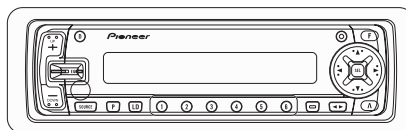


Service Manual

Pioneer



ORDER NO.
CRT2307

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH FM/AM TUNER

KEH-P7850

X1N/ES

NOTE:

- See the separate manual CX-631(CRT1640) for the cassette mechanism description.
- The cassette mechanism assy employed in this model is one of 2L series.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

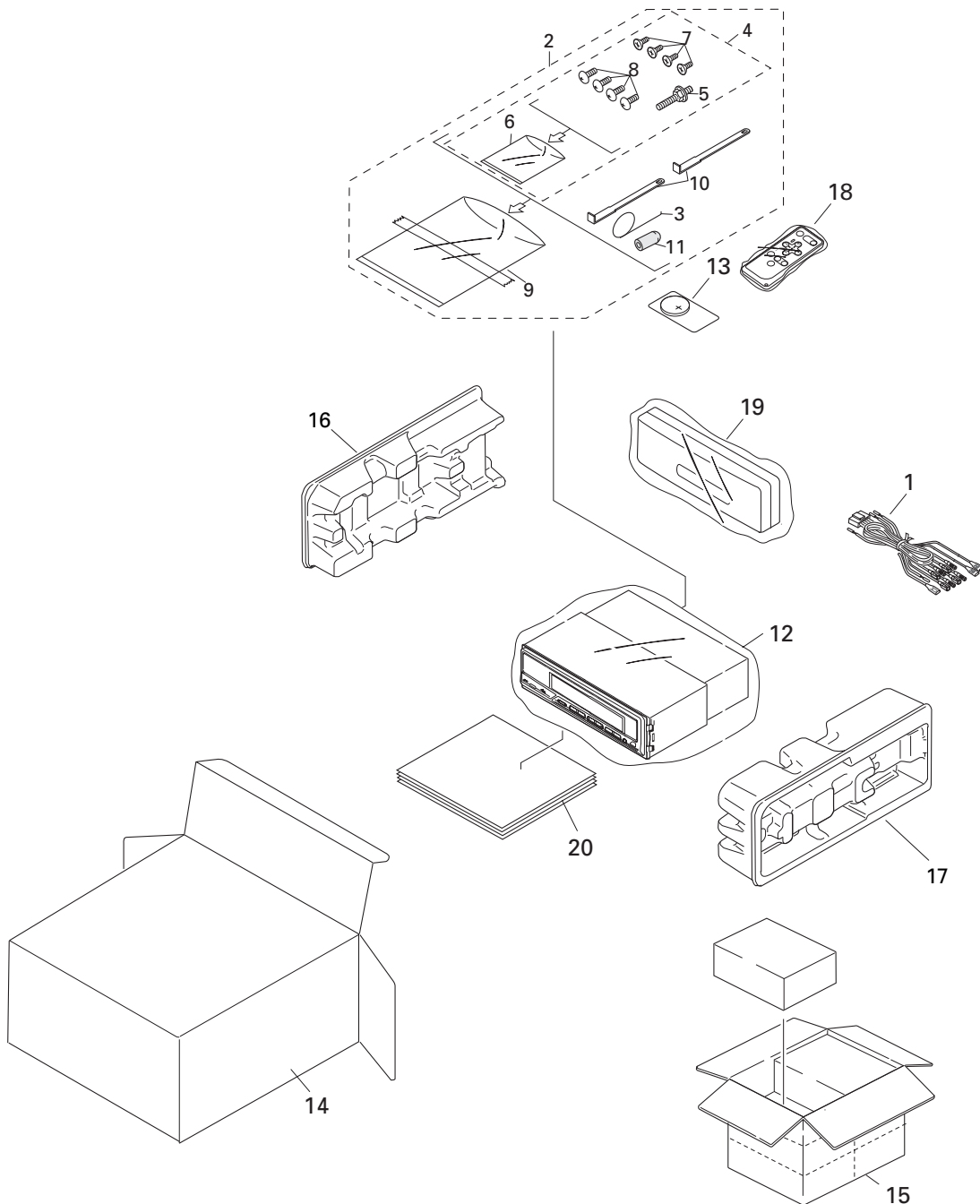
1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by “*” are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

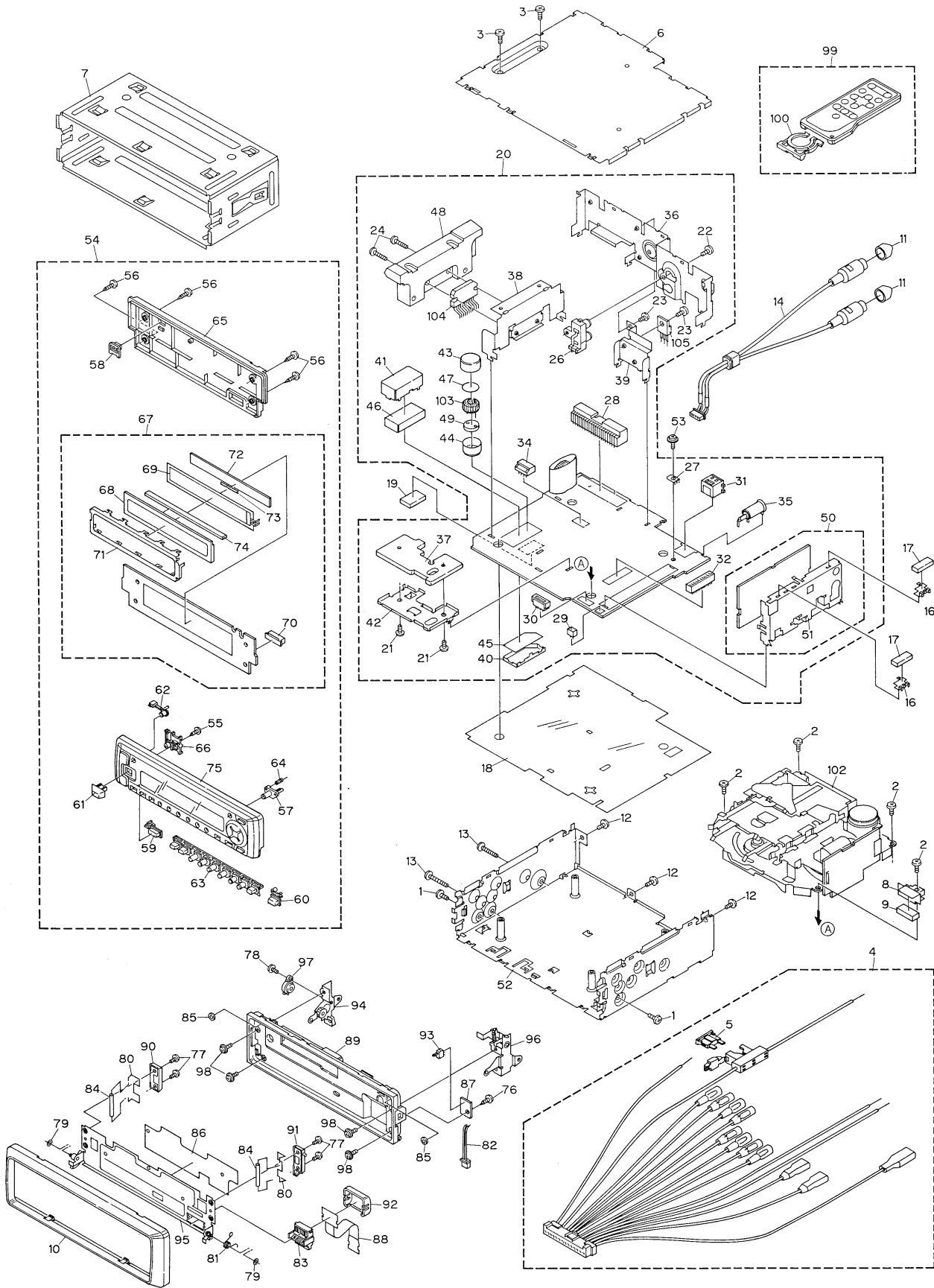
● PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
	1 Cord Assy	CDE5758	16	Protector	CHP2101
*	2 Accessory Assy	CEA2350-/N	17	Protector	CHP2102
	3 Spring	CBH1650	18	Remote Control Assy	CXB3456
	4 Screw Assy	CEA2351	19	Case	CXB3520
	5 Screw	CBA1304	20-1	Owner’s Manual	CRD2762
*	6 Polyethylene Bag	CEG-127	20-2	Owner’s Manual	CRD2763
	7 Screw	CRZ50P090FMC	20-3	Installation Manual	CRD2764
	8 Screw	TRZ50P080FMC			
*	9 Polyethylene Bag	CEG-158			
	10 Handle	CNC5395			
	11 Bush	CNV3930			
	12 Polyethylene Bag	CEG-162			
	13 Battery	CEX1030			
	14 Carton	CHG3552			
	15 Contain Box	CHL3552			

● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-P7850/X1N/ES	CRD2762	English, Spanish, Portuguese(B)
	CRD2763	Chinese, Arabic
	CRD2764	English, Spanish, Portuguese(B), Chinese, Arabic

2.2 EXTERIOR



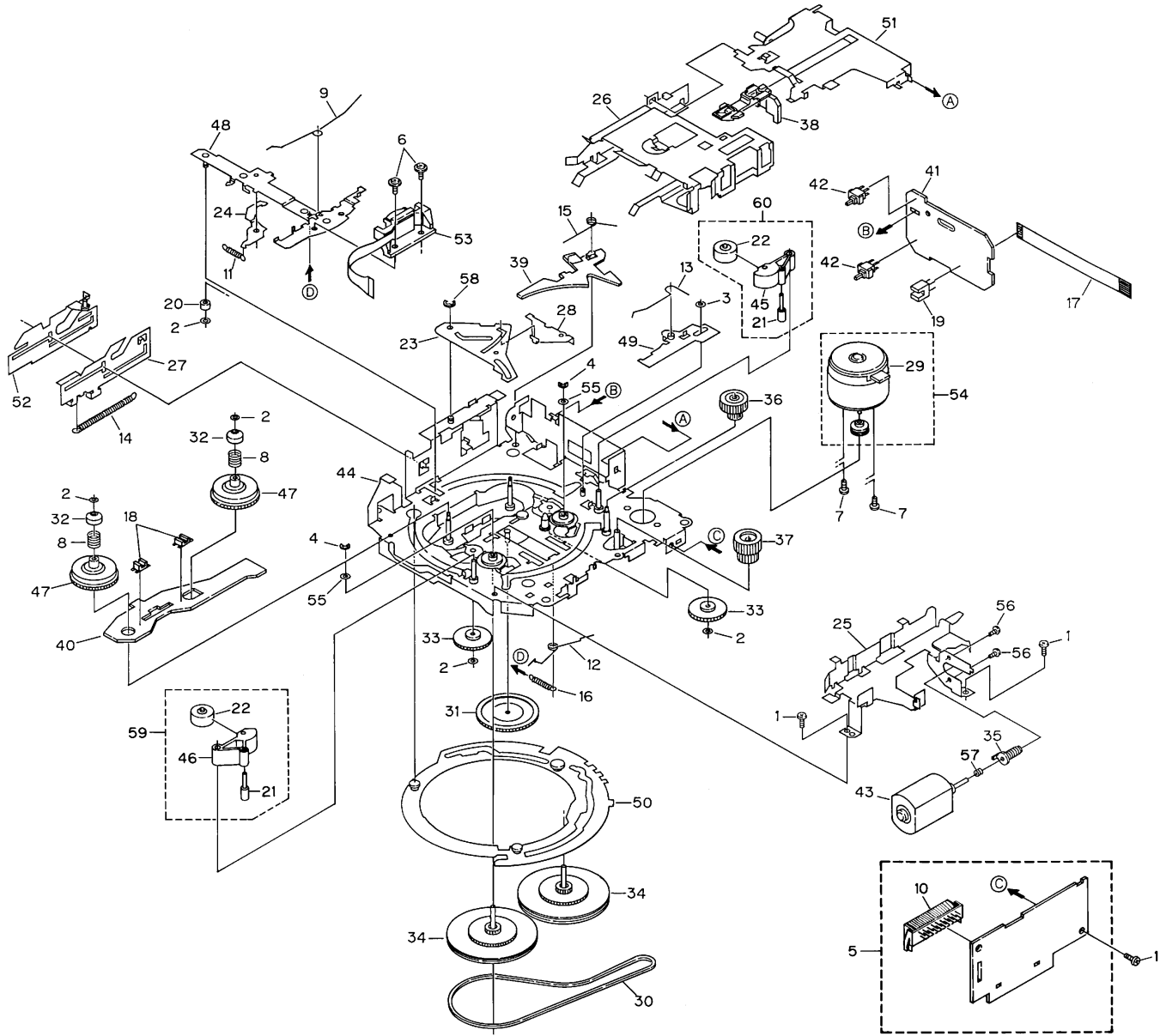
(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ30P040FMC	46	Insulator	CNM6190
2	Screw	BSZ26P050FMC	47	Insulator	CNM6257
3	Screw	BSZ30P050FMC	48	Heat Sink	CNR1505
4	Cord Assy	CDE5758	49	Insulator	CNV5792
5	Fuse(10A)	CEK1136	50	FM/AM Tuner Unit	CWE1486
6	Case	CNB2350	51	Holder	CNC6554
7	Holder	CNC6798	52	Chassis Unit	CXB3048
8	Shield	CNC7365	53	Screw	ISS26P055FUC
9	Spacer	CNM5488	54	Detach Grille Assy	CXB3439
10	Panel	CNS5148	55	Screw	BPZ20P060FMC
11	Cap	CNV2680	56	Screw	BPZ20P080FZK
12	Screw	BSZ30P050FMC	57	Button(OPEN)	CAC5804
13	Screw	BSZ30P200FMC	58	Button(EJECT)	CAC5805
14	Cord	CDE5176	59	Button(SOURCE)	CAC5806
15	•••••		60	Button(BAND)	CAC5807
16	Holder	CNC5704	61	Button	CAC5808
17	Cushion	CNM4870	62	Button(DISP)	CAC5809
18	Insulator	CNM6275	63	Button(1-6)	CAC5922
19	Insulator	CNV5793	64	Spring	CBH2205
20	Tuner Amp Unit	CWM6147	65	Cover	CNS5146
21	Screw	BMZ26P040FMC	66	Holder	CNV5537
22	Screw	BPZ26P060FMC	67	Keyboard Unit	CWM6061
23	Screw	BSZ26P060FMC	68	LCD(LCD901)	CAW1502
24	Screw	BSZ26P160FMC	69	EL	CEL1587
25	•••••		70	Connector(CN901)	CKS2733
26	Pin Jack(CN301)	CKB1028	71	Holder	CNC7992
27	Terminal(CN403)	CKF1059	72	Tape	CNM6348
28	Plug(CN951)	CKM1231	73	Spacer	CNM6347
29	Plug(CN604)	CKS-783	74	Connector	CNV5536
30	Connector(CN601)	CKS1499	75	Grille Unit	CXB3483
31	Connector(CN751)	CKS3408	76	Screw	BPZ20P060FMC
32	Connector(CN602)	CKS3568	77	Screw	CBA1082
33	•••••		78	Screw	CBA1176
34	Connector(CN302)	CKS3598	79	Washer	CBF1001
35	Antenna Jack(CN402)	CKX1056	80	Spring	CBH2063
36	Panel	CNB2358	81	Spring	CBH2204
37	Heat Sink	CNC7991	82	Cord	CDE5800
38	Holder	CNC7996	83	Connector	CKS2780
39	Holder	CNC7997	84	Roller	CLA3386
40	Case	CNC7998	85	Cushion	CNM5486
41	Case	CNC8254	86	Sheet	CNM6109
42	Holder	CNC8255	87	PCB	CNP5430
43	Case	CNC8350	88	PCB	CNP5444
44	Case	CNC8351	89	Panel	CNS5147
45	Insulator	CNM6099	90	Holder	CNS5157

KEH-P7850

Mark No.	Description	Part No.
91	Holder	CNS5165
92	Holder	CNS5389
93	Switch(S602)	CSN1027
94	Holder Unit	CXB3049
95	Holder Unit	CXB3050
96	Holder Unit	CXB3051
97	Damper Unit	CXB3180
98	Screw	IMS20P040FZK
99	Remote Control Unit	CXB3456
100	Cover	CNS4948
101	•••••	
102	Cassette Mechanism Module	EXK3990
103	Coil(L801)	CTH1227
104	IC(IC301)	PAL005A
105	Transistor(Q951)	2SD2396

2.3 CASSETTE MECHANISM MODULE



● CASSETTE MECHANISM MODULE SECTION PARTS LIST

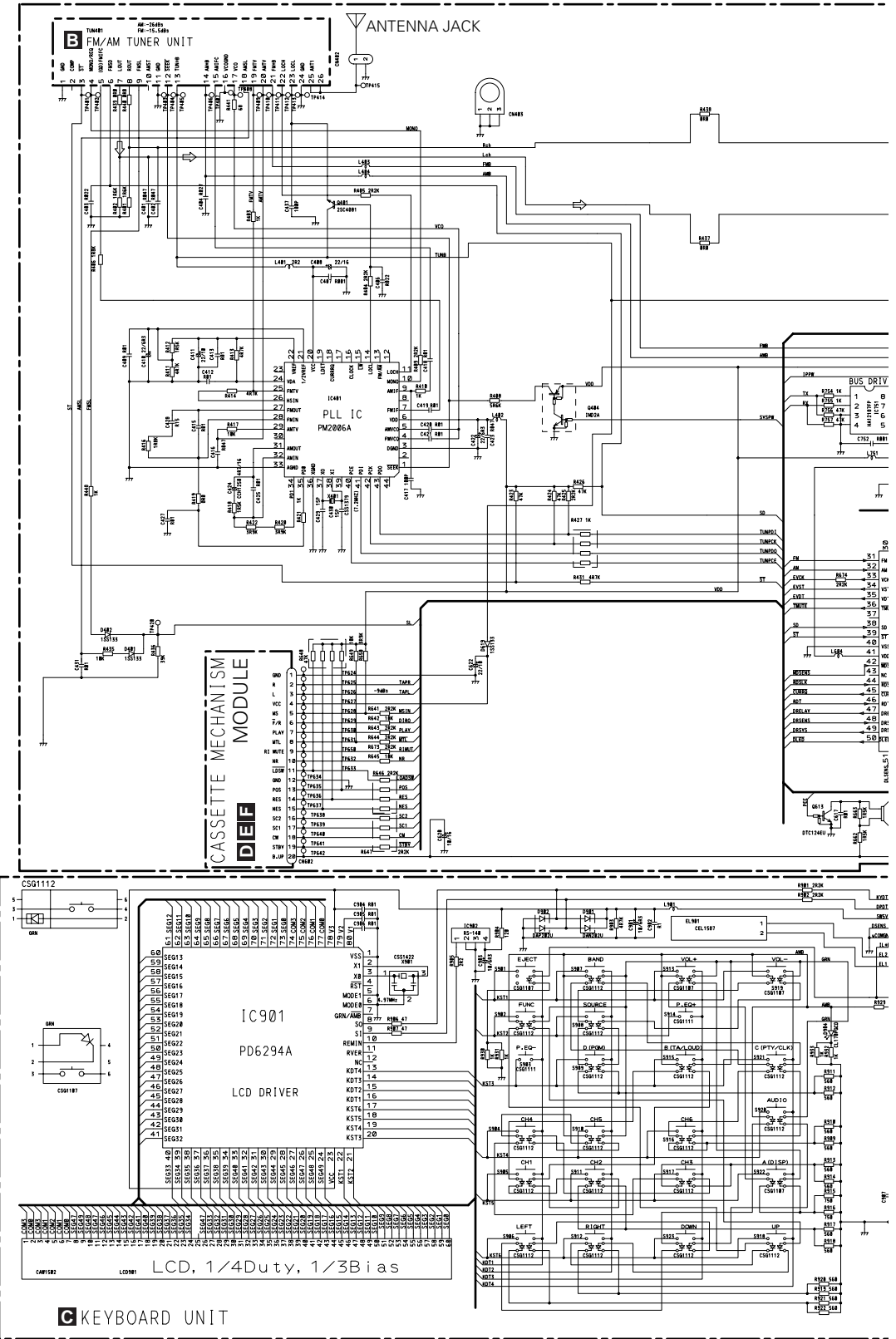
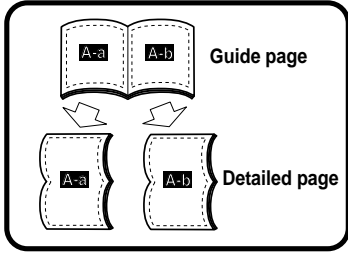
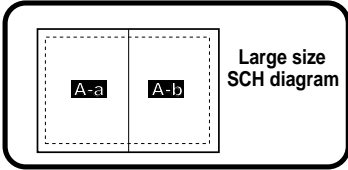
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ20P040FMC	31	Gear	ENV1347
2	Washer	CBF1037	32	Collar	ENV1508
3	Washer	CBF1038	33	Gear	ENV1350
4	Washer	CBG1003	34	Flywheel	ENV1500
5	Deck Unit	EWM1018	35	Worm Gear	ENV1439
6	Screw	EBA1028	36	Worm Wheel	ENV1440
7	Screw	EBA1037	37	Gear	ENR1037
8	Spring	EBH1531	38	Lever	ENV1442
9	Spring	EBH1575	39	Arm	ENV1525
10	Plug(CN251)	CKS3540	40	Gathering PCB	ENX1037
11	Spring	EBH1515	41	Gathering PCB	ENX1042
12	Spring	EBH1587	42	Switch(S1,S2)	ESG1004
13	Spring	EBH1517	43	Motor Unit(M2)	EXA1485
14	Spring	EBH1518	44	Chassis Unit	EXA1567
15	Spring	EBH1519	45	Pinch Holder	ENV1485
16	Spring	EBH1537	46	Pinch Holder	ENV1486
17	Cord	EDD1020	47	Reel Unit	EXA1543
18	Photo-interrupter(EGN2,3)	EGN1006	48	Head Base Unit	EXA1457
19	Photo-interrupter(EGN1)	EGN1005	49	Lever Unit	EXA1438
20	Roller	ENR1031	50	Gear Unit	EXA1545
21	Shaft	ELA1373	51	Frame Unit	EXA1458
22	Pinch Roller	ENV1518	52	Lever Unit	EXA1439
23	Arm	ENC1489	53	Head Assy(HD1)	EXA1506
24	Arm	ENC1397	54	Motor Unit(M1)	EXA1490
25	Guide	ENC1481	55	Washer	HBF-179
26	Holder	ENC1417	56	Screw	BMZ20P022FMC
27	Lever	ENC1448	57	Spring	EBH1545
28	Arm	ENC1488	58	Washer	YE20FUC
* 29	Motor	EXM1031	59	Pinch Holder Unit	EXA1529
30	Belt	ENT1027	60	Pinch Holder Unit	EXA1528

