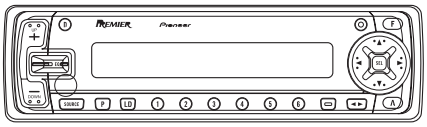
Service Manual

KEH-P780/X1N/UC



ORDER NO.
CRT2306

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

KEH-P780 X1N/UC

KEH-P7800 X1N/UC

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.**

CONTENTS

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PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

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K-ZZS. NOV. 1998 Printed in Japan

1. SAFETY INFORMATION

CAUTION

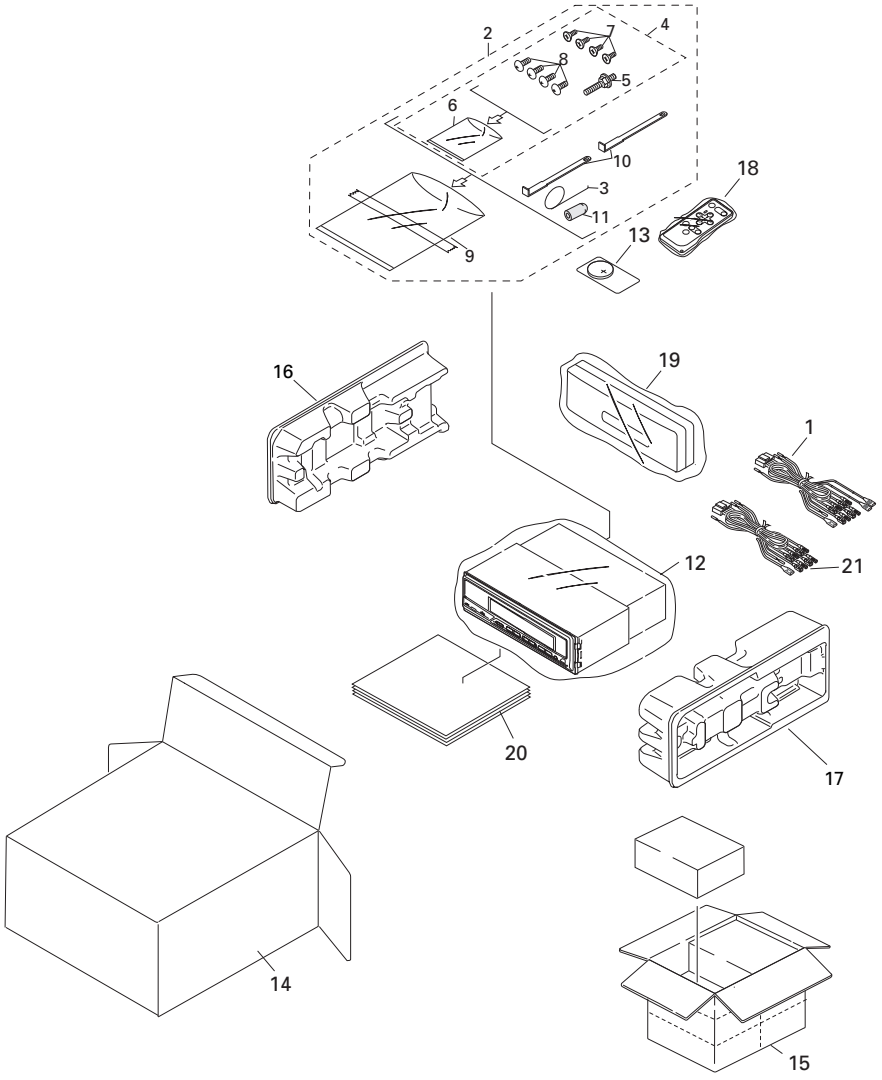
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly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

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

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.

(1) PACKING SECTION PARTS LIST

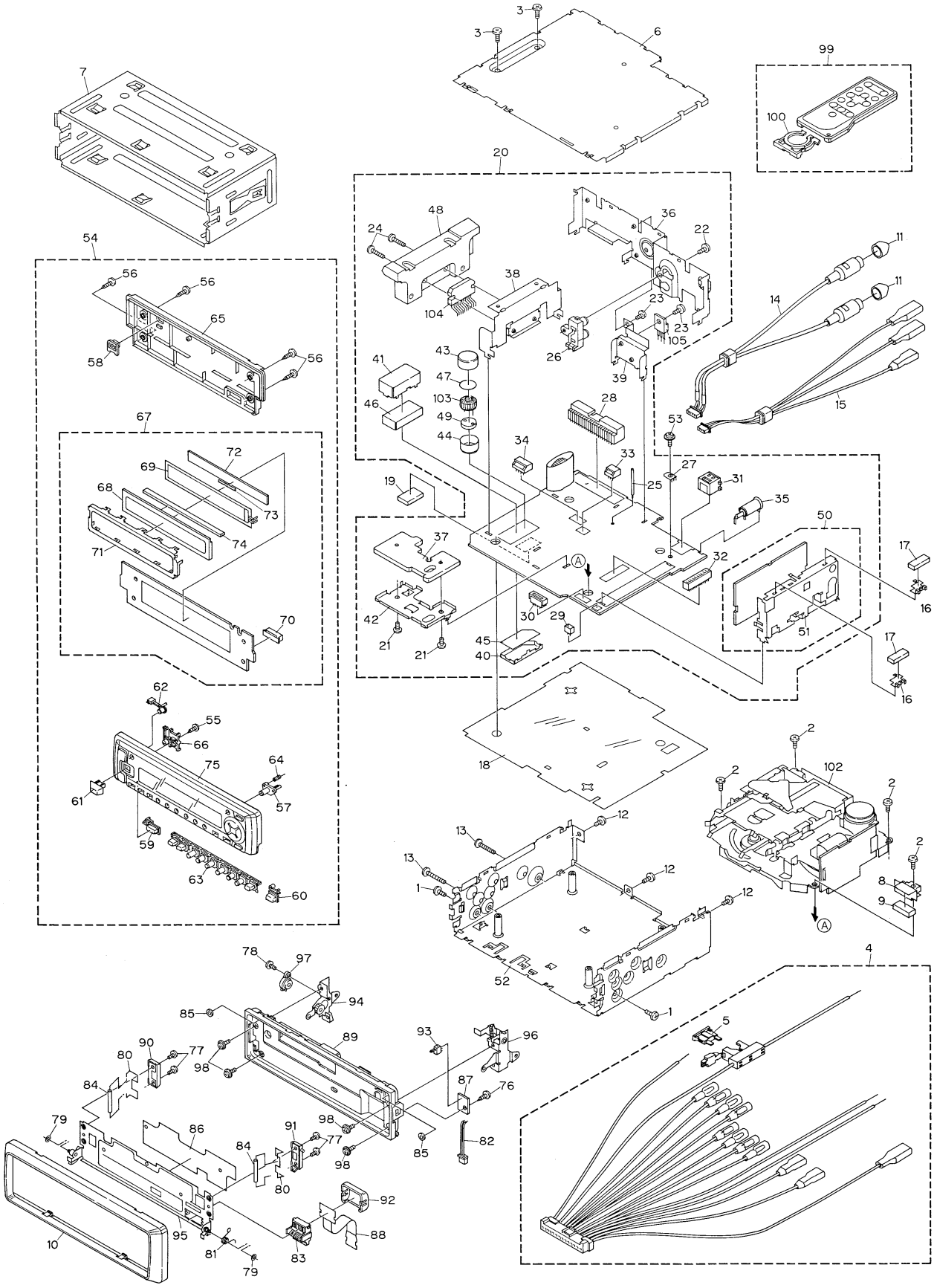
Mark	No.	Description	Part No.
	1	Cord Assy	See Contrast table(2)
*	2	Accessory Assy	CEA2350
	3	Spring	CBH1650
	4	Screw Assy	CEA2351
	5	Screw	CBA1304
*	6	Polyethylene Bag	CEG-127
	7	Screw	CRZ50P090FMC
	8	Screw	TRZ50P080FMC
*	9	Polyethylene Bag	CEG-158
	10	Handle	CNC5395
	11	Bush	CNV3930
	12	Polyethylene Bag	CEG1173
	13	Battery	See Contrast table(2)
	14	Carton	See Contrast table(2)
	15	Contain Box	See Contrast table(2)
	16	Protector	CHP2101
	17	Protector	CHP2102
	18	Remote Control Unit	See Contrast table(2)
	19	Case Assy	CXB3520
	20-1	Owner's Manual (English, French)	See Contrast table(2)
	20-2	Installation Manual (English, French)	See Contrast table(2)
*	20-3	Warranty Card	See Contrast table(2)
	21	Cord Assy	See Contrast table(2)

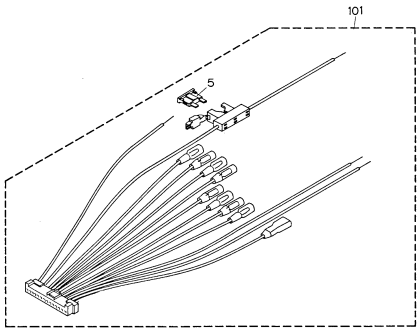
(2) CONTRAST TABLE

KEH-P780/X1N/UC and KEH-P7800/X1N/UC are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.	
			KEH-P780/X1N/UC	KEH-P7800/X1N/UC
	1	Cord Assy	CDE5758	Not used
	13	Battery	CEX1030	Not used
	14	Carton	CHG3551	CHG3550
	15	Contain Box	CHL3551	CHL3550
	18	Remote Control Unit	CXB3456	Not used
	20-1	Owner's Manual	CRD2760	CRD2758
	20-2	Installation Manual	CRD2761	CRD2759
*	20-3	Warranty Card	CRY1070	Not used
	21	Cord Assy	Not used	CDE5802

2.2 EXTERIOR





(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FMC
	2	Screw	BSZ26P050FMC
	3	Screw	BSZ30P050FMC
	4	Cord Assy	See Contrast table(2)
	5	Fuse(10A)	CEK1136
	6	Case	CNB2350
	7	Holder	CNC6798
	8	Shield	CNC7365
	9	Spacer	CNM5488
	10	Panel	CNS5148
	11	Cap	CNV2680
	12	Screw	BSZ30P050FMC
	13	Screw	BSZ30P200FMC
	14	Cord	CDE5176
	15	Cord	See Contrast table(2)
	16	Holder	CNC5704
	17	Cushion	CNM4870
	18	Insulator	CNM6275
	19	Insulator	CNV5793
	20	Tuner Amp Unit	See Contrast table(2)
	21	Screw	BMZ26P040FMC
	22	Screw	BPZ26P060FMC
	23	Screw	BSZ26P060FMC
	24	Screw	BSZ26P160FMC
	25	Clamper	See Contrast table(2)
	26	Pin Jack(CN301)	CKB1028
	27	Terminal(CN403)	CKF1059
	28	Plug(CN951)	CKM1231
	29	Plug(CN604)	CKS-783
	30	Connector(CN601)	CKS1499
	31	Connector(CN751)	CKS3408
	32	Connector(CN602)	CKS3568
	33	Connector(CN603)	See Contrast table(2)
	34	Connector(CN302)	CKS3598
	35	Antenna Jack(CN402)	CKX1056
	36	Panel	See Contrast table(2)
	37	Heat Sink	CNC7991
	38	Holder	CNC7996
	39	Holder	CNC7997
	40	Case	CNC7998
	41	Case	CNC8254
	42	Holder	CNC8255
	43	Case	CNC8350
	44	Case	CNC8351
	45	Insulator	CNM6099
	46	Insulator	CNM6190
	47	Insulator	CNM6257
	48	Heat Sink	CNR1505
	49	Insulator	CNV5792
	50	FM/AM Tuner Unit	CWE1467
	51	Holder	CNC6554
	52	Chassis Unit	CXB3048
	53	Screw	ISS26P055FUC
	54	Detach Grille Assy	See Contrast table(2)
	55	Screw	BPZ20P060FMC
	56	Screw	BPZ20P080FZK
	57	Button(OPEN)	CAC5804
	58	Button(EJECT)	CAC5805
	59	Button(SOURCE)	CAC5806
	60	Button(BAND)	CAC5807
	61	Button(EQ)	CAC5808
	62	Button(DISP)	CAC5809
	63	Button(1-6)	CAC5922
	64	Spring	CBH2205
	65	Cover	CNS5146
	66	Holder	CNV5537
	67	Keyboard Unit	CWM6061
	68	LCD(LCD901)	CAW1502
	69	EL	CEL1587
	70	Connector(CN901)	CKS2733
	71	Holder	CNC7992
	72	Tape	CNM6348
	73	Spacer	CNM6347
	74	Connector	CNV5536
	75	Grille Unit	See Contrast table(2)
	76	Screw	BPZ20P060FMC
	77	Screw	CBA1082
	78	Screw	CBA1176
	79	Washer	CBF1001
	80	Spring	CBH2063

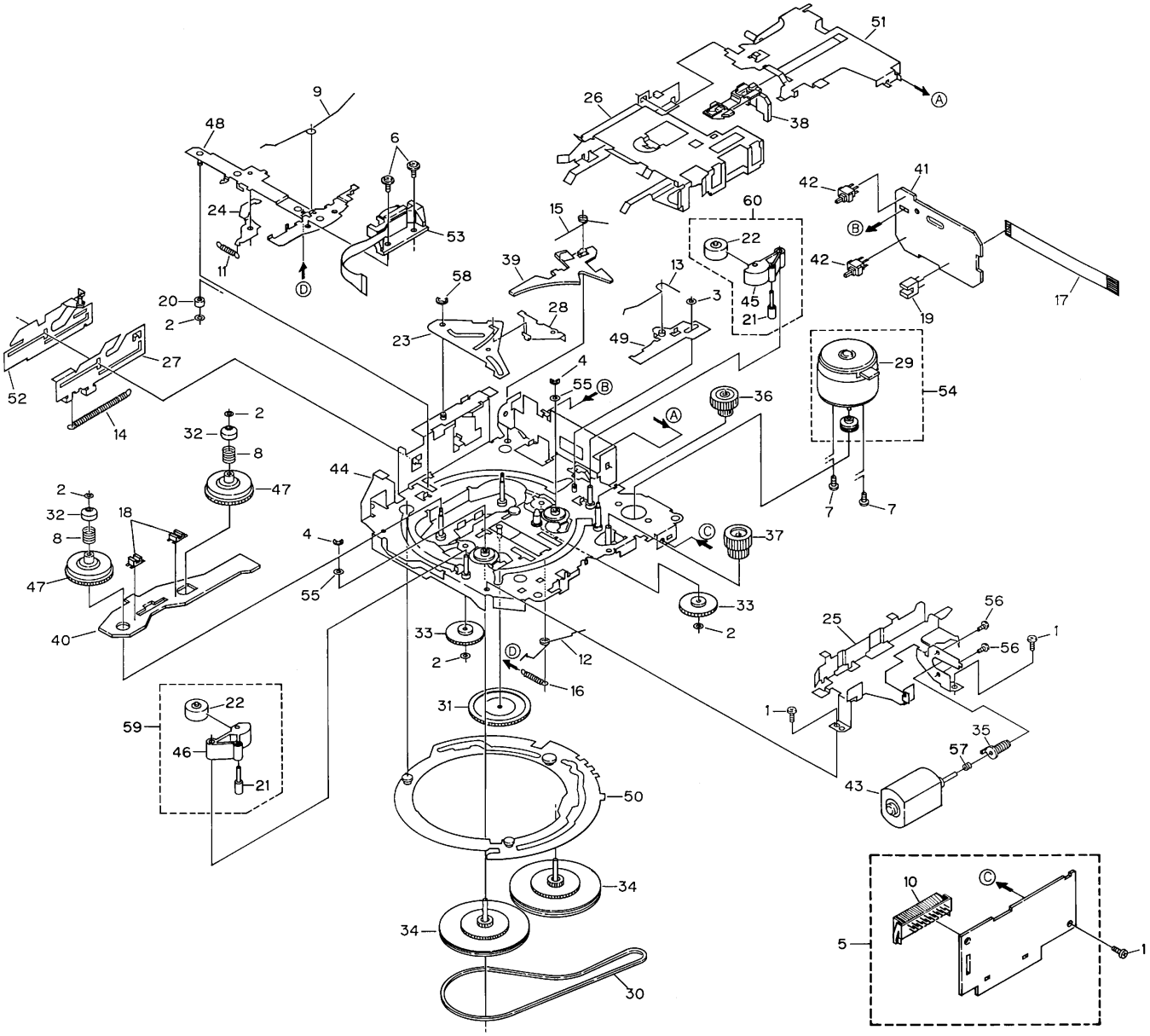
Mark No.	Description	Part No.
81	Spring	CBH2204
82	Cord	CDE5800
83	Connector	CKS2780
84	Roller	CLA3386
85	Cushion	CNM5486
86	Sheet	CNM6109
87	PCB	CNP5430
88	PCB	CNP5444
89	Panel	CNS5147
90	Holder	CNS5157
91	Holder	CNS5165
92	Holder	CNS5389
93	Switch(S602)	CSN1027
94	Holder Unit	CXB3049
95	Holder Unit	CXB3050
96	Holder Unit	CXB3051
97	Damper Unit	CXB3180
98	Screw	IMS20P040FZK
99	Remote Control Unit	See Contrast table(2)
100	Cover	See Contrast table(2)
101	Cord Assy	See Contrast table(2)
102	Cassette Mechanism Module	EXK3990
103	Coil(L801)	CTH1227
104	IC(IC301)	PAL005A
105	Transistor(Q951)	2SD2396

(2) CONTRAST TABLE

KEH-P780/X1N/UC and KEH-P7800/X1N/UC are constructed the same except for the following:

Mark No.	Description	Part No.	
		KEH-P780/X1N/UC	KEH-P7800/X1N/UC
4	Cord Assy	CDE5758	Not used
15	Cord	CDE5762	Not used
20	Tuner Amp Unit	CWM6143	CWM6145
25	Clamper	CEF1005	Not used
33	Connector(CN603)	CKS3597	Not used
36	Panel	CNB2357	CNB2358
54	Detach Grille Assy	CXB3437	CXB3438
75	Grille Unit	CXB3481	CXB3482
99	Remote Control Unit	CXB3456	Not used
100	Cover	CNS4948	Not used
101	Cord Assy	Not used	CDE5802

