

GP-8 SERVICE NOTES *First Edition*

SPECIFICATIONS

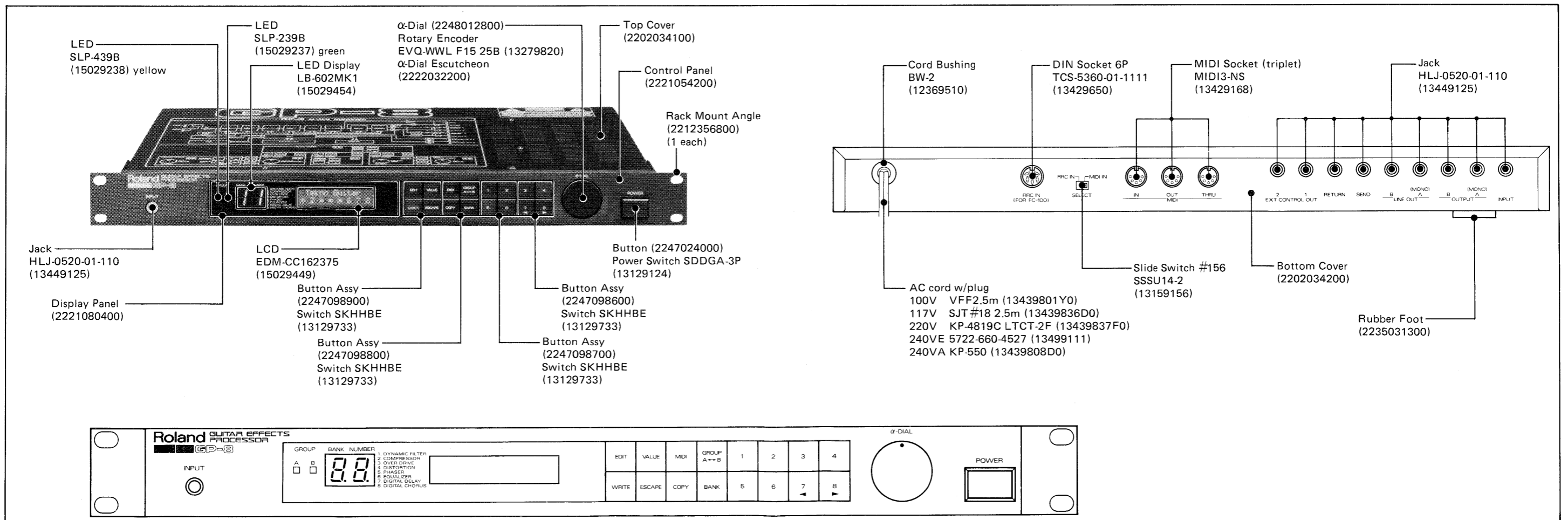
Input Level/Impedance	:	-20dBm/1MΩ
Output and Line Out	Level	-20dBm @Master Volume value 70
	Impedance	2KΩ
	Load Impedance	Over 10KΩ
Effect Send	Output Level	-20dBm (Rated)
	Output Load Impedance	Over 10KΩ
Effect Return	Input Level	-20dBm (Rated)
	Input Impedance	1MΩ
Built-in Effects	:	1. Dynamic Filter 5. Phaser 2. Compressor 6. Equalizer 3. Turbo Overdrive 7. Digital Delay 4. Distortion 8. Digital Chorus
Memory Capacity	:	128 Patches (including names) Back-up
Edit	:	31 Parameters and Names (including Effect ON/OFF)
Compressor	Compression Range	: 35dB
Equalizer	High Level	: ±15dB
	Middle Level	: ±15dB
	Low Level	: ±15dB
Digital Delay	:	Analog logarithmic compression and 12 bit quantizing system
	Delay Time	: 0 to 1000ms
	Frequency Responce	: 40Hz to 12KHz (+0dB, -3dB)
Digital Chorus	:	Analog logarithmic compression and 12 bit quantizing system
	Digital Modulation	
	Sampling Frequency	: 50KHz
	Frequency Responce	: 40Hz to 15KHz (+0dB, -3dB)
Power Consumption	:	34W
Dimensions	:	482(W) x 282(D) x 44(H) mm 19(W) x 11-1/8(D) x 3/4(H) in.
Weight	:	4 kg / 8 lb. 13 oz.
Options	:	Foot Controller FC-100 Expression Pedal EV-5

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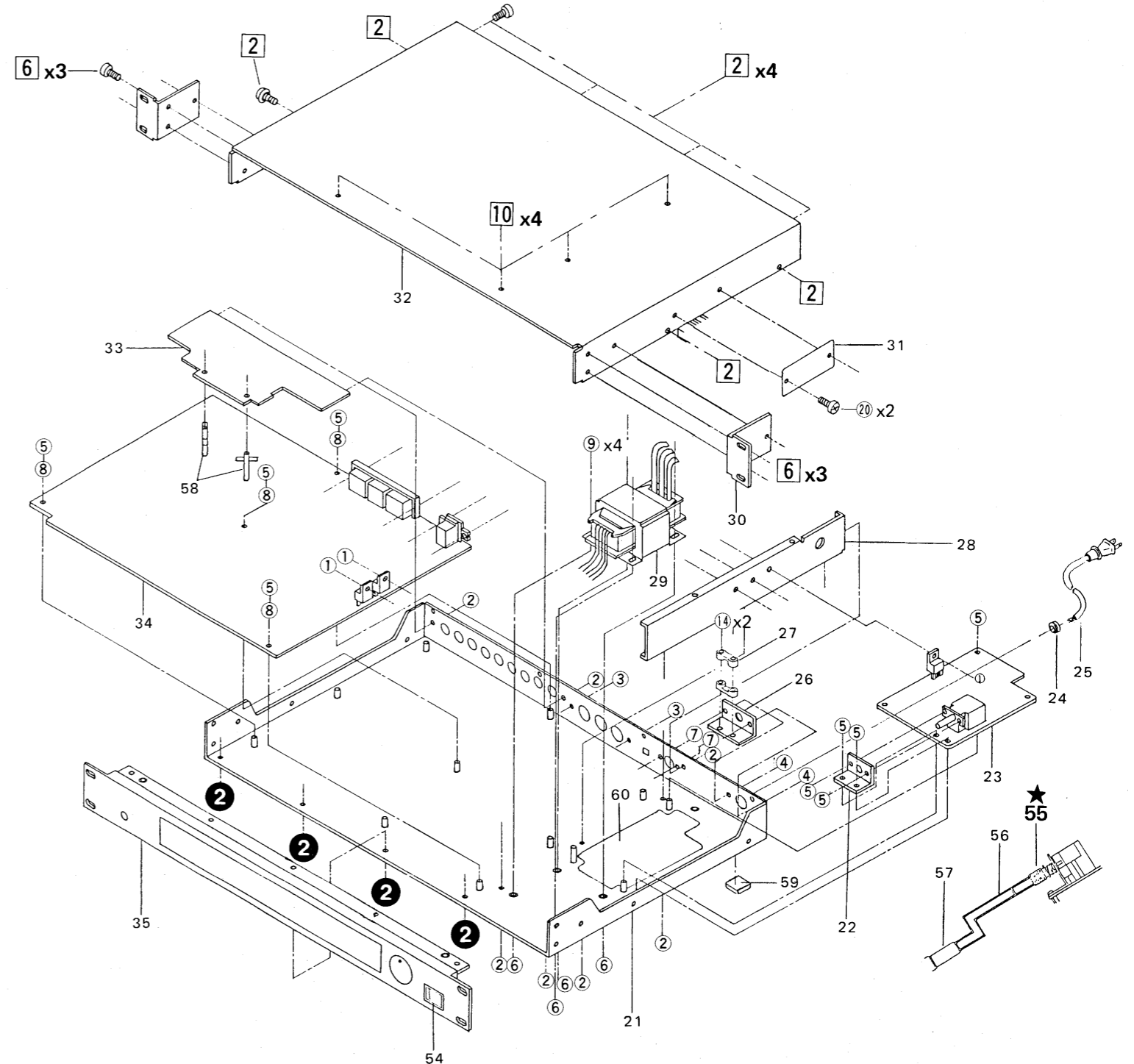
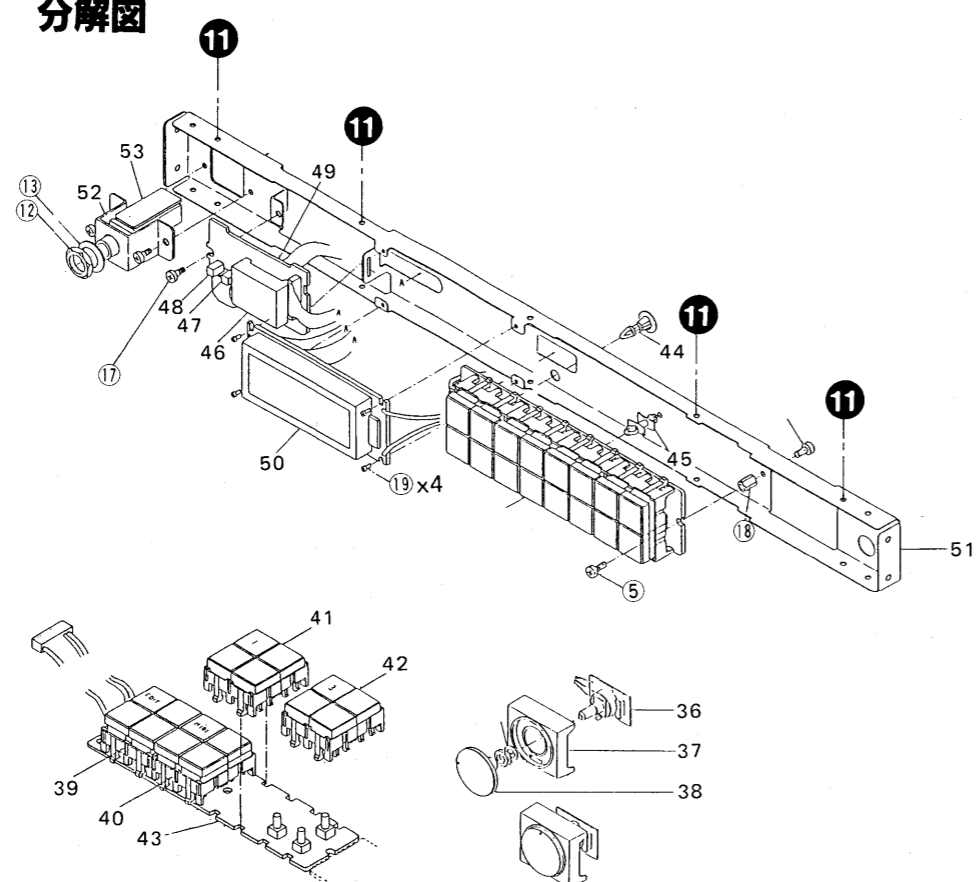
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EXPLODED VIEW 分解図



TOP COVER REMOVAL SCREWS

1. 6 x 3 each
2. 2 x 8
3. 10 x 4

FRONT PANEL REMOVAL SCREWS

1. 55 (Sleeve)

NOTE: The front panel cannot be removed unless the sleeve (55) is pulled out from the power switch.

注意:スリーブ(55)をパワースイッチから抜いてからでないとフロントパネルは取り外せません。

2. 2 x 4
3. 11 x 4

分解図部品一覧

SCREWS

1. 3x8mm Binding Tap-Tight (Self-Tapping) S type FeCm
2. 3x8mm Binding Tap-Tight (Self-Tapping) S type FeBc w/Tooth Washer
3. 3x8mm Binding Tap-Tight (Self-Tapping) P type FeBc
4. 3x6mm Binding MACHINE FeBc
5. 3x6mm Binding MACHINE FeCm
6. 4x8mm Binding MACHINE FeBc
7. Nylon Revet NRP-345
8. 3mm External Tooth Washer
9. 4mm Nut w/Spring Washer
10. 3x8mm Binding Tap-Tight (Self-Tapping) S Type FeBc
11. 3x6mm Flat Tap-Tight (Self-Tapping) S Type FeCm
12. Jack Nut 12x14x2 P=1.0 FeNi
13. Jack Washer 12x16x0.5 FeNi
14. 3x15mm Binding Tapping Bl FeBc
15. 3mm Internal Tooth Washer
16. 3x4mm Binding MACHINE FeCm
17. 3x6mm Binding Tap-Tight (Self-Tapping) S Type FeCm
18. Boss Nut #517 (8mm)
19. 2x6mm Pan Tapping Bl FeCm
20. 3x6mm Binding Tapping Bl FeCm

PARTS

- | | | | | | |
|---------------------------------|-----------------|-----------------------------------|------------|---------------------------|------------|
| 21. GP-8 Bottom Cover | 2202034200 | 35. GP-8 Control Panel | 2221054200 | 55. DE-200 Sleeve 215-404 | 2215040800 |
| 22. GP-8 Switch Holder | 2219096000 | 36. α Dial Board (pcb 2292043700) | 7314465000 | 56. DE-200 Arm 214-219 | 2214021900 |
| 23. PS Board (pcb 2292043900) | 7314469000 | 37. α Dial Escutcheon | 2222032200 | 57. DEP-5 Sleeve 215-408 | 2215040800 |
| 24. Cord Bushing BW-2 | 12369510 | 38. α Dial | 2248012800 | 58. PCB Holder PCB-12 | 12199503 |
| 25. AC Cord | 13439801V0 | 39. GP-8 Button Assembly | 2247098900 | 59. Base #313 | 2235031300 |
| | 100V | 40. GP-8 Button Assembly | 2247098800 | 60. GP-8 Spacer | 2216033700 |
| | 117V | 41. GP-8 Button Assembly | 2247098600 | | |
| | 220V | 42. GP-8 Button Assembly | 2270098700 | | |
| | 240VE | 43. SW Board (pcb 2292043700) | 7314464000 | | |
| | 240VA | 44. Locking Card Spacer | 12199557 | | |
| 26. Cord Holder | 2219078400 | 45. Double Locking Spacer | 12199572 | | |
| 27. Cord Band 1702B | 12369410 | 46. 7-seg LED | 15029454 | | |
| 28. GP-8 Side Chassis | 2291058300 | 47. LED (Yellow) | 15029238 | | |
| 29. Power Transformer | | 48. LED (Green) | 15029237 | | |
| | Type N 100/117V | 49. LED Board (pcb 2292043800) | 7314461000 | | |
| | Type D 220/240V | 50. LCD | 15029449 | | |
| 30. DEP-3 Rack Mount Angle | 22450477N0 | 51. GP-8 Front Chassis | 2281058400 | | |
| 31. Nameplate | 22450478D0 | 52. GP-8 Jack Holder | 2219095800 | | |
| 32. Top Cover | 2202034100 | 53. Jack Board (pcb 2292043800) | 7314456000 | | |
| 33. Jack Board (pcb 2292043800) | 7314456000 | 54. DEP-5 Escutcheon | 2222031900 | | |
| 34. MT Board (pcb 2292043500) | 7314467000 | | | | |

PANEL, CASING

2202034200	GP-8 Bottom Cover	
2202034100	GP-8 Top Cover	
2281058300	GP-8 Side Chassis	
2219095800	GP-8 Jack Holder	
2221054200	GP-8 Control Panel	
2281058400	GP-8 Front Chassis	
2219078400	Cord Holder #219-784	AC Cord
2248012800	α Dial	
2222032200	α Dial Escutcheon	
2215040800	DEP-5 Sleeve 215-408	
2214021900	DE-200 Arm 214-219	Power Switch
2215040400	DE-200 Sleeve 215-404	
2219096000	GP-8 Switch Holder	
2221080400	GP-8 Display Panel #804	
2212356800	DEP-3 Rack Mount Angle	
12369510	Cord Bushing BU-2	
12199503	PCB Holder PCB-12	
2216033700	GP-8 Spacer	
2222031900	DEP-5 Escutcheon	
2235031300	Base #313	Foot(square mat)

BUTTON

2247098600	GP-8 Button Assembly	1,2,5,6
2247098700	GP-8 Button Assembly	3,4,7<,8>
2247098800	GP-8 Button Assembly	MIDI,COPY,GROUP A/B,BANK
2247098900	GP-8 Button Assembly	EDIT,WRITE,ESCAPE,VALUE
2247024000	Button #247-240	Power

SWITCH

13129733	SKHHBE(KHH10922)260G	tact	SW Board
13159156	SSSU14-2	slide	SELECT
13129124	SDDGA-3P		POWER

JACK, SOCKET

13449125	HLJ-0520-01-110		EXT CONTROL, RETURN, SEND, LINE OUT, OUTPUT, INPUT
13429650	TCS-5360-01-1111	DIN 6P	RRC IN
13429168	MIDI3-NS	MIDI 5P triplet	MIDI IN, OUT, THRU

POWER TRANSFORMER

22450477N0	Type N	100/117V
22450478D0	Type D	220/240V

COIL

12449229M1	FK0B160MH15	Choke
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PCB

7314466000	MT Board (PCB 2292043501)	
7314459000	JK Board (PCB 2292043800)	
Replacement JK BOARD includes LED Board and IN JK Board. 補修用JK基板は、LED基板とIN JK基板を含みます。		
7314461000	LED Board (PCB 2292043800)	
7314457000	IN JK Board (PCB 2292043800)	
7314464000	SW Board (PCB 2292043700)	
Replacement SW Board includes α DIAL Board. 補修用SW基板は、α DIAL基板を含みます。		
7314465000	α DIAL Board (PCB 2292043700)	
7314468100	PS Board (PCB 2216033600)	100/117V
7314468400	PS Board (PCB 2216033600)	220/240V

TRANSISTOR

15119814	2SB1015-0	Power
15129827	2SD1406-06	Power
15119602	2SB647C	Power
15129602	2SD677C	Power
15119113	2SA1015GR	
15129136	2SC2878-A	

IC

15179258	CPU HD6303RF*	CPU
	or 15179223 HD6301V1E57F --- (for TU-100)	
15229811	RDD63H101P-G-SH	Delay Gate Array
15229844	MB654119 BOS-0002	Chorus Gate Array
15229834	MB62H195PF-G-BND	System Gate Array
1517315	M5K4164ANP-15*	16bit*64k D-RAM
15179377	M5M4416P-15*	4bit*64k D-RAM
15179831	M5M27C128K-25*	EP-ROM
15179372	TC5564PL-15*	64k S-RAM
15169515	TC74HC00P*	Quad 2-Input NAND Gate HC C-MOS
15159514	TC40H032P*	Quad 2-Input or Gate HC C-MOS
15159506T0	TC40H138P*	3 to 8 Line Decoder/Demultiplexer HC C-MOS
15159509T0	TC40H393P*	Dual 4Bit Binary Counter HC C-MOS
15169556T0	TC74HC574P*	Octal D-Type Flip-Flop(3-State) HC C-MOS
15189111J1	NJM311D*	Comparator
15189189	μ PC4570HA*	OP Amp
	or 15189136 M5218L	

NOTE: μ PC4570HA(9pin)and M5218(8pin)are electrically compatible but differ in the number of pins. See "IC DATA (P-5)" for more details.

