

# Service Manual

Receiver  
**SA-GX280**

AV Control Stereo Receiver



Colour

(K) ... Black Type

Areas

| Suffix for Model No. | Area               | Colour |
|----------------------|--------------------|--------|
| (E)                  | Europe.            | (K)    |
| (EG)                 | Germany and Italy. |        |

## SPECIFICATIONS (DIN 45 500)

### ■ AMPLIFIER SECTION

Power output (at 240 V for (E) area.)

DIN 1 kHz (T.H.D. 1%) 2 × 80 W (4 Ω)

40 Hz–20 kHz continuous power output  
both channels driven 2 × 60 W (8 Ω)

Total harmonic distortion

rated power at 40 Hz–20 kHz 0.5% (8 Ω)

half power at 1 kHz 0.03% (8 Ω)

Intermodulation distortion

rated power at 60 Hz: 7 kHz=4:1, SMPTE 0.5% (8 Ω)

Power bandwidth

both channels driven, –3 dB 10 Hz–40 kHz (8 Ω)

Damping factor

40 (8 Ω)

Input sensitivity and impedance

PHONO 3 mV/47 kΩ

CD, VCR 1, VCR 2, TAPE/DCC 200 mV/22 kΩ

S/N at rated power (8 Ω)

PHONO 70 dB (IHF, A: 80 dB)

CD, VCR 1, VCR 2, TAPE/DCC 80 dB (IHF, A: 90 dB)

Frequency response

PHONO RIAA standard curve

(30 Hz–15 kHz) ±0.8 dB

CD, VCR 1, VCR 2, TAPE/DCC 10 Hz–40 kHz, ±3 dB

Tone controls

BASS 50 Hz, +10 to –10 dB

TREBLE 20 kHz, +10 to –10 dB

Output voltage

VCR 1 OUT, TAPE/DCC REC (OUT) 200 mV

Channel balance (250 Hz–6.3 kHz)

±1 dB

Channel separation

55 dB

Headphones output level and impedance

430 mV/330 Ω

Load impedance

A or B 4–16 Ω

A and B 8–16 Ω

### ■ FM TUNER SECTION

Frequency range

87.50–108.00 MHz

Sensitivity

S/N 30 dB 1.5 μV/75 Ω

S/N 26 dB 1.3 μV/75 Ω

S/N 20 dB 1.2 μV/75 Ω

IHF usable sensitivity

(IHF '58) 1.5 μV/75 Ω

IHF 46 dB stereo quieting sensitivity

22 μV/75 Ω

Total harmonic distortion

MONO 0.2%

STEREO 0.3%

S/N

MONO 60 dB (75 dB, IHF)

STEREO 58 dB (71 dB, IHF)

Frequency response

20 Hz–15 kHz, +1 dB, –2 dB

Alternate channel selectivity

±400 kHz 65 dB

Capture ratio

1.0 dB

Image rejection at 98 MHz

40 dB

IF rejection at 98 MHz

70 dB

Spurious response rejection at 98 MHz

70 dB

AM suppression

50 dB

Stereo separation

1 kHz 40 dB

Carrier leak

19 kHz –30 dB (–35 dB, IHF)

38 kHz –50 dB (–55 dB, IHF)

Channel balance (250 Hz–6.3 kHz)

±1.5 dB

Limiting point

1.2 μV

Bandwidth

IF amplifier 180 kHz

FM demodulator 1000 kHz

Antenna terminal(s)

75 Ω (unbalanced)

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ AM TUNER SECTION

|                            |                                                               |
|----------------------------|---------------------------------------------------------------|
| • For (E) area.            |                                                               |
| Frequency range            |                                                               |
| MW                         | 522 – 1611 kHz (9 kHz steps)<br>530 – 1620 kHz (10 kHz steps) |
| LW                         | 144 – 288 kHz                                                 |
| Sensitivity                |                                                               |
| MW                         | 20 µV, 300 µV/m                                               |
| LW                         | 45 µV                                                         |
| Selectivity                |                                                               |
| MW (at 999 kHz)            | 55 dB                                                         |
| LW (at 252 kHz)            | 55 dB                                                         |
| Image rejection            |                                                               |
| MW (at 999 kHz)            | 40 dB                                                         |
| LW (at 252 kHz)            | 40 dB                                                         |
| IF rejection               |                                                               |
| MW (at 999 kHz)            | 55 dB                                                         |
| LW (at 252 kHz)            | 55 dB                                                         |
| • For (EG) area.           |                                                               |
| Frequency range            | 522~1611 kHz (9 kHz steps)<br>530~1620 kHz (10 kHz steps)     |
| Sensitivity (S/N 20 dB)    | 20 µV, 330 µV/m                                               |
| Selectivity at 999 kHz     | 55 dB                                                         |
| Image rejection at 999 kHz | 40 dB                                                         |
| IF rejection at 999 kHz    | 55 dB                                                         |

■ GENERAL

|                        |                          |
|------------------------|--------------------------|
| Power consumption      | 160 W                    |
| Power supply           |                          |
| [For (E) area.]        | AC 50/60 Hz, 230 – 240 V |
| [For (EG) area.]       | AC 50/60 Hz, 230 V       |
| Dimensions (W × H × D) | 430 × 136 × 305 mm       |
| Weight                 | 6.6 kg                   |

■ REMOTE CONTROL TRANSMITTER

|                              |                                    |
|------------------------------|------------------------------------|
| Control keys                 | 35 keys                            |
| Dimensions (W × H × D)       | 62 × 22.3 × 175 mm                 |
| Weight (including batteries) | 111 g (3.9 oz)                     |
| Power source                 | Two UM-4                           |
|                              | (Panasonic R03/LR03 or equivalent) |

Notes:

- Design and specifications are subject to change without notice.  
Weight and dimensions are approximate.
- Total harmonic distortions is measured by the digital spectrum analyzer.

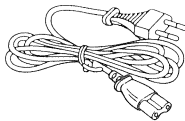
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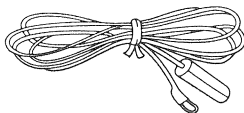
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■ ACCESSORIES

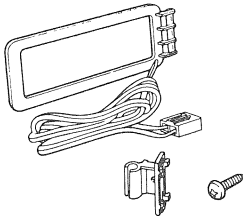
AC power supply cord..... 1 pc.  
[RJA0019-2K]



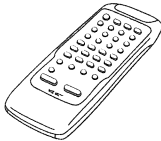
FM indoor antenna ..... 1 pc.  
(SSA270M)



AM loop antenna set..... 1 pc.  
(RSA0010)  
• AM antenna holder..... 1 pc.  
(RMN0244)  
• Screw..... 1 pc.  
(XTN3+ 12AFZ)



Remote control transmitter (1)  
(EUR643861)

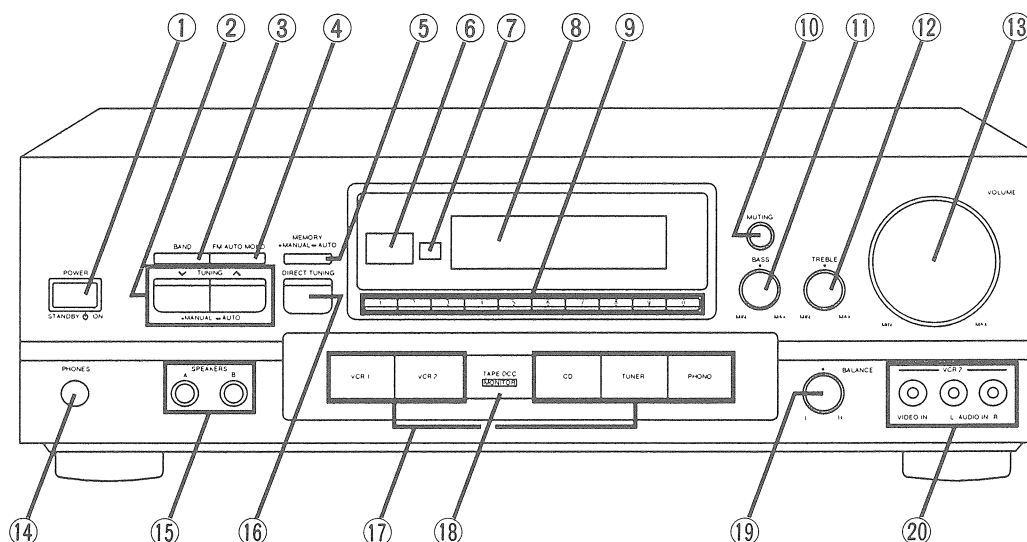


Batteries (2)  
(UM-4, “AAA”, R03)



**Note:** These are available on sale route.

## FRONT PANEL CONTROLS



| No. | Name                                                                                                                                                                                                                                                                                                                                                                  |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ①   | <b>Power “STANDBY /ON” switch (POWER, STANDBY /ON)</b><br>Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power. |
| ②   | <b>Tuning buttons (TUNING)</b>                                                                                                                                                                                                                                                                                                                                        |
| ③   | <b>Band select button (BAND)</b>                                                                                                                                                                                                                                                                                                                                      |
| ④   | <b>FM mode select button (FM AUTO/MONO)</b>                                                                                                                                                                                                                                                                                                                           |
| ⑤   | <b>Memory button (MEMORY)</b>                                                                                                                                                                                                                                                                                                                                         |
| ⑥   | <b>Remote control signal receptor (SENSOR)</b>                                                                                                                                                                                                                                                                                                                        |
| ⑦   | <b>“STANDBY” indicator</b><br>When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.                                                                                                                                                                                                    |
| ⑧   | <b>Display</b>                                                                                                                                                                                                                                                                                                                                                        |
| ⑨   | <b>Numeric buttons (1 – 0)</b>                                                                                                                                                                                                                                                                                                                                        |
| ⑩   | <b>Muting button (MUTING)</b>                                                                                                                                                                                                                                                                                                                                         |

| No. | Name                                                                                                                             |
|-----|----------------------------------------------------------------------------------------------------------------------------------|
| ⑪   | <b>Bass control (BASS)</b>                                                                                                       |
| ⑫   | <b>Treble control (TREBLE)</b>                                                                                                   |
| ⑬   | <b>Volume control (VOLUME)</b>                                                                                                   |
| ⑭   | <b>Headphone jack (PHONES)</b>                                                                                                   |
| ⑮   | <b>Speaker select buttons (SPEAKERS)</b>                                                                                         |
| ⑯   | <b>Direct tuning button (DIRECT TUNING)</b>                                                                                      |
| ⑰   | <b>Input select buttons</b>                                                                                                      |
| ⑱   | <b>Tape/DCC monitor button (TAPE/DCC  )</b> |
| ⑲   | <b>Balance control (BALANCE)</b>                                                                                                 |
| ⑳   | <b>VCR 2 input terminals (VCR 2)</b>                                                                                             |

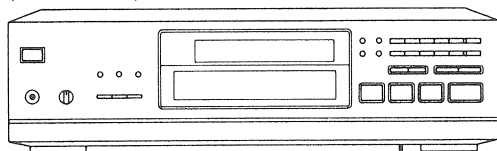
## EQUIPMENT CONNECTIONS

### Connecting audio equipment

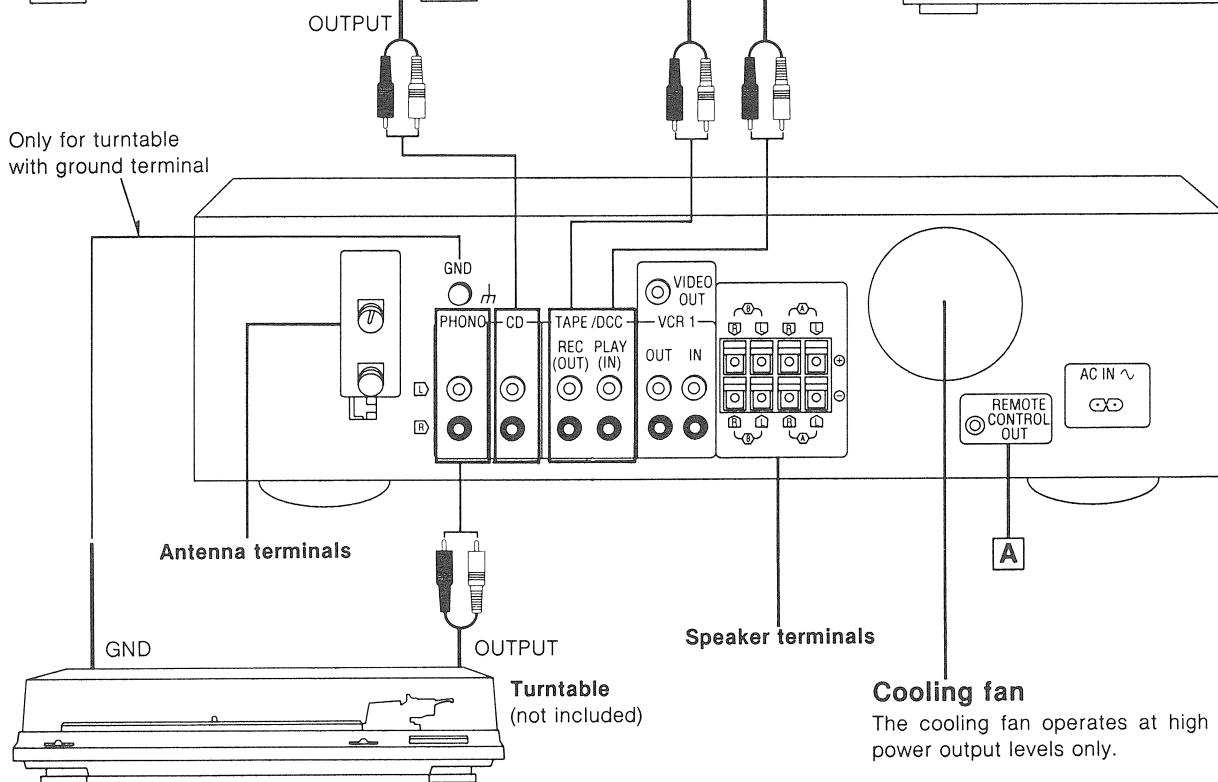
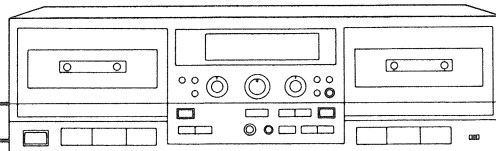
**Stereo connection cable** (not included)

White (L)   
Red (R) 

**CD player (or CD changer)**  
(not included)

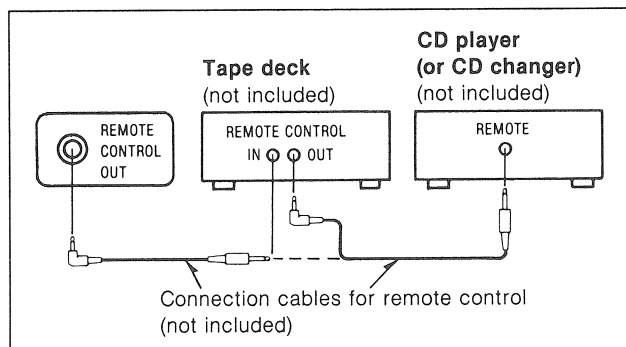


**Tape deck or digital compact cassette deck (DCC)** (not included)



#### A "REMOTE CONTROL OUT" terminal

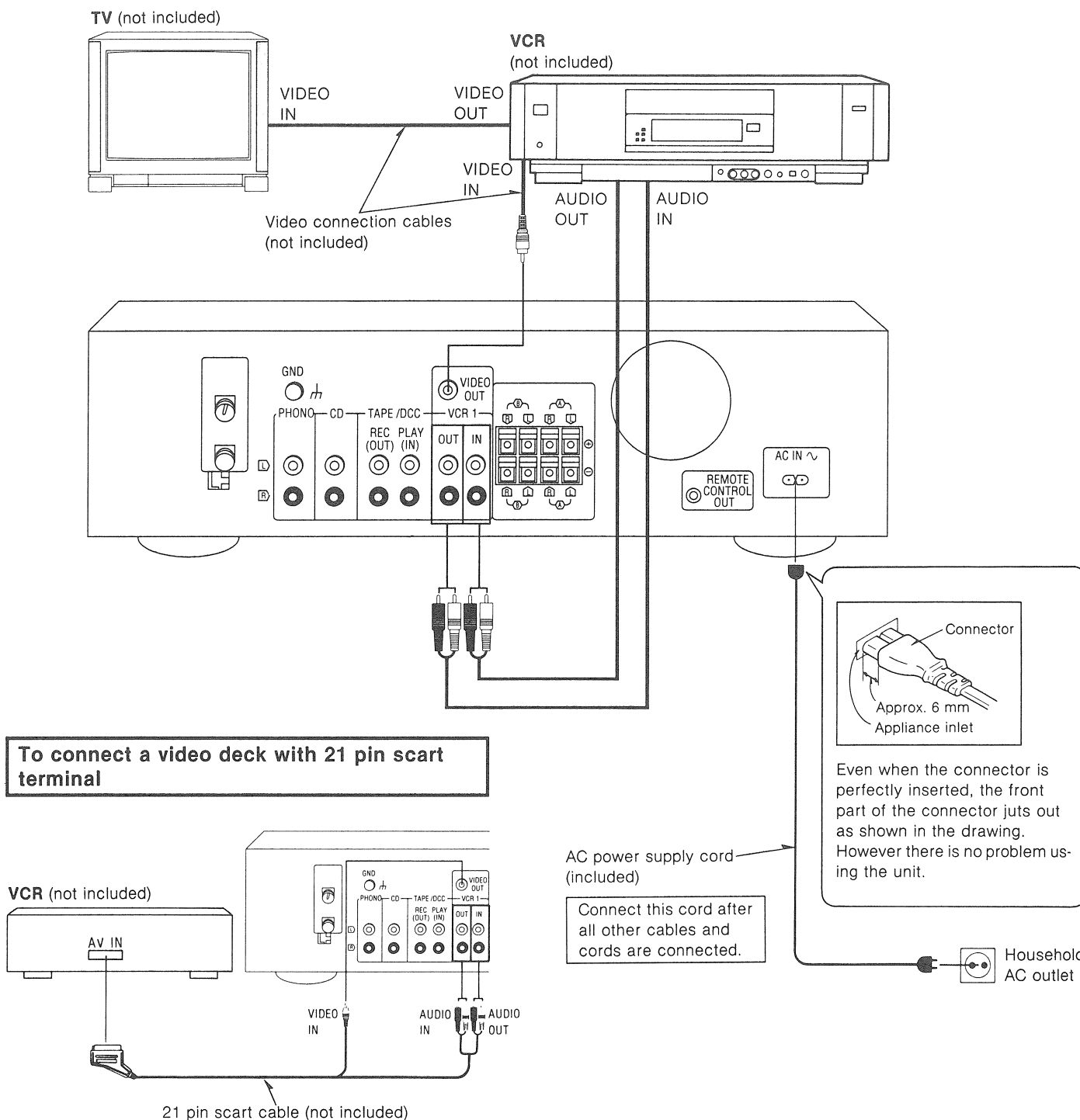
Connect the connection cable for the remote control to a Technics tape deck and/or CD player (or CD changer) which has the appropriate remote control terminal as shown below. If a tape deck is not being used, the CD player (or CD changer) can be connected directly (dotted line).



