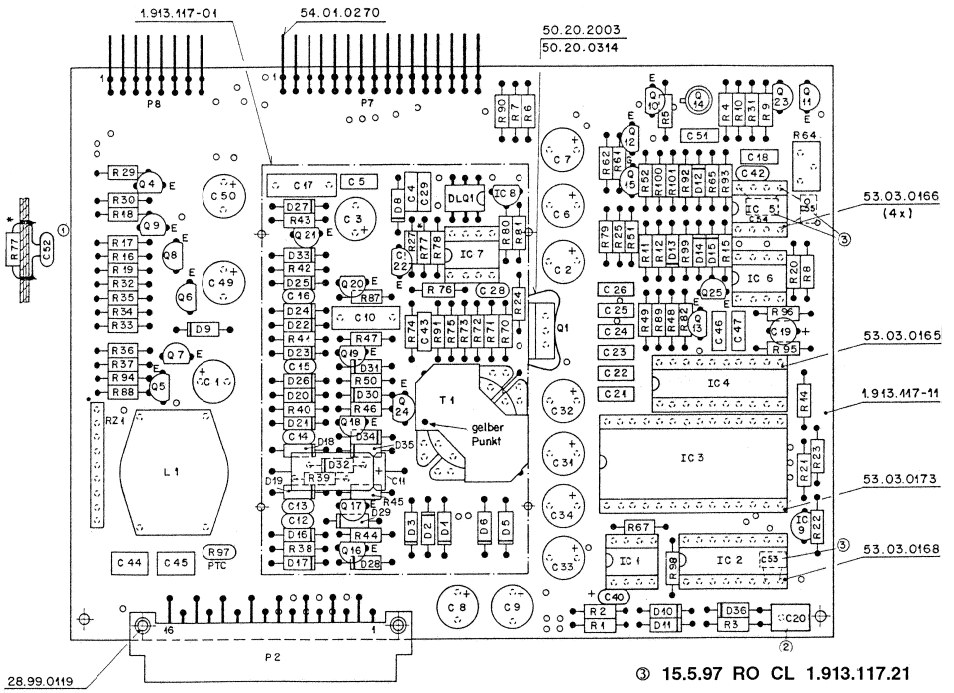
ORIG 87/11/24

S T U D E R (00) 87/11/24 AE DISPLAY UNIT 4E PL 1.913.419.00 PAGE 2



⑧ 9.90 ⑨ ⑩	④ 21.6.96 Ro.	⑫ 15.5.97 RO	
STUDER REGENSDORF ZURICH	DUAL BAR GRAPH PPM DUAL BAR GRAPH VU		SC 1.913.111.81 SC 1.913.112.81

Bargraph Digital Board 1.913.117.21



③ 15.5.97 RO CL 1.913.117.21

① C52 neu dazu

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.6470		47u	EL 40V 20% RM5
0	C 2	59.22.6470		47u	EL 40V 20% RM5
0	C 3	59.22.6470		47u	EL 40V 20% RM5
0	C 4	59.06.0472		4n7	PETP, 63V, 10%, RM5
0	C 5	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 6	59.22.6470		47u	EL 40V 20% RM5
0	C 7	59.22.6470		47u	EL 40V 20% RM5
0	C 8	59.22.4221		220u	EL 16V 20% RM5
0	C 9	59.22.4221		220u	EL 16V 20% RM5
0	C 10	59.31.6683		68n	MPETP, 10%, 100V
0	C 11	59.25.8229		2u2	EL 250V 20% axial
0	C 12	59.32.1471		470p	CER 10%, 400V
0	C 13	59.32.1471		470p	CER 10%, 400V
0	C 14	59.32.1471		470p	CER 10%, 400V
0	C 15	59.32.1471		470p	CER 10%, 400V
0	C 16	59.32.1471		470p	CER 10%, 400V
0	C 17	59.02.5473		47n	MPC, 5%, 250V
0	C 18	59.06.5223		22n	PETP, 63V, 5%, RM5
0	C 19	59.22.6220		22u	EL 35V 20% RM5
0	C 20	59.34.5471		470p	CER 63V, 5%, N1500
0	C 21	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 22	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 23	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 24	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 25	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 26	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 28	59.34.2470		47p	CER 63V, 5%, N150
0	C 29	59.06.5223		22n	PETP, 63V, 5%, RM5
0	C 31	59.22.4221		220u	EL 16V 20% RM5

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 32	59.22.4221		220u	EL 16V 20% RM5
0	C 33	59.22.4221		220u	EL 16V 20% RM5
0	C 34	59.22.4221		220u	EL 16V 20% RM5
0	C 40	59.26.1100		10u	SAL 10V 20%
0	C 42	59.34.2470		47p	CER 63V, 5%, N150
0	C 43	59.06.5222		2n2	PETP, 63V, 5%, RM5
0	C 44	59.06.0105		1u0	PETP, 50V, 10%, RM5
0	C 45	59.06.0105		1u0	PETP, 50V, 10%, RM5
0	C 46	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 47	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 49	59.22.6470		47u	EL 40V 20% RM5
0	C 50	59.22.6470		47u	EL 40V 20% RM5
0	C 51	59.06.5104		100n	PETP, 63V, 5%, RM5
0	C 52	59.32.4102		1n0	CER , 20%, 50V
0	C 53	not used		1n2	CER 10%, 50V
0	C 54	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 55	59.06.0104		100n	PETP, 63V, 10%, RM5
0	D 1	50.04.0508		1N4935	D 1 N 4935 ... 1 N 4937
0	D 2	50.04.0508		1N4935	D 1 N 4935 ... 1 N 4937
0	D 3	50.04.0512		1N5818	D 1N 5818, 1N 5819,
0	D 5	50.04.0513		BA159	D BA 159 , SI
0	D 6	50.04.0513		BA159	D BA 159 , SI
0	D 8	50.04.1122		18V	Zener, 5%, 0.5W, DO-35
0	D 9	50.04.0105		1N4004	1A, DO 41
0	D 10	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 11	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 12	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 13	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 14	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	D 15	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 16	50.04.0133		BAV20	D BAV 20 , SI
0	D 17	50.04.0133		BAV20	D BAV 20 , SI
0	D 18	50.04.0133		BAV20	D BAV 20 , SI
0	D 19	50.04.0133		BAV20	D BAV 20 , SI
0	D 20	50.04.0133		BAV20	D BAV 20 , SI
0	D 21	50.04.0133		BAV20	D BAV 20 , SI
0	D 22	50.04.0133		BAV20	D BAV 20 , SI
0	D 23	50.04.0133		BAV20	D BAV 20 , SI
0	D 24	50.04.0133		BAV20	D BAV 20 , SI
0	D 25	50.04.0133		BAV20	D BAV 20 , SI
0	D 26	50.04.0133		BAV20	D BAV 20 , SI
0	D 27	50.04.0133		BAV20	D BAV 20 , SI
0	D 28	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 29	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 30	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 31	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 32	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 33	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 34	50.04.1166		68V	Zener, 5%, 0.5W, DO-35
0	D 35	50.04.1166		68V	Zener, 5%, 0.5W, DO-35
0	D 36	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DLQ 1	50.04.3200		CNY17-2	Optc-coupler
0	IC 1	50.07.0036		7555	IC ICM 7555 IPA ,A
0	IC 2	50.07.0520		4520	Dual 4bit binary counter
0	IC 3	1.913.999.22			SW BAR-GRAPH DIGITAL BOARD ,A
0	IC 4	50.17.1374		74HC374	IC ... 74 HC 374 .., ,A
0	IC 5	50.09.0121		TL072B	IC TL 072 BCP ,A
0	IC 6	50.09.0121		TL072B	IC TL 072 BCP ,A
0	IC 7	50.10.0113		3843	IC IP 3843 N
0	IC 8	50.10.0106		TL431	Shunt regulator
0	IC 9	50.10.0106		TL431	Shunt regulator
0	L 1	62.03.0100		1.5mH	2A Toroid Chocke compensated
0	MP 1	1.913.117.12	1 pce		BAR-GRAPH DIGITAL PCB
0	MP 2	1.913.117.04	1 pce		NR.-ETIKETTE 5 * 20
0	MP 3	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 4	1.101.001.22			TEXT-ETIK. 5*20 HARDWARE -22
0	MP 5	1.913.117.01	1 pce		ABSCHIRMHAUBE
0	MP 6	28.99.0119	2 pcs		ROHRNIETE D 2.5*0.15* 9
0	MP 7	50.20.0314	1 pce	TO126	Glimmerscheibe, zu Clip
0	MP 8	50.20.2003	1 pce		Montageclip zu TO 220, N/ISOL.
0	MP 9	53.03.0165	1 pce	20p	DIL-socket 0.3"
0	MP 10	53.03.0166	4 pcs	8p	DIL-socket 0.3"
0	MP 11	53.03.0168	1 pce	16p	DIL-socket 0.3"
0	MP 12	53.03.0173	1 pce	28p	DIL 0.6", löt, gerade
0	P 2	54.11.2007		2*8p	EU-BK 2* 8 a1,b2 male
0	P 7	54.01.0270	2 pcs	8p	Stecker CIS parallelsteck
0	P 8	54.01.0270	1 pce	8p	Stecker CIS parallelsteck
0	Q 1	50.03.1502		IRF522	N-VMOS-FET 100V, 7A
0	Q 4	50.03.0515		BC307B	PNP 100mA 45V
0	Q 5	50.03.0436		BC237B	NPN 100mA 45V
0	Q 6	50.03.0436		BC237B	NPN 100mA 45V
0	Q 7	50.03.0436		BC237B	NPN 100mA 45V
0	Q 8	50.03.0436		BC237B	NPN 100mA 45V
0	Q 9	50.03.0436		BC237B	NPN 100mA 45V
0	Q 10	50.03.0508		MPS2369	MPS 2369 NPN
0	Q 11	50.03.0515		BC307B	PNP 100mA 45V
0	Q 12	50.03.0515		BC307B	PNP 100mA 45V
0	Q 13	50.03.0436		BC237B	NPN 100mA 45V
0	Q 14	50.11.0106		SD214	Analog Switch
0	Q 15	50.03.0350		J112	JFET N-Channel
0	Q 16	50.03.0484		MPSA42	MPS A 42
0	Q 17	50.03.0484		MPSA42	MPS A 42
0	Q 18	50.03.0484		MPSA42	MPS A 42
0	Q 19	50.03.0484		MPSA42	MPS A 42
0	Q 20	50.03.0484		MPSA42	MPS A 42
0	Q 21	50.03.0484		MPSA42	MPS A 42
0	Q 22	50.03.0436		BC237B	NPN 100mA 45V
0	Q 23	50.03.0350		J112	JFET N-Channel
0	Q 24	50.03.0484		MPSA42	MPS A 42
0	Q 25	50.03.0407		BC550C	BC 550 C
0	R 1	57.11.3154		150k	MF, 1%, 0207
0	R 2	57.11.3474		470k	MF, 1%, 0207
0	R 3	57.11.3103		10k	MF, 1%, 0207
0	R 4	57.11.3103		10k	MF, 1%, 0207
0	R 5	57.11.3103		10k	MF, 1%, 0207
0	R 6	57.11.3102		1k0	MF, 1%, 0207
0	R 7	57.11.3102		1k0	MF, 1%, 0207
0	R 8	57.11.3224		220k	MF, 1%, 0207
0	R 9	57.11.3105		1M0	MF, 1%, 0207
0	R 10	57.11.3103		10k	MF, 1%, 0207
0	R 11	57.11.3332		3k3	MF, 1%, 0207
0	R 12	57.11.3334		330k	MF, 1%, 0207
0	R 14	57.11.6226		22M	MF, 10%, 0207
0	R 15	57.11.3333		33k	MF, 1%, 0207

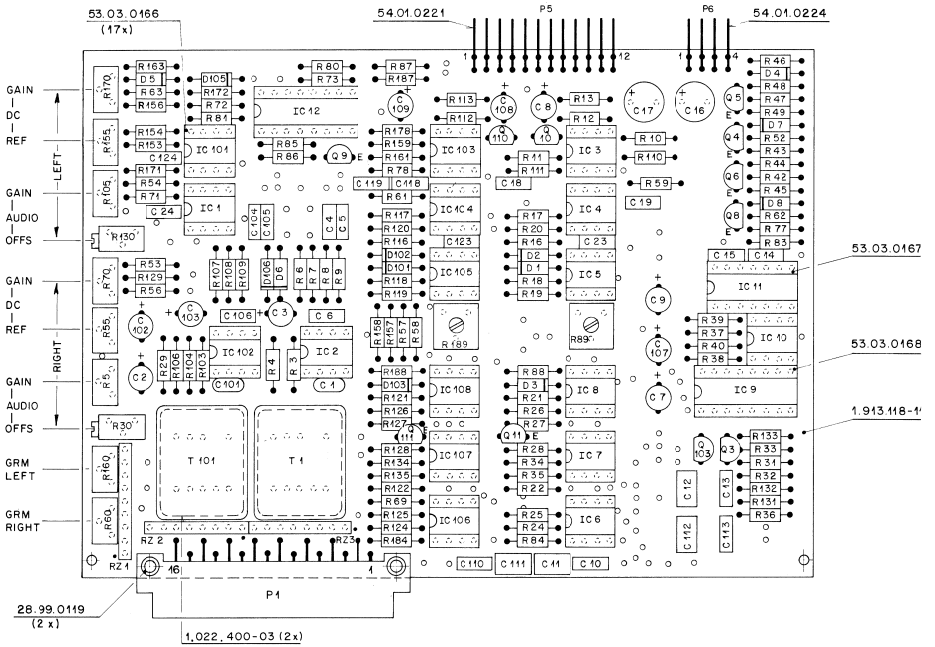
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 16	57.11.3103		10k	MF, 1%, 0207
0	R 17	57.11.3103		10k	MF, 1%, 0207
0	R 18	57.11.3103		10k	MF, 1%, 0207
0	R 19	57.11.3103		10k	MF, 1%, 0207
0	R 20	57.11.3751		750R	MF, 1%, 0207
0	R 21	57.11.3332		3k3	MF, 1%, 0207
0	R 22	57.11.3383		38k	MF, 1%, 0207
0	R 23	57.11.3102		1k0	MF, 1%, 0207
0	R 24	57.11.3479		4R7	MF, 1%, 0207
0	R 25	57.11.3102		1k0	MF, 1%, 0207
0	R 27	57.11.3682		6k8	MF, 1%, 0207
0	R 29	57.11.3103		10k	MF, 1%, 0207
0	R 30	57.11.3102		1k0	MF, 1%, 0207
0	R 31	57.11.3103		10k	MF, 1%, 0207
0	R 32	57.11.3391		390R	MF, 1%, 0207
0	R 33	57.11.3391		390R	MF, 1%, 0207
0	R 34	57.11.3391		390R	MF, 1%, 0207
0	R 35	57.11.3391		390R	MF, 1%, 0207
0	R 36	57.11.3473		47k	MF, 1%, 0207
0	R 37	57.11.3473		47k	MF, 1%, 0207
0	R 38	57.11.3334		330k	MF, 1%, 0207
0	R 39	57.11.3334		330k	MF, 1%, 0207
0	R 40	57.11.3334		330k	MF, 1%, 0207
0	R 41	57.11.3334		330k	MF, 1%, 0207
0	R 42	57.11.3334		330k	MF, 1%, 0207
0	R 43	57.11.3104		100k	MF, 1%, 0207
0	R 44	57.11.3332		3k3	MF, 1%, 0207
0	R 45	57.11.3332		3k3	MF, 1%, 0207
0	R 46	57.11.3332		3k3	MF, 1%, 0207
0	R 47	57.11.3332		3k3	MF, 1%, 0207
0	R 48	57.11.3332		3k3	MF, 1%, 0207
0	R 49	57.11.3332		3k3	MF, 1%, 0207
0	R 50	57.11.3104		100k	MF, 1%, 0207
0	R 51	57.11.3105		1M0	MF, 1%, 0207
0	R 52	57.11.5106		10M	MF, 5%, 0207
0	R 61	57.11.3243		24k	MF, 1%, 0207
0	R 62	57.11.3472		4k7	MF, 1%, 0207
0	R 64	58.01.8102		1k0	Cermet, 10%, 0.5W, horizontal
0	R 65	57.11.3102		1k0	MF, 1%, 0207
0	R 67	57.11.3102		1k0	MF, 1%, 0207
0	R 70	57.11.3109		1R0	MF, 1%, 0207
0	R 71	57.11.3109		1R0	MF, 1%, 0207
0	R 72	57.11.3109		1R0	MF, 1%, 0207
0	R 73	57.11.3109		1R0	MF, 1%, 0207
0	R 74	57.11.3103		10k	MF, 1%, 0207
0	R 75	57.11.3103		10k	MF, 1%, 0207
0	R 76	57.11.3103		10k	MF, 1%, 0207
0	R 77	57.11.3103		10k	MF, 1%, 0207
0	R 78	57.11.3472		4k7	MF, 1%, 0207
0	R 79	57.11.3102		1k0	MF, 1%, 0207
0	R 80	57.11.3102		1k0	MF, 1%, 0207
0	R 81	57.11.3103		10k	MF, 1%, 0207
0	R 82	57.11.3103		10k	MF, 1%, 0207
0	R 87	57.11.3561		560R	MF, 1%, 0207
0	R 88	57.11.3220		22R	MF, 1%, 0207
0	R 89	57.11.3103		10k	MF, 1%, 0207
0	R 90	57.11.3105		1M0	MF, 1%, 0207
0	R 91	57.11.3220		22R	MF, 1%, 0207
0	R 92	57.11.3103		10k	MF, 1%, 0207
0	R 93	57.11.3103		10k	MF, 1%, 0207
0	R 94	57.11.3471		470R	MF, 1%, 0207
0	R 95	57.11.3101		100R	MF, 1%, 0207
0	R 96	57.11.3101		100R	MF, 1%, 0207
0	R 97	57.92.7003		1.0A	PTC
0	R 98	57.11.3152		1k5	MF, 1%, 0207
0	R 99	57.11.3101		100R	MF, 1%, 0207
0	R 100	57.11.3104		100k	MF, 1%, 0207
0	R 101	57.11.3103		10k	MF, 1%, 0207
0	RZ 1	57.88.4102		1k0	8*R Resistor-Netw 2% SIP9
0	T 1	1.022.608.00			SCHALTTRAFO ZU BAR-GRAPH

End of List

Comments:

[23] IC3 same SW, but shifted in address-range

Bargraph Analog Board ESE 1.913.118.81



IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	IC....7	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC....8	50.09.0103	TL 071	single op. amp.	Ra/NE
	IC....9	50.07.0024	4052	analog multi-/demultiplexers	
	IC....10	50.05.0283	LM 393 P	dual voltage comparator	Ra/NE
	IC....11	50.07.0006	4001	quad 2-input Nor Gate	
	IC....12	50.07.0024	4052	analog multi-/demultiplexers	
	IC..101	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC..102	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC..103	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC..104	50.09.0116	OP 07	single op. amp.	Ra/
	IC..105	50.09.0117	MC33078P	dual op. amp.	Motorola
	IC..106	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC..107	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC..108	50.09.0103	TL 071	single op. amp.	Ra/NE
	Q....3	50.03.1505	VN0808	V-MosFET	Fe/Six
	Q....4	50.03.0484	MPSA42	NPN	any
	Q....5	50.03.0485	MPSA92	PNP	any
	Q....6	50.03.0485	MPSA92	PNP	any
	Q....8	50.03.0484	MPSA42	NPN	any
	Q....9	50.03.0436	BC 237	NPN	any
	Q....10	50.03.1130	J 110	N-JFET	NS/Mot/Six
	Q....11	50.03.0497	BC 550	NPN	any
	Q....103	50.03.1505	VN0808	V-MosFET	Fe/Six
	Q....110	50.03.1130	J 110	N-JFET	NS/Mot/Six
	Q....111	50.03.0497	BC 550	NPN	any
	R....3	57.11.3333	33 kOhm	5% 0.25W MF	
	R....4	57.11.3682	6.8 kOhm	5% 0.25W MF	
	R....5	58.01.9202	2 kOhm	10% 0.5 W PGM trimming resistor	
	R....6	57.11.3104	100 kOhm	5% 0.25W MF	
	R....7	57.11.3821	820 Ohm	1% 0.25W MF	
	R....8	57.11.3102	1 kOhm	1% 0.25W MF	
	R....9	57.11.3821	820 Ohm	1% 0.25W MF	
	R....10	57.11.3222	2.2 kOhm	1% 0.25W MF	
	R....11	57.11.3222	2.2 kOhm	1% 0.25W MF	
	R....12	57.11.3222	2.2 kOhm	1% 0.25W MF	

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	R....13	57.11.3244	240 kOhm	5% 0.25W MF	
	R....16	57.11.3103	10 kOhm	1% 0.25W MF	
	R....17	57.11.3105	1 MOhm	5% 0.25W MF	
	R....18	57.11.3103	10 kOhm	1% 0.25W MF	
	R....19	57.11.3103	10 kOhm	1% 0.25W MF	
	R....20	57.11.3203	20 kOhm	1% 0.25W MF	
	R....21	57.11.3203	20 kOhm	1% 0.25W MF	
	R....22	57.11.3164	160 kOhm	1% 0.25W MF	
	R....24	57.11.3624	620 kOhm	1% 0.25W MF	
	R....25	57.11.3394	390 kOhm	1% 0.25W MF	
	R....26	57.11.3203	20 kOhm	1% 0.25W MF	
	R....27	57.11.3203	20 kOhm	1% 0.25W MF	
	R....28	57.11.3122	1.2 kOhm	1% 0.25W MF	
	R....29	57.11.3152	1.5 kOhm	1% 0.25W MF	
	R....30	58.05.0104	100 kOhm	10% 0.5 W PMG trimming resistor	
	R....31	57.11.3563	56 kOhm	5% 0.25W MF	
	R....32	57.11.3684	680 kOhm	1% 0.25W MF	
	R....33	57.11.3000	0 Ohm		
	R....34	57.11.6226	22 MOhm	10% 0.25W MF	
	R....35	57.11.6226	22 MOhm	10% 0.25W MF	
	R....36	57.11.3102	1 kOhm	5% 0.25W MF	
	R....37	57.11.3223	22 kOhm	5% 0.25W MF	
	R....38	57.11.3223	22 kOhm	5% 0.25W MF	
	R....39	57.11.3103	10 kOhm	5% 0.25W MF	
	R....40	57.11.3103	10 kOhm	5% 0.25W MF	
	R....42	57.11.3681	680 Ohm	5% 0.25W MF	
	R....43	57.11.3474	470 kOhm	5% 0.25W MF	
	R....44	57.11.3103	10 kOhm	5% 0.25W MF	
	R....45	57.11.3474	470 kOhm	5% 0.25W MF	
	R....46	57.11.3474	470 kOhm	5% 0.25W MF	
	R....47	57.11.3681	680 Ohm	5% 0.25W MF	
	R....48	57.11.3103	10 kOhm	5% 0.25W MF	
	R....49	57.11.3474	470 kOhm	5% 0.25W MF	
	R....52	57.11.3103	10 kOhm	5% 0.25W MF	
	R....53	57.11.3333	33 kOhm	5% 0.25W MF	
	R....54	57.11.3333	33 kOhm	5% 0.25W MF	
	R....55	58.01.9102	1 kOhm	10% 0.5 W PMG trimming resistor	

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	C....1	59.34.2470	47 pF	CER	
	C....2	59.22.3101	100 uF	ALU 10V	
	C....3	59.22.3101	100 uF	ALU 10V	
	C....4	59.06.5153	15 nF	PE 5%	
	C....5	59.06.5102	1 nF	PE 5%	
	C....6	59.06.5473	47 nF	PE 5%	
	C....7	59.22.3101	100 uF	ALU 10V	
	C....8	59.22.3101	100 uF	ALU 10V	
	C....9	59.22.3101	100 uF	ALU 10V	
	C....10	59.06.5473	47 nF	PE 5%	
	C....11	59.06.5474	470 nF	PE 5%	
	C....12	59.06.5105	1 uF	PE 5%	
	C....13	59.06.5153	15 nF	PE 5%	
	C....14	59.06.5102	1 nF	PE	
	C....15	59.06.5102	1 nF	PE	
	C....16	59.22.3101	100 uF	ALU 25V	
	C....17	59.22.3101	100 uF	ALU 25V	
	C....18	59.06.5102	1 nF	PE	
	C....19	59.06.5102	1 nF	PE	
	C....20			not used	
	C....21			not used	
	C....23	59.06.5223	22 nF	PE 5%	
	C....24	59.06.5152	1.5 nF	PE	
	C....31			not used	
	C....32			not used	
	C....33			not used	
	C....34			not used	
	C....35			not used	
	C....36			not used	
	C....37			not used	
	C....38			not used	
	C....39			not used	
	C....40			not used	
	C....41			not used	
	C....42			not used	
	C..101	59.34.2470	47 pF	CER	
	C..102	59.22.3101	100 uF	ALU 10V	

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	C..103	59.22.3101	100 uF	ALU 10V	
	C..104	59.06.5153	15 nF	PE 5%	
	C..105	59.06.5102	1 nF	PE 5%	
	C..106	59.06.5473	47 nF	PE 5%	
	C..107	59.22.3101	100 uF	ALU 10V	
	C..108	59.22.3101	100 uF	ALU 10V	
	C..109	59.22.3101	100 uF	ALU 10V	
	C..110	59.06.5473	47 nF	PE 5%	
	C..111	59.06.5474	470 nF	PE 5%	
	C..112	59.06.5105	1 uF	PE 5%	
	C..113	59.06.5153	15 nF	PE 5%	
	C..118	59.06.5102	1 nF	PE	
	C..119	59.06.5102	1 nF	PE	
	C..120			not used	
	C..123	59.06.5223	22 nF	PE 5%	
	C..124	59.06.5152	1.5 nF	PE 5%	
	D....1	50.04.0125	1N4448		
	D....2	50.04.0132	BAW 62		
	D....3	50.04.0125	1N4448		
	D....4	50.04.1120	4.3 V	z-diode	
	D....5	50.04.0125	1N4448		
	D....6	50.04.0125	1N4448		
	D....7	50.04.0125	1N4448		
	D....8	50.04.0125	1N4448		
	D..101	50.04.0125	1N4448		
	D..102	50.04.0132	BAW 62		
	D..103	50.04.0125	1N4448		
	D..105	50.04.0125	1N4448		
	D..106	50.04.0125	1N4448		
	IC....1	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC....2	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC....3	50.09.0119	TL 062	dual op. amp.	Ra/NE
	IC....4	50.09.0116	OP 07	single op. amp.	Ra/
	IC....5	50.09.0117	MC33078P	dual op. amp.	Motorola
	IC....6	50.09.0119	TL 062	dual op. amp.	Ra/NE

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	R....56	57.11.3821	820 Ohm	5% 0.25W MF	
	R....57	57.11.3103	10 kOhm	1% 0.25W MF	
	R....58	57.11.3103	10 kOhm	1% 0.25W MF	
	R....59	57.11.3273	27 kOhm	1% 0.25W MF	
	R....60	58.01.9104	100 kOhm	10% 0.5 W PMG trimming resistor	
	R....61	57.11.3273	27 kOhm	1% 0.25W MF	
	R....62	57.11.3103	10 kOhm	5% 0.25W MF	
	R....63	57.11.3333	33 kOhm	5% 0.25W MF	
	R....69	57.11.3183	18 kOhm	5% 0.25W MF	
	R....70	58.01.9104	100 kOhm	10% 0.5 W PMG trimming resistor	
	R....71	57.11.3103	10 kOhm	5% 0.25W MF	
	R....72	57.11.3333	33 kOhm	5% 0.25W MF	
	R....73	57.11.3104	100 kOhm	5% 0.25W MF	
	R....77	57.11.3103	10 kOhm	5% 0.25W MF	
	R....78	57.11.3223	22 kOhm	5% 0.25W MF	
	R....80	57.11.3102	1 kOhm	5% 0.25W MF	
	R....81	57.11.3102	1 kOhm	5% 0.25W MF	
	R....83	57.11.3104	100 kOhm	5% 0.25W MF	
	R....84	57.11.6226	22 MOhm	5% 0.25W MF	
	R....85	57.11.3683	68 kOhm	5% 0.25W MF	
	R....86	57.11.3303	30 kOhm	5% 0.25W MF	
	R....87	57.11.5106	10 MOhm	5% 0.25W MF	
	R....88	57.11.5106	10 MOhm	5% 0.25W MF	
	R....89	58.01.8104	100 kOhm	1% 0.5W PGM trimming resistor	
	R..103	57.11.3333	33 kOhm	5% 0.25W MF	
	R..104	57.11.3682	6.8 kOhm	5% 0.25W MF	
	R..105	58.01.9202	2 kOhm	10% 0.5W PGM trimming resistor	
	R..106	57.11.3104	100 kOhm	5% 0.25W MF	
	R..107	57.11.3821	820 Ohm	1% 0.25W MF	
	R..108	57.11.3102	1 kOhm	1% 0.25W MF	
	R..109	57.11.3821	820 Ohm	1% 0.25W MF	
	R..110	57.11.3222	2.2 Ohm	1% 0.25W MF	
	R..111	57.11.3223	22 kOhm	1% 0.25W MF	
	R..112	57.11.3222	2.2 Ohm	1% 0.25W MF	
	R..113	57.11.3244	240 kOhm	5% 0.25W MF	
	R..116	57.11.3103	10 kOhm	1% 0.25W MF	
	R..117	57.11.3105	1 MOhm	5% 0.25W MF	

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	R..118	57.11.3103	10 kOhm	1% 0.25W MF	
	R..119	57.11.3103	10 kOhm	1% 0.25W MF	
	R..120	57.11.3203	20 kOhm	1% 0.25W MF	
	R..121	57.11.3203	20 kOhm	1% 0.25W MF	
	R..122	57.11.3164	160 kOhm	1% 0.25W MF	
	R..124	57.11.3624	620 kOhm	1% 0.25W MF	
	R..125	57.11.3394	390 kOhm	1% 0.25W MF	
	R..126	57.11.3203	20 kOhm	1% 0.25W MF	
	R..127	57.11.3203	20 kOhm	1% 0.25W MF	
	R..128	57.11.3122	1.2 kOhm	1% 0.25W MF	
	R..129	57.11.3152	1.5 kOhm	5% 0.25W MF	
	R..130	58.05.0104	100 kOhm	10% 0.5 W PMG trimming resistor	
	R..131	57.11.3563	56 kOhm	5% 0.25W MF	
	R..132	57.11.3684	680 kOhm	1% 0.25W MF	
	R..133	57.11.3000	0 Ohm		
	R..134	57.11.6226	22 MOhm	10% 0.25W MF	
	R..135	57.11.6226	22 MOhm	10% 0.25W MF	
	R..153	57.11.3333	33 kOhm	5% 0.25W MF	
	R..154	57.11.3333	33 kOhm	5% 0.25W MF	
	R..155	58.01.9102	1 kOhm	10% 0.5 W PMG trimming resistor	
	R..156	57.11.3821	820 Ohm	5% 0.25W MF	
	R..157	57.11.3103	10 kOhm	1% 0.25W MF	
	R..158	57.11.3103	10 kOhm	1% 0.25W MF	
	R..159	57.11.3273	27 kOhm	5% 0.25W MF	
	R..160	58.01.9104	100 kOhm	10% 0.5 W PMG trimming resistor	
	R..161	57.11.3273	27 kOhm	5% 0.25W MF	
	R..163	57.11.3333	33 kOhm	5% 0.25W MF	
	R..170	58.01.9104	100 kOhm	10% 0.5 W PMG trimming resistor	
	R..171	57.11.3103	10 kOhm	5% 0.25W MF	
	R..178	57.11.3333	33 kOhm	5% 0.25W MF	
	R..179	57.11.3223	22 kOhm	5% 0.25W MF	
	R..184	57.11.6226	22 MOhm	5% 0.25W MF	
	R..187	57.11.5106	10 MOhm	5% 0.25W MF	
	R..188	57.11.5106	10 MOhm	5% 0.25W MF	
	R..189	58.01.8104	100 kOhm	10% 0.5 W PMG trimming resistor	
	RZ....1	57.88.4103	10 kOhm	5% resistor network	

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	RZ....2	57.88.2682	6.8 kOhm	5% resistor network	
	RZ....3	57.88.2682	6.8 kOhm	5% resistor network	
	T.....1	1.022.419.00		input trafo 1:1	STUDER
	T...101	1.022.419.00		input trafo 1:1	STUDER

CER=Ceramic, PE=Polyester, SAL=Solid Aluminium
MF=Metal Film, PM=Cermet

MANUFACTURER: Fa=Ferranti, NE=Nippon Electronic Corp. Ra=Raytheon,
Sig=Signetics, Six=Siliconix

ORIG 88/11/11

Level meter VU/PPM 30 LED and gain reduction meter 10 LED

CONTENTS

SCOPE OF VALIDITY

This manual applies to the following modules:

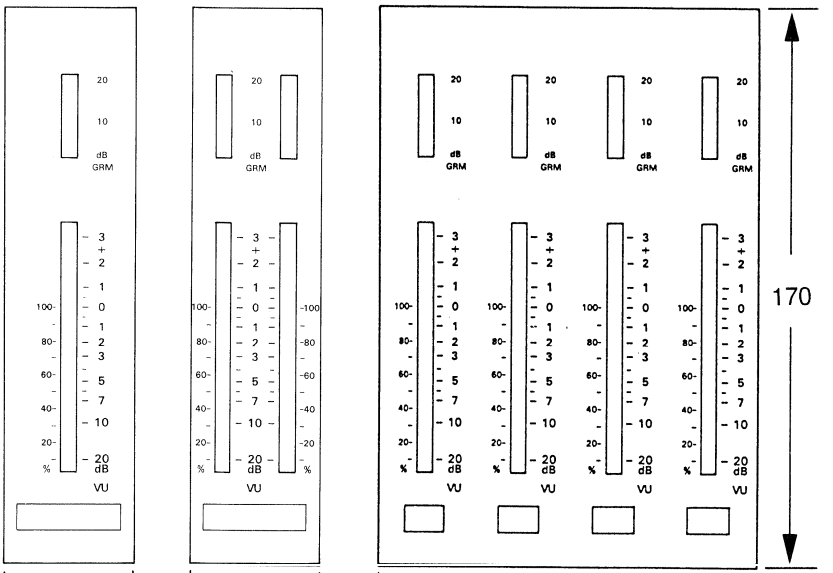
Display	1 Channel	2 Channels	4 Channels	PCB Nr.
PPM	1.913.101	1.913.105	1.913.321	1.913.295
VU	1.913.102	1.913.106	1.913.322	1.913.295
PPM / GRM	1.913.103	1.913.107	1.913.323	1.913.295/297
VU / GRM	1.913.104	1.913.108	1.913.324	1.913.295/297

1. General

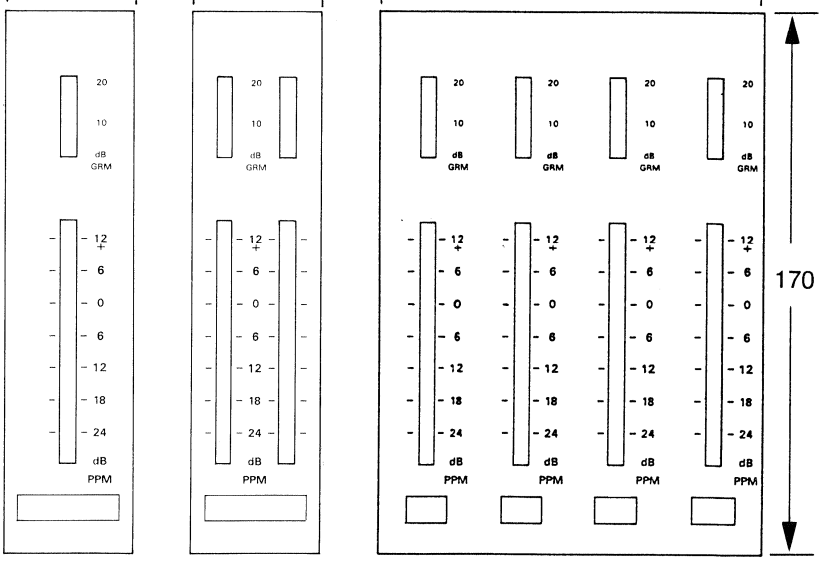
The **STUDER output meter VU-PPM 30 LED** has been developed for installation into the display panel of STUDER mixing consoles. Instruments with VU (volume unit) or PPM (peak program meter) characteristic are available. In place of the bar indication, an optional dot indication is available.
The instruments listed below are equipped with the two PCBs 1.913.295 (VU/PPM) and 1.913.297 (GRM) corresponding to the table on page 1. The circuit diagram relating to the corresponding circuit board number should be consulted.

«Volume Unit Meters»

1.913.102* 1.913.106* 1.913.322*
1.913.104 1.913.108 1.913.324



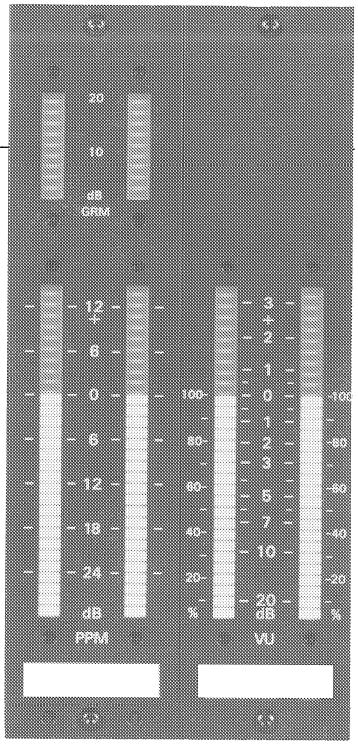
«Peak Program Meters»



1.913.101* 1.913.105* 1.913.321*
1.913.103 1.913.107 1.913.323

* = Version without gain reduction meter (GRM)

VU / PPM 30 LED



2. Functional description

PPM:

The peak program meter is a quasi-peak value instrument with a long release time. When a signal voltage corresponding to a level of 0 dB is applied for 10 ms, the resulting indication should be -1 dB.
The desired decay time to -20dB is 1.7 s.

VU-meter:

The VU-meter indicates signals according to the standard defined by ANSI 1954. When a signal with a duration of 300 ms is applied, the indication should be 99% of the reference value. The rise and decay time on the VU-meter are identical. The factory set lead is 6 dB.

Gain reduction meter:

When the limiter/compressor is switched on, the GRM indicates the magnitude of the gain reduction.

3. Technical data

PCB 1.913.295

General:

0 dBu ≙ 0.775 V_{eff}

Input sensitivity of the reference indication:		-1 dBu... +16 dBu		
Input impedance		>10 kΩ		
Supply:		DC ±15 V	or	DC +24 V
Current consumption:	Quiescent	45mA	/	35 mA
	Medium load	58mA	/	56mA
	Full load	80mA	/	80 mA

VU-meter:

Indicating range:	-20VU... +30VU
Accuracy:	±1 segment
(precond.:-10VU... +3VU/0°...50°C/31.5Hz...16kHz)	
Response time to -1VU:	207(±30)ms

PP-meter:

Indicating range:	-30dBu... +15dBu
Accuracy:	±1 segment
(precond.:-30dB... +15dB/0°...50°C/31.5Hz...16kHz)	
Dynamic behavior:	
Jumper normal: 0dB for 10 ms	→indication: -1dB ±0.5dB
Jumper normal: 0dB for 3ms	→indication: -4dB ±1dB
Jumper fast: 0dB for ~100µs	→indication: 1dB
Decay time 0...-20dB:	1.7(±0.3)s

Circuit board sizes:

Height x depth, with connector:	96 mm x 95 mm
Width:	18 mm
Center between M3 mounting holes:	85.1 mm (3.35")

4. Block diagram

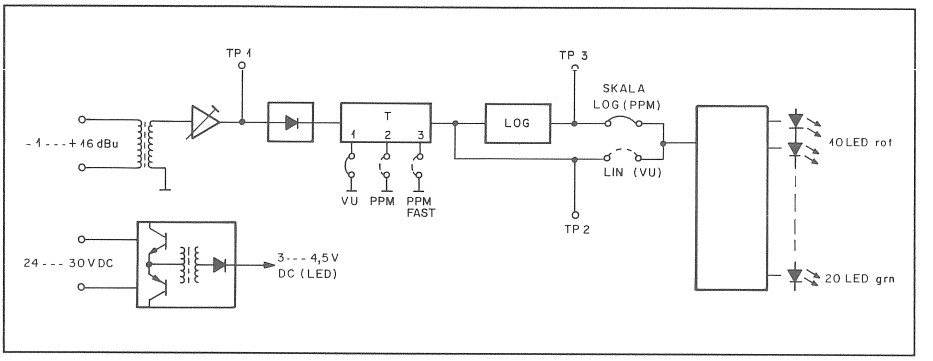


Fig. 2 **VU-PPM block diagram:** The settings VU/PPM/PPM fast or lin/log are established with the jumpers JS 1 and JS 2 respectively (see Fig. 3)

5. Alignment instructions VU/PP meter PCB 1.913.295

Measuring instruments:

AC voltmeter Ri ≥ 20 kΩ
DC voltmeter Ri ≥100 kΩ, preferably digital VM
Generator, 31.5Hz...16kHz, 0...16dBu; attenuator with 10dB increments.

Alignment elements

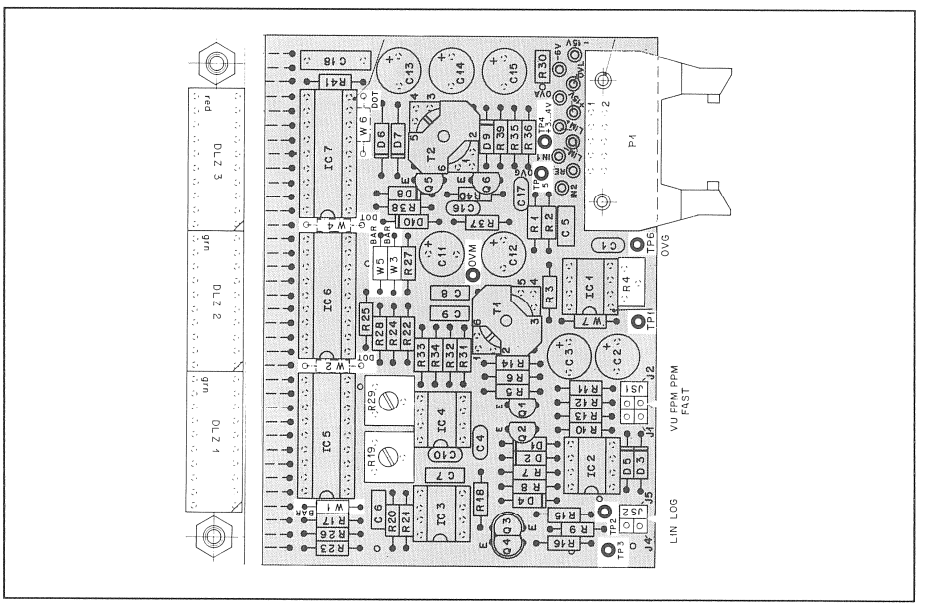


Fig. 3 Alignment elements of the VU/PPM 30 LED

Aligning the line level:

From the generator feed line level (-1dBu ... +16dBu) to the input. Align with R4 until all green LEDs are light and the red LEDs are still dark.
[on TP3: 2.5(±0.1)V]

6. Maintenance instructions

PCB 1.913.295

Test input range:

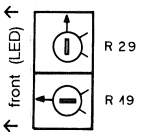
Generator: 1 kHz on input, level: -1dBu ... +16 dBu
AC VM: Hot to TP 1, cold to TP 6 (0V G)
U_{TP1} adjustable with R4 to 290(±10)mV AC

Rectifier and indication:

Both jumpers set to the VU/LIN position.
Generator: 1kHz with 0dBu level on input
U_{TP1}: Adjust with R4 to 290(±2)mV AC. All green LEDs must be light.
DC VM: Hot to TP2, cold to TP6.
U_{TP2} = -380(±15)mV DC
DC VM: Hot to TP3, cold to TP6
U_{TP3} = ±2.575(±0.1)V DC. All green LEDs are light.
Check: Adjust the generator level in such a way that:
U_{TP3} = +3.8(±0.1)V DC. All diodes are light.
U_{TP3} = +0.17(±0.02)V DC. Only the lowest green LED is light.

Logarithmation (PPM):

Both jumpers are set to PPM/LOG.
Generator: 1kHz with +6dBu level on input.
Set U_{TP2} with R4 to 1.18(±0.05V) DC.
The two trimmers have the following basic setting:



Alignment procedure:

DC VM: hot to TP3, cold to TP6.
A: Align the upper value with R19. Desired: U_{TP3} = 3.06(±0.10)V.
All green LEDs and 4 red LEDs are light. Indication +6dB.
B: Attenuation by 30 dB with attenuator.
C: Align the lower value with R29. Desired: U_{TP3} = 0.56(±0.02)V.
4 green LEDs are light. Indication -24 dB
Repeat the procedure A → B → C → A → ... several times.

DC/DC converter:

To check, connect the DC VM hot to TP4, cold to TP5. Generator with line level on input causes all green LEDs to light.

Supply voltage:	+24 V DC	→TP4 = 3.1(±0.1)V
	+30 V DC	→TP4 = 4.1(±0.1)V

7. Gain reduction meter PCB 1.913.297

Connecting the GRM:

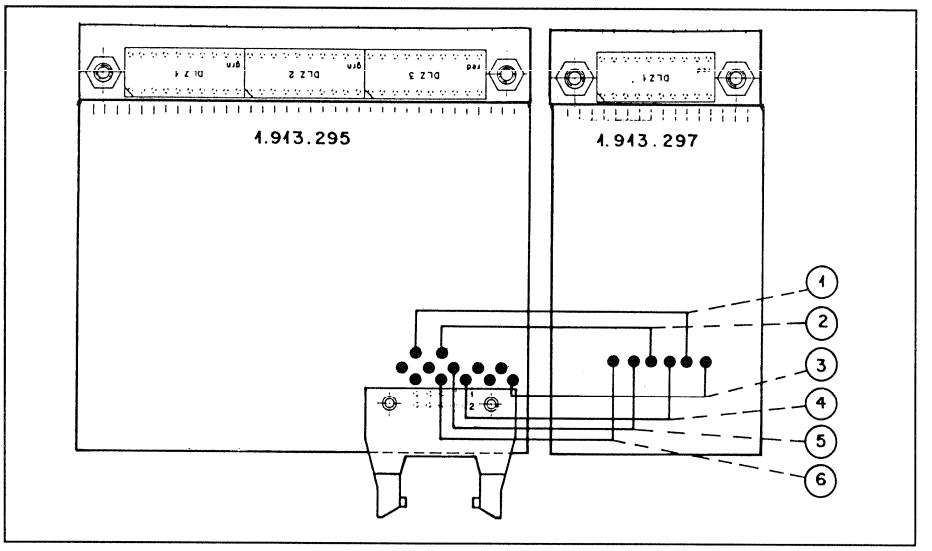


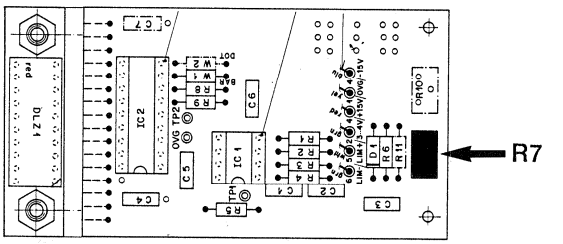
Fig. 4 Connection GRM - VU/PPM.

Conductor assignment of the connection cable:

	Color	Signal
1	yellow	0 VG
2	green	+3...+4,5 V
3	blue	- 15 V
4	red	+15 V
5	white	LIM +
6	grey	LIM -

Aligning the GRM:

- Limiter switched off
- Feed a test signal via an input channel. Set the level on the master output to nominal level +20 dB.
- Switch on the limiter
- Align with R7 to a GRM indication of +20 dB.



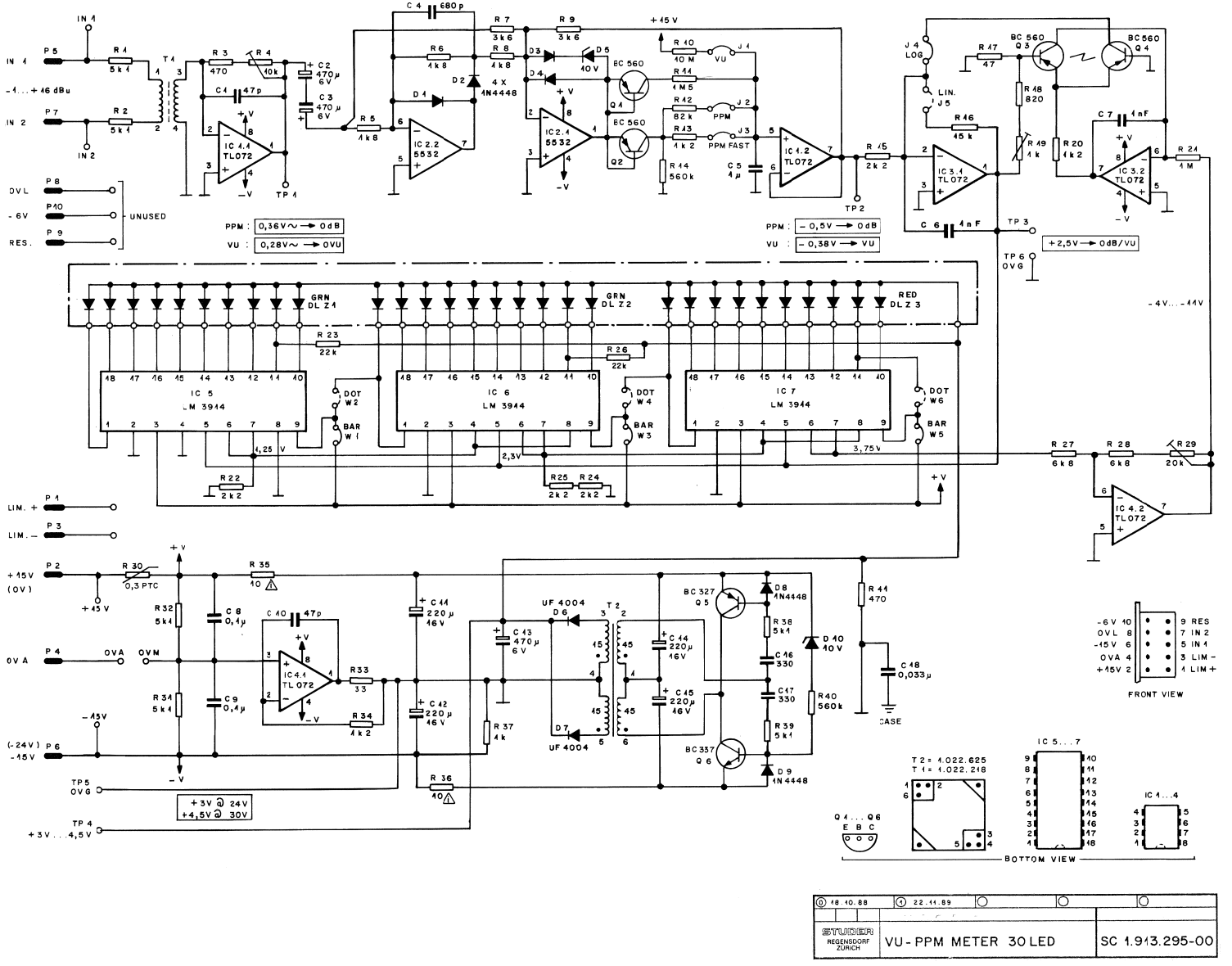
Technical data:

Supply The GRM indicator is supplied by the switching regulator of the basic unit 1.913.295: 24 ... 30 VDC.

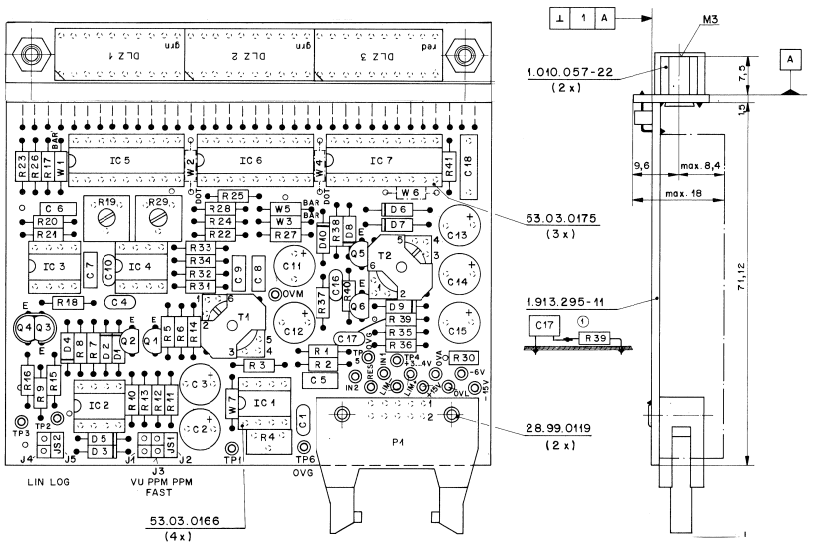
Current consumption:	quiescent	10mA
	full load	25mA
Indication Voltage range:	min. control	0V ... +2V DC
	max. control	0V ... +11V DC
Circuit board dimensions: Height x depth:		45 mm x 85 mm
Width:		18 mm
Center between M3 mounting holes:		39.4 mm (1.55")

8. Diagrams / Schemata

VU- / PP - Meter 30 LED 1.913.295.00



VU- / PP - Meter 30 LED 1.913.295.00



IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	C....01	59.34.2470	47 pF	CE	
	C....02	59.22.2471	470 uF 6V	EL	
	C....03	59.22.2471	470 uF 6V	EL	
	C....04	59.32.2681	680 pF	CE	
	C....05	59.06.5105	1 uF 5%	PE	
	C....06	59.06.5102	1 nF 5%	PE	
	C....07	59.06.5102	1 nF 5%	PE	
	C....08	59.06.0104	0.1 uF	PE	
	C....09	59.06.0104	0.1 uF	PE	
	C....10	59.34.2470	47 pF	CE	
	C....11	59.22.4221	220 uF 16V	EL	
	C....12	59.22.4221	220 uF 16V	EL	
	C....13	59.22.2471	470 uF 6V	EL	
	C....14	59.22.4221	220 uF 16V	EL	
	C....15	59.22.4221	220 uF 16V	EL	
(00)	C....16	59.34.4221	330 PF 5%	CE	
(01)	C....16	59.34.4331	330 PF 5%	CE	
(00)	C....17	59.34.4221	330 PF 5%	CE	
(01)	C....17	59.34.4331	330 PF 5%	CE	
	C....18	59.31.8333	33 nF 400V	PE	
	D....01	50.04.0125	1N4448	SI	any
	D....02	50.04.0125	1N4448	SI	any
	D....03	50.04.0125	1N4448	SI	any
	D....04	50.04.0125	1N4448	SI	any
(00)	D....05	50.04.1114	ZPD 10	FALSCHE REIHENFOLGE D5...8	ANY
(01)	D....05	50.04.1114	ZPD 10 .5W 10V	SI	any
(01)	D....06	50.04.0138	UF4004 1A 400V	SI	any
(01)	D....07	50.04.0138	UF4004 1A 400V	SI	any
(01)	D....08	50.04.0125	1N4448	SI	any
	D....09	50.04.0125	1N4448	SI	any
	D....10	50.04.1114	ZPD 10 .5W 10V	SI	any
	DLZ..01	50.04.2161	10 LED	DISPLAY GREEN	HP
(00)	DLZ..02	50.04.2150	10 LED	DISPLAY GREEN	HP
(01)	DLZ..02	50.04.2161	10 LED	DISPLAY GREEN	HP
	DLZ..03	50.04.2150	10 LED	DISPLAY RED	HP

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	R....38	57.11.3512	5.1 kOhm	0.25W	
	R....39	57.11.3512	5.1 kOhm	0.25W	
	R....40	57.11.3564	560 kOhm	0.25W	
(00)	R....41	57.11.3122	1.2 kOhm	0.25W	
(02)	R....41	57.11.3471	470 Ohm	0.25W	
	T....01	1.022.218.00		input trafo 1:1	St
	T....02	1.022.625.00		switch trafo 3:1	
	W....01	57.11.3000		Wire link BAR, W2 DOT	
	W....03	57.11.3000		Wire link BAR, W4 DOT	
	W....05	57.11.3000		Wire link BAR, W6 DOT	
	W....07	57.11.3000		Wire link connection	

(01) 88/09/11 Update
(02) 89/12/11 Improvement of pre load (R41) Sc index (01)
Improvement of crosstalk to the input (C17,R39)

CE=Ceramic, CF=Carbon Film, EL=Electrolytic, MF=Metal Film,
PE=Polyester, PP=Polypropylen, PS=Polystyrol

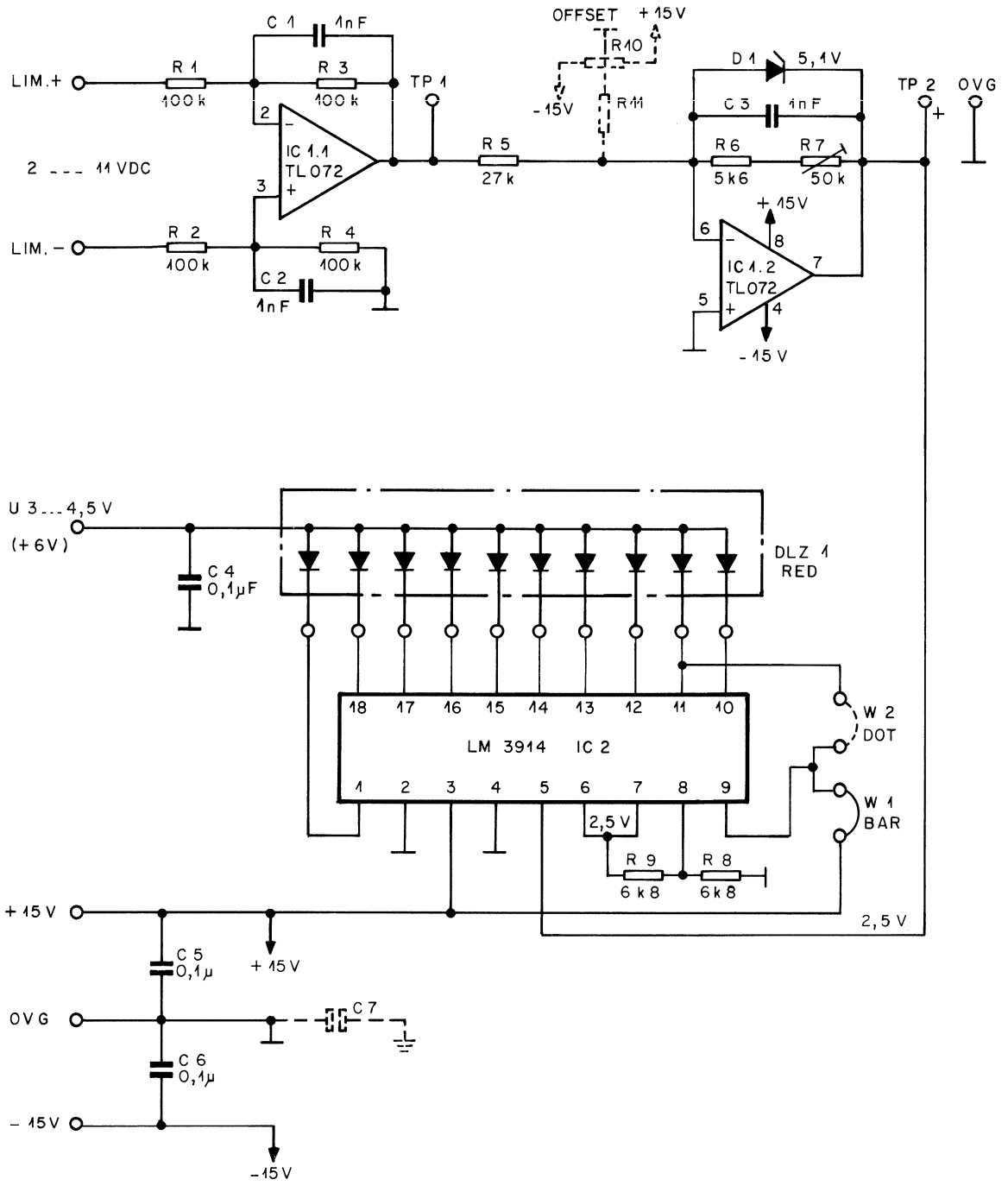
MANUFACTURER: Bu=Burndy, Ex=Exar, Fa=Fairchild, GI=General Instrument
HP=Hewlett Packard, ITT=Intermetall, Mot=Motorola,
NS=National Semiconductors, Ph=Philips, Ra=Raytheon,
Sig=Signetics, Si=Siemens , St=Studer,
TI=Texas Instrument,

ORIG 88/09/12 (01) 88/09/22 (02) 89/11/22

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	IC...01	50.09.0101	TL 072	dua. op. amp.	NS/TI
	IC...02	50.09.0105	NE5532	dua. op. amp. N	NS/Sa
	IC...03	50.09.0101	TL 072	dua. op. amp.	NS/TI
	IC...04	50.09.0101	TL 072	dua. op. amp.	NS/TI
	IC...05	50.11.0119	LM3914	led bar/dot lin.	NS
	IC...06	50.11.0119	LM3914	led bar/dot lin.	NS
	IC...07	50.11.0119	LM3914	led bar/dot lin.	NS
	JP...01	54.01.0020	2 pcs	plug	
	JP...02	54.01.0020	2 pcs	plug	
	JP...03	54.01.0020	2 pcs	plug	
	JP...04	54.01.0020	2 pcs	plug	
	JP...05	54.01.0020	2 pcs	plug	
	JS...01	54.01.0021		jumper	
	JS...02	54.01.0021		jumper	
	MP...01	1.913.295.11	1 pcs	VU-PPM Meter 30 LED PCB	St
	MP...02	1.010.057.22	2 pcs	Hexagon post M3*7.4	
	MP...03	28.99.0.19	2 pcs	tubular rivets D 2.5 * 10	
	MP...04	53.03.0.66	4 pcs	8-pin IC-socket	
	MP...05	53.03.0.75	3 pcs	18-pin IC-socket	
	MP...06	54.11.0.32	36 pcs	connection	
	MP...07	54.02.0471	17 pcs	plug (Rund - Steckstift)	
	MP...08	50.20.2901	1 pcs	clip	
	P....01	54.14.2911	2x5 pin	pcb connector for ribbon cable	
	Q....01	50.03.0496	BC 560	PNP	any
	Q....02	50.03.0496	BC 560	PNP	any
	Q....03	50.03.0496	BC 560	PNP typ C, beta 290-570	Ph,Si
	Q....04	50.03.0496	BC 560	PNP typ C, beta 290-570	Ph,Si
	Q....05	50.03.0351	BC 327	-25 PNP .8A	any
	Q....06	50.03.0340	BC 337	-25 NPN .8A	any
	R....01	57.11.3512	5.1 kOhm	1% 0.25W	
	R....02	57.11.3512	5.1 kOhm	1% 0.25W	

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
(00)	R....03	57.11.3681	680 OHM	0.25W	
(01)	R....03	57.11.3471	470 OHM	0.25W	
	R....04	58.01.9.03	10 kOhm	10% 0.50W trim	
	R....05	57.11.3.82	1.8 kOhm	1% 0.25W	
	R....06	57.11.3.82	1.8 kOhm	1% 0.25W	
	R....07	57.11.3362	3.6 kOhm	1% 0.25W	
	R....08	57.11.3.82	1.8 kOhm	1% 0.25W	
(00)	R....09	57.11.3.82	1.8 KOHM	1% 0.25W	
(01)	R....09	57.11.3362	3.6 kOhm	1% 0.25W	
	R....10	57.11.5.06	10 MOhm	10% 0.25W	
	R....11	57.11.5.55	1.5 MOhm	5% 0.50W	
	R....12	57.11.3823	82 kOhm	0.25W	
	R....13	57.11.3.22	1.2 kOhm	0.25W	
	R....14	57.11.3564	560 kOhm	1% 0.25W	
	R....15	57.11.3222	2.2 kOhm	1% 0.25W	
	R....16	57.11.3.53	15 kOhm	1% 0.25W	
	R....17	57.99.0252	47 Ohm	10% 0.25W Tk +4500ppm	St
	R....18	57.11.3821	820 Ohm	0.25W	
	R....19	58.01.8.02	1 kOhm	10% 0.50W trim	
	R....20	57.11.3.22	1.2 kOhm	0.25W	
	R....21	57.11.3.05	1 MOhm	5% 0.25W	
	R....22	57.11.3222	2.2 kOhm	1% 0.25W	
	R....23	57.11.3223	22 kOhm	0.25W	
	R....24	57.11.3222	2.2 kOhm	1% 0.25W	
	R....25	57.11.3222	2.2 kOhm	1% 0.25W	
	R....26	57.11.3223	22 kOhm	0.25W	
	R....27	57.11.3682	6.8 kOhm	0.25W	
	R....28	57.11.3682	6.8 kOhm	0.25W	
	R....29	58.01.8203	20 kOhm	0.50W trim	
	R....30	57.92.7001	0.3 Ohm	0.50A	
	R....31	57.11.3512	5.1 kOhm	1% 0.25W	
	R....32	57.11.3512	5.1 kOhm	1% 0.25W	
	R....33	57.11.3330	33 Ohm	0.25W	
	R....34	57.11.3122	1.2 kOhm	0.25W	
	R....35	57.19.0100	10 Ohm	5% 0.33W fusible resistor /!\	
	R....36	57.19.0100	10 Ohm	5% 0.33W fusible resistor /!\	
	R....37	57.11.3122	1.2 kOhm	0.25W	

Gain Reduction Meter 1.913.297.00

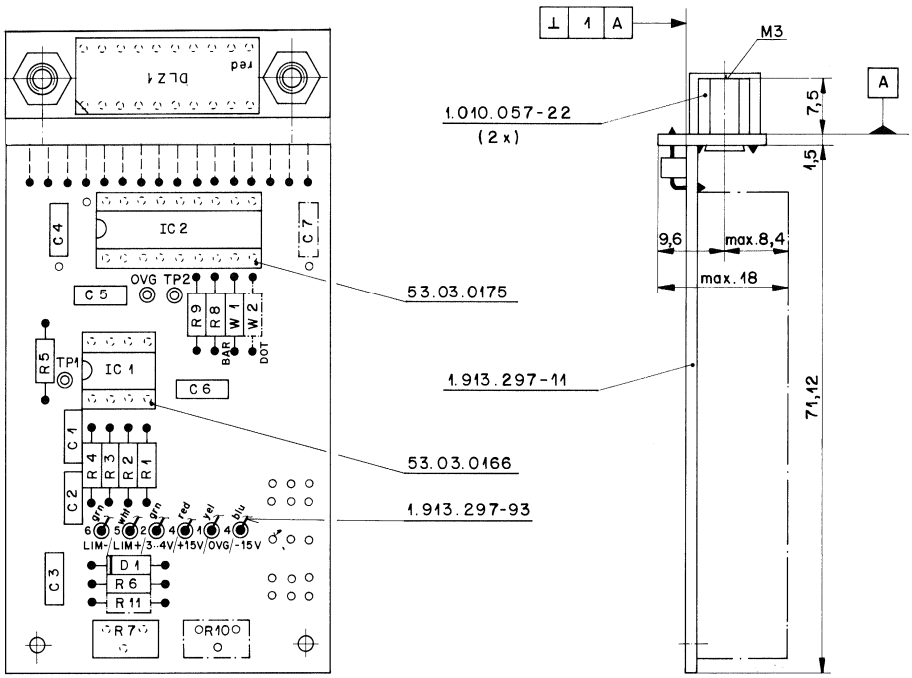


SPECIFICATIONS : UNIT WILL SUPPLYED BY VU/PPM METER 1.913.295.00 / 24V...30V
CURRENT WILL INCREASE BY → IDLE : 10mA / LOAD : 25mA

13.11.89				
STUDER REGENSDORF ZÜRICH	GRM METER 10 LED			SC 1.913.297.00

VU / PPM 30 LED

Gain Reduction Meter 1.913.297.00



Schilder 1.913.297-04/43.01.0108
aufgeklebt nach Fabrikationsmuster.

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
	C....01	59.06.5102	1 nF	5% PE	
	C....02	59.06.5102	1 nF	5% PE	
	C....03	59.06.5102	1 nF	5% PE	
	C....04	59.06.0104	0.1 uF	PE	
	C....05	59.06.0104	0.1 uF	PE	
	C....06	59.06.0104	0.1 uF	PE	
	D....01	50.04.1112	ZPD 5.1	V .5W 5.1V SI	any
	DLZ..01	50.04.2150	10 LED	DISPLAY RED	HP
	IC...01	50.09.0101	TL 072	dual op. amp.	NS,TI
	IC...02	50.11.0119	LM3914	led bar/dot lin.	NS
	MP...01	1.913.297.11	1 pcs	GRM METER 10 LED PCB	St
	MP...02	1.010.057.22	2 pcs	Hexagon post M3*7.4	
	MP...03	53.03.0166	1 pcs	8-pin IC-socket	
	MP...04	53.03.0175	1 pcs	18-pin IC-socket	
	MP...05	54.11.0132	16 pcs	connection	
	MP...06	54.02.0471	9 pcs	plug (Rund - Steckstift)	
	MP...07	1.913.297.93	Li-Li	6 cable connections	St
	R....01	57.11.3104	100 kOhm	1% 0.25W	
	R....02	57.11.3104	100 kOhm	1% 0.25W	
	R....03	57.11.3104	100 kOhm	1% 0.25W	
	R....04	57.11.3104	100 kOhm	1% 0.25W	
(00)	R....05	57.11.3473	47 kOhm	0.25W	
(01)	R....05	57.11.3273	27 kOhm	0.25W	
(00)	R....06	57.11.3103	10 kOhm	0.25W	
(01)	R....06	57.11.3562	5.6 kOhm	0.25W	
	R....07	58.01.9503	50 kOhm	10% 0.50W trim	
	R....08	57.11.3682	6.8 kOhm	1% 0.25W	
	R....09	57.11.3682	6.8 kOhm	1% 0.25W	
	W....01	57.11.3000		Wire link BAR, W2 DOT	

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.

