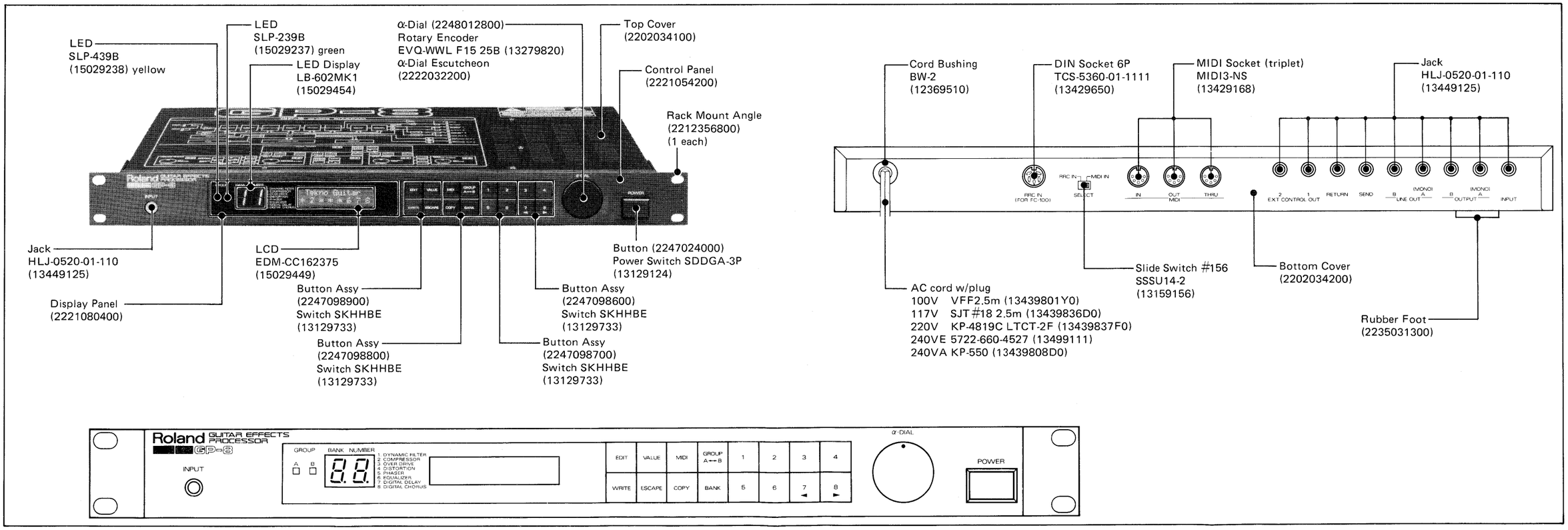
GP-8 SERVICE NOTES *First Edition*

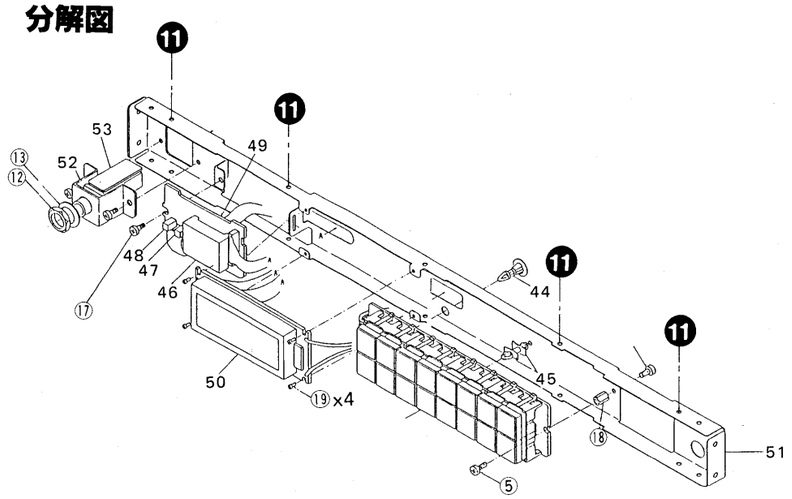
SPECIFICATIONS

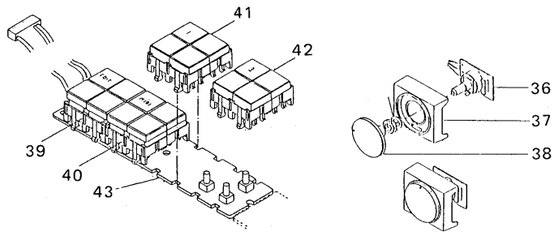
Input Level/Impedance		:	−20dBm/1MΩ
Output and Line Out	Level	:	−20dBm @Master Volume value 70
	Impedance	:	2KΩ
	Load Impedance	:	Over 10KΩ
Effect Send	Output Level	:	−20dBm (Rated)
	Output Load Impedance	:	Over 10KΩ
Effect Return	Input Level	:	−20dBm (Rated)
	Input Impedance	:	1MΩ
Built-in Effects		:	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

