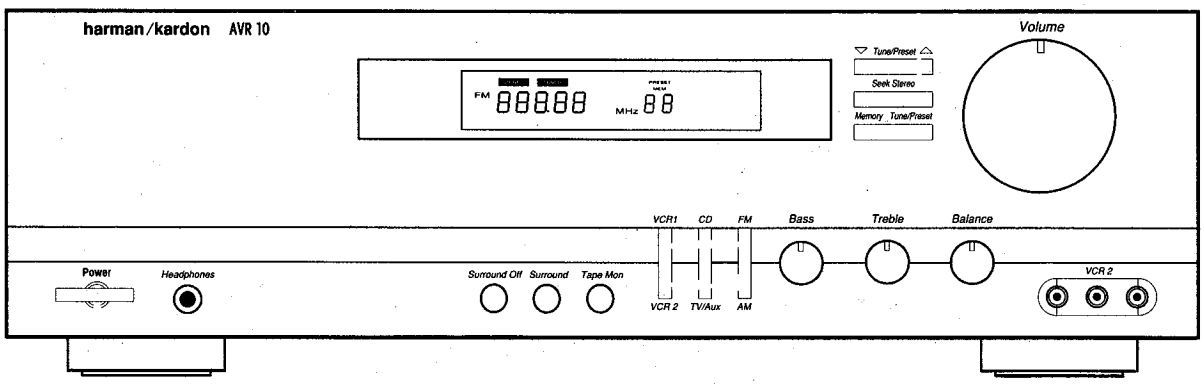
The Harman Kardon
Model AVR10

Manual A

AUDIO AND VIDEO RECEIVER

Technical Manual



■ CONTENTS ■

harman/kardon

Parts and Service Office
80 Crossways Park West, Woodbury, N.Y. 11797
1112-AVR10A G9603 1200 Printed in Korea

SPECIFICATIONS

	Nominal	Limit
● FRONT AMP SECTION		
RMS Output Power		
THD 0.2 %, 8 ohms	≧ 35 W	≧ 30 W
Both Channel Driven (20 Hz-20 kHz)		
THD at 35 W, 8 ohms		
20 Hz	≦ 0.09 %	≦ 0.2 %
1 kHz	≦ 0.09 %	≦ 0.2 %
20 kHz	≦ 0.09 %	≦ 0.2 %
IM Distortion at 35 W, 8 ohms, 60:7000 Hz=4:1		
	≦ 0.1 %	≦ 0.2 %
Input Sensitivity at 35 W, 8 ohms		
CD, AUX, VCR	150 mV	150±30 mV
S/N Ratio Input Shorted at Volume Max.		
(WTD IHF-A) at 35 W, 8 ohms		
CD, AUX	≧ 95 dB	≧ 90 dB
TV, VCR1, 2	≧ 85 dB	≧ 80 dB
Tone Control		
Bass, 50 Hz	±10 dB	±10±2 dB
Treble, 10 kHz	±10 dB	±10±2 dB
Frequency Response at 1 W, 8 ohms		
CD/AUX		
20 Hz, 20 kHz	±1.0 dB	±1.5 dB
Channel Crosstalk Input Shorted at 35 W, 8 ohms		
1 kHz	≧ 60 dB	≧ 50 dB
10 kHz	≧ 47 dB	≧ 45 dB
● CENTER AMP SECTION		
RMS Output Power.		
THD 0.9 %, 8 ohms, 1 kHz	≧ 32 W	≧ 30 W
Only Center Channel Driven		
S/N Ratio		
Input Shorted, IHF-A WTD	≧ 67 dB	≧ 65 dB
Frequency Response at -3 dB		
Normal	100 Hz-20 kHz	120 Hz-15 kHz
Wide	20 Hz-20 kHz	50 Hz-15 kHz
● REAR AMP SECTION		
RMS Output Power.		
THD 1 %, 8 ohms, 1 kHz	≧ 21 W x 2	≧ 20 W x 2
Both Rear Channel Driven		
S/N Ratio		
Input Shorted, (IHF-A WTD)		
Dolby	≧ 60 dB	≧ 55 dB
Frequency Response at -3 dB		
8 ohms, Dolby Pro-Logic	80 Hz-9 kHz	100 Hz-6 kHz
● VIDEO SECTION		
Input Sensitivity/Impedance.		
VCR1, VCR2	1 Vp-p/75 Ω	1 Vp-p/75Ω
Output Level/Impedance		
VCR1, REC out, TV Monitor Out	1 Vp-p/75 Ω	1 Vp-p/75Ω

	Nominal	Limit
Frequency Response at -3 dB		
	DC -10 MHz	5-6 MHz
Crosstalk at 1.0 MHz	≧ 50 dB	≧ 45 dB
● FM SECTION		
Tuning Cover Range 50 kHz Step		
Low	87.5 MHz	
High	108.0 MHz	
Usable Sensitivity 75 ohms Input		
S/N 30 dB UL/CSA	≦ 14.2 dBf	≦ 17.2 dBf
S/N 26 dB Europe		
Image Rejection at 106 MHz		
UL/CSA	≧40 dB	≧ 35 dB
Europe	≧80 dB	≧ 70 dB
IF Rejection, at 90 MHz	≧80 dB	≧ 70 dB
Full Limiting at -3 dB	≦ 12.2 dBf	≦ 15.2 dBf
50 dB Quieting Sensitivity at 98 MHz, 75 k DEV		
IHF Band Pass Filter		
Mono	≦ 20.2 dBf	≦ 23.3 dBf
Stereo	≦ 40.3 dBf	≦ 43.3 dBf
Distortion, 1 kHz 100 % MOD at 98 MHz		
IHF Band Pass Filter		
Mono	≦ 0.3 %	≦ 0.5 %
Stereo	≦ 0.5 %	≦ 0.7 %
S/N Ratio, 1 mV 75K DEV Input 100 % MOD, at 98 MHz		
IHF Band Pass Filter		
Mono	≧ 70 dB	≧ 65 dB
Stereo	≧ 65 dB	≧ 60 dB
Frequency Response, 20 Hz-15 kHz		
	± 1.5 dB	± 3 dB
AM-Rejection Ratio		
(100 μV-20 mV Input)	≧ 60 dB	≧ 50 dB
Search Level (at 98 MHz)	31.2 dBf	31.2± 5 dBf
Automatic Stereo Threshold at 98 MHz		
	31.2 dBf	31.2± 5 dBf
Muting Threshold. at 98 MHz	31.2 dBf	31.2± 5 dBf
Overload. at 98 MHz		
100 % MOD, 100 mV RF Input	≦ 0.3 %	≦ 0.5 %
Suprious Response.		
at 98 MHz, Antenna Input 3 μV	≧ 70 dB	≧ 60 dB
Capture Ratio 40/60 dBf	≦ 2 dB	≦ 2.5 dB
Alternative Channel Selectivity.	≧ 65 dB	≧ 55 dB
Input at 98 MHz	±400 kHz	
Stereo Separation 100% MOD, 1 mV Input at 98 MHz		
IHF Band Pass Filter		
100 Hz	≧ 40 dB	≧ 35 dB
1 kHz	≧ 45 dB	≧ 40 dB
10 kHz	≧ 35 dB	≧ 30 dB
Output Voltage at 75 kHz DEV, 1 kHz MOD, 1 mV Input		
Mono	600 mV	600± 150 mV
Stereo	550 mV	550± 150 mV

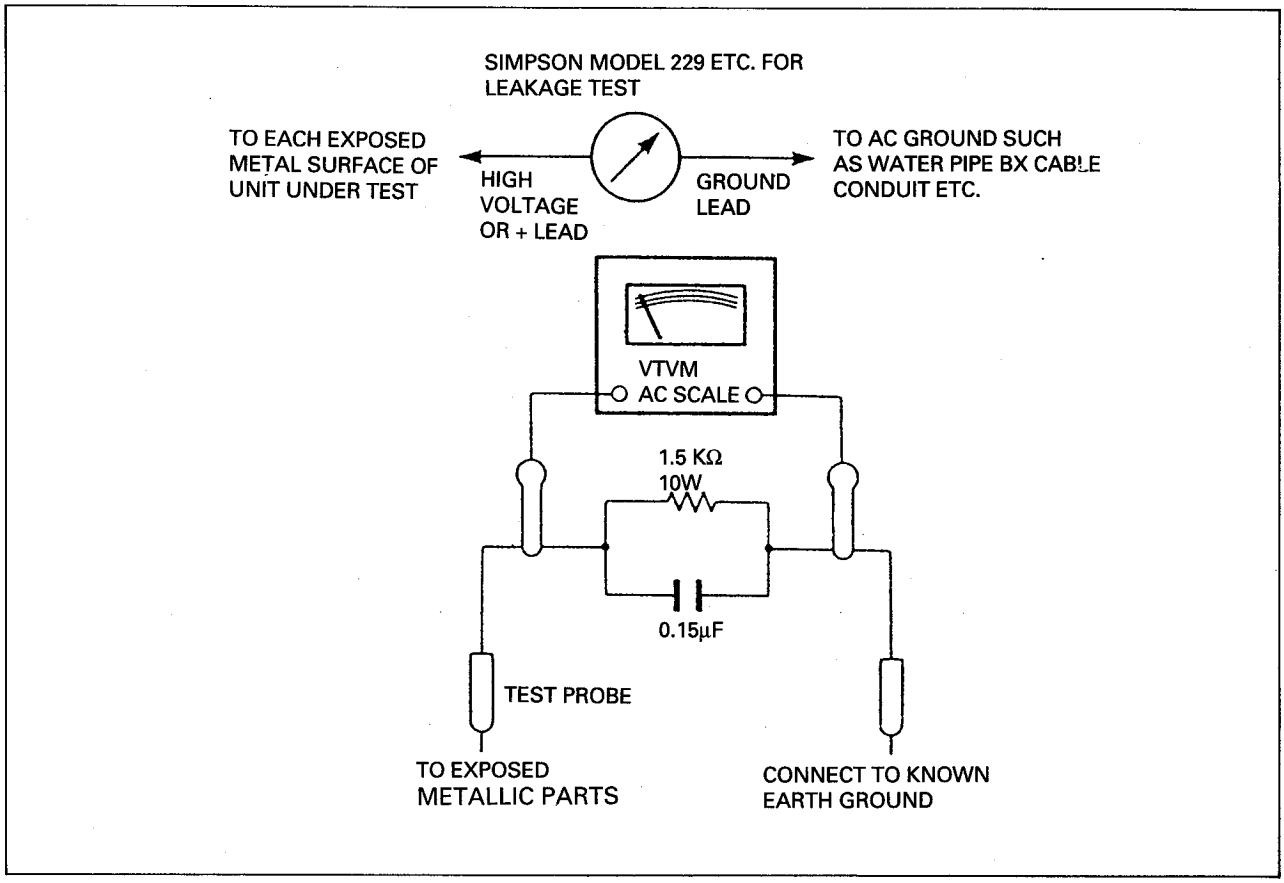
	Nominal	Limit
● AM SECTION		
Tuning Cover Range, 10 kHz/9 kHz Step		
Low	520/522 kHz	
High	1710/1611 kHz	
Usable Sensitivity.		
400Hz, 30% MOD, S/N 20 dB	≦ 500 μV/m	≦ 1000 μV/m
Image Rejection at 1400 kHz	≧ 35 dB	≧ 30 dB
IF Rejection at 600 kHz	≧ 50 dB	≧ 45 dB
AGC Figure of Merit.	≧ 50 dB	≧ 45 dB
From 100 mV/m at 1000 kHz		
Distortion.	≦ 0.8 %	≦ 1.5 %
400 Hz, 30% MOD, 5 mV/m Input		
IF Bandwidth	6 kHz	4-11 kHz
6 dB Down, 350 μV/m		
Audio Response, 5 mV/m Input, 1 kHz, 0 dB, 1000 kHz		
at -6 dB	80 Hz-2.2 kHz	100 Hz-2 kHz
Selecticity at 350 μV/m		
±10 kHz	≧ 25 dB	≧ 20 dB
S/N Ratio, 1000 kHz, With Antenna Input 5 mV/m		
	≧ 43 dB	≧ 40 dB
RF Overload, 400 Hz, 80 % MOD, 100 mV/m Input		
	≦ 5 %	≦ 10 %
Search Level (at 1000 kHz)	800 μV	800±6 dBμV
Output Voltage, 400 Hz, 30 % MOD, 5 mV/m Input		
	200 mV	200±40 mV
Whistle	≦ 10 %	≦ 15 %

Note : Nominal speces represent the design specs. All units should be able to approximate these-some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable ; in no case should a unit fail to meet limit specs.
This manual is based on the Europe Standard wiring diagram, and information on regional component variations through use of parts list. Design and specifications subject to change without notice for improvement.

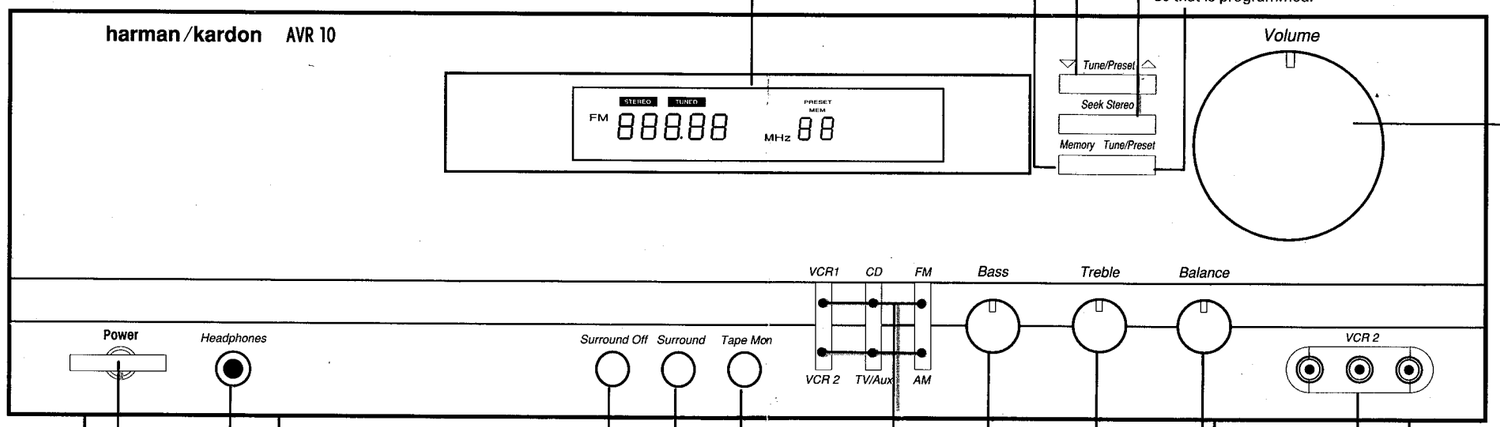
LEAKAGE TEST

Before returning the unit to the user, perform the following safety checks:

1. Inspect all lead dress to makes certain that leads are not pinched or that hardware is not lodged between the chassis and other metallic parts in the unit.
2. Be sure that any protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc., which were removed for servicing are properly reinstalled.
3. Be sure that no shock hazard exists; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows: Plug the power cord directly into a 230-volt AC receptacle (do not use an Isolation Transformer for this test). **Using two clip leads, connects a 1500 Ohm, 10-watt resistor paralleled by a 0.15µF capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 Ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor. (See Diagram.) Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the power switch in both the On and Off positions.)**
A reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.



CONTROLS AND FUNCTIONS



POWER BUTTON
Press this button to turn the power on. Press again to turn the power off. It can also be used as a system power button, if you connect the other components to the switched outlets.

DISPLAY WINDOW
This window shows the state of operation for easier control of the receiver. It also contains the IR Remote Sensor.

TUNE/PRESET BUTTONS
When PRESET and AUTO is not it, the TUNE/PRESET buttons will allow you to tune to a station manually.

MEMORY BUTTON
Use this button to store an AM or FM frequency. Press this button and select one of 30 preset locations to store the frequency with the TUNE/PRESET buttons while the MEMORY Indicator blinks, press MEMORY again to store preset station.

SEEK/STEREO BUTTON
Press this button, "Auto" will illuminate in the display. Then press the TUNE/PRESET button. The tuner will automatically seek out stations in your area that have enough signal strength to be listenable. The tuner will stop on stations until the SEEK/STEREO button is pressed again.

TUNE/PRESET BUTTON
Press the TUNE/PRESET side of this button to light up the preset mode then use the up/down buttons momentarily to scan the preset station frequencies. The receiver stops at each preset location from 1-30 that is programmed.

VOLUME CONTROL
Turn the VOLUME clockwise to increase the volume and counterclockwise to decrease it. The volume of the front, center, and rear channels is changed at the same time.

HEADPHONE JACK
Stereo headphones can be plugged into this jack for private listening.
Headphone impedance should be between 8 and 2K ohms.
Best resuits between 200 and 400 ohms.

BYPASS SELECTOR
Defeats all surround modes.

SURROUND MODE SELECTOR
Press this button to select the desired surround mode. The mode is changed between DOLBY PRO-LOGIC and DOLBY 3-STEREO.

TAPE MONITOR BUTTON
Press this button to select input from a tape deck.

INPUT FUNCTION SELECTOR BUTTONS
Press these buttons to select the desired input source.

BASS CONTROL
Modifies the low-frequency sound of the left and right channels as much as +/- 10dB. Set this control at a suitable position for your taste and room acoustics.

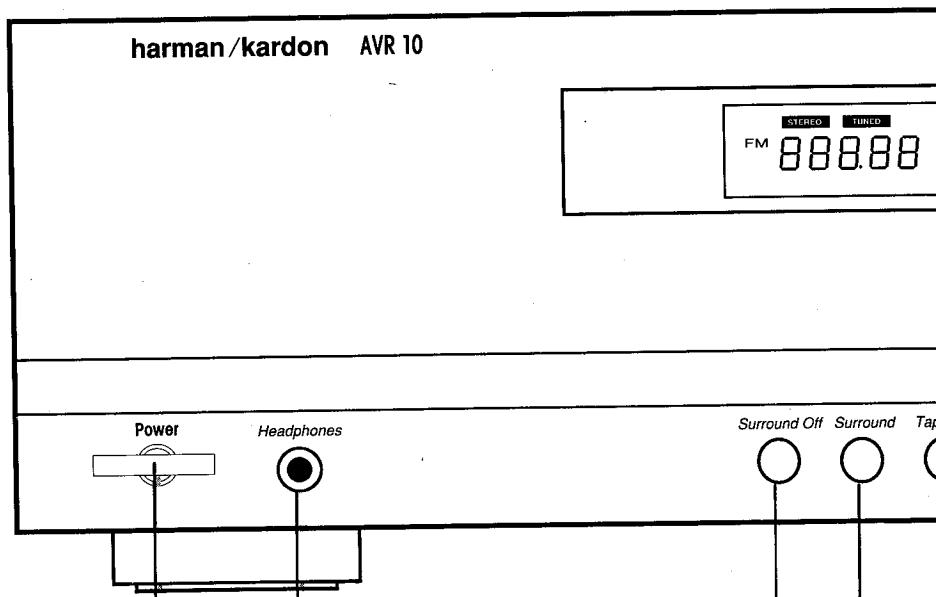
TREBLE CONTROL
Modifies the high-frequency sound of the left and right channels as much as +/- 10dB. Set this control at a suitable position for your taste and room acoustics.

BALANCE CONTROL
This control is used for balancing the relative sound volume of the left and right channel speakers. Clockwise rotation reduces the volume from the left speaker, counterclockwise rotation reduces the volume from the right speaker.

VCR 2 INPUT JACKS
Connect these jacks to the corresponding output jacks of a VCR.

CONTROLS AND FUNCTIONS

DISPLAY WINDOW
This window shows the state of operation for easier control of the receiver. It also contains the IR Remote Sensor.



POWER BUTTON
Press this button to turn the power on. Press again to turn the power off. It can also be used as a system power button, if you connect the other components to the switched outlets.

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Defeats all surround modes.

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When PRESET and AUTO is not it, the TUNE/PRESET buttons will allow you to tune to a station manually.

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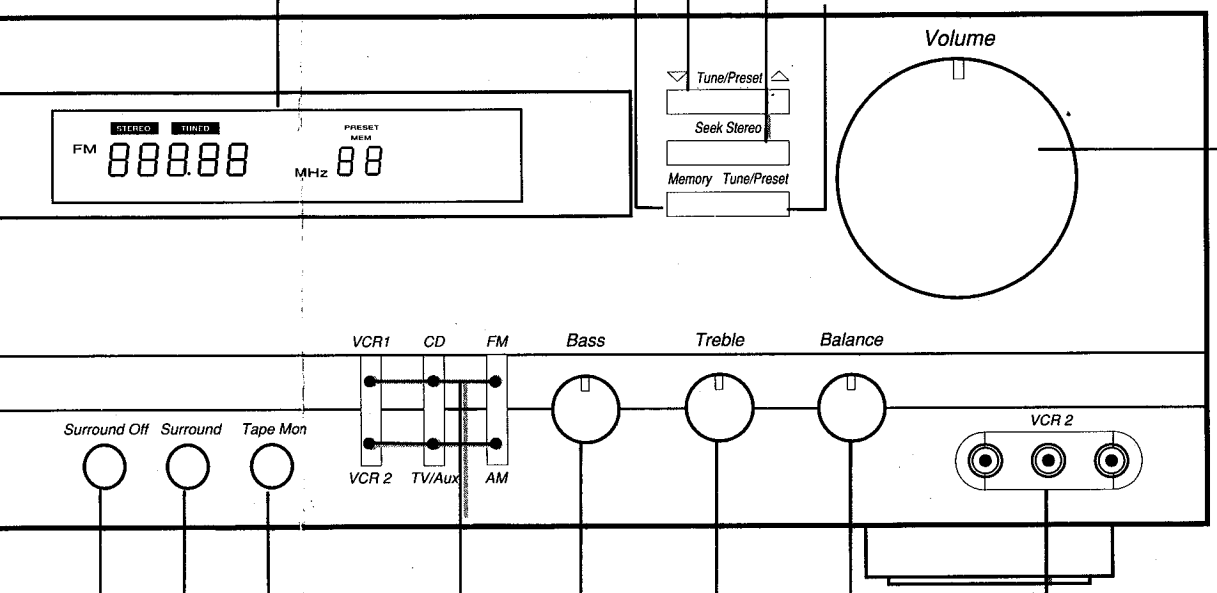
TUNE/PRESET BUTTON
Press the TUNE/PRESET side of this button to light up the preset mode then use the up/down buttons momentarily to scan the preset station frequencies. The receiver stops at each preset location from 1-30 that is programmed.

VOLUME CONTROL
Turn the VOLUME clockwise to increase the volume and counterclockwise to decrease it. The volume of the front, center, and rear channels is changed at the same time.



SELECTOR
surround modes.

INPUT FUNCTION SELECTOR BUTTONS
Press these buttons to select the desired input source.

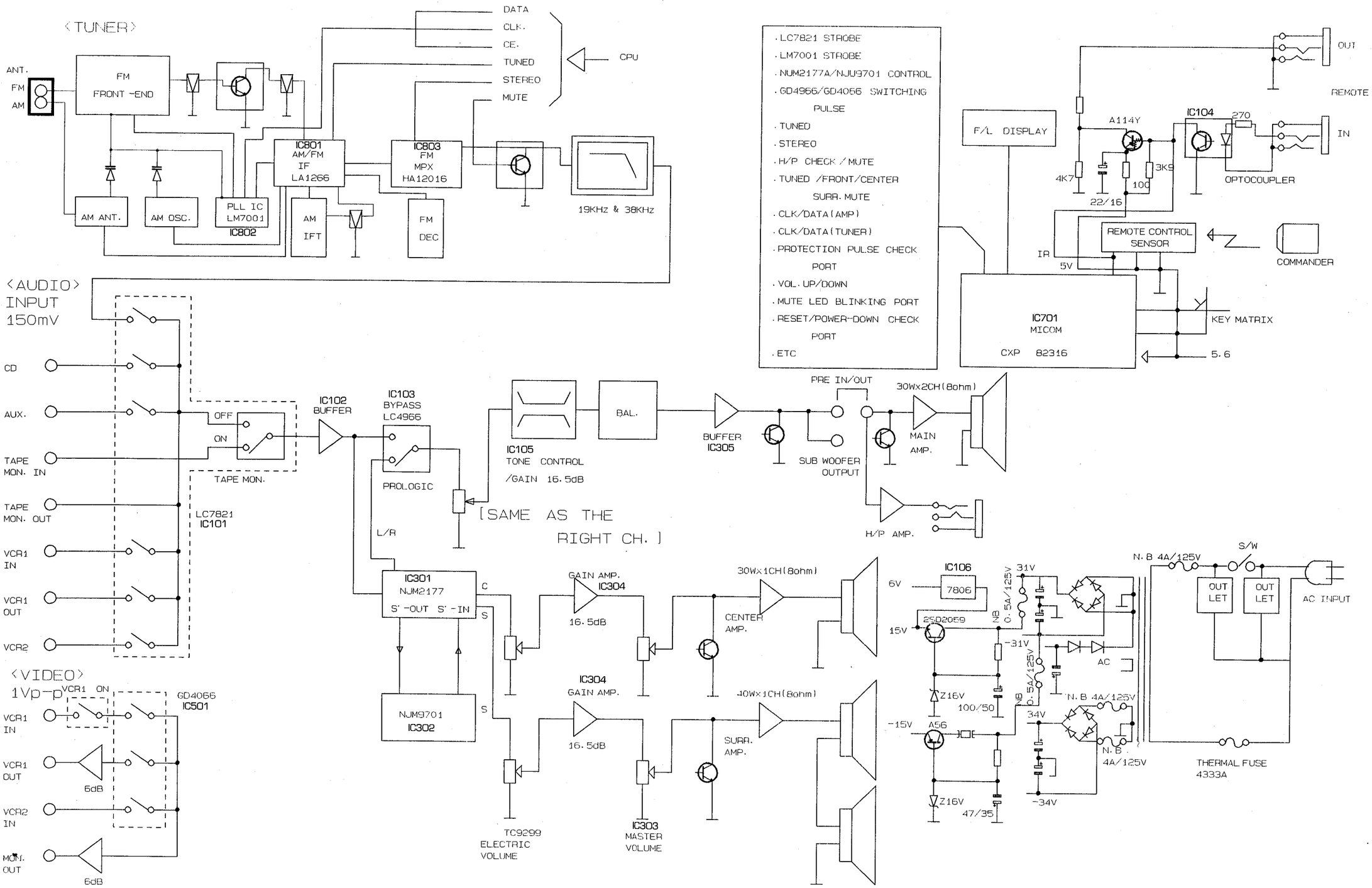
BASS CONTROL
Modifies the low-frequency sound of the left and right channels as much as +/- 10dB. Set this control at a suitable position for your taste and room acoustics.

BALANCE CONTROL
This control is used for balancing the relative sound volume of the left and right channel speakers. Clockwise rotation reduces the volume from the left speaker, counterclockwise rotation reduces the volume from the right speaker.

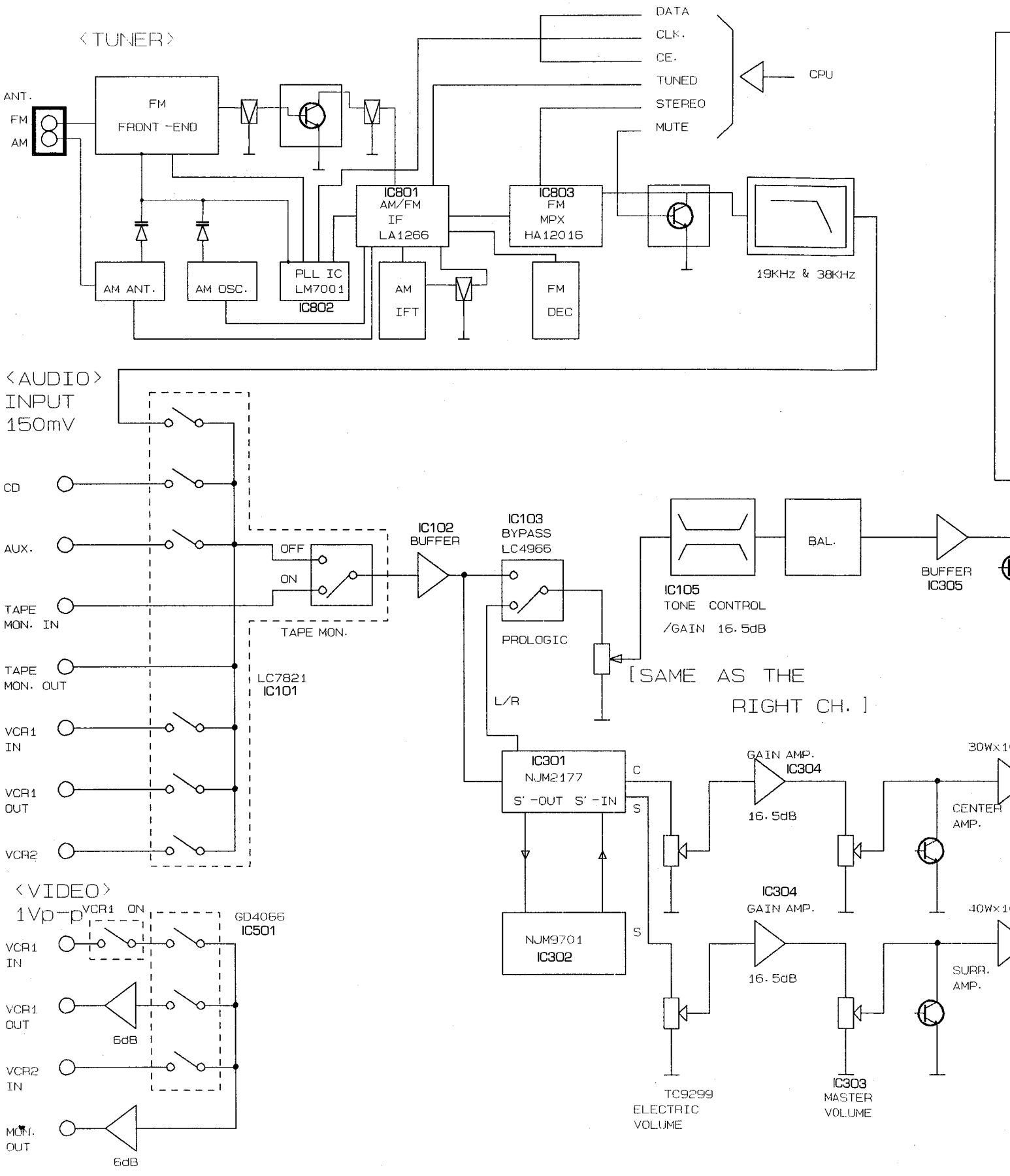
VCR 2 INPUT JACKS
Connect these jacks to the corresponding output jacks of a VCR.

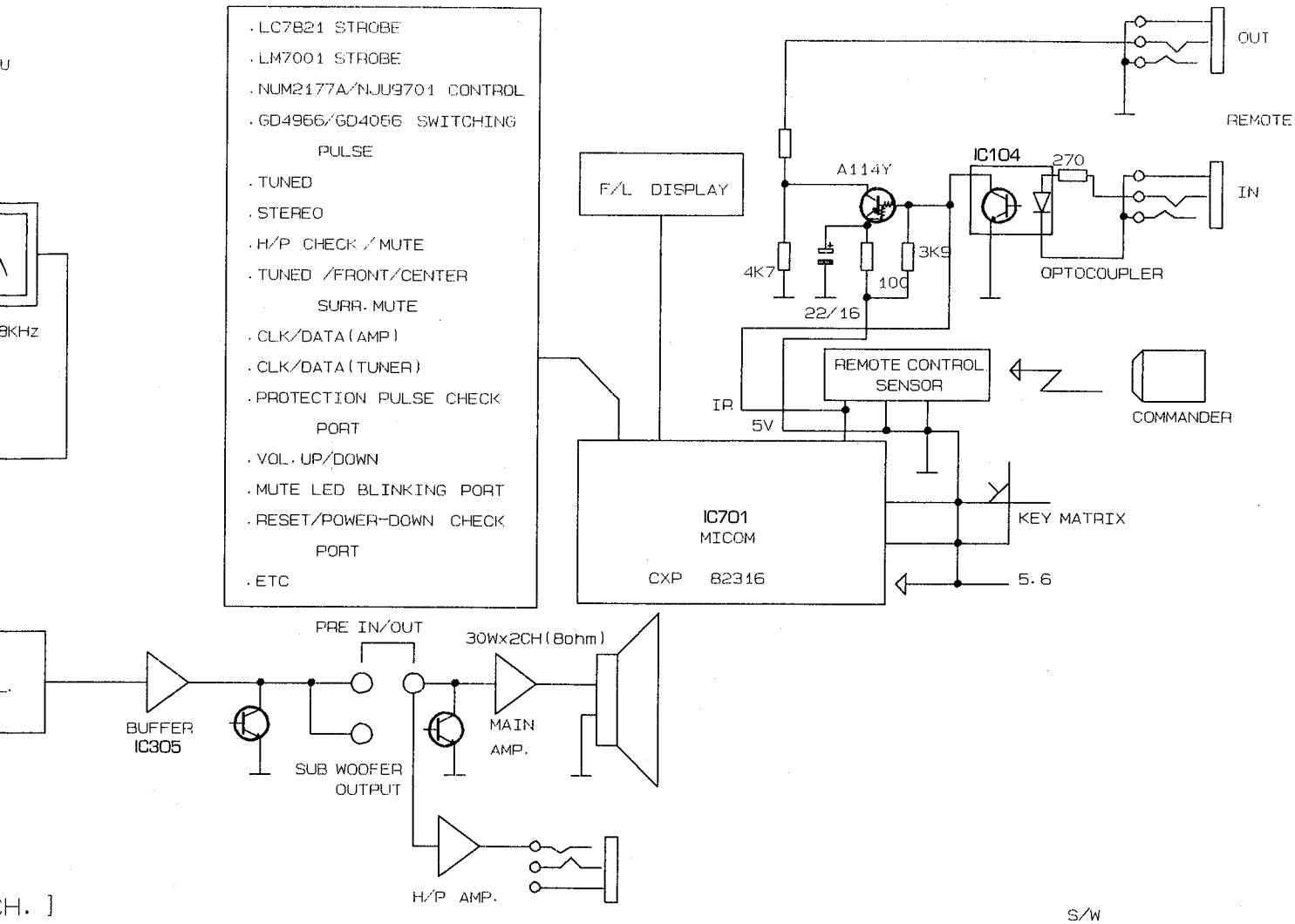
TREBLE CONTROL
Modifies the high-frequency sound of the left and right channels as much as +/- 10dB. Set this control at a suitable position for your taste and room acoustics.

BLOCK DIAGRAM

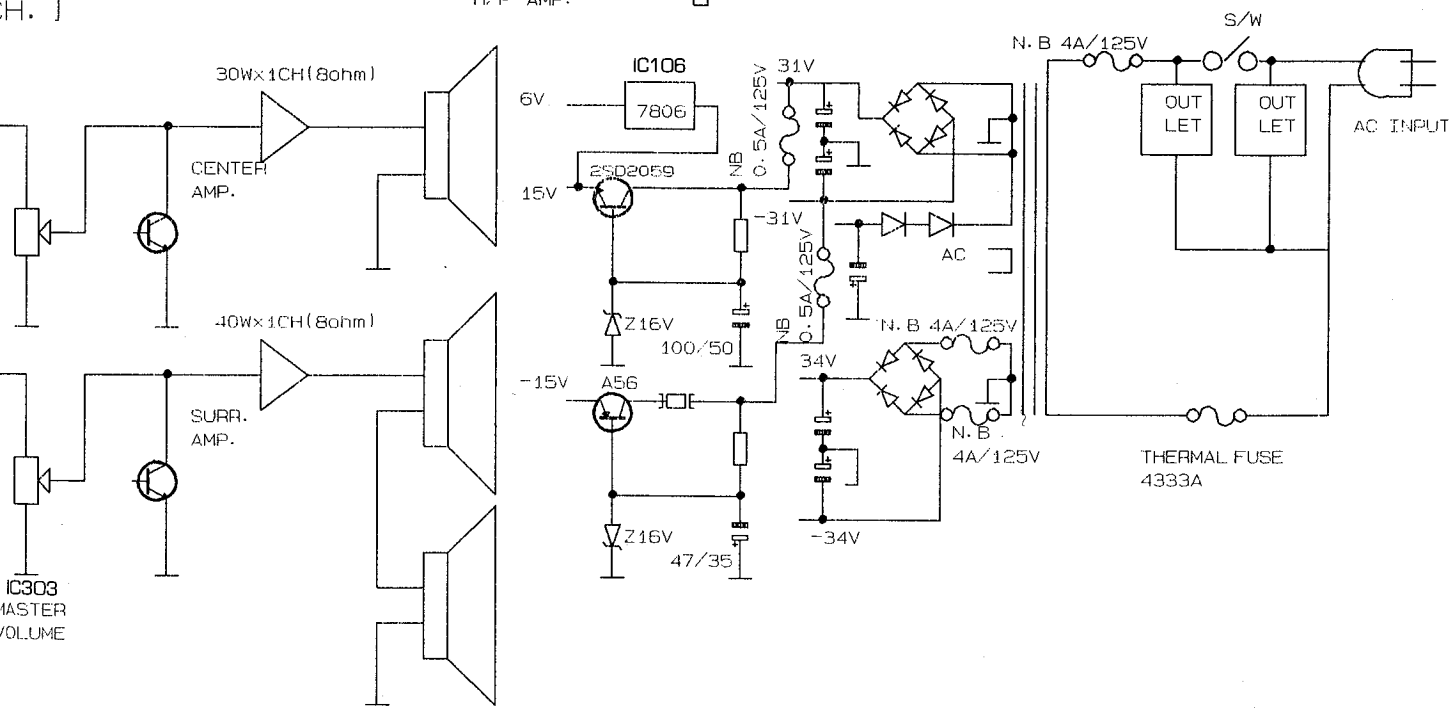


BLOCK DIAGRAM




· LC7821 STROBE
· LM7001 STROBE
· NUM2177A/NJU9701 CONTROL
· GD4966/GD4066 SWITCHING PULSE
· TUNED
· STEREO
· H/P CHECK / MUTE
· TUNED /FRONT/CENTER SURR. MUTE
· CLK/DATA(AMP)
· CLK/DATA(TUNER)
· PROTECTION PULSE CHECK PORT
· VOL. UP/DOWN
· MUTE LED BLINKING PORT
· RESET/POWER-DOWN CHECK PORT
· ETC
F/L DISPLAY
IC701
MICOM
CXP 82316
OUT
REMOTE
IN
A114Y
IC104
270
4K7
3K9
100
22/16
OPTOCOUPLER
REMOTE CONTROL SENSOR
COMMANDER
IR
5V
KEY MATRIX
5.6

PRE IN/OUT
30Wx2CH(8ohm)
BUFFER
IC305
SUB WOOFER OUTPUT
MAIN AMP.
H/P AMP.


30Wx1CH(8ohm)
CENTER AMP.
40Wx1CH(8ohm)
SURR. AMP.
IC303
MASTER VOLUME
IC106
7806
6V
15V
2SD2059
Z16V
100/50
-15V
A56
Z16V
47/35
NB
0.5A/125V
31V
-31V
AC
34V
-34V
N.B 4A/125V
S/W
OUT LET
OUT LET
AC INPUT
THERMAL FUSE
4333A

DISASSEMBLY PROCEDURES

[1] Cover Top Removal (Figure 1)

1. Remove 4 screws (① to ④) from the both sides of chassis.
2. Remove 2 screws (⑤ and ⑥) from the chassis back.
3. Carefully lift the cover top to remove.

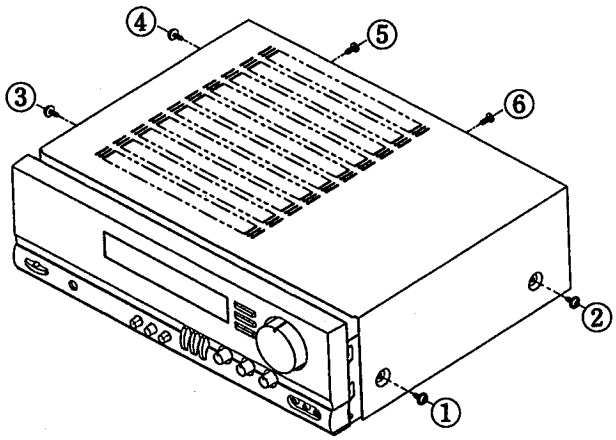


Figure 1

[2] Cover Bottom Removal (Figure 2)

1. Remove 12 screws (① to ⑫) from the cover bottom.
2. Carefully lift the cover bottom to remove.

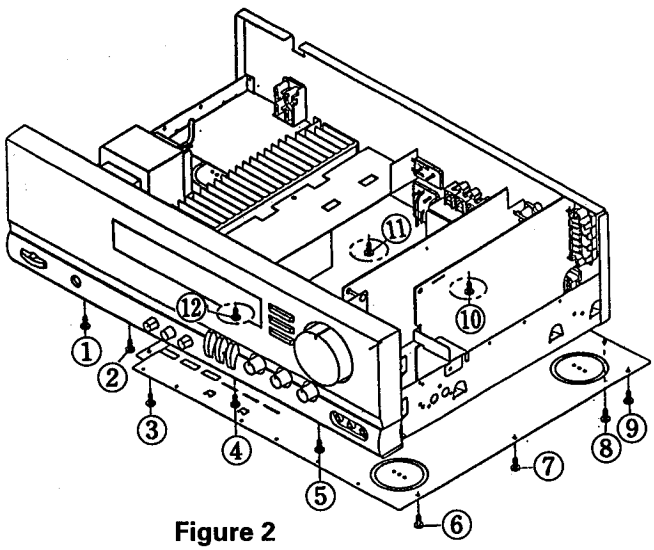


Figure 2

[3] Panel Front Assembly Removal (Figure 3)

1. Remove the cover top and cover bottom (Refer to step ① and ②).
2. Remove 4 screws (① to ④) from both sides of the panel front.
3. Remove 2 screws (⑤ and ⑥) from the bottom of the panel front.
4. Disconnect CNT107, CNT114, CNT116, CNT111 from the Main P.C.Board.
5. Disconnect CNT113-1 from the Video P.C.Board.
6. Disconnect CNT122 from the Outlet P.C.Board.
7. Disconnect CNT105-1 from the Front P.C.Board.
8. Remove a screw ⑦ from the right frame to release lug wire.
9. Remove a screw ⑧ from the left frame to release lug wire.

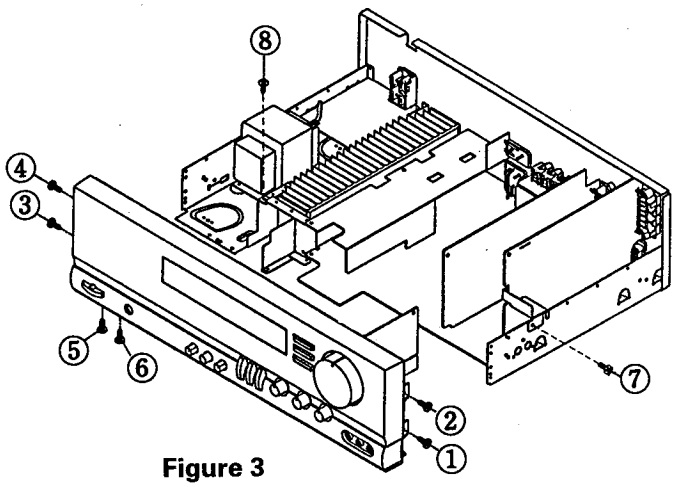


Figure 3

[4] Volume and Front P.C.Board Removal (Figure 4)

1. Remove the panel front assembly. (Refer to step [3]).
2. Disconnect CNT700 from the Volume P.C.Board.
3. Disconnect CNT701 from the Front P.C.Board.
4. Pull the knob(Volume) from the panel front.
5. Remove the hex nut from the volume motor and remove 5 screws (① to ⑥) from the Front P.C.Board to release the Volume and Front P.C.Board.

[5] VCR2 P.C.Board Removal (Figure 4)

1. Remove the panel front assembly (Refer to step [3])
2. Remove 2 screws (⑦ and ⑧) from the Video P.C.Board to release the P.C.Board.

[6] Tone P.C.Board Removal (Figure 4)

1. Remove the panel front assembly. (Refer to step [3]).
2. Pull the knobs (Bass/Treble/Balance) from the panel front assembly.
3. Remove the hex nuts from the variable resistors to release the Tone P.C.Board.

[7] Head Phone P.C.Board Removal (Figure 4)

1. Remove the panel front assembly (Refer to step [3])
2. Remove a screw ⑨ from the head phone jack.
3. Remove 2 screws (⑩ and ⑪) from the power switch to release the Headphone P.C.Board.

[8] Power Led P.C.Board Removal (Figure 4)

1. Remove the panel front assembly (Refer to step [3])
2. Remove the headphone PC Board (Refer to step [7])
3. Remove 2 screws (⑫ and ⑬) from the Power LED P.C.Board to release the P.C.Board.

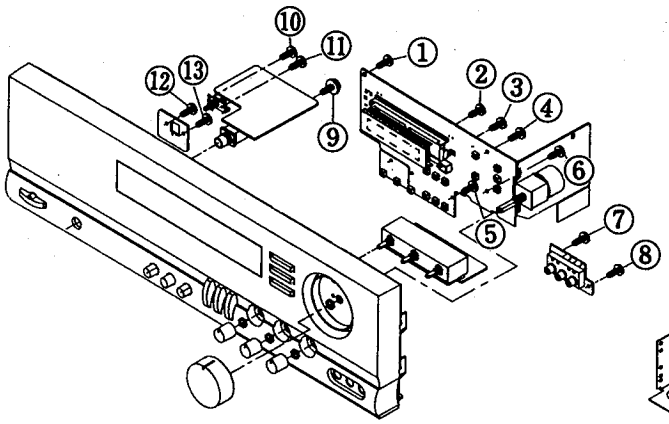


Figure 4

[9] Tuner P.C.Board Removal (Figure 5)

1. Remove the cover top (Refer to step [1])
2. Remove a screw ① from the Tuner P.C.Board bracket.
3. Remove 2 screws (② and ③) from the chassis back.
4. Disconnect CNT106 from the Main P.C.Board to release the Tuner P.C.Board.

[10] Surround P.C.Board Removal (Figure 5)

1. Remove the cover top (Refer to step [1])
2. Remove 2 screws (④ and ⑤) from the chassis back.
3. Disconnect CNT108 and CNT109 from the Main P.C.Board to release the Surround P.C.Board.

[11] Video P.C.Board Removal (Figure 5)

1. Remove the cover top (Refer to step [1])
2. Remove 2 screws (⑥ and ⑦) from the chassis back.
3. Disconnect CNT112 from the Main P.C.Board to release the Video P.C.Board.

[12] Center Speaker P.C.Board Removal (Figure 5)

1. Remove the cover top (Refer to step [1]).
2. Remove a screws (⑧ and ⑨) from the chassis back.
3. Disconnect CNT117-1 from the Center speaker P.C.Board.

[13] Surround/Surround Amp/Rear Speaker P.C.Board Removal (Figure 5)

1. Remove the cover top (Refer to step [1])
2. Remove 2 screws (⑩ and ⑪) from the chassis back.
3. Remove 2 screws (⑫ and ⑬) from the Surround P.C.Board.
4. Unsolder all leads of Q414, Q410, Q413, Q427, Q424, Q428 in the Surround PC Board.
5. Disconnect CNT110 from the Main P.C.Board to relase the surround/surround amp/rear Speaker P.C.Board.

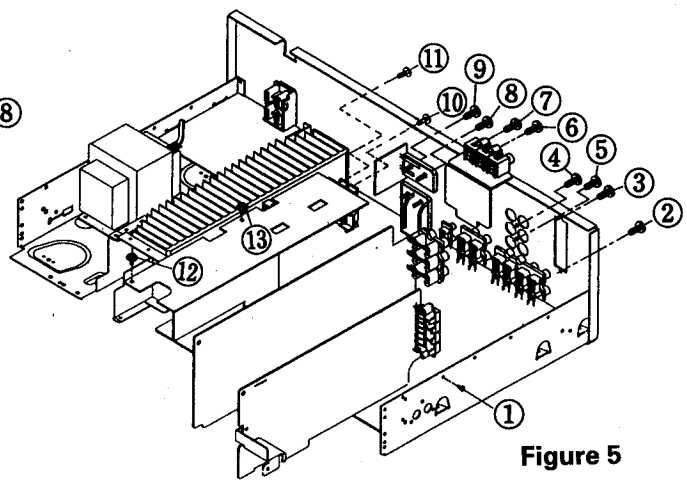


Figure 5

[14] Outlet P.C.Board Removal (Figure 6)

1. Remove the cover top (Refer to step [1]).
2. Remove a screws (① and ②) from the chassis back.
3. Disconnect CNT 101-1, CNT 122 from the Outlet P.C.Board.
4. Remove 3 screws (③ to ⑤) from the Outlet P.C.Board.

[15] Main P.C.Board Removal (Figure 6)

1. Remove the cover top (Refer to step [1])
2. Remove the panel front assembly (Refer to step [3])
3. Do steps [9], [10], [11], [12], [13].
4. Remove 5 screws (⑥ and ⑩) from the chassis back.
5. Remove 4 screws (⑪ and ⑭) from the Main P.C.Board top.

6. Disconnect CNT103, CNT102, CNT104 from the Main P.C.Board.
7. Unsolder all leads of Q216L/R, Q211L/R, Q215L/R, Q186, IC105 P201 in the Main P.C.Board.
8. Relese the Main P.C.Board.

