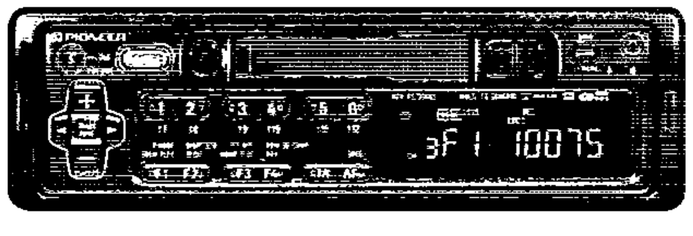
Service Manual

PIONEER
The Art of Entertainment

● KEH-P5200RDS/EW



ORDER NO.
CRT1660

MULTI-CD CONTROL FM/MW/LW TUNER DECK AMPLIFIER

KEH-P5200RDS EW
KEH-P5100RDS EW
KEH-P4200RDS EW
KEH-P4100RDS EW
KEH-P24RDS EW
KEH-P14RDS EW

FM/MW/LW TUNER DECK AMPLIFIER

KEH-3900RDS EW
KEH-3800RDS EW

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-197 (CRT1328) for the cassette mechanism description.**
- **The cassette mechanism employed in this model is one of 1M mechanism series.**

CONTENTS

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K-FFD. JAN. 1995 Printed in Japan

KEH-P5200RDS,P5100RDS,P4200RDS,P4100RDS, KEH-P24RDS,P14RDS,3900RDS,3800RDS

1. SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 8.5 A
Dimensions (chassis) ..... 178 (W) × 50 (H) × 150 (D) mm
(front face) ..... 188 (W) × 58 (H) × 19 (D) mm
Weight ..... 1.3 kg

Amplifier

Maximum power output ..... 35 W × 4 (EIAJ)
Continuous power output ..... 22 W × 4 (DIN45324, +B = 14.4 V)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance
..... 500 mV/1 kΩ
Tone controls (bass) ..... ±10 dB (100 Hz)
(treble) ..... ±10 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)
(Volume: –30 dB)

Tape 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/rewind time ..... Approx. 100 sec. for C-60
Wow & flutter ..... 0.13 % (WRMS)
Frequency response
(KEH–P5200RDS, P5100RDS) ... Metal: 40 — 17,000 Hz (±3 dB)
(KEH–P4200RDS, P4100RDS, P24RDS, P14RDS, 3900RDS, 3800RDS) ..... :40 — 14,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio
(KEH–P5200RDS, P5100RDS)
..... Metal: Dolby B NR IN: 63 dB (IEC-A network)
Dolby NR OUT: 55 dB (IEC-A network)
(KEH–P4200RDS, P4100RDS, P24RDS, P14RDS, 3900RDS, 3800RDS) ..... 52 dB (IEC-A network)

FM tuner

Frequency range ..... 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.

2. OPERATION AND CONNECTION

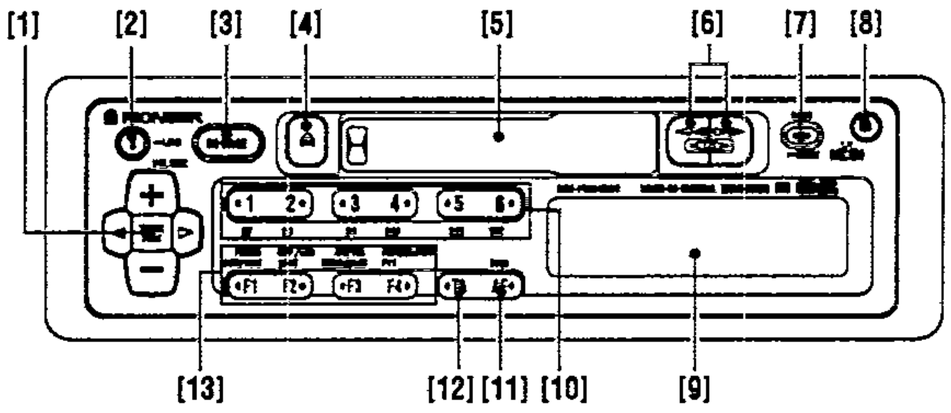


Fig. 1

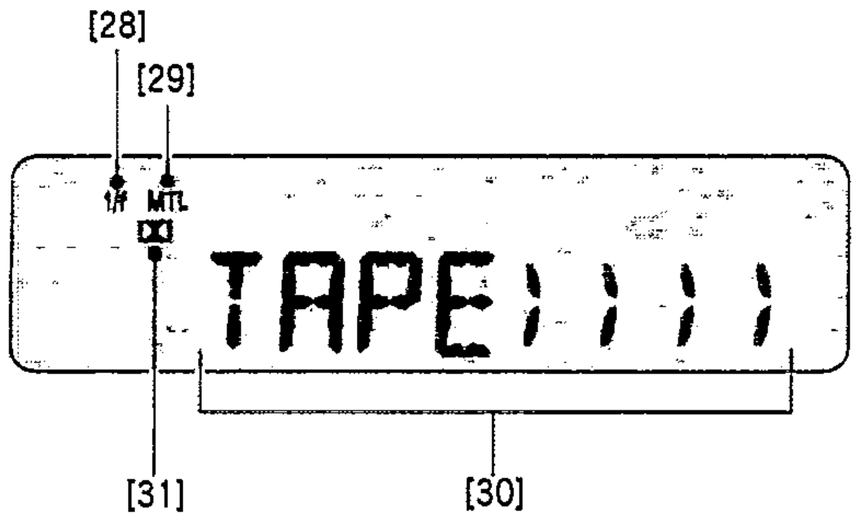


Fig. 3

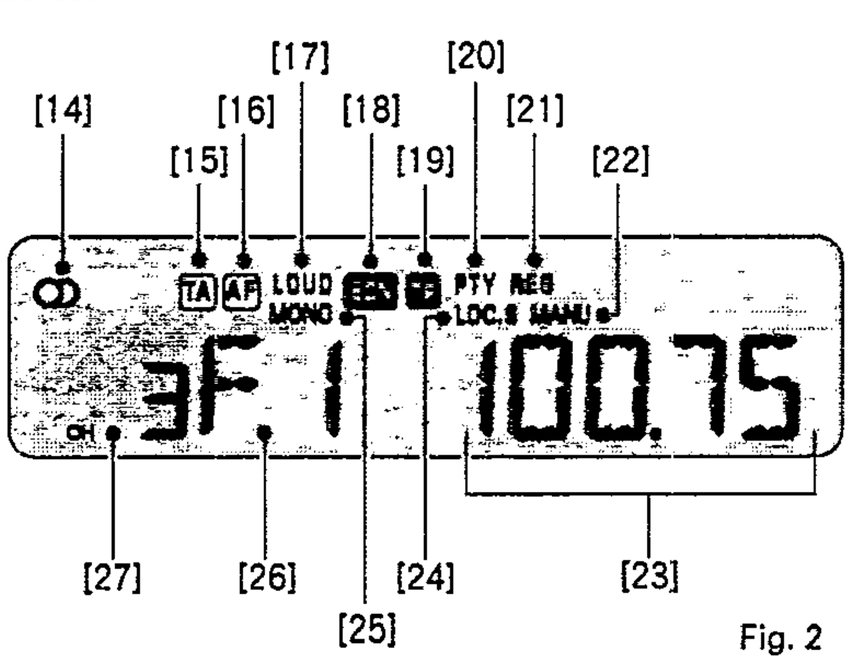


Fig. 2

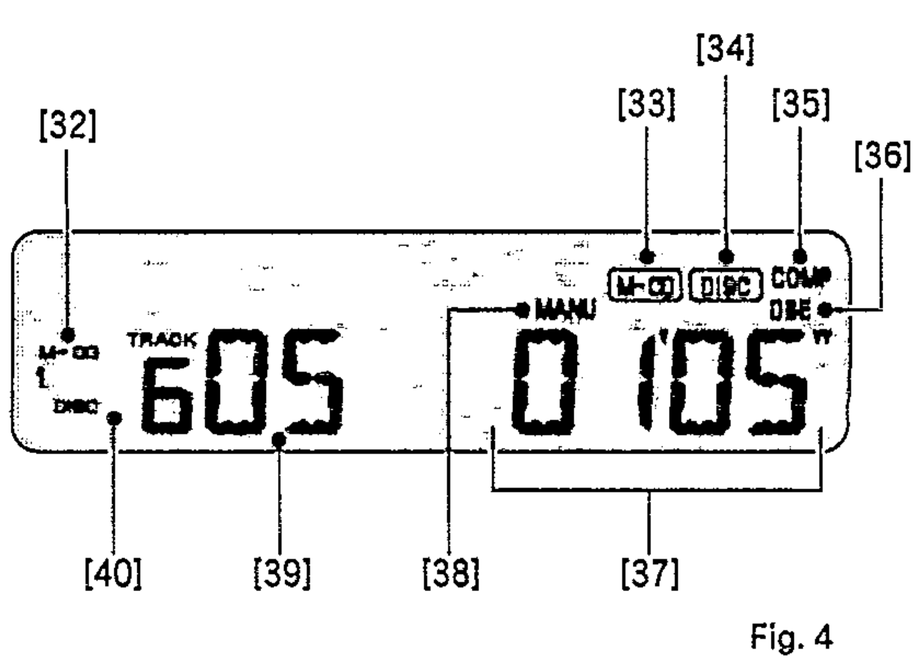


Fig. 4

Connecting the Units

Note:

- *This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.*
- *To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.*
- *Check whether installation and wiring have been completed correctly. Replace the removed car components, then connect the end of the cable to the negative ⊖ terminal of the battery.*
- *Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.*
- *Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.*
- *Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.*
- *Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and can cause a very dangerous short.*
- *Do not shorten any leads. If you do, the protection circuit may fail to work when it should.*
- *Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.*
- *When replacing fuse, be sure to use only fuse of the rating prescribed on the fuse holder.*
- *Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker ⊖ leads are common.*
- *Speakers connected to this unit must be high-power types possessing minimum rating of 35 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.*
- *When connecting a power amp, never connect the blue lead to the amp's power supply terminal. Also, when connecting an auto antenna, never connect the blue lead to the antenna's power supply terminal. Such connections may cause damage due to excessive current.*
- *To prevent incorrect connection, the input side of the IP-BUS connector is blue, and the output side is black. Connect the connectors of the same colors correctly.*
- *When the unit is mounted in a vehicle whose ignition switch does not have the ACC (accessory) position as shown in Fig. 6, be sure to connect the red lead of the unit to the terminal controlled by the ignition switch ON/OFF position. If you do not, the vehicle battery may go flat when you leave your vehicle for several hours.*

ACC position

Fig. 5

No ACC position

Fig. 6

Connection Diagram (Fig. 7)

1. Antenna jack
2. Rear out
3. White
4. Red
5. Connecting cords with RCA pin plugs (sold separetely)
6. Power amp (sold separetely)
7. Blue
8. CD player (sold separately)
9. Multi-play CD player (sold separetely)
10. Please make correct connections according to the directions in the Multi-play CD player's owner's manual.
11. IP-BUS input (blue)
12. Blue
    To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
13. Black (ground)
    To vehicle (metal) body.
14. Red
    To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
15. Orange
    To terminal always supplied with power regardless of ignition switch position
16. Fuse resister
17. Fuse holder
18. With a 2 speaker system, connect to the 2 speakers in the front or the rear.
19. Use this for connections when you have the separately available amplifier.
20. Front/left speaker
21. Front/right speaker
22. Rear/left speaker
23. Rear/right speaker
24. Green
25. Gray
26. Green/black
27. Gray/black
28. Green/red
29. Gray/red
30. Black/green
31. Black/gray

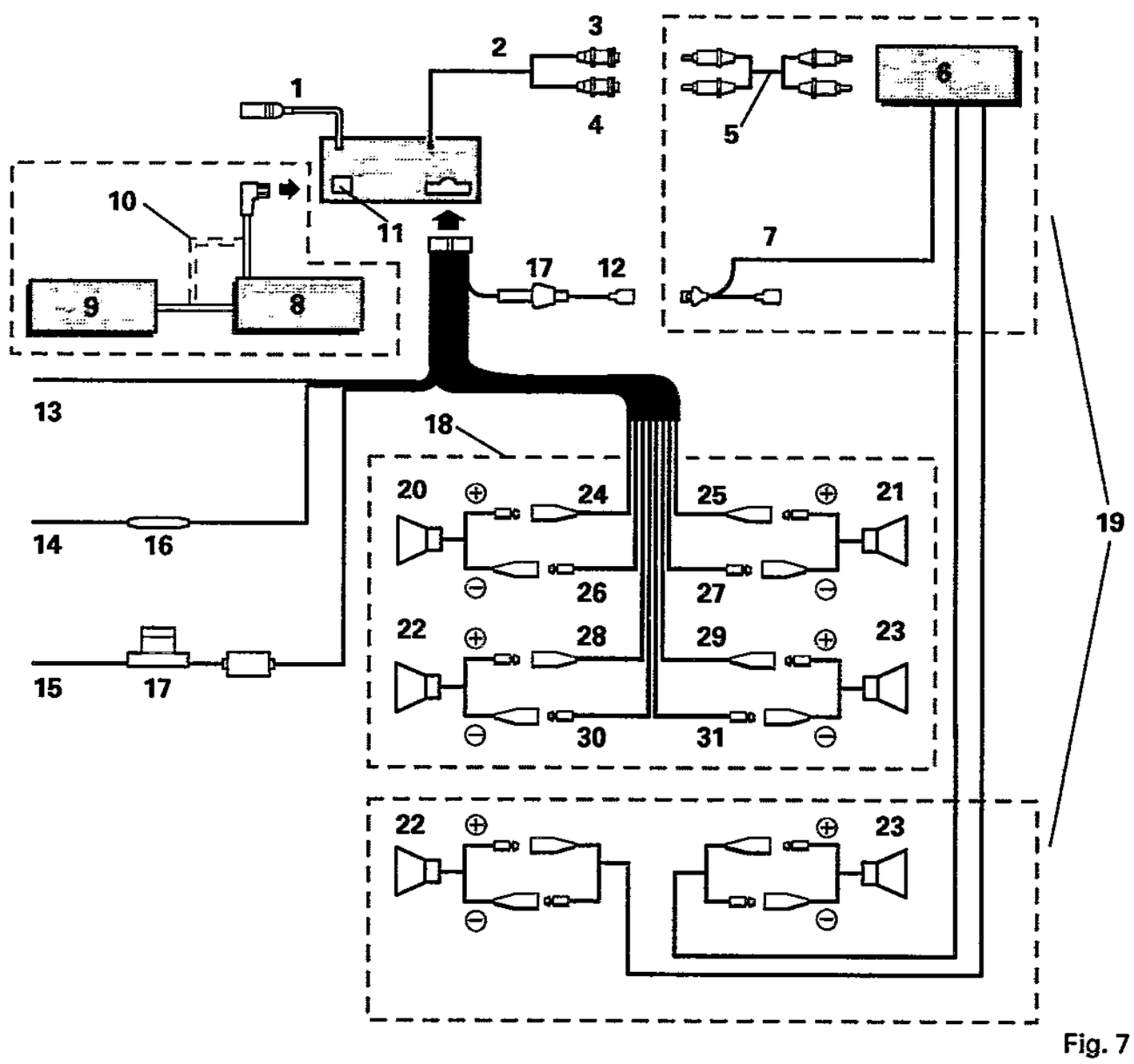


Fig. 7

3. ADJUSTMENT

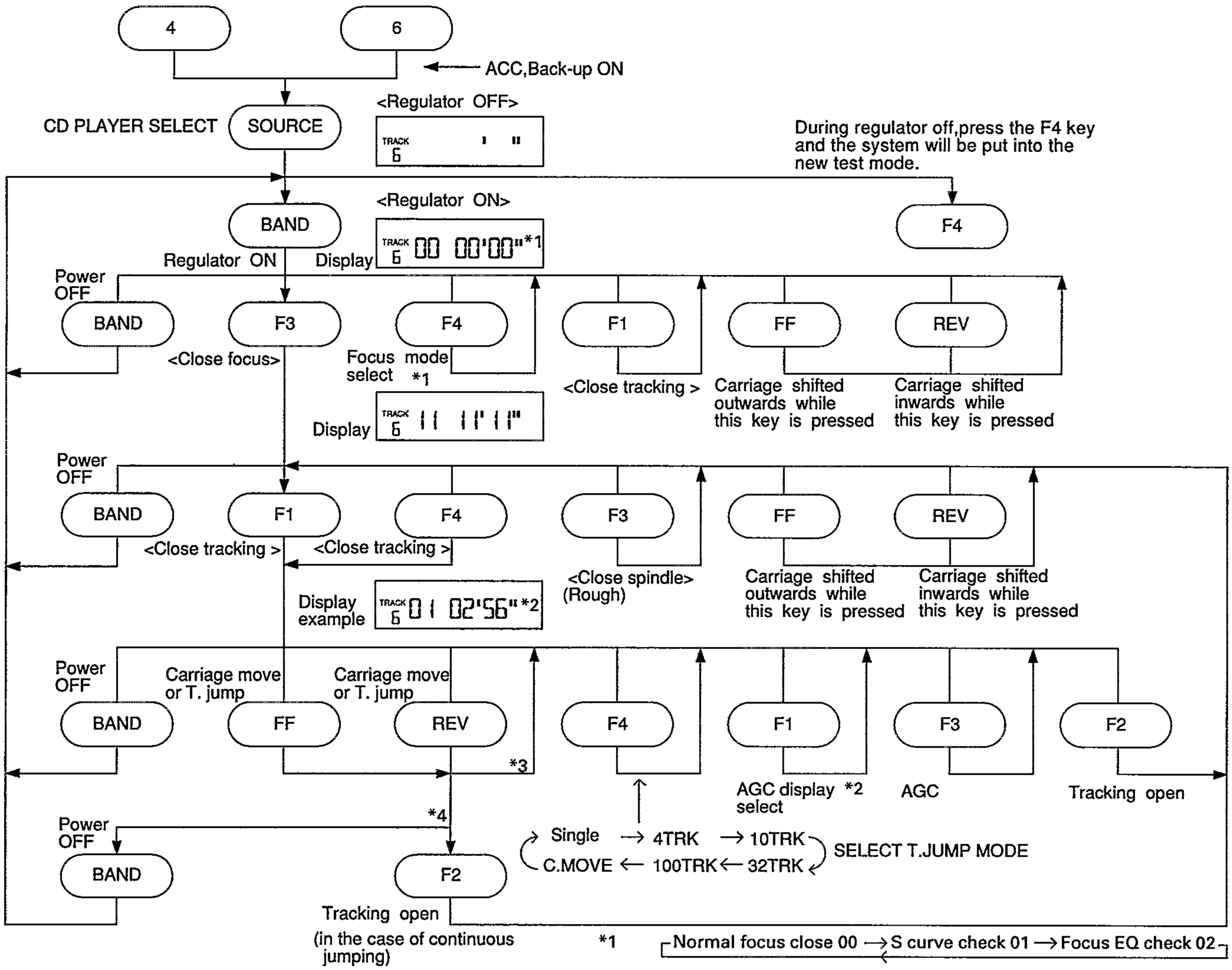
3.1 TEST MODE

(KEH-P5200RDS, P5100RDS, P4200RDS, P4100RDS, P24RDS, P14RDS)

Test mode is mainly used adjustment of IP BUS type CD multi players.(Such as CDX-P610)

- Switching to test mode
  While pressing the 4, 6 keys together, switch the back up and ACC ON.
- Canceling test mode
  Switch the back up and ACC off.
- SINGLE/10TRK/32TRK will continue to operate even after the key is released.Tracking closed the moment C-MOVE is released.
- JUMP MODE resets to SINGLE as soon as power is switched off.

● Flow Chart



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

*2 Normal display → Focus gain → Track gain

*3 100 TRK jump & carriage move continue only while the keys are pressed

*4 SINGLE/4/10/32 → continuous even after key release

3.2 TUNER SECTION

● **Connection Diagram**

NOTE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

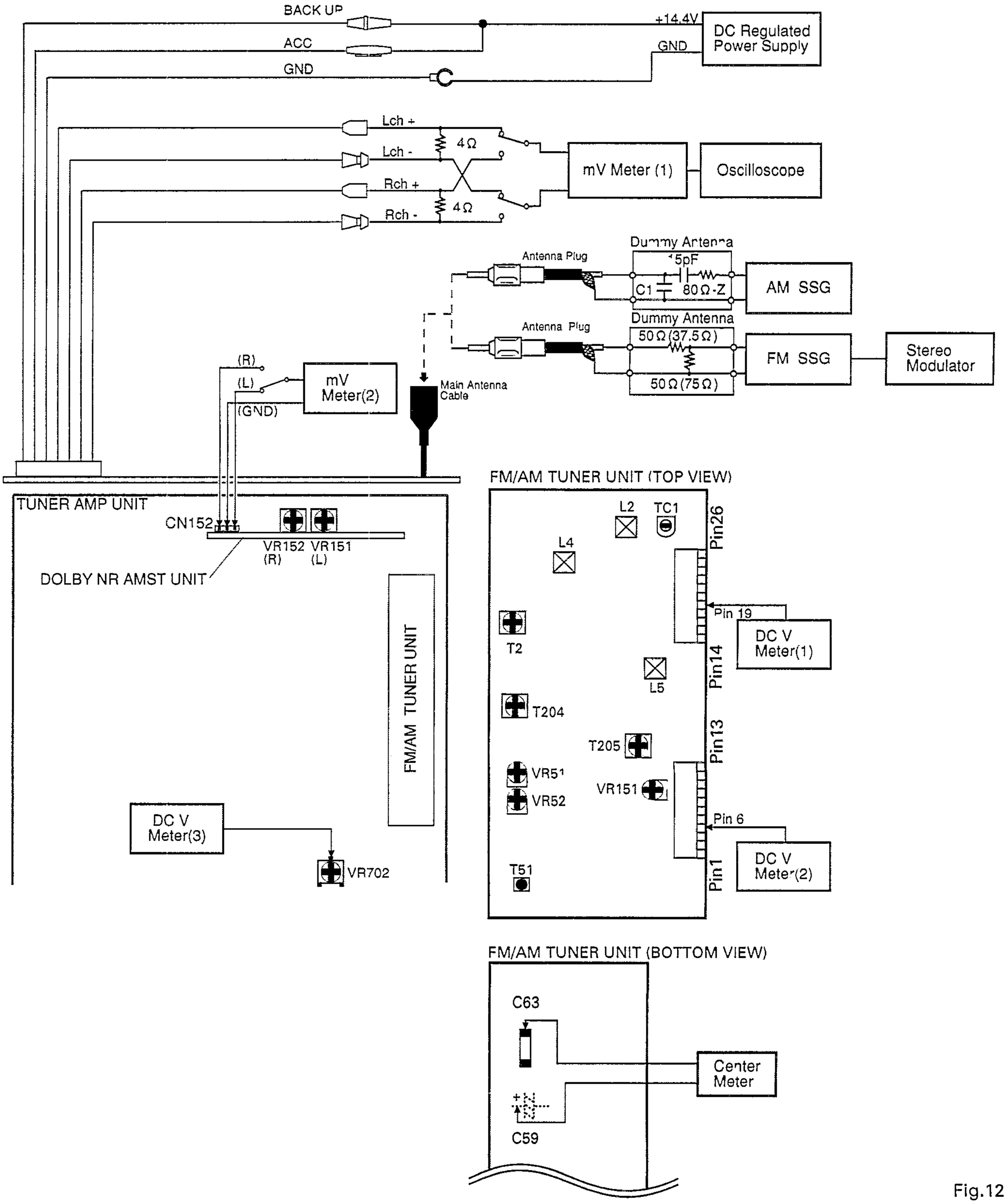


Fig.12

AM ADJUSTMENT

	No.	AM SSG(400Hz,30%)		Displayed	Adjustment	Adjustment Method
		Frequency(kHz)	Level(dBμV)	Frequency(kHz)	Point	(Switch Position)
IF	1	999	20	999	T204,T205	mV Meter(1) : Maximum

FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=100%(67.5kHz+7.5kHz Dev.)

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

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	108.0 M	65	108.0	L5	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter : 0
TRIMMER	1	•••••	•••••	•••••	TC1	Initial setting(before measurement) of trimmer should be that of Fig.12.
ANT,RF	1	98.1 M	5	98.1	L2,L4	mV Meter(1) : Maximum
IMAGE	1	129.3 M	70—90	107.9	TC1	mV Meter(1) : Minimum
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) : A (STEREO MODE)
	2	98.1 M	15	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

RDS SL ADJUSTMENT

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
	1	106.1 M	52	106.1	VR702	DC V Meter(3) : 2.25V±0.05V

DOLBY NR ADJUSTMENT(KEH-P5200RDS, P5100RDS)

Test Tape	Adjustment Point	Adjustment Method (Switch Position)
NCT-150 (400Hz,200nwb/m)	VR151(Lch),VR152(Rch)	mV Meter(2) : –8.2dBs ± 1dB (DOLBY NR Switch : OFF)

4. DISASSEMBLY

● **Removing the Case (not shown)**

1.Insert and turn a flat screwdriver at locations indicated by arrows to remove the case.

● **Removing the Cassette Mechanism Assy (Fig.13)**

1.Remove the four screws.
2.Disconnect the connector.
3.Remove the cassette mechanism assy.

● **Removing the Front Grille Assy (Fig.13)**

1.Disconnect the two stoppers indicated by arrows.
2.Remove the front grille assy.

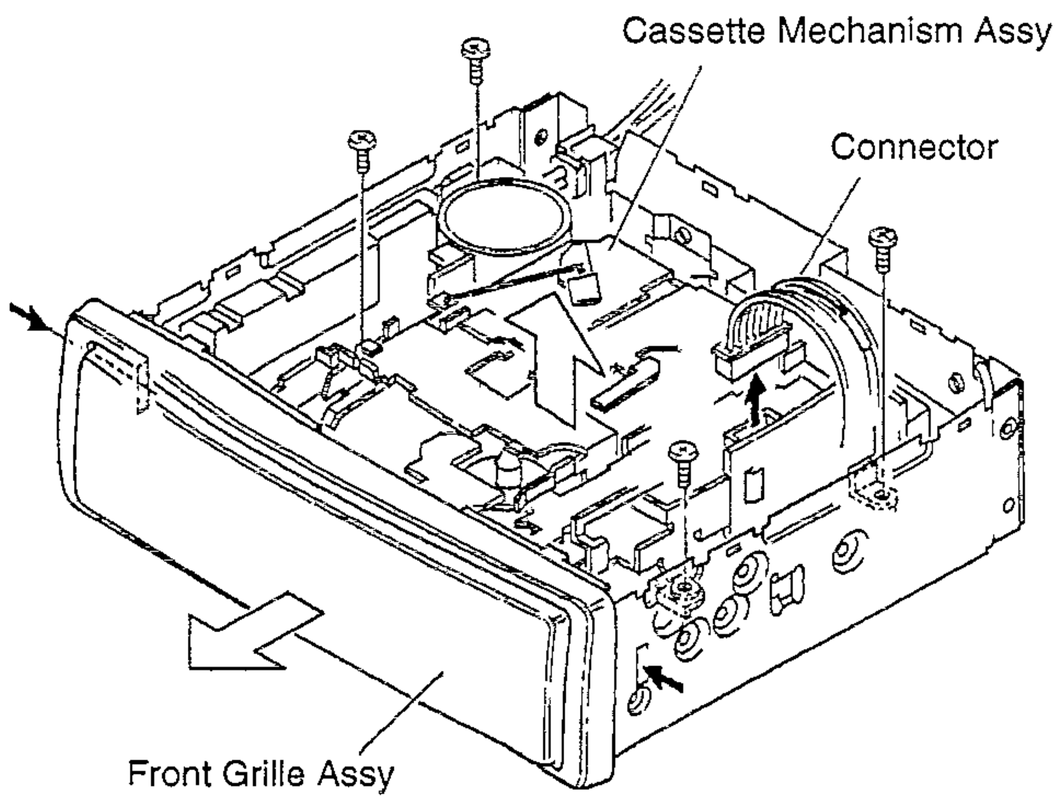


Fig.13

● **Removing the Chassis Unit (Fig.14)**

1.Remove the screw A, and then remove the holder.
2.Remove the two screws B and two screws C.
3.Unbend the tabs at three locations indicated by arrows.
4.Remove the chassis unit.

