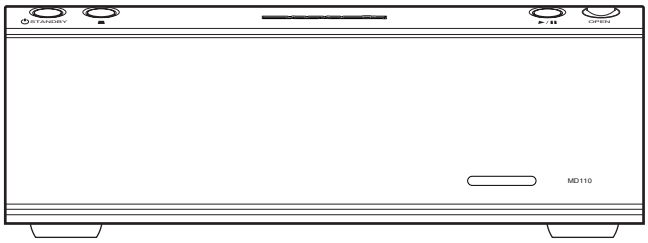
Service Manual

MD110 /F1S, /N1S

MD Deck



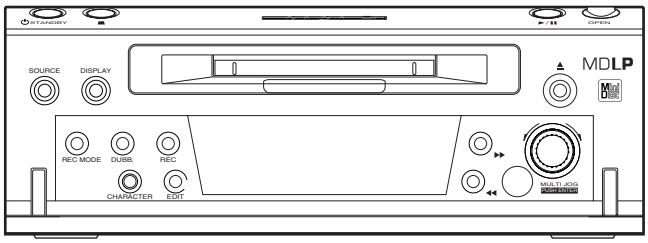


TABLE OF CONTENTS

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。

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MD110

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First Issue 2001.12

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

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2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
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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

MAIN UNIT (MD110)

Type ..... MiniDisc Digital Audio System
Laser ..... Semiconductor laser
Recording method ..... Magnetic field modulation overwrite method
RPMs ..... Approximately 400rpm to 900rpm (CLV)
Sampling frequency ..... 44.1 kHz
Frequency characteristics ..... 20 to 20 kHz (± 1 dB)
S/N ..... 85 dB or greater
Total Harmonic Distortion ..... 0.005 % or less
Wow and Flutter ..... Less than measurable limits
Line output level ..... 2.0 Vrms
Analog Input ..... 250 mVrms

GENERAL

Power supply ..... AC 100 V 50 / 60 Hz (F version)
AC 230 V 50 Hz (N version)
Power Consumption <Electric Appliance Control Act> ..... 16 W
Maximum external dimensions (W x H x D) ..... 210 x 71.5 x 310 mm
Weight ..... 3.3 kg

ACCESSORIES

Remote Control Transmitter (RC110DRMD/N1S, RC110DRMDF/F1S) 1
External dimensions (W x H x D) ..... 50.5 x 154.5 x 25 mm
Weight ..... 60 g
AA type batteries 2
Stereo audio cable ..... 1 pair
Coaxial cable 1
Remote control cable 1

The specifications and external appearance are subject to change without notice.
Some portions of the illustrations that appear in this manual may differ slightly from the actual product.

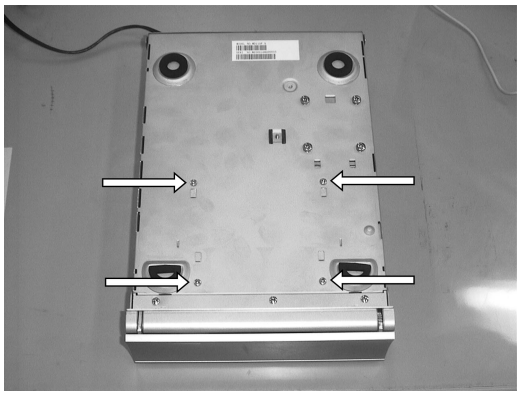
This product is licensed under U.S. and foreign patents of Dolby Laboratories.

2. SERVICE MODE

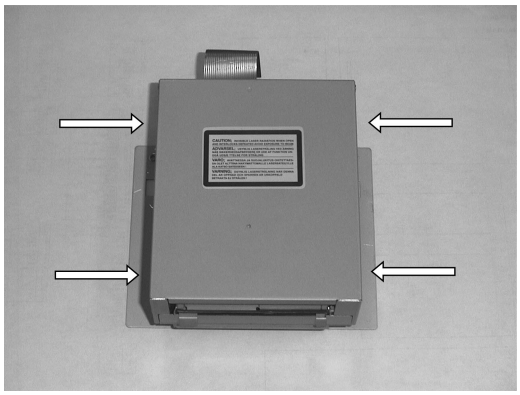
Service Mode

1. While Mains cord is disconnected, press **DISPLAY** Button on the unit and plug in the Mains cord.
2. Version number of the front micom software is displayed.
3. Turn **JOG** dial to either direction 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.

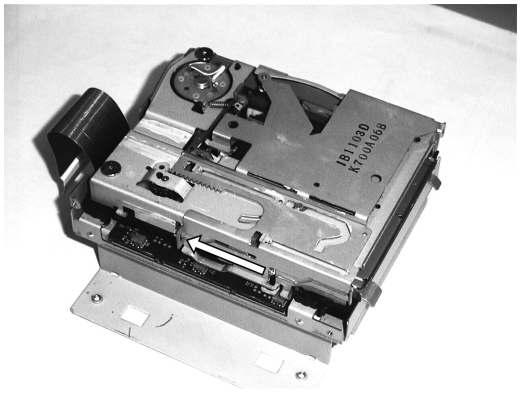
Emargency Eject



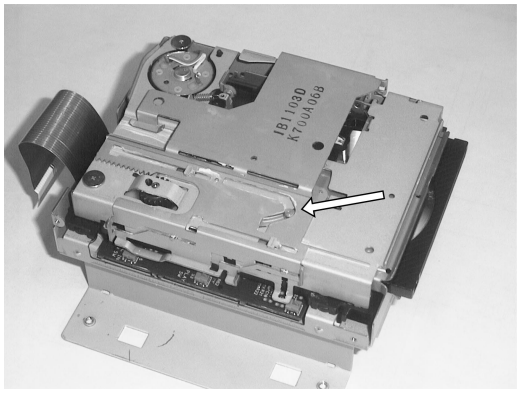
1. Remove 5 screws on the top cover and remove the top cover.
2. Remove 4 screws on the bottom. (Pointed with the arrows in the picture above.)



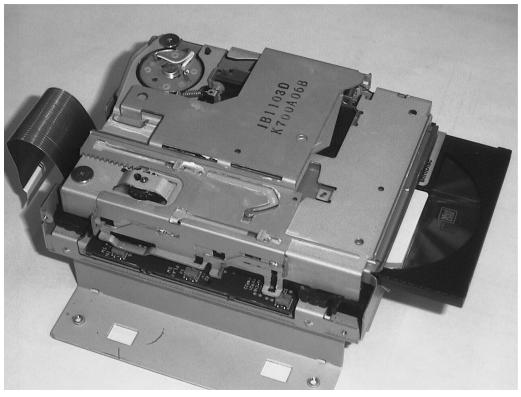
3. Disconnect the flexible wire.
4. Remove the MD mechanism component from the unit and remove the 4 screws on the both sides. (Pointed with the arrows in the picture above.)



5. Slide the lever pointed with the arrow to the direction of the arrow.



6. Slide the pin pointed with the arrow to the direction of the arrow.



7. Disc is ejected.

TEST MODE

1 How to Setting and Cancel Test Mode

Setting: While pressing the PLAY/PAUSE keys, insert the power cord to the wall outlet.
Cancel: Pull out the power cord.

Key Operation for Adjustment

Key	Operation
MULTI JOG	Select parameter and mode.
PLAY	Fix items. Change of display in every check.
STOP	Cancel or back of test mode.

2 Remained Keys Operation

Key	Operation
DISPLAY	Display changes.
FF	Pickup moves outwards when press FF key
FB	Pickup moves inwards when press FB key

3 Selection of test mode

13 test modes are selected by pressing UPIDOWN keys.

No.	Display	Description	Section
1	TEMP ADJUST	The work of adjustment is unnecessary in this mode	6-5
2	LDPWR ADJUST	Laser power adjustment	6-6
3	LDPWR CHECK	Laser power check	6-6
4	EF BAL ADJUST	Traverse adjustment	6-7
5	TE B. ADJUST	Automatic EF balance adjustment	
6	FBIAS ADJUST	Focus bias adjustment	6-8
7	CPLAY MODE	Continuous playback mode	5-4
8	CREC MODE	Continuous recording mode	5-5
9	STT-LIMIT SW	Check the mechanism start limit SW position	-
10	JUMP MODE	Track jump checking mode	-
11	SRV DAT READ	Servo data reading	-
12	EEP MODE	E2PROM data reading or rewrite	-
13	EEP INITIAL	E2PROM data initializing	-

For more information on each adjustment mode, refer to each section of 6, "Electrical adjustment".
If other adjustment mode has been entered incorrectly, press the STOP key to exit the mode.
*The number 9 -13 are not used for service. If these modes have been entered incorrectly, press the STOP key immediately to exit the mode. Specially, do not use EEP INITIAL. (E2PROM data has initialized if used it.)

4 continuous Playback Mode

1. Setting of Continuous Playback Mode

No.	Key	Display/Function
1	MULTI JOG	Select [CPLAY MODE]
2		Load disc
3	PLAY	[CPLAY MID] [c=xxxx a=yy] error (xxxx=C1 error, yy=ADIP error)
4	DISPLAY	[CPLAY (zzzz)] CPLAY address (MID=0300h, OUT=0700h, IN=0030h cluster)
5	DISPLAY	[h****d@@@@] address (****=current head address, @@@@=ADIP address

In No.5, Display shows [-] if can't read disc.

2. Change of Playback Points (In continuous playback mode)

No.	Key	Display/Function
1	PLAY	[CPLAY OUT]
2		Carry out No.4 and 5 in the above table
3	PLAY	[CPLAY IN]
4		Carry out No.4 and 5 in the above table
5	STOP	[CPLAY MODE]
6		EJECT Disc out

5 Continuous Recording Mode

1. Continuous Recording Setting

No.	Key	Display/Function
1	MULTI JOG	Select [CREC MODE]
2		Load the recordable disc
3	PLAY	[CREC MID]
4	PLAY	[CREC (zzzz)] CREC address (0300h cluster = recording start point)
5	DISPLAY	[h****d@@@@] address
6	DISPLAY	[c=xxxx a=yy] error
7	DISPLAY	[CREC (zzzz)]
8	STOP	[c=xxxx a=yy]

2. Change and End of Recording Points

No.	Key	Display/Function
1		Carry out No.1 to 3 in the above table Select [CREC MID]
2	MULTI JOG	[CREC OUT]
3	PLAY	[CREC (zzzz)] CREC address (0700h cluster = recording start point) Carry out No.5 to 8 in the above table
4		Carry out No.1 to 3 in the above table
5	PLAY	Select [CREC MID]
6	MULTI JOG	Select [CREC IN]
7	PLAY	[CREC (zzzz)] CREC address (0300h cluster = recording start point) Carry out No.5 to 8 in the above table
8	EJECT	Disc out

Starting address is the followings.
IN=30h cluster, MID=300h cluster, OUT=700h cluster

1. The recording start addresses of IN, MID, and OUT are described below.
   IN 30H cluster
   MID 300H cluster
   OUT 700H cluster
2. An erasure prevention control is not detected in the test mode. Be careful not to enter the continuous recording mode using a disc containing the data that should not be erased.
3. Do not record continuously for more than five minutes.
4. Take care that no vibration is applied during continuous recording.

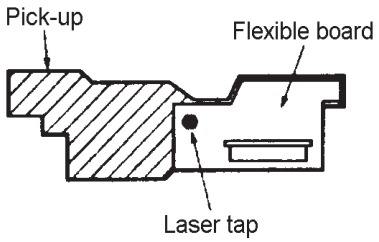
Electrical adjustment

1 Precaution during confirmation of Laser Diode emission

During adjustment, do not view the emission of a laser diode from lust above for confirmation. This may damage your eyes.

2 Precaution on handling of Optical pick-up (KMS-260B)

The laser diode in an optical pick-up is easy to be subject to electrostatic destruction. Therefore, solder-bridge the laser tap on the flexible board when handling the optical pick-up.
When removing the flexible board from the connector, make a solder bridge in advance, then remove the board. Be careful not to remove the solder bridge before inserting the connector. Moreover, take careful measures against electrostatic destruction. The flexible board is cut easily. Handle the flexible board with care.



3 Precaution during adjustment

1) Perform the adjustment and confirmation marked with "O" in the order shown in the table when the parts below are replaced.