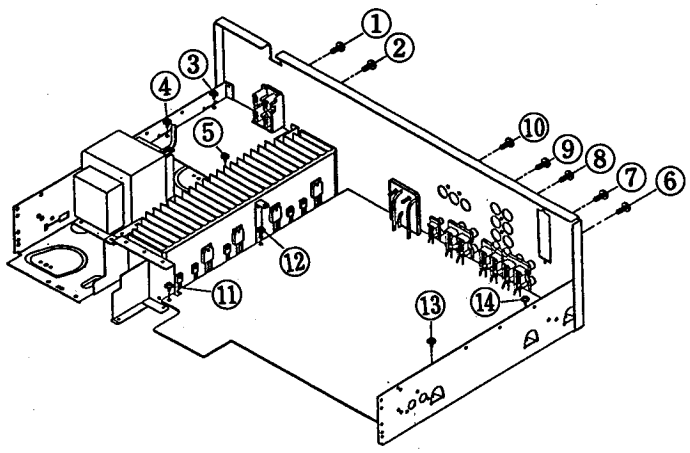
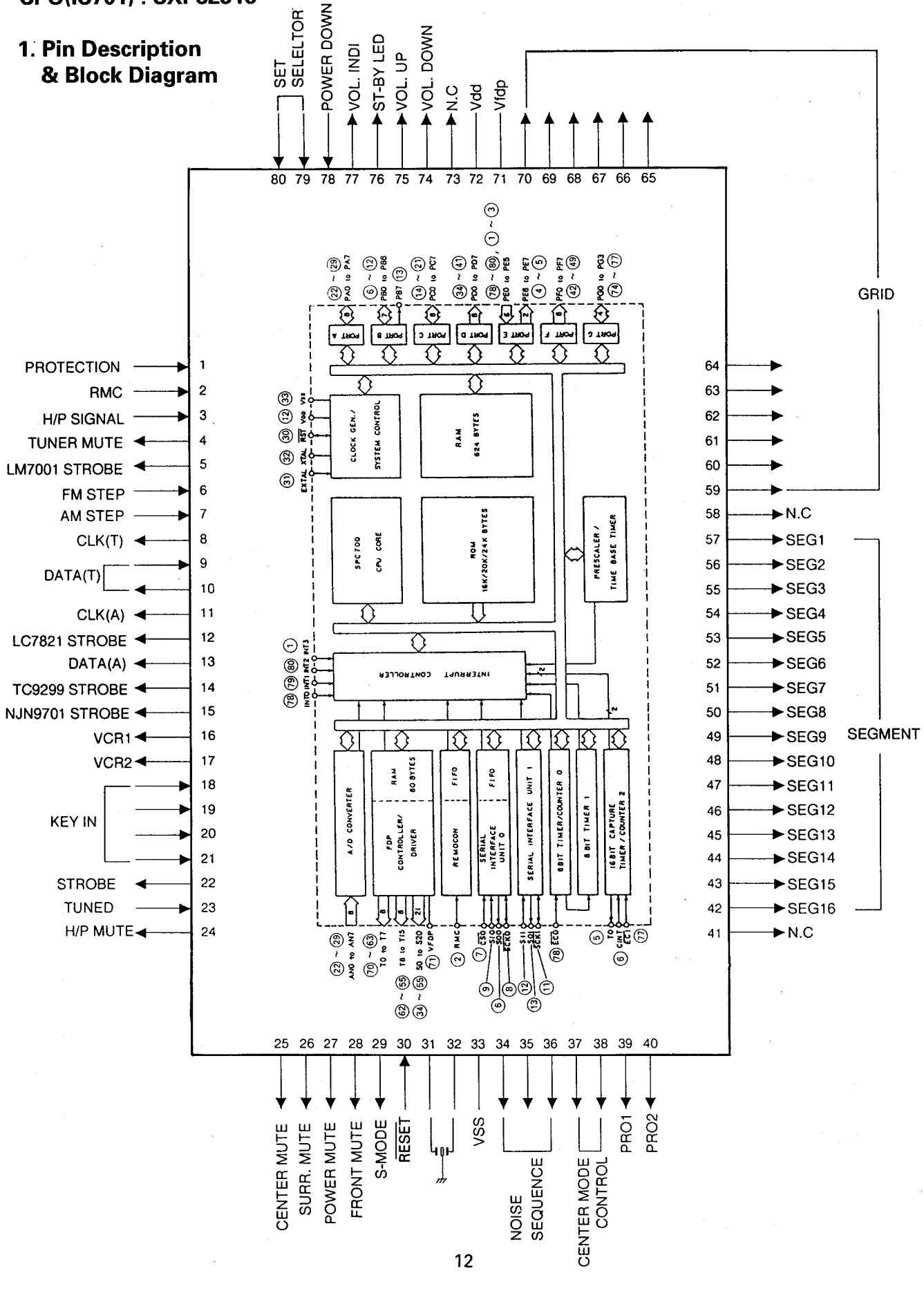


Figure 6

CIRCUIT DESCRIPTION

CPU(IC701) : CXP82316

1. Pin Description & Block Diagram



2. Input and Output Terminal Functions

<table>
<tr><th>Pin. No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1</td><td>PROTECTION</td><td>Input for protection signal.
If it is low, all channel mute signal level is turned to high. Except for first 3 second it doesn't check protection.</td></tr>
<tr><td>2</td><td>RMC</td><td>Input for remote control signal.("L-active")</td></tr>
<tr><td>3</td><td>H/P SIGNAL</td><td>Input for headphone signal.</td></tr>
<tr><td>4</td><td>TUNER MUTE</td><td>Output for tuner mute.
Output high under the followwing conditions.
1. When power is turned on or off.
2. When tuner band is changed.
3. When tuner up or down button is pressed.
4. When preset button is pressed.
5. When preset number displayed changes during memory scan.
6. When the protection terminal's level is low.
7. When "-∞ mute signal" is received from the commander.</td></tr>
<tr><td>5</td><td>LM7001 STROBE</td><td>Output to enable IC LM7001.</td></tr>
<tr><td>6～7</td><td>STEP</td><td>Input to select step.
<table>
<tr><th>BAND</th><th>STEP</th><th>6</th><th>7</th></tr>
<tr><td>FM</td><td>50 K</td><td>L</td><td>H</td></tr>
<tr><td>AM</td><td>10 K</td><td>L</td><td>H</td></tr>
<tr><td>FM</td><td>50 K</td><td>L</td><td>L</td></tr>
<tr><td>AM</td><td>9 K</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>8,10</td><td>CLK(T),DATA(T)</td><td>Output, clock and data signal to IC LM7001.</td></tr>
<tr><td>11,13</td><td>CLK(A),DATA(A)</td><td>Output, clock and data signal to ICs LC7821, NJU701 and TC9299.</td></tr>
<tr><td>12</td><td>LC7821 STROBE</td><td>Output to enable IC LC7821.</td></tr>
<tr><td>14</td><td>TC9299 STROBE</td><td>Output to enable IC TC9299.</td></tr>
<tr><td>15</td><td>NJN9701 STROBE</td><td>Output to enable IC NJN9701.</td></tr>
<tr><td>16, 17</td><td>VCR1/VCR2</td><td>Output to select the video signal of VCR1 or VCR2.
Output data for each mode is as follows.
<table>
<tr><th>MODE</th><th>18</th><th>19</th></tr>
<tr><td>VCR1</td><td>H</td><td>L</td></tr>
<tr><td>VCR2</td><td>L</td><td>H</td></tr>
<tr><td>ELSE</td><td>△</td><td>△</td></tr>
</table>
△;keeping last state.</td></tr>
<tr><td>18～21</td><td>KEY INPUT</td><td>Input data of K_1 - K_4 for key scan.</td></tr>
<tr><td>22</td><td>STEREO</td><td>When receiving low level, it turn on the stereo flag of FL.</td></tr>
<tr><td>23</td><td>TUNED</td><td>Input for station detector signal in searching turning.
Stops searching up or down when stops station detector reached a certain level.</td></tr>
<tr><td>24</td><td>H/P MUTE</td><td>Output for headphone mute.
Output low level under the following conditions.
1. When power is turned on or off.
2. When headphone plug is removed from headphone jack.</td></tr>
<tr><td>25</td><td>CENTER MUTE</td><td>Output for center mute.
Output low level under the following conditions.
1. When power is turned on or off.
2. When center mode is turned on or off.
3. When center mode is switched.
4. When test tone mode is switched on, or when output is not directed to center.</td></tr>
</table>

<table>
<tr><th>Pin. No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>26</td><td>SURR, MUTE</td><td>Output for surround mute.
Output low level under the following conditions.
1. When power is turned on or off.
2. When surround mode is turned on or off.(Keeping low level in surr. off.)
3. When test tone mode is changed, or when output is not directed to surround.
4. When delay time is switched.
5. When the protection terminal's level is low.
6. When "-∞ mute signal" is received from the commander.
7. When headphone plug is inserted.</td></tr>
<tr><td>27</td><td>POWER MUTE</td><td>Output for all amp. mute.
Output low level under the following conditions.
1. When power is turned on or off.
2. When the protection terminal's level is low.</td></tr>
<tr><td>28</td><td>FRONT MUTE</td><td>Output for main mute.
Output low level under the following conditions.
1. When power is turned on or off.
2. When function is changed.
3. When mono or stereo is changed.
4. When the protection terminal's level is low.
5. When "-∞ mute signal " is received from the commander.
6. When headphone plug is inserted.</td></tr>
<tr><td>29</td><td>S-MODE</td><td>Output voltage is as follows to control surround mode.
Prologic : 5V, 3-Stereo : 2.5V, bypass : 0V</td></tr>
<tr><td>30</td><td>RESET</td><td>Input to reset micom</td></tr>
<tr><td>31,32</td><td>EXTAL, XTAL</td><td>Input and output pin for connecting a crystal oscillator.</td></tr>
<tr><td>33</td><td>VSS</td><td>Provides the ground potential.</td></tr>
<tr><td>34～36</td><td>NOISE SEQUENCE</td><td>Output signal to select output channal in testing tone.
Output signal for 2 second per each channal in order L,C,R,S.
<table>
<tr><th>MODE / PIN No.</th><th>L</th><th>C</th><th>R</th><th>S</th><th>TEST TONE OFF</th></tr>
<tr><td>34</td><td>L</td><td>L</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>35</td><td>L</td><td>L</td><td>H</td><td>H</td><td>△</td></tr>
<tr><td>36</td><td>L</td><td>H</td><td>L</td><td>H</td><td>△</td></tr>
</table>
△ : Keeping last state</td></tr>
<tr><td>37, 38</td><td>CENTER MODE CONTROL</td><td>Output data to control center mode.
<table>
<tr><th>MODE / PIN No.</th><th>NOR MAL</th><th>PHAN TOM</th><th>WIDE</th></tr>
<tr><td>37</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>38</td><td>L</td><td>L</td><td>H</td></tr>
</table></td></tr>
<tr><td>39, 40</td><td>PRO1, PRO2</td><td>Input for protection signal.</td></tr>
<tr><td>41</td><td>NC</td><td>Not used.</td></tr>
<tr><td>42～57</td><td>S16-S1</td><td>Output for segment.</td></tr>
<tr><td>58</td><td>NC</td><td>Not used.</td></tr>
<tr><td>59～70</td><td>G1-G12</td><td>Output for grid.</td></tr>
<tr><td>71</td><td>Vfdp</td><td>Power supply of the FL controller.</td></tr>
<tr><td>72</td><td>Vdd</td><td>Power supply.</td></tr>
<tr><td>73</td><td>NC</td><td>Not used.</td></tr>
<tr><td>74, 75</td><td>VOL. UP/DOWN</td><td>Output signal to turn up or down volume moter.</td></tr>
</table>

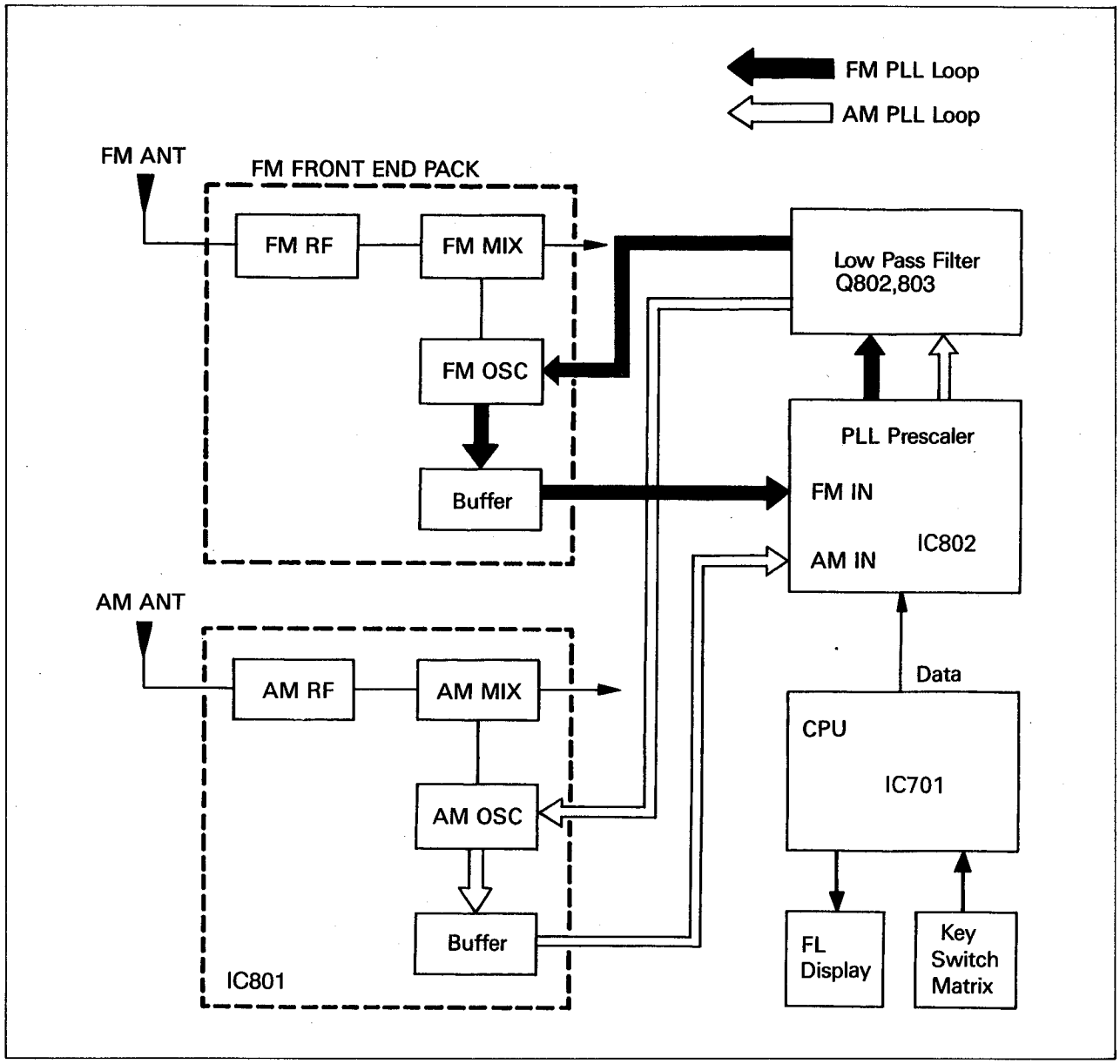
<table>
<tr><th>Pin. No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>76</td><td>ST-BY LED</td><td>Output voltage to control ST-BY LED is asfollows.
When power is turned on by power s/w or remocon, it is high level.
Else, it is low level. (Keeping last level)</td></tr>
<tr><td>77</td><td>VOL. INDI.</td><td>Output signal to turn on or off the LED which is used master volume indicator. It is high level in turning on and low level in turning off.</td></tr>
<tr><td>78</td><td>PD</td><td>Input for power down. (At "L", it is active)</td></tr>
<tr><td>79, 80</td><td>SELECTOR</td><td>Input signal is as follows to select one of three sets(AVR10, AVI100 and HK3250).
<table>
<tr><th>SET</th><th>AVR10</th><th>AVI100</th><th>HK3250</th></tr>
<tr><td>79</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>80</td><td>L</td><td>L</td><td>H</td></tr>
</table>
</td></tr>
</table>

3. Key Matrix

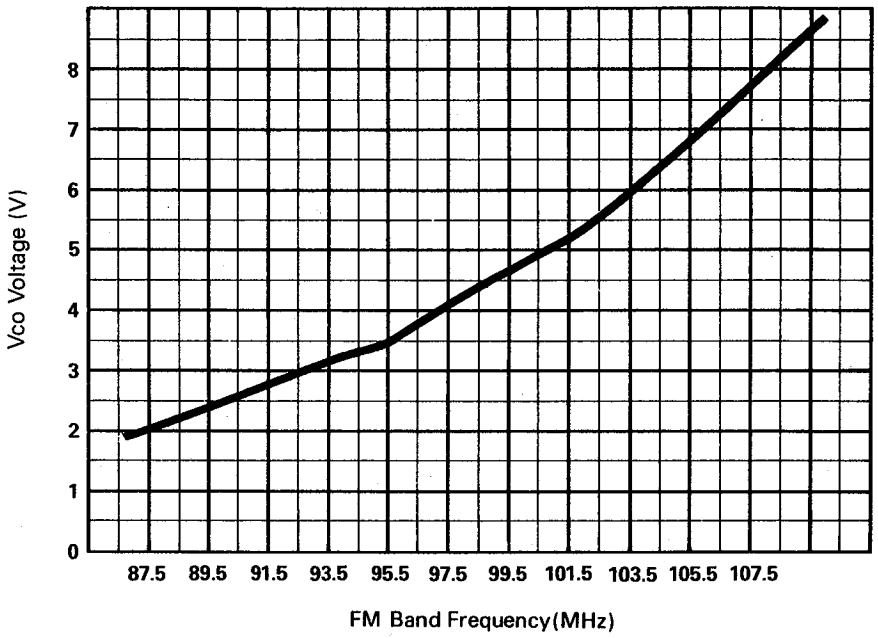
PIN NO.	51	52	53	54
18	SURR1. BYPASS	SURR. MODE	SEEK STEREO	PRESET UP
19	TAPE MON.	VCR1	TUNER ▼ PRESET ▲	PRESET DOWN
20	TV/VCR2	CD	MEMORY	
21	AUX	FM	AM	

4. Digital Tuning System Description

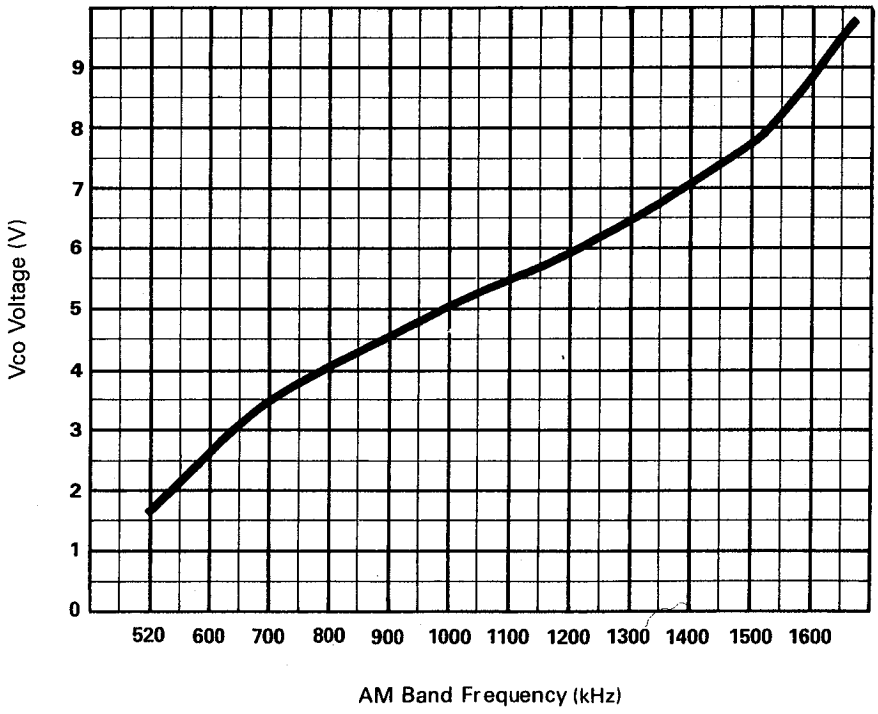
DIGITAL TUNING SYSTEM



Vco vs. FM Band Frequency Curve



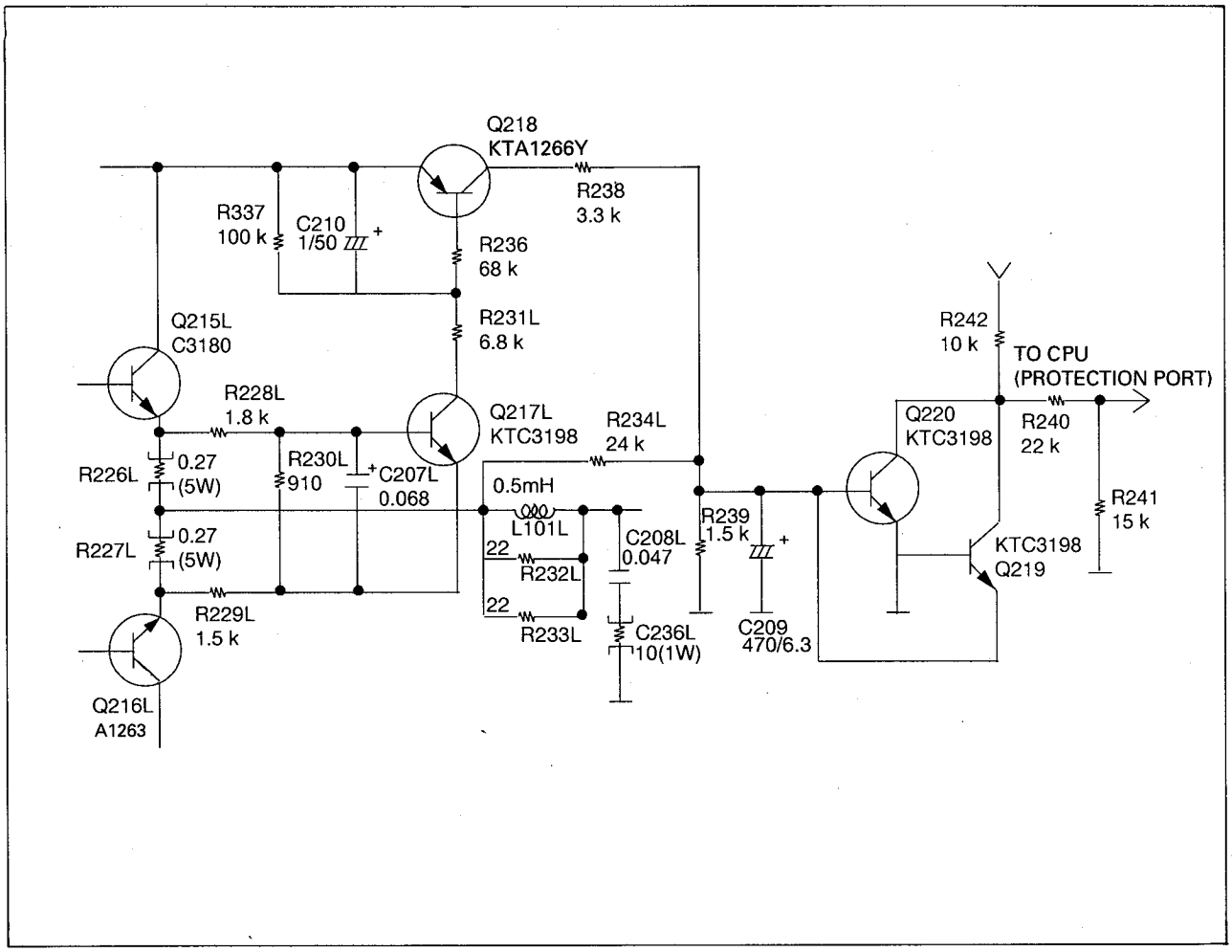
Vco vs. AM Band Frequency Curve



5. Protection Circuits

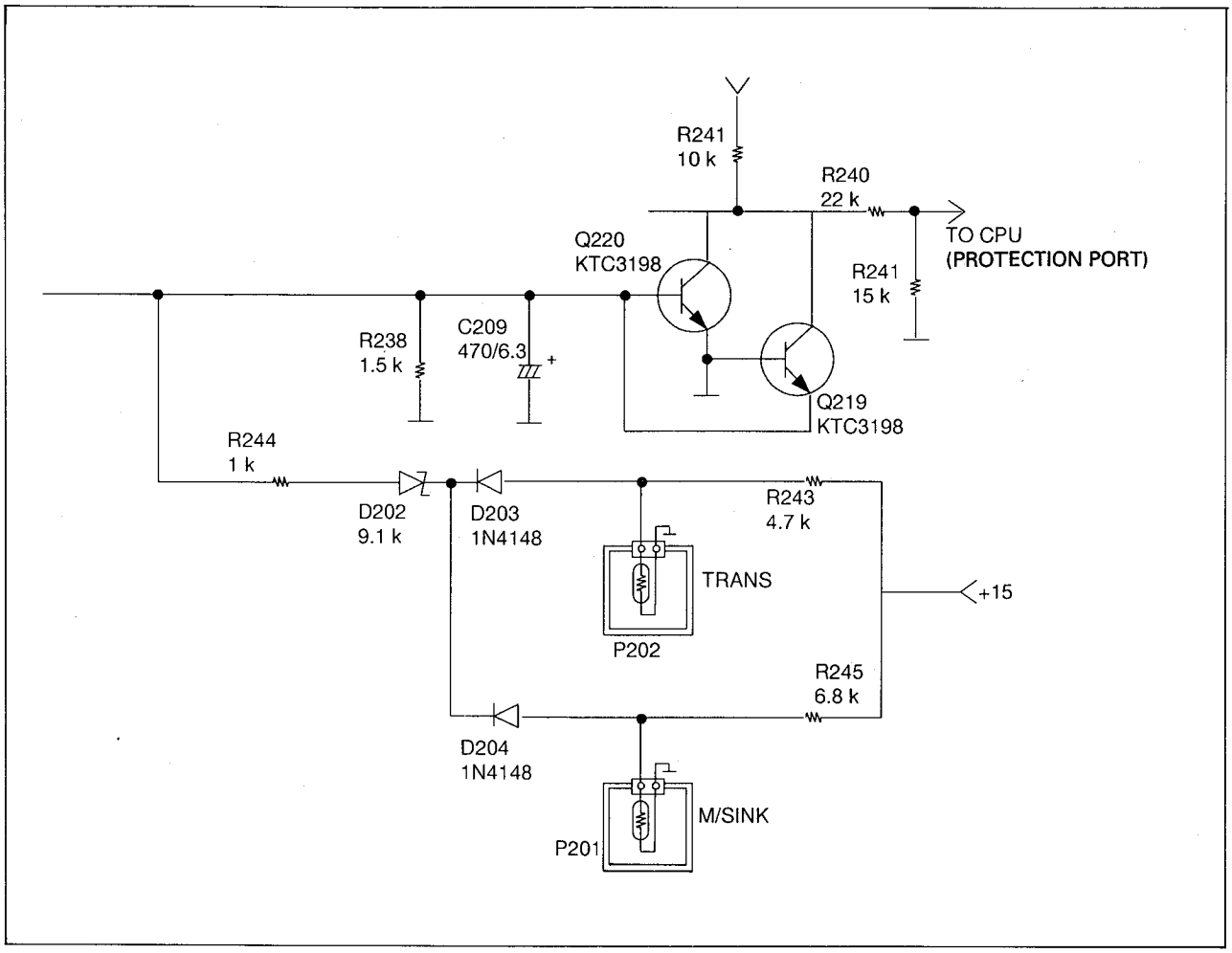
SPEAKER PROTECTION CIRCUIT

The CPU protects both this unit and the speakers when an abnormally high current flows in Q215 L/R/C and Q216 L/R due to excessive input drive, too low of a load impedance, or short of the speaker terminals. If current increase is excessive the voltage across R226 L/R or R227 L/R turns on Q217 L/R, then Q218 turns on Q220.
It makes the protection port of the CPU to low state.
Then the power is turned off.



THERMAL PROTECTION CIRCUIT

This receiver has a overload thermal protection circuits to guard against abnormal operation.
When the temperature of TRANS POSISTOR installed with the main transformer or H/SINK POSISTOR rises abnormally, the resistance of the posistor becomes larger and Q220 is turned on.
It makes the protection port of the CPU to low state. Then the power is turned off.



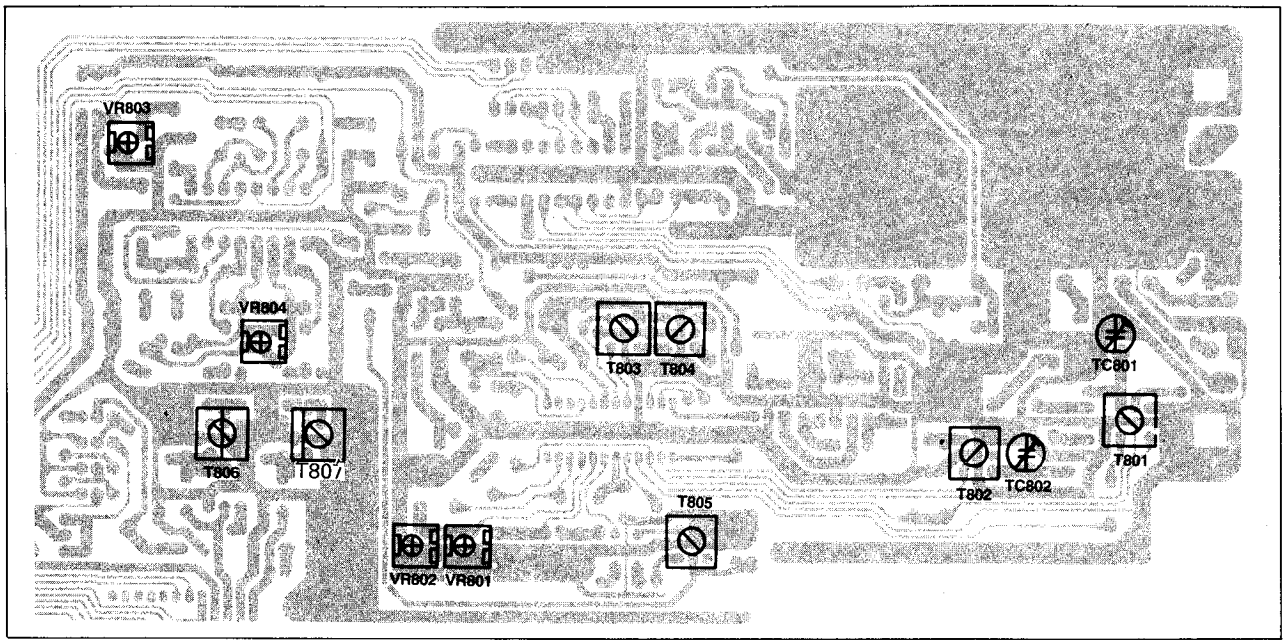
ALIGNMENT PROCEDURES

1. Equipment Required

- AM Standard Signal Generator (AM SSG)
- Oscilloscope
- AC Voltmeter
- FM Standard Signal Generator (FM SSG)
- Stereo Modulator
- Audio Generator
- Distortion Meter
- DC Voltmeter
- Frequency Counter

Note : Disconnect external FM antenna prior to alignment.

2. Alignment and Test Points (PCB14)



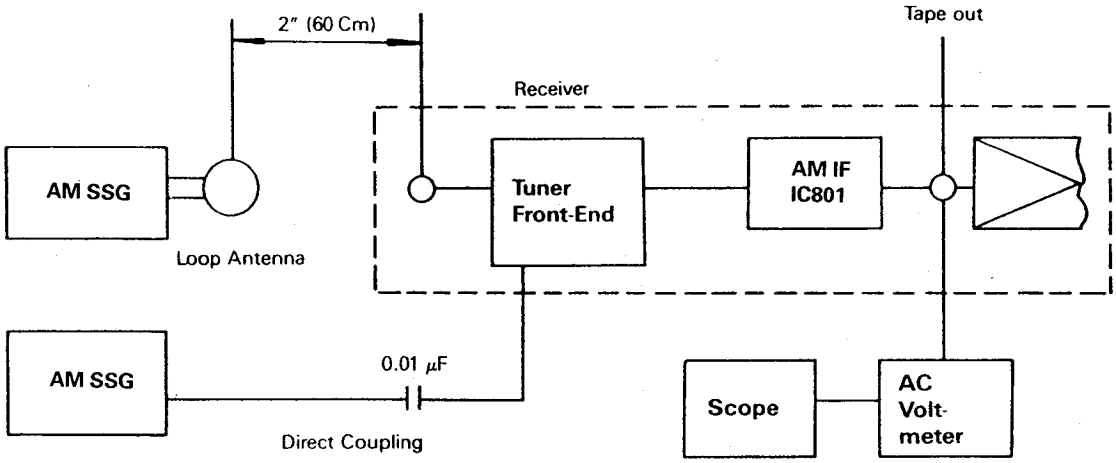
3. AM IF and RF Alignment

Preparation

1. Output of Signal Generator should not be higher than necessary to obtain an optimum output reading.
2. Signal Generator Modulation : 30%
3. Switch : Press to AM.

Step	Signal Generator Frequency	Receiver Frequency on the Display	Equipment Connection	Adjustment Point	Adjust for
1	999 kHz (400 Hz, Mod.)	522 kHz	DC Voltmeter TP1	T802	1.2 V reading
		1611 kHz	DC Voltmeter TP1	TC802	8.5 V reading
2	594 kHz (400 Hz, Mod.)	594 kHz	Same as Step 1.	T801 (ANT Coil)	Same as Step 1
3	1404 kHz (400 Hz, Mod.)	1404 kHz	Same as Step 1.	TC801 (ANT Trimmer)	Same as Step 1

4	450 kHz (400 Hz, Mod.)	Place at a nonin-terference spot around 600 kHz	AC voltmeter to TAPE OUT jack.	T805 (IFT)	Maximum reading
5	999 kHz (400 Hz, Mod.)	999 kHz	Same as Step 1.	VR801	FL display 'TUNED' Indication on receiver with AM SSG Output level of 800 μV/m



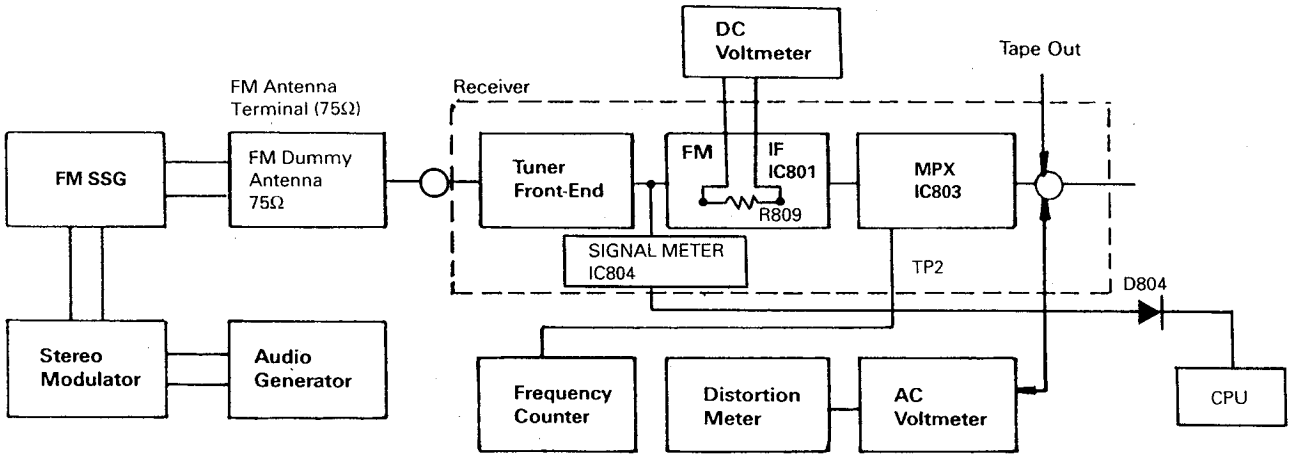
AM Alignment Connection

4. FM IF Alignment

Preparation

1. Signal Generator output should be no higher than necessary to obtain an optimum output reading.
2. Switch Press to FM.
3. Signal generator deviation : 40 kHz.

Step	Signal Generator Frequency	Receiver Frequency Display	Equipment Connection	Adjustment Point	Adjust for
1	98.0 MHz (1 kHz, Mod.)	98.0 MHz	Distortion meter to TAPE OUT jack	T804	Minimum distortion
2	98.0 MHz (1 kHz, Mod.)	98.0 MHz	Same as Step 1	VR802	FL display 'TUNED' Indication on receiver with FM SSG output level of 10 μV/m
3	98.0 MHz (1 kHz, Mod.)	98.0 MHz	DC Volt meter to R809 (PCB14)	T803	Zero reading on DC volt meter.



FM RFIF and MPX Alignment Connection

5. MPX Alignment, SM Alignment

Preparation

1. Switch : Press to FM.
2. Tuner for 98 MHz on band.
3. Signal Generator output level : 1000 μV.
4. Deviation : 40 kHz, at 100% modulation of composite signal.
5. Connect Signal Generator to FM antenna terminal through FM dummy antenna (75Ω).

Step	19 kHz Modulation Level	Signal Generator Frequency Setting	Equipment Connection	Adjustment Point	Adjust for
1	Pilot off	Carrier only	Frequency counter connect to TP2 (HOT) of PCB and ground	VR803	76 kHz
2	8% Mod.	Composite to channel 1kHz R	AC voltmeter to TAPE OUT jack of R channel	–	Adjust for about 450mV of audio output
3	8% Mod.	Composite to channel 1 kHz L	AC voltmeter to TAPE OUT jack of R channel	VR804	AC voltmeter reading should be at least 40 dB below.
4	8% Mod.	Composite to channel 1 kHz R	AC voltmeter to TAPE OUT jack of L channel	VR804	Same as Step 3.
5	8% Mod.	Composite to channel 1 kHz L or R	AC voltmeter to TAPE OUT jack Lor R channel	VR805	FL display 'SIG 60 dB' indication on receiver with FM SSG output level of 1000 μV/m
If you could not obtain –40dB readings in Steps 3 and 4 (compared with Step 2), readjust VR804 until you obtain –40dB readings for both Steps 3 and 4. Nominal is –45 dB.					

TROUBLESHOOTING

Symptom	Cause and Remedy
Receiver inoperative. (FL indicator does not light.)	A) Faulty AC power cord. Replace. B) Defectve the power switch. Replace. C) Broken wire in the power transformer. Replace the power transformer. D) Blown fuse. Replace the fuse.
Fuse blows when power is turned on.	A) Defective power transformer. Replace. B) Short on the primary or secondary of the transformer circuitry. Repair the short. C) Damaged rectifier (D208 to D211) or damaged transistor (Q216 to Q217). Replace the defective component(s). D) Short circuit in the amplifier circuit. Replace the shorted component(s) in the amplifier circuit.
Power indicator lights but no sound from both channels.	A) Defect in transistor Q215 L/R, Q216 L/R on the Main Amp Board. Replace the defective component(s).
One channel does not work when volume is at maximum with a test signal applied to the center terminal of volume control VR5 of the dead channel.	A) Defect in transistors Q215 L/R, Q216 L/R on the Main Amp Board Locate and correct the defect. B) Break in copper foil of printed circuit board. Repair the trace. C) Short in speaker output terminal. Repair or replace.
Speaker works normally but headphones inoperative.	A) Headphone plug does not mate with jack. Replace the jack. B) Defective resistor R728L/R. Replace.
FM inoperative	A) Defective front-end. (FIH3-505H) Replace. B) Defective FM switch. Replace the switch. C) Defective transistors Q801, Q805, Q806, IC801, IC803 Replace the defective transistor(s) or IC(s). D) Defective coil T803 or T804. Replace the coil(s). E) Defective lead-in. Repair or replace the lead-in. F) Ceramic filters CF801, CF802, CF803 defective. Replace the defective ceramic filter(s). G) Defective controller circuit component. Replace.

Symptom	Cause and Remedy
Poor multiplex separation.	A) Improper adjustment. Readjust VR803 and VR804. (Refer to MPX Alignment.) B) IC803 defective. Replace. C) Variable resistor VR803 or VR804 defective. Replace the variable resistor(s).
STEREO indicator does not light.	A) Defective indicator in FL. Replace. B) Improper adjustment of VR803 of tuner board. Make readjustment. C) Defective IC803. Replace the defective component.
FM volume in sufficient.	A) If volume from both L and R channels is not loud enough : Front end section defective. Faulty IC801, Coil T803, Defective C838 of Tuner Board. If sound of one channel is not loud enough: Defective T806, T807
FM Mono has no effect.	A) Defective FM MODE switch. Replace.
AM inoperative.	A) Damaged IC801 of tuner board. Replace. B) Defective T801, T802, T805 or CF804 of Tuner Board. Replace the defective component(s). C) Resistors R829, R817 defective. Replace the defective component(s). D) Capacitors C836, C818, C813 defective. Replace the defective capacitor(s). E) Defective AM switch. Replace. F) Defective varicap diodes VD1, VD2 Replace varicap diods(s). G) Damaged AM loop antenna. Repair or replace. H) Defective controller circuit component. Replace.
Bass control has no effect	A) Variable resistor BASS defective. Replace. B) Defective R129L/R, R131L/R, C126L/R, C128L/R. Replace the defective component(s).

Symptom	Cause and Remedy
Treble control has no effect.	A) Variable resistor TREBLE defective. B) Defective R130L/R, R132L/R, C127L/R, C129L/R. Replace the defective components(s).
Auto tune inoperative. (UP/DOWN)	A) Poor contact in Up/Down key. Repair or replace. B) Defective IC701. Replace. C) Defective tuner circuit components. Replace. D) In case of FM only, improper adjustment of FM front-end. Readjust.
Manual tune inoperative. (UP/DOWN) (AM or FM)	A) Poor contact in Up/Down key. Replace. B) Defective IC701. Replace.
Memory setting inoperative.	A) Poor contact in memory keys 1-10. Replace. B) Defective IC701. Replace the defective component.
FL inoperative.	A) FL defective. Replace. B) Defective IC701. Replace C) Defective X-700. Replace.
Noisy volume control.	A) Defective volume control. Replace. B) Defective capacitors C701 or C703 Replace the defective capacitor(s).
Remote Control Unit inoperative.	A) Weak battery. Replace. B) Defective. Replace. C) Defective IC701 (CPU Board) or IC01. Replace.

GENERAL UNIT PARTS LIST

Ref. No.	Mfr. Part No.	Description	Q'ty
		CABINET & CHASSIS	
1	046122029611	Cover Top, SECC, Black	1
2	6122420410	Cover Bottom, SECC, 1t	1
3	046033102511	Foot, Hot-Stamping, Gold	4
4	6121607640	Frame Left, SECC, 1t	1
5	6122633520	Frame Right, SECC, 1t	1
6	6505139720	Bracket PCB Surround/Main	1
7	046102042621	Chassis Back, SECC, Black	1
8	4328204210	Jumper Plug, 2P	2
9 ⚠	4308001410	Cord AC Power	1
10	6518002310	Stopper Cord	1
11	4438103110	Jack RCA, 4P	3
12	4438007510	Jack Mini, 2P	1
13	4408108910	Terminal Speaker Rear, 4P	1
14	6165149710	Shield Fence, Tone	1
15	3208068910	Volume, Bass/Treble	2
16	3208068810	Volume, Balance	1
17	4438111310	Jack RCA, Sub Output, 2P	1
18	4408108610	terminal Speaker Main, Screw Type, 4P	1
19	4408108710	Terminal Speaker Center, Screw Type, 2P	1
20	4438114310	Jack RCA(VCR1/Monitor), 3P	1
21	6043010210	Holder FL	1
22	4658004810	Switch Tact	14
23	3228020010	Volume Motor, 50 k(A)	1
24	4628055910	Switch Power, Push Type	1
25	4438004510	Jack Phone, Headphone, 9P	1
26	6528301710	Fastener	1
27	4438109710	Jack RCA, 3P, VCR	1
28 ⚠	4448104810	Outlet, AC	1
29	4408108310	Terminal Antenna	1
30	7502008710	Heatsink Power	1
31	6503031410	Bracket Heatsink	1
32	6505139810	Bracket PCB Tuner	1
33	048501035011	Panel Front, ABS, Black	1
34	8553019710	Window Display	1
35	048555048512	Filter FL	1
36	048545128611	Button Power, ABS, Black	1
37	8545128810	Indicator Power	1
38	048543064911	Button Function, ABS, Black, 7key	1
39	048545128711	Button Surround, ABS, Black, 2key	1
40	048543065011	Button Preset, ABS, Black, 5key	1
41	048543059811	Knob Volume, ABS, Black	1
42	048545124311	Knob Rotary(Bass/Treble/Balance), Black	3
43	8555048610	Indicator Volume	1
44	6555008730	Spring Indicator	2
45	6555008720	Spring Power	1
46	6225002610	Clamp Wire	1
47	6528302520	Clamp Wire	1
		HARDWARE KIT	
S1-S57	8109230083	Screw #2BTC 3x8B, Black	57
S56-S61	8159440083	Screw WSAM 4x8B, Black	4
S62-S65	8159440083	Screw WSAM 4x8B	4
S66-S80	8119130103	Screw #1PT 3x10B, Black	14
S81-S83	8155000710	Screw Ground	3
S84	8155001210	Screw Washer	1
S85-S87	8159230083	Screw #2WPTC 3x8(B), Black	3
S88-S101	8099130121	Screw HEX MSPW 3x12Y, Yellow	14
		MISCELLANEOUS	
Trans ⚠	2828100297	Power Transformer, 120 V, 60 Hz	1
	4118631275	FPC Cable, 31P, 270mm	1

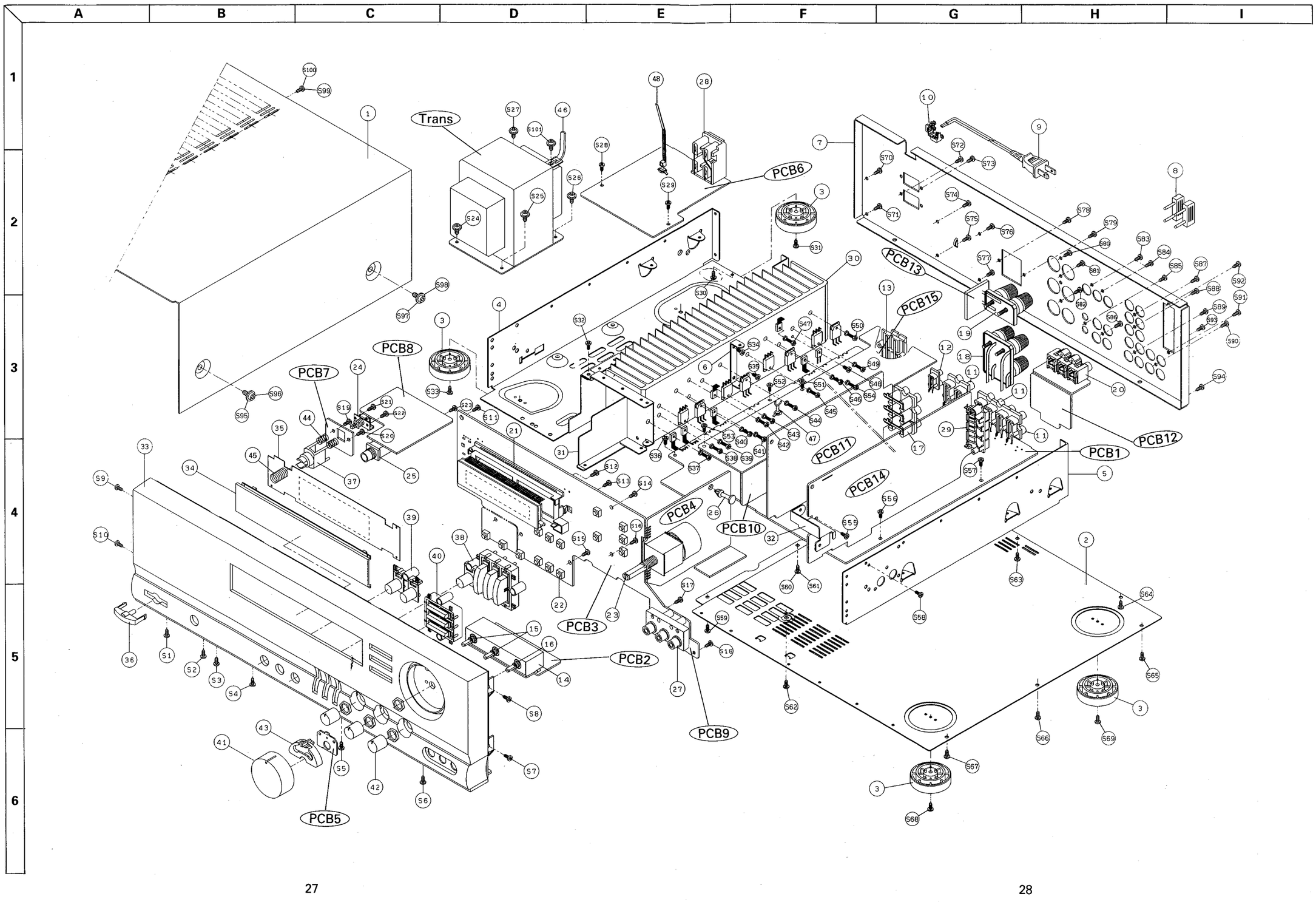
1. This parts list based on American version is for European version.
2. Each initial in the Remark is denoted as follows.
C: Changed, D: Deleted, A: Added

Ref. No.	Mfr. Part No.	Description	Q'ty	Remark
		ACCESSORIES		
	4348001110	Antenna Cord FM	1	C
	9007018231	Manual Instuction	1	C
		CABINET & CHASSIS		
7	046102012651	Chassis Back, SECC, Black	1	C
9 ⚠	4308000430	Cord AC Power	1	C
10	6518002320	Stopper Cord	1	C
28 ⚠	4448103610	Outlet, AC	1	C
29	4408108210	Terminal Antenna	1	C
		MISCELLANEOUS		
Trans ⚠	2828100497	Power Transformer, 230 V, 50 Hz	1	C

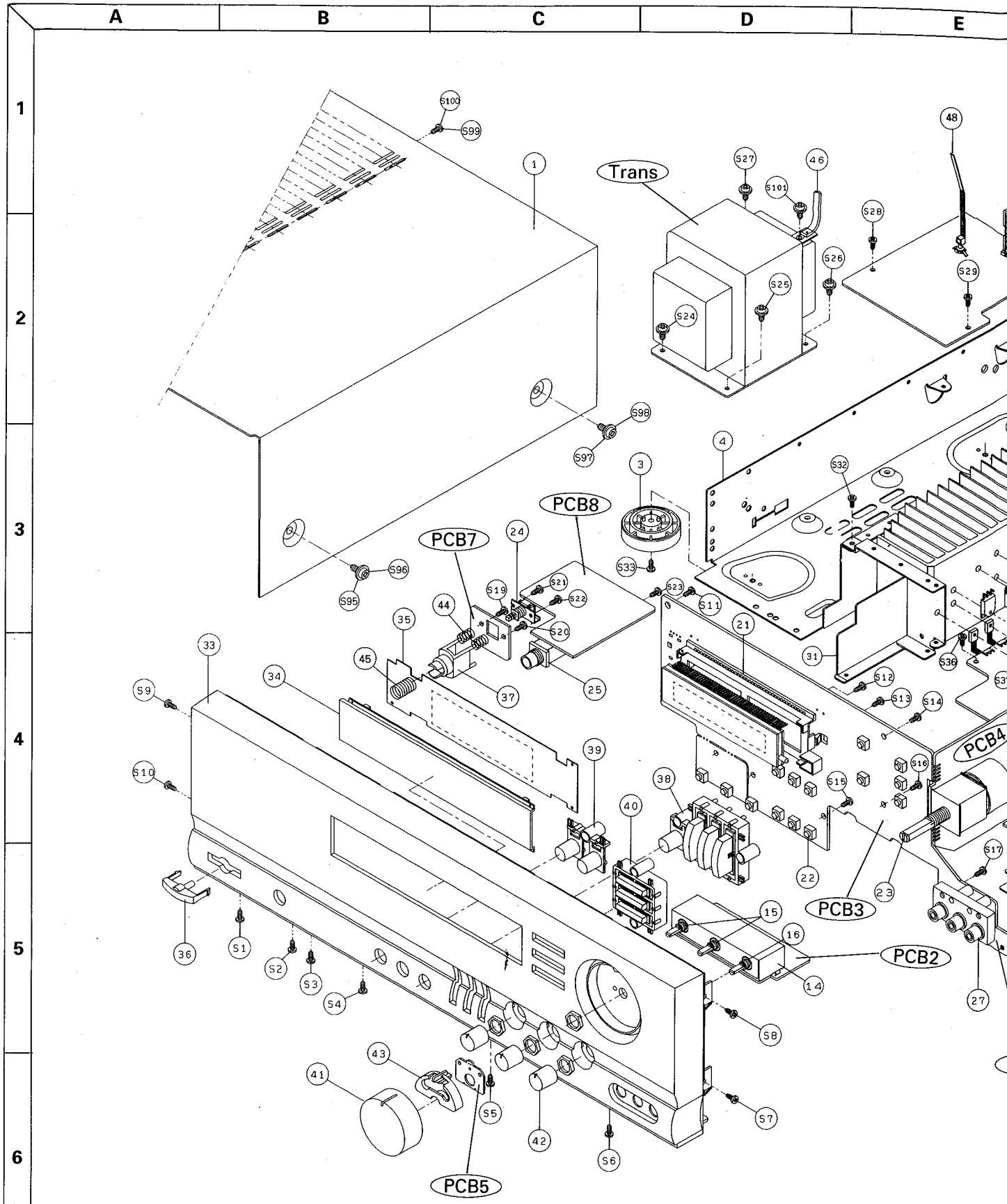
PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the part list are of special significance to safety. When replacing a component identified with ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

