

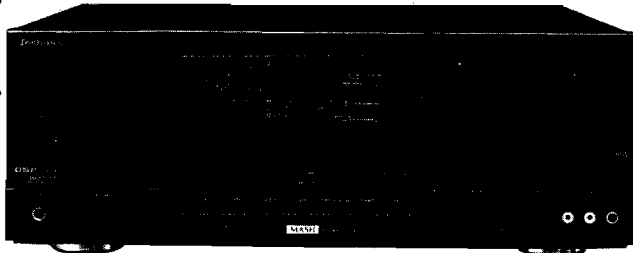
Service Manual

D.S.P. AV Control Stereo Receiver

Receiver



MASH*
multi-stage noise shaping



SA-GX910

Color

(K)...Black Type

Area

Country Code	Area	Color
(PP)	U.S.A./Canada.	(K)

- ※
- Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
 - MASH is a trademark of NTT.

SPECIFICATIONS (IHF'78)

■ AMPLIFIER SECTION

Rated minimum sine wave

RMS power output

20 Hz~20 kHz both channels driven

0.008% total harmonic distortion

125 W per channel (8 Ω)

1 kHz continuous power output

both channels driven

0.008% total harmonic distortion 130 W per channel (8 Ω)

Total harmonic distortion

rated power at 20 Hz~20 kHz 0.008% (8 Ω)

half power at 1 kHz 0.002% (8 Ω)

Dynamic headroom

1.2 dB (8 Ω)

SMPTE intermodulation distortion

0.01% (8 Ω)

Frequency response

PHONO RIAA standard curve ±0.8 dB

CD, VCR 1, VCR 2, VCR 3, VDP, DAT, TAPE

7 Hz~70 kHz, ±3 dB

Input sensitivity

PHONO 0.4 mV (3 mV, IHF '66)

CD, VCR 1, VCR 2, VCR 3, VDP, DAT, TAPE

27 mV (200 mV, IHF '66)

S/N (IHF, A)

PHONO 70 dB (80 dB, IHF '66)

CD, VCR 1, VCR 2, VCR 3, VDP, DAT, TAPE

70 dB (90 dB, IHF '66)

Phono maximum input voltage

160 mV (IHF '66)

Input impedance

PHONO 47 kΩ

CD, VCR 1, VCR 2, VCR 3, VDP, DAT, TAPE 22 kΩ

Tone controls

BASS 50 Hz, +10 dB~-10 dB

TREBLE 20 kHz, +10 dB~-10 dB

4 band parametric equalizer

+10 dB~-10 dB

Loudness control (volume at -30 dB)

50 Hz, +9 dB

Low frequency damping factor

30 (8 Ω)

Load impedance

A or B

4~8 Ω

A and B

8 Ω

■ SURROUND AMPLIFIER SECTION

Power output (Rear)

1 kHz, 2×30 W (8 Ω)

(T.H.D. 0.8 %)

Power output (Center)

100 Hz~15 kHz, 60 W (8 Ω)

(T.H.D. 0.8 %)

■ DIGITAL SECTION (fs=44.1 kHz, EIAJ-D)

Harmonic distortion (1 kHz)

0.005%

Frequency response

+0.3 dB, -0.3 dB (2 Hz~20 kHz)

■ FM TUNER SECTION

Frequency range

87.9~107.9 MHz

Sensitivity

11.2 dBf (2 μV, IHF '58)

50 dB quieting sensitivity

MONO

20.2 dBf (5.6 μV, IHF '58)

STEREO

40.2 dBf (56 μV, IHF '58)

Total harmonic distortion

MONO

0.2%

STEREO

0.3%

S/N

MONO

75 dB

STEREO

70 dB

Frequency response

20 Hz~15 kHz, +1 dB, -2 dB

Technics

SA-GX910

Alternate channel selectivity	65 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	50 dB
IF rejection at 98 MHz	90 dB
Spurious response rejection at 98 MHz	80 dB
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	-35 dB
38 kHz	-50 dB
Antenna terminals	75 Ω (unbalanced)

AM TUNER SECTION

Frequency range	530~1720 kHz
Sensitivity	20 μ V, 330 μ V/m
Selectivity	55 dB
Image rejection at 1000 kHz	40 dB
IF rejection at 1000 kHz	60 dB

VIDEO SECTION

Output voltage at 1 V input (unbalanced)	1 \pm 0,1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output Impedance	75 Ω (unbalanced)

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S VIDEO SECTION

Rated input, Rated output/Impedance	
Y	1 Vp-p, 1 Vp-p/75 Ω
C	0.286 Vp-p, 0.286 Vp-p/75 Ω

GENERAL

Power consumption	500 W, 650 VA
Power supply	AC 120V, 60Hz
Dimensions (W \times H \times D)	430 \times 158 \times 429 mm (16-15/16" \times 6-7/32" \times 16-7/8")
Weight	15.2 kg (33.4 lb.)

Notes:

1. Total harmonic distortion is measured by the digital spectrum analyzer.
2. Specifications are subject to change without notice. Weight and dimensions are approximate.

*Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licenced under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877.

"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

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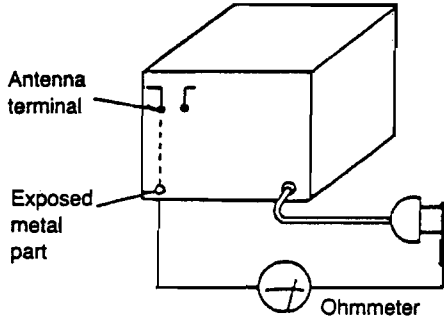
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

INSULATION RESISTANCE TEST

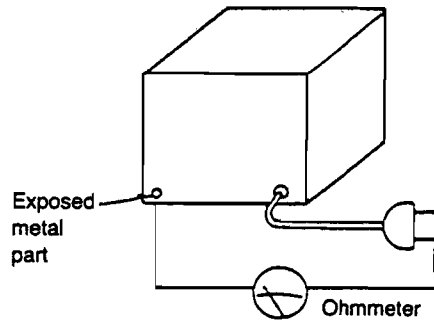
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3 M Ω and 5.2 M Ω to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance=3 MΩ-5.2 MΩ



(Fig. B)

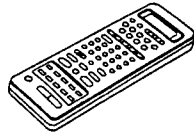
Resistance=Approx. ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

ACCESSORIES



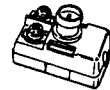
AC power supply cord (SJA172)..... 1 pc.



Remote control transmitter (EUR66636)..... 1 pc.



Batteries AAA, 1.5 V (R03/UM-4)..... 4 pcs.



Antenna plug..... 1 pc. (SJS8202)



FM indoor antenna (SSA270M)..... 1 pc.



AM loop antenna (SPB1163T)..... 1 pc.



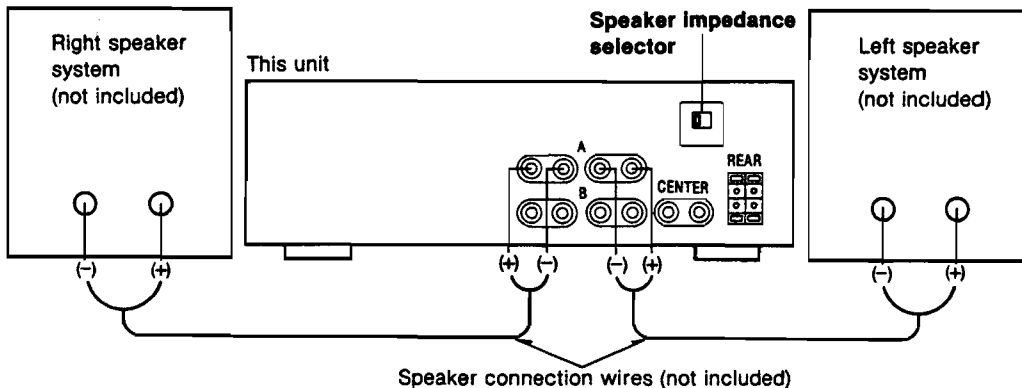
AM antenna holder 1 pc. (SMA233-1M)



Screws 2 pcs. (XTN3+10AFZ)

CONNECTIONS

Speakers connection



“B” terminals

For connection to a second pair of speakers.

“CENTER” terminals

For connection to center speakers.

“REAR” terminals

For connection to rear speakers.

Load impedance

If either the “A” or the “B” speaker systems are used:
 4~6 Ω: For speaker impedance of 4~6 Ω.

8 Ω: For speaker impedance of 8 Ω.

If both “A” and “B” speaker systems are used:

Set the speaker impedance selector to “8 Ω”.

If the impedance of both systems is 4 Ω, or one is 4 Ω and the other is 8 Ω, both speakers can not be used at the same time.

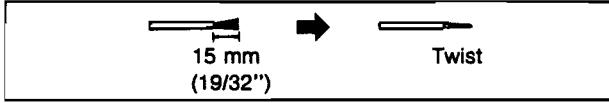
If center and rear speakers are used:

The load impedance must be 8 Ω.

● Connection of speaker cables

For "A", "B" and "CENTER" terminals

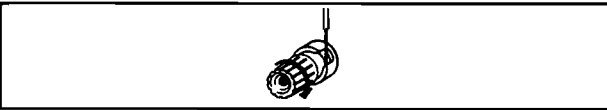
- ① Twist the core of the speaker wires.



- ② Turn counterclockwise 5 or 6 times to reveal hole in terminal shaft.



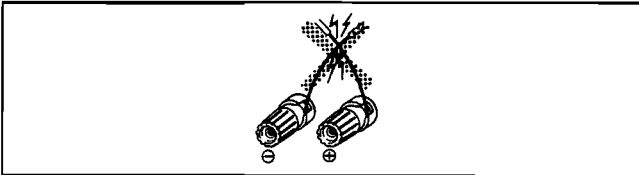
- ③ Insert the wire and tighten screw completely. Pull the wire to assure a proper connection.



Be sure to only connect positive (+) wires to positive (+) terminals, and negative (-) wires to negative (-) terminals.

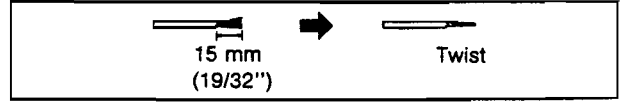
Notes:

To prevent damage to circuitry, never short-circuit positive (+) and negative (-) speaker wires.

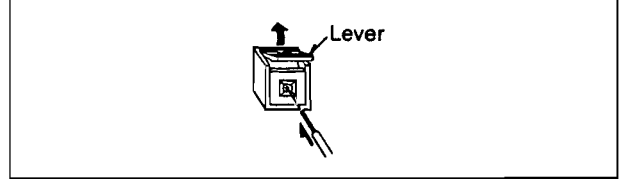


For "REAR" terminals

- ① Twist the core of the speaker wires.



- ② Open the lever, and insert the core until it can no longer be seen.

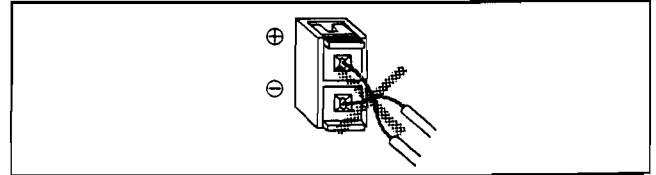


- ③ Close the lever, and pull the wire to assure a proper connection.

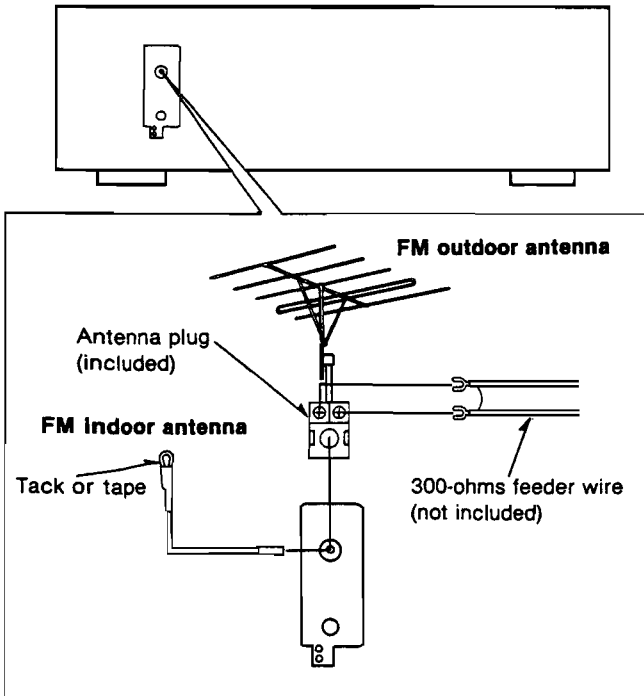
Be sure to only connect positive (+) wires to positive (+) terminals, and negative (-) wires to negative (-) terminals.

Notes:

To prevent damage to circuitry, never short-circuit positive (+) and negative (-) speaker wires.



● FM antenna connections



■ **FM Indoor antenna** (included)

Attach to a wall (using a tack or tape) facing in the direction of best reception.

For best reception sound quality:

An FM outdoor antenna is recommended.

- The tack should not contact the internal antenna wire.
- Disconnect the antenna if an FM outdoor antenna is installed.

■ **FM outdoor antenna** (not included)

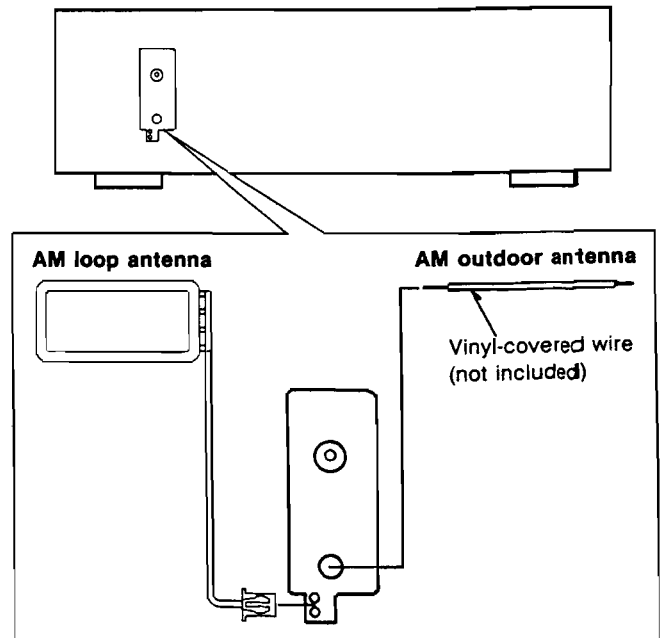
If the FM indoor antenna does not provide satisfactory reception, an outdoor antenna should be used.

The outdoor antenna may be required in a mountainous region, or if this unit is located inside a reinforced-concrete building, etc.

Connection wire from the antenna

Two types of wire are most commonly used for connection from the antenna: 300-ohms parallel feeder wire or 75-ohms coaxial cable. For best resistance to external interference noise, the use of 75-ohms coaxial cable is suggested.

● AM antenna connections



AM loop antenna (included)

Connect the AM loop antenna to the AM antenna terminals, and mount it vertically to a column, rack. Move the antenna toward the right or left to find the point of best reception.

- If this antenna is not properly installed, AM broadcasts will not be received.
- Be sure to connect the AM loop antenna even when an outdoor antenna is used.

Pay attention to the following points when mounting the antenna.

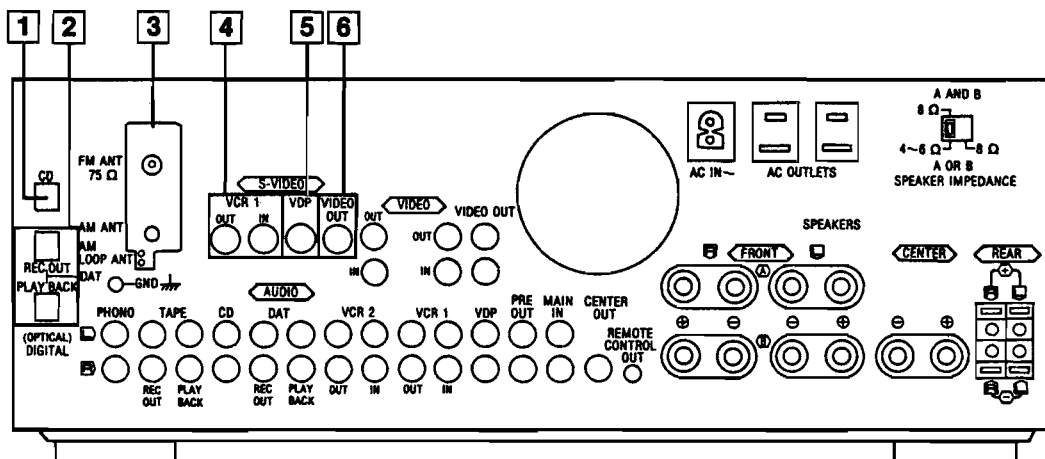
- Do not mount it horizontally (Doing so will impair reception).
- Do not mount it close to power cords, speaker wires or metal surfaces (Doing so will result in noise).
- Do not mount it close to a tape deck. When the tape deck is being used, chirping or beeping sounds may result.

AM outdoor antenna (not included)

An outdoor antenna may be required in a mountainous region, or if this unit is located inside a reinforced-concrete building, etc. Use 5–12 m (16–40 ft.) of vinyl-covered wire horizontally at the window, or convenient location.

When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

REAR PANEL TERMINALS AND FUNCTIONS

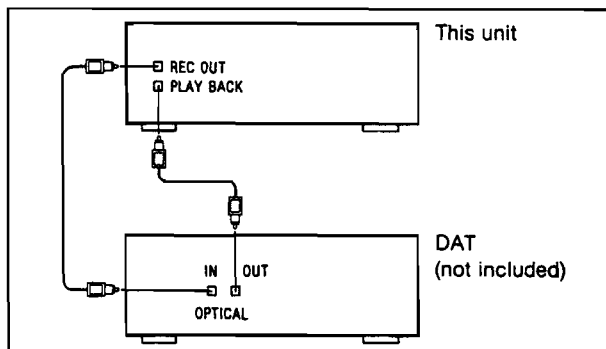


1 "CD" terminals (DIGITAL)

Connect an optical-fiber cable (not included) to the optical output terminal of the compact disc player. If this connection is made, the stereo connection cables do not need to be connected.

2 "DAT" terminals (DIGITAL)

Connect a digital audio tape deck (DAT) by using optical-fiber cables (not included). If this connection is made, the stereo connection cables do not need to be connected.

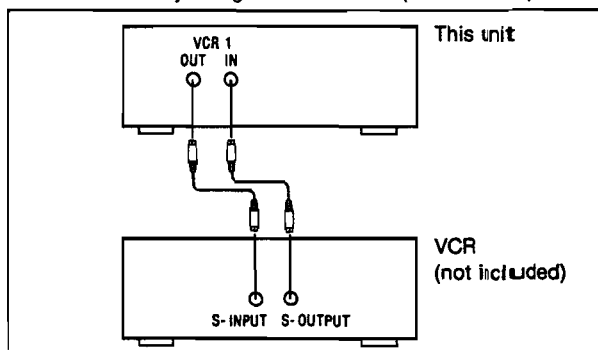


3 Antenna connection terminals

See pages 8–9 for detailed information.

4 S-video "VCR 1" terminals

Connect a VCR by using S video cables (not included).

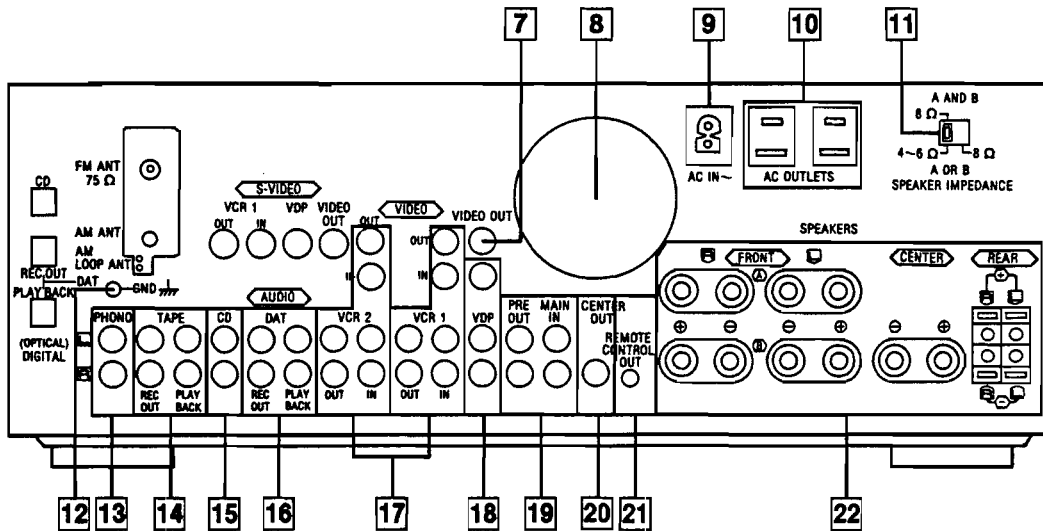


5 S-video "VDP" terminal

Connect an S video cable (not included) to the S output terminal of the video disc player.

6 S-video "VIDEO OUT" terminal

Connect an S video cable (not included) to the "S-VIDEO" input terminal of TV or projection TV.



7 "VIDEO OUT" terminal

Connect a video connection cable (not included) to the video input terminal of TV or projection TV.

12 "GND" terminal

Connect the turntable's ground wire to this terminal (if applicable).

8 Cooling fan

The cooling fan operates at high output power levels only.

13 "PHONO" terminals

Connect a turntable only. Do not connect any other sound source to these terminals.

9 AC IN socket (AC IN)

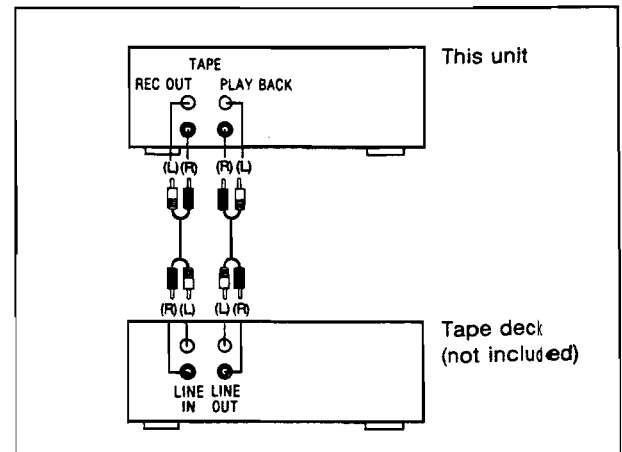
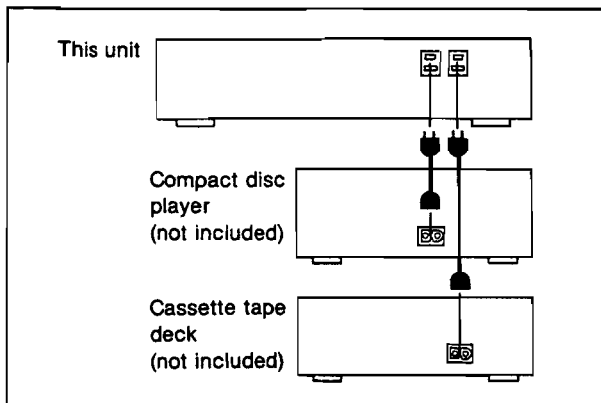
Connect this socket to an AC outlet on the wall using the power supply cord.

14 "TAPE" terminals

Connect a tape deck by using stereo connection cables (not included).

10 Outlets "SWITCHED"

Power to these outlets is controlled by the power switch of this unit. Audio equipment rated up to 80 W (total for all outlets) can be connected here. For proper remote-control operation, connect the power cords of the tape deck and compact disc player to these outlets as indicated below:



11 Speaker impedance selector

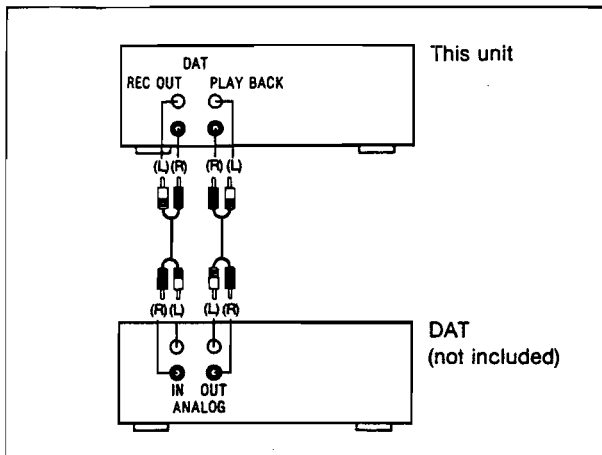
Before use, set to the correct impedance corresponding to the impedance of the speaker systems being used.

15 "CD" terminals

Connect a stereo connection cable (not included) to the "LINE OUT" terminal of the compact disc player.

16 "DAT" terminals

Connect a digital audio tape deck (DAT) by using stereo connection cables (not included).

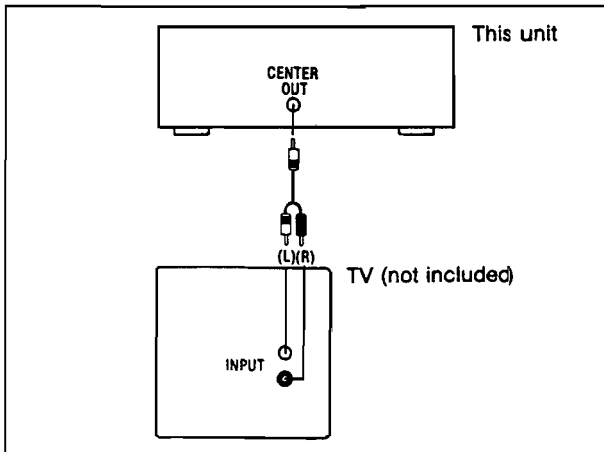


19 "PRE OUT/MAIN IN" terminals

Do not remove the shorting pins from these terminals unless you plan to use an independent preamplifier or main amplifier. (No sound will be heard if they are removed). To use it in this way, refer to the operating instructions for the additional amplifier or preamplifier that you plan to use.

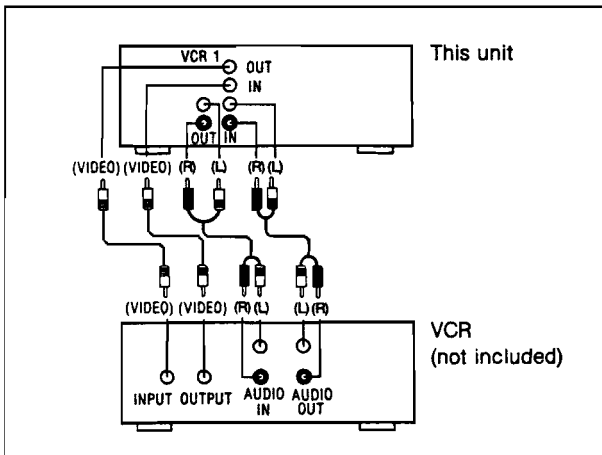
20 "CENTER OUT" terminal

This terminal is connected to use the speakers connecting to the external amplifier or to use the TV speakers as the center speaker. Connect a Y-adaptor cable (not included) to the audio input terminal of the external amplifier or TV. When using the speakers, after setting the center level of the main unit to MAX, adjust the volume on the external amplifier or the TV.



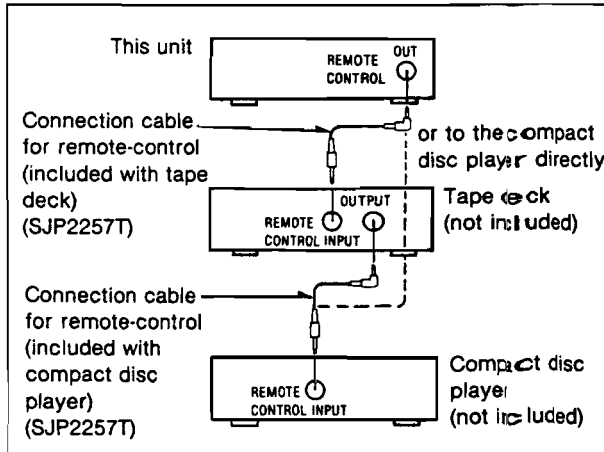
17 "VCR 1/VCR 2" terminals

Connect VCRs by using stereo connection cables (not included) and video connection cables (not included). The illustration below shows the VCR 1 connection.



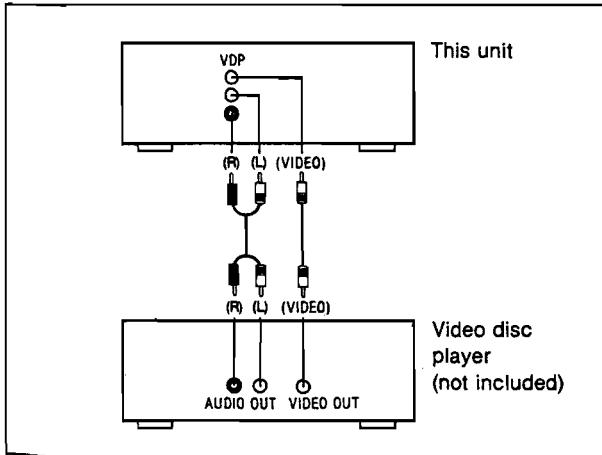
21 Remote-control OUT terminal (REMOTE CONTROL OUT)

This terminal can be used only with Technics components which have the appropriate remote-control terminal. (Consult your dealer for details.) Proper connection with remote-control connection cables SJP2257T will allow control of some functions from this unit's remote-control transmitter. Connect to a tape deck and/or compact disc player as shown below.



18 "VDP" terminals

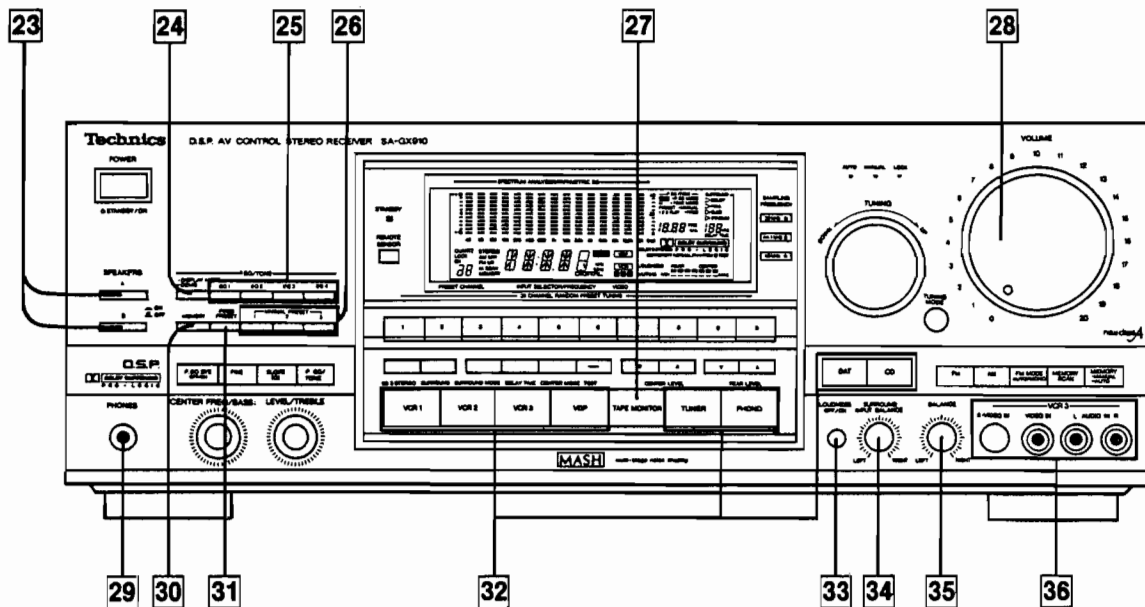
Connect a video disc player by using stereo connection cables (not included) and video connection cables (not included).



22 Speaker connection terminals

See page 3~4 for detailed information.

FRONT PANEL CONTROLS AND FUNCTIONS



Amplifier section

23 Speaker selectors (SPEAKERS)

These selectors are used to select the speaker system(s) (A and/or B).

24 Display mode select button (-DISPLAY MODE - DEMO)

This button is used to select either the spectrum analysis level ("Bar-type display" or "Dot display") or equalization level display.

If the button is pressed for 3 seconds or more, this unit will start a demonstration mode for the parametric EQ system. (Refer to page 25 for detailed information.)

25 Parametric EQ band select buttons

These buttons are used to select the band to be adjusted.

26 Equalization preset buttons (MANUAL PRESET)

These buttons are used for storing or recalling the curves made by the parametric EQ system.

27 Tape-monitor switch (TAPE MONITOR)

Press this button to listen to a tape or an audio source connected to the "TAPE" terminals.

To listen to some other source, press this button once again (so that the indicator is switched OFF).

28 Volume control (VOLUME)

29 Headphone jack (PHONES)

30 Parametric EQ system memory button (MEMORY)

This button enables the curves to be stored in the parametric EQ system memory.

31 Fixed preset button (FIXED PRESET)

This button is used to recall a "fixed preset" curve from the main unit's memory.

32 Input selector buttons

These buttons are used to select the sound source to be heard, such as a disc, radio broadcasts, etc. The selected sound source is shown on the audio input selector/frequency display.

The "PHONO" input selector has two functions: when pressed momentarily it selects "PHONO". when pressed and held for about 3 seconds, it de-activates the muting function.

33 Loudness switch (LOUDNESS)

Set to the "ON" position (the loudness indicator will illuminate); when listening to music at low volume. Auditory perception of sound in the low frequency range falls off at low volume, but when the switch is in this position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

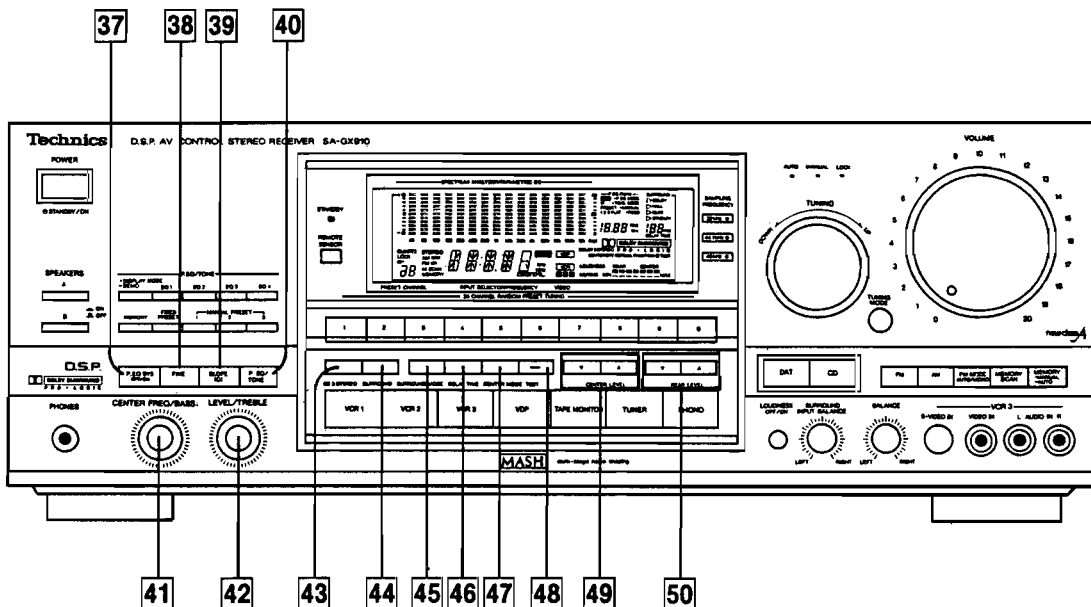
34 Dolby surround input balance control (SURROUND INPUT BALANCE)

This control is used to minimize dialogue leakage in the surround channel thereby optimizing the Dolby Surround decoding operation.

35 Balance control (BALANCE)

36 "VCR 3" terminals (VCR 3)

These terminals are used for tape-to-tape recording if a third VCR is connected here.



37 Parametric EQ system ON/OFF button (P. EQ SYS)

This button is used to turn the parametric EQ system ON or OFF.

38 Fine mode select button (FINE)

This button is used to fine-adjust the center frequency of the parametric EQ.

39 Slope changeover button [SLOPE (Q)]

This button is used to increase or decrease the slope of the parametric EQ curves.

40 Parametric EQ/tone mode select button (P.EQ/TONE)

This button is used to select parametric EQ mode or tone mode.

41 Center frequency select/bass control (CENTER FREQ/BASS)

This control is used to select the center frequency in the parametric EQ mode or to adjust the low-frequency sounds in the tone mode.

42 Frequency level/treble control (LEVEL/TREBLE)

This control is used to adjust the frequency level in the parametric EQ mode or the high-frequency sounds in the tone mode.

43 Dolby 3 stereo ON/OFF button (3 STEREO)

This button is used to activate the Dolby 3 stereo effect.

44 Surround ON/OFF button (SURROUND)

This button is used to activate the surround effect.

45 Surround mode select button (SURROUND MODE)

This button is used to select the desired surround mode.

46 Delay time adjustment button (DELAY TIME)

47 Center mode select button (CENTER MODE)

Each time you press this button, the center mode will change as follows: NORMAL → PHANTOM → CENTER OFF.

48 Test signal transmission button (TEST)

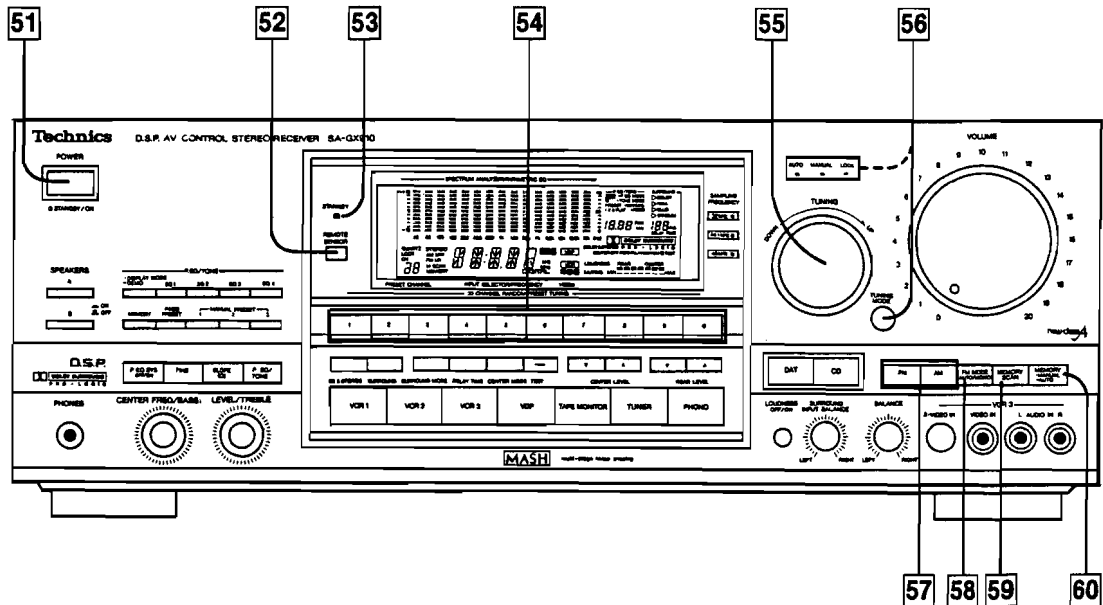
When using the center speaker and the rear speakers, press this button to activate the test signal. Then adjust the volume balance of the center speaker and rear speakers.

49 Center speaker level adjustment buttons (CENTER LEVEL)

These buttons are used to adjust the volume level of the center speaker.

50 Rear speaker level adjustment buttons (REAR LEVEL)

These buttons are used to adjust the volume level of the rear speakers.



Tuner section

51 Power "⏻ STANDBY/ON" switch (POWER/⏻ STANDBY/ON)

52 Remote-control signal receptor (REMOTE SENSOR)

Receives the signals from the remote-control.

53 "STANDBY" indicator (STANDBY)

This indicator illuminates when the power switch of this unit or that of the remote-control is switched "OFF". Its purpose is to alert the user of the constant supply voltage to the internal circuitry even with the power switch OFF.

54 Preset-tuning buttons (1 - 0) (30 CHANNEL RANDOM PRESET TUNING)

These buttons are used to preset broadcast frequencies into the memory of this unit and to recall the desired preset stations.

55 Tuning control (TUNING)

This control is used to select an FM or AM broadcast. When turning the control to the left, the frequency changes downward. When turning the control to the right, the frequency changes upward.

56 Tuning-mode selector/indicator (TUNING MODE)

Each time this selector is pressed, the selection changes, in sequence, to "AUTO", "MANUAL" and "LOCK".

AUTO:

In this position, broadcast channels are automatically selected when the tuning control is momentarily turned to the left or right to start the frequency changing.

MANUAL:

In this position, the tuning control can be used to locate the desired channel manually.

The frequency changes only as the tuning control is turned to the right or left.

LOCK:

In this position, the broadcast channel presently being heard is locked in, and other broadcast stations cannot be tuned to, even if the tuning control is turned.

57 Band selectors

FM: Press this button to listen to an FM broadcast.

AM: Press this button to listen to an AM broadcast.

58 FM mode selector (FM MODE)

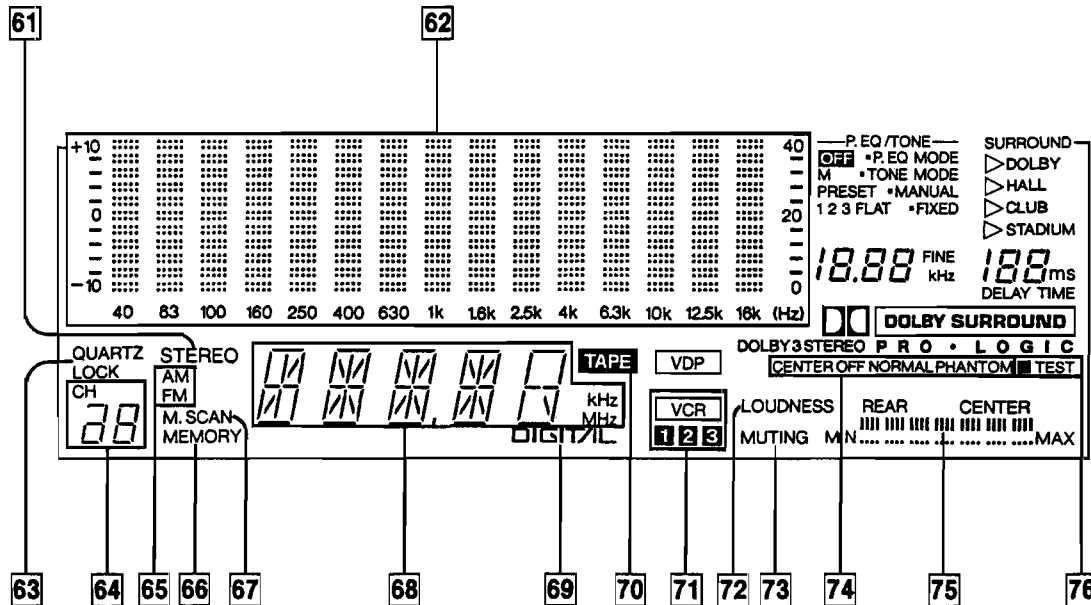
This unit automatically switches to the stereo mode when an FM stereo broadcast is received. This selector is used to select the mode (stereo or monaural) of FM broadcast signals.

59 Memory scan button (MEMORY SCAN)

This button is used to locate a desired broadcast station; each broadcast station is selected for about 3 seconds.

60 Memory button (MEMORY)

This button is used when presetting broadcast station frequencies into memory.



Display section

61 FM stereo indicator (STEREO)

This indicator automatically illuminates when an FM stereo broadcast is being received.

Note:

It will not illuminate if the FM mode selector is set to the monaural mode.

62 Spectrum analysis/parametric EQ level display (SPECTRUM ANALYZER/PARAMETRIC EQ)

This display shows the spectrum analysis level ("Bar-type display" or "Dot display") or equalization level.

63 Quartz-lock indicator (QUARTZ LOCK)

This indicator illuminates when the unit is tuned precisely to a broadcast station.

64 Channel display

This display shows the channel number selected by one of the preset-tuning buttons.

Also this display shows the channel number for about 3 seconds during memory scan operation.

65 Band indicators (AM/FM)

Indicates the selected band.

66 Memory indicator (MEMORY)

This indicator illuminates when the memory button is pressed.

67 Memory scan indicator (M. SCAN)

This indicator illuminates when the memory scan button is pressed.

68 Audio input selector/frequency display (INPUT SELECTOR/FREQUENCY)

Displays the selected source or broadcast frequency.

69 Digital indicator

This indicator will illuminate when listening to compact discs or digital audio tapes through optical-fiber cable connections.

70 Tape indicator (TAPE)

This indicator will illuminate when the tape-monitor switch is pressed.

71 VCR display (VCR)

This display shows the VCR to be used.

72 Loudness indicator (LOUDNESS)

This indicator will illuminate when the loudness switch is pressed.

73 Muting indicator (MUTING)

This indicator will illuminate when the muting button (on the remote-control transmitter) is pressed.

74 Center mode indicators

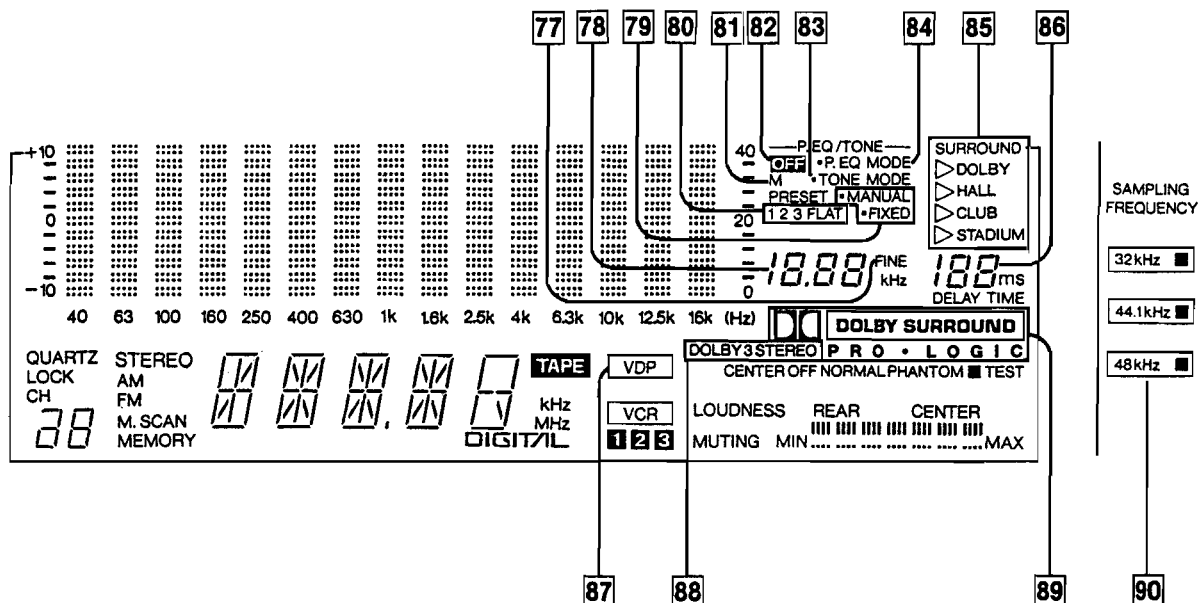
These indicators show the center mode selected by the center mode select button.

75 Rear/center level indicator

Displays the level adjusted by the center speaker level adjustment button or rear speaker level adjustment button.

76 Test signal indicator (TEST)

This indicator illuminates when the test signal transmission button is pressed in the Dolby Pro-Logic Surround mode and the Dolby 3 stereo mode.

**77 Fine mode indicator (FINE)**

This indicator illuminates when the fine mode select button is selected in the parametric EQ mode.

78 Parametric EQ system center frequency display

It displays the center frequency of the curves in the parametric EQ mode arranged by the user with the parametric EQ system or the curves pre-stored in this unit's memory.

79 Parametric EQ system operation select indicators (MANUAL/FIXED)

One of these indicators will illuminate in accordance with the fixed preset button or equalization preset buttons setting.

80 Manual/flat preset indicators (1 2 3 FLAT)

It displays the type of curve selected with the equalization preset buttons or fixed preset button in the parametric EQ mode.

81 Parametric EQ system memory indicator (M)

This indicator illuminates when the parametric EQ system memory button is pressed in the parametric EQ mode.

82 Parametric EQ system off indicator (OFF)

This indicator illuminates when the parametric EQ system is off.

83 Tone mode indicator (TONE MODE)

This indicator illuminates when the parametric EQ/tone mode select button is set to the tone mode.

84 Parametric EQ mode indicator (P.EQ MODE)

This indicator illuminates when the parametric EQ/tone mode select button is set to the parametric EQ mode.

85 Surround mode display (SURROUND)

This display shows the surround mode selected by the surround mode select button.

86 Delay time display (DELAY TIME)

This display shows the length of the delay time selected for the surround feature.

87 VDP indicator (VDP)

This indicator illuminates when the input selector marked "VDP" is pressed.

