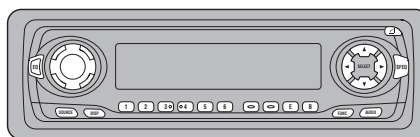


# Service Manual

**Pioneer**

KEH-P8010R/X1N/EW



ORDER NO.  
**CRT2621**

MULTI-CD/DAB CONTROL HIGH POWER CASSETTE PLAYER WITH RDS TUNER

# KEH-P8010R

X1N/EW

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

# KEH-P8015

X1N/ES

- This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-1011	CRT2406	3L	Cassette Mech. Module:Mech.Description, Disassembly, Adjustment

## NOTE:

- **Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.**  
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- **This service manual does not describe the CD test mode.**  
For the operations in the CD test mode, refer to the CD player's Service manual.
- **Extension cable of cassette mechanism : Jig No. GGD1121**

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**PIONEER 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 EUROPE NV** Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium  
**PIONEER ELECTRONICS ASIACENTRE PTE.LTD.** 253 Alexandra Road, #04-01, Singapore 159936

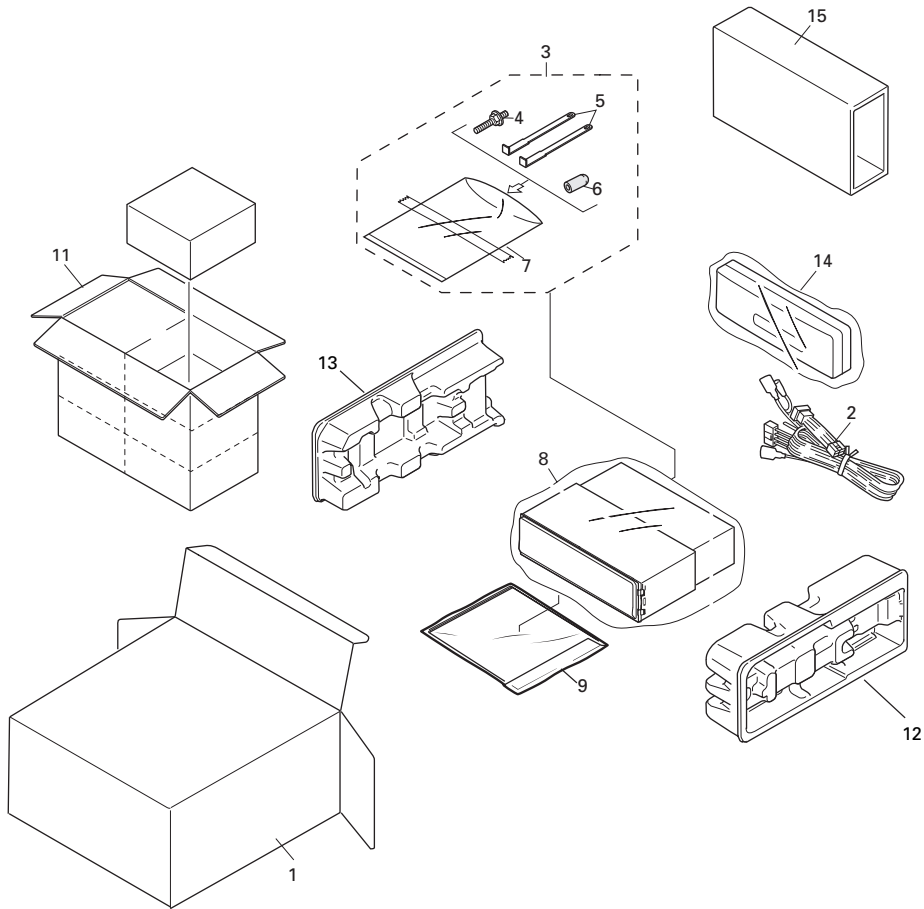
## 1. SAFETY INFORMATION

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(KEH-P8010R/X1N/EW)



**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.

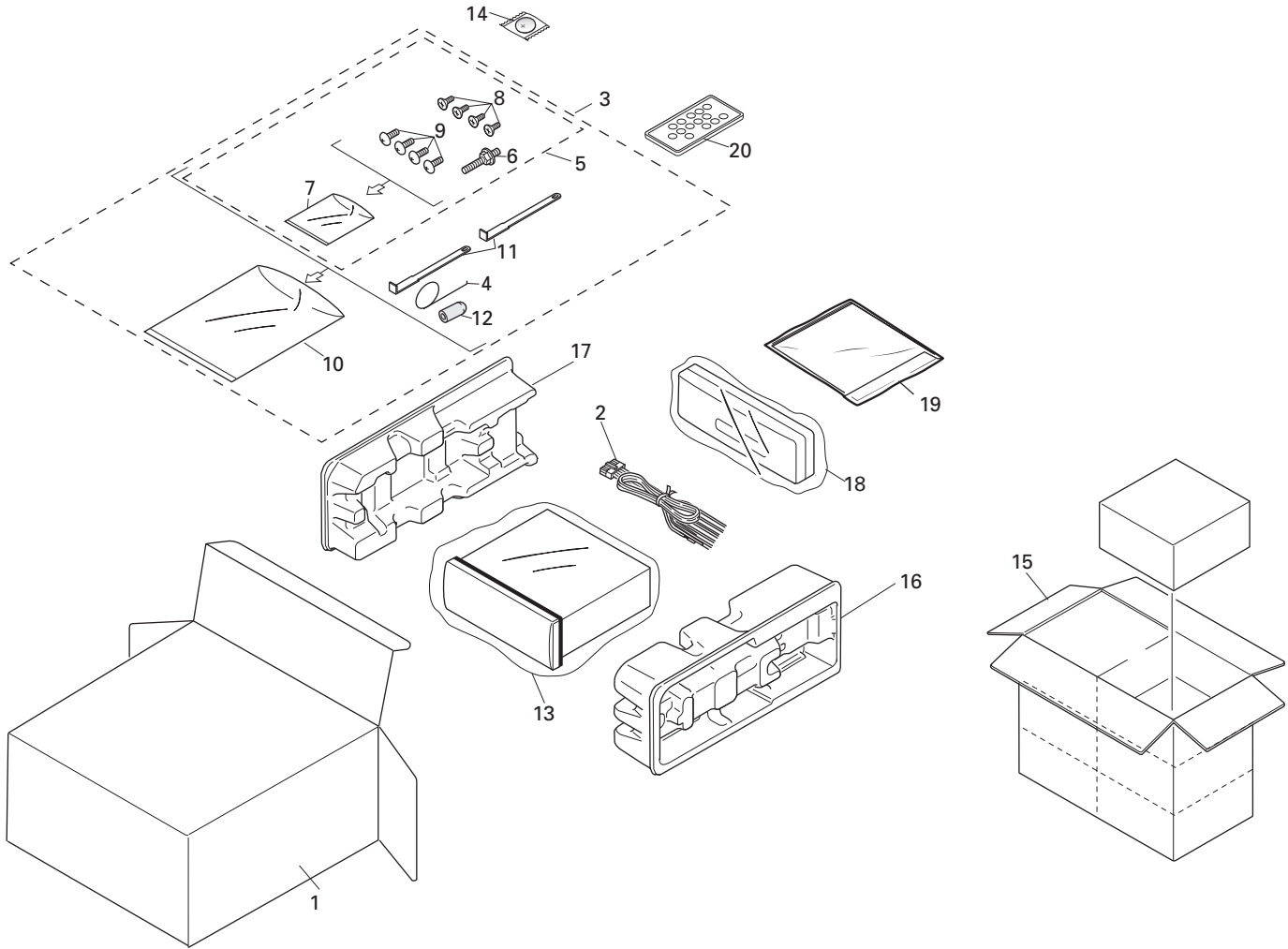
**● PACKING SECTION PARTS LIST**

Mark No.	Description	Part No.	Mark No.	Description	Part No.
	1 Carton	CHG4331		9-3 Owner's Manual	CRD3365
	2 Cord Assy	CDE6435		9-4 Owner's Manual	CRD3366
*	3 Accessory Assy	CEA2397		9-5 Installation Manual	CRD3367
	4 Screw	CBA1002	*	9-6 Passport	CRY1013
	5 Handle	CNC5395	*	9-7 Warranty Card	CRY1157
	6 Bush	CNV3930	*	9-8 Caution Card	CRP1207
*	7 Polyethylene Bag	E36-615	*	9-9 Caution Card	CRP1220
	8 Polyethylene Bag	CEG1227		10 .....	
	9-1 Polyethylene Bag	CEG1116		11 Contain Box	CHL4331
	9-2 Owner's Manual	CRD3364		12 Protector	CHP2252
				13 Protector	CHP2251
				14 Case Assy	CXB3520
				15 Inner Box	CHW1754

**● Owner's Manual, Installation Manual**

Model	Part No.	Language
KEH-P8010R/X1N/EW	CRD3364	English, Spanish
	CRD3365	German, French
	CRD3366	Italian, Dutch
	CRD3367	English, Spanish, German, French, Italian, Dutch

2.2 PACKING(KEH-P8015/X1N/ES)



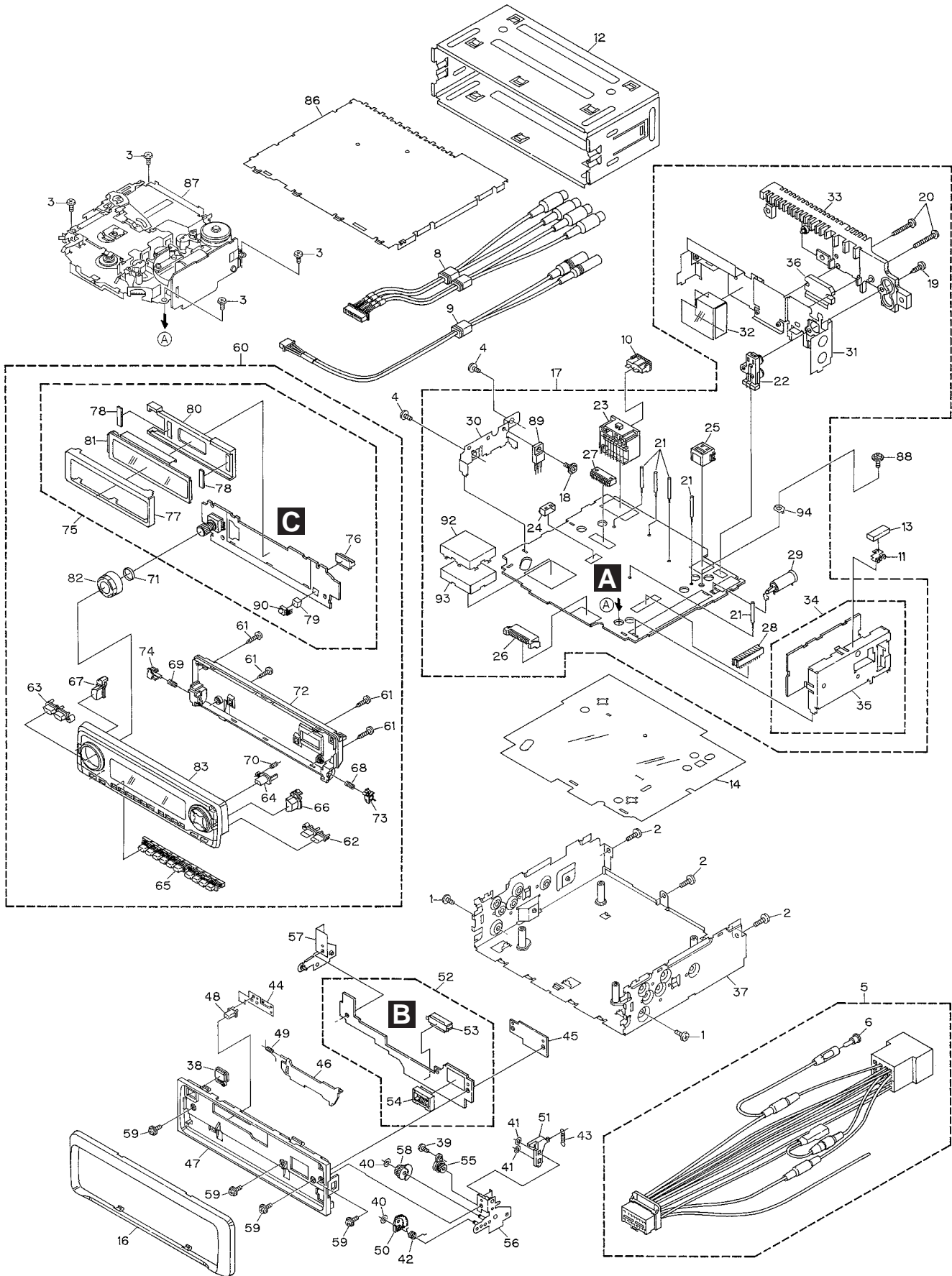
● PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Carton	CHG4332	16	Protector	CHP2252
2	Cord Assy	CDE6438	17	Protector	CHP2251
*	3 Accessory Assy	CEA2395	18	Case Assy	CXB3520
4	Spring	CBH1650	19-1	Polyethylene Bag	CEG1116
*	5 Screw Assy	CEA2396	19-2	Owner's Manual	CRD3368
6	Screw	CBA1002	19-3	Owner's Manual	CRD3369
*	7 Polyethylene Bag	CEG-127	19-4	Installation Manual	CRD3370
8	Screw	CRZ50P090FMC	* 19-5	Caution Card	CRP1207
9	Screw	TRZ50P080FMC	20	Remote Control Unit	CXB6796
*	10 Polyethylene Bag	CEG-158			
11	Handle	CNC5395			
12	Bush	CNV3930			
13	Polyethylene Bag	CEG1227			
*	14 Battery	CEX1065			
15	Contain Box	CHL4332			

**● Owner's Manual, Installation Manual**

Model	Part No.	Language
KEH-P8015/X1N/ES	CRD3368	English, Spanish, Portuguese(B)
	CRD3369	Arabic, Chinese
	CRD3370	English, Spanish, Portuguese(B), Arabic, Chinese

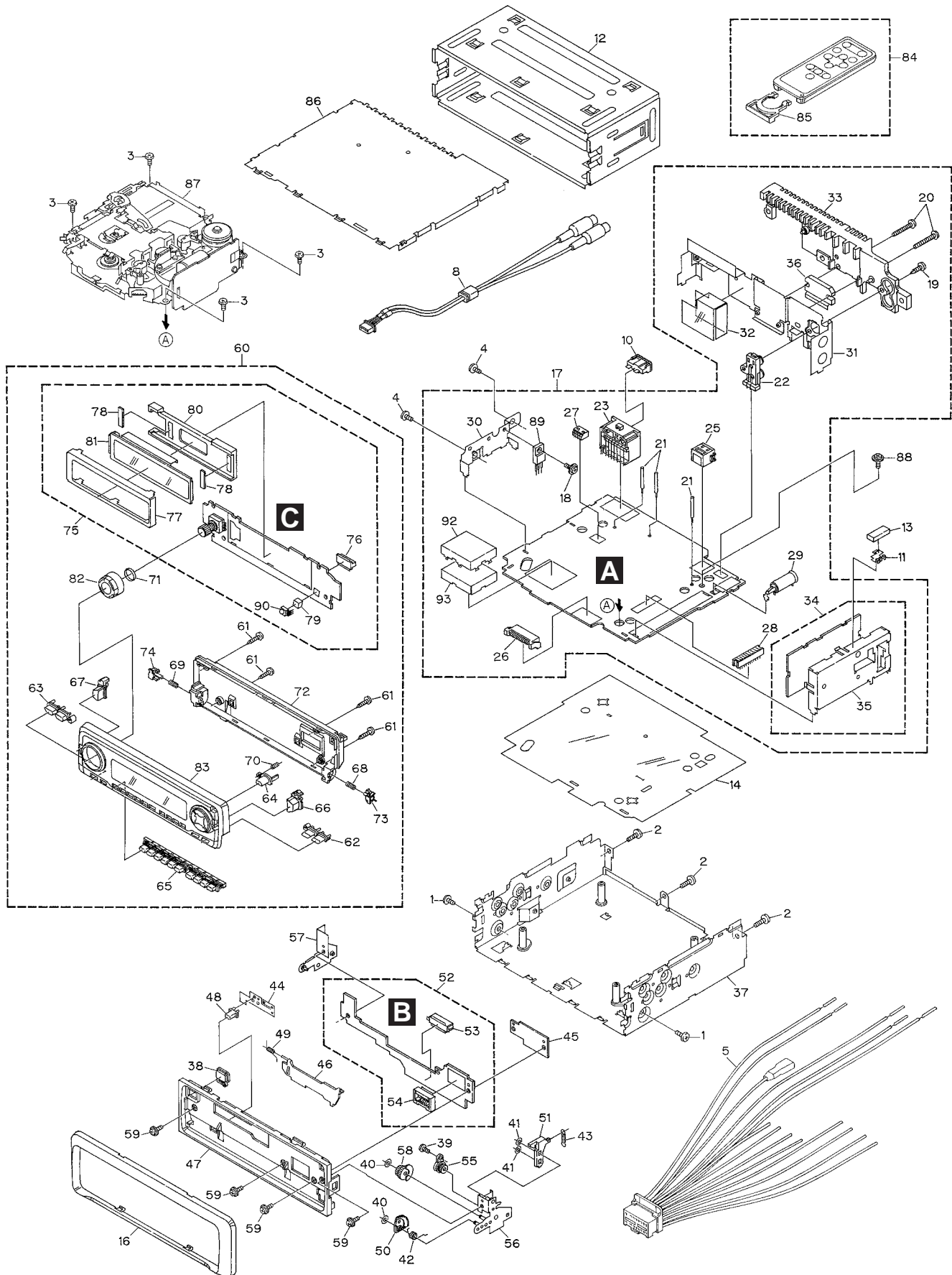
2.3 EXTERIOR(KEH-P8010R/X1N/EW)



## ● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ30P040FZK	51	Arm	CNV6508
2	Screw	BMZ30P100FMC	52	Panel Unit	CWM7627
3	Screw	BSZ26P060FMC	53	Socket(CN1950)	CKS3550
4	Screw	BSZ30P040FMC	54	Connector(CN1951)	CKS4206
5	Cord Assy	CDE6435	55	Damper Unit	CXB5070
6	Terminal Cover	CKX-003	56	Holder Unit	CXB6356
7	.....		57	Holder Unit	CXB6357
8	Cord Assy	CDE6453	58	Clutch Unit	CXB6358
9	Cord Assy	CDE6455	59	Screw	IMS20P045FZK
10	Fuse(10A)	CEK1136	60	Detach Grille Assy	CXB6549
11	Holder	CNC5704	61	Screw	BPZ20P100FZK
12	Holder	CNC8659	62	Button(FUNC AUDIO)	CAC6776
13	Cushion	CNM4870	63	Button(SOURCE DISP)	CAC6777
14	Insulator	CNM6948	64	Button(OPEN)	CAC6780
15	.....		65	Button(1-6)	CAC6841
16	Panel	CNS6552	66	Button(SFEQ)	CAC6842
17	Tuner Amp Unit	CWM7460	67	Button(EQ)	CAC6840
18	Screw	ASZ26P060FMC	68	Spring	CBH2430
19	Screw	BPZ26P120FMC	69	Spring	CBH2431
20	Screw	BSZ26P160FMC	70	Spring	CBH2491
21	Clamper	CEF1007	71	Spring	CBL1470
22	Pin Jack(CN351)	CKB1035	72	Cover	CNS6282
23	Plug(CN901)	CKM1330	73	Holder	CNV6505
* 24	Plug(CN451)	CKS1052	74	Holder	CNV6506
25	Connector(CN101)	CKS3408	75	Keyboard Unit	CWM7466
26	Plug(CN801)	CKS3537	76	Connector(CN1901)	CKS4524
27	Connector(CN352)	CKS3602	77	Holder	CNC9112
28	Connector(CN251)	CKS3568	78	Cushion	CNM6633
29	Antenna Jack(CN401)	CKX1056	* 79	Spacer	CNM7469
30	Holder	CNC8615	80	Holder	CNV6105
31	Holder	CNC9468	81	OEL Unit	MXS8016
32	Insulator	CNM6949	82	Knob Unit	CXB7239
33	Heat Sink	CNR1583	83	Sub Grille Assy	CXB7254
34	FM/AM Tuner Unit	CWE1562	84	.....	
35	Holder	CNC8815	85	.....	
36	IC(IC301)	PAL006A	86	Case Unit	CXB7481
37	Chassis Unit	CXB6461	87	Cassette Mechanism Module	EXK4060
38	Button(EJECT)	CAC6839	88	Screw	ISS26P055FUC
39	Screw(M2x2)	CBA1176	89	Transistor(Q921)	2SD2396
40	Washer	CBF1038	90	IC(IC1903)	TSOP1840SB1
41	Washer	CBF1039	91	.....	
42	Spring	CBH2428	92	Case	CNC8138
43	Spring	CBH2429	93	Insulator	CNM6249
44	Spring	CBL1512	94	Holder	CNC5399
45	Holder	CNC9096			
46	Door	CAT2109			
47	Panel	CNS6280			
48	Pin	CNV6486			
49	Spring	CBH1838			
50	Gear	CNV6507			

2.4 EXTERIOR(KEH-P8015/X1N/ES)

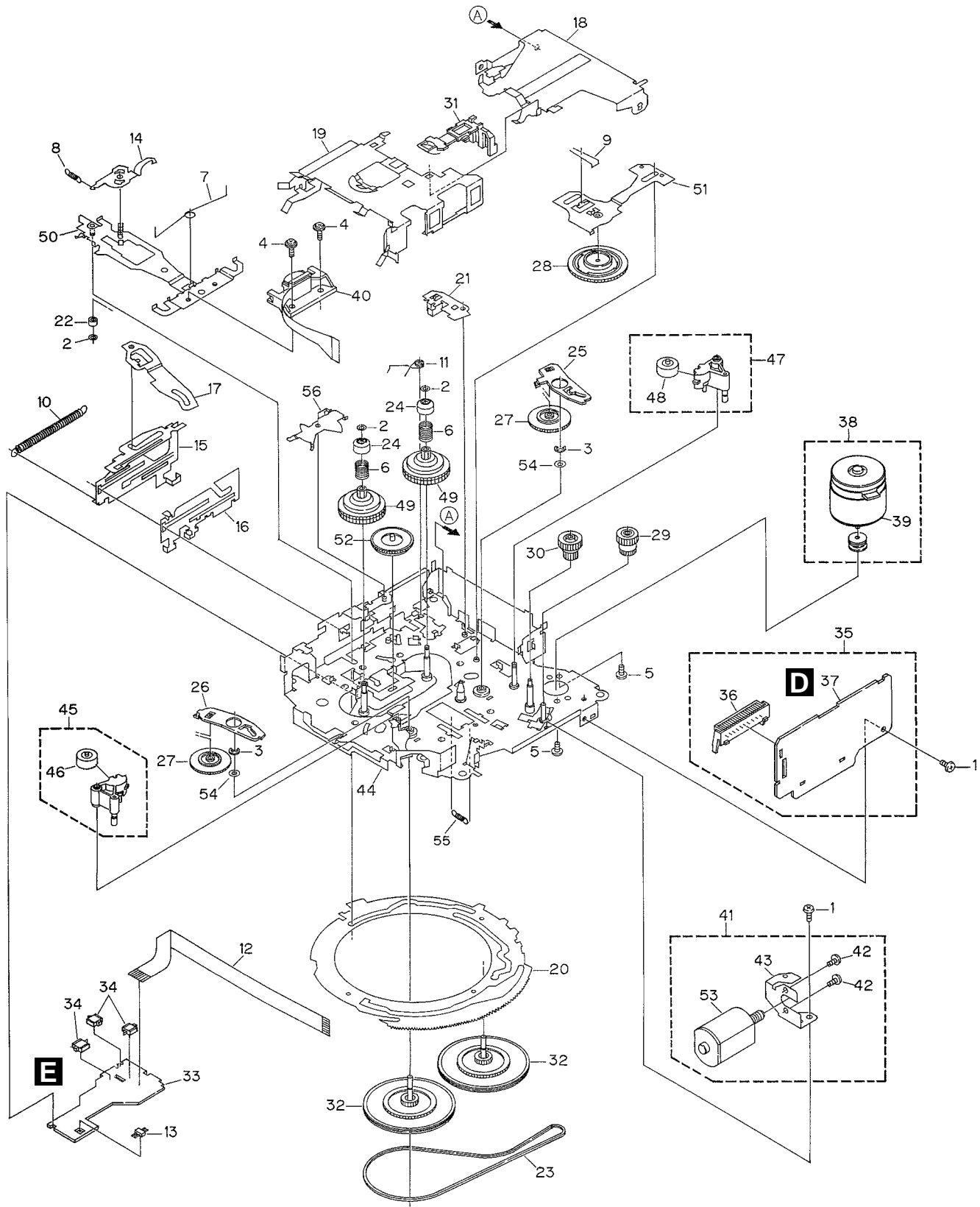




## ● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ30P040FZK	51	Arm	CNV6508
2	Screw	BMZ30P100FMC	52	Panel Unit	CWM7627
3	Screw	BSZ26P060FMC	53	Socket(CN1950)	CKS3550
4	Screw	BSZ30P040FMC	54	Connector(CN1951)	CKS4206
5	Cord Assy	CDE6438	55	Damper Unit	CXB5070
6	.....		56	Holder Unit	CXB6356
7	.....		57	Holder Unit	CXB6357
8	Cord Assy	CDE6454	58	Clutch Unit	CXB6358
9	.....		59	Screw	IMS20P045FZK
10	Fuse(10A)	CEK1136	60	Detach Grille Assy	CXB6551
11	Holder	CNC5704	61	Screw	BPZ20P100FZK
12	Holder	CNC8659	62	Button(FUNC AUDIO)	CAC6776
13	Cushion	CNM4870	63	Button(SOURCE DISP)	CAC6777
14	Insulator	CNM6948	64	Button(OPEN)	CAC6780
15	.....		65	Button(1-6)	CAC6841
16	Panel	CNS6553	66	Button(SFEQ)	CAC6842
17	Tuner Amp Unit	CWM7462	67	Button(EQ)	CAC6840
18	Screw	ASZ26P060FMC	68	Spring	CBH2430
19	Screw	BPZ26P120FMC	69	Spring	CBH2431
20	Screw	BSZ26P160FMC	70	Spring	CBH2491
21	Clamper	CEF1007	71	Spring	CBL1470
22	Pin Jack(CN351)	CKB1035	72	Cover	CNS6282
23	Plug(CN901)	CKM1330	73	Holder	CNV6505
24	.....		74	Holder	CNV6506
25	Connector(CN101)	CKS3408	75	Keyboard Unit	CWM7467
26	Plug(CN801)	CKS3537	76	Connector(CN1901)	CKS4524
27	Connector(CN352)	CKS3598	77	Holder	CNC9112
28	Connector(CN251)	CKS3568	78	Cushion	CNM6633
29	Antenna Jack(CN401)	CKX1056	* 79	Spacer	CNM7469
30	Holder	CNC8615	80	Holder	CNV6105
31	Holder	CNC9470	81	OEL Unit	MXS8016
32	Insulator	CNM6949	82	Knob Unit	CXB7239
33	Heat Sink	CNR1583	83	Sub Grille Assy	CXB7255
34	FM/AM Tuner Unit	CWE1563	84	Remote Control Unit	CXB6796
35	Holder	CNC8815	85	Cover	CNS6439
36	IC(IC301)	PAL006A	86	Case Unit	CXB7481
37	Chassis Unit	CXB6106	87	Cassette Mechanism Module	EXK4060
38	Button(EJECT)	CAC6839	88	Screw	ISS26P055FUC
39	Screw(M2x2)	CBA1176	89	Transistor(Q921)	2SD2396
40	Washer	CBF1038	90	IC(IC1903)	TSOP1840SB1
41	Washer	CBF1039	91	.....	
42	Spring	CBH2428	92	Case	CNC8138
43	Spring	CBH2429	93	Insulator	CNM6249
44	Spring	CBL1512			
45	Holder	CNC9096			
46	Door	CAT2109			
47	Panel	CNS6280			
48	Pin	CNV6486			
49	Spring	CBH1838			
50	Gear	CNV6507			