注意: μ PC4570HA(9pin)と M5218(8pin)はピン数が違いますが互換性が有ります。"ICデータ(p-5)"を参照。

15189188	M5238L	OP Amp
15189136	M5218L	OP Amp
15219181	M5207L	VCA
15219157	M5241L	VCA
15229801	IR3109	VCF
15219124	μ PC1252H2	NR
15219163	NE572	Programmable Analog Comander
15169334H0	HD74LS05P	TTL
1515911571	TC4066BP	Quad Bilateral Switch
15159124T0	TC4093BP	Quad 2-Input NAND Schmitt Trigger
15199117	M5230L	V-regulator
15229836	NJU7302	S/H
15199106E0	μ A7805VC	3-Terminal Voltage Regurator
15129172	DTC114TSPT	w/Built-in Resistors
15119143	2SA1335GR*	
	or 15119111 2SA970GR	
15129179	2SC2458GR*	
	or 15129144 2SC2458GR	
15129178	2SC3378GR*	
	or 15129120 2SC2240GR	
15139123	2SK184GR*	FET
	or 15139106 2SK117GR	

DIODE, LED

15029242	SLP-253B (Green)	LED
15029241	SLP-453B (Yellow)	LED
15029454	LB-602MK1	7seg LED
15019103	1S2473	
15019122	1S188FM	
15019126	1SS133	
15019209T0	S5500G	
15019418	RD2.0ESB2 (Taping)	2.0V Zener
19019419	RD2.4ESB2 (Taping)	2.4V Zener
15019420	RD3.0ESB2 (Taping)	3.0V Zener
15019303	RD5.6JB2	5.6V Zener
15019422	MTZJ4.3B (Taping)	4.3V Zener
15019417	MTZJ4.7B (Taping)	4.7V Zener
15019416	MTZJ6.2B (Taping)	6.2V Zener
15019415	MTZJ10B (Taping)	10.0V Zener
15019236	W-02	Rectifier bridge

OPTO ISOLATOR

1522970650	PC-910
15229711	P-1501

RESISTOR

13910103M1	RGSD8X103J	Array
13919134	RKM14L492/103F	Ladder
13919175	RKM14L472-942F	Ladder
13919157	RKM10L103F	Ladder
13799741D0	3.3k (Taping)	Metal Film
13799722D0	15k (Taping)	Metal Film
13799757D0	24k (Taping)	Metal Film
13829252	68 2W	Metal Oxide
12559807	FRN1/4 4.7 ohm	Fusible Resistor

POTENTIOMETER

13299140	10KB	trimmer
13299156	22KB	trimmer
13299158	47KB	trimmer

CAPACITOR

13529104	MIDE7150F472MVA1	4700pF	Electro
13559356	ECQ-B1H103KZ		Polypropylene

OSCILLATOR

12389729	CSA4.00MG	4MHz Ceramic Resonator
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FUSE

12559356	SGC-1A	100/117V
12559551	T630mA/250V	220/240V

AC CORD, CORD SET

13439801Y0	VFF2.5m	100V
13439836D0	SJT #18 2P	117V
13439837F0	KP-4819C LTCT-2F	220V
13499111	5722-660-4527	240VE
13439808D0	KP-550	240VA
12369410	Cord Band 1702B	

WIRING, CONNECTOR

2341055300	Wiring Assy #553 13P 2.5mm Pitch, l=60mm	CN8 (JACK - MT)
2341055400	Wiring Assy #554 3P 2.5mm Pitch, l=110mm	CN6 (Encoder-MT)
2341055500	Wiring Assy #555 7P 2.5mm Pitch, l=160mm	CN4 (LCD - MT)
341055600	Wiring Assy #556 7P 2.5mm Pitch, l=80mm	CN7 (PS - MT)
2341055700	Wiring Assy #557 10P 2.5mm Pitch, l=165mm	CN2 (LED - MT)
2341055800	Wiring Assy #558 10P 2.5mm Pitch, l=140mm	CN1 (LED - MT)
2341055900	Wiring Assy #559 10P 2.5mm Pitch, l=100mm	CN5 (SW - MT)
2341056000	Wiring Assy #560 7P 2.5mm Pitch, l=160mm	CN3 (LCD - MT)
13439337	IL-S-13P-S2T2-EF	13P Connector
13439296	IL-S-7P-S2T2-EF	7P Connector
13439298	IL-S-10P-S2T2-EF	10P Connector
13439344	IL-S-3P-S2T2-EF	3P Connector
13439333	IL-S-2P-S2T2-EF	2P Connector
13439367	B3B-PH LCD	3P Connector

MISCELLANEOUS

15029449	LCD EDM-CC162375	LCD Assy
2348020800	Shield Cord Assy #208	Front Jack - Rear Jack
2219675700	Holder #757	PCB
13279820	EVQ-WWL F15 25B	Rotary Encoder
12569148	CR-1/3-P	Lithium Battery
12439221	LR1A-05B	Reed Relay #221
13529126	EXC-EMT-103C	EMI Filter
12199550	H0446	Fuse Holder
13459509	WE-5 Pitch 7.5mm	Wrapping Terminal
2216033600	Insulator	Power Supply Board
12199557	KGLS-8R l=8mm	Locking Card Spacer
12199572	WLS-08-0	Double Locking Spacer
2215051700	l=8	Boss Nut 215-517
12199571	KGPS-8R (Black)	Card Spacer

IC DATA

74HC138
3-to-8 Line Decoder

Pin Configuration

Truth Table

Inputs		Outputs							
Enable	Select	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
G1	G2	C	B	A					
X	H	X	X	X	H	H	H	H	H
L	X	X	X	X	H	H	H	H	H
H	L	L	L	L	H	H	H	H	H
H	L	L	L	H	H	L	H	H	H
H	L	L	H	L	H	H	L	H	H
H	L	L	H	H	H	L	L	H	H
H	L	H	L	L	H	H	L	L	H
H	L	H	L	H	H	H	L	L	H
H	L	H	H	L	H	H	L	L	H
H	L	H	H	H	H	H	L	L	H
H	L	L	H	H	H	H	L	L	H
H	L	L	L	H	H	H	L	L	H

Top View

74HC393
Dual 4-Bit Binary Counter

Pin Configuration

Truth Table

Inputs		Function
Clock	Clear	
L	L	Increment
X	H	Clear

Top View

74HC574
Octal D-Type Flip-Flop

Pin Configuration

Truth Table

Output Control	Clock	Data	Output
L	T	H	H
L	L	X	L
L	X	X	Z
H	X	X	Z

Top View

P1501
OPTO ISOLATOR

Top View

74LS05P
HEX INVERTER WITH OPEN COLLECTOR OUTPUT

Top View

M5207L
VOLTAGE REGULATOR

Top View

NE572
PROGRAMMABLE ANALOG COMPANDOR

Top View

μPC1252
DUAL OP AMP

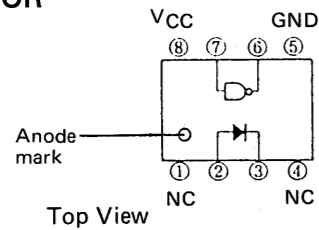
Top View

CPU HD6303RF

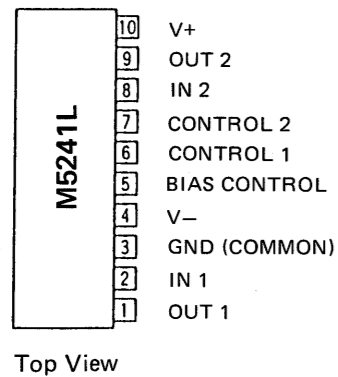


DESIG-NATION	PIN No.	FUNCTION	I/O	DESIG-NATION	PIN No.	FUNCTION	I/O
A	15 2 8	Address BUS	0	P23	1 4	RX	I
	14 2 9		0	P24	1 5	TX	O
	13 3 0		0	P22	1 3	SCI External Clock	I
	12 3 1		0	P21	1 2	PORT 21	I
	11 3 2		0	P20	1 1	Input Capture	I
	10 3 5		0	XTAL	2	Clock Input	O
	9 3 6		0	EXTAL	3		I
	8 3 7		0	<NC>	4 9		-
	07/A7	4 0	1/0	<NC>	4 8		-
	D6/A6	4 1	1/0	<NC>	4 7		-
	D5/A5	4 2	1/0	<NC>	4 6		-
	D4/A4	4 3	1/0	<NC>	3 9		-
	D3/A3	4 4	1/0	<NC>	3 8		-
	D2/A2	4 5	1/0	<NC>	3 4	NOT USED	-
	D1/A1	5 0	1/0	<NC>	3 3		-
	D0/A0	5 1	1/0	<NC>	2 1		-
				<NC>	1 7		-
	18	2 5	SELECT				
	15	2 4	EXT 2				
	14	2 3	EXT 1				
P	13	2 2	GROUP A/B				
	12	2 0	DELAY MUTE				
	11	1 9	DELAY SHIFT				
	10	1 8	DELAY DATA				
AS	5 3	Address Strobe	0	VCC	2 7	+5V	I
R/W	5 2	Read/Write	0	NH1	4	NOT USED	-
E	5 4	Enable	0	STBY	9	NOT USED	-
RES	8	RESET	I	TRQ1	5	NOT USED	-
				VSS	1	GND	I

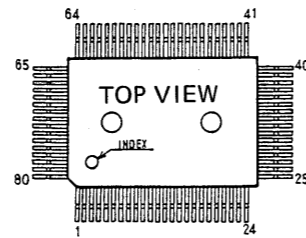
PC910 OPTO ISOLATOR



M5241L DUAL VCA

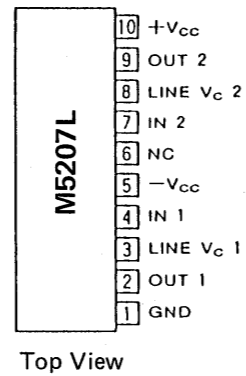


MB62H195 SYSTEM GATE ARRAY

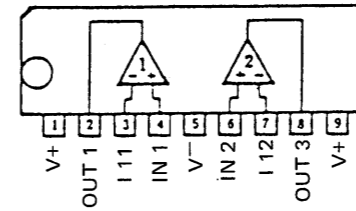


DESIG-NATION	PIN No.	FUNCTION	I/O	DESIG-NATION	PIN No.	FUNCTION	I/O
LC	0 6 8	LCD Data	0	1 4 0	Data Bus	1/0	
	1 6 9		0	2 3 9		1/0	
	2 7 0		0	3 3 8		1/0	
	3 7 1		0	AD 4 3 7		1/0	
	4 7 2		0	5 3 6		1/0	
	5 7 4		0	6 3 5		1/0	
	6 7 5		0	7 3 4		1/0	
	7 7 6		0	T 0 1 8	Keyboard and Switch Read	0	
R	0 9	Keyboard and Switch Read	I	1 1 9	Keyboard and Switch Read	0	
	1 1 0		I	0 6 5	A S/H Channel Select	0	
	2 1 1		I	DC 1 6 4	B S/H Channel Select	0	
	3 1 3		I	2 6 3	C S/H Channel Select	0	
	4 1 4		I	DI 0 6 1	Inhibit pulse	0	
	5 1 5		I	1 6 0	Inhibit pulse	0	
	6 1 6		I	LED 2 5	Chip Select	0	
DA	0 8	8BIT D/A CONVERTER	0	RS 6 6	LCD Register Select	0	
	1 7		0	LCE 6 7	LCD Write Pulse	0	
	2 6		0	RAM2 5 3	ROM Chip Select	0	
	3 5		0	RD 2 7	Read Pulse	I	
	4 4	0	VR 2 6	Write Pulse	I		
	5 3	0	ALE 3 2	ALE Pulse	I		
	6 2	0	T2 2 0	NC	-		
	7 1	0	T3 2 1	NC	-		
	8 2	0	T4 2 2	NC	-		
	9 7 9	Inhibit pulse	0	NC	2 3	NC	
	10 7 8		0	T5 2 4	NC	-	
	11 7 7	0	DA 8 8 0	NC	-		
	0 4 2	ROM and RAM Address (lower 8bits)	0	OUT0 5 5	NC	-	
	1 4 3		0	DC0 5 4	NC	-	
	2 4 4		0	ROM 5 0	NC	-	
	3 4 5		0	RAM1 5 1	NC	-	
	4 4 6		0	SOUT 5 9	NC	-	
	5 4 7	Address (for chip select)	0	SCX 5 8	NC	-	
	6 4 8		0	SIN 5 7	NC	-	
	7 4 9		0	ADC 5 6	NC	-	
	12 2 8	0	NC	6 3	NC		
	13 2 9	0	VDD 3 3	+5V	I		
	14 3 0	0	VDD 7 3	+5V	I		
	15 3 1	0	VSS 5 2	GND	I		
AD	0 4	1/0	VSS 1 2	GND	I		

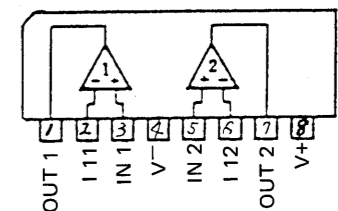
M5207 DUAL LINEAR VCA



μPC4570HA OP AMP



M5218L OP AMP

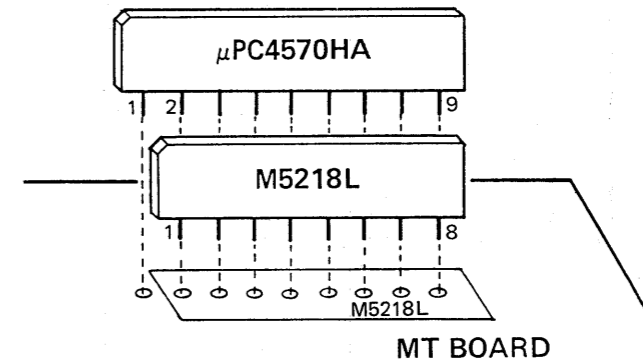


μPC4570A and M5218L

μPC4570A (9 pin) and M5218L (8 pin) are electrically compatible with each other but differ in the number of pins. When replacing, correctly position the IC as shown in the figure below.

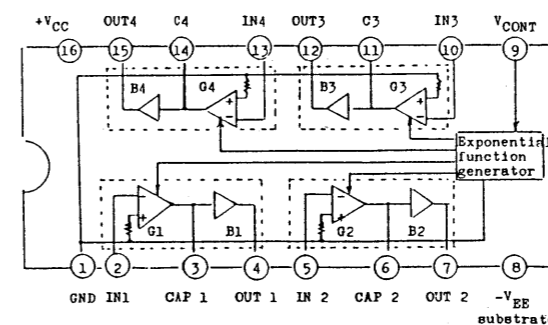
μPC4570A と M5218L

μPC4570A (9pin)とM5218L (8pin)はピン数が異なりますが、互換性が有ります。取付時には下図を参照のうえピンを合わせて下さい。



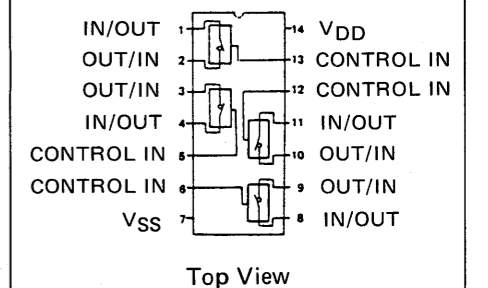
1R3109 VCF

TOP VIEW



4066B Quad Bilateral Switch (for Transmission or Multiplexing of Analog or Digital Signals)

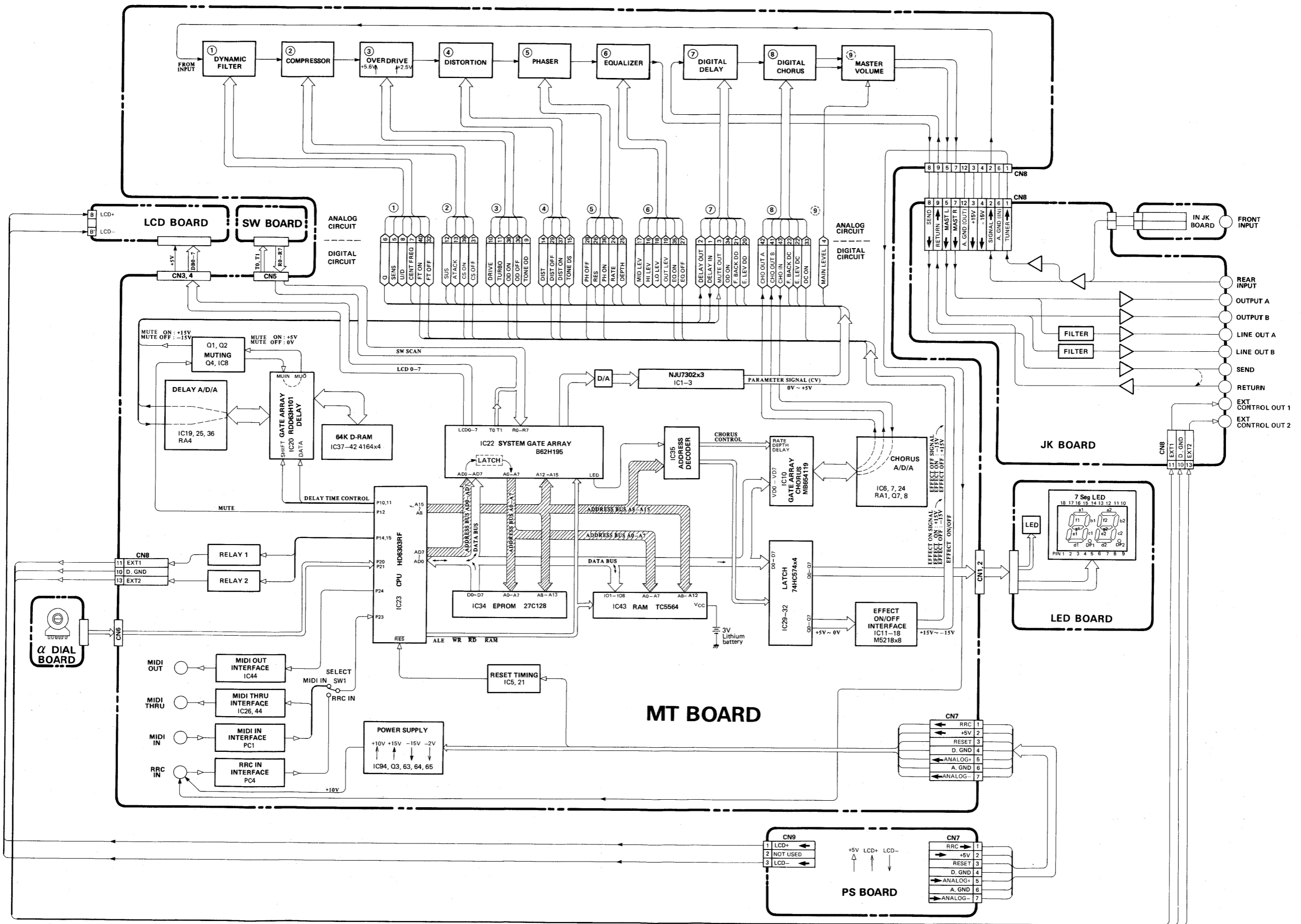
Pin Configuration



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

BLOCK DIAGRAM

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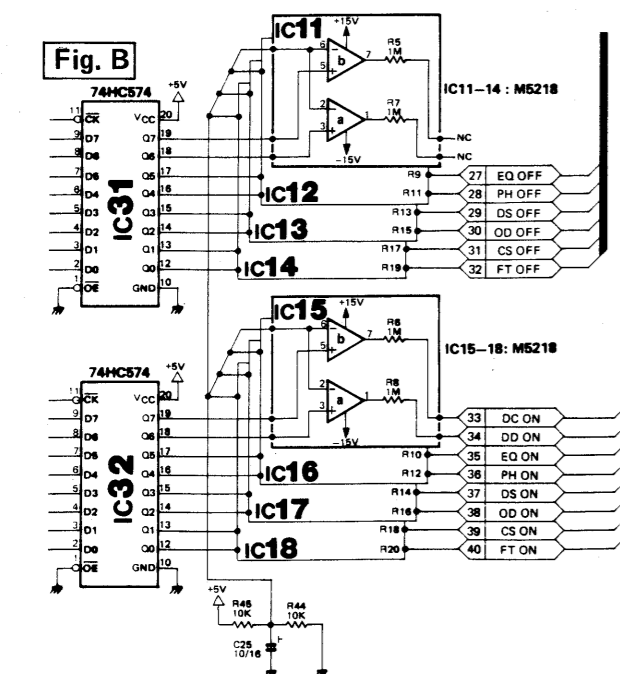
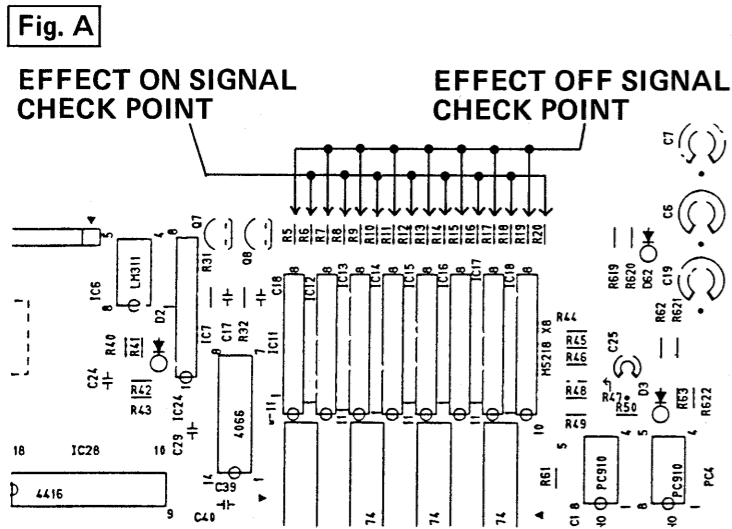