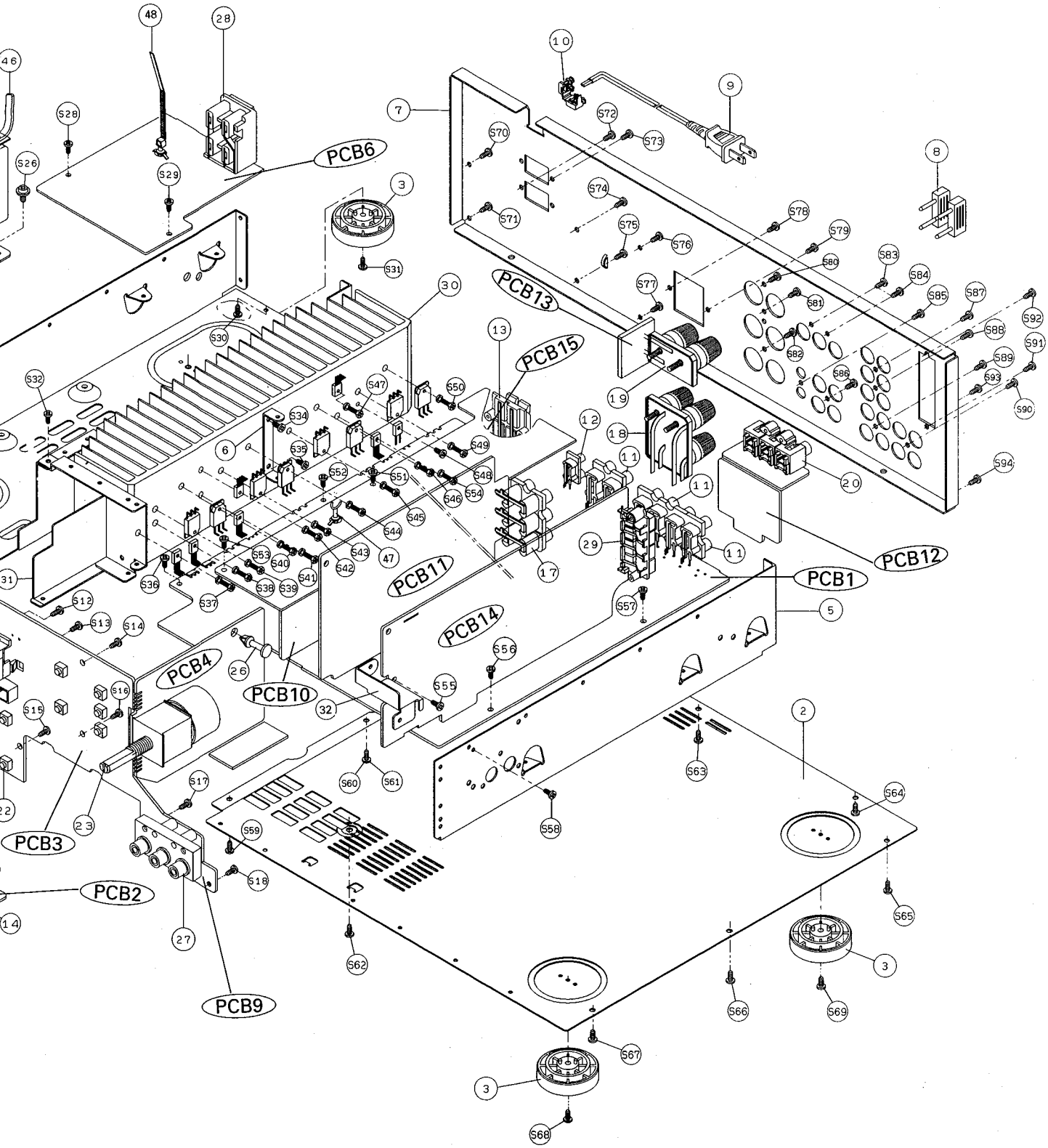
GENERAL UINIT



GENERAL UINIT

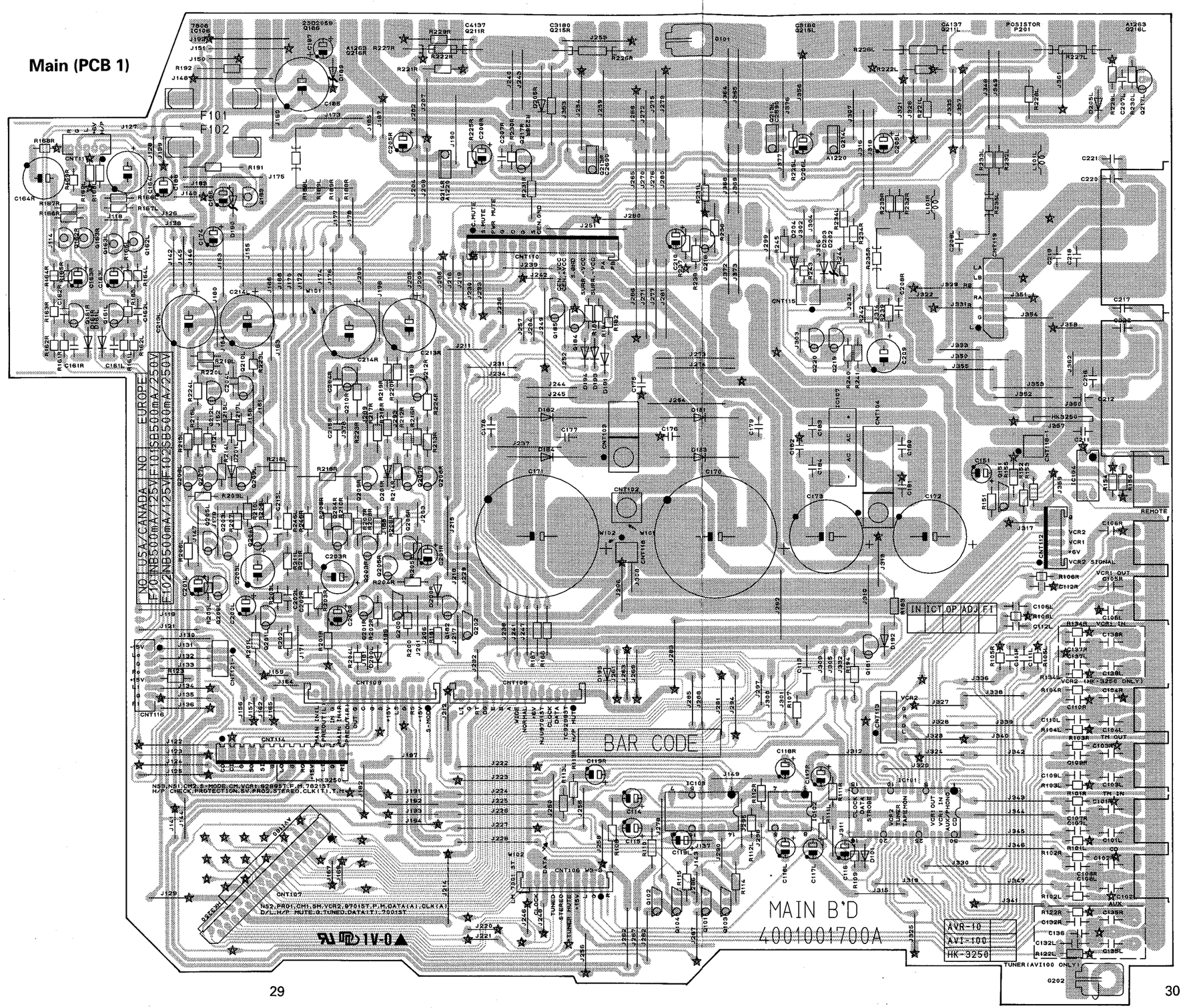


	E	F	G	H	I

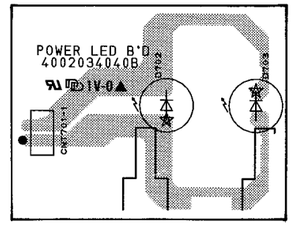

PCB1
PCB2
PCB3
PCB4
PCB5
PCB6
PCB7
PCB8
PCB9
PCB10
PCB11
PCB12
PCB13
PCB14
PCB15

PRINTED CIRCUIT BOARDS

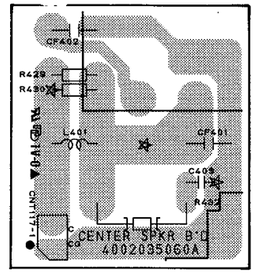
Main (PCB 1)



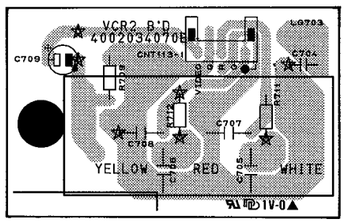
Power LED (PCB 7)



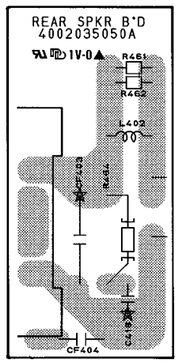
Center Speaker (PCB 13)



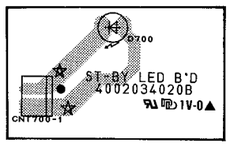
VCR2 (PCB 9)



Rear Speaker (PCB 15)

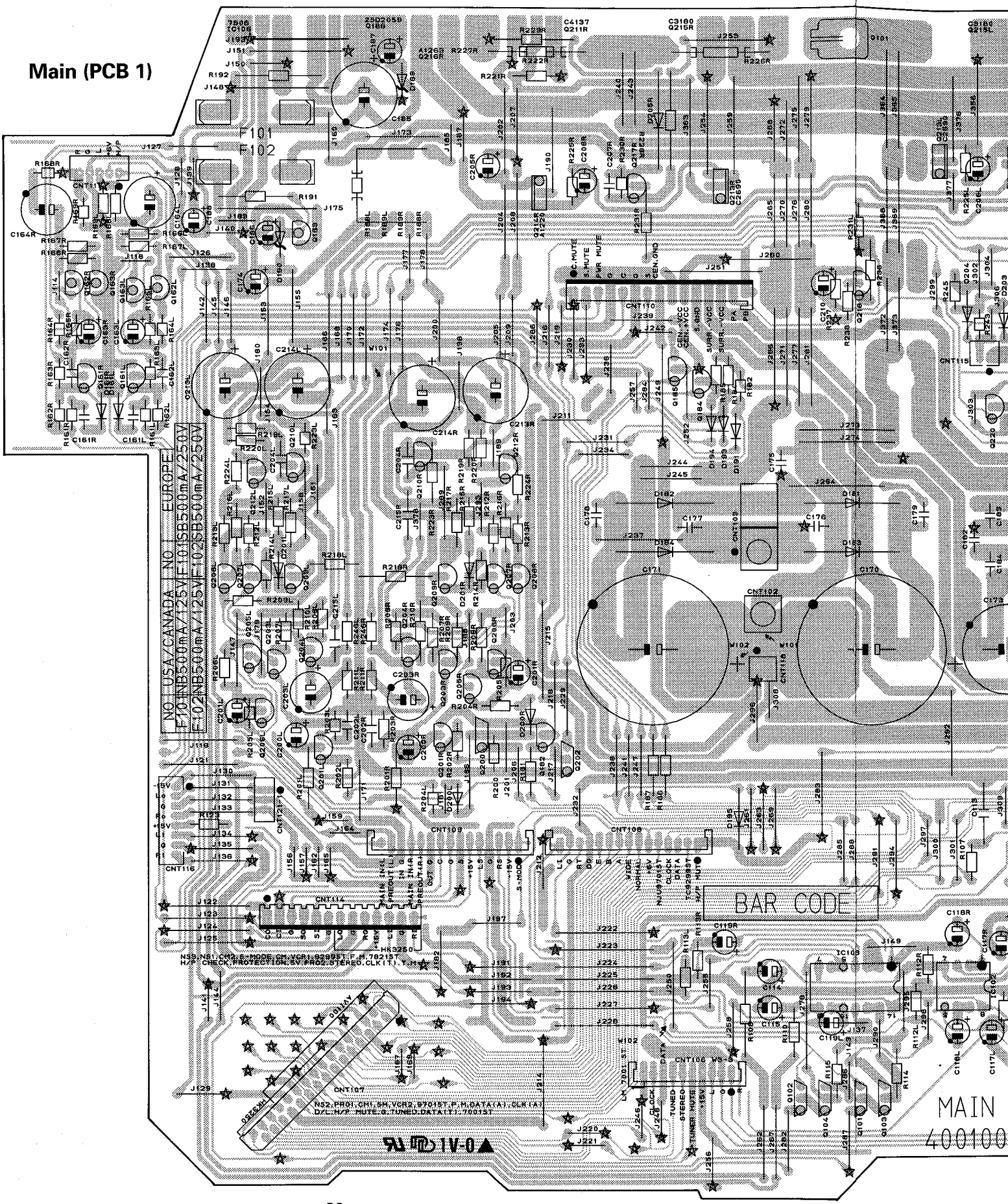


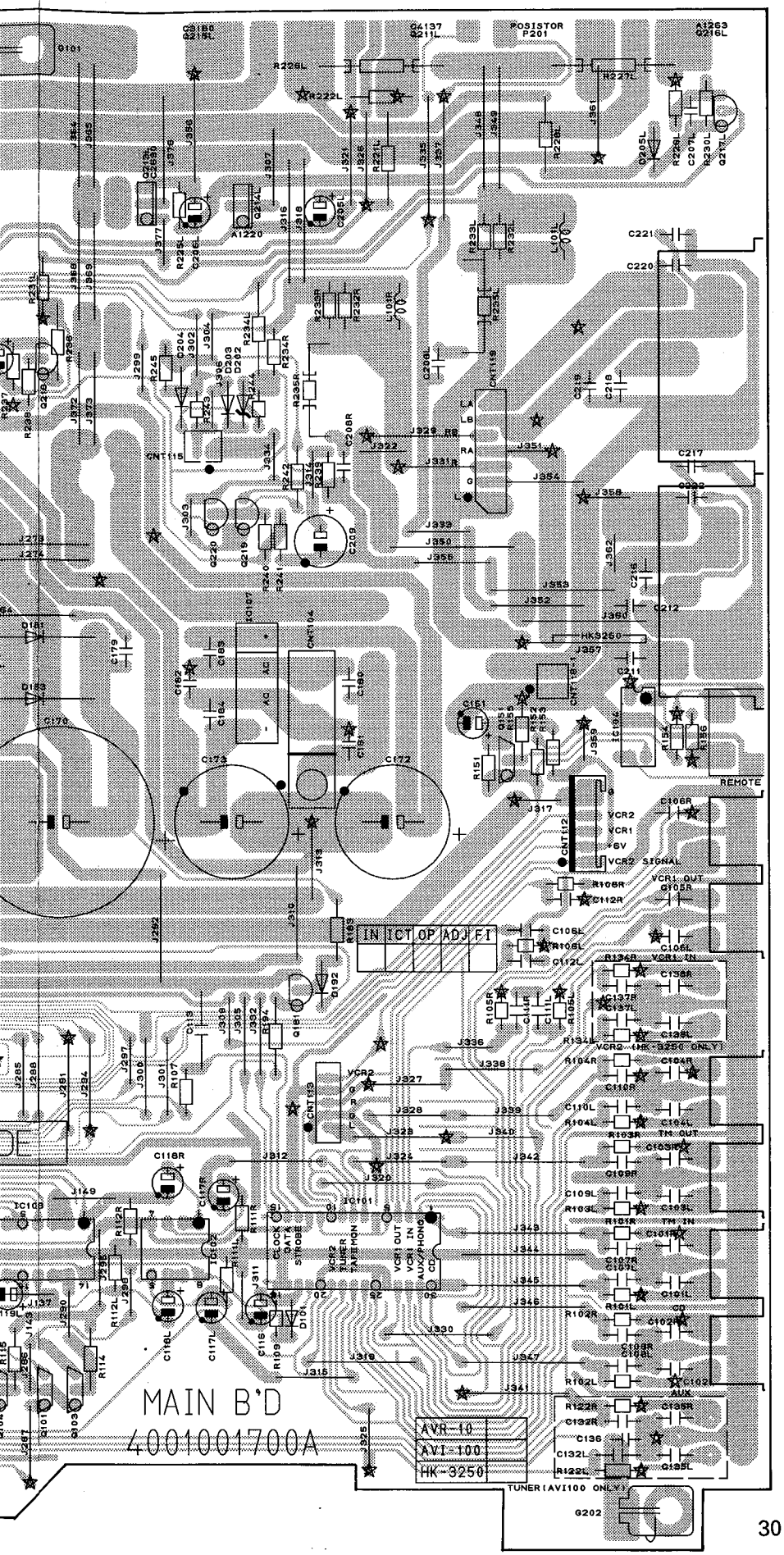
ST-BY LED (PCB 5)



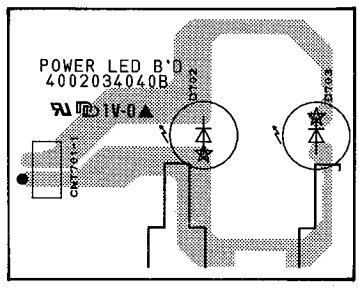
PRINTED CIRCUIT BOARDS

Main (PCB 1)

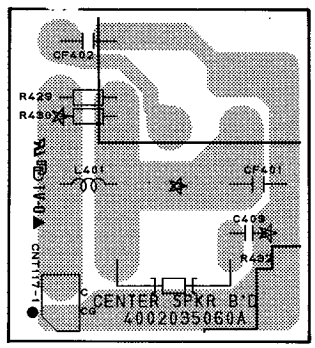




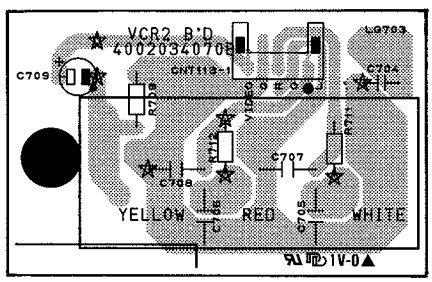
Power LED (PCB 7)



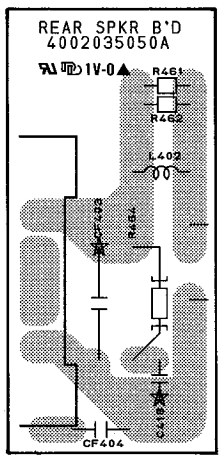
Center Speaker (PCB 13)



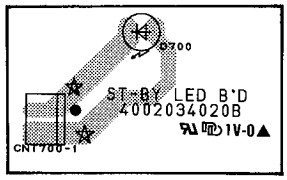
VCR2 (PCB 9)



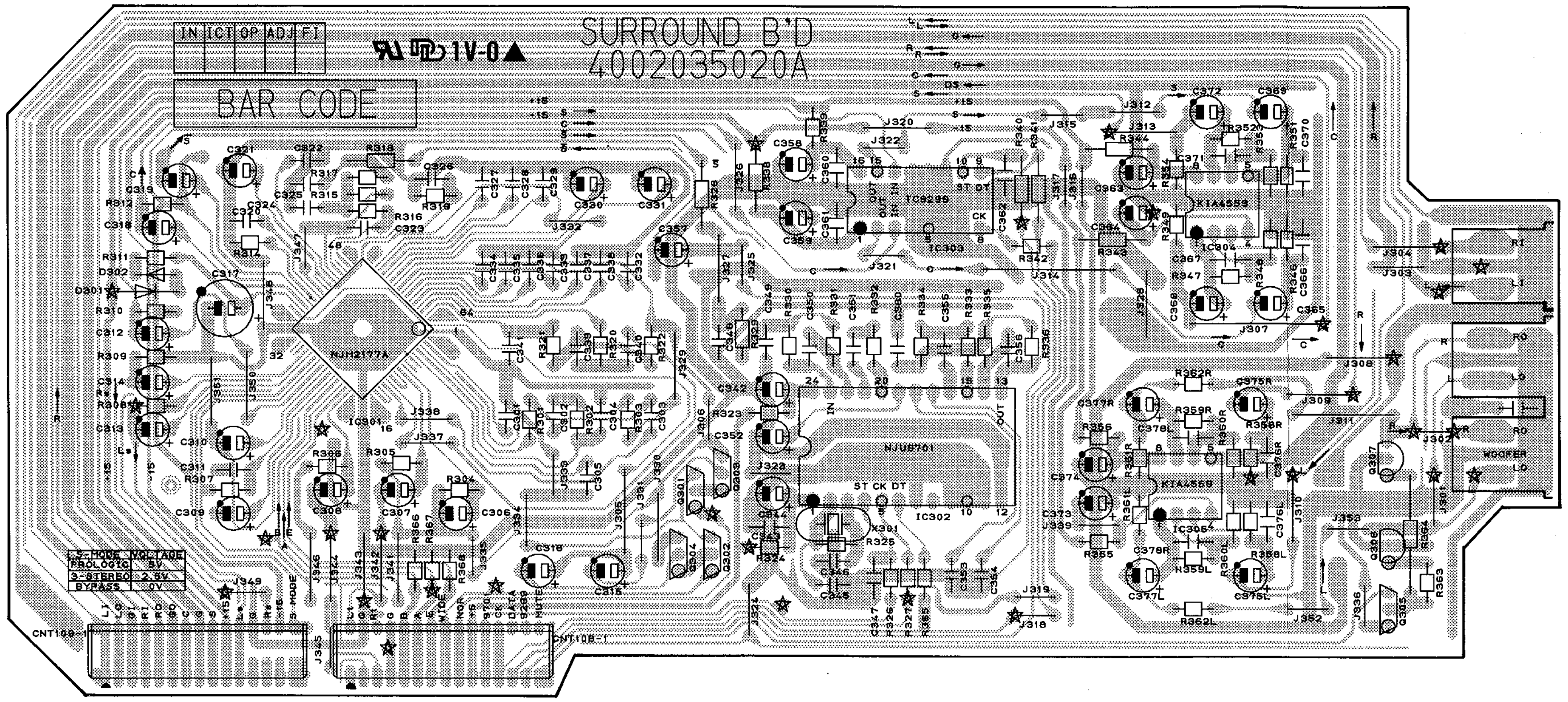
Rear Speaker (PCB 15)



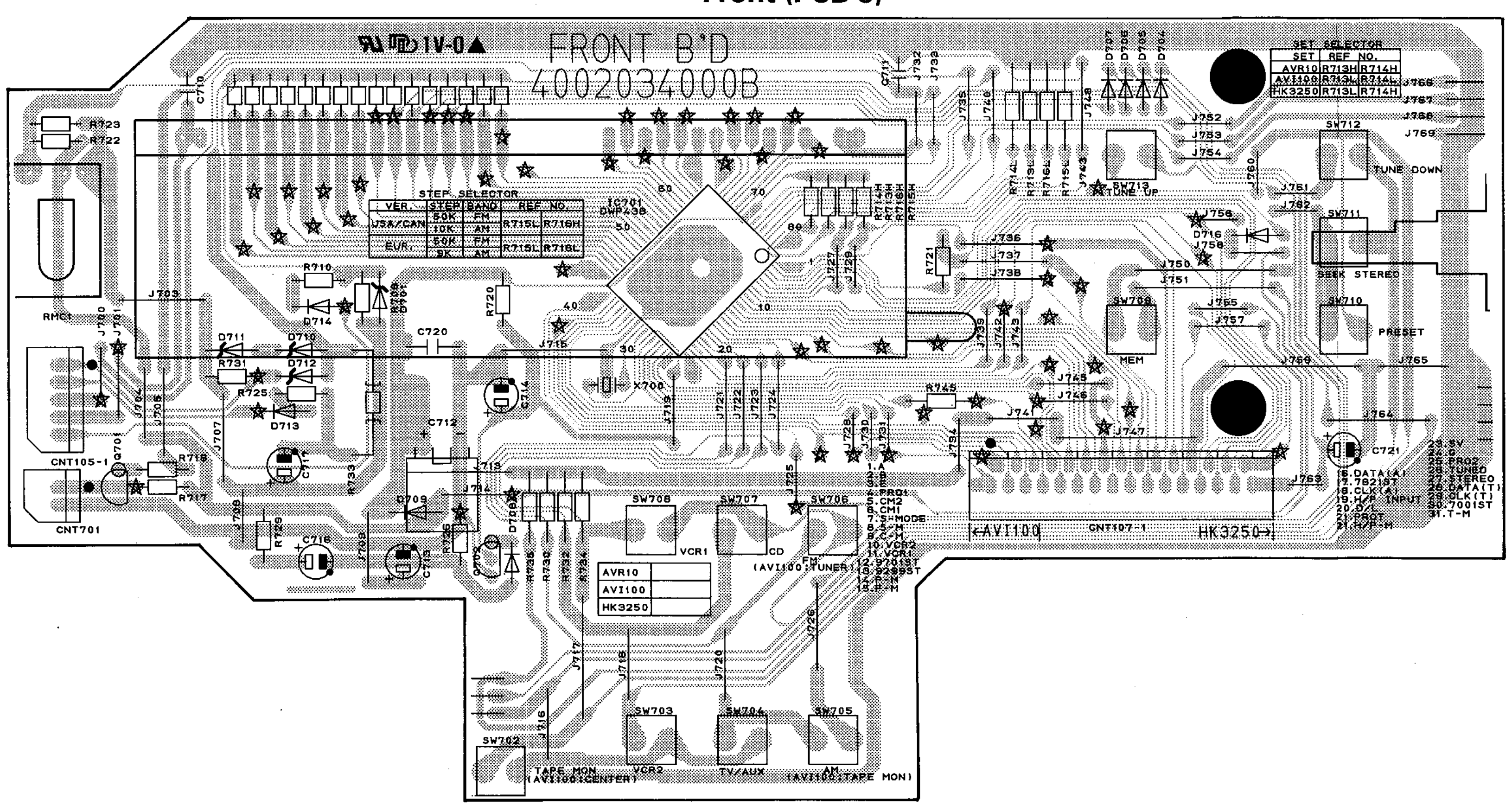
ST-BY LED (PCB 5)



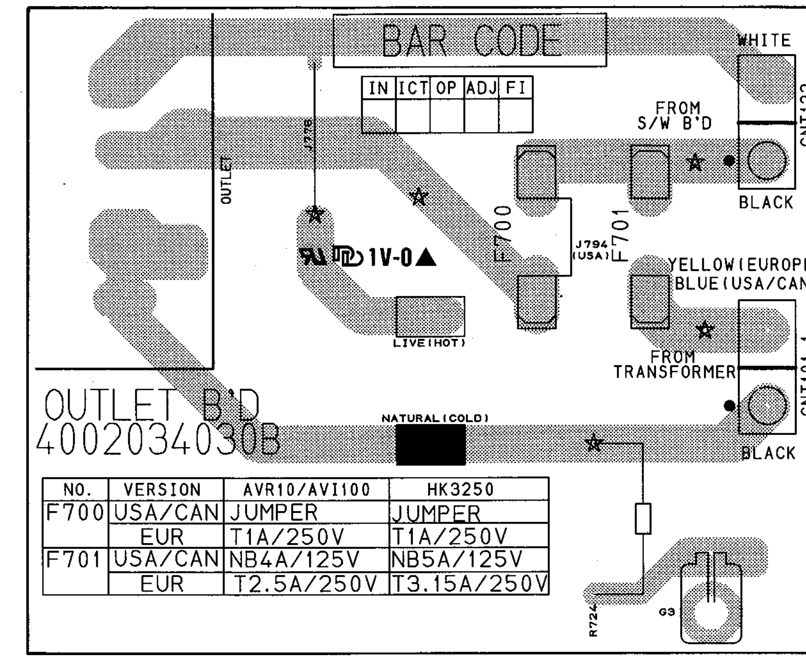
Surround (PCB 11)



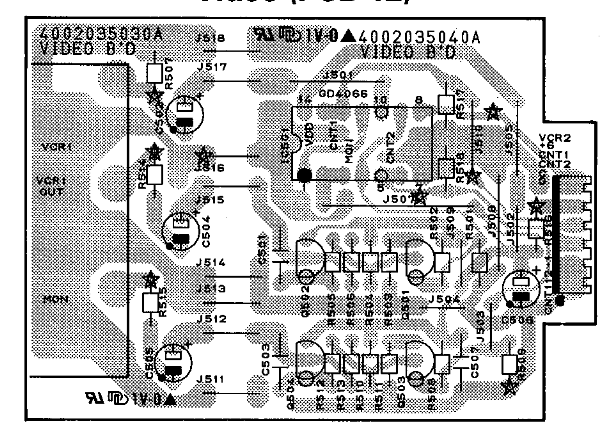
Front (PCB 3)



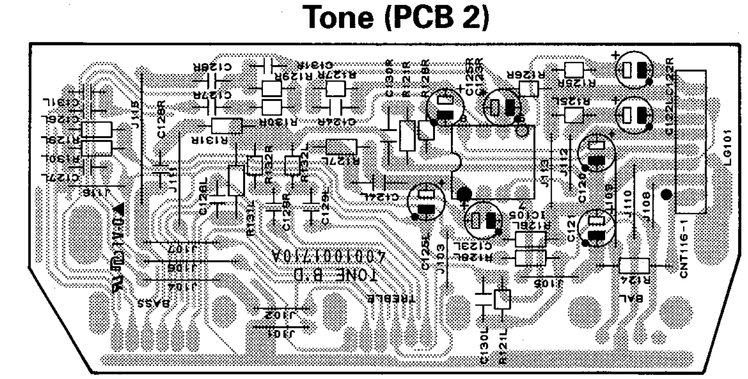
Outlet (PCB 6)



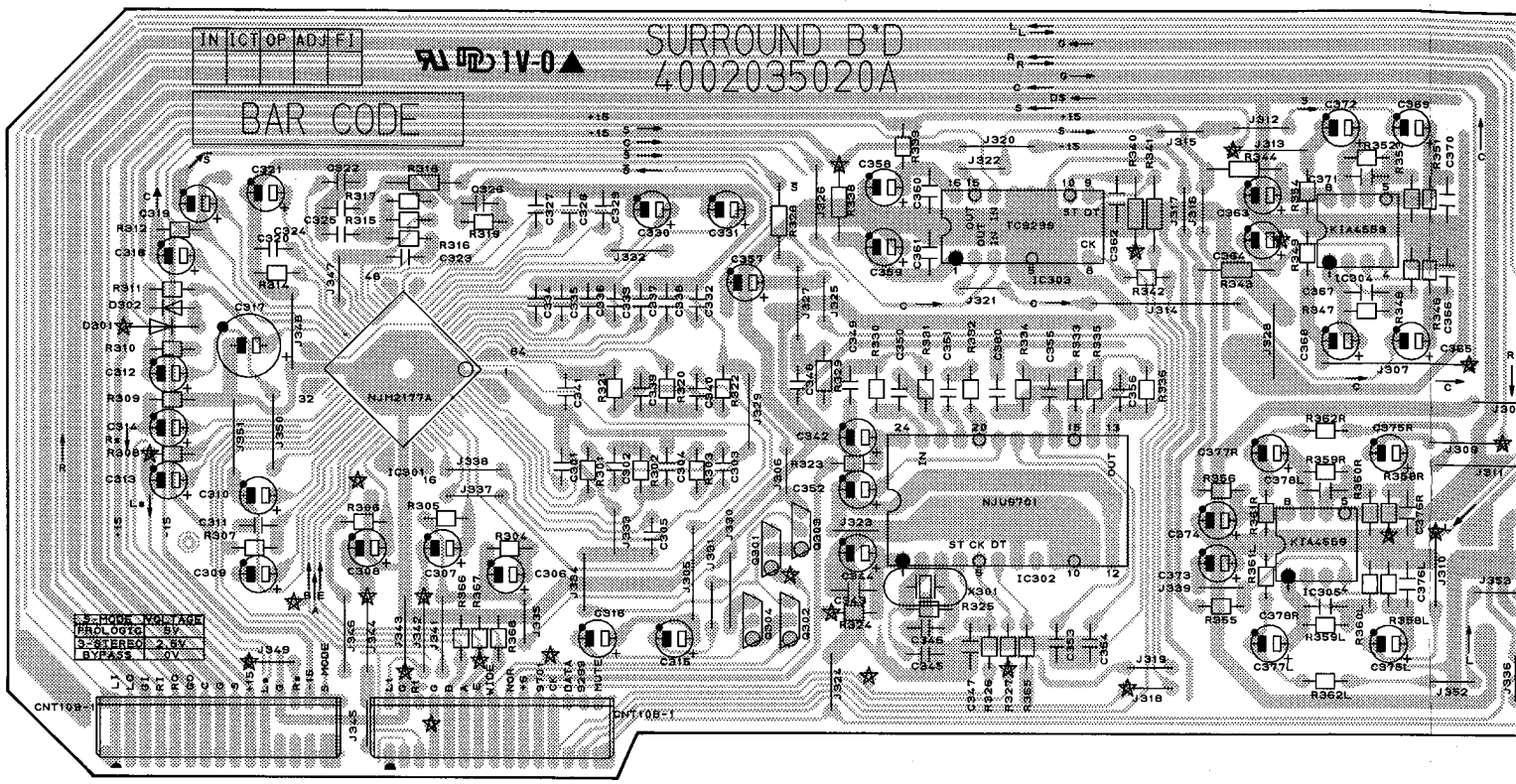
Video (PCB 12)



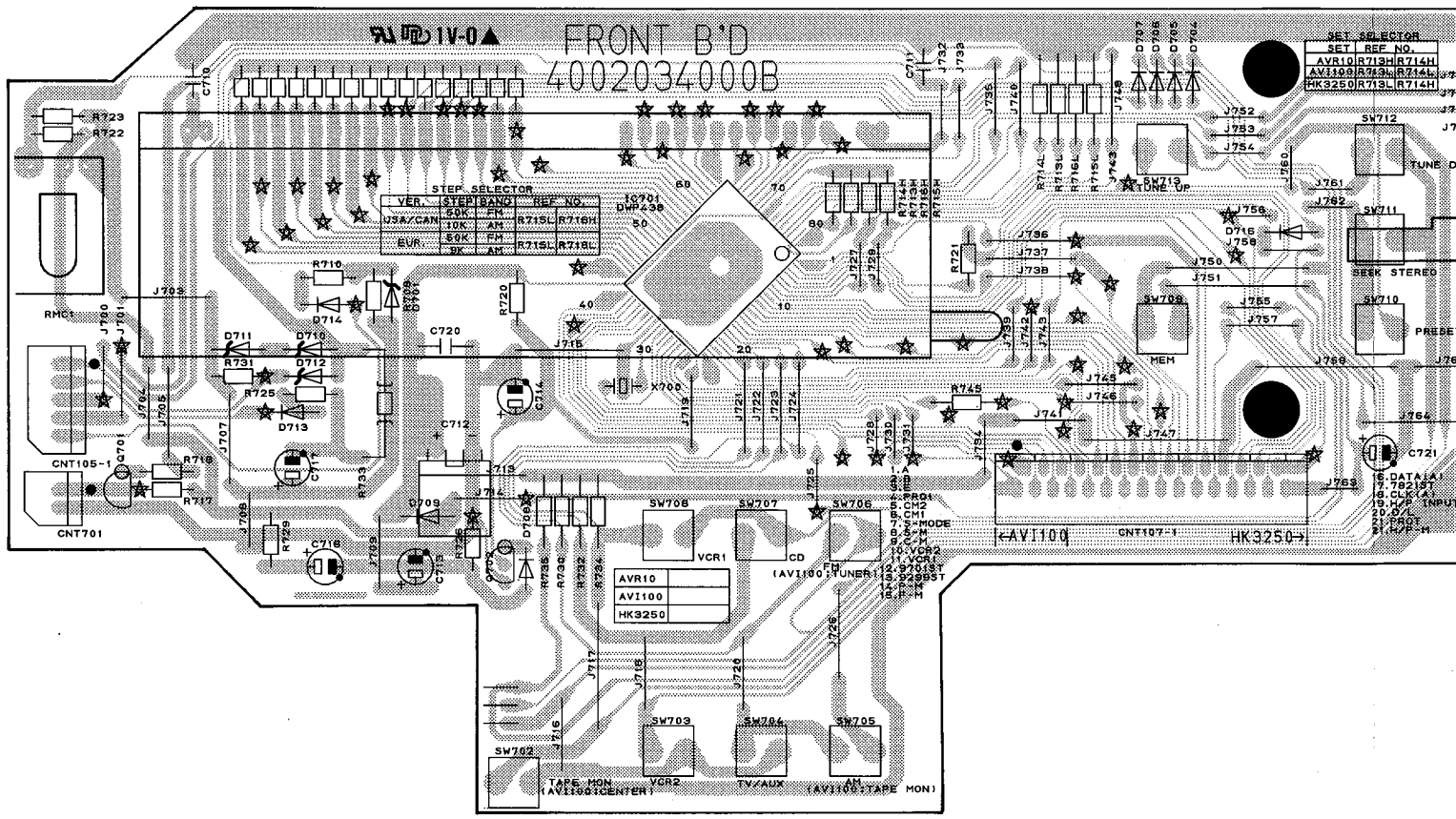
Tone (PCB 2)

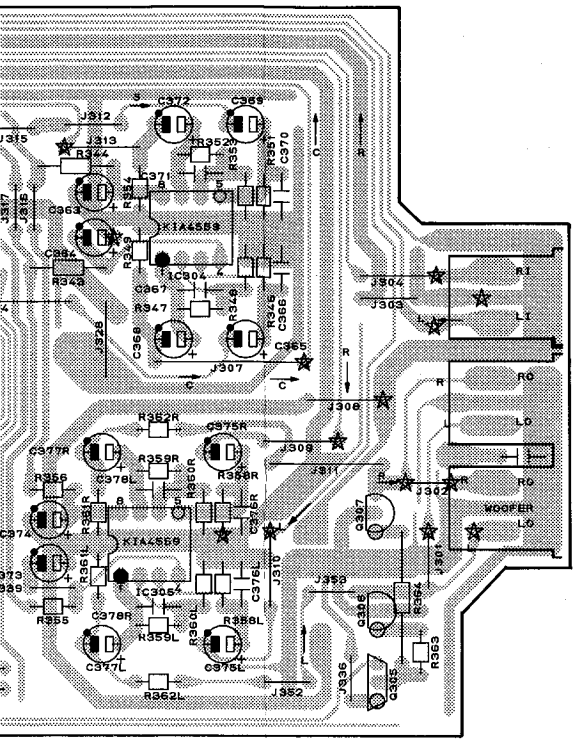


Surround (PCB 11)

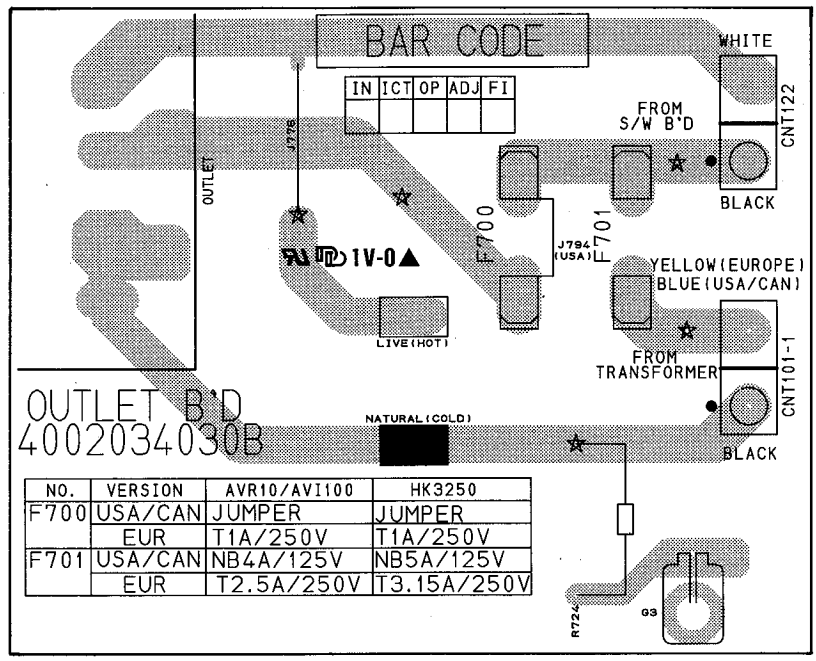


Front (PCB 3)



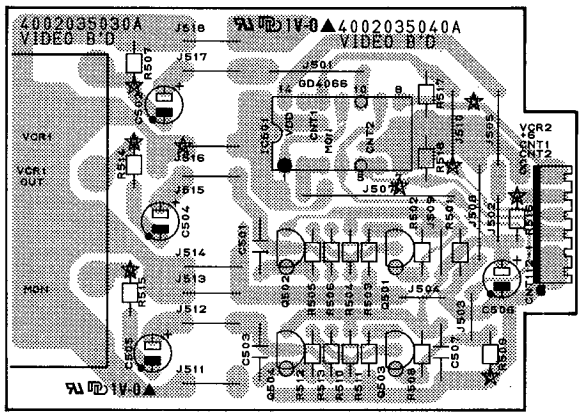


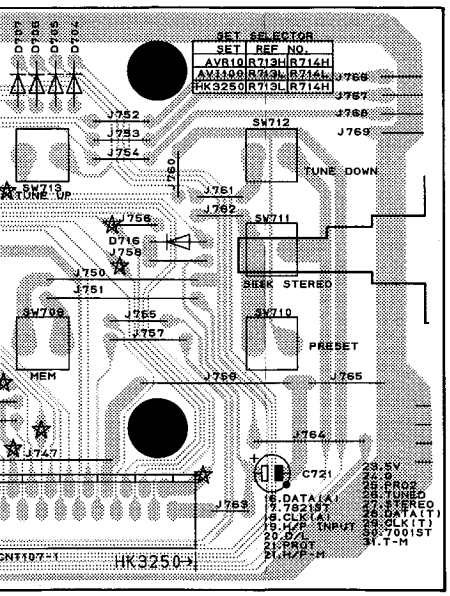
Outlet (PCB 6)



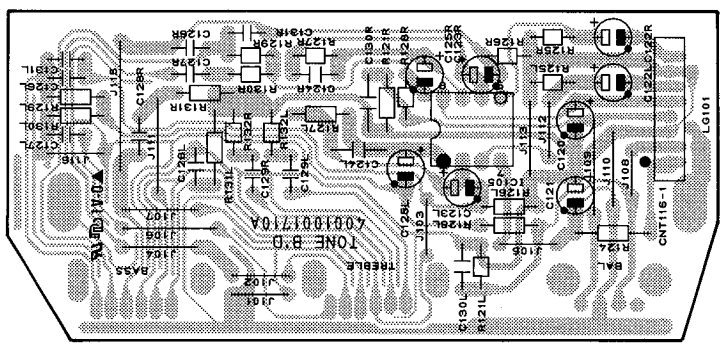
NO.	VERSION	AVR10/AVI100	HK3250
F700	USA/CAN	JUMPER	JUMPER
	EUR	T1A/250V	T1A/250V
F701	USA/CAN	NB4A/125V	NB5A/125V
	EUR	T2.5A/250V	T3.15A/250V

Video (PCB 12)

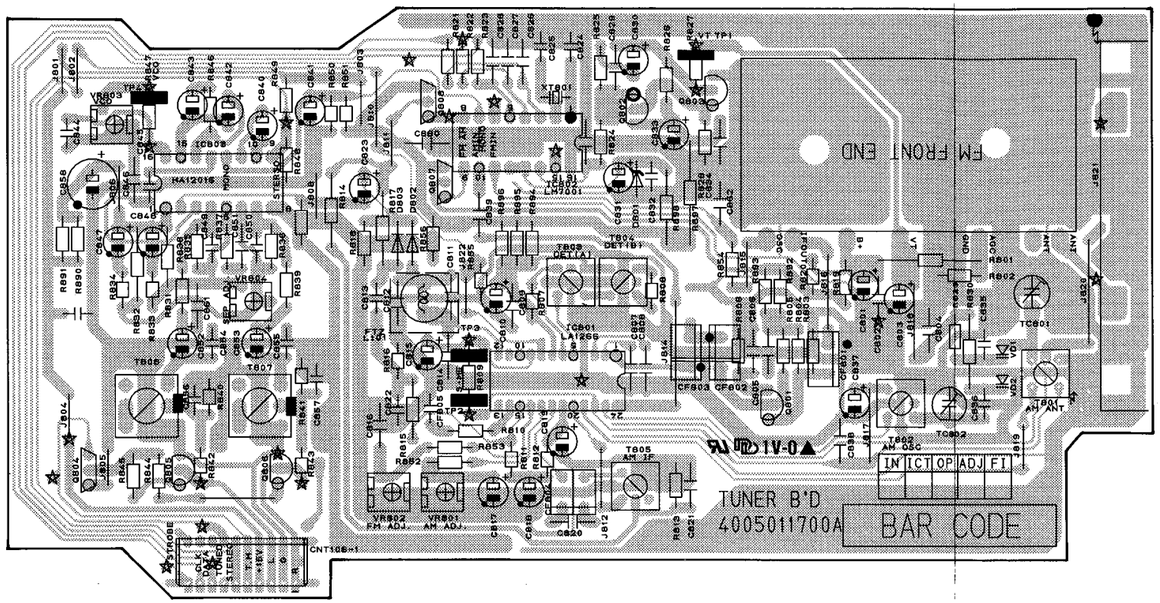




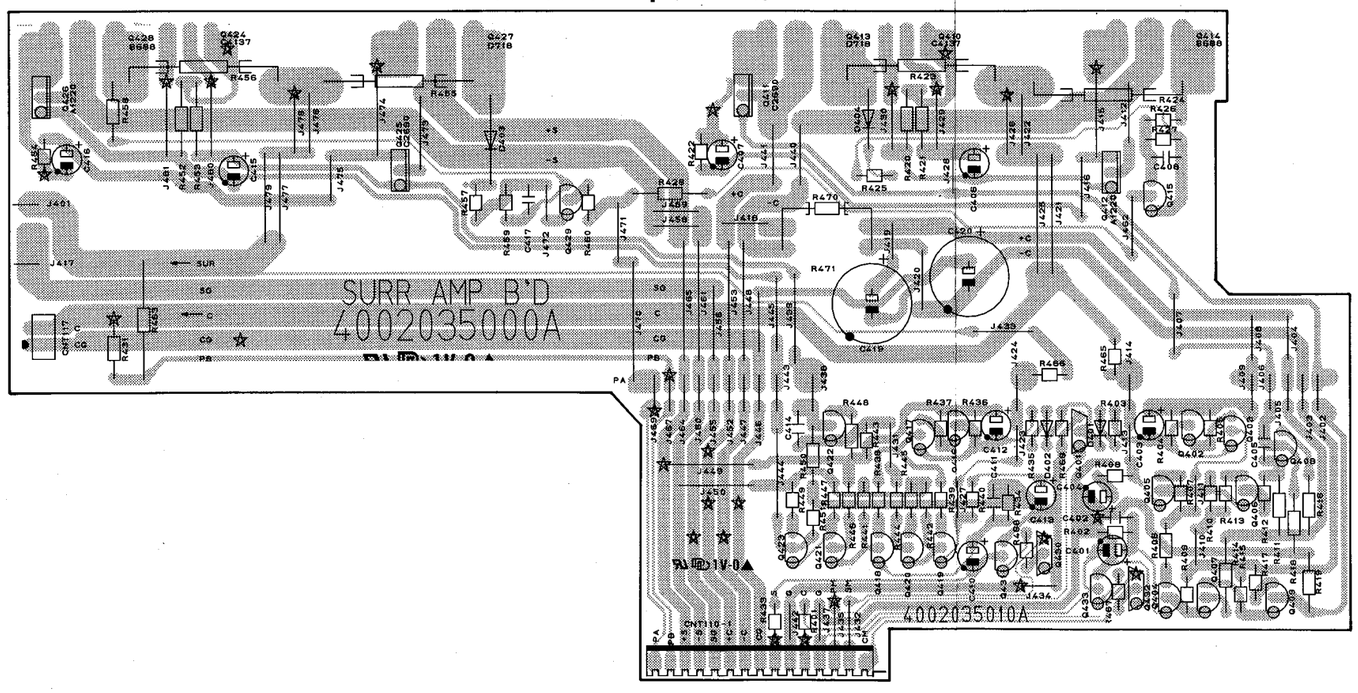
Tone (PCB 2)



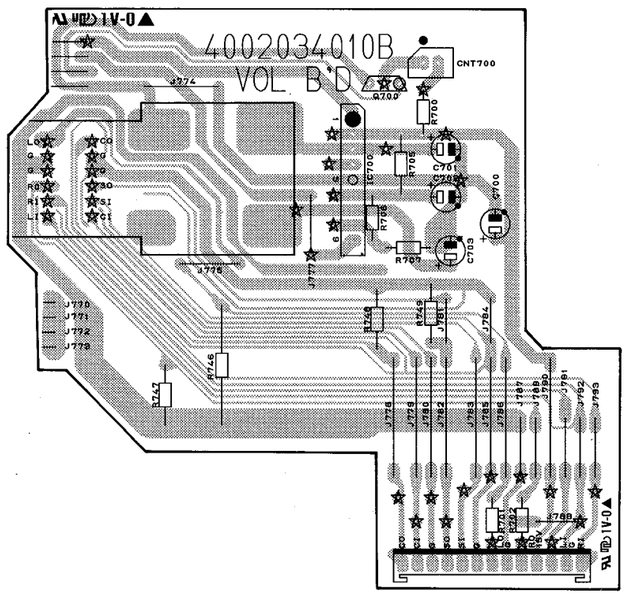
Tuner (PCB 14)



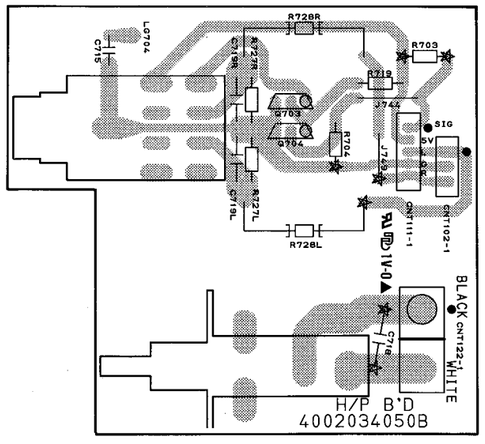
Surround Amp (PCB 10)