## 2.5 CASSETTE MECHANISM MODULE



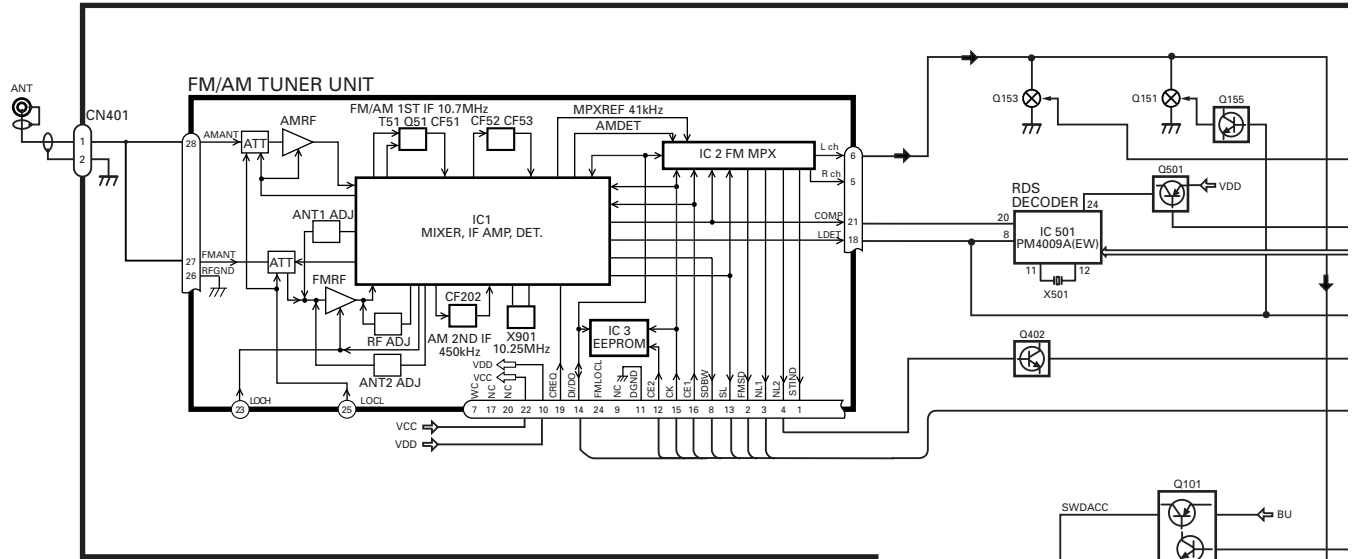
● CASSETTE MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ20P040FMC	46	Pinch Roller	ENV1518
2	Washer	CBF1037	47	Pinch Holder Unit	EXA1607
3	Washer	CBG1003	48	Pinch Roller	ENV1518
4	Screw	EBA1028	49	Reel Unit	EXA1585
5	Screw	CBA1037	50	Head Base Unit	EXA1611
6	Spring	EBH1531	51	Lever Unit	EXA1587
7	Spring	EBH1642	52	Gear Unit	EXA1596
8	Spring	EBH1641	53	Motor Unit(Service)	EXX1055
9	Spring	EBH1626	54	Washer	HBF-179
10	Spring	EBH1627	55	Spring	EBH1537
11	Spring	EBH1648	56	Arm	ENC1537
12	Cord	EDD1024			
13	Photo-reflector(EGN1)	EGN1004			
14	Arm	ENC1526			
* 15	Lever	ENC1544			
16	Lever	ENC1543			
17	Arm	ENC1532			
18	Frame	ENC1533			
19	Holder	ENC1534			
20	Gear	ENC1535			
21	Arm	ENC1550			
22	Roller	ENR1040			
23	Belt	ENT1027			
24	Collar	ENV1508			
25	Arm	ENV1539			
26	Arm	ENV1540			
27	Gear	ENV1544			
28	Gear	ENV1547			
29	Gear	ENV1560			
30	Worm Wheel	ENV1566			
31	Lever	ENV1551			
32	Flywheel	ENV1554			
33	Gathering PCB	ENX1068			
34	Switch(S1,S2,S3)	ESG1007			
35	Deck Unit	EWM1033			
36	Plug(CN251)	CKS3540			
37	Gathering PCB	ENX1067			
38	Motor Unit(M1)	EXA1490			
39	Motor	EXM1027			
40	Head Assy(HD1)	EXA1589			
41	Motor Unit(M2)	EXA1580			
42	Screw	BMZ20P022FMC			
43	Bracket	ENC1528			
44	Chassis Unit	EXA1615			
45	Pinch Holder Unit	EXA1608			

### 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

#### 3.1 BLOCK DIAGRAM

**A** TUNER AMP UNIT



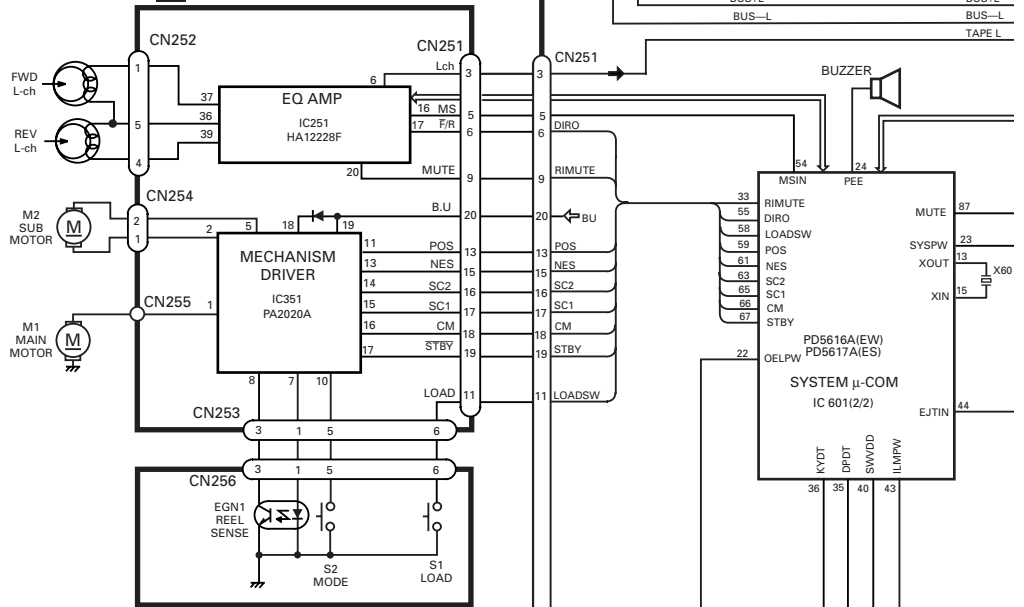
A

B

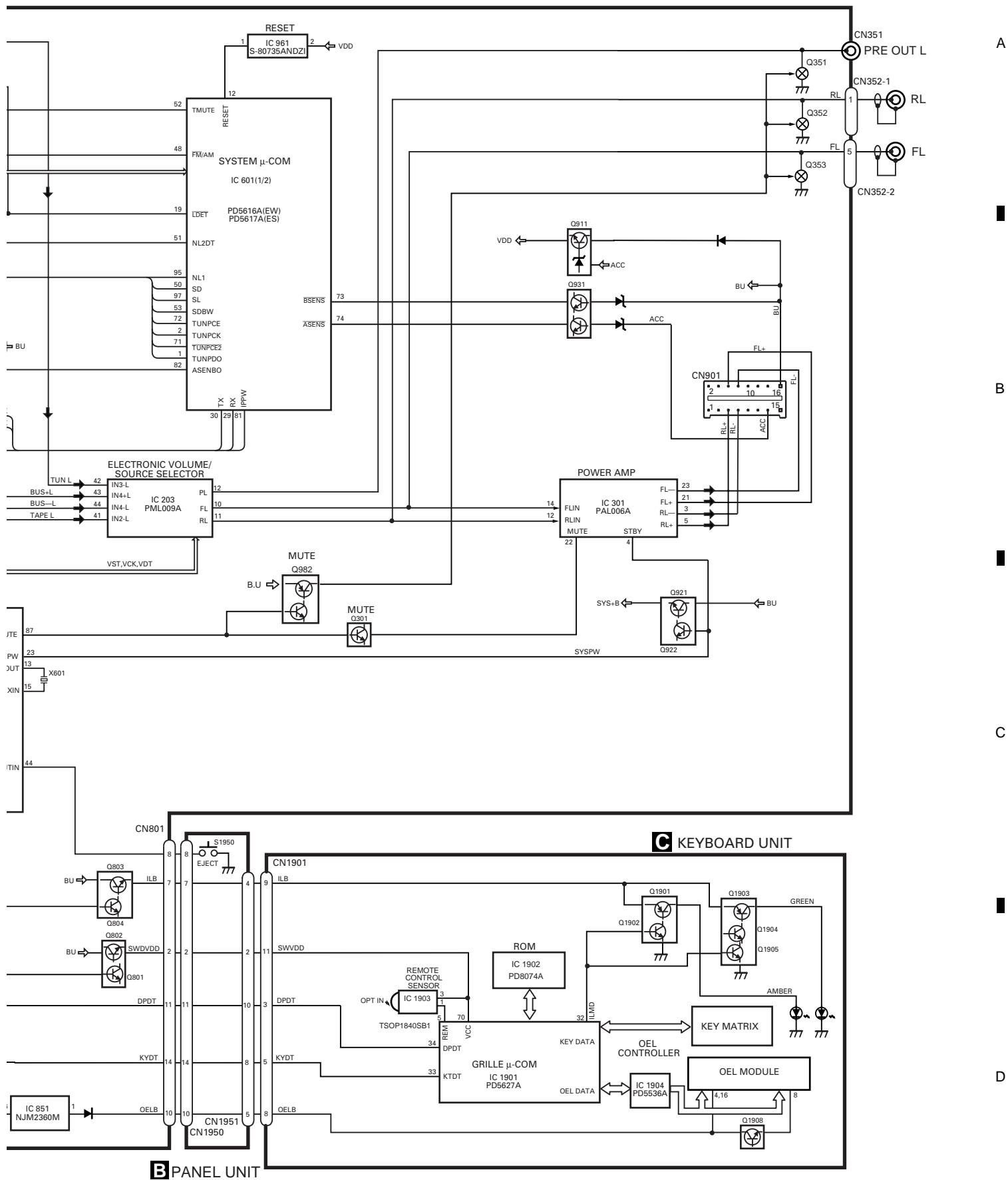
C

D

**D** DECK UNIT



**E** REEL SENSE PCB



A

B

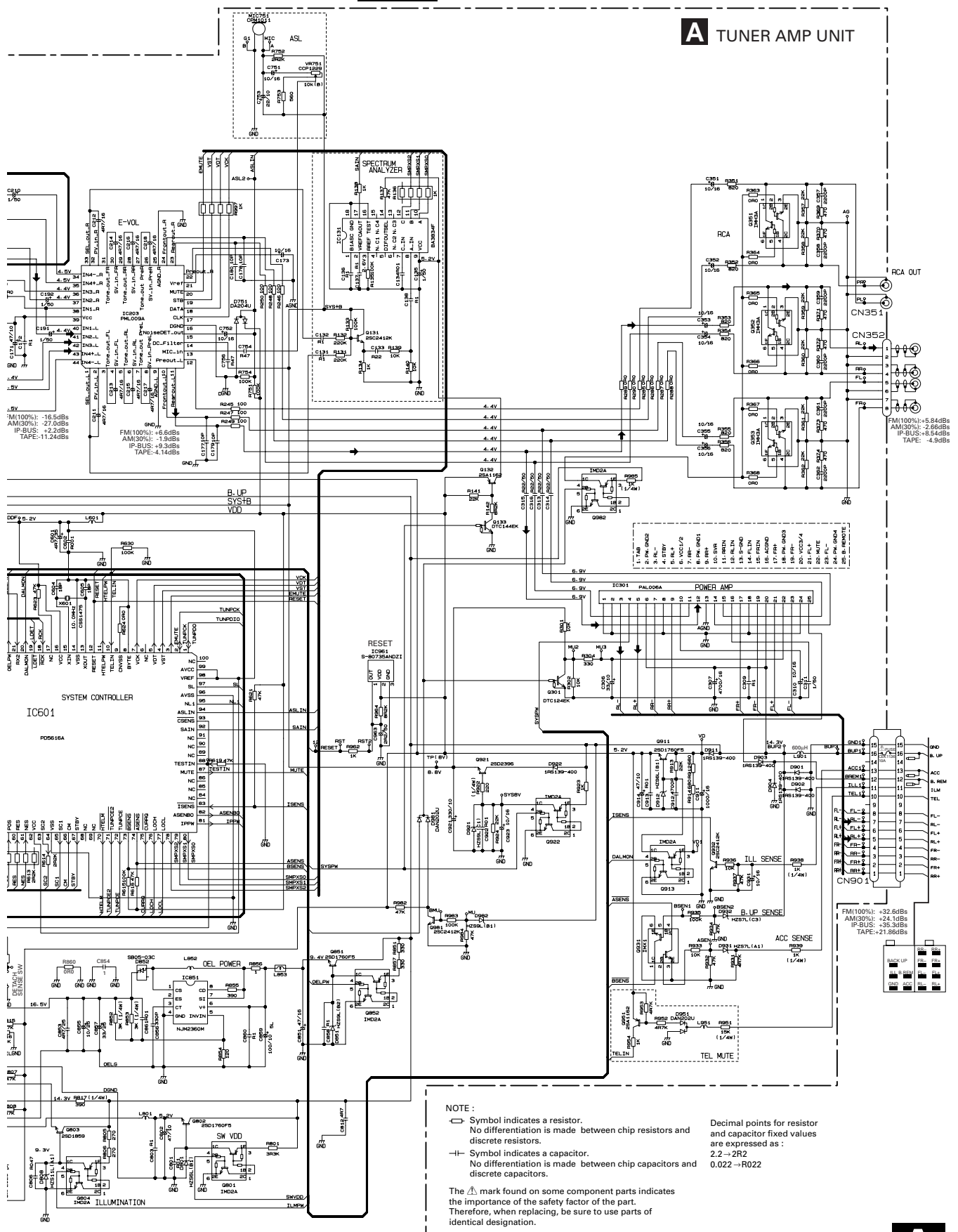
C

D



# A-b

## A TUNER AMP UNIT



**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.
- △ 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



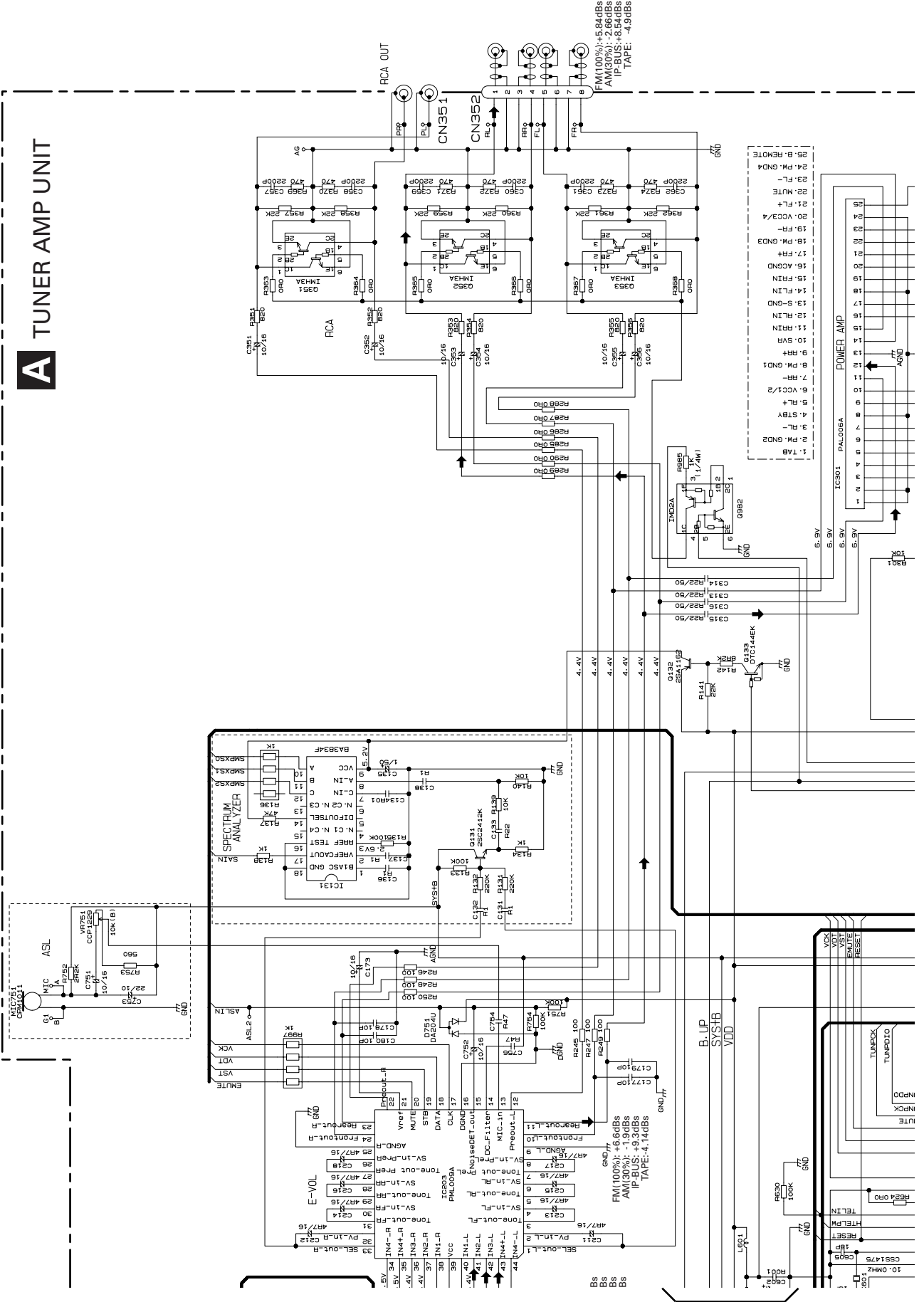




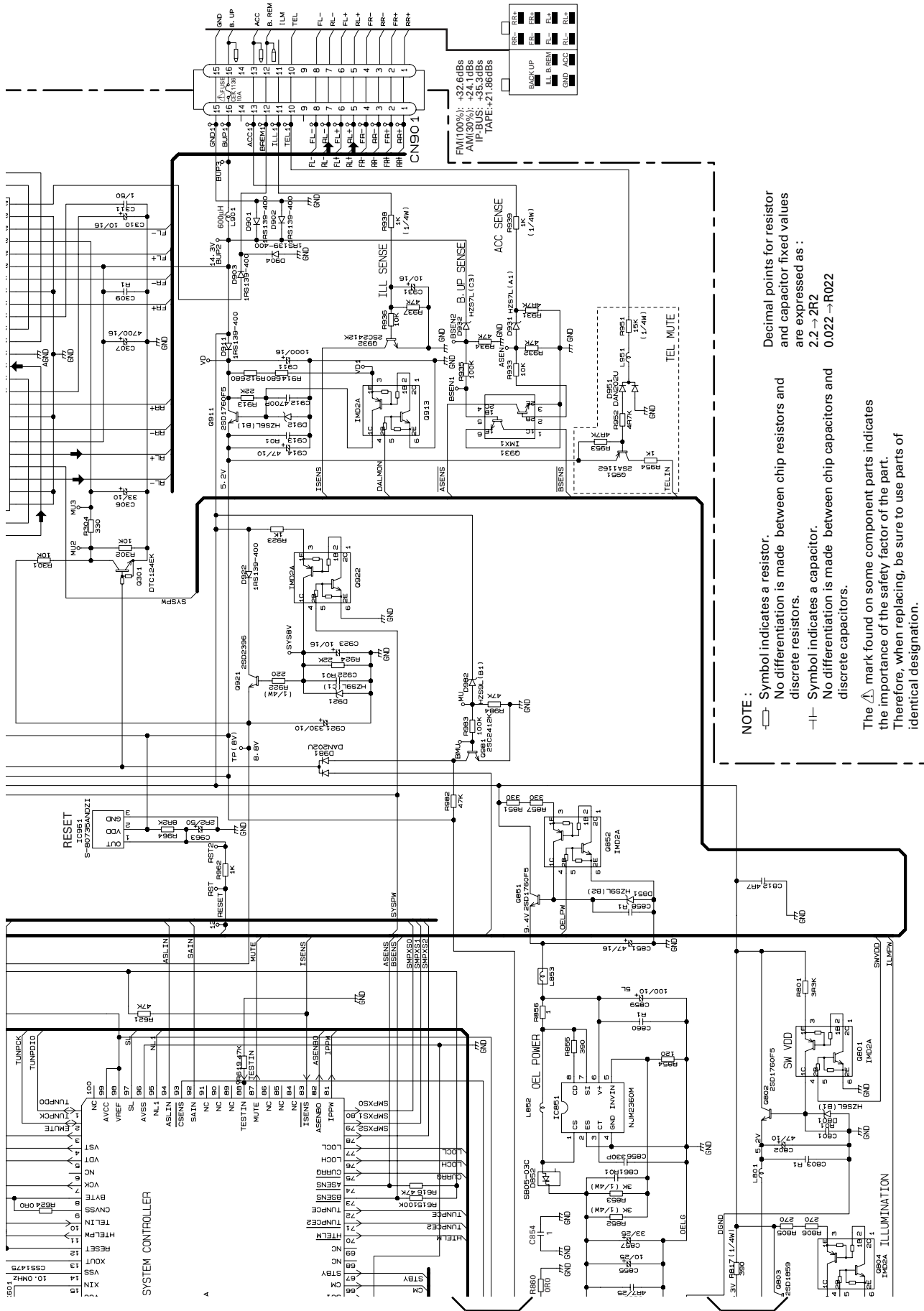


A-a A-b

# A TUNER AMP UNIT



A-b



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  $\Delta$  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

3.3 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)(KEH-P8015/X1N/ES)