For a CD player (or CD changer) with a remote control sensor the above connection is not necessary.



## Connecting video equipment



## 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.

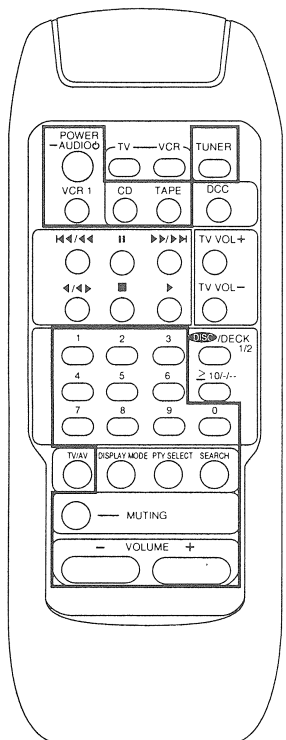
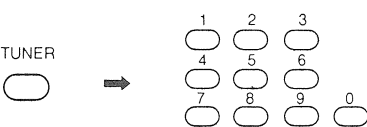
If this occurs, follow the procedure outlines below:

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.

# REMOTE CONTROL OPERATION

|                                                                                                                                                                                                                |                                                                                  |                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                               | <b>Basic operations</b>                                                          |                                                                                                                                            |
|                                                                                                                                                                                                                | <b>To turn the unit ON/OFF</b>                                                   | POWER<br>-AUDIO (Touch only)                                                                                                               |
|                                                                                                                                                                                                                | <b>To select an input source</b>                                                 | TUNER TAPE CD VCR 1<br><b>Note</b><br>1. VCR 2 and PHONO can not be selected by this remote control.<br>2. When selecting DCC, press TAPE. |
|                                                                                                                                                                                                                | <b>To turn the tape monitor function ON</b>                                      | While recording is being made.<br>TAPE                                                                                                     |
|                                                                                                                                                                                                                | (While listening to RDS broadcasts)<br><b>To change the display mode</b>         | DISPLAY MODE This display mode changes each time the button is pressed.                                                                    |
|                                                                                                                                                                                                                | (While listening to RDS broadcasts)<br><b>To select the desired program type</b> | PTY SELECT The PTY display changes each time the button is pressed.                                                                        |
|                                                                                                                                                                                                                | (While listening to RDS broadcasts)<br><b>To start PTY search</b>                | SEARCH                                                                                                                                     |
|                                                                                                                                                                                                                | <b>To mute the sound level</b>                                                   | MUTE Press once more to return to the original volume.                                                                                     |
|                                                                                                                                                                                                                | <b>To adjust the volume level</b>                                                | - VOLUME +                                                                                                                                 |
|                                                                                                                                                                                                                | <b>If your unit is equipped with the Technics Remote Control System</b>          |                                                                                                                                            |
| <b>To listen to radio broadcasts</b>                                                                                                                                                                           |                                                                                  |                                                                                                                                            |
|  <p>Specify the preset channel using the numeric button(s).</p> <p>(Example: Channel 12)</p> <p>1 → 2<br/>Within 2 sec.</p> |                                                                                  |                                                                                                                                            |
| <b>To turn the system OFF</b>                                                                                                                                                                                  |                                                                                  | POWER<br>-AUDIO Press for approx. 2 seconds. (This may not be possible with some models.)                                                  |

# BEFORE REPAIR AND ADJUSTMENT

Disconnect AC power, Discharge both Power Supply Capacitors C703 and C704 (56V 4700μF), C705 and C706 (35V 4700μF) through a 10Ω, 5W 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 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage AC 230V/240V.

| Power supply voltage     | AC 230V |           | AC 240V |           |
|--------------------------|---------|-----------|---------|-----------|
| Consumed current 50/60Hz | 50 Hz   | 120~350mA | 50 Hz   | 130~380mA |
|                          | 60 Hz   | 96~280mA  | 60 Hz   | 104~304mA |

## ■ OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURE

### NOTE

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.
4. Illustrated screws are equivalent to actual size.
5. Refer the parts No. on the page of "Main Component Replacement Procedures", if necessary.

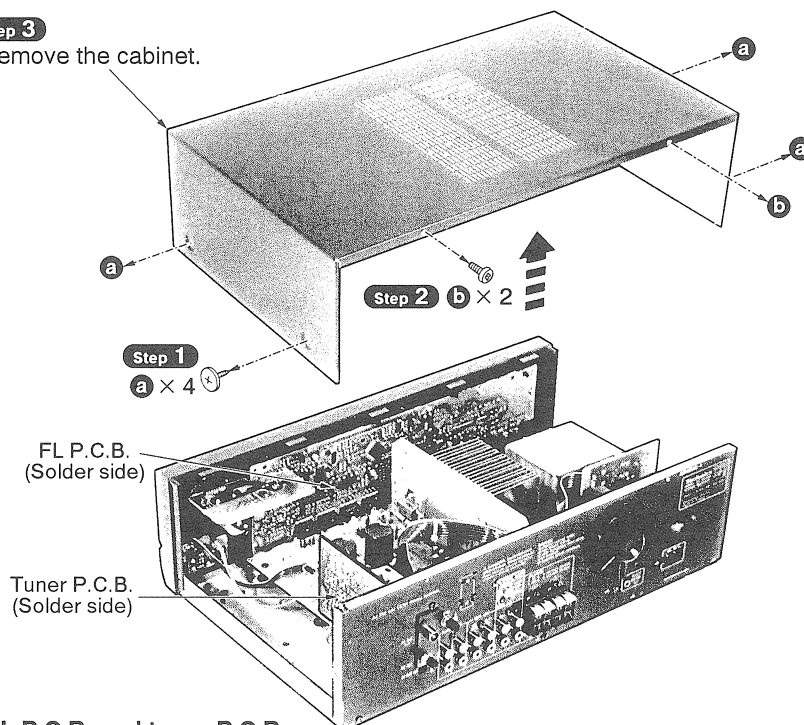
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| •Main Component Replacement Procedures                        |        |
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| 2.Replacement for the power IC and regulator transistor. .... | 10~12. |
| 3.Replacement for the fan motor. ....                         | 12.    |

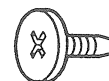
## ■ Checking Procedure for each P.C.B.

### 1. Checking for the FL P.C.B. and tuner P.C.B.

**Step 3**  
Remove the cabinet.



• Check the FL P.C.B. and tuner P.C.B. as shown above.



**a**

[SNE2129-1] (Black)



**b**

[XTBS3+8JFZ1] (Black)

## To remove each P.C.B.



※ Pull out the knobs with using adhesive tape when the knob is hardly removed.

**Step 5**  
Pull out the front panel ass'y.

**c** × 3  
**Step 4**

FL P.C.B.

**Step 13**  
Pull out the headphones jack P.C.B.

**Step 7**  
Release the claw, and then remove the volume P.C.B..

**Step 8** Pull out the knobs.

**Step 6**  
Remove the volume knob and nut.

**Step 11**  
Remove the VCR2 P.C.B..

**Step 12**  
Remove the FL P.C.B.

**d** × 14  
**Step 9**

**e** × 1  
**Step 10**

**d**  
[XTBS26+8J]

**c**  
[XTBS3+8JFZ1](Black)

**e**  
[RHD26016]

## 2. Checking for the main P.C.B.

**Step 1** **a** × 4

**Step 2** **b** × 2

**Step 3**  
Remove the cabinet.

**Step 5**  
Pull out the front panel ass'y.

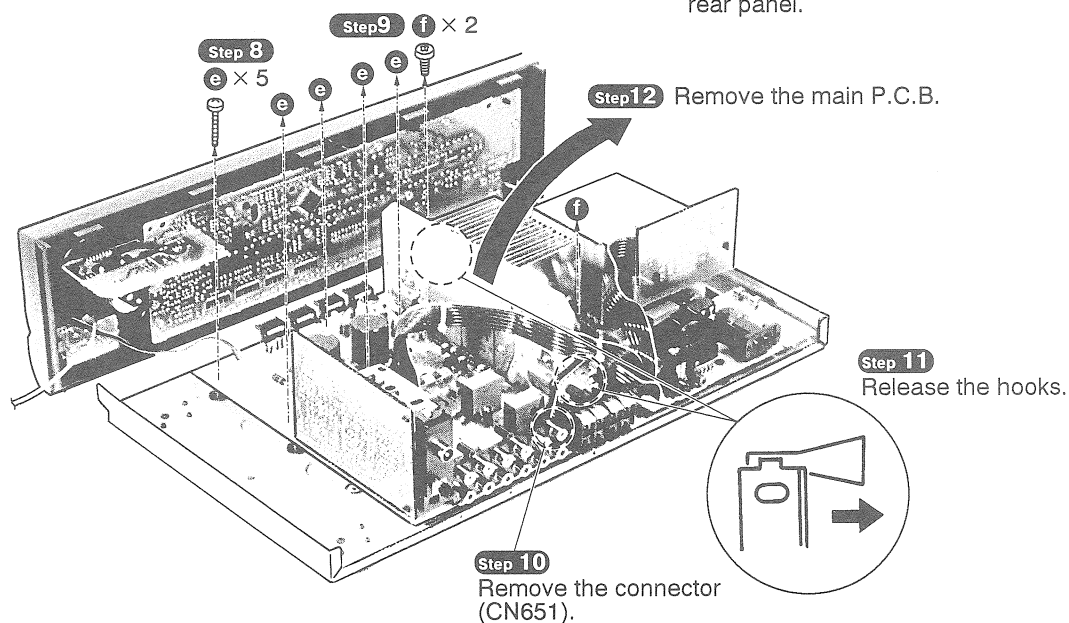
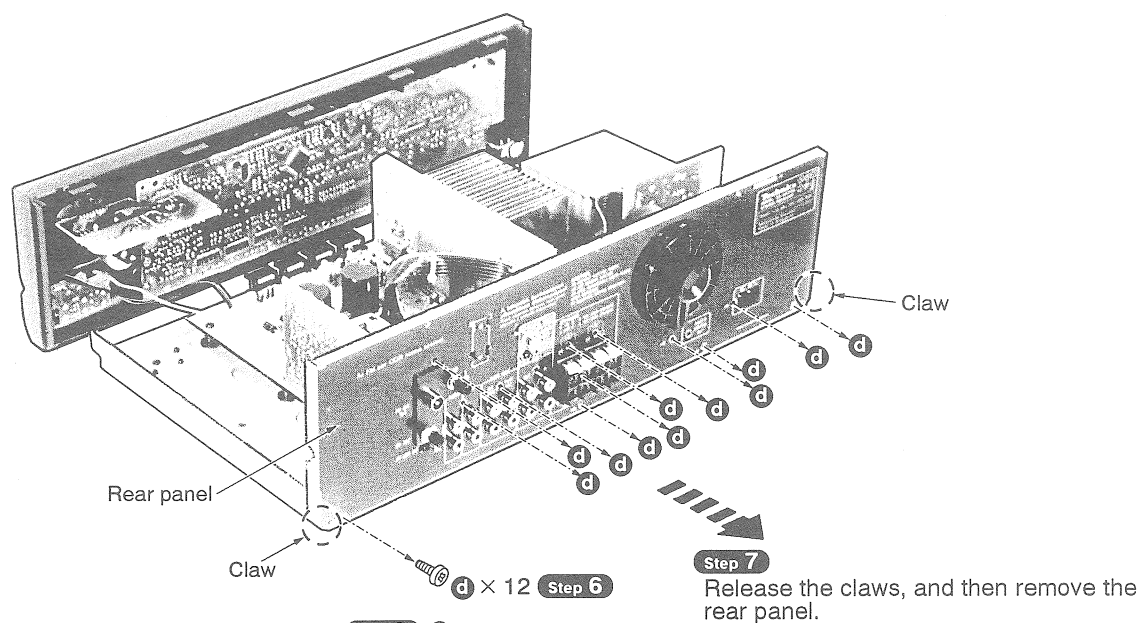
**c** × 3 **Step 4**



[SNE2129-1](Black)

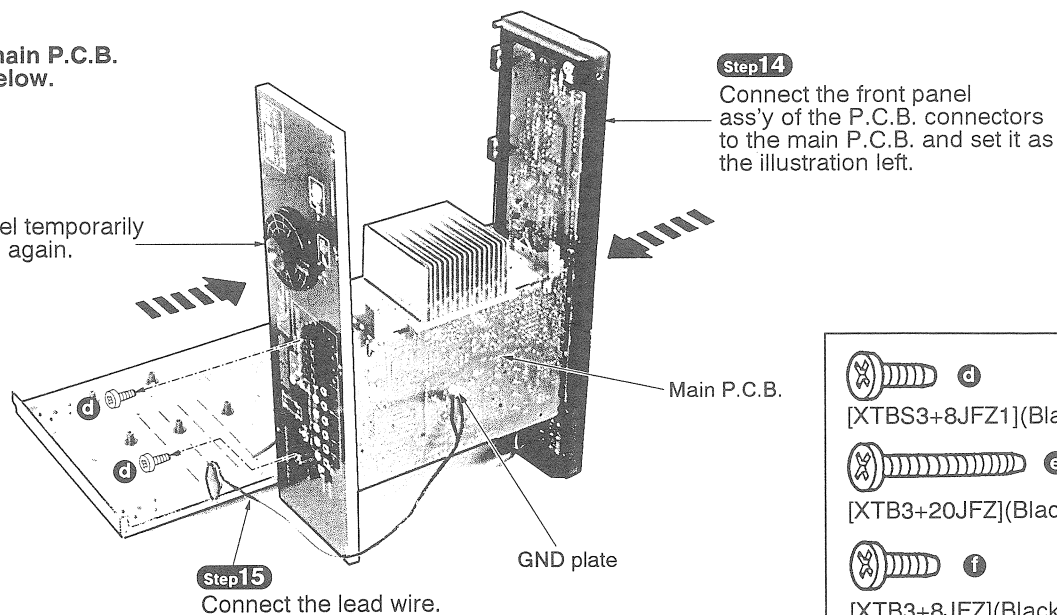


[XTBS3+8JFZ1](Black)



• Check the main P.C.B. as shown below.

Step 13 Install the rear panel temporarily on the main P.C.B. again.



-  **d**  
[XTBS3+8JFZ1](Black)
-  **e**  
[XTB3+20JFZ](Black)
-  **f**  
[XTB3+8JFZ](Black)

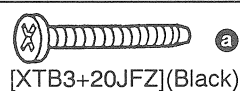
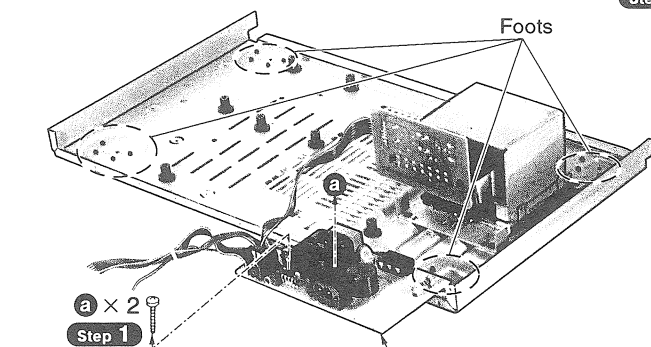
## Main Component Replacement Procedures

### 1. Replacement of the foot

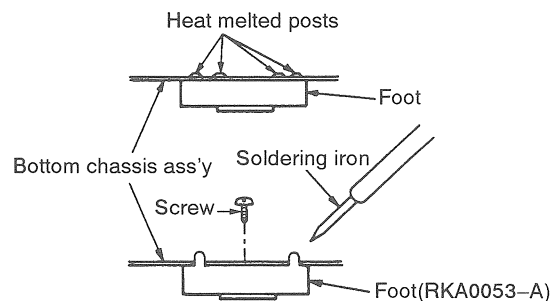
- Follow the **Step 1** ~ **Step 12** in item 2 on checking procedure for each P.C.B. on pages 8 and 9.

**Step 3** Remove the 4 heat melted posts on the Bottom chassis ass'y with a pair of nippers or similar tool.

**Step 4** To replace the foot(RKA0053-A) on the Bottom chassis ass'y melt the 4 posts with a soldering iron or install it with a screw (XTB3+6J).



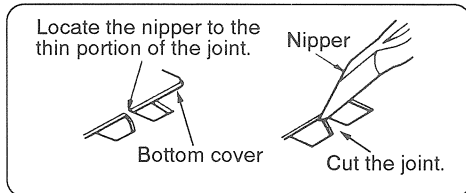
**Step 2** Remove the power supply P.C.B.