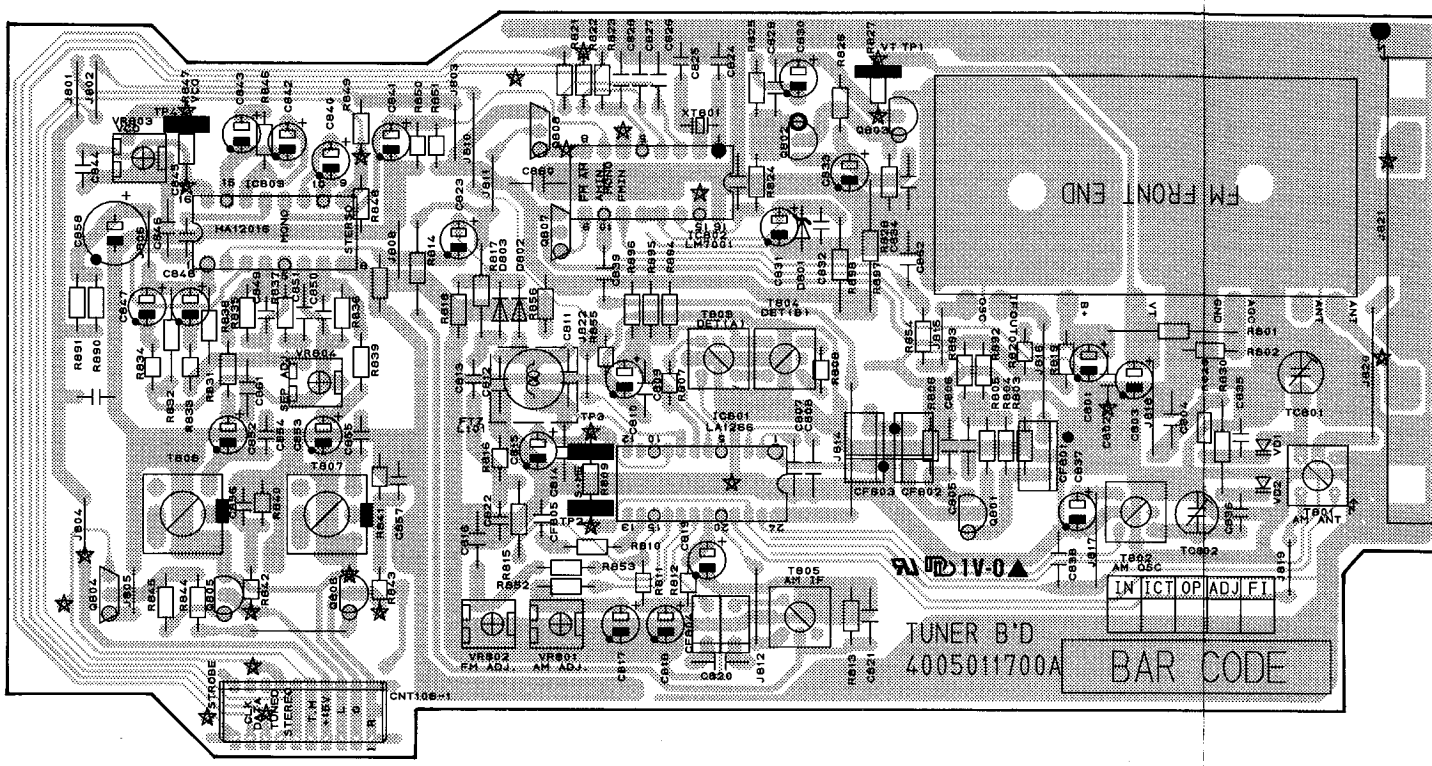
Volume (PCB 4)



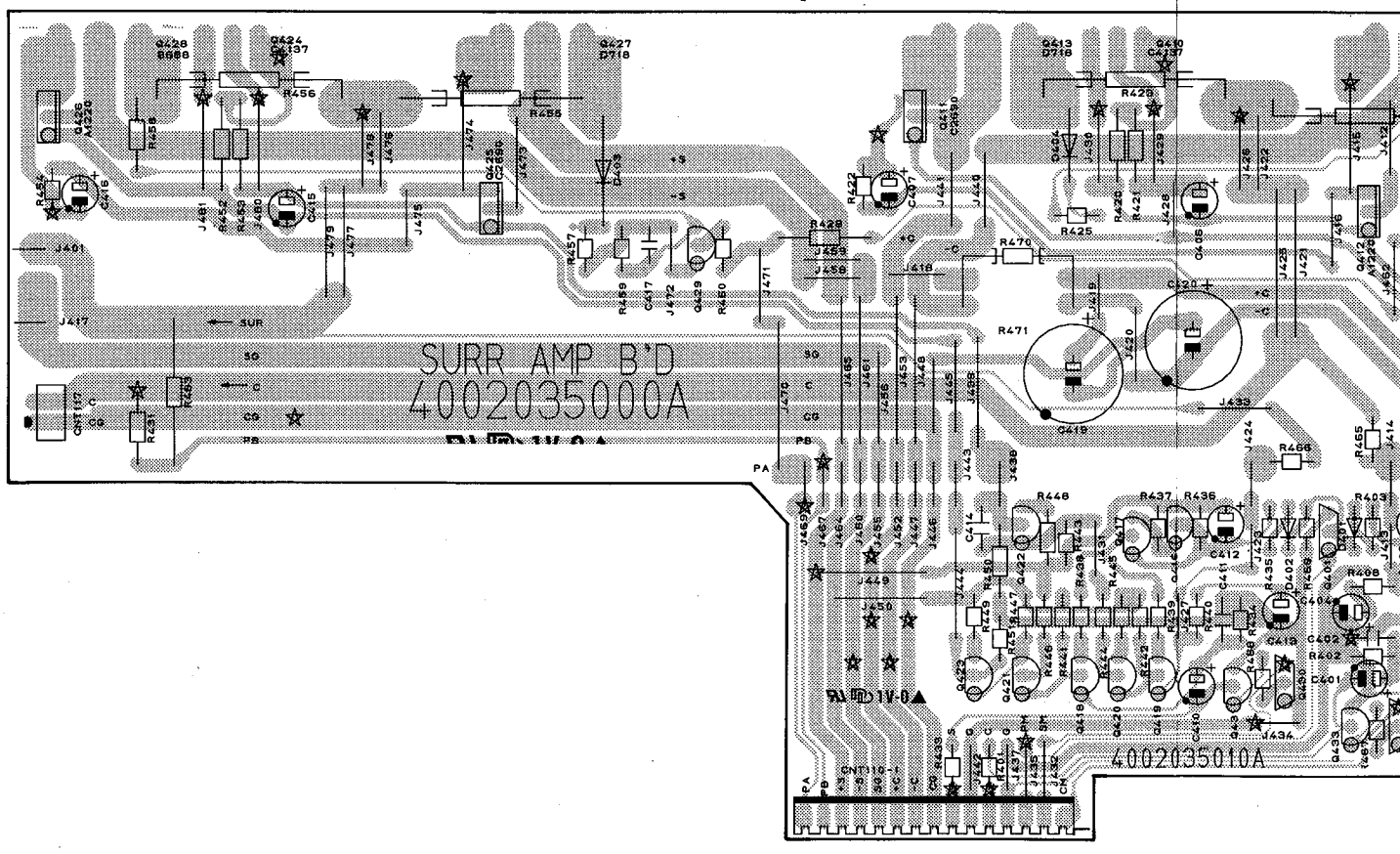
Headphone (PCB 8)

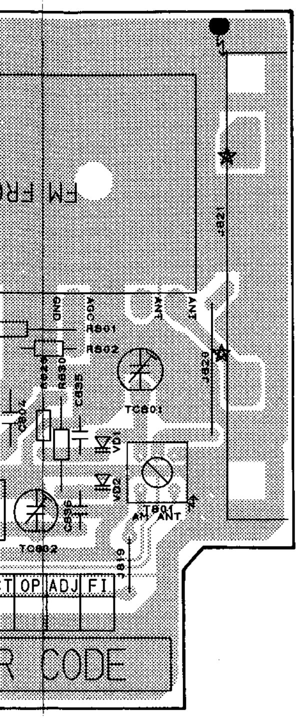


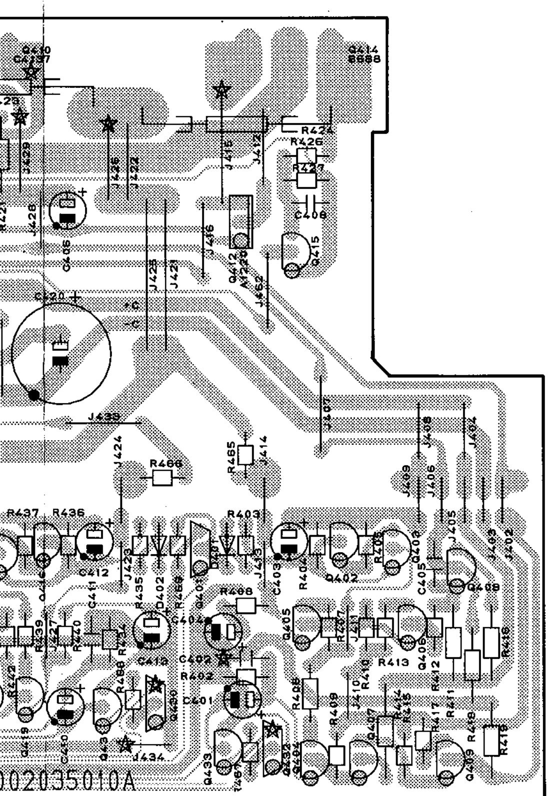
Tuner (PCB 14)



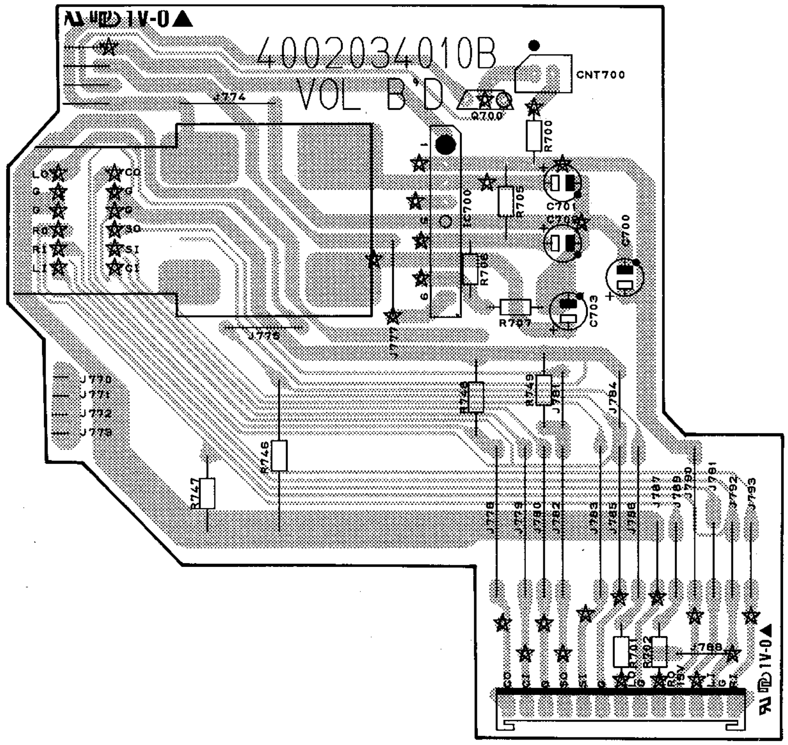
Surround Amp (PCB 10)



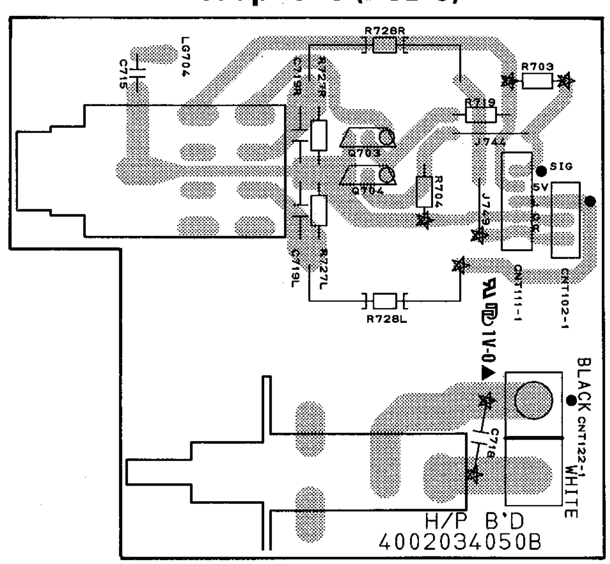




Volume (PCB 4)



Headphone (PCB 8)



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE : Products marked with ⚠ have special characteristics important to safety.
If you replace any of these components, read carefully the product safety notice in this manual.
Don't degrade the safety of the product through improper servicing.
Resistor/Capacitor tolerance – D : (±0.5%), J : (±5%), K : (±10%), M : (±20%), Z : +80, – 20%)

Ref. No.	Mfr. Part No.	Description					Q'ty
PCB1		ASS'Y P.C.BOARD MAIN					
		CAPACITORS					
C107L/R	3519101935	Ceramic Tubular	100	pF	50 V	K	2
C108L/R	3519101935	Ceramic Tubular	100	pF	50 V	K	2
C109L/R	3519101935	Ceramic Tubular	100	pF	50 V	K	2
C111L/R	3519101935	Ceramic Tubular	100	pF	50 V	K	2
C113	3519101935	Ceramic Tubular	100	pF	50 V	K	1
C114/C115	3479347031	Electrolytic SG	47	μF	16 V	M	2
C116	3479310971	Electrolytic SG	1	μF	50 V	M	1
C117L/R	3479347971	Electrolytic SG	4.7	μF	50 V	M	2
C118L/R	3479347031	Electrolytic SG	47	μF	16 V	M	2
C119L/R	3479347031	Electrolytic SG	47	μF	16 V	M	2
C120/C121	3479347031	Electrolytic SG	47	μF	16 V	M	2
C136	3509104512	Ceramic Disk	0.1	μF	50 V	J	1
C151	3479322021	Electrolytic SG	22	μF	10 V	M	1
C161L/R	3679154297	Mylar	0.15	μF	63 V	K	2
C162L/R	3519470935	Ceramic Tubular	47	pF	50 V	J	2
C163L/R	3479347971	Electrolytic SG	4.7	μF	50 V	M	2
C164L/R	3479347139	Electrolytic SG	470	μF	16 V	M	2
⚠ C170/C171	3419568224	Electrolytic HS	6800	μF	50 V	M	2
⚠ C172/C173	3409322279	Electrolytic SG	2200	μF	50 V	M	2
C174	3479347971	Electrolytic SG	4.7	μF	50 V	M	1
C175-C184	3679473120	Mylar	0.047	μF	100 V	J	10
C185	3409333179	Electrolytic SG	330	μF	50 V	M	1
C186-C188	3479347971	Electrolytic SG	4.7	μF	50 V	M	3
C200L/R	3479347031	Electrolytic SG	47	μF	16 V	M	2
C201L/R	3479310971	Electrolytic SG	1	μF	50 V	M	2
C202L/R	3579680130	Ceramic Tubular	68	pF	50 V	J	2
C203L/R	3479347111	Electrolytic SG	470	μF	6.3 V	M	2
C204L/R	3519470935	Ceramic Tubular	47	pF	50 V	J	2
C205L/R	3479310071	Electrolytic SG	10	μF	50 V	M	2
C206L/R	3479347971	Electrolytic SG	4.7	μF	50 V	M	2
C207L/R	3679683120	Mylar	0.068	μF	100 V	J	2
C208L/R	3679473120	Mylar	0.047	μF	100 V	J	2
C209	3479347111	Electrolytic SG	470	μF	6.3 V	M	1
C210	3479310971	Electrolytic SG	1	μF	50 V	M	1
C211	3579222130	Ceramic Disc	0.0022	μF	50 V	Z	1
C213L/R	3409333179	Electrolytic SG	330	μF	50 V	M	2
C214L/R	3409333179	Electrolytic SG	330	μF	50 V	M	2
C215L/R	3519033935	Ceramic Tubular	3.3	pF	50 V	J	2
C216	3679473120	Mylar	0.047	μF	100 V	J	1
C217	3579222130	Ceramic Disc	0.0022	μF	50 V	Z	1
C222	3679473120	Mylar	0.047	μF	100 V	J	1
		CONNECTORS					
CNT102-1	4428525860	Pin Base, 1P					1
CNT103-1	4428525780	Pin Base, 2P					1
CNT104-1	4428525790	Pin Base, 3P					1
CNT106	4428550100	Wafer, 10P, B'D to B'D					1
CNT107	4428509029	Wafer FPC, 31P					1
CNT108	4428550150	Wafer, 15P, B'D to B'D					1
CNT109	4428550150	Wafer, 15P, B'D to B'D					1
CNT110	4428561520	Wafer, 15P, B'D to B'D Type					1
CNT111	4428516410	Wafer, 5P					1
CNT112	4438302927	Wafer, 6P					1
CNT113	436205283332	Lead Ass'y, 5P, 280mm					1
CNT114	4428551320	Wafer, 13P, B'D to B'D Type					1
CNT115	4428516110	Wafer, 2P					1
CNT116	4428516710	Wafer, 8P					1
CNT118	436102203601	Lead Ass'y, 2P, 200mm, to CNT118-1					1
		DIODES					
D101	2058322101	1N4148, Switching					1
D161L/R	2058322101	1N4148, Switching					2

Ref. No.	Mfr. Part No.	Description	Q'ty
⚠ D181-D184	2058100105	1N5402, Retifier	4
D189/D190	2258599120	BZ 16BM	2
D191-D195	2058322101	1N4148, Switching	5
D200L/R	2058322101	1N4148, Switching	2
D201L/R	2058322101	1N4148, Switching	2
D202	2258599107	UZ 9.1BSC	1
D203/D204	2058322101	1N4148, Switching	2
⚠ IC107	2058100146	PBL303, Bridge	1
		FUSES	
⚠ F101	5508201621	NB 125 V, 0.5 A	1
⚠ F102	5508201621	NB 125 V, 0.5 A	1
		INTEGRATED CIRCUITS	
IC101	2168017132	LC7821	1
IC102	2168206104	KIA4559P (KIA75559P), OP Amp	1
IC103	2138017108	LC4966	1
IC104	2408000136	LTV-817, Optocoupler	1
⚠ IC106	2168606110	KIA7806PI, Regulator	1
		COILS	
L101L/R	2648001010	Inductor, 0.5uH	2
		POSISTORS	
P201	052438000280	Ass'y Posistor, 280mm	1
P202	2438012200	PTH9M04BE222TS2F33	1
		TRANSISTORS	
Q101/Q102	2208622106	DTC114YS	2
Q103/Q104	2238006103	KRA107M(DTA114YS)	2
Q151	2238006103	KRA107M(DTA114YS)	1
Q161L/R	2208606108	BKTC3200BL(KTC2240BL), NPN	2
Q162L/R	2208606114	MPSA06Y, NPN	2
Q163L/R	2208206113	MPSA56Y, PNP	2
Q181/Q182	2208606104	BKTC3198Y(KTC1815Y), NPN	2
Q183	2208206113	MPSA56Y, PNP	1
Q184/Q185	2208606104	BKTC3198Y(KTC1815Y), NPN	2
Q186	2028406123	2SD2059Y(KTD2059Y)	1
Q200	2208622106	DTC114YS	1
Q201L/R	2208606112	KTD1302, NPN	2
Q202	2238006103	KRA107M(DTA114YS)	1
Q203L/R	2208206104	KTA1268(KTA970BL), PNP	2
Q204L/R	2208206104	KTA1268(KTA970BL), PNP	2
Q205L/R	2208206104	KTA1268(KTA970BL), PNP	2
Q206L/R	2208206105	KTA1266Y(KTA1015Y), PNP	2
Q207L/R	2208606108	BKTC3200BL(KTC2240BL), NPN	2
Q208L/R	2208606108	BKTC3200BL(KTC2240BL), NPN	2
Q209L/R	2208206104	KTA1268(KTA970BL), PNP	2
Q210L/R	2208206102	KTA1024Y(BKTA949Y), PNP	2
Q211L/R	2008622110	2SC4137, NPN, Bias	2
Q212L/R	2208606107	KTC3206Y(BKTC2229Y), NPN	2
Q213L/R	2008602102	KSC2690AY, NPN	2
Q214L/R	2008202101	KSA1220AY, PNP	2
⚠ Q215L/R	2028307104	2SC3180N-O	2
⚠ Q216L/R	2028007104	2SA1263N-O	2
Q217L/R	2208606104	BKTC3198Y(KTC1815Y), NPN	2
Q218	2208206105	KTA1266Y(KTA1015Y), PNP	1
Q219/Q220	2208606104	BKTC3198Y(KTC1815Y), NPN	2
		RESISTORS	
R101L/R	3069102970	Carbon Film 1 kohm 1/5 W J	2
R102L/R	3069102970	Carbon Film 1 kohm 1/5 W J	2
R103L/R	3069102970	Carbon Film 1 kohm 1/5 W J	2
R104L/R	3069102970	Carbon Film 1 kohm 1/5 W J	2

Ref. No.	Mfr. Part No.	Description				Q'ty
R105L/R	3069102970	Carbon Film	1	kohm	1/5 W J	2
R106L/R	3069102970	Carbon Film	1	kohm	1/5 W J	2
R107	3069102970	Carbon Film	1	kohm	1/5 W J	1
R108	3069151970	Carbon Film	150	ohm	1/5 W J	1
R109	3069104970	Carbon Film	100	kohm	1/5 W J	1
R110	3069151970	Carbon Film	150	ohm	1/5 W J	1
R111L/R	3069104970	Carbon Film	100	kohm	1/5 W J	2
R112L/R	3069224970	Carbon Film	220	kohm	1/5 W J	2
R113L/R	3069224970	Carbon Film	220	kohm	1/5 W J	2
R114/R115	3069104970	Carbon Film	100	kohm	1/5 W J	2
R123	3069151970	Carbon Film	150	ohm	1/5 W J	1
R151	3069392970	Carbon Film	3.9	kohm	1/5 W J	1
R152	3069332970	Carbon Film	3.3	kohm	1/5 W J	1
R153	3069101970	Carbon Film	100	ohm	1/5 W J	1
R154	3069470970	Carbon Film	47	ohm	1/5 W J	1
R155	3069473970	Carbon Film	47	kohm	1/5 W J	1
R156	3069271970	Carbon Film	270	ohm	1/5 W J	1
R161L/R	3069104970	Carbon Film	100	kohm	1/5 W J	2
R162L/R	3069105970	Carbon Film	1	Mohm	1/5 W J	2
R163L/R	3069224970	Carbon Film	220	kohm	1/5 W J	2
R164L/R	3069153970	Carbon Film	15	kohm	1/5 W J	2
R165L/R	3069242970	Carbon Film	2.4	kohm	1/5 W J	2
R166L/R	3069330970	Carbon Film	33	ohm	1/5 W J	2
R167L/R	3069330970	Carbon Film	33	ohm	1/5 W J	2
R168L/R	3069100970	Carbon Film	10	ohm	1/5 W J	2
R169L/R	3069101970	Carbon Film	100	ohm	1/5 W J	2
R181	3069332970	Carbon Film	3.3	kohm	1/5 W J	1
R182-R185	3069473970	Carbon Film	47	kohm	1/5 W J	4
R186/R187	3069332970	Carbon Film	3.3	kohm	1/5 W J	2
⚠ R188L/R	3029470470	Metal Film	47	ohm	1 W J	2
⚠ R189L/R	3029470470	Metal Film	47	ohm	1 W J	2
R191/R192	3069472970	Carbon Film	4.7	kohm	1/5 W J	2
R194	3069332970	Carbon Film	3.3	kohm	1/5 W J	1
R200	3069154970	Carbon Film	150	kohm	1/5 W J	2
R201L/R	3069331970	Carbon Film	330	ohm	1/5 W J	2
R202L/R	3069332970	Carbon Film	3.3	kohm	1/5 W J	2
R203L/R	3069333970	Carbon Film	33	kohm	1/5 W J	2
R204L/R	3069333970	Carbon Film	33	kohm	1/5 W J	2
R205L/R	3069103970	Carbon Film	10	kohm	1/5 W J	2
R206L/R	3069271970	Carbon Film	270	ohm	1/5 W J	2
R207L/R	3069391970	Carbon Film	390	ohm	1/5 W J	2
R208L/R	3069391970	Carbon Film	390	ohm	1/5 W J	2
R209L/R	3069152970	Carbon Film	1.5	kohm	1/5 W J	2
R210L/R	3069152970	Carbon Film	1.5	kohm	1/5 W J	2
R211L/R	3069182970	Carbon Film	1.8	kohm	1/5 W J	2
R212L/R	3069561970	Carbon Film	560	ohm	1/5 W J	2
R213L/R	3069561970	Carbon Film	560	ohm	1/5 W J	2
R214L/R	3069561970	Carbon Film	560	ohm	1/5 W J	2
R215L/R	3069561970	Carbon Film	560	ohm	1/5 W J	2
R216L/R	3069561970	Carbon Film	560	ohm	1/5 W J	2
R217L/R	3069561970	Carbon Film	560	ohm	1/5 W J	2
R218L/R	3069472970	Carbon Film	4.7	kohm	1/5 W J	2
R219L/R	3069223970	Carbon Film	22	kohm	1/5 W J	2
R220L/R	3069223970	Carbon Film	22	kohm	1/5 W J	2
R221L/R	3027121125	Metal Flim	1.21	kohm	1/4 W F	2
R222L/R	3027442025	Metal Flim	442	ohm	1/4 W F	2
R223L/R	3069820970	Carbon Film	82	ohm	1/5 W J	2
R224L/R	3069820970	Carbon Film	82	ohm	1/5 W J	2
R225L/R	3069820970	Carbon Film	82	ohm	1/5 W J	2
⚠ R226L/R	3059027776	Cement	0.27	ohm	5 W J	2
⚠ R227L/R	3059027776	Cement	0.27	ohm	5 W J	2
R228L/R	3069182970	Carbon Film	1.8	kohm	1/5 W J	2
R229L/R	3069152970	Carbon Film	1.5	kohm	1/5 W J	2
R230L/R	3069911970	Carbon Film	910	ohm	1/5 W J	2
R231L/R	3069682970	Carbon Film	6.8	kohm	1/5 W J	2
R232L/R	3069220970	Carbon Film	22	ohm	1/5 W J	2
R233L/R	3069220970	Carbon Film	22	ohm	1/5 W J	2
R234L/R	3069243970	Carbon Film	24	kohm	1/5 W J	2
⚠ R235L/R	3029100470	Metal Film	10	ohm	1 W J	2
R236	3069683970	Carbon Film	68	kohm	1/5 W J	1
R237	3069104970	Carbon Film	100	kohm	1/5 W J	1
R238	3069332970	Carbon Film	3.3	kohm	1/5 W J	1
R239	3069152970	Carbon Film	1.5	kohm	1/5 W J	1
R240	3069223970	Carbon Film	22	kohm	1/5 W J	1
R241	3069153970	Carbon Film	15	kohm	1/5 W J	1
R242	3069103970	Carbon Film	10	kohm	1/5 W J	1
R243	3069472970	Carbon Film	4.7	kohm	1/5 W J	1
R244	3069102970	Carbon Film	1	kohm	1/5 W J	1
R245	3069682970	Carbon Film	6.8	kohm	1/5 W J	1
R246L/R	3069333970	Carbon Film	33	kohm	1/5 W J	2
		MISCELLANEOUS				
	4235007310	Terminal Ground				2
	4255001010	Clip Fuse				4
11	4438103110	Jack RCA, 4P				3
12	4438007510	Jack Mini, 2P				1
18	4408108610	Terminal Speaker Main, Screw Type, 4P				1
PCB2		**ASS'Y P.C.BOARD TONE**				
		CAPACITORS				
C122L/R	3479347031	Electrolytic SG	47	μF	16 V M	2
C123L/R	3479347971	Electrolytic SG	4.7	μF	50 V M	2
C124L/R	3519470935	Ceramic Tubular	47	pF	50 V J	2
C125L/R	3479347971	Electrolytic SG	4.7	μF	50 V M	2
C126L/R	3679273120	Mylar	0.027	μF	100 V J	2
C127L/R	3679332120	Mylar	0.0033	μF	100 V J	2
C128L/R	3679154297	Mylar	0.15	μF	63V K	2
C129L/R	3679183120	Mylar	0.018	μF	100 V J	2
C130L/R	3519331935	Ceramic Tubular	330	pF	50 V K	2
		CONNECTOR				
CNT116-1	436208123332	Lead Ass'y, 8P, 120mm				1
		INTEGRATED CIRCUIT				
IC105	2168206104	KIA4559P (KIA75559P), OP Amp				1
		RESISTORS				
R124	3069151970	Carbon Film	150	ohm	1/5 W J	1
R121L/R	3069104970	Carbon Film	100	kohm	1/5 W J	2
R125L/R	3069104970	Carbon Film	100	kohm	1/5 W J	2
R126L/R	3069274970	Carbon Film	270	kohm	1/5 W J	2
R127L/R	3069105970	Carbon Film	1	Mohm	1/5 W J	2
R128L/R	3069102970	Carbon Film	1	kohm	1/5 W J	2
R129L/R	3069183970	Carbon Film	18	kohm	1/5 W J	2
R130L/R	3069102970	Carbon Film	1	kohm	1/5 W J	2
R131L/R	3069392970	Carbon Film	3.9	kohm	1/5 W J	2
R132L/R	3069621970	Carbon Film	620	ohm	1/5 W J	2
		MISCELLANEOUS				
14	6165149710	Shield Fence, Tone				1
15	3208068910	Volume, Bass/Treble				2
16	3208068810	Volume, Balance				1
PCB3		**ASS'Y P.C. BOARD FRONT**				
		CAPACITORS				
C710/C711	3679473120	Mylar	0.047	μF	100 V J	2
C712	3439247315	Back-Up	0.047	μF	5.5 V M	1
C713	3479347021	Electrolytic SG	47	μF	10 V M	1
C714	3479310971	Electrolytic SG	1	μF	50 V M	1
C716	3479310071	Electrolytic SG	10	μF	50 V M	1
C717	3479310171	Electrolytic SG	100	μF	50 V M	1
C720	3519223530	Ceramic Disc	0.022	μF	50 V Z	1
C721	3479347871	Electrolytic SG	0.47	μF	50 V M	1
		CONNECTORS				
CNT105-1	4428513450	Wafer, 5P, Angle				1
CNT107-1	4428531826	Wafer FPC, 31P				1
CNT701	4428513420	Wafer, 2P, Angle				1

Ref. No.	Mfr. Part No.	Description	Q'ty
		DIODES	
D701	2258599102	UZ 4.3BSB	1
D704-D709	2058322101	1N4148, Switching	6
D710/D711	2258599117	UZ 16.0BSD	2
D712	2258599107	UZ 9.1BSC	1
D713	2258100135	1N4002, Rectifier	1
D714	2058322101	1N4148, Switching	1
D716	2058322101	1N4148, Switching	1
		FIP	
FL700	2328002306	FL Display CM1361C	1
		INTEGRATED CIRCUIT	
IC701	2138322189	CXP82316, CPU	1
		TRANSISTORS	
Q701	2208606104	BKTC3198Y(KTC1815Y), NPN	1
Q702	2208606104	BKTC3198Y(KTC1815Y), NPN	1
		RESISTORS	
R708	3069472970	Carbon Film 4.7 kohm 1/5 W J	1
R710	3069472970	Carbon Film 4.7 kohm 1/5 W J	1
R713H	3069473970	Carbon Film 47 kohm 1/5 W J	1
R714L	3069473970	Carbon Film 47 kohm 1/5 W J	1
R715H	3069473970	Carbon Film 47 kohm 1/5 W J	1
R716L	3069473970	Carbon Film 47 kohm 1/5 W J	1
R717	3069471970	Carbon Film 470 ohm 1/5 W J	1
R718	3069332970	Carbon Film 3.3 kohm 1/5 W J	1
R720	3069104970	Carbon Film 100 kohm 1/5 W J	1
R721	3069331970	Carbon Film 330 ohm 1/5 W J	1
R722	3069332970	Carbon Film 3.3 kohm 1/5 W J	1
R723	3069473970	Carbon Film 47 kohm 1/5 W J	1
R725	3069101970	Carbon Film 100 ohm 1/5 W J	1
R726	3069103970	Carbon Film 10 kohm 1/5 W J	1
R729	3069331970	Carbon Film 330 ohm 1/5 W J	1
R730	3069104970	Carbon Film 100 kohm 1/5 W J	1
R731	3069153970	Carbon Film 15 kohm 1/5 W J	1
R732	3069104970	Carbon Film 100 kohm 1/5 W J	1
R733	3029391470	Metal Film 390 ohm 1 W J	1
R734/R735	3069104970	Carbon Film 100 kohm 1/5 W J	2
R745	3069102970	Carbon Film 1 kohm 1/5 W J	1
		MISCELLANEOUS	
X700	3938124010	Resonator, CST10MTW-TF01	1
RMC1	2408005001	Sensor, TEMT5380(38 kHz)	1
21	6043010210	Holder FL	1
22	4658004810	Switch Tact	14
PCB4		**ASS'Y P. C. BOARD VOLUME**	
		CAPASISTORS	
C700	3479310071	Electrolytic SG 10 µF 50 V M	1
C701	3479310121	Electrolytic SG 100 µF 10 V M	1
C702	3479310131	Electrolytic SG 100 µF 16 V M	1
C703	3479310121	Electrolytic SG 100 µF 10 V M	1
		CONNECTORS	
CNT114-1	4428551320	Wafer, 13P	1
CNT700	4428508210	Wafer, 2P	1
		RESISTORS	
R700	3069681970	Carbon Film 680 ohm 1/5 W J	1
R701/R702	3069102970	Carbon Film 1 kohm 1/5 W J	2
R705	3069479970	Carbon Film 4.7 ohm 1/5 W J	1
R706	3069103970	Carbon Film 10 kohm 1/5 W J	1
R707	3069302970	Carbon Film 3 kohm 1/5 W J	1
		MISCELLANEOUS	
IC700	2168007204	IC, TA7291S	1
Q700	2208622108	TR, DTC114TS	1
23	3228020010	Volume Motor, 50 k(A)	1

Ref. No.	Mfr. Part No.	Description	Q'ty
PCB5		**ASS'Y P. C. BOARD ST-BY LED**	
D700	2308220324	LED, SLR 40MG3, Green	1
CNT700-1	435102183181	Connector, Lead Ass'y, 2P, 180mm	1
PCB6		**ASS'Y P.C BOARD OUTLET**	
⚠ F700	1508400602	Jumper	1
⚠ F701	5508202921	Fuse, NB 125 V, 4 A	1
R724	3029335380	RES, Carbon Film 3.3 Mohm 1/2 W J	1
CNT101-1	4428525780	Connector, Pin Base, 2P	1
CNT122	4428525780	Connector, Pin Base, 2P	1
	4255001010	Clip Fuse	2
	4228001410	Pin Solder	2
	4235007310	Terminal Ground	1
⚠ 28	4448104810	Outlet, AC	1
PCB7		**ASS'Y P. C. BOARD POWER LED**	
D702/D703	2371124701	LED, SLR-34GC, Green	2
CNT701-1	436102183331	Connector, Lead Ass'y, 2P, 180mm	1
PCB8		**ASS'Y P. C. BOARD HEADPHONE**	
		CAPACITORS	
C715	3579104530	Ceramic Disc. 0.1 µF 50V Z	1
C718	3548472340	SPK-Killer 0.0047 µF 400V	1
C719L/R	3579473530	Ceramic Disc. 0.047 µF 50 V Z	2
		TRANSISTORS	
Q703/Q704	2208622106	DTC114YS	2
		RESISTORS	
R703	3069202970	Carbon Film 2 kohm 1/5 W J	1
R704	3069103970	Carbon Film 10 kohm 1/5 W J	1
R719	3069103970	Carbon Film 10 kohm 1/5 W J	1
R728L/R	3069101970	Carbon Film 100 ohm 1/5 W J	2
		CONNECTORS	
CNT111-1	436205283332	Lead Ass'y, 5P, 280mm	1
CNT122-1	4358850230	Lead Ass'y, 2P, 300mm, LV Type	1
		MISCELLANEOUS	
24	4628055910	Switch Power, Push Type	1
25	4438004510	Jack Phone, Headphone, 9P	1
PCB9		**ASS'Y P. C. BOARD VCR2**	
		CAPACITORS	
C704	3579104530	Ceramic Disc. 0.1 µF 50V Z	1
C707/C708	3519101935	Ceramic Tubular 100 pF 50 V K	2
C709	3479333031	Electrolytic SG. 33 µF 16 V M	1
		RESISTORS	
R709	3069750970	Carbon Film 75 ohm 1/5 W J	1
R711/R712	3069102970	Carbon Film 1 kohm 1/5 W J	2
		MISCELLANEOUS	
CNT113-1	4428525550	Connector, Wafer, 5P, Angle	1
27	4438109710	Jack RCA, 3P, VCR	1
PCB10		**ASS'Y P. C. BOARD SURROUND AMP**	
		CAPACITORS	
C401	3479347031	Electrolytic SG 47 µF 16 V M	1
C402	3519101935	Ceramic Tubular 100 pF 50 V K	1
C403	3479310971	Electrolytic SG 1 µF 50 V M	1
C404	3479347041	Electrolytic SG 47 µF 25 V M	1
C405	3519470935	Ceramic Tubular 47 pF 50 V K	1
C406	3479310071	Electrolytic SG 10 µF 50 V M	1
C407	3479347971	Electrolytic SG 4.7 µF 50 V M	1

Ref. No.	Mfr. Part No.	Description				Q'ty
C408	3679683120	Mylar	0.068	μF	100 V J	1
C409	3679473120	Mylar	0.047	μF	100 V J	1
C410	3479347031	Electrolytic SG	47	μF	16 V M	1
C411	3519101935	Ceramic Tubular	100	pF	50 V K	1
C412	3479310971	Electrolytic SG	1	μF	50 V M	1
⚠ C413	3479347041	Electrolytic SG	47	μF	25 V M	1
⚠ C414	3519470935	Ceramic Tubular	47	pF	50 V K	1
C415	3479310071	Electrolytic SG	10	μF	50 V M	1
C416	3479347971	Electrolytic SG	4.7	μF	50 V M	1
C417	3679683120	Mylar	0.068	μF	100 V J	1
C419	3409322179	Electrolytic SG	220	μF	50 V M	1
C471	3409322179	Electrolytic SG	220	μF	50 V M	1
		CONNECTORS				
CNT110-1	4428561520	Wafer, 15P				1
CNT117	436102123321	Lead Ass'y, 2P, 120mm				1
		DIODES				
D401/D402	2058322101	1N4148, Switching				2
		TRANSISTORS				
Q401	2208622106	DTC114YS				1
Q402	2208206105	KTA1266Y(KTA1015Y), PNP				1
Q403-Q405	2208206104	KTA1268/KTA970, PNP				3
Q406/Q407	2208606108	KTC3200BL(KTC2240BL), NPN				2
Q408	2208206102	KTA1024Y(BKTA949Y), PNP				1
Q409	2208606107	KTC3206Y(BKTC2229Y), NPN				1
Q410	2008622110	2SC4137, NPN, Bias				1
Q411	2008602102	KSC2690AY, NPN				1
Q412	2008202101	KSA1220AY, PNP				1
Q413	2028407109	KTD718(2SD718), NPN				1
Q414	2028107106	KTB688(2SB688), PNP				1
Q415	2208606104	BKTC3198Y(KTC1815Y), NPN				1
Q416	2208206105	KTA1266Y(KTA1015Y), PNP				1
Q417-Q419	2208206104	KTA1268/KTA970, PNP				3
Q420/Q421	2208606108	BKTC3200BL(KTC2240BL), NPN				2
Q422	2208206102	KTA1024Y(BKTA949Y), PNP				1
Q423	2208606107	KTC3206Y(BKTC2229Y), NPN				1
Q424	2008622110	2SC4137, NPN, Bias				1
Q425	2008602102	KSC2690AY, NPN				1
Q426	2008202101	KSA1220AY, PNP				1
Q427	2028407109	KTD718(2SD718), NPN				1
Q428	2028107106	KTB688(2SB688), PNP				1
Q429	2208606104	BKTC3198Y(KTC1815Y), NPN				1
Q430	2238006103	KRA107M(DTA114YS)				1
Q431	2208606112	2SD1302, NPN				1
Q432	2238006103	KRA107M(DTA114YS)				1
Q433	2208606112	2SD1302, NPN				1
		RESISTORS				
R401	3069102970	Carbon Film	1	kohm	1/5 W J	1
R402/R403	3069333970	Carbon Film	33	kohm	1/5 W J	2
R404	3069103970	Carbon Film	10	kohm	1/5 W J	1
R405	3069271970	Carbon Film	270	ohm	1/5 W J	1
R406/R407	3069391970	Carbon Film	390	ohm	1/5 W J	2
R408	3069102970	Carbon Film	1	kohm	1/5 W J	1
R409/R410	3069152970	Carbon Film	1.5	kohm	1/5 W J	2
R411-R415	3069561970	Carbon Film	560	ohm	1/5 W J	5
R416/R417	3069820970	Carbon Film	82	ohm	1/5 W J	2
R418/R419	3069223970	Carbon Film	22	kohm	1/5 W J	2
R420	3069471970	Carbon Film	470	ohm	1/5 W J	1
R421	3069122970	Carbon Film	1.2	kohm	1/5 W J	1
R422	3069820970	Carbon Film	82	ohm	1/5 W J	1
R423/R424	3059278782	Cement	0.27	ohm	5 W J	2
R425	3069182970	Carbon Film	1.8	kohm	1/5 W J	1
R426	3069152970	Carbon Film	1.5	kohm	1/5 W J	1
⚠ R427	3069911970	Carbon Film	910	ohm	1/5 W J	1
⚠ R428	3069682970	Carbon Film	6.8	kohm	1/5 W J	1
R431	3069243970	Carbon Film	24	kohm	1/5 W J	1
R433	3069102970	Carbon Film	1	kohm	1/5 W J	1
R434/R435	3069333970	Carbon Film	33	kohm	1/5 W J	2
R436	3069103970	Carbon Film	10	kohm	1/5 W J	1
R437	3069271970	Carbon Film	270	ohm	1/5 W J	1
R438/R439	3069391970	Carbon Film	390	ohm	1/5 W J	2
R440	3069102970	Carbon Film	1	kohm	1/5 W J	1
R441/R442	3069152970	Carbon Film	1.5	kohm	1/5 W J	2
R443-R447	3069561970	Carbon Film	560	ohm	1/5 W J	5
R448/R449	3069820970	Carbon Film	82	ohm	1/5 W J	2
R450/R451	3069223970	Carbon Film	22	kohm	1/5 W J	2
R452	3069471970	Carbon Film	470	ohm	1/5 W J	1
R453	3069122970	Carbon Film	1.2	kohm	1/5 W J	1
R454	3069820970	Carbon Film	82	ohm	1/5 W J	1
R455/R456	3059278782	Cement	0.27	ohm	5 W J	2
R457	3069182970	Carbon Film	1.8	kohm	1/5 W J	1
R458	3069152970	Carbon Film	1.5	kohm	1/5 W J	1
R459	3069911970	Carbon Film	910	ohm	1/5 W J	1
R460	3069682970	Carbon Film	6.8	kohm	1/5 W J	1
R463	3069243970	Carbon Film	24	kohm	1/5 W J	1
R465/R466	3069333970	Carbon Film	33	kohm	1/5 W J	2
R467/R468	3069332970	Carbon Film	3.3	kohm	1/5 W J	2
R469	3069154970	Carbon Film	150	kohm	1/5 W J	1
R470/R471	3029470470	Metal Film	47	ohm	1 W J	2

FCB11		ASS'Y P. C. BOARD SURROUND				
		CAPACITORS				
C301	3679473120	Mylar	0.047	μF	100 V J	1
C302/C303	3679104297	Mylar	0.1	μF	63V K	2
C304	3615681110	Poly	680	pF	50 V J	1
C305	3679473120	Mylar	0.047	μF	100 V J	1
C306	3479322071	Electrolytic SG	22	μF	50 V M	1
C307-C309	3479310071	Electrolytic SG	10	μF	50 V M	3
C310	3479322071	Electrolytic SG	22	μF	50 V M	1
C311	3679472120	Mylar	0.0047	μF	100 V J	1
C312	3479347871	Electrolytic SG	0.47	μF	50 V M	1
C313/C314	3479347971	Electrolytic SG	4.7	μF	50 V M	2
C315	3479322871	Electrolytic SG	0.22	μF	50 V M	1
C316	3479310071	Electrolytic SG	10	μF	50 V M	1
C317	3479322131	Electrolytic SG	220	μF	16 V M	1
C318/C319	3479347971	Electrolytic SG	4.7	μF	50 V M	2
C320	3679562120	Mylar	0.0056	μF	100V J	1
C321	3479322121	Electrolytic SG	220	μF	10 V M	1
C322	3679473120	Mylar	0.047	μF	100 V J	1
C323	3579471130	Ceramic Disc	470	pF	50 V K	1
C324	3679473120	Mylar	0.047	μF	100 V J	1
C325	3679562120	Mylar	0.0056	μF	100V J	1
C326	3679684297	Mylar	0.68	μF	63V K	1
C327-C329	3679224297	Mylar	0.22	μF	63V K	3
C330/C331	3479347971	Electrolytic SG	4.7	μF	50 V M	2
C332	3679224297	Mylar	0.22	μF	63V K	1
C333-C336	3679104297	Mylar	0.1	μF	63V K	4
C337/C338	3679223120	Mylar	0.022	μF	100V J	2
C339/C340	3679104297	Mylar	0.1	μF	63V K	2
C341	3615681110	Poly	680	pF	50 V J	1
C342	3479310121	Electrolytic SG	100	μF	10 V M	1
C343	3519104935	Ceramic Tubular	0.1	μF	50 V K	1
C344	3479310121	Electrolytic SG	100	μF	10 V M	1
C345/C346	3579271130	Ceramic Disc	270	pF	50 V K	2
C347	3519101935	Ceramic Tubular	100	pF	50 V K	1
C348/C349	3679562120	Mylar	0.0056	μF	100 V J	2
C350	3579471130	Ceramic Disc	470	pF	50 V K	1
C351	3679104297	Mylar	0.1	μF	63V J	1
C352	3479347031	Electrolytic SG	47	μF	16 V M	1
C353/C354	3679473120	Mylar	0.047	μF	100 V J	2
C355	3679104297	Mylar	0.1	μF	63V J	1
C356	3579471130	Ceramic Disc	470	pF	50 V K	1
C357	3479310971	Electrolytic SG	1	μF	50 V M	1
C358/C359	3479347031	Electrolytic SG	47	μF	16 V M	2
C360/C361	3519104935	Ceramic Tubular	0.1	μF	50 V K	2
C362	3519101935	Ceramic Tubular	100	pF	50 V K	1