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

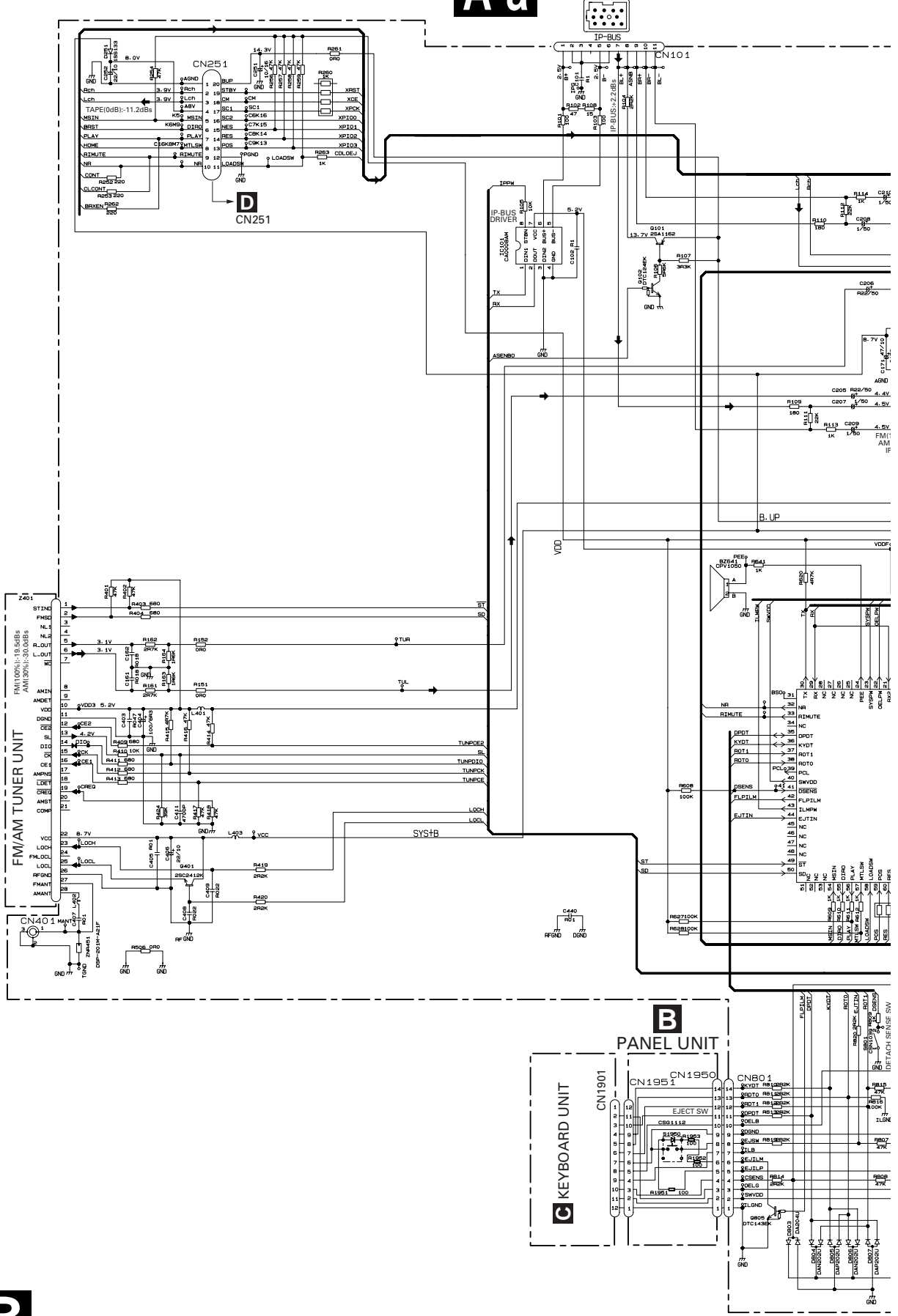
A-a

A

B

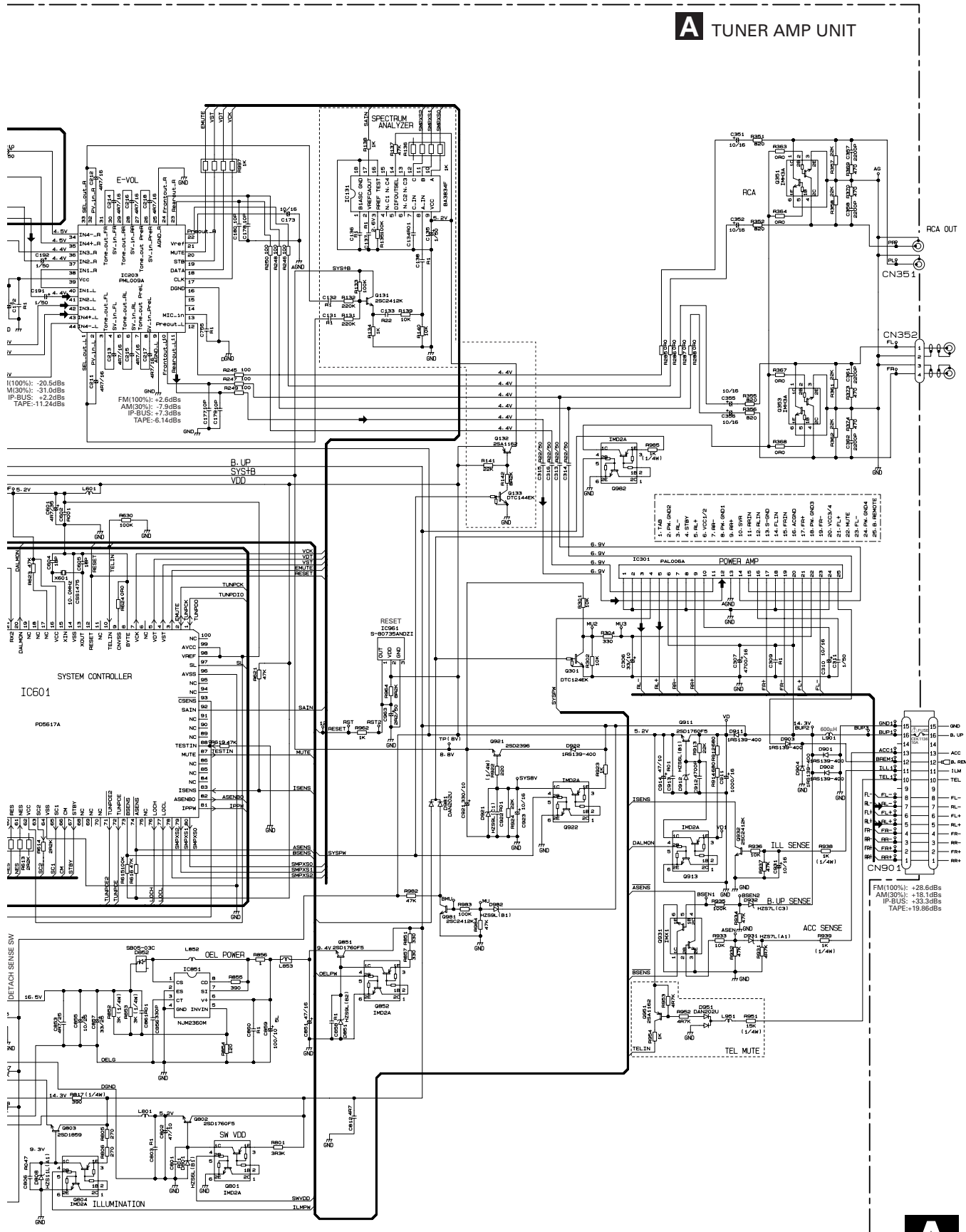
C

D



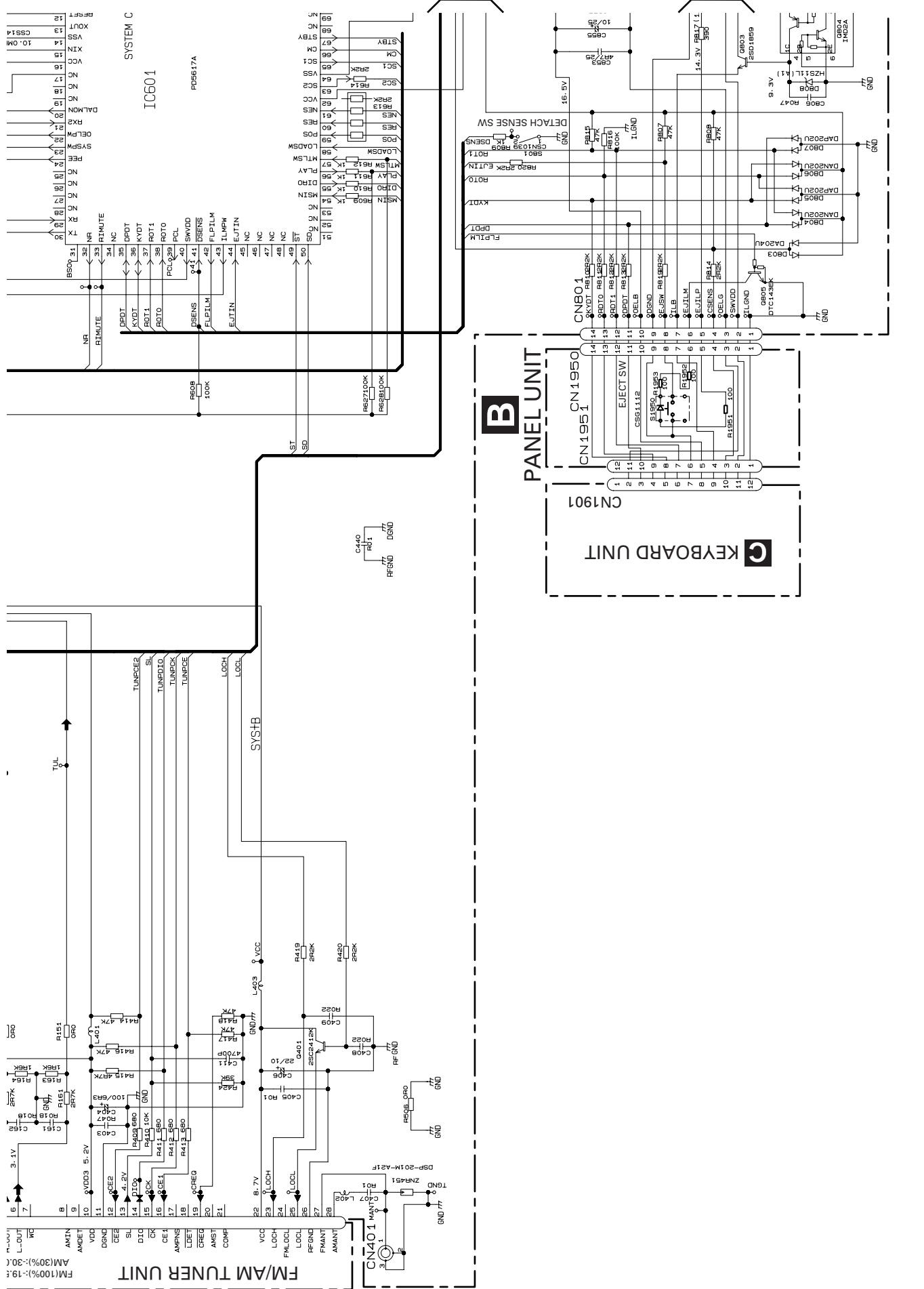
# A-b

## A TUNER AMP UNIT



# A



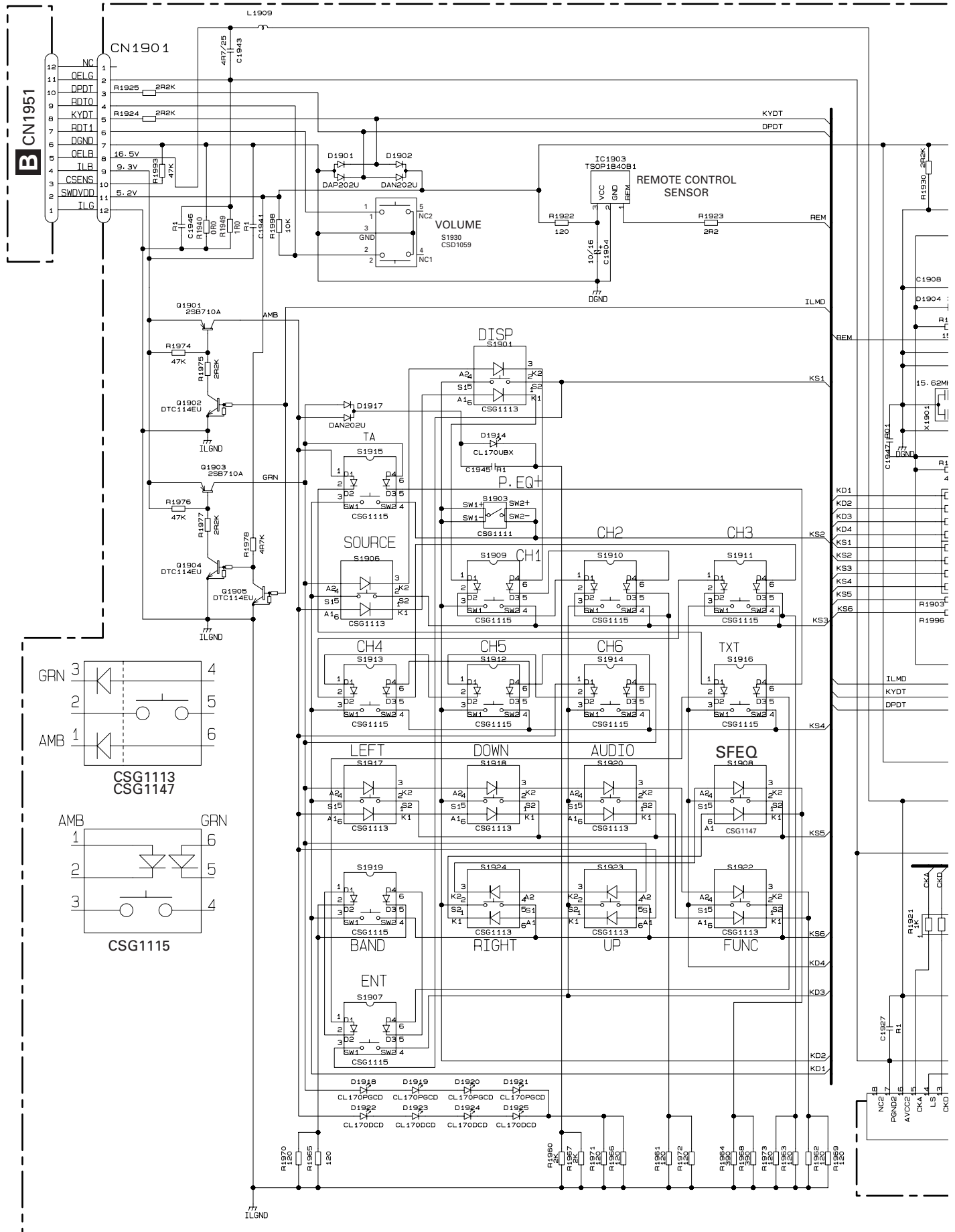








3.4 KEYBOARD UNIT(KEH-P8010R/X1N/EW)



A

B

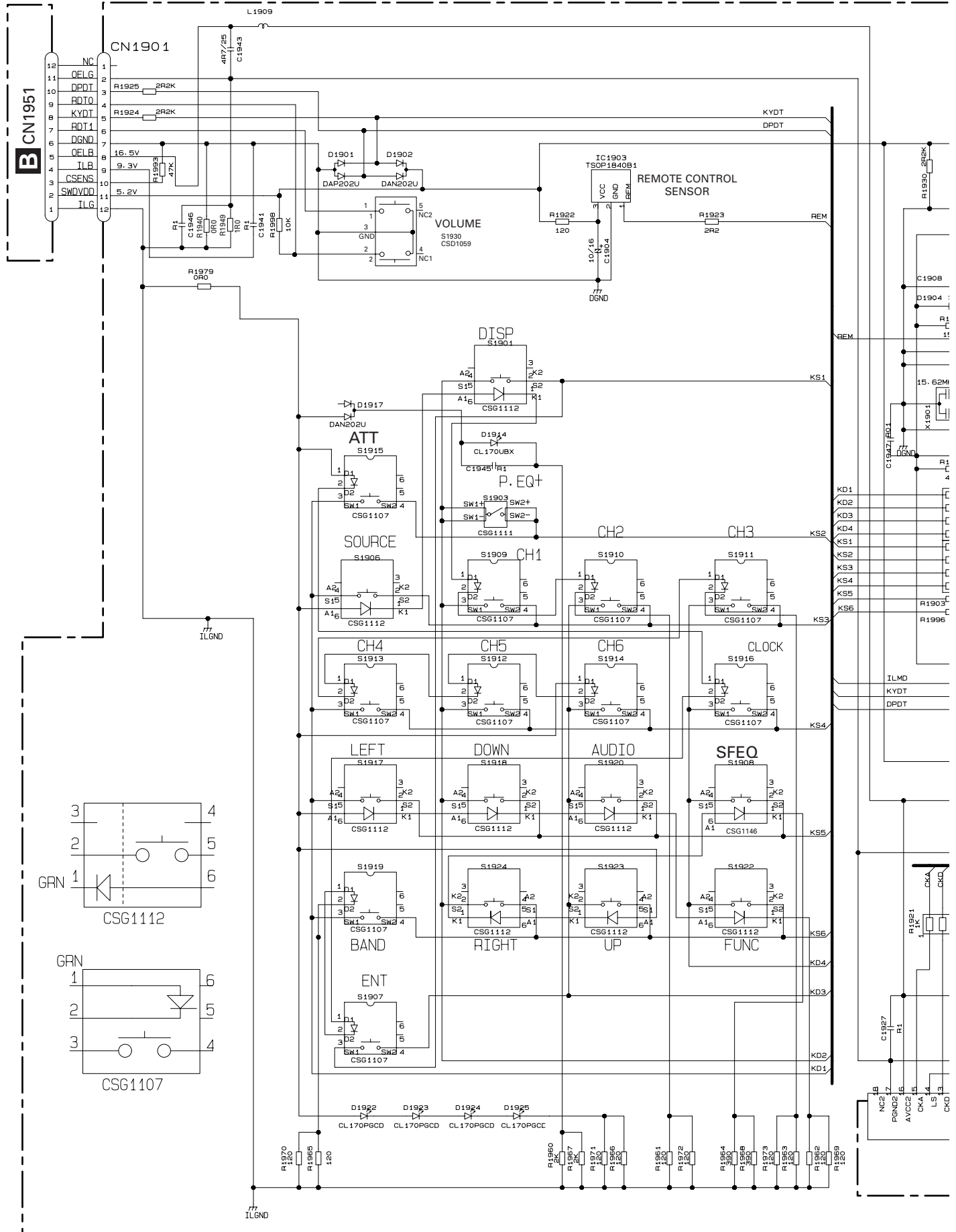
C

D

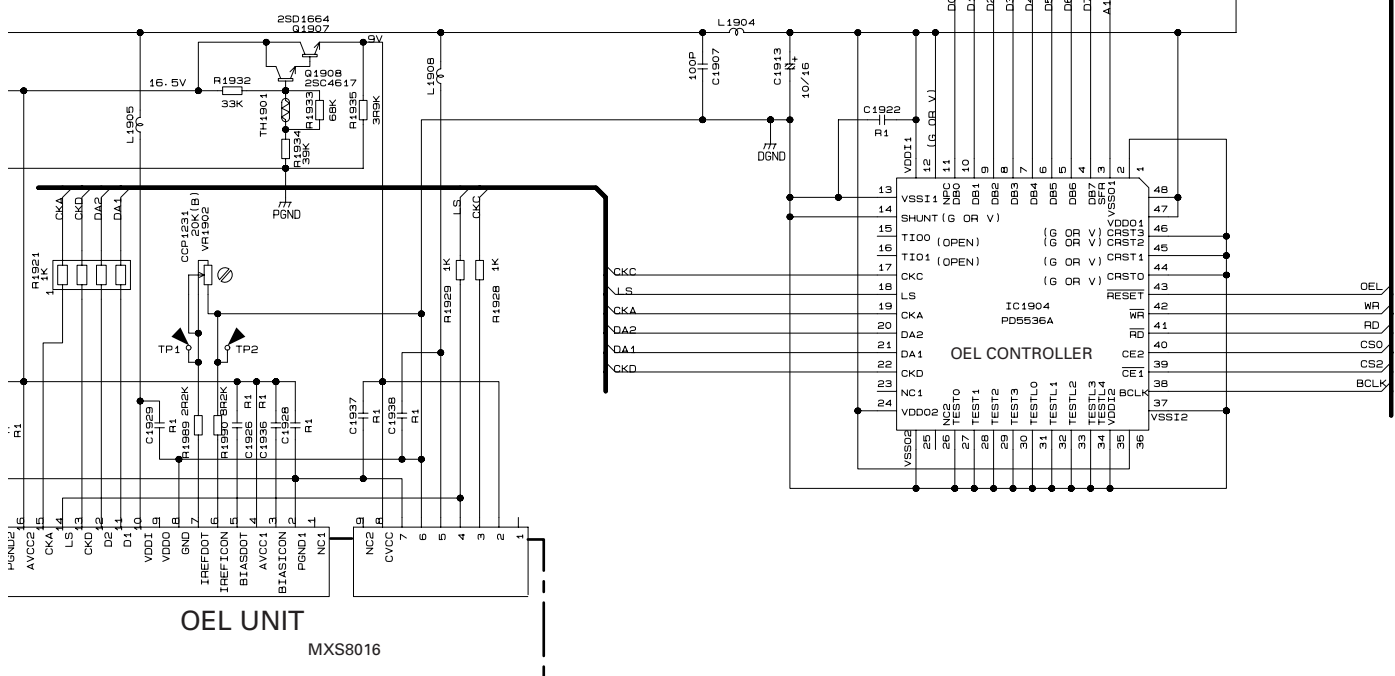
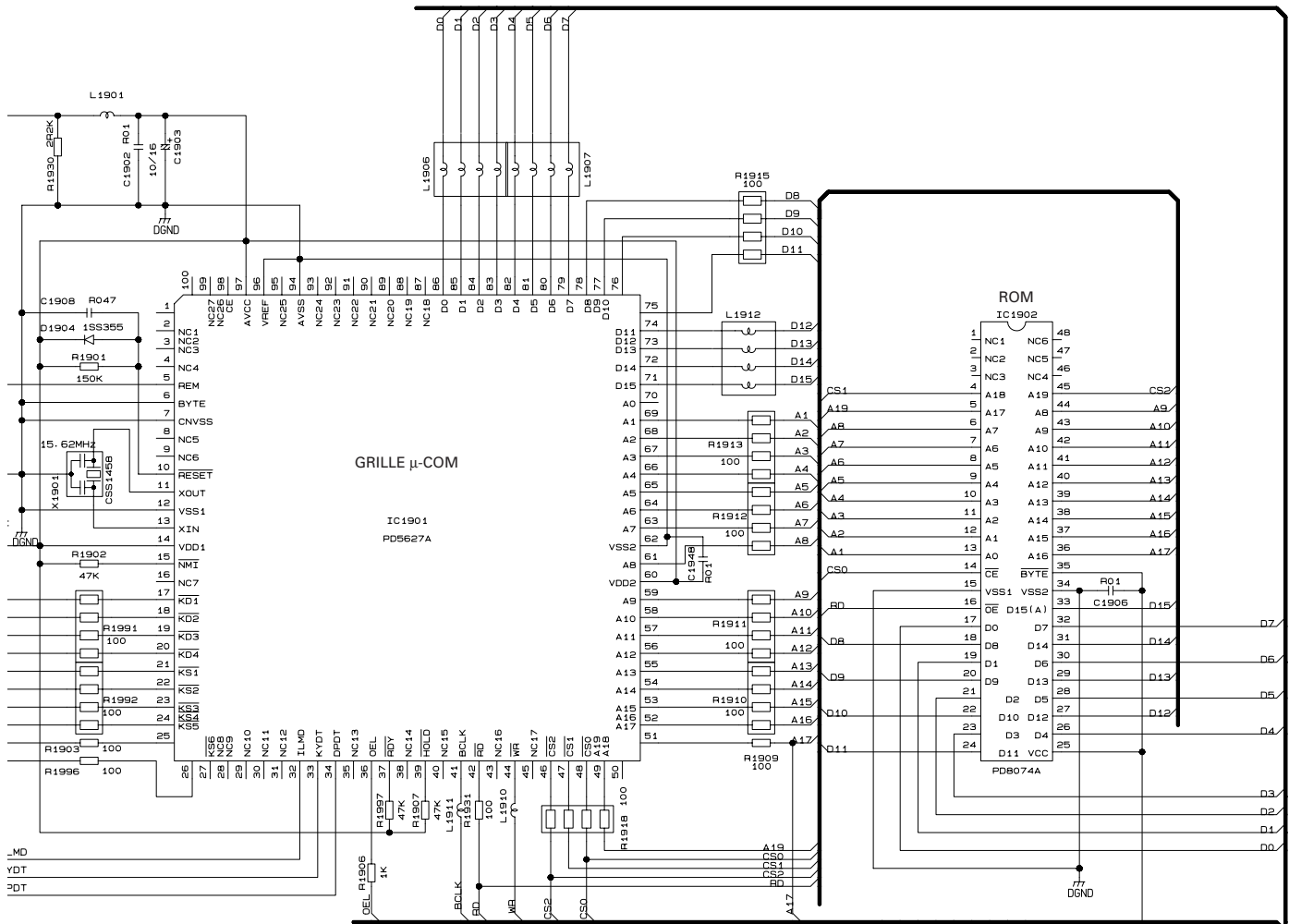