88 Dolby 3 stereo indicator (DOLBY 3 STEREO)

This indicator illuminates when the Dolby 3 stereo ON/OFF button is switched ON.

89 Dolby Pro-Logic Surround indicator (DOLBY SURROUND PRO-LOGIC)

This indicator illuminates when the Dolby Pro-Logic Surround mode is selected.

90 Sampling frequency indicators (SAMPLING FREQUENCY)

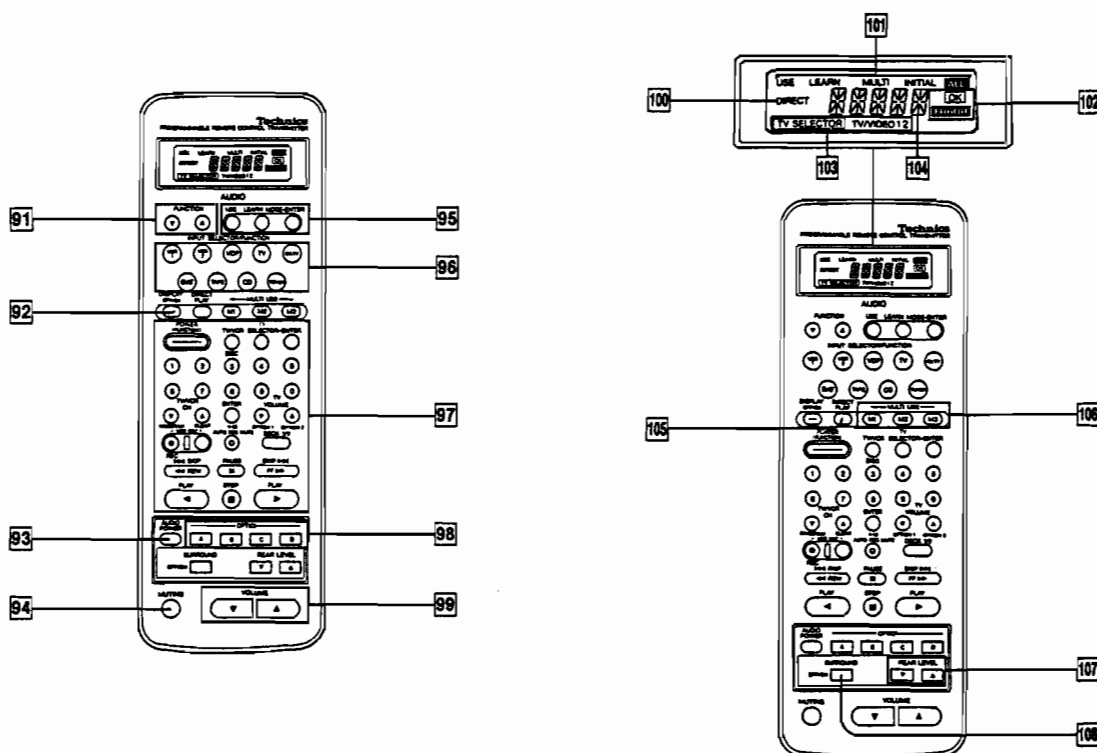
The appropriate indicator will illuminate whenever a digital signal with one of the sampling frequencies listed below is detected at a "DIGITAL" terminal on the rear panel of this unit.

32 kHz: For digital signals with the sampling frequency of 32 kHz mode

44.1 kHz: CD and others

48 kHz: For digital signals with the sampling frequency of 48 kHz mode

Note: Some digital components (compact disc player, etc.) emit digital signals whenever their power switches are "on".



Remote control section

91 Function select keys

These keys are used to select the component to be controlled by this remote-control transmitter.

92 Display OFF/ON key

This key is used to switch ON or OFF the display of this remote-control transmitter.

It automatically goes "OFF" when the display is not used for approximately 18 minutes.

93 Audio power key

This key is used to switch ON or OFF the power of the receiver.

94 Muting key

This key is used to temporarily reduce the volume level. The volume level is attenuated by 20 dB (approx. 1/10). Press once again to resume to the previous volume level.

95 Operation mode select keys

These keys are used to select the operation mode to be operated by this remote-control transmitter.

USE: Select the "USE" key to set this remote-control transmitter for normal operation.

LEARN MODE: Select the "LEARN MODE" key to set this remote-control transmitter to the "LEARN" mode.

ENTER: Select the "ENTER" key to select the mode. (See item 101.)

96 Input/function select keys

These keys are used to select the input source at the component and to select the component to be controlled by this remote-control transmitter.

97 Operation keys

These keys are used to select the desired function of the selected component.

98 Optional keys

These keys are used to memorize a code to be used frequently.

99 Volume keys

These keys are used to adjust the volume level.

100 Direct indicator

This indicator illuminates when this remote-control transmitter is set to the "DIRECT PLAY" mode.

101 Operation mode indicators

One of these indicators shows the operation mode to be operated by this remote-control transmitter.

102 OK / ERROR indicators

103 TV input indicator

104 Component display

This display shows which of the component functions has been selected.

The display shows "FULL" if memory capacity is exceeded when signals from another remote-control transmitter are memorized.

105 Direct play key

This key is used to change this remote-control transmitter to the "DIRECT PLAY" mode.

106 Multi-function keys

These keys are used to memorize a series of codes (up to 8 codes) and transmit these codes in a single operation.

107 Rear speaker volume keys

These keys are used to adjust the volume level of the rear speaker systems.

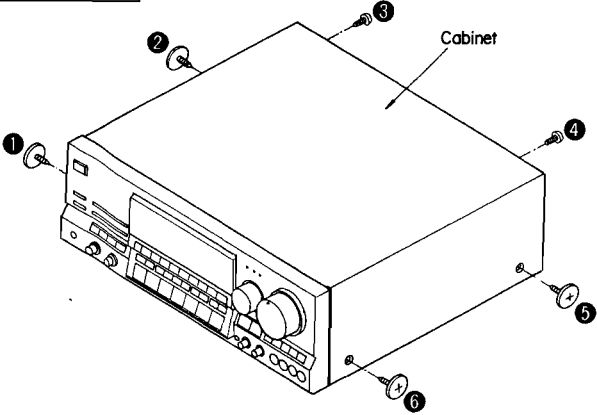
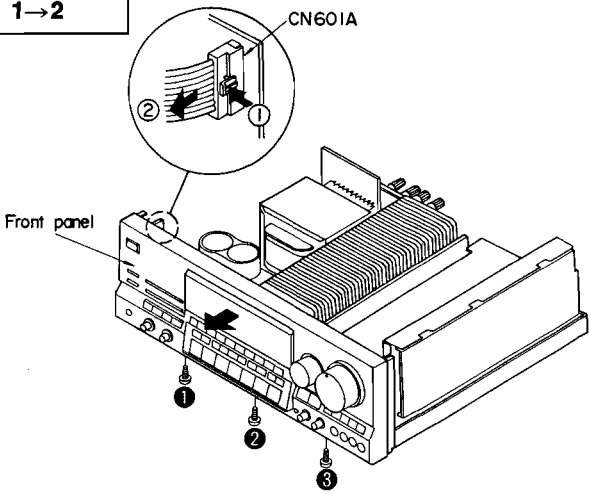
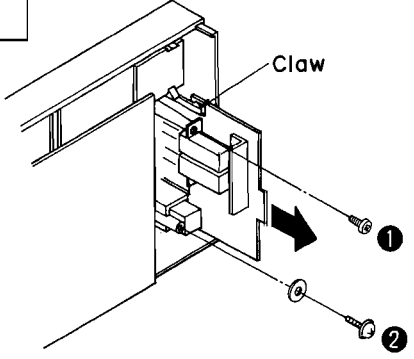
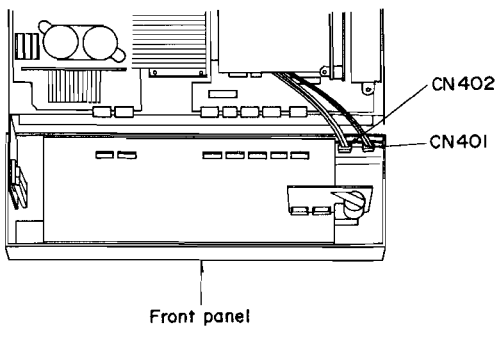
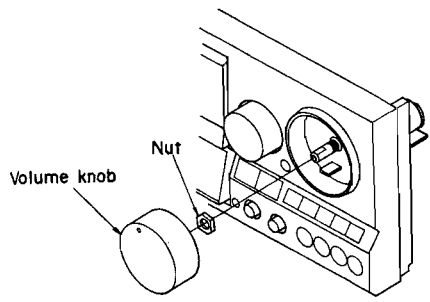
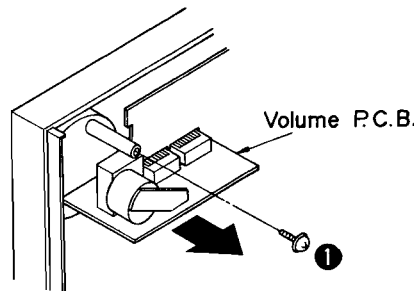
108 Surround ON/OFF key

This key is used to activate the surround effect. When this key is switched OFF, no sound will be heard from the center speaker and surround speaker systems.

DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"

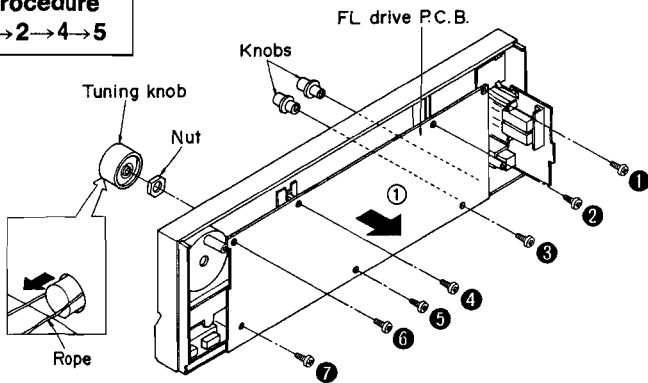
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the front panel
Procedure 1	 <p>•Remove the 6 screws (①~⑥).</p>	Procedure 1→2	 <ol style="list-style-type: none"> 1. Remove the 3 screws (①~③). 2. Remove the 1 connector (CN601A). 3. Remove the front panel in the direction of arrow.
Ref. No. 3	Removal of the speaker switch/ headphones jack P.C.B.	 <ol style="list-style-type: none"> 1. Remove the 2 screws (①, ②). 2. Release the 1 claw. 	 <ol style="list-style-type: none"> 4. Remove the 2 connectors (CN401, 402)
Procedure 1→2→3			Ref. No. 4
Procedure 1→2→4	 <ol style="list-style-type: none"> 1. Pull out the volume knob. 2. Remove the nut. 	 <ol style="list-style-type: none"> 3. Remove the 1 screw (①). 4. Remove the volume P.C.B. in the direction of arrow. 	

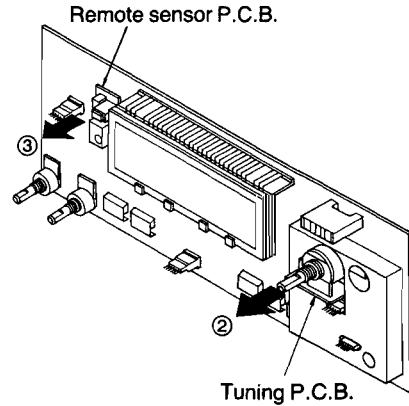
Ref. No
5

Removal of the FL drive P.C.B. tuning P.C.B. and remote sensor P.C.B.

Procedure
1→2→4→5



1. Pull out the tuning knob.
2. Remove the nut.
3. Pull out the 2 knobs.
4. Remove the 7 screws (①~⑦).
5. Remove the FL drive P.C.B. in the direction of arrow ①.

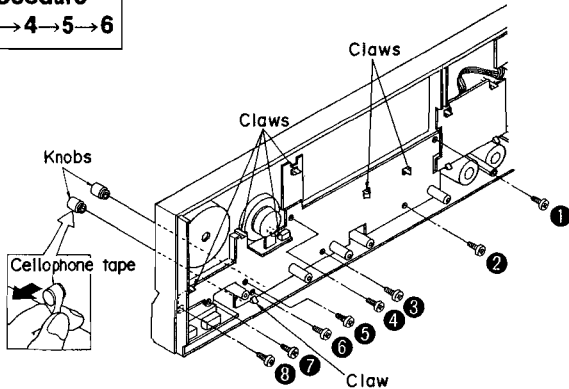


6. Remove the tuning P.C.B. in the direction of arrow ②.
7. Remove the remote sensor P.C.B. in the direction of arrow ③.

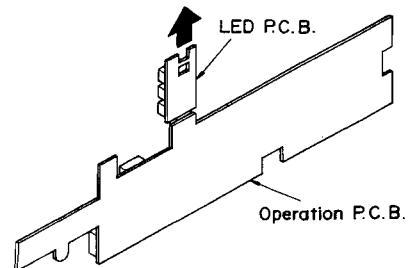
Ref. No
6

Removal of the operation P.C.B. and LED P.C.B.

Procedure
1→2→4→5→6



1. Pull out the 2 knobs.
2. Remove the 8 screws (①~⑧).
3. Release the 7 claws.

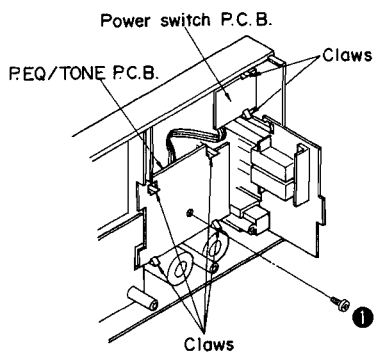


4. Remove the LED P.C.B. in the direction of arrow.

Ref. No
7

Removal of the power switch P.C.B. and P.EQ/TONE P.C.B.

Procedure
1→2→4→5→7



■ **POWER SWITCH P.C.B.**

- Release the 2 claws.

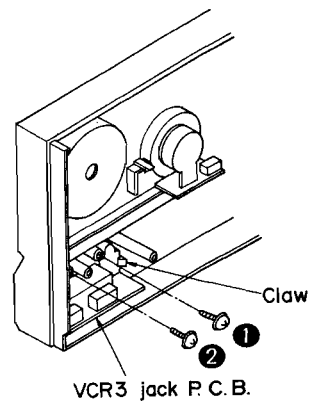
■ **P.EQ/TONE P.C.B.**

1. Remove the 1 screw (①).
2. Release the 4 claws.

Ref. No
8

Removal of the VCR3 jack P.C.B.

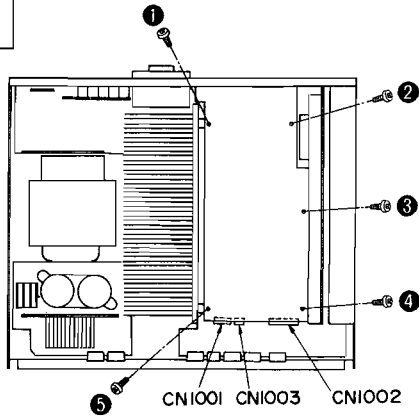
Procedure
1→2→4→5→
6→8



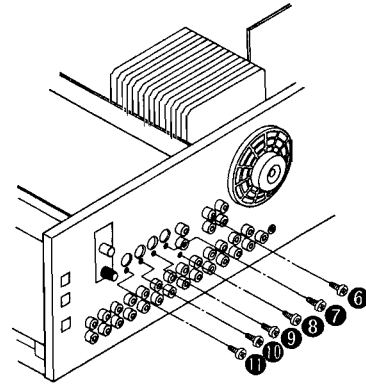
1. Remove the 2 screws (①, ②).
2. Release the 1 claw.

Ref. No. 9 **Removal of the video P.C.B.**

Procedure
1→2→9



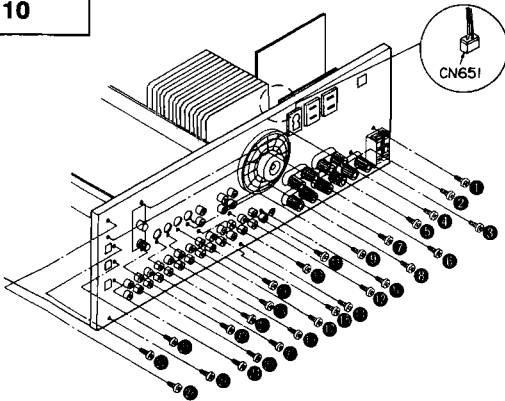
1. Remove the 3 flat cables (CN1001, CN1002, CN1003).
2. Remove the 5 screws (1~5).



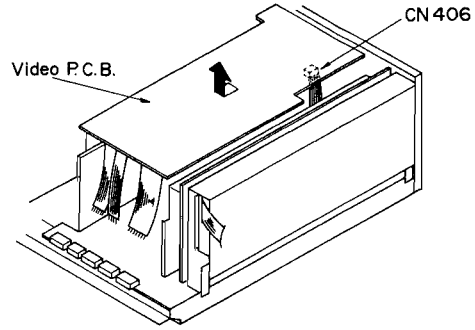
3. Remove the 6 screws (6~11).

Ref. No. 10 **Removal of the rear panel.**

Procedure
1→10



1. Remove the 1 connector (CN651).
2. Remove the 28 screws (1~28).



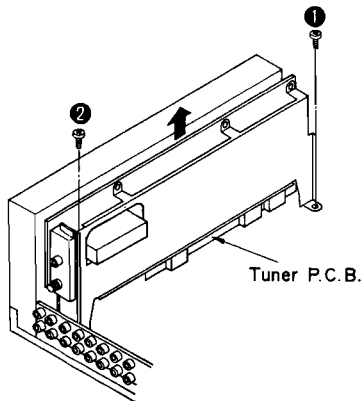
4. Remove the video P.C.B. in the direction of arrow.
5. Remove the 1 flat cable (CN406).

How to remove the flat cable

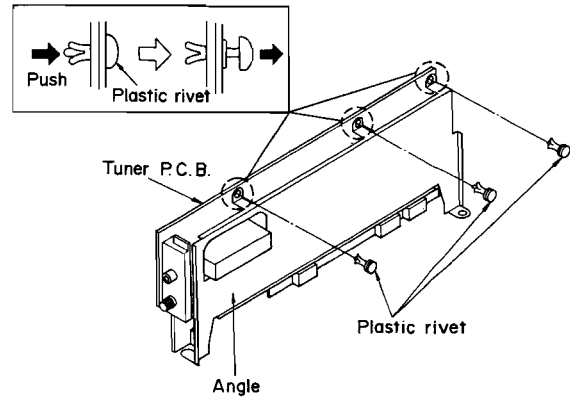
1. Lift the connector.
2. Pull out the flat cable.

Ref. No. 11 **Removal of the tuner P.C.B.**

Procedure
1→2→9→10→
11

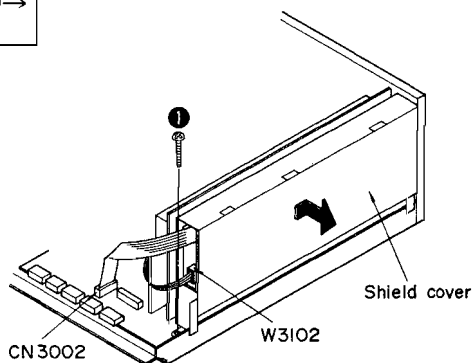


1. Remove the 2 screws (1, 2).
2. Remove the tuner P.C.B. in the direction of arrow.

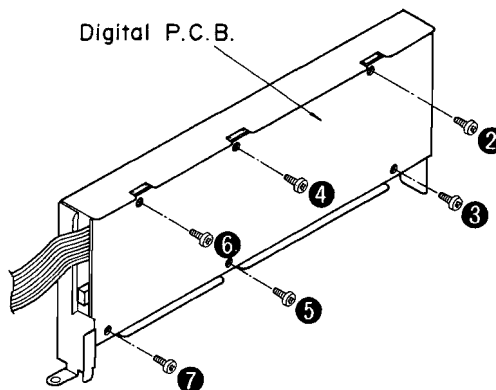


3. Remove the plastic rivet.

Ref. No. 12	Removal of the digital P.C.B.
Procedure 1→2→9→10→ 12	



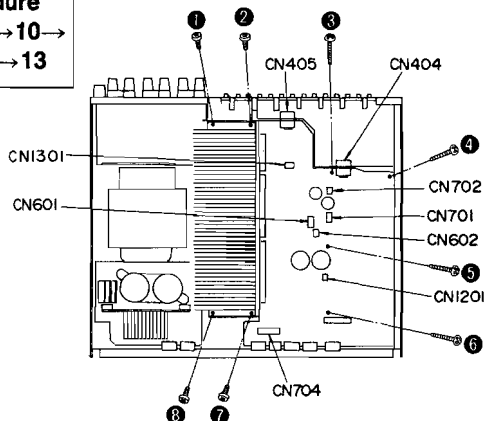
1. Remove the 1 connector (W3102).
2. Remove the 1 flat cable (CN3002).
3. Remove the 1 screw (1).



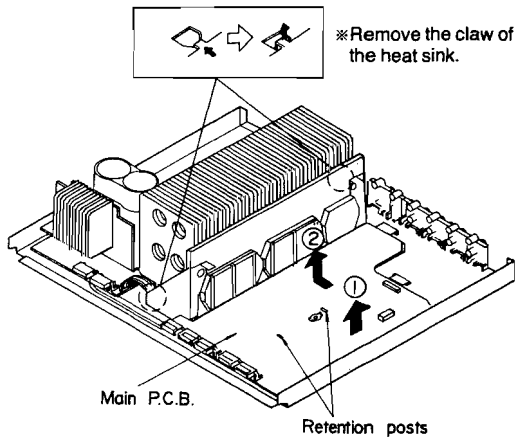
5. Remove the 6 screws (2~7).

Ref. No. 13	Removal of the main P.C.B.
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Procedure 1→2→9→10→ 11→12→13



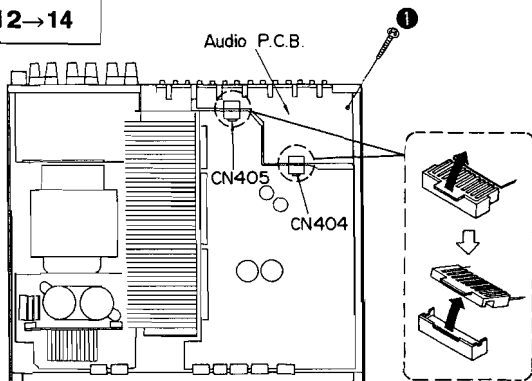
1. Remove the 4 flat cables (CN701, CN702, CN704, CN1301).
2. Remove the 5 connectors (CN404, CN405, CN601, CN602, CN1201).
3. Remove the 8 screws (1~8).



4. Remove the main P.C.B. from the retention post to lift it toward the arrow ①.
5. Remove the main P.C.B. in the direction of arrow ②.

Ref. No. 14	Removal of the audio P.C.B.
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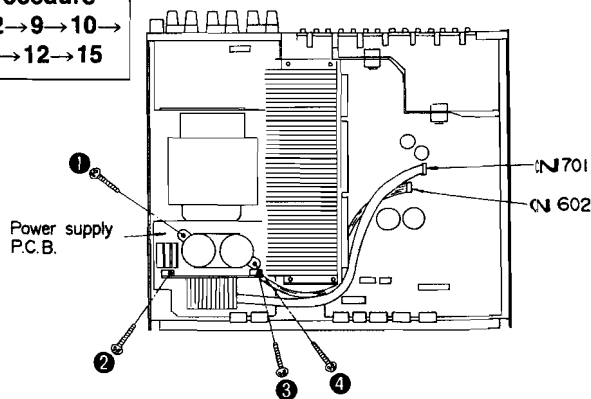
Procedure 1→2→9→10→ 11→12→14



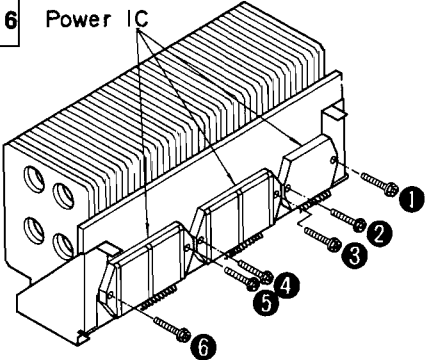
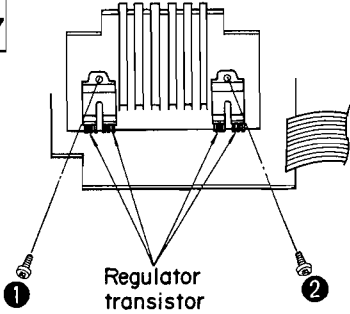
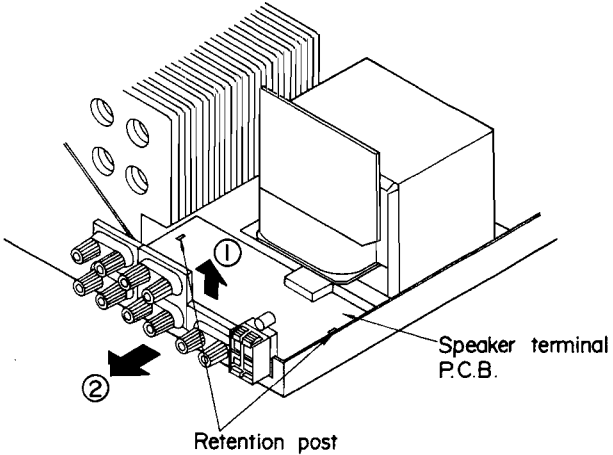
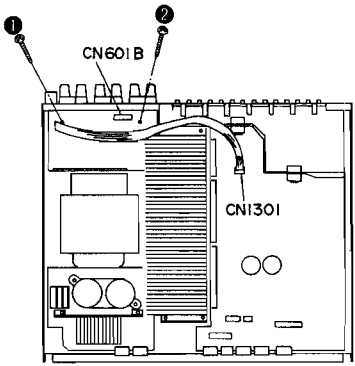
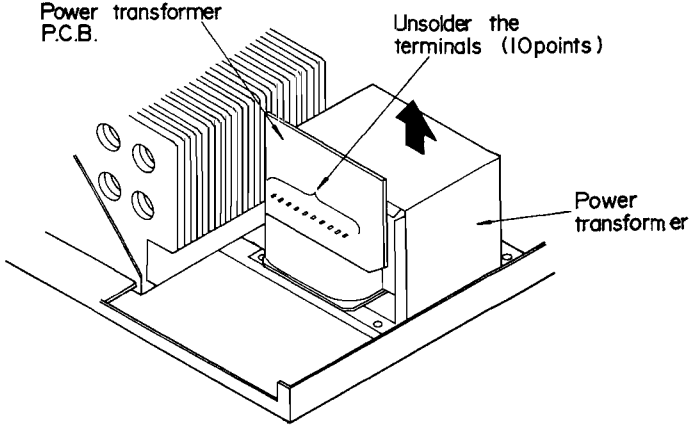
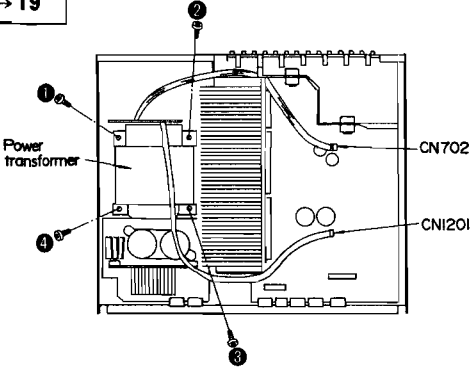
1. Remove the 2 connectors (CN404, CN405).
2. Remove the 1 screw (1).

Ref. No. 15	Removal of the power supply P.C.B.
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Procedure 1→2→9→10→ 11→12→15

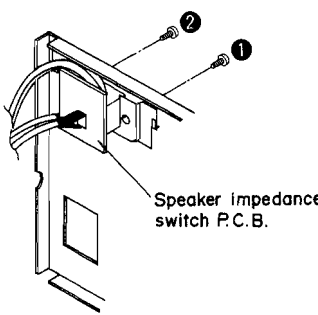


1. Remove the 1 flat cable (CN701).
2. Remove the 1 connector (CN602).
3. Remove the 4 screws (1~4).

<p>Ref. No. 16</p>	<p>Removal of the power IC</p>	<p>Ref. No. 17</p>	<p>Removal of the regulator transistor</p>
<p>Procedure 1→2→9→10→ 11→12→13→16</p>	 <p>Power IC</p> <ol style="list-style-type: none"> 1. Unsolder the power IC. 2. Remove the 6 screws (①~⑥). <p>●When mounting the power IC. Apply silicone compound (SZZ0L15) to the rear side of power IC.</p>	<p>Procedure 1→2→9→10→ 11→12→15→17</p>	 <p>Regulator transistor</p> <ol style="list-style-type: none"> 1. Unsolder the regulator transistor. 2. Remove the 2 screws (①, ②). <p>●When mounting the regulator transistor. Apply silicone compound (SZZ0L15) to the rear side of regulator transistor.</p>
<p>Ref. No. 18</p>	<p>Removal of the speaker terminal P.C.B.</p>	 <p>Speaker terminal P.C.B.</p> <p>Retention post</p> <ol style="list-style-type: none"> 4. Remove the speaker terminal P.C.B. from the retention post to lift it toward the arrow ①. 5. Remove the speaker terminal P.C.B. in the direction of arrow ②. 	
<p>Procedure 1→2→9→10→ 11→12→18</p>	 <p>CN601B</p> <p>CN1301</p> <ol style="list-style-type: none"> 1. Remove the 1 flat cable (CN1301). 2. Remove the 1 connector (CN601B). 3. Remove the 2 screws (①, ②). 		
<p>Ref. No. 19</p>	<p>Removal of the power transformer and power transformer P.C.B.</p>	 <p>Power transformer P.C.B.</p> <p>Unsold the terminals (10points)</p> <p>Power transformer</p> <ol style="list-style-type: none"> 4. Unsolder the terminals of the power transformer. 5. Remove the power transformer in the direction of arrow. 	
<p>Procedure 1→2→9→10→ 11→12→19</p>	 <p>Power transformer</p> <p>CN702</p> <p>CN1201</p> <ol style="list-style-type: none"> 1. Remove the 1 flat cable (CN702). 2. Remove the 1 connector (CN1201). 3. Remove the 4 screws (①~④). 		

Ref. No. 20	Removal of the speaker impedance switch P.C.B.	Ref. No. 21	Removal of the AC IN/AC OUTLETS P.C.B.
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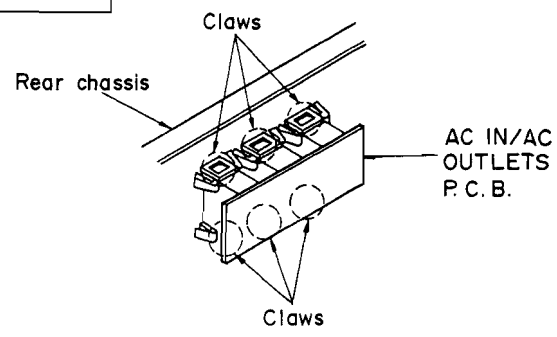
Procedure 1→20



Speaker impedance switch P.C.B.

1. Remove the 2 screws (1, 2).
2. Remove the speaker impedance switch P.C.B. in the direction of arrow.

Procedure 1→10→21

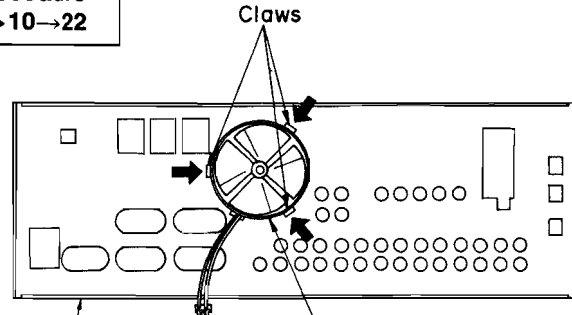


AC IN/AC OUTLETS P.C.B.

- Release the 6 claws.

Ref. No. 22	Removal of the fan motor
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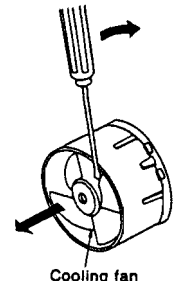
Procedure 1→10→22



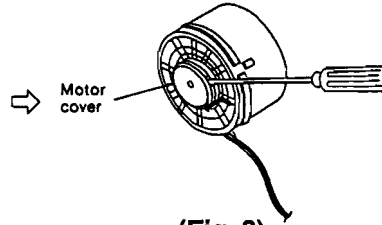
Rear chassis Fan motor

(Fig. 1)

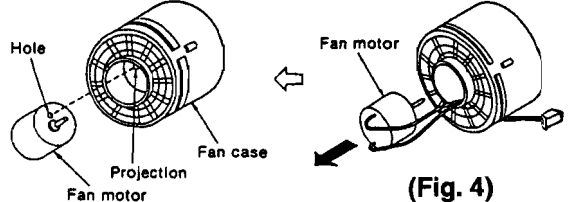
1. Release the 3 claws. (See Fig. 1)
2. Insert a screwdriver at the root of the cooling fan. Force it out of the motor shaft. (See Fig. 2)
3. Remove the motor cover by used ⊖ screwdriver. (See Fig. 3)
4. Remove the motor from the fan casing. (See Fig. 4)
5. When mounting the motor fan, align the fan casing's projection with the hole of the fan motor. (See Fig. 5)



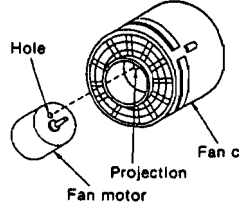
Cooling fan
(Fig. 2)



Motor cover
(Fig. 3)



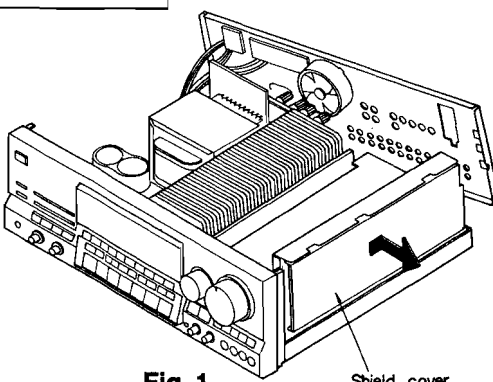
Fan motor
(Fig. 4)



Hole Projection Fan case
Fan motor
(Fig. 5)

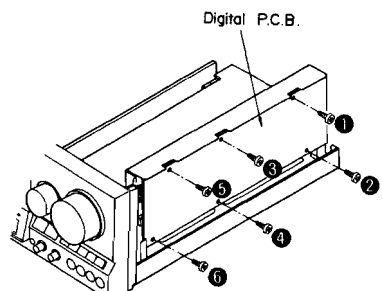
Ref. No. 23	How to check the digital P.C.B.
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Procedure 1→10→23

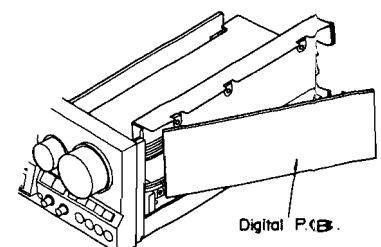


Shield cover
Fig. 1

1. Remove the shield cover in the direction of arrow.



Digital P.C.B.
Fig. 2



Digital P.C.B.
Fig. 3

2. When checking the soldered surface of the digital P.C.B. and replacing the parts, do as shown in the figure above.

Ref. No. 24
How to check the tuner P.C.B.

Procedure
1→10→24

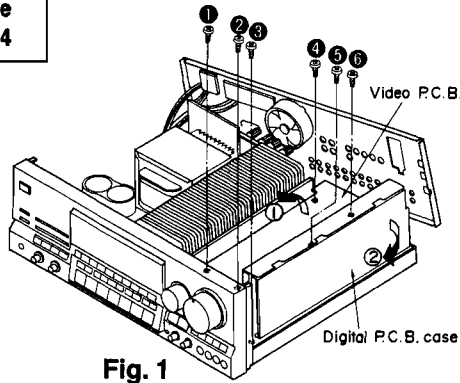
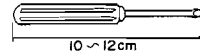


Fig. 1

1. Remove the 6 screws (①~⑥).
2. Raise the video P.C.B. toward to arrow ①.
3. Move the digital P.C.B. case toward to arrow ②.



※When adjusting the tuner P.C.B., please use the screw driver like left figure.

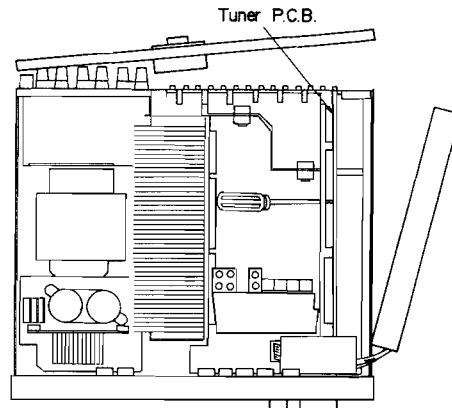


Fig. 2

4. When checking the soldered surface of the digital P.C.B. and replacing the parts, do as shown in the Fig. 2.

Ref. No. 25
How to check the FL drive P.C.B. and operation P.C.B.

Procedure
1→2→25

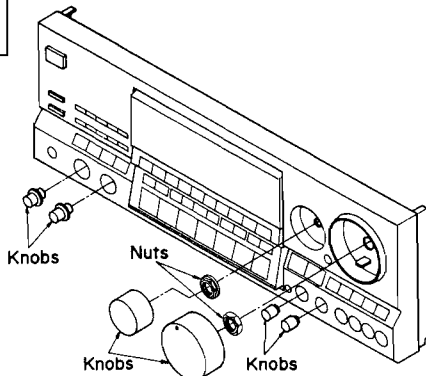


Fig. 1

1. Remove the 6 knobs.
2. Remove the 2 nuts.

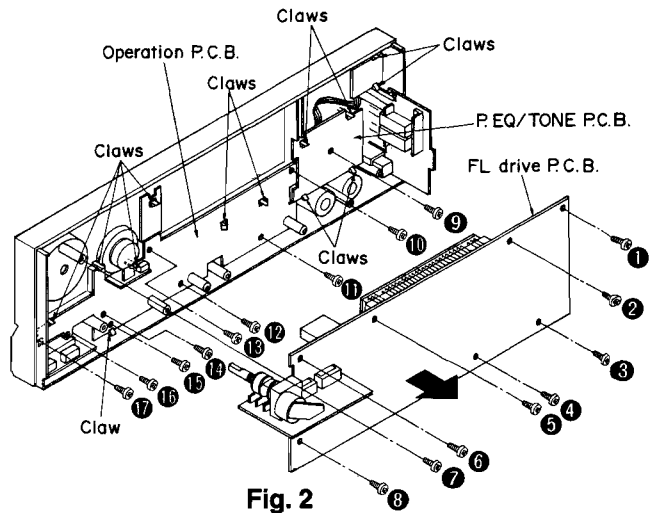


Fig. 2

3. Remove the 8 screws (①~⑧).
4. Remove the FL drive P.C.B. in the direction of arrow.
5. Remove the 9 screws (⑨~⑰).
6. Remove the 13 claws.
7. Remove the operation P.C.B., P.EQ/TONE P.C.B. and power switch P.C.B.

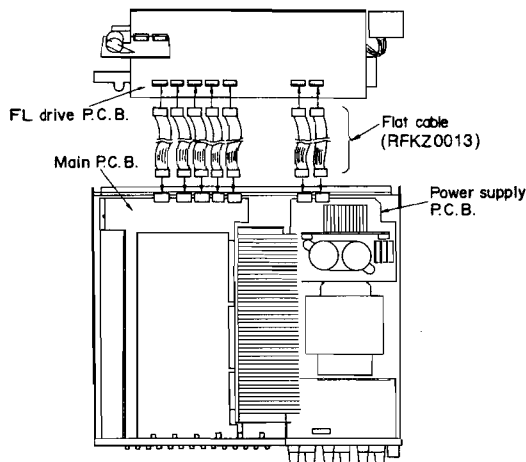


Fig. 4

9. Connect the main P.C.B. and connector of power supply P.C.B. and connector of FL drive P.C.B. with flat cables (7 places).
10. When checking the soldered surface of the FL drive P.C.B. operation P.C.B. and replacing the parts, do as shown in the Fig. 4.

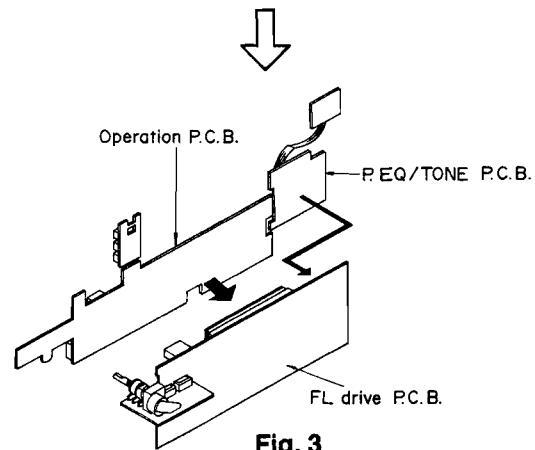
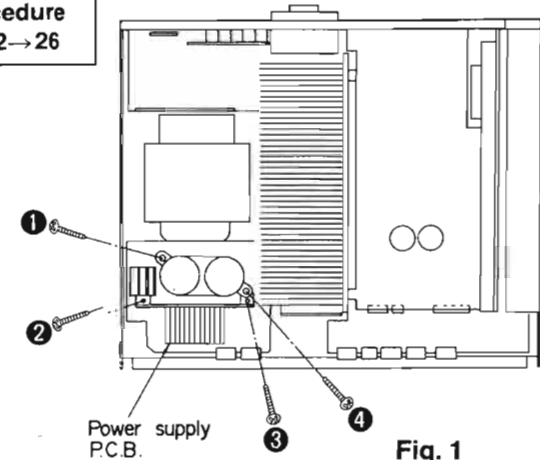
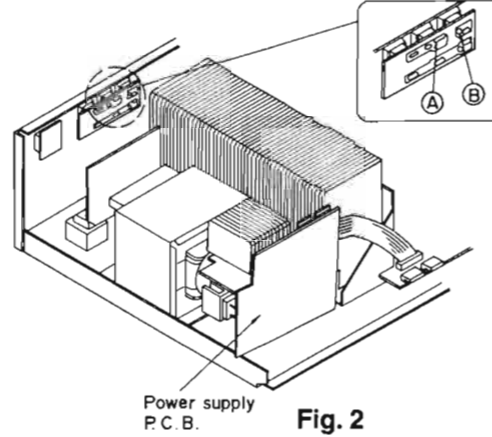
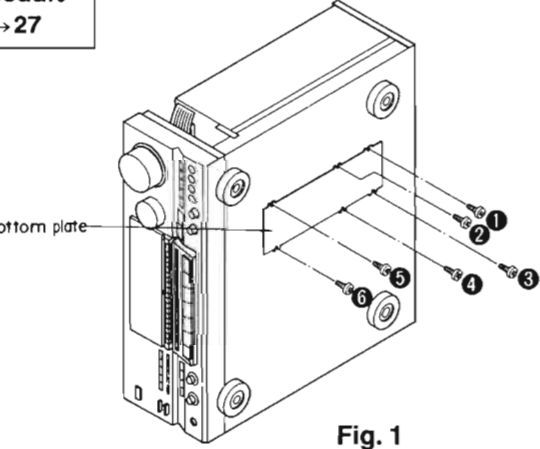
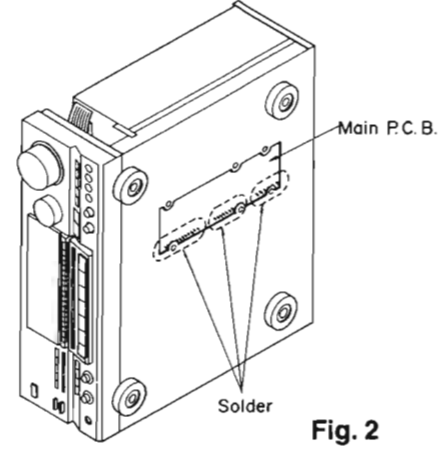
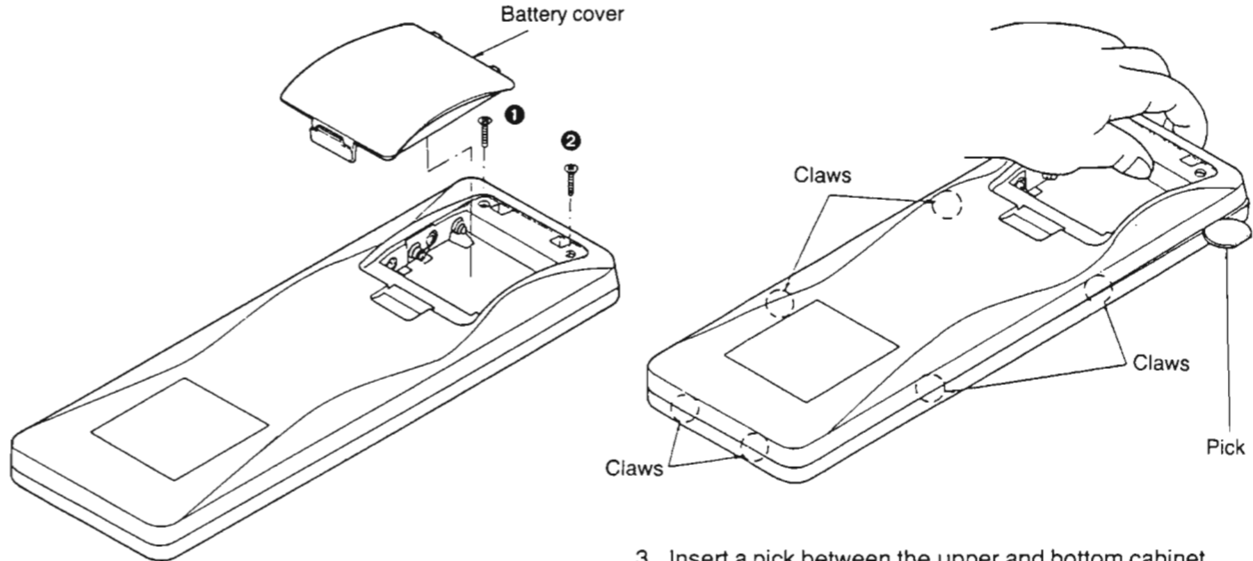
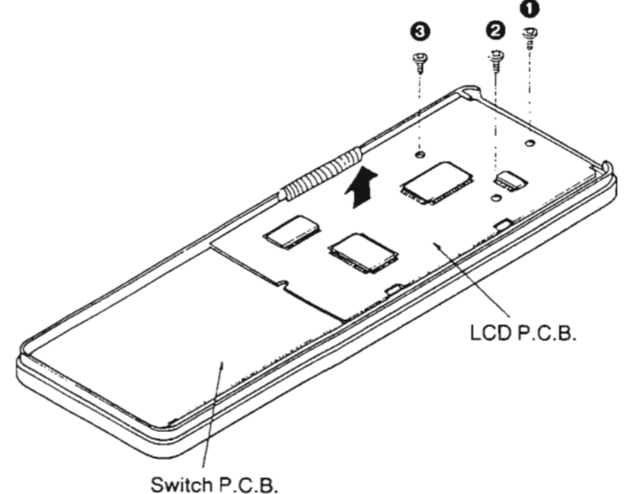


Fig. 3

8. Connect the operation P.C.B. and P.EQ/TONE P.C.B. to FL drive P.C.B.

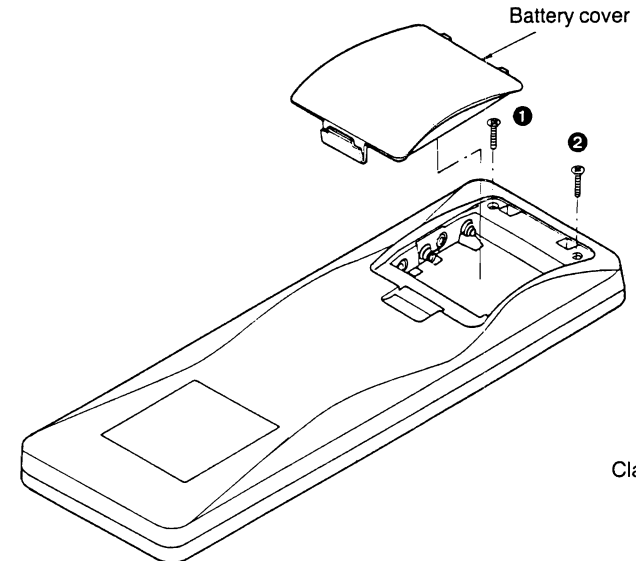
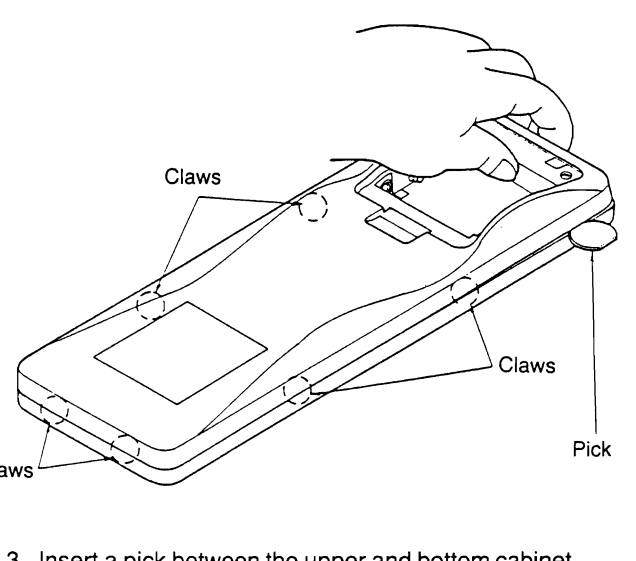
Ref. No. 26	How to check the power supply P.C.B.	 <p data-bbox="207 619 341 661">Power supply P.C.B.</p> <p data-bbox="489 640 578 661">Fig. 1</p>  <p data-bbox="934 556 1053 598">Power supply P.C.B.</p> <p data-bbox="1068 567 1142 598">Fig. 2</p> <p data-bbox="712 651 1305 724">2. Short (A) and (B) of AC inlet/outlet P.C.B. 3. When checking the soldered surface of the power supply P.C.B. and replacing the parts, do as shown in the Fig. 2.</p>
Procedure 1→2→26		<p data-bbox="89 703 385 724">1. Remove the 4 screws (1~4).</p>
Ref. No. 27	How to change the H.I.C.	 <p data-bbox="118 1050 222 1071">Bottom plate</p> <p data-bbox="430 1239 519 1270">Fig. 1</p>  <p data-bbox="1142 955 1261 976">Main P.C.B.</p> <p data-bbox="1038 1218 1113 1239">Solder</p> <p data-bbox="1127 1239 1202 1270">Fig. 2</p> <p data-bbox="712 1291 1305 1344">3. When checking the voltage of H.I.C. and replacing the parts, do as shown in the Fig. 2.</p>
Procedure 1→27		<p data-bbox="89 1291 385 1344">1. Remove the 6 screws (1~6). 2. Remove the bottom plate.</p>

DISASSEMBLY INSTRUCTIONS (REMOTE CONTROLLER)

Ref. No. 1	Removal of the bottom cabinet	 <p data-bbox="2003 304 2122 325">Battery cover</p> <p data-bbox="2285 451 2359 472">Claws</p> <p data-bbox="2597 630 2671 651">Claws</p> <p data-bbox="2671 714 2715 735">Pick</p> <p data-bbox="2107 724 2181 745">Claws</p> <p data-bbox="2122 808 2715 924">3. Insert a pick between the upper and bottom cabinet, and release the 6 claws. Caution: Take care not to damage upper and bottom cabinet.</p>
Procedure 1		<p data-bbox="1528 861 1855 924">1. Remove the battery cover. 2. Remove the 2 screws (1, 2).</p>
Ref. No. 2	Removal of the P.C.B.	 <p data-bbox="2552 1333 2656 1354">LCD P.C.B.</p> <p data-bbox="2255 1480 2389 1501">Switch P.C.B.</p>
Procedure 1→2		<p data-bbox="1528 1228 2062 1312">1. Remove the 3 screws (1~3). 2. Remove the LCD P.C.B. and switch P.C.B. in the direction of the arrow.</p>

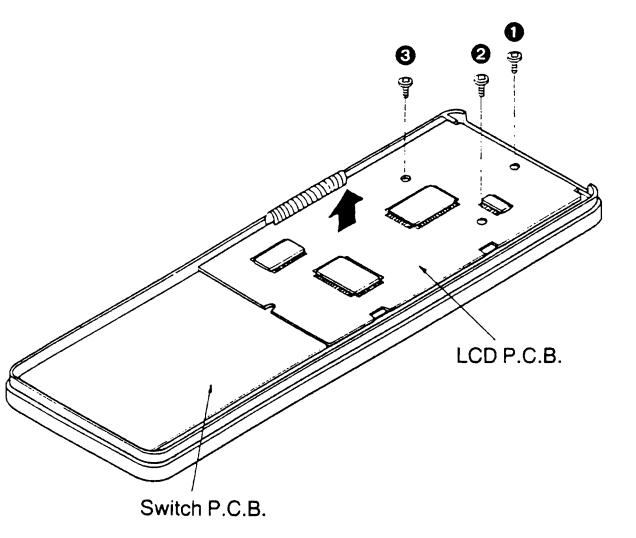
DISASSEMBLY INSTRUCTIONS (REMOTE CONTROLLER)

Ref. No. 1	Removal of the bottom cabinet
Procedure 1	

1. Remove the battery cover.
2. Remove the 2 screws (1, 2).
3. Insert a pick between the upper and bottom cabinet, and release the 6 claws.
Caution: Take care not to damage upper and bottom cabinet.