	Optical pick-up	BD board		
		IC6	D101	IC1, IC2, IC10
1.Temperature compensation offset adjustment	X	O	O	O
2. Laser power adjustment	O	O	X	O
3.Trtvense adjustment	O	O	X	O
4. Focus bias adjustment	O	O	X	O
5. Error rate confirmation	O	O	X	O

2) In the test mode, perform the adjustment. After adjustment is completed, chancel the test mode.
3) Perform the adjustment in the order described.
4) Use the following tools and measurement equipment.
   CD test disc TGYS-1
   Laser power meter
   Oscilloscope (with bandwidth of more than 40 M Ohms)
   (Calibrate the probe before measurement)
   Digital voltmeter
   Thermometer
5) Take care that VC and GND (ground) are not connected on the oscilloscope when two or more signals are monitored on the oscilloscope. (VC and GND are short-circuited in this case,)

4 Creating the recordable continuous recording disc

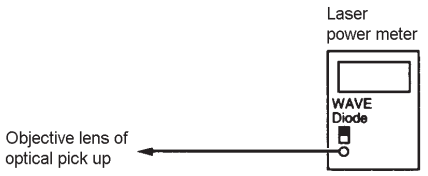
This disc is used for focus bias adjustment and error rate confirmation. How to create the recordable continuous recording disc is 5-5

5 Offset Adjustment

No.	Kay	Display/Function
1	MULTI JOG	Select [TEMP ADJUST]
2	PLAY	[TEMP = xx (yy)] (xx = compensation data, yy = setting temperature
3	MULTI JOG	Input "yy" with present temp.
4	PLAY	[TEMP=**SAVE] [TEMP ADJUST] in writing data

6 Laser Power Check and Adjustment

Laser power setting in playback and recording modes.
Preparation
1. Remove the MD mechanism from the unit
2. Remove the case and bracket.
3. Reconnect the flat cable of MD mechanism to the unit



1. Laser Power Adjustment

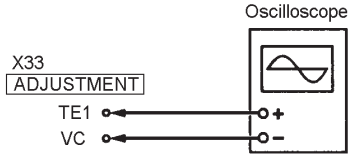
No.	Key	Display/Function
1	MULTI JOG	[LDPWR ADJUST] Load recordable disc
2		Load the disc and laser on [a0.9mW>$xx] read power (xx = power value)
3	EJECT	Unload the disc and laser on
4	FF/FB (REC)	Move the pickup to check the laser power with laser power meter sensor (Press the REC key if the pickup is In the proper position)
5	MULTI JOG	Adjust “xx” so that the power meter shows 0.9mW.
6	PLAY	[a7.0mW>$xx] writing power
7	UPIDOWN	Adjust “xx” so that the power meter shows 7.0mW. This adjustment should be carried out In 15secs.
8	PLAY	Laser power off Display shows [LDPWR ADJUST] after [LDPWR<$xx] to save the data In E2PROM

Start from No.2 if readjust.

2. Laser Power Check

No.	Key	Display/Function
1	UP	[LDPWR CHECK]
2	PLAY	[c0.9mW>$xx] (xx=0.85 to 0.95mW)
3	PLAY	[c7.0mW>$xx] Laser power meter: 7.0 + - 1.0mW*

7 Traverse Adjustment



V: 0.5V/div H: 10ms/div
INPUT: DC mode

FE Balance

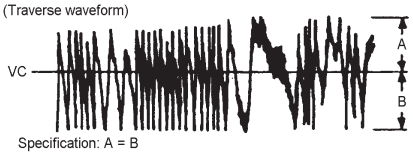
1. Recordable Disc

No.	Key	Display/Function
1		Connect the oscilloscope to TE1 and VC in X33 PCB
2	MULTI JOG	Select [EFBAL ADJUST]
3		Load the recordable disc
4	PLAY	[EFBAL MO-W]
5	PLAY	[EF=$**MOW]
6	MULTI JOG	Write adjustment. Adjust the waveform as follows.
7	PLAY	Display shows [EF=$**MOR] after [EFB=**xSAVE] to save the data in E2PROM. Mode changes write to read Focus and disc servo are on. Tracking servo off.
8	MULTI JOG	Read power adjustment. Adjust the waveform as follows.
9	PLAY PLAY	Save the data in E2PROM. Display shows [EFBAL MO-P] Display shows [EF=$**MOP] (Pickup travels to search pits and tune the servo to on.)
10	MULTI JOG	Adjust the waveform as follows.
11	PLAY	Display shows [EFBAL CHANGE] after [EFB=**xSAVE] to save the data in E2PROM. Display shows [EFBAL CHANGE] disc motor stops.
12	EJECT	Unload disc.

2. PER Master Test Disc (TGYS-1)

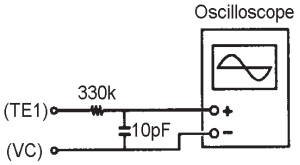
No.	Key	Display/Function
1		Load the disc (TGYS-1).
2	PLAY	[EF=$**CD] servo is on
3	MULTI JOG	Adjust the waveform as follows.
4		Save the data in E2PROM. Display shows [EFB=**xSAVE] in brief time. [EFBAL ADJUST]
5	EJECT	Unload disc.

During this adjustment, the oscilloscope changes in units of about 2%. Adjust so that the waveform comes nearest to the specified value. (MO groove read power traverse adjustment)



Notes:

1. Data is erased during MO write when a recorded disc is used for this adjustment
2. If the traverse waveform is difficult to be monitored, connect an oscilloscope as shown in the figure below.



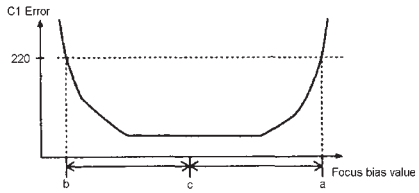
8 Focus Bias Adjustment

Use the special disc (continuous recorded disc)

No.	Key	Display/Function
1	MULTI JOG	Select [FBIAS ADJUST]
2		Load the disc.
3	PLAY	[a=xx yyyy/zz] point a (xx = focus bias yyyy = C1error)
4	UP	Adjust "yyyy" to 220*
5	PLAY	[b=xx yyyy/zz] point b
6	DOWN	Adjust "yyyy" to 220*
7	PLAY	[xx yyyy/zzc=] point c Check "yyyy" within 50
8	PLAY	Display shows [aa bb cc(xx)] focus bias adjust (aa = point a, bb=b, cc=c)

Notes:

1. The relation between the C1 error and focus bias value is shown in the figure below. Points "a" and "b" in the figure are detected by the above adjustment. Focal position "C" is automatically obtained from points "a" and “b” by calculation.
2. The C1 error rate fluctuates. Therefore, perform the adjustment according to the observed mean value.



9 Error Rate Check

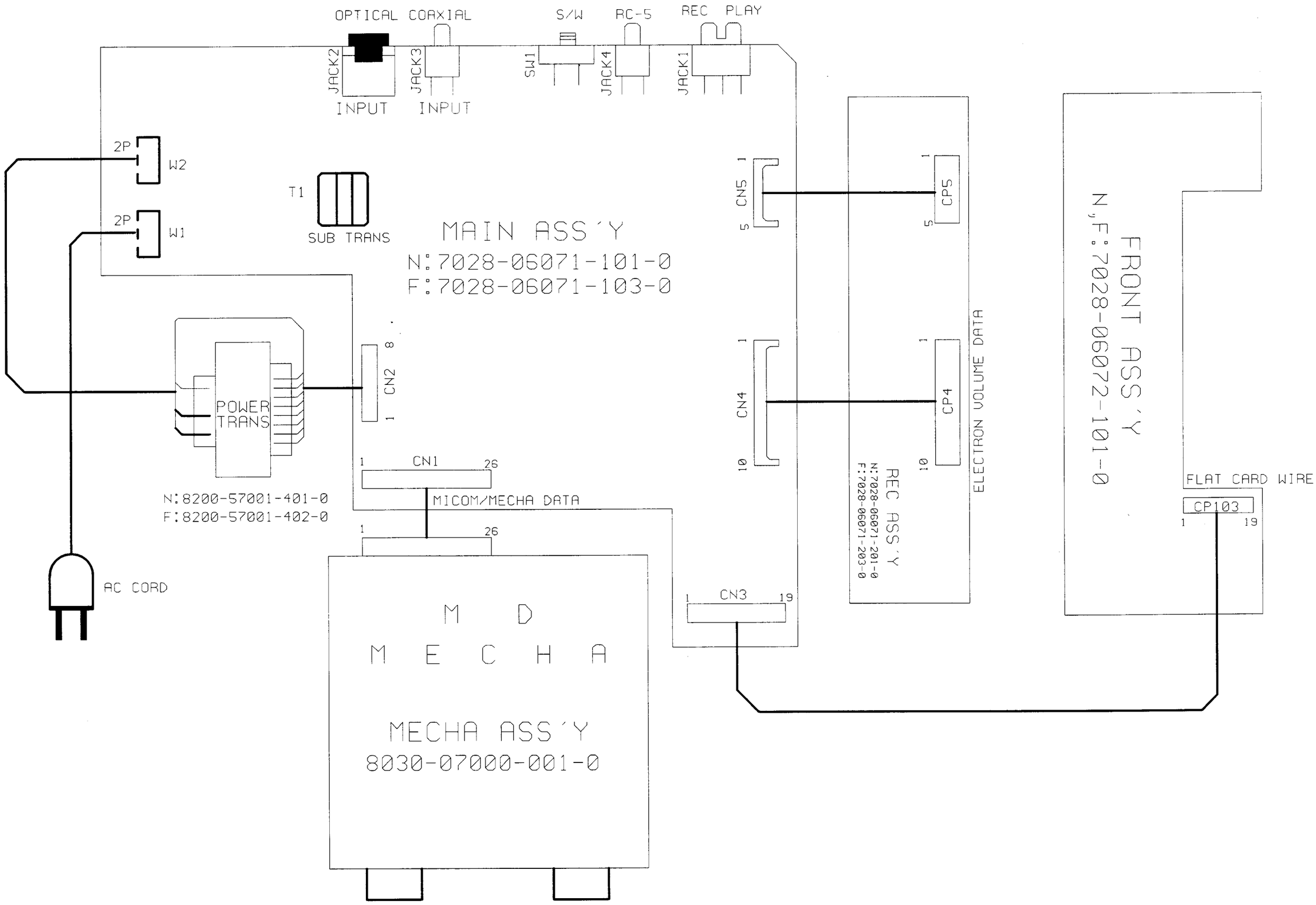
1. CD Error Rate

No.	Key	Display/Function
1	MULTI JOG	[CPLAY MODE]
2		Load the test disc (TGYS-1)
3	PLAY	Display shows [CPLAY MID] Access and [c=xxxx a=yy] xxxx=C1 error (lower 20) yy = AIDP error
4	STOP	[CPLAY MODE]
5	EJECT	Unload disc.

