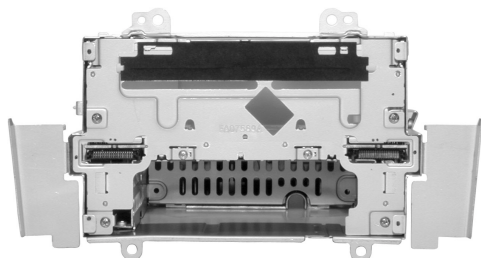


Service Manual

AUTOMOTIVE ELECTRONICS



MAZDA CR-LM0280K

AM/FM MPX ELECTRONIC TUNING
RADIO [Center Panel Module System]

VEHICLE : DEMIO

DESTINATION : Australia, Hong Kong, New Zealand,
Middle East

PRODUCED AFTER : Jun., 2002

Specifications*

General

Power Supply	DC 12V (11V - 16V) Test Voltage 14.4V Negative Ground
Current Consumption	Less than 4A (Illumination ON)
Maximum Power Output	25W x 4ch

FM Stereo Radio

Frequency Range	87.5 - 108.0MHz
Effective Sensitivity	Less than 14dB/μV (S/N 30 dB, 15kHz LPF)
Stereo Separation	25 dB (15kHz LPF)

AM Radio

Frequency Range	522 - 1,629kHz
Effective Sensitivity	6dB/μV (S/N 20 dB)

Dimensions** (WxHxD) 196 x 110 x 165 (mm)

Weight** 1.5 kg

* Specifications and the design are subject to possible modification without notice due to improvements.

** Dimensions and Weight shown are approximate.

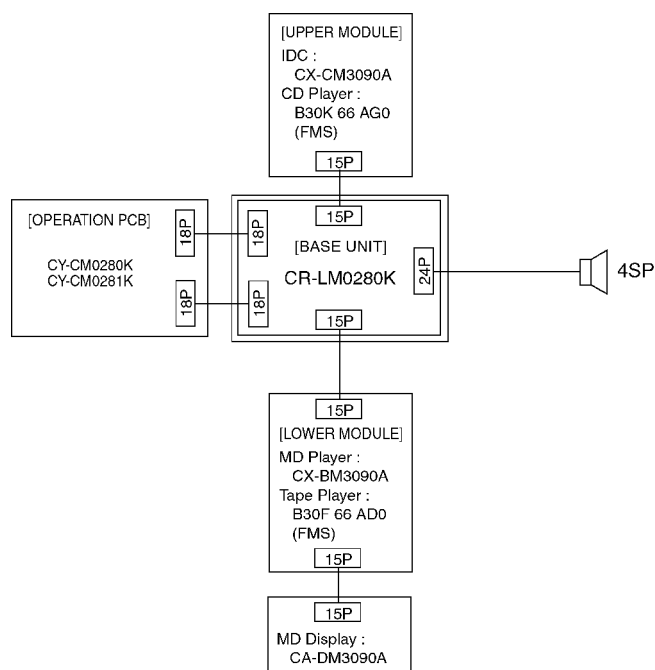
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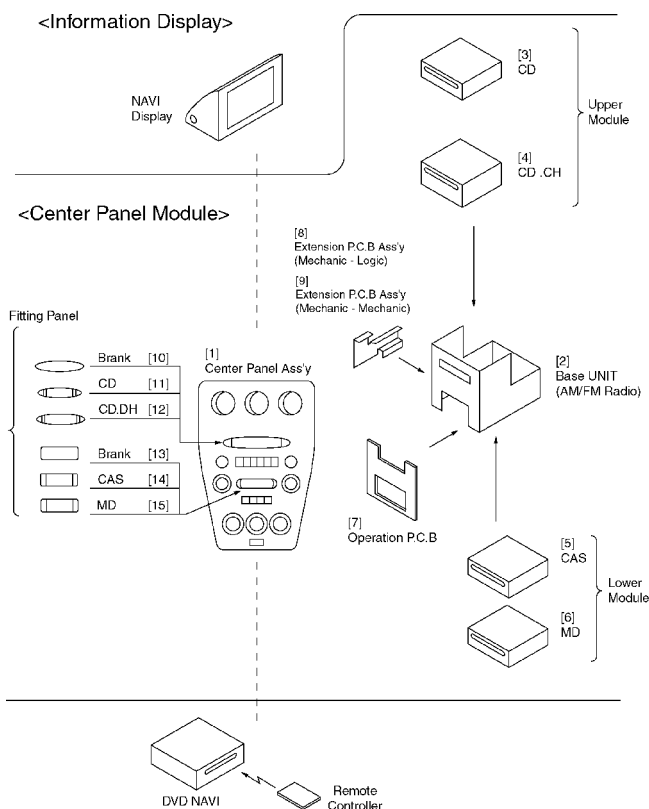
1 FEATUERS

- 25Wx4 Amp. system.
- PLL (Phase Locked Loop) synthesized tuning.
- 12-FM,6-AM presets with preset scan.
- Intelligent Volume Control (VOL,BASS,BAL,FADE)
- CD/MD Player, CD Changer and Tape Player Control.
- Clock function.

2 SYSTEM BLOCK DIAGRAM



3 CENTER PANEL AUDIO SYSTEM



Note :
 The numbers [1] through [15] above correspond to the numbers [1] through [15] in the next chapter (Chapter 4 "CENTER PANEL MODULE SYSTEM PART NUMBERS").

4 CENTER PANEL MODULE SYSTEM PART NUMBERS

DE61 66 DSXA RADIO / CD.CH	DE61 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	CX-CM3090A (Panasonic) -----	[4] CD.CH Module
	CY-CM0280K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D352 G2 212 -----	[12] Fitting Panel for CD.CH (Upper)
	D350 G1 213 -----	[13] Fitting Panel (Lower)
DE62 66 DSX RADIO / CD	DE60 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	B30K 66 AG0A -----	[3] CD Module
	CY-CM0281K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G2 212 -----	[11] Fitting Panel for CD (Upper)
	D350 G1 213 -----	[13] Fitting Panel (Lower)
DE63 66 DSX RADIO / CD	DE61 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	B30K 66 AG0A -----	[3] CD Module
	CY-CM0280K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G2 212 -----	[11] Fitting Panel for CD (Upper)
	D350 G1 213 -----	[13] Fitting Panel (Lower)
DE82 66 DSX RADIO / CD	DE60 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	B30K 66 AG0A -----	[3] CD Module
	CY-CM0281K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G2 212 -----	[11] Fitting Panel for CD (Upper)
	D350 G1 213 -----	[13] Fitting Panel (Lower)
DE83 66 DSX RADIO / CD	DE61 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	B30K 66 AG0A -----	[3] CD Module
	CY-CM0280K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G2 212 -----	[11] Fitting Panel for CD (Upper)
	D350 G1 213 -----	[13] Fitting Panel (Lower)
DE60 66 DSX RADIO / CAS	DE60 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	B30F 66 AD0 -----	[5] CAS Module
	CY-CM0281K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G1 212 -----	[10] Fitting Panel (Upper)
	-----	[14] Fitting Panel for CAS (Lower)

Note :

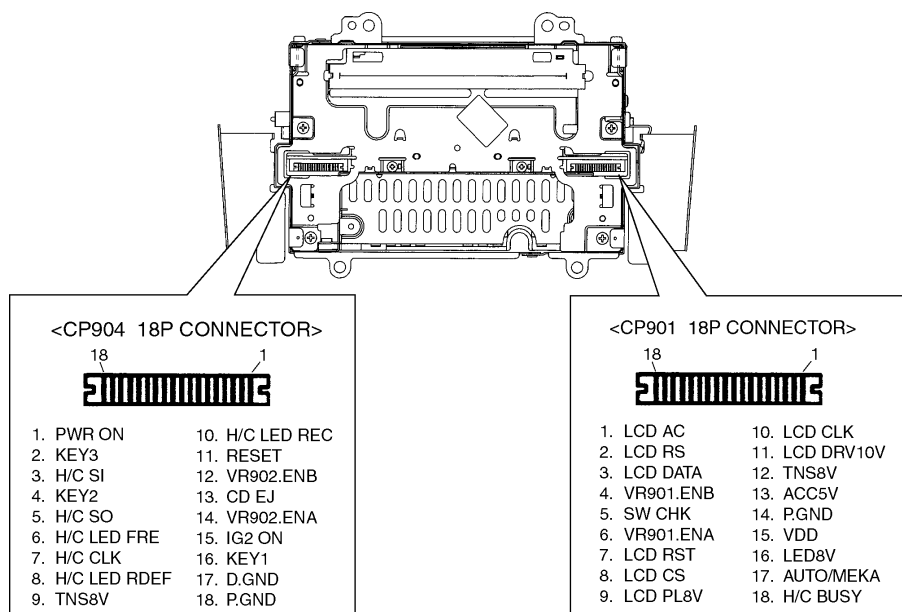
The numbers [1] through [15] above correspond to the numbers [1] through [15] in the previous chapter (Chapter 3 "CENTER PANEL AUDIO SYSTEM").