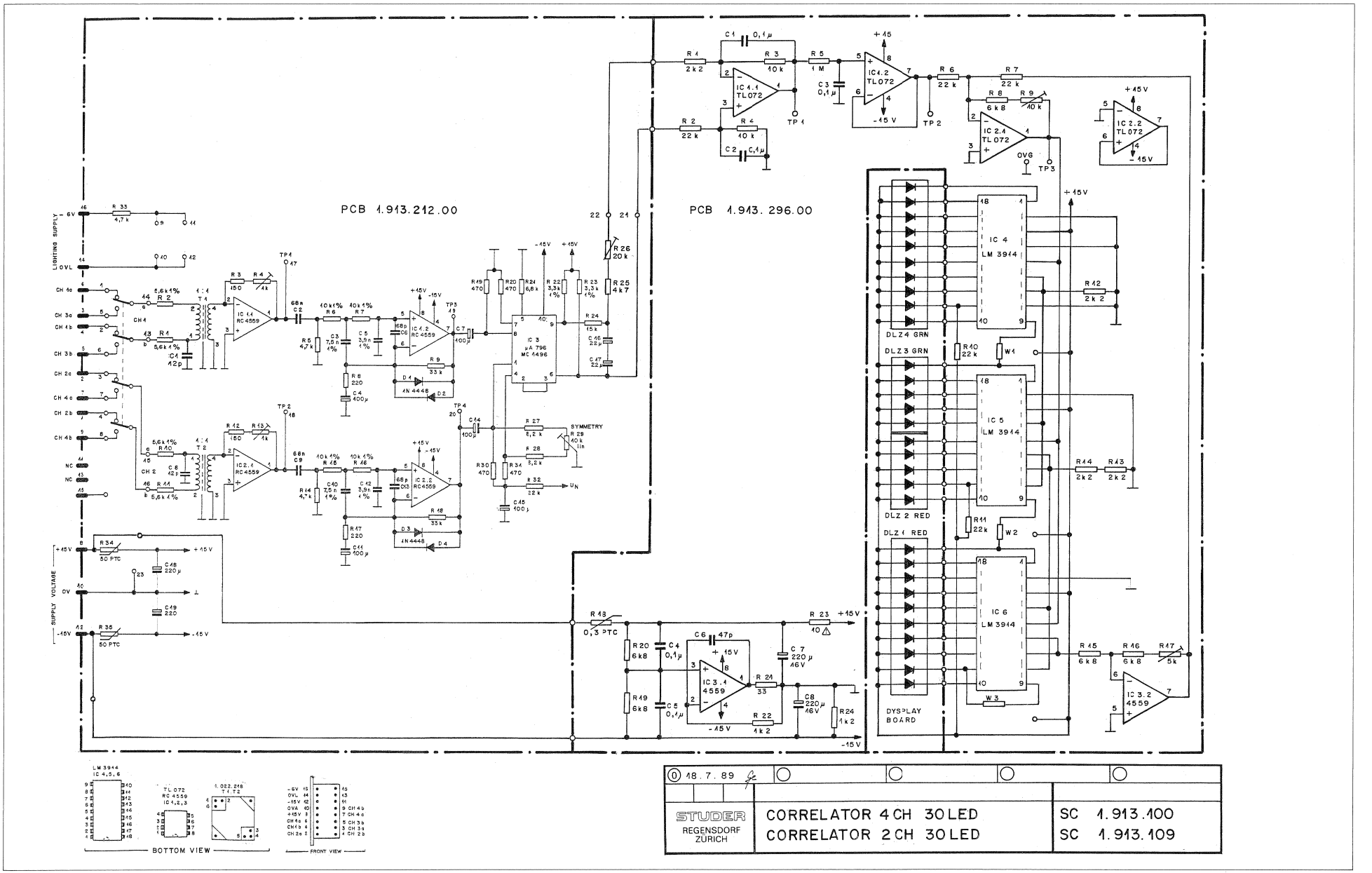
(01)89/11/22 min. 0V...2V Range

CE=Ceramic, CF=Carbon Film, EL=Electrolytic, MF=Metal Film,
PE=Polyester, PP=Polypropylen, PS=Polystyrol

MANUFACTURER: Bu=Burndy, Ex=Exar, Fc=Fairchild, GI=General Instrument
HP=Hewlett Packard, ITT=Intermetall, Mot=Motorola,
NS=National Semiconductors, Ph=Philips, Ra=Raytheon,
Sig=Signetics, Si=Siemens , St=Studer,
TI=Texas Instrument

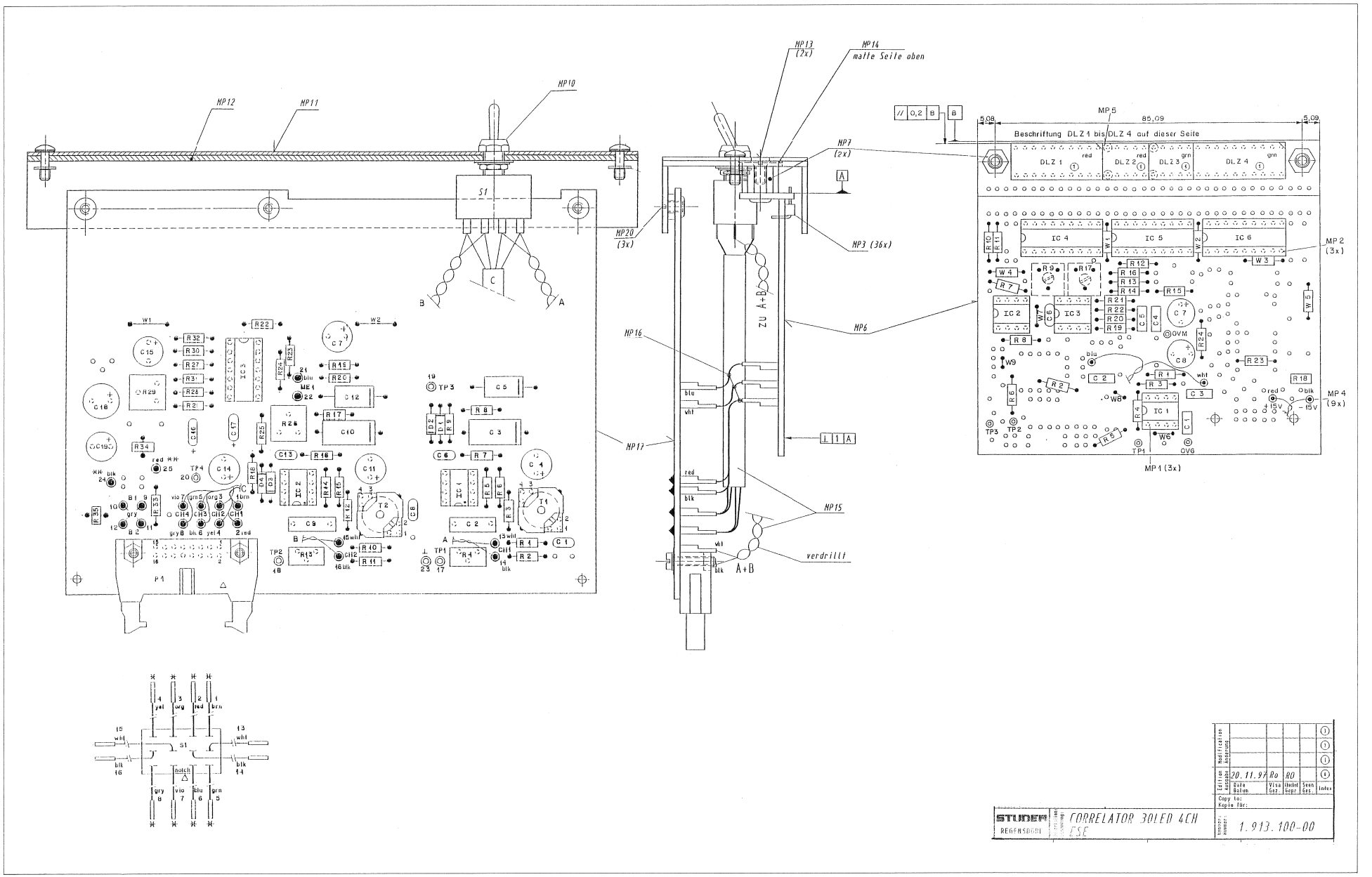
ORIG 88/10/31 (01) 89/11/22

Correlator 4CH 30 LED 1.913.100
Correlator 2CH 30 LED 1.913.109



0 18.7.89		
STUDER REGENSDORF ZÜRICH	CORRELATOR 4 CH 30 LED CORRELATOR 2 CH 30 LED	SC 1.913.100 SC 1.913.109

Correlator 4CH 30 LED 1.913.100



Edition Ausgabe	Modification Änderung					
						1
						1
						1
1	20.11.97	Ro	RO			1
Edition Ausgabe	Date Datum	Visa Ges.	Checked Gepr.	Seen Ges.		Index

Copy to: Kopie für:

STUDER REGENSDORF — CORRELATOR 30LED 4CH ESE — Nummer: Numéro: 1.913.100-00

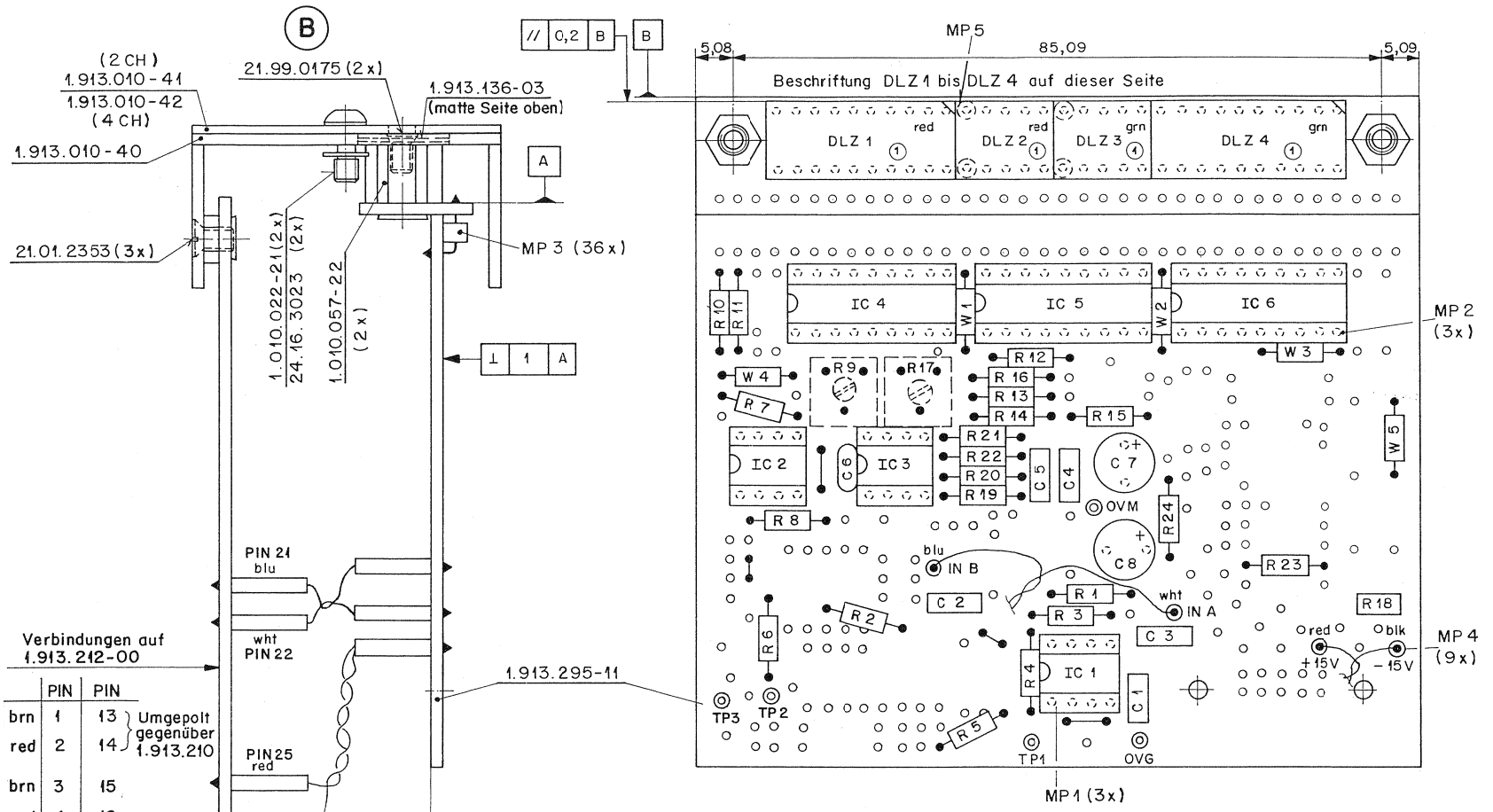
Correlator 4CH 30 LED 1.913.100

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 3	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 4	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 5	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 6	59.34.2470		47p	CER 63V, 5%, N150
0	C 7	59.22.4221		220u	EL 16V, 20%, RM5
0	C 8	59.22.4221		220u	EL 16V, 20%, RM5
0	DLZ 1	50.04.2150		MV57164	DLZ MV 57164 " G " 10*D RT
0	DLZ 2	1.913.109.01			5 LED DISPLAY RED
0	DLZ 3	1.913.109.02			5 LED DISPLAY GREEN
0	DLZ 4	50.04.2161		GRN	DLZ MV 54 164,LTA1000G 10*D GN
0	IC 1	50.09.0101		TL072	IC TL 072 CN ,A
0	IC 2	50.09.0101		TL072	IC TL 072 CN ,A
0	IC 3	50.09.0107		RC4559	Dual Op-Amp
0	IC 4	50.11.0119		LM3914	IC LM 3914 N,
0	IC 5	50.11.0119		LM3914	IC LM 3914 N,
0	IC 6	50.11.0119		LM3914	IC LM 3914 N,
0	MP 1	53.03.0166	3 mp	8p	DIL 0.3", löt, gerade
0	MP 2	53.03.0175	3 mp	18p	DIL 0.3", löt, gerade
0	MP 3	54.11.0132	36 mp	1p	P STIFT,WINKEL 1 PIN=1 STK.
0	MP 4	54.02.0471	9 mp		Stift d 1.5 * 5.5 löt
0	MP 5	1.913.109.03	4 mp		DISPLAY UNTERLAGE
0	MP 6	1.913.295.11	1 pce		VU/PPM METER 30LED PCB
0	MP 7	1.010.057.22	2 pcs		NIETMUTTER, M 3 * 7.4
0	MP 8	43.01.0108		Label	ESE-WARNSCHILD
0	MP 9	1.913.100.04			STUDER-NR.-ETIKETTE 10 * 20
0	MP 10	1.010.031.22	1 pce		ABDECKMUTTER SW 8
0	MP 11	1.913.010.42	1 pce		FRONTSCHILD 1E 30LED CORR.4CH
0	MP 12	1.913.010.40	1 pce		TRAEGER 1E 30LED CORRELATOR
0	MP 13	21.99.0175	2 pcs		S - SCHR. IS ,SWOX, M 3 * 6
0	MP 14	1.913.136.03	1 pce		FENSTER BUS SELECTOR +VU
0	MP 15	1.913.211.93	1 pce		LI-L KORRELATOR 4CH
0	MP 16	1.913.109.93	1 pce		LL CORRELATOR 30 LED
0	MP 17	1.913.212.00	1 pce		CORRELATOR BOARD ,A
0	MP 18	24.16.3023	2 pcs		WELLENSICHERUNG 2.3
0	MP 19	1.010.022.21	2 pcs		LINSENSCHRAUBE IS SPEZ.M3X8 SW
0	MP 20	21.01.2353	3 pcs		S - SCHR. , ZN , M 3 * 5
0	R 1	57.11.3222		2k2	MF, 1%, 0207
0	R 2	57.11.3223		22k	MF, 1%, 0207
0	R 3	57.11.3103		10k	MF, 1%, 0207
0	R 4	57.11.3103		10k	MF, 1%, 0207
0	R 5	57.11.3105		1M0	MF, 1%, 0207
0	R 6	57.11.3223		22k	MF, 1%, 0207
0	R 7	57.11.3223		22k	MF, 1%, 0207
0	R 8	57.11.3682		6k8	MF, 1%, 0207
0	R 9	58.01.8103		10k	Cermet, 10%, 0.5W, horizontal
0	R 10	57.11.3223		22k	MF, 1%, 0207
0	R 11	57.11.3223		22k	MF, 1%, 0207
0	R 12	57.11.3222		2k2	MF, 1%, 0207
0	R 13	57.11.3222		2k2	MF, 1%, 0207
0	R 14	57.11.3222		2k2	MF, 1%, 0207
0	R 15	57.11.3682		6k8	MF, 1%, 0207
0	R 16	57.11.3682		6k8	MF, 1%, 0207
0	R 17	58.01.8502		5k	Cermet, 10%, 0.5W, horizontal
0	R 18	57.92.7001			RT 500 MA, PTC ->57.92.7013
0	R 19	57.11.3682		6k8	MF, 1%, 0207
0	R 20	57.11.3682		6k8	MF, 1%, 0207
0	R 21	57.11.3330		33R	MF, 1%, 0207
0	R 22	57.11.3122		1k2	MF, 1%, 0207
0	R 23	57.19.0100		10R	5%, 0207, Fuse
0	R 24	57.11.3122		1k2	MF, 1%, 0207
0	S 1	55.01.0115			S KIPP , 4*ON-ON , AG
0	W 1	57.11.3000		0R0	MF, 0207
0	W 2	57.11.3000		0R0	MF, 0207
0	W 3	57.11.3000		0R0	MF, 0207
0	W 4	57.11.3000		0R0	MF, 0207
0	W 5	57.11.3000		0R0	MF, 0207
0	W 6	1.010.321.64		Wire	DRAHTBRUECKE U, 4.3* 5.0, 0.6
0	W 7	1.010.321.64		Wire	DRAHTBRUECKE U, 4.3* 5.0, 0.6
0	W 8	1.010.329.64		Wire	DRAHTBRUECKE U, 4.3* 2.5, 0.6
0	W 9	1.010.329.64		Wire	DRAHTBRUECKE U, 4.3* 2.5, 0.6

End of List

Comments

Correlator 2CH 30 LED 1.913.109



Änderung	Datum	Gez.	Gepr.	Ges.	Index
					3
					2
	29.10.92				1
Ausgabe	13.6.89				0

Kopie für:

STUDER REGENSDORF ZÜRICH

Benennung: CORRELATOR 30 LED ESE

Nummer: 1.913.109-00

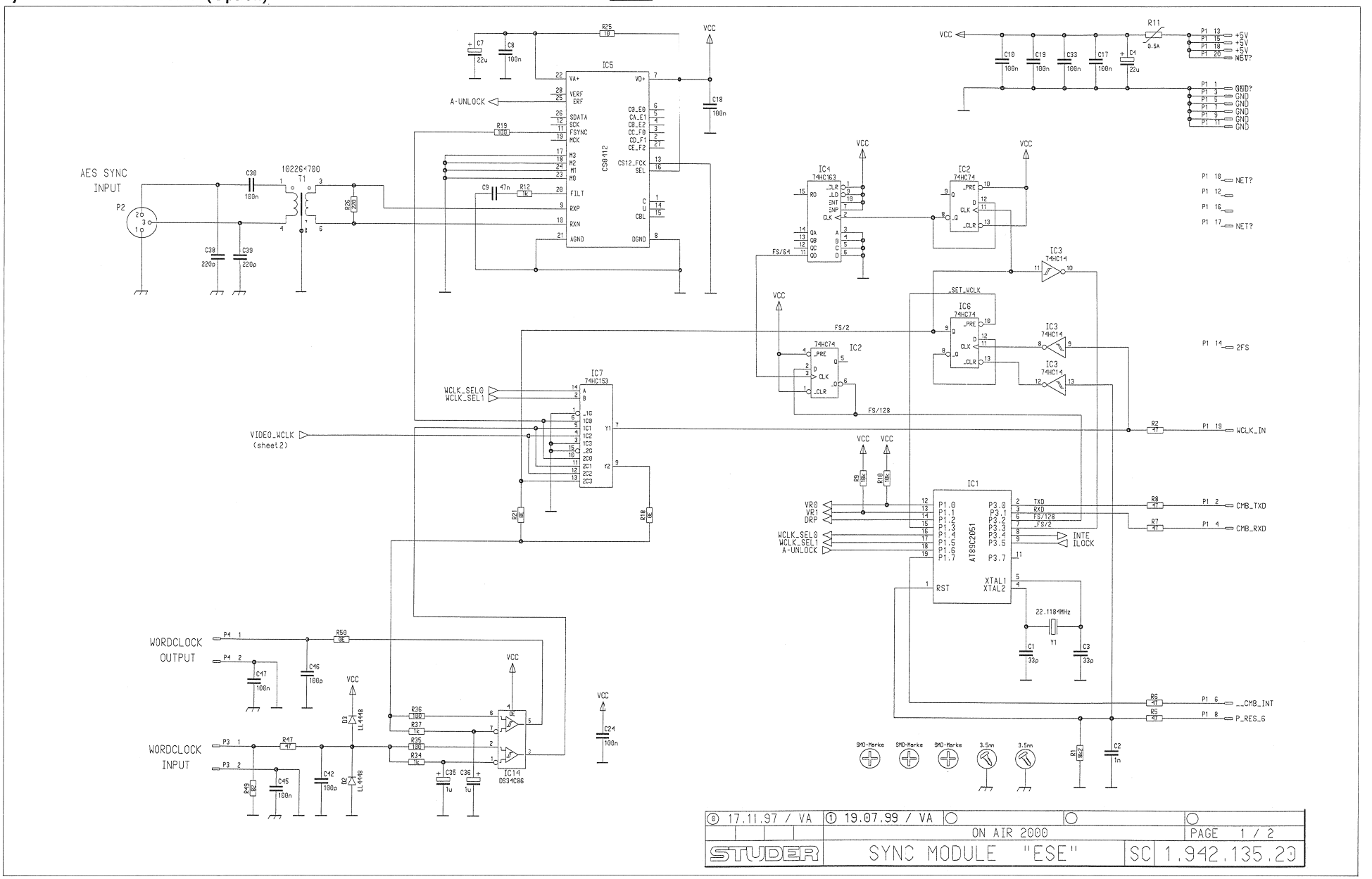
Correlator 2CH 30 LED 1.913.109

Ind.	Pos.Nr.	Teil Nr.	Wert (Menge)	Bezeichnung	Hersteller
00	C....01	59.06.0104	0.1 uF	PE	
00	C....02	59.06.0104	0.1 uF	PE	
00	C....03	59.06.0104	0.1 uF	PE	
00	C....04	59.06.0104	0.1 uF	PE	
00	C....05	59.06.0104	0.1 uF	PE	
00	C....06	59.34.2470	47 pF	CE	
00	C....07	59.22.4221	220 uF	16V EL	
00	C....08	59.22.4221	220 uF	16V EL	
00	DLZ..01	50.04.2150	10 LED	DISPLAY RED	HP
00	DLZ..02	1.913.109.01	5 LED	DISPLAY RED	St,HP
00	DLZ..03	1.913.109.02	5 LED	DISPLAY GREEN	St,HP
00	DLZ..04	50.04.2161	10 LED	DISPLAY GREEN	HP
00	IC...01	50.09.0101	TL 072	dual op. amp.	NS,TI
00	IC...02	50.09.0101	TL 072	dual op. amp.	NS,TI
00	IC...03	50.09.0107	4559	dual op. amp.	RC
00	IC...04	50.11.0119	LM3914	LED bar/dot lin.	NS
00	IC...05	50.11.0119	LM3914	LED bar/dot lin.	NS
00	IC...06	50.11.0119	LM3914	LED bar/dot lin.	NS
00	MP...01	53.03.0166	3 pcs	8-pin IC-socket	
00	MP...02	53.03.0175	3 pcs	18-pin IC-socket	
00	MP...03	54.11.0132	36 pcs	Connection	
00	MP...04	54.02.0471	9 pcs	Plug (Rund - Steckstift)	
00	MP...05	1.913.109.03	1 pcs	Display-Unterlage	St
00	R....01	57.11.3222	2.2 kOhm	1% 0.25W	
00	R....02	57.11.3223	22 kOhm	1% 0.25W	
00	R....03	57.11.3103	10 kOhm	1% 0.25W	
00	R....04	57.11.3103	10 kOhm	1% 0.25W	
00	R....05	57.11.3105	1 MOhm	5% 0.25W	
00	R....06	57.11.3223	22 kOhm	1% 0.25W	
00	R....07	57.11.3223	22 kOhm	1% 0.25W	
00	R....08	57.11.3682	6.8 kOhm	1% 0.25W	
00	R....09	58.01.8103	10 kOhm	10% 0.50W variabel ,liegend	
00	R....10	57.11.3223	22 kOhm	1% 0.25W	
00	R....11	57.11.3223	22 kOhm	1% 0.25W	
00	R....12	57.11.3222	2.2 kOhm	1% 0.25W	
00	R....13	57.11.3222	2.2 kOhm	1% 0.25W	
00	R....14	57.11.3222	2.2 kOhm	1% 0.25W	
00	R....15	57.11.3682	6.8 kOhm	1% 0.25W	
00	R....16	57.11.3682	6.8 kOhm	1% 0.25W	
00	R....17	58.01.8502	5 kOhm	10% 0.50W variabel, liegend	
00	R....18	57.92.7001	0.3 Ohm	0.5 A PTC	
00	R....19	57.11.3682	6.8 kOhm	1% 0.25W	
00	R....20	57.11.3682	6.8 kOhm	1% 0.25W	
00	R....21	57.11.3330	33 Ohm	1% 0.25W	
00	R....22	57.11.3122	1.2 kOhm	1% 0.25W	
00	R....23	57.19.0100	10 Ohm	5% 0.33W fusible resistor /!\	
00	R....24	57.11.3122	1.2 kOhm	1% 0.25W	
00	W....01	57.11.3000		Wire link	
00	W....02	57.11.3000		Wire link	
00	W....03	57.11.3000		Wire link	
00	W....04	57.11.3000		Wire link	
00	W....05	57.11.3000		Wire link	

CE=Ceramic, CF=Carbon Film, EL=Electrolytic, MF=Metal Film,
PE=Polyester, PP=Polypropylen, PS=Polystyrol

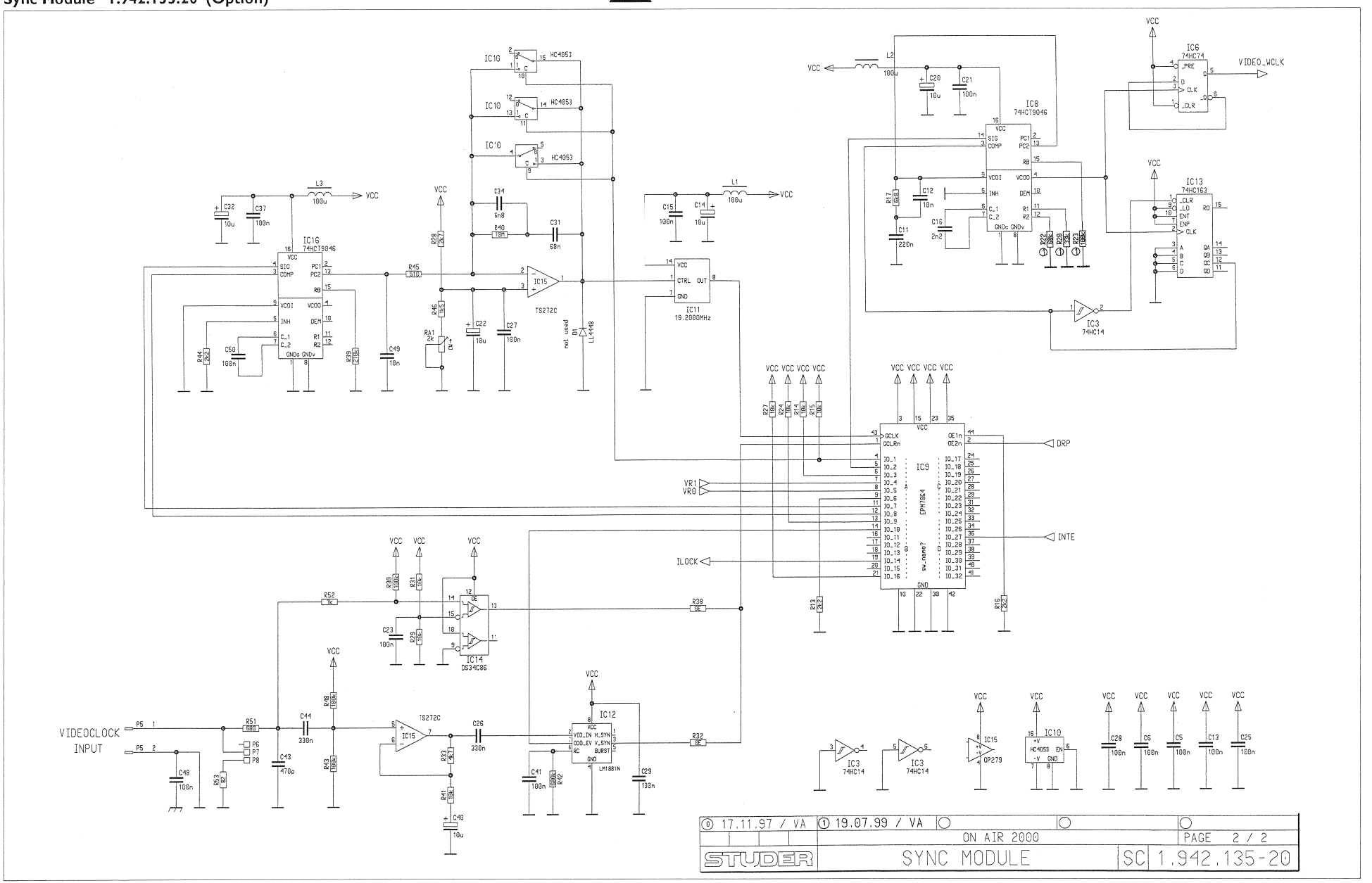
MANUFACTURER: Bu=Burndy, Ex=Exar, Fc=Fairchild, GI=General Instrument
HP=Hewlett Packard, ITT=Intermetall, Mot=Motorola,
NS=National Semiconductors, Ph=Philips, Ra=Raytheon,
Sig=Signetics, Si=Siemens , St=Studer,
TI=Texas Instrument,

Sync Module 1.942.135.20 (Option)

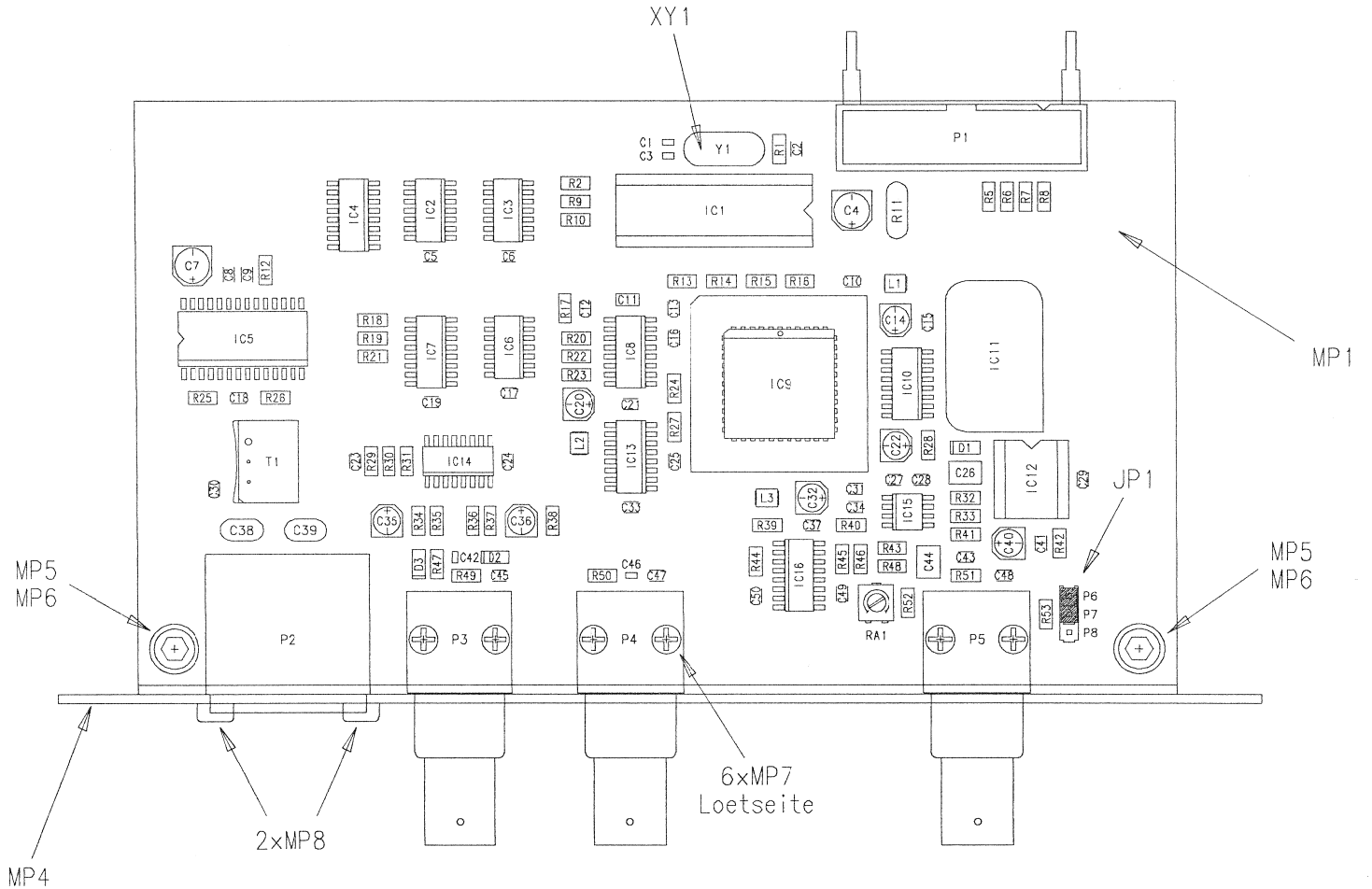


⓪ 17.11.97 / VA	① 19.07.99 / VA		
	ON AIR 2000		PAGE 1 / 2
STUDER	SYNC MODULE "ESE"	SC	1.942.135.20

Sync Module 1.942.135.20 (Option)



Sync Module 1.942.135.20 (Option)



Edition Ausgabe	Modification Aenderung				
	.	.	.	.	3
	.	.	.	.	2
	.	.	.	.	1
19.11.97	PZ				0
Date Datum	Visa Gez.	Dessin Gepr.	Seen Ges	Index	

Copy to: Kopie fuer: .

STUDER REGENSDORF — Description Benennung: . SYNC BOARD "ESE" — Number Nummer: . 1.942.135-20

Sync Module 1.942.135.20 (Option)

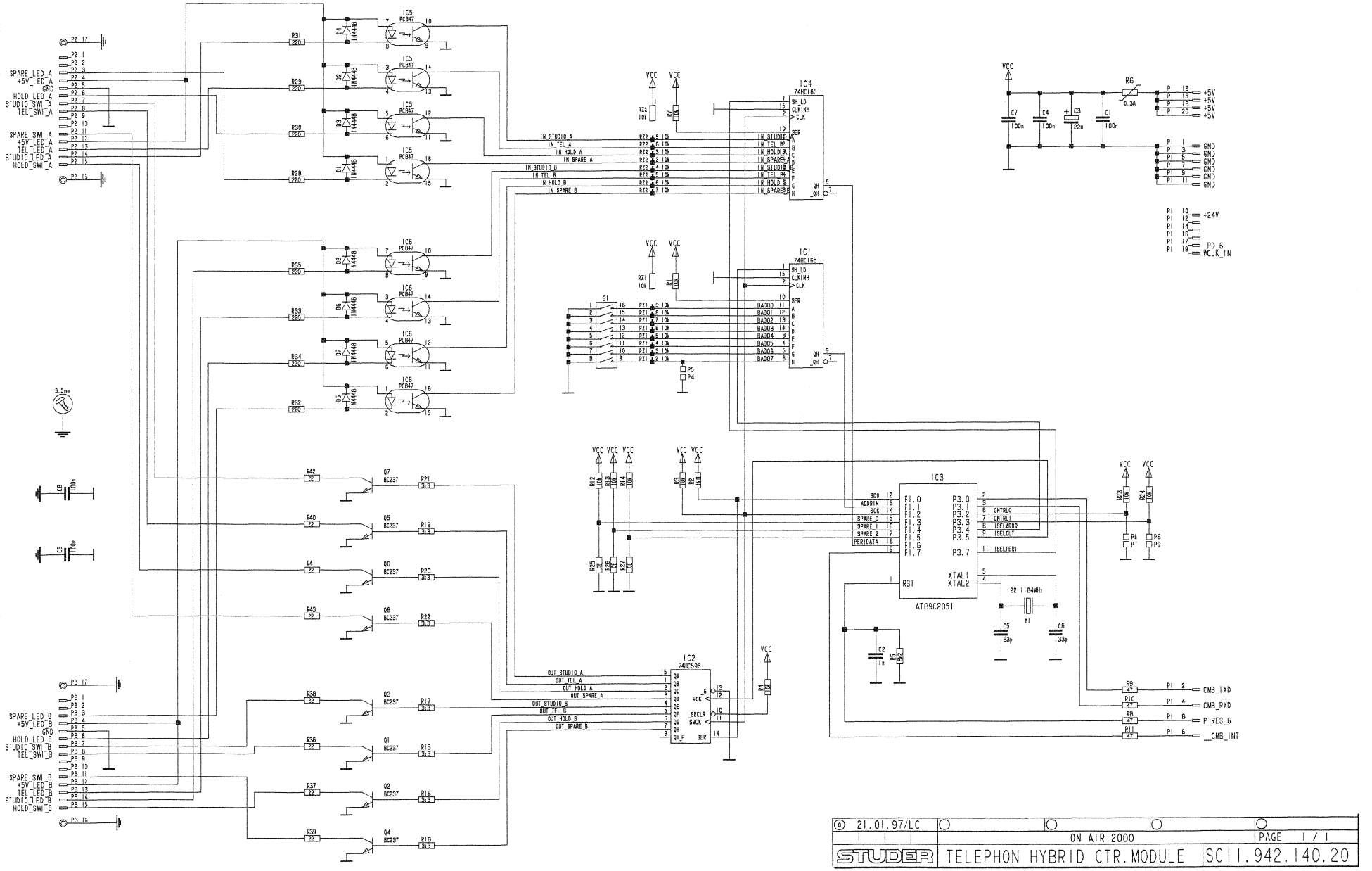
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 2	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 3	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 4	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 5	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 6	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 7	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 8	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 9	59.60.3333		47n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.60.3441		220n	CER 50V, 10%, X7R, 1206
0	C 12	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 13	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 14	59.68.0065		10u	C-EL 16V, 4.0*5.7
0	C 15	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 16	59.60.3317		2n2	CER 50V, 10%, X7R, 0805
0	C 17	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 18	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.68.0065		10u	C-EL 16V, 4.0*5.7
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.68.0065		10u	C-EL 16V, 4.0*5.7
0	C 23	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 24	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 25	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 26	59.60.3743		330n	CER 50V, 10%, X7R, 1812
0	C 27	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 28	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 29	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 30	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 31	59.60.3335		68n	CER 50V, 10%, X7R, 0805
0	C 32	59.68.0065		10u	C-EL 16V, 4.0*5.7
0	C 33	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 34	59.60.3323		6n8	CER 50V, 10%, X7R, 0805
0	C 35	59.68.0127		1u0	C-EL 50V, 4.0*5.7
0	C 36	59.68.0127		1u0	C-EL 50V, 4.0*5.7
0	C 37	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 38	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 39	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 40	59.68.0055		10u	C-EL 16V, 4.0*5.7
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 42	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 43	59.60.2385		470p	CER 50V, 5%, C0G, 0805
0	C 44	59.60.3743		330n	CER 50V, 10%, X7R, 1812
0	C 45	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 46	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 47	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 48	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 49	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 50	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	D 1	not used		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	1.942.914.20			SW.135 SYNC MODULE *(50160313, 89C2051)*
0	IC 2	50.62.1074		74HC 74	Dual D-type FF, preset clear
0	IC 3	50.62.1014		74HC 14	Hex Schmitt trigger inverter
0	IC 4	50.62.1163		74HC163	Synchr preset 4bit counter bin
0	IC 5	50.62.0913		CS8412	AES-Receiver
0	IC 6	50.62.1074		74HC 74	Dual D-type FF, preset clear
0	IC 7	50.62.1153		74HC153	Dual 4ch multiplexer
0	IC 8	50.62.4946		74HCT9046	PLL with bandgap contr VCO
0	IC 9	1.866.910.20			SW120 MOLOCHA (50.63.4202)
0	IC 10	50.62.8063		HC4053	Tripple 2ch analog muxdemux
0	IC 11	89.01.1510		19.200MHz	HC 19.200 000 MHZ, VCXO
0	IC 12	50.11.0145		LM1881	IC LM 1881 N,
0	IC 13	50.62.1163		74HC163	Synchr preset 4bit counter bin
0	IC 14	50.62.0463		DS34C86	4*RS 422 Line Receiver
1	IC 15	50.61.0205		TS272CD	Dual Op-Amp CMOS SO 8
0	IC 16	50.62.4946		74HCT9046	PLL with bandgap contr VCO
0	JP 1	54.01.0021	1 pce	Jumper	0.63 * 0.63mm
0	L 1	62.60.0125		100uH	10%, SMD 1210
0	L 2	62.60.0125		100uH	10%, SMD 1210
0	L 3	62.60.0125		100uH	10%, SMD 1210
0	MP 1	1.942.135.11	1 pce		SYNC MODULE PCB
0	MP 2	43.01.0198	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.135.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	1.942.135.01	1 pce		BLENDE SYNC MODU.
0	MP 5	24.16.2030	2 pcs		FAECHERSCHEIBE A D 3.2
0	MP 6	21.53.0353	2 pcs	M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	20.24.7280	6 pcs		LIN-FORMSCH.ZNSW.KS D2.5* 8
2	MP 8	20.24.8754	2 pcs	2.9*6	L -Formschr,K-Torx, Zn bl
3	MP 9	43.10.0110	1 pce	A	Revisions-Etikette 5mm h'blau

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	P 1	54.14.2103		20p	P STECKER 20 P,AU,VR,GERADE
0	P 2	54.21.2203		3p	XLR PCB Winkel
0	P 3	54.21.2021		BNC	J 1 POL PRINT/WINKEL BNC
0	P 4	54.21.2021		BNC	J 1 POL PRINT/WINKEL BNC
0	P 5	54.21.2021		BNC	J 1 POL PRINT/WINKEL BNC
0	P 6	54.01.0020		1p	Pin 0.63*0.63
0	P 7	54.01.0020		1p	Pin 0.63*0.63
0	P 8	54.01.0020		1p	Pin 0.63*0.63
0	R 1	57.60.1822		8K2	MF, 1%, 0204, E24
0	R 2	57.60.1470		47R	MF, 1%, 0204, E24
0	R 5	57.60.1470		47R	MF, 1%, 0204, E24
0	R 6	57.60.1470		47R	MF, 1%, 0204, E24
0	R 7	57.60.1470		47R	MF, 1%, 0204, E24
0	R 8	57.60.1470		47R	MF, 1%, 0204, E24
0	R 9	57.60.1103		10K	MF, 1%, 0204, E24
0	R 10	57.60.1103		10K	MF, 1%, 0204, E24
0	R 11	57.92.7013		0.5A	POLY- PTC, 60V
0	R 12	57.60.1102		1K	MF, 1%, 0204, E24
0	R 13	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 14	57.60.1103		10K	MF, 1%, 0204, E24
0	R 15	57.60.1103		10K	MF, 1%, 0204, E24
0	R 16	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 17	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 18	57.60.1000		0R0	MF, 0204
0	R 19	57.60.1101		100R	MF, 1%, 0204, E24
3	R 20	57.60.1333		33K	MF, 1%, 0204, E24
0	R 21	not used		0R0	MF, 0204
3	R 22	57.60.1683		68K	MF, 1%, 0204, E24
3	R 23	57.60.1104		100K	MF, 1%, 0204, E24
0	R 24	57.60.1103		10K	MF, 1%, 0204, E24
0	R 25	57.60.1100		10R	MF, 1%, 0204, E24
0	R 26	57.60.1221		220R	MF, 1%, 0204, E24
0	R 27	57.60.1103		10K	MF, 1%, 0204, E24
0	R 28	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 29	57.60.1103		10K	MF, 1%, 0204, E24
0	R 30	57.60.1104		100K	MF, 1%, 0204, E24
0	R 31	57.60.1103		10K	MF, 1%, 0204, E24
0	R 32	57.60.1000		0R0	MF, 0204
0	R 33	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 34	57.60.1102		1K	MF, 1%, 0204, E24
0	R 35	57.60.1101		100R	MF, 1%, 0204, E24
0	R 36	57.60.1101		100R	MF, 1%, 0204, E24
0	R 37	57.60.1102		1K	MF, 1%, 0204, E24
0	R 38	not used		0R0	MF, 0204
0	R 39	57.60.1274		270K	MF, 1%, 0204, E24
0	R 40	57.60.1106		10M	MF, 1%, 0204, E24
0	R 41	57.60.1103		10K	MF, 1%, 0204, E24
0	R 42	57.60.1684		680K	MF, 1%, 0204, E24
0	R 43	57.60.1104		100K	MF, 1%, 0204, E24
0	R 44	57.60.1222		2K2	MF, 1%, 0204, E24
0	R 45	57.60.1511		510R	MF, 1%, 0204, E24
0	R 46	57.60.1152		1K5	MF, 1%, 0204, E24
0	R 47	57.60.1470		47R	MF, 1%, 0204, E24
0	R 48	57.60.1104		100K	MF, 1%, 0204, E24
0	R 49	57.60.1820		82R	MF, 1%, 0204, E24
0	R 50	57.60.1000		0R0	MF, 0204
0	R 51	57.60.1681		680R	MF, 1%, 0204, E24
0	R 52	57.60.1102		1K	MF, 1%, 0204, E24
0	R 53	57.60.1820		82R	MF, 1%, 0204, E24
0	RA 1	58.60.0115		2kΩ	SMD 20%, 0.25W, Cermet
0	T 1	1.022.647.00		1:1:4	OUTPUT TRAFO AES/EBU
0	XIC 1	53.03.0185		20p	DIL 0.3", lot, gerade
0	XIC 9	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	22.118 400 MHz, HC 49/U

End of List

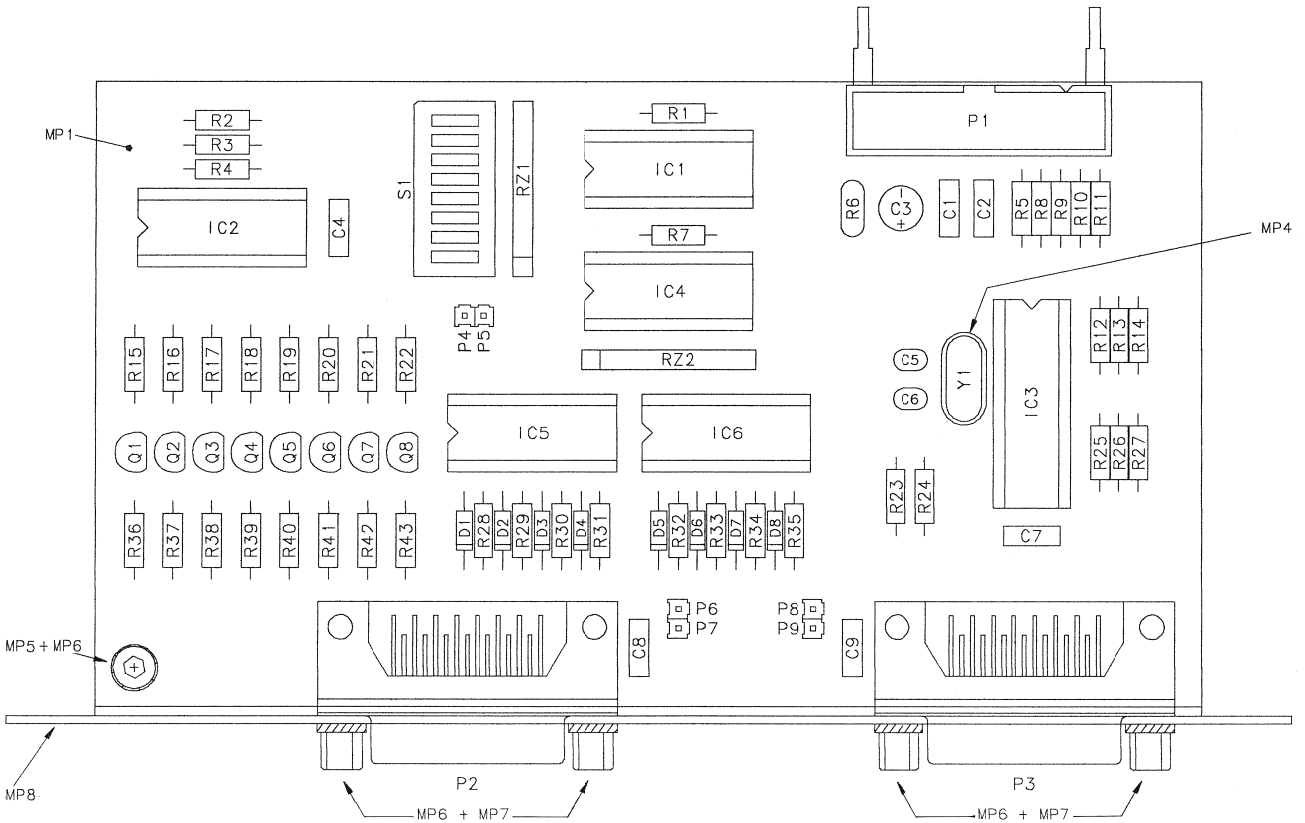
Comments:

Telephon Hybrid CTR. Module 1.942.140.20 (Option)



ⓓ 21.01.97/LC				
STUDER	ON AIR 2000			PAGE 1 / 1
	TELEPHON HYBRID CTR. MODULE		SC	1.942.140.20

Telephon Hybrid CTR. Module 1.942.140.20 (Option)



Modification Aenderung					
Ausgabe Edition	21.01.97	LC	VA		
Datum Date		Visa Gez.	Dessin Gepr.	Seen Ges.	Index

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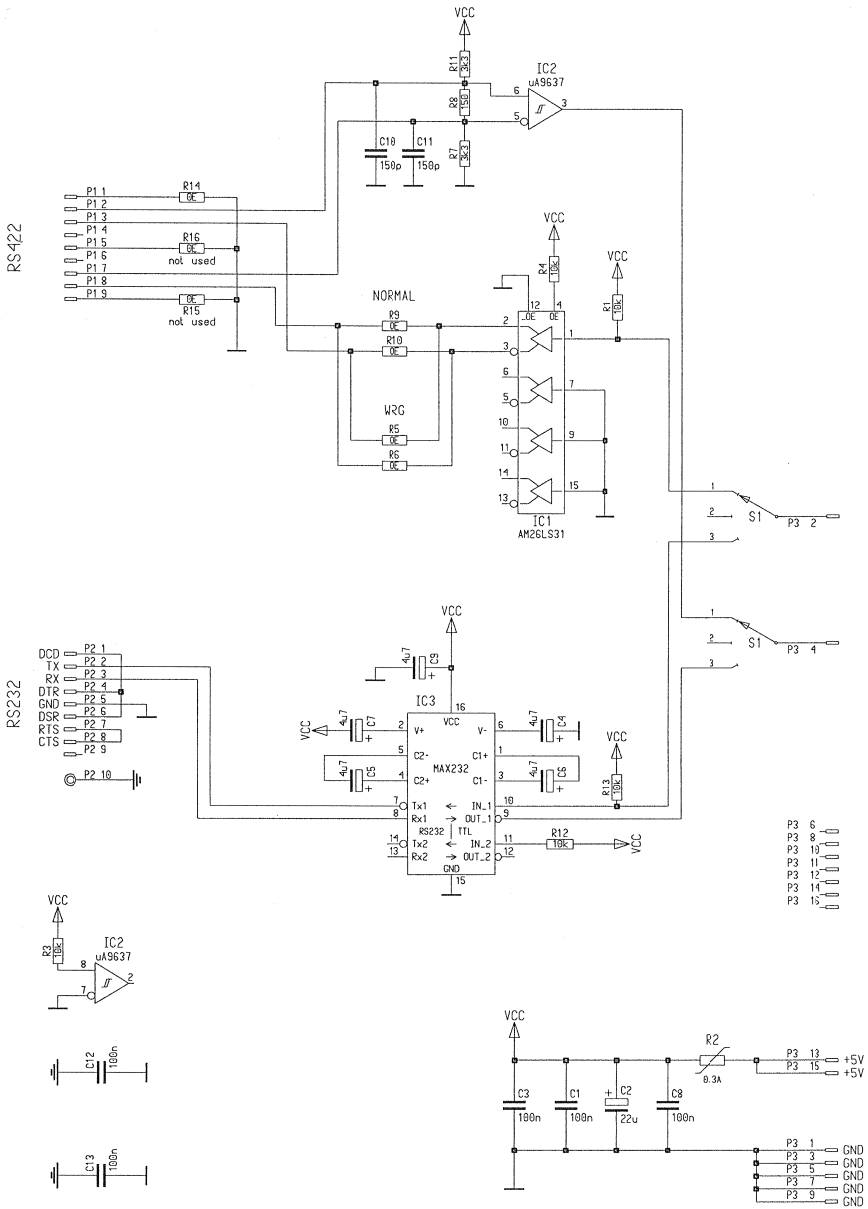
STUDER REGENSDORF — Description / Benennung: TELEPHON HYBRID CTR.MODULE, ESE — Number / Nummer: 1.942.140.20

TELEPHON HYBRID CTR.MODULE 1.942.140.21 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	C 3	59.22.5220		22u	EL 25V 20% RM5
0	C 4	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 5	59.34.2330		33p	CER 63V, 5%, N150
0	C 6	59.34.2330		33p	CER 63V, 5%, N150
0	C 7	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 8	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 9	59.06.0104		100n	PETP, 63V, 10%, RM5
0	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 2	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 3	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 6	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 8	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	IC 1	50.17.1165		74HC165	IC ... 74 HC 165 ., ,A
0	IC 2	50.17.1595		74HC595	IC ... 74 HC 595 ., ,A
0	IC 3	1.942.915.21			SW.140 TELEPHON HYBR.CTR. MOD
				50160313. 89C2051	
0	IC 4	50.17.1165		74HC165	IC ... 74 HC 165 ., ,A
0	IC 5	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	IC 6	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	MP 1	1.942.140.11			TELEPHON HYBRID CTR.MOD.PCB
0	MP 2	43.01.0108		Label	ESE-WARNSCHILD
0	MP 3	1.942.140.10			NR.ETIKETTE 5X20
0	MP 4	89.01.1499			QUARZ - ISOLIERPLATTE
0	MP 5	21.53.0353		M3*5	Z-Schraube Inbus Zn gb chr
0	MP 6	24.16.2030	5 pcs	3.2/6.0	Fächerscheibe Form A
0	MP 7	54.13.0081	4 pcs	4.85mm	Bolzen UNC 4-40
0	MP 8	1.942.140.01			BLENDE TELEPHON HYBR.CTR.MOD
0	P 1	54.14.2103		20p	1/20" Au, gerade, Verrieg
0	P 2	54.13.0077		15p	D-Sub, PCB, Winkel
0	P 3	54.13.0077		15p	D-Sub, PCB, Winkel
0	P 4	54.01.0020		1p	Pin, 1reihig, gerade
0	P 5	54.01.0020		1p	Pin, 1reihig, gerade
0	P 6	54.01.0020		1p	Pin, 1reihig, gerade
0	P 7	54.01.0020		1p	Pin, 1reihig, gerade
0	P 8	54.01.0020		1p	Pin, 1reihig, gerade
0	P 9	54.01.0020		1p	Pin, 1reihig, gerade
0	Q 1	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 2	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 3	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	R 1	57.11.3103		10k	MF, 1%, 0207
0	R 2	57.11.3182		1k8	MF, 1%, 0207
0	R 3	57.11.3103		10k	MF, 1%, 0207
0	R 4	57.11.3103		10k	MF, 1%, 0207
0	R 5	57.11.3822		8k2	MF, 1%, 0207
0	R 6	57.92.7012		0.3A	PTC 60V
0	R 7	57.11.3103		10k	MF, 1%, 0207
0	R 8	57.11.3470		47R	MF, 1%, 0207
0	R 9	57.11.3470		47R	MF, 1%, 0207
0	R 10	57.11.3470		47R	MF, 1%, 0207
0	R 11	57.11.3470		47R	MF, 1%, 0207
0	R 12	57.11.3103		10k	MF, 1%, 0207
0	R 13	57.11.3103		10k	MF, 1%, 0207
0	R 14	57.11.3103		10k	MF, 1%, 0207
0	R 15	57.11.3332		3k3	MF, 1%, 0207
0	R 16	57.11.3332		3k3	MF, 1%, 0207
0	R 17	57.11.3332		3k3	MF, 1%, 0207
0	R 18	57.11.3332		3k3	MF, 1%, 0207
0	R 19	57.11.3332		3k3	MF, 1%, 0207
0	R 20	57.11.3332		3k3	MF, 1%, 0207
0	R 21	57.11.3332		3k3	MF, 1%, 0207
0	R 22	57.11.3332		3k3	MF, 1%, 0207
0	R 23	57.11.3103		10k	MF, 1%, 0207
0	R 24	57.11.3103		10k	MF, 1%, 0207
0	R 25	57.11.3000		0R0	MF, 0207
0	R 26	57.11.3000		0R0	MF, 0207
0	R 27	57.11.3000		0R0	MF, 0207
0	R 28	57.11.3221		220R	MF, 1%, 0207
0	R 29	57.11.3221		220R	MF, 1%, 0207
0	R 30	57.11.3221		220R	MF, 1%, 0207
0	R 31	57.11.3221		220R	MF, 1%, 0207
0	R 32	57.11.3221		220R	MF, 1%, 0207
0	R 33	57.11.3221		220R	MF, 1%, 0207
0	R 34	57.11.3221		220R	MF, 1%, 0207
0	R 35	57.11.3221		220R	MF, 1%, 0207
0	R 36	57.11.3220		22R	MF, 1%, 0207
0	R 37	57.11.3220		22R	MF, 1%, 0207
0	R 38	57.11.3220		22R	MF, 1%, 0207
0	R 39	57.11.3220		22R	MF, 1%, 0207
0	R 40	57.11.3220		22R	MF, 1%, 0207
0	R 41	57.11.3220		22R	MF, 1%, 0207
0	R 42	57.11.3220		22R	MF, 1%, 0207
0	R 43	57.11.3220		22R	MF, 1%, 0207
0	RZ 1	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	DIL-Switch, PCB
0	XIC 3	53.03.0165		20p	DIL 0.3", löt, gerade
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

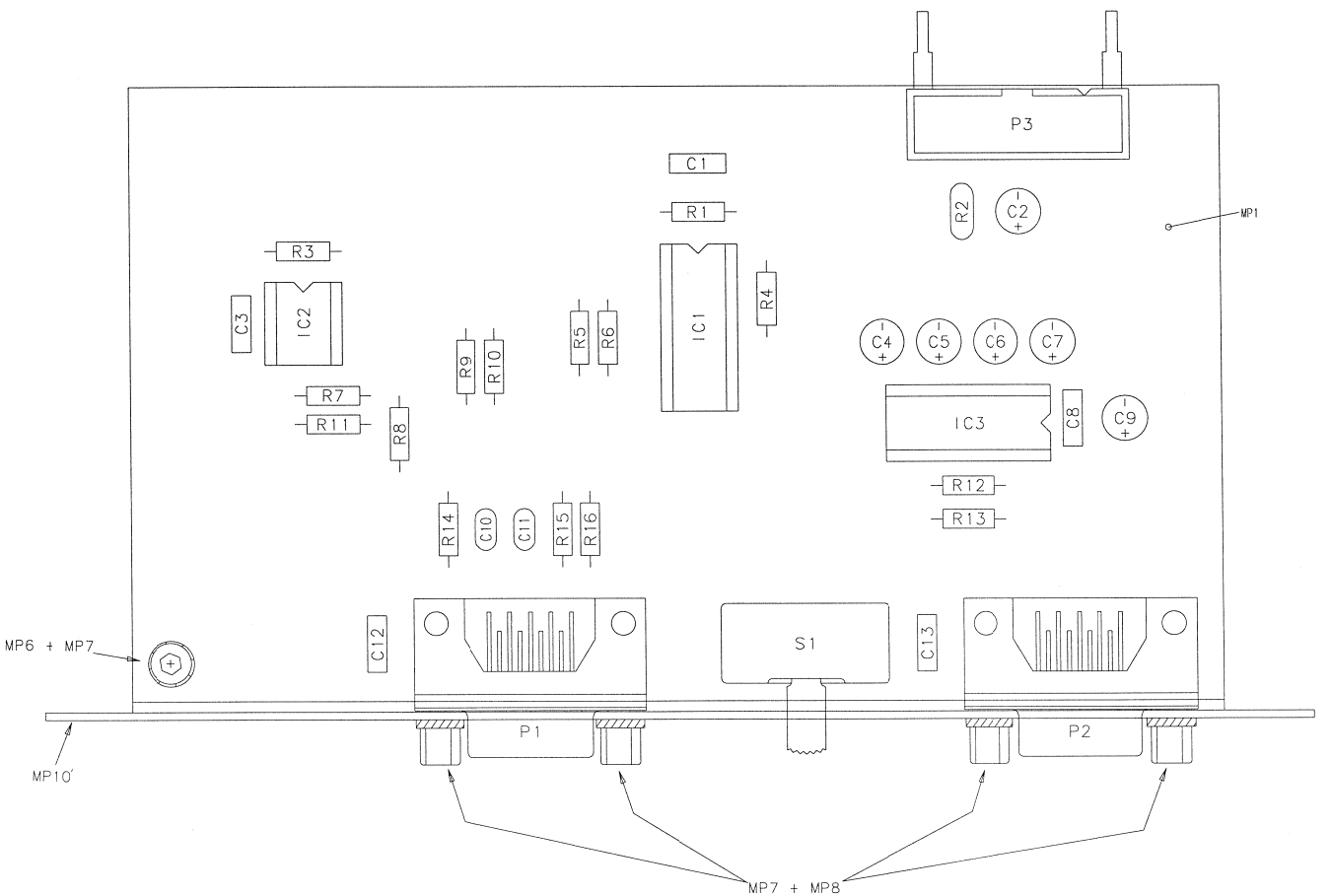
End of List

RS232 Module 1.942.145.00 (Option)



0 12.05.1998 LC				
	OnAir2000			PAGE 1 OF 1
STUDER	RS232 Module		SC	1.942.145.00

RS232 Module 1.942.145.81 (Option)



Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.22.5220		22u	EL 25V, 20%, RM5
0	C 3	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 4	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 5	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 6	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 7	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 8	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 9	59.22.8479		4u7	EL 50V, 20%, RM5
0	C 10	59.34.4151		150p	CER 63V, 5%, N750
0	C 11	59.34.4151		150p	CER 63V, 5%, N750
0	C 12	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 13	59.06.0104		100n	PETP, 63V, 10%, RM5
0	IC 1	50.15.0108		26LS31	IC AM26 LS 31 PC,AM26 LS31 CN
0	IC 2	50.15.0114		9637	Dual diff Line Receiver
0	IC 3	50.15.0120		MAX232	IC MAX 232 CPE
0	MP 1	1.942.145.12			RS 232 MODULE PCB
0	MP 2	43.01.0108		Label	ESE-WARNSCHILD
0	MP 3	1.942.145.10			NR.ETIKETTE 5X20
0	MP 6	21.53.0353		M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	24.16.2030	5 pcs		FAECHERSCHEIBE A D 3.2
0	MP 8	54.13.0081	4 pcs	4.85mm	Bolzen UNC 4-40
0	MP 10	1.942.145.01			BLENDE RS 232 MODUL
0	P 1	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 2	54.13.0071		9p	D-Sub, PCB, Winkel
0	P 3	54.14.2102		16p	P STECKER 16 P,AU,VR,GERADE
0	R 1	57.11.3103		10k	MF, 1%, 0207
0	R 2	57.92.7012		0.3A	POLY- PTC, 60V
0	R 3	57.11.3103		10k	MF, 1%, 0207
0	R 4	57.11.3103		10k	MF, 1%, 0207
0	R 5	not used		0R0	MF, 0207
0	R 6	not used		0R0	MF, 0207
0	R 7	57.11.3332		3k3	MF, 1%, 0207
0	R 8	57.11.3151		150R	MF, 1%, 0207
0	R 9	57.11.3000		0R0	MF, 0207
0	R 10	57.11.3000		0R0	MF, 0207
0	R 11	57.11.3332		3k3	MF, 1%, 0207
0	R 12	57.11.3103		10k	MF, 1%, 0207
0	R 13	57.11.3103		10k	MF, 1%, 0207
0	R 14	57.11.3000		0R0	MF, 0207
0	R 15	not used		0R0	MF, 0207
0	R 16	not used		0R0	MF, 0207
0	S 1	55.12.0003		2*3ST	S SCHIEBE,2*3U, PRINT
0	XIC 1	53.03.0168		16p	DIL 0.3", löt, gerade
0	XIC 2	53.03.0165		8p	DIL 0.3", löt, gerade
0	XIC 3	53.03.0168		16p	DIL 0.3", löt, gerade

End of List

Comments

MP1 hat von .11 auf .12 geändert

Edition Ausgabe	Date Datum	Visa Exp.	Checked Gepr.	Sect Org.	Index
	02.03.1999	LC			

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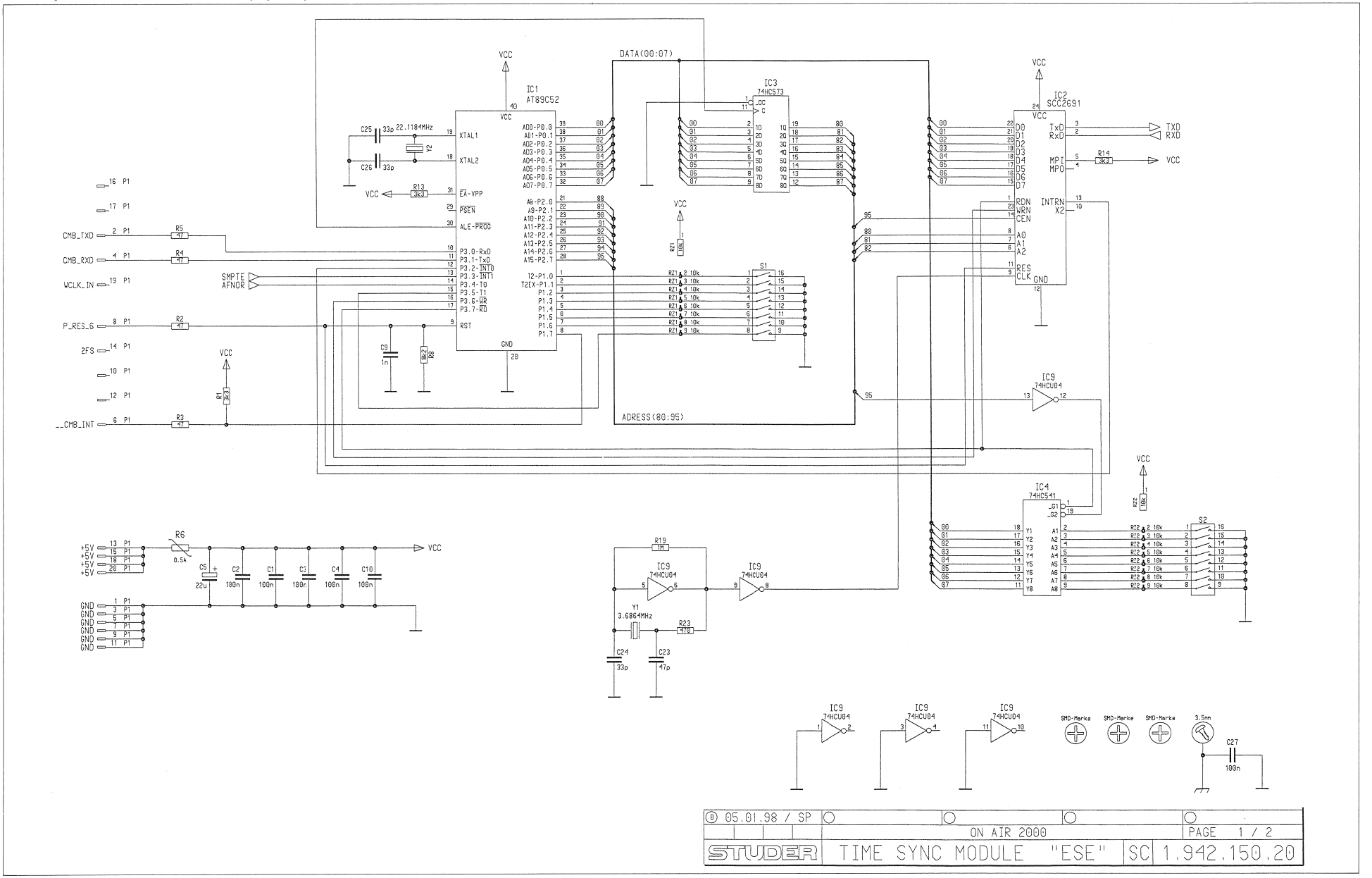
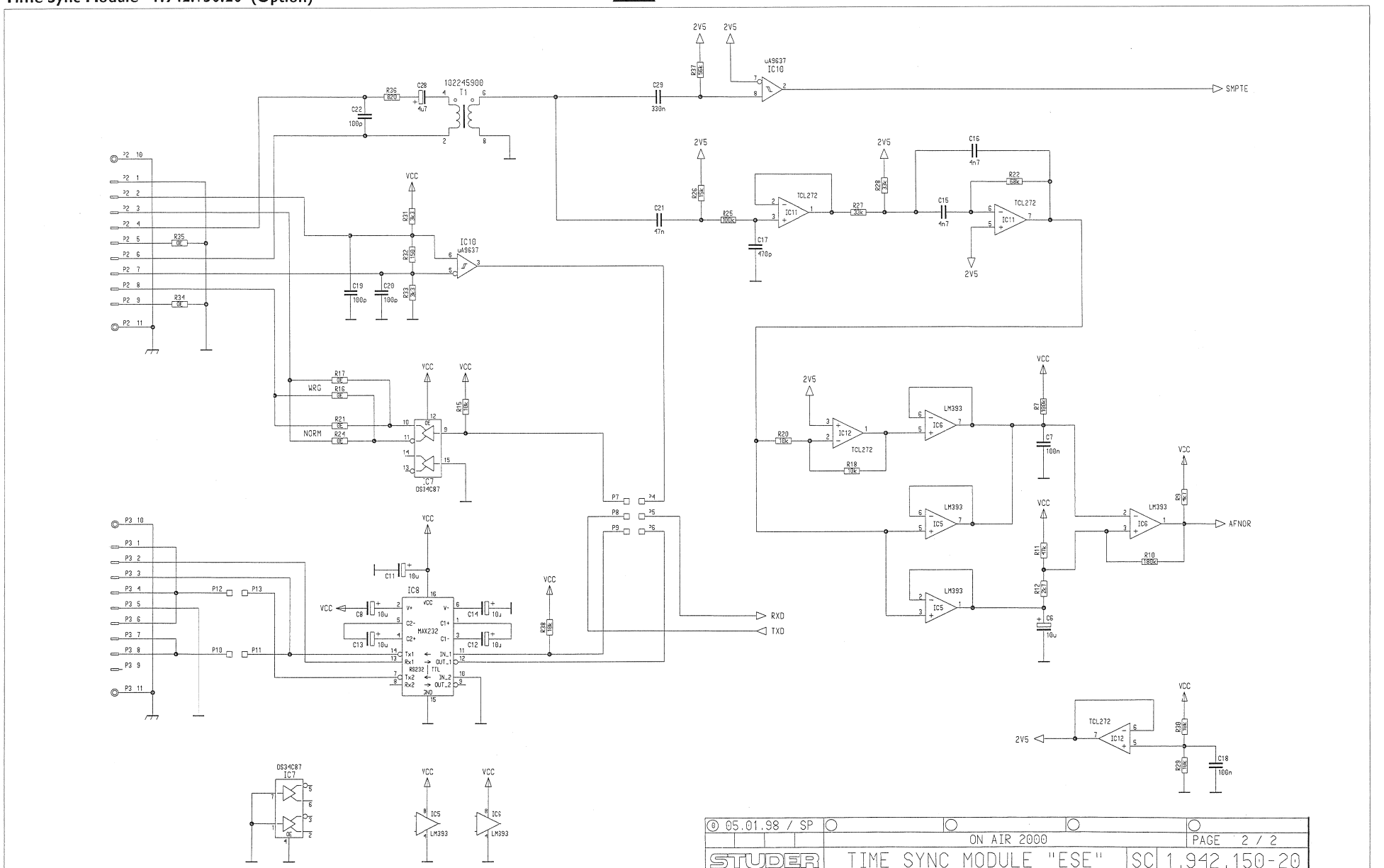
STUDER REGENSDORF | Description Bezeichnung: RS232 Module, ESE | Z | Number Nummer: 1.942.145.81

Time Sync Module 1.942.150.20 (Option)

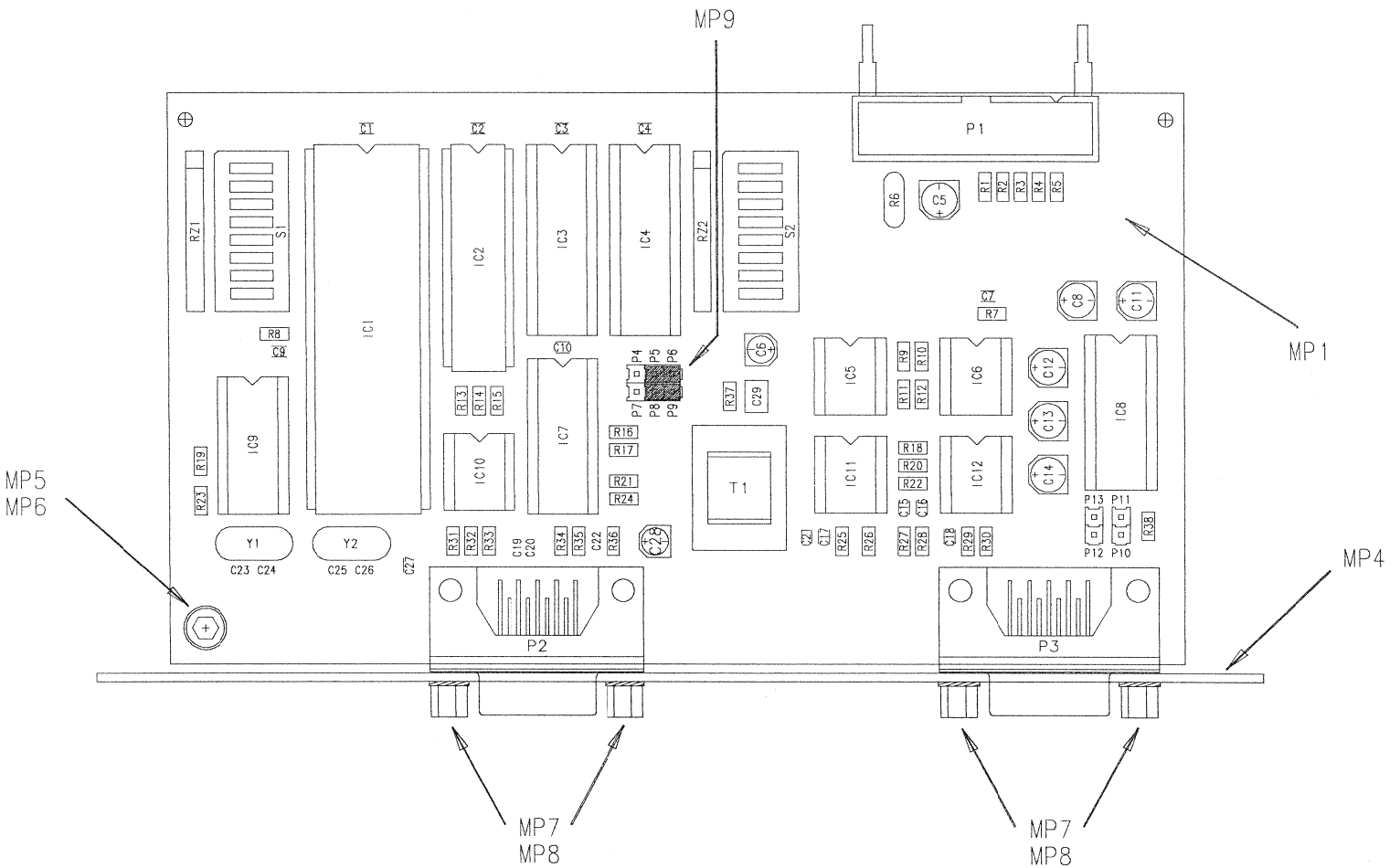


Time Sync Module 1.942.150.20 (Option)



0 05.01.98 / SP				
	ON AIR 2000			PAGE 2 / 2
STUDER	TIME SYNC MODULE "ESE"	SC	1.942.150-20	

Time Sync Module 1.942.150.20 (Option)



Edition Ausgabe	Modification Aenderung				
					3
					2
					1
	5.01.98	PZ			0
	Date Datum	Visa Gez.	Dessin Constr.	Seen Gen.	Index

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STUDER REGENSDORF — Description Benennung: TIME SYNC MODULE "ESE" — Number Nummer: 1.942.150-20

TIME SYNC MODULE 1.942.150.26 (0)

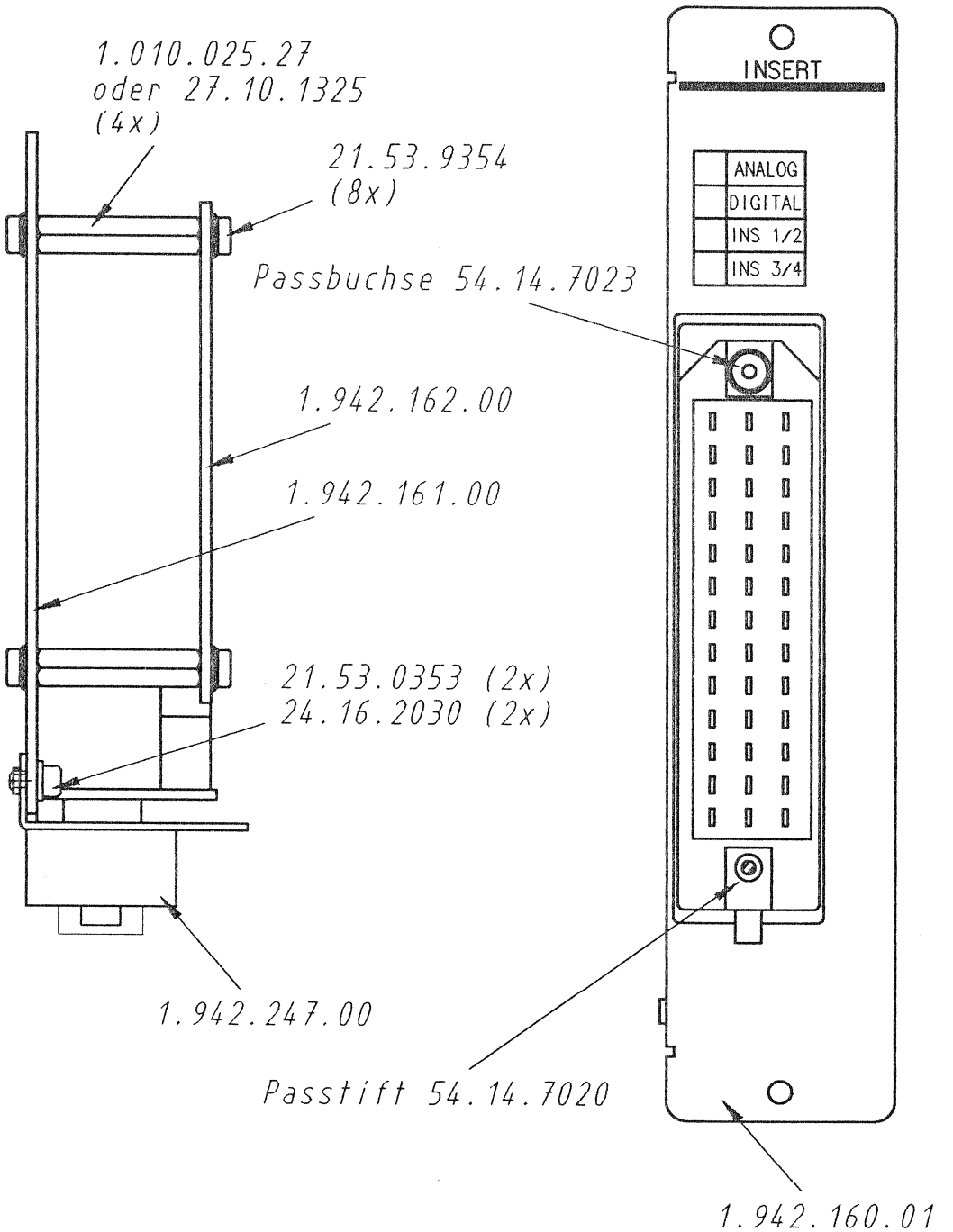
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 2	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 3	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.68.0067		22u	EL 16V, 5.0*5.7
0	C 6	59.68.0065		10u	EL 16V, 4.0*5.7
0	C 7	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 8	59.68.0109		10u	EL 35V, 5.0*5.7
0	C 9	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.68.0109		10u	EL 35V, 5.0*5.7
0	C 12	59.68.0109		10u	EL 35V, 5.0*5.7
0	C 13	59.68.0109		10u	EL 35V, 5.0*5.7
0	C 14	59.68.0109		10u	EL 35V, 5.0*5.7
0	C 15	59.60.3321		4n7	CER 50V, 10%, X7R, 0805
0	C 16	59.60.3321		4n7	CER 50V, 10%, X7R, 0805
0	C 17	59.60.2365		470p	CER 50V, 5%, C0G, 0805
0	C 18	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 19	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 20	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 21	59.60.3333		47n	CER 50V, 10%, X7R, 0805
0	C 22	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 23	59.60.2241		47p	CER 50V, 5%, C0G, 0603
0	C 24	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 25	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 26	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 27	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 28	59.68.0107		4u7	EL 35V, 4.0*5.7
0	C 29	59.60.3743		330n	CER 50V, 10%, X7R, 1812
0	IC 1	1.942.928.26			SW.150 TIME SYNC MODULE
0	IC 2	50.16.0201		SCC2691	IC SCC 2691 AE 1 N 24 ,A
0	IC 3	50.17.1573		74HC573	74 HC 573(A)
0	IC 4	not used		74HC541	Octal bus buffer
0	IC 5	50.05.0283		LM393	Dual Comparator
0	IC 6	50.05.0283		LM393	Dual Comparator
0	IC 7	50.15.0127		34C87	IC DS 34 C 87 TN, MC34C87P ,A
0	IC 8	50.15.0120		MAX232	IC MAX 232 CPE
0	IC 9	50.17.1904		74HCU04	IC ... 74 HCU 04 ., ,A
0	IC 10	50.15.0114		9637	Dual diff Line Receiver
0	IC 11	50.09.0122		TLC272	Dual Op-Amp CMOS DIP 8
0	IC 12	50.09.0122		TLC272	Dual Op-Amp CMOS DIP 8
0	MP 1	1.942.150.11	1 pce		TIME SYNC PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.150.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	1.942.150.01	1 pce		BLENDE TIME SYNC MODULE
0	MP 5	24.16.2030	1 pce	3.2/6.0	Fächerscheibe Form A
0	MP 6	21.53.0353	1 pce	M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	24.16.2030	4 pcs	3.2/6.0	Fächerscheibe Form A
0	MP 8	54.13.0081	4 pcs	4.85mm	Bolzen UNC 4-40
0	MP 9	54.01.0021	2 pcs	Jumper	0.63*0.63mm, Au
0	MP 10	1.101.001.23	2 pcs		TEXT-ETIK. 5*20 HARDWARE -23
0	P 1	54.14.2103		20p	1/20" Au, gerade, Verrieg
0	P 2	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 3	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 4	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	P 10	54.01.0020		1p	Pin, 1reihig, gerade
0	P 11	54.01.0020		1p	Pin, 1reihig, gerade
0	P 12	54.01.0020		1p	Pin, 1reihig, gerade
0	P 13	54.01.0020		1p	Pin, 1reihig, gerade
0	R 1	57.60.1332		3k3	MF, 1%, 0204, E24
0	R 2	57.60.1470		47R	MF, 1%, 0204, E24
0	R 3	57.60.1470		47R	MF, 1%, 0204, E24
0	R 4	57.60.1470		47R	MF, 1%, 0204, E24
0	R 5	57.60.1470		47R	MF, 1%, 0204, E24
0	R 6	57.92.7013		0.5A	PTC 60V
0	R 7	57.60.1104		100k	MF, 1%, 0204, E24
0	R 8	57.60.1822		8k2	MF, 1%, 0204, E24
0	R 9	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 10	57.60.1184		180k	MF, 1%, 0204, E24
0	R 11	57.60.1473		47k	MF, 1%, 0204, E24
0	R 12	57.60.1272		2k7	MF, 1%, 0204, E24
0	R 13	57.60.1332		3k3	MF, 1%, 0204, E24
0	R 14	57.60.1332		3k3	MF, 1%, 0204, E24
0	R 15	57.60.1103		10k	MF, 1%, 0204, E24
0	R 16	not used		0R0	MF, 0204
0	R 17	not used		0R0	MF, 0204
0	R 18	57.60.1103		10k	MF, 1%, 0204, E24
0	R 19	57.60.1105		1M	MF, 1%, 0204, E24
0	R 20	57.60.1103		10k	MF, 1%, 0204, E24
0	R 21	57.60.1000		0R0	MF, 0204
0	R 22	57.60.1683		68k	MF, 1%, 0204, E24
0	R 23	57.60.1471		470R	MF, 1%, 0204, E24
0	R 24	57.60.1000		0R0	MF, 0204
0	R 25	57.60.1104		100k	MF, 1%, 0204, E24
0	R 26	57.60.1153		15k	MF, 1%, 0204, E24
0	R 27	57.60.1333		33k	MF, 1%, 0204, E24
0	R 28	57.60.1333		33k	MF, 1%, 0204, E24
0	R 29	57.60.1103		10k	MF, 1%, 0204, E24
0	R 30	57.60.1103		10k	MF, 1%, 0204, E24
0	R 31	57.60.1332		3k3	MF, 1%, 0204, E24
0	R 32	57.60.1151		150R	MF, 1%, 0204, E24
0	R 33	57.60.1332		3k3	MF, 1%, 0204, E24
0	R 34	not used		0R0	MF, 0204
0	R 35	not used		0R0	MF, 0204
0	R 36	57.60.1821		820R	MF, 1%, 0204, E24
0	R 37	57.60.1563		56k	MF, 1%, 0204, E24
0	R 38	57.60.1103		10k	MF, 1%, 0204, E24
0	RZ 1	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 2	not used		10k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	DIL-Switch, PCB
0	S 2	not used		8*a	DIL-Switch, PCB
0	T 1	1.022.459.00			AUSGANGSTRAFO 1:1
0	XIC 1	53.03.0172		40p	DIL 0.6", löt, gerade
0	XIC 7	53.03.0168		16p	DIL 0.3", löt, gerade
0	XIC 8	53.03.0168		16p	DIL 0.3", löt, gerade
0	XIC 10	53.03.0166		8p	DIL 0.3", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	XY 2	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1002		3.6864MHz	XTAL HC 18 U
0	Y 2	89.01.1016		22.1184MHz	XTAL HC 49/U