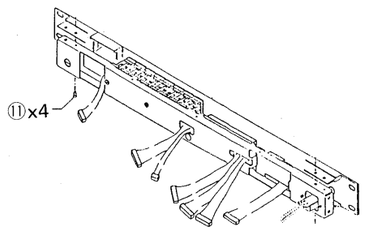
TABLE OF CONTENTS

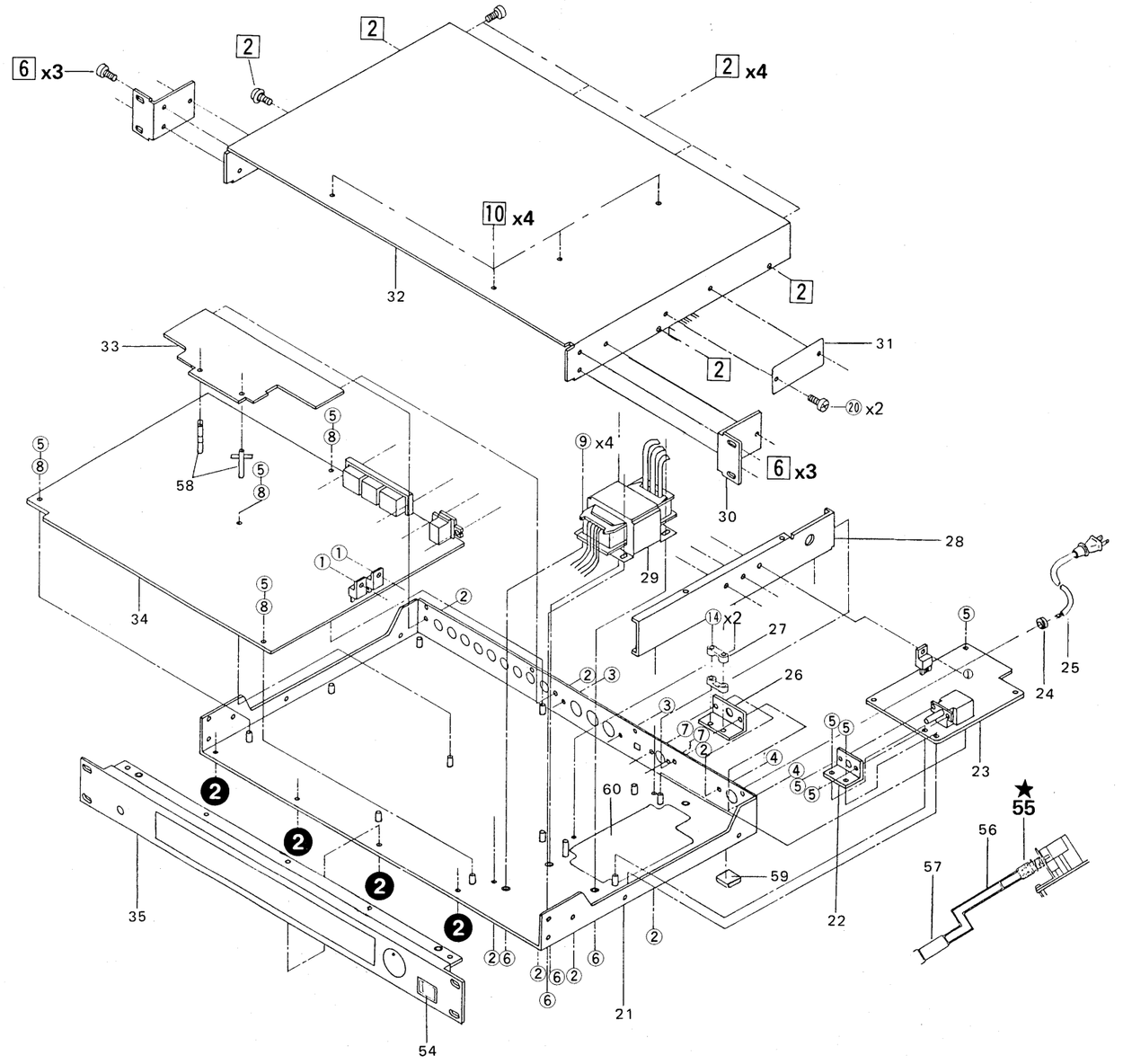


EXPLODED VIEW 分解図









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
22.	GP-8 Switch Holder	2219096000
23.	PS Board (pcb 2292043900)	7314469000
24.	Cord Bushing BW-2	12369510
25.	AC Cord 100V	13439801V0
	117V	13439836D0
	220V	13439837F0
	240VE	13499111
	240VA	13439808D0
26.	Cord Holder	2219078400
27.	Cord Band 1702B	12369410
28.	GP-8 Side Chassis	2291058300
29.	Power Transformer	
	Type N 100/117V	22450477N0
	Type D 220/240V	22450478D0
30.	DEP-3 Rack Mount Angle	2212356800
31.	Nameplate	----------
32.	Top Cover	2202034100
33.	Jack Board (pcb 2292043800)	7314456000
34.	MT Board (pcb 2292043500)	7314467000
35.	GP-8 Control Panel	2221054200
36.	α Dial Board (pcb 2292043700)	7314465000
37.	α Dial Escutcheon	2222032200
38.	α Dial	2248012800
39.	GP-8 Button Assembly	2247098900
40.	GP-8 Button Assembly	2247098800
41.	GP-8 Button Assembly	2247098600
42.	GP-8 Button Assembly	2270098700
43.	SW Board (pcb 2292043700)	7314464000
44.	Locking Card Spacer	12199557
45.	Double Locking Spacer	12199572
46.	7-seg LED	15029454
47.	LED (Yellow)	15029238
48.	LED (Green)	15029237
49.	LED Board (pcb 2292043800)	7314461000
50.	LCD	15029449
51.	GP-8 Front Chassis	2281058400
52.	GP-8 Jack Holder	2219095800
53.	Jack Board (pcb 2292043800)	7314456000
54.	DEP-5 Escutcheon	2222031900
55.	DE-200 Sleeve 215-404	2215040800
56.	DE-200 Arm 214-219	2214021900
57.	DEP-5 Sleeve 215-408	2215040800
58.	PCB Holder PCB-12	12199503
59.	Base #313	2235031300
60.	GP-8 Spacer	2216033700

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

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	μPC4570HA•		OP Amp
	or 15189136 M5218L		

NOTE: μPC4570HA(9pin)and M5218(8pin)are electrically compatible but differ in the number of pins. See "IC DATA (P-5)" for more ditails.

注意：μPC4570HA(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	μPC1252H2	NR
15219163	NE572	Programmable Analog Compander
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	μA7805VC	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
1379974DD	3.3k (Taping)	Metal Film
13799722DD	15k (Taping)	Metal Film
13799757DD	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

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 α dial	3P Connector
13439333	IL-S-2P-S2T2-EF	2P Connector
13439367	B3B-PH LCD	3P Connector

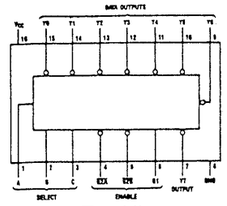
MISCELLANEOUS

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	3V	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



Top View

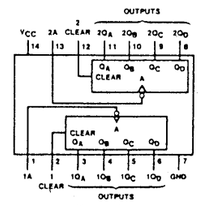
Truth Table

Inputs				Outputs							
Enable		Select									
G1	$\overline{G2}$*	C	B	A	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
X	H	X	X	X	H	H	H	H	H	H	H	H
L	X	X	X	X	H	H	H	H	H	H	H	H
H	L	L	L	L	L	H	H	H	H	H	H	H
H	L	L	L	H	H	L	H	H	H	H	H	H
H	L	L	H	L	H	H	L	H	H	H	H	H
H	L	L	H	H	H	H	H	L	H	H	H	H
H	L	H	L	L	H	H	H	H	L	H	H	H
H	L	H	L	H	H	H	H	H	H	L	H	H
H	L	H	H	L	H	H	H	H	H	H	L	H
H	L	H	H	H	H	H	H	H	H	H	H	L

*$\overline{G2} = \overline{G2A} + \overline{G2B}$

74HC393
Dual 4-Bit Binary Counter

Pin Configuration



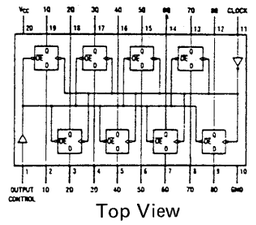
Top View

Truth Table

Inputs		
Clock	Clear	Function
↓	L	Increment
X	H	Clear

74HC574
Octal D-Type Flip-Flop

Pin Configuration

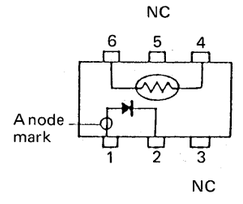


Top View

Truth Table

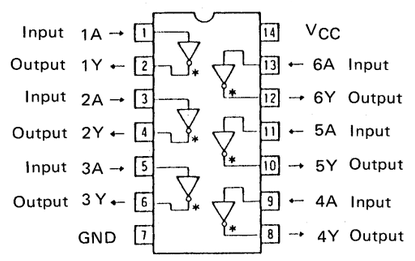
Output Control	Clock	Data	Output
L	↑	H	H
L	↑	L	L
L	L	X	Q_0
H	X	X	Z

P1501
OPTO ISOLATOR



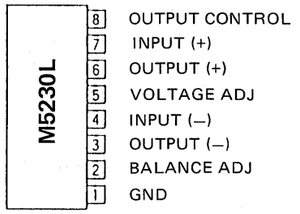
Top View

74LS05P
HEX INVERTER WITH OPEN COLLECTOR OUTPUT



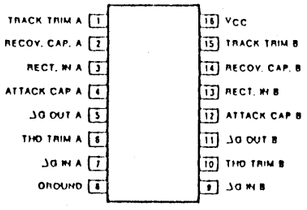
Top View Open Collector

M5207L
VOLTAGE REGULATOR



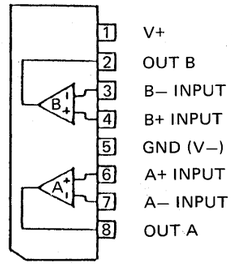
Top View

NE572
PROGRAMMABLE ANALOG COMPANDOR



Top View

μPC1252
DUAL OP AMP



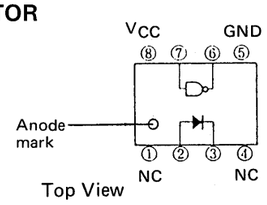
Top View

CPU HD6303RF

DESIG-NATION	PIN No.	FUNCTION	I/O
15	28	Address BUS	O
14	29		O
13	30		O
A 12	31		O
11	32		O
10	35		O
9	36		O
8	37		O
D7/A7	40	Address (lower 8bits) and DATA BUS	I/O
D6/A6	41		I/O
D5/A5	42		I/O
D4/A4	43		I/O
D3/A3	44		I/O
D2/A2	45		I/O
D1/A1	50		I/O
D0/A0	51		I/O
16	25	SELECT	I
15	24	EXT 2	O
14	23	EXT 1	O
P 13	22	GROUP A/B	O
12	20	DELAY MUTE	O
11	19	DELAY SHIFT	O
10	18	DELAY DATA	O
AS	53	Address Strobe	O
R/$\overline{W}$	52	Read/Write	O
E	54	Enable	O
$\overline{RES}$	8	RESET	I

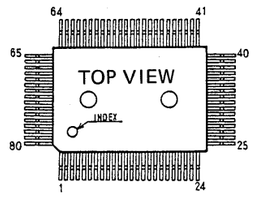
DESIG-NATION	PIN No.	FUNCTION	I/O
P23	14	RX	I
P24	15	TX	O
P22	13	SCI External Clock	I
P21	12	PORT 21	I
P20	11	Input Capture	I
XTAL	2	Clock Input	O
EXTAL	3		I
<NC>	49	NOT USED	–
<NC>	48		–
<NC>	47		–
<NC>	46		–
<NC>	39		–
<NC>	38		–
<NC>	34		–
<NC>	33		–
<NC>	21		–
<NC>	17		–
<NC>	16		–
<NC>	10		–
<NC>	7		–
<NC>	6		–
P16	26		–
VCC	27	+5V	I
$\overline{NMI}$	4	NOT USED	–
$\overline{STBY}$	9	NOT USED	–
$\overline{IRQ1}$	5	NOT USED	–
VSS	1	GND	I

PC910 OPTO ISOLATOR



Top View

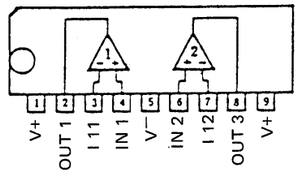
MB62H195 SYSTEM GATE ARRAY



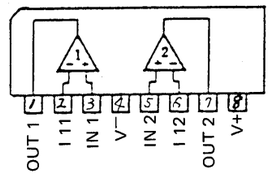
DESIG-NATION	PIN No.	FUNCTION	I/O
LC 0	68	LCD Data	O
1	69		O
2	70		O
3	71		O
4	72		O
5	74		O
6	75		O
7	76		O
R 0	9	Keyboard and Switch Read	I
1	10		I
2	11		I
3	13		I
4	14		I
5	15		I
6	16		I
7	17		I
DA 0	8	8BIT D/A CONVERTER	O
1	7		O
2	6		O
3	5		O
4	4		O
5	3		O
6	2		O
7	1		O
9	79	Inhibit pulse	O
10	78		O
11	77		O
A 0	42	ROM and RAM Address (lower 8bits)	O
1	43		O
2	44		O
3	45		O
4	46		O
5	47		O
6	48		O
7	49		O
12	28	Address (for chip select)	O
13	29		O
14	30		O
15	31		O
AD 0	41	—	I/O