DE64 66 DSX RADIO / CAS	DE60 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	B30F 66 AD0 -----	[5] CAS Module
	CY-CM0281K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G1 212 -----	[10] Fitting Panel (Upper)
	-----	[14] Fitting Panel for CAS (Lower)
DE65 66 DSXA RADIO / CD.CH	DE61 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	CX-CM3090A (Panasonic) -----	[4] CD.CH Module
	CY-CM0280K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D352 G2 212 -----	[12] Fitting Panel for CD.CH (Upper)
	D350 G1 213 -----	[13] Fitting Panel (Lower)
DE70 66 DSX RADIO	DE61 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	CY-CM0280K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G1 212 -----	[10] Fitting Panel (Upper)
		D350 G1 213 -----
DE24 66 DSX RADIO	DE61 66 DS0 -----	[1] Center Panel Ass'y
	CR-LM0280K (Panasonic) -----	[2] Base Unit (AM/FM Radio)
	CY-CM0280K (Panasonic) -----	[7] Operation PCB
	CA-LM0200K (Panasonic) -----	[9] Extension PCB Ass'y (Mechanic - Mechanic)
	D350 G1 212 -----	[10] Fitting Panel (Upper)
		D350 G1 213 -----

Note :

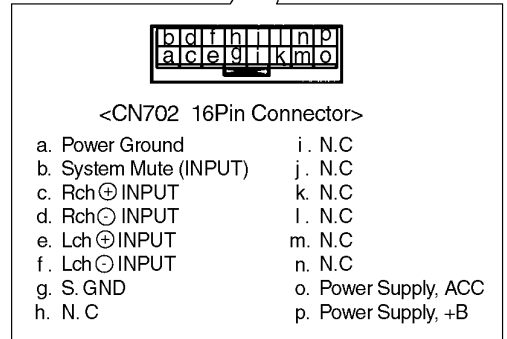
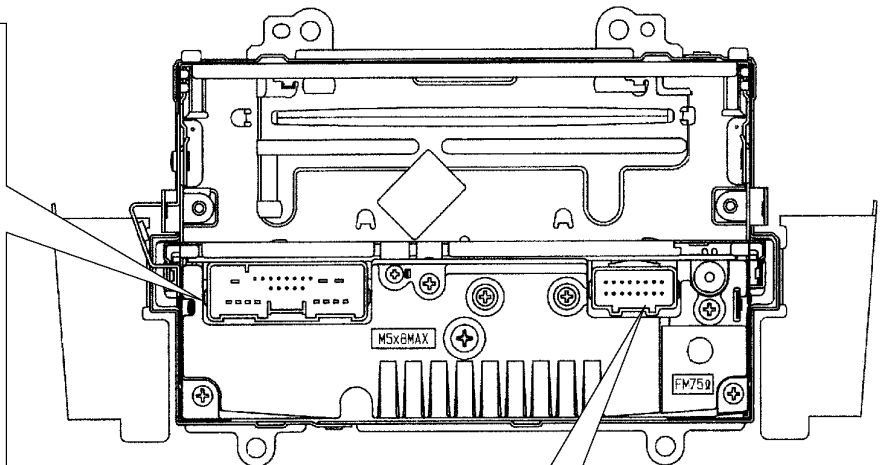
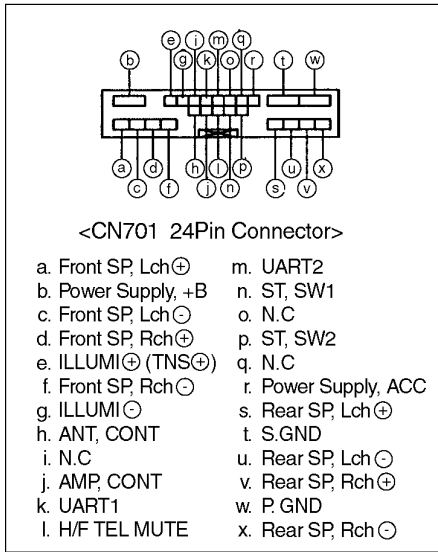
The numbers [1] through [15] above correspond to the numbers [1] through [15] in the previous chapter (Chapter 3 "CENTER PANEL AUDIO SYSTEM").

5 FRONT VIEW AND CONNECTORS

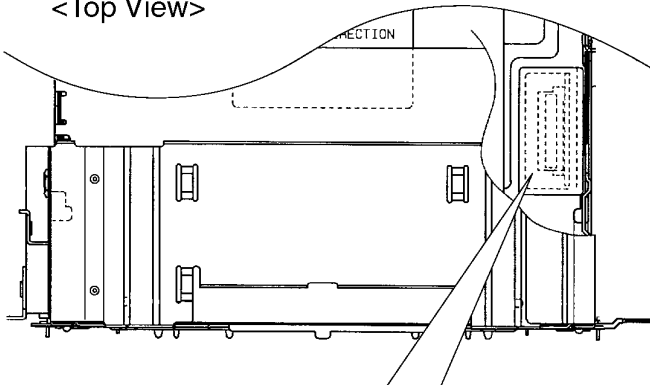


6 REAR/TOP/BOTTOM VIEW AND CONNECTORS

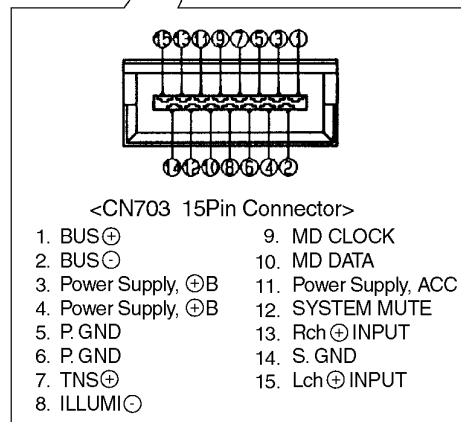
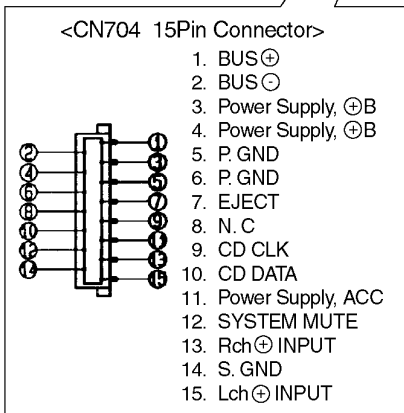
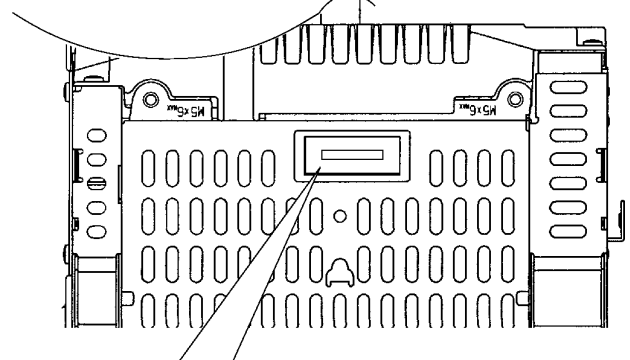
<Rear View>