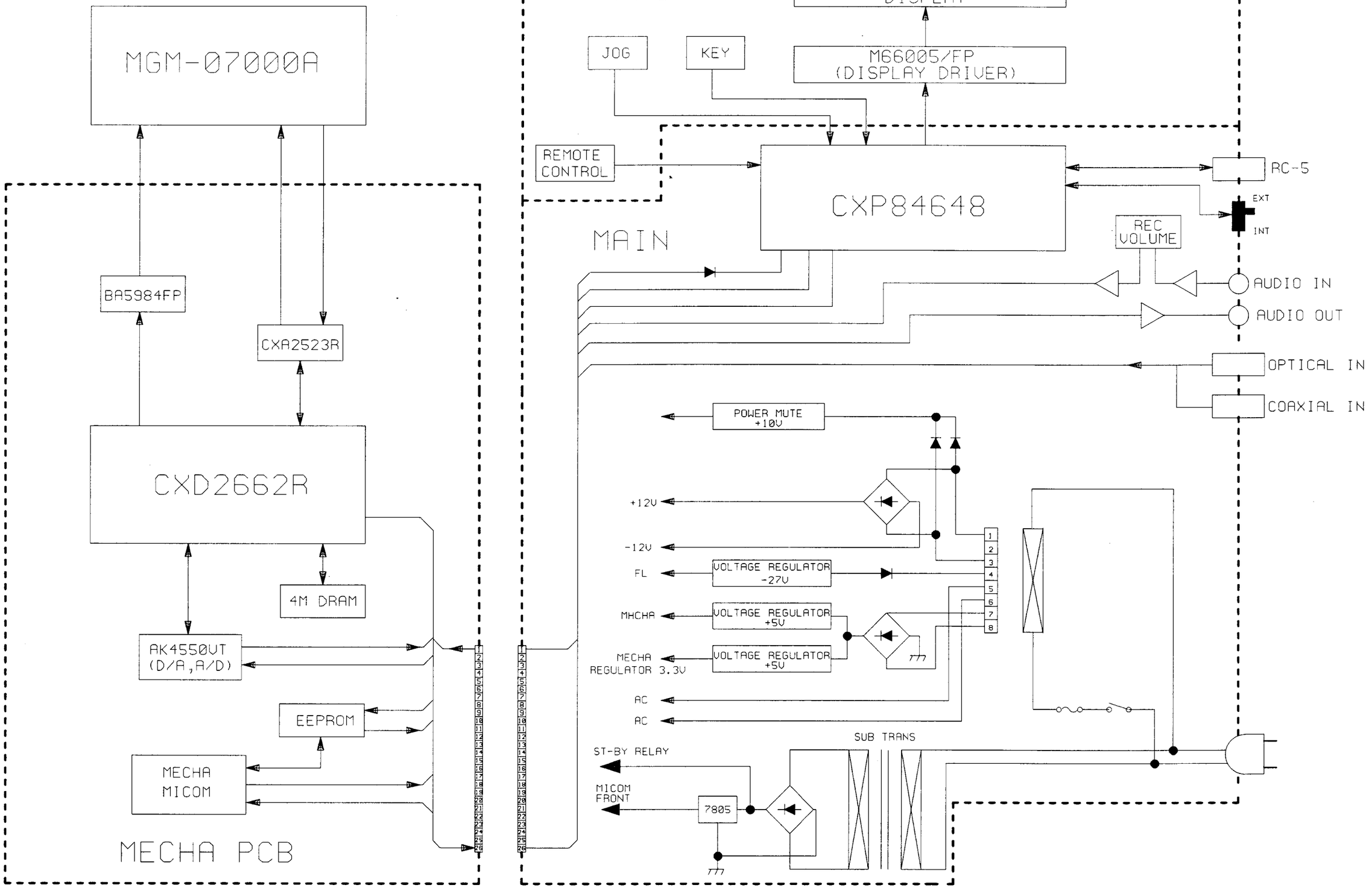
2. MO Error Rate

No.	Key	Display/Function
1	MULTI JOG	[CPLAY MODE]
2		Load the recordable disc
3	PLAY	Display shows [CPLAY MID] Access and [c=xxxx a=yy] xxxx=C1 error (lower 50) yy = AIDP error (00)
4	STOP	[CPLAY MODE]
5	EJECT	Unload disc.

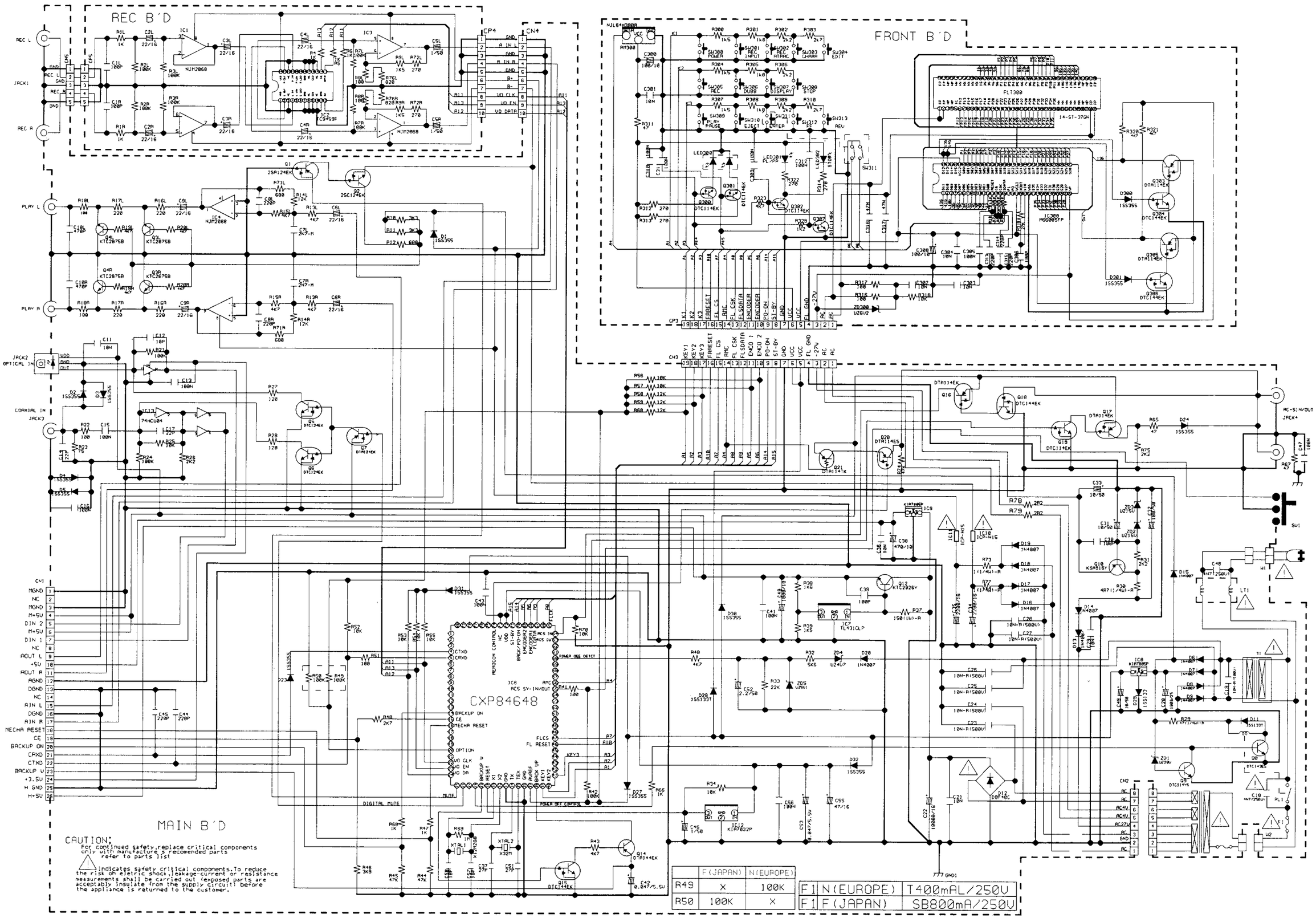
3. WIRING DIAGRAM



4. BLOCK DIAGRAM



5. SCHEMATIC DIAGRAM



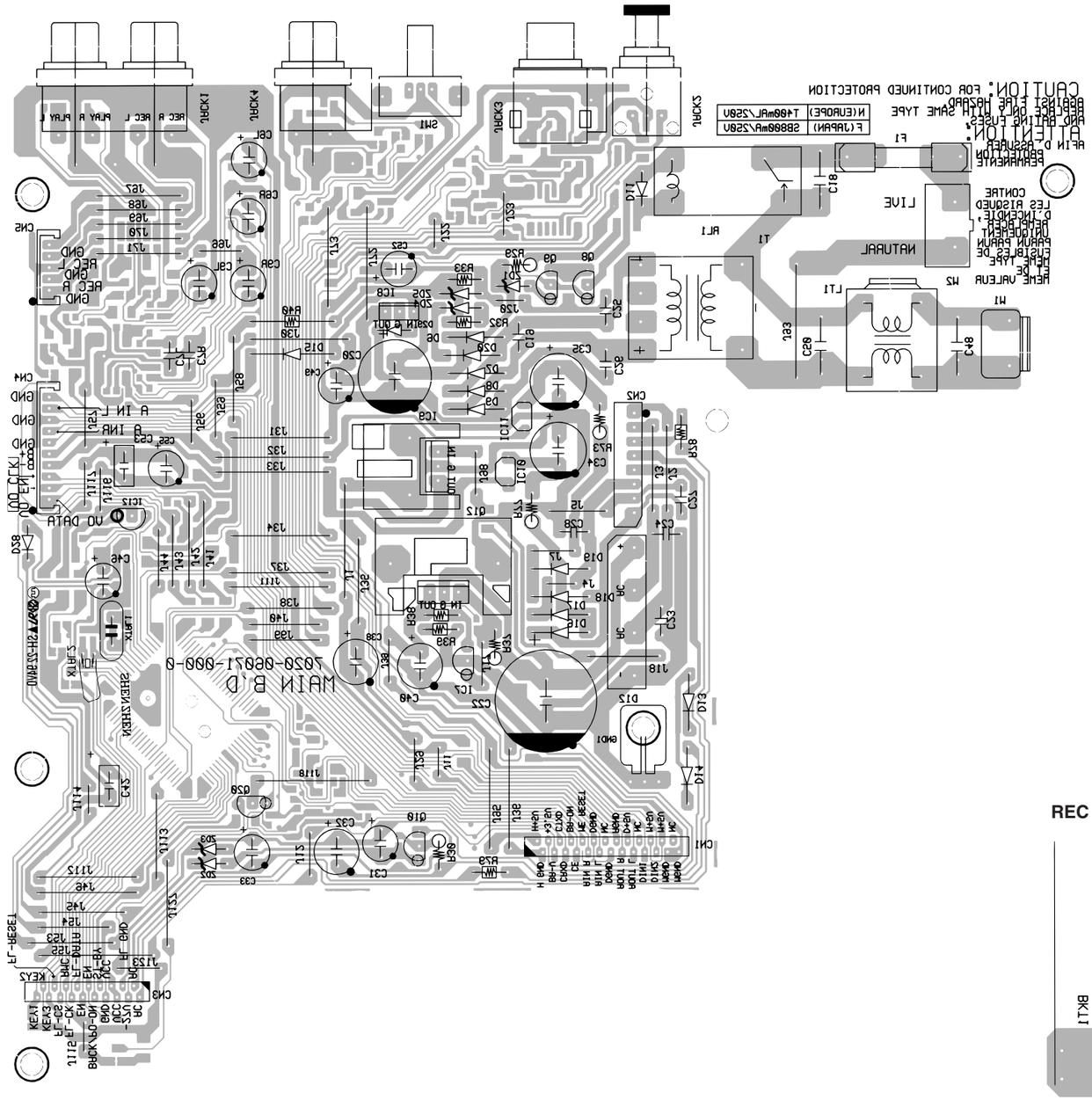
	F(JAPAN)	N(EUROPE)
R49	X	100K
R50	100K	X

F1	N(EUROPE)	T400mAL/250V
F1	F(JAPAN)	SB800mA/250V

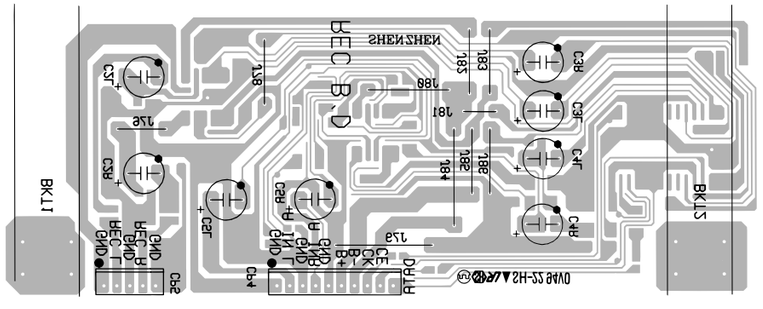
6. PARTS LOCATION (Pattern Side)