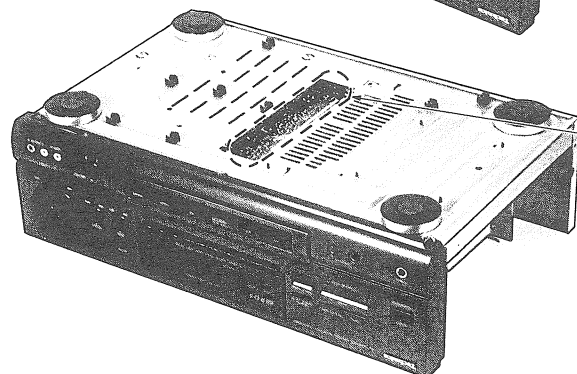
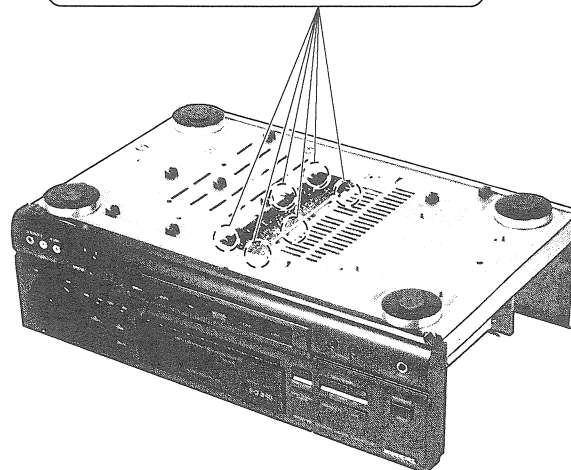
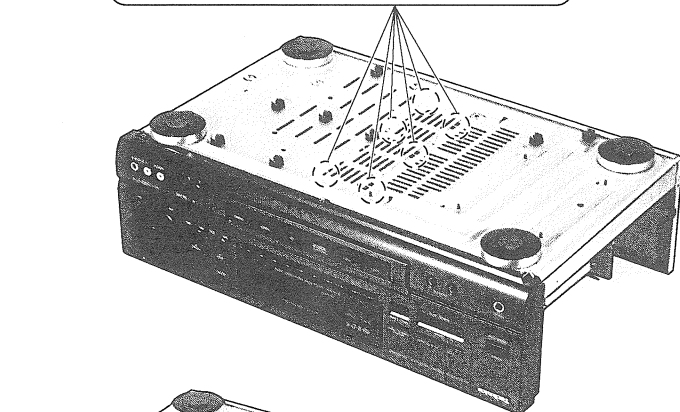
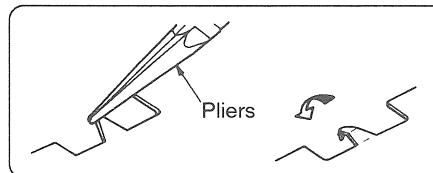
### 2. Replacement for the power IC and regulator transistor

- Follow the **Step 1** ~ **Step 3** in item 1 on checking procedure for each P.C.B. on page 7.

**Step 1** Cut the joints as shown below.(6 portions)

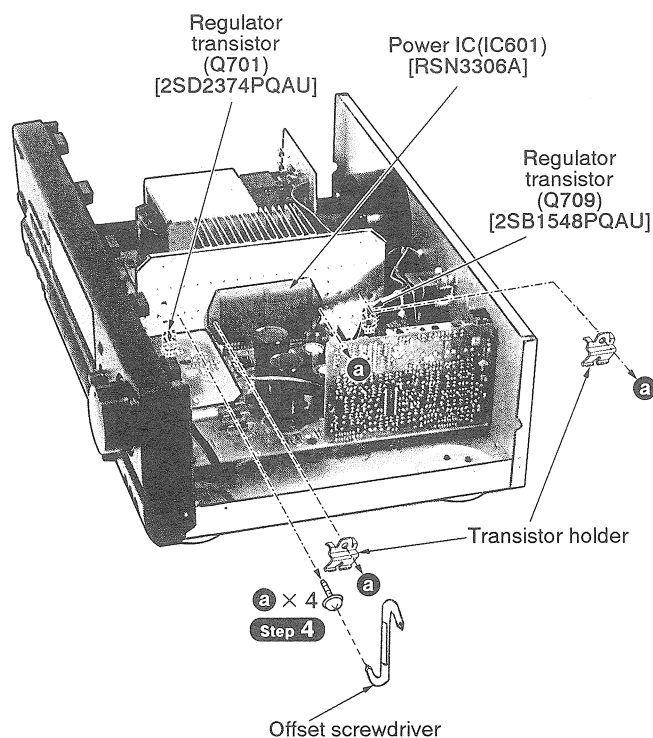


**Step 2** Fold the joints.(6 portions)

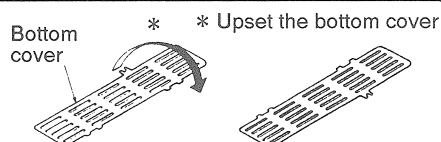


**Step 3** Unsolder the terminals of power IC and regulator transistor.

## Installation of the bottom cover after replacement

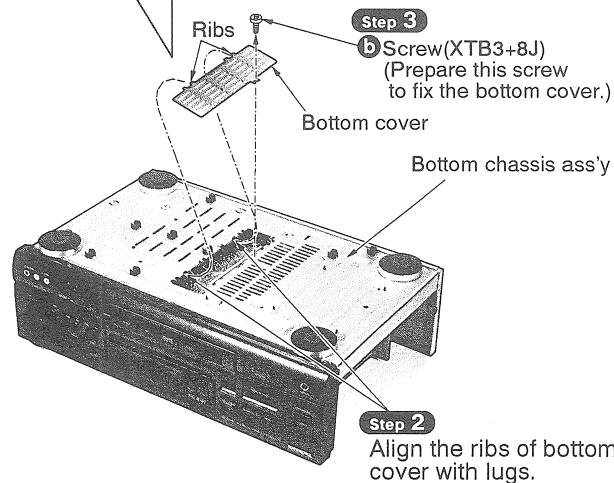


## Step 1



## Step 3

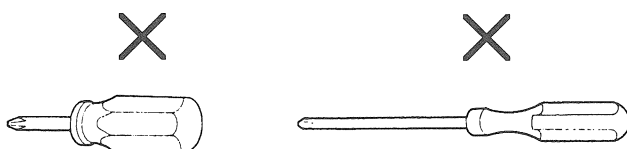
b Screw (XTB3+8J)  
(Prepare this screw to fix the bottom cover.)



## CAUTION

1. After replacing the power IC or regulator transistor, apply a sufficient quantity of compound grease (RFKX0002) between the heat sink and the power IC or regulator transistor (Radiation of power IC).
2. Tighten enough the screws (a) after replacing the power IC and regulator transistor. Otherwise, the heat radiation works little.
3. When installing or removing the power IC or transistor holder, be sure to use an offset screwdriver.

- A long straight screwdriver cannot be used for removal or mounting since its long grip interferes with the neighboring P.C.B. (See Fig.1)
- A short straight screwdriver may be used for removal, but cannot be used for mounting because the limited space in the unit will not allow sufficient tightening torque. (See Fig.2)

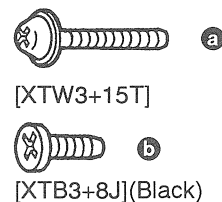


A short straight screwdriver

A long straight screwdriver

Fig.2

- Insufficient tightening will cause poor heat dissipation from the power IC and regulator transistor and, in the worst case, may lead their thermal breakdown. (See Fig.2)



(Prepare this screw to fix the bottom cover.)

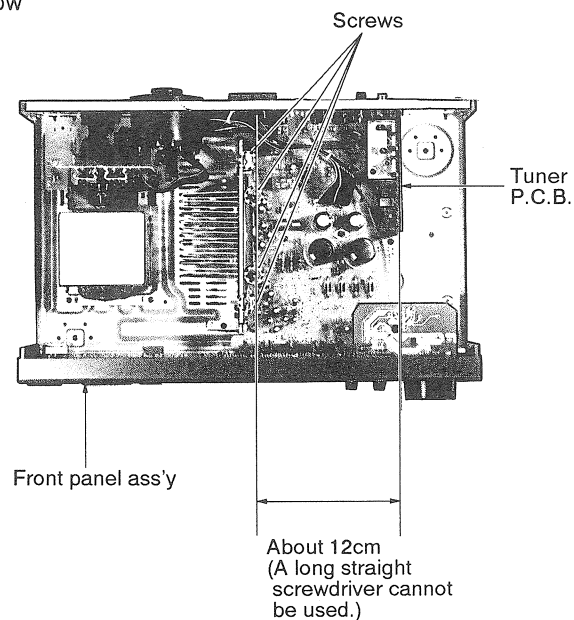
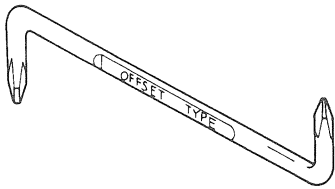


Fig.1

**—OFFSET SCREWDRIVER—**

- The PROTO offset screwdriver No.34 - 1/4 is recommended for use in the application above.



| No.    |       |        |
|--------|-------|--------|
| 34 1/4 | 1 & 2 | 4 3/4" |

- The address of PROTO International Sales is as follows.

**International Sales**

International Sales Office  
Stanley-Proto Industrial Tools  
14117 Industrial Park Blvd.  
Covington, GA 30209 U.S.A.  
Fax: 706-786-4387  
Phone: 706-787-3800

Australia, New Zealand &  
South Pacific  
Stanley-Proto Industrial Tools  
P.O.Box 10  
400 Whitehorse Road  
Nunrwedding 3131  
Victoria, Australia  
Fax: 61-3-894-1173  
Phone: 61-3-878-9244

Singapore, Indonesia,  
Philippines, Korea, Hong  
Kong, Malaysia, China.  
Stanley-Proto Asia Pacific  
12 Gul Drive  
Singapore 2262  
Fax: 65-861-3206  
Phone: 65-862-0883

Thailand  
Stanley-Proto Thailand Ltd.  
1017 Moo 13 Bangnatrad  
Highway, Tambol Bankaew  
Amphur Bangplee  
Samutprakarn, Thailand  
Fax: 66-2-316-6071  
Phone: 66-2-316-8655

Japan  
Stanley Works Japan  
2-7-16 Hyakunin-Cho  
Shinjuku-ku  
Tokyo 160 Japan  
Fax: 81-3-3360-8456  
Phone: 81-3-3360-8458

Mexico  
Herramientas Stanley S.A.  
DE C.V.  
Apartado Postal 675  
72030 Puebla, Pue, Mexico  
Fax: 52-22-494-4880  
Phone: 52-22-495-300

South & Central America,  
Puerto Rico, The Caribbean  
Stanley Inter-America  
2101 N.W. 84th Ave.  
Miami, Florida 33122  
Fax: 305-594-4261  
Phone: 305-591-3828

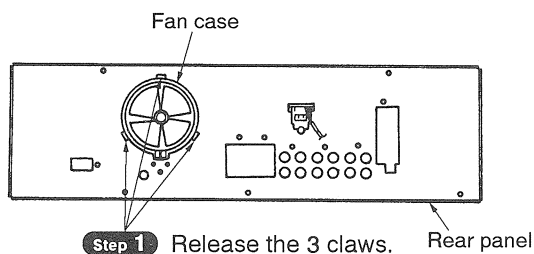
Europe  
Stanley-Proto Europe  
Woodside, Sheffield  
S39PD  
England  
Fax: 44-742-739-038  
Phone: 44-742-768-888

Canada  
Stanley-Proto Canada  
1100 Corporate Drive  
Burlington, Ontario  
Canada, L7L 5R6  
Fax: 416-335-0075  
Phone: 416-335-0075

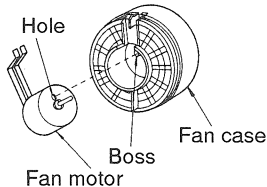
Middle East, Mediterranean  
& Africa  
Stanley-MEMA  
Cory House The Ring  
Bracknell Berkshire  
RG 12 1A2  
England  
Fax: 44-344-485-526  
Phone: 44-344-51813

**3. Replacement for the fan motor**

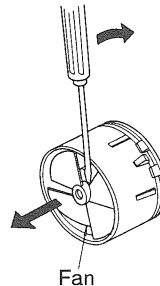
- Follow the **Step 1** ~ **Step 9** in item 2 on checking procedure for each P.C.B. on pages 8 and 9.

**NOTE**

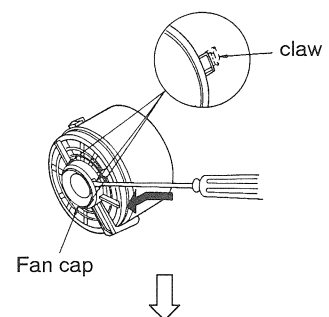
When replacing the fan motor, align the boss of the fan case with the hole of the fan motor.



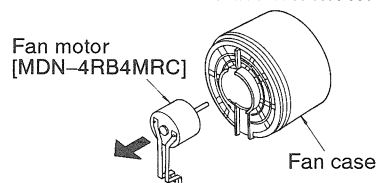
**Step 2**  
Put a screwdriver at the root of the fan and remove it.



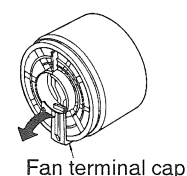
**Step 3**  
Remove the fan cap.



**Step 5**  
Remove the fan motor.



**Step 4**  
Remove the fan terminal cap.



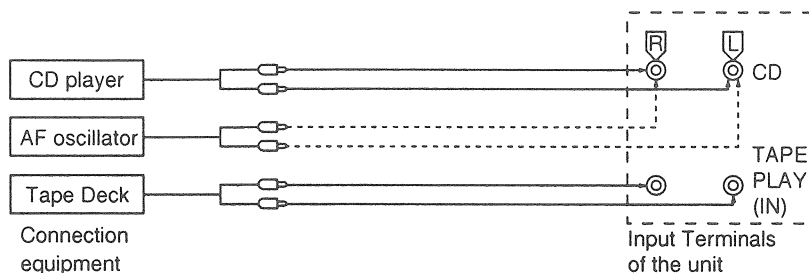


## ■ TROUBLESHOOTING

This unit has test points on each circuit board block for use in troubleshooting.

### CONNECTION

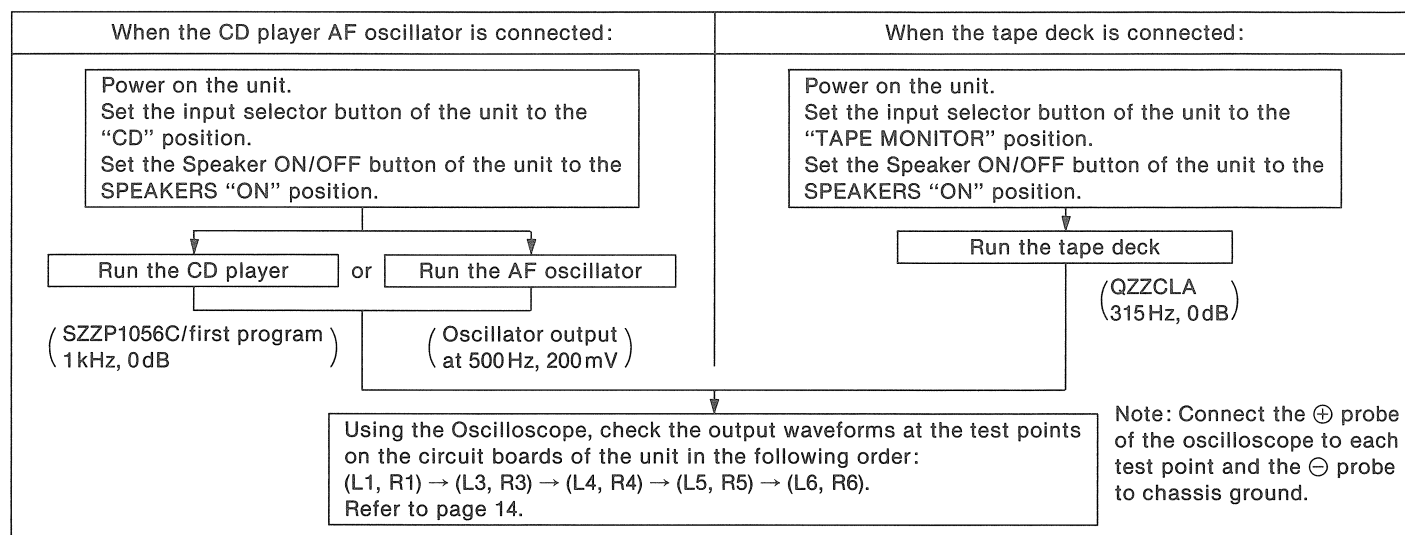
Connect either a CD player, tape deck or AF oscillator to the input terminals of the unit.



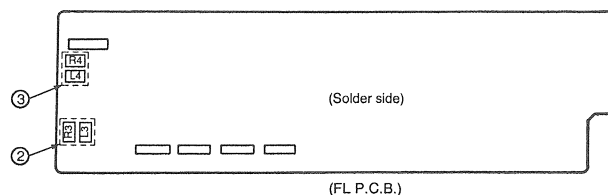
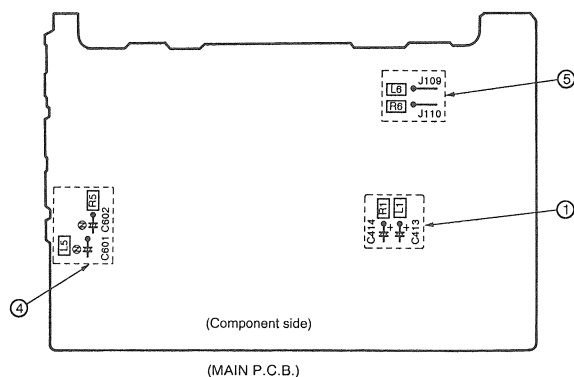
### REQUIRED ITEMS

- ① Testing with a CD player ————— Test deck (SZZP1054C/first program, 1 kHz, 0 dB)
- ② Testing with a tape deck ————— Test tape (QZZCLA/315 Hz, 0 dB)
- ③ Testing with a AF oscillator ————— Set the output at 500 Hz, 200 mV
- ④ Oscilloscope (min. 10 MHz) ..... To measure the output waveform at the test points.