DESIG-NATION	PIN No.	FUNCTION	I/O
1	40	Data Bus	I/O
2	39		I/O
3	38		I/O
AD 4	37		I/O
5	36		I/O
6	35		I/O
7	34		I/O
T 0	18	Keyboard and	O
1	19	Switch Read	O
DC 0	65	A S/H Channel	O
1	64	B Select	O
2	63	C	O
DI 0	61	Inhibit pulse	O
1	60		O
LED	25	Chip Select	O
RS	66	LCD Register Select	O
LCE	67	LCD Write Pulse	O
RAM2	53	RAM Chip Select	O
RD	27	Read Pulse	I
WR	26	Write Pulse	I
ALE	32	ALE Pulse	I
T2	20	NC	–
T3	21	NC	–
T4	22	NC	–
NC	23	NC	–
T5	24	NC	–
DA 8	80	NC	–
OUT0	55	NC	–
DC0	54	NC	–
ROM	50	NC	–
RAM1	51	NC	–
SOUT	59	NC	–
SCK	58	NC	–
SIN	57	NC	–
ADC	56	NC	–
NC	63	NC	–
VDD	33	+5V	I
VDD	73	+5V	I
VSS	52	GND	I
VSS	12	GND	I

μPC4570HA OP AMP



M5218L OP AMP

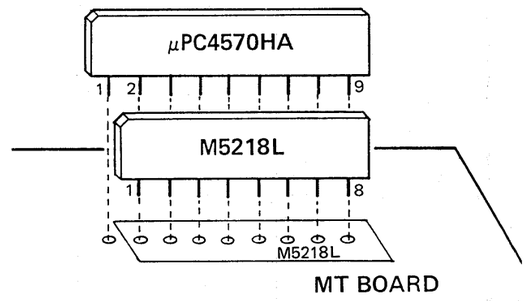


μPC4570A and M5218L

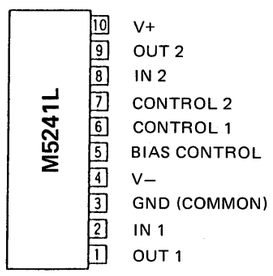
μPC4570A (9 pin) and M5218L (8 pin) are electrically compatible with each other but differ in the number of pins. When replacing, correctly position the IC as shown in the figure below.

μPC4570A と M5218L

μPC4570A(9pin)とM5218L(8pin)はピン数が違いますが、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。

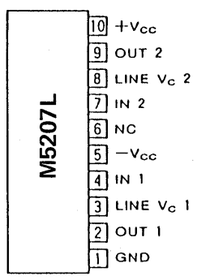


M5241L DUAL VCA



Top View

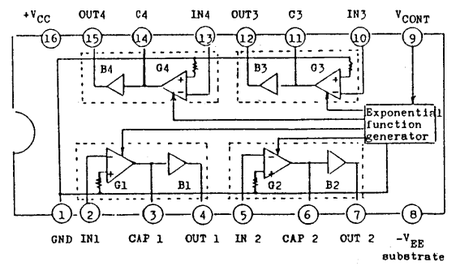
M5207 DUAL LINEAR VCA



Top View

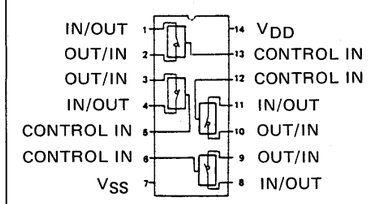
1R3109 VCF

TOP VIEW



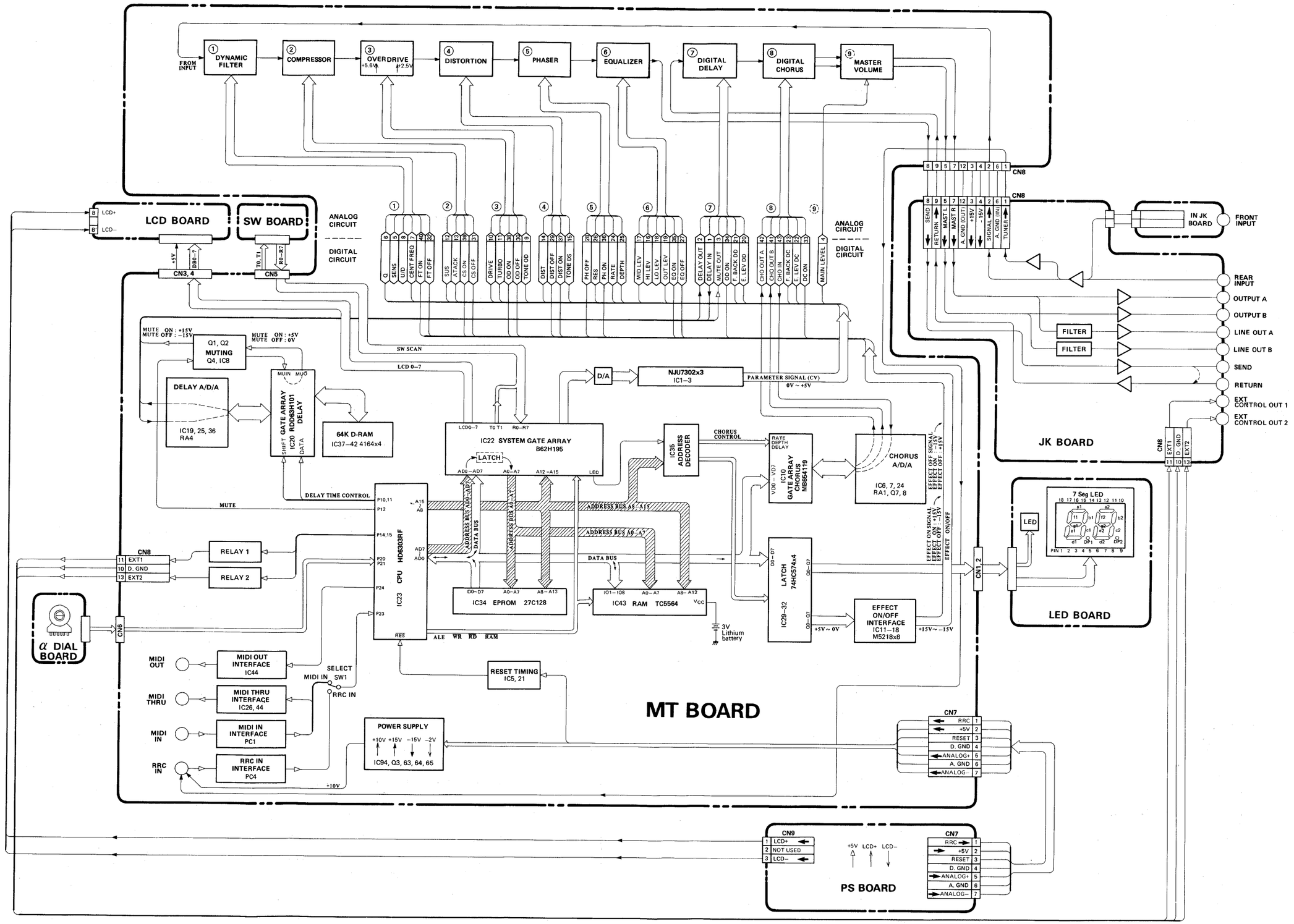
4066B Quad Bilateral Switch (for Transmission or Multiplexing of Analog or Digital Signals)

Pin Configuration



Top View

BLOCK DIAGRAM



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有る場合は、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有るかが分ります。

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

SETTING		EFFECT ON SIGNALE		FFECT OFF SIGNAL	
EFFECT NO.	ON/OFF	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 (EQUA-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		

Fig. A

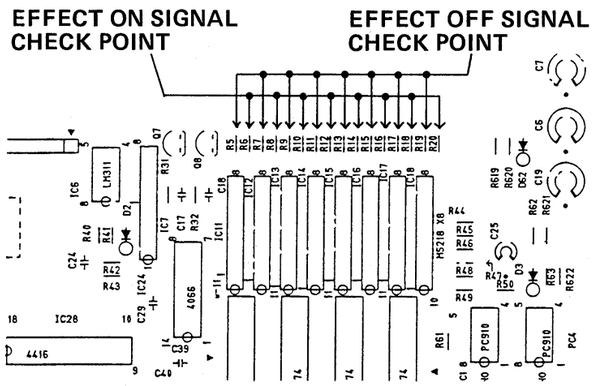
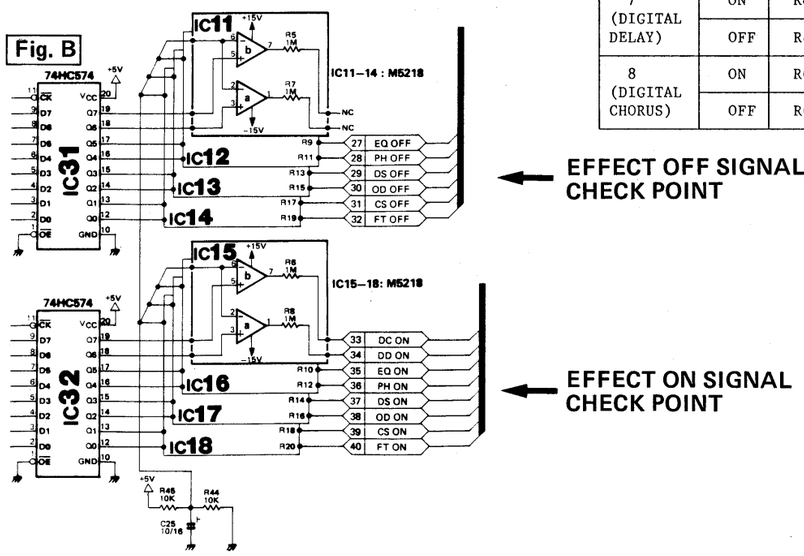