3. SCHEMATIC DIAGRAM

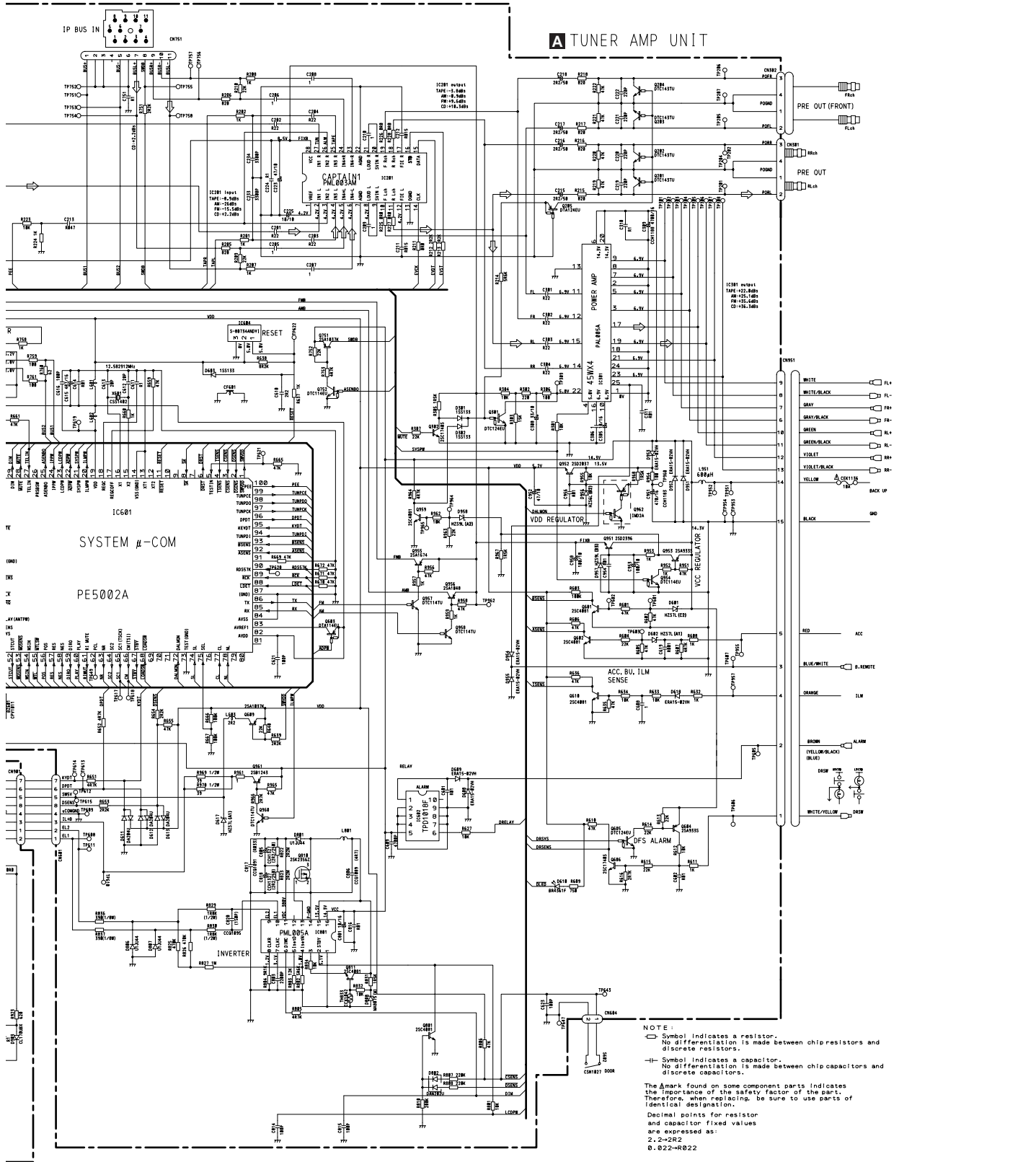
3.1 OVERALL CONNECTION DIAGRAM (GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a



A-b



A

B

C

D



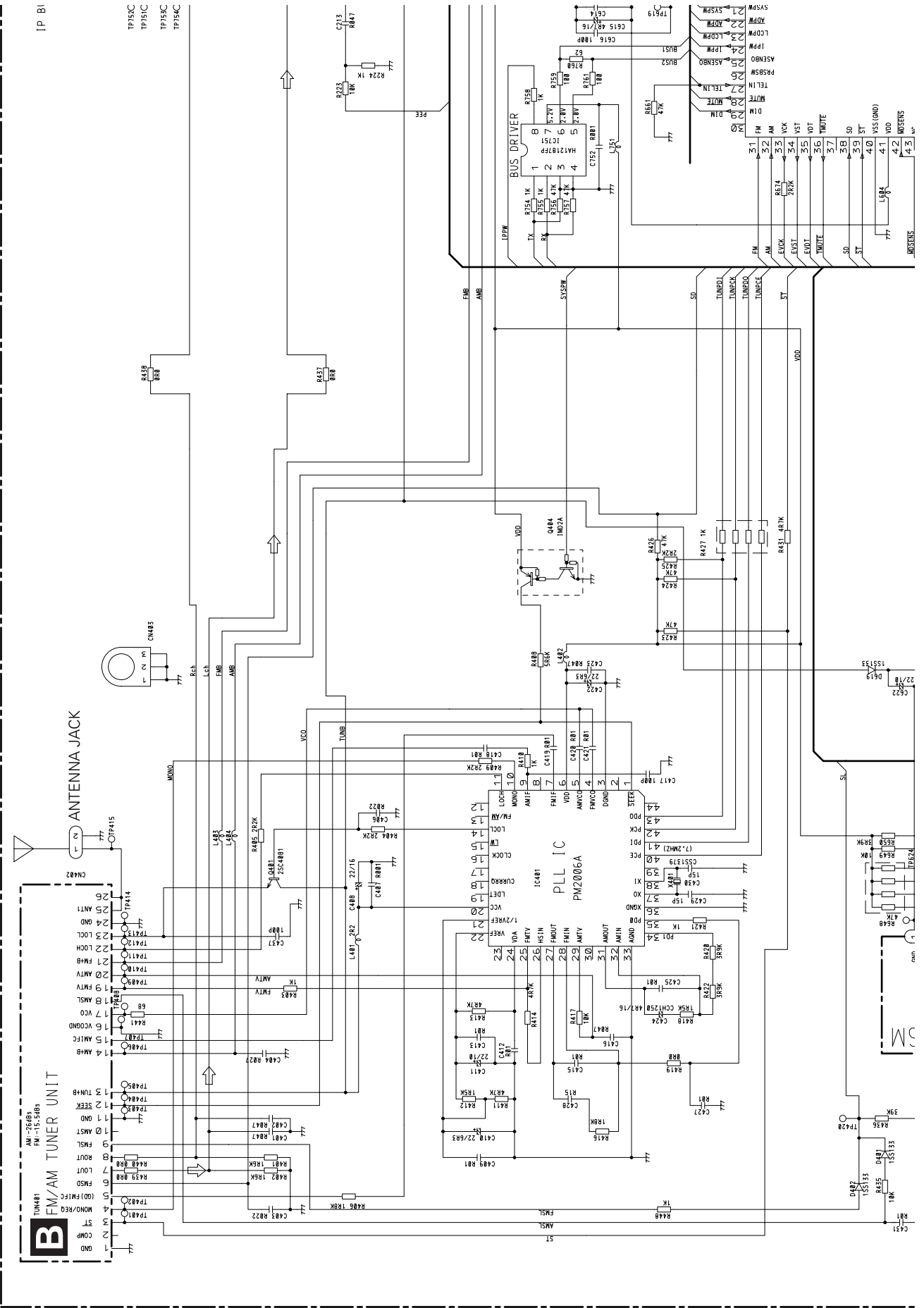
A-a A-b

A

B

C

D



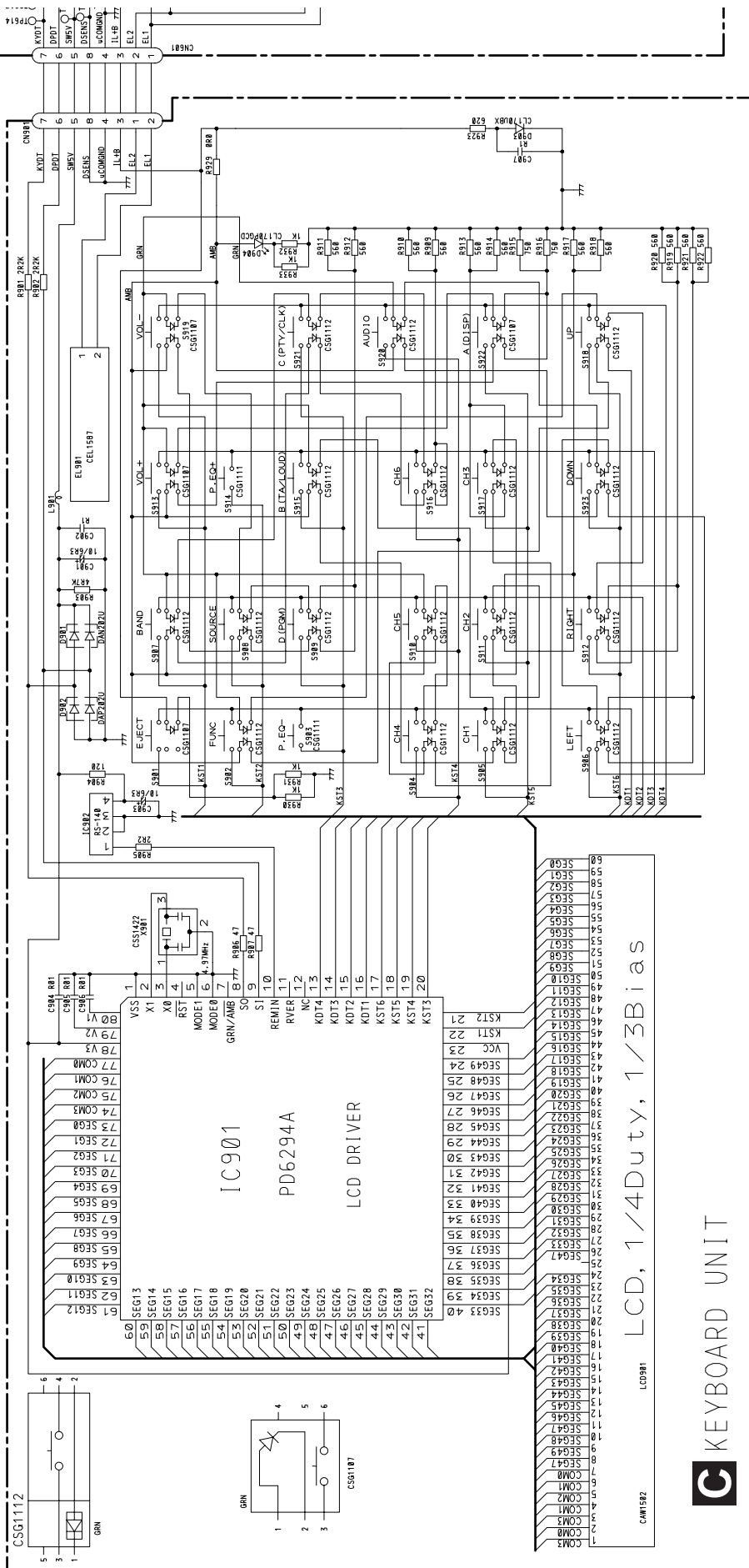
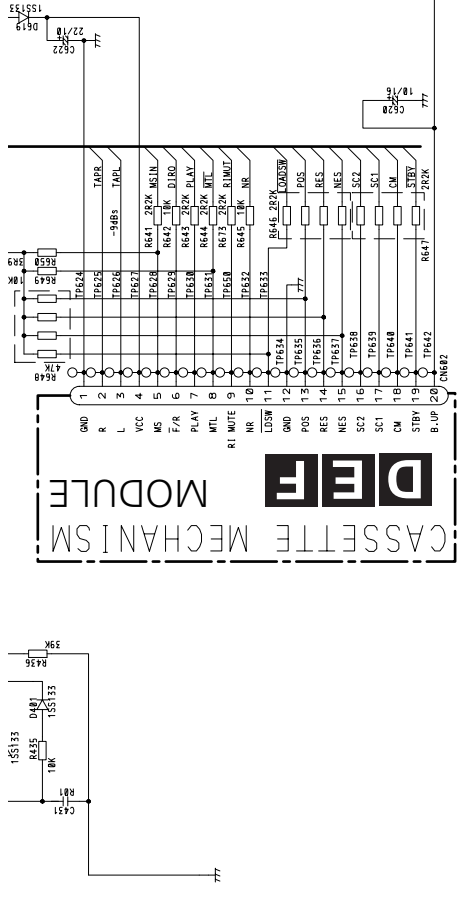
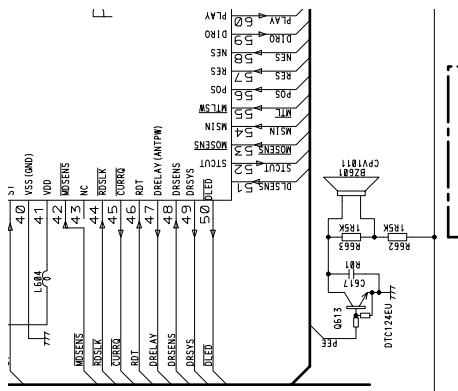
A

B

C

D

A-a A-b



KEYBOARD UNIT

A-a C

A-a A-b

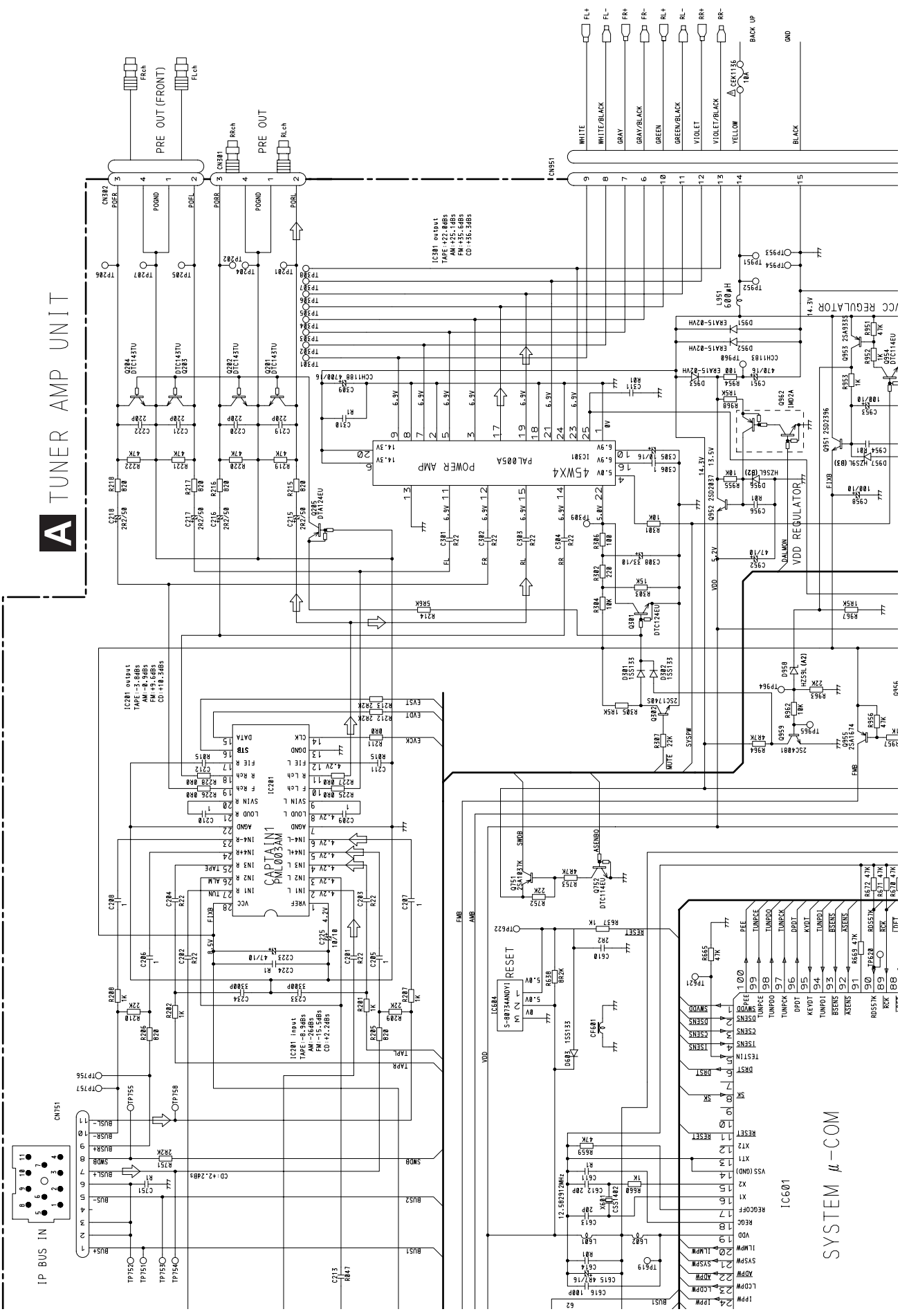
A TUNER AMP UNIT

A

B

C

D



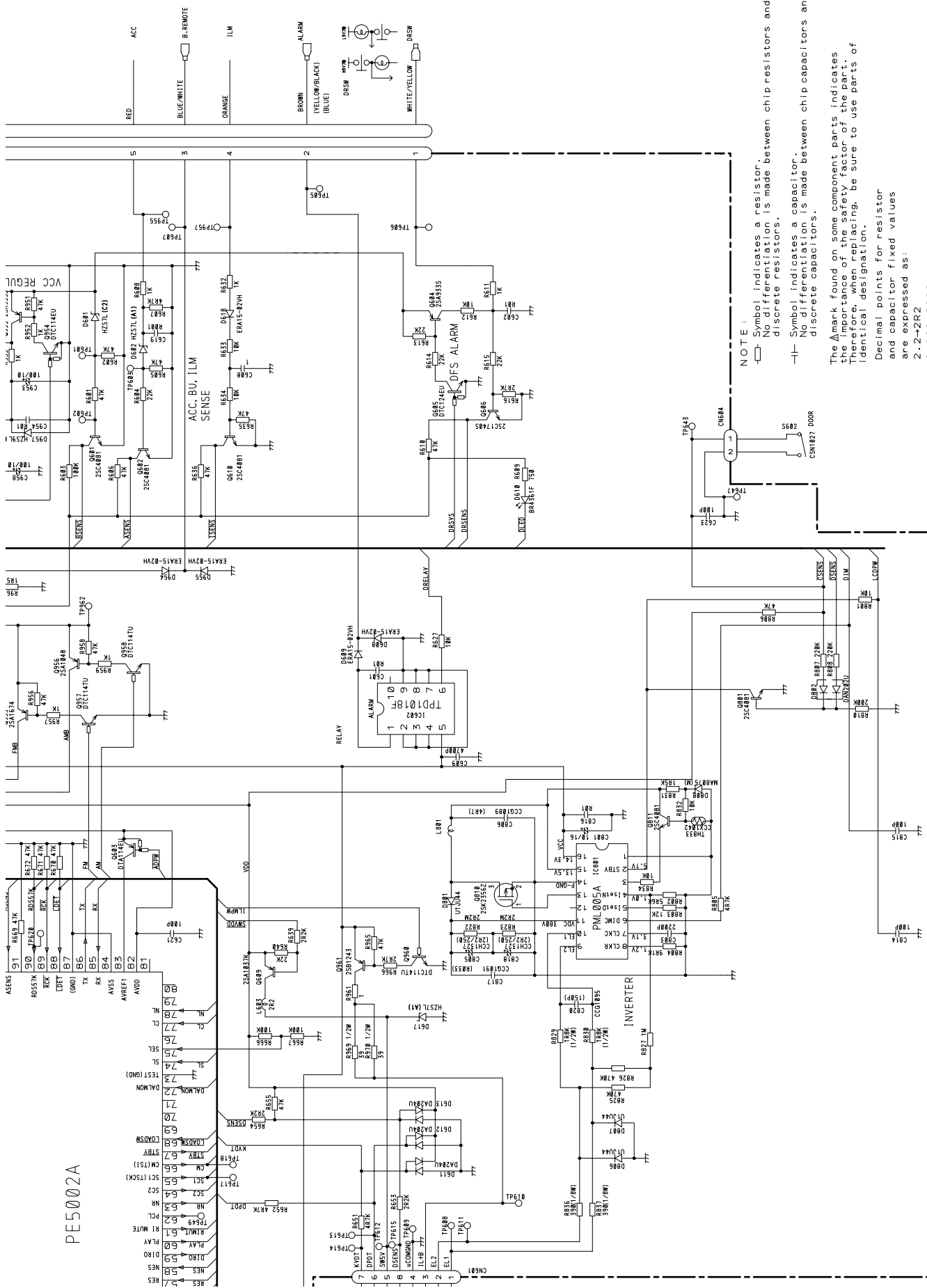
A-b

A

B

C

D



NOTE :

