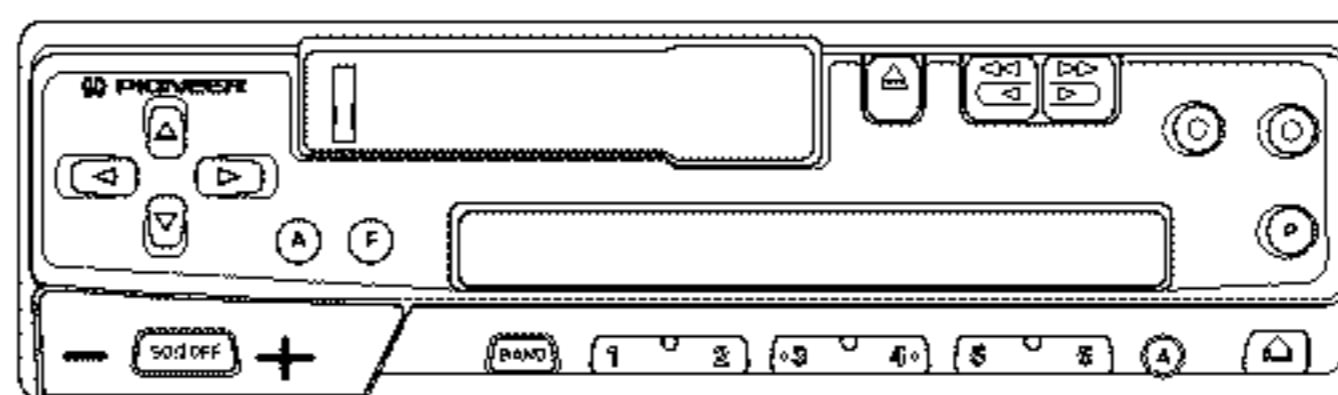


Service Manual

PIONEER[®]
The Art of Entertainment



ORDER NO.
CRT2107

HIGH POWER CASSETTE PLAYER WITH FM/MW/LW TUNER

KEH-2710

X1M/EE

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.
- **See the separate manual CX-644(CRT1800) for the cassette mechanism description.**
- **The cassette mechanism assy employed in this model is one of 2M series.**
- **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.

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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

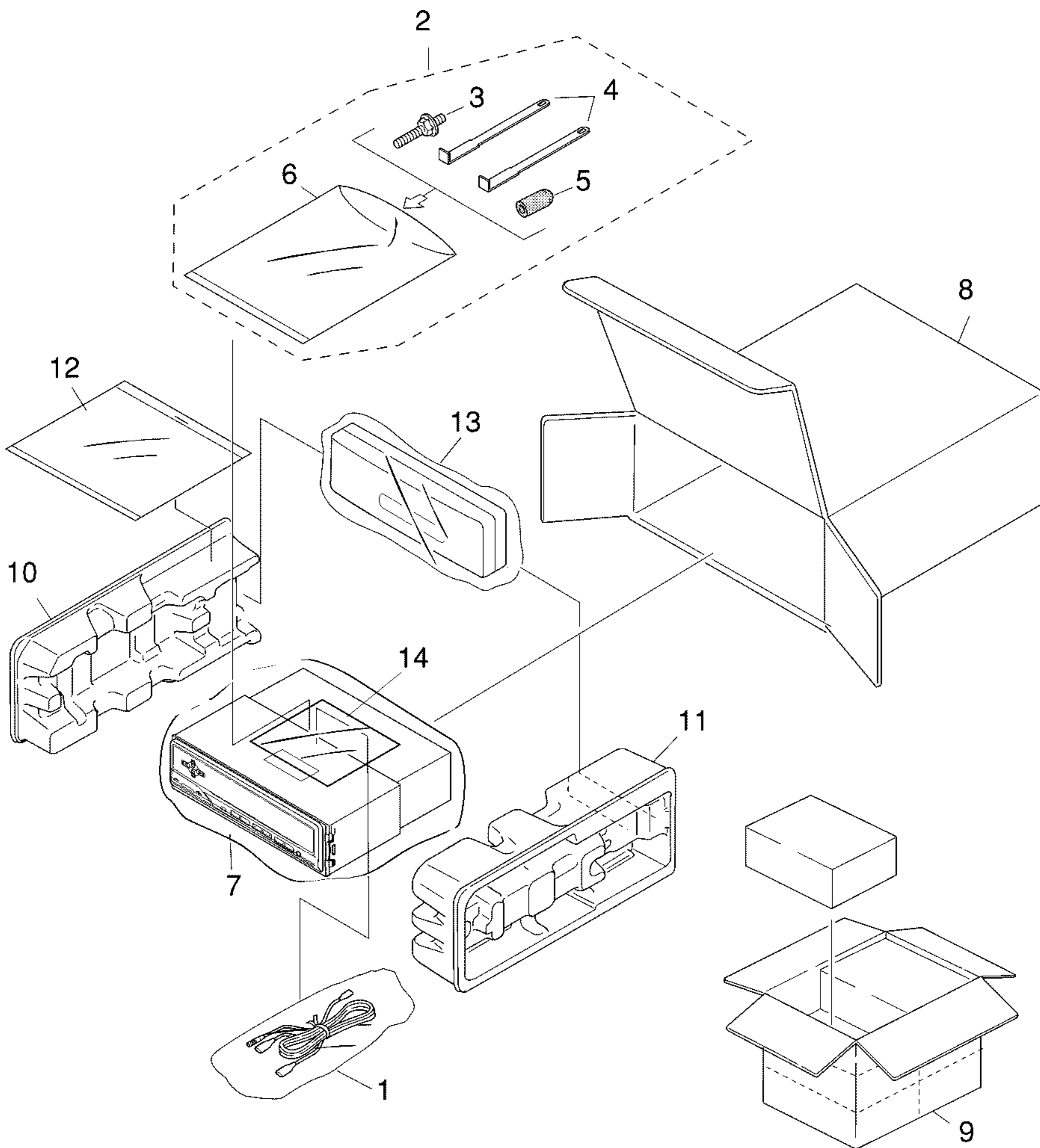


Fig. 1

NOTE:

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

● PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord Assy	CDE5496	11	Protector	CHP1623
2	Accessory Assy	CEA1917	12-1	Owner's Manual	CRD2507
3	Screw	CBA1304	12-2	Installation Manual	CRD2509
4	Handle(x2)	CNC5395	* 12-3	Warranty Card	CRY1087
5	Bush	CNV3930	13	Case Assy	CXB1063
* 6	Polyethylene Bag	E36-615	* 14	Caution Card	CRP1172
7	Polyethylene Bag	CEG-162			
8	Carton	CHG3345			
9	Contain Box	CHL3345			
10	Protector	CHP1622			

● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-2710/X1M/EE	CRD2507	English,Polish
	CRD2509	English,Polish

2.2 EXTERIOR

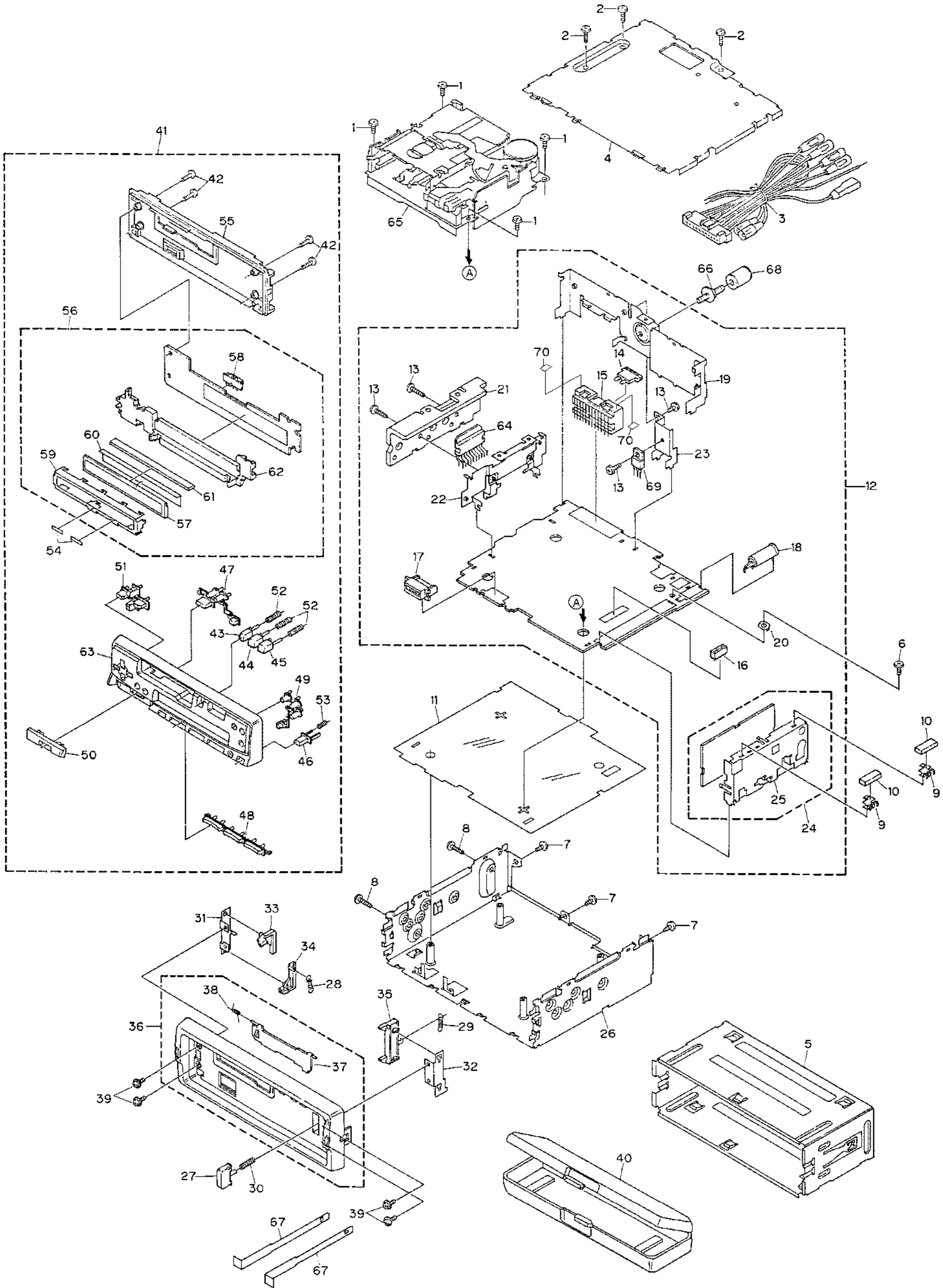


Fig. 2

● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P050FMC	36	Panel Unit	CXB1660
2	Screw	BSZ30P100FMC	37	Door	CAT1836
3	Cord Assy	CDE5496	38	Spring	CBH1838
4	Case	CNB2074	39	Screw	IMS20P030FZK
5	Holder	CNC6798	40	Case Assy	CXB1063
6	Screw	BSZ30P055FUC	41	Detach Grille Assy	CXB1718
7	Screw	BSZ30P060FMC	42	Screw	BPZ20P120FZK
8	Screw	BSZ30P100FMC	43	Button(⊕)	CAC4867
9	Holder	CNC5704	44	Button(◀)	CAC4868
10	Cushion	CNM4870	45	Button(▶)	CAC4869
11	Insulator	CNM5025	46	Button(⊕)	CAC4870
12	Tuner Amp Unit	CWM5519	47	Button(SOURCE, A, F, BAND)	CAC5306
13	Screw	BSZ26P080FMC	48	Button(1-6)	CAC5307
14	Fuse(10A)	CEK1136	49	Button(○, ○, P, A)	CAC5311
15	Plug(CN601)	CKM1270	50	Button(VOL+, VOL-)	CAC5321
16	Connector(CN604)	CKS3362	51	Button	CAC5323
17	Connector(CN603)	CKS3581	52	Spring	CBH1836
18	Antenna Jack(CN301)	CKX1056	53	Spring	CBH2103
19	Panel	CNB2246	54	Spacer	CNM5319
20	Holder	CNC5399	55	Cover	CNS4627
21	Heat Sink	CNC6217	56	Keyboard Unit	CWM5528
22	Holder	CNC6372	57	LCD(LCD901)	CAW1387
23	Holder	CNC6845	58	Connector(CN901)	CKS3580
24	Tuner Unit	CWE1366	59	Holder	CNC6846
25	Holder	CNC6523	60	Reflector	CNM5542
26	Chassis Unit	CXA9851	61	Connector	CNV4763
27	Button	CAC4836	62	Lighting Conductor	CNV5074
28	Spring	CBH1834	63	Grille Assy	CXB2315
29	Spring	CBH1835	64	IC(IC501)	HA13155
30	Spring	CBH1996	65	Cassette Mechanism Assy	EXK3475
31	Bracket	CNC6135	66	Screw	CBA1304
32	Bracket	CNC6791	67	Handle	CNC5395
33	Arm	CNV4692	68	Bush	CNV3930
34	Arm	CNV4693	69	Transistor(Q801)	2SD2037
35	Arm	CNV4728	70	Spacer	CNM5739

2.3 CASSETTE MECHANISM ASSY

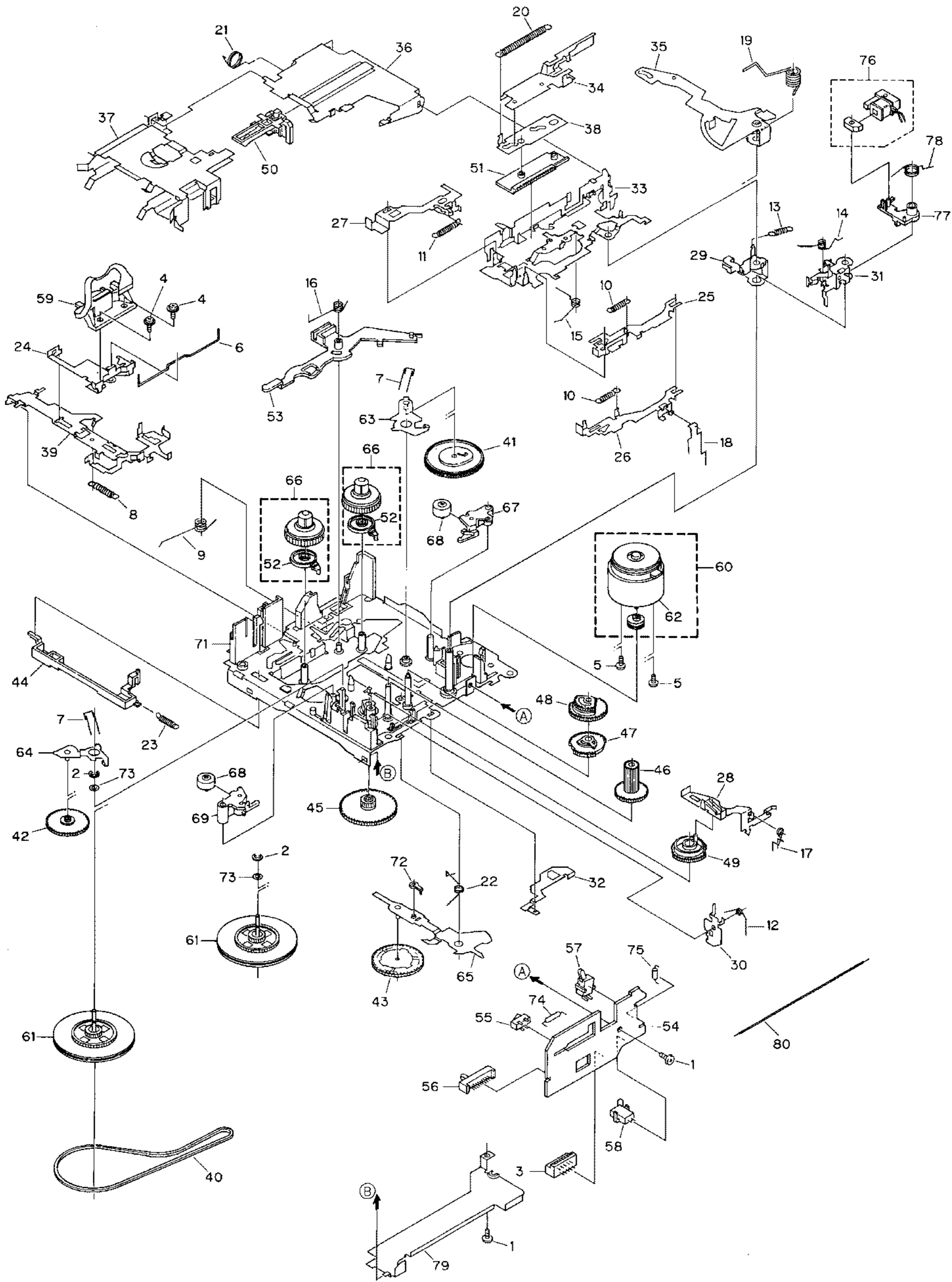


Fig. 3

● CASSETTE MECHANISM ASSY SECTION PARTS LIST

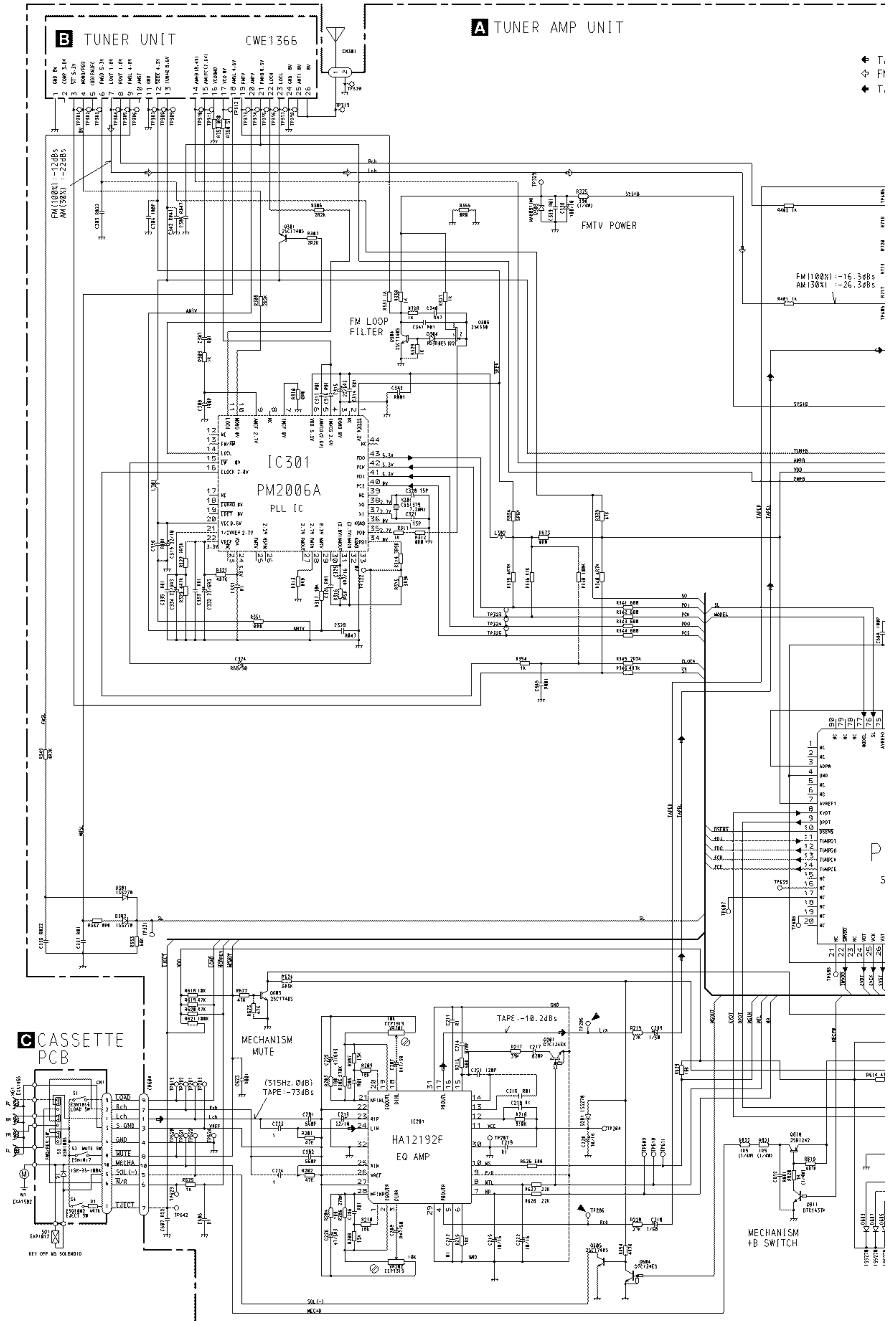
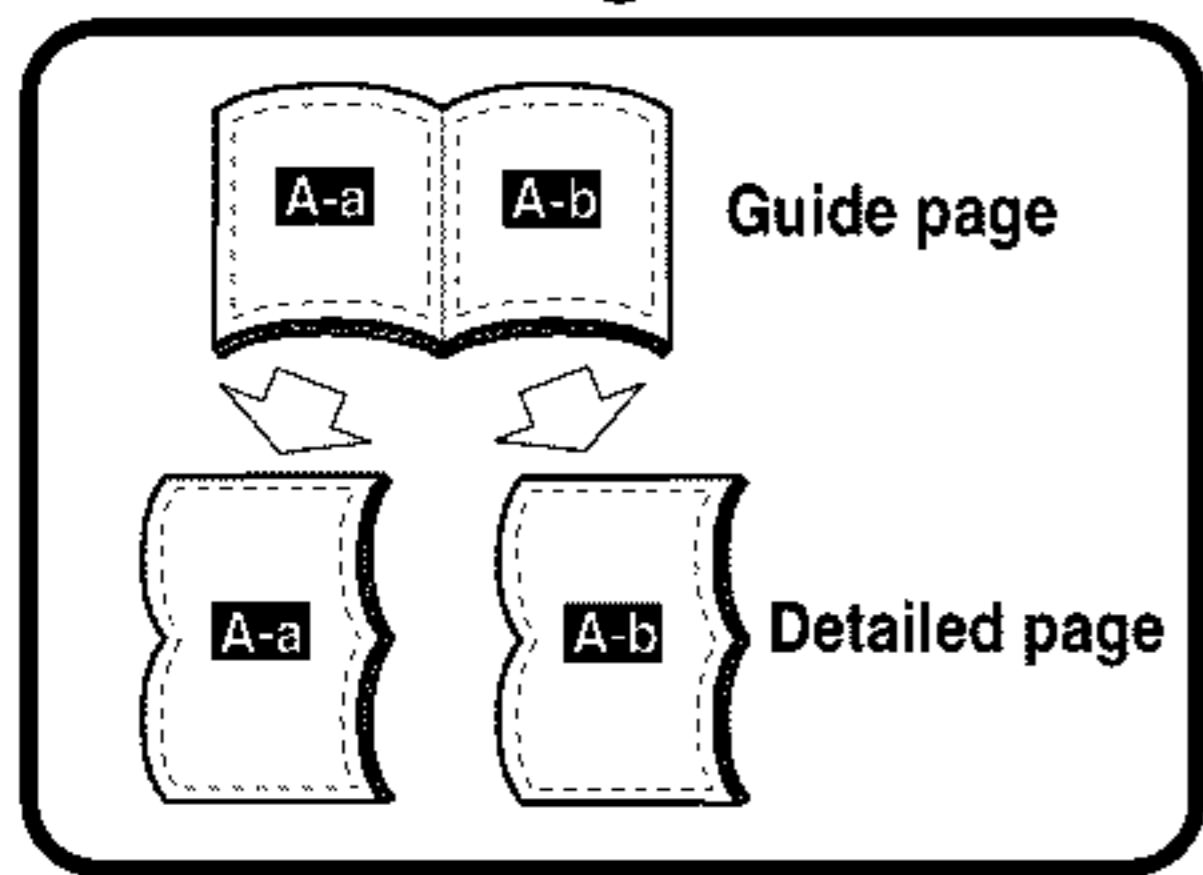
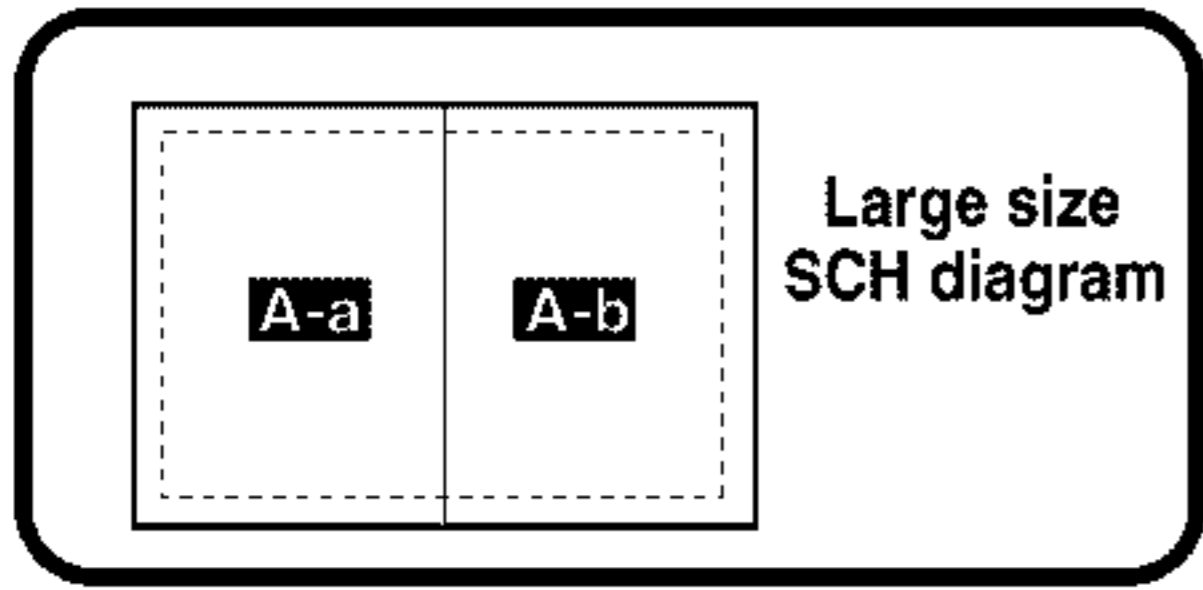
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ23P050FMC	41	Gear	ENV1504
2	Washer	CBG1003	42	Gear	ENV1470
3	Connector(CN1)	CKS2829	43	Gear	ENV1471
4	Screw(M2x5)	EBA1028	44	Lever	ENV1472
5	Screw(M2x2.5)	EBA1037	45	Gear	ENV1474
6	Spring	EBH1554	46	Gear	ENV1475
7	Spring	EBH1555	47	Gear	ENV1493
8	Spring	EBH1556	48	Gear	ENV1477
9	Spring	EBH1557	49	Gear	ENV1499
10	Spring	EBH1591	50	Lever	ENV1480
11	Spring	EBH1559	51	Lever	ENV1487
12	Spring	EBH1593	52	Arm	ENV1464
13	Spring	EBH1561	53	Arm	ENV1489
14	Spring	EBH1562	* 54	PCB	ENP1148
15	Spring	EBH1563	55	Switch(Eject)(S4)	ESG1002
16	Spring	EBH1590	56	Switch(FWD)(REV)(S3)	ESH1006
17	Spring	EBH1565	57	Switch(Load)(S1)	ESN1016
18	Spring	EBH1566	58	Switch(Mute)(S2)	ESN1017
19	Spring	EBH1567	59	Head Assy(HD1)	EXA1466
20	Spring	EBH1568	60	Motor Unit	EXA1502
21	Spring	EBH1569	61	Flywheel Unit	EXA1505
22	Spring	EBH1571	62	Motor	EXM1028
23	Spring	EBH1579	63	Arm Unit	EXA1447
24	Head Base	ENC1457	64	Arm Unit	EXA1448
25	Lever	ENC1429	65	Arm Unit	EXA1449
26	Lever	ENC1430	66	Reel Unit	EXA1450
27	Lever	ENC1431	67	Pinch Holder	ENV1466
28	Lever	ENC1432	68	Pinch Roller	ENV1514
29	Arm	ENC1433	69	Pinch Holder	ENV1467
30	Arm	ENC1434	70	
31	Arm	ENC1435	71	Chassis Unit	EXA1465
32	Arm	ENC1476	72	Service Arm	EXX1048
33	Bracket	ENC1437	73	Washer	HBF-179
34	Lever	ENC1438	74	Resistor(R1)	RD1/4HM472J
35	Arm	ENC1439	75	Diode(D1)	F1SR35-100A
36	Frame	ENC1440	76	Solenoid(SO1)	EXP1012
37	Holder	ENC1441	77	Arm	ENV1491
38	Lever	ENC1446	78	Spring	EBH1582
39	Lever	ENC1454	79	Cover	ENC1452
40	Belt	ENT1027	80	Cord	EDC1006
			81	Spring	EBH1592