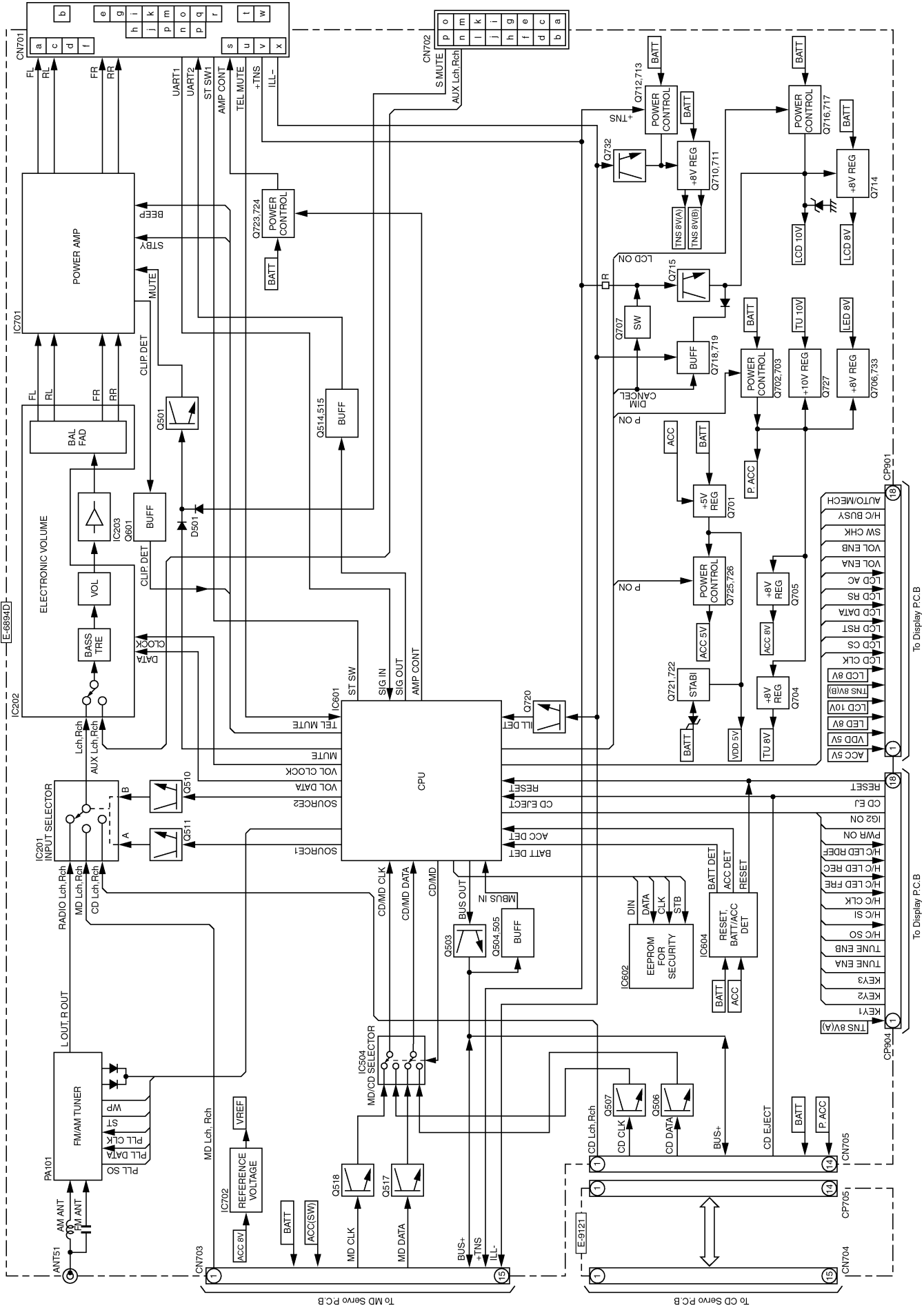
<Top View>



<Bottom View>



7 BLOCK DIAGRAM



8 TERMINALS DESCRIPTION

IC601 : C2CBHG000101

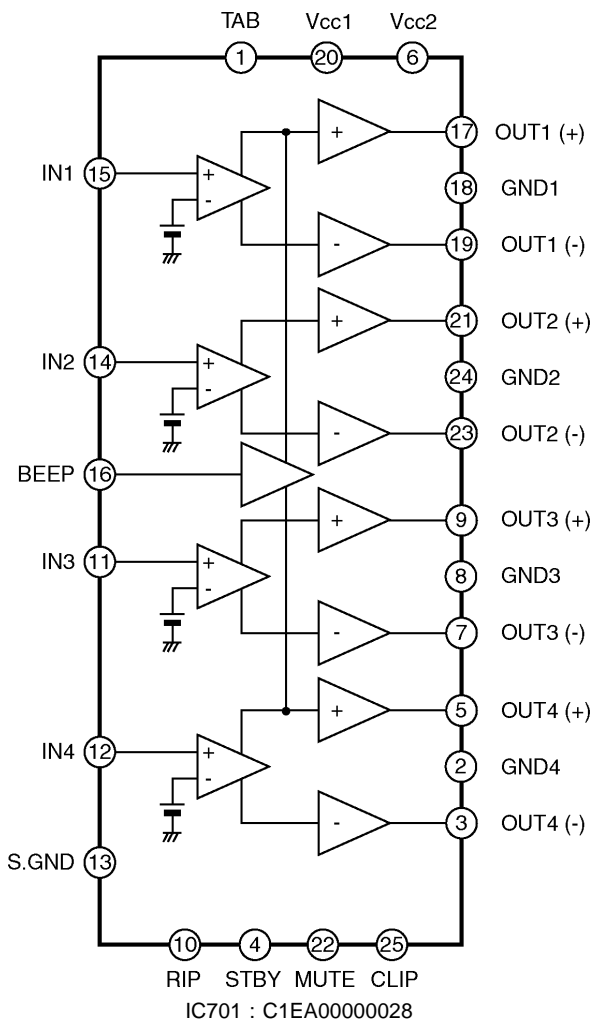
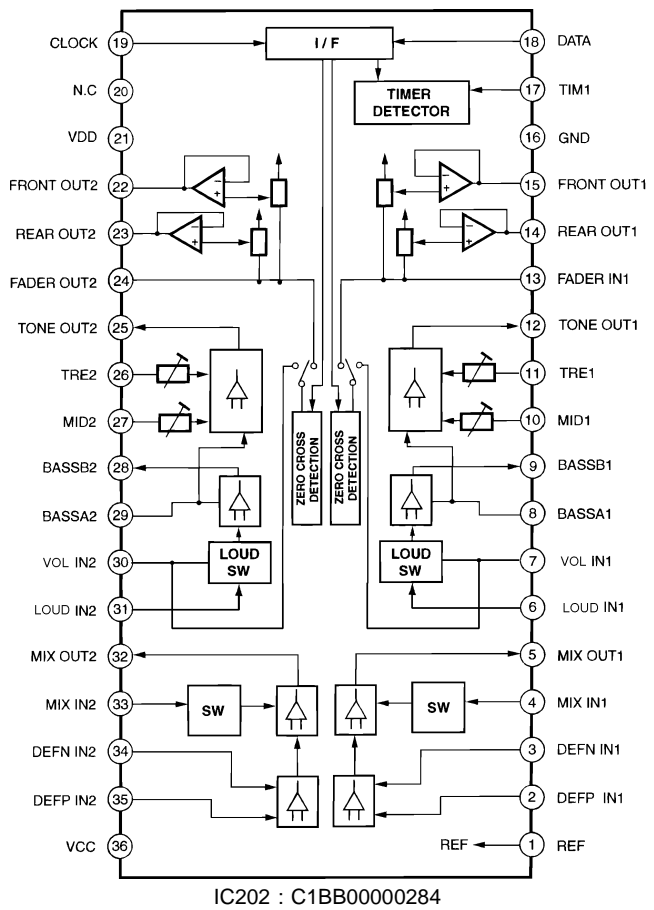
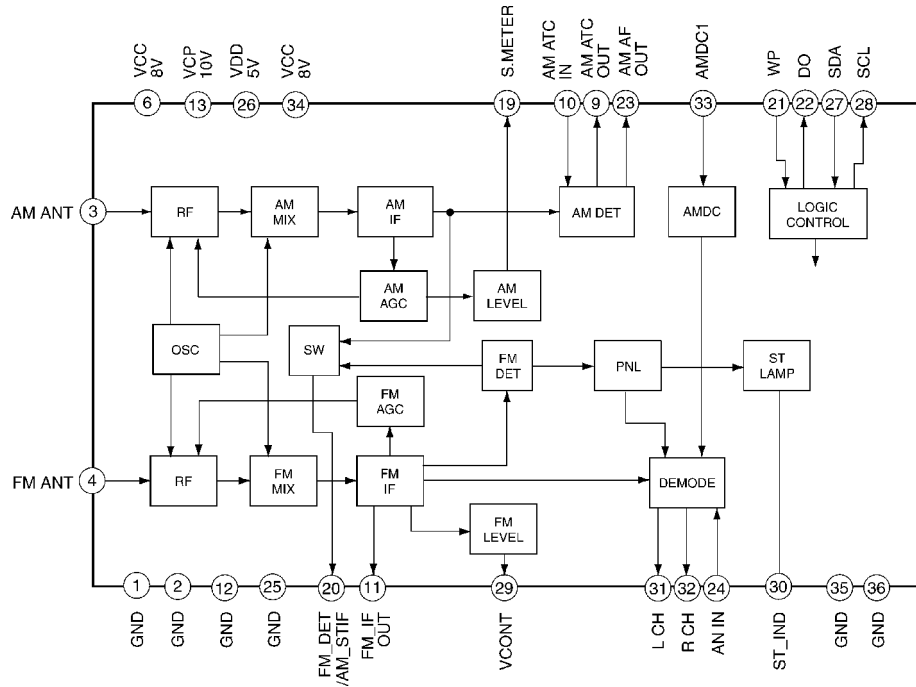
Pin No.	Name	Description	I/O	Vol.(V)	
				FM	AM
1	VOL ENB	Contact signal (VOLUME)	I	5.1	5.1
2	H/C CLK	Clock for concentration display	O	3.1	3.0
3	H/C SO	Serial data for concentration display	O	0	0
4	H/C SI	Serial data for concentration display	I	0	0
5	H/C BUSY	Busy signal	O	0	0
6	PWR ON	Power on/off	O	5.1	5.1
7	AUTO/MEK A	Air conditioner mode	O	5.1	5.1
8	CD/MD CLK	Clock for CD/MD	I	0	0
9	CD/MD DATA	Data for CD/MD	I	0	0
10	CD/MD	CD/MD mode selection	O	0	0
11	RESET	System reset	I	5.0	4.9
12	XT2	Not used	-	-	-
13	XT1	(Connecting to ground)	-	0	0
14	VSS	Ground	-	0	0
15	X2	Crystal oscillator	-	1.5	1.5
16	X1	Crystal oscillator	-	1.4	1.4
17	REG OFF	(Connecting to ground)	-	0	0
18	REGC	Bypass capacitor terminal	-	3.6	3.6
19	VDD	+5V power supply	-	5.1	5.1
20	H/C LED RDEF	LED control for concentration display	O	0	0
21	H/C LED REC	LED control for concentration display	O	0	0
22	H/C LED FRE	LED control for concentration display	O	0	0
23	SW CHK	Display mode check	I	5.1	5.1
24	LCD CLK	Clock for LCD	O	5.1	5.1
25	LCD CS	Chip select for LCD driver	O	5.1	5.1
26	LCD RST	Reset for LCD driver	O	5.1	5.1
27	LCD RS	LCD registor selection	O	5.1	5.1
28	CD EJECT	CD eject SW	I	5.1	5.1
29	LCD DATA	LCD data	O	0	0
30	LCD AC	LCD address	O	0	0
31	DIM CANCEL	Dimmer cancel signal	O	0	0
32	TUNE ENB	Contact signal (TUNE)	I	0.9	0.9
33	TUNE ENA	Contact signal (TUNE)	I	5.1	5.1
34	RDS OFF	Not used	-	-	-
35	P.ON	System power on/off	O	5.1	5.1
36	LCD ON	LCD illumination on/off	O	5.1	5.1
37	TYPE1	Setting value for model type	I	5.1	5.1
38	TYPE2	Setting value for model type	I	5.1	5.1
39	BOSE	Audio output type	I	0	0
40	VSS	Ground	-	0	0
41	VDD	+5V power supply	-	5.1	5.1
42	AUX1	Not used	-	-	-
43	AUX2	Not used	-	-	-
44	E2P DIN	Security data	O	5.1	5.0
45	E2P DATA	Security data	I	0	0
46	E2P CLK	Shift clock	O	0	0
47	E2P STB	Data strobe	O	0	0
48	AMP CONT	Ext. Amp on/off	O	5.1	5.1
49	TEL MUTE	Telephone mute	I	5.0	4.9
50	VOL CLK	Clock for E-volume cont.	O	0	0
51	VOL DATA	Data for E- volume cont.	O	0	0
52	AMP STBY	Power Amp stand-by signal	O	5.0	5.1
53	SOURCE1	AF selection (IDC/MD/RADIO)	O	5.0	5.1
54	SOURCE2	AF selection (IDC/MD/RADIO)	O	0	0
55	CLIP DET	Clip detection	I	5.1	5.1