TROUBLESHOOTING GUIDE

When an effect does not work, first check the control signals (Effect ON/OFF Parameter (CV)) to make sure whether the problem resides in the Digital or Analog circuit.

Effect ON/OFF Signal Check

1. Connect a voltmeter or oscilloscope to one of the check points of the effect circuit in question. (Refer to Table A, Fig. A, B.)
 2. Select the Effect with the Number button. (See "GP-8 Basic Operation", page 8.)
 3. Press this button repeatedly (ON, OFF) and make sure that the voltage swings between polarities as shown in Table A.
- If OK, the problem might reside in the Analog circuit.



故障診断上のヒント

特定のエフェクト回路に異常がある場合は、デジタル回路からの制御信号(エフェクト ON/OFF, パラメータ信号(CV))をチェックすることによりアナログ、デジタル回路のいずれに原因があるかが分ります。

エフェクト ON/OFF 信号チェック

1. チェックポイントに電圧計かオシロスコープを接続する。(Fig. A, B, Table A 参照)
 2. 目的のエフェクターをナンバーボタンで選択する。("GP-8の基本操作図" (P. 8) 参照)
 3. このボタンを繰り返し押し(ON, OFF)、電圧値が Table A の様に変化するか確認する。
- 正常な場合、原因はアナログ部分にあると考えられる。

Table A EFFECT ON/OFF SIGNAL

EFFECT NO.	ON/OFF	EFFECT ON SIGNAL		EFFECT OFF SIGNAL	
		CHECK POINT	VOLTAGE	CHECK POINT	VOLTAGE
1 (DYNAMIC FILTER)	ON	R20	+15V	R19	-15V
	OFF	R20	-15V	R19	+15V
2 (COM-PRESSOR)	ON	R18	+15V	R17	-15V
	OFF	R18	-15V	R17	+15V
3 (OVER-DRIVE)	ON	R16	+15V	R15	-15V
	OFF	R16	-15V	R15	+15V
4 (DIS-TORTION)	ON	R14	+15V	R13	-15V
	OFF	R14	-15V	R13	+15V
5 (PHASER)	ON	R12	+15V	R11	-15V
	OFF	R12	-15V	R11	+15V
6 (EQU-LIZER)	ON	R10	+15V	R9	-15V
	OFF	R10	-15V	R9	+15V
7 (DIGITAL DELAY)	ON	R8	+15V		
	OFF	R8	-15V		
8 (DIGITAL CHORUS)	ON	R6	+15V		
	OFF	R6	-15V		

Parameter Signal (CV) Check

1. (See Table B.) Locate the check point for the parameter to be tested.
 2. Connect a voltmeter or oscilloscope to the check point. (Refer to Fig. C and D.)
 3. Select an Effect which contains the parameter by using Number button.
 4. Select the parameter with α -dial. (See "GP-8 Basic Operation" page 8.)
 5. Press "VALUE" button.
 6. Turning α -dial, make sure that the parameter signal (CV) changes as the parameter value increases or decreases as shown in "D/A OUT" of Table B.
- If OK, the problem might reside in the Analog circuit.

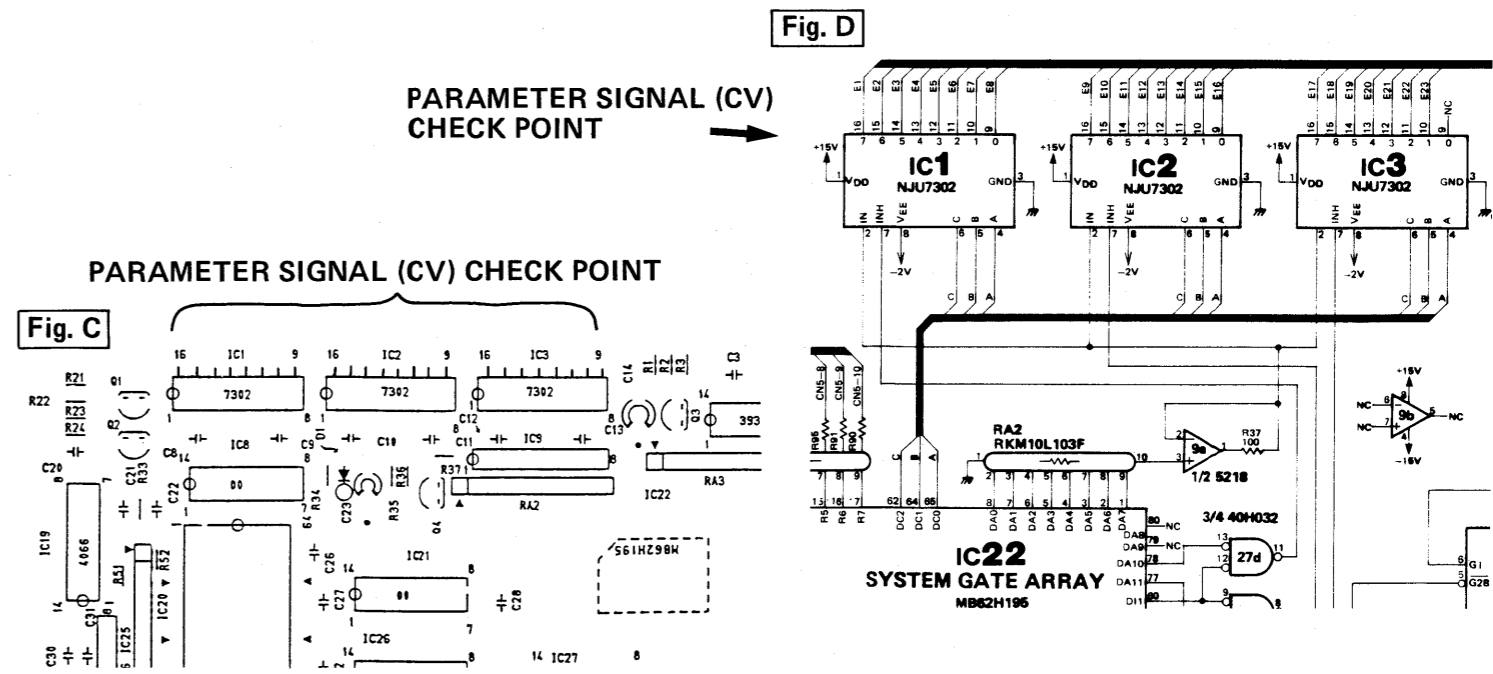
パラメータ信号(CV)チェック

1. チェックポイントに電圧計かオシロスコープを接続する。(Fig. C, D 参照)
 2. 目的のエフェクタのパラメータを選択する。("GP-8の基本操作図" (P. 8) 参照)
 3. "VALUE" ボタンを押しパラメータ・エディット・モードに入る。
 4. α -ダイヤルを回しながら、パラメータのバリューの変化に従って Table B の様にパラメータ信号(CV)が変化する事を確認する。
- 正常な場合、原因はアナログ部分にあると考えられる。

Table B PARAMETER SIGNAL (CV)

CHECK POINT	PARAMETER SIGNAL (CV)															
	IC1 pin		IC2 pin		IC3 pin										16	
	14	15	13	12	15	16	13	14	12	11	9	10	16	15	14	13
PARAMETER SIGNAL (CV)	+5V															
	0V															
PARAMETER	SENS															
	CUTOFF FREQ															
(EXAMPLE)	UP/DOWN															
	ATTACK															
	SUSTAIN															
	TONE															
	DRIVE															
	TURBO															
	TONE															
	DIST															
	RATE															
	DEPTH															
	RESONANCE															
	HI LEVEL															
	MID LEVEL															
	LO LEVEL															
	OUT LEVEL															
	D.D. E.LEVEL															
	D.D. F.BACK															
	D.C. E.LEVEL															
	D.C. F.BACK															
	MASTER VOLUME															

* 0V at "100" \leftrightarrow +5V at "0"
 ☆ 0V at "0" \leftrightarrow +5V at "100"
 ※ 0V at "UP" or +5V at "DOWN"
 ★ 0V at "TURBO OFF" or +5V at "TURBO ON"



GP-8 Basic Operation Table

GP-8の基本操作図

Parameter Table

Effect	Parameter	
	Parameter Name	Description
1. DYNAMIC FILTER	SENS	Sensitivity
	CUTOFF FREQ	Cutoff Frequency
	Q	Q Control
	DOWN/UP	Down/Up
2. COMPRESSOR	ATTACK	Attack
	SUSTAIN	Sustain Time
3. TURBO OVER DRIVE	TONE	Tone
	DRIVE	Drive
	TURBO OFF/ON	Turbo Off/On
4. DISTORTION	TONE	Tone
	DIST	Distortion
5. PHASER	RATE	Rate
	DEPTH	Depth
	RESONANCE	Resonance
6. EQUALIZER	HI LEVEL	High Level
	MID LEVEL	Middle Level
	LO LEVEL	Low Level
	OUT LEVEL	Output Level
7. DIGITAL DELAY	E.LEVEL	Effect Level
	DELAY TIME	Delay Time
	F.BACK	Feedback
8. DIGITAL CHORUS	RATE	Rate
	DEPTH	Depth
	E.LEVEL	Effect Level
	PRE DELAY	Pre Delay
	MASTER VOLUME	Master Volume
	EV-5 PARAMETER	EV-5 Parameter
	EXT CONTROL OUT1	External Control Output 1
	EXT CONTROL OUT2	External Control Output 2
	NAME EDIT	Name Edit

Select a Patch to be edited.
通常の使用状態で
修正したいパッチを選択

88 GUITAR PROCESSOR
* 2 * * * * 7 *



ESCAPE To stop editing.
修正を中止する。

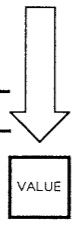
Editing Parameter パラメーターの調節

Rotating the Alpha Dial will display the parameter which can be edited and its value.
αダイヤルを回すと、調節できるパラメーターとその内容を表示

Pushing the Escape Button will return to the condition just before. (Note that the edited data will also be changed to the previous setting.)
このボタンを押すと1つ前の状態に戻ることができる。
(変更した内容も元に戻るのに注意)

88 EFFECT ON/OFF
* 2 * * * * 7 *

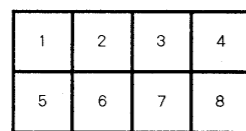
Selecting Effects エフェクターの選択



Effect Selecting Mode
(エフェクターを選択できる状態)

88 EFFECT ON/OFF
* 2 * * * * 7 *

Flashing
点滅



Press the number of the Effect to be turned on.

使用したいエフェクター番号を選択
(1回押しごとにオン/オフ)

88 EFFECT ON/OFF
* 2 * * * * 6 7 *

Flashing
点滅

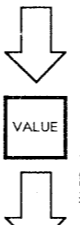
Number: Effect Number turned on.
*: Effect turned off.

数字 = 選択したエフェクター番号
* = 使用しないエフェクター



EDIT Enters the data.
使用するエフェクターを決定

88 2. COMPRESSOR
ATTACK = 50



VALUE Push this button when the Display shows the Parameter you wish to edit.
調節したいパラメーターが表示されたら押す
Parameter Editing Mode
パラメーターの内容を変更できる状態

88 2. COMPRESSOR
ATTACK = 50

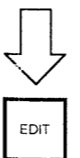
Flashing
点滅



Edit the Parameter while listening to the sound.
音を出しながら内容を変更

88 2. COMPRESSOR
ATTACK = 68

Flashing
点滅



EDIT Enters the Data.
内容を決定

To continue to edit other parameters. To write the edited data into memory.
別のパラメーターを調節したい場合 修正した内容を保存(記憶)したい場合

Writing Operation 記憶操作



Writing
記憶中

88 WRITING....

Normal Condition.
通常の使用状態

88 GUITAR PROCESSOR
* 2 * * * * 6 7 *

Do not press "WRITE" button during the adjustments or the data will be destroyed.
調整中に"WRITE"ボタンに触れないで下さい。
でなければ、データが壊される恐れがあります。

CHECKING AND ADJUSTING

The following adjustments are executed in edit mode. Therefore, the user's data will be protected as long as "WRITE" button is kept open.

1. OVERDRIVE BIAS (VR1)

- Apply a 200Hz, 120mVpp square wave from an audio generator to INPUT jack.
- Connect a scope (RANGE: 200mV/div, 1ms/div) to SEND jack.
- Select Effect No. "3" (OVERDRIVE). (See page "GP-8 basic operation.")
- Set up the values of Effect "3" (TONE, DRIVE, TURBO ON/OFF) as shown in Table 1.
- Adjust VR1 for the waveform shown in the figure below.

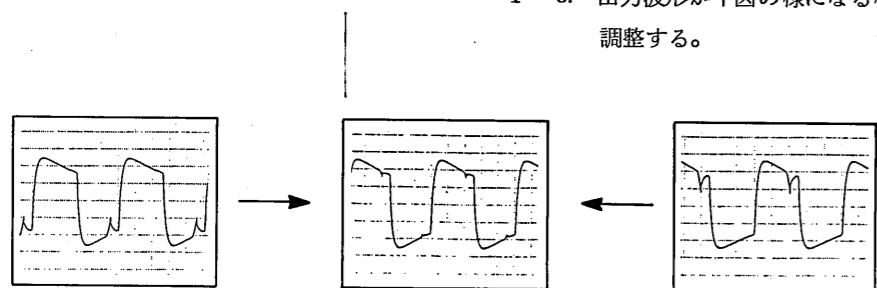


Table 1

1 Overdrive Bias オーバードライブ・バイアス (VR1)			
INPUT POINT	INPUT jack 200Hz, 120mVpp Square wave 矩形波		
OUTPUT POINT	SEND jack (oscilloscope オシロスコープ RANGE: 200mV/div, 1ms/div.)		
EFFECT	***3****		
3 TONE	= 50		
3 DRIVE	= 100		
3 TURBO ON/OFF	= ON		

2. - 9. Adjust each items following Table 2 respectively.