Fig. B



EFFECT OFF SIGNAL CHECK POINT

EFFECT ON SIGNAL CHECK POINT

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	IC1 pin	14	15	13	12			11	10	9																16	
	IC2 pin					15	16				13	14				12	11	9	10								
	IC3 pin												12	11	10					16	15	14	13				
PARAMETER SIGNAL (CV)	+5V / D/A OUT (EXAMPLE) / 0V																										
PARAMETER		SENS	α	CUT OFF FREQ	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			
	(EXAMPLE)	10	20	30	UP	40	50	60	70	ON	80	90	100	90	80	70	60	50	40	30	20	10	0	10			
		*				*	*	*			*		*	*	*	*	*	*	*	*	*	*	*	*			
			☆	☆					☆			☆															
					※																						
										★																	

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

Fig. C

PARAMETER SIGNAL (CV) CHECK POINT

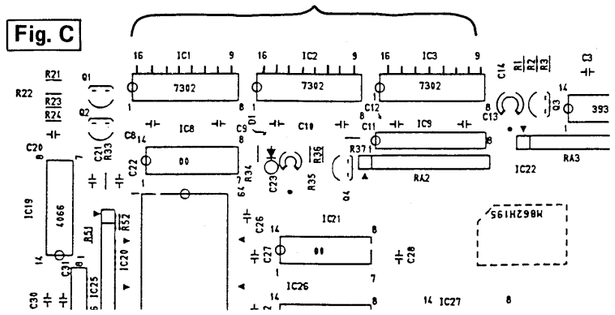
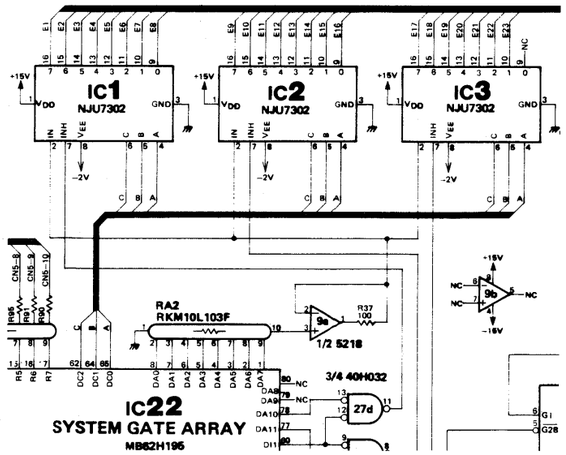
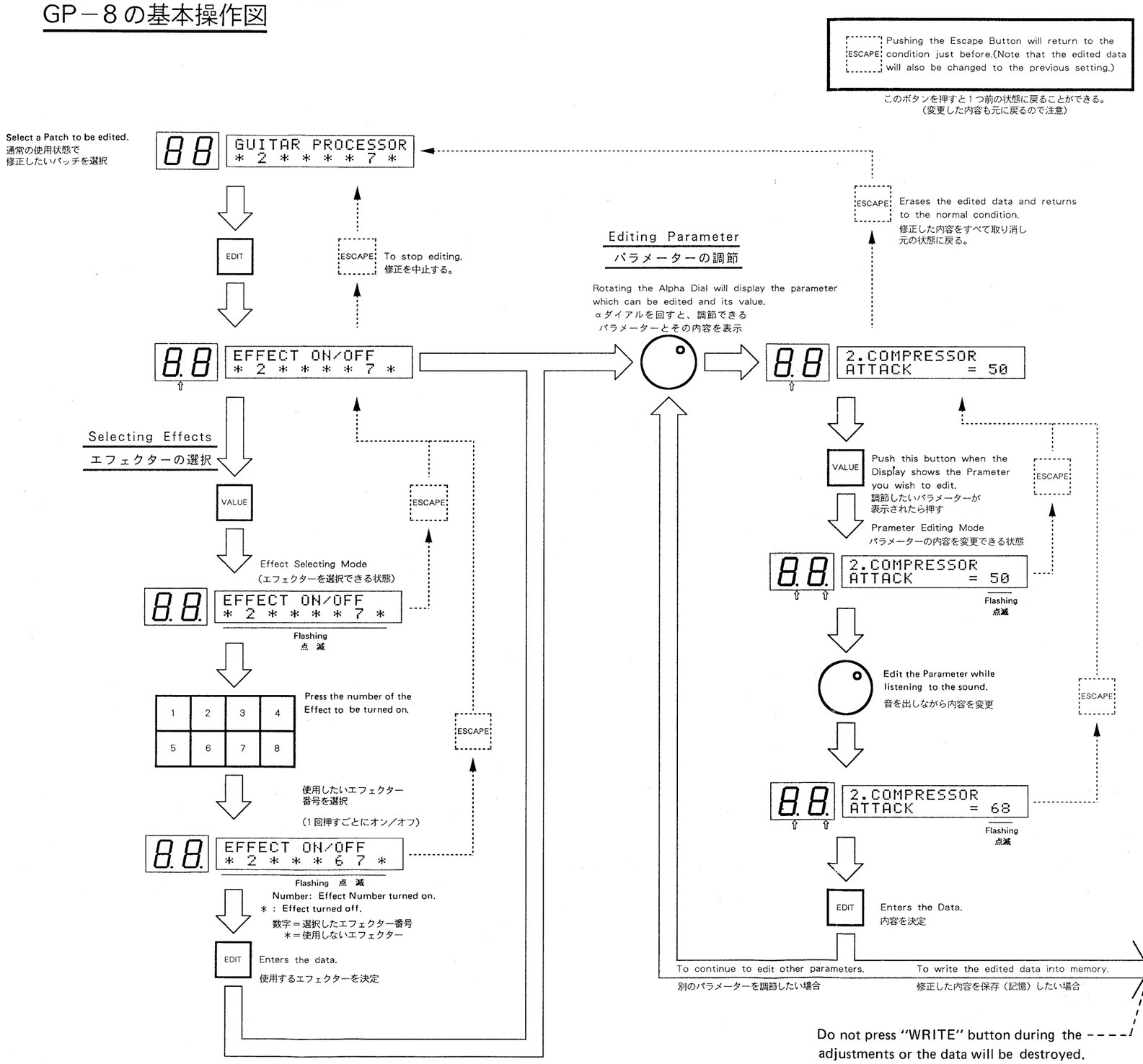


Fig. D

PARAMETER SIGNAL (CV) CHECK POINT



GP－8 Basic Operation Table
GP－8の基本操作図



Prameter Table

Effct	Parameter	
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
	F.BACK	Feedback
	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

CHECKING AND ADJUSTING

調整と確認

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

以下の調整はエデット・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. OVERDRIVE BIAS (VR1)

1-1. Apply a 200Hz, 120mVpp square wave from an audio generator to INPUT jack.
1-2. Connect a scope (RANGE: 200mV/div, 1ms/div) to SEND jack.
1-3. Select Effect No. "3" (OVERDRIVE). (See page "GP-8 basic operation.)
1-4. Set up the values of Effect "3" (TONE, DRIVE, TURBO ON/OFF) as shown in Table 1.
1-5. Adjust VR1 for the waveform shown in the figure below.

1.オーバードライブ・バイアス(VR1)

1－1. 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。
1－2. 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。
1－3. "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。
1－4. エフェクター"3"のバリュー(TONE，DRIVE，TURBO ON/OFF)をTable 1に従って設定する。
1－5. 出力波形が下図の様になる様にVR1を調整する。

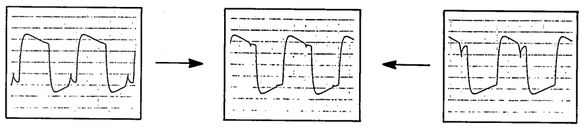


Table 1

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.