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

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

A-a



A C

A-b

TAPE SIGNAL
FM/AM SIGNAL
TAPE, FM/AM SIGNAL

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

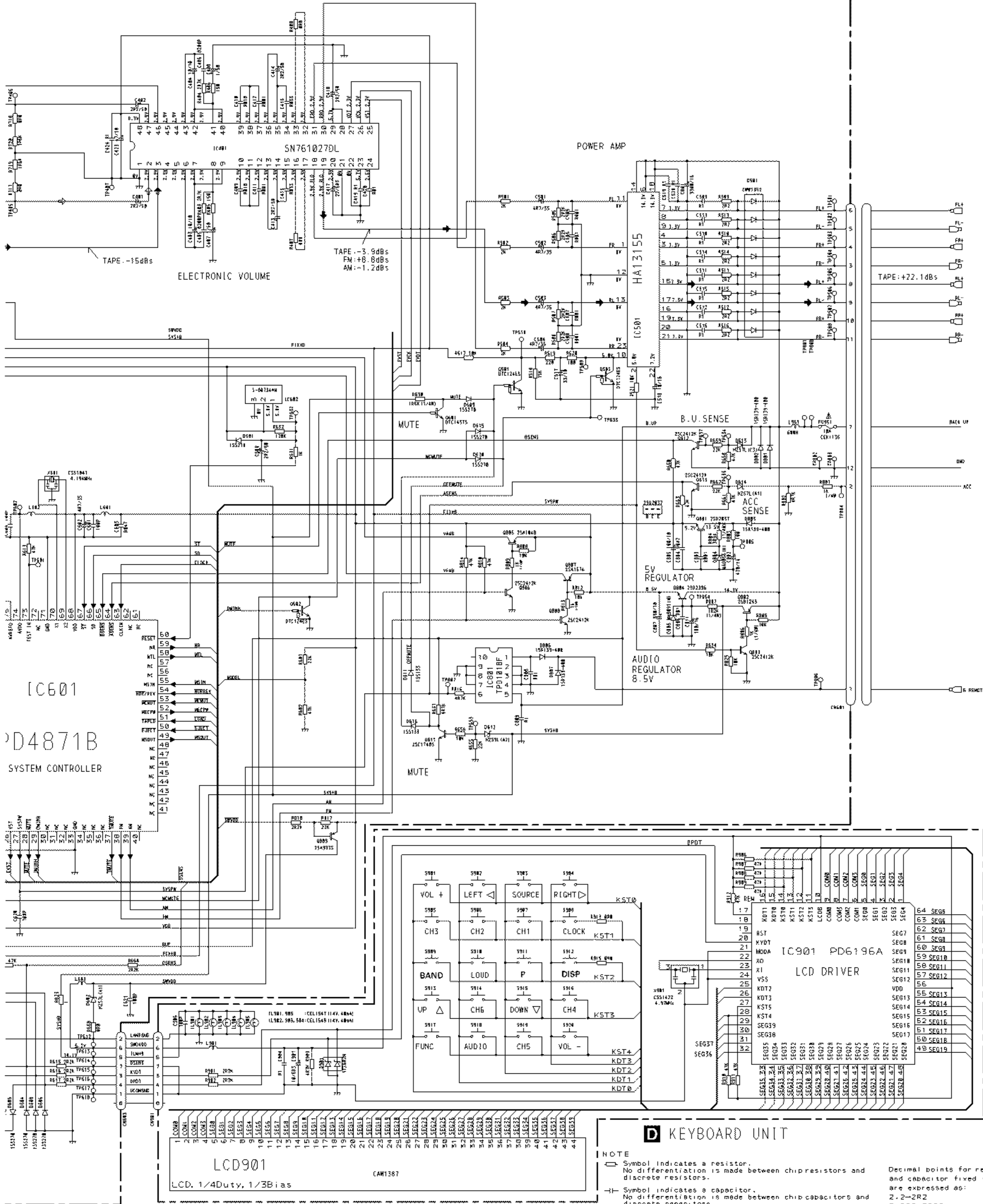
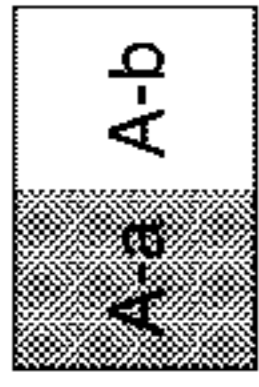


Fig. 4





A

B

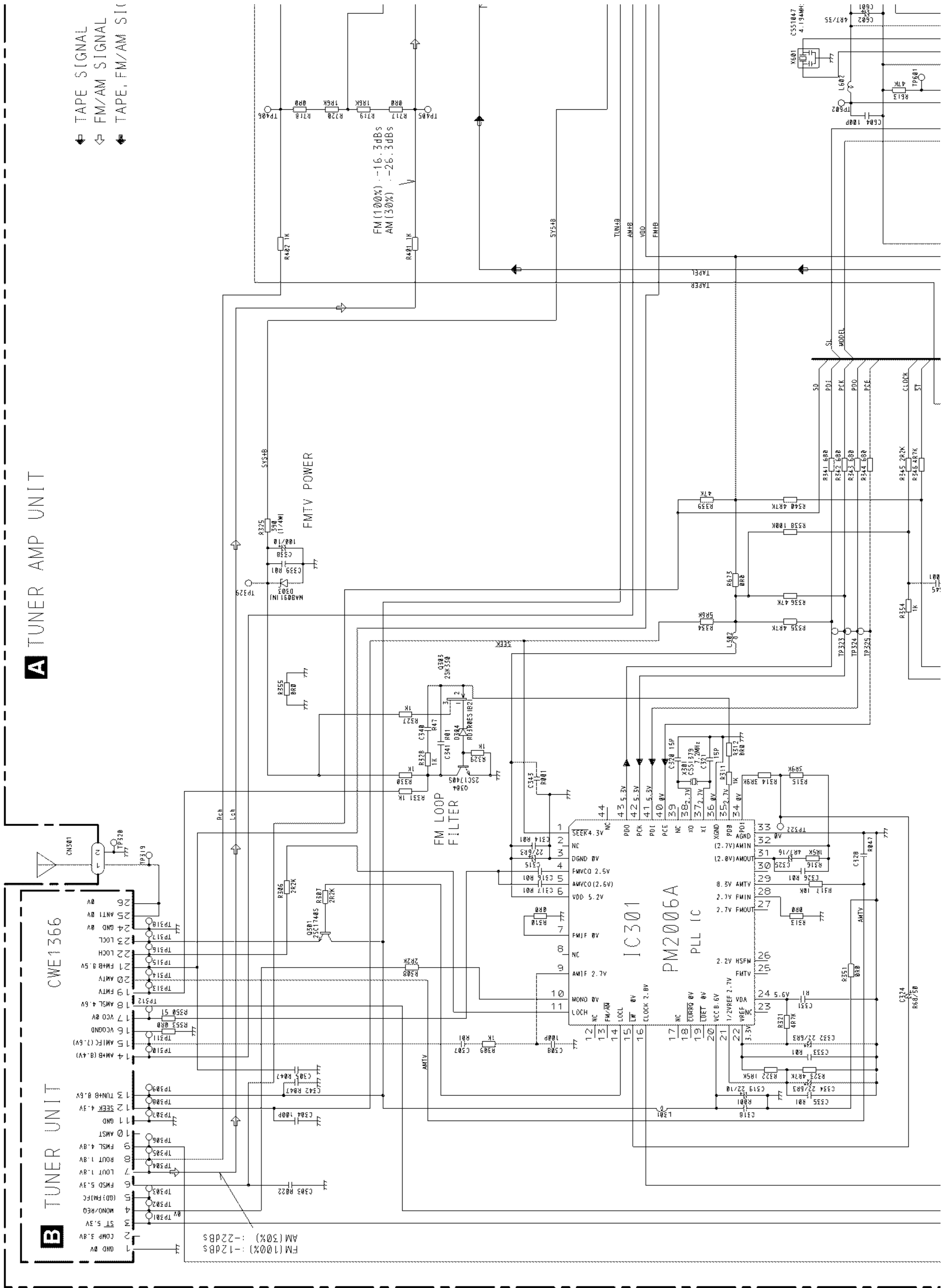
C

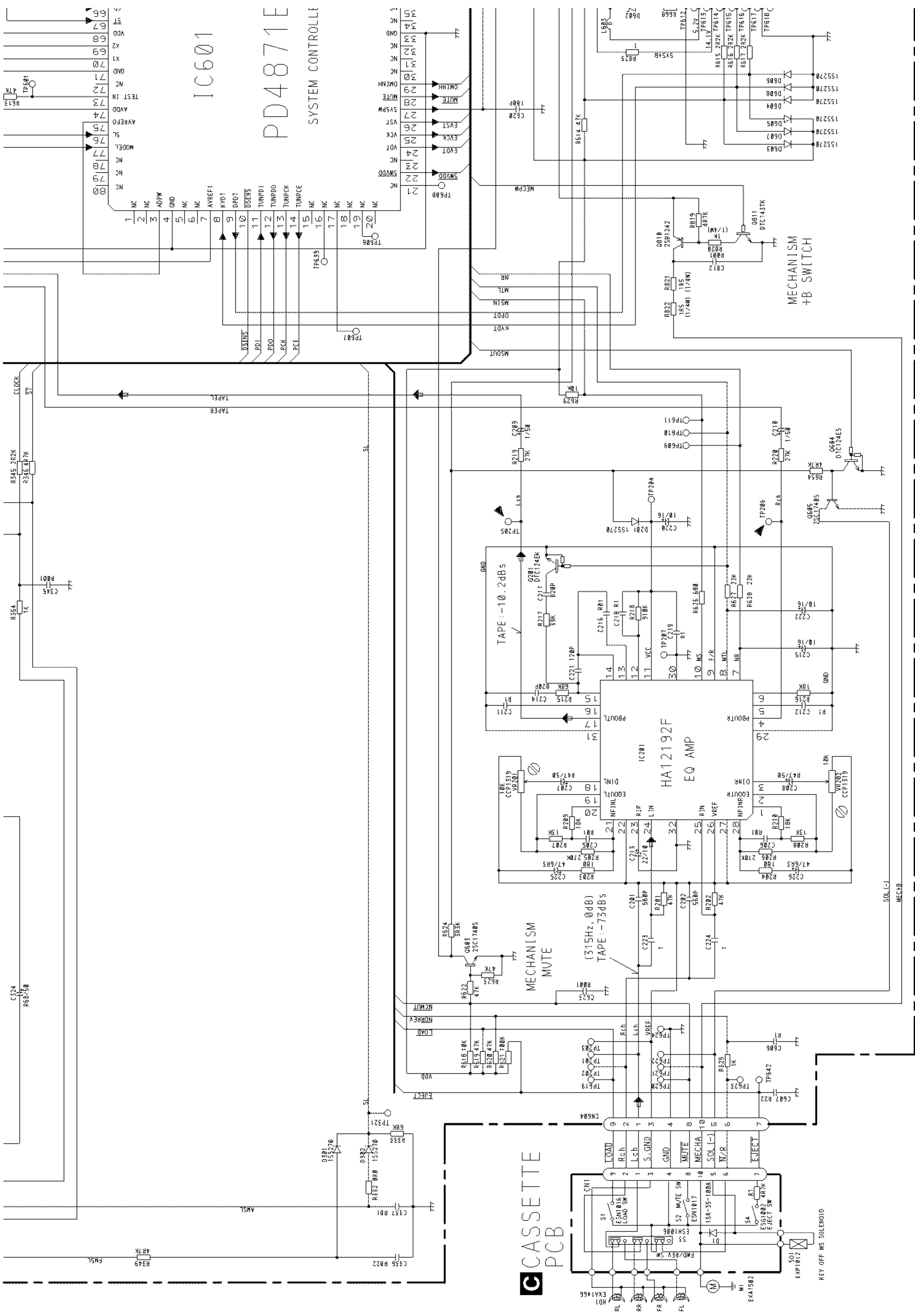
D

- ◀ TAPE SIGNAL
- ◀ FM/AM SIGNAL
- ◀ TAPE, FM/AM S/C

A TUNER AMP UNIT

B TUNER UNIT





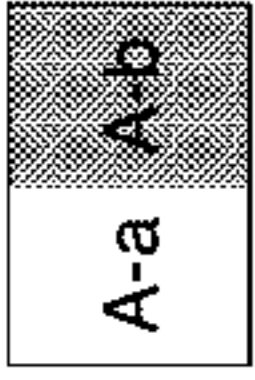
A-a A-b

A B C D

Fig. 5

A-a

C



A

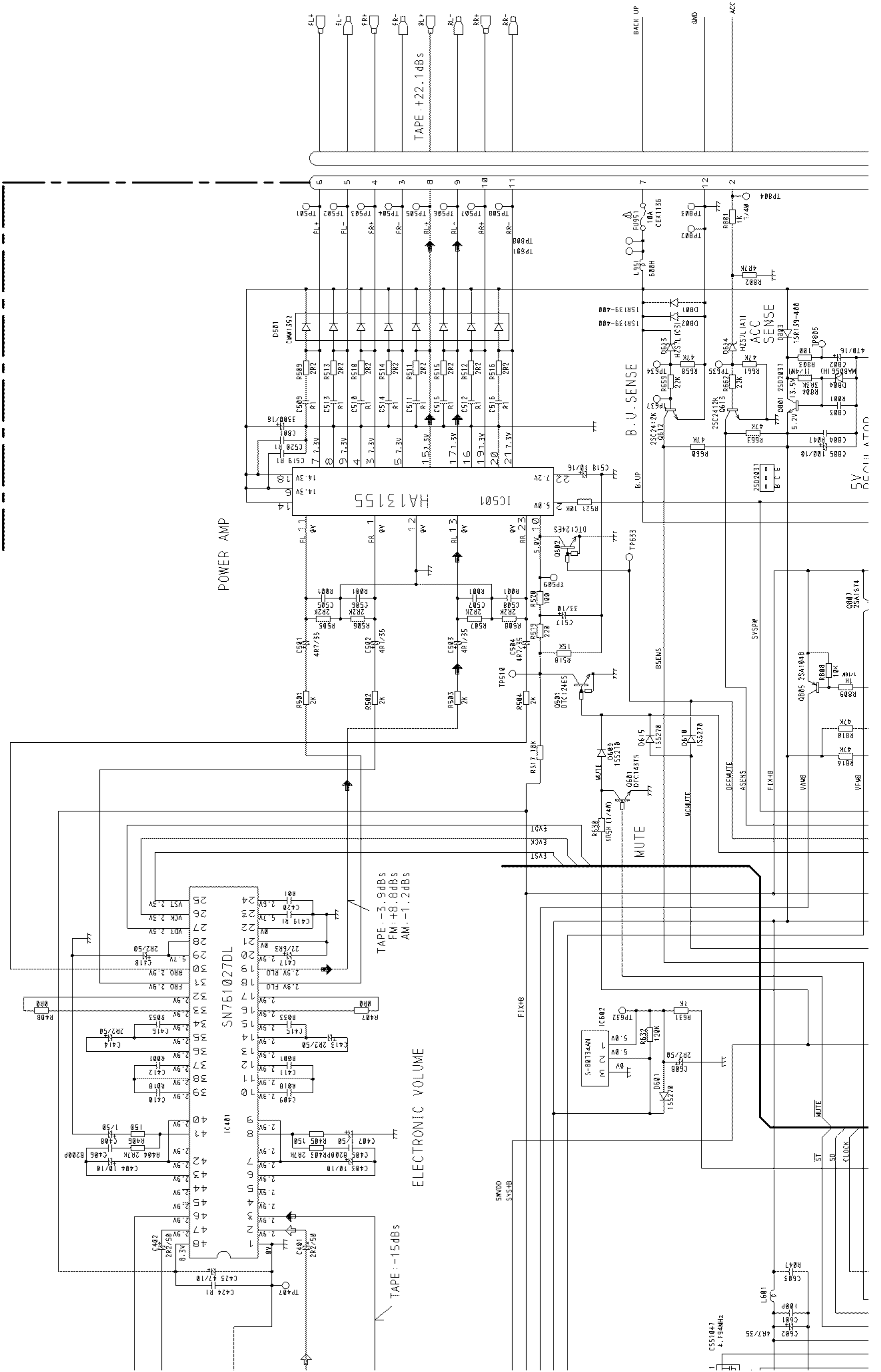
B

C

D

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

IGNAL
GNAL
AM SIGNAL



ELECTRONIC VOLUME

POWER AMP

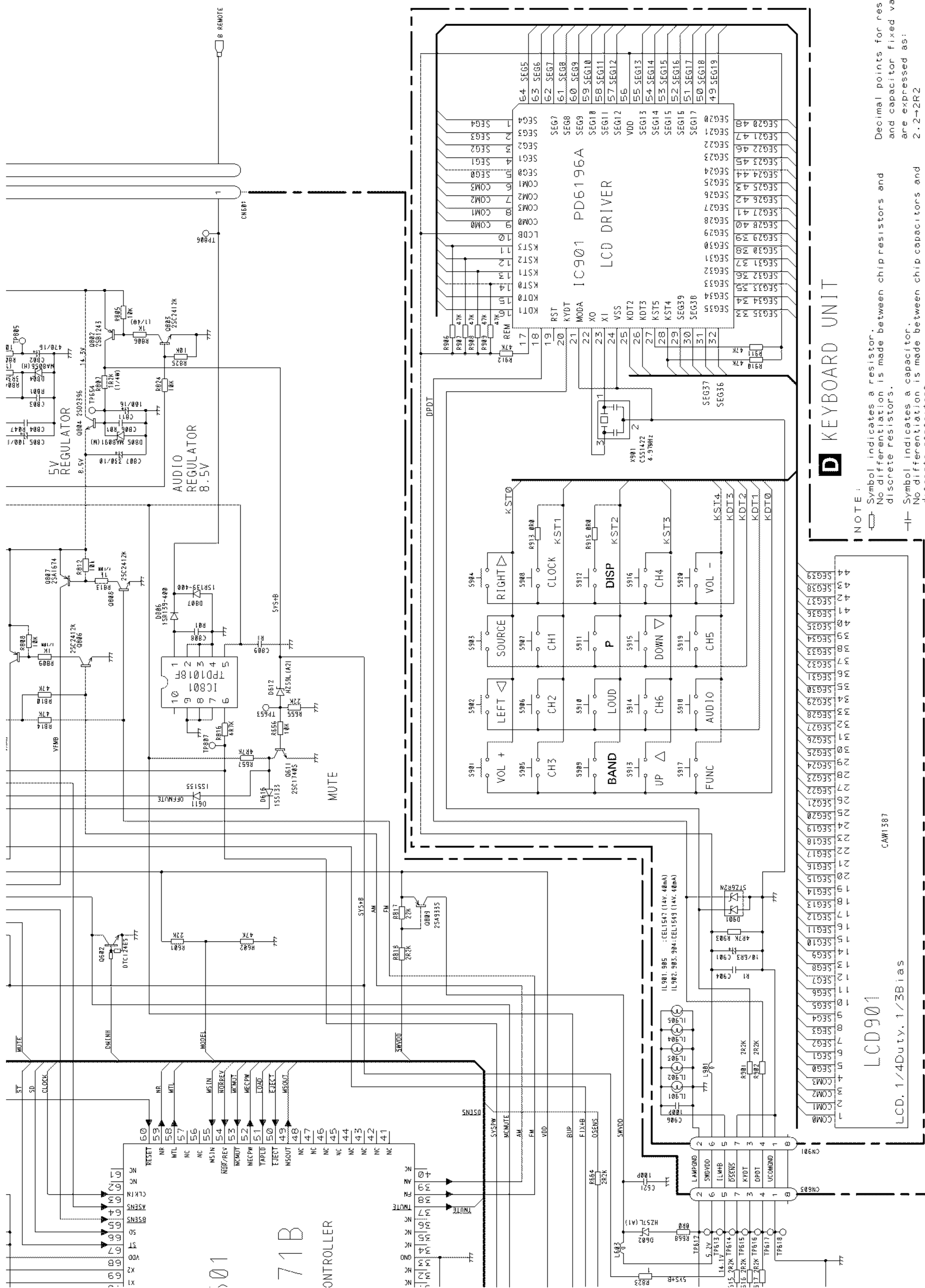
B.U. SENSE

TAPE: -3.9dBs
FM: +8.8dBs
AM: -1.2dBs

TAPE: +22.1dBs

TAPE: -15dBs





NOTE:

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

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

A-a A-b

Fig. 6

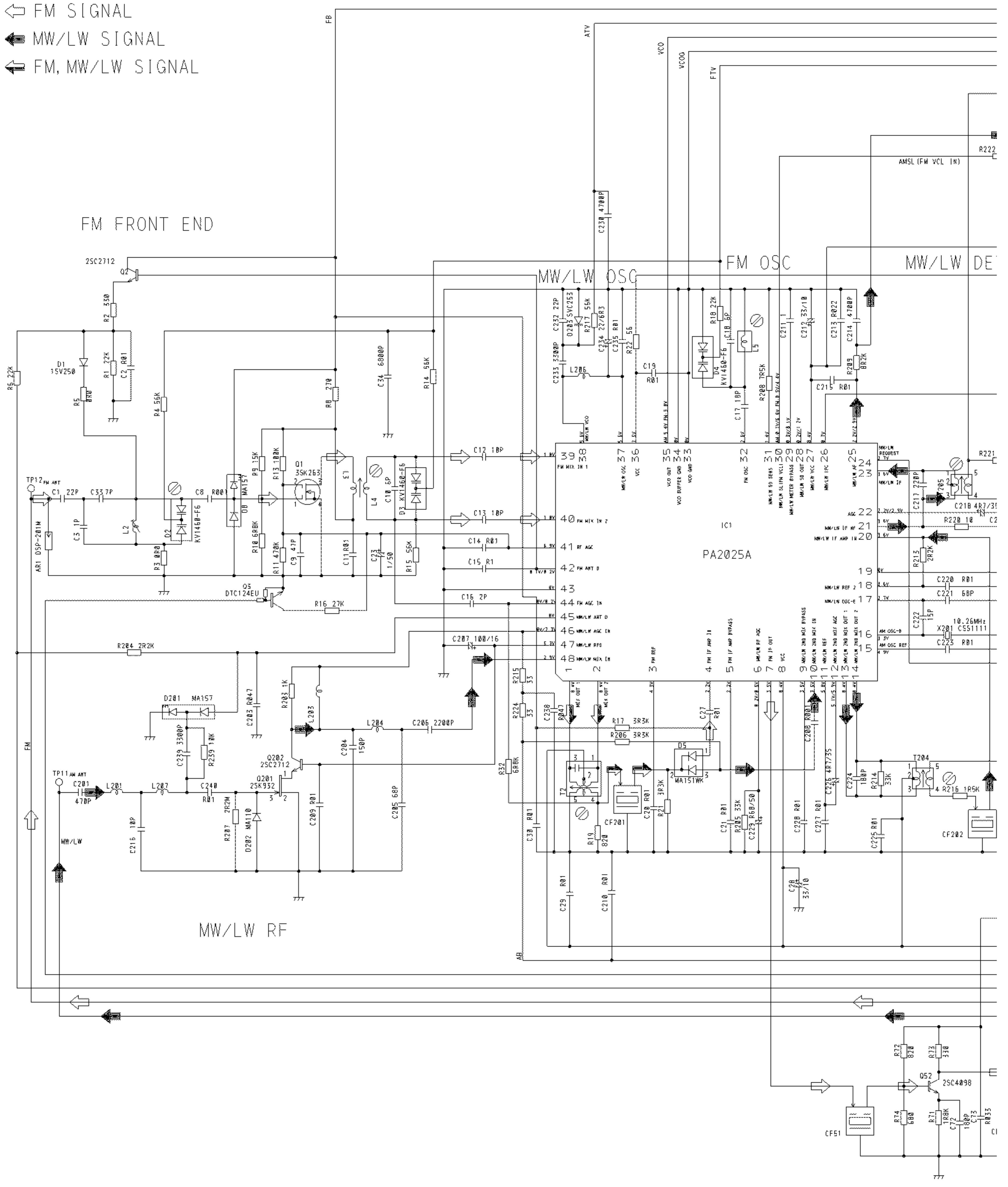
A-b

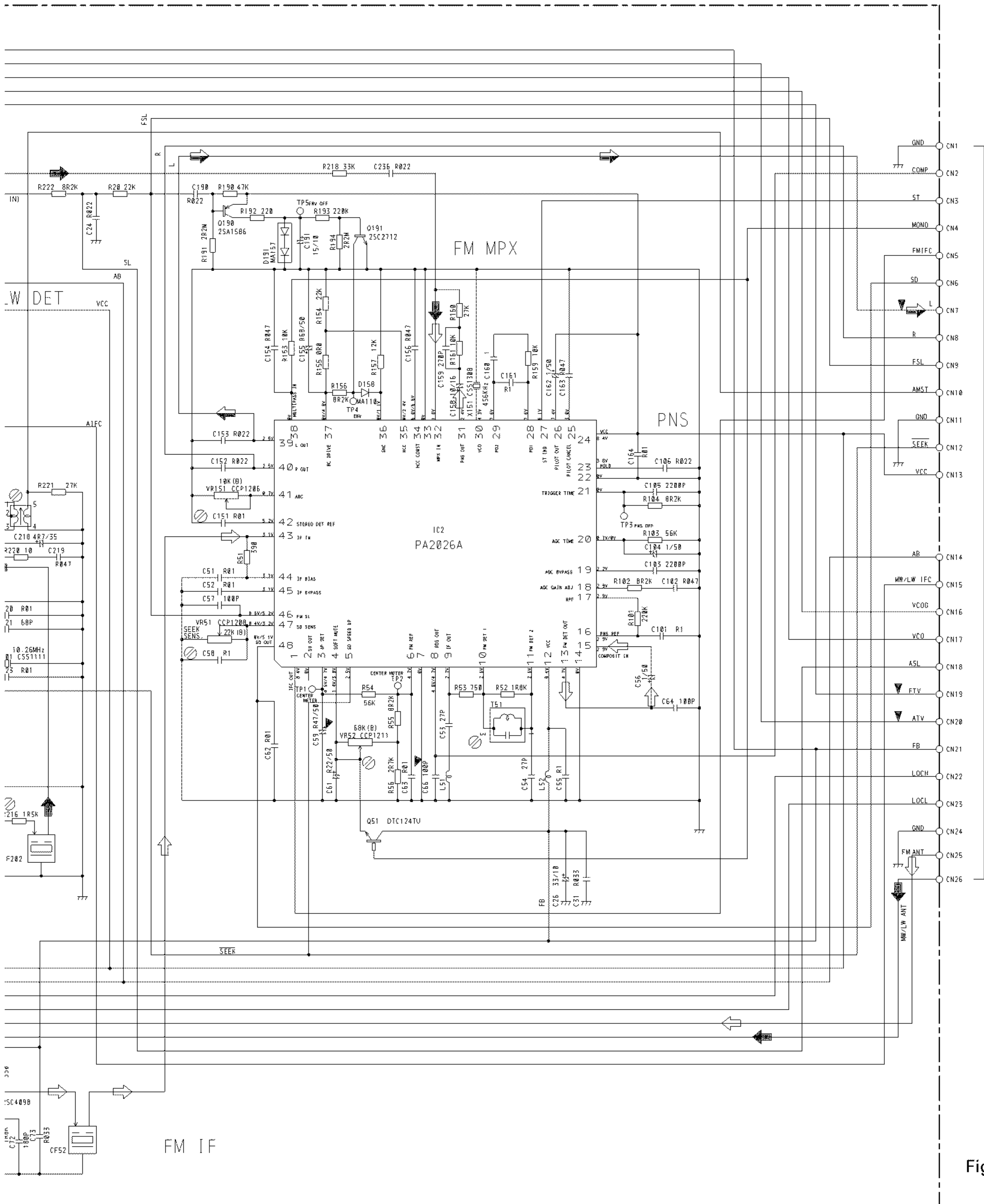
D

3.2 TUNER UNIT

B TUNER UNIT

- ← FM SIGNAL
- ← MW/LW SIGNAL
- ← FM, MW/LW SIGNAL





A

B

C

D

Fig. 7

B

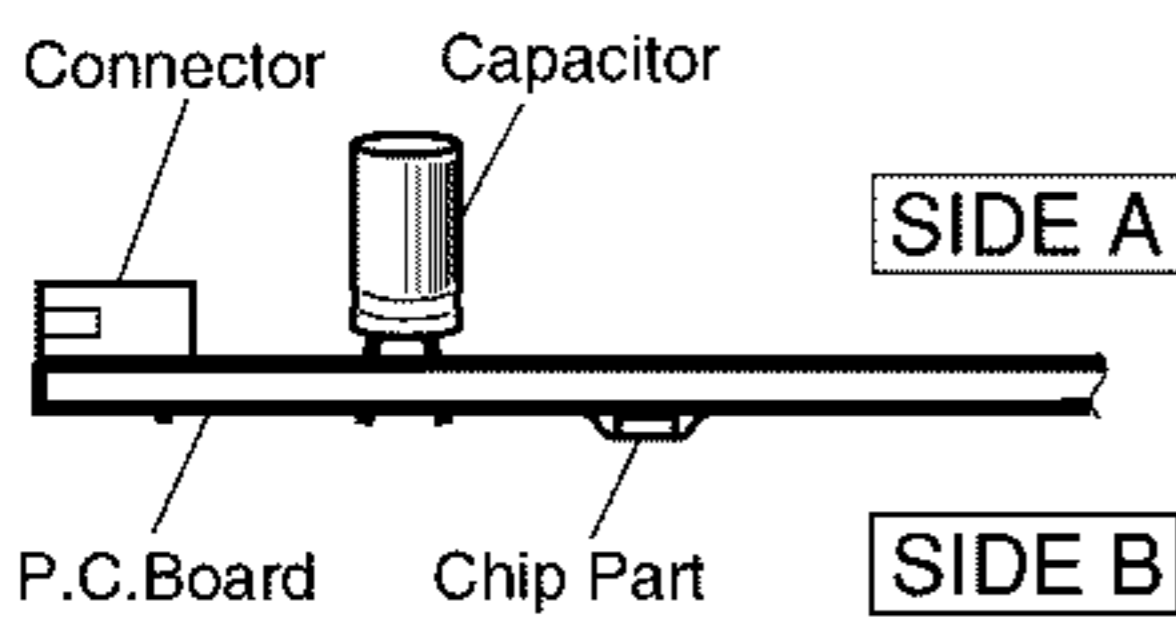
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

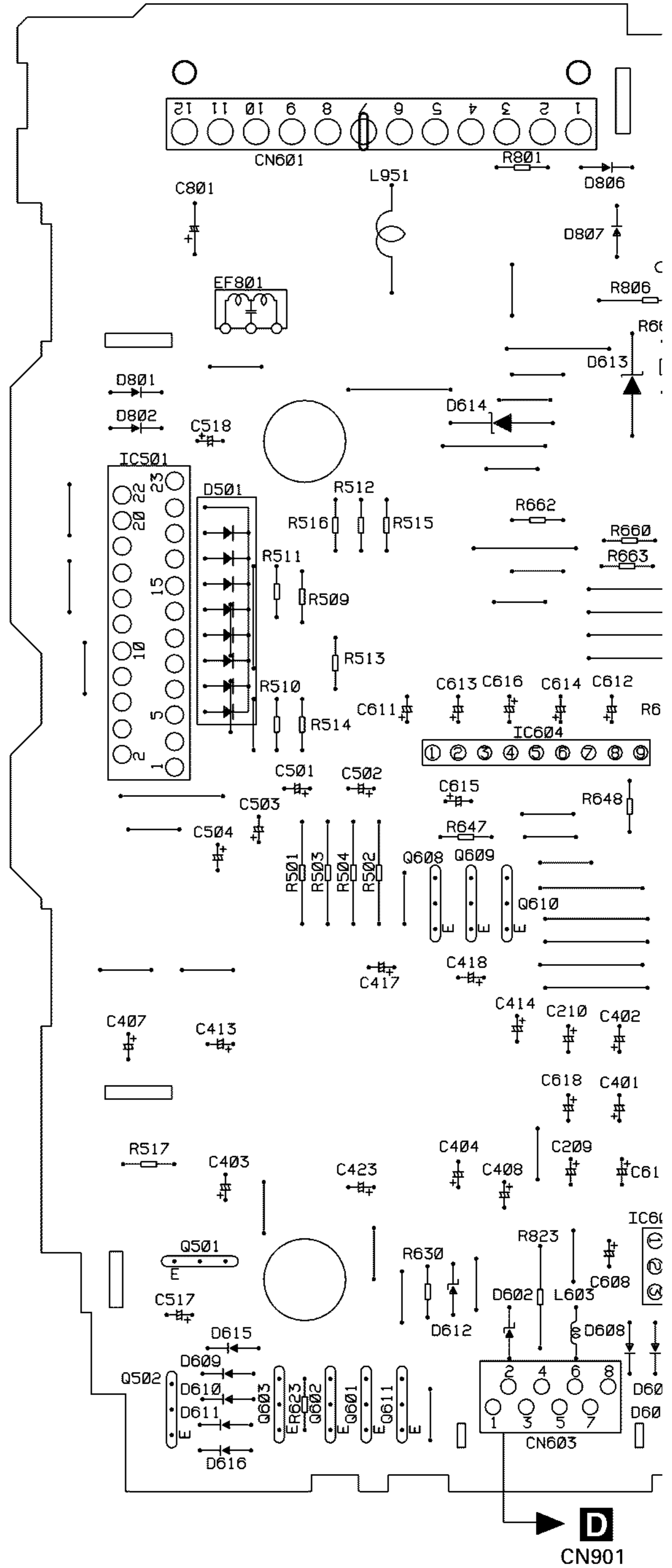
1. The parts mounted on this PCB include all necessary parts for several destination.
For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



IC, Q	ADJ
Q804	
Q801	
Q802	
Q805	Q301
IC501	Q807
Q702	IC302
	Q302
	Q810
	Q303
	Q605
	Q604
IC604	Q304
	Q608
	Q609
	Q704
	Q610
	Q703
	VR701
	Q701
	VR201
IC602	
Q501	
Q809	
	VR202
	Q502
Q601	Q611
Q603	Q602

