

VS-1680 SERVICE NOTES

24BIT DIGITAL STUDIO WORKSTATION

First Edition
Issued by RJA

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SPECIFICATIONS

VS-1680: 24 bit Digital Studio Workstation

- Tracks :Tracks :16
:V-Tracks :256(16V-Tracks per each Track)

Note :Up to 8 tracks can be recorded simultaneously, and up to 16 tracks can be played back simultaneously.

- Maximum Useful Capacity :128Gbytes :2Gbytes(capacity)
x8 (Partition)
x8 (Disk Drive)
- Internal Memory :Songs :200(each partition)
- Equalizer :HI, MID, LOW (16 channels)
HI, LOW (26 channels)
- Recording Mode :Multitrack Pro (MTP)
Mastering (MAS)
Multitrack 1 (MT1)
Multitrack 2 (MT2)
Live 1 (LIV1)
Live 2 (LIV2)
- Signal Processing :AD Conversion :20bits,64times oversampling
:DA Conversion :20bits,128times oversampling
Internal Processing :24 bits (mixer section)
- Sample Rate :48.0 kHz, 44.1 kHz, 32.0 kHz

Note :Sample rate can be adjusted around 22.00~50.48 kHz (maximum) by using vari-pitch function.

- Frequency Response :Sample Rate
:48.0 kHz:20 Hz~22 kHz (+0.2 dB/-0.2 dB)
:44.1 kHz:20 Hz~20 kHz (+0.2 dB/-0.2 dB)
:32.0 kHz:20 Hz~14 kHz (+0.2 dB/-0.2 dB)

- Total Harmonic Distortion
(INPUT SENS: 0 dBu, 1 kHz at nominal output level)
:0.005 % or less (recording mode: MTP)
:0.003 % or less (recording mode: MAS)

●Recording Time (at 2 G bytes, 1 track)

Recording Mode	Sample Rate	48.0 kHz	44.1 kHz	32.0 kHz
MTP	742 minutes	808 minutes	1114 minutes	
MAS	370 minutes	404 minutes	556 minutes	
MT1	742 minutes	808 minutes	1114 minutes	
MT2	990 minutes	1078 minutes	1484 minutes	
LIV1	1188 minutes	1292 minutes	1782 minutes	
LIV2	1484 minutes	1616 minutes	2228 minutes	

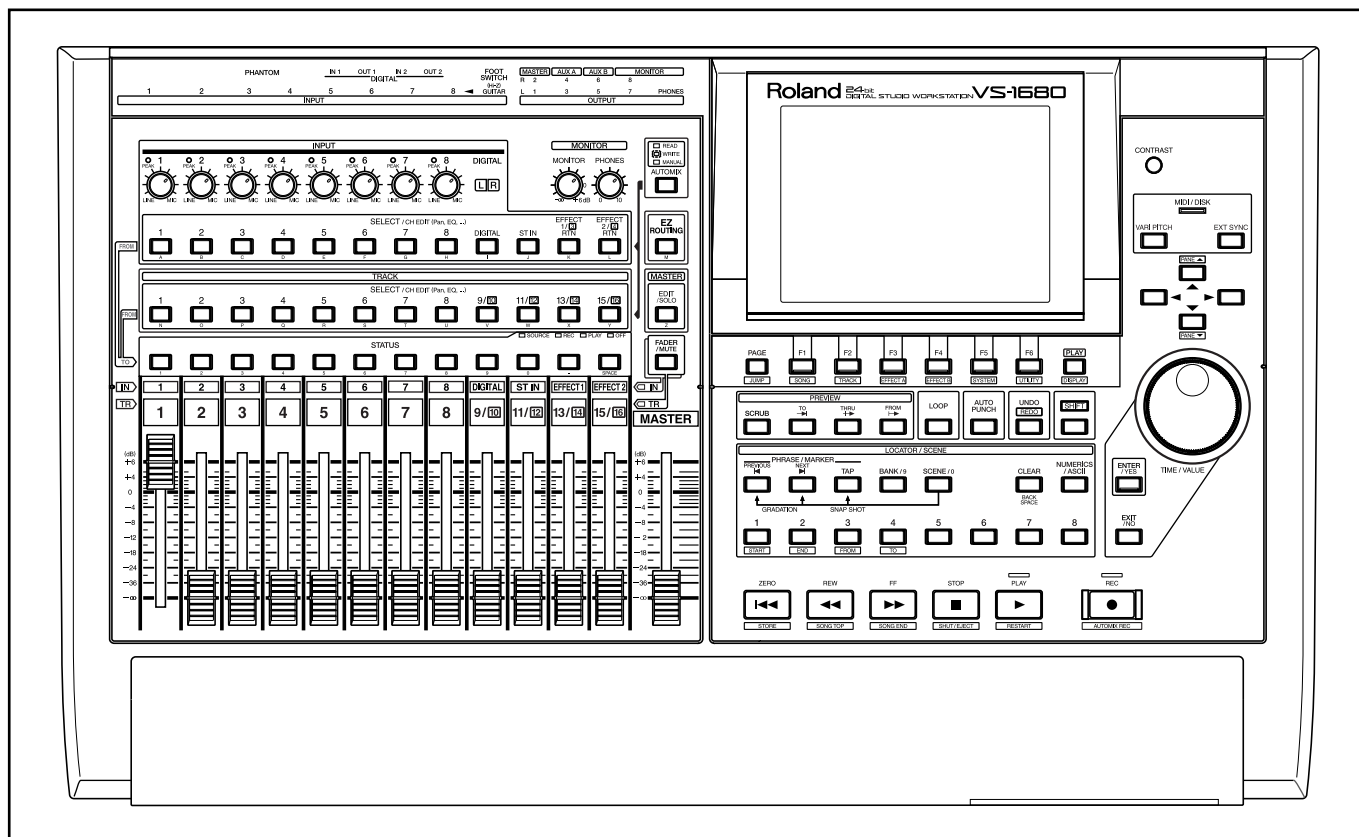
Note :The above-listed recording times are approximate. Times may be slightly depending on the specifications of the disk drive and on the number of songs that were created.

- Nominal Input Level (variable)
Input1--2 :-50--+4 dBu (maximum +26 dBu:Balanced, maximum +20 dBu:Unbalanced)
Input3--8 :-50--+4 dBu (maximum +26 dBu:Balanced, maximum +20 dBu:Unbalanced)
Guitar(Hi-Z) :-50--+4 dBu (maximum +26 dBu:Balanced, maximum +20 dBu:Unbalanced)

- Input Impedance :Input1--2 :30 k ohms
:Input3--8 :30 k ohms
:Guitar (Hi-Z) :500 k ohms

- Nominal Output Level :Master Out :0 dBu
AUX A (L, R) :0 dBu
AUX B (L, R) :0 dBu
Monitor Out :0 dBu

- Output Impedance :Master Out :1 k ohm
AUX A (L, R) :1 k ohm
AUX B (L, R) :1 k ohm
Monitor Out :1 k ohm
Headphones :22 ohms



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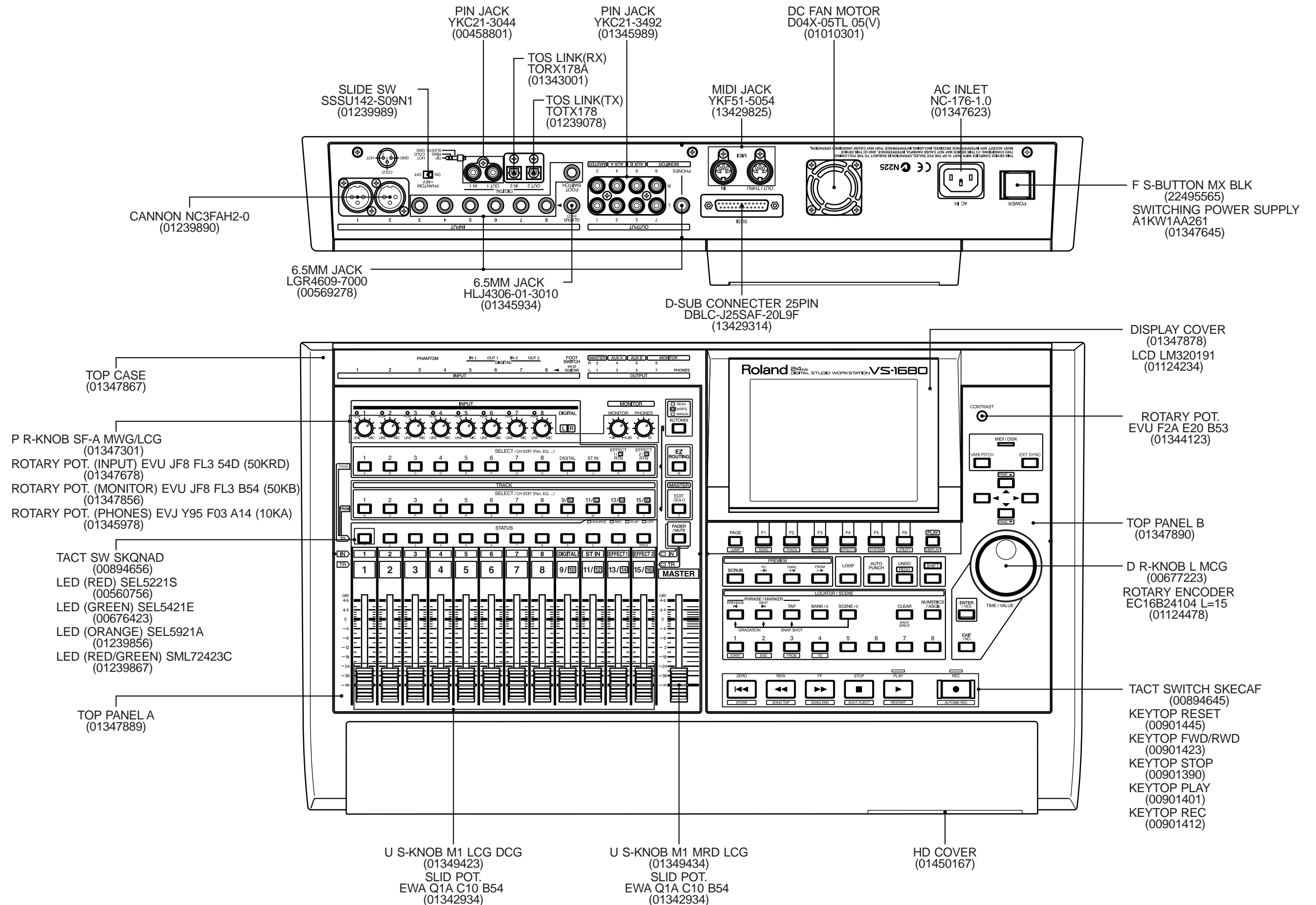
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●Recommended load Impedance	:Master Out :10 k ohms or greater AUX A (L, R) :10 k ohms or greater AUX B (L, R) :10 k ohms or greater Monitor Out :10 k ohms or greater Headphones :8--50 ohms
●Residual Noise Level (input terminated with 1 k ohms,INPUT SENS = LINE, IHF-A, typ.)	:Master Out :-82 dBu or less AUX A (L, R) :-82 dBu or less AUX B (L, R) :-82 dBu or less Monitor Out :-82 dBu or less
●Interface Connectors	:SCSI :DB-25 type Digital I/O :Coaxial, Optical (conforms to S/P DIF)
●Display	:320 x 240 dots, Graphic LCD (with backlit)
●Connectors	:SCSI Connector (DB-25 type) MIDI Connector (IN, OUT/THRU) Input Jack 1--2 (XLR type, balanced, phantom power) Input Jack 3--8 (1/4 inch phone type, TRS balanced) Guitar (Hi-Z) Jack (1/4 inch phone type) Digital In Connector (Coaxial type, Optical type) Digital Out Connector (Coaxial type, Optical type) Foot Switch Jack (1/4 inch phone type) Headphones Jack (Stereo 1/4 inch phone type) AUX A Send Jack L/R (RCA phono type) AUX B Send Jack L/R (RCA phono type) Master Out Jack L/R (RCA phono type) Monitor Out Jack L/R (RCA phono type)
●Power Supply	:AC 117 V, AC 230 V or AC 240 V
●Power Consumption	:33 W (Including internal hard disk)
●Dimension	:554 (W) x 336 (D) x 109 (H) mm 21-13/16 (W) x 13-1/4 (D) x 4-5/16 (H) inches
●Weight	:6.3 kg (Excluding internal hard disk) 13 lbs 15 oz
●Accessories	:Owner's Manual (ENGLISH) :#71017189 AC Cord 120V :#00894378 AC Cord 230V :#00894389 AC Cord 240VE :#00907001 AC Cord 240VA :#23495124
●Options	:Internal Hard Disk Drive Unit :HDP88 Series Effect Expansion Board :VS8F-2 Foot Switch :FS-5U (BOSS) Pedal Switch :DP-2 Headphone :RH-120

(0 dBu = 0.775 V rms)

* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

LOCATION OF CONTROLS



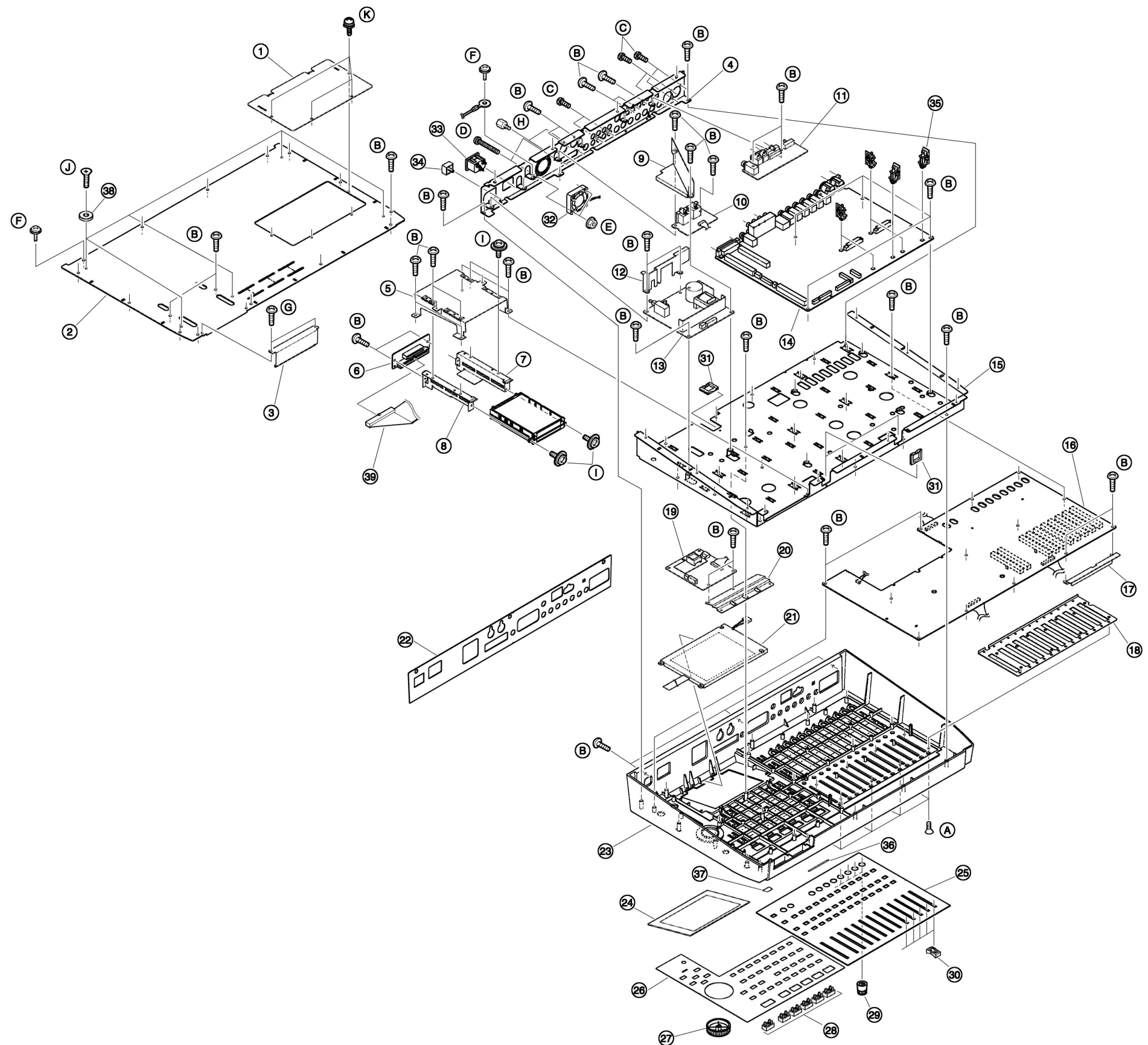
EXPLODED VIEW

[PARTS]