MAIN BOARD

IC8 Q9 Q8
IC12 IC9 Q12 IC10 IC11
Q20 Q10 IC7

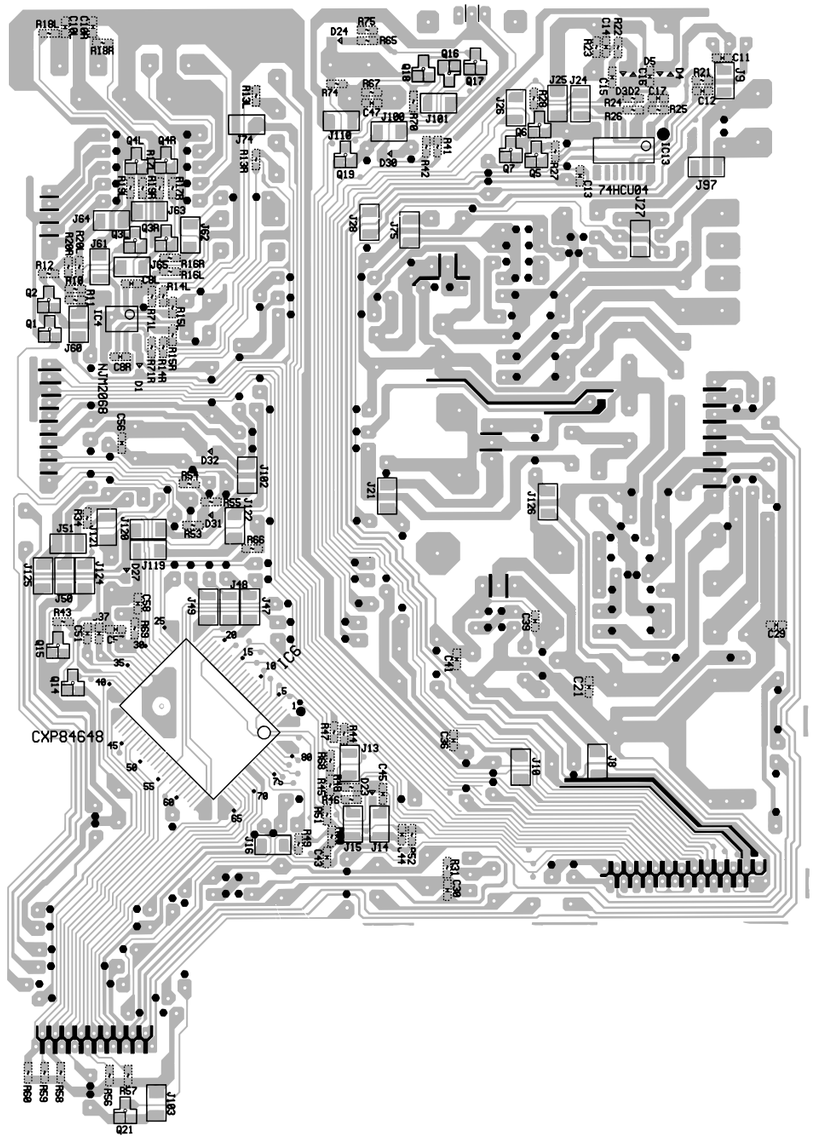


REC BOARD



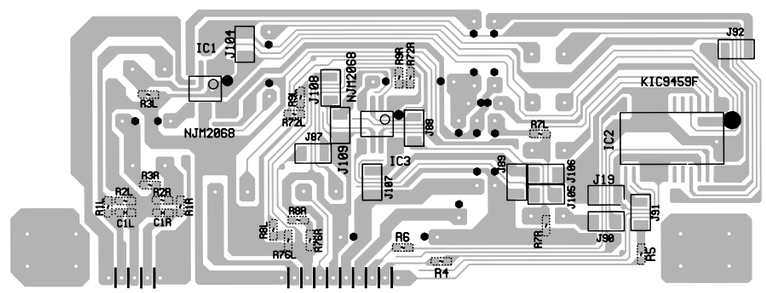
MAIN BOARD

Q4L Q4R Q16-Q18
Q1 Q2 IC4 Q3L Q3R Q19 Q5-Q7 IC13
Q14 Q15
Q21

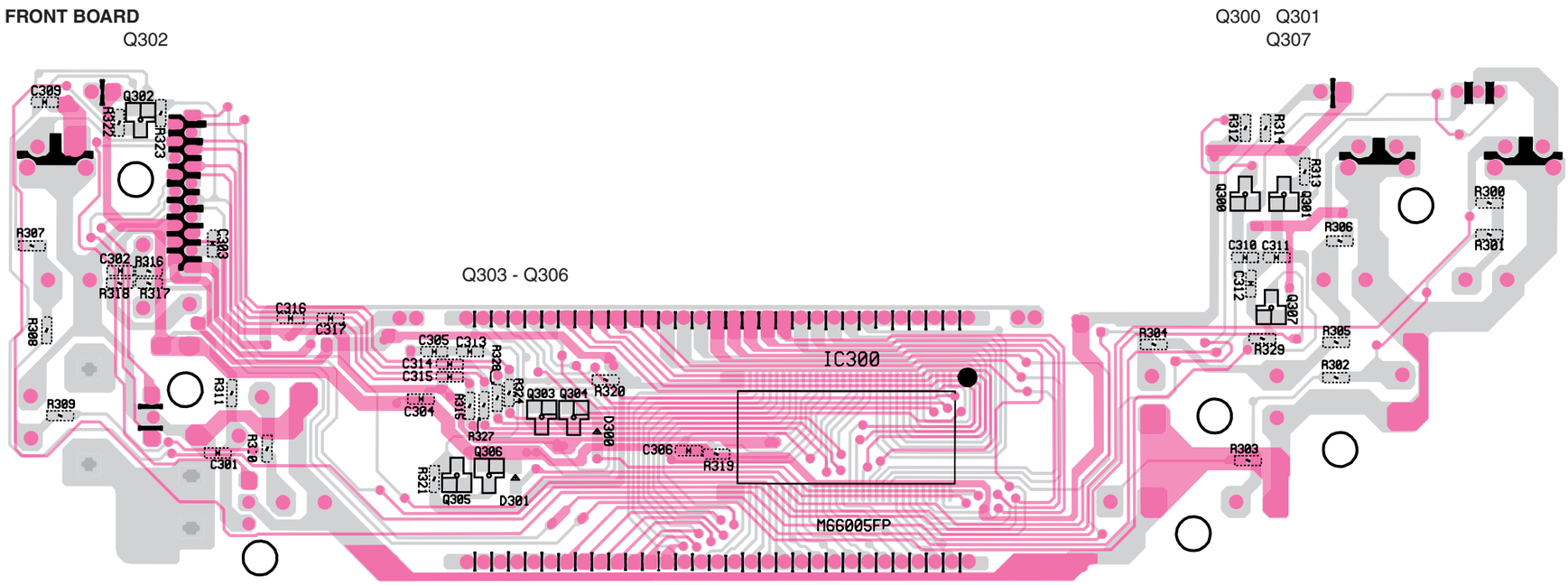


REC BOARD

IC1 IC3 IC2



FRONT BOARD


Q302
Q300 Q301
Q307
Q303 - Q306
IC300
M66005FP
C309
Q302
R324
R323
R307
C303
C302
R316
R318
R317
R308
C316
C317
C305
C313
C314
C315
R328
R324
R315
Q303
Q304
R320
D300
C304
R327
Q306
R321
Q305
D301
C306
R319
R311
R310
C301
R309
R312
R314
R313
Q300
Q301
R300
R306
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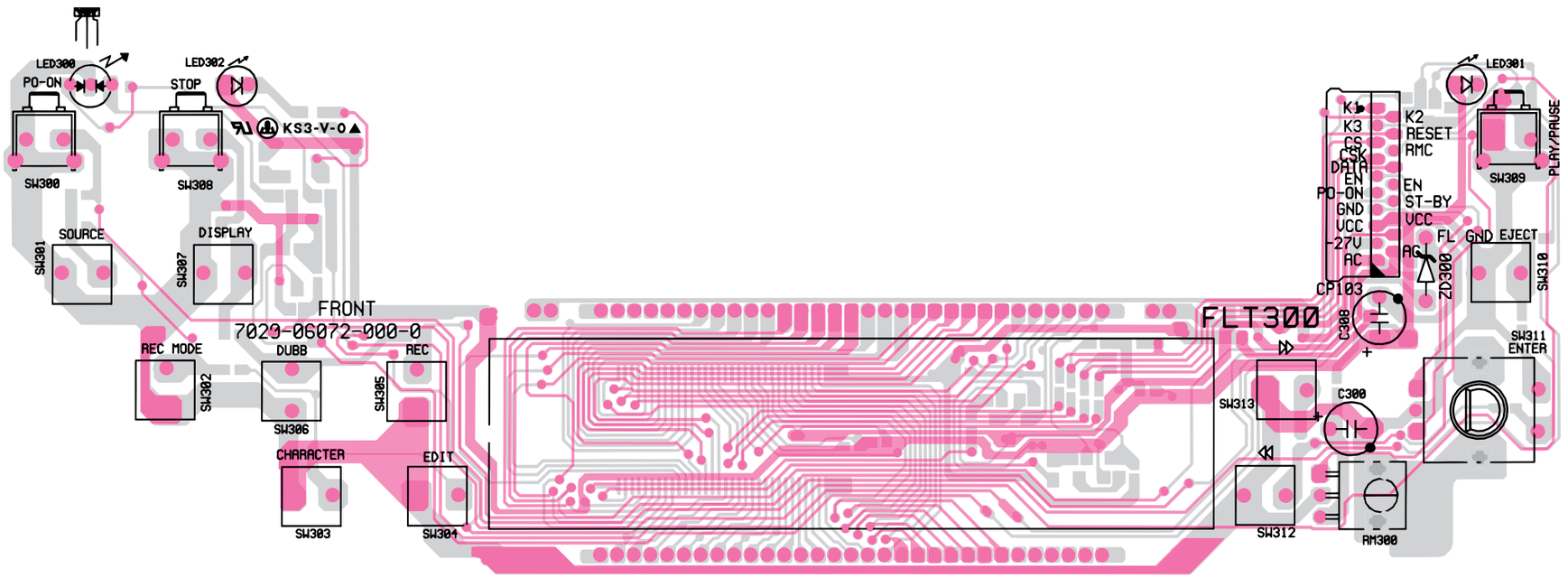
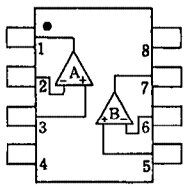
C310
C311
C312
Q307
R304
R329
R305
R302
R303


LED300
PO-ON
LED302
STOP
KS3-V-0
SW300
SW308
SOURCE
DISPLAY
SW301
SW307
FRONT
7020-06072-000-0
REC MODE
DUBB
REC
SW302
SW306
SW305
CHARACTER
EDIT
SW303
SW304
K1
K3
CS
CSK
DATA
EN
PO-ON
GND
VCC
-27V
AC
K2
RESET
RMC
EN
ST-BY
VCC
AG
FL GND EJECT
CP103
FLT300
C308
ZD300
SW310
LED301
SW309
PLAY/PAUSE
SW311
ENTER
C300
SW313
SW312
RM300

7. IC DATA

IC1/3/4:NJM2068

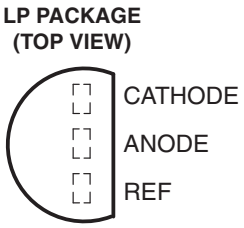
Pin Configuration



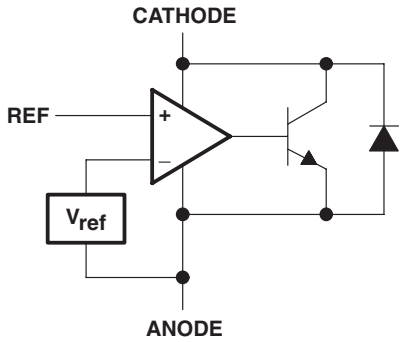
PIN FUNCITON
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

