

Service Manual

DR110 /F1S/N1S

Compact Disc Recorder

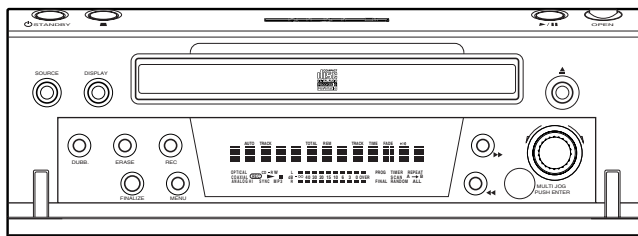
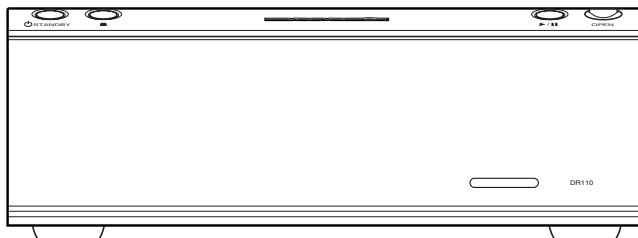


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Please use this service manual with referring to the user guide (D.F.U.) without fail.

修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

DR110

326W855020 MIT
3120 785 22740
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DR110

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC
1100 MAPLEWOOD DRIVE
ITASCA, IL. 60143
USA
PHONE : 630 - 741 - 0300
FAX : 630 - 741 - 0301

EUROPE / TRADING

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BRAZIL

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THAILAND

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SINGAPORE

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SUITE 8.1, LEVEL 8, MENARA GENESIS,
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PHONE : +60 3 - 21457677
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KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

GENERAL

System	Compact disc digital audio
Number of channels	2 (stereo)
Applicable discs	CD, CD-R (digital audio), CD-RW (digital audio)
Power Requirement	AC 100V 50 / 60Hz (F version) AC 230 V 50 Hz (N version)
Power Consumption	16W
Operating Temperature	5 - 35 °C

DIMENSION (MAX)

Width	210 mm
Height	71.5 mm
Depth	310 mm
Weight	3.8 Kg

AUDIO

Frequency Response	20 Hz - 20 kHz
Playback S/N	90 dB
Playback Dynamic Range	85 dB
Playback Total Harmonic Distortion	0.04 %
Recording S/N	90 dB
Recording Dynamic Range	85 dB
Recording Total Harmonic Distortion	0.04 %
Line Output Voltage	2 Vrms

RECORDING VALUES FOR LINE INPUT

Digital Coaxial Input (automatic sample rate conversion)	32 - 48 kHz
Digital Optical Input (automatic sample rate conversion)	32 - 48 kHz
Analog Input	250 mVrms/ 50 kW

ACCESSORIES

Remote Control Unit (RC110DRMD)	1
Dimensions (W x H x D)	50.5 x 54.5 x 25 mm
Weight	60 g
AA Type Batteries	2
Stereo Audio Cable	1 pair
Coaxial Cable	1
Remote Cable	1

Specifications subject to change without prior notice.

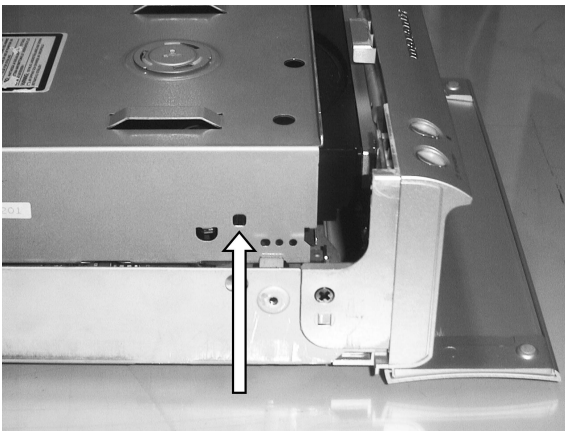
2. SERVICE PROCEDURE

Service Mode

1. While Mains cord is disconnected, press **STOP** button on the unit and plug in the Mains cord.
2. Version number of the front micom software is displayed.
3. Turn **JOG** dial clockwise then Display Segment test begins.
4. First all the segments will light and then a segment turns off one by one.
5. Disconnect Mains cord to quit service mode.

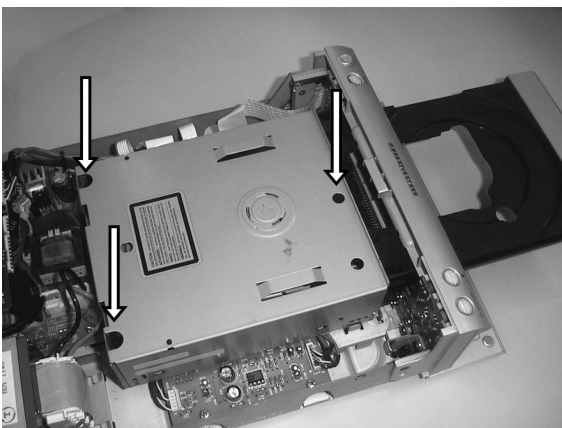
Emergency Eject

1. To open the tray when it is stuck, insert a pin into the eject pinhole and push.
2. Use a pin $\phi 4\text{mm}$ or less.