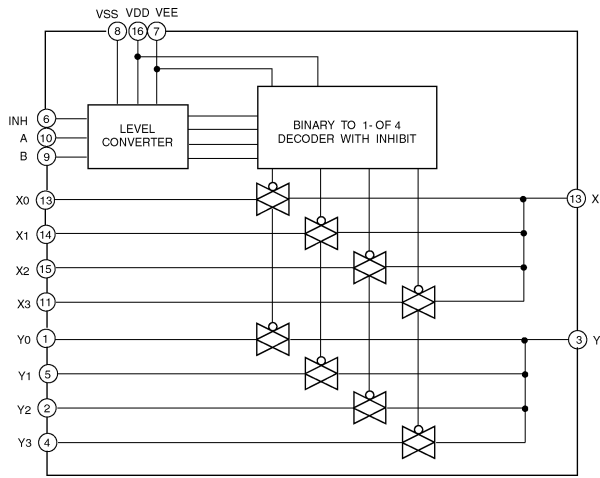
Pin No.	Name	Description	I/O	Vol.(V)	
				FM	AM
56	MUTE	Mute output	O	5.1	5.1
57	MBUS OUT	M-BUS data output	O	0	0
58	BOSE ACC OUT	Not used	-	-	-
59	CAN BUSY	Not used	-	-	-
60	CAN RST	Not used	-	-	-
61	RDS MUTE	Not used	-	-	-
62	NC	No connection	-	-	-
63	RADIO ON	Not used	-	-	-
64	WP	Write pulse	O	5.1	5.1
65	PLL DATA	PLL data	O	5.1	5.1
66	CAN SI	Not used	-	-	-
67	CAN SO	Not used	-	-	-
68	PLL SD	PLL data	I	3.8	3.8
69	PLL CLK	PLL clock	O	5.1	5.1
70	ST	FM stereo detection	I	5.1	5.0
71	ILL BL	Not used	-	-	-
72	LCD BL	Not used	-	-	-
73	TEST	(Ground pull-down)	-	0	0
74	ST SW	Steering switch input	I	5.0	5.0
75	+B.V	Battery detection	I	3.2	3.2
76	V.CONT	Phase diff. level detection	I	3.7	3.7
77	NOISE	Not used	-	-	-
78	MP	(Ground pull-down)	-	0	0
79	KEY2	Key data input	I	4.6	4.6
80	KEY1	Key data input	I	4.6	4.6
81	KEY3	Key data input	I	4.6	4.6
82	AVDD	+5V power supply	-	5.1	5.1
83	AVREF	+5V power supply	-	5.1	5.1
84	AVSS	Ground	-	0	0
85	RX	(Connecting to ground)	-	0	0
86	TX	(Connecting to ground)	-	0	0
87	J56/J37	(VDD pull-up)	-	5.1	5.1
88	SPEED	Not used	-	-	-
89	ILL DET IN	ILL+ detection	I	5.1	5.1
90	IG2 ON	Ignition2 on signal	O	5.1	5.1
91	MBUS IN	M-BUS data input	I	5.1	5.1
92	ACC DET	ACC detection	I	5.1	5.1
93	BAT DET	Battery detection	I	5.1	5.1
94	RDS DATA	Not used	-	-	-
95	SIG IN	Serial communication data	I	5.1	5.1
96	SIG OUT	Serial communication data	O	4.0	5.0
97	RDS CLK	Not used	-	-	-
98	ANT AMP	Antenna Amp power output	O	0	0
99	BEEP	Beep output	O	0	0
100	VOL ENA	Contact signal (VOLUME)	I	5.1	5.1

Note :

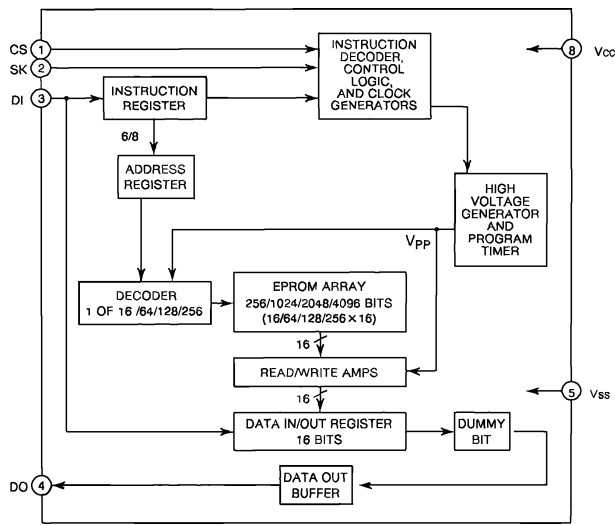
Voltage measurements are with respect to ground, with a voltmeter (internal resistance : 10M ohms).