2.3 CASSETTE MECHANISM MODULE



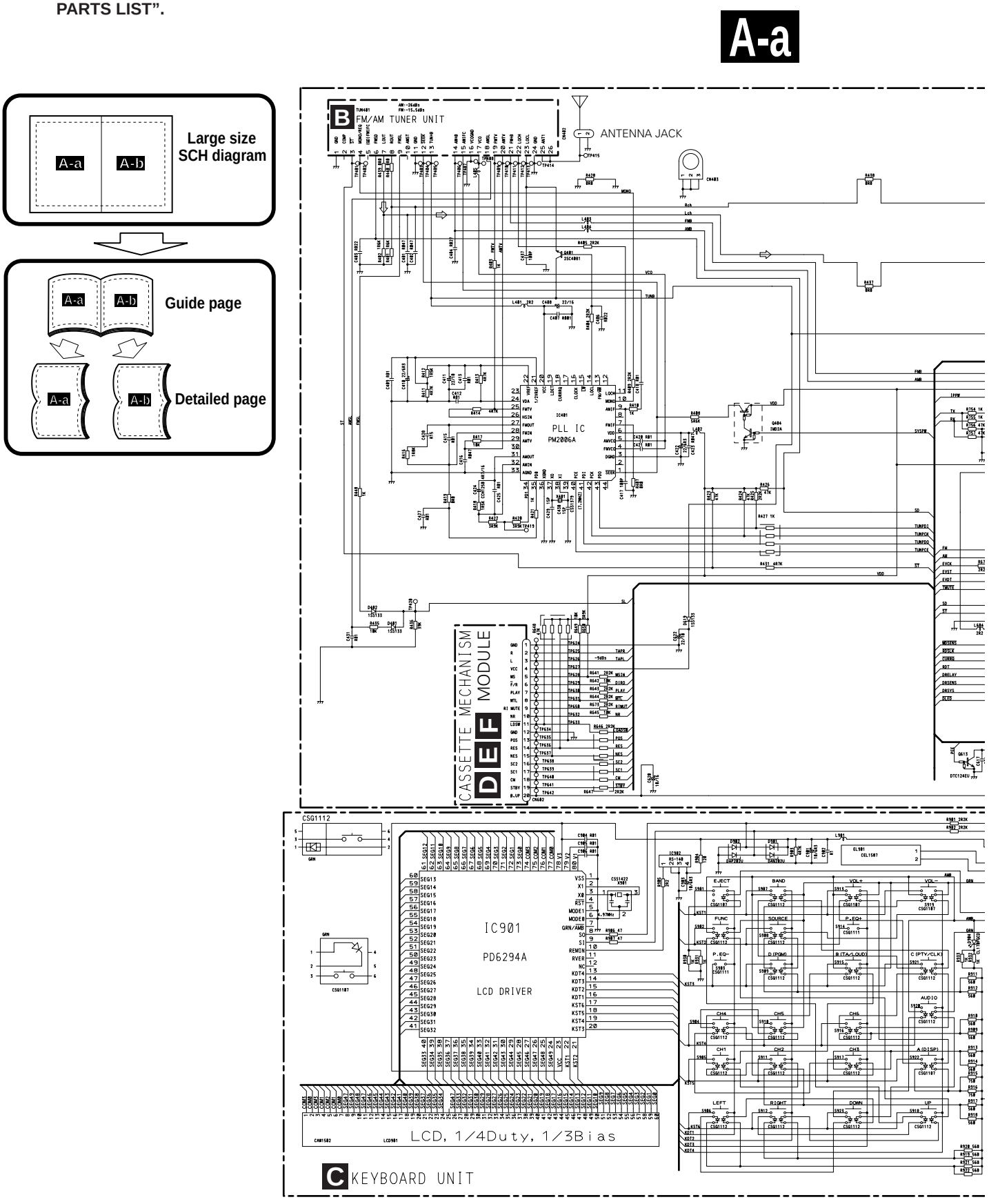
● CASSETTE MECHANISM MODULE SECTION PARTS LIST

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

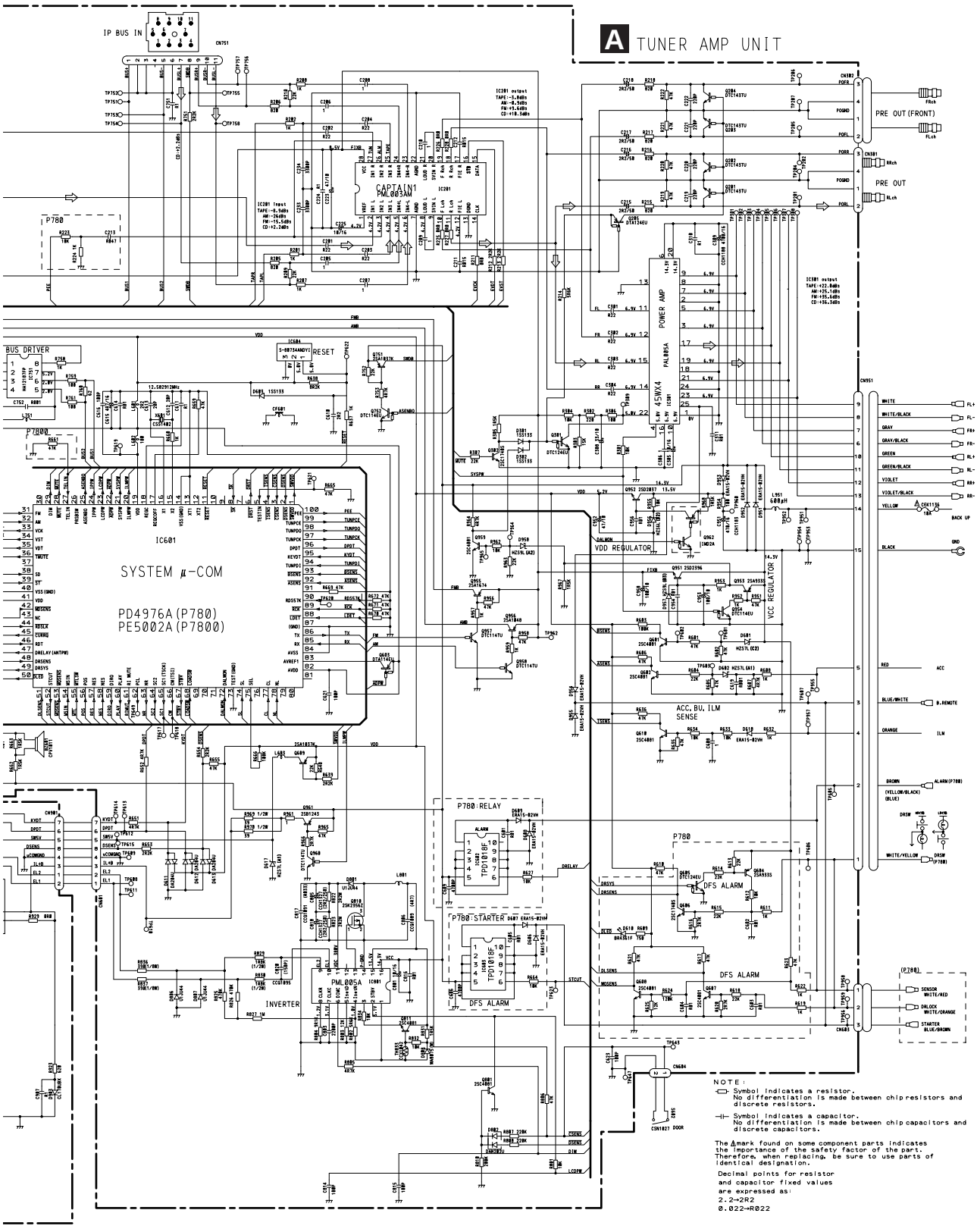
3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM (GUIDE PAGE)

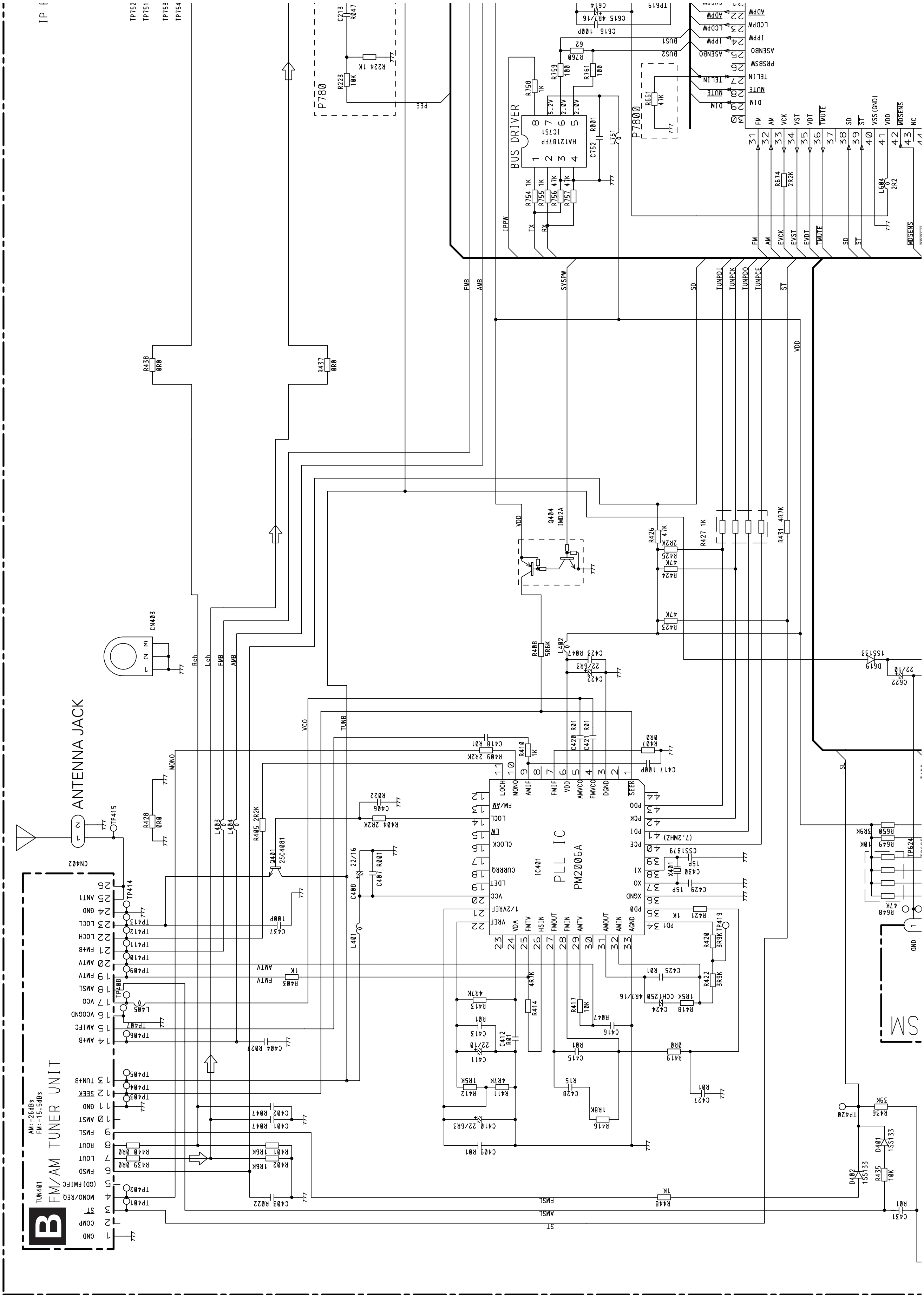
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



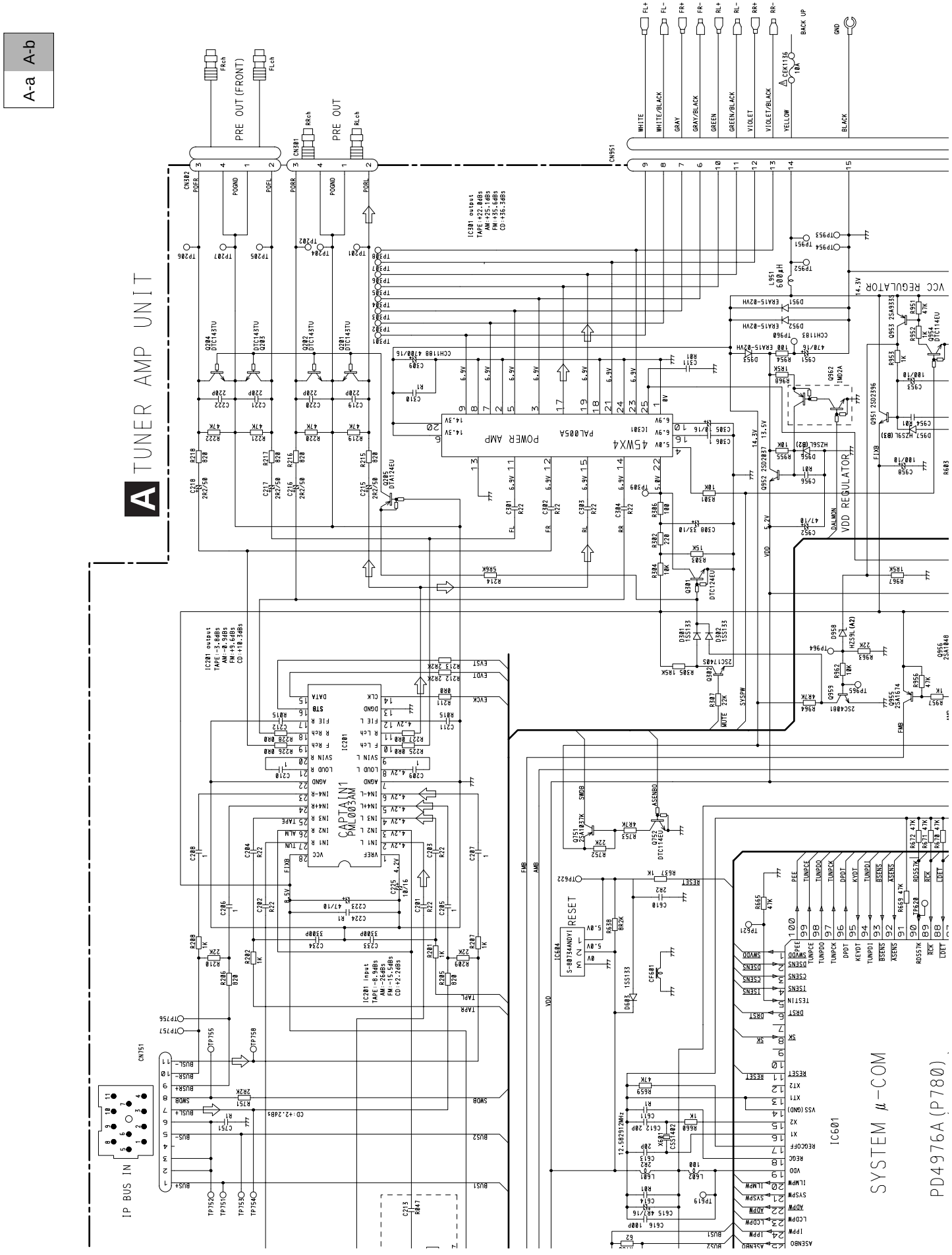
A-b

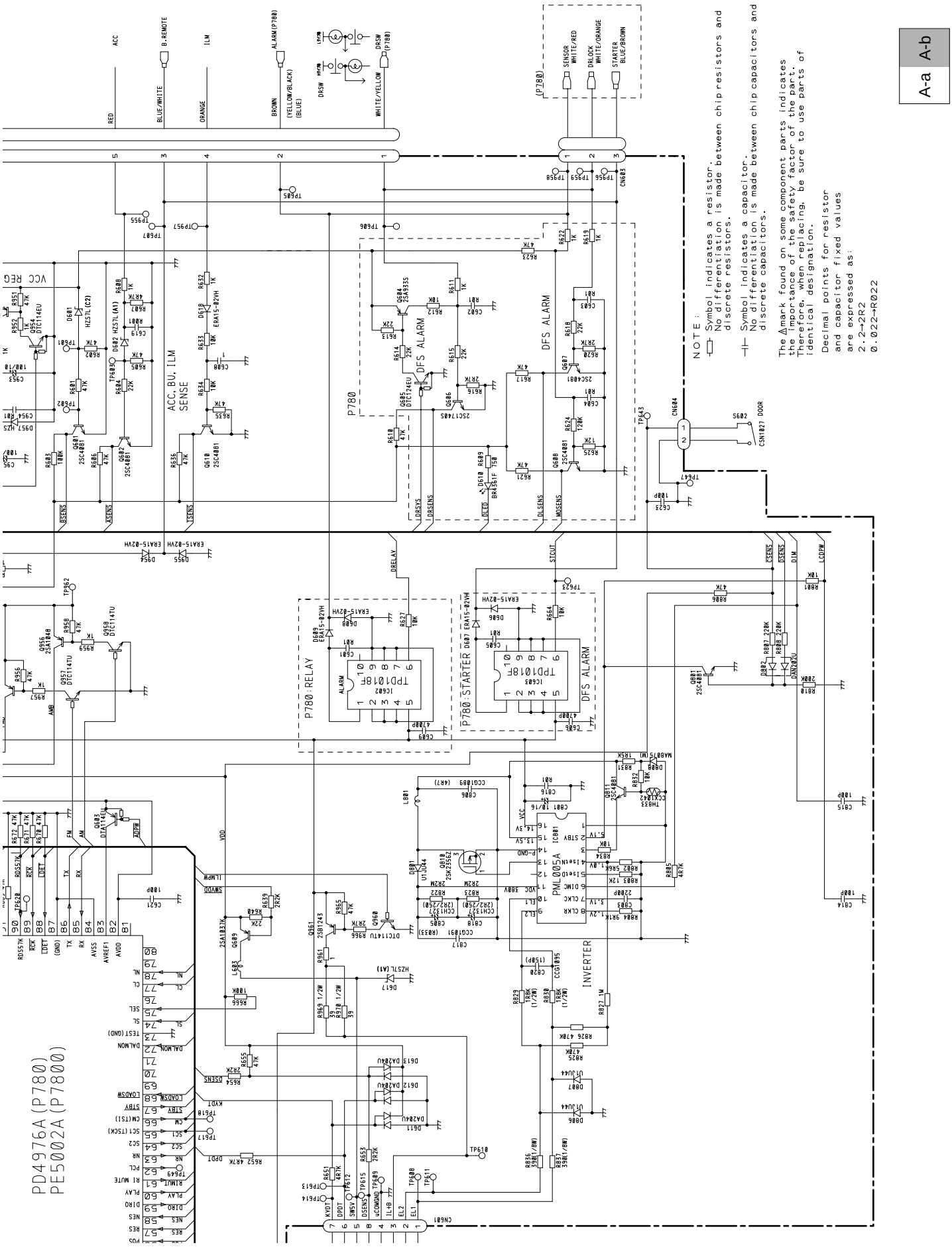

A TUNER AMP UNIT
IP BUS IN
CN751
PRE OUT (FRONT)
PRE OUT
CAPTAIN1
PML003AN
POWER AMP
PAL0854
BUS DRIVER
RESET
SYSTEM μ-COM
PD4976A(P780)
PE5002A(P780)
IC601
VDD REGULATOR
VCC REGULATOR
ACC, BU, ILM SENSE
P780:RELAY
P780:STARTER
DFS ALARM
INVERTER
PML003AN
CN951
WHITE
WHITE/BLACK
GRAY
GRAY/BLACK
GREEN
GREEN/BLACK
VIOLET
VIOLET/BLACK
YELLOW
BACK UP
BLACK
GND
RED
ACC
BLUE/WHITE
B.REMOTE
ORANGE
ILM
BROWN
ALARM(P780)
(YELLOW/BLACK)
(BLUE)
WHITE/YELLOW
DRSW(P780)
SENSOR WHITE/RED
DBLOCK WHITE/ORANGE
STARTER BLUE/BROWN
CN1801 DOOR
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 Δmark 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

A-b
A-a


ANTENNA JACK
CN402
CN403
B
TUN401
FM/AM TUNER UNIT
AM:-26dBs
FM:-15.5dBs
PLL IC
IC401
PM2006A
BUS DRIVER
IC751
HA12187FP
Q404
IMD2A
Q401
2SC4081
P780
P7800

IC901
PD6294A
LCD DRIVER
LCD, 1/4Duty, 1/3Bias
KEYBOARD UNIT
CASSETTE MECHANISM MODULE
CN901
CN902
LCD901
CSG1112
CSG1107
X901
4.9MHz
EL301
CEL1587
VOL-
VOL+
P.EQ+
P.EQ-
BAND
SOURCE
D (PGM)
EJECT
FUNC
B (TA/LOUD)
C (PTY/CLK)
AUDIO
A (DISP)
UP
DOWN
CH6
CH5
CH4
CH3
CH2
CH1
RIGHT
LEFT


A-b
A-a
A TUNER AMP UNIT
PRE OUT (FRONT)
PRE OUT
POWER AMP
VCC REGULATOR
VDD REGULATOR
SYSTEM μ-COM
PD4976A(P780)
IC601
IP BUS IN
CAPTAIN1
PWL003AM
RESET
BACK UP
GND