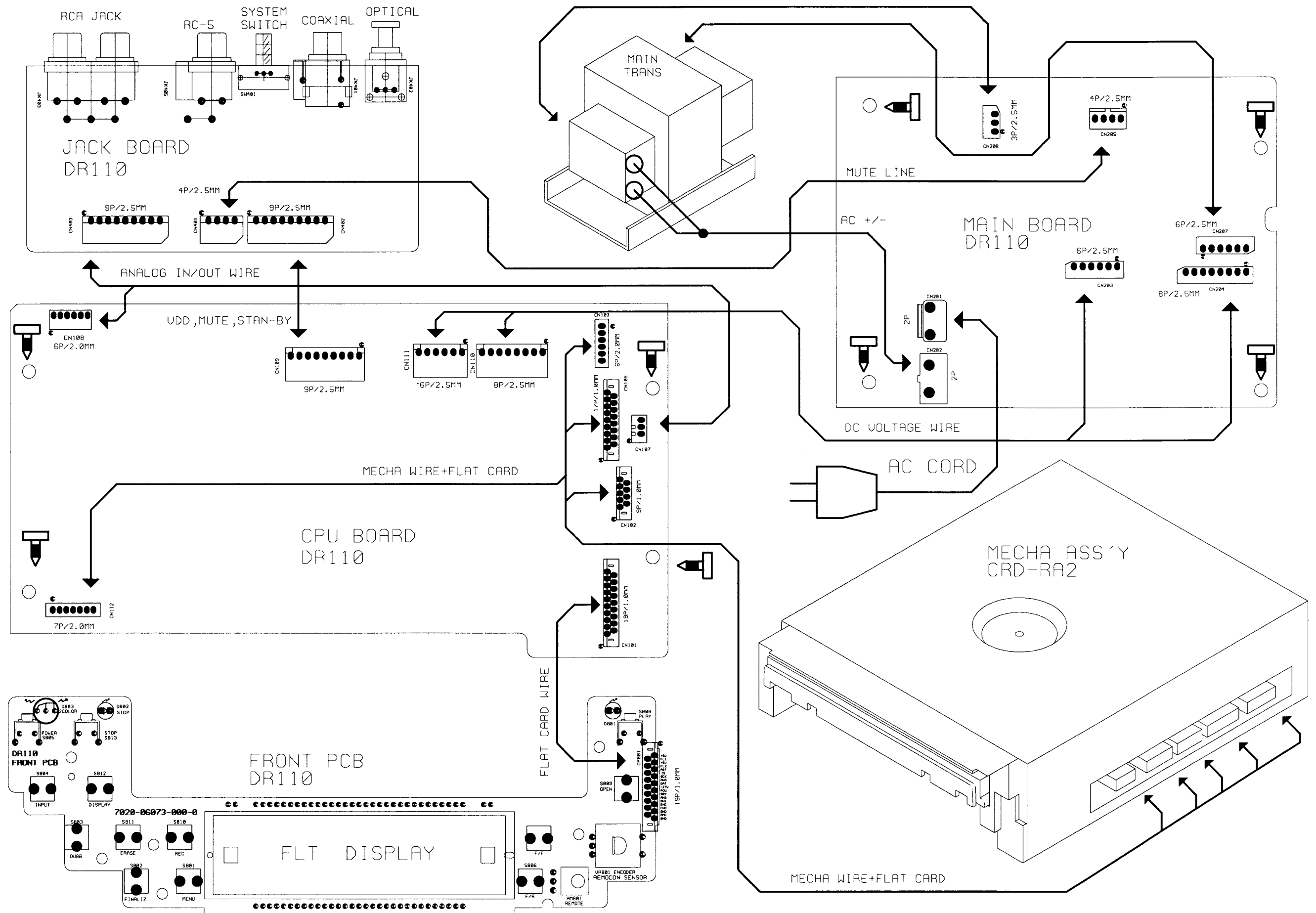


Replacing the Mechanism Assy

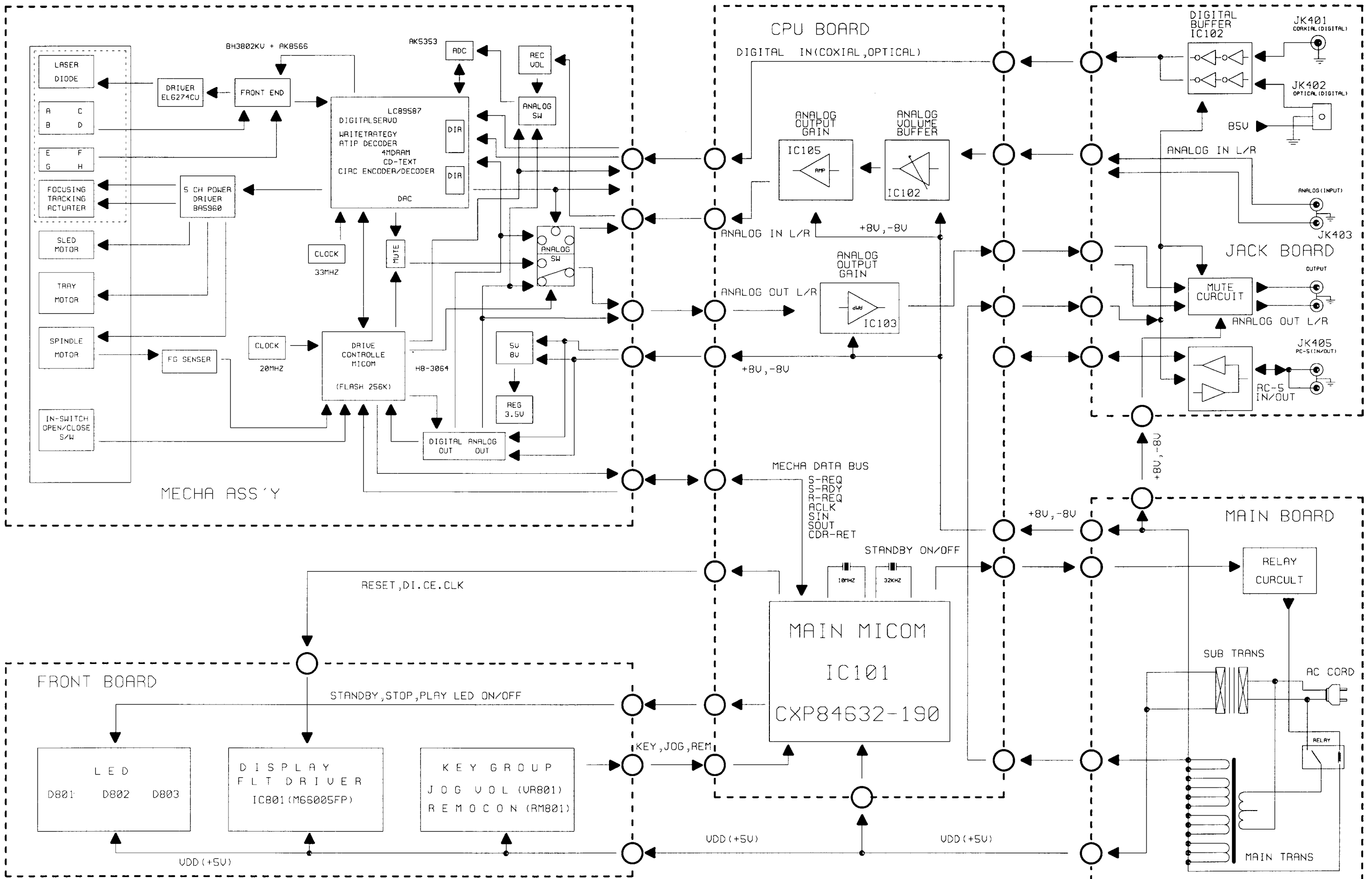
1. Open the tray first.
2. Remove the 3 screws shown in the picture below.
3. Disconnect all the wires at the right side.
4. Replace the MECHANISM ASSY.
5. After replacing the MECHANISM ASSY, insert a CD-R/RW, record something and FINALIZE it. It MUST be done to set its particular R-ID to the new MECHANISM ASSY.