3.5 KEYBOARD UNIT(KEH-P8015/X1N/ES)

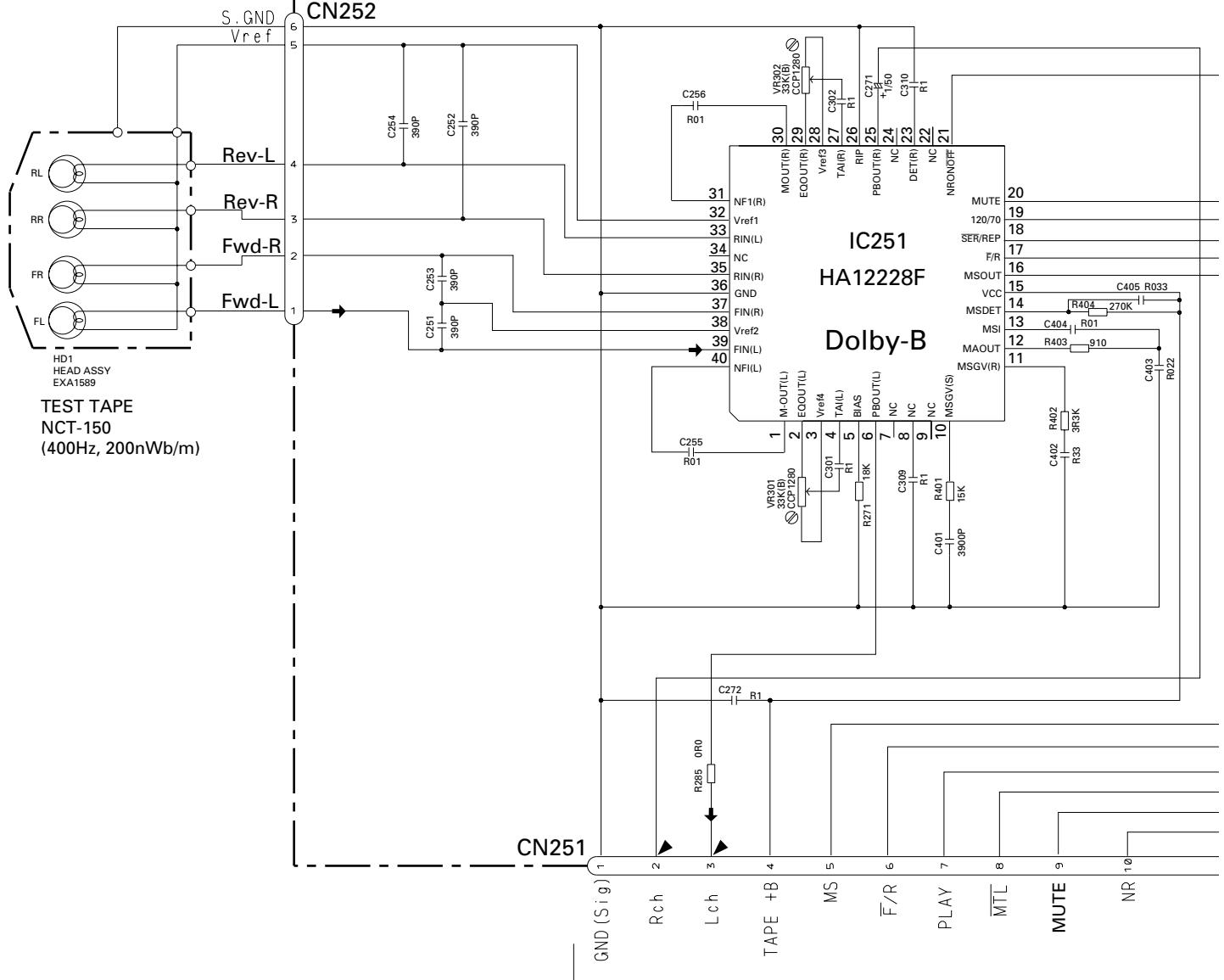


KEYBOARD UNIT



### 3.6 CASSETTE MECHANISM MODULE

## D DECK UNIT



-8.24dBs±1dB

**A** CN251

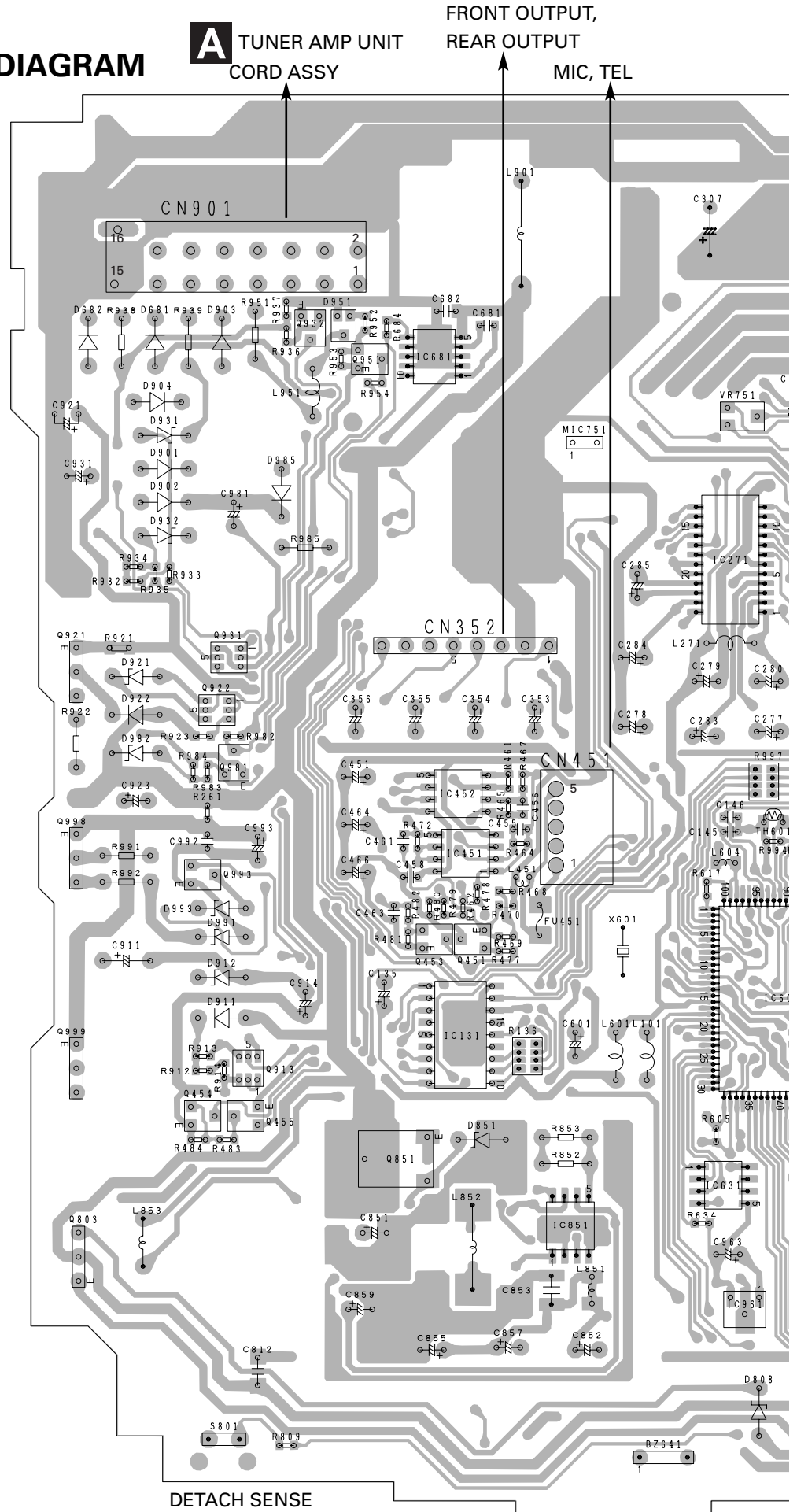
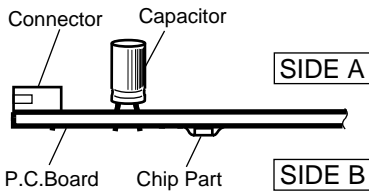


# 4. PCB CONNECTION DIAGRAM

## 4.1 TUNER AMP UNIT

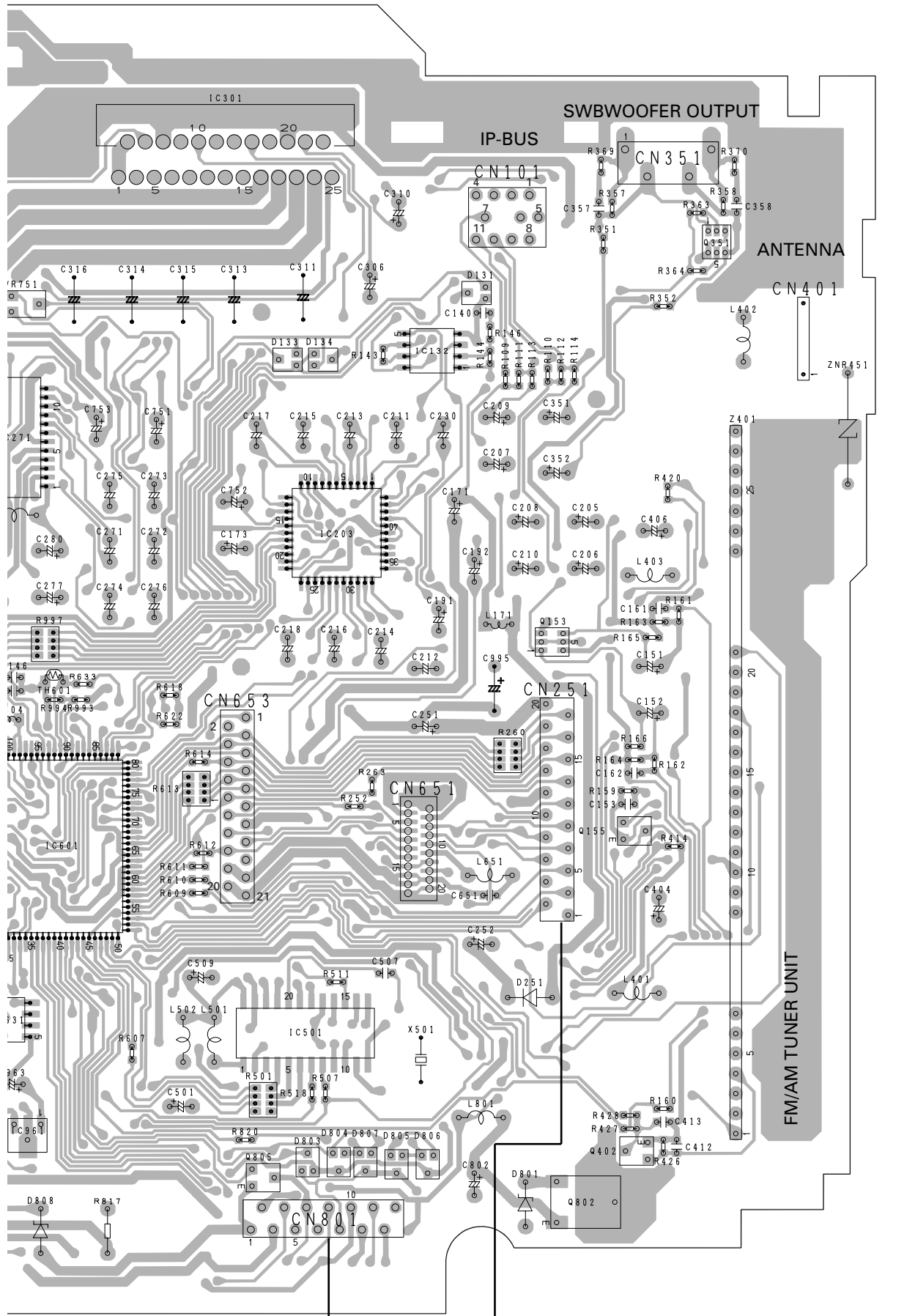
### NOTE FOR PCB DIAGRAMS

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





SIDE A



- IC, Q
- IC301
- Q932
- Q351
- IC681
- Q951
- IC132
- IC271
- Q931
- Q921
- IC203
- Q922
- Q153
- Q981
- IC452
- Q998
- IC451
- Q993
- Q453
- Q451
- Q155
- IC601
- Q999
- IC131
- Q913
- Q454
- Q455
- Q851
- IC631
- IC501
- Q803
- IC851
- IC961
- Q402
- Q805
- Q802

FRONT

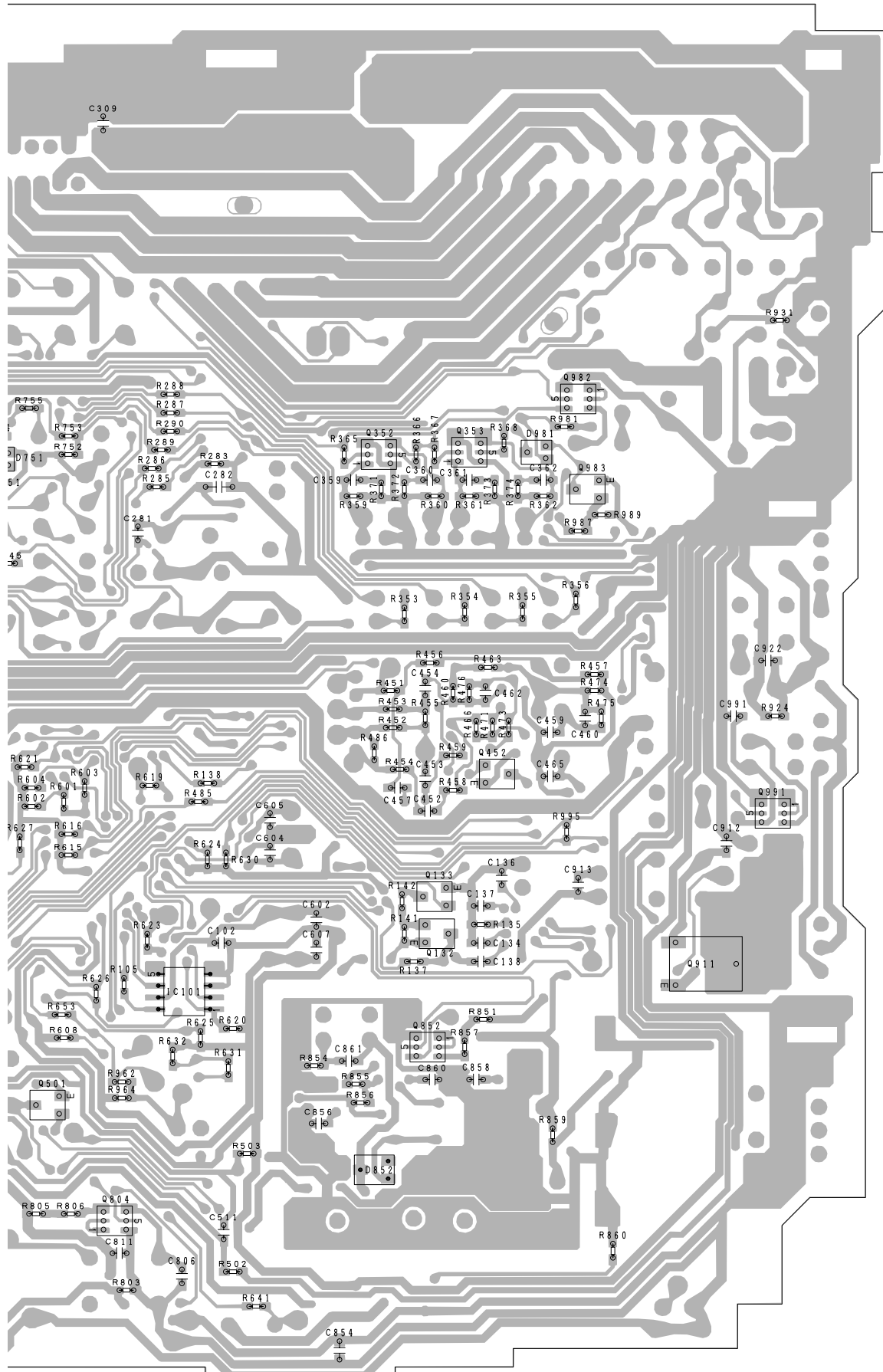
**B** CN1950

**D** CN251

**A**



SIDE B



A

B

C

D



### 4.2 PANEL UNIT

SIDE A

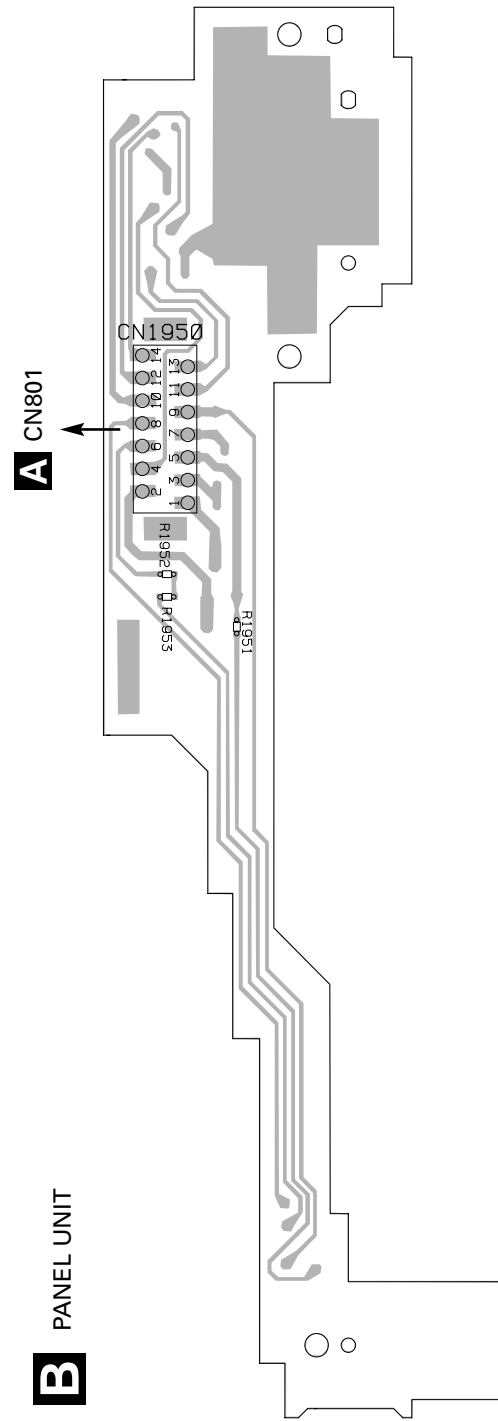
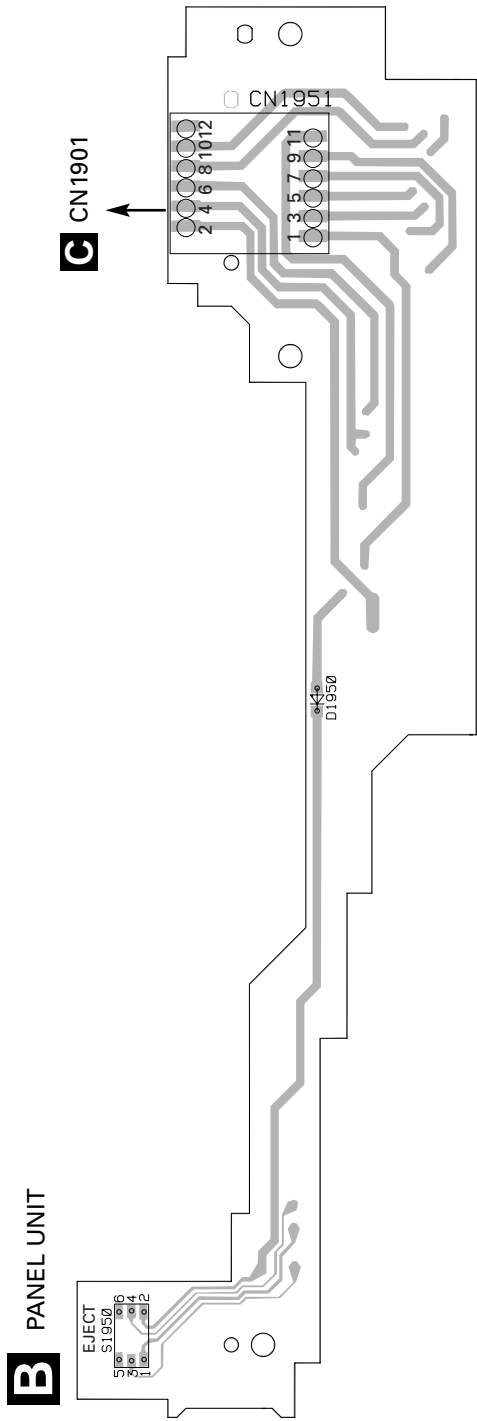
SIDE B

A

B

C

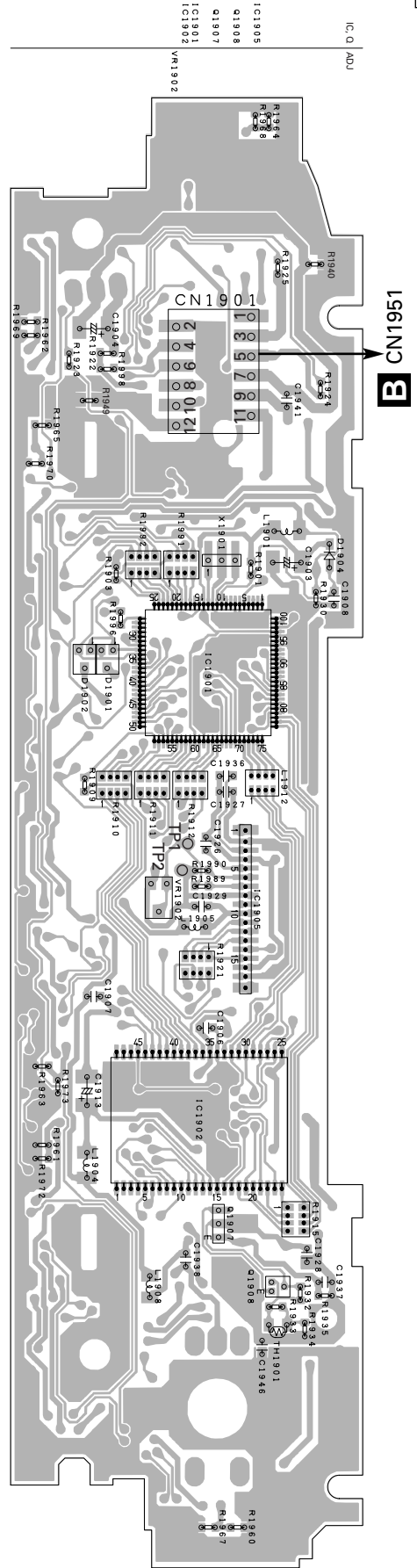
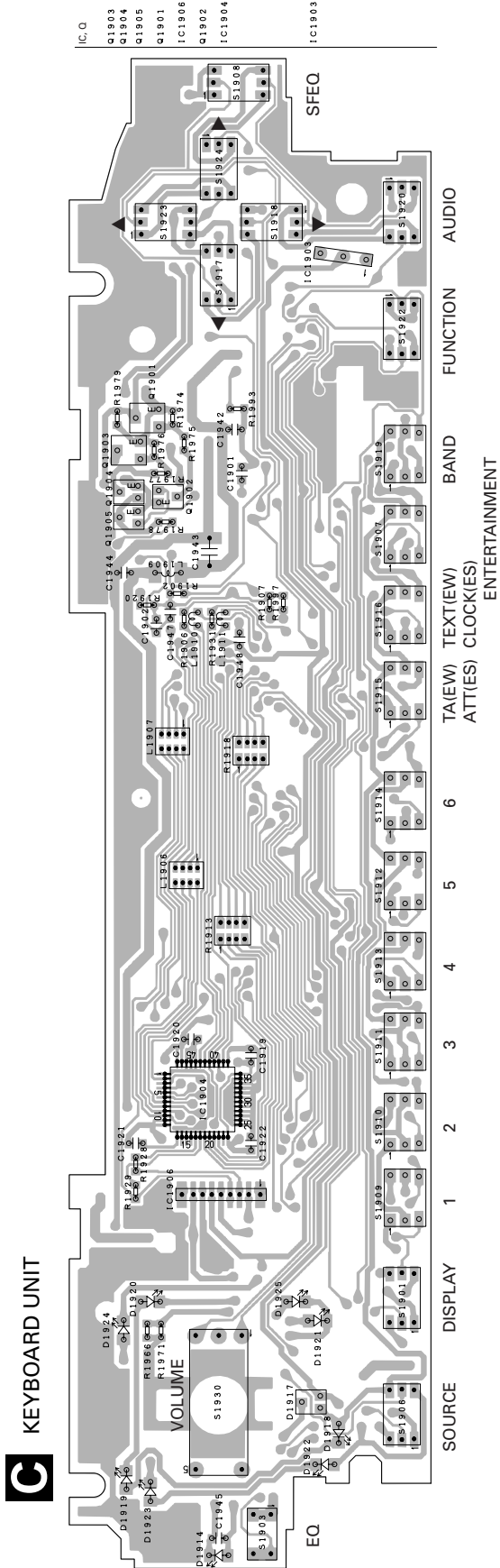
D



4.3 KEYBOARD UNIT

SIDE A

SIDE B



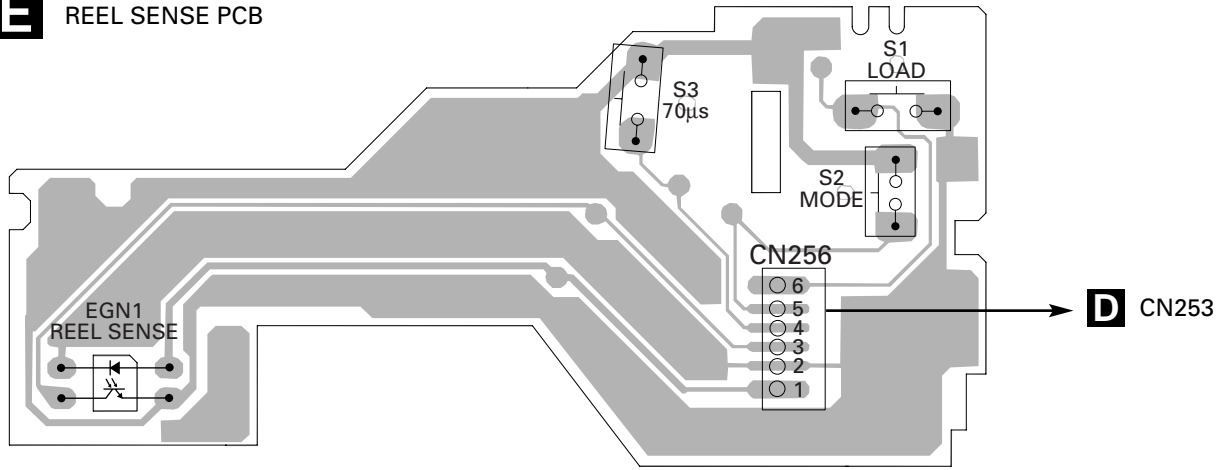
C

C

C



**E** REEL SENSE PCB



A

B

C

D

## 5. ELECTRICAL PARTS LIST

**NOTES:**

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

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>A</b> Unit Number : CWM7460(KEH-P8010R/X1N/EW)		D 806 Diode	DAN202U
Unit Name : Tuner Amp Unit		D 807 Diode	DAP202U
<b>MISCELLANEOUS</b>		D 808 Diode	HZS11L(A1)
IC 101 IC	CA0008AM	D 851 Diode	HZS9L(B2)
IC 131 IC	BA3834F	D 852 Diode	SB05-03C
IC 203 IC	PML009A	D 901 Diode	1SR139-400
IC 301 IC	PAL006A	D 902 Diode	1SR139-400
IC 452 IC	NJM2068MD	D 903 Diode	1SR139-400
		D 904 Diode	1SR139-400
		D 911 Diode	1SR139-400
IC 501 IC	PM4009A	D 912 Diode	HZS6L(B1)
IC 601 IC	PD5616A	D 921 Diode	HZS9L(C1)
IC 851 IC	NJM2360M	D 922 Diode	1SR139-400
IC 961 IC	S-80735ANDZI	D 931 Diode	HZS7L(A1)
Q 101 Transistor	2SA1162	D 932 Diode	HZS7L(C3)
Q 102 Transistor	DTC124EK	D 951 Diode	DAN202U
Q 131 Transistor	2SC2412K	D 981 Diode	DAN202U
Q 132 Transistor	2SA1162	D 982 Diode	HZS9L(B1)
Q 133 Transistor	DTC144EK	ZNR 451 Surge Protector	DSP-201M-A21F
Q 151 Transistor	2SD1757K	L 401 Ferri-Inductor	LAU2R2K
Q 152 Transistor	2SD1757K	L 402 Ferri-Inductor	LAU4R7K
Q 153 Transistor	IMH3A	L 403 Ferri-Inductor	LAU1R0M
Q 155 Transistor	2SC2412K	L 451 Inductor	CTF1378
Q 301 Transistor	DTC124EK	L 501 Ferri-Inductor	LAU101K
Q 351 Transistor	IMH3A	L 502 Ferri-Inductor	LAU2R2K
Q 352 Transistor	IMH3A	L 503 Inductor	CTF1378
Q 353 Transistor	IMH3A	L 601 Ferri-Inductor	LAU2R2K
Q 401 Transistor	2SC2412K	L 801 Inductor	LAU100K
Q 402 Transistor	2SC2412K	L 852 Inductor	CTF1510
Q 451 Transistor	2SC3326	L 853 Inductor	CTF1489
Q 454 Transistor	2SA1162	L 901 Choke Coil 600µH	CTH1221
Q 455 Transistor	DTC114EK	L 951 Ferri-Inductor	LAU2R2K
Q 501 Transistor	DTA124EK	X 501 Crystal Resonator 3.648MHz	CSS1447
Q 801 Transistor	IMD2A	X 601 Radiator 10.00MHz	CSS1475
Q 802 Transistor	2SD1760F5	S 801 Switch(DETACH SENSE)	CSN1039
Q 803 Transistor	2SD1859	VR 751 Semi-fixed 10kΩ(B)	CCP1229
Q 804 Transistor	IMD2A	FU 451 Fuse 200mA	CEK1189
Q 805 Transistor	DTC143EK	MIC 751 Microphone	CPM1011
Q 851 Transistor	2SD1760F5	BZ 641 Buzzer	CPV1050
Q 852 Transistor	IMD2A		CWE1562
Q 911 Transistor	2SD1760F5		
Q 913 Transistor	IMD2A		
Q 921 Transistor	2SD2396		
Q 922 Transistor	IMD2A		
Q 931 Transistor	IMX1		
Q 932 Transistor	2SC2412K		
Q 951 Transistor	2SA1162		
Q 981 Transistor	2SC2412K		
Q 982 Transistor	IMD2A		
D 251 Diode	1SS133		
D 751 Diode Network	DA204U		
D 801 Diode	HZS6L(B1)		
D 803 Diode Network	DA204U		
D 804 Diode	DAN202U		
D 805 Diode	DAP202U		
		<b>RESISTORS</b>	
		R 101	RS1/16S101J
		R 102	RS1/16S470J
		R 103	RS1/16S101J
		R 104	RS1/16S222J
		R 105	RS1/16S103J
		R 106	RS1/16S562J
		R 107	RS1/16S332J
		R 108	RS1/16S150J
		R 109	RS1/16S181J
		R 110	RS1/16S181J