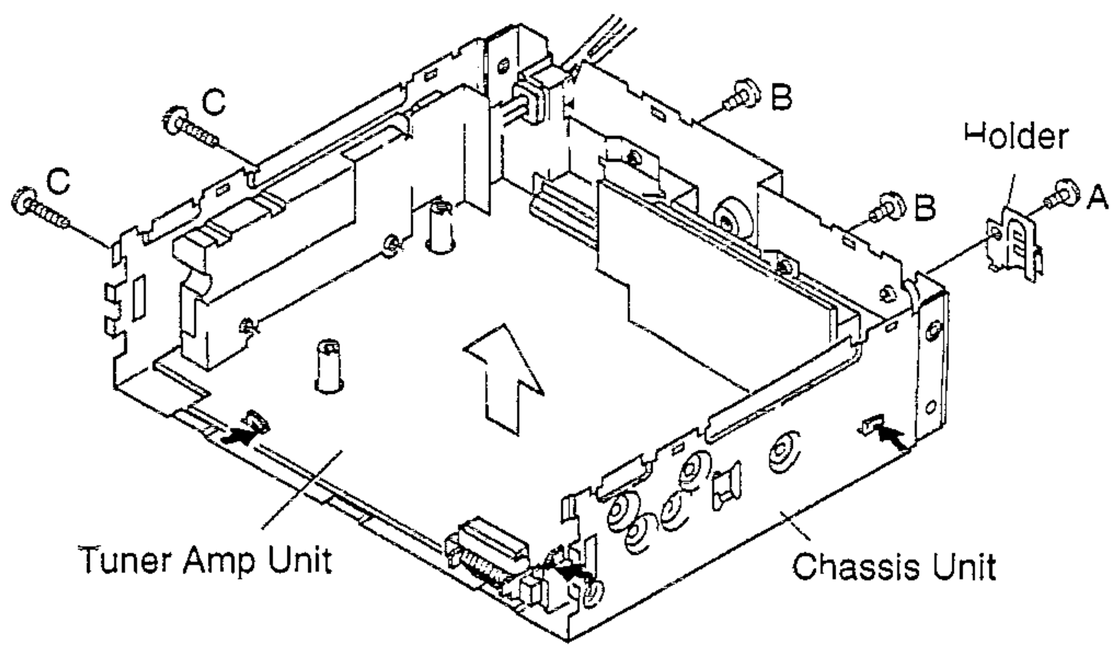


Fig.14

5. ERROR NUMBERS AND NEW TEST MODE

● Indicating An Error Number

If the CD should fail to operate in CD multi player or if an error has taken place during the operation and resulted in an error, the player will enter into the error mode. And the cause of such error is numerically indicated.
This is armed at assisting an analysis or repair.

(1) Basic Means of Display

- With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitted by the use of MIN and SEC. Identical date are transmitted with MIN and SEC.
- Examples of Display ERROR-XX

(2) Error Codes

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

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

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number)
During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 11.

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

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND	Regulator ON	Regulator OFF	—	Time of occurrence / cause of error select
FF	—	FWD-Kick	TRACK UP / FF	—
REV	—	REV-Kick	TRACK DOWN /REV	—
F1	—	Tracking close	RPT	—
F2	—	Tracking open	RANDOM	—
F3	—	Focus close	ITS	—
F4	To New Test Mode	Focus Mode Select	PAUSE	—

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

(3) Error Cause (Error Number) Code

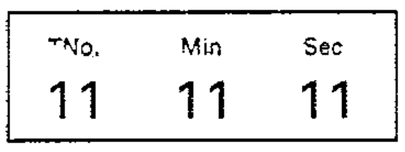
Error Code	Classification	Mode	Description	Cause	Detail
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 150ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

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

(5) Example of Display.

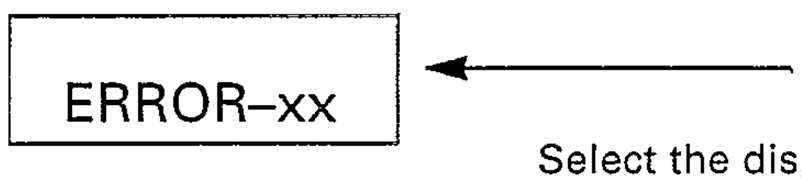
·SET UP in progress



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

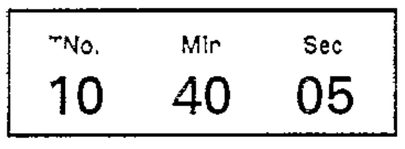
·Protection/Error upon occurrence

(a) Error number indicated



Select the display with the BAND key.

(b) Track number and absolute time indicated



6. 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 & No. Part Name=====	Part No.
Unit Number : CWM4071	
Unit Name : Tuner Amp Unit	
MISCELLANEOUS	
IC 251	TA8162SN
IC 301	PA0059AM
IC 451	SN761025DL
IC 501	LC72146M
IC 551	PAL003A
IC 601	PDR017A
IC 602	S-80734AN
IC 701	PMR001B
IC 851	TA2050S
IC 852	PA0051AM
Q 251 252 253 301 501 504 552 701 702 906	2SC2458
Q 302 851 910	2SA1048
Q 481 482	DTC143TK
Q 483	DTA124EK
Q 484	DTA124ES
Q 485 486	DTC143TS
Q 505	2SK330
Q 507 852 909 912 916 918 919	DTC124ES
Q 551 553	DTC124EK
Q 903	2SD1859
Q 907	2SC2458
Q 908 917	2SB1242
Q 911	2SB1243
Q 913	2SD2395
Q 914 915	2SA1674
Q 2001	2SC2712
D 251 301 302 303 505 506 553 554 556 601	1SS133
D 252	1SS133
D 253 917	HZS6LB2
D 504	RD3R0ESB2
D 555	HZS9LA2
D 701	RD5R1ESB1
D 901 902 903 904 905 919	ERA15-02
D 906	HZS6LB1
D 909	HZS7LC3
D 910	HZS9LA1
D 911 912 913 914 915 916	1SS133
D 918	HZS9LB2
L 501 601 851 901 Ferri-Inductor	LAU2R2K
L 502 Ferri-Inductor	CTF-157
L 602 Ferri-Inductor	LAU101K
L 701 Ferri-Inductor	LAU101K
L 2021 Inductor	LCTBR15K1608
X 501 Crystal Resonator	CSS1334
X 601 Ceramic Resonator	CSS1310
X 701 Crystal Resonator	CSS1056
S 601 Switch(Reset)	CSG1046
VR 702 Semi-fixed 2.2kΩ(B)	CCP1202
FM/AM Tuner Unit	CWE1360
Dolby NR AMST Unit	CWM4072
EF 901	CCG1003

=====Circuit Symbol & No. Part Name=====	Part No.
RESISTORS	
R 251 253 272 530 535 546 574 607 857 863	RS1/10S473J
R 252	RS1/10S103J
R 254 255 256 505 512 519 603 604 858	RS1/10S222J
R 257 258 709	RS1/10S333J
R 259	RS1/8S181J
R 260 851 852	RS1/10S181J
R 261 262	RS1/10S334J
R 263 264	RS1/10S133J
R 265 266	RS1/10S183J
R 267 270 305 471 472 853 854 910 928 930	RS1/10S223J
R 268	RS1/8S223J
R 269	RS1/10S222J
R 271	RS1/10S472J
R 273	RS1/8S0R0J
R 275	RD1/4PS333JL
R 277 313 2001 2002	RS1/10S0R0J
R 278	RS1/10S104J
R 303	RD1/4PS512JL
R 304	RS1/10S512J
R 306 532	RS1/10S102J
R 307 572	RS1/8S103J
R 308	RS1/10S563J
R 309 466	RS1/16S331J
R 310 465	RS1/10S331J
R 311	RD1/4PS821JL
R 312	RS1/8S821J
R 451 452	RS1/16S102J
R 453 454	RS1/16S162J
R 455	RD1/4PS152JL
R 456	RS1/10S152J
R 457 458	RS1/16S472J
R 459 460	RS1/16S272J
R 461 462	RS1/16S151J
R 463 464	RS1/16S101J
R 467 468 477 478 613	RS1/16S104J
R 469 470	RS1/10S471J
R 473	RS1/10S223J
R 474 513 528 567 906 912 933 935	RS1/10S103J
R 475 578	RD1/4PS471JL
R 476 932	RS1/8S471J
R 501	RS1/10S472J
R 502 514 529 608 609 610 704 859 904 919	RS1/10S472J
R 503 531	RS1/8S472J
R 515 706	RS1/10S152J
R 520 605 710	RS1/8S102J
R 521 522 523 524 525 573 703 705 714 715	RS1/10S102J
R 526 538	RS1/8S222J
R 533 534	RS1/8S473J
R 536 537 539 916 921 922 923	RD1/4PS222JL
R 541	RS1/8S0R0J

=====Circuit Symbo & No. Part Name=====	Part No.
R 55*	RS1/8S683J
R 568	RS1/10S*53J
R 569	RS1/10S221J
R 570 861 862	RS1/10S*01J
R 571 611	RD1/4PS103JL
R 577	RD*/4PS471JL
R 579	RS1/8S0R0J
R 606	RS1/10S*24J
R 612	RS1/16S223J
R 70*	RD1/4PS820JL
R 707	RS1/10S332J
R 708	RS1/10S683J
R 7*1 712	RD1/4PS*02JL
R 7*3	RS1/10S102J
R 7*6 717 718 855 856 865 866 934 936	RS1/10S102J
R 860	RS1/10S620J
R 864 905 907 908 9*3 918	RS1/10S473J
R 867 868	RD*/4PS*22JL
R 869 870	RS1/16S472J
R 903	RS1/10S101J
R 909	RS1/10S1R0J
R 9*1 929	RD1/4PS*02JL
R 9*7	RD1/4PS473JL
R 920	RS1/10S0R0J
R 924 925	RD1/4PS472JL
R 926 927	RD1/4PS*R5JL
R 931 938	RD1/4PS331JL
R 2004 2005 2010	RS1/10S0R0J
R 2007 2008	RS1/10S473J
R 2009	RS1/10S332J

CAPACITORS

C 251 309 3*6 455 456 482 859	CKSQYB104K*6
C 252 573	CKSQYB104K25
C 253	CKSQYB104K16
C 254 3*0 319 32* 904	CEA101M10LL
C 255 256 301 302 307 308 3** 312 318 453	CEA4R7M35LL
C 257 258 303 304 515 522 705 908	CKSQYB103K50
C 259 260 571	CEA330M10LL
C 26* 262	CKSQYB821K50
C 263 314 315 457 458 463 464 473	CEA100M*6LL
C 305 306	CKSQYB222K50
C 317 461 462 572 574 85* 852 853 854 855	CEA010M50LL
C 320	CEA470M10LL
C 451 452 469 470 474 607	CEA2R2M50LL
C 454 520	CEA4R7M35LL
C 459 460	CKSRYB822K25
C 465 466	CKSRYB152K50
C 467 468 511 526 2021	CCSRCH101J50
C 47* 472	CKSQYB333K25
C 475 476 485 486	CKSRYB102K50
C 477	CKSQYB332K50
C 478	CKSRYB*03K25
C 479 480	CEA100M16LL
C 481	CEA470M10LL
C 483 484	CKSQYB183K25
C 487	CEA3R3M50LL
C 488	CEA3R3M50LL
C 50* 5*9 575 576 606	CCSQCH101J50
C 503	CKSYB473K*6
C 504 506 702 707 905	CKSQYB473K16
C 505 521 713	CKSQYB223K25
C 507 581 582 583 584 585 586 587 588	CKSQYB*02K50
C 5*3 4.7 μF/16V	CCH1005
C 5*4	CF*LA474J50
C 516	CEAR47M50LL
C 517 518	CCSQCH150J50

=====Circuit Symbo & No. Part Name=====		Part No.
C 524	0.047 μF	CCG1008
C 525		CKSQYB473K16
C 55* 552 553 554		CEAR22M50LL
C 569		CEAS472M16
C 570		CEA220M*6LL
C 579		CCSQCH*0*K50
C 580		CKSQYB103K50
C 604		CEA4R7M35LL
C 605		CKSQYB473K*6
C 703 709		CKSQYB472K50
C 704		CEA*R5M50LL
C 706		CEA0R1M50LL
C 708 857 858		CEA*00M*6LL
C 7*0 7*1		CKSYB105K16
C 7*2		CSZA3R3M16
C 7*4 7*5		CCSQCH220J50
C 7*6		CKSQYB*03K25
C 856		CEA010M50LL
C 860		CKSYB104K*6
C 902	1000 μF/16V	CCH1185
C 903		CKSQYB473K50
C 906	470 μF/16V	CCH1183
C 907	330 μF/10V	CCH1181
C 9*0	100 μF/16V	CCH1179
C 91*		CKSQYB473K16
C 2001		CKSQYB473K50

Unit Number : CWM4072
Unit Name : Dolby NR AMS* Unit

MISCELLANEOUS

IC *51		HA*2*34A
VR *51 152	Semi-fixed 33kΩ/B	VRMB6HS333

RESISTORS

R *59	RD1/4PS*04JL
R *60	RS1/*0S223J
R *61	RS1/10S*83J

CAPACITORS

C *53 154	CEA4R7M35LL
C *55 156 *58	CEA0*0M50LL
C *57	CEA470M*6LL
C 159 160	CKSQYB224K*6

Unit Number : CWM4077
Unit Name : Key Board Unit

MISCELLANEOUS

IC 961		PD6*22A
D 951		MA3062L
D 952		UZMA6R2
L 951	Ferri-Inductor	LAU*50K
X 95*	Ceram*c Resonator	CSS*312
S 95* 952 953 954	Switch	CSG1044
S 955 956 957 958	Switch	CSG1044
S 959 960 961 962	Switch	CSG*044
S 963 964 965 966	Switch	CSG*044
S 967 968 969	Switch	CSG1044
L 951 952 953 954	Lamp *4V40mA	CEL134*
IL 955 956	Lamp *4V40mA	CEL1341
LCD951	LCD	CAW*3*2

RESISTORS

R 951 952	RS1/10S222J
R 953 954 955 956 957 958 959 960 96* 962	RS1/10S471J
R 963	RS1/10S471J
R 964	RS1/10S472J
R 966	RS1/10S223J

Circuit Symbol & No.	Part Name	Part No.
CAPACITORS		
C 951 952 953		CKSQYB103K25
C 954		CEA100M16LS2
Unit Number : CWE1360		
Unit Name : FM/AM Tuner Unit		
MISCELLANEOUS		
IC 1		PA2021B
IC 2		PA2022B
Q 1		3SK263
Q 2		2SC2712
Q 3		DTC124EU
Q 51		DTC124TU
Q 52		2SC4098
Q 53		2SA1162
Q 190		2SA1586
Q 191 202		2SC2712
Q 201		2SK932
D 1		1SV251
D 2 3 4		KV1410-F1
D 5		MA151WK
D 8 201		MA157-MR
D 191		MA157-MR
D 202		MA110-1A
D 203		SVC253
L 1	Inductor	LCTBR12K2125
L 2 4		CTC1108
L 3		CTC1105
L 5		CTC1107
L 51	Ferri-Inductor	LAU2R2K
L 52	Ferri-Inductor	LAU150K
L 201	Ferri-Inductor	LAU4R7K
L 203	Inductor 1mH	CTF1026
L 204	Ferri-Inductor	LAU151K
L 206	Inductor	LAU3R3K
L 207	Ferri-Inductor	LAU330K
T 2	Coil	CTE1077
T 51	Coil	CTC1119
T 204	Coil	CTE1074
T 205	Coil	CTE1075
TC 1		CCL1038
CF 51 52 201		CTF1292
CF 202		CTF1300
X 151		CSS1308
X 201	Crystal Resonator	CSS1111
VR 51	Semi-fixed 47kΩ(B)	CCP1210
VR 52	Semi-fixed 68kΩ(B)	CCP1211
VR 151	Semi-fixed 10kΩ(B)	CCP1206
AR 1	Capacitor with Discharge Gap	DSP-201M
RESISTORS		
R 1 3 16 20		RS1/16S223J
R 2		RS1/16S331J
R 4 14		RS1/16S563J
R 6		RS1/16S123J
R 8		RS1/16S271J
R 9		RS1/16S153J
R 10 32		RS1/16S682J
R 11		RS1/16S474J
R 13		RS1/16S104J
R 15 103 217		RS1/16S563J
R 17 21 206		RS1/16S332J
R 18		RS1/16S223J
R 22		RS1/16S560J
R 51		RS1/16S391J
R 52		RS1/16S182J
R 53		RS1/16S751J
R 54		RS1/16S823J
R 55 102 161 209 222		RS1/16S822J
R 56		RS1/16S272J
R 60		RS1/16S123J
R 71		RS1/16S272J
R 72		RS1/16S821J
R 73		RS1/16S331J
R 74		RS1/16S681J
R 101		RS1/16S224J
R 104		RS1/16S822J
R 153 159 239		RS1/16S103J
R 154		RS1/16S123J
R 155		RS1/16S822J
R 156		RS1/16S822J
R 157		RS1/16S562J
R 158		RS1/10S682J
R 160		RS1/16S273J
R 190		RS1/16S473J
R 191 207		RS1/16S225J
R 192		RS1/16S221J
R 193		RS1/16S224J
R 194		RS1/16S225J
R 203		RS1/16S102J
R 204 213		RS1/16S222J
R 205		RS1/16S333J
R 208		RS1/16S752J
R 214 218		RS1/16S333J
R 215 224		RS1/16S330J
R 216		RS1/16S152J
R 220		RS1/16S100J
R 221		RS1/16S273J
CAPACITORS		
C 1		CCSQCH220J50
C 2 11 19 29 51 52 62 63		CKSRYB103K50
C 3		CCSRCH470J50
C 4		CCSRRH270J50
C 6		CCSRRH040C50
C 8		CKSRYB102K50
C 9		CCSRCH470J50
C 10		CCSRRH100D50
C 12 13		CCSRCH050D50
C 14 20 21 151 227 228		CKSRYB103K50
C 15 55 58 101 161		CKSQYB104K16
C 16		CCSRCH020C50
C 17		CCSRRH100D50
C 18		CCSRRH090D50
C 23 56 104 162		CEA010M50LL
C 24 106 213 236		CKSRYB223K25
C 26 28 212		CEA330M10LL
C 27		CKSRYB103K50
C 31 73		CKSRYB333K16
C 32 103 105 206		CKSRYB222K50
C 34		CKSRYB682K50
C 53 54		CCSRCH270J50
C 57 64 66		CCSRCH101J50
C 59		CEAR47M50LL
C 61		CEAR22M50LL
C 72		CKSRYB102K50
C 164 209 210 215 220 223 225 235 239		CKSRYB103K50
C 102 154 156 163 203 219 238		CKSQYB473K16
C 152 153		CKSRYB223K25
C 155		CEAR68M50LL
C 158		CEA100M16LL
C 159		CCSRCH271J50
C 160		CKSYB105K16
C 190		CKSRYB103K50
C 191		CEA150M10LS

=====Circuit Symbol & No.	Part Name=====	Part No.
C 201		CKSRYB222K50
C 204		CCSRCH15*J50
C 205	221	CCSRCH680J50
C 207		CEA470M6R3LL
C 208		CCSRCH330J50
C 211		CKSYB105K16
C 214	230	CKSRYB472K50
C 216		CCSRCH100D50
C 217		CCSRCH22*J50
C 218		CEA4R7M35LL
C 222		CCSRCH150J50
C 224		CCSRUJ181J50
C 226		CEA4R7M35LL
C 229		CEAR68M50LL
C 232		CCSRTH180J50
C 233		CKSRYB332K50
C 234		CEA220M6R3LL
C 240		CKSRYB103K50

=====Circuit Symbol & No.	Part Name=====	Part No.
Unit Number :		
Unit Name	: P.C.Board(A)	
S 2	Switch(FWD/REV)	ESH1003
Unit Number :		
Unit Name	: P.C.Board(B)	
S 3	Switch(TAPE/TUN)	ESN1011
S 4	Switch(MUTE B)	ESH1004
Miscellaneous Parts List		
S 1	Switch(MUTE A)	ESN1014
M 1	Motor Unit	EXA1304
HD 1	Head Assy	EXA1366

● The KEH-P5100RDS, KEH-P4200RDS, KEH-P4100RDS, KEH-P24RDS, KEH-P14RDS, KEH-3900RDS and KEH-3800RDS Parts Lists enumerate the parts which differ from those enumerated in the KEH-P5200RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The KEH-P5200RDS Parts List is given on page 17.

Tuner Amp Unit

Circuit Symbol & No.	KEH-P5100RDS KEH-P5200RDS Part No.	KEH-P4100RDS KEH-P4200RDS Part No.	KEH-P14RDS KEH-P24RDS Part No.	KEH-3800RDS KEH-3900RDS Part No.
IC301	PA0059AM	PA0059AM	•••••	•••••
IC851	TA2050S	TA2050S	TA2050S	•••••
IC852	PA0051AM	PA0051AM	PA0051AM	•••••
Q301	2SC2458	2SC2458	•••••	•••••
Q302	2SA1048	2SA1048	•••••	•••••
Q481,482	DTC143TK	DTC143TK	DTC143TK	•••••
Q483	DTA124EK	DTA124EK	DTA124EK	•••••
Q484	DTA124ES	DTA124ES	•••••	•••••
Q485,486	DTC143TS	DTC143TS	•••••	•••••
Q851	2SA1048	2SA1048	2SA1048	•••••
Q852	DTC124ES	DTC124ES	DTC124ES	•••••
D301,302,303	1SS133	1SS133	•••••	•••••
L851	LAU2R2K	LAU2R2K	LAU2R2K	•••••
Dolby NR AMS Unit	CWM4072	•••••	•••••	•••••
R259	RS1/8S181J	RS1/8S470J	RS1/8S470J	RS1/8S470J
R260	RS1/10S181J	RS1/10S470J	RS1/10S470J	RS1/10S470J
R265,266	RS1/10S183J	•••••	•••••	•••••
R273	RS1/8S0R0J	RS1/8S0R0J	•••••	•••••
R274	•••••	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J
R303	RD1/4PS512JL	RD1/4PS512JL	•••••	•••••
R304	RS1/10S512J	RS1/10S512J	•••••	•••••
R305	RS1/10S223J	RS1/10S223J	•••••	•••••
R306	RS1/10S102J	RS1/10S102J	•••••	•••••
R307	RS1/8S103J	RS1/8S103J	•••••	•••••
R308	RS1/10S563J	RS1/10S563J	•••••	•••••
R309	RS1/16S331J	RS1/16S0R0J	RS1/16S0R0J	RS1/16S0R0J
R310	RS1/10S331J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J
R311	RD1/4PS821JL	•••••	•••••	•••••
R312	RS1/8S821J	•••••	•••••	•••••
R313	RS1/10S0R0J	•••••	•••••	•••••

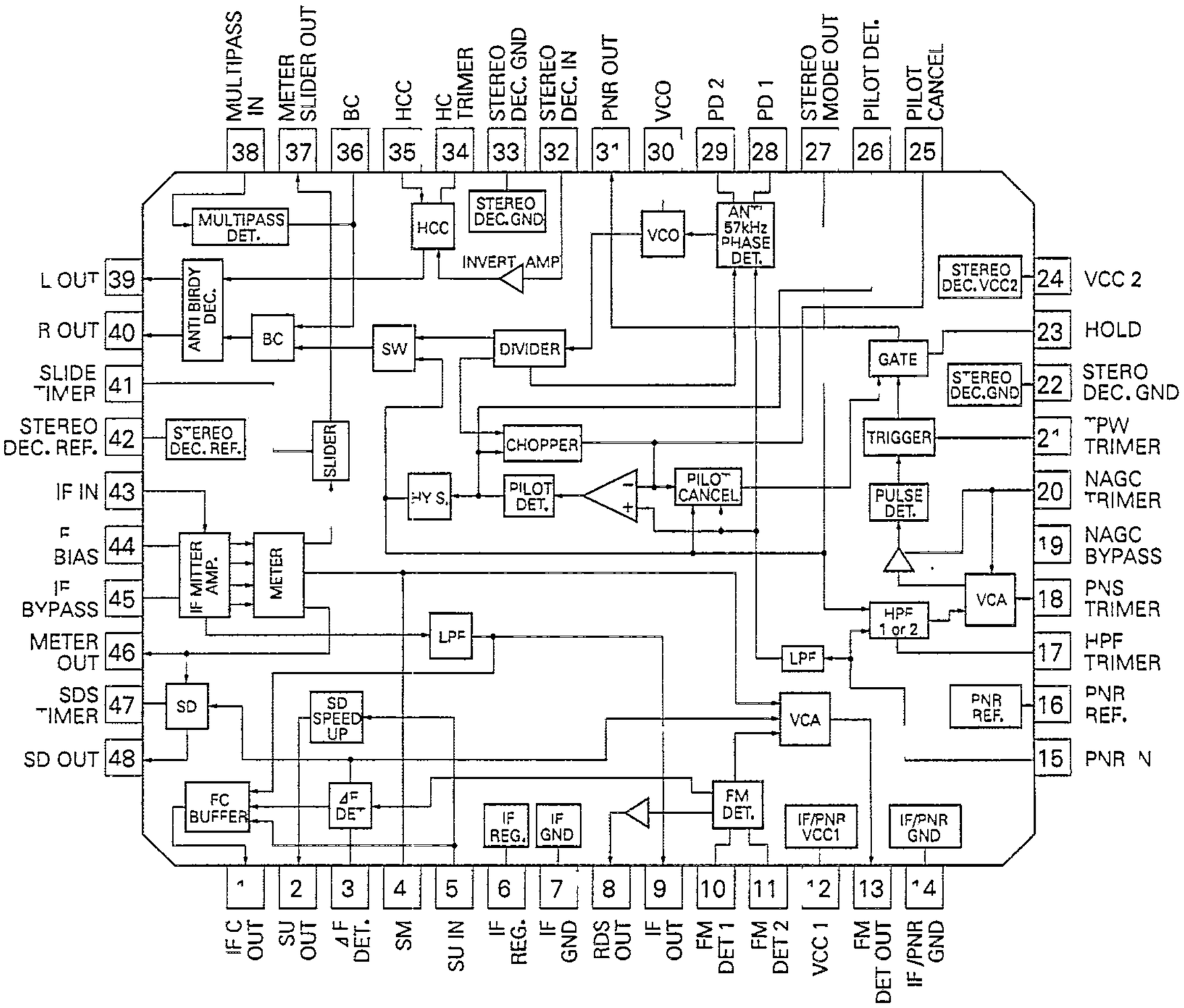
Circuit Symbol & No.	KEH-P5100RDS KEH-P5200RDS Part No.	KEH-P4100RDS KEH-P4200RDS Part No.	KEH-P14RDS KEH-P24RDS Part No.	KEH-3800RDS KEH-3900RDS Part No.
R455	RD1/4PS152JL	RD1/4PS152JL	•••••	•••••
R456	RS1/10S152J	RS1/10S152J	•••••	•••••
R457,458	RS1/16S472J	RS1/16S472J	•••••	•••••
R469,470	RS1/10S471J	RS1/10S471J	RS1/10S471J	•••••
R471,472	RS1/10S223J	RS1/10S223J	RS1/10S223J	•••••
R477,478	RS1/16S104J	RS1/16S104J	•••••	•••••
R603	RS1/10S222J	•••••	RS1/10S222J	•••••
R604	RS1/10S222J	RS1/10S222J	•••••	•••••
R851,852	RS1/10S181J	RS1/10S181J	RS1/10S181J	•••••
R853,854	RS1/10S223J	RS1/10S223J	RS1/10S223J	•••••
R855,856	RS1/10S102J	RS1/10S102J	RS1/10S102J	•••••
R857	RS1/10S473J	RS1/10S473J	RS1/10S473J	•••••
R858	RS1/10S222J	RS1/10S222J	RS1/10S222J	•••••
R859	RS1/10S472J	RS1/10S472J	RS1/10S472J	•••••
R860	RS1/10S620J	RS1/10S620J	RS1/10S620J	•••••
R861,862	RS1/10S101J	RS1/10S101J	RS1/10S101J	•••••
R863,864	RS1/10S473J	RS1/10S473J	RS1/10S473J	•••••
R865,866	RS1/10S102J	RS1/10S102J	RS1/10S102J	•••••
R867,868	RD1/4PS122JL	RD1/4PS122JL	RD1/4PS122JL	•••••
R869,870	RS1/16S472J	RS1/16S472J	RS1/16S472J	•••••
R1001	•••••	•••••	RS1/16S0R0J	RS1/16S0R0J
R1002	•••••	•••••	RS1/10S0R0J	RS1/10S0R0J
C259,260	CEA330M10LL	CEA101M10LL	CEA101M10LL	CEA101M10LL
C301,302	CEA4R7M35LL	CEA4R7M35LL	•••••	•••••
C303,304	CKSQYB103K50	CKSQYB103K50	•••••	•••••
C305,306	CKSQYB222K50	CKSQYB222K50	•••••	•••••
C307,308	CEA4R7M35LL	CEA4R7M35LL	•••••	•••••
C309,316	CKSQYB104K16	CKSQYB104K16	•••••	•••••
C310,319	CEA101M10LL	CEA101M10LL	•••••	•••••
C311,312,318	CEA4R7M35LL	CEA4R7M35LL	•••••	•••••
C314,315	CEA100M16LL	CEA100M16LL	•••••	•••••
C317	CEA010M50LL	CEA010M50LL	•••••	•••••
C320	CEA470M10LL	CEA470M10LL	•••••	•••••
C321	CEA101M10LL	CEA101M10LL	•••••	•••••
C479,480	CEA100M16LL	CEA100M16LL	CEA100M16LL	•••••
C487,488	CEA3R3M50LL	CEA3R3M50LL	•••••	•••••
C851,852	CEA010M50LL	CEA010M50LL	CEA010M50LL	•••••
C853,854	CEA010M50LL	CEA010M50LL	CEA010M50LL	•••••
C855,856	CEA010M50LL	CEA010M50LL	CEA010M50LL	•••••
C857,858	CEA100M16LL	CEA100M16LL	CEA100M16LL	•••••
C859	CKSQYB104K16	CKSQYB104K16	CKSQYB104K16	•••••
C860	CKSYB104K16	CKSYB104K16	CKSYB104K16	•••••