IC7:TL431

Pin Assignment

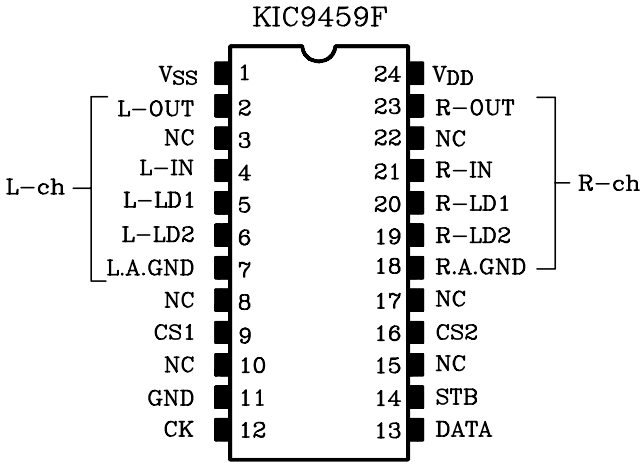


Functional Block Diagram



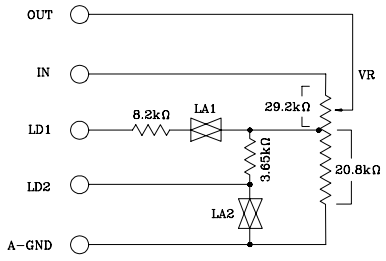
IC2:KIC9459N

PIN CONNECTION



PIN DESCRIPTION

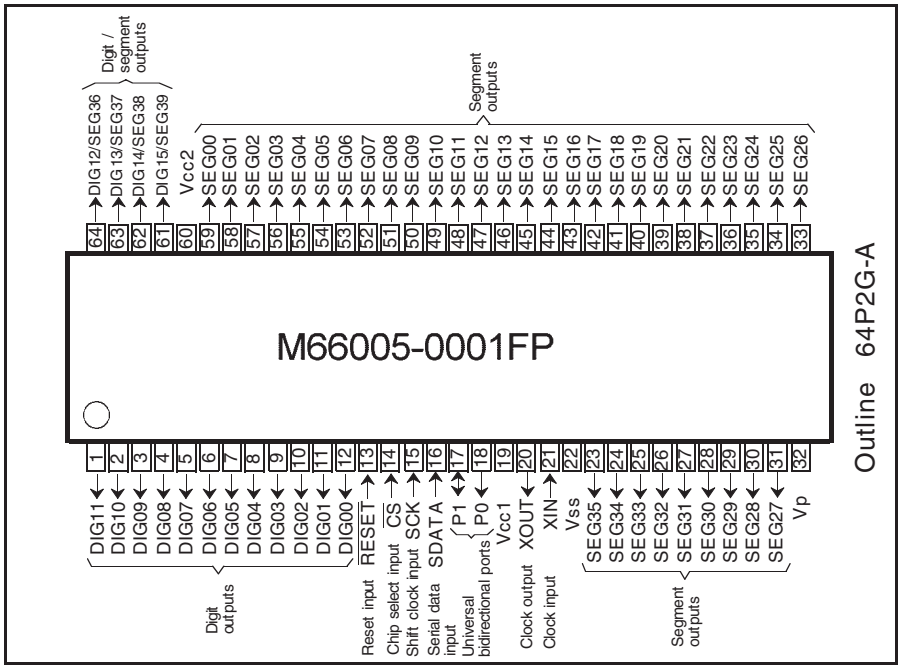
Numeral in ( ) means the pin No. of KIC9459F

<table>
<tr><th>Pin No.</th><th>SYMBOL</th><th>PIN NAME</th><th>FUNCTION</th><th>REMARK</th></tr>
<tr><td>1 (1)</td><td>V_{SS}</td><td>Negative power supply pin</td><td rowspan="3">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</td><td rowspan="3">-</td></tr>
<tr><td>13 (11)</td><td>GND</td><td>Digital GND pin</td></tr>
<tr><td>28 (24)</td><td>V_{DD}</td><td>Positive power supply pin</td></tr>
<tr><td>3 (2)</td><td>L-OUT</td><td rowspan="2">volume output pin</td><td rowspan="9"> 

<table>
<tr><th></th><th>LA1</th><th>LA2</th></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></td><td rowspan="9">-</td></tr>
<tr><td>26 (23)</td><td>R-OUT</td></tr>
<tr><td>5 (4)</td><td>L-IN</td><td rowspan="2">volume input pin</td></tr>
<tr><td>24 (21)</td><td>R-IN</td></tr>
<tr><td>6 (5)</td><td>L-LD1</td><td rowspan="4">Loudness tap output pin</td></tr>
<tr><td>23 (20)</td><td>R-LD1</td></tr>
<tr><td>7 (6)</td><td>L-LD2</td></tr>
<tr><td>22 (19)</td><td>R-LD2</td></tr>
<tr><td>8 (7)</td><td>L-A-GND</td><td rowspan="2">Analog GND pin</td></tr>
<tr><td>21 (18)</td><td>R-A-GND</td></tr>
<tr><td>10 (9)</td><td>CS1</td><td rowspan="2">Chip select input pin</td><td rowspan="2">Up to 4 chips on the same bus can be used by switching over chip select code</td><td rowspan="2">-</td></tr>
<tr><td>19 (16)</td><td>CS2</td></tr>
<tr><td>14 (12)</td><td>CK</td><td>clock input pin</td><td>Data transfer clock input</td><td rowspan="3">Low threshold value input pin</td></tr>
<tr><td>15 (13)</td><td>DATA</td><td>Data input pin</td><td>Volume setup serial data input</td></tr>
<tr><td>16 (14)</td><td>STB</td><td>Strobe input pin</td><td>Data write strobe input</td></tr>
<tr><td>2,4,9,11,12,17, 18,20,25,27 (3) (8) (10) (15) (17) (22)</td><td>NC</td><td>No connection</td><td></td><td>-</td></tr>
</table>

IC300:M66005F

PIN CONFIGURATION



PIN DESCRIPTIONS

Symbol	Pin name	Comment
$\overline{\text{RESET}}$	Reset input	When "L", M66005 is initialized.
$\overline{\text{CS}}$	Chip select input	When "L", communication with the MCU is possible. When "H", any instruction from the MCU is neglected.
SCK	Shift clock input	Serial input data is taken and shifted by the positive edge of SCK.
SDATA	Serial data input	
XIN , XOUT	Clock input Clock output	When use as a CR oscillator, connect external resistor and capacitor. When use an external clock, input external clock to XIN, and XOUT must be opened.
DIG00~ DIG15	Digit output	Connect to digit (grid) pins of VFD.
SEG00~ SEG39	Segment output	Connect to segment (anode) pins of VFD. Pins from SEG00 to SEG39 correspond to segment pins of VFD as shown in the table below. SEG36~SEG39 pins are common to DIG12~DIG15 pins. So, when use SEG36~SEG39, the number of digit to be used is decreased.
P1, P0	Universal port P1 : bidirectional P0 : output	Generally, use this port as the static output port. This port also operates as the timing IN/OUT port to control another M66005.
Vcc1		Positive power supply for internal logic.
Vcc2		Positive power supply for DIG and SEG outputs.
Vss		GND (0V)
Vp		Negative power supply to pull down.

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

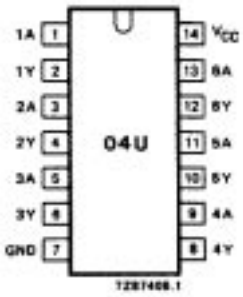


Fig.1 Pin configuration.

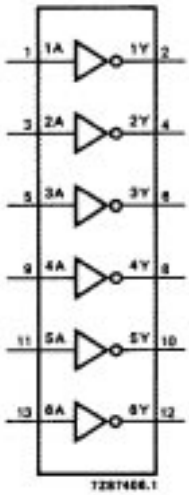


Fig.4 Functional diagram.

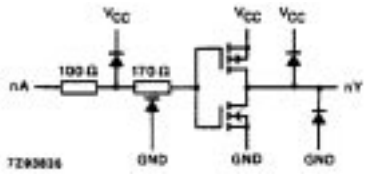
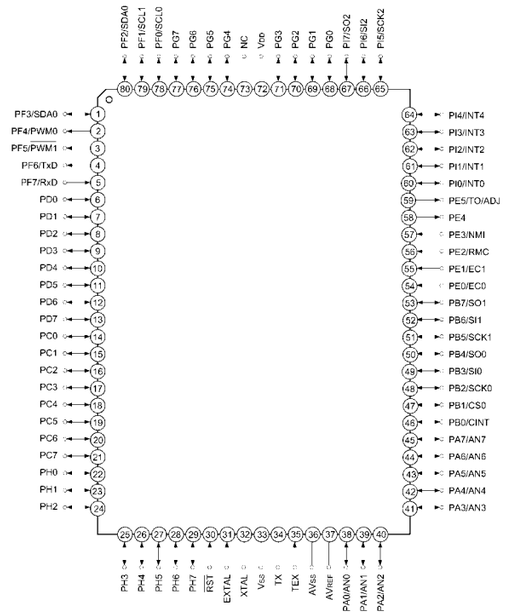


Fig.5 Schematic diagram (one inverter).

PIN ASSIGNMENT



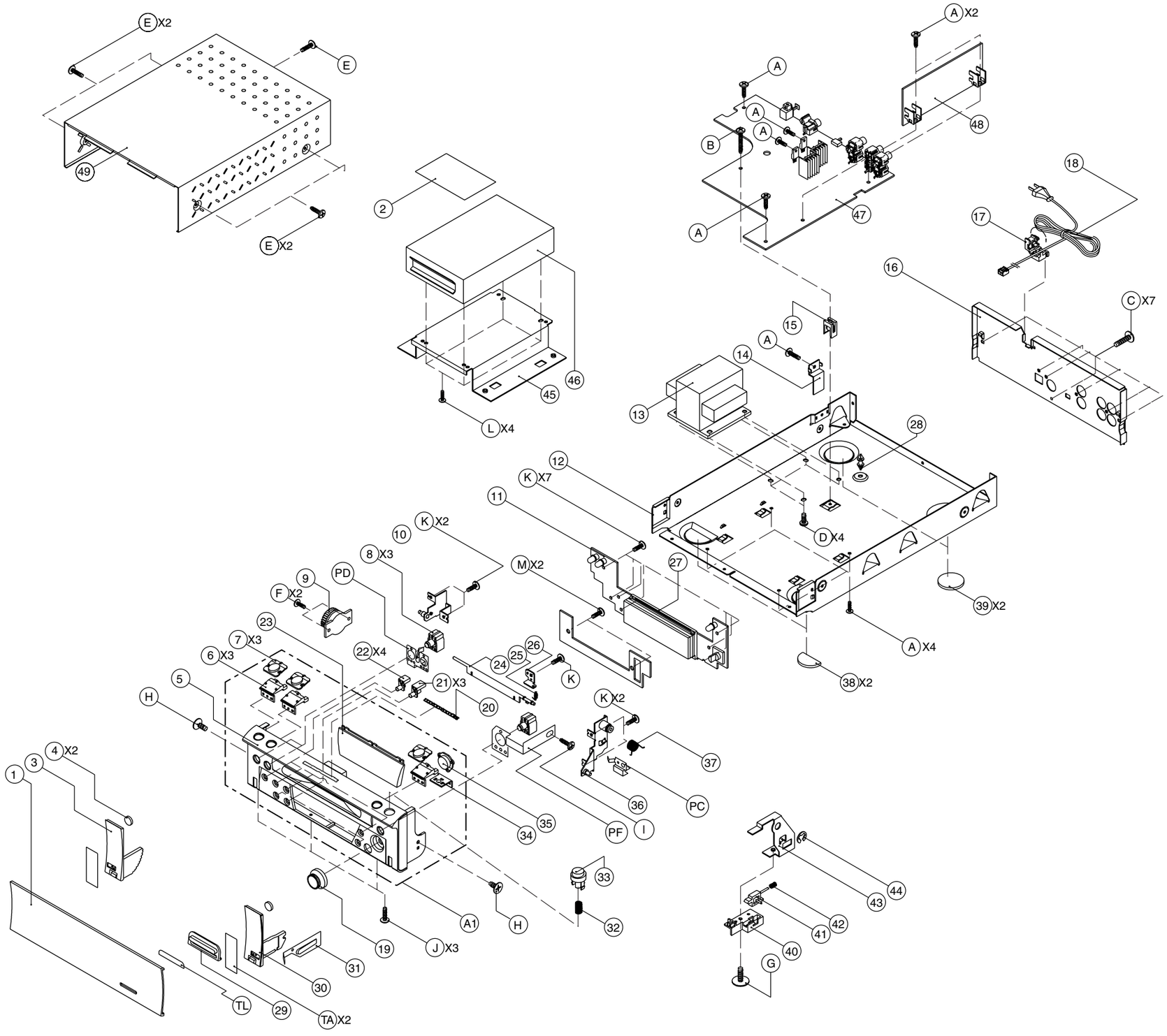
Note) NC (Pin 73) must be connected VDD.