A TUNER AMP UNIT



SIDE A

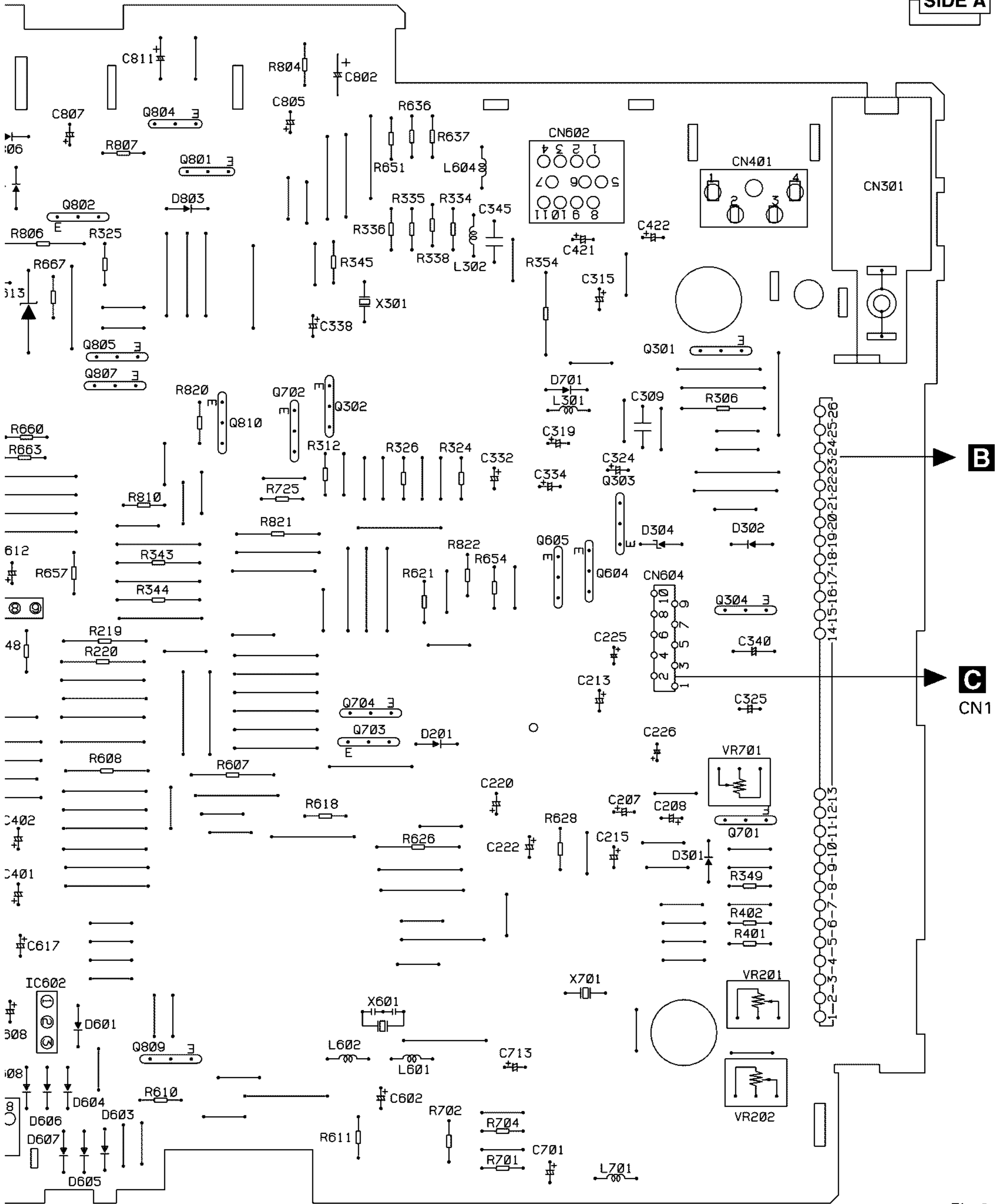


Fig.8

A

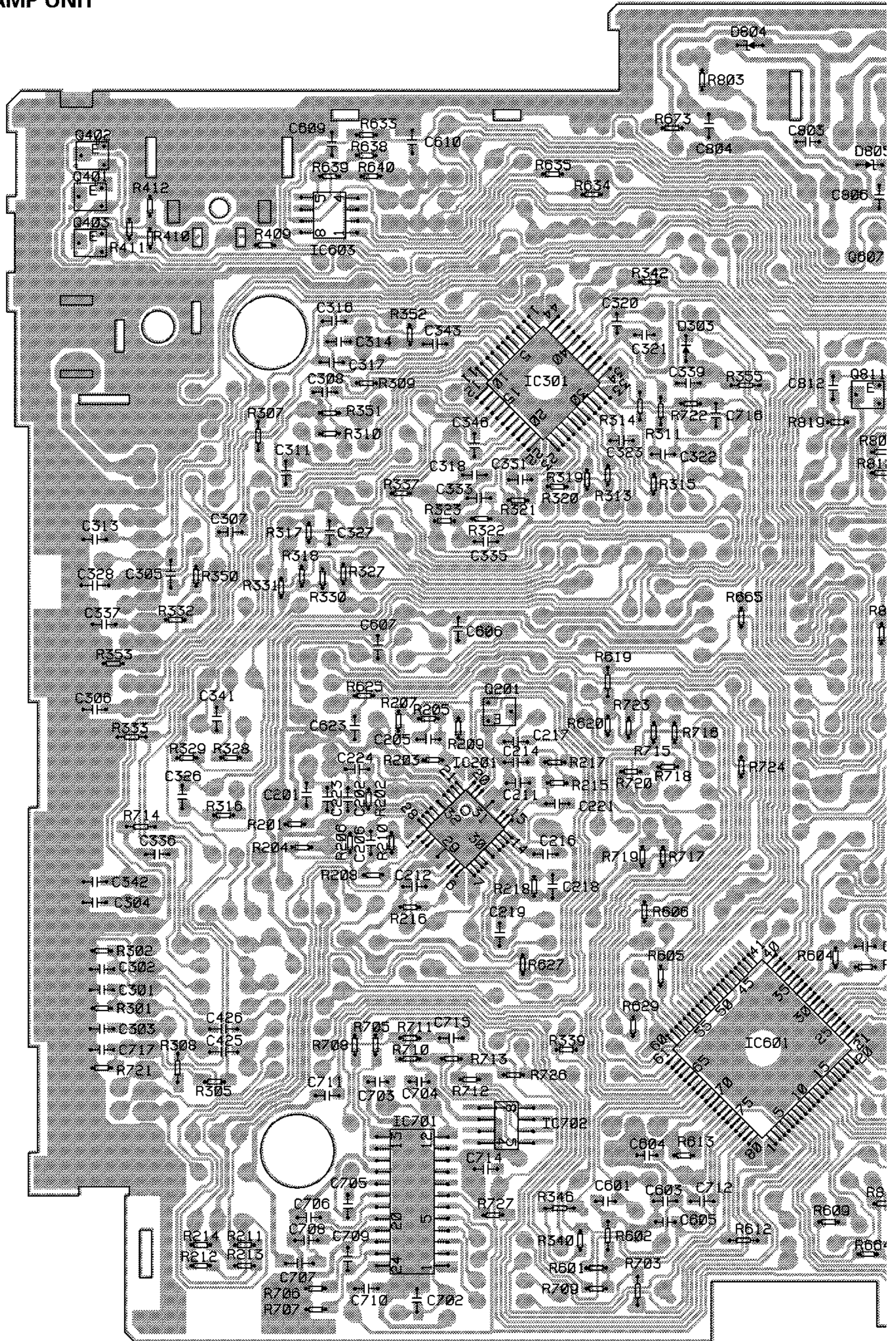
A TUNER AMP UNIT

A

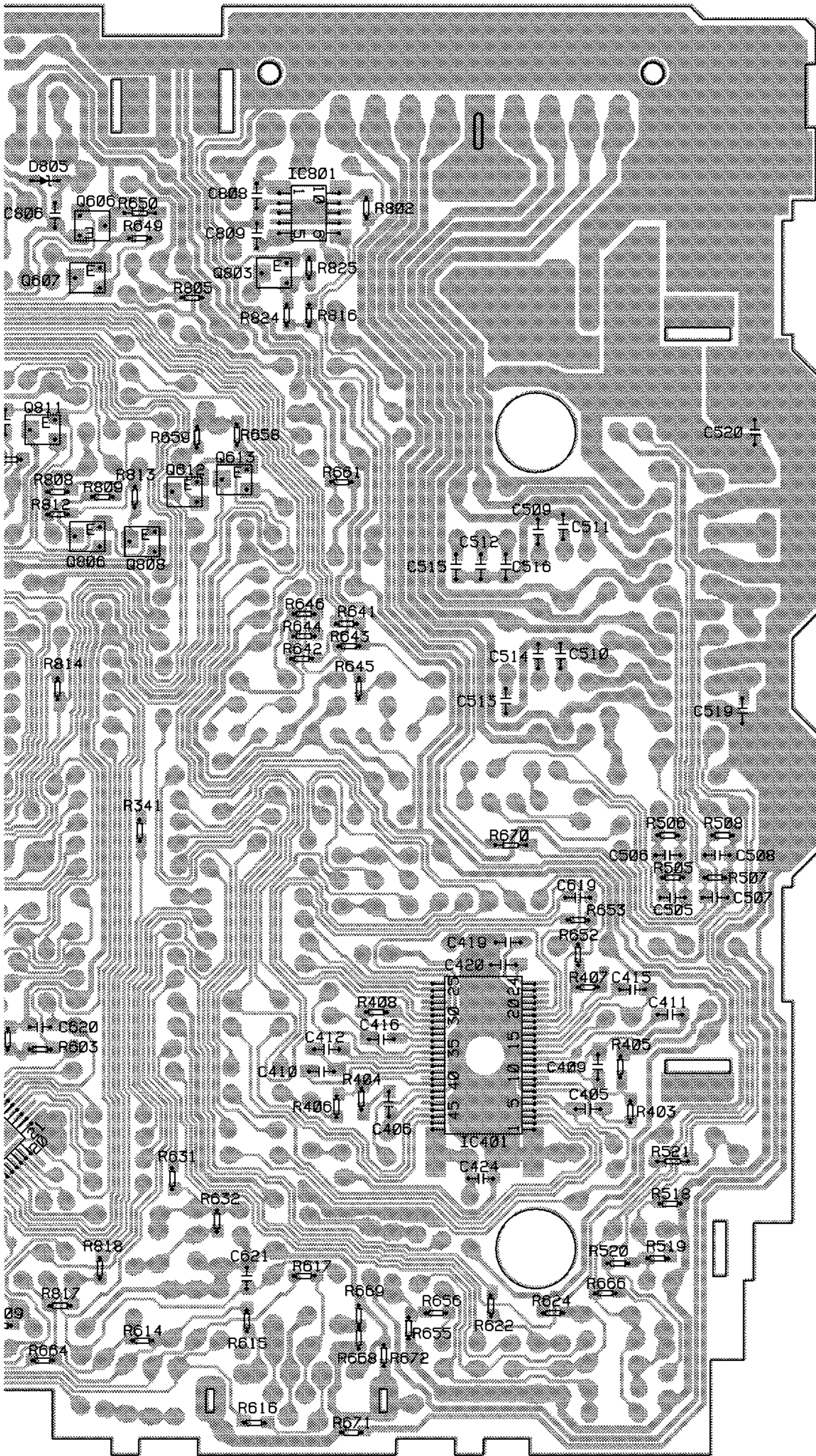
B

C

D



SIDE B



IC. Q

A

Q402

Q401 Q606
IC801
Q403

Q607 Q803
IC603

Q811
IC301

Q613
Q612

Q806
Q808

Q201

IC201

IC401
IC601

IC701
IC702

B

C

D

Fig. 9



4.2 KEYBOARD UNIT

D KEYBOARD UNIT **SIDE A**

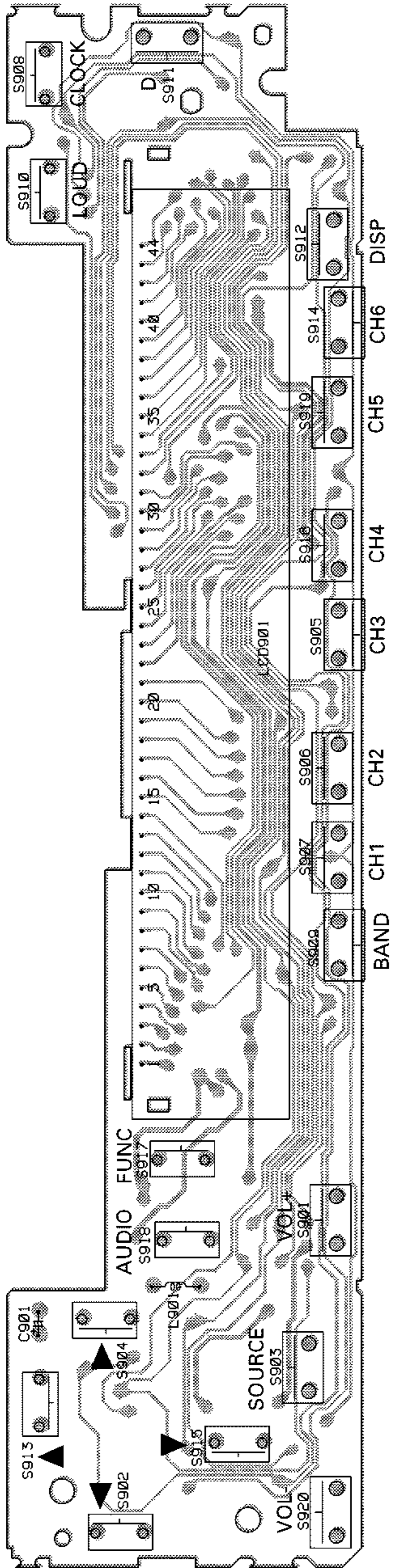


Fig. 10

SIDE B

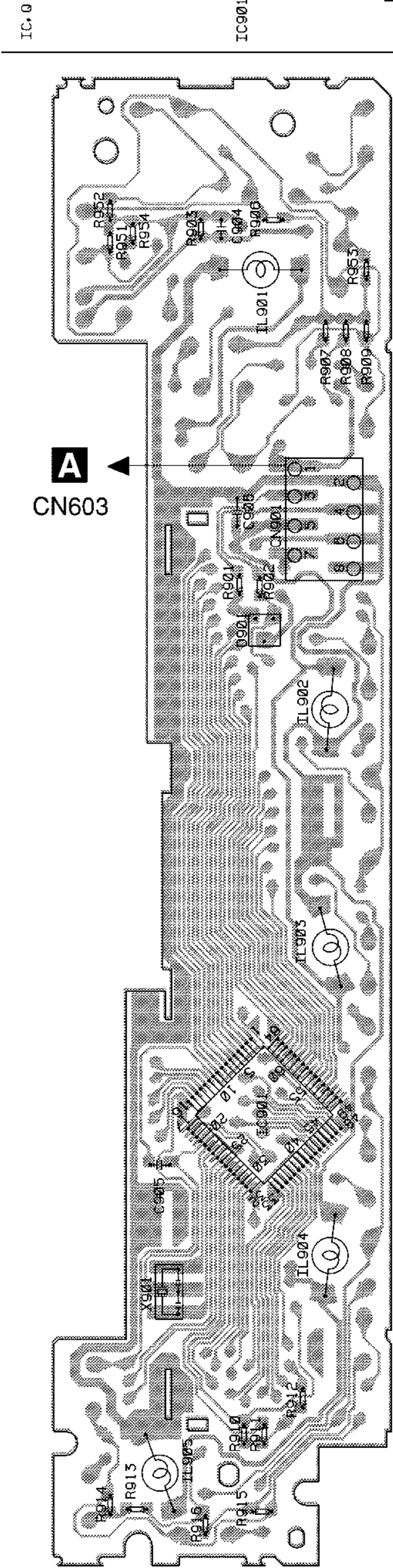


Fig. 11

4.3 CASSETTE MECHANISM PCB

C CASSETTE PCB

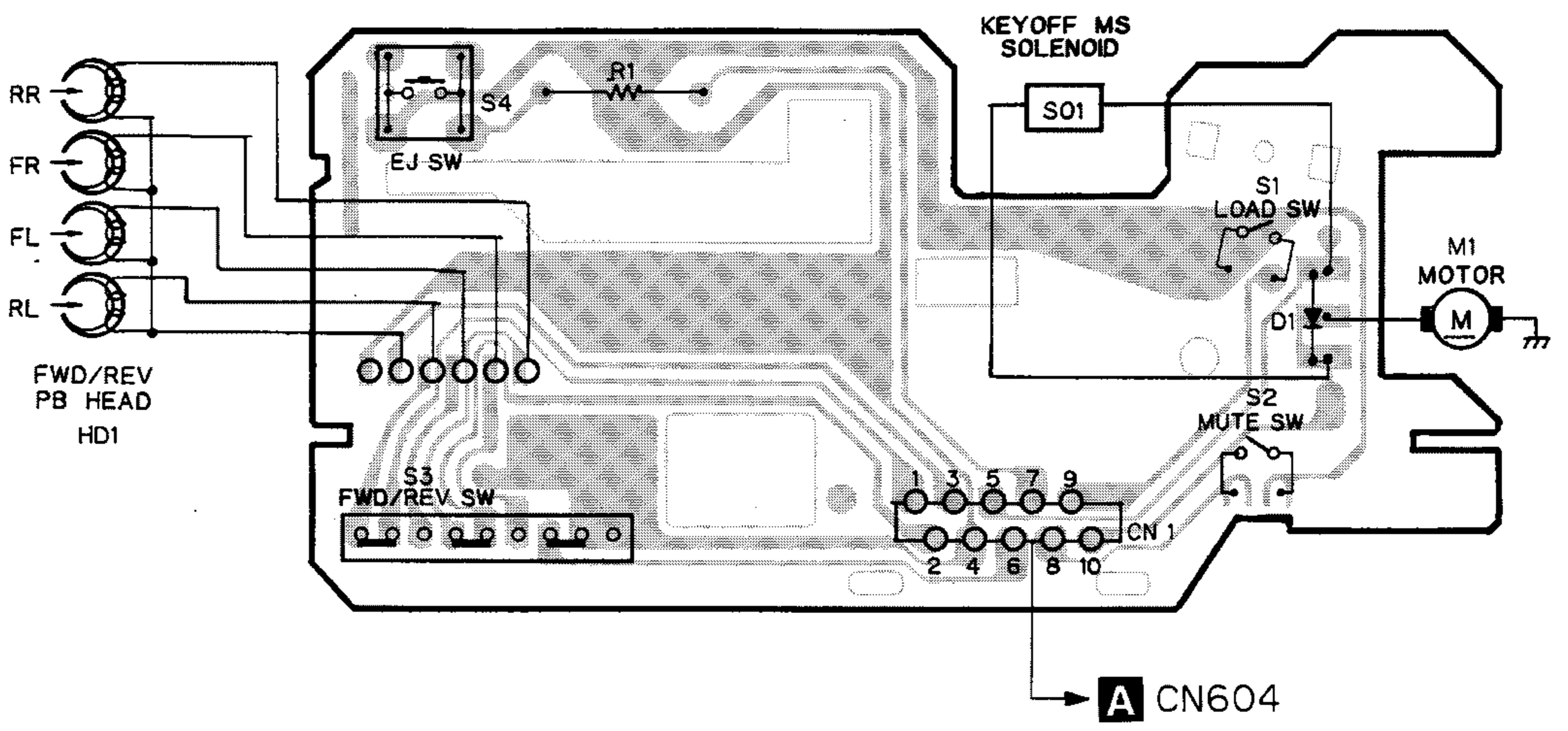


Fig. 12

4.4 TUNER UNIT

B TUNER UNIT

SIDE A

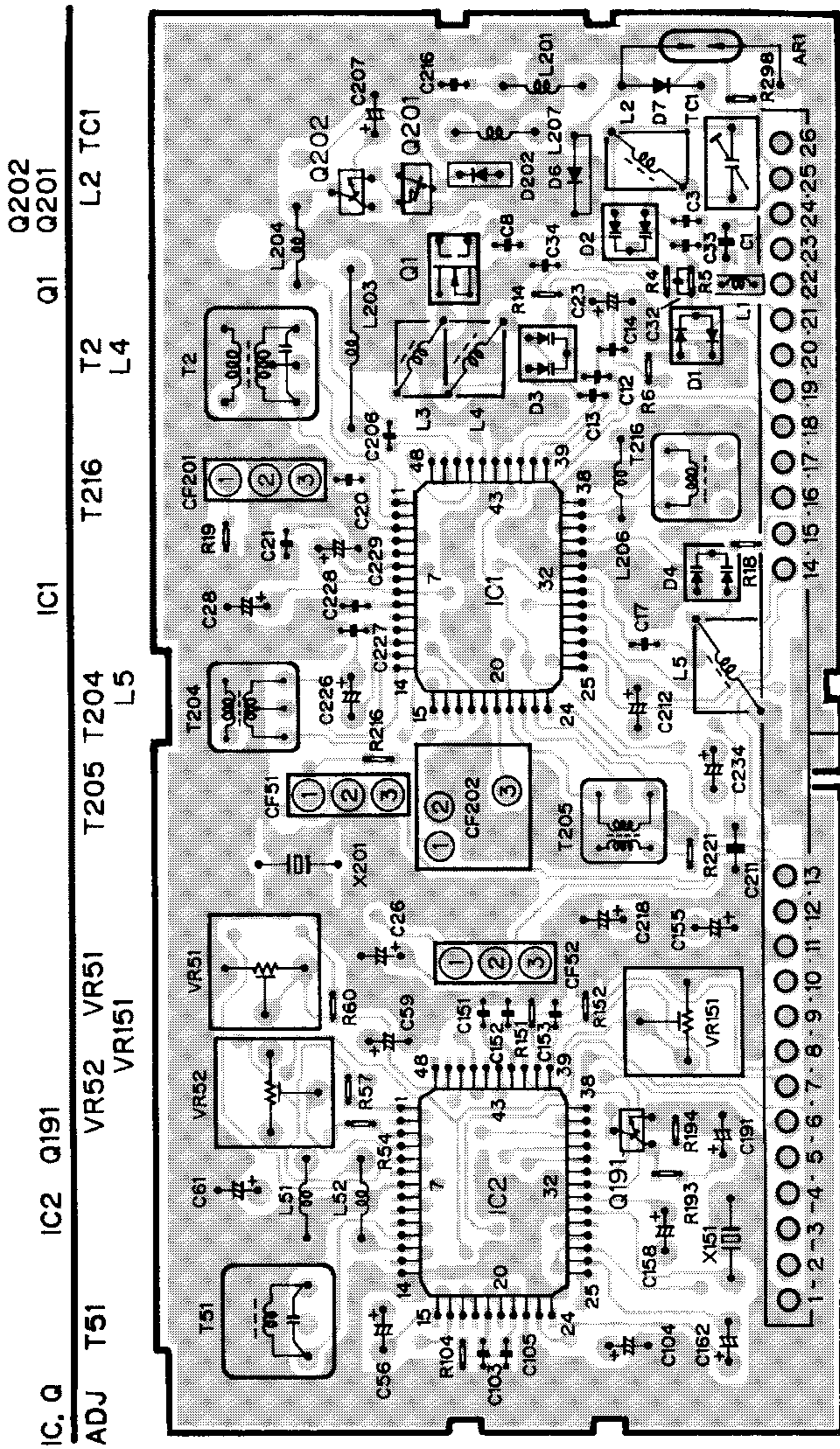
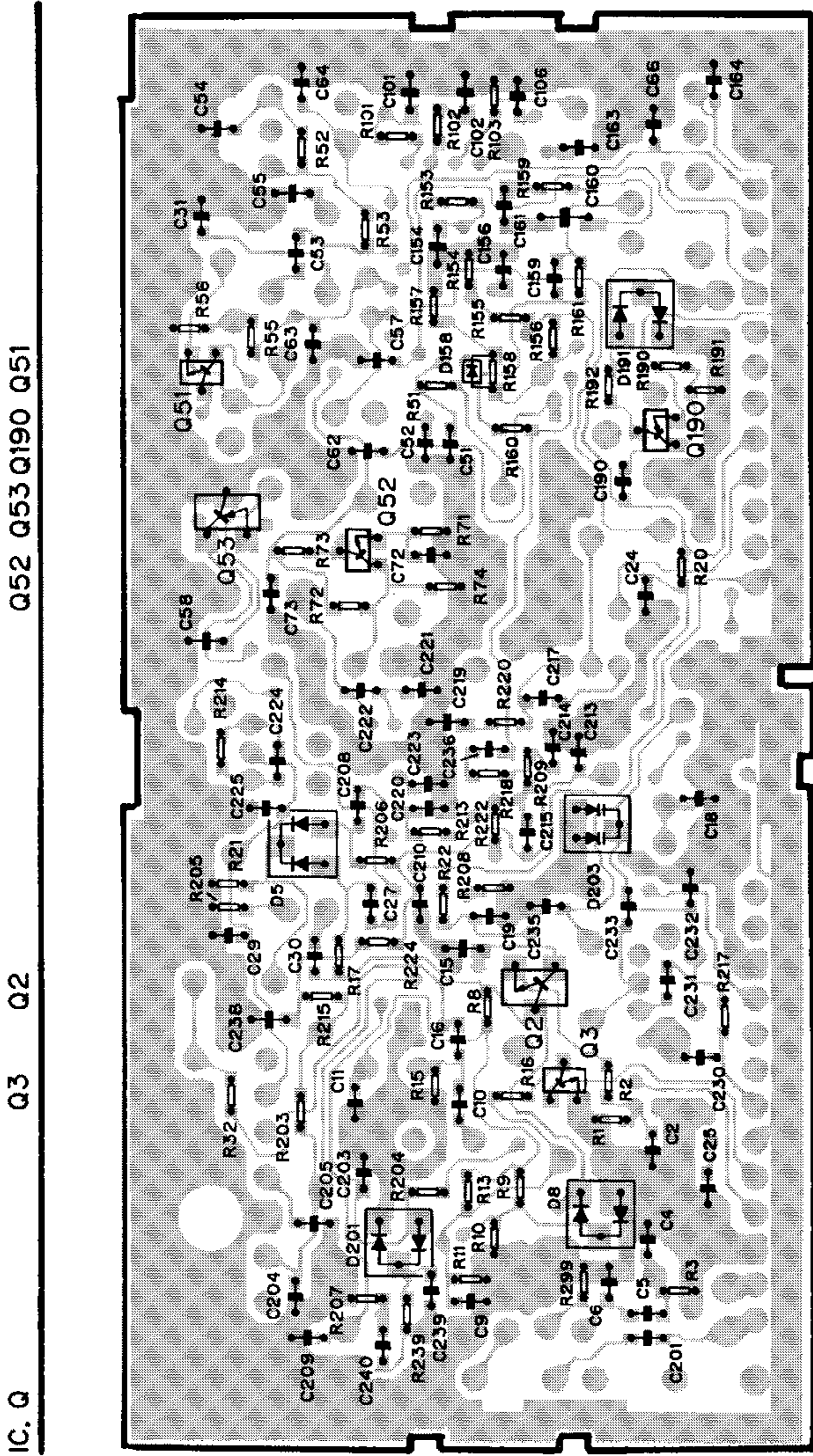


Fig. 13

B TUNER UNIT

SIDE B



IC. Q Q2 Q3 Q51

Q190 Q191 Q192 Q193 Q194 Q195 Q196 Q197 Q198 Q199 Q200 Q201 Q202 Q203 Q204 Q205 Q206 Q207 Q208 Q209 Q210 Q211 Q212 Q213 Q214 Q215 Q216 Q217 Q218 Q219 Q220 Q221 Q222 Q223 Q224 Q225 Q226 Q227 Q228 Q229 Q230 Q231 Q232 Q233 Q234 Q235 Q236 Q237 Q238 Q239

Fig. 14

5. ELECTRICAL PARTS LIST

NOTE:

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

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○○J

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

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

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
A Unit Number : CWM5519		D 613 Diode	HZS7L(C3)
Unit Name : Tuner Amp Unit		D 614 Diode	HZS7L(A1)
MISCELLANEOUS		D 615 Diode	1SS270
IC 201 IC	HA12192F	D 616 Diode	1SS270
IC 301 IC	PM2006A	D 801 Diode	1SR139-400
IC 401 IC	SN761027DL	D 802 Diode	1SR139-400
IC 501 IC	HA13155	D 803 Diode	MA8056(H)
IC 601 IC	PD4871B	D 804 Diode	MA8091(M)
IC 602 IC	S-80734AN	D 805 Diode	1SR139-400
IC 801 IC	TPD1018F	D 806 Diode	1SR139-400
Q 201 Transistor	DTC124EK	D 807 Diode	1SR139-400
Q 301 Transistor	2SC1740S	L 301 Ferri-Inductor	LAU101K
Q 303 Transistor	2SK330	L 302 Ferri-Inductor	LAU101K
Q 304 Transistor	2SC1740S	L 601 Ferri-Inductor	LAU101K
Q 501 Transistor	DTC124ES	L 602 Ferri-Inductor	LAU101K
Q 502 Transistor	DTC124ES	L 603 Ferri-Inductor	LAU101K
Q 601 Transistor	DTC143TS	L 951 Choke Coil 600H	CTH1168
Q 602 Transistor	DTC124ES	X 301 Crystal Resonator 7.200MHz	CSS1379
Q 603 Transistor	2SC1740S	X 601 Ceramic Resonator 4.194MHz	CSS1047
Q 604 Transistor	DTC124ES	VR 201 Semi-fixed 10kΩ(B)	CCP1319
Q 605 Transistor	2SC1740S	VR 202 Semi-fixed 10kΩ(B)	CCP1319
Q 611 Transistor	2SC1740S	FU 951 Fuse 10A	CEK1136
Q 612 Transistor	2SC2412K	RESISTORS	
Q 613 Transistor	2SC2412K	R 201	RS1/10S473J
Q 801 Transistor	2SD2037	R 202	RS1/10S473J
Q 802 Transistor	2SB1243	R 203	RS1/10S181J
Q 803 Transistor	2SC2412K	R 204	RS1/10S181J
Q 804 Transistor	2SD2396	R 205	RS1/10S274J
Q 805 Transistor	2SA1048	R 206	RS1/10S274J
Q 806 Transistor	2SC2412K	R 207	RS1/10S133J
Q 807 Transistor	2SA1674	R 208	RS1/10S133J
Q 808 Transistor	2SC2412K	R 209	RS1/10S183J
Q 809 Transistor	2SA933S	R 210	RS1/10S183J
Q 810 Transistor	2SB1242	R 215	RS1/10S683J
Q 811 Transistor	DTC143TK	R 216	RS1/10S183J
D 201 Diode	1SS270	R 217	RS1/10S393J
D 301 Diode	1SS270	R 218	RS1/10S914J
D 302 Diode	1SS270	R 219	RD1/4PU273J
D 303 Diode	MA8091(M)	R 220	RD1/4PU273J
D 304 Diode	RD3R0ES(B2)	R 306	RD1/4PU222J
D 501 Compound Parts	CWW1352	R 307	RS1/8S222J
D 601 Diode	1SS270	R 308	RS1/8S222J
D 602 Diode	HZS7L(A1)	R 309	RS1/10S102J
D 603 Diode	1SS270	R 310	RS1/10S0R0J
D 604 Diode	1SS270	R 311	RS1/8S102J
D 605 Diode	1SS270	R 312	RD1/4PU0R0J
D 606 Diode	1SS270	R 313	RS1/10S0R0J
D 607 Diode	1SS270	R 314	RS1/8S392J
D 608 Diode	1SS270	R 315	RS1/10S392J
D 609 Diode	1SS270	R 316	RS1/10S222J
D 610 Diode	1SS270	R 317	RS1/10S562J
D 611 Diode	1SS270	R 321	RS1/10S472J
D 612 Diode	HZS9L(A2)	R 322	RS1/10S152J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 323	RS1/10S472J	R 619	RS1/8S473J
R 325	RD1/4PU391J	R 620	RS1/10S473J
R 327	RS1/10S102J	R 621	RD1/4PU104J
R 328	RS1/10S102J	R 622	RS1/10S473J
R 329	RS1/10S102J	R 623	RD1/4PU473J
R 330	RS1/10S102J	R 624	RS1/10S332J
R 331	RS1/10S102J	R 625	RS1/10S102J
R 332	RS1/10S0R0J	R 626	RD1/4PU681J
R 333	RS1/8S683J	R 627	RS1/10S223J
R 334	RD1/4PU562J	R 628	RD1/4PU223J
R 335	RD1/4PU472J	R 629	RS1/10S103J
R 336	RD1/4PU473J	R 630	RD1/4PU152J
R 337	RS1/10S473J	R 631	RS1/10S102J
R 338	RD1/4PU104J	R 632	RS1/10S124J
R 339	RS1/10S473J	R 654	RD1/4PU472J
R 340	RS1/10S472J	R 655	RS1/10S223J
R 341	RS1/10S681J	R 656	RS1/10S103J
R 342	RS1/10S681J	R 657	RD1/4PU472J
R 343	RD1/4PU681J	R 658	RS1/10S473J
R 344	RD1/4PU681J	R 659	RS1/10S223J
R 345	RD1/4PU222J	R 660	RD1/4PU473J
R 346	RS1/8S472J	R 661	RS1/10S473J
R 349	RD1/4PU472J	R 662	RD1/4PU223J
R 350	RS1/10S510J	R 663	RD1/4PU473J
R 351	RS1/10S0R0J	R 664	RS1/10S222J
R 353	RS1/10S0R0J	R 668	RS1/10S0R0J
R 354	RD1/4PU102J	R 673	RS1/10S0R0J
R 355	RS1/8S0R0J	R 717	RS1/10S0R0J
R 401	RD1/4PU102J	R 718	RS1/10S0R0J
R 402	RD1/4PU102J	R 719	RS1/10S162J
R 403	RS1/10S272J	R 720	RS1/10S162J
R 404	RS1/10S272J	R 801	RD1/4PU102J
R 405	RS1/10S151J	R 802	RS1/10S472J
R 406	RS1/10S151J	R 803	RS1/10S101J
R 407	RS1/10S0R0J	R 804	RD1/4PU332J
R 408	RS1/10S0R0J	R 805	RS1/10S103J
R 501	RD1/4PU202J	R 806	RD1/4PU102J
R 502	RD1/4PU202J	R 807	RD1/4PU122J
R 503	RD1/4PU202J	R 808	RS1/10S103J
R 504	RD1/4PU202J	R 809	RS1/10S102J
R 505	RS1/10S222J	R 810	RD1/4PU473J
R 506	RS1/10S222J	R 812	RS1/10S103J
R 507	RS1/10S222J	R 813	RS1/10S102J
R 508	RS1/10S222J	R 814	RS1/10S473J
R 509	RD1/4PU2R2J	R 816	RS1/10S472J
R 510	RD1/4PU2R2J	R 817	RS1/10S223J
R 511	RD1/4PU2R2J	R 818	RS1/10S222J
R 512	RD1/4PU2R2J	R 819	RS1/10S472J
R 513	RD1/4PU2R2J	R 820	RD1/4PU102J
R 514	RD1/4PU2R2J	R 821	RD1/4PU1R5J
R 515	RD1/4PU2R2J	R 822	RD1/4PU1R5J
R 516	RD1/4PU2R2J	R 823	RD1/4PU1R0J
R 517	RD1/4PU103J	R 824	RS1/10S103J
R 518	RS1/10S153J	R 825	RS1/10S103J
R 519	RS1/10S221J		
R 520	RS1/10S101J	CAPACITORS	
R 521	RS1/8S103J	C 201	CKSQYB561K50
R 601	RS1/10S223J	C 202	CKSQYB561K50
R 602	RS1/8S473J	C 205	CKSQYB103K25
R 613	RS1/10S473J	C 206	CKSQYB103K25
		C 207	CEALR47M50
R 614	RS1/10S473J		
R 615	RS1/10S222J	C 208	CEALR47M50
R 616	RS1/10S222J	C 209	CEJA1R0M50
R 617	RS1/10S222J	C 210	CEJA1R0M50
R 618	RD1/4PU103J	C 211	CKSQYB104K16
		C 212	CKSQYB104K16

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====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 213	CEAL220M16	C 424	CKSQYB104K16
C 214	CKSQYB821K50	C 501	CEJA4R7M35
C 215	CEAL100M16	C 502	CEJA4R7M35
C 216	CKSQYB103K25	C 503	CEJA4R7M35
C 217	CKSQYB821K50	C 504	CEJA4R7M35
C 218	CKSQYB104K16	C 505	CKSQYB102K50
C 219	CKSQYB104K16	C 506	CKSQYB102K50
C 220	CEAL100M16	C 507	CKSQYB102K50
C 221	CCSQCH121J50	C 508	CKSQYB102K50
C 222	CEAL100M16	C 509	CKSQYB104K16
C 223	CKSQYB105K10	C 510	CKSQYB104K16
C 224	CKSQYB105K10	C 511	CKSQYB104K16
C 225	CEAL470M6R3	C 512	CKSQYB104K16
C 226	CEAL470M6R3	C 513	CKSQYB104K16
C 303	CKSQYB223K25	C 514	CKSQYB104K16
C 304	CCSQCH101K50	C 515	CKSQYB104K16
C 305	CKSYB473K16	C 516	CKSQYB104K16
C 307	CKSQYB103K25	C 517	CEJA330M10
C 308	CCSQCH101K50	C 518	CEJA100M16
C 314	CKSQYB103K25	C 519	CKSQYB104K16
C 315	CEAL220M6R3	C 520	CKSQYB104K16
C 316	CKSQYB103K25	C 601	CCSQCH101K50
C 317	CKSQYB103K25	C 602	CEAL4R7M35
C 318	CKSQYB102K50	C 603	CKSQYB473K16
C 319	CEAL220M16	C 604	CCSQCH101K50
C 320	CCSQCH150J50	C 606	CKSQYB104K16
C 321	CCSQCH150J50	C 607	CKSQYB224K16
C 324	CEALR68M50	C 608	CEJA2R2M50
C 325	CCH1250	C 620	CCSQCH101K50
C 326	CKSQYB103K25	C 621	CCSQCH101J50
C 328	CKLSR473K16	C 623	CKSQYB102K50
C 331	CKSQYB104K16	C 801	3300µF/16V
C 332	CEAL220M6R3	C 802	470µF/16V
C 333	CKSQYB103K25	C 803	
C 334	CEAL220M6R3	C 804	
C 335	CKSQYB103K25	C 805	
C 336	CKSQYB223K25	C 806	
C 338	CEJA101M10	C 807	330µF/10V
C 339	CKSQYB103K50	C 808	
C 340	CFTLA474J50	C 809	
C 341	CKSQYB103K25	C 811	100µF/16V
C 342	CKSQYB473K16	C 812	
C 343	CKSQYB102K50		
C 345	CKPUYB102K50		
C 401	CEJA2R2M50		
C 402	CEJA2R2M50		
C 403	CEJA100M16		
C 404	CEJA100M16		
C 405	CKSQYB822K50		
C 406	CKSQYB822K50		
C 407	CEJA1R0M50		
C 408	CEJA1R0M50		
C 409	CKSQYB183K25		
C 410	CKSQYB183K25		
C 411	CKSQYB102K50		
C 412	CKSQYB102K50		
C 413	CEJA2R2M50		
C 414	CEJA2R2M50		
C 415	CKSQYB333K25		
C 416	CKSQYB333K25		
C 417	CEJA220M6R3		
C 418	CEJA2R2M50		
C 419	CKSQYB104K16		
C 420	CKSQYB103K25		
C 423	CEJA470M10		

D Unit Number : CWM5528
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 901	IC	PD6196A
D 901	Diode	STZ6R2N
L 901	Ferri-Inductor	LAU101K
X 901	Ceramic Resonator 4.970MHz	CSS1422
S 901	Push Switch	CSG1093
S 902	Switch	CSG1081
S 903	Push Switch	CSG1093
S 904	Switch	CSG1081
S 905	Push Switch	CSG1093
S 906	Push Switch	CSG1093
S 907	Push Switch	CSG1093
S 908	Switch	CSG1081
S 909	Push Switch	CSG1093
S 910	Switch	CSG1081
S 911	Push Switch	CSG1093
S 912	Push Switch	CSG1093
S 913	Switch	CSG1081
S 914	Push Switch	CSG1093
S 915	Switch	CSG1081
S 916	Push Switch	CSG1093

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
S 917 Switch	CSG1081	T 204 Coil	CTE1112
S 918 Switch	CSG1081	T 205 Coil	CTE1118
S 919 Push Switch	CSG1093	CF 51 Ceramic Filter	CTF1290
S 920 Push Switch	CSG1093	CF 52 Ceramic Filter	CTF1290
IL 901 Lamp 14V 40mA	CEL1547	CF 201 Ceramic Filter	CTF1290
IL 902 Lamp 14V 40mA	CEL1549	CF 202 Ceramic Filter	CTF1300
IL 903 Lamp 14V 40mA	CEL1549	X 151 Ceramic Resonator 456kHz	CSS1308
IL 904 Lamp 14V 40mA	CEL1549	X 201 Crystal Resonator 10.26MHz	CSS1111
IL 905 Lamp 14V 40mA	CEL1547	VR 51 Semi-fixed 22kΩ(B)	CCP1208
LCD 901 LCD	CAW1387	VR 52 Semi-fixed 68kΩ(B)	CCP1211
		VR 151 Semi-fixed 10kΩ(B)	CCP1206
		AR 1 Surge Protector	DSP-201M
RESISTORS		RESISTORS	
R 901	RS1/10S222J	R 1	RS1/16S223J
R 902	RS1/10S222J	R 2	RS1/16S331J
R 903	RS1/10S472J	R 3	RS1/16S0R0J
R 906	RS1/10S473J	R 4	RS1/16S563J
R 907	RS1/10S473J	R 5	RS1/16S0R0J
R 908	RS1/10S473J	R 6	RS1/16S223J
R 909	RS1/10S473J	R 8	RS1/16S271J
R 910	RS1/10S473J	R 9	RS1/16S153J
R 911	RS1/10S473J	R 10	RS1/16S682J
R 912	RS1/10S473J	R 11	RS1/16S474J
R 913	RS1/10S0R0J	R 13	RS1/16S104J
R 915	RS1/10S0R0J	R 14	RS1/16S563J
		R 15	RS1/16S563J
		R 16	RS1/16S273J
		R 17	RS1/16S332J
		R 18	RS1/16S223J
		R 19	RS1/16S821J
		R 20	RS1/16S223J
		R 21	RS1/16S332J
		R 22	RS1/16S560J
		R 32	RS1/16S682J
		R 51	RS1/16S391J
		R 52	RS1/16S182J
		R 53	RS1/16S751J
		R 54	RS1/16S563J
		R 55	RS1/16S822J
		R 56	RS1/16S272J
		R 71	RS1/16S182J
		R 72	RS1/16S821J
		R 73	RS1/16S331J
		R 74	RS1/16S681J
		R 101	RS1/16S224J
		R 102	RS1/16S822J
		R 103	RS1/16S563J
		R 104	RS1/16S822J
		R 153	RS1/16S103J
		R 154	RS1/16S223J
		R 155	RS1/16S0R0J
		R 156	RS1/16S822J
		R 157	RS1/16S123J
		R 159	RS1/16S103J
		R 160	RS1/16S273J
		R 161	RS1/16S103J
		R 190	RS1/16S473J
		R 191	RS1/16S225J
		R 192	RS1/16S221J
		R 193	RS1/16S224J
		R 194	RS1/16S225J
		R 203	RS1/16S102J
		R 204	RS1/16S222J
CAPACITORS			
C 901	CEAL100M16		
C 904	CKSQYB104K50		
C 906	CCSCH101J50		
IC			
IC 1	PA2025A		
IC 2	PA2026A		
Q			
Q 1	3SK263		
Q 2	2SC2712		
Q 3	DTC124EU		
Q 51	DTC124TU		
Q 52	2SC4098		
Q 190	2SA1586		
Q 191	2SC2712		
Q 201	2SK932		
Q 202	2SC2712		
D			
D 1	1SV250		
D 2	KV1460-F6		
D 3	KV1460-F6		
D 4	KV1460-F6		
D 5	MA151WK		
D 8	MA157		
D 158	MA110		
D 191	MA157		
D 201	MA157		
D 202	MA110		
D 203	SVC253		
L			
L 2	CTC1112		
L 3	CTC1121		
L 4	CTC1122		
L 5	CTC1111		
L 51	LAU2R2K		
L 52	LAU150K		
L 201	LAU4R7K		
L 203	CTF1026		
L 204	LAU151K		
L 206	LAU3R3J		
L 207	LAU330K		
T			
T 2	CTE1077		
T 51	CTC1119		

B Unit Number : CWE1366
Unit Name : Tuner Unit

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====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 205	RS1/16S333J	C 152	CKSRYP223K25
R 206	RS1/16S332J	C 153	CKSRYP223K25
R 207	RS1/16S225J	C 154	CKSQYB473K16
R 208	RS1/16S752J	C 155	CEJAR68M50
R 209	RS1/16S822J	C 156	CKSQYB473K16
R 213	RS1/16S222J	C 158	CEJA100M16
R 214	RS1/16S333J	C 159	CCSRCH271J50
R 215	RS1/16S330J	C 160	CKSYB105K16
R 216	RS1/16S152J	C 161	CKSQYB104K16
R 217	RS1/16S563J	C 162	CEJA1R0M50
R 218	RS1/16S333J	C 163	CKSQYB473K16
R 220	RS1/16S100J	C 164	CKSRYP103K50
R 221	RS1/16S273J	C 190	CKSRYP223K25
R 222	RS1/16S822J	C 191	CEAL150M10
R 224	RS1/16S330J	C 201	CCSRCH471J50
R 239	RS1/16S103J	C 203	CKSQYB473K16
CAPACITORS			
C 1	CCSQCH220J50	C 204	CCSRCH151J50
C 2	CKSRYP103K50	C 205	CCSRCH680J50
C 3	CCSRCK1R0C50	C 206	CKSRYP222K50
C 8	CKSRYP102K50	C 207	CEJA101M16
C 9	CCSRCH470J50	C 208	CKSRYP102K50
C 10	CCSRCH6R0D50	C 209	CKSRYP103K50
C 11	CKSRYP103K50	C 210	CKSRYP103K50
C 12	CCSRCH100D50	C 211	CKSYB105K16
C 13	CCSRCH100D50	C 212	CEJA330M10
C 14	CKSRYP103K50	C 213	CKSRYP223K25
C 15	CKSQYB104K16	C 214	CKSRYP472K50
C 16	CCSRCK2R0D50	C 215	CKSRYP103K50
C 17	CCSRCH180J50	C 216	CCSRCH100D50
C 18	CCSRCH6R0D50	C 217	CCSRCH221J50
C 19	CKSRYP103K50	C 218	CEJA4R7M35
C 20	CKSRYP103K50	C 219	CKSQYB473K16
C 21	CKSRYP103K50	C 220	CKSRYP103K50
C 23	CEJA1R0M50	C 221	CCSRCH680J50
C 24	CKSRYP223K25	C 222	CCSRCH150J50
C 26	CEJA330M10	C 223	CKSRYP103K50
C 27	CKSRYP103K50	C 224	CCSRUJ181J50
C 28	CEJA330M10	C 225	CKSRYP103K50
C 29	CKSRYP103K50	C 226	CEJA4R7M35
C 30	CKSRYP103K50	C 227	CKSRYP103K50
C 31	CKSRYP333K16	C 228	CKSRYP103K50
C 33	CCSRCH7R0D50	C 229	CEJAR68M50
C 34	CKSRYP682K50	C 230	CKSRYP472K50
C 51	CKSRYP103K50	C 232	CCSRTH220J50
C 52	CKSRYP103K50	C 233	CKSRYP332K50
C 53	CCSRCH270J50	C 234	CEJA220M6R3
C 54	CCSRCH270J50	C 235	CKSRYP103K50
C 55	CKSQYB104K16	C 236	CKSRYP223K25
C 56	CEJA1R0M50	C 238	CKSQYB473K16
C 57	CCSRCH101J50	C 239	CKSRYP332K50
C 58	CKSQYB104K16	C 240	CKSRYP103K50
C 59	CEJAR47M50	C Unit Number : Unit Name : Cassette PCB	
C 61	CEJAR22M50	D 1	Diode 1SR-35-100A
C 62	CKSRYP103K50	S 1	Switch(Load) ESN1016
C 63	CKSRYP103K50	S 2	Switch(Mute) ESN1017
C 64	CCSRCH101J50	S 3	Switch(FWD/REV) ESH1006
C 66	CCSRCH101J50	S 4	Switch(Eject) ESG1002
C 72	CCSRCH181J50	R 1	RD1/4HM472J
C 73	CKSRYP333K16	Miscellaneous Parts List	
C 101	CKSQYB104K16	M 1	Motor Unit EXA1502
C 102	CKSQYB473K16	HD 1	Head Assy EXA1466
C 103	CKSRYP222K50	SO 1	Solenoid EXP1012
C 104	CEJA1R0M50		
C 105	CKSRYP222K50		
C 106	CKSRYP223K25		
C 151	CKSRYP103K50		

6. ADJUSTMENT

● Connection Diagram

NOTE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

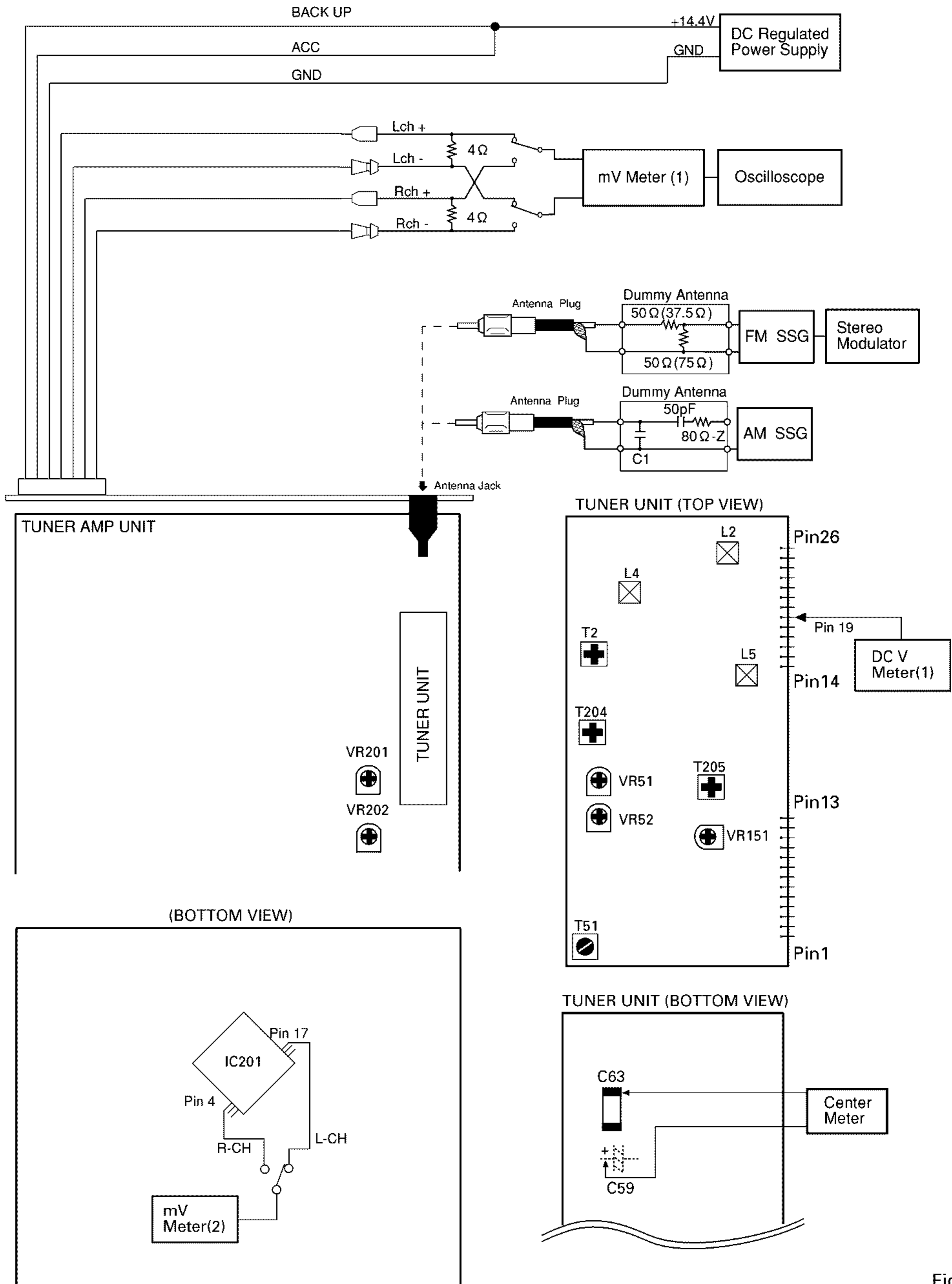


Fig. 15

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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.