Key Board Unit

Circuit Symbol & No.	KEH-3900RDS KEH-P24RDS KEH-P4200RDS KEH-P5200RDS Part No.	KEH-3800RDS KEH-P14RDS KEH-P4100RDS KEH-P5100RDS Part No.
D951	MA3062L	MA3056M
LCD951	CAW1312	CAW1313
IL951,952,953	CEL1341	CEL1295
IL954,955,956	CEL1341	CEL1295

● ICs

PA2022B



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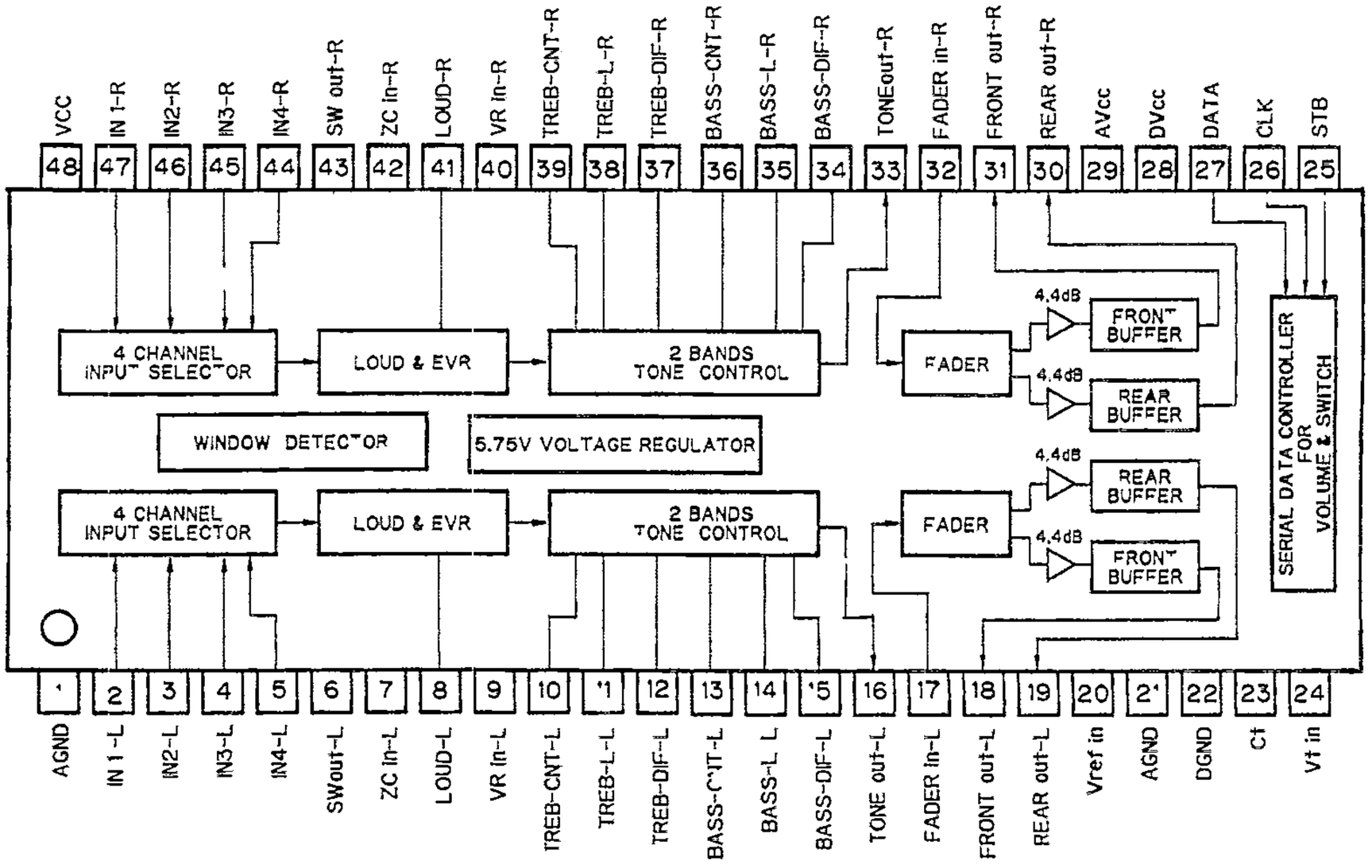

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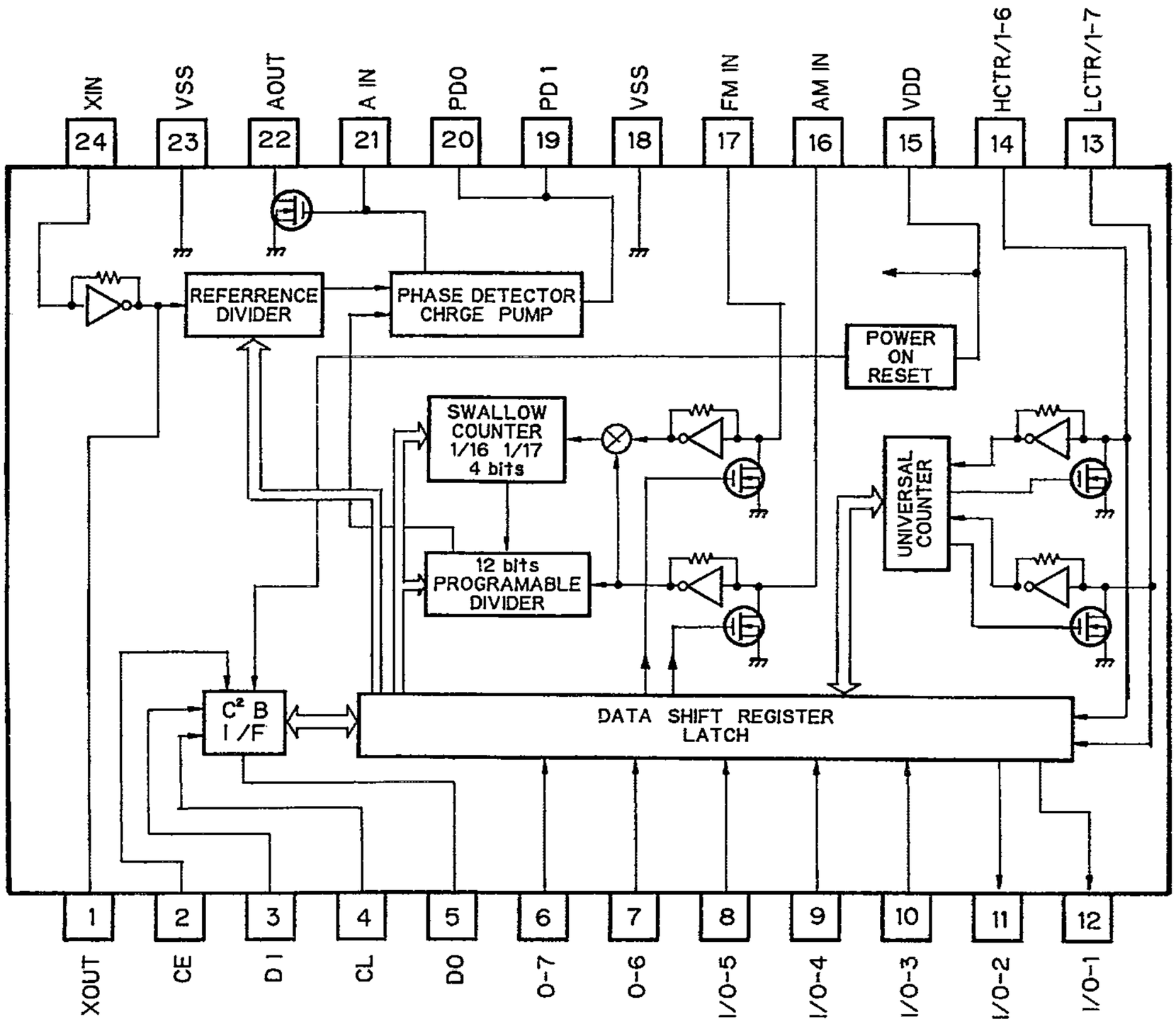

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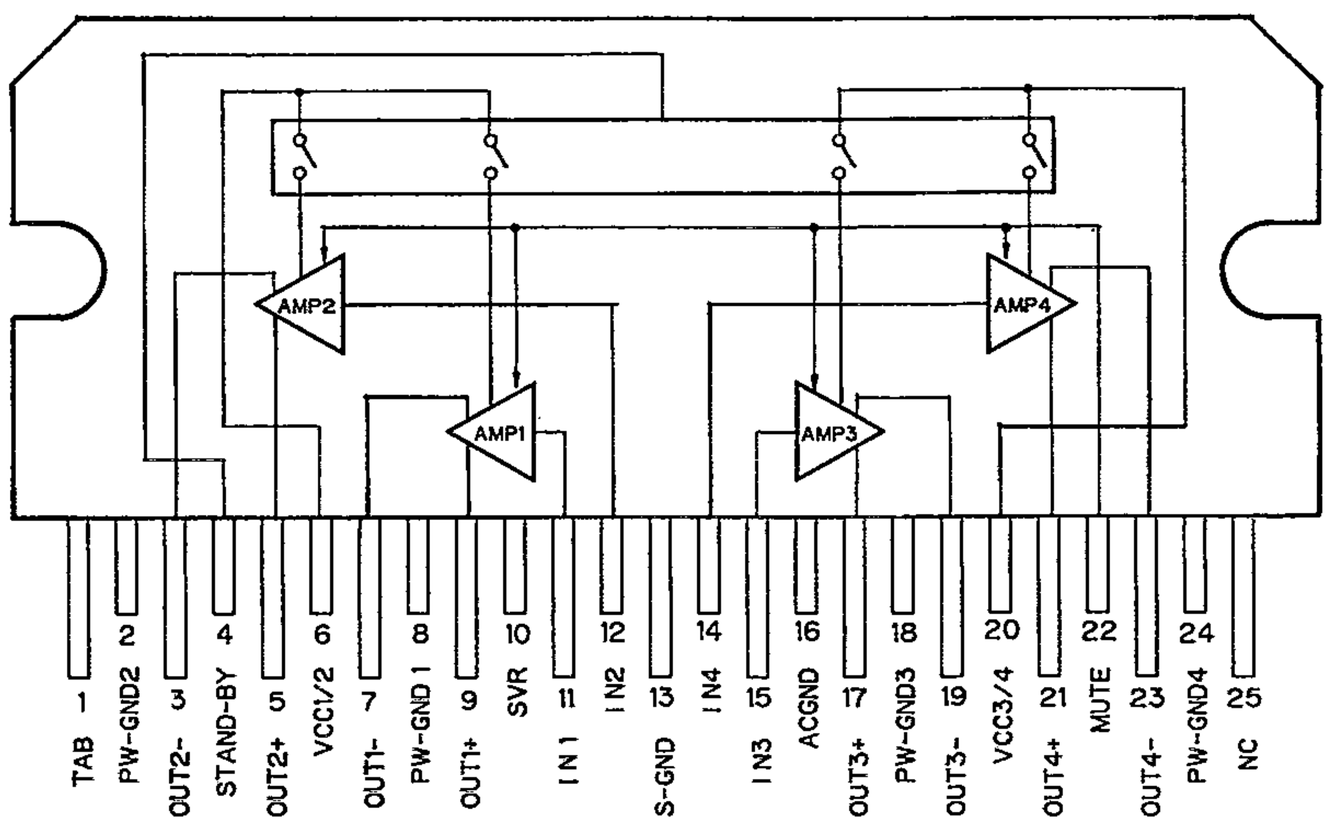
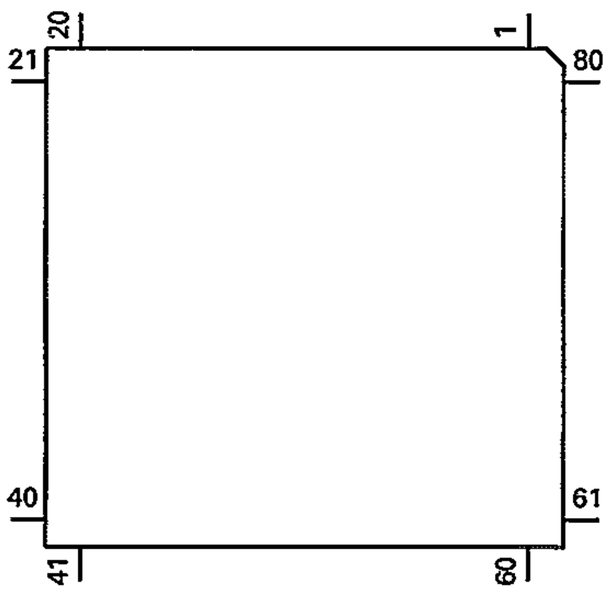


● Pin Functions (PDR017A)

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1	NC			Not used
2,3	SEL1,2	I		Model select pin
4	AVSS			GND
5,6	SEL3,4	I		Model select pin
7	AVREF1	I		A/D converter reference voltage input
8	KYDT	I		Key data input
9	DPDT	O		Display data output
10	$\overline{\text{SWVDD}}$	O	C	Key board unit power supply control output
11–13	NC			Not used
14	MONO	O	C	Forced mono output
15	SD	I		FM SD input
16	PDI	I		Data input from PLL IC
17	PDO	O	C	Data output for PLL IC
18	PCK	O	C	Clock output for PLL IC
19	PCE	O	C	Chip enable output for PLL IC
20–23	NC			Not used
24	LPASS	O		Low pass filter control output
25	CORR	O		Error output
26	RECIVE	O		Not used
27	$\overline{\text{DRST}}$	O		RDS decoder reset output
28	$\overline{\text{DK}}$	I		DK signal input
29	$\overline{\text{SK}}$	I		SK signal input
30	$\overline{\text{RDSLK}}$	I		RDS LK signal input
31	RDT	I		RDS demodulation data input
32	FZOUT	O		Fuzzy control output
33	VSS			GND
34	$\overline{\text{TMUTE}}$	O	C	Tuner mute output
35	DKOUT	O	C	Mute release output for mechanism
36	MUTE	O	N	Mute output
37,38	NC			Not used
39	$\overline{\text{HARF}}$	I		Cassette tape set sense input
40	ILMPW	O	C	Illumination power supply control output
41	VDT	O	C	Data output for electronic volume
42	VCK	O	C	Clock output for electronic volume
43	VST	O	C	Strobe pulse output for electronic volume
44	NC			Not used
45	PEE	O	C	Beep tone output
46	SYSPW	O	C	System power supply control output
47	AM	O	C	AM power control output
48	FM	O	C	FM power control output
49	PCL	O	C	Clock adjustment output
50	PELL	O	C	Beep tone level control output
51	MECPW	O	C	Cassette mechanism power output
52	MTL	O	C	Cassette mechanism tape select output
53	NR	O	C	Dolby NR ON/OFF select output
54	FLEX	O	C	FLEX output
55	ASENBO	O	C	Slave power supply control output
56	TX	O	C	IP BUS data output
57	RX	I		IP BUS data input
58	$\overline{\text{IPPW}}$	O	C	Power supply control output for IP BUS interface IC
59	$\overline{\text{MCMUTE}}$	I		Cassette mechanism mute input
60	RESET	I		Reset input
61	$\overline{\text{RCK}}$	I		RDS demodulation clock input
62	$\overline{\text{BSENS}}$	I		Back up power sense input
63	$\overline{\text{ASENS}}$	I		ACC power sense input
64	$\overline{\text{DSENS}}$	I		Grille detach sense

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
65	$\overline{\text{TAPLD}}$	I		Tape loading input
66	NOR/$\overline{\text{REV}}$	I		Tape direction input
67	CLKIN	I		Clock input from PLL IC
68	VDD			Power supply
69,70	X2,X1			Crystal oscillating element connection pin
71	VPP			Not used
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	AVDD			Power supply
75	AVREF0	I		A/D converter reference voltage input
76	FMSL	I		FM signal level input
77	AMSL	I		AM signal level input
78	SLIN	I		RDS signal level input
79	FZIN	I		RDS fuzzy level input
80	NC			Not used

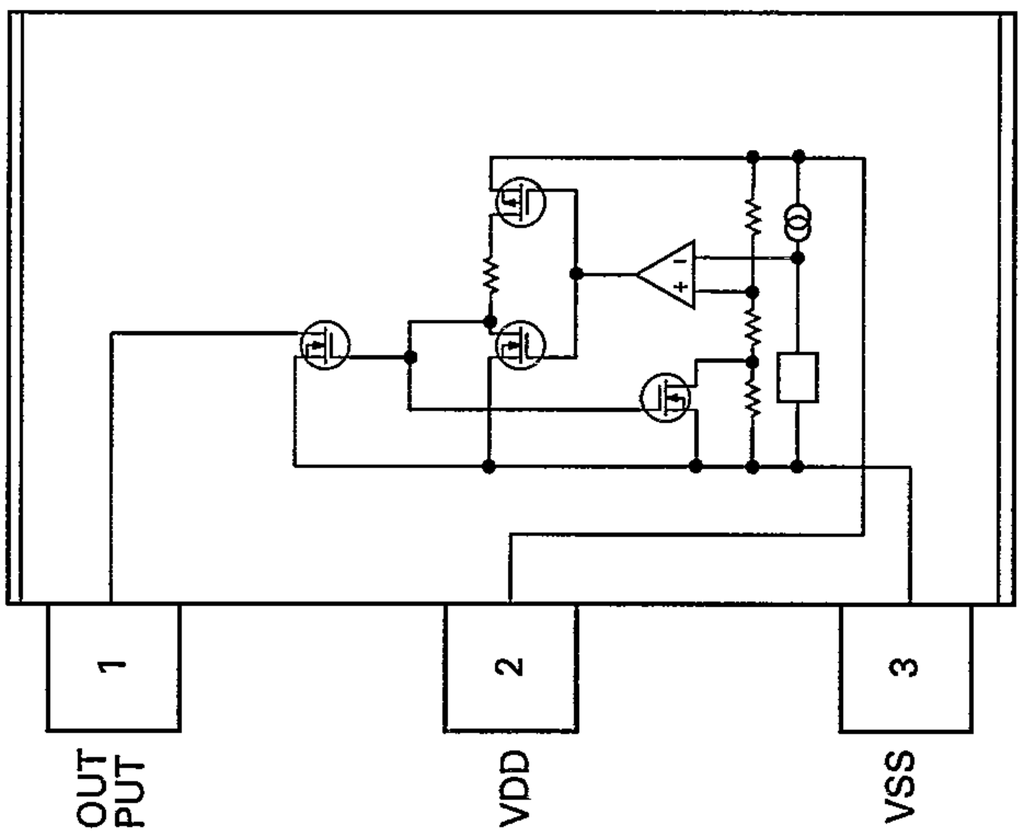
*PDR017A



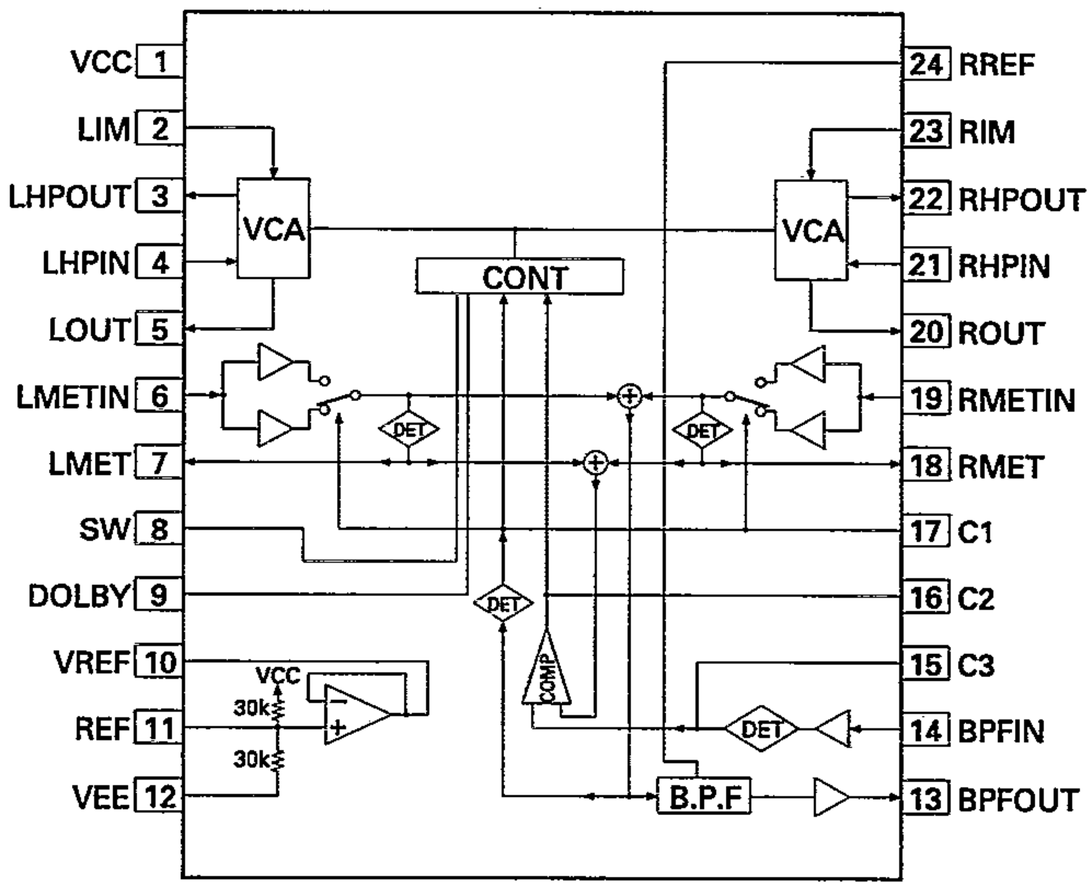
IC's marked by are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

I/O Format	Meaning
C	C MOS
N	N channel open drain

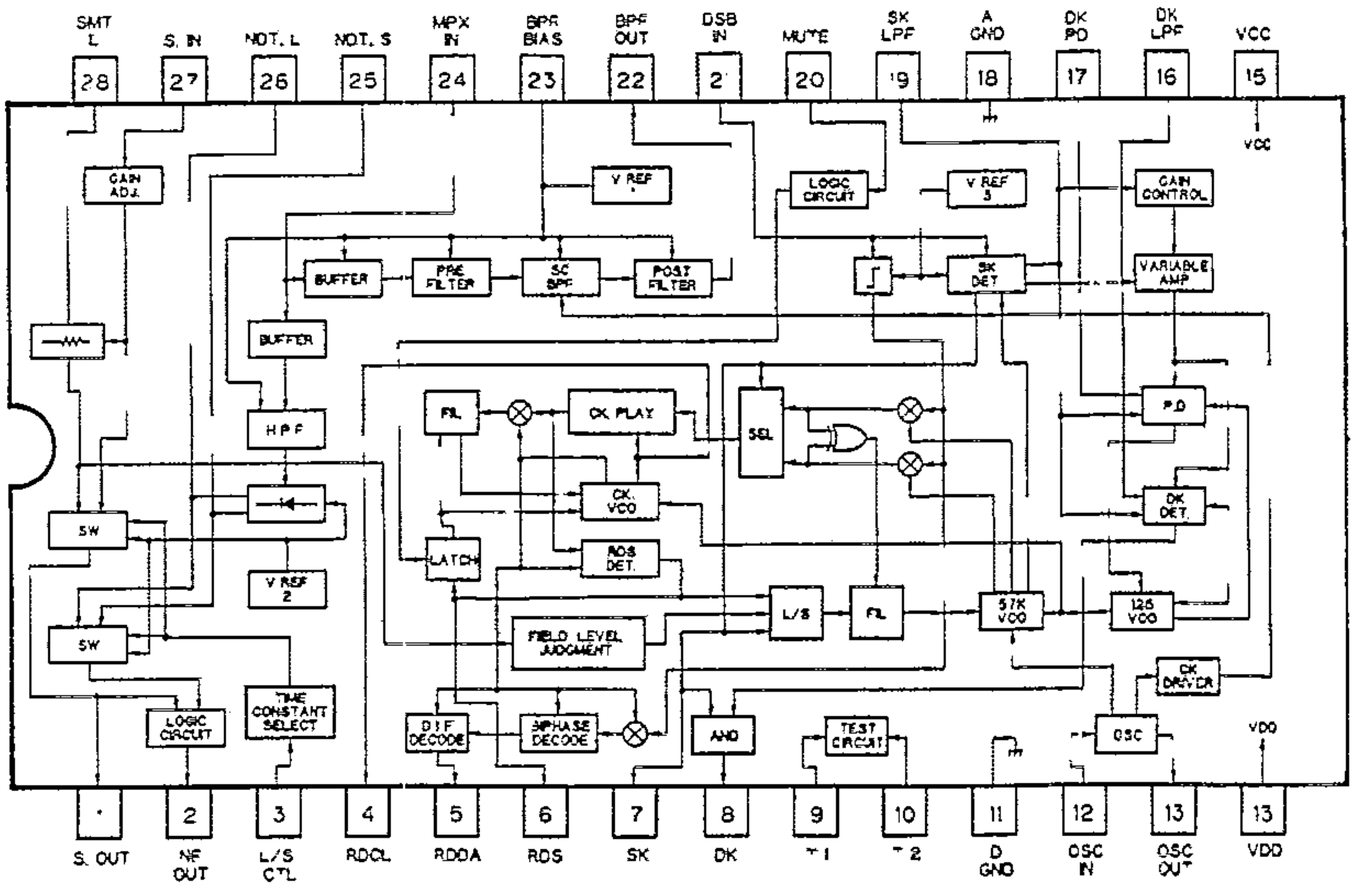
*S-80734AN



PA0059AM

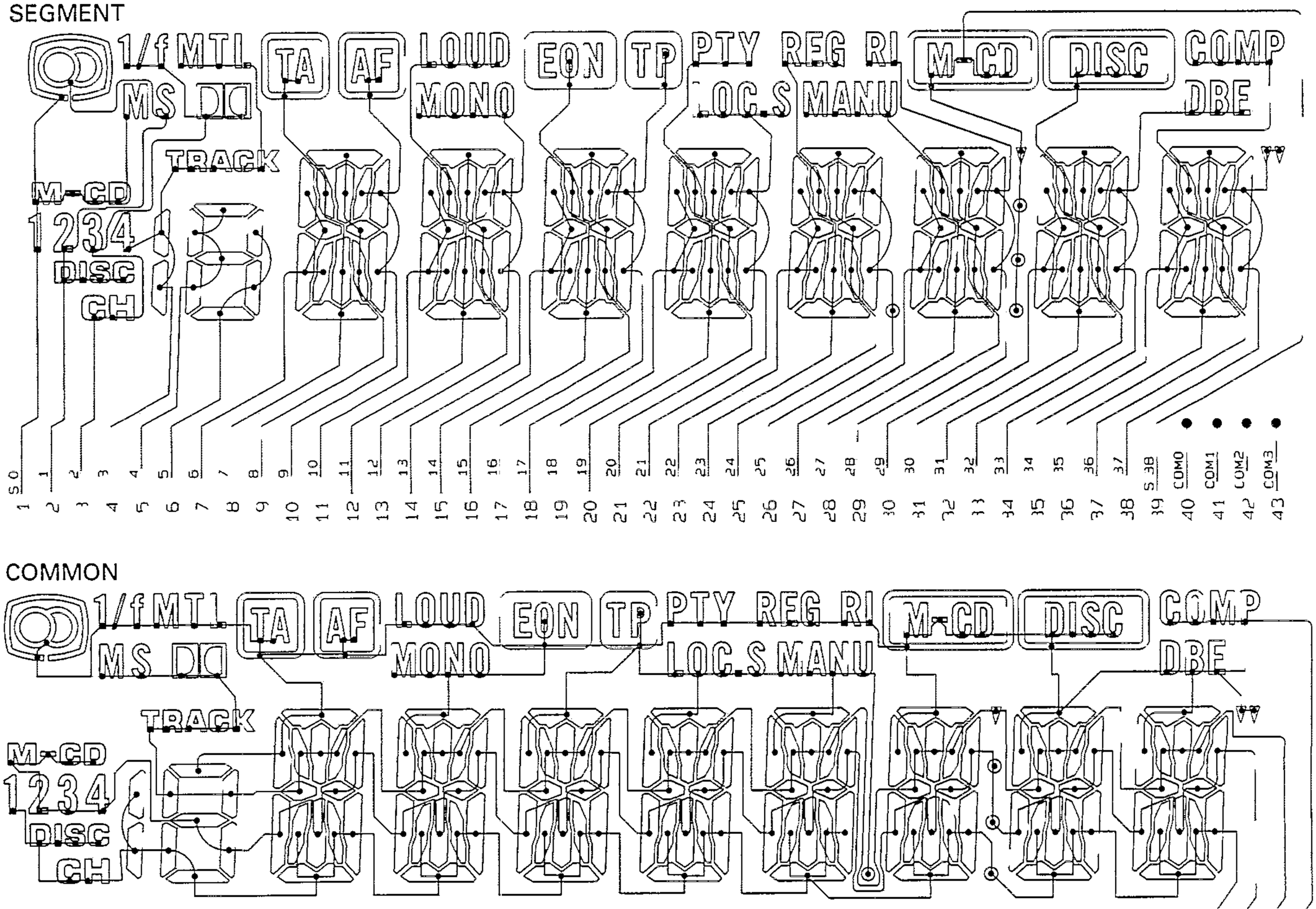


*PMR001B



● LCD (CAW1312, CAW1313)