Ref. No.	Mfr. Part No.	Description				Q'ty
C363/C364	3479347031	Electrolytic SG	47	µF	16 V M	2
C365	3479347971	Electrolytic SG	4.7	µF	50 V M	1
C366	3519101935	Ceramic Tubular	100	pF	50 V K	1
C367	3519681935	Ceramic Disc	680	pF	50 V J	1
C368	3479347971	Electrolytic SG	4.7	µF	50 V M	1
C369	3479347871	Electrolytic SG	0.47	µF	50 V M	1
C370	3519101935	Ceramic Tubular	100	pF	50 V K	1
C371	3519681935	Ceramic Tubular	680	pF	50 V J	1
C372	3479347871	Electrolytic SG	0.47	µF	50 V M	1
C373/C374	3479347031	Electrolytic SG	47	µF	16 V M	2
C375L/R	3479347971	Electrolytic SG	4.7	µF	50 V M	2
C376L/R	3519101935	Ceramic Tubular	100	pF	50 V K	2
C377L/R	3479347971	Electrolytic SG	4.7	µF	50 V M	2
C378L/R	3519330935	Ceramic Tubular	33	pF	50 V K	2
C380	3679332120	Mylar	0.0033	µF	100 V J	1
		CONNECTORS				
CNT108-1	4428560150	Wafer, 15P				1
CNT109-1	4428560150	Wafer, 15P				1
		DIODES				
D301/D302	2058322101	1N4148, Switching				2
		INTEGRATED CIRCUITS				
IC301	2169020000	NJM2177AFB3				1
IC302	2168020114	NJU9701, Delay				1
IC303	2168007210	TC9299				1
IC304/IC305	2168206104	KIA4559P (KIA75559P), OP Amp				2
		TRANSISTORS				
Q301/Q302	2208622106	DTC114YS				2
Q303-Q305	2238006103	KRA107M(DTA114YS)				2
Q306/Q307	2208606112	2SD1302, NPN				2
		RESISTORS				
R301	3069752970	Carbon Film	7.5	kohm	1/5 W J	1
R302	3069473970	Carbon Film	47	kohm	1/5 W J	1
R303	3069153970	Carbon Film	15	kohm	1/5 W J	1
R304	3069475970	Carbon Film	4.7	Mohm	1/5 W J	1
R305/R306	3069223970	Carbon Film	22	kohm	1/5 W J	2
R307-R309	3069104970	Carbon Film	100	kohm	1/5 W J	3
R310	3069103970	Carbon Film	10	kohm	1/5 W J	1
R311	3069680970	Carbon Film	68	ohm	1/5 W J	1
R312	3069104970	Carbon Film	100	kohm	1/5 W J	1
R314	3069104970	Carbon Film	100	kohm	1/5 W J	1
R315	3069153970	Carbon Film	15	kohm	1/5 W J	1
R316/R317	3069822970	Carbon Film	8.2	kohm	1/5 W J	2
R318	3069682970	Carbon Film	6.8	kohm	1/5 W J	1
R319	3069334970	Carbon Film	330	kohm	1/5 W J	1
R320	3069752970	Carbon Film	7.5	kohm	1/5 W J	1
R321	3069473970	Carbon Film	47	kohm	1/5 W J	1
R322	3069153970	Carbon Film	15	kohm	1/5 W J	1
R323	3069560970	Carbon Film	56	ohm	1/5 W J	1
R324	3069470970	Carbon Film	47	ohm	1/5 W J	1
R325	3069105970	Carbon Film	1	Mohm	1/5 W J	1
R326/R327	3069102970	Carbon Film	1	kohm	1/5 W J	2
R328	3069822970	Carbon Film	8.2	kohm	1/5 W J	1
R329	3069752970	Carbon Film	7.5	kohm	1/5 W J	1
R330	3069183970	Carbon Film	18	kohm	1/5 W J	1
R331	3069562970	Carbon Film	5.6	kohm	1/5 W J	1
R332/R333	3069220970	Carbon Film	22	ohm	1/5 W J	2
R334	3069153970	Carbon Film	15	kohm	1/5 W J	1
R335	3069183970	Carbon Film	18	kohm	1/5 W J	1
R336	3069153970	Carbon Film	15	kohm	1/5 W J	1
R338/R339	3069151970	Carbon Film	150	ohm	1/5 W J	2
R340-R342	3069102970	Carbon Film	1	kohm	1/5 W J	3
R343/R344	3069151970	Carbon Film	150	ohm	1/5 W J	2
R346	3069104970	Carbon Film	100	kohm	1/5 W J	1
R347	3069822970	Carbon Film	8.2	kohm	1/5 W J	1
R348	3069182970	Carbon Film	1.8	kohm	1/5 W J	1
R349	3069104970	Carbon Film	100	kohm	1/5 W J	1
R351	3069473970	Carbon Film	47	kohm	1/5 W J	1
R352	3069822970	Carbon Film	8.2	kohm	1/5 W J	1
R353	3069182970	Carbon Film	1.8	kohm	1/5 W J	1
R354	3069103970	Carbon Film	10	kohm	1/5 W J	1
R355/R356	3069151970	Carbon Film	150	ohm	1/5 W J	2
R358L/R	3069104970	Carbon Film	100	kohm	1/5 W J	2
R359L/R	3069152970	Carbon Film	1.5	kohm	1/5 W J	2
R360L/R	3069912970	Carbon Film	9.1	kohm	1/5 W J	2
R361L/R	3069104970	Carbon Film	100	kohm	1/5 W J	2
R362L/R	3069102970	Carbon Film	1	kohm	1/5 W J	2
R363/R364	3069332970	Carbon Film	3.3	kohm	1/5 W J	2
R365	3069102970	Carbon Film	1	kohm	1/5 W J	1
R366-R368	3069104970	Carbon Film	10	kohm	1/5 W J	3
		MISCELLANEOUS				
X301	3938131740	Resonator, CSA2.00MG				1
11	4438103110	Jack RCA, 4P				1
17	4438111310	Jack RCA, Sub Output, 2P				1
PCB12		**ASS'Y P. C. BOARD VIDEO**				
		CAPACITORS				
C501	3519050935	Ceramic Tubular	5	pF	50 V D	1
C502	3479333031	Electrolytic SG	33	µF	16 V M	1
C503	3519050935	Ceramic Tubular	5	µF	50 V D	1
C504/C505	3479347121	Electrolytic SG	470	µF	10 V M	2
C506	3479310121	Electrolytic SG	100	µF	10 V M	1
C507	3519104935	Ceramic Tubular	0.1	µF	50 V Z	1
		INTEGRATED CIRCUIT				
IC501	2138001101	GD4066B				1
		TRANSISTORS				
Q501	2208606104	BKTC3198Y(KTC1815Y), NPN				1
Q502	2208206105	KTA1266Y(KTA1015Y), PNP				1
Q503	2208606104	BKTC3198Y(KTC1815Y), NPN				1
Q504	2208206105	KTA1266Y(KTA1015Y), PNP				1
		RESISTORS				
R501	3069822970	Carbon Film	8.2	kohm	1/5 W J	1
R502	3069123970	Carbon Film	12	kohm	1/5 W J	1
R503	3069151970	Carbon Film	150	ohm	1/5 W J	1
R504/R505	3069122970	Carbon Film	1.2	kohm	1/5 W J	2
R506	3069181970	Carbon Film	180	ohm	1/5 W J	1
R507	3069750970	Carbon Film	75	ohm	1/5 W J	1
R508	3069123970	Carbon Film	12	kohm	1/5 W J	1
R509	3069822970	Carbon Film	8.2	kohm	1/5 W J	1
R510	3069122970	Carbon Film	1.2	kohm	1/5 W J	1
R511	3069151970	Carbon Film	150	ohm	1/5 W J	1
R512	3069122970	Carbon Film	1.2	kohm	1/5 W J	1
R513	3069181970	Carbon Film	180	ohm	1/5 W J	1
R514/R515	3069750970	Carbon Film	75	ohm	1/5 W J	2
R516	3069101970	Carbon Film	100	ohm	1/5 W J	1
R517/R518	3069104970	Carbon Film	100	kohm	1/5 W J	2
		MISCELLANEOUS				
CNT112-1	4438302927	Connector, Wafer, 6P				1
20	4438114310	Jack RCA(VCR1/Monitor), 3P				1
PCB13		**ASS'Y P. C. BOARD CENTER SPEAKER**				
CF401/402	3519472935	CAP, Ceramic	0.0047	µF	50 V K	2
R429/R430	3069220970	RES, Carbon Film	22	ohm	1/5 W J	2
R432	3029100470	RES, Metal Film	10	ohm	1 W J	1
L401	2648001010	Coil, Inductor, 0.5 uH				1
CNT117-1	4428508210	Connector, Wafer, 2P				1
19	4408108710	Terminal Speaker Center, Screw Type, 2P				1

Ref. No.	Mfr. Part No.	Description					Q'ty
PCB14		**ASS'Y P. C. BOARD TUNER**					
		CAPACITORS					
C801	3479310141	Electrolytic SG	100	µF	25 V	M	1
C802	3519223935	Ceramic Tubular	0.022	µF	50 V	Z	1
C804-C809	3519223935	Ceramic Tubular	0.022	µF	50 V	Z	6
C810	3479347041	Electrolytic SG	47	µF	25 V	M	1
C813	3679473120	Mylar	0.047	µF	100 V	J	1
C814	3519331935	Ceramic Tubular	330	pF	50 V	K	1
C815	3479347871	Electrolytic SG	0.47	µF	50 V	M	1
C816	3519223935	Ceramic Tubular	0.022	µF	50 V	Z	1
C817	3479347971	Electrolytic SG	4.7	µF	50 V	M	1
C818	3479333971	Electrolytic SG	3.3	µF	50 V	M	1
C819	3479347971	Electrolytic SG	4.7	µF	50 V	M	1
C820	3519470935	Ceramic Tubular	47	pF	50 V	J	1
C821	3519223935	Ceramic Tubular	0.022	µF	50 V	Z	1
C822	3679272120	Mylar	0.0027	µF	100 V	J	1
C823	3479322971	Electrolytic SG	2.2	µF	50 V	M	1
C824/C825	3528330210	Ceramic Disc, CH	33	pF	50 V	J	2
C828	3519101935	Ceramic Tubular	100	pF	50 V	K	1
C829	3519103935	Ceramic Tubular	0.01	µF	50 V	Z	1
C830	3479310971	Electrolytic SG	1	µF	50 V	M	1
C831	3479347041	Electrolytic SG	47	µF	25 V	M	1
C832	3519223935	Ceramic Tubular	0.022	µF	50 V	Z	1
C833	3479347041	Electrolytic SG	47	µF	25 V	M	1
C834	3519223935	Ceramic Tubular	0.022	µF	50 V	Z	1
C835	3579473530	Ceramic Disc	0.047	µF	50 V	Z	1
C836	3615471110	Poly	470	pF	50 V	J	1
C837	3479310071	Electrolytic SG	10	µF	50 V	M	1
C838	3519223935	Ceramic Tubular	0.022	µF	50 V	Z	1
C839	3519103935	Ceramic Tubular	0.01	µF	50 V	Z	1
C840	3479333971	Electrolytic SG	3.3	µF	50 V	M	1
C841/C842	3479310971	Electrolytic SG	1	µF	50 V	M	2
C843	3479333971	Electrolytic SG	3.3	µF	50 V	M	1
C844	3615102110	Poly	1000	pF	50 V	J	1
C845	3679473120	Mylar	0.047	µF	100 V	J	1
C846	3519681935	Ceramic Tubular	680	pF	50 V	J	1
C847/C848	3479322041	Electrolytic SG	22	µF	25 V	M	2
C849/C850	3679152120	Mylar	0.0015	µF	100 V	J	2
C851	3519151935	Ceramic Tubular	150	pF	50 V	K	1
C852/C853	3479322971	Electrolytic SG	2.2	µF	50 V	M	2
C854/C855	3679222120	Mylar	0.0022	µF	100 V	J	2
C858	3479310141	Electrolytic SG	100	µF	25 V	M	1
		FILTERS					
CF801/802	3978011011	SFE10.7MS3GH-ATF21					2
CF804	3908001380	Ceramic, SFZ450F					1
CF805	3908001020	Ceramic, BFU450C					1
		DIODES					
D801	2258599103	UZ 5.1BSB					1
D802/D803	2058322101	1N4148, Switching					2
		INTEGRATED CIRCUITS					
IC801	2168017128	LA1266					1
IC802	2168411105	HA12016					1
IC803	2138017112	LM7001					1
		TRANSISTORS					
Q801	2208406103	KTC1923Y(KTC3194Y), NPN					1
Q802	2018211100	2SK168, N-CH., FET					1
Q803	2208606108	BKTC3200BL(KTC2240BL), NPN					1
Q804	2238006103	KRA107M(DTA114YS)					1
Q805/Q806	2208606112	KTD1302, NPN					2
Q807/Q808	2238006103	DTA114YS/KRA107M					2
		RESISTORS					
R803	3069471970	Carbon Film	470	ohm	1/5 W	J	1
R804	3069332970	Carbon Film	3.3	kohm	1/5 W	J	1
R805	3069331970	Carbon Film	330	ohm	1/5 W	J	1
R806	3069471970	Carbon Film	470	ohm	1/5 W	J	1

Ref. No.	Mfr. Part No.	Description					Q'ty
R807	3069103970	Carbon Film	10	kohm	1/5 W	J	1
R808	3069332970	Carbon Film	3.3	kohm	1/5 W	J	1
R809	3069473970	Carbon Film	47	kohm	1/5 W	J	1
R810	3069820970	Carbon Film	82	ohm	1/5 W	J	1
R811	3069243970	Carbon Film	24	kohm	1/5 W	J	1
R812	3069103970	Carbon Film	10	kohm	1/5 W	J	1
R813	3069683970	Carbon Film	68	kohm	1/5 W	J	1
R814	3069472970	Carbon Film	4.7	kohm	1/5 W	J	1
R815	3069222970	Carbon Film	2.2	kohm	1/5 W	J	1
R816	3069272970	Carbon Film	2.7	kohm	1/5 W	J	1
R817/R818	3069104970	Carbon Film	100	kohm	1/5 W	J	2
R819/R820	3069221970	Carbon Film	220	ohm	1/5 W	J	2
R821-R823	3069102970	Carbon Film	1	kohm	1/5 W	J	3
R824	3069821970	Carbon Film	820	ohm	1/5 W	J	1
R825	3069152970	Carbon Film	1.5	kohm	1/5 W	J	1
R826	3069103970	Carbon Film	10	kohm	1/5 W	J	1
R827	3069102970	Carbon Film	1	kohm	1/5 W	J	1
R828	3069101970	Carbon Film	100	ohm	1/5 W	J	1
R829/R830	3069104970	Carbon Film	100	kohm	1/5 W	J	2
R831/R832	3069223970	Carbon Film	22	kohm	1/5 W	J	2
R833/R834	3069272970	Carbon Film	2.7	kohm	1/5 W	J	2
R835/R836	3069473970	Carbon Film	47	kohm	1/5 W	J	2
R837	3069392970	Carbon Film	3.9	kohm	1/5 W	J	1
R838-R841	3069332970	Carbon Film	3.3	kohm	1/5 W	J	4
R842/R843	3069102970	Carbon Film	1	kohm	1/5 W	J	2
R844/R845	3069332970	Carbon Film	3.3	kohm	1/5 W	J	2
R846	3069102970	Carbon Film	1	kohm	1/5 W	J	1
R847	3069562970	Carbon Film	5.6	kohm	1/5 W	J	1
R848	3069223970	Carbon Film	22	kohm	1/5 W	J	1
R849	3069473970	Carbon Film	47	kohm	1/5 W	J	1
R850/R851	3069103970	Carbon Film	10	kohm	1/5 W	J	2
R852	3069102970	Carbon Film	1	kohm	1/5 W	J	1
R854	3069101970	Carbon Film	100	ohm	1/5 W	J	1
R855	3069223970	Carbon Film	22	kohm	1/5 W	J	1
R856	3069473970	Carbon Film	47	kohm	1/5 W	J	1
R890-R898	3069271970	Carbon Film	270	ohm	1/5 W	J	9
		COILS					
T801	2608201120	AM-ANT					1
T802	2638201150	AM-OSC					1
T803	2838501110	FM Quad DET(A)					1
T804	2838501210	FM Quad DET(B)					1
T805	2848001250	AM-IFT, P-7SB					1
T806	2658001050	Filter, '19KHz/38KHz, MPX BLK					1
T807	2658001050	Filter, '19KHz/38KHz, MPX BLK					1
		TRIMMERS					
TC801	3838001010	TZ03-T200FR					1
TC802	3838001000	TZ03-T110FR					1
		SEMI FIXED RESISTORS					
VR801	3248050243	5 k(B)					1
VR802	3248020343	20 k(B)					1
VR803	3248050243	5 k(B)					1
VR804	3248020443	200 k(B)					1
		MISCELLANEOUS					
	3928101790	F/E FTH3-505H 3					1
29	4408108310	Terminal Antenna					1
VD1/VD2	2058819106	Diode Varactor, 'KV1236Z					1
XT801	3978101031	Crystal, 7.2MHz					1
PCB15		**ASS'Y P. C. BOARD REAR SPEAKER**					
CF403	3519332935	CAP, Ceramic	3300	pF	50 V	K	1
C418	3679473120	CAP, Mylar	0.047	µF	100 V	J	1
R461/R462	3069220970	RES, Carbon Film	22	ohm	1/5 W	J	2
R464	3029100470	RES, Metal Film	10	ohm	1 W	J	1
L402	2648001010	Coil, Inductor, 0.5 uH					1
13	4408108910	Termianl Speaker Rear, 4P					1

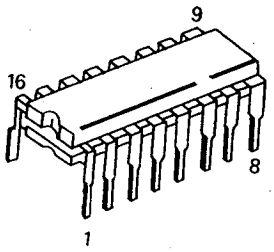
1. This parts list based on American version is for European version.
2. Each initial in the Remark is denoted as follows.
   C: Changed, D: Deleted, A: Added

Ref. No.	Mfr. Part No.	Description	Q'ty	Remark
PCB6		ASS'Y P.C.BOARD OUTLET		
		FUSE		
F700	5508302035	T 250 V, 1 A	1	C
F701	5508302535	T 250 V, 2.5 A	1	C
		RESISTOR		
R724	3029335380	Carbon Film 3.3 Moh 1/2 W J	0	D
		MISCELLANEOUS		
28	4448103610	Outlet, AC	1	C
PCB14		ASS'Y P.C.BOARD TUNER		
		CAPACITORS		
C811	3519820935	Ceramic Tubular 82 pF 50 V J	1	A
C812	3519101935	Ceramic Tubular 100 pF 50 V J	1	A
C861	3519271935	Ceramic Tubular 270 pF 50 V K	1	A
		FILTERS		
CF803	3978011011	SFE10.7MS3GH-ATF21	1	A
0		**TRANSISTORS**		
Q805/Q806	2208606112	KTD1302, NPN	2	C
		RESISTORS		
R801	3069623970	Carbon Film 62 kohm 1/5 W J	1	A
R802	3069104970	Carbon Film 100 kohm 1/5 W J	1	A
R809	3069563970	Carbon Film 56 kohm 1/5 W J	1	C
R857	3069102970	Carbon Film 1 kohm 1/5 W J	1	A
		COIL		
L101	2648050443	Inductor, 20.8 mH	1	A
		SEMI FIXED RESISTOR		
VR804	3248050443	500 k(B)	1	C
		MISCELLANEOUS		
	3928801890	FE407-G60, Front-end	1	C
29	4408108210	Terminal Antenna	1	C

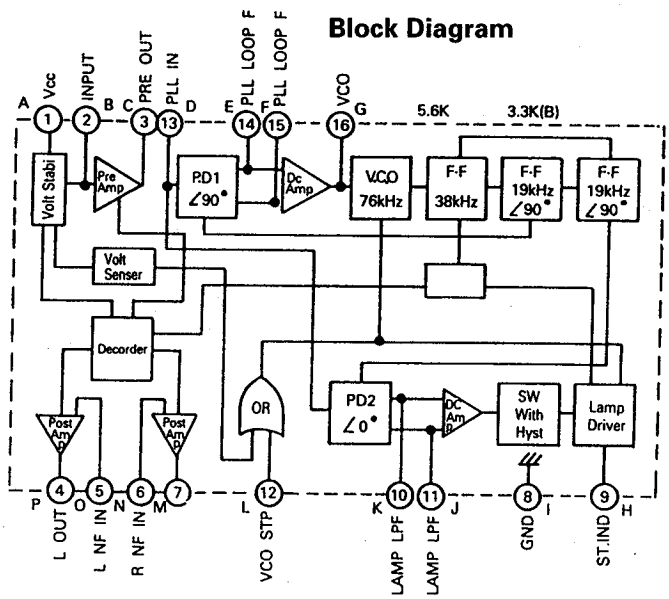
SEMICONDUCTOR LEAD IDENTIFICATION & INTERNAL DIAGRAM

HA12016 : IC803

Package Outline

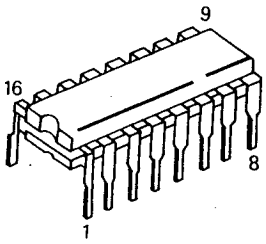


Block Diagram



LC7821 : IC101

Package Outline



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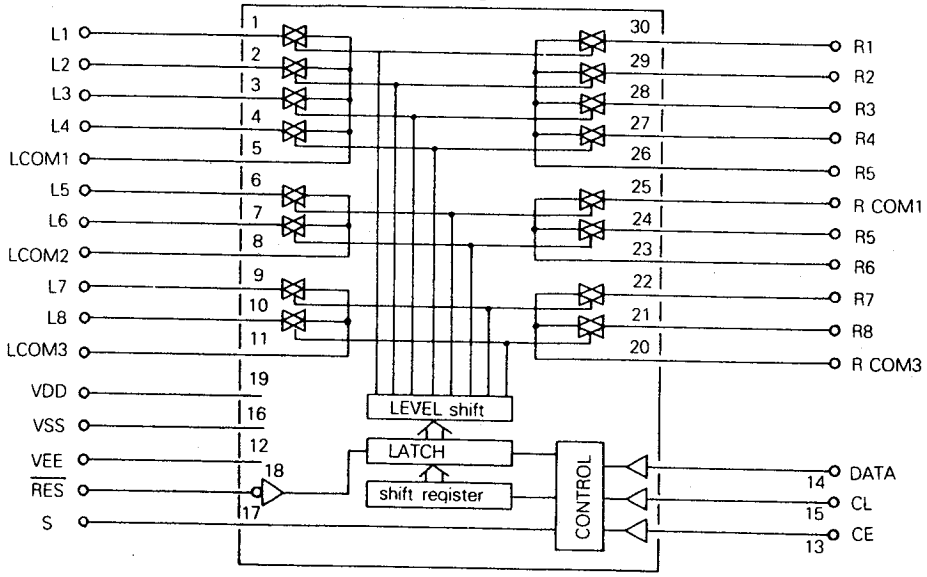

TA7291S : IC700

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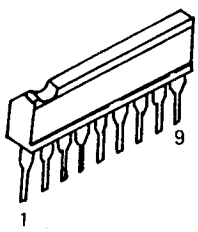

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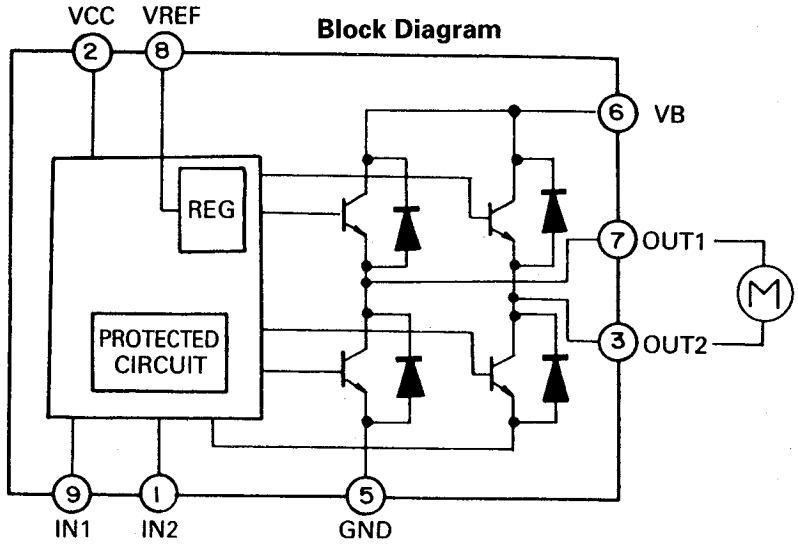

LC4966B : IC103

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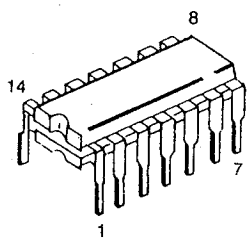

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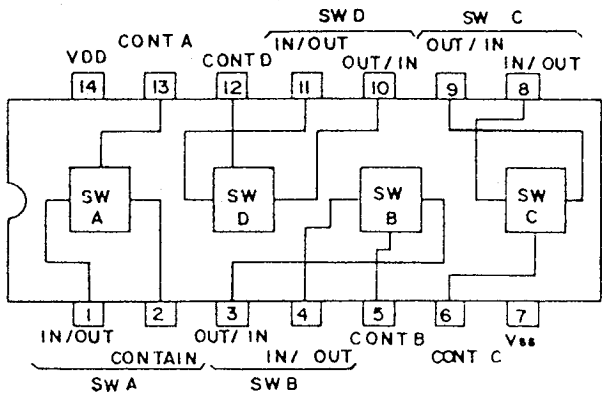
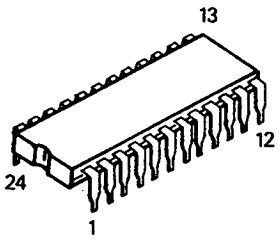


NJU9701 : IC302

Package Outline



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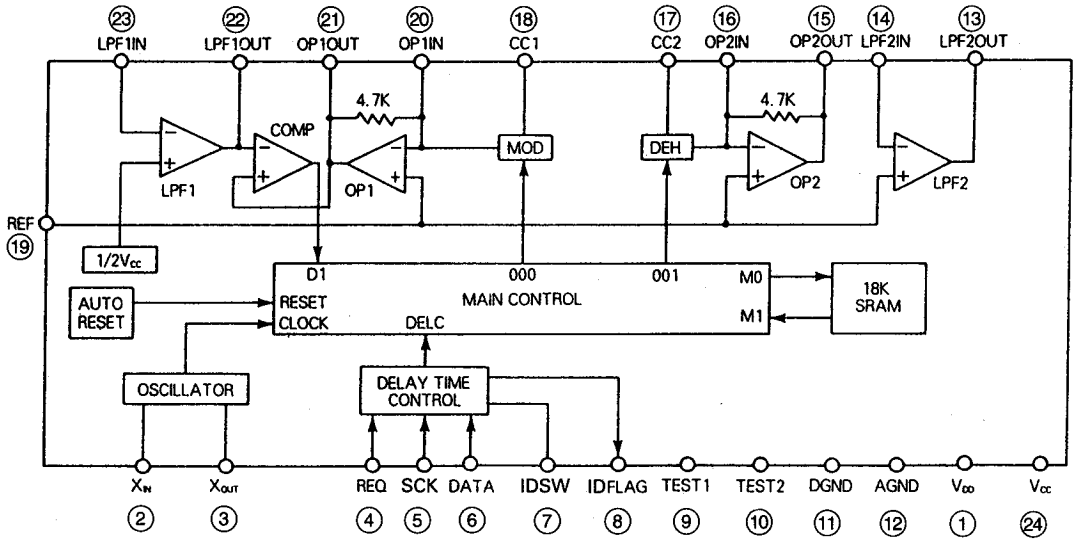

LA1266 : IC801

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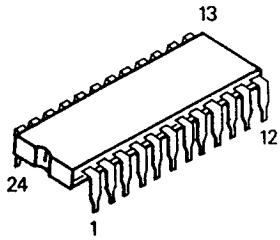

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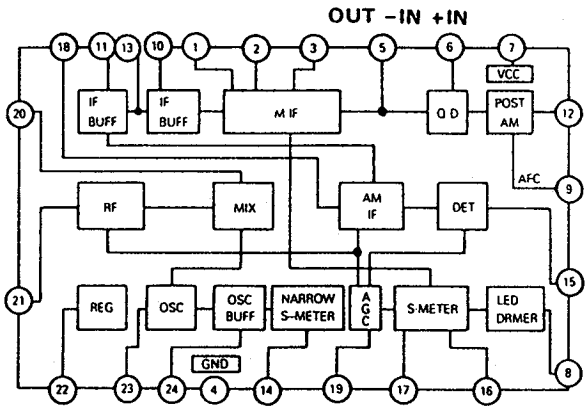

LM7001 : IC802

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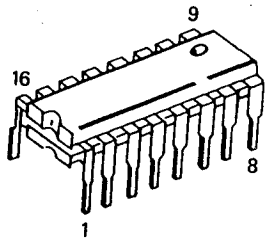

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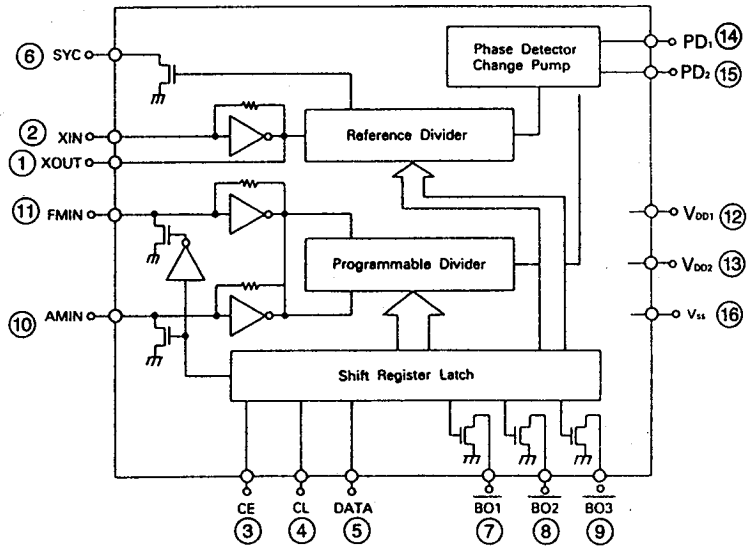
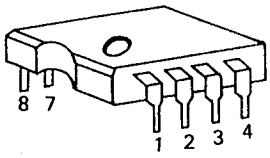


KIA 4559P : IC102, IC105, IC304, IC305
KIA 6259P : IC103

Package Outline



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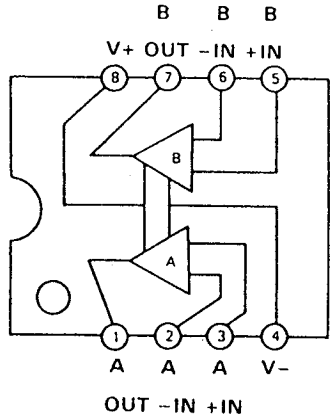
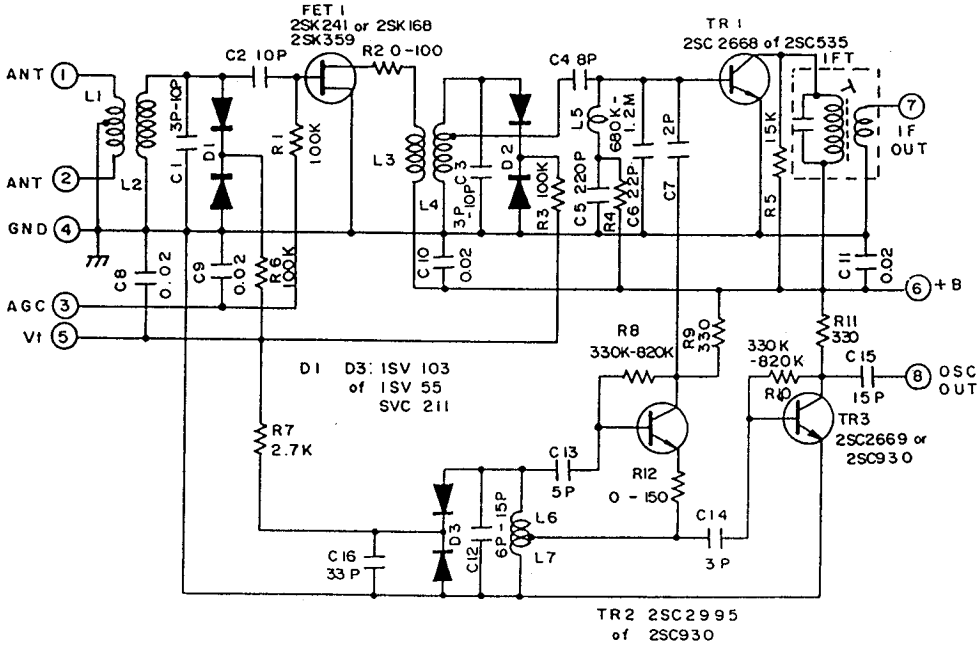
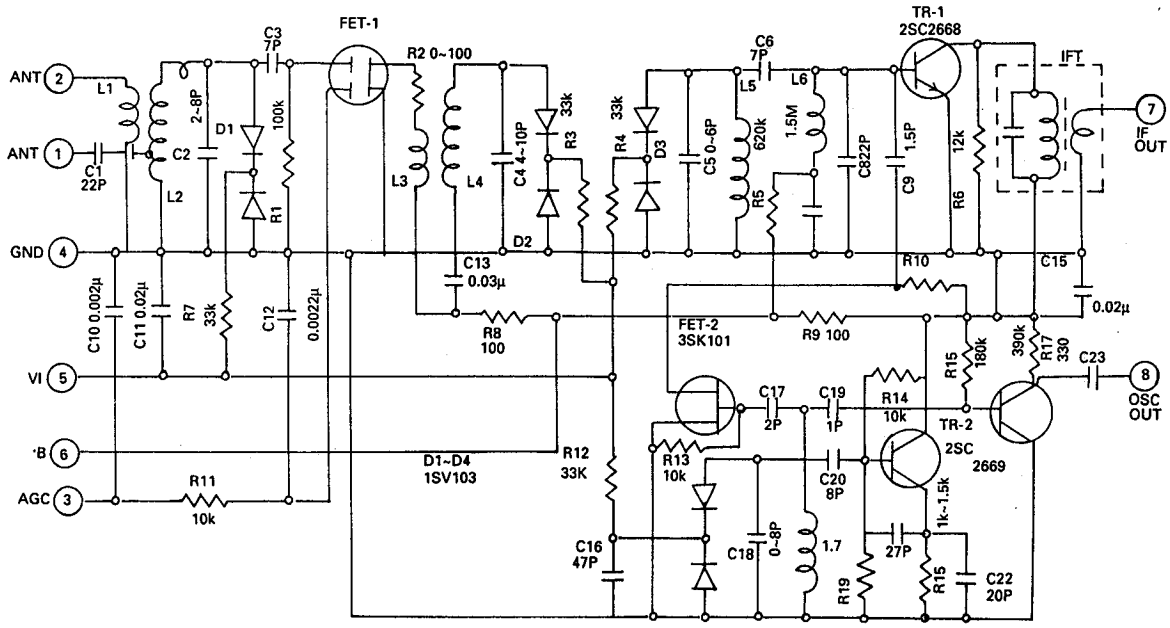


FRONT-END : FE FTH3-505H (USA/CA)

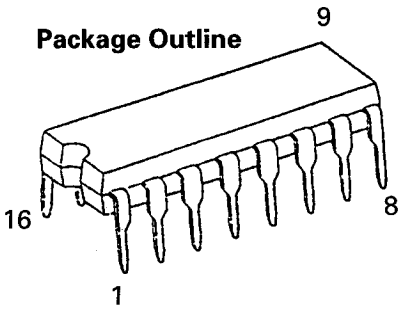


FE407-G6O (Europe)



TC9299P : IC303

Package Outline



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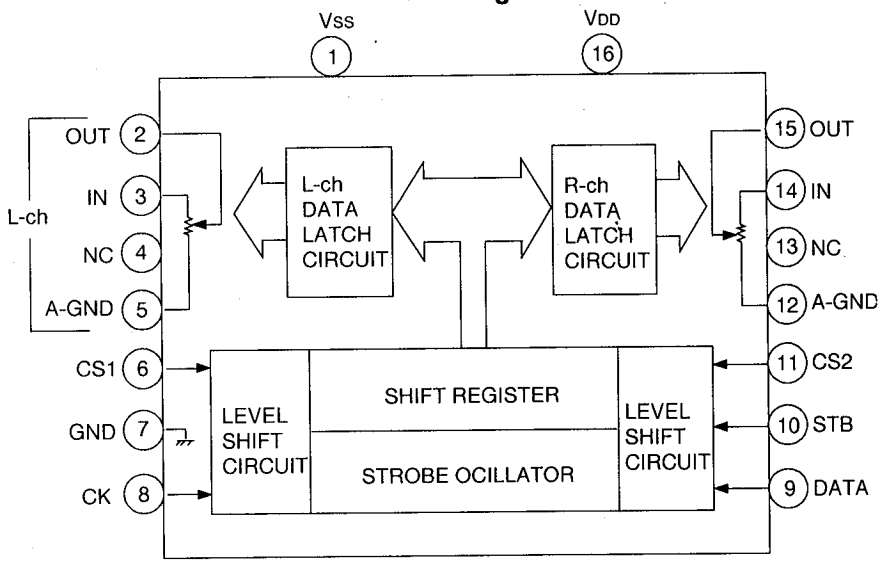
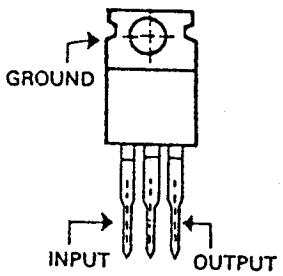


GD78XX : IC105

Front View



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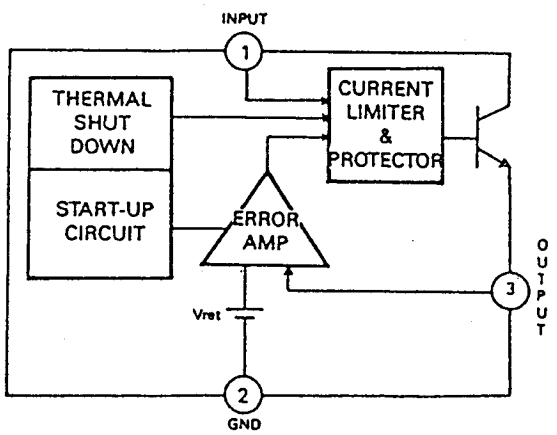

NJM2177A : IC301

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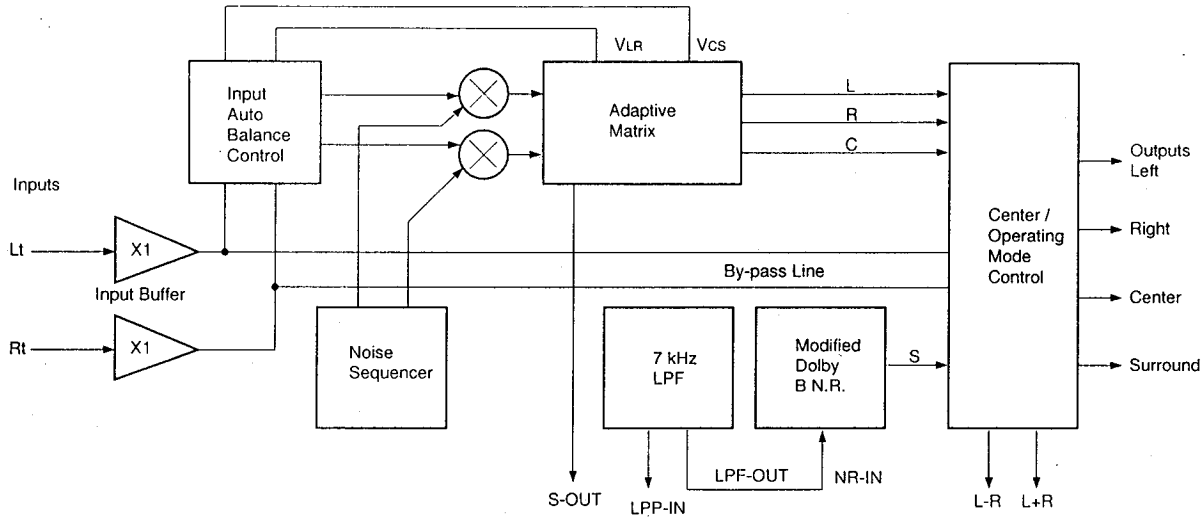

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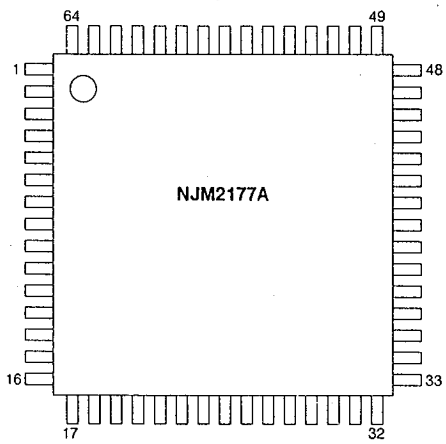
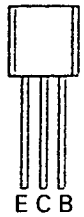
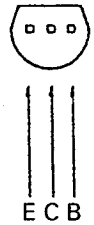
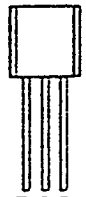
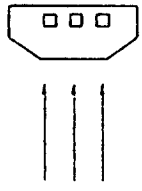
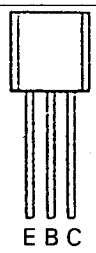
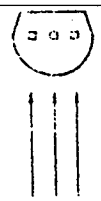
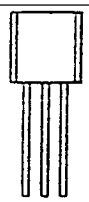
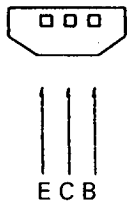
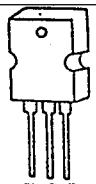
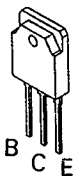
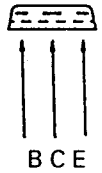


Pin Description

PIN No.	Pin Name	PIN No.	Pin Name	PIN No.	Pin Name
1	NC	23	NOISE-HPF	45	LPF-INV-IN
2	L-RECT-TC	24	NOISE-LPF	46	LPF-NINV-IN
3	R-BPF-OUT	25	S-OUT	47	NR-TC
4	R-BPF-IN	26	CENTER-CNT	48	NC
5	R-RECT-TC	27	MODE-CNT	49	NC
6	GND	28	L-OUT	50	VLR-TC3
7	AB-GATE	29	R-OUT	51	VCS-TC3
8	AB-HOLD-TC	30	L+R-OUT	52	VCS-TC2
9	L-AB-IN	31	L-R-OUT	53	VCS-TC1
10	L-AB-OUT	32	NC	54	VCS-T1
11	L-IN	33	NC	55	VLR-TC2
12	L-INBUF-OUT	34	CENTER-MODE	56	S-RECT-OUT
13	R-INBUF-OUT	35	Vcc	57	C-RECT-OUT
14	R-IN	36	C-OUT	58	R-RECT-OUT
15	R-AB-OUT	37	S'-OUT	59	L-RECT-OUT
16	NC	38	IREF	60	S-RECT-TC
17	NC	39	NR-VCF	61	C-RECT-TC
18	R-AB-IN	40	NR-IN	62	L-BPF-OUT
19	NOISE-CNT-E	41	VREF	63	L-BPF-IN
20	NOISE-CNT-A	42	VREF	64	NC
21	NOISE-CNT-B	43	NR-WT		
22	NOISE-REF	44	LPF-OUT		

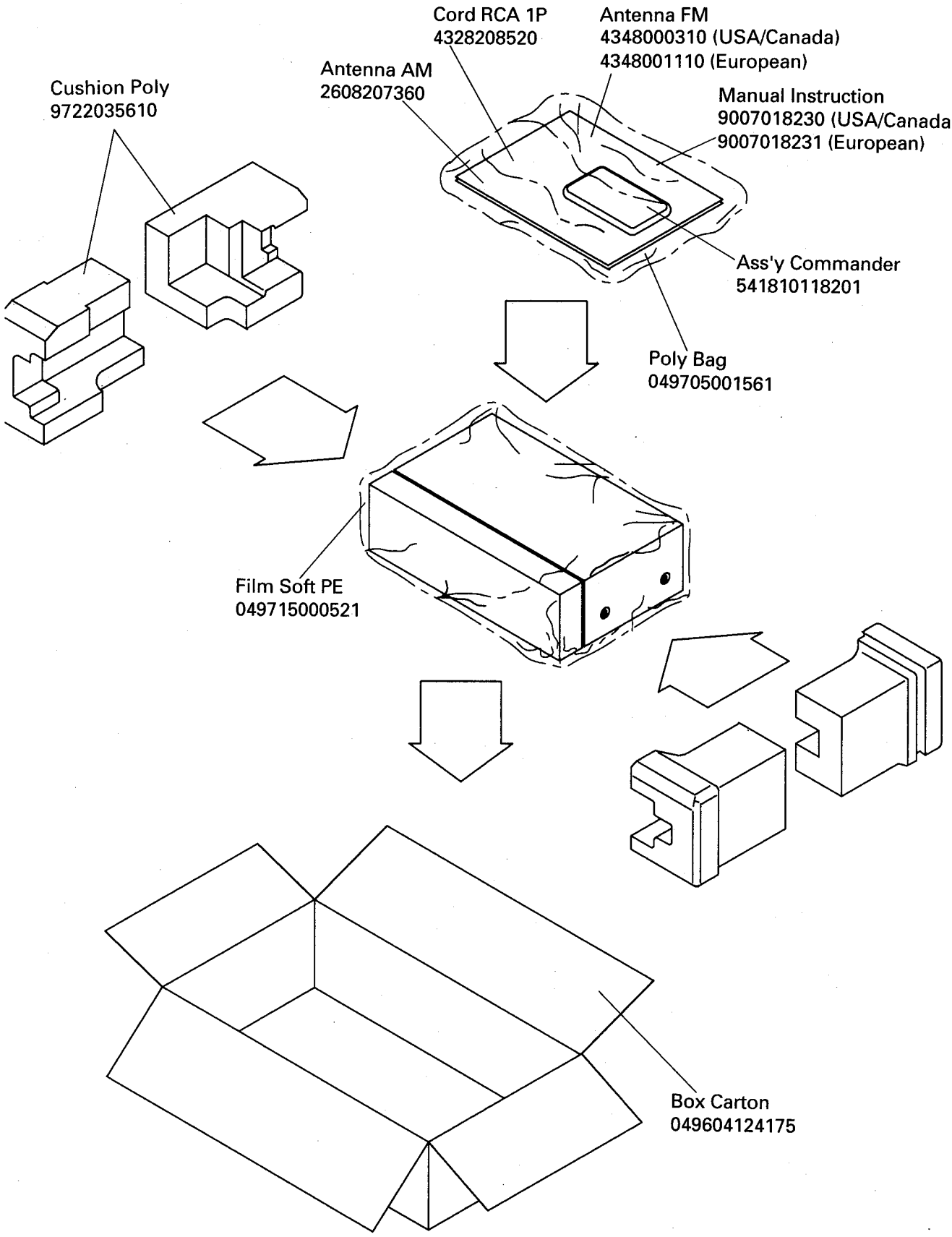
TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
TDA 1302 KTC3200/KTC2240 KTC3198/KTC1815 KTC1923/KTC3194 KTA2400 KTA1268/KTA970 KTA1266/KTA1015	 E C B	 E C B
DTC114YS DTA114YS	 E C B	 E C B
MPSA06 MPSA56	 E B C	 E C B
KTA1024 KTC3206	 E C B	 E C B
2SC4137 KSC2690 KSA1220	 E C B	 E C B
2SK168A	 G S D	 G S D
2SA1263N-O 2SC3180N-O	 B C E	 B C E

TERMINAL NAME

B→BASE	G→GATE
C→COLLECTOR	S→SOURCE
E→EMITTER	D→DRAIN

PACKAGE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Antenna FM
4348000310 (USA/Canada)
4348001110 (European)
Antenna AM
2608207360
Manual Instruction
9007018230 (USA/Canada)
9007018231 (European)
Cushion Poly
9722035610
Ass'y Commander
541810118201
Poly Bag
049705001561
Film Soft PE
049715000521
Box Carton
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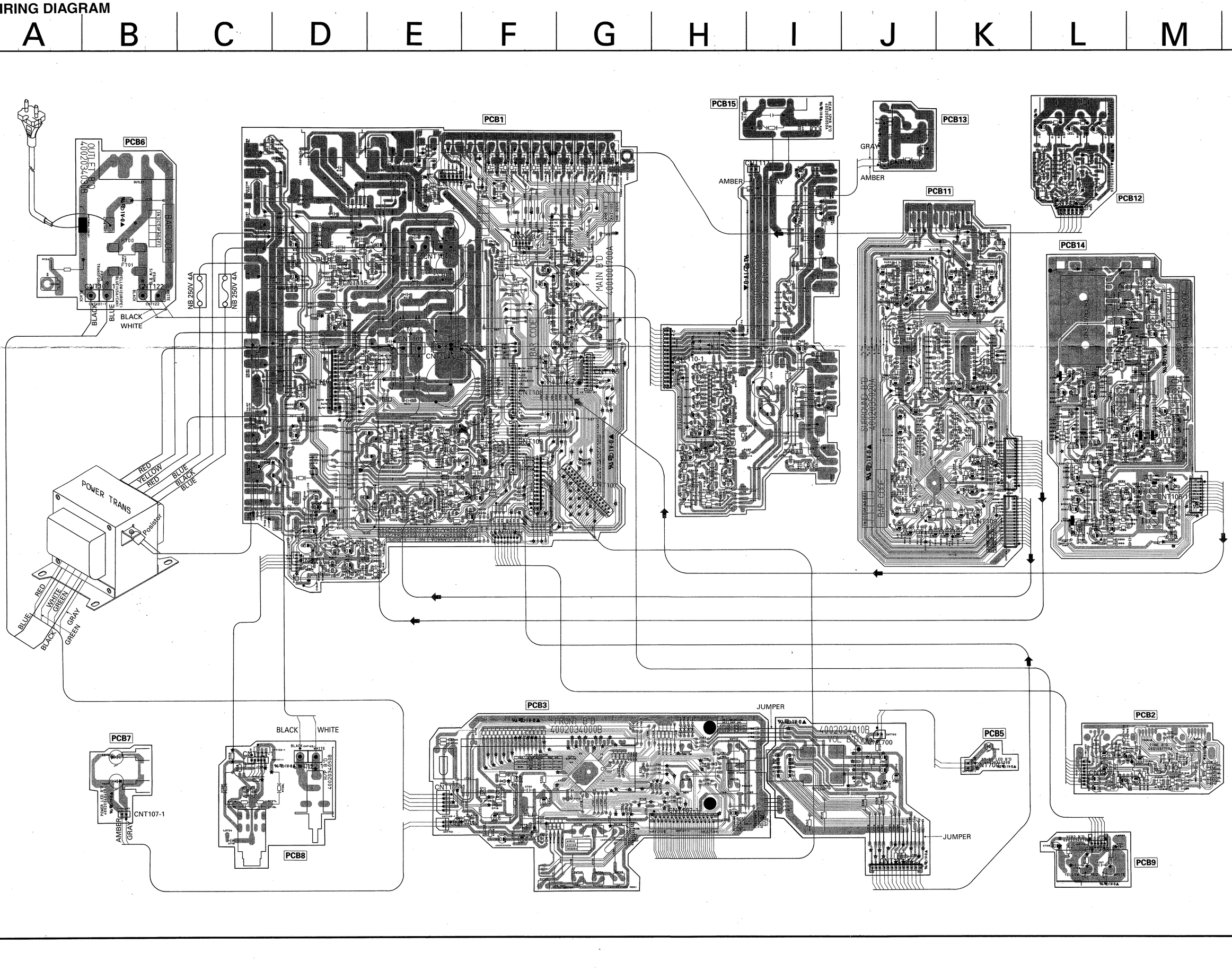
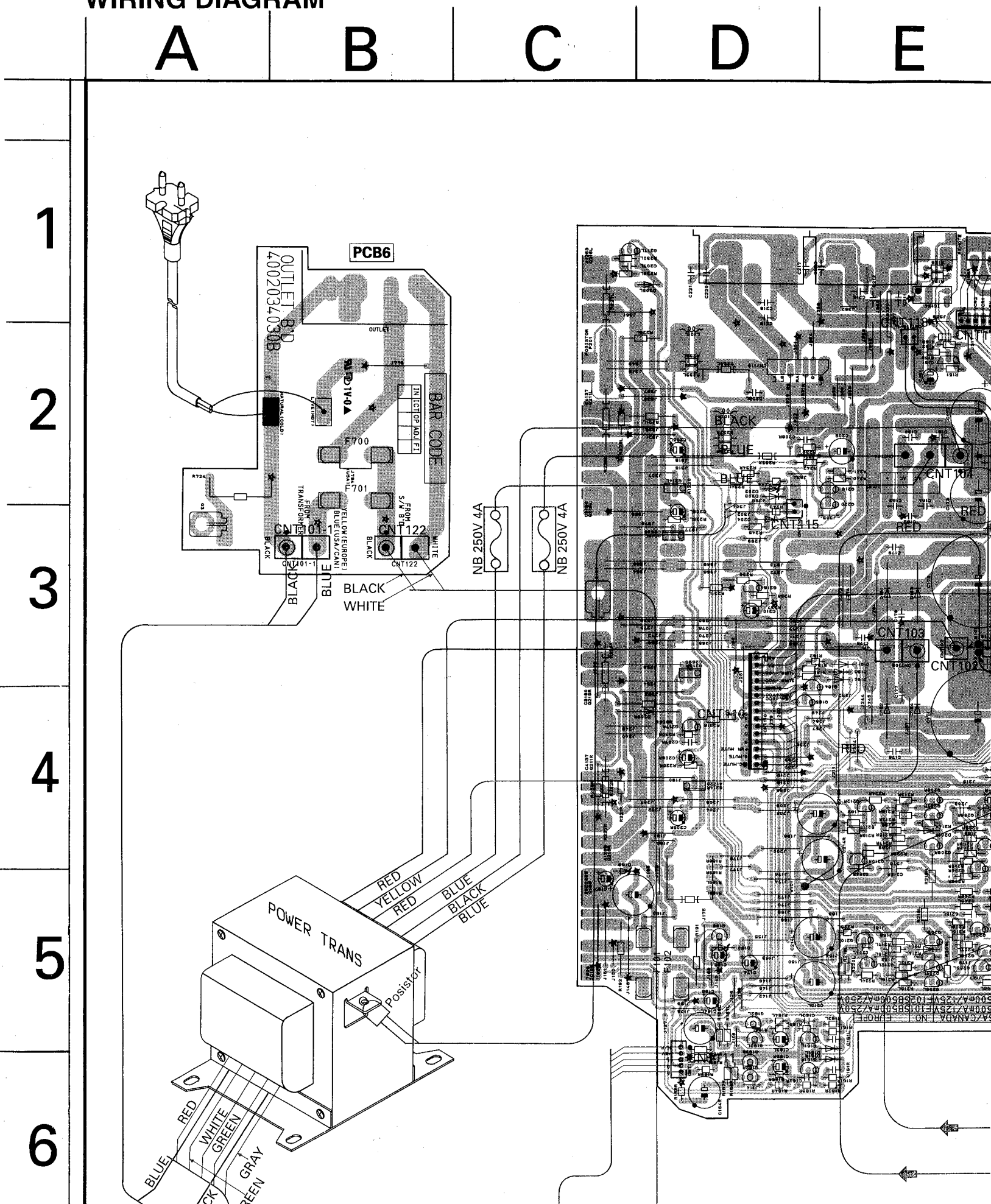
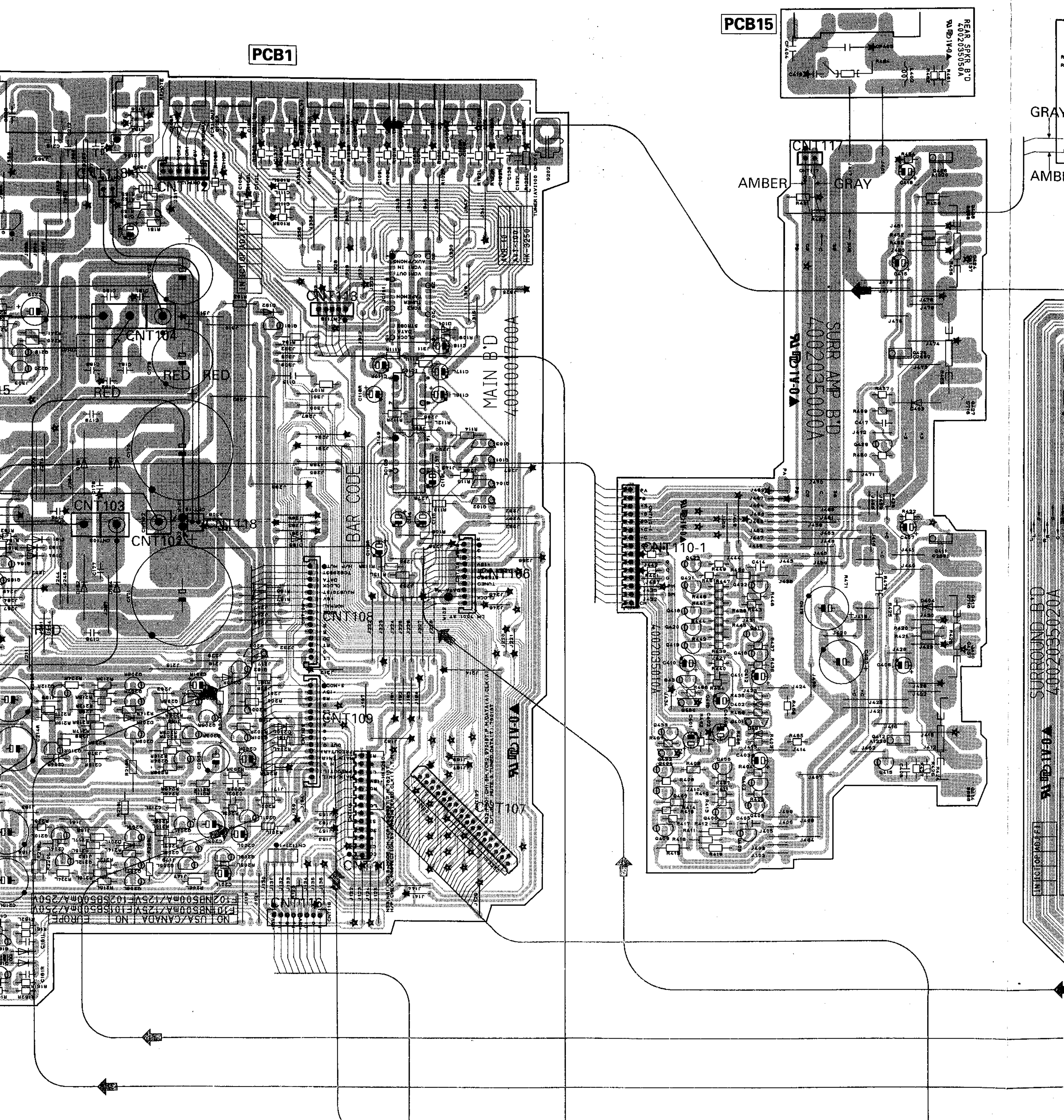
WIRING DIAGRAM