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

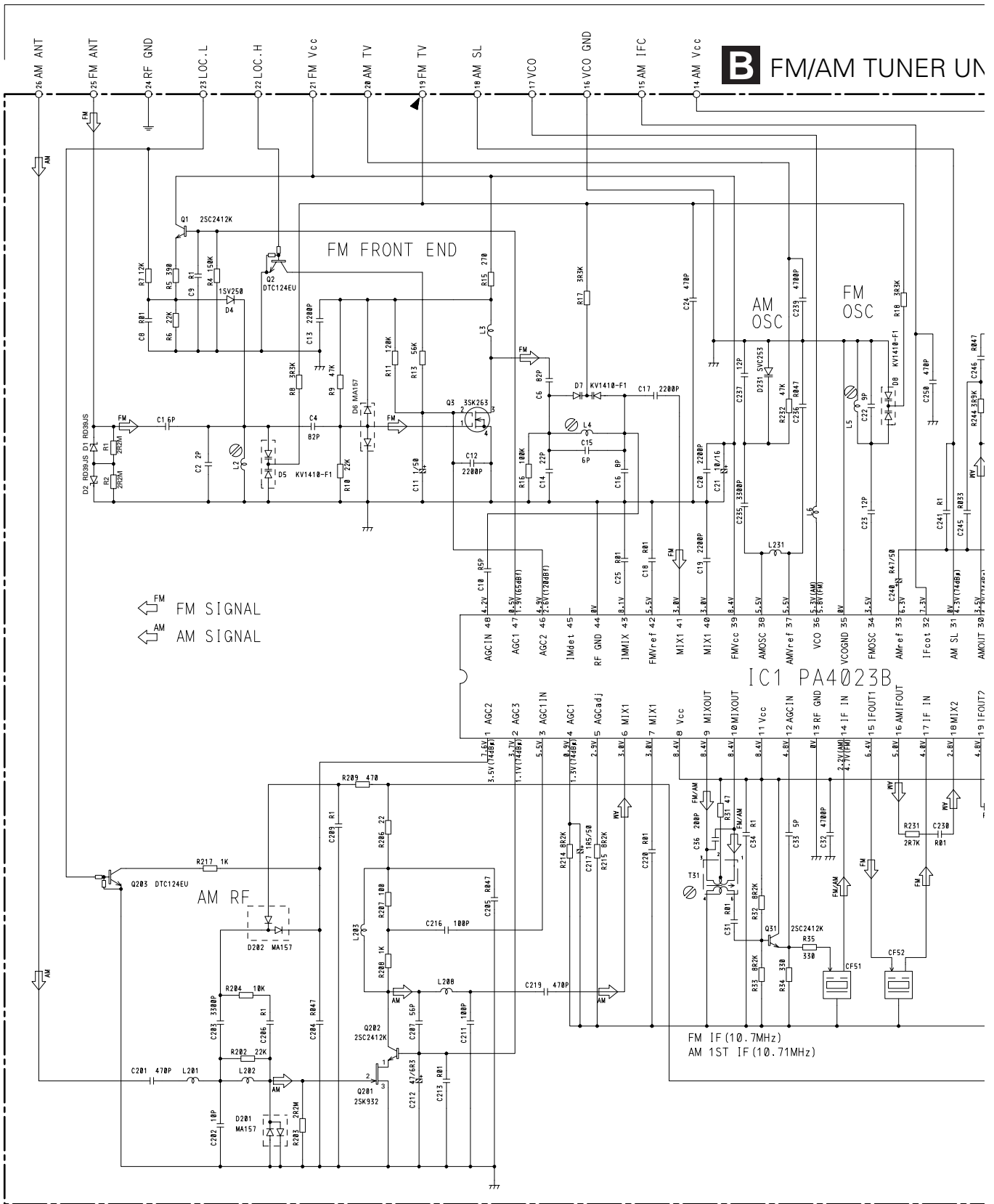
The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

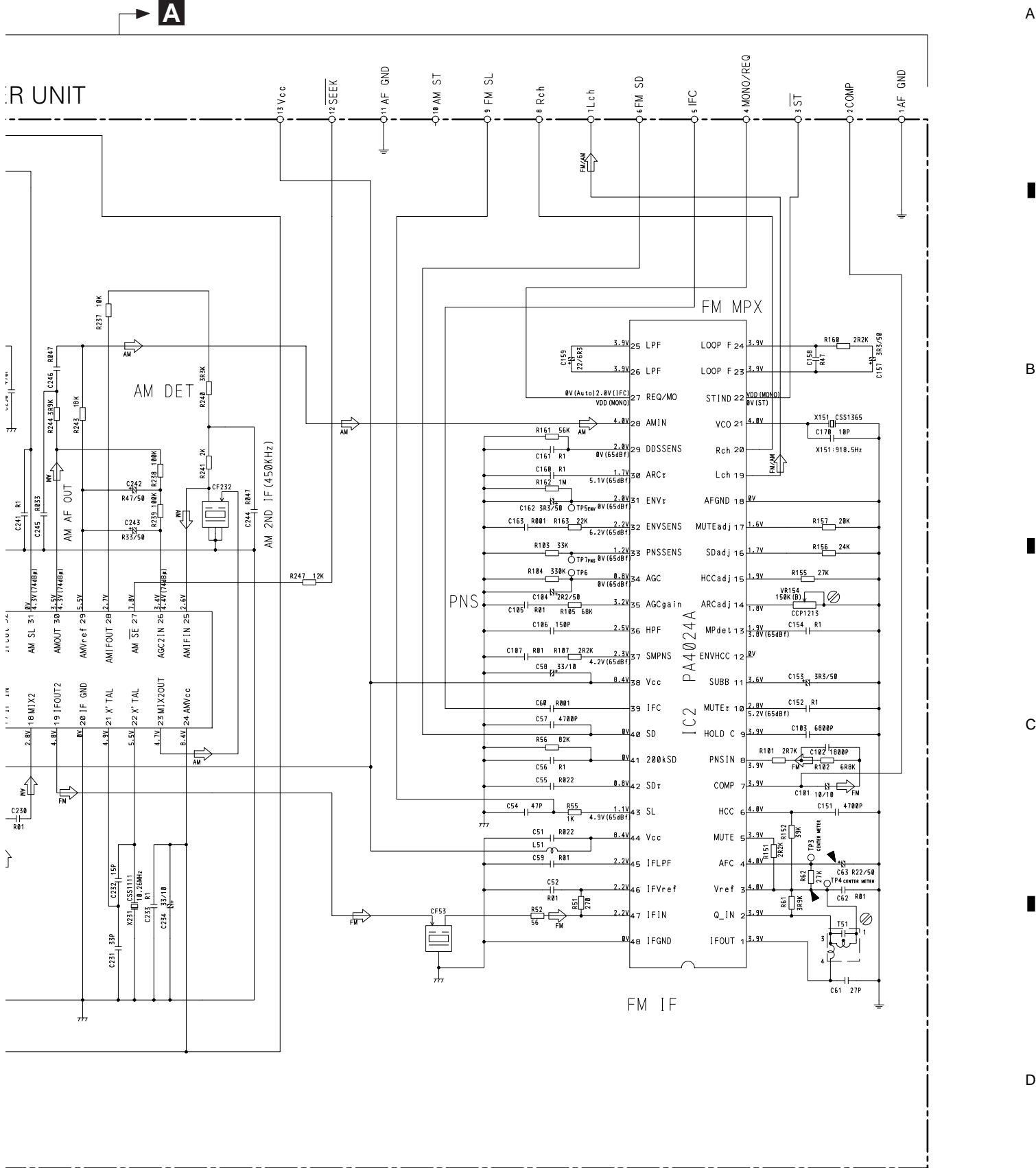
Decimal points for resistor and capacitor fixed values are expressed as:
 2.2-2R2
 0.022-R022

PE5002A

3.2 FM/AM TUNER UNIT

FM/AM TUNER UNIT





R UNIT

A

A

B

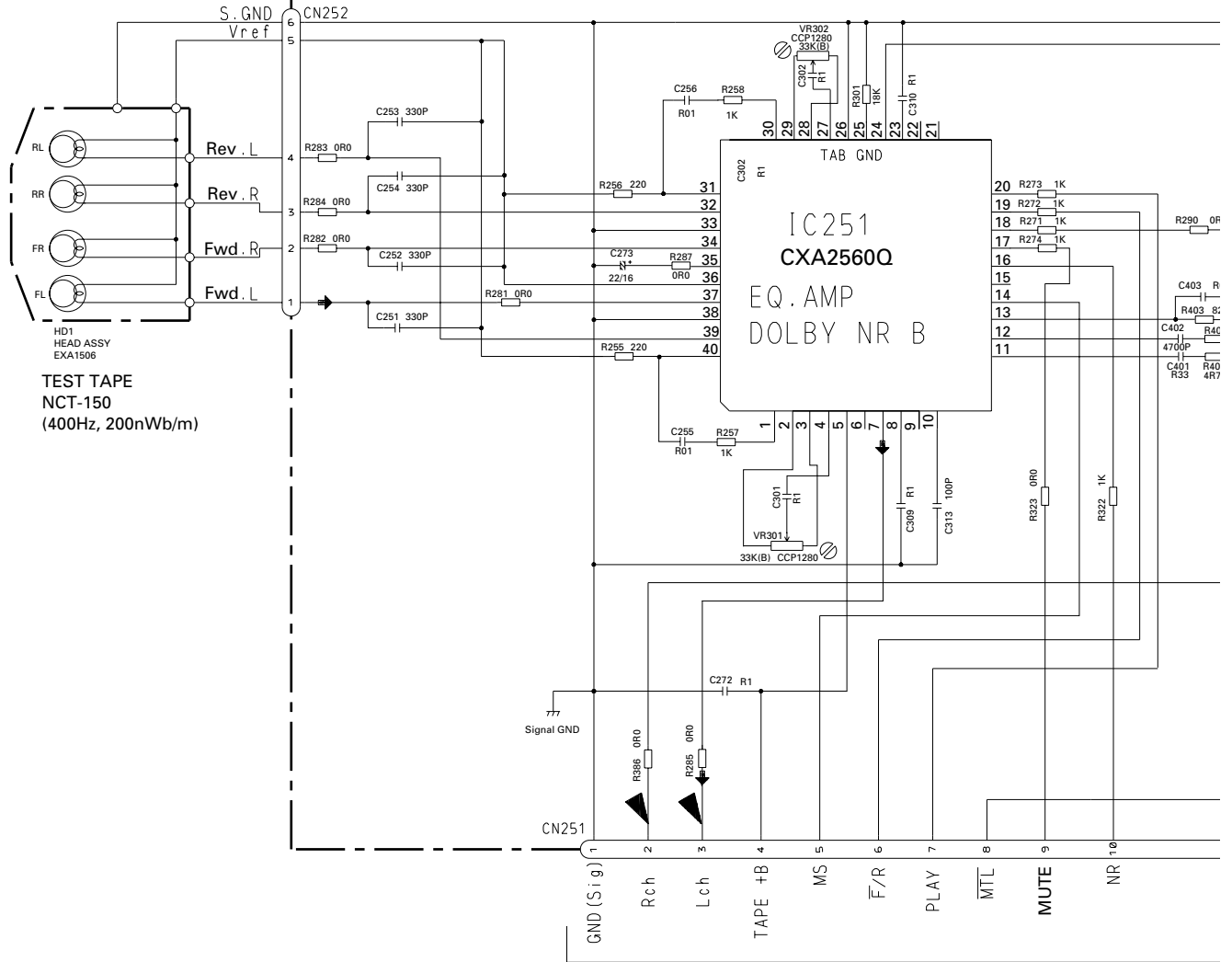
C

D

B

3.3 CASSETTE MECHANISM MODULE

D DECK UNIT

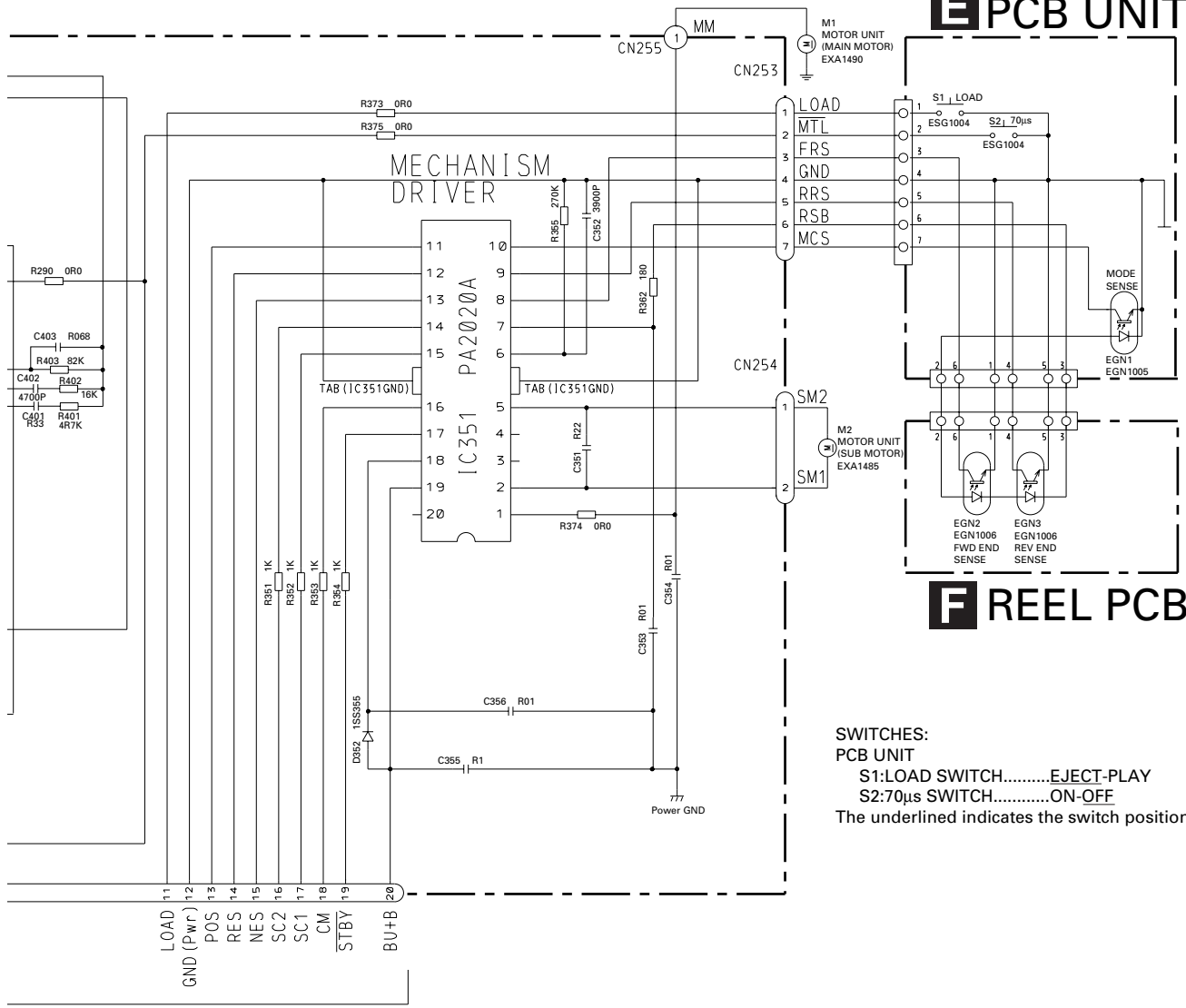


-6dBs(388mV)±1dB

A CN602

E PCB UNIT

F REEL PCB



SWITCHES:
 PCB UNIT
 S1:LOAD SWITCH.....EJECT-PLAY
 S2:70µs SWITCH.....ON-OFF
 The underlined indicates the switch position.

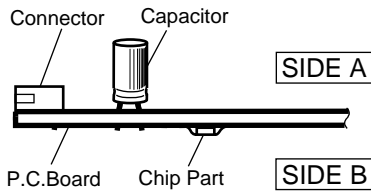
4. PCB CONNECTION DIAGRAM

A TUNER AMP UNIT

4.1 TUNER AMP UNIT

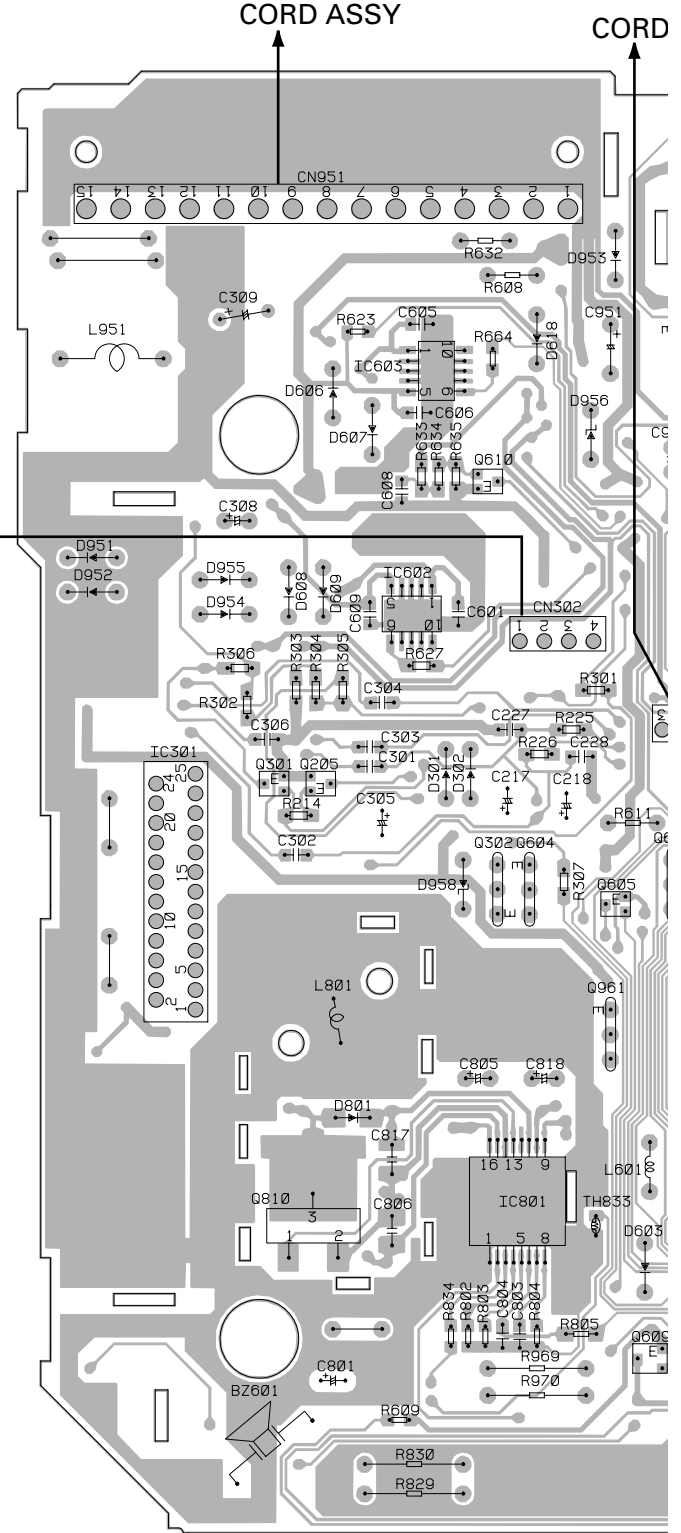
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination. For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams

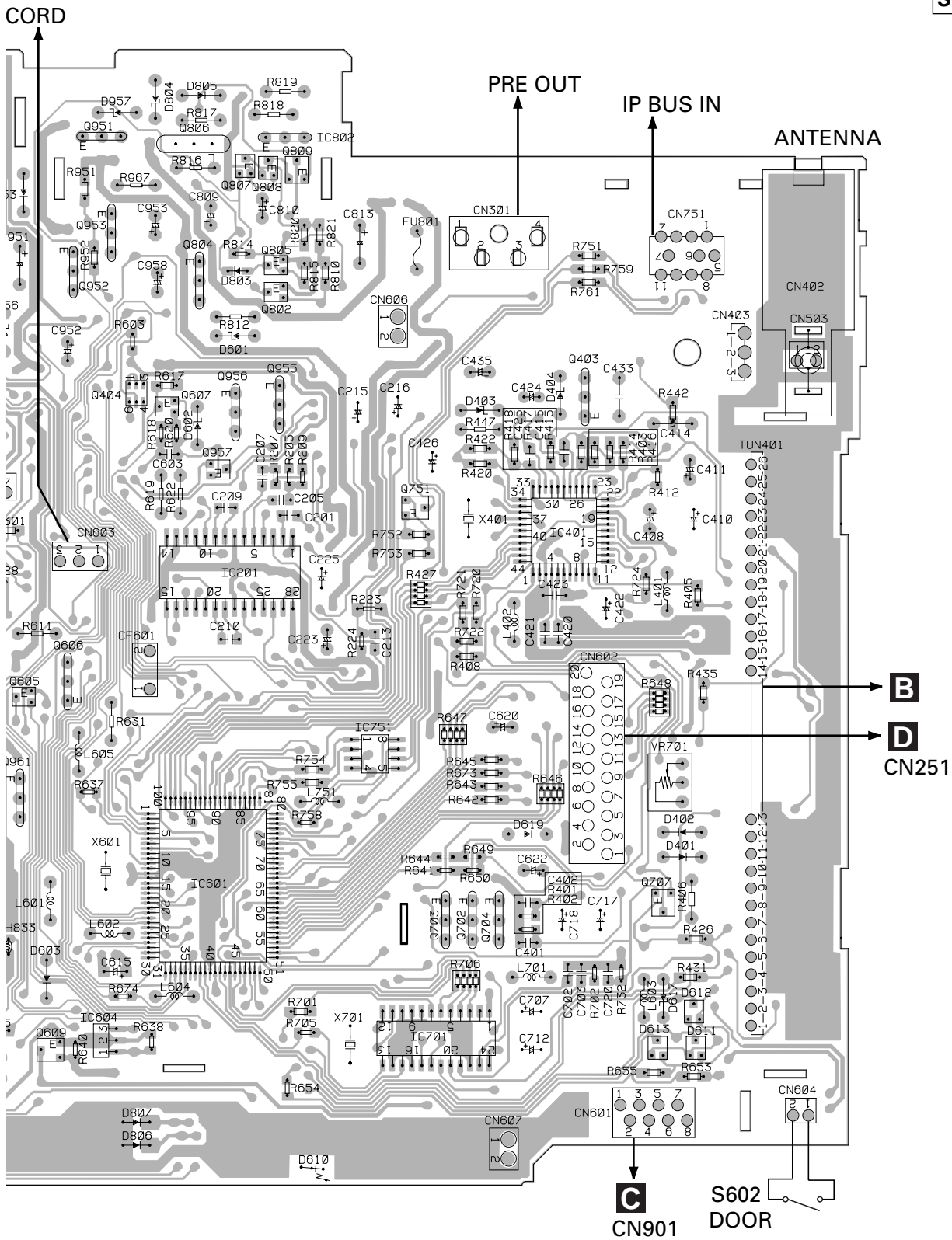


PRE OUT (FRONT)