SEGMENT



COMMON

Fig.15

7. BLOCK DIAGRAM

● **KEH-P5200RDS/EW**

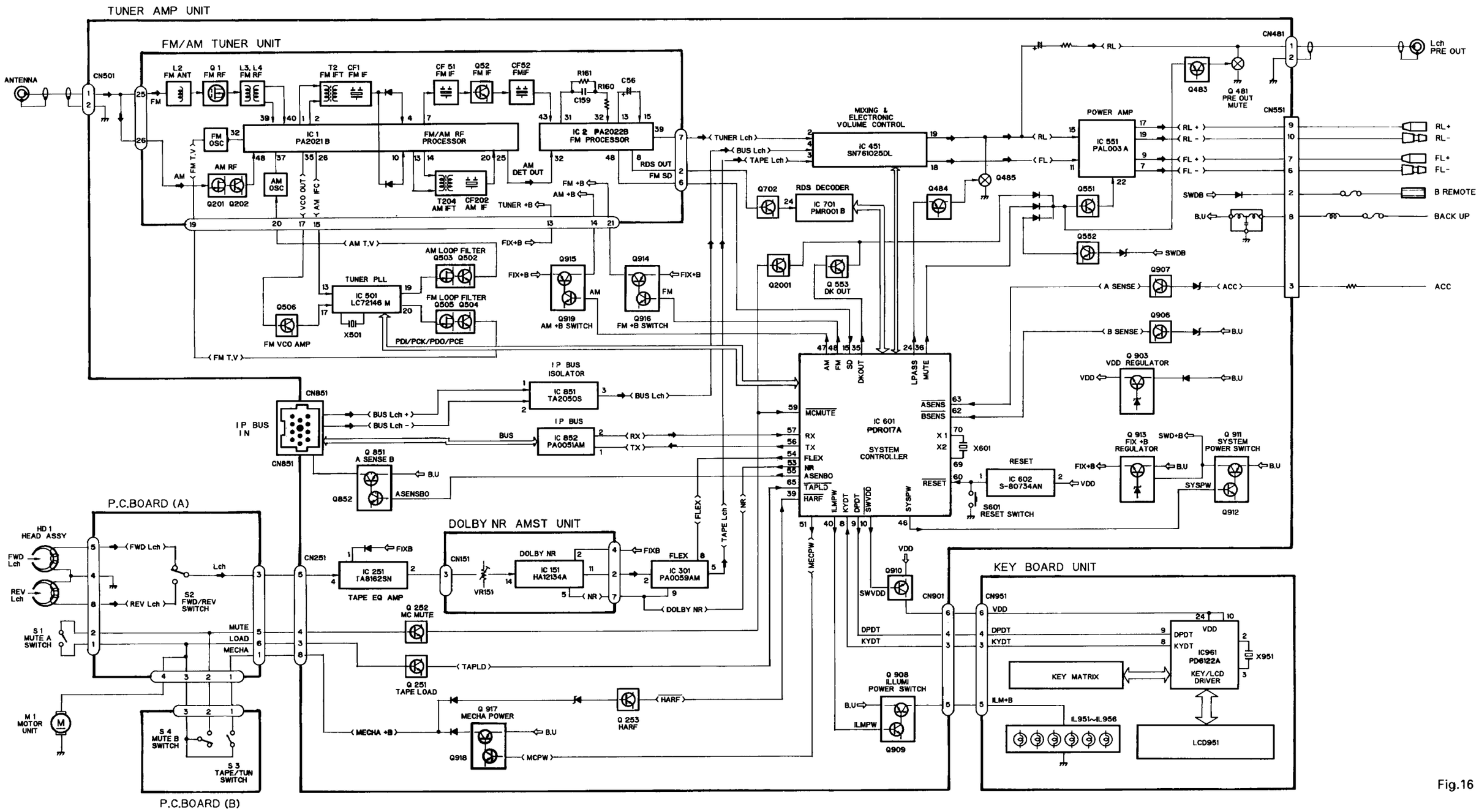
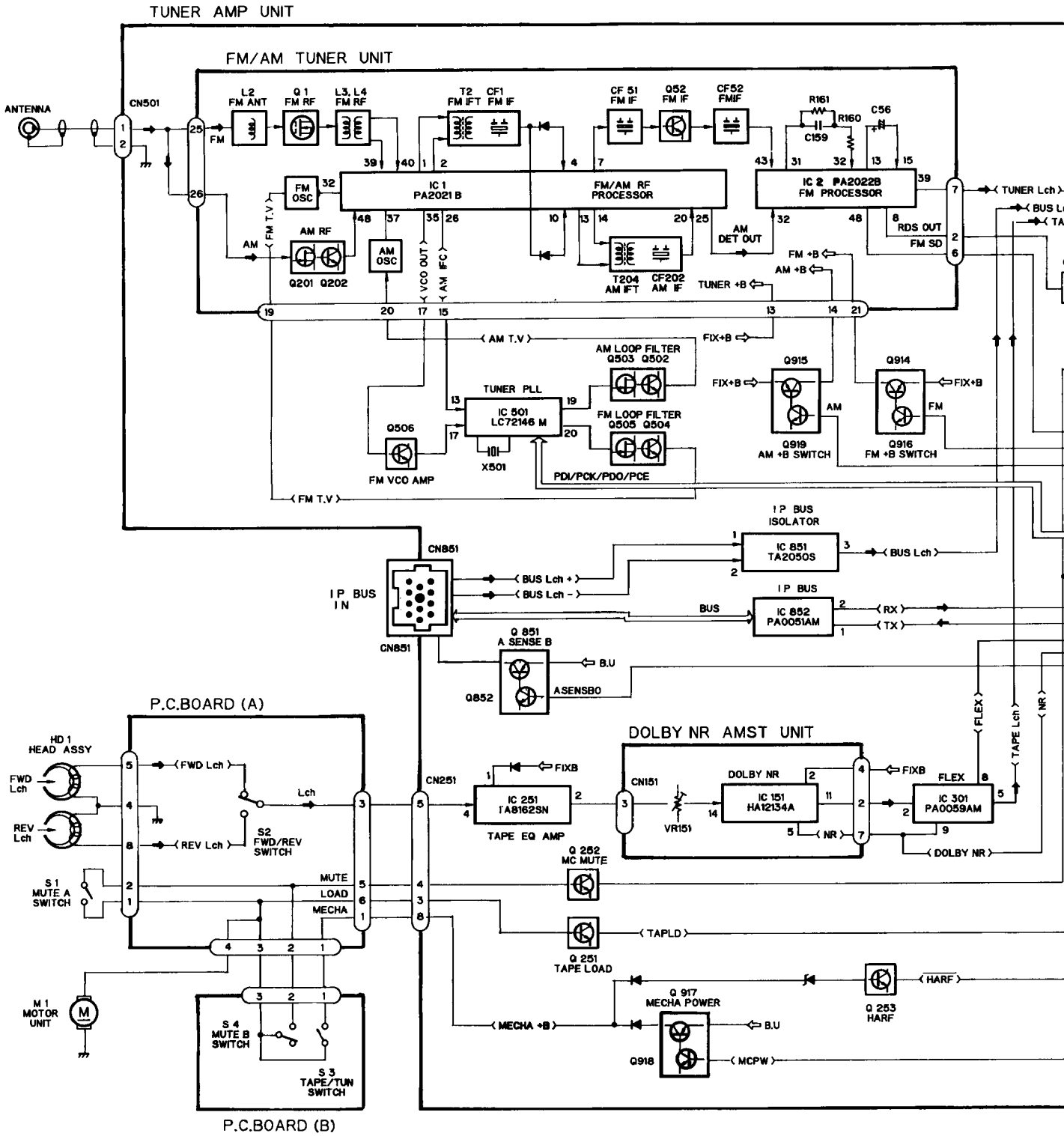


Fig.16

7. BLOCK DIAGRAM

● **KEH-P5200RDS/EW**



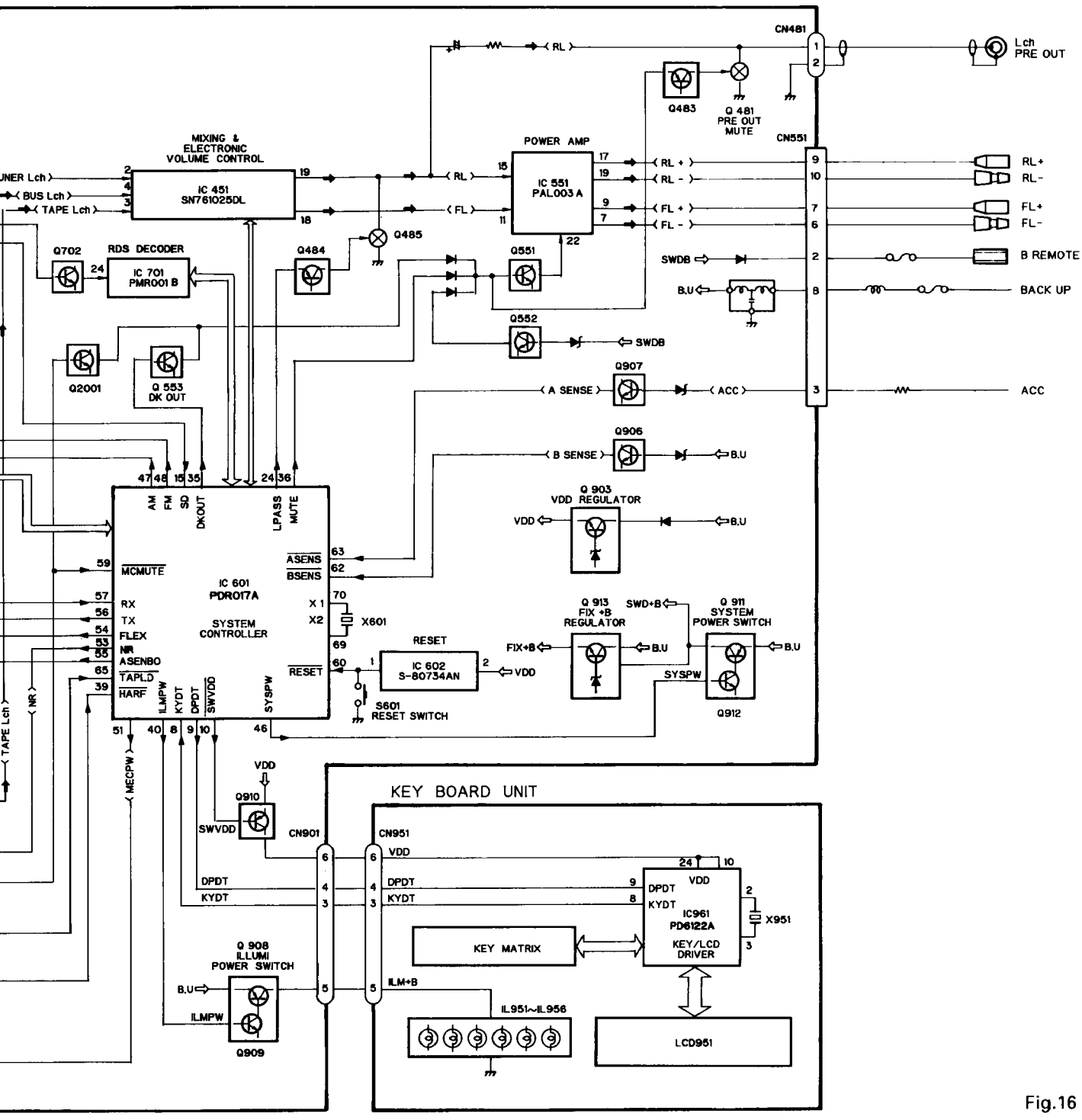
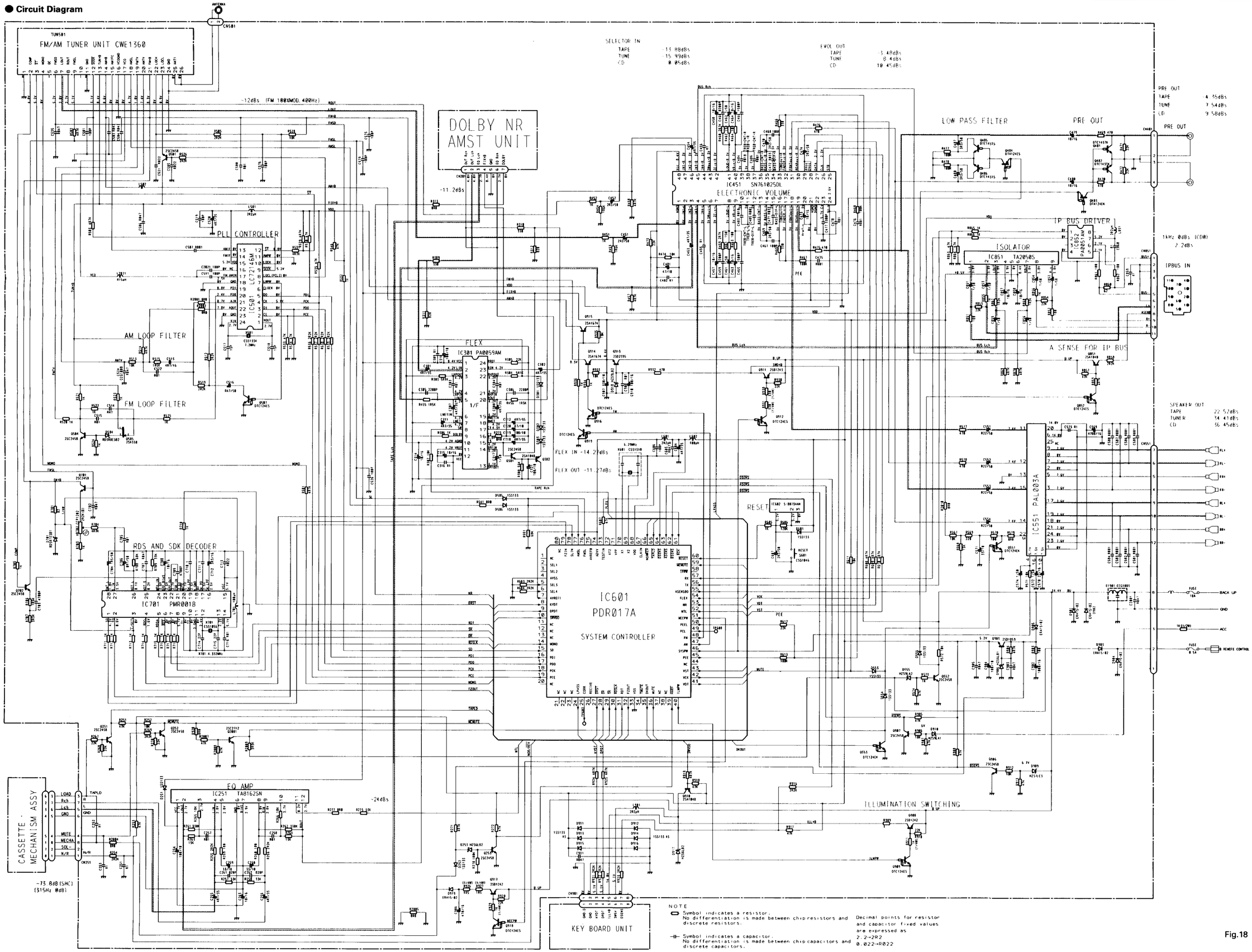

CN481
Lch PRE OUT
Q483
Q 481 PRE OUT MUTE
MIXING & ELECTRONIC VOLUME CONTROL
IC 451 SN761025DL
POWER AMP
IC 551 PAL003 A
CN551
RL+
RL-
FL+
FL-
B REMOTE
BACK UP
ACC
Q702
RDS DECODER
IC 701 PMR001 B
Q484
Q485
Q551
Q552
SWDB
B.U
Q2001
Q 553 DK OUT
Q907
A SENSE
Q906
B SENSE
Q 903 VDD REGULATOR
VDD
IC 601 PDR017A
SYSTEM CONTROLLER
MCMUTE
RX
TX
FLEX
NR
ASENBO
TAPLD
HARF
ASENS
BSENS
X601
RESET
IC 602 S-80734AN
S601 RESET SWITCH
Q 913 FIX +B REGULATOR
FIX+B
SWD+B
Q 911 SYSTEM POWER SWITCH
SYSPW
Q912
TAPE Lch
MECPW
Q910
SWVDD
KEY BOARD UNIT
CN901
CN951
DPDT
KYDT
IC961 PD6122A
KEY/LCD DRIVER
X951
KEY MATRIX
Q 908 ILLUMI POWER SWITCH
ILMPW
ILM+B
IL951~IL956
LCD951
Q909

Fig.16

● **Circuit Diagram**



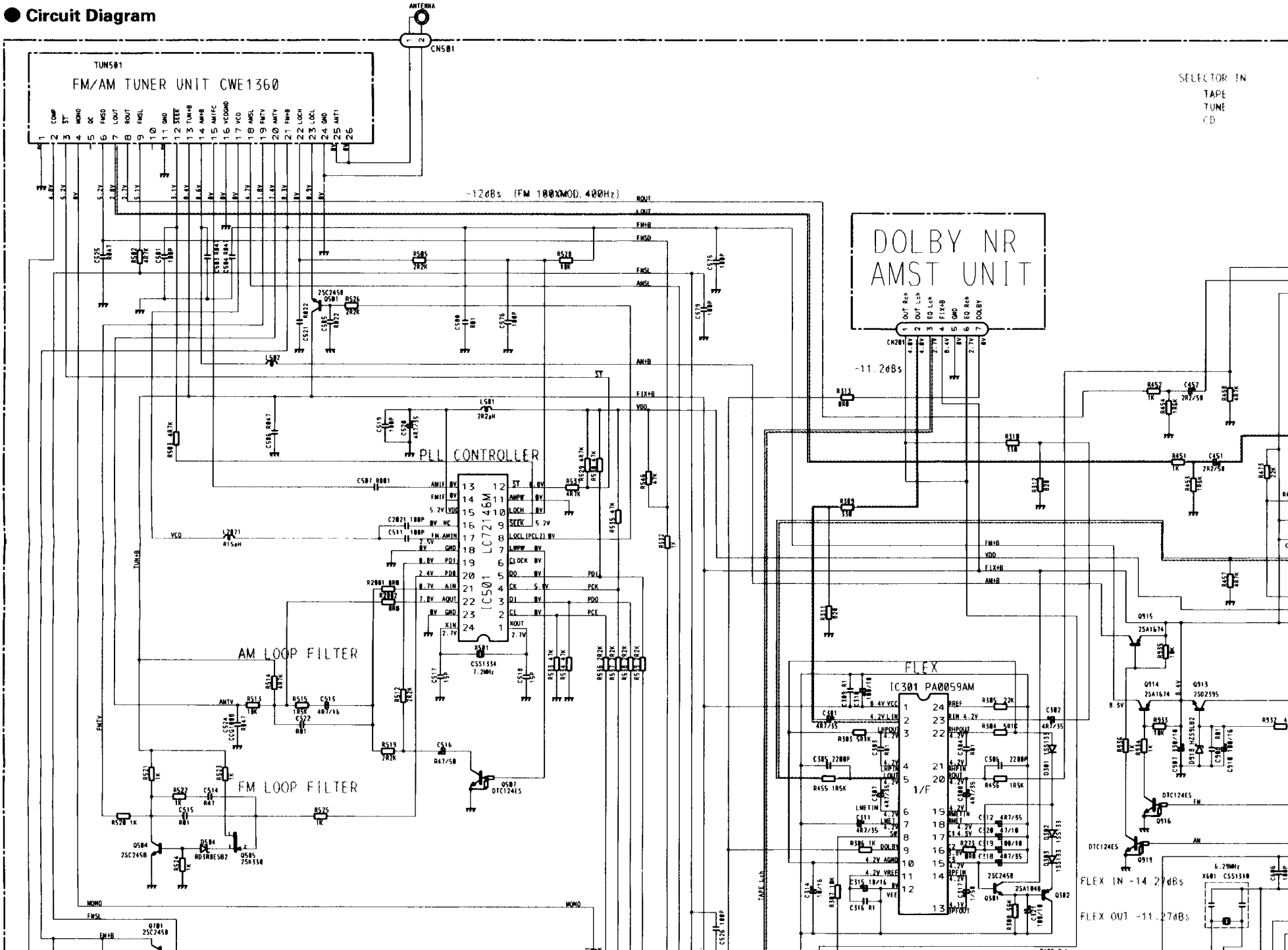
NOTE

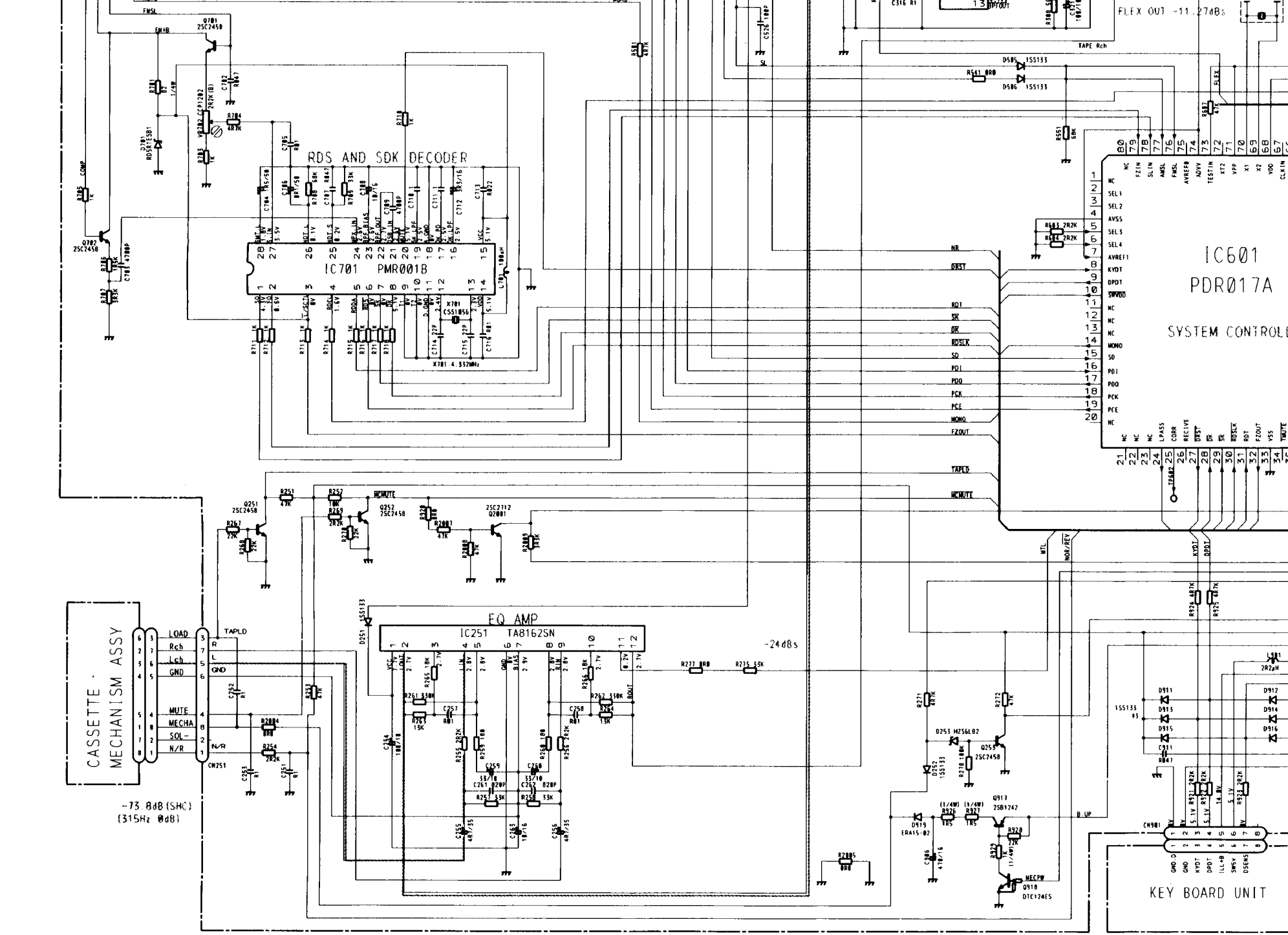
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