FM ADJUSTMENT

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	108.0 M	65	108.0	L5	DC V Meter(1) : 8.0V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter : 0
ANT, RF	1	106.1 M	10	106.1 M	L2, L4	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (STEREO MODE)
Soft Mute	1	98.1 M	65	98.1	—	mV Meter(1) : Maximum (STEREO MODE)
	2	98.1 M	10	98.1	VR52	mV Meter(1) : A-3dB
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(2) : Approx. 5V

AM ADJUSTMENT

	No.	AM SSG		Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dBf)			
IF	1	999	20	999	T204, T205	mV Meter(1) : Maximum

DOLBY B NR ADJUSTMENT

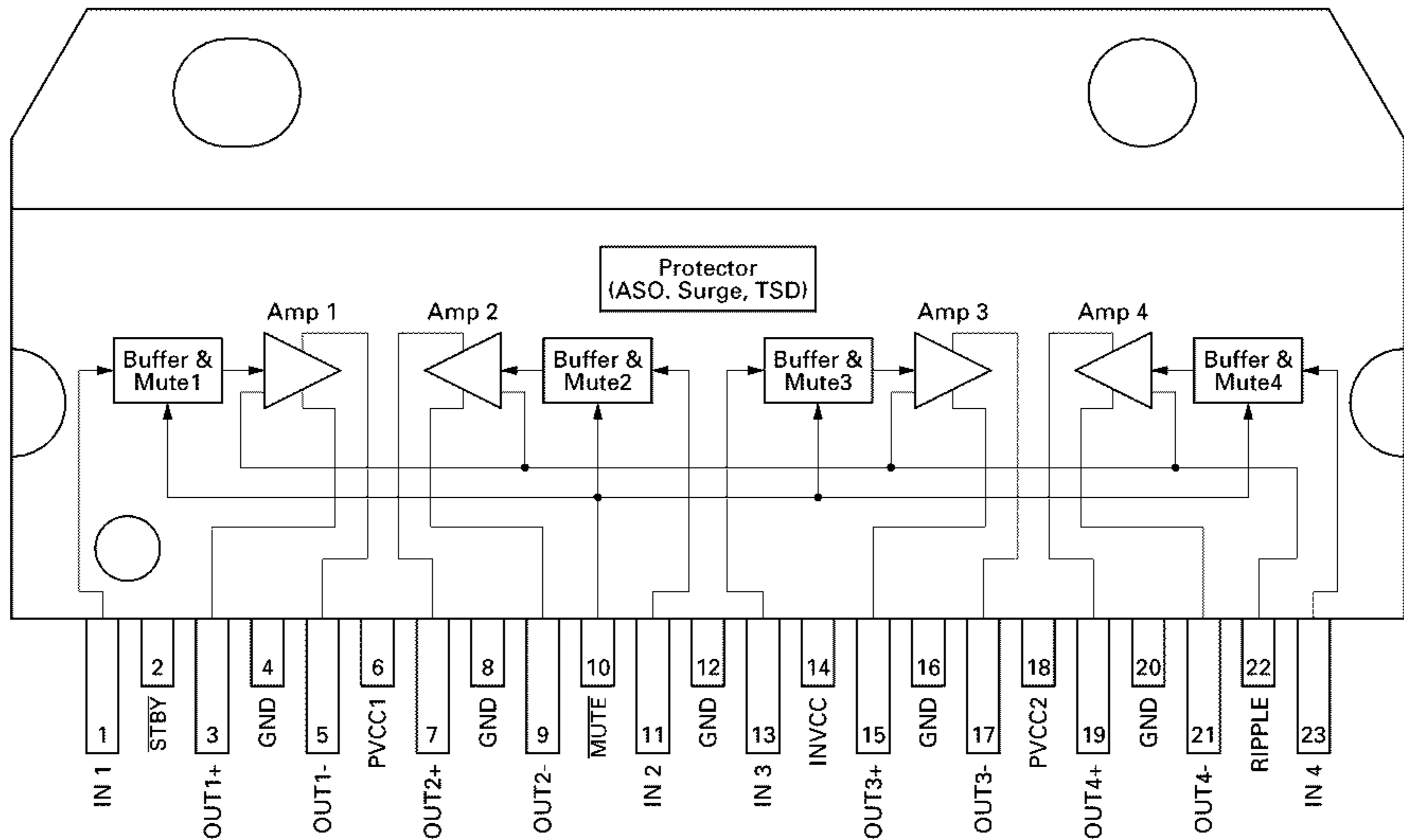
No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR201(Lch), VR202(Rch)	mV Meter(2) : -6.0dB±1.0dB (DOLBY NR Switch : OFF)

7. GENERAL INFORMATION

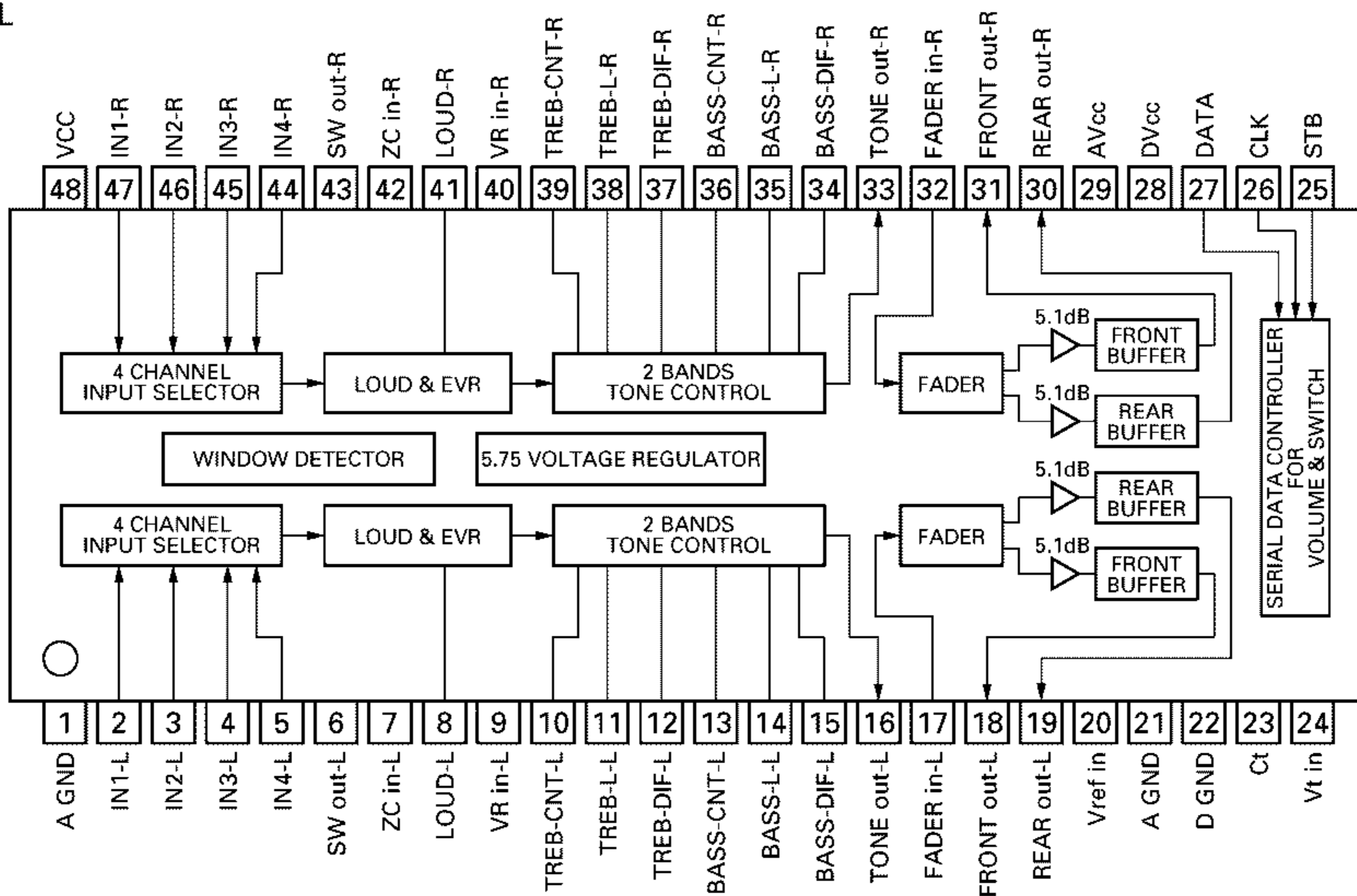
7.1 PARTS

7.1.1 IC

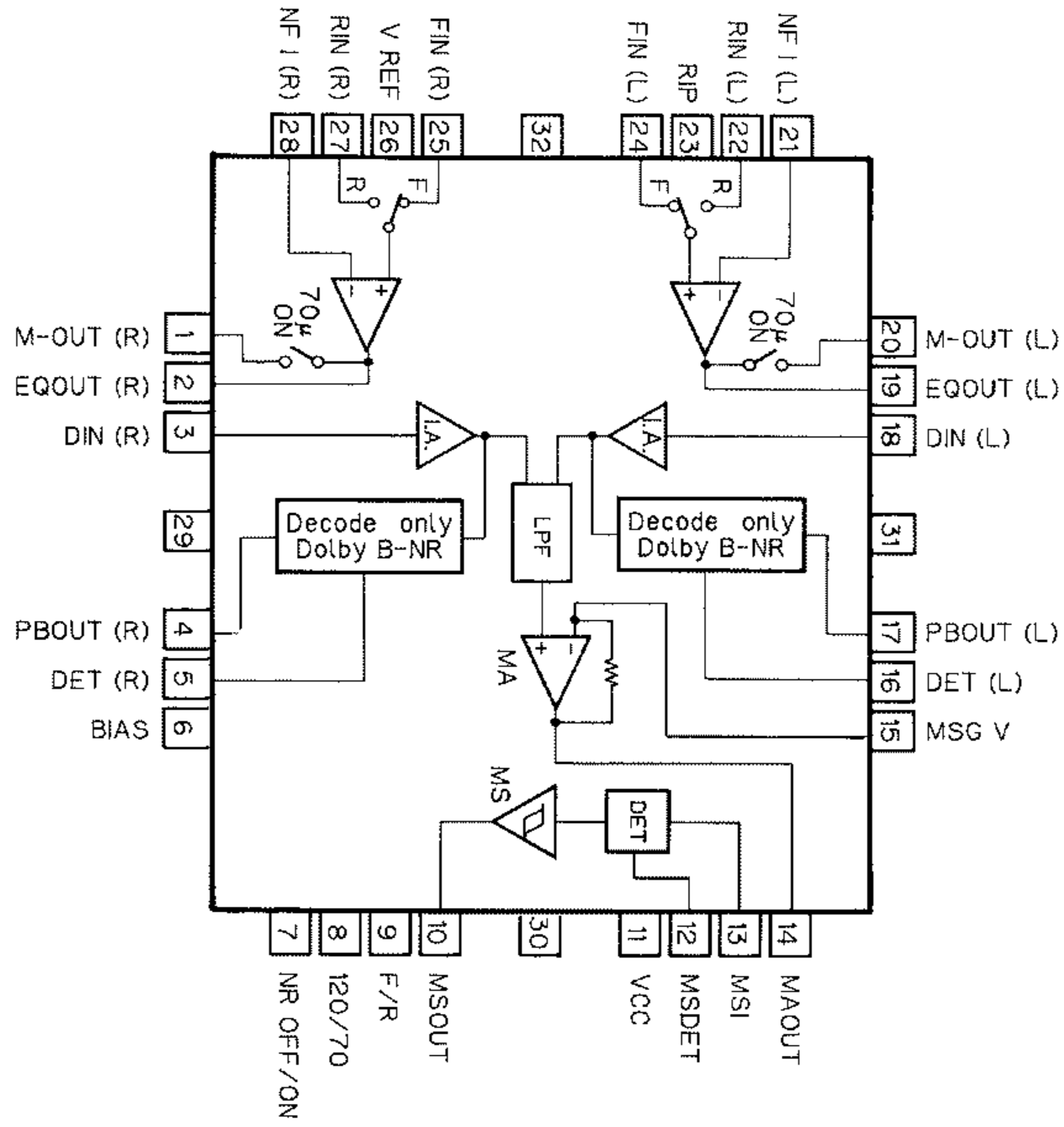
HA13155



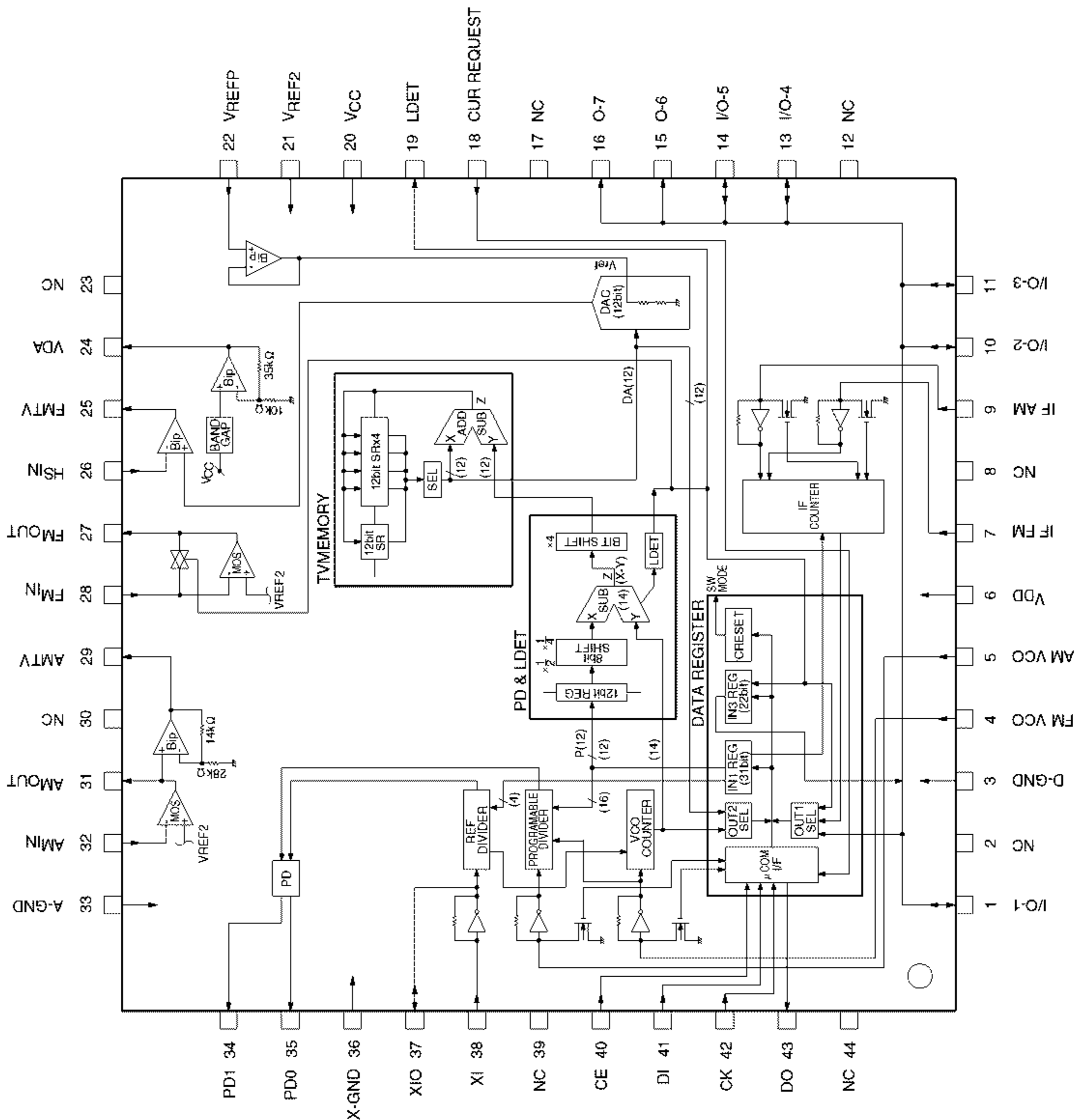
SN761027DL



HA12192F



PM2006A

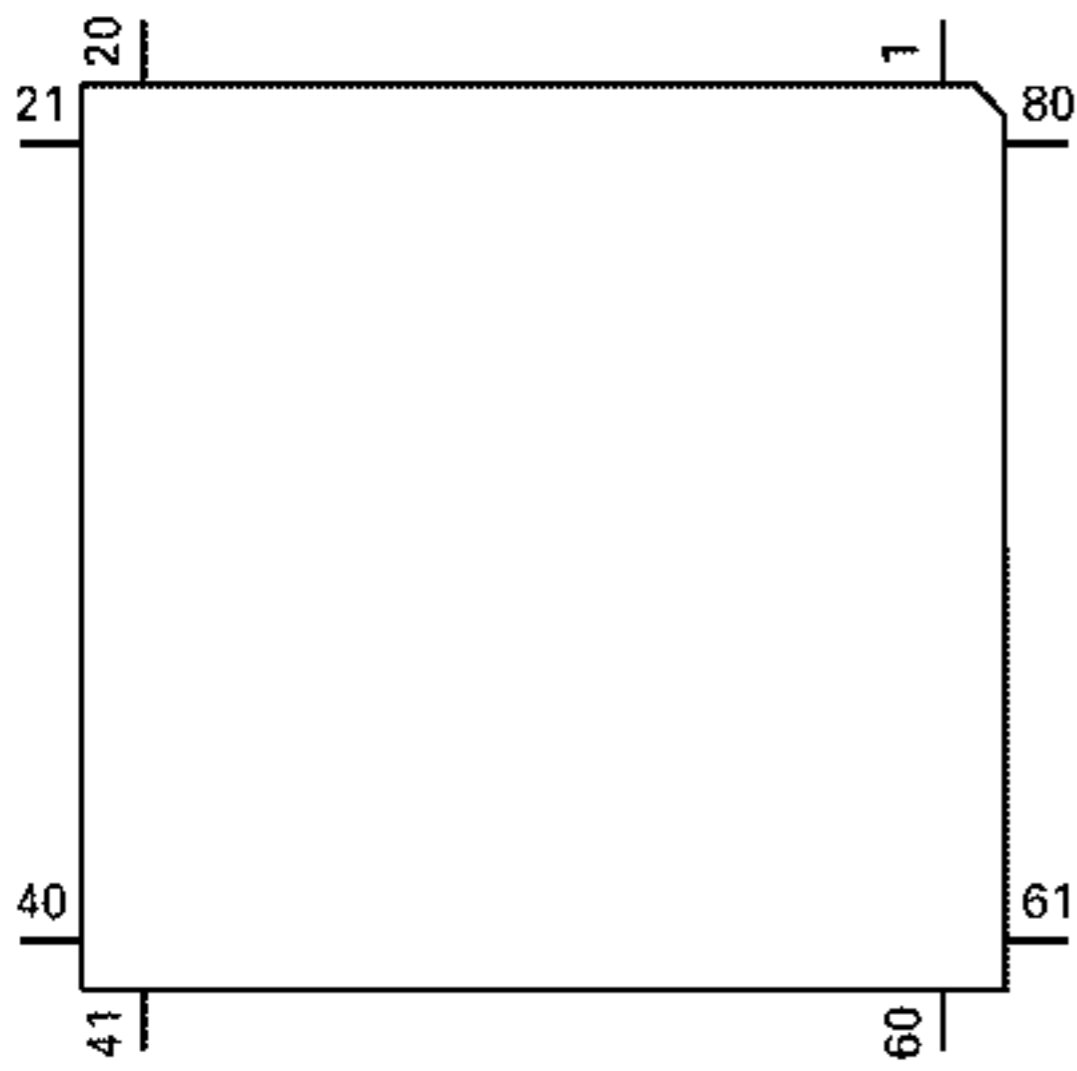


● Pin Functions (PD4871B)

Pin No.	Pin Name	I/O	Format	Function and Operation
1,2	NC			Not used
3	ADPW			A/D converter power
4	GND			GND
5,6	NC			Not used
7	AVREF1			(Connect to VDD)
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	$\overline{\text{DSENS}}$	I		Grille detach sense input
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock output
14	TUNPCE	O	C	PLL IC chip enable output
15,16	NC			Not used
17	TX	O	C	IP BUS data output
18-21	NC			Not used
22	$\overline{\text{SWVDD}}$	O	C	Grille power supply control output
23	NC			Not used
24	VDT	O	C	Data output for electronic volume
25	VCK	O	C	Clock output for electronic volume
26	VST	O	C	Strobe pulse output for electronic volume
27	SYSPW	O	C	System power supply control output
28	MUTE	O	C	Mute output
29	DMINH	O	C	Mechanism mute cancel output
30-32	NC			Not used
33	GND			GND
34-36	NC			Not used
37	$\overline{\text{TMUTE}}$	O	C	Tuner mute output
38	FM	O	C	FM power control output
39	AM	O	C	AM power control output
40	ASENBO	O	C	Slave power supply control output
41-48	NC			Not used
49	MSOUT	O	C	MS output
50	$\overline{\text{EJECT}}$	I		Eject key input
51	$\overline{\text{TAPLD}}$	I		Tape loading input
52	MECPW	O	C	Cassette mechanism power output
53	$\overline{\text{MCMUT}}$	I		Mechanism mute input
54	$\overline{\text{NOR/REV}}$	I		Normal reverse input
55	MSIN	I		Cassette mechanism MS sense input
56,57	NC			Not used
58	MTL	O	C	METAL output
59	NR	O	C	NR output
60	$\overline{\text{RESET}}$	I		Reset input
61	RX	I		IP BUS data input
62	NC			Not used
63	CLKIN	I		Clock input
64	$\overline{\text{ASENS}}$	I		ACC power sense input
65	$\overline{\text{BSENS}}$	I		Back up power sense input
66	SD	I		SD input
67	$\overline{\text{ST}}$	I		FM stereo input
68	VDD			Power supply
69	X2			Oscillator output
70	X1			Oscillator input
71	GND			GND
72	NC			Not used
73	TESTIN	I		Test program mode input
74	AVDD			A/D converter analog power supply (VDD)
75	AVREF0			(A/D converter standard voltage input)
76	SL	I		Signal level input
77	MODEL	I		Model select input
78-80	NC			Not used

