

JD-990

SYNTHESIZER MODULE

SERVICE NOTES

First Edition

ERRATA & SUPPLEMENT is attached at the end of the page.
最終頁に正誤表&追加情報があります。

SPECIFICATIONS / 仕様

SOUND GENERATOR/音源
Number of parts/パート数
7 Parts+1 Rhythm Set
Maximum Polyphony/最大同時発音数
24 Voices

EFFECTS/エフェクト
Patch Mode/パッチモード
3 Band EQ/3バンドEQ
Distortion/ディストーション
Phaser/フェイザー, Spectrum/スペクトラム
Enhancer/エンハンサー, Chorus/コーラス
Delay/ディレイ, Reverb/リバーブ
Mix Out EQ/ミックスアウトEQ

Performance Mode/パフォーマンスモード
Rhythm Set Mode/リズムセットモード
3 Band EQ/3バンドEQ
Chorus/コーラス
Delay/ディレイ, Reverb/リバーブ
Mix Out EQ/ミックスアウトEQ

MEMORY CAPACITY/メモリー容量
Wave ROM
6Mbytes (195 Waveforms)
Expansion Board/エクステンションボード
8Mbytes

Internal
System Setup 1
Performance/パフォーマンス
Preset A 16
Preset B 16
User 16

Patch/パッチ
Preset A 64
Preset B 64
User 64

Rhythm Set/リズムセット
Preset A 1
Preset B 1
User 1

Card/カード
System Setup 1
Performance 16
Patch 64
Rhythm Set 1

DISPLAY/ディスプレイ
320 × 80 Dot LCD (with backlight green/緑色バックライト付き)

MIDI
IN, OUT, THRU

CARD SLOTS/カードスロット
PCM, DATA

OUTPUT/出力
Phones (IMP 100)
MIX OUT (L/R) (IMP 1.5k)
DIRECT OUT 1 (IMP 1.5k)
DIRECT OUT 2 (IMP 1.5k)
DIRECT OUT 3 (IMP 1.5k)

POWER CONSUMPTION/消費電力
23W/100V, 23W/117V
25W/230V, 25W/240V

DIMENSIONS/外形寸法
482(W) × 281(D) × 88(H)mm (19inch × 11-1/16inch × 3-1/2inch)
EIA-2U rack mount type/EIA-2U ラックマウントタイプ

WEIGHT/重量
5.1kg (11lbs 4oz)

ACCESSORIES/標準付属品
MIDI Cable/MIDI ケーブル × 1 (No.23485228)
AC Cord (Detachable/着脱式) × 1
100V (No.13499219)
117V (No.13449220)
230V (No.13449221)
240VA (No.13449222)
240VE (No.13449223)
Owner's Manual Set × 1
Japanese (No.26055661)
English (No.26055662)

OPTIONS/オプション
Sound Library
SL-JD80 series
SO-PCM1 series
PN-JV80 series
Expansion Board
SR-JV80 series
DATA Card (M-256E)
MIDI/SYNC Cable (MSC-07/15/25/50/100)
Monitor AMP. (MA-12)

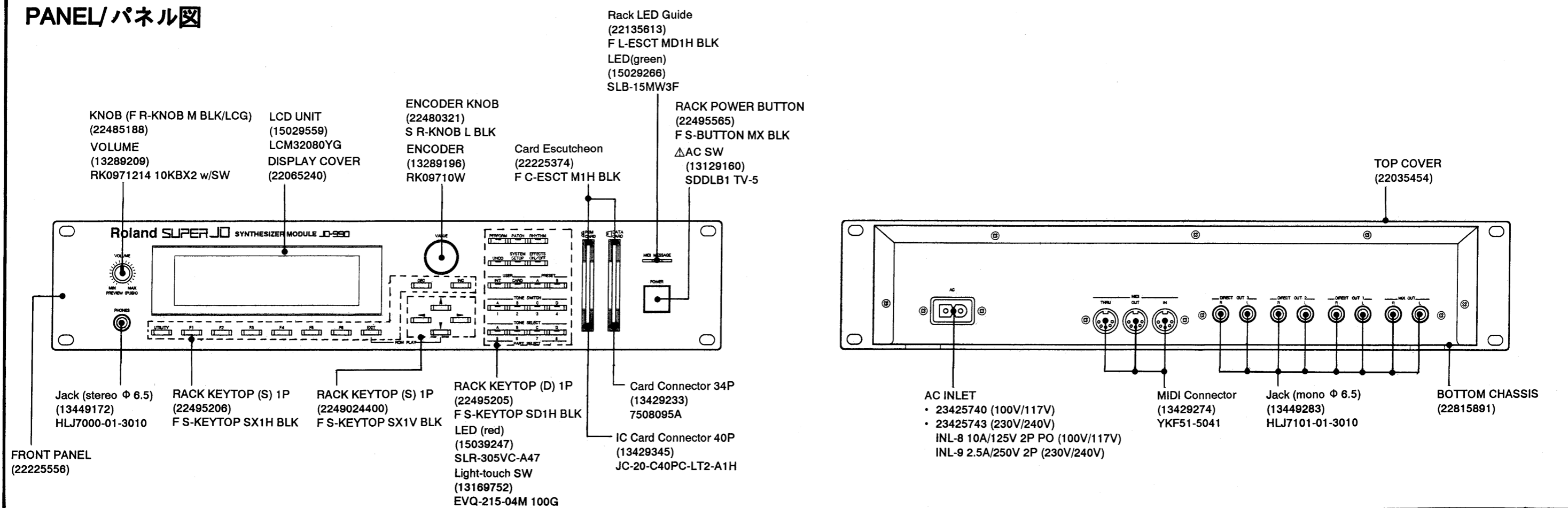
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PANEL/パネル図



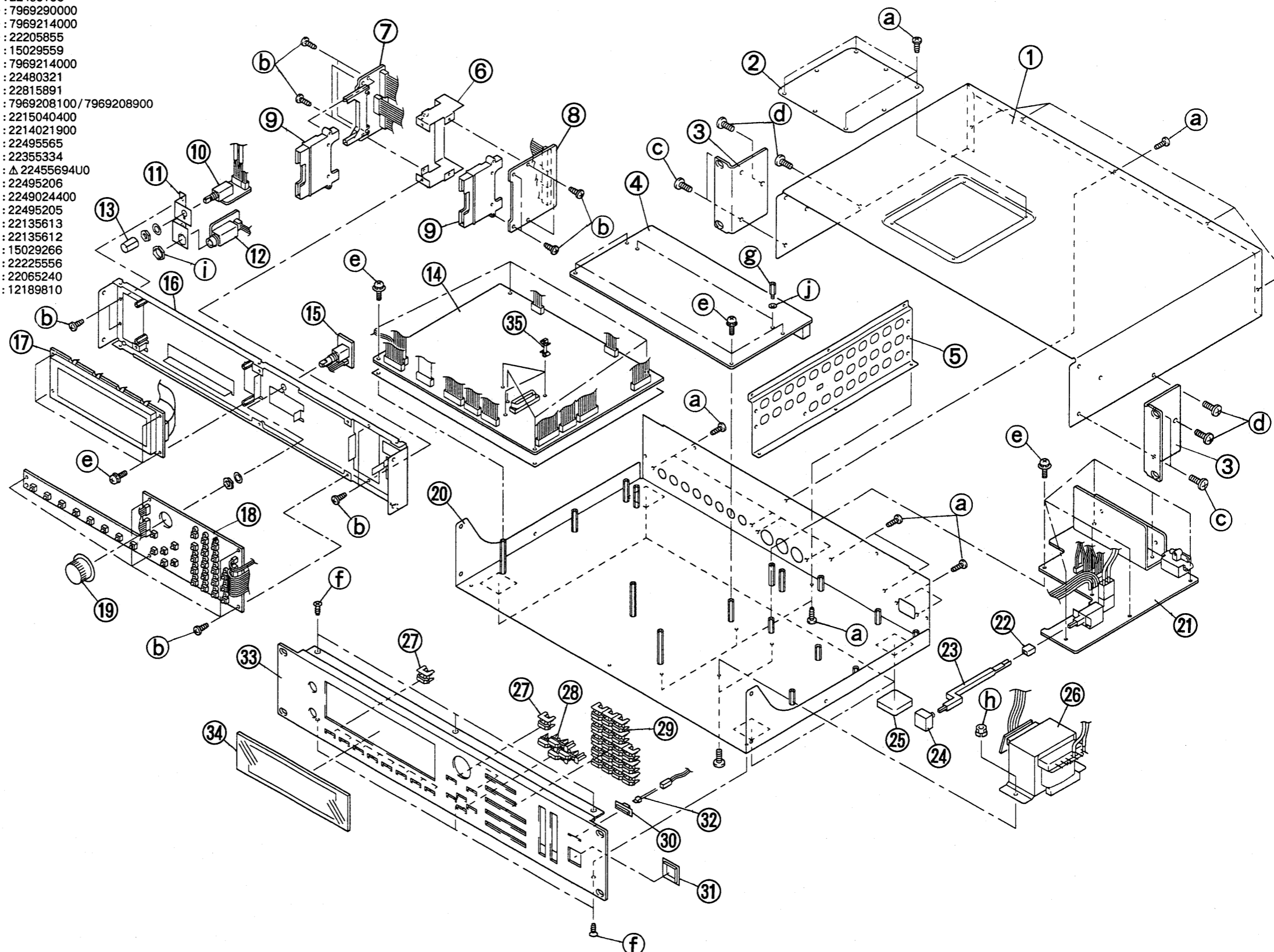
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

EXPLODED VIEW/分解图

No.	-PARTS NAME-	-PARTS NUMBER-
①	TOP COVER	:22035454
②	EXP COVER	:22025583
③	RACK ANGLE	:22125586
④	JACK BOARD ASSY (pcb22935457-00)	:7969211000
⑤	REAR HOLDER	:22205460
⑥	CARD HOLDER	:22205784
⑦	PCM CARD ASSY (pcb22935459-01 3/4)	:7969208100/7969208900
⑧	DATA CARD ASSY (pcb22935459-01 4/4)	:7969208100/7969208900
⑨	Card Escutcheon F C-ESCT M1H BLK	:22225374
⑩	VOLUME BOARD ASSY (pcb22935458-00 4/4)	:7969214000
⑪	PHONES HOLDER	:22205856
⑫	PHONE BOARD ASSY (pcb22935458-00 3/4)	:7969214000
⑬	KNOB (F R-KNOB M BLK/LCG)	:22485188
⑭	MAIN BOARD ASSY (pcb22935456)	:7969290000
⑮	ENCODER BOARD ASSY (pcb22935458-00 2/4)	:7969214000
⑯	FRONT HOLDER	:22205855
⑰	LCM32080YG (LCD Unit)	:15029559
⑱	PANEL BOARD ASSY (pcb22935458-00 1/4)	:7969214000
⑲	S R-KNOB L BLK	:22480321
⑳	BOTTOM CHASSIS	:22815891
㉑	PS BOARD ASSY (pcb22935459-01 1/4)	:7969208100/7969208900
㉒	Sleeve 215-404	:2215040400
㉓	Arm 214-219	:2214021900
㉔	RACK POWER BUTTON (F S-BUTTON MX BLK)	:22495565
㉕	Base 235-334	:22355334
㉖	Power Transformer UNIVERSAL	:Δ 22455694U0
㉗	RACK KEYTOP (S) 1P (F S-KEYTOP SX1H BLK)	:22495206
㉘	RACK KEYTOP (S) 1P (F S-KEYTOP SX1V BLK)	:2249024400
㉙	RACK KEYTOP (D) 1P (F S-KEYTOP SD1H BLK (w/WINDOW))	:22495205
㉚	Rack LED Guide (F L-ESCT MD1H BLK)	:22135613
㉛	Rack Button Guide (F B-ESCT MX1H BLK)	:22135612
㉜	LED (green) SLB-15MW3F	:15029266
㉝	FRONT PANEL	:22225556
㉞	DISPLAY COVER	:22065240
㉟	Double Locking Spacer WLS-14-094V0	:12189810

SCREWS

Ⓐ	3 × 8mm	Binding	B-tight	BC
Ⓑ	3 × 8mm	Binding	B-tight	Cm
Ⓒ	4 × 10mm	Binding	B-tight	BC
Ⓓ	4 × 8mm	Binding	S-tight	BC
Ⓔ	3 × 8mm	W-Sems		Cm
Ⓕ	3 × 8mm	Flat	B-tight	BC
Ⓖ	BOSS Nut # 526			22153526
Ⓗ	M4 Nut	W/ Spring Washer		Cm
Ⓘ	M12 Jack Nut			BC
Ⓣ	M3 × 8 × 0.8mm	Fiber Washer		

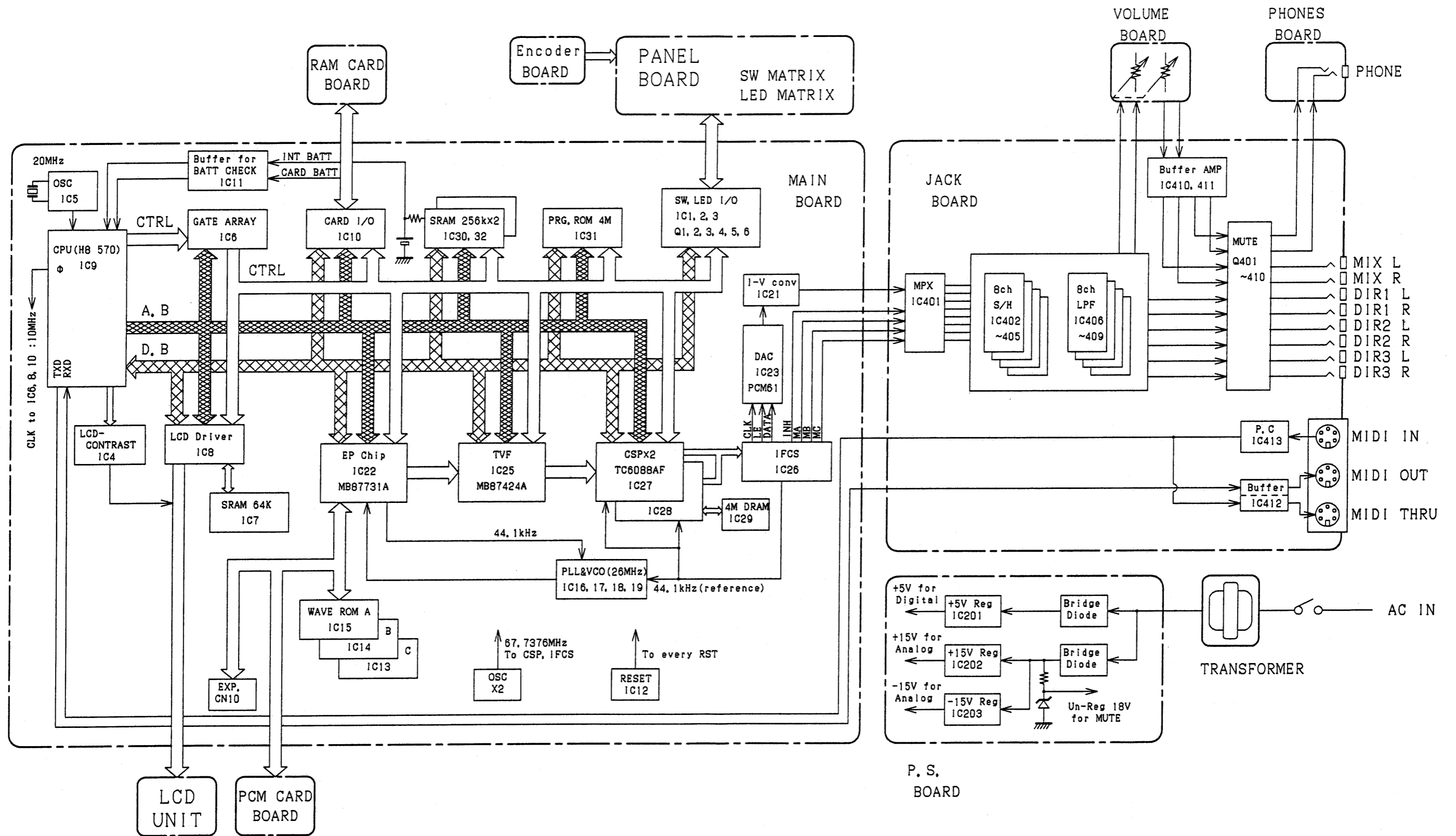


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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

BLOCK DIAGRAM/ブロック図

A
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A. B. means Address Bus
D. B. means Data Bus

PARTS LIST/パーツリスト

SAFETY PRECAUTIONS:

The parts marked Δ have safety-related characteristics. Use only listed parts for replacement.

安全上の注意:

Δ が付いている部品は、安全上特別な規格でつくられたものです。交換の際は、指定された部品番号以外の部品は使わないようして下さい。

CONSIDERATIONS ON PARTS ORDERING

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

Ex.	QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER
	10	22575241	Sharp key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.