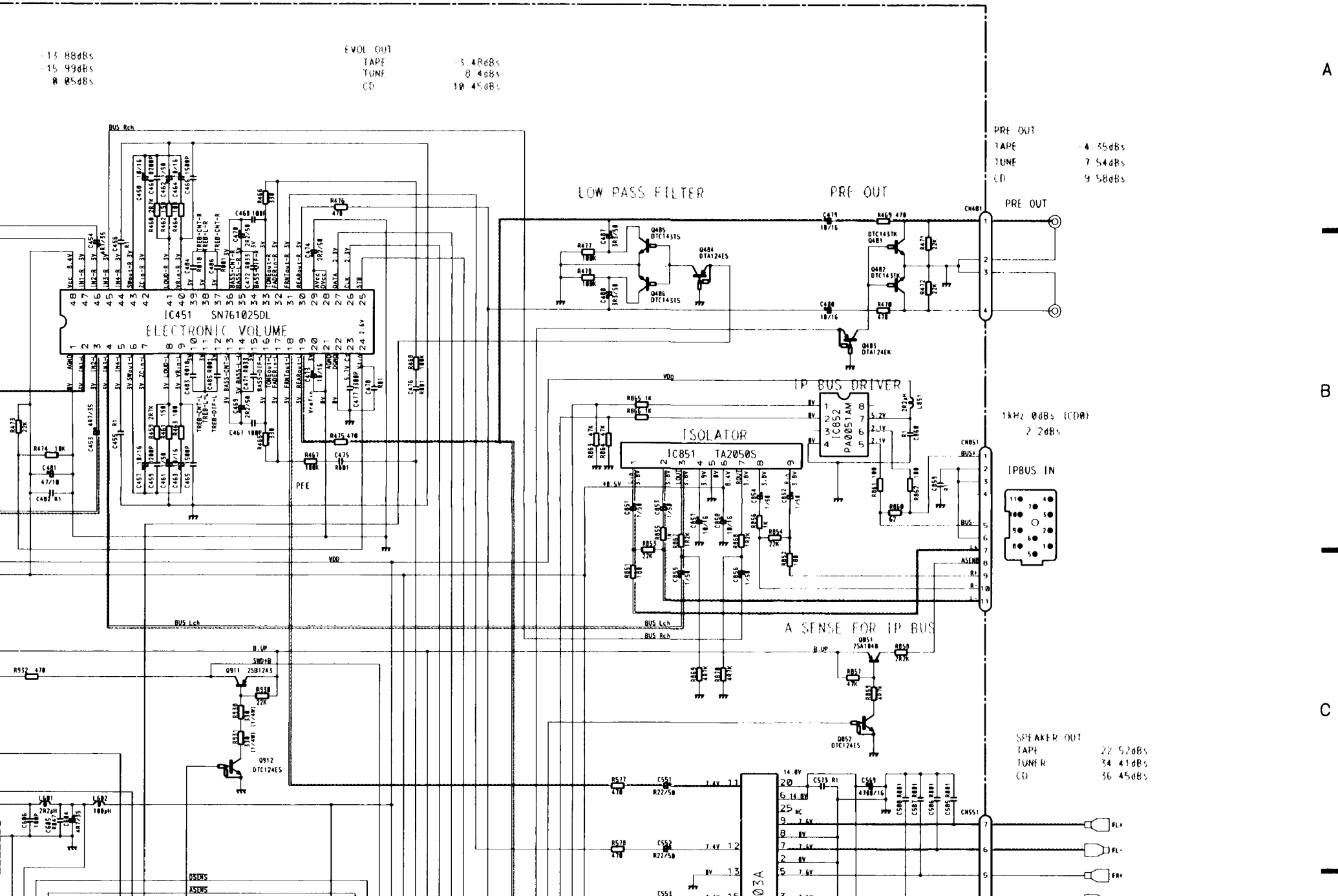
Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

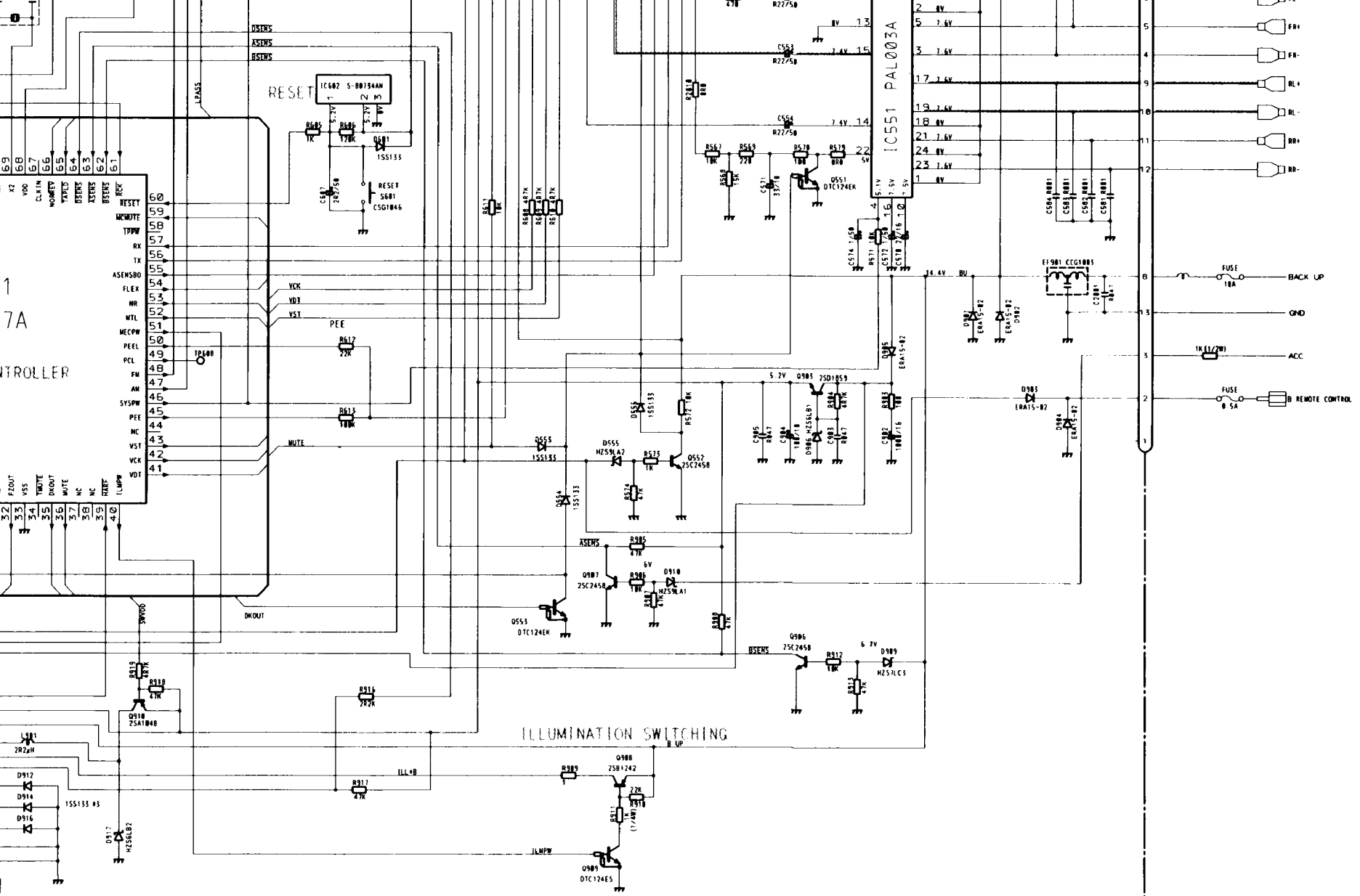
Fig.18

● Circuit Diagram




RDS AND SDK DECODER
IC701 PMR001B
X701 CSS1056
X701 4.332MHz
EQ AMP
IC251 TA8162SN
IC601
PDR017A
SYSTEM CONTROLL
CASSETTE - MECHANISM ASSY
LOAD
Rch
Lch
GND
MUTE
MECHA
SOL
N/R
CN251
TAPLD
-73.8dB (SHC)
(315Hz 0dB)
-24dBs
FLEX OUT -11.27dBs
TAPE Rch
KEY BOARD UNIT
CN901
SYSTEM CONTROLL


-13.88dBs
-15.99dBs
0.85dBs
EVOL OUT
TAPE -3.48dBs
TUNE 8.4dBs
CD 10.45dBs
BUS Rch
IC451 SN761025DL
ELECTRONIC VOLUME
LOW PASS FILTER
PRE OUT
PRE OUT
TAPE -4.35dBs
TUNE 7.54dBs
CD 9.58dBs
IP BUS DRIVER
IC852 PA0051AM
ISOLATOR
IC851 TA2050S
1kHz 0dBs (CD0)
2.2dBs
IPBUS IN
A SENSE FOR IP BUS
SPEAKER OUT
TAPE 22.52dBs
TUNER 34.41dBs
CD 36.45dBs
BUS Lch
BUS Rch
VDD
ASENS
DSENS



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.

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

Fig.18

8.2 TUNER AMP UNIT (KEH-P4200RDS, P4100RDS)

● **Circuit Diagram**

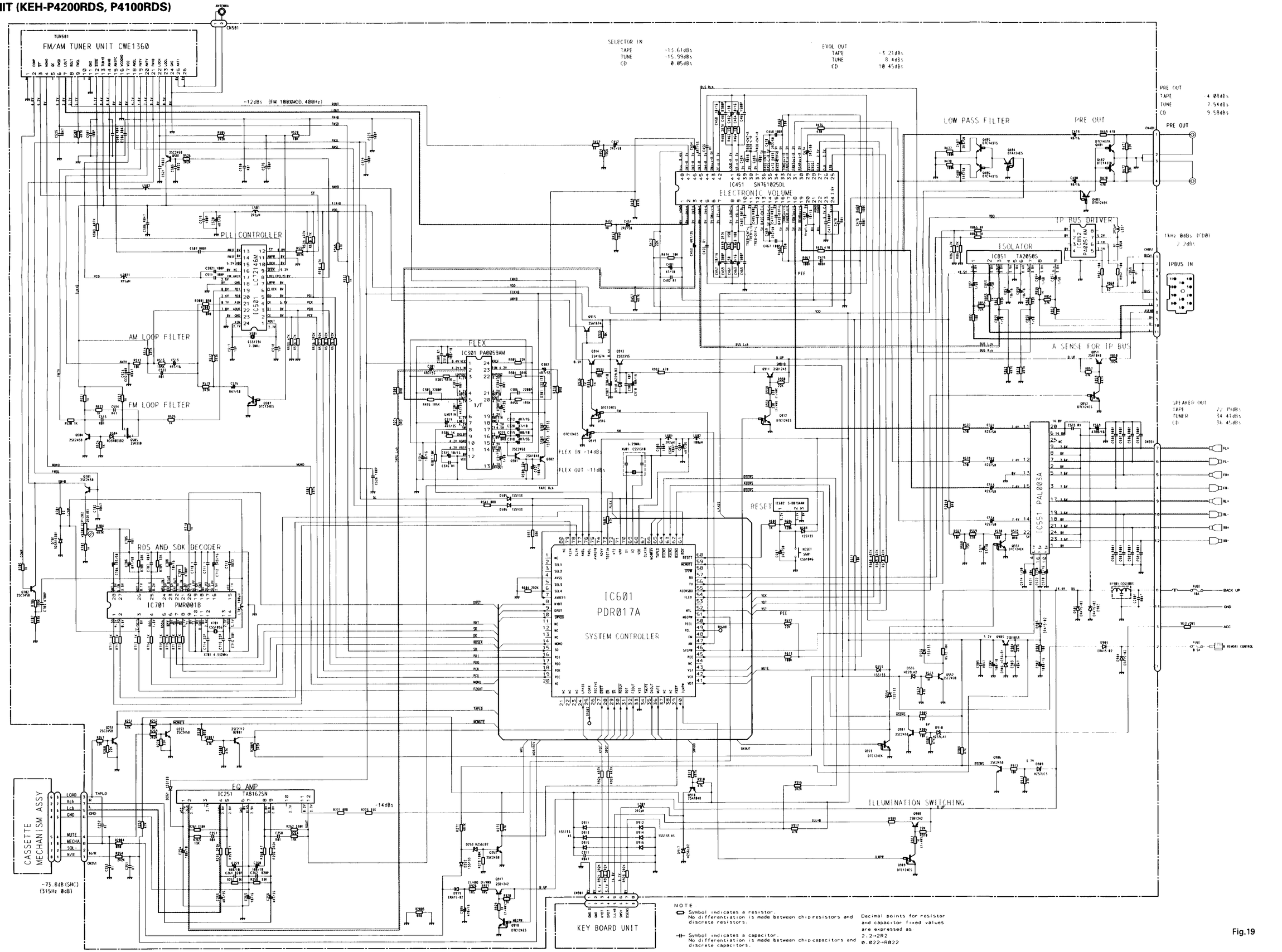
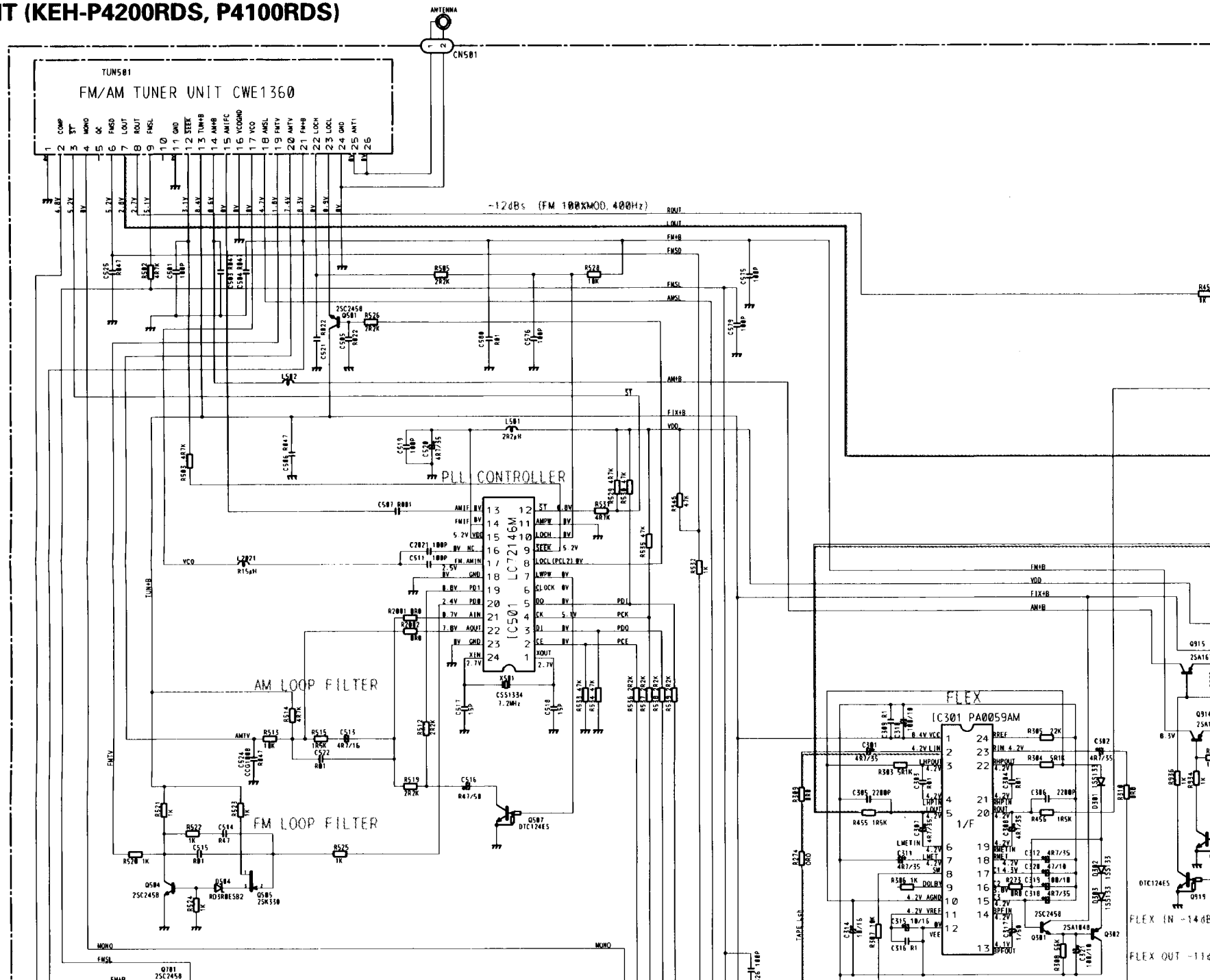
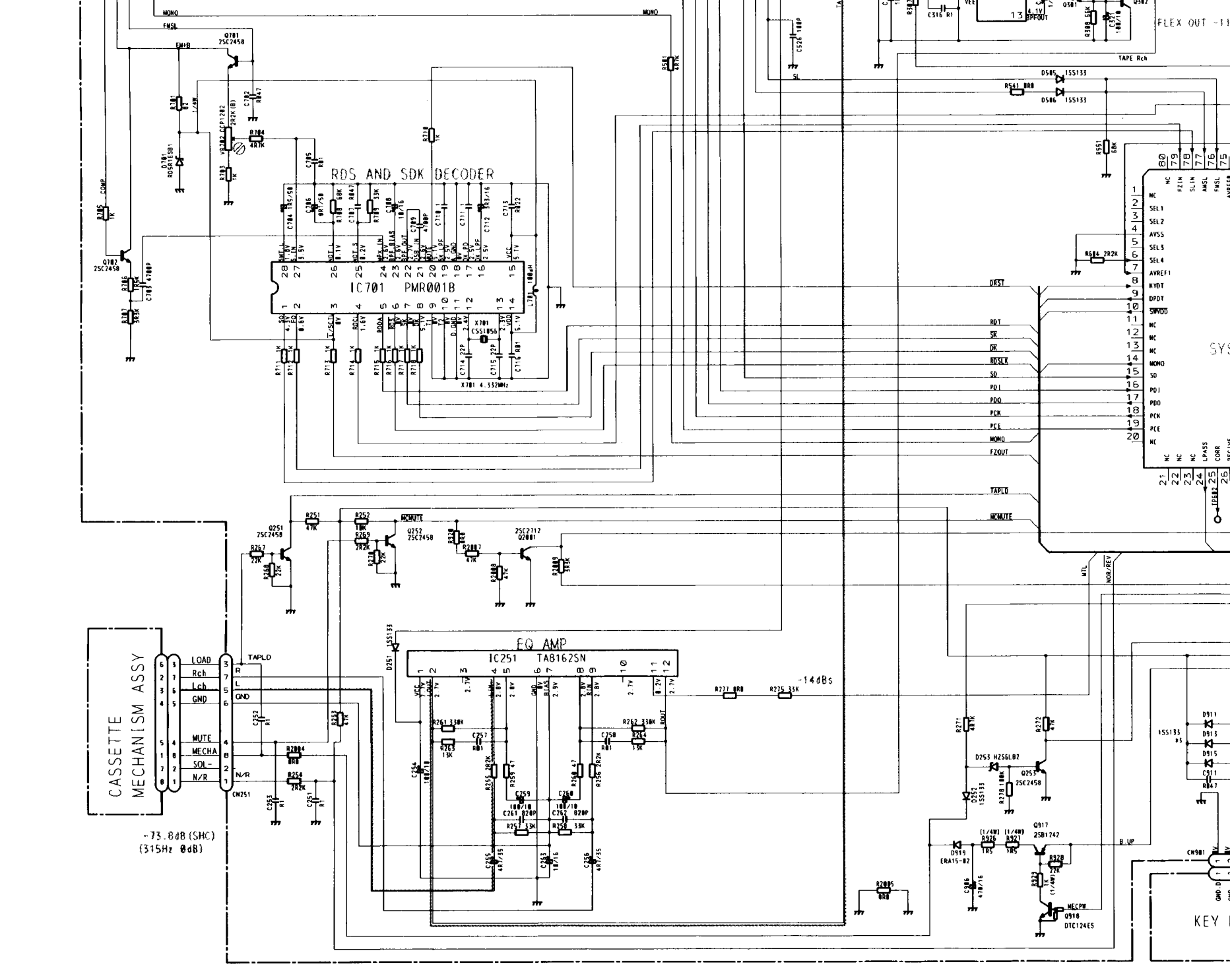


Fig.19

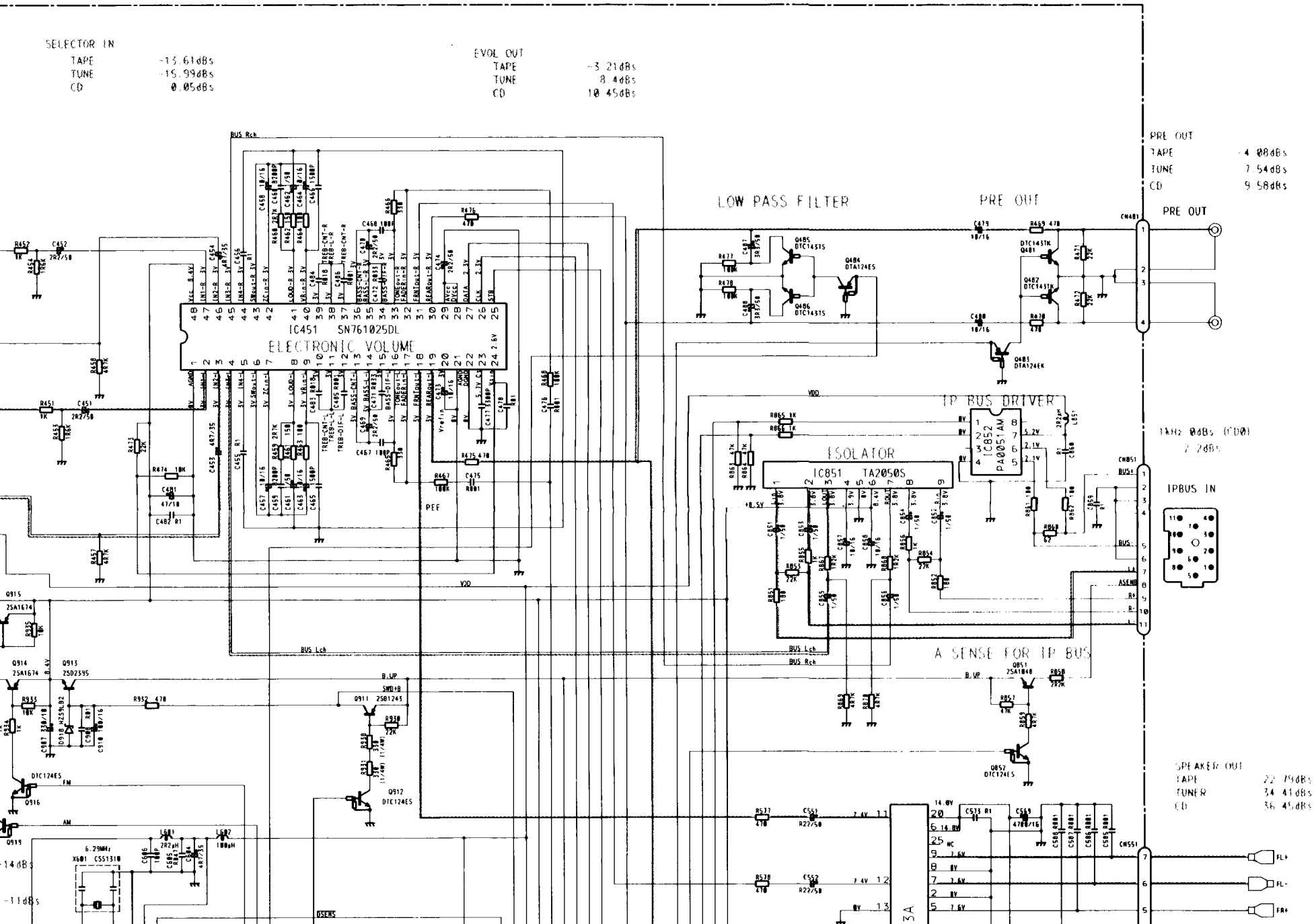
8.2 TUNER AMP UNIT (KEH-P4200RDS, P4100RDS)

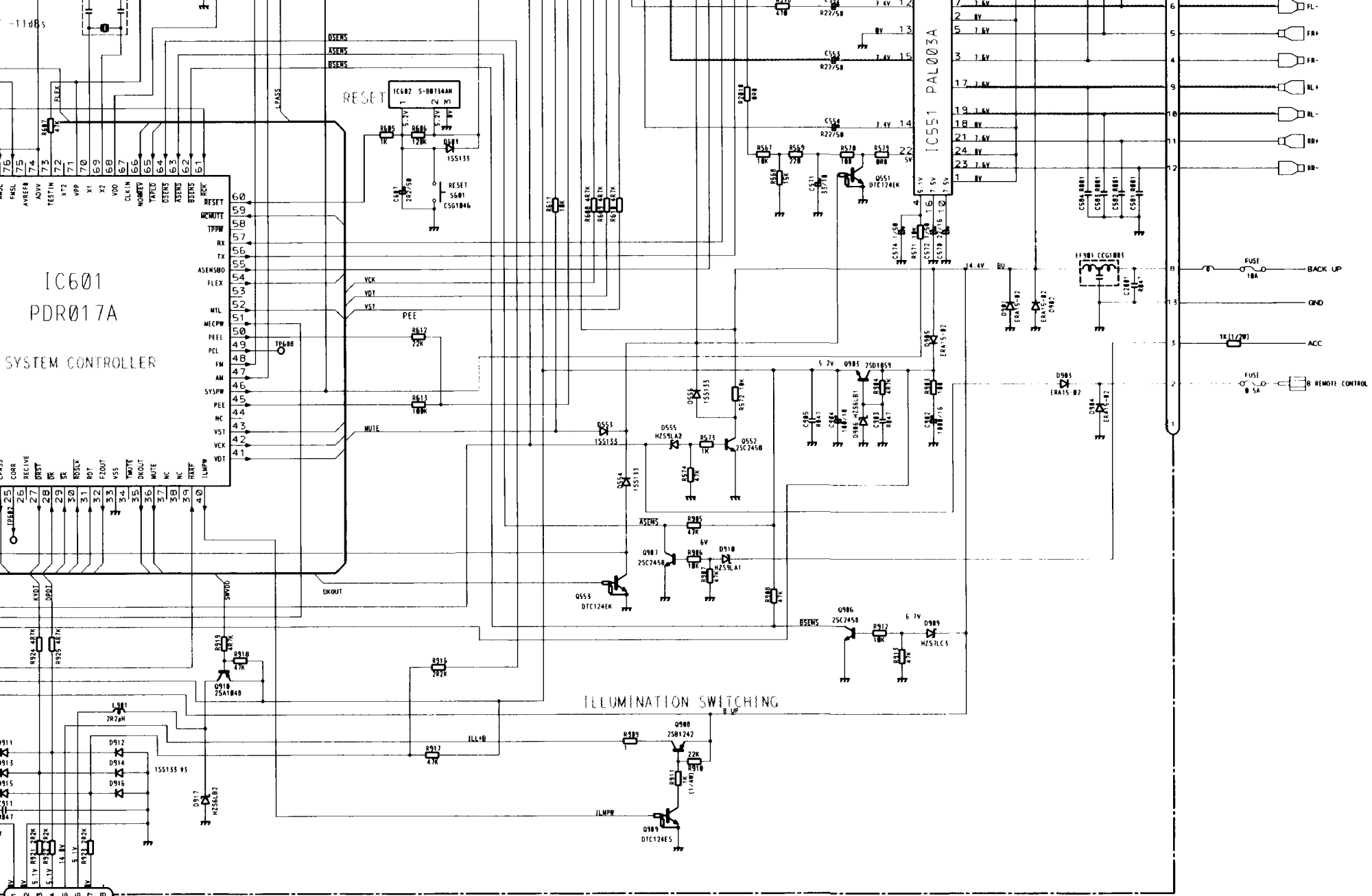
● **Circuit Diagram**




RDS AND SDK DECODER
IC701 PMR001B
EQ AMP
IC251 TA8162SN
CASSETTE MECHANISM ASSY
LOAD
Rch
Lch
GND
MUTE
MECHA
SOL-
N/R
TAPLD
HCMUTE
-14dBs
-73.8dB (SHC)
(315Hz 0dB)
SYS
KEY

2 3 4 5


SELECTOR IN
TAPE -13.61dBs
TUNE -15.99dBs
CD 0.05dBs
EVOL OUT
TAPE -3.21dBs
TUNE 8.46dBs
CD 10.45dBs
PRE OUT
TAPE -4.08dBs
TUNE 7.54dBs
CD 9.58dBs
LOW PASS FILTER
PRE OUT
IC451 SN761025DL
ELECTRONIC VOLUME
IP BUS DRIVER
ISOLATOR
IC851 TA2050S
A SENSE FOR IP BUS
IPBUS IN
SPEAKER OUT
TAPE 22.79dBs
TUNE 34.41dBs
CD 36.45dBs
BUS Rch
BUS Lch
VDD
B.UP
PEF



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.