NOTE:
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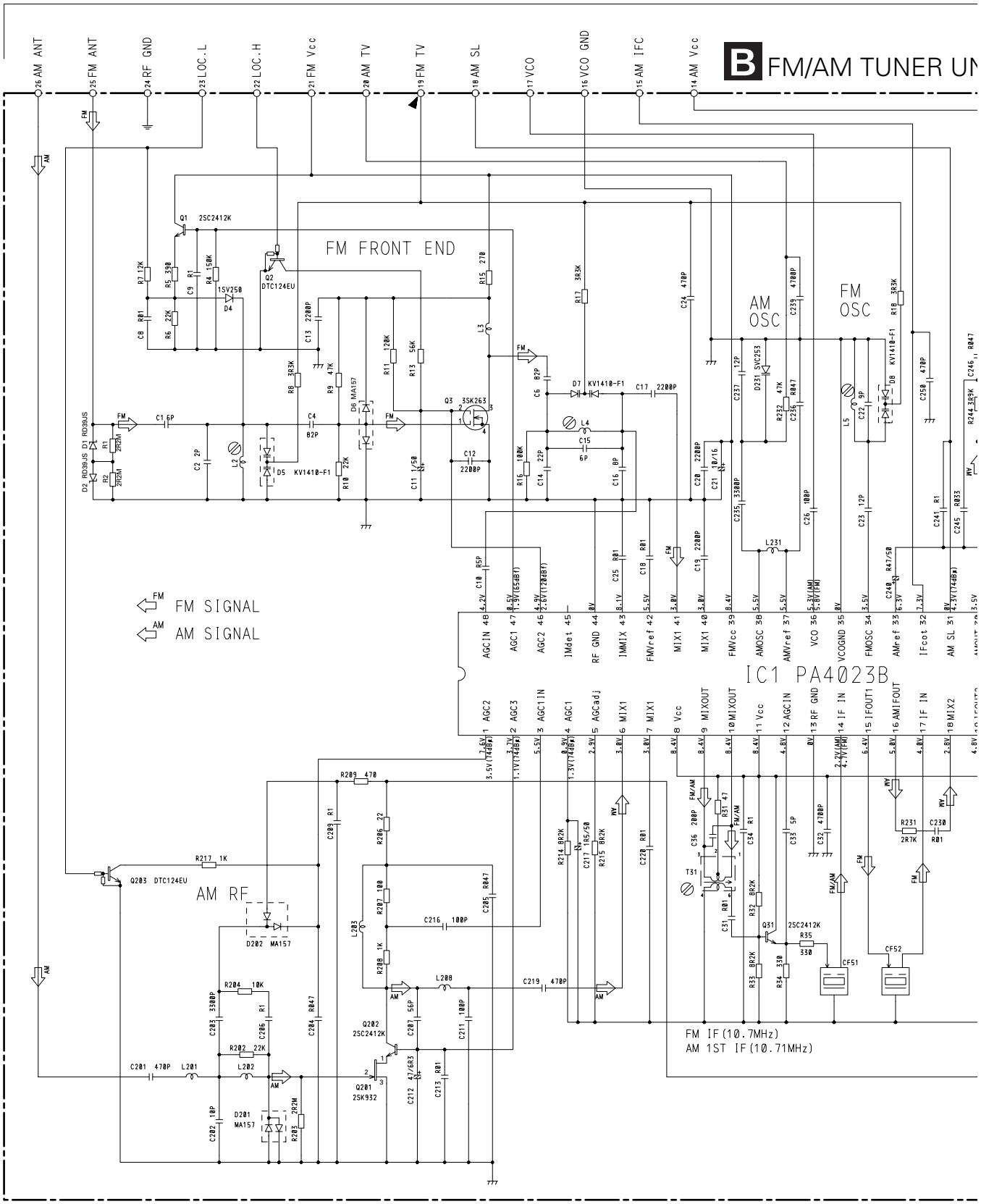
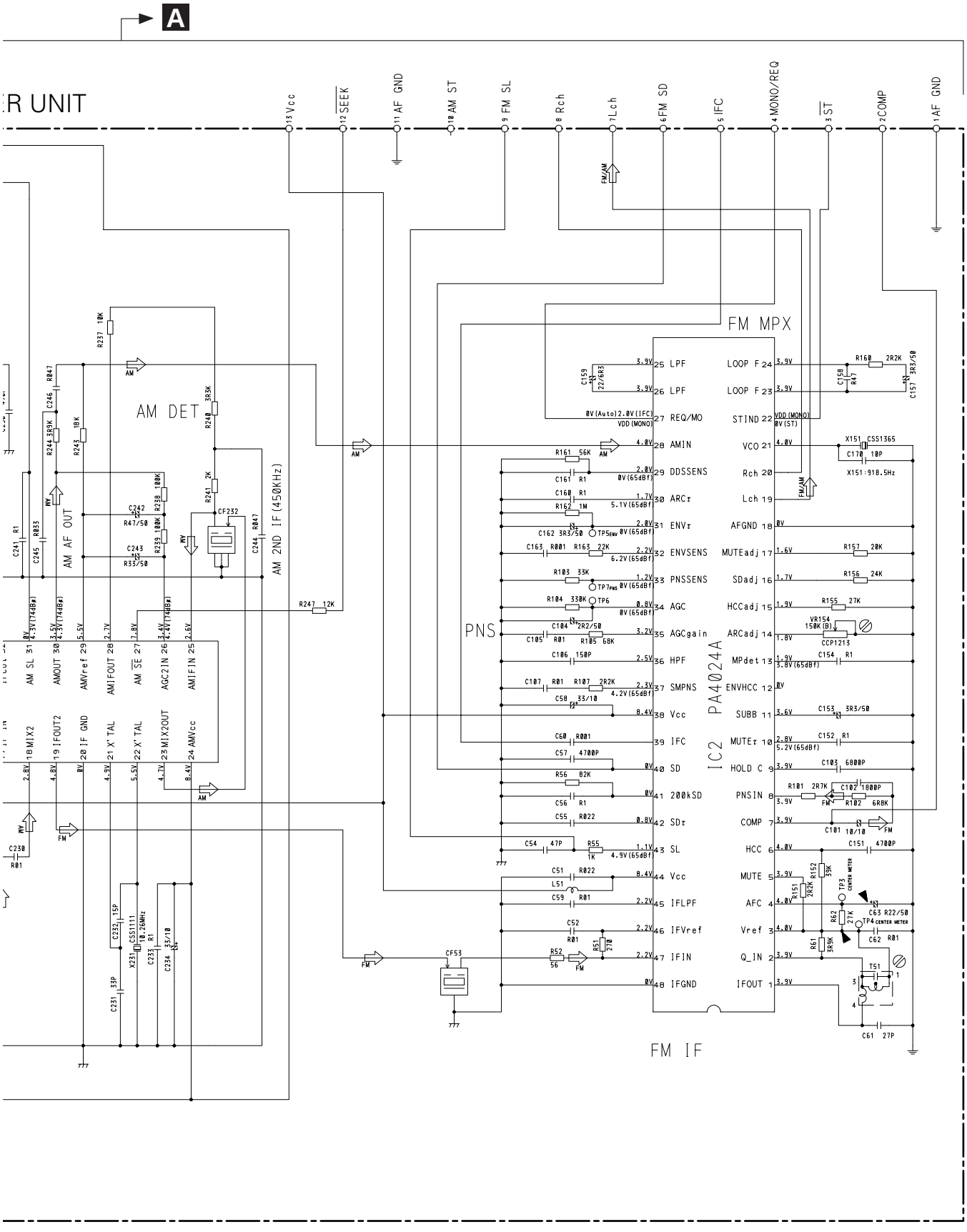
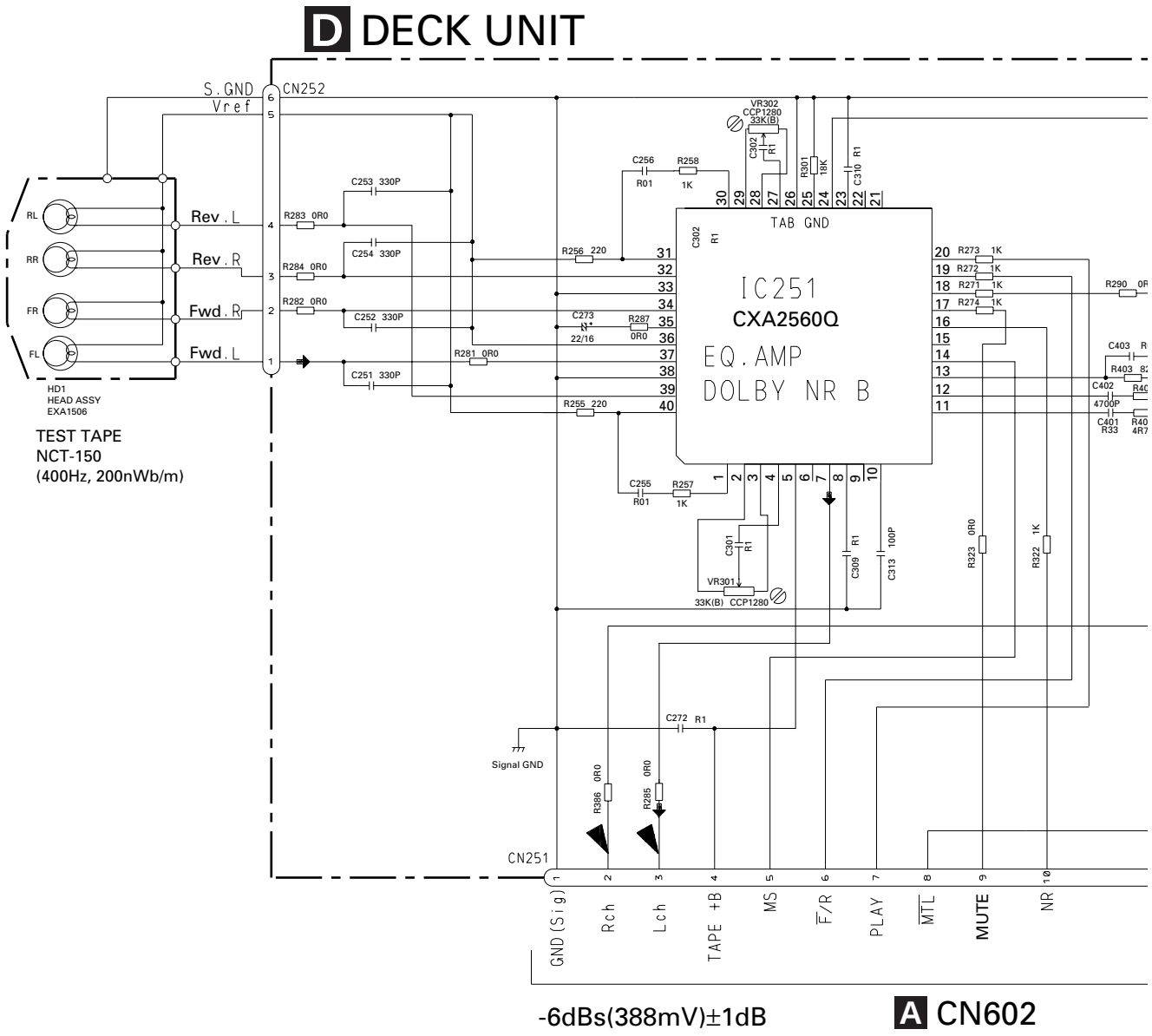
No differentiation is made between chip capacitors and discrete capacitors.
The Δmark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022
P780
ACC. BU. ILM SENSE
DFS ALARM
P780 :RELAY
P780 :STARTER
INVERTER
PML005A
PD4976A(P780)
PE5002A(P7800)

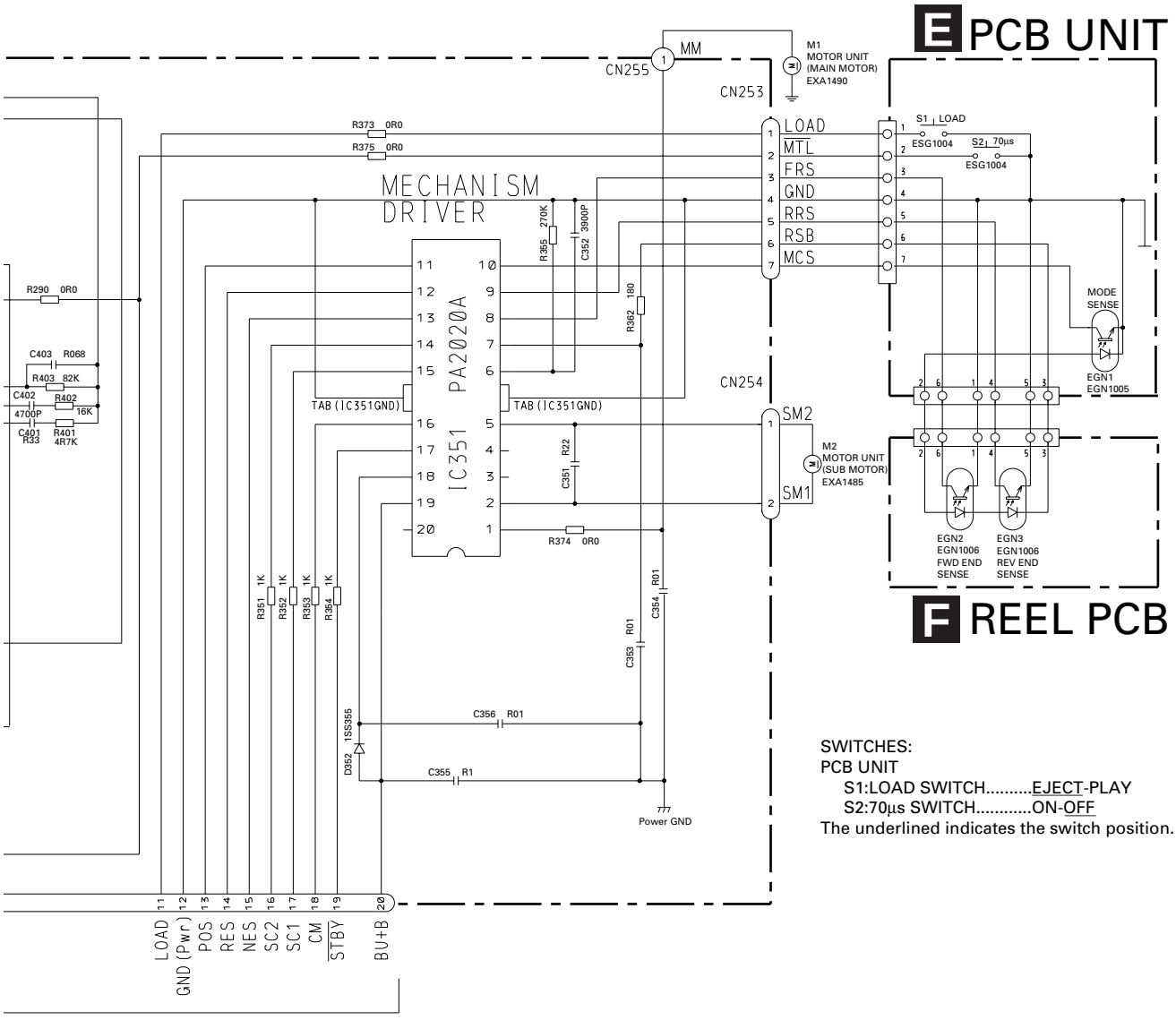
3.2 FM/AM TUNER UNIT




A
R UNIT
13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 IFC
4 MONO/REQ
3 ST
2 COMP
1 AF GND
FM MPX
AM DET
AM AF OUT
AM 2ND IF (450KHz)
PNS
IC2 PA4024A
FM IF
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCr
31 ENVr
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDr
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
24 LOOP F
23 LOOP F
22 STIND
21 VCO
20 Rch
19 Lch
18 AFGND
17 MUTEadj
16 SDadj
15 HCCadj
14 ARCadj
13 MPdet
12 ENVHCC
11 SUBB
10 MUTEr
9 HOLD C
8 PNSIN
7 COMP
6 HCC
5 MUTE
4 AFC
3 Vref
2 Q_IN
1 IFOUT
X151:918.5Hz
CF232
CF53
TP3 CENTER METER
TP4 CENTER METER
TP5ENV
TP7PNS
TP6
T51
L51

3.3 CASSETTE MECHANISM MODULE





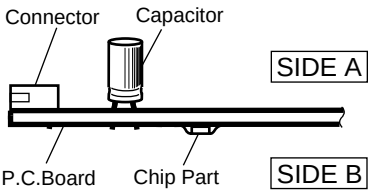
SWITCHES:
PCB UNIT
S1:LOAD SWITCH.....EJECT-PLAY
S2:70µs SWITCH.....ON-OFF
The underlined indicates the switch position.

4. PCB CONNECTION DIAGRAM

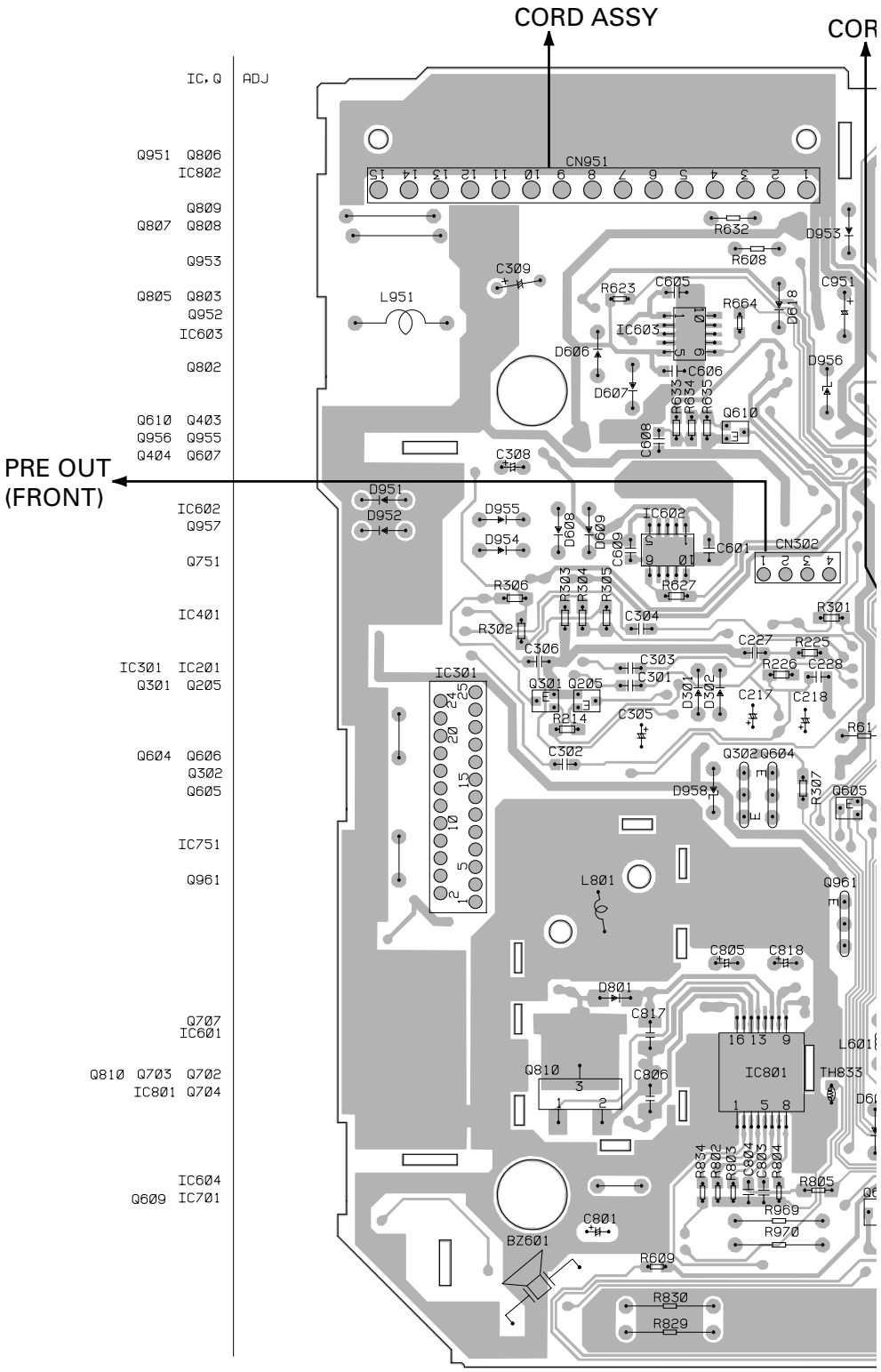
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

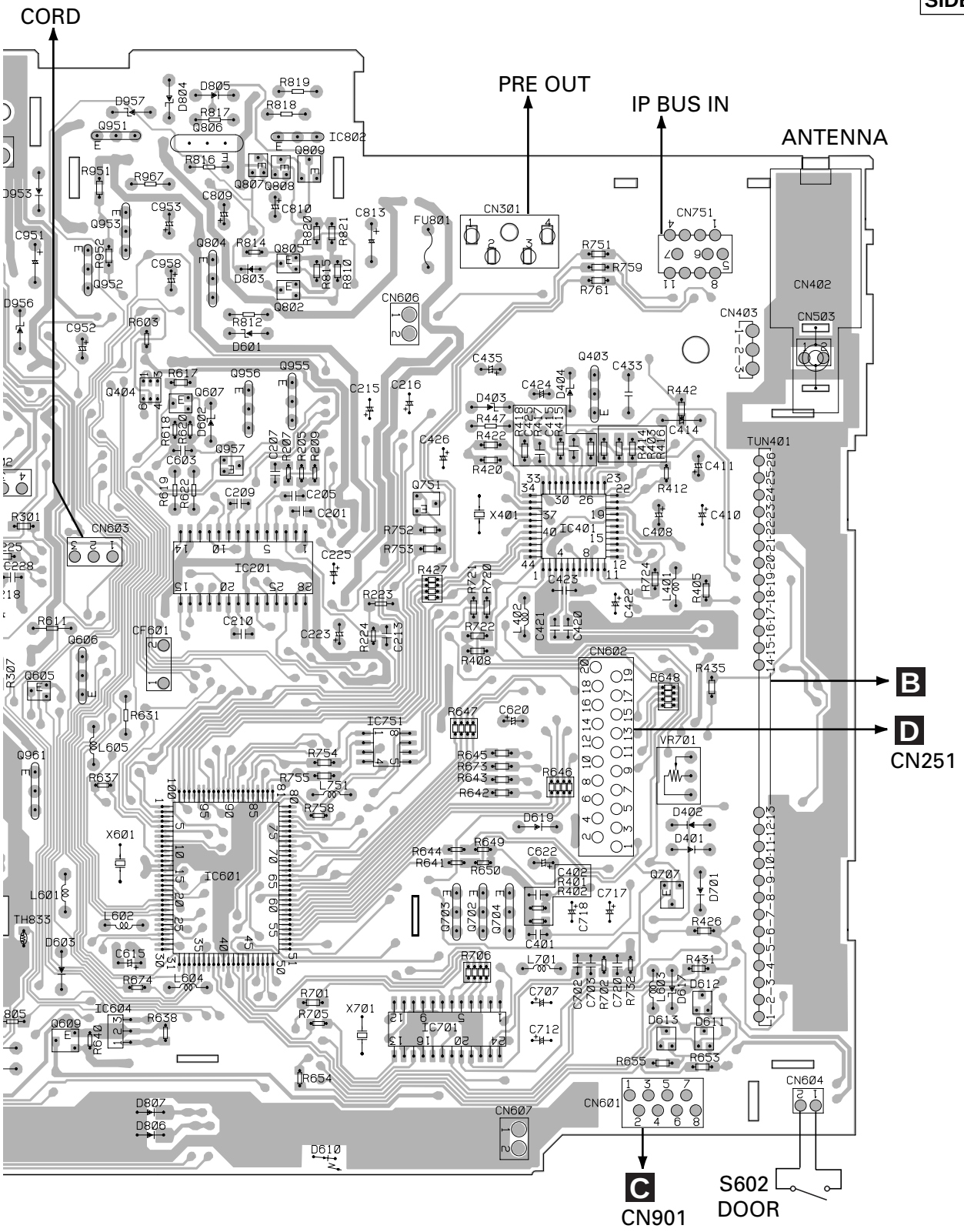
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