パーツ発注に関するお願い

オーダーシートには、必ず下記の4項目は正確に記入して下さい。(例外は除く)

	必要数	パーツナンバー	品名	使用機種
例)	10	22575241	Sharp key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

もし記入漏れ、誤記等がある場合、必要部品が発送できなかったり、大幅な遅れの原因になります。御協力をお願いします。

- MB → MAIN BOARD ASSY
- JB → JACK BOARD ASSY
- PB → PANEL BOARD ASSY
- PSCB → PS/CARD BOARD ASSY

CASING/ケース

22035454	TOP COVER
22025583	EXP COVER
22065240	DISPLAY COVER
22815891	BOTTOM CHASSIS
22125586	RACK ANGLE
22225556	FRONT PANEL
22355334	Base 235-334

CHASSIS/シャーシ

22205460	REAR HOLDER
22205784	CARD HOLDER
22205855	FRONT HOLDER
22205856	PHONES HOLDER
22205857	JACK HOLDER

KNOB,BUTTON/ツマミ、ボタン

22480321	S R-KNOB L BLK	ENCODER KNOB
22485188	KNOB (F R-KNOB M BLK/LCG)	
2249024400	RACK KEYPAD (S) 1P (F S-KEYTOP SX1V BLK)	
22495205	RACK KEYPAD (D) 1P (F S-KEYTOP SD1H BLK (w/WINDOW))	
22495206	RACK KEYPAD (S) 1P (F S-KEYTOP SX1H BLK)	
22495565	RACK POWER BUTTON (F S-BUTTON MX BLK)	POWER

SWITCH/スイッチ

Δ 13129160	SDDL1 TV-5	AC SW	on PSCB
13169752	EVQ-215-04M 100G (TAPING)	Light-touch SW	on PB

JACK, SOCKET/ジャック、ソケット

13449172	HLJ7000-01-3010	Jack (stereo Φ 6.5)	on PB
13449283	HLJ7101-01-3010	Jack (mono Φ 6.5)	on JB
13429274	YKF51-5041	MIDI Connector	on JB
13429552	100-040-000	IC Socket	on MB

DISPLAY UNIT/表示ユニット

15029559	LCM32080YG	LCD Unit
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NOTE : Replacements should be made on a unit basis. No replacements available for individual parts. Replacement only by a unit.

注 : 補修品の交換は、ユニット単位で行って下さい。補修品は、ユニット単位。

PCB ASSY/基板完成品

E 7969290000	MAIN BOARD ASSY (pcb22935456)
7969211000	JACK BOARD ASSY (pcb22953457-00)
7969214000	PANEL BOARD ASSY (pcb22935458-00 1/4)
7969208100	PS/CARD BOARD ASSY 100V/117V (pcb22935459-01 1/4)
7969208900	PS/CARD BOARD ASSY 230V/240V (pcb22935459-01 1/4)

NOTE1: Replacement Main Board Assy does not include the Lithium Battery. Because lithium battery does not use for the back-up of factory presets. Order proper the lithium battery separately if necessary.

NOTE2: Replacement PANEL BOARD Assy consists of the following PCBs. PANEL BOARD/ENCODER BOARD/PHONE BOARD/VOLUME BOARD

NOTE3: Replacement PS/CARD BOARD Assy consists of the following PCBs. PS BOARD/PCM CARD BOARD/DATA CARD BOARD/JUMPER BOARD

NOTE4: Concerning PS/CARD Board Assy The 100V/117V version differs from 230V/240V version only AC Inlet. (Refer to the TABLE-A)

注1 : Main Board Assy上に装着されているリチウム電池は、工場出荷時のデータを保持する目的では使用されていません。Main Board Assyをオーダーしてもリチウム電池は装着されていませんので注意して下さい。リチウム電池が必要な場合は別途、オーダーして下さい。

注2 : 補修用基板は、下記の基板から構成されます。PANEL BOARD/ENCODER BOARD/PHONE BOARD/VOLUME BOARD

注3 : 補修用基板は、下記の基板から構成されます。PS BOARD/PCM CARD BOARD/DATA CARD BOARD/JUMPER BOARD

注4 : PS/CARD BOARD ASSYの100V/117V仕様と230V/240V仕様の違いは、ACインレットだけです。(TABLE-A 参照)

TABLE-A

	100V/117V	230V/240V
AC INLET	INL-8 10A/125V 2P PO (# 23425740)	INL-9 2.5A/250V 2P (# 23425743)

IC

15199852	H8/570	MASK CPU	IC9 on MB
15209445	HN62444BP	4M MASK ROM (Programed)	IC31 on MB
15449324	TMS27C240-10JL	4M EP-ROM (Programed)	IC31 on MB
15209447	TMS27C240-10JL	4M EP-ROM (Blank)	
15209393	HN624116FBD10 A	16M MASK ROM A (WAVE)	IC15 on MB
15209394	HN624116FBD11 B	16M MASK ROM B (WAVE)	IC14 on MB
15209395	HN624116FBD12 C	16M MASK ROM C (WAVE)	IC13 on MB
15235149	HG62E11B24FS	Gate Array (CARD I/O)	IC10 on MB
15239168	MB87731A EP	Custom IC (EP Chip)	IC22 on MB
15239169	MB87424APF-G-LBND	Custom IC (TVF Chip)	IC25 on MB
15239177	TC6088AF	Standard Cell (CSP Chip)	IC27, 28on MB
15239190	HG62E11R46FB	Gate Array (IFCS)	IC26 on MB
15239224	R10-0001	Gate Array	IC6 on MB
15199944	SED1335F0B	LCD Controller	IC8 on MB
15279531	LC36256AML-70-TLM SOP (TAPING)	S-RAM	IC30,32 on MB
15279541	SRM2064M15G (TAPING)	S-RAM	IC7 on MB
15179481	HM514280ZP-80	4M DRAM	IC29 on MB
15209160	PCM61P 18BIT	D/A Converter	IC23 on MB
15249111	TC7WU04F (TE12L) (TAPING/C-MOS)	Triple Inverters	IC19 on MB
15259706T0	TC74HCU04F-T2 (TAPING/HS-CMOS Mini Flat)	Hex Inverters	IC5 on MB
15259738T0	TC74HC138F-T2 (TAPING/HS-CMOS Mini Flat)	3 to 8 Line Inverters	IC3 on MB
15259757T0	TC74HC174F-T2 (TAPING/HS-CMOS Mini Flat)	Hex DFFs with clear	IC1 on MB
15259778T0	TC74HC245F-T2 (TAPING/HS-CMOS Mini Flat)	Oct 3 state Transceiver	IC2 on MB
15169659	MC74HC4046AFEL (C-MOS)	Phase Locked Loop	IC17 on MB
15169508	SN74S124N(TTL)	VCO	IC16 on MB
15259883	TC7S00F TE85L (TAPING)	Single 2 Input NAND Gate	IC33 on MB
15169304H0	HD74LS04P (TTL)	Hex Inverters	IC412 on JB
15169596	TC74HC4051 (H-CMOS)	8ch Multiplexer/Demultiplexer	IC401 on JB
15209159	M51953AFP	Reset IC	IC12 on MB
15229718	6N137	Photo Coupler	IC413 on JB
15189210	BA15218F T2 (TAPING)	OP Amp	IC4,18 on MB
15289110	UPC4062G SOP (TAPING)	OP Amp	IC11 on MB
15289117	NJM5532MD (TAPING)	OP Amp	IC21 on MB
15189235	BA15218N	OP Amp	IC411 on JB
15189243	NJM2082L 8PIN SIP	OP Amp	on JB
15189519	NJM5532SD	OP Amp	on JB
15199286	AN78L05M-(E1) (TAPING)	Voltage Regulator	IC24 on MB
15199287	AN79L05M-(E1) (TAPING)	Voltage Regulator	IC20 on MB
15199184	AN78M15F 0.5A/15V	Voltage Regulator	IC202 on PSCB
15199185	AN79M15F 0.5A/-15V	Voltage Regulator	IC203 on PSCB
15199288	PQ05RH1	Voltage Regulator	IC201 on PSCB

TRANSISTOR/トランジスタ

15309101	2SA1037KR T-146 (TAPING/CHIP)	
15319101	2SC2412KR T-146 (TAPING/CHIP)	
15329507	DTA114EK T-146 (TAPING/CHIP)	Digital Tr
15329516	DTC114EK T-146 (TAPING/CHIP)	Digital Tr
15119135	2SA1115-TP-E (TAPING)	
15129136	2SC2878-A	
15129135	2SC2603-F	
15129198	DTA-124ES-TP (TAPING)	Digital Tr

DIODE/ダイオード

15339105	DAN202K T146 (TAPING/CHIP)	
15339108	DA204K T-146 (TAPING/CHIP)	Diode Array
15339112	DA119 T-146(TAPING/CHIP)	
15039176	D3SBA10	Bridge
15039177	S1NB10 1A/100V	Rectifier
15019456	MTZ18B T-91 (TAPING)	
15019103	1S2473	
15019125	1SS133	
15039247	SLR-305VC-A47 (TAPING)	LED (red)
15029266	SLB-15MW3F	LED (green) MIDI MESSAGE

RESISTOR/抵抗

15399907	MNR34J5A153E (TAPING/CHIP)	Resistor Array
15399932	MNR34J5A101 (TAPING/CHIP)	Resistor Array
15399975	RCE9A223JA (TAPING/CHIP)	Resistor Array
△12559736	ERQ12HUKR22P Forming	Fusing Resistor
15399711	MCR25-221J 1/4W (TAPING/CHIP)	

POTENTIOMETER/ボリューム

13289209	RK0971214 10KBX2 w/SW		on PB
13299257	EVN D8A01B54 50KB	Trimmer Pot.	on MB

CAPACITOR/コンデンサ

△13529104	DE7150F 472MVA1 KC	
13649695	35V1000 SMG35VB1000	Electrolytic Cap.
13669407	16V6800 SMG16VB6800	Electrolytic Cap.
13639118	6.3V3300 SMG6.3VB3300	Electrolytic Cap.
13549112M0	ECQ-M1H392JF0.0039 μ F	Polyester Film Cap.
13549115M0	ECQ-M1H682JF0.0068 μ F	Polyester Film Cap.
13549121M0	ECQ-M1H223JF0.022 μ F	Polyester Film Cap.
13549133M0	ECQ-M1H224JF0.22 μ F	Polyester Film Cap.
13539101	ECQ-B1H221KF220pF	Polyester Film Cap.

INDUCTOR, COIL, FILTER/インダクタ、コイル、フィルター

12449418	ELKTH560BA	Digital Noise Filter
13529188	ELKTT101GA (TAPING)	Digital Noise Filter
12449460	EXC-ELDR25C	Ferrite Bead
12449358	FL5R200N PNT (TAPING)	Coil
13529164	DSS306-55-F223Z16	EMI Filter

CRYSTAL, RESONATOR/クリスタル、発振子

15299204	SG5311 67.7376MHZ	Crystal Module	on MB
15299132	MA-506 20.000MHZ (TAPING)	Crystal	on MB

ENCODER/エンコーダー

13289196	RK09710W		on PB
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CONNECTOR/コネクタ

13429233	7508095A (34P)	Card Connector	
13429345	JC-20-C40PC-LT2-A1H(40P)	IC Card Connector	
△13439326	5219-02A (2P)		on PSCB
13429833	52411-0401 (40P)		on EXP BOARD
13379151	IL-FPC-14ST-N (14P)		
13439333	IL-S-2P-S2T2-EF (2P)		
13439330	IL-S-3P-S2T2-E (3P)		
13439335	IL-S-6P-S2T2-EF (6P)		
13439296	IL-S-7P-S2T2-EF (7P)		
13439345	IL-S-9P-S2T2-EF (9P)		
13439298	IL-S-10P-S2T2-EF (10P)		
13439331	IL-S-11P-S2T2-EF (11P)		
13439336	IL-S-12P-S2T2-EF (12P)		
13439338	IL-S-14P-S2T2-EF (13P)		

WIRING, CABLE/ワイヤリング、ケーブル

23475439	14 \times 190-A6.0 BRR-H10	MB-LCD
23505639	WIRING HARNESS W-1	MB-JB
23505641	WIRING HARNESS W-3	PB-MB
23505642	WIRING HARNESS W-4	PB-MB
23505643	WIRING HARNESS W-5	PSCB-MB
23505644	WIRING HARNESS W-6	PSCB-MB
23505645	WIRING HARNESS W-7	PSCB-MB
23505646	WIRING HARNESS W-8	PSCB-MB
23505647	WIRING HARNESS W-9	PSCB-MB
23505648	WIRING HARNESS W-10	PSCB-MB
23505649	WIRING HARNESS W-11	PSCB-MB
23505650	WIRING HARNESS W-12	PSCB-MB
23505651	WIRING HARNESS W-13	PSCB-JB
23505652	WIRING HARNESS W-14	PB-ENCODER
23505653	WIRING HARNESS W-15	PB-LED (MIDI MESSAGE)
23505654	WIRING HARNESS W-16	JB-PHONE BOARD
23505655	WIRING HARNESS W-17	JB-VOLUME BOARD
△23505656	WIRING HARNESS W-18	TRANS-PSCB
23505657	WIRING HARNESS W-19	PSCB-JUMPER BOARD
23505801	WIRE	
23505807	WIRE 2 (ジュンビセン2)	

TRANSFORMER/トランス

△22455694U0	Power Transformer	UNIVERSAL	100V/120V/220V/240V
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AC INLET/ACインレット

△23425740	INL-8 10A/125V 2P PO	AC INLET 100V/117V
△23425743	INL-9 2.5A/250V 2P	AC INLET 230V/240V

BATTERY/電池

12569249S0	CR2032	Lithium Battery
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SCREW/ネジ類

22153526	Boss Nut # 526
*****	3 \times 8mm Binding B-tight BC
*****	3 \times 8mm Binding B-tight Cm
*****	3 \times 8mm W-Sems Cm
*****	M12 Jack Nut BC
*****	3 \times 8mm Flat B-tight BC
*****	M4 Nut w/spring washer Cm
*****	Internal tooth washer Φ 7
*****	M3 \times 8 \times 0.8mm Fiber Washer
*****	4 \times 8mm Binding S-tight BC
*****	4 \times 10mm Binding B-tight BC

MISCELLANEOUS/その他

22255379	SHIELD SHEET	
12569420	Lithium Battery Holder (for CR2032)	
12189810	Double Locking Spacer WLS-14-094VO	
2214021900	Arm 214-219	
2215040400	Sleeve 215-404	
22225374	Card Escutcheon F C-ESCT MIH BLK	
22135612	Rack Button Guide F B-ESCT MX1H BLK	
22135613	Rack LED Guide F L-ESCT MD1H BLK	
△12449229	FKOB160MH15 250VAC FL	on PSCB
22465232	HEAT SINK	on PSCB
△*****	PVC Tube EIT-30 6AWG VW-1 Φ 4.1mm L = 105mm 117V only	

ACCESSORIES(Standard)/標準付属品

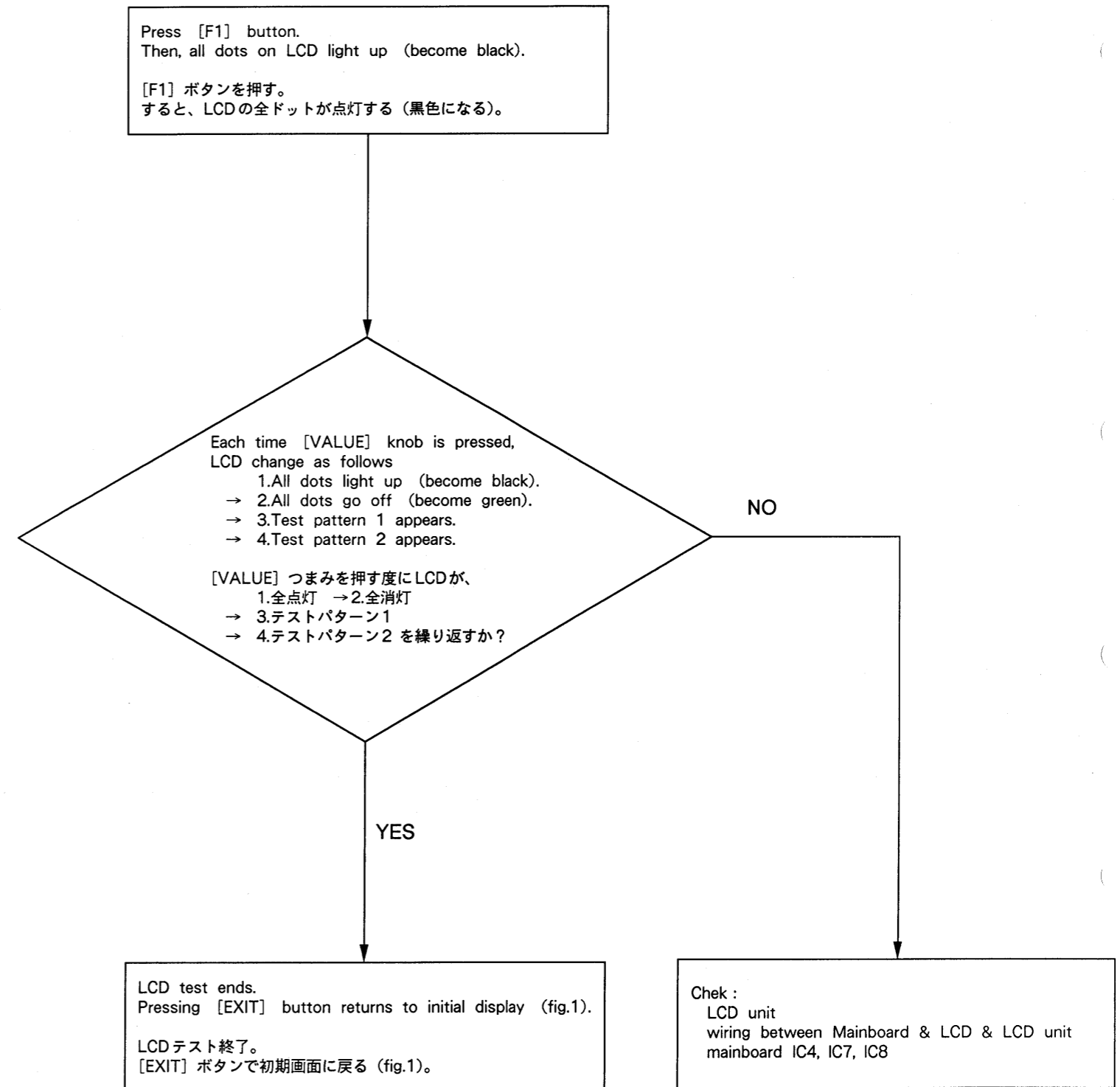
△13499219	DC-382-J01	AC Cord Set (100V Detachable/着脱式)
△13499220	SJT2P18AWG60P0 UC712	AC Cord (117V Detachable/着脱式)
△13499221	EC-511-E07	AC Cord Set (230V Detachable/着脱式)
△13499222	SC-472-J03	AC Cord Set (240VA Detachable/着脱式)
△13499223	PHE8-VCTFK-BS	AC Cord Set (240VE/Detachable/着脱式)
23485228	MIDI Cable 1M (Black) 348-228	
26055661	Owner's Manual Set (Japanese)	
26055662	Owner's Manual Set (English)	