2. ~ 9. 調整 2. ~ 9. についても Table 2 に従ってそれぞれ調整する。

Table 2

2 Overdrive Turbo ON Gain オーバードライブ・ターボONゲイン (VR2)			
INPUT POINT	INPUT jack 1kHz, -60dBm Sine wave 正弦波		
OUTPUT POINT	SEND jack (voltmeter ミリボルト)		
EFFECT	***3****		
3 TONE	= 500		
3 DRIVE	= 100		
3 TURBO ON/OFF	= ON		
Adjust VR2 on MT board for -20dBm ± 2dB. 出力レベルが -20dBm ± 2dB になる様に VR 2 を調整する。			
3 Overdrive Turbo OFF Gain オーバードライブ・ターボOFFゲイン (VR4)			
INPUT POINT	INPUT jack 1kHz, -60dBm Sine wave 正弦波		
OUTPUT POINT	SEND jack (voltmeter ミリボルト)		
EFFECT	***3****		
3 TONE	= 50		
3 DRIVE	= 100		
3 TURBO ON/OFF	= OFF		
Adjust VR4 on MT board for -25dBm ± 2dB. 出力レベルが -25dBm ± 2dB になる様に VR 4 を調整する。			
4 Distortion Offset (Coarse) ディストーション・オフセット(粗調整)(DIST Max) (VR6)			
INPUT POINT Unplug the INPUT. INPUTジャックからプラグを抜く。		
OUTPUT POINT	IC54 pin 8 (voltmeter ミリボルト)		
EFFECT	***4****		
4 TONE	= 50		
4 DIST	= 100		
Adjust VR6 on MT board for -25mV ± 10mV. 出力が -25mV ± 10mV になる様に VR 6 を調整する。			

To be continued

調整と確認

以下の調整はエディット・モードで行なわれますので "WRITE" ボタンが押えられないかぎりユーザーデータが書き換えられる事は有ません。

1. オーバードライブ・バイアス (VR1)

- INPUT ジャックにオーディオ発振器を接続し 200Hz, 120mVpp の矩形波を加える。
- SEND ジャックにオシロスコープ(レンジ: 200m/div, 1ms/div) を接続する。
- "GP-8 の基本操作図(8 ページ)に従って、エフェクタ "3" (オーバードライブ) を選択する。
- エフェクタ "3" のバリュー (TONE, DRIVE, TURBO ON/OFF) を Table 1 に従って設定する。
- 出力波形が下図のようになる様に VR 1 を調整する。

Table 2

5 Distortion Offset (Fine) ディストーション・オフセット(微調整) (DIST Min) (VR6)			
INPUT POINT Unplug the INPUT. INPUTジャックからプラグを抜く。		
OUTPUT POINT	IC54 pin 8 (voltmeter ミリボルト)		
EFFECT	***4****		
4 TONE	= 50		
4 DIST	= 0		
Adjust VR6 again for -25mV ± 10mV. Since steps 4 and 5 interrelate with each other, repeat the steps (with DIST value 0 or 100) until same level is obtained at both steps. 出力が -25mV ± 10mV になる様に VR 6 を調整する。ステップ 4 と 5 は相互に影響する。DIST の値を 0 と 100 に切替えながら、どちらの場合も同出力になる様 VR 6 を繰り返し調整する。ステップ 4 に戻り DIST 100 にする。同出力になっていない場合は更に VR 6 で調整する。ステップ 4, 5 を繰り返す。			
6 Phaser フェイザー (VR7)			
INPUT POINT	INPUT jack 400Hz, 200mVpp Square wave 矩形波		
OUTPUT POINT	SEND jack (oscilloscope オシロスコープ RANGE: 20mV/div, 0.2ms/div.)		
EFFECT	*****5****		
5 RATE	= 0		
5 DEPTH	= 0		
5 RESONANCE	= 0		
Turn VR7 on MT board fully counterclockwise. Gradually advance it until a symmetrical waveforms as shown below is obtained. VR 7 を左に回し切った状態から徐々に戻していき出力波形が下図の様に調整する。			
Adjust VR7 on MT board for same height. 高さが等しいこと。 (20mV/div, 0.2ms/div)			

To be continued

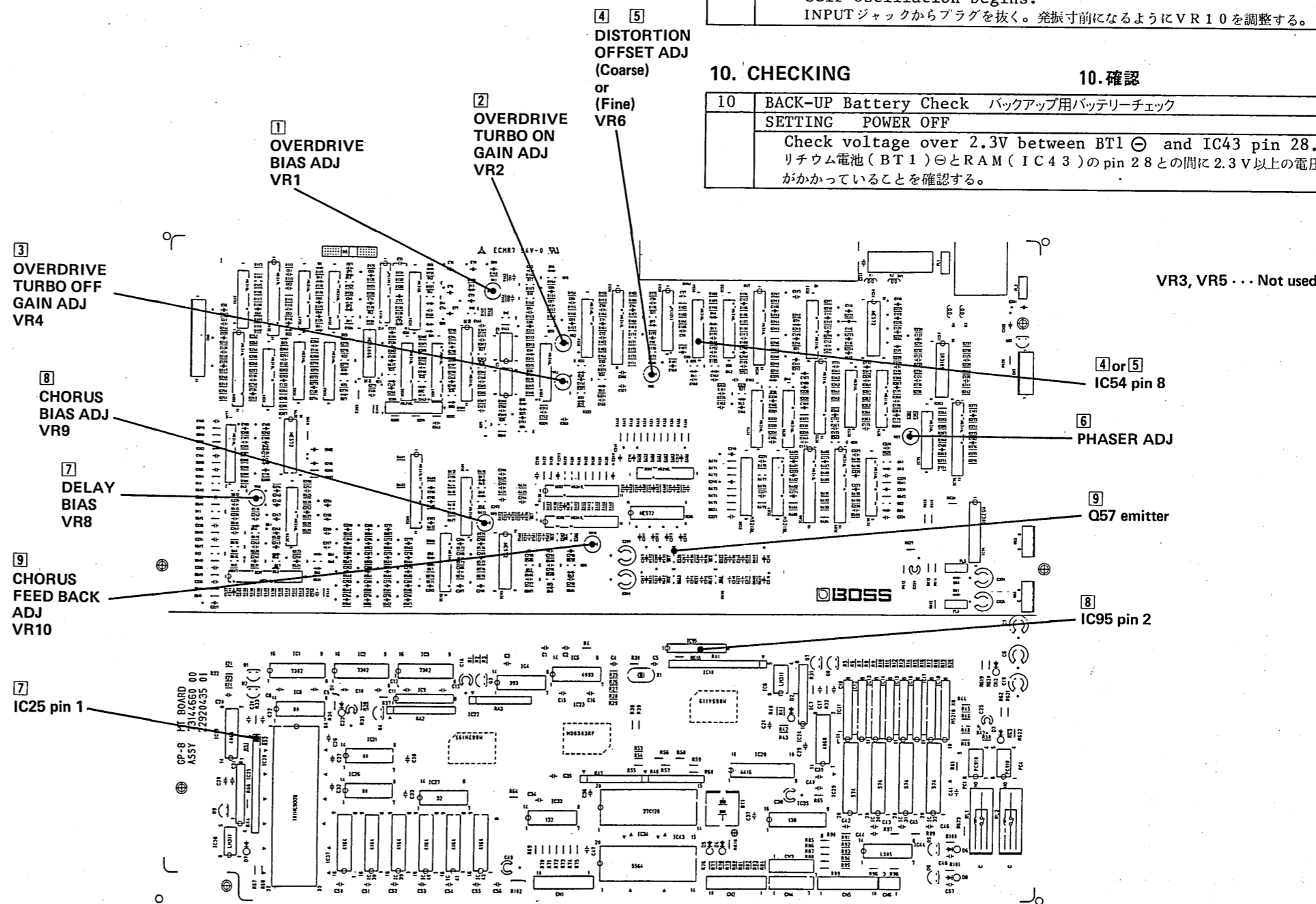
Table 2

7 Delay Bias デレイ・バイアス (VR8)			
INPUT POINT	RETURN jack 1kHz, +6dB Sine wave 正弦波		
OUTPUT POINT	IC25 pin 1 (oscilloscope オシロスコープ RANGE: 1V/div, 0.2ms/div.)		
EFFECT	*****7**		
7 E. LEVEL	= 100		
7 D. TIME	= 100		
7 F. BACK	= 0		
Adjust VR8 on MT Board for symmetrical waveforms as shown below. (If distorted, for the same degree at top and bottom.) 出力波形が下図の様に VR 8 を調整する。 (波形が歪んでいる場合は、上下対照になるようにする。)			
8 Chorus Bias コーラス・バイアス (VR9)			
INPUT POINT	RETURN jack 1kHz, +6dB Sine wave 正弦波		
OUTPUT POINT	IC95 pin 2 (oscilloscope オシロスコープ RANGE: 1V/div, 0.2ms/div.)		
EFFECT	*****8**		
8 RATE	= 100	8 PRE DELAY	= 0
8 DEPTH	= 0	8 F. BACK	= 0
8 E. LEVEL	= 100		
Adjust VR9 on MT Board in the same manner as in step "7, Delay Bias". ディレイ・バイアス調整と同じ要領で VR 9 を調整する。			
9 Chorus Feed Back コーラス・フィードバック (VR10)			
INPUT POINT	RETURN jack 200Hz, 100mVpp Square wave 矩形波		
OUTPUT POINT	Q57 Emitter		
EFFECT	*****8**		
8 RATE	= 100	8 PRE DELAY	= 50
8 DEPTH	= 0	8 F. BACK	= 100
8 E. LEVEL	= 100		
Disconnect input signal. Adjust VR10 to the point where self-oscillation begins. INPUTジャックからプラグを抜く。発振寸前になるように VR 10 を調整する。			

10. CHECKING

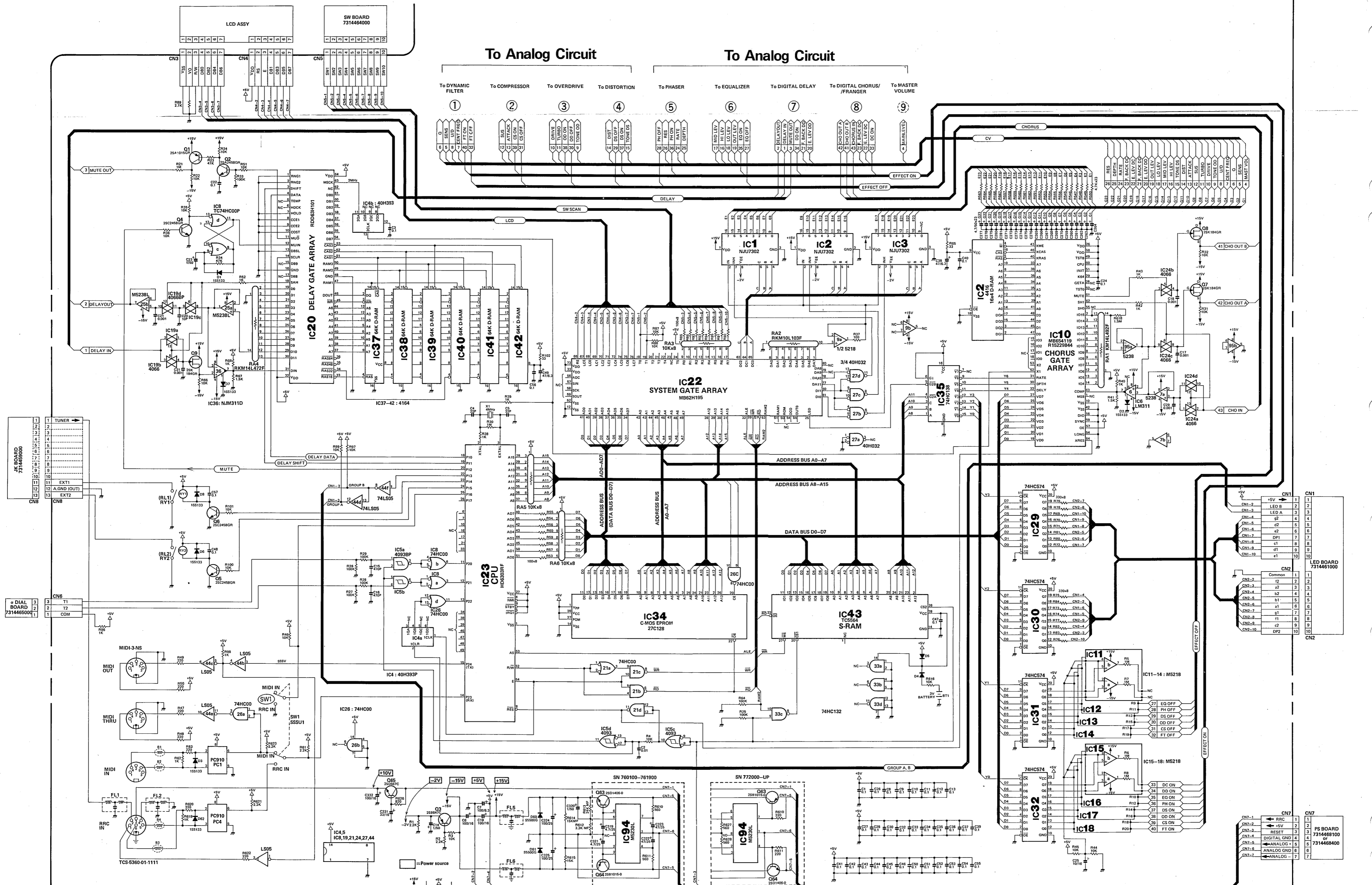
10. 確認

10 BACK-UP Battery Check バックアップ用バッテリーチェック	
SETTING	POWER OFF
Check voltage over 2.3V between BT1 ⊖ and IC43 pin 28. リチウム電池 (BT 1) ⊖ と RAM (IC 43) の pin 28 との間に 2.3V 以上の電圧がかかっていることを確認する。	



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 43 44 45 46 47 48 49

CIRCUIT DIAGRAM



MT BOARD (DIGITAL CIRCUIT)

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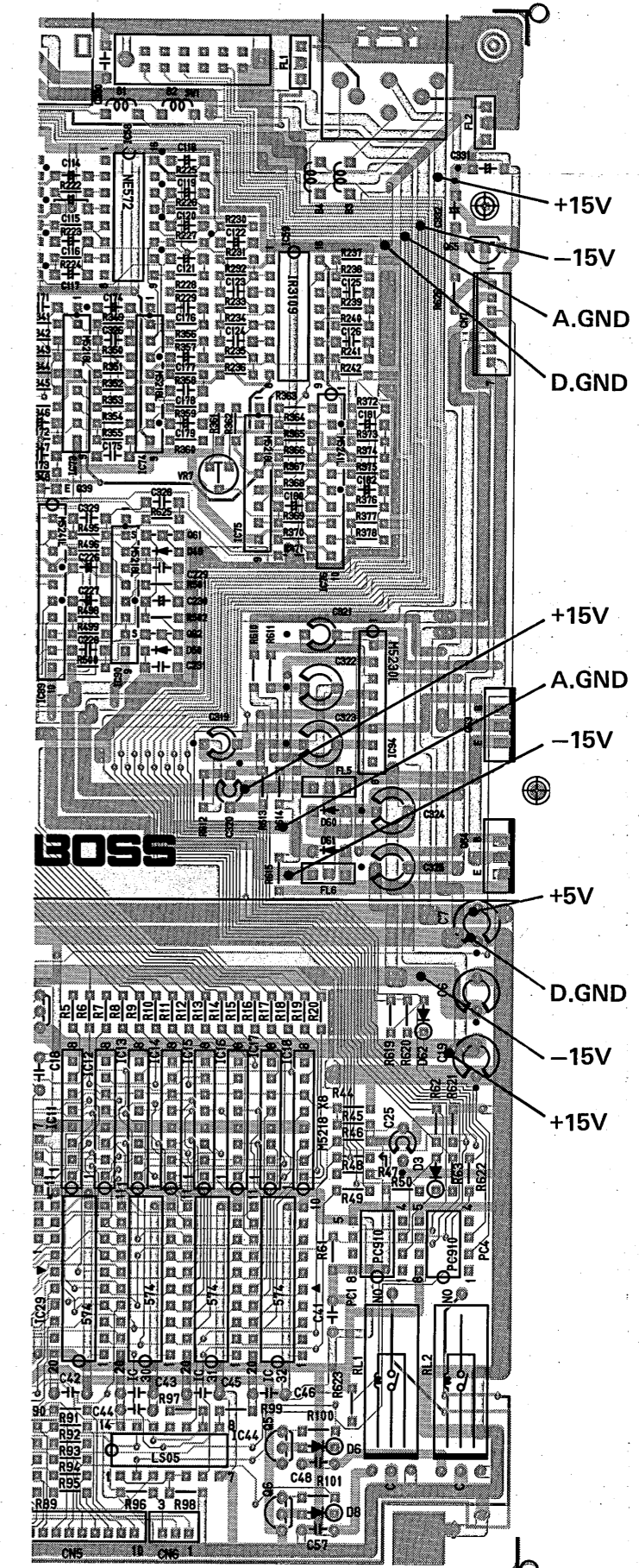
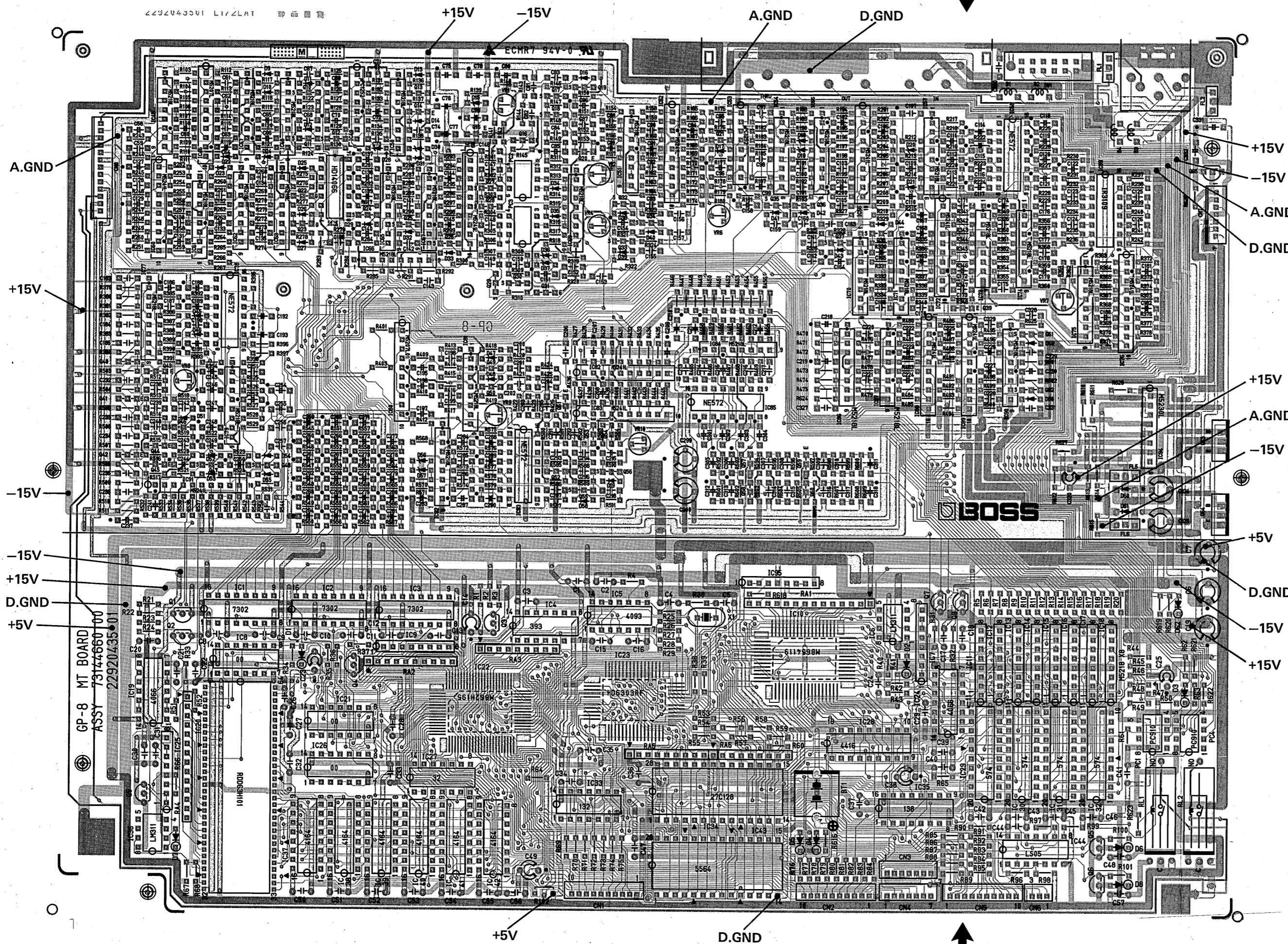
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MT BOARD 73144660 (pcb 2292043501) SN 772000-783499

ANALOG CIRCUIT

(pcb 2292043500)
SN 760100-761900



ADVARSEL!
Lithiumbatteri. Eksplosionsfare.
Udskiftning må kun foretages af en sagkyndig,
og som beskrevet i servicemanual.

Lithium batteri må kun udskiftes med samme type
og fabrikat.

ADVARSEL!
Lithiumbatteri. Fare for eksplosion.
Må bare skiftes af kvalificeret tekniker som
beskrevet i servicemanualen.

Lithium batteri må kun udskiftes med samme type
og fabrikat.

VARNING!
Lithiumbatteri. Explosionsrisk.
Får endast bytas av behörig servicetekniker.
Se instruktioner i servicemanualen.

Lithium batteri för endast ersättes med samma typ
och fabrikat.