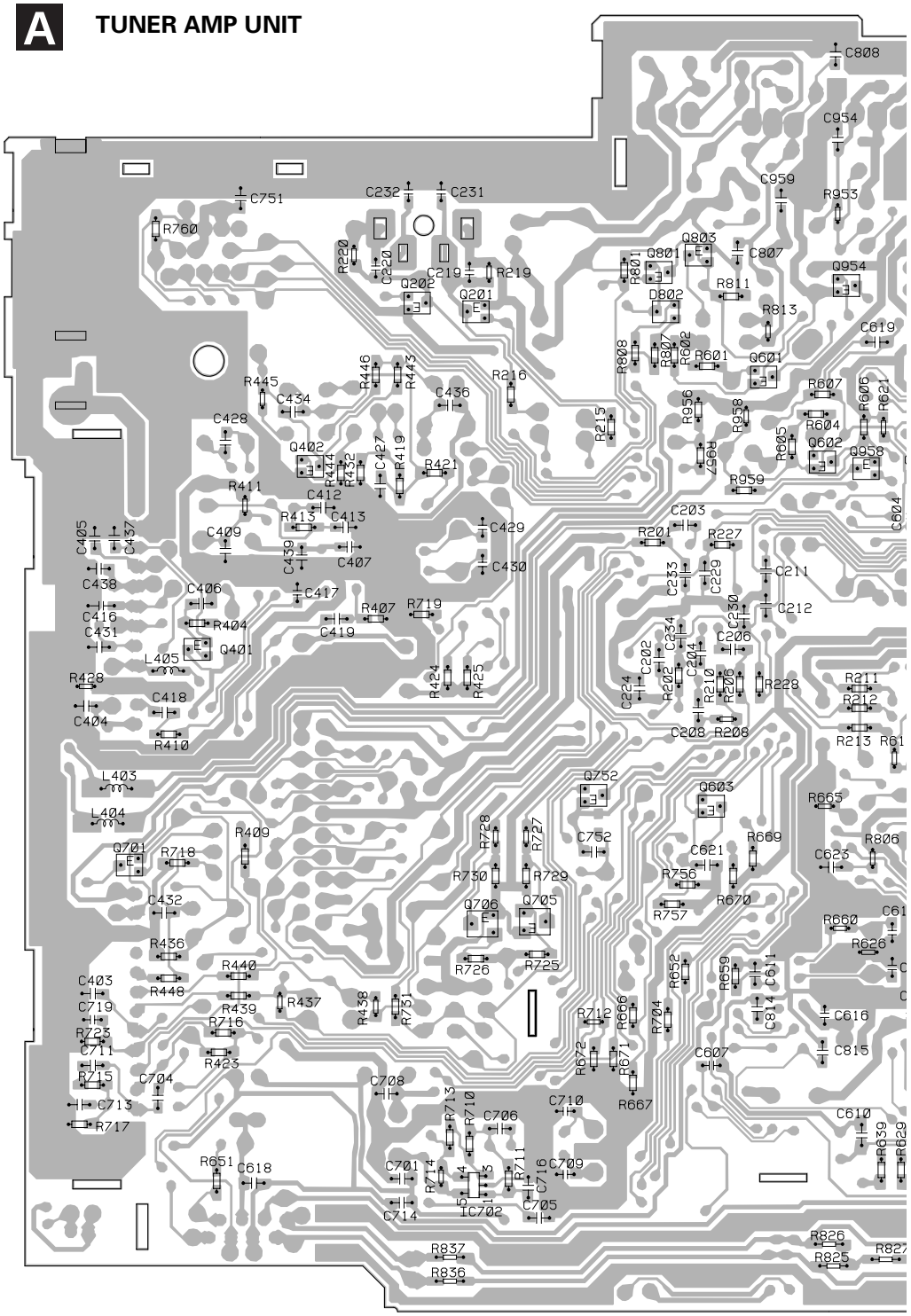
A TUNER AMP UNIT



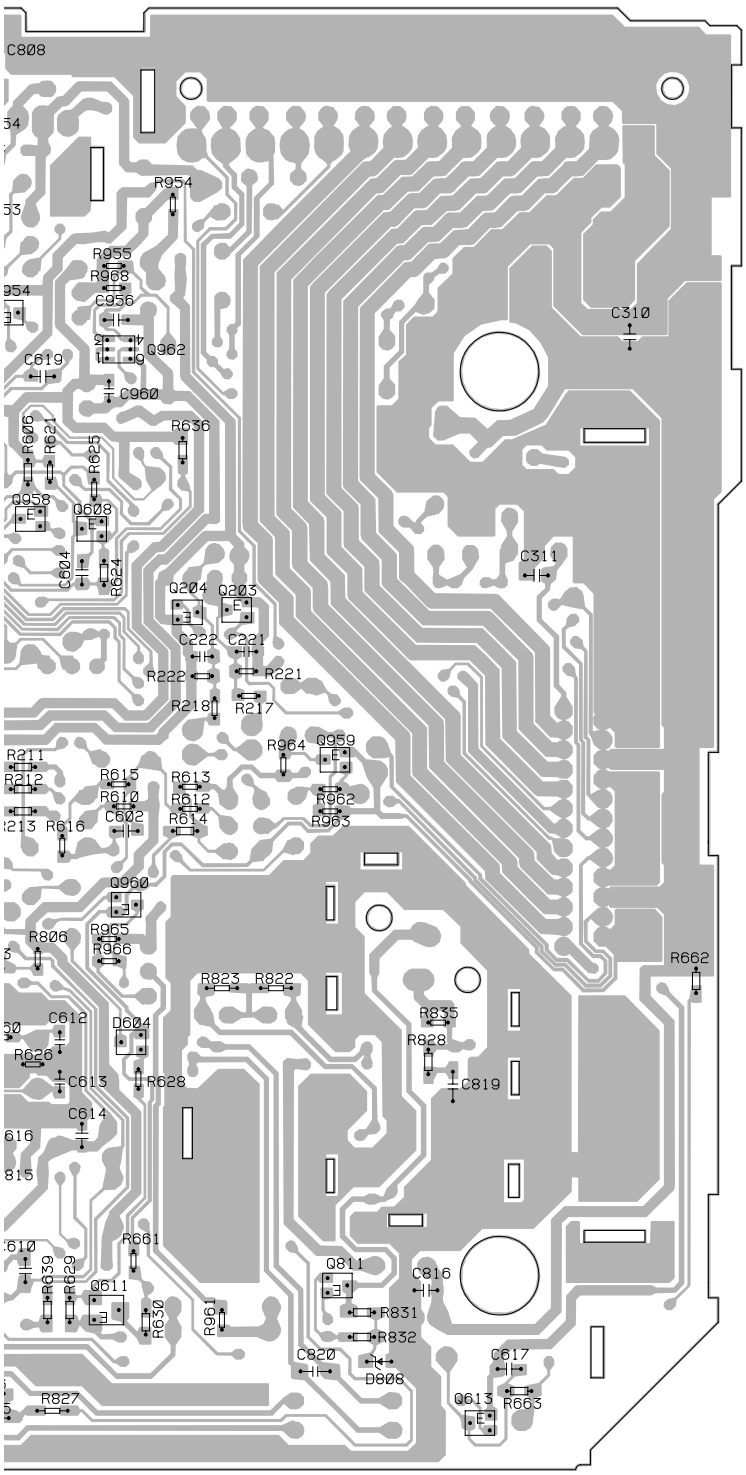
SIDE A


CORD
PRE OUT
IP BUS IN
ANTENNA
CN301
CN751
CN402
CN503
CN403
CN606
FU801
IC802
TUN401
CN603
IC201
IC401
X401
Q751
CN602
VR701
CN251
B
D
IC601
X601
IC751
IC604
X701
IC701
CN601
CN604
CN607
CN901
C
S602
DOOR