TEST MODE

テストモード

<p>To enter the Test mode</p> <p>テストモードへの入り方</p> <p>Required Items/準備する物</p> <ul style="list-style-type: none"> • PCM Card/PCM カード • 2 DATA Card/DATA カード 2枚 (Refer to Card Test) (カードテストの項参照) • EXP Board/EXP ボード (Set in advance) (あらかじめセットして置く事) • Headphones/ヘッドフォン • 8CH (or more) Mixer/8CH(以上の) ミキサー • Oscilloscope/オシロスコープ • Philips Screwdriver (+head)/ プラスドライバー 	<p>(1) Press [INC]+[DEC] buttons.</p> <p>(2) Holding down them, turn the power on.</p> <p>(3) Test mode program runs automatically. Then, the initial display shown in [fig.1] appears on LCD.</p> <p>The program version number is displayed on the upper right of the screen.</p> <p>(1) [INC]ボタンと[DEC]ボタンを押す。</p> <p>(2) ボタンを押したまま電源を投入する。</p> <p>(3) テストモード用プログラムが走り、その初期画面[fig.1]がLCDに表示される。画面右上にプログラムのバージョン・ナンバーが表示される。</p> <p>[fig.1]</p> <table border="1" data-bbox="706 600 1228 793"> <tr> <td>Test Mode</td> <td>[] Test Menu []</td> <td>Ver 1.00</td> </tr> <tr> <td>[F1] LCD Test</td> <td>[] [UTILI]TY +</td> <td></td> </tr> <tr> <td>[F2] LED Test</td> <td>[F1] Sound Test</td> <td></td> </tr> <tr> <td>[F3] SW&Encoder Test</td> <td>[F2] Effect Test</td> <td></td> </tr> <tr> <td>[F4] Memory Test</td> <td>[F3] MSB Adjust</td> <td></td> </tr> <tr> <td>[F5] Card Test</td> <td>[F4] Exit Test Mode & Load Factory Data</td> <td></td> </tr> <tr> <td>[F6] MIDI Test</td> <td></td> <td></td> </tr> <tr> <td>[LCD]</td> <td>[LED]</td> <td>[SW&ENC]</td> </tr> <tr> <td>[Memory]</td> <td>[Card]</td> <td>[MIDI]</td> </tr> </table>	Test Mode	[] Test Menu []	Ver 1.00	[F1] LCD Test	[] [UTILI]TY +		[F2] LED Test	[F1] Sound Test		[F3] SW&Encoder Test	[F2] Effect Test		[F4] Memory Test	[F3] MSB Adjust		[F5] Card Test	[F4] Exit Test Mode & Load Factory Data		[F6] MIDI Test			[LCD]	[LED]	[SW&ENC]	[Memory]	[Card]	[MIDI]
Test Mode	[] Test Menu []	Ver 1.00																										
[F1] LCD Test	[] [UTILI]TY +																											
[F2] LED Test	[F1] Sound Test																											
[F3] SW&Encoder Test	[F2] Effect Test																											
[F4] Memory Test	[F3] MSB Adjust																											
[F5] Card Test	[F4] Exit Test Mode & Load Factory Data																											
[F6] MIDI Test																												
[LCD]	[LED]	[SW&ENC]																										
[Memory]	[Card]	[MIDI]																										
<p>Test Item</p> <p>テスト項目</p>	<p>The following nine tests are available for JD-990. Refer to the each Test item for details.</p> <p>JD-990には以下の9つのテストがあります。各テストの詳細については各テスト項目を参照してください。</p> <p>F1 : LCD Test/LCDテスト</p> <p>F2 : LED Test/LEDテスト</p> <p>F3 : SW&Encoder Test/SW・エンコーダーテスト</p> <p>F4 : Memory Test/メモリーテスト</p> <p>F5 : Card Test/カードテスト</p> <p>F6 : MIDI Test/MIDIテスト</p> <p>+ [UTILI]TY</p> <p>F1 : Sound Test/サウンドテスト</p> <p>F2 : Effect Test/エフェクトテスト</p> <p>F3 : MSB Adjust/MSB アジャスト</p>																											
<p>To exit the Test Mode. (Refer to Exit Test Mode)</p> <p>テストモードの抜け方</p>	<p>(1) Select "Exit Test Mode".</p> <p>(2) Push [VALUE] knob.</p> <p>(3) The operation exits the Test mode and automatically loads "Factory Data".</p> <p>(1) "Exit Test Mode"を選択する。</p> <p>(2) [VALUE]つまみを押す。</p> <p>(3) テストモードを抜けると同時に工場出荷データが自動的にロードされる。</p>																											
<p>To exit the Test Item</p> <p>各テスト項目の抜け方</p>	<p>(1) Press [Exit] button after having passed each test item.</p> <p>(2) Press [UTILITY]+[EXIT] buttons, when you want to exit the test item.</p> <p>(1) 基本的には各テスト項目をパスした後、[EXIT]ボタンを押します。</p> <p>(2) 強制的に抜きたい時は、[UTILITY]+[EXIT]ボタンを押します。</p>																											

LCD TEST/LCD テスト

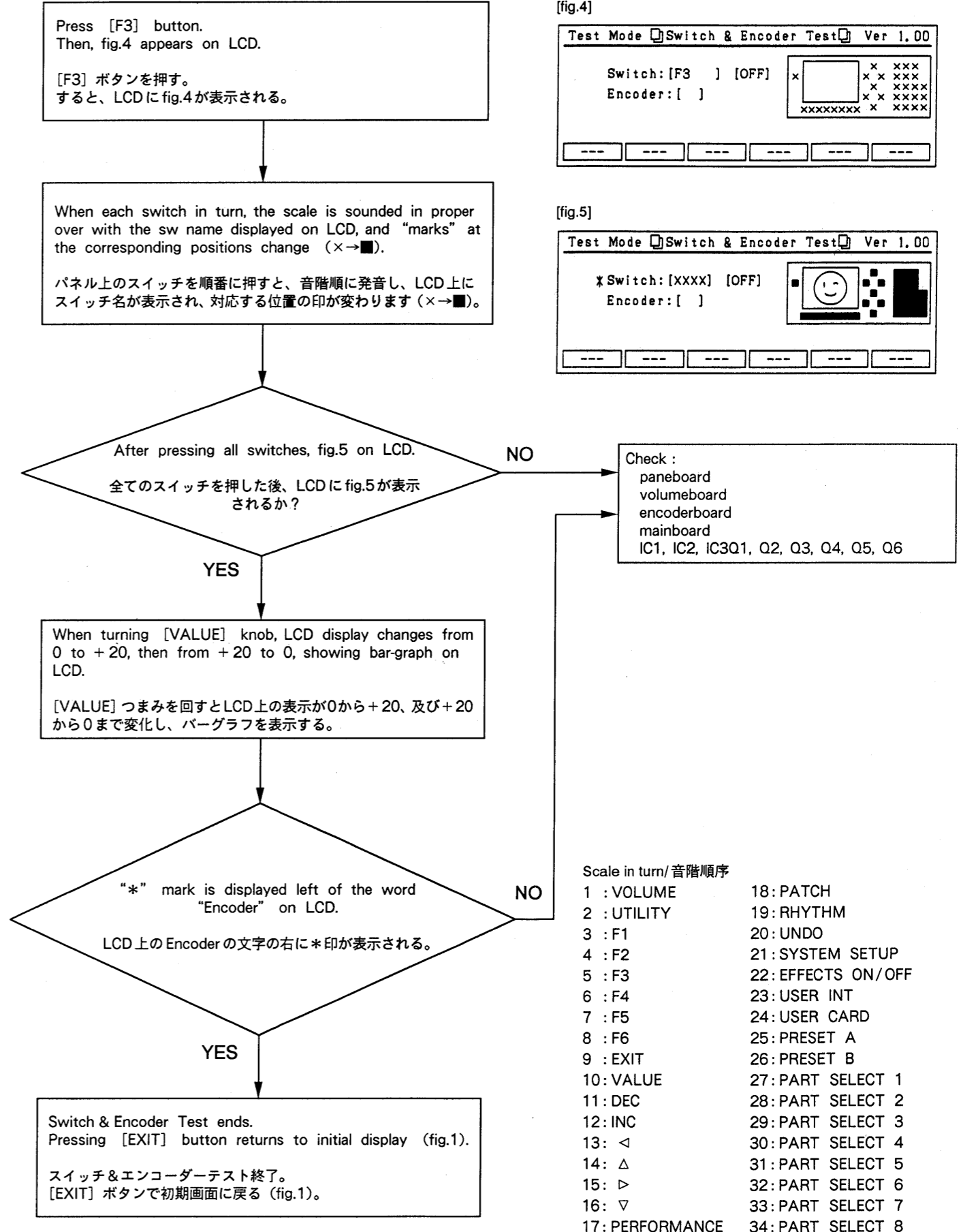
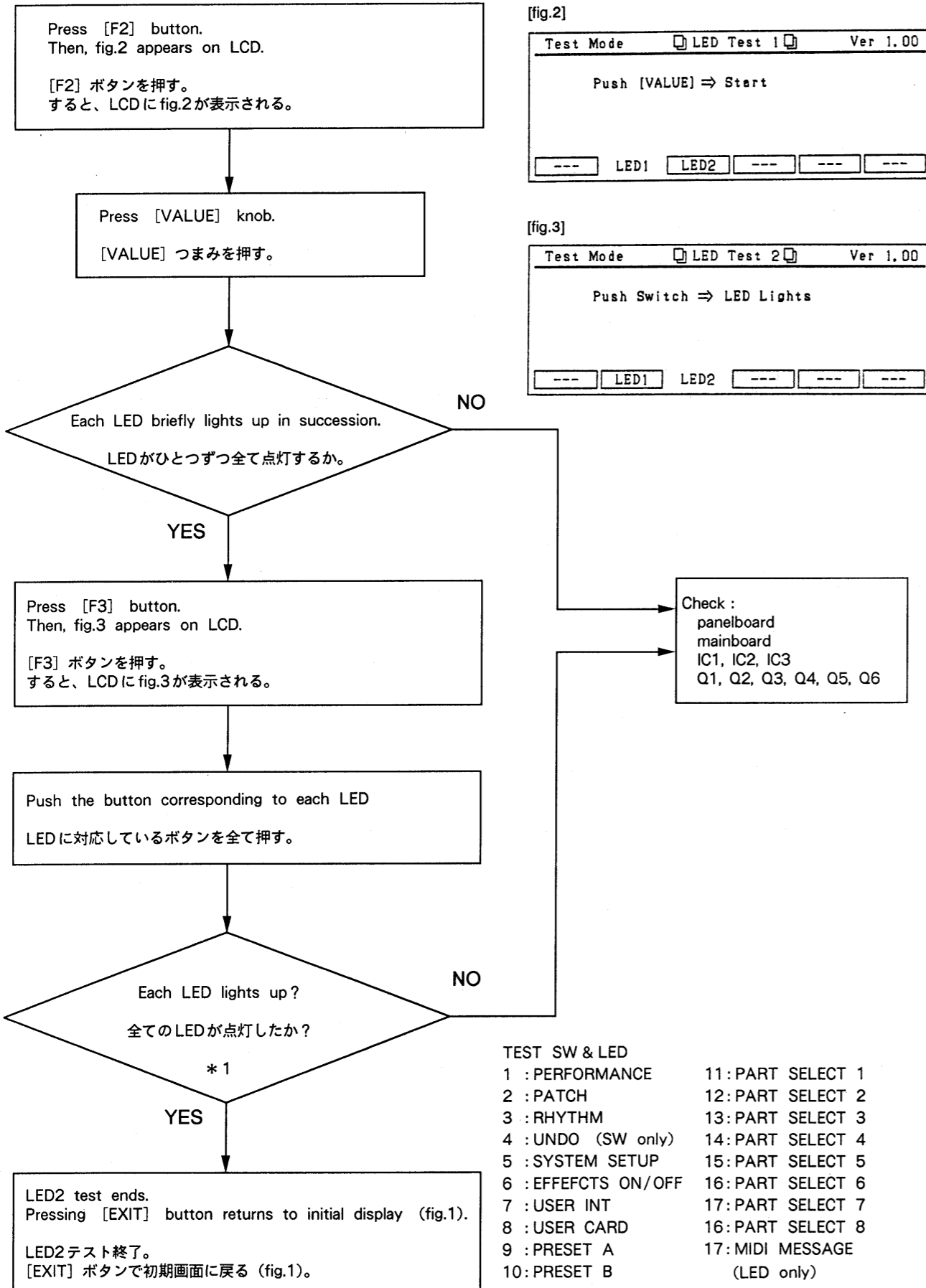


*Test patterns 1 and 2 have neutral tints over the whole surface. テストパターン1と2は中間色。

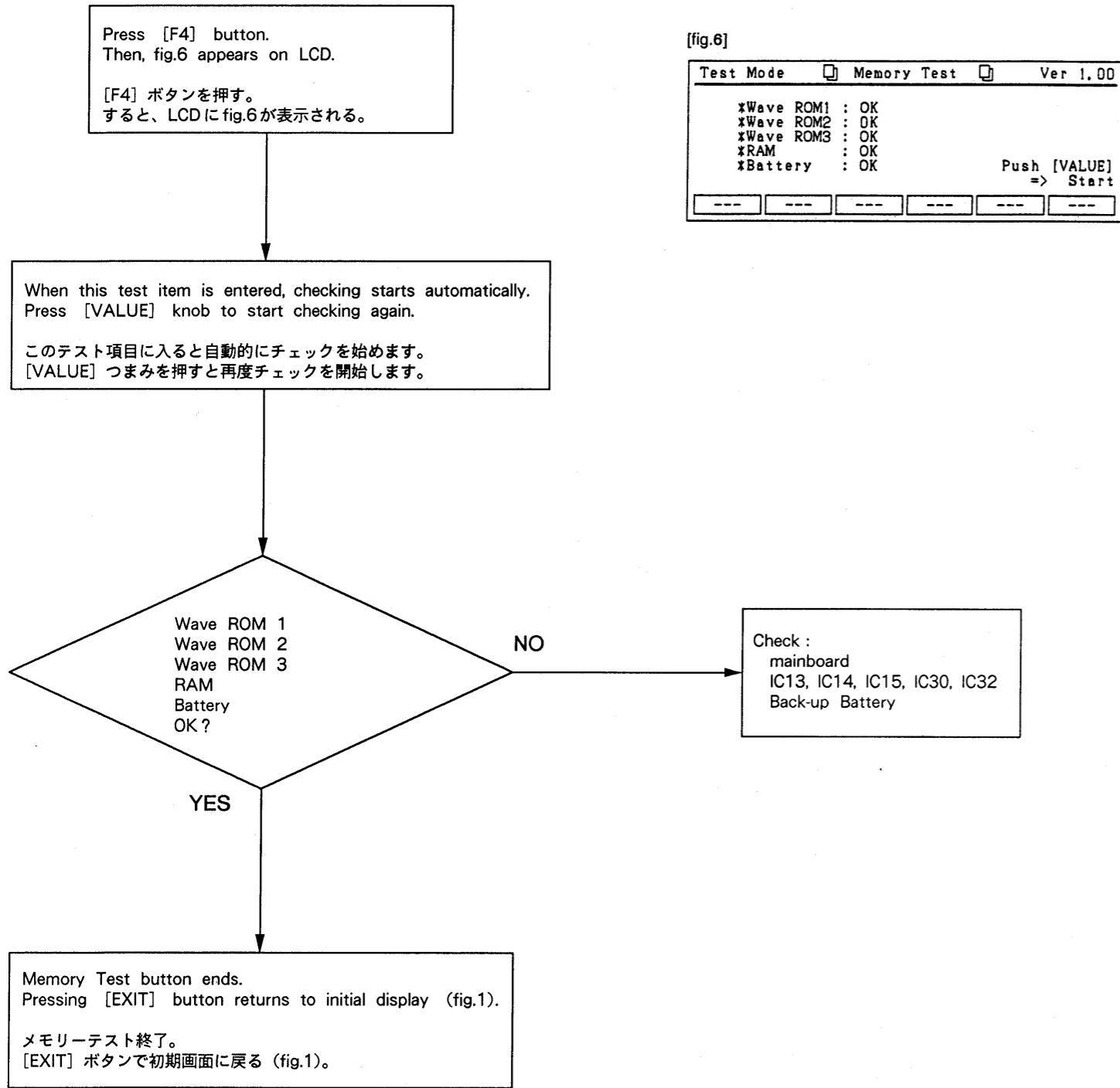
*When turning [VALUE] knob, LCD contrast changes. [VALUE] つまみを回すと、LCDのコントラストが変化する。