No.	PART No.	PART NAME
①	01452289	EXP COVER
②	01347901	BOTTOM COVER
③	01450167	HD COVER
④	01347712	PWB HOLDER
⑤	01349878	HD HOLDER
⑥	70905967	CONNECTER BOARD
⑦	00897812	ANGLE HD-R
⑧	00897823	ANGLE HD-L
⑨	01561334	AIR GUIDE
⑩	70906756	MIDI BOARD
⑪	71011289	DIGITAL I/O BOARD
⑫	01458312	SHIELD PANEL
⑬	01347645	SWITCHING REGULATOR A1KW1AA261
⑭	71015356	MAIN BOARD
⑮	01348090	SUB CHASSIS
⑯	70897023	PANEL BOARD
⑰	01451445	SWB HOLDER
⑱	01459201	VOLUME HOLDER
⑲	71015967	LCD CONTRAST BOARD
⑳	01451434	LCD HOLDER
㉑	01124234	DISPLAY UNIT LCD LM320191
㉒	01450112	REAR PANEL
㉓	01347867	TOP CASE
㉔	01347878	DISPLAY COVER
㉕	01347889	TOP PANEL A
㉖	01347890	TOP PANEL B
㉗	00677223	D R-KNOB L MCG
㉘	00901423	KEYTOP FWD/RWD
	00901401	KEYTOP PLAY
	00901412	KEYTOP REC
	00901445	KEYTOP RESET
	00901390	KEYTOP STOP
㉙	01347301	P R-KNOB SF-A MWG/LCG
㉚	01349423	U S-KNOB M1 LCG DCG
	01349434	U S-KNOB M1 MRD LCG
㉛	01455523	CORD BUSHING EDS-1717U
㉜	01010301	DC FAN MOTOR D04X-05TL 05(V)
㉝	01455745	WIRING POWER WITH INLET
㉞	22495565	F S-BUTTON MX BLK
㉟	00899890	PWB SPACER KGES-12
㊱	17048413	STATUS KEY SEAL
㊲	17048412	AUTMIX KEY SEAL
㊳	22355160	FOOT D25
㊴	01347912	WIRING HDD

[SCREW]

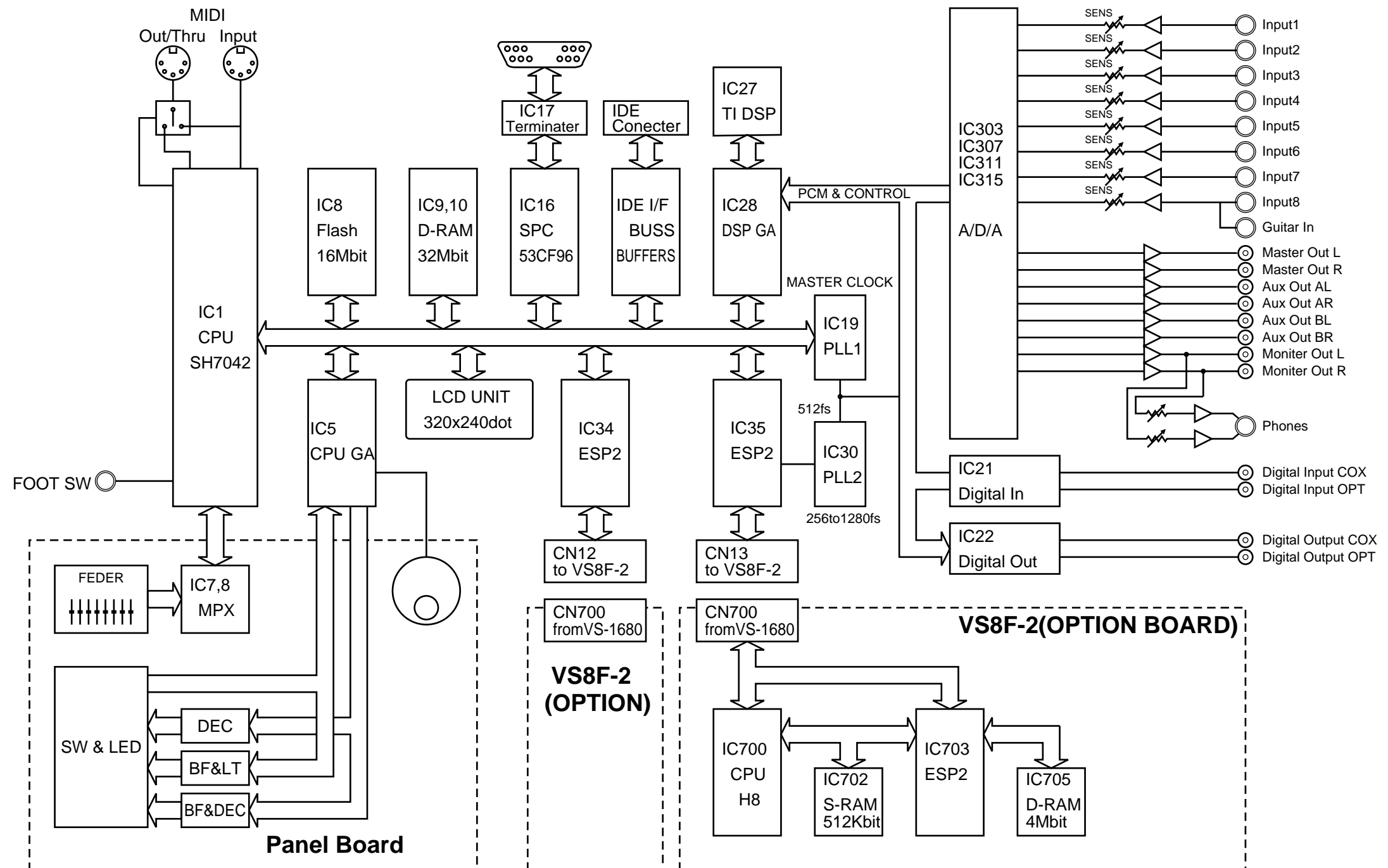
Ⓐ	40011145	FLAT TAPTIGHT B M3x6mm BZC
Ⓑ	40011101	BINDING TAPTIGHT B M3x8mm BZC
Ⓒ	40011501	PAN MACHINE SCREW SEMS P 3x8mm BZC
Ⓓ	40019990	PAN MACHINE SCREW SEMS 4x20mm BZC
Ⓔ	*****	M4 FLANGE NUT
Ⓕ	*****	M4x8mm LO2 BZC
Ⓖ	40012534	BINDING TAPTIGHT S M3x6mm BZC
Ⓗ	*****	BOSS NUT M2.6/M7.3L5.2
Ⓘ	40012945	PAN MACHINE SCREW W/SW+PW M3x6mm BZC
Ⓙ	40011156	FLAT TAPTIGHT B M3x8mm BZC
Ⓚ	*****	PAN MACHINE SCREW W/SW+SMOLE PW M3x6mm BZC



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A BLOCK DIAGRAM

B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U



CONNECTOR			
00894567	FX2C2-52P-1.27DSAL	CONNECTOR	CN601 on CB
13429825	YKF51-5054 (DUAL)	MIDI CONNECTOR	JK300 on PB
13369503	B7B-PH-K-S JST	CONNECTOR	CN7 on MB
13379104	TX14-40R-6ST-MH1	B TO B CONNECTOR	CN12,CN13 on MB
# 01341990	52045-1245	FFC/FPC CONNECTOR	CN701 on CB
01349645	S2(4-2.3)B-XH-A	CONNECTOR	CN703 on CB
13369851	PS-50PE-D4T1-B1-K	CONNECTOR	CN7-CN9 on MB CN600 on CB
13369567	B4B-PH-K-S JST	CONNECTOR	CN201 on PB
13369564	B12B-PH-K-S JST	CONNECTOR	CN6 on MB
13369582	B13B-PH-K-S JST	CONNECTOR	CN11 on MB
13369563	B14B-PH-K-S JST	CONNECTOR	CN4 on MB
13369562	B15B-PH-K-S JST	CONNECTOR	CN5 on MB
13439474	B2B-XH-A	CONNECTOR	CN14 on MB
13369594	B4B-XH-A JST	CONNECTOR	CN3 on MB
13369566	B6B-PH-K-S JST	CONNECTOR	CN1 on MB
13369541	B10B-PH-K-S JST	CONNECTOR	CN15 on MB
13369568	B3B-PH-K-S JST	CONNECTOR	CN702 on CB
WIRING CABLE			
# 01347912	WIRING HDD	Between MB(CN8) to CB(CN600)	
# 01344134	WIRING PANEL 3S	Between CB(CN702) to PB(CN4)	
# 01344145	WIRING PANEL 13S	Between MB(CN11) to PB(CN3)	
# 01344156	WIRING PANEL 14S	Between MB(CN4) to PB(CN2)	
# 01344167	WIRING PANEL 15S	Between MB(CN5) to PB(CN1)	
# 01344212	WIRING MIDI BOARD 6S	Between MB(CN1) to PB(CN300)	
# 01344178	WIRING DIGITAL I/O BOARD 3	Between PS Assy(CN3) to PB(CN200)	
# 01344190	WIRING DIGITAL I/O BOARD 7S	Between MB(CN10) to PB(CN400)	
# 01347512	WIRING MAIN 8	Between MB(CN2) to PS Assy(CN2)	
# 01344189	WIRING DIGITAL I/O BOARD 4	Between MB(CN300) to PS Assy(CN201)	
# 01347634	WIRING LCD CONT BOARD 12S	Between MB(CN6) to CB(CN700)	
# Δ 01455745	WIRING POWER WITH INLET		
TRANSFORMER			
12449615	PT-10244-615	Pulse Trans.	T400 on PB
FAN MOTOR			
# 01010301	D04X-05TL 05(V)	DC FAN MOTOR	
SCREW			
40012534	3X6mm Binding Taptight S BZC		
* * * * *	3X6mm Pan Machine Screw W/SW+Smole PW BZC		
40012945	3X6mm Pan Machine Screw W/SW+PW BZC		
40011145	3X6mm Flat Taptight B BZC		
40011101	3X8mm Binding Taptight B BZC		
40011501	3X8mm Pan Machine Screw SEMS BZC		
40011156	3X8mm Flat Tap-Tight B BZC		
* * * * *	4X8mm LO2 BZC		
# 40019990	4X20mm Pan Machine Screw SEMS BZC		
* * * * *	M4 FLANGE NUT		
* * * * *	BOSS NUT M2.6/M7.3L5.2		
PACKING			
# 01124089	PACKING CASE		
# 01124123	PAD	for PACKING CASE	
MISCELLANEOUS			
00898990	KGES-12	PWB SPACER on MB	
01455512	UC-300287 L=15	EMI GASKET	
# 40238545	CAUTION LABEL SHOCK HAZARD & ICES		
# 40126812	CAUTION LABEL BARRIER		
ACCESSORIES(Standard)			
# 70896967	OWNER'S MANUAL SET	JAPANESE	
# 71017189	OWNER'S MANUAL SET	ENGLISH	
Δ 00894367	AC CORD SET 100V	SP18A+IS14 VCTF2X0.75	
Δ 00894378	AC CORD SET 120V	SP301+IS14 SJT18/3	
Δ 00894389	AC CORD SET 230V	SP22+IS14 H05VV-F3G1.0	
Δ 00907001	AC CORD SET 240VE	KP-610,GTBS-3,KS-31A	
Δ 23495124	AC CORD SET 240VA	SC-114-011 ES303-10HMA	
# Δ 40232334		(JAPAN ONLY)	

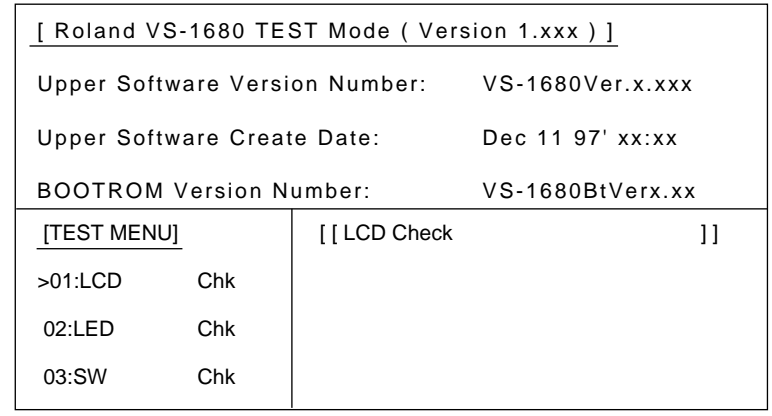
TEST MODE

Equipment
 :VS-1680
 :VS8F-2
 :Audio devices (CD PLAYER, DAT, AUDIO SIGNAL GENERATOR, AMPLIFIER, SPEAKER, HEADPHONES)
 :MIDI devices (MIDI KEYBOARD, MIDI MODULE)
 :SCSI devices (ZIP DRIVE)
 :Cable (AUDIO, MIDI, SCSI)

1.Entering test mode
 While pressing [TRACK SELECT] and [STATUS]button on the CH5, turn the power on.
 The unit is now in the test mode.

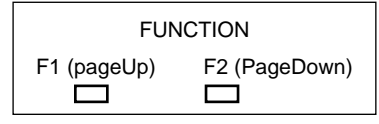
2.Exiting test mode
 Turning the power off is the only one way to exit the test mode.

3.Selecting of the test from a menu
 The test menu is shown on the display after starting up the test mode program.
 The information of the current version is shown on the upper part of the display all the time.
 The menu items are shown on the left-lower part of the display.
 The contents of the selected menu is shown on the right-lower part of the display.



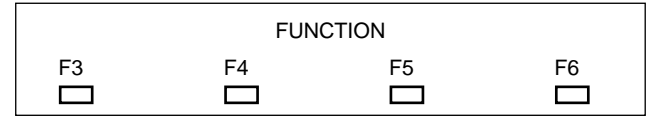
(fig-1)

4. Executing commands
 There are 17 kinds of the check menus. Each check menu has several commands.
 To select the desired menu, use [F1] and [F2] button.



(fig-2)

When the desired menu is selected by [F1] or [F2] button, that function on a display is shown on the [F3], [F4], [F5] and [F6].



(fig-3)

5. Test Options
[01:LCD check]
 This is a test for the LCD in order to find any defect such as LCD lighting problems,cracks, wrong connections, or etc.
 [F3:LCD Black] Turn on all LCD dots simultaneously.
 [F4:LCD White] Turn off all LCD dots simultaneously.
 [F5:LCD check1] Turn on LCD in a check pattern.

[F6:LCD check2] Display all ASCII character codes one by one on the LCD.

[02:LED check]

This is a test for the LED in order to find any defect such as LED lighting problems, short circuit, wrong connections, or etc.

[F3:LED Scan] Turn on and off LED one by one.

[F4:LED Blink] Flash all LED simultaneously.

[F5:LED All On] Turn all LED simultaneously.

[F6:LED ManuScan] Turn on LED one by one as [FF] or [REW] button is pressed or TIME/VALUE Dial is turned.

[03:SW check]

Check the SW contact fault or other problems and confirm SW functions on Panel board.

[F3:SW] Except power switch press all switches on the panel one by one. The LEDs will flash and warn of error when more than two switches are pressed at the same time during the test. To finish this test turn TIME/VALUE dial. "Err" message and the number of switches which not tested yet will be appeared on the display at the end of the test. (If there is any untested switch is remained.) When all switches are tested completely, "OK" message is appeared on the display and finish the test.

[04:Fader check]

Check the Fader and the capacity of back up battery on Panel board.

[xx:Fader Check] Check the Faders. The LCD draws bar graphs representing settings of the faders. Each channel LED lights green when the fader is at the bottom, red at the top position (127) and orange at the middle of the stroke (64). In the test, confirm the bottom and top position.

[xx:Battery Check] Battery voltage and OK/NG are shown on the display.

[05:FootSW check]

Check the status of foot switch function.

[xx:FootSW Check] Check the foot switch. Plug the foot switch in FOOT SWITCH socket. The LCD indicates each status when switch is turned on and off and confirm the LCD correspond it correctly.

[06:Encoder check]

Check the status of Encoder function.

[xx:Encoder Check] Check the encoder function. The display shows the numbers that increase or decrease depending on the TIME/VALUE dial turning direction. Confirm increase or decrease numbers correspond to the dial direction. Turn TIME/VALUE dial clockwise: increase the numbers. Turn TIME/VALUE dial counterclockwise: decrease the numbers. The numbers are indicated -25 to 25 extreme.

[07:MIDI check]

Check the status of MIDI IN/OUT/THRU function.

[F3:MIDI IN/OUT] Feed MIDI signal to MIDI IN. The display indicate the data which input into MIDI IN and output the data from MIDI OUT. Confirm the data which output from MIDI OUT is as same as the input data.