IC. Q	ADJ
Q951	Q806
IC802	Q809
	Q807
	Q808
	Q953
Q805	Q803
IC603	Q952
	IC603
	Q802
Q610	Q403
Q956	Q955
Q404	Q607
IC602	Q957
Q751	
IC401	
IC301	IC201
Q301	Q205
Q604	Q606
	Q302
	Q605
IC751	
Q961	
Q707	IC601
Q810	Q703
	Q702
	IC801
	Q704
IC604	
Q609	IC701



SIDE A



B

D
CN251

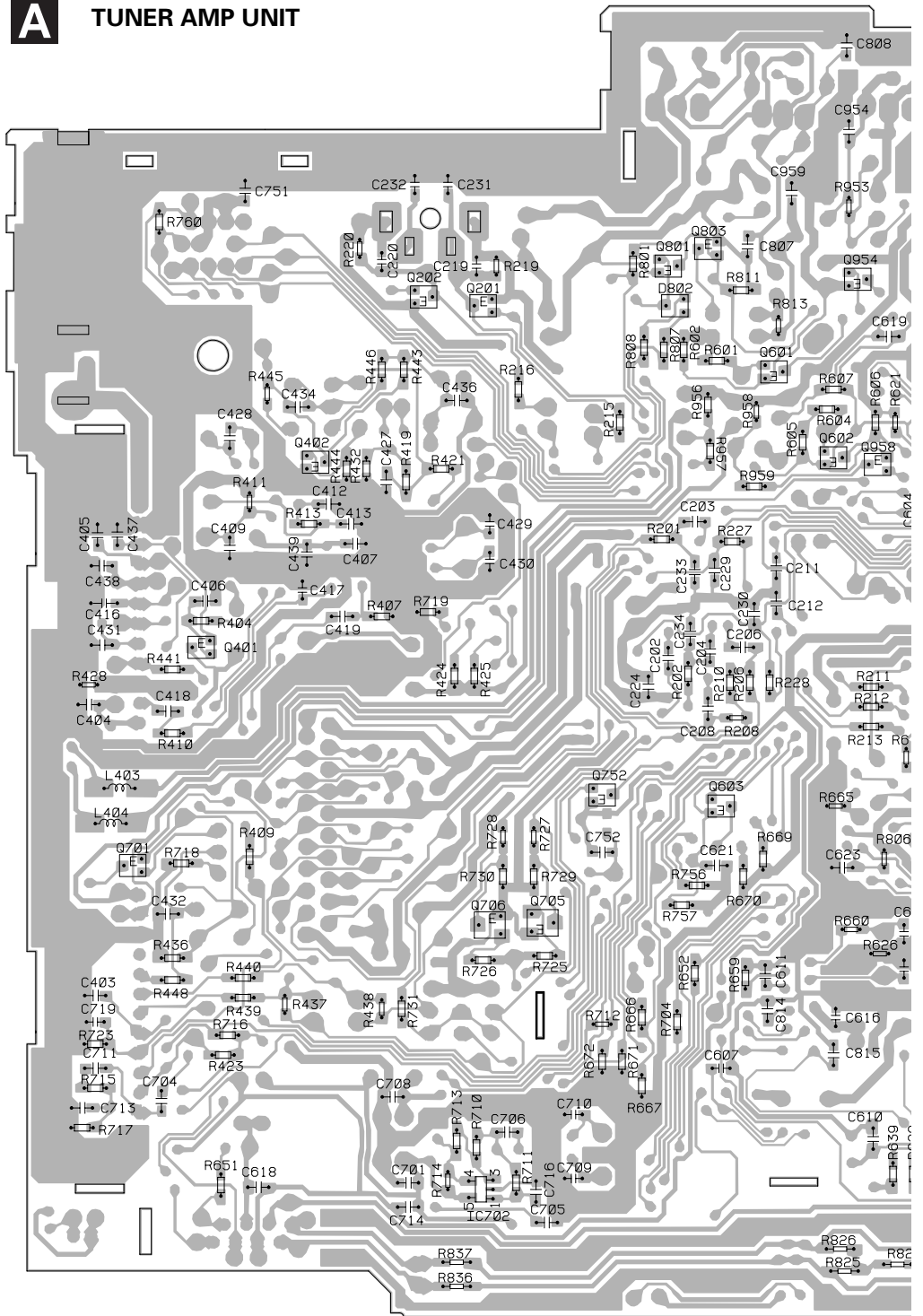
C
CN901

S602
DOOR

A

A

A TUNER AMP UNIT



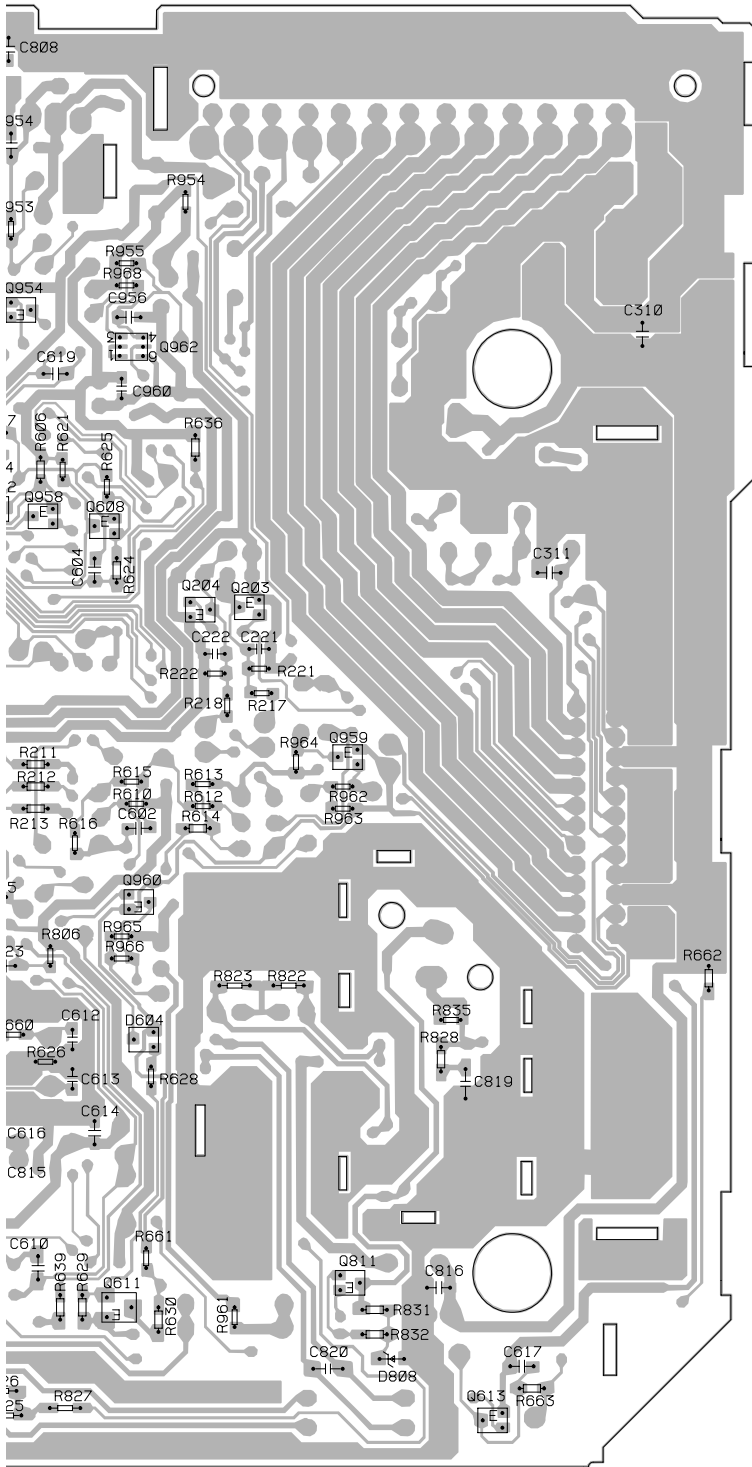
B

C

D

SIDE B

A



IC, Q

Q804
 Q801 Q954
 Q202
 Q201
 Q962

Q601

Q602
 Q402 Q958
 Q608

Q204 Q203

Q401
 Q959

Q752
 Q603 Q960

Q701

Q706 Q705

Q811
 Q611

IC702

Q613

B

C

D

4.2 KEYBOARD UNIT

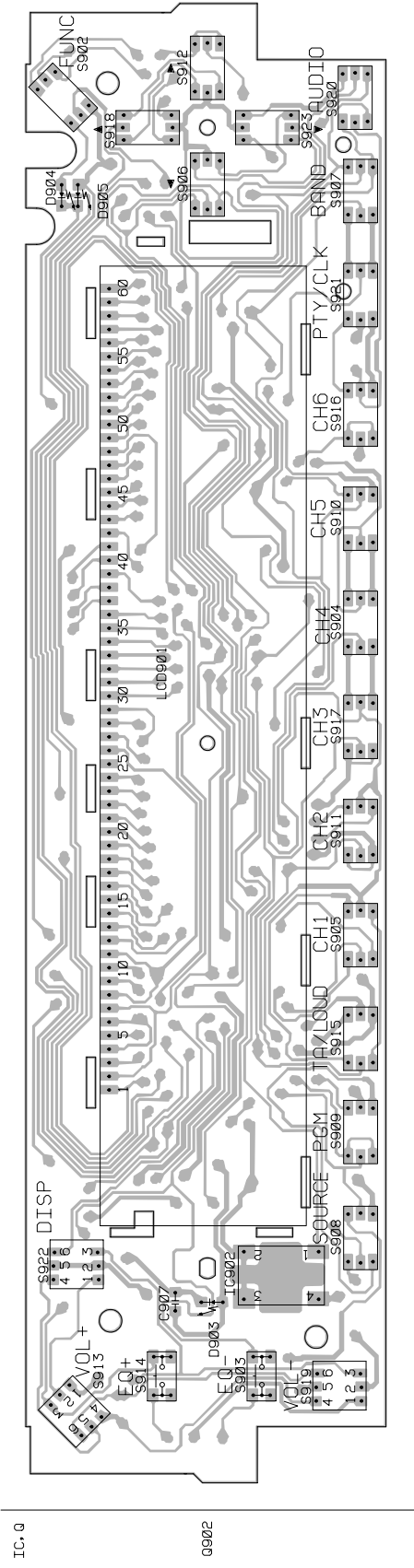
A

B

C

D

C KEYBOARD UNIT



SIDE A



1

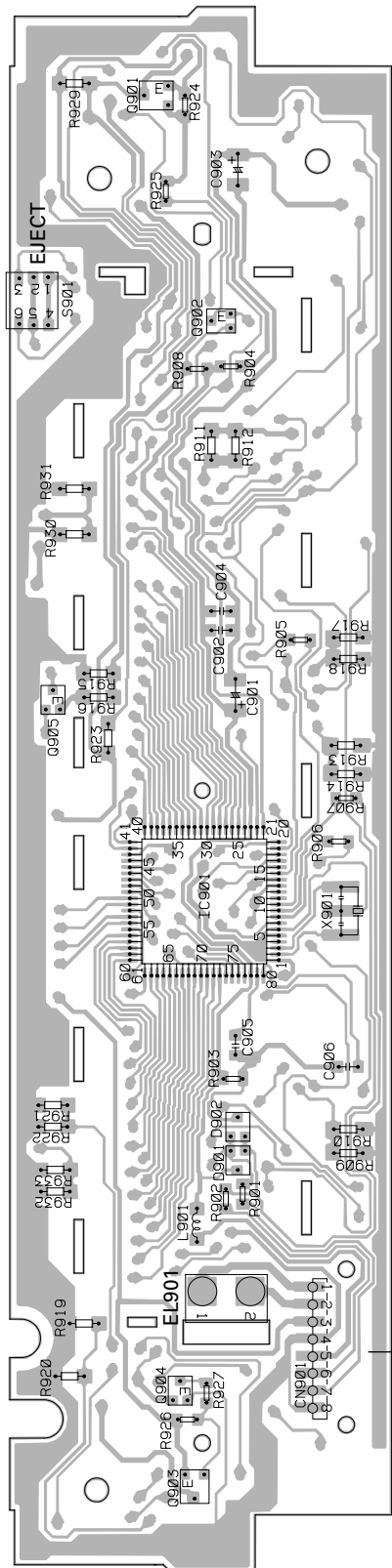
2

3

4

C KEYBOARD UNIT

- IC-0
- Q905
- Q901
- Q904
- Q903
- Q902
- IC901



SIDE B

A CN601

A

B

C

D

1

2

3

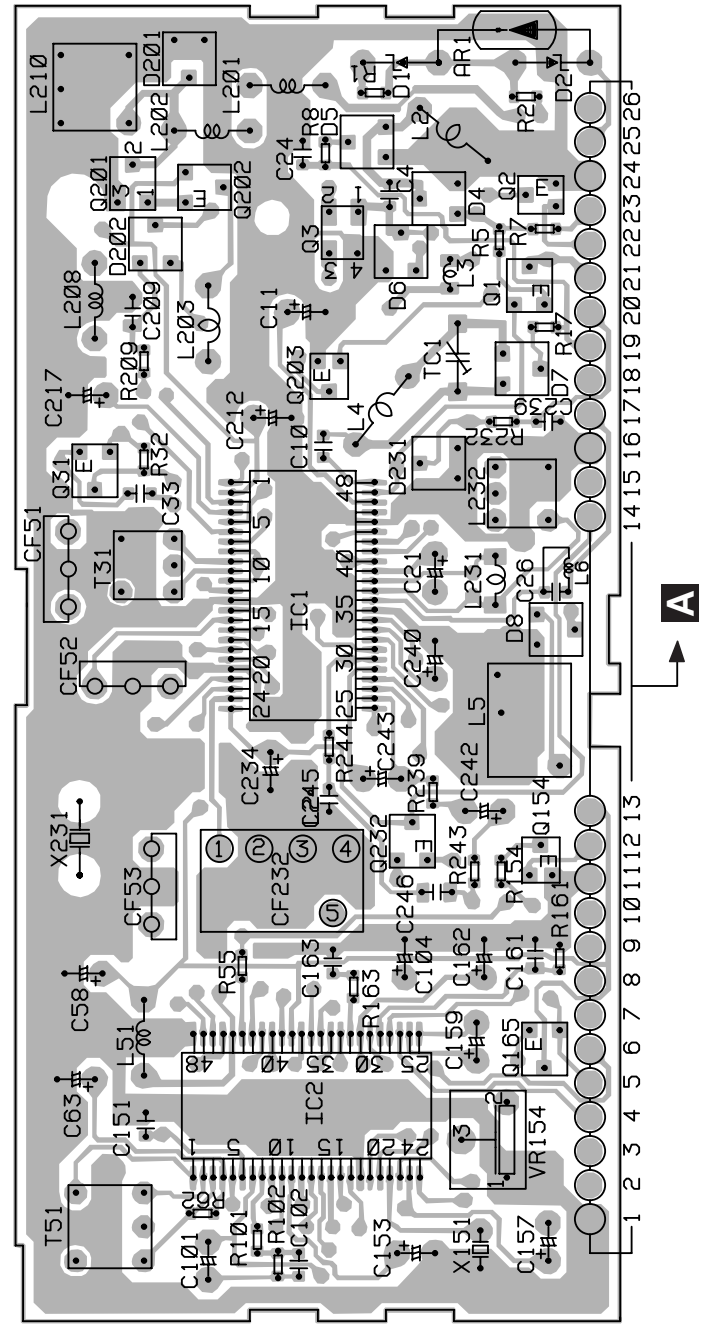
4



4.3 FM/AM TUNER UNIT

SIDE A

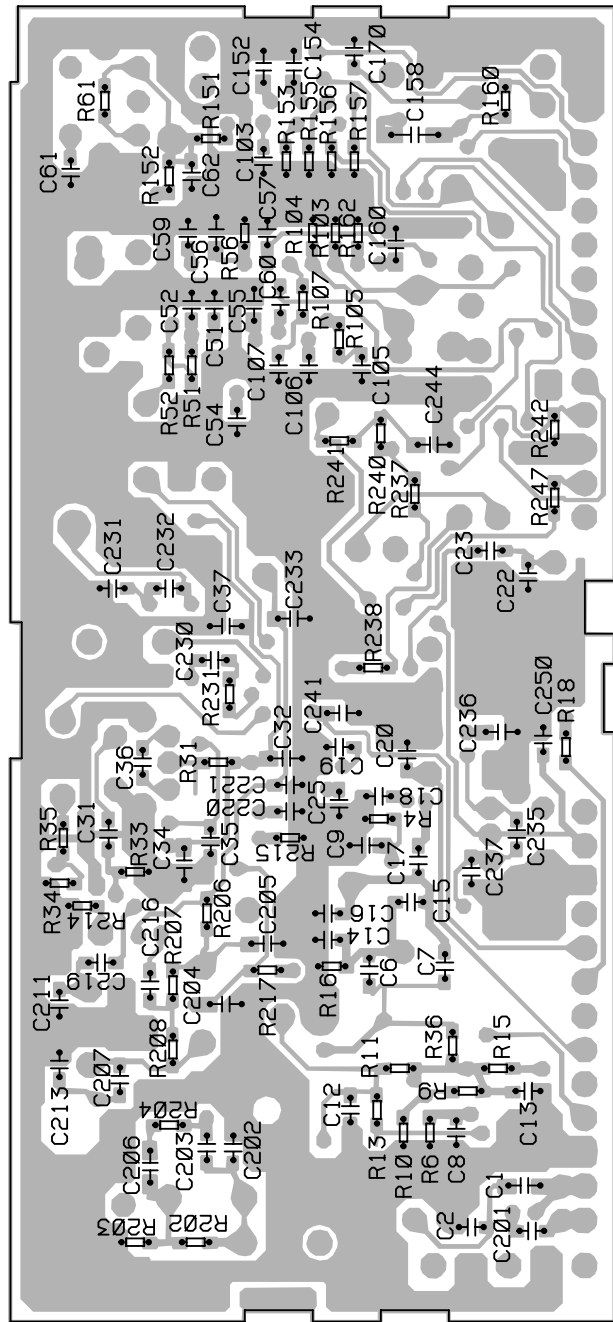
B FM/AM TUNER UNIT



IC, Q	ADJ
Q31	T51
Q201	T31
Q202	
Q203 Q3	L4
IC2 IC1	L2
Q232	TC1
Q1	L5
Q165 Q2	VR154
Q154	

SIDE B

B FM/AM TUNER UNIT

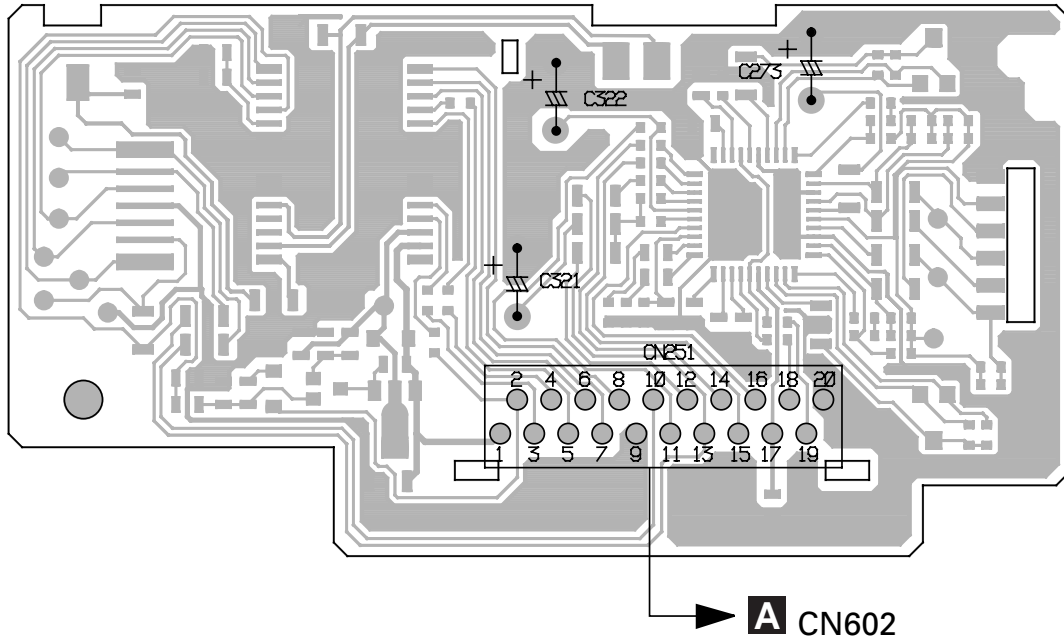


4.4 CASSETTE MECHANISM MODULE

A

D DECK UNIT

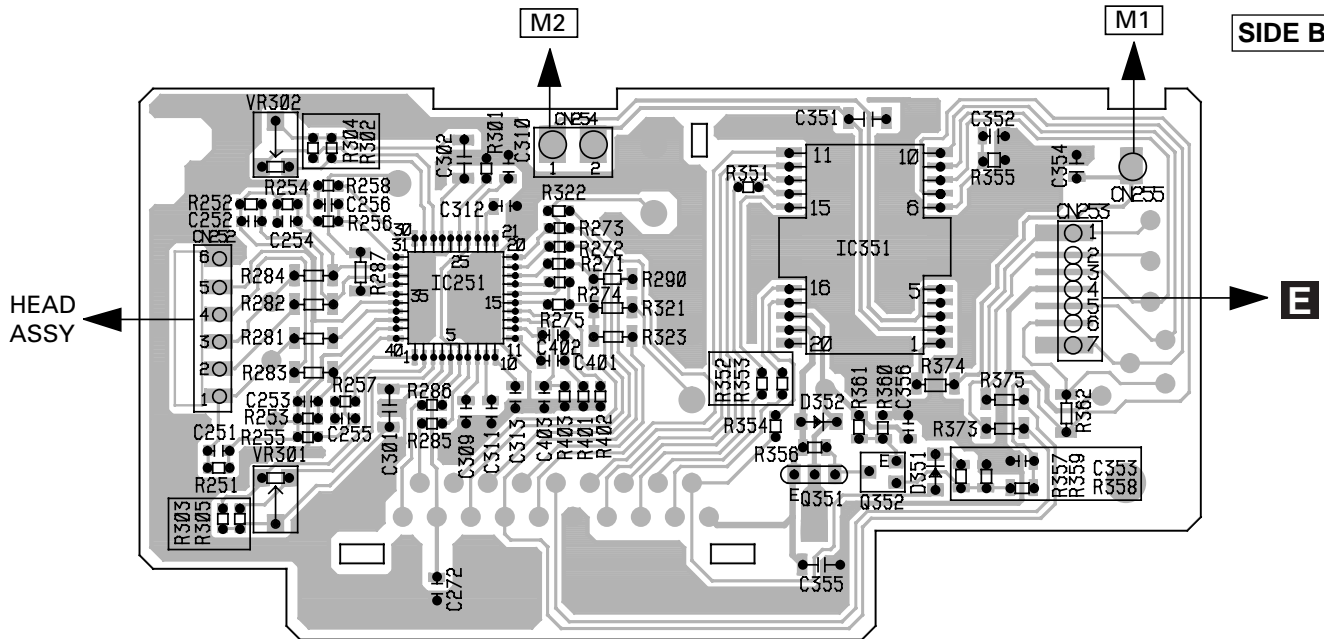
SIDE A



B

D DECK UNIT

SIDE B

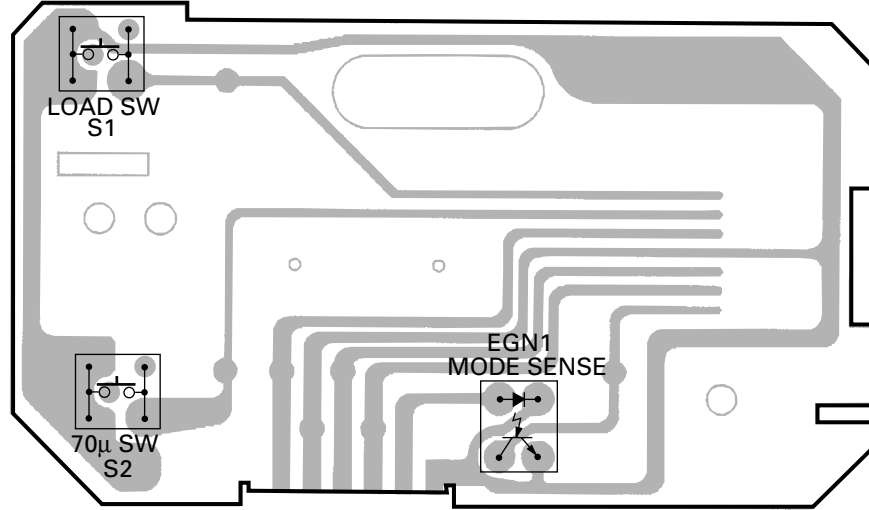


C

D

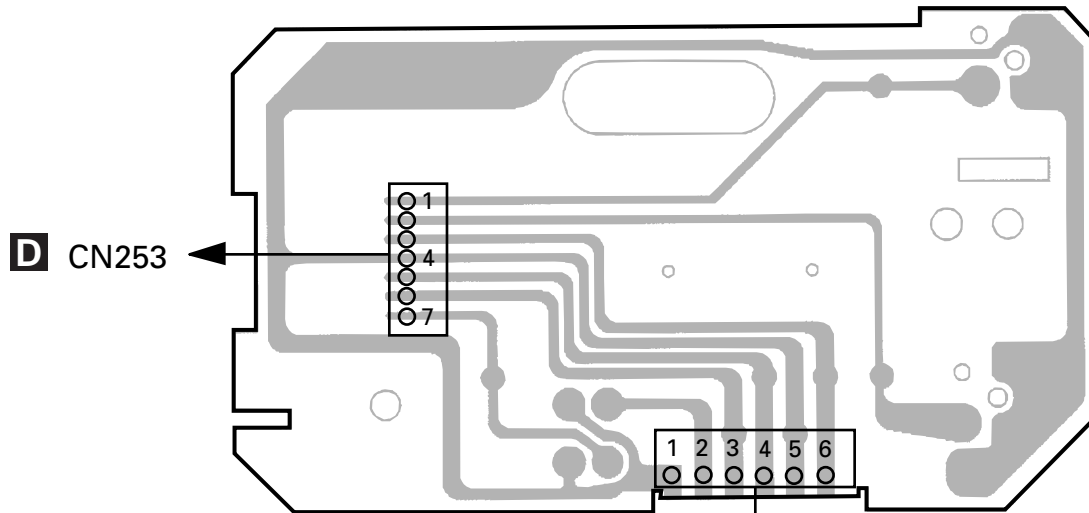
E PCB UNIT

SIDE A

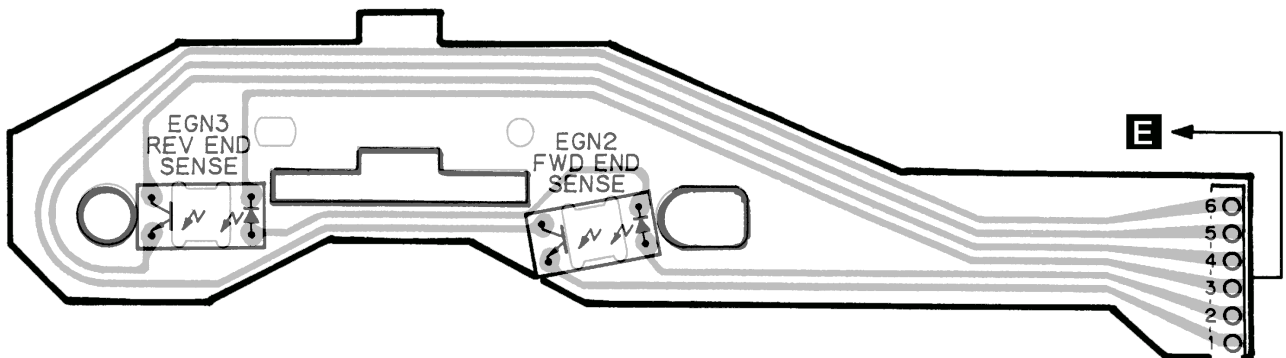


E PCB UNIT

SIDE B



F REEL PCB



5. ELECTRICAL PARTS LIST

NOTE:

● Parts whose parts numbers are omitted are subject to being not supplied.

● The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
B Unit Number : CWE1486		R 13	RS1/16S563J
Unit Name : FM/AM Tuner Unit		R 15	RS1/16S271J
MISCELLANEOUS		R 16	RS1/16S104J
IC 1 IC	PA4023B	R 17	RS1/16S332J
IC 2 IC	PA4024A	R 18	RS1/16S332J
Q 1 Transistor	2SC2412K	R 31	RS1/16S470J
Q 2 Transistor	DTC124EU	R 32	RS1/16S822J
Q 3 FET	3SK263	R 33	RS1/16S822J
		R 34	RS1/16S331J
		R 35	RS1/16S331J
Q 31 Transistor	2SC2412K		
Q 201 FET	2SK932	R 51	RS1/16S271J
Q 202 Transistor	2SC2412K	R 52	RS1/16S560J
Q 203 Transistor	DTC124EU	R 55	RS1/16S102J
D 1 Diode	RD39JS	R 56	RS1/16S823J
		R 61	RS1/16S392J
D 2 Diode	RD39JS		
D 4 Diode	1SV250	R 62	RS1/16S273J
D 5 Diode	KV1410-F1	R 101	RS1/16S272J
D 6 Diode	MA157	R 102	RS1/16S682J
D 7 Diode	KV1410-F1	R 103	RS1/16S333J
		R 104	RS1/16S334J
D 8 Diode	KV1410-F1		
D 201 Diode	MA157	R 105	RS1/16S683J
D 202 Diode	MA157	R 107	RS1/16S222J
D 231 Diode	SVC253	R 151	RS1/16S222J
L 2 Coil	CTC1133	R 152	RS1/16S393J
		R 155	RS1/16S273J
L 3 Inductor	LCTB2R2K2125		
L 4 Coil	CTC1133	R 156	RS1/16S243J
L 5 Coil	CTC1132	R 157	RS1/16S203J
L 6 Inductor	LCTBR15K1608	R 160	RS1/16S222J
L 51 Ferri-Inductor	LAU150K	R 161	RS1/16S563J
		R 162	RS1/16S105J
L 201 Ferri-Inductor	LAU4R7K		
L 202 Ferri-Inductor	LAU330K	R 163	RS1/16S223J
L 203 Inductor	CTF1287	R 202	RS1/16S223J
L 208 Inductor	LAU121K	R 203	RS1/16S225J
L 231 Inductor	LCTA3R3J3225	R 204	RS1/16S103J
		R 206	RS1/16S220J
T 31 Coil	CTE1117		
T 51 Coil	CTC1159	R 207	RS1/16S101J
CF 51 Ceramic Filter	CTF1441	R 208	RS1/16S102J
CF 52 Ceramic Filter	CTF1441	R 209	RS1/16S471J
CF 53 Ceramic Filter	CTF1441	R 214	RS1/16S822J
		R 215	RS1/16S822J
CF 232 Ceramic Filter	CTF1348		
X 151 Radiator 918.5Hz	CSS1365	R 217	RS1/16S102J
X 231 Crystal Resonator 10.26MHz	CSS1111	R 231	RS1/16S272J
VR 154 Semi-fixed 150kΩ(B)	CCP1213	R 232	RS1/16S473J
		R 237	RS1/16S103J
		R 238	RS1/16S104J
RESISTORS			
R 1	RS1/16S225J	R 239	RS1/16S104J
R 2	RS1/16S225J	R 240	RS1/16S332J
R 4	RS1/16S154J	R 241	RS1/16S202J
R 5	RS1/16S391J	R 243	RS1/16S183J
R 6	RS1/16S223J	R 244	RS1/16S392J
R 7	RS1/16S123J	R 247	RS1/16S123J
R 8	RS1/16S332J		
R 9	RS1/16S473J		
R 10	RS1/16S223J		
R 11	RS1/16S124J		

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
CAPACITORS			
C 1	CCSQCH6R0D50	C 209	CKSQYB104K16
C 2	CCSRCK2R0C50	C 211	CCSRCH101J50
C 4	CCSRCH820J50	C 212	CEJA470M6R3
C 6	CCSRCH820J50	C 213	CKSRYP103K25
C 8	CKSRYP103K25	C 216	CCSRCH101J50
C 9	CKSQYB104K16	C 217	CEJA1R5M50
C 10	CCSRCKR50C50	C 219	CCSRCH471J50
C 11	CEJA1R0M50	C 220	CKSRYP103K25
C 12	CKSRYP222K50	C 230	CKSRYP103K25
C 13	CKSRYP222K50	C 231	CCSRCH330J50
C 14	CCSRCH220J50	C 232	CCSRCH150J50
C 15	CCSRCH6R0D50	C 233	CKSQYB104K16
C 16	CCSRCH8R0D50	C 234	CEJA330M10
C 17	CKSRYP222K50	C 235	CKSRYP332K50
C 18	CKSRYP103K25	C 236	CKSQYB473K16
C 19	CKSRYP222K50	C 237	CCSRCH120J50
C 20	CKSRYP222K50	C 239	CKSRYP472K50
C 21	CEJA100M16	C 240	CEJAR47M50
C 22	CCSRTH9R0D50	C 241	CKSQYB104K16
C 23	CCSRTH120J50	C 242	CEJAR47M50
C 24	CCSRCH471J50	C 243	CEJAR33M50
C 25	CKSRYP103K25	C 244	CKSQYB473K16
C 31	CKSRYP103K25	C 245	CKSRYP333K16
C 32	CKSQYB472K50	C 246	CKSQYB473K16
C 33	CCSRCH5R0C50	C 250	CCSRCH471J50
C 34	CKSQYB104K16	A Unit Number : CWM6147	
C 36	CCSRRH201J50	Unit Name : Tuner Amp Unit	
C 51	CKSRYP223K25	MISCELLANEOUS	
C 52	CKSRYP103K25	IC 201	IC PML003AM
C 54	CCSRCH470J50	IC 301	IC PAL005A
C 55	CKSQYB223K25	IC 401	IC PM2006A
C 56	CKSQYB104K16	IC 601	IC PE5002A
C 57	CKSRYP472K50	IC 602	IC TPD1018F
C 58	CEJA330M10	IC 604	IC S-80734ANDYI
C 59	CKSRYP103K25	IC 751	IC HA12187FP
C 60	CKSRYP102K50	IC 801	IC PML005A
C 61	CCSRCH270J50	Q 201	Transistor DTC143TU
C 62	CKSRYP103K25	Q 202	Transistor DTC143TU
C 63	CEJAR22M50	Q 203	Transistor DTC143TU
C 101	CEJANP100M10	Q 204	Transistor DTC143TU
C 102	CKSRYP182K50	Q 205	Transistor DTA124EU
C 103	CKSRYP682K25	Q 301	Transistor DTC124EU
C 104	CEJA2R2M50	Q 302	Transistor 2SC1740S
C 105	CKSRYP103K25	Q 401	Transistor 2SC4081
C 106	CCSRCH151J50	Q 404	Transistor IMD2A
C 107	CKSRYP103K25	Q 601	Transistor 2SC4081
C 151	CKSRYP472K50	Q 602	Transistor 2SC4081
C 152	CKSQYB104K16	Q 603	Transistor DTA114EU
C 153	CEJA3R3M50	Q 604	Transistor 2SA933S
C 154	CKSQYB104K16	Q 605	Transistor DTC124EU
C 157	CEJA3R3M50	Q 606	Transistor 2SC1740S
C 158	CKSYB474K16	Q 609	Transistor 2SA1037K