====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 111	RS1/16S223J	R 359	RS1/16S223J
R 112	RS1/16S223J	R 360	RS1/16S223J
R 113	RS1/16S102J	R 361	RS1/16S223J
R 114	RS1/16S102J	R 362	RS1/16S223J
R 131	RS1/16S224J	R 363	RS1/16S0R0J
R 132	RS1/16S224J	R 364	RS1/16S0R0J
R 133	RS1/16S104J	R 365	RS1/16S0R0J
R 134	RS1/16S102J	R 366	RS1/16S0R0J
R 135	RS1/16S104J	R 367	RS1/16S0R0J
R 136	RAB4C102J	R 368	RS1/16S0R0J
R 137	RS1/16S473J	R 369	RS1/16S471J
R 138	RS1/16S102J	R 370	RS1/16S471J
R 139	RS1/16S103J	R 371	RS1/16S471J
R 140	RS1/16S103J	R 372	RS1/16S471J
R 141	RS1/16S223J	R 373	RS1/16S471J
R 142	RS1/16S822J	R 374	RS1/16S471J
R 153	RS1/16S224J	R 401	RS1/16S473J
R 154	RS1/16S224J	R 402	RS1/16S473J
R 155	RS1/16S222J	R 403	RS1/16S681J
R 156	RS1/16S222J	R 404	RS1/16S681J
R 157	RS1/16S223J	R 405	RS1/16S681J
R 158	RS1/16S223J	R 406	RS1/16S102J
R 159	RS1/16S224J	R 407	RS1/16S473J
R 160	RS1/16S473J	R 409	RS1/16S681J
R 161	RS1/16S162J	R 410	RS1/16S103J
R 162	RS1/16S162J	R 411	RS1/16S681J
R 163	RS1/16S272J	R 412	RS1/16S681J
R 164	RS1/16S272J	R 413	RS1/16S681J
R 165	RS1/16S104J	R 414	RS1/16S473J
R 166	RS1/16S104J	R 415	RS1/16S472J
R 230	RS1/16S0R0J	R 416	RS1/16S473J
R 245	RS1/16S101J	R 417	RS1/16S473J
R 246	RS1/16S101J	R 418	RS1/16S473J
R 247	RS1/16S101J	R 419	RS1/16S222J
R 248	RS1/16S101J	R 420	RS1/16S222J
R 249	RS1/16S101J	R 421	RS1/16S681J
R 250	RS1/16S101J	R 422	RS1/16S681J
R 252	RS1/16S221J	R 424	RS1/16S393J
R 253	RS1/16S221J	R 426	RS1/16S153J
R 254	RS1/16S473J	R 427	RS1/16S474J
R 256	RS1/16S473J	R 428	RS1/16S681J
R 257	RS1/16S473J	R 451	RS1/16S152J
R 258	RS1/16S473J	R 452	RS1/16S102J
R 259	RS1/16S473J	R 453	RS1/16S471J
R 260	RAB4C102J	R 456	RS1/16S102J
R 261	RS1/16S0R0J	R 457	RS1/16S102J
R 262	RS1/16S221J	R 462	RS1/16S0R0J
R 263	RS1/16S102J	R 463	RS1/16S0R0J
R 285	RS1/16S0R0J	R 465	RS1/16S105J
R 286	RS1/16S0R0J	R 468	RS1/16S223J
R 287	RS1/16S0R0J	R 469	RS1/16S103J
R 288	RS1/16S0R0J	R 470	RS1/16S105J
R 289	RS1/16S0R0J	R 472	RS1/16S0R0J
R 290	RS1/16S0R0J	R 473	RS1/16S103J
R 301	RS1/16S103J	R 474	RS1/16S103J
R 302	RS1/16S103J	R 475	RS1/16S123J
R 304	RS1/16S331J	R 476	RS1/16S473J
R 351	RS1/16S821J	R 477	RS1/16S103J
R 352	RS1/16S821J	R 483	RS1/16S152J
R 353	RS1/16S821J	R 484	RS1/16S223J
R 354	RS1/16S821J	R 485	RS1/16S0R0J
R 355	RS1/16S821J	R 501	RAB4C102J
R 356	RS1/16S821J	R 503	RS1/16S0R0J
R 357	RS1/16S223J	R 506	RS1/16S0R0J
R 358	RS1/16S223J	R 507	RS1/16S0R0J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 511	RS1/16S102J	R 951	RD1/4PU153J
R 513	RS1/16S225J	R 952	RS1/16S472J
R 518	RS1/16S681J	R 953	RS1/16S472J
R 607	RS1/16S0R0J	R 954	RS1/16S102J
R 608	RS1/16S104J	R 962	RS1/16S102J
R 609	RS1/16S102J	R 964	RS1/16S822J
R 610	RS1/16S102J	R 982	RS1/16S473J
R 611	RS1/16S102J	R 983	RS1/16S104J
R 612	RS1/16S102J	R 984	RS1/16S473J
R 613	RAB4C222J	R 985	RD1/4PU102J
R 614	RS1/16S222J	R 997	RAB4C102J
R 615	RS1/16S104J	CAPACITORS	
R 616	RS1/16S473J	C 101	CKSRYB104K16
R 619	RS1/16S473J	C 102	CKSRYB104K16
R 620	RS1/16S472J	C 131	CKSRYB104K16
R 621	RS1/16S473J	C 132	CKSRYB104K16
R 623	RS1/16S473J	C 133	CKSRYB224K16
R 624	RS1/16S0R0J	C 134	CKSRYB103K50
R 627	RS1/16S104J	C 135	CEAL1R0M50
R 628	RS1/16S104J	C 136	CKSRYB104K16
R 630	RS1/16S104J	C 137	CKSRYB104K16
R 641	RS1/16S102J	C 138	CKSRYB104K16
R 751	RS1/16S104J	C 151	CEJQ1R0M50
R 752	RS1/16S222J	C 152	CEJQ1R0M50
R 753	RS1/16S561J	C 153	CKSRYB223K25
R 754	RS1/16S104J	C 161	CKSRYB123K25
R 801	RS1/16S332J	C 162	CKSRYB123K25
R 805	RS1/16S271J	C 171	CEJQ470M10
R 806	RS1/16S271J	C 172	CKSRYB104K16
R 807	RS1/16S473J	C 173	CEAL100M16
R 808	RS1/16S473J	C 177	CCSRCH100D50
R 809	RS1/16S102J	C 178	CCSRCH100D50
R 810	RS1/16S222J	C 179	CCSRCH100D50
R 811	RS1/16S222J	C 180	CCSRCH100D50
R 812	RS1/16S222J	C 191	CEAL1R0M50
R 813	RS1/16S222J	C 192	CEAL1R0M50
R 814	RS1/16S222J	C 205	CEALR22M50
R 815	RS1/16S473J	C 206	CEALR22M50
R 816	RS1/16S104J	C 207	CEAL1R0M50
R 817	RD1/4PU391J	C 208	CEAL1R0M50
R 819	RS1/16S222J	C 209	CEAL1R0M50
R 820	RS1/16S222J	C 210	CEAL1R0M50
R 851	RS1/16S331J	C 211	CEALNP4R7M16
R 852	RD1/4PU302J	C 212	CEALNP4R7M16
R 853	RD1/4PU302J	C 213	CEALNP4R7M16
R 854	RS1/16S121J	C 214	CEALNP4R7M16
R 855	RS1/16S391J	C 215	CEALNP4R7M16
R 856	RS1/16S1R0J	C 216	CEALNP4R7M16
R 857	RS1/16S331J	C 217	CEALNP4R7M16
R 860	RS1/16S0R0J	C 218	CEALNP4R7M16
R 912	RS1/16S681J	C 251	CEAL100M16
R 913	RS1/16S223J	C 252	CEJQ220M10
R 914	RS1/16S681J	C 306	CEAL330M10
R 922	RD1/4PU221J	C 307	CCH1367
R 923	RS1/16S102J	C 309	CKSRYB104K16
R 924	RS1/16S223J	C 310	CEJQ100M16
R 931	RS1/16S472J	C 311	CFTNA105J50
R 932	RS1/16S473J	C 313	CFTNA224J50
R 933	RS1/16S103J	C 314	CFTNA224J50
R 934	RS1/16S473J	C 315	CFTNA224J50
R 935	RS1/16S104J	C 316	CFTNA224J50
R 936	RS1/16S103J	C 351	CEAL100M16
R 937	RS1/16S473J	C 352	CEAL100M16
R 938	RD1/4PU102J	C 353	CEAL100M16
R 939	RD1/4PU102J	C 354	CEAL100M16
		C 355	CEAL100M16
		C 356	CEAL100M16

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 357	CKSRYPB222K50	C 914	CEJQ470M10
C 358	CKSRYPB222K50	C 921 330µF/10V	CCH1181
C 359	CKSRYPB222K50	C 922	CKSRYPB103K50
C 360	CKSRYPB222K50	C 923	CEJQ100M16
C 361	CKSRYPB222K50	C 931	CEJQ100M16
C 362	CKSRYPB222K50	C 963	CEAL2R2M50
C 401	CKSRYPB182K50	<b>A</b> Unit Number : CWM7462(KEH-P8015/X1N/ES)	
C 403	CKSRYPB473K25	Unit Name : Tuner Amp Unit	
C 404	CEJQ101M6R3	<b>MISCELLANEOUS</b>	
C 405	CKSRYPB103K50	IC 101 IC	CA0008AM
C 406	CEJQ220M10	IC 131 IC	BA3834F
C 407	CKSQYB103K50	IC 203 IC	PML009A
C 408	CKSRYPB223K25	IC 301 IC	PAL006A
C 409	CKSRYPB223K25	IC 601 IC	PD5617A
C 411	CKSRYPB472K50	IC 851 IC	NJM2360M
C 413	CKSRYPB472K50	IC 961 IC	S-80735ANDZI
C 440	CKSRYPB103K25	Q 101 Transistor	2SA1162
C 451	CEAL100M16	Q 102 Transistor	DTC124EK
C 453	CKSRYPB224K16	Q 131 Transistor	2SC2412K
C 454	CKSRYPB224K16	Q 132 Transistor	2SA1162
C 457	CKSRYPB473K16	Q 133 Transistor	DTC144EK
C 459	CKSRYPB104K16	Q 301 Transistor	DTC124EK
C 460	CKSRYPB104K16	Q 351 Transistor	IMH3A
C 461	CKSRYPB224K16	Q 353 Transistor	IMH3A
C 462	CCSRCH471J50	Q 401 Transistor	2SC2412K
C 464	CEAL100M16	Q 801 Transistor	IMD2A
C 465	CKSRYPB104K16	Q 802 Transistor	2SD1760F5
C 466	CEAL100M16	Q 803 Transistor	2SD1859
C 501	CEAL220M6R3	Q 804 Transistor	IMD2A
C 502	CKSRYPB104K16	Q 805 Transistor	DTC143EK
C 503	CCSRCH270J50	Q 851 Transistor	2SD1760F5
C 504	CCSRCH270J50	Q 852 Transistor	IMD2A
C 505	CKSRYPB104K16	Q 911 Transistor	2SD1760F5
C 506	CKSRYPB471K50	Q 913 Transistor	IMD2A
C 507	CKSRYPB471K50	Q 921 Transistor	2SD2396
C 508	CKSRYPB104K16	Q 922 Transistor	IMD2A
C 509	CEAL220M6R3	Q 931 Transistor	IMX1
C 510	CCSRCH101J50	Q 932 Transistor	2SC2412K
C 601	CEAL4R7M35	Q 951 Transistor	2SA1162
C 602	CKSRYPB102K50	Q 981 Transistor	2SC2412K
C 604	CCSRCH180J50	Q 982 Transistor	IMD2A
C 605	CCSRCH180J50	D 251 Diode	1SS133
C 751	CEAL100M16	D 801 Diode	HZS6L(B1)
C 752	CEAL100M16	D 803 Diode Network	DA204U
C 753	CEAL220M10	D 804 Diode	DAN202U
C 754	CKSRYPB474K10	D 805 Diode	DAP202U
C 756	CKSRYPB474K10	D 806 Diode	DAN202U
C 801	CKSRYPB103K50	D 807 Diode	DAP202U
C 802	CEJQ470M10	D 808 Diode	HZS11L(A1)
C 803	CKSRYPB104K16	D 851 Diode	HZS9L(B2)
C 806	CKSRYPB473K25	D 852 Diode	SB05-03C
C 812	CKSYB475K16	D 901 Diode	1SR139-400
C 851 4.7µF/25V	CEAL470M16	D 902 Diode	1SR139-400
C 853	CCG1111	D 903 Diode	1SR139-400
C 854	CKSQYB105K16	D 904 Diode	1SR139-400
C 855	CEAL100M25	D 911 Diode	1SR139-400
C 856	CCSRCH331J50	D 912 Diode	HZS6L(B1)
C 857	CEAL330M25	D 921 Diode	HZS9L(C1)
C 858	CKSRYPB104K16	D 922 Diode	1SR139-400
C 859	CEAL101M10	D 931 Diode	HZS7L(A1)
C 860	CKSRYPB104K16	D 932 Diode	HZS7L(C3)
C 861 1000µF/16V	CKSRYPB103K25	D 951 Diode	DAN202U
C 911	CCH1343	D 981 Diode	DAN202U
C 912	CKSRYPB472K50	D 982 Diode	HZS9L(B1)
C 913	CKSRYPB103K50		

# KEH-P8010R,P8015

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
ZNR 451 Surge Protector	DSP-201M-A21F	R 286	RS1/16S0R0J
L 401 Ferri-Inductor	LAU2R2K	R 287	RS1/16S0R0J
L 402 Ferri-Inductor	LAU4R7K	R 288	RS1/16S0R0J
L 403 Ferri-Inductor	LAU1R0M	R 301	RS1/16S103J
L 601 Ferri-Inductor	LAU2R2K	R 302	RS1/16S103J
L 801 Inductor	LAU100K	R 304	RS1/16S331J
L 852 Inductor	CTF1510	R 351	RS1/16S821J
L 853 Inductor	CTF1489	R 352	RS1/16S821J
L 901 Choke Coil 600μH	CTH1221	R 355	RS1/16S821J
L 951 Ferri-Inductor	LAU2R2K	R 356	RS1/16S821J
X 601 Radiator 10.00MHz	CSS1475	R 357	RS1/16S223J
S 801 Switch(DETACH SENSE)	CSN1039	R 358	RS1/16S223J
BZ 641 Buzzer	CPV1050	R 361	RS1/16S223J
FM/AM Tuner Unit	CWE1563	R 362	RS1/16S223J
		R 363	RS1/16S0R0J
<b>RESISTORS</b>			
R 101	RS1/16S101J	R 364	RS1/16S0R0J
R 102	RS1/16S470J	R 367	RS1/16S0R0J
R 103	RS1/16S101J	R 368	RS1/16S0R0J
R 104	RS1/16S222J	R 369	RS1/16S471J
R 105	RS1/16S103J	R 370	RS1/16S471J
R 106	RS1/16S562J	R 373	RS1/16S471J
R 107	RS1/16S332J	R 374	RS1/16S471J
R 108	RS1/16S150J	R 401	RS1/16S473J
R 109	RS1/16S181J	R 402	RS1/16S473J
R 110	RS1/16S181J	R 403	RS1/16S681J
R 111	RS1/16S223J	R 404	RS1/16S681J
R 112	RS1/16S223J	R 409	RS1/16S681J
R 113	RS1/16S102J	R 410	RS1/16S103J
R 114	RS1/16S102J	R 411	RS1/16S681J
R 131	RS1/16S224J	R 412	RS1/16S681J
R 132	RS1/16S224J	R 413	RS1/16S681J
R 133	RS1/16S104J	R 414	RS1/16S473J
R 134	RS1/16S102J	R 415	RS1/16S472J
R 135	RS1/16S104J	R 416	RS1/16S473J
R 136	RAB4C102J	R 417	RS1/16S473J
R 137	RS1/16S473J	R 418	RS1/16S473J
R 138	RS1/16S102J	R 419	RS1/16S222J
R 139	RS1/16S103J	R 420	RS1/16S222J
R 140	RS1/16S103J	R 424	RS1/16S393J
R 141	RS1/16S223J	R 506	RS1/16S0R0J
R 142	RS1/16S822J	R 608	RS1/16S104J
R 151	RS1/16S0R0J	R 609	RS1/16S102J
R 152	RS1/16S0R0J	R 610	RS1/16S102J
R 161	RS1/16S272J	R 611	RS1/16S102J
R 162	RS1/16S272J	R 612	RS1/16S102J
R 163	RS1/16S162J	R 613	RAB4C222J
R 164	RS1/16S162J	R 614	RS1/16S222J
R 245	RS1/16S101J	R 615	RS1/16S104J
R 246	RS1/16S101J	R 616	RS1/16S473J
R 247	RS1/16S101J	R 619	RS1/16S473J
R 248	RS1/16S101J	R 620	RS1/16S472J
R 249	RS1/16S101J	R 621	RS1/16S473J
R 250	RS1/16S101J	R 623	RS1/16S473J
R 252	RS1/16S221J	R 624	RS1/16S0R0J
R 253	RS1/16S221J	R 627	RS1/16S104J
R 254	RS1/16S473J	R 628	RS1/16S104J
R 256	RS1/16S473J	R 630	RS1/16S104J
R 257	RS1/16S473J	R 641	RS1/16S102J
R 258	RS1/16S473J	R 801	RS1/16S332J
R 259	RS1/16S473J	R 805	RS1/16S271J
R 260	RAB4C102J	R 806	RS1/16S271J
R 261	RS1/16S0R0J	R 807	RS1/16S473J
R 262	RS1/16S221J	R 808	RS1/16S473J
R 263	RS1/16S102J	R 809	RS1/16S102J
R 285	RS1/16S0R0J	R 810	RS1/16S222J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 811	RS1/16S222J	C 192	CEAL1R0M50
R 812	RS1/16S222J	C 205	CEALR22M50
R 813	RS1/16S222J	C 206	CEALR22M50
R 814	RS1/16S222J	C 207	CEAL1R0M50
R 815	RS1/16S473J	C 208	CEAL1R0M50
R 816	RS1/16S104J	C 209	CEAL1R0M50
R 817	RD1/4PU391J	C 210	CEAL1R0M50
R 819	RS1/16S222J	C 211	CEALNP4R7M16
R 820	RS1/16S222J	C 212	CEALNP4R7M16
R 851	RS1/16S331J	C 213	CEALNP4R7M16
R 852	RD1/4PU302J	C 214	CEALNP4R7M16
R 853	RD1/4PU302J	C 215	CEALNP4R7M16
R 854	RS1/16S121J	C 216	CEALNP4R7M16
R 855	RS1/16S391J	C 217	CEALNP4R7M16
R 856	RS1/16S1R0J	C 218	CEALNP4R7M16
R 857	RS1/16S331J	C 251	CEAL100M16
R 912	RS1/16S681J	C 252	CEJQ220M10
R 913	RS1/16S223J	C 306	CEAL330M10
R 914	RS1/16S681J	C 307	CCH1367
R 922	RD1/4PU221J	C 309	CKSRYB104K16
R 923	RS1/16S102J	C 310	CEJQ100M16
R 924	RS1/16S223J	C 311	CFTNA105J50
R 931	RS1/16S472J	C 313	CFTNA224J50
R 932	RS1/16S473J	C 314	CFTNA224J50
R 933	RS1/16S103J	C 315	CFTNA224J50
R 934	RS1/16S473J	C 316	CFTNA224J50
R 935	RS1/16S104J	C 351	CEAL100M16
R 936	RS1/16S103J	C 352	CEAL100M16
R 937	RS1/16S473J	C 355	CEAL100M16
R 938	RD1/4PU102J	C 356	CEAL100M16
R 939	RD1/4PU102J	C 357	CKSRYB222K50
R 951	RD1/4PU153J	C 358	CKSRYB222K50
R 952	RS1/16S472J	C 361	CKSRYB222K50
R 953	RS1/16S472J	C 362	CKSRYB222K50
R 954	RS1/16S102J	C 403	CKSRYB473K25
R 962	RS1/16S102J	C 404	CEJQ101M6R3
R 964	RS1/16S822J	C 405	CKSRYB103K50
R 982	RS1/16S473J	C 406	CEJQ220M10
R 983	RS1/16S104J	C 407	CKSQYB103K50
R 984	RS1/16S473J	C 408	CKSRYB223K25
R 985	RD1/4PU102J	C 409	CKSRYB223K25
R 997	RAB4C102J	C 411	CKSRYB472K50
		C 440	CKSRYB103K25
		C 601	CEAL4R7M35
		C 602	CKSRYB102K50
		C 604	CCSRCH180J50
		C 605	CCSRCH180J50
		C 755	CKSRYB104K16
		C 801	CKSRYB103K50
		C 802	CEJQ470M10
		C 803	CKSRYB104K16
		C 806	CKSRYB473K25
		C 812	CKSYB475K16
		C 851	CEAL470M16
		C 853	CCG1111
		C 855	CEAL100M25
		C 856	CCSRCH331J50
		C 857	CEAL330M25
		C 858	CKSRYB104K16
		C 859	CEAL101M10
		C 860	CKSRYB104K16
		C 861	CKSRYB103K25
		C 911	CCH1343
		C 912	CKSRYB472K50
		C 913	CKSRYB103K50
<b>CAPACITORS</b>			
C 101	CKSRYB104K16		
C 102	CKSRYB104K16		
C 131	CKSRYB104K16		
C 132	CKSRYB104K16		
C 133	CKSRYB224K16		
C 134	CKSRYB103K50		
C 135	CEAL1R0M50		
C 136	CKSRYB104K16		
C 137	CKSRYB104K16		
C 138	CKSRYB104K16		
C 161	CKSRYB183K25		
C 162	CKSRYB183K25		
C 171	CEJQ470M10		
C 172	CKSRYB104K16		
C 173	CEAL100M16		
C 177	CCSRCH100D50		
C 178	CCSRCH100D50		
C 179	CCSRCH100D50		
C 180	CCSRCH100D50		
C 191	CEAL1R0M50		
		C 4700µF/16V	
		C 4.7µF/25V	
		C 1000µF/16V	

# KEH-P8010R,P8015

====Circuit Symbol and No.====	Part Name	Part No.
C 914		CEJQ470M10
C 921	330μF/10V	CCH1181
C 922		CKSRYP103K50
C 923		CEJQ100M16
C 931		CEJQ100M16
C 963		CEAL2R2M50

**C** Unit Number : CWM7466(KEH-P8010R/X1N/EW)  
 Unit Name : Keyboard Unit

## MISCELLANEOUS

IC 1901	IC	PD5627A
IC 1902	IC	PD8074A
IC 1903	IC	TSOP1840SB1
IC 1904	IC	PD5536A
Q 1901	Transistor	2SB710A
Q 1902	Transistor	DTC114EU
Q 1903	Transistor	2SB710A
Q 1904	Transistor	DTC114EU
Q 1905	Transistor	DTC114EU
Q 1907	Transistor	2SD1664
Q 1908	Transistor	2SC4617
D 1901	Diode	DAP202U
D 1902	Diode	DAN202U
D 1904	Diode	1SS355
D 1914	LED	CL170UBX
D 1917	Diode	DAN202U
D 1918	LED	CL170PGCD
D 1919	LED	CL170PGCD
D 1920	LED	CL170PGCD
D 1921	LED	CL170PGCD
D 1922	LED	CL170DCD
D 1923	LED	CL170DCD
D 1924	LED	CL170DCD
D 1925	LED	CL170DCD
L 1901	Chip-Inductor	LCTA2R2J3225
L 1904	Chip-Inductor	LCTA2R2J3225
L 1905	Inductor	LCTA220J2520
L 1906	Inductor-Array	CTF1421
L 1907	Inductor-Array	CTF1421
L 1908	Inductor	LCTA220J2520
L 1909	Inductor	CTF1484
L 1910	Inductor	CTF1410
L 1911	Inductor	CTF1410
L 1912	Inductor-Array	CTF1421
TH 1901	Thermistor	CCX1037
X 1901	Ceramic Resonator 15.62MHz	CSS1458
S 1901	Push Switch	CSG1113
S 1903	Push Switch	CSG1111
S 1906	Push Switch	CSG1113
S 1907	Push Switch	CSG1115
S 1908	Push Switch	CSG1147
S 1909	Push Switch	CSG1115
S 1910	Push Switch	CSG1115
S 1911	Push Switch	CSG1115
S 1912	Push Switch	CSG1115
S 1913	Push Switch	CSG1115
S 1914	Push Switch	CSG1115
S 1915	Push Switch	CSG1115
S 1916	Push Switch	CSG1115
S 1917	Push Switch	CSG1113
S 1918	Push Switch	CSG1113
S 1919	Push Switch	CSG1115
S 1920	Push Switch	CSG1113
S 1922	Push Switch	CSG1113
S 1923	Push Switch	CSG1113