PIN FUNCTION

PIN NO	PIN NAME	OPERATION	DESCRIPTION	ASSIGN
1-3	N.C			I/O
4	ME_CTXD	UART Communication		O
5	ME_CRXD	UART Communication		I/O
6-13	N.C			I/O
14	ME_BACK_ON			O
15	CE			O
16	M E_RESET			O
17-19	N.C			I/O
20	OPTION	PULL-UP(ENG) / PUII-DOWN(JAP)		I/O
21	N.C			I/O
22	VOL_CLK	CLK SIGNAL OUTPUT 9459F	ELECTRONIC VOLUME CONTROL	O
23	VOL_EN	EN SIGNAL OUTPUT 9459F	ELECTRONIC VOLUME CONTROL	O
24	VOL_DA	DA SIGNAL OUTPUT 9459F	ELECTRONIC VOLUME CONTROL	O

PIN NO	PIN NAME	OPERATION	DESCRIPTION	ASSIGN
25	A_MUTE	OUTPUT A_MUTE	ACTIVE LOW	O
26	D_MUTE	OUTPUT D_MUTE	ACTIVE LOW	O
27	N.C			I/O
28	PO_OFF_CONT	OUTPUT FOR RLY	ACTIVE HIGH	O
29	BACKUP_V			I
30	RESET	INPUT CPU	ACTIVE HIGH	I
31	EXTAL	OUTPUT FOR 12.288MHZ CRYSTAL		O
32	XTAL	12.288MHZ CRYSTAL		
33	VSS	VSS	GND	
34	TX	32MHZ CRYSTAL		
35	TEX	OUTPUT FOR 32MHZ CRYSTAL		O
36	AVSS	AVSS	GND	
37	AVREF	REFERENC VOLTAGE	VDD	
38	BACKUP_CH	OUTPUT BACKUP CHACK		O
39	KEY1	DATA INPUT KEY SCAN	CHECK PORT for AD KEY INPUT	O
40	KEY2	DATA INPUT KEY SCAN	CHECK PORT for AD KEY INPUT	O
41	KEY3	DATA INPUT KEY SCAN	CHECK PORT for AD KEY INPUT	O
42-45	N.C			I/O
46	FL_RESET	OUTPUT RESET FOR M66005		O
47	FL_CS	OUTPUT CS FOR M66005		O
48-54	N.C			I/O
55	RC5 SY IN/OUT	SYSTEM CONTROL	"HIGH": SYSTEM MODE, "LOW": INT MODE	O
56	RMC	OUTPUT FOR REMOCON DATA		O
57-59	N.C			O
60	PO_OFF_DET	OUTPUT FOR POWER DOWN		O
61	N.C			I/O
62	N.C			I/O
63	RC5_OUT	OUTPUT FOR CONTROLING RC-5		O
64	RC5_IN	INPUT FOR CONTROLING RC-5		I
65	FL_CLK	OUTPUT CLK FOR M66005		O
66	N.C			I/O
67	FL_DATA	OUTPUT DATA FOR M66005		O
68	ENCODER			I
69	ENCODER			I
70	BACK/PO_ON	OUTPUT TO DRIVE POWER ON(GREEN)	ACTIVE HIGH	O
71	ST-BY	OUTPUT TO DRIVE STBY LED(RED)	ACTIVE HIGH	O
72	VDD	VDD +5V		
73	VDD	VDD +5V		
74	RMC-CONTROL	OUTPUT FOR RC-5 ON/OFF		O
75-80	N.C			I/O

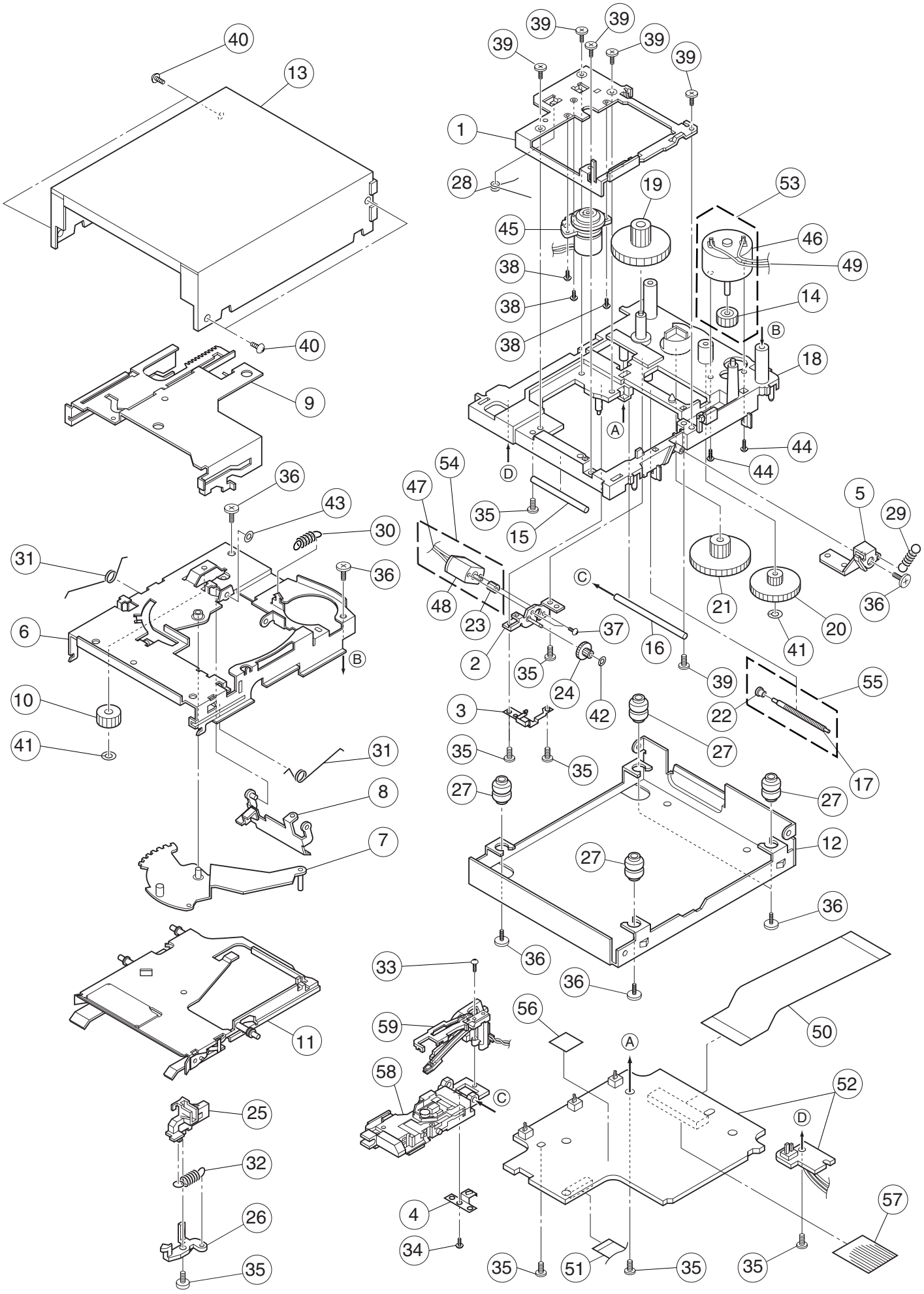
8. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
1		9965 000 11414	PANEL DOOR	325W162010
2		nsp	LABEL LASER CAUTION-CD	nsp
3		9965 000 10697	ARM DOOR L	323W002010
4		9965 000 10698	CUSHION DOOR	323W259010
A1		9965 000 11415	FRONT PANEL SUB ASSY	325W248500
5		nsp	PANEL FRONT	nsp
6		nsp	BUTTON POWER B	nsp
7		nsp	BUTTON POWER A	nsp
8		9965 000 11103	BUTTON DISPLAY	325W270040
9		9965 000 10701	DAMPER GEAR (KIFCO)	323W130010
10		9965 000 10702	BRACKET DOOR C	323W160060
11		nsp	P.C.B ASSY FRONT	nsp
12		nsp	CHASSIS MAIN	nsp
⚠ 13	F	nsp	POWER TRANS 100V/50HZ 57x27	*TS001340R
⚠ 13	N	9965 000 11416	POWER TRANS 230V/50HZ 57x27	*TS001330R
14		nsp	BRACKET SIDE	nsp
15		nsp	SUPPORTER PCB	nsp
16	F	nsp	CHASSIS BACK	nsp
16	N	nsp	CHASSIS BACK	nsp
17	F	nsp	STOPPER	323W259020
17	N	9965 000 11058	STOPPER	323W259030
⚠ 18	F	nsp	MAINS CORD ASSY	*YC000560R
⚠ 18	N	9965 000 10705	MAINS CORD ASSY	*YC000570R
19		9965 000 11202	KNOB SHUTTLE	325W154010
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 MD	nsp
24		9965 000 11417	DOOR MD	325W162100
25		9965 000 11418	SPRING MD	325W115010
26		nsp	BRACKET MD DOOR	nsp
27		nsp	SUPPORTER FLT MD	nsp
28		nsp	SUPPORTER P.C.	nsp
29		9965 000 10709	WINDOW REMOCON B	323W158030
30		9965 000 10713	ARM DOOR R	323W002020
31		9965 000 11111	PLATE EARTH A	323W123010
32		9965 000 10714	SPRING DOOR C	323W115010
33		9965 000 10715	KNOB EJECT	323W154020
34		nsp	SUPPORTER EJECT	nsp
35		nsp	WINDOW REMOCON A	nsp
36		9965 000 10716	BRACKET DOOR A	323W160010
37		9965 000 10717	SPRING DOOR A	323W115020
38		9965 000 10718	CUSHION FOOT F	323W057010
39		9965 000 10719	CUSHION FOOT B	323W057020
40		9965 000 10720	HOLDER HINGE B	323W271020
41		9965 000 10721	HOLDER HINGE A	323W271010
42		9965 000 10703	SPRING DOOR B	323W115030
43		9965 000 10722	BRACKET DOOR B	323W160020
44		9965 000 10723	RING	323W353100
45		nsp	BRACKET MECHA MD	nsp
46		nsp	MD MODULE MGM-07000A KPJ	325W304500
47	N	nsp	P.C.B ASSY MAIN	nsp
47	F	nsp	P.C.B ASSY MAIN	nsp
48	N	nsp	P.C.B ASSY REC	nsp
48	F	nsp	P.C.B ASSY REC	nsp
49		9965 000 11113	CABINET TOP	324W257010
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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
A		nsp	SCREW +2S 3x8 B-TYPE ZNY/BH	nsp
B		nsp	SCREW +2S 3x17 B-TYPE ZNY/BH	nsp
C		nsp	SCREW +2S 3x10 B-TYPE(DOT) BK/BH	nsp
D		nsp	SCREW +3S 4x8 P+S-WASHER ZNY/BH	nsp
E		nsp	SCREW +2S 3x8 B-TYPE CR/BH	nsp
F		nsp	SCREW +2S 2x6 BK/PH	nsp
G		nsp	SCREW +2S 3x8 PI9.5 B-TYPE ZNY	nsp
H		nsp	SCREW +2S 3x5 B-TYPE BK/FH	nsp
I		nsp	SCREW +3S 3x5 BK/FH	nsp
J		nsp	SCREW +2S 3x6 B-TYPE ZNY/BH	nsp
K		nsp	SCREW +2S 3x8 ZNY/PH	nsp
L		nsp	SCREW +3S 2.6x4 ZNW/BH	nsp
M		nsp	SCREW 2PS 3x8Y	nsp
			PACKING	
-	N	9965 000 11419	USER GUIDE	325W851310
-	F	nsp	USER GUIDE	325W851110
-	N	9965 000 11420	REMOTE CONTROLLER RC110DRMD	ZK326W0010
-	F	nsp	REMOTE CONTROLLER RC110DRMDF	ZK325W0010
			NOT STANDARD SPARE PARTS	
-	N	nsp	CARD	nsp
-	F	nsp	CARD	nsp
-	F	nsp	CARD	nsp
-		nsp	BOX,GIFT	325W801010
-		nsp	CUSHION,SNOW	323W809010