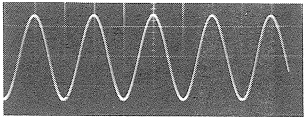
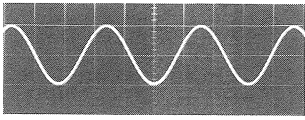
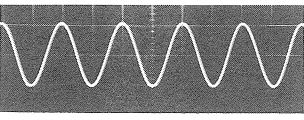
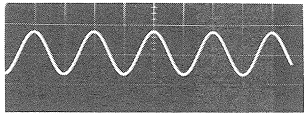
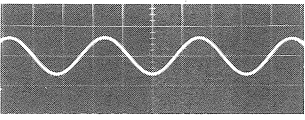
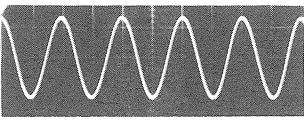
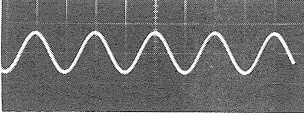
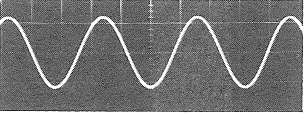
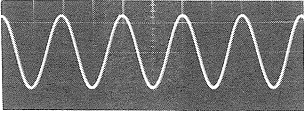
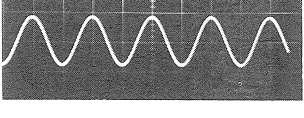
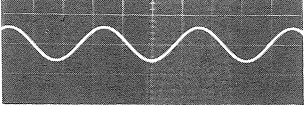
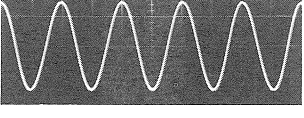
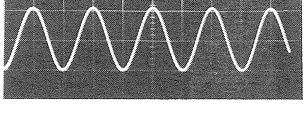
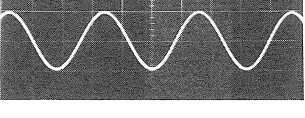
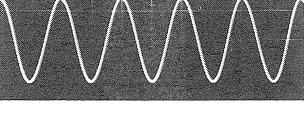
### TEST PROCEDURE FOR AMPLIFIER CIRCUIT



### TEST POINTS POSITIONS OF AMPLIFIER CIRCUIT

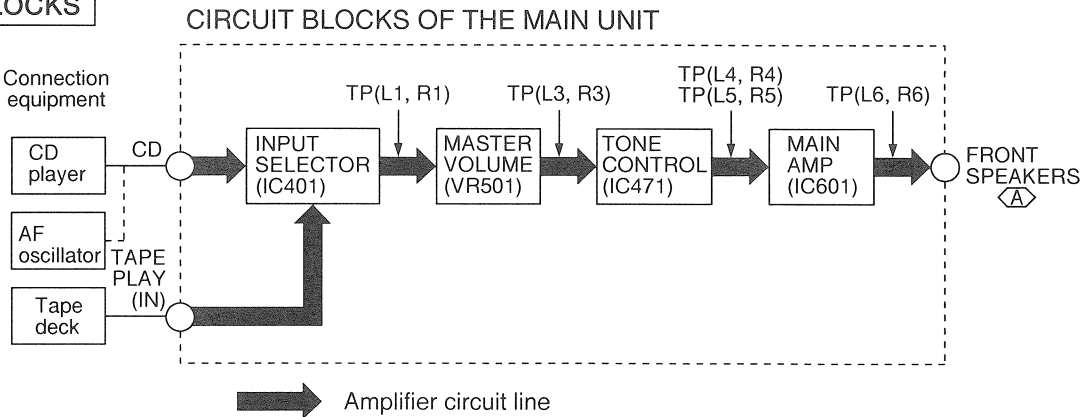


NORMAL WAVEFORMS OF AMPLIFIER CIRCUIT AND LIKELY FAULTY BLOCKS

| No. | TP    | CD player                                                                                          | Tape deck                                                                                        | AF oscillator                                                                                     | Likely faulty block if the normal waveform shown at left is not present. |
|-----|-------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| ①   | L1/R1 | <br>0.5msec 2V    | <br>1msec 500mV | <br>1msec 500mV | Input selector block IC402 & area                                        |
| ②   | L3/R3 | <br>0.5msec 0.5mV | <br>1msec 100mV | <br>1msec 500mV | Master volume block VR501 & area                                         |
| ③   | L4/R4 | <br>0.5msec 5V    | <br>1msec 500mV | <br>1msec 500mV | Tone control block IC471 & area                                          |
| ④   | L5/R5 | <br>0.5msec 2V    | <br>1msec 500mV | <br>1msec 200mV |                                                                          |
| ⑤   | L6/R6 | <br>0.5msec 5V* | <br>1msec 1V* | <br>1msec 1V* | Main amplifier block IC601 & area                                        |

Measurement conditions. Volume control (VR501), Treble control (VR472) and Bass control (VR471) positions:   
\* Volume control position (VR501) for these test : 

CIRCUIT BLOCKS



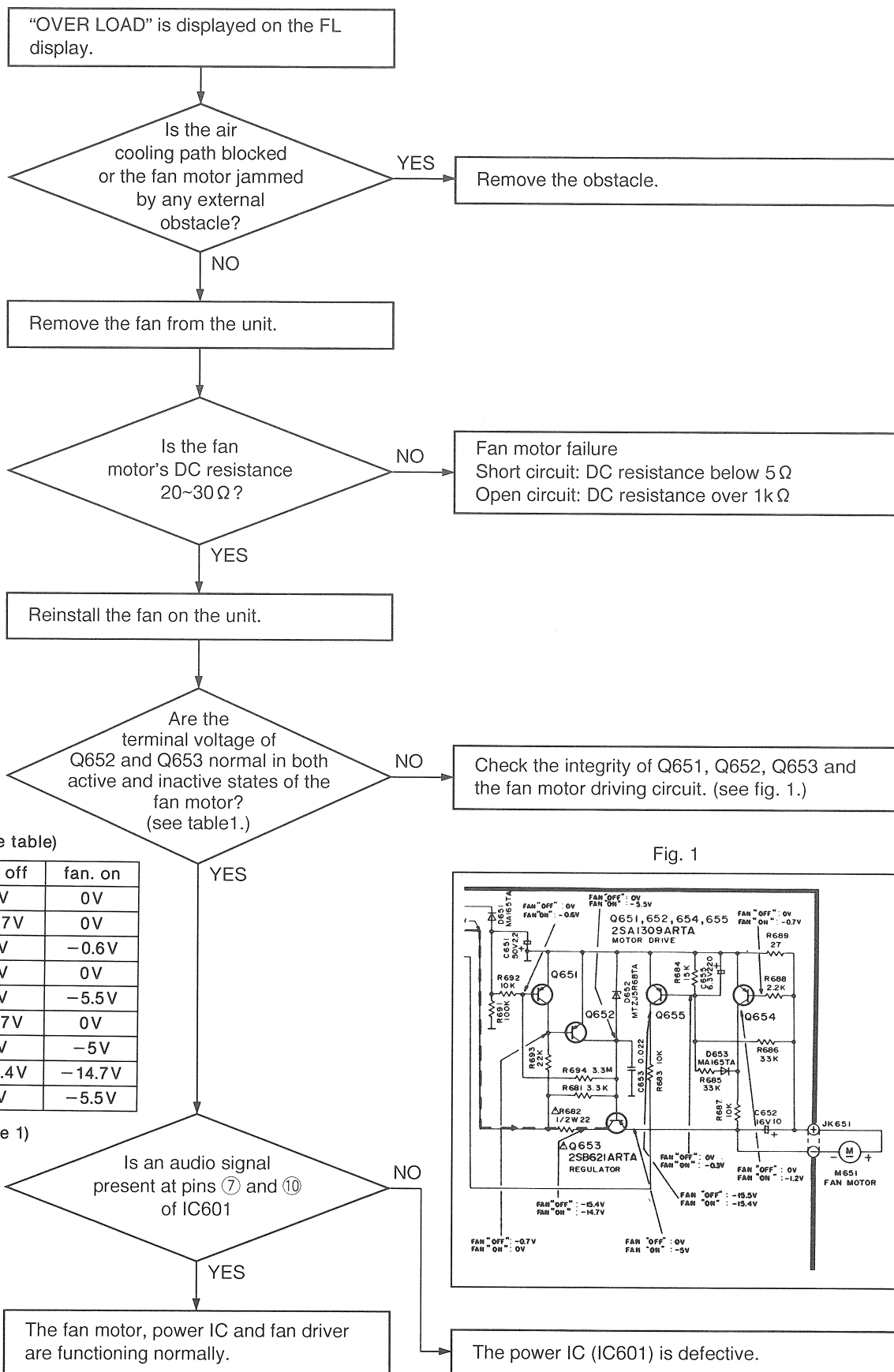
OVERLOAD DETECTION FUNCTION

The HIC protection circuit functions if any cord at a speaker terminal is short-circuited or if the unit overheats because of improper operation. At the same time, 『OVERLOAD』 scrolls across the FL display. In this state, all keys remain inoperative; if any key is pressed, 『SWITCH OFF POWER』 scrolls across the FL display. If an overload occurs, immediately power off the unit and check the speaker connections, venting holes and cooling fans. After fixing any faults, power on the unit again and check for proper operation. If no defects are found, or if the unit remains overloaded after it is power on again, check the circuit for faults.

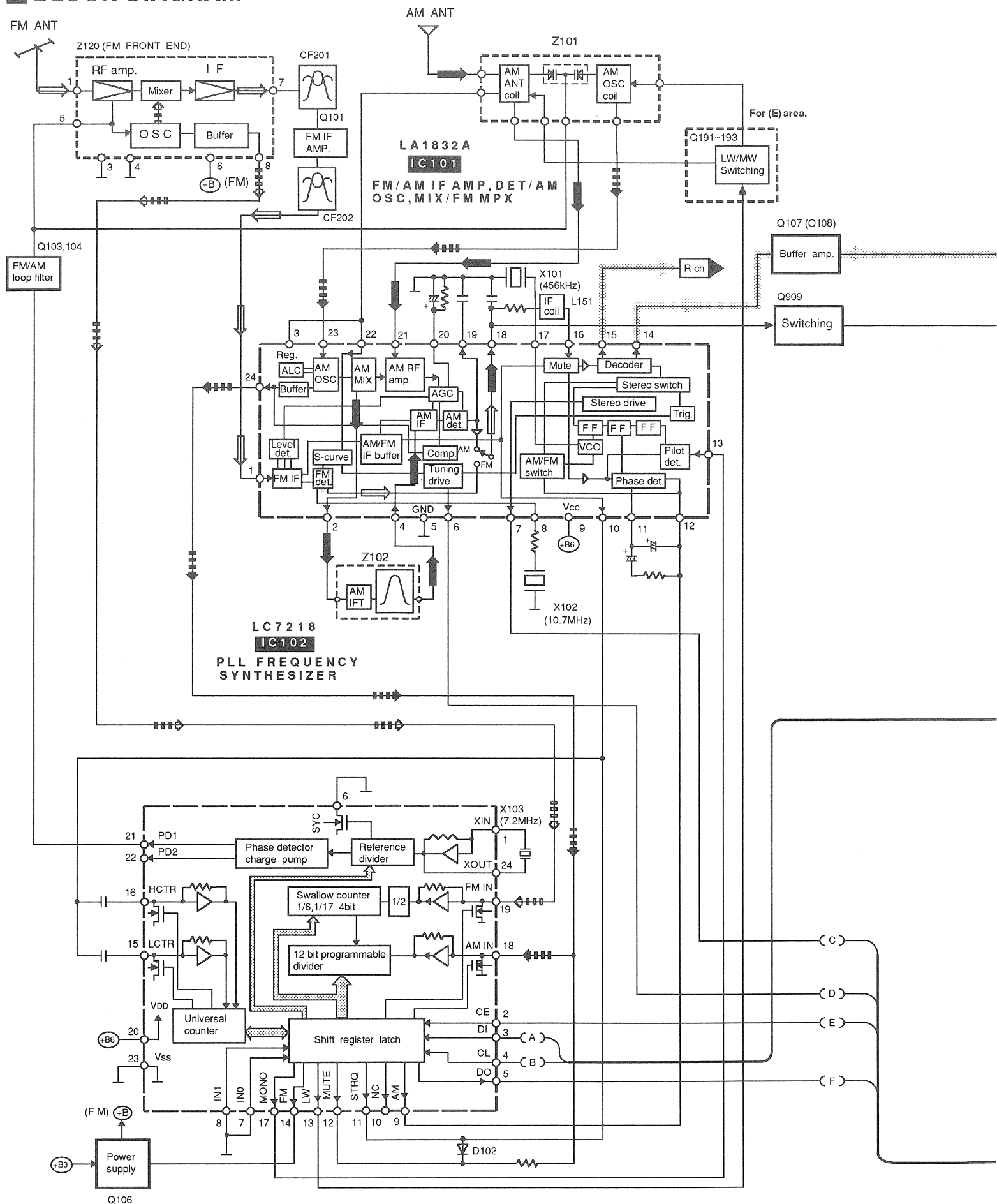
## FAN MOTOR TROUBLESHOOTING GUIDE

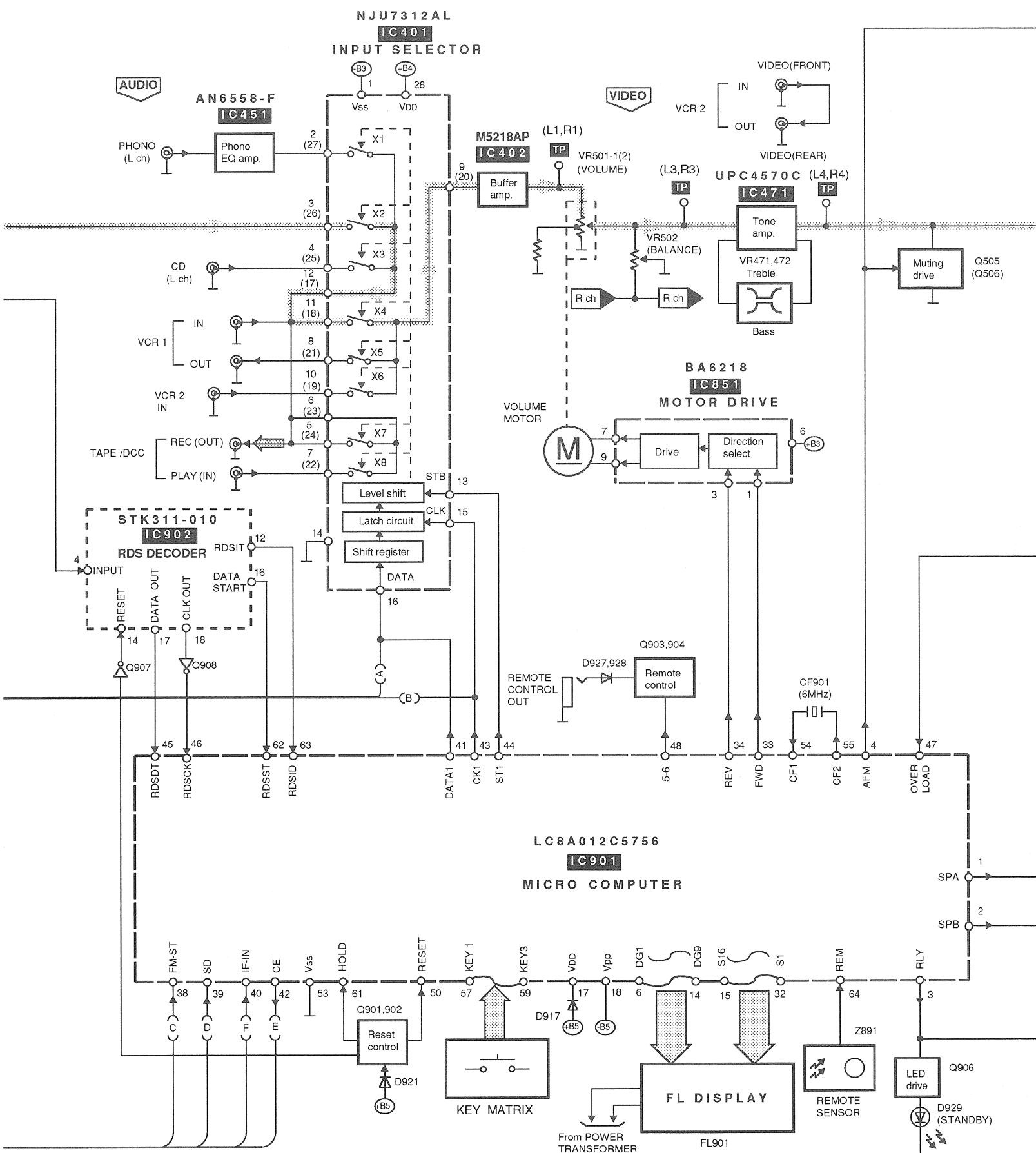
The Model SA-GX280 employ fan motor error sensing electronics.

If the cooling fan is not operation and "OVER LOAD" is displayed on the FL display, check the fan motor and its driving circuit.



# BLOCK DIAGRAM

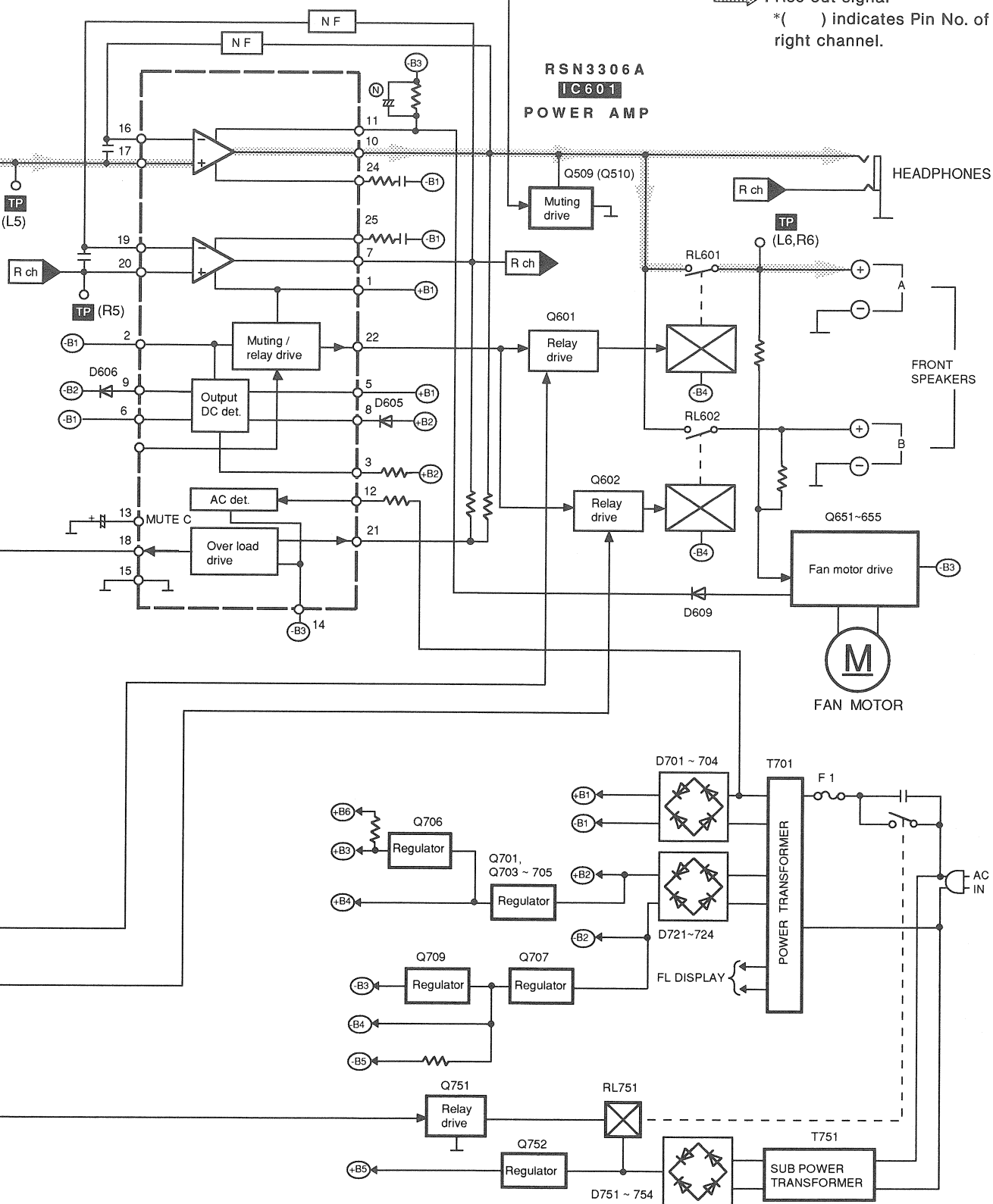




## Notes:

- ⋯⋯⋯ : AF signal
- ▭ : FM signal
- : FM OSC signal
- ▬ : AM (MW/LW) signal
- ▬▬▬ : AM (MW/LW) OSC signal
- ▬▬▬ : Rec out signal

\*( ) indicates Pin No. of right channel.