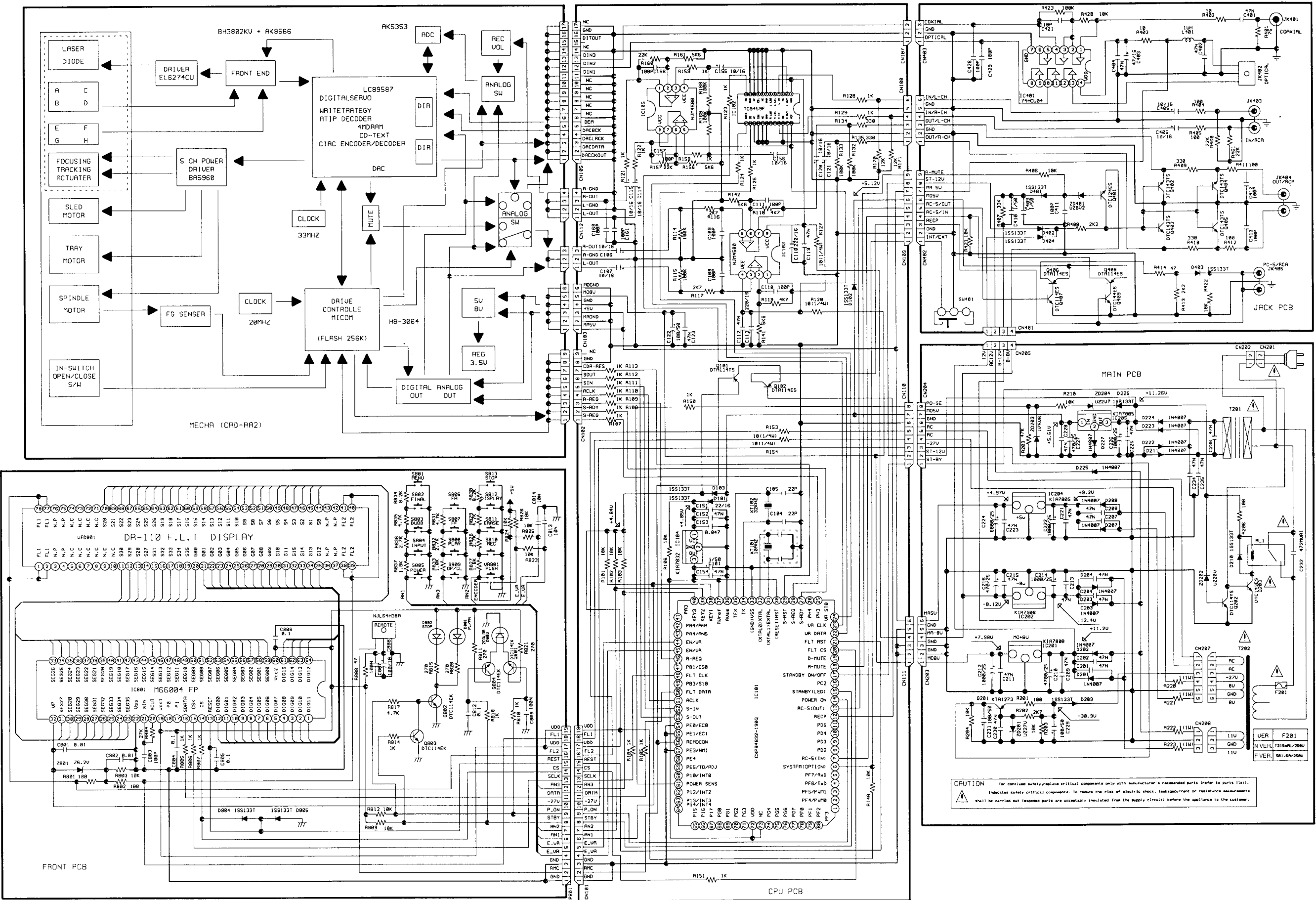
3. WIRING DIAGRAM



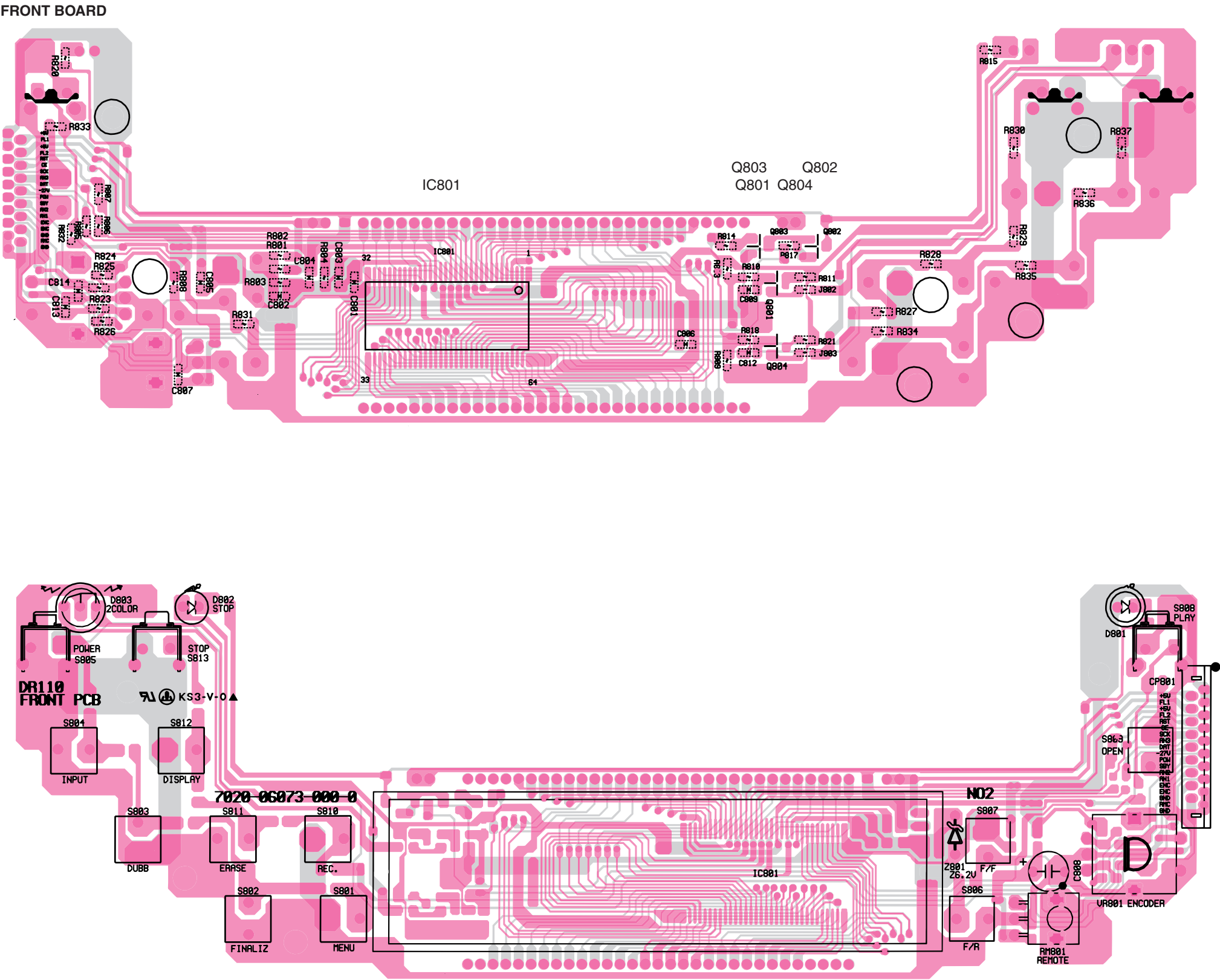
4. BLOCK DIAGRAM



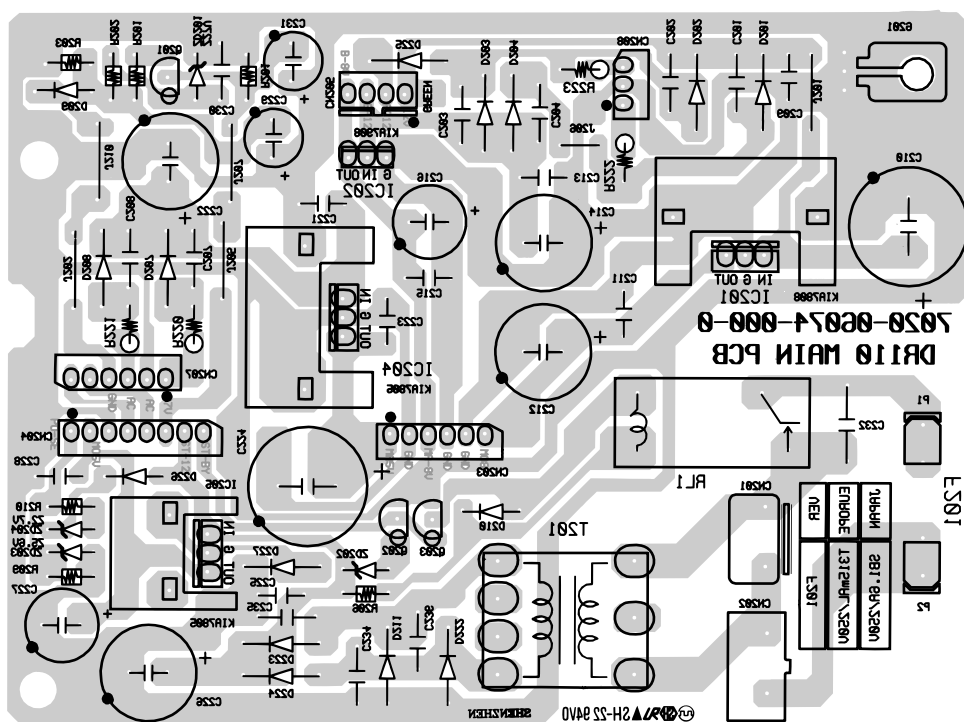
5. SCHEMATIC DIAGRAM



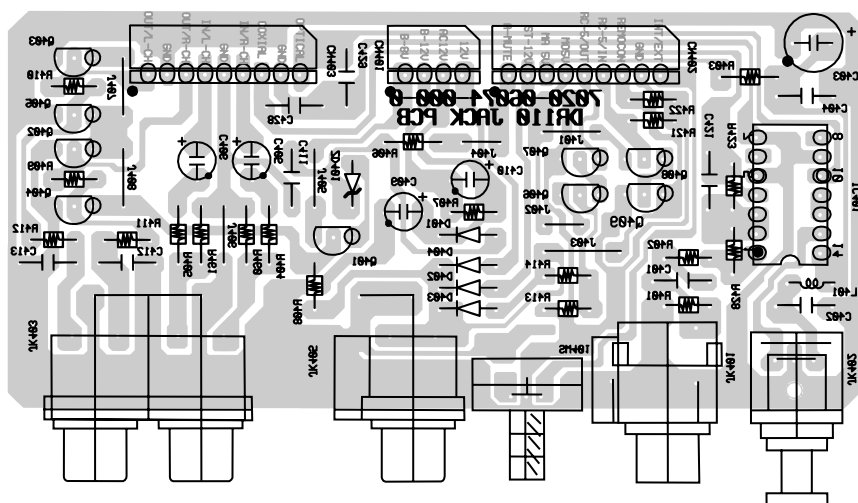
6. PARTS LOCATION (Pattern Side)



Q201	IC202	IC204	
IC205	Q202	Q204	IC201

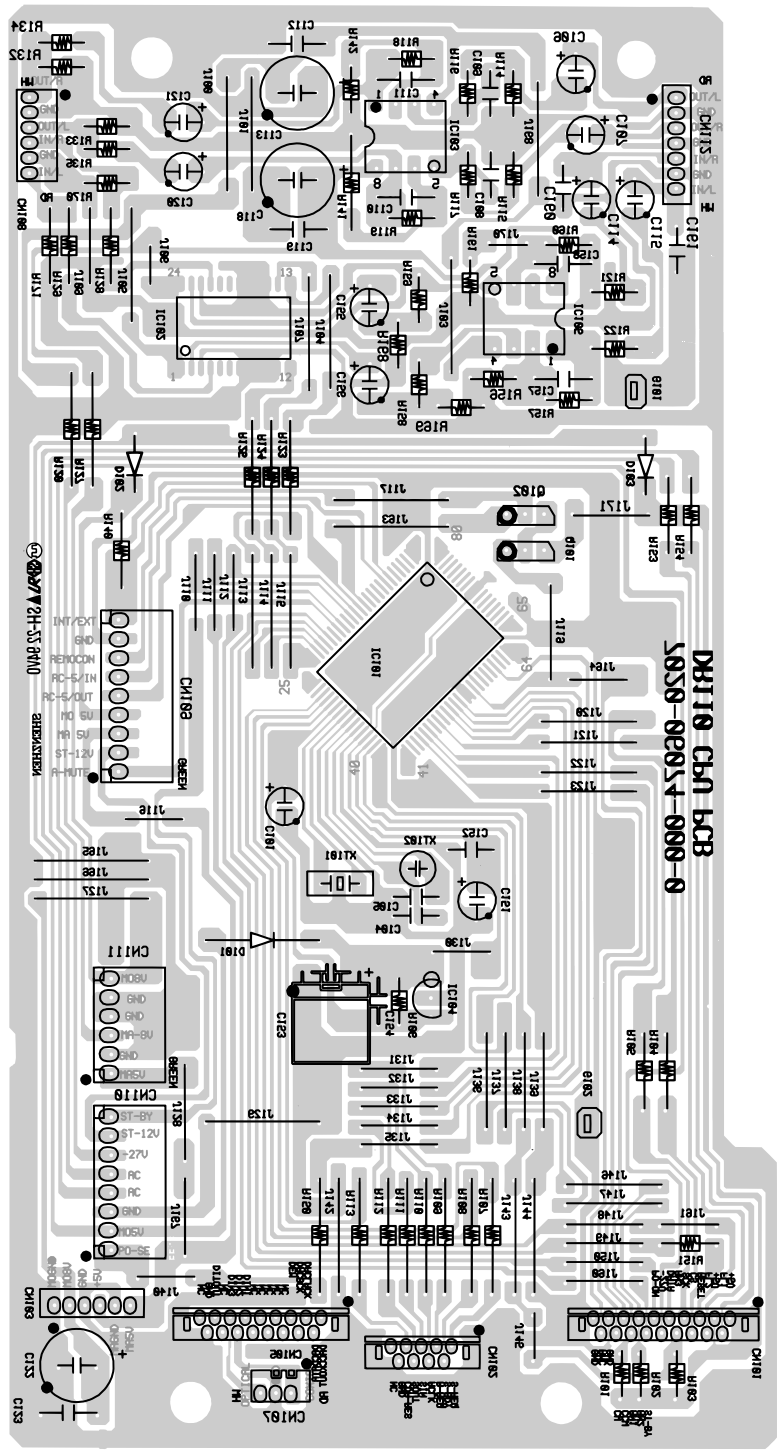


Q403	Q405		Q407	Q408	
Q402	Q404	Q401	Q406	Q409	IC401



CPU BOARD

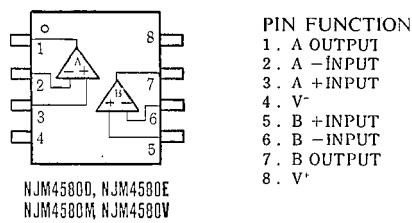
IC102	IC103		
	IC101	Q102	IC105
	IC104	Q101	