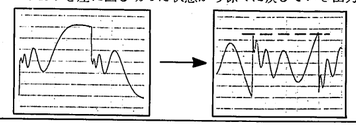
調整2.～9.についてもTable 2に従ってそれぞれ調整する。

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)			
	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VR2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)			
	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VR4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)			
	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VR6を調整する。				

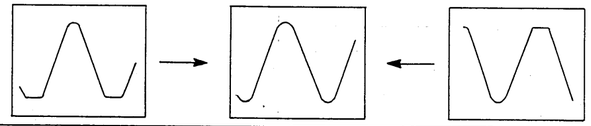
To be continued

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)			
	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VR6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VR6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VR6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. VR7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

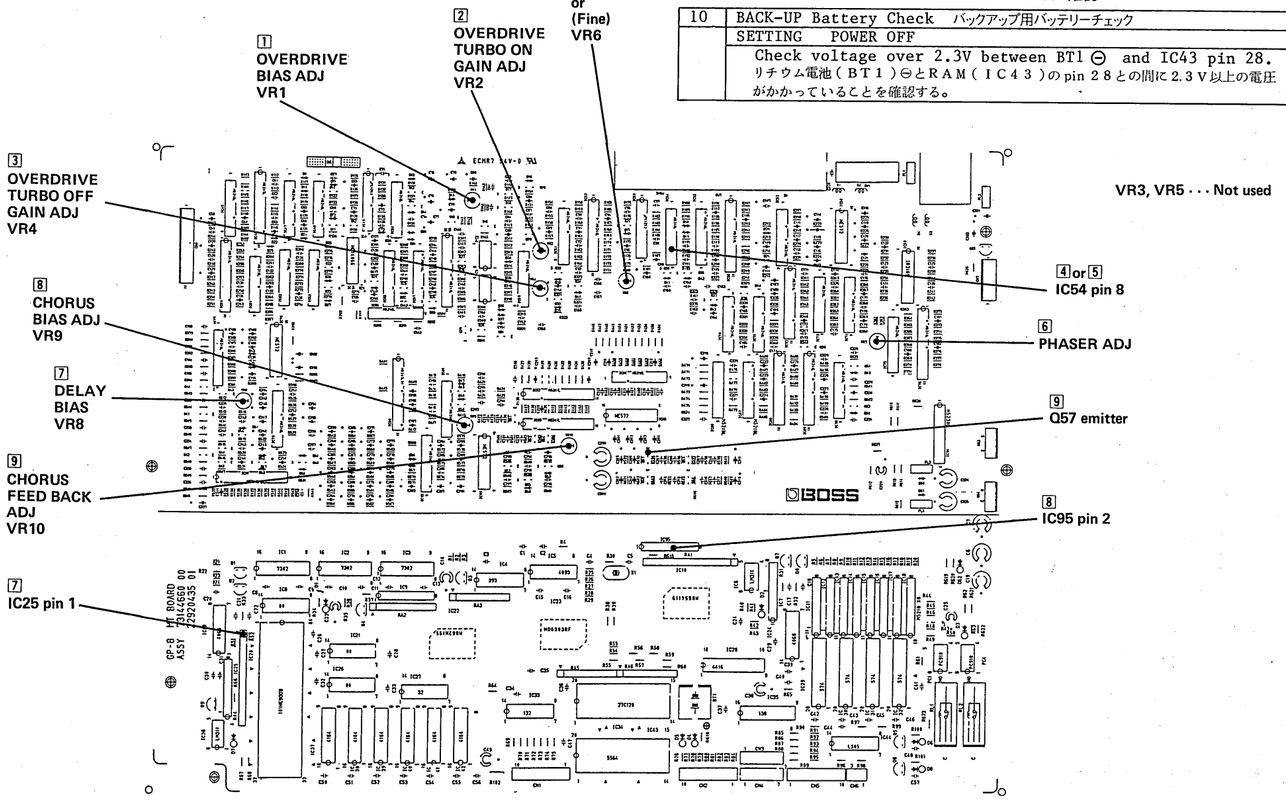
Table 2

7	Delay Bias ディレイ・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VR8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VR9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VR10を調整する。				

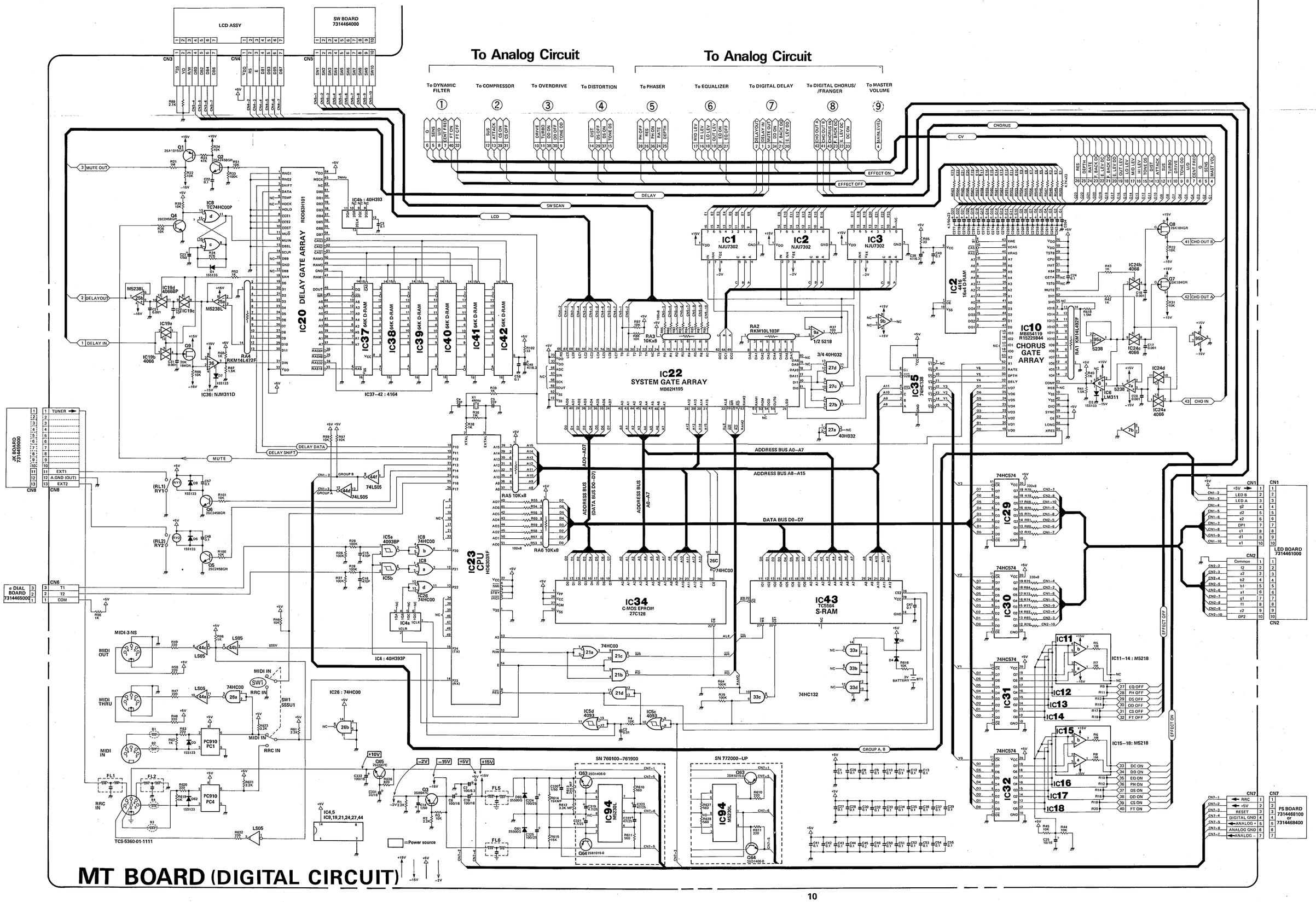
10. CHECKING

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(BT1)⊖とRAM(IC43)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。	



CIRCUIT DIAGRAM



MT BOARD (DIGITAL CIRCUIT)

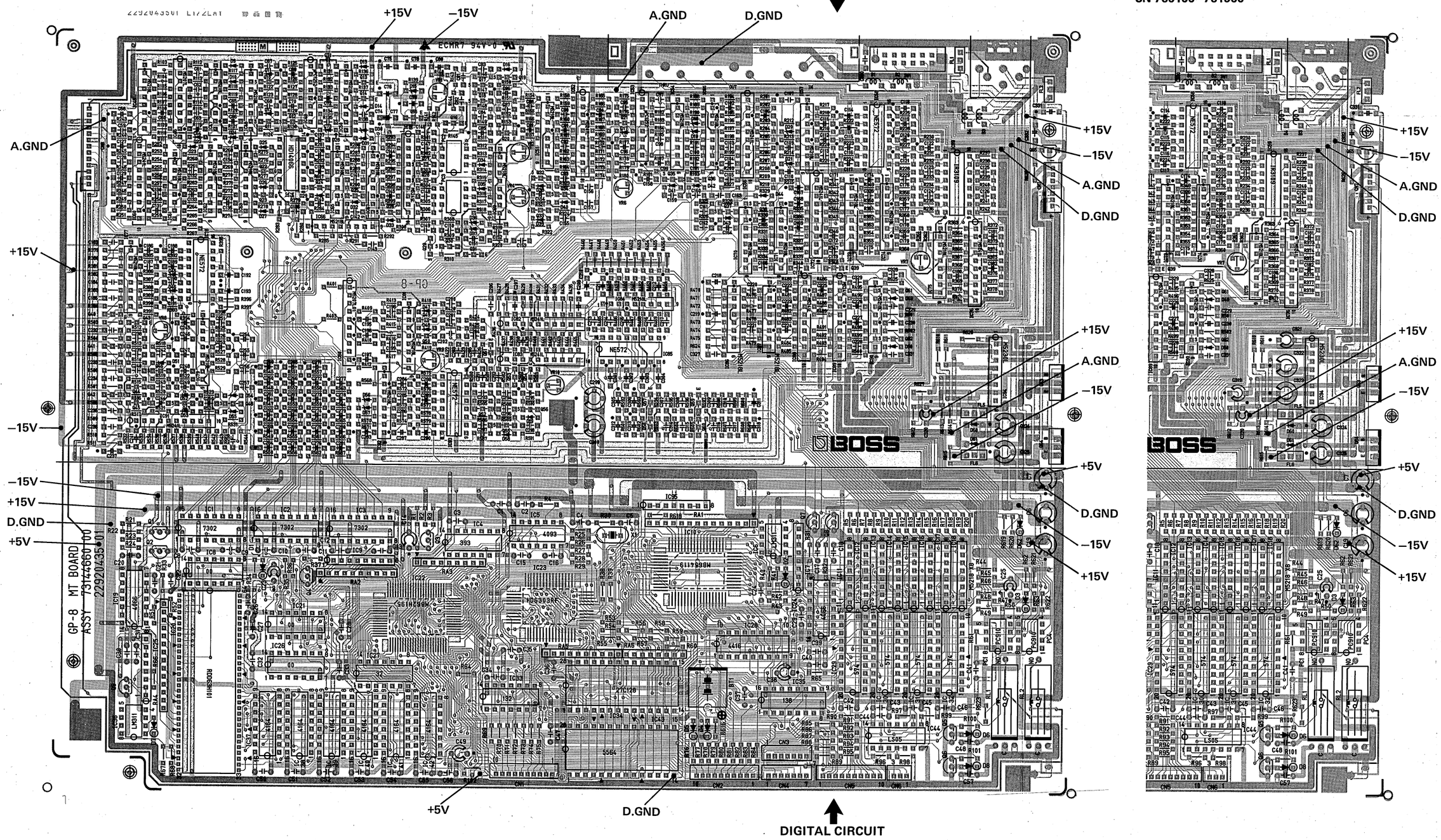
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