VAROITUS!
Lithiumparisto. Räjähdyksvaara.
Pariston saa vaihtaa ainoastaan
alan ammattimies.

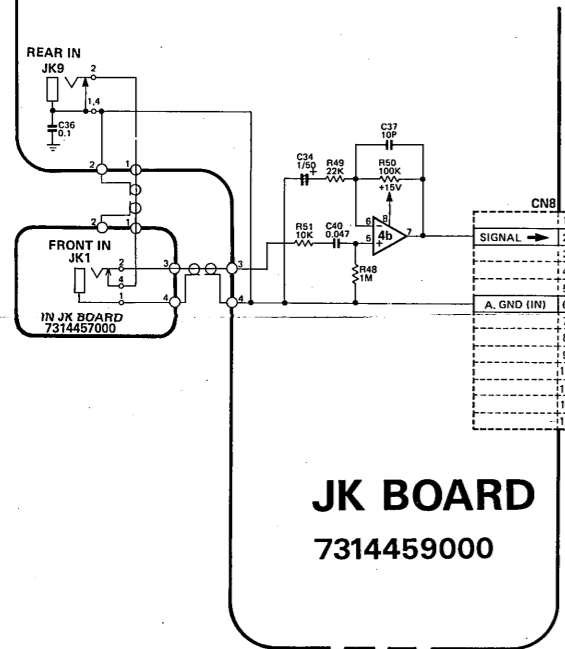
Kun vaihat lithium pariston KÄYTTÄ saman valmista-
jan samaa tyyppiä.

DIGITAL CIRCUIT

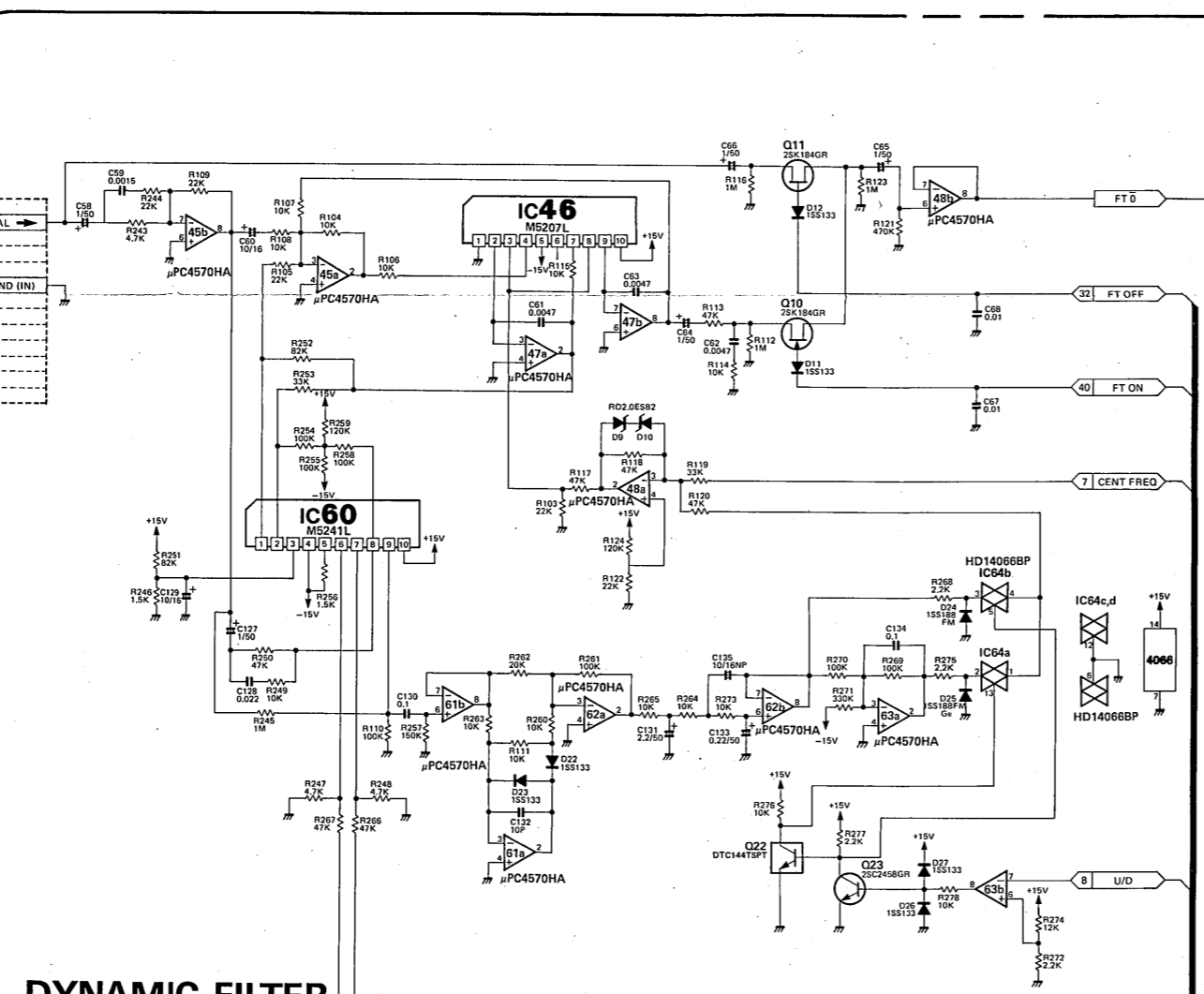
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

CIRCUIT DIAGRAM

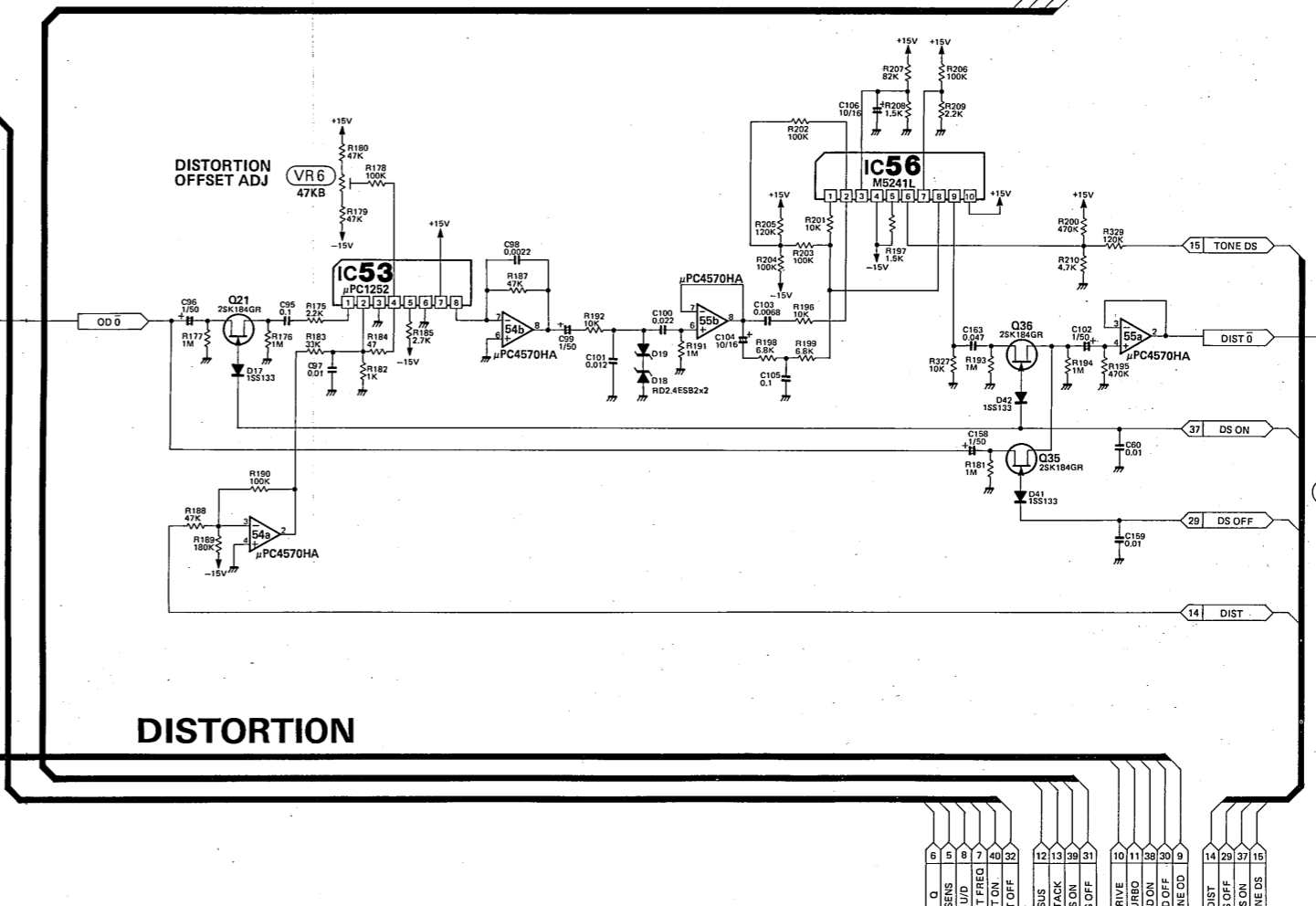
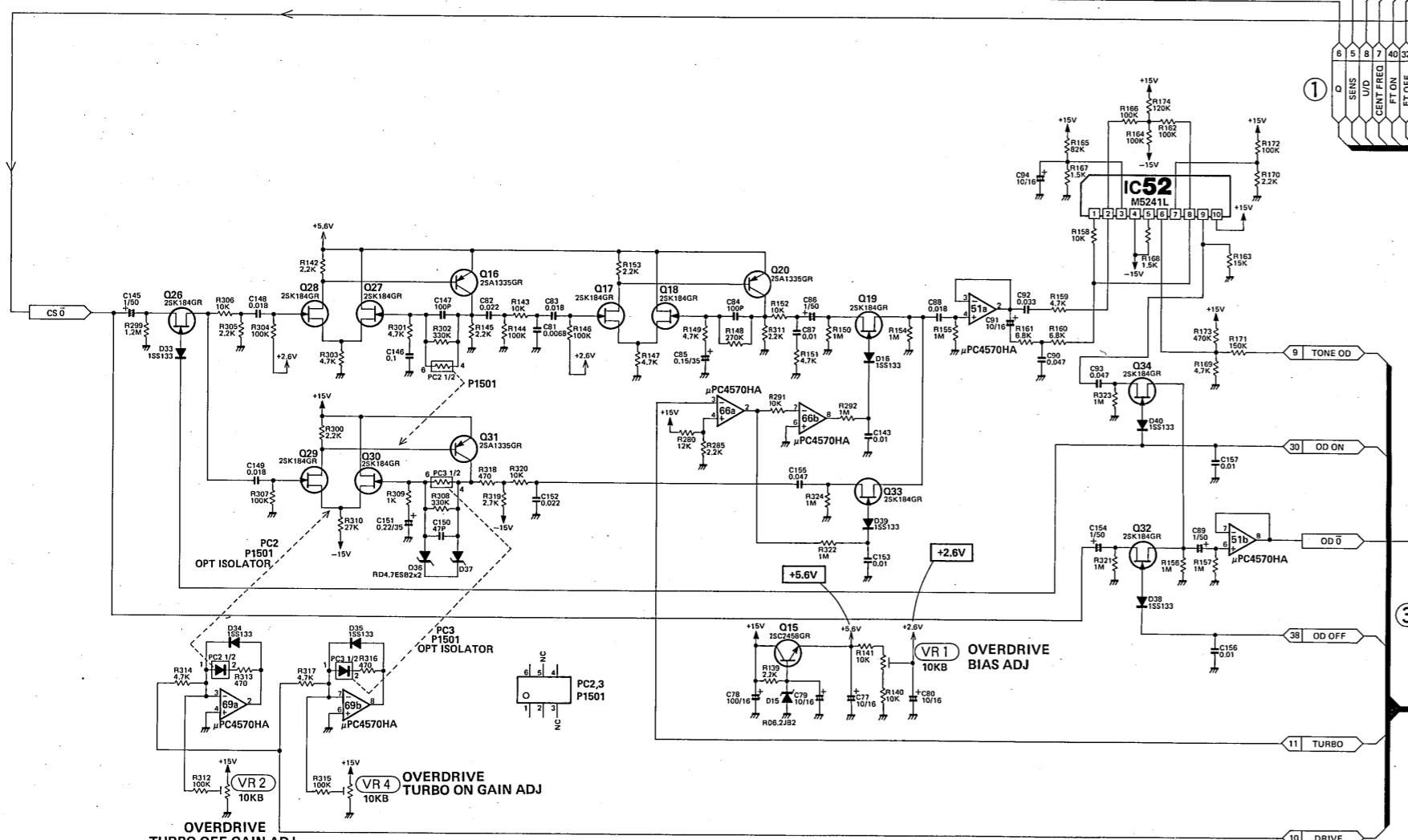
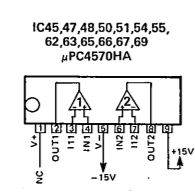
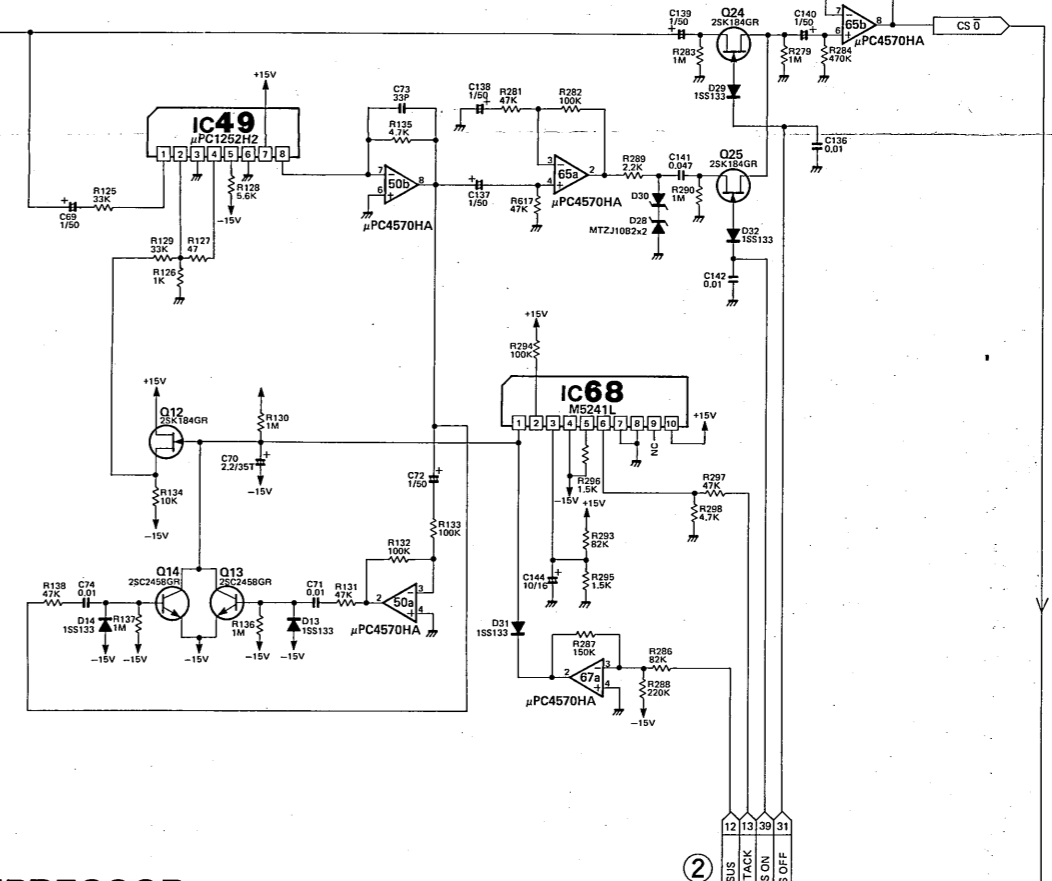
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JK BOARD
7314459000