C 159	CEJA220M6R3	Q 610	Transistor 2SC4081
C 160	CKSQYB104K16	Q 613	Transistor DTC124EU
C 161	CKSQYB104K16	Q 751	Transistor 2SA1037K
C 162	CEJA3R3M50	Q 752	Transistor DTC114EU
C 163	CKSRYP102K50	Q 801	Transistor 2SC4081
C 170	CCSRCH100D50	Q 810	FET 2SK2356Z
C 201	CCSRCH471J50	Q 811	Transistor 2SC4081
C 202	CCSRCH100D50	Q 951	Transistor 2SD2396
C 203	CKSRYP332K50	Q 952	Transistor 2SD2037
C 204	CKSQYB473K16	Q 953	Transistor 2SA933S
C 205	CKSQYB473K16	Q 954	Transistor DTC114EU
C 206	CKSQYB104K16		
C 207	CCSRCH560J50		

====Circuit Symbol and No.===Part Name	Part No.	====Circuit Symbol and No.===Part Name	Part No.
Q 955 Transistor	2SA1674	R 213	RS1/10S222J
Q 956 Transistor	2SA1048	R 214	RS1/10S562J
Q 957 Transistor	DTC114TU	R 215	RS1/10S821J
Q 958 Transistor	DTC114TU	R 216	RS1/10S821J
Q 959 Transistor	2SC4081	R 217	RS1/10S821J
Q 960 Transistor	DTC114TU	R 218	RS1/10S821J
Q 961 Transistor	2SB1243	R 219	RS1/10S473J
Q 962 Transistor	IMD2A	R 220	RS1/10S473J
D 301 Diode	1SS133	R 221	RS1/10S473J
D 302 Diode	1SS133	R 222	RS1/10S473J
D 401 Diode	1SS133	R 223	RS1/8S103J
D 402 Diode	1SS133	R 224	RS1/10S102J
D 601 Diode	HZS7L(C2)	R 225	RS1/10S0R0J
D 602 Diode	HZS7L(A1)	R 226	RS1/10S0R0J
D 603 Diode	1SS133	R 227	RS1/10S0R0J
D 608 Diode	ERA15-02VH	R 228	RS1/10S0R0J
D 609 Diode	ERA15-02VH	R 301	RS1/10S103J
D 610 LED	BR4361F	R 302	RS1/10S221J
D 611 Diode Array	DA204U	R 303	RS1/10S153J
D 612 Diode Array	DA204U	R 304	RS1/10S103J
D 613 Diode Array	DA204U	R 305	RS1/10S152J
D 617 Diode	HZS7L(A1)	R 306	RS1/10S101J
D 618 Diode	ERA15-02VH	R 307	RS1/10S223J
D 619 Diode	1SS133	R 401	RS1/10S162J
D 801 Diode	U1JU44	R 402	RS1/10S162J
D 802 Diode	DAN202U	R 403	RS1/10S102J
D 806 Diode	U1JU44	R 404	RS1/10S222J
D 807 Diode	U1JU44	R 405	RS1/10S222J
D 808 Diode	MA8075(M)	R 406	RD1/4PU182J
D 951 Diode	ERA15-02VH	R 408	RS1/10S562J
D 952 Diode	ERA15-02VH	R 409	RS1/10S222J
D 953 Diode	ERA15-02VH	R 410	RS1/10S102J
D 954 Diode	ERA15-02VH	R 411	RS1/10S472J
D 955 Diode	ERA15-02VH	R 412	RS1/10S152J
D 956 Diode	HZS6L(B2)	R 413	RS1/10S472J
D 957 Diode	HZS9L(B3)	R 414	RS1/10S472J
D 958 Diode	HZS9L(A2)	R 416	RS1/10S182J
L 401 Ferri-Inductor	LAU2R2K	R 417	RS1/10S103J
L 402 Ferri-Inductor	LAU2R2K	R 418	RS1/10S152J
L 403 Inductor	LCTA100J3225	R 419	RS1/10S0R0J
L 404 Inductor	LCTA100J3225	R 420	RS1/10S392J
L 601 Ferri-Inductor	LAU2R2K	R 421	RS1/10S102J
L 602 Ferri-Inductor	LAU101K	R 422	RS1/10S392J
L 603 Ferri-Inductor	LAU2R2K	R 423	RS1/10S473J
L 604 Ferri-Inductor	LAU2R2K	R 424	RS1/10S473J
L 751 Ferri-Inductor	LAU2R2K	R 425	RS1/10S222J
L 801 Coil	CTH1227	R 426	RS1/10S473J
L 951 Choke Coil 600μH	CTH1171	R 427	RA4C102J
TH 833 Thermistor	CCX1042	R 431	RS1/10S472J
CF 601 Filter	CTF1071	R 435	RS1/10S103J
X 401 Crystal Resonator 7.200MHz	CSS1379	R 436	RS1/10S393J
X 601 Radiator 12.58291MHz	CSS1402	R 437	RS1/10S0R0J
FM/AM Tuner Unit	CWE1486	R 438	RS1/10S0R0J
BZ 601 Buzzer	CPV1011	R 439	RS1/10S0R0J
		R 440	RS1/10S0R0J
RESISTORS		R 441	RS1/10S680J
R 201	RS1/10S102J	R 448	RS1/10S102J
R 202	RS1/10S102J	R 601	RS1/10S473J
R 205	RS1/10S821J	R 602	RS1/10S473J
R 206	RS1/10S821J	R 603	RS1/10S104J
R 207	RS1/10S102J		
R 208	RS1/10S102J	R 604	RS1/10S223J
R 209	RS1/10S223J	R 605	RS1/10S473J
R 210	RS1/10S223J	R 606	RS1/10S473J
R 211	RS1/10S0R0J	R 607	RS1/10S472J
R 212	RS1/10S222J	R 608	RD1/4PU102J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 609	RS1/10S751J	R 826	RS1/8S474J
R 610	RS1/10S473J	R 827	RS1/8S105J
R 611	RD1/4PU102J	R 829	RD1/2PM182J
R 612	RS1/10S103J	R 830	RD1/2PM182J
R 613	RS1/10S223J	R 831	RS1/10S152J
R 614	RS1/10S223J	R 832	RS1/10S103J
R 615	RS1/10S223J	R 834	RS1/10S103J
R 616	RS1/10S272J	R 836	RS1/8S391J
R 627	RS1/10S103J	R 837	RS1/8S391J
R 632	RD1/4PU102J	R 951	RS1/10S473J
R 633	RS1/10S103J	R 952	RS1/10S102J
R 634	RS1/10S103J	R 953	RS1/10S102J
R 635	RS1/10S473J	R 954	RS1/10S101J
R 636	RS1/10S473J	R 955	RS1/10S103J
R 637	RS1/10S102J	R 956	RS1/10S473J
R 638	RS1/10S822J	R 957	RS1/10S102J
R 639	RS1/10S222J	R 958	RS1/10S473J
R 640	RS1/10S223J	R 959	RS1/10S102J
R 641	RS1/10S222J	R 961	RS1/10S1R0J
R 642	RS1/10S103J	R 962	RS1/10S103J
R 643	RS1/10S222J	R 963	RS1/10S223J
R 644	RS1/10S222J	R 964	RS1/10S472J
R 645	RS1/10S103J	R 965	RS1/10S473J
R 646	RA4C222J	R 966	RS1/10S272J
R 647	RA4C222J	R 967	RD1/4PU152J
R 648	RA4C473J	R 968	RS1/10S152J
R 649	RS1/10S103J	R 969	RD1/2PM390J
R 650	RS1/10S392J	R 970	RD1/2PM390J
R 651	RS1/10S472J		
R 652	RS1/10S472J	CAPACITORS	
R 653	RS1/10S222J	C 201	CKSQYB224K16
R 654	RS1/10S222J	C 202	CKSQYB224K16
R 655	RS1/10S473J	C 203	CKSQYB224K16
R 659	RS1/10S473J	C 204	CKSQYB224K16
R 660	RS1/10S102J	C 205	CKSQYB105K16
R 661	RS1/10S473J	C 206	CKSQYB105K16
R 662	RS1/10S152J	C 207	CKSQYB105K16
R 663	RS1/10S152J	C 208	CKSQYB105K16
R 665	RS1/10S473J	C 209	CKSQYB105K16
R 666	RS1/10S104J	C 210	CKSQYB105K16
R 667	RS1/10S104J	C 211	CKSQYB153K50
R 669	RS1/10S473J	C 212	CKSQYB153K50
R 670	RS1/10S473J	C 213	CKSQYB473K25
R 671	RS1/10S473J	C 215	CEJA2R2M50
R 672	RS1/10S473J	C 216	CEJA2R2M50
R 673	RS1/10S222J	C 217	CEJA2R2M50
R 674	RS1/10S222J	C 218	CEJA2R2M50
R 751	RS1/10S222J	C 219	CCSQSL221J50
R 752	RS1/10S223J	C 220	CCSQSL221J50
R 753	RS1/10S472J	C 221	CCSQSL221J50
R 754	RS1/10S102J	C 222	CCSQSL221J50
R 755	RS1/10S102J	C 223	CEJA470M10
R 756	RS1/10S473J	C 224	CKSQYF104Z25
R 757	RS1/10S473J	C 225	CEJA100M16
R 758	RS1/10S102J	C 233	CKSQYB332K50
R 759	RS1/10S101J	C 234	CKSQYB332K50
R 760	RS1/10S620J	C 301	CKSQYB224K16
R 761	RS1/10S101J	C 302	CKSQYB224K16
R 801	RS1/10S103J	C 303	CKSQYB224K16
R 802	RS1/10S562J	C 304	CKSQYB224K16
R 803	RS1/10S123J	C 305	CEJA100M16
R 804	RS1/10S912J	C 306	CKSQYB105K16
R 805	RS1/8S472J	C 308	CEJA330M10
R 806	RS1/10S473J	C 309	CCH1188
R 807	RS1/10S224J	C 310	CKSQYB104K25
R 808	RS1/10S224J	C 311	CKSQYB103K50
R 810	RS1/10S204J	C 401	CKSQYB473K25
R 822	RS1/8S225J	C 402	CKSQYB473K25
R 823	RS1/8S225J	C 403	CKSQYB223K50
R 825	RS1/8S474J	C 404	CKSQYB273K50