End of List

Comments:

(25) Software update IC1

Analog Insert Module 1.942.160.20 (Option)



Modification Änderung	.	.	.	.	③
	.	.	.	.	②
	.	.	.	.	①
Edition Ausgabe	21.01.98	SW	PZ	SW	⓪
	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index

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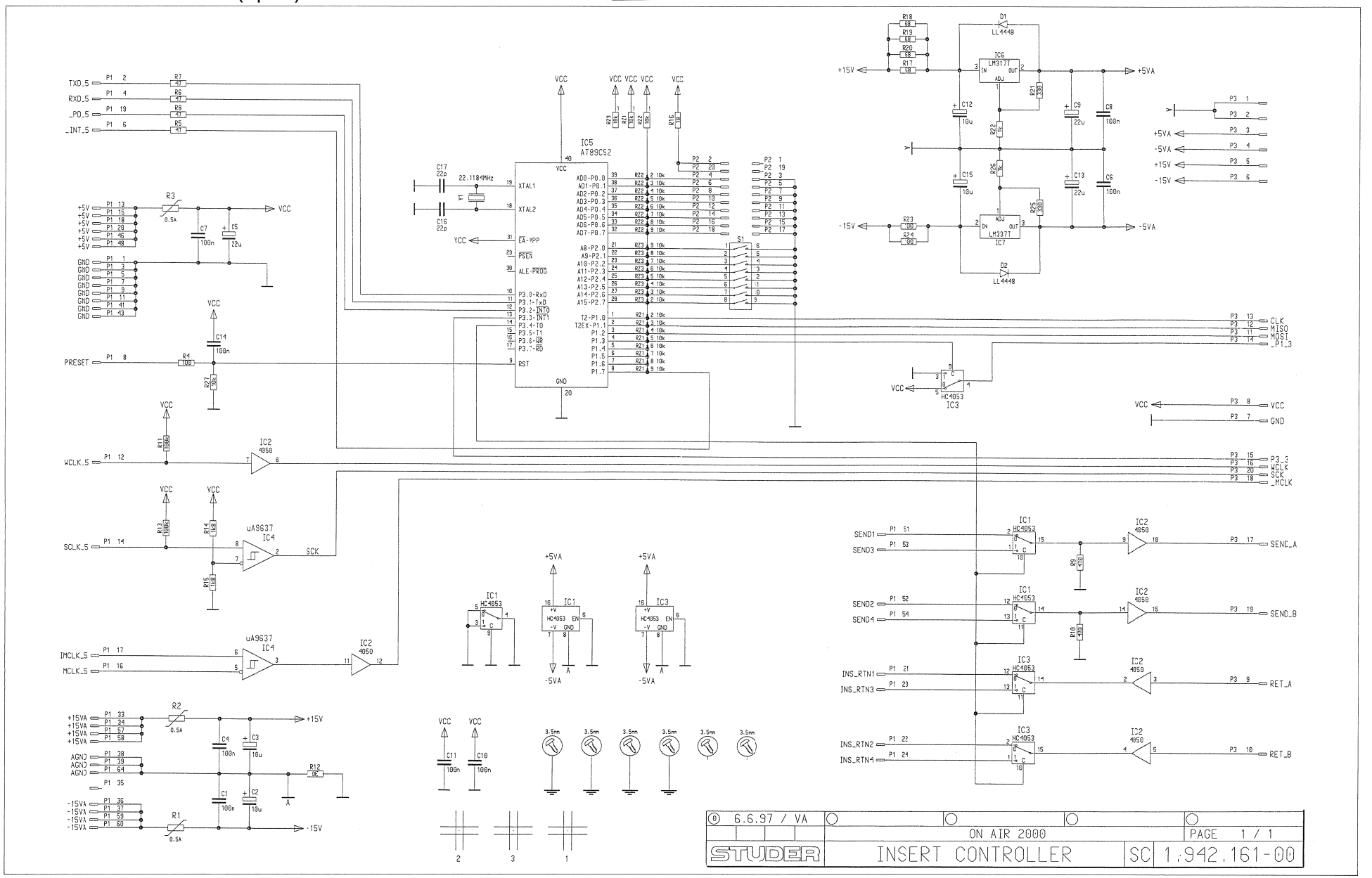
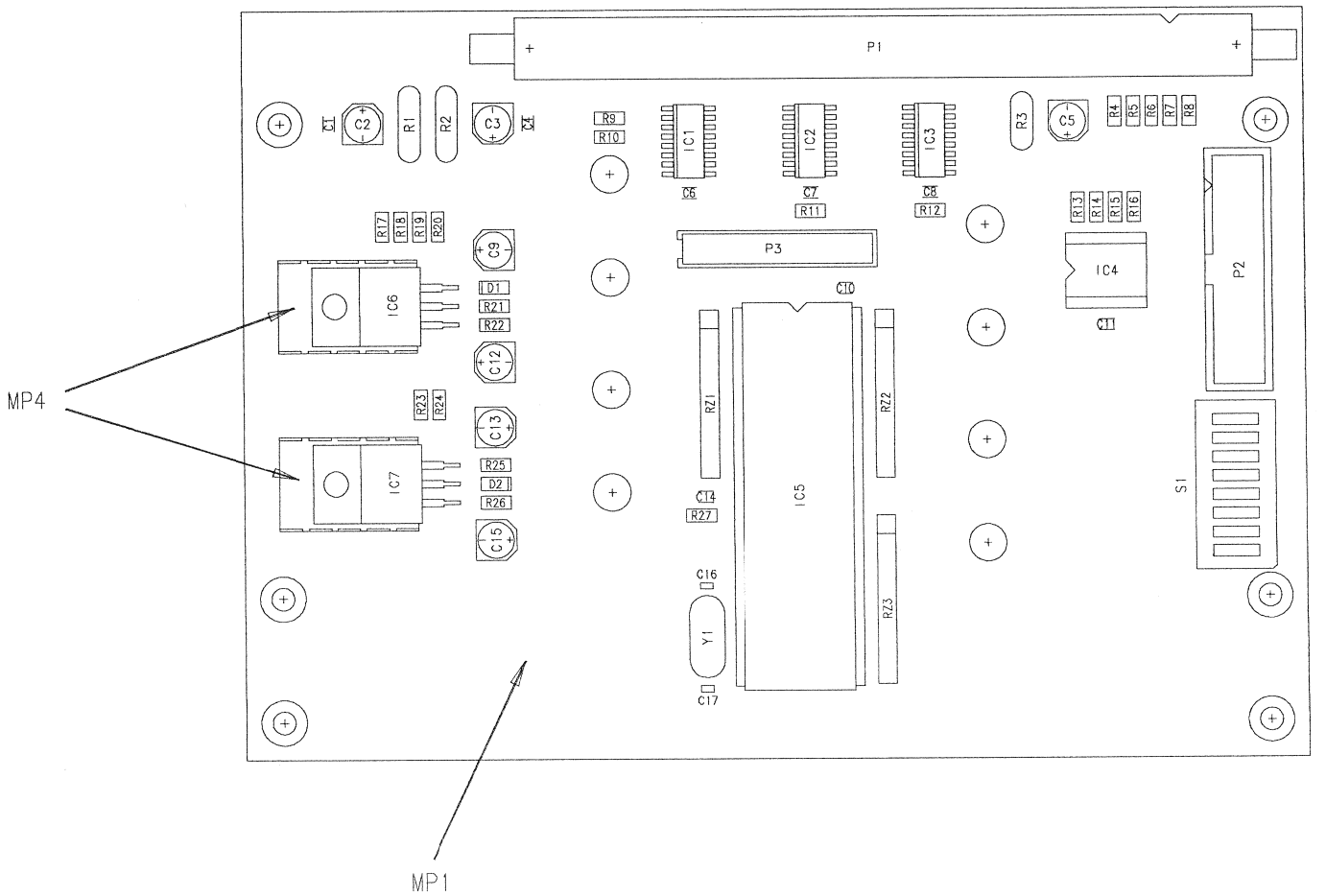
STUDER REGENSDORF	Description: Benennung: ANALOG INSERT MODULE, ESE	Number: Nummer: 1.942.160.20

Insert Controller 1.942.161.00 (Option)



Insert Controller 1.942.161.00 (Option)



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 2	59.68.0109		10u	C-EL 35V, 5.0*5.7
0	C 3	59.68.0109		10u	C-EL 35V, 5.0*5.7
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 6	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 7	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 8	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 9	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 12	59.68.0109		10u	C-EL 35V, 5.0*5.7
0	C 13	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 14	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 15	59.68.0109		10u	C-EL 35V, 5.0*5.7
0	C 16	59.60.2233		22p	CER 50V, 5%, C0G, 0603
0	C 17	59.60.2233		22p	CER 50V, 5%, C0G, 0603
0	D 1	50.60.8001		4448	D LL 4448 SOD 80
0	D 2	50.60.8001		4448	D LL 4448 SOD 80
0	IC 1	50.62.8053		4053	IC .. 74 HC 4053 . ,A
0	IC 2	50.62.1950		74HC4050	Hex High-to-Low Level Shifter
0	IC 3	50.62.8053		4053	IC .. 74 HC 4053 . ,A
0	IC 4	50.15.0114		9637	Dual diff Line Receiver
0	IC 5	not used		89C52	MicroController 24MHz
0	IC 6	50.10.0104		LM317SP	IC LM 317 SP, ..T,
0	IC 7	50.10.0105		LM337KC	IC LM 337 KC, ..SP, ..T,
0	MP 1	1.942.161.11	1 pcs		INSERT CONTROLLER PCB
0	MP 2	43.01.0108	1 pcs	Label	ESE-WARNSCHILD
0	MP 3	1.942.161.10	1 pcs		NR.ETIKETTE 5X20
0	MP 4	50.20.3004	2 pcs		Kühlkörper, TO 220, horizontal
0	P 1	54.14.2056		64p	P STECKER 64 P , AU, GERADE
0	P 2	54.14.2008		20p	1/20" Au, gerade, ohne Verrieg
0	P 3	54.14.5520		20p	PCB-Buchse gerade
0	R 1	57.92.7013		0.5A	POLY- PTC, 60V
0	R 2	57.92.7013		0.5A	POLY- PTC, 60V
0	R 3	57.92.7013		0.5A	POLY- PTC, 60V
0	R 4	57.60.1101		100R	MF, 1%, 0204, E24
0	R 5	57.60.1470		47R	MF, 1%, 0204, E24
0	R 6	57.60.1470		47R	MF, 1%, 0204, E24
0	R 7	57.60.1470		47R	MF, 1%, 0204, E24
0	R 8	57.60.1470		47R	MF, 1%, 0204, E24
0	R 9	57.60.1471		470R	MF, 1%, 0204, E24
0	R 10	57.60.1471		470R	MF, 1%, 0204, E24
0	R 11	57.60.1104		100K	MF, 1%, 0204, E24
0	R 12	57.60.1000		0R0	MF, 0204
0	R 13	57.60.1104		100K	MF, 1%, 0204, E24
0	R 14	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 15	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 16	57.60.1100		10R	MF, 1%, 0204, E24
0	R 17	57.60.1680		68R	MF, 1%, 0204, E24
0	R 18	57.60.1680		68R	MF, 1%, 0204, E24
0	R 19	57.60.1680		68R	MF, 1%, 0204, E24
0	R 20	57.60.1680		68R	MF, 1%, 0204, E24
0	R 21	57.60.1331		330R	MF, 1%, 0204, E24
0	R 22	57.60.1102		1K	MF, 1%, 0204, E24
0	R 23	57.60.1101		100R	MF, 1%, 0204, E24
0	R 24	57.60.1101		100R	MF, 1%, 0204, E24
0	R 25	57.60.1331		330R	MF, 1%, 0204, E24
0	R 26	57.60.1102		1K	MF, 1%, 0204, E24
0	R 27	57.60.1103		10K	MF, 1%, 0204, E24
0	RZ 1	57.88.4103		8*10k	2%, SIP 9
0	RZ 2	57.88.4103		8*10k	2%, SIP 9
0	RZ 3	57.88.4103		8*10k	2%, SIP 9
0	S 1	55.01.0168		8*a	SZ , 8*A, DIL
0	XIC 5	53.03.0172		40p	DIL 0.6", lötl, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	22.118 400 MHz, HC 49/U

End of List

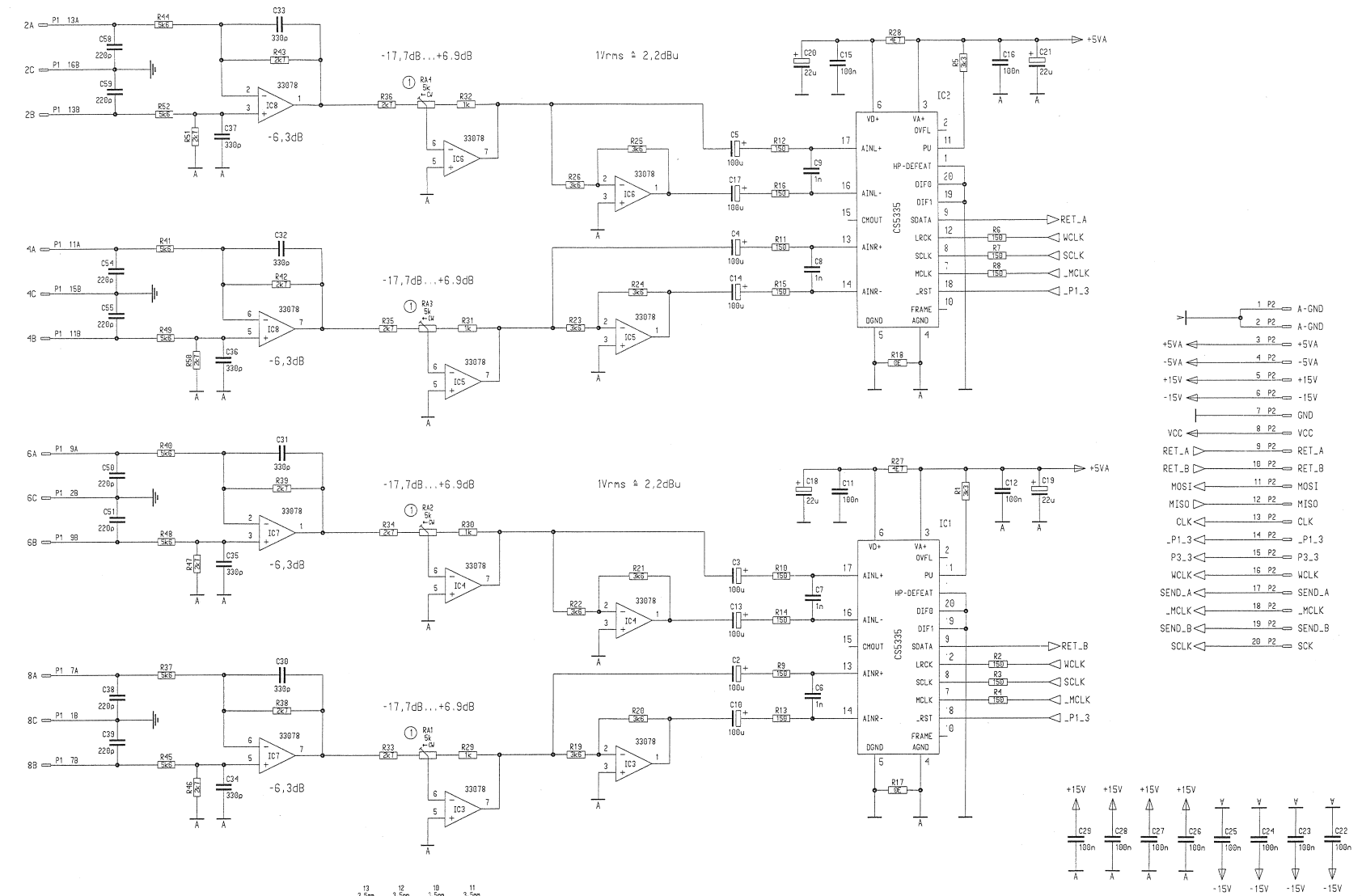
Comments

Edition Ausgabe	Modification Aenderung	Index
21.5.97	.	3
	.	2
	.	1
Date Datum	Visa Ges.	Index
PZ		0

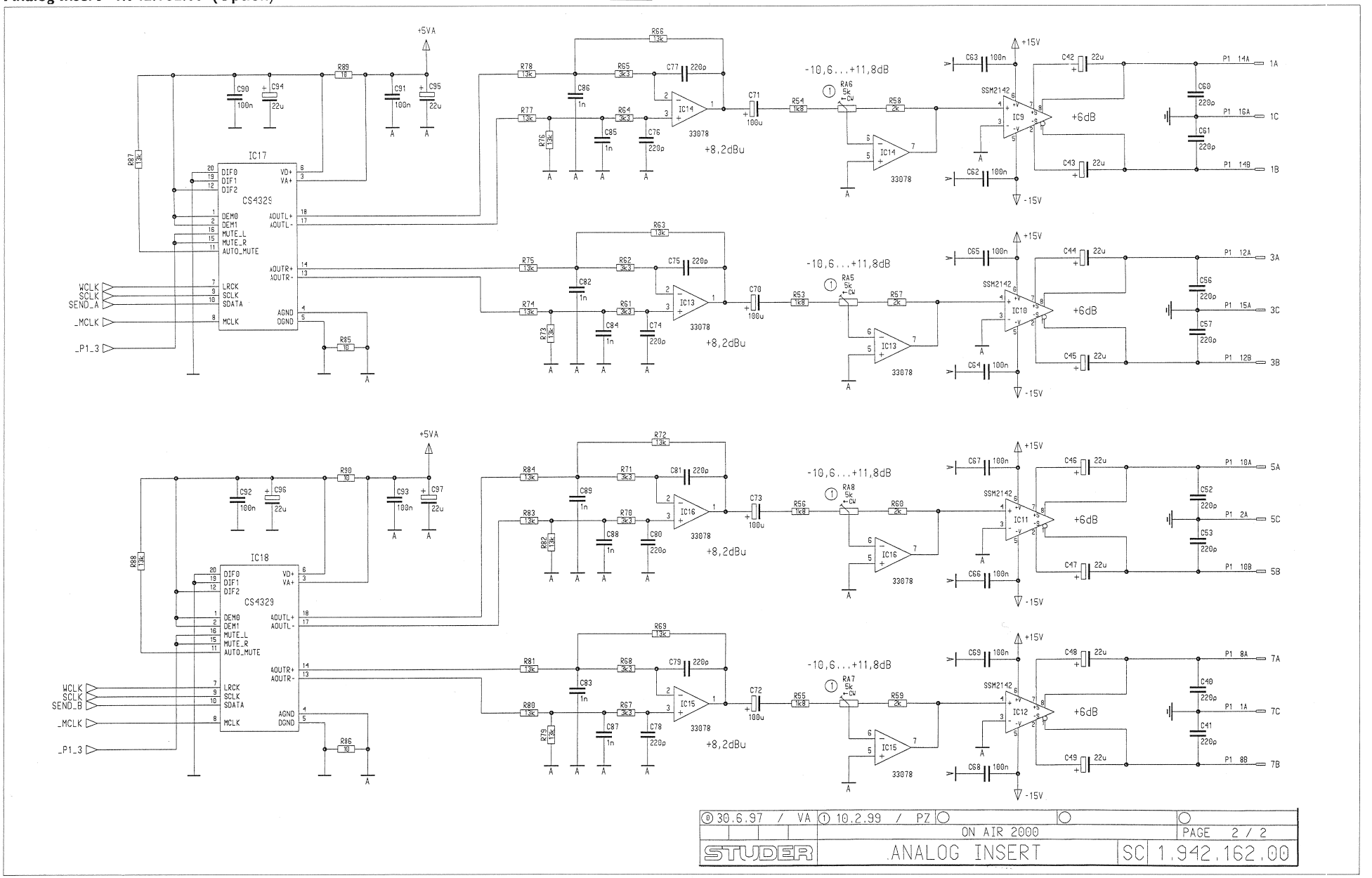
Copy to: Kopie fuer: -

STUDER REGENSDORF | Description Bezeichnung: INSERT CONTROLLER 'ESE' | Number: Nummer: 1.942.161-00

Analog Insert 1.942.162.00 (Option)

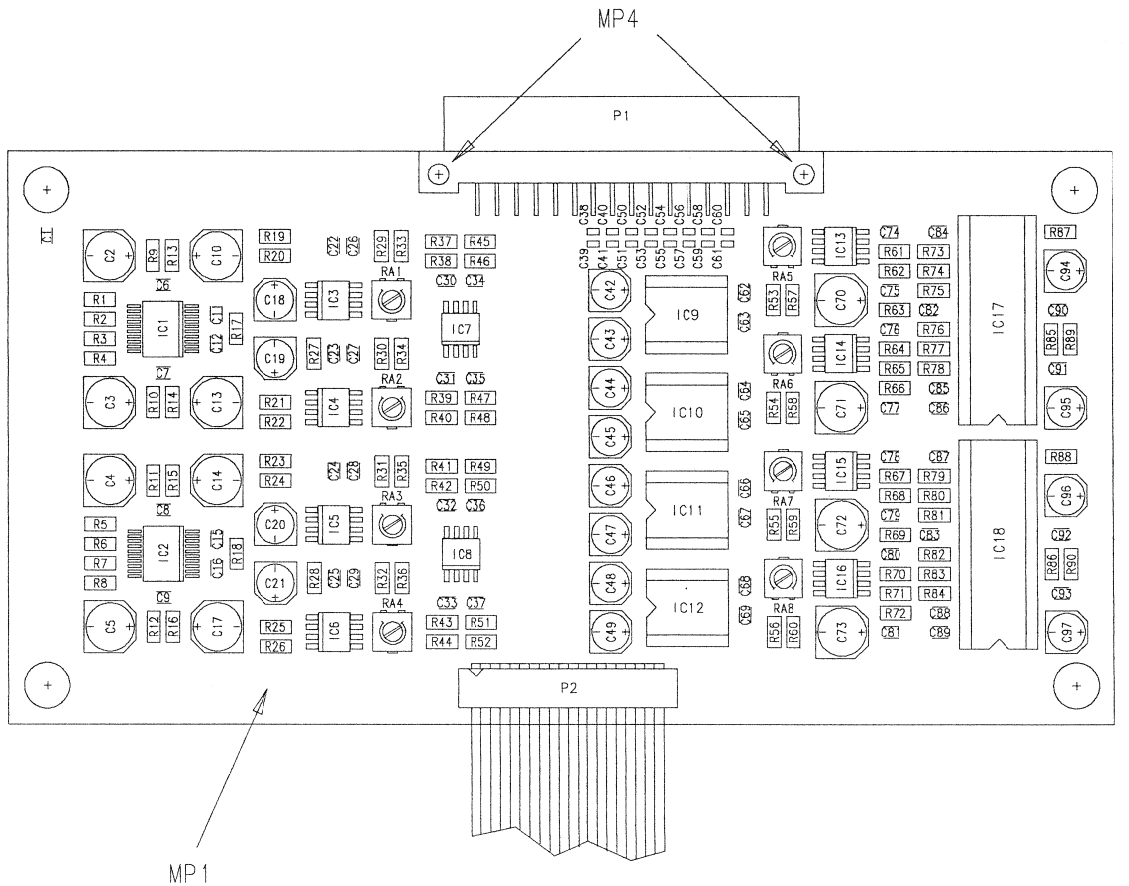


Analog Insert 1.942.162.00 (Option)



⓪ 30.6.97 / VA	① 10.2.99 / PZ			
	ON AIR 2000			PAGE 2 / 2
STUDER	ANALOG INSERT		SC	1.942.162.00

Analog Insert 1.942.162.00 (Option)



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 2	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 3	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 4	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 5	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 6	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 7	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 8	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 9	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 10	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 14	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 15	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 16	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 17	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 18	59.63.0067		22u	C-EL 16V, 5.0*5.7
0	C 19	59.63.0067		22u	C-EL 16V, 5.0*5.7
0	C 20	59.63.0067		22u	C-EL 16V, 5.0*5.7
0	C 21	59.63.0067		22u	C-EL 16V, 5.0*5.7
0	C 22	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 23	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 24	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 25	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 26	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 27	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 28	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 29	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 30	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 31	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 32	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 33	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 34	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 35	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 36	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 37	59.60.2361		330p	CER 50V, 5%, C0G, 0805
0	C 38	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 39	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 40	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 41	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 42	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 43	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 44	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 45	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 46	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 47	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 48	59.63.0067		22u	C-EL 16V, 5.0*5.7
0	C 49	59.63.0067		22u	C-EL 16V, 5.0*5.7
0	C 50	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 51	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 52	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 53	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 54	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 55	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 56	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 57	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 58	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 59	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 60	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 61	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 62	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 63	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 64	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 65	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 66	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 67	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 68	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 69	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 70	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 71	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 72	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 73	59.68.0029		100u	C-EL 6V, 6.3*5.7
0	C 74	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 75	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 76	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 77	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 78	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 79	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 80	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 81	59.63.1105		220p	PPS 50V, 2%, 0805
0	C 82	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 83	59.63.1113		1n0	PPS 50V, 2%, 0805

Edition Ausgabe	14.3.97	PZ			Index
	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	

Copy to: Kopie fuer:

STUDER REGENSDORF | Description: Benennung: ANALOG INSERT 'ESE' | Number: Nummer: 1.942.162-00

Analog Insert 1.942.162.00 (Option)

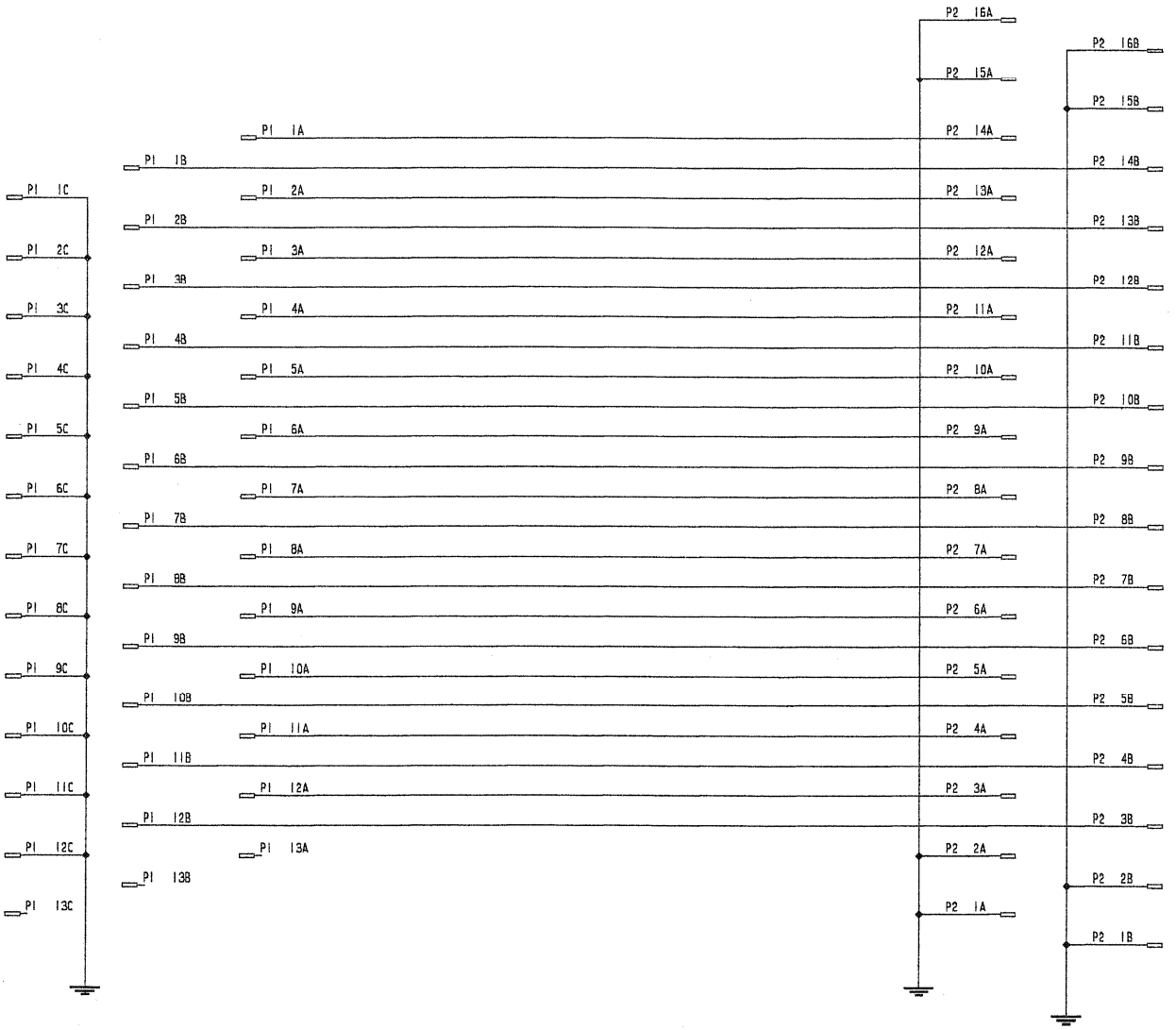
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 84	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 85	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 86	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 87	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 88	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 89	59.63.1113		1n0	PPS 50V, 2%, 0805
0	C 90	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 91	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 92	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 93	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 94	59.68.0037		22u	C-EL 16V, 5.0*5.7
0	C 95	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 96	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 97	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	IC 1	50.61.8103		CS5335	A/D Converter 20bit 2ChSSOP20
0	IC 2	50.61.8103		CS5335	A/D Converter 20bit 2ChSSOP20
0	IC 3	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 4	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 5	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 6	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 7	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 8	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 9	50.09.0124		2142	IC SSM 2142 P
0	IC 10	50.09.0124		2142	IC SSM 2142 P
0	IC 11	50.09.0124		2142	IC SSM 2142 P
0	IC 12	50.09.0124		2142	IC SSM 2142 P
0	IC 13	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 14	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 15	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 16	50.61.0204		MC33078	IC MC 33078 P ,A
0	IC 17	50.19.0114		D/A Conv	IC CS 4329-KP,
0	IC 18	50.19.0114		D/A Conv	IC CS 4329-KP,
0	MP 1	1.942.162.11	1 pce		ANALOG INSERT PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.162.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	28.99.0119	2 pcs		ROHRNIETE D 2.5*0.15* 9
0	P 1	54.11.2013		32p	EU-BK 2*16p
0	P 2	1.023.567.04		Ribbon20p	FLACHKABEL 20 POL. 0,04M
0	R 1	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 2	57.60.1151		150R	MF, 1%, 0204, E24
0	R 3	57.60.1151		150R	MF, 1%, 0204, E24
0	R 4	57.60.1151		150R	MF, 1%, 0204, E24
0	R 5	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 6	57.60.1151		150R	MF, 1%, 0204, E24
0	R 7	57.60.1151		150R	MF, 1%, 0204, E24
0	R 8	57.60.1151		150R	MF, 1%, 0204, E24
0	R 9	57.60.1151		150R	MF, 1%, 0204, E24
0	R 10	57.60.1151		150R	MF, 1%, 0204, E24
0	R 11	57.60.1151		150R	MF, 1%, 0204, E24
0	R 12	57.60.1151		150R	MF, 1%, 0204, E24
0	R 13	57.60.1151		150R	MF, 1%, 0204, E24
0	R 14	57.60.1151		150R	MF, 1%, 0204, E24
0	R 15	57.60.1151		150R	MF, 1%, 0204, E24
0	R 16	57.60.1151		150R	MF, 1%, 0204, E24
0	R 17	57.60.1000		0R0	MF, 0204
0	R 18	57.60.1000		0R0	MF, 0204
0	R 19	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 20	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 21	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 22	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 23	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 24	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 25	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 26	57.60.1362		3K6	MF, 1%, 0204, E24
0	R 27	57.60.1479		4R7	MF, 2%, 0204, E24
0	R 28	57.60.1479		4R7	MF, 2%, 0204, E24
0	R 29	57.60.1102		1K	MF, 1%, 0204, E24
0	R 30	57.60.1102		1K	MF, 1%, 0204, E24
0	R 31	57.60.1102		1K	MF, 1%, 0204, E24
0	R 32	57.60.1102		1K	MF, 1%, 0204, E24
0	R 33	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 34	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 35	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 36	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 37	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 38	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 39	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 40	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 41	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 42	57.60.1272		2K7	MF, 1%, 0204, E24

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 43	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 44	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 45	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 46	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 47	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 48	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 49	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 50	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 51	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 52	57.60.1562		5K6	MF, 1%, 0204, E24
0	R 53	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 54	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 55	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 56	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 57	57.60.1202		2K0	MF, 1%, 0204, E24
0	R 58	57.60.1202		2K0	MF, 1%, 0204, E24
0	R 59	57.60.1202		2K0	MF, 1%, 0204, E24
0	R 60	57.60.1202		2K0	MF, 1%, 0204, E24
0	R 61	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 62	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 63	57.60.1133		13K	MF, 1%, 0204, E24
0	R 64	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 65	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 66	57.60.1133		13K	MF, 1%, 0204, E24
0	R 67	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 68	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 69	57.60.1133		13K	MF, 1%, 0204, E24
0	R 70	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 71	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 72	57.60.1133		13K	MF, 1%, 0204, E24
0	R 73	57.60.1133		13K	MF, 1%, 0204, E24
0	R 74	57.60.1133		13K	MF, 1%, 0204, E24
0	R 75	57.60.1133		13K	MF, 1%, 0204, E24
0	R 76	57.60.1133		13K	MF, 1%, 0204, E24
0	R 77	57.60.1133		13K	MF, 1%, 0204, E24
0	R 78	57.60.1133		13K	MF, 1%, 0204, E24
0	R 79	57.60.1133		13K	MF, 1%, 0204, E24
0	R 80	57.60.1133		13K	MF, 1%, 0204, E24
0	R 81	57.60.1133		13K	MF, 1%, 0204, E24
0	R 82	57.60.1133		13K	MF, 1%, 0204, E24
0	R 83	57.60.1133		13K	MF, 1%, 0204, E24
0	R 84	57.60.1133		13K	MF, 1%, 0204, E24
0	R 85	57.60.1100		10R	MF, 1%, 0204, E24
0	R 86	57.60.1100		10R	MF, 1%, 0204, E24
0	R 87	57.60.1133		13K	MF, 1%, 0204, E24
0	R 88	57.60.1133		13K	MF, 1%, 0204, E24
0	R 89	57.60.1100		10R	MF, 1%, 0204, E24
0	R 90	57.60.1100		10R	MF, 1%, 0204, E24
1	RA 1	58.60.0117		5k0	SMD 20%, 0.25W, Cermet
1	RA 2	58.60.0117		5k0	SMD 20%, 0.25W, Cermet
1	RA 3	58.60.0117		5k0	SMD 20%, 0.25W, Cermet
1	RA 4	58.60.0117		5k0	SMD 20%, 0.25W, Cermet
1	RA 5	58.60.0117		5k0	SMD 20%, 0.25W, Cermet
1	RA 6	58.60.0117		5k0	SMD 20%, 0.25W, Cermet
1	RA 7	58.60.0117		5k0	SMD 20%, 0.25W, Cermet
1	RA 8	58.60.0117		5k0	SMD 20%, 0.25W, Cermet

End of List

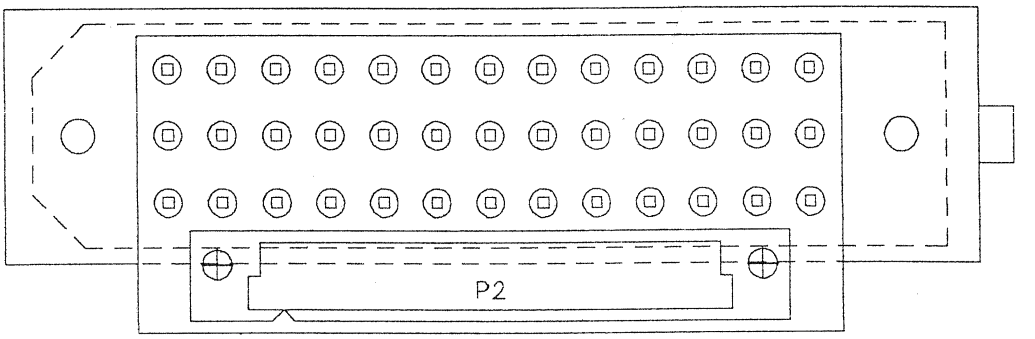
Comments:

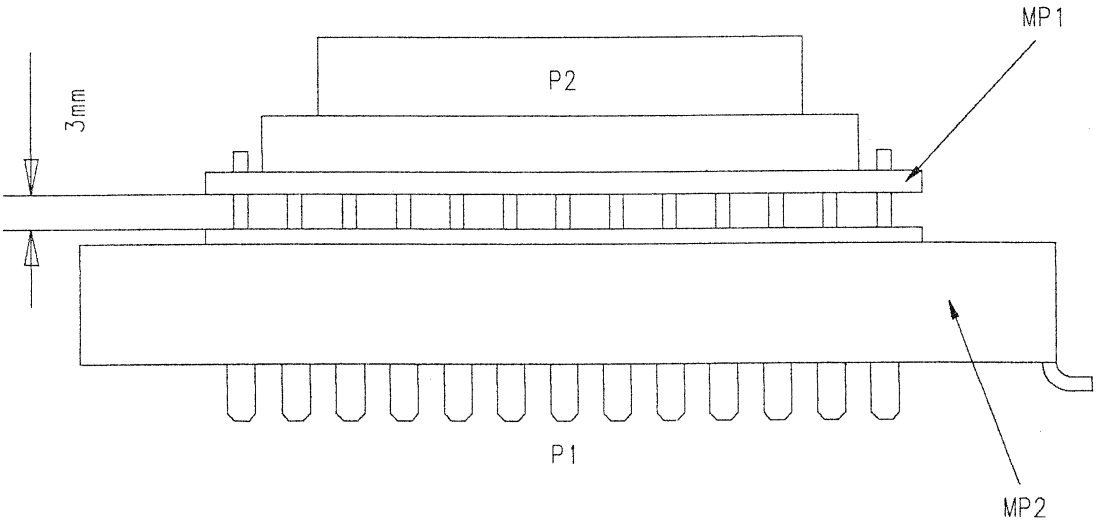
Connection Board 39 Pol 1.942.247.00 (Option)



⓪ 20.1.97 / PZ				
	ON AIR 2000			PAGE 1 / 1
STUDER	CONECTION BOARD 39 POL		SC	1.942.247.00

Connection Board 39 Pol 1.942.247.00 (Option)





Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	MP 1	1.942.247.11	1 pce		Connection Board 39 Pol PCB
0	MP 2	54.14.7002	1 pce		MP RIEGELWANNE 30/39 POL
0	P 1	54.14.1023			P LEISTE 39 POL PRINT
0	P 2	54.11.2014		32p	EU-BK 2*16p

End of List

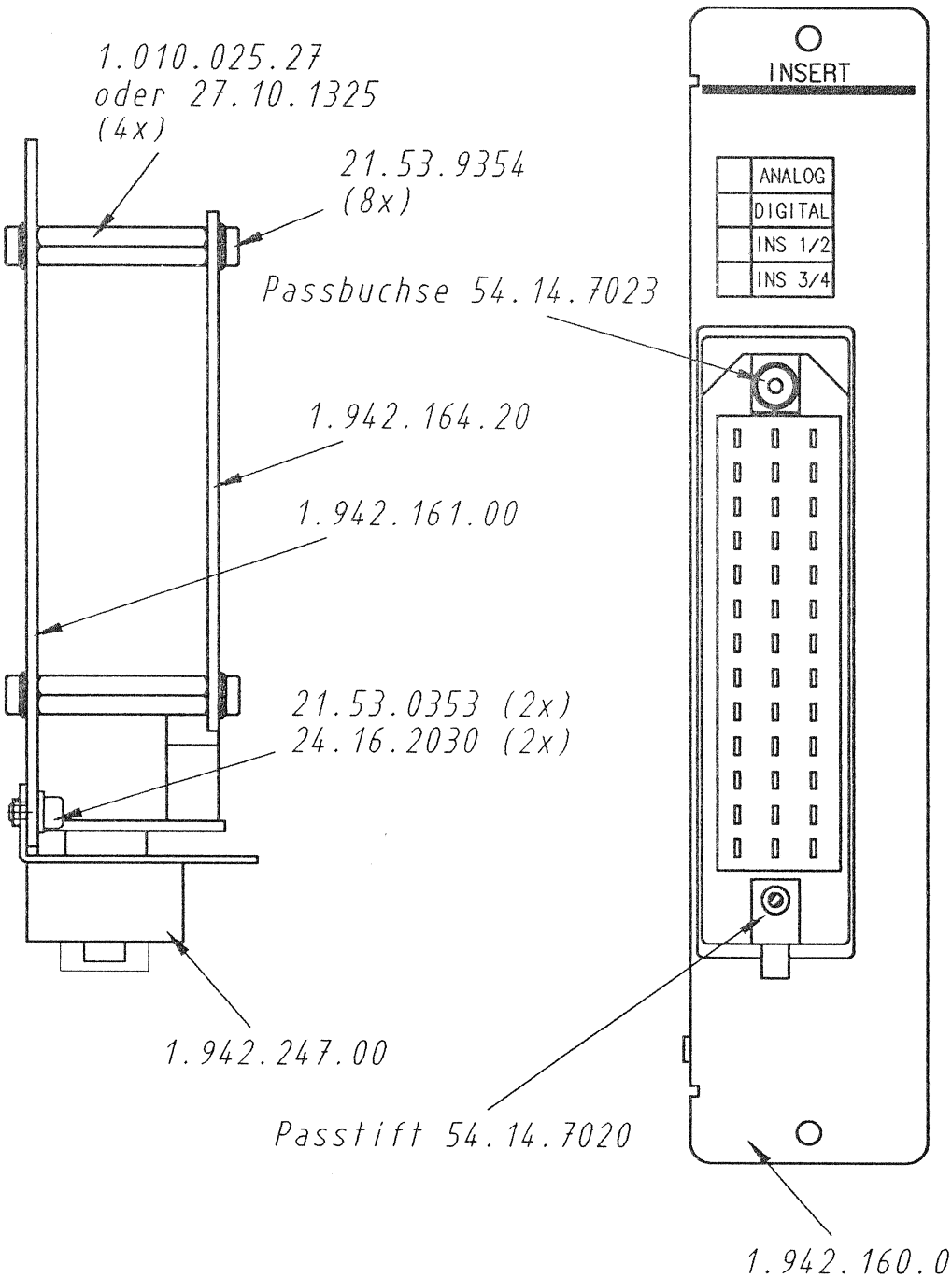
Comments:

Modification Aenderung					
	.	.	.	.	3
	.	.	.	.	2
	.	.	.	.	1
Edition Ausgabe	20.1.97	PZ			0
	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index

Copy to: Kopie fuer: -

STUDER REGENSDORF | Description: Benennung: CONNECTION BOARD 39POL | Number: Nummer: 1.942.247-00

Digital Insert Module 1.942.165.20 (Option)

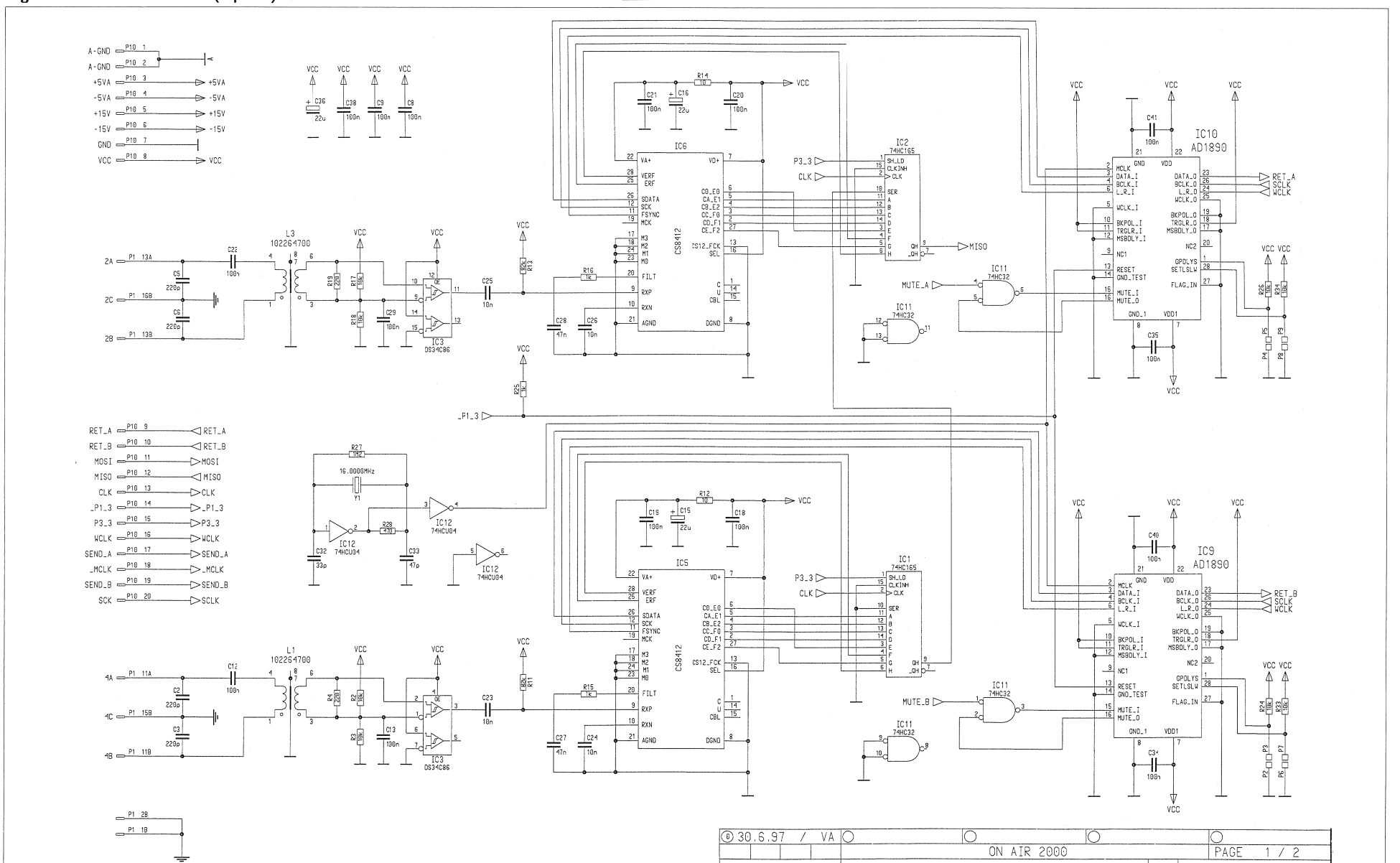


Modification Änderung					
	.	.	.	.	3
	.	.	.	.	2
	.	.	.	.	1
Edition Ausgabe	21.01.98	SW	PZ	SW	0
	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index

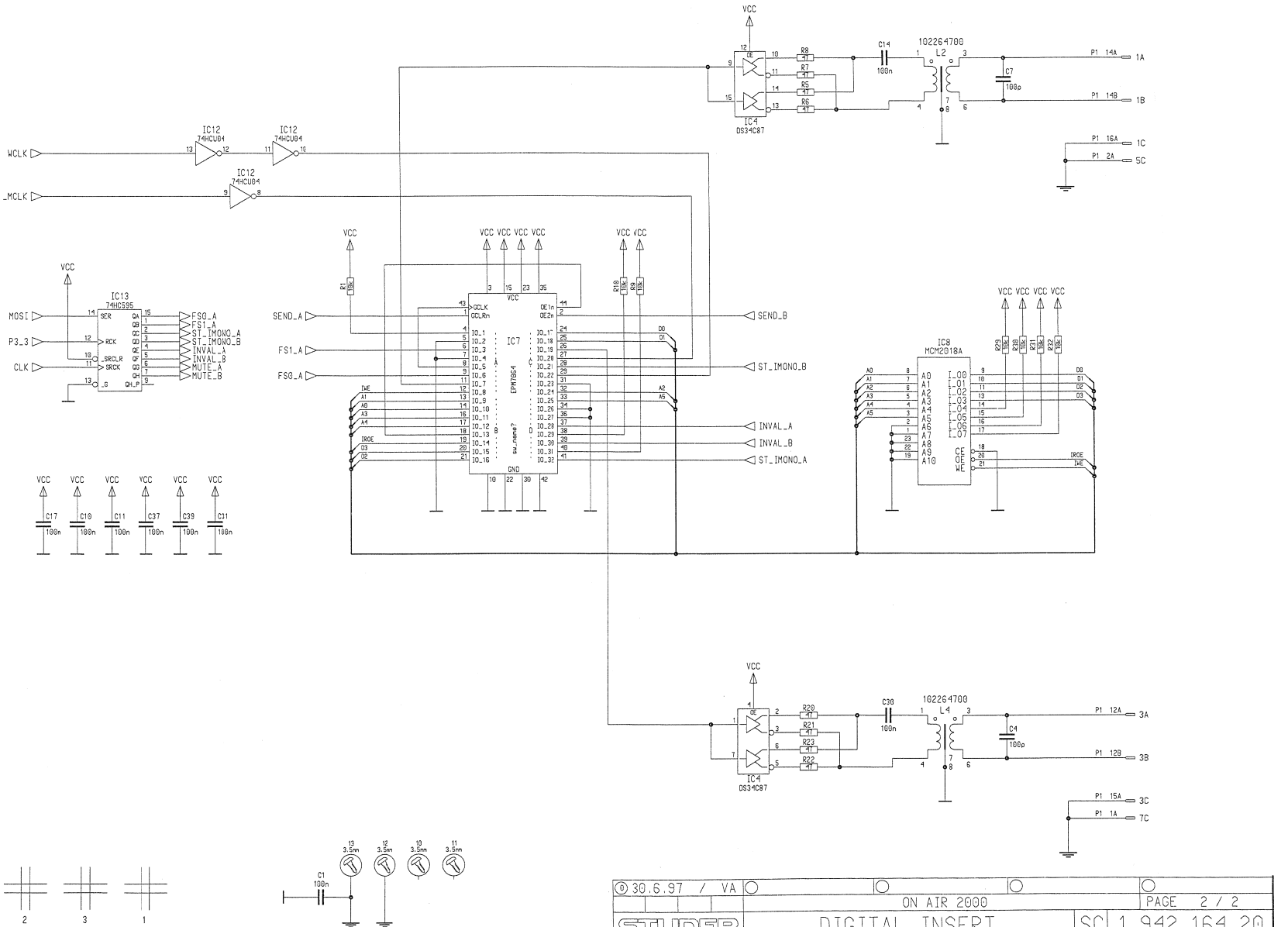
Copy to: Kopie für: -

STUDER REGENSDORF	Description: Benennung: DIGITAL INSERT MODULE, ESE	Number: Nummer: 1.942.165.20

Digital Insert 1.942.164.20 (Option)

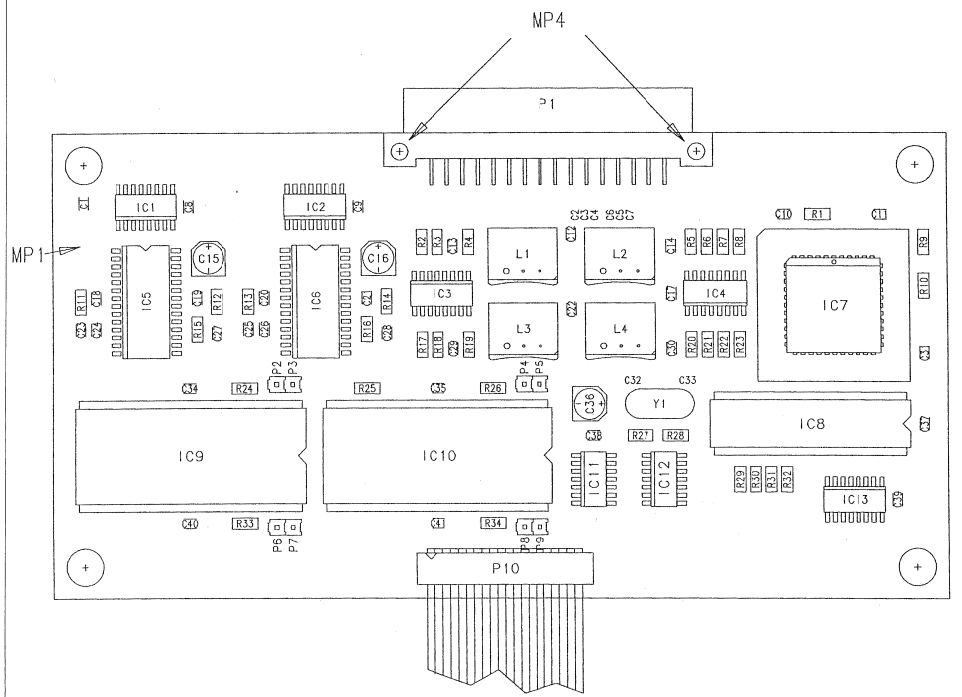


Digital Insert 1.942.164.20 (Option)



⓪ 30.6.97 / VA			
	ON AIR 2000		PAGE 2 / 2
STUDER	DIGITAL INSERT	SC	1.942.164.20

Digital Insert 1.942.164.20 (Option)



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 2	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 3	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 4	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 5	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 6	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 7	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 8	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 9	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 15	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 16	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 17	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 18	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 19	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 20	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 23	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 24	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 25	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 26	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 27	59.60.3333		47n	CER 50V, 10%, X7R, 0805
0	C 28	59.60.3333		47n	CER 50V, 10%, X7R, 0805
0	C 29	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 30	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 31	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 32	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 33	59.60.2241		47p	CER 50V, 5%, C0G, 0603
0	C 34	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 35	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 36	59.68.0067		22u	C-EL 16V, 5.0*5.7
0	C 37	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 38	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 39	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 40	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	IC 1	50.62.1165		74HC165	74 HC 165
0	IC 2	50.62.1165		74HC165	74 HC 165
0	IC 3	50.62.0463		DS34C86	RS 422 Line Receiver
0	IC 4	50.62.0464		DS34C87	RS 422 Line Driver
0	IC 5	50.62.0913		CS8412	AES-Receiver
0	IC 6	50.62.0913		CS8412	AES-Receiver
0	IC 7	1.942.927.20			SW.124 DIGITAL OUT. MOD., PLD
					30634202, EPLD 7064
0	IC 8	50.14.1009		CY7C128-35	IC MCM 2018 A - 35 ,A
0	IC 9	50.13.0204			IC AD 1890 JN ,A
0	IC 10	50.13.0204			IC AD 1890 JN ,A
0	IC 11	50.62.1032		74HC 32	74 HC 32
0	IC 12	50.62.1904		74HCU04	IC .. 74 HCU 04 . ,A
0	IC 13	50.62.1595		74HC595	74 HC 595
0	L 1	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	L 2	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	L 3	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	L 4	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	MP 1	1.942.164.11	1 pce		DIGITAL INSERT PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.164.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	28.99.0119	2 pcs		ROHRNIETE D 2.5*0.15* 9
0	P 1	54.11.2013		32p	EU-BK 2*16p
0	P 2	not used		1p	Pin 0.63*0.63
0	P 3	not used		1p	Pin 0.63*0.63
0	P 4	not used		1p	Pin 0.63*0.63
0	P 5	not used		1p	Pin 0.63*0.63
0	P 6	not used		1p	Pin 0.63*0.63
0	P 7	not used		1p	Pin 0.63*0.63
0	P 8	not used		1p	Pin 0.63*0.63
0	P 9	not used		1p	Pin 0.63*0.63
0	P 10	1.023.567.04		Ribbon20p	FLACHKABEL 20 POL. 0,04M
0	R 1	57.60.1103		10K	MF, 1%, 0204, E24
0	R 2	57.60.1103		10K	MF, 1%, 0204, E24
0	R 3	57.60.1103		10K	MF, 1%, 0204, E24
0	R 4	57.60.1221		220R	MF, 1%, 0204, E24
0	R 5	57.60.1470		47R	MF, 1%, 0204, E24
0	R 6	57.60.1470		47R	MF, 1%, 0204, E24
0	R 7	57.60.1470		47R	MF, 1%, 0204, E24

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 8	57.60.1470		47R	MF, 1%, 0204, E24
0	R 9	57.60.1103		10K	MF, 1%, 0204, E24
0	R 10	57.60.1103		10K	MF, 1%, 0204, E24
0	R 11	57.60.1823		82K	MF, 1%, 0204, E24
0	R 12	57.60.1100		10R	MF, 1%, 0204, E24
0	R 13	57.60.1823		82K	MF, 1%, 0204, E24
0	R 14	57.60.1100		10R	MF, 1%, 0204, E24
0	R 15	57.60.1102		1K	MF, 1%, 0204, E24
0	R 16	57.60.1102		1K	MF, 1%, 0204, E24
0	R 17	57.60.1103		10K	MF, 1%, 0204, E24
0	R 18	57.60.1103		10K	MF, 1%, 0204, E24
0	R 19	57.60.1221		220R	MF, 1%, 0204, E24
0	R 20	57.60.1470		47R	MF, 1%, 0204, E24
0	R 21	57.60.1470		47R	MF, 1%, 0204, E24
0	R 22	57.60.1470		47R	MF, 1%, 0204, E24
0	R 23	57.60.1470		47R	MF, 1%, 0204, E24
0	R 24	57.60.1103		10K	MF, 1%, 0204, E24
0	R 25	57.60.1102		1K	MF, 1%, 0204, E24
0	R 26	57.60.1103		10K	MF, 1%, 0204, E24
0	R 27	57.60.1125		1M2	MF, 1%, 0204, E24
0	R 28	57.60.1471		470R	MF, 1%, 0204, E24
0	R 29	57.60.1103		10K	MF, 1%, 0204, E24
0	R 30	57.60.1103		10K	MF, 1%, 0204, E24
0	R 31	57.60.1103		10K	MF, 1%, 0204, E24
0	R 32	57.60.1103		10K	MF, 1%, 0204, E24
0	R 33	57.60.1103		10K	MF, 1%, 0204, E24
0	R 34	57.60.1103		10K	MF, 1%, 0204, E24
0	XIC 7	53.03.2244		PLCC44p	PLCC-Socket 44p
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1009		16.000MHz	16.000 000 MHz, HC 49/U

End of List

Comments:

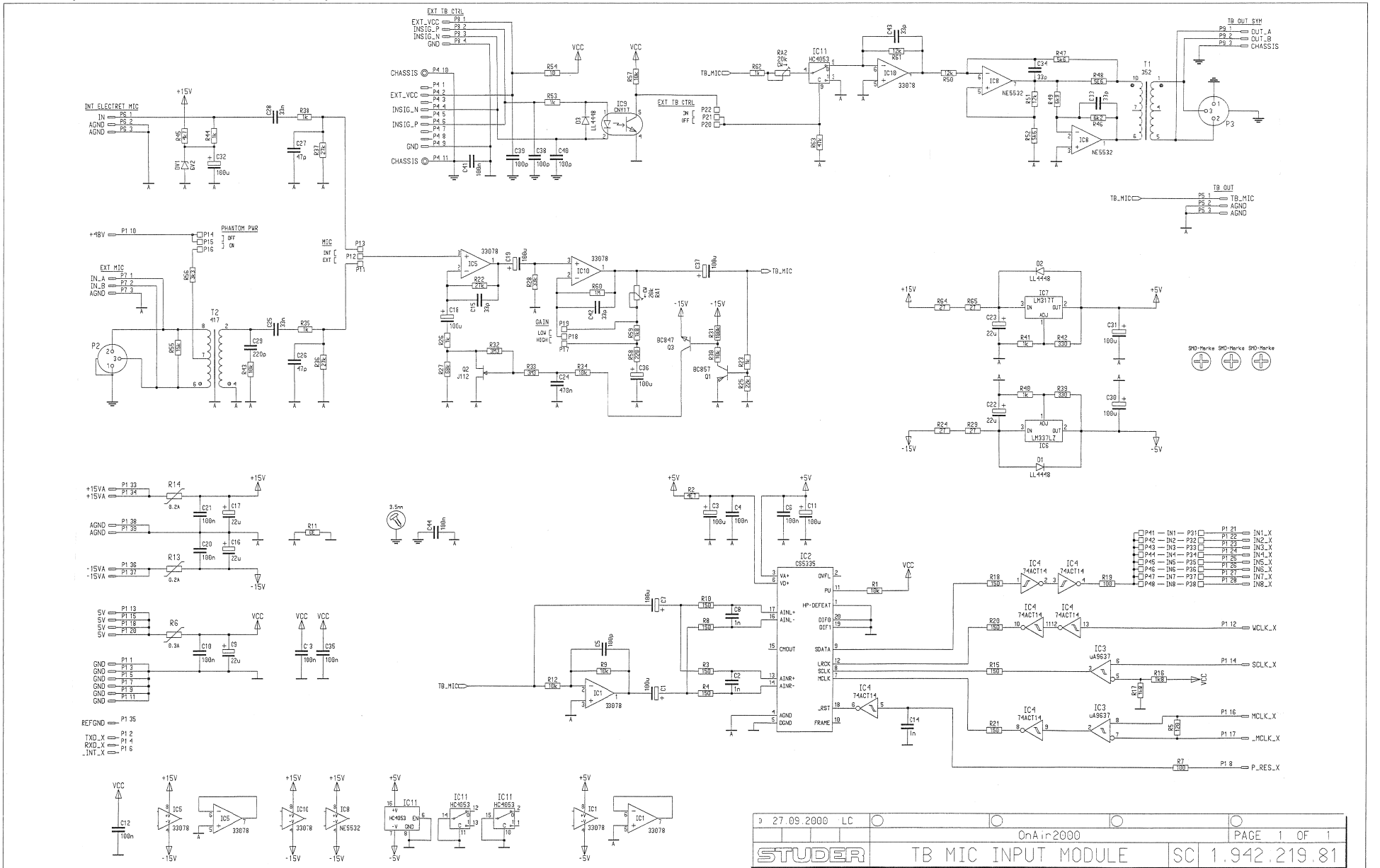
Modification Aenderung						3
						2
						1
Edition Ausgabe	30.6.97	PZ	HB			0
	Date Datum	Visa Gez.	Dsded Gepr.	Seen Ges.	Index	

Copy to: Kopie fuer:

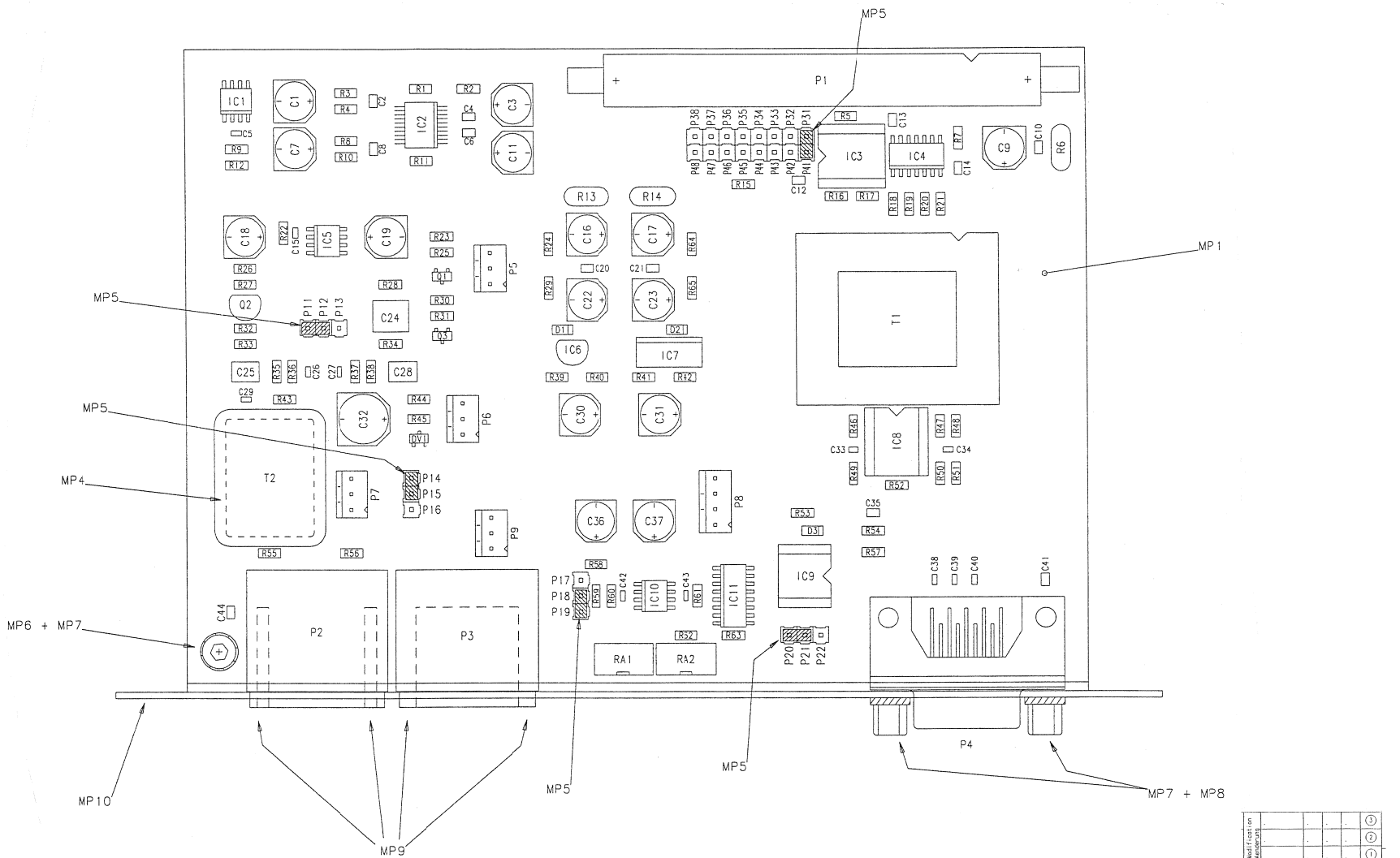
STUDER REGENSDORF Description: Bezeichnung: DIGITAL INSERT 'ESE'

Number: Nummer: 1.942.164-20

TB Mic Input Module 1.942.219.81 (Option)



TB Mic Input Module 1.942.219.00 (Option)



TB MIC INPUT MODULE 1.942.219.81 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 2	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 3	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 6	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 7	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 8	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 9	59.68.0111		22u	EL 35V, 6.3*5.7
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 15	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 16	59.68.0111		22u	EL 35V, 6.3*5.7
0	C 17	59.68.0111		22u	EL 35V, 6.3*5.7
0	C 18	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 19	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 20	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.68.0111		22u	EL 35V, 6.3*5.7
0	C 23	59.68.0111		22u	EL 35V, 6.3*5.7
0	C 24	59.60.3845		470n	CER 50V, 10%, X7R, 2220
0	C 25	59.63.0119		33n	PEN 50V, 5%, 1812
0	C 26	59.60.2241		47p	CER 50V, 5%, C0G, 0603
0	C 27	59.60.2241		47p	CER 50V, 5%, C0G, 0603
0	C 28	59.63.0119		33n	PEN 50V, 5%, 1812
0	C 29	59.60.2257		220p	CER 50V, 5%, C0G, 0603
0	C 30	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 31	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 32	59.68.0071		100u	EL 16V, 8.0*6.3
0	C 33	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 34	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 35	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 36	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 37	59.68.0029		100u	EL 6V, 6.3*5.7
0	C 38	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 39	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 40	59.60.2249		100p	CER 50V, 5%, C0G, 0603
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 42	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 43	59.60.2237		33p	CER 50V, 5%, C0G, 0603
0	C 44	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	DV 1	50.60.9012		6V2	5%, 0.2W, SOT 23
0	IC 1	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 2	50.61.8103		CS5360	A/D Converter 24bit Ste SSOP20
0	IC 3	50.15.0114		9637	Dual diff Line Receiver
0	IC 4	50.62.6014		74ACT 14	Hex inverting Schmitt trigger
0	IC 5	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 6	50.10.0109		LM337L	Series regulator 100mA ...-37V
0	IC 7	50.10.0104		LM317SP	Series regulator 1.5A ...+37V
0	IC 8	50.09.0105		5532	IC NE 5532 N, RC 5532 NB ,A
0	IC 9	50.04.3200		CNY17-2	Opto-coupler
0	IC 10	50.61.0204		MC33078	Dual Op-Amp low noise
0	IC 11	50.62.8053		HC4053	Tripple 2ch analog mux/demux
0	MP 1	1.942.219.12			TB MIC INPUT PCB
0	MP 2	43.01.0108		Label	ESE-WARNSCHILD
0	MP 3	1.942.219.10			NR.-ETIKETTE
0	MP 4	1.022.400.03			ISOLATION
0	MP 5	54.01.0021	5 pcs	Jumper	0.63*0.63mm, Au
0	MP 6	21.53.0353		M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	24.16.2030	3 pcs	3.2/6.0	Fächerscheibe Form A
0	MP 8	54.13.0081	2 pcs	4.85mm	Bolzen UNC 4-40
0	MP 9	20.24.8754	4 pcs	2.9*6	L - Formschr. K-Torx, Zn bl
0	MP 10	1.942.219.01			BLENDE TB MIC INPUT
0	P 1	54.14.2054		40p	Stecker gerade Au
0	P 2	54.21.2203		3p	XLR PCB Winkel
0	P 3	54.21.2202		3p	XLR PCB Winkel
0	P 4	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 5	54.12.0703		3p	Stecker gerade PCB
0	P 6	54.12.0703		3p	Stecker gerade PCB
0	P 7	54.12.0703		3p	Stecker gerade PCB
0	P 8	54.12.0704		4p	Stecker gerade PCB
0	P 9	54.12.0703		3p	Stecker gerade PCB
0	P 11	54.01.0020		1p	Pin, 1reihig, gerade
0	P 12	54.01.0020		1p	Pin, 1reihig, gerade
0	P 13	54.01.0020		1p	Pin, 1reihig, gerade
0	P 14	54.01.0020		1p	Pin, 1reihig, gerade
0	P 15	54.01.0020		1p	Pin, 1reihig, gerade
0	P 16	54.01.0020		1p	Pin, 1reihig, gerade
0	P 17	54.01.0020		1p	Pin, 1reihig, gerade
0	P 18	54.01.0020		1p	Pin, 1reihig, gerade
0	P 19	54.01.0020		1p	Pin, 1reihig, gerade
0	P 20	54.01.0020		1p	Pin, 1reihig, gerade
0	P 21	54.01.0020		1p	Pin, 1reihig, gerade
0	P 22	54.01.0020		1p	Pin, 1reihig, gerade
0	P 31	54.01.0020		1p	Pin, 1reihig, gerade
0	P 32	54.01.0020		1p	Pin, 1reihig, gerade
0	P 33	54.01.0020		1p	Pin, 1reihig, gerade
0	P 34	54.01.0020		1p	Pin, 1reihig, gerade
0	P 35	54.01.0020		1p	Pin, 1reihig, gerade
0	P 36	54.01.0020		1p	Pin, 1reihig, gerade
0	P 37	54.01.0020		1p	Pin, 1reihig, gerade
0	P 38	54.01.0020		1p	Pin, 1reihig, gerade
0	P 41	54.01.0020		1p	Pin, 1reihig, gerade
0	P 42	54.01.0020		1p	Pin, 1reihig, gerade
0	P 43	54.01.0020		1p	Pin, 1reihig, gerade
0	P 44	54.01.0020		1p	Pin, 1reihig, gerade
0	P 45	54.01.0020		1p	Pin, 1reihig, gerade
0	P 46	54.01.0020		1p	Pin, 1reihig, gerade
0	P 47	54.01.0020		1p	Pin, 1reihig, gerade
0	P 48	54.01.0020		1p	Pin, 1reihig, gerade
0	Q 1	50.60.1001		BC857B	PNP 45V 100mA SOT 23
0	Q 2	50.03.0350		J112	JFET N-Channel
0	Q 3	50.60.0001		BC847B	NPN 45V 100mA SOT 23
0	R 1	57.60.1103		10k	MF, 1%, 0204, E24
0	R 2	57.60.1479		4R7	MF, 1%, 0204, E24
0	R 3	57.60.1151		150R	MF, 1%, 0204, E24
0	R 4	57.60.1151		150R	MF, 1%, 0204, E24
0	R 5	57.60.1121		120R	MF, 1%, 0204, E24
0	R 6	57.92.7012		0.3A	PTC 60V
0	R 7	57.60.1101		100R	MF, 1%, 0204, E24
0	R 8	57.60.1151		150R	MF, 1%, 0204, E24
0	R 9	57.60.1103		10k	MF, 1%, 0204, E24
0	R 10	57.60.1151		150R	MF, 1%, 0204, E24
0	R 11	57.60.1000		0R0	MF, 0204
0	R 12	57.60.1103		10k	MF, 1%, 0204, E24
0	R 13	57.92.7011		0.2A	PTC 60V
0	R 14	57.92.7011		0.2A	PTC 60V
0	R 15	57.60.1151		150R	MF, 1%, 0204, E24
0	R 16	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 17	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 18	57.60.1151		150R	MF, 1%, 0204, E24
0	R 19	57.60.1101		100R	MF, 1%, 0204, E24
0	R 20	57.60.1151		150R	MF, 1%, 0204, E24
0	R 21	57.60.1151		150R	MF, 1%, 0204, E24
0	R 22	57.60.1273		27k	MF, 1%, 0204, E24
0	R 23	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 24	57.60.1270		27R	MF, 1%, 0204, E24
0	R 25	57.60.1223		22k	MF, 1%, 0204, E24
0	R 26	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 27	57.60.1683		68k	MF, 1%, 0204, E24
0	R 28	57.60.1333		33k	MF, 1%, 0204, E24
0	R 29	57.60.1270		27R	MF, 1%, 0204, E24
0	R 30	57.60.1103		10k	MF, 1%, 0204, E24
0	R 31	57.60.1104		100k	MF, 1%, 0204, E24
0	R 32	57.60.1335		3M3	MF, 1%, 0204, E24
0	R 33	57.60.1335		3M3	MF, 1%, 0204, E24
0	R 34	57.60.1103		10k	MF, 1%, 0204, E24
0	R 35	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 36	57.60.1273		27k	MF, 1%, 0204, E24
0	R 37	57.60.1273		27k	MF, 1%, 0204, E24
0	R 38	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 39	57.60.1331		330R	MF, 1%, 0204, E24
0	R 40	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 41	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 42	57.60.1331		330R	MF, 1%, 0204, E24
0	R 43	57.60.1103		10k	MF, 1%, 0204, E24
0	R 44	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 45	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 46	57.60.1622		6k2	MF, 1%, 0204, E24
0	R 47	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 48	57.60.1569		5R6	MF, 1%, 0204, E24
0	R 49	57.60.1682		6k8	MF, 1%, 0204, E24
0	R 50	57.60.1123		12k	MF, 1%, 0204, E24
0	R 51	57.60.1123		12k	MF, 1%, 0204, E24
0	R 52	57.60.1562		5k6	MF, 1%, 0204, E24
0	R 53	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 54	57.60.1100		10R	MF, 1%, 0204, E24
0	R 55	57.60.1153		15k	MF, 1%, 0204, E24
0	R 56	57.60.1332		3k3	MF, 1%, 0204, E24
0	R 57	57.60.1103		10k	MF, 1%, 0204, E24
0	R 58	57.60.1221		220R	MF, 1%, 0204, E24
0	R 59	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 60	57.60.1105		1M	MF, 1%, 0204, E24
0	R 61	57.60.1123		12k	MF, 1%, 0204, E24
0	R 62	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 63	57.60.1473		47k	MF, 1%, 0204, E24
0	R 64	57.60.1270		27R	MF, 1%, 0204, E24
0	R 65	57.60.1270		27R	MF, 1%, 0204, E24