7. IC DATA

IC103/105:NJM4580

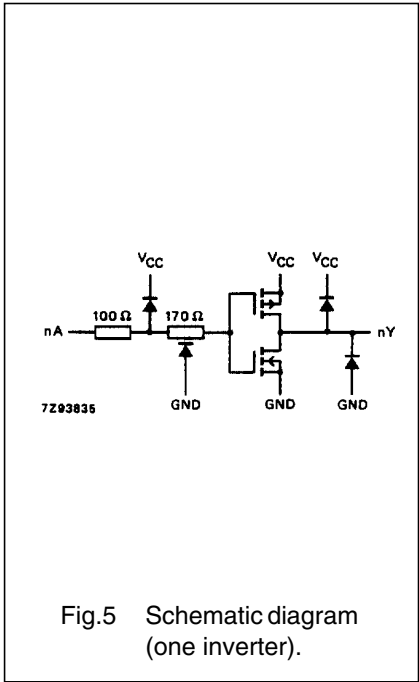
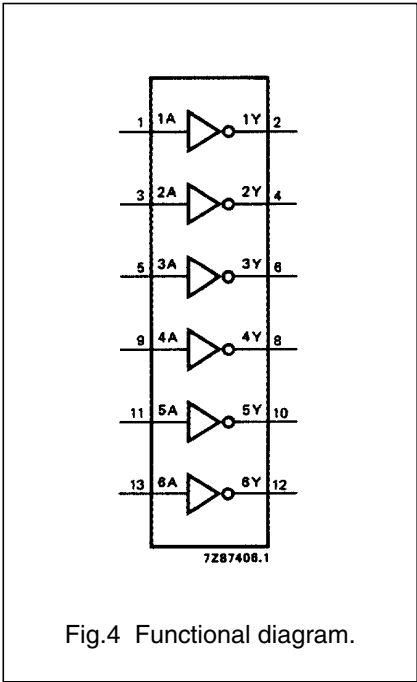
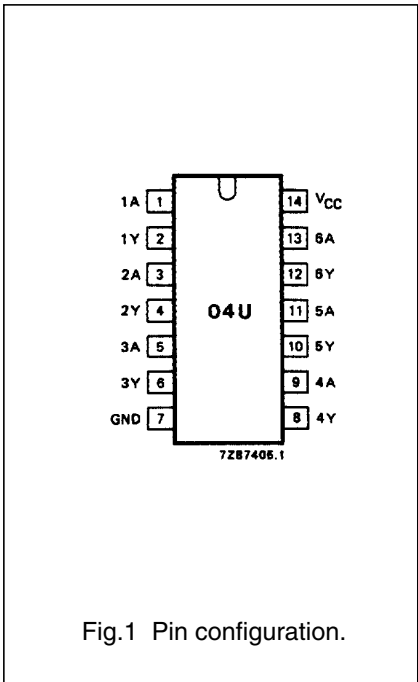
PIN CONFIGURATION



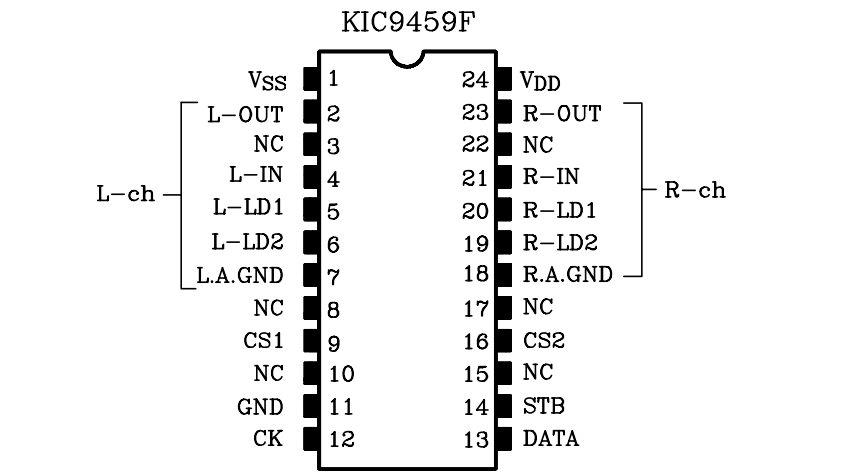
IC401:74HCU04

PIN DESCRIPTION

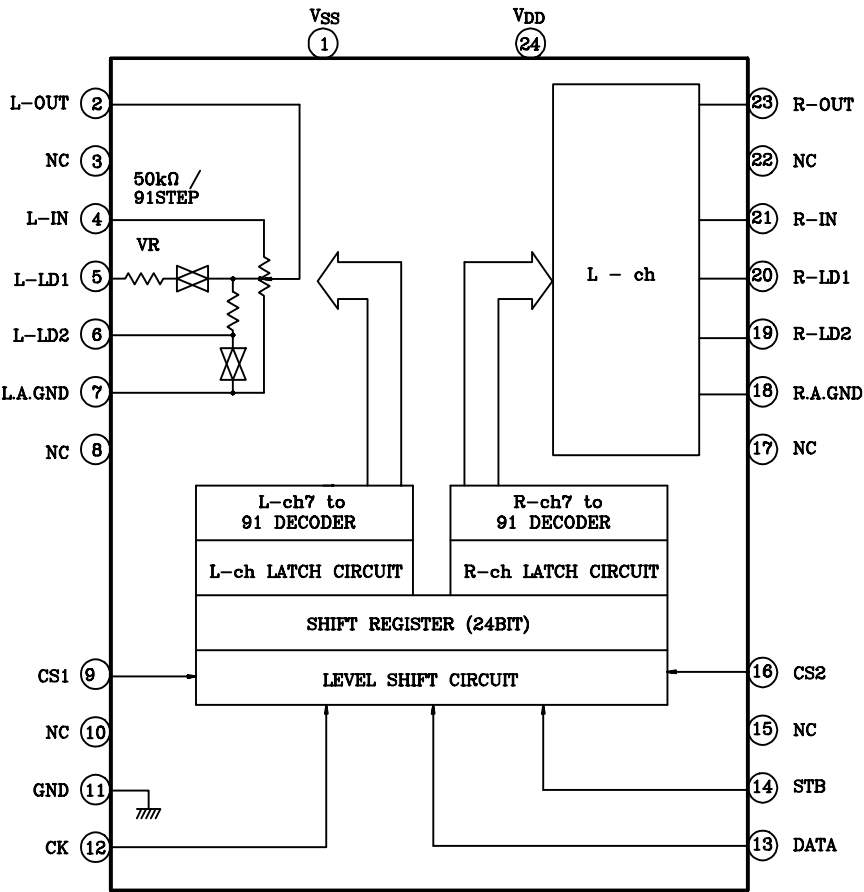
PIN NO.	SYMBOL	NAME AND FUNCTION
1, 3, 5, 9, 11, 13	1A to 6A	data inputs
2, 4, 6, 8, 10, 12	1Y to 6Y	data outputs
7	GND	ground (0 V)
14	V _{CC}	positive supply voltage