9 PACKAGE AND IC BLOCK DIAGRAM

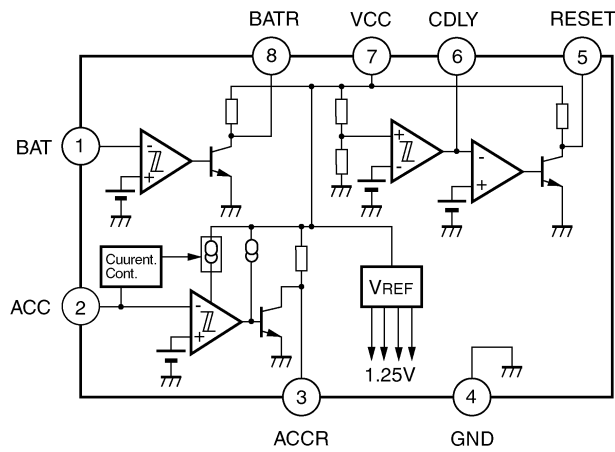




IC201, 504 : C0JBAR000066



IC602 : C3EBCG000037



IC604 : AN8065E1

10 REPLACEMENT PARTS LIST

Notes :

1. Be sure to make your orders of replacement parts according to this list.
2. Important safety notice: Components, identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Location keys in the remarks column indicates the general location of the parts shown in the exploded drawing, as in a road map.
4. The marking (RTL) indicates that Retention Time is limited for this item. After the discontinuation of assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
5. "MCC" marks in remarks column are indicated supply parts of Matsushita Communication Industrial Corp. of America (MCC).

Ref. No.	Part No.	Part Name & Description	Remarks
[E6894D] Main Block			
IC's and TRANSISTORS			
IC201	C0JBAR000066	IC	
IC202	C1BB00000284	IC	
IC203	C0ABCB000015	IC	
IC504	C0JBAR000066	IC	
IC601	C2CBHG000101	IC	
IC602	C3EBCG000037	IC	
IC604	AN8065SEL	IC	
IC701	C1EA00000028	IC	
IC702	COABAB000001	IC	
PA101	YEP0PTB566A0	Electronic Tuner	
Q501	B1GBCFNN0004	Transistor	
Q503	B1ABCF000044	Transistor	
Q504	B1ABCF000044	Transistor	
Q505	YEANA1037KTX	Transistor	
Q506	B1GBCFJJ0002	Transistor	
Q507	B1GBCFJJ0002	Transistor	
Q510	B1GBCFNN0004	Transistor	
Q511	B1GBCFNN0004	Transistor	
Q514	B1GBCFJJ0002	Transistor	
Q515	B1ABCF000044	Transistor	
Q517	B1GBCFJJ0002	Transistor	
Q518	B1GBCFJJ0002	Transistor	
Q601	B1GBCFNN0004	Transistor	
Q701	B1BBAC000007	Transistor	
Q702	2SB1073TX	Transistor	
Q703	YEANC114WKTX	Transistor	
Q704	2SD2139TA	Transistor	
Q705	2SD2139TA	Transistor	
Q706	B1BBAC000007	Transistor	
Q707	YEANC114YKX	Transistor	
Q710	YEAN2SD1856	Transistor	
Q711	YEAN2SD1856	Transistor	
Q712	B1GDCFJJ0002	Transistor	
Q713	B1ABCF000044	Transistor	
Q714	YEAN2SD1856	Transistor	
Q715	B1ABCF000044	Transistor	
Q716	B1GDCFJJ0002	Transistor	
Q717	YEANC114YKX	Transistor	
Q718	YEANC114YKX	Transistor	
Q719	B1ABCF000044	Transistor	
Q720	B1ABCF000044	Transistor	

Ref. No.	Part No.	Part Name & Description	Remarks
Q721	YEANC3661TA	Transistor	
Q722	YEANC3661TA	Transistor	
Q723	YEANHQ1F3PT1	Transistor	
Q724	YEANC114YKX	Transistor	
Q725	YEANFP1F3PT1	Transistor	
Q726	YEANC114WKTX	Transistor	
Q727	YEANC3661TA	Transistor	
Q732	B1ABCF000044	Transistor	
Q733	B1ABCF000044	Transistor	
DIODES			
D101	MA152WKTX	Diode	
D201	MA8056LMHTX	Diode	
D202	MA8056LMHTX	Diode	
D301	MA8056LMHTX	Diode	
D302	MA8056LMHTX	Diode	
D501	MA152WKTX	Diode	
D503	B0ACCK000005	Diode	
D504	MA153TX	Diode	
D510	B0ACCK000005	Diode	
D512	MA8056LMHTX	Diode	
D513	MA153TX	Diode	
D701	YEADDAM3MA47	Diode	
D702	YEADDSA3A2B	Diode	
D703	B0ACCK000005	Diode	
D704	B0ACCK000005	Diode	
D705	YEADRD56M3T1	Diode	
D706	YEARDR10M2T1	Diode	
D707	YEADDEC10DS1	Diode	
D708	B0BC8R100002	Diode	
D709	YEADRD82M3T1	Diode	
D710	YEARDR47M2T1	Diode	
D711	B0ACCK000005	Diode	
D712	YEARDR62M2T1	Diode	
D713	B0BC8R100002	Diode	
D714	YEARDR75M3T1	Diode	
D715	B0ACCK000005	Diode	
D716	YEADRD56M2T1	Diode	
D717	YEARDR62M2T1	Diode	
D718	B0ACCK000005	Diode	
D720	B0ACCK000005	Diode	
D721	B0ACCK000005	Diode	
D722	B0ACCK000005	Diode	
D723	YEARDR39M2T2	Diode	
D724	MA8056LMHTX	Diode	
D725	MA8056LMHTX	Diode	
D726	MA8056LMHTX	Diode	
D727	MA8056LMHTX	Diode	
D730	B0ACCK000005	Diode	
D731	MA3X028TAL	Diode	
D732	B0ACCK000005	Diode	
D736	MA2J72900L	Diode	
CAPACITORS			
C71	ECEA1AKS221I	Electrolytic, 220 μ F 10WV	
C72	YECUS1E223KX	Ceramic, 0.022 μ F 25WV	
C73	ECEA1CKS101I	Electrolytic, 100 μ F 16WV	
C74	YECUS1H103KX	Ceramic, 0.01 μ F 50WV	
C75	ECEA1CKS220I	Electrolytic, 22 μ F 16WV	
C76	YECUS1C104KX	Ceramic, 0.1 μ F 16WV	
C77	ECA1AM221I	Electrolytic, 220 μ F 10WV	
C78	YECUS1C104KX	Ceramic, 0.1 μ F 16WV	
C101	YECUS1C154KX	Ceramic, 0.15 μ F 16WV	
C102	YECUZ1H103KX	Ceramic, 0.01 μ F 50WV	
C104	YECUZ1C683KX	Ceramic, 0.068 μ F 16WV	
C105	FLH1E273A011	Ceramic, 0.027 μ F 50WV	
C106	ECEA1CKA220I	Electrolytic, 22 μ F 16WV	
C107	YECUS1H152KX	Ceramic, 1500PF 50WV	
C201	YECUZ1E223KX	Ceramic, 0.022 μ F 25WV	
C202	YECUS1H822KX	Ceramic, 8200PF 50WV	
C204	YECUS1C124KX	Ceramic, 0.12 μ F 16WV	