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*PD4871B



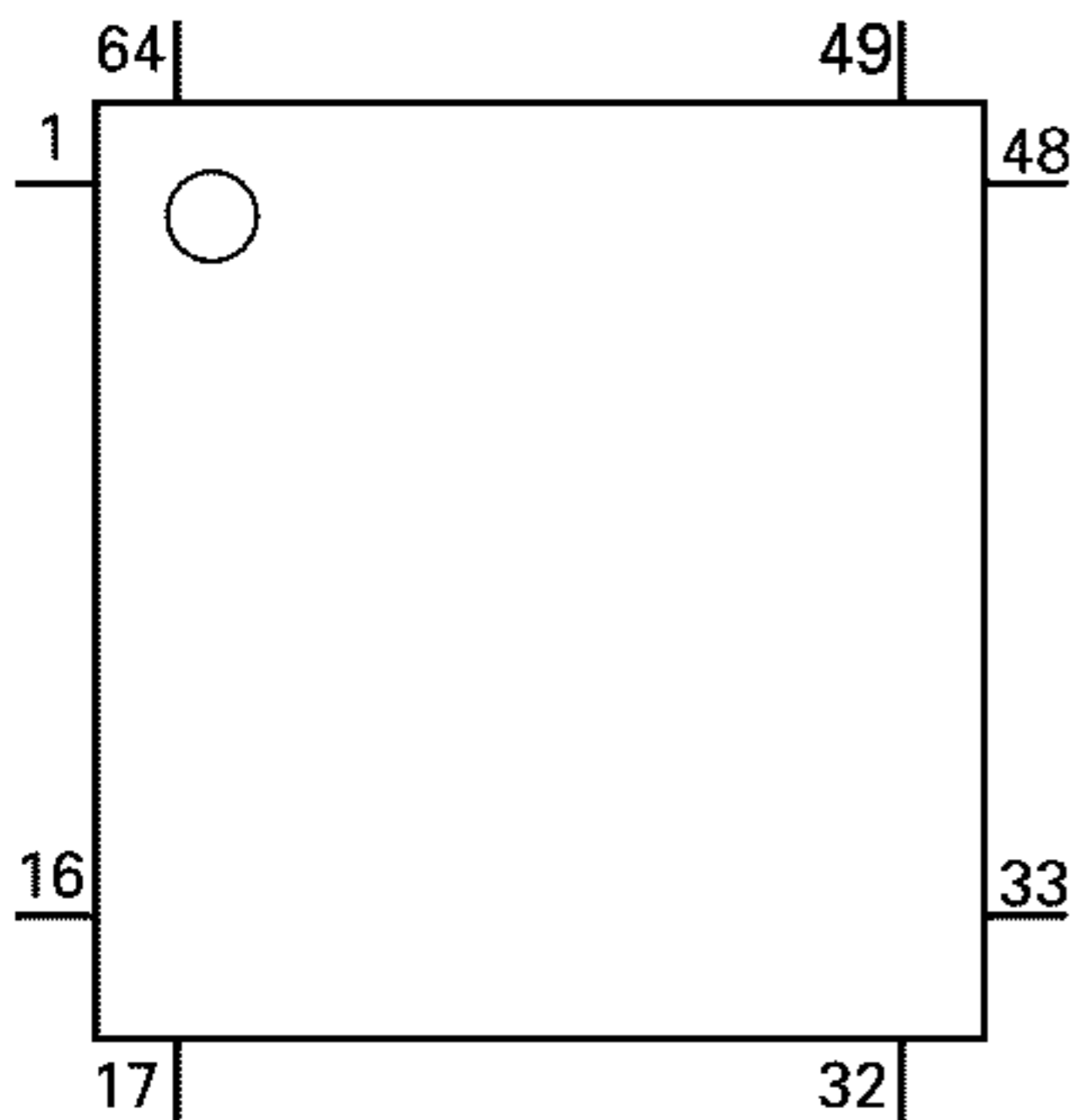
Format	Meaning
C	C MOS

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(PD6196A)

Pin No.	Pin Name	I/O	Function and Operation
1-5	SEG4-0	O	LCD segment output
6-9	COM3-0	O	Common driver output
10	V3		LCD bias power supply
11-14	KS4-1	O	Key strobe output
15,16	KD1,2	I	Key data input
17	REM	I	Remote control reception
18	SI	I	UART input
19	RST	I	System reset
20	SO	O	UART output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KD3,4	I	Key data input
27,28	KS6,5	O	Key strobe output
29-55	SEG39-13	O	LCD segment output
56	VCC		5V
57-64	SEG12-5	O	LCD segment output

*PD6196A



7.1.2 DISPLAY

● CAW1387

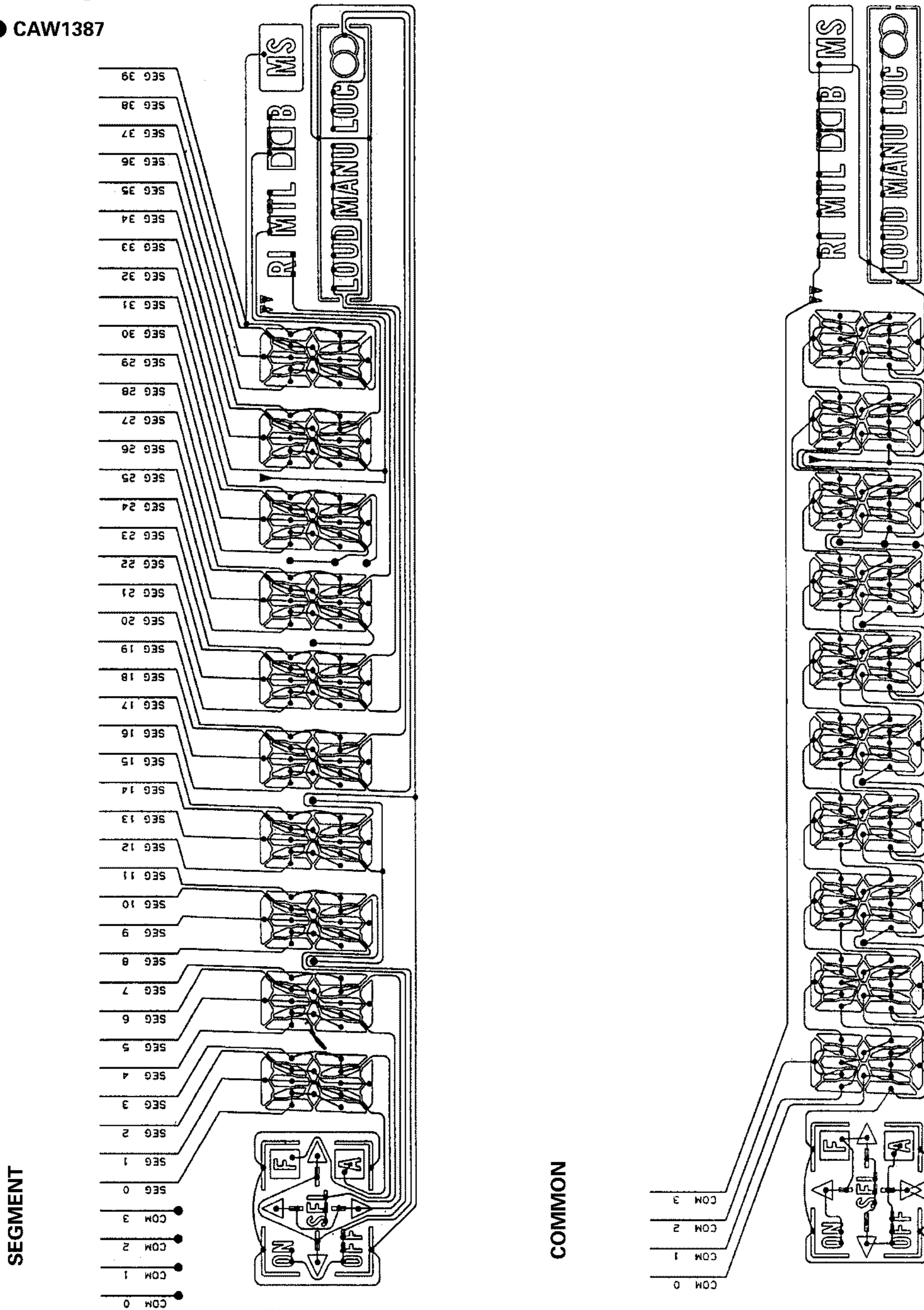


Fig. 16

7.2 DISASSEMBLY

● Removing the Case(not shown)

1. Remove the three screws.
2. Remove the Case.

● Removing the Cassette Mechanism Assy (not shown)

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

● Removing the Grille Assy(Fig.17)

1. Disengage the stopper at two locations indicated by arrows.
2. Remove the Grille Assy.

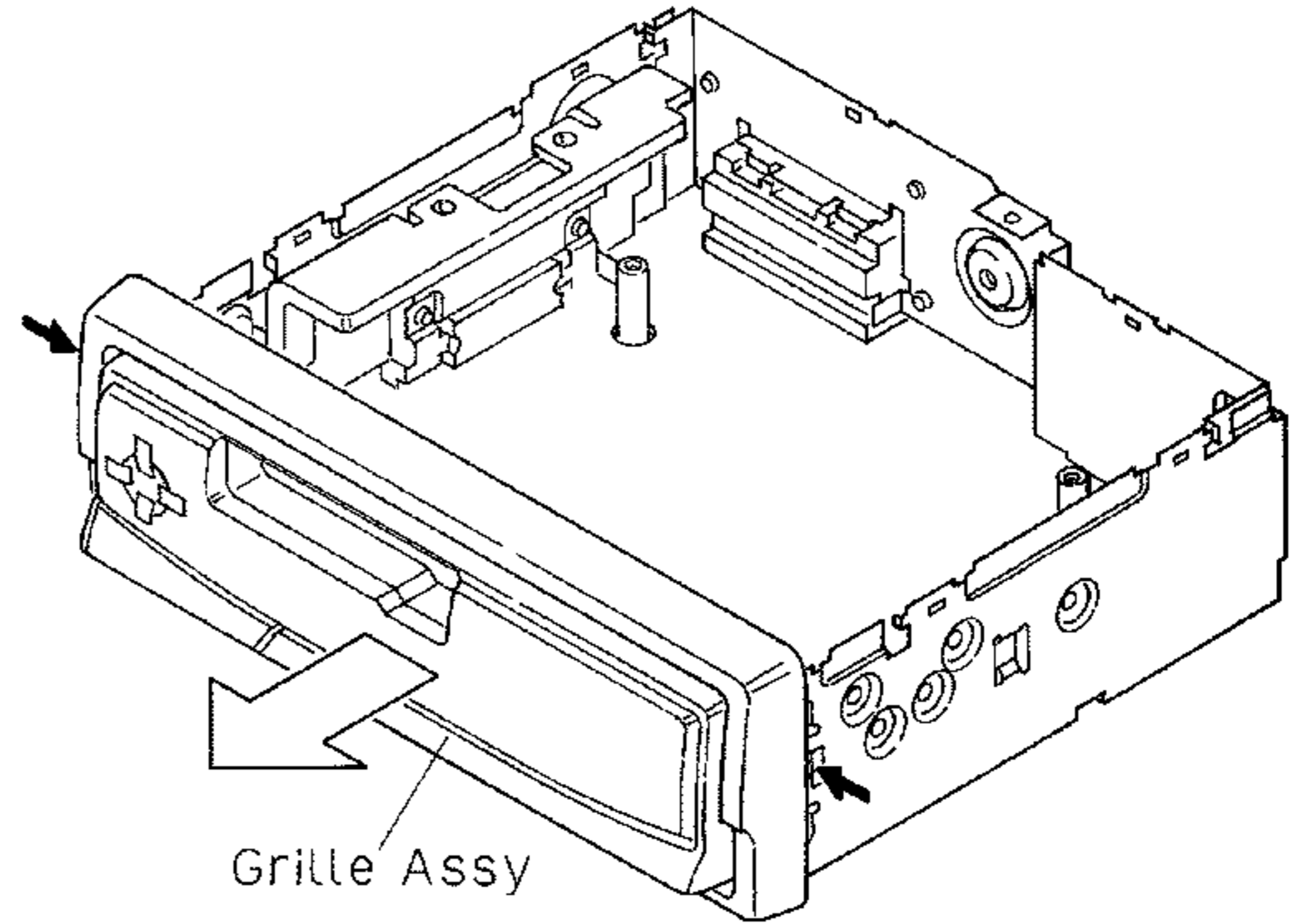


Fig. 17

● Removing the Tuner Amp Unit(Fig.18)

1. Removing the three screws A, and two screws B.
2. Removing the screw C.
3. Unbend the tabs at a location indicated by arrow until straight.
4. Remove the Tuner Amp Unit.