## SCHEMATIC DIAGRAM (Parts list on pages 38~43.)

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

### Note:

- **S950, 951**, : Input select switches.  
     **953~955** [ S950: VCR 1, S951: VCR 2, S953: CD, ]  
               [ S954: TUNER, S955: PHONO ]
- **S952** : Tape/DCC monitor switch.
- **S956** : Numeric (0) switch.
- **S960** : Numeric (1) switch.
- **S961** : Numeric (2) switch.
- **S962** : Numeric (3) switch.
- **S963** : Numeric (4) switch.
- **S964** : Numeric (5) switch.
- **S965** : Numeric (6) switch.
- **S966** : Numeric (7) switch.
- **S967** : Numeric (8) switch.
- **S968** : Numeric (9) switch.
- **S957** : Muting (MUTING) switch.
- **S970** : Memory (MEMORY) switch.
- **S971** : FM mode select (FM MODE) switch.
- **S972** : Band select (BAND) switch.
- **S973, 974** : Tuning (TUNING) switches.  
     [ S973: TUNING DOWN, S974: TUNING UP ]
- **S975** : Direct tuning (DIRECT TUNING) switch.
- **S976, 977** : Speaker select (SPEAKERS) switches.  
     [ S976: SPEAKERS B, S977: SPEAKERS A ]
- **S978** : Power "STANDBY /ON".  
     (POWER STANDBY /ON) switch.
- **Signal line**
  - : FM OSC
  - ■ ■ ■ : AM (MW/LW) OSC
  - : FM signal
  - : AM (MW/LW) signal
  - : Rec out signal (Lch)
  - : AF signal (Lch)
  - : Positive voltage lines
  - : Negative voltage lines

### Important safety notice:

Components identified by  $\triangle$  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 (MW) signal reception mode.

\* Figures in < > Stand for DC-voltage in LW signal reception mode.

• L1, L3~L6, R1 and R3~R6 in the schematic diagram show the test points.

For detail, please refer to p. 13 and p. 14.

### 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.

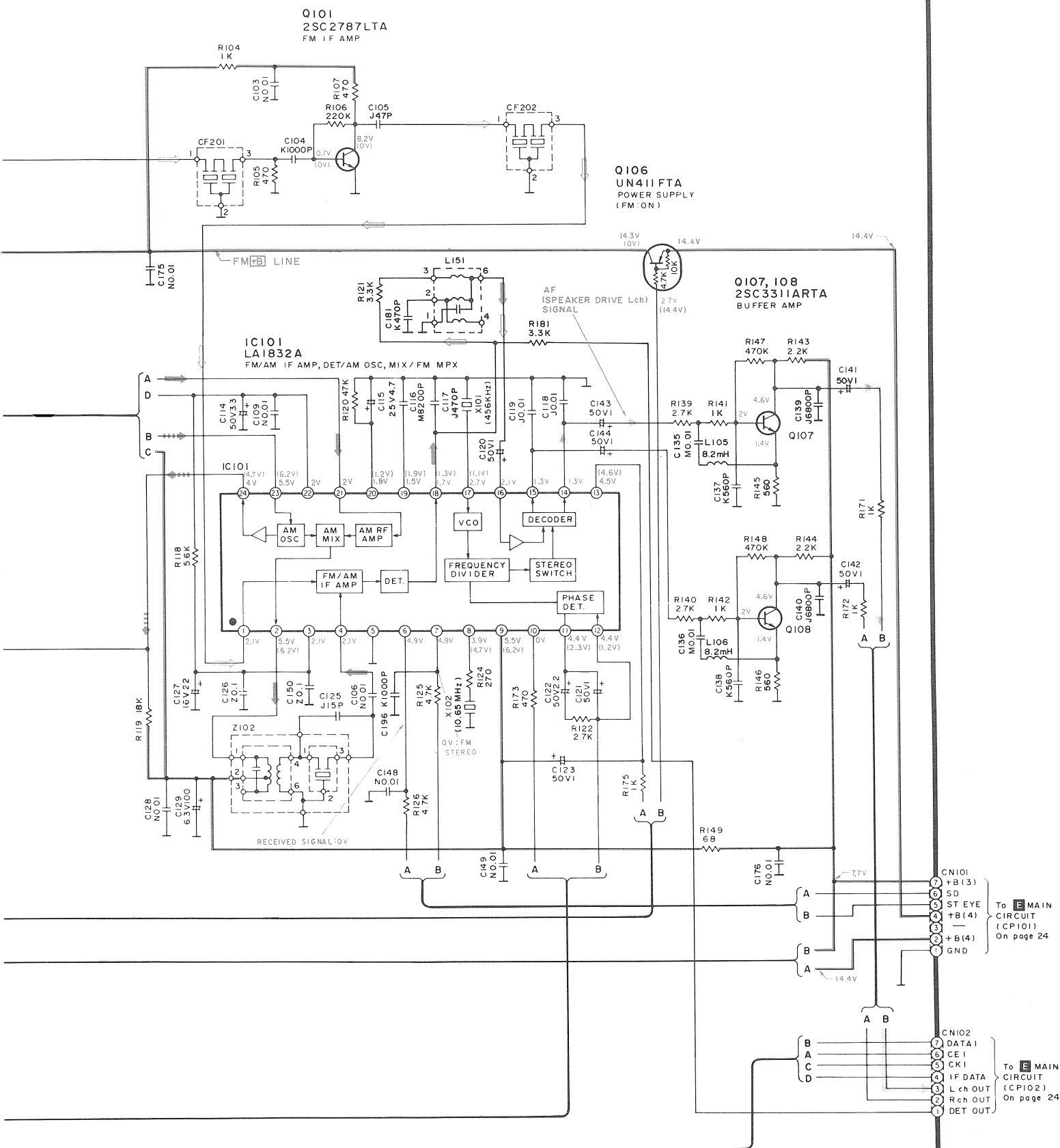
• Do not touch the legs of IC or LSI with the fingers directly.

### Terminal guide of IC's, transistors and diodes

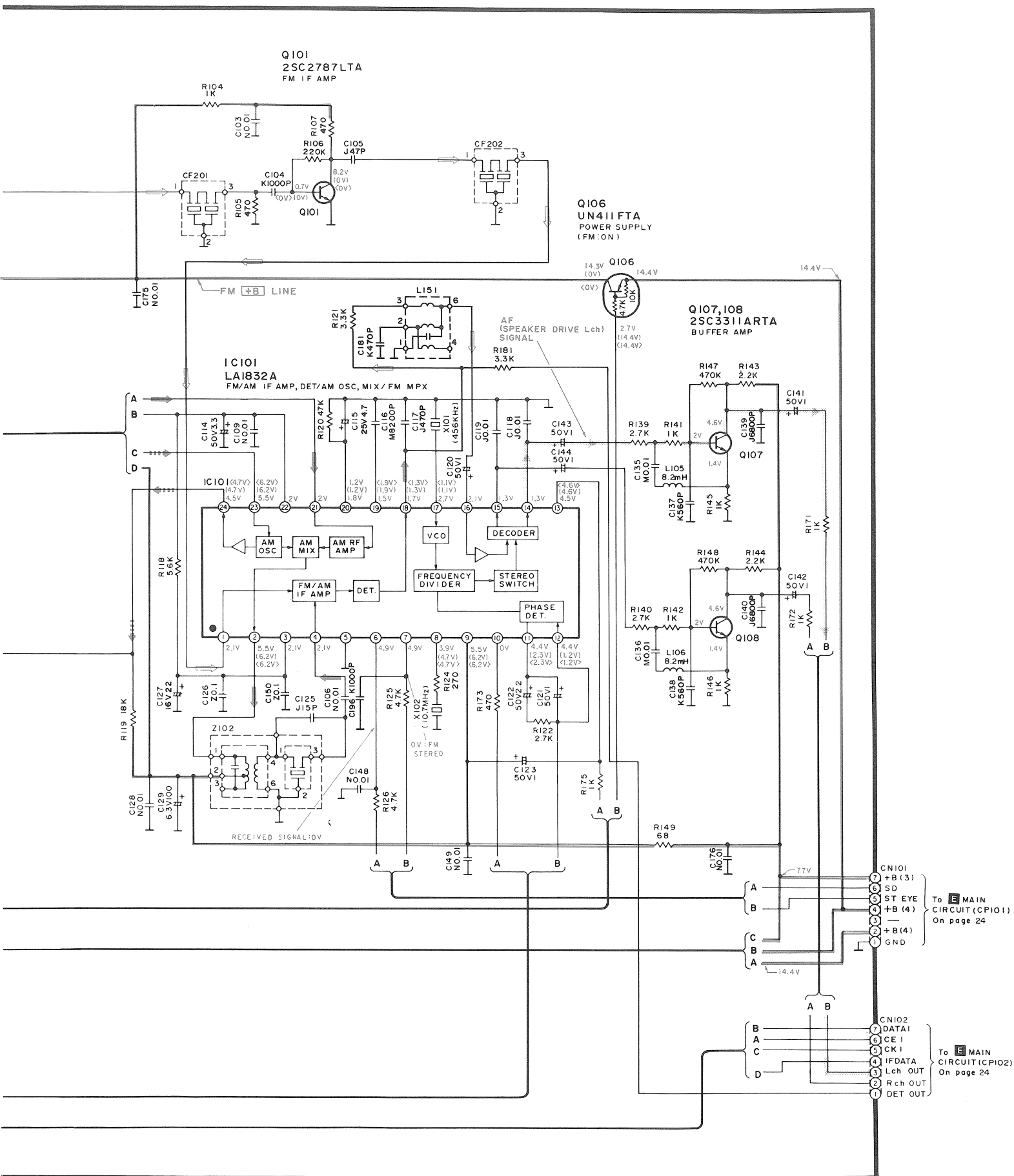
|                                                    |                                                                                                                                                              |                                                                                                                                                     |                                                                                                                 |                                                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------|--------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|----------|-------|-----------|--------|---------------------------------|-------------------------------|
| <div>LC8A012C5756</div> <div></div>                | <div><table><tr><td>M5218AP</td><td>8 Pin</td></tr><tr><td>LA1832A</td><td>24 Pin</td></tr><tr><td>LC7218</td><td>24 Pin</td></tr></table></div> <div></div> | M5218AP                                                                                                                                             | 8 Pin                                                                                                           | LA1832A                                                | 24 Pin                            | LC7218 | 24 Pin | <div><table><tr><td>AN6558-F</td><td>8 Pin</td></tr><tr><td>UPC4570C</td><td>8 Pin</td></tr><tr><td>NJU7312AL</td><td>28 Pin</td></tr></table></div> <div></div> | AN6558-F | 8 Pin | UPC4570C | 8 Pin | NJU7312AL | 28 Pin | <div>RSN3306A</div> <div></div> | <div>BA6218</div> <div></div> |
| M5218AP                                            | 8 Pin                                                                                                                                                        |                                                                                                                                                     |                                                                                                                 |                                                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
| LA1832A                                            | 24 Pin                                                                                                                                                       |                                                                                                                                                     |                                                                                                                 |                                                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
| LC7218                                             | 24 Pin                                                                                                                                                       |                                                                                                                                                     |                                                                                                                 |                                                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
| AN6558-F                                           | 8 Pin                                                                                                                                                        |                                                                                                                                                     |                                                                                                                 |                                                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
| UPC4570C                                           | 8 Pin                                                                                                                                                        |                                                                                                                                                     |                                                                                                                 |                                                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
| NJU7312AL                                          | 28 Pin                                                                                                                                                       |                                                                                                                                                     |                                                                                                                 |                                                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
| <div>STK311-010</div> <div></div>                  | <div>2SC3940AQSTA</div> <div></div>                                                                                                                          | <div>2SC3327ABTP</div> <div></div>                                                                                                                  | <div><div>2SA1309ARTA<br/>2SC2785FETA<br/>2SC2787LTA<br/>2SC3311ARTA<br/>UN411FTA<br/>RVTDTTC114YST</div></div> | <div>UN421FTA<br/>RVTDTA144EST<br/>RVTDTTC114EST</div> | <div>2SB621ARTA</div> <div></div> |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |
| <div>2SD2374PQAU<br/>2SB1548PQAU</div> <div></div> | <div><div>MA165TA<br/>MA700ATA<br/>1SS291TA<br/>1SR35200TB</div></div>                                                                                       | <div></div> <div><div>MTZJ5R1BTA<br/>MTZJ7R5CTA<br/>MTZJ5R6BTA<br/>MTZJ6R2BTA<br/>MTZJ22DTA<br/>MTZJ16CTA<br/>MTZJ6R8CTA<br/>MTZJ3R9ATA</div></div> | <div><div>P300DLF<br/>SB360L6508</div></div>                                                                    | <div>LN846RPH</div> <div></div>                        |                                   |        |        |                                                                                                                                                                  |          |       |          |       |           |        |                                 |                               |