PIN CONNECTION

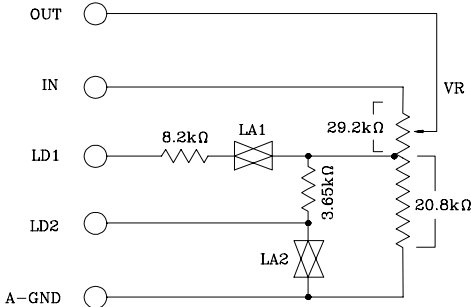


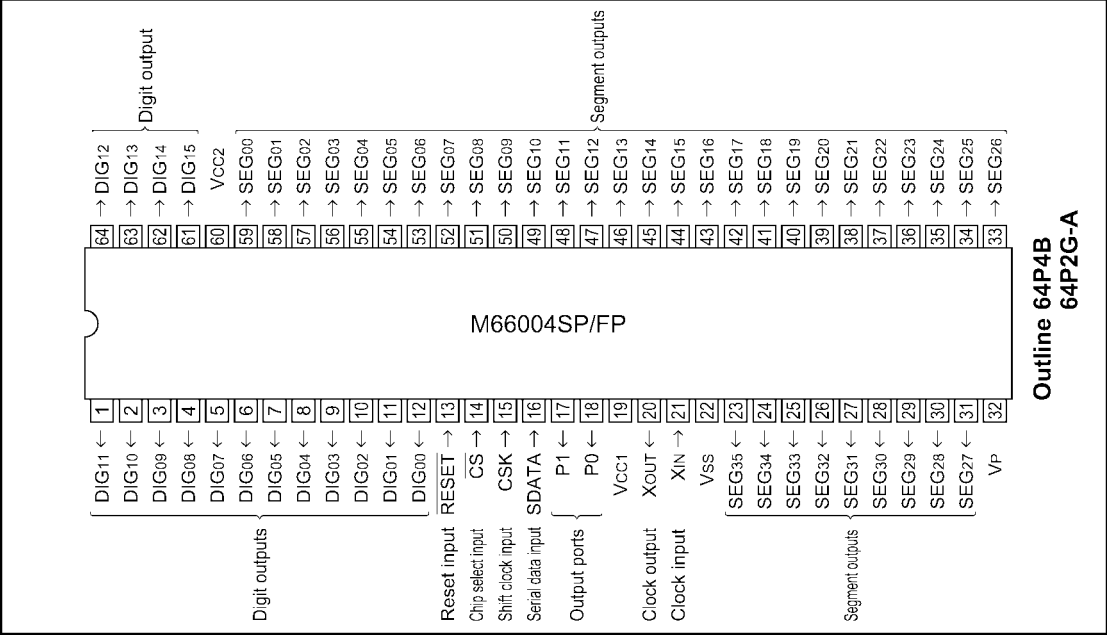
BLOCK DIAGRAM



PIN DESCRIPTION

Numeral in () means the pin No. of KIC9459F

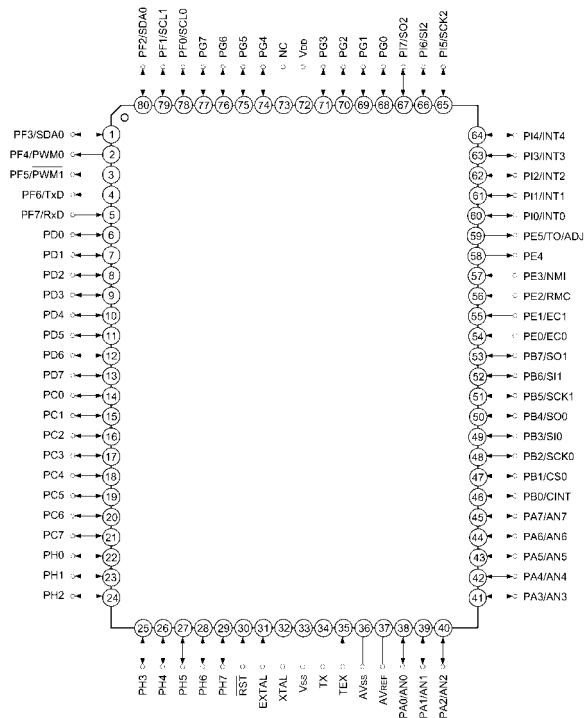
Pin No.	SYMBOL	PIN NAME	FUNCTION	REMARK								
1 (1)	V _{SS}	Negative power supply pin	When using dual power supplies { VDD=6.0~17V GND=0V VSS=-6.0~-17V When using a single power supply { VDD=6.0~18V GND=VSS=0V	-								
13 (11)	GND	Digital GND pin										
28 (24)	V _{DD}	Positive power supply pin										
3 (2)	L-OUT	volume output pin		-								
26 (23)	R-OUT											
5 (4)	L-IN	volume input pin										
24 (21)	R-IN											
6 (5)	L-LD1	Loudness tap output pin										
23 (20)	R-LD1											
7 (6)	L-LD2											
22 (19)	R-LD2											
8 (7)	L-A-GND	Analog GND pin			<table><tr><td></td><td>LA1</td><td>LA2</td></tr><tr><td>Loudness "ON"</td><td>ON</td><td>OFF</td></tr><tr><td>Loudness "OFF"</td><td>OFF</td><td>ON</td></tr></table>		LA1	LA2	Loudness "ON"	ON	OFF	Loudness "OFF"
	LA1		LA2									
Loudness "ON"	ON	OFF										
Loudness "OFF"	OFF	ON										
21 (18)	R-A-GND											
10 (9)	CS1	Chip select input pin	Up to 4 chips on the same bus can be used by switching over chip select code	-								
19 (16)	CS2											
14 (12)	CK	clock input pin	Data transfer clock input	Low threshold value input pin								
15 (13)	DATA	Data input pin	Volume setup serial data input									
16 (14)	STB	Strobe input pin	Data write strobe input									
2,4,9,11,12,17,18,20,25,27 (3) (8) (10) (15) (17) (22)	NC	No connection		-								



PIN DESCRIPTIONS

Symbol	Pin name	Function
RESET	Reset input	This pin is used to initialize the internal state of the M66004.
CS	Chip select input	In "L" state, communication with the MCU is possible. In "H" state, any instruction from the MCU is neglected.
SCK	Shift clock input	At the rising edge from "L" to "H", input data is shifted.
SDATA	Serial data input	Character code or command data to display is input from MSB.
XIN, XOUT	Clock input Clock output	This pin is used to connect a resistor and a capacitor externally to set oscillation frequency. (maximum oscillation frequency fosc(max)=1MHz) An external clock can be also connected. In this case, an external clock is connected to pin XIN, and pin XOUT is set to be in open state.
DIG00~DIG15	Digit output	These pins are used to connect to digit pins of VFD. Pins from DIG00 to DIG15 correspond to digits of VFD from the first digit to the 16th digit.
SEG00~SEG35	Segment output	These pins are used to connect to segment pins of VFD. Pins from SEG00 to SEG35 correspond to segment pins of VFD as shown in the table below.
P0, P1		Output port (static operation)
VCC1		Positive power supply for internal logic
VCC2		Positive power supply for high-pressure-resistant output port
VSS		GND
VP		Negative power supply for VFD drive

PIN ASSIGNMENT



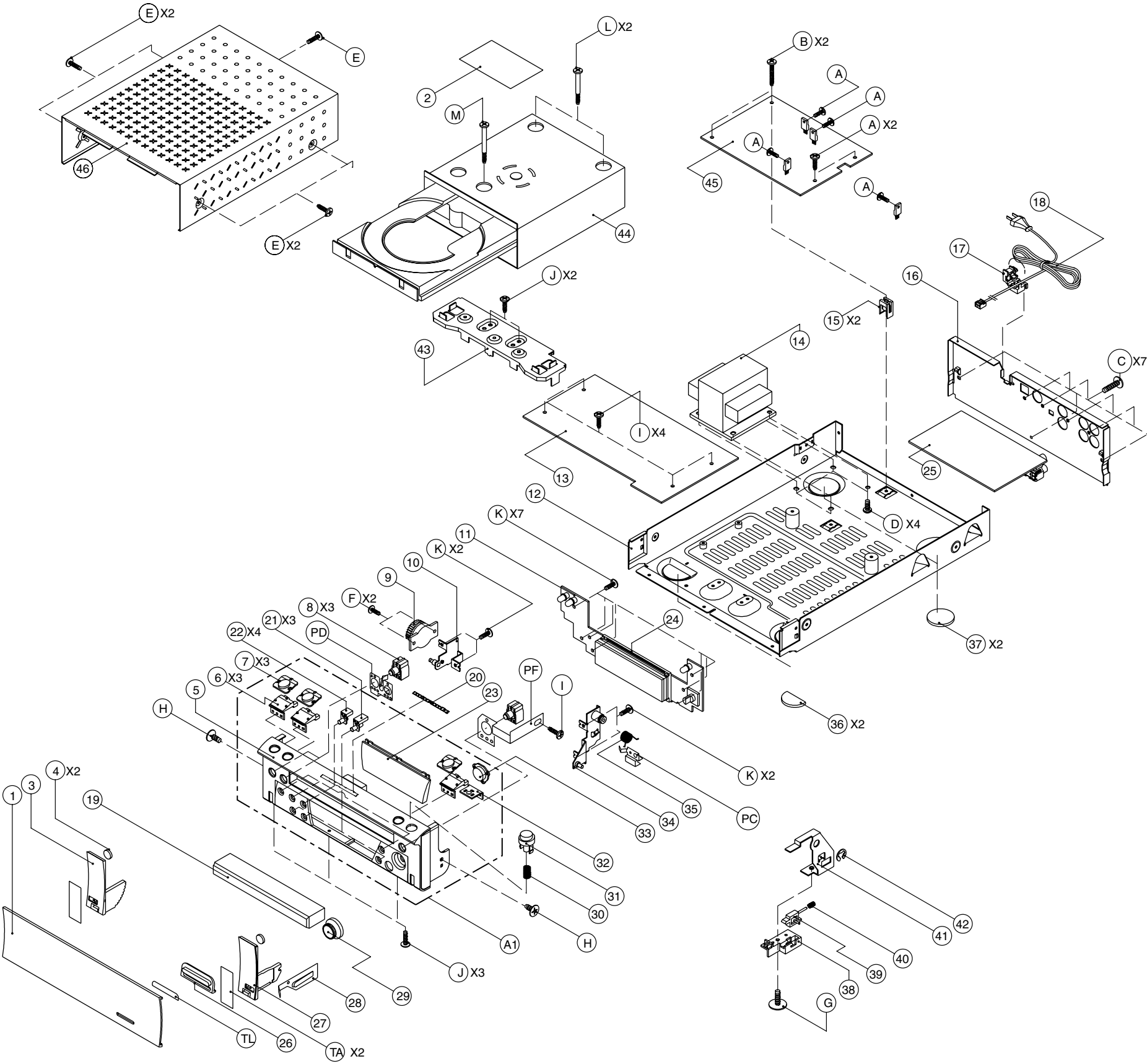
Note) NC (Pin 73) must be connected VDD.