[F4:MIDI THRU] Feed MIDI signal to MIDI IN. The display indicate the data which input into MIDI IN and output the data from MIDI OUT by hardware through from MIDI IN. Confirm the data which output from MIDI OUT is as same as the input data.

[08:A/D D/A check]

Test A/D and D/A in order to find wrong connection or etc.

[F3:FS Select] 48,44.1,32KHz
Select the sampling rate at A/D and D/A stages

[F4:Peak ModeSel] Clip(0dB), Peak(-3dB), Sence(-20dB), 0(---dB)
Set the LED lighting conditions at the peak point.

[F5:R-DAC Mode] MASTER, MT-PRO, MT-1, MT-2, Liv1, Liv2
R-DAC processed sound is output to all OUT.

[F6:MUTE] Off, ON
Mute all of output signals.

Analogue input 1-8 send signals to analogue output 1-8 respectively.

The signals from analogue input 7 and 8 are also sent to DIGITAL OUT.

[09:Digital IN check]

Test Digital IN in order to find wrong connection or etc.

[F3:Input Sel] 1ch(Cx), 2ch(Op)
Select the output of Cox and Opt.

[[F5:R-DAC Mode] MASTER, MT-PRO, MT-1, MT-2, Liv1, Liv2
R-DAC processed sound is output to all OUT

Test DIGITAL IN.

Connect DIGITAL IN socket to DIGITAL OUT of your CD player or etc. and play song.

When the signal is received correctly and locked, the display will show "Lock" message, current FS, Emphasis(EMP), Copy graph(CPY) and Category(xxH). If the signal isn't received correctly and unlocked, "Unlock" message will be appeared on the display.

The input signals from DIGITAL IN are sent to all of analogue output and also sent to DIGITAL OUT with the same flags (FS, CPY, EMP) as they received.

[10:Digital OUT check]

Test Digital OUT in order to find wrong connection or etc.

[F3:FS Select] 48,44.1,32KHz
Select the sampling rate at Digital OUT.

[F4:Emphasis]	Off, On Set the Emphasis flag of DIGITAL OUT.
[F5:Copy]	Off, On Set the Copy flag of DIGITAL OUT.
[F6:MUTE]	Off, ON Mute all of output signals.

Test DIGITAL OUT.

Send the signals that are input to analogue 7 and 8 to DIGITAL OUT (1ch, 2ch) and also send to analogue output(7ch, 8ch).

[11:Sin Wave check]
(FACTORY ONLY TEST.NOT USE SERVICE.)

Test the analogue D/A by SIN wave from DSP in order to find wrong connection or etc.

[F3:FS Select]	48,44.1,32KHz Select the sampling rate at Sin wave output stages.
[F4:Sin Freq]	100-900(100HzStep) 1K-10K(1KHzStep) Select the Sin wave frequency.
[F5:Sin Level]	0Fh-7Fh Set the output level of Sin wave.
[F6:MUTE]	Off, ON Mute the output from Sin wave.

Output Sin wave.

Sin wave is sent to all analogue output and DIGITAL OUT.

[12:SCSI check]

This is a test for SCSI in order to find wrong connection, chip defect or etc.

[F3:Check Start]	Test SCSI (External, Internal). Connect a disk drive unit to SCSI socket. When this test is selected, perform initialization of SCSI chip and read/write the data from/into the connected SCSI device. The drive unit must have been formatted on VS-1680. The display will show "OK!" message when the test is successful, if not "Err" message will be appeared on the display.
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[13:IDE check]

Test IDE in order to find wrong connection or etc.

[F3:Check Start]	Test IDE. Install a disk drive unit into front panel expansion slot (if not installed). Execute read/write procedure from/into the connected IDE. The drive unit must have been formatted on VS-1680. The display will show "OK!" message when the test is successful, if not "Err" message will be appeared on the display.
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[14:RTC check]

Set the internal clock.

[F3:TIME Edit]	Set the time of the internal clock. [F4] and [F5] buttons function as (Left) and (Right) cursor in the edit menu. Move the cursor and edit the values by TIME/VALUE dial. To select the value press [F6](Store). To cancel the performance press [F3] (Cancel).
[F6:Get MIDI]	Set the internal clock by the data from MIDI.

[15:FAN check]

This is a test for FAN control to see whether it functions correctly.

[F3:FAN ON/OFF]	Off, On FAN is switched ON/OFF alternatively whenever it selected. The display shows FAN condition.
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[16:DSP GA check]

(FACTORY ONLY TEST.NOT USE SERVICE.)

This is a test for DSP GA function and memory in order to find any wrong connection or etc.

[F3:FS Select]	48,44.1,32KHz Select the sampling rate at the test.
[F4:Peak ModeSel]	Clip(0dB), Peak(-3dB), Sence(-20dB), 0(---dB) Set the LED lighting conditions at the peak point.
[F6:Memory Check]	Test the memory of the high speed S-RAM which used in DSP GA.

[17:VS8F-2 check]

This is a test for the option board (VS8F-2), ESP and DSP in order to find any wrong connection, chip defect or other problems.

[F3:VS8F-2]	Test the connection between VS-1680 and VS8F-2 and also test the VS8F-2 internal functions. To start the test install VS8F-2 to the option connector A and B on VS-1680 then select the test menu. The display will show "OK!" messages from both of connector A and B when the test is successful, if not "Err" message will be appeared on the display.
[F4:ESP Check]	Test the connection of ESP and ESP internal functions. To start the test select this item. The display will show "OK!" message when the test is successful,if not "Err" message will be appeared.
[F5:DSP Check]	Test the connection of DSP. To start the test select this item. The display will show "OK!" message when the test is successful, if not "Err" message will be appeared.

TEST MODE ERROR CODE

■ESP check error codes

01 ESP busy error	ESP 2 chip may be defective
02 ESP program RAM error	ESP 2 chip may be defective
04 ESP internal RAM error	ESP 2 chip may be defective
08 ESP communications RAM error	ESP 2 chip may be defective
10 ESP flag error	ESP 2 chip may be defective
40 ESP wiring error	ESP 2 may be loosely connected (poor soldering, etc.)

These error codes are expressed in hexadecimal.

Two or more errors may occur at a time and corresponding error code will appear.

Examples: 11: Busy error and flag error
06: Program RAM error and internal RAM error
0c: Internal RAM error and communications RAM error

■VS8F-2 check error codes

01 SRAM wiring error	Loose connection of SRAM (poor soldering, etc.)
02 ESP wiring error	Loose connection of ESP 2 (poor soldering, etc.)

04	ESP program RAM error	ESP 2 chip may be defective
08	ESP internal RAM error	ESP 2 chip may be defective
10	ESP communications RAM error	ESP 2 chip may be defective
20	ESP external RAM error	Loose connection of DRAM (poor soldering, etc.)
40	ESP flag error	ESP 2 chip may be defective

These error codes are expressed in hexadecimal.
Two or more errors may occur at a time and corresponding error code will appear.

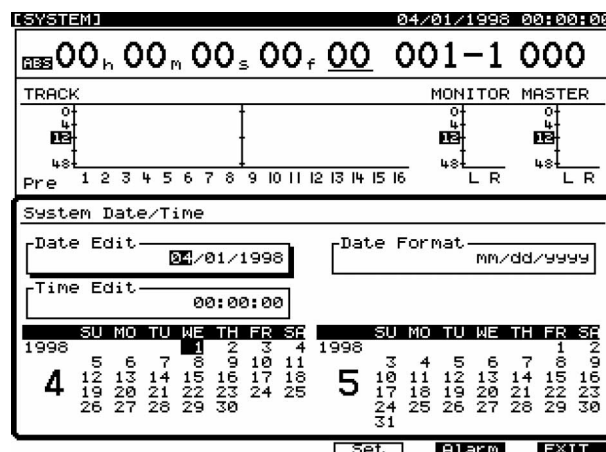
Examples: 11: SRAM wiring error and ESP communications RAM error
06: ESP wiring error and ESP communications RAM error
0c: ESP program RAM error and ESP internal RAM error

SETTING THE INTERNAL CLOCK

The VS-1680 features an internal clock. The internal clock is battery-powered.

Re-setting of time and date will be required when the battery is changed.

1. Press [PLAY (DISPLAY)].
2. Hold down [SHIFT] and press [F5(SYSTEM)]. The System menu icon is displayed.
If the system menu icon does not appear press [F6(EXIT)].
3. Press [F2(DATE)]. If "DATE" does not appear in [F2], first press [PAGE] until "DATE" is displayed then press [F2(DATE)].
4. To move cursor and set the each value press [A], [V], [←] or [→].
Refer to the displayed calendar shown on the display.



Date Edit
Set year, month and date by the Christian era.

Date Format
Select the way of indicating year, month and date.
mm/dd/yyyy: month/date/year
dd/mm/yyyy: date/month/year
yyyy/mm/dd: year/month/date
mmm.dd,yy: month/date/year
dd mmm 'yy: date/month/year

Time Edit
Set the current time by 24 hours.

5. When year, month, date and time are set, press [F4(Set)] with the time signal.
From that moment, the clock start counting time.
6. Press [PLAY(DISPLAY)] to back to the initial display.

VS-1680 SYSTEM SOFTWARE UPDATE USING THE SMF

The latest system software of the VS-1680 is stored to the floppy disks named "VS-1680 System Ver.1.xx SMF" as the standard MIDI file format (SMF format).

Check the following SMF's included to the floppy disks.

VS-1680 System Ver.1.xx SMF disk 1	VS-1680 System Ver. 1.xx SMF disk 2
VS168001. MID	VS168005. MID
VS168002. MID	VS168006. MID
VS168003. MID	VS168007. MID
VS168004. MID	VS168008. MID
VS-1680 System Ver. 1.xx SMF disk 3	VS-1680 System Ver. 1.xx SMF disk 4
VS168009. MID	VS168013. MID
VS168010. MID	VS168014. MID
VS168011. MID	VS168015. MID
VS168012. MID	VS168016. MID

Update VS-1680 system software by following the procedure described below.

1. Connect a MIDI cable between two connectors; MIDI OUT connector of the MIDI Sequencer that can play back SMF data and MIDI IN connector of VS-1680. It is convenient to use the MIDI Sequencer such as an SB-55 sound brush that can play back some SMF's continuously.
2. While holding down [TRACK SELECT] and [STATUS] on the CH7, turn on the VS-1680's power.
3. A message "SYSTEM Update?" will be displayed. Press [YES].
4. Check a message "Waiting MIDI-EX" is displayed, play back all SMF data from "VS-168001. MID" to "VS-168016. MID" in order.
5. After finish playing back all SMF's, a message "Update SysPRG?" will be displayed. Press [YES].
6. A message "Please Reboot OK" will be displayed. The system software of your VS-1680 was already updated. Restart the VS-1680.

SYSTEM SOFTWARE UPDATE USING ZIP DISK

To update the VS-1680 using the disk, follow the procedure described below.

Note that if the version of the disk is identical to that of the VS-1680, no updating is possible. Rather, the unit simply operates in the play conditions.

1. Connect a zip drive to VS-1680 through the SCSI cable.
Turn on Zip drive.
2. Insert the disk into the zip drive.
3. Turn on VS-1680.
4. The message "System Prog Load Now working ..." appears indicating the start of updating.

```

-- Update System Program ? --
Ver.1.xxx ( Btver1.00 )
[ YES ]/[ NO ]
    
```

Fig.1

5. [Fig.1] is displayed. When the updated data is correct, press YES button.

```

-- Keep User Setting ? --
[ EZ ROUTING User Routing ]
[ EFFECT User Patch ]
[ ARARM User Data ]
[ NO ] is Init User Seeting
[ YES ]/[ NO ]
    
```

Fig.2

```

-- Init User Setting Sure ? --
[ EZ ROUTING User Routing ]
[ EFFECT User Patch ]
[ ARARM User Data ]
[ YES ]/[ NO ]
    
```

Fig.3

6. [Fig.2] is displayed. If the user date is required to be saved, press [YES] button.
If [NO] button is pressed, [Fig.3] is displayed.
If it is OK, press [YES] button.
7. The message "Now Working ..**" appears indicating the start of count down.
When the message ""Please Reboot OK" appears and LEDs on the VS-1680 are flashing, the updating procedure is completed. Turn off VS-1680.
8. Remove the zip disk and turn off the zip drive. Remove the SISI cable.

SAVING SYTEM PARAMETERS

If it is necessary to replace a PCB on the user VS-1680, save the user system parameters and Effect user patches onto a sequencer or equivalent storage.
Load back the data onto the VS-1680 after it has been fixed.

■Send the parameters through MIDI OUT

1. Pressing CH7 "TRACK SELECT" and STATUS and F5 SYSTEM button simultaneously, turn on POWER switch on VS-1680.
2. The message "Send SysPrmMIDI?" is displayed. Press "YES" button and the system parameters are sent in MIDI exclusive format.

■Restore the system parameters

To receive the system parameters & write it to Flash, refer to the chapter [VS-1680 SYSTEM SOFTWARE UPDATE USING THE SMF] in this service note.

Depending on the receiving method, the displays will look different on the LCD.

For example, when "-P-" and prompt "Update SysPRM/" are displayed, press [YES] button to write only the system parameters into the flash memory.

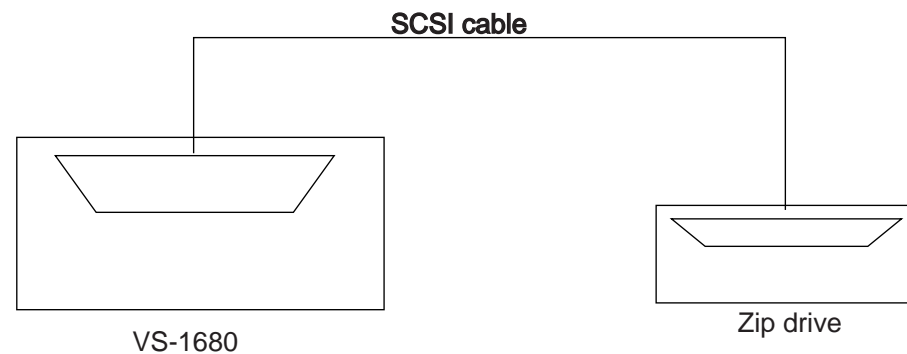
SAVING AND LOADING DATA OF INTERNAL HDD

A Zip drive (ZIP-EXT-S2) can be connected to the SCSI connector of the VS-1680 and save song data which created on VS-1680.

Equipment: VS-1680
Zip disk
Zip drive (ZIP-EXT-2S)
SCSI connector

Connecting the Zip Drive

Connect the Zip drive to the VS-1680 as below.



About connector:

- VS-1680 uses SCSI connector; D-sub type, pin25 (female). To connect the cable correctly, please confirm the form of the SCSI connector of the disk drive to be connected.
- Keep SCSI cable as short as possible, and use only cables which have an impedance (110 ohms +/- 10%) that is compatible with the SCSI standard, and are completely shield.
- Do not allow the total length of all SCSI cables connecting the chain of disk drives to exceed 6.5 meters.
- Do not connect or disconnect SCSI cables when the power of any device is turned on.

Turning power on.

1. Turn on the power to the Zip drive.
2. Turn on the power to the VS-1680 with the POWER switch on the rear panel.

INITIALIZING THE DISK (DRIVE LINITIALIZE)

A new disk just purchased at your computer store or a disk that was used by another device cannot be used on the VS-1680 as is. You must initialize the disk by VS-1680 so that it can be used by the VS-1680.

When a disk is initialized, the entire contents are irretrievably lost.

Check any such disk you plan to initialize to make sure that it does not contain anything that you don't want deleted.

If you are using a drive or disk that has been partitioned, please note that you will not be able to choose a particular partition that you wish to initialize.

When you carry out a drive initialization, the whole drive and all its partitions will be initialized at once.

■Initializing new Zip disks.

1. Confirm that power to the Zip drive and the VS-1680 is turned on.
2. Insert a disk into the Zip drive.
3. Press [PLAY (DISPLAY)]
4. Hold down [SHIFT] and press [F6 (UTILITY)].
The Utility menu icon appears in the display.
5. Press [F6 (DrIn)]. If "DrIn" does not appear in [F6], first press [PAGE] until "DrIn" is displayed, then press [F6 (DrIn)].
6. Use [^], [v], [<], and [>] to move the cursor. Rotate the TIME/VALUE dial to make each of the values settings.

■Init Drive (Initialize Drive):

Select the disk drive (IDE, SCSI0~SCSI7). "IDE" indicators internal hard disks, and "SCSI0~SCSI7" (these are SCSI ID numbers) indicate external hard disks.

For example, select "SCSI5" when selecting the Zip drive connection.