TB MIC INPUT MODULE 1.942.219.81 (0)

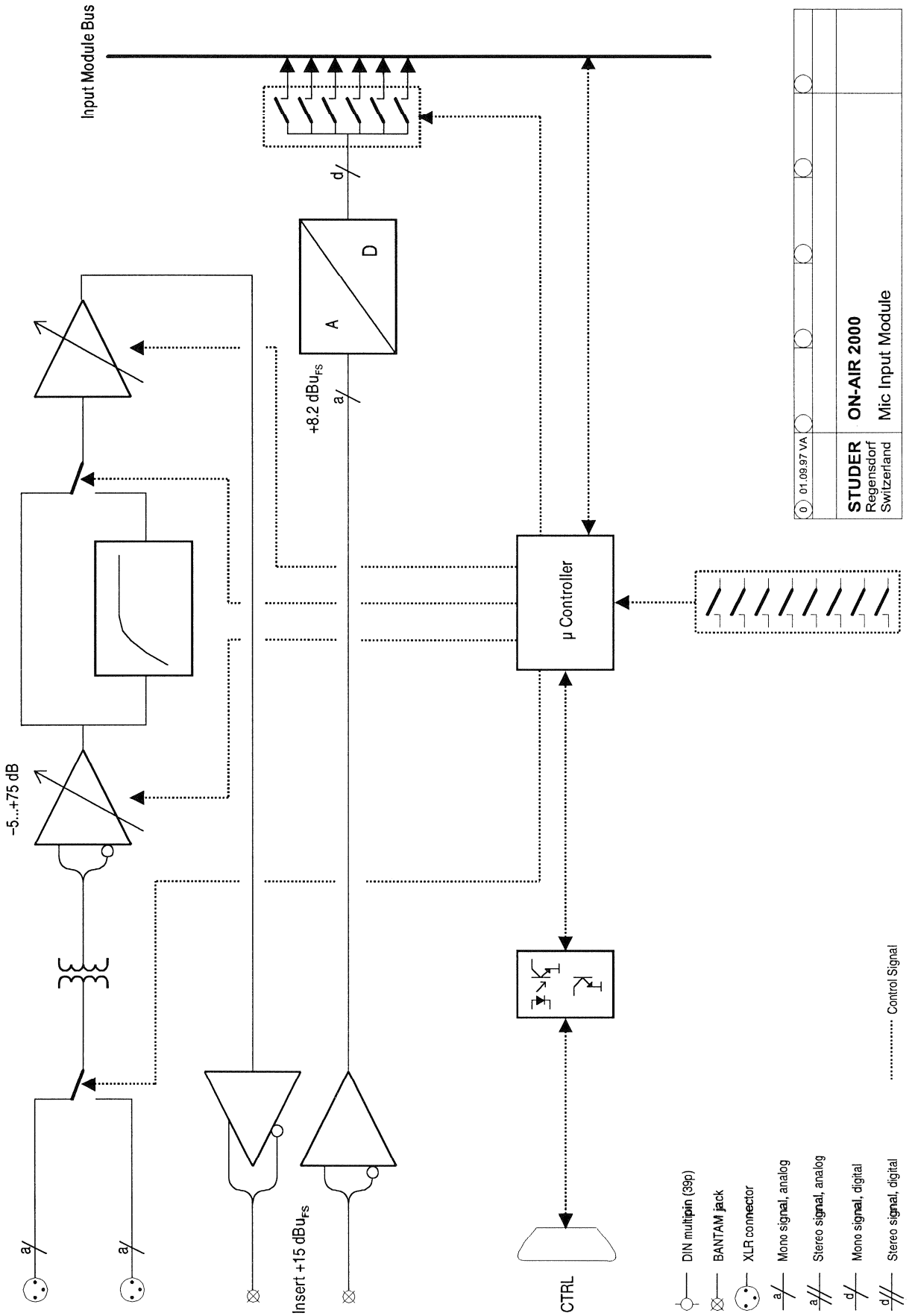
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	RA 1	58.01.9203		20k	Cermet, 10%, 0.5W, vertical
0	RA 2	58.01.9203		20k	Cermet, 10%, 0.5W, vertical
0	T 1	1.022.352.00			LEITUNGSTRAFO
0	T 2	1.022.417.00		1:3.16	EINGANGSTRAFO 1:3,16

End of List

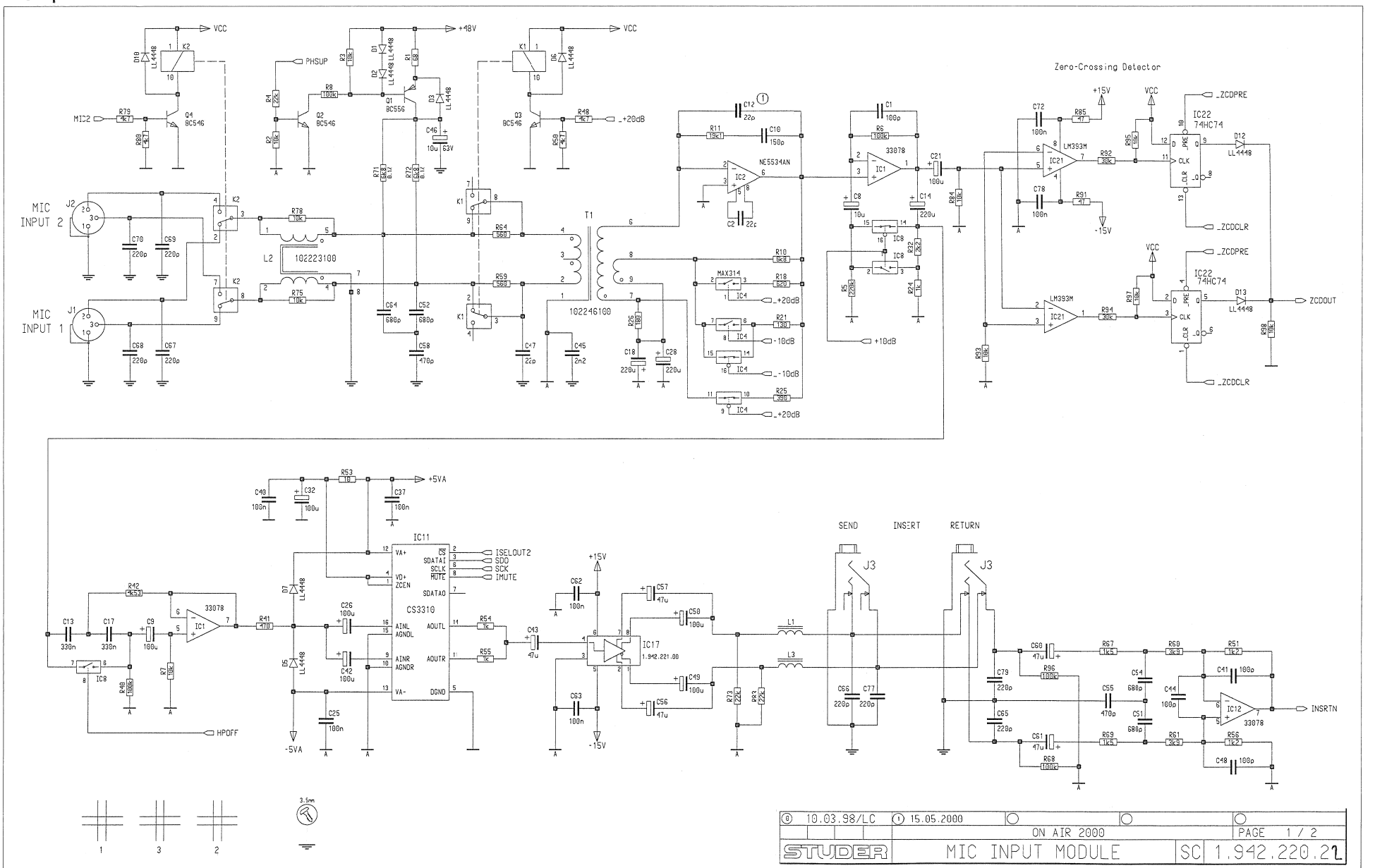
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description

CONTENTS PART FOUR – DIAGRAMS FADER SECTION

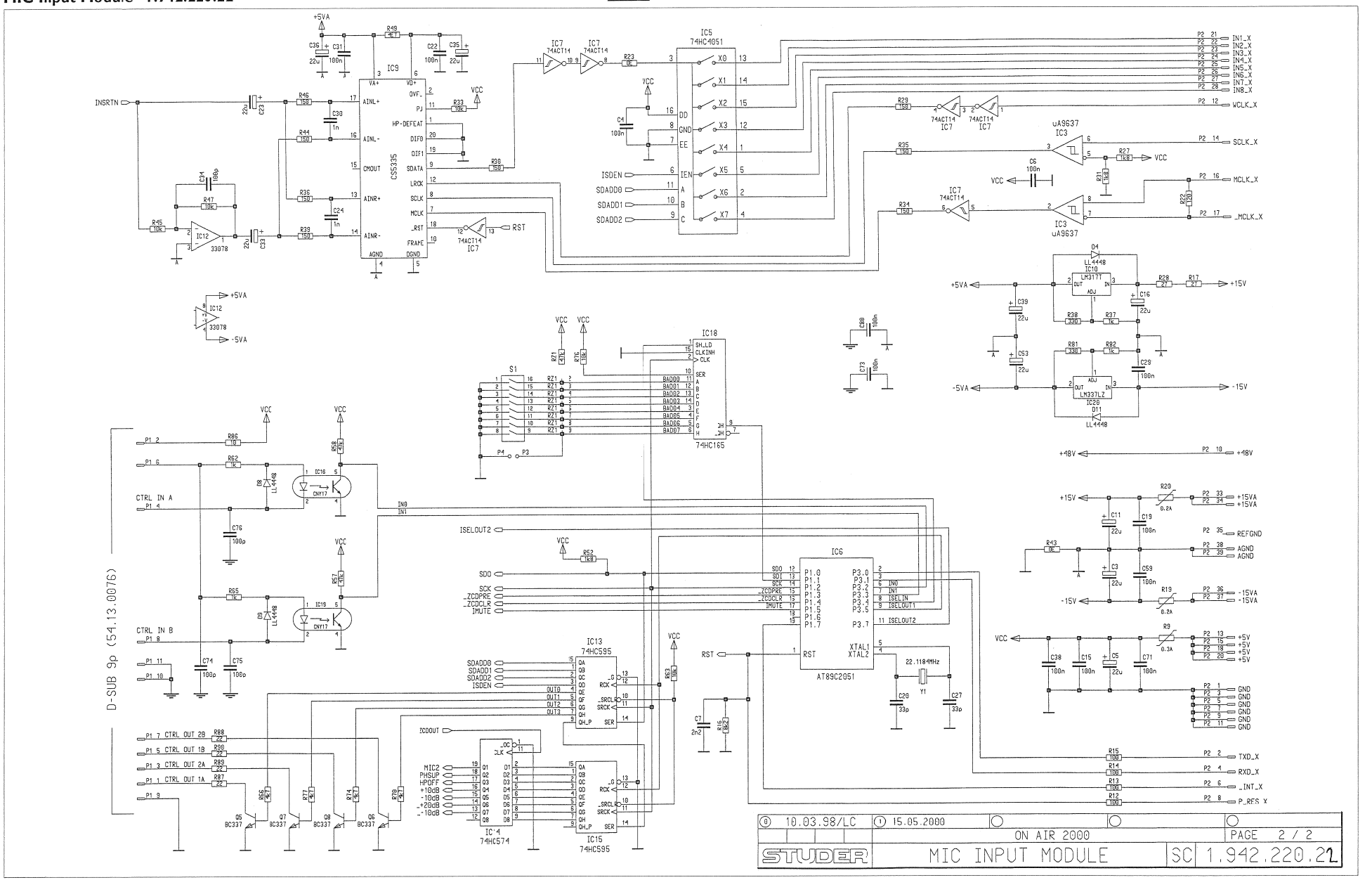
Block diagram Mic Input Module



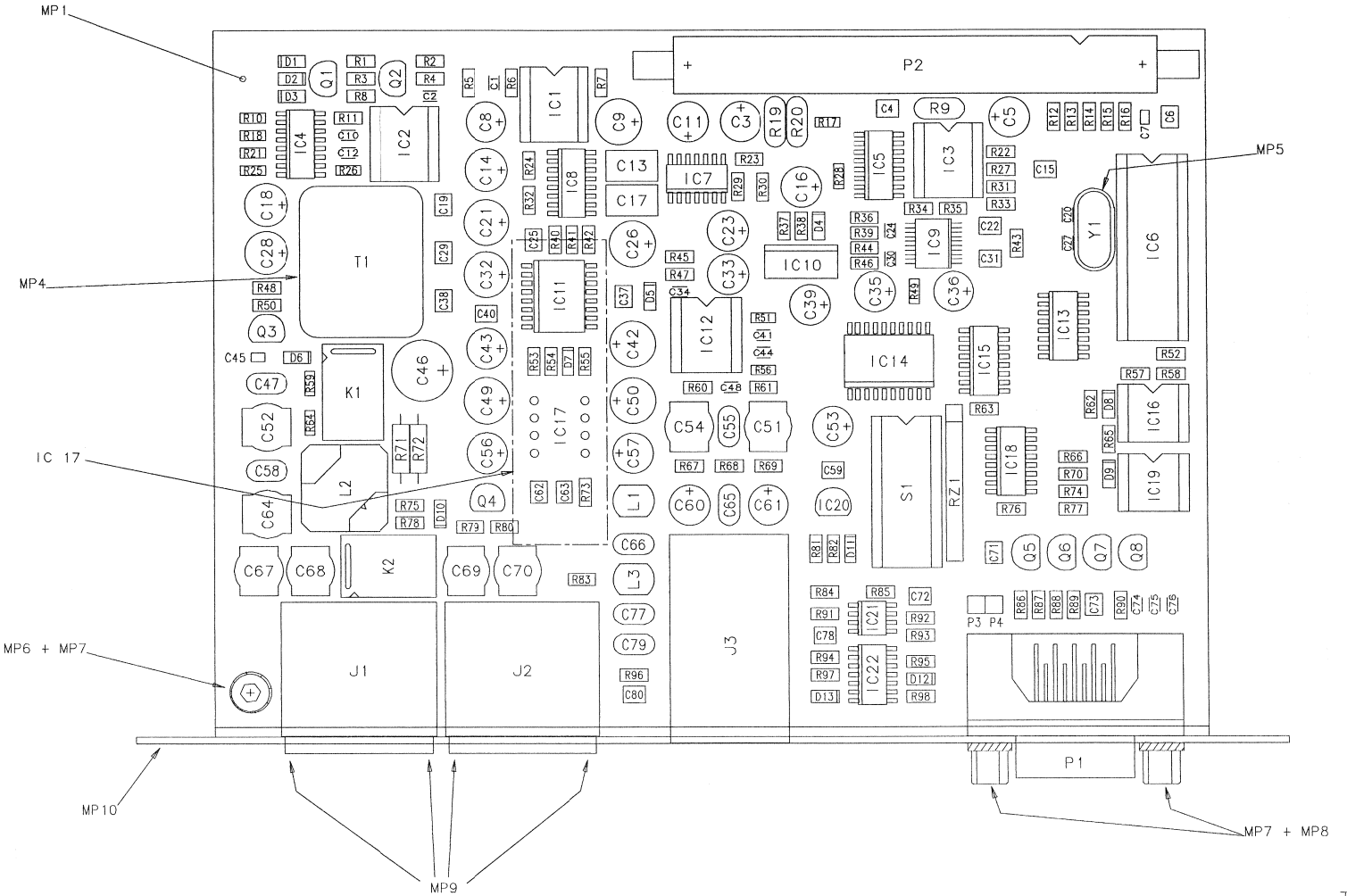
MIC Input Module 1.942.220.22



MIC Input Module 1.942.220.22



MIC Input Module 1.942.220.22



STUDER REGENSDORF — MIC INPUT MODUL, ESE — Number: 1.942.220.22

MIC INPUT MODULE 1.942.220.23 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 2	59.60.2333		22p	CER 50V, 5%, C0G, 0805
0	C 3	59.22.5220		22u	EL 25V 20% RM5
0	C 4	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 5	59.22.5220		22u	EL 25V 20% RM5
0	C 6	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 7	59.60.3317		2n2	CER 50V, 10%, X7R, 0805
0	C 8	59.22.6100		10u	EL 35V 20% RM5
0	C 9	59.22.4002		100u	EL 16V 20% RM5
0	C 10	59.60.2353		150p	CER 50V, 5%, C0G, 0805
0	C 11	59.22.5220		22u	EL 25V 20% RM5
0	C 12	59.60.2333		22p	CER 50V, 5%, C0G, 0805
0	C 13	59.06.5334		330n	PETP, 63V, 5%, RM5
0	C 14	59.22.3003		220u	EL 10V 20% RM5
0	C 15	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 16	59.22.5220		22u	EL 25V 20% RM5
0	C 17	59.06.5334		330n	PETP, 63V, 5%, RM5
0	C 18	59.22.3003		220u	EL 10V 20% RM5
0	C 19	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 20	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 21	59.22.4002		100u	EL 16V 20% RM5
0	C 22	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 23	59.22.5220		22u	EL 25V 20% RM5
0	C 24	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 25	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 26	59.22.4002		100u	EL 16V 20% RM5
0	C 27	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 28	59.22.3003		220u	EL 10V 20% RM5
0	C 29	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 30	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 31	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 32	59.22.4002		100u	EL 16V 20% RM5
0	C 33	59.22.5220		22u	EL 25V 20% RM5
0	C 34	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 35	59.22.5220		22u	EL 25V 20% RM5
0	C 36	59.22.5220		22u	EL 25V 20% RM5
0	C 37	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 38	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 39	59.22.5220		22u	EL 25V 20% RM5
0	C 40	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 41	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 42	59.22.4002		100u	EL 16V 20% RM5
0	C 43	59.22.3470		47u	EL 10V 20% RM5
0	C 44	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 45	59.60.3317		2n2	CER 50V, 10%, X7R, 0805
0	C 46	59.22.8100		10u	EL 63V 20% RM5
0	C 47	59.32.1220		22p	CER 10%, 400V
0	C 48	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 49	59.22.4002		100u	EL 16V 20% RM5
0	C 50	59.22.4002		100u	EL 16V 20% RM5
0	C 51	59.05.1681		680p	PP, 1%, 630V
0	C 52	59.05.1681		680p	PP, 1%, 630V
0	C 53	59.22.5220		22u	EL 25V 20% RM5
0	C 54	59.05.1681		680p	PP, 1%, 630V
0	C 55	59.32.1471		470p	CER 10%, 400V
0	C 56	59.22.3470		47u	EL 10V 20% RM5
0	C 57	59.22.3470		47u	EL 10V 20% RM5
0	C 58	59.32.1471		470p	CER 10%, 400V
0	C 59	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 60	59.22.3470		47u	EL 10V 20% RM5
0	C 61	59.22.3470		47u	EL 10V 20% RM5
0	C 62	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 63	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 64	59.05.1681		680p	PP, 1%, 630V
0	C 65	59.32.1221		220p	CER 10%, 400V
0	C 66	59.32.1221		220p	CER 10%, 400V
0	C 67	59.05.1221		220p	PP, 1%, 630V
0	C 68	59.05.1221		220p	PP, 1%, 630V
0	C 69	59.05.1221		220p	PP, 1%, 630V
0	C 70	59.05.1221		220p	PP, 1%, 630V
0	C 71	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 72	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 73	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 74	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 75	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 76	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 77	59.32.1221		220p	CER 10%, 400V
0	C 78	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 79	59.32.1221		220p	CER 10%, 400V
0	C 80	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 6	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 7	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 8	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 9	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 10	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 11	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 12	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 13	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.09.0117		33078	IC MC 33078 P
0	IC 2	50.05.0244		5534A	Single Op-amp, low noise
0	IC 3	50.15.0114		9637	Dual diff Line Receiver
0	IC 4	50.61.8203		MAX314	Quad SPST SO 16
0	IC 5	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 6	1.942.921.22			SW.220 MIC INP MOD (50160313)
0	IC 7	50.62.6014		74ACT 14	Hex inverting Schmitt trigger
0	IC 8	50.61.8202		ADG433	Quad SPST SO 16
0	IC 9	50.61.8103		CS5360	A/D Converter 24bit Ste SSOP20
0	IC 10	50.10.0104		LM317SP	Series regulator 1.5A ...+37V
0	IC 11	50.61.8301		CS3310	Dig volume control ste SO16
0	IC 12	50.09.0117		33078	IC MC 33078 P
0	IC 13	50.62.1595		74HC595	8bit shift/output register
0	IC 14	50.62.1574		74HC574	Octal D-FF
0	IC 15	50.62.1595		74HC595	8bit shift/output register
0	IC 16	50.04.3200		CNY17-2	Opto-coupler
0	IC 17	1.942.221.00			INSERT SEND BOARD ,A
0	IC 18	50.62.1165		74HC165	8bit shift register
0	IC 19	50.04.3200		CNY17-2	Opto-coupler
0	IC 20	50.10.0109		LM337L	Series regulator 100mA ...-37V
0	IC 21	50.61.9001		LM393	Dual voltage comp. SO 8
0	IC 22	50.62.1074		74HC 74	Dual D-type FF, preset clear
0	J 1	54.21.2203		3p	XLR PCB Winkel
0	J 2	54.21.2203		3p	XLR PCB Winkel
0	J 3	54.24.0211		2*3p	Bantam-Buchse, 4.4mm
0	K 1	56.04.0198		2*u	5V 125V 2A Ag/Au
0	K 2	56.04.0198		2*u	5V 125V 2A Ag/Au
0	L 1	62.01.0301		110MHz	Breitband-Drossel
0	L 2	1.022.231.00		235mH	HF-ASYM. DROSSEL RM5
0	L 3	62.01.0301		110MHz	Breitband-Drossel
0	MP 1	1.942.220.11			MIC INPUT MODUL PCB
0	MP 2	43.01.0108		Label	ESE-WARNSCHILD
0	MP 3	1.942.220.10			NR.ETIKETTE 5X20
					(plus Hardware-Etikette 1.101.001.21)
0	MP 4	1.022.400.03			ISOLATION
0	MP 5	89.01.1499			QUARZ - ISOLIERPLATTE
0	MP 6	21.53.0353		M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	24.16.2030	3 pcs	3.2/6.0	Fächerscheibe Form A
0	MP 8	54.13.0081	2 pcs	4.85mm	Bolzen UNC 4-40
0	MP 9	20.24.8754	4 pcs	2.9*6	L - Formschr. K-Torx, Zn bl
0	MP 10	1.942.220.01			BLENDE MIC IN MODUL
0	P 1	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 2	54.14.2054		40p	Stecker gerade Au
0	P 3	54.01.0020		1p	Pin, 1reihig, gerade
0	P 4	54.01.0020		1p	Pin, 1reihig, gerade
0	Q 1	50.03.0492		BC556B	BC 556 B PNP
0	Q 2	50.03.0491		BC546B	BC 546 B NPN
0	Q 3	50.03.0491		BC546B	BC 546 B NPN
0	Q 4	50.03.0491		BC546B	BC 546 B NPN
0	Q 5	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 6	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 7	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 8	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.60.1680		68R	MF, 1%, 0204, E24
0	R 2	57.60.1103		10k	MF, 1%, 0204, E24
0	R 3	57.60.1103		10k	MF, 1%, 0204, E24
0	R 4	57.60.1223		22k	MF, 1%, 0204, E24
0	R 5	57.60.1224		220k	MF, 1%, 0204, E24
0	R 6	57.60.1104		100k	MF, 1%, 0204, E24
0	R 7	57.60.1103		10k	MF, 1%, 0204, E24
0	R 8	57.60.1104		100k	MF, 1%, 0204, E24
0	R 9	57.92.7012		0.3A	PTC 60V
0	R 10	57.60.1682		6k8	MF, 1%, 0204, E24
0	R 11	57.60.2428		19k1	MF, 1%, 0204, E96
0	R 12	57.60.1101		100R	MF, 1%, 0204, E24
0	R 13	57.60.1101		100R	MF, 1%, 0204, E24
0	R 14	57.60.1101		100R	MF, 1%, 0204, E24
0	R 15	57.60.1101		100R	MF, 1%, 0204, E24
0	R 16	57.60.1822		8k2	MF, 1%, 0204, E24
0	R 17	57.60.1270		27R	MF, 1%, 0204, E24
0	R 18	57.60.1621		620R	MF, 1%, 0204, E24
0	R 19	57.92.7011		0.2A	PTC 60V
0	R 20	57.92.7011		0.2A	PTC 60V
0	R 21	57.60.1131		130R	MF, 1%, 0204, E24
0	R 22	not used		120R	MF, 1%, 0204, E24
0	R 23	57.60.1000		0R0	MF, 0204
0	R 24	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 25	57.60.1391		390R	MF, 1%, 0204, E24
0	R 26	57.60.1181		180R	MF, 1%, 0204, E24
0	R 27	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 28	57.60.1270		27R	MF, 1%, 0204, E24

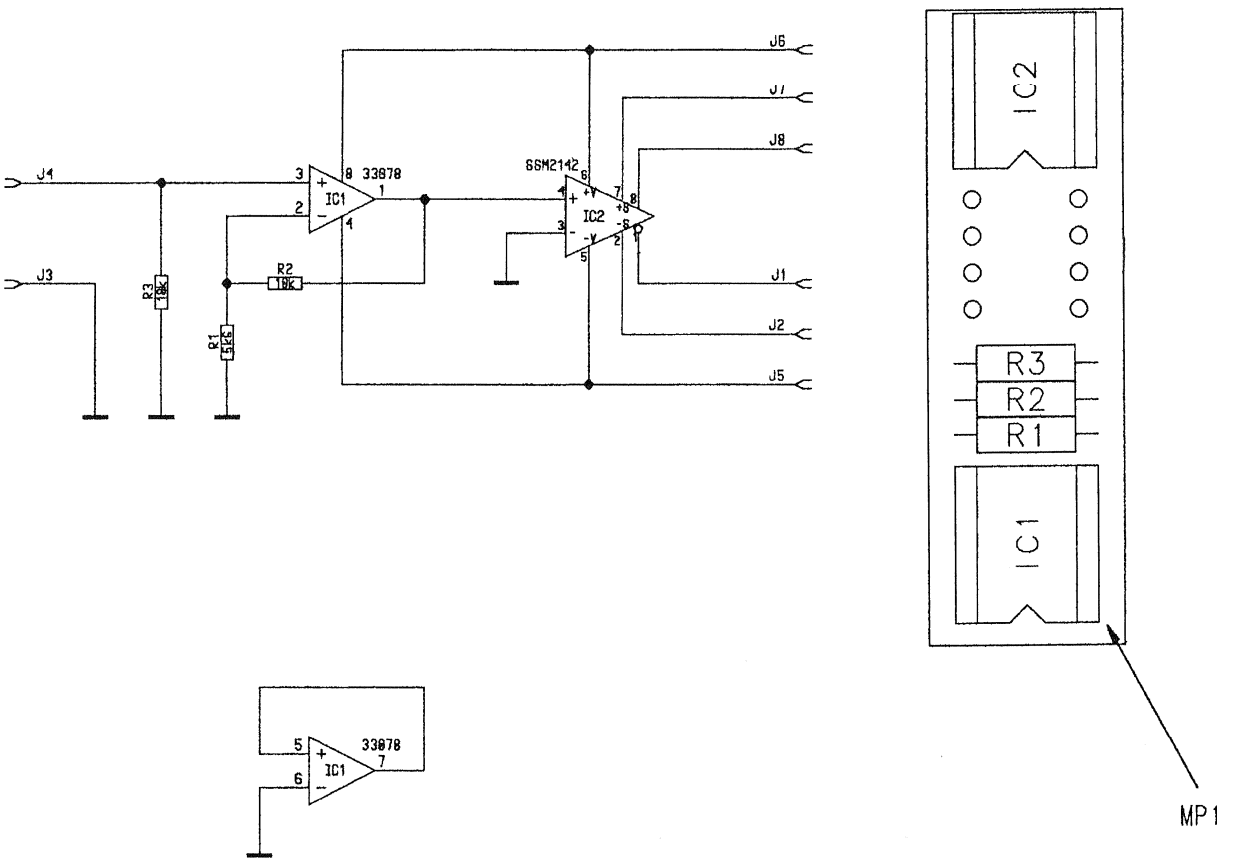
MIC INPUT MODULE 1.942.220.23 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 29	57.60.1151		150R	MF, 1%, 0204, E24
0	R 30	57.60.1151		150R	MF, 1%, 0204, E24
0	R 31	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 32	57.60.1222		2k2	MF, 1%, 0204, E24
0	R 33	57.60.1103		10k	MF, 1%, 0204, E24
0	R 34	57.60.1151		150R	MF, 1%, 0204, E24
0	R 35	57.60.1151		150R	MF, 1%, 0204, E24
0	R 36	57.60.1151		150R	MF, 1%, 0204, E24
0	R 37	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 38	57.60.1331		330R	MF, 1%, 0204, E24
0	R 39	57.60.1151		150R	MF, 1%, 0204, E24
0	R 40	57.60.1104		100k	MF, 1%, 0204, E24
0	R 41	57.60.1471		470R	MF, 1%, 0204, E24
0	R 42	57.60.2364		4k53	MF, 1%, 0204, E96
0	R 43	57.60.1000		0R0	MF, 0204
0	R 44	57.60.1151		150R	MF, 1%, 0204, E24
0	R 45	57.60.1103		10k	MF, 1%, 0204, E24
0	R 46	57.60.1151		150R	MF, 1%, 0204, E24
0	R 47	57.60.1103		10k	MF, 1%, 0204, E24
0	R 48	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 49	57.60.1479		4R7	MF, 1%, 0204, E24
0	R 50	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 51	57.60.1122		1k2	MF, 1%, 0204, E24
0	R 52	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 53	57.60.1100		10R	MF, 1%, 0204, E24
0	R 54	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 55	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 56	57.60.1122		1k2	MF, 1%, 0204, E24
0	R 57	57.60.1473		47k	MF, 1%, 0204, E24
0	R 58	57.60.1473		47k	MF, 1%, 0204, E24
0	R 59	57.60.1561		560R	MF, 1%, 0204, E24
0	R 60	57.60.1392		3k9	MF, 1%, 0204, E24
0	R 61	57.60.1392		3k9	MF, 1%, 0204, E24
0	R 62	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 63	57.60.1103		10k	MF, 1%, 0204, E24
0	R 64	57.60.1561		560R	MF, 1%, 0204, E24
0	R 65	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 66	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 67	57.60.1152		1k5	MF, 1%, 0204, E24
0	R 68	57.60.1104		100k	MF, 1%, 0204, E24
0	R 69	57.60.1152		1k5	MF, 1%, 0204, E24
0	R 70	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 71	57.99.0250		6k8	MF 0.1%, 25ppm 0207
0	R 72	57.99.0250		6k8	MF 0.1%, 25ppm 0207
0	R 73	57.60.1223		22k	MF, 1%, 0204, E24
0	R 74	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 75	57.60.1103		10k	MF, 1%, 0204, E24
0	R 76	57.60.1103		10k	MF, 1%, 0204, E24
0	R 77	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 78	57.60.1103		10k	MF, 1%, 0204, E24
0	R 79	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 80	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 81	57.60.1331		330R	MF, 1%, 0204, E24
0	R 82	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 83	57.60.1223		22k	MF, 1%, 0204, E24
0	R 84	57.60.1103		10k	MF, 1%, 0204, E24
0	R 85	57.60.1470		47R	MF, 1%, 0204, E24
0	R 86	57.60.1100		10R	MF, 1%, 0204, E24
0	R 87	57.60.1220		22R	MF, 1%, 0204, E24
0	R 88	57.60.1220		22R	MF, 1%, 0204, E24
0	R 89	57.60.1220		22R	MF, 1%, 0204, E24
0	R 90	57.60.1220		22R	MF, 1%, 0204, E24
0	R 91	57.60.1470		47R	MF, 1%, 0204, E24
0	R 92	57.60.1303		30k	MF, 1%, 0204, E24
0	R 93	57.60.1103		10k	MF, 1%, 0204, E24
0	R 94	57.60.1303		30k	MF, 1%, 0204, E24
0	R 95	57.60.1103		10k	MF, 1%, 0204, E24
0	R 96	57.60.1104		100k	MF, 1%, 0204, E24
0	R 97	57.60.1103		10k	MF, 1%, 0204, E24
0	R 98	57.60.1103		10k	MF, 1%, 0204, E24
0	RZ 1	57.88.4473		47k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	DIL-Switch, PCB
0	T 1	1.022.461.00			HIGH-LEVEL MIC INPUT
0	XIC 6	53.03.0165		20p	DIL-socket 0.3"
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

End of List

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description

Insert Send 1.942.221.00



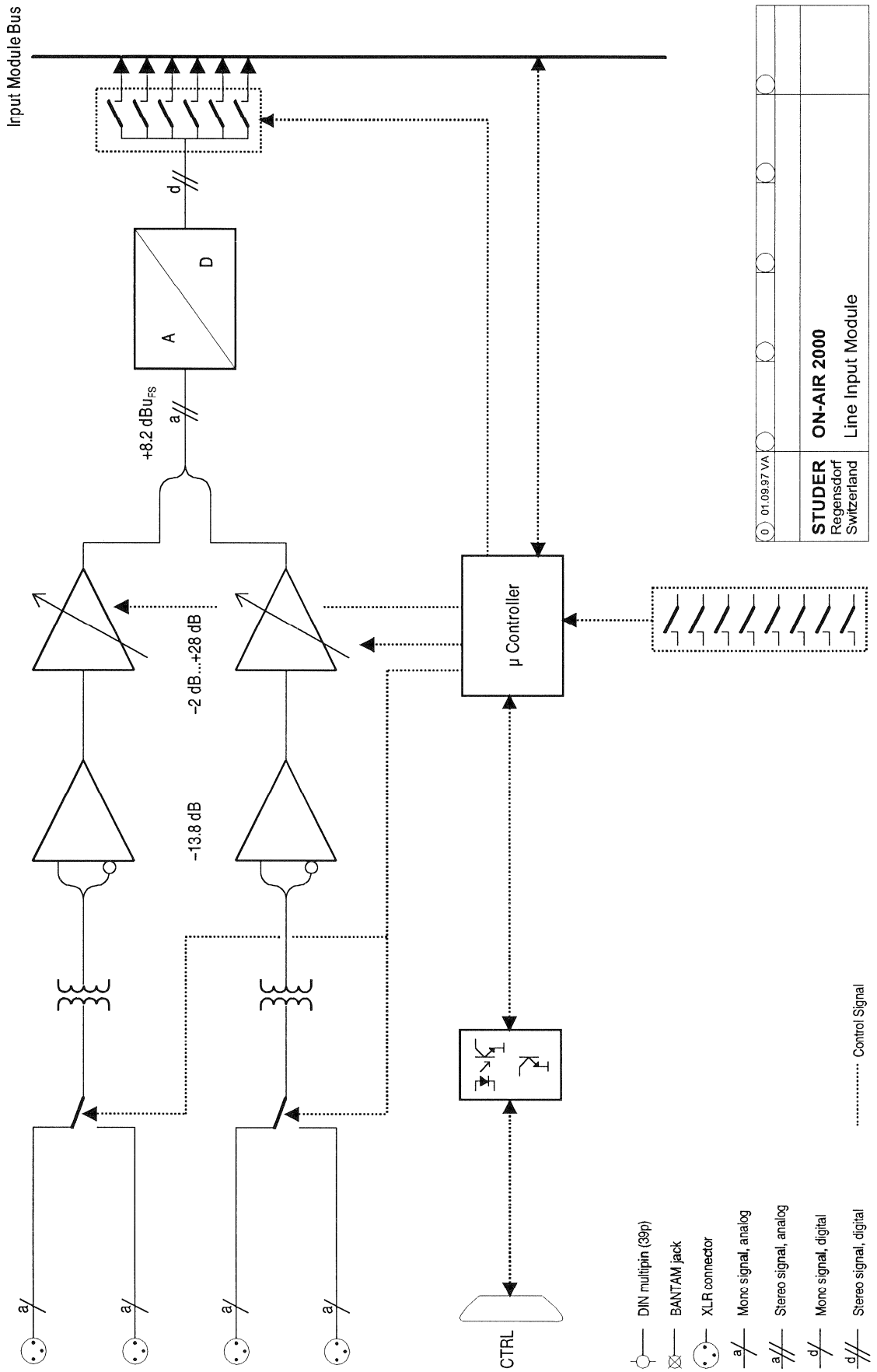
Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	IC 1	50.09.0117		MC33078	IC MC 33078 P
0	IC 2	50.09.0124		2142	Audio balanced line driver
0	MP 1	1.942.221.11	1 pce		INSERT SEND PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.221.10	1 pce		NR.ETIKETTE 5X20
0	MP 4	1.010.018.54	8 pcs	1p	KONTAKTSTIFT, L = 16 MM
0	R 1	57.11.3562		5k6	MF, 1%, 0207
0	R 2	57.11.3103		10k	MF, 1%, 0207
0	R 3	57.11.3103		10k	MF, 1%, 0207

End of List

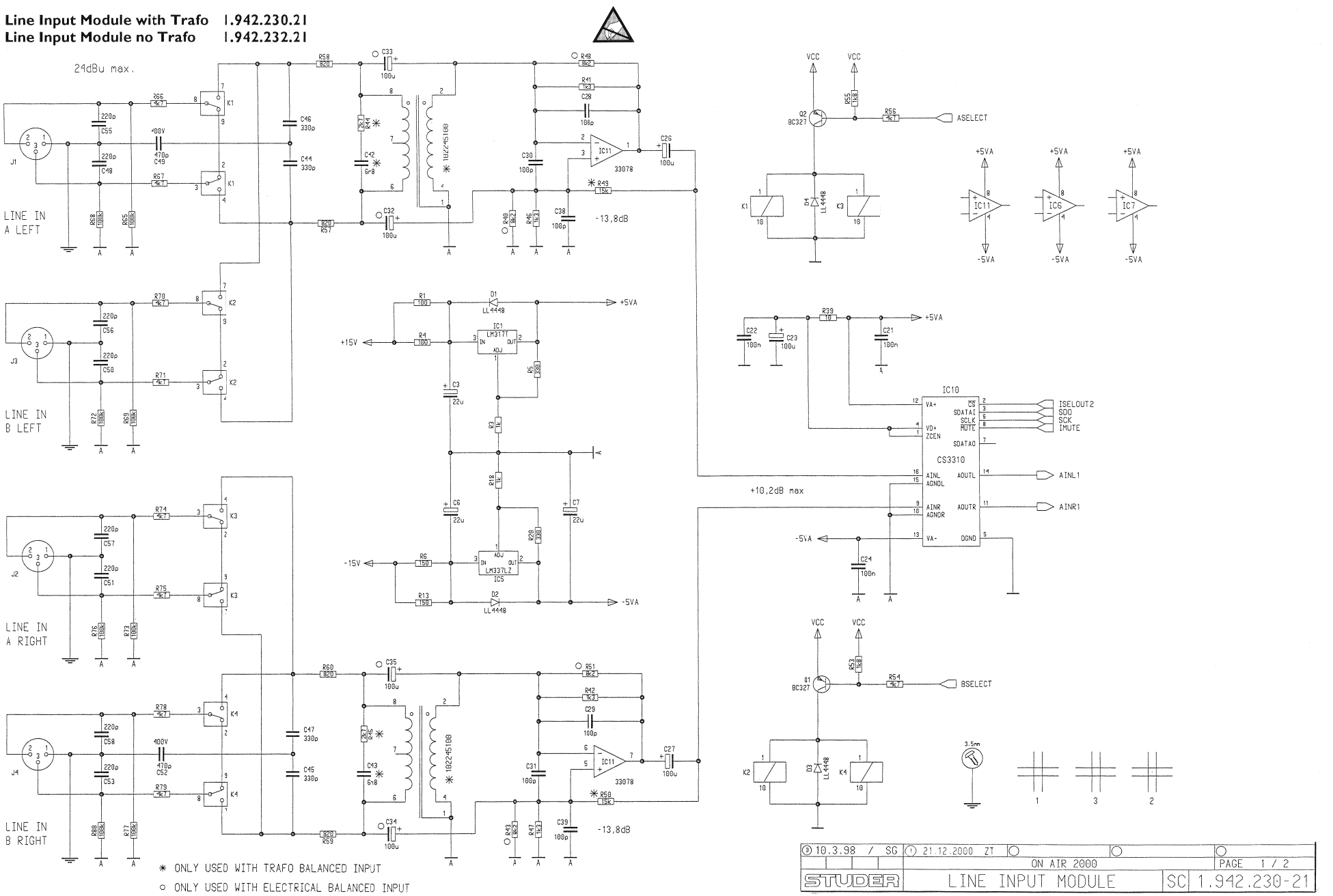
Comments

3.4.97 / VA			
	ON AIR 2000		PAGE 1 / 1
STUDER	INSERT SEND	SC	1.942.221.00

Block diagram Line Input Module

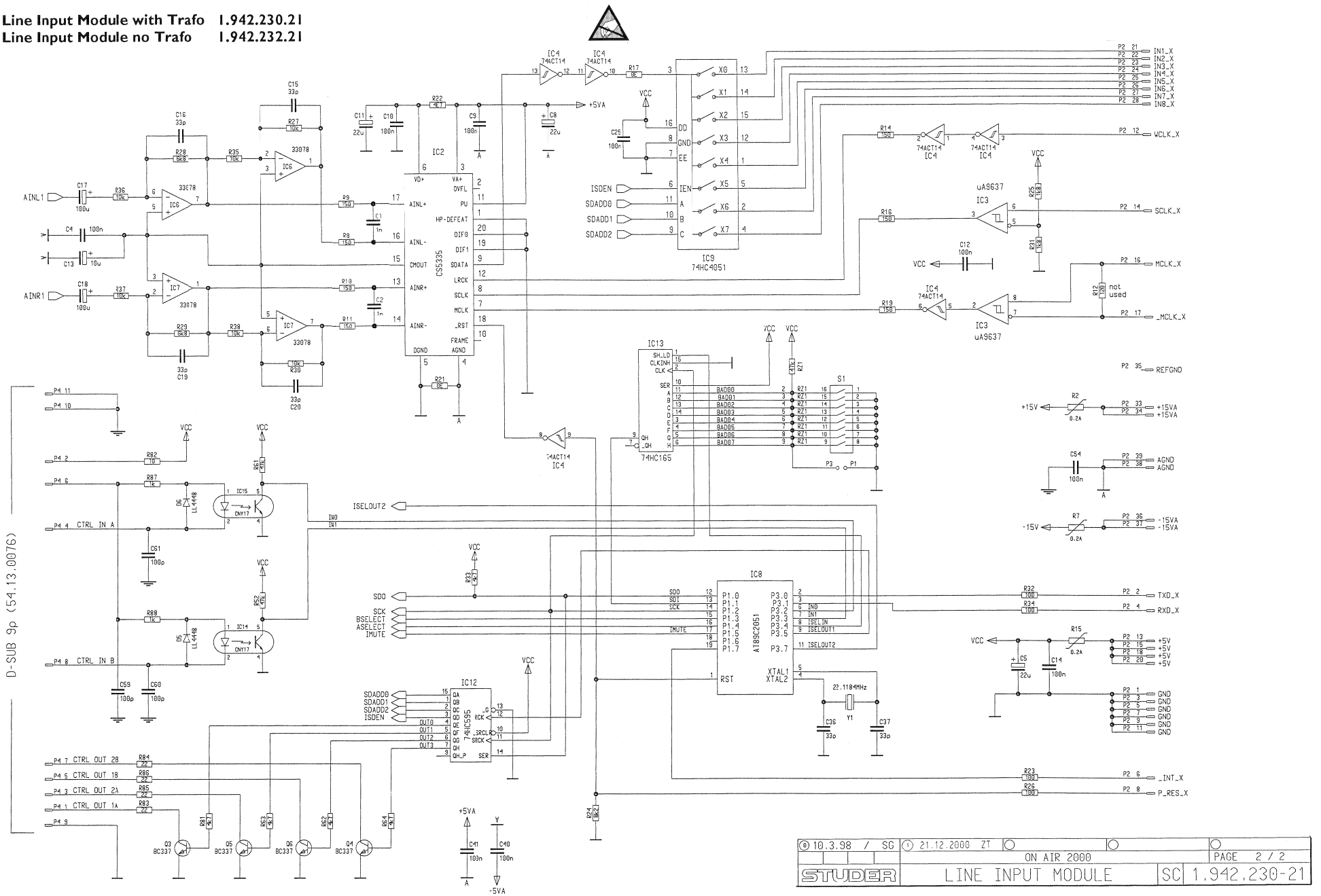


Line Input Module with Trafo 1.942.230.21
Line Input Module no Trafo 1.942.232.21



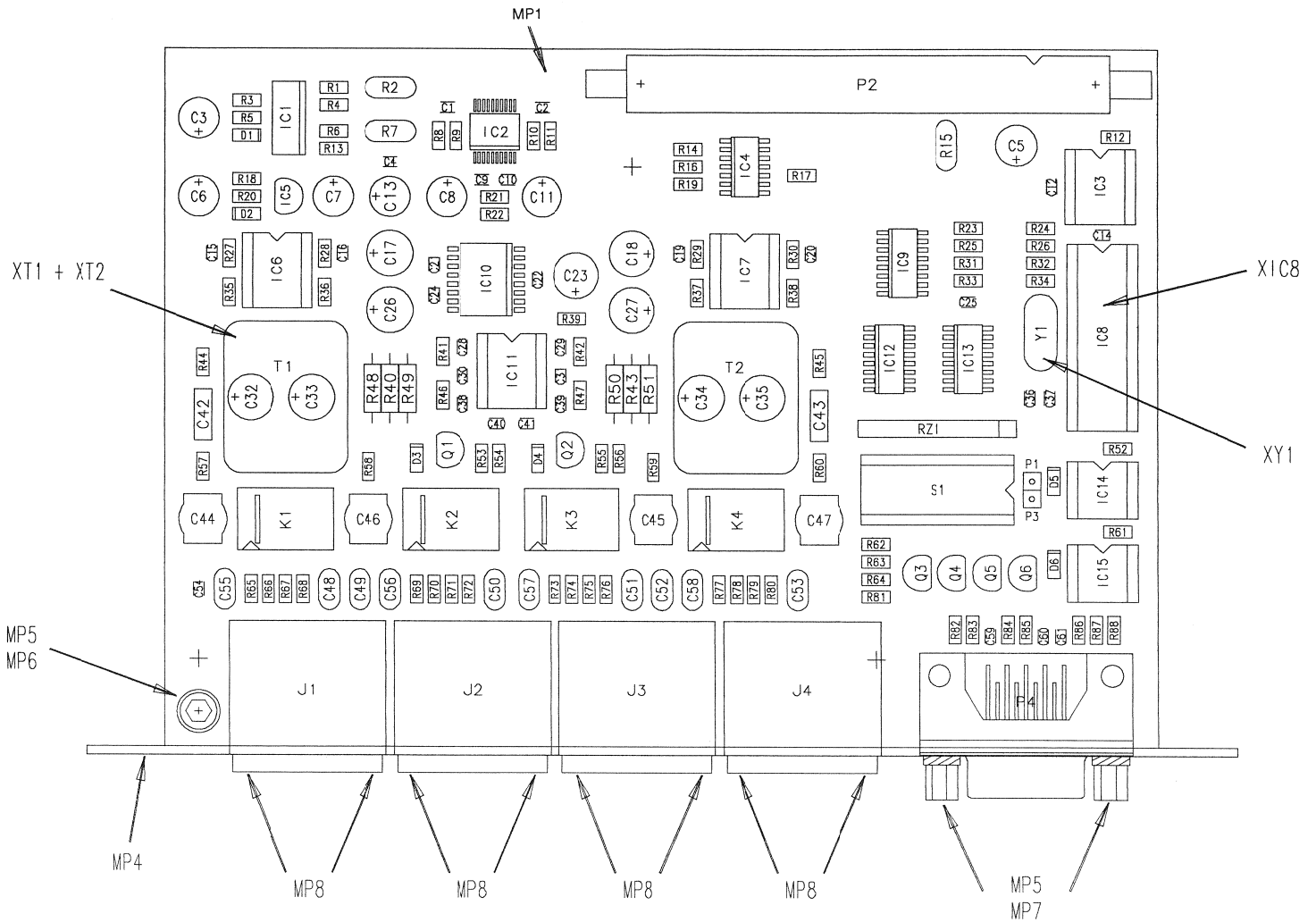
9 10.3.98 / SG	1 21.12.2000 ZT	ON AIR 2000	PAGE 1 / 2
STUDER	LINE INPUT MODULE	SC	1.942.230-21

Line Input Module with Trafo 1.942.230.21
Line Input Module no Trafo 1.942.232.21



⑧ 10.3.98 / SG	① 21.12.2000 ZT		
	ON AIR 2000		PAGE 2 / 2
STUDER	LINE INPUT MODULE	SC	1.942.230-21

Line Input Module with Trafo 1.942.230.21
Line Input Module no Trafo 1.942.232.21



Edition Ausgabe	Modification Änderung				
		.	.	.	3
		.	.	.	2
		.	.	.	1
10.3.98	PZ	/A			0
Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index	

Copy to: Kopie fuer: .

STUDER REGENSDORF | Description: Benennung: LINE INPUT MODULE 'ESE' | Number: Nummer: 1.942.230-21

Line Input Module with Trafo 1.942.230.22

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 2	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 3	59.22.5220		22u	EL 25V, 20%, RM5
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.22.5220		22u	EL 25V, 20%, RM5
0	C 6	59.22.5220		22u	EL 25V, 20%, RM5
0	C 7	59.22.5220		22u	EL 25V, 20%, RM5
0	C 8	59.22.5220		22u	EL 25V, 20%, RM5
0	C 9	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.22.5220		22u	EL 25V, 20%, RM5
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.22.6100		10u	EL 35V, 20%, RM5
0	C 14	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 15	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 16	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 17	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 18	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 19	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 20	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 23	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 24	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 25	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 26	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 27	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 28	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 29	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 30	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 31	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 32	not used		100uF	EL 16V, 20%, RM5
0	C 33	not used		100uF	EL 16V, 20%, RM5
0	C 34	not used		100uF	EL 16V, 20%, RM5
0	C 35	not used		100uF	EL 16V, 20%, RM5
0	C 36	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 37	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 38	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 39	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 40	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 42	59.06.5682		6n8	PETP, 63V, 5%, RM5
0	C 43	59.06.5682		6n8	PETP, 63V, 5%, RM5
0	C 44	59.05.1331		330p	PP, 1%, 630V
0	C 45	59.05.1331		330p	PP, 1%, 630V
0	C 46	59.05.1331		330p	PP, 1%, 630V
0	C 47	59.05.1331		330p	PP, 1%, 630V
0	C 48	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 49	59.32.1471		470p	C 470 P , 10%, 400V , CER
0	C 50	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 51	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 52	59.32.1471		470p	C 470 P , 10%, 400V , CER
0	C 53	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 54	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 55	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 56	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 57	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 58	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 59	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 60	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 61	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 6	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.10.0104		LM317SP	IC LM 317 SP, ...T,
0	IC 2	50.61.8103		CS5360	A/D Converter 24bit Ste SSOP20
0	IC 3	50.15.0114		9637	Dual diff Line Receiver
0	IC 4	50.62.6014		74ACT 14	Hex inverting Schmitt trigger
0	IC 5	50.10.0109		LM337L	IC LM 337 LZ,
0	IC 6	50.09.0117		MC33078	IC MC 33078 P
0	IC 7	50.09.0117		MC33078	IC MC 33078 P
0	IC 8	1.942.922.21			SW.230 LINE INPUT MODULE *(50160313, AT89C2051)*
0	IC 9	50.62.1351		74HC4051	IC 74 HC 4051
0	IC 10	50.61.8301		CS3310	Dig volume control ste SO16 ,A
0	IC 11	50.09.0117		MC33078	IC MC 33078 P
0	IC 12	50.62.1595		74HC595	74 HC 595
0	IC 13	50.62.1165		74HC165	74 HC 165
0	IC 14	50.04.3200		CNY17	DLQ CNY 17-2, CNY 17-2Z,
0	IC 15	50.04.3200		CNY17	DLQ CNY 17-2, CNY 17-2Z,
0	J 1	54.21.2203		3p	XLR PCB Winkel
0	J 2	54.21.2203		3p	XLR PCB Winkel
0	J 3	54.21.2203		3p	XLR PCB Winkel
0	J 4	54.21.2203		3p	XLR PCB Winkel
0	K 1	56.04.0198		2u	5V 125V 2A Ag/Au
0	K 2	56.04.0198		2u	5V 125V 2A Ag/Au
0	K 3	56.04.0198		2u	5V 125V 2A Ag/Au
0	K 4	56.04.0198		2u	5V 125V 2A Ag/Au
0	MP 1	1.942.230.11	1 pce		Line Input Module pcb
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.230.10	1 pce		NR.ETIKETTE 5X20 *(plus Hardware-Etikette 1.101.001.21)*
0	MP 4	1.942.230.01	1 pce		BLENDE „INE IN MODUL
0	MP 5	24.16.2030	3 pcs		FAECHERSCHEIBE A D 3.2
0	MP 6	21.53.0353	1 pce	M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	54.13.0081	2 pcs	4.85mm	Bolzen UNC 4-40
0	MP 8	20.24.7623	8 pcs		LK-Formschr 2.9*8, KS, Zn gb
0	P 1	54.01.0020		1p	Pin 0.63*0.63
0	P 2	54.14.2054		40p	P STECKER 40 P , AU, GERADE
0	P 3	54.01.0020		1p	Pin 0.63*0.63
0	P 4	54.13.0076		9p	D-Sub, PCB, Winkel
0	Q 1	50.03.0351		BC327-25	PNP, 800mA
0	Q 2	50.03.0351		BC327-25	PNP, 800mA
0	Q 3	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 4	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 5	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 6	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.60.1101		100R	MF, 1%, 0204, E24
0	R 2	57.92.7011		0.2A	POLY- PTC, 60V
0	R 3	57.60.1102		1K	MF, 1%, 0204, E24
0	R 4	57.60.1101		100R	MF, 1%, 0204, E24
0	R 5	57.60.1331		330R	MF, 1%, 0204, E24
0	R 6	57.60.1151		150R	MF, 1%, 0204, E24
0	R 7	57.92.7011		0.2A	POLY- PTC, 60V
0	R 8	57.60.1151		150R	MF, 1%, 0204, E24
0	R 9	57.60.1151		150R	MF, 1%, 0204, E24
0	R 10	57.60.1151		150R	MF, 1%, 0204, E24
0	R 11	57.60.1151		150R	MF, 1%, 0204, E24
0	R 12	not used		120R	MF, 1%, 0204, E24
0	R 13	57.60.1151		150R	MF, 1%, 0204, E24
0	R 14	57.60.1151		150R	MF, 1%, 0204, E24
0	R 15	57.92.7011		0.2A	POLY- PTC, 60V
0	R 16	57.60.1151		150R	MF, 1%, 0204, E24
0	R 17	57.60.1000		0R0	MF, 0204
0	R 18	57.60.1102		1K	MF, 1%, 0204, E24
0	R 19	57.60.1151		150R	MF, 1%, 0204, E24
0	R 20	57.60.1331		330R	MF, 1%, 0204, E24
0	R 21	57.60.1000		0R0	MF, 0204
0	R 22	57.60.1479		4R7	MF, 1%, 0204, E24
0	R 23	57.60.1101		100R	MF, 1%, 0204, E24
0	R 24	57.60.1822		9K2	MF, 1%, C204, E24
0	R 25	57.60.1182		1K8	MF, 1%, C204, E24
0	R 26	57.60.1101		100R	MF, 1%, C204, E24
0	R 27	57.60.1103		10K	MF, 1%, C204, E24
0	R 28	57.60.1682		5K8	MF, 1%, C204, E24
0	R 29	57.60.1682		5K8	MF, 1%, C204, E24
0	R 30	57.60.1103		10K	MF, 1%, C204, E24
0	R 31	57.60.1182		1K8	MF, 1%, C204, E24
0	R 32	57.60.1101		100R	MF, 1%, C204, E24
0	R 33	57.60.1472		4K7	MF, 1%, C204, E24
0	R 34	57.60.1101		100R	MF, 1%, C204, E24
0	R 35	57.60.1103		10K	MF, 1%, C204, E24
0	R 36	57.60.1103		10K	MF, 1%, C204, E24
0	R 37	57.60.1103		10K	MF, 1%, C204, E24
0	R 38	57.60.1103		10K	MF, 1%, C204, E24
0	R 39	57.60.1100		10R	MF, 1%, C204, E24
0	R 40	not used		8k2	MF, 1%, 3207
0	R 41	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 42	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 43	not used		8k2	MF, 1%, 0207
0	R 44	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 45	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 46	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 47	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 48	not used		8k2	MF, 1%, 0207
0	R 49	57.11.3153		15k	MF, 1%, 0207
0	R 50	57.11.3153		15k	MF, 1%, 0207
0	R 51	not used		8k2	MF, 1%, 0207
0	R 52	57.60.1473		47K	MF, 1%, 0204, E24
0	R 53	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 54	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 55	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 56	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 57	57.60.1821		820R	MF, 1%, 0204, E24
0	R 58	57.60.1821		820R	MF, 1%, 0204, E24
0	R 59	57.60.1821		820R	MF, 1%, 0204, E24
0	R 60	57.60.1821		820R	MF, 1%, 0204, E24
0	R 61	57.60.1473		47K	MF, 1%, 0204, E24
0	R 62	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 63	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 64	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 65	57.60.1104		100K	MF, 1%, 0204, E24
0	R 66	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 67	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 68	57.60.1104		100K	MF, 1%, 0204, E24
0	R 69	57.60.1104		100K	MF, 1%, 0204, E24
0	R 70	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 71	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 72	57.60.1104		100K	MF, 1%, 0204, E24
0	R 73	57.60.1104		100K	MF, 1%, 0204, E24
0	R 74	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 75	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 76	57.60.1104		100K	MF, 1%, 0204, E24
0	R 77	57.60.1104		100K	MF, 1%, 0204, E24
0	R 78	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 79	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 80	57.60.1104		100K	MF, 1%, 0204, E24
0	R 81	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 82	57.60.1100		10R	MF, 1%, 0204, E24
0	R 83	57.60.1220		22R	MF, 1%, 0204, E24
0	R 84	57.60.1220		22R	MF, 1%, 0204, E24
0	R 85	57.60.1220		22R	MF, 1%, 0204, E24
0	R 86	57.60.1220		22R	MF, 1%, 0204, E24
0	R 87	57.60.1102		1K	MF, 1%, 0204, E24
0	R 88	57.60.1102		1K	MF, 1%, 0204, E24
0	RZ 1	57.88.4473		47k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	SZ , 8*A, DIL
0	T 1	1.022.451.00		1:0.62	EINGANGSTRAFO 1 : 0,62
0	T 2	1.022.451.00		1:0.62	EINGANGSTRAFO 1 : 0,62
0	XIC 8	53.03.0165		20p	DIL 0.3", löt, gerade
0	XT 1	1.022.400.03			ISOLATION
0	XT 2	1.022.400.03			ISOLATION
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	22.118 400 MHz, HC 49/U

End of List

Comments:

Line Input Module (no Trafo) 1.942.232.22 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 2	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 3	59.22.5220		22u	EL 25V 20% RM5
0	C 4	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 5	59.22.5220		22u	EL 25V 20% RM5
0	C 6	59.22.5220		22u	EL 25V 20% RM5
0	C 7	59.22.5220		22u	EL 25V 20% RM5
0	C 8	59.22.5220		22u	EL 25V 20% RM5
0	C 9	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 11	59.22.5220		22u	EL 25V 20% RM5
0	C 12	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 13	59.22.6100		10u	EL 35V 20% RM5
0	C 14	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 15	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 16	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 17	59.22.4002		100u	EL 16V 20% RM5
0	C 18	59.22.4002		100u	EL 16V 20% RM5
0	C 19	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 20	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 23	59.22.4002		100u	EL 16V 20% RM5
0	C 24	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 25	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 26	59.22.4002		100u	EL 16V 20% RM5
0	C 27	59.22.4002		100u	EL 16V 20% RM5
0	C 28	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 29	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 30	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 31	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 32	59.22.4002		100u	EL 16V 20% RM5
0	C 33	59.22.4002		100u	EL 16V 20% RM5
0	C 34	59.22.4002		100u	EL 16V 20% RM5
0	C 35	59.22.4002		100u	EL 16V 20% RM5
0	C 36	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 37	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 38	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 39	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 40	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 41	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 42	not used		6n8	PETP, 63V, 5%, RM5
0	C 43	not used		6n8	PETP, 63V, 5%, RM5
0	C 44	59.05.1331		330p	PP, 1%, 630V
0	C 45	59.05.1331		330p	PP, 1%, 630V
0	C 46	59.05.1331		330p	PP, 1%, 630V
0	C 47	59.05.1331		330p	PP, 1%, 630V
0	C 48	59.32.1221		220p	CER 10%, 400V
0	C 49	59.32.1471		470p	CER 10%, 400V
0	C 50	59.32.1221		220p	CER 10%, 400V
0	C 51	59.32.1221		220p	CER 10%, 400V
0	C 52	59.32.1471		470p	CER 10%, 400V
0	C 53	59.32.1221		220p	CER 10%, 400V
0	C 54	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 55	59.32.1221		220p	CER 10%, 400V
0	C 56	59.32.1221		220p	CER 10%, 400V
0	C 57	59.32.1221		220p	CER 10%, 400V
0	C 58	59.32.1221		220p	CER 10%, 400V
0	C 59	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 60	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 61	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 6	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.10.0104		LM317SP	Series regulator 1.5A ...+37V
0	IC 2	50.61.8103		CS5360	A/D Converter 24bit Ste SSOP20
0	IC 3	50.15.0114		9637	Dual diff Line Receiver
0	IC 4	50.62.6014		74ACT 14	Hex inverting Schmitt trigger
0	IC 5	50.10.0109		LM337L	Series regulator 100mA ...-37V
0	IC 6	50.09.0117		33078	IC MC 33078 P
0	IC 7	50.09.0117		33078	IC MC 33078 P
0	IC 8	1.942.922.21			SW.230 LINE INPUT MODULE
				(50160313. AT89C2051)	
0	IC 9	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 10	50.61.8301		CS3310	Dig volume control ste SO16
0	IC 11	50.09.0117		33078	IC MC 33078 P
0	IC 12	50.62.1595		74HC595	8bit shift/output register
0	IC 13	50.62.1165		74HC165	8bit shift register
0	IC 14	50.04.3200		CNY17-2	Opto-coupler
0	IC 15	50.04.3200		CNY17-2	Opto-coupler
0	J 1	54.21.2203		3p	XLR PCB Winkel
0	J 2	54.21.2203		3p	XLR PCB Winkel
0	J 3	54.21.2203		3p	XLR PCB Winkel
0	J 4	54.21.2203		3p	XLR PCB Winkel

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	K 1	56.04.0198		2*u	5V 125V 2A Ag/Au
0	K 2	56.04.0198		2*u	5V 125V 2A Ag/Au
0	K 3	56.04.0198		2*u	5V 125V 2A Ag/Au
0	K 4	56.04.0198		2*u	5V 125V 2A Ag/Au
0	MP 1	1.942.230.11	1 pce		Line Input Module pcb
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.230.10	1 pce		NR.ETIKETTE 5X20
				(plus Hardware-Etikette 1.101.001.21)	
0	MP 4	1.942.230.01	1 pce		BLENDE LINE IN MODUL
0	MP 5	24.16.2030	3 pcs	3.2/6.0	Fächerscheibe Form A
0	MP 6	21.53.0353	1 pce	M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	54.13.0081	2 pcs	4.85mm	Bolzen UNC 4-40
0	MP 8	20.24.8754	8 pcs	2.9*6	L - Formschr. K-Torx, Zn bl
0	P 1	54.01.0020		1p	Pin, 1reihig, gerade
0	P 2	54.14.2054		40p	Stecker gerade Au
0	P 3	54.01.0020		1p	Pin, 1reihig, gerade
0	P 4	54.13.0076		9p	D-Sub, PCB, Winkel
0	Q 1	50.03.0351		BC327-25	PNP, 800mA
0	Q 2	50.03.0351		BC327-25	PNP, 800mA
0	Q 3	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 4	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 5	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 6	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.60.1101		100R	MF, 1%, 0204, E24
0	R 2	57.92.7011		0.2A	PTC 60V
0	R 3	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 4	57.60.1101		100R	MF, 1%, 0204, E24
0	R 5	57.60.1331		330R	MF, 1%, 0204, E24
0	R 6	57.60.1151		150R	MF, 1%, 0204, E24
0	R 7	57.92.7011		0.2A	PTC 60V
0	R 8	57.60.1151		150R	MF, 1%, 0204, E24
0	R 9	57.60.1151		150R	MF, 1%, 0204, E24
0	R 10	57.60.1151		150R	MF, 1%, 0204, E24
0	R 11	57.60.1151		150R	MF, 1%, 0204, E24
0	R 12	not used		120R	MF, 1%, 0204, E24
0	R 13	57.60.1151		150R	MF, 1%, 0204, E24
0	R 14	57.60.1151		150R	MF, 1%, 0204, E24
0	R 15	57.92.7011		0.2A	PTC 60V
0	R 16	57.60.1151		150R	MF, 1%, 0204, E24
0	R 17	57.60.1000		0R0	MF, 0204
0	R 18	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 19	57.60.1151		150R	MF, 1%, 0204, E24
0	R 20	57.60.1331		330R	MF, 1%, 0204, E24
0	R 21	57.60.1000		0R0	MF, 0204
0	R 22	57.60.1479		4R7	MF, 1%, 0204, E24
0	R 23	57.60.1101		100R	MF, 1%, 0204, E24
0	R 24	57.60.1822		8k2	MF, 1%, 0204, E24
0	R 25	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 26	57.60.1101		100R	MF, 1%, 0204, E24
0	R 27	57.60.1103		10k	MF, 1%, 0204, E24
0	R 28	57.60.1682		6k8	MF, 1%, 0204, E24
0	R 29	57.60.1682		6k8	MF, 1%, 0204, E24
0	R 30	57.60.1103		10k	MF, 1%, 0204, E24
0	R 31	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 32	57.60.1101		100R	MF, 1%, 0204, E24
0	R 33	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 34	57.60.1101		100R	MF, 1%, 0204, E24
0	R 35	57.60.1103		10k	MF, 1%, 0204, E24
0	R 36	57.60.1103		10k	MF, 1%, 0204, E24
0	R 37	57.60.1103		10k	MF, 1%, 0204, E24
0	R 38	57.60.1103		10k	MF, 1%, 0204, E24
0	R 39	57.60.1100		10R	MF, 1%, 0204, E24
0	R 40	57.11.3822		8k2	MF, 1%, 0207
0	R 41	57.60.1132		1k3	MF, 1%, 0204, E24
0	R 42	57.60.1132		1k3	MF, 1%, 0204, E24
0	R 43	57.11.3822		8k2	MF, 1%, 0207
0	R 44	57.60.1272		2k7	MF, 1%, 0204, E24
0	R 45	57.60.1272		2k7	MF, 1%, 0204, E24
0	R 46	57.60.1132		1k3	MF, 1%, 0204, E24
0	R 47	57.60.1132		1k3	MF, 1%, 0204, E24
0	R 48	57.11.3822		8k2	MF, 1%, 0207
0	R 49	not used		15k	MF, 1%, 0207
0	R 50	not used		15k	MF, 1%, 0207
0	R 51	57.11.3822		8k2	MF, 1%, 0207
0	R 52	57.60.1473		47k	MF, 1%, 0204, E24
0	R 53	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 54	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 55	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 56	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 57	57.60.1821		820R	MF, 1%, 0204, E24
0	R 58	57.60.1821		820R	MF, 1%, 0204, E24
0	R 59	57.60.1821		820R	MF, 1%, 0204, E24
0	R 60	57.60.1821		820R	MF, 1%, 0204, E24
0	R 61	57.60.1473		47k	MF, 1%, 0204, E24
0	R 62	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 63	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 64	57.60.1472		4k7	MF, 1%, 0204, E24

Line Input Module (no Trafo) 1.942.232.22 (0)

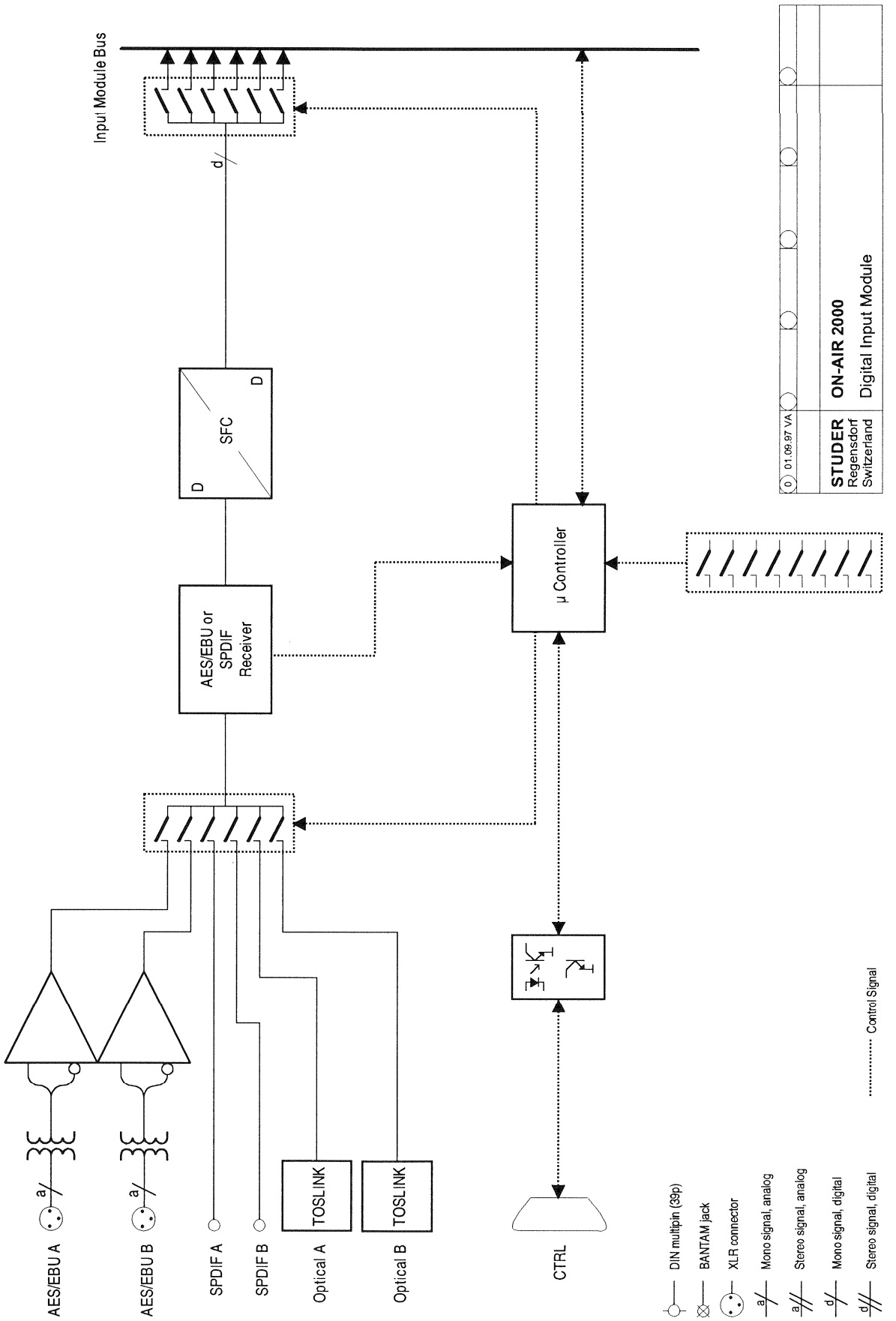
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 65	57.60.1104		100k	MF, 1%, 0204, E24
0	R 66	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 67	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 68	57.60.1104		100k	MF, 1%, 0204, E24
0	R 69	57.60.1104		100k	MF, 1%, 0204, E24
0	R 70	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 71	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 72	57.60.1104		100k	MF, 1%, 0204, E24
0	R 73	57.60.1104		100k	MF, 1%, 0204, E24
0	R 74	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 75	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 76	57.60.1104		100k	MF, 1%, 0204, E24
0	R 77	57.60.1104		100k	MF, 1%, 0204, E24
0	R 78	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 79	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 80	57.60.1104		100k	MF, 1%, 0204, E24
0	R 81	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 82	57.60.1100		10R	MF, 1%, 0204, E24
0	R 83	57.60.1220		22R	MF, 1%, 0204, E24
0	R 84	57.60.1220		22R	MF, 1%, 0204, E24
0	R 85	57.60.1220		22R	MF, 1%, 0204, E24
0	R 86	57.60.1220		22R	MF, 1%, 0204, E24
0	R 87	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 88	57.60.1102		1k0	MF, 1%, 0204, E24
0	RZ 1	57.88.4473		47k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	DIL-Switch, PCB
0	T 1	not used		1:0.62	EINGANGSTRAFO 1 : 0,62
0	T 2	not used		1:0.62	EINGANGSTRAFO 1 : 0,62
0	XIC 8	53.03.0165		20p	DIL 0.3", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	XTAL HC 49/U