PIN FUNCTION

PIN NO	PIN NAME	Operation	Description	ASSIGN
1-5	NC			
6	RC-5 INT/EXT	Input for checking system connection	Active high → int mode, Active low → ext mode	I
7	RC-5 IN	Input for controlling RC-5		I
8-11	NC			
12	RC-5 ON/OFF	Output for RC-5 on/off	Active low	O
13	RC-5 OUT	Output for controlling RC-5		O
14	POWER ON LED	Output to drive POWER ON LED(GREEN)	Active high	O
15	ST/BY LED	Output to drive STANBY LED(RED)	Active high	O
16	NC			
17	STANBY ON/OFF	Output for RELAY on	Active high	O
18	MUTE	Output for MUTE	Active low	O
19	NC			
20	FLT CE	Output for CE of M66005 FLT DRIVE IC		O
21	FLT RST	Output for RESET of M66005 FLT DRIVE IC		O
22	VOL DA	Output for DA of TC9459 VOLUME IC		O
23	VOL CLK	Output for CLK of TC9459 VOLUME IC		O
24	VOL STB	Output for STB of TC9459 VOLUME IC		O

PIN NO	PIN NAME	Operation	Description	ASSIGN
25-26	NC			
27	MECHA S-RDY	Output for mecha S-RDY		O
28	MECHA S-REQ	Output for mecha S-REQ		O
29	MECHA S-RST	Output for mecha S-RST		O
30	RST	Input for RESET	Active low	I
31	EXTAL	Input for 10MHz crystal oscillator.		
32	XTAL	Output for 10MHz crystal oscillator.		
33	VSS	Ground		
34	TX	Input for 38.768KHz sub crystal oscillator		
35	TEX	Output for 38.768KHz sub crystal oscillator		
36	AVSS	Ground		
37	AVREF	VDD +5V		
38	KEY1	DATA input key scan	Check port for ad key input	I
39	KEY2	DATA input key scan	"	I
40	KEY3	DATA input key scan	"	I
41-43	NC			
44	ENCODER	Input for encoder DOWN		I
45	ENCODER	Input for encoder UP		I
46	MECHA R-REQ	Input for mecha R-REQ		I
47	NC			
48	FLT CLK	Output for CLK of M66005 FLT DRIVE IC		O
49	NC			
50	FLT DATA	Ouput for DATA of M66005 FLT DRIVE IC		O
51	MECHA ACLK	Input for mecha ACLK		I
52	MECHA S-IN	Input for mecha S-IN		I
53	MECHA S-OUT	Output for mecha S-OUT		O
54-55	GND	GND		
56	REMOCON	Input for remocon DATA		I
57	GND	GND		
58-60	NC			
61	POWER DOWN	Input for power down		I
62-71	NC			
72	VDD	VDD +5V		
73	VDD	VDD +5V		
74-80	NC			

8. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
1		9965 000 11197	PANEL DOOR	326W162010	C		nsp	SCREW TAP TITE,	nsp
2		nsp	LABEL LASER CAUTION-CD	nsp	D		nsp	+2S 3x10 B-TYPE	
3		9965 000 10697	ARM DOOR L	323W002010				SCREW TAP TITE ASSY,	nsp
4		9965 000 10698	CUSHION DOOR	323W259010	E		nsp	+3S 4x8 P+S-WASHER	
A1		9965 000 11198	FRONT PANEL SUB ASSY	326W248500				SCREW TAP TITE,	nsp
5		nsp	PANEL FRONT	326W248010	F		nsp	+2S 3x8 B-TYPE	
6		nsp	BUTTON POWER B	323W270030	G		nsp	SCREW TAPPING,+2S 2x6	nsp
7		nsp	BUTTON POWER A	323W270010	H		nsp	SCREW,+2S 3x8 PI9.5 B-TYPE	nsp
8		9965 000 11103	BUTTON	325W270040				SCREW TAP TITE,	nsp
			DISPLAY SOURCE OPEN		I		nsp	+2S 3x5 B-TYPE	
9		9965 000 10701	DAMPER GEAR	323W130010	J		nsp	SCREW TAP TITE,+3S 3x5	nsp
10		9965 000 10702	BRACKET DOOR C	323W160060				SCREW TAP TITE,	nsp
11		nsp	P.C.B SUB ASSY FRONT	nsp	K		nsp	+2S 3x6 B-TYPE	
12		nsp	CHASSIS MAIN	326W105010	L		nsp	SCREW TAP TITE,+2PS 3x8	nsp
13	F	nsp	P.C.B ASSY CPU DR-110F1S	nsp	M		nsp	SCREW,3x26 B-TITE	nsp
13	N	nsp	P.C.B ASSY CPU DR-110N1S	nsp				SCREW,3X33	nsp
▲ 14	F	nsp	MAINS TRANSF. FOR F	*TS001320R				PACKING	
▲ 14	N	9965 000 11199	MAINS TRANSF. FOR N	*TS001310R	001T	N	9965 000 11196	USER GUIDE DR110N1S	326W851310
15		nsp	SUPPORTER PCB	nsp	001T	F	nsp	USER GUIDE DR110F1S	326W851110
16	F	nsp	PANEL REAR FOR F	326W250040	001Z		9965 000 11195	REMOTE CONTROLLER	ZK326W0010
16	N	9965 000 11200	PANEL REAR FOR N	326W250020				RC110DRMD	
17	F	nsp	CORD HOLDER DACH-2	323W259020					
17	N	9965 000 11058	CORD HOLDER DACH-1	323W259030					
▲ 18	F	nsp	MAINS CORD ASSY FOR F	*YC000560R					
▲ 18	N	9965 000 10705	MAINS CORD ASSY FOR N	*YC000570R					
19		9965 000 11201	COVER TRAY DR110	326W053010					
20		9965 000 10708	BADGE MARANTZ	323W251010					
21		9965 000 11109	BUTTON MENU	325W270010					
22		9965 000 11110	BUTTON REC	325W270020					
23		nsp	WINDOW DISPLAY	325W158010					
24		nsp	SUPPORTER FLT	nsp					
25	F	nsp	P.C.B ASSY JACK	nsp					
25	N	nsp	P.C.B ASSY JACK	nsp					
26		9965 000 10709	WINDOW REMOTE B	323W158030					
27		9965 000 10713	ARM DOOR R	323W002020					
28		9965 000 11111	PLATE EARTH A	323W123010					
29		9965 000 11202	KNOB SHUTTLE	325W154010					
30		9965 000 10714	SPRING DOOR C	323W115010					
31		9965 000 10715	KNOB EJECT	323W154020					
32		9965 000 11203	SUPPORTER EJECT	323W101010					
33		nsp	WINDOW REMOTE A	323W158020					
34		9965 000 10716	BRACKET DOOR A	323W160010					
35		9965 000 10717	SPRING DOOR A	323W115020					
36		9965 000 10718	CUSHION FOOT FRONT	323W057010					
37		9965 000 10719	CUSHION FOOT BACK	323W057020					
38		9965 000 10720	HOLDER HINGE B	323W271020					
39		9965 000 10721	HOLDER HINGE A	323W271010					
40		9965 000 10703	SPRING DOOR B	323W115030					
41		9965 000 10722	BRACKET DOOR B	323W160020					
42		9965 000 10723	E-RING PI6	323W353100					
43		nsp	BRACKET	nsp					
44		9965 000 12279	MECHA ASSY / CRD-RA2	ZK416K0020					
44a		9965 000 11204	TRAY FOR CDR MECHA	326W163010					
44b		9965 000 11205	BELT FOR CDR MECHA	326W264010					
45	F	nsp	P.C.B ASSY MAIN DR110F1S	nsp					
45	N	nsp	P.C.B ASSY MAIN DR110N1S	nsp					
46		9965 000 11206	CABINET,COVER TOP	325W257010					
PC		nsp	PLATE EARTH "C"	nsp					
PF		nsp	PLATE EARTH "F"	nsp					
PD		nsp	PLATE EARTH "D"	nsp					
TA		nsp	TAPE ARM	nsp					
TL		nsp	TAPE LENS	nsp					
TP		nsp	TAPE PRPTECTOR	nsp					
A		nsp	SCREW TAP TITE,	nsp	-	N	nsp	NOT STANDARD SPARE PARTS	
			+2S 3x8 B-TYPE		-	F	nsp	CARD,Important Card FOR N	nsp
B		nsp	SCREW TAP TITE,	nsp	-	F	nsp	CARD,Post Card FOR F	nsp
			+2S 3x17 B-TYPE		-	F	nsp	CARD,Warranty Card FOR F	nsp
					001S		nsp	BOX GIFT DR110N1S	326W801010
					-		nsp	CUSHION SNOW	323W809010

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W
 R***: 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W

① — Resistance value

Examples ;

① Resistance value
 0.1 Ω 001 10 Ω 100 1 kΩ 102 100 kΩ 104
 0.5 Ω 005 18 Ω 180 2.7 kΩ 272 680 kΩ 684
 1 Ω 010 100 Ω 101 10 kΩ 103 1 MΩ 105
 6.8 Ω 068 390 Ω 391 22 kΩ 223 4.7 MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C***: CERAMIC CAP.

3) DD1 × × × × 370, Ceramic capacitor
 Disc type
 Temp.coeff.P350 ~N1000, 50V
 ② — Capacity value
 ③ — Tolerance

Examples ;

② Tolerance (Capacity deviation)
 ±0.25 pF 0
 ±0.5 pF 1
 ±5% 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5 pF ~ 5 pF ±0.25 pF
 6 pF ~ 10 pF ±0.5 pF
 12 pF ~ 560 pF ±5%

③ Capacity value



0.5 pF 005 3 pF 030 100 pF 101
 1 pF 010 10 pF 100 220 pF 221
 1.5 pF 015 47 pF 470 560 pF 561

C*** : CERAMIC CAP.

4) DK16 × × × 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 ④ — Capacity value

Examples ;

④ Capacity value
 100 pF 101 1000 pF 102 10000 pF 103
 470 pF 471 2200 pF 222

C*** : 5) ELECTROLY CAP. (), 6) FILM CAP. ()

5) EA × × × × × 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%
 ⑤ — Working voltage
 ⑥ — Capacity value

Examples ;

⑤ Capacity value
 0.1 μF 104 4.7 μF 475 100 μF 107
 0.33 μF 334 10 μF 106 330 μF 337
 1 μF 105 22 μF 226 1100 μF 118
 2200 μF 228

⑥ Working voltage

6.3V 006 25V 025
 10V 010 35V 035
 16V 016 50V 050

6) DF15 × × × 350 — Plastic film capacitor
 DF15 × × × 310 — One-way type, Mylar ±5% 50V
 DF16 × × × 310 — Plastic film capacitor
 One-way type, Mylar ±10% 50V
 ⑦ — Capacity value

Examples ;

⑦ Capacity value
 0.001 μF (1000 pF) 102 0.1 μF 104
 0.0018 μF 182 0.56 μF 564
 0.01 μF 103 1 μF 105
 0.015 μF 153

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.

2) On the occasion, be confirmed the common parts on the parts list.