■Partition:

Select the partition size (500 MB, 1000 MB, or 2000 MB).
In normal circumstances, select "2000 MB."

■Physical Format:

Select whether or not to use physical formatting. For new disks or disks that have been used by another device, select "On."

"For new hard disks or when formatting disks for Windows or Macintosh platforms, select "Off."

■Surface Scan:

This confirms that the read and write functions in all of the disk drive's partitions

are operating correctly when the drive is initialized.

In normal circumstances, set this to "Off."

"When you particularly want to conduct a test of the read/write functions, the set this to "On."

At this time, the function buttons work as shown below.

[F1 (DrSel)]: This displays a directory of the currently connected drives.

Use [^], [v], [<], and [>] to select the drive that you want to initialize.

[F3 (Info)]: Displays the drive information.

[F4 (Exec)]: Executes initialization of the selected drive.

[F6 (EXIT)]: Exits the screen.

7. When the settings are made, press [F4 (Exec)].
"Init. *****, OK?" appears in the display. "*****" refers to the drive's SCSI ID number.
For example, "SCSI5" indicates a Zip drive.
8. Press [YES].
"Init *****, Sure?" (Really initialize the disk?) appears in the display.
9. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.

10. If you wish to save the current song, press [YES]; if not, then press [NO].
If you have selected a demo song, then press [NO].
11. After the initialization is completed correctly, the VS-1680 restarts automatically, and you are returned to Play condition.

* Be aware that initializing a drive requires some time. This is not a malfunction.
For example, when physical formatting is turned on, the time required to format one Zip disk is approximately 10 minutes.
The progress of initialization will be shown in the display.
Be sure not to turn the power off until initialization is complete.

SAVING PERFORMANCE DATA TO A ZIP DRIVE (Song Copy)

There are two ways to carry out the Song Copy procedure. Select the method you will use based on the amount of free space on the destination disk (100 MB for Zip disks). The amount of memory used on the disk is shown in the display.

Playable: Use this method to copy songs that use relatively little data onto disks with sufficient memory to hold them.

If the destination drive or disk already has song data saved on it, then you can copy additional songs that will fit within the remaining free space.

Archive: Use this method to copy songs that are too large to be saved on a single disk.

The song data is converted into a data format specifically for saving (archive format), and is copied onto multiple disks according to the free space on the disks.

This means that it will not be possible to directly play back the song data.

If you wish to play back song data copied in archive format, you will need to reload the archive data into the current drive using the appropriate procedure.

Furthermore, song data cannot be copied onto disks that already have songs recorded on them.

■ Saving a Song to a Single Disk (Playable)

Save a playable copy of a song on the VS-1680's internal hard disk to a Zip drive which is set to SCSI ID Number 5.

1. Select the disk containing the source song you want to copy as the current drive.
2. Press [PLAY(DISPLAY)]
3. Hold down [SHIFT] and press [F1 (SONG)]
The Song menu icon appears in the display.
4. Press [F1 (CP PL)]. If "CP PL" does not appear in [F1], first press [PAGE] until "CP PL" is displayed, then press [F1 (CP PL)].
5. Press [<] and [>] to move the cursor to "Source Song."
6. Use the TIME/VALUE dial to move the cursor to the song you want to copy and press [F3 (MARK)]. By pressing [F2 (ALL)], you can place and remove Markers from all of the songs.
In addition, you can press [F1 (SelSg)] to display a directory of the songs.
At this point, after you have placed a Marker at the song you want, press [F1 (Back)].
7. Press [>] to move the cursor to "Destination Drive."
8. Use the TIME/VALUE dial to select the destination drive and partition.
You can press [F5 (SelDr)] to display a directory of drives.
At this point, use [^], [v], [<], and [>] to select the destination drive, and select the destination partition with the TIME/VALUE dial.
Once you have selected the destination drive, press [F1 (Back)].

9. If the source and destination drives are different, press [v]. Move the cursor to "Erase All Songs" with the TIME/VALUE dial.
* Erase All Songs
When this is set to "On," the copy procedure is carried out after the destination drive is initialized.
If you want to perform the copy procedure leaving songs already saved in the destination drive as they are, then set this to "Off."
10. Press [F4 (Exec)].
A message asking if you want to continue appears in the display.
11. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
12. If you wish to save the current song, press [YES]; if not, then press [NO].
If you have selected a demo song, then press [NO].
13. When copy is completed, the Song menu icon appears in the display.
Press [PLAY (DISPLAY)].
Return to Play condition.

NOTE: If "Disk Memory Full" Appears in the Display
This indicates that the destination disk has insufficient free space, or that the number of songs on the disk has exceeded the maximum number (200 songs) that can be stored on the disk, and that the copy procedure was canceled.
However, you can still use the song data copied up to that point.

■ To Load Data from Disks

Use the following procedure to take playable songs that have been copied to Zip disks and load them onto the VS-1680's hard disk.

Switch the current drive to Zip drive (Drive Select).

Then perform playable copy from Zip drive to the internal hard disk drive.

* The original song is not overwritten by performing these procedures if the original song that copied from the internal hard disk to Zip disk is not erased from the internal hard disk.
In that case, a new song which has the same name as the original one will be create in an available earliest song number.

1. Confirm both power of Zip drive and VS-1680 are turned on.
2. Insert the disk containing the song you want to load into the Zip drive.
3. Press [PLAY (DISPLAY)].
4. While pressing [SHIFT] press [F6 (UTILITY)]. The utility menu icon is appeared on the display.
5. Press [F4 (DrSel)]. If "DrSel" does not appear on [F4], first press [PAGE] to show "DrSel" then press [F4 (DrSel)]. Table of the current connected drive will be shown on the display.
6. To move cursor, press [^], [v], [<] or [>]. Select the drive you wish to switch.
To select the partition which you wish to switch, rotate the TIME/VALUE dial.
At this time, the function buttons works as described below.
[F3 (Info)] : Indicate the drive information.
[F4 (Exec)] : Execute drive select.
[F6 (EXIT)] : Exit from the menu.
7. After select drive/partition press [F4 (Exec)].
8. A confirming message is appeared on the display. Press [YES].
9. "STORE Current?" (Save the current song?) message is appeared on the display.
If you wish to save the current song press [YES], if not press [NO].
When the demo song is selected press [NO].
10. When the current drive is switched song menu icon is displayed.
Press [PLAY (DISPLAY)].
Return to play condition.
11. Make a playable copy of the song from the Zip disk onto the VS-1680's hard disk, as described in "Saving a Song to a Single Disk."

12. When playable copy is completed, repeat the procedures 3 to 10 and select the internal hard disk as a current drive.

■When You Cannot Save a Song to a Single Disk

Handling of Archive Copy Disks

To save songs in archive format, the destination disk must be initialized.

This initialization procedure differs from the usual Drive Initialize formatting.

This procedure lets you carry out Archive Copy with newly purchased disks, disks which previously have been used with a personal computer or other device, or other disks which have not been formatted with Drive Initialize.

However, any song data saved to the disk is lost once the Archive Copy procedure is performed.

Additionally, you cannot designate a disk containing archive format songs as the current drive.

If you try to do this, the disk is identified as being an {uninitialized disk}.

■Saving to Disks (Store)

1. Make the drive containing the song you want to load the current drive.
2. Press [PLAY (DISPLAY)]
3. Hold down [SHIFT] and press [F1 (SONG)].
The Song menu icon appears in the display.
4. Press [F2 (AC Str)]. If "AC Str" does not appear in [F2], first press [PAGE] until "AC Str" is displayed, then press [F2 (AC Str)].
5. Press [<] to move the cursor to "Source Song."
6. Songs that are marked are copied.
Use the TIME/VALUE dial to move the cursor to the song you want to copy and press [F3 (MARK)].
By pressing [F2 (ALL)], you can place and remove Markers from all of the songs.
In addition, you can press [F1 (SelSg)] to display a directory of the songs.
At this point, after you have placed a Marker at the song you want, press [F1 (Back)].
7. Press [>] to move the cursor to "Destination Drive."
8. Use the TIME/VALUE dial to select the destination drive and partition.
Press [F5 (SelDr)] to display a directory of drives.
At this point, use [^], [v], [<], and [>] to select the destination drive, and press [F1 (Back)].
9. Press [F4 (Exec)].
A message asking if you want to continue appears in the display.
10. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
11. If you wish to save the current song, press [YES]; if not, then press [NO].
If you have selected a demo song, then press [NO].

* All data saved on the Zip disk will be deleted.
Do not use any Zip disk containing song data that you need.

12. If the song holds a large amount of data, and cannot be contained on a single Zip disk, the disk is ejected, and the message "Please Insert Disk" appears in the display.
Insert the next disk and press [YES].
At this time, be sure to write the disk numbers on the labels so that you can keep track of the order in which the disks were inserted into the drive.
13. When copying over multiple Zip disks, "Insert Disk #" (# indicates the number in the order of insertion) appears in the display.
Insert each of the disks once more in the proper order and press [YES].
14. When the Archive Store procedure is finished, the Song menu icon appears in the display.
Press [PLAY (DISPLAY)].
Return to Play condition.

■Loading Data From Disks (Extract)

1. Make the drive containing the song you want to copy the current drive.
2. Press [PLAY (DISPLAY)]
3. Hold down [SHIFT] and press [F1 (SONG)].
The Song menu icon appears in the display.

4. Press [F3 (AC Ext)]. If "AC Ext" does not appear in [F3], first press [PAGE] until "AC Ext" is displayed, then press [F3 (AC Ext)].
 5. Press [^] to move the cursor to "Source Drive."
 6. Use the TIME/VALUE dial to select the drive containing the source you want to load.
By pressing [F1 (SelDr)], you can display a directory of drives.
At this point, use [^],[v],[<], and [>] to select the source drive, and press [F1(Back)].
 7. Songs that are marked are copied.
Use the TIME/VALUE dial to move the cursor to the song you want to restore and press [F4 (MARK)].
By pressing [F3 (ALL)], you can place and remove Markers from all of the songs.
In addition, you can press [F2 (SelSg)] to display a directory of the songs.
At this point, after you have placed a Marker at the song you want, press [F1 (Back)].
 8. Press [F5 (Exec)].
A message asking if you want to continue appears in the display.
 9. Press [YES].
"STORE Current?" (Store the current song?) appears in the display.
 10. If you wish to save the current song, press [YES]; if not, then press [NO].
If you have selected a demo song, then press [NO].
 11. A confirmation message is displayed asking if you want to perform the Drive Initialize procedure on the disk to which the data will be loaded.
If you want the song data to loaded after the drive is initialized, press [YES].
If you do not wish to initialize the drive, the press [NO].
- * If you press [YES] at this point, any data stored on the destination drive is lost.
In normal circumstances, press [NO].
If there is insufficient free space on the drive, then after first backing up the data on the disk to which you will load the data, press [YES].
12. Execute the load.
When copying over multiple disks, "Insert Disk #" (# indicates the number in the order of insertion) appears in the display.
Insert the next disk and press [YES].
 13. When the Archive Store procedure is finished, the Song menu icon appears in the display.
Press [PLAY (DISPLAY)].
Return to Play condition.

■Turning power off

1. Turn the power of VS-1680 off.
2. Take Zip disk from Zip drive.
3. Turn the power of Zip drive off.
4. Disconnect SCSI connector.

EXCHANGE THE MAIN BOARD

1. Remove the knobs from the front panel: (a), (b) (13 slider knobs and 10 round knobs).

Remove the top panel A(c): slide in a flat blade tool e.g. tip of a screwdriver below the top panel and then carefully lift the panel.

Notes: 1) Main board cannot be removed before the top panel A(c) is removed.

2) Once the panel is removed, keep adhesive surfaces away from dusts.

3) Replacement top panel A(c) available from Roland service representative.

2. Turn over the body (d) and remove the bottom cover (f) by removing 16 screws.

3. Remove CN2 and CN3 and MIDI board by removing corresponding 4 screws.

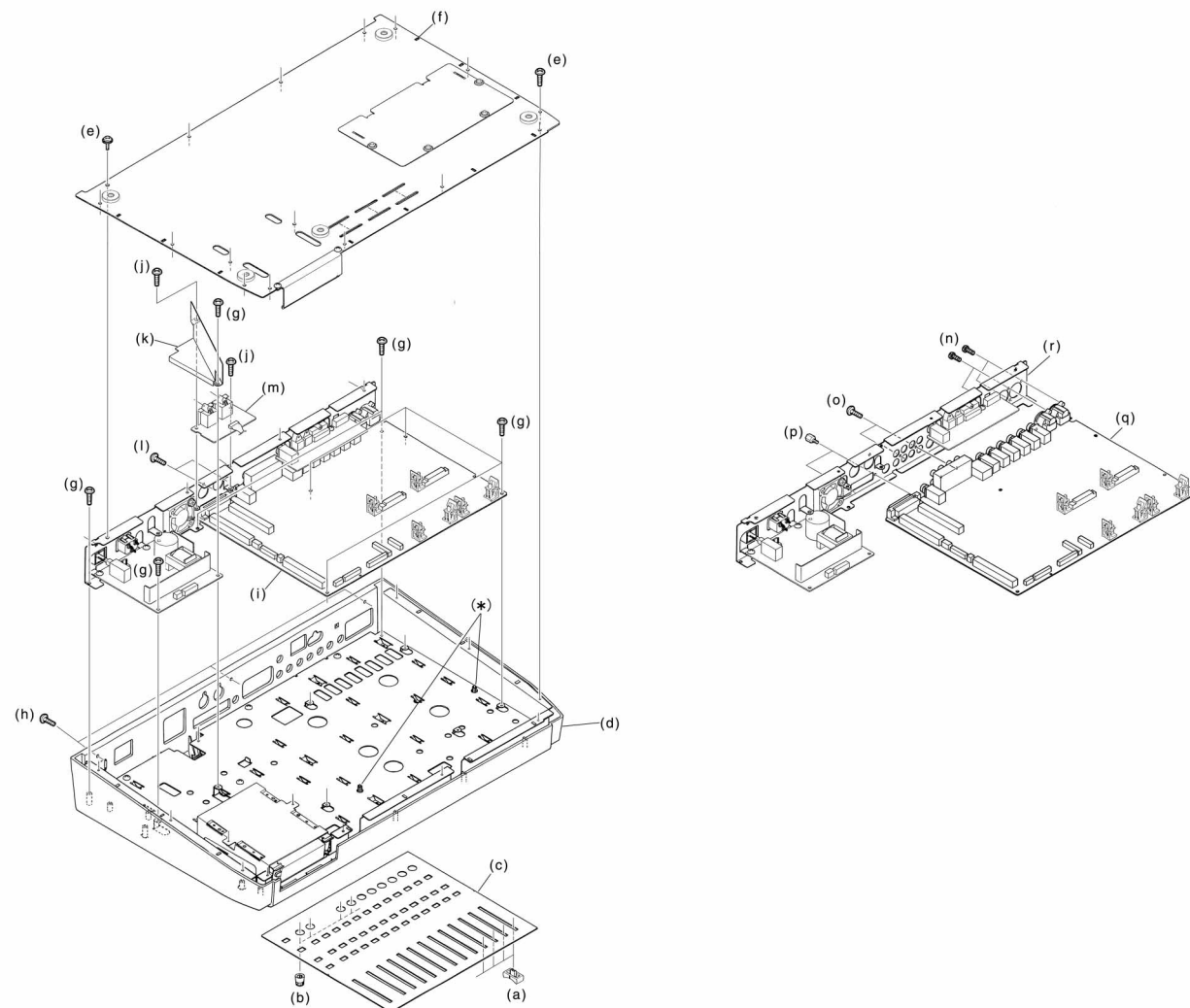
4. Remove screws: 2 from main board, 6 from rear panel, 2 (g and h) from switching regulator. Remove the rear panel (i) together with the switching regulator, fan, main board, digital I/O board. To do this, slightly shift the main board to disengage it from notches (marked * in the figure).

5. Remove screws (j) and (l) and then the air guide (k) and MIDI board (m) from the rear panel.

6. Remove screws (n), (o) and (p) and then main board (q) from the rear panel (r).

7. Install the repaired or new main board by first engage it with notches (*). Repeat steps 1 to 6 in the reverse order.

After attaching the top panel A(c), evenly depress the surface using soft cloth for tight adhesion.