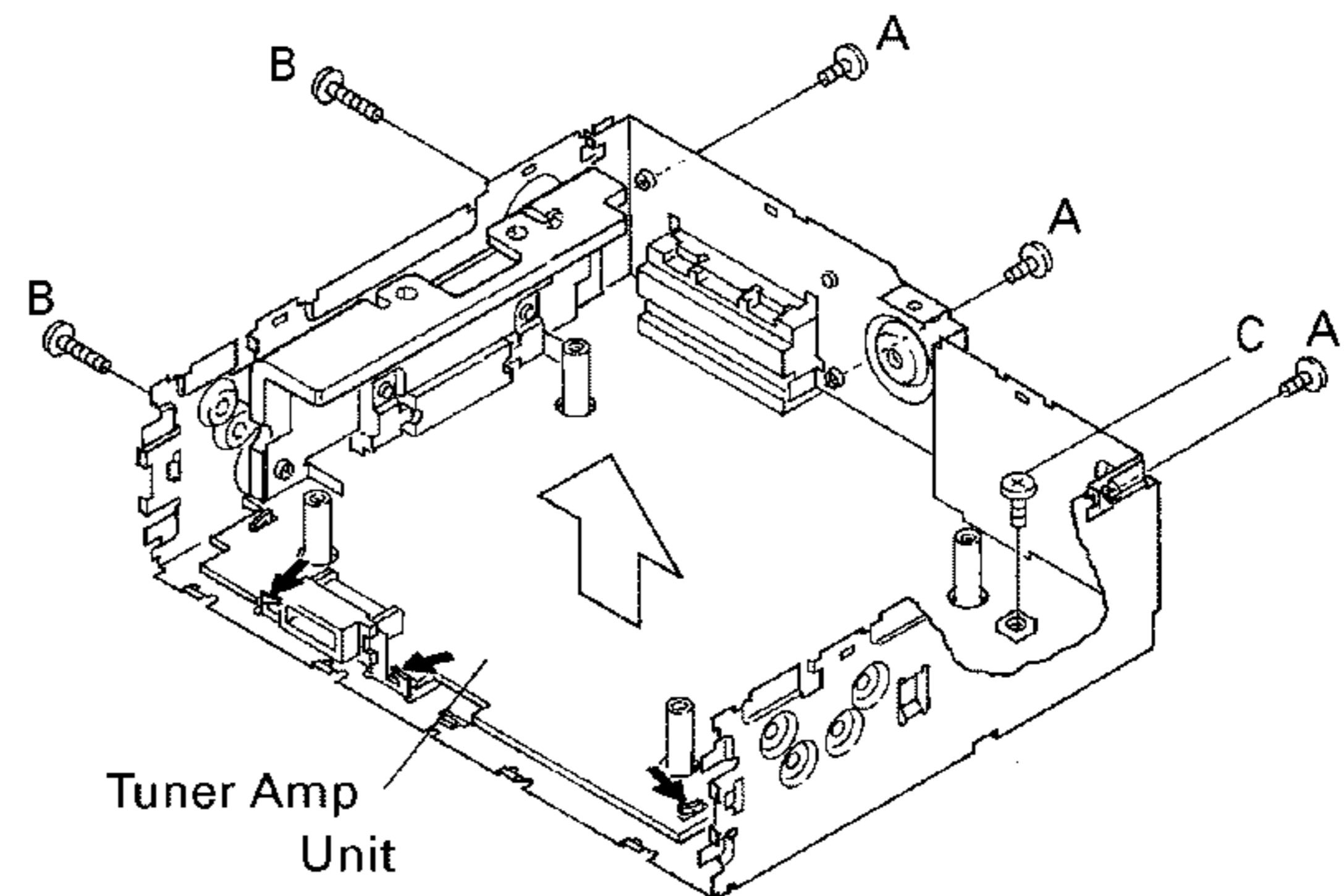


Fig.18

7.3 BLOCK DIAGRAM

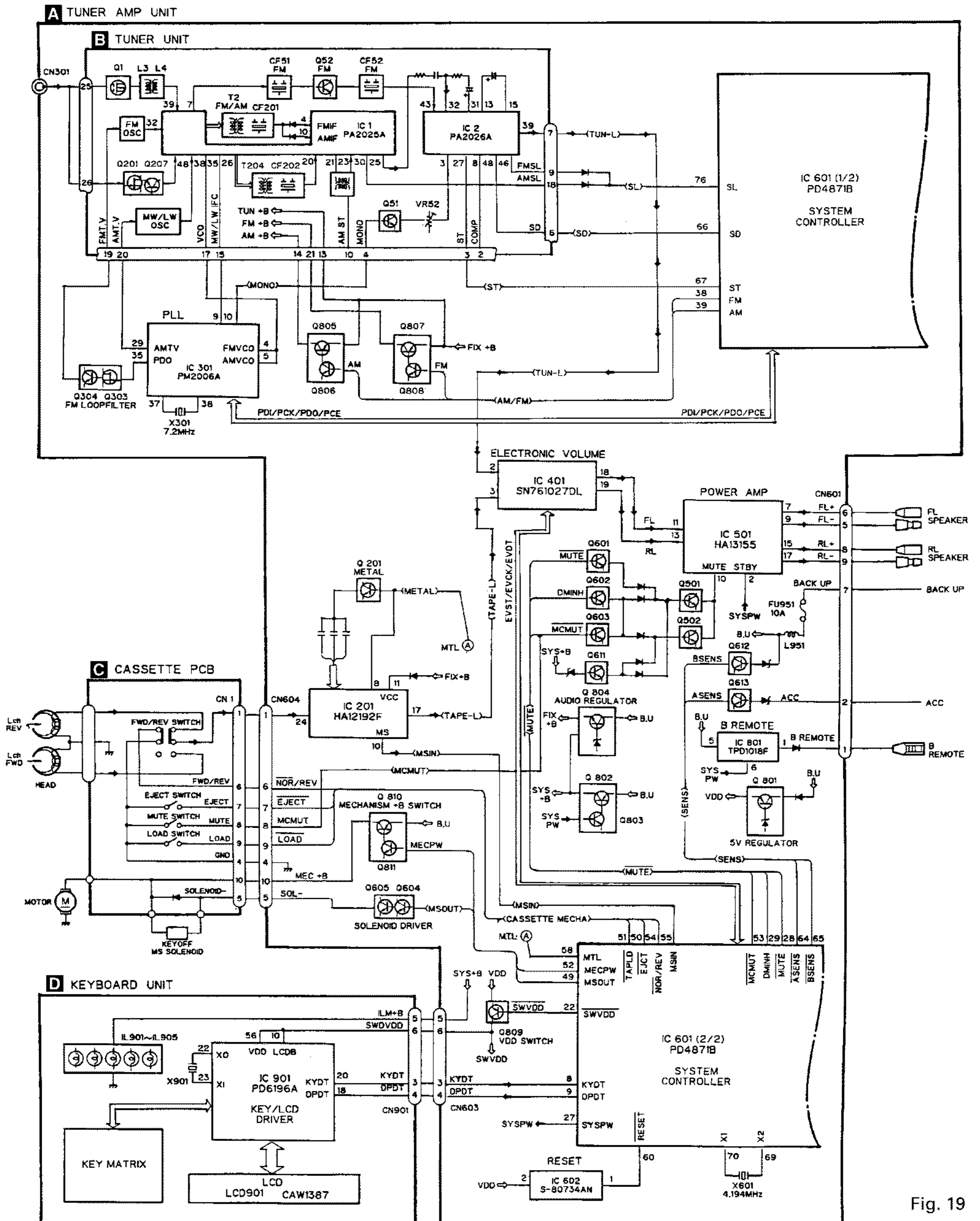


Fig. 19

8. OPERATIONS AND SPECIFICATIONS

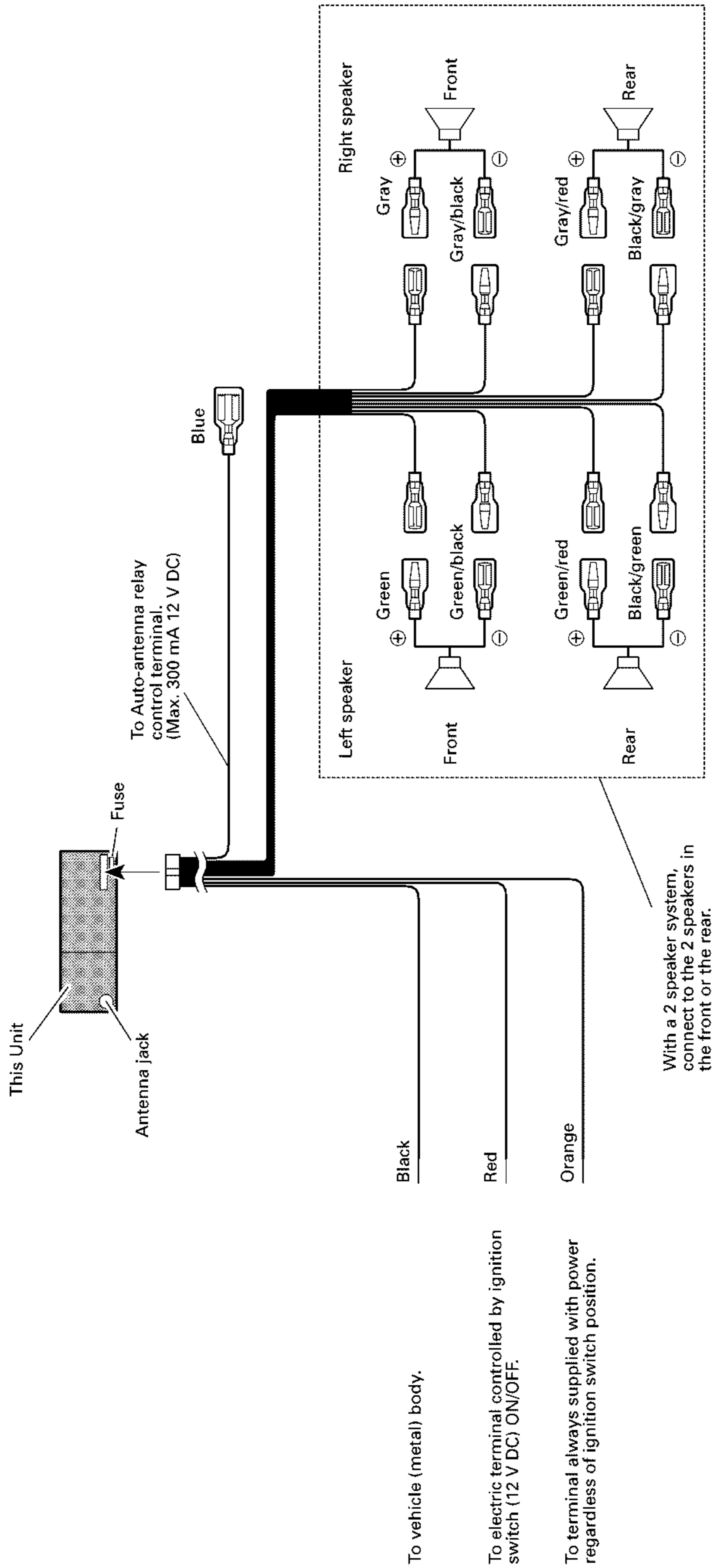
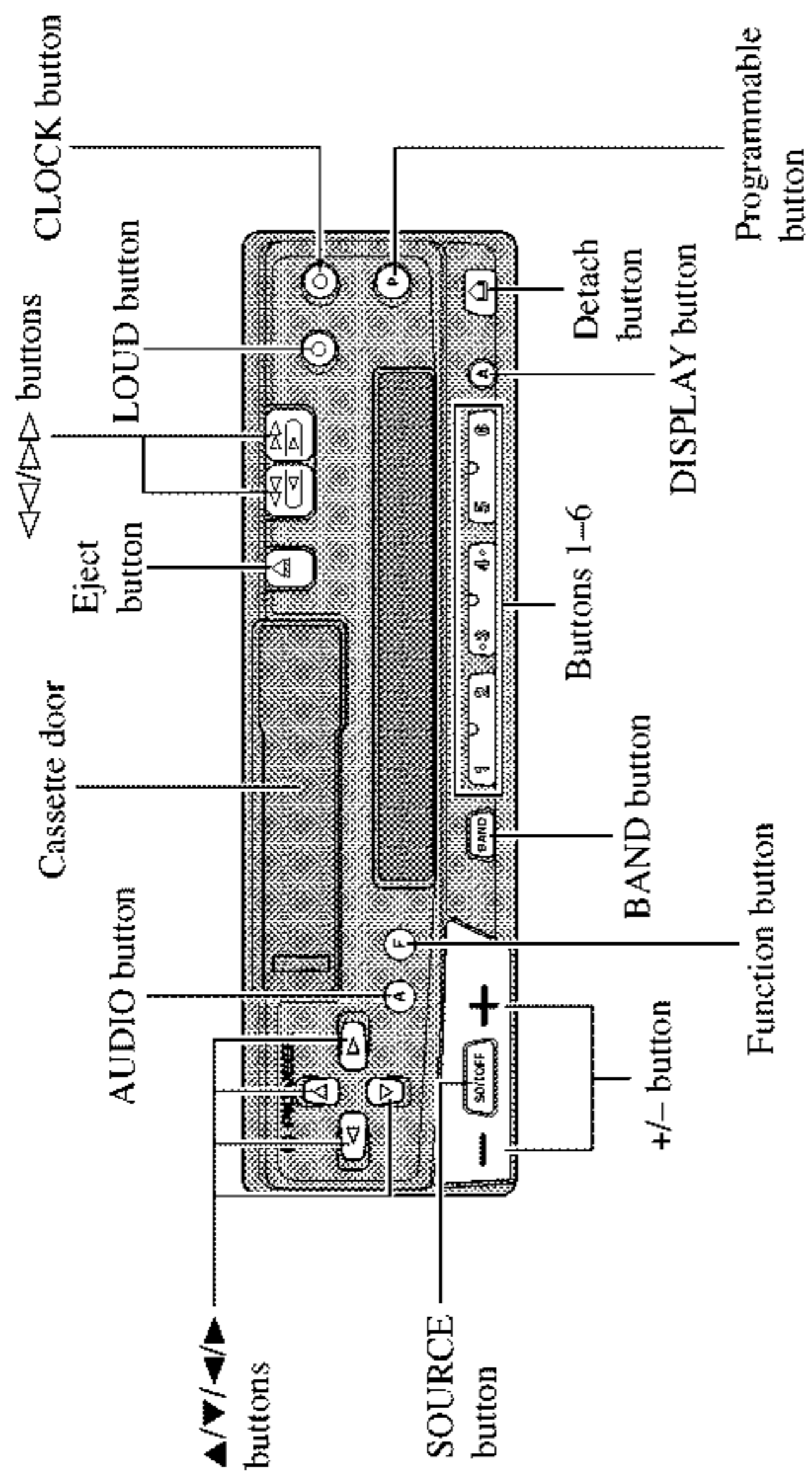


Fig. 20

8.1 OPERATIONS

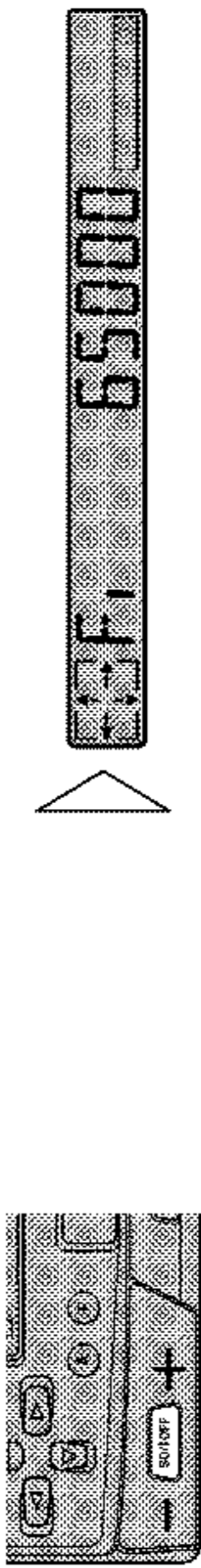
Key Finder



Basic Operation

Switching Power On

- Select the desired source (such as the tuner).



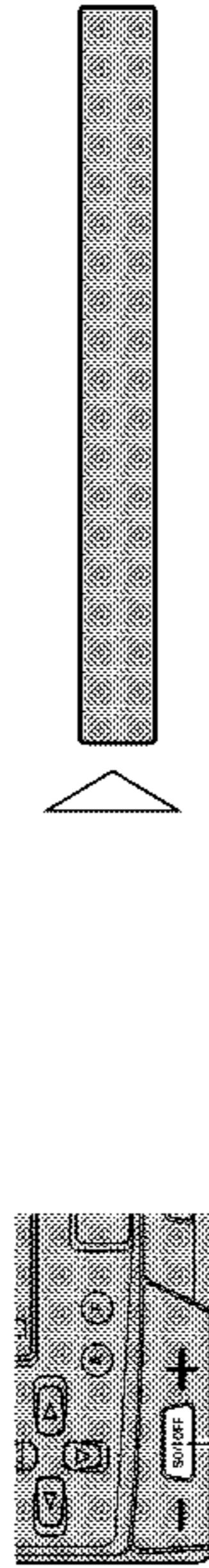
Each press of the SOURCE button selects the desired source in the following order:
Tuner → Tape

Note:

- The sound source will not change when a cassette tape is not set in this unit.

Switching Power Off

- Switch the sources OFF.

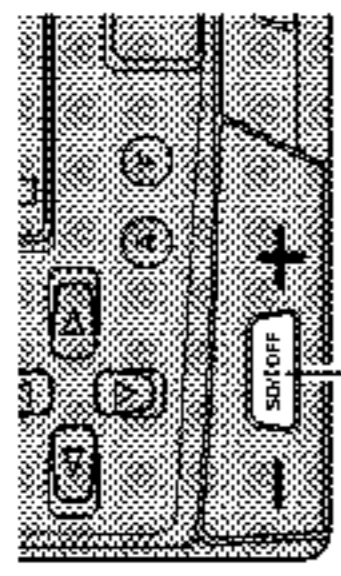


Hold for 1 second

Tuner Operation

Basic Operation of Tuner

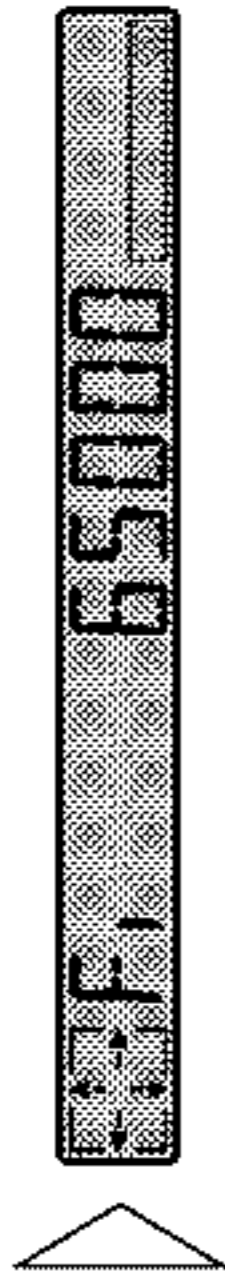
1. Select Tuner.



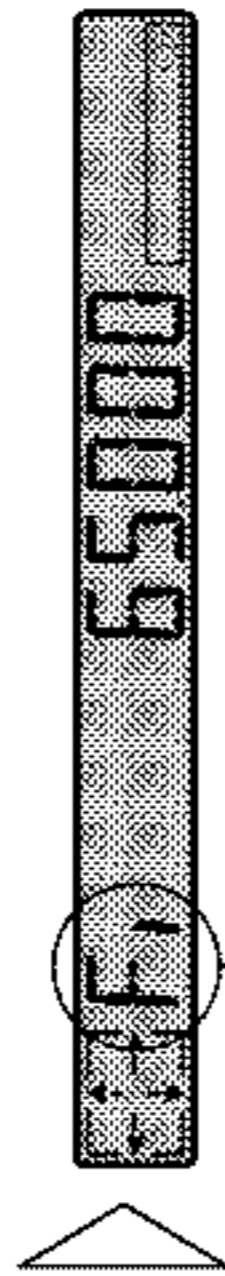
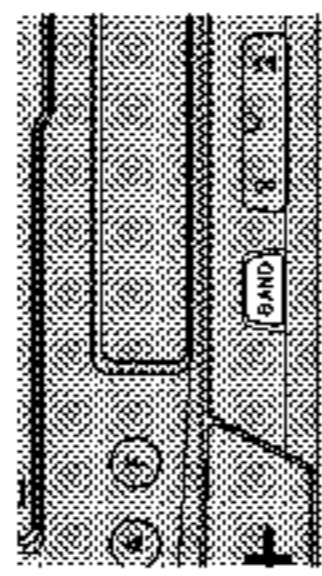
Each press changes the Source ...

Frequency appears on the display.

("O" indicator lights when a stereo station is selected.)



2. Select the desired band.

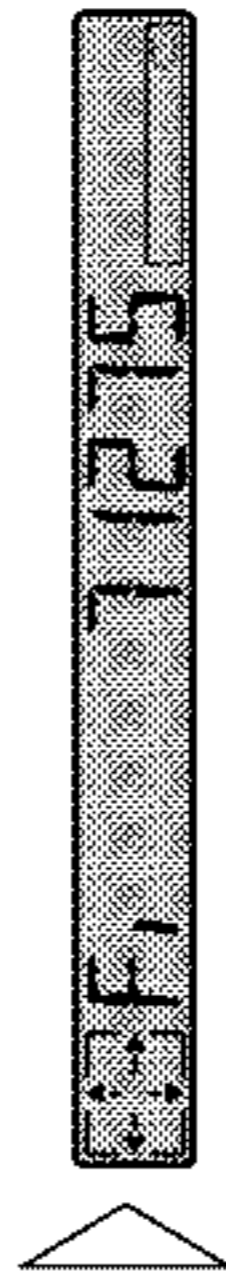
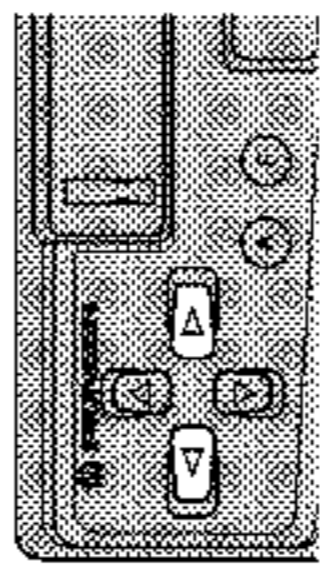


FI → FII → FIII → MW/LW

Note:

- The FM bands cover different frequency ranges as below:
 FI (FM1): 65 – 74 MHz
 FII (FM2), FIII (FM3): 87.5 – 108 MHz

3. Tune the receiver to a higher or lower frequency.



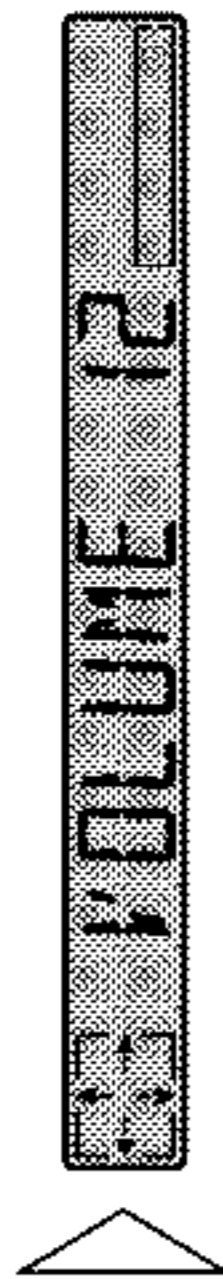
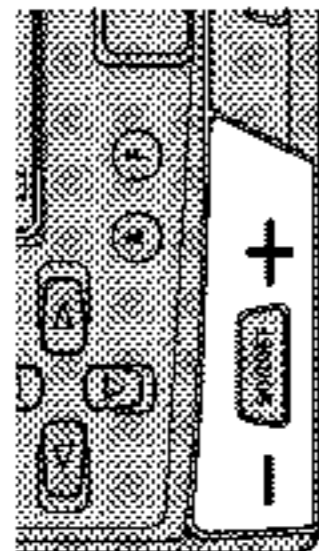
This product's tuner lets you select the tuning by changing the length of the time you press the button.

Manual Tuning (step by step)	0.3 seconds or less
Seek Tuning	0.3 – 2 seconds
Manual Tuning (continuously)	2 seconds or more

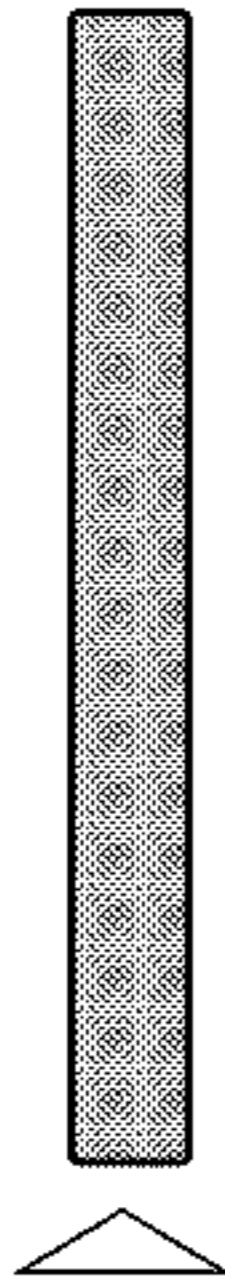
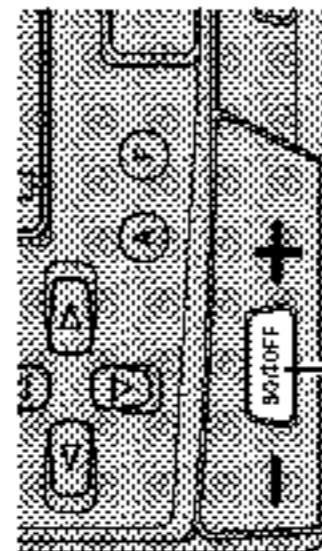
Note:

- To select a weak broadcasting station that cannot be tuned in with the Seek Tuning function, tune in with Manual Tuning.

4. Raise or lower the volume.



5. Turn the source OFF.

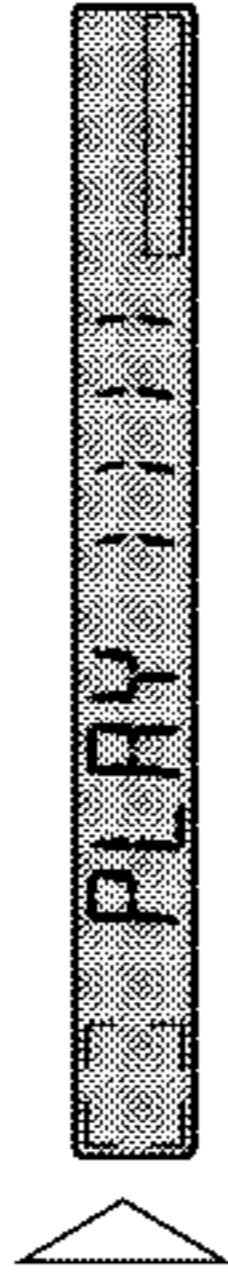
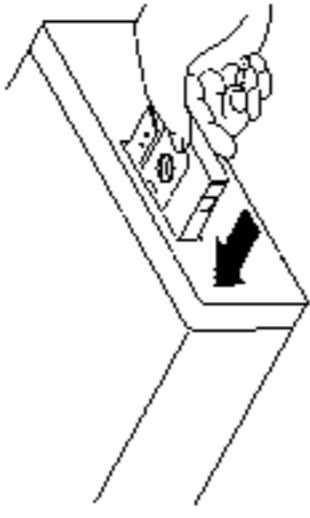


Hold for 1 second

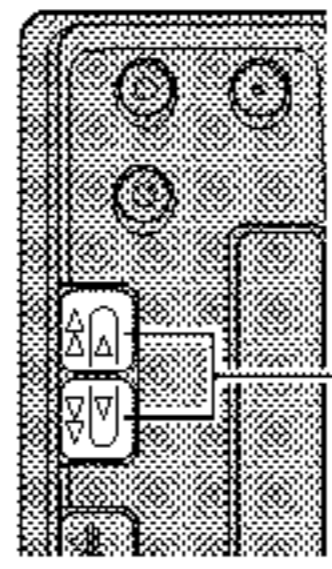
Using the Cassette Player

Basic Operation of Cassette Player

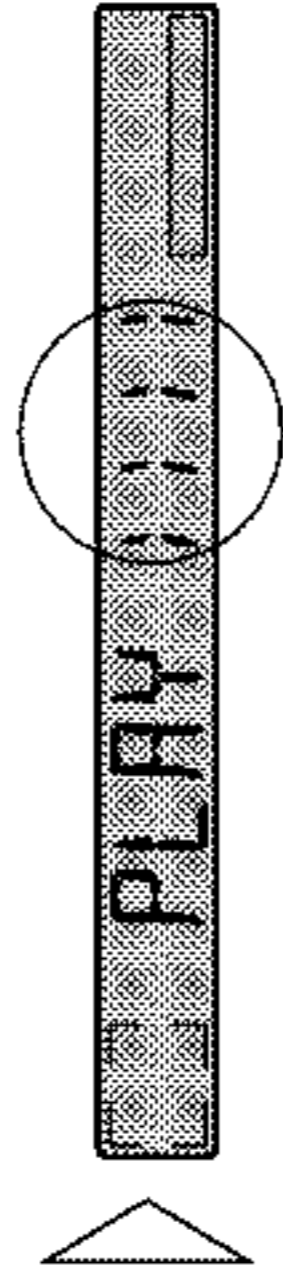
1. Insert the cassette tape.



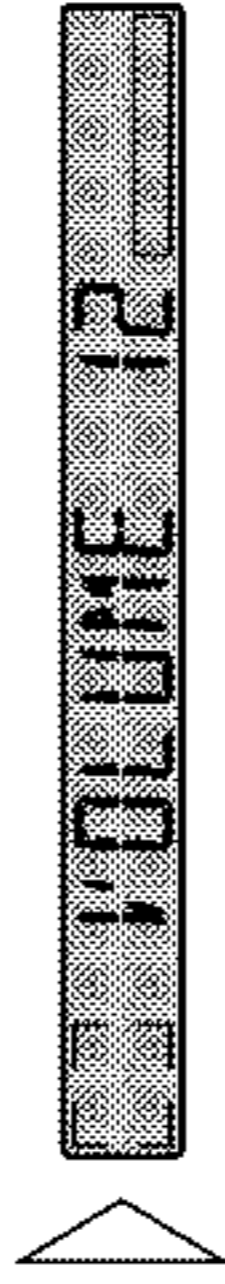
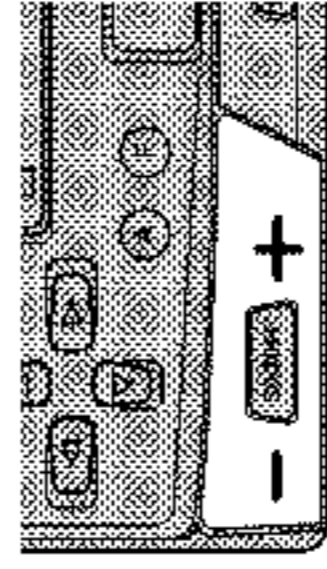
2. Switch tape playback from side A to side B, or vice versa.



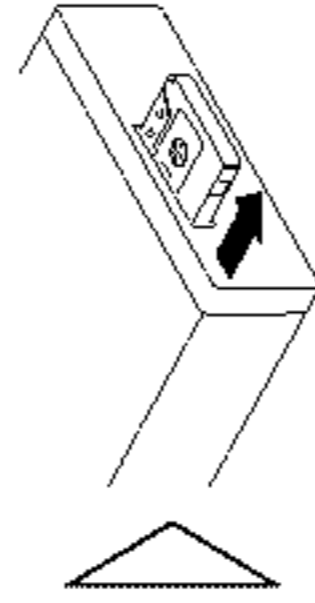
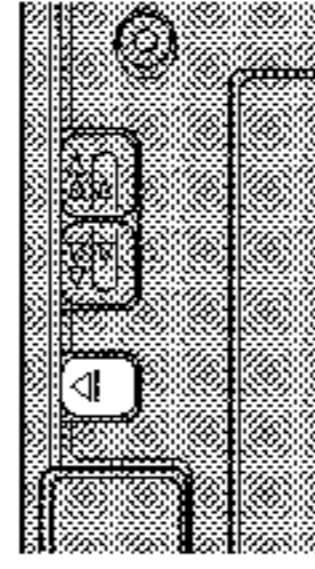
Same Time



3. Raise or lower the volume.



4. Remove the cassette tape.



Note:

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

8.2 SPECIFICATIONS**Specifications****General**

Power source 14.4 V DC (10.8 – 15.1 V allowable)
 Grounding system Negative type
 Max. current consumption 8.5 A
 Dimensions
 (mounting size) 178 (W) × 50 (H) × 150 (D) mm
 (front face) 188 (W) × 58 (H) × 19 (D) mm
 Weight 1.2 kg

Amplifier

Maximum power output 35 W × 4
 Continuous power output 22 W × 4
 (DIN45324, +B = 14.4 V)
 Load impedance 4 Ω (4 – 8 Ω allowable)
 Tone controls
 (Bass) ±12 dB (100 Hz)
 (Treble) ±12 dB (10 kHz)
 Loudness contour +10 dB (100 Hz), +7 dB (10 kHz)
 (volume: –30 dB)

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. 90 sec. for C-60
 Wow & flutter 0.13% (WRMS)
 Frequency response Metal: 40 – 17,000 Hz (±3 dB)
 Stereo separation 45 dB
 Signal-to-noise ratio
 Metal: Dolby B NR IN: 63 dB (IEC-A network)
 Dolby NR OUT: 55 dB (IEC-A network)

FM tuner

Frequency range 65 – 74 MHz
 87.5 – 108 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 (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
 Usable sensitivity 18 μV (25 dB) (S/N: 20 dB)
 Selectivity 50 dB (±9 kHz)

LW tuner

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

Note:

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