3) Refer to "Common Parts List" for the other common parts (R105, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value * Resistance value
 (0.1 Ω – 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

* Resistance value * Resistance value

Examples ;

* Resistance value
 0.1 Ω 001 10 Ω 100 1 kΩ 102 100 kΩ 104
 0.5 Ω 005 18 Ω 180 2.7 kΩ 272 680 kΩ 684
 1 Ω 010 100 Ω 101 10 kΩ 103 1 MΩ 105
 6.8 Ω 068 390 Ω 391 22 kΩ 223 4.7 MΩ 475



ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL


NOTE ON FUSE :

Regarding to all parts of parts code **FS20xxx2xx**, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

NOTE ON SAFETY :

Symbol  Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol  . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

 が付いている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			CPU CIRCUIT BOARD						
			CPU - CAPACITORS						
C101		nsp	ELECT,1µF-M/50V	nsp	R157		nsp	22K-J 1/5W	nsp
C104		nsp	CER.,SL22pF-J/50V	nsp	R158		nsp	1K-J 1/5W	nsp
C105		nsp	CER.,SL22pF-J/50V	nsp	R159		nsp	1K-J 1/5W	nsp
C106		nsp	ELECT,10µF-M/16V	nsp	R160		nsp	22K-J 1/5W	nsp
C107		nsp	ELECT,10µF-M/16V	nsp	R161		nsp	5.6K-J 1/5W	nsp
C108					R168		nsp	100K-J 1/5W	nsp
C108					R169		nsp	100K-J 1/5W	nsp
C111		nsp	CER.,100pF-K/50V	nsp				CPU - SEMICONDUCTORS	
C112		nsp	CER.,0.047µF-Z/50V	nsp	D101		4822 130 32778	DIODE,1SS133T	HD20015210
C113		nsp	ELECT,220µF-M/16V	nsp	D102		4822 130 32778	DIODE,1SS133T	HD20015210
C114		nsp	ELECT,10µF-M/16V	nsp	D103		4822 130 32778	DIODE,1SS133T	HD20015210
C115		nsp	ELECT,10µF-M/16V	nsp	IC102		9965 000 01373	IC ELECT VR, KIC9459F SOP24P	HC10449050
C118		nsp	ELECT,220µF-M/16V	nsp	IC103		4822 209 73953	IC LINEAR OP, NJM4580DD DIP8P	HC10112090
C119		nsp	CER.,0.047µF-Z/50V	nsp	IC104		9965 000 11129	IC LINEAR-RESET,KIA7032P	*HC107390R
C120		nsp	ELECT,10µF-M/16V	nsp	IC105		4822 209 73953	IC LINEAR OP, NJM4580DD DIP8P	HC10112090
C121		nsp	ELECT,10µF-M/16V	nsp					
C122		nsp	ELECT,100µF-M/50V	nsp	Q101		4822 130 63211	TRS.RA,DTA114TS	*BA001340R
C123		nsp	CER.,0.047µF-Z/50V	nsp				CPU - MISCELLANEOUS	
C151		nsp	ELECT,22µF-M/16V	nsp	CN101		nsp	CN.FPC 1.0MM, 52806-1910 19P STRAIGHT	nsp
C152		nsp	CER.,0.047µF-Z/50V	nsp	CN102		nsp	CN.FPC 1.0MM, 52806-0910 09P STRAIGHT	nsp
C153		9965 000 11211	DOUBLE LAYER(70),0.047F 5.5V / VEND ESR45OHM	*EA001100R	CN103		nsp	CN.WAFER 2.0MM, 53014-0610 6P	nsp
C154		nsp	CER.,0.047µF-Z/50V	nsp	CN105		nsp	CN.FPC 1.0MM, 52806-1710 17P STRAIGHT	nsp
C155		nsp	ELECT,10µF-M/16V	nsp	CN112		nsp	CN.WAFER 2.0MM, 53014-0710 7P	nsp
C156		nsp	ELECT,10µF-M/16V	nsp	G101		nsp	CLAMP WIRE	nsp
C157					G102		nsp	CLAMP WIRE	nsp
C161		nsp	CER.,100pF-K/50V	nsp	XT101		9965 000 10739	RESONATOR CERAMIC, CST10.0MTW-TF01	*FQ000350R
			CPU - RESISTORS		XT102		9965 000 11124	CRYSTAL,32.768kHz	*JX000830R
R101		nsp	10K-J 1/5W	nsp				MAIN CIRCUIT BOARD	
R102		nsp	10K-J 1/5W	nsp				MAIN - CAPACITORS	
R103		nsp	10K-J 1/5W	nsp	C201				
R104		nsp	1K-J 1/5W	nsp	C209		nsp	CER.,0.047µF-Z/50V	nsp
R105		nsp	1K-J 1/5W	nsp	C210		nsp	ELECT,4700µF-M/25V	nsp
R106		nsp	10K-J 1/5W	nsp	C211		nsp	CER.,0.047µF-Z/50V	nsp
R107					C212		nsp	ELECT,1000µF-M/25V	nsp
R113		nsp	1K-J 1/5W	nsp	C213		nsp	CER.,0.047µF-Z/50V	nsp
R114		nsp	100K-J 1/5W	nsp	C214		nsp	ELECT,1000µF-M/25V	nsp
R115		nsp	100K-J 1/5W	nsp	C215		nsp	CER.,0.047µF-Z/50V	nsp
R116		nsp	2.7K-J 1/5W	nsp	C216		nsp	ELECT,470µF-M/25V	nsp
R117		nsp	2.7K-J 1/5W	nsp	C221		nsp	CER.,0.047µF-Z/50V	nsp
R118		nsp	4.7K-J 1/5W	nsp	C222		nsp	ELECT,1000µF-M/25V	nsp
R119		nsp	4.7K-J 1/5W	nsp	C223		nsp	CER.,0.047µF-Z/50V	nsp
R120		nsp	10-J 1/4W	nsp	C224		nsp	ELECT,6800µF-M/16V	nsp
R121					C225		nsp	CER.,0.047µF-Z/50V	nsp
R125		nsp	1K-J 1/5W	nsp	C226		nsp	ELECT,1000µF-M/25V	nsp
R127		nsp	10-J 1/4W	nsp	C227		nsp	ELECT,470µF-M/25V	nsp
R128		nsp	1K-J 1/5W	nsp	C228		nsp	CER.,0.047µF-Z/50V	nsp
R129		nsp	1K-J 1/5W	nsp	C229		nsp	ELECT,100µF-M/50V	nsp
R132		nsp	100K-J 1/5W	nsp	C230		nsp	CER.,0.047µF-Z/50V	nsp
R133		nsp	100K-J 1/5W	nsp	C231		nsp	ELECT,100µF-M/50V	nsp
R134		nsp	330-J 1/5W	nsp	▲ C232		9965 000 11120	CER. AC(SAFETY), DE7150-487F	DK17472840
R135		nsp	330-J 1/5W	nsp	C234		nsp	CER.,0.047µF-Z/50V	nsp
R140		nsp	10K-J 1/5W	nsp	C235		nsp	CER.,0.047µF-Z/50V	nsp
R141		nsp	5.6K-J 1/5W	nsp	C236		nsp	CER.,0.047µF-Z/50V	nsp
R142		nsp	5.6K-J 1/5W	nsp					
R150		nsp	1K-J 1/5W	nsp					
R151		nsp	1K-J 1/5W	nsp					
R153		nsp	10-J 1/4W	nsp					
R154		nsp	10-J 1/4W	nsp					
R156		nsp	5.6K-J 1/5W	nsp					