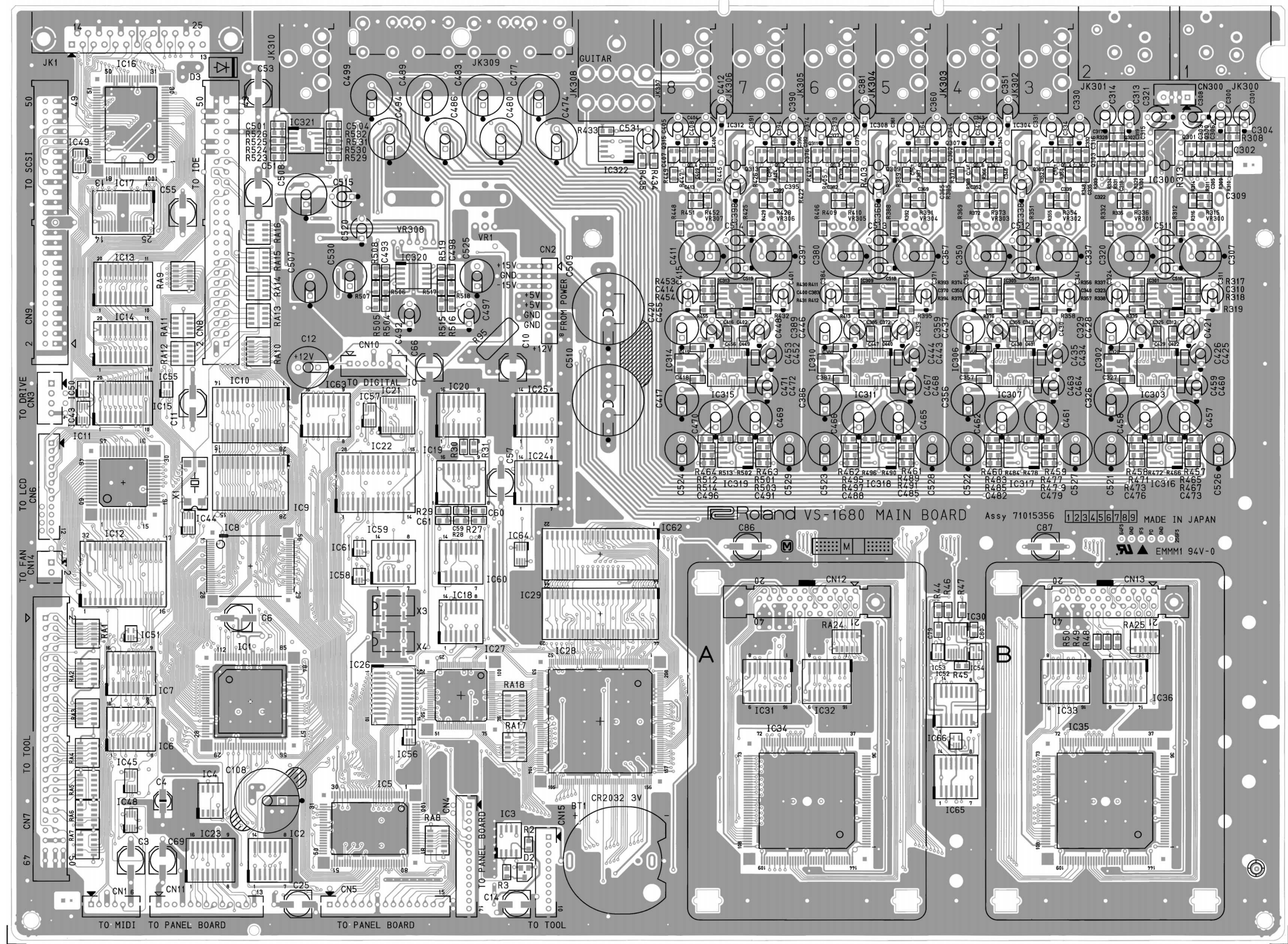


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A CIRCUIT BOARD

B MAIN BOARD ASSY (71015356)

C
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I
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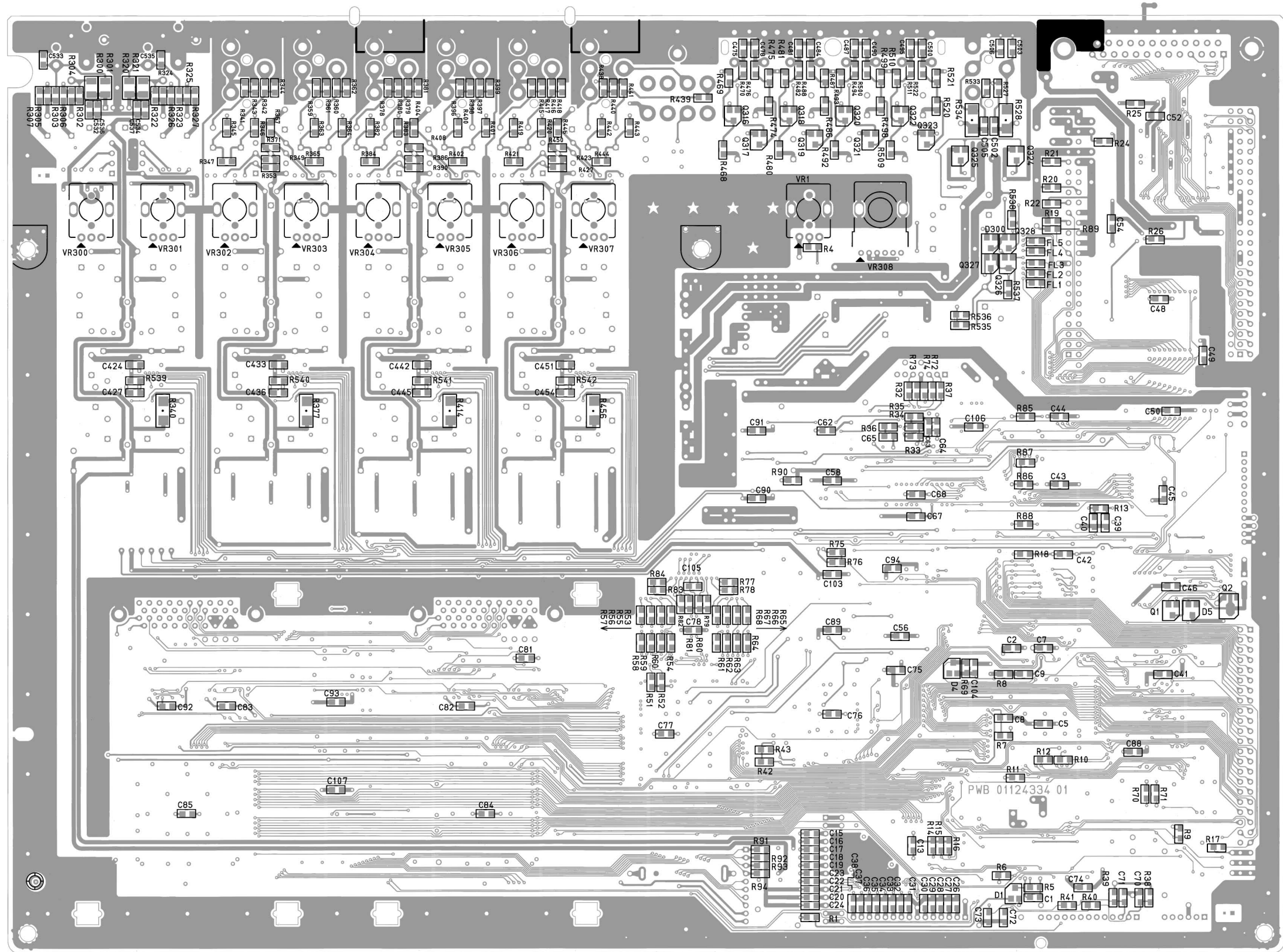


View from component side.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A MAIN BOARD ASSY (71015356)

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View from foil side.

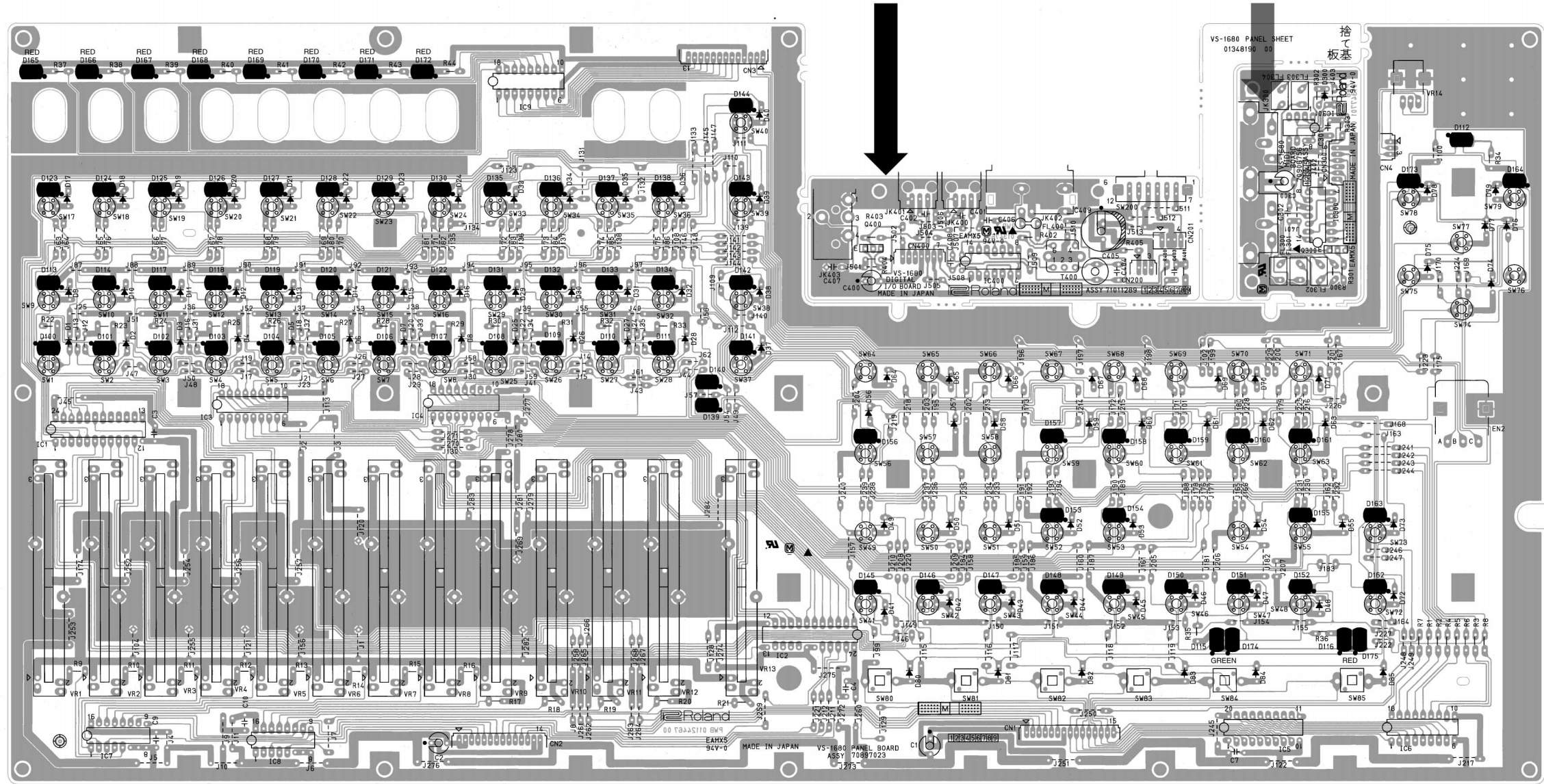
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A PANEL BOARD ASSY (70897023)/DIGITAL I/O BOARD ASSY (71011289)
/MIDI BOARD ASSY (70906756)

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DIGITAL I/O BOARD ASSY
(71011289)

MIDI BOARD ASSY
(70906756)



PANEL BOARD ASSY (70897023)

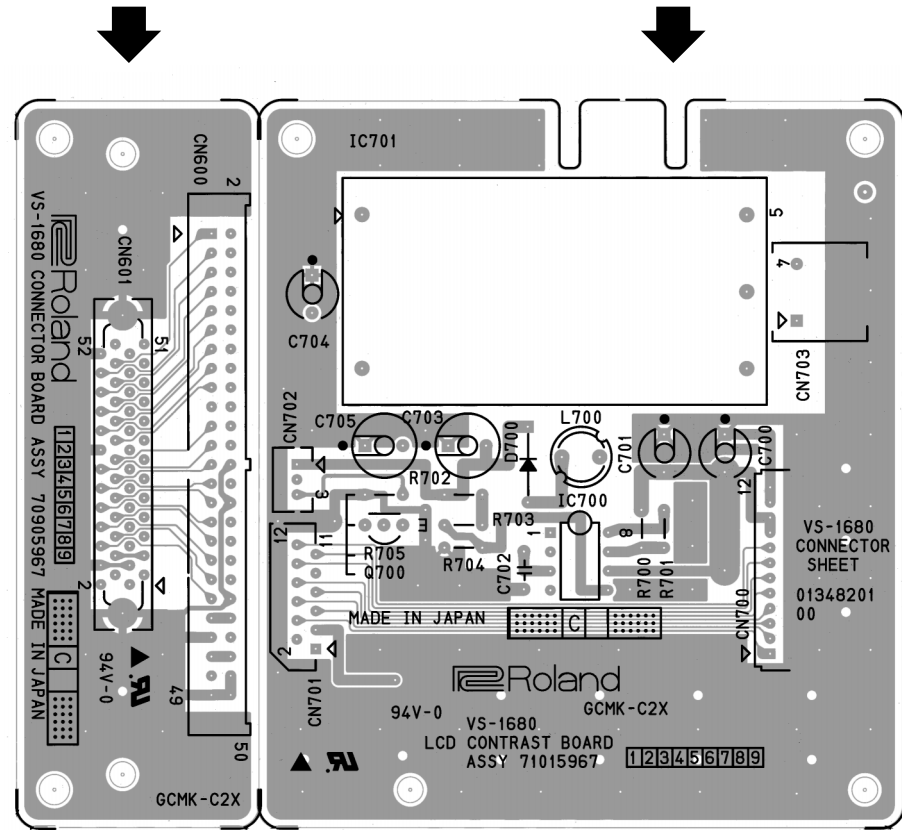
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A LCD CONTRAST BOARD ASSY (71015967)
/CONNECTOR BOARD ASSY (70905967)

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CONNECTOR BOARD ASSY (70905967)

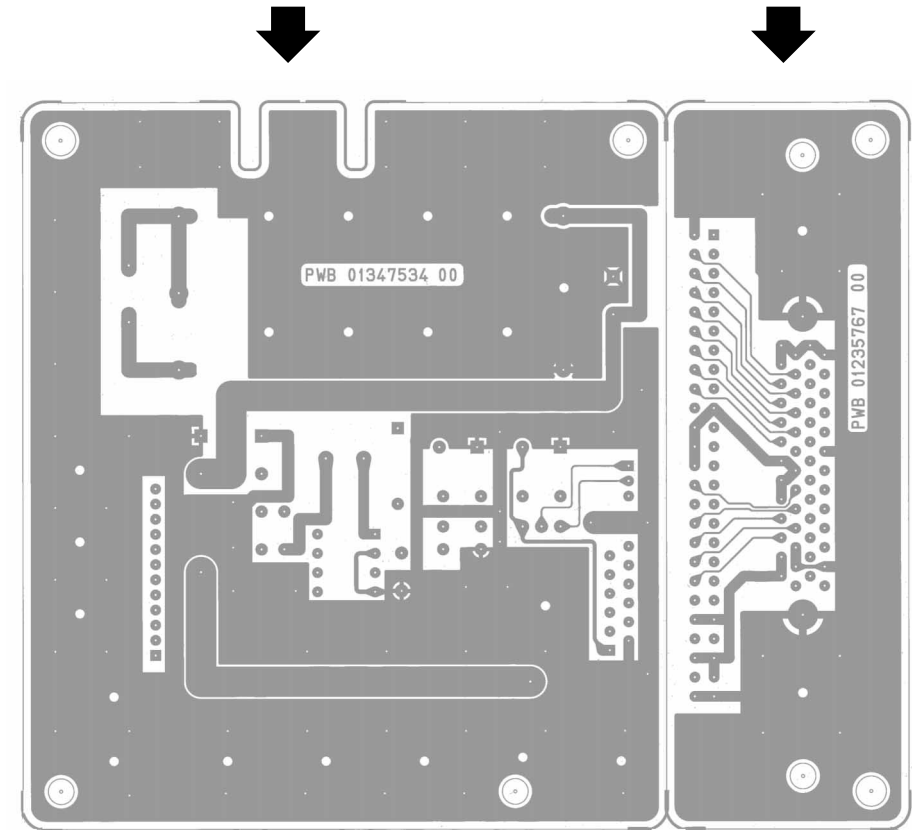
LCD CONTRAST BOARD ASSY (71015967)



View from component side.