Ref. No. 2	Removal of the P.C.B.
Procedure 1→2	

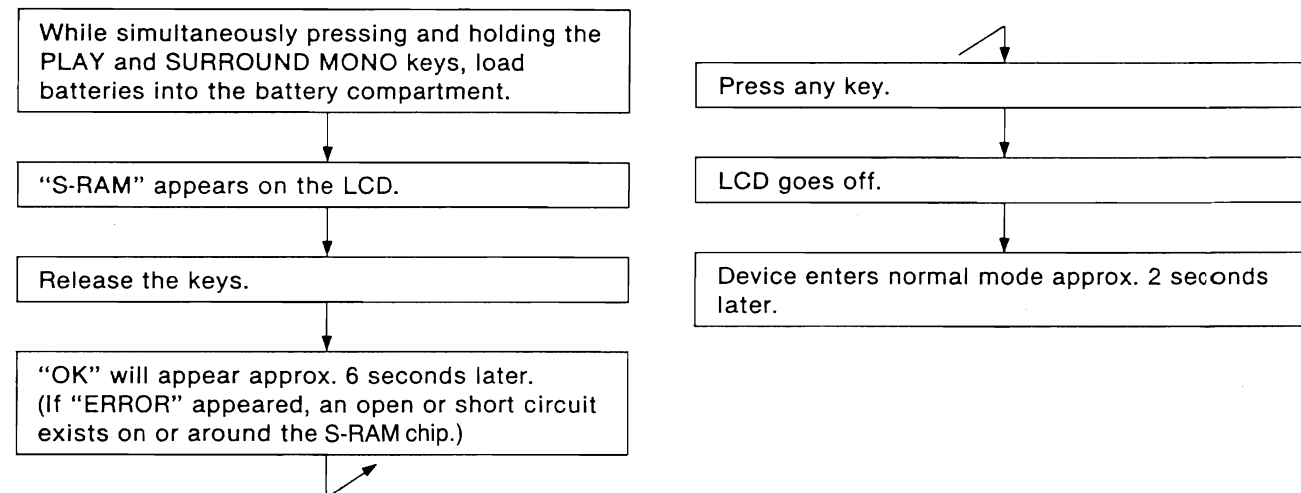


1. Remove the 3 screws (1~3).
2. Remove the LCD P.C.B. and switch P.C.B. in the direction of the arrow.

TROUBLESHOOTING (REMOTE CONTROLLER)

Symptom	Possible cause
LCD remains off when the DISPLAY key is activated.	R9~R11 or R30 is opened.
	R22~R29 is opened.
	IC7's pin 1 or IC1's pin 68 is shorted to ground level.
	X1 or X2 is opened.
LCD contrast is not uniform.	R9~R11 or R30 has an internal short circuit.
	Short circuit exists across pins 59~80, 1~11, or IC1's pin 21~24.
Signal transmission fails.	D3 or D4 is opened.
	Q1 has an internal open or short circuit.
	R17 is opened.
Fails to enter Learning mode.	IC2's pin 39 has an internal open circuit.
	IC2's pin 67 or IC4's pin 7 has an internal open circuit or is pulled up to High level.
Learning error occurs (transmission code error).	Short circuit exists across S-RAM's pins, or across IC2's pin 40~63, or IC1's pin 46~53, or 60~67.
Learned data evaporates immediately after the batteries are removed.	D2 has internal open or short circuit.
	C10 is opened.
Keys are inoperative.	R22~R29 is opened.

INITIALIZATION AFTER REPLACEMENT OF LCD, CPU OR S-RAM (REMOTE CONTROLLER)



PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

BEFORE REPAIR AND ADJUSTMENT

Disconnect AC power, Discharge both Power Supply Capacitors C619 and C620 through a 10Ω, 5 W resistor to ground. DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices. After repairs are completed, restore power gradually using a variac, to avoid overcurrent. Current consumption at 120 V, 60 Hz in NO SIGNAL mode should be 650~1150 mA.

MEASUREMENTS AND ADJUSTMENTS

FM ADJUSTMENT

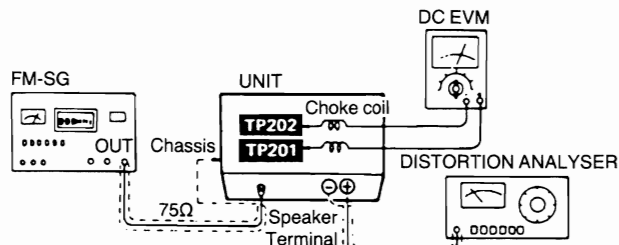
Control positions and equipment used

- FM signal generator (FM-SG).
- Distortion analyser
- Oscilloscope
- DC electronic voltmeter (EVM)
- Frequency counter
- Choke coil (100 μH)
- Resistor (100 kΩ)

FM MONODISTORTION AND FM OFFSET ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "FM" position.
3. Set the radio frequency display and signal generator to 100.10 MHz.
4. Adjust T201 core so that voltage measured in signal mode is 0 mV (0±20 mV) in 300 mV range.
5. Adjust T202 core so that distortion factor of L-ch is minimized.
6. Repeat step 4 and 5.
7. Make sure that the distortion factors of L-ch and R-ch are nearly the same with each other to minimum.

FM SIGNAL GENERATOR CONDITION
 Modulation 100%
 Modulation frequency 1 kHz
 (MONO)
 Output level 66 dB

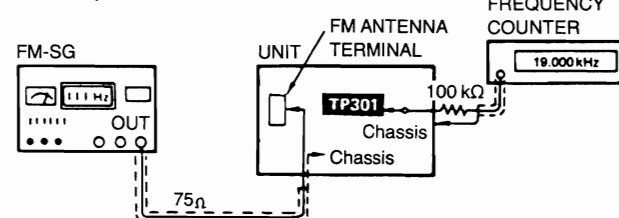


Note:
 The adjusting screwdriver used should be made of resin.

FM MPX VCO ADJUSTMENT

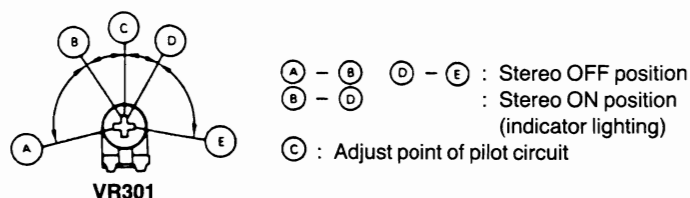
1. Test equipment connection is shown in figure.
2. Set the unit to "FM STEREO" position.
3. Place the radio frequency display and signal generator setting to 100.10 MHz.
4. Adjust VR301 for 19.00±0.03 kHz on frequency counter reading.

FM SIGNAL GENERATOR CONDITION
 Modulation 0%
 (non-modulation)
 Output 66 dB



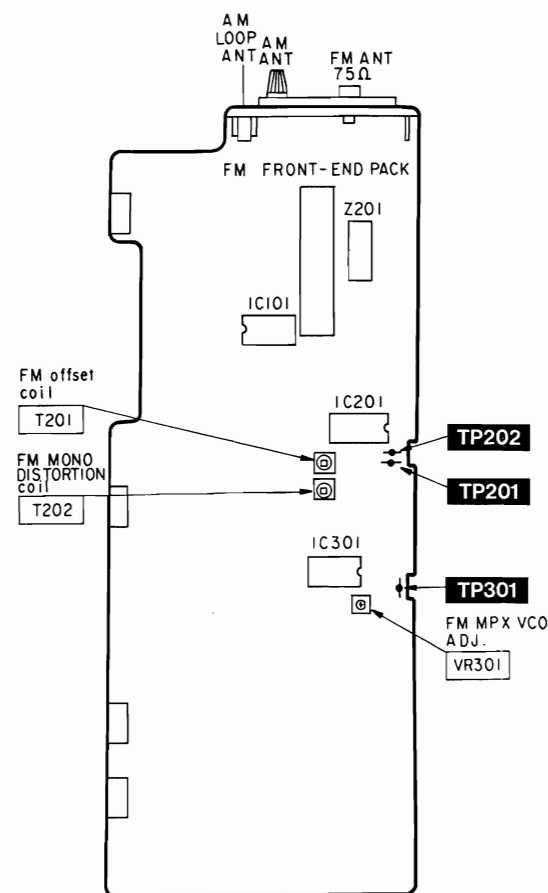
USING ALTERNATE SYSTEM

1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust VR301 until stereo indicator lights up. Cement arm of VR301 as shown in figure.

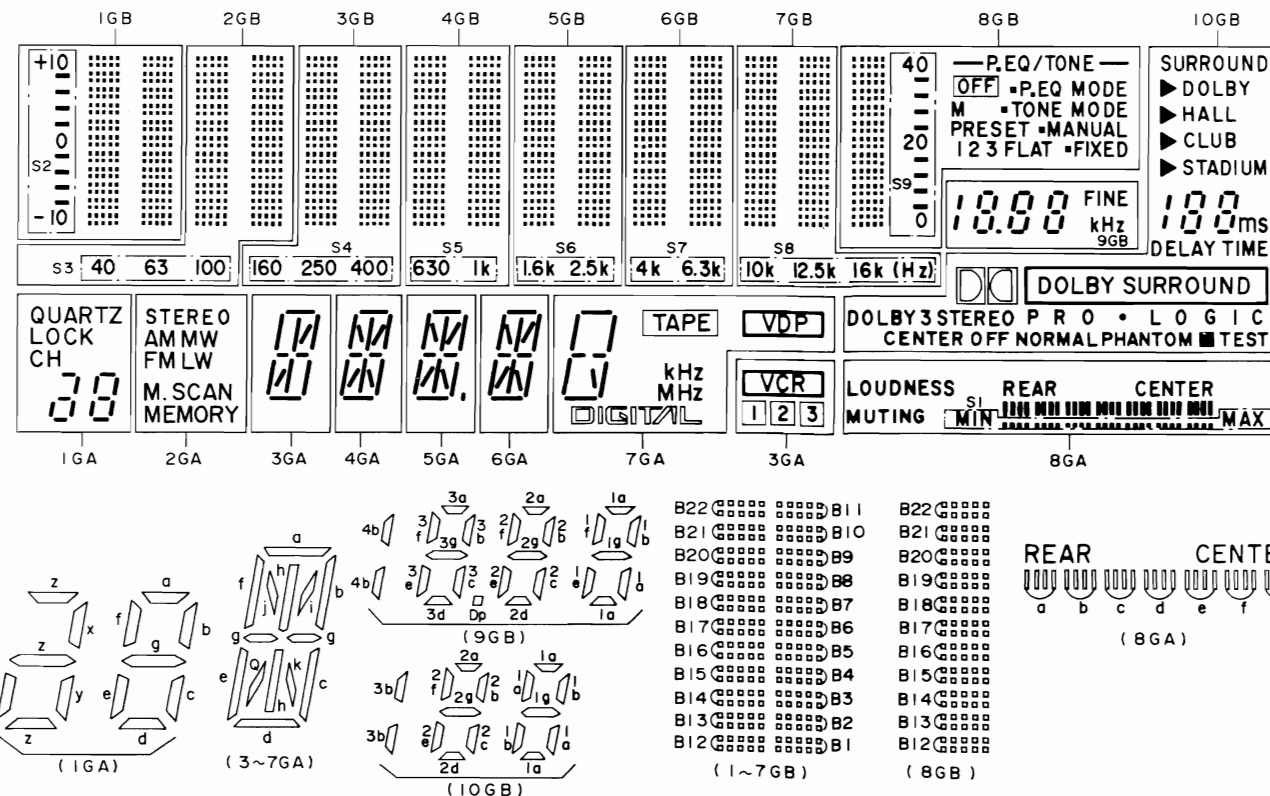


ADJUSTMENT POINTS

Note: For Z202 (AM-IFT), and Z201 (AM ANT and OSC coil), they are supplied as adjusted parts. So, do not turn the cores of the parts. It is not necessary to adjust the AM circuit.



DESCRIPTION OF FL PANEL [FL901 (RSL0089-F)]



PIN CO

Pin N	
Connet	
Pin N	
Connet	
Notes:	
1) F1, F2 ..	
ANODE	
P1A	
P2A	
P3A	
P4A	
P5A	
P6A	
P7A	
P8A	
P9A	
P10A	
P11A	
P12A	QU
P13A	

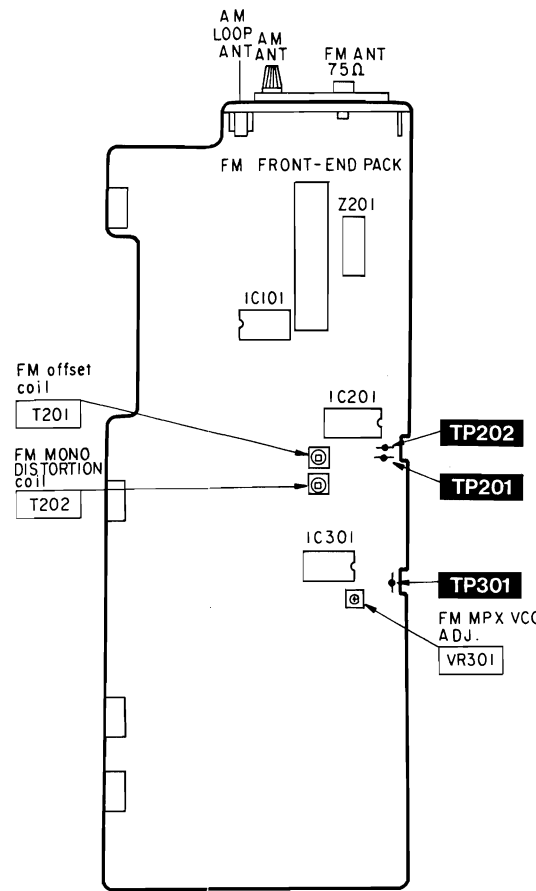
ANODE

	1G
P1B	S:
P2B	B
P3B	B
P4B	B
P5B	B
P6B	B
P7B	B
P8B	B
P9B	B
P10B	B
P11B	B1
P12B	B1
P13B	B1
P14B	B1
P15B	B1
P16B	B1
P17B	B1
P18B	B1
P19B	B1
P20B	B1
P21B	B2
P22B	B2
P23B	B2

ADJUSTMENT POINTS

Note: For Z202 (AM-IFT), and Z201 (AM ANT and OSC coil), they are supplied as adjusted parts. So, do not turn the cores of the parts.

It is not necessary to adjust the AM circuit.



PIN CONNECTION

Table with Pin No. and Connection columns for two different views of the device.

Notes:

1) F1, F2 Filament 2) 1G~6G..... Grid 3) NPNo Pin 4) NC.....No Connection

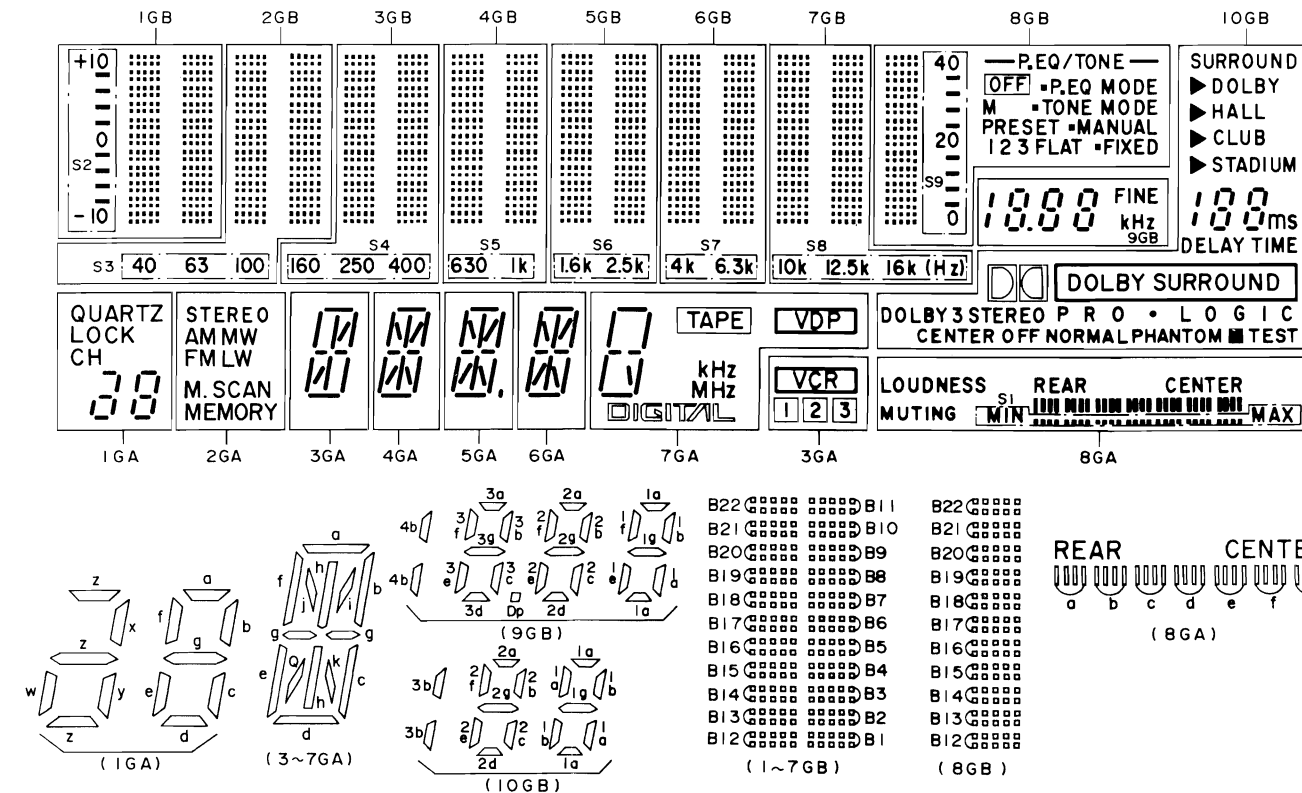
ANODE CONNECTION (Table A)

Table A: Anode Connection mapping pins 1GA-13A to various modes like P1A, P2A, etc.

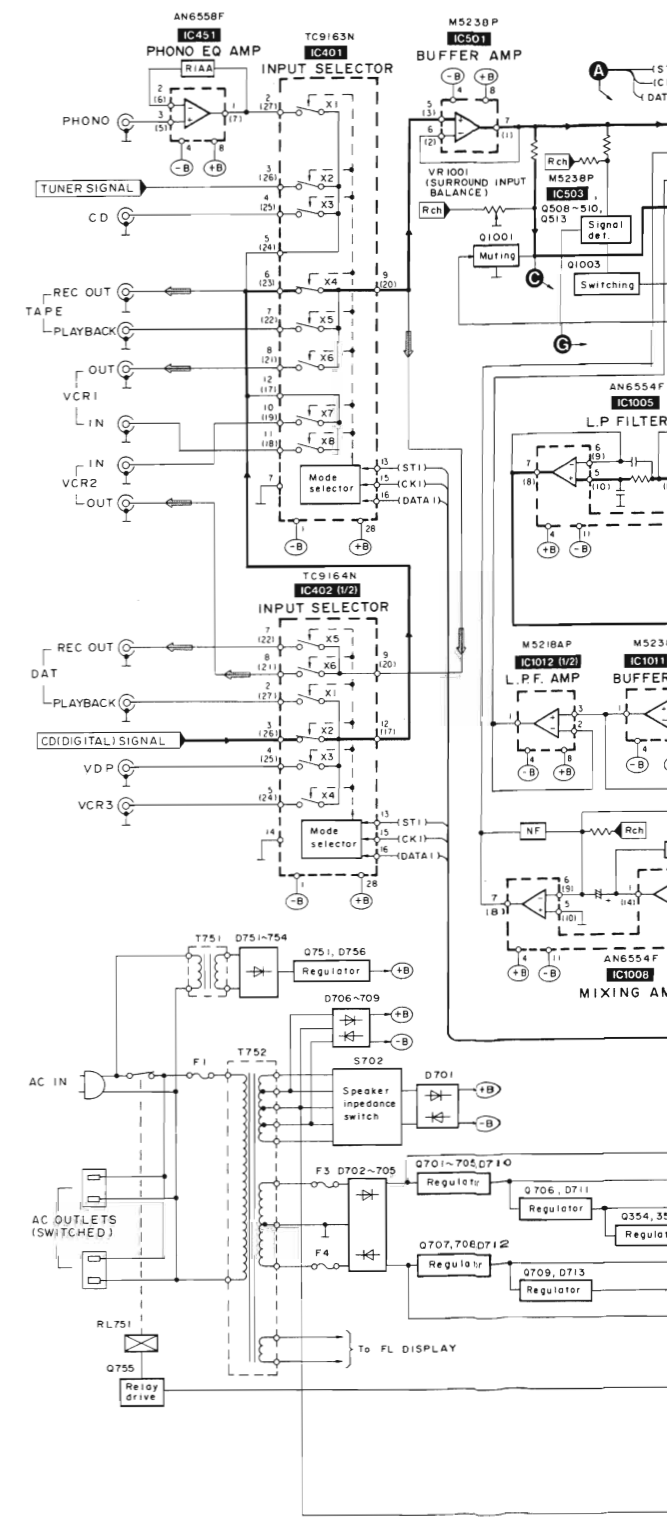
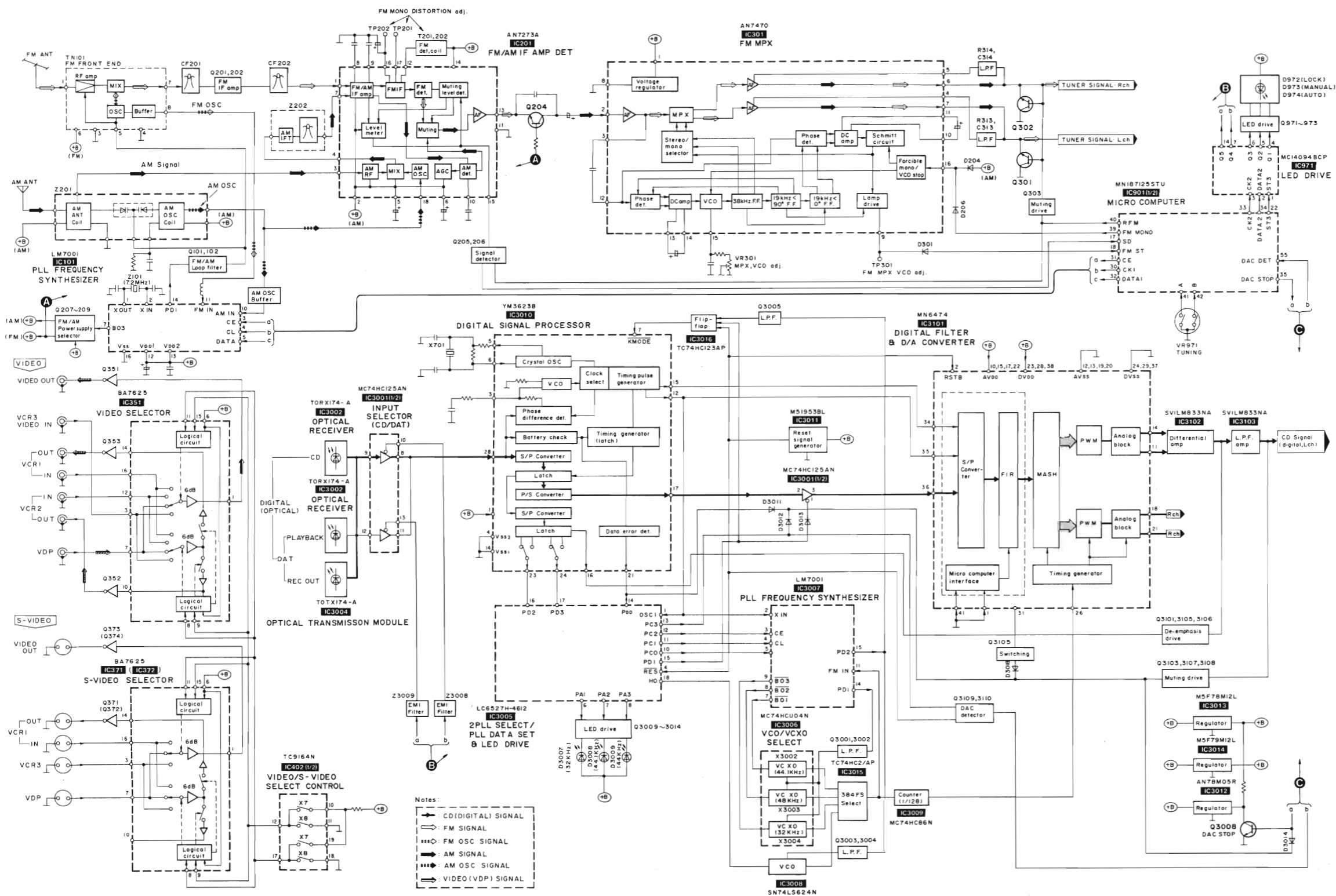
ANODE CONNECTION (Table B)

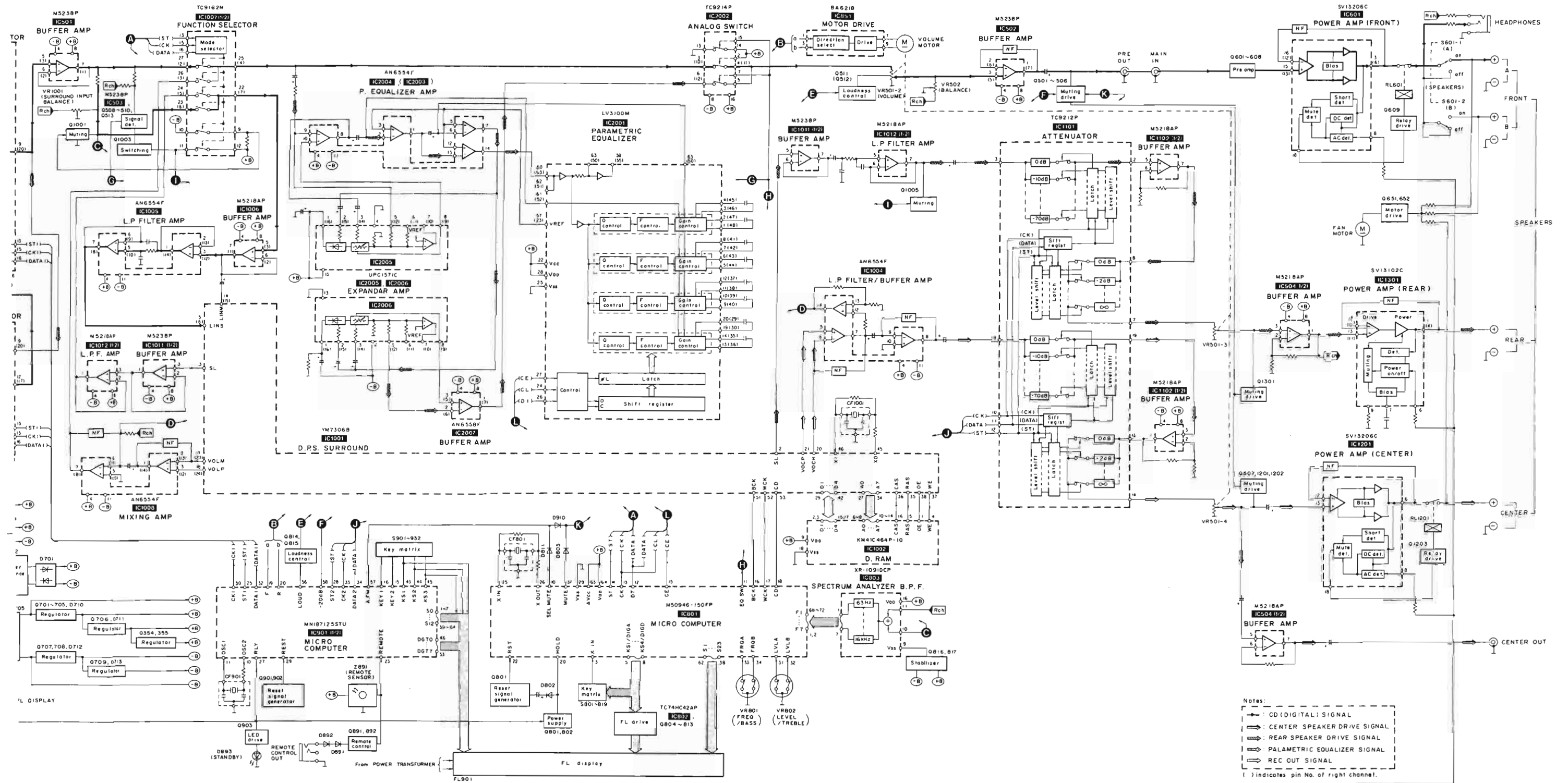
Table B: Anode Connection mapping pins 1GB-23B to various modes like P1B, P2B, etc.

DESCRIPTION OF FL PANEL [FL901 (RSL0089-F)]



■ BLOCK DIAGRAM





SCHEMATIC DIAGRAM (Parts list on pages 68~77)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

- S601-1, 602-2 : Speaker selectors (SPEAKERS) switches. (S601-1: A, S601-2: B)
- S702 : Speaker impedance selector switch in "8Ω" position. (4Ω↔8Ω)
- S801 : Display mode (-DISPLAY MODE-DEMO) switch.
- S802~805 : Parametric EQ band select switches. (S802: EQ1, S803: EQ2, S804: EQ3, S805: EQ4)
- S806 : Parametric EQ system ON/OFF (P.EQ SYS ON/OFF) switch.
- S807 : Fine mode (FINE) switch.
- S808 : Slope changeover [SLOPE (Q)] switch.
- S809 : Parametric EQ/tone mode (P.EQ/TONE) switch.
- S810 : Parametric EQ system memory (MEMORY) switch.
- S811 : Fixed preset (FIXED PRESET) switch.
- S812~814 : Equalization preset (MANUAL PRESET) switches. (S812: Manual 1, S813: Manual 2, S814: Manual 3)
- S815 : Surround mode (SURROUND MODE) switch.
- S816 : Delay time adjustment (DELAY TIME) switch.
- S817 : Center mode (CENTER MODE) switch.
- S818 : Test signal transmission (TEST) switch.
- S819 : 3-Stereo (3-STEREO) switch.
- S901~910 : Preset-tuning (30 CHANNEL RANDOM PRESET TUNING) switches. (S901: 1, S902: 2, S903: 3, S904: 4, S905: 5) (S906: 6, S907: 7, S908: 8, S909: 9, S910: 0)
- S911 : Surround ON/OFF (SURROUND) switch.
- S912, 913 : Center speaker level adjustment (CENTER LEVEL) switches. (S912: DOWN, S913: UP)
- S914, 915 : Rear speaker level adjustment (REAR LEVEL) switches. (S914: DOWN, S915: UP)
- S916 : Input selector (PHONO) switch.
- S917 : Input selector (TUNER) switch.
- S918 : Tape-monitor (TAPE MONITOR) switch.
- S919 : Input selector (VDP) switch.
- S920 : Input selector (VCR3) switch.
- S921 : Input selector (VCR2) switch.
- S922 : Input selector (VCR1) switch.
- S923 : Input selector (CD) switch.
- S924 : Input selector (DAT) switch.
- S925 : Loudness (LOUDNESS) switch.
- S926 : Tuning-mode selector (TUNING MODE) switch.
- S927 : Band selector (FM) switch.
- S928 : Band selector (AM) switch.
- S929 : FM mode selector (FM MODE) switch.
- S930 : Memory scan (MEMORY SCAN) switch.
- S931 : Memory (MEMORY) switch.
- S932 : Power (POWER/STANDBY/ON) switch.

- □ □ □ : FM OSC
- ▬ ▬ ▬ ▬ : AM OSC
- ▬ ▬ ▬ ▬ : Rec out signal (L ch)
- ▬ ▬ ▬ ▬ : Center S.P. drive signal
- ▬ ▬ ▬ ▬ : CD (Digital) signal
- ▬ ▬ ▬ ▬ : Positive voltage lines
- ▬ ▬ ▬ ▬ : Negative voltage lines
- ▬ ▬ ▬ ▬ : Rear S.P. drive signal (L ch)
- ▬ ▬ ▬ ▬ : P. Equalizer signal
- ▬ ▬ ▬ ▬ : S-VIDEO (Color/VDP) signal
- ▬ ▬ ▬ ▬ : S-VIDEO (luminance/VDP) signal
- ▬ ▬ ▬ ▬ : VIDEO (VDP) signal

●Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.

●All voltage values shown in circuitry are DC voltage in FM signal (Stereo signal) reception mode.
* Figures in () stand for DC-voltage in AM signal reception mode. * No mark: CD (DIGITAL) voltage
* Figures in < > stand for DC-voltage in FM signal reception mode.

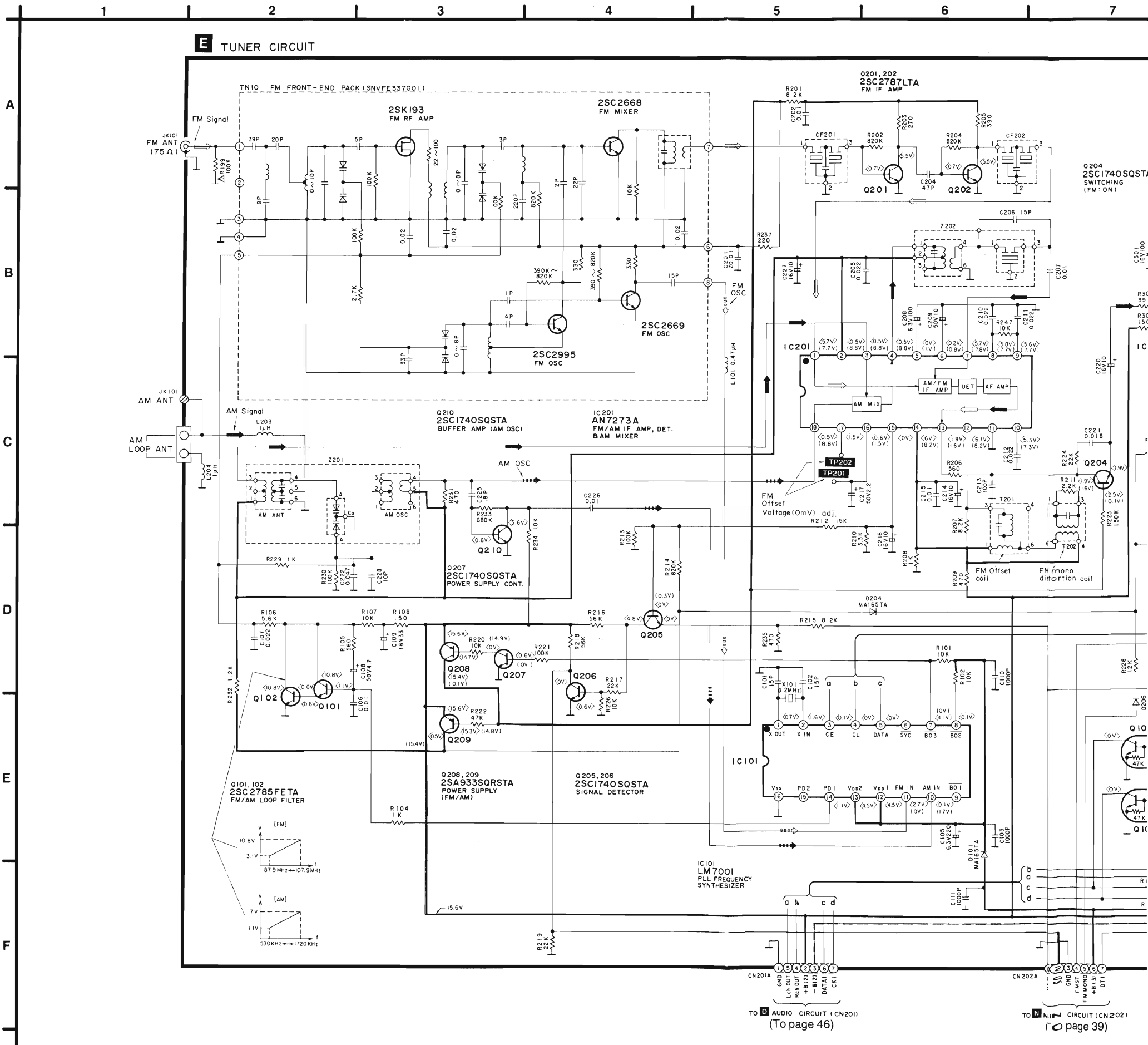
Caution!

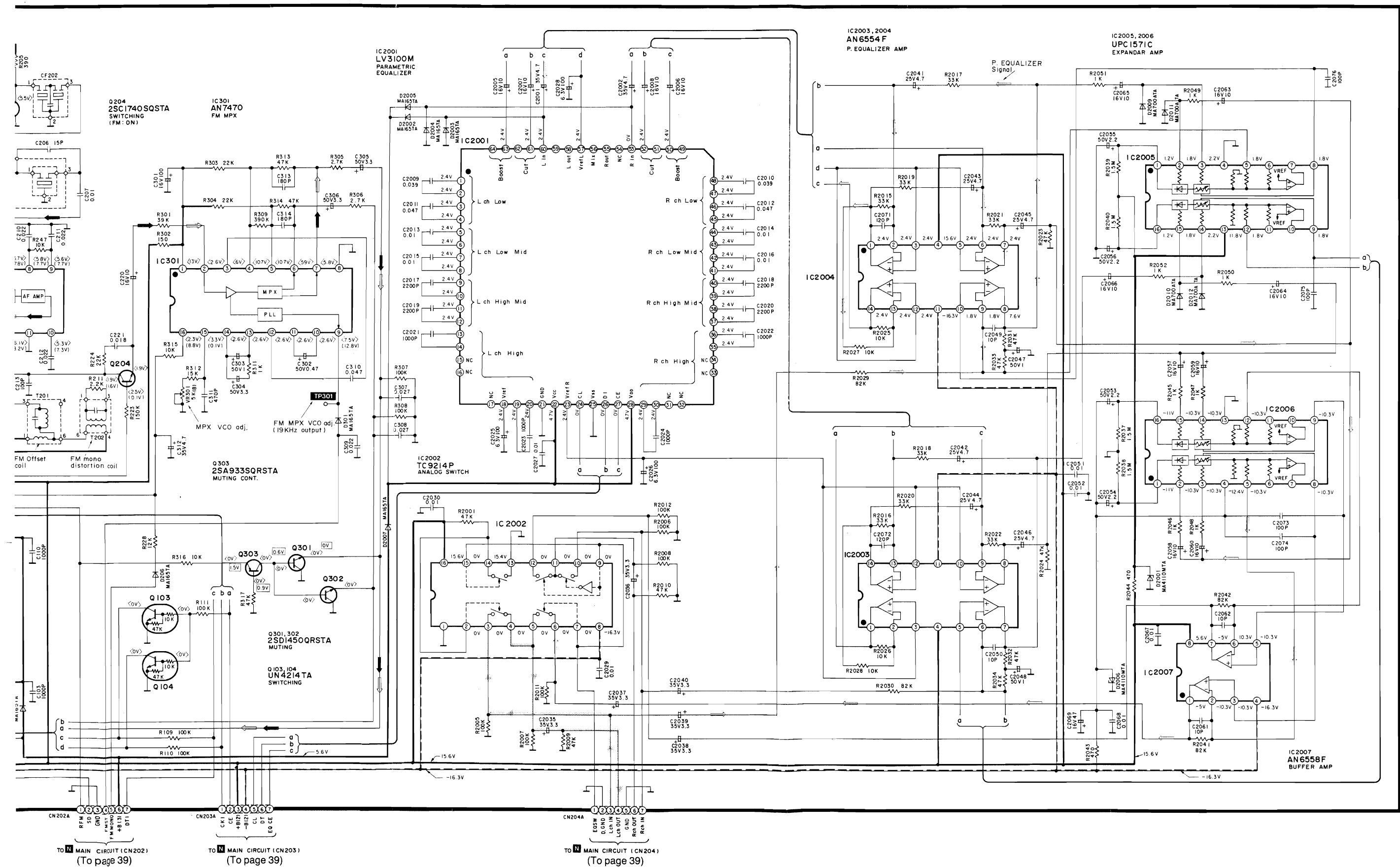
- IC and LSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- *Cover the parts boxes made of plastics with aluminum foil.
- *Ground the soldering iron.
- *Put a conductive mat on the work table.
- *Do not touch the legs of IC or LSI with the fingers directly.