End of List

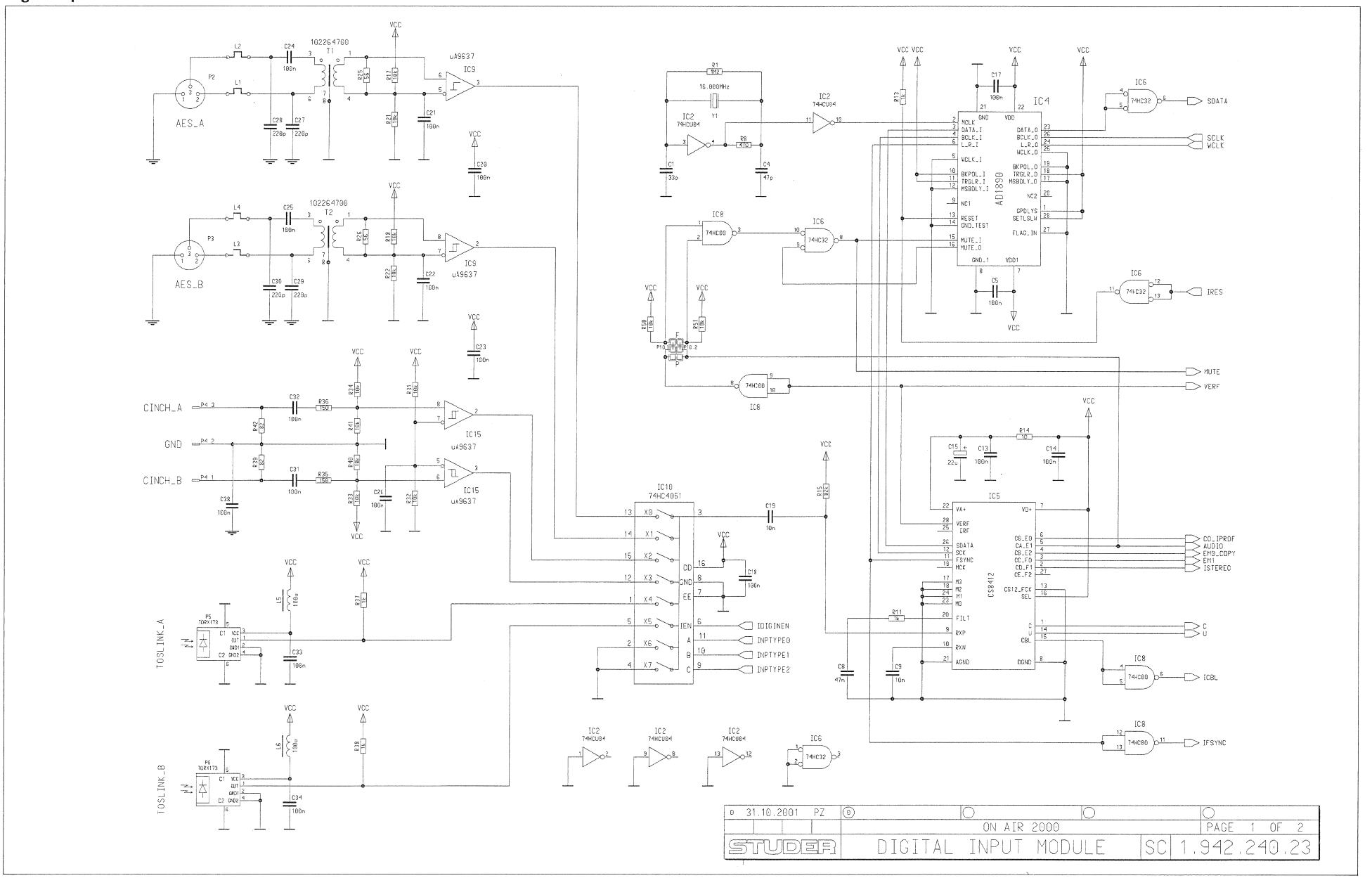
Comments:

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description

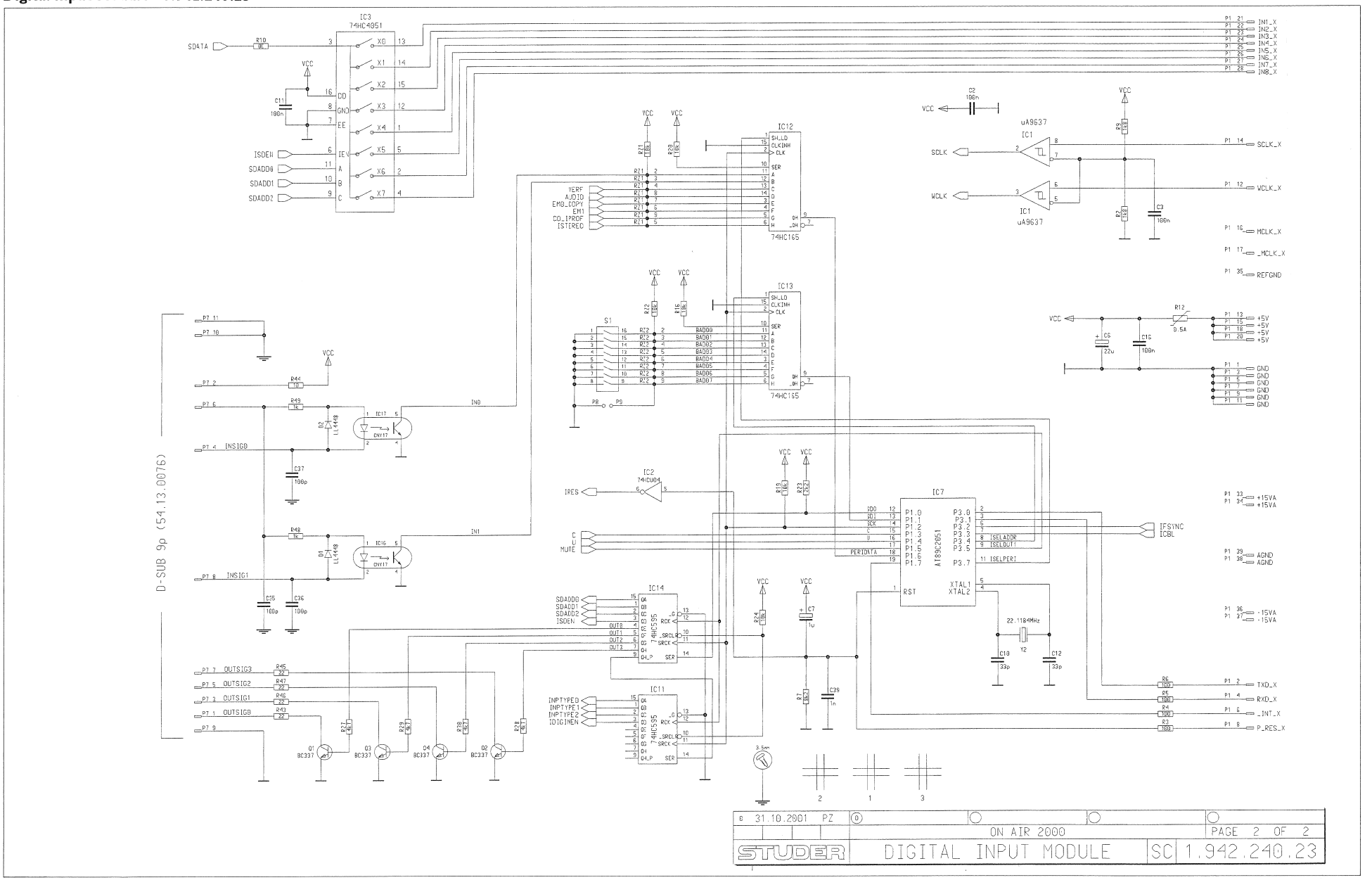
Block diagram Digital Input Module



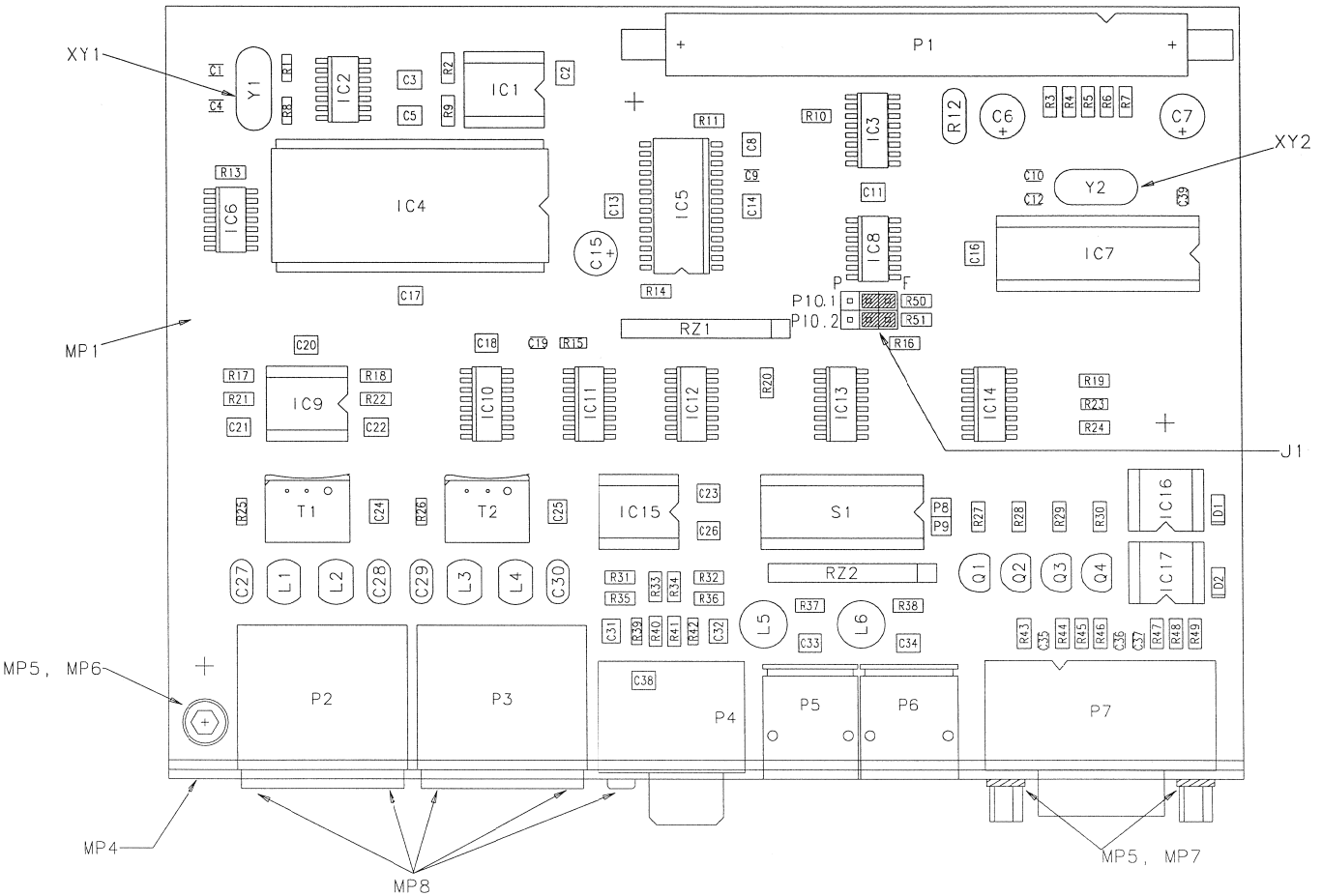
Digital Input Module 1.942.240.23



Digital Input Module 1.942.240.23



Digital Input Module 1.942.240.21



Edition / Ausgabe	Modification / Änderung				
					3
					2
					1
29.05.1998	PZ				0
Date / Datum	Visa / Gez.	Checked / Gepr.	Seen / Ges.	Index	

Copy to / Kopie fuer:

STUDER REGENSDORF | Description / Benennung: DIGITAL INPUT MODULE, ESE | Number / Nummer: 1.942.240.21

Digital Input Module 1.942.240.23

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 2	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 3	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 4	59.60.2341		47p	CER 50V, 5%, C0G, 0805
0	C 5	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 6	59.22.5220		22u	EL 25V 20% RM5
0	C 7	not used		1u0	EL 50V 20% RM5
0	C 8	59.60.3533		47n	CER 50V, 10%, X7R, 1210
0	C 9	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 10	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 11	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 12	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 13	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 14	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 15	59.22.5220		22u	EL 25V 20% RM5
0	C 16	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 17	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 18	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 19	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 20	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 21	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 22	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 23	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 24	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 25	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 26	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 27	59.32.1221		220p	CER 10%, 400V
0	C 28	59.32.1221		220p	CER 10%, 400V
0	C 29	59.32.1221		220p	CER 10%, 400V
0	C 30	59.32.1221		220p	CER 10%, 400V
0	C 31	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 32	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 33	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 34	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 35	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 36	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 37	59.60.2349		100p	CER 50V, 5%, C0G, 0805
0	C 38	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 39	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.15.0114		9637	Dual diff Line Receiver
0	IC 2	50.62.1904		74HCU04	Hex inverter unbuffered
0	IC 3	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 4	50.13.0204			IC AD 1890 JN ,A
0	IC 5	50.62.0913		CS8412	AES-Receiver
0	IC 6	50.62.1032		74HC 32	Quad 2input OR
0	IC 7	1.942.923.21			SW.240 DIGITAL INPUT MODULE
				(50160313, AT89C2051)	
0	IC 8	50.62.1000		74HC 00	Quad 2input NAND
0	IC 9	50.15.0114		9637	Dual diff Line Receiver
0	IC 10	50.62.1951		74HC4051	8ch analog mux/demux
0	IC 11	50.62.1595		74HC595	8bit shift/output register
0	IC 12	50.62.1165		74HC165	8bit shift register
0	IC 13	50.62.1165		74HC165	8bit shift register
0	IC 14	50.62.1595		74HC595	8bit shift/output register
0	IC 15	50.15.0114		9637	Dual diff Line Receiver
0	IC 16	50.04.3200		CNY17-2	Opto-coupler
0	IC 17	50.04.3200		CNY17-2	Opto-coupler
0	J 1	54.01.0021	2 pcs	Jumper	0.63*0.63mm, Au
0	L 1	1.010.321.64		Wire	DRAHTBRUECKE U, 4.3* 5.0, 0.6
0	L 2	1.010.321.64		Wire	DRAHTBRUECKE U, 4.3* 5.0, 0.6
0	L 3	1.010.321.64		Wire	DRAHTBRUECKE U, 4.3* 5.0, 0.6
0	L 4	1.010.321.64		Wire	DRAHTBRUECKE U, 4.3* 5.0, 0.6
0	L 5	62.02.3101		100uH	10%, radial RM 5
0	L 6	62.02.3101		100uH	10%, radial RM 5
0	MP 1	1.942.240.12	1 pce		Digital Input Module PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.240.10	1 pce		NR-ETIKETTE 5x20
0	MP 4	1.942.240.01	1 pce		Blende Digital Input Module
0	MP 5	24.16.2030	3 pcs	3.2/6.0	Fächerscheibe Form A
0	MP 6	21.53.0353	1 pce	M3*5	Z-Schraube Inbus Zn gb chr
0	MP 7	54.13.0081	2 pcs	4.85mm	Bolzen UNC 4-40
0	MP 8	20.24.8754	5 pcs	2.9*6	L -Formschr,K-Torx, Zn bl
0	MP 9	1.101.001.23	1 pce		TEXT-ETIK. 5*20 HARDWARE -23

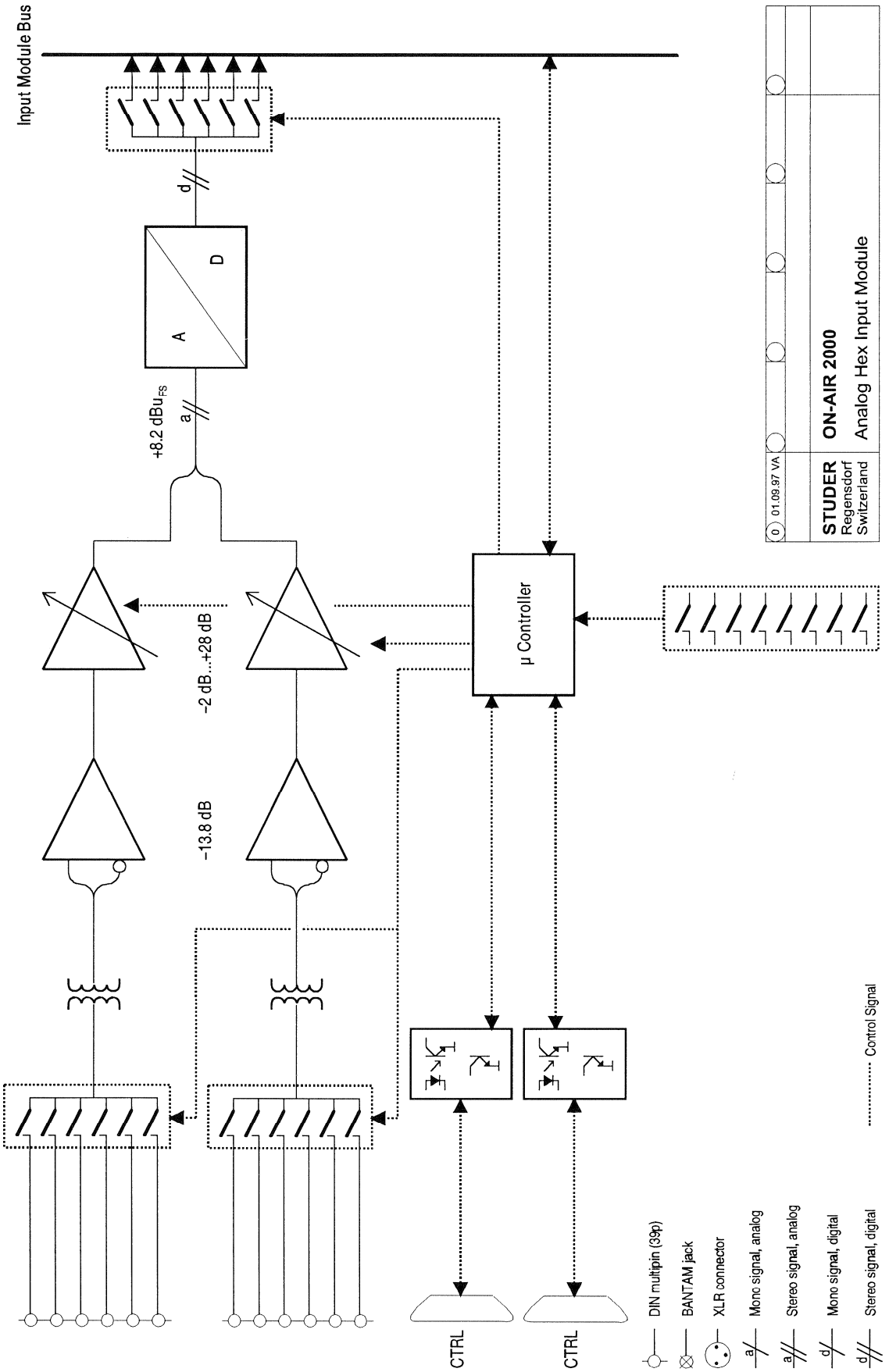
Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	P 1	54.14.2054		40p	Stecker gerade Au
0	P 2	54.21.2203		3p	XLR PCB Winkel
0	P 3	54.21.2203		3p	XLR PCB Winkel
0	P 4	54.21.2006		1*2p	Cinch vertikal PCB
0	P 5	89.10.0121		TORX173	Toslink Receiver
0	P 6	89.10.0121		TORX173	Toslink Receiver
0	P 7	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 8	54.01.0020		1p	Pin, 1reihig, gerade
0	P 9	54.01.0020		1p	Pin, 1reihig, gerade
0	P 10	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	Q 1	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 2	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 3	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 4	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.60.1125		1M2	MF, 1%, 0204, E24
0	R 2	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 3	57.60.1101		100R	MF, 1%, 0204, E24
0	R 4	57.60.1101		100R	MF, 1%, 0204, E24
0	R 5	57.60.1101		100R	MF, 1%, 0204, E24
0	R 6	57.60.1101		100R	MF, 1%, 0204, E24
0	R 7	57.60.1822		8k2	MF, 1%, 0204, E24
0	R 8	57.60.1471		470R	MF, 1%, 0204, E24
0	R 9	57.60.1182		1k8	MF, 1%, 0204, E24
0	R 10	57.60.1000		0R0	MF, 0204
0	R 11	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 12	57.92.7013		0.5A	PTC 60V
0	R 13	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 14	57.60.1100		10R	MF, 1%, 0204, E24
0	R 15	57.60.1823		82k	MF, 1%, 0204, E24
0	R 16	57.60.1103		10k	MF, 1%, 0204, E24
0	R 17	57.60.1103		10k	MF, 1%, 0204, E24
0	R 18	57.60.1103		10k	MF, 1%, 0204, E24
0	R 19	57.60.1103		10k	MF, 1%, 0204, E24
0	R 20	57.60.1103		10k	MF, 1%, 0204, E24
0	R 21	57.60.1103		10k	MF, 1%, 0204, E24
0	R 22	57.60.1103		10k	MF, 1%, 0204, E24
0	R 23	57.60.1222		2k2	MF, 1%, 0204, E24
0	R 24	57.60.1103		10k	MF, 1%, 0204, E24
0	R 25	57.60.1560		56R	MF, 1%, 0204, E24
0	R 26	57.60.1560		56R	MF, 1%, 0204, E24
0	R 27	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 28	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 29	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 30	57.60.1472		4k7	MF, 1%, 0204, E24
0	R 31	57.60.1103		10k	MF, 1%, 0204, E24
0	R 32	57.60.1103		10k	MF, 1%, 0204, E24
0	R 33	57.60.1103		10k	MF, 1%, 0204, E24
0	R 34	57.60.1103		10k	MF, 1%, 0204, E24
0	R 35	57.60.1151		150R	MF, 1%, 0204, E24
0	R 36	57.60.1151		150R	MF, 1%, 0204, E24
0	R 37	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 38	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 39	57.60.1820		82R	MF, 1%, 0204, E24
0	R 40	57.60.1103		10k	MF, 1%, 0204, E24
0	R 41	57.60.1103		10k	MF, 1%, 0204, E24
0	R 42	57.60.1820		82R	MF, 1%, 0204, E24
0	R 43	57.60.1220		22R	MF, 1%, 0204, E24
0	R 44	57.60.1100		10R	MF, 1%, 0204, E24
0	R 45	57.60.1220		22R	MF, 1%, 0204, E24
0	R 46	57.60.1220		22R	MF, 1%, 0204, E24
0	R 47	57.60.1220		22R	MF, 1%, 0204, E24

Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 48	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 49	57.60.1102		1k0	MF, 1%, 0204, E24
0	R 50	57.60.1103		10k	MF, 1%, 0204, E24
0	R 51	57.60.1103		10k	MF, 1%, 0204, E24
0	RZ 1	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	SZ , 8*A, DIL
0	T 1	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 2	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	XIC 7	53.03.0165		20p	DIL 0.3", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	XY 2	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1009		16.000MHz	XTAL HC 49/U
0	Y 2	89.01.1016		22.1184MHz	XTAL HC 49/U

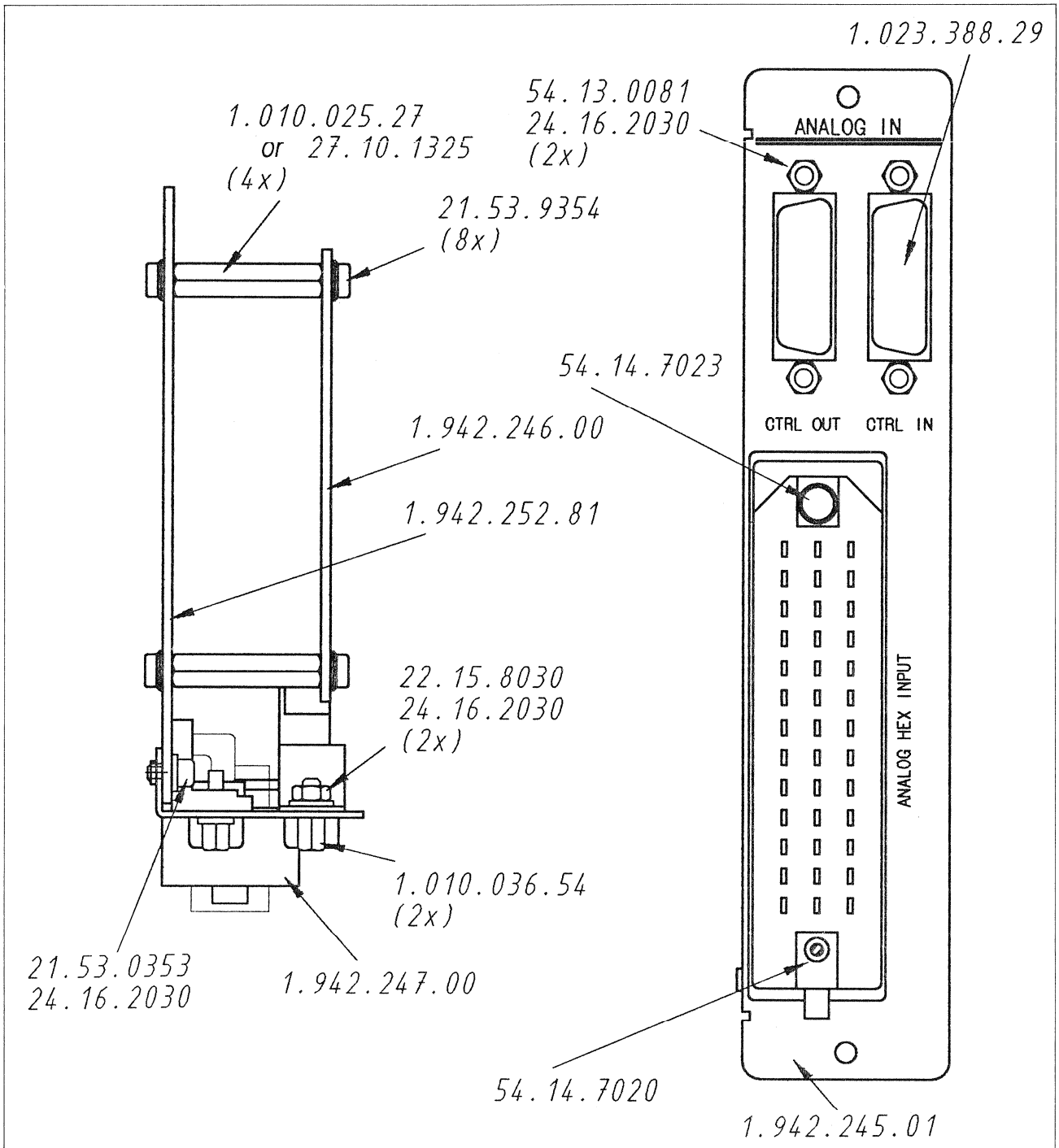
End of List

Comments:

Block diagram Analog Hex Input Module



Analog Hex. Input Module 1.942.245.22



Modification / Änderung					
	.	.	.	.	3
	.	.	.	.	2
	.	.	.	.	1
Edition / Ausgabe	10.03.98	SW	PZ	SW	0
	Date / Datum	Visa / Gez.	Checked / Gepr.	Seen / Ges.	Index

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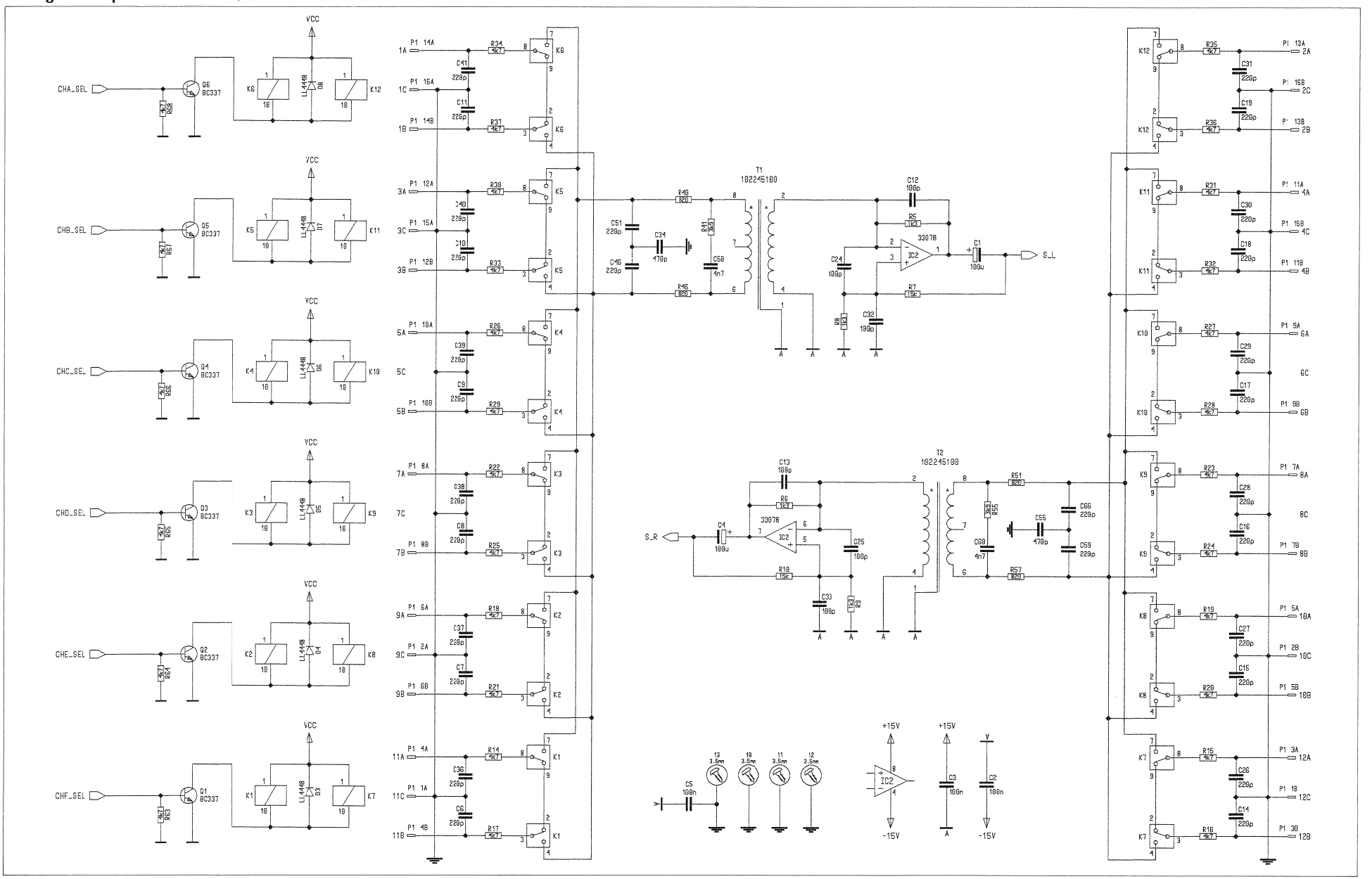
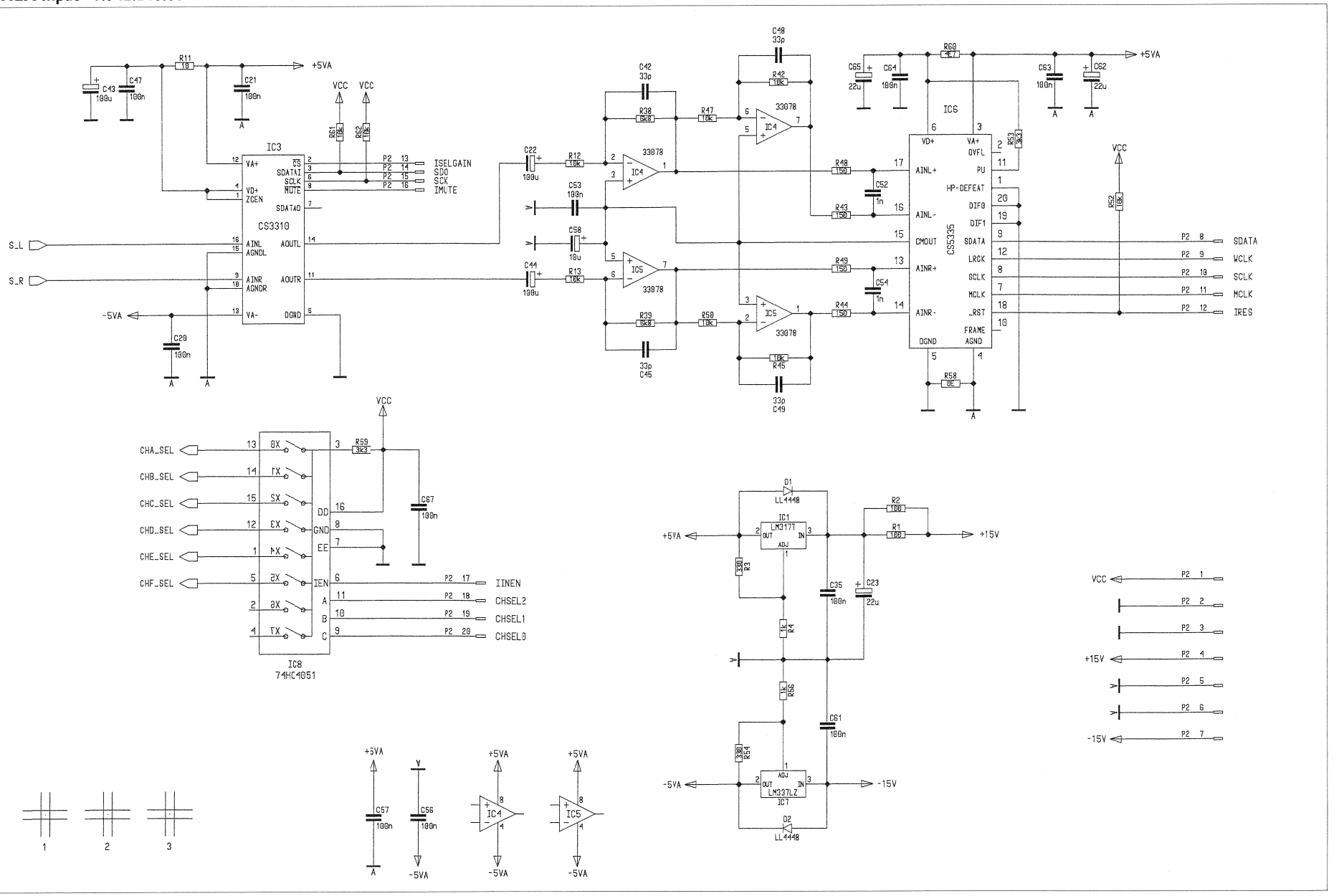
STUDER REGENSDORF | Description / Benennung: ANALOG HEX INPUT MODULE, ESE | Number / Nummer: 1.942.245.22

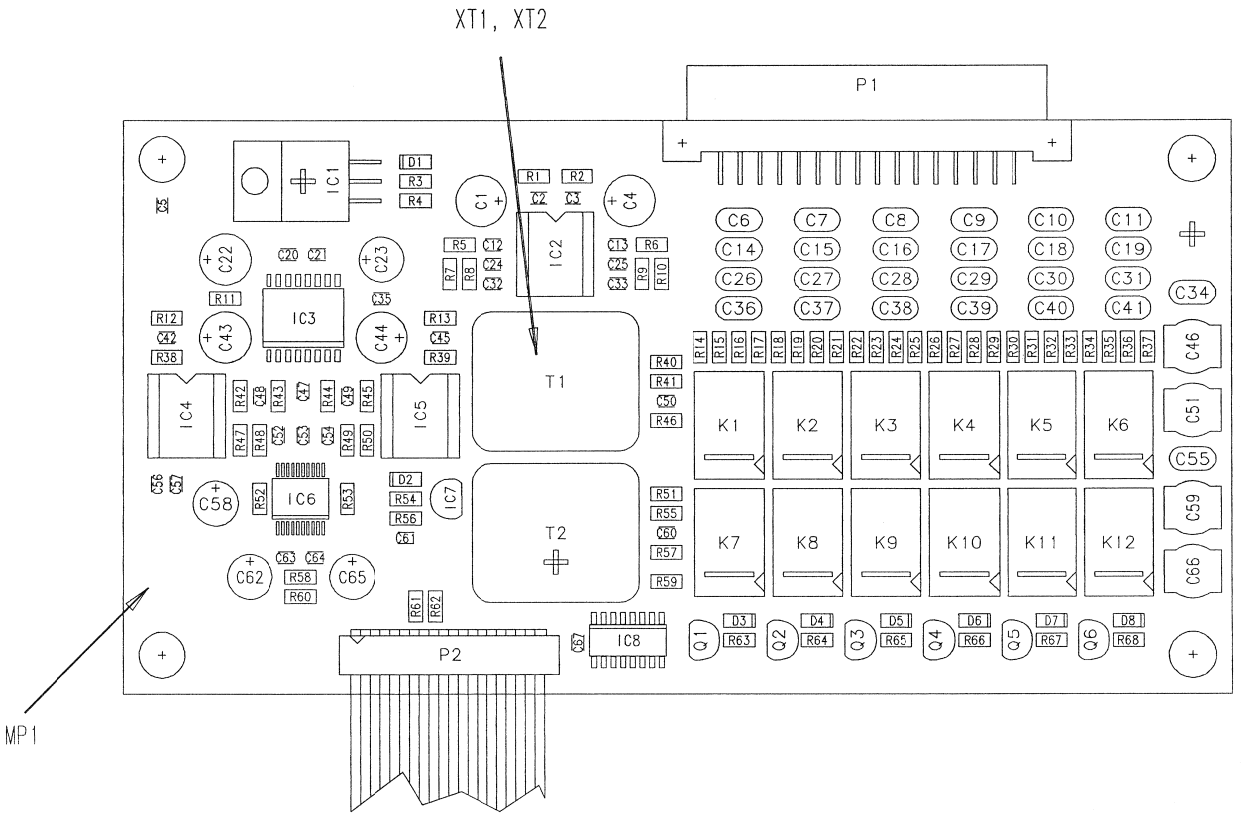
Analog HEX Input 1.942.246.00



Analog HEX Input 1.942.246.00



Analog HEX Input 1.942.246.00



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 2	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 3	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 4	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 5	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 6	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 7	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 8	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 9	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 10	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 11	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 12	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 13	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 14	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 15	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 16	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 17	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 18	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 19	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 20	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 21	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 22	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 23	59.22.5220		22u	EL 25V, 20%, RM5
0	C 24	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 25	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 26	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 27	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 28	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 29	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 30	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 31	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 32	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 33	59.60.0101		100p	CER 63V, 5%, C0G, 0805
0	C 34	59.32.1471		470p	C 470 P , 10% 400V , CER
0	C 35	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 36	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 37	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 38	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 39	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 40	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 41	59.32.1221		220p	C 220 P , 10% 400V , CER
0	C 42	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 43	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 44	59.22.4002		100uF	EL 16V, 20%, RM5
0	C 45	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 46	59.05.1221		220p	PP, 1%, 630V
0	C 47	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 48	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 49	59.60.0330		33p	CER 63V, 5%, C0G, 0805
0	C 50	59.60.1472		4n7	CER 63V, 10%, X7R, 0805
0	C 51	59.05.1221		220p	PP, 1%, 630V
0	C 52	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 53	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 54	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 55	59.32.1471		470p	C 470 P , 10% 400V , CER
0	C 56	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 57	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 58	59.22.6100		10u	EL 35V, 20%, RM5
0	C 59	59.05.1221		220p	PP, 1%, 630V
0	C 60	59.60.1472		4n7	CER 63V, 10%, X7R, 0805
0	C 61	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 62	59.22.5220		22u	EL 25V, 20%, RM5
0	C 63	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 64	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	C 65	59.22.5220		22u	EL 25V, 20%, RM5
0	C 66	59.05.1221		220p	PP, 1%, 630V
0	C 67	59.60.3337		100n	CER 50V, 10%, X7R, 0805
0	D 1	50.60.8001		4448	D LL 4448 SOD 80
0	D 2	50.60.8001		4448	D LL 4448 SOD 80
0	D 3	50.60.8001		4448	D LL 4448 SOD 80
0	D 4	50.60.8001		4448	D LL 4448 SOD 80
0	D 5	50.60.8001		4448	D LL 4448 SOD 80
0	D 6	50.60.8001		4448	D LL 4448 SOD 80
0	D 7	50.60.8001		4448	D LL 4448 SOD 80
0	D 8	50.60.8001		4448	D LL 4448 SOD 80
0	IC 1	50.10.0104		LM317SP	IC LM 317 SP, . T,
0	IC 2	50.09.0117		MC33078	IC MC 33078 P
0	IC 3	50.61.8301		CS3310	IC CS 3310-KS
0	IC 4	50.09.0117		MC33078	IC MC 33078 P

Modification / Änderung					
Edition / Ausgabe	14.1.97	PZ			Index
Date / Datum		Visa / Gez.	Dessin / Gepr.	Genm. / Ges.	

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STUDER REGENSDORF — Description / Benennung: ANALOG HEX INPUT 'ESE' — Number / Nummer: 1.942.246-00

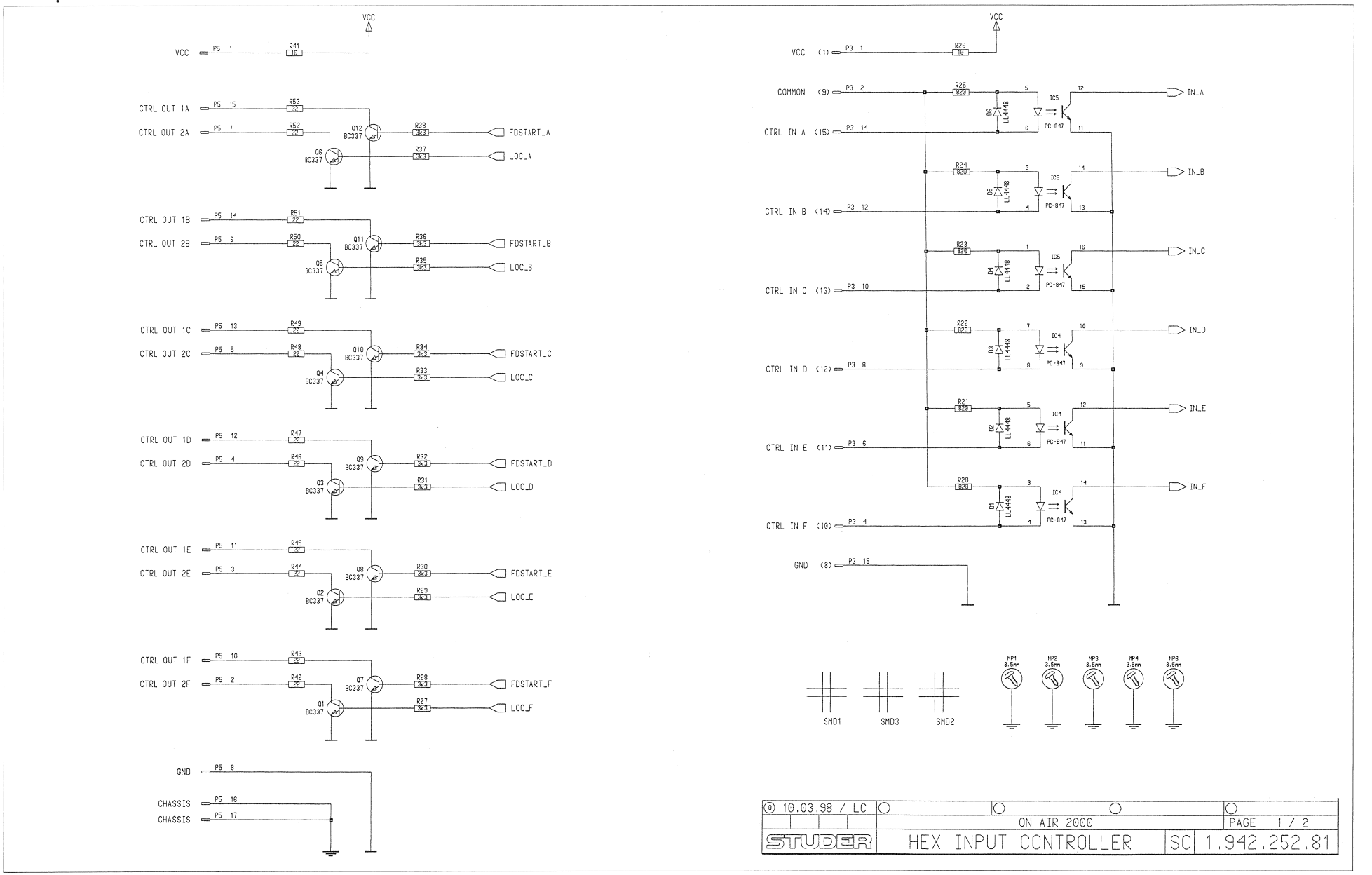
Analog HEX Input 1.942.246.00

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	IC 5	50.09.0117		MC33078	IC MC 33078 P
0	IC 6	50.61.8103		CS5335	A/D Converter, 20 bit, SO 20
0	IC 7	50.10.0109		LM337L	IC LM 337 LZ.
0	IC 8	50.62.1951		74HC4051	IC 74 HC 4051
0	K 1	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 2	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 3	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 4	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 5	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 6	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 7	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 8	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 9	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 10	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 11	56.04.0198		2u	5V, 125V/2A, AG/AU
0	K 12	56.04.0198		2u	5V, 125V/2A, AG/AU
0	MP 1	1.942.246.11	1 pce		Analog HEX Input PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.246.10	1 pce		NR.ETIKETTE 5x20
0	P 1	54.11.2013		32p	EU-BK 2*16p
0	P 2	1.023.567.04		Ribbon20p	FLACHKABEL 20 POL. 0,04M
0	Q 1	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 2	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 3	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 4	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 5	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 6	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.60.1101		100R	MF, 1%, 0204, E24
0	R 2	57.60.1101		100R	MF, 1%, 0204, E24
0	R 3	57.60.1331		330R	MF, 1%, 0204, E24
0	R 4	57.60.1102		1K	MF, 1%, 0204, E24
0	R 5	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 6	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 7	57.60.1153		15K	MF, 1%, 0204, E24
0	R 8	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 9	57.60.1132		1K3	MF, 1%, 0204, E24
0	R 10	57.60.1153		15K	MF, 1%, 0204, E24
0	R 11	57.60.1100		10R	MF, 1%, 0204, E24
0	R 12	57.60.1103		10K	MF, 1%, 0204, E24
0	R 13	57.60.1103		10K	MF, 1%, 0204, E24
0	R 14	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 15	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 16	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 17	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 18	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 19	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 20	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 21	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 22	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 23	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 24	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 25	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 26	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 27	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 28	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 29	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 30	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 31	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 32	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 33	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 34	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 35	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 36	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 37	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 38	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 39	57.60.1682		6K8	MF, 1%, 0204, E24
0	R 40	57.60.1821		820R	MF, 1%, 0204, E24
0	R 41	57.60.1392		3K9	MF, 1%, 0204, E24
0	R 42	57.60.1103		10K	MF, 1%, 0204, E24
0	R 43	57.60.1151		150R	MF, 1%, 0204, E24
0	R 44	57.60.1151		150R	MF, 1%, 0204, E24
0	R 45	57.60.1103		10K	MF, 1%, 0204, E24
0	R 46	57.60.1821		820R	MF, 1%, 0204, E24
0	R 47	57.60.1103		10K	MF, 1%, 0204, E24
0	R 48	57.60.1151		150R	MF, 1%, 0204, E24
0	R 49	57.60.1151		150R	MF, 1%, 0204, E24
0	R 50	57.60.1103		10K	MF, 1%, 0204, E24
0	R 51	57.60.1821		820R	MF, 1%, 0204, E24
0	R 52	57.60.1103		10K	MF, 1%, 0204, E24
0	R 53	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 54	57.60.1331		330R	MF, 1%, 0204, E24
0	R 55	57.60.1392		3K9	MF, 1%, 0204, E24
0	R 56	57.60.1102		1K	MF, 1%, 0204, E24
0	R 57	57.60.1821		820R	MF, 1%, 0204, E24
0	R 58	57.60.1000		0R0	MF, 0204
0	R 59	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 60	57.60.1479		4R7	MF, 2%, 0204, E24
0	R 61	57.60.1103		10K	MF, 1%, 0204, E24
0	R 62	57.60.1103		10K	MF, 1%, 0204, E24
0	R 63	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 64	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 65	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 66	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 67	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 68	57.60.1472		4K7	MF, 1%, 0204, E24
0	T 1	1.022.451.00		1:0.62	EINGANGSTRAFO 1 : 0,62
0	T 2	1.022.451.00		1:0.62	EINGANGSTRAFO 1 : 0,62
0	XT 1	1.022.400.03			ISOLATION
0	XT 2	1.022.400.03			ISOLATION

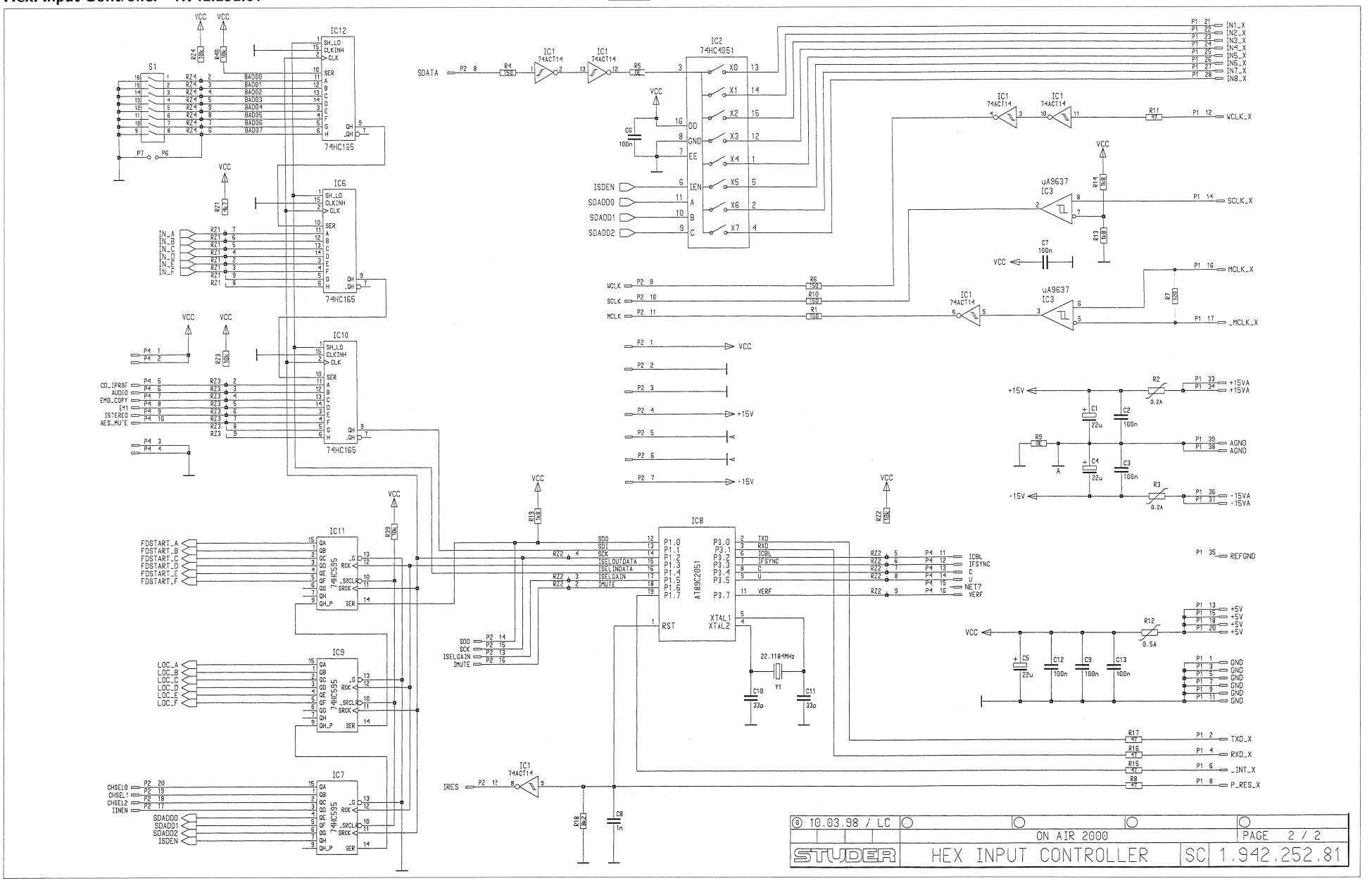
End of List

Comments:

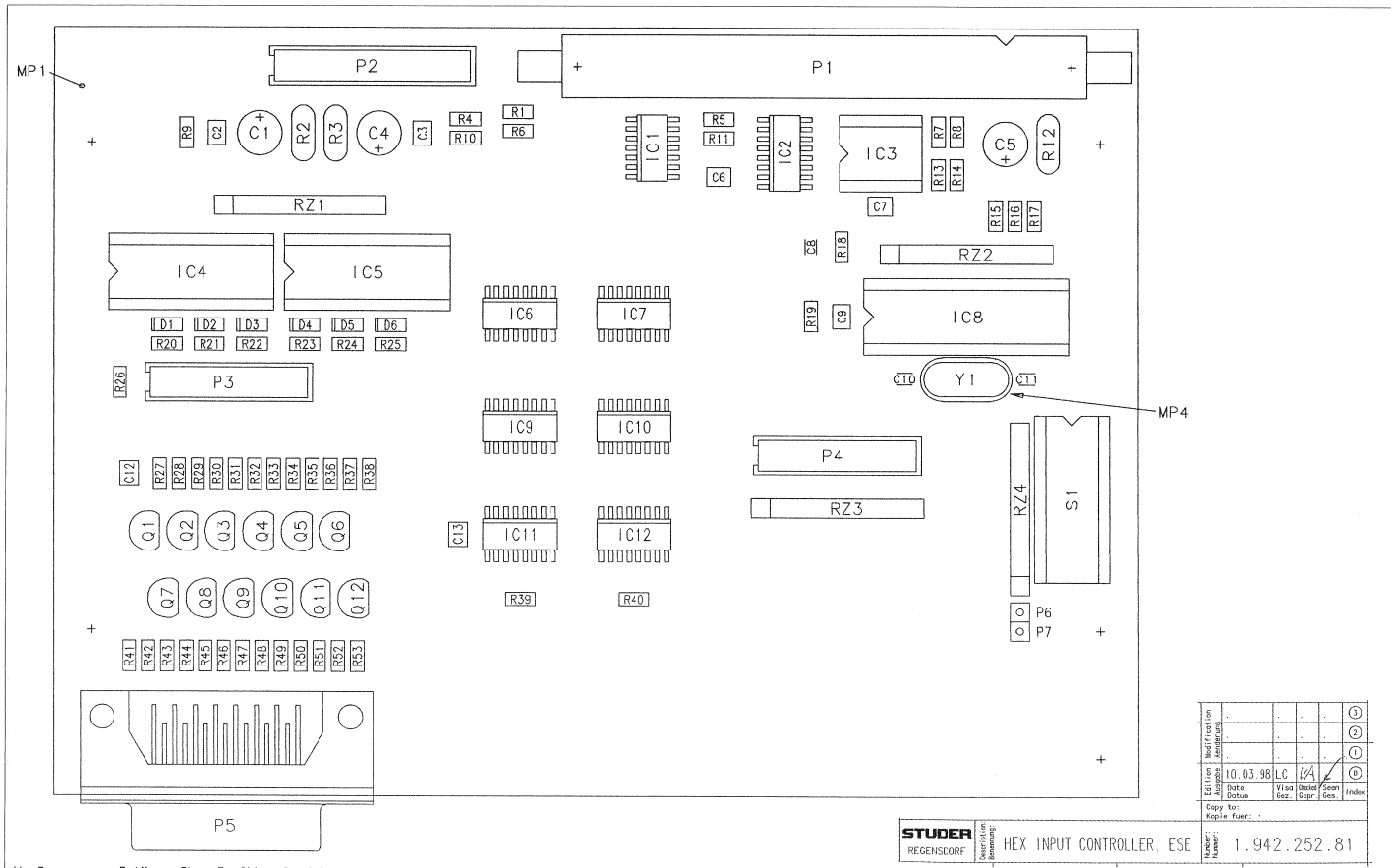
Hex. Input Controller 1.942.252.81



Hex. Input Controller 1.942.252.81



Hex. Input Controller 1.942.252.81



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.5220		22u	EL 25V, 20%, RM5
0	C 2	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 3	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 4	59.22.5220		22u	EL 25V, 20%, RM5
0	C 5	59.22.5220		22u	EL 25V, 20%, RM5
0	C 6	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 7	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 8	59.60.2373		1n0	CER 50V, 5%, C0G, 0805
0	C 9	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 10	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 11	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 12	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 13	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	D 1	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 2	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 3	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 4	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 5	50.60.8001		4448	200mA 75V 4ns SOD 80
0	D 6	50.60.8001		4448	200mA 75V 4ns SOD 80
0	IC 1	50.62.6014		74ACT 14	Hex inverting Schmitt trigger
0	IC 2	50.62.1951		74HC4051	IC 74 HC 4051

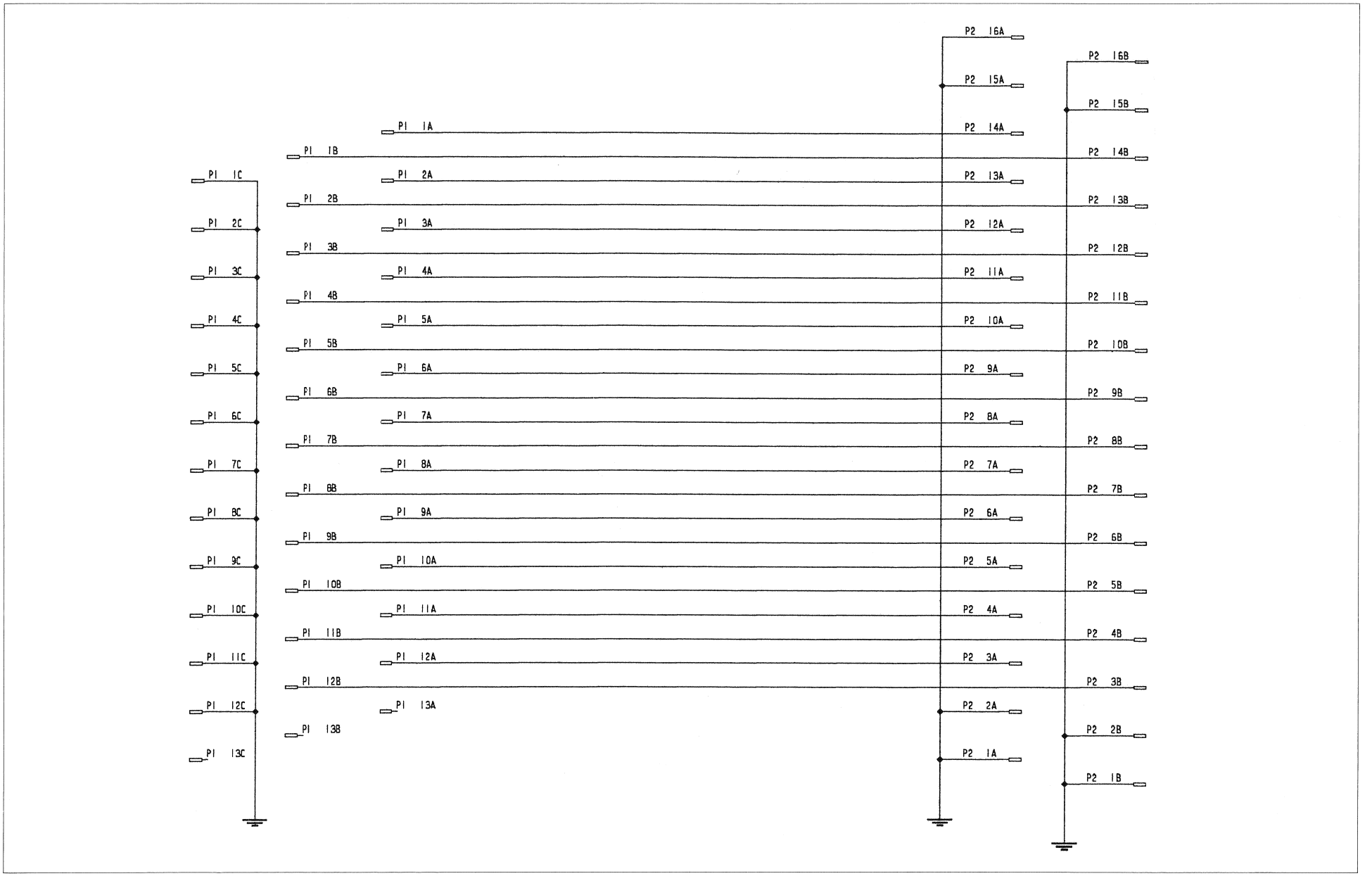
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	IC 3	50.15.0114		9637	Dual diff Line Receiver
0	IC 4	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	IC 5	50.04.2138		PC847	DLQ PC-847 , EE-CM 4
0	IC 6	50.62.1165		74HC165	74 HC 165
0	IC 7	50.62.1595		74HC595	74 HC 595
0	IC 8	not used		89C2051	MicroController 12MHz
0	IC 9	50.62.1595		74HC595	74 HC 595
0	IC 10	50.62.1165		74HC165	74 HC 165
0	IC 11	50.62.1595		74HC595	74 HC 595
0	IC 12	50.62.1165		74HC165	74 HC 165
0	MP 1	1.942.252.11			HEX Input Controler PCB/
0	MP 2	43.01.0108		Label	ESE-WARNSCHILD
0	MP 3	1.942.252.10			NR.ETIKETTE 5x20
0	MP 4	89.01.1499			QUARZ - ISOLIERPLATTE
0	P 1	54.14.2054		40p	P STECKER 40 P , AU, GERADE
0	P 2	54.14.5620		20p	PCB-Buchse gerade
0	P 3	54.14.5616		16p	PCB-Buchse gerade
0	P 4	54.14.5616		16p	PCB-Buchse gerade
0	P 5	54.13.0077		15p	D-Sub, PCB, Winkel
0	P 6	54.01.0020		1p	Pin 0.63*0.63
0	P 7	54.01.0020		1p	Pin 0.63*0.63

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	Q 1	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 2	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 3	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 4	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 5	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 6	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 7	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 8	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 9	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 10	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 11	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 12	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.60.1151		150R	MF, 1%, 0204, E24
0	R 2	57.92.7011		0.2A	POLY- PTC, 60V
0	R 3	57.92.7011		0.2A	POLY- PTC, 60V
0	R 4	57.60.1151		150R	MF, 1%, 0204, E24
0	R 5	57.60.1000		0R0	MF, 0204
0	R 6	57.60.1151		150R	MF, 1%, 0204, E24
0	R 7	not used		120R	MF, 1%, 0204, E24
0	R 8	57.60.1470		47R	MF, 1%, 0204, E24
0	R 9	57.60.1000		0R0	MF, 0204
0	R 10	57.60.1151		150R	MF, 1%, 0204, E24
0	R 11	57.60.1470		47R	MF, 1%, 0204, E24
0	R 12	57.92.7013		0.5A	POLY- PTC, 60V
0	R 13	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 14	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 15	57.60.1470		47R	MF, 1%, 0204, E24
0	R 16	57.60.1470		47R	MF, 1%, 0204, E24
0	R 17	57.60.1470		47R	MF, 1%, 0204, E24
0	R 18	57.60.1622		6K2	MF, 1%, 0204, E24
0	R 19	57.60.1182		1K8	MF, 1%, 0204, E24
0	R 20	57.60.1821		820R	MF, 1%, 0204, E24
0	R 21	57.60.1821		820R	MF, 1%, 0204, E24
0	R 22	57.60.1821		820R	MF, 1%, 0204, E24
0	R 23	57.60.1821		820R	MF, 1%, 0204, E24
0	R 24	57.60.1821		820R	MF, 1%, 0204, E24
0	R 25	57.60.1821		820R	MF, 1%, 0204, E24
0	R 26	57.60.1100		10R	MF, 1%, 0204, E24
0	R 27	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 28	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 29	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 30	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 31	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 32	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 33	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 34	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 35	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 36	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 37	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 38	57.60.1332		3K3	MF, 1%, 0204, E24
0	R 39	57.60.1103		10K	MF, 1%, 0204, E24
0	R 40	57.60.1103		10K	MF, 1%, 0204, E24
0	R 41	57.60.1100		10R	MF, 1%, 0204, E24
0	R 42	57.60.1220		22R	MF, 1%, 0204, E24
0	R 43	57.60.1220		22R	MF, 1%, 0204, E24
0	R 44	57.60.1220		22R	MF, 1%, 0204, E24
0	R 45	57.60.1220		22R	MF, 1%, 0204, E24
0	R 46	57.60.1220		22R	MF, 1%, 0204, E24
0	R 47	57.60.1220		22R	MF, 1%, 0204, E24
0	R 48	57.60.1220		22R	MF, 1%, 0204, E24
0	R 49	57.60.1220		22R	MF, 1%, 0204, E24
0	R 50	57.60.1220		22R	MF, 1%, 0204, E24
0	R 51	57.60.1220		22R	MF, 1%, 0204, E24
0	R 52	57.60.1220		22R	MF, 1%, 0204, E24
0	R 53	57.60.1220		22R	MF, 1%, 0204, E24
0	RZ 1	57.88.4472		4k7	8*R Resistor-Netw 2% SIP9
0	RZ 2	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 3	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	RZ 4	57.88.4103		10k	8*R Resistor-Netw 2% SIP9
0	S 1	55.01.0168		8*a	SZ , 8*A, DIL
0	XIC 8	53.03.0165		20p	DIL 0.3", löt, gerade
0	Y 1	89.01.1016		22.1184MHz	22.118 400 MHz, HC 49/U

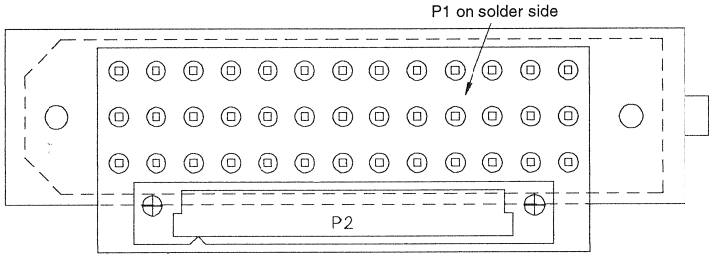
End of List

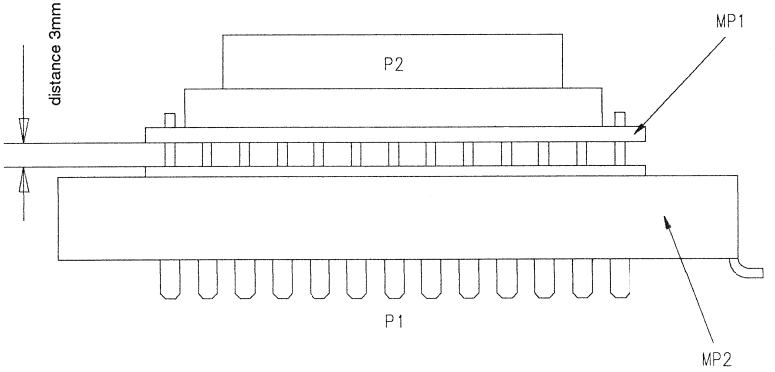
Comments:

Connection Board 39 Pol 1.942.247.00



Connection Board 39 Pol 1.942.247.00





Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	MP 1	1.942.247.11	1 pce		Connection Board 39 Pol PCB
0	MP 2	54.14.7002	1 pce		MP RIEGELWANNE 30/39 POL
0	P 1	54.14.1023			P LEISTE 39 POL PRINT
0	P 2	54.11.2014		32p	EU-BK 2*16p

End of List

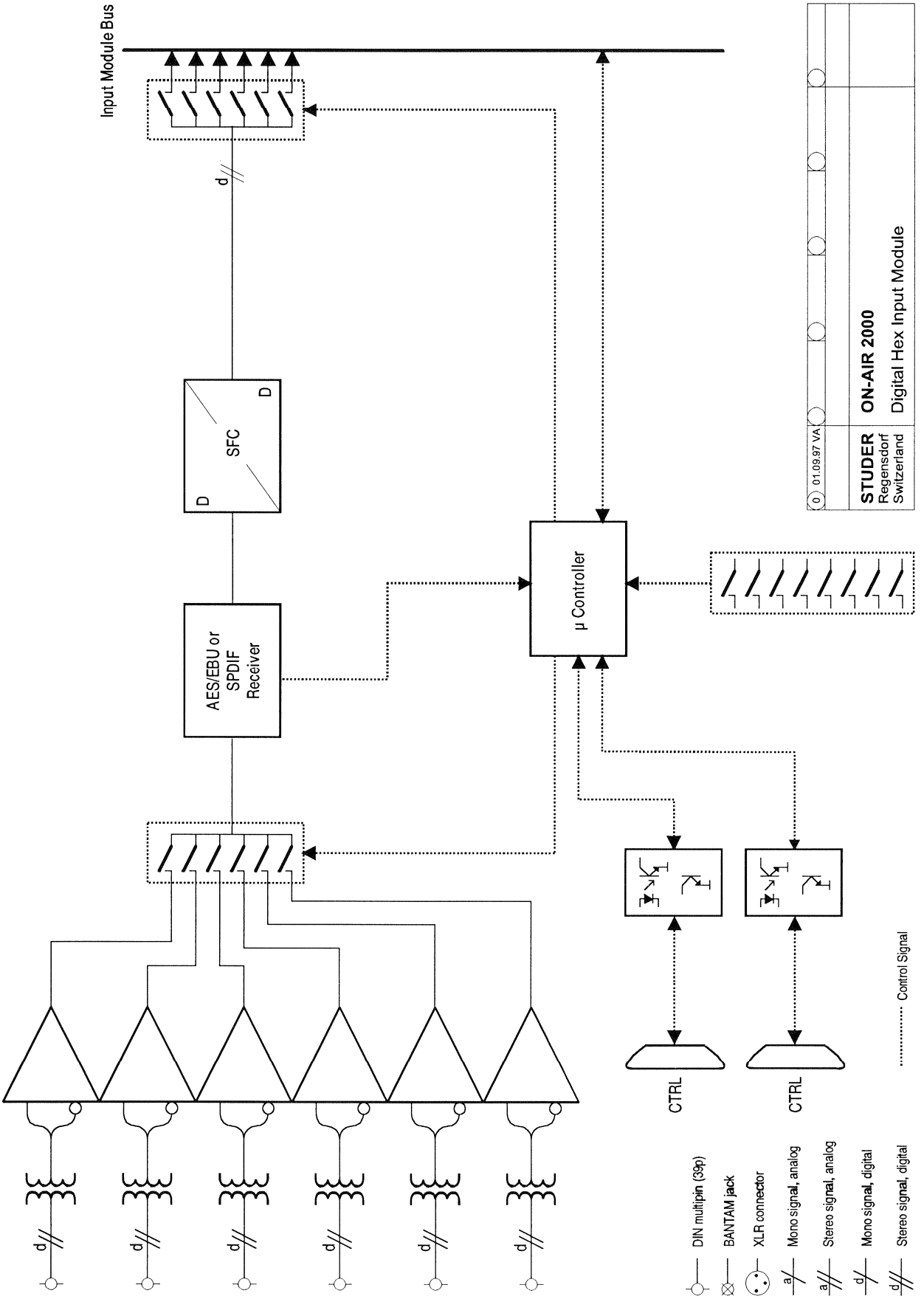
Comments:

Edition Ausgabe	Modification Änderung				
					3
					2
					1
0	20.1.97	PZ			0
	Date Datum	Visa Ges.	Dept. Dept.	Seen Ges.	Index

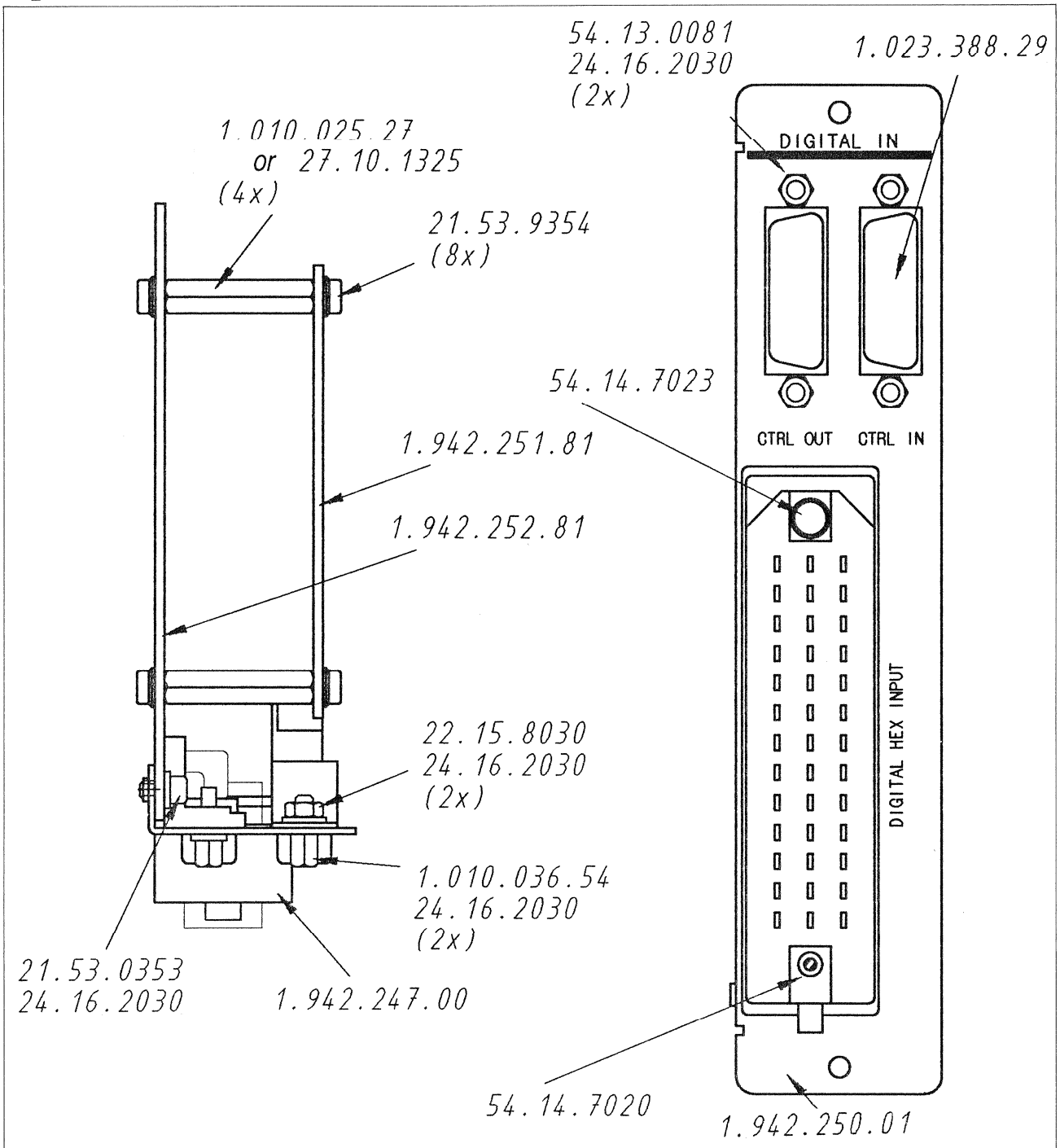
Copy to: Kopie für:

STUDER REGENSDORF | Description Benennung: CONNECTION BOARD 39POL | Number: Nummer: 1.942.247-00

Block diagram Digital Hex Input Module



Digital Hex. Input Module 1.942.250.22

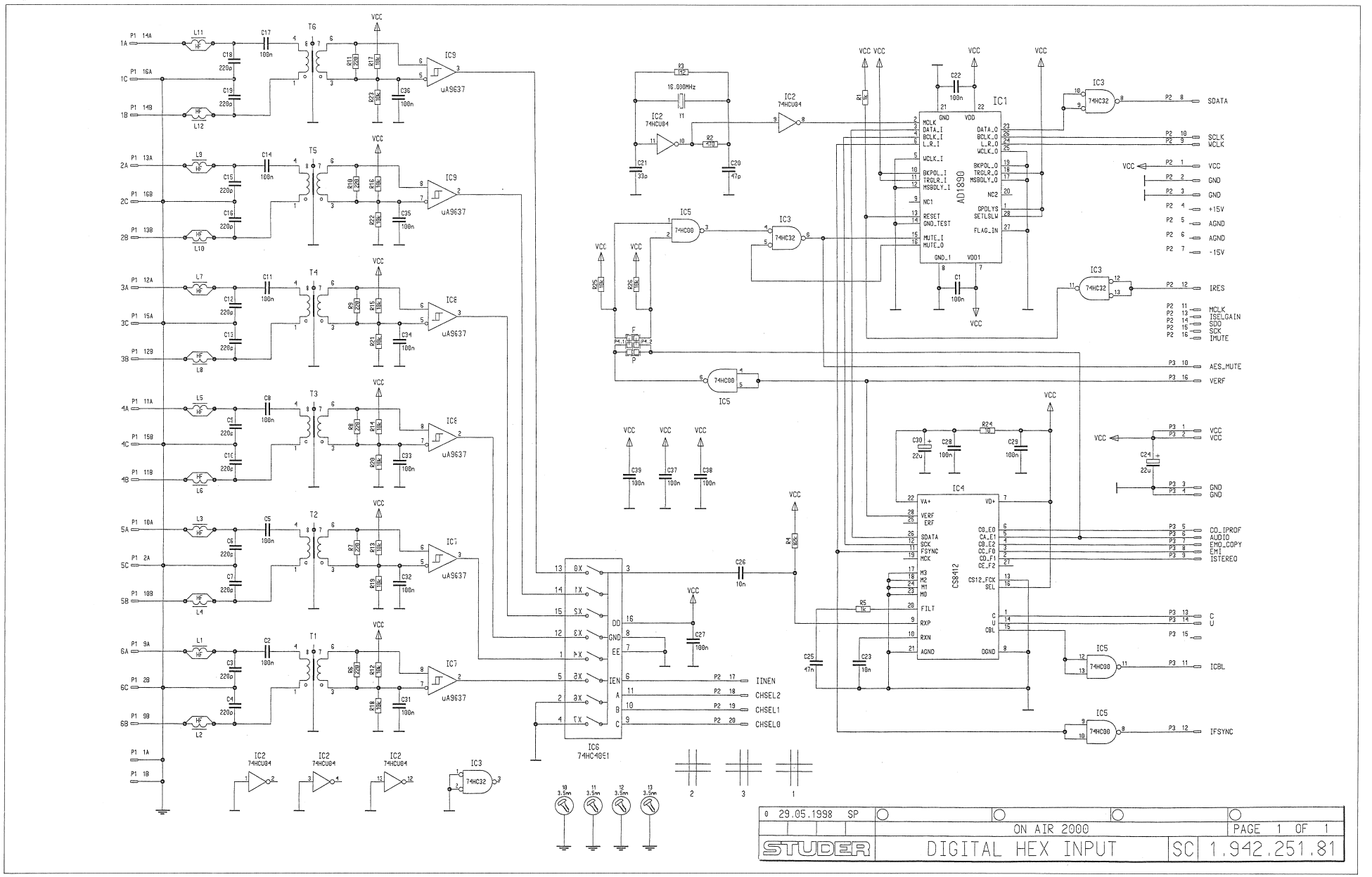


Modification Änderung					
	.	.	.	.	3
	.	.	.	.	2
	.	.	.	.	1
Edition Ausgabe	10.03.98	SW	PZ	SW	0
	Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.	Index

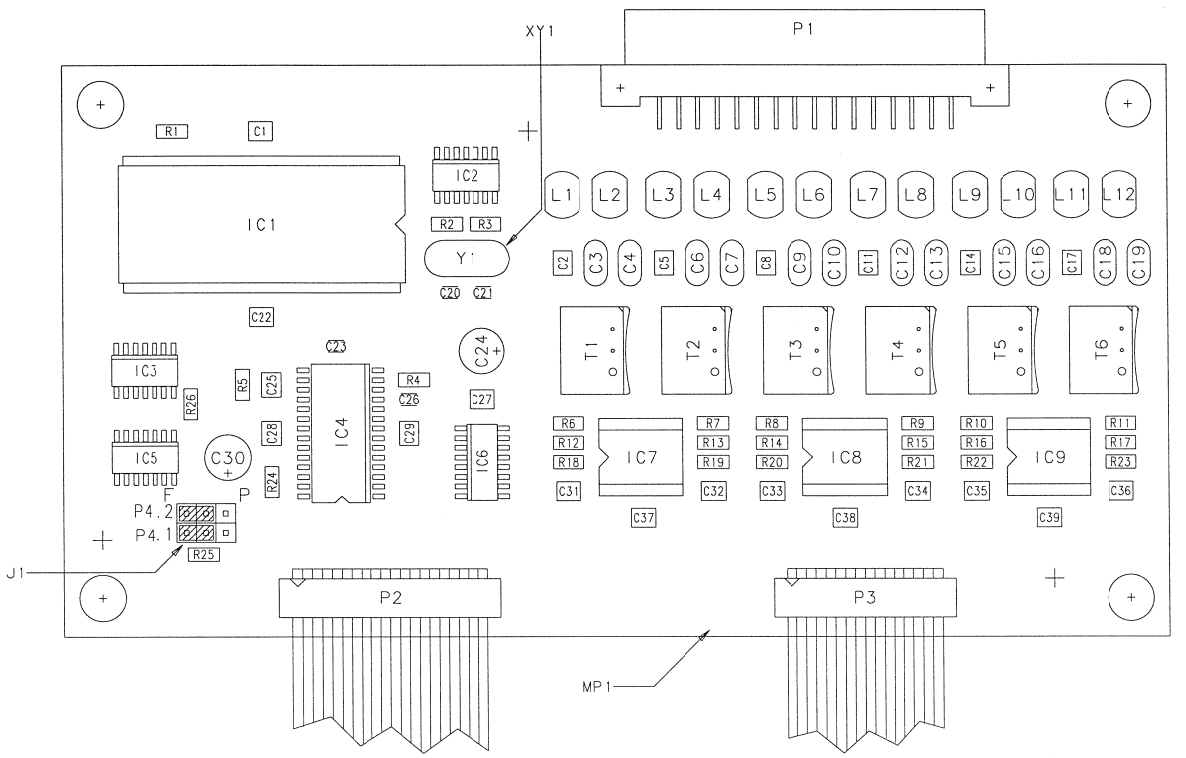
Copy to: Kopie für: .