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

Fig.19

● **Circuit Diagram**

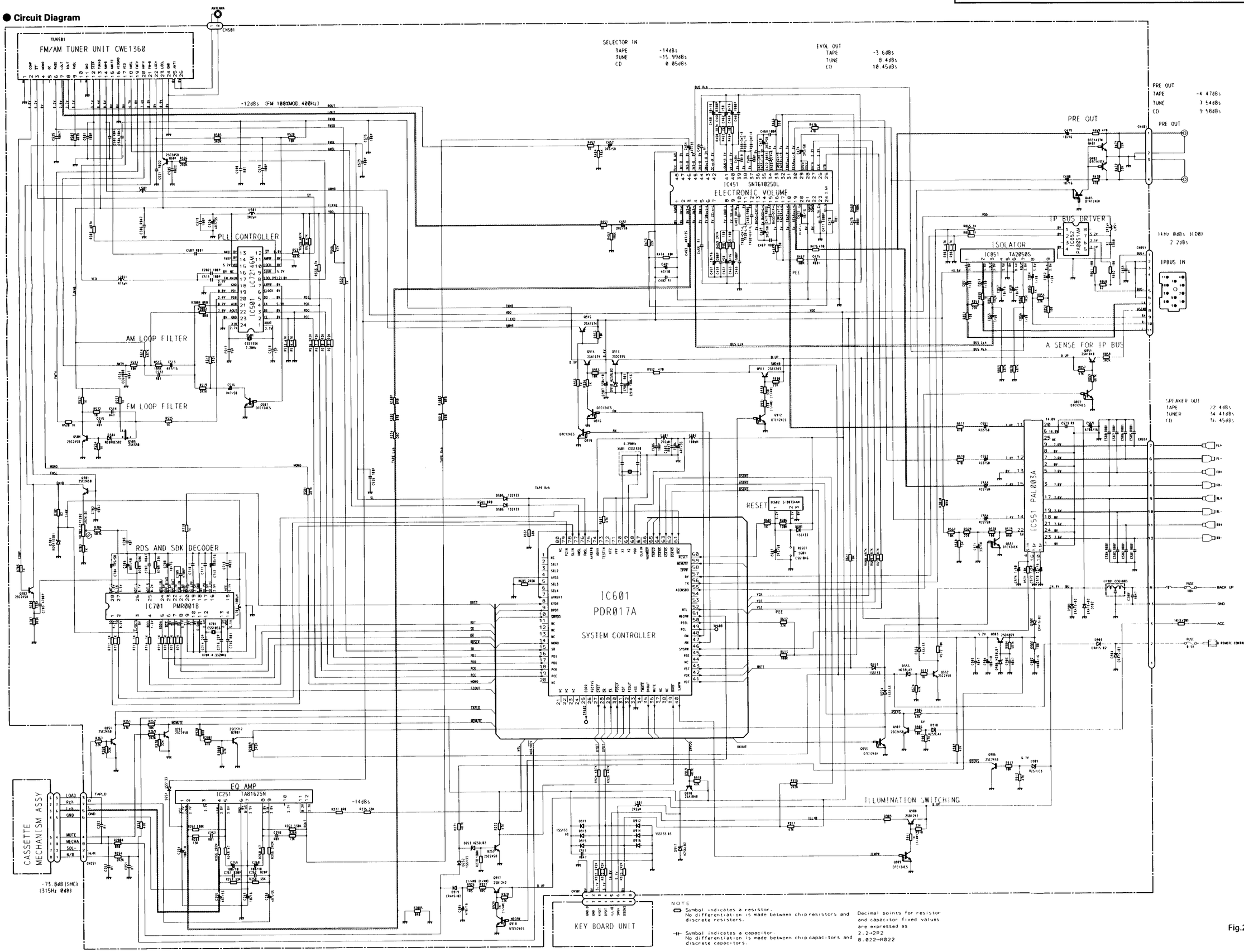
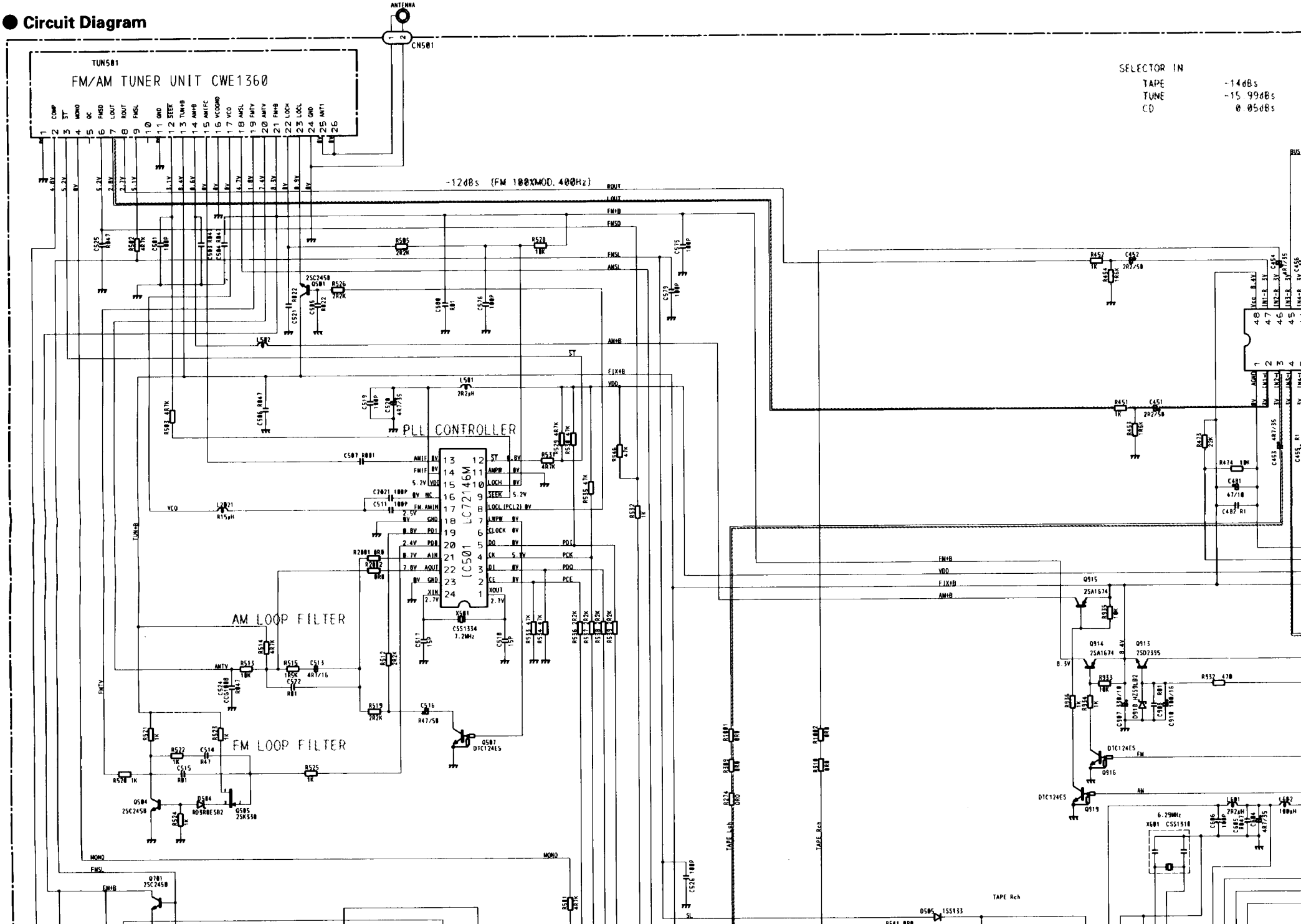
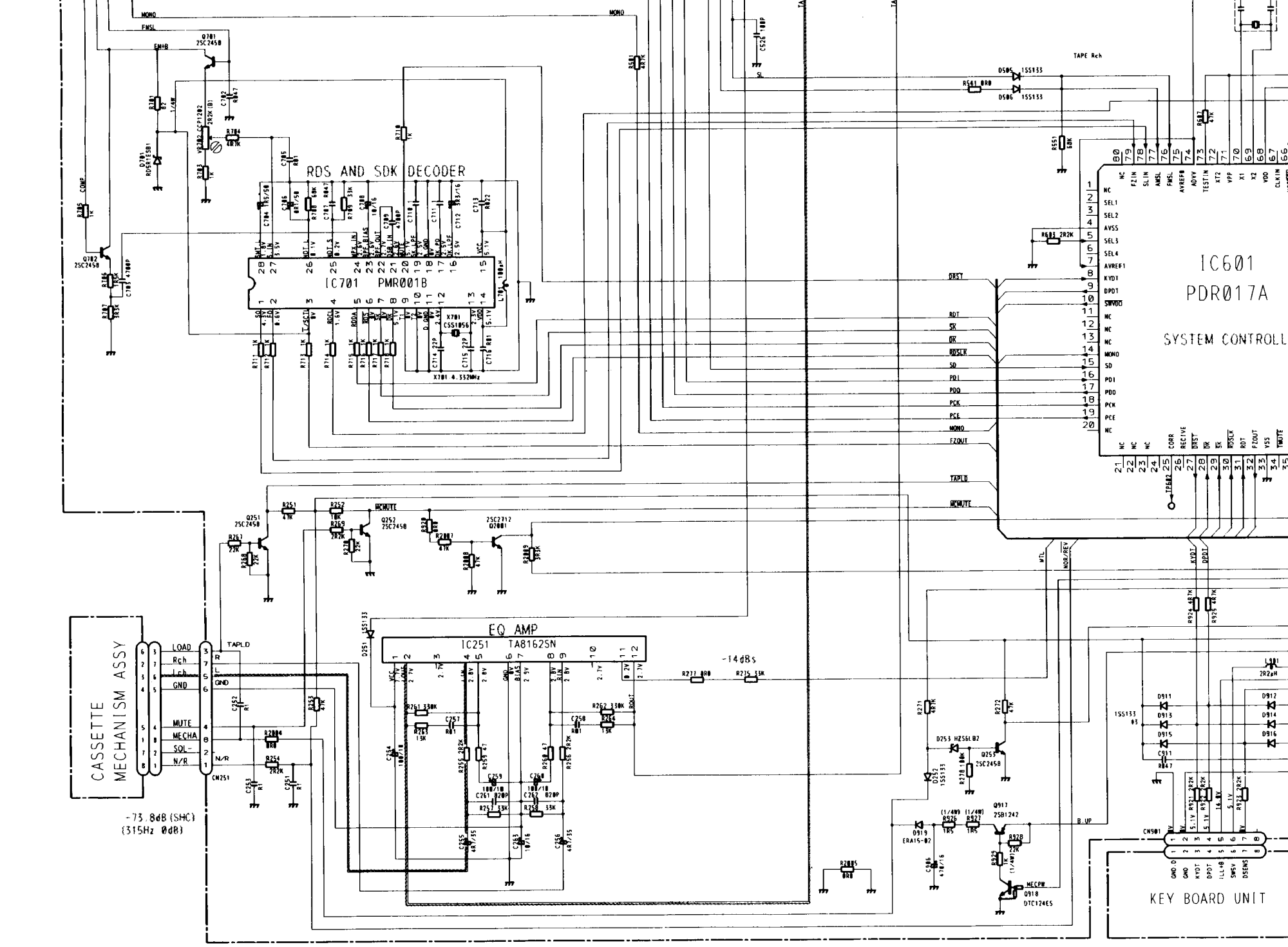
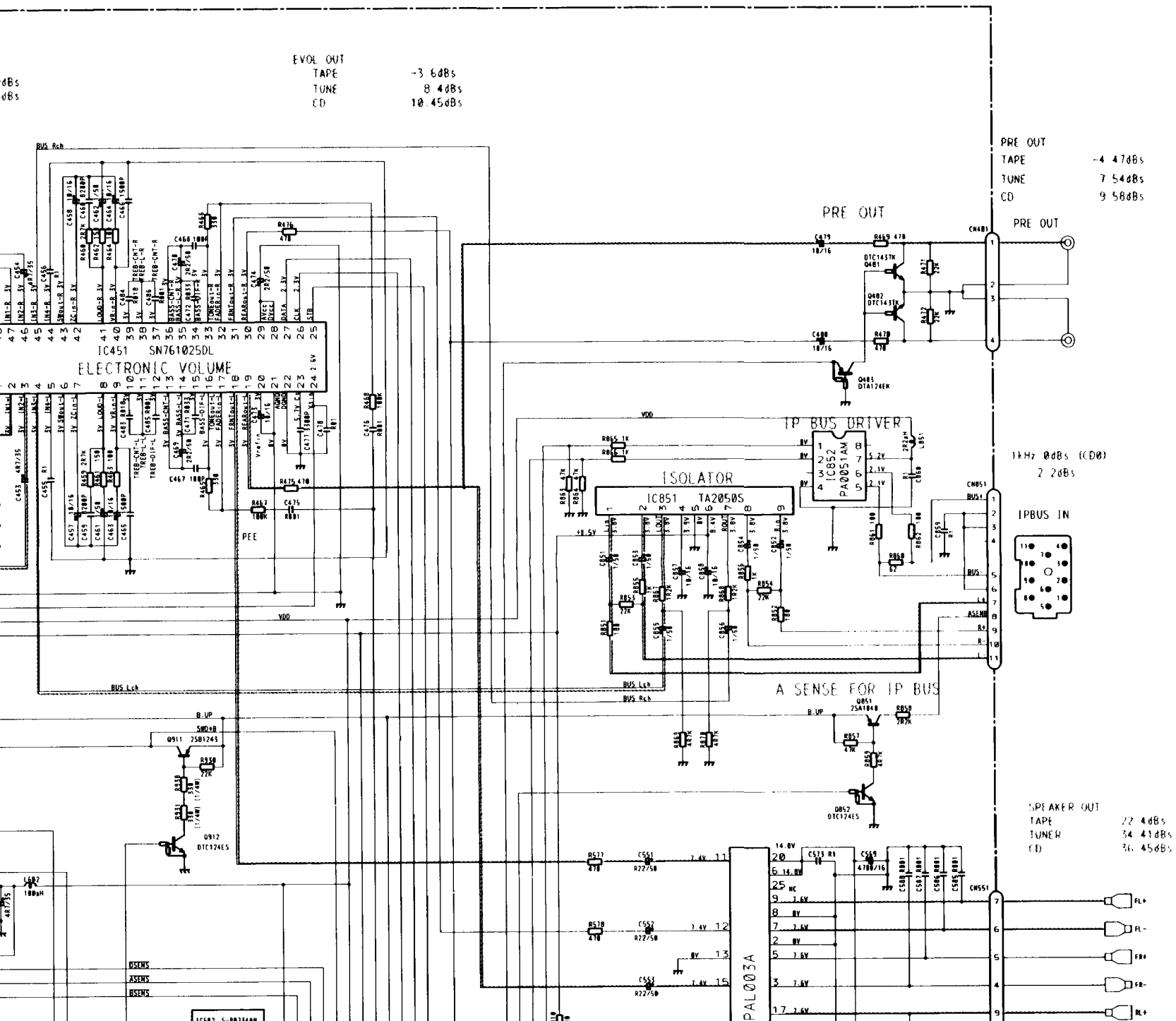


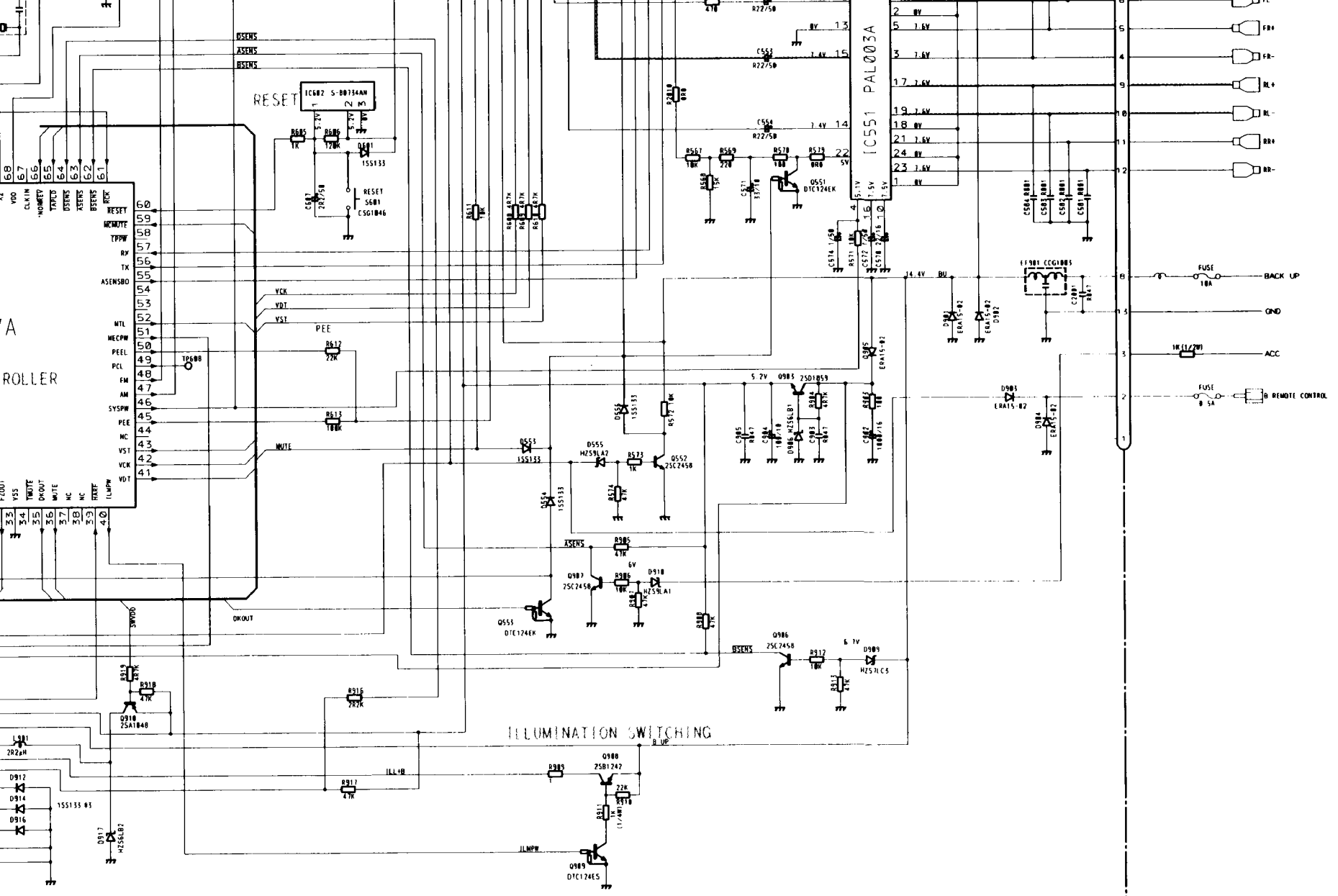
Fig.22

● Circuit Diagram




RDS AND SDK DECODER
IC701 PMR001B
X701 4.332MHz
EQ AMP
IC251 TA8162SN
-14dBs
CASSETTE MECHANISM ASSY
LOAD
Rch
Lch
GND
MUTE
MECHA
SOL-
N/R
CN251
TAPLD
-73.8dB (SHC)
(315Hz 0dB)
IC601
PDR017A
SYSTEM CONTROLL
TAPE Rch
KEY BOARD UNIT


EVOL OUT
TAPE -3.6dBs
TUNE 8.4dBs
CD 10.45dBs
PRE OUT
TAPE -4.47dBs
TUNE 7.54dBs
CD 9.58dBs
PRE OUT
IC451 SN761025DL
ELECTRONIC VOLUME
IP BUS DRIVER
IC852 PA0051AM
ISOLATOR
IC851 TA2050S
1kHz 0dBs (CD0)
2.2dBs
IPBUS IN
A SENSE FOR IP BUS
SPEAKER OUT
TAPE 22.4dBs
TUNER 34.41dBs
CD 36.45dBs
PAL003A
BUS Rch
BUS Lch
VDD
B.UP
ASENS
BSENS



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.

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

Fig.22

8.4 TUNER AMP UNIT (KEH-3900RDS, 3800RDS)

● **Circuit Diagram**

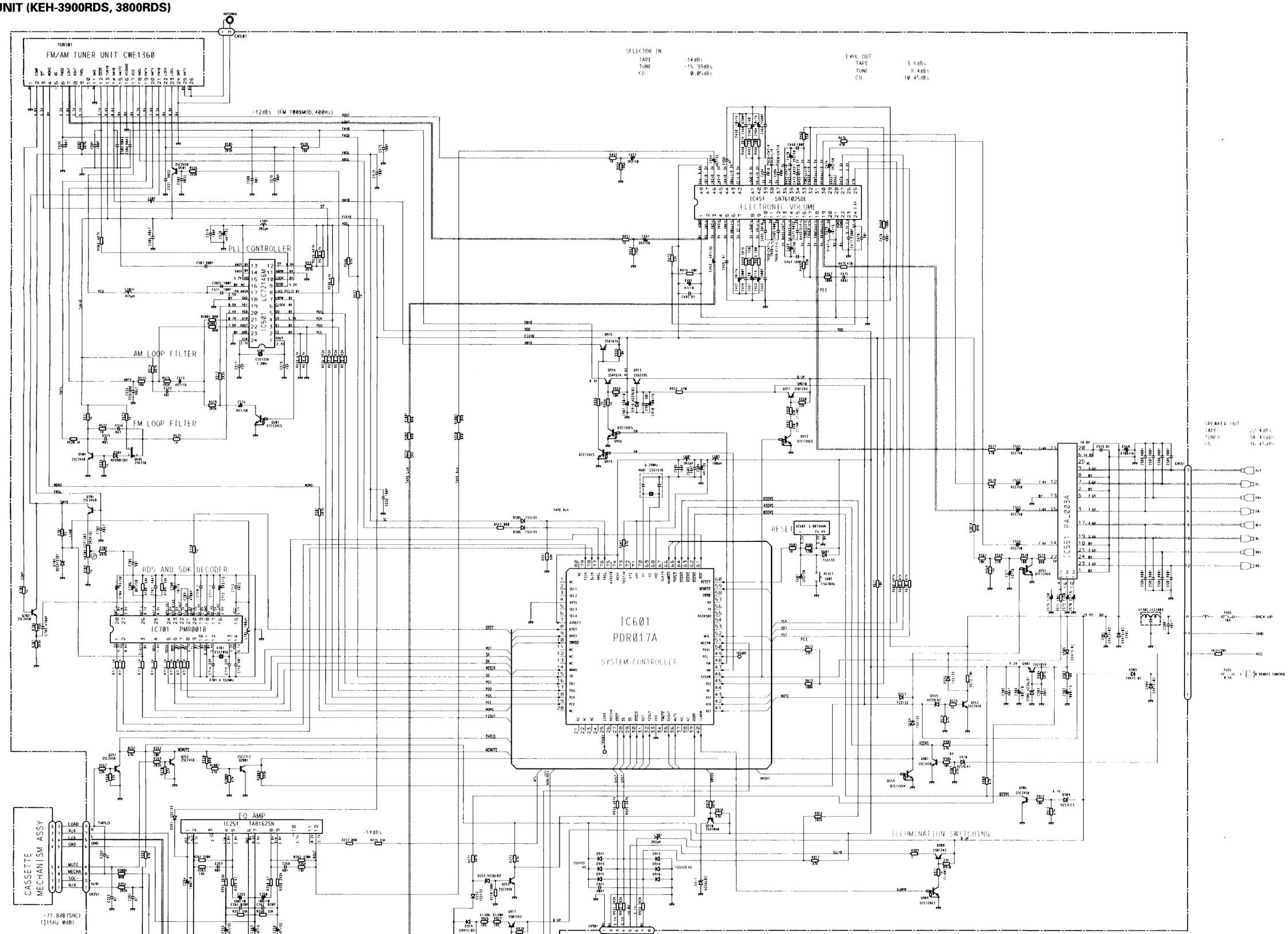
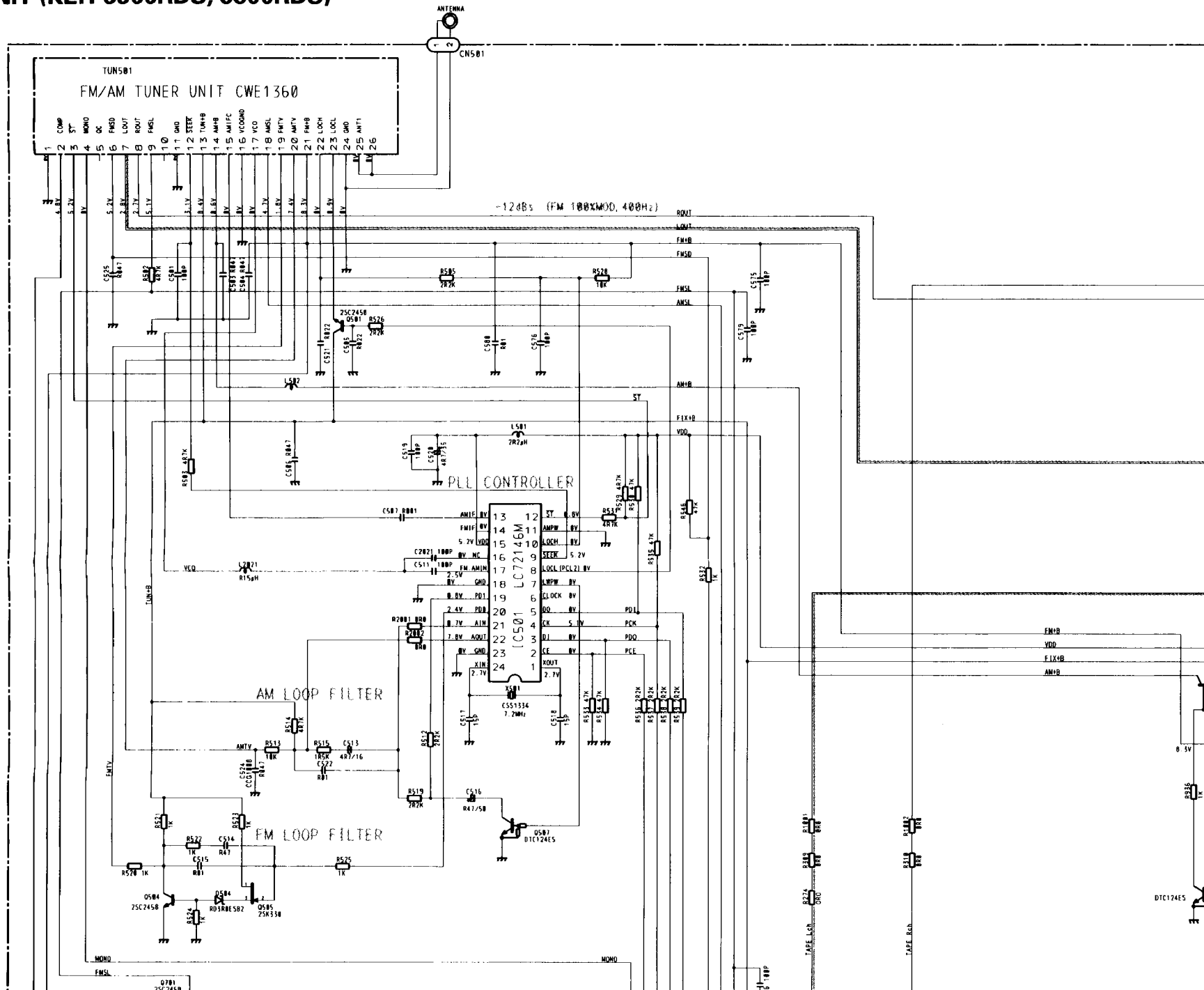
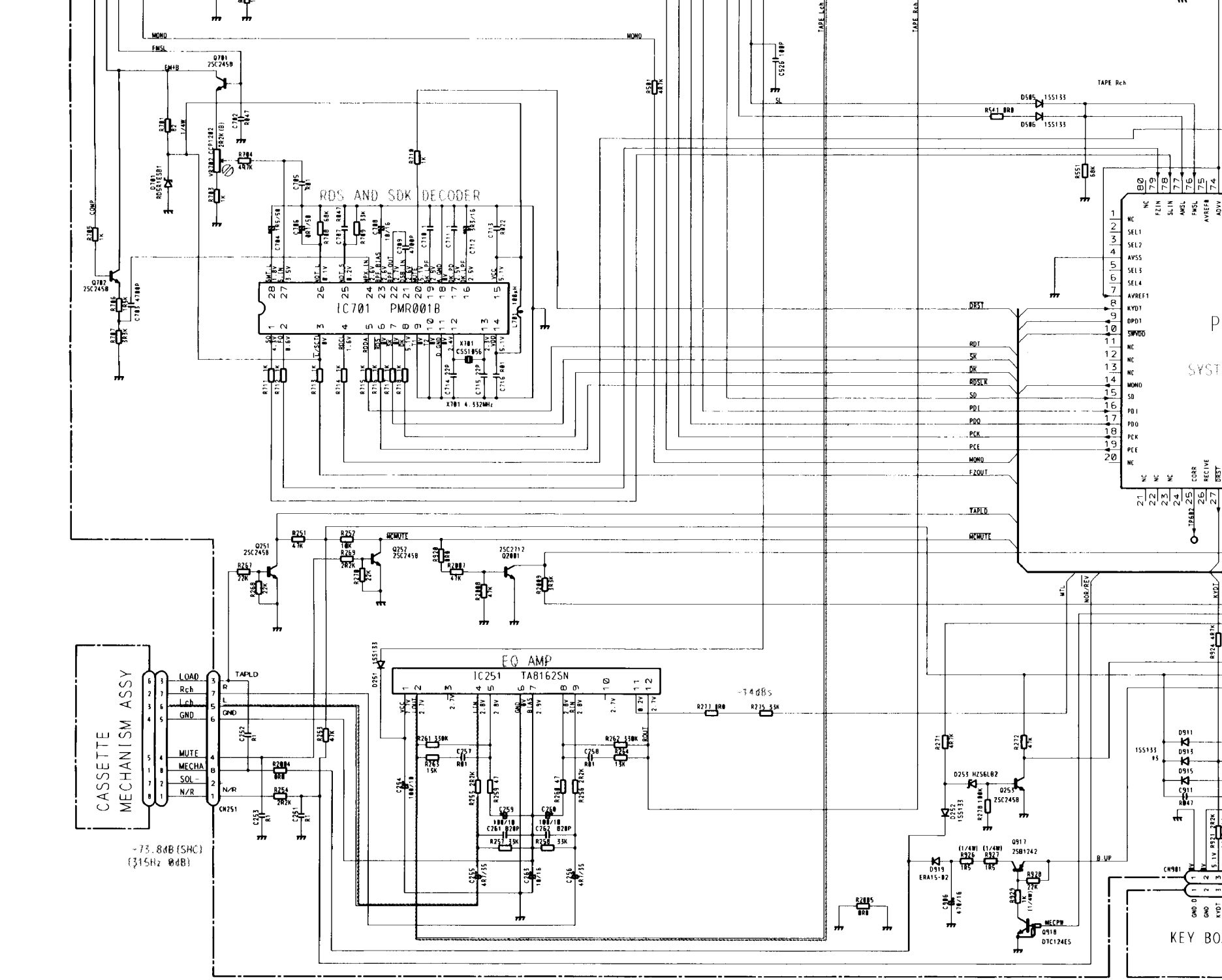