●The supply part number is described alone in the replacement parts list

Ref. No.	Production Part No.	Supply Part No.
IC 301	AN7470	SVIUPC1161C3
IC501~503 IC1010 IC1011	M5238P	M5238P-1

TUNER CIRCUIT



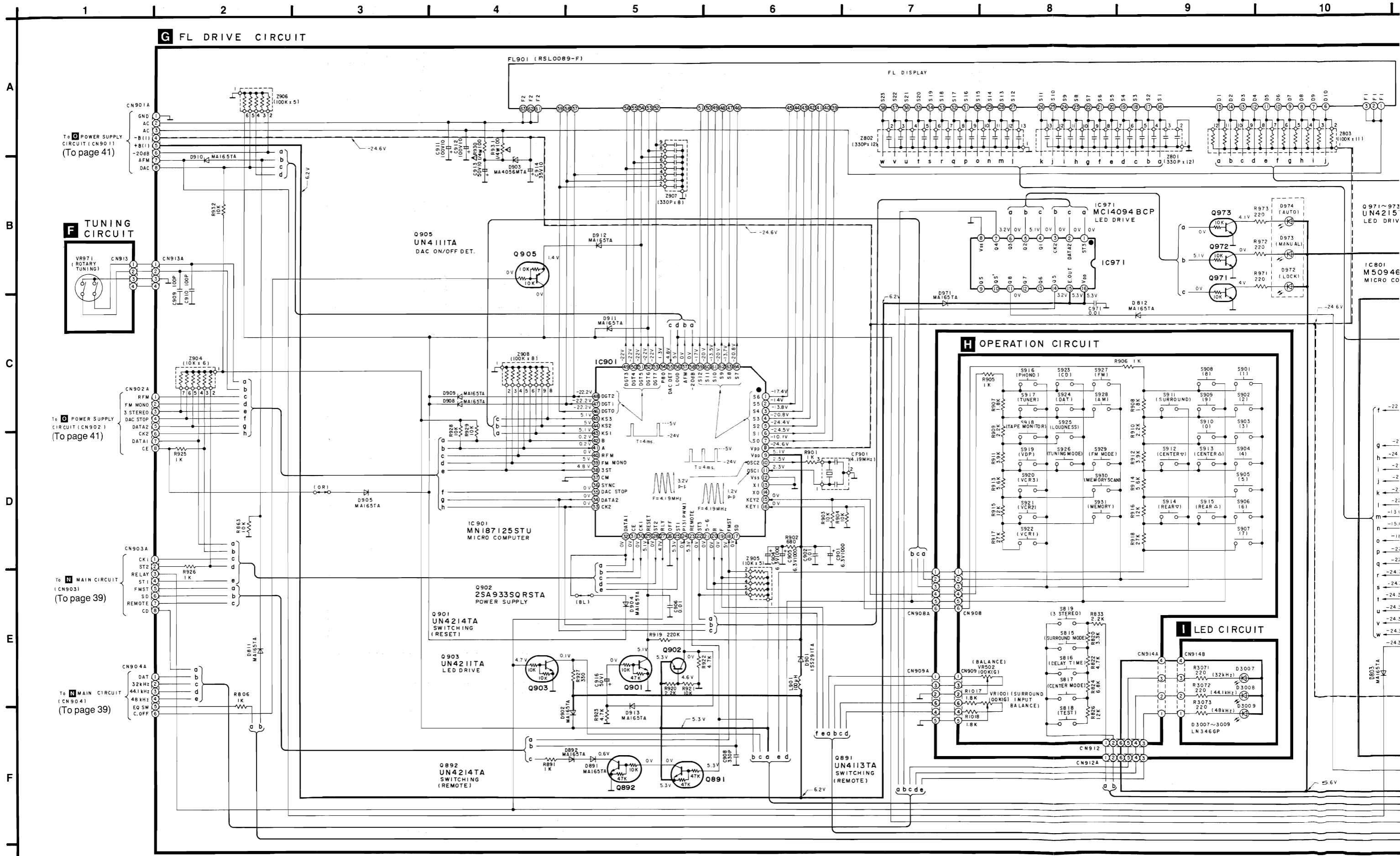


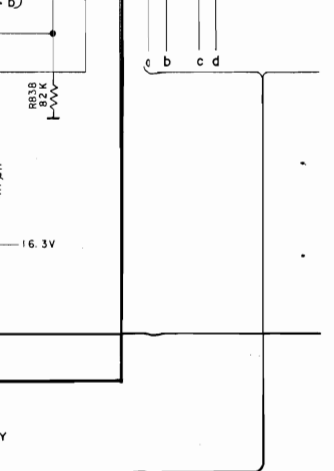
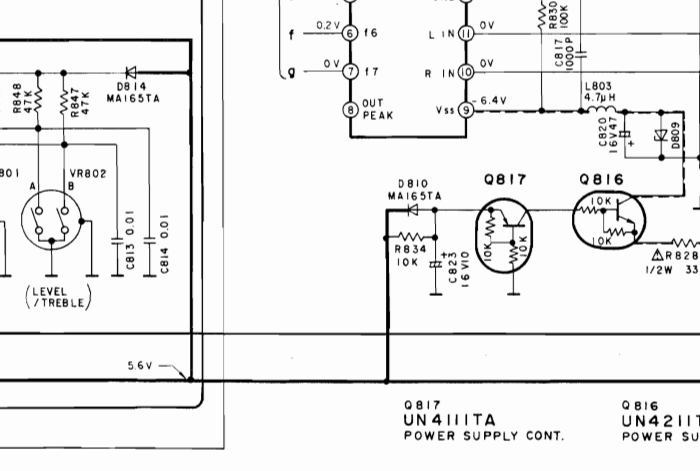
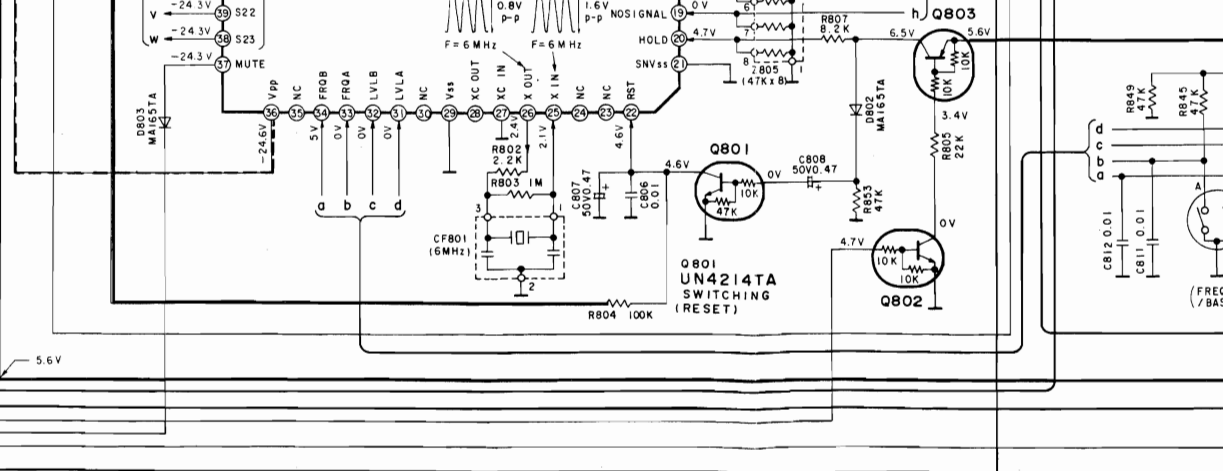
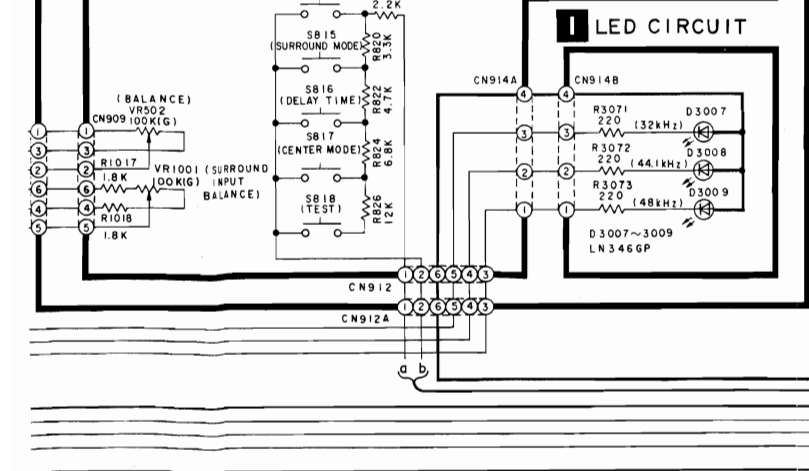
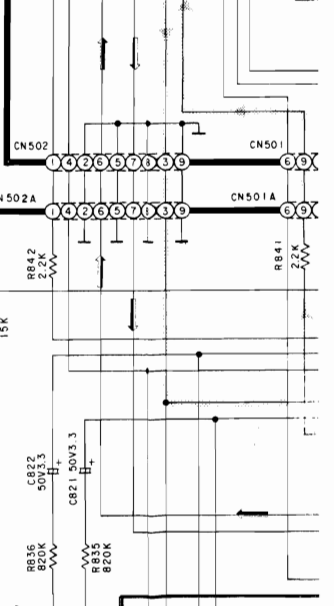
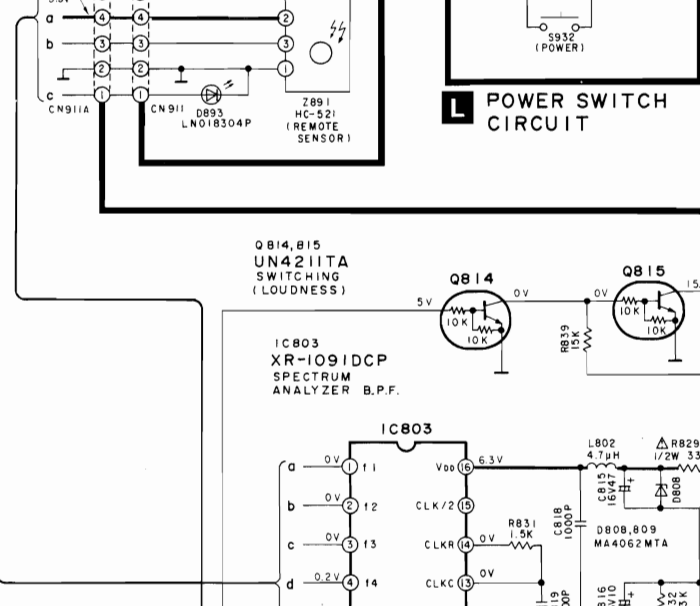
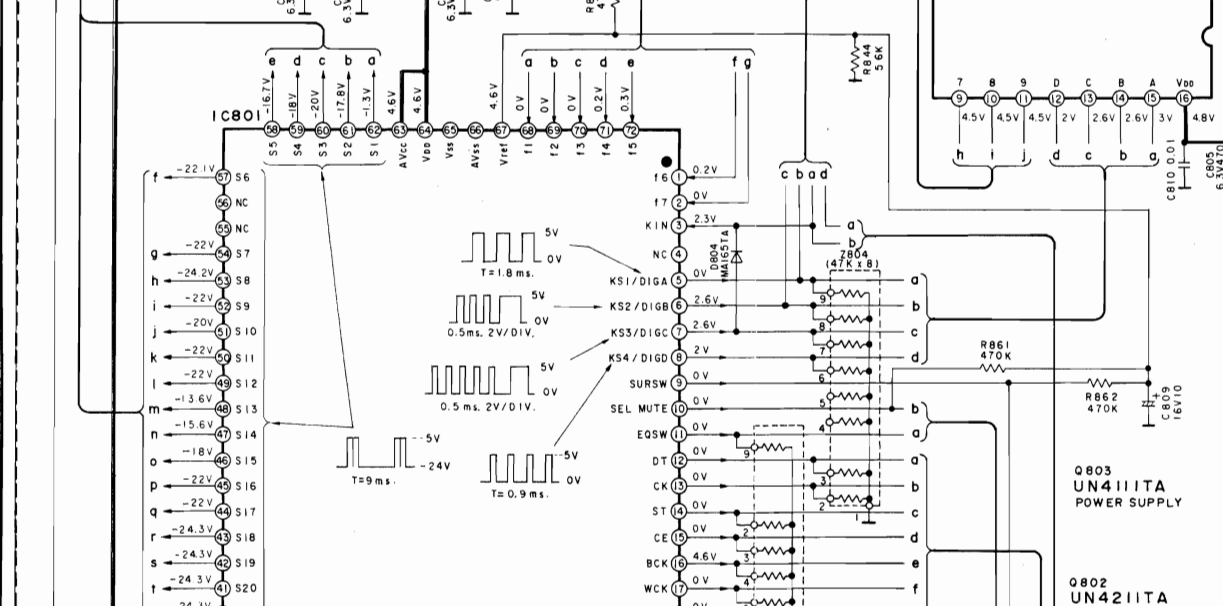
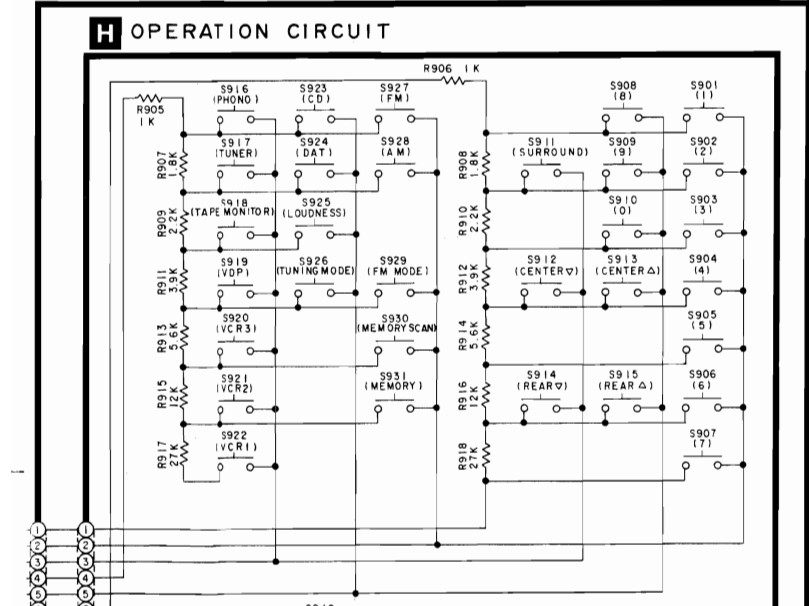
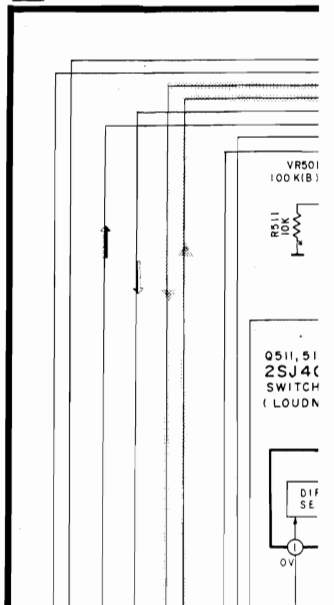
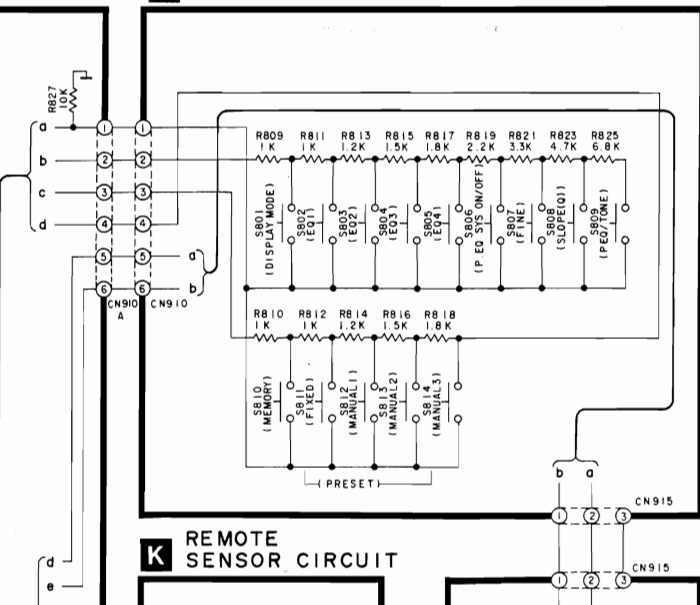
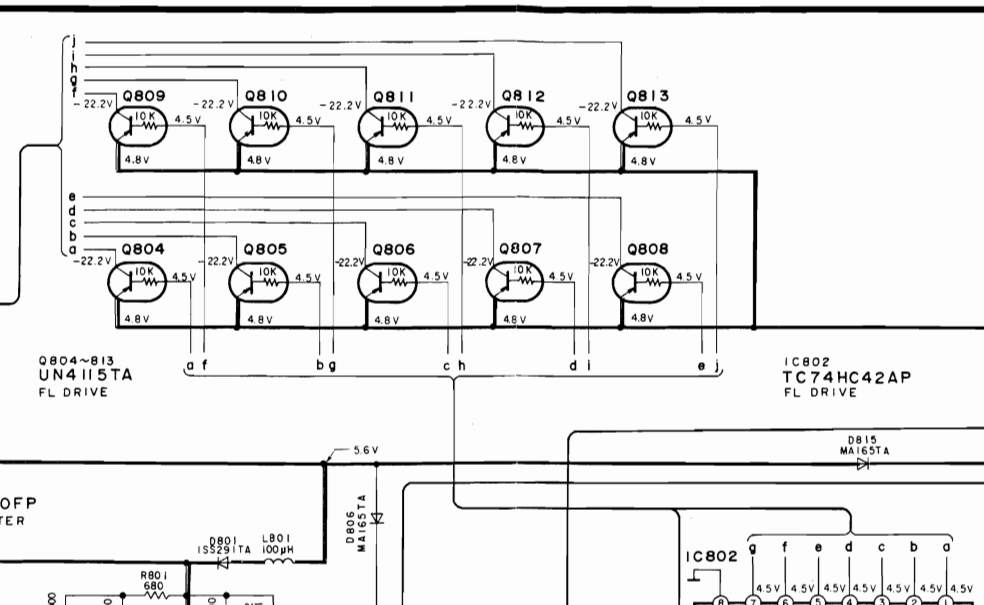
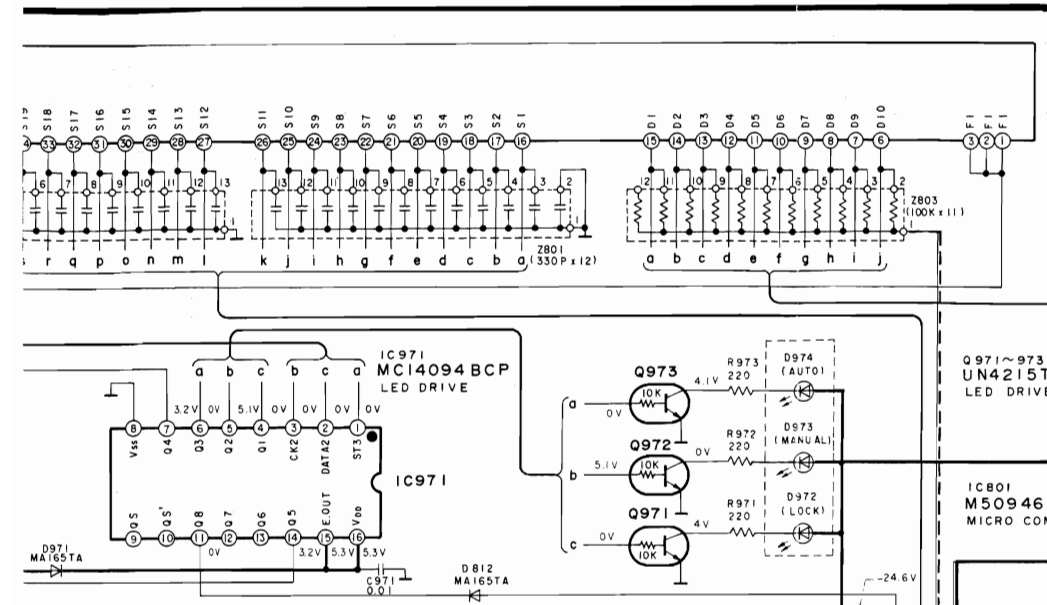
TO MAIN CIRCUIT (CN202)
(To page 39)

TO MAIN CIRCUIT (CN203)
(To page 39)

TO MAIN CIRCUIT (CN204)
(To page 39)

●FL DRIVE/OPERATION CIRCUIT



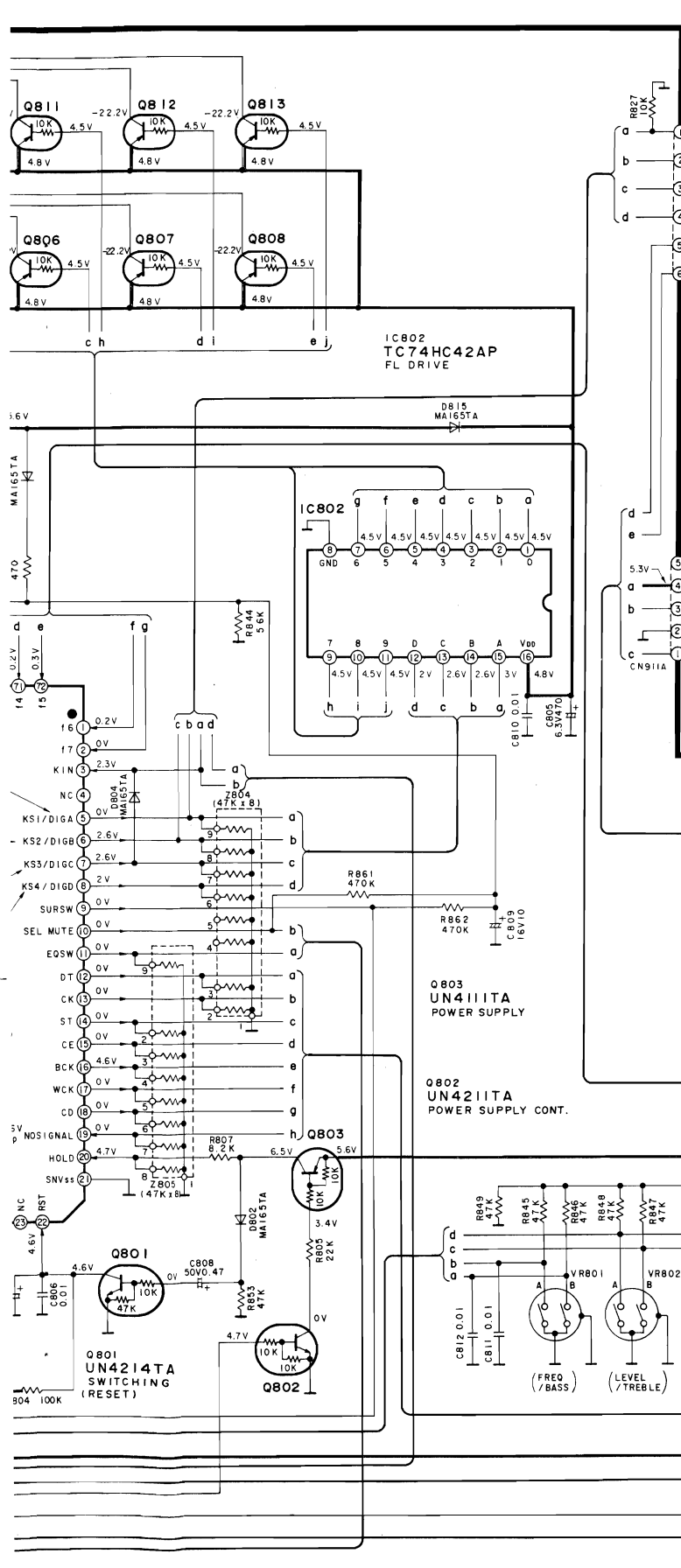


J P.EQ/TONE CIRCUIT

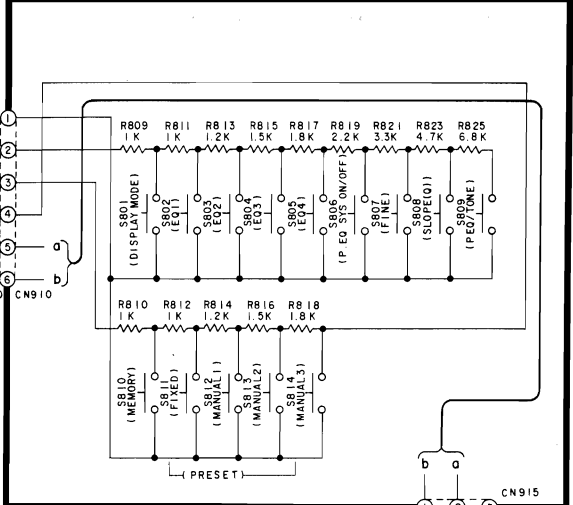
M VOLUME CIRCUIT

K REMOTE SENSOR CIRCUIT

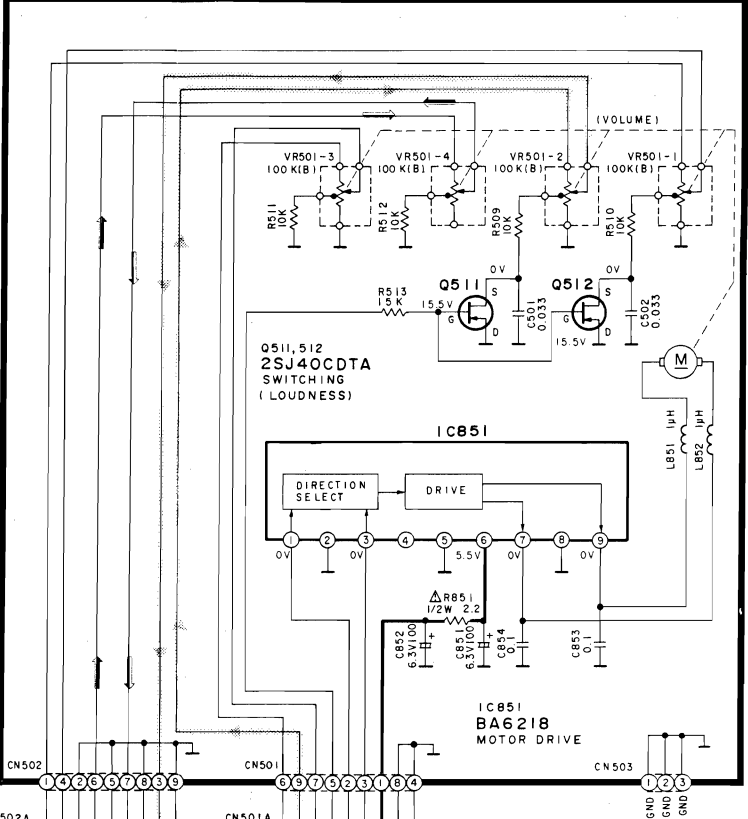
L POWER SWITCH CIRCUIT



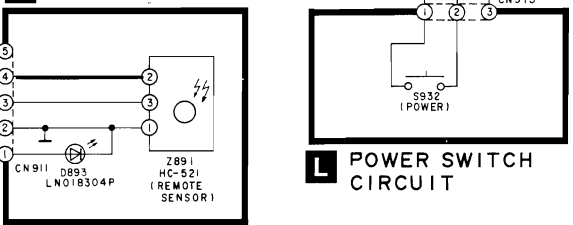
J P.EQ/TONE CIRCUIT



M VOLUME CIRCUIT



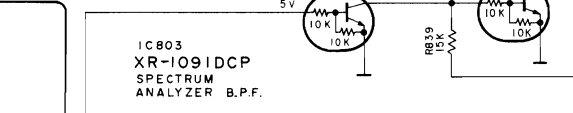
K REMOTE SENSOR CIRCUIT



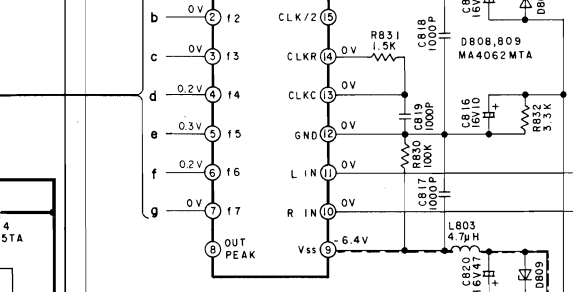
L POWER SWITCH CIRCUIT



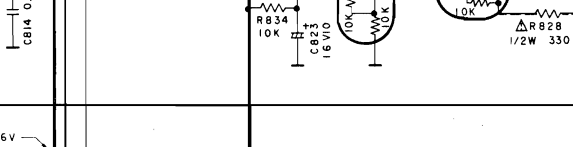
Q814, 815 UN4211TA SWITCHING (LOUDNESS)



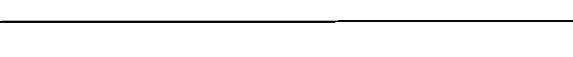
IC803 XR-109IDCP SPECTRUM ANALYZER B.P.F.




Q817, 816 UN4111TA POWER SUPPLY CONT.



Q817, 816 UN4211TA POWER SUPPLY



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE 4 A 125 V AND 8 A 125 V FUSES.



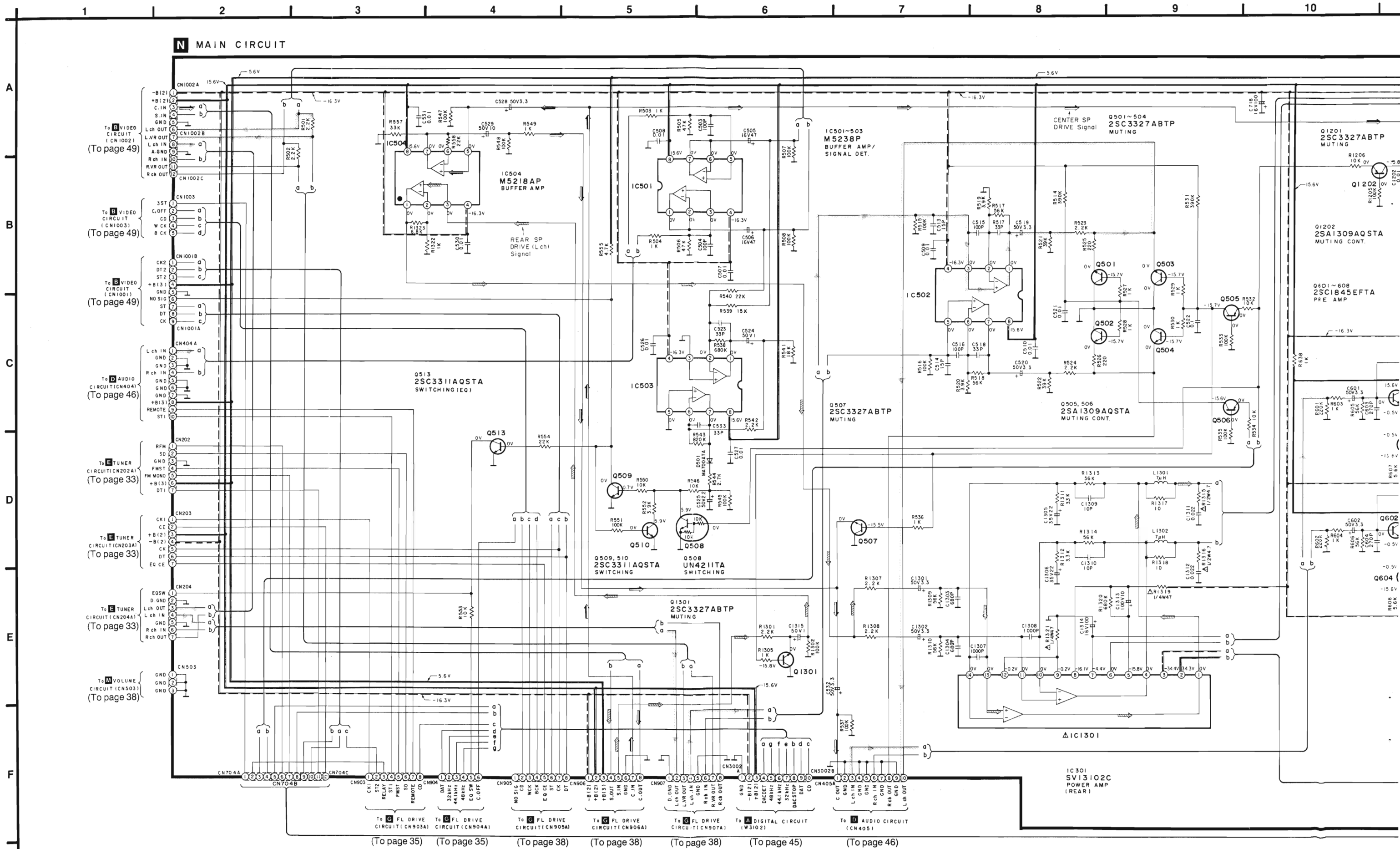
RISK OF FIRE-REPLACE FUSE AS MARKED.

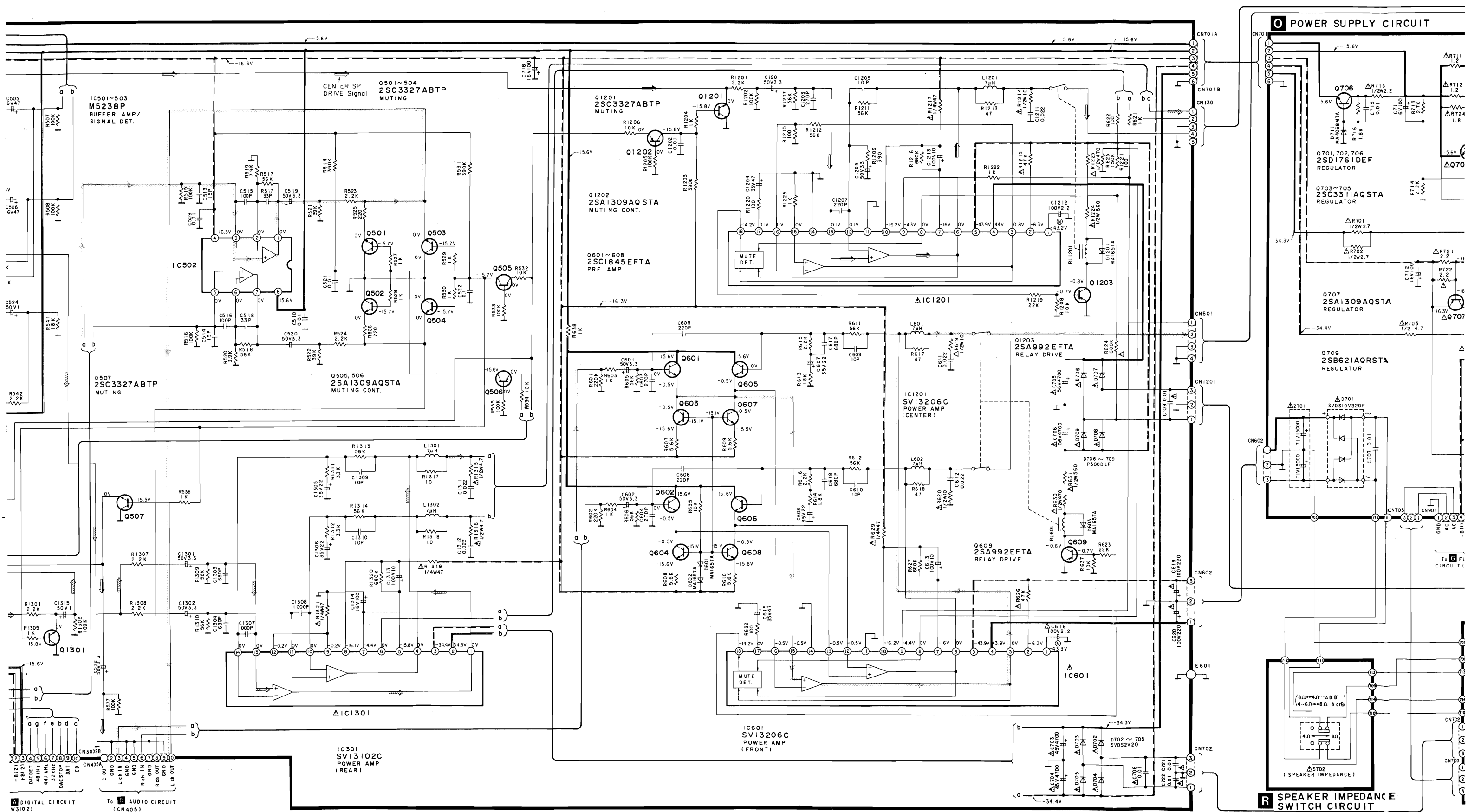
FUSE CAUTION

— This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

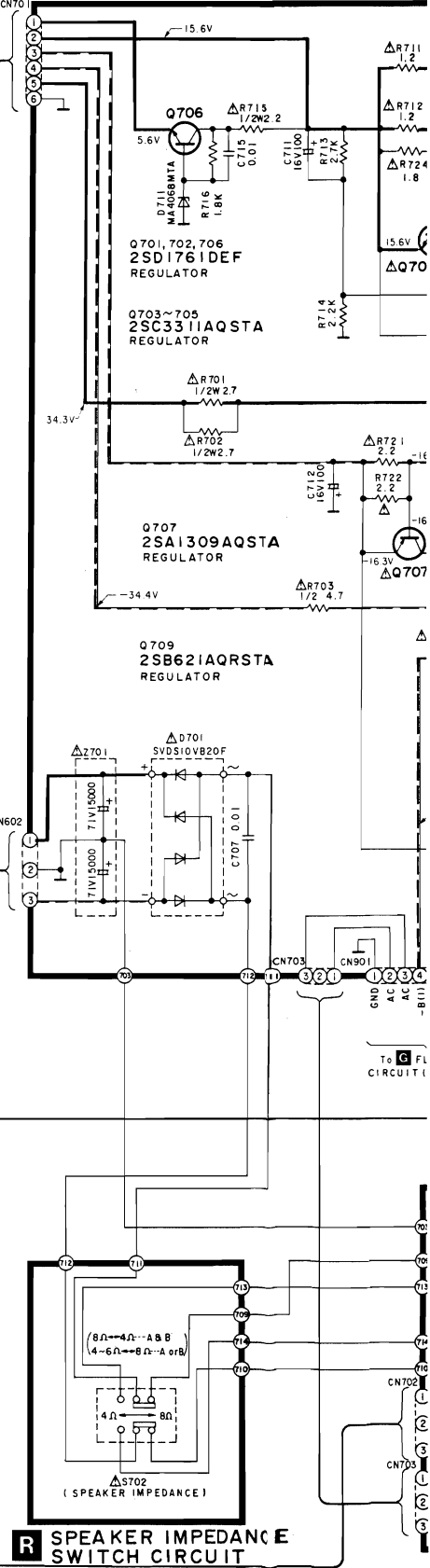
— Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n'utiliser que des fusibles de même type. Ce dernier est indiqué là où le présent symbole est apposé.

MAIN/POWER SUPPLY CIRCUIT

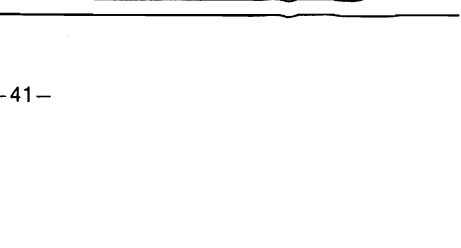




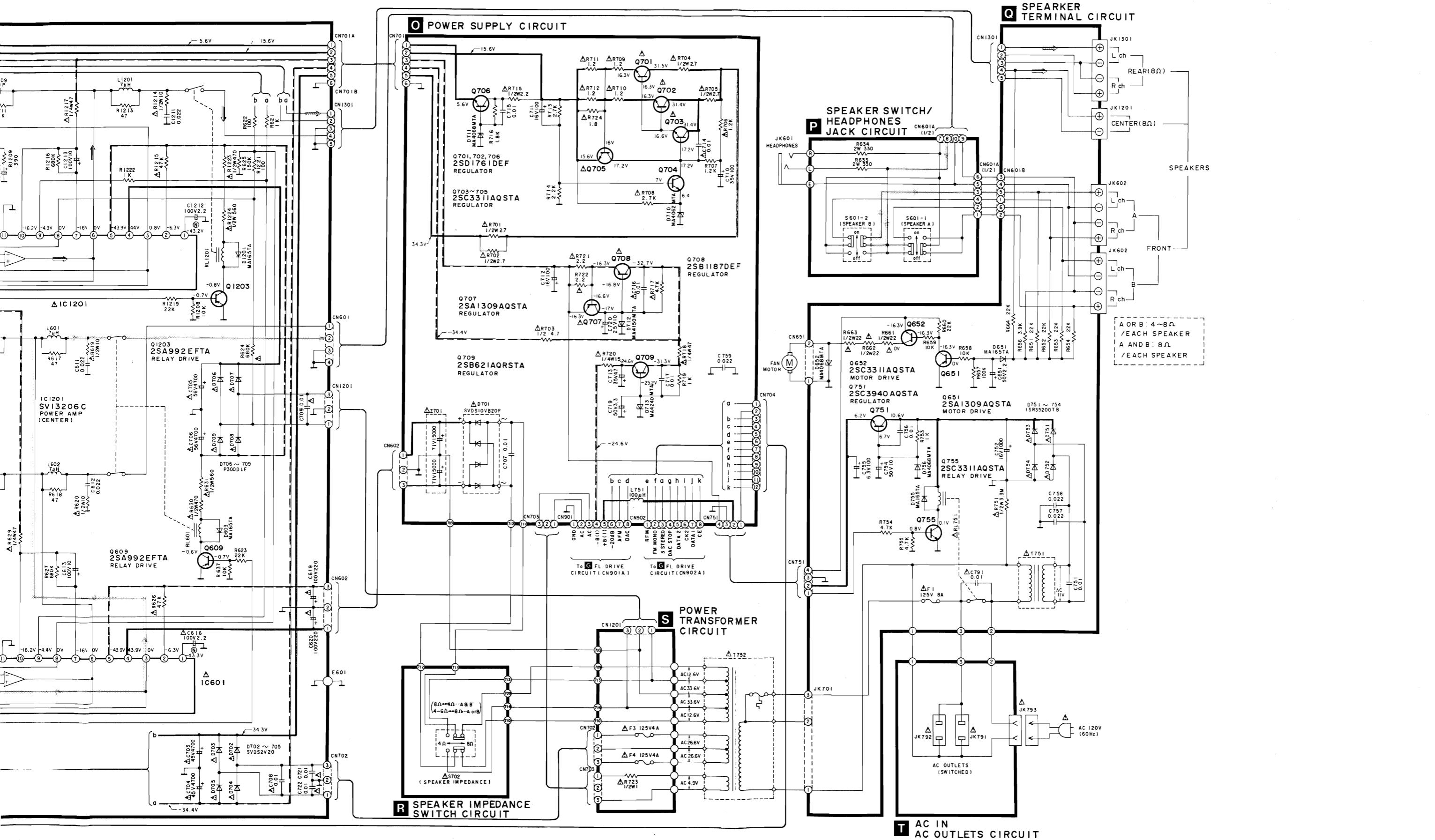
O POWER SUPPLY CIRCUIT



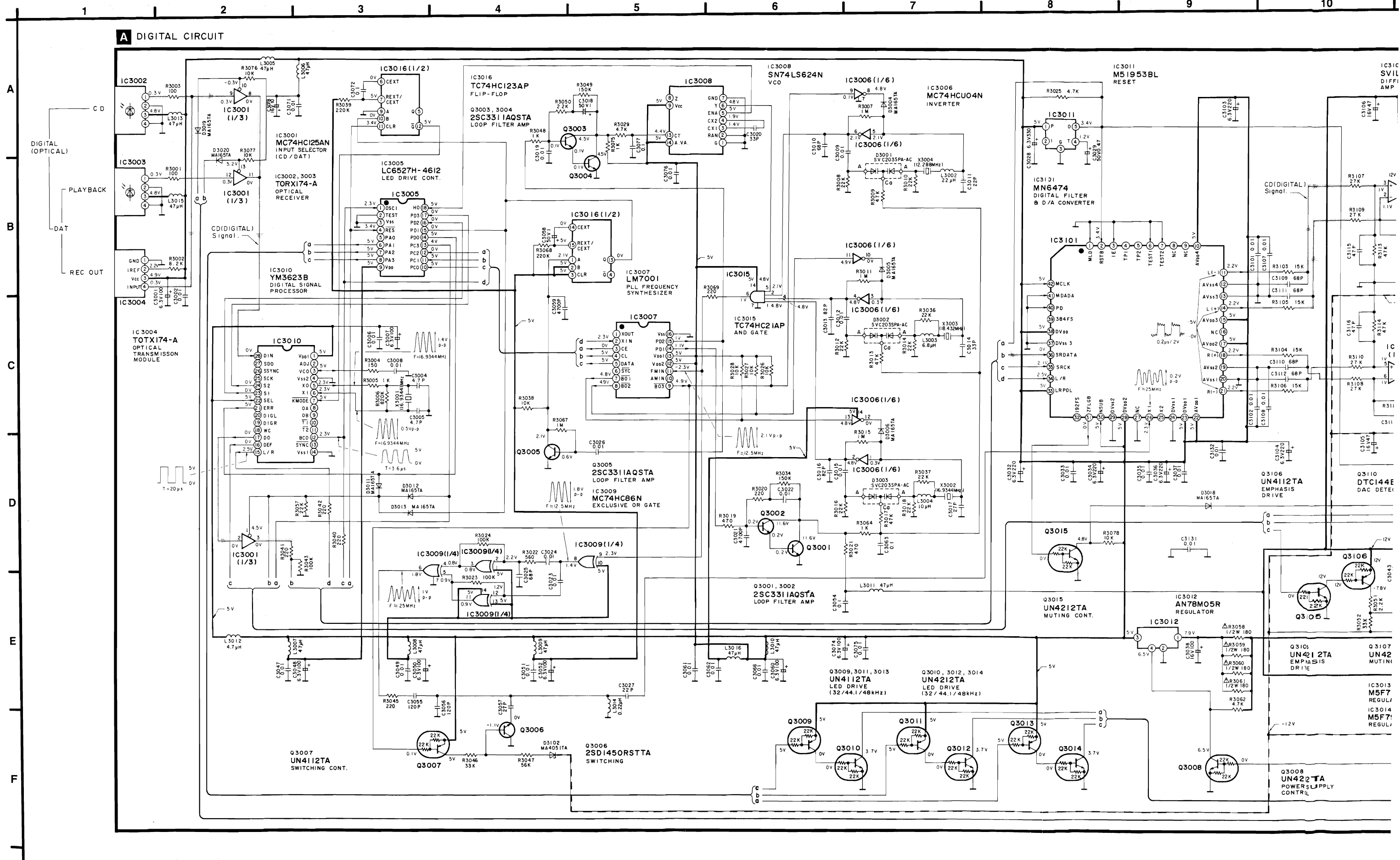
R SPEAKER IMPEDANCE SWITCH CIRCUIT

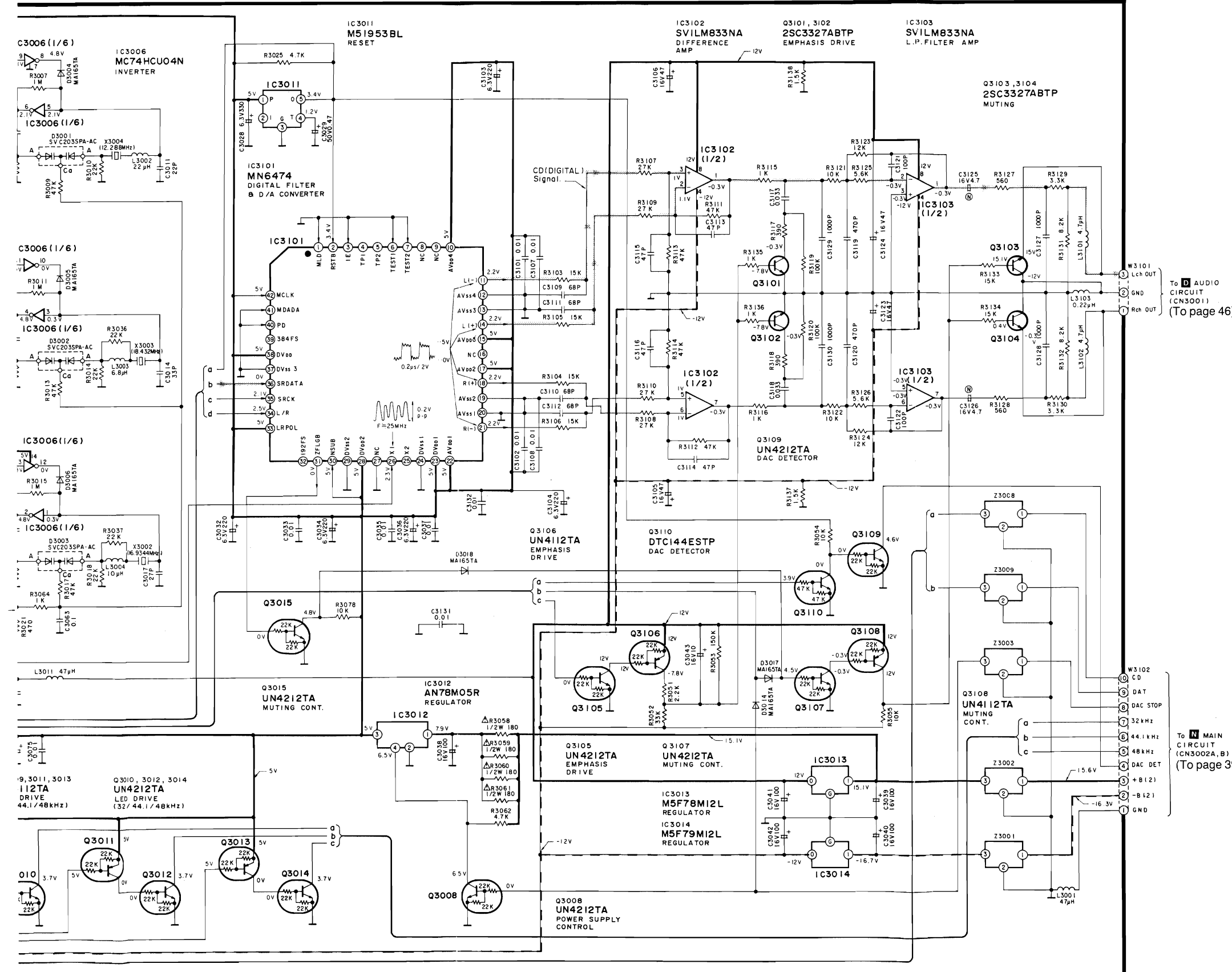


(To page 45) (To page 46)



OPTICAL (DIGITAL)/AUDIO TERMINAL CIRCUIT

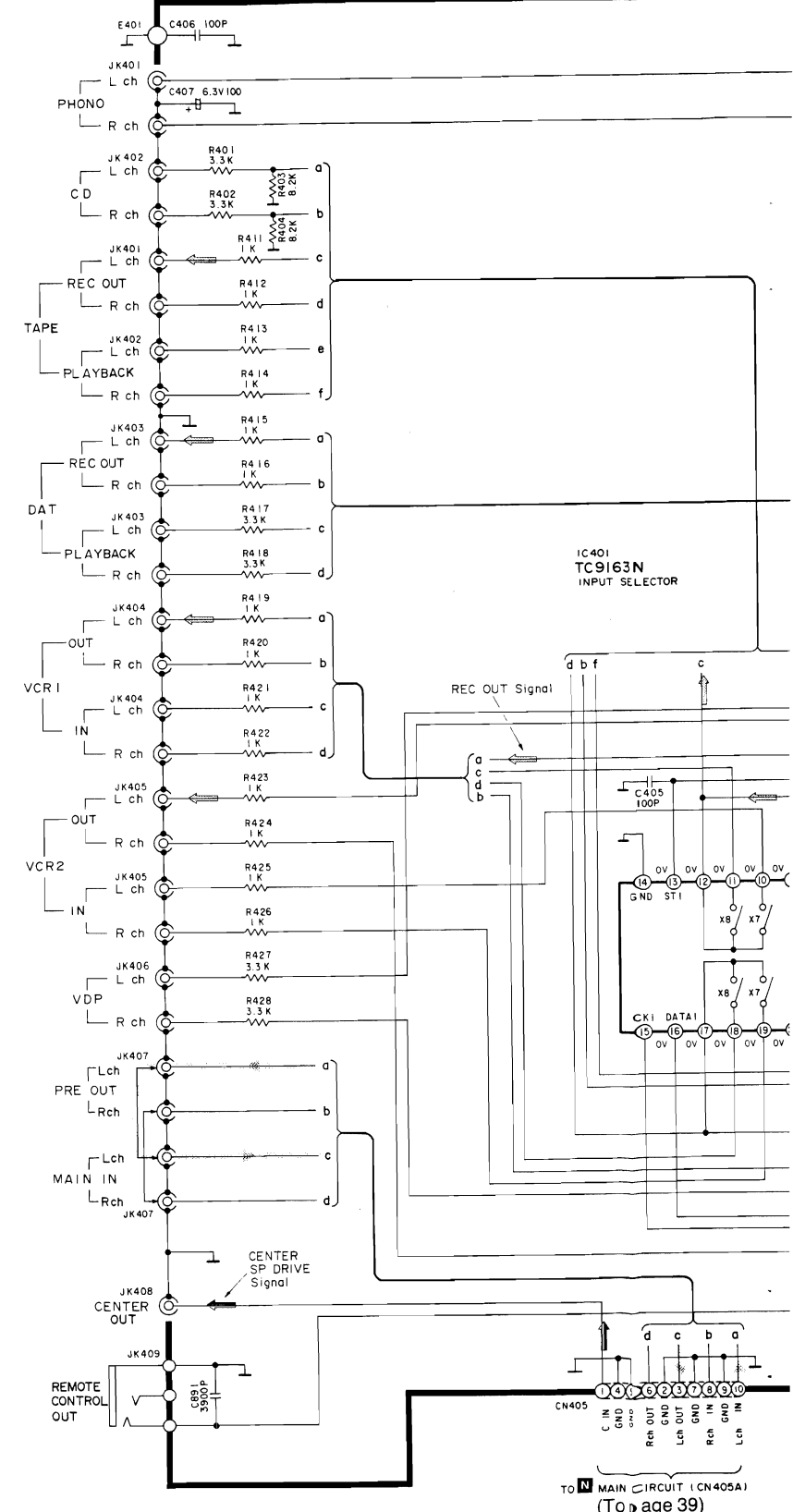




To D AUDIO CIRCUIT (CN3001) (To page 46)