A TUNER AMP UNIT



SIDE B



IC, Q

Q804
Q801 Q954
Q202
Q201
Q962

Q601

Q602
Q402 Q958
Q608

Q204 Q203

Q401
Q959

Q752
Q603 Q960

Q701

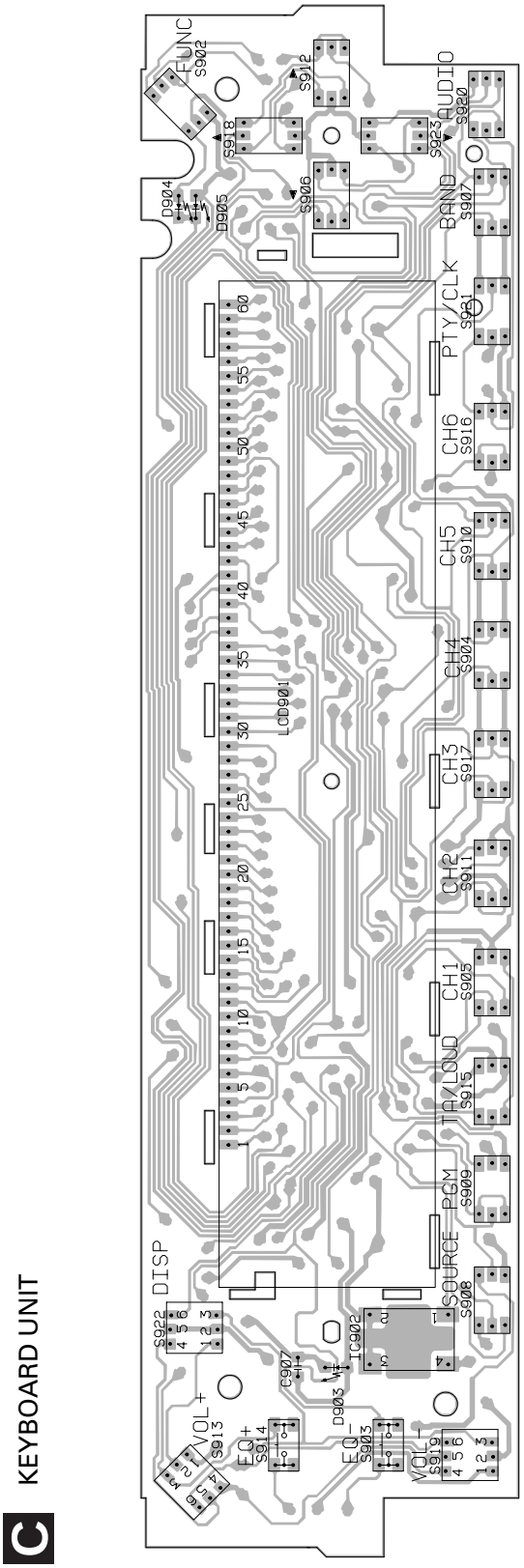
Q706 Q705

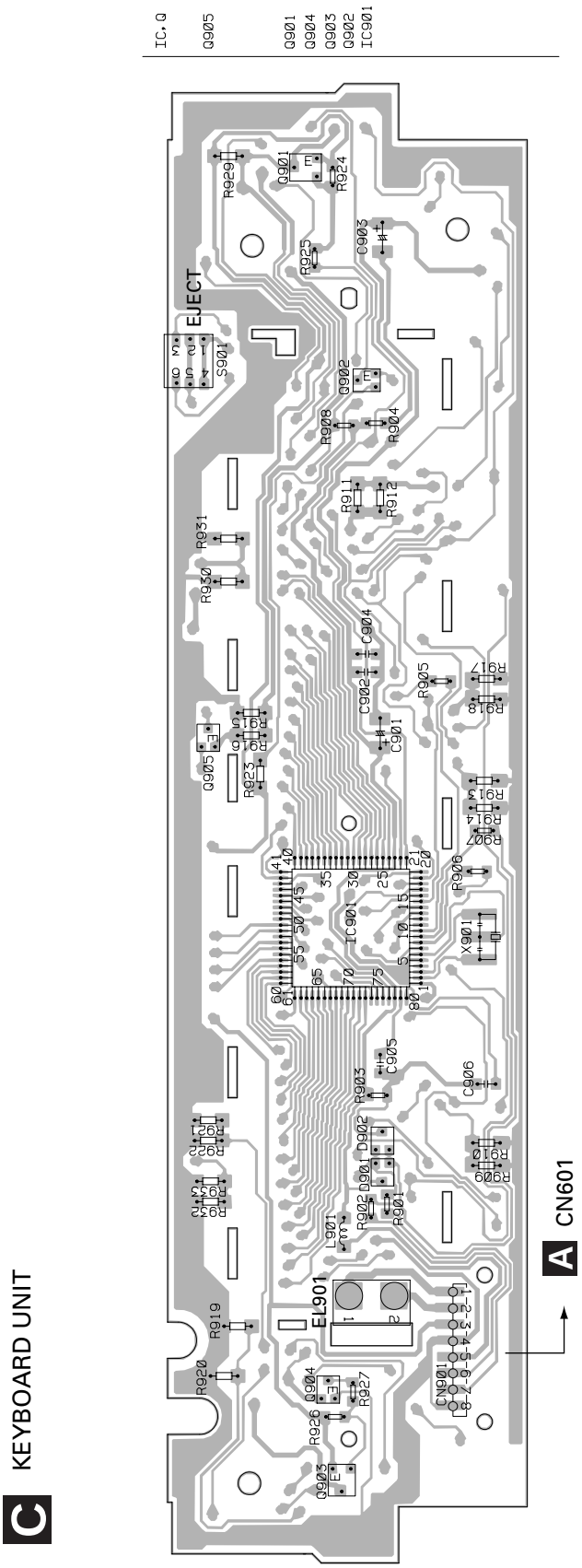
Q811
Q611

IC702

Q613

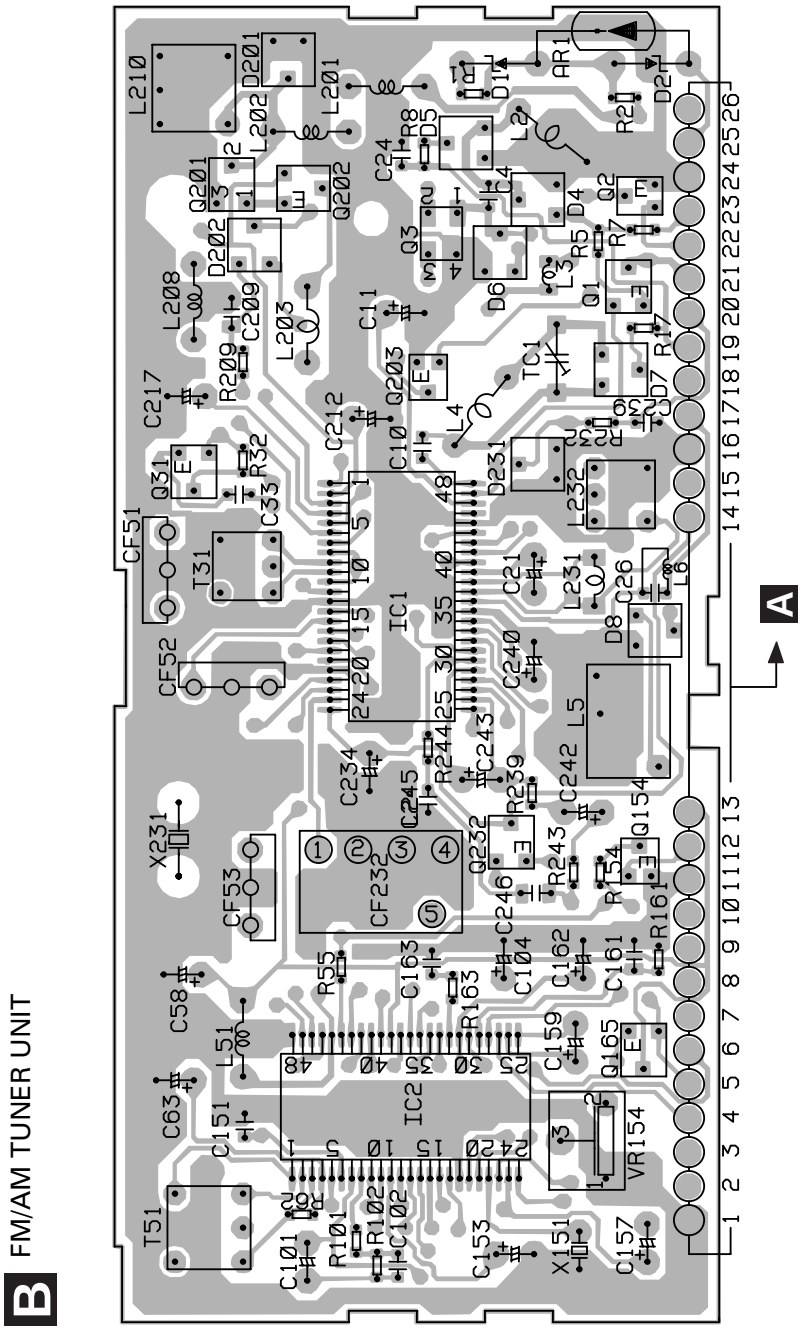
4.2 KEYBOARD UNIT



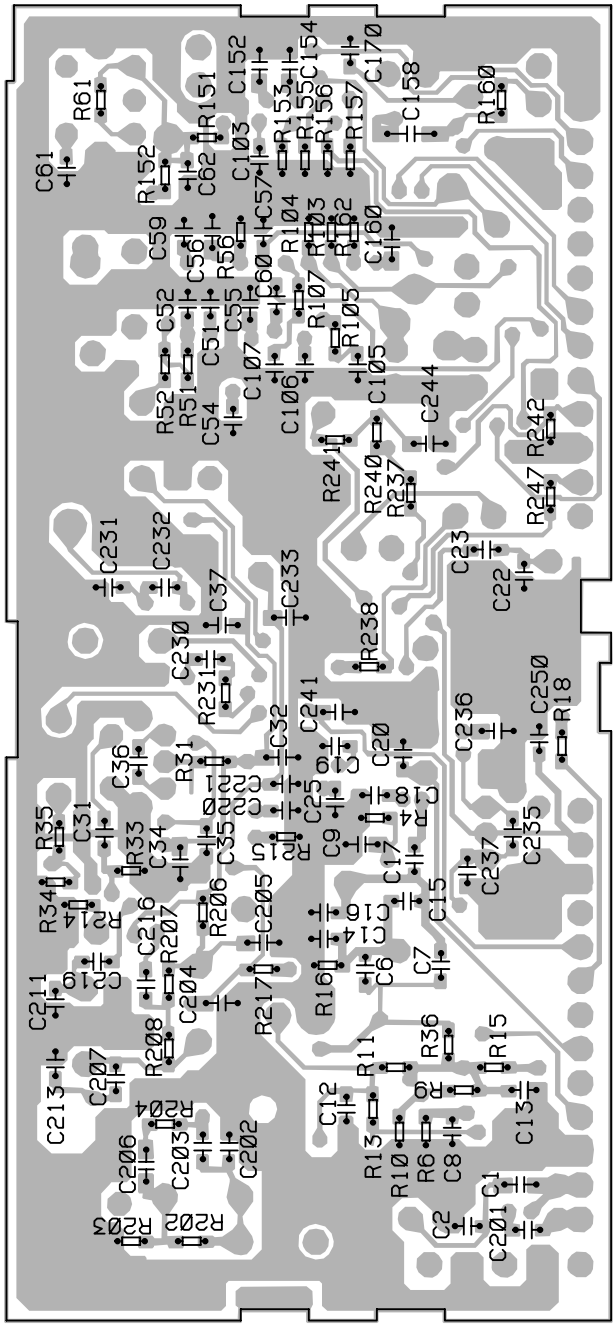

IC.Q
Q905
Q901
Q904
Q903
Q902
IC901
SIDE B
EJECT
S901
EL901
CN901
CN601
A
C
KEYBOARD UNIT

4.3 FM/AM TUNER UNIT

SIDE A



SIDE B

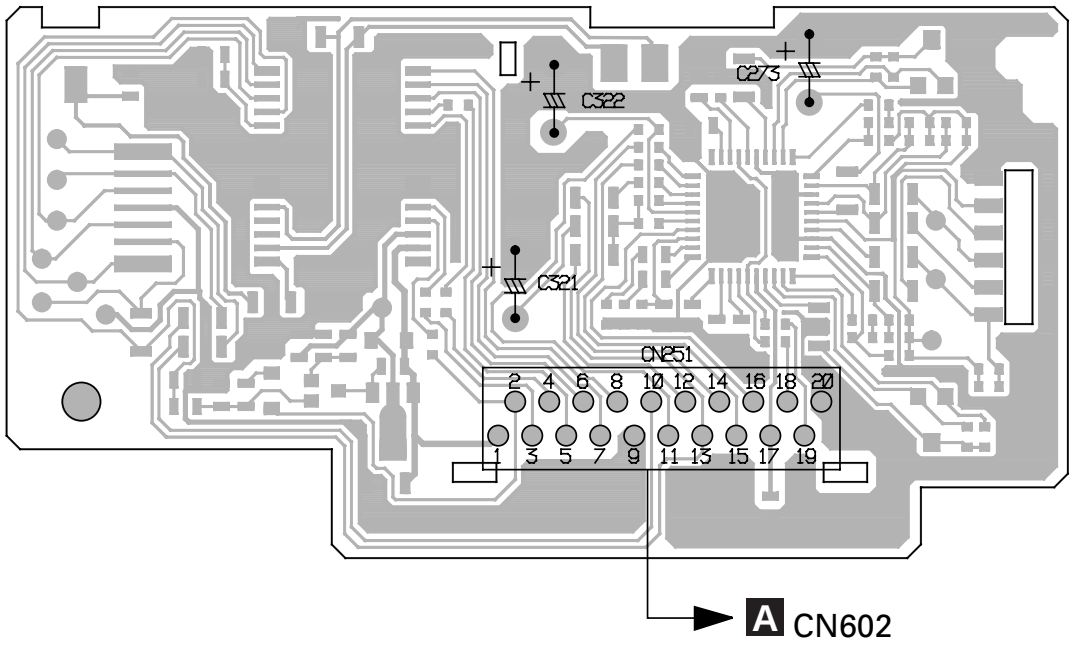


B FM/AM TUNER UNIT

4.4 CASSETTE MECHANISM MODULE

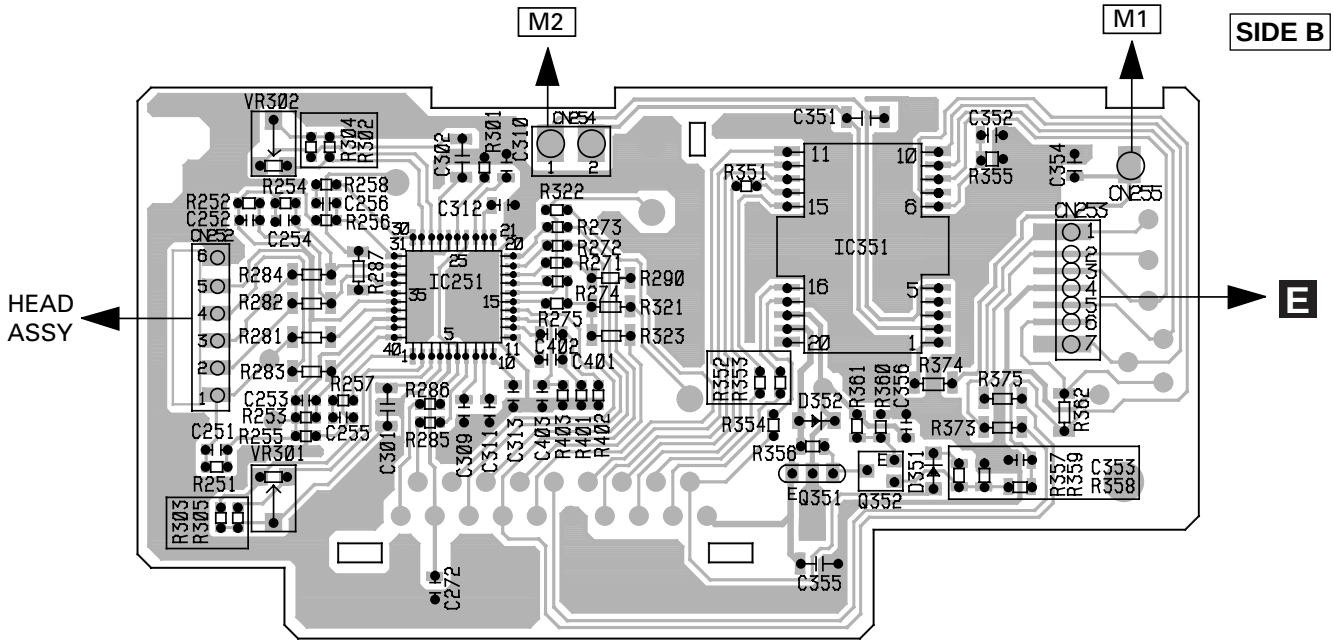
D DECK UNIT

SIDE A



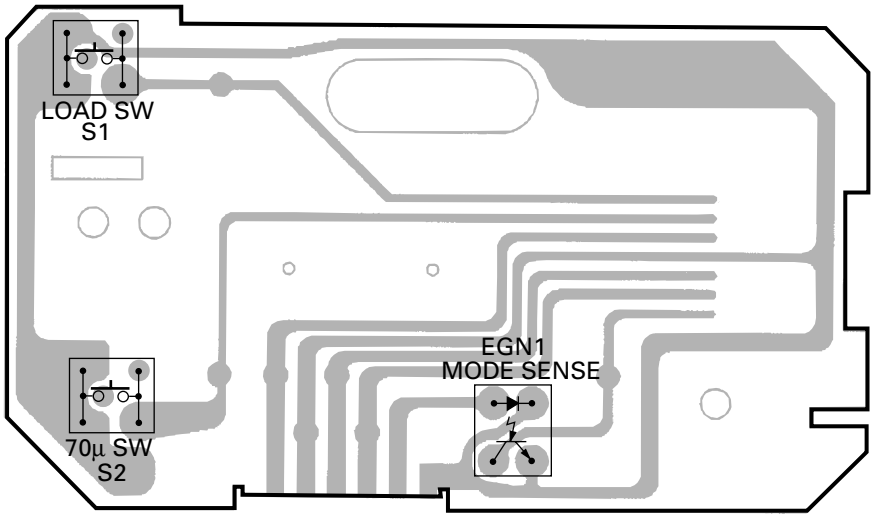
D DECK UNIT

SIDE B



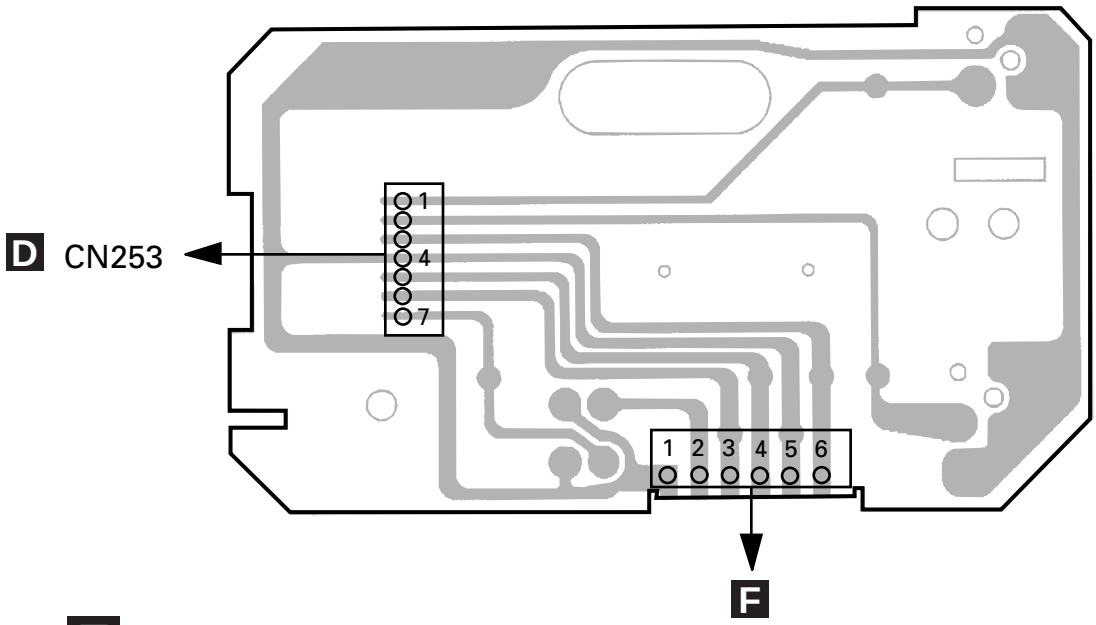
E PCB UNIT

SIDE A

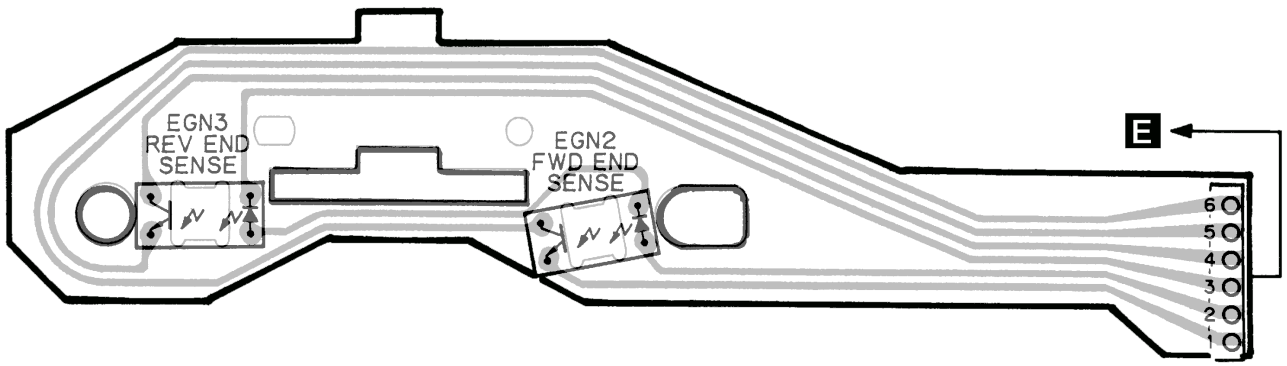


E PCB UNIT

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.....

B Unit Number : CWE1467
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412K
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412K
Q	201	FET	2SK932
Q	202	Transistor	2SC2412K
Q	203	Transistor	DTC124EU
D	1	Diode	RD39JS
D	2	Diode	RD39JS
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	6	Diode	MA157
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
D	201	Diode	MA157
D	202	Diode	MA157
D	231	Diode	SVC253
L	2	Coil	CTC1133
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1133
L	5	Coil	CTC1132
L	51	Ferri-Inductor	LAU150K
L	201	Ferri-Inductor	LAU4R7K
L	202	Ferri-Inductor	LAU330K
L	203	Inductor	CTF1287
L	208	Inductor	LAU121K
L	231	Inductor	LCTA3R3J3225
T	31	Coil	CTE1117
T	51	Coil	CTC1159
CF	51	Ceramic Filter	CTF1441
CF	52	Ceramic Filter	CTF1441
CF	53	Ceramic Filter	CTF1441
CF	232	Ceramic Filter	CTF1348
X	151	Radiator 918.5Hz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213

RESISTORS

=====Circuit Symbol and No.		===Part Name	Part No.
R	1		RS1/16S225J
R	2		RS1/16S225J
R	4		RS1/16S154J
R	5		RS1/16S391J
R	6		RS1/16S223J
R	7		RS1/16S123J
R	8		RS1/16S332J
R	9		RS1/16S473J
R	10		RS1/16S223J
R	11		RS1/16S124J
R	13		RS1/16S563J
R	15		RS1/16S271J
R	16		RS1/16S104J
R	17		RS1/16S332J
R	18		RS1/16S332J
R	31		RS1/16S470J
R	32		RS1/16S822J
R	33		RS1/16S822J
R	34		RS1/16S331J
R	35		RS1/16S331J
R	51		RS1/16S271J
R	52		RS1/16S560J
R	55		RS1/16S102J
R	56		RS1/16S823J
R	61		RS1/16S392J
R	62		RS1/16S273J
R	101		RS1/16S272J
R	102		RS1/16S682J
R	103		RS1/16S333J
R	104		RS1/16S334J
R	105		RS1/16S683J
R	107		RS1/16S222J
R	151		RS1/16S222J
R	152		RS1/16S393J
R	155		RS1/16S273J
R	156		RS1/16S243J
R	157		RS1/16S203J
R	160		RS1/16S222J
R	161		RS1/16S563J
R	162		RS1/16S105J
R	163		RS1/16S223J
R	202		RS1/16S223J
R	203		RS1/16S225J
R	204		RS1/16S103J
R	206		RS1/16S220J
R	207		RS1/16S101J
R	208		RS1/16S102J
R	209		RS1/16S471J
R	214		RS1/16S822J
R	215		RS1/16S822J
R	217		RS1/16S102J
R	231		RS1/16S272J
R	232		RS1/16S473J
R	237		RS1/16S103J
R	238		RS1/16S104J
R	239		RS1/16S104J
R	240		RS1/16S332J
R	241		RS1/16S202J
R	243		RS1/16S183J
R	244		RS1/16S392J
R	247		RS1/16S123J

=====Circuit Symbol and No.	===Part Name	Part No.
CAPACITORS		
C 1		CCSQCH6R0D50
C 2		CCSRCK2R0C50
C 4		CCSRCH820J50
C 6		CCSRCH820J50
C 8		CKSRYB103K25
C 9		CKSQYB104K16
C 10		CCSRCKR50C50
C 11		CEJA1R0M50
C 12		CKSRYB222K50
C 13		CKSRYB222K50
C 14		CCSRCH220J50
C 15		CCSRCH6R0D50
C 16		CCSRCH8R0D50
C 17		CKSRYB222K50
C 18		CKSRYB103K25
C 19		CKSRYB222K50
C 20		CKSRYB222K50
C 21		CEJA100M16
C 22		CCSRTH9R0D50
C 23		CCSRTH120J50
C 24		CCSRCH471J50
C 25		CKSRYB103K25
C 26		CCSRCH101J50
C 31		CKSRYB103K25
C 32		CKSQYB472K50
C 33		CCSRCH5R0C50
C 34		CKSQYB104K16
C 36		CCSRRH201J50
C 51		CKSRYB223K25
C 52		CKSRYB103K25
C 54		CCSRCH470J50
C 55		CKSQYB223K25
C 56		CKSQYB104K16
C 57		CKSRYB472K50
C 58		CEJA330M10
C 59		CKSRYB103K25
C 60		CKSRYB102K50
C 61		CCSRCH270J50
C 62		CKSRYB103K25
C 63		CEJAR22M50
C 101		CEJANP100M10
C 102		CKSRYB182K50
C 103		CKSRYB682K25
C 104		CEJA2R2M50
C 105		CKSRYB103K25
C 106		CCSRCH151J50
C 107		CKSRYB103K25
C 151		CKSRYB472K50
C 152		CKSQYB104K16
C 153		CEJA3R3M50
C 154		CKSQYB104K16
C 157		CEJA3R3M50
C 158		CKSYB474K16
C 159		CEJA220M6R3
C 160		CKSQYB104K16
C 161		CKSQYB104K16
C 162		CEJA3R3M50
C 163		CKSRYB102K50
C 170		CCSRCH100D50
C 201		CCSRCH471J50
C 202		CCSRCH100D50
C 203		CKSRYB332K50
C 204		CKSQYB473K16
C 205		CKSQYB473K16
C 206		CKSQYB104K16
C 207		CCSRCH560J50
C 209		CKSQYB104K16
C 211		CCSRCH101J50
C 212		CEJA470M6R3
C 213		CKSRYB103K25
C 216		CCSRCH101J50
C 217		CEJA1R5M50
C 219		CCSRCH471J50
C 220		CKSRYB103K25
C 230		CKSRYB103K25
C 231		CCSRCH330J50
C 232		CCSRCH150J50
C 233		CKSQYB104K16
C 234		CEJA330M10
C 235		CKSRYB332K50
C 236		CKSQYB473K16
C 237		CCSRCH120J50
C 239		CKSRYB472K50
C 240		CEJAR47M50
C 241		CKSQYB104K16
C 242		CEJAR47M50
C 243		CEJAR33M50
C 244		CKSQYB473K16
C 245		CKSRYB333K16
C 246		CKSQYB473K16
C 250		CCSRCH471J50

A Unit Number : CWM6143(KEH-P780)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 201	IC		PML003AM
IC 301	IC		PAL005A
IC 401	IC		PM2006A
IC 601	IC		PD4976A
IC 602	IC		TPD1018F
IC 603	IC		TPD1018F
IC 604	IC		S-80734ANDYI
IC 751	IC		HA12187FP
IC 801	IC		PML005A
Q 201	Transistor		DTC143TU
Q 202	Transistor		DTC143TU
Q 203	Transistor		DTC143TU
Q 204	Transistor		DTC143TU
Q 205	Transistor		DTA124EU
Q 301	Transistor		DTC124EU
Q 302	Transistor		2SC1740S
Q 401	Transistor		2SC4081
Q 404	Transistor		IMD2A
Q 601	Transistor		2SC4081
Q 602	Transistor		2SC4081
Q 603	Transistor		DTA114EU
Q 604	Transistor		2SA933S
Q 605	Transistor		DTC124EU
Q 606	Transistor		2SC1740S
Q 607	Transistor		2SC4081
Q 608	Transistor		2SC4081
Q 609	Transistor		2SA1037K
Q 610	Transistor		2SC4081
Q 613	Transistor		DTC124EU
Q 751	Transistor		2SA1037K
Q 752	Transistor		DTC114EU
Q 801	Transistor		2SC4081
Q 810	FET		2SK2356Z
Q 811	Transistor		2SC4081
Q 951	Transistor		2SD2396

Circuit Symbol and No.		Part Name	Part No.
Q	952	Transistor	2SD2037
Q	953	Transistor	2SA933S
Q	954	Transistor	DTC114EU
Q	955	Transistor	2SA1674
Q	956	Transistor	2SA1048
Q	957	Transistor	DTC114TU
Q	958	Transistor	DTC114TU
Q	959	Transistor	2SC4081
Q	960	Transistor	DTC114TU
Q	961	Transistor	2SB1243
Q	962	Transistor	IMD2A
D	301	Diode	1SS133
D	302	Diode	1SS133
D	401	Diode	1SS133
D	402	Diode	1SS133
D	601	Diode	HZS7L(C2)
D	602	Diode	HZS7L(A1)
D	603	Diode	1SS133
D	606	Diode	ERA15-02VH
D	607	Diode	ERA15-02VH
D	608	Diode	ERA15-02VH
D	609	Diode	ERA15-02VH
D	610	LED	BR4361F
D	611	Diode Array	DA204U
D	612	Diode Array	DA204U
D	613	Diode Array	DA204U
D	617	Diode	HZS7L(A1)
D	618	Diode	ERA15-02VH
D	619	Diode	1SS133
D	801	Diode	U1JU44
D	802	Diode	DAN202U
D	806	Diode	U1JU44
D	807	Diode	U1JU44
D	808	Diode	MA8075(M)
D	951	Diode	ERA15-02VH
D	952	Diode	ERA15-02VH
D	953	Diode	ERA15-02VH
D	954	Diode	ERA15-02VH
D	955	Diode	ERA15-02VH
D	956	Diode	HZS6L(B2)
D	957	Diode	HZS9L(B3)
D	958	Diode	HZS9L(A2)
L	401	Ferri-Inductor	LAU2R2K
L	402	Ferri-Inductor	LAU2R2K
L	403	Inductor	LCTA100J3225
L	404	Inductor	LCTA100J3225
L	405	Inductor	LCTBR39K2125
L	601	Ferri-Inductor	LAU2R2K
L	602	Ferri-Inductor	LAU101K
L	603	Ferri-Inductor	LAU2R2K
L	604	Ferri-Inductor	LAU2R2K
L	751	Ferri-Inductor	LAU2R2K
L	801	Coil	CTH1227
L	951	Choke Coil 600μH	CTH1171
TH	833	Thermistor	CCX1042
CF	601	Filter	CTF1071
X	401	Crystal Resonator 7.200MHz	CSS1379
X	601	Radiator 12.58291MHz	CSS1402
		FM/AM Tuner Unit	CWE1467
BZ	601	Buzzer	CPV1011

RESISTORS

R	201	RS1/10S102J
R	202	RS1/10S102J
R	205	RS1/10S821J
R	206	RS1/10S821J
R	207	RS1/10S102J
R	208	RS1/10S102J
R	209	RS1/10S223J
R	210	RS1/10S223J
R	211	RS1/10S0R0J
R	212	RS1/10S222J
R	213	RS1/10S222J
R	214	RS1/10S562J
R	215	RS1/10S821J
R	216	RS1/10S821J
R	217	RS1/10S821J
R	218	RS1/10S821J
R	219	RS1/10S473J
R	220	RS1/10S473J
R	221	RS1/10S473J
R	222	RS1/10S473J
R	223	RS1/8S103J
R	224	RS1/10S102J
R	225	RS1/10S0R0J
R	226	RS1/10S0R0J
R	227	RS1/10S0R0J
R	228	RS1/10S0R0J
R	301	RS1/10S103J
R	302	RS1/10S221J
R	303	RS1/10S153J
R	304	RS1/10S103J
R	305	RS1/10S152J
R	306	RS1/10S101J
R	307	RS1/10S223J
R	401	RS1/10S162J
R	402	RS1/10S162J
R	403	RS1/10S102J
R	404	RS1/10S222J
R	405	RS1/10S222J
R	407	RS1/10S0R0J
R	408	RS1/10S562J
R	409	RS1/10S222J
R	410	RS1/10S102J
R	411	RS1/10S472J
R	412	RS1/10S152J
R	413	RS1/10S472J
R	414	RS1/10S472J
R	416	RS1/10S182J
R	417	RS1/10S103J
R	418	RS1/10S152J
R	419	RS1/10S0R0J
R	420	RS1/10S392J
R	421	RS1/10S102J
R	422	RS1/10S392J
R	423	RS1/10S473J
R	424	RS1/10S473J
R	425	RS1/10S222J
R	426	RS1/10S473J
R	427	RA4C102J
R	428	RS1/10S0R0J
R	431	RS1/10S472J
R	435	RS1/10S103J
R	436	RS1/10S393J
R	437	RS1/10S0R0J
R	438	RS1/10S0R0J
R	439	RS1/10S0R0J
R	440	RS1/10S0R0J
R	448	RS1/10S102J
R	601	RS1/10S473J
R	602	RS1/10S473J
R	603	RS1/10S104J

Circuit Symbol and No.	Part Name	Part No.
R 604		RS1/10S223J
R 605		RS1/10S473J
R 606		RS1/10S473J
R 607		RS1/10S472J
R 608		RD1/4PU102J
R 609		RS1/10S751J
R 610		RS1/10S473J
R 611		RD1/4PU102J
R 612		RS1/10S103J
R 613		RS1/10S223J
R 614		RS1/10S223J
R 615		RS1/10S223J
R 616		RS1/10S272J
R 617		RS1/10S473J
R 618		RS1/10S223J
R 619		RD1/4PU102J
R 620		RS1/10S272J
R 621		RS1/10S473J
R 622		RD1/4PU102J
R 623		RS1/10S473J
R 624		RS1/10S124J
R 625		RS1/10S123J
R 627		RS1/10S103J
R 632		RD1/4PU102J
R 633		RS1/10S103J
R 634		RS1/10S103J
R 635		RS1/10S473J
R 636		RS1/10S473J
R 637		RS1/10S102J
R 638		RS1/10S822J
R 639		RS1/10S222J
R 640		RS1/10S223J
R 641		RS1/10S222J
R 642		RS1/10S103J
R 643		RS1/10S222J
R 644		RS1/10S222J
R 645		RS1/10S103J
R 646		RA4C222J
R 647		RA4C222J
R 648		RA4C473J
R 649		RS1/10S103J
R 650		RS1/10S392J
R 651		RS1/10S472J
R 652		RS1/10S472J
R 653		RS1/10S222J
R 654		RS1/10S222J
R 655		RS1/10S473J
R 659		RS1/10S473J
R 660		RS1/10S102J
R 662		RS1/10S152J
R 663		RS1/10S152J
R 664		RS1/10S103J
R 665		RS1/10S473J
R 666		RS1/10S104J
R 669		RS1/10S473J
R 670		RS1/10S473J
R 671		RS1/10S473J
R 672		RS1/10S473J
R 673		RS1/10S222J
R 674		RS1/10S222J
R 751		RS1/10S222J
R 752		RS1/10S223J
R 753		RS1/10S472J
R 754		RS1/10S102J
R 755		RS1/10S102J
R 756		RS1/10S473J
R 757		RS1/10S473J
R 758		RS1/10S102J
R 759		RS1/10S101J
R 760		RS1/10S620J

Circuit Symbol and No.	Part Name	Part No.
R 761		RS1/10S101J
R 801		RS1/10S103J
R 802		RS1/10S562J
R 803		RS1/10S123J
R 804		RS1/10S912J
R 805		RS1/8S472J
R 806		RS1/10S473J
R 807		RS1/10S224J
R 808		RS1/10S224J
R 810		RS1/10S204J
R 822		RS1/8S225J
R 823		RS1/8S225J
R 825		RS1/8S474J
R 826		RS1/8S474J
R 827		RS1/8S105J
R 829		RD1/2PM182J
R 830		RD1/2PM182J
R 831		RS1/10S152J
R 832		RS1/10S103J
R 834		RS1/10S103J
R 836		RS1/8S391J
R 837		RS1/8S391J
R 951		RS1/10S473J
R 952		RS1/10S102J
R 953		RS1/10S102J
R 954		RS1/10S101J
R 955		RS1/10S103J
R 956		RS1/10S473J
R 957		RS1/10S102J
R 958		RS1/10S473J
R 959		RS1/10S102J
R 961		RS1/10S1R0J
R 962		RS1/10S103J
R 963		RS1/10S223J
R 964		RS1/10S472J
R 965		RS1/10S473J
R 966		RS1/10S272J
R 967		RD1/4PU152J
R 968		RS1/10S152J
R 969		RD1/2PM390J
R 970		RD1/2PM390J
CAPACITORS		
C 201		CKSQYB224K16
C 202		CKSQYB224K16
C 203		CKSQYB224K16
C 204		CKSQYB224K16
C 205		CKSQYB105K16
C 206		CKSQYB105K16
C 207		CKSQYB105K16
C 208		CKSQYB105K16
C 209		CKSQYB105K16
C 210		CKSQYB105K16
C 211		CKSQYB153K50
C 212		CKSQYB153K50
C 213		CKSQYB473K25
C 215		CEJA2R2M50
C 216		CEJA2R2M50
C 217		CEJA2R2M50
C 218		CEJA2R2M50
C 219		CCSQSL221J50
C 220		CCSQSL221J50
C 221		CCSQSL221J50
C 222		CCSQSL221J50
C 223		CEJA470M10
C 224		CKSQYF104Z25
C 225		CEJA100M16
C 233		CKSQYB332K50