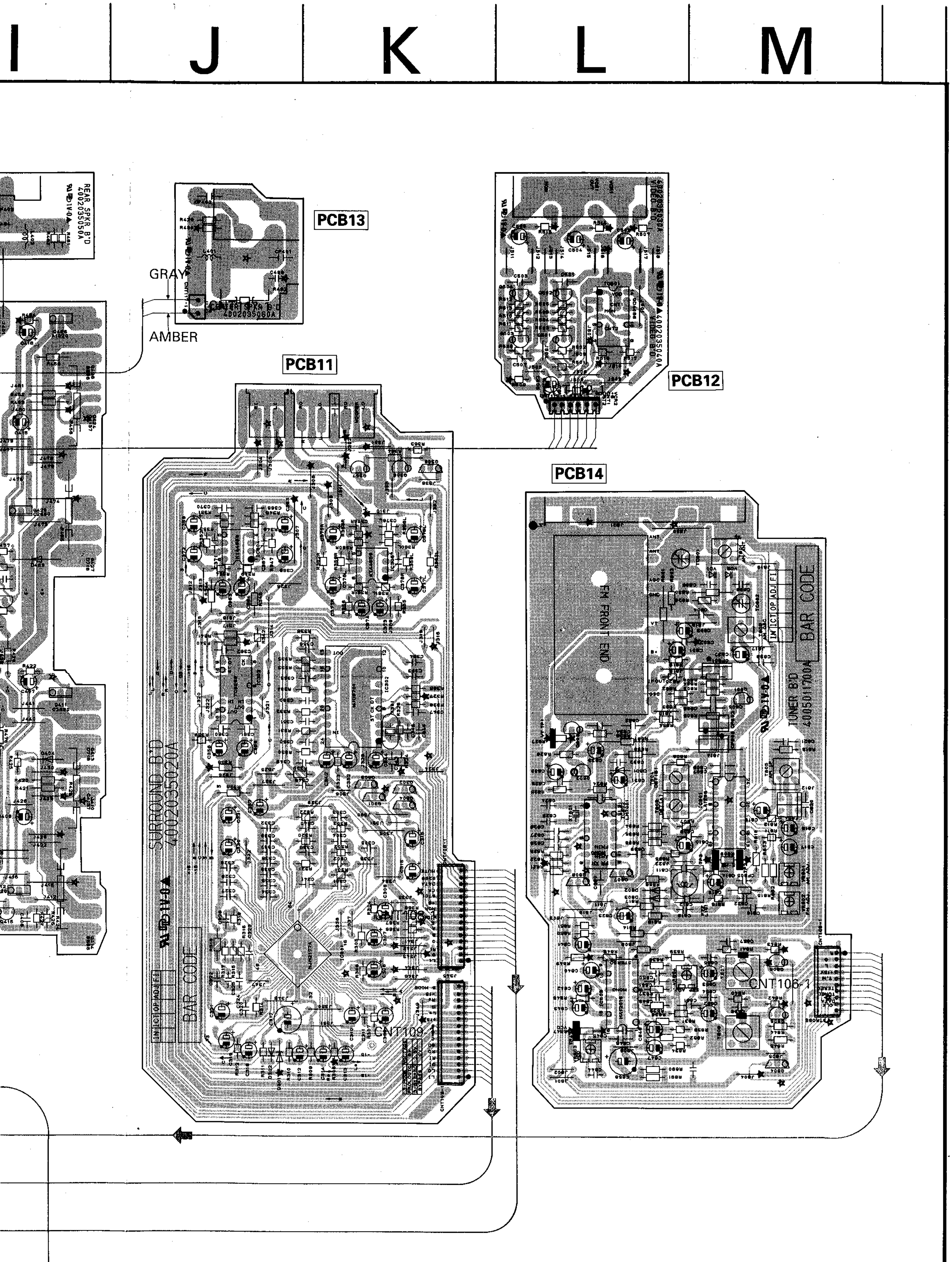
WIRING DIAGRAM



E	F	G	H	I



PCB1
PCB15
REAR SPKR B'D
4002035050A
CNT117
AMBER
GRAY
AMBER
CNT118
CNT112
CNT104
CNT113
RED
RED
RED
CNT103
CNT102
CNT116
CNT106
CNT108
CNT109
CNT107
CNT110-1
BAR CODE
MAIN B'D
4001001700A
SURR AMP B'D
4002035000A
SURROUND B'D
4002035020A
NO
USA/CANADA
NO
EUROPE
F301
NBS00mA/125V
F101
SBS00mA/250V
F102
NBS00mA/125V
F102
SBS00mA/250V


I
J
K
L
M
PCB13
GRAY
AMBER
PCB11
PCB12
PCB14
REAR SPKR B'D
4002035050A
SURROUND B'D
4002035020A
BAR CODE
CNT109
FM FRONT END
TUNER B'D
4005011700A
CNT106-1
VIDEO B'D

3

4

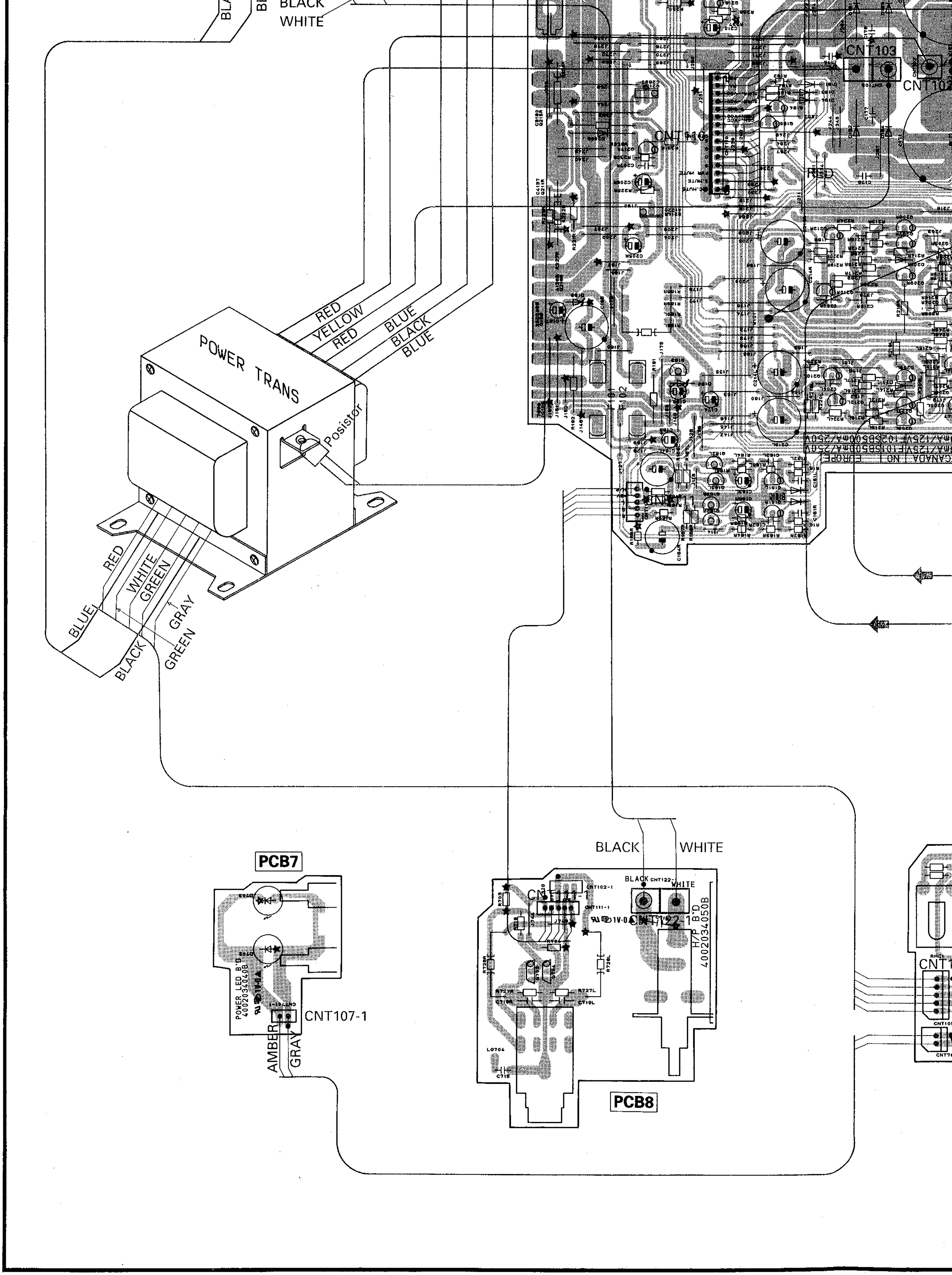
5

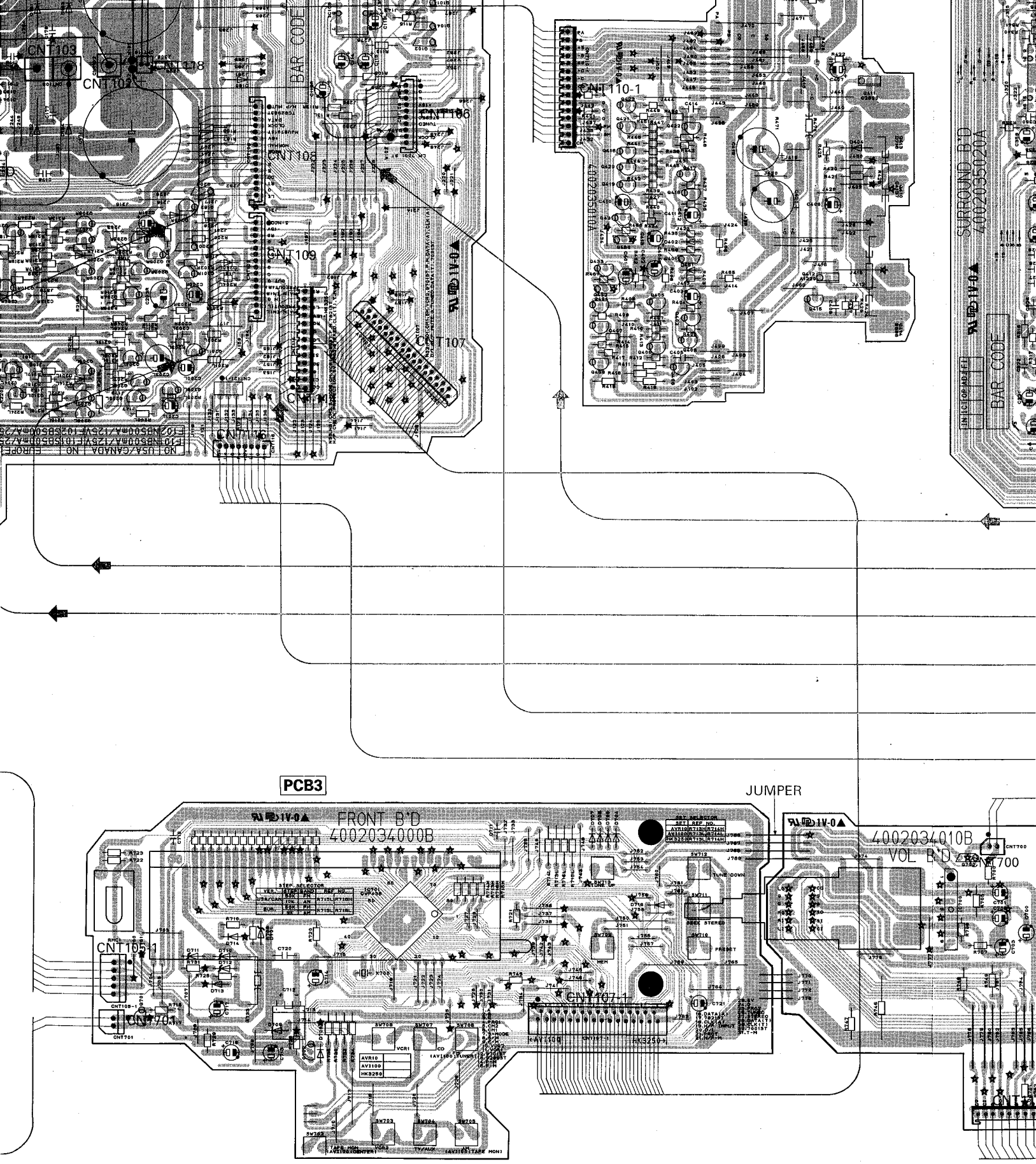
6

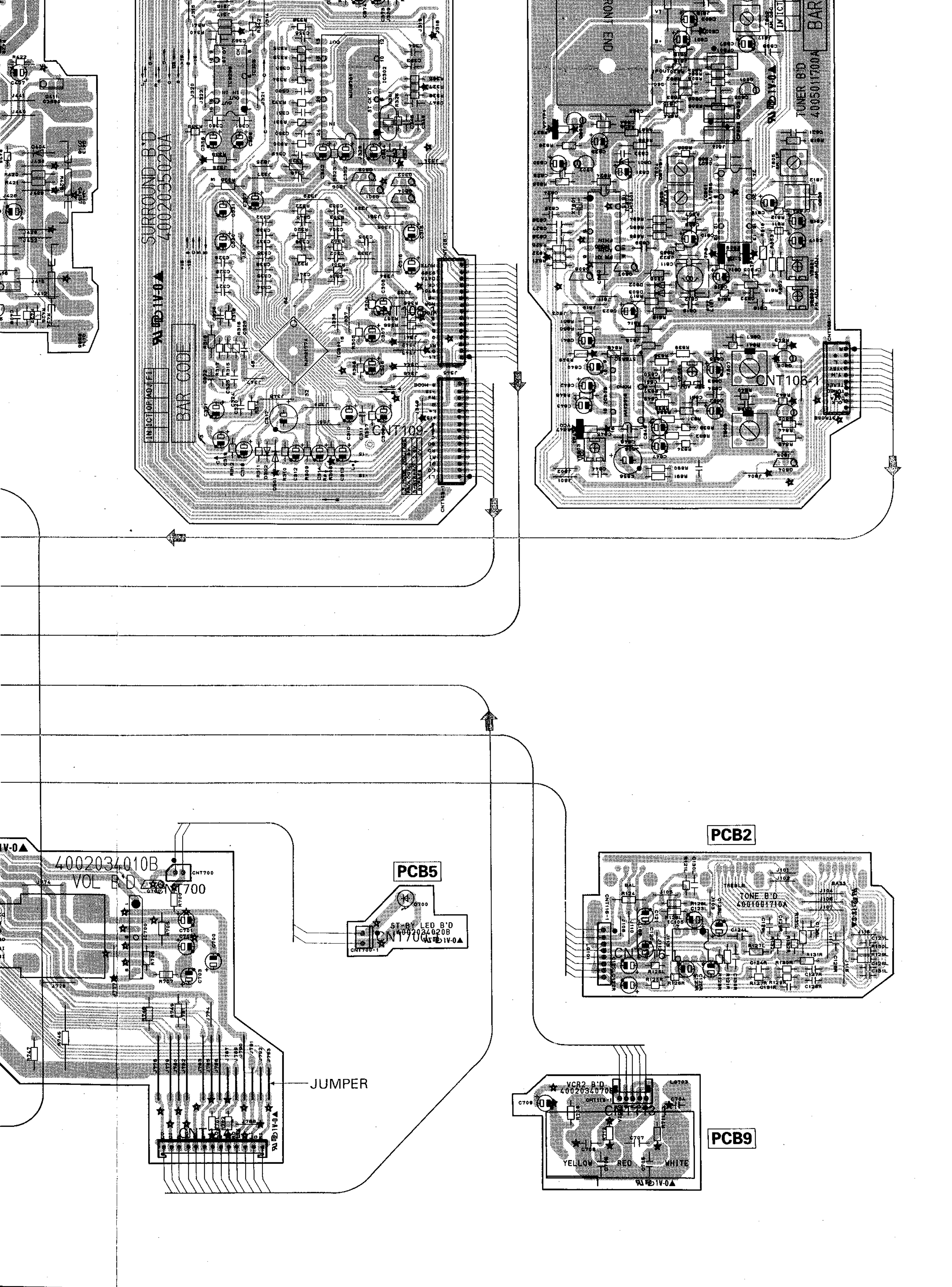
7

8

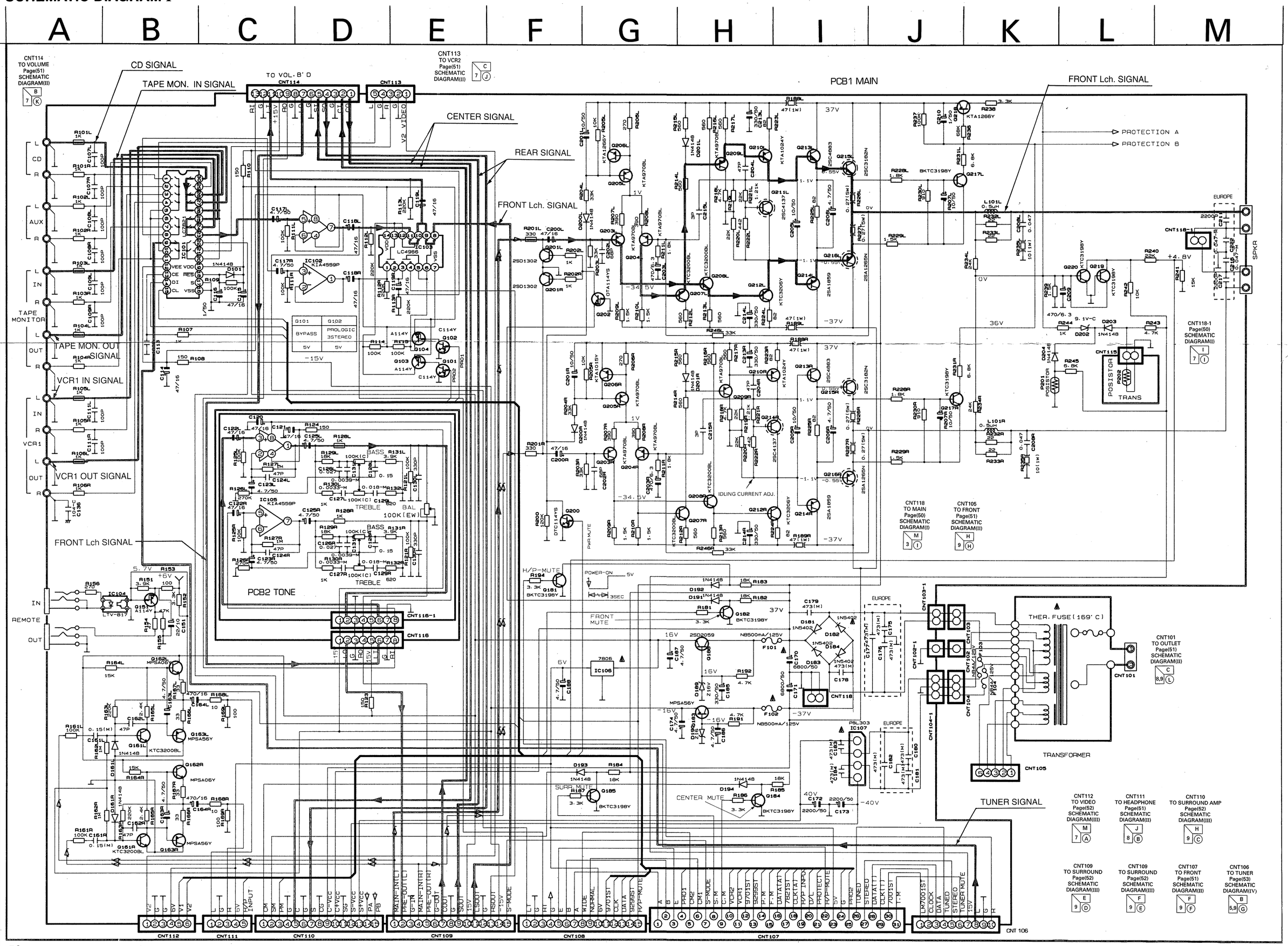
9


BLACK
WHITE
CNT103
POWER TRANS
Positor
RED
YELLOW
RED
BLUE
BLACK
BLUE
RED
WHITE
GREEN
BLUE
GRAY
BLACK
GREEN
PCB7
POWER LED B'D
CNT107-1
AMBER
GRAY
BLACK
WHITE
H/P B'D
PCB8

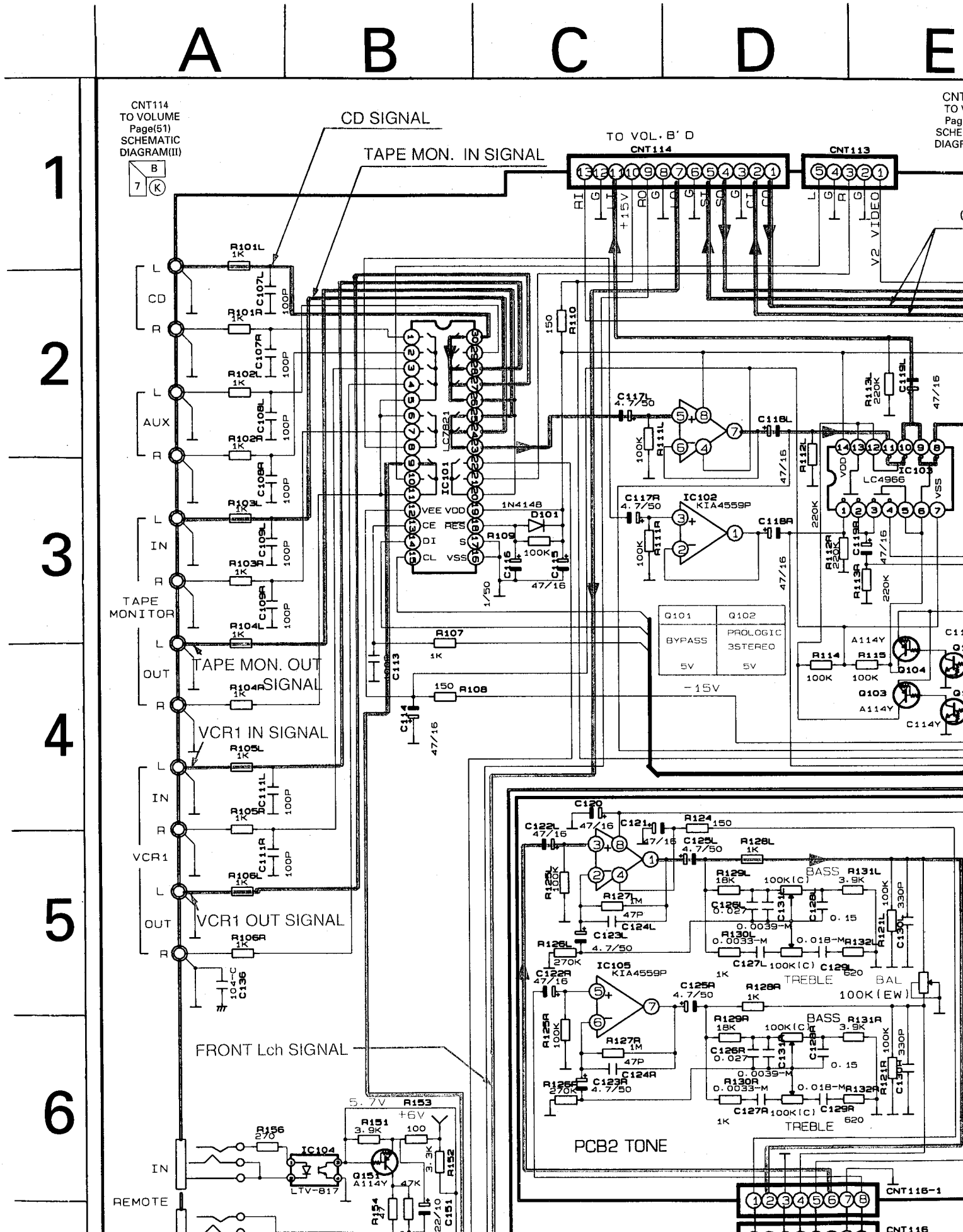

CNT103
CNT102
CNT104
CNT106
CNT108
CNT109
CNT107
CNT110
CNT110-1
SURROUND P.C.B.
4002035002A
BAR CODE
PCB3
JUMPER
FRONT B'D
4002034000B
4002034010B
VOL B'D
CNT700
CNT105-1
CNT701
CNT707-1


SURROUND B'D
4002035020A
BAR CODE
CNT109
TUNER B'D
4005011700A
CNT106-1
PCB2
TONE B'D
4001001710A
PCB5
ST-BY LED B'D
4002034020B
4002034010B
VOL B'D
CNT700
JUMPER
VCR2 B'D
PCB9
YELLOW
RED
WHITE

SCHEMATIC DIAGRAM I



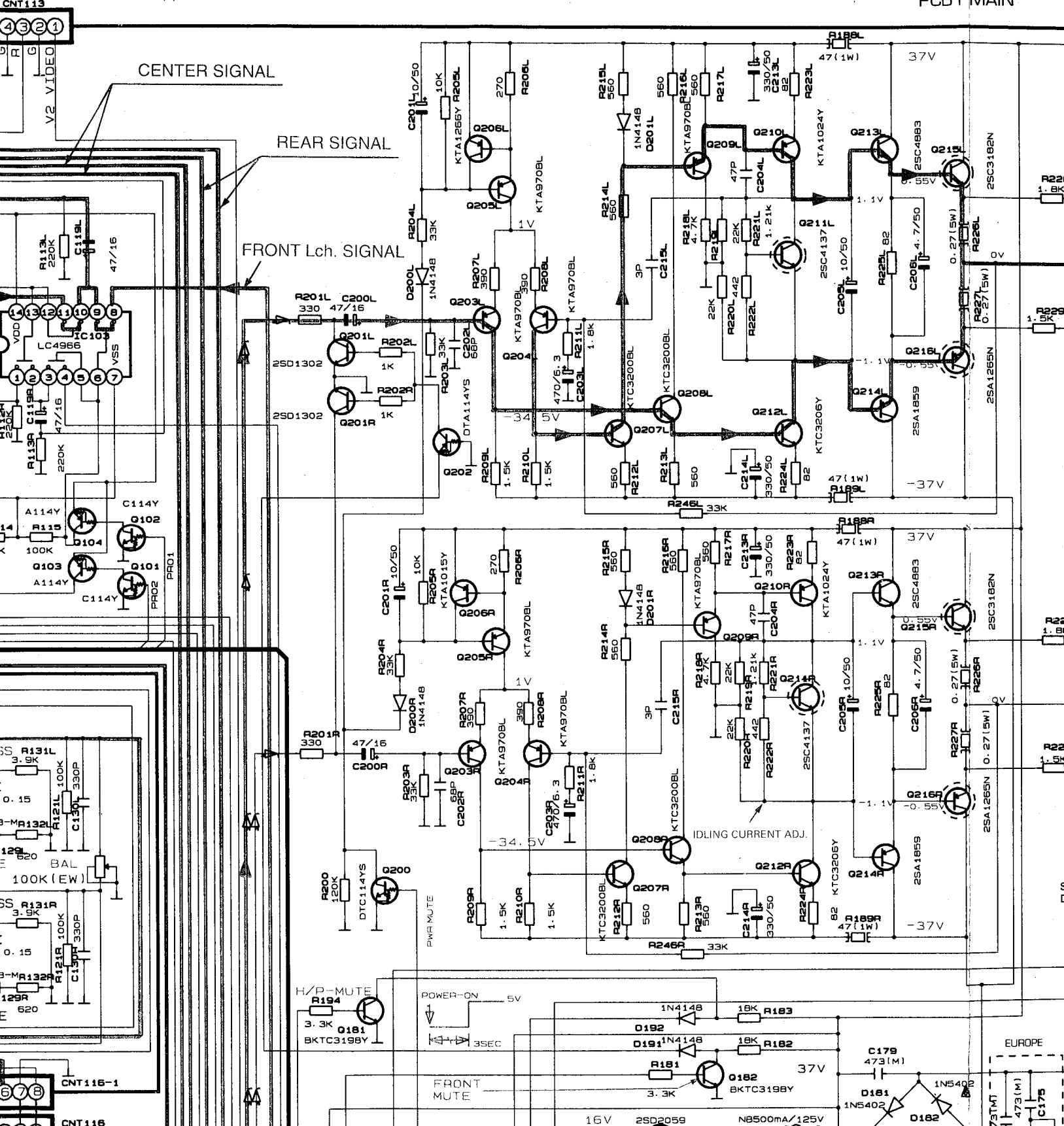
SCHEMATIC DIAGRAM I



E F G H I

CNT113
TO VCR2
Page(51)
SCHEMATIC
DIAGRAM(II)

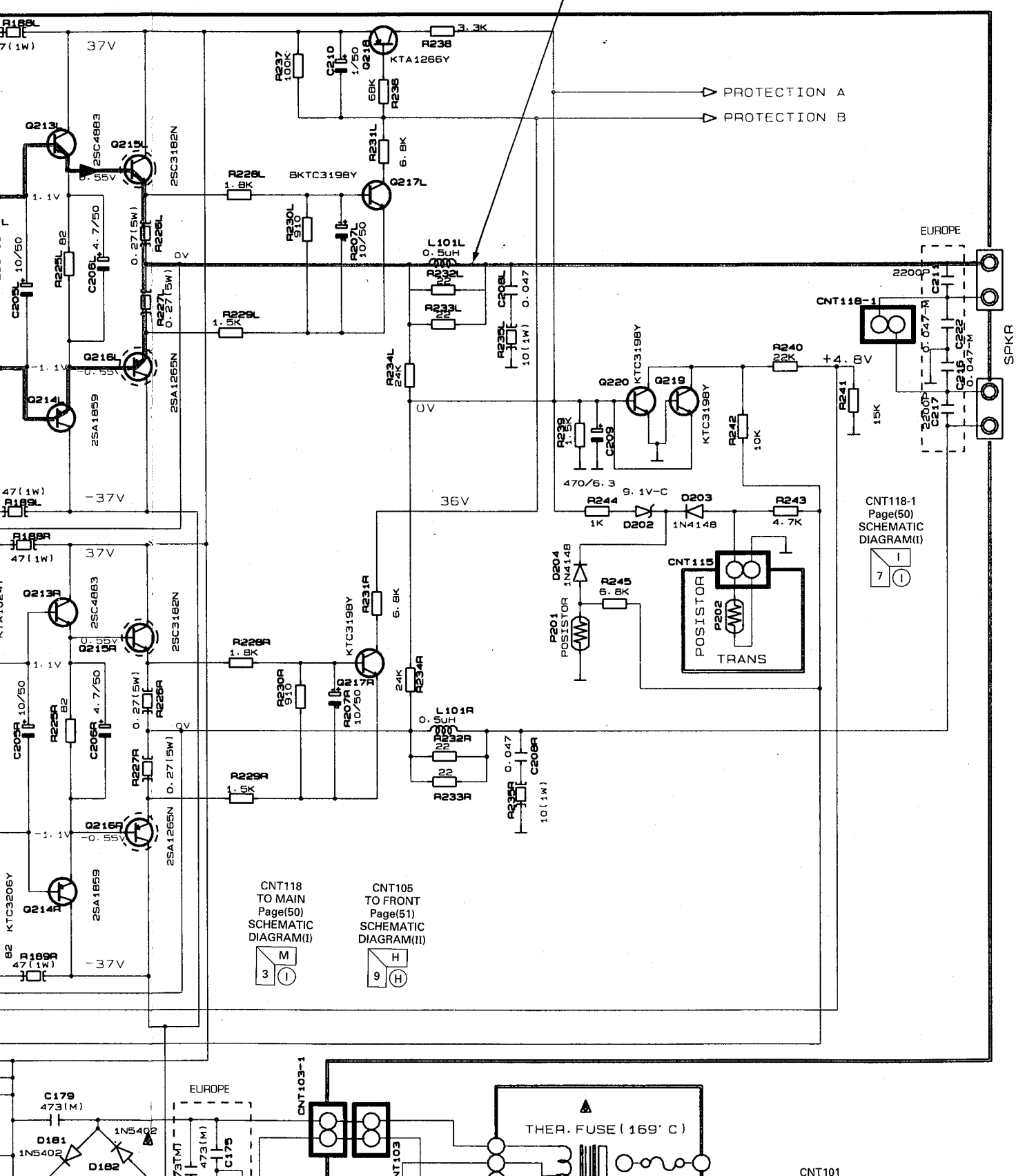
PCB1 MAIN

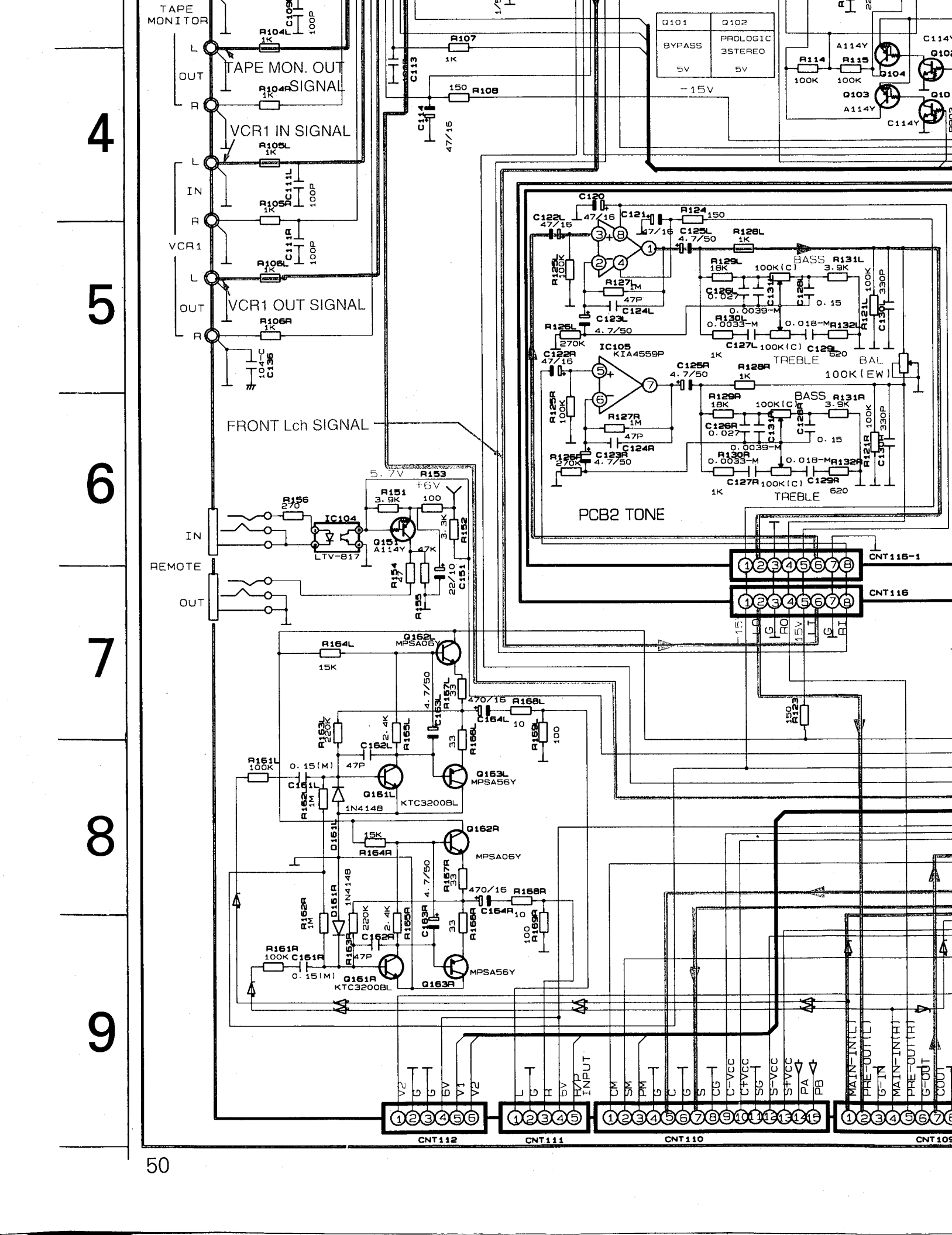


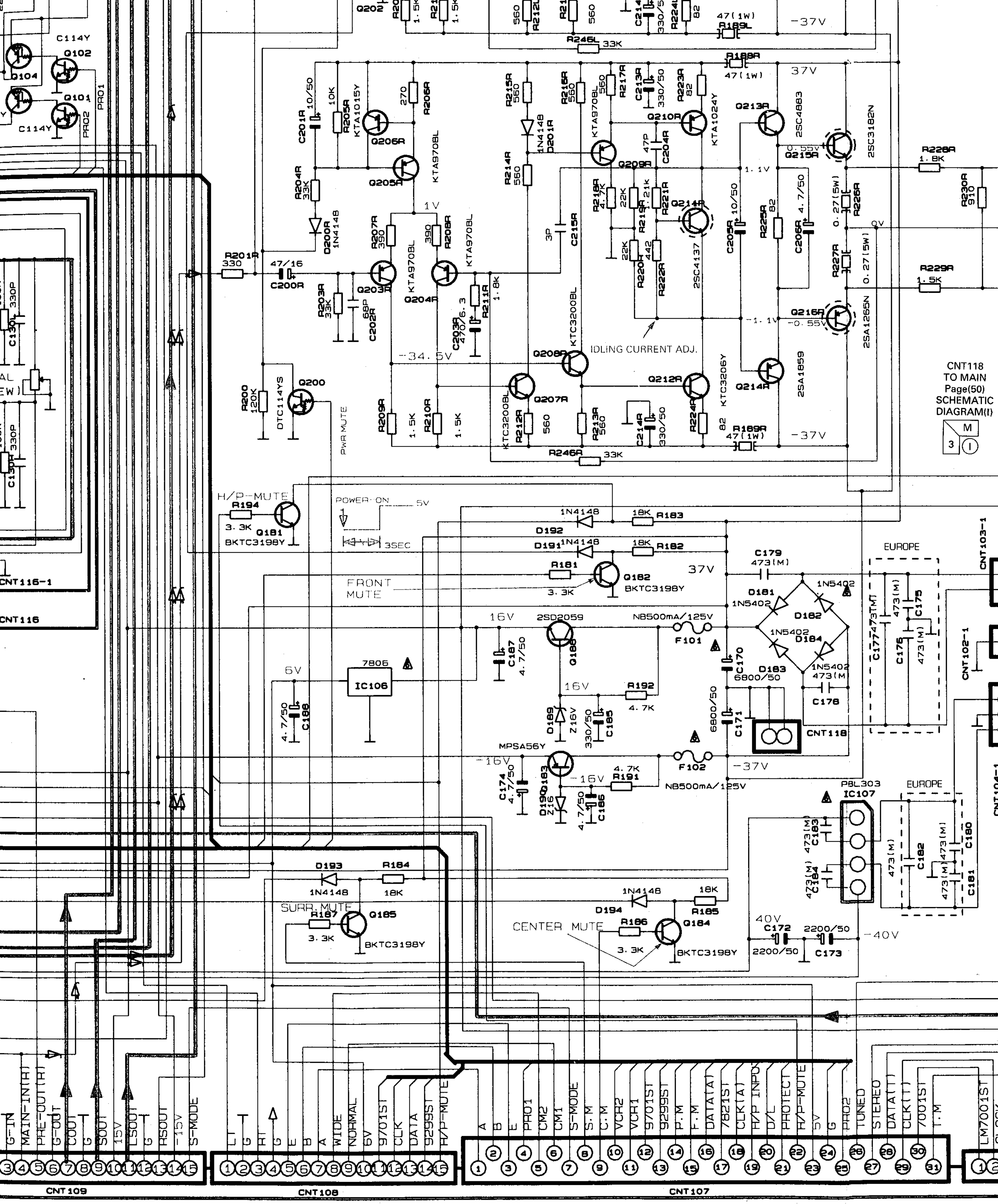
I J K L M

PCB1 MAIN

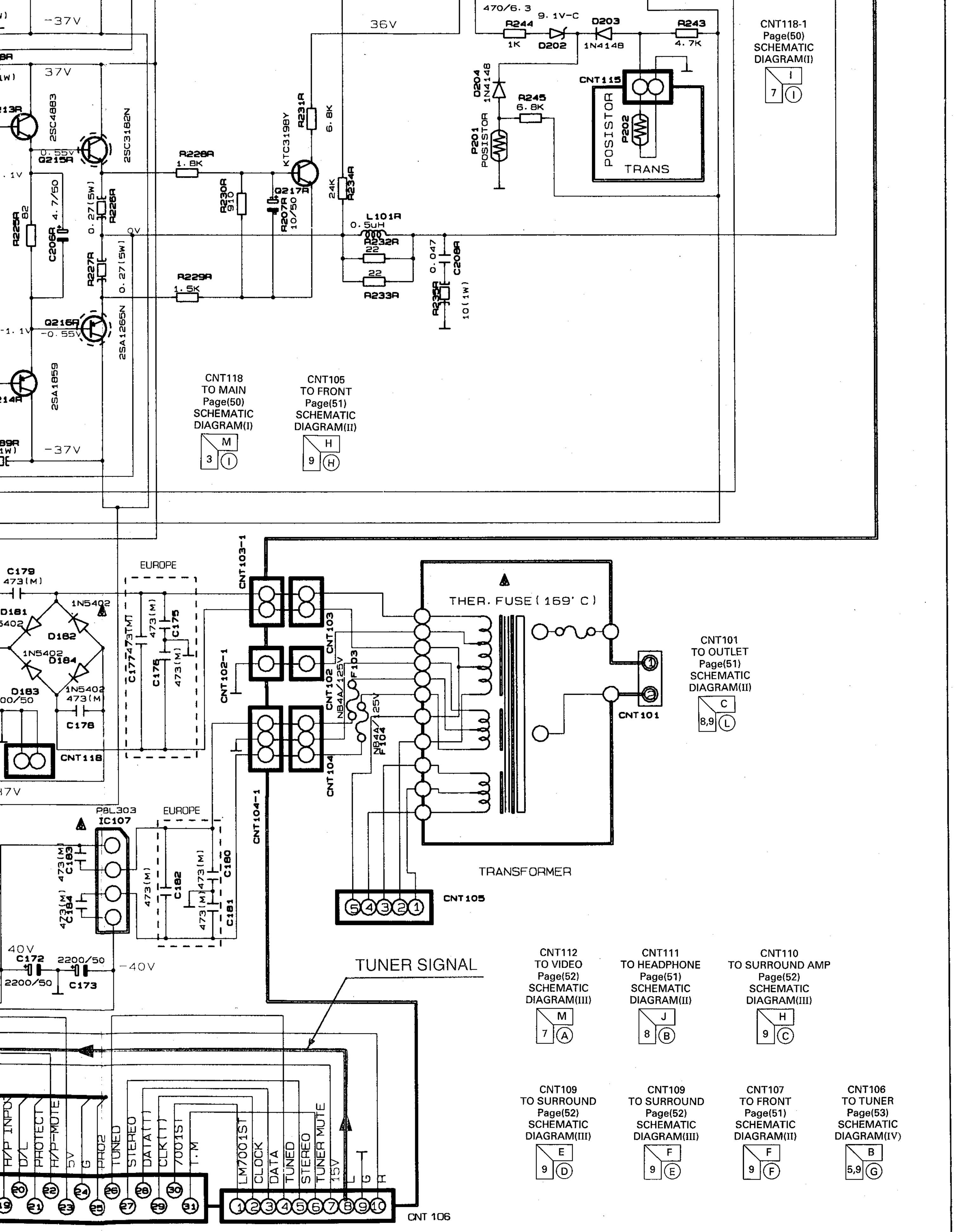
FRONT Lch. SIGNAL




TAPE MONITOR
TAPE MON. OUT SIGNAL
VCR1 IN SIGNAL
VCR1 OUT SIGNAL
FRONT Lch SIGNAL
PCB2 TONE
REMOTE
IC105 KIA4559P
IC104
LTV-817
Q101
Q102
BYPASS
PROLOGIC 3STEREO
-15V
+6V
5.7V
CNT116-1
CNT116
CNT112
CNT111
CNT110
CNT109
MAIN-IN(L)
PRE-OUT(L)
MAIN-IN(R)
PRE-OUT(R)
INPUT

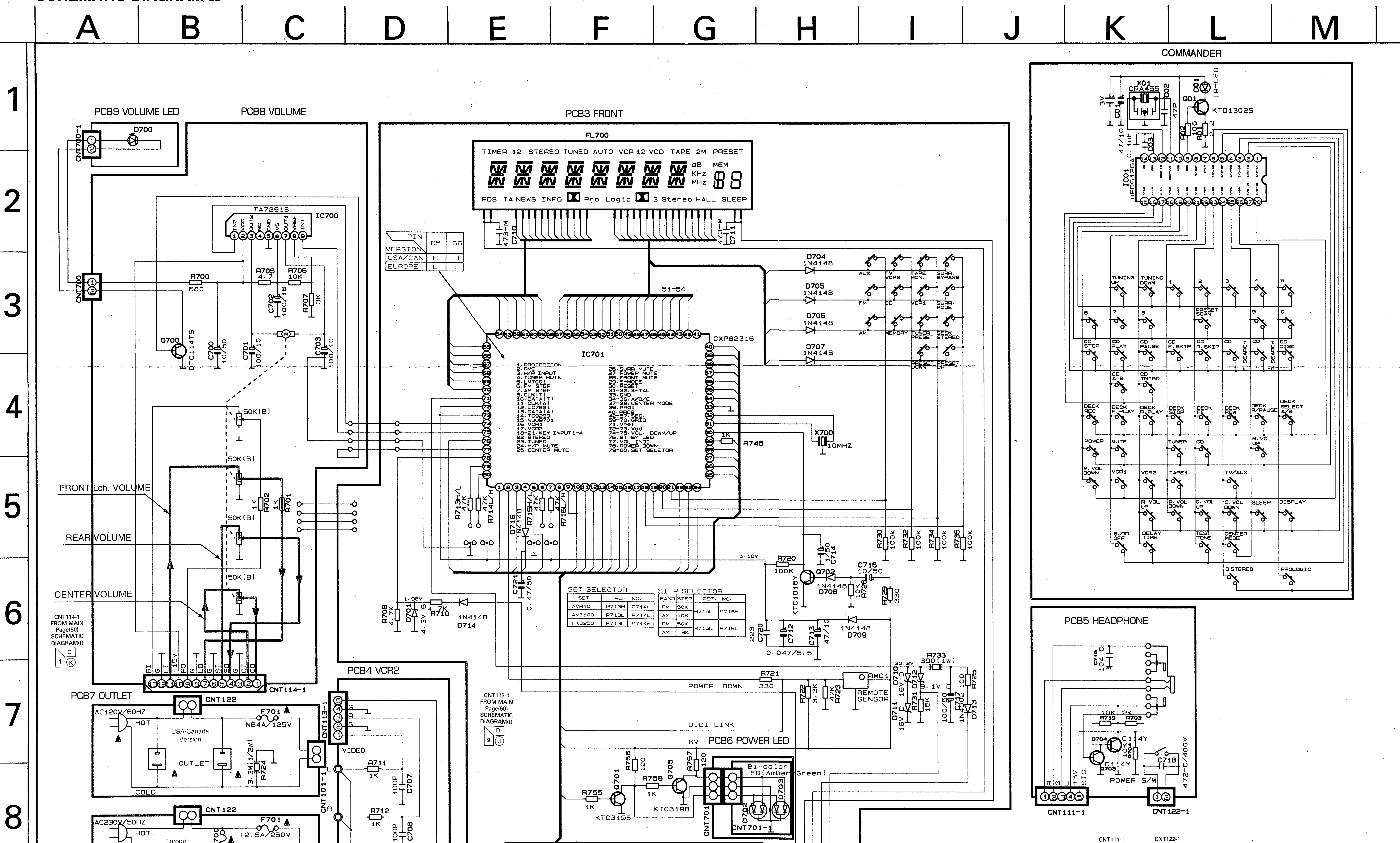


IDLING CURRENT ADJ.
CNT118
TO MAIN
Page(50)
SCHEMATIC
DIAGRAM(I)
H/P-MUTE
POWER-ON
5V
3SEC
FRONT
MUTE
SURR. MUTE
CENTER MUTE
PWR MUTE
EUROPE
EUROPE
2SC4883
2SC3182N
2SA1859
2SA1265N
2SC4137
KTA1015Y
KTA970BL
KTA1024Y
KTC3200BL
KTC3206Y
DTC114YS
BKTC3198Y
2SD2059
MPSA56Y
7806
IC106
PBL303
IC107
NB500mA/125V
F101
F102
1N4148
1N5402
-37V
37V
-34.5V
16V
-16V
6V
40V
-40V
CNT109
CNT108
CNT107
CNT116
CNT116-1
CNT103-1
CNT102-1
CNT104-1
G-IN
MAIN-IN(R)
PRE-OUT(R)
G-OUT
COUT
G
SOUT
15V
LSOUT
G
RSOUT
-15V
S-MODE
LT
G
RT
G
E
B
A
WIDE
NORMAL
6V
9701ST
CLK
DATA
9299ST
H/P-MUTE
A
B
E
PRO1
CM2
CM1
S-MODE
S.M
C.M
VCR2
VCR1
9701ST
9299ST
P.M
F.M
DATA(A)
7821ST
CLK(A)
H/P INPUT
D/L
PROTECT
H/P-MUTE
5V
G
PRO2
TUNED
STEREO
DATA(T)
CLK(T)
7001ST
T.M
LM7001ST