LCD CONTRAST BOARD ASSY (71015967)

CONNECTOR BOARD ASSY (70905967)

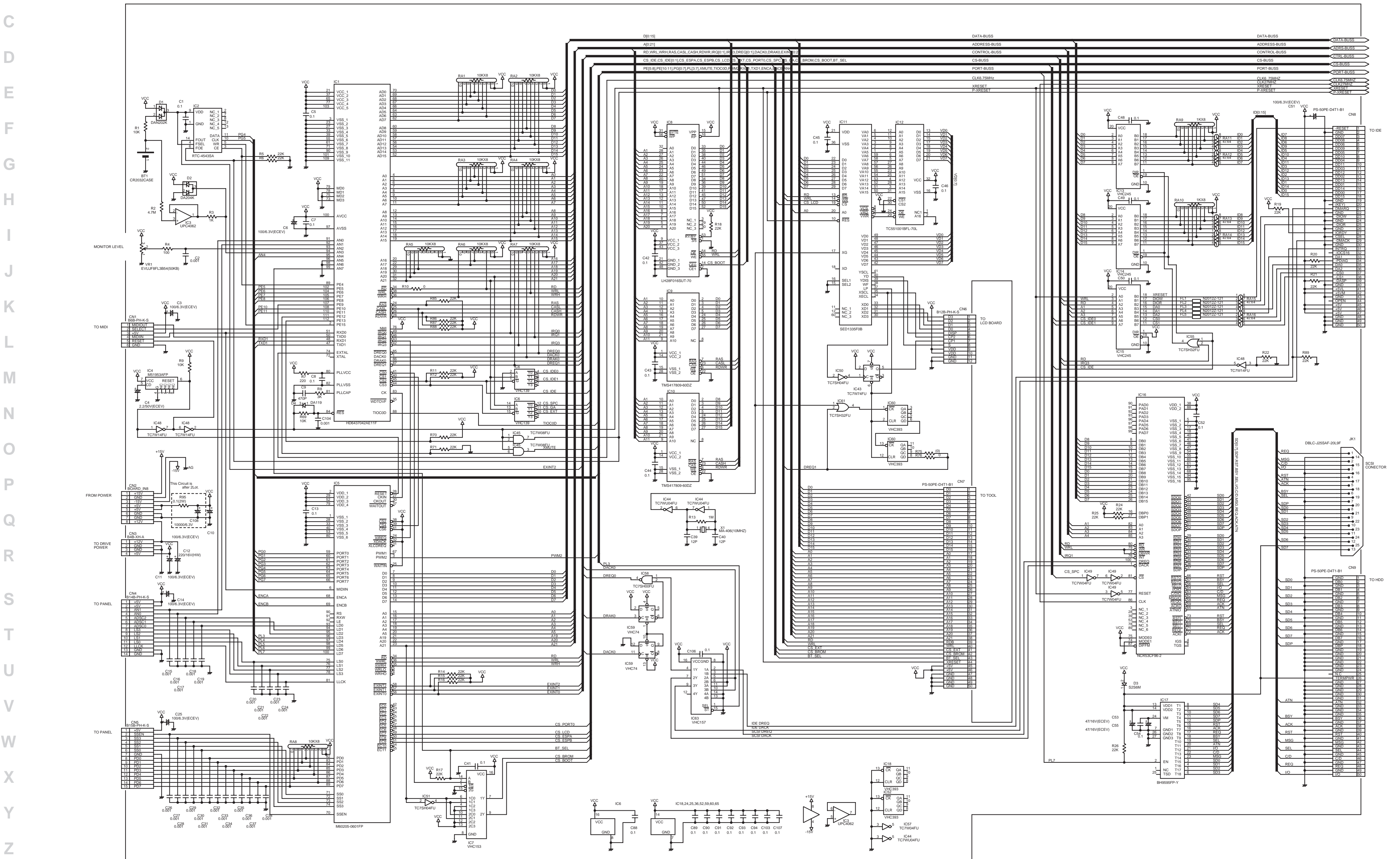


View from foil side.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

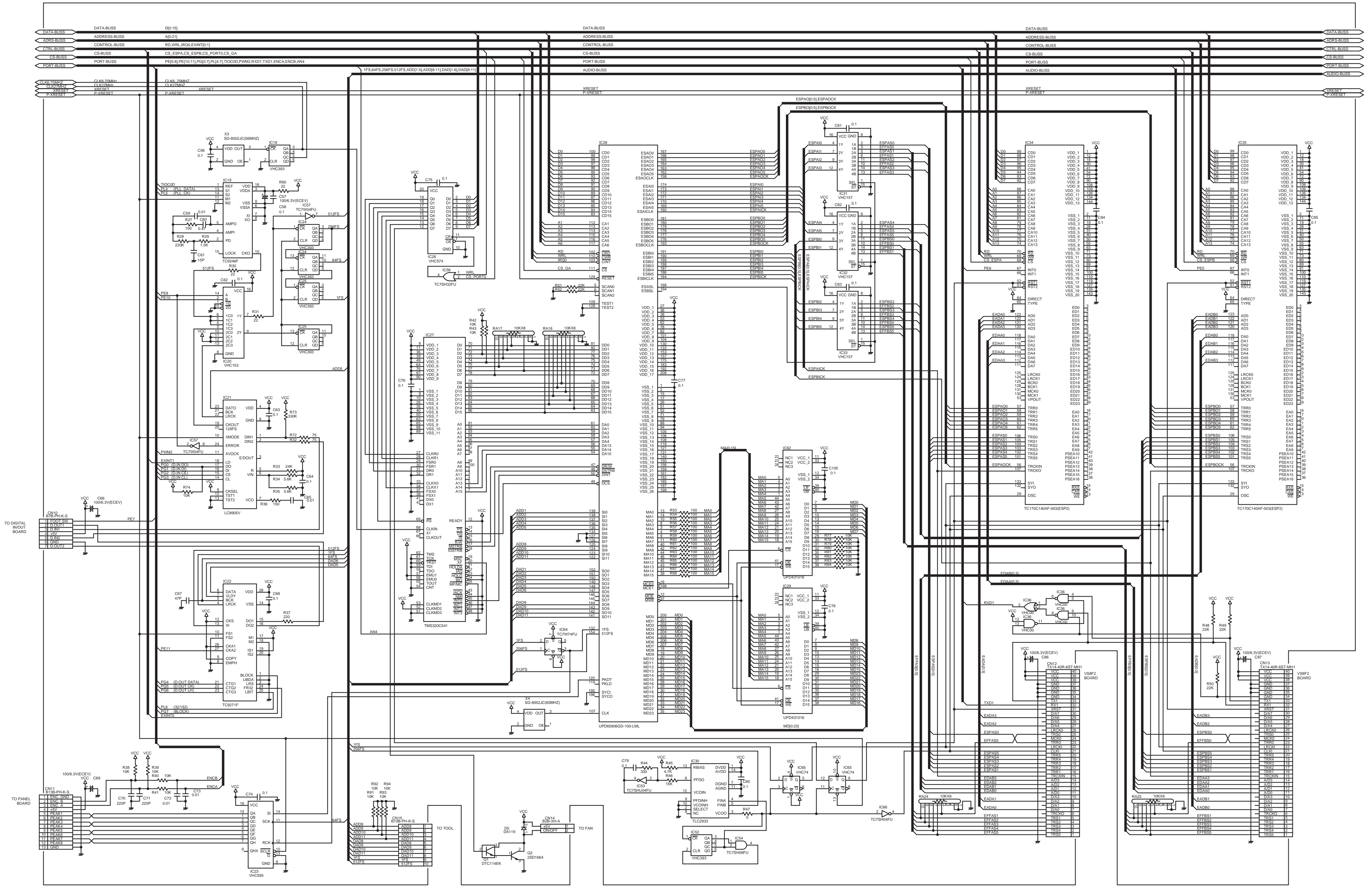
A CIRCUI DIAGRAM

B MAIN BOARD 1/3 (71015356)



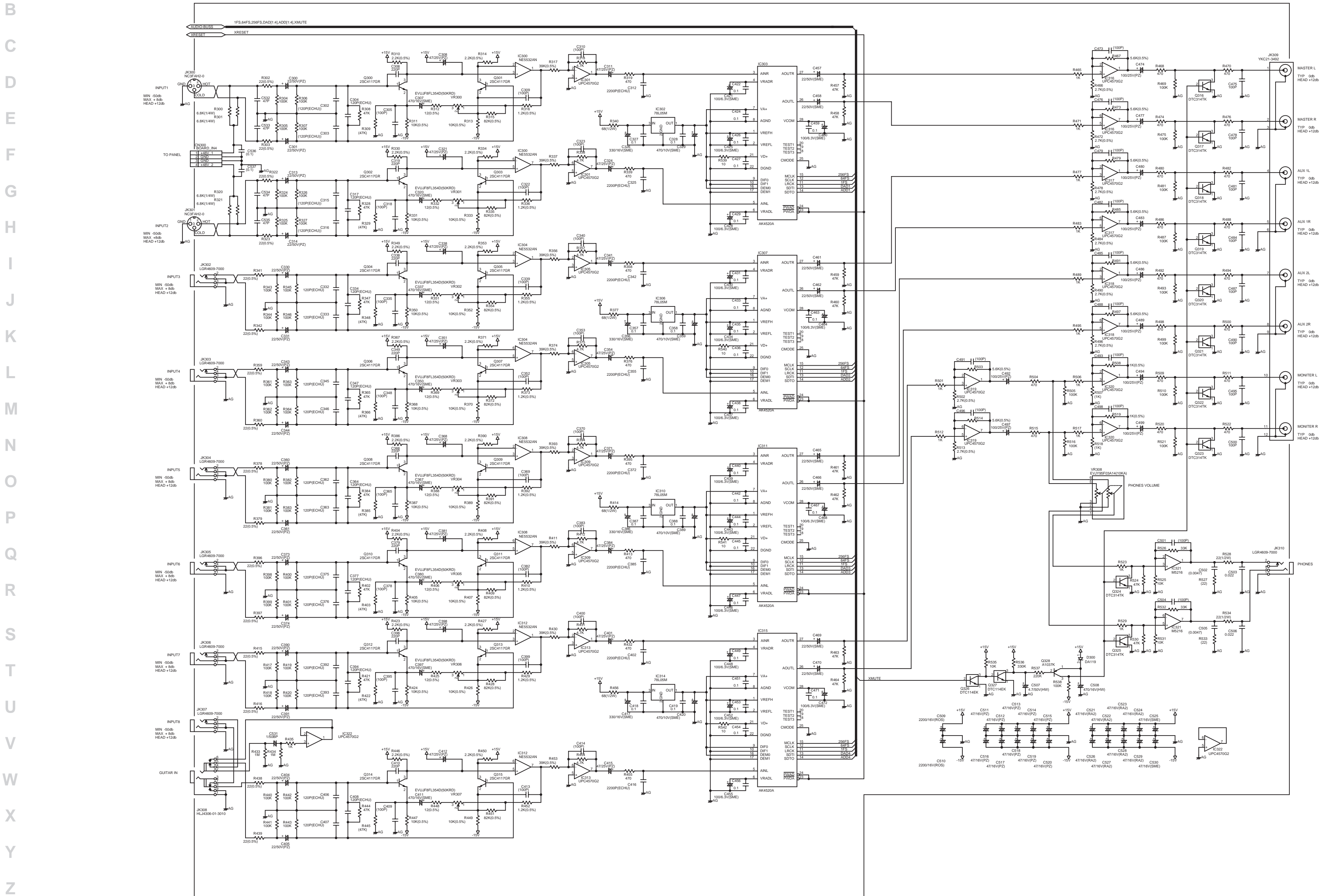
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

A MAIN BOARD 2/3 (71015356)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

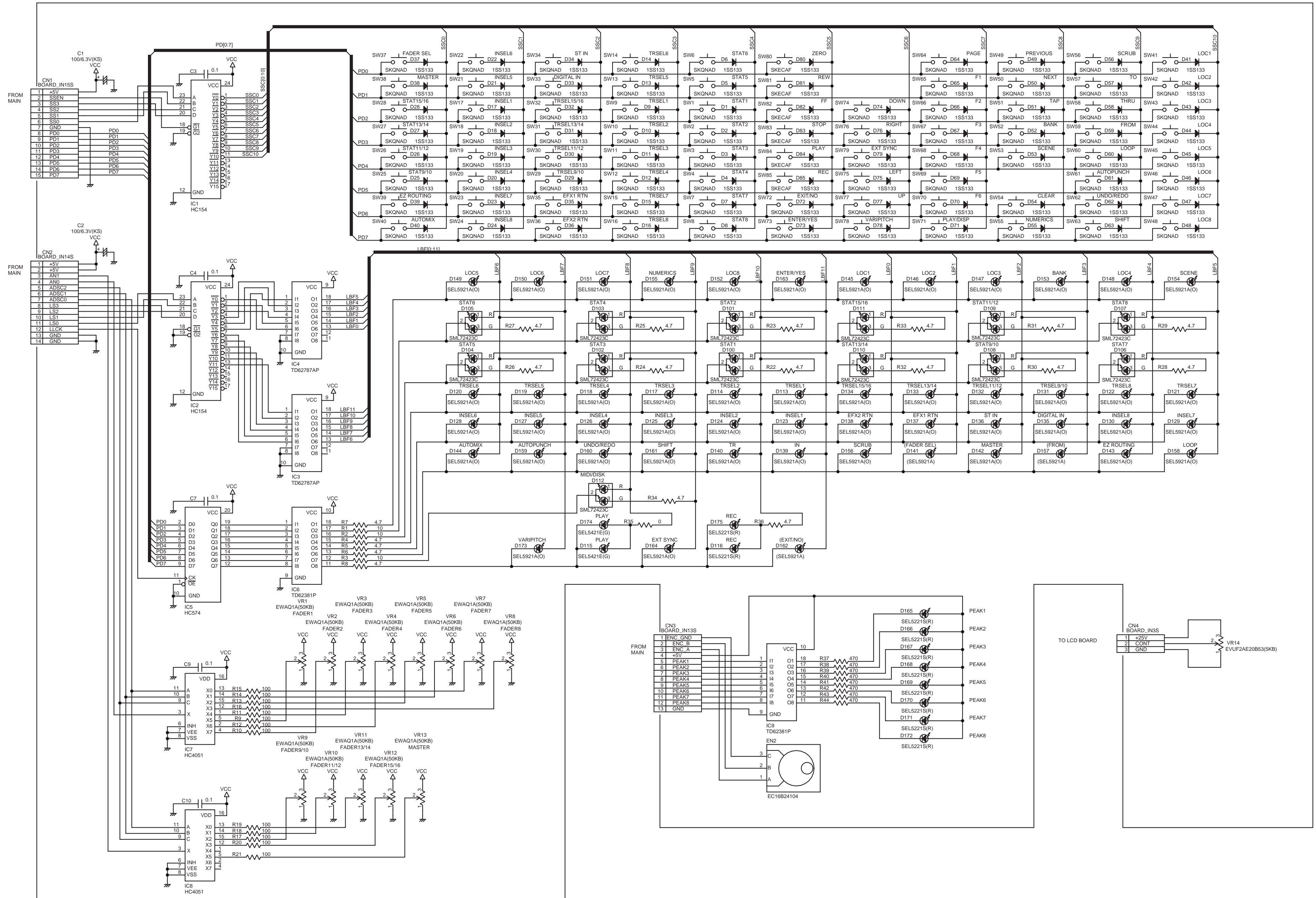
A MAIN BOARD 3/3 (71015356)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

A PANEL BOARD (70897023)

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Q
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S
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W
X
Y
Z