====Circuit Symbol and No.====	Part Name	Part No.
S 1924	Push Switch	CSG1113
S 1930	Encoder	CSD1059
VR 1902	Semi-fixed 20kΩ(B) OEL Unit	CCP1231
		MXS8016

## RESISTORS

R 1901		RS1/16S154J
R 1902		RS1/16S473J
R 1903		RS1/16S101J
R 1906		RS1/16S102J
R 1907		RS1/16S473J
R 1909		RS1/16S101J
R 1910		RAB4C101J
R 1911		RAB4C101J
R 1912		RAB4C101J
R 1913		RAB4C101J
R 1915		RAB4C101J
R 1918		RAB4C101J
R 1921		RAB4C102J
R 1922		RS1/16S121J
R 1923		RS1/16S2R2J
R 1924		RS1/16S222J
R 1925		RS1/16S222J
R 1928		RS1/16S102J
R 1929		RS1/16S102J
R 1930		RS1/16S222J
R 1931		RS1/16S101J
R 1932		RS1/16S333J
R 1933		RS1/16S683J
R 1934		RS1/16S393J
R 1935		RS1/16S392J
R 1940		RS1/16S0R0J
R 1949		RS1/16S1R0J
R 1960		RS1/16S202J
R 1961		RS1/16S121J
R 1962		RS1/16S121J
R 1963		RS1/16S121J
R 1964		RS1/16S391J
R 1965		RS1/16S121J
R 1966		RS1/16S121J
R 1967		RS1/16S202J
R 1968		RS1/16S391J
R 1969		RS1/16S121J
R 1970		RS1/16S121J
R 1971		RS1/16S121J
R 1972		RS1/16S121J
R 1973		RS1/16S121J
R 1974		RS1/16S473J
R 1975		RS1/16S222J
R 1976		RS1/16S473J
R 1977		RS1/16S222J
R 1978		RS1/16S472J
R 1989		RS1/16S222J
R 1990		RS1/16S822J
R 1991		RAB4C101J
R 1992		RAB4C101J
R 1993		RS1/16S473J
R 1996		RS1/16S101J
R 1997		RS1/16S473J
R 1998		RS1/16S103J
<b>CAPACITORS</b>		
C 1902		CKSRYP103K25
C 1903		CSZSR100M16
C 1904		CSZSR100M16
C 1906		CKSRYP103K25
C 1907		CCSRCH101J50

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 1908	CKSRYPB473K16	S 1923	Push Switch
C 1913	CSZSR100M16	S 1924	Push Switch
C 1922	CKSRYPB104K16	S 1930	Encoder
C 1926	CKSRYPB104K25	VR 1902	Semi-fixed 20kΩ(B) OEL Unit
C 1927	CKSRYPB104K25		
C 1928	CKSRYPB104K25		
C 1929	CKSRYPB104K16		
C 1936	CKSRYPB104K25		
C 1937	CKSRYPB104K16		
C 1938	CKSRYPB104K16		
C 1941	CKSRYPB104K16		
C 1943	4.7μF/25V CCG1111		
C 1945	CKSRYPB104K25		
C 1946	CKSRYPB104K16		
C 1947	CKSRYPB103K25		
C 1948	CKSRYPB103K25		
<b>C</b> Unit Number : CWM7467(KEH-P8015/X1N/ES) Unit Name : Keyboard Unit			
<b>MISCELLANEOUS</b>			
IC 1901	IC	PD5627A	
IC 1902	IC	PD8074A	
IC 1903	IC	TSOP1840SB1	
IC 1904	IC	PD5536A	
Q 1907	Transistor	2SD1664	
Q 1908	Transistor	2SC4617	
D 1901	Diode	DAP202U	
D 1902	Diode	DAN202U	
D 1904	Diode	1SS355	
D 1914	LED	CL170UBX	
D 1917	Diode	DAN202U	
D 1922	LED	CL170PGCD	
D 1923	LED	CL170PGCD	
D 1924	LED	CL170PGCD	
D 1925	LED	CL170PGCD	
L 1901	Chip-Inductor	LCTA2R2J3225	
L 1904	Chip-Inductor	LCTA2R2J3225	
L 1905	Inductor	LCTA220J2520	
L 1906	Inductor-Array	CTF1421	
L 1907	Inductor-Array	CTF1421	
L 1908	Inductor	LCTA220J2520	
L 1909	Inductor	CTF1484	
L 1910	Inductor	CTF1410	
L 1911	Inductor	CTF1410	
L 1912	Inductor-Array	CTF1421	
TH 1901	Thermistor	CCX1037	
X 1901	Ceramic Resonator 15.62MHz	CSS1458	
S 1901	Push Switch	CSG1112	
S 1903	Push Switch	CSG1111	
S 1906	Push Switch	CSG1112	
S 1907	Switch	CSG1107	
S 1908	Push Switch	CSG1112	
S 1909	Switch	CSG1107	
S 1910	Switch	CSG1107	
S 1911	Switch	CSG1107	
S 1912	Switch	CSG1107	
S 1913	Switch	CSG1107	
S 1914	Switch	CSG1107	
S 1915	Switch	CSG1107	
S 1916	Switch	CSG1107	
S 1917	Push Switch	CSG1112	
S 1918	Push Switch	CSG1112	
S 1919	Switch	CSG1107	
S 1920	Push Switch	CSG1112	
S 1922	Push Switch	CSG1112	
		<b>RESISTORS</b>	
		R 1901	RS1/16S154J
		R 1902	RS1/16S473J
		R 1903	RS1/16S101J
		R 1906	RS1/16S102J
		R 1907	RS1/16S473J
		R 1909	RS1/16S101J
		R 1910	RAB4C101J
		R 1911	RAB4C101J
		R 1912	RAB4C101J
		R 1913	RAB4C101J
		R 1915	RAB4C101J
		R 1918	RAB4C101J
		R 1921	RAB4C102J
		R 1922	RS1/16S121J
		R 1923	RS1/16S2R2J
		R 1924	RS1/16S222J
		R 1925	RS1/16S222J
		R 1928	RS1/16S102J
		R 1929	RS1/16S102J
		R 1930	RS1/16S222J
		R 1931	RS1/16S101J
		R 1932	RS1/16S333J
		R 1933	RS1/16S683J
		R 1934	RS1/16S393J
		R 1935	RS1/16S392J
		R 1940	RS1/16S0R0J
		R 1949	RS1/16S1R0J
		R 1960	RS1/16S202J
		R 1961	RS1/16S121J
		R 1962	RS1/16S121J
		R 1963	RS1/16S121J
		R 1964	RS1/16S391J
		R 1965	RS1/16S121J
		R 1966	RS1/16S121J
		R 1967	RS1/16S202J
		R 1968	RS1/16S391J
		R 1969	RS1/16S121J
		R 1970	RS1/16S121J
		R 1971	RS1/16S121J
		R 1972	RS1/16S121J
		R 1973	RS1/16S121J
		R 1979	RS1/16S0R0J
		R 1989	RS1/16S222J
		R 1990	RS1/16S822J
		R 1991	RAB4C101J
		R 1992	RAB4C101J
		R 1993	RS1/16S473J
		R 1996	RS1/16S101J
		R 1997	RS1/16S473J
		R 1998	RS1/16S103J
		<b>CAPACITORS</b>	
		C 1902	CKSRYPB103K25
		C 1903	CSZSR100M16
		C 1904	CSZSR100M16
		C 1906	CKSRYPB103K25
		C 1907	CCSRCH101J50
		C 1908	CKSRYPB473K16
		C 1913	CSZSR100M16
		C 1922	CKSRYPB104K16
		C 1926	CKSRYPB104K25
		C 1927	CKSRYPB104K25

====Circuit Symbol and No.====Part Name	Part No.
C 1928	CKSRYP104K25
C 1929	CKSRYP104K16
C 1936	CKSRYP104K25
C 1937	CKSRYP104K16
C 1938	CKSRYP104K16
C 1941	CKSRYP104K16
C 1943 4.7μF/25V	CCG1111
C 1945	CKSRYP104K25
C 1946	CKSRYP104K16
C 1947	CKSRYP103K25
C 1948	CKSRYP103K25

**B** Unit Number : CWM7627  
Unit Name : Panel Unit

**MISCELLANEOUS**

S 1950 Push Switch	CSG1112
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**RESISTORS**

R 1951	RS1/16S101J
R 1952	RS1/16S101J
R 1953	RS1/16S101J

**D** Unit Number : EWM1033  
Unit Name : Deck Unit

**MISCELLANEOUS**

IC 251 IC	HA12228F
IC 351 IC	PA2020A
D 352 Diode	1SS355
VR 301 Semi-fixed 33kΩ(B)	CCP1280
VR 302 Semi-fixed 33kΩ(B)	CCP1280

**RESISTORS**

R 271	RS1/16S183J
R 285	RS1/16S0R0J
R 351	RS1/16S102J
R 352	RS1/16S102J
R 353	RS1/16S102J
R 354	RS1/16S102J
R 355	RS1/16S274J
R 362	RS1/8S301J
R 373	RS1/16S0R0J
R 374	RS1/8S0R0J
R 375	RS1/8S0R0J
R 401	RS1/16S153J
R 402	RS1/16S332J
R 403	RS1/16S911J
R 404	RS1/16S274J

**CAPACITORS**

C 251	CKSRYP391K50
C 252	CKSRYP391K50
C 253	CKSRYP391K50
C 254	CKSRYP391K50
C 255	CKSRYP103K50
C 256	CKSRYP103K50
C 271 1μF/50V	ECH0002
C 272	CKSRYP104K16
C 301	CKSRYP104K16
C 302	CKSRYP104K16
C 309	CKSRYP104K16
C 310	CKSRYP104K16
C 351	CKSQYB224K25
C 352	CKSRYP392K50
C 353	CKSRYP103K50

====Circuit Symbol and No.====Part Name	Part No.
C 354	CKSRYP103K50
C 355	CKSQYB104K50
C 356	CKSRYP103K50
C 401	CKSRYP392K50
C 402	CKSRYP334K10
C 403	CKSRYP223K25
C 404	CKSRYP103K50
C 405	CKSRYP333K16

**E** Unit Number :  
Unit Name : Reel Sense PCB

**MISCELLANEOUS**

S 1 Switch(LOAD)	ESG1007
S 2 Switch(MODE)	ESG1007
S 3 Switch(70μs)	ESG1007
EGR 1 Photo-reflector	EGR1004

**Miscellaneous Parts List**

M 1 Motor Unit(MAIN)	EXA1490
M 2 Motor Unit(SUB)	EXA1580
HD 1 Head Assy	EXA1589

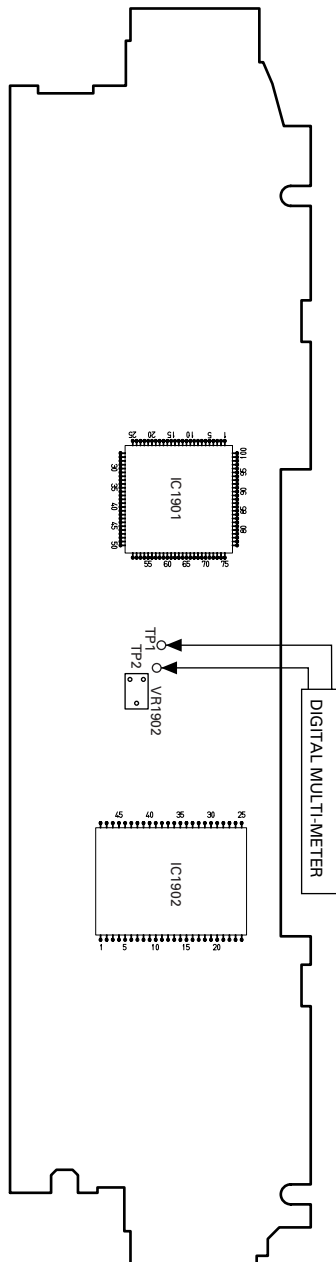


## 6. ADJUSTMENT

### 6.1 OEL UNIT ADJUSTMENT

#### ● Adjustment point

KEYBOARD UNIT (SIDE B)

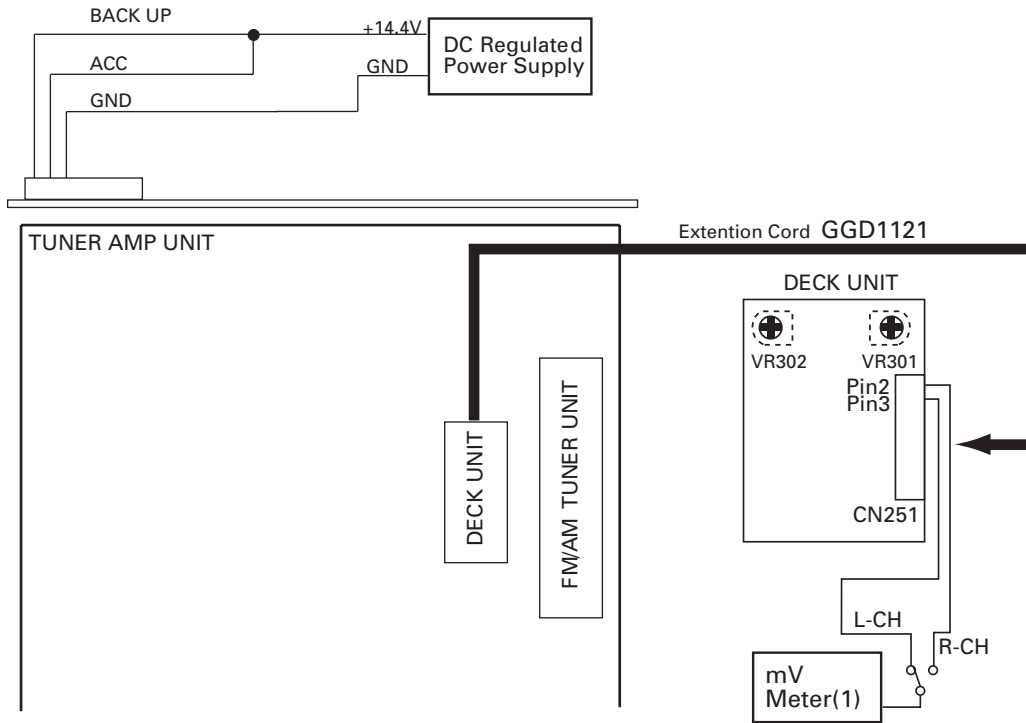


<When the OEL Unit has been replaced>

1. Use VR1902 to adjust the resistance between TP1 and TP2 to 5.85kΩ.

## 6.2 DOLBY B NR ADJUSTMENT

### ● Connection Diagram



### 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) : $-8.24\text{dBm} \pm 1\text{dB}$ (DOLBY NR Switch : OFF)

## 7. GENERAL INFORMATION

### 7.1 DIAGNOSIS

#### 7.1.1 DISASSEMBLY

##### ● Removing the Case Unit(not shown)

1. Remove the Case Unit.

##### ● Removing the Cassette Mechanism Module (Fig.1)

- ➔ 1 Remove the four screws and then remove the Cassette Mechanism Module.

##### ● Removing the Panel Assy (Fig.1)

- ➔ 2 Remove the two screws and then remove the Panel Assy.

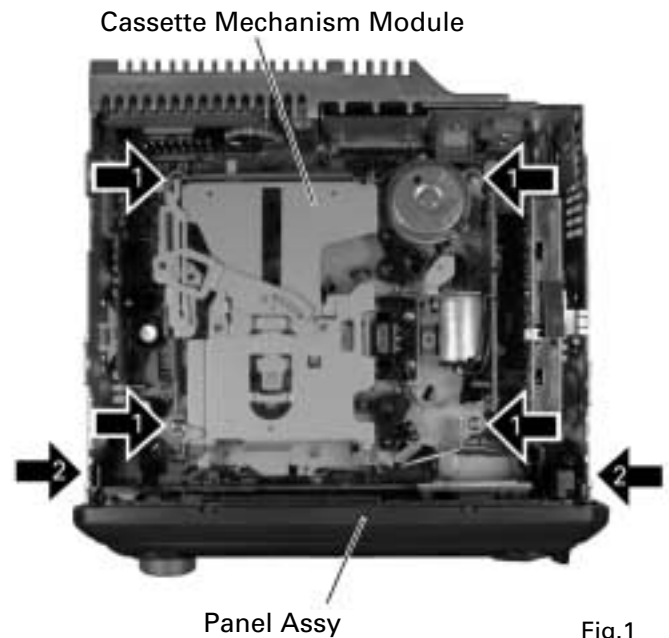
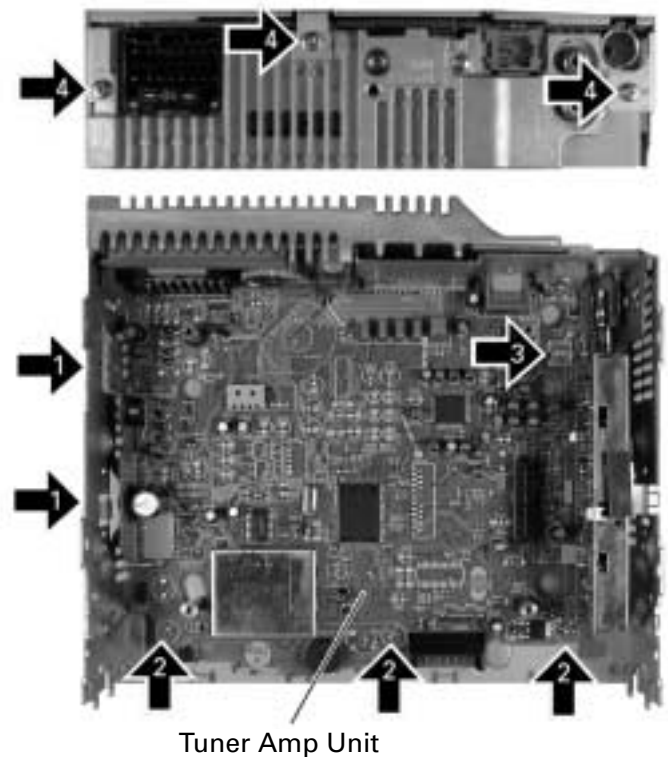


Fig.1

##### ● Removing the Tuner Amp Unit (Fig.2)

- ➔ 1 Remove the two screws.
- ➔ 2 Straight the tabs at three locations indicated.
- ➔ 3 Remove the screw.
- ➔ 4 Remove the three screws and then remove the Tuner Amp Unit.

\*) Tuner Amp Unit is different partially from this photo.



Tuner Amp Unit

Fig.2

● **Removing the OEL Unit**

1. Apply hot air to the cable pins for the anode terminal using a blower used for removing a flat-packaged IC or something like that. When all the pins are peeling off from the PCB, pinch the cable with a pair of tweezers and remove it slowly from the PCB. (Fig.3)

\* Be careful not to remove other electrical parts when you use a blower. Especially, when hot air is appropriated to the VR1902 too much, the volume will destroy.

\* Flexible cable may not remove easily by transforming the Bosses by the hot air of the Blower.

2. Five tabs are extended until becoming straight in the direction of the arrow and then remove the Holder. (Fig.3)

3. Slowly set up the OEL Unit. At this time, the stress is prevented from hanging to flexible cable in the Cathode terminal. (Fig.4)

4. The Cathode terminal is removed according to the procedure same as the Anode terminal, and the OEL Unit is removed. (Fig.4)

5. Remove the Holder. (Remove after removing the Cathode terminal without fail.) (Fig.4)

● **Installing the OEL Unit**

1. Install the Holder in the OEL Unit. (Fig.5)

2. When soldering the flexible cable for the Cathode terminal on the PCB, use a pair of tweezers. First, insert the tips of tweezers into 2 holes in the flexible cable, then into the 2 holes in the PCB. (Fig.5)

3. Position the flexible cable on the PCB so that their lands touch each other. (Fig.5)

4. Apply solder to each pin of the flexible cable. (Fig.5)

\* Appropriate soldering iron lightly so that the stress should not hang to Flexible cable.

5. Lay down the OEL Unit. (Fig.5)

6. Install the Holder. (Fig.3)

7. When soldering the flexible cable for the Anode terminal on the PCB, first, insert the Bosses on the PCB into the 2 holes in the flexible cable. Then, take the same procedures 2 and 3 as that for the Cathode terminal to solder the cable pins. (Fig.3)

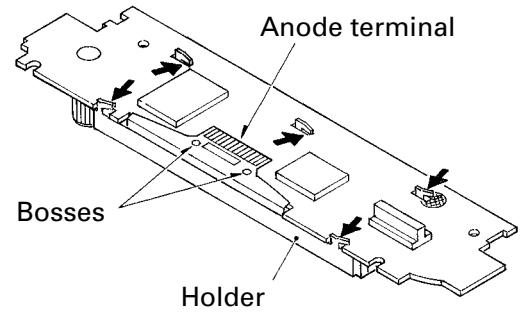


Fig.3

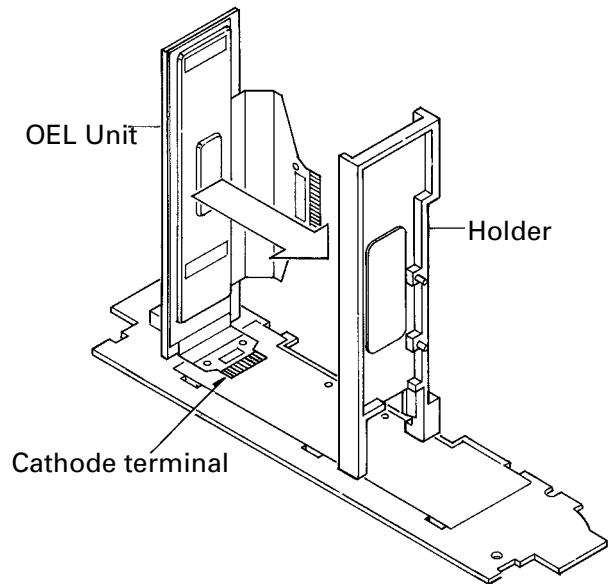


Fig.4

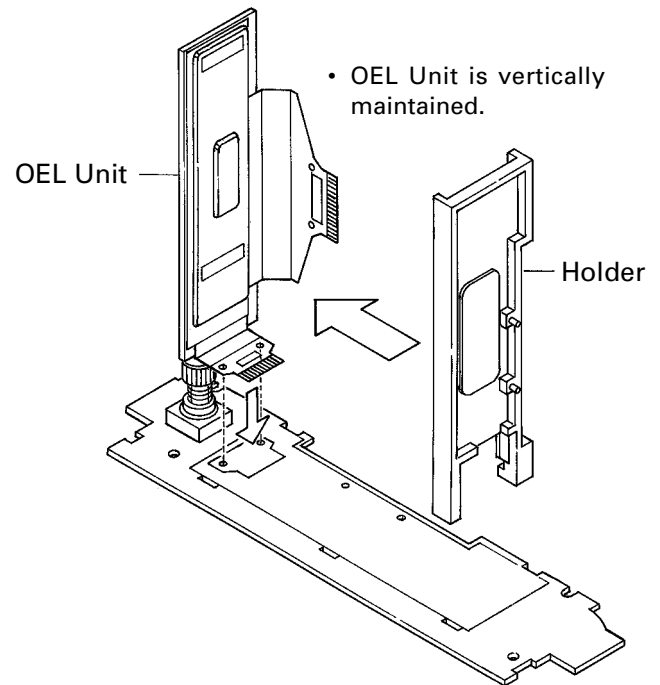
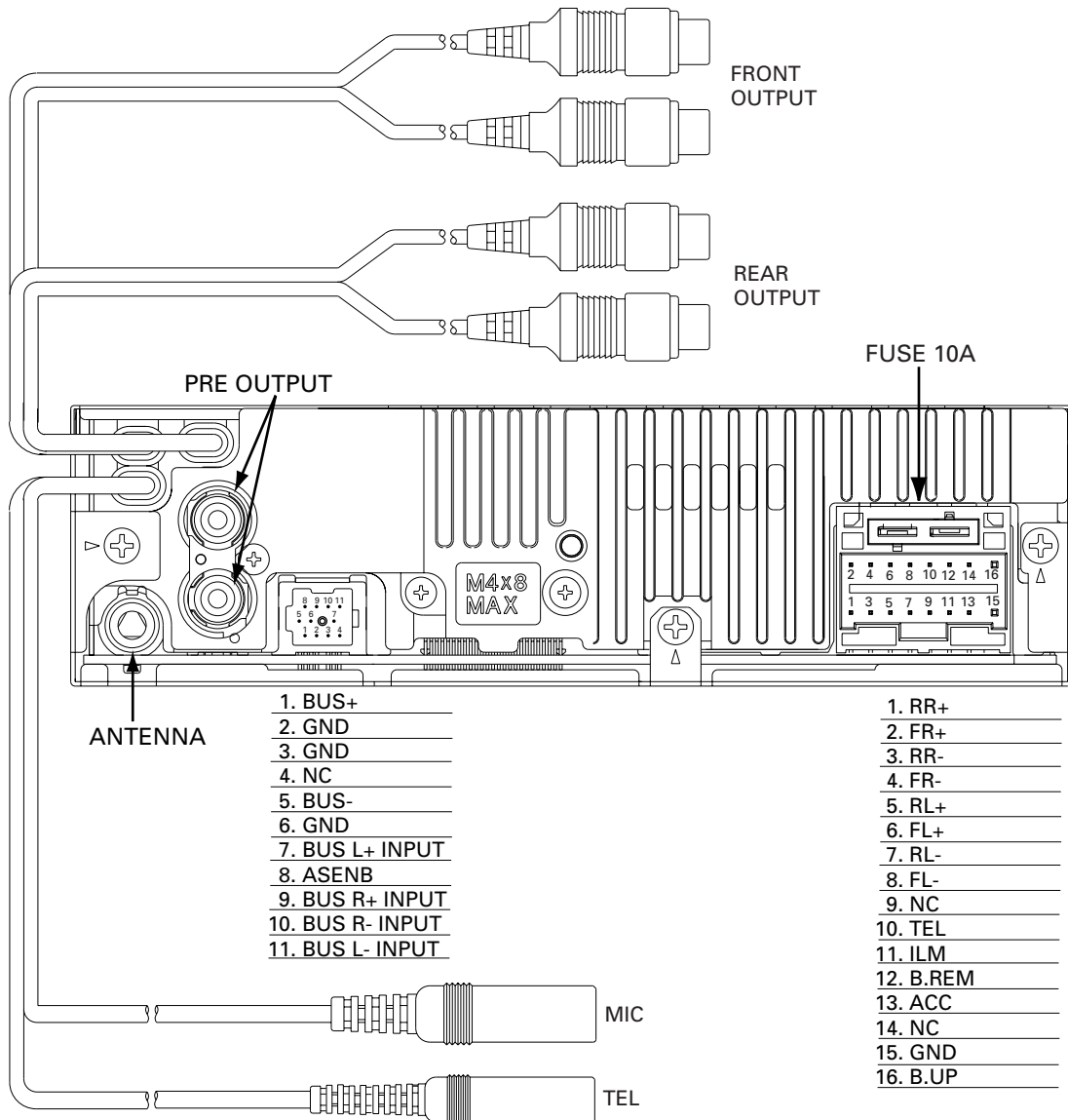