-37V
36V
470/6.3
9.1V-C
R244
1K
D202
D203
1N4148
R243
4.7K
CNT118-1
Page(50)
SCHEMATIC
DIAGRAM(I)
D204
1N4148
R245
6.8K
CNT115
P201
POSISTOR
POSISTOR
P202
TRANS
37V
2SC4883
2SC3182N
Q215R
R231R
6.8K
KTC3198Y
R228R
1.8K
R230R
910
Q217R
R207R
10/50
24K
R234R
C206R
4.7/50
R225R
82
R226R
0.27(5W)
L101R
0.5uH
R232R
22
R233R
0.047
C208R
R227R
R229R
1.5K
R235R
10(1W)
Q216R
-0.55V
2SA1265N
2SA1859
-37V
CNT118
TO MAIN
Page(50)
SCHEMATIC
DIAGRAM(I)
CNT105
TO FRONT
Page(51)
SCHEMATIC
DIAGRAM(II)
C179
473(M)
EUROPE
CNT103-1
CNT103
D181
1N5402
D182
D184
D183
473(M)
C177
C175
C176
C178
CNT102-1
CNT102
NB4A/125V
F103
NB4A/125V
F104
CNT104
CNT104-1
CNT118
THER. FUSE(169°C)
CNT101
TO OUTLET
Page(51)
SCHEMATIC
DIAGRAM(II)
CNT101
PBL303
IC107
EUROPE
C183
C184
C182
C180
C181
TRANSFORMER
CNT105
40V
C172
2200/50
C173
-40V
TUNER SIGNAL
CNT112
TO VIDEO
Page(52)
SCHEMATIC
DIAGRAM(III)
CNT111
TO HEADPHONE
Page(51)
SCHEMATIC
DIAGRAM(II)
CNT110
TO SURROUND AMP
Page(52)
SCHEMATIC
DIAGRAM(III)
H/P INPUT
D/L
PROTECT
H/P-MUTE
5V
G
PRO2
TUNED
STEREO
DATA(T)
CLK(T)
7001ST
T.M
LM7001ST
CLOCK
DATA
TUNED
STEREO
TUNER MUTE
15V
L
G
R
CNT 106
CNT109
TO SURROUND
Page(52)
SCHEMATIC
DIAGRAM(III)
CNT109
TO SURROUND
Page(52)
SCHEMATIC
DIAGRAM(III)
CNT107
TO FRONT
Page(51)
SCHEMATIC
DIAGRAM(II)
CNT106
TO TUNER
Page(53)
SCHEMATIC
DIAGRAM(IV)

SCHEMATIC DIAGRAM II


A B C D E F G H I J K L M
1 2 3 4 5 6 7 8 9
COMMANDER
PCB9 VOLUME LED
PCB8 VOLUME
PCB3 FRONT
FL700
TIMER 12 STEREO TUNED AUTO VCR 12 VCD TAPE 2M PRESET
RDS TA NEWS INFO Pro Logic 3 Stereo HALL SLEEP
TA7291S
IC700
IC701
CXP82316
X700
10MHZ
FRONT Lch. VOLUME
REAR VOLUME
CENTER VOLUME
CNT114-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
CNT114-1
PCB7 OUTLET
CNT122
USA/Canada Version
OUTLET
Europe Version
COLD
HOT
PCB4 VCR2
CNT113-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
CNT101-1
VIDEO
CH. GND
SET SELECTOR
STEP SELECTOR
POWER DOWN
DIGI LINK
REMOTE SENSOR
PCB6 POWER LED
Bi-color LED(Amber-Green)
CNT701
CNT701-1
CNT107-1
CNT105-1
PCB5 HEADPHONE
POWER S/W
CNT111-1
CNT122-1
CNT122 TO HEADPHONE Page(51) SCHEMATIC DIAGRAM(II)
CNT101-1 FROM TRANS Page(50) SCHEMATIC DIAGRAM(I)
CNT107-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
CNT105-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
CNT111-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
CNT122-1 FROM OUTLET Page(51) SCHEMATIC DIAGRAM(II)

NOTES

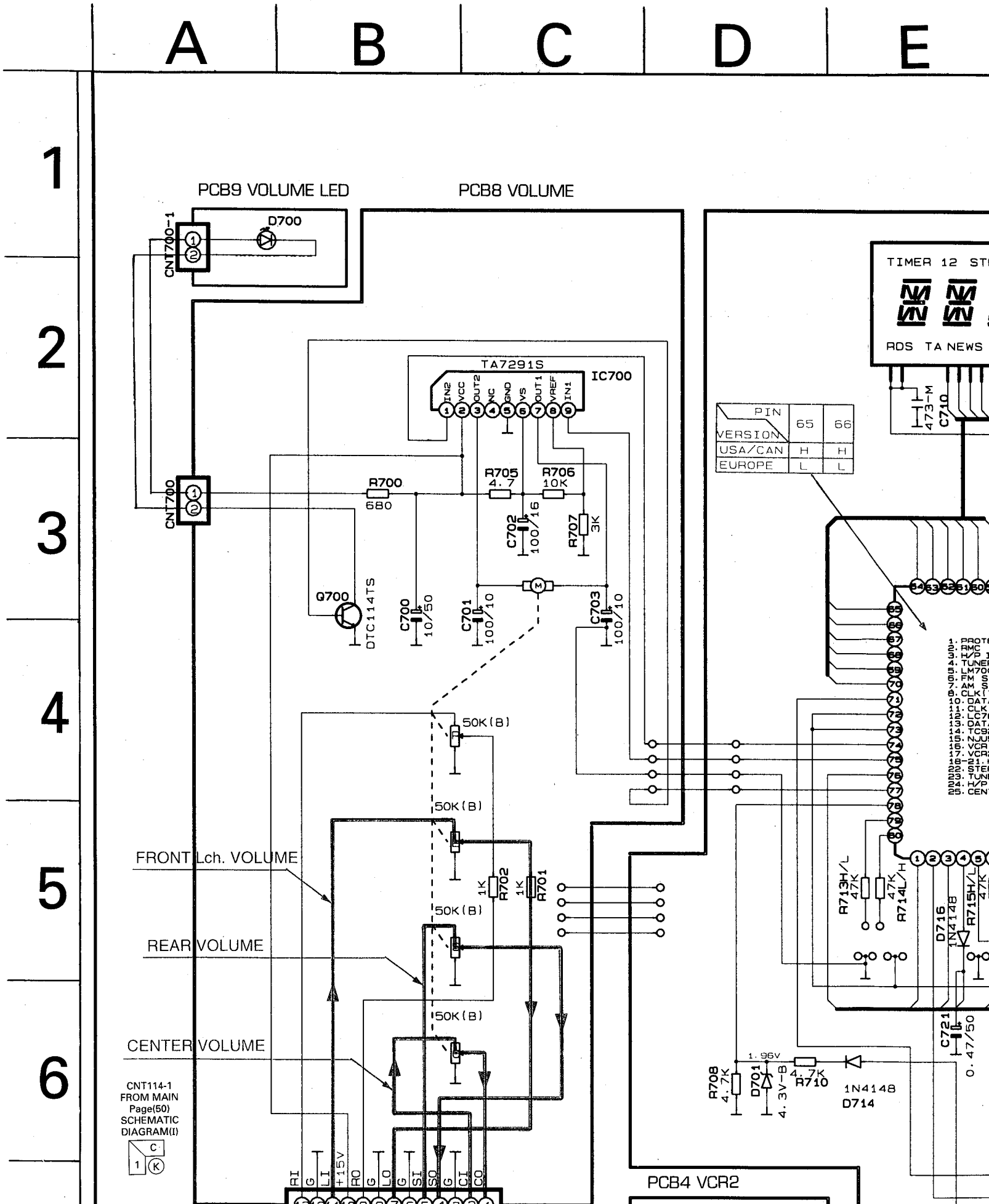
1. Resistor values are indicated in ohms unless otherwise specified
   [K=1.000 M=1.000.000]
2. Capacitor values are indicated in microfarades unless otherwise specified. [p=micro-microfarades]

CAUTION

Safety precaution to be followed during servicing

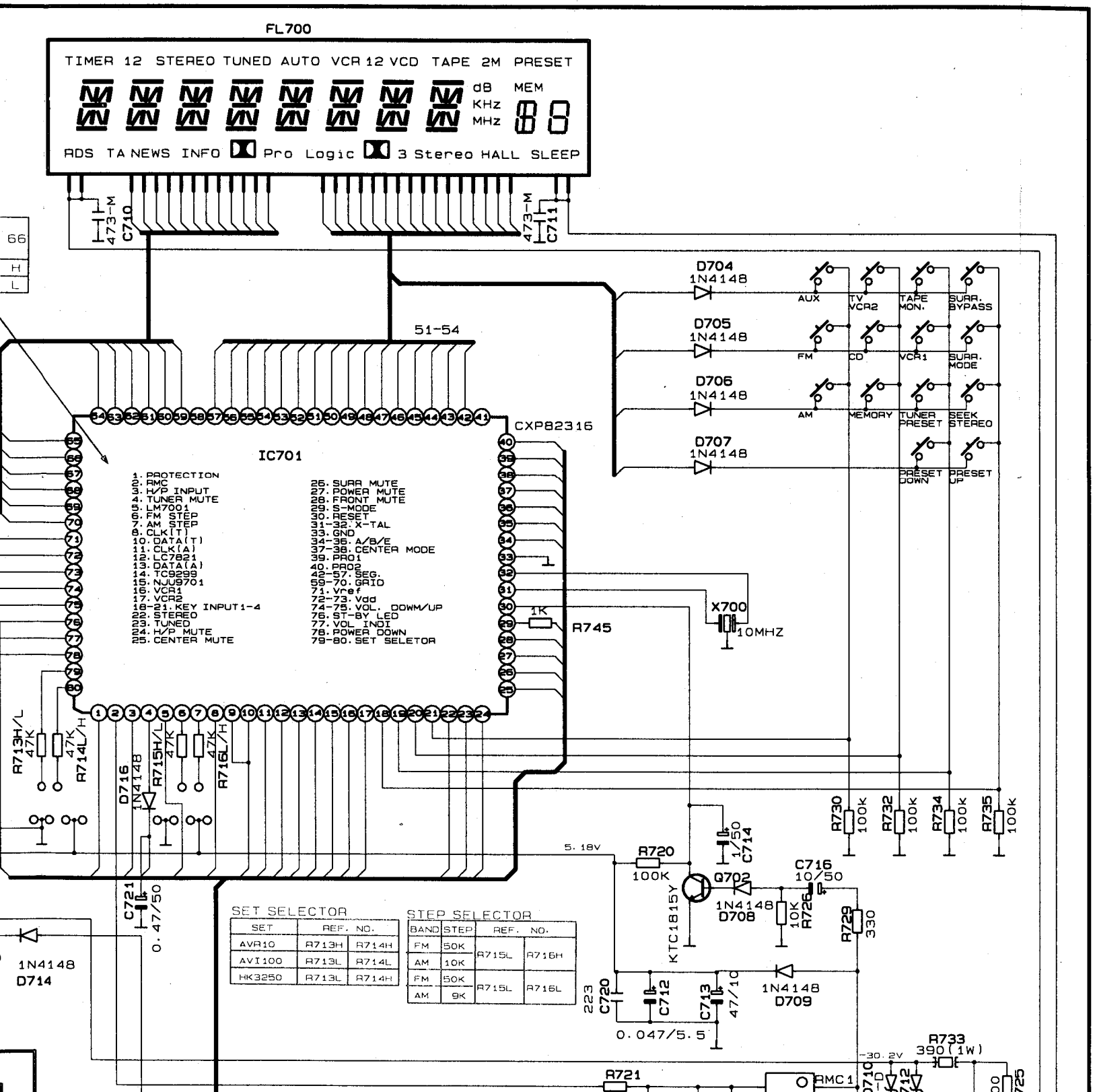
1) Since those parts marked with ⚠ are critical parts for safety. use only the one described in the parts list
2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

SCHEMATIC DIAGRAM II



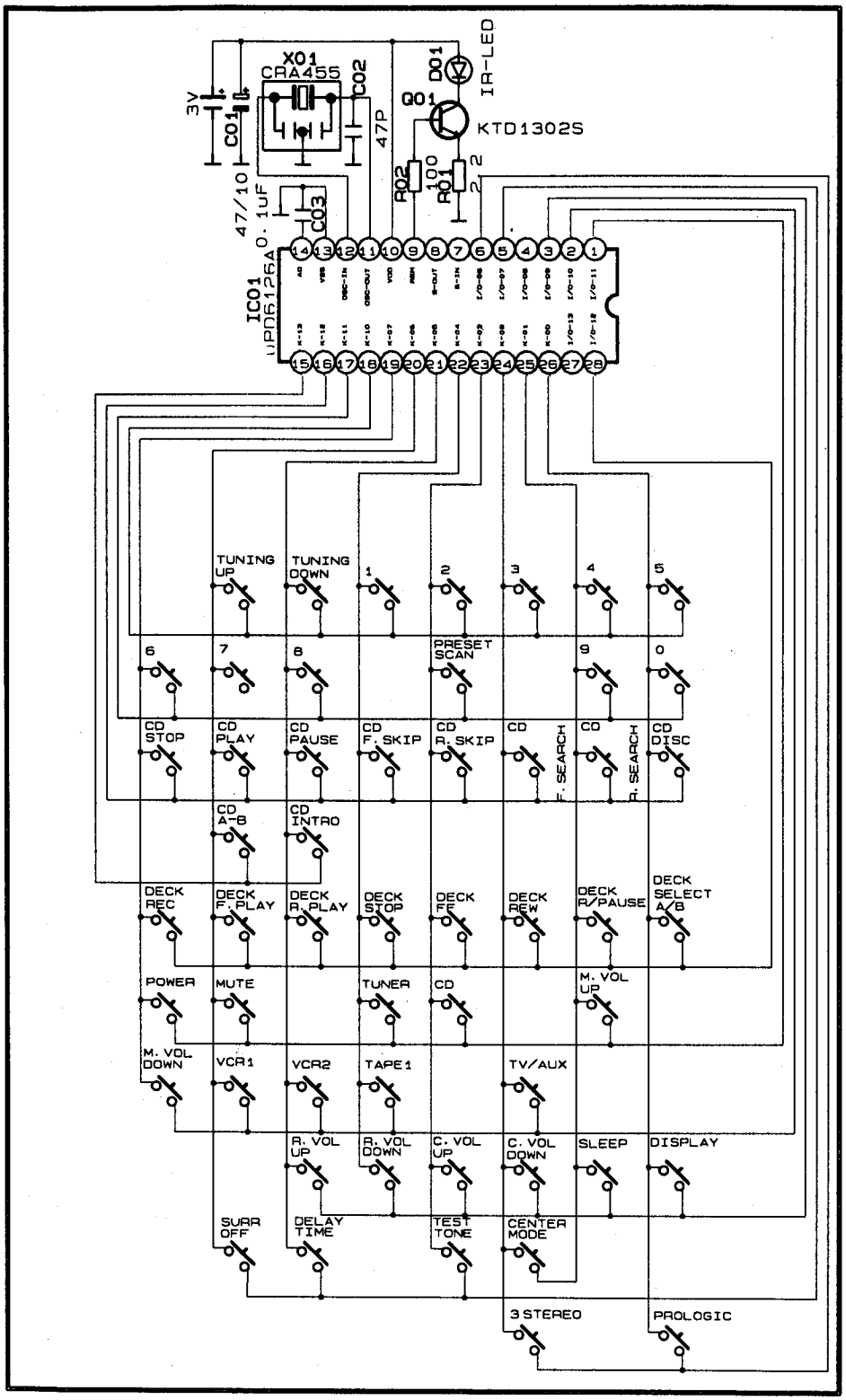
E F G H I

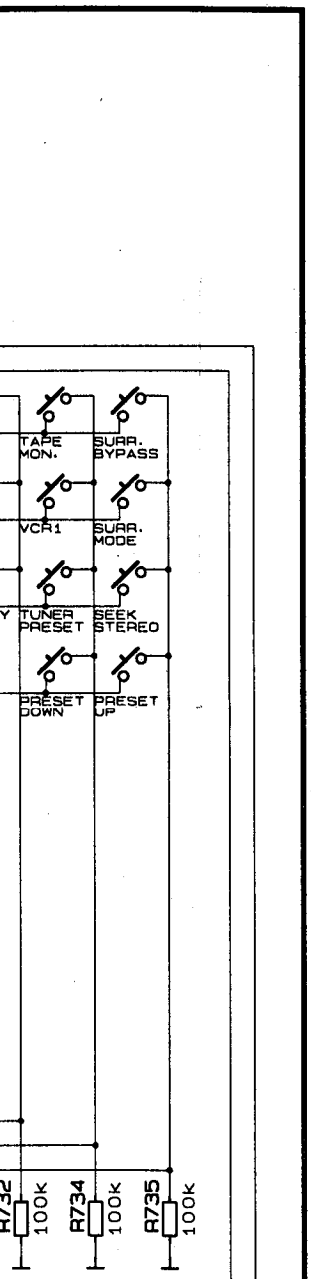
PCB3 FRONT



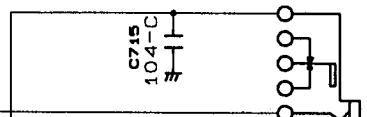
I J K L M

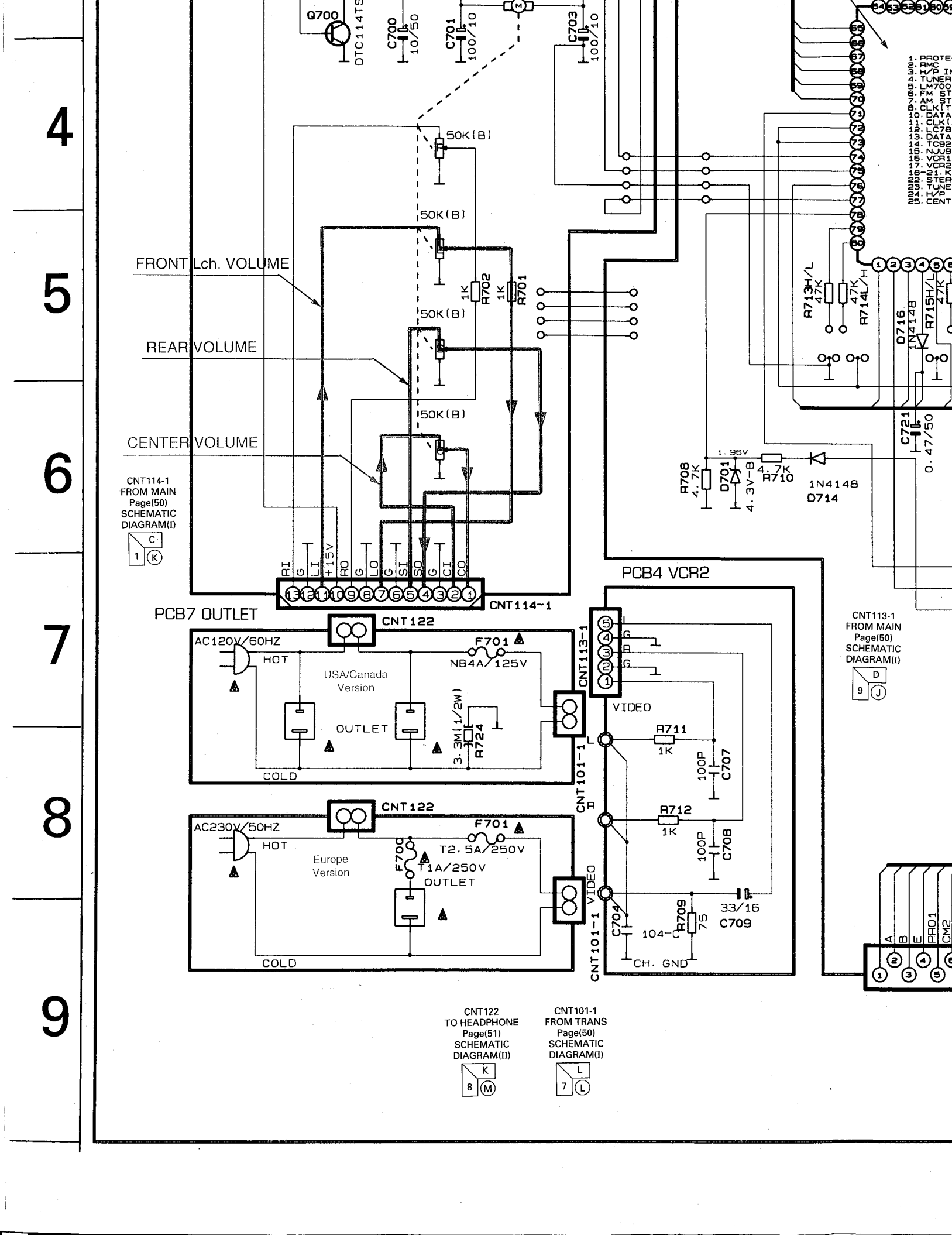
COMMANDER

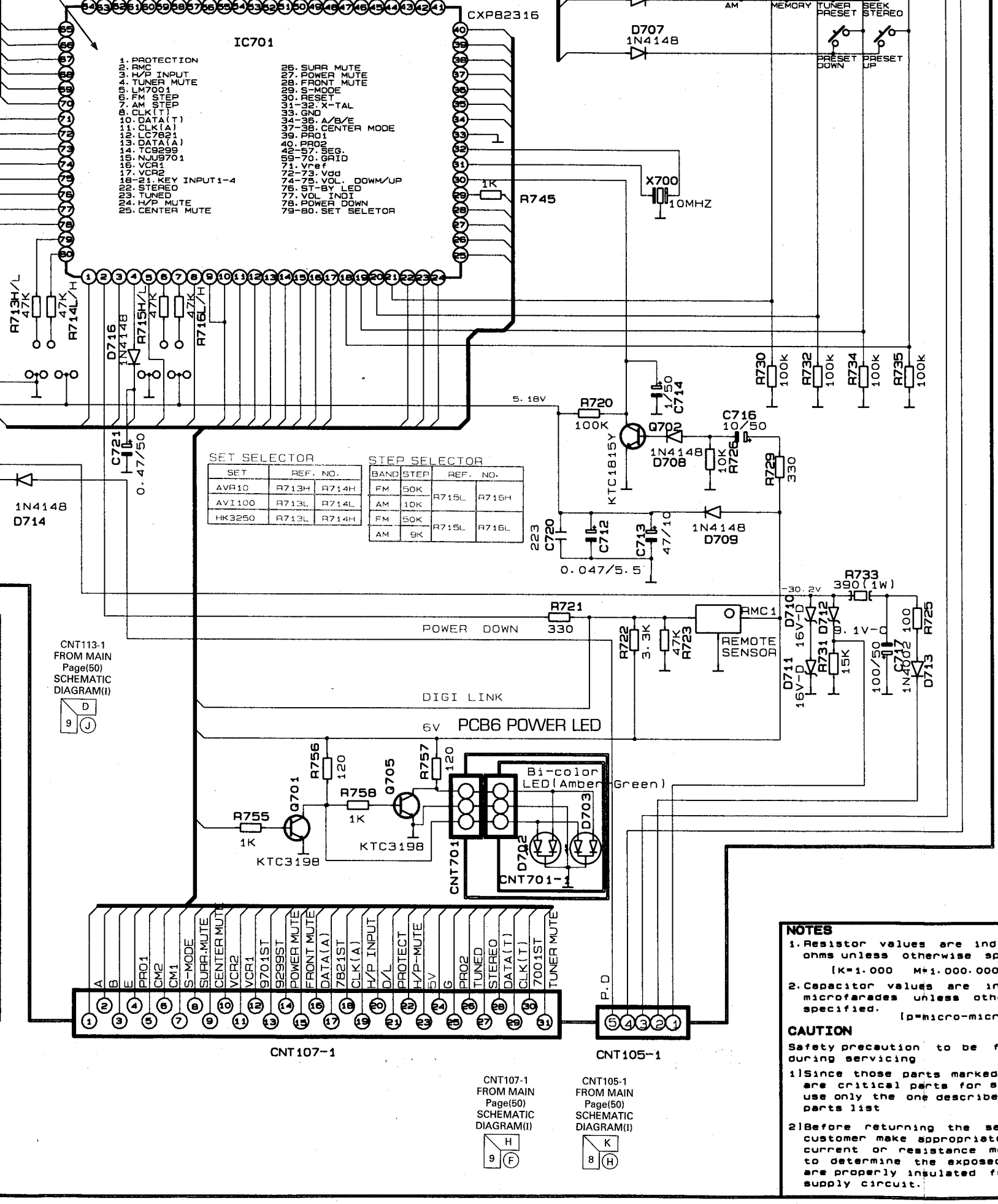




PCB5 HEADPHONE




Q700
DTC114TS
C700
10/50
C701
100/10
C703
100/10
50K(B)
50K(B)
FRONT Lch. VOLUME
1K
R702
1K
R701
50K(B)
REAR VOLUME
50K(B)
CENTER VOLUME
R713H/L
47K
R714L/H
47K
D716
1N4148
R715H/L
47K
C721
0.47/50
1.96V
R708
4.7K
D701
4.3V-B
4.7K
R710
1N4148
D714
CNT114-1
FROM MAIN
Page(50)
SCHEMATIC
DIAGRAM(I)
C
1
K
RI
G
LI
+15V
RO
G
LO
G
SI
SO
G
CI
CO
CNT114-1
PCB4 VCR2
PCB7 OUTLET
CNT122
AC120V/60HZ
HOT
F701
NB4A/125V
USA/Canada
Version
OUTLET
3.3M(1/2W)
R724
COLD
CNT122
AC230V/50HZ
HOT
F701
T2.5A/250V
F702
T1A/250V
Europe
Version
OUTLET
COLD
CNT113-1
L
G
B
G
VIDEO
CNT101-1
L
R711
1K
100P
C707
R
R712
1K
100P
C708
VIDEO
C704
104-C
R709
75
33/16
C709
CH. GND
CNT113-1
FROM MAIN
Page(50)
SCHEMATIC
DIAGRAM(I)
D
9
J
A
B
E
PRO1
CM2
CNT122
TO HEADPHONE
Page(51)
SCHEMATIC
DIAGRAM(II)
K
8
M
CNT101-1
FROM TRANS
Page(50)
SCHEMATIC
DIAGRAM(I)
L
7
L



NOTES

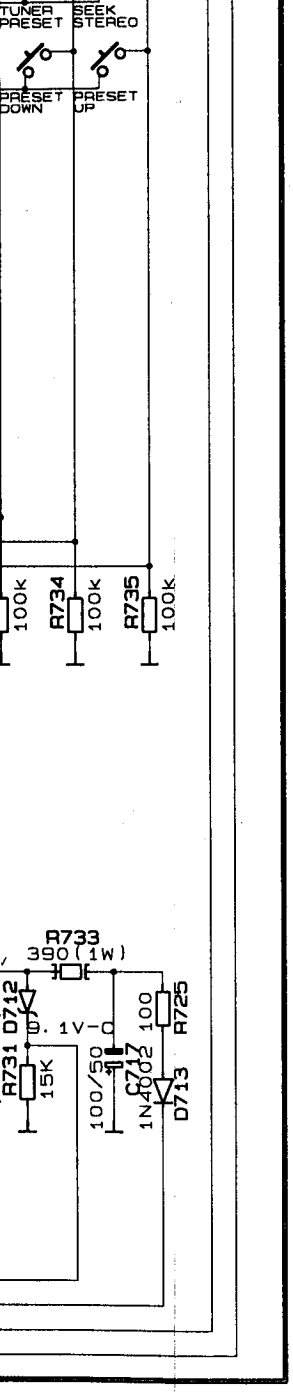
1. Resistor values are ind ohms unless otherwise sp
   [K=1.000 M=1.000.000
2. Capacitor values are in microfarades unless oth specified.
   [p=micro-micr

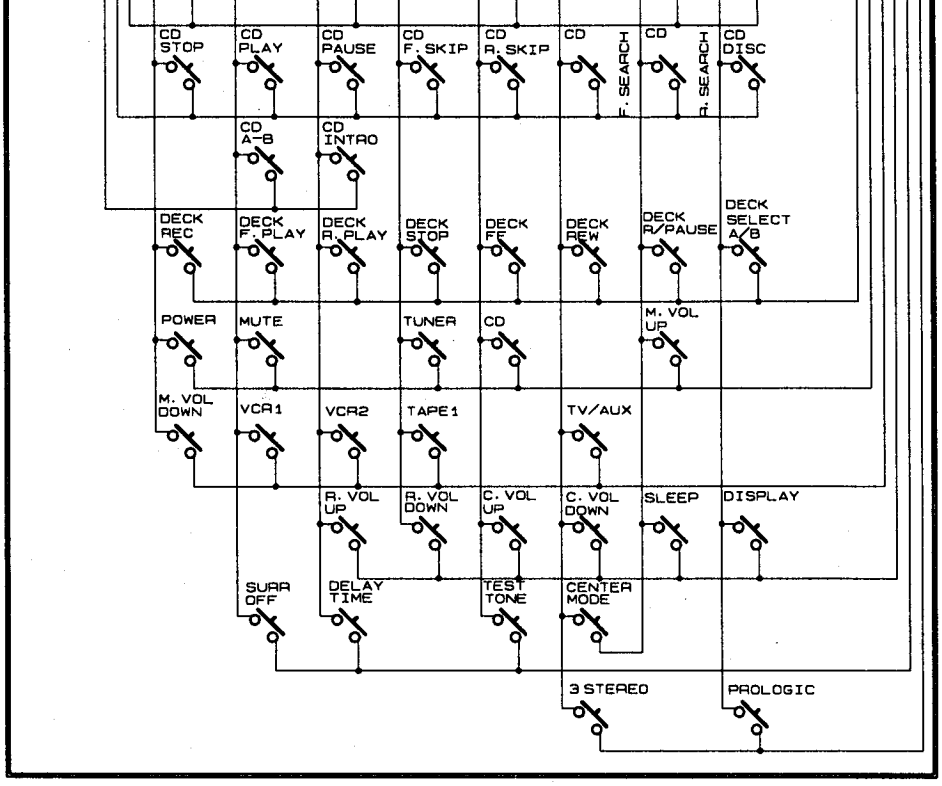
CAUTION

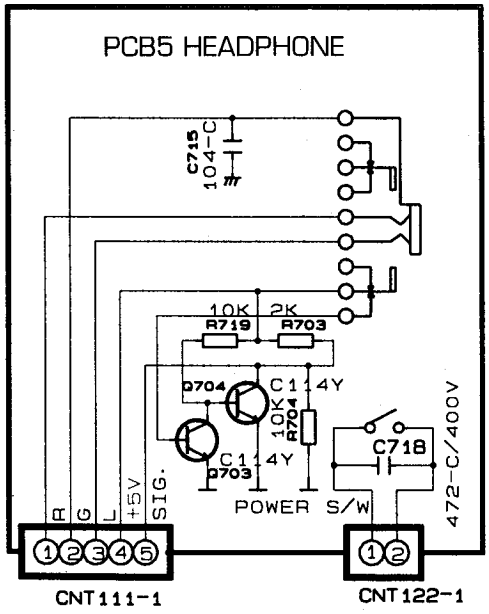
Safety precaution to be f during servicing

1]Since those parts marked are critical parts for s use only the one describe parts list

2]Before returning the se customer make appropriate current or resistance m to determine the exposed are properly insulated f supply circuit.







CNT111-1
FROM MAIN
Page(50)
SCHEMATIC
DIAGRAM(I)
C
9 B

CNT122-1
FROM OUTLET
Page(51)
SCHEMATIC
DIAGRAM(II)
B
7,8 M

ES

esistor values are indicated in
ms unless otherwise specified
[K=1.000 M=1.000.000]
apacitor values are indicated in
icrofarades unless otherwise
ecified.
[p=micro-microfarades]

TION

ty precaution to be followed
ing servicing
ance those parts marked with ⚠
e critical parts for safety.
e only the one described in the
rts list
efore returning the set to the
ustomer make appropriate leakage
urrent or resistance measurements
determine the exposed parts
e properly insulated from the
upply circuit.

SCHEMATIC DIAGRAM III

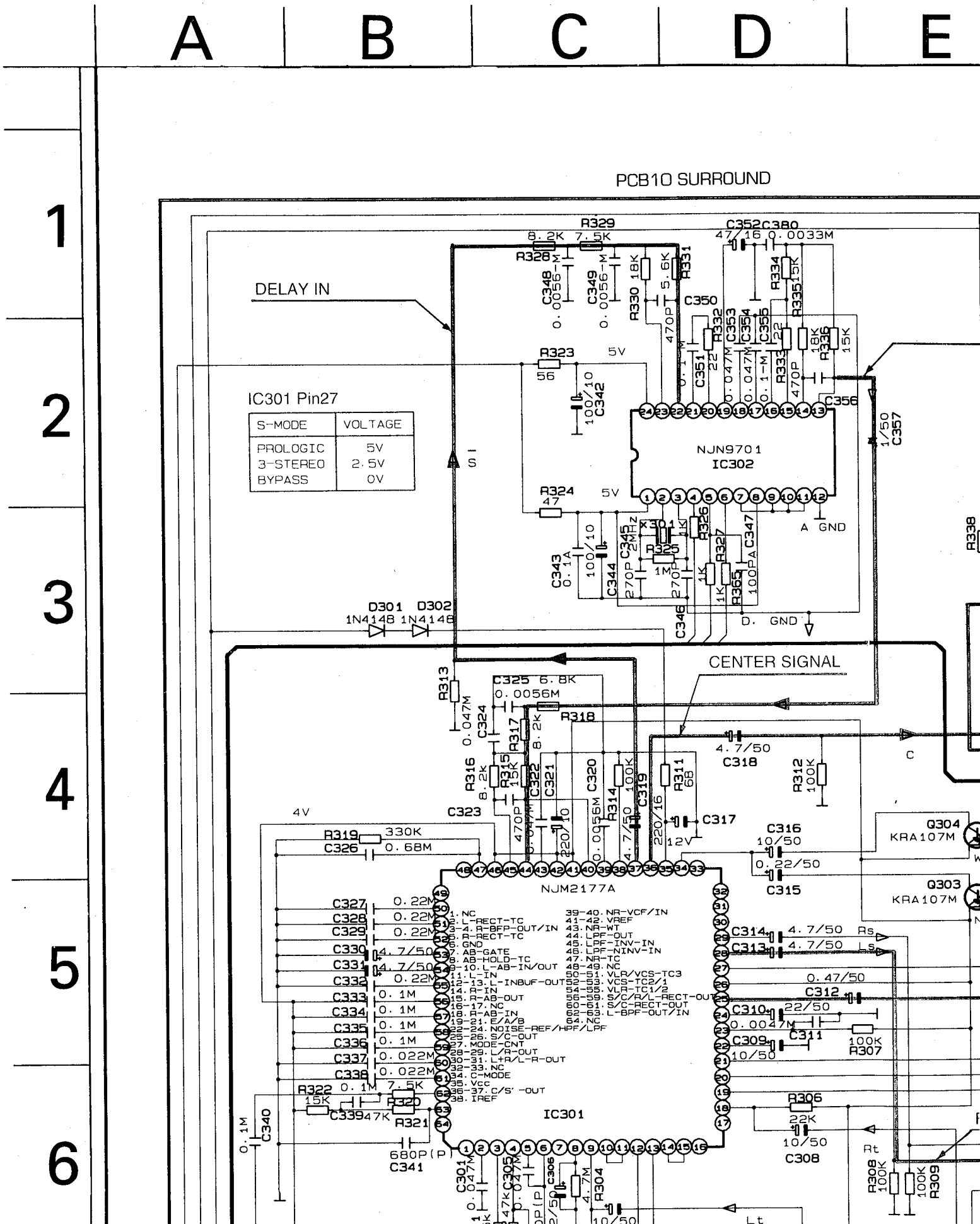
PCB10 SURROUND

PCB11 SURROUND AMP

IC301 Pin27

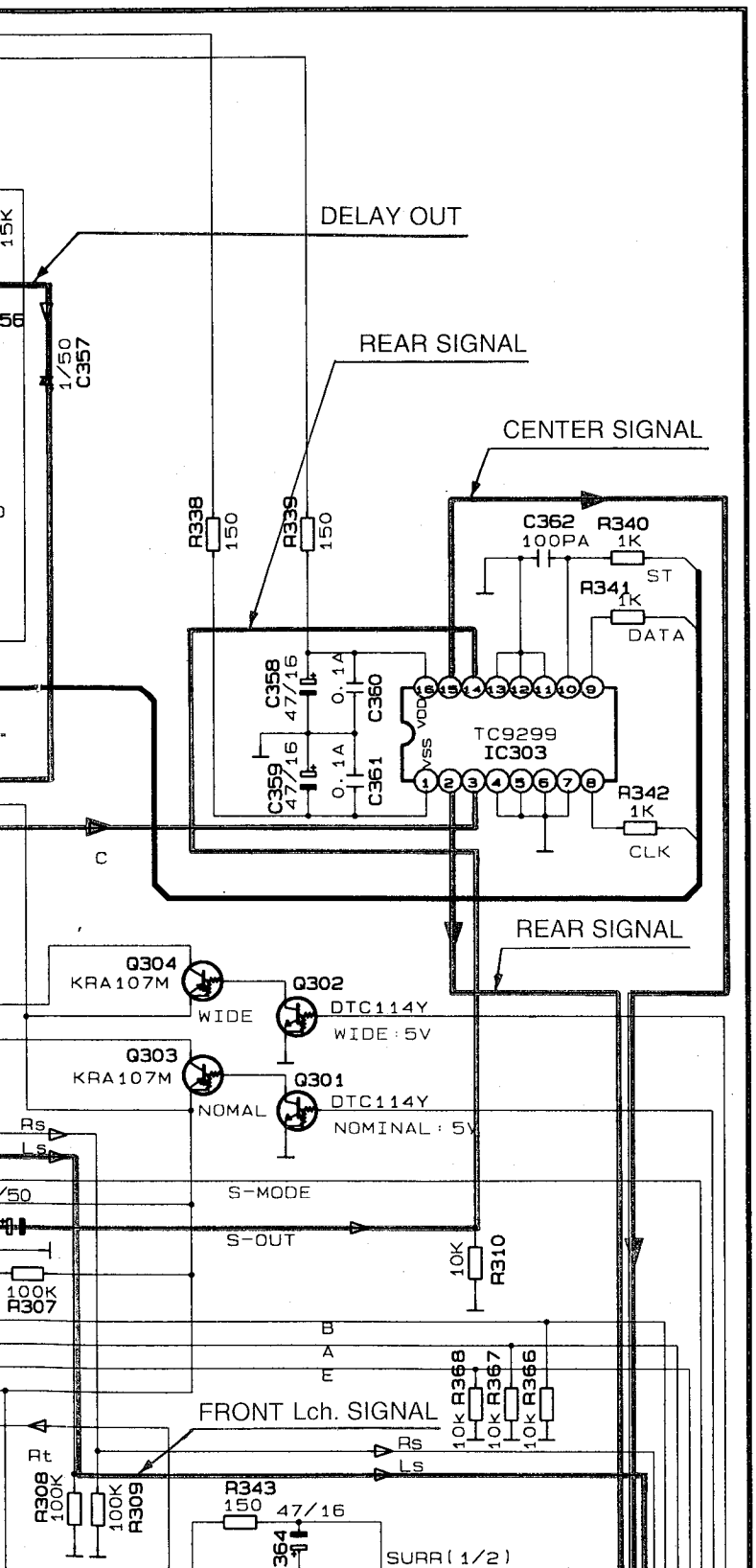
S-MODE	VOLTAGE
PROLOGIC	5V
3-STEREO	2.5V
BYPASS	0V

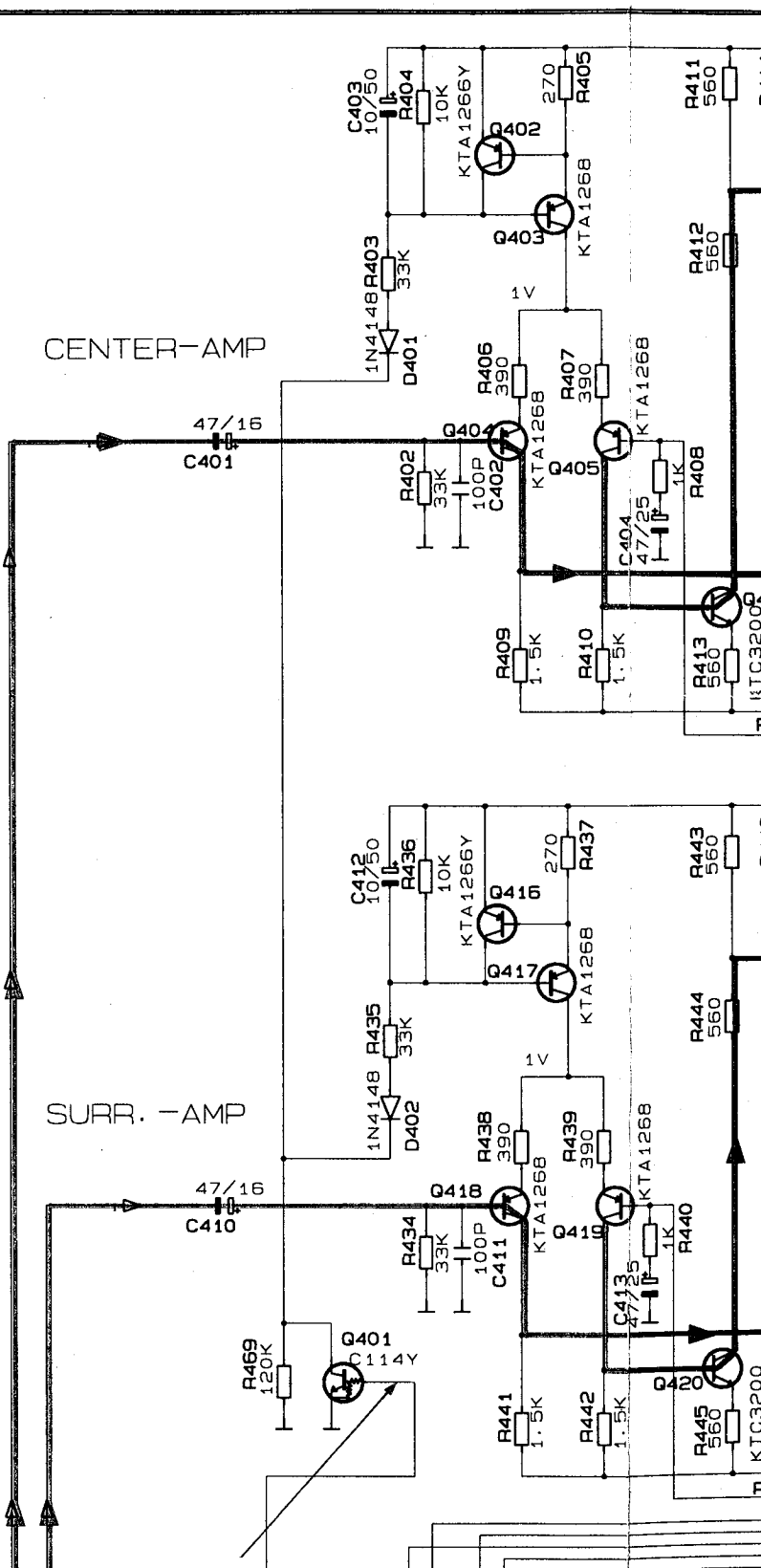
SCHEMATIC DIAGRAM III



E F G H I

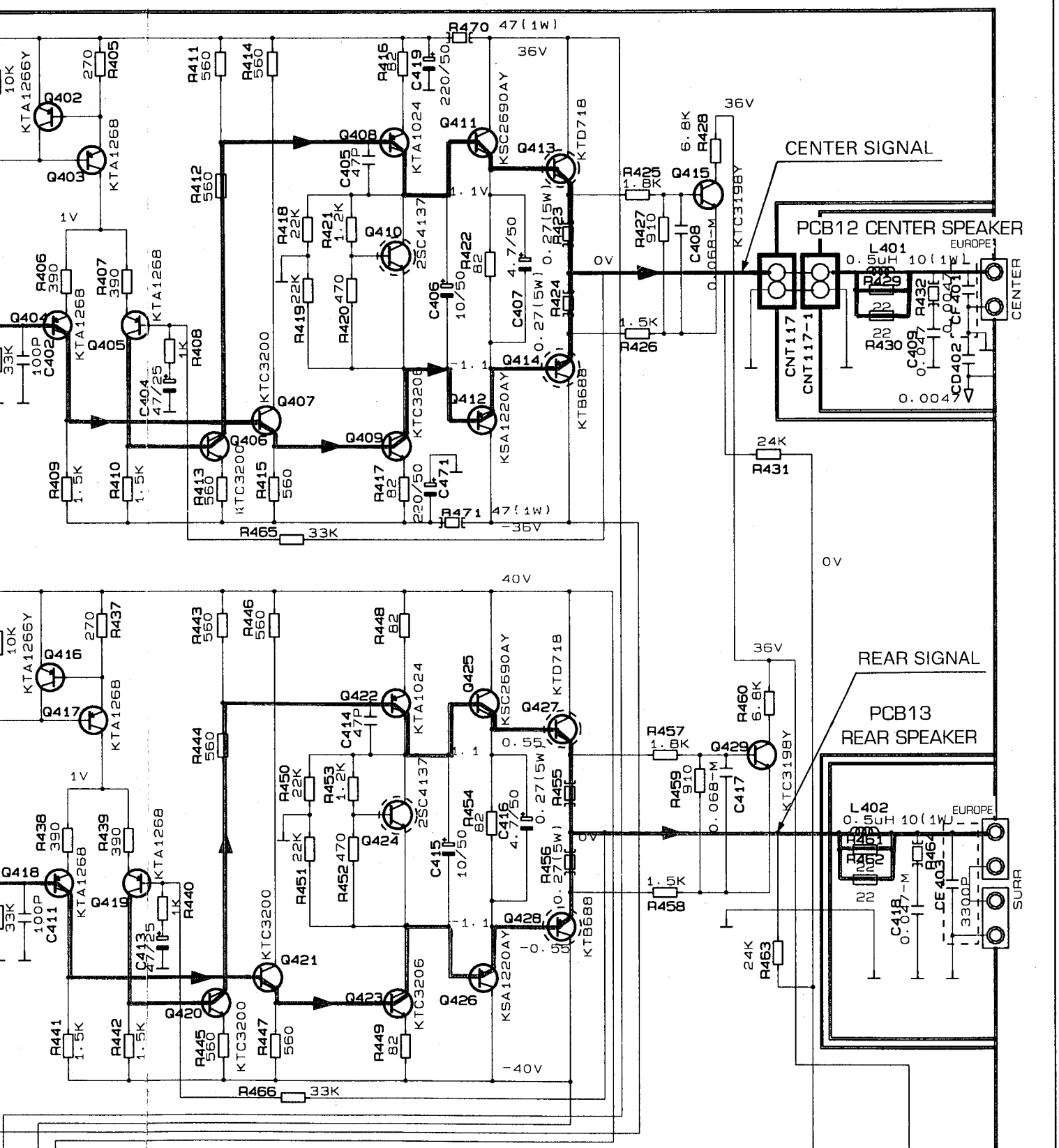
PCB

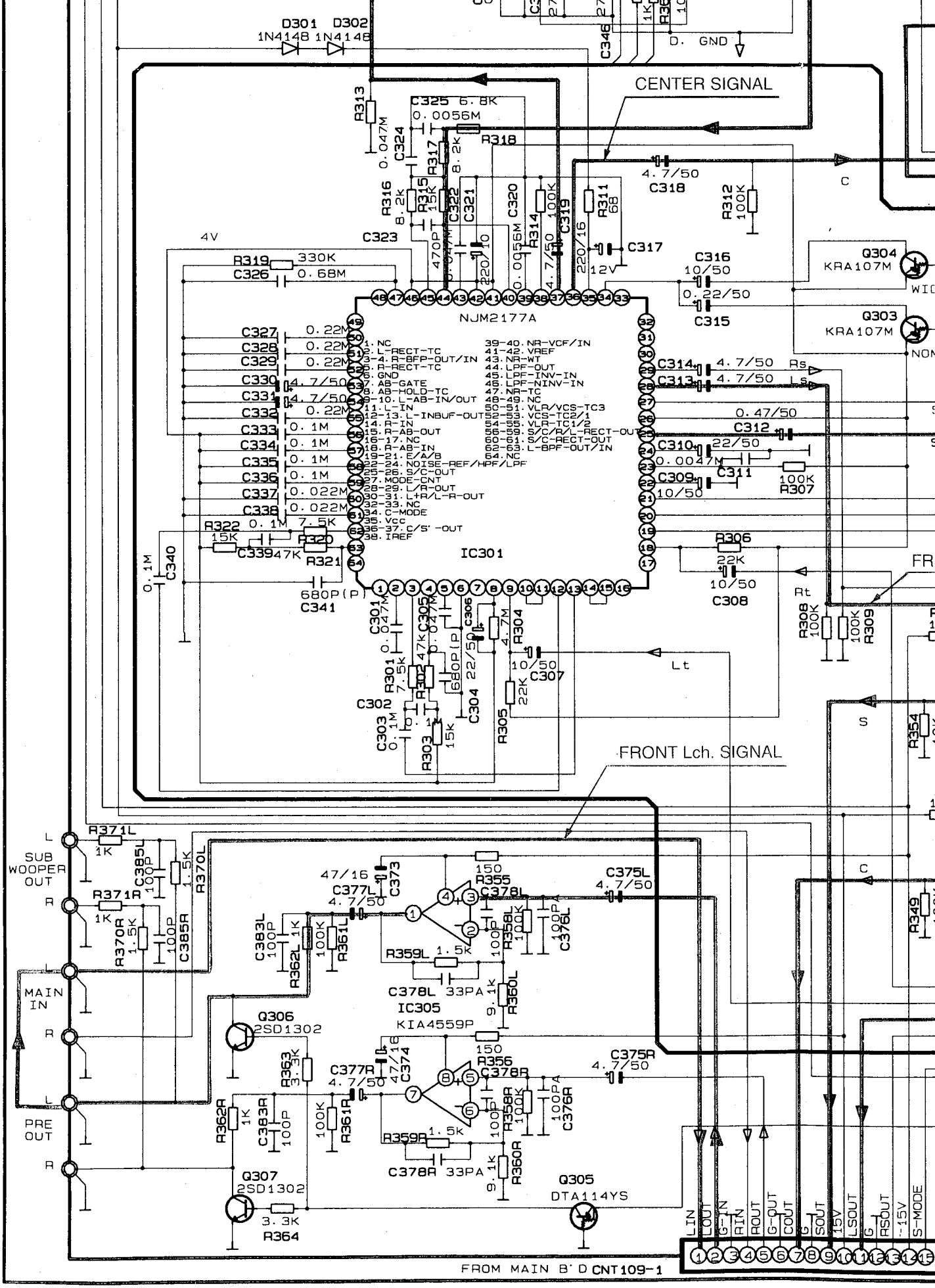

DELAY OUT
REAR SIGNAL
CENTER SIGNAL
R338 150
R339 150
C362 100PA
R340 1K
ST
R341 1K
DATA
C358 47/16
C359 47/16
C360 0.1A
C361 0.1A
VDD
Vss
TC9299
IC303
R342 1K
CLK
REAR SIGNAL
Q304 KRA107M
WIDE
Q302 DTC114Y
WIDE : 5V
Q303 KRA107M
NOMAL
Q301 DTC114Y
NOMINAL : 5V
S-MODE
S-OUT
R310 10K
R307 100K
B
A
E
R368 10K
R367 10K
R366 10K
FRONT Lch. SIGNAL
Rt
Rs
Ls
R308 100K
R309 100K
R343 150
47/16
SURR(1/2)