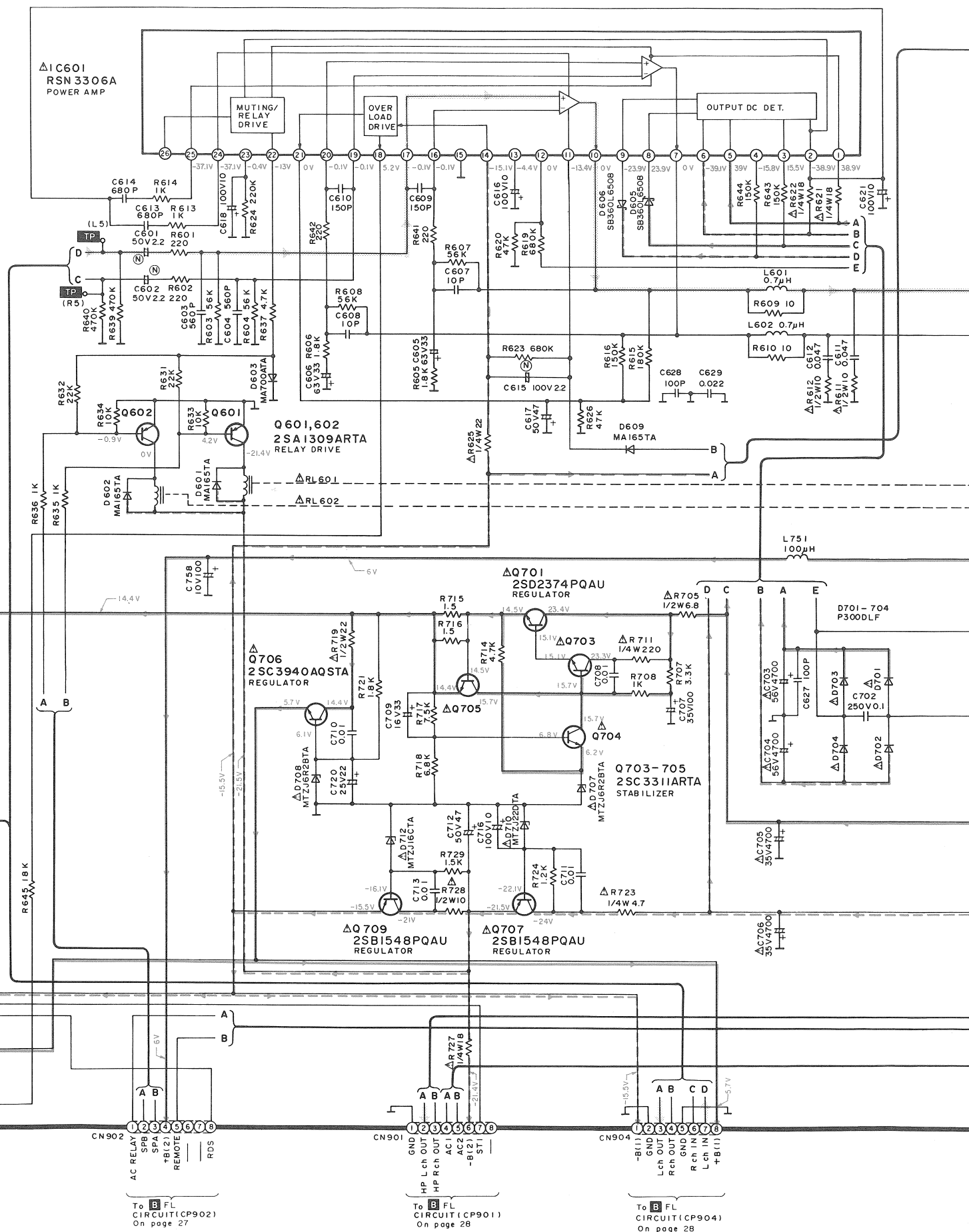




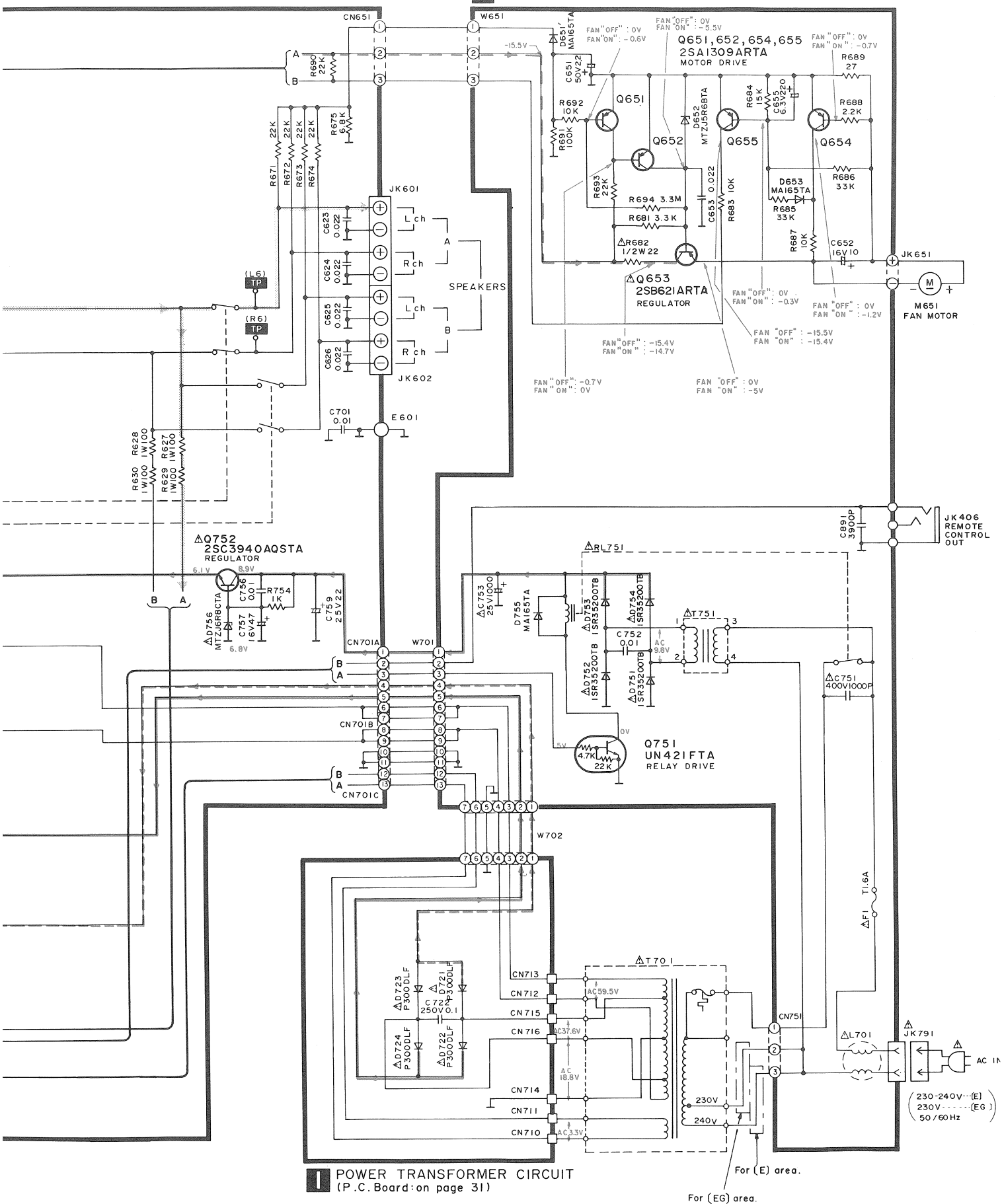








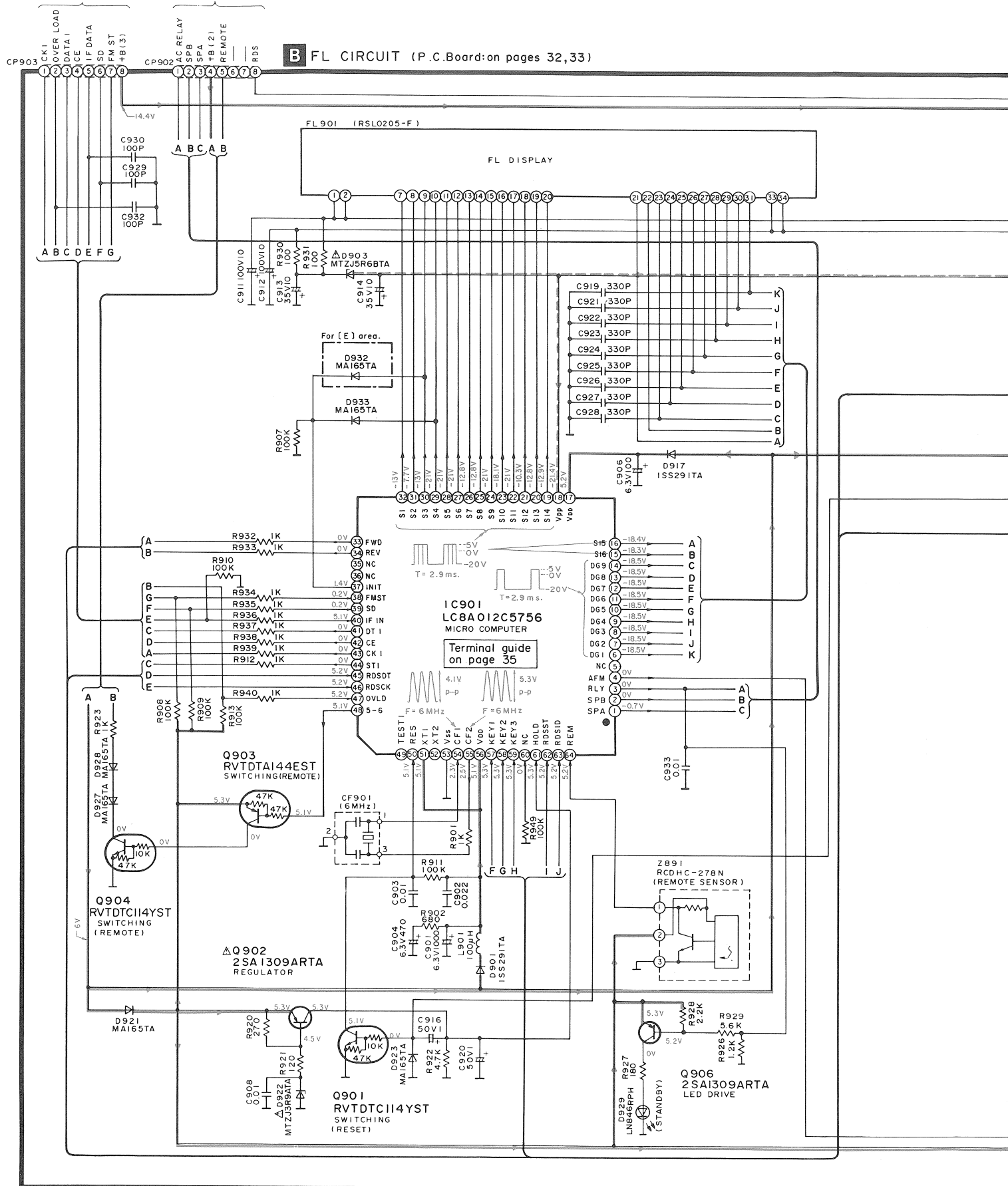
## H POWER SUPPLY CIRCUIT (P.C. Board: on page 31)

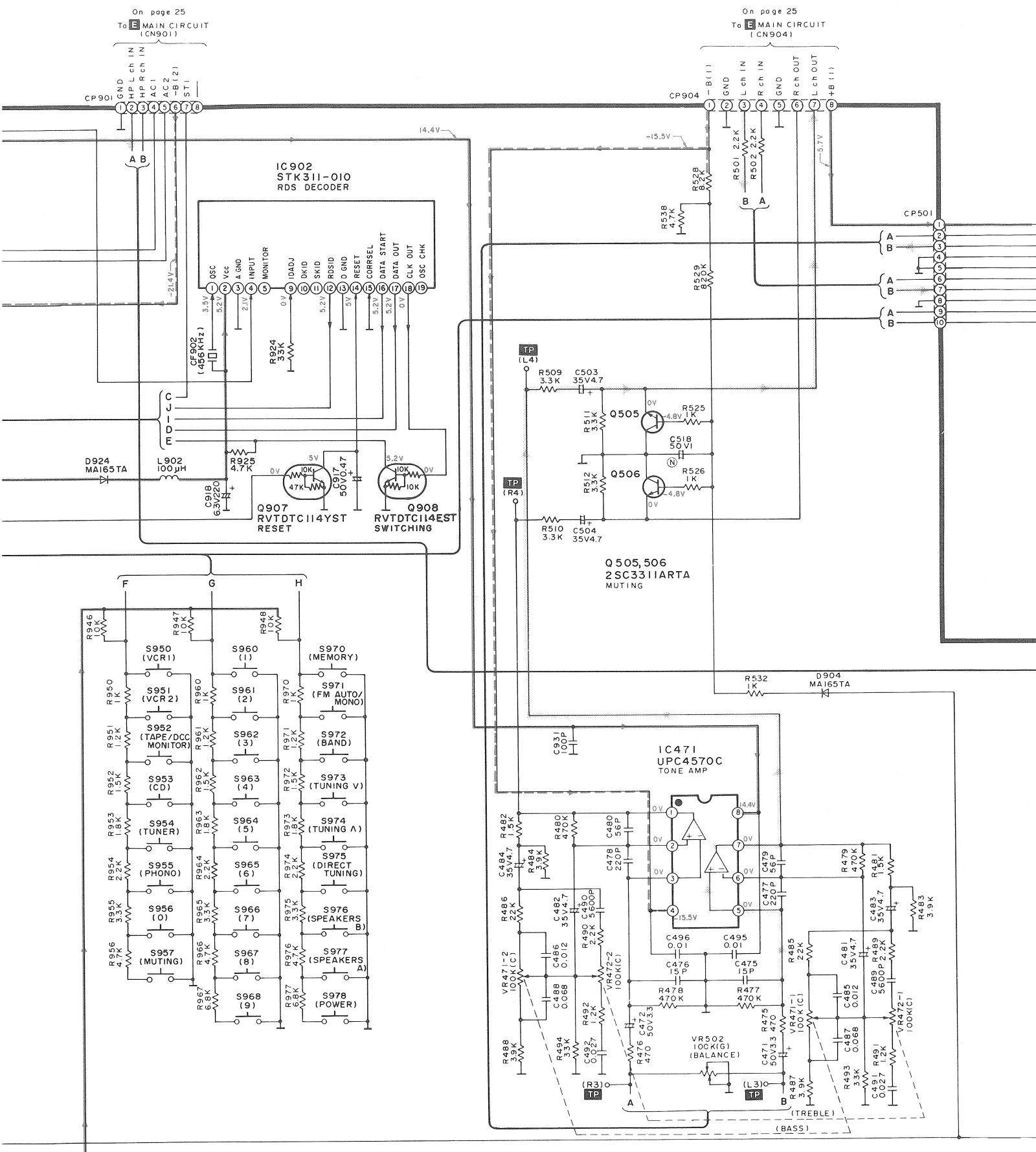


On page 24

To **E** MAIN CIRCUIT  
(CN903)

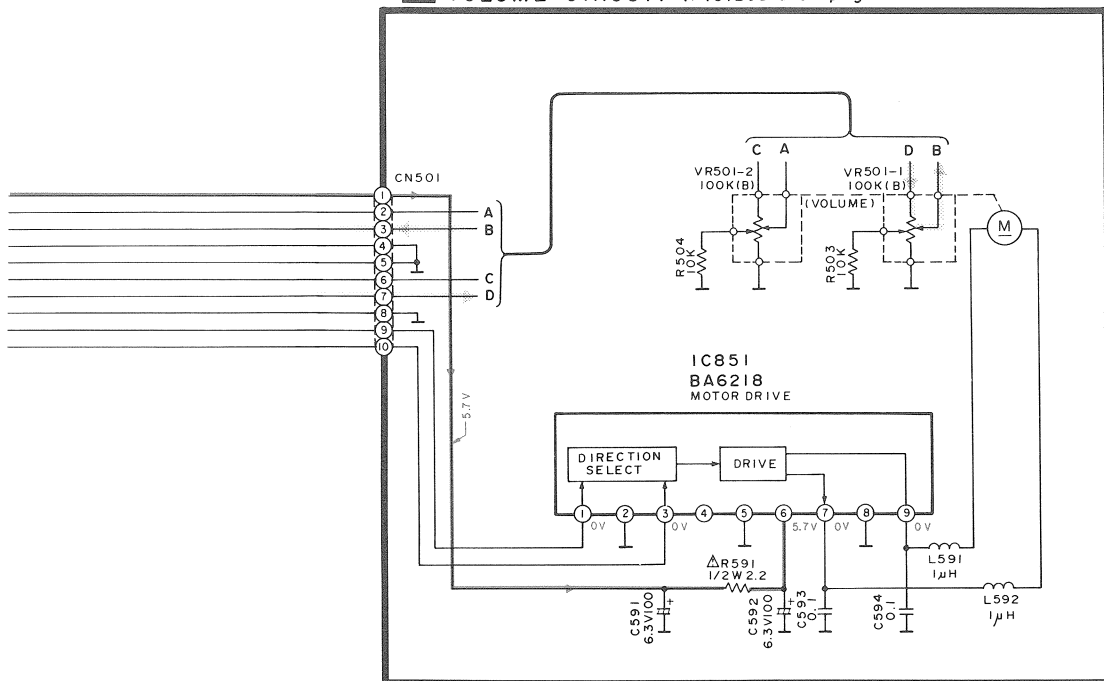
On page 25

To **E** MAIN CIRCUIT  
(CN902)**B** FL CIRCUIT (P.C.Board: on pages 32,33)

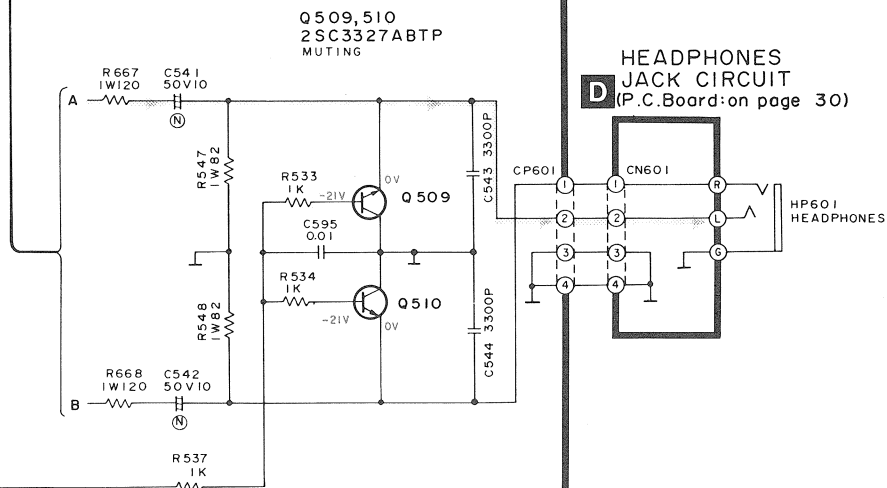




**C** VOLUME CIRCUIT (P.C.Board: on page 30)



HEADPHONES  
**D** JACK CIRCUIT  
 (P.C.Board: on page 30)



1

2

3

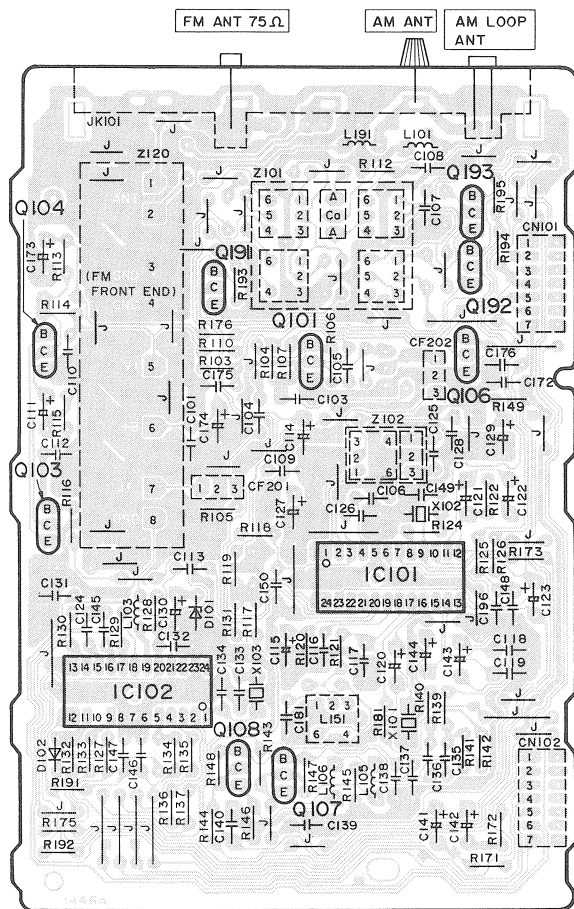
4

5

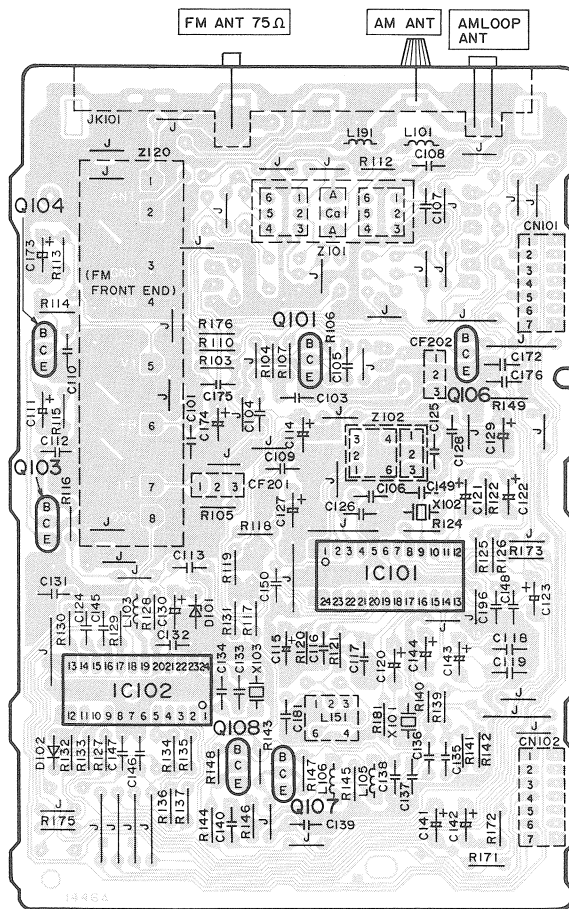
## PRINTED CIRCUIT BOARDS

- This circuit board diagram may be modified at any time with the development of new technology.
  - L1, L3~L6, R1 and R3~R6 in the circuit board diagram show the test points.
- For detail, please refer to p. 13 and p. 14.