MT BOARD 73144660 (pcb 2292043501) SN 772000–783499

ANALOG CIRCUIT

(pcb 2292043500)
SN 760100–761900



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

Lithium batteri ma kun udskiftes med samme type og fabrikat.

ADVARSEL!
Lithiumbatteri. Fare for eksplotion.
Ma bare skiftes av kvalifisert tekniker som beskrevet i servicemanualen.

Lithium batteri må kun utskiftes med samme type og fabrikat.

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

Lithium batteri för endast ersättes med samme typ och fabrikat.

VAROITUS!
Lithiumparisto. Räjähdysvaara.
Pariston saa vaihtaa ainoastaan alan ammottimies.

Kun vaihat lithium pariston KÄYTÄ saman valmistajan samaa tyyppiä.

CIRCUIT DIAGRAM

JK BOARD
7314459000

REAR IN JK9
FRONT IN JK1
IN JK BOARD 7314457000

DYNAMIC FILTER

IC45,47,48,50,51,54,55,62,63,65,66,67,69 µPC4570HA

IC46 M5207L
IC60 M5241L
IC64a,b HD14066BP
IC64c,d HD14066BP

COMPRESSOR

IC49 µPC1252H2
IC68 M5241L

DISTORTION

IC52 M5241L
IC53 µPC1252
IC56 M5241L

DISTORTION OFFSET ADJ VR6 47KB

TURBO OVERDRIVE

IC45,47,48,50,51,54,55,62,63,65,66,67,69 µPC4570HA

PC1 1/2 P1501
PC2 P1501 OPT ISOLATOR
PC3 P1501 OPT ISOLATOR
PC2,3 P1501

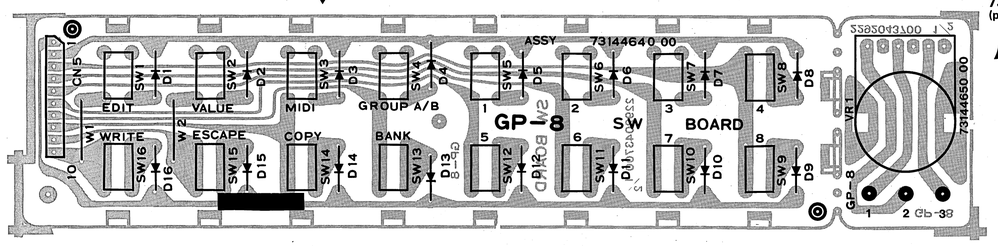
VR 1 10KB OVERDRIVE BIAS ADJ
VR 2 10KB OVERDRIVE TURBO OFF GAIN ADJ
VR 4 10KB OVERDRIVE TURBO ON GAIN ADJ

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)

To Digital Circuit
From DYNAMIC FILTER
From COMPRESSOR
From TURBO OVERDRIVE
From DISTORTION

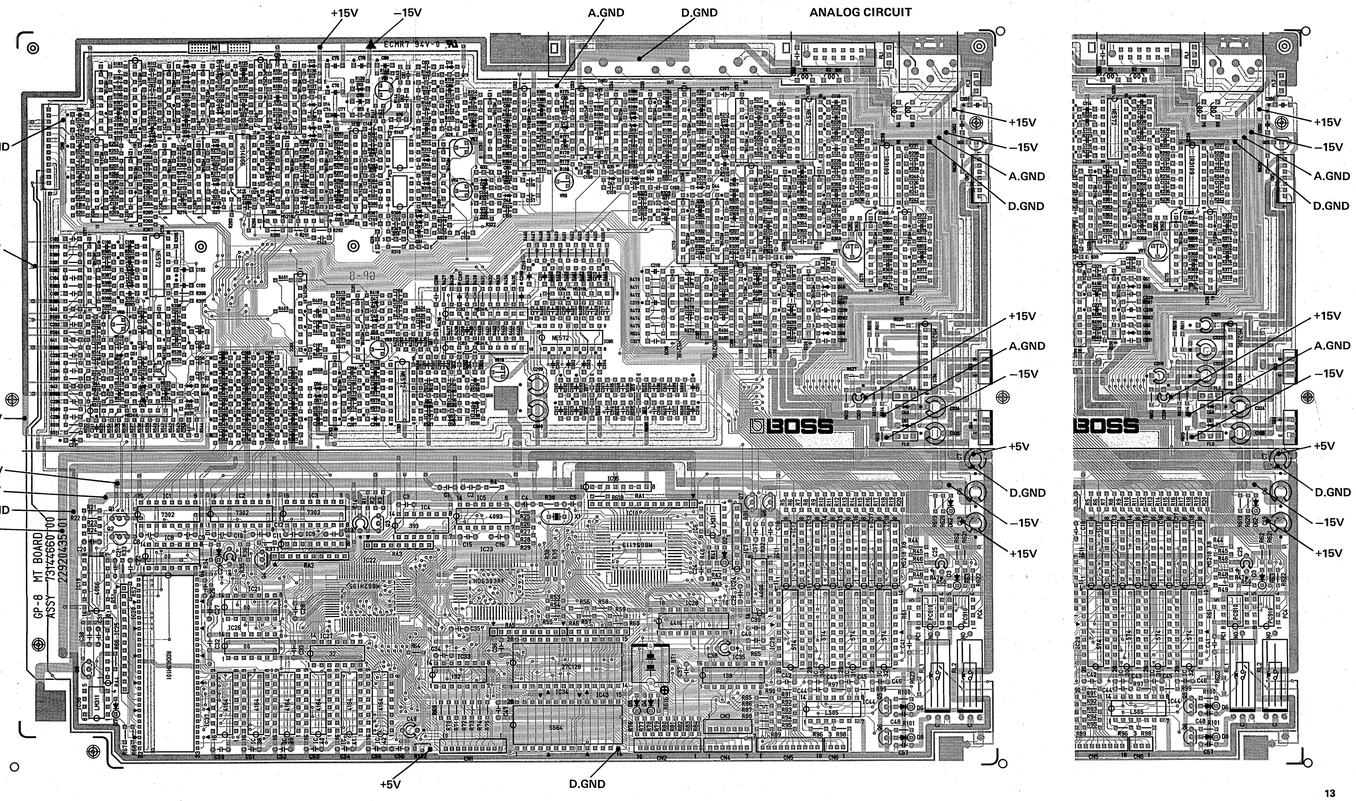
SW BOARD 7314464000 (pcb 2292043700)

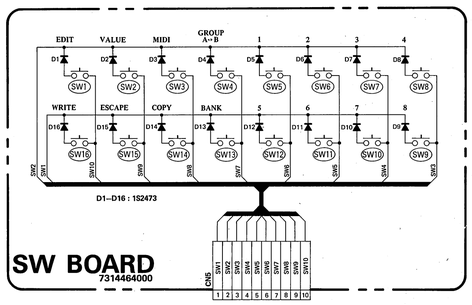


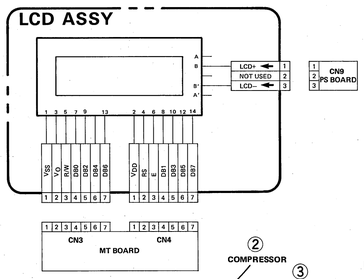
α DIAL BOARD 7314465000 (pcb 2292043700)

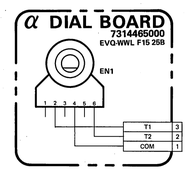
MT BOARD 73144660 (pcb 2292043501) SN 772000–783499