4700μF/16V

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 406	CKSQYB223K50	C Unit Number : CWM6061 Unit Name : Keyboard Unit	
C 407	CKSQYB102K50		
C 408	CEJA220M16	MISCELLANEOUS	
C 409	CKSQYB103K50	IC 901 IC	PD6294A
C 410	CEJA220M6R3	IC 902	RS-140
C 411	CEJA220M10	D 901 Diode	DAN202U
C 412	CKSQYB103K50	D 902 Diode	DAP202U
C 413	CKSQYB103K50	D 903 LED	CL170UBX
C 414	CKSQYB103K50		
C 415	CKSQYB103K50	D 904 LED	CL170PGCD
C 416	CKLSR473K16	L 901 Inductor	LCTA101J3225
C 417	CCSQSL101J50	X 901 Ceramic Resonator 4.97MHz	CSS1422
C 418	CKSQYB103K50	S 901 Switch	CSG1107
C 419	CKSQYB103K50	S 902 Switch	CSG1112
C 420	CKSQYB103K50		
C 421	CKSQYB103K50	S 903 Switch	CSG1111
C 422	CEJA220M6R3	S 904 Switch	CSG1112
C 423	CKSYB473K25	S 905 Switch	CSG1112
C 424 4.7μF/16V	CCH1250	S 906 Switch	CSG1112
C 425	CKSQYB103K50	S 907 Switch	CSG1112
C 427	CKSQYB103K50		
C 428	CKSQYB154K16	S 908 Switch	CSG1112
C 429	CCSQCH150J50	S 909 Switch	CSG1112
C 430	CCSQCH150J50	S 910 Switch	CSG1112
C 431	CKSQYB103K50	S 911 Switch	CSG1112
C 437	CCSQSL101J50	S 912 Switch	CSG1112
C 601	CKSQYB103K50	S 913 Switch	CSG1107
C 602	CKSQYB103K50	S 914 Switch	CSG1111
C 608	CKSQYF105Z25	S 915 Switch	CSG1112
C 609	CKSQYB472K50	S 916 Switch	CSG1112
C 610	CKSQYB225K10	S 917 Switch	CSG1112
C 611	CKSQYB104K25	S 918 Switch	CSG1112
C 612	CCSQCH200J50	S 919 Switch	CSG1107
C 613	CCSQCH200J50	S 920 Switch	CSG1112
C 614	CKSQYB103K50	S 921 Switch	CSG1112
C 615	CSZS4R7M16	S 922 Switch	CSG1107
C 616	CCSQSL101J50	S 923 Switch	CSG1112
C 617	CKSQYB103K50	LCD 901 LCD	CAW1502
C 619	CKSQYB102K50	EL 901 EL	CEL1587
C 620	CEJA100M16		
C 621	CCSQSL101J50	RESISTORS	
C 622	CEJA220M10	R 901	RS1/10S222J
C 623	CCSQSL101J50	R 902	RS1/10S222J
C 751	CKSQYB104K25	R 903	RS1/10S472J
C 752	CKSQYB102K50	R 904	RS1/10S121J
C 801	CEJA100M16	R 905	RS1/10S2R2J
C 803	CKSQYB222K50	R 906	RS1/10S470J
C 805 2.2μF/250V	CCH1327	R 907	RS1/10S470J
C 806	CCG1089	R 909	RS1/8S561J
C 814	CCSQSL101J50	R 910	RS1/8S561J
C 815	CCSQSL101J50	R 911	RS1/8S561J
C 816	CKSQYB103K50	R 912	RS1/8S561J
C 817	CCG1091	R 913	RS1/8S561J
C 818 2.2μF/250V	CCH1327	R 914	RS1/8S561J
C 820	CCG1095	R 915	RS1/8S751J
C 951 470μF/16V	CCH1183	R 916	RS1/8S751J
C 952	CEJA470M10	R 917	RS1/8S561J
C 953	CEJA101M10	R 918	RS1/8S561J
C 954	CKSQYB103K50	R 919	RS1/8S561J
C 956	CKSQYB103K50	R 920	RS1/8S561J
C 958	CEJA101M10	R 921	RS1/8S561J
		R 922	RS1/8S561J
		R 923	RS1/8S621J
		R 929	RS1/8S0R0J
		R 930	RS1/8S102J
		R 931	RS1/8S102J
		R 932	RS1/8S102J
		R 933	RS1/8S102J

====Circuit Symbol and No.====Part Name	Part No.
CAPACITORS	
C 901	CSZSR100M6R3
C 902	CKSQYF104Z50
C 903	CSZSR100M6R3
C 904	CKSQYB103K25
C 905	CKSQYB103K25
C 906	CKSQYB103K25
C 907	CKSQYF104Z50

D Unit Number : EWM1018
Unit Name : Deck Unit

====Circuit Symbol and No.====Part Name	Part No.
MISCELLANEOUS	
IC 251 IC	CXA2560Q
IC 351 IC	PA2020A
D 352 Diode	1SS355
VR 301 Semi-fixed 33kΩ(B)	CCP1280
VR 302 Semi-fixed 33kΩ(B)	CCP1280

====Circuit Symbol and No.====Part Name	Part No.
RESISTORS	
R 255	RS1/16S221J
R 256	RS1/16S221J
R 257	RS1/16S102J
R 258	RS1/16S102J
R 271	RS1/16S102J
R 272	RS1/16S102J
R 273	RS1/16S102J
R 274	RS1/16S102J
R 281	RS1/8S0R0J
R 282	RS1/8S0R0J
R 283	RS1/8S0R0J
R 284	RS1/8S0R0J
R 285	RS1/16S0R0J
R 286	RS1/16S0R0J
R 287	RS1/8S0R0J
R 290	RS1/8S0R0J
R 301	RS1/16S183J
R 322	RS1/16S102J
R 323	RS1/8S0R0J
R 351	RS1/16S102J
R 352	RS1/16S102J
R 353	RS1/16S102J
R 354	RS1/16S102J
R 355	RS1/10S274J
R 362	RS1/8S181J
R 373	RS1/8S0R0J
R 374	RS1/8S0R0J
R 375	RS1/8S0R0J
R 401	RS1/16S472J
R 402	RS1/16S163J
R 403	RS1/16S823J

====Circuit Symbol and No.====Part Name	Part No.
CAPACITORS	
C 251	CKSRYP331K50
C 252	CKSRYP331K50
C 253	CKSRYP331K50
C 254	CKSRYP331K50
C 255	CKSRYP103K25
C 256	CKSRYP103K25
C 272	CKSQYB104K16
C 273	CEJA220M16
C 301	CKSYB104K50
C 302	CKSYB104K50
C 309	CKSQYB104K16
C 310	CKSQYB104K16
C 313	CCSQCH101K50
C 351	CKSYB224K25
C 352	CKSQYB392K50

====Circuit Symbol and No.====Part Name	Part No.
C 353	CKSQYB103K50
C 354	CKSQYB103K50
C 355	CKSYB104K50
C 356	CKSQYB103K50
C 401	CKSQYB334K16
C 402	CKSQYB472K50
C 403	CKSQYB683K16

E Unit Number :
Unit Name : PCB Unit

S 1	Switch (Load)	ESG1004
S 2	Switch (70μS)	ESG1004
EGN 1	Photo-Interrupter	EGN1005

F Unit Number :
Unit Name : Reel PCB

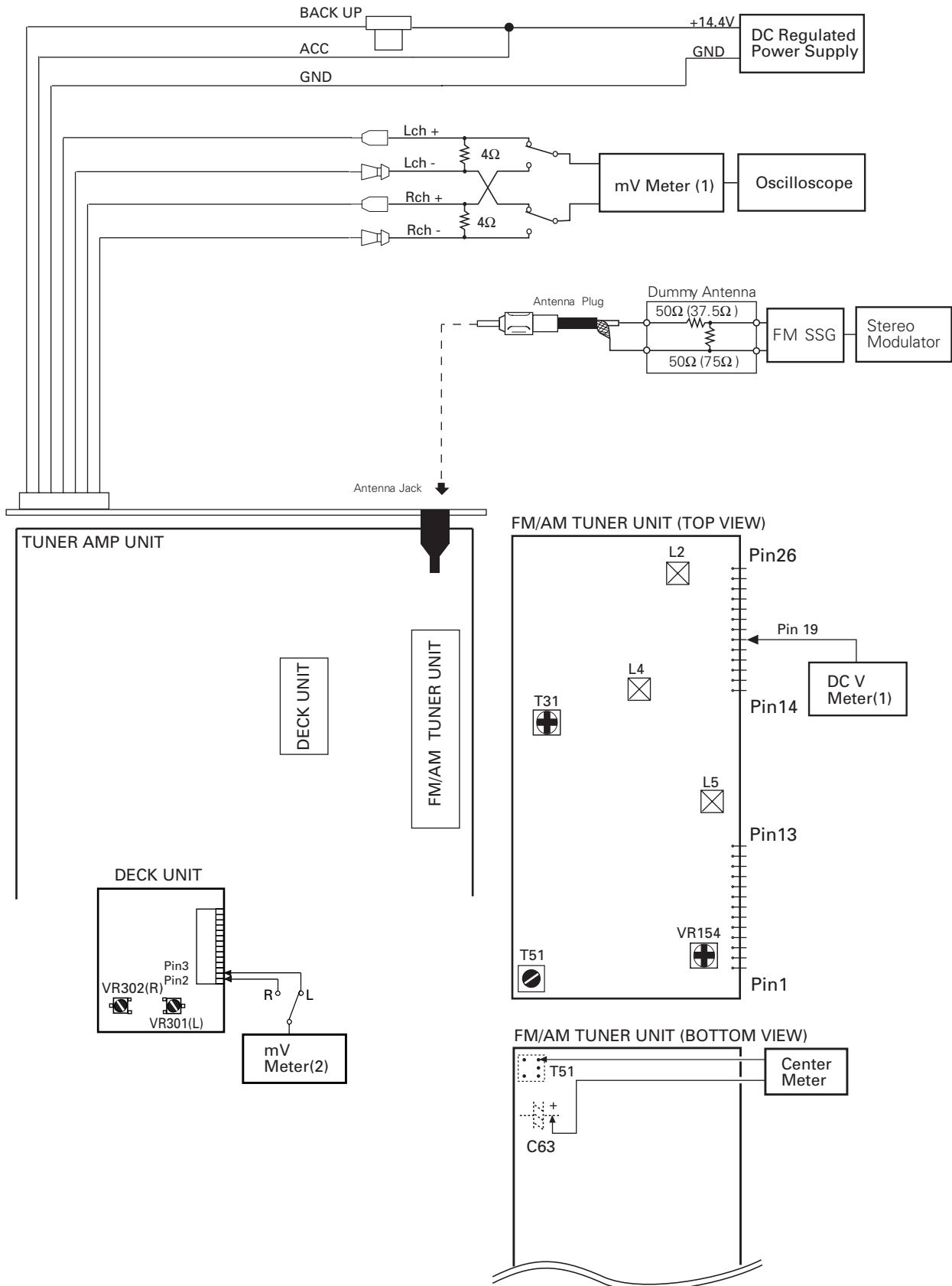
EGN 2	Photo-Interrupter	EGN1006
EGN 3	Photo-Interrupter	EGN1006

Miscellaneous Parts List

M 1	Motor Unit (Main)	EXA1490
M 2	Motor Unit (Sub)	EXA1485
HD 1	Head Assy	EXA1506

6. ADJUSTMENT

● Connection Diagram



FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)

S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)	Frequency(MHz)		
TUN Volt	1	••••	••••	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60—100	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	5	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	6	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

DOLBY B NR ADJUSTMENT

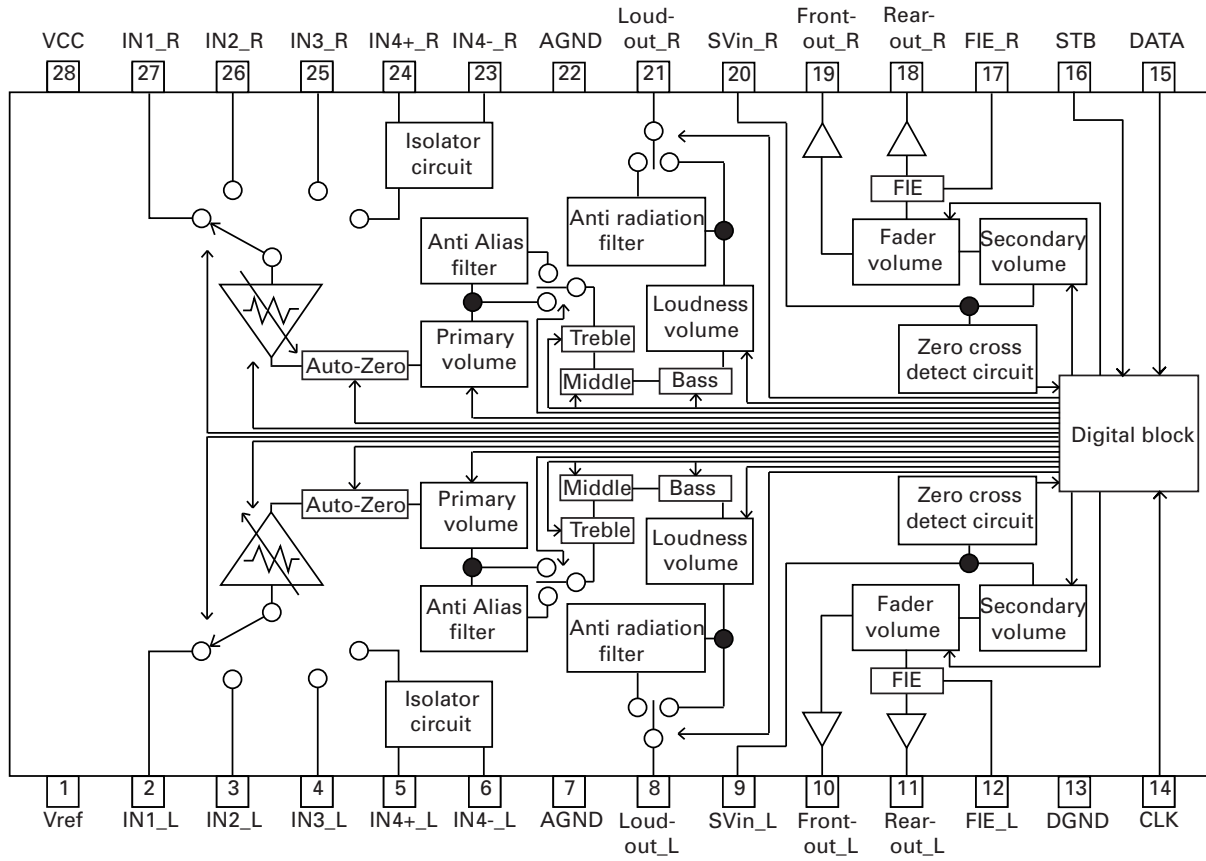
No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : -6dB \pm 1.0dB (DOLBY NR Switch : OFF)

7. GENERAL INFORMATION

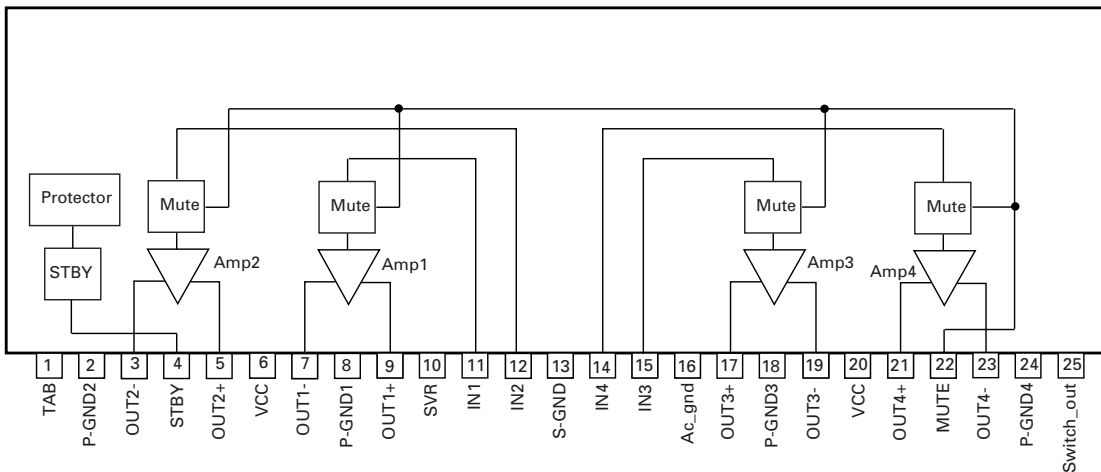
7.1 PARTS

7.1.1 IC

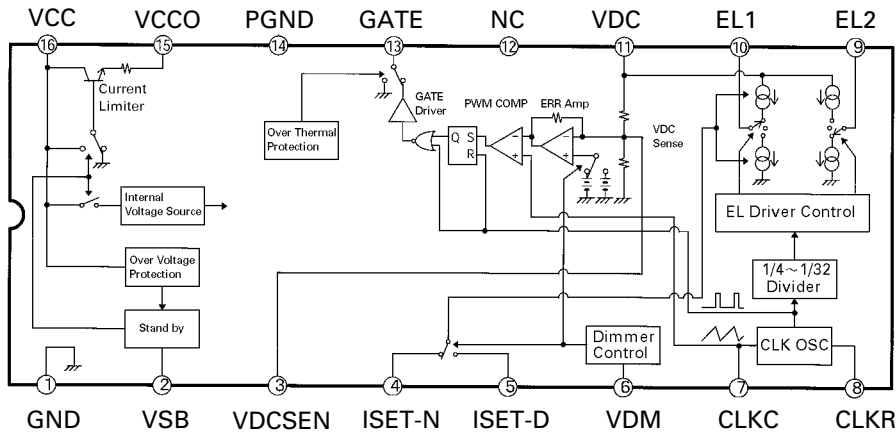
PML003AM



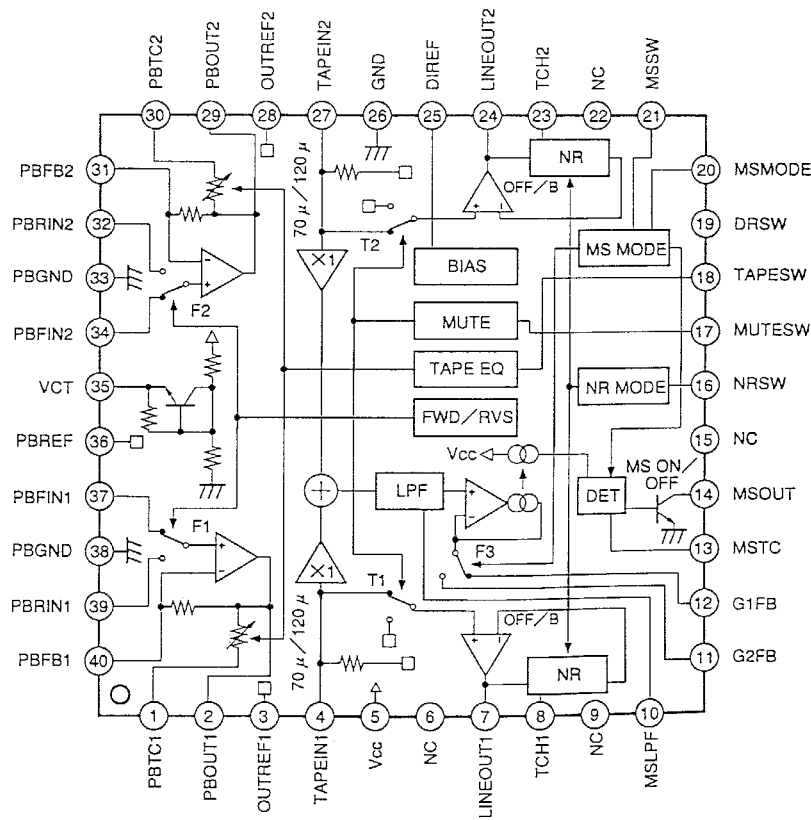
PAL005A



PML005A



CXA2560Q

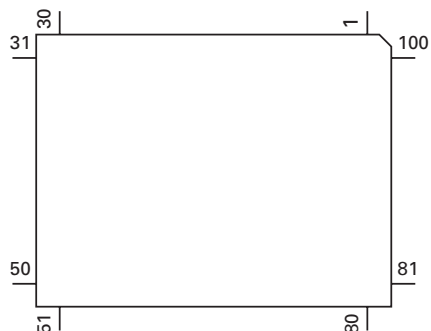


● Pin Functions (PE5002A)