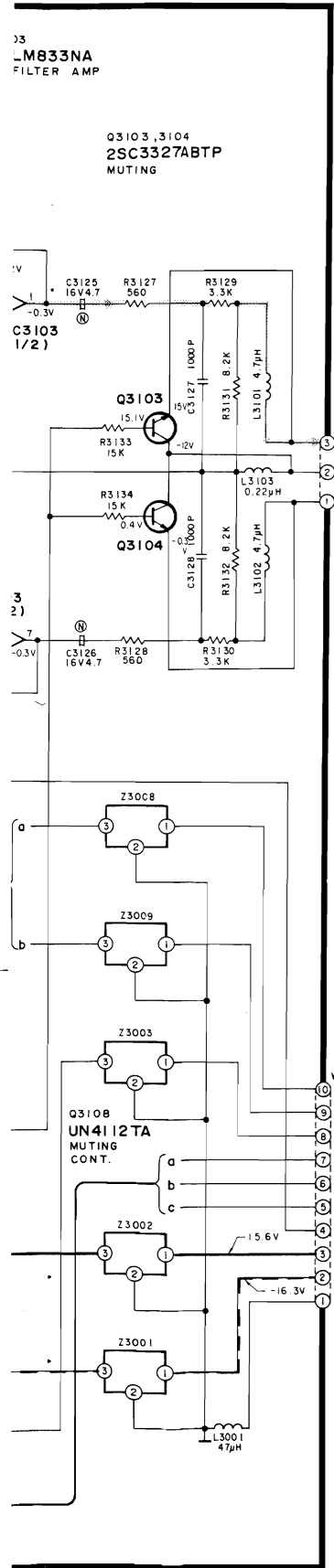
To N MAIN CIRCUIT (CN3002A, B) (To page 39)

D AUDIO CIRCUIT



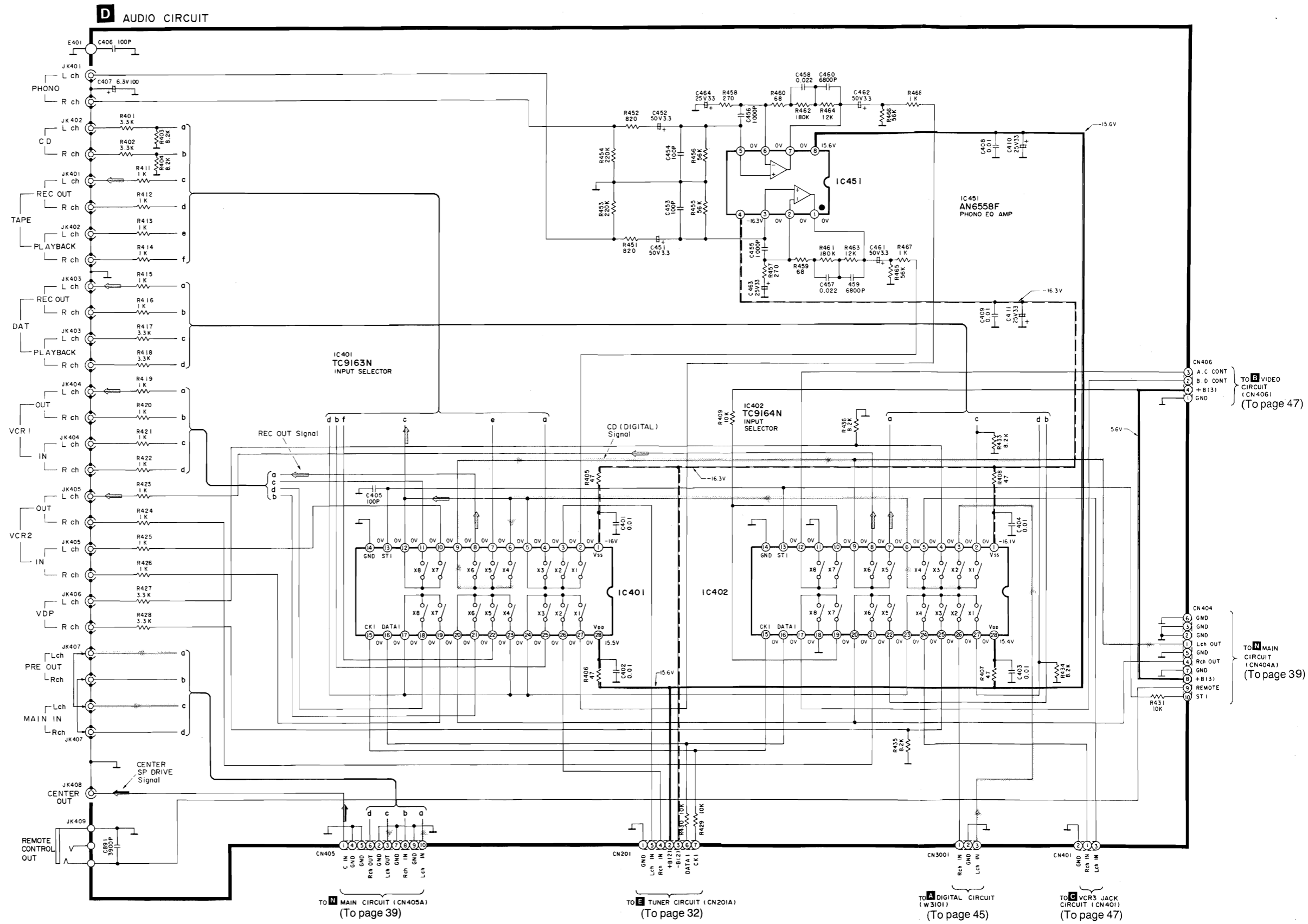
To N MAIN CIRCUIT (CN405A) (To page 39)

12 13 14 15 16 17 18 19 20 21 22

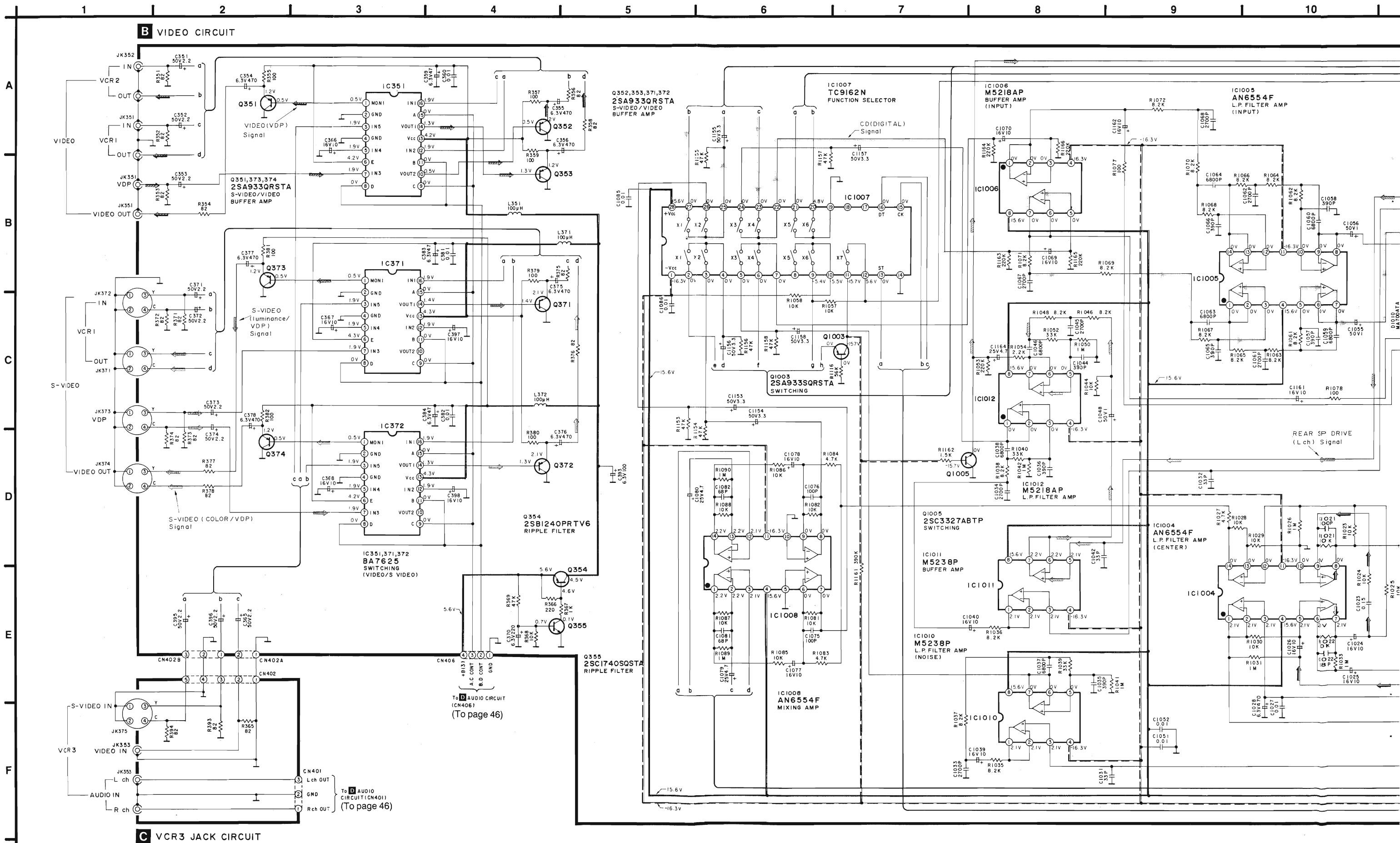


To **D** AUDIO CIRCUIT (CN3001) (To page 46)

To **N** MAIN CIRCUIT (CN3002A, B) (To page 39)



VIDEO TERMINAL CIRCUIT



7

8

9

10

11

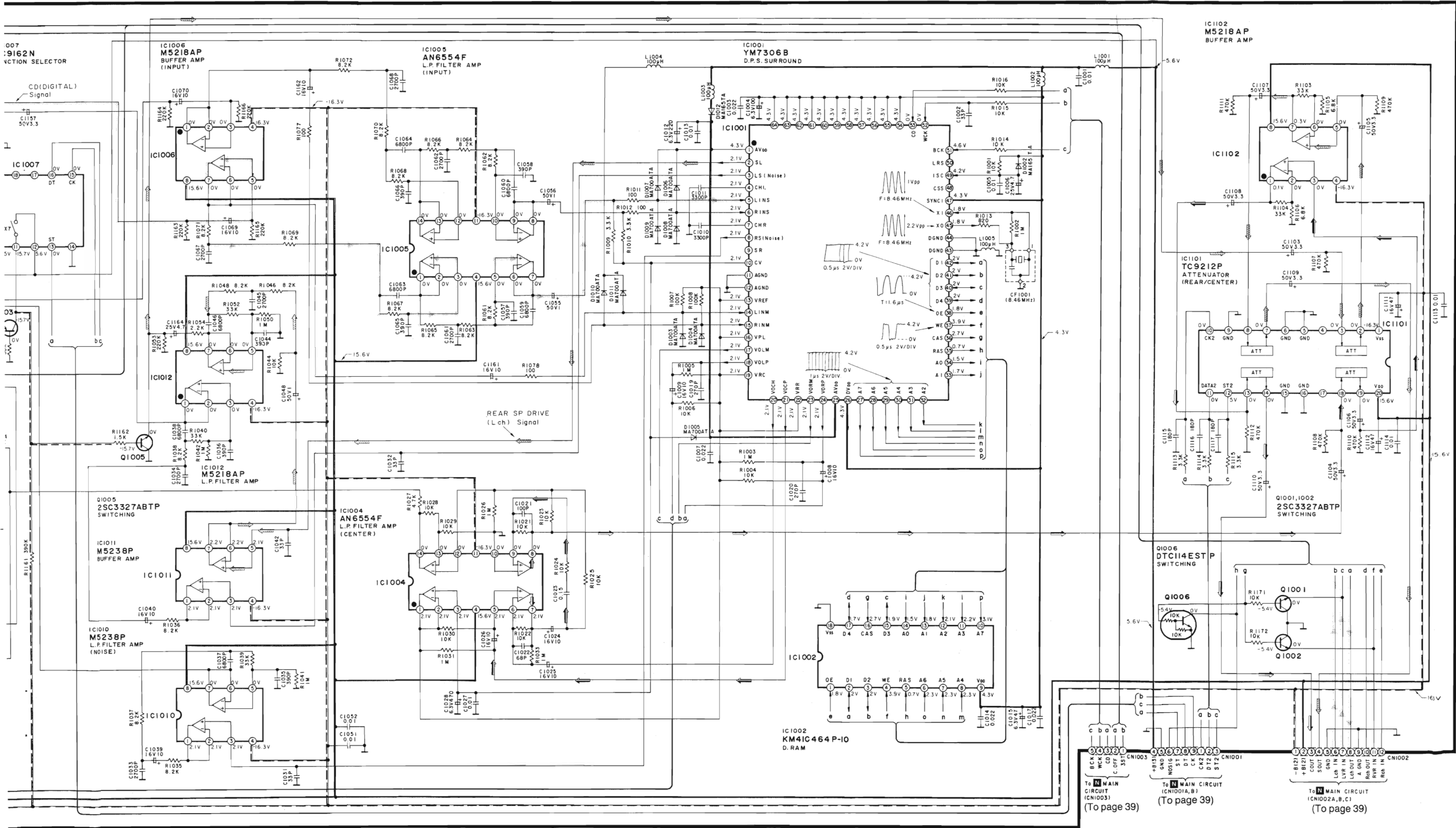
12

13

14

15

16



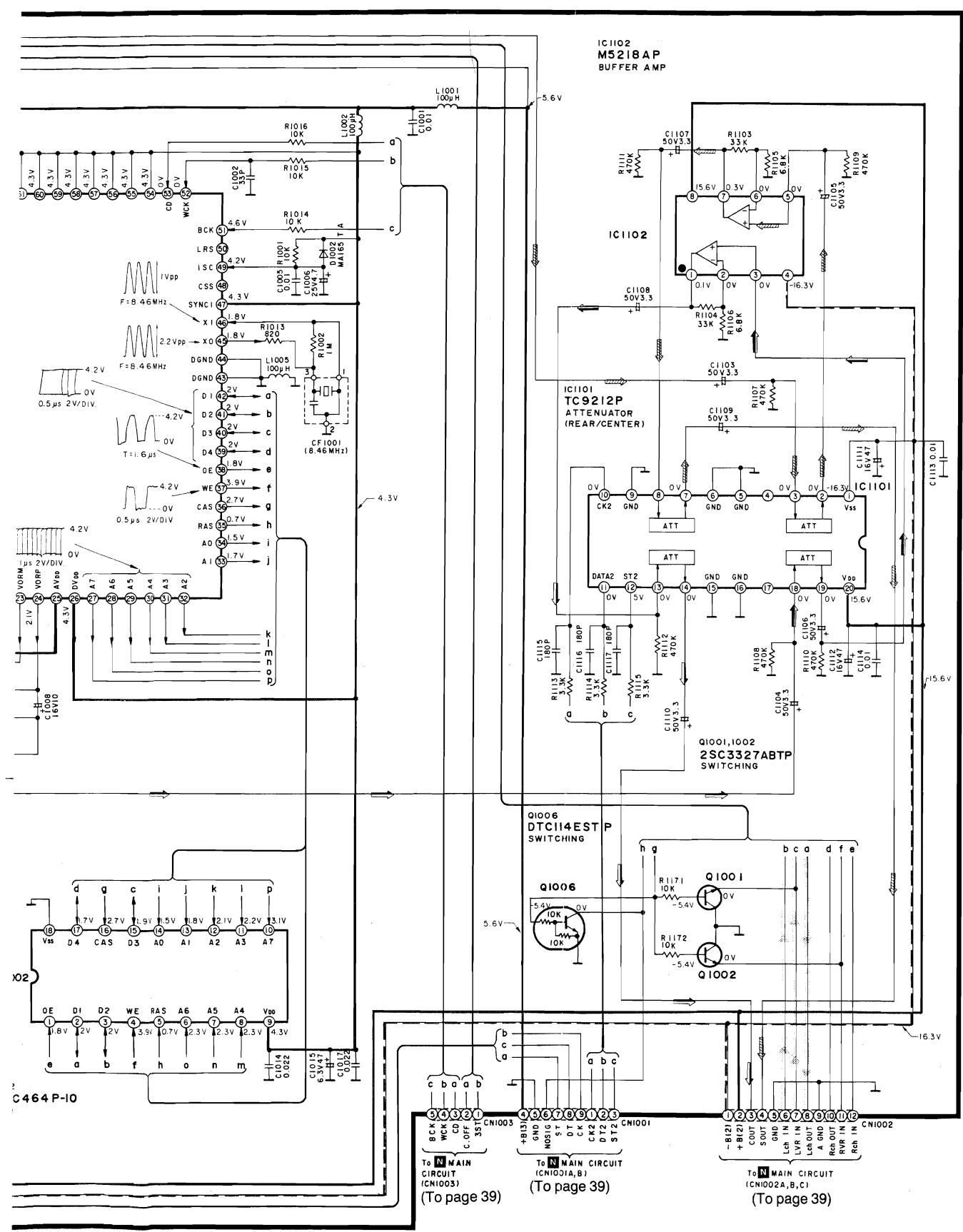
SCHEMATIC DIAGRAM (REMOTE CONTROLLER)

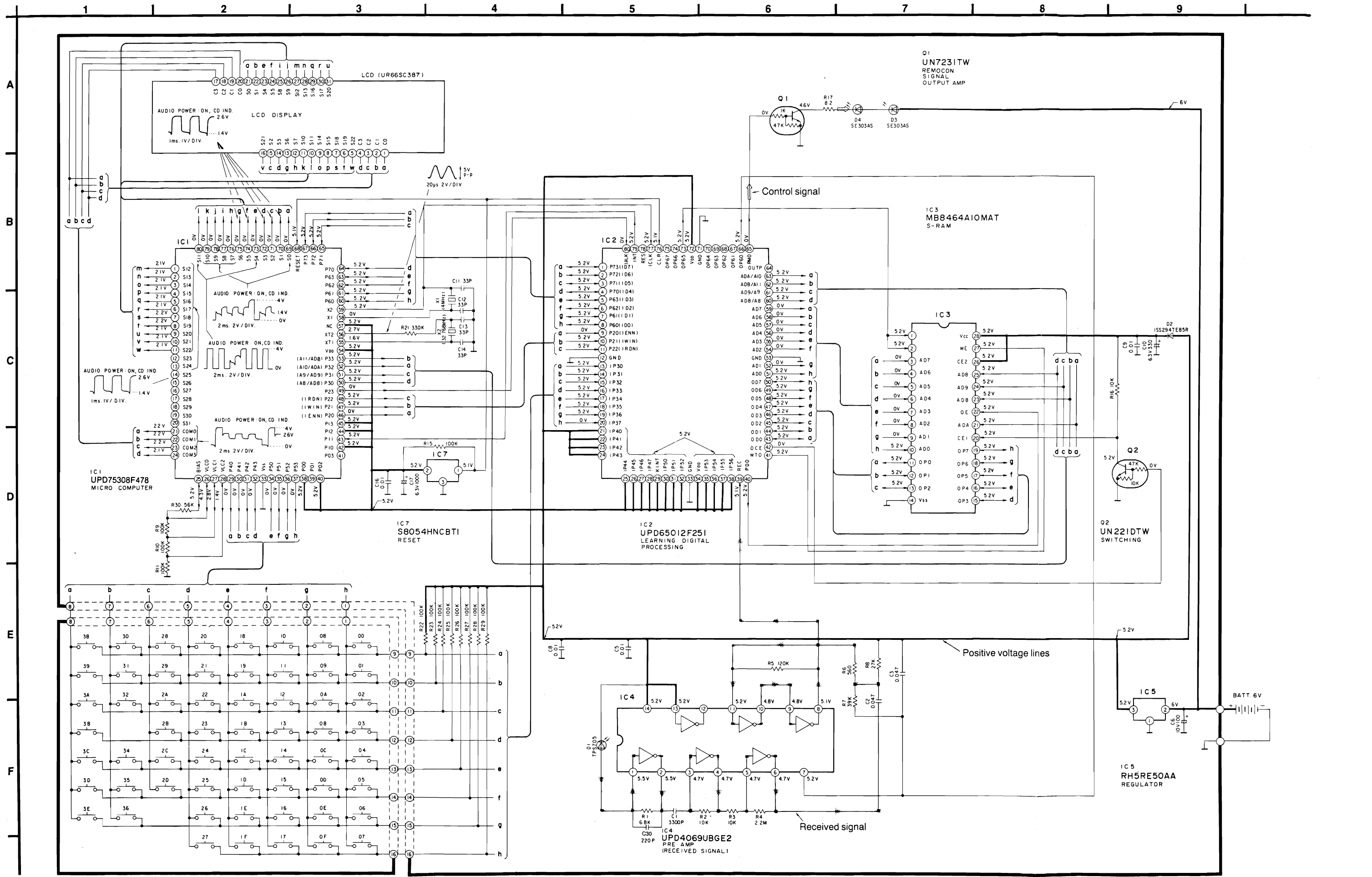
(Parts list on page 81)
 (This schematic diagram may be modified at any time with the development of new technology.)

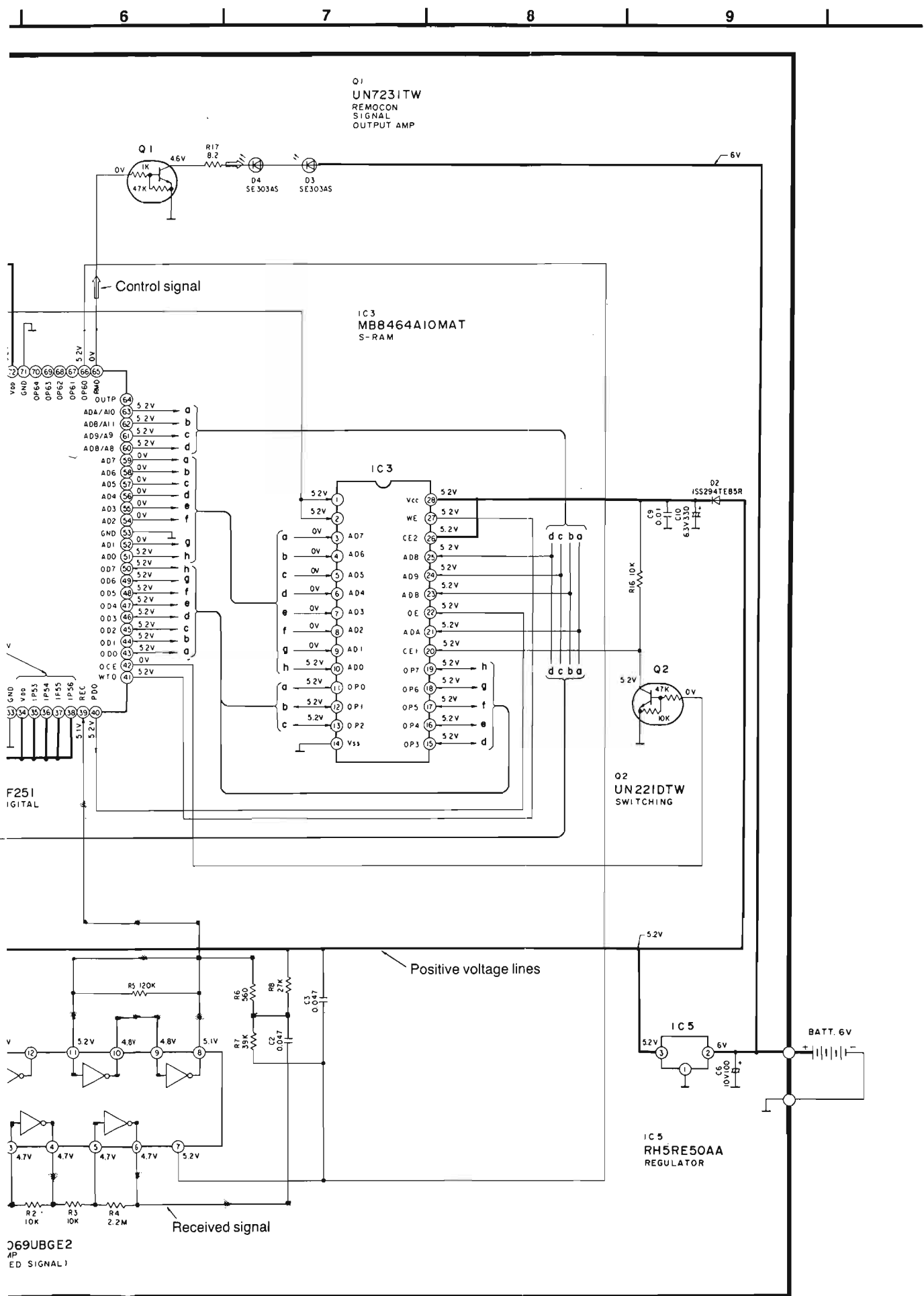
- ——— : Positive voltage lines
- ——— : Control signal lines
- ⋯⋯⋯ : Received signal lines

• Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

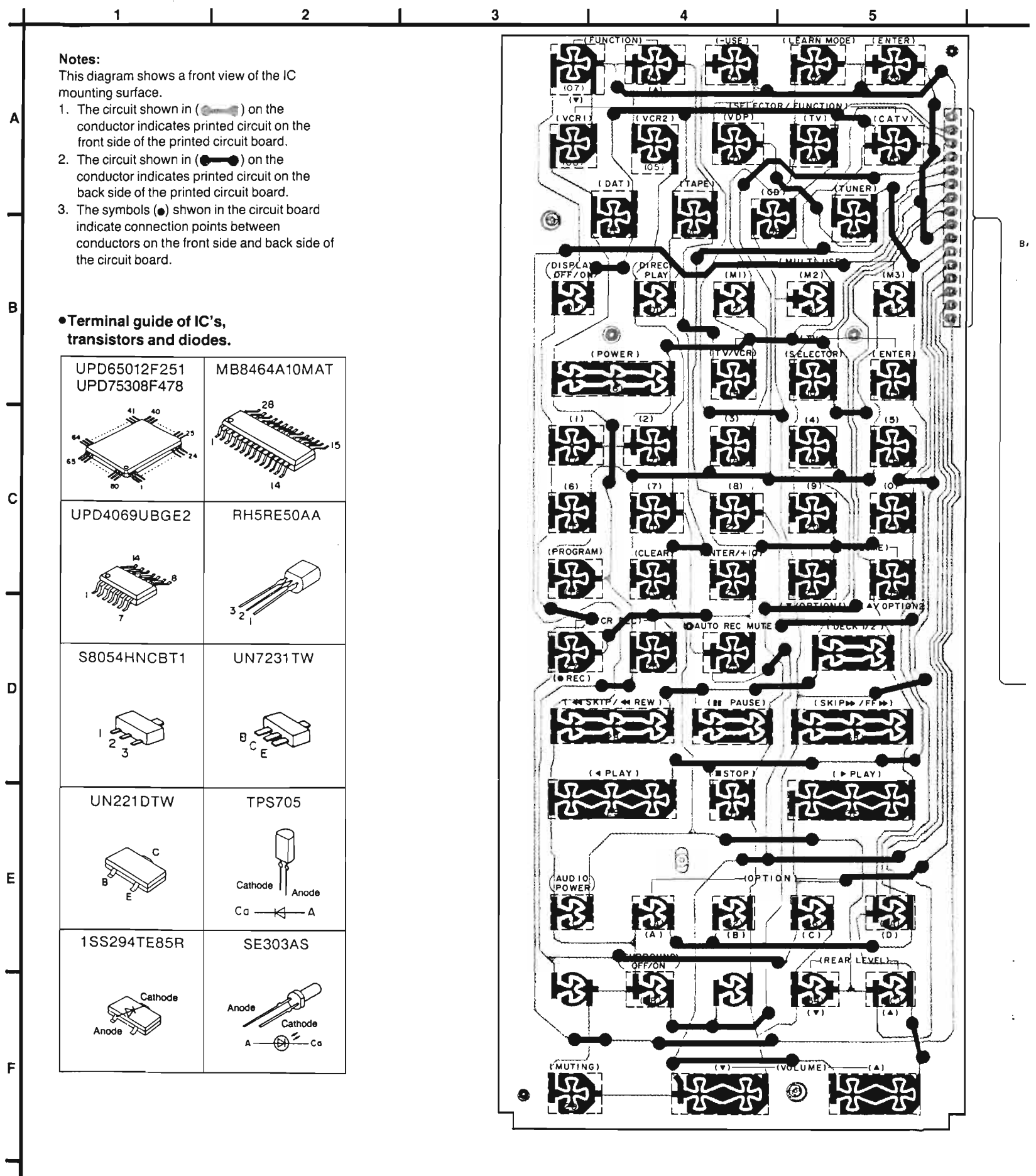
- *Caution!**
 IC and LSI are sensitive to static electricity.
 Secondary trouble can be prevented by taking care during repair.
 *Cover the parts boxes made of plastics with aluminum foil.
 *Ground the soldering iron.
 *Put a conductive mat on the work table.
 *Do not touch the legs of IC or LSI with the fingers directly.







PRINTED CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (REMOTE COM



BOARDS AND WIRING CONNECTION DIAGRAM (REMOTE CONTROLLER) (Parts list on page 81)

2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12

IC
he
on the
rd.
ne
on the
rd.
it board
n
ack side of

A10MAT



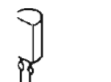
E50AA



31TW

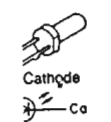


705

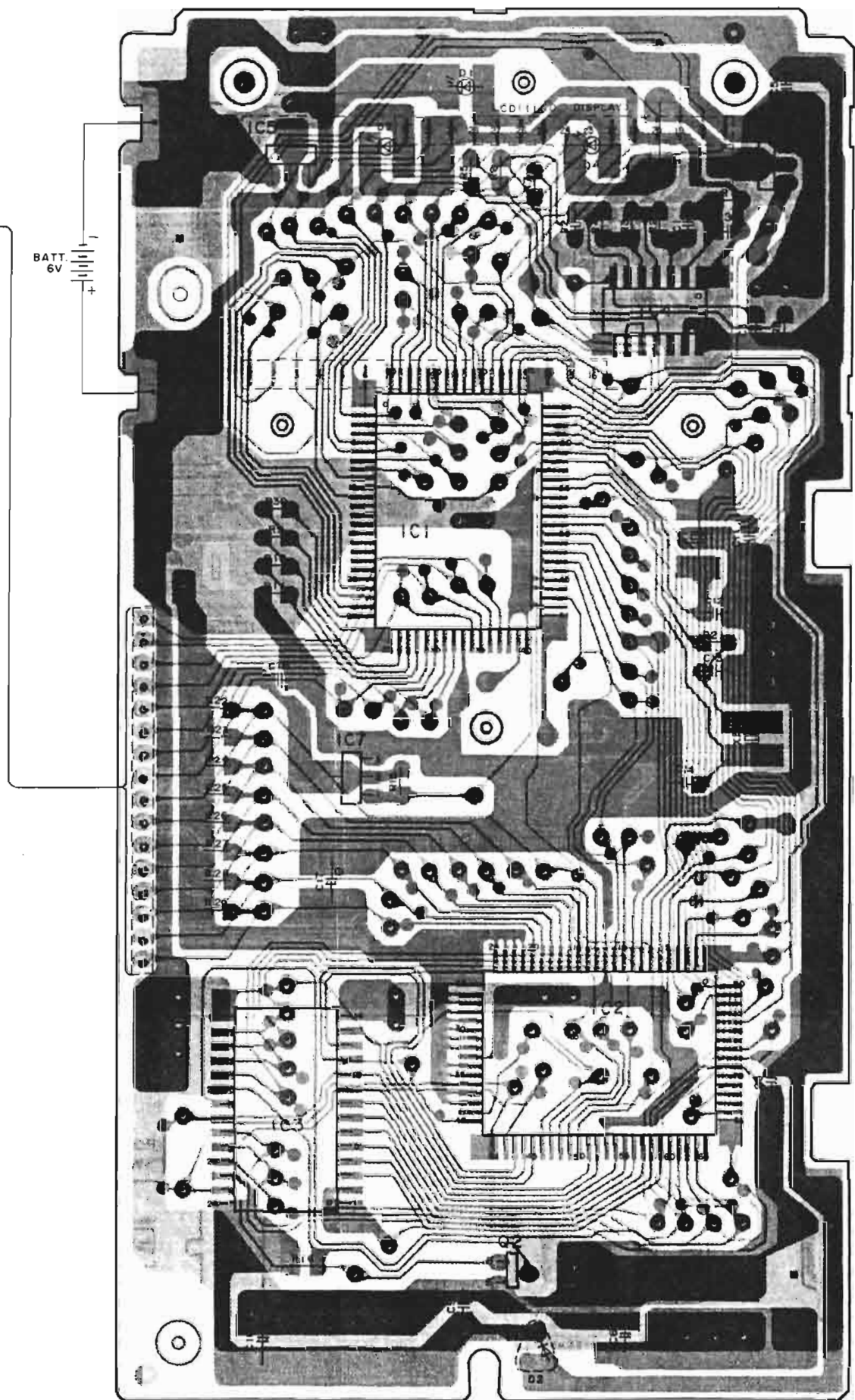
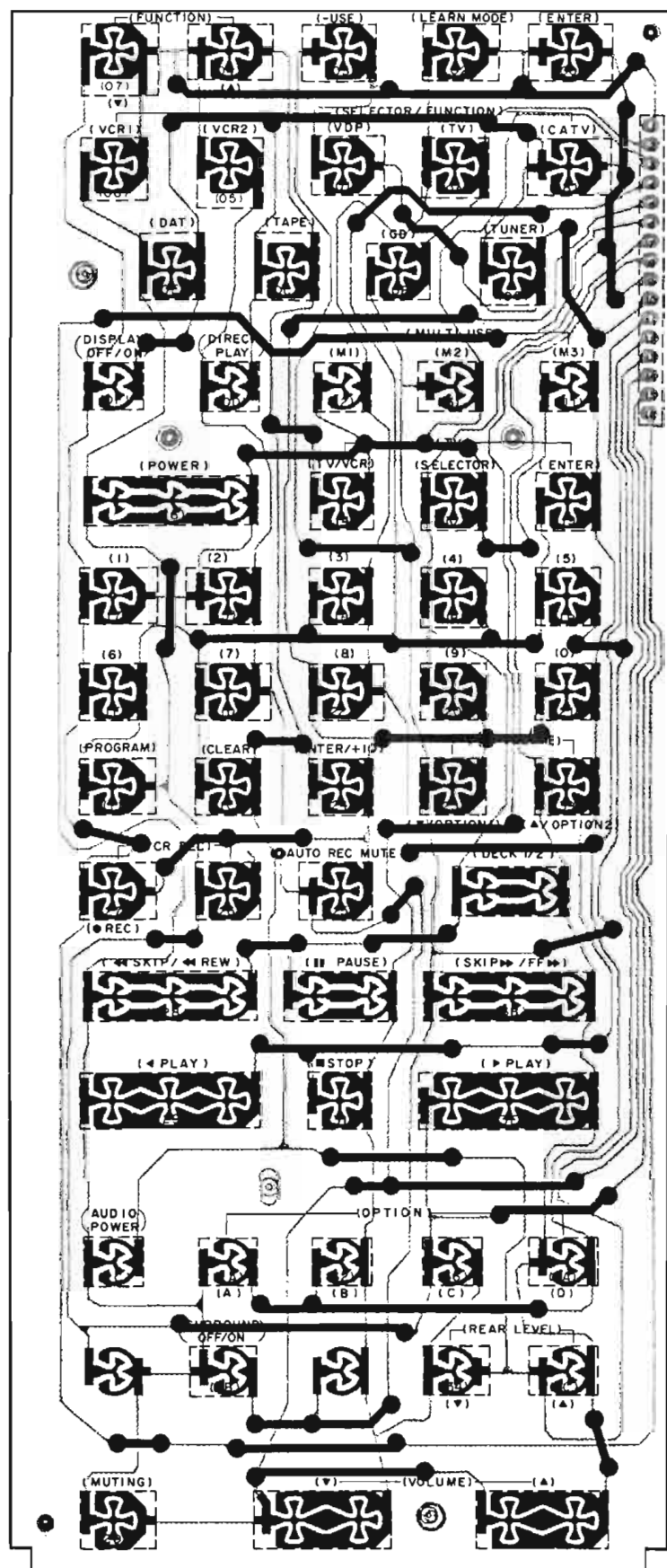


Anode
A

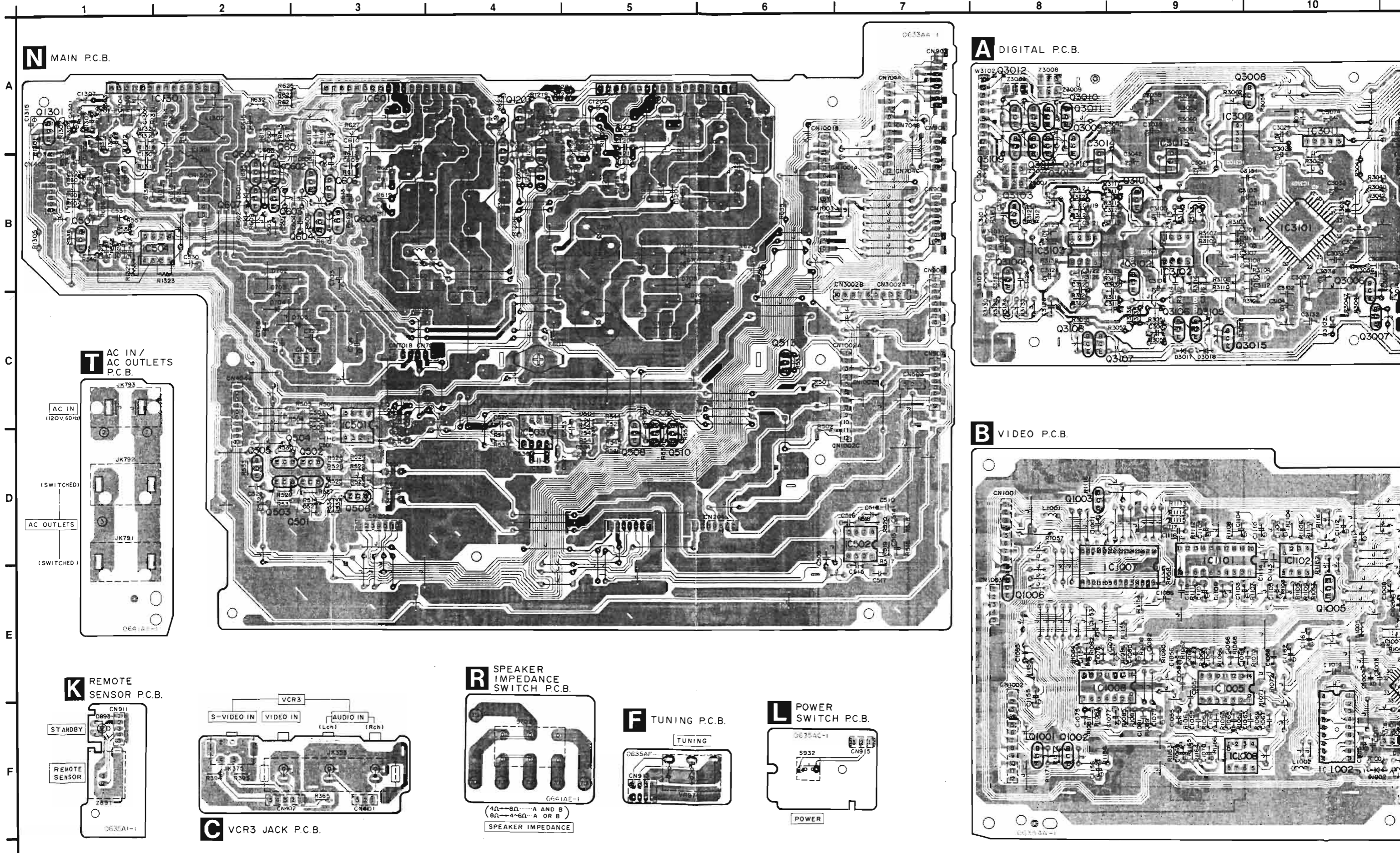
3AS



Cathode
Co



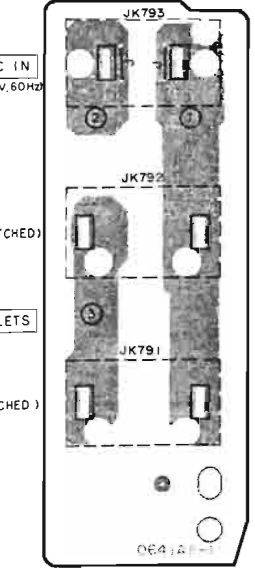
PRINTED CIRCUIT BOARDS (Parts list on pages 68~77)



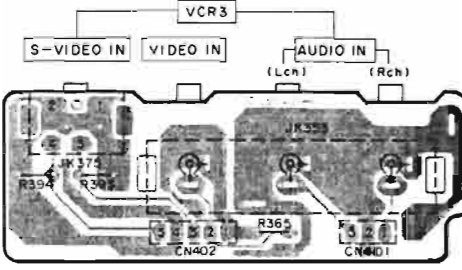
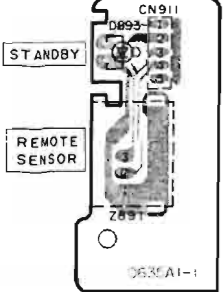
N MAIN P.C.B.

A DIGITAL P.C.B.

T AC IN / AC OUTLETS P.C.B.

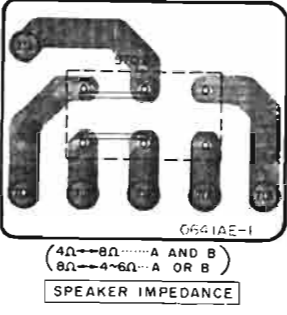


K REMOTE SENSOR P.C.B.

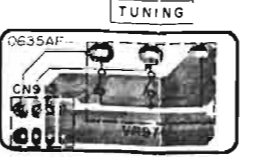


C VCR3 JACK P.C.B.

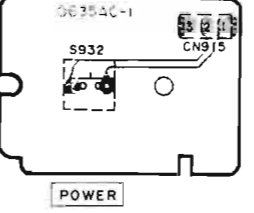
R SPEAKER IMPEDANCE SWITCH P.C.B.



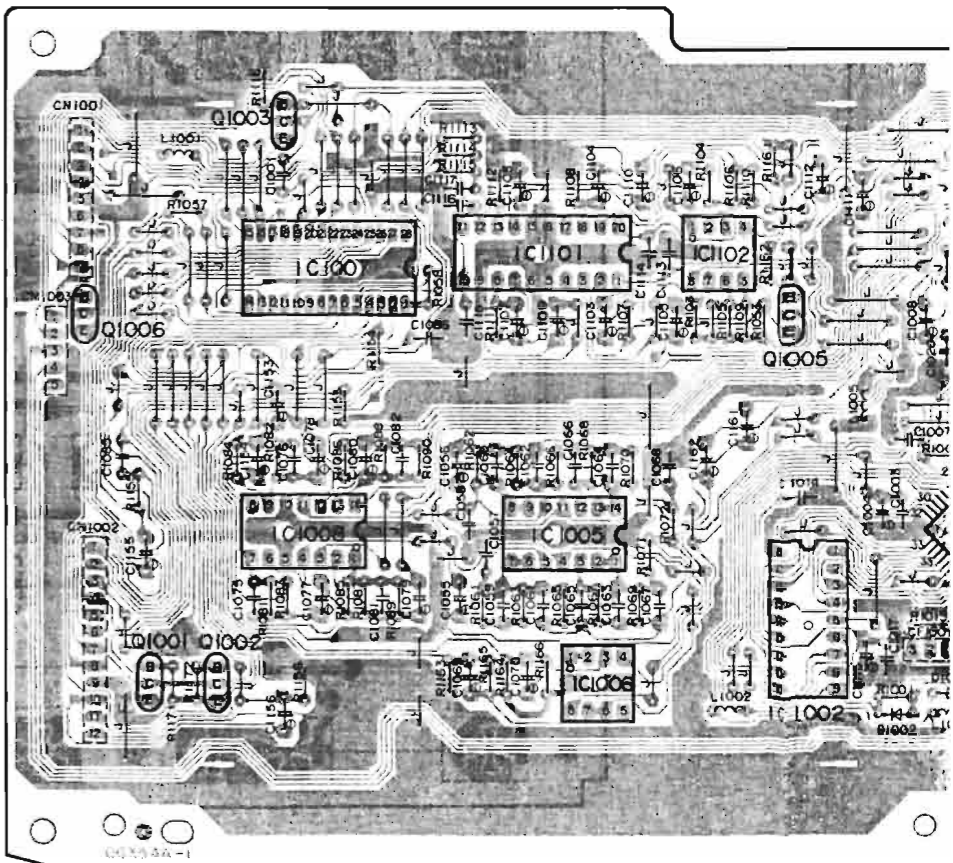
F TUNING P.C.B.



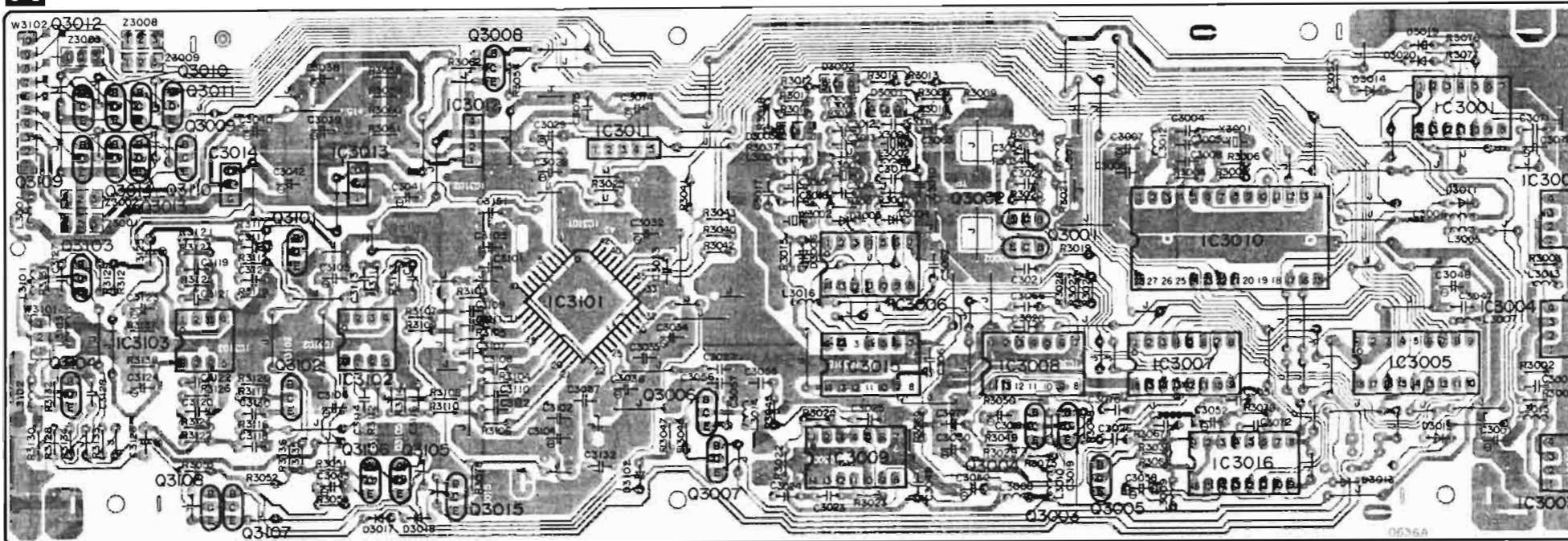
L POWER SWITCH P.C.B.



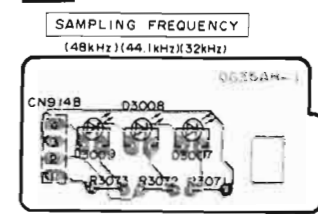
B VIDEO P.C.B.