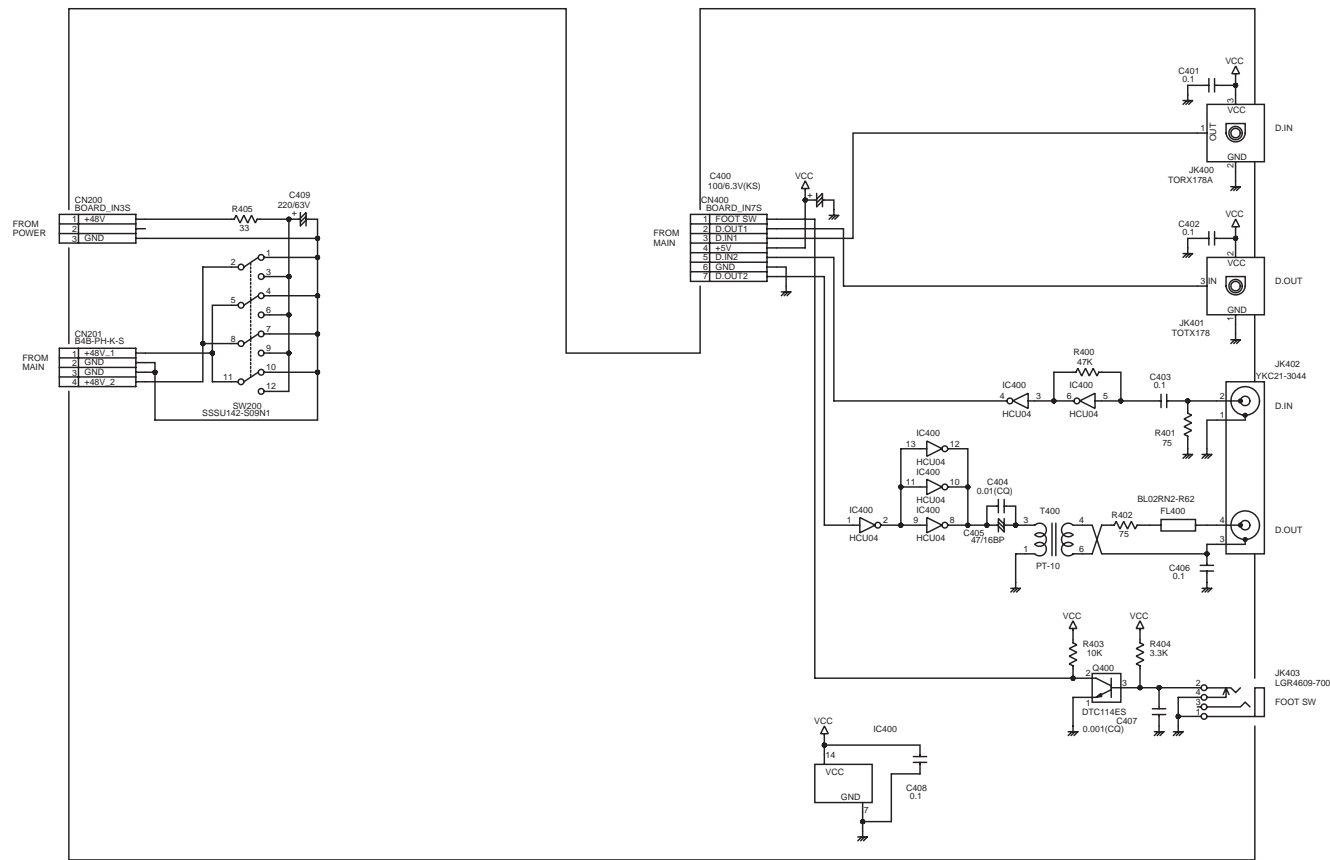


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

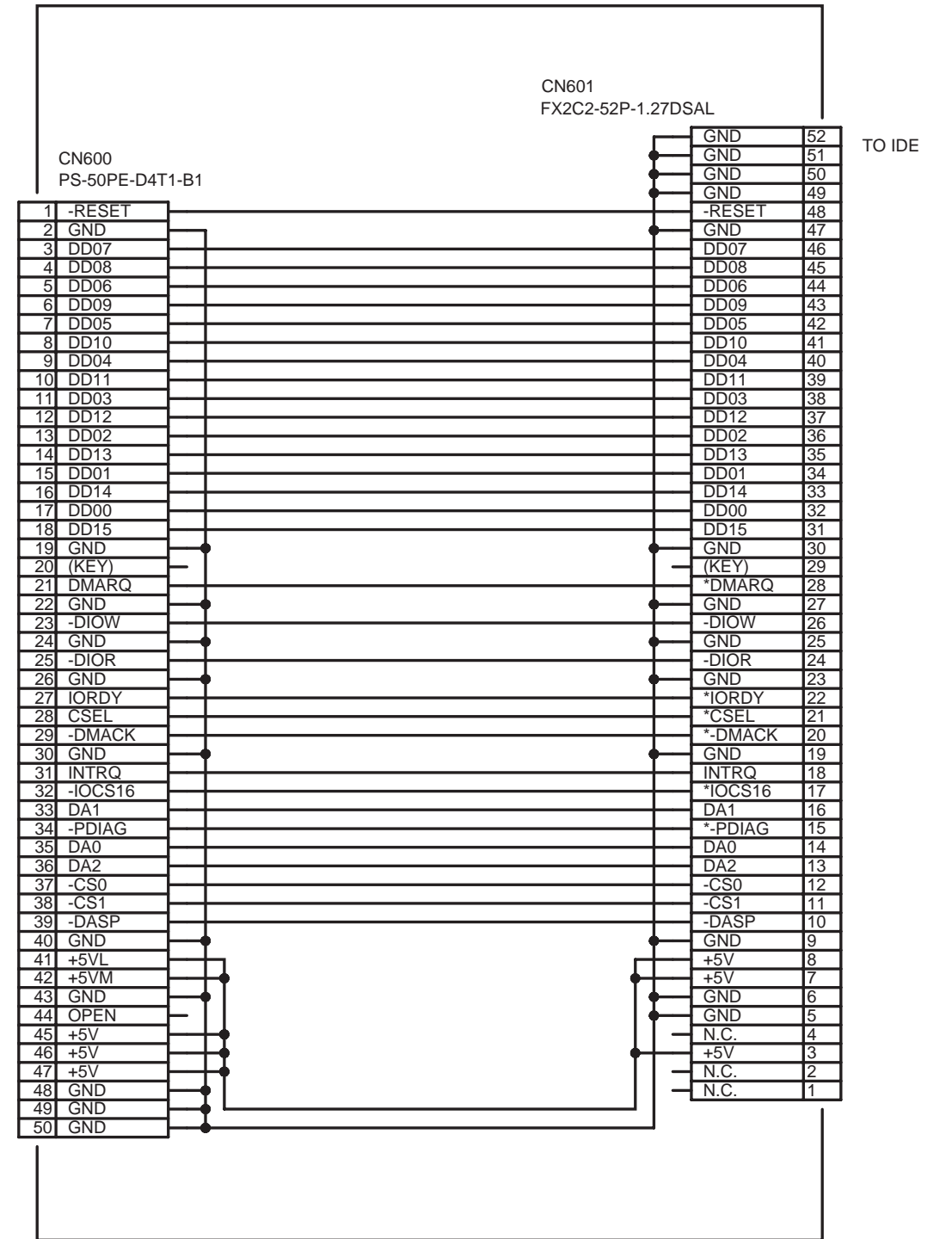
A DIGITAL I/O BOARD (71011289)

B
C
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CONNECTOR BOARD (70905967)



FROM MAINBOARD

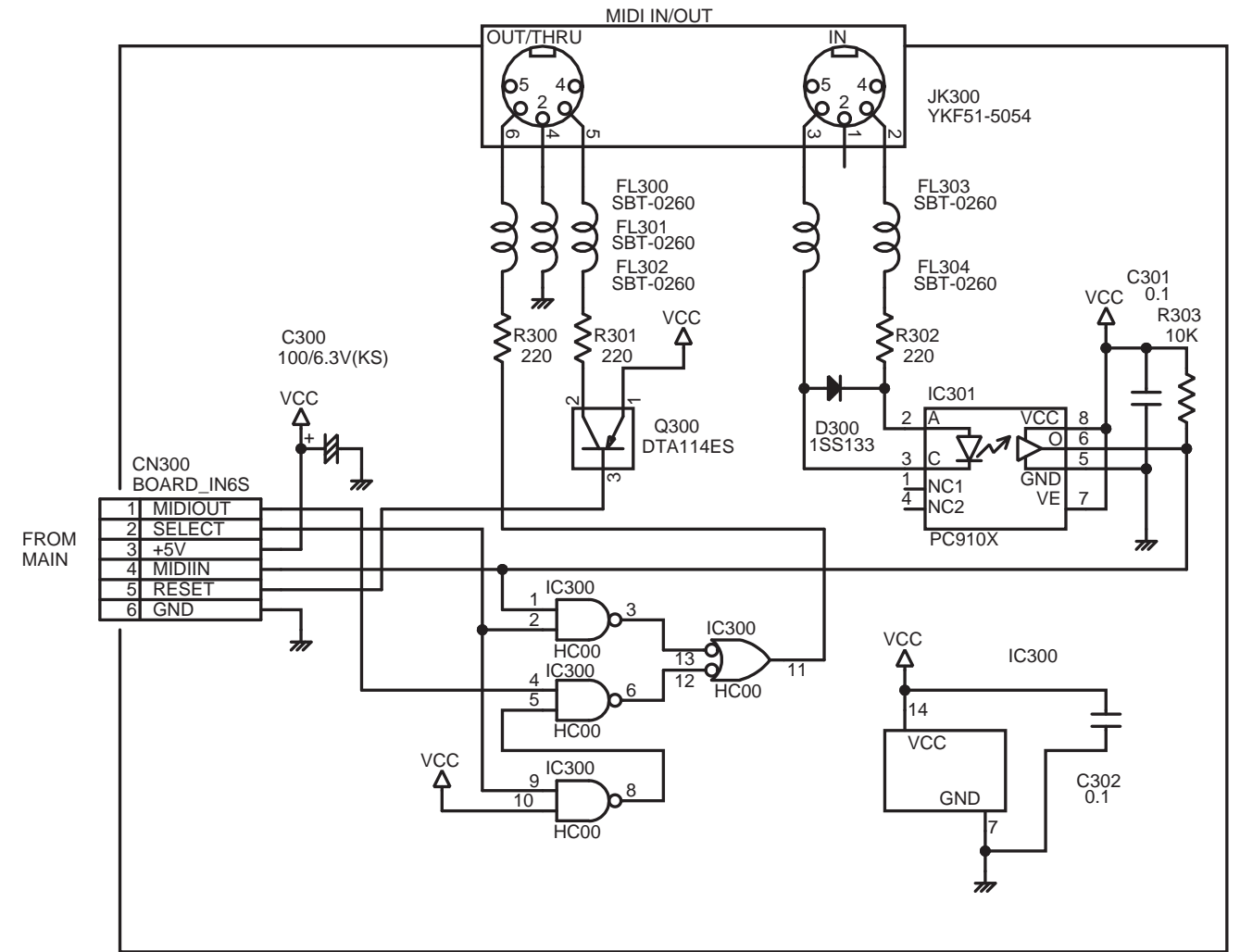
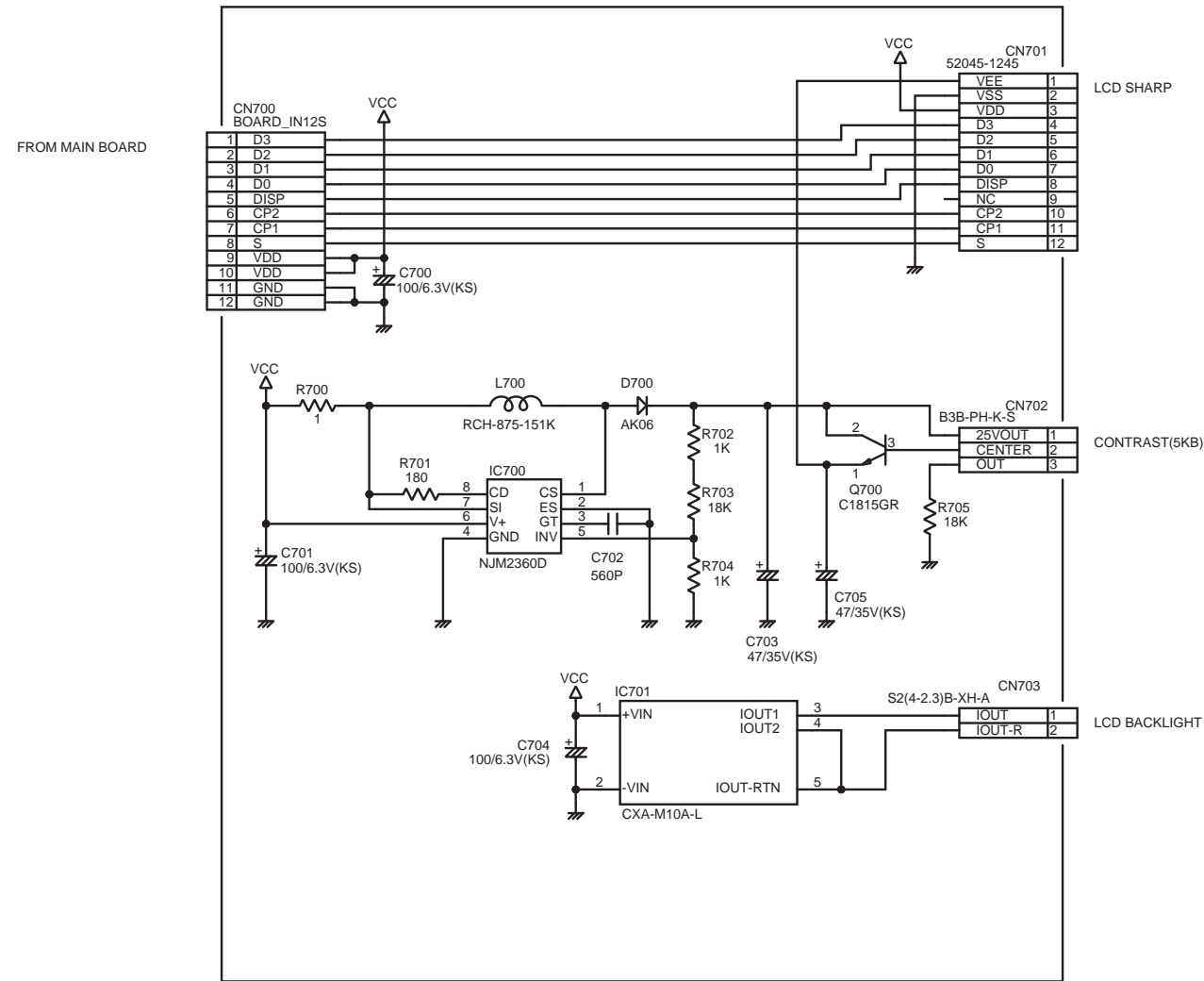


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A LCD CONTRAST BOARD (71015967)

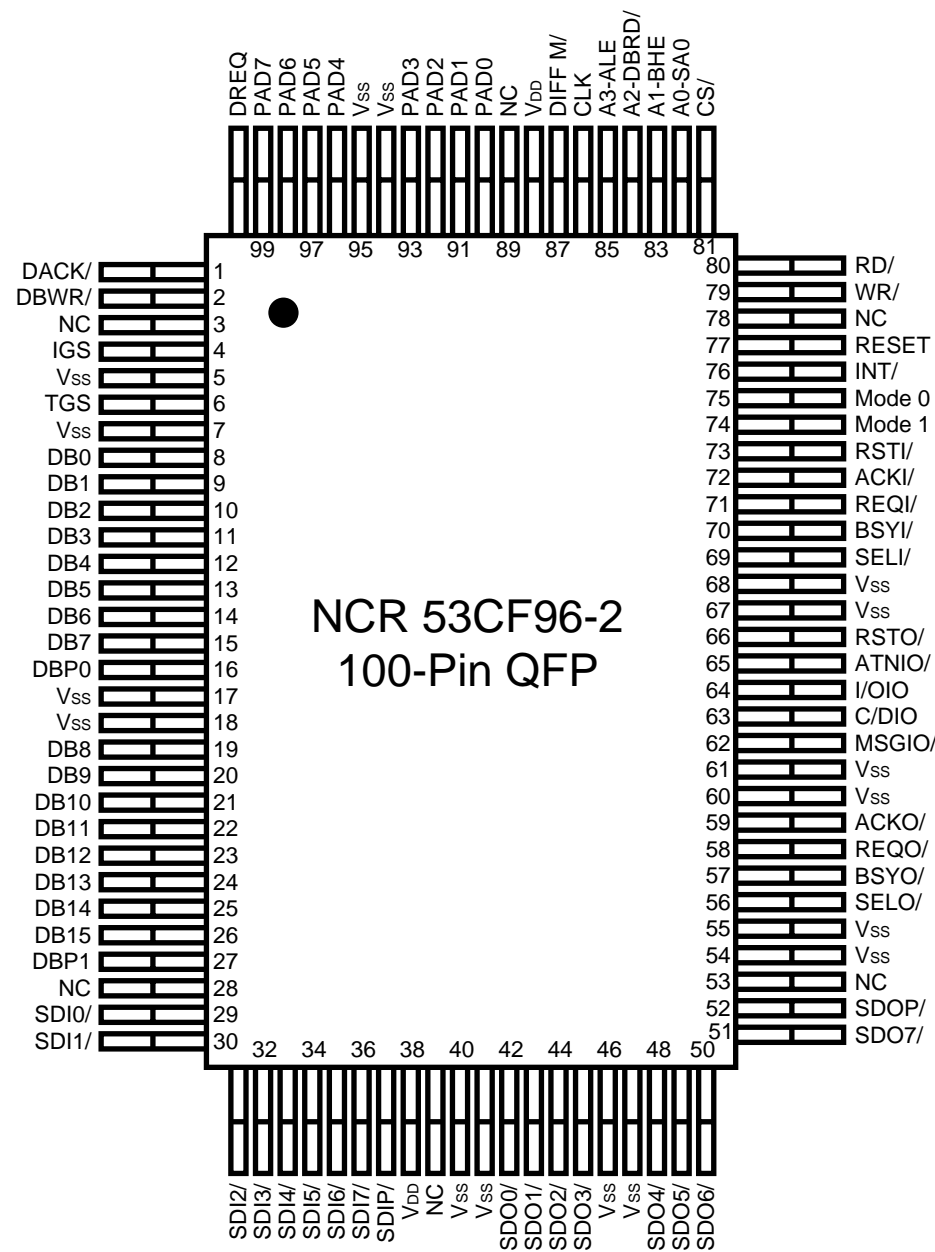
MIDI BOARD (70906756)