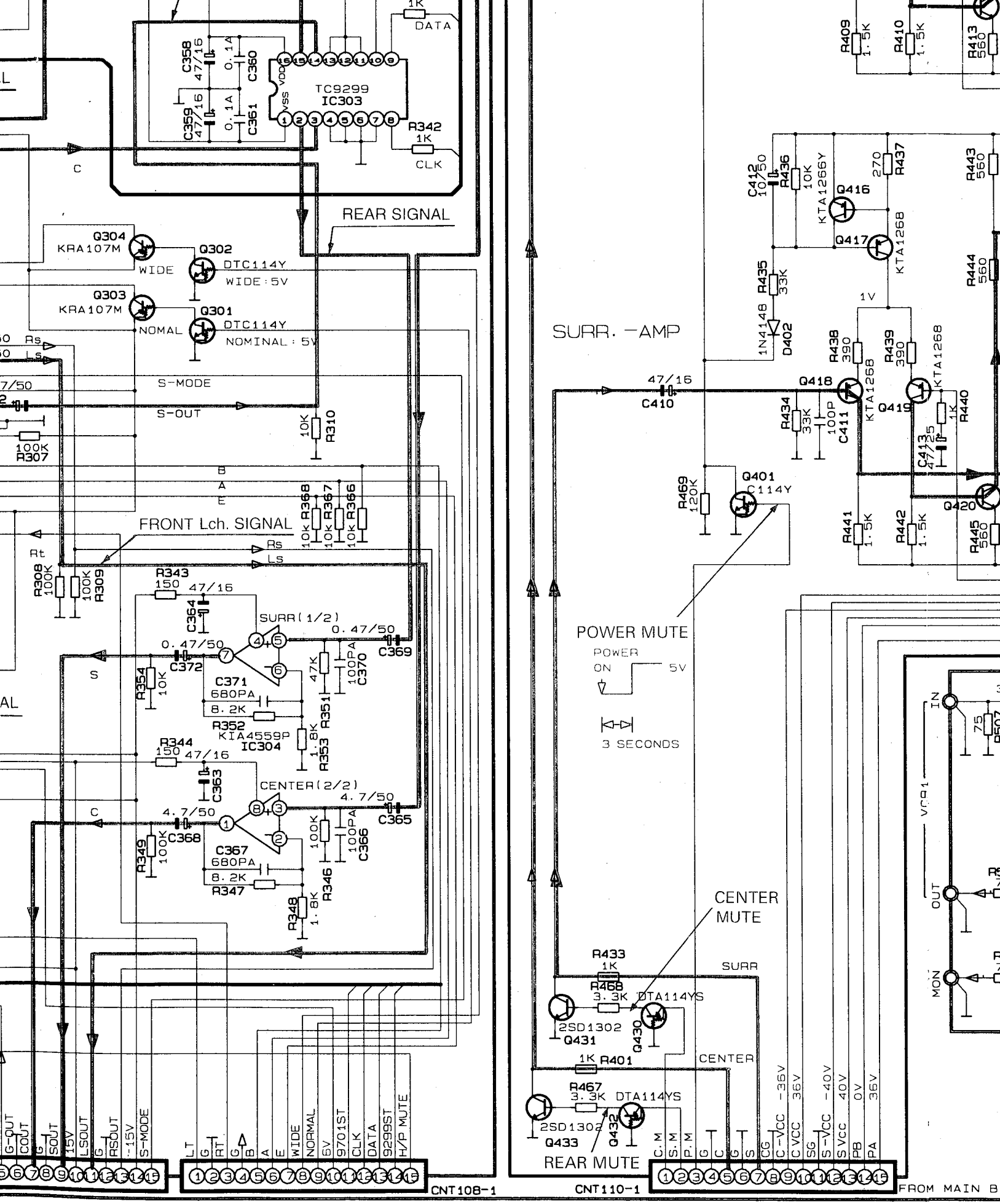

CENTER-AMP
C403 10/50
R404 10K
KTA1266Y
Q402
R405 270
Q403 KTA1268
R403 33K
1N4148 D401
1V
R406 390
R407 390
Q404 KTA1268
Q405 KTA1268
47/16 C401
R402 33K
100P C402
R408 1K
C404 47/25
R409 1.5K
R410 1.5K
R411 560
R412 560
R413 560
SURR. -AMP
C412 10/50
R436 10K
KTA1266Y
Q416
R437 270
Q417 KTA1268
R435 33K
1N4148 D402
1V
R438 390
R439 390
Q418 KTA1268
Q419 KTA1268
47/16 C410
R434 33K
100P C411
R440 1K
C413 47/25
Q401 C114Y
R469 120K
Q420
R441 1.5K
R442 1.5K
R443 560
R444 560
R445 560

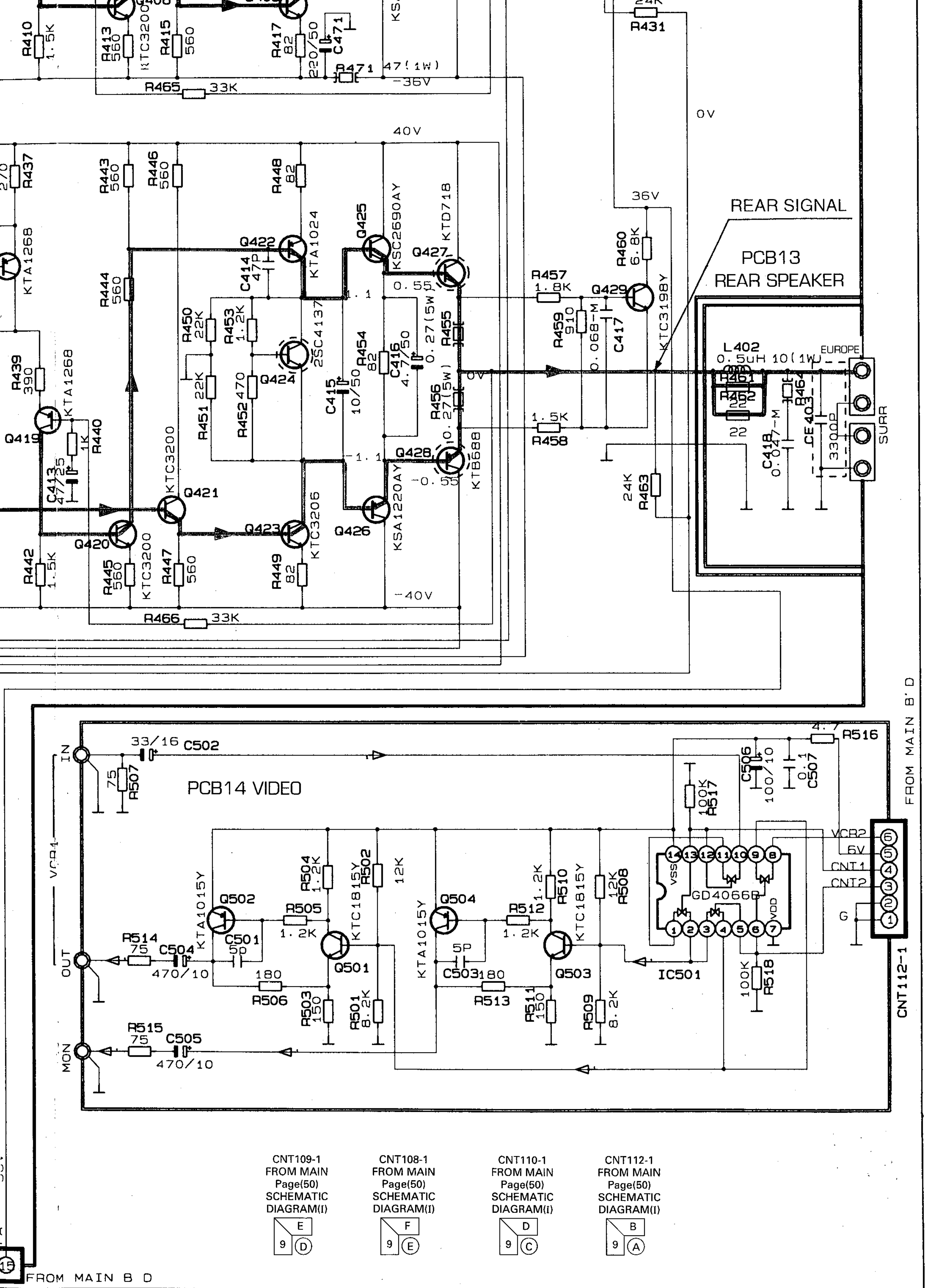
I J K L M

PCB11 SURROUND AMP

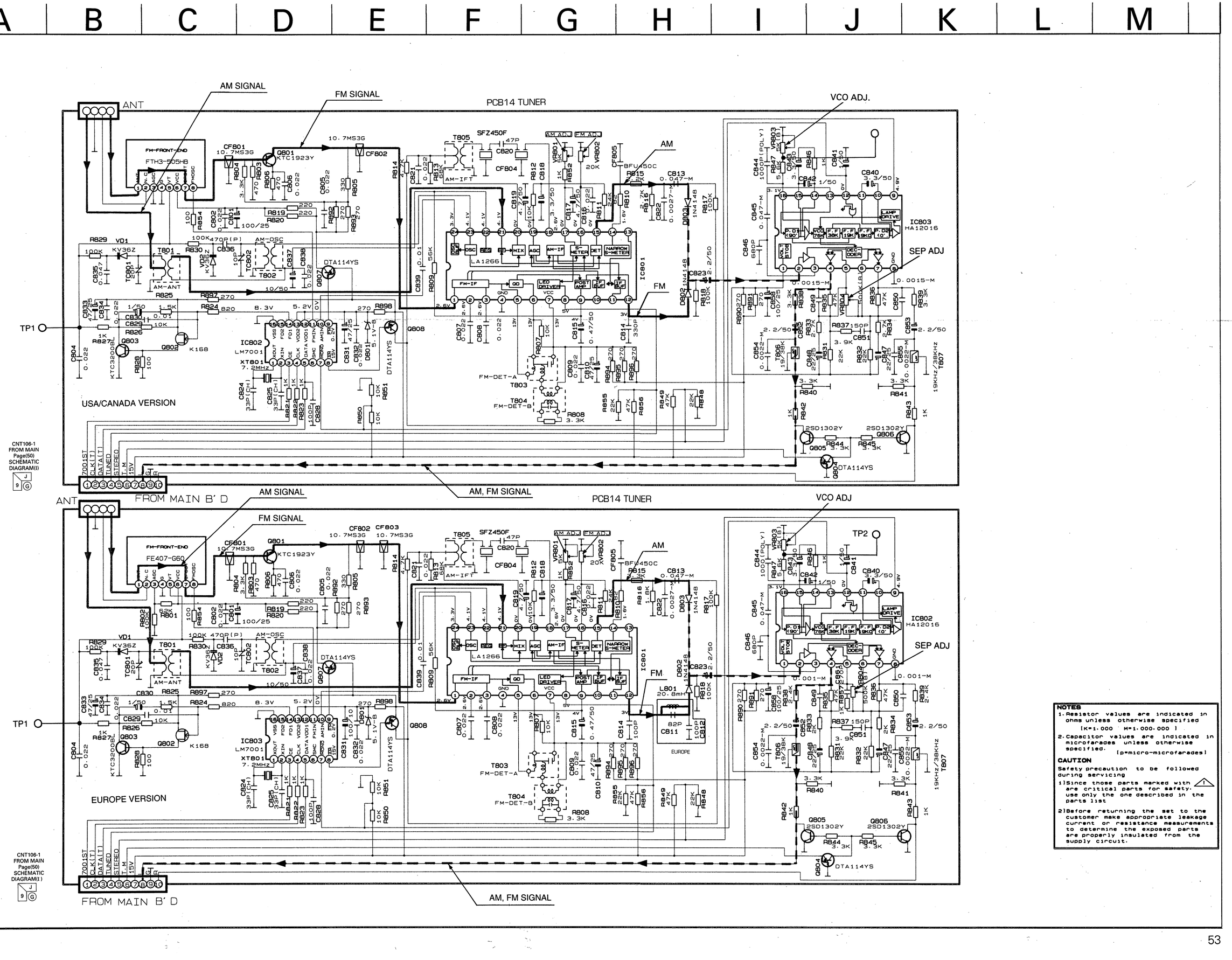



D301 D302
1N4148 1N4148
D. GND
CENTER SIGNAL
C325 6.8K
0.0056M
R313
0.047M
C324
R318
R317
8.2K
R316
8.2K
R315
15K
C322
C321
C320
R314
100K
C319
R311
68
C318
4.7/50
R312
100K
4V
C323
R319 330K
C326 0.68M
C317
220/16
12V
C316
10/50
0.22/50
C315
Q304
KRA107M
Q303
KRA107M
NJM2177A
IC301
C327 0.22M
C328 0.22M
C329 0.22M
C330 4.7/50
C331 4.7/50
C332 0.22M
C333 0.1M
C334 0.1M
C335 0.1M
C336 0.1M
C337 0.022M
C338 0.022M
R322 0.1M 7.5K
15K
C339 47K
R320
R321
C340 0.1M
680P(P)
C341
C314 4.7/50 Rs
C313 4.7/50 Ls
0.47/50
C312
C310 22/50
0.0047M
C311
C309
10/50
100K
R307
R306
22K
10/50
C308
Rt
R308 100K
100K
R309
Lt
C301 0.047M
C305 0.047M
C306
R304 4.7M
C307 10/50
22K
R305
R301 7.5K
R302 47K
680P(P)
C304 22/50
C302
C303 0.1M
0.1M
R303 15K
FRONT Lch. SIGNAL
R371L 1K
SUB WOOPER OUT
C385L 100P
1.5K
R370L
R371R 1K
R370R 1.5K
100P
C385R
MAIN IN
PRE OUT
47/16
C373
C377L 4.7/50
150
R355
C378L
C375L 4.7/50
C383L 100P
R362L 1K
100K
R361L
R359L 1.5K
C378L 33PA
R358L 100K
100P
C376L
R360L 9.1K
IC305
KIA4559P
Q306
2SD1302
R363 3.3K
C377R 4.7/50
47/16
C374
150
R356
C378R
C375R 4.7/50
R362R 1K
C383R 100P
100K
R361R
R359R 1.5K
C378R 33PA
R358R 100K
100P
C376R
R360R 9.1K
Q307
2SD1302
3.3K
R364
Q305
DTA114YS
LIN
LOUT
G-IN
RIN
ROUT
G-OUT
COUT
G
SOUT
15V
LSOUT
G
RSOUT
-15V
S-MODE
FROM MAIN B' D CNT109-1


DATA
C358 47/16
C359 47/16
C360 0.1A
C361 0.1A
TC9299
IC303
R342 1K
CLK
REAR SIGNAL
Q304 KRA107M
WIDE
Q302 DTC114Y
WIDE:5V
Q303 KRA107M
NOMAL
Q301 DTC114Y
NOMINAL:5V
S-MODE
S-OUT
R310 10K
R307 100K
FRONT Lch. SIGNAL
R368 10K
R367 10K
R366 10K
R308 100K
R309 100K
R343 150
C364 47/16
SURR(1/2)
C369 0.47/50
C372 0.47/50
R354 10K
C371 680PA
R352 8.2K
KIA4559P
IC304
R351 47K
C370 100PA
R353 1.8K
R344 150
C363 47/16
CENTER(2/2)
C365 4.7/50
C368 4.7/50
R349 100K
C367 680PA
R347 8.2K
R346 100K
C366 100PA
R348 1.8K
SURR. -AMP
C410 47/16
R469 120K
Q401 C114Y
POWER MUTE
POWER ON 5V
3 SECONDS
CENTER MUTE
REAR MUTE
R433 1K
R468 3.3K DTA114YS
Q431 2SD1302
Q430
R401 1K
R467 3.3K DTA114YS
Q433 2SD1302
Q432
SURR
CENTER
C412 10/50
R436 10K
Q416 KTA1266Y
R437 270
Q417 KTA1268
R435 33K
D402 1N4148
1V
R438 390
R439 390
Q418 KTA1268
Q419 KTA1268
R434 33K
C411 100P
C413 47/25
R440 1K
Q420
R441 1.5K
R442 1.5K
R445 560
R443 560
R444 560
R409 1.5K
R410 1.5K
R413 560
IN
OUT
MON
VCR1
CNT108-1
CNT110-1
FROM MAIN B


R410 1.5K
R413 560
KTC3200
R415 560
R417 82
220/50
C471
R471 47(1W)
-36V
R465 33K
24K
R431
0V
40V
R437
R443 560
R446 560
R448 82
KTA1268
R444 560
Q422
C414 47P
KTA1024
Q425
KSC2690AY
KTD718
Q427
0.55
R457 1.8K
R460 6.8K
36V
Q429
KTC3198Y
REAR SIGNAL
PCB13
REAR SPEAKER
R450 22K
R453 1.2K
2SC4137
Q424
R451 22K
R452 470
C415 10/50
R454 82
C416 4.7/50
0.27(5W)
R455
R456 0.27(5W)
R459 910
0.068-M
C417
L402 0.5uH
10(1W)
EUROPE
R461
R462 22
22
R464
CE403
3300P
C418 0.047-M
SURR
R439 390
KTA1268
Q419
R440 1K
C413 47/25
KTC3200
Q421
Q428
KTB688
-0.55
-1.1
R458 1.5K
R463 24K
Q420
Q423
KTC3206
Q426
KSA1220AY
R442 1.5K
R445 560
KTC3200
R447 560
R449 82
-40V
R466 33K
FROM MAIN B'D
IN
33/16 C502
75 R507
PCB14 VIDEO
VCR1
R504 1.2K
R502 12K
KTC1815Y
KTA1015Y
Q502
R505 1.2K
Q504
R512 1.2K
R510 1.2K
KTC1815Y
R508 12K
R517 100K
C506 100/10
0.1 C507
4.7 R516
VSS
GD4066B
VDD
VCR2
6V
CNT1
CNT2
G
R514 75
C504 470/10
C501 5P
OUT
Q501
5P C503
R506 180
R513 180
Q503
IC501
R518 100K
R503 150
R501 8.2K
R511 150
R509 8.2K
CNT112-1
R515 75
C505 470/10
MON
CNT109-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
E 9 D
CNT108-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
F 9 E
CNT110-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
D 9 C
CNT112-1 FROM MAIN Page(50) SCHEMATIC DIAGRAM(I)
B 9 A
FROM MAIN B D

SCHEMATIC DIAGRAM IV



NOTES

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   [K=1,000 M=1,000,000]
2. Capacitor values are indicated in microfarades unless otherwise specified. [p=micro-microfarades]

CAUTION

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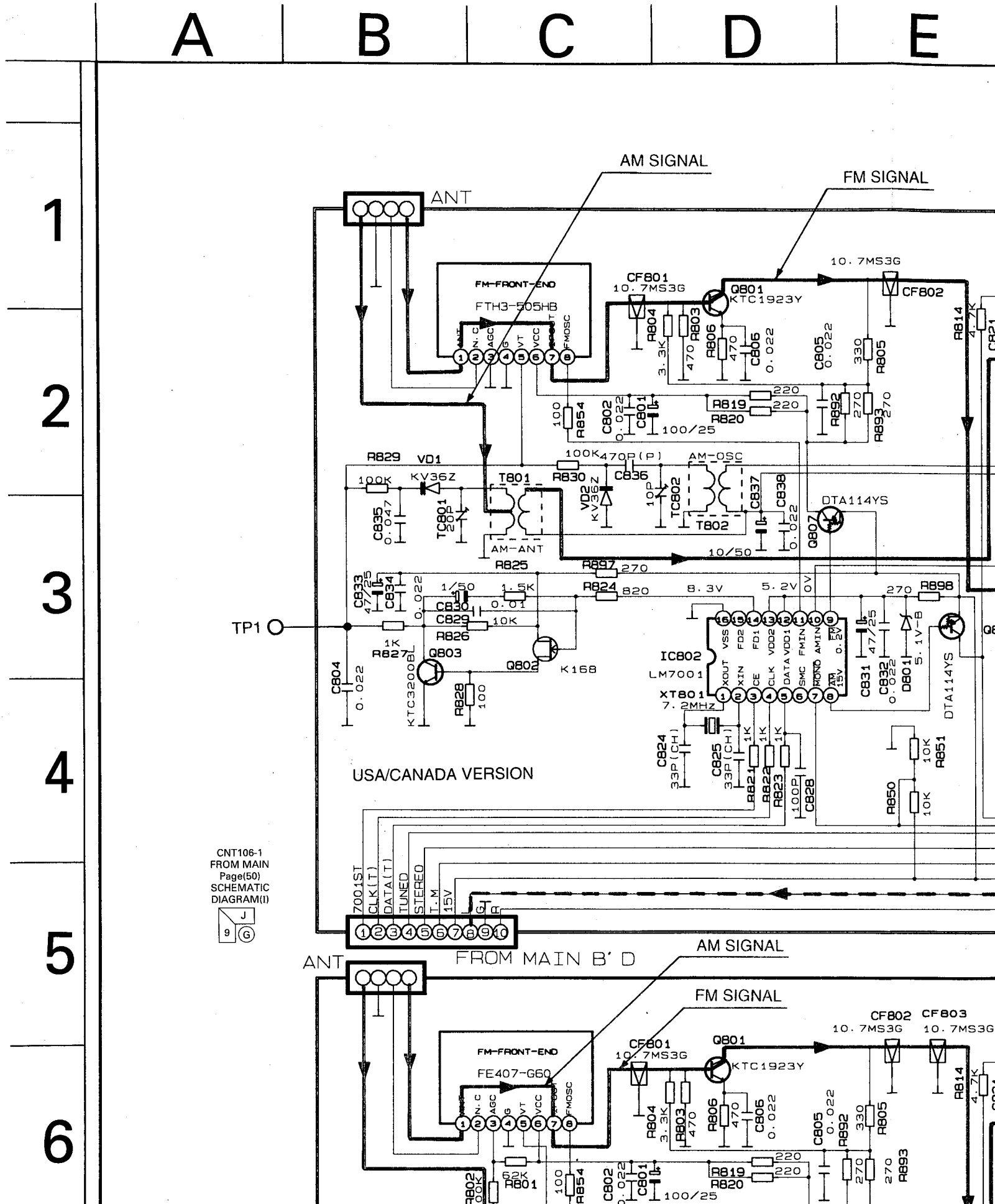
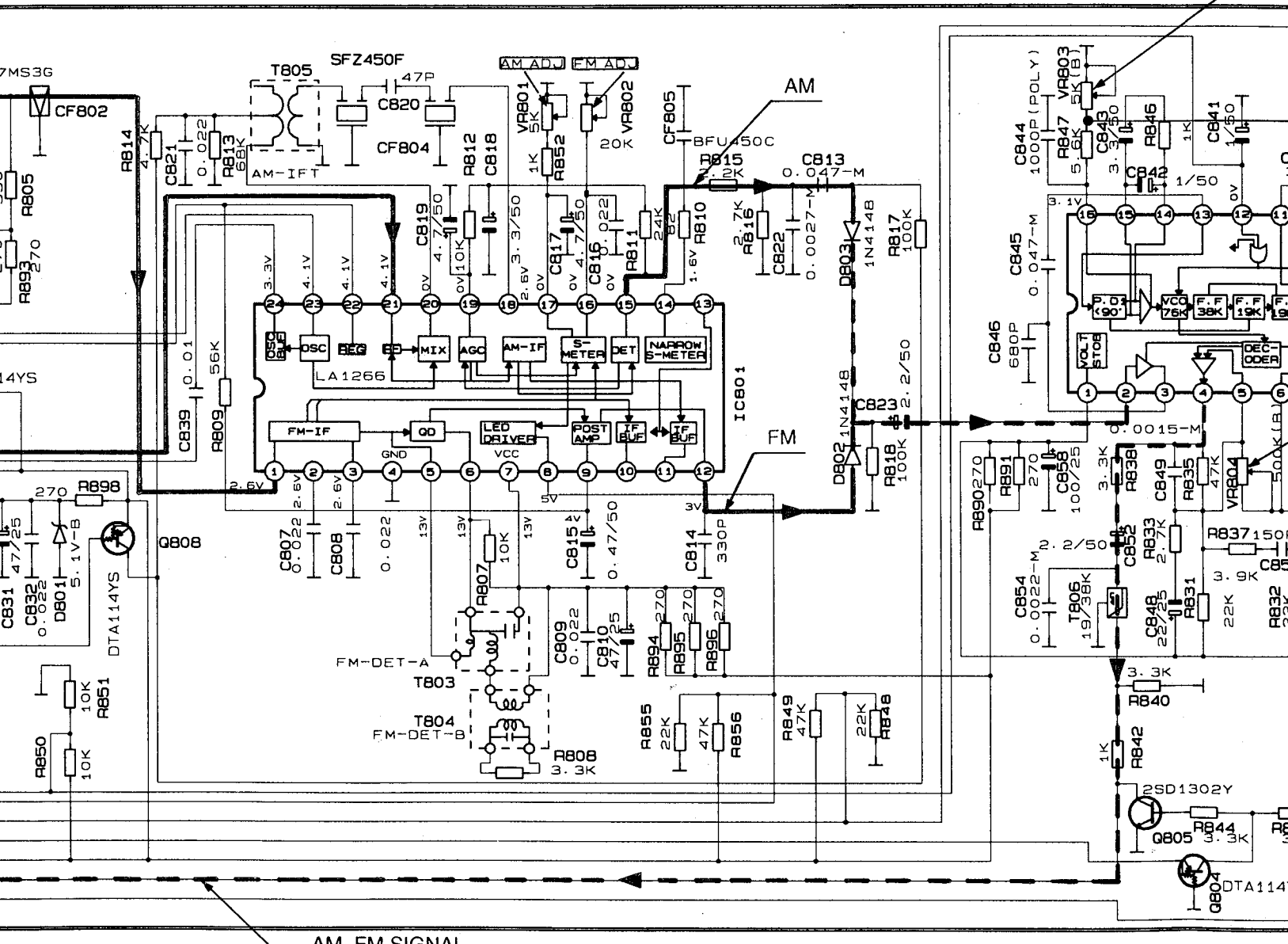
SCHEMATIC DIAGRAM IV



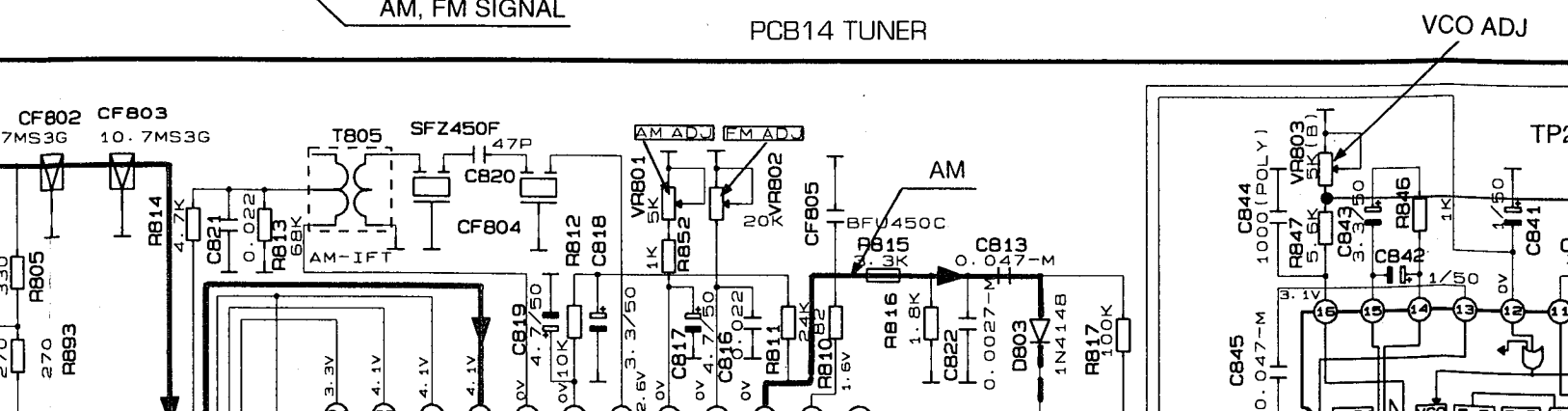
E F G H I J

M SIGNAL

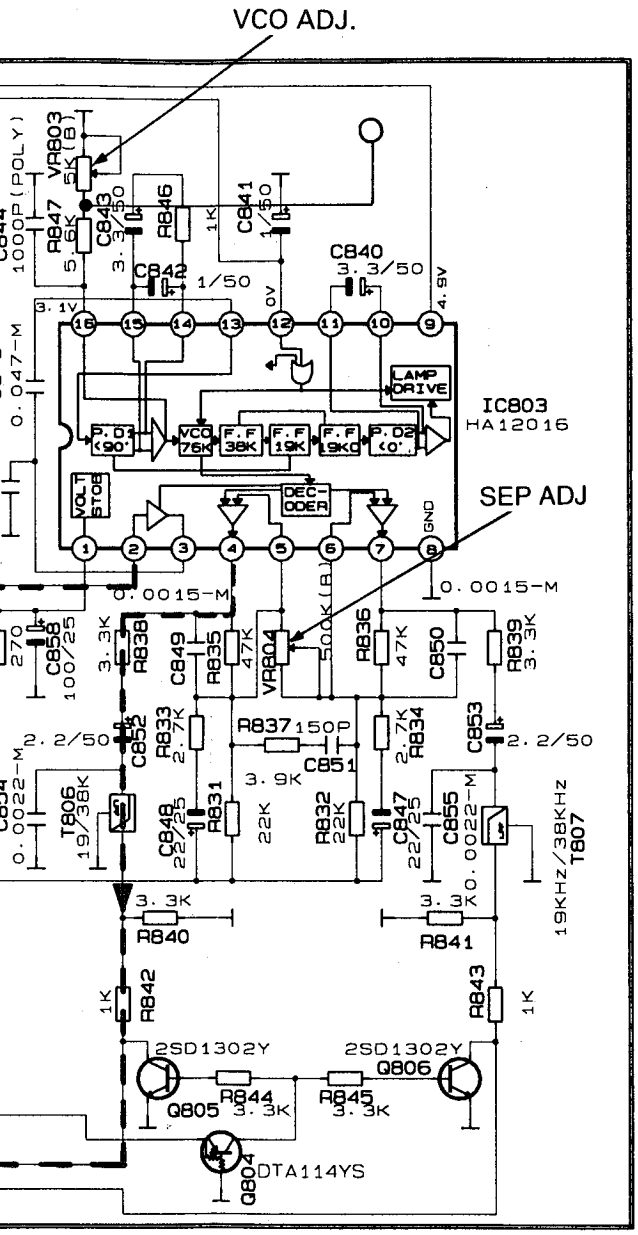
PCB14 TUNER

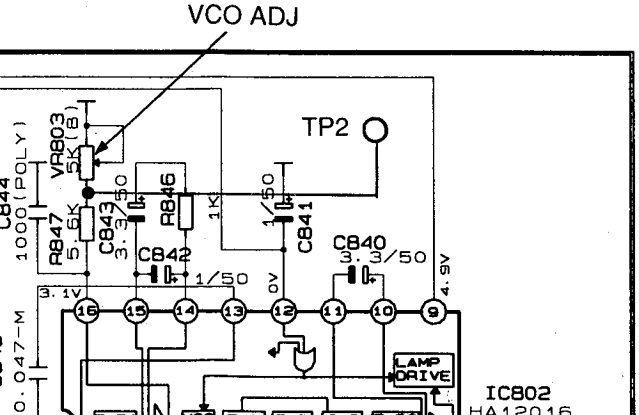


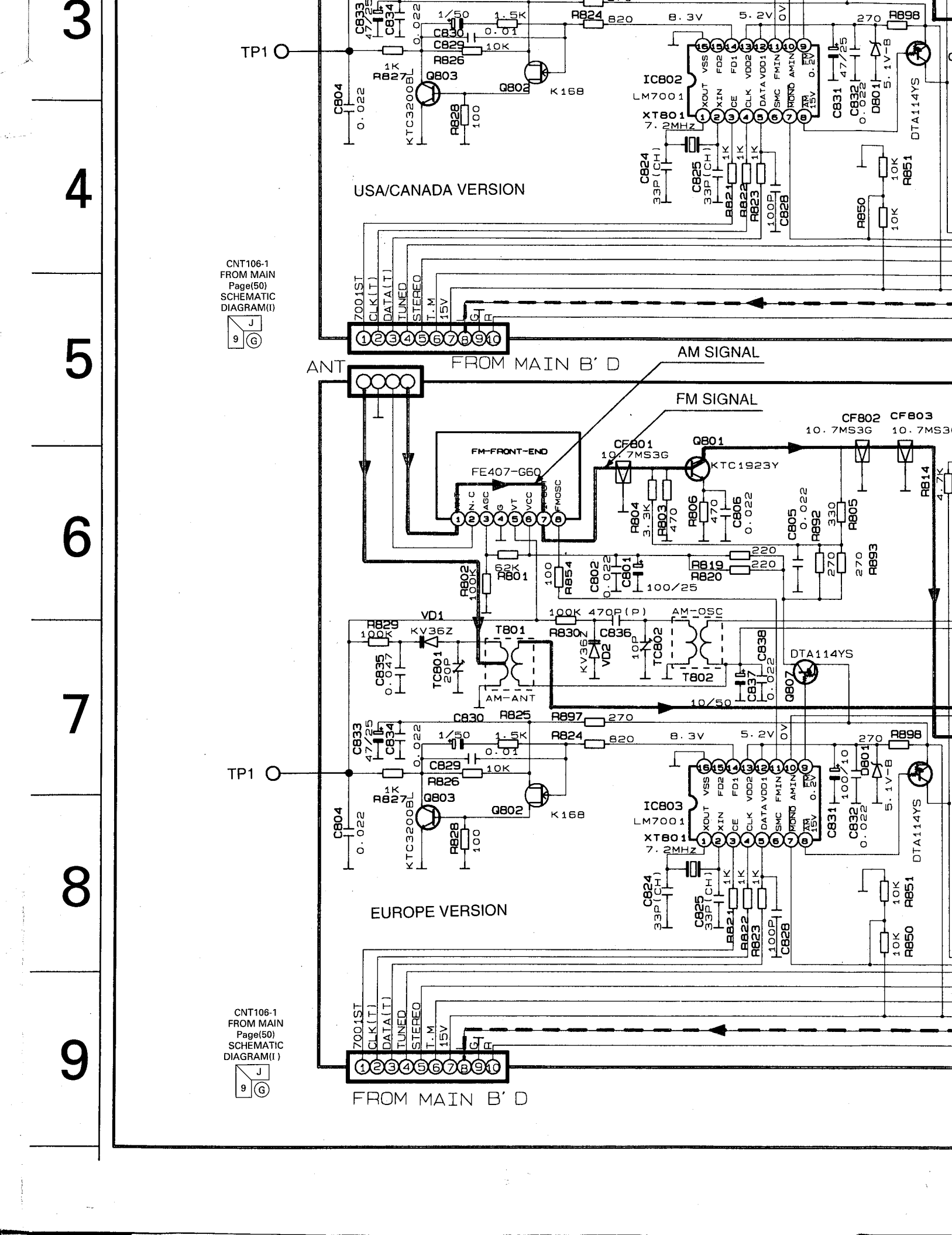
PCB14 TUNER

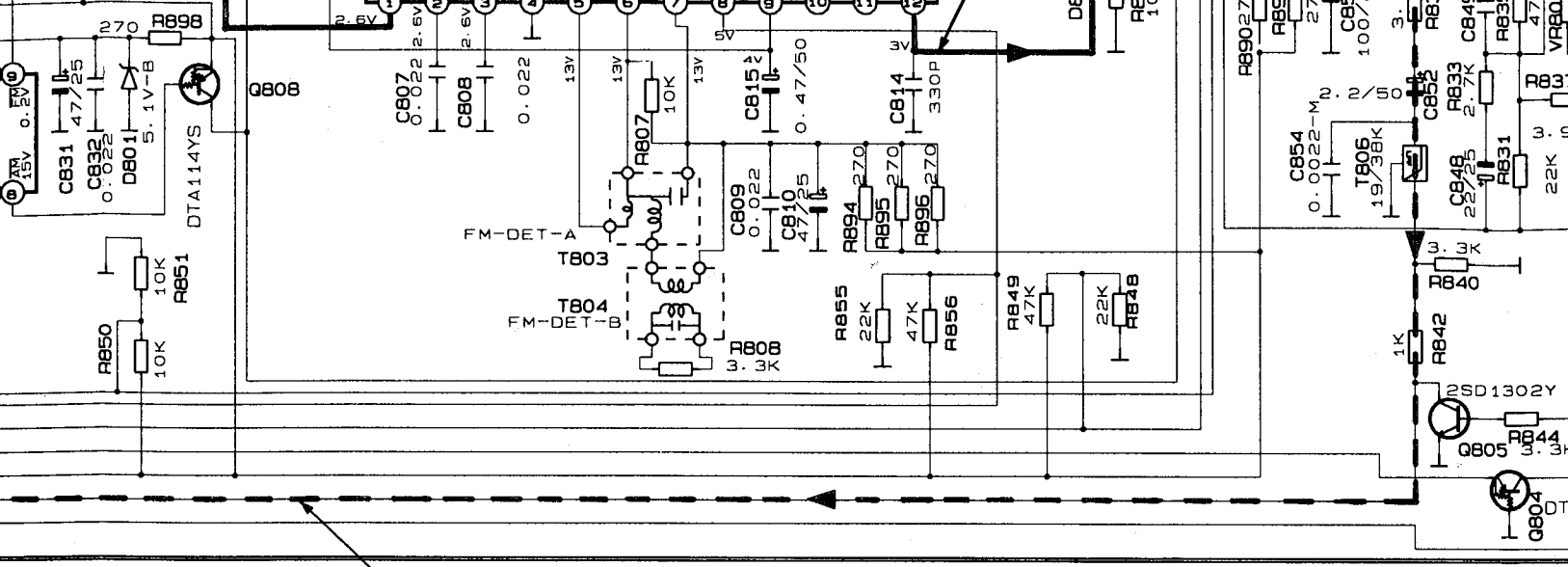


I J K L M


VCO ADJ.
VR803 5K(B)
R847 5.6K
C843 3.3/50
R846 1K
C841 1/50
C842 1/50
C840 3.3/50
3.1V
0V
4.9V
LAMP DRIVE
IC803 HA12016
P.D3 (90°)
VCO 76K
F.F 38K
F.F 19K
F.F 9K
P.D2 (0°)
VOLT STOB
DEC-ODER
GND
SEP ADJ
0.0015-M
R838 3.3K
C849
R835 47K
VR804 500K(B)
R836 47K
C850
R839 3.3K
C852 2.2/50
R833 2.7K
R837 150P
C851
R834 2.7K
C853 2.2/50
3.9K
T806 19/38K
C848 22/25
R831 22K
R832 22K
C847 22/25
C855 0.0022-M
T807 19KHz/38KHz
3.3K
R840
R841
1K
R842
R843
2SD1302Y
Q805
R844 3.3K
R845 3.3K
2SD1302Y
Q806
Q804 DTA114YS

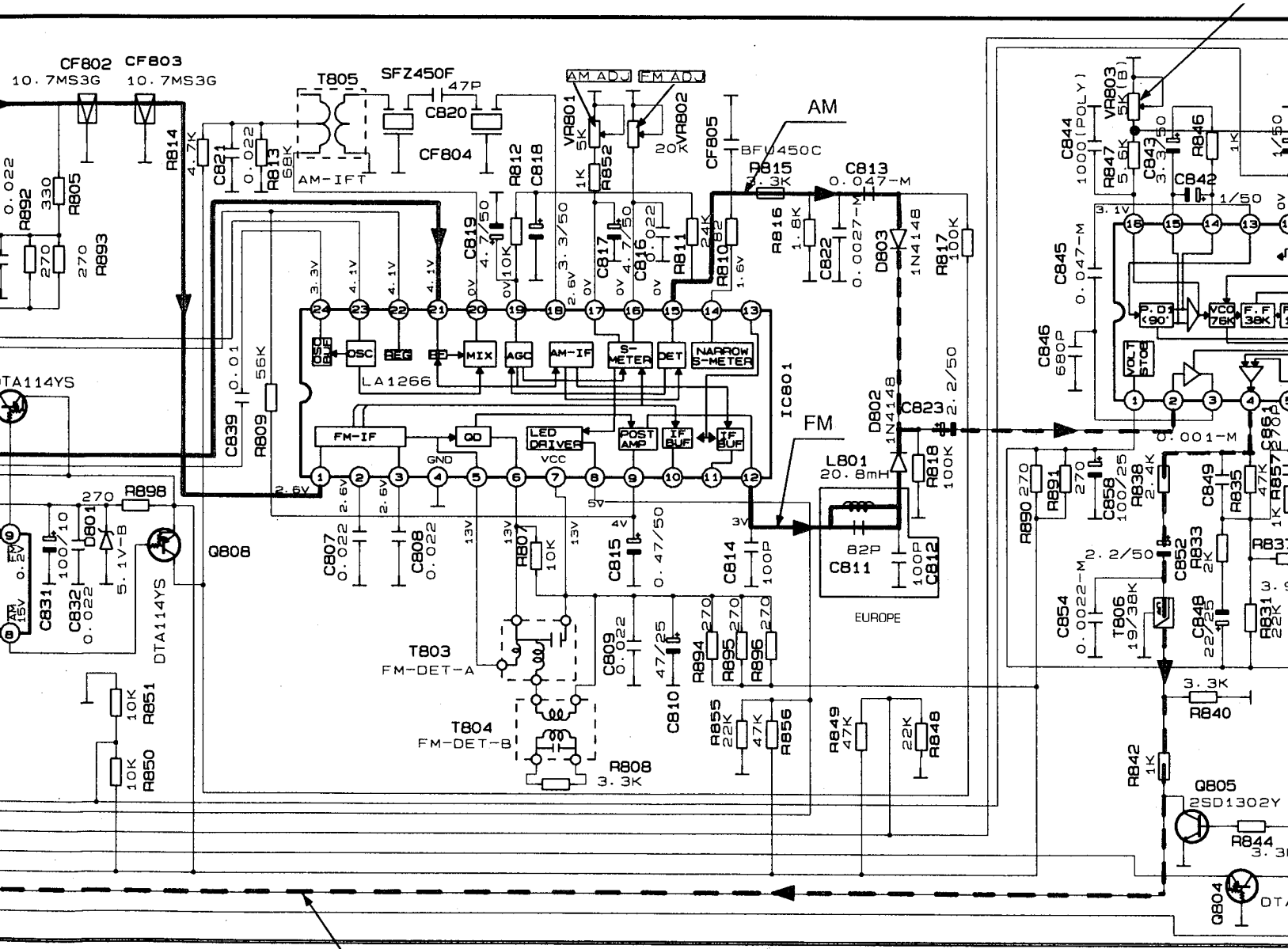

VCO ADJ
TP2
VR803 5K(B)
R847 5.6K
C843 3.3/50
R846 1K
C841 1/50
C842 1/50
C840 3.3/50
3.1V
0V
4.9V
LAMP DRIVE
IC802 HA12016

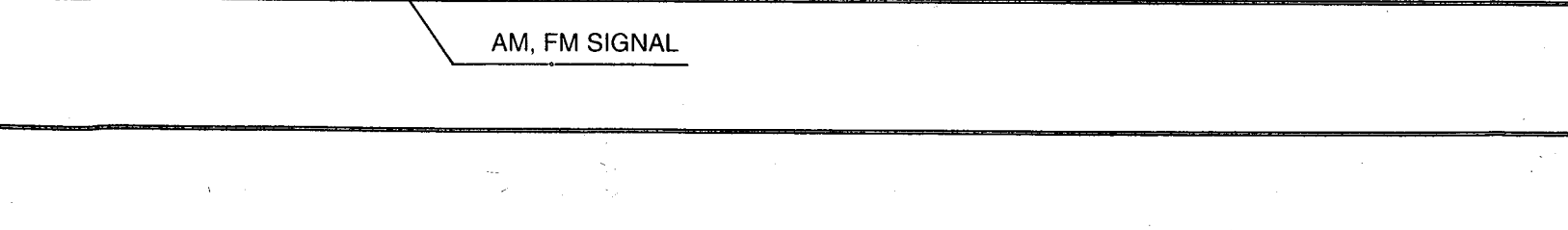

USA/CANADA VERSION
EUROPE VERSION
FROM MAIN B' D
AM SIGNAL
FM SIGNAL
ANT
TP1
IC802
IC803
LM7001
XT801
7.2MHz
Q801
Q802
Q803
KTC1923Y
K168
KTC3200BL
DTA114YS
FM-FRONT-END
FE407-G60
CF801
CF802
CF803
10.7MS3G
T801
T802
VD1
VD2
KV36Z
AM-OSC
AM-ANT
CNT106-1
FROM MAIN
Page(50)
SCHEMATIC
DIAGRAM(I)
CNT106-1
FROM MAIN
Page(50)
SCHEMATIC
DIAGRAM(I)

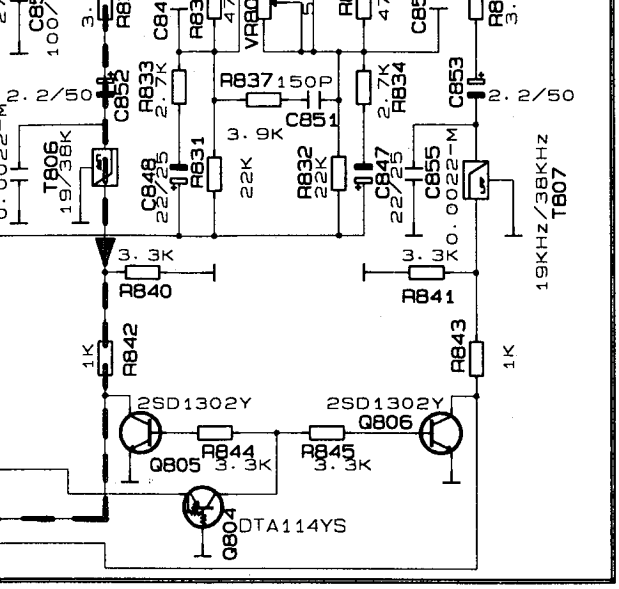


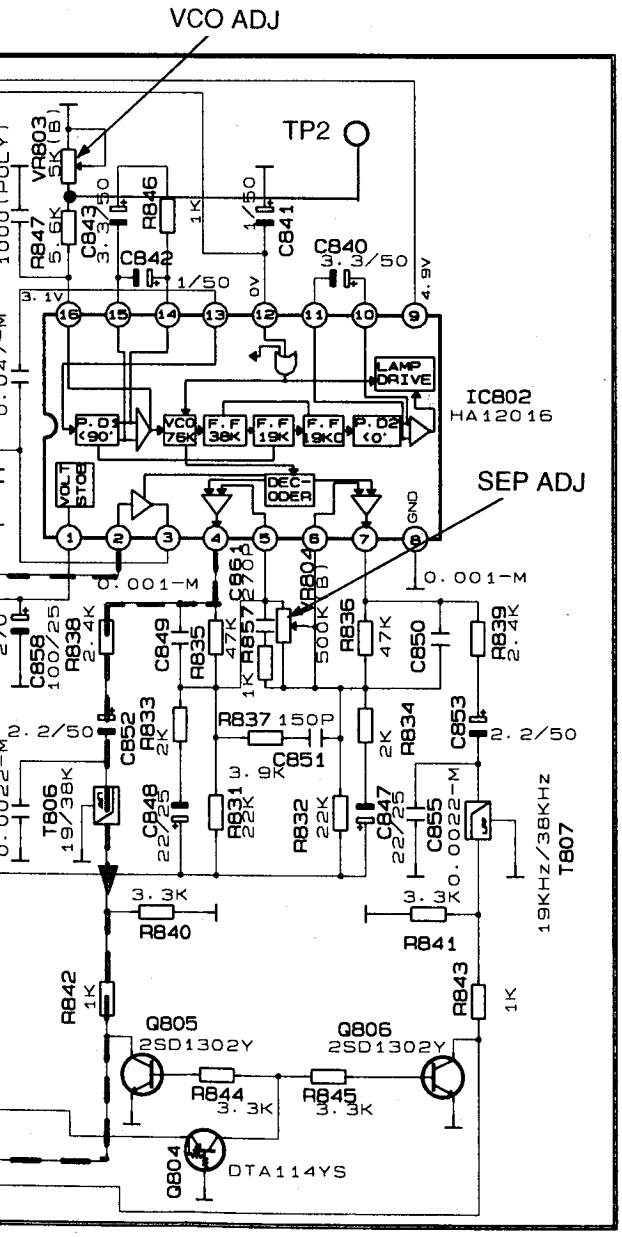
PCB14 TUNER

VCO AD









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