Pin No.	Pin Name	I/O	Function and Operation
1	SWVDD	O	Key board unit power supply control output
2	DSSENS	I	Grille detach sense
3	CSSENS	I	Flap close sense input
4	ISSENS	I	Illumination sense input
5	TESTIN	I	Test mode input/test enable
6	DRST	O	Decoder reset output
7	NC		Not used
8	SK	I	SK signal input
9	RECIVE	O	During RDS data reception output
10	NC		Not used
11	RESET	I	Reset input
12	XT2		Not used
13	XT1		Connect to GND
14	VSS		GND
15	X2		Crystal oscillator connection pin
16	X1		Crystal oscillator connection pin
17	REGCOFF		VSS
18	REGC		VSS
19	VDD		Power supply
20	ILMPW	O	Illumination power supply control output
21	SYSPW	O	System power supply control output
22	ADPW	O	A/D converter power
23	LCDPW	O	LCD back light power supply control output
24	IPPW	O	Power supply control output for IP BUS interface IC
25	ASENBO	O	Slave power supply control output
26	PRSBSW	I	Not used
27	TELIN	I	TEL mute signal input
28	MUTE	O	Mute output
29	DIM	O	Dimmer select output
30	NC		Not used
31	FM	O	FM power control output
32	AM	O	AM power control output
33	VCK	O	Clock output for electronic volume
34	VST	O	Strobe pulse output for electronic volume
35	VDT	O	Data output for electronic volume
36	TMUTE	O	Tuner mute output
37	NC		Not used
38	SD	I	SD input
39	ST	I	FM stereo input
40	VSS		GND
41	VDD		Power supply
42	MDSSENS	I	Modulation detect input
43	NC		Not used
44	RDSLK	I	RDS LK signal input
45	CURRO	O	Tuner voltage FIX output
46	RDT	I	RDS demodulation data input
47	DRELAY	O	External relay output
48	DRSENS	I	Door open/close sense input
49	DRSYS	O	Door system select output
50	DLED	O	Alarm LED output
51	DLSSENS	I	Door lock sense input
52	STCUT	O	Starter cut off output
53	MOSENS	I	Motion/window damage sensor input
54	MSIN	I	MS sense
55	MTLSW	I	Metal sense input
56	POS	I	Position sense
57	RES	I	Cassette mechanism reverse end sense input
58	NES	I	Cassette mechanism forward end sense input
59	DIRO	O	Head F/R select output
60	PLAY	O	MS gain select output

Pin No.	Pin Name	I/O	Function and Operation
61	RIMUTE	O	Mute output when RI
62	PCL	O	Clock adjustment output
63	NR	O	NR output
64	SC2	O	Cassette mechanism sub motor control output
65	SC1	O	Cassette mechanism sub motor control output
66	CM	O	Cassette mechanism capstan motor control output
67	\overline{STBY}	O	Drive IC control output
68	\overline{LOADSW}	I	Cassette mechanism loading detect input
69-71	NC		Not used
72	DALMON	O	"L" output when ACC OFF
73	TEST	I	Connect to GND
74	SL	I	Signal level input
75	SEL	I	Select input for the destination
76	NC		Not used
77	CL	I	Synchronizing signal input
78	NL	I	Noise level input
79-81	NC		Not used
82	AVDD		Positive power supply terminal for analog circuit
83	AVREF1		A/D converter reference voltage
84	AVSS		A/D GND
85	RX	I	IP BUS data input
86	TX	O	IP BUS data output
87	GND		GND
88	\overline{LDET}	I	PLL lock sense input
89	RCK	I	RDS demodulation clock input
90	RDS57K	I	57kHz pulse count sense input
91	NC		Not used
92	ASENS	I	ACC power sense input
93	BSSENS	I	Back up power sense input
94	TUNPDI	I	PLL IC data input
95	KEYDT	I	Display data input
96	DPDT	O	Display data output
97	TUNPCK	O	PLL IC clock
98	TUNPDO	O	PLL IC data output
99	TUNPCE	O	PLL IC chip enable
100	PEE	O	Beep tone output

*PE5002A



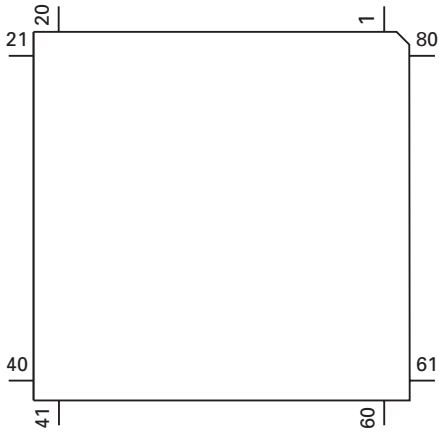
IC's marked by* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.

● Pin Functions(PD6294A)

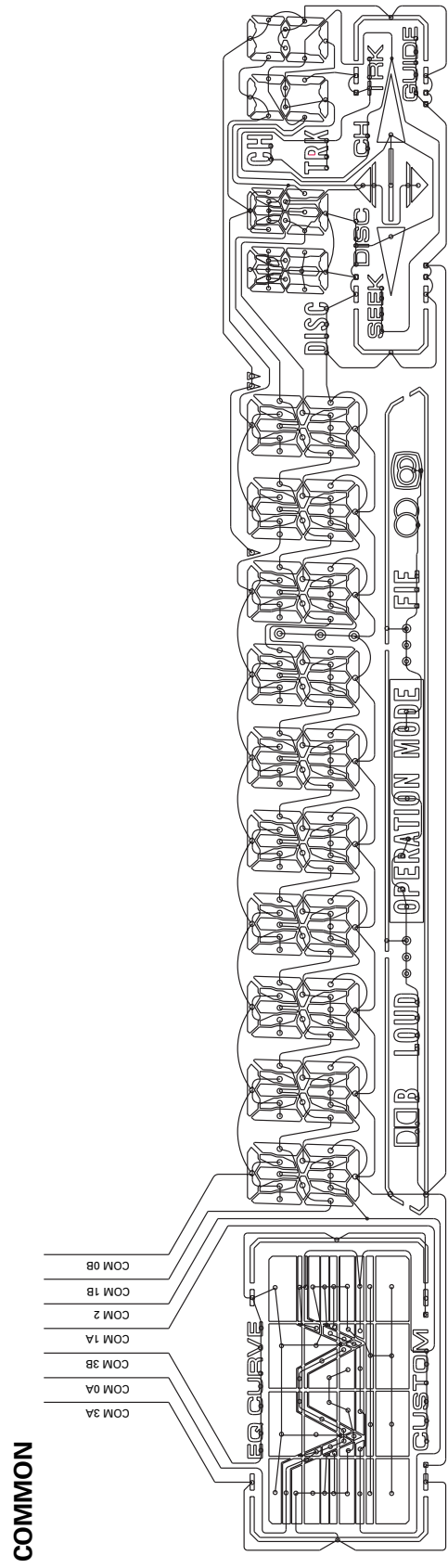
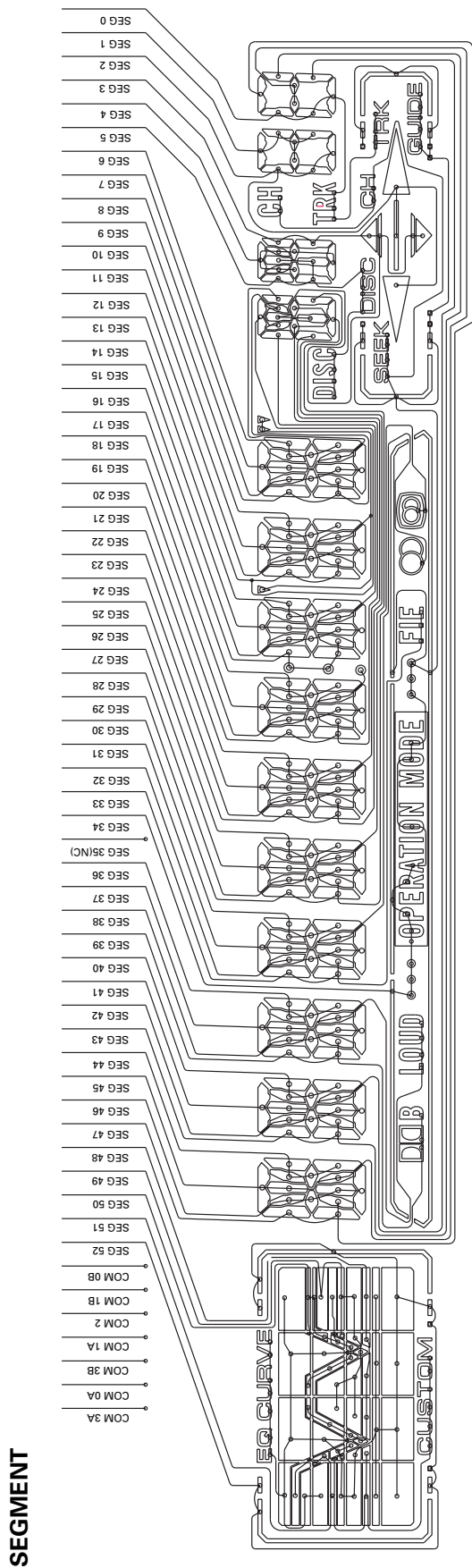
Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	RST	I	System reset
5,6	MODE1,0		GND
7	GRN/AMB	O	Green/Amber select output
8	SO	O	UART output
9	SI	I	UART input
10	REMIN	I	Remote control reception
11	RVER		Not used
12	NC		Not used
13-16	KDT4-1	I	Key data input
17-22	KST6-1	O	Key strobe output
23	VCC		5V
24-73	SEG49-0	O	LCD segment output
74-77	COM3-0	O	Common driver output
78-80	V3-1		LCD bias power supply

*PD6294A



7.1.2 DISPLAY

● CAW1502



7.2 DIAGNOSIS

7.2.1 DISASSEMBLY




● Removing the Case(not shown)

- 1.Remove the two screws.
- 2.Remove the Case.

● Removing the Cassette Mechanism Module (not shown)

- 1.Remove the four screws.
- 2.Disconnect the connector, and then removing the Cassette Mechanism Module.

● Removing the Panel Assy(Fig.1)

-  1 Remove the two screws.
-  2 Disconnect the two connectors.
-  3 Disengage the stopper at two locations indicated and remove the Panel Assy.

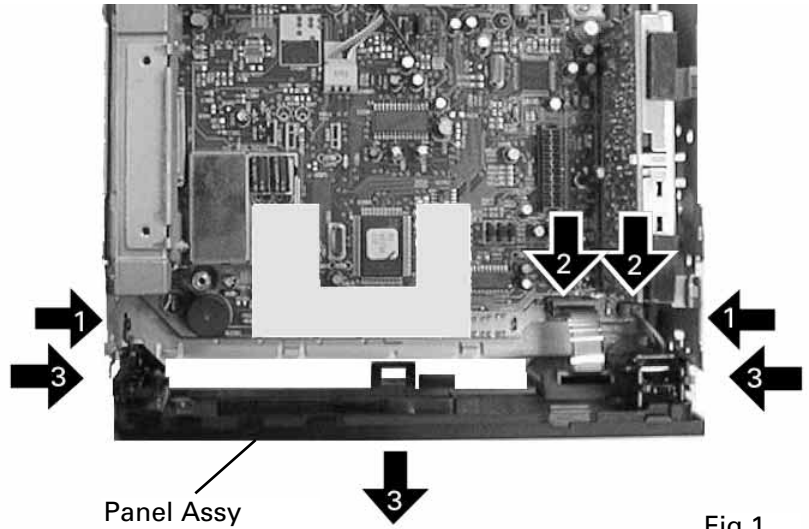






Fig.1

● Removing the Tuner Amp Unit(Fig.2)

-  1 Removing the two screws.
-  2 Removing the three screws.
-  3 Removing the screw.
-  4 Unbend the tabs at two locations indicated by arrow until straight. Remove the Tuner Amp Unit.

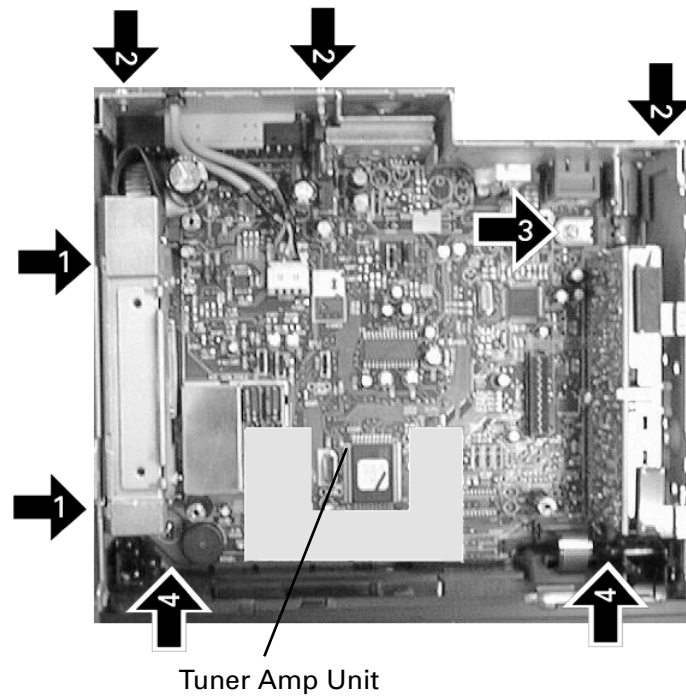
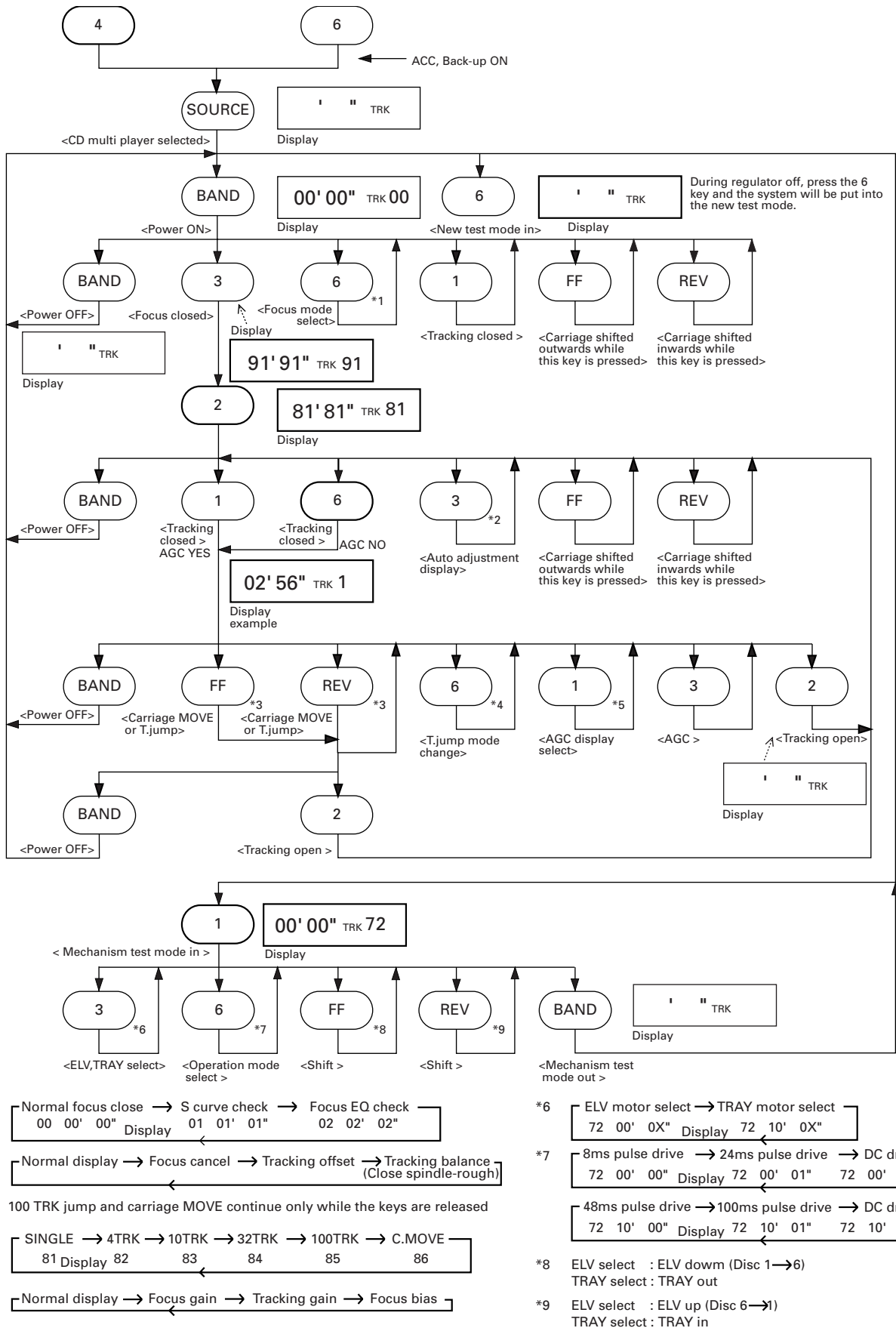


Fig.2

7.2.2 TEST MODE

● Flow Chart



● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number)

During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 45.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND	Regulator ON	Regulator OFF	—	Time of occurrence/ cause of error select
FF	—	FWD-Kick	FF/TRACK+	—
REV	—	REV-Kick	REV/TRACK-	—
1	—	Tracking close	SCAN	—
2	—	Tracking open	MODE	—
3	—	Focus close	—	—
6	To New Test Mode	Jump Mode Select	AUTO/MANU	TRACK No./ time of occurrence select

Operations,such as EJECT, CD ON/OFF, etc. are performed normally

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause/Detail	Scratch, Stain, Vibration, Servo defect, etc...
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	
41	ELECTRIC	PLAY	LOCK=L 100ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15, 16, 17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, Failure to lock, failed to read subcode

(5) Example of Display.

- SET UP in progress
8 digits display LCD

TNo.	Min	Sec
11	11	11

- Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

- Protection/Error upon occurrence(8 digits display LCD)

(a) Error number indicated

ERROR-xx

Select the display with the BAND key.

(b) Track number and absolute time indicated

TNo.	Min	Sec
10	40	05

● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.

This is aimed at assisting in analysis or repair.

(1) Basic Means of Display

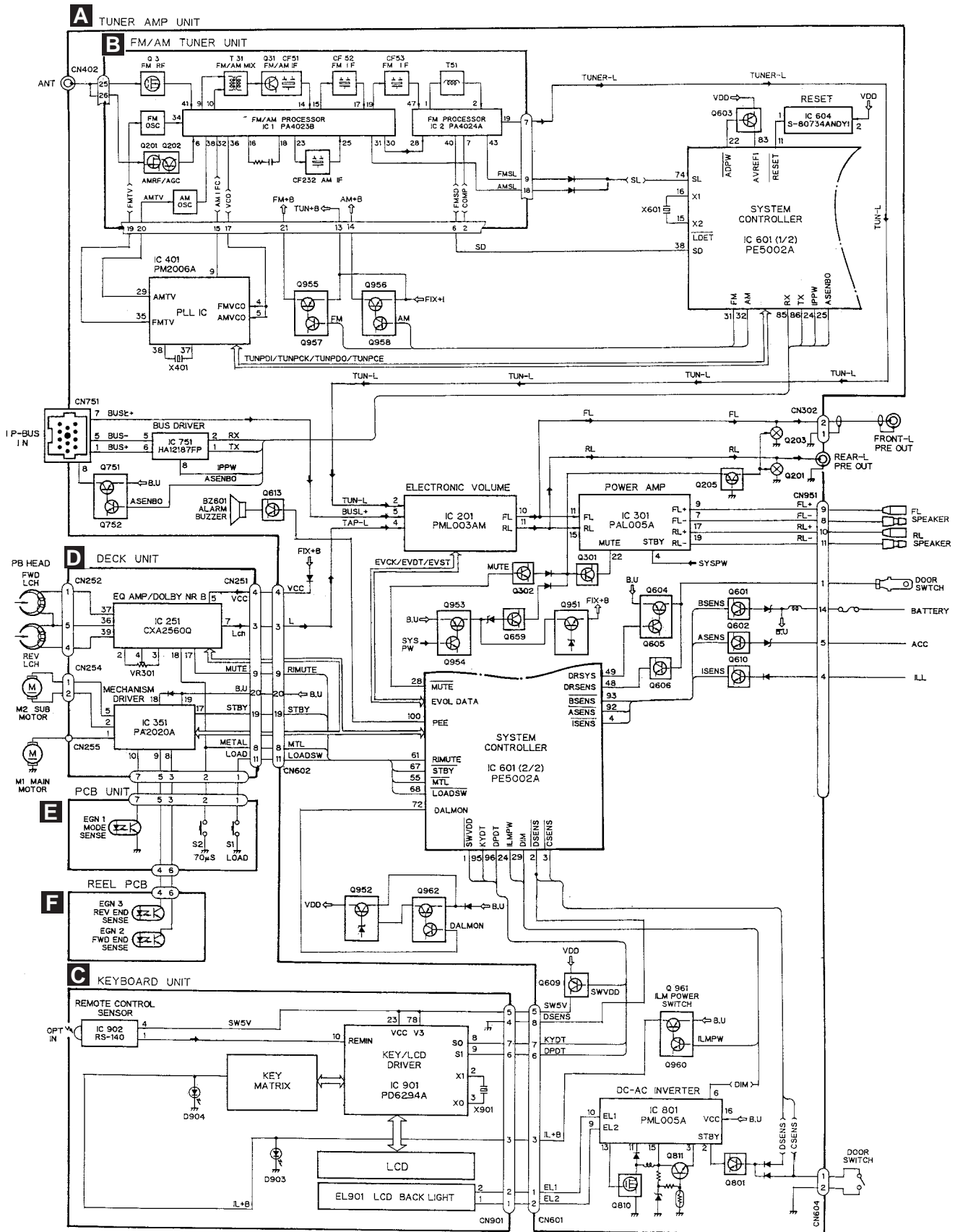
- Examples of Display ERROR-xx

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
19	ELECTRIC	Set up failure	Tracking error waveform is too unbalanced (>50%) or level is too small →The pickup unit or tracking error circuitry is N.G.
30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal
A1	SYSTEM	Mechanism power failure	Mechanism elevation reference voltage is out of prescription →EREF adjustment VR and/or power abnormal
50	MECHANISM	An error upon ejection	MAG switch release time has time out Elevation time out when eject
60	MECHANISM	An error while putting in and out the tray	Tray in / out time has time out Tray is caught when put in
70	MECHANISM	An error upon elevation	Elevation time has time out
80	MECHANISM	An error with an empty magazine inserted	No disc is available

* Setup means a series of operations after focusing up to sound output.