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
R201		nsp	MAIN - RESISTORS 100-J 1/5W	nsp	C408		nsp	CER.,100pF-K/50V	nsp
R202		nsp	2.7K-J 1/5W	nsp	C409		nsp	ELECT,1μF-M/50V	nsp
R203		nsp	10K-J 1/5W	nsp	C410		nsp	ELECT,1μF-M/50V	nsp
R204		nsp	10K-J 1/5W	nsp	C411		nsp	CER.,100pF-K/50V	nsp
R206		nsp	100-J 1/5W	nsp	C412		nsp	CER.,100pF-K/50V	nsp
R209		nsp	47K-J 1/5W	nsp	C413		nsp	CER.,100pF-K/50V	nsp
R210		nsp	10K-J 1/5W	nsp	C421		nsp	CER.,10pF-J/50V	nsp
R220		nsp	10K-J 1/5W	nsp	C428		nsp	CER.,100pF-K/50V	nsp
}		nsp	1-J 1W	nsp	C429		nsp	CER.,100pF-K/50V	nsp
R223								JACK - RESISTORS	
			MAIN - SEMICONDUCTORS		R401		nsp	75-J 1/5W	nsp
D201		9965 000 10728	DIODE,IN4007	*HD201570R	R402		nsp	10-J 1/5W	nsp
}					R403		nsp	10-J 1/5W	nsp
D208		4822 130 32778	DIODE,1SS133T	HD20015210	R404		nsp	100-J 1/5W	nsp
D209		4822 130 32778	DIODE,1SS133T	HD20015210	R405		nsp	100-J 1/5W	nsp
D210		9965 000 10728	DIODE,IN4007	*HD201570R	R406		nsp	10K-J 1/5W	nsp
D211					R407		nsp	33K-J 1/5W	nsp
D222		9965 000 10728	DIODE,IN4007	*HD201570R	R408		nsp	2.2K-J 1/5W	nsp
}					R409		nsp	330-J 1/5W	nsp
D225		9965 000 10728	DIODE,IN4007	*HD201570R	R410		nsp	330-J 1/5W	nsp
D226		4822 130 32778	DIODE,1SS133T	HD20015210	R411		nsp	100-J 1/5W	nsp
D227		9965 000 10728	DIODE,IN4007	*HD201570R	R412		nsp	100-J 1/5W	nsp
IC201		4822 209 32676	IC LINEAR-REGULATOR, KIA7808P	HC38908090	R413		nsp	2.2K-J 1/5W	nsp
IC202		9965 000 01744	IC LINEAR-REGULATOR, KA7908	HC39908090	R414		nsp	47-J 1/5W	nsp
IC204		4822 209 31631	IC LINEAR-REGULATOR, KIA7805PI	HC3890509F	R421		nsp	10K-J 1/5W	nsp
IC205		4822 209 31631	IC LINEAR-REGULATOR, KIA7805PI	HC3890509F	R422		nsp	10K-J 1/5W	nsp
Q201		9965 000 11123	TRS.2SA,KTA1273Y	*BA001250R	R423		nsp	100K-J 1/5W	nsp
Q202		4822 130 62503	TRS.RC,DTC114YS	*BA001360R	R428		nsp	10K-J 1/5W	nsp
Q203		4822 130 50437	TRS.RC,DTC143ES	*BA001300R				JACK - SEMICONDUCTORS	
ZD201		4822 130 10624	D ZENER,MTZJ27B	*HD301580R	D401		4822 130 32778	DIODE,1SS133T	HD20015210
ZD202		9965 000 11210	D ZENER,MTZJ20B	*HD301950R	}				
ZD203		4822 130 33948	D ZENER,MTZJ5.6B	HD30561000	D404		5322 209 11323	IC LOGIC,PC74HCU04 DIP14P	HC700405B0
ZD204		9965 000 01374	D ZENER,MTZJ2.7B	HD30271000	IC401		4822 130 42683	TRS.RC,DTC124ES	*BA001370R
					Q401				
					Q402		4822 130 63659	TRS.RC,DTC143TS	*BA001380R
					Q405				
			MAIN - MISCELLANEOUS		Q406		4822 130 61227	TRS.RA,DTA114ES	*BA001330R
▲ CN201		nsp	CN.WAFER 3.96MM, 35328-0210	nsp	Q407		4822 130 60588	TRS.RC,DTC114ES	*BA001350R
▲ CN202		nsp	CN.WAFER 7.92MM, YW396-32V 2P	nsp	Q408		4822 130 61227	TRS.RA,DTA114ES	*BA001330R
CN203		nsp	CN.WAFER 2.5MM,5267-06A 6P	nsp	Q409		4822 130 42594	TRS.RC,DTC144ES	*BA001390R
CN204		nsp	CN.WAFER 2.5MM,5267-08A 8P	nsp	ZD401		4822 130 80273	D ZENER,MTZJ8.2B	HD30821000
CN207		nsp	CN.WAFER 2.5MM,5267-06A 6P	nsp				JACK - MISCELLANEOUS	
CN208		nsp	CN.WAFER 2.5MM,5267-03A 3P	nsp	CN401		nsp	CN.WAFER 2.5MM, 5268-04A 4P ANGLE	nsp
▲ F200	N	4822 070 33151	FUSE (5.2x20),250V-T315MA	*FS000810R	CN402		nsp	CN.WAFER 2.5MM, 5268-09A 9P ANGLE	nsp
▲ F200	F	nsp	FUSE (5.2x20),250V-S1.6A	*FS000820R	CN403		nsp	CN.WAFER 2.5MM, 5268-09A 9P ANGLE	nsp
F201		nsp	HOLDER FUSE CLIP	nsp					
F202		nsp	HOLDER FUSE CLIP	nsp					
G201		nsp	TERMINAL,GND PLATE	nsp	JK401		9965 000 11127	TER RCA 1PIN,JE010003PN	*YT002670R
▲ RL1		9965 000 10737	RELAY,G5PA-1-8 12V 5A	*LY000260R	JK402		9965 000 11212	MODULE, GP1F37R1/OPTICAL TX	*YJ002500R
▲ T201	N	9965 000 11027	SUB TRANSF. FOR N	*TS001540R					
▲ T201	F	nsp	SUB TRANSF. FOR F	*TS001370R	JK403		9965 000 11260	TER RCA 4PIN,JK040131	*YJ002510R
					JK405		9965 000 11126	TER RCA 2PIN,JK020130LN	*YJ002490R
			JACK CIRCUIT BOARD		L401		nsp	COIL FILTER-INDUCTOR, 1UH-Q40/150M-R0.8 03TB	nsp
			JACK - CAPACITORS		SW401		9965 000 10732	SW SLIDE,SSAF112NA011	*SS000700R
C401		nsp	CER.,0.047μF-Z/50V	nsp				FRONT CIRCUIT BOARD	
C402		nsp	CER.,0.047μF-Z/50V	nsp				FRONT - CAPACITORS	
C403		nsp	ELECT,47μF-M/16V	nsp	C801		nsp	CER.CHIP,0.01μF-K/50V	nsp
C404		nsp	CER.,0.047μF-Z/50V	nsp	C802		nsp	CER.CHIP,0.01μF-K/50V	nsp
C405		nsp	ELECT,10μF-M/16V	nsp	C803		nsp	CER.CHIP,100pF-J/50V	nsp
C406		nsp	ELECT,10μF-M/16V	nsp					
C407		nsp	CER.,100pF-K/50V	nsp					

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
C804 }		nsp	CER.CHIP,0.1µF-K/50V	nsp	S805		9965 000 10760	SW TACT,THVH472GAA	*SP001150R
C807					S806		9965 000 10761	SW TACT,SKHV10920A	*SP001140R
C808		nsp	ELECT,100µF-M/10V	nsp	S807		9965 000 10761	SW TACT,SKHV10920A	*SP001140R
C809		nsp	CER.CHIP,0.1µF-K/50V	nsp	S808		9965 000 10760	SW TACT,THVH472GAA	*SP001150R
C812		nsp	CER.CHIP,0.1µF-K/50V	nsp	S809 }		9965 000 10761	SW TACT,SKHV10920A	*SP001140R
C813		nsp	CER.CHIP,0.01µF-K/50V	nsp	S812				
C814		nsp	CER.CHIP,0.01µF-K/50V	nsp	S813		9965 000 10760	SW TACT,THVH472GAA	*SP001150R
			FRONT - RESISTORS		VFD801		9965 000 11208	DISPLAY FLT / ST-16-48GN	*HQ300470R
R801		nsp	CHIP,100-J 1/16W	nsp	VR801		9965 000 11207	SW ROTARY, EC12B24S2033ZZZ	*SR000170R
R802		nsp	CHIP,100-J 1/16W	nsp					
R803		nsp	CHIP,10K-J 1/16W	nsp					
R804		nsp	CHIP,27K-J 1/16W	nsp					
R805		nsp	CHIP,1K-J 1/16W	nsp					
R806		nsp	CHIP,1K-J 1/16W	nsp					
R807		nsp	CHIP,1K-J 1/16W	nsp					
R808		nsp	CHIP,47-J 1/16W	nsp					
R809		nsp	CHIP,10K-J 1/16W	nsp					
R810		nsp	CHIP,1K-J 1/16W	nsp					
R811		nsp	CHIP,270-J 1/16W	nsp					
R813		nsp	CHIP,10K-J 1/16W	nsp					
R814		nsp	CHIP,1K-J 1/16W	nsp					
R815		nsp	CHIP,270-J 1/16W	nsp					
R817		nsp	CHIP,1K-J 1/16W	nsp					
R818		nsp	CHIP,1K-J 1/16W	nsp					
R820		nsp	CHIP,270-J 1/16W	nsp					
R821		nsp	CHIP,270-J 1/16W	nsp					
R823 }		nsp	CHIP,10K-J 1/16W	nsp					
R826									
R827		nsp	CHIP,1.8K-J 1/16W	nsp					
R828		nsp	CHIP,2.7K-J 1/16W	nsp					
R829		nsp	CHIP,4.7K-J 1/16W	nsp					
R830		nsp	CHIP,8.2K-J 1/16W	nsp					
R831		nsp	CHIP,4.7K-J 1/16W	nsp					
R832		nsp	CHIP,2.7K-J 1/16W	nsp					
R833		nsp	CHIP,1.8K-J 1/16W	nsp					
R834		nsp	CHIP,8.2K-J 1/16W	nsp					
R835		nsp	CHIP,4.7K-J 1/16W	nsp					
R836		nsp	CHIP,2.7K-J 1/16W	nsp					
R837		nsp	CHIP,1.8K-J 1/16W	nsp					
			FRONT - SEMICONDUCTORS						
D801		9965 000 10757	LED ROUND,HL-50CDG	*HI100970R					
D802		9965 000 10757	LED ROUND,HL-50CDG	*HI100970R					
D803		9965 000 10758	LED ROUND, PI5-RD GR/HLD50RG DUAL	*HI100980R					
IC801		9965 000 10762	IC LINEAR-DRIVER, M66005FP SOP64P	*HC107180R					
Q801 }		9965 000 11209	CHIP TRS.2SC,DTC114EK	*BA001320R					
Q804									
Z801		4822 130 83142	D ZENER,MTZJ6.2B	HD30621000					
			FRONT - MISCELLANEOUS						
CP801		nsp	CN.FPC 1.0MM, 52806-1910 19P STRAIGHT	nsp					
G101		nsp	CLAMP,CABLE TIE DACT-100A	nsp					
G102		nsp	CLAMP,CABLE TIE DACT-100A	nsp					
J802		nsp	CHIP,0-J 1/16W	nsp					
J803		nsp	CHIP,0-J 1/16W	nsp					
RM801		9965 000 10754	REMOTE MODULE, NJL64H380A	*HW100520R					
S801 }		9965 000 10761	SW TACT,SKHV10920A	*SP001140R					
S804									

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.