Fig.5

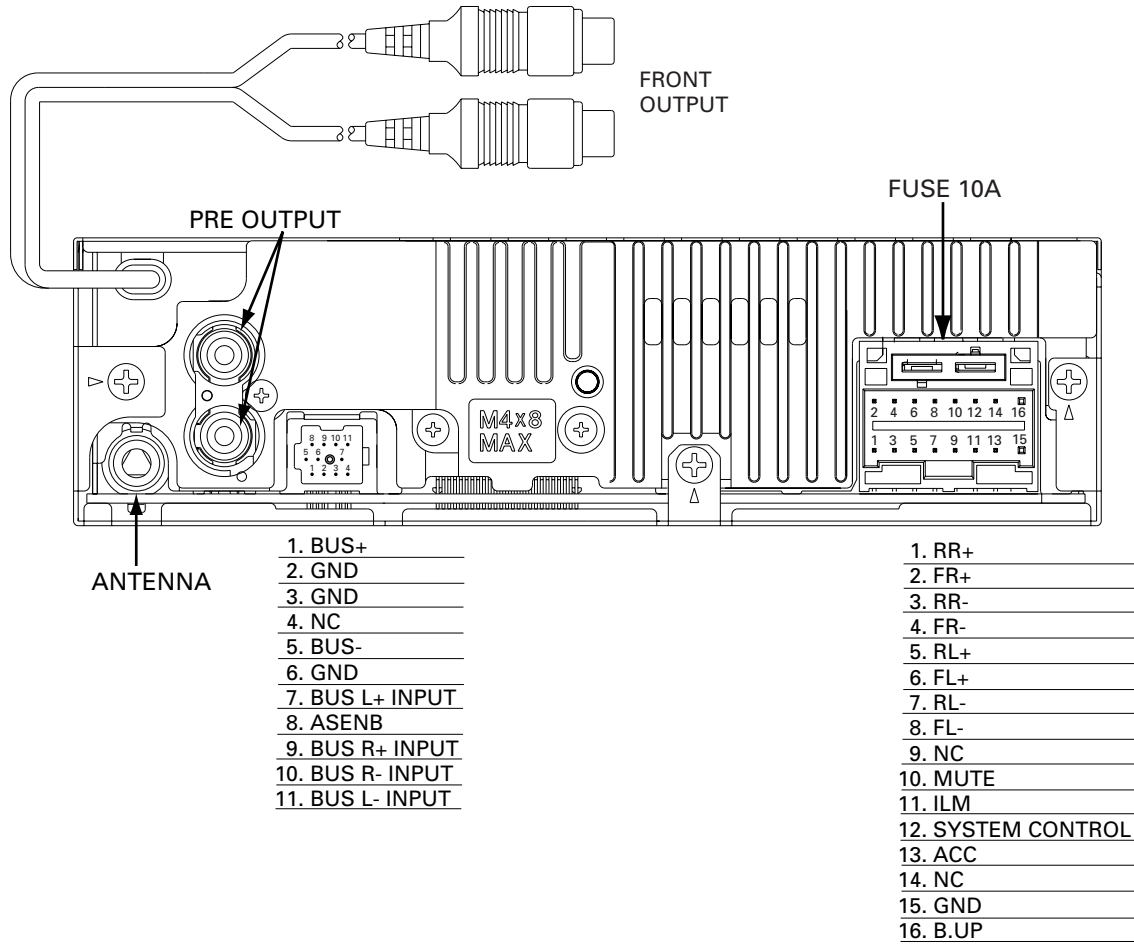
### 7.1.2 CONNECTOR FUNCTION DESCRIPTION

KEH-P8010R/X1N/EW



# KEH-P8010R,P8015

KEH-P8015/X1N/ES



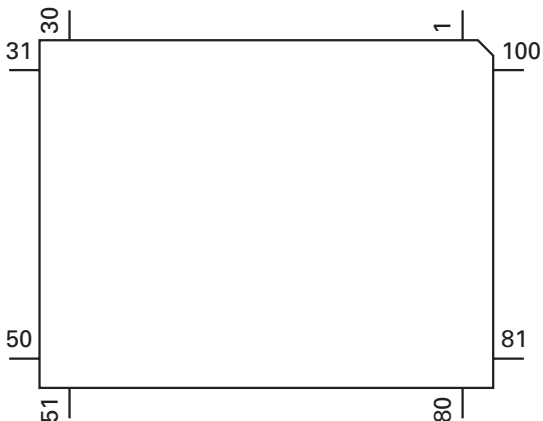
## 7.2 IC

## ● Pin Functions (PD5616A, PD5617A)

Pin No.	Pin Name	I/O	Function and Operation
1	TUNPDO	SIO	TUNER:Data output(PLL)
2	TUNPCK	SIO	TUNER:Clock output(PLL)
3	EMUTE	O	EVOL:Mute output
4	VST	O	EVOL:Strobe output
5	VDT	O	EVOL:Data output
6	NC		Not used
7	VCK	O	EVOL:Clock output
8	BYTE		Vss
9	CNVSS		Vss
10	TELIN	I	TEL:Cellular mute input
11	HTELPW	O	TEL:Microphone control output
12	RESET		Reset input(RESET)
13	XOUT		Clock output
14	VSS		Power supply input(Vss)
15	XIN		Clock input
16	VCC		Power supply input(Vcc)
17	NC		Not used(Vcc)(Pull up)
18	RCK	I	RDS:Clock input(EW)
19	LD $\overline{\text{ET}}$	I	RDS:PLL lock detection input(EW)
20	DALMON	O	DFS alarm output
21	RX2	I	IPBUS:Input 2
22	OELPW	O	OEL power supply output
23	SYSPW	O	System power control output
24	PEE	O	Beep tone output
25	RDS57K	I	RDS:57KHz pulse count input(EW)
26	ROMCS	O	ROM correction:Chip select
27	ROMCK	O	ROM correction:Clock output
28	ROMDATA	I	ROM correction:Data input/output
29	RX	I	IPBUS:Input
30	TX	O	IPBUS:Output
31	NC		Not used(OPEN)
32	NR	O	3L:Noise reduction switch
33	RIMUTE	O	3L:TAPE mute
34	NC		Not used(OPEN)
35	DPDT	SIO	GRILL:Data output
36	KYDT	SIO	GRILL:Data input
37, 38	ROT1, 0	I	Rotary encoder pulse input 1, 0
39	PCL	O	Clock adjustment output
40	SWVDD	O	GRILL:Chip enable output
41	D $\overline{\text{SENS}}$	I	Detach sense input
42	FLPILM	O	Inside of flap illumination output
43	ILMPW	O	Illumination output
44	EJTIN	I	EJECT key input
45	D $\overline{\text{RST}}$	O	RDS:Reset output(EW)
46	R $\overline{\text{DSLK}}$	I	RDS:Lock signal input(EW)
47	RDT	I	RDS:Data input(EW)
48	AM/FM	O	TUNER:Decoder power supply control output
49	ST	I	TUNER:Stereo input
50	SD	I	TUNER:SD input
51	NL2DT	I	RDS:Noise level 2(EW)
52	TMUTE	O	RDS:Mute output(EW)
53	SDBW	I	RDS:In case of NF, SD input(EW)
54	MSIN	I	3L:MS input
55	DIRO	O	3L:NR switch
56	PLAY	O	3L:MS gain switch
57	MTLSW	I	3L:Metal input
58	LOADSW	I	3L>Loading SW

Pin No.	Pin Name	I/O	Function and Operation
59	POS	I	3L:Position sense
60	RES	I	3L:Reverse sense
61	NES	I	3L:Normal sense
62	VCC		Power supply input(Vcc)
63	SC2	O	3L:Sub-motor 2
64	VSS		Power supply input(Vss)
65	SC1	O	3L:Sub-motor 1
66	CM	O	3L:Carriage motor
67	STBY	O	3L:Drive IC control
68, 69	NC		Not used(OPEN)
70	HTELM	O	TEL:Mute output for handsfree
71	TUNPCE2	O	TUNER:Chip enable output(EEPROM)
72	TUNPCE	O	TUNER:Chip enable output(PLL)
73	BSENS		Backup sense
74	ASENS		ACC sense
75	CURRO	O	RDS:Voltage FIX output(EW)
76	LOCH	O	TUNER:Local H output
77	LOCL	O	TUNER:Local L output
78-80	SMPXS2-0	O	Spectrum analyzer switch output 2-0
81	IPPW	O	IPBUS:Driver power supply control output
82	ASENBO	O	IPBUS:Slave ACC sense output
83	ISENS	I	Illumination sense input
84	NC		Not used(OPEN)
85	MODELO	I	Model input 0
86	NC		Not used(OPEN)
87	MUTE	O	Mute output
88	TESTIN	I	Test program input
89-91	NC		Not used(OPEN)
92	SAIN		Spectrum analyzer input
93	CSENS		Flap open/close sense input
94	ASLIN		CAP4:ASL input
95	NL1		RDS:Noise level input 1(EW)
96	AVSS		AD converter power supply input(Vss)
97	SL		TUNER:Signal level input
98	VREF		AD converter reference voltage(Vref)
99	AVCC		AD converter power supply input(Vcc)
100	TUNPDI	I	TUNER:PLL communication

\*PD5616A, PD5617A



IC's marked by\* are MOS type.

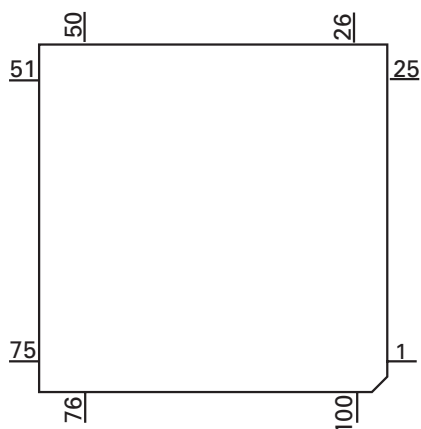
Be careful in handling them because they are very liable to be damaged by electrostatic induction.



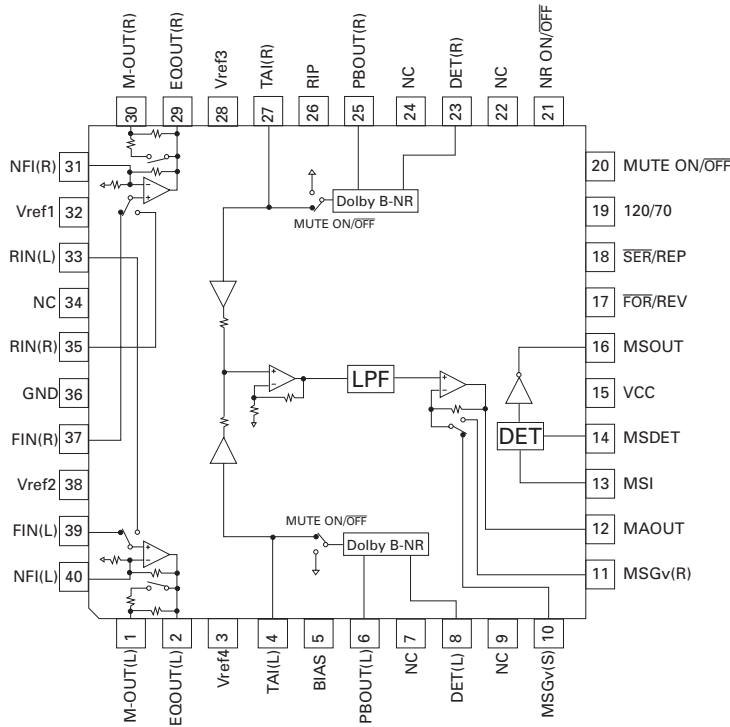
● Pin Functions (PD5627A)

Pin No.	Pin Name	I/O	Function and Operation
1-4	NC		Not used OPEN
5	REM	I	Remote control reception
6	BYTE	I	GND connection
7	CNVSS	I	GND connection
8, 9	NC		Not used OPEN
10	RESET		Pull up
11	XOUT	O	Crystal oscillating element connection pin
12	VSS		VSS connection
13	XIN	I	Crystal oscillating element connection pin
14	VDD		VDD connection
15	NMI	I	Pull up
16	NC		Not used OPEN
17-20	$\overline{KD1-4}$	I	Key data 1-4
21-26	$\overline{KS1-6}$	I/O	key strobe
27-31	NC		Not used OPEN
32	ILMD	O	Dual illumination
33	$\overline{KYDT}$	O	Key data communication
34	$\overline{DPDT}$	I	Display data communication
35	NC		Not used OPEN
36	OEL	O	OEL controller ON
37	NC		Not used Pull up
38	NC		Not used OPEN
39	HOLD	I	Pull up
40	HLDA	O	OPEN
41	BCLK	O	Bus clock
42	$\overline{RD}$	O	Read strobe
43	BHE	O	OPEN
44	$\overline{WR}$	O	Write strobe
45	CS3	O	OPEN
46	$\overline{CS2}$	O	Bank address high
47	$\overline{CS1}$	O	Bank address low
48	$\overline{CS0}$	O	External ROM chip select
49-59	A19-9	O	Address bus 19-9
60	VDD		VDD connection
61	A8	O	Address bus 8
62	VSS		GND connection
63-70	A7-0	O	Address bus 7-0
71-86	D15-0	I/O	Data bus 15-0
87-93	NC		Not used OPEN
94	NC		Not used VSS connection
95	NC		Not used OPEN
96	NC		Not used VSS connection
97	NC		Not used VCC connection
98-100	NC		Not used OPEN

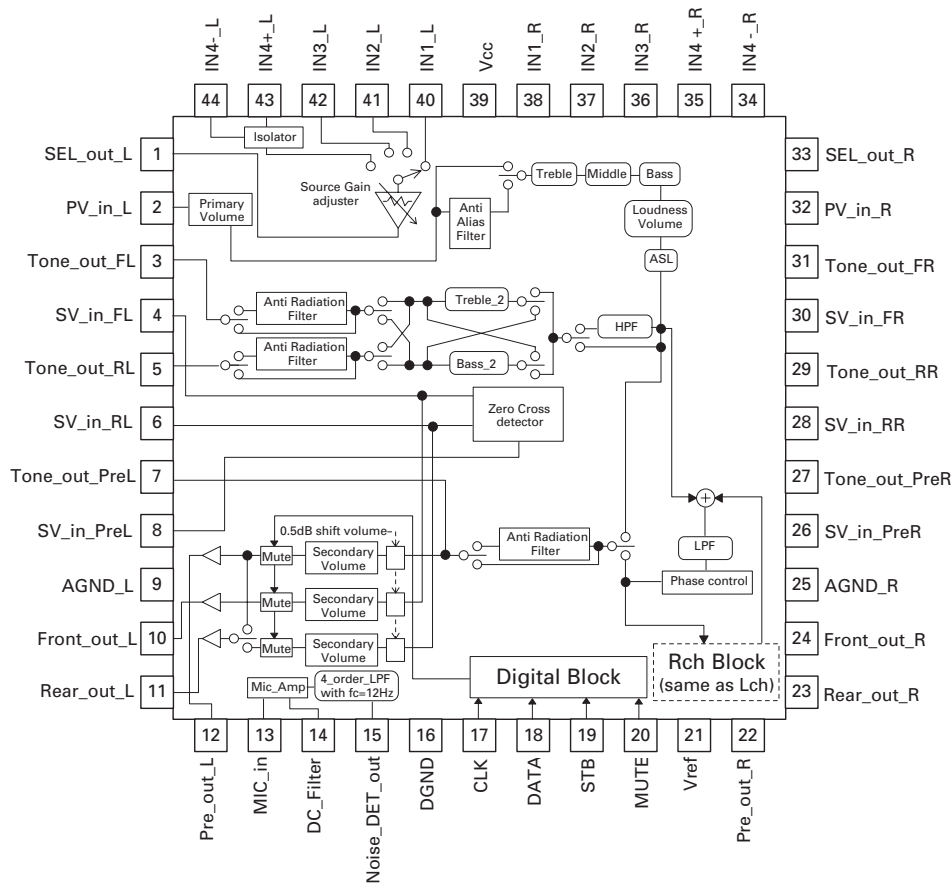
\*PD5627A



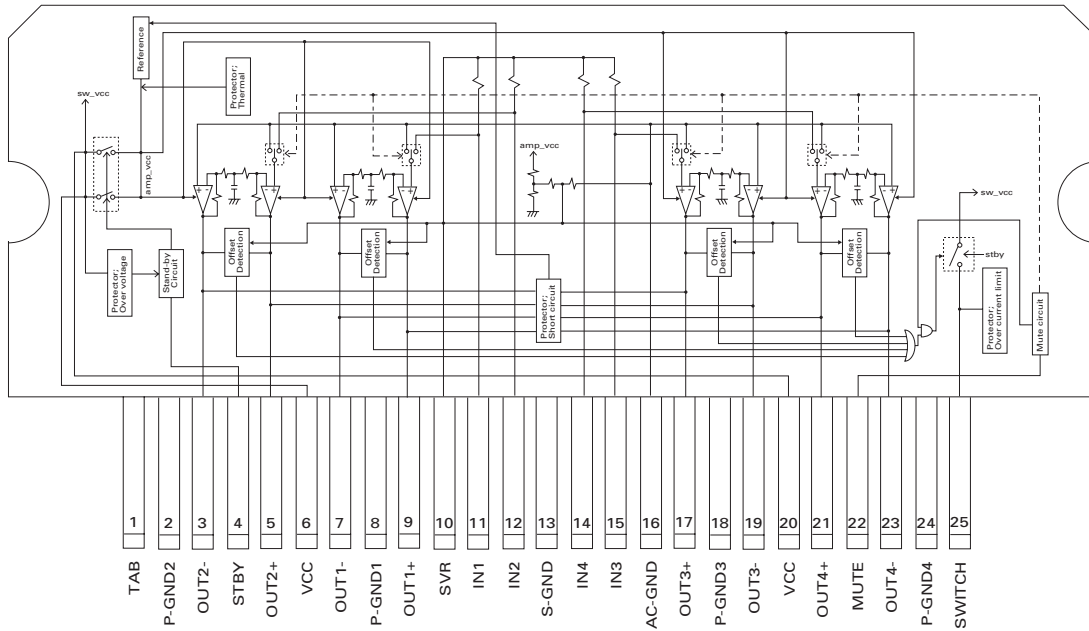
HA12228F



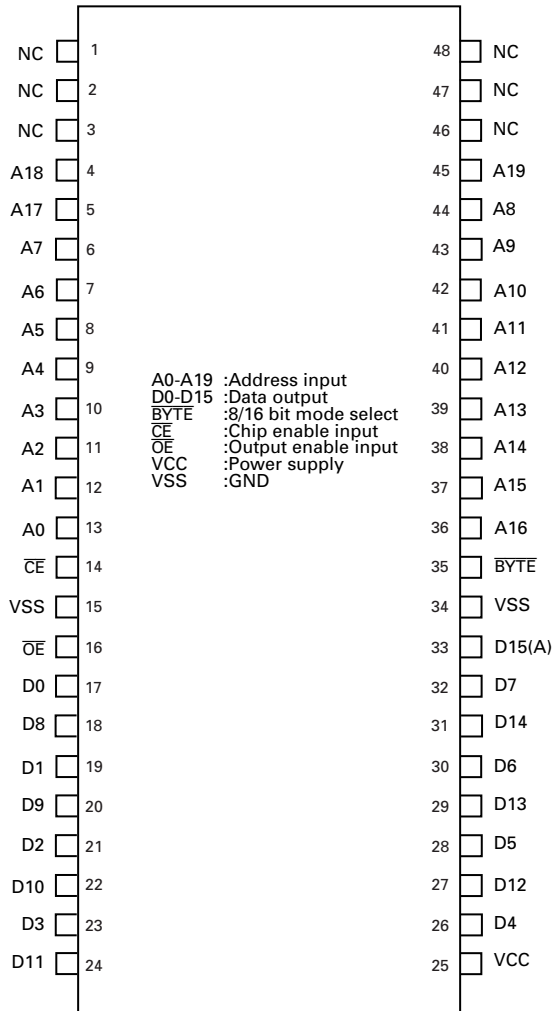
PML009A



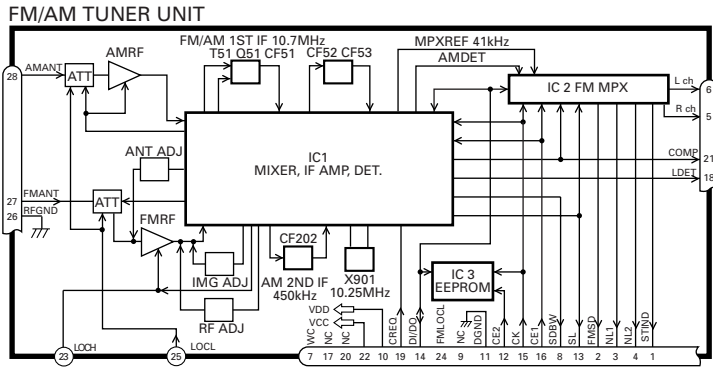
PAL006A



PD8074A

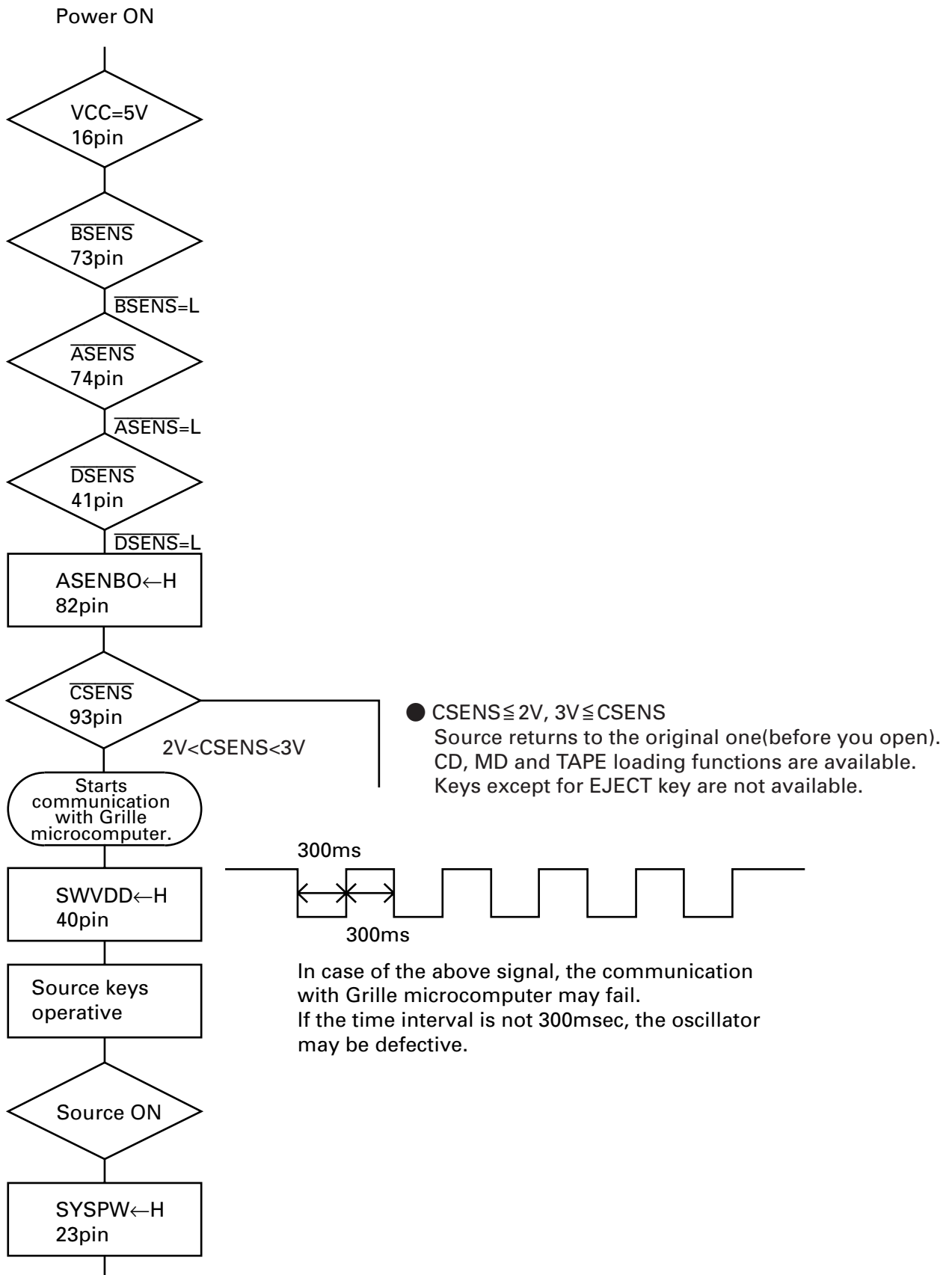


● FM/AM Tuner Unit



No.	Symbol	I/O	Explain	
1	STIND	O	stereo indicator	"Low" when the FM stereo signals are received. To be pulled up to the "VDD" at 47kΩ.
2	FMSD	O	FM station detector	"High" when signals are received. To be pulled up to the "VDD" at 47kΩ. Meanwhile, 10kΩ should be used when taking diver FIX trigger from here and "High: 0.9VDD or more" and "Low: 250mV or less". (Should satisfy the diver IC specifications)
3	NL1	O	noise level-1	"High" when noise is received. Output for the RDS. GND at 47kΩ //1,800pF.
4	NL2	O	noise level-2	"High" when noise is received. Output for the RDS. GND at 36kΩ //330pF.
5	Rch	O	R channel output	FM stereo "R-ch" signal output or AM audio output. Add the specified di-emphasis constant.
6	Lch	O	L channel output	FM stereo "L-ch" signal output or AM audio output. Add the specified di-emphasis constant.
7	WC		write control	EEPROM write control. Writing permissible at "Low". Normally open.
8	SDBW	O	SD bandwidth	SD bandwidth signal output. For detection of detuning data for the RDS.
9	NC			Not used
10	VDD		power supply	Power supply pin for the digital section. D.C. 5V +/- 0.25V. Be careful about overlapping noise in the logic section.
11	DGND		digital ground	Grounding for the digital section.
12	CE2	I	chip enable-2	EEPROM chip enable. Active a "Low" To be pulled up to the "VDD" at 47kΩ
13	SL	I/O	signal level	Received FM/AM signal level (strength) output. Connect the specified load resistor and capacitor (10k Ω + 39k Ω //4,700pF)
14	DI/DO	I/O	data input/ data output	Data input/Data output To be pulled up to the "VDD" at 47kΩ
15	CK	I	clock	Clock input To be pulled up to the "VDD" at 47kΩ
16	CE1	I	chip enable-1	AF-RF chip enable. Active at "High" To be grounded at 47kΩ
17	NC			Not used
18	LDET	O	lock detector	Active at "Low". To be pulled up to the "VDD" at 47kΩ
19	CREQ	I	current request	Active at "Low". To be grounded at 47kΩ
20	NC			Not used
21	COMP	O	composite signal	FM composite signal output. r out < 100Ω
22	VCC		power supply	Analog section power supply pin.D.C.8.4V +/- 0.3V
23	LOCH	I	local high	FM local high pin. When seeking local high, apply 5V together with "LOCL".
24	FMLOCL	I	FM local low	FM local low pin. When seeking local low, apply 5V to the base of the NPN transistor with which the specified resistor is being connected to the emitter. Keep it open in case of ordinary marketed models.
25	LOCL	I	local low	FM/AM local low pin. When seeking local low, apply 5V to the base of the NPN transistor. Since this pin is exclusive for AM when the FMLOCL is in use, do not drive it under FM.
26	RFGND		RF ground	Grounding for the antenna section.
27	FMANT	I	FM antenna input	FM antenna input. 75Ω. Serge absorber (DSP-201M-S00B) is necessary.
28	AMANT	I	AM antenna input	AM antenna input. High impedance. Connect to the antenna through an L (LAU type) of 4.7μH.To cope with the power transmission line hums, insert a series circuit consisting of an L (a coil of about 100mH) + R (a resistor of 470 Ω to 2.2kΩ) between the GND.