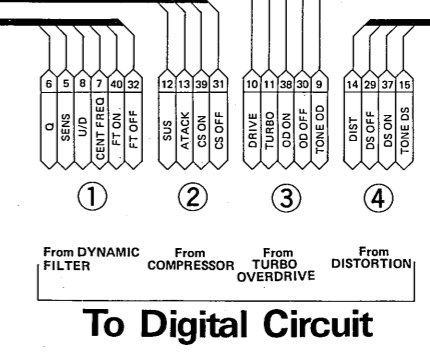


COMPRESSOR

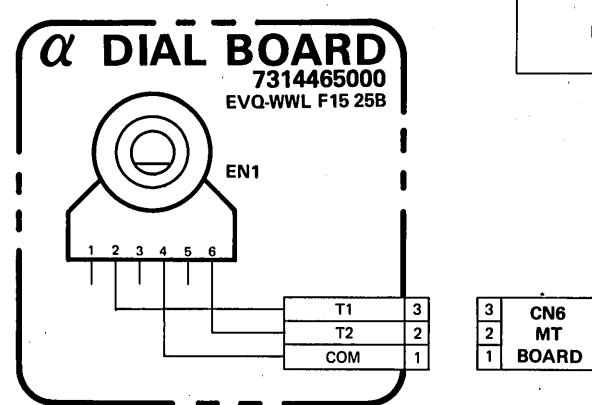
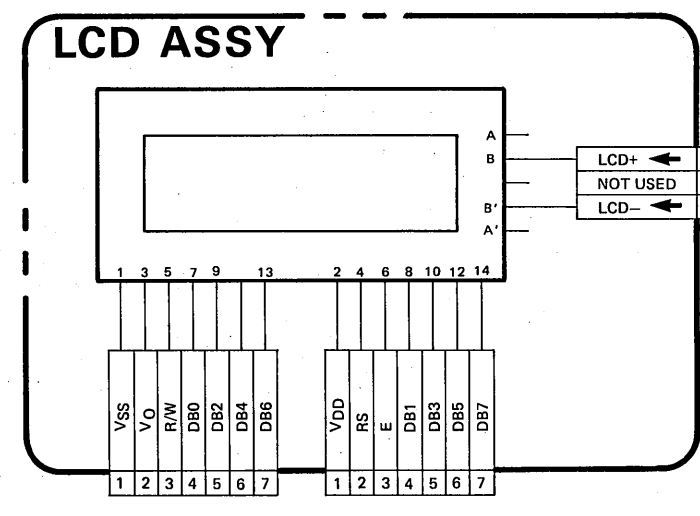
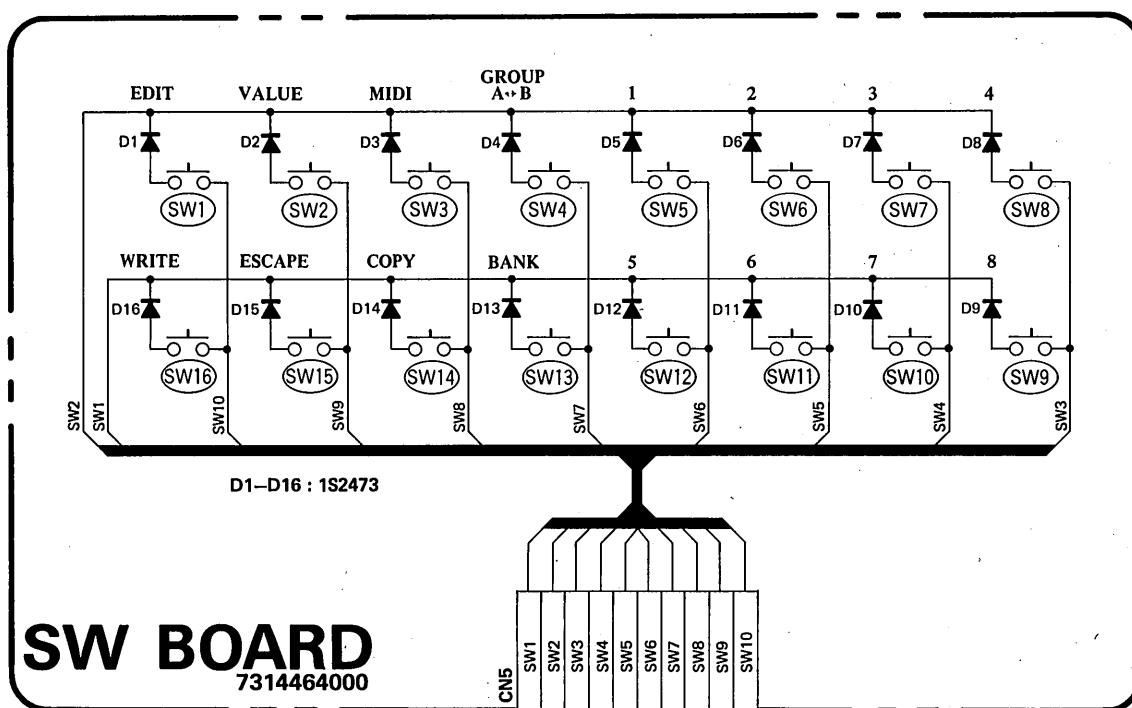
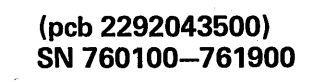
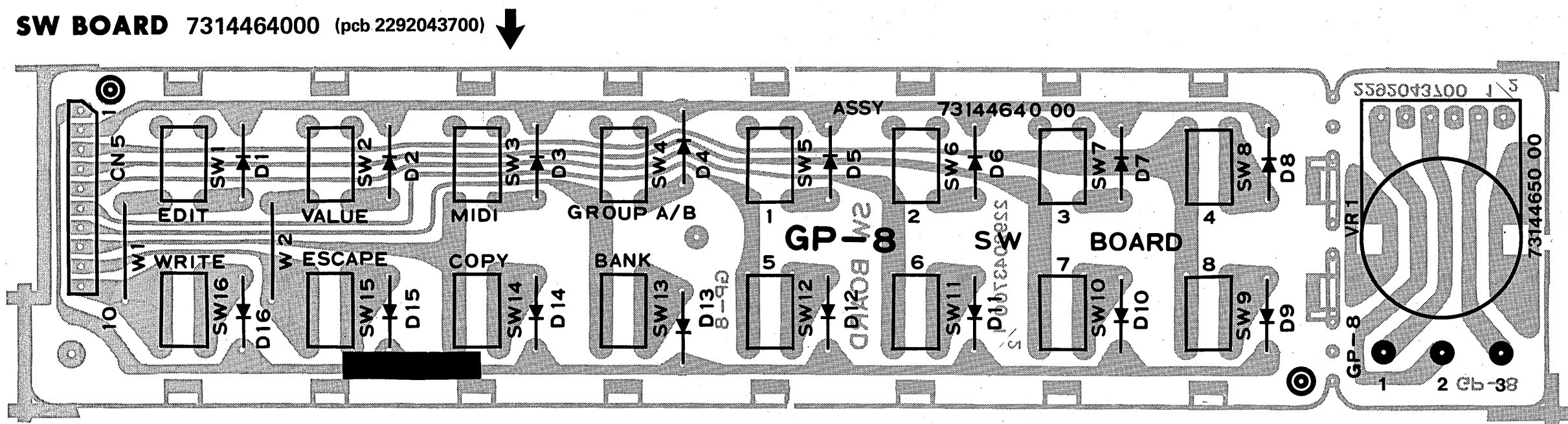


Not used . . . VR3, VR5
C194, C253, C282
FL3, FL4
R216, R339, R400, R402, R404, R405
R406, R407, R408, R411, R457, R490
R497, R530, R569

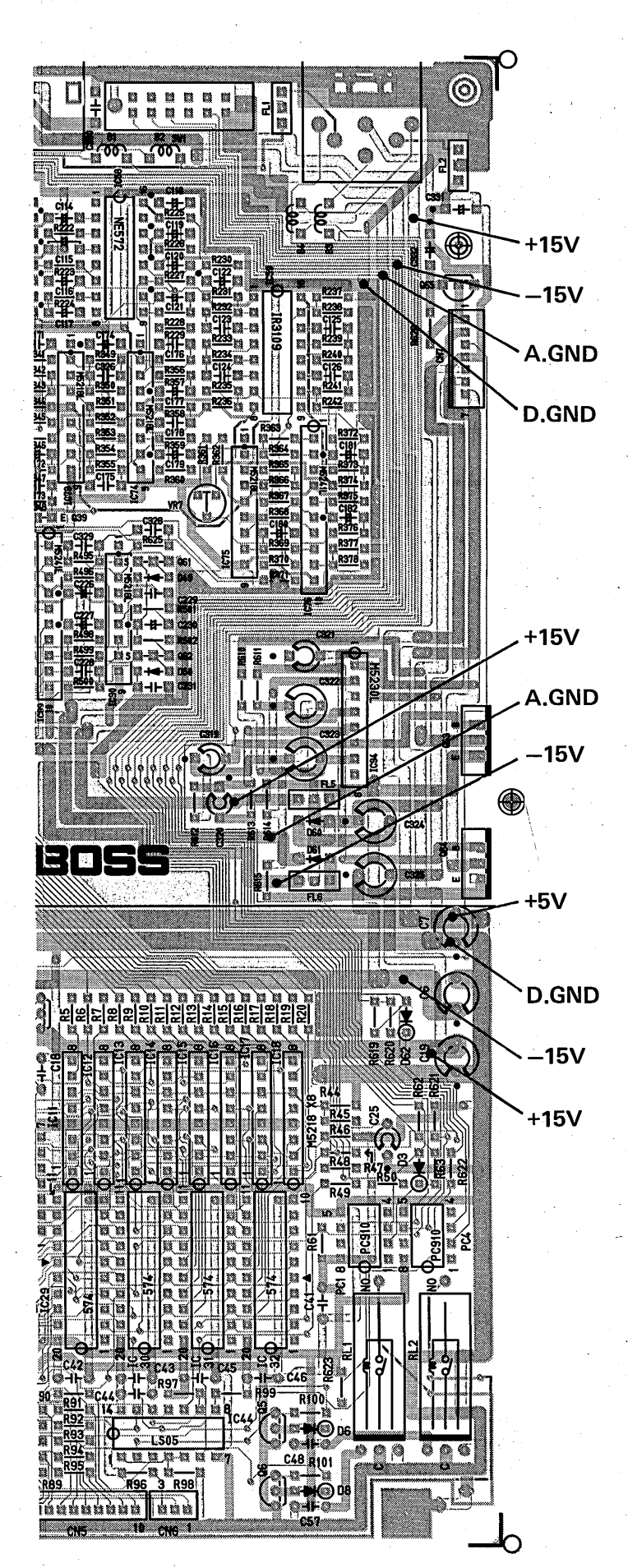
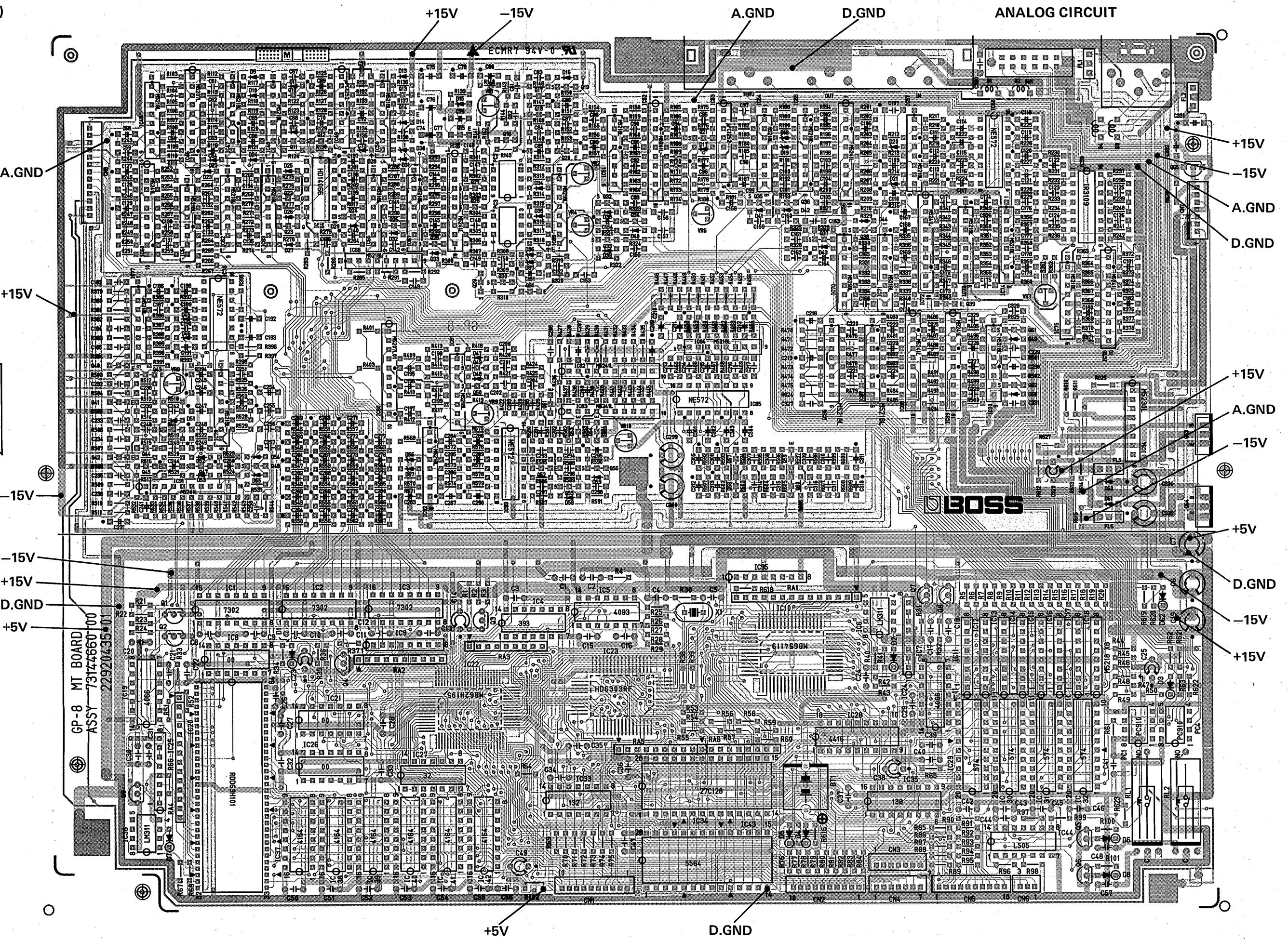
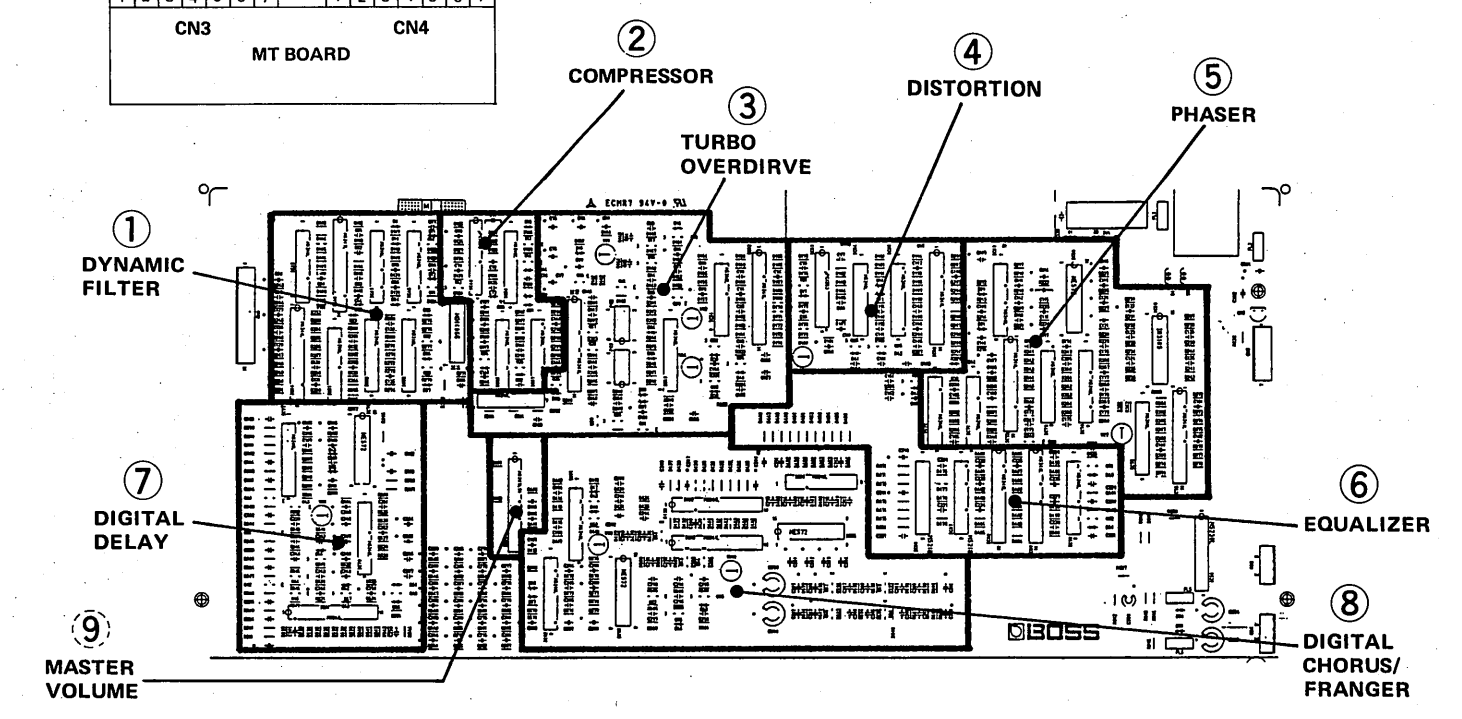
MT BOARD 73144660 (ANALOG CIRCUIT)



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 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81

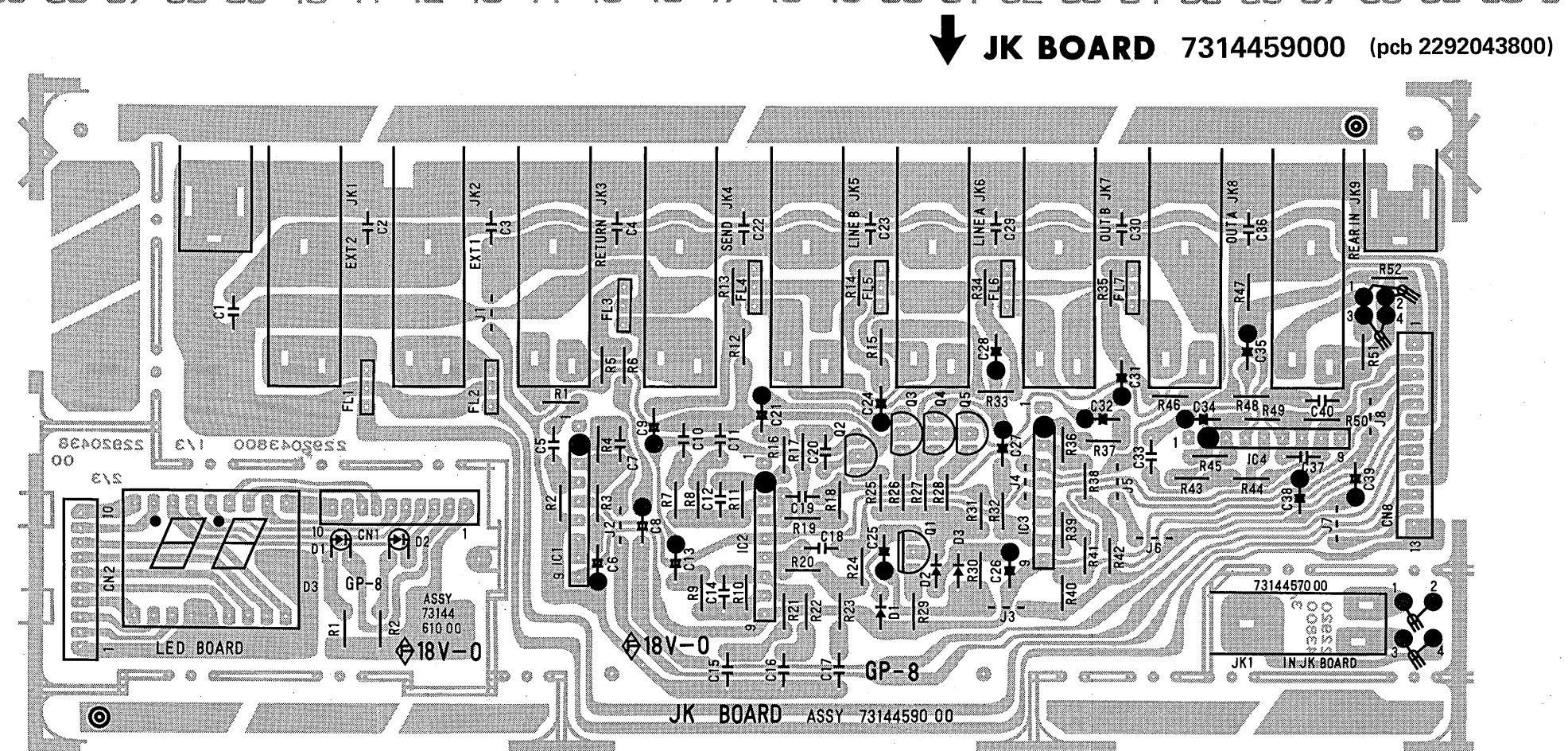
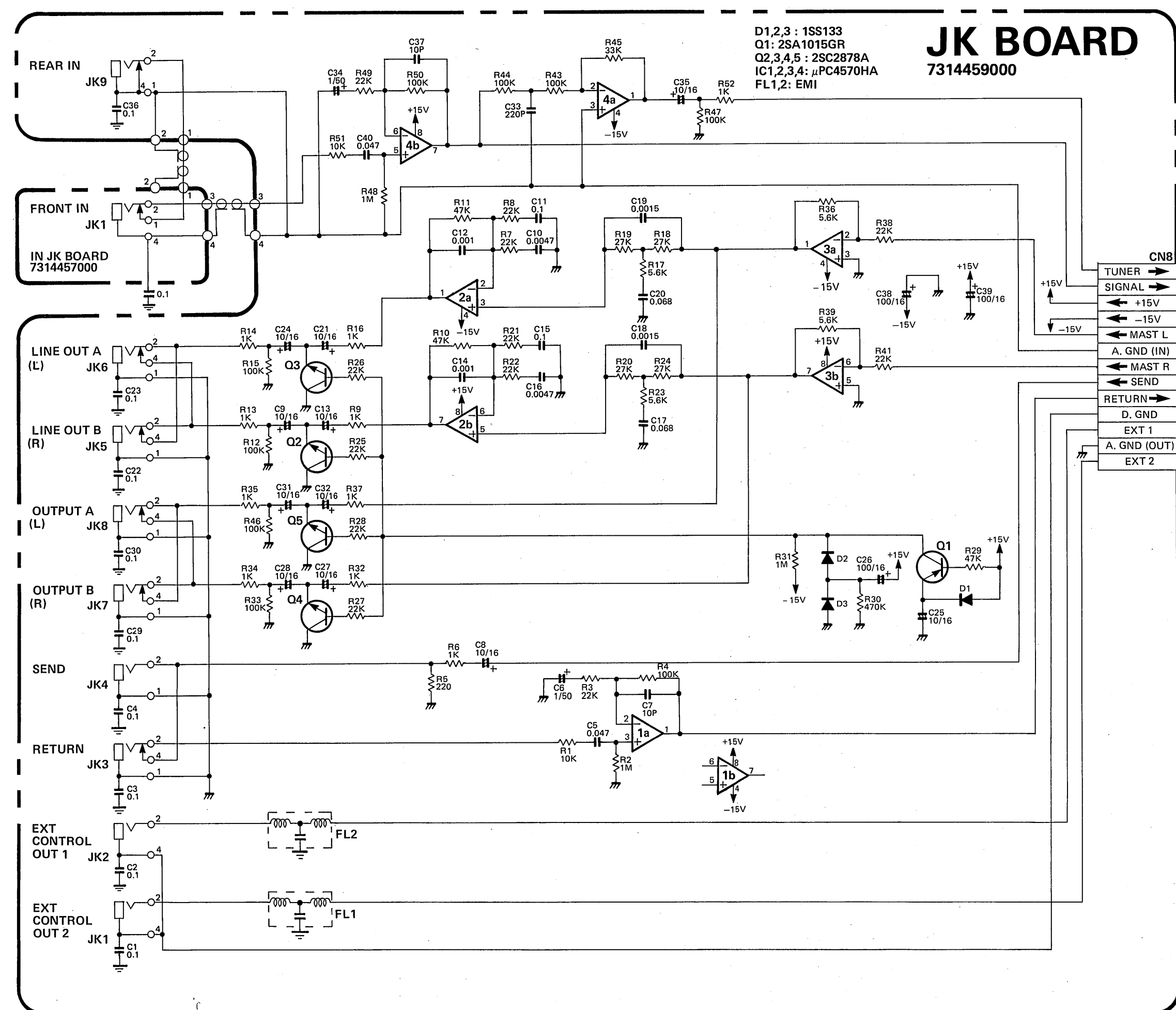