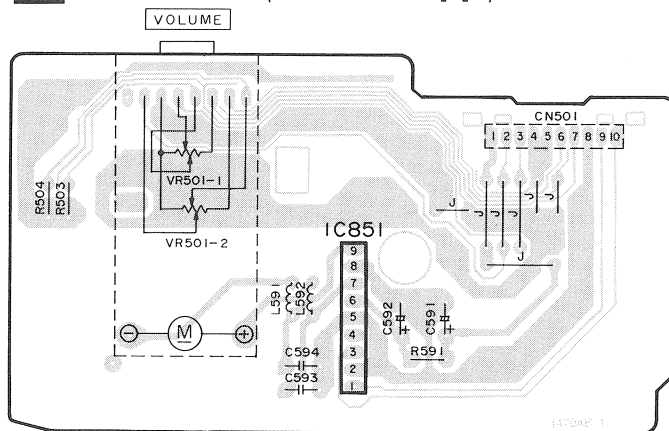
**A** TUNER P.C.B. For [E] area.  
(REP2158B-T)



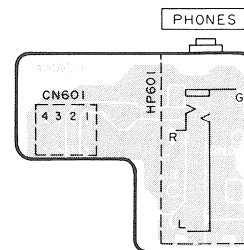
**A** TUNER P.C.B. For [EG] area.  
(REP2158A-T)



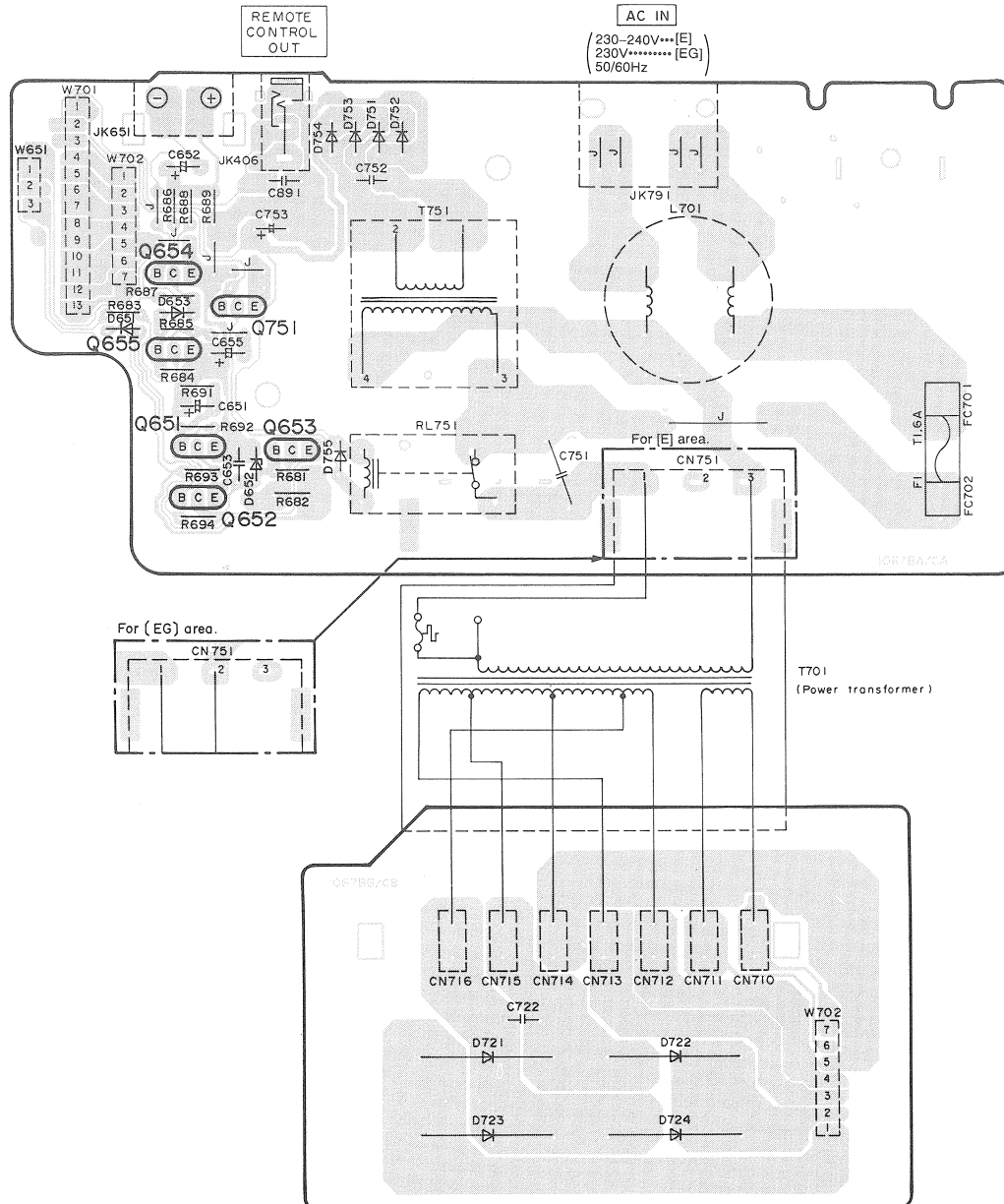
**C** VOLUME P.C.B. (REP2160C-S...[EG])  
(REP2160D-S...[E])



**D** HEADPHONES JACK P.C.B.  
(REP2160C-S...[EG])  
(REP2160D-S...[E])



# **H** POWER SUPPLY P.C.B. (REP1605H-P...[EG] REP1605J-P...[E])



## **I** POWER TRANSFORMER P.C.B. (REP1605H-P...[EG] REP1605J-P...[E])



(L4) TP (R4) TP

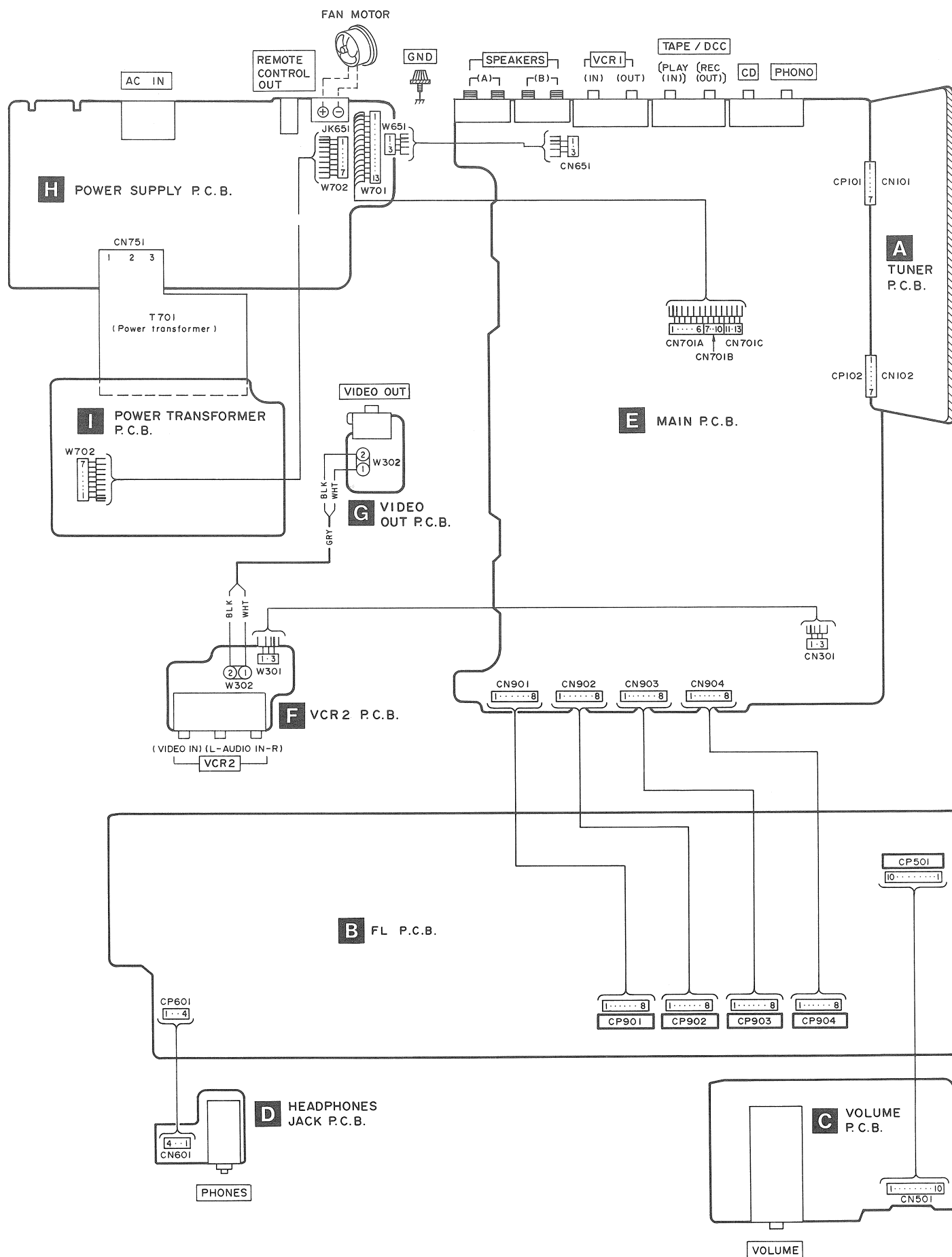




The diagram shows the back of the W302 camera. A dashed line indicates the location of the video output terminal, which is labeled "VIDEO OUT". The terminal is a circular connector with a central pin. The camera body is labeled "W302". Two numbered circles, ① and ②, are shown near the bottom left of the camera body, indicating the location of the video output terminal. The text "VIDEO OUT" is written in a box to the right of the terminal.



# WIRING CONNECTION DIAGRAM



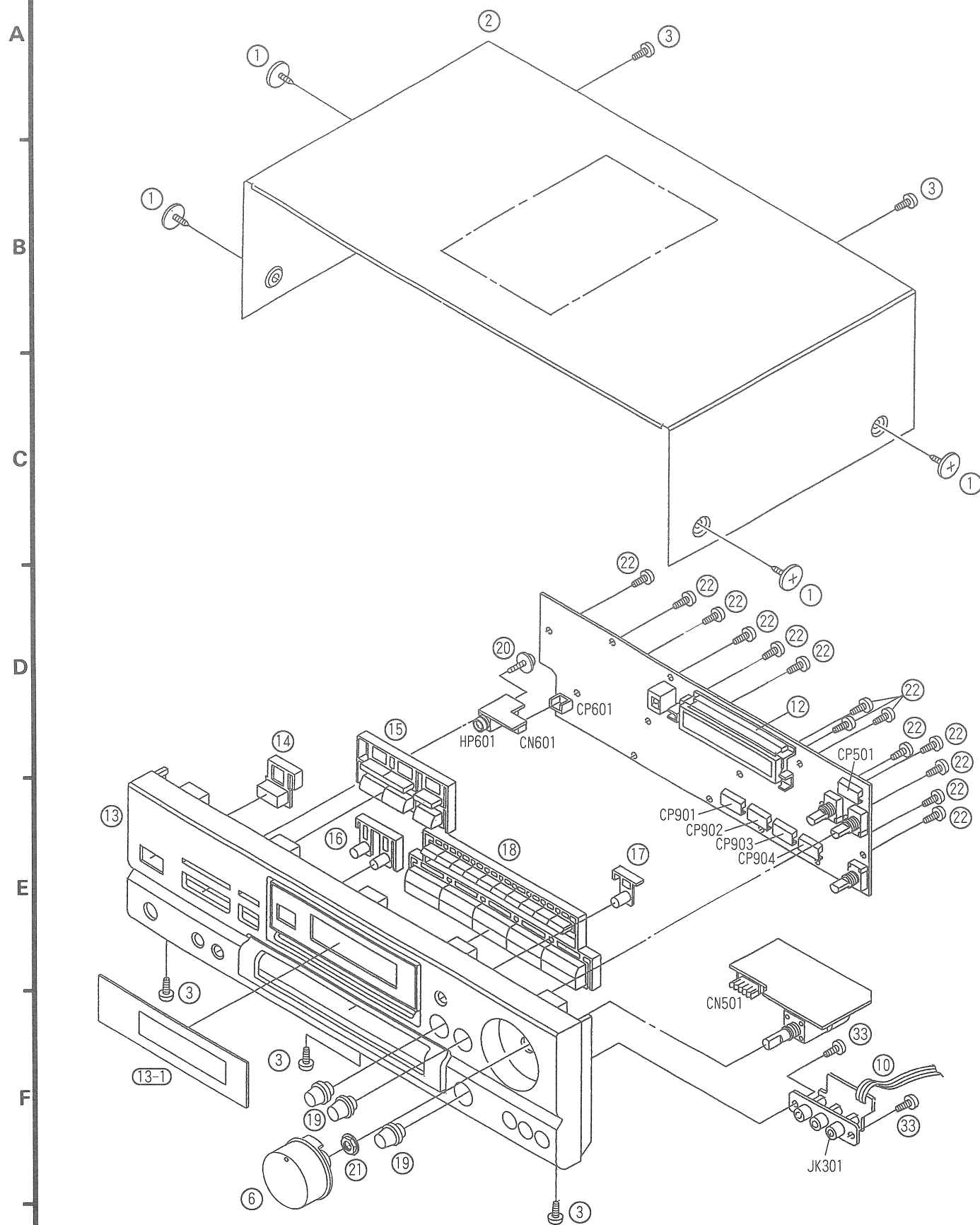
## ■ TERMINAL GUIDE

### • IC901 (LC8A012C5756): Micro computer

| Pin No.       | Mark            | I/O Division | Function                                  |
|---------------|-----------------|--------------|-------------------------------------------|
| 1<br>•<br>2   | SPA<br>•<br>SPB | O            | Speaker select control terminal           |
| 3             | RLY             | O            | Relay control terminal                    |
| 4             | AFM             | O            | Muting control terminal                   |
| 5             | NC              | —            | Non connection                            |
| 6<br>}<br>14  | DG1<br>}<br>DG9 | O            | Digit signal of FL display                |
| 15<br>•<br>16 | S16<br>•<br>S15 | O            | Segment signal of FL display              |
| 17            | VDD             | I            | Power supply terminal                     |
| 18            | VPP             | I            | Power supply terminal of FL display       |
| 19<br>}<br>32 | S14<br>}<br>S1  | O            | Segment signal of FL display              |
| 33<br>•<br>34 | FWD<br>•<br>REV | O            | Rotation control terminal of volume motor |
| 35<br>•<br>36 | NC              | —            | Non connection                            |
| 37            | INIT            | I            | Not used, connected to resistor           |
| 38            | FMST            | I            | Stereo signal detect terminal             |
| 39            | SD              | I            | Received signal detect terminal           |
| 40            | IF IN           | I            | Serial data signal                        |
| 41            | DATA1           | O            | Serial data signal                        |
| 42            | CE              | O            | Chip enable terminal                      |
| 43            | CK1             | O            | Serial clock signal                       |
| 44            | ST1             | O            | Level shift control terminal              |

| Pin No.       | Mark              | I/O Division | Function                              |
|---------------|-------------------|--------------|---------------------------------------|
| 45            | RDSDT             | I            | RDS data input                        |
| 46            | RDSCK             | I            | RDS clock input                       |
| 47            | OVER<br>LOAD      | I            | Overl load detect terminal            |
| 48            | 5-6               | O            | Remote control terminal               |
| 49            | TEST1             | —            | Test terminal                         |
| 50            | RES               | I            | Reset detect terminal                 |
| 51            | XT1               | I            | Not used, connected to power supply   |
| 52            | XT2               | —            | Not used, open                        |
| 53            | VSS               | —            | GND terminal                          |
| 54            | CF1               | I            | Crystal oscillator terminal<br>(6MHz) |
| 55            | CF2               | O            |                                       |
| 56            | VDD               | I            | Power supply terminal                 |
| 57<br>}<br>59 | KEY1<br>}<br>KEY3 | I            | Key matrix detect terminal            |
| 60            | NC                | I            | Not used, connected to resistor       |
| 61            | HOLD              | I            | Hold signal input terminal            |
| 62            | RDSST             | I            | RDS data start signal input           |
| 63            | RDSID             | I            | RDS ID signal input                   |
| 64            | REM               | I            | Remote control terminal               |
|               |                   |              |                                       |

# CABINET PARTS LOCATION





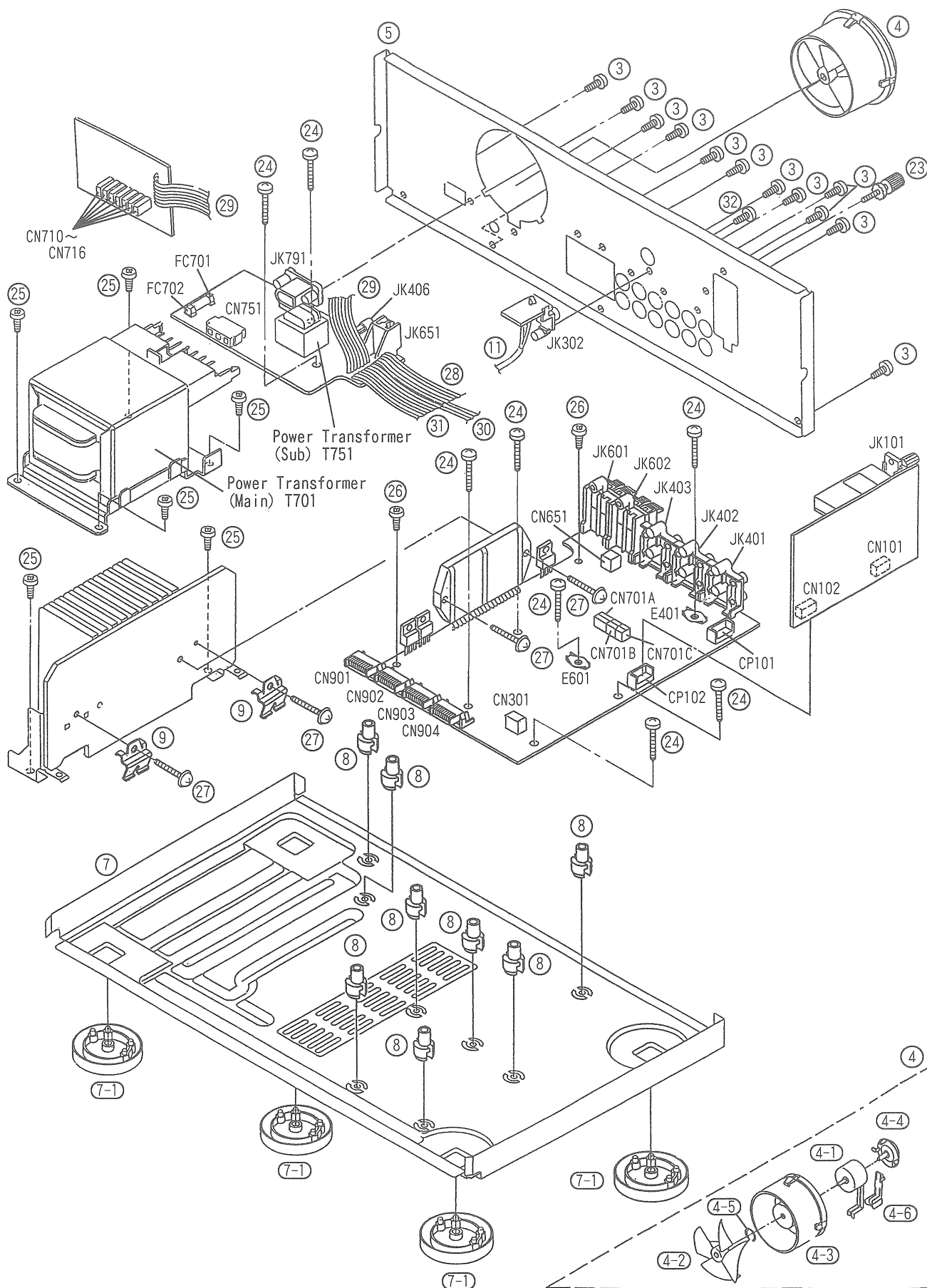
6

7

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10



## REPLACEMENT PARTS LIST

**Notes:** \*Important safety notice:

 Components identified by  $\Delta$  mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

\*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.