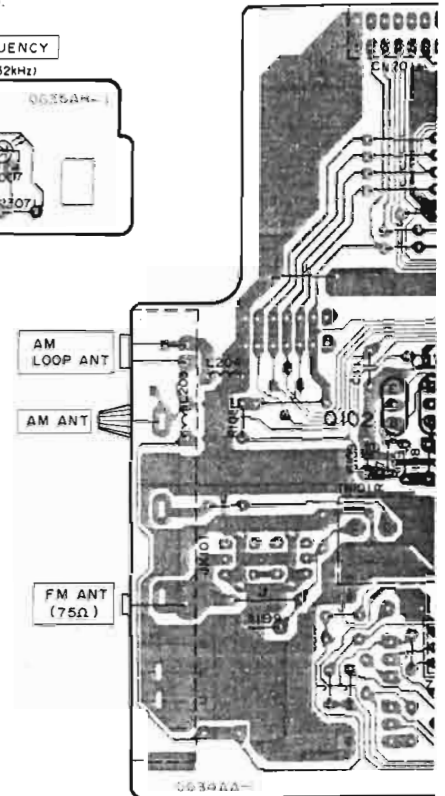
A DIGITAL P.C.B.



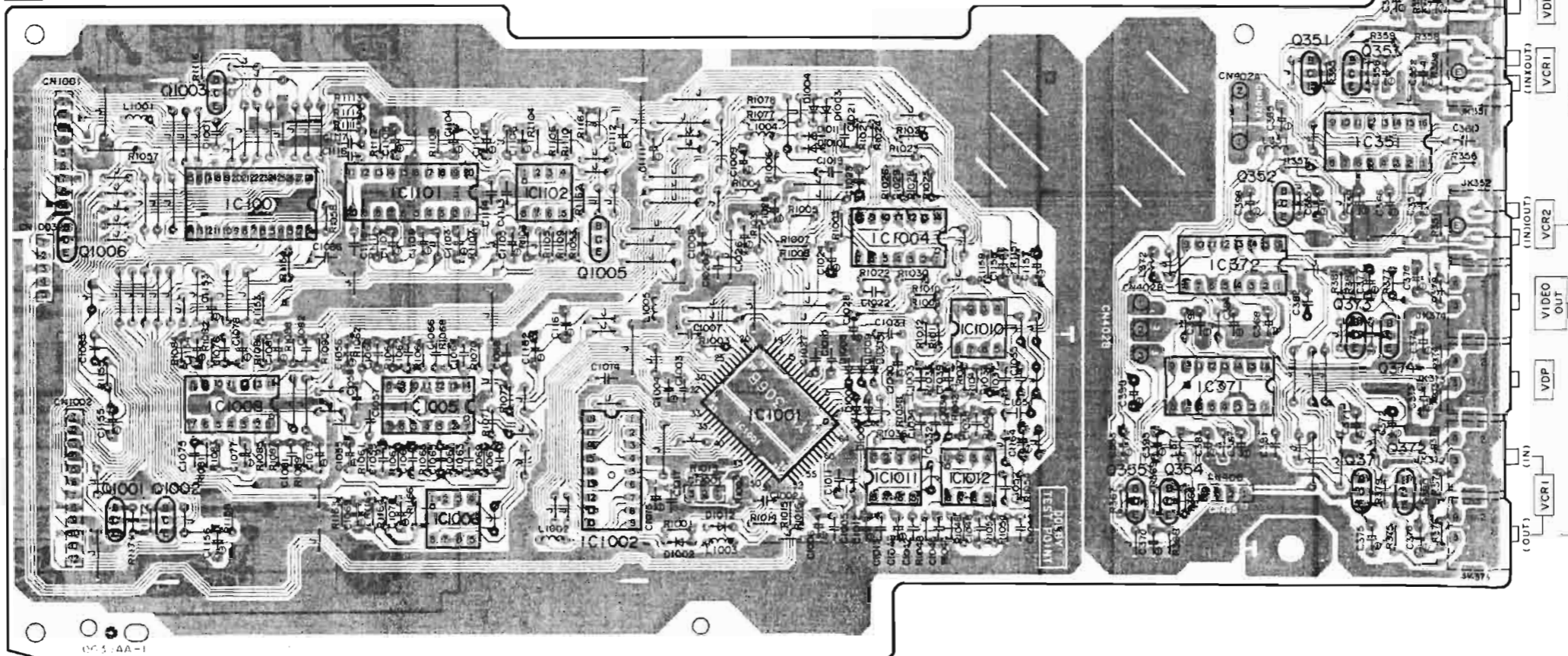
I LED P.C.B.



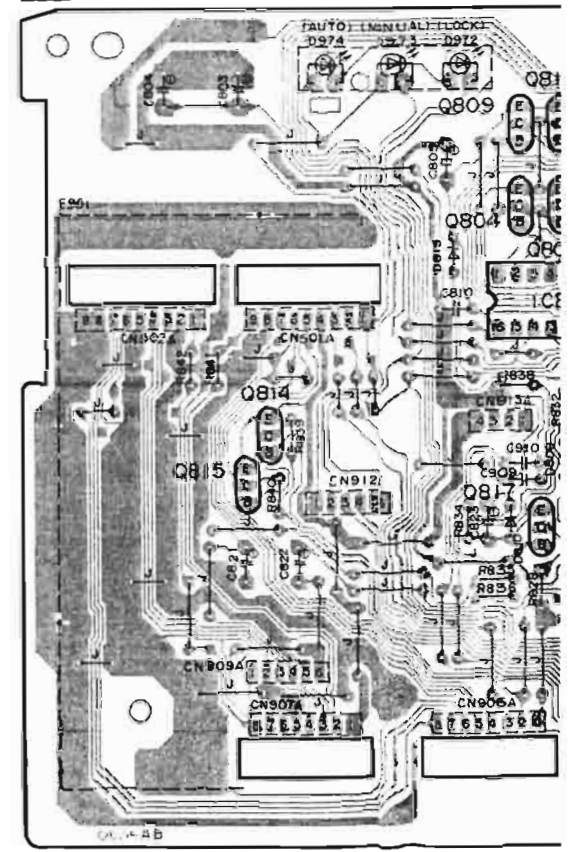
E TUNER P.C.



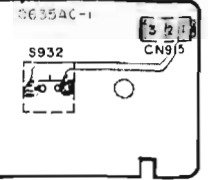
B VIDEO P.C.B.

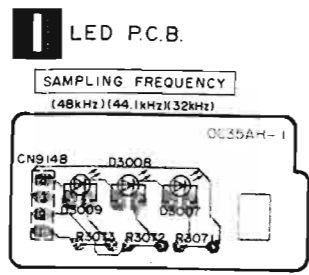


G FL DRIVE P.C.B.

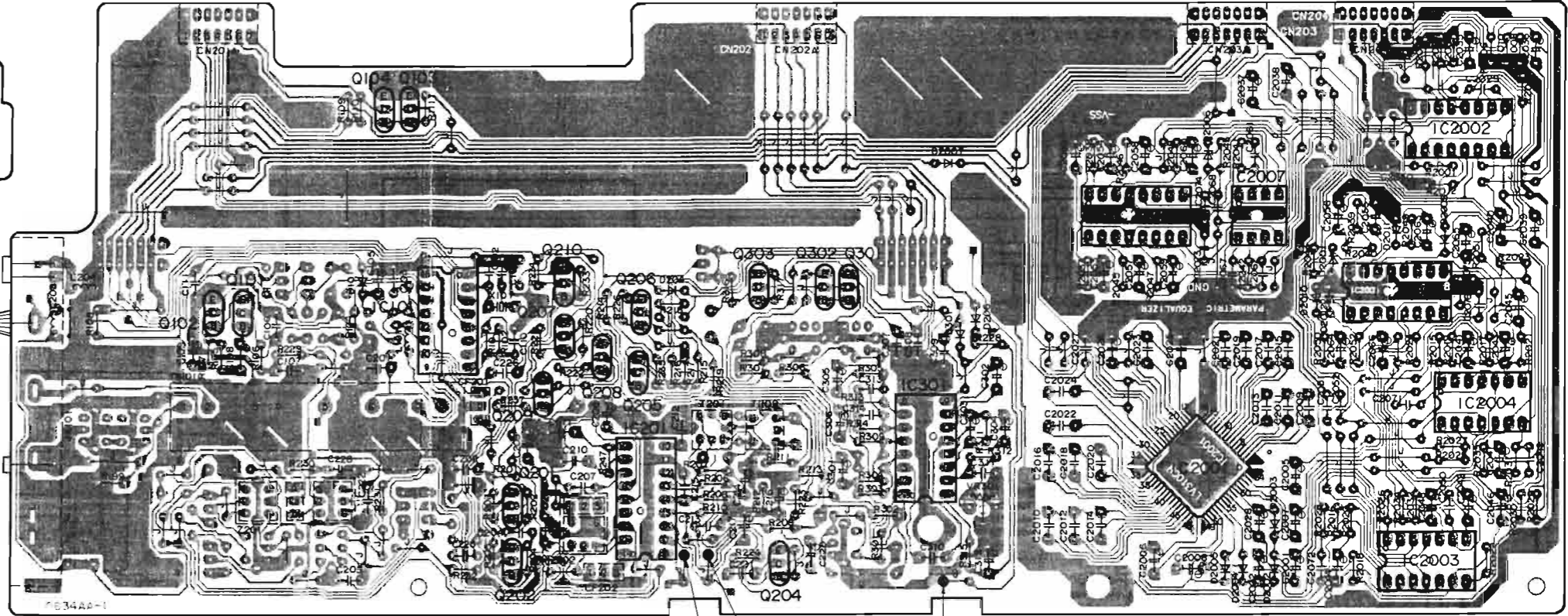


POWER SWITCH P.C.B.

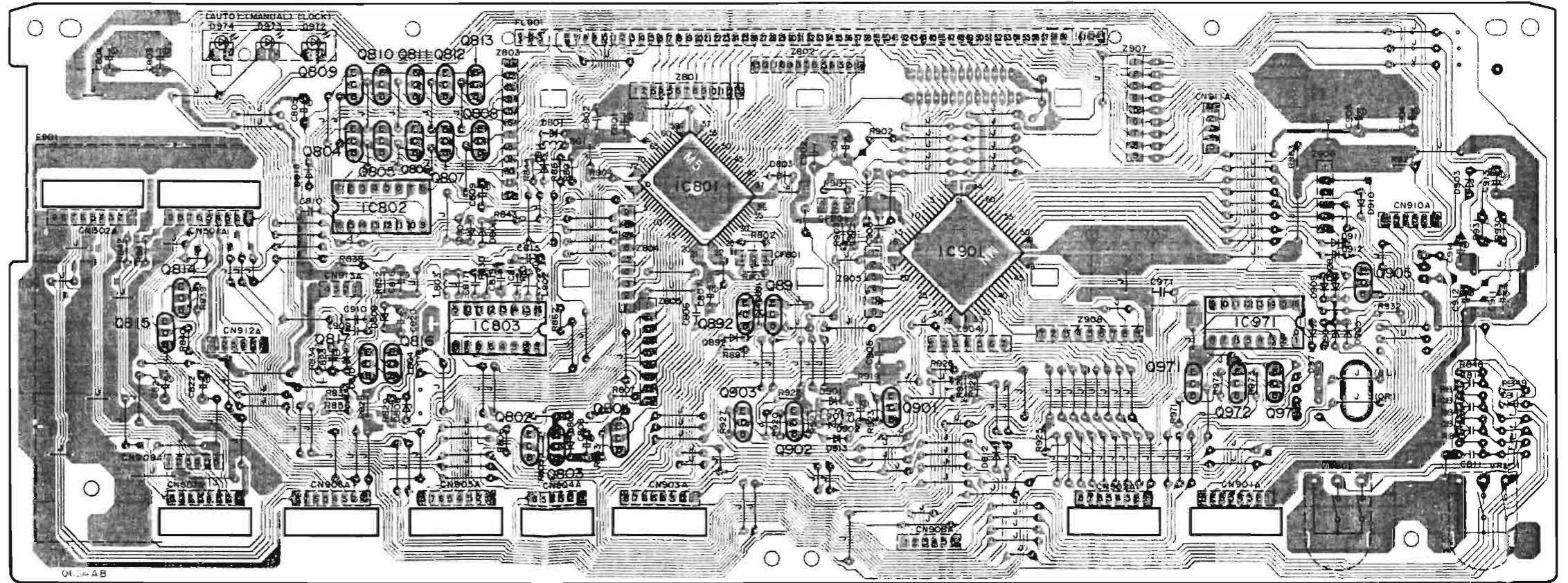




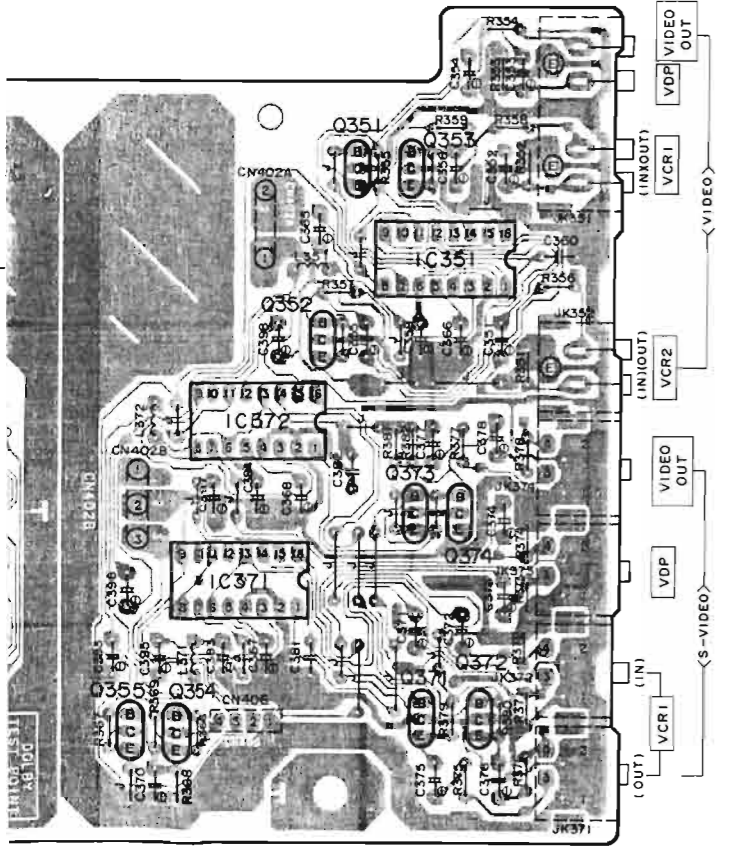
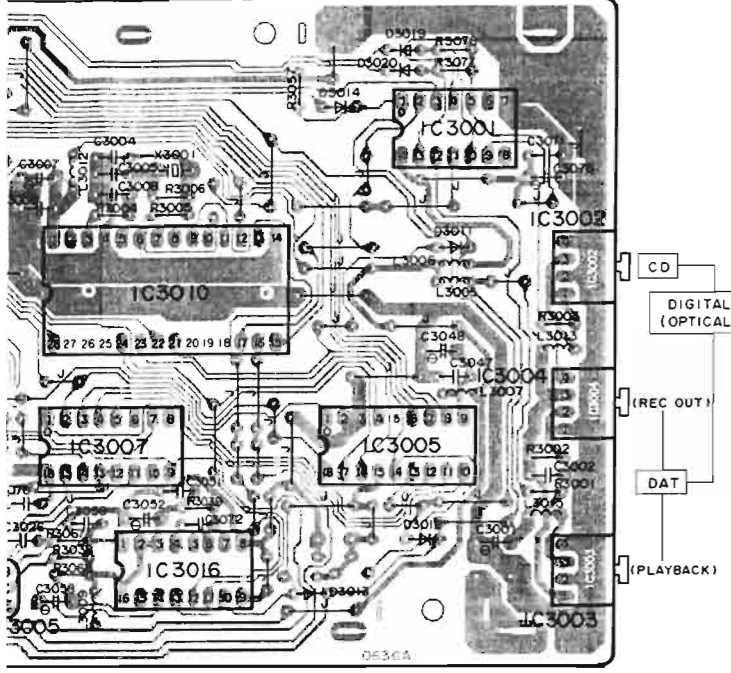
E TUNER P.C.B.



G FL DRIVE P.C.B.

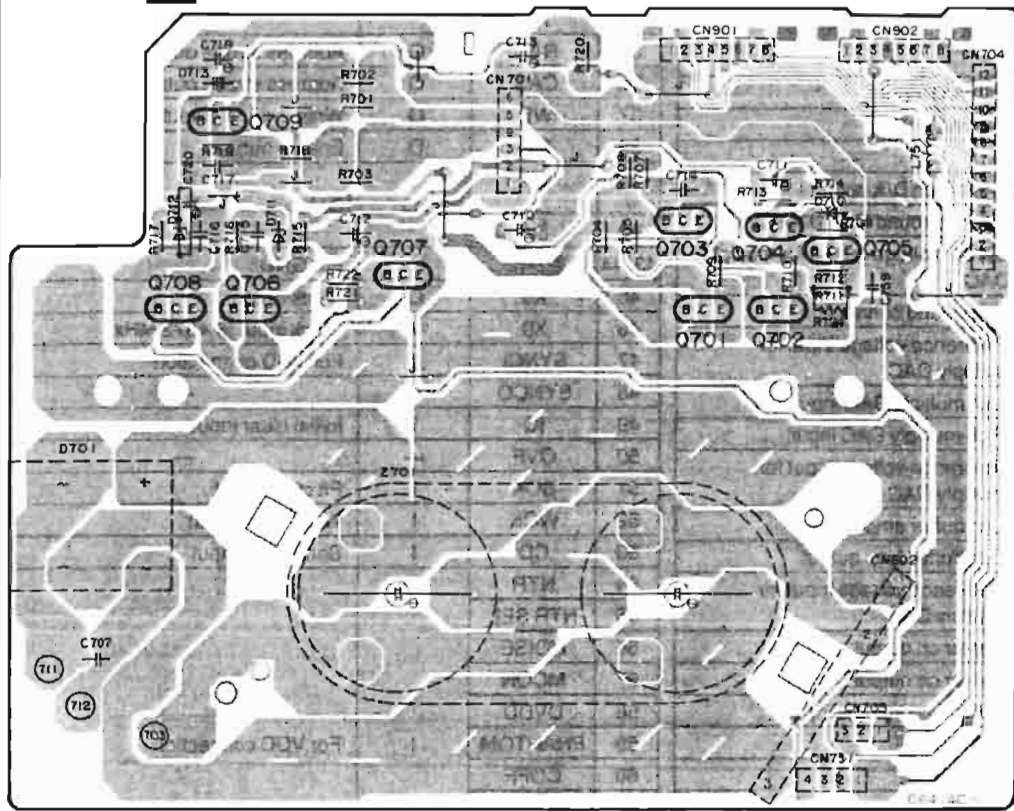


LEVEL /TREBLE
CENTER FREQ/BASS

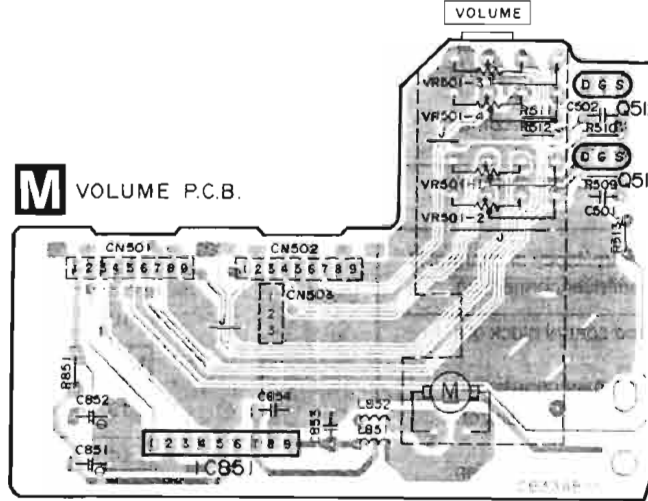


1 2 3 4 5 6 7 8 9 10

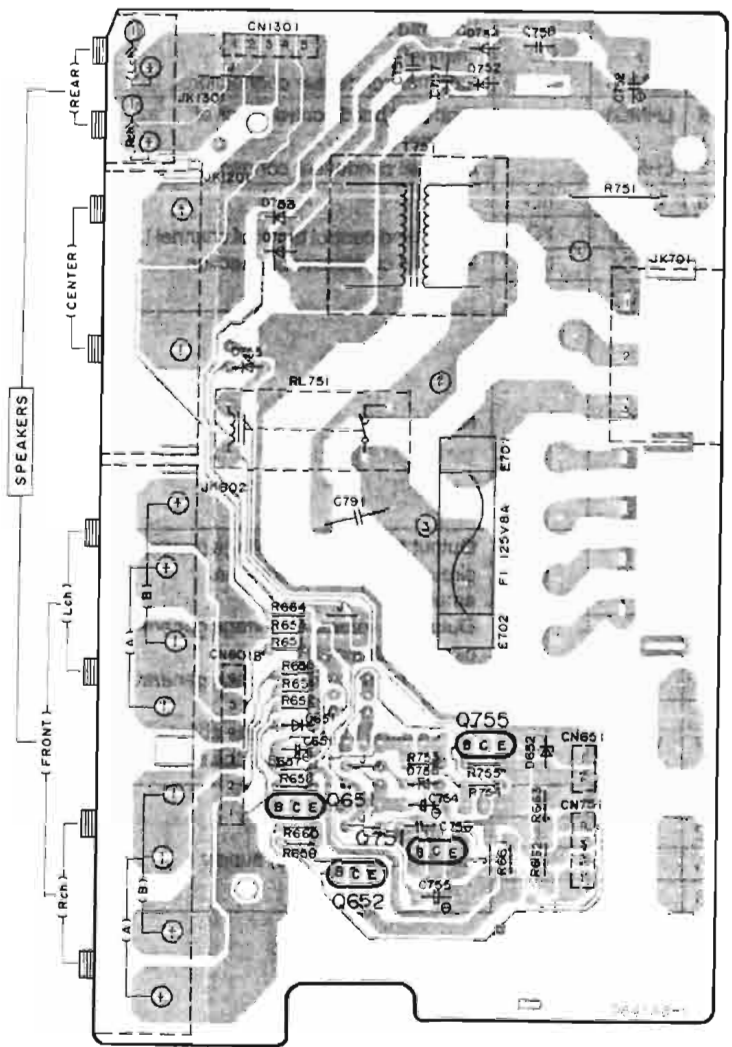
O POWER SUPPLY P.C.B.



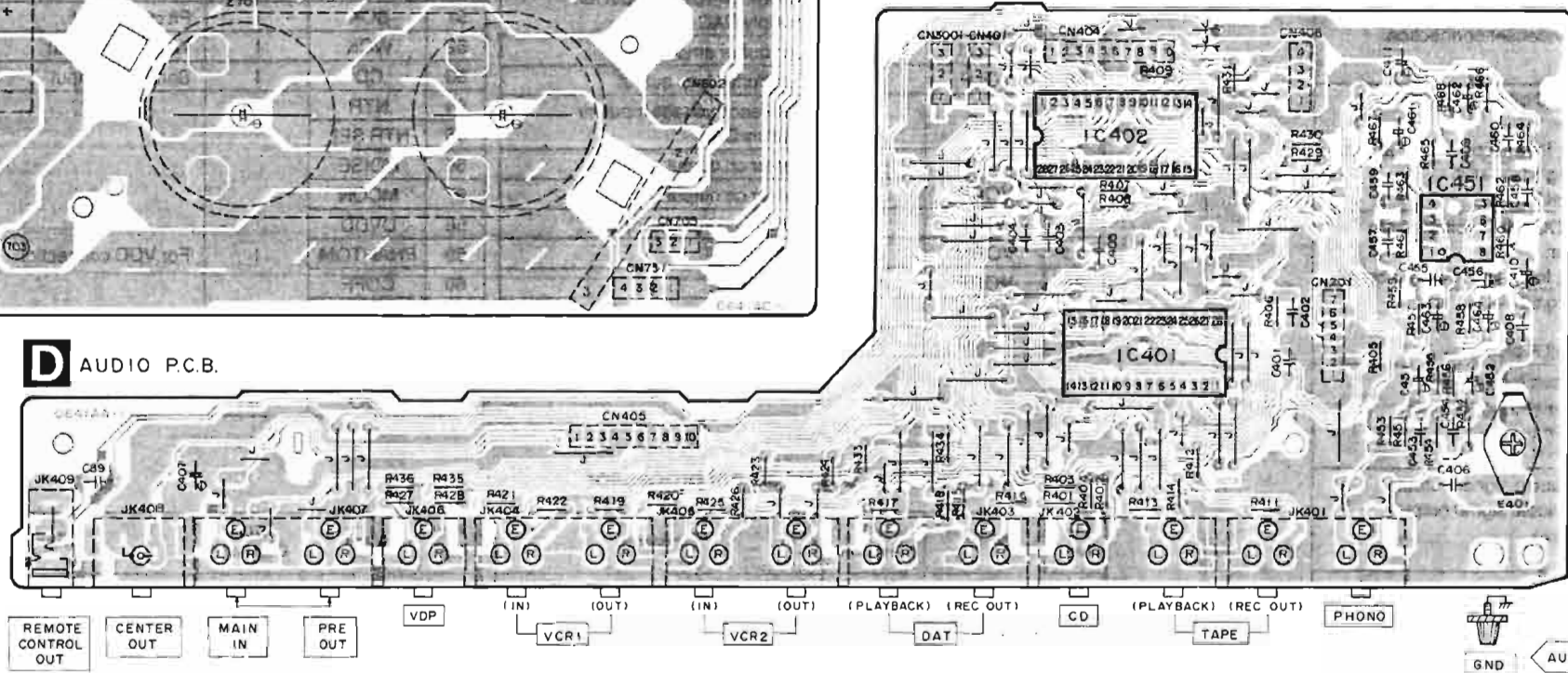
M VOLUME P.C.B.



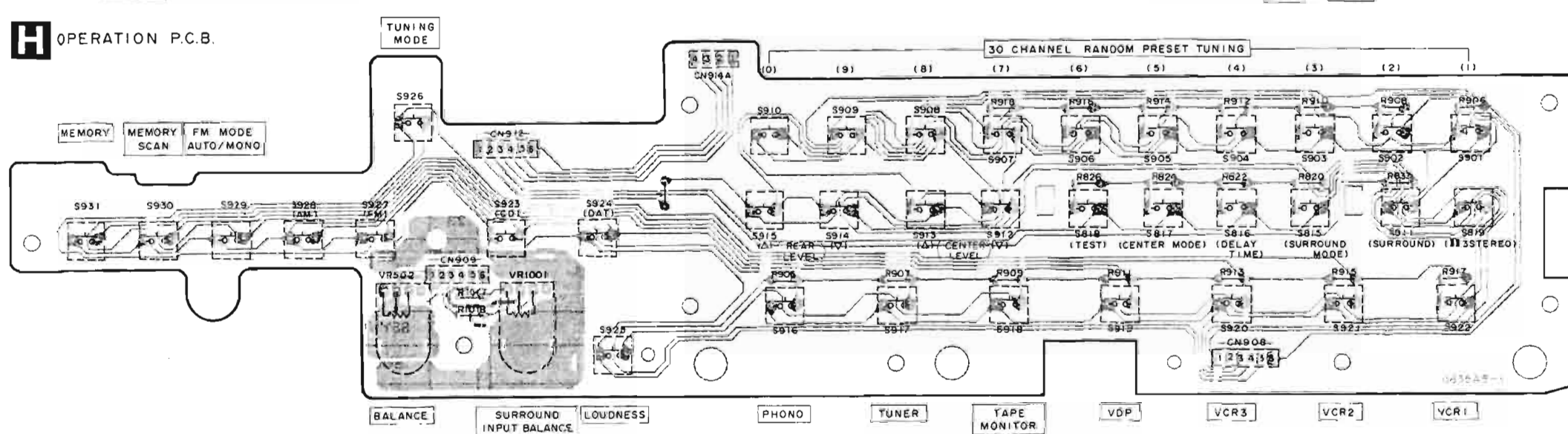
Q SPEAKER TERMINAL P.C.B.



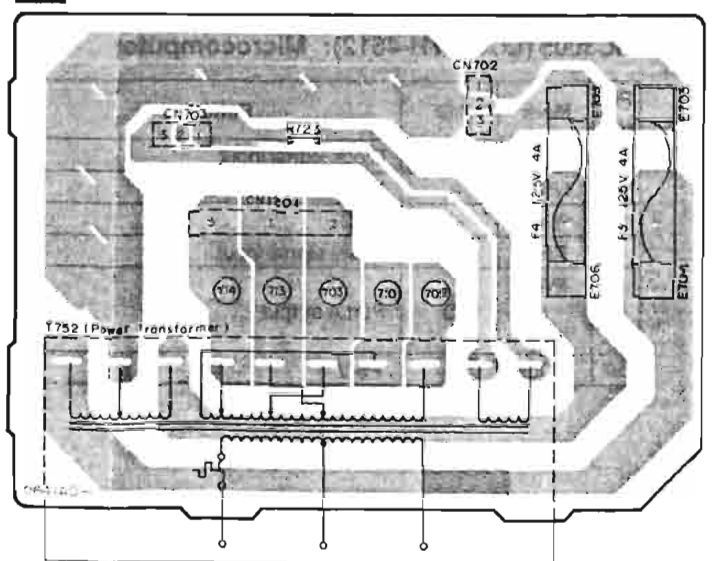
D AUDIO P.C.B.



H OPERATION P.C.B.

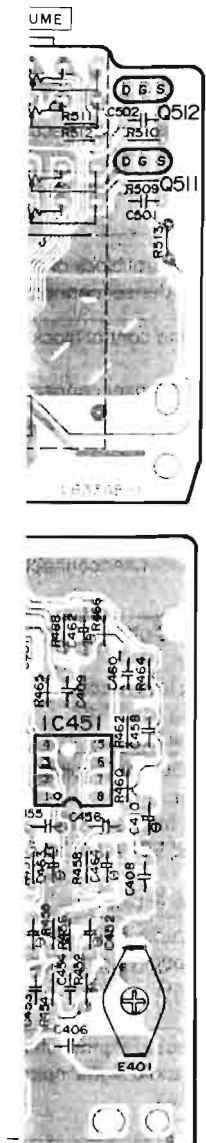


S POWER TRANSFORMER P.C.B.

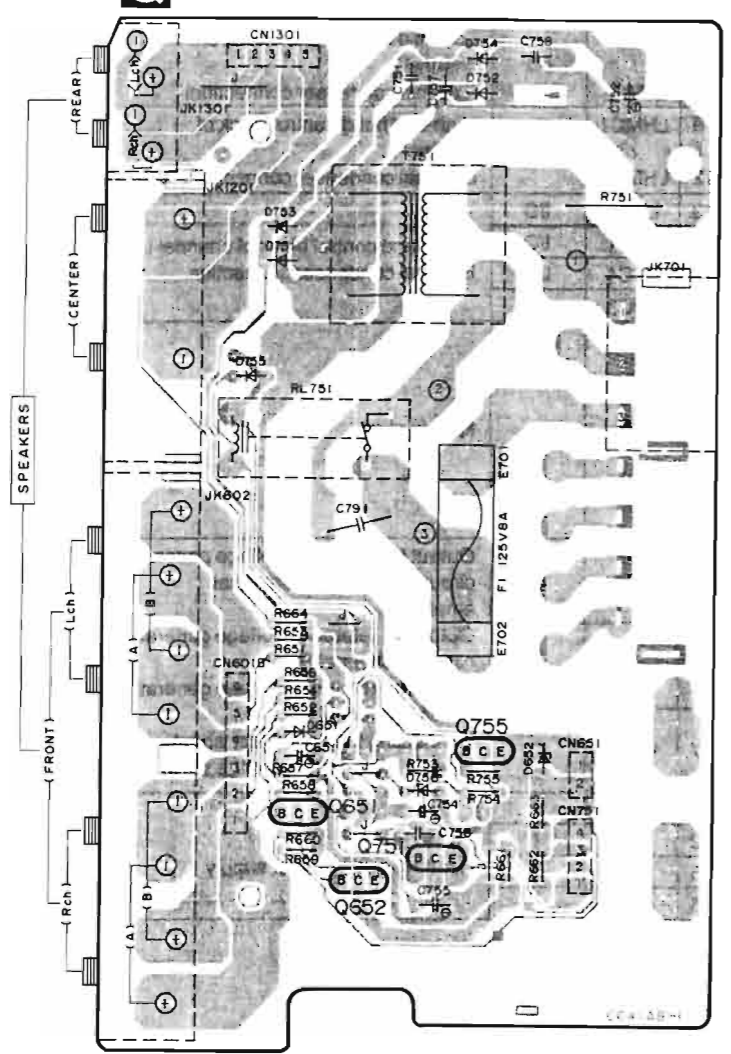


WIRING CONNECTION DIAGRAM

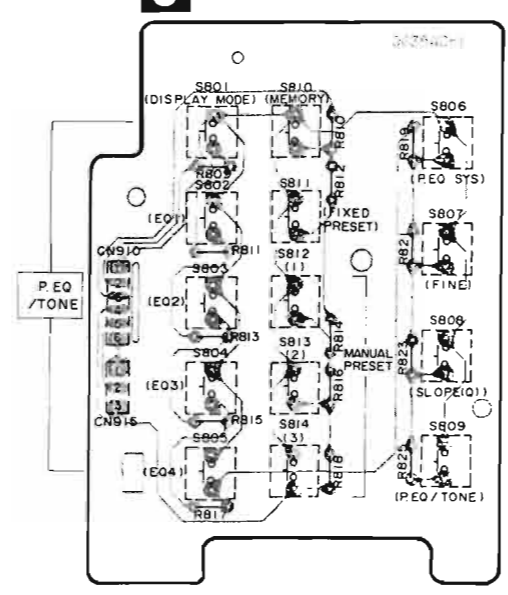
7 8 9 10 11 12



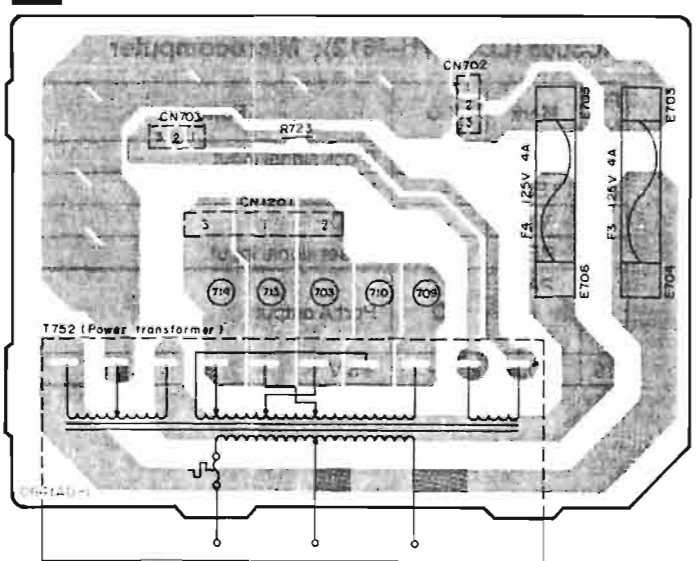
Q SPEAKER TERMINAL P.C.B.



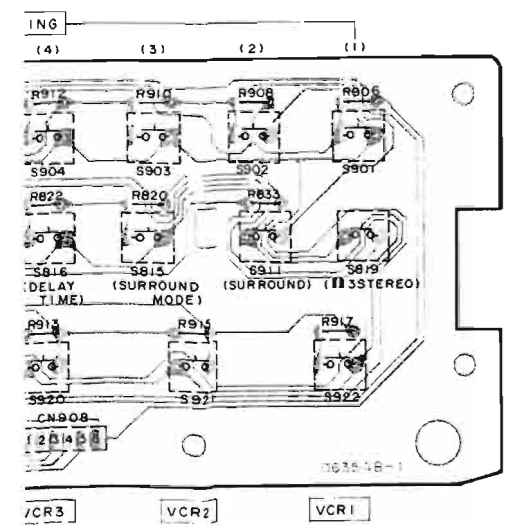
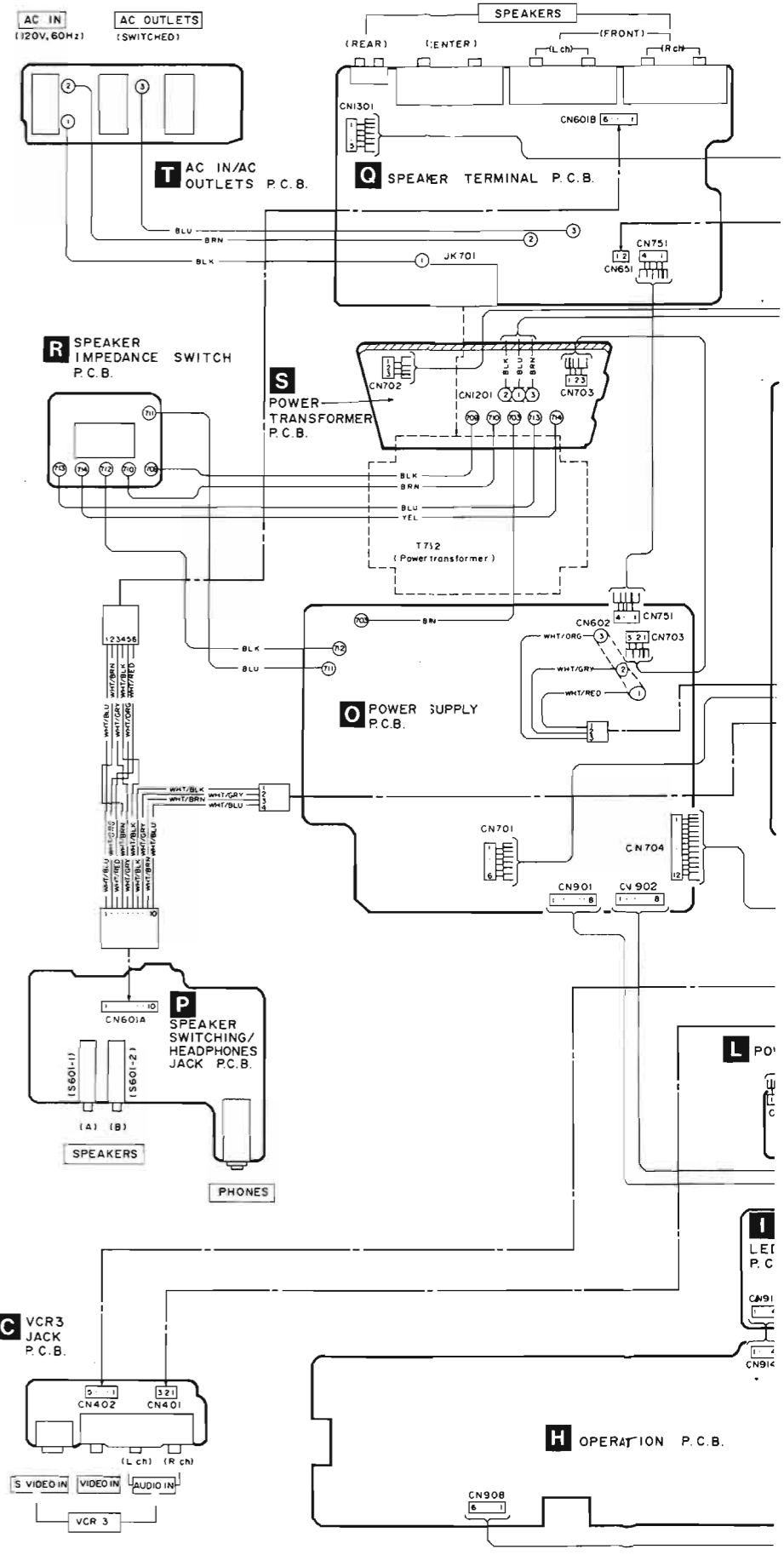
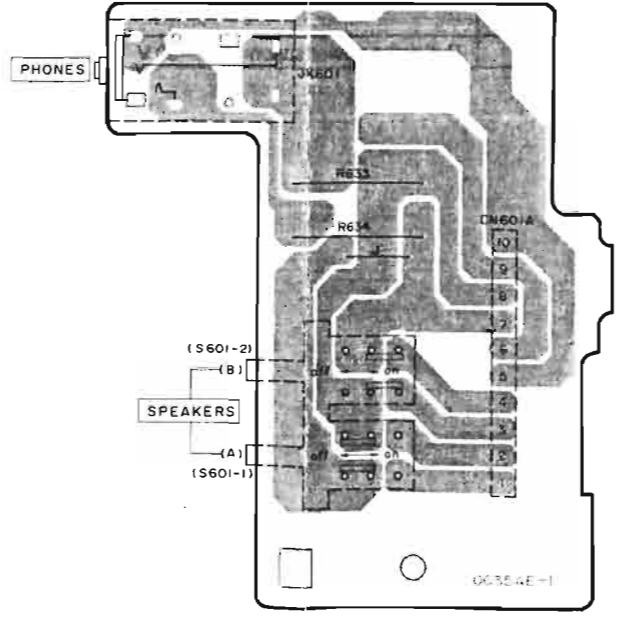
J P.EQ/TONE P.C.B.



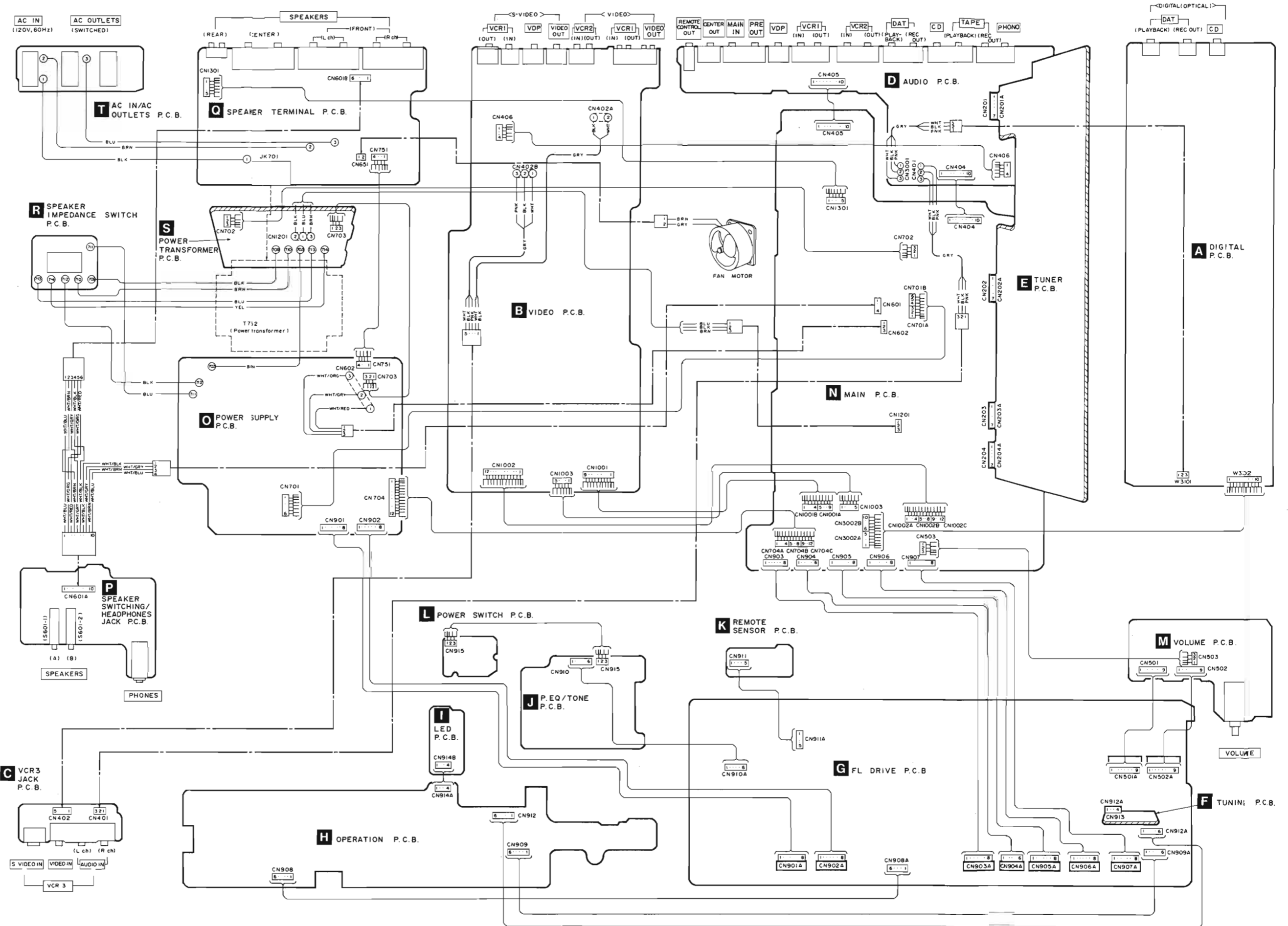
S POWER TRANSFORMER P.C.B.



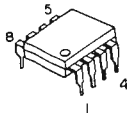
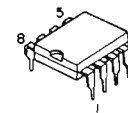
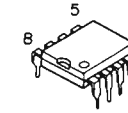
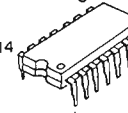
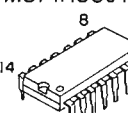
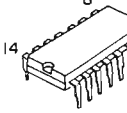
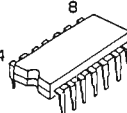
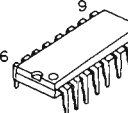
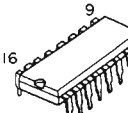
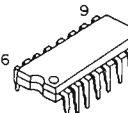
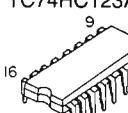
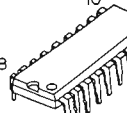
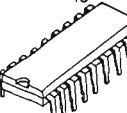
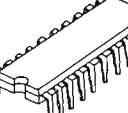

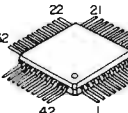
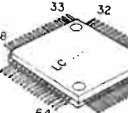
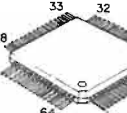
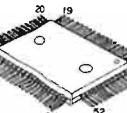

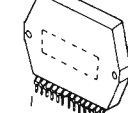
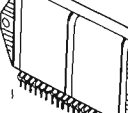
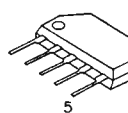
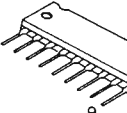
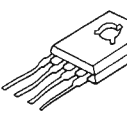
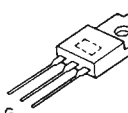
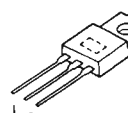
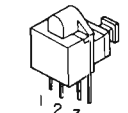

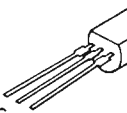
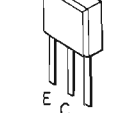
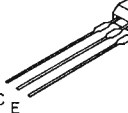
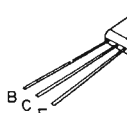
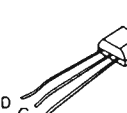
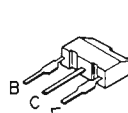
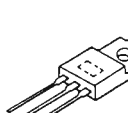
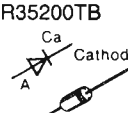
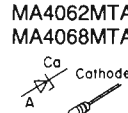
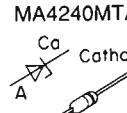
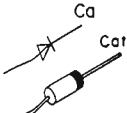
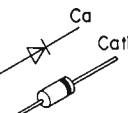
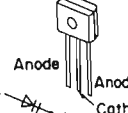
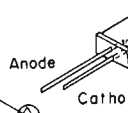
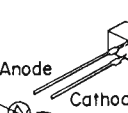
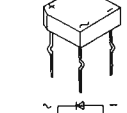
P SPEAKER SWITCH/ HEADPHONES JACK P.C.B.