CIRCUIT DIAGRAM

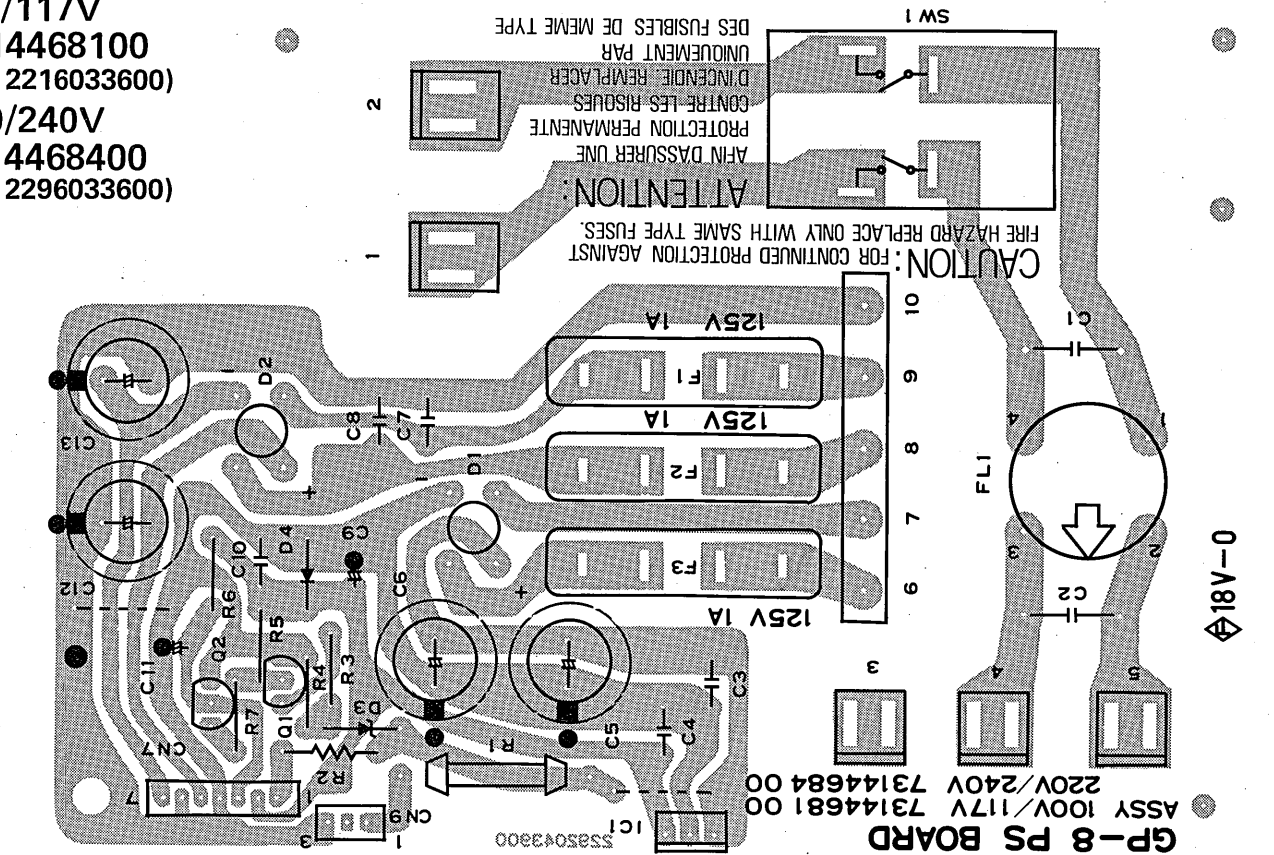


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81

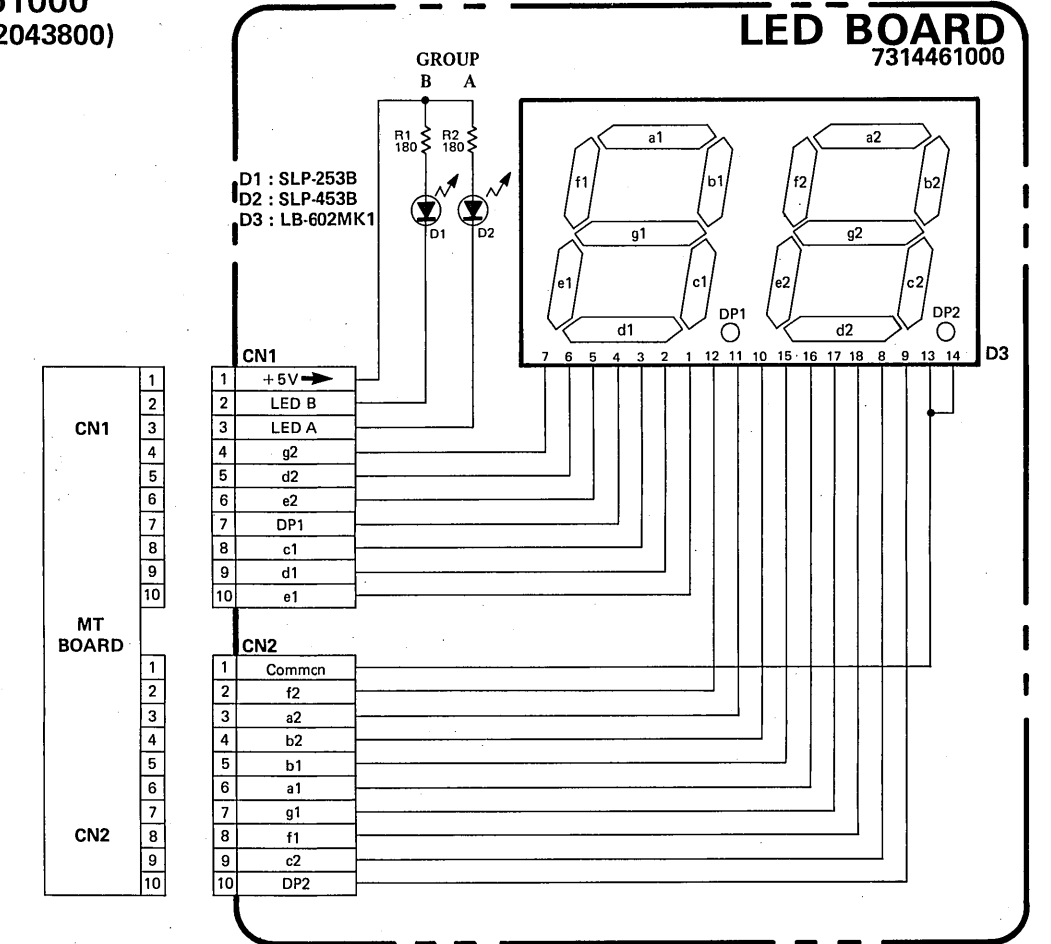
CIRCUIT DIAGRAM



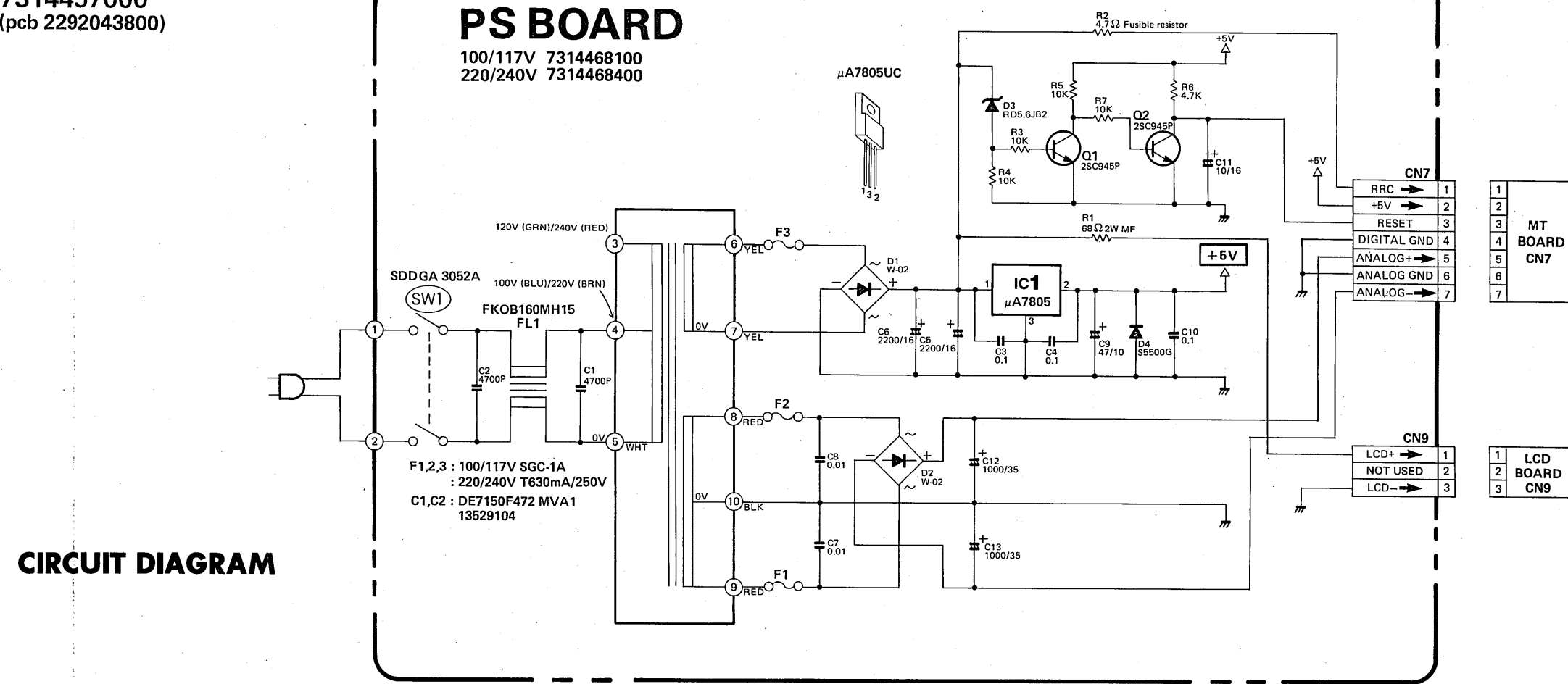
PS BOARD
100/117V
7314468100
(pcb 2216033600)
220/240V
7314468400
(pcb 2296033600)



LED BOARD
7314461000
(pcb 2292043800)



IN JK BOARD
7314457000
(pcb 2292043800)

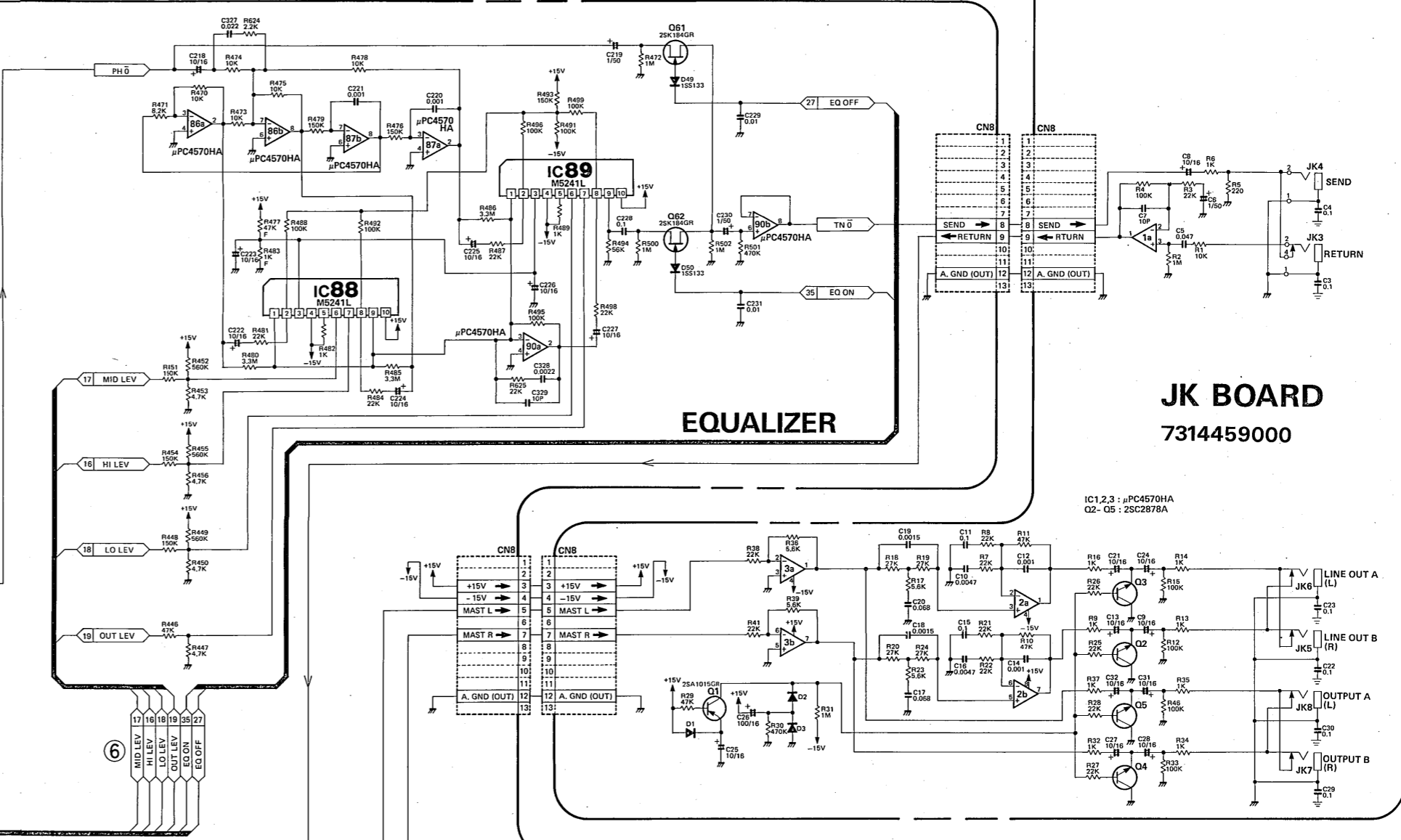
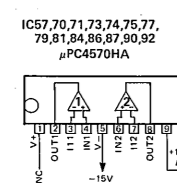
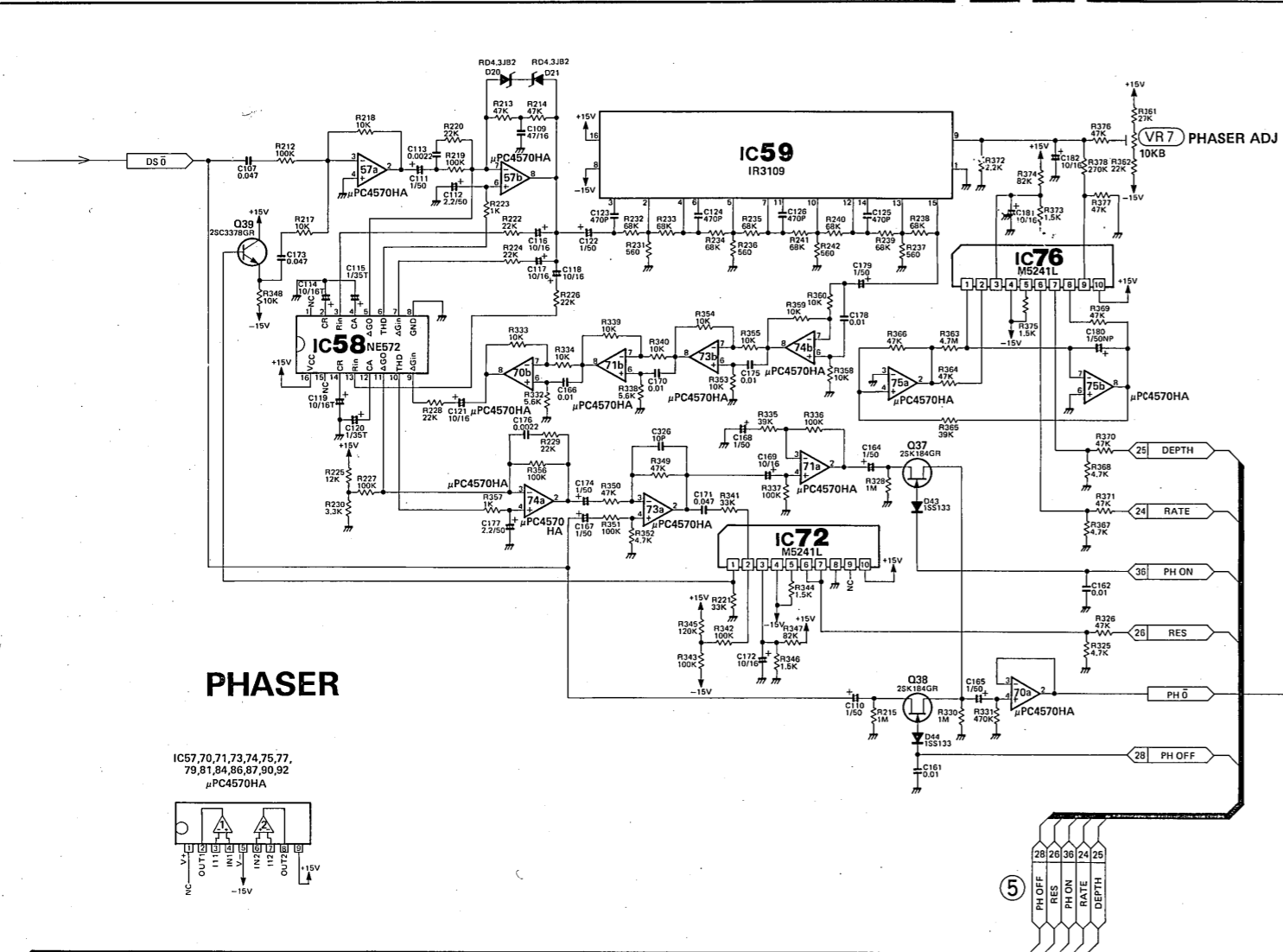