STUDER REGENSDORF	Description: Benennung: DIGITAL HEX INPUT MODULE, ESE	Number: Nummer: 1.942.250.21

Digital Hex. Input 1.942.251.81



Digital Hex. Input 1.942.251.81



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 2	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 3	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 4	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 5	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 6	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 7	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 8	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 9	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 10	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 11	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 12	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 13	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 14	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 15	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 16	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 17	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 18	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 19	59.32.1221		220p	C 220 P , 10%, 400V , CER
0	C 20	59.60.2341		47p	CER 50V, 5%, C0G, 0805
0	C 21	59.60.2337		33p	CER 50V, 5%, C0G, 0805
0	C 22	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 23	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 24	59.22.5220		22u	EL 25V, 20%, RM5
0	C 25	59.60.3533		47n	CER 50V, 10%, X7R, 1210
0	C 26	59.60.3325		10n	CER 50V, 10%, X7R, 0805
0	C 27	59.60.3537		100n	CER 50V, 10%, X7R, 1210

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 28	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 29	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 30	59.22.5220		22u	EL 25V, 20%, RM5
0	C 31	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 32	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 33	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 34	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 35	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 36	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 37	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 38	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	C 39	59.60.3537		100n	CER 50V, 10%, X7R, 1210
0	IC 1	50.13.0204			IC AD 1890 JN ,A
0	IC 2	50.62.1904		74HCU04	IC .. 74 HCU 04 . ,A
0	IC 3	50.62.1032		74HC 32	74 HC 32
0	IC 4	50.62.0913		CS8412	AES-Receiver
0	IC 5	50.62.1000		74HC 00	74 HC 00
0	IC 6	50.62.1951		74HC4051	IC 74 HC 4051
0	IC 7	50.15.0114		9637	Dual diff Line Receiver
0	IC 8	50.15.0114		9637	Dual diff Line Receiver
0	IC 9	50.15.0114		9637	Dual diff Line Receiver
0	J 1	54.01.0021	2 pcs	Jumper	0.63 * 0.63mm
0	L 1	not used		110MHz	Breitband-Drossel
0	L 2	not used		110MHz	Breitband-Drossel
0	L 3	not used		110MHz	Breitband-Drossel

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	L 4	not used		110MHz	Breitband-Drossel
0	L 5	not used		110MHz	Breitband-Drossel
0	L 6	not used		110MHz	Breitband-Drossel
0	L 7	not used		110MHz	Breitband-Drossel
0	L 8	not used		110MHz	Breitband-Drossel
0	L 9	not used		110MHz	Breitband-Drossel
0	L 10	not used		110MHz	Breitband-Drossel
0	L 11	not used		110MHz	Breitband-Drossel
0	L 12	not used		110MHz	Breitband-Drossel
0	MP 1	1.942.251.12	1 pce		Digital HEX Input PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.251.10	1 pce		NR.ETIKETTE 5x20
0	P 1	54.11.2013		32p	EU-BK 2*16p
0	P 2	1.023.567.04		Ribbon20p	FLACHKABEL 20 POL 0,04M
0	P 3	1.023.566.01		Ribbon16p	FLACHKABEL 16 POL 0,08M
0	P 4	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	R 1	57.60.1102		1K	MF, 1%, 0204, E24
0	R 2	57.60.1471		470R	MF, 1%, 0204, E24
0	R 3	57.60.1125		1M2	MF, 1%, 0204, E24
0	R 4	57.60.1823		82K	MF, 1%, 0204, E24
0	R 5	57.60.1102		1K	MF, 1%, 0204, E24
0	R 6	57.60.1221		220R	MF, 1%, 0204, E24
0	R 7	57.60.1221		220R	MF, 1%, 0204, E24
0	R 8	57.60.1221		220R	MF, 1%, 0204, E24
0	R 9	57.60.1221		220R	MF, 1%, 0204, E24
0	R 10	57.60.1221		220R	MF, 1%, 0204, E24
0	R 11	57.60.1221		220R	MF, 1%, 0204, E24
0	R 12	57.60.1103		10K	MF, 1%, 0204, E24
0	R 13	57.60.1103		10K	MF, 1%, 0204, E24
0	R 14	57.60.1103		10K	MF, 1%, 0204, E24
0	R 15	57.60.1103		10K	MF, 1%, 0204, E24
0	R 16	57.60.1103		10K	MF, 1%, 0204, E24
0	R 17	57.60.1103		10K	MF, 1%, 0204, E24
0	R 18	57.60.1103		10K	MF, 1%, 0204, E24
0	R 19	57.60.1103		10K	MF, 1%, 0204, E24
0	R 20	57.60.1103		10K	MF, 1%, 0204, E24
0	R 21	57.60.1103		10K	MF, 1%, 0204, E24
0	R 22	57.60.1103		10K	MF, 1%, 0204, E24
0	R 23	57.60.1103		10K	MF, 1%, 0204, E24
0	R 24	57.60.1100		10R	MF, 1%, 0204, E24
0	R 25	57.60.1103		10K	MF, 1%, 0204, E24
0	R 26	57.60.1103		10K	MF, 1%, 0204, E24
0	T 1	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 2	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 3	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 4	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 5	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	T 6	1.022.647.00		1:1.4	OUTPUT TRAFO AES/EBU
0	XIC 7	53.03.0166		8p	DIL 0.3", löt, gerade
0	XIC 8	53.03.0166		8p	DIL 0.3", löt, gerade
0	XIC 9	53.03.0166		8p	DIL 0.3", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1009		16.000MHz	16.000 000 MHz, HC 49/U

End of List

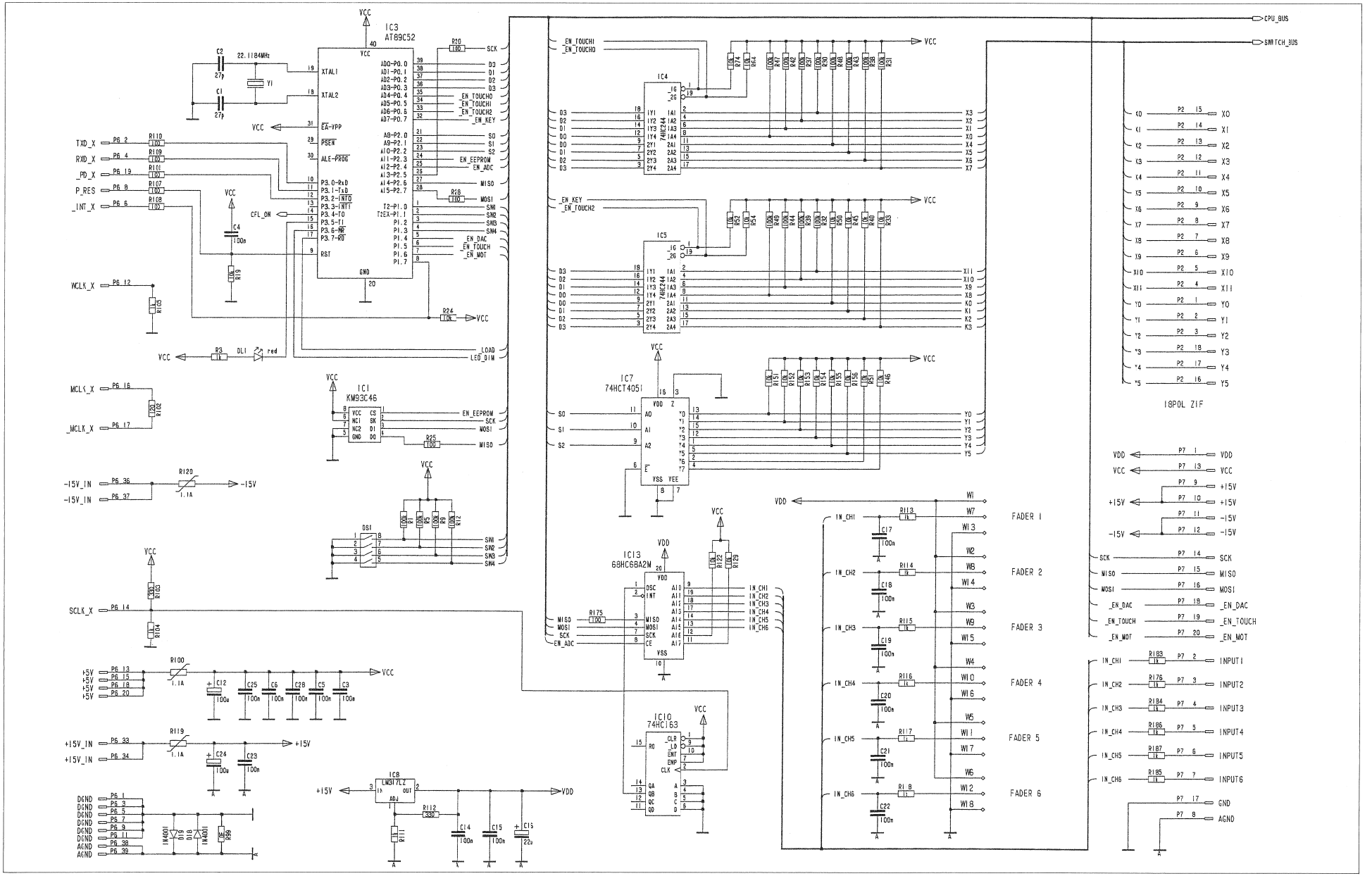
Comments:

Edition Ausgabe	Modification Aenderung				
					1
					2
					3
4	29.05.1998	PZ			4
Date Datum		Visa Gez.	Dessin Eepr.	Seen Ges.	Index

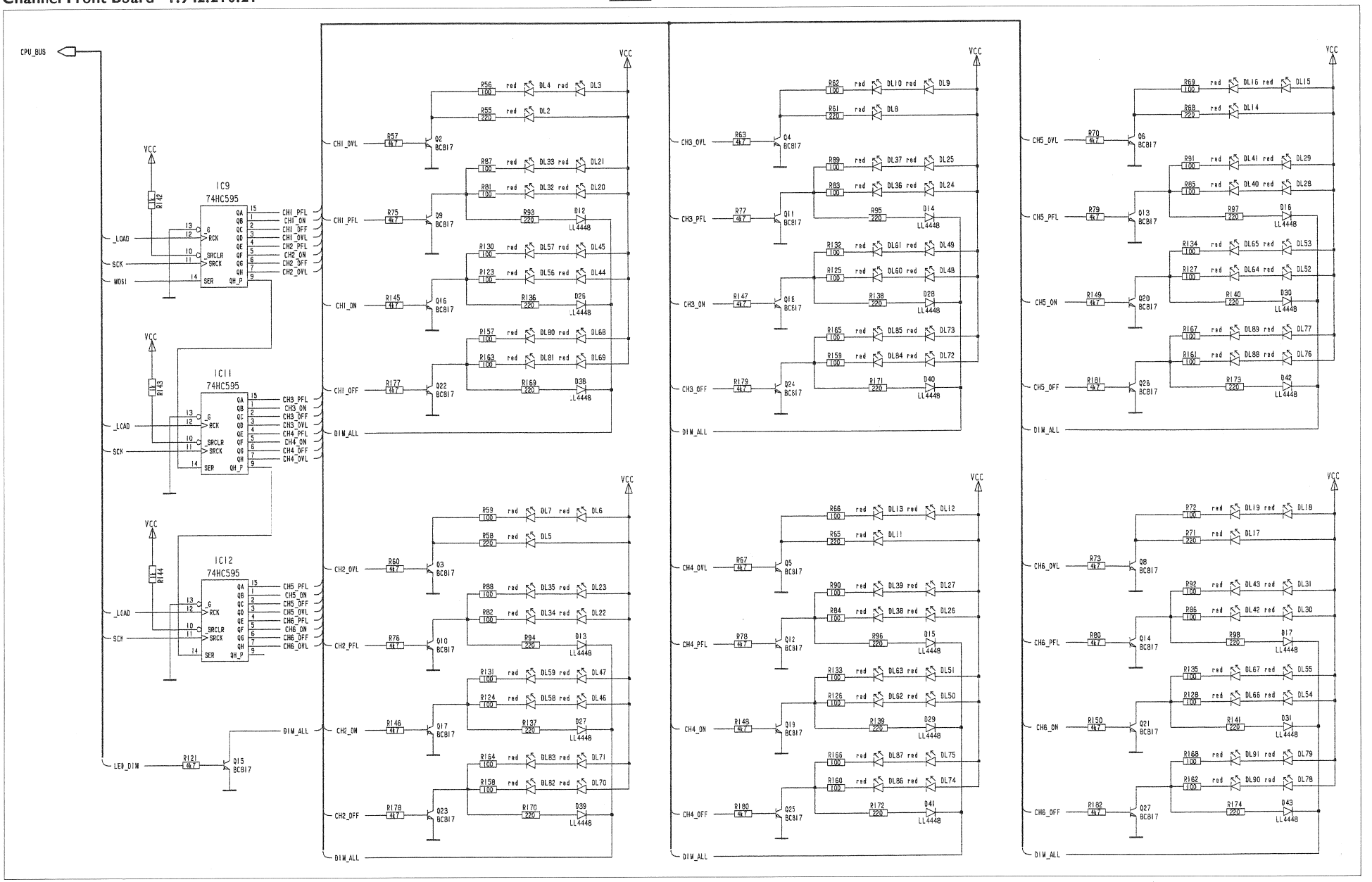
Copy to: Kopie fuer:

STUDER REGENSDORF | Description Benennung: DIGITAL HEX INPUT, ESE | Number Nummer: 1.942.251.81

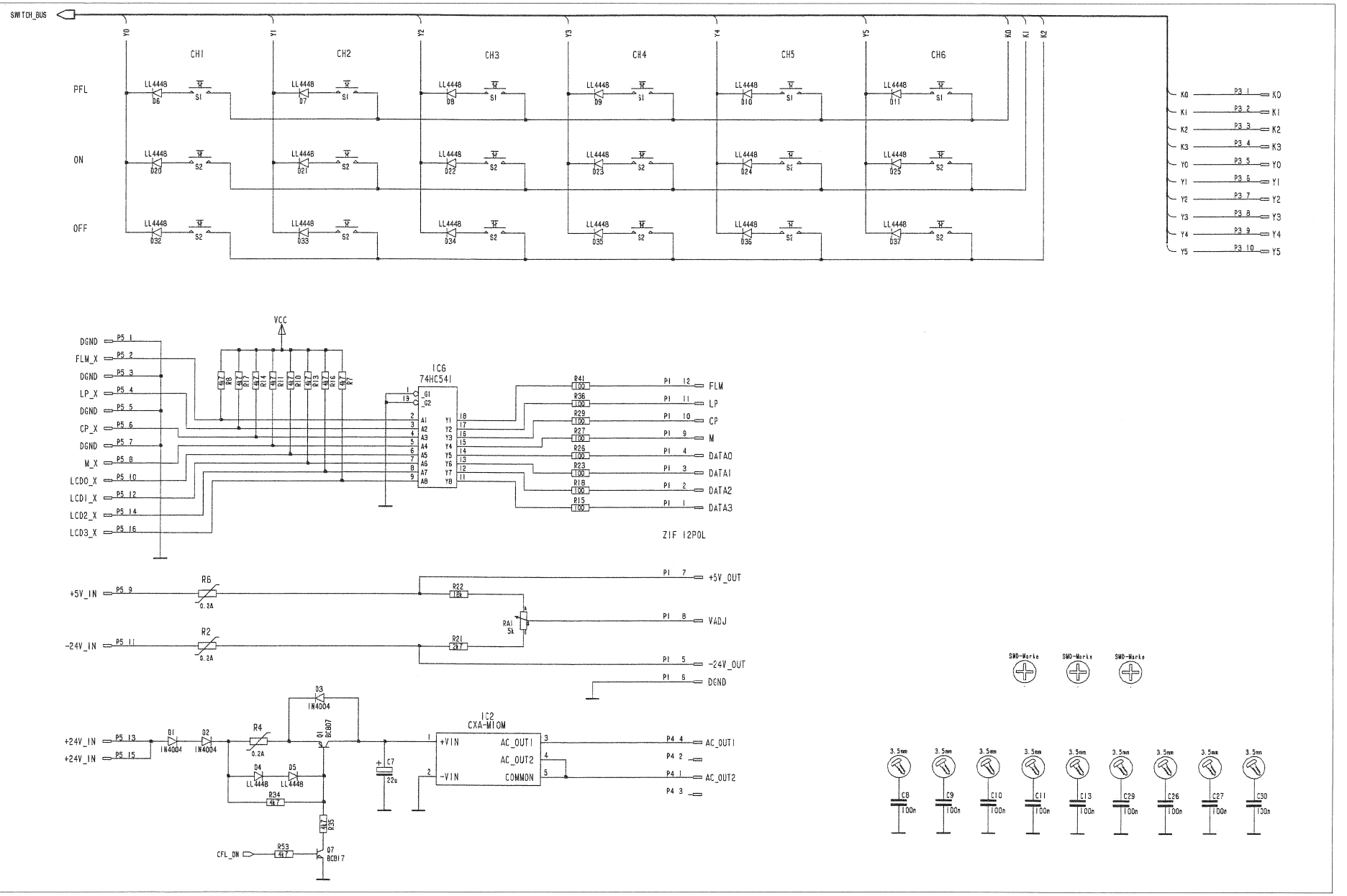
Channel Front Board 1.942.210.21



Channel Front Board 1.942.210.21

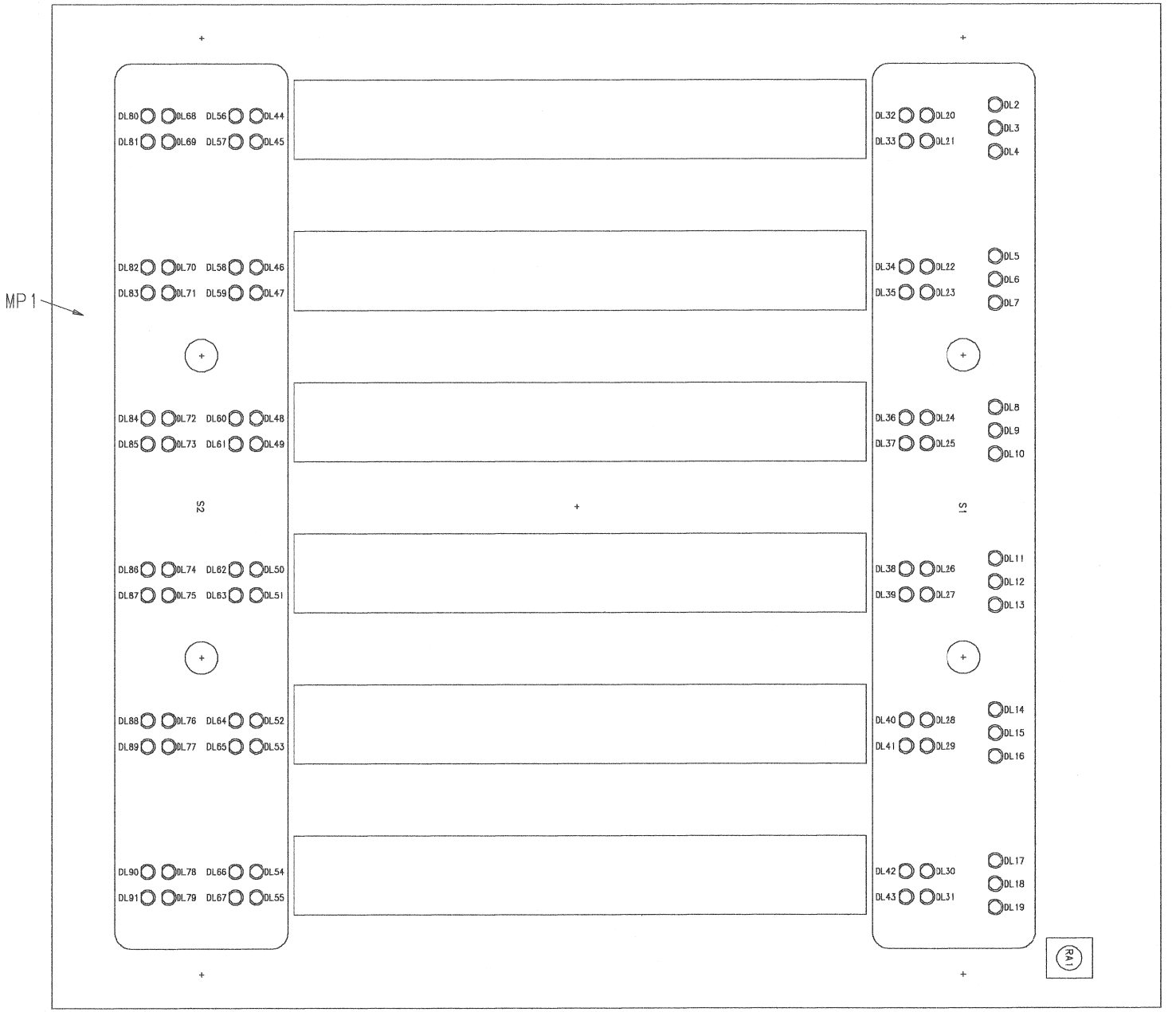


Channel Front Board 1.942.210.21



Channel Front Board 1.942.210.20

Component side



Edition Ausgabe	Modification Aenderung	
		3
		2
		1
1.11.96	PZ	0
Date Datum	Visa Gez.	Index

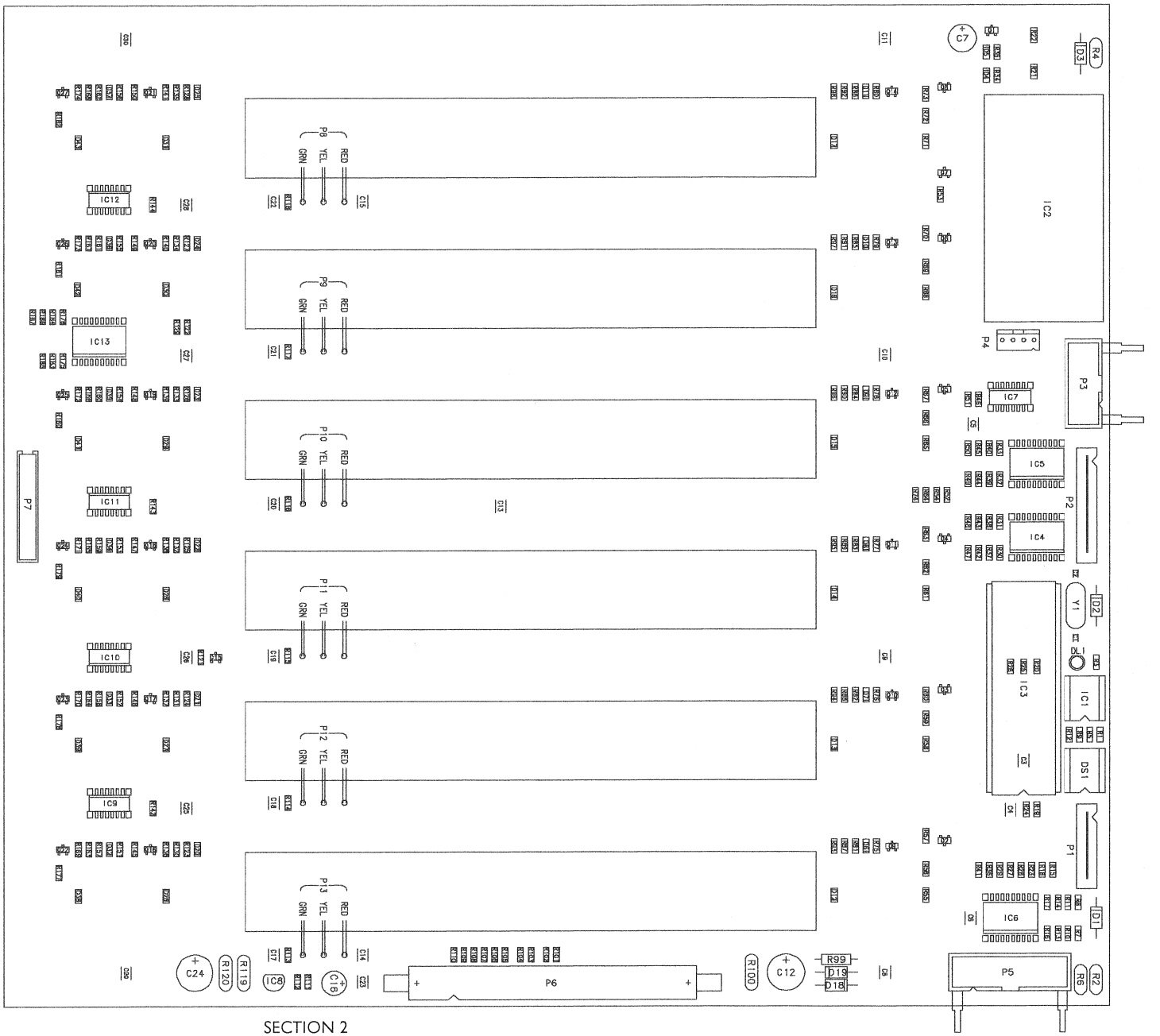
Copy to: Kopie fuer. .

STUDER REGENSDORF Description Benennung: CHANNEL FRONT BOARD ESE

Number Nummer: 1.942.210-20

Channel Front Board 1.942.210.20

Solder side



Channel Front Board 1.942.210.22

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.0270		27p	CER 63V, 5%, C0G, 0806
0	C 2	59.60.0270		27p	CER 63V, 5%, C0G, 0805
0	C 3	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 4	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 5	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 6	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 7	59.22.6220		22u	EL 35V, 20%, RM5
0	C 8	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 9	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 10	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 11	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 12	59.22.5101		100u	EL 25V, 20%, RM5
0	C 13	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 14	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 15	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 16	59.22.5220		22u	EL 25V, 20%, RM5
0	C 17	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 18	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 19	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 20	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 21	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 22	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 23	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 24	59.22.5101		100u	EL 25V, 20%, RM5
0	C 25	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 26	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 27	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 28	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 29	59.60.1104		100n	CER 63V, 10%, X7R, 1210
0	C 30	69.60.1104		100n	CER 63V, 10%, X7R, 1210
0	D 1	50.04.0105		1N4004	D 1 N 4004 ... 1 N 4007
0	D 2	50.04.0105		1N4004	D 1 N 4004 ... 1 N 4007
0	D 3	50.04.0105		1N4004	D 1 N 4004 ... 1 N 4007
0	D 4	50.60.8001		4448	D LL 4448 SOD 80
0	D 5	50.60.8001		4448	D LL 4448 SOD 80
0	D 6	50.60.8001		4448	D LL 4448 SOD 80
0	D 7	50.60.8001		4448	D LL 4448 SOD 80
0	D 8	50.60.8001		4448	D LL 4448 SOD 80
0	D 9	50.60.8001		4448	D LL 4448 SOD 80
0	D 10	50.60.8001		4448	D LL 4448 SOD 80
0	D 11	50.60.8001		4448	D LL 4448 SOD 80
0	D 12	50.60.8001		4448	D LL 4448 SOD 80
0	D 13	50.60.8001		4448	D LL 4448 SOD 80
0	D 14	50.60.8001		4448	D LL 4448 SOD 80
0	D 15	50.60.8001		4448	D LL 4448 SOD 80
0	D 16	50.60.8001		4448	D LL 4448 SOD 80
0	D 17	50.60.8001		4448	D LL 4448 SOD 80
0	D 18	50.04.0122		1N4001	1A, DO 41
0	D 19	50.04.0122		1N4001	1A, DO 41
0	D 20	50.60.8001		4448	D LL 4448 SOD 80
0	D 21	50.60.8001		4448	D LL 4448 SOD 80
0	D 22	50.60.8001		4448	D LL 4448 SOD 80
0	D 23	50.60.8001		4448	D LL 4448 SOD 80
0	D 24	50.60.8001		4448	D LL 4448 SOD 80
0	D 25	50.60.8001		4448	D LL 4448 SOD 80
0	D 26	50.60.8001		4448	D LL 4448 SOD 80
0	D 27	50.60.8001		4448	D LL 4448 SOD 80
0	D 28	50.60.8001		4448	D LL 4448 SOD 80
0	D 29	50.60.8001		4448	D LL 4448 SOD 80
0	D 30	50.60.8001		4448	D LL 4448 SOD 80
0	D 31	50.60.8001		4448	D LL 4448 SOD 80
0	D 32	50.60.8001		4448	D LL 4448 SOD 80
0	D 33	50.60.8001		4448	D LL 4448 SOD 80
0	D 34	50.60.8001		4448	D LL 4448 SOD 80
0	D 35	50.60.8001		4448	D LL 4448 SOD 80
0	D 36	50.60.8001		4448	D LL 4448 SOD 80
0	D 37	50.60.8001		4448	D LL 4448 SOD 80
0	D 38	50.60.8001		4448	D LL 4448 SOD 80
0	D 39	50.60.8001		4448	D LL 4448 SOD 80
0	D 40	50.60.8001		4448	D LL 4448 SOD 80
0	D 41	50.60.8001		4448	D LL 4448 SOD 80
0	D 42	50.60.8001		4448	D LL 4448 SOD 80
0	D 43	50.60.8001		4448	D LL 4448 SOD 80
0	DL 1	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 2	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 3	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 4	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 5	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 6	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 7	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 8	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 9	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 10	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 11	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 12	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 13	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 14	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 15	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 16	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 17	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 18	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 19	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 20	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 21	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 22	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 23	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 24	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 25	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 26	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 27	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 28	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 29	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 30	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 31	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 32	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 33	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 34	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 35	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 36	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 37	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 38	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 39	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 40	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 41	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 42	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 43	50.04.2162		HLMP1540	LED 3mm, grün klar
0	DL 44	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 45	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 46	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 47	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 48	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 49	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 50	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 51	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 52	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 53	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 54	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 55	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 56	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 57	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 58	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 59	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 60	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 61	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 62	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 63	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 64	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 65	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 66	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 67	50.04.2159		HLMP1340	LED 3mm, rot klar
0	DL 68	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 69	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 70	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 71	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 72	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 73	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 74	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 75	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 76	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 77	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 78	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 79	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 80	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 81	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 82	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 83	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 84	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 85	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 86	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 87	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 88	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 89	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 90	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DL 91	50.04.2152		HLMP1440	LED 3mm, gelb klar
0	DS 1	55.01.0164		4*a	SZ , 4*A, DIL
0	IC 1	50.14.2103		HY93C46S	EEPROM 64 * 16, serial
0	IC 2	89.20.2201		600VAC	DC / AC Converter
0	IC 3	1.942.920.21			SW.210 C-HANNEL FRONT BOARD *(5016031, AT89C52)*
0	IC 4	50.62.1244		74HC244	Octal buffer line driver/recei
0	IC 5	50.62.1244		74HC244	Octal buffer line driver/recei
0	IC 6	50.62.1541		74HC541	Octal buffer line driver/recei
0	IC 7	50.62.1951		74HC4051	IC 74 HC 4051
0	IC 8	50.10.0108		LM317L	IC LM 317 LZ,
0	IC 9	50.62.1595		74HC595	IC .. 74 HC 595 ,A
0	IC 10	50.62.1163		74HC163	IC .. 74 HC 163 ,A
0	IC 11	50.62.1595		74HC595	IC .. 74 HC 595 ,A
0	IC 12	50.62.1595		74HC595	IC .. 74 HC 595 ,A
0	IC 13	50.61.8101			IC CDP 68 HC 68 A2M ,A
0	MP 1	1.942.210.11	1 pce		CANNEL FRONT BOARD PCB
0	MP 2	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 3	1.942.210.10	1 pce		NR.ETIKETTE 5X20
0	P 1	54.10.4012		J12p	J ZIF 12p gerade, PCB
0	P 2	54.10.4018		J18p	J ZIF 18p gerade, PCB
0	P 3	54.14.2101		10p	P STECKER 10 P,AU,VR,GERADE
0	P 4	54.99.0337		P4p	P 4p Pin-Row vertical
0	P 5	54.14.2102		16p	P STECKER 16 P,AU,VR,GERADE
0	P 6	54.14.2054		40p	P STECKER 40 P , AU, GERADE
0	P 7	54.14.5520		20p	J PCB-BUCHSE GERADE 20 P
0	P 8	1.942.210.93			LL-CANNEL FRONT BOARD
0	P 9	1.942.210.93			LL-CANNEL FRONT BOARD
0	P 10	1.942.210.93			LL-CANNEL FRONT BOARD
0	P 11	1.942.210.93			LL-CANNEL FRONT BOARD
0	P 12	1.942.210.93			LL-CANNEL FRONT BOARD
0	P 13	1.942.210.93			LL-CANNEL FRONT BOARD
0	Q 1	50.60.1050		BC807-25	Q BC 807-25, PNP SOT 23
0	Q 2	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 3	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 4	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 5	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 6	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 7	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 8	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 9	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 10	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 11	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 12	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 13	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 14	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 15	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 16	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 17	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 18	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 19	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 20	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 21	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 22	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 23	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 24	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 25	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 26	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	Q 27	50.60.0050		BC817-25	Q BC 817-25, NPN SOT 23
0	R 1	57.60.1104		100K	MF, 1%, 0204, E24
0	R 2	57.92.7011		0.2A	POLY- PTC, 60V
0	R 3	57.60.1102		1K	MF, 1%, 0204, E24
0	R 4	57.92.7011		0.2A	POLY- PTC, 60V
0	R 5	57.60.1104		100K	MF, 1%, 0204, E24
0	R 6	57.92.7011		0.2A	POLY- PTC, 60V
0	R 7	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 8	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 9	57.60.1104		100K	MF, 1%, 0204, E24
0	R 10	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 11	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 12	57.60.1104		100K	MF, 1%, 0204, E24
0	R 13	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 14	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 15	57.60.1101		100R	MF, 1%, 0204, E24
0	R 16	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 17	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 18	57.60.1101		100R	MF, 1%, 0204, E24
0	R 19	57.60.1103		10K	MF, 1%, 0204, E24
0	R 20	57.60.1101		100R	MF, 1%, 0204, E24
0	R 21	57.60.1272		2K7	MF, 1%, 0204, E24
0	R 22	57.60.1163		16K	MF, 1%, 0204, E24
0	R 23	57.60.1101		100R	MF, 1%, 0204, E24
0	R 24	57.60.1103		10K	MF, 1%, 0204, E24
0	R 25	57.60.1101		100R	MF, 1%, 0204, E24
0	R 26	57.60.1101		100R	MF, 1%, 0204, E24
0	R 27	57.60.1101		100R	MF, 1%, 0204, E24
0	R 28	57.60.1101		100R	MF, 1%, 0204, E24
0	R 29	57.60.1101		100R	MF, 1%, 0204, E24
0	R 30	57.60.1104		100K	MF, 1%, 0204, E24
0	R 31	57.60.1104		100K	MF, 1%, 0204, E24
0	R 32	57.60.1104		100K	MF, 1%, 0204, E24
0	R 33	57.60.1103		10K	MF, 1%, 0204, E24
0	R 34	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 35	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 36	57.60.1101		100R	MF, 1%, 0204, E24
0	R 37	57.60.1104		100K	MF, 1%, 0204, E24
0	R 38	57.60.1104		100K	MF, 1%, 0204, E24
0	R 39	57.60.1104		100K	MF, 1%, 0204, E24
0	R 40	57.60.1103		10K	MF, 1%, 0204, E24
0	R 41	57.60.1101		100R	MF, 1%, 0204, E24
0	R 42	57.60.1104		100K	MF, 1%, 0204, E24
0	R 43	57.60.1104		100K	MF, 1%, 0204, E24
0	R 44	57.60.1104		100K	MF, 1%, 0204, E24
0	R 45	57.60.1103		10K	MF, 1%, 0204, E24
0	R 46	57.60.1103		10K	MF, 1%, 0204, E24
0	R 47	57.60.1104		100K	MF, 1%, 0204, E24
0	R 48	57.60.1104		100K	MF, 1%, 0204, E24
0	R 49	57.60.1104		100K	MF, 1%, 0204, E24
0	R 50	57.60.1103		10K	MF, 1%, 0204, E24
0	R 51	57.60.1103		10K	MF, 1%, 0204, E24
0	R 52	57.60.1103		10K	MF, 1%, 0204, E24
0	R 53	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 54	57.60.1103		10K	MF, 1%, 0204, E24
0	R 55	57.60.1221		220R	MF, 1%, 0204, E24
0	R 56	57.60.1101		100R	MF, 1%, 0204, E24
0	R 57	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 58	57.60.1221		220R	MF, 1%, 0204, E24
0	R 59	57.60.1101		100R	MF, 1%, 0204, E24
0	R 60	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 61	57.60.1221		220R	MF, 1%, 0204, E24
0	R 62	57.60.1101		100R	MF, 1%, 0204, E24
0	R 63	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 64	57.60.1103		10K	MF, 1%, 0204, E24
0	R 65	57.60.1221		220R	MF, 1%, 0204, E24
0	R 66	57.60.1101		100R	MF, 1%, 0204, E24
0	R 67	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 68	57.60.1221		220R	MF, 1%, 0204, E24
0	R 69	57.60.1101		100R	MF, 1%, 0204, E24
0	R 70	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 71	57.60.1221		220R	MF, 1%, 0204, E24
0	R 72	57.60.1101		100R	MF, 1%, 0204, E24
0	R 73	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 74	57.60.1103		10K	MF, 1%, 0204, E24
0	R 75	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 76	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 77	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 78	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 79	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 80	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 81	57.60.1101		100R	MF, 1%, 0204, E24
0	R 82	57.60.1101		100R	MF, 1%, 0204, E24
0	R 83	57.60.1101		100R	MF, 1%, 0204, E24
0	R 84	57.60.1101		100R	MF, 1%, 0204, E24
0	R 85	57.60.1101		100R	MF, 1%, 0204, E24
0	R 86	57.60.1101		100R	MF, 1%, 0204, E24
0	R 87	57.60.1101		100R	MF, 1%, 0204, E24
0	R 88	57.60.1101		100R	MF, 1%, 0204, E24
0	R 89	57.60.1101		100R	MF, 1%, 0204, E24
0	R 90	57.60.1101		100R	MF, 1%, 0204, E24
0	R 91	57.60.1101		100R	MF, 1%, 0204, E24
0	R 92	57.60.1101		100R	MF, 1%, 0204, E24
0	R 93	57.60.1221		220R	MF, 1%, 0204, E24
0	R 94	57.60.1221		220R	MF, 1%, 0204, E24
0	R 95	57.60.1221		220R	MF, 1%, 0204, E24
0	R 96	57.60.1221		220R	MF, 1%, 0204, E24
0	R 97	57.60.1221		220R	MF, 1%, 0204, E24
0	R 98	57.60.1221		220R	MF, 1%, 0204, E24
0	R 99	57.11.3000		0R0	MF, 0207
0	R 100	57.92.7015		1.1A	POLY- PTC, 50V
0	R 101	57.60.1101		100R	MF, 1%, 0204, E24
0	R 102	57.60.1121		120R	MF, 1%, 0204, E24
0	R 103	57.60.1331		330R	MF, 1%, 0204, E24
0	R 104	57.60.1102		1K	MF, 1%, 0204, E24
0	R 105	57.60.1102		1K	MF, 1%, 0204, E24
0	R 106	57.60.1331		330R	MF, 1%, 0204, E24
0	R 107	57.60.1101		100R	MF, 1%, 0204, E24
0	R 108	57.60.1101		100R	MF, 1%, 0204, E24
0	R 109	57.60.1101		100R	MF, 1%, 0204, E24
0	R 110	57.60.1101		100R	MF, 1%, 0204, E24
0	R 111	57.60.1102		1K	MF, 1%, 0204, E24
0	R 112	57.60.1331		330R	MF, 1%, 0204, E24
0	R 113	57.60.1102		1K	MF, 1%, 0204, E24
0	R 114	57.60.1102		1K	MF, 1%, 0204, E24
0	R 115	57.60.1102		1K	MF, 1%, 0204, E24
0	R 116	57.60.1102		1K	MF, 1%, 0204, E24
0	R 117	57.60.1102		1K	MF, 1%, 0204, E24
0	R 118	57.60.1102		1K	MF, 1%, 0204, E24
0	R 119	57.92.7015		1.1A	POLY- PTC, 50V
0	R 120	57.92.7015		1.1A	POLY- PTC, 50V
0	R 121	57.60.1472		4K7	MF, 1%, 0204, E24

Channel Front Board 1.942.210.22

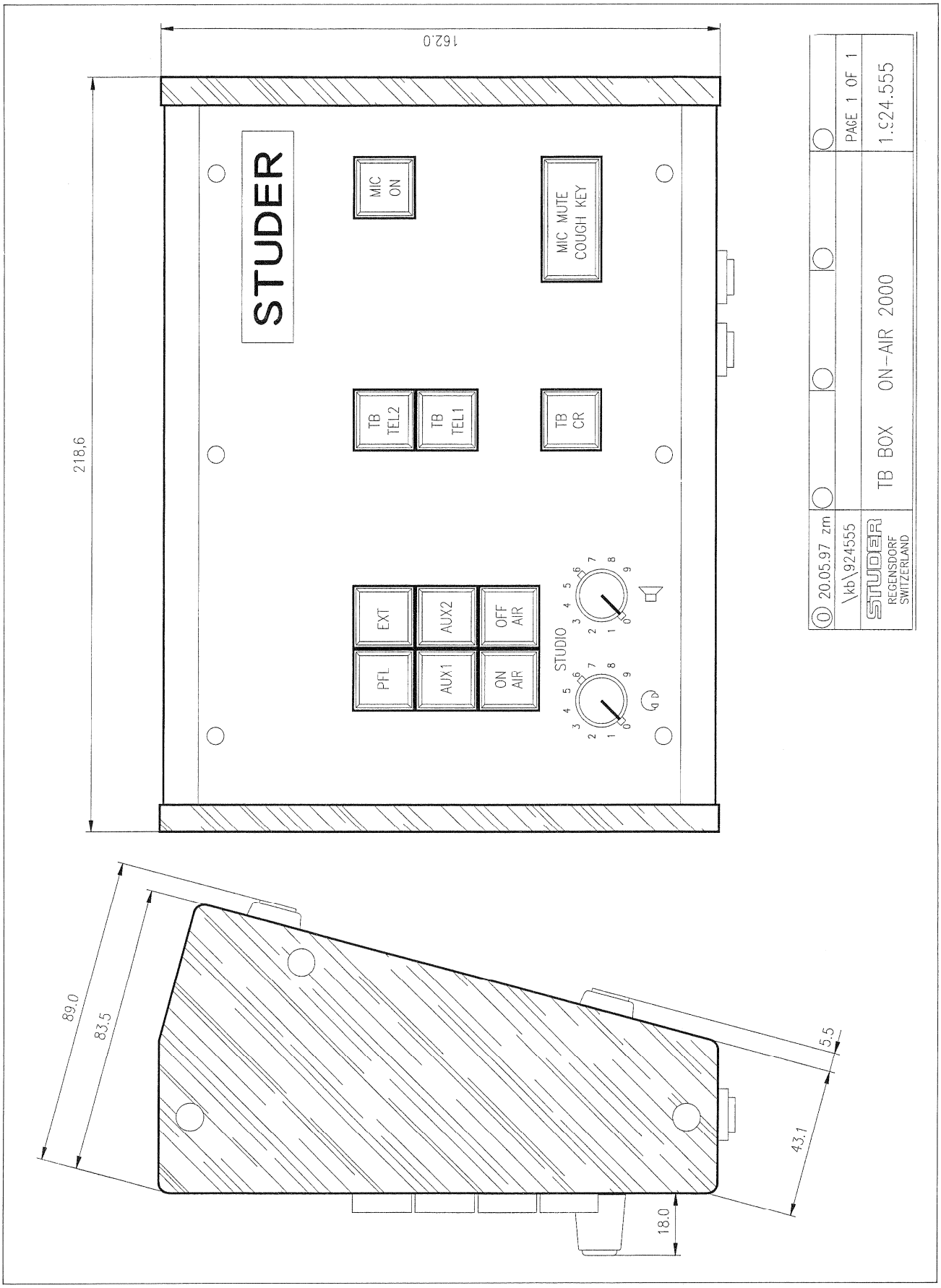
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 122	57.60.1103		10K	MF, 1%, 0204, E24
0	R 123	57.60.1101		100R	MF, 1%, 0204, E24
0	R 124	57.60.1101		100R	MF, 1%, 0204, E24
0	R 125	57.60.1101		100R	MF, 1%, 0204, E24
0	R 126	57.60.1101		100R	MF, 1%, 0204, E24
0	R 127	57.60.1101		100R	MF, 1%, 0204, E24
0	R 128	57.60.1101		100R	MF, 1%, 0204, E24
0	R 129	57.60.1103		10K	MF, 1%, 0204, E24
0	R 130	57.60.1101		100R	MF, 1%, 0204, E24
0	R 131	57.60.1101		100R	MF, 1%, 0204, E24
0	R 132	57.60.1101		100R	MF, 1%, 0204, E24
0	R 133	57.60.1101		100R	MF, 1%, 0204, E24
0	R 134	57.60.1101		100R	MF, 1%, 0204, E24
0	R 135	57.60.1101		100R	MF, 1%, 0204, E24
0	R 136	57.60.1221		220R	MF, 1%, 0204, E24
0	R 137	57.60.1221		220R	MF, 1%, 0204, E24
0	R 138	57.60.1221		220R	MF, 1%, 0204, E24
0	R 139	57.60.1221		220R	MF, 1%, 0204, E24
0	R 140	57.60.1221		220R	MF, 1%, 0204, E24
0	R 141	57.60.1221		220R	MF, 1%, 0204, E24
0	R 142	57.60.1102		1K	MF, 1%, 0204, E24
0	R 143	57.60.1102		1K	MF, 1%, 0204, E24
0	R 144	57.60.1102		1K	MF, 1%, 0204, E24
0	R 145	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 146	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 147	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 148	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 149	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 150	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 151	57.60.1103		10K	MF, 1%, 0204, E24
0	R 152	57.60.1103		10K	MF, 1%, 0204, E24
0	R 153	57.60.1103		10K	MF, 1%, 0204, E24
0	R 154	57.60.1103		10K	MF, 1%, 0204, E24
0	R 155	57.60.1103		10K	MF, 1%, 0204, E24
0	R 156	57.60.1103		10K	MF, 1%, 0204, E24
0	R 157	57.60.1101		100R	MF, 1%, 0204, E24
0	R 158	57.60.1101		100R	MF, 1%, 0204, E24
0	R 159	57.60.1101		100R	MF, 1%, 0204, E24
0	R 160	57.60.1101		100R	MF, 1%, 0204, E24
0	R 161	57.60.1101		100R	MF, 1%, 0204, E24
0	R 162	57.60.1101		100R	MF, 1%, 0204, E24
0	R 163	57.60.1101		100R	MF, 1%, 0204, E24
0	R 164	57.60.1101		100R	MF, 1%, 0204, E24
0	R 165	57.60.1101		100R	MF, 1%, 0204, E24
0	R 166	57.60.1101		100R	MF, 1%, 0204, E24
0	R 167	57.60.1101		100R	MF, 1%, 0204, E24
0	R 168	57.60.1101		100R	MF, 1%, 0204, E24
0	R 169	57.60.1221		220R	MF, 1%, 0204, E24
0	R 170	57.60.1221		220R	MF, 1%, 0204, E24
0	R 171	57.60.1221		220R	MF, 1%, 0204, E24
0	R 172	57.60.1221		220R	MF, 1%, 0204, E24
0	R 173	57.60.1221		220R	MF, 1%, 0204, E24
0	R 174	57.60.1221		220R	MF, 1%, 0204, E24
0	R 175	57.60.1101		100R	MF, 1%, 0204, E24
0	R 176	57.60.1102		1K	MF, 1%, 0204, E24
0	R 177	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 178	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 179	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 180	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 181	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 182	57.60.1472		4K7	MF, 1%, 0204, E24
0	R 183	57.60.1102		1K	MF, 1%, 0204, E24
0	R 184	57.60.1102		1K	MF, 1%, 0204, E24
0	R 185	57.60.1102		1K	MF, 1%, 0204, E24
0	R 186	57.60.1102		1K	MF, 1%, 0204, E24
0	R 187	57.60.1102		1K	MF, 1%, 0204, E24
0	RA 1	58.20.7101		5k	1*R, lin
0	S 1	1.942.020.07			KONTAKTMATTE,6 TASTEN,6 ANZ
0	S 2	1.942.020.08			KONTAKTMATTE,12 TASTEN
0	XIC 1	53.03.0166		8p	DIL 0.3", löt, gerade
0	XIC 3	53.03.0172		40p	DIL 0.6", löt, gerade
0	XY 1	89.01.1499			QUARZ - ISOLIERPLATTE
0	Y 1	89.01.1016		22.1184MHz	Y 22.1184 MHz, HC 49/U

End of List

Comments

CONTENTS PART FIVE – ACCESSORIES

TB Box 1.924.555.00



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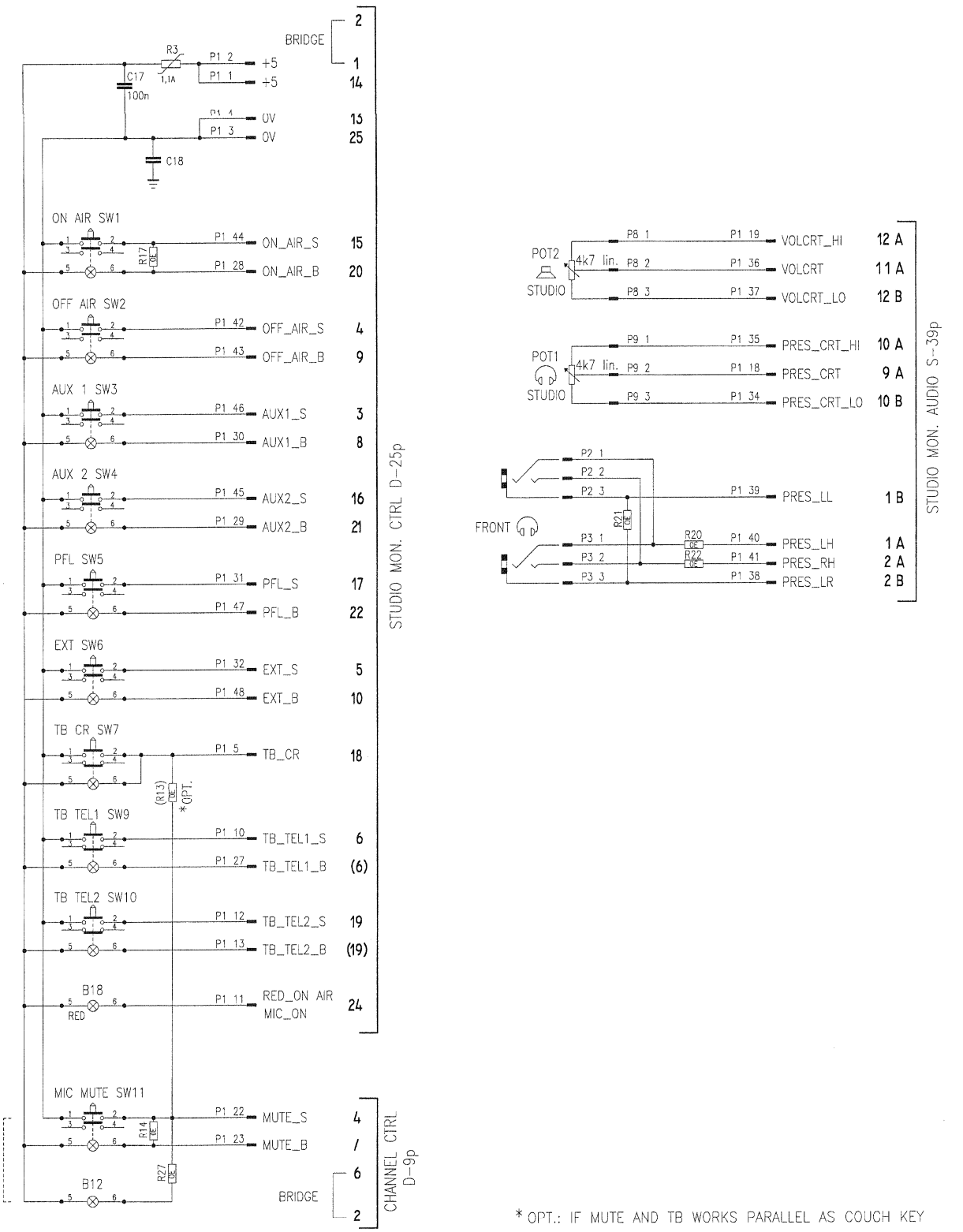
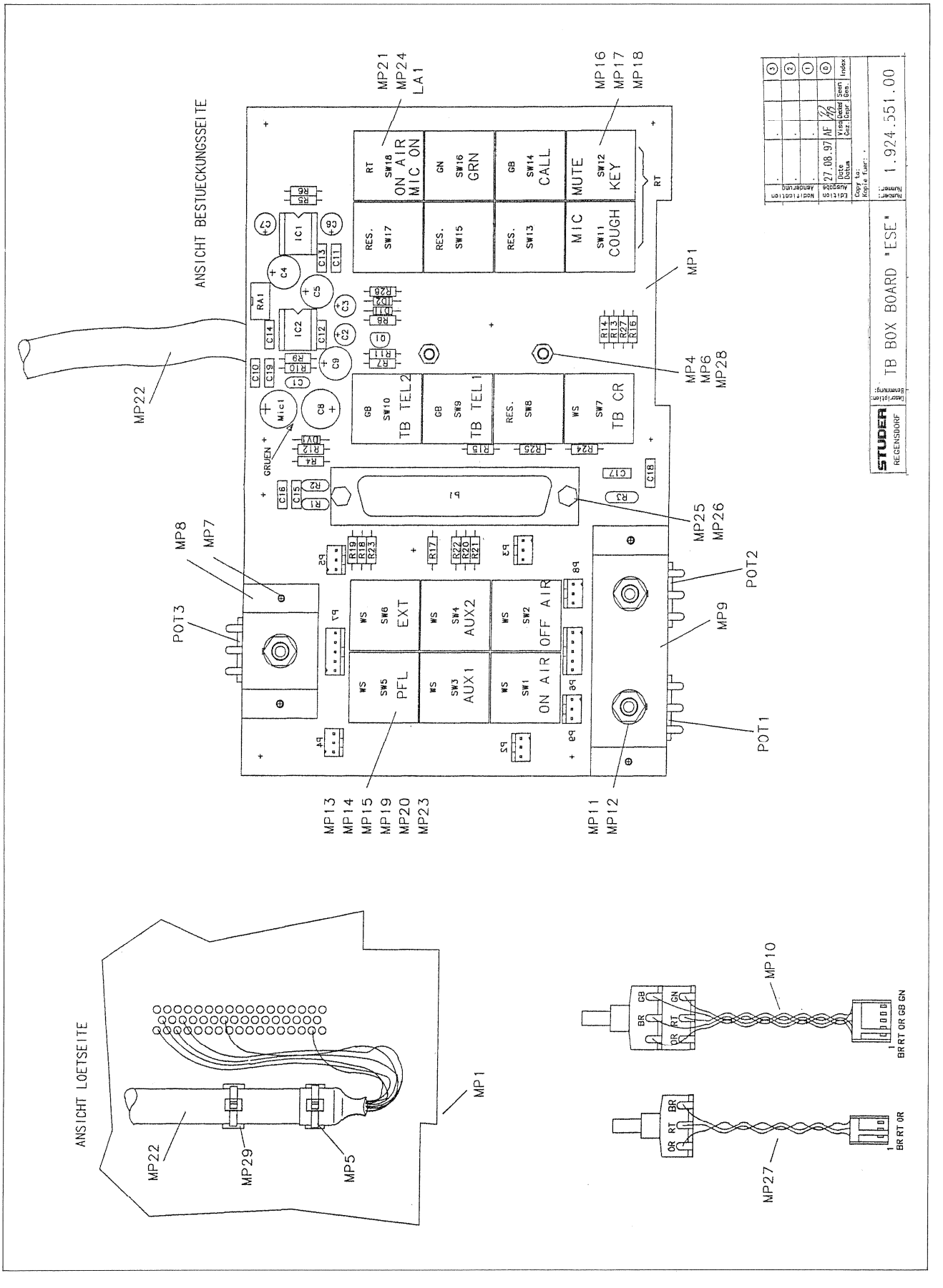


⓪ 26.8.97 zm	① 24.10.97 zm	② 10.3.98 zm	○
s924555a			
STUDER REGENSDORF SWITZERLAND	TB BOX ON-AIR 2000		1.924.555.00

TB Box Board 1.924.551.00



TB Box Board 1.924.551.00

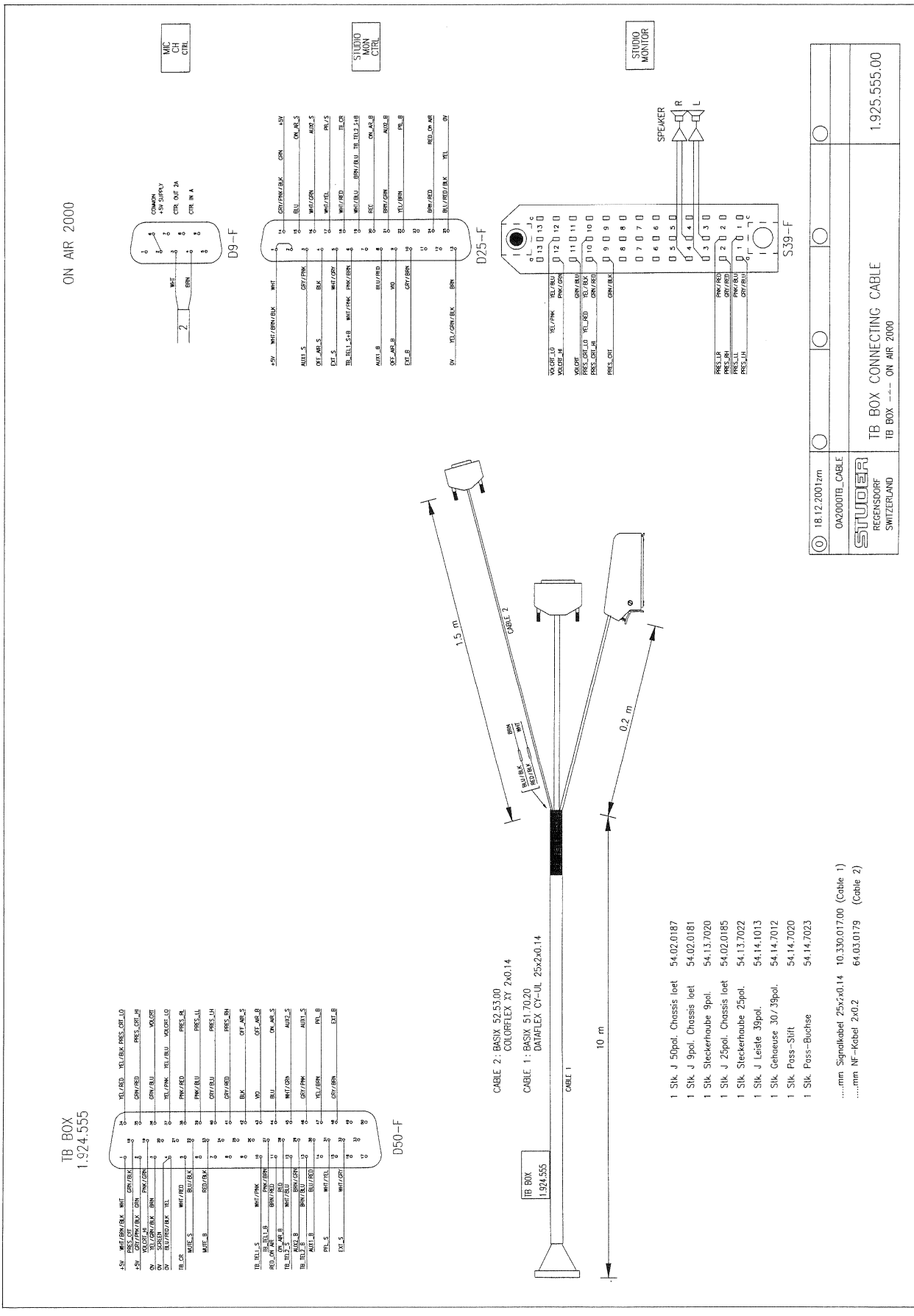
Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.34.4271		270p	CER 63V, 5%, N750
0	C 2	59.22.8109		1u0	EL 50V 20% RM5
0	C 3	59.22.8109		1u0	EL 50V 20% RM5
0	C 4	59.22.6470		47u	EL 40V 20% RM5
0	C 5	59.22.6470		47u	EL 40V 20% RM5
0	C 6	59.22.6100		10u	EL 35V 20% RM5
0	C 7	59.22.6100		10u	EL 35V 20% RM5
0	C 8	59.22.5221		220u	EL 25V 20% RM5
0	C 9	59.22.5101		100u	EL 25V 20% RM5
0	C 10	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 11	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 12	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 13	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 14	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 15	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 16	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 17	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 18	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 19	59.06.0104		100n	PETP, 63V, 10%, RM5
0	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 2	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 3	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	DV 1	50.04.1118		6V2	Zener, 5%, 0.5W, DO-35
0	IC 1	50.09.0124		2142	Audio balanced line driver
0	IC 2	50.05.0244		NE5534AN	IC 5534 ANB, NE 5534 SAN, ,A
0	LA 1	51.02.0154	6 pcs	5V	Bulb 0.2W, BI PIN T 1
0	Mic 1	89.01.3450		Mic	Elektret-Kapsel mit Stiften
0	MP 1	1.924.551.11	1 pce		TB-BOX PCB
0	MP 2	1.924.551.04	1 pce		NR. ETIKETTE 5x20
0	MP 3	43.01.0108		Label	ESE-WARNSCHILD
0	MP 4	21.53.0354	2 pcs	M3*6	Z-Schraube Inbus Zn gb chr
0	MP 5	35.03.0109	2 pcs	2.5*92	Kabelbinder
0	MP 6	24.16.1030	2 pcs	3.2/5.5	Rippenscheibe
0	MP 7	21.53.9354	4 pcs	M3*6	Z-Schraube Inbus-Ripp Zn gb ch
0	MP 8	1.924.550.01	1 pce		BUEGEL
0	MP 9	1.924.550.02	1 pce		BUEGEL
0	MP 10	1.924.551.93	2 pcs		LL-TB BOX 928
0	MP 11	22.99.0137	3 pcs		6-KT MUTTER, M 7 *0.75 PREH
0	MP 12	23.99.0122	3 pcs		U-SCHEIBE PREH D 7.1/12.0*0.5
0	MP 13	55.15.0201	2 pcs		MP DRUCKHAUBENPLATTE KONKAV
0	MP 14	55.15.0221	4 pcs		MP TEXTPLATTE WS
0	MP 15	55.15.0228	4 pcs		MP DRUCKHAUBENRAHMEN
0	MP 16	55.15.0251	1 pce		MP DRUCKPLATTE DOPPEL KONKAV
0	MP 17	55.15.0271	1 pce		MP TEXTPLATTE DOPPEL WS
0	MP 18	55.15.0252	1 pce		MP FARBFOLIE ROT DOPPEL
0	MP 19	55.15.0214	1 pce		MP FARBFOLIE GELB
0	MP 20	55.15.0215	1 pce		MP FARBFOLIE GRUEN
0	MP 21	55.15.0212	1 pce		MP FARBFOLIE ROT
0	MP 22	1.924.552.00	1 pce		CABLE FOR TB BOX 928
0	MP 23	1.924.550.06	1 pce		TASTENBESCHRIFTUNG
0	MP 24	55.15.0202	2 pcs		MP DRUCKHAUBENPLATTE FLACH
0	MP 25	not used	2 pcs		VERIEGELUNGS-GEWINDEBOLZEN
0	MP 26	not used	2 pcs	3*11	NIETMUTTER, M3*11, GEWL. 10.3
0	MP 27	1.924.556.93	1 pce		LL-TB BOX ON AIR
0	MP 28	22.01.8030	2 pcs	M3	6kt-Mutter 0.8d St Zn gb
0	MP 29	35.03.0124	2 pcs		SOCKEL ZU BEFESTIGUNGSRIEMEN
0	P 1	not used		50p	D-TYPE, PCB
0	P 2	54.12.0703		3p	Stecker gerade PCB
0	P 3	54.12.0703		3p	Stecker gerade PCB
0	P 4	54.12.0703		3p	Stecker gerade PCB
0	P 5	54.12.0703		3p	Stecker gerade PCB
0	P 6	54.12.0705		5p	Stecker gerade PCB
0	P 7	54.12.0705		5p	Stecker gerade PCB
0	P 8	54.12.0703		3p	Stecker gerade PCB
0	P 9	not used		3p	Stecker gerade PCB
0	POT 1	1.169.200.48			POT. 2*1K +LOG.
0	POT 2	1.169.200.32			POT. 4K7 LIN.
0	POT 3	1.169.200.48			POT. 2*1K +LOG.
1	Q 1	50.03.0215		2SK170	2 SK 170
0	R 1	57.92.7011		0.2A	PTC 60V
0	R 2	57.92.7011		0.2A	PTC 60V
0	R 3	57.92.7051		1.1A	PTC 30V
0	R 4	57.11.3472		4k7	MF, 1%, 0207
0	R 5	57.11.3332		3k3	MF, 1%, 0207
0	R 6	57.11.3332		3k3	MF, 1%, 0207
0	R 7	57.11.3330		33R	MF, 1%, 0207
0	R 8	57.11.3105		1M0	MF, 1%, 0207
0	R 9	57.11.3104		100k	MF, 1%, 0207
0	R 10	57.11.3103		10k	MF, 1%, 0207
0	R 11	57.11.3103		10k	MF, 1%, 0207
0	R 12	57.11.3102		1k0	MF, 1%, 0207
0	R 14	57.11.3000		0R0	MF, 0207
0	R 15	not used		0R0	MF, 0207
0	R 16	57.11.3000		0R0	MF, 0207
0	R 17	not used		0R0	MF, 0207
0	R 18	not used		0R0	MF, 0207
0	R 19	not used		0R0	MF, 0207
0	R 20	not used		0R0	MF, 0207
0	R 21	57.11.3000		0R0	MF, 0207
0	R 22	not used		0R0	MF, 0207
0	R 23	57.11.3000		0R0	MF, 0207
0	R 24	57.11.3000		0R0	MF, 0207
0	R 25	not used		0R0	MF, 0207
0	R 26	57.11.3105		1M0	MF, 1%, 0207
0	R 27	57.11.3000		0R0	MF, 0207
0	RA 1	58.01.9502		5k	Cermet, 10%, 0.5W, vertical
0	SW 1	not used		1*a	Taste, impuls
0	SW 2	not used		1*a	Taste, impuls
0	SW 3	not used		1*a	Taste, impuls
0	SW 4	not used		1*a	Taste, impuls
0	SW 5	not used		1*a	Taste, impuls
0	SW 6	not used		1*a	Taste, impuls
0	SW 7	55.15.0234		1*a/1*r	Taste, impuls
0	SW 8	not used		1*a/1*r	Taste, impuls
0	SW 9	not used		1*a/1*r	Taste, impuls
0	SW 10	not used		1*a/1*r	Taste, impuls
0	SW 11	55.15.0281			S DOPPELTASTE 2*A, IMPULS GR
0	SW 12	not used		1*a	Taste, impuls
0	SW 13	not used		1*a	Taste, impuls
0	SW 14	55.15.0231		1*a	Taste, impuls
0	SW 15	not used		1*a	Taste, impuls
0	SW 16	55.15.0249		EAO	MP EAO - MELDELEUCHTE
0	SW 17	not used		1*a	Taste, impuls
0	SW 18	55.15.0249		EAO	MP EAO - MELDELEUCHTE
0	XIC 1	53.03.0166		8p	DIL 0.3", löt, gerade
0	XIC 2	53.03.0166		8p	DIL 0.3", löt, gerade