(pcb 2292043500) SN 760100–761900

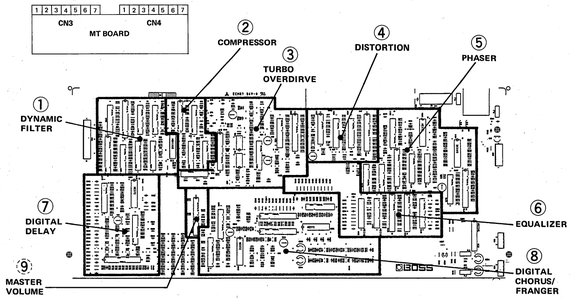




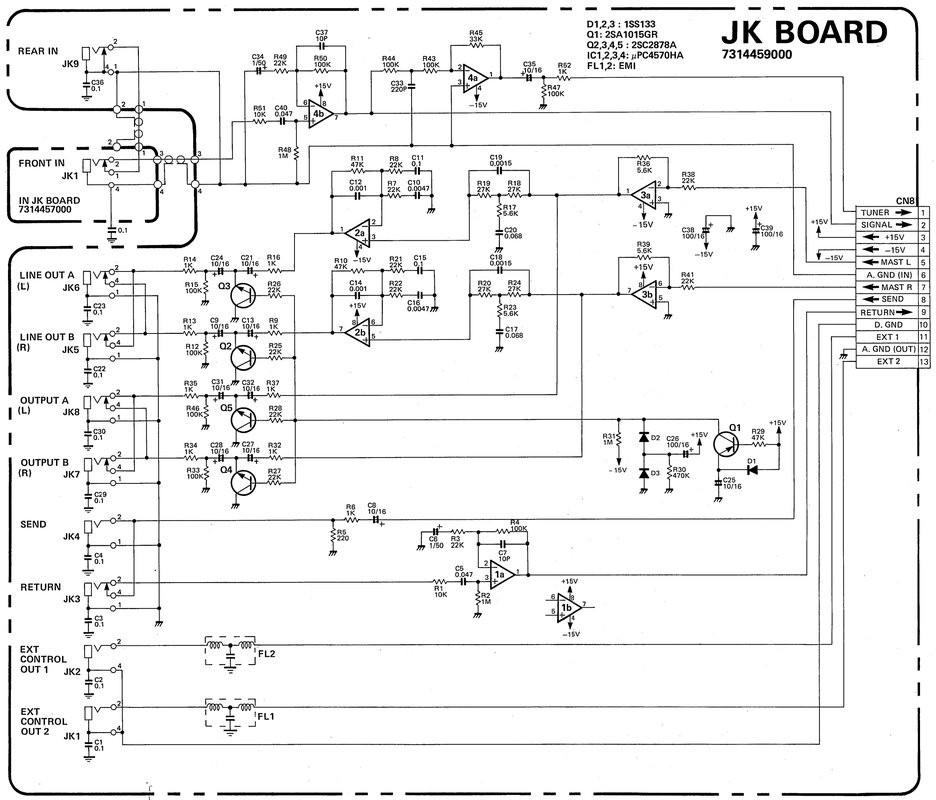




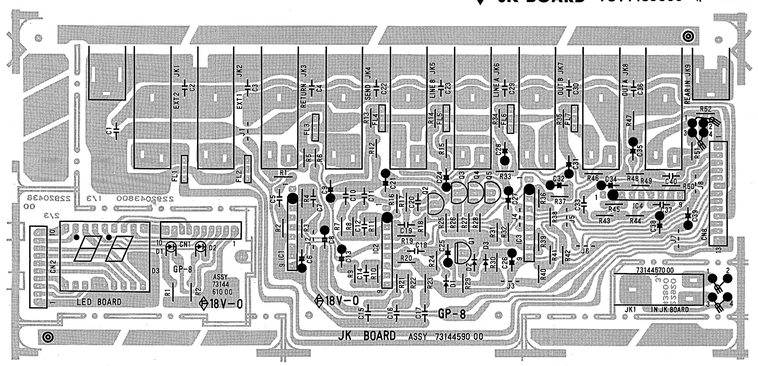
CIRCUIT DIAGRAM



CIRCUIT DIAGRAM



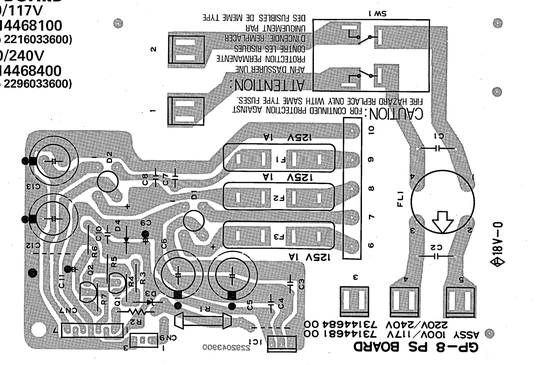
JK BOARD 7314459000 (pcb 2292043800)



PS BOARD

100/117V 7314468100 (pcb 2216033600)

220/240V 7314468400 (pcb 2296033600)



LED BOARD

7314461000 (pcb 2292043800)

IN JK BOARD

7314457000 (pcb 2292043800)

PS BOARD

100/117V 7314468100
220/240V 7314468400

CIRCUIT DIAGRAM

CIRCUIT DIAGRAM

PHASER

EQUALIZER

JK BOARD
7314459000

DIGITAL DELAY

DIGITAL CHORUS

MT BOARD 73144660 (ANALOG CIRCUIT)

To Digital Circuit

GUITAR EFFECTS PROCESSOR

MODEL GP-8

MIDI Implementation Chart

Date : 1/29. 1987

Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic	Default	×	1-16	Memorized
Channel	Changed	×	1-16	
Mode	Default	×	OMNI ON/OFF	Memorized
	Messages	×	×	
	Altered	*********	×	
Note Number		×	×	
	True Voice	*********	×	
Velocity	Note ON	×	×	
	Note ON	×	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	×	
Control Change	16	×	○ EV-5	
	80	×	○ Control Pedal	
Prog Change		○ (0-127)	○ (0-127)	
	True #	*********	0-127	
System Exclusive		○	○	*
System common	Song Pos	×	×	
	Song scl	×	×	
	True	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Message	Local ON/OFF	×	×	
	All Notes OFF	×	×	
	Active Sense	×	×	
	Reset	×	×	
Note		*Bulk Dump/Bulk Load (Roland "One Way" Format)		

Mode 1 : OMNI ON, POLY　　Mode 2 : OMNI ON. MONO　　○ : Yes

Mode 3 : OMNI OFF, POLY　　Mode 4 : OMNI OFF, MONO　　× : No

1. TRANSMITTED DATA

Status	Second	Third	Description
1100 nnnn	0ppp pppp		Program Change pppppppp = 0 - 127
1111 0000	... ...	1111 0111	System exclusive

2. RECOGNIZED RECEIVE DATA

Status	Second	Third	Description
1100 nnnn	0ppp pppp		Program Change pppppppp = 0 - 127
1011 nnnn	0001 0000	0vvv vvvv	Controls the parameter selected with EV-5 PARAMETER vvvvvvv=0-127
1011 nnnn	0101 0000	0vxx xxxx	Controls the Control Pedal v=1 (Control Pedal ON) v=0 (Control Pedal OFF)
1111 0000	... ...	1111 0111	System Exclusive

3. EXCLUSIVE COMMUNICATION

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

Byte		Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0000 nnnn	Device-ID # = MIDI basic channel where nnnn + 1 = channel #
d	0001 0011	Model-ID # (GP-8)
e	0aaa aaaa	Command-ID #
[f	0bbb bbbb	Address MSB] {} depend on Command-ID
[g	0ddd dddd	Address LSB]
[h	0eee eeee	Data]
[:	:	]
[i	0fff ffff	Checksum]
j	1111 0111	End of System Exclusive

Summed value of the all bytes between Command-ID and EOX must be 00H (7 bits). It does not include Command-ID and EOX.

4. COMMUNICATION FORMAT

4.1 Request (One way) RQ1 11H
(Recognized only)

Byte		Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0000 nnnn	Device-ID # = MIDI basic channel where nnnn + 1 = channel #
d	0001 0011	Model-ID # (GP-8)
e	0001 0001	Command-ID # (RQ1)
f	0aaa aaaa	Address MSB
g	0ccc cccc	Address LSB
h	0ddd dddd	Size MSB
i	0eee eeee	Size LSB
j	0fff ffff	Checksum
k	1111 0111	End of System Exclusive

4.2 Data set (One way) DT1 12H
(Transmitted and recognized)

Byte		Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0000 nnnn	Device ID # = MIDI basic channel where nnnn + 1 = channel #
d	0001 0011	Model-ID # (GP-8)
e	0001 0010	Command-ID # (DT1)
f	0aaa aaaa	Address MSB
g	0bbb bbbb	Address LSB
h	0ccc cccc	Data
:	:	
i	0ddd dddd	Checksum
j	1111 0111	End of System Exclusive

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

0	0000 aaaa	EFFECT ON/OFF (MSB)	
		*BIT0 --> PHASER	(0=OFF,1=ON)
		*BIT1 --> EQUALIZER	(0=OFF,1=ON)
		*BIT2 --> DELAY	(0=OFF,1=ON)
		*BIT3 --> CHORUS	(0=OFF,1=ON)
1	0000 bbbb	EFFECT ON/OFF (LSB)	
		*BIT0 --> D.FILTER	(0=OFF,1=ON)
		*BIT1 --> COMPRESSOR	(0=OFF,1=ON)
		*BIT2 --> TURBO O.D	(0=OFF,1=ON)
		*BIT3 --> DISTORTION	(0=OFF,1=ON)