LED TEST/LED テスト

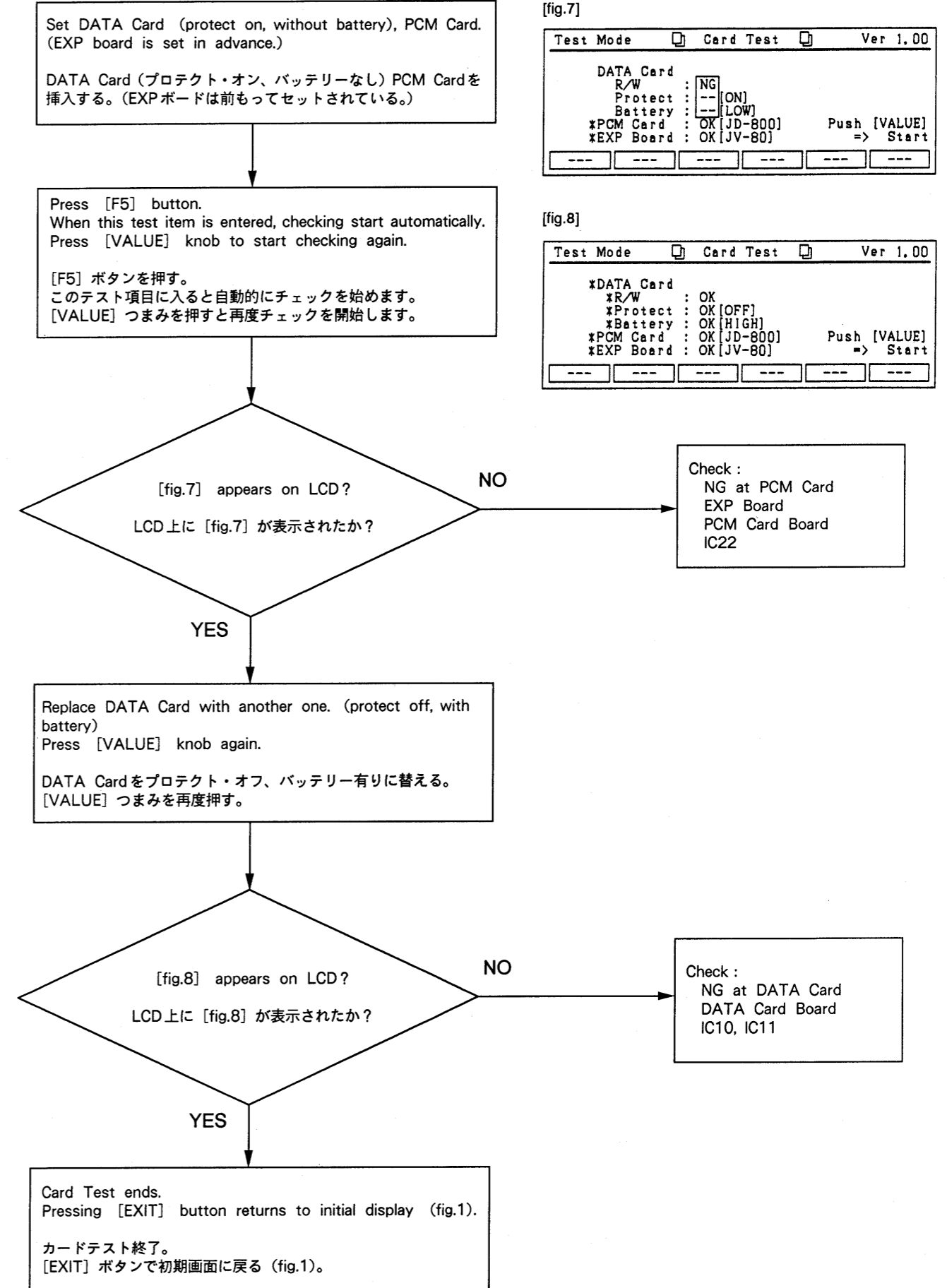
SWITCH&ENCODER TEST/ スイッチ & エンコーダーテスト



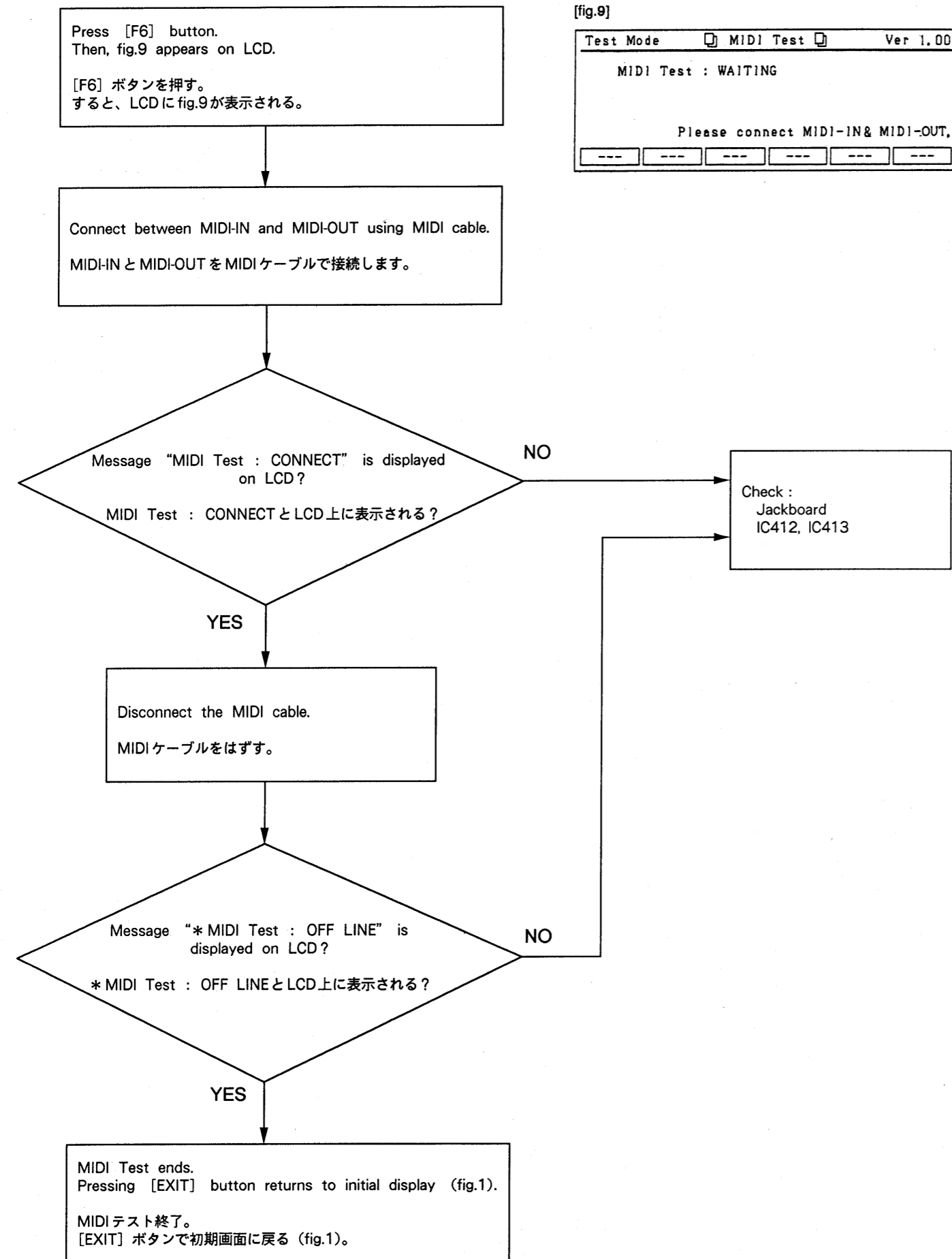
MEMORY TEST/メモリーテスト



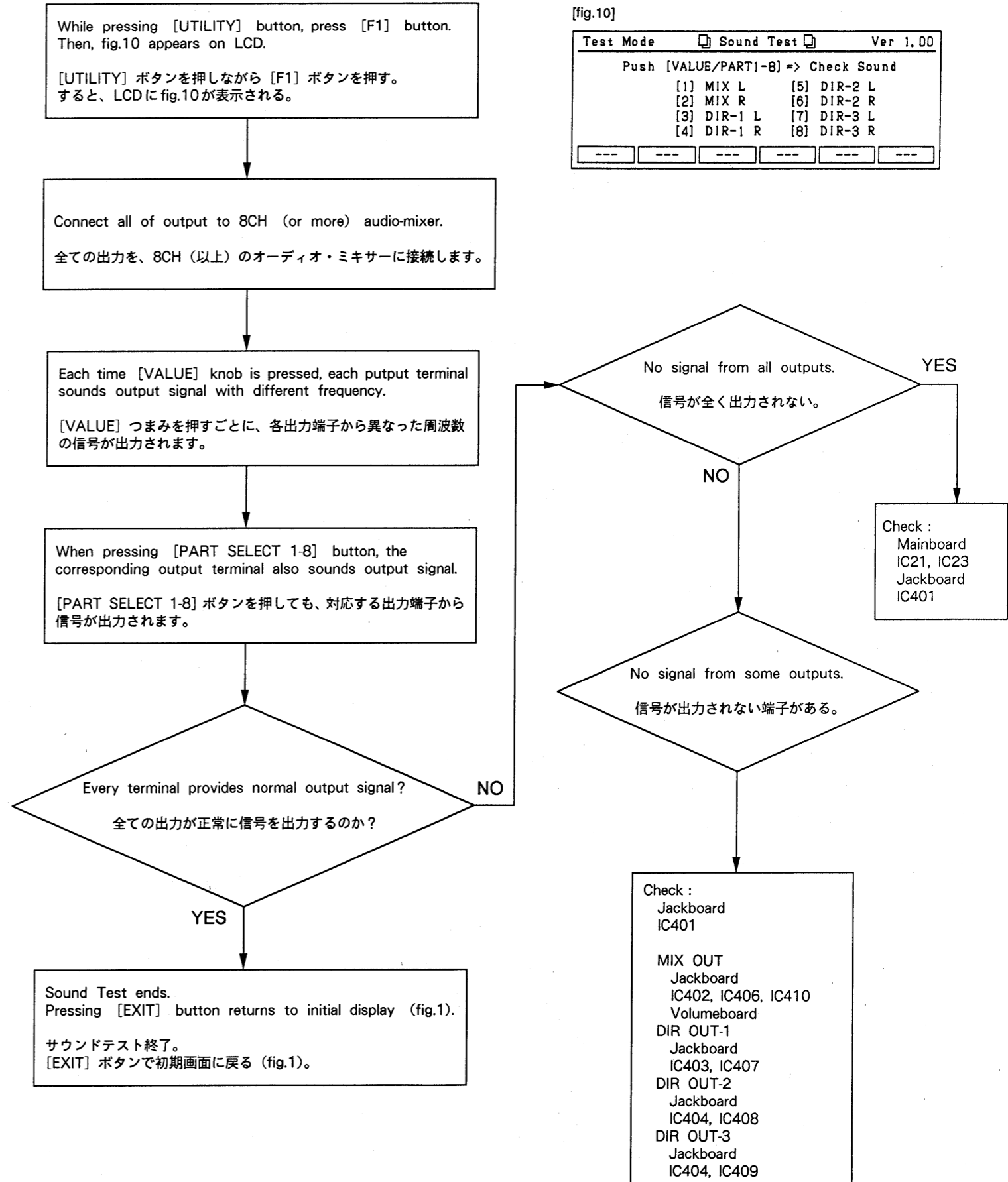
CARD TEST/カードテスト



MIDI TEST/MIDI テスト



SOUND TEST/サウンドテスト



MSB ADJUST/MSB調整

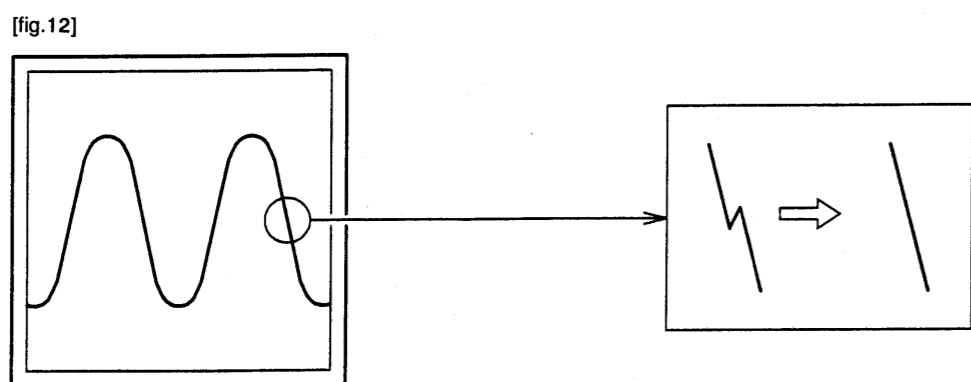
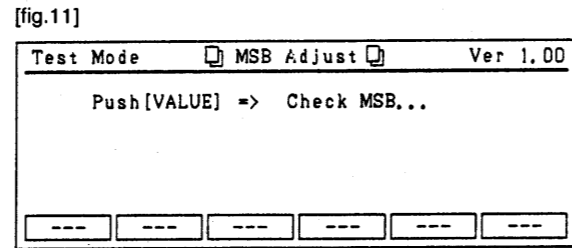
Connect the oscilloscope to MIX OUT. (L or R), and the measurement range to "10mv/Div, 0.5mSec/Div".
 オシロスコープをMIX OUT.に接続し、測定レンジを10mv/Div, 0.5mSec/Divにセットする。

Turn up the volume fully. While pressing [UTILITY] button, pressing [F3] button. Then, fig.11 appears on LCD.
 ボリュームを一杯に上げておく。[UTILITY] ボタンを押しながら [F3] ボタンを押す。すると、LCDにfig.11が表示される。

Press [VALUE] knob, then sine-wave is reproduced. (440Hz)
 [VALUE] つまみを押すとサイン波が出力される。(440Hz)

Watch the oscilloscope screen, adjust VR1 so that sine wave becomes smooth. (fig.12)
 オシロスコープの画面を見ながら、サイン波が滑らかになる様にVR1を調整する。(fig.12)

MSB Adjust ends. Pressing [EXIT] button returns to initial display (fig.1).
 MSB調整終了。[EXIT] ボタンで初期画面に戻る (fig.1)。



Adjust zero-cross-point so that it becomes smooth. ゼロ・クロス・ポイントが、滑らかになる様に調整。

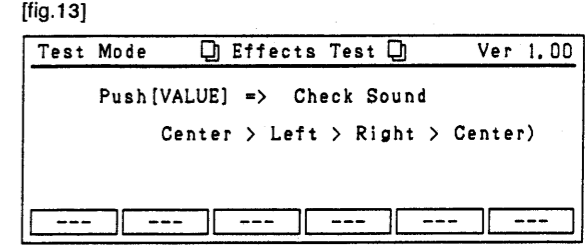
EFFECTS TEST/エフェクトテスト

While pressing [UTILITY] button, press [F2] button. Then, fig.13 appears on LCD.
 [UTILITY] ボタンを押しながら [F2] ボタンを押す。すると、LCDにfig.13が表示される。

When pressing [VALUE] knob, delay tone is sounded from MIX OUT and PHONES.
 [VALUE] つまみを押すとディレイ音が、MIX OUT及びPHONESから出力されます。

Sounds snare tone (Center→Left→Right→Center) in turn?
 スネアの音が、中央→左→右→中央の順に聞こえる?