Ref. No.	Part No.	Part Name & Description	Remarks
L728	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
L729	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
L730	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R101	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R102	ERJ6GEYJ104	Chip, 100kΩ 1/10W	
R104	ERJ6GEYJ104	Chip, 100kΩ 1/10W	
R105	ERJ3GEYJ822V	Chip, 8.2kΩ 1/16W	
R106	ERJ3GEYJ472V	Chip, 4.7kΩ 1/16W	
R107	ERJ3GEYJ472V	Chip, 4.7kΩ 1/16W	
R108	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R109	ERJ6GEYJ104	Chip, 100kΩ 1/10W	
R169	ERJ6GEYJ223	Chip, 22kΩ 1/10W	
R172	ERJ3GEYJ223V	Chip, 22kΩ 1/16W	
R201	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R202	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R204	ERJ6GEYJ332	Chip, 3.3kΩ 1/10W	
R205	ERJ6GEYJ153	Chip, 15kΩ 1/10W	
R206	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R207	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R208	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R209	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R210	ERJ3GEYJ682V	Chip, 6.8kΩ 1/16W	
R211	ERJ6GEYJ393	Chip, 39kΩ 1/10W	
R212	ERJ6GEYJ393	Chip, 39kΩ 1/10W	
R213	ERJ3GEYJ223V	Chip, 22kΩ 1/16W	
R214	ERJ3GEYJ272V	Chip, 2.7kΩ 1/16W	
R215	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R216	ERJ3GEYJ562V	Chip, 5.6kΩ 1/16W	
R217	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R218	ERJ3GEYJ822V	Chip, 8.2kΩ 1/16W	
R219	ERJ3GEYJ123V	Chip, 12kΩ 1/16W	
R221	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R250	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R252	ERJ3GEYJ222V	Chip, 2.2kΩ 1/16W	
R254	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	
R255	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	
R256	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R257	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R280	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R282	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R284	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	
R285	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	
R286	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R287	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R301	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R302	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R304	ERJ6GEYJ332	Chip, 3.3kΩ 1/10W	
R305	ERJ6GEYJ153	Chip, 15kΩ 1/10W	
R306	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R307	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R308	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R309	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R310	ERJ3GEYJ682V	Chip, 6.8kΩ 1/16W	
R311	ERJ6GEYJ393	Chip, 39kΩ 1/10W	
R312	ERJ6GEYJ393	Chip, 39kΩ 1/10W	
R313	ERJ3GEYJ223V	Chip, 22kΩ 1/16W	
R314	ERJ3GEYJ272V	Chip, 2.7kΩ 1/16W	
R315	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R316	ERJ3GEYJ562V	Chip, 5.6kΩ 1/16W	
R317	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R318	ERJ3GEYJ822V	Chip, 8.2kΩ 1/16W	
R319	ERJ3GEYJ123V	Chip, 12kΩ 1/16W	
R321	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R350	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R352	ERJ3GEYJ222V	Chip, 2.2kΩ 1/16W	
R354	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	
R355	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	
R356	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R357	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R380	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R382	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R384	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	
R385	ERJ6GEYJ2R2	Chip, 2.2Ω 1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R386	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R387	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R501	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R502	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R504	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R505	ERJ6GEYJ183	Chip, 18kΩ 1/10W	
R506	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R507	ERJ3GEYJ223V	Chip, 22kΩ 1/16W	
R508	ERJ6GEYJ223	Chip, 22kΩ 1/10W	
R509	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R510	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R511	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R512	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R513	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R514	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R515	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R516	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R517	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R529	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R530	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R533	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R534	ERJ6GEYJ101	Chip, 100Ω 1/10W	
R535	ERJ3GEYJ472V	Chip, 4.7kΩ 1/16W	
R536	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R537	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R538	ERJ6GEYJ101	Chip, 100Ω 1/10W	
R539	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R540	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R541	ERJ6GEYJ222	Chip, 2.2kΩ 1/10W	
R542	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R543	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R544	ERJ6GEYJ222	Chip, 2.2kΩ 1/10W	
R545	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R548	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R555	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R601	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R602	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R603	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R604	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R605	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R606	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R607	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R609	ERJ3GEYJ472V	Chip, 4.7kΩ 1/16W	
R610	ERJ3GEYJ472V	Chip, 4.7kΩ 1/16W	
R611	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R612	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R614	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R617	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R619	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R620	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R621	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R622	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R623	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R624	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R625	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R627	ERJ3GEYJ472V	Chip, 4.7kΩ 1/16W	
R628	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R629	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R630	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R631	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R632	ERJ6GEYJ561	Chip, 560Ω 1/10W	
R633	ERJ3GEYJ104V	Chip, 100kΩ 1/16W	
R634	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R635	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R636	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R637	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R638	ERJ6ENF4701V	Chip, 4.7kΩ 1/10W	
R639	ERJ6ENF1200V	Chip, 120Ω 1/10W	
R640	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R641	ERJ6ENF4701V	Chip, 4.7kΩ 1/10W	
R642	ERJ6ENF1200V	Chip, 120Ω 1/10W	
R643	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R644	ERJ6ENF4701V	Chip, 4.7kΩ 1/10W	

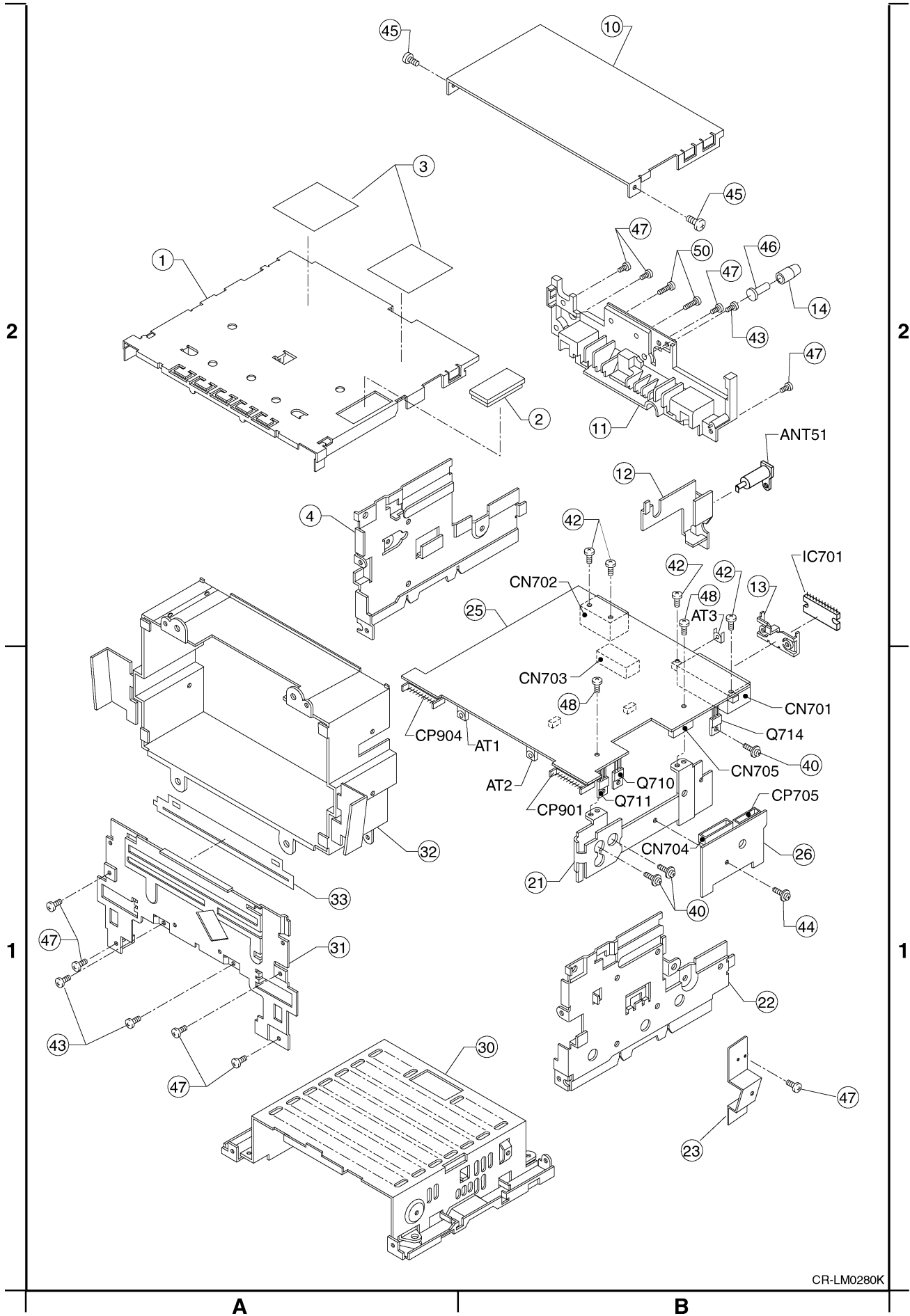
Ref. No.	Part No.	Part Name & Description	Remarks
R645	ERJ6ENF1200V	Chip, 120Ω 1/10W	
R646	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R647	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R648	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R652	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R653	ERJ3GEYJ154V	Chip, 150kΩ 1/16W	
R654	ERJ6GEYJ272	Chip, 2.7kΩ 1/10W	
R655	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R656	ERJ3GEYJ472V	Chip, 4.7kΩ 1/16W	
R657	ERJ6ENF2703V	Chip, 270kΩ 1/10W	
R658	ERJ6ENF4302V	Chip, 43kΩ 1/10W	
R659	ERJ6GEYJ273	Chip, 27kΩ 1/10W	
R660	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R661	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R663	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R664	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R672	ERJ6GEYJ272	Chip, 2.7kΩ 1/10W	
R673	ERJ3GEYJ333V	Chip, 33kΩ 1/16W	
R674	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R675	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R676	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R677	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R678	ERJ3GEY0R00V	Chip, 0Ω 1/16W	
R679	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R680	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R681	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R682	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R683	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R701	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R702	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R704	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R705	ERJ8GEYJ1R0V	Chip, 1.0Ω 1/8W	
R706	ERJ3GEYJ333V	Chip, 33kΩ 1/16W	
R707	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R708	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R709	ERJ8GEYJ182V	Chip, 1.8kΩ 1/8W	
R710	ERJ8GEYJ182V	Chip, 1.8kΩ 1/8W	
R711	ERJ8GEYJ100V	Chip, 10Ω 1/8W	
R712	ERJ6GEYJ101	Chip, 100Ω 1/10W	
R713	ERJ8GEYJ1R0V	Chip, 1.0Ω 1/8W	
R714	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R715	ERJ6GEYJ273	Chip, 27kΩ 1/10W	
R716	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R717	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R718	ERJ6GEYJ222	Chip, 2.2kΩ 1/10W	
R719	ERJ6GEYJ223	Chip, 22kΩ 1/10W	
R720	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R721	ERJ6GEYJ104	Chip, 100kΩ 1/10W	
R722	ERJ6GEYJ333	Chip, 33kΩ 1/10W	
R723	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R725	ERX2S1R0	Metal Film, 1Ω 2W	
R726	ERJ3GEYJ821V	Chip, 820Ω 1/16W	
R727	ERJ6GEYJ821	Chip, 820Ω 1/10W	
R728	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R729	ERJ3GEYJ100V	Chip, 10Ω 1/16W	
R731	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R732	ERJ8GEYJ2R2V	Chip, 2.2Ω 1/8W	
R733	ERJ3GEYJ821V	Chip, 820Ω 1/16W	
R734	ERJ6GEYJ821	Chip, 820Ω 1/10W	
R736	ERJ3GEYJ102V	Chip, 1kΩ 1/16W	
R737	ERJ6GEYJ223	Chip, 22kΩ 1/10W	
R738	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R739	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R740	ERJ6GEYJ472	Chip, 4.7kΩ 1/10W	
R741	ERJ3GEYJ100V	Chip, 10Ω 1/16W	
R742	ERJ6GEYJ153	Chip, 15kΩ 1/10W	
R743	ERJ6GEYJ272	Chip, 2.7kΩ 1/10W	
R745	ERJ6GEYJ153	Chip, 15kΩ 1/10W	
R746	ERJ3GEYJ223V	Chip, 22kΩ 1/16W	
R747	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R748	ERJ6GEYJ821	Chip, 820Ω 1/10W	
R749	ERJ6GEYJ821	Chip, 820Ω 1/10W	
R750	ERJ6GEYJ333	Chip, 33kΩ 1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R751	ERJ3GEYJ103V	Chip, 10kΩ 1/16W	
R752	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R753	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R754	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R755	ERJ3GEYJ332V	Chip, 3.3kΩ 1/16W	
R756	ERJ3GEYJ473V	Chip, 47kΩ 1/16W	
R757	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R758	ERJ6GEYJ273	Chip, 27kΩ 1/10W	
R759	ERJ6GEYJ102	Chip, 1kΩ 1/10W	
R760	ERJ6GEYJ473	Chip, 47kΩ 1/10W	
R761	ERJ8GEYJ181V	Chip, 180Ω 1/8W	
R762	ERJ8GEYJ331V	Chip, 330Ω 1/8W	
R763	ERJ8GEYJ331V	Chip, 330Ω 1/8W	
R764	ERJ3GEYJ222V	Chip, 2.2kΩ 1/16W	
R765	ERJ6GEYJ222	Chip, 2.2kΩ 1/10W	
R766	ERJ6GEYJ101	Chip, 100Ω 1/10W	
R767	ERJ6GEYJ100	Chip, 10Ω 1/10W	
R769	ERJ8GEYJ2R2V	Chip, 2.2Ω 1/8W	
R774	ERJ6GEY0R00V	Chip, 0Ω 1/10W	
R783	ERJ8GEYJ333V	Chip, 33kΩ 1/8W	
R784	ERJ6GEYJ103	Chip, 10kΩ 1/10W	
R795	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R796	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
R799	ERJ8GEY0R00V	Chip, 0Ω 1/8W	
CONNECTORS			
CN701	K1FA124B0004	Connector, 24P	
CN702	K1FA116B0020	Connector, 16P	
CN703	K1KA15A00087	Connector, 15P	
CN705	YEAEKCF14QS	Connector, 14P	
CP901	K1KA18B00031	Connector, 18P	
CP904	K1KA18B00031	Connector, 18P	
COILS			
L503	YELTBLM21B10	Coil	
L504	YELTBLM21B10	Coil	
L601	YELTBLM21B10	Coil	
L603	YELTBLM21B10	Coil	
L604	YELTBLM21B10	Coil	
L701	GOA151J00004	Coil	
L702	YELTBLM21B10	Coil	
L703	YELTBLM21B10	Coil	
L705	YELTBLM21B10	Coil	
L706	YELTBLM21B10	Coil	
L707	YELTBLM21B10	Coil	
L708	YELTBLM21B10	Coil	
L712	YELTBLM21B10	Coil	
L740	YELTBLM21B10	Coil	
R797	YELTBLM21B10	Coil	
CRYSTAL			
XL601	H0D125500004	Crystal	
Neon Tube			
Z51	YEAL02007	Neon Tube	
NETWORK RESISTORS			
RA601	EXBV8V102JV	Network Resistor	
RA602	EXBV8V102JV	Network Resistor	
RA603	EXBV8V102JV	Network Resistor	
RA604	EXBV8V102JV	Network Resistor	
RA605	EXBV8V102JV	Network Resistor	
RA606	EXBV8V102JV	Network Resistor	
RA607	EXBV8V102JV	Network Resistor	
RA608	EXBV8V102JV	Network Resistor	
RA609	EXBV8V102JV	Network Resistor	
RA610	EXBV8V102JV	Network Resistor	
RA611	EXBV8V102JV	Network Resistor	