End of List

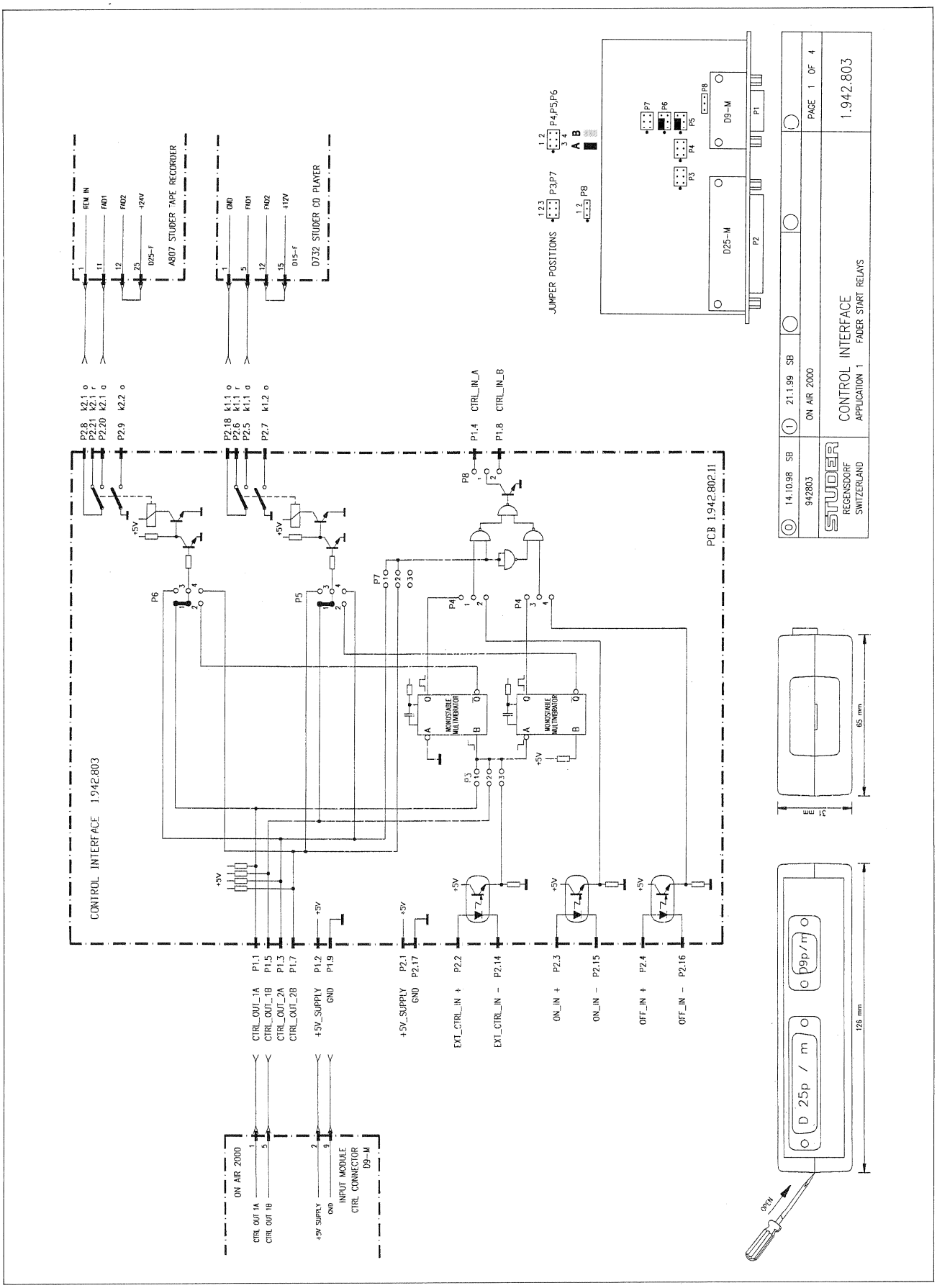
Comments

(1) 05.06.1998 Q1 50.03.0215 Component has been changed

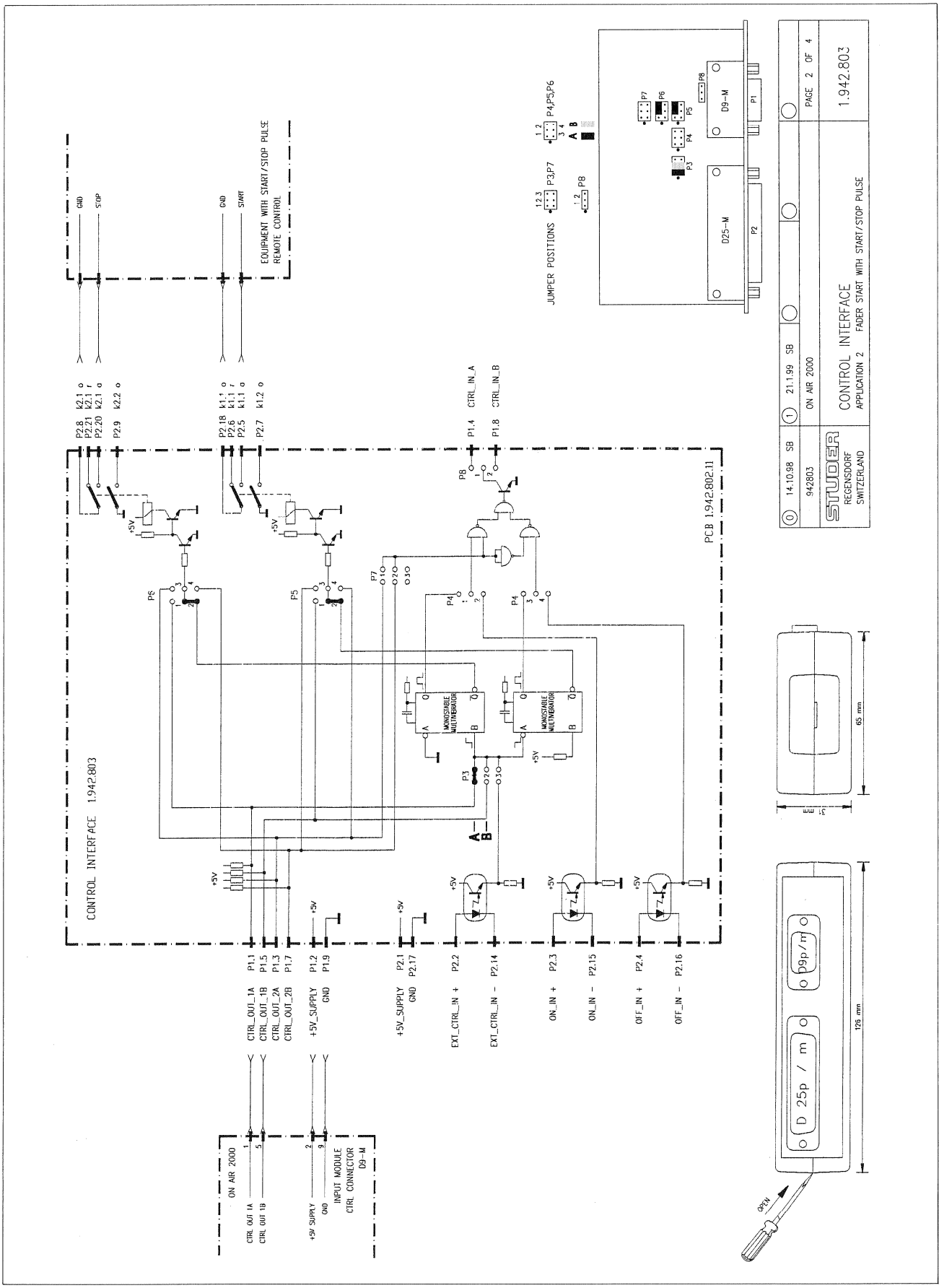
Connecting Cable to above 1.925.555.00



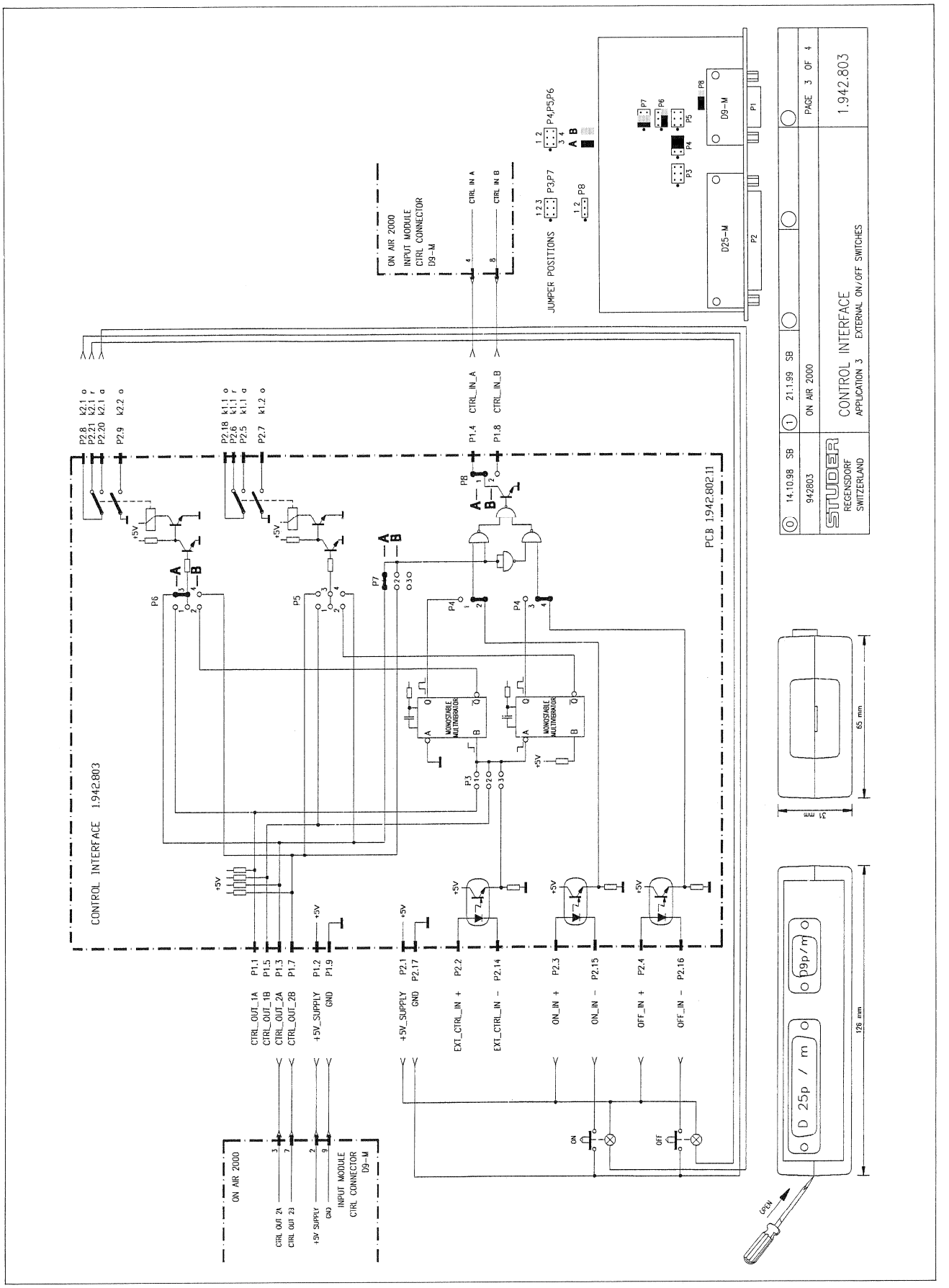
Control Interface 1.942.803



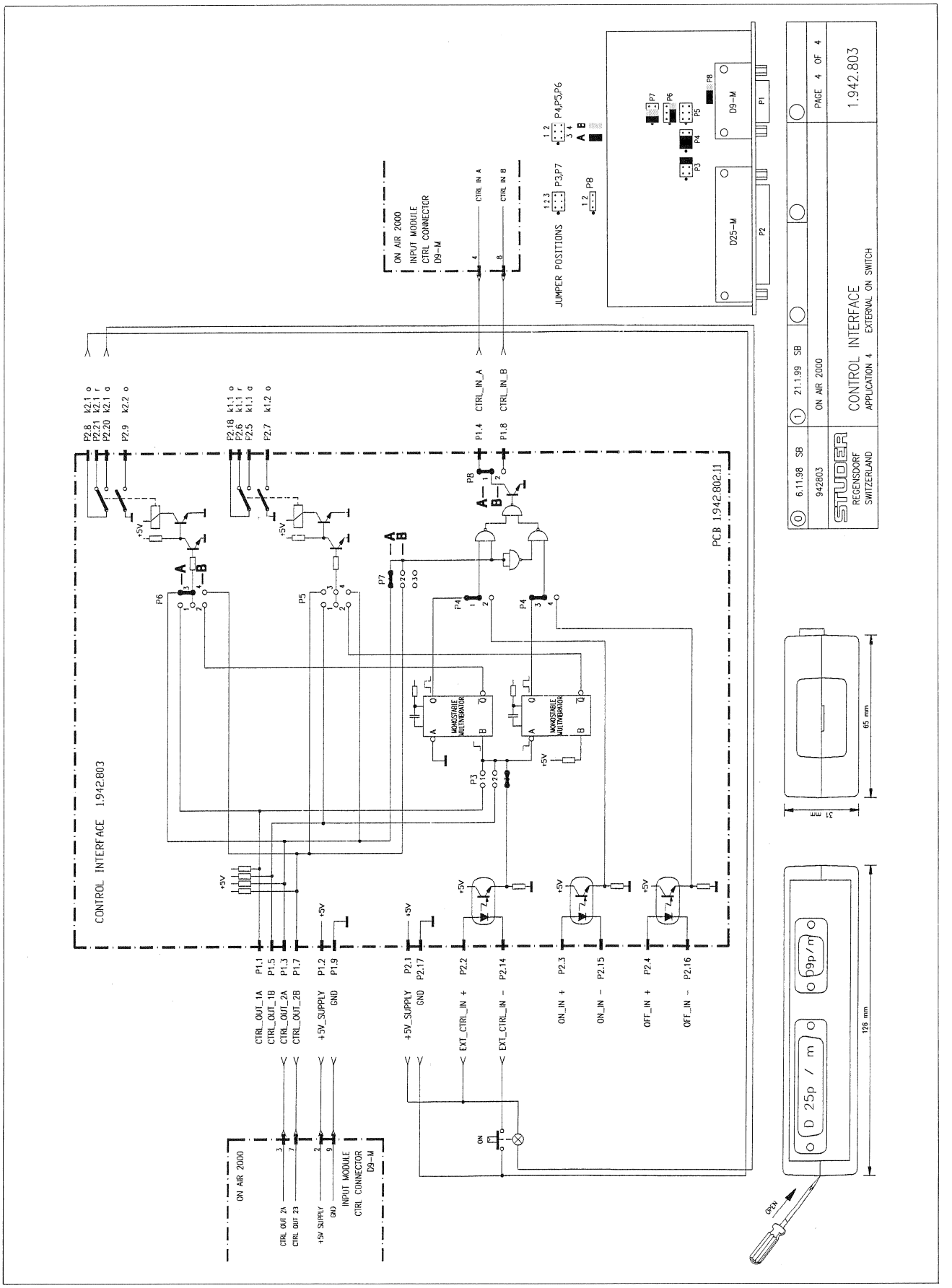
Control Interface 1.942.803



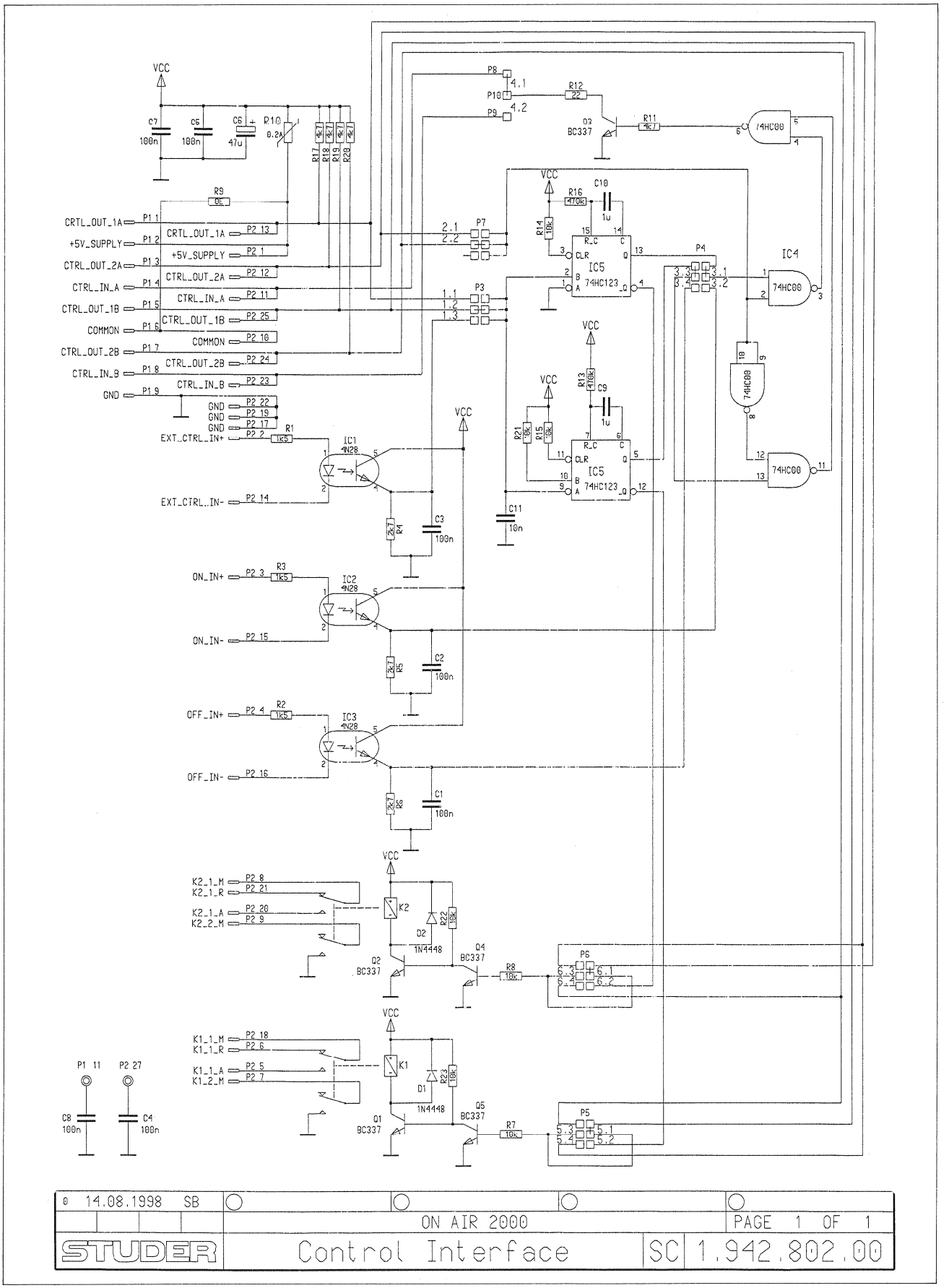
Control Interface 1.942.803



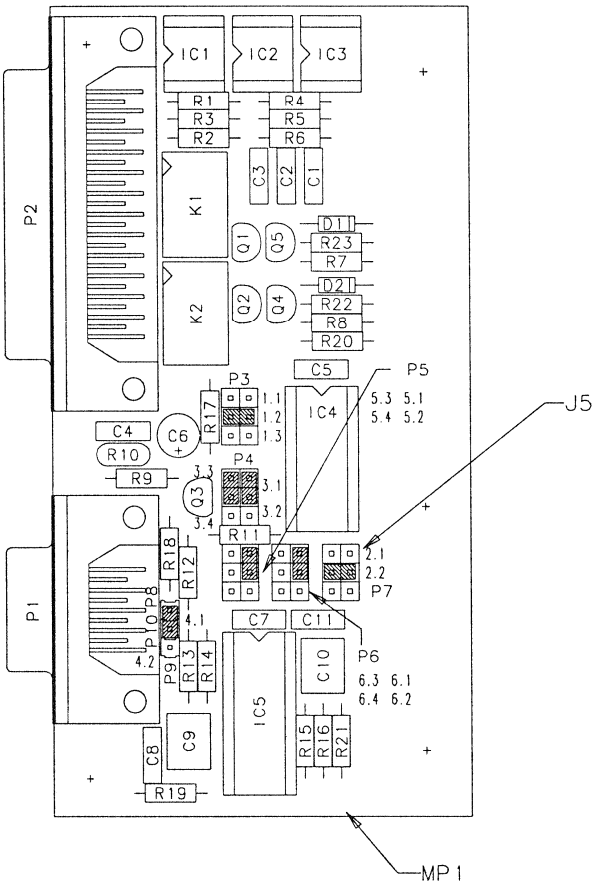
Control Interface 1.942.803



Control Interface 1.942.803.00 (Option)



Control Interface 1.942.803.00 (Option)



Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
		not used			
0	C 1	not used		100n	PETP, 63V, 10%, RM5
0	C 2	not used		100n	PETP, 63V, 10%, RM5
0	C 3	not used		100n	PETP, 63V, 10%, RM5
0	C 4	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 5	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 6	59.22.3470		47u	EL 10V, 20%, RM5
0	C 7	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 8	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 9	59.06.0105		1u0	PETP, 50V, 10%, RM5
0	C 10	59.06.0105		1u0	PETP, 50V, 10%, RM5
0	C 11	59.06.0103		10n	PETP, 63V, 10%, RM5
0	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 2	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	IC 1	50.99.0126		4N26	Optocoupler
0	IC 2	50.99.0126		4N26	Optocoupler
0	IC 3	50.99.0126		4N26	Optocoupler
0	IC 4	50.17.1000		74HC00	IC ... 74 HC 00 ., ,A
0	IC 5	50.17.1123		74HC123	IC ... 74 HC 123 ., ,A
0	J 5	54.01.0021	7 pcs	Jumper	0.63 * 0.63mm
0	K 1	56.04.0198		2u	5V 125V 2A Ag/Au
0	K 2	56.04.0198		2u	5V 125V 2A Ag/Au
0	MP 1	1.942.802.11	1 pce		CONTROLL INTERFACE PCB
0	MP 2	1.942.802.10	1 pce		NR.-ETIKETTE
0	MP 3	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	P 1	54.13.0076		9p	D-Sub, PCB, Winkel
0	P 2	54.13.0078		25p	D-Sub, PCB, Winkel
0	P 3	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	P 4	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	P 5	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	P 6	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	P 7	54.11.0136		2*3p	Pin 0.63*0.63, RM2.54
0	P 8	54.01.0020		1p	Pin 0.63*0.63
0	P 9	54.01.0020		1p	Pin 0.63*0.63
0	P 10	54.01.0020		1p	Pin 0.63*0.63
0	Q 1	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 2	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 3	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 4	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 5	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.11.3152		1k5	MF, 1%, 0207
0	R 2	57.11.3152		1k5	MF, 1%, 0207
0	R 3	57.11.3152		1k5	MF, 1%, 0207
0	R 4	57.11.3272		2k7	MF, 1%, 0207
0	R 5	57.11.3272		2k7	MF, 1%, 0207
0	R 6	57.11.3272		2k7	MF, 1%, 0207
0	R 7	57.11.3103		10k	MF, 1%, 0207
0	R 8	57.11.3103		10k	MF, 1%, 0207
0	R 9	57.11.3000		0R0	MF, 0207
0	R 10	57.92.7011		0.2A	POLY- PTC, 60V
0	R 11	57.11.3472		4k7	MF, 1%, 0207
0	R 12	57.11.3220		22R	MF, 1%, 0207
0	R 13	57.11.3474		470k	MF, 1%, 0207
0	R 14	57.11.3103		10k	MF, 1%, 0207
0	R 15	57.11.3103		10k	MF, 1%, 0207
0	R 16	57.11.3474		470k	MF, 1%, 0207
0	R 17	57.11.3472		4k7	MF, 1%, 0207
0	R 18	57.11.3472		4k7	MF, 1%, 0207
0	R 19	57.11.3472		4k7	MF, 1%, 0207
0	R 20	57.11.3472		4k7	MF, 1%, 0207
0	R 21	57.11.3103		10k	MF, 1%, 0207
0	R 22	57.11.3103		10k	MF, 1%, 0207
0	R 23	57.11.3103		10k	MF, 1%, 0207
0	XIC 1	53.03.0164		6p	DIL 0.3", löt, gerade
0	XIC 2	53.03.0164		6p	DIL 0.3", löt, gerade
0	XIC 3	53.03.0164		6p	DIL 0.3", löt, gerade

End of List

Comments:

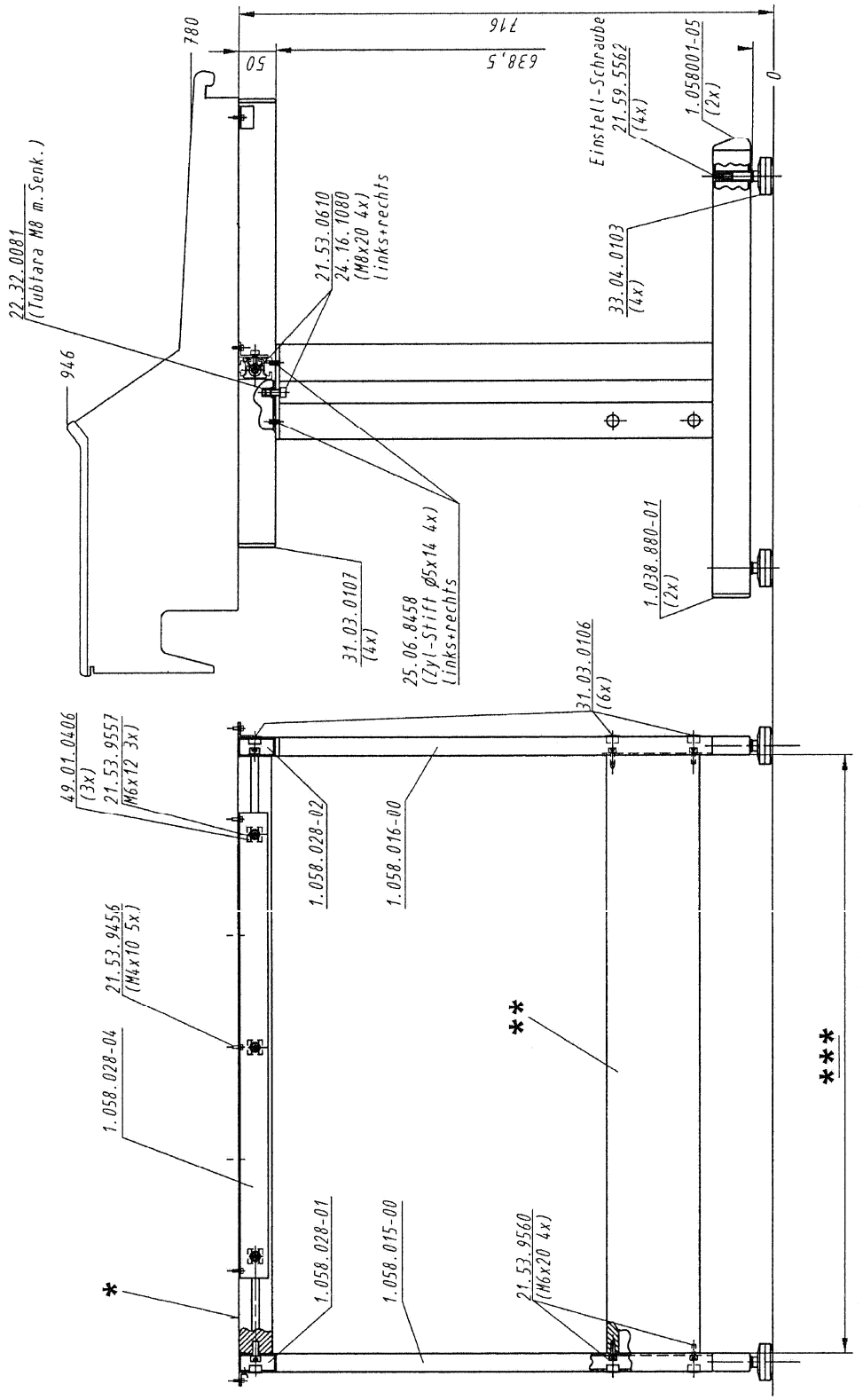
Modification Aenderung						3
						2
						1
Edition Ausgabe	26.08.98	AF				0
	Date Datum	Visa Gez.	Checked Gepr.	Scan Ges.	Index	

Copy to: Kopie fuer: -

STUDER REGENSDORF	Description: Benennung: CONTROL INTERFACE	Number: Nummer: 1.942.802.00	

Metal Stands for On-Air 2000 Mixing Consoles

(Dimensions in mm)



Console Size	Stand Order No.	*	**	*** [mm]
6-Channel	1.058.028.06	1.058.028.08	1.058.028.07	672
12-Channel	1.058.028.12	1.058.028.14	1.058.028.13	976
18-Channel	1.058.028.18	1.058.028.20	1.058.028.19	1262
24-Channel	1.058.028.24	1.058.028.26	1.058.028.25	1557

ON-AIR 2000M2, UPGRADE TO SOFTWARE V4.0

General

For safety information and conformity declarations, please refer to the Safety section at the beginning of the On-Air 2000M2 Operating manual (contained in this kit).

For unpacking, inspection, and general installation information, please refer to chapter 1 of the On-Air 2000M2 Operating manual.

Warning: *Software V4.0 requires compatible Control Front Board I firmware. If software V4.0 is loaded without the corresponding firmware, the console will be blocked and cannot be used. In this case, either the former main software has to be re-loaded, the new Control Front Board I firmware must be installed, or the Control Front Board has to be replaced.*

Studer will not take any responsibility nor accept warranty claims for not following this procedure.

Contents of the Kit

(Order No. 1.942.896.23)

PC-Card with software V4.0; µP chip with compatible firmware (IC1 on Control Front Board I); hardware and software release labels; On-Air 2000M2 Operating manual V4.0; Installation Instructions (this sheet).

Basic Requirements

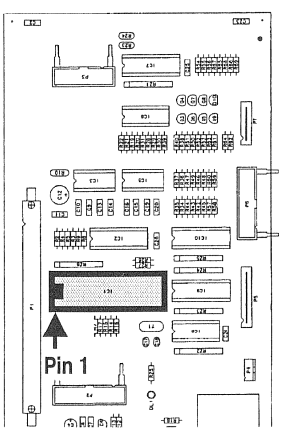
Important: *Please note that the software upgrade to V4.0 is only possible from an existing version V3.0 or later. Should your console be equipped with an earlier software version (i.e. below V3.0), you must upgrade to V3.0 first due to a different memory structure and a hardware modification on the Controller Board. Please contact your distributor.*

If your console should still be equipped with software V1.0, the DSP Board must be upgraded as well. Please contact your distributor.

If your console should be equipped with an early Power Supply PCB 1.942.105.00, the smoothing capacitors C11 and C16 (22'000 µF) must be modified to 33'000 µF (order no. 59.29.0323). Otherwise, after powering the console off and on again, an error message "Current Console State corrupted" could be displayed. In this case, normally the console can be operated as usual, without restrictions, but configuration changes might get lost from time to time.

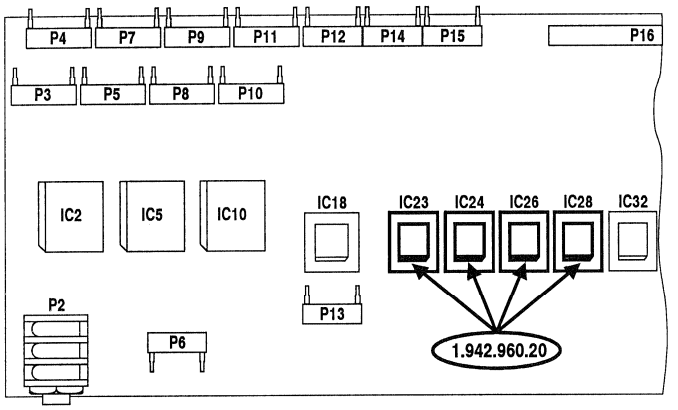
Please make sure that the console data are backed-up prior to any modification as the internal data structure is different. Note the current customer code setting (chapter 12.2.12 of the On-Air 2000M2 Operating manual).

Procedure



1. For data backup, perform a console dump according to chapter 12.2.8 of the On-Air 2000M2 Operating manual (i.e., copy the console configuration data, the global and private snapshots, and the global and private mic settings to a PC-Card).
2. Install the new processor chip on the Control Front Board I:
   - Switch the console OFF and unplug the mains cable.
   - Remove the upper left part of the console's center section (the one with the center touch screen).
   - Replace IC1 on the Control Front Board I (1.942.110); this PCB is located behind the Touch Screen. *Please observe the correct orientation of IC1 (see left), and consider the precautions for handling components sensitive to electrostatic discharge (refer to the Safety section at the beginning of the On-Air 2000M2 Operating manual).*
   - Replace the hardware release label "1.942.110.xx" by "1.942.610.20".
   - Re-assemble the console, connect it to the mains, and switch it ON.

3. Load the new software from the PC-Card contained in the kit, according to chapter 13 of the On-Air 2000M2 Operating manual; re-enter the customer code you had noted before, then re-boot the console.
4. Switch the console OFF again and unplug the mains cable.



Controller Board 1.942.100.xx ⇨ 1.942.601.20

5. Remove the center desk cover (in front of the center screen), locate the Controller Board 1.942.100.xx, and replace its hardware release label by "1.942.601.20". Replace the software release labels on IC23, IC24, IC26, and IC28, as shown at the left.
6. Re-assemble the console, connect it to the mains again, and switch it ON.
7. Re-load the data dumped to your PC-Card before.
8. Configure the new features described in the On-Air 2000M2 Operating manual (e.g. channel routing, new customer codes).
9. And now, have a good time with your upgraded console!

Optional Input Module Extension Box

Number of Faders	Max. Number of Input Module Extension Boxes
6	3
12	2
18	1
24	0

If more input modules than faders are required for a Studer On-Air 2000M2 Mixing Console, the Input Module Extension Box is used to house and connect up to six additional input modules.
The maximum number of all input modules for an On-Air 2000M2 is 24 (i.e., up to three additional Input Module Extension Boxes for a 6-fader console, up to two Input Module Extension Boxes for a 12-fader console, and one Input Module Extension Box for an 18-fader console).
The maximum number of input signals that can be processed is 64, which means that a console with 24 input modules can contain no more than 4 hex input modules.
The only difference between the Input Module Extension Box and the console itself is that the Input Module Extension Box is equipped with a PCB containing the bus termination resistors instead of a fader assembly.
An Input Module Extension Box is shipped with all the hardware required for connecting it to the console (cables, internal wiring, connection panels, termination PCB, installation instructions).
Please note that the Input Module Extension Box as well as additional input modules must be ordered separately.

Ordering Information

Assembly	Order No.
Input Module Extension Box, for 6 additional Input Modules	1.942.031.xx
Mic Input Module	1.942.220.xx
Analog Line Input Module, transformer-balanced	1.942.230.xx
Analog Line Input Module, electronically balanced	1.942.232.xx
Digital Input Module	1.942.240.xx
Analog Hex Input Module, transformer-balanced	1.942.245.xx
Digital Hex Input Module	1.942.250.xx

STUDER
professional audio equipment

External Supply Unit

for Studer OnAir 2000 Mixing Console

Operating and Service Instructions

CONTENTS

1 EXTERNAL PSU FOR ONAIR 2000

1.1 Utilization for the Purpose Intended

The External Power Supply Unit (PSU) for Studer OnAir 2000 and OnAir 2000M2 mixing consoles with redundant supply option is intended for professional use.

It is presumed that the unit is operated only by trained personnel. Servicing is reserved to skilled technicians.

The electrical connections may be connected only to the voltages and signals designated in this manual.

1.2 First Steps

1.2.1 Unpacking and Inspection

Your new equipment is shipped in a special packing, protecting it against mechanical shock during transit. Care should be exercised when unpacking so that the surfaces do not get marred.

Verify that the content of the packing agrees with the items listed on the enclosed shipping list.

Check the condition of the equipment for signs of shipping damage. If there should be any complaints you should immediately notify the forwarding agent and your nearest Studer distributor.

Please retain the original packing material because it offers the best protection in case your equipment ever needs to be transported.

1.2.2 Installation

Primary Voltage: The External PSU is auto-ranging; it can be used for mains voltages in a range of 100 to 240 V_{AC}, 50 to 60 Hz.

General Precautions: Do not use the unit in conditions of excessive heat or cold, near any source of moisture, in excessively humid environments, or in positions where it is likely to be subjected to vibration or dust. The ambient temperature range for normal operation of the unit is +5...+40° C.

Unobstructed air flow is essential for proper operation. The air vents on the sides of the unit are a functional part of the design and must not be blocked in any way.

Cleaning: Do not use any liquids to clean the exterior of the unit. A soft, dry cloth or brush will usually do.

Power Connection:

The attached female IEC 320/C13 mains cable socket has to be connected to an appropriate mains cable by a trained technician, respecting your local regulations. Refer to the "Installation, Operation, and Waste Disposal" chapter at the beginning of this manual.

DC Cable: A DC cable (length 2 m, order no. 1.925.225) is shipped with every External PSU. If longer cables are required, please order separately:

Cable Length	Order No.
5 m	1.925.226
7 m	1.925.227
10 m	1.925.228

1.3 Adjustments, Repair

Danger:  All internal adjustments as well as repair work on this product must be performed by trained technicians!

Replacing the supply unit:  *The primary fuses are located within the primary power supply units and cannot be changed. In case of failure, the complete supply unit must be replaced. Please ask your nearest Studer representative.*

2 WIRING AND HARDWARE INFORMATION

The optional external power supply unit for the OnAir 2000 console is installed in a 19" 2U cabinet. If it is used, the standard internal power supply of the console is replaced by a connection unit with two 30-pin Siemens connectors. Each of these allows connection to one external supply unit.

Usually, full redundancy is desired (order no. 1.942.109.00). In such a case, two identical supply units are used. Their mains inlets should preferably be connected to different phases of the mains. Each unit has its own power switch and contains one (earlier versions: two) primary switching power supply/ies and one secondary DC/DC converter. Each of the external power supply units is connected with its own DC cable to the console.

	Pcs	Order no.	Designation
Redundancy PSU Set (1.942.109), consisting of:	2	* 1.918.220/222***	Power Supply
	2	1.918.225	Cable 2 m (longer cables on request)
	1	** 1.942.106	Connection Unit
* Power Supply (1.918.220 or 1.918.222***), consisting of:	2	89.20.2011	Power Supply Main (earlier versions)
	or 1	89.20.2017	Power Supply Main (current versions)
	1	1.942.105 ***	Power Supply
	1	1.918.221	Sub Board PSU
** Connection Unit (1.942.106), consisting of:	1	1.942.107	Redundancy PSU Connection Board
			Cables to DSP and Level Meter Interface + miscellaneous mounting hardware
*** *Earlier versions only:* The Power Supply PCB 1.942.105.83 for *OnAir 2000M2 Modulo* devices requires an additional capacitor in parallel with C11 and C16, due to the increased current drawn by the additional Remote Master and Slave PCBs. This capacitor is referenced with "C*" in the diagram 1.942.105.83; it is mechanically mounted within the case (1.918.222) and hard-wired to the PCB.			

Front Panel LEDs

The external power supply unit has a red and four green LEDs on its front panel; the four green LEDs indicate presence of the four supply voltages (+15 V, –15 V, +5 V, and +24 V); the red "POWER ALARM" LED is on if one of the DC supply voltages should fail. Should this happen, a power alarm is triggered in addition.

Alarm Output

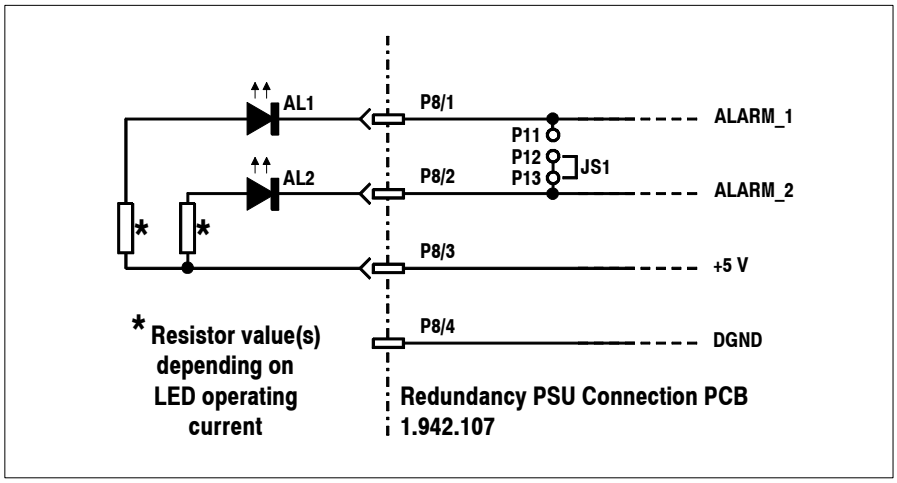
The power alarm output signal is sent to pin7A of the DC supply connector. The power alarm output is a relay contact (40 V/200 mA max.). Its behaviour depends on the setting of the jumper JS1 on the "Sub Board for PSU" PCB.
Pin7A of the DC supply connector is normally floating, and pulled to GND when power alarm is active (JP1 and JP2 connected with JS1, default factory setting).
In the alternate jumper position (JP2 and JP3 connected with JS1), pin7A is normally pulled to GND and becomes floating when alarm is active.

Note: *It is recommended to leave the jumper setting as it is. Should it be changed, the POWER ALARM LED on the front panel of the supply unit will be illuminated if everything is alright, and vice versa.*

Alarm Indicator(s) in the Console

If required, power alarm indicator LEDs can be installed in a prominent position within the console. For this purpose, connector P8 on the Redundancy PSU Connection PCB has been provided. It allows to connect

either one or two LEDs – preferably flashing types, with integrated current limiting resistors for 5 V_{DC} operation. For connection, please refer to the diagram below.



Alarm Jumper in the Console

On the Redundancy PSU Connection PCB 1.942.107, a jumper is located.
If P11 and P12 are connected with jumper JS1 (refer to the diagram above): The ALARM_1 and ALARM_2 signals are linked, so that one single power alarm LED can be used.
If P12 and P13 are connected with jumper JS1 (as shown in the diagram above): The ALARM_1 and ALARM_2 signals are separate, so that two individual power alarm LEDs can be used.

Single Supply Unit Operation

An OnAir 2000 Mixing console equipped with the supply redundancy option can be operated with one external supply unit only.
Please note that *no supply redundancy* is available in this application.

3 SETUP

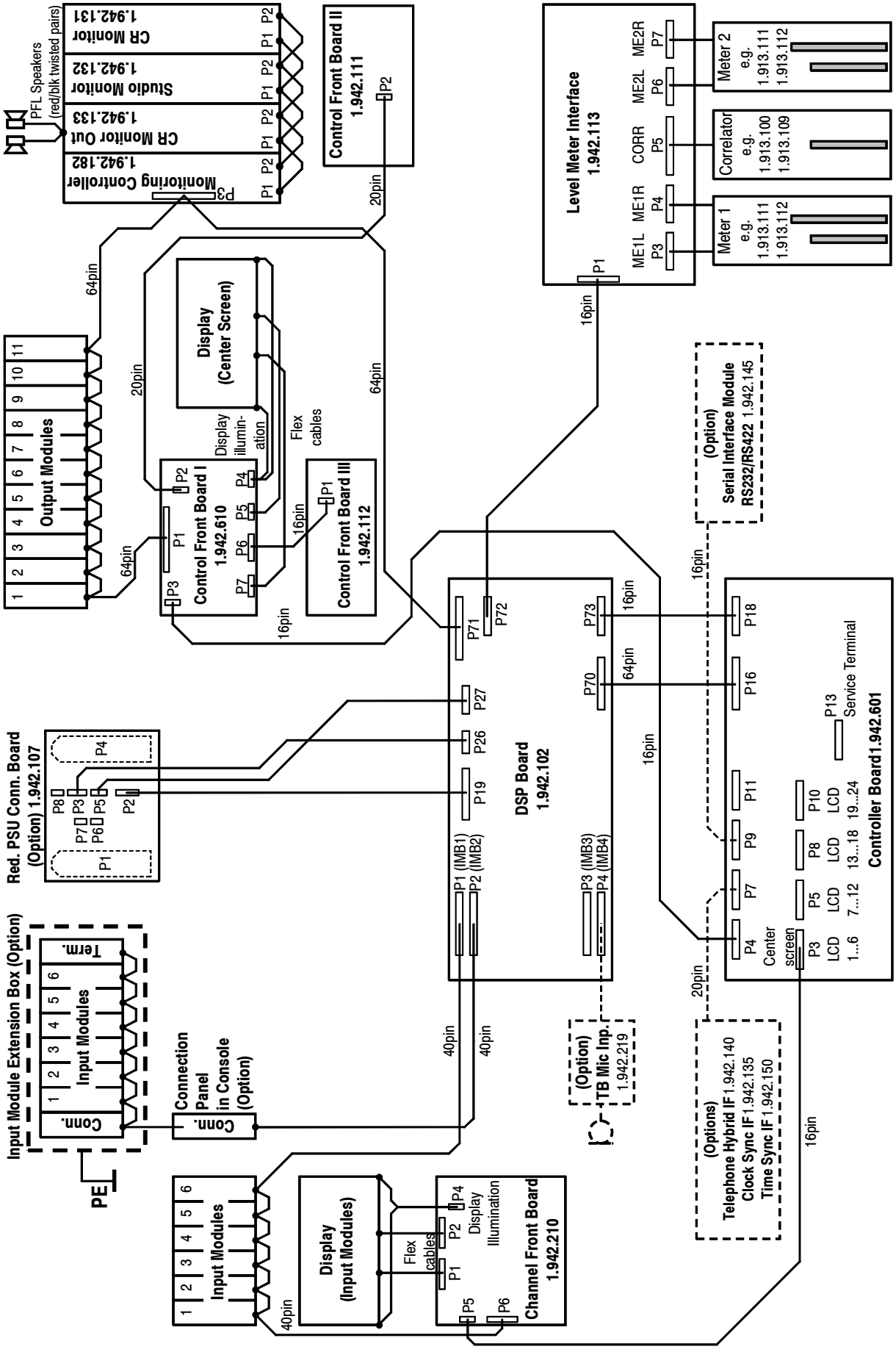
Please follow the steps below for correct setup!

1. Set the POWER switches of both external power supply units to the OFF position.
2. Connect the DC supply cables between the console and the external power supply units.
3. Connect the mains inlets of the external power supply units to the mains using appropriate cables. *Please note that for fully redundant operation, the two mains cables should be connected to two different phases.*
4. Switch the external power supply units ON.

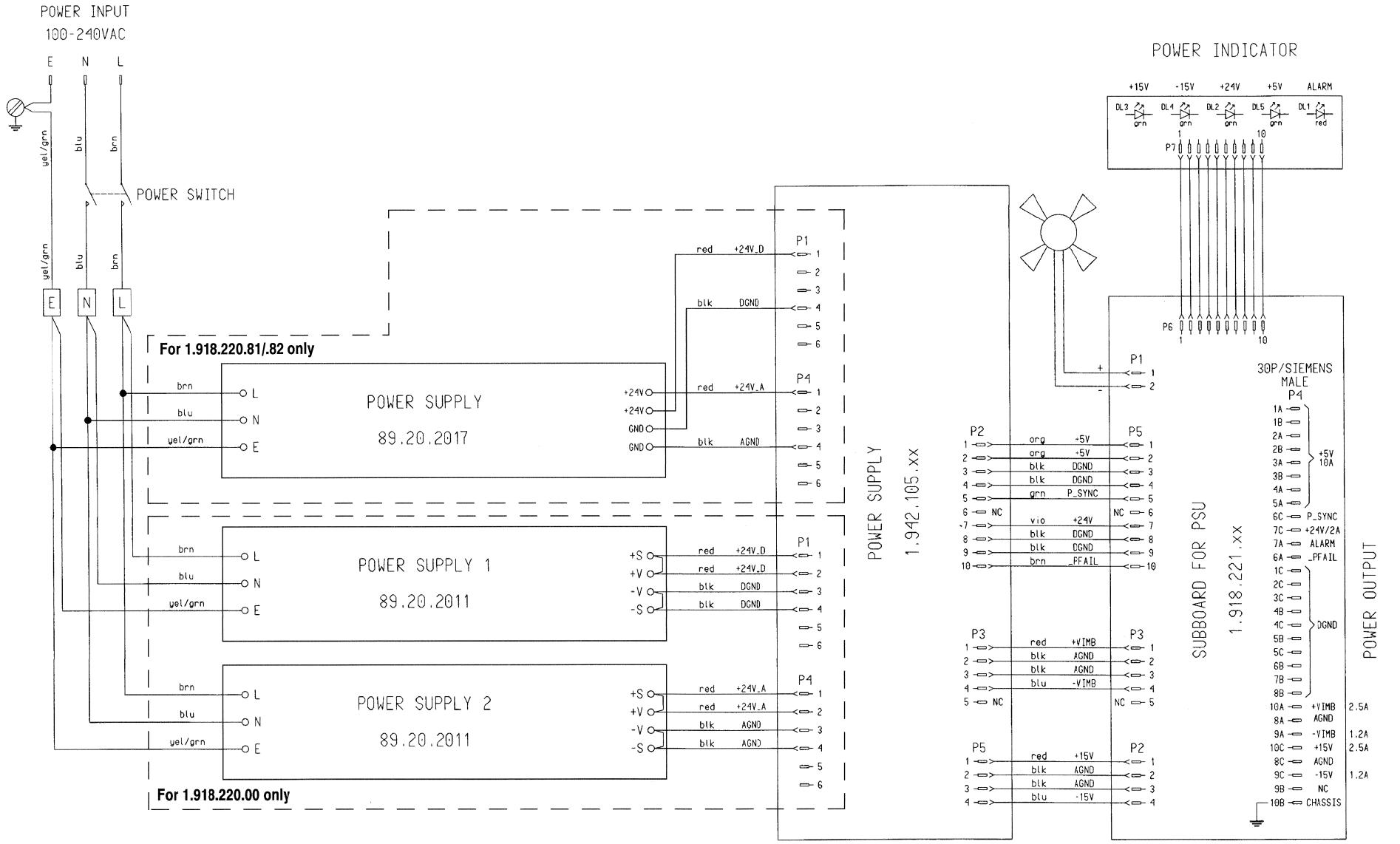
4 DIAGRAMS

	Assembly No.	Diagram	Component Layout	Parts List
OnAir 2000/2000M2 wiring diagram w. power supply redundancy option				
External PSU wiring diagram	*1.918.220/222**	*.00/.81/.82*	-	-
External PSU spare parts diagram	*1.918.220/222**	*.00/.81/.82*	-	-
Power Supply PCB	1.942.105	.83/.84	.83/.84	.83/.84
Sub Board for PSU	1.918.221	.81	.81	.81
Redundancy PSU Connection PCB	1.942.107	.81	.81	.81
	** for OnAir 2000 Modulo only*			

OnAir 2000/2000M2 Wiring Diagram with Power Supply Redundancy Option

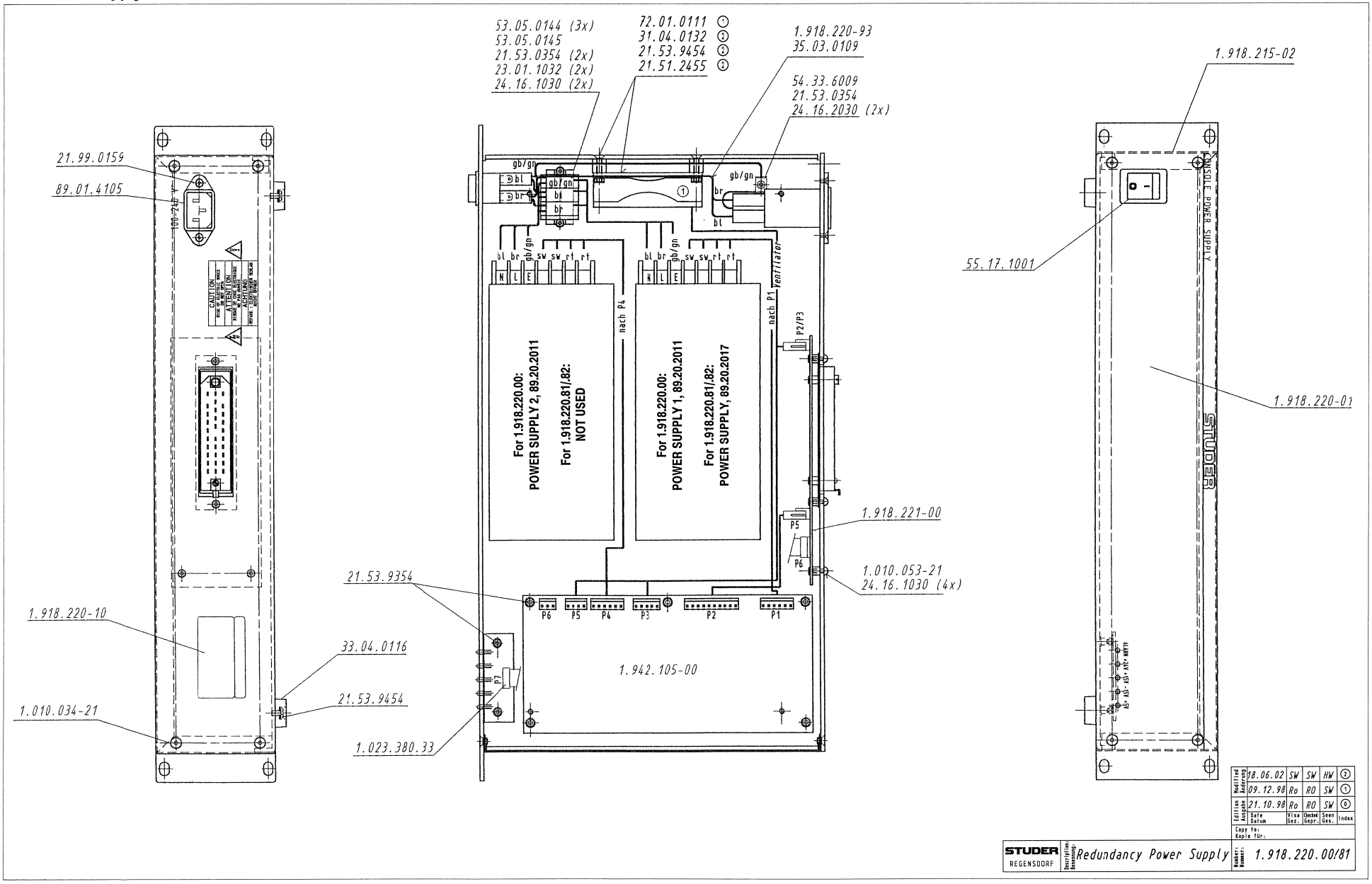


Ext. Power Supply for OnAir 2000 1.918.220.00/81/.82

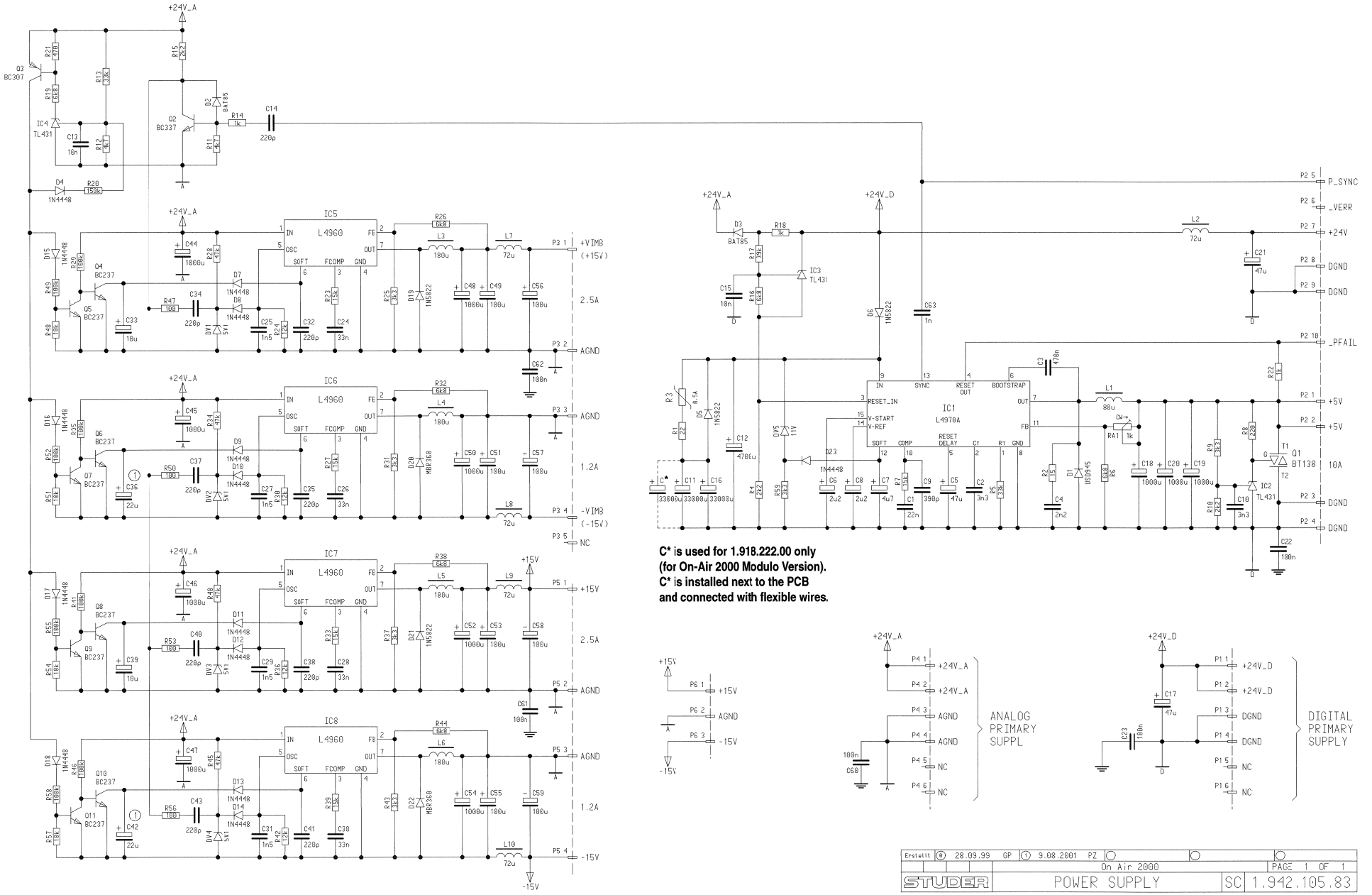


23.10.1998 GP	19"/2U FRAME	PAGE 1 OF 1
STUDER	POWER SUPPLY FOR ONAIR 2000	1.918.220

Ext. Power Supply for OnAir 2000 1.918.220.00/.81/.82



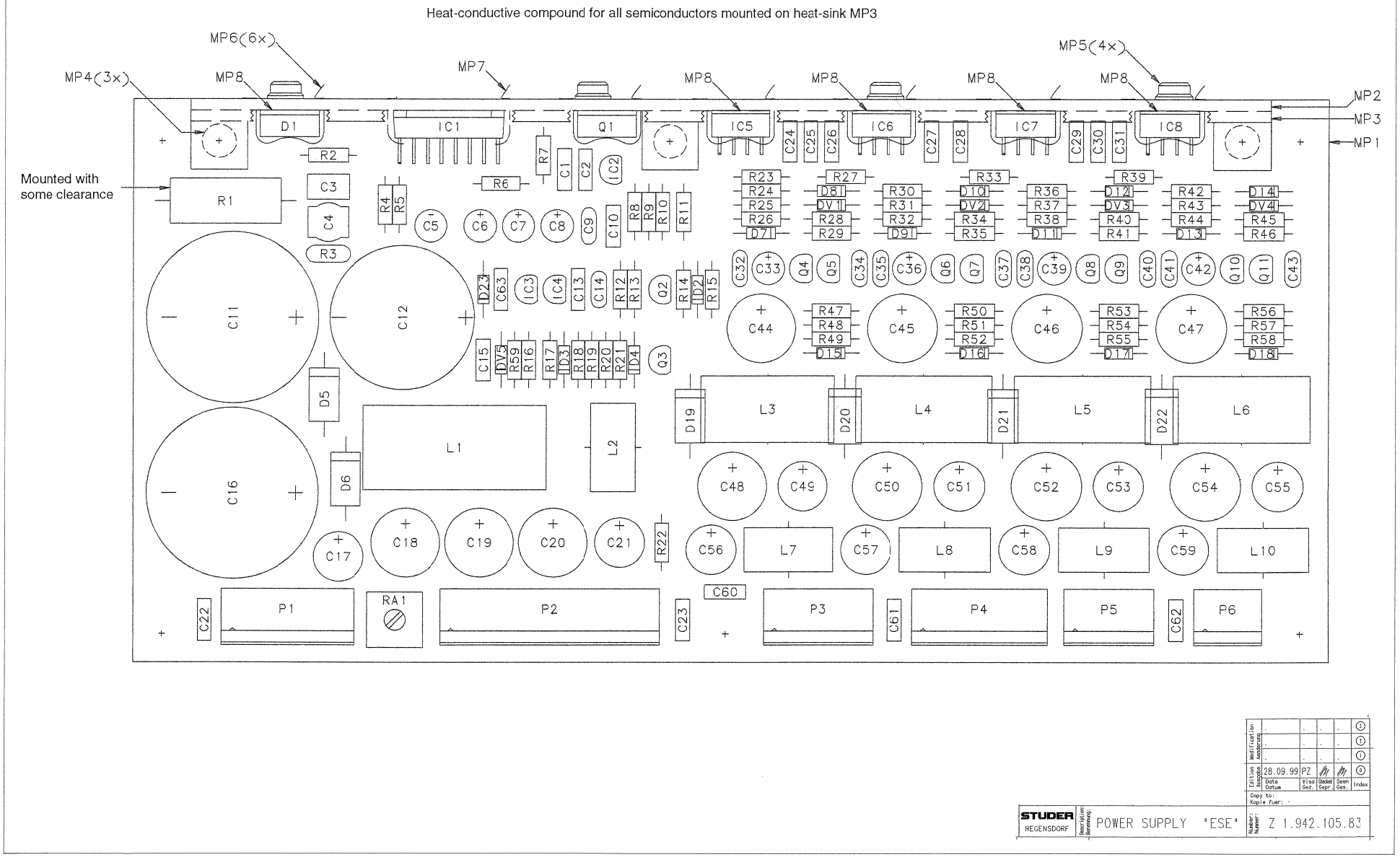
Power Supply 1.942.105.83 (1)



C* is used for 1.918.222.00 only (for On-Air 2000 Modulo Version). C* is installed next to the PCB and connected with flexible wires.

Erstellt	28.09.99 GP	9.08.2001 PZ			
		On Air 2000		PAGE 1 OF 1	
STUDER	POWER SUPPLY		SC	1.942.105.83	

Power Supply 1.942.105.83



POWER SUPPLY 1.942.105.83 (1)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.5223		22n	PETP, 63V, 5%, RM5
0	C 2	59.06.5332		3n3	PETP, 63V, 5%, RM5
0	C 3	59.06.0474		470n	PETP, 63V, 10%, RM5
0	C 4	59.05.2222		2n2	PP, 2.5%, 160V
0	C 5	59.22.3470		47u	EL 10V 20% RM5
0	C 6	59.22.8229		2u2	EL 50V 20% RM5
0	C 7	59.22.8479		4u7	EL 50V 20% RM5
0	C 8	59.22.8229		2u2	EL 50V 20% RM5
0	C 9	59.34.5391		390p	CER 63V, 5%, N1500
0	C 10	59.06.5332		3n3	PETP, 63V, 5%, RM5
0	C 11	59.29.0323		33m	EL 25V RM10 radial
0	C 12	59.29.4472		4m7	EL 35V RM10 radial 105
0	C 13	59.06.0103		10n	PETP, 63V, 10%, RM5
0	C 14	59.34.4221		220p	CER 63V, 5%, N750
0	C 15	59.06.0103		10n	PETP, 63V, 10%, RM5
0	C 16	59.29.0323		33m	EL 25V RM10 radial
0	C 17	59.22.6470		47u	EL 40V 20% RM5
0	C 18	59.22.4102		1m0	EL 16V 20% RM5
0	C 19	59.22.4102		1m0	EL 16V 20% RM5
0	C 20	59.22.4102		1m0	EL 16V 20% RM5
0	C 21	59.22.6470		47u	EL 40V 20% RM5
0	C 22	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 23	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 24	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 25	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 26	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 27	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 28	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 29	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 30	59.06.0333		33n	PETP, 63V, 10%, RM5
0	C 31	59.06.5152		1n5	PETP, 63V, 5%, RM5
0	C 32	59.34.4221		220p	CER 63V, 5%, N750
0	C 33	59.22.6100		10u	EL 35V 20% RM5
0	C 34	59.34.4221		220p	CER 63V, 5%, N750
0	C 35	59.34.4221		220p	CER 63V, 5%, N750
1	C 36	59.22.6220		22u	EL 35V 20% RM5
0	C 37	59.34.4221		220p	CER 63V, 5%, N750
0	C 38	59.34.4221		220p	CER 63V, 5%, N750
0	C 39	59.22.6100		10u	EL 35V 20% RM5
0	C 40	59.34.4221		220p	CER 63V, 5%, N750
0	C 41	59.34.4221		220p	CER 63V, 5%, N750
1	C 42	59.22.6220		22u	EL 35V 20% RM5
0	C 43	59.34.4221		220p	CER 63V, 5%, N750
0	C 44	59.99.1708		1m0	EL 35V 20% RM5
0	C 45	59.99.1708		1m0	EL 35V 20% RM5
0	C 46	59.99.1708		1m0	EL 35V 20% RM5
0	C 47	59.99.1708		1m0	EL 35V 20% RM5
0	C 48	59.99.1708		1m0	EL 35V 20% RM5
0	C 49	59.22.5101		100u	EL 25V 20% RM5
0	C 50	59.99.1708		1m0	EL 35V 20% RM5
0	C 51	59.22.5101		100u	EL 25V 20% RM5
0	C 52	59.99.1708		1m0	EL 35V 20% RM5
0	C 53	59.22.5101		100u	EL 25V 20% RM5
0	C 54	59.99.1708		1m0	EL 35V 20% RM5
0	C 55	59.22.5101		100u	EL 25V 20% RM5
0	C 56	59.22.5101		100u	EL 25V 20% RM5
0	C 57	59.22.5101		100u	EL 25V 20% RM5
0	C 58	59.22.5101		100u	EL 25V 20% RM5
0	C 59	59.22.5101		100u	EL 25V 20% RM5
0	C 60	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 61	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 62	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 63	59.06.0102		1n0	PETP, 63V, 10%, RM5
0	D 1	50.04.0516		USD945	Schottky Rect 16A, 45V
0	D 2	50.04.0127		BAT85	200mA, Schottky
0	D 3	50.04.0127		BAT85	200mA, Schottky
0	D 4	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.0519		1N5822	3A, Schottky
0	D 6	50.04.0519		1N5822	3A, Schottky
0	D 7	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 8	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 9	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 10	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 11	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 12	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 13	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 14	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 15	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 16	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 17	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 18	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 19	50.04.0519		1N5822	3A, Schottky
0	D 20	50.04.0526		MBR360	D MBR 360, SB 360, 31 DQ 06,
0	D 21	50.04.0519		1N5822	3A, Schottky
0	D 22	50.04.0526		MBR360	D MBR 360, SB 360, 31 DQ 06,
0	D 23	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	DV 1	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 2	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 3	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 4	50.04.1112		5V1	Zener, 5%, 0.5W, DO-35
0	DV 5	50.04.1147		11V	Zener, 5%, 0.5W, DO-35
0	IC 1	50.10.0125		L4970A	Switching Regulator 10A
0	IC 2	50.10.0106		TL431	Shunt regulator
0	IC 3	50.10.0106		TL431	Shunt regulator
0	IC 4	50.10.0106		TL431	Shunt regulator
0	IC 5	50.10.0122		L4960	L 4960,
0	IC 6	50.10.0122		L4960	L 4960,
0	IC 7	50.10.0122		L4960	L 4960,
0	IC 8	50.10.0122		L4960	L 4960,
0	L 1	62.03.0045		80uH	10A Toroid Chocke
0	L 2	62.03.0015		72uH	2A Toroid Chocke
0	L 3	62.03.0035		180uH	3A Toroid Chocke
0	L 4	62.03.0035		180uH	3A Toroid Chocke
0	L 5	62.03.0035		180uH	3A Toroid Chocke
0	L 6	62.03.0035		180uH	3A Toroid Chocke
0	L 7	62.03.0015		72uH	2A Toroid Chocke
0	L 8	62.03.0015		72uH	2A Toroid Chocke
0	L 9	62.03.0015		72uH	2A Toroid Chocke
0	L 10	62.03.0015		72uH	2A Toroid Chocke
0	MP 1	1.942.105.12			POWER SUPPLY PCB
0	MP 2	1.942.105.01			Kühlkörper
0	MP 3	1.942.105.02			Kühlkörper
0	MP 4	21.38.0354	3 pcs	M3*6	Z - Schraube KS A2 blank
0	MP 5	21.53.9354	4 pcs	M3*6	Z-Schraube Inbus-Ripp Zn gb ch
0	MP 6	50.20.2003	6 pcs		Montageclip zu TO 220, N/ISOL.
0	MP 7	50.20.2005			Montageclip zu SOT 93
0	MP 8	50.20.0318	5 pcs	TO220	Glimmerscheibe, zu Clip
0	MP 9	1.942.105.10			NR.ETIKETTE 5X20
0	MP 10	43.01.0108		Label	ESE-WARNSCHILD
1	MP 11	43.10.0110		A	Revisions-Etikette 5mm h'blau
0	P 1	54.12.0506		6p	Power-Pin Stecker
0	P 2	54.12.0510		10p	Power-Pin Stecker
0	P 3	54.12.0505		5p	Power-Pin Stecker
0	P 4	54.12.0506		6p	Power-Pin Stecker
0	P 5	54.12.0504		4p	Power-Pin Stecker
0	P 6	54.12.0503		3p	Power-Pin Stecker
0	Q 1	50.99.0106		BT138	TRIAC 400V, 8A
0	Q 2	50.03.0340		BC337-25	800mA, 45V, NPN
0	Q 3	50.03.0515		BC307B	BC 307 B , BC 557 B ,PNP
0	Q 4	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 6	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 7	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 8	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 9	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 10	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 11	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	R 1	57.56.5220		22R	WW, 10%, 4 W
0	R 2	57.11.3150		15R	MF, 1%, 0207
0	R 3	57.92.7013		0.5A	PTC 60V
0	R 4	57.11.3222		2k2	MF, 1%, 0207
0	R 5	57.11.3333		33k	MF, 1%, 0207
0	R 6	57.11.3682		6k8	MF, 1%, 0207
0	R 7	57.11.3153		15k	MF, 1%, 0207
0	R 8	57.11.3221		220R	MF, 1%, 0207
0	R 9	57.11.3332		3k3	MF, 1%, 0207
0	R 10	57.11.3222		2k2	MF, 1%, 0207
0	R 11	57.11.3472		4k7	MF, 1%, 0207
0	R 12	57.11.3472		4k7	MF, 1%, 0207
0	R 13	57.11.3333		33k	MF, 1%, 0207
0	R 14	57.11.3102		1k0	MF, 1%, 0207
0	R 15	57.11.3222		2k2	MF, 1%, 0207
0	R 16	57.11.3682		6k8	MF, 1%, 0207
0	R 17	57.11.3393		39k	MF, 1%, 0207
0	R 18	57.11.3102		1k0	MF, 1%, 0207
0	R 19	57.11.3682		6k8	MF, 1%, 0207
0	R 20	57.11.3154		150k	MF, 1%, 0207
0	R 21	57.11.3471		470R	MF, 1%, 0207
0	R 22	57.11.3102		1k0	MF, 1%, 0207
0	R 23	57.11.3153		15k	MF, 1%, 0207
0	R 24	57.11.3123		12k	MF, 1%, 0207
0	R 25	57.11.3332		3k3	MF, 1%, 0207
0	R 26	57.11.3682		6k8	MF, 1%, 0207
0	R 27	57.11.3153		15k	MF, 1%, 0207
0	R 28	57.11.3473		47k	MF, 1%, 0207
0	R 29	57.11.3104		100k	MF, 1%, 0207
0	R 30	57.11.3123		12k	MF, 1%, 0207
0	R 31	57.11.3332		3k3	MF, 1%, 0207
0	R 32	57.11.3682		6k8	MF, 1%, 0207
0	R 33	57.11.3153		15k	MF, 1%, 0207
0	R 34	57.11.3473		47k	MF, 1%, 0207
0	R 35	57.11.3104		100k	MF, 1%, 0207
0	R 36	57.11.3123		12k	MF, 1%, 0207
0	R 37	57.11.3332		3k3	MF, 1%, 0207

POWER SUPPLY 1.942.105.83 (1)

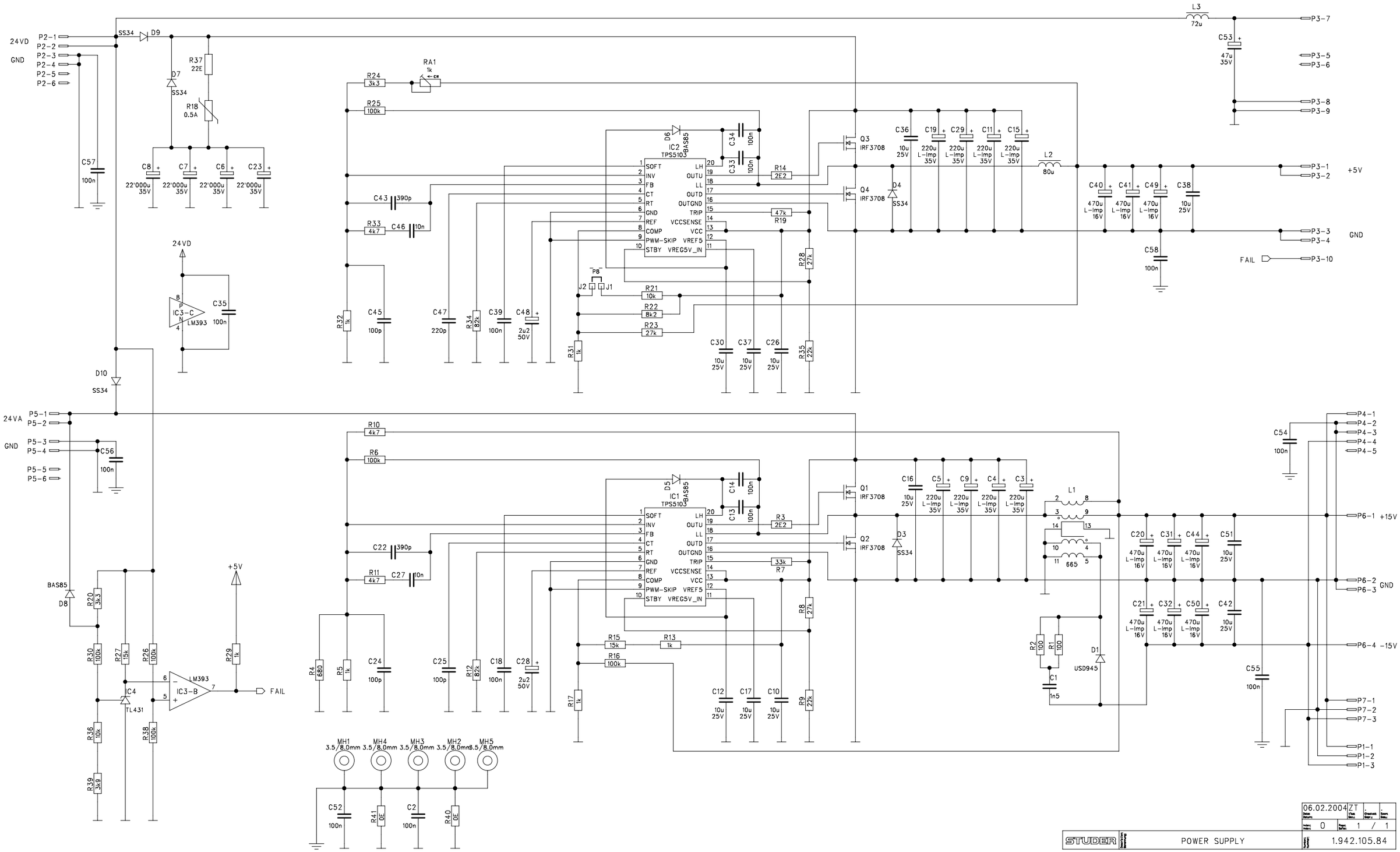
Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	R 38	57.11.3682		6k8	MF, 1%, 0207
0	R 39	57.11.3153		15k	MF, 1%, 0207
0	R 40	57.11.3473		47k	MF, 1%, 0207
0	R 41	57.11.3104		100k	MF, 1%, 0207
0	R 42	57.11.3123		12k	MF, 1%, 0207
0	R 43	57.11.3332		3k3	MF, 1%, 0207
0	R 44	57.11.3682		6k8	MF, 1%, 0207
0	R 45	57.11.3473		47k	MF, 1%, 0207
0	R 46	57.11.3104		100k	MF, 1%, 0207
0	R 47	57.11.3101		100R	MF, 1%, 0207
0	R 48	57.11.3103		10k	MF, 1%, 0207
0	R 49	57.11.3104		100k	MF, 1%, 0207
0	R 50	57.11.3101		100R	MF, 1%, 0207
0	R 51	57.11.3103		10k	MF, 1%, 0207
0	R 52	57.11.3104		100k	MF, 1%, 0207
0	R 53	57.11.3101		100R	MF, 1%, 0207
0	R 54	57.11.3103		10k	MF, 1%, 0207
0	R 55	57.11.3104		100k	MF, 1%, 0207
0	R 56	57.11.3101		100R	MF, 1%, 0207
0	R 57	57.11.3103		10k	MF, 1%, 0207
0	R 58	57.11.3104		100k	MF, 1%, 0207
0	R 59	57.11.3332		3k3	MF, 1%, 0207
0	RA 1	58.01.8102		1k0	Cermet, 10%, 0.5W, horizontal