=====Circuit Symbol and No.		===Part Name	Part No.
C	234		CKSQYB332K50
C	301		CKSQYB224K16
C	302		CKSQYB224K16
C	303		CKSQYB224K16
C	304		CKSQYB224K16
C	305		CEJA100M16
C	306		CKSQYB105K16
C	308		CEJA330M10
C	309	4700μF/16V	CCH1188
C	310		CKSQYB104K25
C	311		CKSQYB103K50
C	401		CKSQYB473K25
C	402		CKSQYB473K25
C	403		CKSQYB223K50
C	404		CKSQYB273K50
C	406		CKSQYB223K50
C	407		CKSQYB102K50
C	408		CEJA220M16
C	409		CKSQYB103K50
C	410		CEJA220M6R3
C	411		CEJA220M10
C	412		CKSQYB103K50
C	413		CKSQYB103K50
C	415		CKSQYB103K50
C	416		CKLSR473K16
C	417		CCSQSL101J50
C	418		CKSQYB103K50
C	420		CKSQYB103K50
C	421		CKSQYB103K50
C	422		CEJA220M6R3
C	423		CKSYB473K25
C	424	4.7μF/16V	CCH1250
C	425		CKSQYB103K50
C	427		CKSQYB103K50
C	428		CKSQYB154K16
C	429		CCSQCH150J50
C	430		CCSQCH150J50
C	431		CKSQYB103K50
C	437		CCSQSL101J50
C	601		CKSQYB103K50
C	602		CKSQYB103K50
C	603		CKSQYB103K50
C	604		CKSQYB103K50
C	605		CKSQYB103K50
C	606		CKSQYB472K50
C	608		CKSQYF105Z25
C	609		CKSQYB472K50
C	610		CKSQYB225K10
C	611		CKSQYB104K25
C	612		CCSQCH200J50
C	613		CCSQCH200J50
C	614		CKSQYB103K50
C	615		CSZS4R7M16
C	616		CCSQSL101J50
C	617		CKSQYB103K50
C	619		CKSQYB102K50
C	620		CEJA100M16
C	621		CCSQSL101J50
C	622		CEJA220M10
C	623		CCSQSL101J50
C	751		CKSQYB104K25
C	752		CKSQYB102K50
C	801		CEJA100M16
C	803		CKSQYB222K50
C	805	2.2μF/250V	CCH1327
C	806		CCG1089
C	814		CCSQSL101J50
C	815		CCSQSL101J50
C	816		CKSQYB103K50
C	817		CCG1091

=====Circuit Symbol and No.		===Part Name	Part No.
C	818	2.2μF/250V	CCH1327
C	820		CCG1095
C	951	470μF/16V	CCH1183
C	952		CEJA470M10
C	953		CEJA101M10
C	954		CKSQYB103K50
C	956		CKSQYB103K50
C	958		CEJA101M10

A Unit Number : CWM6145(KEH-P7800)
nit Name : Tuner Amp Unit

MISCELLANEOUS

IC	201	IC	PML003AM
IC	301	IC	PAL005A
IC	401	IC	PM2006A
IC	601	IC	PE5002A
IC	604	IC	S-80734ANDYI
IC	751	IC	HA12187FP
IC	801	IC	PML005A
Q	201	Transistor	DTC143TU
Q	202	Transistor	DTC143TU
Q	203	Transistor	DTC143TU
Q	204	Transistor	DTC143TU
Q	205	Transistor	DTA124EU
Q	301	Transistor	DTC124EU
Q	302	Transistor	2SC1740S
Q	401	Transistor	2SC4081
Q	404	Transistor	IMD2A
Q	601	Transistor	2SC4081
Q	602	Transistor	2SC4081
Q	603	Transistor	DTA114EU
Q	609	Transistor	2SA1037K
Q	610	Transistor	2SC4081
Q	613	Transistor	DTC124EU
Q	751	Transistor	2SA1037K
Q	752	Transistor	DTC114EU
Q	801	Transistor	2SC4081
Q	810	FET	2SK2356Z
Q	811	Transistor	2SC4081
Q	951	Transistor	2SD2396
Q	952	Transistor	2SD2037
Q	953	Transistor	2SA933S
Q	954	Transistor	DTC114EU
Q	955	Transistor	2SA1674
Q	956	Transistor	2SA1048
Q	957	Transistor	DTC114TU
Q	958	Transistor	DTC114TU
Q	959	Transistor	2SC4081
Q	960	Transistor	DTC114TU
Q	961	Transistor	2SB1243
Q	962	Transistor	IMD2A
D	301	Diode	1SS133
D	302	Diode	1SS133
D	401	Diode	1SS133
D	402	Diode	1SS133
D	601	Diode	HZS7L(C2)
D	602	Diode	HZS7L(A1)
D	603	Diode	1SS133
D	611	Diode Array	DA204U
D	612	Diode Array	DA204U
D	613	Diode Array	DA204U
D	617	Diode	HZS7L(A1)
D	618	Diode	ERA15-02VH
D	619	Diode	1SS133
D	801	Diode	U1JU44
D	802	Diode	DAN202U
D	806	Diode	U1JU44

Circuit Symbol and No.		Part Name	Part No.
D	807	Diode	U1JU44
D	808	Diode	MA8075(M)
D	951	Diode	ERA15-02VH
D	952	Diode	ERA15-02VH
D	953	Diode	ERA15-02VH
D	954	Diode	ERA15-02VH
D	955	Diode	ERA15-02VH
D	956	Diode	HZS6L(B2)
D	957	Diode	HZS9L(B3)
D	958	Diode	HZS9L(A2)
L	401	Ferri-Inductor	LAU2R2K
L	402	Ferri-Inductor	LAU2R2K
L	403	Inductor	LCTA100J3225
L	404	Inductor	LCTA100J3225
L	405	Inductor	LCTBR39K2125
L	601	Ferri-Inductor	LAU2R2K
L	602	Ferri-Inductor	LAU101K
L	603	Ferri-Inductor	LAU2R2K
L	604	Ferri-Inductor	LAU2R2K
L	751	Ferri-Inductor	LAU2R2K
L	801	Coil	CTH1227
L	951	Choke Coil 600μH	CTH1171
TH	833	Thermistor	CCX1042
CF	601	Filter	CTF1071
X	401	Crystal Resonator 7.200MHz	CSS1379
X	601	Radiator 12.58291MHz	CSS1402
		FM/AM Tuner Unit	CWE1467
BZ	601	Buzzer	CPV1011

RESISTORS

Circuit Symbol and No.		Part No.
R	201	RS1/10S102J
R	202	RS1/10S102J
R	205	RS1/10S821J
R	206	RS1/10S821J
R	207	RS1/10S102J
R	208	RS1/10S102J
R	209	RS1/10S223J
R	210	RS1/10S223J
R	211	RS1/10S0R0J
R	212	RS1/10S222J
R	213	RS1/10S222J
R	214	RS1/10S562J
R	215	RS1/10S821J
R	216	RS1/10S821J
R	217	RS1/10S821J
R	218	RS1/10S821J
R	219	RS1/10S473J
R	220	RS1/10S473J
R	221	RS1/10S473J
R	222	RS1/10S473J
R	225	RS1/10S0R0J
R	226	RS1/10S0R0J
R	227	RS1/10S0R0J
R	228	RS1/10S0R0J
R	301	RS1/10S103J
R	302	RS1/10S221J
R	303	RS1/10S153J
R	304	RS1/10S103J
R	305	RS1/10S152J
R	306	RS1/10S101J
R	307	RS1/10S223J
R	401	RS1/10S162J
R	402	RS1/10S162J
R	403	RS1/10S102J
R	404	RS1/10S222J
R	405	RS1/10S222J
R	407	RS1/10S0R0J
R	408	RS1/10S562J
R	409	RS1/10S222J
R	410	RS1/10S102J
R	411	RS1/10S472J
R	412	RS1/10S152J
R	413	RS1/10S472J
R	414	RS1/10S472J
R	416	RS1/10S182J
R	417	RS1/10S103J
R	418	RS1/10S152J
R	419	RS1/10S0R0J
R	420	RS1/10S392J
R	421	RS1/10S102J
R	422	RS1/10S392J
R	423	RS1/10S473J
R	424	RS1/10S473J
R	425	RS1/10S222J
R	426	RS1/10S473J
R	427	RA4C102J
R	428	RS1/10S0R0J
R	431	RS1/10S472J
R	435	RS1/10S103J
R	436	RS1/10S393J
R	437	RS1/10S0R0J
R	438	RS1/10S0R0J
R	439	RS1/10S0R0J
R	440	RS1/10S0R0J
R	448	RS1/10S102J
R	601	RS1/10S473J
R	602	RS1/10S473J
R	603	RS1/10S104J
R	604	RS1/10S223J
R	605	RS1/10S473J
R	606	RS1/10S473J
R	607	RS1/10S472J
R	608	RD1/4PU102J
R	610	RS1/10S473J
R	632	RD1/4PU102J
R	633	RS1/10S103J
R	634	RS1/10S103J
R	635	RS1/10S473J
R	636	RS1/10S473J
R	637	RS1/10S102J
R	638	RS1/10S822J
R	639	RS1/10S222J
R	640	RS1/10S223J
R	641	RS1/10S222J
R	642	RS1/10S103J
R	643	RS1/10S222J
R	644	RS1/10S222J
R	645	RS1/10S103J
R	646	RA4C222J
R	647	RA4C222J
R	648	RA4C473J
R	649	RS1/10S103J
R	650	RS1/10S392J
R	651	RS1/10S472J
R	652	RS1/10S472J
R	653	RS1/10S222J
R	654	RS1/10S222J
R	655	RS1/10S473J
R	659	RS1/10S473J
R	660	RS1/10S102J
R	661	RS1/10S473J
R	662	RS1/10S152J
R	663	RS1/10S152J
R	665	RS1/10S473J
R	666	RS1/10S104J
R	669	RS1/10S473J
R	670	RS1/10S473J
R	671	RS1/10S473J
R	672	RS1/10S473J
R	673	RS1/10S222J

=====Circuit Symbol and No.		===Part Name	Part No.
R	674		RS1/10S222J
R	751		RS1/10S222J
R	752		RS1/10S223J
R	753		RS1/10S472J
R	754		RS1/10S102J
R	755		RS1/10S102J
R	756		RS1/10S473J
R	757		RS1/10S473J
R	758		RS1/10S102J
R	759		RS1/10S101J
R	760		RS1/10S620J
R	761		RS1/10S101J
R	801		RS1/10S103J
R	802		RS1/10S562J
R	803		RS1/10S123J
R	804		RS1/10S912J
R	805		RS1/8S472J
R	806		RS1/10S473J
R	807		RS1/10S224J
R	808		RS1/10S224J
R	810		RS1/10S204J
R	822		RS1/8S225J
R	823		RS1/8S225J
R	825		RS1/8S474J
R	826		RS1/8S474J
R	827		RS1/8S105J
R	829		RD1/2PM182J
R	830		RD1/2PM182J
R	831		RS1/10S152J
R	832		RS1/10S103J
R	834		RS1/10S103J
R	836		RS1/8S391J
R	837		RS1/8S391J
R	951		RS1/10S473J
R	952		RS1/10S102J
R	953		RS1/10S102J
R	954		RS1/10S101J
R	955		RS1/10S103J
R	956		RS1/10S473J
R	957		RS1/10S102J
R	958		RS1/10S473J
R	959		RS1/10S102J
R	961		RS1/10S1R0J
R	962		RS1/10S103J
R	963		RS1/10S223J
R	964		RS1/10S472J
R	965		RS1/10S473J
R	966		RS1/10S272J
R	967		RD1/4PU152J
R	968		RS1/10S152J
R	969		RD1/2PM390J
R	970		RD1/2PM390J

CAPACITORS

C	201		CKSQYB224K16
C	202		CKSQYB224K16
C	203		CKSQYB224K16
C	204		CKSQYB224K16
C	205		CKSQYB105K16
C	206		CKSQYB105K16
C	207		CKSQYB105K16
C	208		CKSQYB105K16
C	209		CKSQYB105K16
C	210		CKSQYB105K16
C	211		CKSQYB153K50
C	212		CKSQYB153K50
C	215		CEJA2R2M50
C	216		CEJA2R2M50
C	217		CEJA2R2M50
C	218		CEJA2R2M50
C	219		CCSQSL221J50
C	220		CCSQSL221J50
C	221		CCSQSL221J50
C	222		CCSQSL221J50
C	223		CEJA470M10
C	224		CKSQYF104Z25
C	225		CEJA100M16
C	233		CKSQYB332K50
C	234		CKSQYB332K50
C	301		CKSQYB224K16
C	302		CKSQYB224K16
C	303		CKSQYB224K16
C	304		CKSQYB224K16
C	305		CEJA100M16
C	306		CKSQYB105K16
C	308		CEJA330M10
C	309	4700μF/16V	CCH1188
C	310		CKSQYB104K25
C	311		CKSQYB103K50
C	401		CKSQYB473K25
C	402		CKSQYB473K25
C	403		CKSQYB223K50
C	404		CKSQYB273K50
C	406		CKSQYB223K50
C	407		CKSQYB102K50
C	408		CEJA220M16
C	409		CKSQYB103K50
C	410		CEJA220M6R3
C	411		CEJA220M10
C	412		CKSQYB103K50
C	413		CKSQYB103K50
C	415		CKSQYB103K50
C	416		CKLSR473K16
C	417		CCSQSL101J50
C	418		CKSQYB103K50
C	420		CKSQYB103K50
C	421		CKSQYB103K50
C	422		CEJA220M6R3
C	423		CKSYB473K25
C	424	4.7μF/16V	CCH1250
C	425		CKSQYB103K50
C	427		CKSQYB103K50
C	428		CKSQYB154K16
C	429		CCSQCH150J50
C	430		CCSQCH150J50
C	431		CKSQYB103K50
C	437		CCSQSL101J50
C	608		CKSQYF105Z25
C	610		CKSQYB225K10
C	611		CKSQYB104K25
C	612		CCSQCH200J50
C	613		CCSQCH200J50
C	614		CKSQYB103K50
C	615		CSZS4R7M16
C	616		CCSQSL101J50
C	617		CKSQYB103K50
C	619		CKSQYB102K50
C	620		CEJA100M16
C	621		CCSQSL101J50
C	622		CEJA220M10
C	623		CCSQSL101J50
C	751		CKSQYB104K25
C	752		CKSQYB102K50
C	801		CEJA100M16
C	803		CKSQYB222K50
C	805	2.2μF/250V	CCH1327
C	806		CCG1089
C	814		CCSQSL101J50
C	815		CCSQSL101J50

=====Circuit Symbol and No.		===Part Name	Part No.
C	816		CKSQYB103K50
C	817		CCG1091
C	818	2.2μF/250V	CCH1327
C	820		CCG1095
C	951	470μF/16V	CCH1183
C	952		CEJA470M10
C	953		CEJA101M10
C	954		CKSQYB103K50
C	956		CKSQYB103K50
C	958		CEJA101M10

C Unit Number : CWM6061
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	PD6294A
IC	902		RS-140
D	901	Diode	DAN202U
D	902	Diode	DAP202U
D	903	LED	CL170UBX
D	904	LED	CL170PGCD
L	901	Inductor	LCTA101J3225
X	901	Ceramic Resonator 4.97MHz	CSS1422
S	901	Switch	CSG1107
S	902	Switch	CSG1112
S	903	Switch	CSG1111
S	904	Switch	CSG1112
S	905	Switch	CSG1112
S	906	Switch	CSG1112
S	907	Switch	CSG1112
S	908	Switch	CSG1112
S	909	Switch	CSG1112
S	910	Switch	CSG1112
S	911	Switch	CSG1112
S	912	Switch	CSG1112
S	913	Switch	CSG1107
S	914	Switch	CSG1111
S	915	Switch	CSG1112
S	916	Switch	CSG1112
S	917	Switch	CSG1112
S	918	Switch	CSG1112
S	919	Switch	CSG1107
S	920	Switch	CSG1112
S	921	Switch	CSG1112
S	922	Switch	CSG1107
S	923	Switch	CSG1112
LCD	901	LCD	CAW1502
EL	901	EL	CEL1587

RESISTORS

R	901		RS1/10S222J
R	902		RS1/10S222J
R	903		RS1/10S472J
R	904		RS1/10S121J
R	905		RS1/10S2R2J
R	906		RS1/10S470J
R	907		RS1/10S470J
R	909		RS1/8S561J
R	910		RS1/8S561J
R	911		RS1/8S561J
R	912		RS1/8S561J
R	913		RS1/8S561J
R	914		RS1/8S561J
R	915		RS1/8S751J
R	916		RS1/8S751J
R	917		RS1/8S561J
R	918		RS1/8S561J
R	919		RS1/8S561J
R	920		RS1/8S561J
R	921		RS1/8S561J

=====Circuit Symbol and No.		===Part Name	Part No.
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

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

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

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

CAPACITORS

C	251		CKSRYB331K50
C	252		CKSRYB331K50
C	253		CKSRYB331K50
C	254		CKSRYB331K50
C	255		CKSRYB103K25

=====Circuit Symbol and No.		===Part Name	Part No.
C	256		CKSRYB103K25
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
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

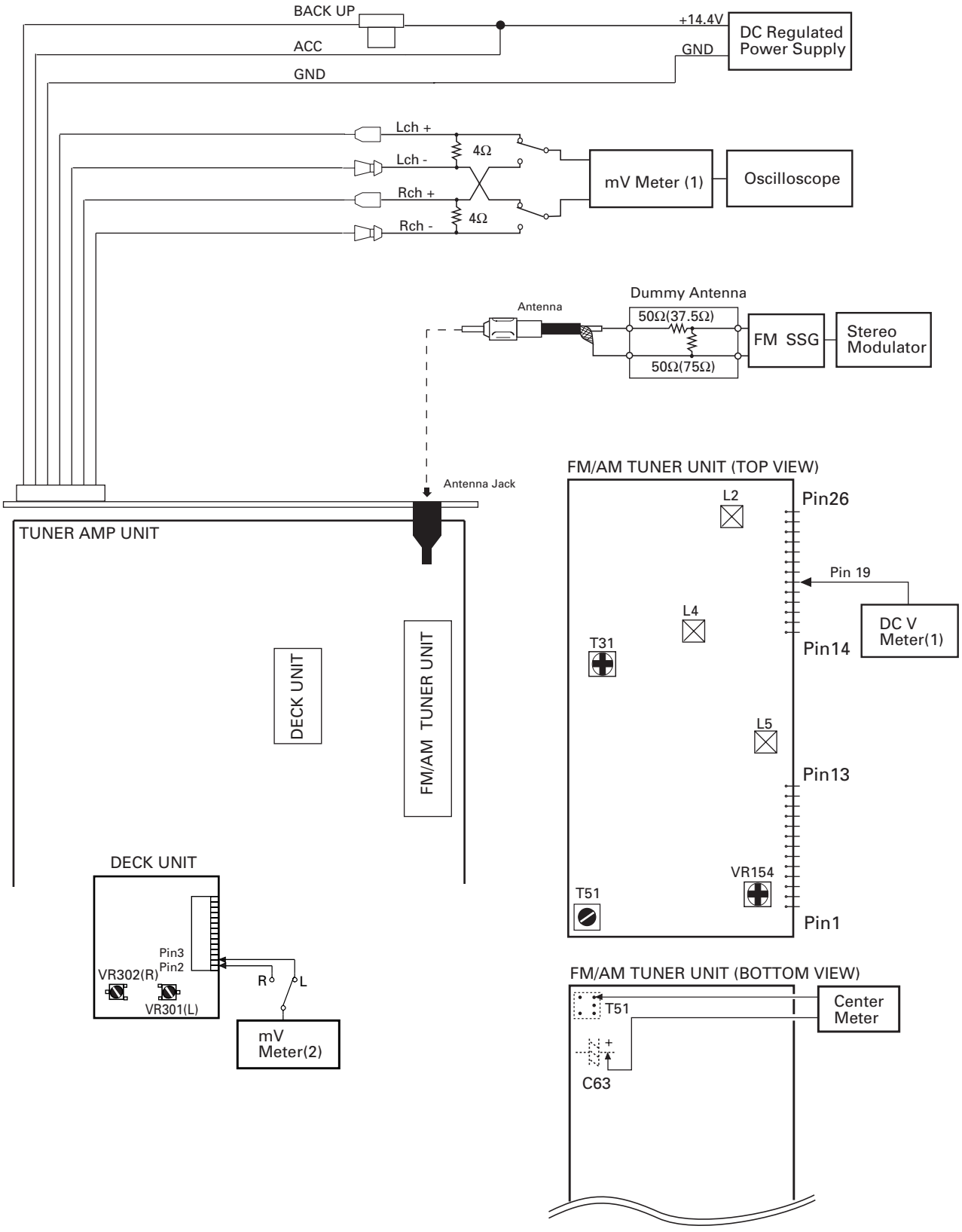
EGN	2	Photo-Interrupter	EGN1006
EGN	3	Photo-Interrupter	EGN1006

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	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	107.9	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