CIRCUIT DIAGRAM

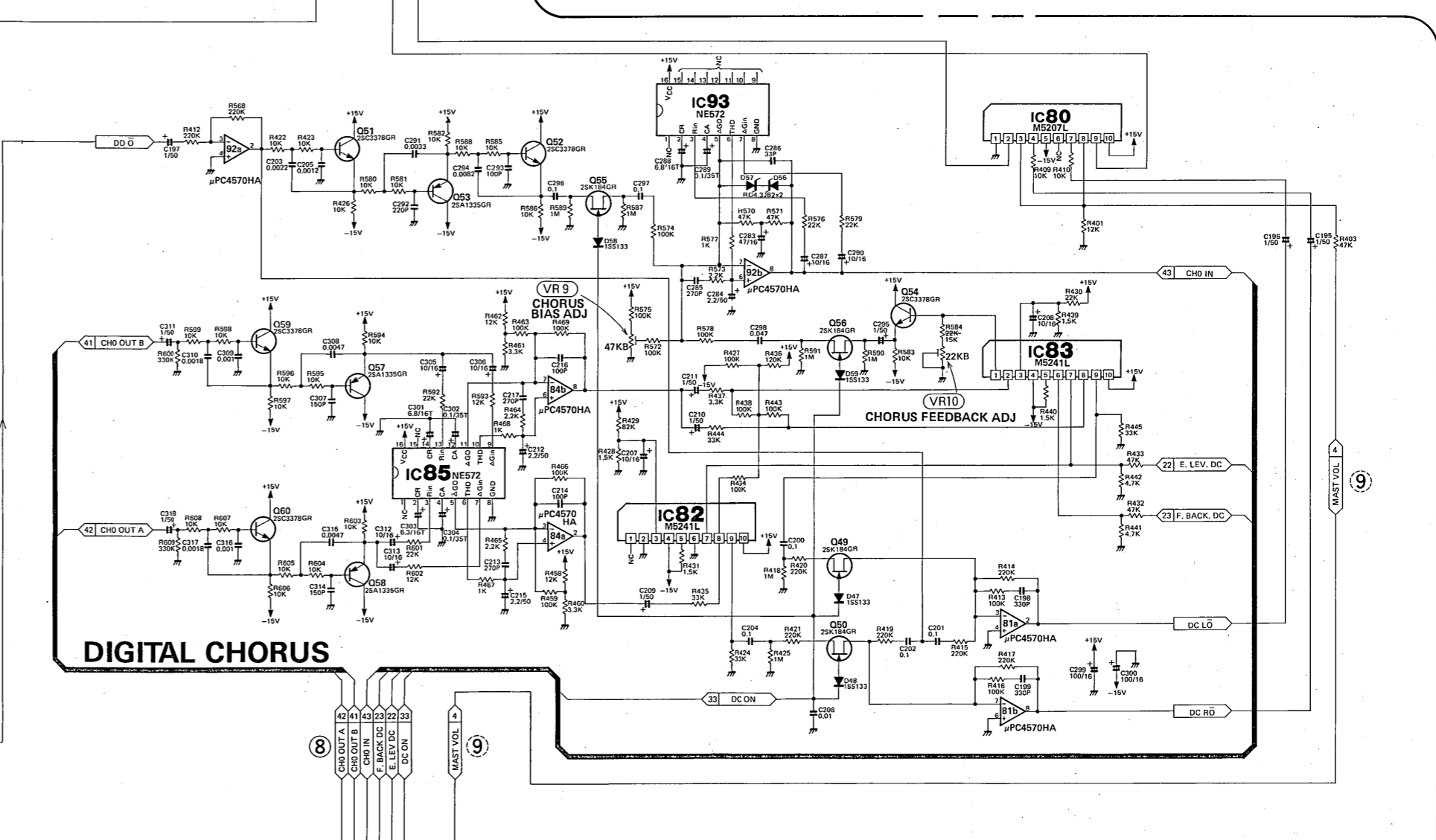
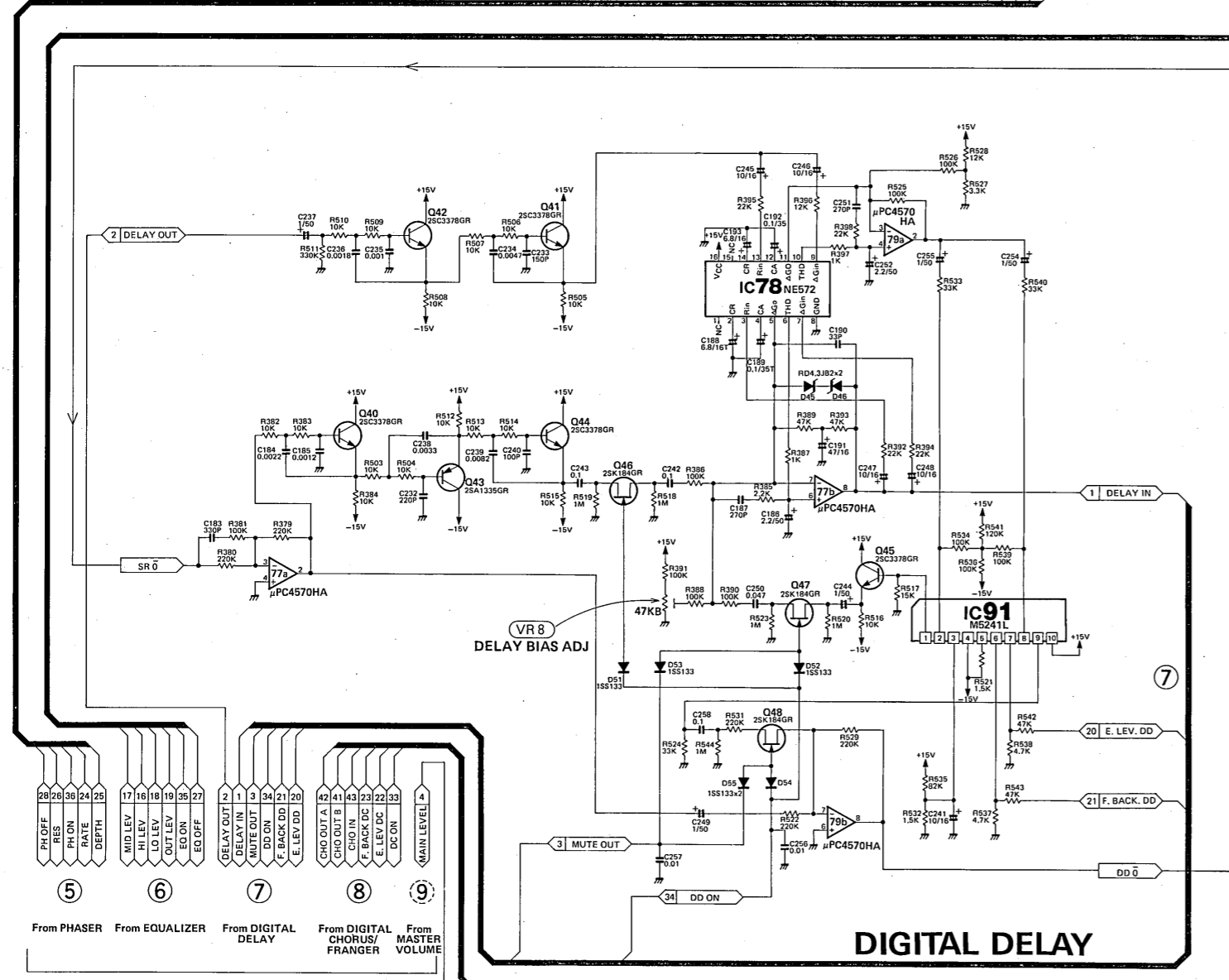
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

CIRCUIT DIAGRAM

A
B
C
D
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V
W
X
Y
Z



JK BOARD
7314459000



From PHASER From EQUALIZER From DIGITAL DELAY From DIGITAL CHORUS/FRANGER From MASTER VOLUME

To Digital Circuit

MT BOARD 73144660 (ANALOG CIRCUIT)

GUITAR EFFECTS PROCESSOR

MODEL GP-8

MIDI Implementation Chart

Date : 1/29. 1987

Version : 1.00

Table with 4 columns: Function..., Transmitted, Recognized, Remarks. Rows include Basic Channel, Mode, Note Number, Velocity, After Touch, Pitch Bender, Control Change, Prog Change, System Exclusive, System common, System Real Time, Aux Message, Note.

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY

Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

1. TRANSMITTED DATA

Table with 4 columns: Status, Second, Third, Description. Rows include 1100 nnnn 0ppp pppp and 1111 0000 1111 0111.

2. RECOGNIZED RECEIVE DATA

Table with 4 columns: Status, Second, Third, Description. Rows include 1100 nnnn 0ppp pppp and 1111 0000 1111 0111.

3. EXCLUSIVE COMMUNICATION

All exclusive communications are based on the following structure (Roland Exclusive Format Type IV).

Table with 2 columns: Byte, Description. Rows a-j describe fields like Exclusive status, Roland ID #, Device-ID #, Model-ID #, Command-ID #, Address MSB, Address LSB, Data, Checksum, End of System Exclusive.

Summed value of the all bytes between Command-ID and EOX must be 0011 (7 bits). It does not include Command-ID and EOX.

4. COMMUNICATION FORMAT

4.1 Request (One way) RQ1 1111 (Recognized only)

Table with 2 columns: Byte, Description. Rows a-k describe fields for Request format.

4.2 Data set (One way) DT1 1211 (Transmitted and recognized)

Table with 2 columns: Byte, Description. Rows a-j describe fields for Data set format.

Notes :

Data of one parameter is sent at one time.
Data of only one parameter is recognized at one time.

5. ADDRESS MAPPING OF PARAMETERS

Address of parameter

0000 Temporary parameter

Table with 4 columns: Address, Description, Bit, Value. Rows include EFFECT ON/OFF (MSB), PHASER, EQUALIZER, DELAY, CHORUS, EFFECT ON/OFF (LSB), D.FILTER, COMPRESSOR, TURBO O.D., DISTORTION.

DYNAMIC FILTER

Table with 4 columns: Address, Description, Value. Rows include SENS, CUTOFF FREQ, Q, UP/DOWN.

COMPRESSOR

Table with 4 columns: Address, Description, Value. Rows include ATTACK, SUSTAIN.

TURBO OVER DRIVE

Table with 4 columns: Address, Description, Value. Rows include TONE, DRIVE, TURBO ON/OFF.

DISTORTION

Table with 4 columns: Address, Description, Value. Rows include TONE, DIST.

PHASER

Table with 4 columns: Address, Description, Value. Rows include RATE, DEPTH, RESONANCE.

EQUALIZER

Table with 4 columns: Address, Description, Value. Rows include HLLEVEL, MIDLEVEL, LOLEVEL, OUT LEVEL.

DIGITAL DELAY

Table with 4 columns: Address, Description, Value. Rows include E.LEVEL, D.TIME (MSB), D.TIME (LSB), F.BACK.

DIGITAL CHORUS

Table with 4 columns: Address, Description, Value. Rows include RATE, DEPTH, E.LEVEL, PRE DELAY, F.BACK, MASTER VOLUME, EV-5 PARAMETER, EXT CONTROL OUT1, EXT CONTROL OUT2, NAME (1-31).

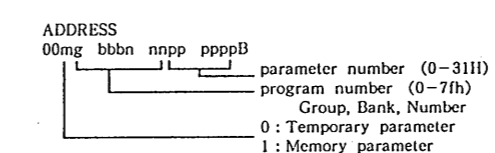
Table with 4 columns: Address, Description, Value. Rows include Memory parameter 1, GROUP A, BANK 1, NUMBER 1.

Table with 4 columns: Address, Description, Value. Rows include Memory parameter 2, GROUP A, BANK 1, NUMBER 2.

Table with 4 columns: Address, Description, Value. Rows include Memory parameter 3-127, GROUP A, BANK 1, NUMBER 2.

Table with 4 columns: Address, Description, Value. Rows include Memory parameter 128, GROUP B, BANK 8, NUMBER 8.

Notes :



6. TRANSMITTED EXCLUSIVE MESSAGE IN MIDI BULK DUMP MODE

6.1 One way transfer

6.1.1 Data set DT1 1211

Table with 4 columns: Byte, Description. Rows a-j describe fields for Exclusive status, Roland ID #, Device-ID #, Model-ID #, Command-ID #, Address MSB, Address LSB, Data, Checksum, End of System Exclusive.

7. RECOGNIZED EXCLUSIVE MESSAGES

7.1 One way receive

7.1.1 Data set DT1 1211

Table with 4 columns: Byte, Description. Rows a-j describe fields for Exclusive status, Roland ID #, Device-ID #, Model-ID #, Command-ID #, Address MSB, Address LSB, Data, Checksum, End of System Exclusive.

8. SEQUENCE OF COMMUNICATION

8.1 When 'WRITE' button is pressed in BULK DUMP (All) mode.

this unit (message) objective unit

DT1 (SOUND DATA)

* time interval about 20 ms

DT1 (SOUND DATA)

DT1 (SOUND DATA)

* All the programs and temporary parameters are transmitted sequentially

8.2 When 'WRITE' button is pressed in BULK DUMP (Current) mode.

this unit (message) objective unit

DT1 (SOUND DATA)

* time interval about 20 ms

DT1 (SOUND DATA)

DT1 (SOUND DATA)

* The current program and temporary parameters are transmitted.

8.3 When one way data set is received

this unit (message) objective unit

DT1 (SOUND DATA)

* wait time more than 20 ms

DT1 (SOUND DATA)

DT1 (SOUND DATA)

8.4 When one way Request data is received

this unit (message) objective unit

DT1 (SOUND DATA)

DT1 (SOUND DATA)

DT1 (SOUND DATA)

DT1 (SOUND DATA)

DT1 (SOUND DATA)

Notes :
*in DT1, the data is written the moment the data is received, therefore,Checksum is not recognized.
*In RQ1, even when Address is located in the middle of one sound parameter, or Size does not show one whole sound, data of one sound is output.

CHANGE INFORMATION

変更案内

□ Reconnecting IC35 of MT board

□ IC35ピン接続変更

Change connection of IC35 pin 6(G1) from a +5V line to IC23 pin 54.

IC35 6番ピンの接続先を+5VラインからIC23の54番ピンへ変更

REASON

For more positive synchronization of IC22 (gate array) and IC35 operational timings.

理由

IC22 (ゲートアレイ) と IC35 の動作タイミングを確実にし、下記現象異常の発生を防止する。

This will prevent the following problems:

- * Improper Chorus effect
- * Incorrect LED reading
- * Disabled effect even it is set to on together with other effect(s).

- * コーラス効果異常
- * 7セグLED表示異常
- * 複数のエフェクトをオンしても、そのうちの 하나가動かない。

MODIFICATION

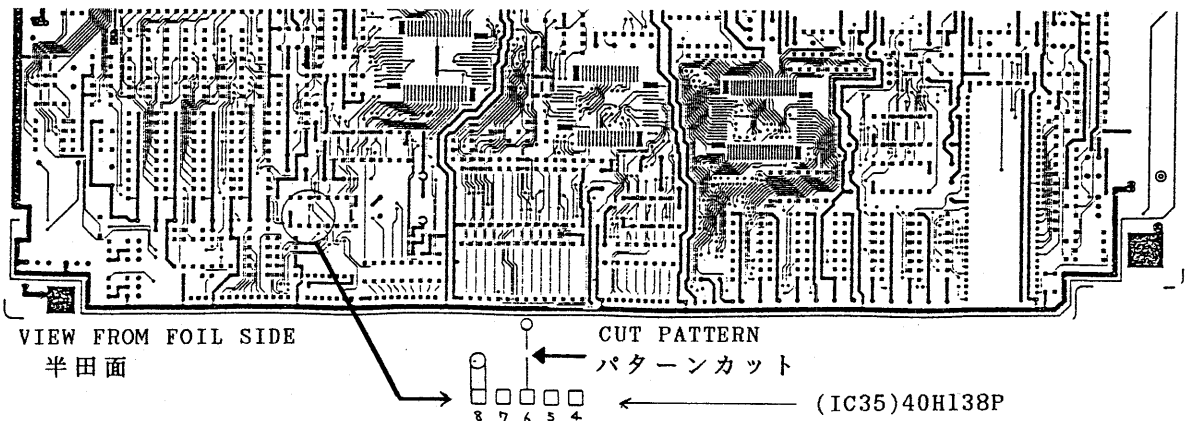
SN761000 - 783499 MT board 7314466001 (See Fig.A and B.) Jumper connect IC35 pin 6 to IC23 pin 54 with unnecessary foil pattern cut.

実施方法

- 1, 製番 761000 - 783499
基板 MTボード 7314466001 (pcb 2292043501) (Fig.A,B参照) パターンカット及びジャンパ線追加
- 2, 製番 783500 - UP
(Fig.B参照) パターン変更、これに伴いMTボードは 7314466002 (pcb 2292043502)となる。

MT BOARD SN761000 - 783499

Fig.A



VIEW FROM PARTS SIDE 部品面

Fig.B

MT BOARD SN761000 - UP