Effect Test ends. Pressing [EXIT] button returns to initial display (fig.1).
 エフェクトテスト終了。[EXIT] ボタンで初期画面に戻る (fig.1)。



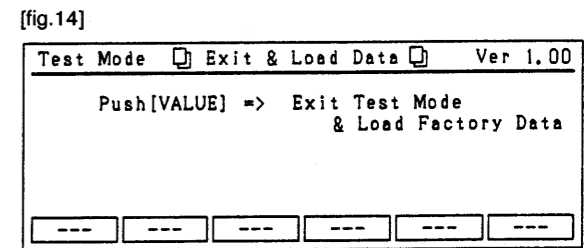
Check : Main Board IC27, IC28

EXIT TEST MODE/テストモード終了

While pressing [UTILITY] button, press [F4] button. Then, fig.14 appears on LCD.
 [UTILITY] ボタンを押しながら [F4] ボタンを押す。すると、LCDにfig.14が表示される。

Pressing [VALUE] knob loads Factory Data and exits Test Mode. (Changes into Patch Mode)
 [VALUE] つまみを押すと工場出荷データにインシャライズされ、テストモードを抜けます。(パッチモードになる)

Test Mode ends. テストモード終了。



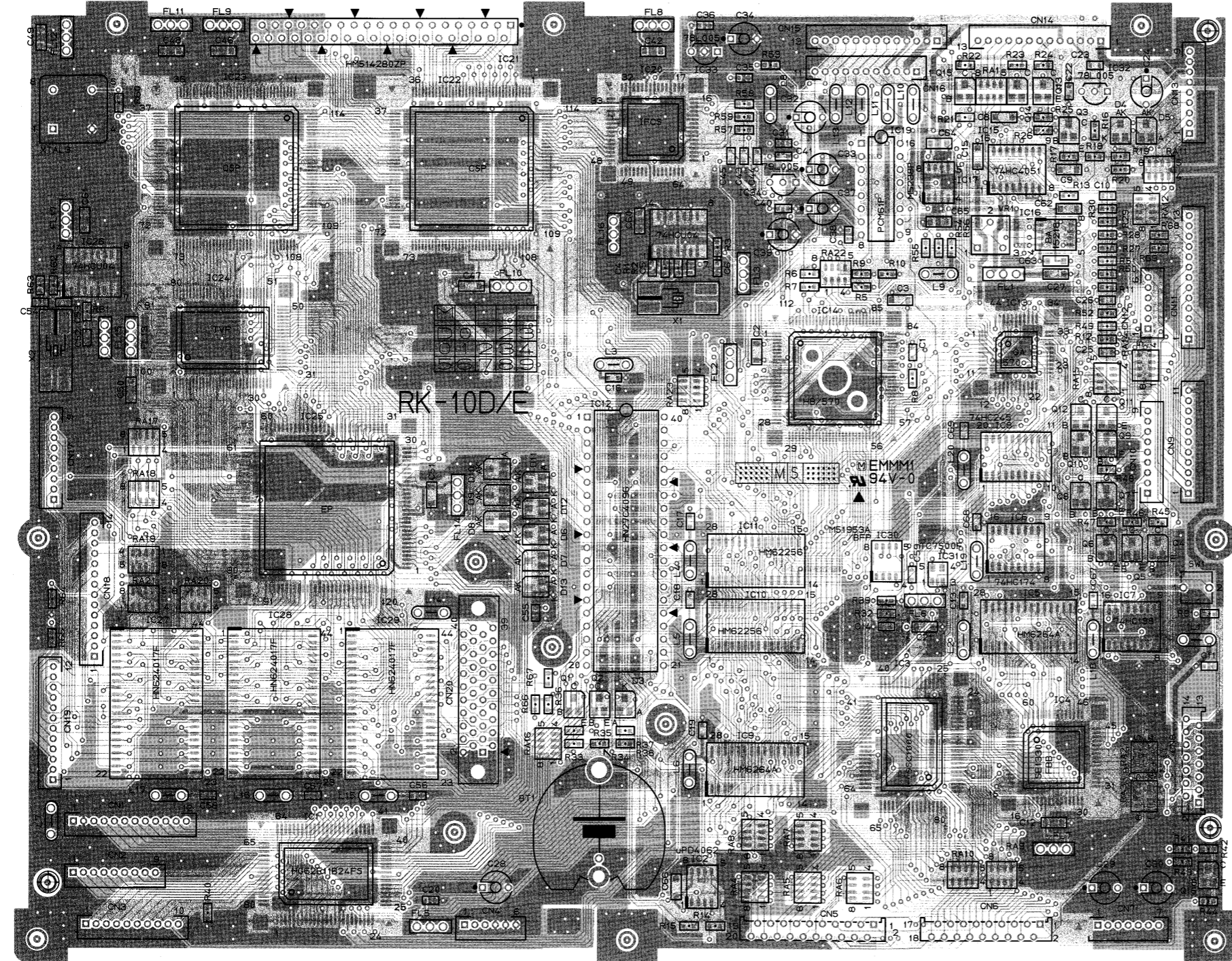
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

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E MAIN BOARD
Assy7969290000
(pcb 22935456)

NOTE1 : Replacement Main Board Assy does not include the Lithium Battery.
Because lithium battery does not use for the back-up of factory presets. Order proper the lithium battery separately if necessary.
12569249S0 Lithium Battery CR2032

注1 : Main Board Assy上に装着されているリチウム電池は、工場出荷時のデータを保持する目的では使用されていません。
Main Board Assyをオーダーしてもリチウム電池は装着されていないので注意して下さい。リチウム電池が必要な場合は別途、オーダーして下さい。 12569249S0 Lithium Battery CR2032



View from components side.

For Nordic Countries

Apparatus containing Lithium batteries

ADVARSEL!

Lithiumbatteri – Eksplosjonsfare ved feilagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL!

Lithiumbatteri – Eksplosjonsfare.
Ved utskiftning benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING!

Explosionsfara ved felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparatillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

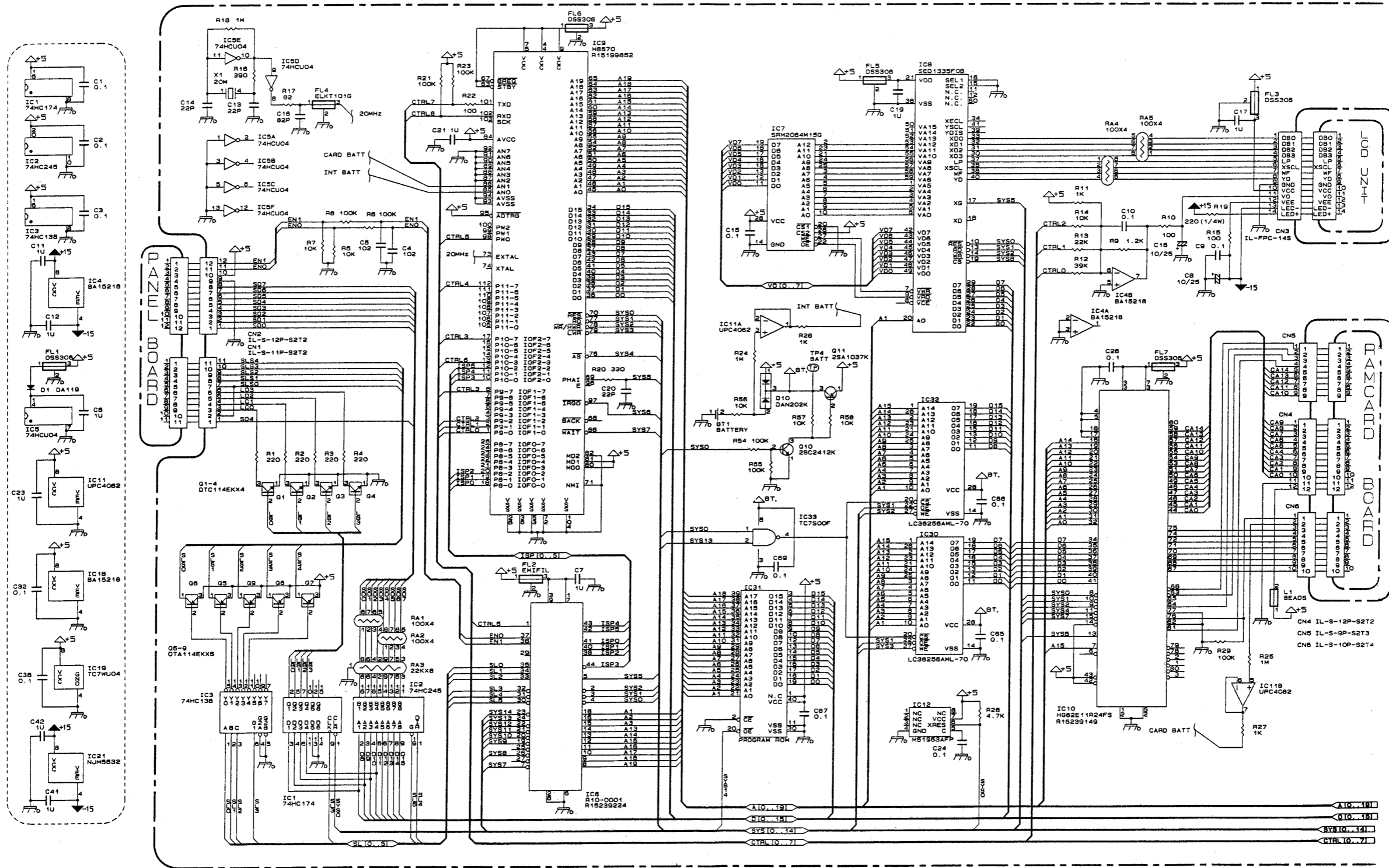
VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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

CIRCUIT DIAGRAM / 回路图 (MAIN 1/2)

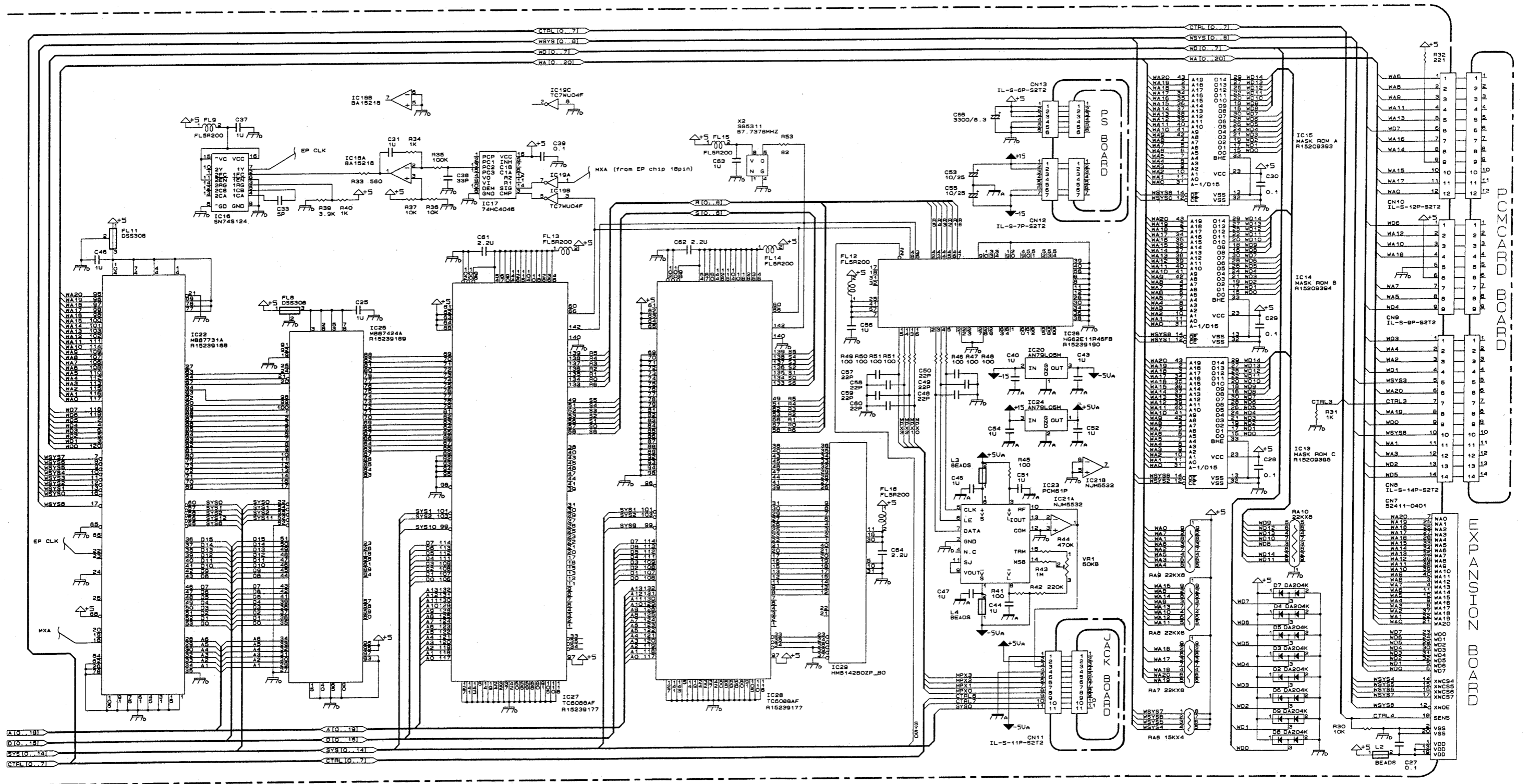
A B C D E F G H I J K L M N O P Q R S T U V



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

CIRCUIT DIAGRAM / 回路図 (MAIN 2/2)

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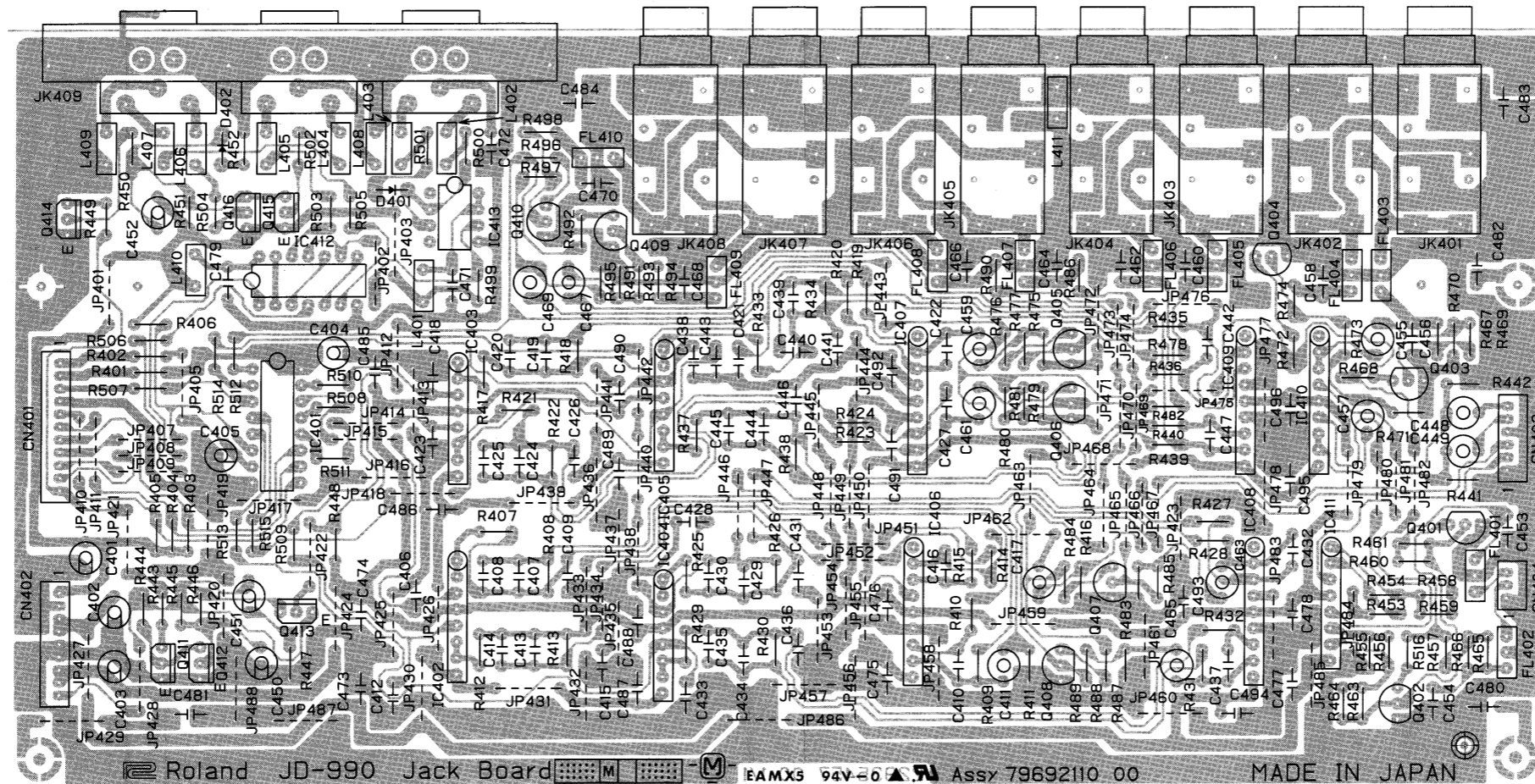


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

JCAK BOARD

Assy7969211000
(pcb 22953457-00)