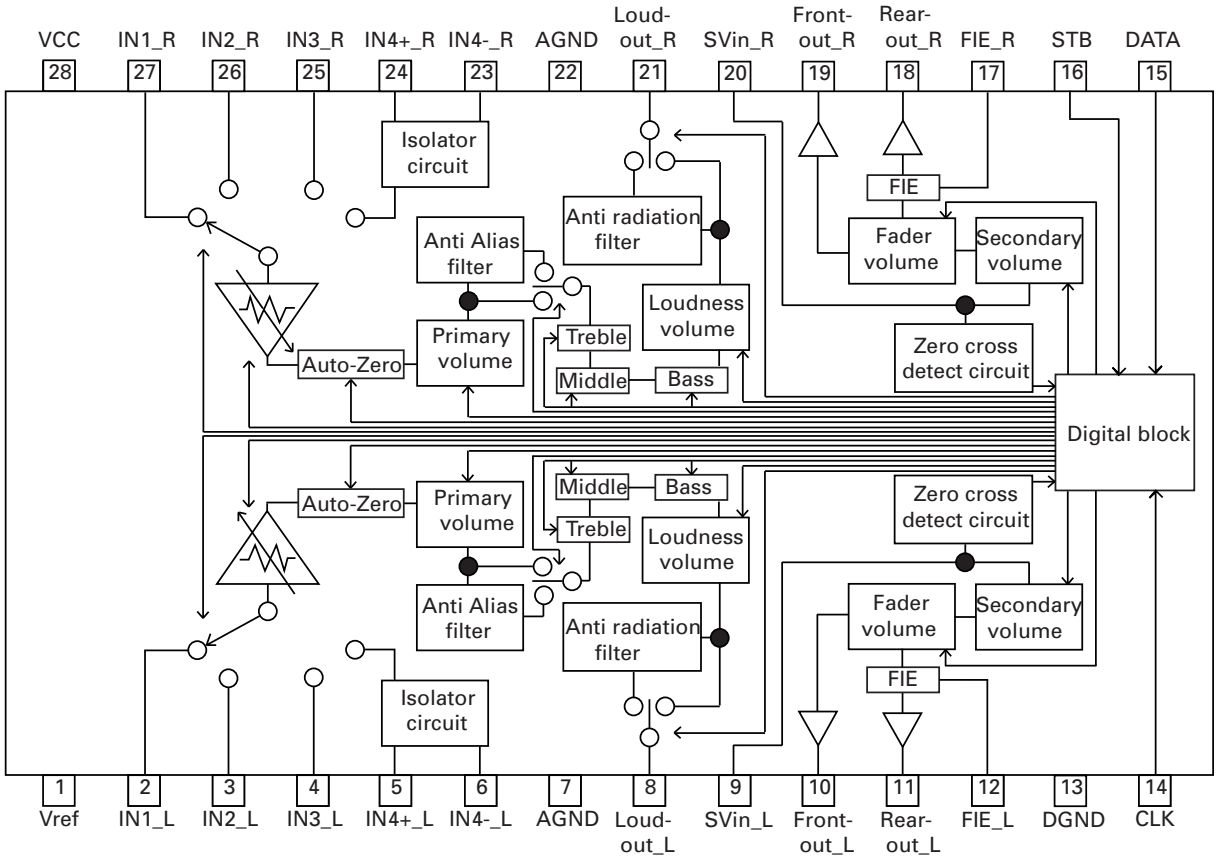
No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : –6dBs±1.0dB (DOLBY NR Switch : OFF)

7. GENERAL INFORMATION

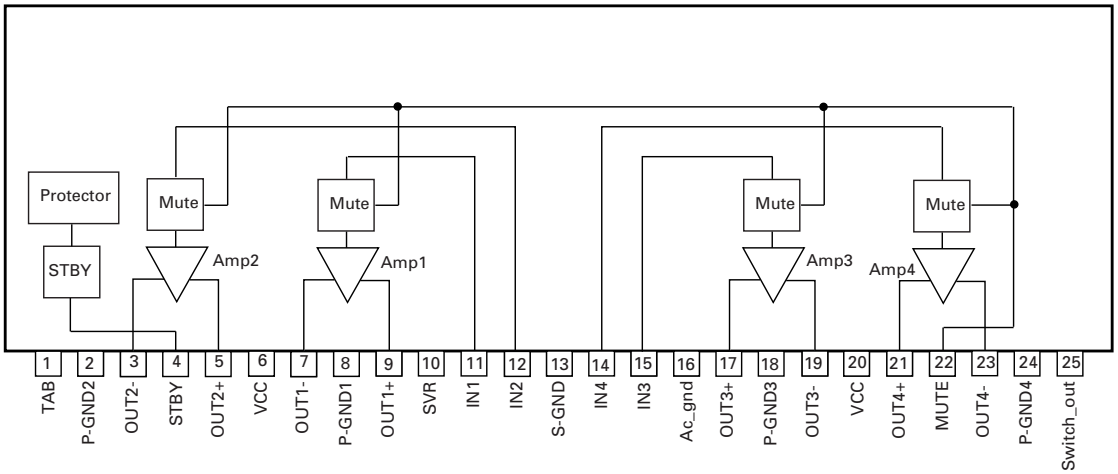
7.1 PARTS

7.1.1 IC

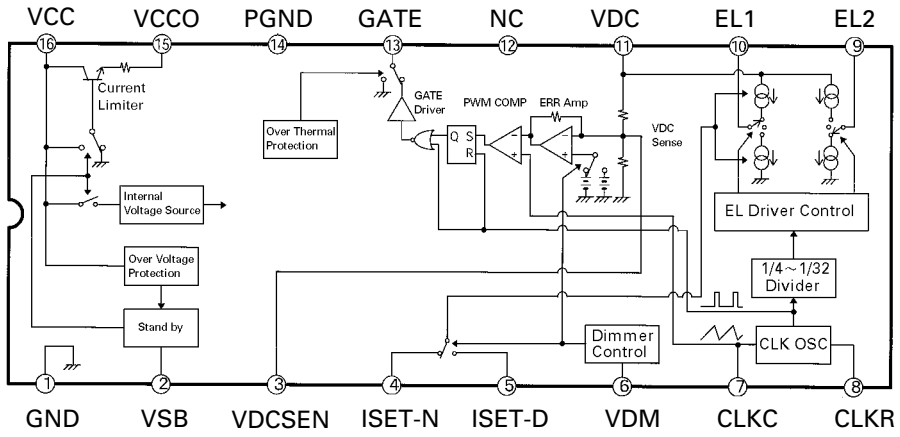
PML003AM



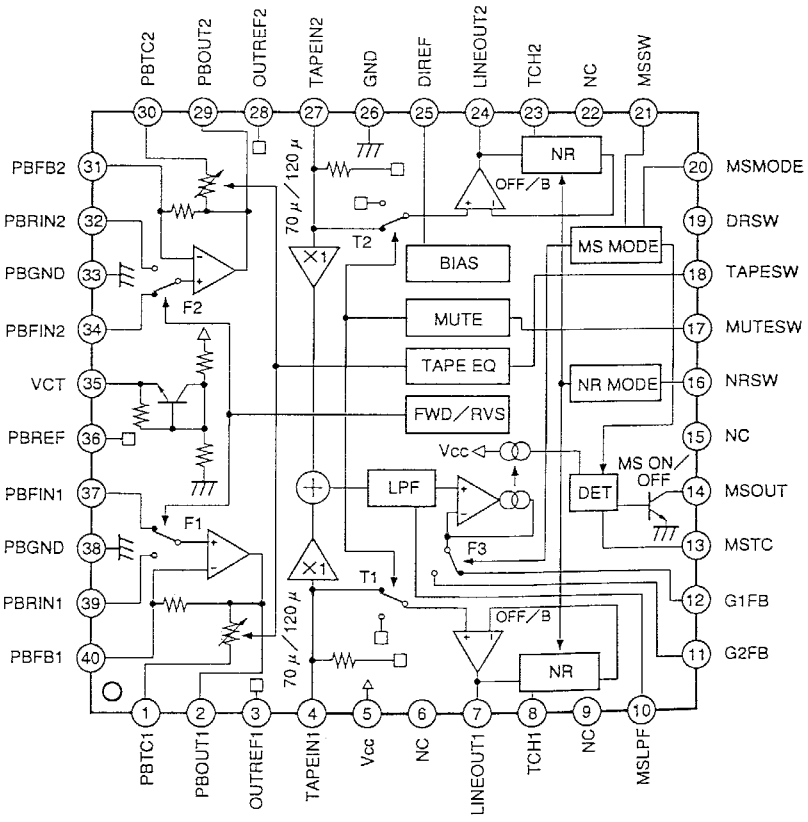
PAL005A



PML005A



CXA2560Q

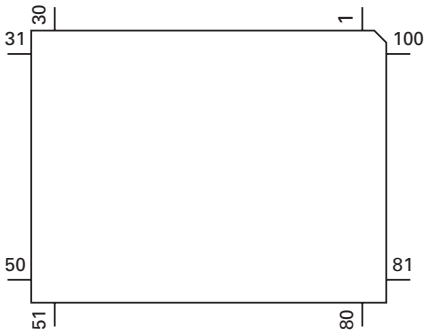


● **Pin Functions (PD4976A, PE5002A)**

Pin No.	Pin Name	I/O	Function and Operation
1	$\overline{\text{SWVDD}}$	O	Key board unit power supply control output
2	$\overline{\text{DSENS}}$	I	Grille detach sense
3	$\overline{\text{CSENS}}$	I	Flap close sense input
4	$\overline{\text{ISENS}}$	I	Illumination sense input
5	TESTIN	I	Test mode input/test enable
6	$\overline{\text{DRST}}$	O	Decoder reset output
7	NC		Not used
8	$\overline{\text{SK}}$	I	SK signal input
9	RECIVE	O	During RDS data reception output
10	NC		Not used
11	$\overline{\text{RESET}}$	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	$\overline{\text{ADPW}}$	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	$\overline{\text{MUTE}}$	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	$\overline{\text{TMUTE}}$	O	Tuner mute output
37	NC		Not used
38	SD	I	SD input
39	$\overline{\text{ST}}$	I	FM stereo input
40	VSS		GND
41	VDD		Power supply
42	$\overline{\text{MDSENS}}$	I	Modulation detect input
43	NC		Not used
44	$\overline{\text{RDSLK}}$	I	RDS LK signal input
45	$\overline{\text{CURRQ}}$	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	$\overline{\text{DLED}}$	O	Alarm LED output
51	DLSENS	I	Door lock sense input
52	STCUT	O	Starter cut off output
53	$\overline{\text{MOSENS}}$	I	Motion/window damage sensor input
54	MSIN	I	MS sense
55	$\overline{\text{MTLSW}}$	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	$\overline{\text{STBY}}$	O	Drive IC control output
68	$\overline{\text{LOADSW}}$	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	$\overline{\text{LDET}}$	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	$\overline{\text{ASENS}}$	I	ACC power sense input
93	$\overline{\text{BSENS}}$	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

*PD4976A,PE5002A

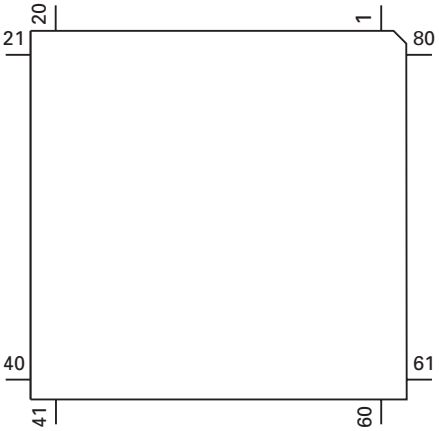


IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

● **Pin Functions(PD6294A)**

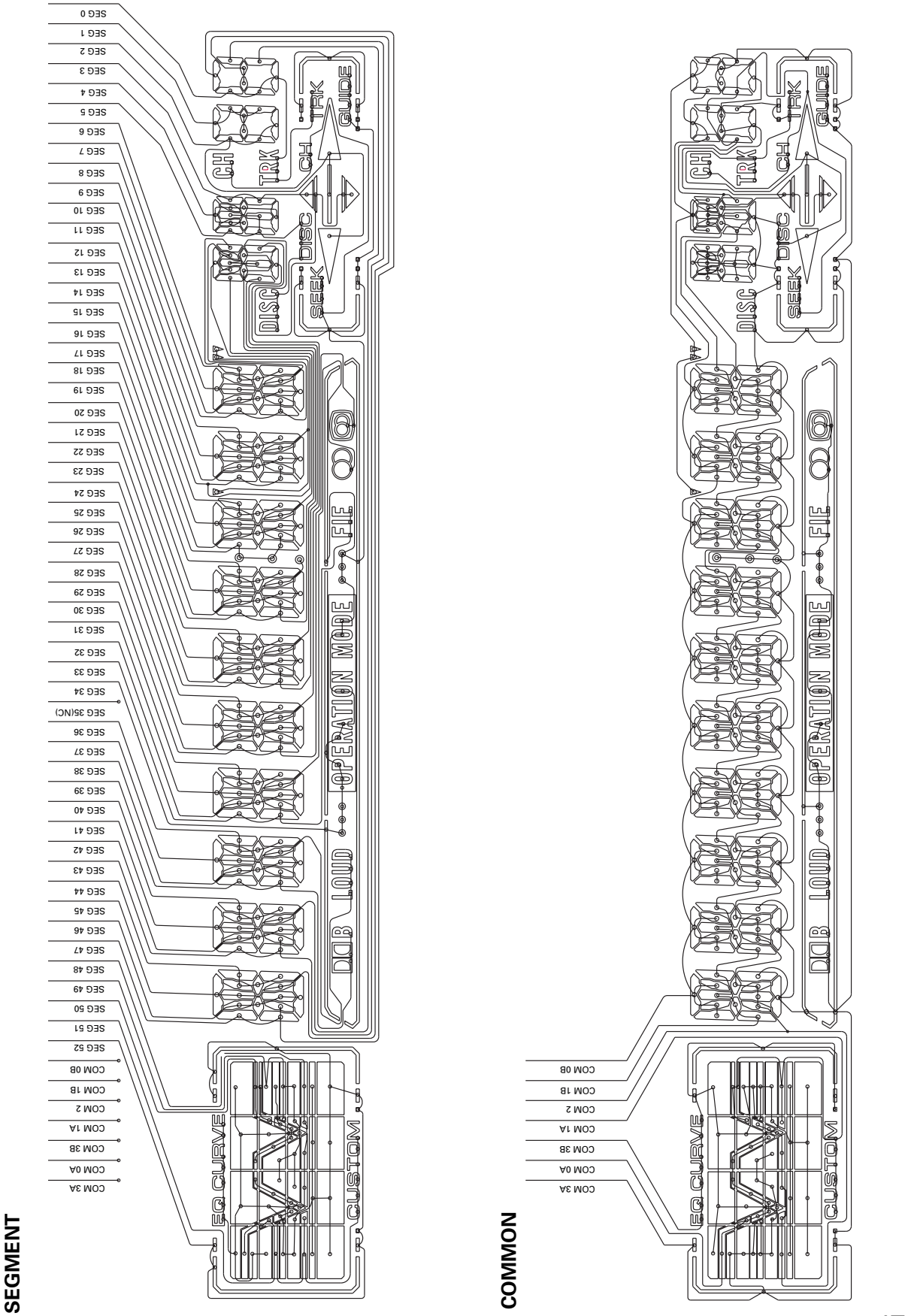
Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	$\overline{RST}$	I	System reset
5,6	MODE1,0		GND
7	GRN/$\overline{AMB}$	O	Green/Amber select output
8	SO	O	UART output
9	SI	I	UART input
10	REMIN	I	Remote control reception
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.

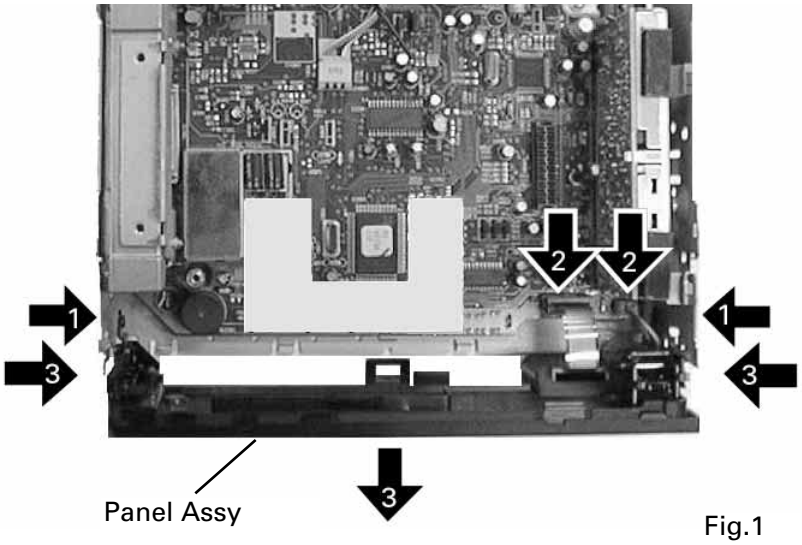


Fig.1

● **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.

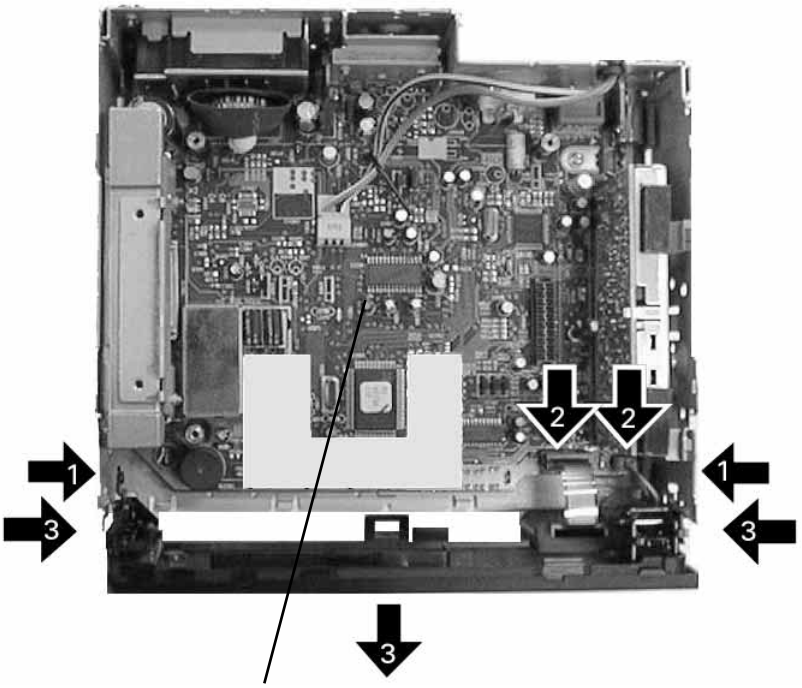
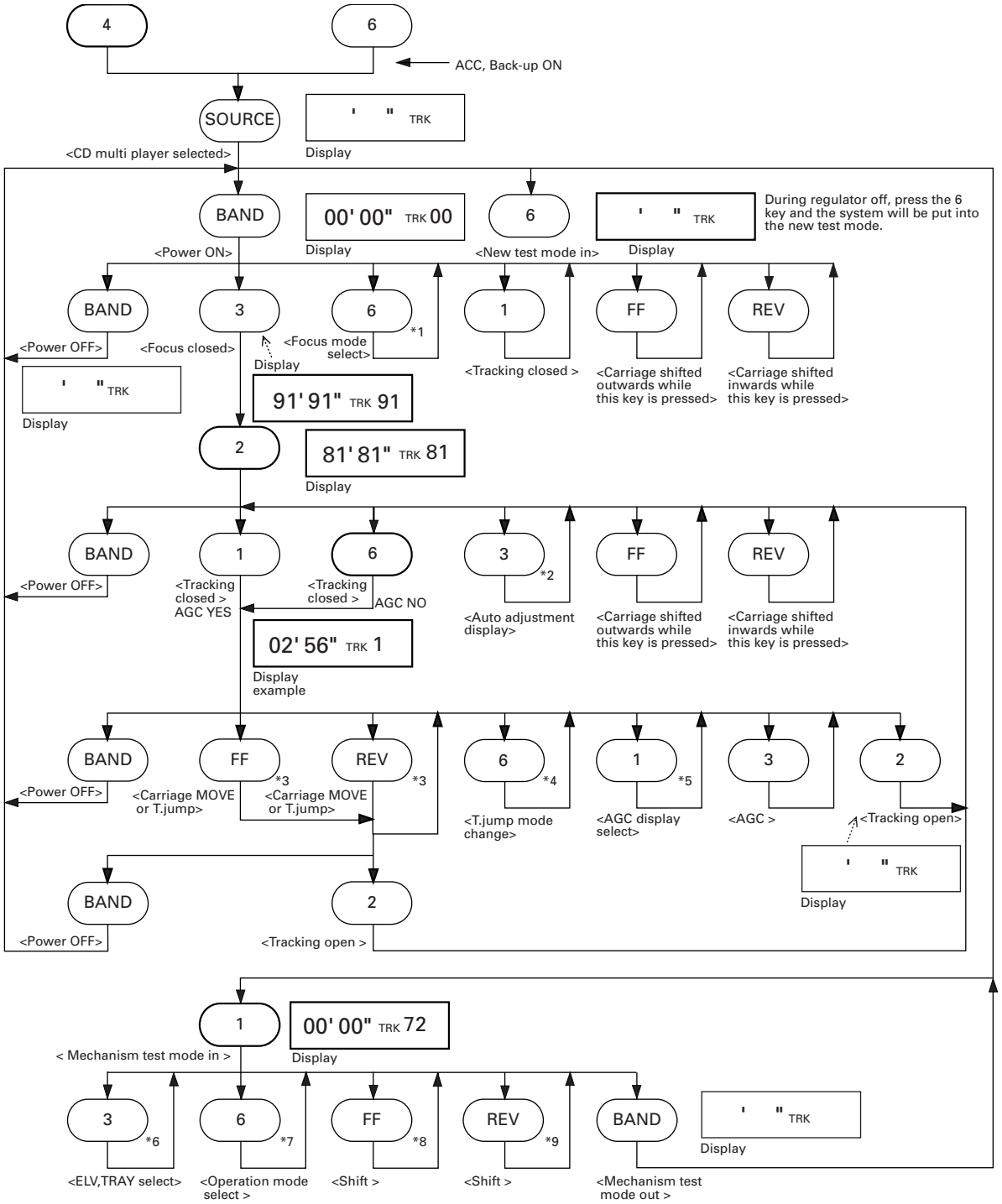


Fig.2

7.2.2 TEST MODE

● Flow Chart



*1 Normal focus close → S curve check → Focus EQ check
00 00' 00" Display 01 01' 01" 02 02' 02"

*2 Normal display → Focus cancel → Tracking offset → Tracking balance (Close spindle-rough)

*3 100 TRK jump and carriage MOVE continue only while the keys are released

*4 SINGLE → 4TRK → 10TRK → 32TRK → 100TRK → C.MOVE
81 Display 82 83 84 85 86

*5 Normal display → Focus gain → Tracking gain → Focus bias

*6 ELV motor select → TRAY motor select
72 00' 0X" Display 72 10' 0X"

*7 8ms pulse drive → 24ms pulse drive → DC drive
72 00' 00" Display 72 00' 01" 72 00' 02"

48ms pulse drive → 100ms pulse drive → DC drive
72 10' 00" Display 72 10' 01" 72 10' 02"

*8 ELV select : ELV dowm (Disc 1→6)
TRAY select : TRAY out

*9 ELV select : ELV up (Disc 6→1)
TRAY select : TRAY in

● 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 49.