End of List

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description

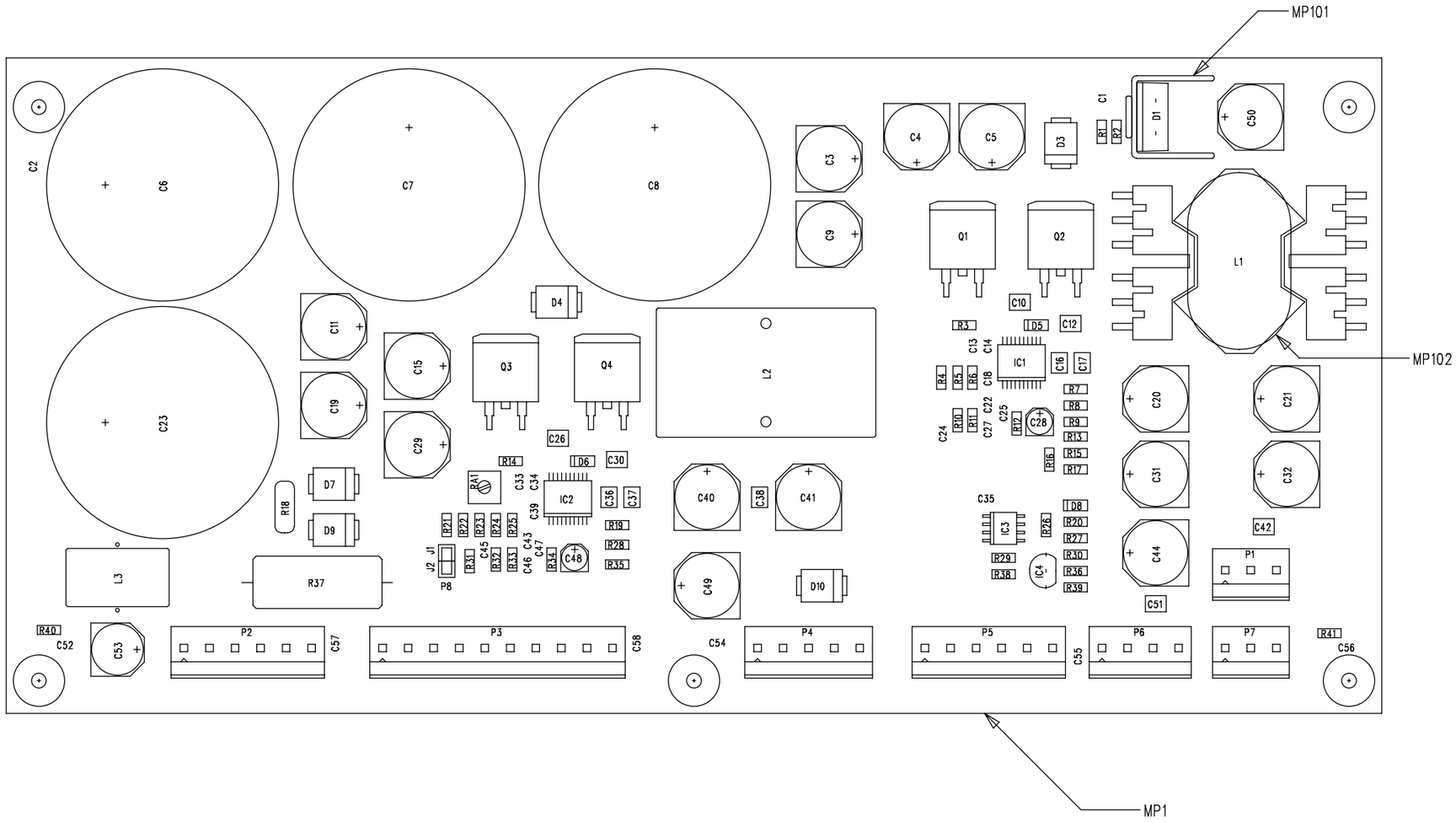
(01) C36, C42: 10uF->22uF; Revisionlabel->"A" added

Power Supply 1.942.105.84 (0)



Date printed: 23.08.04

Power Supply 1.942.105.84 (0)



		06.02.2004	ZT	ML	HW
		0	1 / 1		
STUDER	POWER SUPPLY, ESE		1.942.105.84		

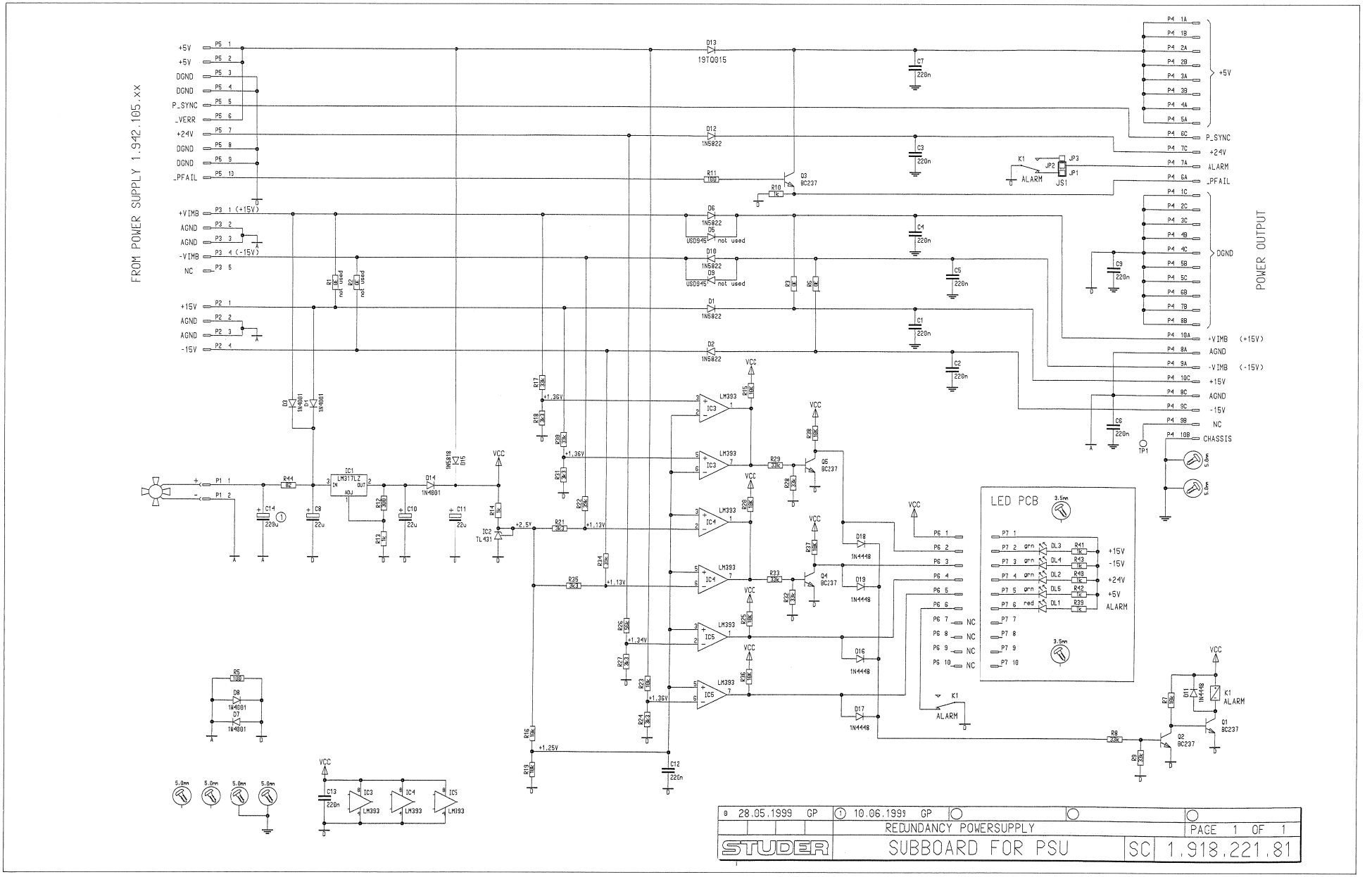
Power Supply 1.942.105.84 (0)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3315	1 pce	1n5	CER 50V, 10%, X7R, 0805
0	C 2	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 3	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 4	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 5	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 6	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 7	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 8	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 9	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 10	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 11	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 12	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 13	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 14	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 15	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 16	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 17	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 18	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 19	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 20	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 21	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 22	59.60.2363	1 pce	390p	CER 50V, 5%, C0G, 0805
0	C 23	59.29.0422	1 pce	22m	EL 35V RM10 radial
0	C 24	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603
0	C 25	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603
0	C 26	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 27	59.60.3325	1 pce	10n	CER 50V, 10%, X7R, 0805
0	C 28	59.68.0129	1 pce	2u2	EL 50V, 4.0*5.7
0	C 29	59.68.0317	1 pce	220u	EL 35V, 10 *10.7 lowESR
0	C 30	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 31	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 32	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 33	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 34	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 35	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 36	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 37	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 38	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 39	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 40	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 41	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 42	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 43	59.60.2363	1 pce	390p	CER 50V, 5%, C0G, 0805
0	C 44	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 45	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603
0	C 46	59.60.3325	1 pce	10n	CER 50V, 10%, X7R, 0805
0	C 47	59.60.2257	1 pce	220p	CER 50V, 5%, C0G, 0603
0	C 48	59.68.0129	1 pce	2u2	EL 50V, 4.0*5.7
0	C 49	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 50	59.68.0275	1 pce	470u	EL 16V, 10 *10.7 lowESR
0	C 51	59.60.3905	1 pce	10u	CER 25V, 1210
0	C 52	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 53	59.68.0113	1 pce	47u	EL 35V, 8.0*6.3
0	C 54	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 55	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 56	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 57	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	C 58	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805
0	D 1	50.04.0516	1 pce	USD945	Schottky Rect 16A, 45V
0	D 3	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 4	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 5	50.60.8101	1 pce	BAS85	200mA 30V Schottky SOD 80
0	D 6	50.60.8101	1 pce	BAS85	200mA 30V Schottky SOD 80
0	D 7	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 8	50.60.8101	1 pce	BAS85	200mA 30V Schottky SOD 80
0	D 9	50.60.8102	1 pce	SS34	3A 40V Schottky
0	D 10	50.60.8102	1 pce	SS34	3A 40V Schottky
0	IC 1	50.61.2004	1 pce	TPS 5103	Sync step down converter
0	IC 2	50.61.2004	1 pce	TPS 5103	Sync step down converter
0	IC 3	50.61.9001	1 pce	LM393	Dual voltage comp. SO 8
0	IC 4	50.10.0106	1 pce	TL431	Shunt regulator
0	J 1	54.01.0020	1 pce	1p	Pin, 1reihig, gerade
0	J 2	54.01.0020	1 pce	1p	Pin, 1reihig, gerade
0	L 1	1.022.665.00	1 pce		Trafo +/-15V
0	L 2	62.03.0045	1 pce	80uH	10A Toroid Chocke
0	L 3	62.03.0015	1 pce	72uH	2A Toroid Chocke
0	MP 1	1.942.105.14	1 pce		POWER SUPPLY PCB
0	MP 2	1.942.105.10	1 pce		NR.ETIKETTE 5X20
0	MP 3	43.01.0108	1 pce	Label	ESE-WARNSCHILD
0	MP 101	50.20.3011	1 pce		Kühlkörper, TO 220, vertikal
0	MP 102	1.010.005.61	1 pce		UNTERLAGE ZU RM 10
0	P 1	54.12.0503	1 pce	3p	Power-Pin Stecker
0	P 2	54.12.0506	1 pce	6p	Power-Pin Stecker
0	P 3	54.12.0510	1 pce	10p	Power-Pin Stecker
0	P 4	54.12.0505	1 pce	5p	Power-Pin Stecker
0	P 5	54.12.0506	1 pce	6p	Power-Pin Stecker
0	P 6	54.12.0504	1 pce	4p	Power-Pin Stecker
0	P 7	54.12.0503	1 pce	3p	Power-Pin Stecker
0	P 8	not used	1 pce	Jumper	0.63*0.63mm, Au
0	Q 1	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	Q 2	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	Q 3	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	Q 4	50.60.2202	1 pce	IRF3708	PowerMOS N-Ch 30V, 50A
0	R 1	57.60.1101	1 pce	100R	MF, 1%, 0204, E24
0	R 2	57.60.1101	1 pce	100R	MF, 1%, 0204, E24
0	R 3	57.60.1229	1 pce	2R2	MF, 1%, 0204, E24
0	R 4	57.60.1681	1 pce	680R	MF, 1%, 0204, E24
0	R 5	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 6	not used	1 pce	100k	MF, 1%, 0204, E24
0	R 7	57.60.1333	1 pce	33k	MF, 1%, 0204, E24
0	R 8	57.60.1273	1 pce	27k	MF, 1%, 0204, E24
0	R 9	57.60.1223	1 pce	22k	MF, 1%, 0204, E24
0	R 10	57.60.1472	1 pce	4k7	MF, 1%, 0204, E24
0	R 11	57.60.1472	1 pce	4k7	MF, 1%, 0204, E24
0	R 12	57.60.1823	1 pce	82k	MF, 1%, 0204, E24
0	R 13	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 14	57.60.1229	1 pce	2R2	MF, 1%, 0204, E24
0	R 15	57.60.1153	1 pce	15k	MF, 1%, 0204, E24
0	R 16	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 17	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 18	57.92.7013	1 pce	0.5A	PTC 60V
0	R 19	57.60.1473	1 pce	47k	MF, 1%, 0204, E24
0	R 20	57.60.1332	1 pce	3k3	MF, 1%, 0204, E24
0	R 21	57.60.1103	1 pce	10k	MF, 1%, 0204, E24
0	R 22	57.60.1822	1 pce	8k2	MF, 1%, 0204, E24
0	R 23	57.60.1273	1 pce	27k	MF, 1%, 0204, E24
0	R 24	57.60.1332	1 pce	3k3	MF, 1%, 0204, E24
0	R 25	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 26	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 27	57.60.1153	1 pce	15k	MF, 1%, 0204, E24
0	R 28	57.60.1273	1 pce	27k	MF, 1%, 0204, E24
0	R 29	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 30	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 31	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 32	57.60.1102	1 pce	1k0	MF, 1%, 0204, E24
0	R 33	57.60.1472	1 pce	4k7	MF, 1%, 0204, E24
0	R 34	57.60.1823	1 pce	82k	MF, 1%, 0204, E24
0	R 35	57.60.1223	1 pce	22k	MF, 1%, 0204, E24
0	R 36	57.60.1103	1 pce	10k	MF, 1%, 0204, E24
0	R 37	57.56.5220	1 pce	22R	WW, 10%, 4 W
0	R 38	57.60.1104	1 pce	100k	MF, 1%, 0204, E24
0	R 39	57.60.1392	1 pce	3k9	MF, 1%, 0204, E24
0	R 40	57.60.1000	1 pce	0R0	MF, 0204
0	R 41	57.60.1000	1 pce	0R0	MF, 0204
0	RA 1	58.60.0113	1 pce	1k0	SMD 20%, 0.25W, Cermet

End of List

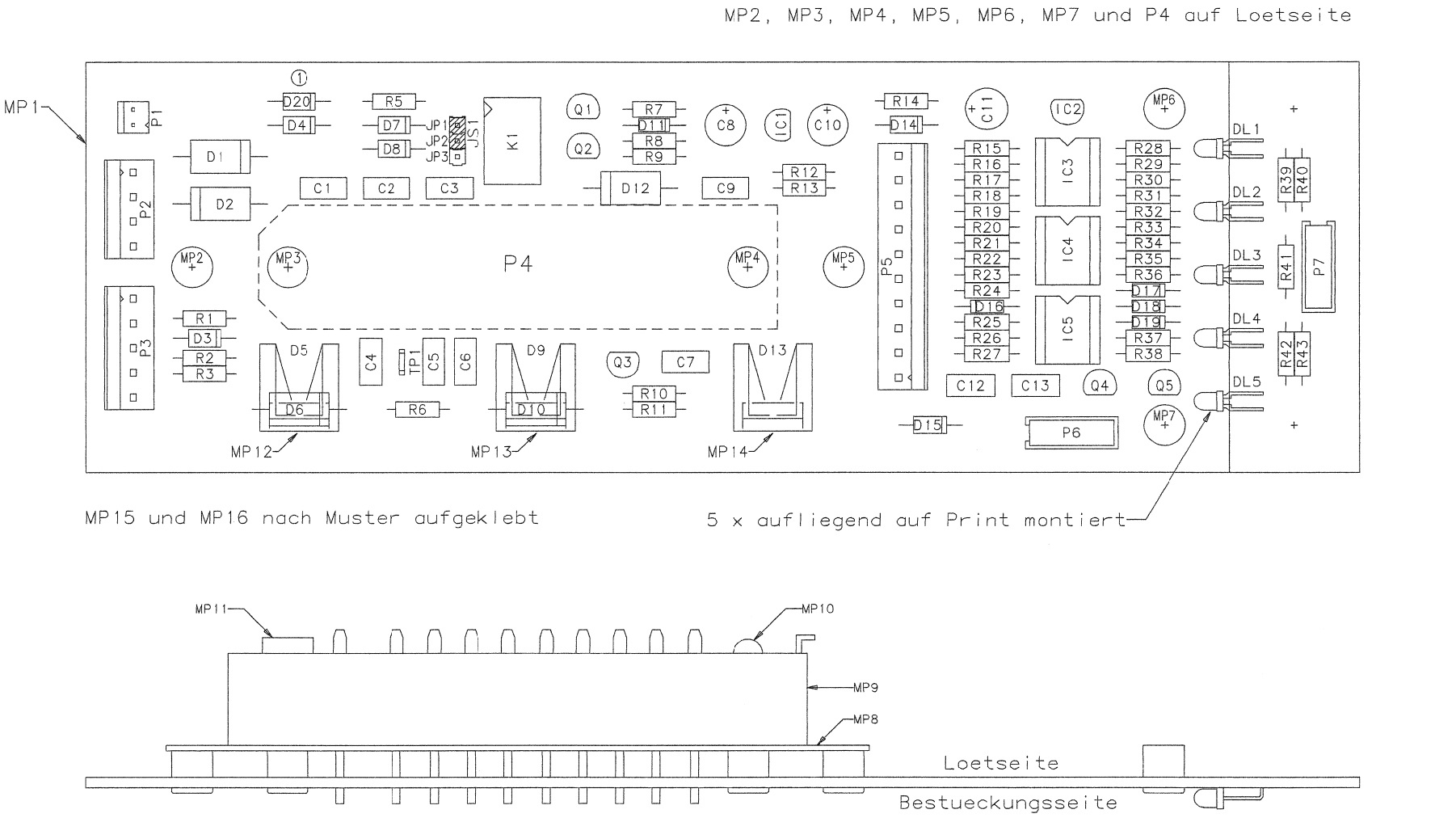
Comments:

Subboard for **PSU 1.918.221.81**



0 28.05.1999 GP	1 10.06.1999 GP			
	REDUNDANCY POWERSUPPLY		PAGE 1 OF 1	
STUDER	SUBBOARD FOR PSU	SC	1.918.221.81	

Subboard for PSU 1.918.221.81



Modification / Aenderung					③
					②
	09.12.98	PZ			①
Edition / Ausgabe	25.09.1998	GP			⓪
	Date / Datum	Visa / Gez.	Dekad / Gepr.	Sean / Ges.	Index

Copy to: / Kopie fuer: -

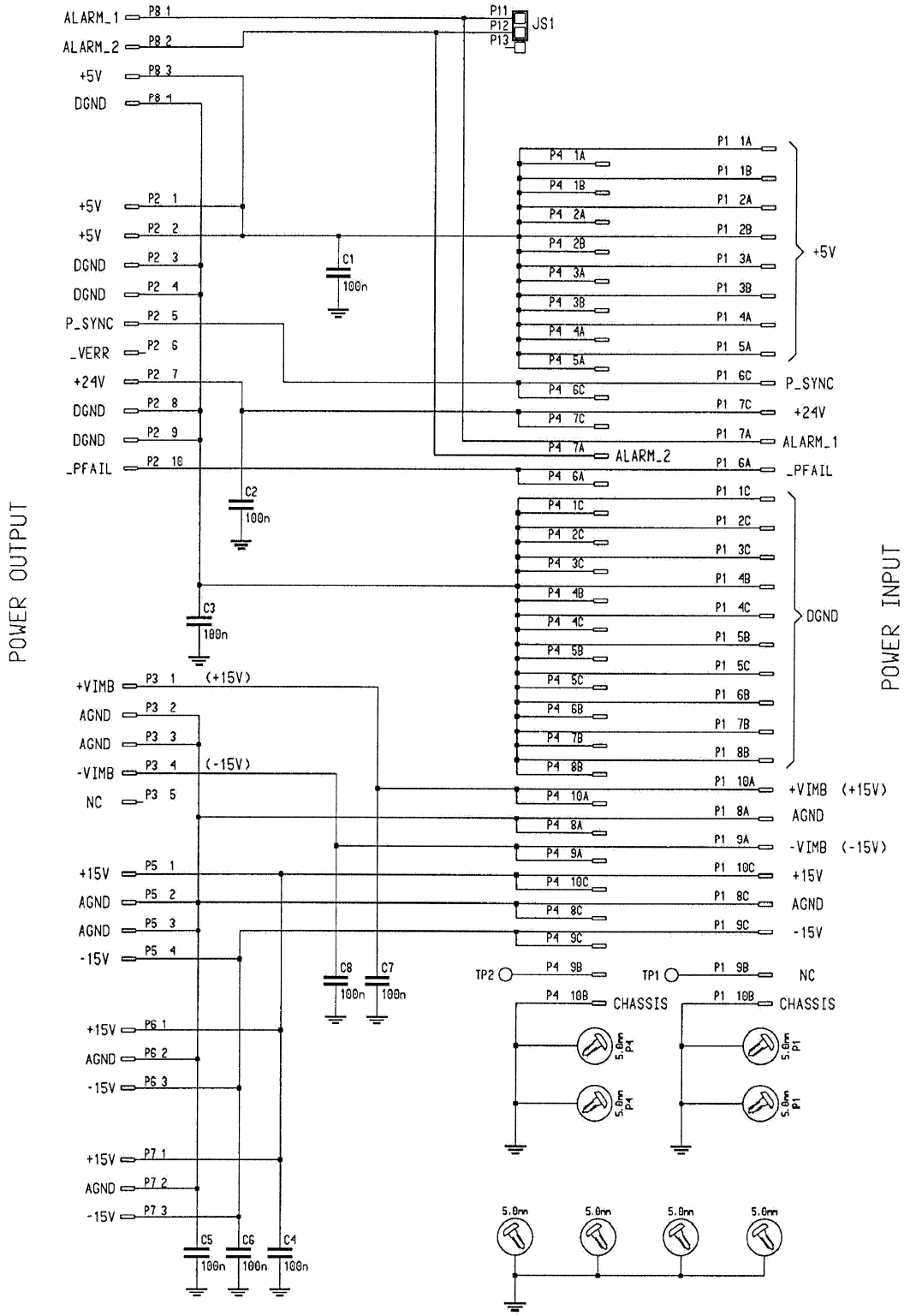
STUDER REGENSDORF — Description / Benennung: SUBBOARD FOR PSU, ESE — Number / Nummer: 1.918.221.00

SUBBOARD PSU 1.918.221.81 (1)

Idx.	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 2	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 3	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 4	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 5	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 6	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 7	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 8	59.22.6220		22u	EL 35V 20% RM5
0	C 9	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 10	59.22.6220		22u	EL 35V 20% RM5
0	C 11	59.22.6220		22u	EL 35V 20% RM5
0	C 12	59.06.0224		220n	PETP, 63V, 10%, RM5
0	C 13	59.06.0224		220n	PETP, 63V, 10%, RM5
1	C 14	59.22.4221		220u	EL 16V 20% RM5
0	D 1	50.04.0519		1N5822	3A, Schottky
0	D 2	50.04.0519		1N5822	3A, Schottky
0	D 3	50.04.0122		1N4001	1A, DO 41
0	D 4	50.04.0122		1N4001	1A, DO 41
0	D 5	not used		USD945	Schottky Rect 16A, 45V
0	D 6	50.04.0519		1N5822	3A, Schottky
0	D 7	50.04.0122		1N4001	1A, DO 41
0	D 8	50.04.0122		1N4001	1A, DO 41
0	D 9	not used		USD945	Schottky Rect 16A, 45V
0	D 10	50.04.0519		1N5822	3A, Schottky
0	D 11	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 12	50.04.0519		1N5822	3A, Schottky
0	D 13	50.04.0529		19TQ015	19A 15V Schottky, TO 220
0	D 14	50.04.0122		1N4001	1A, DO 41
0	D 15	50.04.0512		1N5818	D 1N 5818, 1N 5819,
0	D 16	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 17	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 18	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 19	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	DL 1	50.04.2204		L934ID	LED 3mm red
0	DL 2	50.04.2206		L934GT	LED 3mm green
0	DL 3	50.04.2206		L934GT	LED 3mm green
0	DL 4	50.04.2206		L934GT	LED 3mm green
0	DL 5	50.04.2206		L934GT	LED 3mm green
0	IC 1	50.10.0108		LM317L	Series regulator 100mA ...+37V
0	IC 2	50.10.0106		TL431	Shunt regulator
0	IC 3	50.05.0283		LM393	Dual Comparator
0	IC 4	50.05.0283		LM393	Dual Comparator
0	IC 5	50.05.0283		LM393	Dual Comparator
0	JP 1	54.01.0020		1p	Pin, 1reihig, gerade
0	JP 2	54.01.0020		1p	Pin, 1reihig, gerade
0	JP 3	54.01.0020		1p	Pin, 1reihig, gerade
0	JS 1	54.01.0021		Jumper	0.63*0.63mm, Au
0	K 1	56.04.0198		2*u	5V 125V 2A Ag/Au
1	MP 1	1.918.221.12			SUBBOARD PSU PCB
0	MP 2	1.010.041.22		M3*4.1	Nietmutter sw 6
0	MP 3	1.010.041.22		M3*4.1	Nietmutter sw 6
0	MP 4	1.010.041.22		M3*4.1	Nietmutter sw 6
0	MP 5	1.010.041.22		M3*4.1	Nietmutter sw 6
0	MP 6	1.010.016.22		M3*5	Nietmutter sw 6
0	MP 7	1.010.016.22		M3*5	Nietmutter sw 6
0	MP 8	1.918.221.01			STECKERPLATTE
0	MP 9	54.14.7002			Riegelwanne 30/39p
0	MP 10	54.14.7020			Pass-Stift
0	MP 11	54.14.7023			Pass-Buchse
0	MP 12	not used			Kühlkörper, TO 220, vertikal
0	MP 13	not used			Kühlkörper, TO 220, vertikal
0	MP 14	50.20.3011			Kühlkörper, TO 220, vertikal
0	MP 15	1.918.221.10			NR.ETIKETTE
0	MP 16	43.01.0108		Label	ESE-WARNSCHILD
0	P 1	54.12.0702		2p	Stecker gerade PCB
0	P 2	54.12.0504		4p	Power-Pin Stecker
0	P 3	54.12.0505		5p	Power-Pin Stecker
0	P 4	54.14.1022		3*10p	Messerleiste Ag PCB
0	P 5	54.12.0510		10p	Power-Pin Stecker
0	P 6	54.14.5510		10p	PCB-Buchse gerade
0	P 7	54.14.5510		10p	PCB-Buchse gerade
0	Q 1	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 2	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 3	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 4	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	Q 5	50.03.0436		BC237B	BC 237 B, 547 B, 550 B,
0	R 1	not used		0R0	MF, 0207
0	R 2	not used		0R0	MF, 0207
0	R 3	not used		0R0	MF, 0207
1	R 4	not used		100R	MF, 1%, 0207
0	R 5	57.11.3101		100R	MF, 1%, 0207
0	R 6	not used		0R0	MF, 0207
0	R 7	57.11.3103		10k	MF, 1%, 0207
0	R 8	57.11.3333		33k	MF, 1%, 0207
0	R 9	57.11.3333		33k	MF, 1%, 0207
0	R 10	57.11.3102		1k0	MF, 1%, 0207
0	R 11	57.11.3101		100R	MF, 1%, 0207
0	R 12	57.11.3301		300R	MF, 1%, 0207
0	R 13	57.11.3102		1k0	MF, 1%, 0207
0	R 14	57.11.3102		1k0	MF, 1%, 0207
0	R 15	57.11.3103		10k	MF, 1%, 0207
0	R 16	57.11.3103		10k	MF, 1%, 0207
0	R 17	57.11.3333		33k	MF, 1%, 0207
0	R 18	57.11.3332		3k3	MF, 1%, 0207
0	R 19	57.11.3103		10k	MF, 1%, 0207
0	R 20	57.11.3103		10k	MF, 1%, 0207
0	R 21	57.11.3332		3k3	MF, 1%, 0207
0	R 22	57.11.3393		39k	MF, 1%, 0207
0	R 23	57.11.3103		10k	MF, 1%, 0207
0	R 24	57.11.3332		3k3	MF, 1%, 0207
0	R 25	57.11.3103		10k	MF, 1%, 0207
0	R 26	57.11.3563		56k	MF, 1%, 0207
0	R 27	57.11.3332		3k3	MF, 1%, 0207
0	R 28	57.11.3333		33k	MF, 1%, 0207
0	R 29	57.11.3333		33k	MF, 1%, 0207
0	R 30	57.11.3333		33k	MF, 1%, 0207
0	R 31	57.11.3332		3k3	MF, 1%, 0207
0	R 32	57.11.3333		33k	MF, 1%, 0207
0	R 33	57.11.3333		33k	MF, 1%, 0207
0	R 34	57.11.3393		39k	MF, 1%, 0207
0	R 35	57.11.3332		3k3	MF, 1%, 0207
0	R 36	57.11.3103		10k	MF, 1%, 0207
0	R 37	57.11.3103		10k	MF, 1%, 0207
0	R 38	57.11.3103		10k	MF, 1%, 0207
0	R 39	57.11.3102		1k0	MF, 1%, 0207
0	R 40	57.11.3102		1k0	MF, 1%, 0207
0	R 41	57.11.3102		1k0	MF, 1%, 0207
0	R 42	57.11.3102		1k0	MF, 1%, 0207
0	R 43	57.11.3102		1k0	MF, 1%, 0207
0	R 44	57.11.3820		82R	MF, 1%, 0207
0	TP 1	not used		1p	PCB-Flachst 2.8*0.8, gerade

End of List

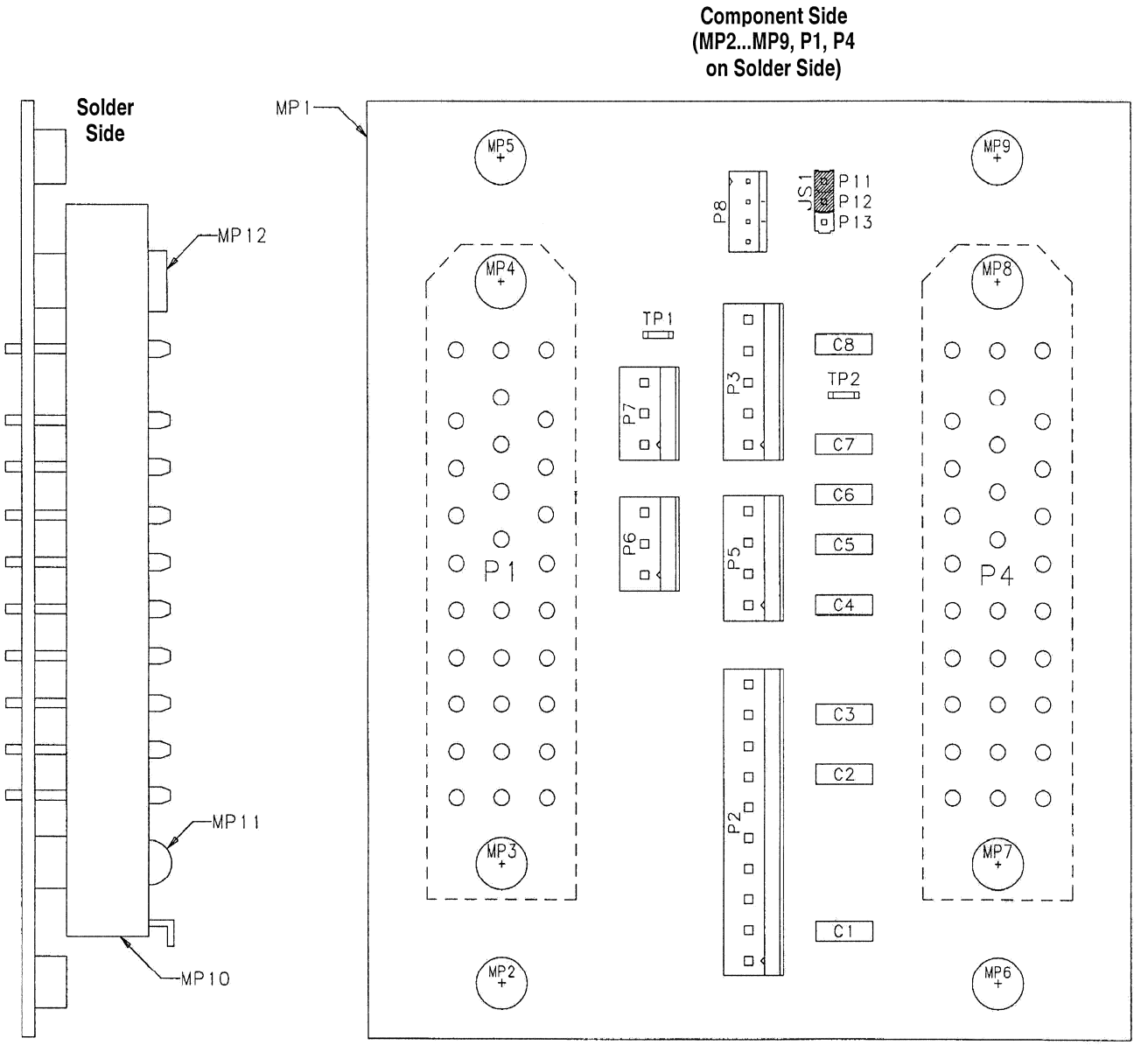
Redundancy PSU Connection PCB 1.942.107.81



0 15.01.1999 GP				
	REDUNDANCY POWER SUPPLY OnAir 2000			PAGE 1 OF 1
STUDER	REDUNDANCY PSU CONN.BOARD	SC	1.942.107.81	

Date printed: 17.05.02

Redundancy PSU Connection PCB 1.942.107.81



Raw Material Werkstoff	Norm-No.: Norm-Nr.: ·	Surface Oberfläche	Quality: Guete: ·	Modification Aenderung	.		.	.	.	3
	DIN-indication: DIN-Bez.: ·		Treatment: Behandlung:		.		.	.	.	2
	Dimensions: Abmessung: ·		.		01.03.1999	AF				1
Accompanying documents: Zugehoerige Unterlagen: PL		General tolerance: Freimasstoleranz: .	Scale: Massstab: 1,5:1	Edition Ausgabe	15.01.1999	AF				0
					Date Datum	Visa Gez.	Checked Gepr.	Seen Ges.		Index
Substitute for: Ersatz fuer: ·		Replaced by: Ersetzt durch: ·		Copy to: Kopie fuer: ·						
STUDER REGENSDORF	Description: Benennung: REDUNDANCY PSU CONN.BOARD			Number: Nummer: 1.942.107.81						

RED. PSU CONN.BOARD 1.942.107.81 (0)

Idx.	Pos.	Part No.	Qtv.	Tvpe/Val.	Description
0	C 1	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 2	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 3	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 4	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 5	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 6	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 7	59.06.0104		100n	PETP, 63V, 10%, RM5
0	C 8	59.06.0104		100n	PETP, 63V, 10%, RM5
0	JP 1	54.01.0021	1 pce	Jumper	0.63*0.63mm, Au
0	MP 1	1.942.107.12	1 pce		RED. PSU CONN.PCB
0	MP 2	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 3	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 4	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 5	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 6	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 7	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 8	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 9	1.010.041.22	1 pce	M3*4.1	Nietmutter sw 6
0	MP 10	54.14.7002	2 pcs		Riegelwanne 30/39p
0	MP 11	54.14.7020	2 pcs		Pass-Stift
0	MP 12	54.14.7023	2 pcs		Pass-Buchse
0	MP 13	1.942.107.10	1 pce		NR.ETIKETTE
0	P 1	54.14.1022		3*10p	Messerleiste Ag PCB
0	P 2	54.12.0510		10p	Power-Pin Stecker
0	P 3	54.12.0505		5p	Power-Pin Stecker
0	P 4	54.14.1022		3*10p	Messerleiste Ag PCB
0	P 5	54.12.0504		4p	Power-Pin Stecker
0	P 6	54.12.0503		3p	Power-Pin Stecker
0	P 7	54.12.0503		3p	Power-Pin Stecker
0	P 8	54.12.0704		4p	Stecker gerade PCB
0	P 11	54.01.0020		1p	Pin, 1reihig, gerade
0	P 12	54.01.0020		1p	Pin, 1reihig, gerade
0	P 13	54.01.0020		1p	Pin, 1reihig, gerade
0	TP 1	not used		1p	PCB-Flachst 2.8*0.8, gerade
0	TP 2	not used		1p	PCB-Flachst 2.8*0.8, gerade

Idx.	Pos.	Part No.	Qtv.	Tvpe/Val.	Description

End of List


STUDER
Automation!
Digital
Continuity
Console
Studer OnAir 2000M2

The Studer OnAir 2000M2 in action: Main studio of a private radio station in Switzerland equipped with a 12 fader desk and Studer DigiMedia radio automation system.

A graphic display above each fader strip provides information on all parameter settings such as equalization, level, balance, etc. With a simple touch on the screen, the desired channel function is transferred to the central control unit.

The parameters of the selected function are displayed on the touch screen of the central section. On the right-hand side of the touch-sensitive screen, the system time and stopwatch functions are displayed. Other functions such as telephone inserts, storage and retrieval of snapshots, etc. are also controlled from here.

The Studer OnAir 2000M2 includes an input router. Any two (or six with a hex input module) of maximum 64 input signals can be assigned to any fader channel on the surface. By simply touching on the fader touch-screen, one of two (or six) signals can be selected directly. The user can also toggle between these pre-selected signals, A and B.

The Studer OnAir 2000M2 can be configured with up to four fader sections containing six channel faders each. This results in a modular system with 6, 12, 18 or 24 fader channels. A given configuration can easily be upgraded later in the field, with additional fader sections up to the maximum of 24 faders.

The Studer OnAir 2000M2 reduces the operator controls of each channel strip to one fader and three buttons: ON, OFF and PFL. All other settings are made via the central control screen. The Touch'n'Action concept allows direct access to functions without navigation through complex menu trees.

The four rotary encoders used for parameter settings feature tactile feedback. The end stops and detent points are set individually in accordance with the current function area. The ergonomic convenience of an analog mixing console is now complemented by digital technology.

The central section offers generous work space for the operator. It includes the central touch screen, configurable level meters, and the control field for monitoring and talkback.

Refreshingly Simple to Use

Studer makes highly sophisticated technology easily accessible. The Studer OnAir 2000M2 digital mixing console offers complete flexibility on a comprehensible and intuitively usable operating surface.

Allowing the user to concentrate on his primary task, the Studer OnAir 2000M2 digital mixing console provides only the key operating elements for routine use. This Touch'n'Action approach is both ergonomic in layout use and intuitive in operation. If desired, the operator can access all levels of configuration possibilities by means of touch screens, and adjust the setup to his specific needs.

The Studer OnAir 2000M2 is ready for integration into Computer Assisted Broadcasting (CAB) and radio automation systems such as the Studer DigiMedia system. Remote operation, for example by mobile telephone serving as a modem from nearly every-where, and unattended automatic operation is also possible.

Due to the fully-digital signal processing and processor-controlled operation of the console, specific setups can be stored (snapshots), either in the internal flash memory or on an external memory card. Up to 20 user accounts can be installed including, for example, a specific equalizer filtering curve for the DJ's microphone. Taking control of the console, the DJ has just to load his user profile and is ready to go OnAir. A selection out of maximum 64 input signals can be routed to any fader channel on the surface allowing for broadcast specific set-ups.

Whenever possible, customer-specific requirements and adaptations will be incorporated in the console to tailor the Studer OnAir 2000M2 digital mixing console to your needs. Please contact your local Studer representative for further information.

The Studer OnAir 2000M2 at a Glance

- Ergonomic and easy-to-learn solution for medium to large broadcast studios
- Modular 6, 12, 18 or 24 faders
- Fully-digital signal processing
- Input router with up to 64 inputs for any number of faders
- Graphical user interface giving complete system overview
- Programmable user authorization system
- Comprehensive monitoring and talkback
- Prepared for system integration
- Ready interface to radio automation systems

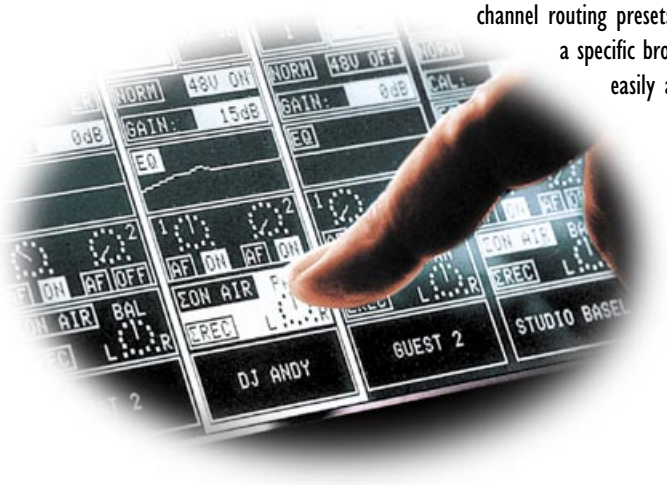
Touch'n'Action

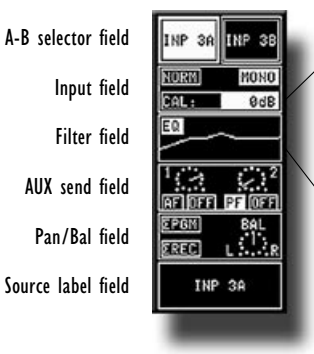
The operation of the Studer OnAir 2000M2 is based on a touch-screen user interface. Only the most important functions have hardware control elements. Therefore the operation of the console is very simple.

Every channel strip has its own channel screen section just above the corresponding fader providing information on the key elements of each channel's signal path. To adjust a particular channel parameter, the operator simply touches the symbol area in the channel touch screen. The corresponding control field is instantly expanded on the central section control touch screen. The parameters can then be set in detail using rotary encoders or by choice from a selection table.

The channel screen shows the selected physical input (depending on the input module type, two or six input signals may be connected to one fader channel, whereas the assignment will be set according to the input router setting), selected phase and stereo mode (LR/RL/LL/RR), gain setting, phantom power on/off, equalizer filter setting curve, AUX bus settings, balance or pan, output bus routing (program and/or record bus) and the source label, for example, DJ mic or Disc 1, etc.

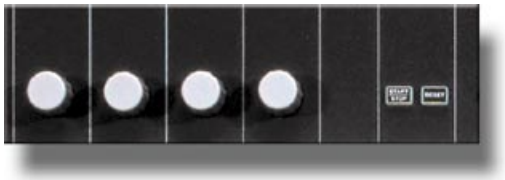
The input router enables any input module to be assigned to any of the available fader channels on the surface. This configuration can also be stored and retrieved from the user profile. Additionally, channel routing presets, which can be prepared for a specific broadcast such as News etc., are easily accessible.





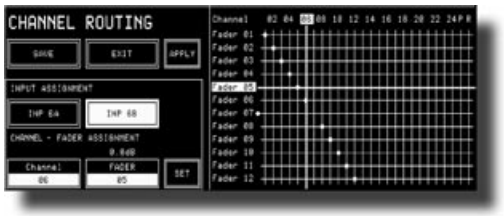
Upon touching the input field, the channel screen expands on the central screen. Here the user can conveniently select the output signal routing or adjust the balance or pan respectively. In the mid right section the user can chose one of the menu buttons to progress deeper into the machine controls.

Here the equalizer filter curve setting has been chosen. The user can switch the equalizer on or off and set the frequency and slope of the filter curve. The date and time displayed on the right of the screen can be synchronized with an external time signal. Also available are two stop watches. One of the stop watches can be controlled by a fader start signal or externally.

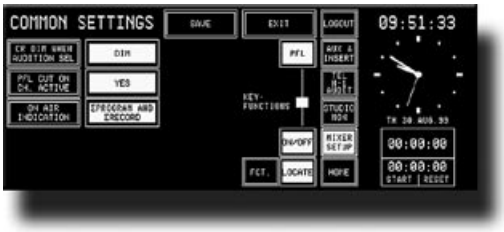


Studer has designed proprietary rotary encoders with purely virtual detents and end stops (pat. pending). A computer-actuated, electromagnetic brake with variable strength generates the feeling of real detents or stops . This overcomes the flaws of traditional encoders. Thanks to the tactile feedback, the operator no longer has to observe the screen to check a setting.

A user authorization system allows control of access rights for many functions of the mixing console. Up to twenty users can be given a log-in name by the administrator to access their working domain. Each user can store and recall his own snapshots or mic settings.



The user can, access permission given, assign the input signals easily to a fader using this graphical representation of the input matrix. The selection is made by choosing a fader and an input channel via the two left rotaries, displayed also by two highlighted lines in the grid. Where these lines cross, the connection is made by touching the set button. The channel routing can be stored in the user profile. In addition, five preset configurations, e.g. for news or sports broadcast, can be accessed globally by all users.



There are a number of system configuration submenus. To open a respective menu page, the operator touches the appropriate soft button on the screen. In the input configuration page of an analog line input, for example, nominal levels and headroom can be adjusted, and features such as fader start, external control, bus assignment, timer start, or the channel label can be customized. Other pages provide a detailed system diagnostics menu and a software dump function used to download global or specific configuration data to a memory card.

Any of the faders can be configured as master fader for one of the two main output busses (PGM or REC bus). This configuration is done in the Channel Routing page (see above) with the two rotary encoders located below the Channel and Fader fields.

The corresponding fader screen section will change to the master display mode while the original channel remains still active in the background. Both the master fader and the channel fader in the background can be controlled by an automation system.

Snapshots and configurations can be stored and retrieved via a memory card (PCMCIA). It allows the user to completely reconfigure the console, or just recall a suitable EQ setting for the DJ's microphone channel. Radio stations often use the same console type for OnAir and production applications. Via the memory card, it is easily possible to reload different settings and turn a production console into an OnAir console within seconds. In addition, new software versions can be downloaded from the memory card to the console.

Modular Concept

Thanks to its modular concept, the Studer OnAir 2000M2 can be configured to suit your needs. The console is built around a central section and may include up to four fader sections. The central section includes the Digital Signal Processing (DSP) electronics, the control electronics and the power supplies. It also houses the central touch screen, the level meters and the monitoring controls. Moreover, it offers a generous working space desk for the operators' notes.

Each of the fader sections includes six channel faders and a channel touch screen, as well as the individual input modules for the physical connection of the signal sources to the console. If there are more input modules required than faders, input module extension boxes are available.

The Studer OnAir 2000M2 offers a wide variety of different input module types:

Type	# input	Audio connector
Mic input module	2 mono	XLR
Analog line module	2 stereo	XLR
Digital input module	2 stereo	XLR, Cinch, Toslink
Analog hex line input module	6 stereo	Siemens 39 pin
Digital hex input module	6 stereo	Siemens 39 pin

The console can be equipped with either 6, 12, 18, or 24 faders (one to four fader sections). Different input module types can be selected according to the specific signal source to be connected. The analog input modules include the A/D conversion of the signal, a preamplifier and the phantom powering in case of an analog microphone input module. The digital input modules support either AES/EBU or S/PDIF formats whereby the digital signal source needs not to be synchronized since the input modules are equipped with an asynchronous sampling frequency converter (SFC).

The user, access permission given, or administrator can choose one of the input modules directly on the router page on the central screen and assign it to a fader. Each fader channel has two or six signals (depending on the input module type) selectable directly on the channel touch screen. Up to 64 signal sources can be connected to the console. The Studer OnAir 2000M2 is self-configuring. If any module is changed, the system recognizes the new set-up after powering up the console and automatically adapts to the new hardware.

This flexibility makes the Studer OnAir 2000M2 a future-proof investment when migrating a fully digital broadcast system.

For complete system solutions and integration of specific customer requirements, Studer offers a wide range of customer adaptations. Our Systems Group will be delighted to work with you on a turnkey project to help fulfill your wishes. Please contact your local Studer representative.

Monitoring, Talkback, and Metering

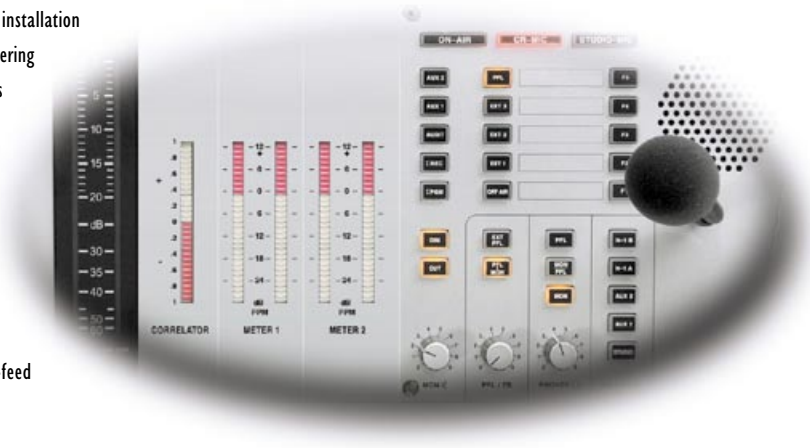
The Studer OnAir 2000M2 offers a comprehensible monitoring and talkback section. In addition to the internal signals, a variety of external sources can be monitored directly from the console. Talkback to several destinations is conveniently accessible to the user.

The monitoring and talkback controls are located on the right side of the central control screen. They provide access to the auxiliary outputs (AUX), the audition bus, the two mix busses (PGM, REC), the pre-fader listening bus (PFL), three external sources (EXT) and an external off-air monitor feed. A dedicated external PFL input is provided for use with radio automation systems. Separate level controls are available for the headphones, the loudspeakers and PFL/talkback signals.

Control room monitoring

Ten keys are available to select one of the six internal and four external signal sources whereby the selected source key is illuminated. The function keys F1 to F5 act as additional source selectors for external analog and digital signals given that the optional Monitor Extension 1 is installed *(see Accessories and Options)*.

The meter section allows installation of four 190 x 40 mm metering modules. The level meters can be installed according to customer specifications, e.g. level meters for PGM and REC bus outputs with VU or PPM characteristics, phase correlator, meters for AUX sends or clean-feed outputs (N-1).



Built-in loudspeakers on each side of the central section of the console are used for talkback and PFL listening in the control room.

Studio monitoring

The built-in studio monitoring functions are based on a touch screen menu on the central control screen. The monitoring source selection can also be controlled directly from the studio via external push buttons. The monitor loudspeaker and headphone levels can be independently remote controlled by two potentiometers in the studio *(see Accessories and Options)*.

Talkback

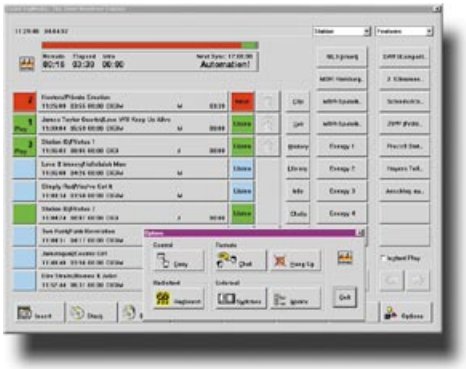
In the standard configuration, there is a choice of five talkback destinations from the DJ's microphone. A key is assigned for each destination. The two clean-feeds (N-1) can be used as mono outputs to telephone hybrids or to line outputs. Optionally four additional clean-feeds can be installed. The clean-feeds as well as the general purpose audition bus have master level controls accessible via the central touch screen. Talkback to the AUX busses or the studio is directly accessible. In contrast, any of the five function keys F1 to F5 can also be configured as additional talkback target keys.

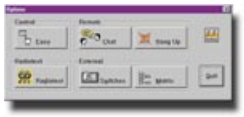
Radio Automation

The Studer OnAir 2000M2 is ideally suited for integration into a radio automation or Computer Assisted Broadcast (CAB) system. It can be integrated in a network of several computer workstations, CD jukeboxes or other data storage devices. The whole system can also be remote controlled from virtually anywhere by a combination of laptop computer and mobile phone.

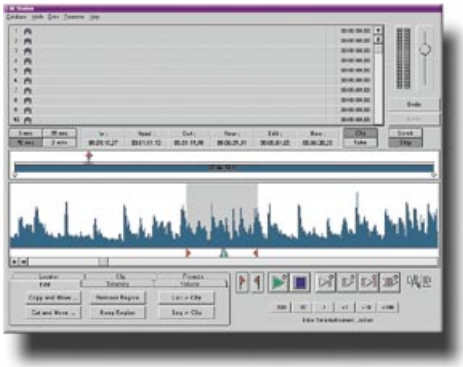
For this purpose, the Studer DigiMedia radio automation system Studer DigiMedia has been developed by Studer in cooperation with radio professionals bringing extensive hands-on experience. Studer DigiMedia is a worldwide proven, reliable and very easy-to-use system. The OnAir 2000M2 can be fully controlled by Studer DigiMedia and allows for either completely automated operation, semi-automatic operation or manual use.

This Studer DigiMedia display shows the sequence control of the OnAir program. In addition to the playback and prelistening of the selections from the play list, access to the entire database is possible. Jingles, format elements or reports can be played directly even if they are not planned in the play list. Access to supplementary functions such as RDS or matrix control is also possible.

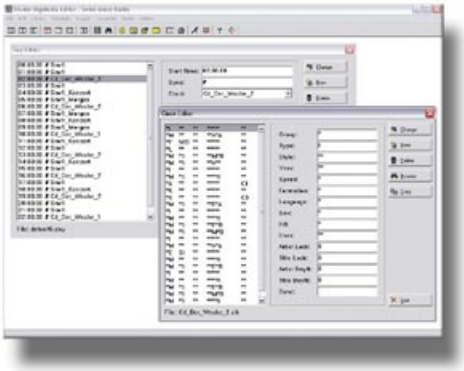


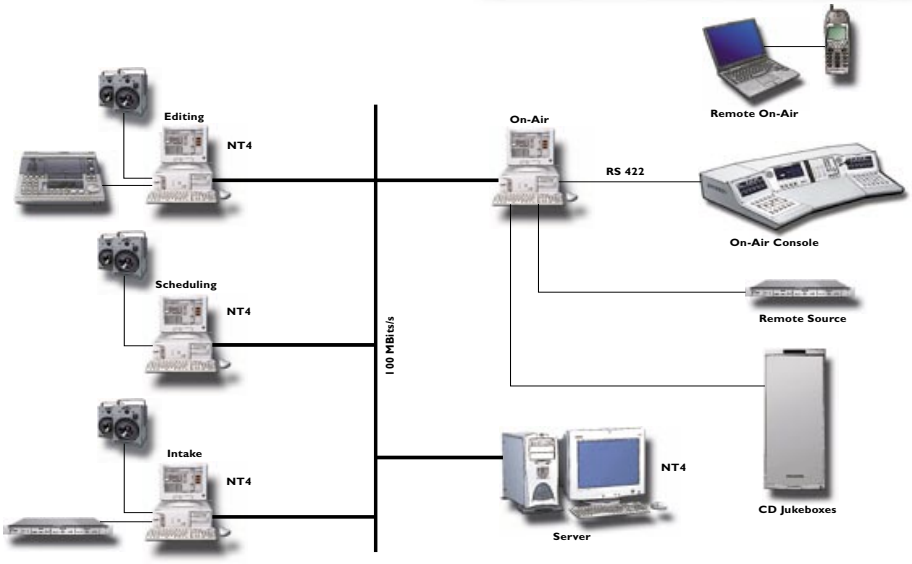


The option panel gives access to various tools such as a Chat Mode, control of an external Audio Matrix, switching of peripheral devices, Radiotext selection and others.



A professional two-channel or multitrack editor with or without mixing tools is built into the Studer DigiMedia software. Edited elements can be stored directly in the database. Elements stored as “Hotnews” are displayed on the OnAir Station and are ready for immediate playback through the Studer OnAir 2000M2 console.





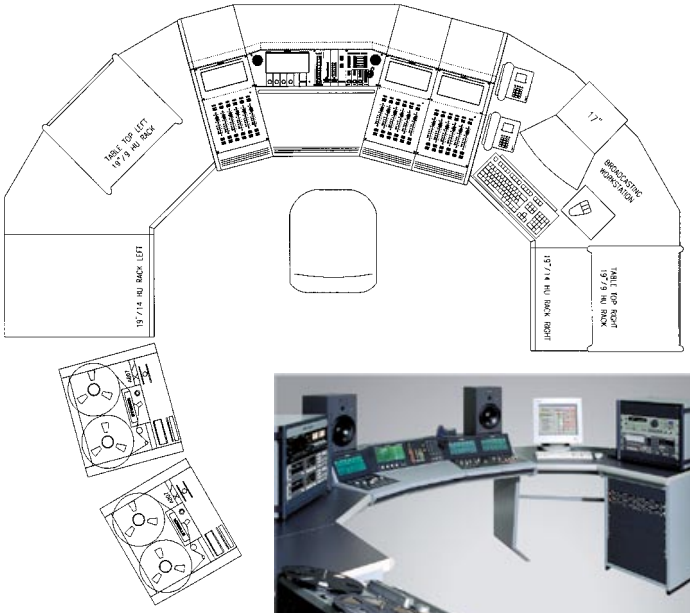
For scheduling, a play list can be generated either automatically or manually on the Edit Station. Modifications are possible any time on the Edit Station as well as on the OnAir Station. The play list may be assembled well in advance or shortly before broadcasting.

The Studer DigiMedia allows for various RDS signals and messages to be sent out. In addition to the automated output of RDS data, instant messages can be transmitted, even images in jpg/gif format can be added, which may be important in view of future digital radio formats.

Networking and remote control: Studer OnAir 2000M2 and Studer DigiMedia can be operated via the screen of a remote workstation. It makes no difference whether the workstation is connected via a LAN or a modem, e.g. the high-speed transmission protocol from a GSM modem. (The Studer DigiMedia software is not part of the Studer OnAir 2000M2 digital mixing console.)

System Integration

Studer as a systems house not only offers high quality mixing consoles but complete turnkey solutions. Over fifty years of intensive customer contact and professional expertise have made Studer one of the leading manufacturers of audio equipment worldwide.



The Systems Group at Studer can help you find the optimum solution for your needs. Studer offers, plans and realizes complete studios for local radio stations or complex broadcast house installations with master control rooms and multiple control rooms and studios.

Example of a radio studio with an 18-fader Studer OnAir 2000 console, a broadcasting workstation running Studer DigiMedia, two Studer A807 tape recorders and additional equipment for DJ operation, planned and installed by Studer.

Studer engineers provide a wide variety of special equipment to fit customer requirements like this remote fader unit which allows the signals to be controlled directly from the studio.

Example of a multi-purpose OnAir complex incorporating a Studer OnAir 2000 and a multi-purpose studio area handling talk and music programming. This is one of two identical studios which can be networked for easy transition at program breaks while offering added redundancy. Studer has built many similar facilities with multiple identical rooms, often using over 20 Studer OnAir 2000M2 consoles in the same installation.

Accessories and Options

Input and output modules

To fit customers' needs, different versions of input and output modules are available:

- Mic/line mono input modules
- Analog line stereo input modules
- Digital input modules
- Analog hex line input modules
- Digital hex input modules
- Analog output modules
- Dual analog output modules
- Digital output modules

Telephone hybrid module

The telephone hybrid module is used to control the usual functions Hold, Drop and OnAir for two independent telephone hybrids directly from the Studer OnAir 2000M2.

Serial interface module

This module provides an RS 232 / RS 422 serial communication link. It can be used for communication with a Computer Assisted Broadcast (CAB) system

Analog insert module

The analog insert module has two electronically balanced stereo insert sends and returns which can be assigned to any of the input channels or to the PGM or REC buses.

Digital insert module

The digital insert module has two transformer-coupled AES/EBU insert sends and returns which can be assigned to any of the input channels or to the PGM or REC buses.

Clock sync module

This module allows the synchronization of the internal clock frequency to an external master clock. Synchronization to the following external signals is possible:

AES/EBU: 32 kHz, 44.1 kHz, 48 kHz
Wordclock: 32 kHz, 44.1 kHz, 48 kHz
Video sync: 25 fps, 29.97 fps, 30 fps

Time sync module

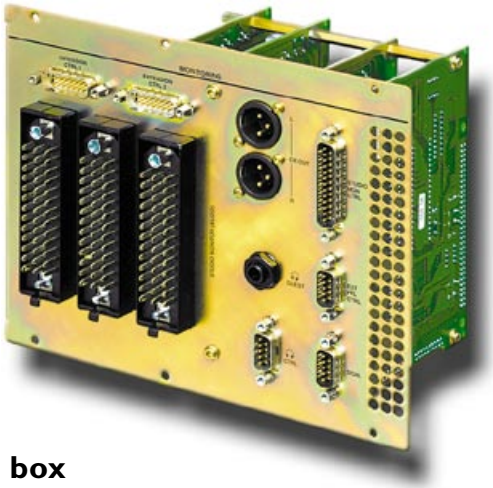
Using the time sync module the console's internal clock can be synchronized with an external time reference signal such as DCF 77, a GPS receiver or a Mobatime clock providing a serial output signal.

Monitor module extension

The monitor module can be extended in two steps. The basic function of the standard module will be maintained.

Extension 1 allows five Additional external monitor sources, two of them being digital.

Extension 2 additionally includes two VCA modules, two electronically balanced line outputs, a D/A converter and two relays. It allows the implementation of customer specific circuits.



Metal stand

For applications where the Studer OnAir 2000M2 will not be installed on or in an existing table, a metal stand is available.

Studio talkback box

The studio talkback box is equipped with three talkback keys (TB to control room, TB to N-1A [TEL1], TB to N-1B [TEL2], a cough key (mutes the studio microphone), a MIC ON signalling lamp, six selector keys for selection of the source, and separate volume controls for studio loudspeakers and headphones.

Redundancy

For redundancy purposes, external power supplies can be connected to the console. Each module includes a primary switched-mode power supply and a secondary DC-DC converter.

Input Module Extension Box

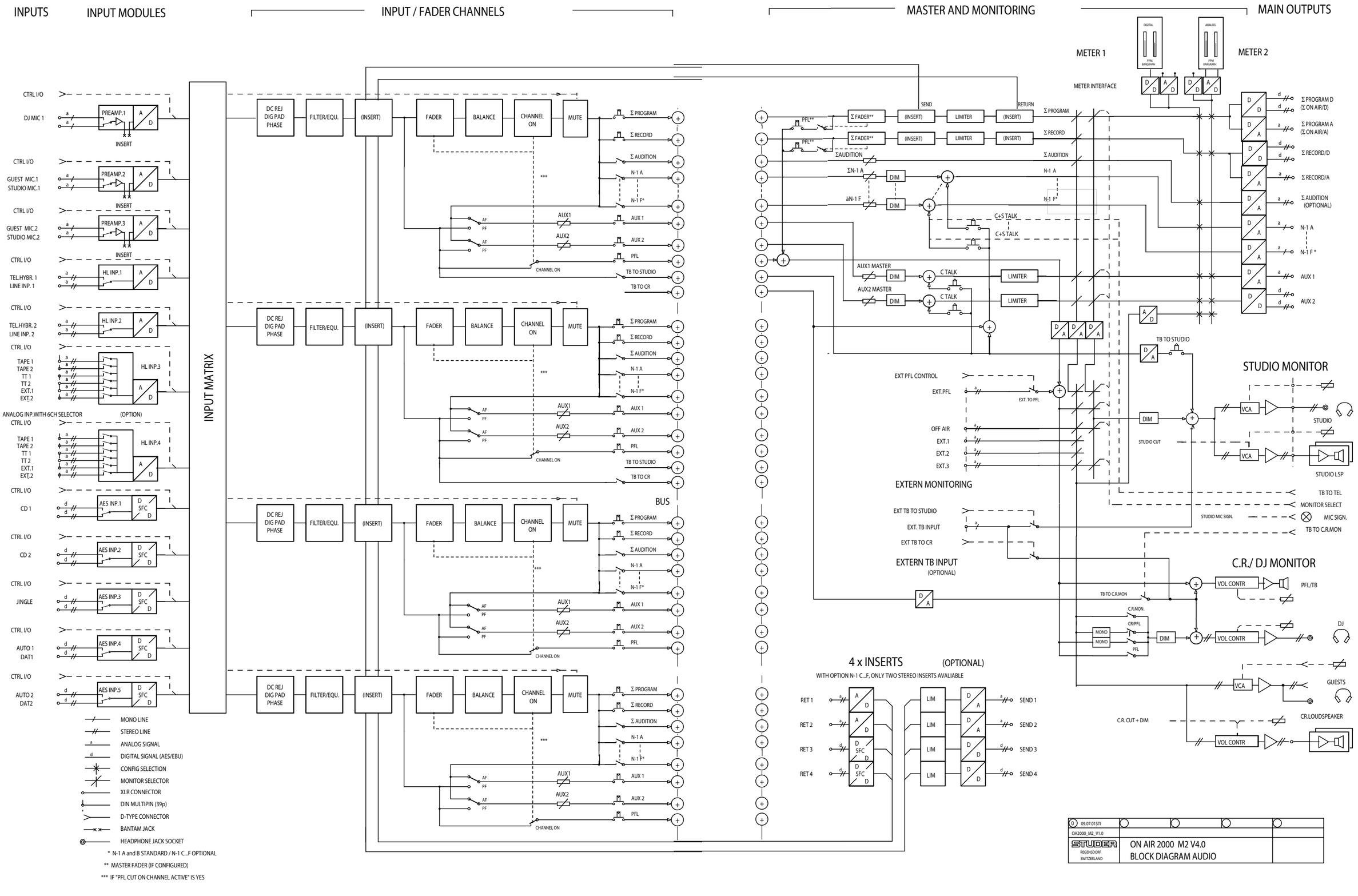
If more input modules than faders are required, the Input Module Extension Box is used to house and connect these modules. The Input Module Extension Box has to be placed close to the console. The maximum number of all input modules for the OnAir 2000M2 is 24 resulting in a maximum of 64 input signals.

Service and Support

The Studer OnAir 2000M2 is a time-tested and proven digital mixing console which is in use in hundreds of installations worldwide, 24 hours a day, seven days a week. Due to the modular setup of the OnAir 2000M2, individual function blocks can easily and quickly be exchanged at the customer's site.

We at Studer know that reliability is vital to our customers. Therefore Studer offers worldwide service and support for its products. Studer also offers operator training and service courses on-site or in the factory. Please consult your local Studer representative.

Block Diagram



Dimensions and Features

Studer OnAir 2000M2 features:

- Fully digital OnAir mixing console
- Ergonomic, easy-to-learn Touch'n'Action user interface (pat. pend.)
- Complete system overview
- Rotary encoders with tactile feedback (pat. pend.)
- Console snapshots
- Microphone snapshots
- Memory-card (PCMCIA) for configuration, snapshots and software updates
- 6, 12, 18 or 24 channel faders, each with A/B input selector or hex input (optional)
- Input router
- Up to 64 audio inputs
- User Authorization System

Input modules:

- Microphone inputs with transformer, high-pass filter, phantom powering and analog insert (mono)
- Analog balanced stereo high level inputs with or without transformers
- Analog balanced hex inputs (6 x stereo high level input)
- Digital inputs (2 x stereo, AES/EBU and S/PDIF)
- Digital hex inputs (6 x stereo AES/EBU and S/PDIF)
  (All digital inputs with SFC (Sampling Frequency Converter))

Output modules:

- Analog outputs (stereo or mono)
- Digital outputs (AES/EBU, stereo or mono)

7 output buses:

- Program output (stereo)
- Record output (stereo)
- Audition output (stereo)
- 2 clean-feed/(N-1) (optional 6) outputs (mono)
- 2 Aux outputs (stereo)

Assignable inserts (optional):

- 4 insert sends (stereo)
- 4 insert returns (stereo)

Comprehensive monitoring:

- 6 internal monitoring sources
- 4 external monitoring inputs
- Output for DJ headphones
- Output for guest headphones with VCA control input
- Output for CR monitoring loudspeaker
- Output for studio headphones with VCA control input
- Output for studio loudspeakers with VCA control input
- Talkback to 5 destinations
- Built-in PFL/TB loudspeakers
- External PFL input for broadcast automation systems
- Control signals for studio monitoring unit

Miscellaneous:

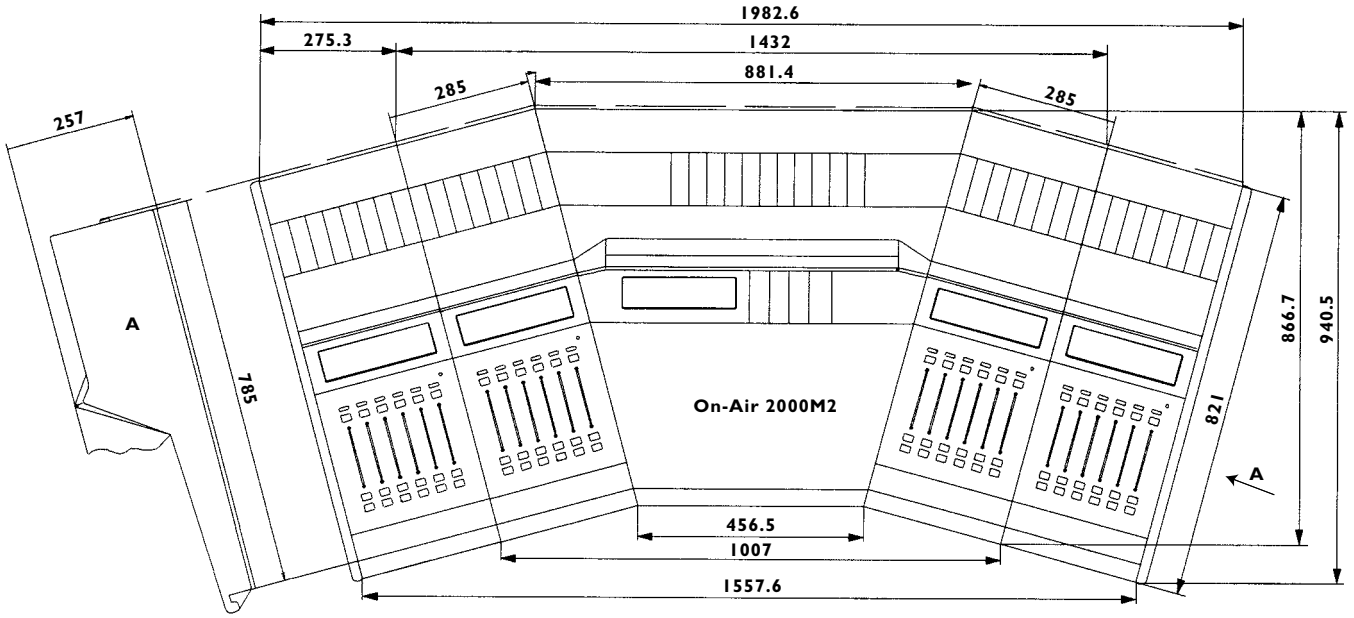
- 1 or 2 dual bargraph PPM or VU meter
- Built-in clock/stop watch
- Easy system configuration

Channel functions:

- Calibration (Line Input) / Gain (Mic Input)
- Stereo mode (LR / LL / RR / RL)
- Phase (normal / reversed)
- Equalizer (3 band)
- AUX1 and AUX2 level (AF or PF)
- AUX1 and AUX2 master level
- Balance (stereo inputs) / Panning (mono inputs)
- Bus assignment (Program and Record bus)
- Fader start and signaling

Options:

- Telephone hybrid control module
- Sync module (console synchronization to Wordclock or AES/EBU)
- Time code reader module (clock synchronization)
- RS232 / RS422 interface for e.g. DCF-77, integration with radio automation etc.
- Input Module Extension Box



Dimensions in Millimeters

Technical Specifications

General

Level specs, digital, in dB_{FS}:	dB, referenced to full modulation (dB_{FS}, dB Full Scale)
Level specs, analog, in dBu:	0 dB ≙ 0.775 Vrms
Level specs, analog, in dBu_{FS}:	Level in dBu for full modulation (≙ 0 dB_{FS})
Sampling rate:	48 kHz ±50 ppm (internally synchronized)
Headroom adjustable:	0 to 20 dB
Default setting:	9 dB
Output Level	15 dBu @ 0 dB_{FS}

All input faders set to their 0 dB position. External analog sources: source impedance < 200 Ω. Frequency range: 20 Hz to 20 kHz, if not stated otherwise.

Microphone inputs

Microphone input modules have A/B-switchover and are equipped with a balancing transformer and XLR connectors. The signal is routed to an electronically balanced, analog insert point before the A/D-converter.

Input sensitivity:	-60 to +20 dBu_{FS} (with 9 dB headroom: -69 to +11 dBu)
Gain setting:	in steps of 1 dB
Phantom power, switchable:	48 V
Frequency response:	±0.5 dB
High-pass filter (12 dB/Octave):	-3 dB @ 75 Hz ±5 Hz, switchable
Input impedance:	> 1 kΩ
Insert level:	+15 dBu_{FS} (with 9 dB headroom: +6 dBu)
A/D converter:	24 bit (Delta-Sigma, 64 × oversampling)
Dynamics:	typ. 102 dB (unweighted)
THD+N:	< -85 dBFS, 20 Hz to 20 kHz, @ -1 dB_{FS}
THD+N:	< -100 dBFS, 20 Hz to 20 kHz, @ -30 dB_{FS}
Noise figure:	typ. < 4 dB @ max. gain, bandwidth 20 kHz, Rs=200Ω
Common mode rejection:	> 50 dB @ 15 kHz, > 75 dB @ 50 Hz

Line level inputs

Analog line level input modules are available in three versions:

- Stereo input with A/B switching, with balancing transformer, XLR connectors
- Stereo input with A/B switching, with electronically balanced input, XLR connectors
- Stereo input with 6-input selector, with balancing transformer. On this module the sources are connected via a 39-pin DIN connector.

Input sensitivity for 0 dB_{FS}:	0 to +24 dBu_{FS} (with 9 dB headroom: -9 to +15 dBu)
Gain setting:	in steps of 1 dB
Frequency response:	±0.1 dB
Input impedance:	> 10 kΩ
A/D converter:	24 bit (Delta-Sigma, 64 × oversampling)
Dynamics:	typ. 102 dB (unweighted)
THD+N:	< -94 dBFS, 20 Hz to 20 kHz @ -1 dB_{FS}
THD+N:	< -100 dBFS, 20 Hz to 20 kHz @ -30 dB_{FS}
Common mode rejection:	> 50 dB @ 50 Hz to 15 kHz, with transformer; > 47 dB @ 50 Hz to 15 kHz, electronically balanced

Digital inputs

Digital input modules are available either with A/B switching or with a 6-input selector. The module with A/B switching supports the AES/EBU (AES3-1992) and S/PDIF (IEC 958) formats. It is equipped with XLR, Cinch, and Toslink connectors.
The 6-input selector supports the AES/EBU (AES3-1992) format and is equipped with a 39-pin DIN connector for source connection.
All digital inputs are equipped with a sampling frequency converter (SFC).

SFC resolution:	20 Bit
Input sampling rate:	30 to 54 kHz
THD+N:	< -105 dBFS @ 1 kHz, 0 dB_{FS}
Frequency response:	±0.1 dB
Input impedance:	110Ω (AES/EBU inputs); 75Ω (S/PDIF inputs)

Analog outputs

Analog output modules are available with balancing transformer or with electronically balanced output, XLR connectors.

Output level @ 0 dB_{FS}:	(transformer-balanced) +4 to +24 dBu @ RL = 100 kΩ; +4 to +23 dBu @ RL = 300 Ω
Output level @ 0 dB_{FS}:	(electronically balanced) +4 to +23 dBu @ RL = 100 kΩ; +4 to +22 dBu @ RL = 300 Ω
D/A converter:	24 bit (Delta-Sigma, 128 × oversampling)
Dynamics:	typ. 101 dB (unweighted)
THD+N:	< -90 dB_{FS} @ 1 kHz, -1 dB_{FS}
Frequency response:	±0.2 dB
Output impedance:	< 40 Ω

Digital outputs

Digital output modules are equipped with two independent outputs according to the AES/EBU standard (AES3-1992). On each of these outputs, the same signal is fed to two XLR sockets with individual buffers.

Output level	2 to 5 V
Output impedance	110 Ω

Equalizer

Treble control (High)	5 kHz/10 kHz: ±15 dB (depending on Customer Code setting)
Equalizer (Mid)	200 Hz to 10 kHz: ±15 dB
Bass control (Low)	200 Hz/400 Hz: ±15 dB

Crosstalk attenuation

Between channels	> 90 dB
Input fader attenuation	> 100 dB

Power supply

Mains voltage	100 to 240 V, 50/60 Hz (auto-ranging)
Power consumption	150 VA typ. (OnAir 2000M2/24/4)
	Redundant power supply available on request.

Weight

OnAir 2000M2 6/4	34 kg
OnAir 2000M2 12/4	44 kg
OnAir 2000M2 18/4	55 kg
OnAir 2000M2 24/4	63 kg

Note:
Depending on the application, the OnAir mixing consoles can have different configurations. For this reason the values mentioned above are applicable only to a typical configuration; in an individual case, the values may differ. We reserve the right to make changes as technological progress may warrant.

Data subject to change without notice.

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