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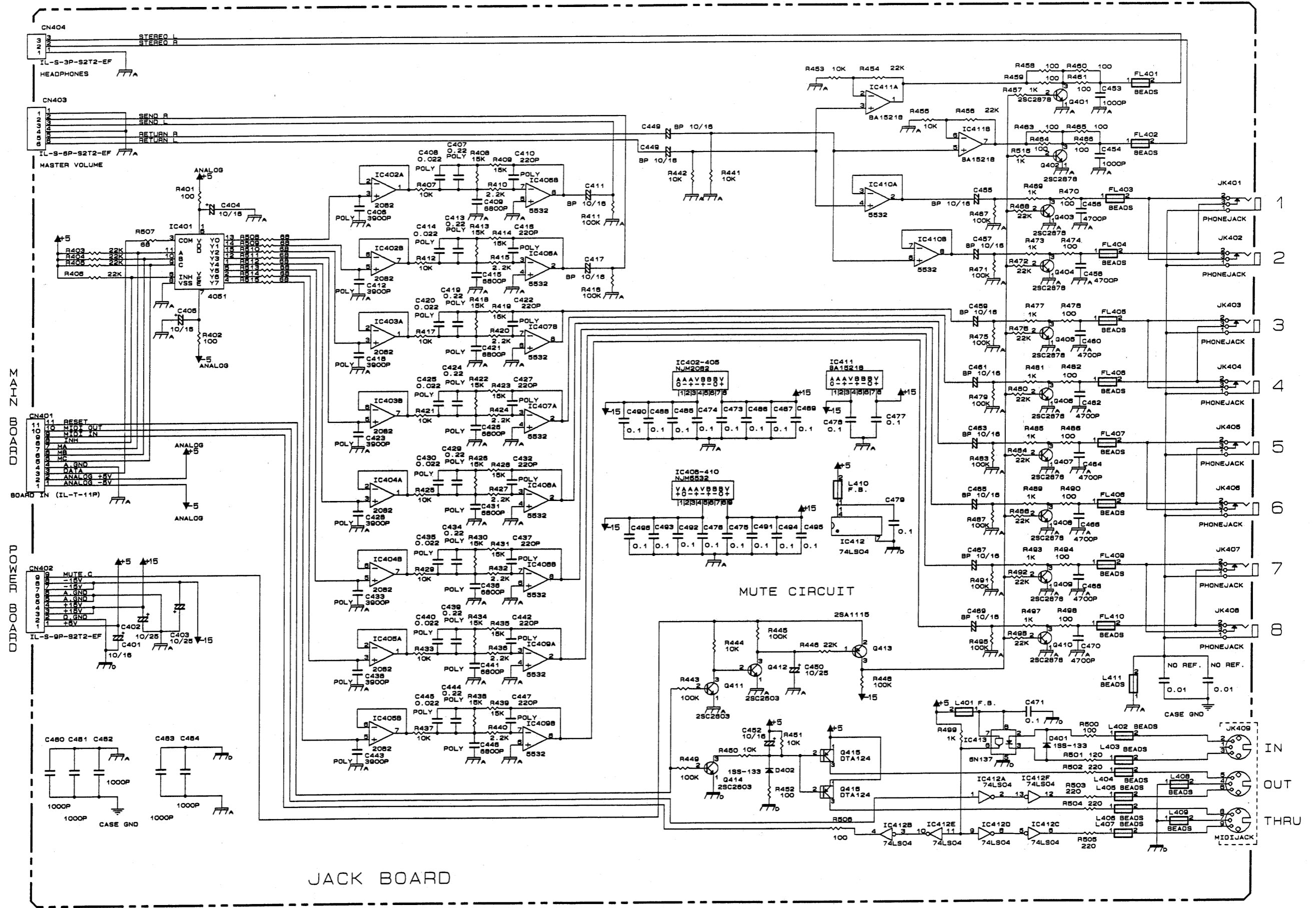


Roland JD-990 Jack Board EAMX5 94V-0 Assy 79692110 00 MADE IN JAPAN

View from components 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

CIRCUIT DIAGRAM / 回路図 (JACK)



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PS/CARD BOARD

100V/117V
Assy7969208100
(pcb 22935459-01 1/4)

230V/240V
Assy7969208900
(pcb 22935459-01 1/4)

NOTE1 : Replacement PS/CARD BOARD Assy consists of the following PCBs.
PS BOARD/PCM CARD BOARD/DATA CARD BOARD/JUMPER BOARD

NOTE2 : Concerning PS/CARD Board Assy The 100V/117V version differs from 230V/240V version only AC Inlet.(Refer to the TABLE-A)

注1 : 補修用基板は、下記の基板から構成されます。
PS BOARD/PCM CARD BOARD/DATA CARD BOARD/JUMPER BOARD

注2 : PS/CARD BOARD ASSYの100V/117V仕様と230V/240V仕様の違いは、ACインレットだけです。(TABLE-A 参照)

TABLE-A

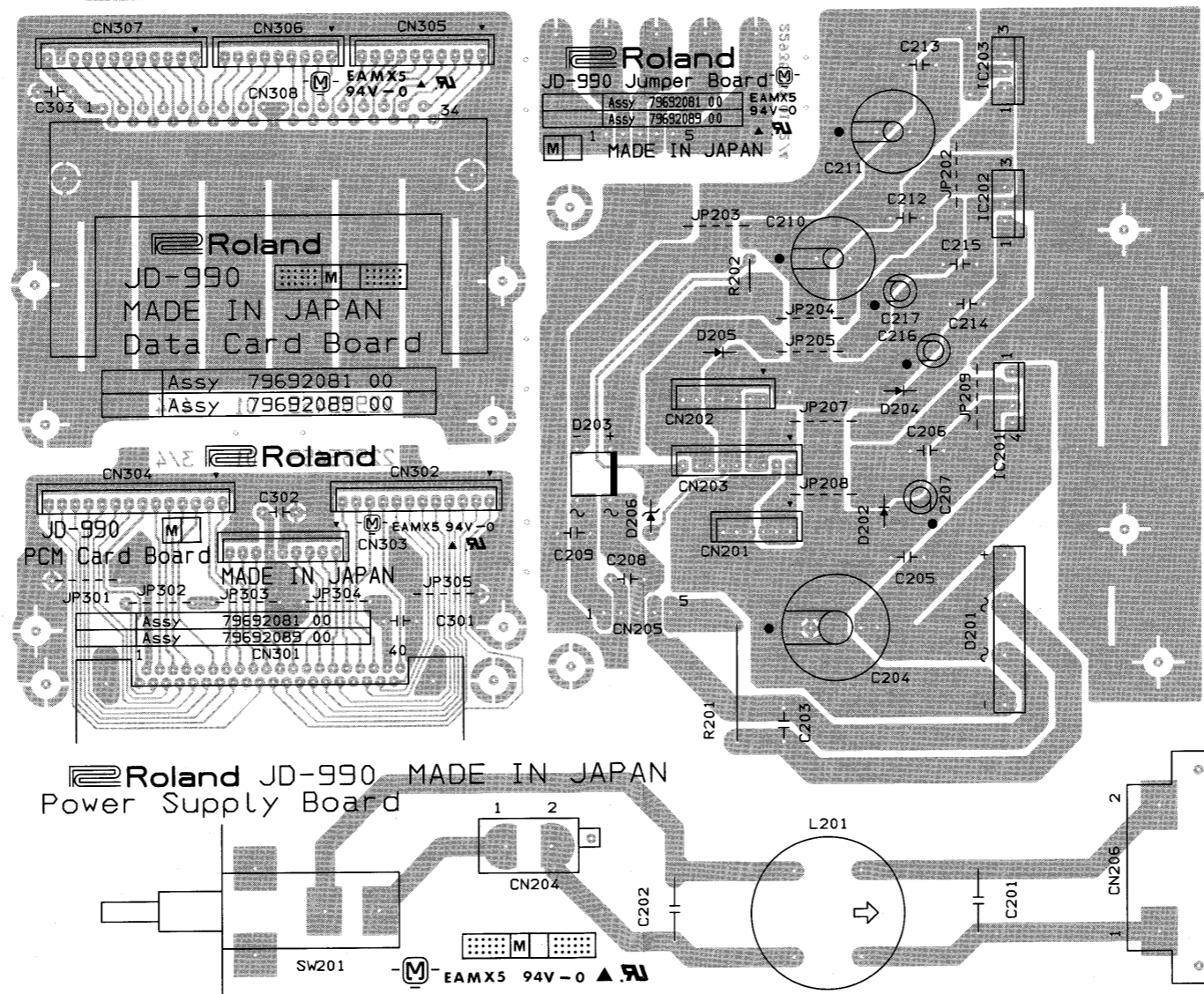
	100V/117V	230V/240V
AC INLET	INL-8 10A/125V 2P PO (# 23425740)	INL-9 2.5A/250V 2P (# 23425743)

JUMPER BOARD
(pcb 22935159-01 2/4)

DATA CARD BOARD
(pcb 22935159-01 4/4)

PCM CARD BOARD
(pcb 22935159-01 3/4)

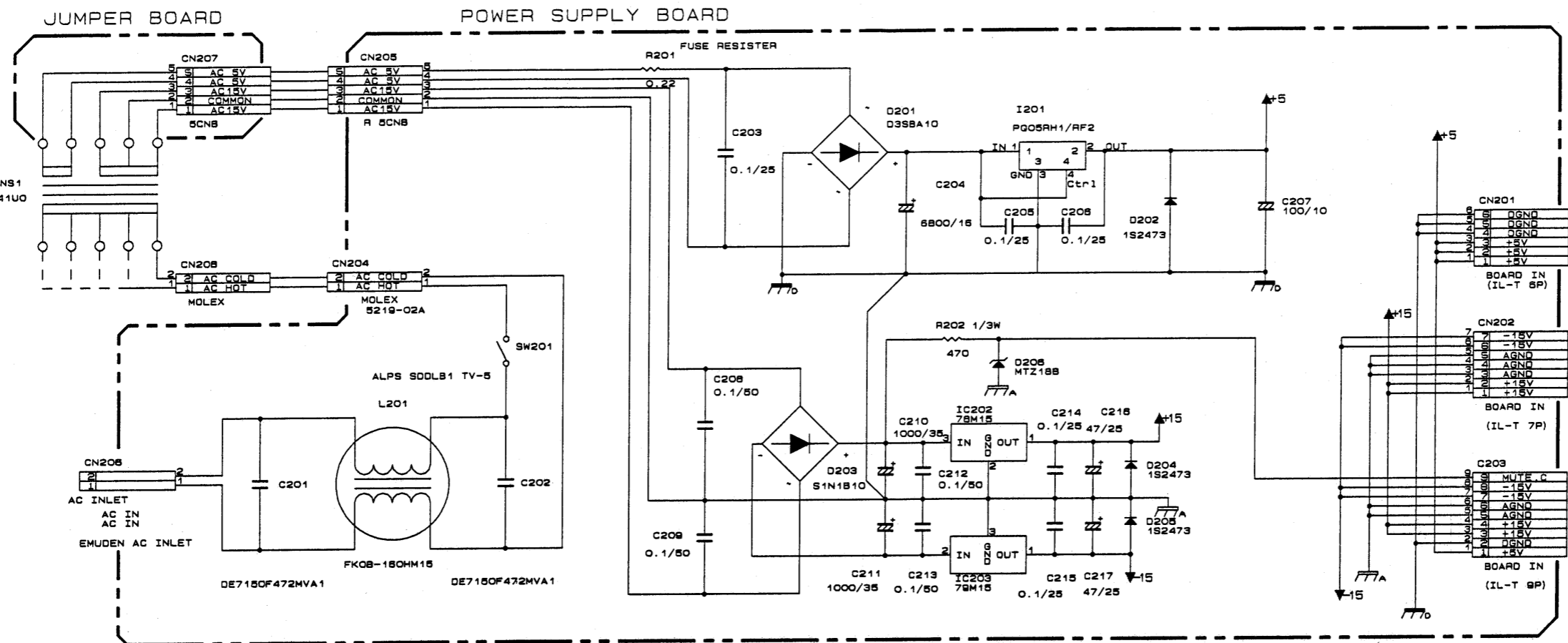
POWER SUPPLY BOARD
(pcb 22935159-01 1/4)



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

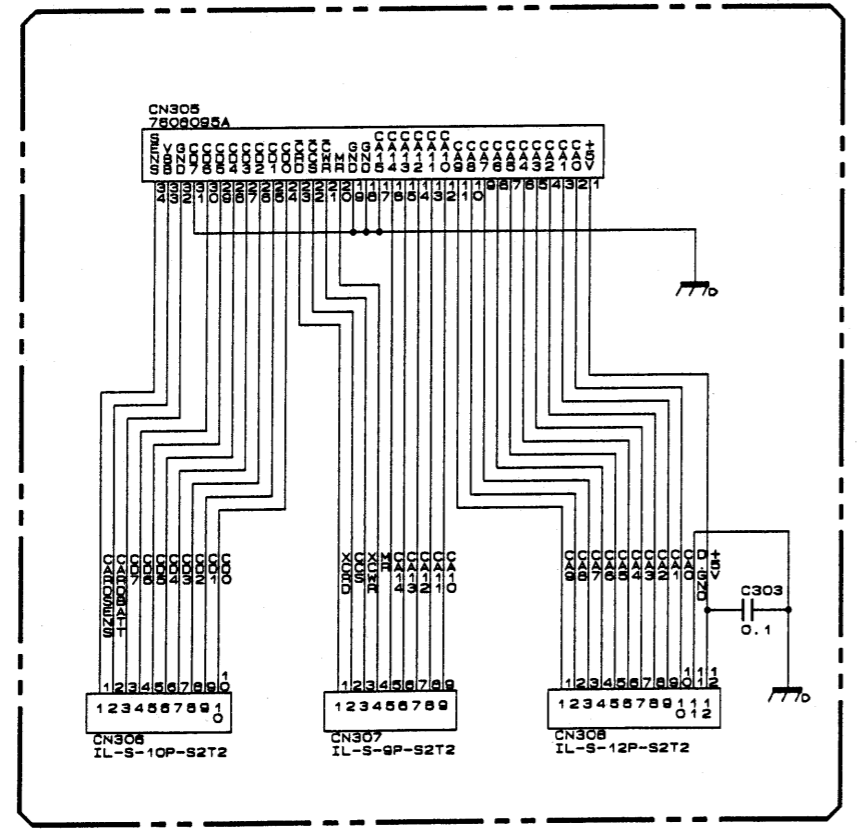
CIRCUIT DIAGRAM / 回路図 (PS/PCM CARD/DATA CARD/JUMPER)

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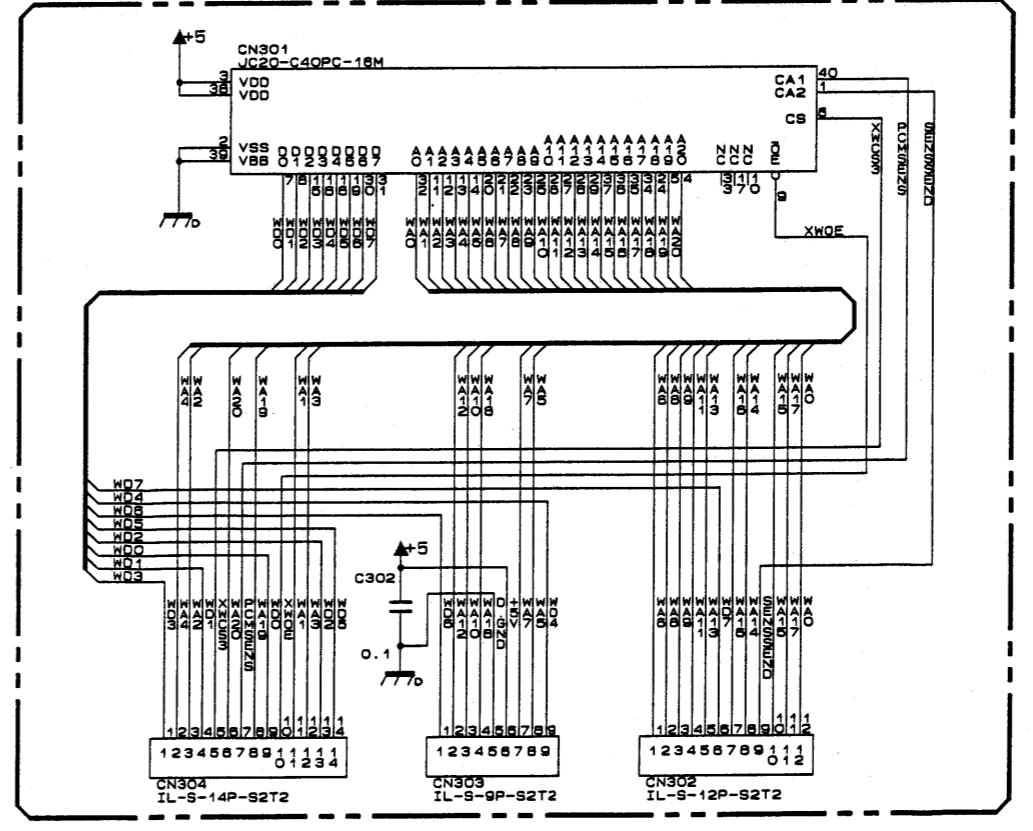


MHZ BOARD
DATA BOARD

DATA CARD BOARD



PCM CARD BOARD



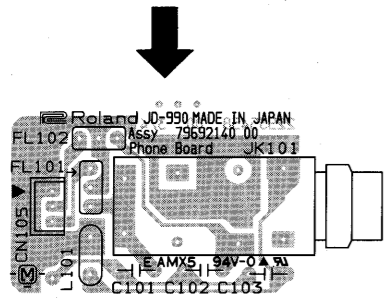
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

PANEL BOARD

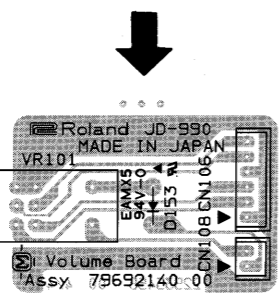
Assy7969214000
(pcb 22935458-00 1/4)