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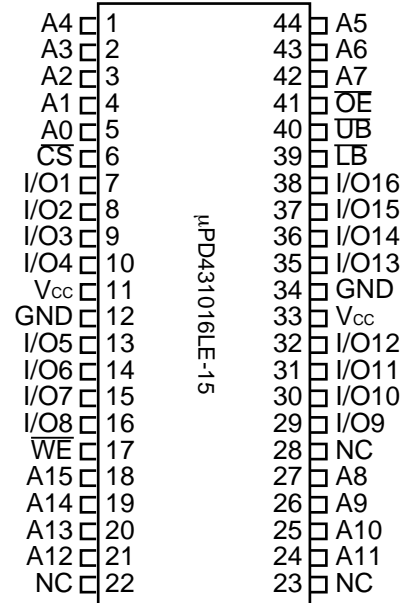


IC DATA

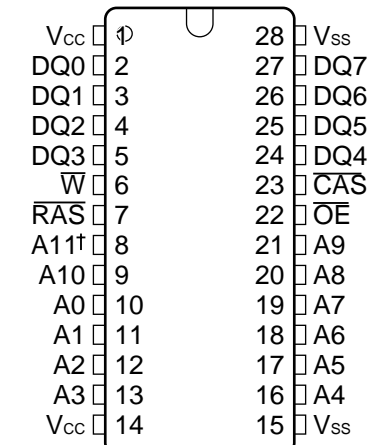
SIO
NCR53C-CF96-2 (01347490)
IC16 on MB



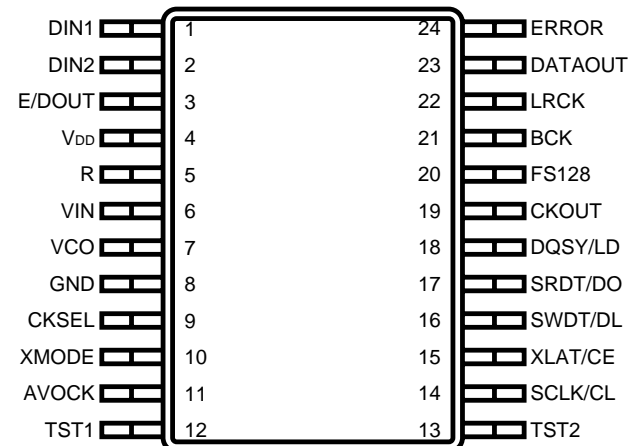
SRAM
μPD431016LE-15-E2 (01450845)
IC29, IC62 on MB



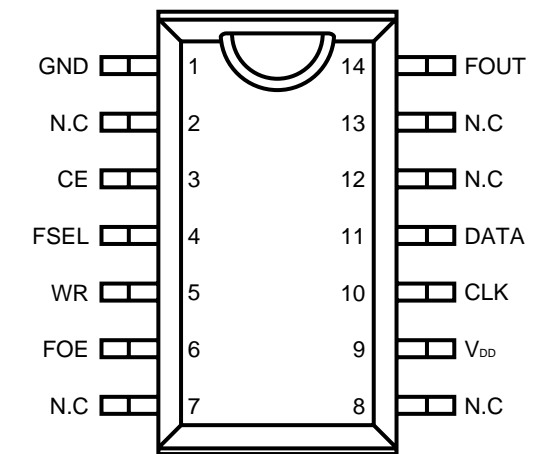
16M DRAM
TMS417809A-60DZR (01347689)
IC9, IC10 on MB



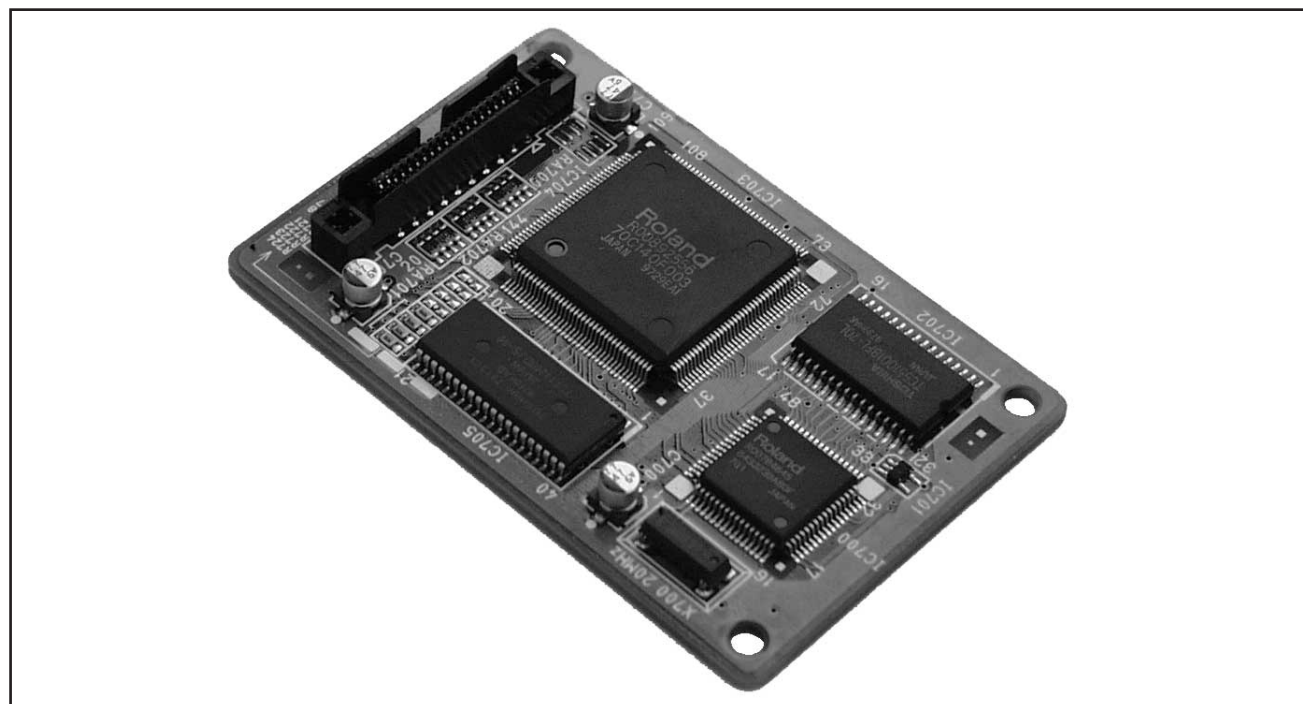
RECEIVER
LC8905V-TLM (01124378)
IC21 on MB



TIMER
RTC-4543 SA-A (01347489)
IC2 on MB



VS8F-2



SPECIFICATIONS (VS8F-2)

● Expands the functionality of the VS-1680

Simply by installing the VS8F-2 into the VS-1680, high quality stereo effects become accessible for convenient use.

● Two stereo effect systems

The VS8F-2 has two stereo effect systems. Each effect can be connected to the effect buss or inserted into a specific channel.

This means that you can, for example, insert one effect into a specific channel, and connect the other effect to the send/return of the mixer.

● A varied selection of effects

200 Preset Patches (effect settings) and 210 User Patches are provided.

You can instantly switch between a variety of effects simply by selecting a Patch.

Original effects settings that you create can be saved as a User Patch.

They can also be saved as part of the mixer settings in a Scene.

● Algorithms

The VS8F-2 provided not only basic effects such as reverb and delay, but also effects ideal for vocals and guitar, and even special effects such as vocoder and RSS.

The way in which each of these effects is organized internally is determined by which of the 34 algorithms it uses.

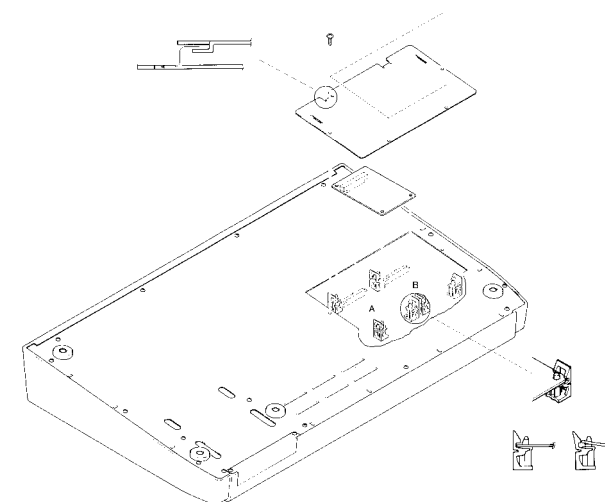
This means that you can simply select an algorithm (Patch) and begin creating the sound you want, without having to worry about how to make connections.

INSTALLING THE VS8F-2

1. Turn off the power of the VS-1680 and the connected devices, and disconnect all cables that are connected to the VS-1680.

2. Turn the VS-1680 over, and remove the bottom cover. Inside is the connector and three plastic pins.

Insert the connector of the VS8F-2 into the internal connector and at the same time make sure the plastic pins go into the holes in the VS8F-2, so that the board is firmly in place.



3. Re-attach the cover.

4. Connect the external equipment to the VS-1680, and turn on the VS-1680 power.

PARTS LIST (VS8F-2)

<p>SAFETY PRECAUTIONS: The parts marked Δ have safety-related characteristics. Use only listed parts for replacement.</p>	<p style="text-align: center;">CONSIDERATIONS ON PARTS ORDERING</p> <p><i>When ordering any parts listed in the parts list, please specify the following items in the order sheet.</i></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">QTY</th> <th style="text-align: left;">PART NUMBER</th> <th style="text-align: left;">DESCRIPTION</th> <th style="text-align: left;">MODEL NUMBER</th> </tr> </thead> <tbody> <tr> <td>Ex. 10</td> <td>22575241</td> <td>Sharp Key</td> <td>C-20/50</td> </tr> <tr> <td>15</td> <td>2247017300</td> <td>Knob (orange)</td> <td>DAC-15D</td> </tr> </tbody> </table> <p><i>Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.</i></p>	QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER	Ex. 10	22575241	Sharp Key	C-20/50	15	2247017300	Knob (orange)	DAC-15D
QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER										
Ex. 10	22575241	Sharp Key	C-20/50										
15	2247017300	Knob (orange)	DAC-15D										

NOTE: The parts marked # are new (initial parts)

EB->Effect Expansion Board

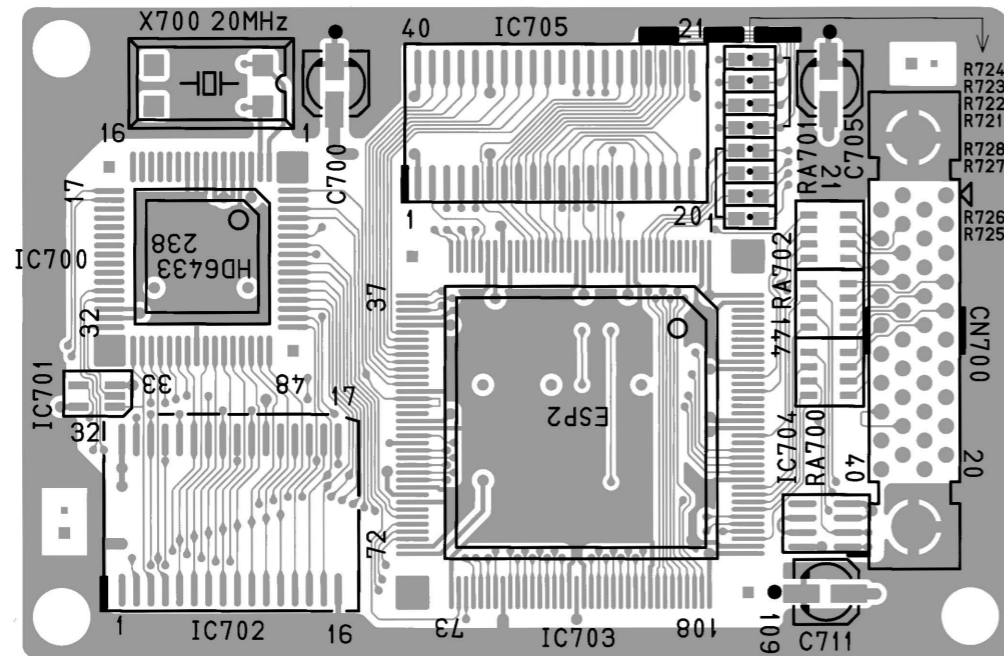
PCB ASSY			
#	*****	VS8F-2 BOARD ASSY	EFFECT EXPANSION BOARD
NOTE: VS8F-2 BOARD is not available for replacement parts. For replacement, please use VS8F-2(goods), if necessary.			
IC			
	00784645	HD6433238A80F	CPU IC700 on EB
	00892556	TC170C140AF-003	CUSTOM IC IC703 on EB
	01122412	TC551001CF-70L	SRAM IC702 on EB
#	01238234	TC514260DJS-50(YEL)	DRAM IC705 on EB
#	00565956	TC7S86F(TE85L)	CMOS IC704 on EB
CRYSTAL			
	00894023	MA-406 20.000MHZ	X'TAL X700 on EB
CONNECTOR			
#	13379114	TX15-40P-6ST-MH1	CN700 on EB
PACKING			
#	01452634	PACKING CASE	
#	22633419	PAD	for PACKING CASE
MISCELLANEOUS			
#	71019223	OWNER'S MANUAL SET	JAPANESE/ENGLISH

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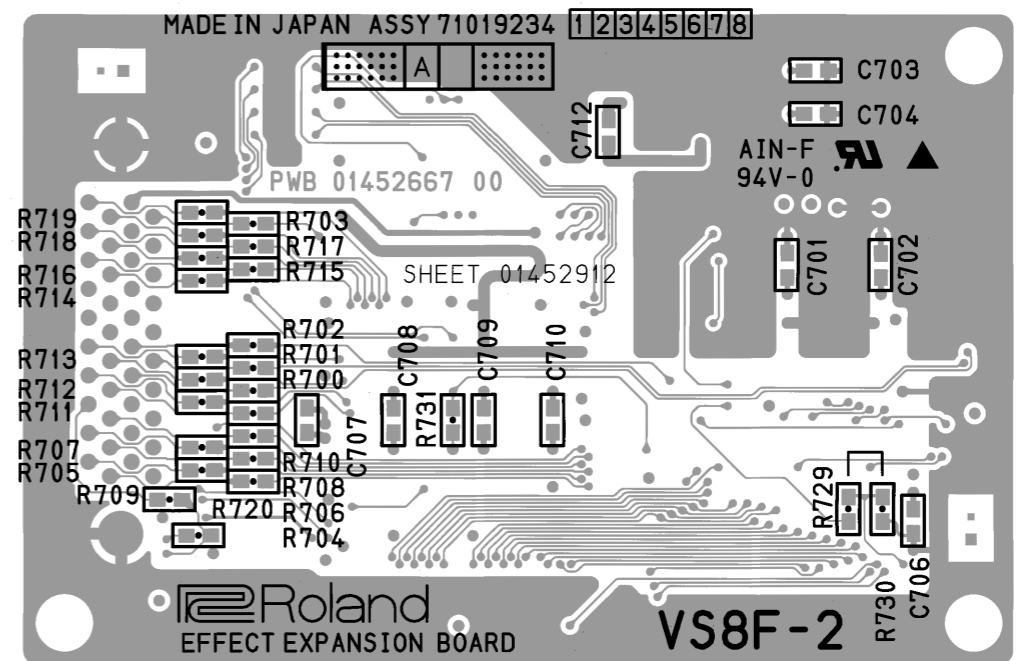
A VS8F-2 CIRCUIT BOARD

B VS8F-2 BOARD ASSY (*****)

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View from component side.



View from foil side.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

A VS8F-2 CIRCUIT DIAGRAM

B VS8F-2 BOARD ASSY (*****)