(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	
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
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

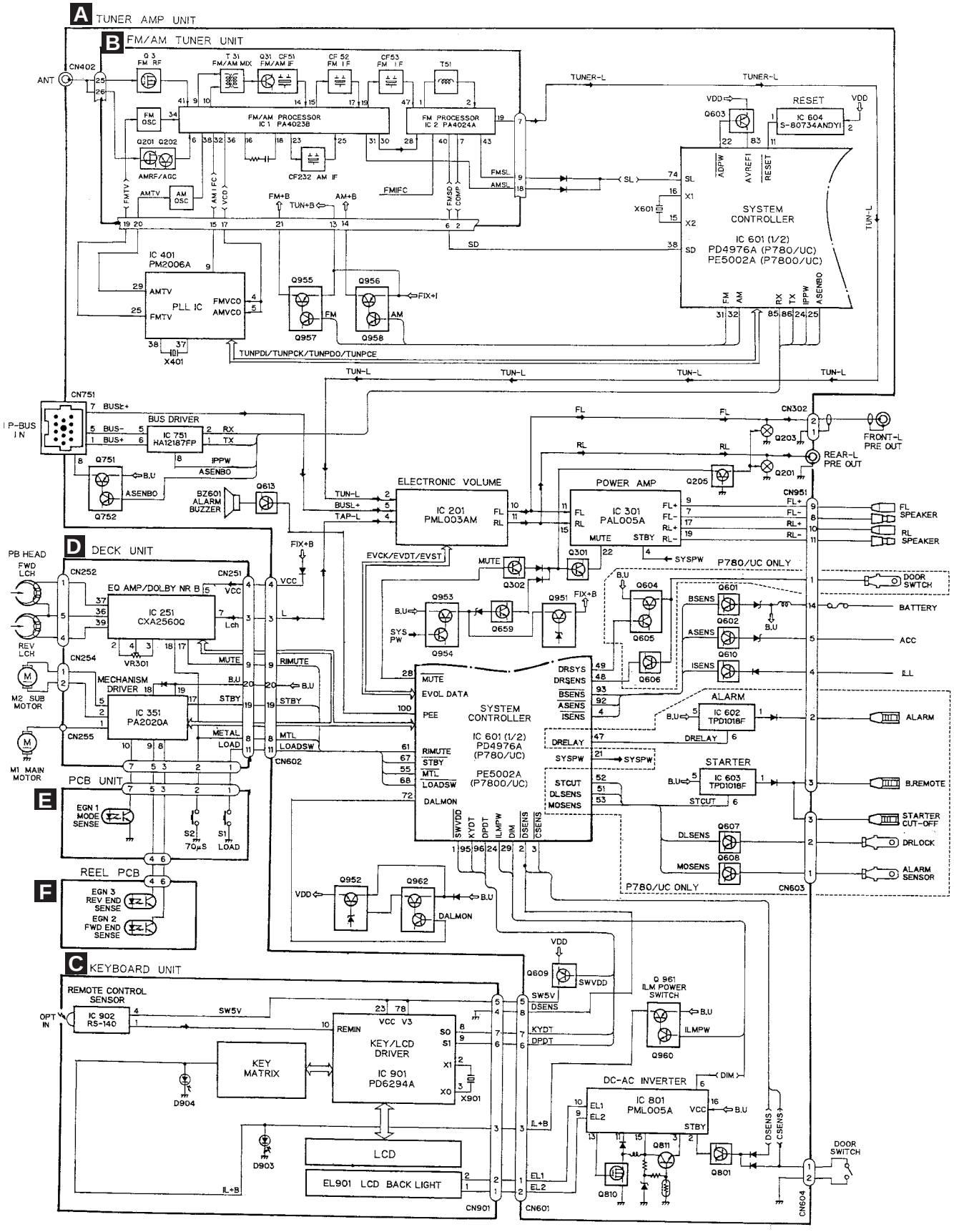
•Examples of Display ERROR-xx

(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

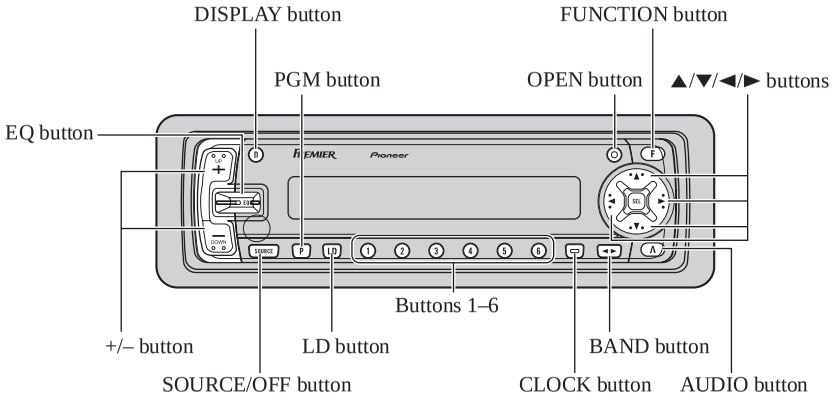
* Setup means a series of operations after focusing up to sound output.

7.3 BLOCK DIAGRAM



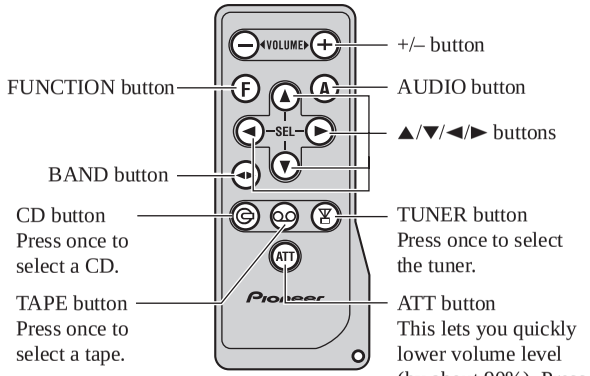
8.1 OPERATIONS

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.

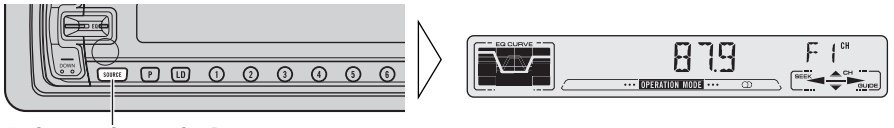


To Listen to Music

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

Note:
- Loading a cassette in this product.

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



Each press changes the Source ...

■ Head Unit

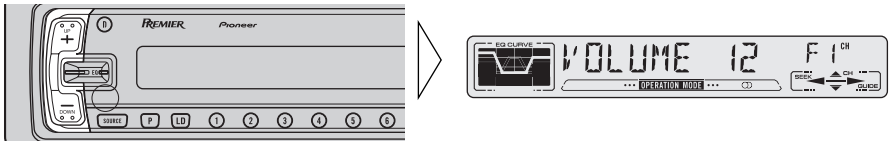
Each press of the SOURCE/OFF button selects the desired source in the following order:
CD player (one disc only) → Tuner → Tape → Multi-CD player → AUX

■ Remote Controller

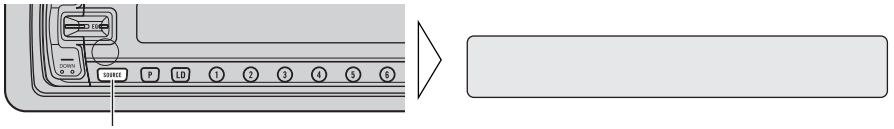
Each press of the button selects the desired source in the following order:
TUNER button : Tuner → OFF
TAPE button : Tape → AUX → OFF
CD button : CD player (one disc only) → Multi-CD player → OFF

Note:
- In the following cases, the sound source will not change:
  - * When no Multi-CD player is connected to this product. (When “M-CD” display is OFF.)
  - * When no CD player is 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.

2. Raise or lower the volume.



3. Turn the source OFF.



Hold for 1 second or more

Basic Operation of Cassette Player

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.**

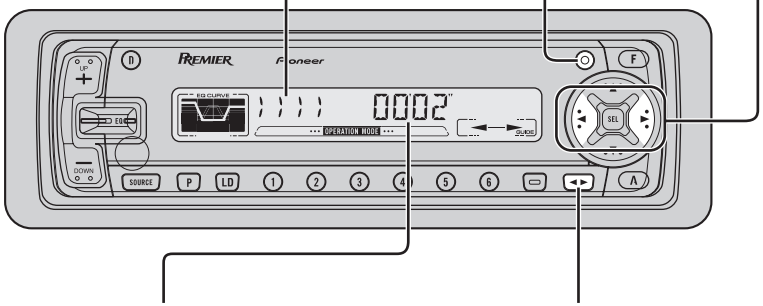
  REW (Rewind) → R-MS (Rewind-Music Search) → Normal Playback

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

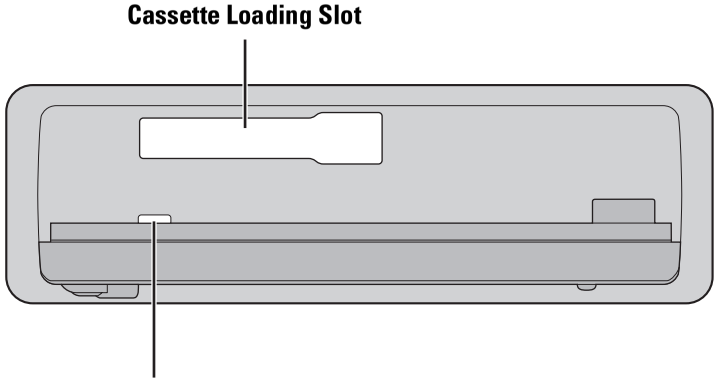
Note:
- "METAL" appears on the display for 4 seconds when a metal or chrome tape is inserted. Nothing is displayed for a normal tape.

Open

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



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.



Note:
- The Tape function can be turned ON/OFF with the cassette tape remaining in this product.

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

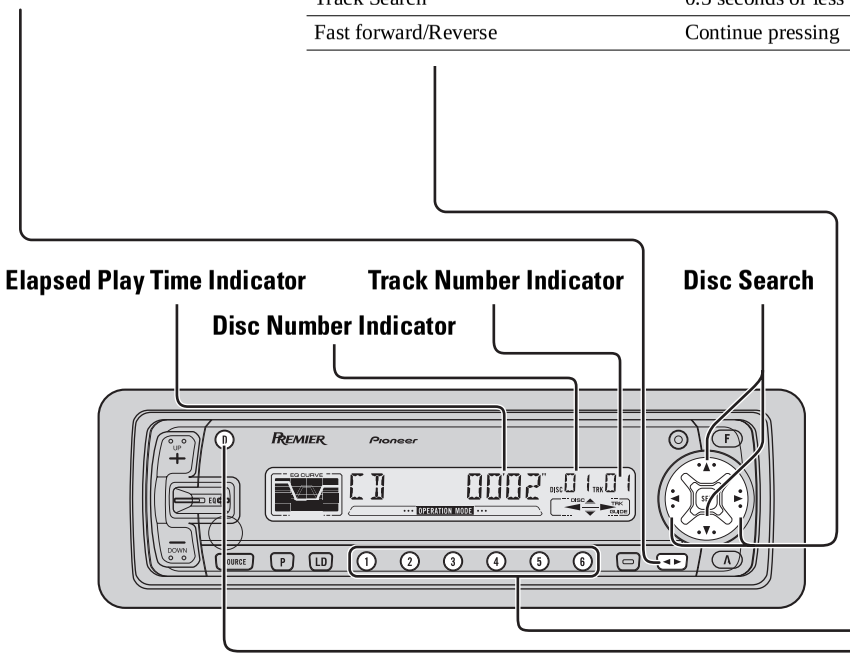
Using a multiple connection adapter lets you connect up to three Multi-CD players.

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.

Displaying Disc Titles

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

When playing a CD TEXT disc on a CD TEXT compatible Multi-CD Player such as the CDX-P656:
- You can use the following two functions. Refer to Multi-CD Player’s Owner’s Manual for operation details.
  * Title display switching
  * Title scroll
- You cannot switch to the Disc Title Input mode in the Detailed Setting Menu.

Basic Operation of Tuner

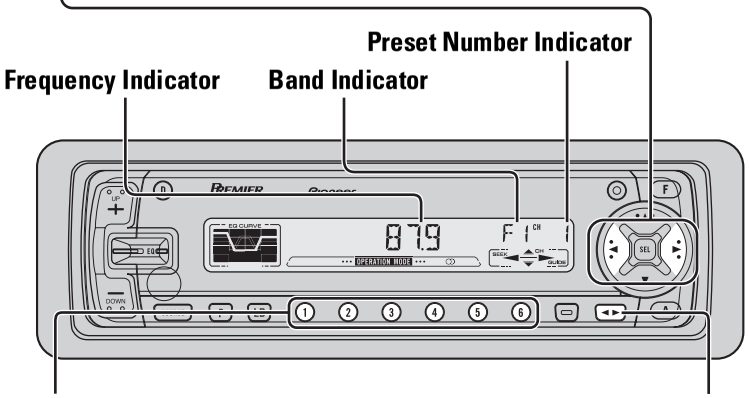
Manual and Seek Tuning

- **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:
- "◯" stereo indicator lights when a stereo station is selected.



F1 (FM1) → F2 (FM2) → F3 (FM3) → AM

- **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.

Basic Operation of CD Player (one disc only)

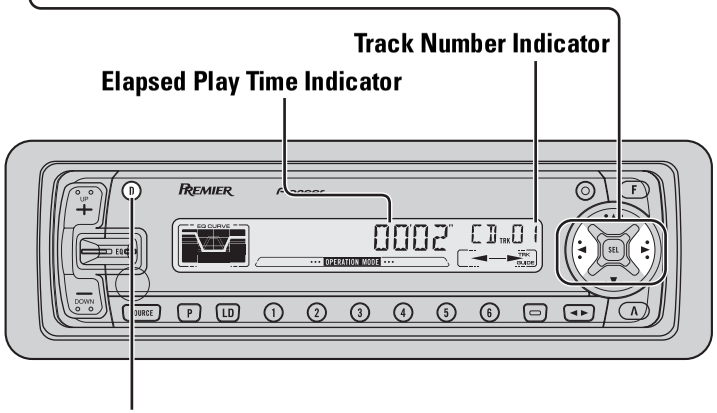
This product can control a CD player (one disc only).

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.**

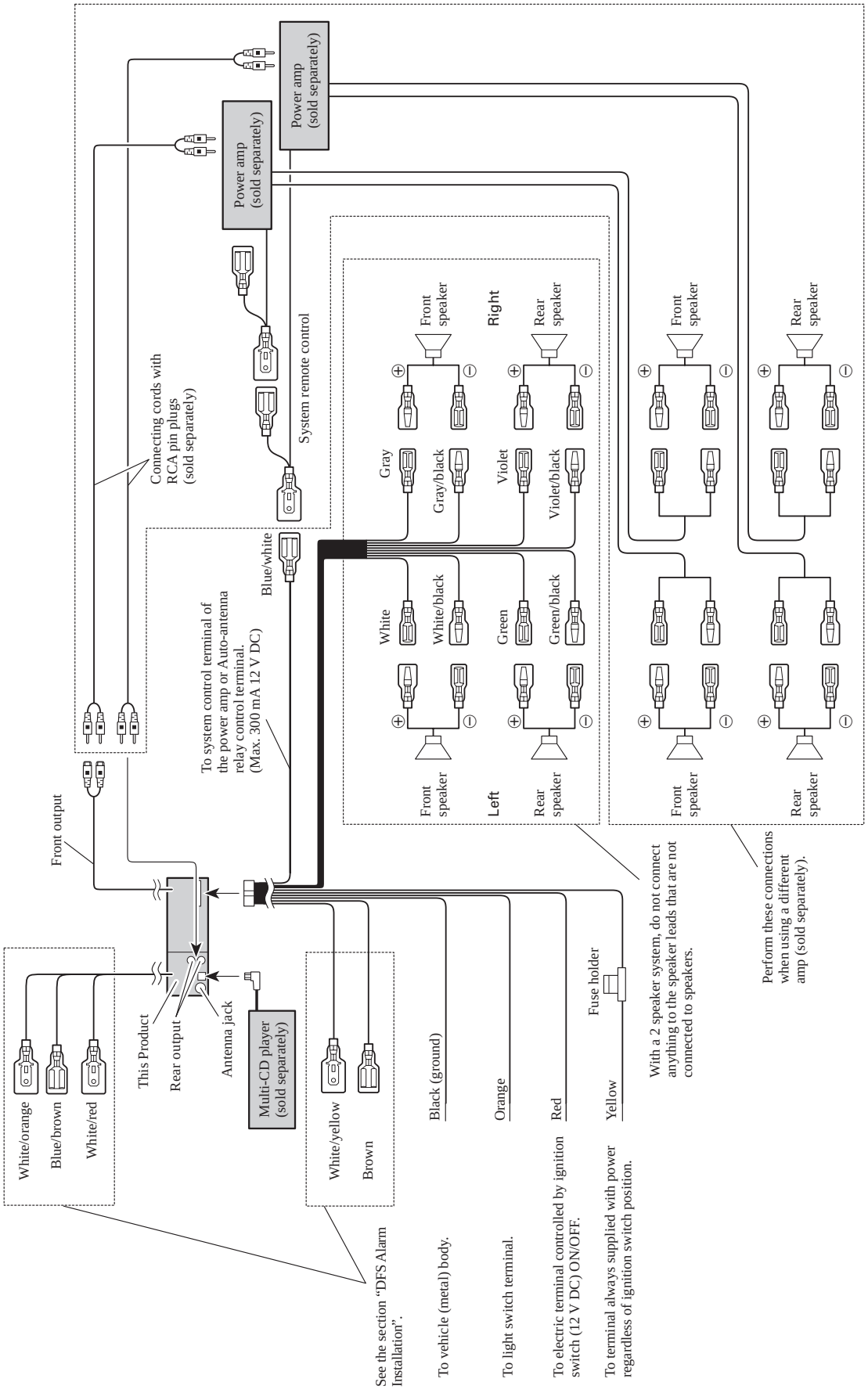
Track Search	0.5 seconds or less
Fast-forward/Reverse	Continue pressing

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.



- **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.


Power amp (sold separately)
Power amp (sold separately)
Power amp (sold separately)
System remote control
Connecting cords with RCA pin plugs (sold separately)
To system control terminal of the power amp or Auto-antenna relay control terminal. (Max. 300 mA 12 V DC)
Blue/white
Front output
Front speaker
Rear speaker
Left
Right
Gray
Gray/black
Violet
Violet/black
White
White/black
Green
Green/black
White/orange
Blue/brown
White/red
This Product
Rear output
Antenna jack
Multi-CD player (sold separately)
White/yellow
Brown
Black (ground)
Orange
Red
Yellow
Fuse holder
See the section "DFS Alarm Installation".
To vehicle (metal) body.
To light switch terminal.
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
To terminal always supplied with power regardless of ignition switch position.
With a 2 speaker system, do not connect anything to the speaker leads that are not connected to speakers.
Perform these connections when using a different amp (sold separately).

8.2 SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions
(DIN) (chassis) ..... 178 (W) × 50 (H) × 155 (D) mm
[7 (W) × 2 (H) × 6-1/8 (D) in]
(nose) ..... 188 (W) × 58 (H) × 18 (D) mm
[7-3/8 (W) × 2-1/4 (H) × 3/4 (D) in]
(D) (chassis) ..... 178 (W) × 50 (H) × 160 (D) mm
[7 (W) × 2 (H) × 6-1/4 (D) in]
(nose) ..... 170 (W) × 46 (H) × 13 (D) mm
[6-3/4 (W) × 1-3/4 (H) × 1/2 (D) in]
Weight ..... 1.3 kg (2.9 lbs)

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 × 4
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout maximum output level/
output impedance ..... 2.2 V /1 kΩ
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 (IHF-A network)
Dolby NR OUT: 61 dB (IHF-A network)

FM tuner

Frequency range ..... 87.9 – 107.9 MHz
Usable sensitivity ..... 11 dBf
(1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IHF-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)
Selectivity ..... 70 dB (2ACA)
Three-signal intermodulation
(desired signal level) ..... 50 dBf
(two undesired signal level: 100 dBf)

AM tuner

Frequency range ..... 530 – 1,710 kHz
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±10 kHz)

Note:

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