Ref. No.	Part No.	Part Name & Description	Remarks
RA612	EXBV8V102JV	Network Resistor	
RA613	EXBV8V102JV	Network Resistor	
[E9121] Connection Block			
DIODES			
D203	MA8056LMHTX	Diode	
D204	MA8056LMHTX	Diode	
D303	MA8056LMHTX	Diode	
D304	MA8056LMHTX	Diode	
D729	MA8056LMHTX	Diode	
D733	MA8056LMHTX	Diode	
D734	MA8056LMHTX	Diode	
CAPACITOR			
C741	YECUS1H103ZF	Ceramic, 0.01 μ F 50WV	
RESISTORS			
J101	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
J102	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
J201	ERJ8GEY0R00V	Chip, 0 Ω 1/8W	
J202	ERJ8GEY0R00V	Chip, 0 Ω 1/8W	
L204	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L304	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L731	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L732	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L733	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L734	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L735	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L736	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L737	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L738	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
L739	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
CONNECTORS			
CN704	K1KB15B00015	Connector, 15P	
CP705	K1KA14A00173	Connector, 14P	
Mechanical Parts			
MISCELLANEOUS			
ANT51	YEAAL0060	Antenna Receptacle	
AT1	YEFX0215015	Bracket, GND	
AT2	YEFX0215015	Bracket, GND	
AT3	YEFX0215015	Bracket, GND	
1	YGFA031789	Middle Cover	
2	YGFV012205	Connector Cover	
3	YGFX9992888	Watertight	
4	YGFA09728	Side Plate (L)	
10	YEFA031729	Upper Cover	
11	YGFF011068B	Heat Sink	
12	YEFX0215010	Bracket, ANT	
13	YEFX0214943	Bracket, IC701	
14	YEFS04761	Rubber Packing	
21	YGFF011080	Heat Sink (Q710, 711, 714)	
22	YGFA09729	Side Plate (R)	
23	YGFG012761	Side Bracket (R)	
25	YEP0PT6894L9	PCB w/Component	RTL
26	YEP0PT9121Z8	PCB w/Component	RTL
30	YGFA05817	Bottom Cover	
31	YGFA07569A	Front Plate	
32	YGFG012760	Bracket	
33	YGFS02398	Dust Felt	
40	YEJS06017	Screw,	
42	YEJT01089	Screw, M3x6mm	
43	YEJT03131	Screw, M2.6x5mm	
44	YEJT03272A	Screw,	