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.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12
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C
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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
1		nsp	A10-3531 CHASSIS(TU)	nsp
2		nsp	J19-6125 BRACKET ASSY	nsp
3		nsp	G02-1716 FLAT SPRING(THRUST)	nsp
4		nsp	D13-2510 RACK(GEAR)	nsp
5		nsp	D10-3958 LEVER(LIMIT)	nsp
6		nsp	A11-1189 SUB CHASSIS ASSY	nsp
7		nsp	D10-3959 ARM ASSY(MAIN)	nsp
8		nsp	D10-3961 LEVER ASSY(HEAD)	nsp
9		nsp	D10-3963 SLIDER(MAIN)	nsp
10		nsp	D13-2511 GEAR(FINAL)	nsp
11		nsp	J19-6127 HOLDER ASSY	nsp
12		nsp	A15-0106 FRAME	nsp
13		nsp	F11-0503 SHIELDING CASE	nsp
15		nsp	D10-3982 ROD(SUB)	nsp
16		nsp	D10-3957 ROD	nsp
18		nsp	A11-1187 SUB CHASSIS ASSY(TU)	nsp
19		nsp	D13-2504 GEAR(LOAD A)	nsp
20		nsp	D13-2505 GEAR(LOAD B)	nsp
21		nsp	D13-2516 GEAR(LOAD C)	nsp
24		nsp	D13-2509 GEAR (INTERMEDIATE)	nsp
25		nsp	D10-3964 SLIDER(LOAD)	nsp
26		nsp	D10-3965 ARM(LOAD)	nsp
27		nsp	J02-1492 INSULATOR	nsp
28		nsp	G01-4230 TORSION COIL SP(SPM)	nsp
29		nsp	G01-4231 EXTENSION COIL SPRING	nsp
30		nsp	G01-4235 EXTENSION COIL SPRING	nsp
31		nsp	G01-4233 TORSION COIL SPRING	nsp
32		nsp	G01-4234 EXTENSION COIL SPRING	nsp
33		nsp	N39-1745 MACHINE SCREW 1.7*4.5	nsp
34		nsp	N09-3104 MECHINE SCREW 1.7*2	nsp
35		nsp	N09-3279 MACHINE SCREW 1.7*3	nsp
36		nsp	N09-5113 SCREW 1.7*7 (B-TITE)	nsp
37		nsp	N09-5229 SCREW 1.4*1.8	nsp
38		nsp	N09-5230 SCREW 1.4*2.2 (S-TITE)	nsp
39		nsp	N09-5231 SCREW 1.7*4 (B-TITE)	nsp
40		nsp	N86-2004 BIND TAPTITE SC 2*4(S-TITE)	nsp
41		nsp	N19-0366 FLAT WASHER 2.1*4*0.5CUT	nsp
42		nsp	N19-1511 FLAT WS 2.5*0.9*0.25 CUT	nsp
43		nsp	N19-1171 FLAT WS 1.6*3.5*0.25 CUT	nsp
44		nsp	N09-5285 MACHINE SCREW(B) 1.7*4.5	nsp
45		nsp	T42-0983 MOTOR ASSY	*MM001170R
47		nsp	E35-2689 WIRING HARNESS(SLED)	nsp
49		nsp	E35-2690 WIRE HARNESS	nsp
50		nsp	E35-2691 FLAT CABLE L=80MM	*YU000960R
51		nsp	E35-2348 FLAT CABLE(PU)21P	*YU000970R
52		nsp	X33-1260 PCB ASSY	*ZZ001870R
53		nsp	T42-0984 MOTOR ASSY(LOAD)	*MM001180R
54		nsp	T42-0985 MOTOR ASSY(SLED)	*MM001190R
55		nsp	D13-2506 GEAR ASSY	nsp
56		nsp	G16-1236 SHEET	nsp
57		nsp	G11-2825 SOFT TAPE	nsp
58		nsp	T25-0111-05 PICKUP KMS-260E	*ZZ001880R
59		nsp	T30-0027-05 REC HEAD RM-21E	*LH400180R

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 ③
③ —— Capacity value
② —— 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
④
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 ⑥
⑥ —— Working voltage
⑤ —— 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
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 (**RI05**, **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 **FS20**xxx**2**xx, 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：

⚠がついている部品は、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。

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			MAIN CIRCUIT BOARD	
			MAIN - CAPACITORS	
C6L		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C6R		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C7L		nsp	FILM,ST-0.0027µF-J/100V-5RE	nsp
C7R		nsp	FILM,ST-0.0027µF-J/100V-5RE	nsp
C8L		nsp	CER.CHIP,220pF-J/50V-1608	nsp
C8R		nsp	CER.CHIP,220pF-J/50V-1608	nsp
C9L		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C9R		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C10L		nsp	CER.CHIP,470pF-J/50V-1608	nsp
C10R		nsp	CER.CHIP,470pF-J/50V-1608	nsp
C11		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp
C12		nsp	CER.CHIP,10pF-D/50V-1608	nsp
C13		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C14		nsp	CER.CHIP,22pF-J/50V-1608	nsp
C15		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C16		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C17		nsp	CER.CHIP,22pF-J/50V-1608	nsp
⚠ C18		9965 000 11120	CER.AC(SAFETY), DE7150-487F 472MVAI	DK17472840
C19		nsp	CER.,0.01µF-Z/500V-5RE	nsp
C20		nsp	ELECT,1000µF-M/25V(SHL), 10x20L-5RE OEMONLY	nsp
C21		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp
C22		nsp	ELECT,SHL 10000µF 16V M 18x35 P=7.5MM	nsp
C23 ∫ C28		nsp	CER.,0.01µF-Z/500V-5RE	nsp
C29		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp
C30		nsp	CER.CHIP,100pF-J/50V-1608	nsp
C31		nsp	ELECT,10µF-M/50V,5x11-5RE	nsp
C32		nsp	ELECT,100µF-M/50V,8x11.5-5	nsp
C33		nsp	ELECT,10µF-M/50V,5x11-5RE	nsp
C34		nsp	ELECT,2200µF-M/16V,10x20	nsp
C35		nsp	ELECT,2200µF-M/16V,10x20	nsp
C36		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp
C37		nsp	CER.CHIP,27pF-J/50V-1608	nsp
C38		nsp	ELECT,470µF-M/10V,6.3x11-5	nsp
C39		nsp	CER.CHIP,100pF-J/50V-1608	nsp
C40		nsp	ELECT,1000µF-M/10V,10x12.5	nsp
C41		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C42		9965 000 11128	DOUBLE LAYER(70), 0.047F-70UA/5.5V-5RE	*EX000090R
C43		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C44		nsp	CER.CHIP,220pF-J/50V-1608	nsp
C45		nsp	CER.CHIP,220pF-J/50V-1608	nsp
C46		nsp	ELECT,1µF-M/50V,3x5-5RE	nsp
C47		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
⚠ C48		9965 000 11120	CER.AC(SAFETY),DE7150-487F 472MVAI	DK17472840
C49		nsp	ELECT,10µF-M/50V,5x11-5RE	nsp
C50		9965 000 11120	CER.AC(SAFETY), DE7150-487F 472MVAI	DK17472840
C51		nsp	CER.CHIP,27pF-J/50V-1608	nsp
C52		nsp	ELECT,2.2µF-M/50V,5x11-5RE	nsp
C53		9965 000 11128	DOUBLE LAYER(70), 0.047F-70UA/5.5V-5RE	*EX000090R
C55		nsp	ELECT,47µF-M/16V,5x11-5RE	nsp
C56		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C57		nsp	CER.CHIP,18pF-J/50V-1608	nsp
C58		nsp	CER.CHIP,18pF-J/50V-1608	nsp
			MAIN - RESISTORS	
R10		nsp	CHIP,3.3K-J,1/16W-1608REEL	nsp
R11		nsp	CHIP,3.3K-J,1/16W-1608REEL	nsp