### 7.3 OPERATIONAL FLOW CHART

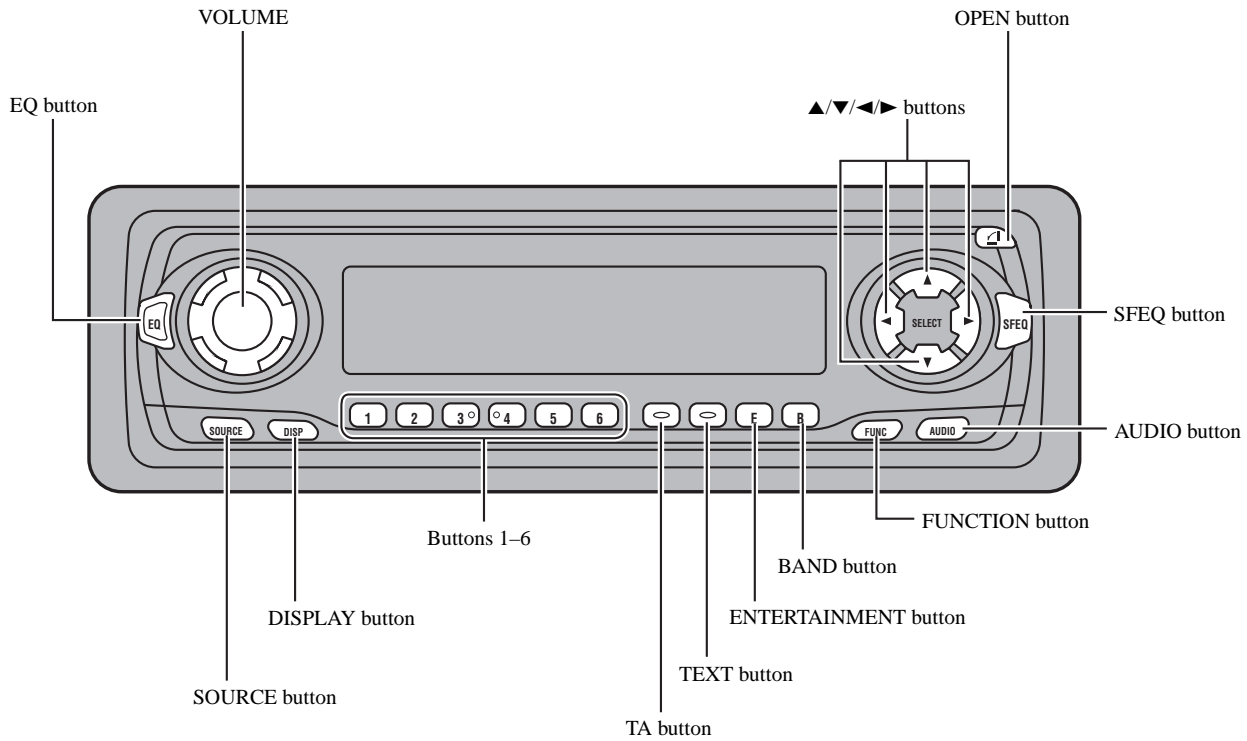


Completes power-on operation.  
(After that, proceed to each source operation)

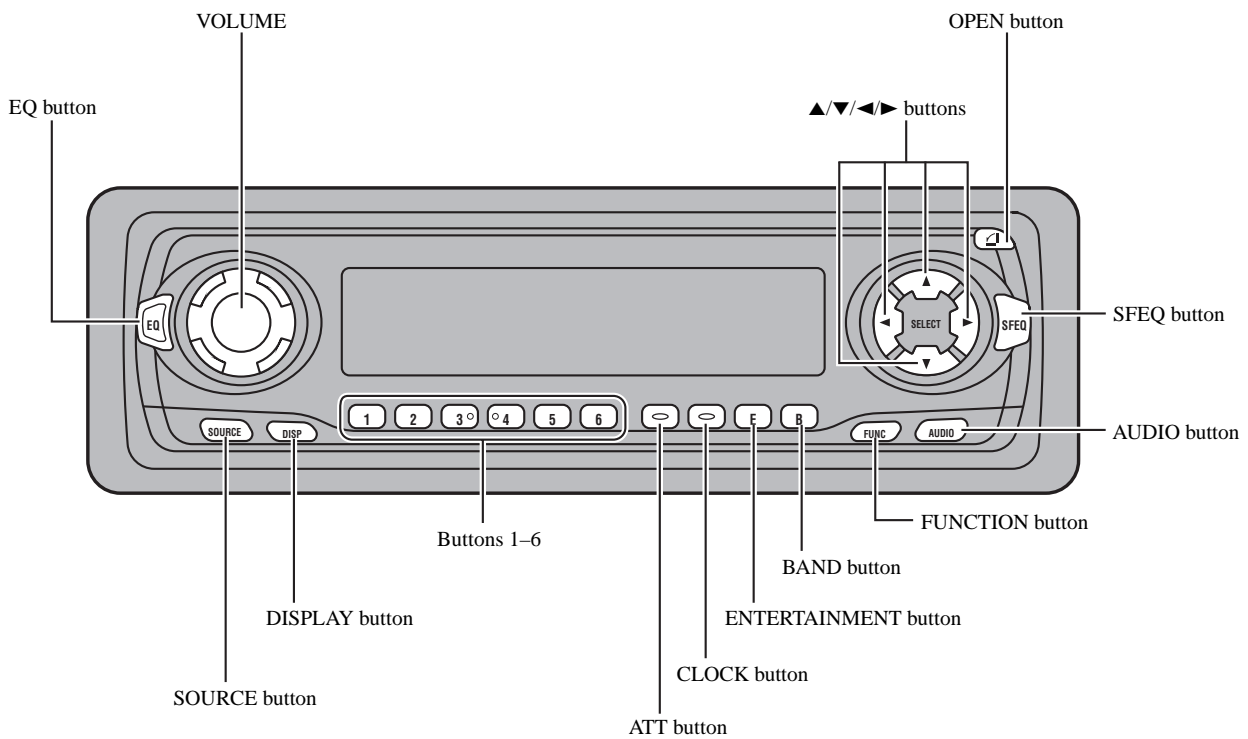
## 8. OPERATIONS AND SPECIFICATIONS

### 8.1 OPERATIONS

#### Head Unit (for KEH-P8010R)

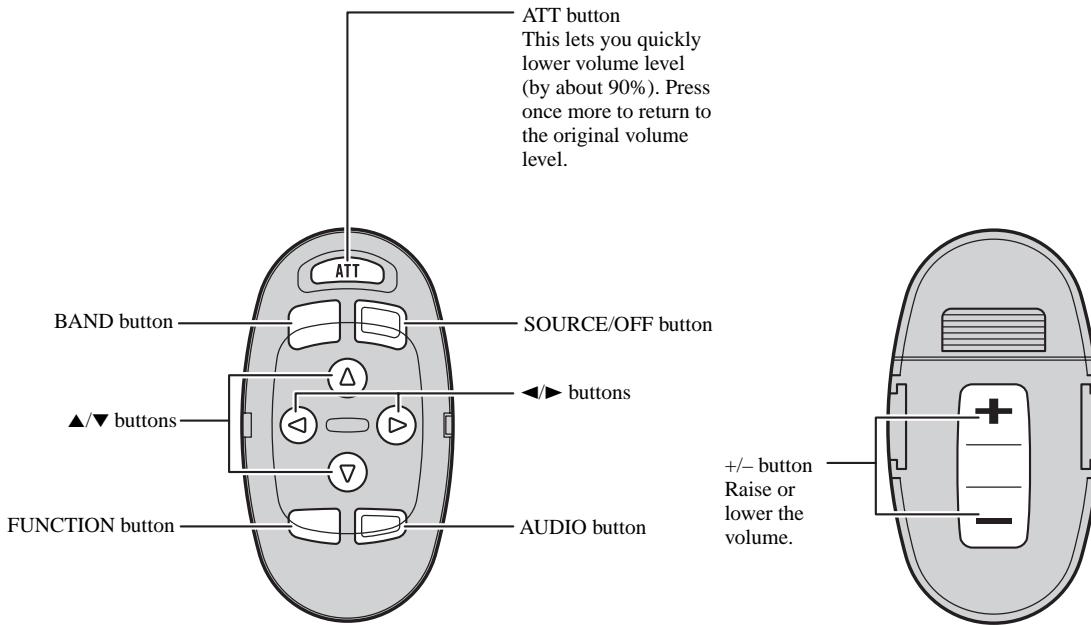


#### Head Unit (for KEH-P8015)



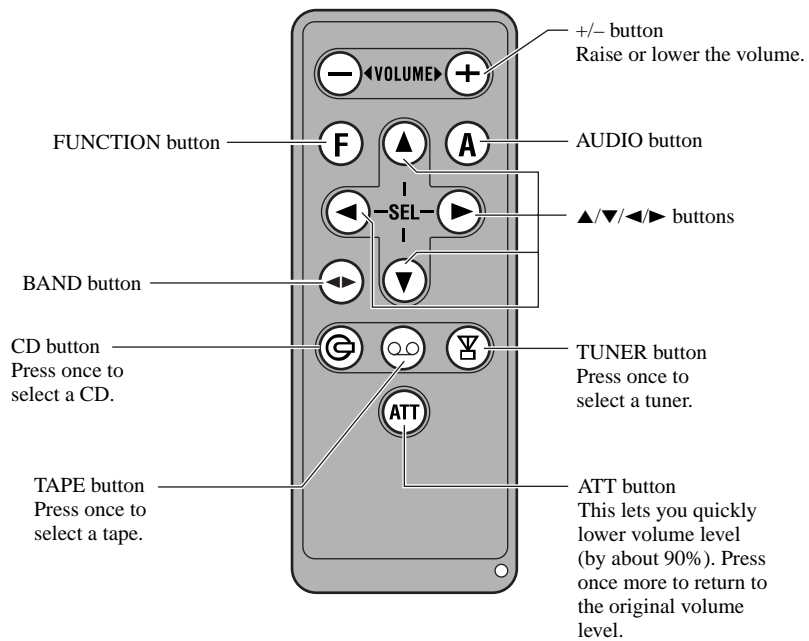
**Steering Remote Controller (for KEH-P8010R)**

The steering remote controller (CD-SR80) enabling remote control of the head unit is sold separately. Operation is the same as when using buttons on the head unit.



**Remote Controller (for KEH-P8015)**

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.



## Basic Operation

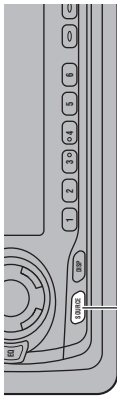
### To Listen to Music

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

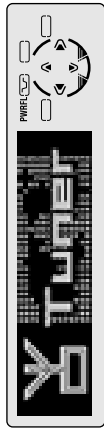
#### Note:

- Loading a cassette in this product.

#### 1. Select the desired source (e.g. Tuner).



Each press changes the Source ...



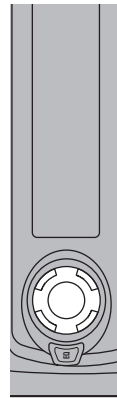
Each press of the SOURCE button selects the desired source in the following order:

- CD player (one disc only) → TV → Tuner → DAB (Digital Audio Broadcasting) Tuner
- Cassette player → Multi-CD player → External Unit 1 → External Unit 2 → AUX
- Telephone standby

#### Note:

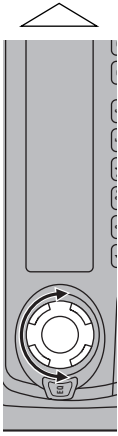
- External Unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this product. Two External Units can be controlled by this product, although "External" is displayed whether you select External Unit 1 or External Unit 2. When two External Units are connected, the allocation of them to External Unit 1 or External Unit 2 is automatically set by this product.
- In the following cases, the sound source will not change:
  - \* When a product corresponding to each source 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 the AUX (external input) is set to OFF.
  - \* When the Telephone standby is set to OFF.
- When this product's blue/white lead is connected to the car's Auto-antenna relay control terminal, the car's Auto-antenna extends when this product's source is switched ON. To retract the antenna, switch the source OFF.

#### 2. Extend the VOLUME forward.



When you press the VOLUME, it extends forward so that it becomes easier to roll. To retract the VOLUME, press it again.

#### 3. Raise or lower the volume.

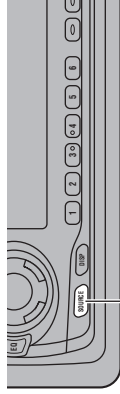


Rolling the VOLUME changes the volume level.

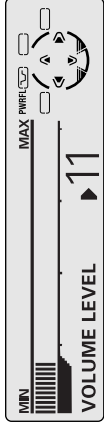
#### Note:

- Roll clockwise to raise the volume level.
- Roll counterclockwise to lower the volume level.

#### 4. Turn the source OFF.



Hold for 1 second





## Basic Operation

### Basic Operation of Cassette Player

#### Note:

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

#### Switching the Display

Each press of the DISPLAY button changes the display in the following order:  
 Playback mode A (Play time) → Playback mode B (Play time and DAB Information)

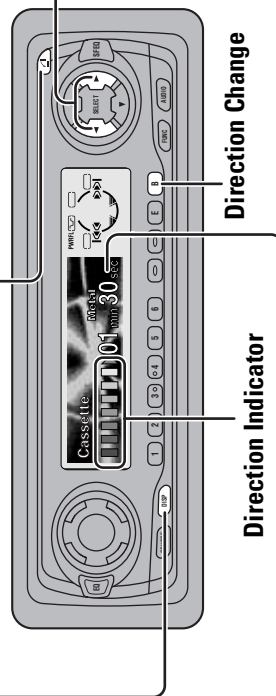
#### Note:

- You can only switch to Playback mode B when a DAB Tuner (e.g. GEX-P700DAB) is connected.

#### Open

#### Note:

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



#### Direction Indicator

#### Play Time Indicator

#### Note:

- The continuous playback time count starts at "00 min 00 sec" 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.

#### 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

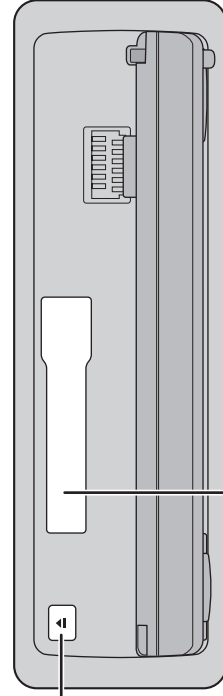
#### Note:

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

#### Eject

#### Note:

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



#### Precaution:

- To avoid a malfunction, make sure that no metal object comes into contact with the terminals when the front panel is open.

#### Cassette Loading Slot

#### Note:

- "Metal" appears automatically when a metal or chrome tape is inserted. Nothing is displayed for a normal tape.
- Do not insert anything other than a cassette into the Cassette Loading Slot.

## Basic Operation

### Basic Operation of Tuner

This product's AF function can be switched ON and OFF. AF should be switched OFF for normal tuning operations.

#### Manual and Seek Tuning

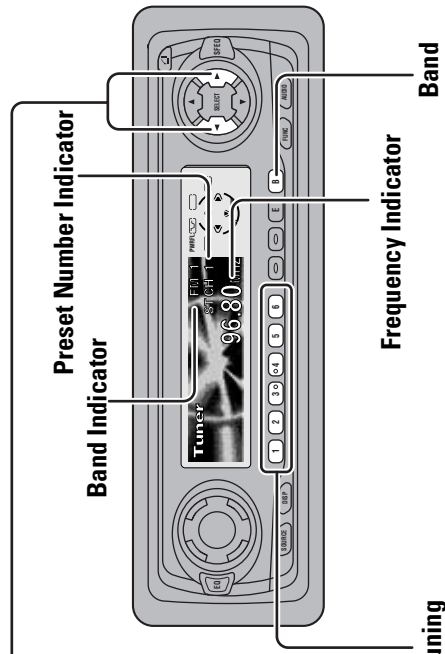
- You can select the tuning method by changing the length of time you press the ◀/▶ button.

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 release the button.
- Stereo indicator "ST" lights when a stereo station is selected.



#### Preset Tuning

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

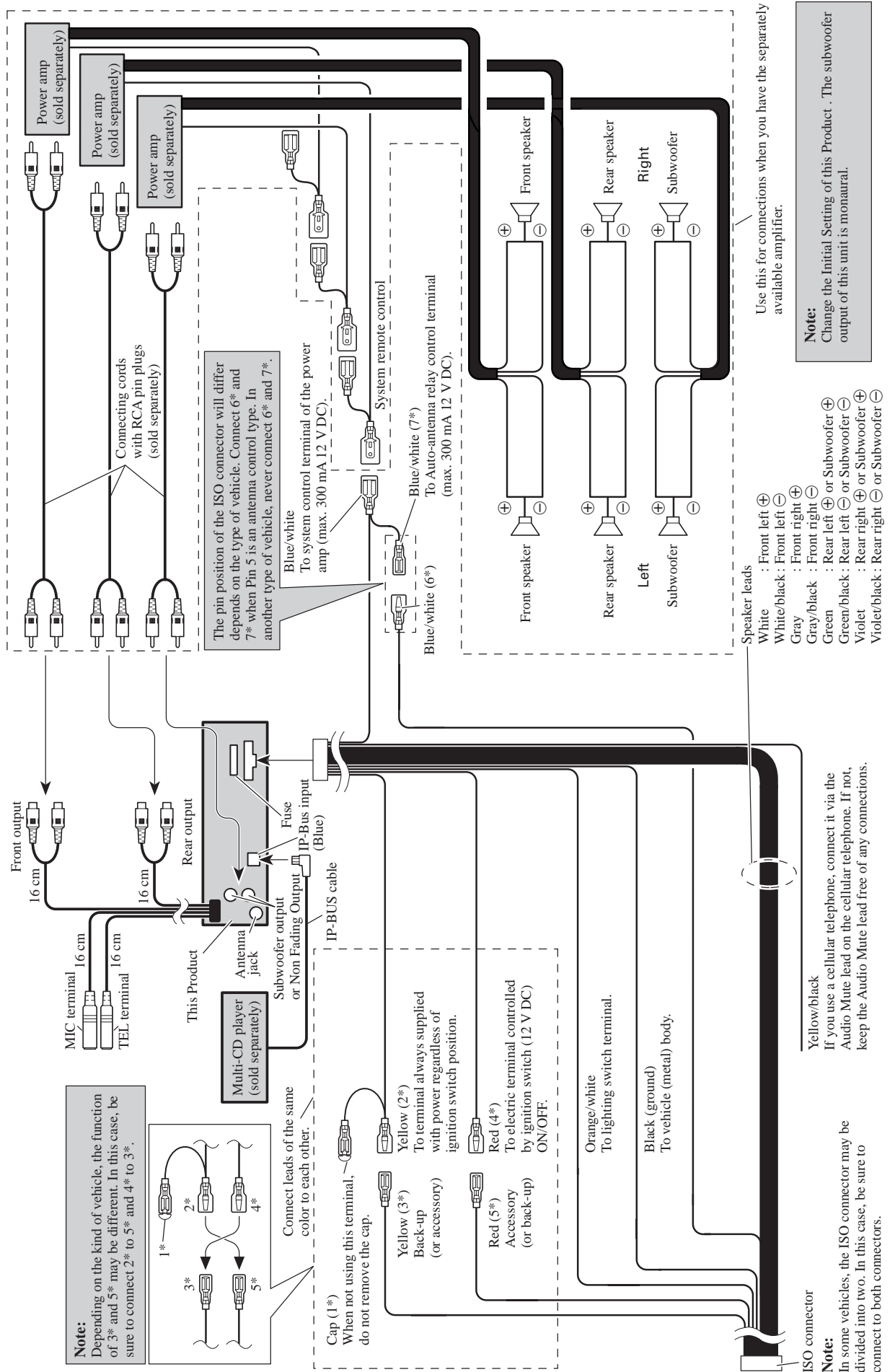
Preset station recall	2 seconds or less
-----------------------	-------------------

Broadcast station preset memory	2 seconds or more
---------------------------------	-------------------

#### Note:

- Up to 18 FM stations (6 in FM 1, FM 2 and FM 3) and 6 MW/LW stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

# Connecting the Units



## 8.2 SPECIFICATIONS

### ● KEH-P8010R/X1N/EW

#### General

Power source	..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	..... Negative type
Max. current consumption	..... 10.0 A
Dimensions	
(mounting size)	..... 178 (W) × 50 (H) × 157 (D) mm
(front face)	..... 188 (W) × 58 (H) × 19 (D) mm
Weight	..... 1.3 kg
Backup current	..... Less than 5 mA

#### Amplifier

Maximum power output	..... 50 W × 4
50 W × 2 ch/4 Ω + 70 W × 1 ch/2 Ω (for Subwoofer)	25 W × 4 (BRI)
Continuous power output	..... 27 W × 4
(DIN45324, +B = 14.4 V)	
Load impedance	..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] 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)
Gain: ±12 dB	
(Mid)	..... Frequency: 200/500/1k/2k Hz
Q Factor: 0.35/0.59/0.95/1.15	(+6 dB when boosted)
Gain: ±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)
Gain: ±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)	
Tone controls	
(Bass)	..... Frequency: 40/63/100/160 Hz
Gain: ±12 dB	
(Treble)	..... Frequency: 2.5k/4k/6.3k/10k Hz
Gain: ±12 dB	
HPF	
Frequency	..... 50/80/125 Hz
Slope	..... –12 dB/oct.
Subwoofer output	
Frequency	..... 50/80/125 Hz
Slope	..... –18 dB/oct.
Gain	..... ±12 dB
Phase	..... Normal/Reverse

#### Cassette player

Tape	..... Compact cassette tape (C-30 – C-90)
Tape speed	..... 4.76 cm/sec. (+0.14 cm/sec., -0.05 cm/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	..... 9 dBf
(0.8 μV/75 Ω, mono, S/N: 30 dB)	
50 dB quieting sensitivity	..... 15 dBf
(1.5 μV/75 Ω, 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)

#### MW tuner

Frequency range	..... 531 – 1,602 kHz (9 kHz)
Usable sensitivity	..... 18 μV (S/N: 20 dB)
Selectivity	..... 50 dB (±9 kHz)

#### LW tuner

Frequency range	..... 153 – 281 kHz
Usable sensitivity	..... 30 μV (S/N: 20 dB)
Selectivity	..... 50 dB (±9 kHz)

#### Note:

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

## ● KEH-P8015/X1N/ES

### 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) × 157 (D) mm
(nose)	188 (W) × 58 (H) × 19 (D) mm
(D) (chassis)	178 (W) × 50 (H) × 162 (D) mm
(nose)	170 (W) × 46 (H) × 14 (D) mm
Weight	1.3 kg
Backup current	Less than 5 mA

### 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 50 W × 4  
50 W × 2 ch/4 Ω + 70 W × 1 ch/2 Ω (for Subwoofer)

Load impedance  
4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)

Preout maximum output level/  
output impedance 2.2 V/1k 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)  
Gain: ±12 dB

(Mid) Frequency: 200/500/1k/2k Hz  
Q Factor: 0.35/0.59/0.95/1.15  
(+6 dB when boosted)  
Gain: ±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)  
Gain: ±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)

Tone controls

(Bass) Frequency: 40/63/100/160 Hz  
Gain: ±12 dB  
(Treble) Frequency: 2.5k/4k/6.3k/10k Hz  
Gain: ±12 dB

HPF

Frequency 50/80/125 Hz  
Slope –12 dB/oct.

Subwoofer output

Frequency 50/80/125 Hz  
Slope –18 dB/oct.  
Gain ±12 dB  
Phase Normal/Reverse

### Cassette player

Tape	Compact cassette tape (C-30 – C-90)
Tape speed	4.76 cm/sec. (+0.14 cm/sec., -0.05 cm/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	9 dBf (0.8 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	15 dBf (1.5 μV/75 Ω, 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 – 1,640 kHz (10 kHz)
Usable sensitivity	18 μV (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.