DYNAMIC FILTER

2	0aaa aaaa	SENS	(0-100)
3	0aaa aaaa	CUTOFF FREQ	(0-100)
4	0aaa aaaa	Q	(0-100)
5	0aaa aaaa	UP/DOWN	(0=DOWN,100=UP)

COMPRESSOR

6	0aaa aaaa	ATTACK	(0-100)
7	0aaa aaaa	SUSTAIN	(0-100)

TURBO OVER DRIVE

8	0aaa aaaa	TONE	(0-100)
9	0aaa aaaa	DRIVE	(0-100)
0A	0aaa aaaa	TURBO ON/OFF	(0=OFF,100=ON)

DISTORTION

0B	0aaa aaaa	TONE	(0-100)
0C	0aaa aaaa	DIST	(0-100)

PHASER

0D	0aaa aaaa	RATE	(0-100)
0E	0aaa aaaa	DEPTH	(0-100)
0F	0aaa aaaa	RESONANCE	(0-100)

EQUALIZER

10	0aaa aaaa	HI.LEVEL	(0-100)
11	0aaa aaaa	MID.LEVEL	(0-100)
12	0aaa aaaa	LO.LEVEL	(0-100)
13	0aaa aaaa	OUT LEVEL	(0-100)

DIGITAL DELAY

14	0aaa aaaa	E.LEVEL	(0-100)
15	0000 0aaa	D.TIME (MSB)	(0-1000)
16	0bbb bbbb	D.TIME (LSB)	
17	0aaa aaaa	F.BACK	(0-100)

DIGITAL CHORUS

18	0aaa aaaa	RATE	(0-100)
19	0aaa aaaa	DEPTH	(0-100)
1A	0aaa aaaa	E.LEVEL	(0-100)
1B	0aaa aaaa	PRE DELAY	(0-100)
1C	0aaa aaaa	F.BACK	(0-100)
1D	0aaa aaaa	MASTER VOLUME	(0-100)
1E	000a aaaa	EV-5 PARAMETER	(0-27) ; 0=OFF
1F	0aaa aaaa	EXT CONTROL OUT1	(0=OFF,100=ON)
20	0aaa aaaa	EXT CONTROL OUT2	(0=OFF,100=ON)
21	0aaa aaaa	NAME (1)	(32-127)
22	0aaa aaaa	NAME (2)	(32-127)
23	0aaa aaaa	NAME (3)	(32-127)
24	0aaa aaaa	NAME (4)	(32-127)
25	0aaa aaaa	NAME (5)	(32-127)
26	0aaa aaaa	NAME (6)	(32-127)
27	0aaa aaaa	NAME (7)	(32-127)
28	0aaa aaaa	NAME (8)	(32-127)
29	0aaa aaaa	NAME (9)	(32-127)
2A	0aaa aaaa	NAME (10)	(32-127)
2B	0aaa aaaa	NAME (11)	(32-127)
2C	0aaa aaaa	NAME (12)	(32-127)
2D	0aaa aaaa	NAME (13)	(32-127)
2E	0aaa aaaa	NAME (14)	(32-127)
2F	0aaa aaaa	NAME (15)	(32-127)
30	0aaa aaaa	NAME (16)	(32-127)
31	0000 0000	End of String	(0)

2000 Memory parameter 1
: GROUP A
: BANK 1
: NUMBER 1
31

2040 Memory parameter 2
: GROUP A
: BANK 1
: NUMBER 2
71
:
:
: Memory parameter (3 - 127)
:
:
:
3FC0 Memory parameter 128
: GROUP B
: BANK 8
: NUMBER 8
F1

Notes :

ADDRESS
00mg bbbn nnpp ppppB
- parameter number (0-31H)
- program number (0-7fh) Group, Bank, Number
- 0 : Temporary parameter
- 1 : Memory parameter

6. TRANSMITTED EXCLUSIVE MESSAGE IN MIDI BULK DUMP MODE

6.1 One way transfer

6.1.1 Data set DT1 12H

Byte		Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0000 nnnn	Device-ID # = MIDI basic channel where nnnn + 1 = channel #
d	0001 0011	Model-ID # (GP-8)
e	0001 0010	Command-ID # (DT1)
f	0aaa aaaa	Address MSB
g	0bbb bbbb	Address LSB
h	0ccc cccc	Data
:	:	
i	0ddd dddd	Checksum
j	1111 0111	End of System Exclusive

7. RECOGNIZED EXCLUSIVE MESSAGES

7.1 One way receive

7.1.1 Data set DT1 12H

Byte		Description
a	1111 0000	Exclusive status
b	0100 0001	Roland ID #
c	0000 nnnn	Device-ID # = MIDI basic channel where nnnn + 1 = channel #
d	0001 0011	Model-ID # (GP-8)
e	0001 0010	Command ID # (DT1)
f	0aaa aaaa	Address MSB
g	0bbb bbbb	Address LSB
h	0ccc cccc	Data
:	:	
i	0ddd dddd	Checksum
j	1111 0111	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 sequencially

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) ---------->

*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
<---------- RQ1

DT1 (SOUND DATA) ---------->

* time interval about 20 ms

[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

□ Reconnecting IC35 of MT board

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

REASON

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

This will prevent the following problems:

* Inproper Chorus effect
* Incorrect LED reading
* Disabled effect even it is set to on togather with other effect(s).

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.

SN783500 - UP

(See Fig.B.)Relayout foil pattern MT board to provide the above reconnection.the part number of MT board is changed to 7314466002 (pcb 2292043502).

変更案内

□ IC35ピン接続変更

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

理由

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

* コーラス効果異常
* 7セグLED表示異常
* 複数のエフェクタをオンしても、そのうちの一つが働かない。

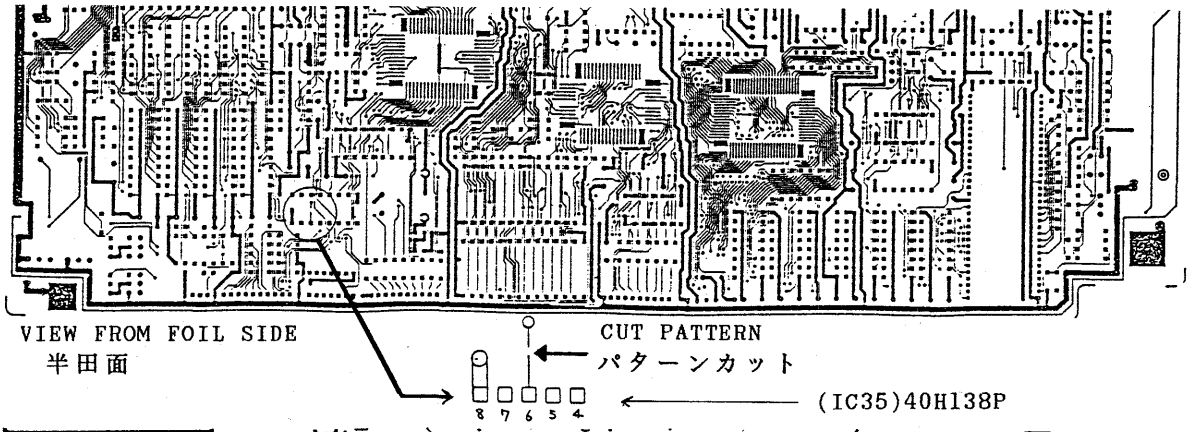
実施方法

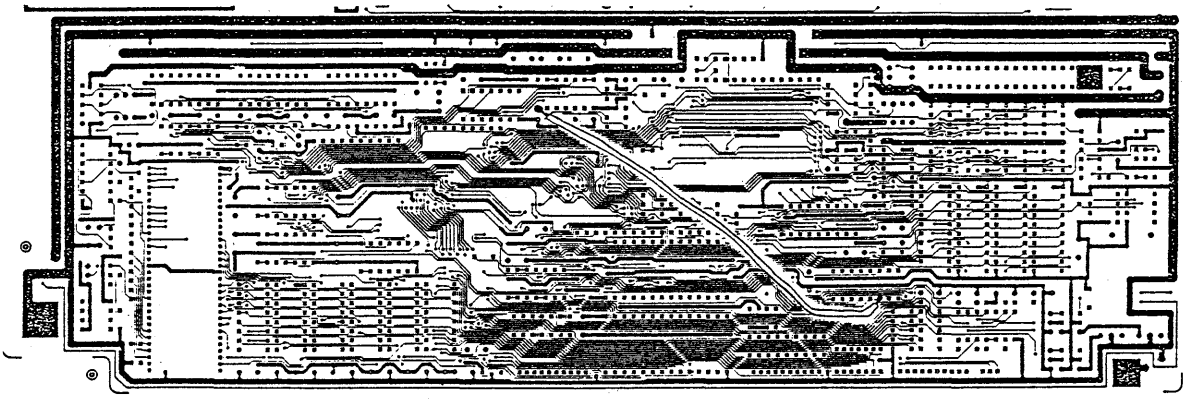
1，製番761000 - 783499
基板 MTボード 7314466001 (pcb 2292043501)
（Fig.A,B参照） パターンカット及びジャンパ線追加

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