Fig.23

8.4 TUNER AMP UNIT (KEH-3900RDS, 3800RDS)

● **Circuit Diagram**




RDS AND SDK DECODER
IC701 PMR001B
X701 4.332MHz
EQ AMP
IC251 TA8162SN
CASSETTE MECHANISM ASSY
LOAD
Rch
Lch
GND
MUTE
MECHA
SOL-
N/R
CN251
-73.8dB (SHC)
(315Hz 0dB)
-14dBs
TAPE Rch
TAPE Lch
MONO
FMSL
COMP
TAPLD
MCMUTE
DRST
RDT
SK
DK
RDSLR
SD
PDI
PDO
PCK
PCE
FZOUT
B.UP
KEY BO

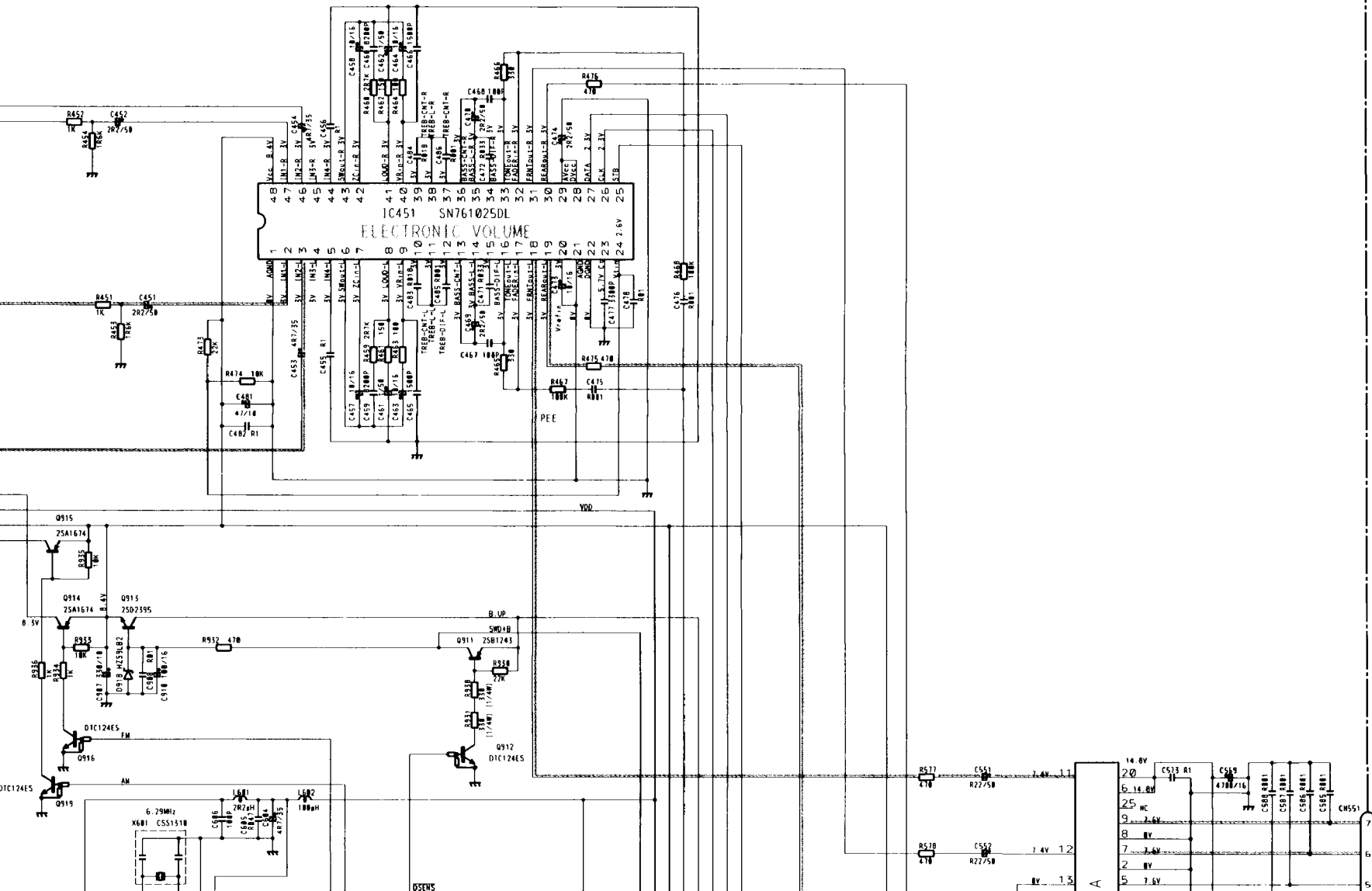
2 3 4 5

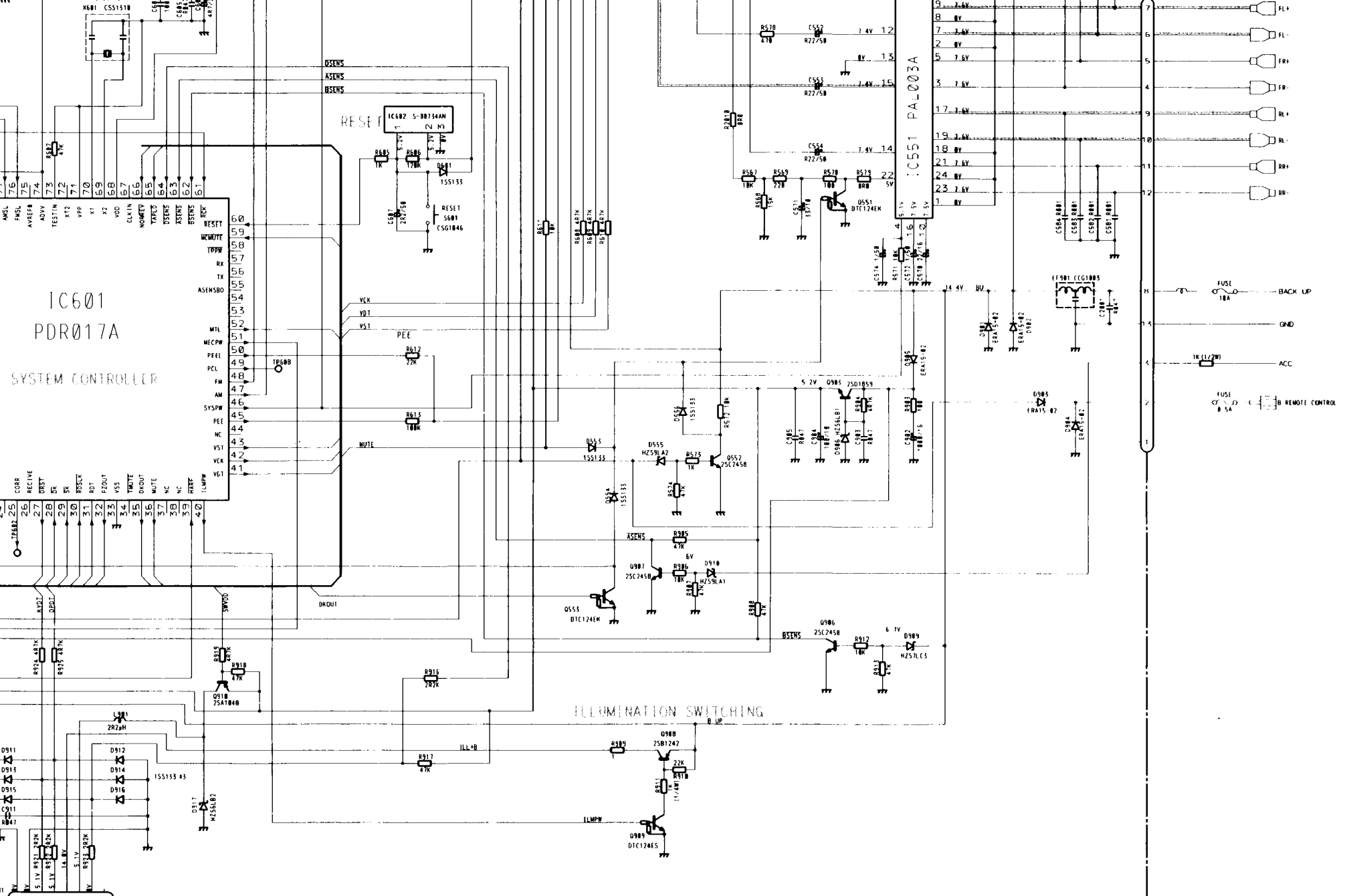
SELECTOR IN

TAPE	-14dBs
TUNE	-15.99dBs
CD	0.05dBs

EVOL OUT

TAPE	-3.6dBs
TUNE	8.4dBs
CD	10.45dBs





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.

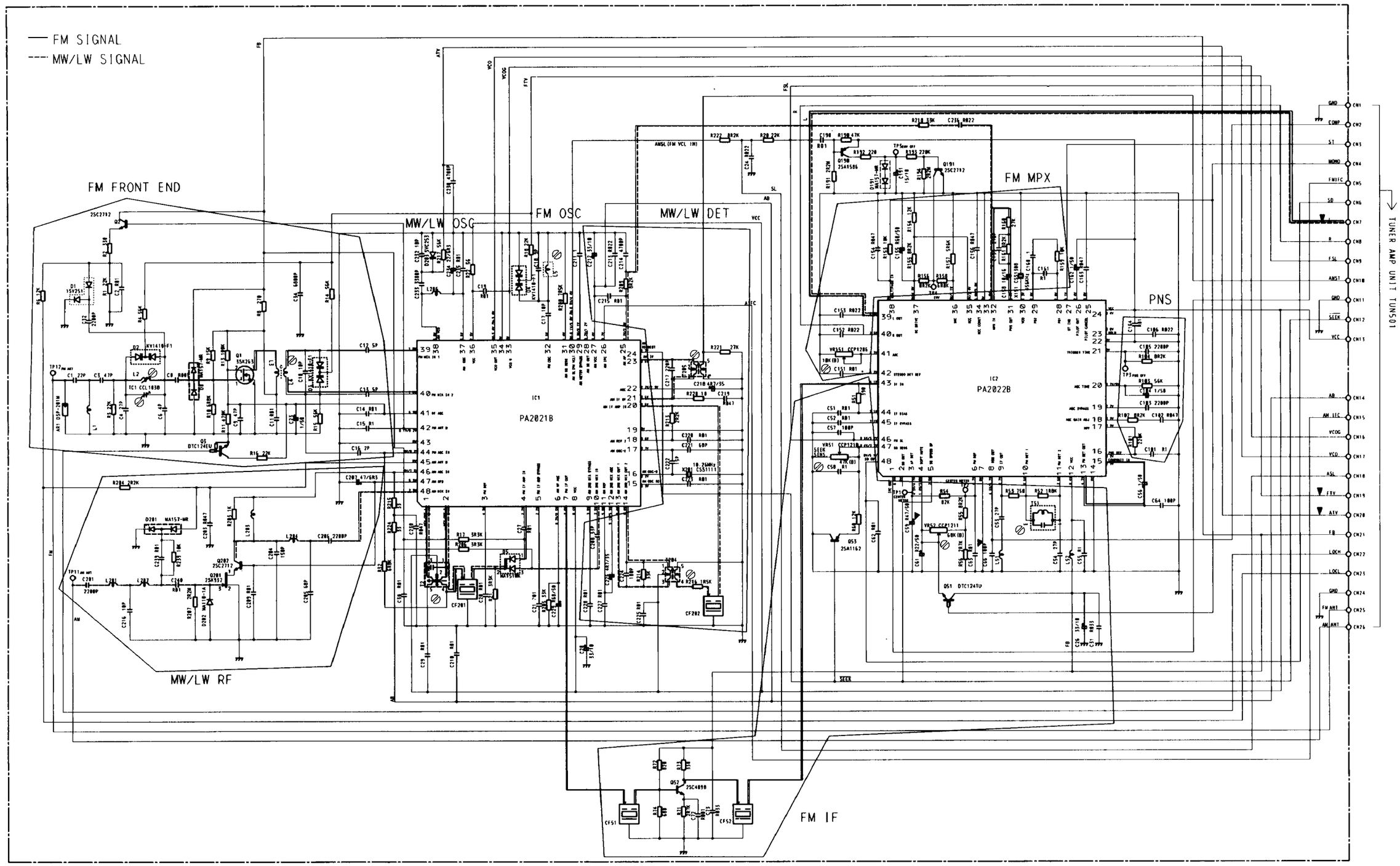
Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

Fig.23

8.5 FM/AM TUNER UNIT

● **Circuit Diagram**

FM/AM TUNER 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.

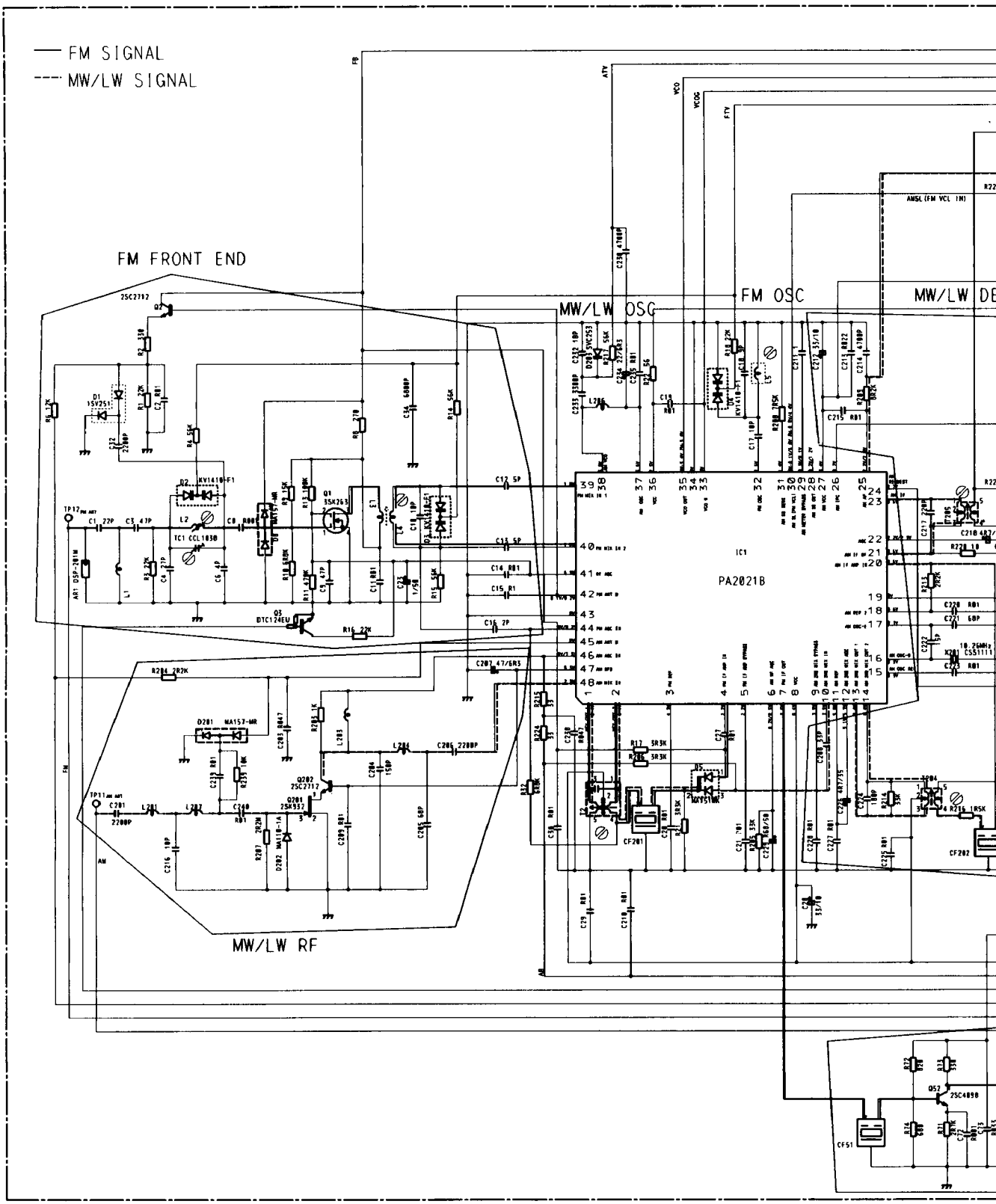
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig.25

8.5 FM/AM TUNER UNIT

● **Circuit Diagram**

FM/AM TUNER 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.

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

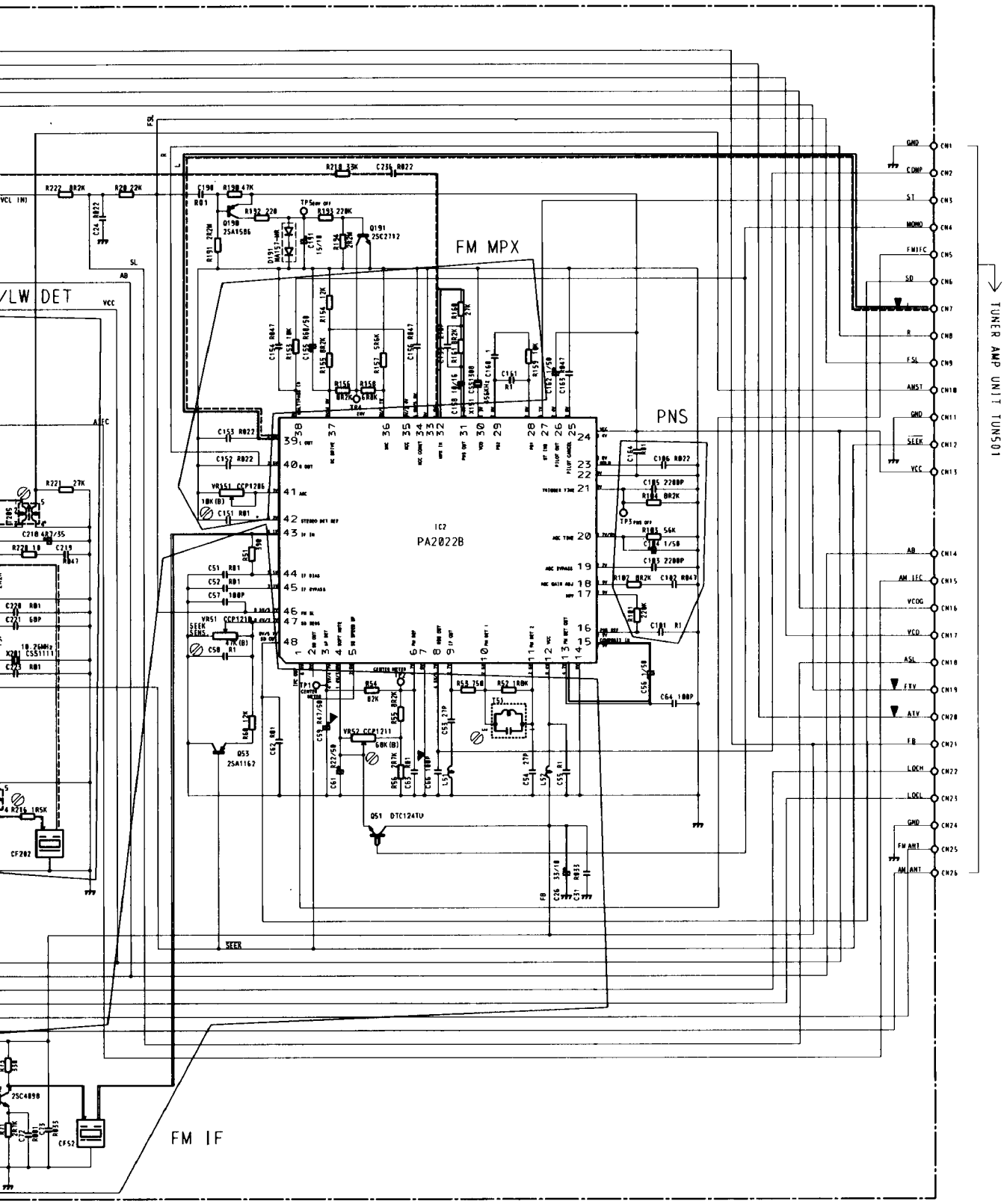
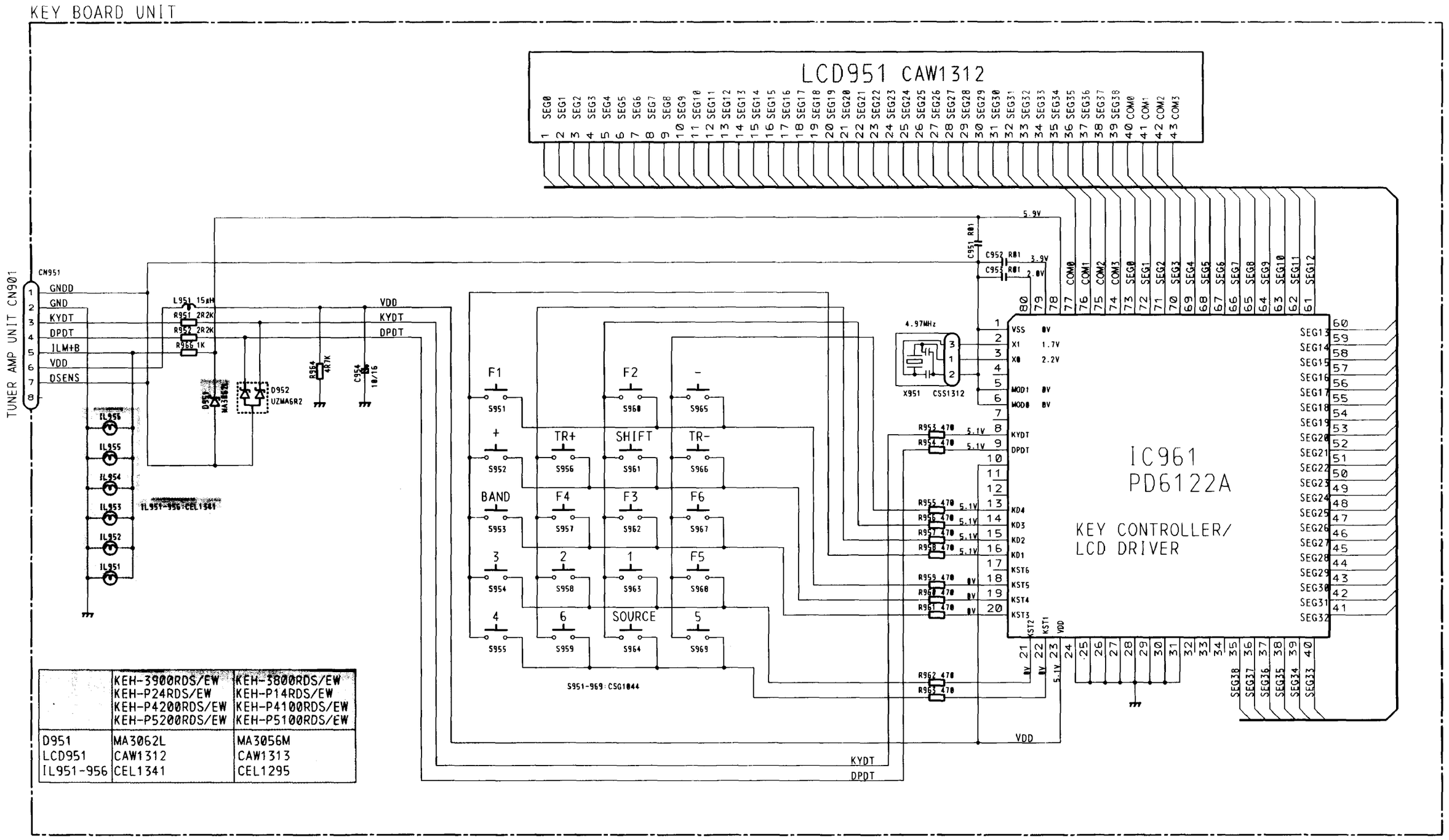