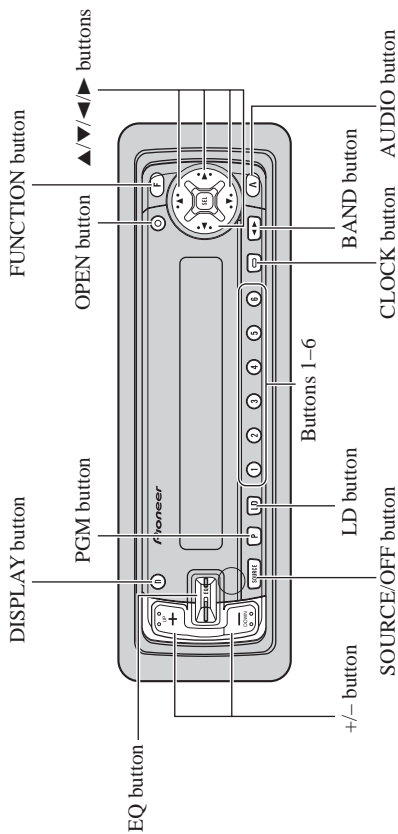
7.3 BLOCK DIAGRAM



8. OPERATIONS AND SPECIFICATIONS

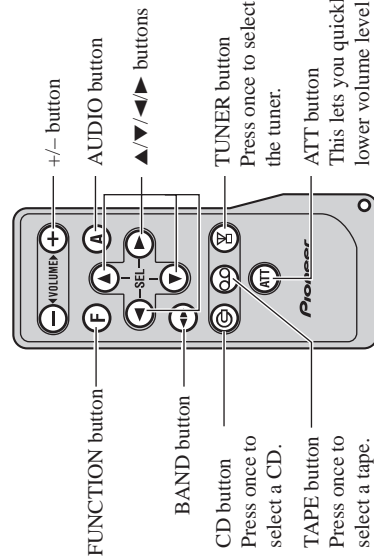
8.1 OPERATIONS

Head Unit



Remote Controller

A remote controller that enables remote operation of the head unit is supplied. Operation is the same as when using buttons on the head unit.



FUNCTION button
Press once to select a CD.

BAND button
Press once to select the tuner.

TUNER button
Press once to select the tuner.

ATT button
This lets you quickly lower volume level (by about 90%). Press once more to return to the original volume level.

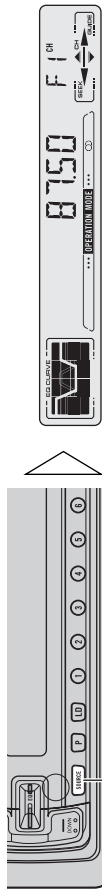
To Listen to Music

The following explains the initial operations required before you can listen to music.

Note:

- Loading a cassette in this product. (Refer to page 7.)

1. Select the desired source (e.g. tuner).



Each press changes the Source ...

■ **Head Unit**

Each press of the SOURCE/OFF button selects the desired source in the following order:
CD player (one disc only) → Tuner → Tape → Multi-CD player → AUX

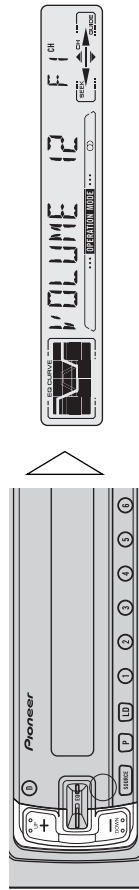
■ **Remote Controller**

Each press of the button selects the desired source in the following order:
TUNER button : Tuner → OFF
TAPE button : Tape → AUX → OFF
CD button : CD player (one disc only) → Multi-CD player → OFF

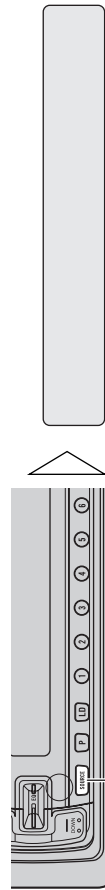
Note:

- In the following cases, the sound source will not change:
 - * When a product is not connected to this product.
 - * When no tape is set in this product.
 - * When no magazine is set in the Multi-CD player.
 - * When no disc is set in the CD player.
 - * When the AUX (external input) is set to OFF. (Refer to page 40.)

2. Raise or lower the volume.



3. Turn the source OFF.



Hold for 1 second or more

Note:

- Be sure to close the front panel after loading or ejecting a cassette.

Fast Forward/Rewind and Music Search

- Each press of the **▶** button selects **Fast forward or Forward-Music Search**.
FF (Fast forward) → F-MS (Forward-Music Search) → Normal Playback
- Each press of the **◀** button selects **Rewind or Rewind-Music Search**.
REW (Rewind) → R-MS (Rewind-Music Search) → Normal Playback

Note:

- Fast forward/Rewind and Music Search can be canceled by pressing the BAND button.

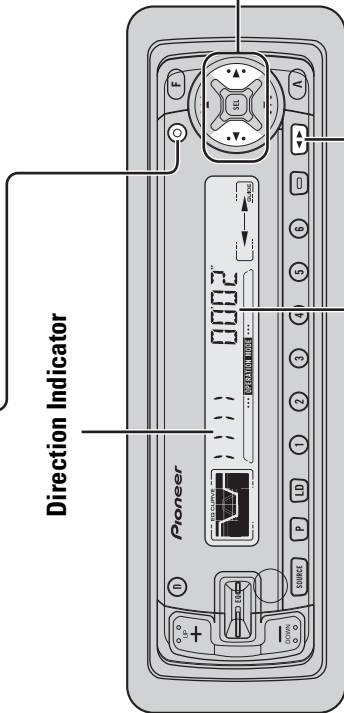
Note:

- "METAL" appears on the display for 4 seconds when a metal or chrome tape is inserted. Nothing is displayed for a normal tape.

Open

- Use to open the front panel when loading or ejecting a cassette. (The illustration on the right shows the front panel open.)

Direction Indicator

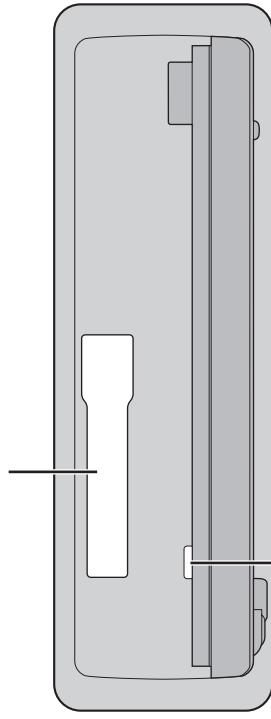


Elapsed Play Time Indicator

Note:

- The continuous playback time count starts at 00'00" at the following times.
 - * When a tape is inserted.
 - * When the tape direction is changed.
 - * When you rewind the tape side currently playing back to the beginning.
- The continuous playback time count is halted when fast-forwarding/rewinding and while the Music Search function is operating.

Cassette Loading Slot



Eject

Note:

- The Tape function can be turned ON/OFF with the cassette tape remaining in this product. (Refer to page 6.)

Basic Operation of Multi-CD Player

This product can control one or more multi-CD players. (There are some types of Multi-CD players such as "CDX-P630S" which you cannot connect more than one.)

Switching the Multi-CD Player

Using a multiple connection adapter lets you connect up to three Multi-CD players.

M-CD 1 → M-CD 2 → M-CD 3
(Displayed for about 2 seconds.)

Track Search and Fast Forward/Reverse

- You can select between Track Search or Fast forward/Reverse by pressing the ◀/▶ button for a different length of time.

Track Search	0.5 seconds or less
Fast forward/Reverse	Continue pressing

Disc Number Search (for 6-Disc, 12-Disc types)

- You can select discs directly with the 1 to 6 buttons. Just press the number corresponding to the disc you want to listen to.

Note:

- When a 12-Disc Multi-CD Player is connected and you want to select disc 7 to 12, press the 1 to 6 buttons for 2 seconds or longer.

Disc Number Rough Search (for 50-Disc type only)

This handy function lets you select discs loaded in a 50-Disc Multi-CD Player using the 1 to 5 buttons. The 50 discs are divided into five blocks, with each of the 1 to 5 buttons assigned to a block.

- Select the desired block with the 1 to 5 button.

Note:

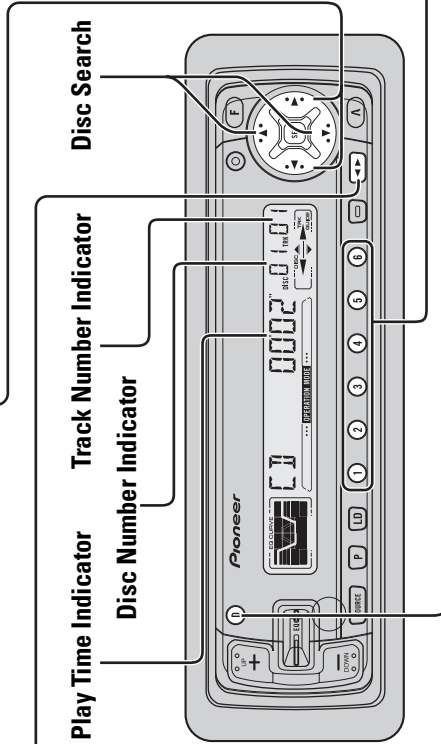
- After completing a rough search, use the ▲ and ▼ buttons to select a desired disc.

Elapsed Play Time Indicator

Track Number Indicator

Disc Number Indicator

Disc Search



Displaying Disc Titles

- Press the DISPLAY button, to change the Disc Title display of the current disc.

Note:

- If you switch displays when disc titles have not been input, "NO TITLE" is displayed.
- Repeat the preceding operation to return to the normal display.

Note:

- The multi-CD player may perform a preparatory operation, such as verifying the presence of a disc or reading disc information, when the power is turned ON or a new disc is selected for play-back. "READY" is displayed.
- When a magazine is loaded into a 50-Disc type Multi-CD Player, information on all the discs in the magazine is read.
If you start playing a disc on a 50-Disc type Multi-CD Player before reading of information on all discs has been completed, reading of information stops part way through. This will prevent you from using the ITS function. (If you try and use this function, "NOT READY" is displayed.) If this happens, reading of information begins again when you switch to a component other than the 50-Disc type Multi-CD Player.
- If the multi-CD player cannot operate properly, an error message such as "ERROR-1.4" is displayed. Refer to the multi-CD player owner's manual.
- If there are no discs in the multi-CD player magazine, "NO DISC" is displayed.
- "LOAD" will be displayed in the following cases:
* If the disc in the extra tray is selected.
* If the disc is moved from the extra tray to the magazine.
(Refer to the 50-Disc type multi-CD player owner's manual.)
- You cannot use the "Ejecting a Single Disc", "Frequency Play", "Music Group Play", or "ABC Disc Title Search" functions with this product.

When playing a CD TEXT disc on a CD TEXT compatible Multi-CD Player such as the CDX-P650:

- You cannot operate the following two functions that are mentioned in the Multi-CD Player's Owner's Manual.
* Title display switching
* Title scroll
- You cannot switch to the Disc Title Input mode in the Detailed Setting Menu.

Basic Operation of Tuner

Reset the AM tuning step from 9 kHz (the factory preset step) to 10 kHz when using the tuner in North, Central or South America. (Refer to page 39.)

Manual and Seek Tuning

- You can select the tuning method by changing the length of time you press the ◀/▶ button.

Manual Tuning (step by step)	0.5 seconds or less
Seek Tuning	0.5 seconds or more

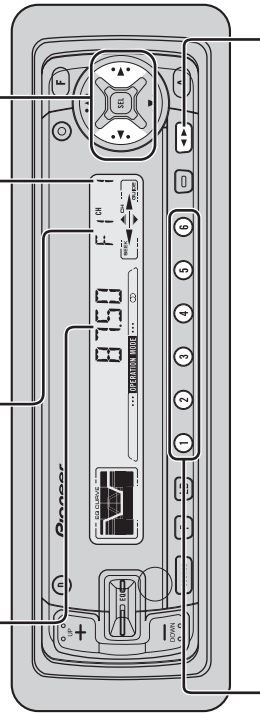
Note:

- If you continue pressing the button for longer than 0.5 seconds, you can skip broadcasting stations. Seek Tuning starts as soon as you stop pressing the button.

Note:

- “O” stereo indicator lights when a stereo station is selected.

Frequency Indicator Band Indicator Preset Number Indicator



Preset Tuning

- You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.

Preset station recall	2 seconds or less
Broadcast station preset memory	2 seconds or more

Note:

- Up to 18 FM stations (6 in F1 (FM1), F2 (FM2) and F3 (FM3)) and 6 AM stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

Band

F1 (FM1) → F2 (FM2)
→ F3 (FM3) → AM

Basic Operation of CD Player (one disc only)

This product can control a CD player (one disc only).

Track Search and Fast Forward/Reverse

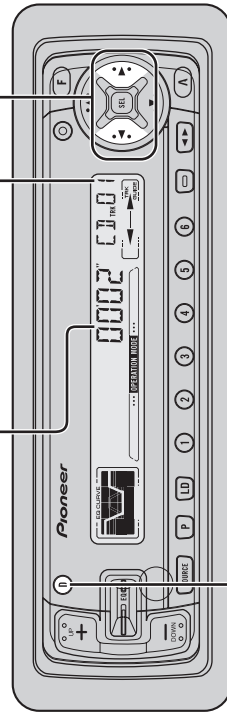
- You can select between Track Search or Fast forward/Reverse by pressing the ◀/▶ button for a different length of time.

Track Search	0.5 seconds or less
Fast-forward/Reverse	Continue pressing

Note:

- If the CD player cannot operate properly, an error message such as “ERROR-14” is displayed. Refer to the CD player owner’s manual.

Elapsed Play Time Indicator Track Number Indicator

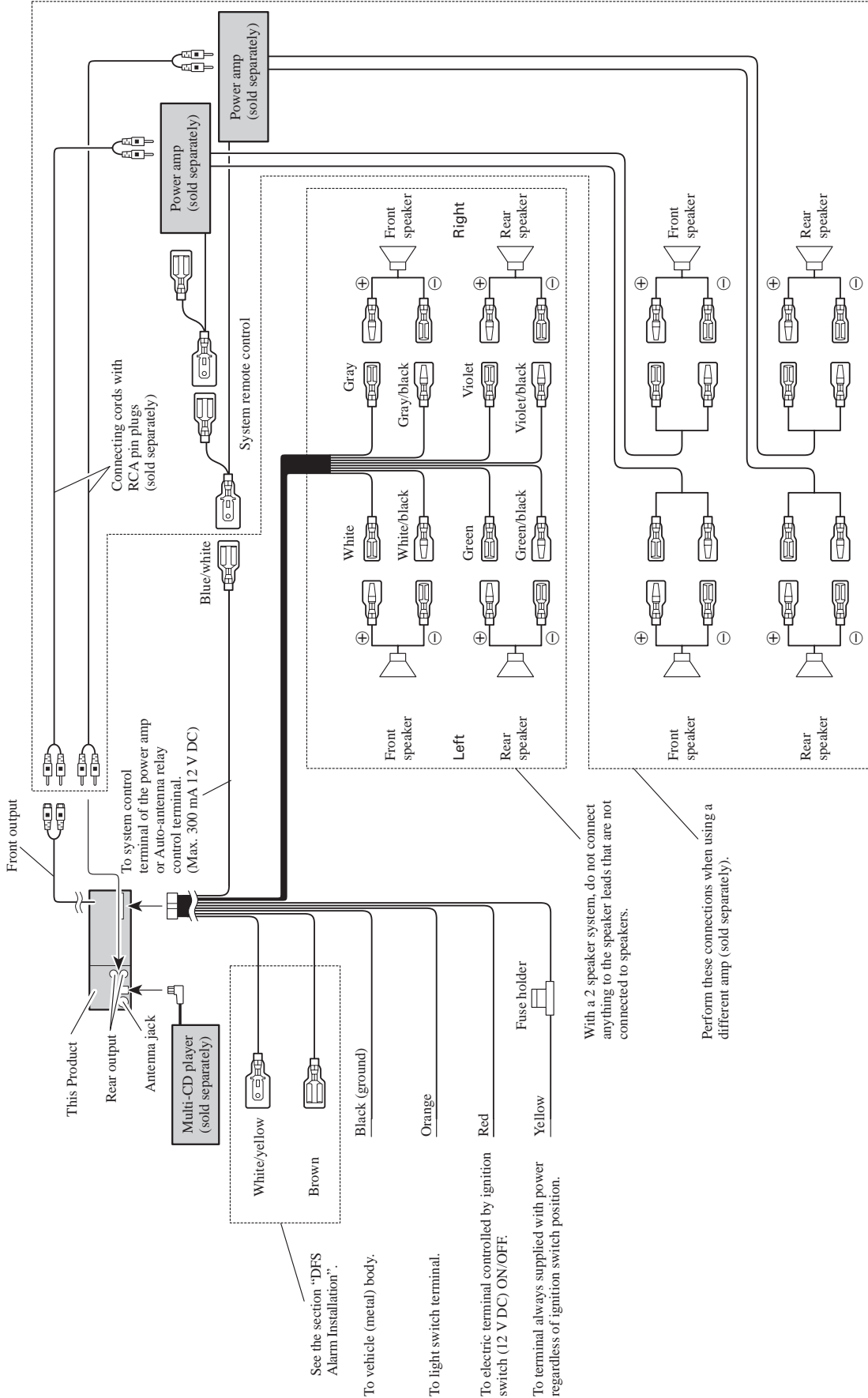


Displaying Disc Titles

- Press the DISPLAY button, to change the Disc Title display of the current disc.

Note:

- When a Multi-CD player is not connected to this product, this function does not work.
- If you switch displays when disc titles have not been input, “NO TITLE” is displayed.
- Repeat the preceding operation to return to the normal display.



8.2 SPECIFICATIONS

General

Power source 14.4 V DC (10.8 – 15.1 V allowable)
 Grounding system Negative type
 Max. current consumption 10 A
 Dimensions
 (DIN) (chassis) 178 (W) x 50 (H) x 155 (D) mm
 (nose) 188 (W) x 58 (H) x 18 (D) mm
 (D) (chassis) 178 (W) x 50 (H) x 160 (D) mm
 (nose) 170 (W) x 46 (H) x 13 (D) mm
 Weight 1.3 kg

Amplifier

Continuous power output is 22 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
 Maximum power output 45 W x 4
 Load impedance 4 W (4 – 8 W allowable)
 Preout maximum output level/
 output impedance 2.2 V/1 k Ω
 Equalizer (3-Band Parametric Equalizer)
 (Low) Frequency: 40/80/100/160 Hz
 Q Factor: 0.35/0.59/0.95/1.15
 (+6 dB when boosted)
 Level: ± 12 dB
 (Mid) Frequency: 200/500/1k/2k Hz
 Q Factor: 0.35/0.59/0.95/1.15
 (+6 dB when boosted)
 Level: ± 12 dB
 (High) Frequency: 3.15k/8k/10k/12.5k Hz
 Q Factor: 0.35/0.59/0.95/1.15
 (+6 dB when boosted)
 Level: ± 12 dB
 Loudness contour
 (Low) +3.5 dB (100 Hz), +3 dB (10 kHz)
 (Mid) +10 dB (100 Hz), +6.5 dB (10 kHz)
 (High) +11 dB (100 Hz), +11 dB (10 kHz)
 (volume: -30 dB)

Cassette player

Tape Compact cassette tape (C-30 – C-90)
 Tape speed 4.76 cm/sec. (+0.14cm/sec., -0.05cm/sec.)
 Fast forward/rewinding time Approx. 100 sec. for C-60
 Wow & flutter 0.09% (WRMS)
 Frequency response Metal: 30 – 19,000 Hz (± 3 dB)
 Stereo separation 45 dB
 Signal-to-noise ratio
 Metal: Dolby B NR IN: 67 dB (IEC-A network)
 Dolby NR OUT: 61 dB (IEC-A network)

FM tuner

Frequency range 87.5 – 108 MHz
 Usable sensitivity 11 dBf
 (1.0 mV/75 W, mono, S/N: 30 dB)
 50 dB quieting sensitivity 16 dBf (1.7 mV/75 W, mono)
 Signal-to-noise ratio 70 dB (IEC-A network)
 Distortion 0.3% (at 65 dBf, 1 kHz, stereo)
 Frequency response 30 – 15,000 Hz (± 3 dB)
 Stereo separation 40 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range 531 – 1,602 kHz (9 kHz)
 530 – 1,710 kHz (10 kHz)
 Usable sensitivity 18 mV (S/N: 20 dB)
 Selectivity 50 dB (± 9 kHz)
 50 dB (± 10 kHz)

Note:

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