WIRING CONNECTION DIAGRAM



■ TERMINAL GUIDE OF IC'S TRANSISTORS AND DIODES

M5218AP 	M5238P 	AN6558F SVILM833NA 	AN6554F 	MC74HC86N MC74HC125AN MC74HCU04N 	SN74LS624N 
TC74HC21AP 	AN7470 MC14094BCP 	BA7625 XR-1091DCP 	LM7001 UPC1571C 	TC9214P TC74HC42AP TC74HC123AP 	AN7273A LC6527H-4612 
KM41C464P-10 	TC9212P 	TC9162N TC9163N TC9164N YM3623B 	MN6474 	LV3100M 	MN187125STU 
YM7306B 	M50946-150FP 	SVI3102C 	SVI3206C 	M51953BL 	BA6218 
AN78M05R 	M5F78M12L 	M5F79M12L 	T0RX174-A 	2SA992EFTA 2SB621AQRSTA 2SC1845EFTA 	2SC3940AQSTA 
	2SA1309AQSTA 2SC2785FETA 2SC2787LTA 2SC3311AQSTA 2SD1450RSTTA 2SD1450QRSTA UN4111TA	UN4112TA UN4113TA UN4115TA UN4211TA UN4212TA UN4214TA UN4215TA		2SA933QRSTA 2SA933SQRSTA 2SC1740SQSTA DTC114ESTP DTC144ESTP	2SC3327ABTP 
2SJ40CDTA 	2SB1240PRTV6 	2SB1187DEF 2SD1761DEF 	MA165TA, MA700TA 1SS291TA 1SR35200TB 	MA4051MTA MA4056MTA MA4062MTA MA4068MTA 	MA4110MTA MA4150MTA MA4240MTA 
P300DLF 	SVDS2V20 	SVC203SSPA-AC 	SVDS10VB20F 	LN346GP 	LN018304P 

■ FUNCTIONS OF IC TERMINALS

●IC801 (M50946-150FP): Microcomputer

Pin No.	Mark	I/O	Function
1	Vref	—	Power supply +5 V
2	f1	I	Spectrum analyzer analog input 63 Hz
3	f2	I	Spectrum analyzer analog input 160 Hz
4	f3	I	Spectrum analyzer analog input 400 Hz
5	f4	I	Spectrum analyzer analog input 1 kHz
6	f5	I	Spectrum analyzer analog input 25 kHz
7	f6	I	Spectrum analyzer analog input 6.3 kHz
8	f7	I	Spectrum analyzer analog input 12.5 kHz
9	KIN	I	Key input (8 bit A/D input)
10	KS1/DIGA	O	Key output/BCD output for Digit Scan
11	KS2/DIGA	O	Key output/BCD output for Digit Scan
12	KS3/DIGA	O	Initial clear output/BCD output for Digit Scan
13	KS4/DIGA	O	Initial clear output/BCD output for Digit Scan
14	SURSW	I	Input for surround ON/OFF "H"=ON
15	SELMUTE	I	Selector switching muting input "H"=ON
16	EQSW	O	P.EQ Output for ON/OFF "H"=ON
17	DT	O	P.EQ IC/Data output for surround SW
18	CK	O	P.EQ IC/Clock output for surround SW
19	ST	O	Strobe output for surround SW
20	CE	O	Chip enable output for P.EQ IC
21	BCK	O	Bit clock output for surround IC
22	WCK	O	Ward clock output for surround IC
23	CD	O	Serial data output for surround IC
24	NO SIGNAL	I	No signal detection input "H"=No signal
25	HOLD	I	Power off detection input "L"=OFF
26	CNVss	—	GND
27	RESET	I	Reset signal input
28	X in	I	Ceramic oscillator connection (input)
29	X out	O	Ceramic oscillator connection (output)
30	—	—	No use
31	—	—	No use
32	Vss	—	GND
33	—	—	No use
34	LVL A	I	Level encoder volume input A
35	LVL B	I	Level encoder volume input B
36	FRQA	I	Freq. encoder volume input A
37	FRQB	I	Freq. encoder volume input B
38	Vp	I	Pull down voltage input -30 V
39	MUTE	O	Switching muting signal output
40	S23	I	Segment output
62	S1	O	
63	AVcc	—	Power supply +5 V
64	Vcc	—	Power supply +5 V

●IC901 (MN187125STU): DTS Microcomputer

Pin No.	Mark	I/O	Function
1	V _{DD}	I	Power supply 5 V ±10%
2	OSC2	O	Ceramic oscillator connection (OUT)
3	OSC1	I	Ceramic oscillator connection (IN) 4.19 MHz
4	V _{SS}	I	V _{SS} =0 V
5	XI	I	Connected to V _{SS}
6	XO	O	No use (Open)
7	VIN2	A/DI	Performs the voltage input decision of level 7 by 4 bit A/D input.
8	VIN1		
9	VIN0	A/DI	SD input. 2 steps decision of the existence for a radio station and the stop level while auto searching.
10	P24	CMOSI	For FM stereo detection Active "L"
11	P23	CMOSO	Output for BA6218 control Vol. up at "H"
12	P22	CMOSO	Output for BA6218 control Vol. down at "L"
13	P21	CMOSO	5~6 bit remote output Active "L"
14	P20	CMOSO	Strobe output for tuning mode LED decoder ST3.
15	IRQ1	CMOS Internal input rising	Remote control input (interrupt and level detection) Active "L"
16	IRQ0	CMOS Interrupt input rising	Breakdown of electric current detection (Low level detection) Reversion input from breakdown of electric current Breakdown of electric current at "L"
17	P13	CMOSO	Strobe output for TC916XN control ST1
18	P12	CMOSI	Input for power SW Power off "H" Power on "L"
19	P11	CMOSO	Output for relay control Active "H"
20	P10	CMOS	Strobe output for TC9212P control ST2
21	RES	Pull up R=50K	Reset input Reset at "L"
22	P0S	CMOSO	Serial clock output for LM 7001/TC916XN/MC14094BCP CK1
23	P04	CMOS	CE for LM7001 CE

Pin No.	Mark	I/O	Function
24	PO3	CMOSO	Serial data output for LM7001/TC916XN/MC14094BCP DATA1
25	PO2	CMOSO	Serial clock output for TC9212P/MC14094BCP CK2
26	PO1	CMOSO	Serial data output for TC9212P/MC14094BCP DATA2
27	PO0	CMOSO	DAC stop output...710/910 To stop the DAC when except CD and DAT selector. Acgive "H" Image switching output...303/505 Active "H"
28	SYNC	O	No use (Open)
29	CM	I	Connected to V _{SS}
30	P47	Pch open No R	3 stereo input detection port Active "L"
31	P46	Pch open No R	FM forced monaural output Active "H"
32	P45	Pch open No R	Tuner and mute output Active "H"
33	P44	Pch open No R	Rotary and encoder pulse input (Signal A) Active "H"
34	P43	Pch open No R	Rotary and encoder pulse input (Signal B) Active "H"
35	P42	Pch open No R	Key output
37	P40		
38	DGT0	Pch open No R	Digit output for FIP
45	DGT7		
46	P71	I	Initial clear input
47	P70	I/O	DAC detection input...710/910 Active "L" Surround output...303/505 Active "L"
48	P67	O No R	Output for loudness control Active "H"
49	P66	O No R	Output for amplifier mute Active "H"
50	P65	O No R	Output for attenuator control (-20 dB) Active "H"
51	SEG12	Pch open No R	Segment output for FIP
63	SEG0		
64	V _{PP}	I	Pull down power supply bias -30 V

●IC2001 (LV3100M): Parametric E.Q

Pin No.	Mark	I/O	Function
1	LLC1	I/O	Low band control block of channel L. External condenser connection.
4	LLC4		
5	LLMC1	I/O	Low-mid band control block of channel L. External condenser connection.
8	LLMC4		
9	LHMC1	I/O	High-mid band control block of channel L. External condenser connection.
12	LHMC4		
13	LHC2	I/O	High band control block of channel L. External condenser connection.
14	LHC1		
19	LHC4		
20	LHC3		
15	NC	—	No connect
17			
31			
34			
54			
59			
18	V _{REF}	O	Output for reference voltage generate circuit of internal operational amplifier.
23	V _{REF} R	O	Output for reference voltage generate circuit of channel R.
57	V _{REF} L	O	Output for reference voltage generate circuit of channel L. Connecting the condenser about several 10 μF to remove the ripple.
21	GND	I	Power supply Connecting the power supply
22	V _{CC}	I	
25	V _{SS}	I	
28	V _{DD}	I	

Pin No.	Mark	I/O	Function
37	CE	I	Chip enable Internal analog switch operates to write down the data to internal latch while it will be "L" from "H". The data transmission becomes enable at level "H".
26	DI	I	Input of serial data and clock for control.
24	CL	I	
45	RLC1	I/O	Low band control block of channel R. External condenser connection.
48	RLC4		
41	RLMC1	I/O	Low-mid band control block of channel R. External condenser connection.
44	RLMC4		
37	RHMC1	I/O	High-mid band control block of channel R. External condenser connection.
40	RHMC4		
36	RHC2	I/O	High band control block of channel R. External condenser connection.
35	RHC1		
30	RHC4		
29	RHC3		
61	RCUT2	I/O	Removing DC offset voltage from internal filter. Connecting for the condenser about 10 μF during 61 ↔ 64. (For channel L block)
62	RCUT1		
63	RBOOS2		
64	RBOOS1		
52	RCUT2	I/O	Removing DC offset voltage from internal filter. Connecting for the condenser about/ 10 μF during 52 ↔ 51 and 50 ↔ 49. (For channel R block)
51	RCUT1		
50	RBOOS2		
49	RBOOS1		
60	L IN	I	Channel L audio signal input. Channel R audio signal input.
53	R IN	I	(Receive for low load capacity.)
58	L OUT	O	Channel L audio signal output. Channel R audio signal output.
55	R OUT	O	(Receive for low load capacity.)
56	MIX OUT	O	L and R addition output

●IC3005 (LC6527H-4612): Microcomputer

Pin No.	Mark	I/O	Function
1	OSC1	I	Clock signal input
2	TEST	—	Not used connect to GND
3	V _{SS}	—	GND
4	RES	I	Reset signal input
5	PA0	O	Port A output
7	PA1		
8	PA3		
9	V _{DD}	—	+5 V

Pin No.	Mark	I/O	Function
10	PC0	O	Port C output
13	PC3		
14	PD0	O	Port D output
17	PD3		
18	PH0	—	GND

●IC1001 (YM7306B): D.S.P.

Pin No.	Mark	I/O	Function	Pin No.	Mark	I/O	Function
1	AVDD	I	Power supply (+5 V)	27	A7	O	Address output
2	SL	O	Rear surround L ch D/A output	34	A0	O	
3	LS	O	Front L ch D/A output	35	RAS	O	Address strobe output
4	CHL	—	—	36	CAS	O	Address strobe output
5	LINS	I	L ch A/D input	37	WE	O	Write enable output
6	RINS	I	R ch A/D input	38	OE	O	Enable output
7	CHR	—	—	39	D4	I/O	Data
8	RS	O	Front R ch D/A output	42	D1		
9	SR	O	Rear surround R ch D/A output	43, 44	DGND	—	For GND
10	CV	O	Center voltage output for multiply DAC	45	X0	O	Clock output
11, 12	A GND	—	For ground connection	46	X0	I	Clock input (8.4672 MHz)
13	VREF	I	Reference voltage input for multiply DAC	47	SYNCI	I	For VDD connection
14	LINM	I	L ch multiply DAC input	48	SYNCO	—	—
15	RINM	I	R ch multiply DAC input	49	IC	I	Initial clear input
16	VRL	I	Reference voltage input for multiply DAC	50	OVF	—	—
17	VOLM	O	L ch buffer amp output	51	BCK	I	Pit clock input
18	VOLP	O	L ch buffer amp output	52	WCK	I	Ward clock input
19	VRC	I	Reference voltage input for multiply DAC	53	CD	I	Serial data input
20	VOCM	O	Center ch output	54	NTR	I	For VDD connection
21	VOCP	O	Center ch output	55	NTR SEL		
22	VRR	I	Reference voltage input	56	NOISE		
23	VORM	O	R ch output	57	MCON		
24	VORP	O	R ch output	58	DVDD		
25	AVDD	I	Power supply (+5 V)	59	PHANTOM		
26	DVDD	I	Power supply (+5 V)	60	COFF		
				61	STROFF		
				62	SSTROFF		
				63	TSBWD		
				64	TI/O		

●IC3010 (YM3623B): Digital signal processor

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	VDD1	I	Power supply terminal	15	L/R	O	L/R discrimination signal
2	ADJ	—	(Not used, open)	16	DEF	O	Emphasis signal
3	VCO	I/O	External condenser terminal	17	D0	O	Serial data output
4	VSS2	—	GND terminal	18	WC	—	(Not used, open)
5	XO	O	Crystal vibrator input/output terminal	19	DIGR		
6	XI	I		20	DIG L		
7	$\overline{\text{KMODE}}$	I	Reset signal	21	ERR	O	Error detection terminal
8	OA	—	(Not used, open)	22	SEL	I	Power supply terminal
9	OB						
10	$\overline{\text{T1}}$	—	(Not used, open)	23	S1	O	VCXO control signal and LED drive signal output
11	$\overline{\text{T2}}$						
12	BCO	O	Serial bit clock output	24	S2	O	Sub code clock signal output (Not used, open)
13	$\overline{\text{SYNC}}$	O	Synchronization signal (Not used, open)	25	SCK	O	Sub code signal (Not used, open)
14	Vss1	—	GND terminal	26	SSYNC	O	Sub code data output (Not used, open)
				27	SDO	O	Serial data input
				28	DIN	I	

FUNCTIONS OF IC TERMINALS

●IC1 (UPD75308F478): Microcomputer

Pin No.	Mark	I/O Division	Function
69 } 80 1 } 20	S0 } S31	O	LCD segment drive control
21 } 24	COM0 } COM3	O	LCD common drive control
25 26 } 28	BIAS VLC0 } VLC2	I/O	LCD bias voltage
29 } 32 34 } 37	P40 } P43 P50 } P53	O	Key scan signal output
38	P00	I	Microcomputer reset Timing detection.
39	P01	I	Test point
40 41 42	P02 P03 P10	I	Not used (Connected to VDD)

Pin No.	Mark	I/O Division	Function
43	P11	I	Interrupt from IC2
44 45	P11 P12	I	Not used (Connected to VDD)
46 } 48	P20 } P22	O	Control terminal for IC 2
49	P23	O	Address latch enable terminal for IC2
50 } 53	P30 } P33	O	S-RAM host address (AD8~ADB)
55 56	XT1 XT2	—	Sub-clock (32.768 kHz)
58 59	X1 X2	—	Main-clock (4 MHz)
60 } 67	P60 } P73	I/O	Exchange data with IC2
68	RESET	I	Microcomputer reset

●IC2 (UPD65012F251): Learning digital processor

Pin No.	Mark	I/O Division	Function
1 } 8	ID7 } ID0	I/O	Exchange data with microcomputer
9 10 11	IENN IWIN IRDN	I	Control signal input from microcomputer
13 } 20	IP30 } IP37	I	Key scan signal input
21 } 28 29 30 } 32 35 } 38	IP40 } IP47 KINT IP50 } } IP56	I	Not used (Connected to VDD)
39	REC	I	Remote controller signal input
40 41 42	PD0 WT0 OCE	O	S-RAM control
43 } 50	OD0 } OD7	I/O	Exchange data with S-RAM

Pin No.	Mark	I/O Division	Function
51 52 54 } 59	AD0 } AD7	O	S-RAM subordinate address (AD0~AD7)
60 } 63	AD8 } ADB	O	S-RAM host address (AD8~ADB)
64	OUTP	O	Not used
65	RM0	O	Remote controller signal output
66	OP60	O	Remote controller receiving section ON/OFF switches
67 } 70 73 } 75	OP61 } OP67	O	Not used
76	CLR	I	Reset
77	ICLK	I	Clock signal input
78	RES	I	Not used
79	INT	O	Interrupt output to microcomputer
80	IALE	I	Address latch enable input

REPLACEMENT PARTS LIST

Notes : * Important safety notice:
 Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
 * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
 Parts without these indications can be used for all areas.
 * Remote Control Ass'y:
 Supply period for three years from termination of production.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		IC3006	MC74HC04N	I. C, INVERTER	
				IC3007	LM7001	I. C, PLL FREQ SYNTHESIZER	
				IC3008	SN74LS624N	I. C, VCO	
IC101	LM7001	I. C, PLL FREQ SYNTHESIZER		IC3009	MC74HC86N	I. C, EXCLUSIVE OR GATE	
IC201	AN7273A	I. C, FM/AM IF AMP&MIXER		IC3010	YM3623B	I. C, D. SIGNAL PROCESSOR	
IC301	SVIUPC1161C3	I. C, FM MPX		IC3011	M51953BL	I. C, RESET	
IC351	BA7625	I. C, VIDEO SIGNAL SELECTOR		IC3012	AN78M05R	I. C, REGULATOR	
IC371, 372	BA7625	I. C, VIDEO SIGNAL SELECTOR		IC3013	M5F78M12L	I. C, REGULATOR	
IC401	TC9163N	I. C, INPUT SELECTOR		IC3014	M5F79M12L	I. C, REGULATOR	
IC402	TC9164N	I. C, ANALOG FAN		IC3015	TC74HC21AP	I. C, FL DRIVE	
IC451	AN6558F	I. C, PHONO EQ AMP.		IC3016	TC74HC123AP	I. C, FLIP FLOP	
IC501-503	M5238P-1	I. C, BUFFER AMP.		IC3101	MN6474	I. C, DIGITAL FILTER & D/A C.	
IC504	M5218AP	I. C, BUFFER AMP.		IC3102	SVILM833NA	I. C, LPF	
IC601	SVI3206C	I. C, POWER AMP.	Δ	IC3103	SVILM833NA	I. C, LPF	
IC801	M50946-150FP	I. C, MICROCOMPUTER				TRANSISTOR(S)	
IC802	TC74HC42AP	I. C, FL DRIVE		Q101, 102	2SC2785FE	TRANSISTOR	
IC803	XR-1091DCP	I. C, B. P. F.		Q103, 104	UN4214TA	TRANSISTOR	
IC851	BA6218	I. C, MOTOR DRIVE		Q201, 202	2SC2787L	TRANSISTOR	
IC901	MN187125STU	I. C, DTS MICROCOMPUTER		Q204-207	2SC1740SQ	TRANSISTOR	
IC971	MC14094BCP	I. C, SURROUND CONTROL		Q208, 209	2SA933SQR	TRANSISTOR	
IC1001	YM7306B	I. C, D. S. P.		Q210	2SC1740SQ	TRANSISTOR	
IC1002	KM41C464P-10	I. C, D. RAM		Q301, 302	2SD1450QRSTA	TRANSISTOR	
IC1004	AN6554F	I. C, B. P. F.		Q303	2SA933SQR	TRANSISTOR	
IC1005	AN6554F	I. C, B. P. F.		Q351-353	2SA933QRSTA	TRANSISTOR	
IC1006	M5218AP	I. C, BUFFER AMP.		Q354	2SB1240PRTV6	TRANSISTOR	
IC1007	TC9162N	I. C, EQ. SELECTOR		Q355	2SC1740SQ	TRANSISTOR	
IC1008	AN6554F	I. C, BUFFER AMP.		Q371-374	2SA933QRSTA	TRANSISTOR	
IC1010	M5238P-1	I. C, BUFFER AMP.		Q501-504	2SC3327-A	TRANSISTOR	
IC1011	M5238P-1	I. C, BUFFER AMP.		Q505, 506	2SA1309A-R	TRANSISTOR	
IC1012	M5218AP	I. C, BUFFER AMP.		Q507	2SC3327-A	TRANSISTOR	
IC1101	TC9212P	I. C, ATT/VOLUME CONTROL		Q508	UN4211	TRANSISTOR	
IC1102	M5218AP	I. C, BUFFER AMP.		Q509, 510	2SC3311A-Q	TRANSISTOR	
IC1201	SVI3206C	I. C, POWER AMP.	Δ	Q511, 512	2SJ40CDTA	TRANSISTOR	
IC1301	SVI3102C	I. C, POWER AMP.	Δ	Q513	2SC3311A-Q	TRANSISTOR	
IC2001	LV3100M	I. C, PARAMETRIC EQ.		Q601-608	2SC1845EFTA	TRANSISTOR	
IC2002	TC9214P	I. C, ANALOG SWITCHER		Q609	2SA992EFTA	TRANSISTOR	
IC2003	AN6554F	I. C, BUFFER AMP.		Q651	2SA1309A-R	TRANSISTOR	
IC2004	AN6554F	I. C, BUFFER AMP.		Q652	2SC3311A-Q	TRANSISTOR	
IC2005	UPC1571C	I. C, OPE AMP.		Q701, 702	2SD1761DEF	TRANSISTOR	Δ
IC2006	UPC1571C	I. C, OPE AMP.		Q703	2SC3311A-Q	TRANSISTOR	Δ
IC2007	AN6558F	I. C, BUFFER AMP.		Q704	2SC3311A-Q	TRANSISTOR	
IC3001	MC74HC125AN	I. C, BUFFER AMP.		Q705	2SC3311A-Q	TRANSISTOR	Δ
IC3002	TORX174-A	I. C, DIGITAL INPUT(OPTICAL)		Q706	2SD1761DEF	TRANSISTOR	
IC3003	TORX174-A	I. C, DIGITAL INPUT(OPTICAL)		Q707	2SA1309A-R	TRANSISTOR	Δ
IC3004	TOTX174-A	I. C, DIGITAL INPUT(OPTICAL)					
IC3005	LC6527H-4612	I. C, MICROCOMPUTER					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
Q708	2SB1187DEF	TRANSISTOR	△	D652	MA4068M	DIODE	
Q709	2SB621A-R	TRANSISTOR		D701	SVDS10VB20F	DIODE	△
Q751	2SC3940AQSTA	TRANSISTOR		D702-705	SVDS2V20	DIODE	△
Q755	2SC3311A-Q	TRANSISTOR		D706-709	P300DLF	DIODE	△
Q801	UN4214TA	TRANSISTOR		D710	MA4062MTA	DIODE	
Q802	UN4211	TRANSISTOR		D711	MA4068M	DIODE	
Q803	UN4111	TRANSISTOR		D712	MA4150M	DIODE	
Q804-813	UN4115	TRANSISTOR		D713	MA4240H	DIODE	
Q814-816	UN4211	TRANSISTOR		D751-754	1SR35200TB	DIODE	△
Q817	UN4111	TRANSISTOR		D755	MA165	DIODE	
Q891	UN4113TA	TRANSISTOR		D756	MA4068M	DIODE	
Q892	UN4214TA	TRANSISTOR		D801	1SS291TA	DIODE	
Q901	UN4214TA	TRANSISTOR		D802, 804	MA165	DIODE	
Q902	2SA933SQR	TRANSISTOR		D806	MA165	DIODE	
Q903	UN4211	TRANSISTOR		D808, 809	MA4062MTA	DIODE	
Q905	UN4111	TRANSISTOR		D810-812	MA165	DIODE	
Q971-973	UN4215	TRANSISTOR		D814, 815	MA165	DIODE	
Q1001, 1002	2SC3327-A	TRANSISTOR		D891, 892	MA165	DIODE	
Q1003	2SA933SQR	TRANSISTOR		D893	LN018304P	DIODE	
Q1005	2SC3327-A	TRANSISTOR		D901	1SS291TA	DIODE	
Q1006	DTC114ESTP	TRANSISTOR		D902	MA165	DIODE	
Q1201	2SC3327-A	TRANSISTOR		D903	MA4056MTA	DIODE	
Q1202	2SA1309A-R	TRANSISTOR		D904, 905	MA165	DIODE	
Q1203	2SA992EFTA	TRANSISTOR		D908-913	MA165	DIODE	
Q1301	2SC3327-A	TRANSISTOR		D971	MA165	DIODE	
Q3001-3005	2SC3311A-Q	TRANSISTOR		D1002	MA165	DIODE	
Q3006	2SD1450RTA	TRANSISTOR		D1003-1011	MA700	DIODE	
Q3007	UN4112	TRANSISTOR		D1012	MA165	DIODE	
Q3008	UN4212TA	TRANSISTOR		D1201	MA165	DIODE	
Q3009	UN4112	TRANSISTOR		D2001	MA4110MTA	DIODE	
Q3010	UN4212TA	TRANSISTOR		D2002-2005	MA165	DIODE	
Q3011	UN4112	TRANSISTOR		D2006	MA4110MTA	DIODE	
Q3012	UN4212TA	TRANSISTOR		D2007	MA165	DIODE	
Q3013	UN4112	TRANSISTOR		D2009-2012	MA700	DIODE	
Q3014, 3015	UN4212TA	TRANSISTOR		D3001-3003	SVC203SPA-AC	DIODE	
Q3101-3104	2SC3327-A	TRANSISTOR		D3004-3006	MA165	DIODE	
Q3105	UN4212TA	TRANSISTOR		D3007-3009	LN346GP	DIODE	
Q3106	UN4112	TRANSISTOR		D3011-3014	MA165	DIODE	
Q3107	UN4212TA	TRANSISTOR		D3017-3020	MA165	DIODE	
Q3108	UN4112	TRANSISTOR		D3102	MA4051TA	DIODE	
Q3109	UN4212TA	TRANSISTOR					
Q3110	DTC144ESTP	TRANSISTOR				VARIABLE RESISTOR (S)	
		DIODE (S)		VR301	EVNDXAA00B53	V. R. FM MPX VCO ADJ.	
				VR501	ELNMLJTF25B15	V. R. MAIN VOLUME	
D101	MA165	DIODE		VR502	EVJ02SF01G15	V. R. BALANCE	
D204	MA165	DIODE		VR801	EVQWQ202224B	V. R. CENTER FREQ. /BASS	
D206	MA165	DIODE		VR802	EVQWQ202224B	V. R. LEVEL/TREBLE	
D301	MA165	DIODE		VR971	EVQWQ902612B	V. R. ROTARY TUNING	
D501	MA700	DIODE		VR1001	EVJ02SF01G15	V. R. SURROUND BALANCE	
D601-603	MA165	DIODE					
D651	MA165	DIODE				COMPONENT COMBINATION (S)	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
Z201	RLA2Z001-T	COMPONENT COMBINATION		CF201, 202	RLFETNGM02L	CERAMIC FILTER	
Z202	SL17Z101-T	COMPONENT COMBINATION		CF801	EFOGC6004T4	CERAMIC FILTER	
Z701	ECED71T153U	COMPONENT COMBINATION	△	CF901	EFOGC4194T4	CERAMIC FILTER	
Z801, 802	EXFP12331MF	COMPONENT COMBINATION		CF1001	EFOGC8464T4	CERAMIC FILTER	
Z803	EXBF12E104J	COMPONENT COMBINATION				OSCILLATOR (S)	
Z804, 805	EXBF9E473J	COMPONENT COMBINATION					
Z891	HC-521	REMOTE SENSOR		X101	SVQ49U722-S	OSCILLATOR	
Z904	EXBF7E103J	COMPONENT COMBINATION		X3001	SVQAT1693A	OSCILLATOR	
Z905	EXBF6E103J	COMPONENT COMBINATION		X3002	RSXA16M9S01	OSCILLATOR	
Z906	EXBF6E104J	COMPONENT COMBINATION		X3003	RSXA18M4S01	OSCILLATOR	
Z907	EXFP8331MW	COMPONENT COMBINATION		X3004	RSXA12M2S01	OSCILLATOR	
Z908	EXBF9E104J	COMPONENT COMBINATION				DISPLAY	
Z3001-3003	EXCEMT103DTB	COMPONENT COMBINATION					
Z3008, 3009	EXCEMT103DTB	COMPONENT COMBINATION		FL901	RSL0089-F	DISPLAY	
TN101	SNVFE337G01	FM FRONT END					
		COIL (S)				FUSE (S)	
L101	RLQZPR47KT-Y	COIL		F1	XBAIF80NU14	FUSE, 125V 8A	△
L203, 204	ELEPK1ROMA	COIL		F3, 4	XBAIF40NU14	FUSE, 125V 4A	△
L351	ELEPK101KA	COIL				SWITCH (ES)	
L371, 372	ELEPK101KA	COIL					
L601, 602	SLQY07G-40	COIL		S601	RSP2007-J	SW, SPEAKER SELECTOR	
L751	ELEPK101KA	COIL		S702	RSS3B004S	SW, IMPEDANCE SELECTOR	△
L801	RLQZP101KT-Y	COIL		S801	EVQ21405R	SW, DISPLAY MODE	
L802-804	RLQZP4R7KT-Y	COIL		S802	EVQ21405R	SW, P. EQ. 1	
L851, 852	RLQZP1R0KT-Y	COIL		S803	EVQ21405R	SW, P. EQ. 2	
L901	ELEPK101KA	COIL		S804	EVQ21405R	SW, P. EQ. 3	
L1001-1004	RLQZP101KT-Y	COIL		S805	EVQ21405R	SW, P. EQ. 4	
L1005	ELEPK101KA	COIL		S806	EVQ21405R	SW, P. EQ. SYSTEM ON/OFF	
L1201	SLQY07G-40	COIL		S807	EVQ21405R	SW, FINE	
L1301, 1302	SLQY07G-40	COIL		S808	EVQ21405R	SW, SLOPE (Q)	
L3001	ELEPK470KA	COIL		S809	EVQ21405R	SW, P. EQ. /TONE	
L3002	ELEXT220JA	COIL		S810	EVQ21405R	SW, MEMORY	
L3003	ELEXT6R8JA	COIL		S811	EVQ21405R	SW, FIXED	
L3004	ELEXT100JA	COIL		S812	EVQ21405R	SW, MANUAL 1	
L3005-3013	ELEXT470KA9	COIL		S813	EVQ21405R	SW, MANUAL 2	
L3014	ELEXT22KA	COIL		S814	EVQ21405R	SW, MANUAL 3	
L3015, 3016	ELEXT470KA9	COIL		S815	EVQ21405R	SW, SURROUND MODE	
L3101, 3102	ELEXT4R7KA9	COIL		S816	EVQ21405R	SW, DELAY TIME	
L3103	ELEPKR22KA	COIL		S817	EVQ21405R	SW, CENTER MODE	
		TRANSFORMER (S)		S818	EVQ21405R	SW, TEST	
				S819	EVQ21405R	SW, 3-STEREO	
T201	RLI4B002-Z	TRANSFORMER		S901	EVQ21405R	SW, PRESET 1	
T202	RLI4B003-Z	TRANSFORMER		S902	EVQ21405R	SW, PRESET 2	
T701	RTP1R5C001-W	POWER TRANSFORMER	△	S903	EVQ21405R	SW, PRESET 3	
T751	RTP1H5C001-V	POWER TRANSFORMER	△	S904	EVQ21405R	SW, PRESET 4	
		FILTER (S)		S905	EVQ21405R	SW, PRESET 5	
				S906	EVQ21405R	SW, PRESET 6	
				S907	EVQ21405R	SW, PRESET 7	

Notes : * Capacity value are in microfarads (μF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R305, 306	ERDS2TJ272T	1/4W 2.7K	R517, 518	ERDS2TJ563	1/4W 56K
			R307, 308	ERDS2TJ104	1/4W 100K	R519, 520	ERDS2TJ392T	1/4W 3.9K
			R309	ERDS2TJ394	1/4W 390K	R521, 522	ERDS2TJ393	1/4W 39K
R101, 102	ERDS2TJ103	1/4W 10K	R311	ERDS2TJ102	1/4W 1K	R523, 524	ERDS2TJ222	1/4W 2.2K
R104	ERDS2TJ102	1/4W 1K	R312	ERDS2TJ153	1/4W 15K	R525, 526	ERDS2TJ221	1/4W 220
R105	ERDS2TJ561	1/4W 560	R313, 314	ERDS2TJ473	1/4W 47K	R527-530	ERDS2TJ102	1/4W 1K
R106	ERDS2TJ562	1/4W 5.6K	R315, 316	ERDS2TJ103	1/4W 10K	R531	ERDS2TJ394	1/4W 390K
R107	ERDS2TJ103	1/4W 10K	R317	ERDS2TJ473	1/4W 47K	R532	ERDS2TJ103	1/4W 10K
R108	ERDS2TJ151	1/4W 150	R351-354	ERDS2EJ820	1/4W 82	R533	ERDS2TJ104	1/4W 100K
R109-111	ERDS2TJ104	1/4W 100K	R355	ERDS2TJ101	1/4W 100	R534	ERDS2TJ103	1/4W 10K
R199	ERDS1FVJ104T	1/2W 100K Δ	R356	ERDS2EJ820	1/4W 82	R535	ERDS2TJ104	1/4W 100K
R201	ERDS2TJ822	1/4W 8.2K	R357	ERDS2TJ101	1/4W 100	R536	ERDS2TJ102	1/4W 1K
R202	ERDS2TJ824	1/4W 820K	R358	ERDS2EJ820	1/4W 82	R537	ERDS2TJ104	1/4W 100K
R203	ERDS2TJ271	1/4W 270	R359	ERDS2TJ101	1/4W 100	R538	ERDS2TJ684	1/4W 680K
R204	ERDS2TJ824	1/4W 820K	R365	ERDS2EJ820	1/4W 82	R539	ERDS2TJ153T	1/4W 15K
R205	ERDS2TJ391	1/4W 390	R366	ERDS2TJ221	1/4W 220	R540	ERDS2TJ223T	1/4W 22K
R206	ERDS2TJ561	1/4W 560	R367	ERDS2TJ102	1/4W 1K	R541	ERDS2TJ183T	1/4W 18K
R207	ERDS2TJ822	1/4W 8.2K	R368	ERDS2TJ103	1/4W 10K	R542	ERDS2TJ222	1/4W 2.2K
R208	ERDS2TJ102	1/4W 1K	R369	ERDS2TJ473	1/4W 47K	R543	ERDS2TJ824	1/4W 820K
R209	ERDS2TJ471	1/4W 470	R371-378	ERDS2EJ820	1/4W 82	R544	ERDS2TJ272T	1/4W 2.7K
R210	ERDS2TJ332	1/4W 3.3K	R379-382	ERDS2TJ101	1/4W 100	R545	ERDS2TJ104	1/4W 100K
R211	ERDS2TJ222	1/4W 2.2K	R393, 394	ERDS2EJ820	1/4W 82	R546	ERDS2TJ103	1/4W 10K
R212	ERDS2TJ153	1/4W 15K	R401, 402	ERDS2TJ332	1/4W 3.3K	R547, 548	ERDS2TJ104	1/4W 100K
R213	ERDS2TJ104	1/4W 100K	R403, 404	ERDS2TJ822	1/4W 8.2K	R549	ERDS2TJ102	1/4W 1K
R214	ERDS2TJ824	1/4W 820K	R405-408	ERDS2TJ470	1/4W 47	R550	ERDS2TJ103	1/4W 10K
R215	ERDS2TJ822	1/4W 8.2K	R409	ERDS2TJ103	1/4W 10K	R551	ERDS2TJ104	1/4W 100K
R216	ERDS2TJ563	1/4W 56K	R411-416	ERDS2TJ102	1/4W 1K	R552	ERDS2TJ392T	1/4W 3.9K
R217	ERDS2TJ223	1/4W 22K	R417, 418	ERDS2TJ332	1/4W 3.3K	R553	ERDS2TJ103	1/4W 10K
R218	ERDS2TJ563	1/4W 56K	R419-426	ERDS2TJ102	1/4W 1K	R554	ERDS2TJ223	1/4W 22K
R219	ERDS2TJ223	1/4W 22K	R427, 428	ERDS2TJ332	1/4W 3.3K	R555	ERDS2TJ472	1/4W 4.7K
R220	ERDS2TJ103	1/4W 10K	R429-431	ERDS2TJ103	1/4W 10K	R557	ERDS2TJ333	1/4W 33K
R221	ERDS2TJ104	1/4W 100K	R433-436	ERDS2TJ822	1/4W 8.2K	R558	ERDS2TJ223	1/4W 22K
R222	ERDS2TJ473	1/4W 47K	R451, 452	ERDS2TJ821	1/4W 820	R601, 602	ERDS2TJ224T	1/4W 220K
R223	ERDS2TJ154	1/4W 150K	R453, 454	ERDS2TJ224T	1/4W 220K	R603, 604	ERDS2TJ102	1/4W 1K
R224	ERDS2TJ223	1/4W 22K	R455, 456	ERDS2TJ563	1/4W 56K	R605, 606	ERDS2TJ563	1/4W 56K
R226	ERDS2TJ103	1/4W 10K	R457, 458	ERDS2TJ271	1/4W 270	R607-610	ERDS2TJ562	1/4W 5.6K
R228	ERDS2TJ123	1/4W 12K	R459, 460	ERDS2TJ680T	1/4W 68	R611, 612	ERDS2TJ563	1/4W 56K
R229	ERDS2TJ102	1/4W 1K	R461, 462	ERDS2TJ184T	1/4W 180K	R613, 614	ERDS2TJ182	1/4W 1.8K
R230	ERDS2TJ104	1/4W 100K	R463, 464	ERDS2TJ123	1/4W 12K	R615, 616	ERDS2TJ222	1/4W 2.2K
R231	ERDS2TJ471	1/4W 470	R465, 466	ERDS2TJ563	1/4W 56K	R617, 618	ERDS2TJ470	1/4W 47
R232	ERDS2TJ122	1/4W 1.2K	R467, 468	ERDS2TJ102	1/4W 1K	R619, 620	ERDS1FVJ100T	1/2W 10 Δ
R233	ERDS2TJ684	1/4W 680K	R501, 502	ERDS2TJ222	1/4W 2.2K	R621	ERDS2TJ102	1/4W 1K
R234	ERDS2TJ103	1/4W 10K	R503, 504	ERDS2TJ102	1/4W 1K	R622	ERDS2TJ101	1/4W 100
R235	ERDS2TJ471	1/4W 470	R505, 506	ERDS2TJ473	1/4W 47K	R623	ERDS2TJ223	1/4W 22K
R237	ERDS2TJ221	1/4W 220	R507, 508	ERDS2TJ104	1/4W 100K	R624	ERDS2TJ684	1/4W 680K Δ
R247	ERDS2TJ103	1/4W 10K	R509-512	ERDS2TJ103	1/4W 10K	R625	ERDS2TJ154	1/4W 150K
R301	ERDS2TJ393	1/4W 39K	R513	ERDS2TJ153	1/4W 15K	R626	ERDS2TJ473	1/4W 47K Δ
R302	ERDS2TJ151	1/4W 150	R514	ERDS2TJ394	1/4W 390K	R627	ERDS2TJ684	1/4W 680K
R303, 304	ERDS2TJ223	1/4W 22K	R515, 516	ERDS2TJ104	1/4W 100K	R629	ERD25FJ470	1/4W 47 Δ

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R630	ERDS1FVJ471T	1/2W 470 Δ	R828, 829	ERDS1FVJ331T	1/2W 330 Δ	R1028-1030	ERDS2TJ103	1/4W 10K
R631	ERDS1FVJ561T	1/2W 560 Δ	R830	ERDS2TJ104	1/4W 100K	R1031	ERDS2TJ105T	1/4W 1M
R632	ERDS2TJ101	1/4W 100	R831	ERDS2TJ152	1/4W 1.5K	R1033	ERDS2TJ105T	1/4W 1M
R633, 634	ERC2ANJP331S	2W 330	R832	ERDS2TJ332	1/4W 3.3K	R1035-1038	ERDS2TJ822	1/4W 8.2K
R635	ERDS2TJ103	1/4W 10K	R833	ERDS2TJ222	1/4W 2.2K	R1039, 1040	ERDS2TJ333	1/4W 33K
R637	ERDS2TJ103	1/4W 10K	R834	ERDS2TJ103	1/4W 10K	R1041, 1042	ERDS2TJ105T	1/4W 1M
R638	ERDS2TJ102	1/4W 1K	R835-836	ERDS2TJ824	1/4W 820K	R1044	ERDS2TJ103	1/4W 10K
R651-654	ERDS2TJ223	1/4W 22K	R838	ERDS2TJ823T	1/4W 82K	R1046	ERDS2TJ822	1/4W 8.2K
R656	ERDS2TJ392T	1/4W 3.9K	R839, 840	ERDS2TJ153	1/4W 15K	R1048	ERDS2TJ822	1/4W 8.2K
R657	ERDS2TJ104	1/4W 100K	R841, 842	ERDS2TJ222	1/4W 2.2K	R1050	ERDS2TJ105T	1/4W 1M
R658, 659	ERDS2TJ103	1/4W 10K	R843	ERDS2TJ471	1/4W 470	R1052	ERDS2TJ333	1/4W 33K
R660	ERDS2TJ223	1/4W 22K	R844	ERDS2TJ563	1/4W 56K	R1053	ERDS2TJ224T	1/4W 220K
R661-663	ERDS1FVJ220T	1/2W 22 Δ	R845-849	ERDS2TJ473	1/4W 47K	R1054	ERDS2TJ222	1/4W 2.2K
R664	ERDS2TJ223	1/4W 22K	R851	ERDS1FVJ2R2T	1/2W 2.2 Δ	R1057, 1058	ERDS2TJ103	1/4W 10K
R701, 702	ERDS1FVJ2R7T	1/2W 2.7 Δ	R853	ERDS2TJ473	1/4W 47K	R1061-1072	ERDS2TJ822	1/4W 8.2K
R703	ERDS1FVJ4R7T	1/2W 4.7 Δ	R861, 862	ERDS2TJ474	1/4W 470K	R1077, 1078	ERDS2TJ101	1/4W 100
R704, 705	ERDS1FVJ2R7T	1/2W 2.7 Δ	R863	ERDS2TJ103	1/4W 10K	R1081, 1082	ERDS2TJ103	1/4W 10K
R706	ERDS2TJ122	1/4W 1.2K Δ	R891	ERDS2TJ102	1/4W 1K	R1083, 1084	ERDS2TJ472	1/4W 4.7K
R707	ERDS2TJ122T	1/4W 1.2K	R901	ERDS2TJ102	1/4W 1K	R1085-1088	ERDS2TJ103	1/4W 10K
R708	ERDS2TJ272T	1/4W 2.7K Δ	R902	ERDS2TJ681	1/4W 680	R1089, 1090	ERDS2TJ105T	1/4W 1M
R709-712	ERDS2TJ1R2	1/4W 1.2 Δ	R903, 904	ERDS2TJ103	1/4W 10K	R1103, 1104	ERDS2TJ333	1/4W 33K
R713	ERDS2TJ272T	1/4W 2.7K	R905, 906	ERDS2TJ102	1/4W 1K	R1105, 1106	ERDS2TJ682T	1/4W 6.8K
R714	ERDS2TJ222	1/4W 2.2K	R907, 908	ERDS2TJ182	1/4W 1.8K	R1107-1112	ERDS2TJ474	1/4W 470K
R715	ERDS1FVJ2R2T	1/2W 2.2 Δ	R909, 910	ERDS2TJ222	1/4W 2.2K	R1113-1115	ERDS2TJ332	1/4W 3.3K
R716	ERDS2TJ182	1/4W 1.8K	R911, 912	ERDS2TJ392T	1/4W 3.9K	R1116	ERDS2TJ563	1/4W 56K
R717	ERDS2TJ472T	1/4W 4.7K Δ	R913, 914	ERDS2TJ562	1/4W 5.6K	R1153-1158	ERDS2TJ473	1/4W 47K
R718	ERD25FJ470	1/4W 47 Δ	R915, 916	ERDS2TJ123	1/4W 12K	R1161	ERDS2TJ394	1/4W 390K
R719	ERDS2TJ102	1/4W 1K	R917, 918	ERDS2TJ273	1/4W 27K	R1162	ERDS2TJ152	1/4W 1.5K
R720	ERD25FVJ150T	1/4W 15 Δ	R919	ERDS2TJ224T	1/4W 220K	R1163-1166	ERDS2TJ224T	1/4W 220K
R721, 722	ERDS2TJ2R2T	1/4W 2.2 Δ	R920	ERDS2TJ222	1/4W 2.2K	R1171, 1172	ERDS2TJ103	1/4W 10K
R723	ERDS1FVJ1R0T	1/2W 1.0 Δ	R921	ERDS2TJ103	1/4W 10K	R1201	ERDS2TJ222	1/4W 2.2K
R724	ERDS2TJ1R8T	1/4W 1.8 Δ	R922, 923	ERDS2TJ472	1/4W 4.7K	R1202	ERDS2TJ104	1/4W 100K
R751	ERC122GK335	1/2W 3.3M Δ	R925, 926	ERDS2TJ102	1/4W 1K	R1203	ERDS2TJ394	1/4W 390K
R753	ERDS2TJ102	1/4W 1K	R927	ERDS2TJ331	1/4W 330	R1204	ERDS2TJ102	1/4W 1K
R754, 755	ERDS2TJ472	1/4W 4.7K	R928, 929	ERDS2TJ103	1/4W 10K	R1205	ERDS2TJ104	1/4W 100K
R801	ERDS2TJ681	1/4W 680	R930, 931	ERD25FJ101	1/4W 100 Δ	R1206	ERDS2TJ103	1/4W 10K
R802	ERDS2TJ222	1/4W 2.2K	R932	ERDS2TJ103	1/4W 10K	R1207	ERDS2TJ563	1/4W 56K
R803	ERDS2TJ105T	1/4W 1M	R971-973	ERDS2TJ221	1/4W 220	R1208	ERDS2TJ103	1/4W 10K
R804	ERDS2TJ104	1/4W 100K	R1001	ERDS2TJ103	1/4W 10K	R1209	ERDS2TJ391T	1/4W 390
R805	ERDS2TJ223	1/4W 22K	R1002, 1003	ERDS2TJ105T	1/4W 1M	R1210	ERDS2TJ101	1/4W 100
R806	ERDS2TJ102	1/4W 1K	R1004	ERDS2TJ103	1/4W 10K	R1211, 1212	ERDS2TJ563	1/4W 56K
R807	ERDS2TJ822	1/4W 8.2K	R1005	ERDS2TJ105T	1/4W 1M	R1213	ERDS2TJ470	1/4W 47
R809-812	ERDS2TJ102	1/4W 1K	R1006	ERDS2TJ103	1/4W 10K	R1214	ERDS1FVJ100T	1/2W 10 Δ
R813, 814	ERDS2TJ122	1/4W 1.2K	R1007, 1008	ERDS2TJ104	1/4W 100K	R1215	ERDS2TJ473	1/4W 47K Δ
R815, 816	ERDS2TJ152	1/4W 1.5K	R1009, 1010	ERDS2TJ332	1/4W 3.3K	R1216	ERDS2TJ684	1/4W 680K
R817, 818	ERDS2TJ182	1/4W 1.8K	R1011, 1012	ERDS2TJ101	1/4W 100	R1217	ERD25FJ470	1/4W 47 Δ
R819	ERDS2TJ222	1/4W 2.2K	R1013	ERDS2TJ821	1/4W 820	R1219	ERDS2TJ223	1/4W 22K
R820, 821	ERDS2TJ332	1/4W 3.3K	R1014-1016	ERDS2TJ103	1/4W 10K	R1220, 1221	ERDS2TJ101	1/4W 100
R822, 823	ERDS2TJ472	1/4W 4.7K	R1017, 1018	ERDS2TJ182	1/4W 1.8K	R1222	ERDS2TJ102	1/4W 1K
R824, 825	ERDS2TJ682T	1/4W 6.8K	R1021-1025	ERDS2TJ103	1/4W 10K	R1223	ERDS1FVJ471T	1/2W 470 Δ
R826	ERDS2TJ123	1/4W 12K	R1026	ERDS2TJ105T	1/4W 1M	R1224	ERDS1FVJ561T	1/2W 560 Δ
R827	ERDS2TJ103	1/4W 10K	R1027	ERDS2TJ472	1/4W 4.7K	R1225	ERDS2TJ102	1/4W 1K