FM MPX
PNS
FM IF
IC2
PA2022B
Q51 DTC124TU
Q53 2SA1162
TUNER AMP UNIT TUN501
GND CN1
COMP CN2
ST CN3
MONO CN4
FMIFC CN5
SD CN6
CN7
R CN8
FSL CN9
AMST CN10
GND CN11
SEEK CN12
VCC CN13
AB CN14
AM IFC CN15
VCOG CN16
VCO CN17
ASL CN18
FTV CN19
ATV CN20
FB CN21
LOCH CN22
LOCL CN23
GND CN24
FM ANT CN25
AM ANT CN26

Fig.25

8.6 KEY BOARD UNIT

● **Circuit Diagram**

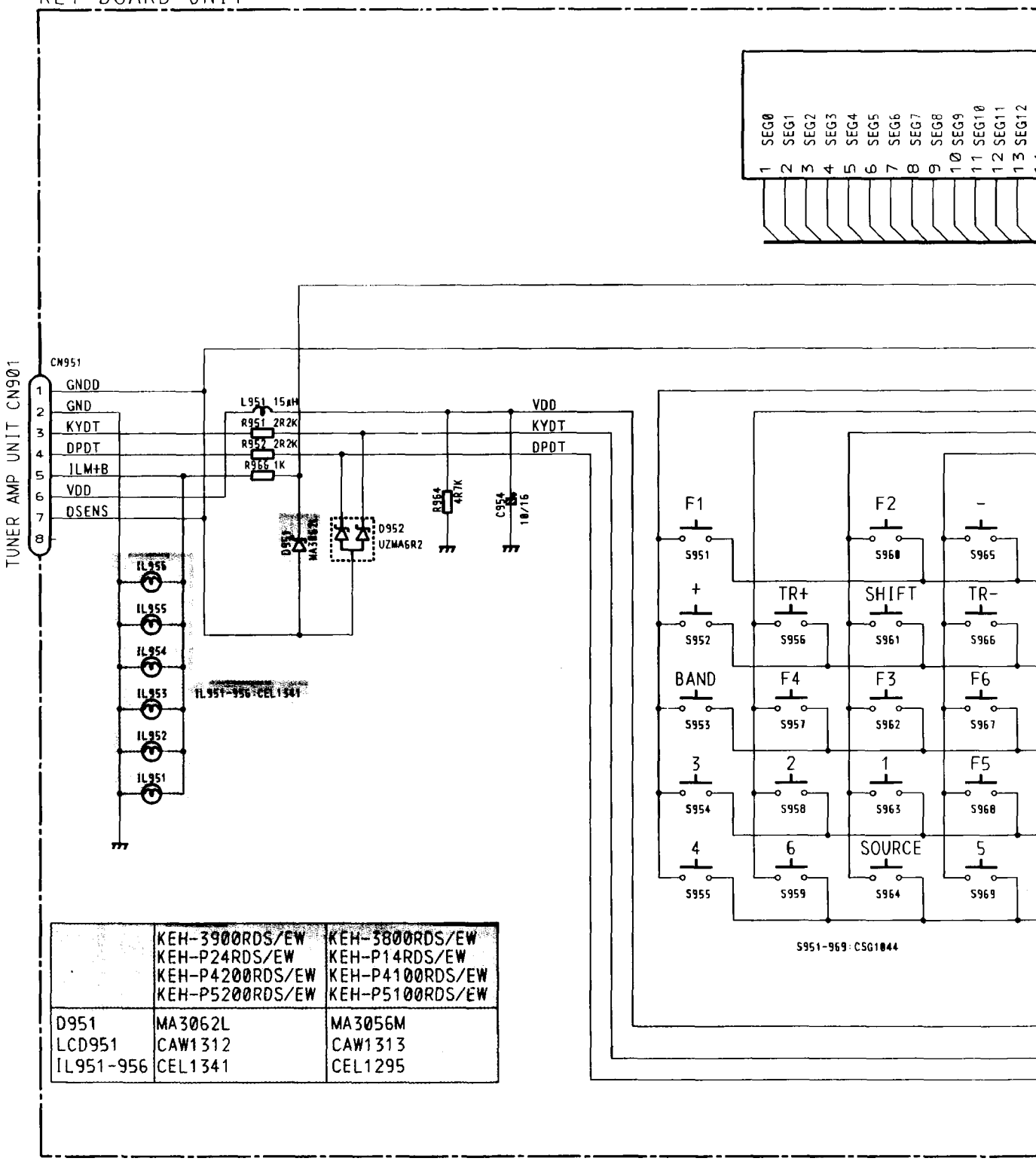


	KEH-3900RDS/EW KEH-P24RDS/EW KEH-P4200RDS/EW KEH-P5200RDS/EW	KEH-3800RDS/EW KEH-P14RDS/EW KEH-P4100RDS/EW KEH-P5100RDS/EW
D951	MA3062L	MA3056M
LCD951	CAW1312	CAW1313
IL951-956	CEL1341	CEL1295

Fig.27

8.6 KEY BOARD UNIT

● **Circuit Diagram**



	KEH-3900RDS/EW KEH-P24RDS/EW KEH-P4200RDS/EW KEH-P5200RDS/EW	KEH-3800RDS/EW KEH-P14RDS/EW KEH-P4100RDS/EW KEH-P5100RDS/EW
D951	MA3062L	MA3056M
LCD951	CAW1312	CAW1313
IL951-956	CEL1341	CEL1295

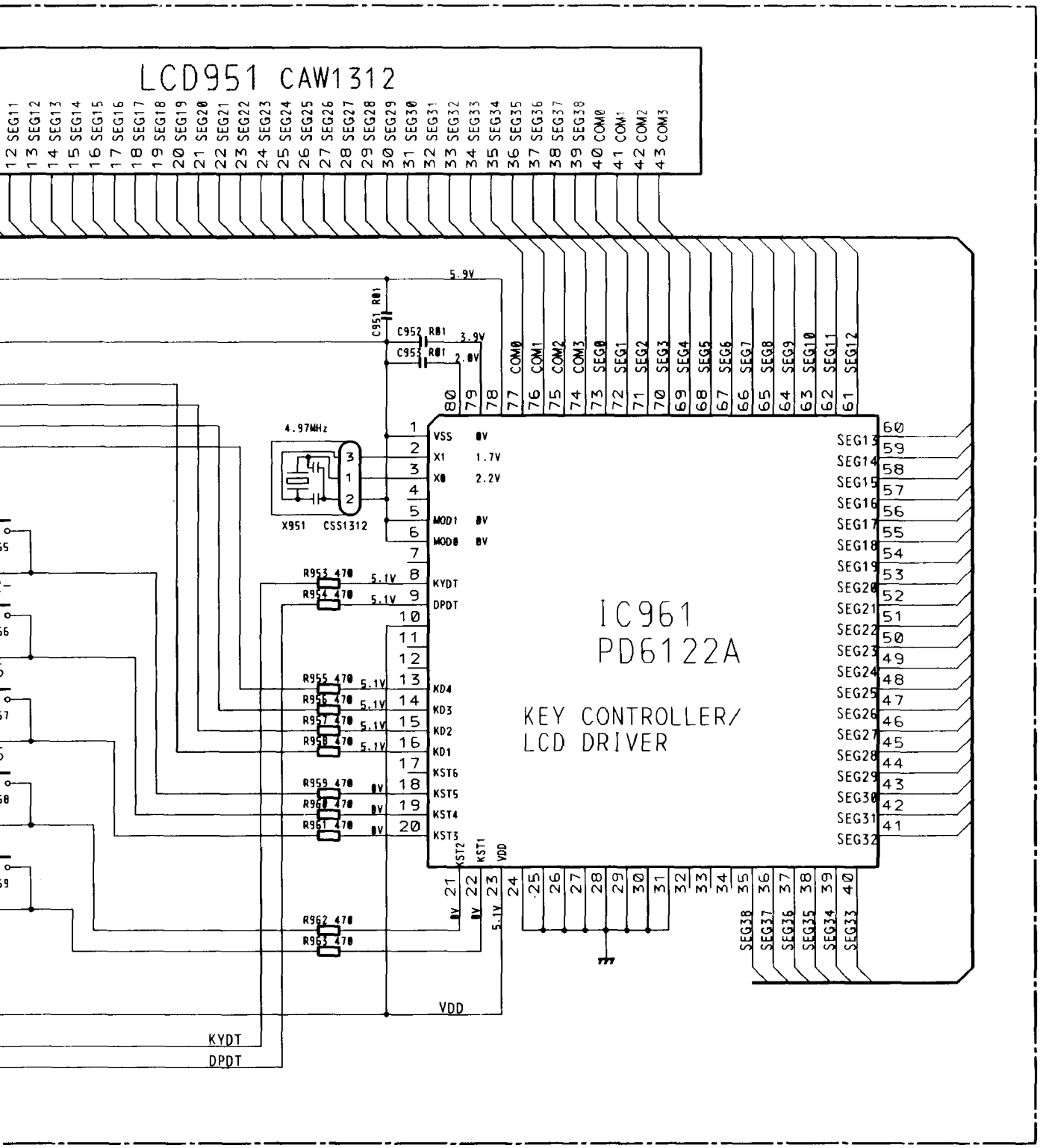

LCD951 CAW1312
IC961
PD6122A
KEY CONTROLLER/
LCD DRIVER
4.97MHz
X951 CSS1312
5.9V
3.9V
2.0V
VDD
KYDT
DPDT

Fig.27

8.7 DOLBY NR AMST UNIT

● **Circuit Diagram**

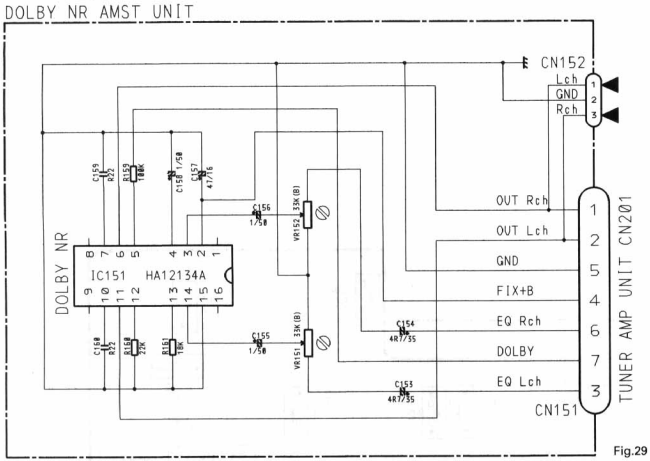


Fig.29

● **Connection Diagram**

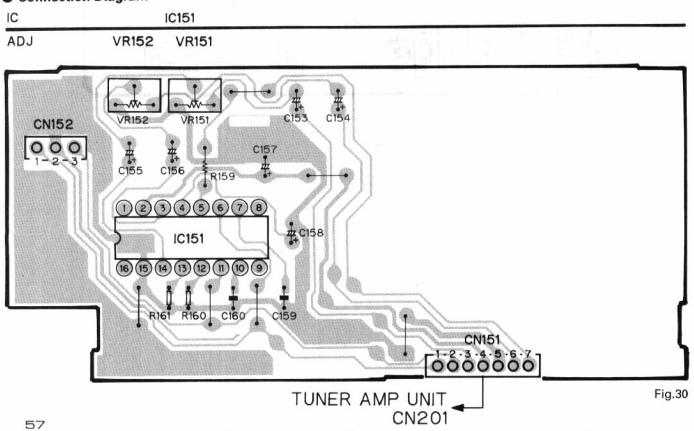


Fig.30

8.8 CASSETTE MECHANISM ASSY

● **Circuit Diagram**

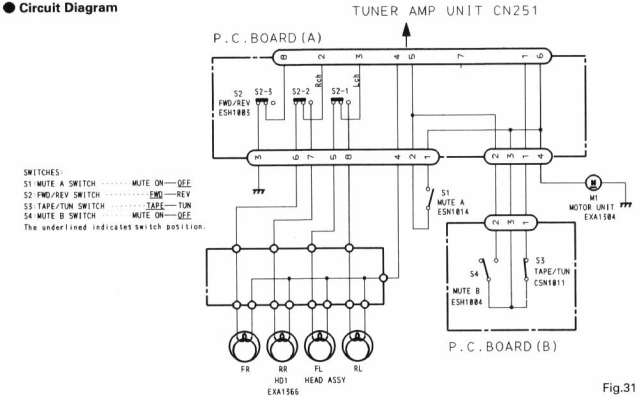


Fig.31

● **Connection Diagram**

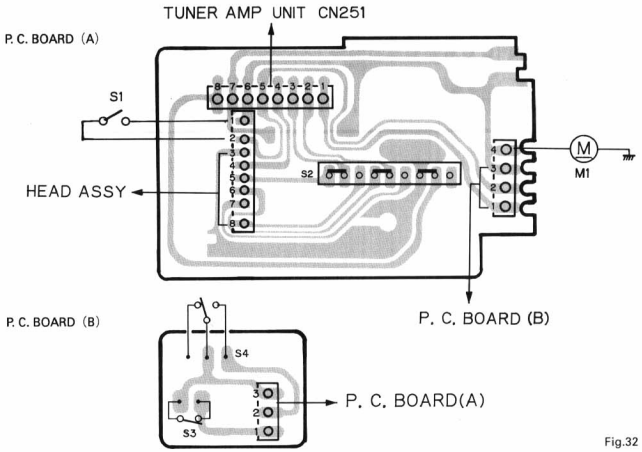


Fig.32

9. CHASSIS EXPLODED VIEW

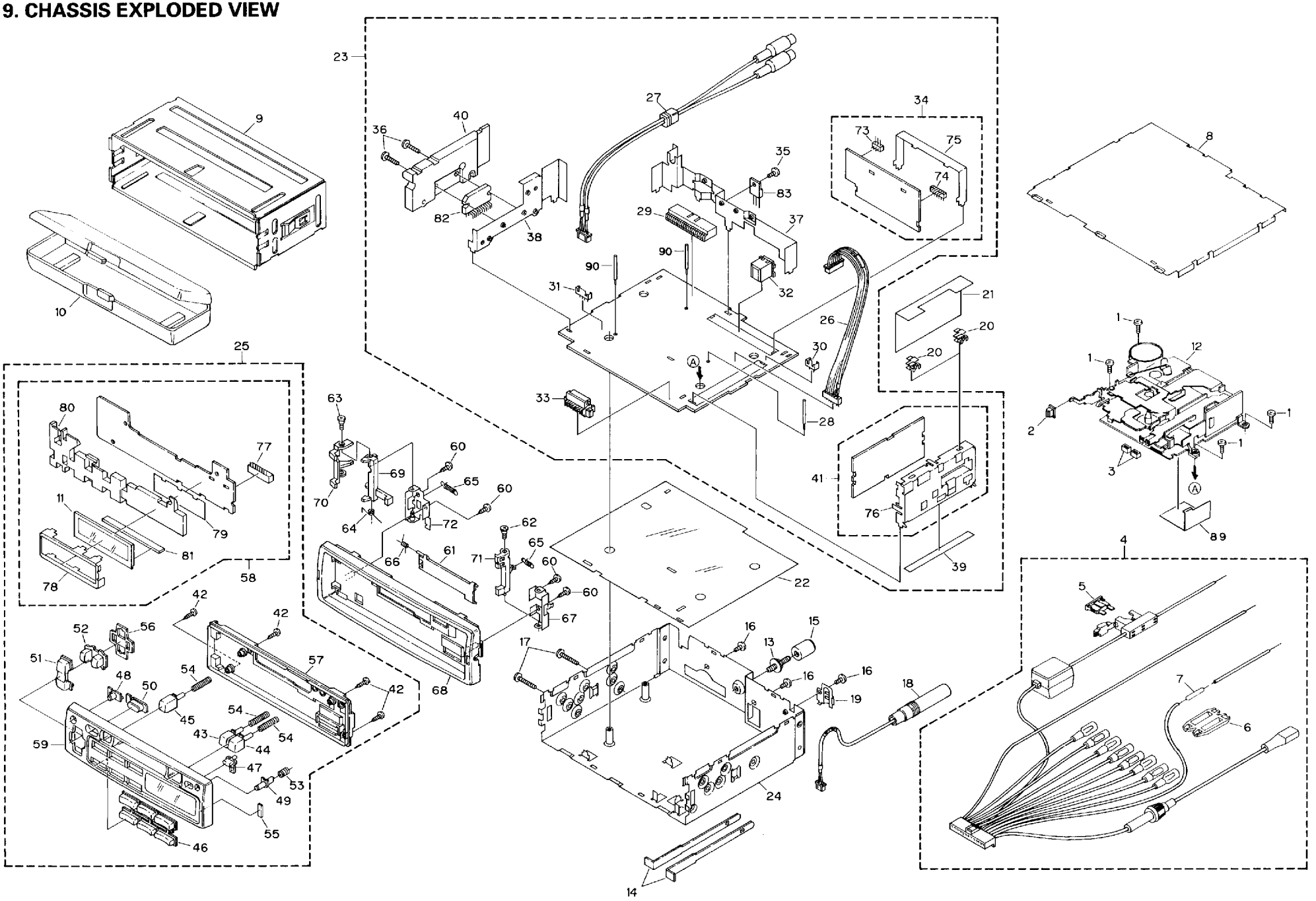


Fig.33

NOTE:

● Parts marked by "✱"are generally unavailable because they are not in our Master Spare Parts List.

● **Part List(KEH-P5200RDS)**

Mark	No.	Description	Part No.
	1	Screw	BSZ26P050FMC
	2	Button	CAC2819
	3	Button	CAC2820
	4	Cord Assy	CDE4448
	5	Fuse	CEK1136
	6	Cap	CNS1472
	7	Resistor	RS1/2P102JL
	8	Case	CNB1852
	9	Holder	CNC4946
	10	Case	CNS2269
	11	LCD(LCD951)	CAW1312
	12	Cassette Mechanism Assy	EXK1717
	13	Screw	CBA1284
	14	Handle	CNC4947
	15	Bush	CNV1009
	16	Screw	BSZ30P060FMC
	17	Screw	BSZ30P160FMC
	18	Antenna Cable	CDH1115
	19	Holder	CNC4963
	20	Holder	CNC5704
	21	Insulator	CNM3884
	22	Insulator	CNM4111
	23	Tuner Amp Unit	CWM4071
	24	Chassis Unit	CXA7540
	25	Detach Grille Assy	CXA6729
	26	Connector(CN251)	CDE4446
	27	Cord Assy	CDE4456
	28	Clamper	CEF1005
	29	Plug(CN551)	CKM1140
	30	Plug(CN501)	CKS1222
	31	Plug(CN481)	CKS1224
	32	Connector(CN851)	CKS2486
	33	Connector(CN901)	CKS2884
	34	Dolby NR AMST Unit	CWM4072
	35	Screw	BSZ30P080FMC
	36	Screw	BSZ30P120FMC
	37	Holder	CNC5559
	38	Holder	CNC5703
	39	Insulator	CNM4243
	40	Heat Sink	CNR1342
	41	FM/AM Tuner Unit	CWE1360
	42	Screw	BPZ20P100FZK
	43	Button(REW)	CAC4072
	44	Button(FF)	CAC4073
	45	Button(EJECT)	CAC4074
	46	Button	CAC4075
	47	Button(BAND)	CAC4077
	48	Button(S)	CAC4078
	49	Button(DETACH)	CAC4079
	50	Button(SOURCE)	CAC4184
	51	Button(+-)	CAC4301
	52	Button(<>)	CAC4302
	53	Spring	CBH1748
	54	Spring	CBH1572
	55	Spacer	CNM4341
	56	Cushion	CNM4358
	57	Cover	CNS3270
	58	Key Board Unit	CWM4077
	59	Grille Unit	CXA7851
	60	Screw	BPZ20P080FMC
	61	Door	CAT1680
	62	Screw	CBA1215
	63	Screw	CBA1271
	64	Spring	CBH1566
	65	Spring	CBH1567
	66	Spring	CBH1655
	67	Holder	CNC5694
	68	Panel	CNS3406
	69	Arm	CNV3654
	70	Arm	CNV3655
	71	Arm	CNV3750
	72	Holder Unit	CXA5779
	73	Plug(CN152)	CKS1004
	74	Plug(CN151)	CKS1616
	75	Holder	CNC5542
✱	76	Holder	CNC5803
	77	Connector(CN951)	CKS2883
	78	Holder	CNC5562
	79	Reflector	CNM4342
	80	Lens	CNV3981
	81	Connector	CNV3982
	82	IC(IC551)	PAL003A
	83	Transistor(Q913)	2SD2395
	84-88	•••••	
	89	Spacer	CNM3842
	90	Clamper	CEF1005

● The KEH-P5100RDS, KEH-P4200RDS, KEH-P4100RDS, KEH-P24RDS, KEH-P14RDS, KEH-3900RDS and KEH-3800RDS Parts Lists enumerate the parts which differ from those enumerated in the KEH-P5200RDS Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The KEH-P5200RDS Parts List is given on page 61.

Mark	No.	Description	P5200RDS Part No.	P5100RDS Part No.	P4200RDS Part No.	P4100RDS Part No.	P24RDS Part No.	P14RDS Part No.	3900RDS Part No.	3800RDS Part No.
	11	LCD(LCD951)	CAW1312	CAW1313	CAW1312	CAW1313	CAW1312	CAW1313	CAW1312	CAW1313
	23	Tuner Amp Unit	CWM4071	CWM4071	CWM4027	CWM4027	CWM4079	CWM4079	CWM4334	CWM4334
	24	Chassis Unit	CXA7540	CXA6887	CXA7539	CXA7008	CXA7541	CXA7010	CXA7544	CXA7543
	25	Detach Grille Assy	CXA6729	CXA6726	CXA6713	CXA6679	CXA6735	CXA6732	CXA7779	CXA7777
	27	Cord Assy	CDE4456	CDE4456	CDE4456	CDE4456	CDE4456	CDE4456	·····	·····
	31	Plug(CN481)	CKS1224	CKS1224	CKS1224	CKS1224	CKS1224	CKS1224	·····	·····
	32	Connector(CN851)	CKS2486	CKS2486	CKS2486	CKS2486	CKS2486	CKS2486	·····	·····
	34	Dolby NR AMST Unit	CWM4072	CWM4072	·····	·····	·····	·····	·····	·····
	43	Button(REW)	CAC4072	CAC3698	CAC4072	CAC3698	CAC4072	CAC3698	CAC4072	CAC3698
	44	Button(FF)	CAC4073	CAC3699	CAC4073	CAC3699	CAC4073	CAC3699	CAC4073	CAC3699
	45	Button(EJECT)	CAC4074	CAC3700	CAC4074	CAC3700	CAC4074	CAC3700	CAC4074	CAC3700
	49	Button(DETACH)	CAC4079	CAC3876	CAC4079	CAC3876	CAC4079	CAC3876	CAC4079	CAC3876
	51	Button(+-)	CAC4301	CAC4135	CAC4301	CAC4135	CAC4301	CAC4135	CAC4301	CAC4135
	52	Button(<>)	CAC4302	CAC4136	CAC4302	CAC4136	CAC4302	CAC4136	CAC4302	CAC4136
	57	Cover	CNS3270	CNS3103	CNS3270	CNS3103	CNS3270	CNS3103	CNS3270	CNS3103
	58	Key Board Unit	CWM4077	CWM4073	CWM4077	CWM4073	CWM4077	CWM4073	CWM4077	CWM4073
	59	Grille Unit	CXA7851	CXA6888	CXA7013	CXA7012	CXA7019	CXA7018	CXA7663	CXA7662
	61	Door	CAT1680	CAT1575	CAT1680	CAT1575	CAT1680	CAT1575	CAT1680	CAT1575
	68	Panel	CNS3406	CNS3104	CNS3406	CNS3104	CNS3406	CNS3104	CNS3406	CNS3104
	73	Plug(CN152)	CKS1004	CKS1004	·····	·····	·····	·····	·····	·····
	74	Plug(CN151)	CKS1616	CKS1616	·····	·····	·····	·····	·····	·····
	75	Holder	CNC5542	CNC5542	·····	·····	·····	·····	·····	·····
	90	Clamper	CEF1005	CEF1005	CEF1005	CEF1005	CEF1005	CEF1005	·····	·····

10. CASSETTE MECHANISM ASSY EXPLODED VIEW

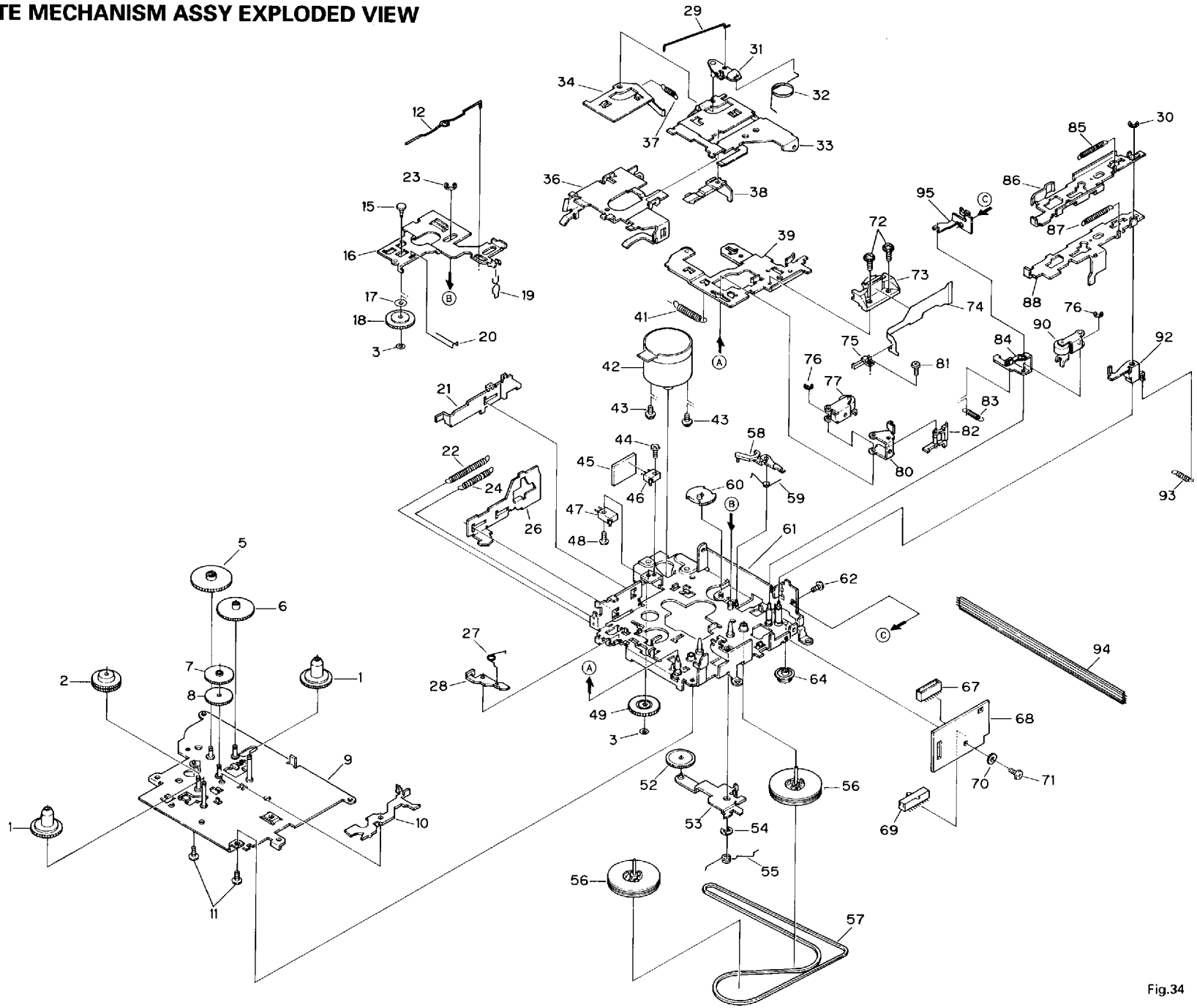


Fig.34