NOTE1 : Replacement PANEL BOARD Assy consists of the following PCBs.
 PANEL BOARD/ENCODER BOARD/PHONE BOARD/VOLUME BOARD
 注1 : 補修用基板は、下記の基板から構成されます。
 PANEL BOARD/ENCODER BOARD/PHONE BOARD/VOLUME BOARD

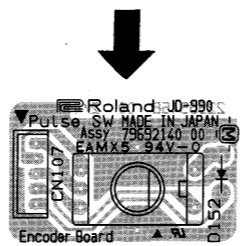
VOLUME BOARD
(pcb 22935458-00 4/4)



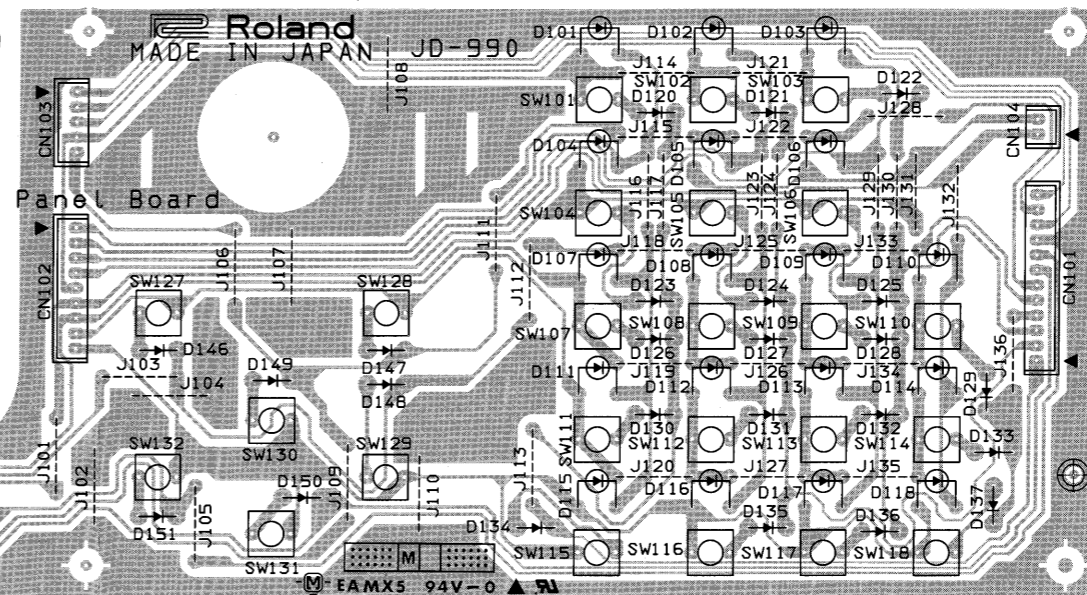
PHONE BOARD
(pcb 22935458-00 3/4)



ENCODER BOARD
(pcb 22935458-00 2/4)



PANEL BOARD
(pcb 22935458-00 1/4)



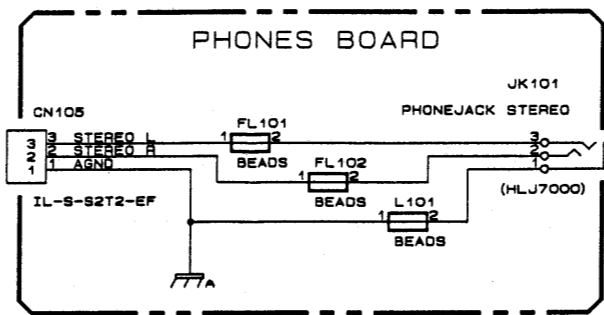
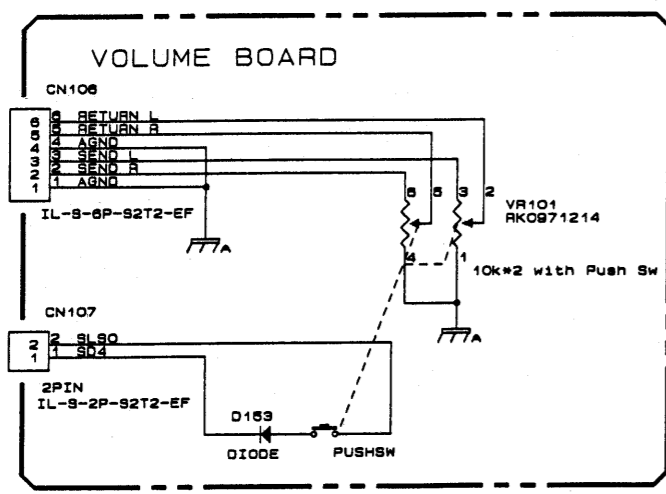
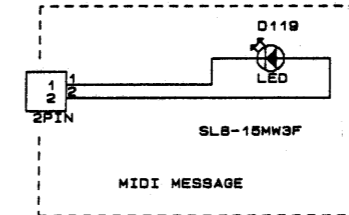
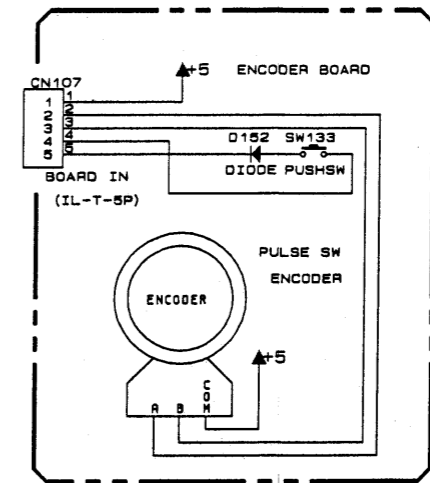
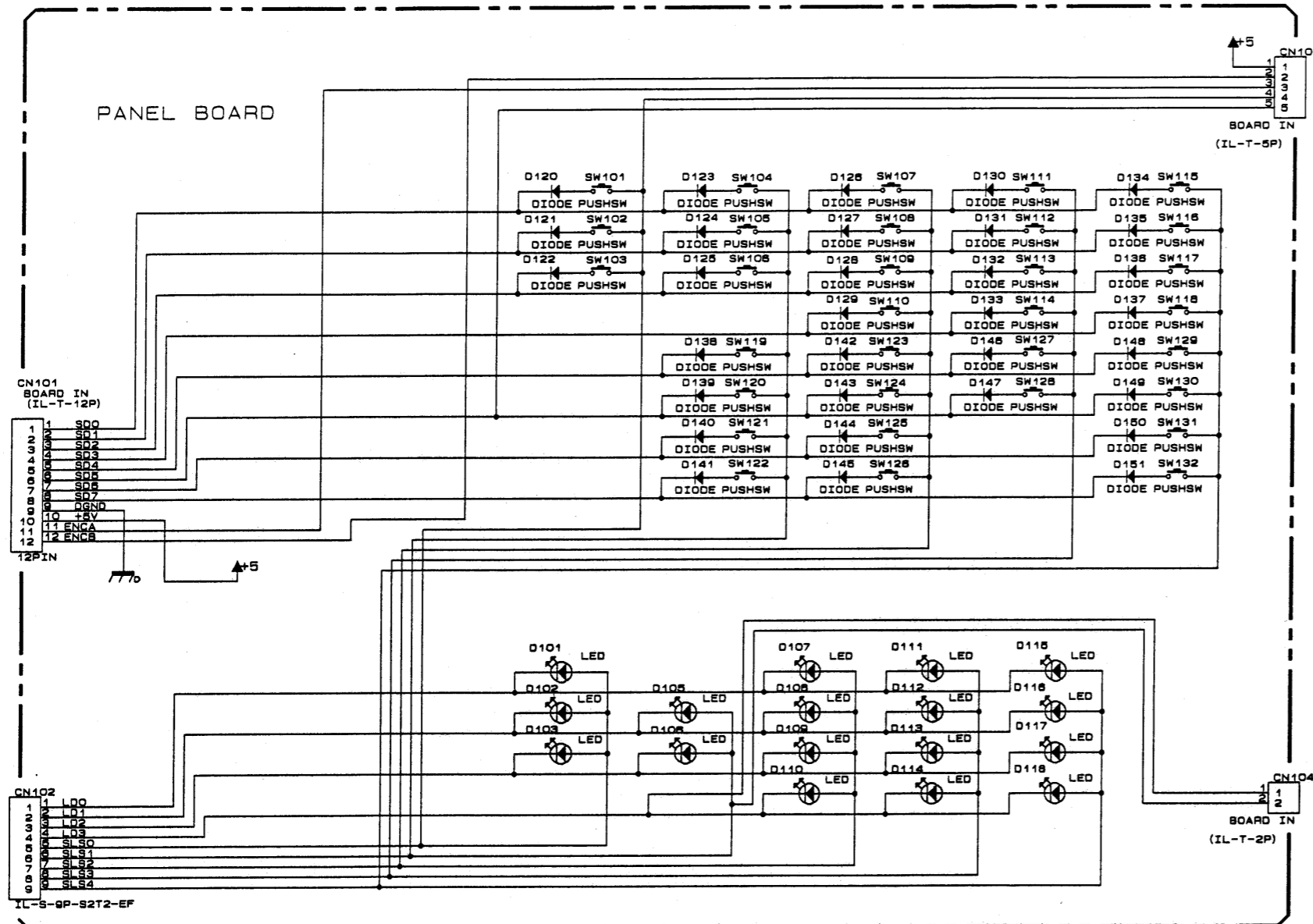
View from components side.

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CIRCUIT DIAGRAM / 回路図 (PANEL / ENCODER / PHONE / VOLUME)

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LED: SLR-305 D101-D118
 DIODE: 1SS133 D120-D152
 SW: SKHVBD1008 SW101-SW133
 ENCODER: RK09710WL

CHANGE INFORMATION

◆ Change History of Main Board

Change

The silk-printed pattern for C18 (chemical capacitor, 10 μ F/25V) shows the reverse polarity. (The circuit diagram is correct.)

Service Response

When replacing C18, be careful not to connect it with the wrong polarity.

◆ Change History of Jack Board

Change

Part C45 (chemical capacitor) is not mounted due to modifications to the mute circuit.

Service Response

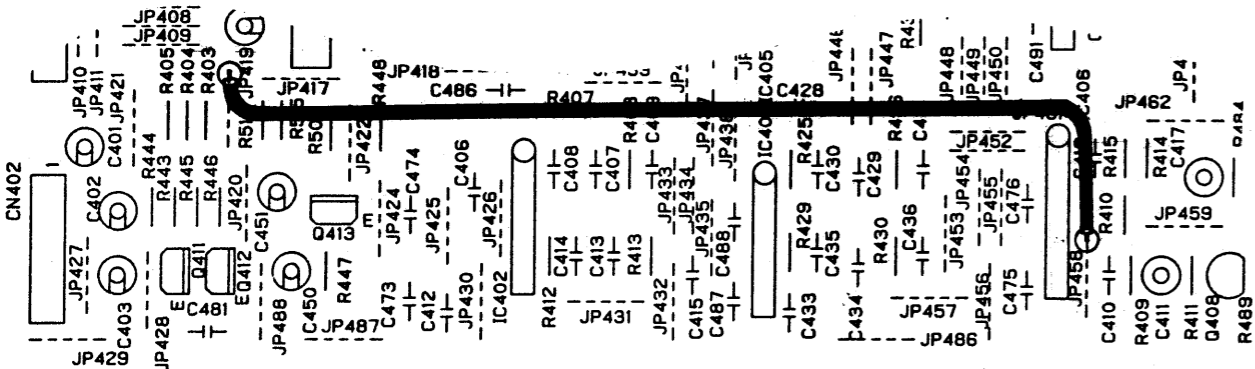
These changes have been made for all products. There is no need for additional service response.

Change

A jumper wire (2350581) was soldered to connect between the holes of JP419 and JP458.

Service Response

These changes have been made for all products. There is no need for additional service response.



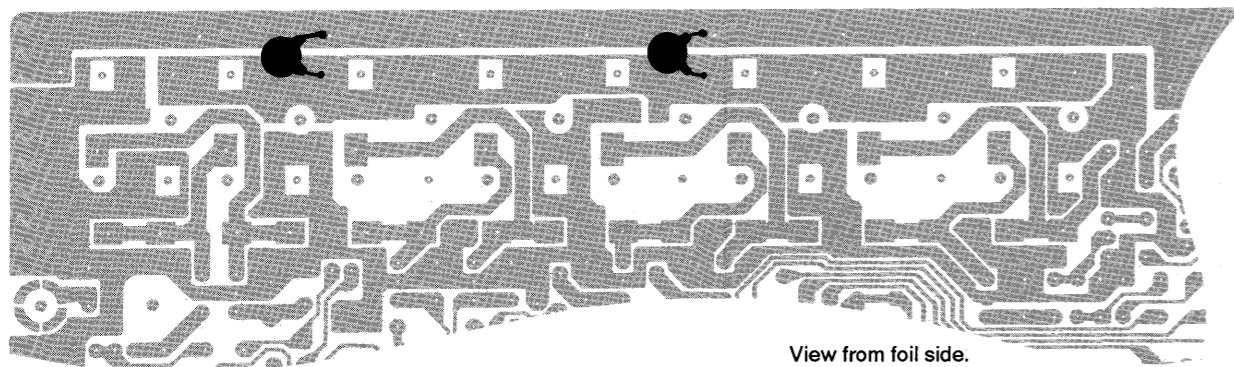
Roland JD-990 Jack Board EAMX5 94V-0 Assy 79697 View from component side.

Change

Two ceramic capacitors (0.01 μ F) were added to eliminate influence of radio waves.

Service Response

These changes have been made for all products. There is no need for additional service response.



View from foil side.

変更案内

◆ メインボードの変更履歴

変更内容

C18 (ケミコン) 10 μ F/25Vのシルク印刷が実際のパターン極性と逆になっています (回路図は正しい)。

サービスの対応

C18の部品を交換するとき、極性に注意してください。

◆ ジャックボード変更履歴

変更内容

ミュート回路変更によるC45 (ケミコン) の未実装。

サービスの対応

全数対策済の為、何もする必要はありません。

変更内容

JP419とJP458の穴を利用してジャンパー線 (2350581) を半田付けする。

サービスの対応

全数対策済の為、何もする必要はありません。

◆ Change History of Power Supply/Card Board

Change

For hum reduction, two jumper wires (230505807) were added. These jumper wires are not necessary for the board after modified for hum reduction.

Before Change	After Change
pcb No.2293545900 (SNo.ZE50100—ZE82299)	⇒ 2293545901 (SNo.ZE92300—)

Service Response

These changes have been made for all products. There is no need for additional service response.

◆ 電源/カードボードの変更履歴

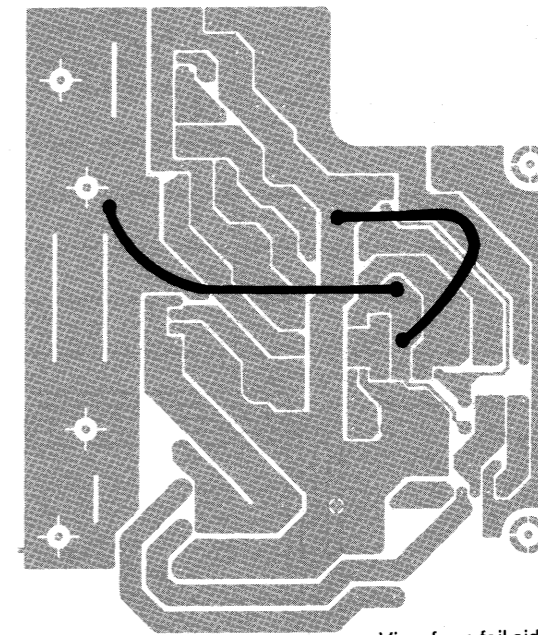
変更内容

ハム対策の為、ジャンパー線 (230505807) を2本追加する。対策後の基板では不要となる。

対策前	対策後
pcb No.2293545900 (SNo.ZE50100~ZE82299)	⇒ 2293545901 (SNo.ZE92300~)

サービスの対応

全数対策済の為、何もする必要はありません。



View from foil side.

◆ Change History of Panel Board

Change

Parts D104 and C101 to 103 are not mouted due to changes in the specifications.

Service Response

These changes have been made for all products. There is no need for additional service response.