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
R12		nsp	CHIP,680-J,1/16W-1608REEL	nsp
R13L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R13R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R14L		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
R14R		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
R15L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R15R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R16L		nsp	CHIP,220-J,1/16W-1608REEL	nsp
R16R		nsp	CHIP,220-J,1/16W-1608REEL	nsp
R17L		nsp	CHIP,220-J,1/16W-1608REEL	nsp
R17R		nsp	CHIP,220-J,1/16W-1608REEL	nsp
R18L		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R18R		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R19L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R19R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R20L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R20R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R21		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R22		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R23		nsp	CHIP,75-J,1/16W-1608REEL	nsp
R24		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R25		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
R26		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
R27		nsp	CHIP,120-J,1/16W-1608REEL	nsp
R28		nsp	CHIP,120-J,1/16W-1608REEL	nsp
R29		nsp	47-J,1/4W-R.REEL	nsp
R30		nsp	4.7-J,1/4W,R.REEL	nsp
R31		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
R32		nsp	5.6K-J,1/5W-52RE-AX	nsp
R33		nsp	22K-J,1/5W-52RE-AX	nsp
R34		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
R37		nsp	150-J,1W-R.REEL	nsp
R38		nsp	1.6K-J,1/5W-52RE-AX	nsp
R39		nsp	1.5K-J,1/5W-52RE-AX	nsp
R40		nsp	4.7K-J,1/5W-52RE-AX	nsp
R41		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R42		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R43		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R44		nsp	CHIP,47K-J,1/16W-1608REEL	nsp
R45		nsp	CHIP,47K-J,1/16W-1608REEL	nsp
R46		nsp	CHIP,3.9K-J,1/16W-1608REEL	nsp
R47		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R48		nsp	CHIP,2.7K-J,1/16W-1608REEL	nsp
R49	N	nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R50	F	nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R51		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R52 ∫ R57		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
R58		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
R59		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
R60		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
R65		nsp	CHIP,47-J,1/16W-1608REEL	nsp
R66		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R67		nsp	CHIP,47-J,1/16W-1608REEL	nsp
R68		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R69		nsp	CHIP,1M-J,1/16W-1608REEL	nsp
R70		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
R71L		nsp	CHIP,680-J,1/16W-1608REEL	nsp
R71R		nsp	CHIP,680-J,1/16W-1608REEL	nsp
R73		nsp	1-J,1/4W-R.TYPE REEL	nsp
R74		nsp	CHIP,47K-J,1/16W-1608REEL	nsp
R75		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
R77		nsp	1-J,1/4W-R.TYPE REEL	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)
			MAIN - SEMICONDUCTORS	
D1				
⟆		9965 000 11119	D CHIP,1SS355USM	*HD201580R
D5				
D6				
⟆		9965 000 10728	DIODE,IN4007 52 1000V 1A	*HD201570R
D9				
D11		4822 130 32778	DIODE,1SS133T-72-52MM	HD20015210
⚠ D12		4822 130 83067	D,RECTIFIER BRIDGE, D3SB20/DBF40C 5A-4PIN	HE20020290
D13				
⟆		9965 000 10728	DIODE,IN4007 52 1000V 1A	*HD201570R
D20				
D23		9965 000 11119	D CHIP,1SS355USM	*HD201580R
D24		9965 000 11119	D CHIP,1SS355USM	*HD201580R
D27		9965 000 11119	D CHIP,1SS355USM	*HD201580R
D28		4822 130 32778	DIODE,1SS133T-72-52MM	HD20015210
D29		4822 130 32778	DIODE,1SS133T-72-52MM	HD20015210
D30		9965 000 11119	D CHIP,1SS355USM	*HD201580R
D31		9965 000 11119	D CHIP,1SS355USM	*HD201580R
D32		9965 000 11119	D CHIP,1SS355USM	*HD201580R
IC4		5322 209 13406	IC,NJM2068MD-SOP8P	*HC107380R
IC7		4822 209 81397	ILINEAR-REGULATOR, TL431CLP 3PIN	*HC300440R
IC8		4822 209 31631	IC,KIA7805PI, 20W-TO220IS MOLD	HC3890509F
IC9		4822 209 31631	IC,KIA7805PI, 20W-TO220IS MOLD	HC3890509F
IC10		9965 000 11426	IC,ICP-N15 T104/PROTEC-REEL	FU60115020
IC11		9965 000 11426	IC,ICP-N15 T104/PROTEC-REEL	FU60115020
IC12		9965 000 11129	IC,KIA7032P,3.2V/TO92-RELL	*HC107390R
IC13		9965 000 10992	IC,INVRTR MC74HCU04AD SOP14	*HC700180R
Q1		9965 000 11427	CHIP TRS.2SA,KRA103S (SOP)	*BA001400R
Q2		4822 130 60729	CHIP TRS.2SC, DTC124EK,0.2W/SMT-REEL	*BA001080R
Q3L		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R
Q3R		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R
Q4L		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R
Q4R		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R
Q5		4822 130 60729	CHIP TRS.2SC, DTC124EK,0.2W/SMT-REEL	*BA001080R
Q6		4822 130 60729	CHIP TRS.2SC, DTC124EK,0.2W/SMT-REEL	*BA001080R
Q7		9965 000 11427	CHIP TRS.2SA,KRA103S (SOP)	*BA001400R
Q8		4822 130 50437	SEMI,BRT/NPN RC,DTC143ES, 0.3W/TO92M-REEL	*BA001300R
Q9		9965 000 10444	SEMI,BRT/NPN RC,KRC107M, 0.4W/TO92M-REEL	*BA001070R
Q10		4822 130 11683	SEMI,TR/GE PNP 2SA, KSA916Y,0.9W/TO92L-REEL	*HT100460R
Q12		9965 000 11425	SEMI,TR/GE NPN 2SD, KTC2026Y TO220IS BULK 2W	*HT300780R
Q14		4822 130 60326	CHIP TRS.2SA, DTA144EK,0.2W/SMT-REEL	*BA001050R
Q15		4822 130 60729	CHIP TRS.2SC, DTC144EK,0.2W/SMT-REEL	*BA001040R
Q18	N	9965 000 10753	CHIP TRS.2SC, KRC102S T/P (KEC)	*BA001220R
Q18	N	4822 130 60729	CHIP TRS.2SC, DTC144EK,0.2W/SMT-REEL	*BA001040R
Q18	F	9965 000 10753	CHIP TRS.2SC, KRC102S T/P (KEC)	*BA001220R
Q18	F	4822 130 60729	CHIP TRS.2SC, DTC144EK,0.2W/SMT-REEL	*BA001040R
Q19		9965 000 10753	CHIP TRS.2SC, KRC102S T/P (KEC)	*BA001220R
Q20		4822 130 61227	SEMI,BRT/PNP RA, DTA114ES,0.3W/TO92M-REEL	*BA001330R
Q21		4822 130 90326	CHIP TRS.2SA, DTA114TK,0.2W/SMT-REEL	*BA001280R
ZD1		9965 000 11210	D,ZENER,MTZJ20B-0.5W/ 5MA-52MM	*HD301950R
ZD2		4822 130 11627	D,ZENER,MTZJ15B-0.5W/ 5MA-52MM	*HD302000R
ZD3		4822 130 11627	D,ZENER,MTZJ15B-0.5W/ 5MA-52MM	*HD302000R
ZD4		4822 130 10667	D,ZENER,MTZJ4.7B-0.5W/ 5MA-52MM	HD30471000
ZD5		4822 130 80317	D,ZENER,MTZJ5.1B-0.5W/ 5MA-52MM	HD30511000
			MAIN - MISCELLANEOUS	
CN1		nsp	CN.FPC 1.0MM, 52806-2610 26P STRAIGHT	nsp
CN2		nsp	CN.WAFER 2.5MM,5267-08A 8P	nsp
CN3		nsp	CN.FPC 1.0MM, 52806-1910 19P STRAIGHT	nsp
CN4		nsp	CN.WAFER 2.0MM, 35336-1010 10P	nsp
CN5		nsp	CN.WAFER 2.0MM, 35336-0510 5P	nsp
⚠ F1	N	4822 070 31601	FUSE (5.2x20), 250V-T160MA-S/V/B/R(YARN)	*FS000450R
⚠ F1	F	nsp	FUSE (5.2x20),250V-S1A-U/	*FS000830R
F1L		nsp	HOLDER,FUSE CLIP, PI5.2-REEL	nsp
F1R		nsp	HOLDER,FUSE CLIP, PI5.2-REEL	nsp
GND1		nsp	TERMINAL, ALL PBST/GND PLATE-REEL	nsp
J8				
J126		nsp	CHIP,0-J,1/8W-3216REEL	nsp
JACK1		9965 000 10734	TER,RCA 4PIN, DAERYUNG/JK040131PN	*YT002460R
JACK2		9965 000 11212	MODULE,GP1F37R1/ OPTICAL TRANSMITE	*YJ002500R
JACK3		9965 000 11127	TER,RCA 1PIN, JE010003PN(GND) BLACK	*YT002670R
JACK4		9965 000 11126	TER,RCA 2PIN,JK020130LN (GND PLATE&PIN)/ORINGE	*YJ002490R
⚠ LT1		9965 000 11422	COIL,LINE FILTER, UU1116 1MH(411B)	*FN000150R
⚠ RL1		9965 000 11424	RELAY,SDT-S-109LMR 9V 250V/5A	*LY000280R
SW1		9965 000 10732	SW,SLIDE,SSAF112NA011	*SS000700R
⚠ T1	N	9965 000 11027	TRANS ST/BY,230/50 RV5080R 28x25 Io=22MA 12.5Vx0.1A(DC)	*TS001540R
⚠ T1	F	nsp	TRANS ST/BY,AVC5/ 100V 50HZ 28x15	*TS001370R
W1		nsp	CN.WAFER 7.92MM, YW396-32V 2P	nsp
W2		nsp	CN.WAFER3.96MM,35328-0210	nsp
XTAL1		9965 000 11423	CRYSTAL,12.288MHZ, HC49U-CL;20pF	*JX000890R
XTAL2		9965 000 11124	CRYSTAL,MX-38T(32.768KHZ) NDK	*JX000830R

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)
			FRONT CIRCUIT BOARD	
			FRONT - CAPACITORS	
C300		nsp	ELECT,100µF-M/10V,6.3x5-5RE	nsp
C301				
⟆		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp
C304				
C305		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C306		nsp	CER.CHIP,100pF-J/50V-1608	nsp
C308		nsp	ELECT,100µF-M/10V,6.3x5-5RE	nsp
C309				
⟆		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp
C312				
C313		nsp	CER.CHIP,220pF-J/50V-1608	nsp
C314		nsp	CER.CHIP,220pF-J/50V-1608	nsp
C315		nsp	CER.CHIP,220pF-J/50V-1608	nsp
C316		nsp	CER.CHIP,0.047µF-Z/50V-1608	nsp
C317		nsp	CER.CHIP,0.047µF-Z/50V-1608	nsp
			FRONT - RESISTORS	
R300		nsp	CHIP,1.5K-J,1/16W-1608REEL	nsp
R301		nsp	CHIP,1.8K-J,1/16W-1608REEL	nsp
R302		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
R303		nsp	CHIP,2.7K-J,1/16W-1608REEL	nsp
R304		nsp	CHIP,1.5K-J,1/16W-1608REEL	nsp
R305		nsp	CHIP,1.8K-J,1/16W-1608REEL	nsp
R306		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
R307		nsp	CHIP,1.5K-J,1/16W-1608REEL	nsp
R308		nsp	CHIP,1.8K-J,1/16W-1608REEL	nsp
R309		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
R310		nsp	CHIP,2.7K-J,1/16W-1608REEL	nsp
R311		nsp	CHIP,47-J,1/16W-1608REEL	nsp
R312		nsp	CHIP,270-J,1/16W-1608REEL	nsp
R313		nsp	CHIP,270-J,1/16W-1608REEL	nsp
R314		nsp	CHIP,270-J,1/16W-1608REEL	nsp
R315		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R316		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R317		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R318		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
R319		nsp	CHIP,27K-J,1/16W-1608REEL	nsp
R320		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R321		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R322		nsp	CHIP,270-J,1/16W-1608REEL	nsp
R323		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
R324		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R327		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R328		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R329		nsp	CHIP,1.2K-J,1/16W-1608REEL	nsp
			FRONT - SEMICONDUCTORS	
D300		9965 000 11119	D CHIP,1SS355USM	*HD201580R
D301		9965 000 11119	D CHIP,1SS355USM	*HD201580R
IC300		9965 000 10762	IC,M66005FP-SOP64P / FL DRIVER	*HC107180R
Q300		9965 000 10753	CHIP TRS.2SC,KRC102S T/P (KEC)	*BA001220R
Q301		9965 000 10753	CHIP TRS.2SC,KRC102S T/P (KEC)	*BA001220R
Q302		9965 000 10753	CHIP TRS.2SC,KRC102S T/P (KEC)	*BA001220R
Q303		4822 130 60941	CHIP TRS.2SA,DTA114EK, 0.2W/SMT-REEL	BA10023210
Q304		9965 000 11131	CHIP TRS.2SC,KRC104S (SOP)	*BA001290R
Q305		4822 130 60941	CHIP TRS.2SA,DTA114EK, 0.2W/SMT-REEL	BA10023210
Q306		9965 000 11131	CHIP TRS.2SC,KRC104S (SOP)	*BA001290R
Q307		9965 000 10753	CHIP TRS.2SC,KRC102S T/P (KEC)	*BA001220R

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
ZD300		4822 130 83142	D,ZENER,MTZJ6.2B-0.5W/ 5MA-52MM	HD30621000
			FRONT - MISCELLANEOUS	
CP3		nsp	CN.FPC 1.0MM, 52807-1910 19P ANGLE	nsp
FLT300		9965 000 11421	DISPLAY FLT, 14-ST-37GN/MD110	*HQ300480R
LED300		9965 000 10758	LED,PI5-RD, GR/HLD50RG,DUAL	*HI100980R
LED301		9965 000 10757	LED,HL-50CDG GREEN MILKY RESIN (MAN,5PI,P=2.5)	*HI100970R
LED302		9965 000 10757	LED,HL-50CDG GREEN MILKY RESIN (MAN,5PI,P=2.5)	*HI100970R
RM300		9965 000 10754	MODULE,REMOCON, NJL64H380A	*HW100520R
SW300		9965 000 10760	SW,TACT, THVH472GAA	*SP001150R
SW301				
⟆		9965 000 10761	SW,TACT,SKHV10920A, 5MM/260G-REEL	*SP001140R
SW307				
SW308		9965 000 10760	SW,TACT,THVH472GAA	*SP001150R
SW309		9965 000 10760	SW,TACT,THVH472GAA	*SP001150R
SW310		9965 000 10761	SW,TACT,SKHV10920A, 5MM/260G-REEL	*SP001140R
SW311		9965 000 11207	SW,ROTARY, EC12B24S2033ZZZ/WITHPUSH	*SR000170R
SW311		9965 000 10761	SW,TACT,SKHV10920A, 5MM/260G-REEL	*SP001140R
SW312		9965 000 10761	SW,TACT,SKHV10920A, 5MM/260G-REEL	*SP001140R
			REC CIRCUIT BOARD	
			REC - CAPACITORS	
C1L		nsp	CER.CHIP,100pF-J/50V-1608	nsp
C1R		nsp	CER.CHIP,100pF-J/50V-1608	nsp
C2L		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C2R		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C3L		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C3R		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C4L		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C4R		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp
C5L		nsp	ELECT,1µF-M/50V,3x5-5RE	nsp
C5R		nsp	ELECT,1µF-M/50V,3x5-5RE	nsp
			REC - RESISTORS	
R1L		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R1R		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R2L		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R2R		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R3L		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R3R		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R4		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R5		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R6		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R72L		nsp	CHIP,270-J,1/16W-1608REEL	nsp
R72R		nsp	CHIP,270-J,1/16W-1608REEL	nsp
R76L		nsp	CHIP,820-J,1/16W-1608REEL	nsp
R76R		nsp	CHIP,820-J,1/16W-1608REEL	nsp
R7L		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R7R		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
R8L		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R8R		nsp	CHIP,100-J,1/16W-1608REEL	nsp
R9L		nsp	CHIP,1.5K-J,1/16W-1608REEL	nsp
R9R		nsp	CHIP,1.5K-J,1/16W-1608REEL	nsp

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			REC - SEMICONDUCTORS	
IC1		5322 209 13406	IC,NJM2068MD-SOP8P	*HC107380R
IC2		9965 000 01373	IC,KIC9459F/SOP24P	HC10449050
IC3		5322 209 13406	IC,NJM2068MD-SOP8P	*HC107380R
			REC - MISCELLANEOUS	
BKT1		nsp	BRACKET,AVR3300(E3) (DENON) SPTE 0.8t/SCREW	nsp
BKT2		nsp	BRACKET,AVR3300(E3) (DENON) SPTE 0.8t/SCREW	nsp
CP4		nsp	CN.WAFER 2.0MM, 35237-1010 10P	nsp
CP5		nsp	CN.WAFER 2.0MM, 35237-0510 5P	nsp
J19 ~ J109		nsp	CHIP,0-J,1/8W-3216REEL	nsp

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