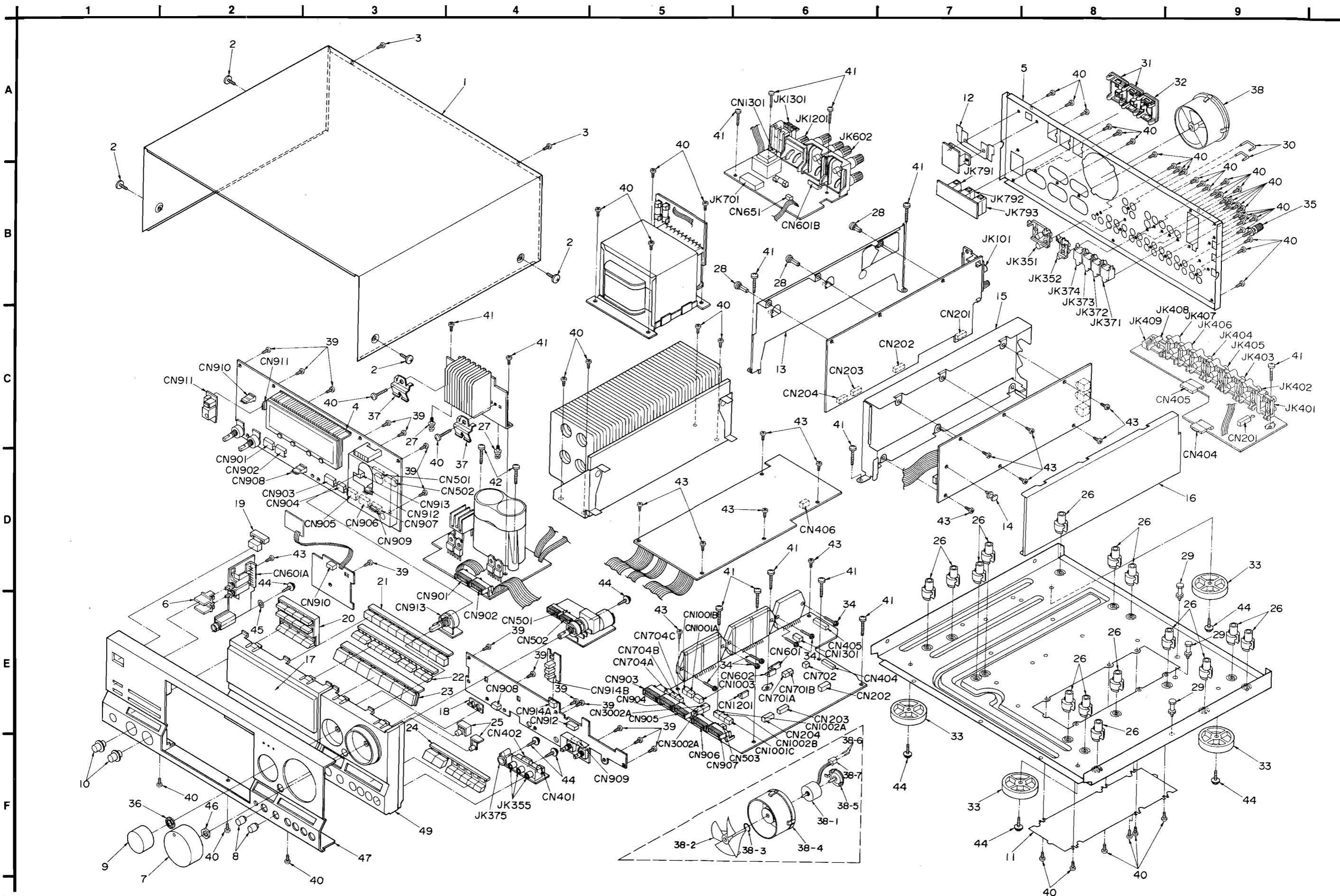
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R1301	ERDS2TJ222	1/4W 2.2K	R3029	ERDS2TJ472	1/4W 4.7K	C201, 202	ECKR1H103ZF5	50V 0.01U
R1302	ERDS2TJ104	1/4W 100K	R3034	ERDS2TJ154	1/4W 150K	C204	ECBT1H470J5	50V 47P
R1305	ERDS2TJ102	1/4W 1K	R3036, 3037	ERDS2TJ223	1/4W 22K	C205	ECKT1H223ZF	50V 0.022U
R1307, 1308	ERDS2TJ222	1/4W 2.2K	R3038	ERDS2TJ103	1/4W 10K	C206	ECBT1H150JC5	50V 15P
R1309, 1310	ERDS2TJ563	1/4W 56K	R3039	ERDS2TJ224T	1/4W 220K	C207	ECBT1C103MS5	16V 0.01U
R1311, 1312	ERDS2TJ332T	1/4W 3.3K	R3040-3042	ERDS2TJ221	1/4W 220	C208	ECEAOJU101B	6.3V 100U
R1313, 1314	ERDS2TJ563	1/4W 56K	R3043	ERDS2TJ104T	1/4W 100K	C209	ECEA1HK100	50V 10U
R1315, 1316	ERDS1FVJ4R7T	1/2W 4.7 Δ	R3045	ERDS2TJ221	1/4W 220	C210-212	ECKT1H223ZF	50V 0.022U
R1317, 1318	ERDS2TJ100	1/4W 10	R3046	ERDS2TJ333	1/4W 33K	C213	ECBT1H101KB5	50V 100P
R1319	ERD25FJ470	1/4W 47 Δ	R3047	ERDS2TJ563	1/4W 56K	C214	ECEA1CK100B	16V 10U
R1320	ERDS2TJ684	1/4W 680K	R3048	ERDS2TJ102	1/4W 1K	C215	ECKR1H103ZF5	50V 0.01U
R1321	ERD25FJ470	1/4W 47 Δ	R3049	ERDS2TJ154	1/4W 150K	C216	ECEA1CK100B	16V 10U
R1322	ERDS2TJ102T	1/4W 1K	R3050, 3051	ERDS2TJ222	1/4W 2.2K	C217	ECEA1HK2R2B	50V 2.2U
R1323	ERDS2TJ682T	1/4W 6.8K	R3052	ERDS2TJ333	1/4W 33K	C220	ECEA1CK100B	16V 10U
R2001	ERDS2TJ473	1/4W 47K	R3053	ERDS2TJ154	1/4W 150K	C221	ECFR1E183KR	25V 0.018U
R2005-2008	ERDS2TJ104	1/4W 100K	R3054, 3055	ERDS2TJ103	1/4W 10K	C222	ECQM1H473JZ	50V 0.047U
R2009, 2010	ERDS2TJ473	1/4W 47K	R3057	ERDS2TJ223	1/4W 22K	C225	ECBT1H180JC5	50V 18P
R2011, 2012	ERDS2TJ104	1/4W 100K	R3058-3061	ERDS1FVJ181T	1/2W 180 Δ	C226	ECKR1H103ZF5	50V 0.01U
R2015-2022	ERDS2TJ333	1/4W 33K	R3062	ERDS2TJ472	1/4W 4.7K	C227	ECEA1CK100B	16V 10U
R2023, 2024	ERDS2TJ473	1/4W 47K	R3064	ERDS2TJ102	1/4W 1K	C228	ECBT1H100JC5	50V 10P
R2025-2028	ERDS2TJ103	1/4W 10K	R3067	ERDS2TJ105T	1/4W 1M	C301	ECEA1CU101	16V 100U
R2029, 2030	ERDS2TJ823T	1/4W 82K	R3068	ERDS2TJ224T	1/4W 220K	C302	ECEA1HKR47	50V 0.47U
R2031-2034	ERDS2TJ473	1/4W 47K	R3069	ERDS2TJ221	1/4W 220	C303	ECEA1HK010B	50V 1U
R2037-2040	ERDS2TJ155	1/4W 1.5M	R3071-3073	ERDS2TJ221	1/4W 220	C304-306	ECEA1HK3R3	50V 3.3U
R2041, 2042	ERDS2TJ823T	1/4W 82K	R3075	ERDS2TJ102	1/4W 1K	C307, 308	ECFR1E273KR	25V 0.027U
R2043, 2044	ERDS2TJ471	1/4W 470	R3076-3078	ERDS2TJ103	1/4W 10K	C309	ECKT1H223ZF	50V 0.022U
R2045-2052	ERDS2TJ102	1/4W 1K	R3103-3106	ERDS2TJ153	1/4W 15K	C310	ECFR1E473KR	25V 0.047U
R3001	ERDS2TJ101	1/4W 100	R3107-3110	ERDS2TJ273	1/4W 27K	C311	ECQP1471JZ	50V 470P
R3002	ERDS2TJ822	1/4W 8.2K	R3111-3114	ERDS2TJ473	1/4W 47K	C312	ECEA1VK4R7	35V 4.7U
R3003	ERDS2TJ101	1/4W 100	R3115, 3116	ERDS2TJ102	1/4W 1K	C313, 314	ECBT1H181KB5	50V 180P
R3004	ERDS2TJ151	1/4W 150	R3117, 3118	ERDS2TJ391	1/4W 390	C351-353	ECEA1HK2R2B	50V 2.2U
R3005	ERDS2TJ102	1/4W 1K	R3119, 3120	ERDS2TJ104	1/4W 100K	C354-356	ECEAOJU471	6.3V 470U
R3006	ERDS2TJ824	1/4W 820K	R3121, 3122	ERDS2TJ103	1/4W 10K	C359	ECEAOJK470	6.3V 47U
R3007	ERDS2TJ105T	1/4W 1M	R3123, 3124	ERDS2TJ123	1/4W 12K	C360	ECBT1E103ZF	25V 0.01U
R3008	ERDS2TJ223	1/4W 22K	R3125, 3126	ERDS2TJ562	1/4W 5.6K	C365	ECEA1HK2R2B	50V 2.2U
R3009	ERDS2TJ473	1/4W 47K	R3127, 3128	ERDS2TJ561	1/4W 560	C366-368	ECEA1CK100B	16V 10U
R3010	ERDS2TJ223	1/4W 22K	R3129, 3130	ERDS2TJ332	1/4W 3.3K	C370	ECEAOJU221	6.3V 220U
R3011	ERDS2TJ105T	1/4W 1M	R3131, 3132	ERDS2TJ822	1/4W 8.2K	C371-374	ECEA1HK2R2B	50V 2.2U
R3012	ERDS2TJ223	1/4W 22K	R3133, 3134	ERDS2TJ153	1/4W 15K	C375-378	ECEAOJU471	6.3V 470U
R3013	ERDS2TJ473	1/4W 47K	R3135, 3136	ERDS2TJ102	1/4W 1K	C381, 382	ECBT1E103ZF	25V 0.01U
R3014	ERDS2TJ223	1/4W 22K	R3137, 3138	ERDS2TJ152	1/4W 1.5K	C383, 384	ECEAOJK470	6.3V 47U
R3015	ERDS2TJ105T	1/4W 1M				C393	ECEAOJU101B	6.3V 100U
R3016	ERDS2TJ223	1/4W 22K			CAPACITORS	C395, 396	ECEA1HK2R2B	50V 2.2U
R3017	ERDS2TJ473	1/4W 47K				C397, 398	ECEA1CK100B	16V 10U
R3018	ERDS2TJ223	1/4W 22K	C101, 102	ECBT1H150JC5	50V 15P	C401, 402	ECBT1E103ZF	25V 0.01U
R3019	ERDS2TJ471	1/4W 470	C103	ECBT1H102KB5	50V 1000P	C403, 404	ECKR1H103ZF5	50V 0.01U
R3020	ERDS2TJ221	1/4W 220	C105	ECEAOJU221	6.3V 220U	C405, 406	ECBT1H101KB5	50V 100P
R3021	ERDS2TJ471	1/4W 470	C106	ECKR1H103ZF5	50V 0.01U	C407	ECAOJAP101B	6.3V 100U
R3022	ERDS2TJ561	1/4W 560	C107	ECKT1H223ZF	50V 0.022U	C408, 409	ECKR1H103ZF5	50V 0.01U
R3023, 3024	ERDS2TJ104	1/4W 100K	C108	ECEA1HK4R7	50V 4.7U	C410, 411	ECA1EAP330B	25V 33U
R3025	ERDS2TJ472	1/4W 4.7K	C109	ECEA1CU330	16V 33U	C451, 452	ECA1HAP3R3B	50V 3.3U
R3026-3028	ERDS2TJ103	1/4W 10K	C110, 111	ECBT1H102KB5	50V 1000P	C453, 454	ECBT1H101KB5	50V 100P

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C455, 456	ECBT1H102KB5	50V 1000P	C751	ECKR1H103ZF5	50V 0.01U	C1022	ECBT1H680J5	50V 68P
C457, 458	ECFR1E223KR	25V 0.022U	C752	ECA1CM102B	16V 1000U	C1023	ECQV1H154JZ3	50V 0.15U
C459, 460	ECFR1E682KR	25V 6800P	C754	ECA1HAP100B	50V 10U	C1024-1026	ECEA1CK100B	16V 10U
C461, 462	ECA1HAP3R3B	50V 3.3U	C755	ECAQJAP101B	6.3V 100U	C1027	ECBT1E103ZF	25V 0.01U
C463, 464	ECA1EAP330B	25V 33U	C756	ECBT1E103ZF	25V 0.01U	C1028	ECEADJU471B	6.3V 470U
C501, 502	ECQM1H333JZ	50V 0.033U	C757-759	ECKT1H223ZF	50V 0.022U	C1031, 1032	ECBT1H330J5	50V 33P
C503, 504	ECBT1H101KB5	50V 100P	C791	ECKWNS103ZV	500V 0.01U Δ	C1033, 1034	ECFR1E272KR	25V 2700P
C505, 506	ECA1CAP470B	16V 47U	C801	ECEADJU102	6.3V 1000U	C1035, 1036	ECBT1H391KB5	50V 390P
C507-510	ECBT1E103ZF	25V 0.01U	C802	ECBT1E103ZF	25V 0.01U	C1037, 1038	ECQP1682JZ3	16V 6800P
C513, 514	ECBT1H150J5	50V 15P	C803, 804	ECEADJU102	6.3V 1000U	C1039, 1040	ECEA1CK100B	16V 10U
C515, 516	ECBT1H101KB5	50V 100P	C805	ECEADJU471	6.3V 470U	C1042	ECBT1H330J5	50V 33P
C517, 518	ECBT1H330J5	50V 33P	C806	ECBT1E103ZF	25V 0.01U	C1044	ECBT1H391KB5	50V 390P
C519, 520	ECA1HAP3R3B	50V 3.3U	C807, 808	ECEA1HMR47	50V 0.47U	C1045	ECFR1E272KR	25V 2700P
C521	ECKR1H103ZF5	50V 0.01U	C809	ECEA1CK100B	16V 10U	C1046	ECQP1682JZ3	16V 6800P
C522	ECFR1E104KR	25V 0.1U	C810-814	ECBT1E103ZF	25V 0.01U	C1048	ECEA1HK010B	50V 1U
C523	ECBT1H330J5	50V 33P	C815	ECEA1CK470	16V 47U	C1051, 1052	ECBT1E103ZF	25V 0.01U
C524	ECA1HAP010B	50V 1U	C816	ECEA1CK100B	16V 10U	C1055, 1056	ECEA1HK010B	50V 1U
C525	ECA1HAP2R2B	50V 2.2U	C817, 818	ECBT1H102KB5	50V 1000P	C1057, 1058	ECBT1H391KB5	50V 390P
C526, 527	ECBT1E103ZF	25V 0.01U	C819	ECQP1102JZ3	11V 1000P	C1059, 1060	ECQP1682JZ3	16V 6800P
C528	ECA1HAP3R3B	50V 3.3U	C820	ECEA1CK470	16V 47U	C1061, 1062	ECFR1E272KR	25V 2700P
C529	ECA1HAP100B	50V 10U	C821, 822	ECEA1HK3R3	50V 3.3U	C1063, 1064	ECQP1682JZ3	16V 6800P
C530, 531	ECBT1E103ZF	25V 0.01U	C823	ECEA1CK100B	16V 10U	C1065, 1066	ECBT1H391KB5	50V 390P
C532	ECA1HAP3R3B	50V 3.3U	C851, 852	ECAQJAP101B	6.3V 100U	C1067, 1068	ECFR1E272KR	25V 2700P
C533	ECBT1H330J5	50V 33P	C853, 854	ECFR1E104KR	25V 0.1U	C1069, 1070	ECEA1CK100B	16V 10U
C601, 602	ECA1HAP3R3B	50V 3.3U	C891	ECFR1E392KR	25V 3900P	C1075, 1076	ECBT1H101KB5	50V 100P
C603, 604	ECQP1271JZ	50V 270P	C901	ECEADJU102	6.3V 1000U	C1077, 1078	ECEA1CK100B	16V 10U
C605, 606	ECBT1H221KB5	50V 220P	C902	ECBT1E103ZF	25V 0.01U	C1079, 1080	ECEA1EK4R7	25V 4.7U
C607, 608	ECA1VAP220B	35V 22U	C904, 905	ECEADJU102	6.3V 1000U	C1081, 1082	ECBT1H680J5	50V 68P
C609, 610	ECCR1H100K5	50V 10P	C906	ECBT1E103ZF	25V 0.01U	C1085, 1086	ECBT1E103ZF	25V 0.01U
C611, 612	ECQB1H223JZ3	50V 0.022U	C908	ECBT1H331KB5	50V 330P	C1103-1110	ECEA1HK3R3	50V 3.3U
C613	ECA2AAP100B	100V 10U	C909, 910	ECBT1H101KB5	50V 100P	C1111, 1112	ECEA1CU470	16V 47U
C615	ECA1VAP470B	35V 47U	C911, 912	ECEA2AU100	100V 10U	C1113, 1114	ECBT1E103ZF	25V 0.01U
C616	ECEA2AN2R2SB	100V 2.2U Δ	C913	ECEA1HK100	50V 10U	C1115-1117	ECBT1H181KB5	50V 180P
C617, 618	ECQB1H681KF3	50V 680P	C914	ECEA1VK100B	35V 10U	C1153-1158	ECEA1HK3R3	50V 3.3U
C619, 620	ECA2AAP221E	100V 220U Δ	C916	ECEA1HK010B	50V 1U	C1161, 1162	ECEA1CK100B	16V 10U
C651	ECA1HAP2R2B	50V 2.2U	C971	ECBT1E103ZF	25V 0.01U	C1164	ECEA1EK4R7	25V 4.7U
C703, 704	ECA45AP472E	45V 4700U Δ	C1001	ECBT1E103ZF	25V 0.01U	C1201	ECA1HAP3R3B	50V 3.3U
C705, 706	ECETS56V472U	56V 4700U Δ	C1002	ECBT1H330J5	50V 33P	C1202	ECKR1H103ZF5	50V 0.01U
C707	ECKR2H103ZU	500V 0.01U	C1003	ECBT1E223ZF	25V 0.022U	C1203	ECBT1H271KB5	50V 270P
C708	ECKR2H103ZU	500V 0.01U Δ	C1004	ECEADJU101B	6.3V 100U	C1204	ECA1VAP470B	35V 47U
C709	ECKR2H103ZU	500V 0.01U Δ	C1005	ECBT1E103ZF	25V 0.01U	C1205	ECA1HAP330B	50V 33U
C710	ECA1VM101B	35V 100U	C1006	ECEA1EK4R7	25V 4.7U	C1207	ECBT1H221KB5	50V 220P
C711, 712	ECA1CAP101B	16V 100U	C1007	ECBT1E223ZF	25V 0.022U	C1209	ECCR1H100K5	50V 10P
C713	ECA1VAP470B	35V 47U	C1008, 1009	ECEA1CK100B	16V 10U	C1211	ECQB1H223JZ3	50V 0.022U
C714	ECKR1H103ZF5	50V 0.01U Δ	C1010, 1011	ECQP1332JZ3	13V 3300P	C1212	ECEA2AN2R2SB	100V 2.2U
C715	ECKR1H103ZF5	50V 0.01U	C1012	ECEADJU221B	6.3V 220U	C1213	ECA2AAP100B	100V 10U
C716	ECKR1H103ZF5	50V 0.01U Δ	C1013	ECBT1E103ZF	25V 0.01U	C1301, 1302	ECA1HAP3R3B	50V 3.3U
C717	ECKR1H103ZF5	50V 0.01U	C1014	ECBT1E223ZF	25V 0.022U	C1303, 1304	ECBA1H681KB5	50V 680P
C718	ECA1CAP101B	16V 100U	C1015	ECEADJU470	6.3V 47U	C1305, 1306	ECA1VAP220B	35V 22U
C719	ECA1HAP3R3B	50V 3.3U	C1017	ECBT1E223ZF	25V 0.022U	C1307, 1308	ECBT1H102KB5	50V 1000P
C720	ECEA1EU100B	25V 10U	C1019, 1020	ECBT1H271KB5	50V 270P	C1309, 1310	ECCR1H100K5	50V 10P
C721, 722	ECKR2H103ZU	500V 0.01U Δ	C1021	ECBT1H101KB5	50V 100P	C1311, 1312	ECQB1H223JZ3	50V 0.022U

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks			
C1313	ECA2AAP100B	100V 10U	C3029	ECEA1HHR47	50V 0.47U			
C1314	ECA1CAP101B	16V 100U	C3032	ECEADJK221B	6.3V 220U			
C1315	ECEA1HKD10B	50V 1U	C3033	ECBT1E103ZF	25V 0.01U			
C2001, 2002	ECEA1VK4R7	35V 4.7U	C3034	ECEADJK221B	6.3V 220U			
C2005-2008	ECEA1CK100B	16V 10U	C3035	ECBT1E103ZF	25V 0.01U			
C2009, 2010	ECQV1H393JZ3	50V 0.039U	C3036	ECEADJK221B	6.3V 220U			
C2011, 2012	ECQV1H473JZ3	50V 0.047U	C3037	ECBT1E103ZF	25V 0.01U			
C2013-2016	ECQB1H103JZ	50V 0.01U	C3038-3042	ECEA1CU101	16V 100U			
C2017-2020	ECQP1222JZ	12V 2200P	C3043	ECEA1CK100B	16V 10U			
C2021-2024	ECQP1102JZ3	11V 1000P	C3047	ECBT1E103ZF	25V 0.01U			
C2025, 2026	ECEAOJU101B	6.3V 100U	C3048	ECEADJK101	6.3V 100U			
C2027	ECBT1E103ZF	25V 0.01U	C3049	ECBT1E103ZF	25V 0.01U			
C2028	ECEAOJU101B	6.3V 100U	C3050	ECEADJK101	6.3V 100U			
C2029	ECKR1H103ZF5	50V 0.01U	C3051	ECBT1E103ZF	25V 0.01U			
C2030	ECBT1E103ZF	25V 0.01U	C3052	ECEADJK101	6.3V 100U			
C2035-2040	ECEA1VK3R3	35V 3.3U	C3054	ECBT1H104ZF5	50V 0.1U			
C2041-2046	ECEA1EK4R7	25V 4.7U	C3055, 3056	ECBT1H121KB5	50V 120P			
C2047, 2048	ECEA1HKD10B	50V 1U	C3057	ECBT1H270J5	50V 27P			
C2049, 2050	ECBT1H100JC5	50V 10P	C3058	ECEA1HKD10B	50V 1U			
C2051, 2052	ECBT1E103ZF	25V 0.01U	C3059	ECBT1C472MR5	16V 4700P			
C2053-2056	ECEA1HK2R2B	50V 2.2U	C3060	ECEADJK101	6.3V 100U			
C2057-2060	ECEA1CK100B	16V 10U	C3061, 3062	ECBT1E103ZF	25V 0.01U			
C2061, 2062	ECBT1H100JC5	50V 10P	C3063	ECBT1H104ZF5	50V 0.1U			
C2063-2066	ECEA1CK100B	16V 10U	C3066	ECBT1E103ZF	25V 0.01U			
C2067, 2068	ECBT1E103ZF	25V 0.01U	C3071	ECBT1E103ZF	25V 0.01U			
C2069	ECEA1CU470	16V 47U	C3072	ECBT1H104ZF5	50V 0.1U			
C2071, 2072	ECBT1H121KB5	50V 120P	C3074	ECEADJK101	6.3V 100U			
C2073-2076	ECBT1H101KB5	50V 100P	C3075, 3076	ECBT1E103ZF	25V 0.01U			
C3001	ECEADJK101	6.3V 100U	C3077	ECBT1H104ZF5	50V 0.1U			
C3002	ECBT1E103ZF	25V 0.01U	C3078	ECEA1CK100B	16V 10U			
C3004, 3005	ECBT1H4R7KC5	50V 4.7P	C3101, 3102	ECBT1E103ZF	25V 0.01U			
C3006	ECBT1E103ZF	25V 0.01U	C3103, 3104	ECEADJK221B	6.3V 220U			
C3007	ECEADJK101	6.3V 100U	C3105, 3106	ECEA1CU470	16V 47U			
C3008	ECBT1H103KB5	50V 0.01U	C3107, 3108	ECBT1E103ZF	25V 0.01U			
C3009	ECBT1E103ZF	25V 0.01U	C3109-3112	ECBT1H680J5	50V 68P			
C3010	ECBT1H680J5	50V 68P	C3113-3116	ECBT1H470J5	50V 47P			
C3011	ECBT1H220JC5	50V 22P	C3117, 3118	ECQM1H333JZ	50V 0.033U			
C3012	ECBT1E103ZF	25V 0.01U	C3119, 3120	ECKD1H471KB	50V 470P			
C3013	ECBT1H820JB5	50V 82P	C3121, 3122	ECBT1H101KB5	50V 100P			
C3014	ECBT1H330J5	50V 33P	C3123, 3124	ECEA1CU470	16V 47U			
C3015	ECBT1E103ZF	25V 0.01U	C3125, 3126	ECEA1CKN4R7B	16V 4.7U			
C3016	ECBT1H820JB5	50V 82P	C3127-3130	ECBT1H102KB5	50V 1000P			
C3017	ECBT1H270J5	50V 27P	C3131, 3132	ECBT1E103ZF	25V 0.01U			
C3018	ECEA1HKD10B	50V 1U						
C3019	ECBT1E103ZF	25V 0.01U						
C3020	ECBT1H330J5	50V 33P						
C3021	ECBT1C472MR5	16V 4700P						
C3022-3024	ECBT1E103ZF	25V 0.01U						
C3025	ECBT1H680J5	50V 68P						
C3026	ECBT1E103ZF	25V 0.01U						
C3027	ECBT1H220JC5	50V 22P						
C3028	ECEAOJU331B	6.3V 330U						

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS					
1	RKMD102A-K	CABINET		43	XTB3+8JFZ	SCREW	
2	SNE2129-3	SCREW		44	XTWS3+8T	SCREW	
3	XTBS3+8JFZ1	SCREW		45	XWE3G14	WASHER	
4	RMND134-1	FL HOLDER		46	XNS7	NUT	
5	RGR0122A-A	REAR PANEL		47	RFKAGX910PK	FRONT PANEL ASS'Y	
6	RGU0101	BUTTON, SPEAKER		48	RFKJAGX910PK	BOTTOM BOARD ASS'Y	
7	RGW0049A-K	KNOB, VOLUME		49	RFKNAGX910PK	ORNAMENT (R) ASS'Y	
8	RGW0073	KNOB, BALANCE				PACKING MATERIALS	
9	RGW0079	KNOB, TUNING		P1	RPG0889	PACKING CASE	
10	RGW0083	KNOB, BASS/TREBLE		P2	RPN0499	PAD	
11	RKU0035	PLATE		P3	XZB60X65A01Z	PROTECTION COVER	
12	RMA0309	ANGLE		P4	SPSD155	ACCESSORIES BOX	
13	RMA0473	ANGLE		P5	XZB24X33C04	PROTECTION COVER (MANUAL)	
14	RMND086	SPACER		P6	RQX94672A	ENVELOPE	(for CANADA)
15	RSC0200	DAC SHIELD PLATE A				ACCESSORIES	
16	RSC0201	DAC SHIELD PLATE B		A1	RQF1106	INSTRUCTIONS MANUAL ASS'Y	
17	RGK0382A	FRONT GRILL (CENTOR)		A1-1	RQT1014-Y	INSTRUCTIONS MANUAL	
18	RGL0129	PANEL LIGHT		A1-2	RQA0049	WARRANTY CARD	(for CANADA)
19	RGU0453-K	BUTTON, POWER		A1-2	SQX7179	WARRANTY CARD	
20	RGU0592	BUTTON, PEQ. SYSTEM		A1-3	SQX9131	SERVICE CENTOR LIST	(for CANADA)
21	RGU0593	BUTTON, PRESET		A1-3	SQX9129-1	SERVICE CENTOR LIST	
22	RGU0594A	BUTTON, DOLBY		A2	EUR66636	REMOTE CONTROLLER	
23	RGU0595	BUTTON, SELECT		A3	SJA172	POWER SUPPLY CORD	△
24	RGU0596A	BUTTON, TUNER		A4	SJS8202	ANTENNA PLUG	
25	RGU0597	BUTTON, MODE		A5	SPB1163T	AM LOOP ANTENNA	
26	SHE187-2	HOLDER		A5-1	SMA233-1M	HOLDER	
27	SHR411	LATCH		A5-2	XTN3+10AFZ	SCREW	
28	SHR415	LATCH		A6	SSA270M	FM INDOOR ANTENNA	
29	SHR8006	SPACER					
30	SJP9205-2T	SHORT PIN					
31	SJS9233A	AC OUTLET COVER					
32	SJS9234A	AC INLET COVER					
33	SKL306	FOOT					
34	SNE2118	SCREW					
35	SNE2123	GND TERMINAL SCREW					
36	SNE4021	NUT					
37	SUS894-1	PLATE					
38	SYE1128-2	FAN ASS'Y					
38-1	MDN-4RB4MRC	MOTOR					
38-2	SHE232	FAN					
38-3	SUS271	SPRING					
38-4	SHE233	FAN CASE					
38-5	SHE234	CAP					
38-6	SJT783	TERMINAL					
38-7	SJS5215	SOCKET (2P)					
39	XTBS26+8J	SCREW					
40	XTBS3+8JFZ1	SCREW					
41	XTB3+20JFZ	SCREW					
42	XTB3+22F	SCREW					

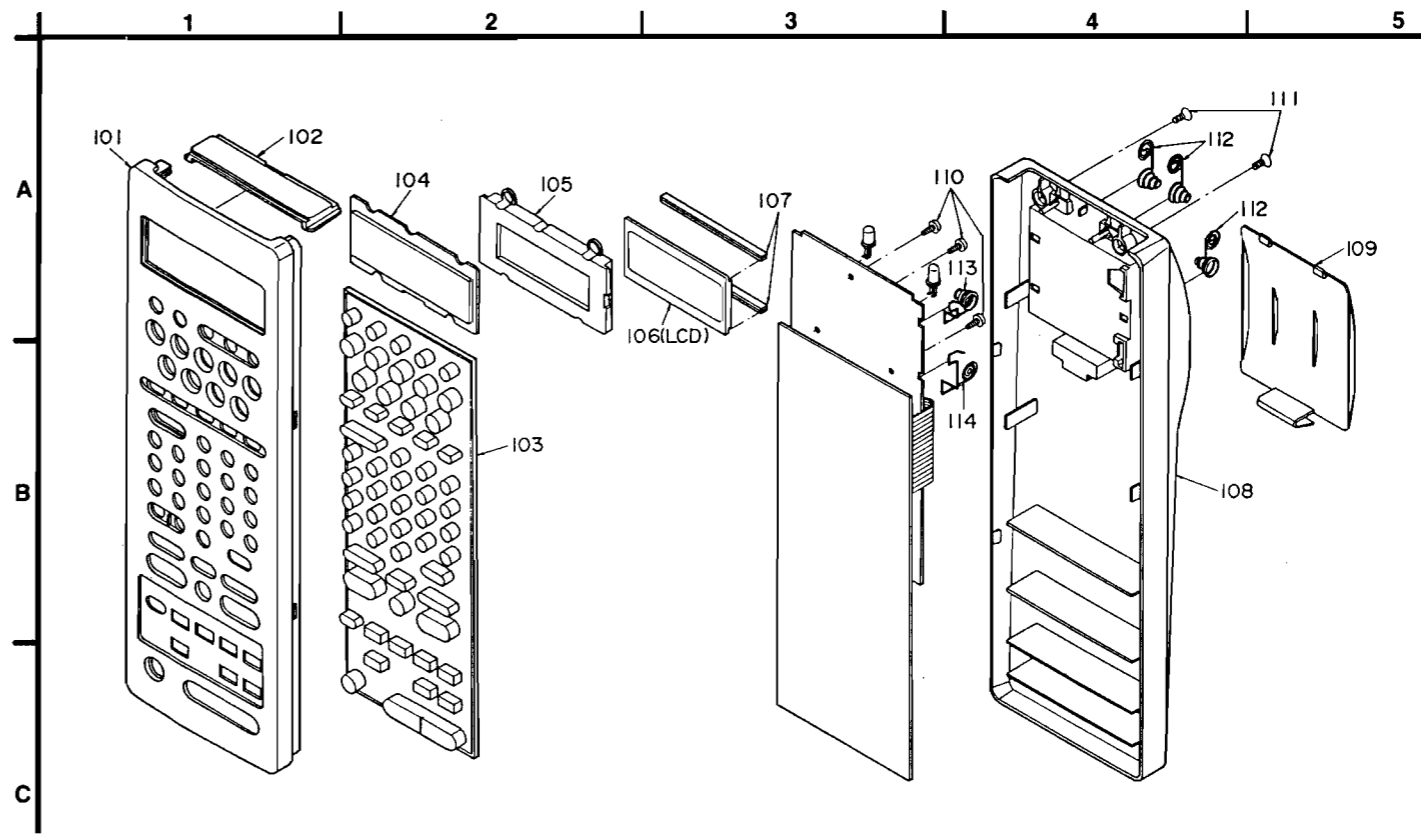
CABINET PARTS LOCATION



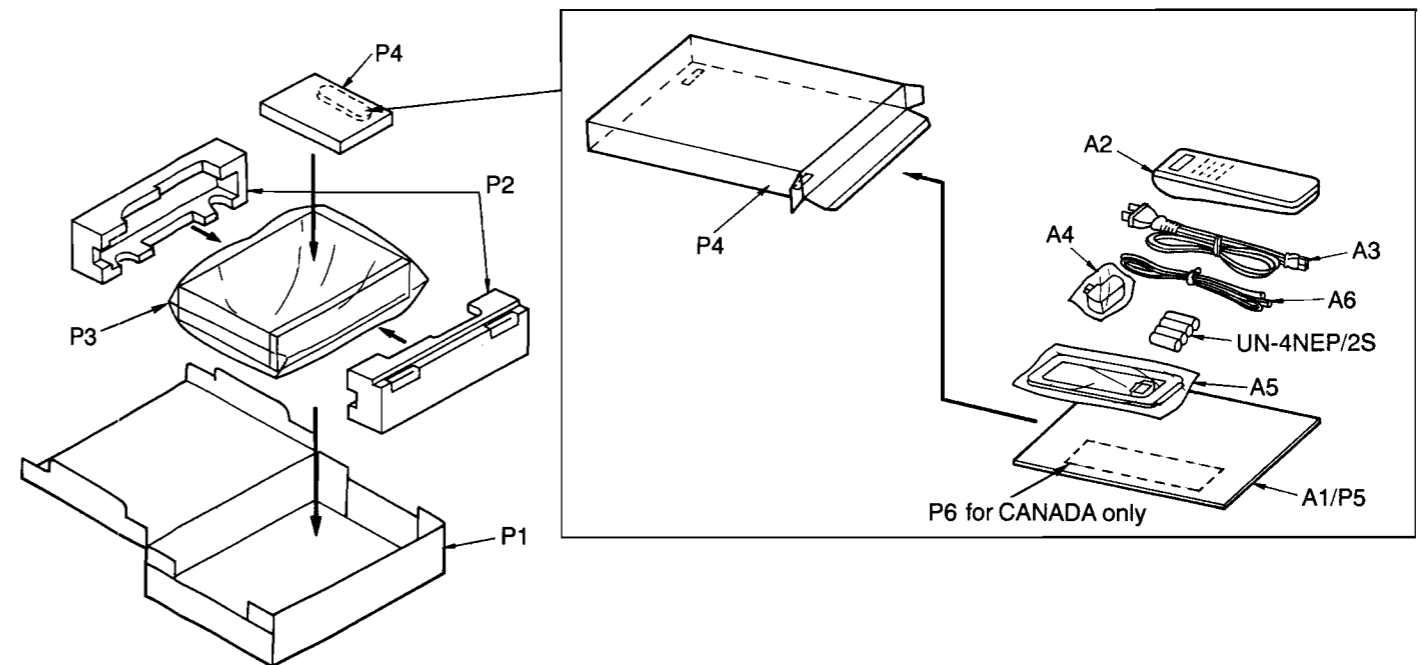
● REMOTE CONTROLLER

■ CABINET PARTS LOCATIONS (REMOTE CONTROLLER)

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		R30	ERJ6GEYJ563V	RESISTOR 1/10W 56K	
						CAPACITOR(S)	
IC1	UPD75308F478	I. C. MICROCOMPUTER		C1	ECUV1H332KBN	CAPACITOR 50V 3300P	
IC2	UPD65012F251	I. C. DIGITAL PROCESSOR		C2	21WR473K25AT	CAPACITOR 25V 0.047U	
IC3	MB8464A10MAT	I. C. S-RAM		C3	21WR473K25AT	CAPACITOR 25V 0.047U	
IC4	UPD4069UBGE2	I. C. INVERTER		C5	ECUV1H103KB	CAPACITOR 50V 0.01U	
IC5	RH5RE50AA	I. C. REGULATOR		C6	ECEA1AU101	CAPACITOR 10V 100U	
IC7	S8054HNCBT1	I. C. RESET		C8	ECUV1H103KB	CAPACITOR 50V 0.01U	
		TRANSISTOR(S)		C9	ECUV1H103KB	CAPACITOR 50V 0.01U	
Q1	UN7231TW	TRANSISTOR		C10	ECEA0JU331	CAPACITOR 6.3V 330U	
Q2	UN221DTW	TRANSISTOR		C11	ECUV1H330KCN	CAPACITOR 50V 33P	
		DIODE(S)		C12	ECUV1H330KCN	CAPACITOR 50V 33P	
D1	TPS705	DIODE		C13	ECUV1H330KCN	CAPACITOR 50V 33P	
D2	1SS294TE85R	DIODE		C14	ECUV1H330KCN	CAPACITOR 50V 33P	
D3	SE303AS	LED		C16	ECUV1H103KB	CAPACITOR 50V 0.01U	
D4	SE303AS	LED		C17	ECEA0JU102E	CAPACITOR 6.3V 1000U	
		OSCILLATOR(S)		C30	ECUV1H221KC	CAPACITOR 50V 220P	
X1	CSA400MGT	OSCILLATOR				CABINET	
XZ	KF38G	OSCILLATOR		101	RFKGEUR66636	UPPER CABINET ASS'Y	
		RESISTOR(S)		102	UR66SB379	SMOKE PLATE	
R1	ERJ6GEYJ682V	RESISTOR 1/10W 6.8K		103	UR66CT380C	RUBBER CONTACT	
R2	ERJ6GEYJ103V	RESISTOR 1/10W 10K		104	UR66MF382	WINDOW PLATE	
R3	ERJ6GEYJ103V	RESISTOR 1/10W 10K		105	UR66SS400	SPACER	
R4	ERJ6GEYJ225	RESISTOR 1/10W 2.2M		106	UR66SC370	LCD	
R5	ERJ6GEYJ124V	RESISTOR 1/10W 120K		107	UR66CN405	CONNECTOR	
R6	ERJ6GEYJ561V	RESISTOR 1/10W 560		108	UR66CS377A	LOWER CABINET	
R7	ERJ6GEYJ393	RESISTOR 1/10W 39K		109	UR66EC378	BATTERY COVER	
R8	ERJ6GEYJ273V	RESISTOR 1/10W 27K		110	XTB2+5GFZ	SCREW	
R9	ERJ6GEYJ104V	RESISTOR 1/10W 100K		111	XTS2+8GFZ	SCREW	
R10	ERJ6GEYJ104V	RESISTOR 1/10W 100K		112	UR68TD10	BATTERY TERMINAL (COMMON)	
R11	ERJ6GEYJ104V	RESISTOR 1/10W 100K		113	UR66TD386	BATTERY TERMINAL (-)	
R15	ERJ6GEYJ104V	RESISTOR 1/10W 100K		114	UR66TD385	BATTERY TERMINAL (+)	
R16	ERJ6GEYJ103V	RESISTOR 1/10W 10K					
R17	ERD25TL8R2U	RESISTOR 1/10W 8.2					
R21	ERJ6GEYJ334V	RESISTOR 1/10W 330K					
R22	ERJ6GEYJ104V	RESISTOR 1/10W 100K					
R23	ERJ6GEYJ104V	RESISTOR 1/10W 100K					
R24	ERJ6GEYJ104V	RESISTOR 1/10W 100K					
R25	ERJ6GEYJ104V	RESISTOR 1/10W 100K					
R26	ERJ6GEYJ104V	RESISTOR 1/10W 100K					
R27	ERJ6GEYJ104V	RESISTOR 1/10W 100K					
R28	ERJ6GEYJ104V	RESISTOR 1/10W 100K					
R29	ERJ6GEYJ104V	RESISTOR 1/10W 100K					



■ PACKING



34082

ORDER NO. AD9106168A4

Service Manual

Simplified



PANA-07268

Receiver
SA-GX910

D.S.P. AV Control Stereo Receiver

Color

(K) Black Type

- Please file and use this simplified manual together with the service manual for model No. SA-GX910, Order No. AD9104077C1.
- This service manual indicates the main differences between; Original SA-GX910 (PP) and SA-GX910 (PX).

Areas

Country Code	Area	Color
(PX)	Far East-PX and Europe PX	(K)

CHANGE IN SPECIFICATIONS

AMPLIFIER SECTION

Rated minimum sine wave RMS power output
 20 Hz~20 kHz both channels driven
 0.008% total harmonic distortion
 125 W per channel (8 Ω)

1 kHz continuous power output both channels driven
 0.008% total harmonic distortion 130 W per channel (8 Ω)

Load impedance
 A or B 4~8 Ω
 A and B 8 Ω

FM TUNER SECTION

Frequency range 87.9~107.9 MHz

AM TUNER SECTION

Frequency range 530~1720 kHz

GENERAL

Power consumption 500 W, 650 VA
Power supply AC 120V, 60Hz

AMPLIFIER SECTION

Rated minimum sine wave RMS power output
 20 Hz~20 kHz both channels driven
 0.008% total harmonic distortion
 110 W per channel (8 Ω)

1 kHz continuous power output both channels driven
 0.008% total harmonic distortion 115 W per channel (8 Ω)

Load impedance
 A or B 4~16 Ω
 A and B 8~16 Ω

FM TUNER SECTION

Frequency range 87.5~108.0 MHz

AM TUNER SECTION

Frequency range 522~1611 kHz/9 kHz-steps
 530~1620 kHz/10 kHz-steps

GENERAL

Power consumption 850 W
Power supply 110 V/127 V/220 V/240 V, 50/60 Hz

CHANGE IN REPLACEMENT PARTS LIST

Note: 1. Mentioned in this parts list are only those different from Model No. SA-GX910 (PP); all other parts are the same as for SA-GX910 (PP).

SA-GX910 (Page 68~78, 81 of service manual.)

Ref. No.	Change of Part No.		Part Name & Description	Remarks
	SA-GX910 (PP)	SA-GX910 (PX)		
TRANSISTOR(S)				
Q751	2SC3940AQSTA	2SC1815Y0TP	TRANSISTOR	
Q752	—	2SK381CTA	TRANSISTOR	Addition
Q753, 754	—	2SD1761DEF	TRANSISTOR	Addition
Q903	UN4211	UN4111	TRANSISTOR	

Technics

7268

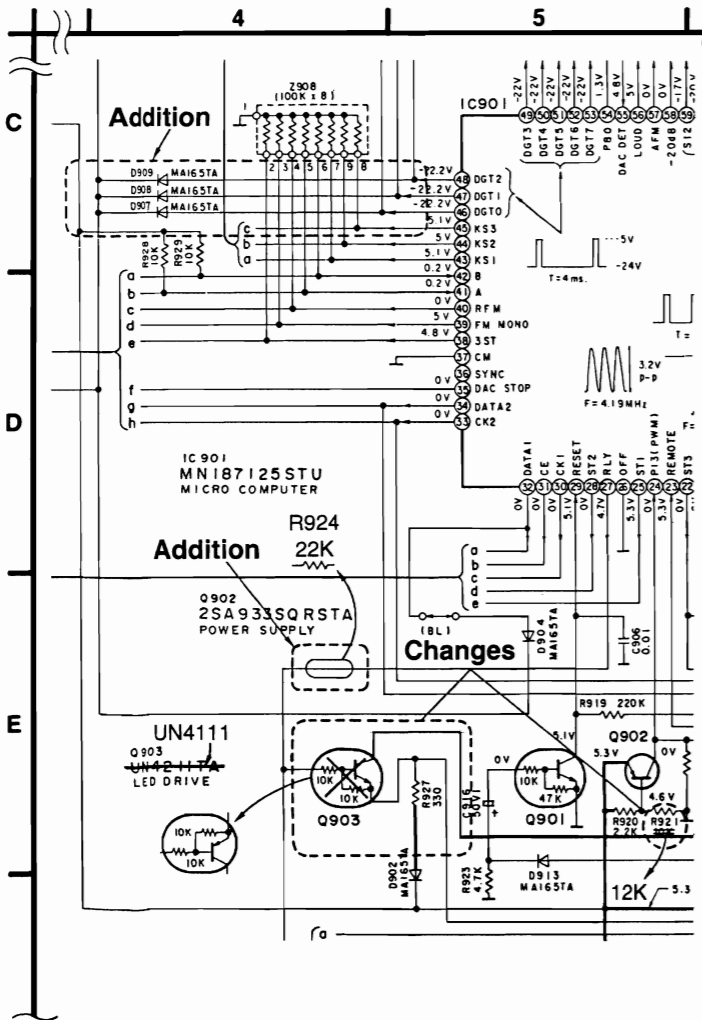
SA-GX910

Ref. No.	Change of Part No.		Part Name & Description	Remarks
	SA-GX910 (PP)	SA-GX910 (PX)		
DIODE(S)				
D604, 758, 907	_____	MA165TA	DIODE	Addition
D757	_____	MA4120MTA	DIODE	Addition
TRANSFORMER(S)				
T1	_____	RTP1R5E003-W	POWER TRANSFORMER	△ Addition
T701	RTP1R5C001-W	_____	POWER TRANSFORMER	△
T751	RTP1H5C001-V	RTP1I5E004-V	POWER TRANSFORMER	△
FUSE(S)				
F1	XBA1F80NU14	XBA2C63TB0	FUSE, 250 V T6.3 A	△
F2	_____	XBA2C31TB0	FUSE, 250 V T3.15 A	△ Addition
F3, 4	XBA1F40NU14	XBA2C40TB0	FUSE, 250 V T4 A	△
SWITCH(ES)				
S703	_____	ESE37263	SW, VOLTAGE SELECTOR	△ Addition
FUSE HOLDER(S)				
E701~706	RJR0011	EYF52BC	FUSE HOLDER	Addition
E707, 708	_____			
JACK(S)				
JK701	SJS305-1	SJS702-1	CONNECTOR	
JK793	SJS9234B	SJS9231B	AC INLET	△
THERMAL DETECTOR				
PS601	_____	SRPBC47101	POSISTOR	Addition
RESISTORS				
R636	_____	ERDS2TJ153T	RESISTOR 1/4 W 15 K	Addition
R751	ERC12ZGK335	_____	RESISTOR 1/2 W 3.3 M	
R752	_____	ERDS2TJ221T	RESISTOR 1/4 W 220	Addition
R755	ERDS2TJ472	_____	RESISTOR 1/4 W 4.7 K	
R756, 757	_____	ERDS2TJ8R2T	RESISTOR 1/4 W 8.2	Addition
R921	ERDS2TJ103	ERDS2TJ123T	RESISTOR 1/4 W 12 K	
R924	_____	ERDS2TJ223T	RESISTOR 1/4 W 22 K	Addition
CAPACITORS				
C752	ECA1CM102B	ECA1HM102E	CAPACITOR 50 V 1000 μ	
C753	_____	ECKR1H103ZF5	CAPACITOR 50 V 0.01 μ	Addition
C754	ECA1HAP100B	ECEA1AU221B	CAPACITOR 10 V 220 μ	
C760	_____	ECEA1CK100B	CAPACITOR 16 V 10 μ	Addition
CABINET PARTS				
5	RGR0122A-A	RGR0122C-A	REAR PANEL	
10	RGW0083	RGW0083-1	KNOB, BASS/TREBLE	
24	RGU0596A	RGU0596B	BUTTON, TUNER	
27	SHR411	_____	LATCH	
32	SJS9234A	SJS9231A	AC INLET COVER	
42	XTB3+22F	XTBS3+22F	SCREW	
43	XTB3+8JFZ	XTB3+8J	SCREW	
45	XWE3G14	XWE3F13	WASHER	
48	RFKJAGX910PK	RMK0128-1	BOTTOM BOARD	
PACKING MATERIALS				
P1	RPG0889	RPG0889-1	PACKING CASE	
P5	XZB24X33C04	SPB1061	PROTECTION COVER (MANUAL)	
P6	RQX9467ZA	_____	ENVELOPE	

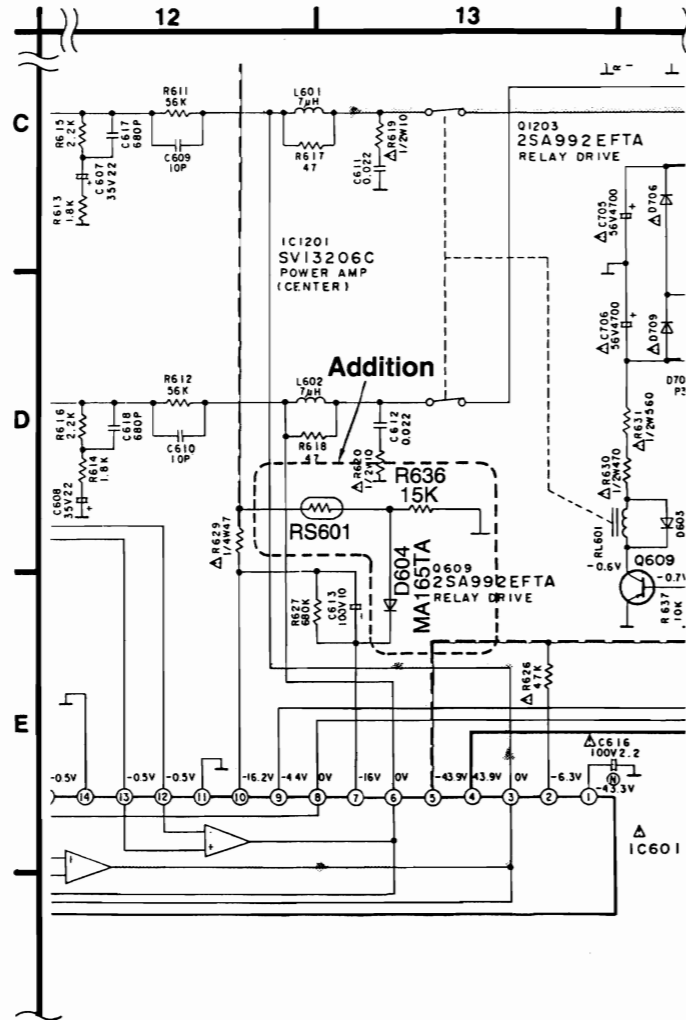
Ref. No.	Change of Part No.		Part Name & Description	Remarks
	SA-GX910 (PP)	SA-GX910 (PX)		
ACCESSORIES				
A1	RQF1106	RQF1254	INSTRUCTIONS MANUAL ASS'Y	
A1-1	RQT1014-Y	RQT1199-M	INSTRUCTIONS MANUAL	
A1-2	RQA0049		WARRANTY CARD	
	SQX7179	SQX7071-1		
A1-3	SQX9131		SERVICE CENTER LIST	
	SQX9129-1			
A3	SJA172	RJA0004	AC POWER SUPPLY CORD	△
A7		SJP9215	ATTACHMENT PLUG	△ Addition

SCHEMATIC DIAGRAM

G FL DRIVE CIRCUIT (See pages 35~36.)



N MAIN CIRCUIT (See pages 40~41.)



Q SPEAKER TERMINAL CIRCUIT (CHANGES) (See pages 42.)