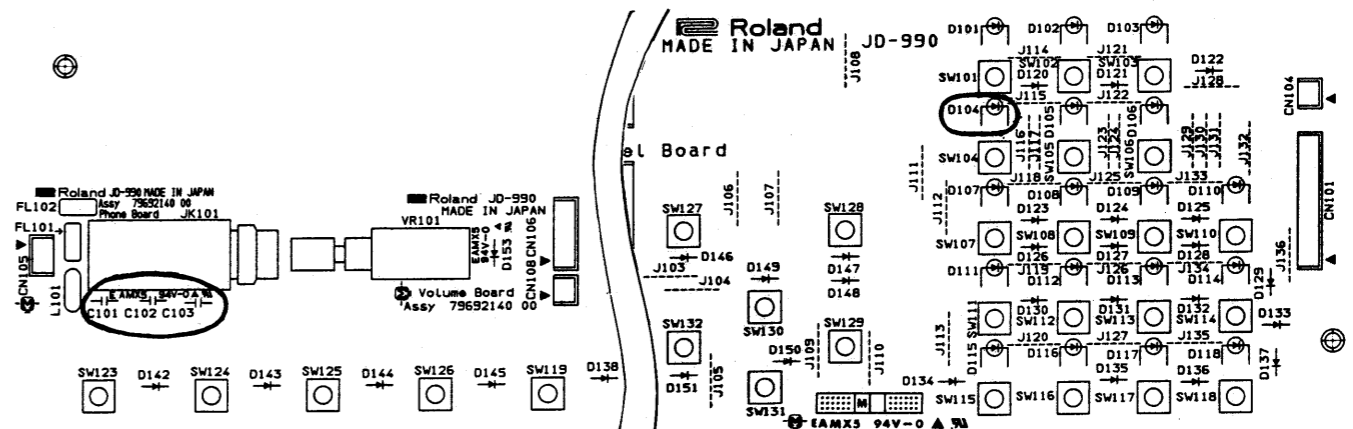
◆ パネルボードの変更履歴

変更内容

仕様変更の為D104およびC101~103の未実装

サービスの対応

全数対策済の為、何もする必要はありません。

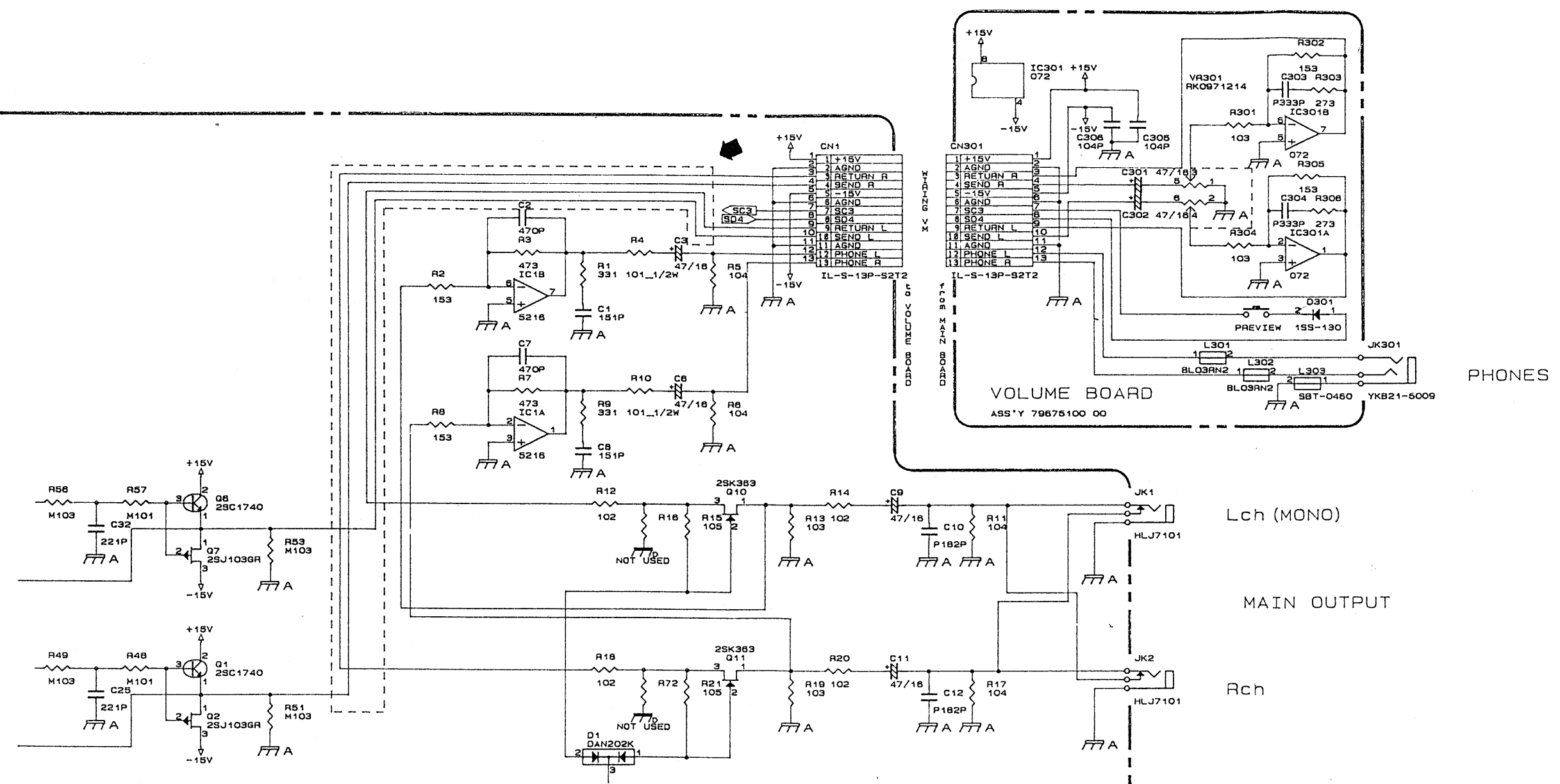


View from component side.

ER00080

JV-880 CORRECT CIRCUIT DIAGRAM

SERVICE NOTE P-16



PHONES

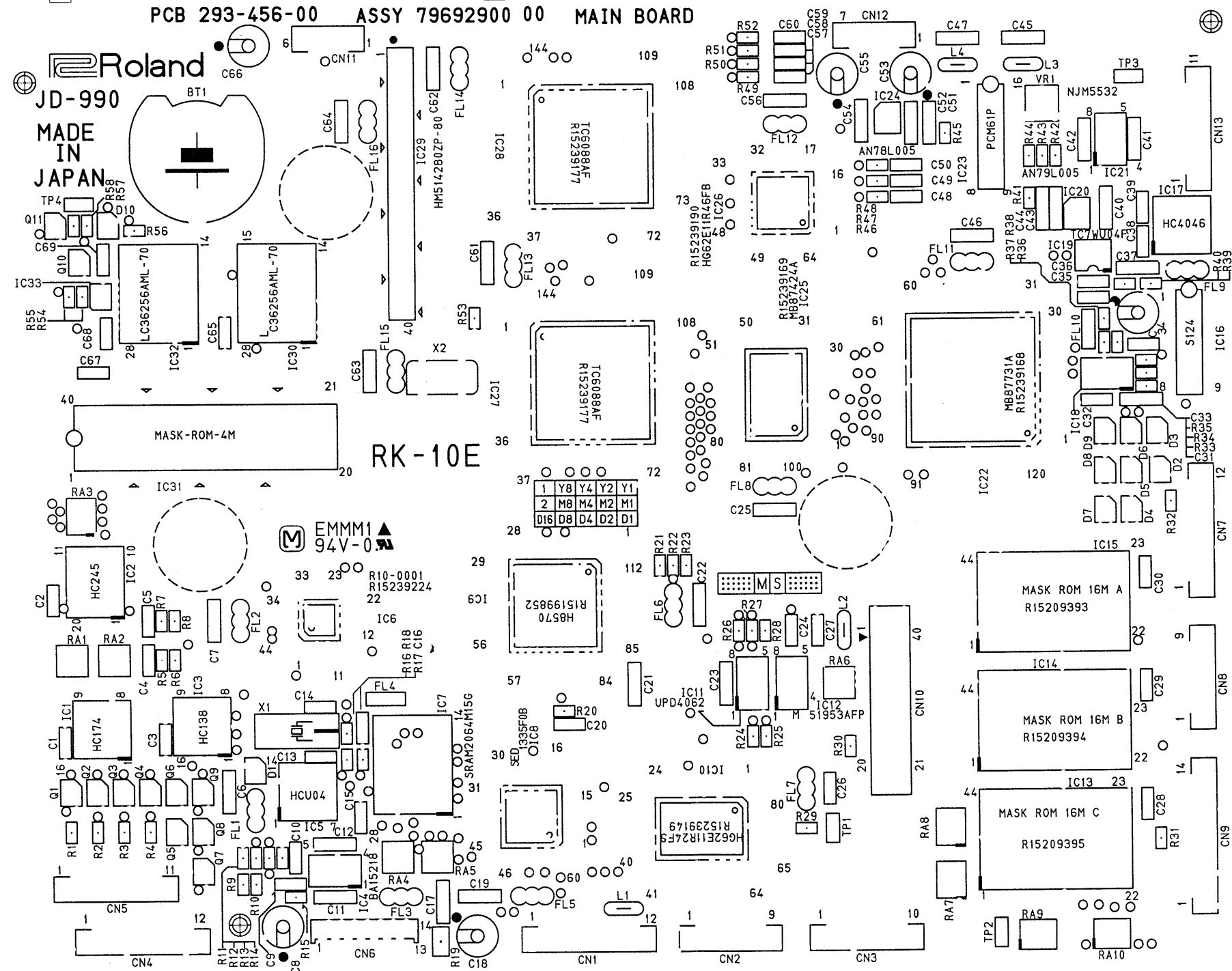
Lch (MONO)

MAIN OUTPUT

Rch

JD-990 MAIN BOARD
Assy 7969290000
(pcb 22935456)

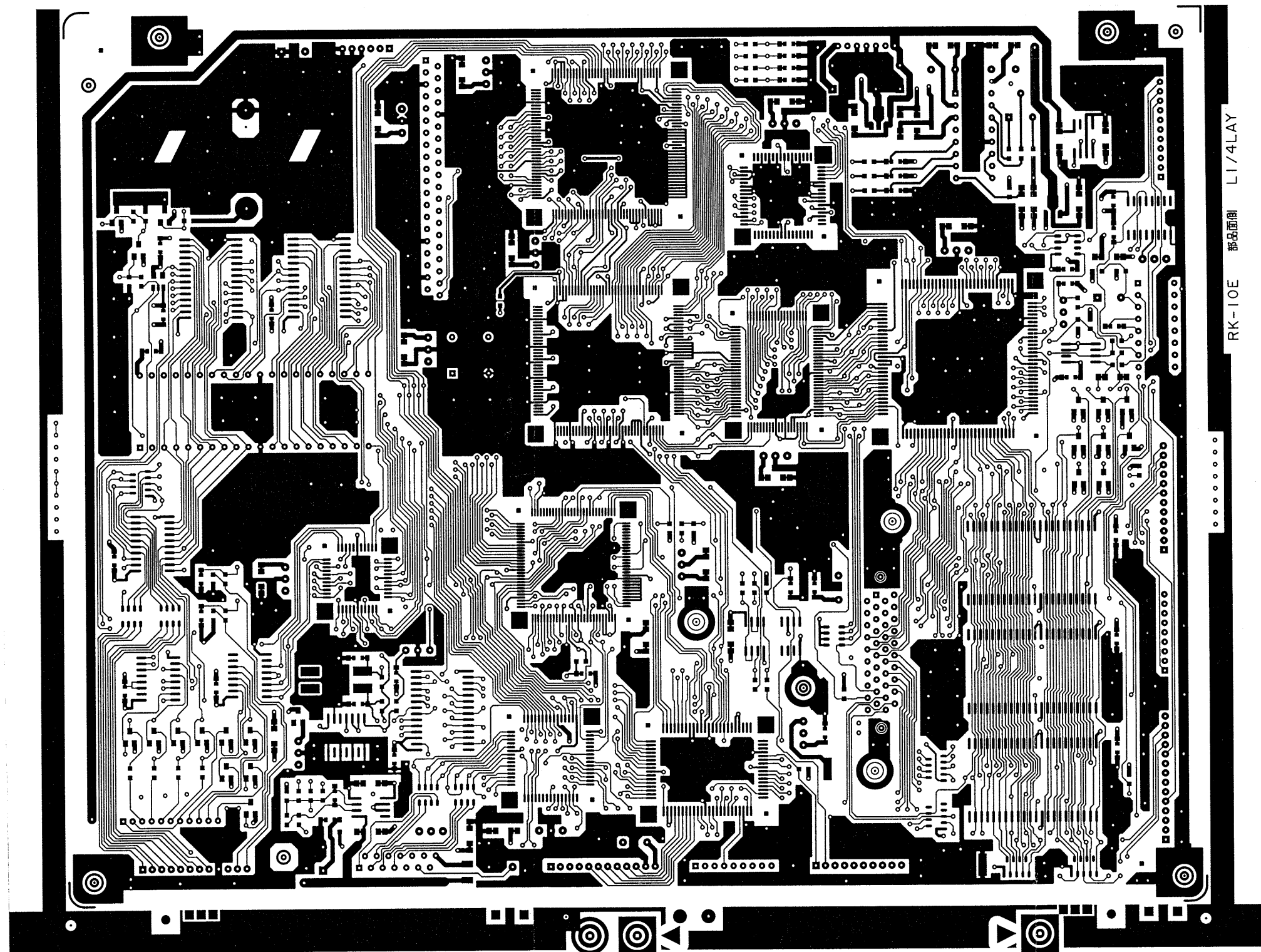
(PCB LAYOUT)



View from component side

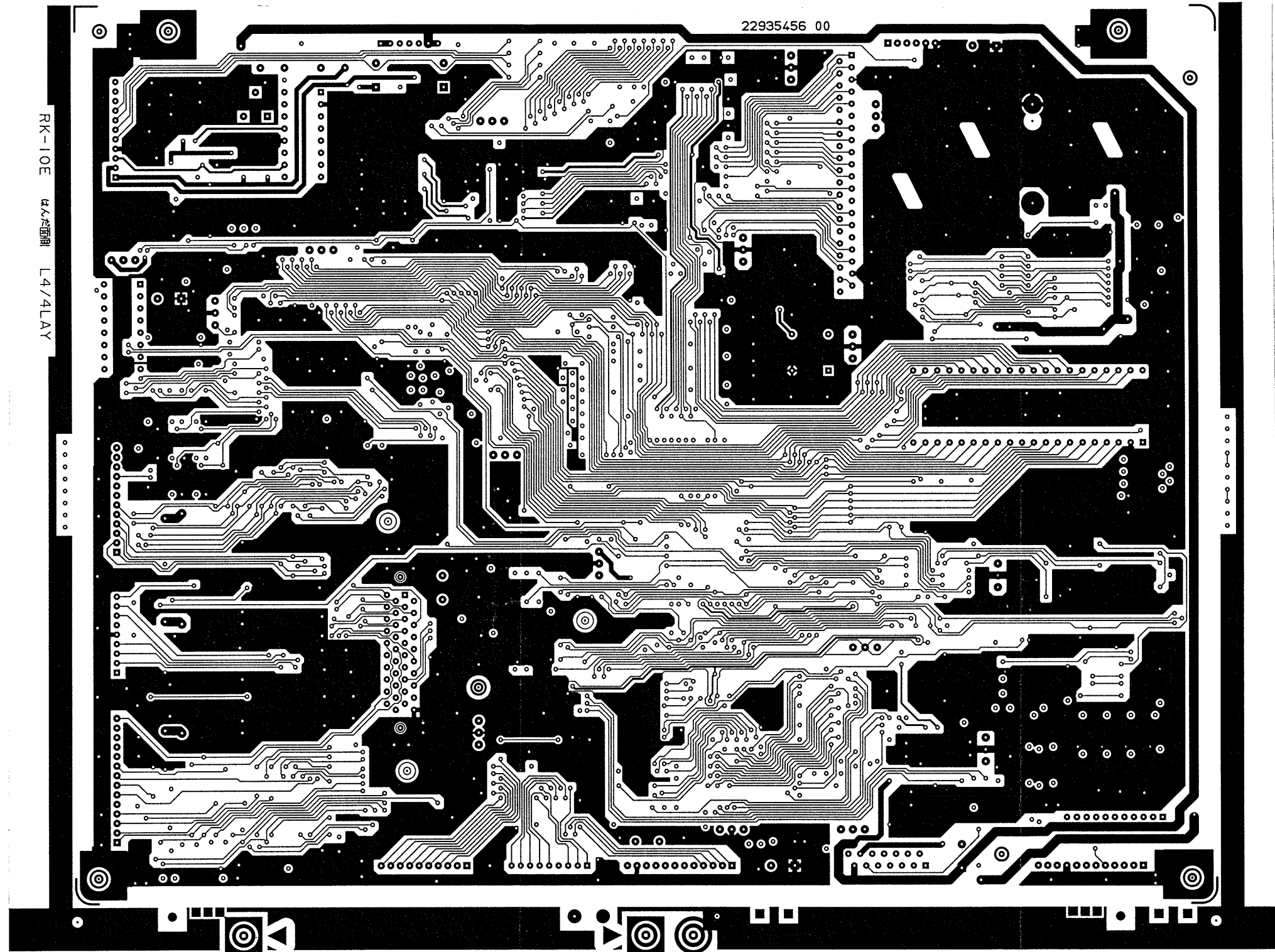
(R8B144A)

JD-990 MAIN BOARD



View from component side

JD-990 MAIN BOARD



View from solder side

Page	WRONG 誤 →	CORRECT 正
11	<p>* MAIN BOARD (Assy 7969290000) PCB LAYOUT / 基板図</p>	<p>* The pcb layout of the Main board is only for JD-900 (plot type) and it is completely different from that of actual JD-990. So please refer to the attached pcb layout for actual JD-990.</p> <p>* サービスノートの11ページのメインボード基板図は試作用JD-990のもので、通常のJD-990の基板図とは大幅に違います。通常のJD-990用として添付の基板図を参照して下さい。</p>