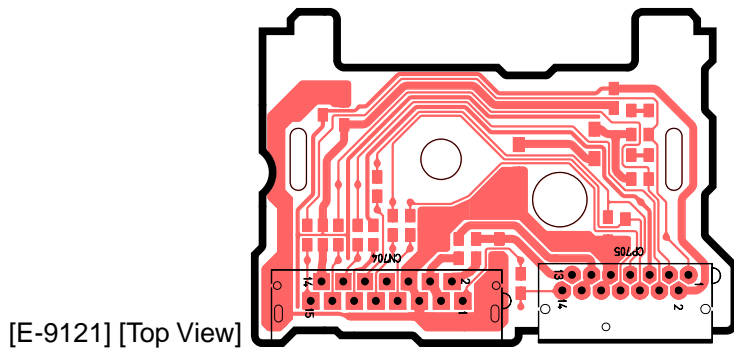
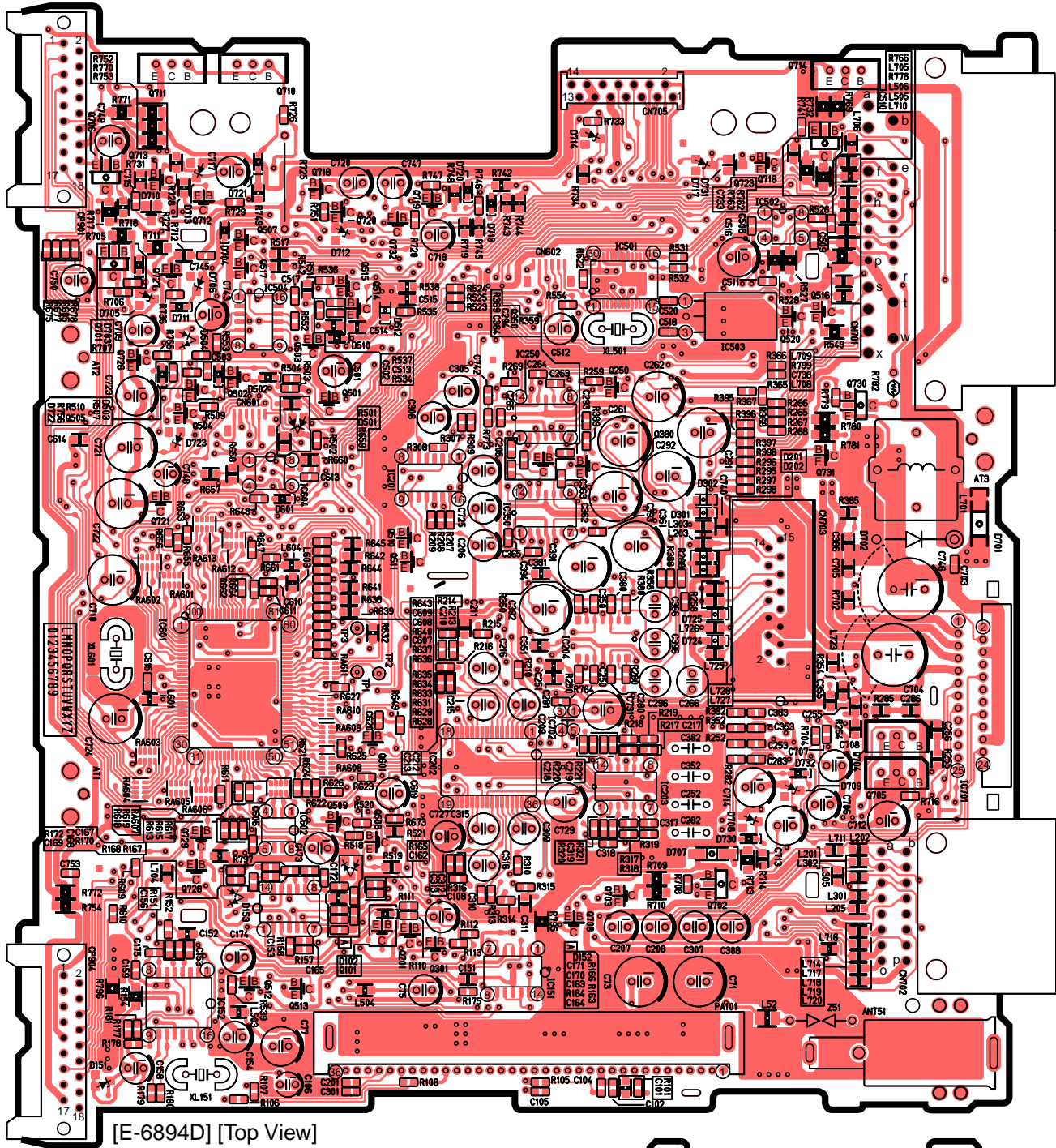
Ref. No.	Part No.	Part Name & Description	Remarks
45	YEJV01109	Steel Bolt	
46	YGJV01113	Steel Bolt	
47	XTB3+6FFX	Screw, M3x6mm	
48	XTB3+8JFN	Screw, M3x8mm	
50	YEJT03013	Screw, M3x12mm	

11 EXPLODED VIEW

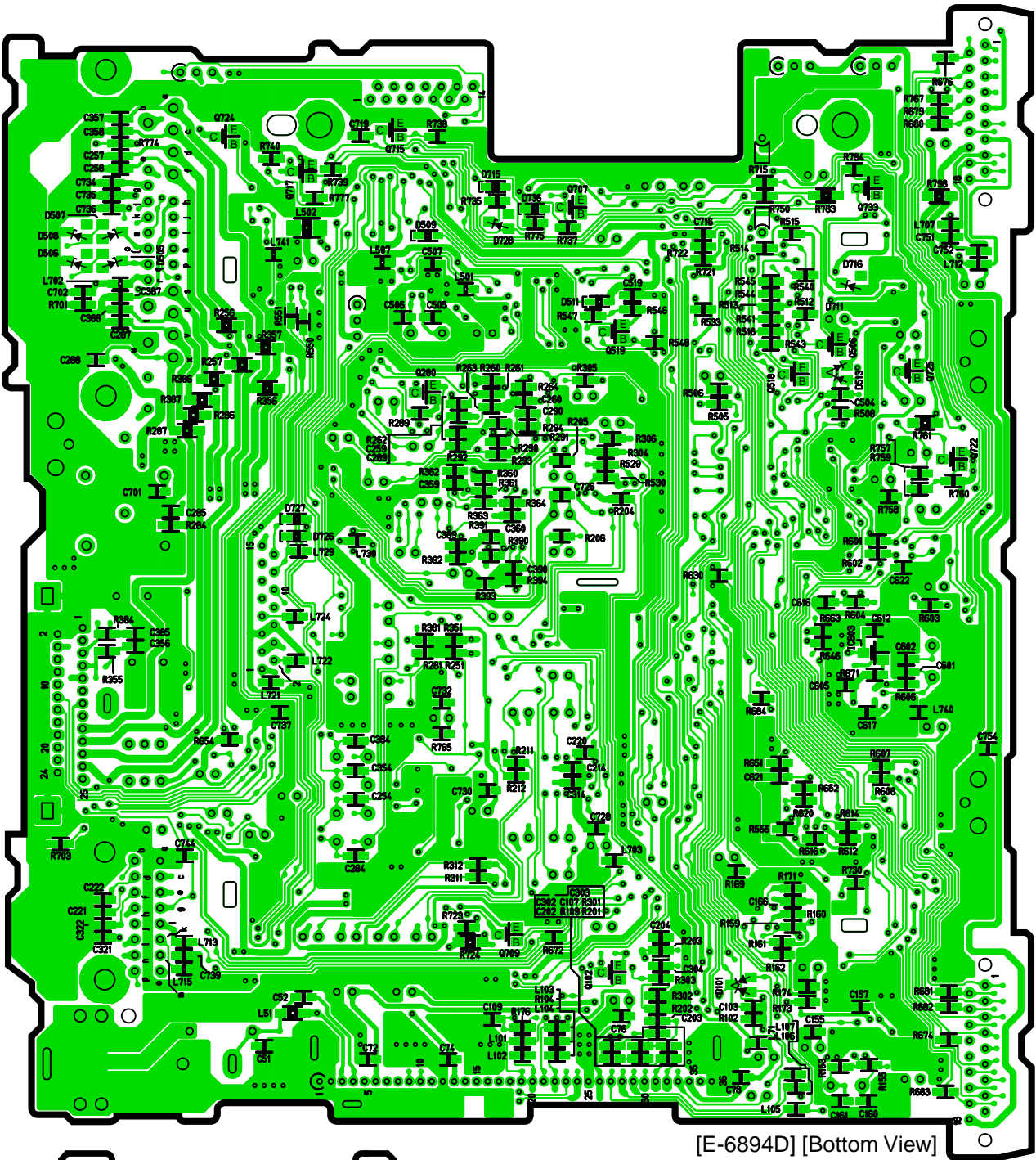


12 WIRING DIAGRAM

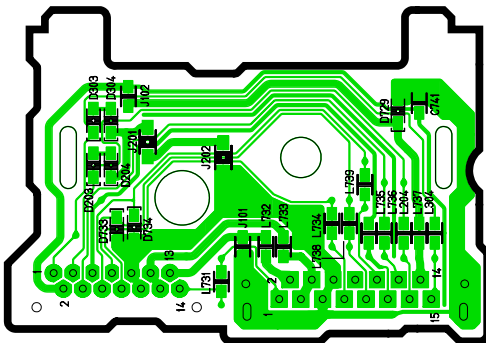
12.1. Main/Connection Block (Top View)



12.2. Main/Connection Block (Bottom View)



[E-6894D] [Bottom View]



[E-9121] [Bottom View]

**THIS PAGE IS JUST FOR
THE PAGE LAYOUT USE
ONLY.**

13 SCHEMATIC DIAGRAM

13.1. Main/Connection Block