\*[M] Indicates in Remarks columns parts that are supplied by MESA.

| Ref. No. | Part No.     | Part Name & Description     | Remarks  | Ref. No.  | Part No.     | Part Name & Description | Remarks  |
|----------|--------------|-----------------------------|----------|-----------|--------------|-------------------------|----------|
|          |              | CABINET AND CHASSIS         |          |           |              | INTEGRATED CIRCUIT(S)   |          |
| 1        | SNE2129-1    | SCREW                       |          | IC101     | LA1832A      | FM/AM IF AMP. AM OSC    |          |
| 2        | RKM0260B-KJ  | CABINET                     | [M]      | IC102     | LC7218       | PLL FREQ. SYNTHESIZER   |          |
| 3        | XTBS3+8JFZ1  | SCREW                       |          | IC401     | NJU7312AL    | INPUT SELECTOR          |          |
| 4        | REM0020-1    | COOLING FAN UNIT            |          | IC402     | M5218AP      | BUFFER AMP              |          |
| 4-1      | MDN-4RB4MRC  | FAN MOTOR                   |          | IC451     | AN6558-F     | PHONO EQ AMP            | [M]      |
| 4-2      | SHE232-1     | FAN                         |          | IC471     | UPC4570C     | TONE CONTROL            |          |
| 4-3      | RMQ0209-K    | FAN CASE                    |          | IC601     | RSN3306A     | POWER AMP               | $\Delta$ |
| 4-4      | RMQ0208-K    | FAN CAP                     |          | IC851     | BA6218       | MOTOR DRIVE             |          |
| 4-5      | SUS271       | SPRING                      |          | IC901     | LC8A012C5756 | MICROCOMPUTER           | [M]      |
| 4-6      | RMQ0212-K    | FAN TERMINAL CAP            |          | IC902     | STK311-010   | RDS DECODER             | [M]      |
| 5        | RGR0178B-K1  | REAR PANEL                  | [M] (E)  |           |              | TRANSISTOR (S)          |          |
| 5        | RGR0178B-J   | REAR PANEL                  | [M] (EG) |           |              |                         |          |
| 6        | RGW0145-1KJ  | VOLUME KNOB                 |          | Q101      | 2SC2787L     | TRANSISTOR              |          |
| 7        | RFKJAGX190PK | BOTTOM CHASSIS ASS'Y        | [M]      | Q103, 104 | 2SC2785FE    | TRANSISTOR              |          |
| 7-1      | RKA0053-A    | FOOT                        |          | Q106      | UN411FTA     | TRANSISTOR              |          |
| 8        | RKQ0089      | P. C. B. SUPPORT            |          | Q107, 108 | 2SC3311AR    | TRANSISTOR              |          |
| 9        | RMCO158-S    | TRANSISTOR HOLDER           | [M]      | Q191-193  | 2SC3311AR    | TRANSISTOR              | (E)      |
| 10       | RWJ1803150QK | FLAT CABLE (3P) (W301)      |          | Q505, 506 | 2SC3311AR    | TRANSISTOR              |          |
| 11       | RFKEAGX170EK | CONNECTOR ASS'Y (2P) (W302) |          | Q509, 510 | 2SC3327-A    | TRANSISTOR              |          |
| 12       | RMNO248-1    | FL HOLDER                   |          | Q601, 602 | 2SA1309A-R   | TRANSISTOR              |          |
| 13       | RFKGAGX280EK | FRONT PANEL ASS'Y           | [M]      | Q651, 652 | 2SA1309A-R   | TRANSISTOR              |          |
| 13-1     | RKW0317B-Q   | TRANSPARENT PLATE           | [M]      | Q653      | 2SB621ARTA   | TRANSISTOR              | $\Delta$ |
| 14       | RFKNAGX170AK | POWER BUTTON ASS'Y          |          | Q654, 655 | 2SA1309A-R   | TRANSISTOR              |          |
| 15       | RFKNAGX170BK | MODE BUTTON ASS'Y           |          | Q701      | 2SD2374PQAU  | TRANSISTOR              | $\Delta$ |
| 16       | RFKNAGX170CK | SPEAKERS BUTTON ASS'Y       |          | Q703-705  | 2SC3311AR    | TRANSISTOR              | $\Delta$ |
| 17       | RFKNAGX170DK | MUTING BUTTON ASS'Y         |          | Q706      | 2SC3940AQSTA | TRANSISTOR              | $\Delta$ |
| 18       | RGU1057-K    | SELECTOR BUTTON             |          | Q707      | 2SB1548PQAU  | TRANSISTOR              | $\Delta$ |
| 19       | RGW0198-K    | BALANCE/TREBLE/BASE KNOB    |          | Q709      | 2SB1548PQAU  | TRANSISTOR              | $\Delta$ |
| 20       | RHD26016     | SCREW                       |          | Q751      | UN421FTA     | TRANSISTOR              |          |
| 21       | RHN90001     | NUT                         |          | Q752      | 2SC3940AQSTA | TRANSISTOR              | $\Delta$ |
| 22       | XTBS26+8J    | SCREW                       |          | Q901      | RVTDT114YST  | TRANSISTOR              |          |
| 23       | SNE2123      | GND TERMINAL                |          | Q902      | 2SA1309A-R   | TRANSISTOR              | $\Delta$ |
| 24       | XTB3+20JFZ   | SCREW                       |          | Q903      | RVTDTA144EST | TRANSISTOR              |          |
| 25       | XTB3+8JFZ    | SCREW                       |          | Q904      | RVTDT114YST  | TRANSISTOR              |          |
| 26       | XTWS3+8T     | SCREW                       |          | Q906      | 2SA1309A-R   | TRANSISTOR              |          |
| 27       | XTW3+15T     | SCREW                       |          | Q907      | RVTDT114YST  | TRANSISTOR              |          |
| 28       | RWJ1806300KQ | FLAT CABLE (6P) (W701A)     |          | Q908      | RVTDT114EST  | TRANSISTOR              |          |
| 29       | RWJ1807180KK | FLAT CABLE (7P) (W702)      |          | Q909      | 2SC3311AR    | TRANSISTOR              |          |
| 30       | RWJ1803140KQ | FLAT CABLE (3P) (W651)      |          |           |              |                         |          |
| 31       | RWJ1807300KQ | FLAT CABLE (7P) (W701B)     |          |           |              |                         |          |
| 32       | XTBS3+8JFZ1  | SCREW                       |          |           |              | DIODE (S)               |          |
| 33       | XTBS26+8J    | SCREW                       |          |           |              |                         |          |
|          |              |                             |          | D101      | MTZJ5R1BTA   | DIODE                   | $\Delta$ |

| Ref. No.   | Part No.     | Part Name & Description | Remarks | Ref. No. | Part No.     | Part Name & Description     | Remarks |
|------------|--------------|-------------------------|---------|----------|--------------|-----------------------------|---------|
| D102       | MA165        | DIODE                   |         | T701     | RTP1N5E014-V | POWER TRANSFORMER (MAIN)    | △       |
| D401       | MTZJ7R5CTA   | DIODE                   | △       | T751     | RTP1I5E003-V | POWER TRANSFORMER (SUB)     | △       |
| D601, 602  | MA165        | DIODE                   |         |          |              | COMPONENT COMBINATION (S)   |         |
| D603       | MA700        | DIODE                   |         |          |              |                             |         |
| D605, 606  | SB360L6508   | DIODE                   |         | Z101     | RLA6Z005M-T  | COMPONENT COMBINATION       | (E)     |
| D609       | MA165        | DIODE                   |         | Z101     | RLA2Z002M-T  | COMPONENT COMBINATION       | (EG)    |
| D651       | MA165        | DIODE                   |         | Z102     | RLI2Z006M-T  | COMPONENT COMBINATION       |         |
| D652       | MTZJ5R6BTA   | DIODE                   |         | Z891     | RCDHC-278N   | REMOTE SENSOR               |         |
| D653       | MA165        | DIODE                   |         |          |              |                             |         |
| D701-704   | P300DLF      | DIODE                   | △       |          |              | FILTER(S) AND OSCILLATOR(S) |         |
| D707, 708  | MTZJ6R2BTA   | DIODE                   | △       |          |              |                             |         |
| D710       | MTZJ22DTA    | DIODE                   | △       | CF201    | RLFFETNGD01L | FILTER                      |         |
| D712       | MTZJ16CTA    | DIODE                   | △       | CF202    | RLFFETMGD01L | FILTER                      |         |
| D721-724   | P300DLF      | DIODE                   | △       | CF901    | EFOEC6004T4  | OSCILLATOR (6MHz)           |         |
| D751-754   | 1SR35200TB   | DIODE                   | △       | CF902    | RSXZ456KM07M | OSCILLATOR (456KHz)         |         |
| D755       | MA165        | DIODE                   |         | X101     | RSXZ456KM07M | OSCILLATOR (456KHz)         |         |
| D756       | MTZJ6R8CTA   | DIODE                   | △       | X102     | RLFDGTD01I   | OSCILLATOR (10. 65MHz)      |         |
| D901       | 1SS2917A     | DIODE                   |         | X103     | SVQ49U722-S  | OSCILLATOR (7. 2MHz)        |         |
| D903       | MTZJ5R6BTA   | DIODE                   | △       |          |              |                             |         |
| D904       | MA165        | DIODE                   |         |          |              | DISPLAY TUBE (S)            |         |
| D917       | 1SS2917A     | DIODE                   |         |          |              |                             |         |
| D921       | MA165        | DIODE                   |         | FL901    | RSL0205-F    | DISPLAY TUBE                | [M]     |
| D922       | MTZJ3R9ATA   | DIODE                   | △       |          |              |                             |         |
| D923, 924  | MA165        | DIODE                   |         |          |              | FM FRONT END PACK ASS'Y (S) |         |
| D927, 928  | MA165        | DIODE                   |         |          |              |                             |         |
| D929       | LN846RPH     | L. E. D.                |         | Z120     | ENV17290G1R  | FM FRONT END                |         |
| D932       | MA165        | DIODE                   | (E)     |          |              |                             |         |
| D933       | MA165        | DIODE                   |         |          |              | FUSE (S)                    |         |
|            |              |                         |         |          |              |                             |         |
|            |              | VARIABLE RESISTOR(S)    |         | F1       | XBA2C16TB0   | FUSE, 250V, T1. 6A          | △       |
| VR471, 472 | EVJYA1FA5C15 | TONE CONTROL            |         |          |              | SWITCH(ES)                  |         |
| VR501      | EUNWMB025B15 | VOLUME CONTROL          |         |          |              |                             |         |
| VR502      | EVJ02QF02G15 | BALANCE CONTROL         |         | S950     | EVQ21405R    | VCR1                        |         |
|            |              |                         |         | S951     | EVQ21405R    | VCR2                        |         |
|            |              | COIL (S)                |         | S952     | EVQ21405R    | TAPE/DCC MONITOR            |         |
|            |              |                         |         | S953     | EVQ21405R    | CD                          |         |
| L101       | ELESNR68MA   | COIL                    | (E)     | S954     | EVQ21405R    | TUNER                       |         |
| L101       | ELESN1ROMA   | COIL                    | (EG)    | S955     | EVQ21405R    | PHONO                       |         |
| L103       | ELEXTR47MA9  | COIL                    |         | S956     | EVQ21405R    | NUMERIC 0                   |         |
| L105, 106  | RLQZB822KT-D | COIL                    |         | S957     | EVQ21405R    | MUTING                      |         |
| L151       | SLM1B10-1M   | COIL                    |         | S960     | EVQ21405R    | NUMERIC 1                   |         |
| L191       | ELESNR68MA   | COIL                    | (E)     | S961     | EVQ21405R    | NUMERIC 2                   |         |
| L191       | ELESNR56MA   | COIL                    | (EG)    | S962     | EVQ21405R    | NUMERIC 3                   |         |
| L591, 592  | RLQZP1ROKT-Y | COIL                    |         | S963     | EVQ21405R    | NUMERIC 4                   |         |
| L601, 602  | RLQYR73M     | COIL                    |         | S964     | EVQ21405R    | NUMERIC 5                   |         |
| L701       | SLQZ650MH49  | COIL                    | △       | S965     | EVQ21405R    | NUMERIC 6                   |         |
| L751       | ELESN101KA   | COIL                    |         | S966     | EVQ21405R    | NUMERIC 7                   |         |
| L901, 902  | RLQZP101KT-Y | COIL                    |         | S967     | EVQ21405R    | NUMERIC 8                   |         |
|            |              |                         |         | S968     | EVQ21405R    | NUMERIC 9                   |         |
|            |              | TRANSFORMER (S)         |         | S970     | EVQ21405R    | MEMORY                      |         |
|            |              |                         |         |          |              |                             |         |

| Ref. No.   | Part No.     | Part Name & Description     | Remarks | Ref. No.   | Part No. | Part Name & Description | Remarks |
|------------|--------------|-----------------------------|---------|------------|----------|-------------------------|---------|
| S971       | EVQ21405R    | FM AUTO/MODE                |         |            |          | FUSE HOLDER(S)          |         |
| S972       | EVQ21405R    | BAND                        |         |            |          |                         |         |
| S973       | EVQ21405R    | TUNING DOWN                 |         | FC701, 702 | EYF52BC  | FUSE HOLDER             |         |
| S974       | EVQ21405R    | TUNING UP                   |         |            |          |                         |         |
| S975       | EVQ21405R    | DIRECT TUNING               |         |            |          |                         |         |
| S976       | EVQ21405R    | SP-B                        |         |            |          |                         |         |
| S977       | EVQ21405R    | SP-A                        |         |            |          |                         |         |
| S978       | EVQ21405R    | POWER                       |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
|            |              | RELAY(S)                    |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
| RL601, 602 | RSY0013M-0   | RELAY                       | △       |            |          |                         |         |
| RL751      | RSY0019M-0   | RELAY                       | △       |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
|            |              | CONNECTOR(S) AND SOCKET(S)  |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
| CN101, 102 | RJU057W007   | SOCKET(7P)                  |         |            |          |                         |         |
| CN301      | RJS1A6603    | CONNECTOR(3P)               |         |            |          |                         |         |
| CN501      | RJU003K010M1 | SOCKET(10P)                 |         |            |          |                         |         |
| CN601      | RJU057W004   | SOCKET(4P)                  |         |            |          |                         |         |
| CN651      | RJS1A6603    | CONNECTOR(3P)               |         |            |          |                         |         |
| CN701A     | RJS1A6606    | CONNECTOR(6P)               |         |            |          |                         |         |
| CN701B     | RJS1A6604    | CONNECTOR(4P)               |         |            |          |                         |         |
| CN701C     | RJS1A6603    | CONNECTOR(3P)               |         |            |          |                         |         |
| CN710-716  | RJS1A1101T1  | CONNECTOR(1P)               |         |            |          |                         |         |
| CN751      | SJS305-1     | CONNECTOR(3P)               |         |            |          |                         |         |
| CN901-904  | RJU003K008M1 | SOCKET(8P)                  |         |            |          |                         |         |
| CP101, 102 | RJT057W007-1 | CONNECTOR(7P)               |         |            |          |                         |         |
| CP501      | RJT003K010M1 | CONNECTOR(10P)              |         |            |          |                         |         |
| CP601      | RJT057W004-1 | CONNECTOR(4P)               |         |            |          |                         |         |
| CP901-904  | RJT003K008-1 | CONNECTOR(8P)               |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
|            |              | JACK(S) AND TERMINAL(S)     |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
| JK101      | RJH4202      | ANT TERMINAL                |         |            |          |                         |         |
| JK301      | SJFK5-1      | VCR2 IN TERMINAL            |         |            |          |                         |         |
| JK302      | SJFD7-6      | VIDEO OUT TERMINAL          |         |            |          |                         |         |
| JK401      | SJF3069N     | PHONO/CD TERMINAL           |         |            |          |                         |         |
| JK402      | SJF3069N     | TAPE/DCC TERMINAL           |         |            |          |                         |         |
| JK403      | SJF3069N     | VCR1 TERMINAL               |         |            |          |                         |         |
| JK406      | RJJ33TR01    | REMOTE CONTROL OUT TERMINAL |         |            |          |                         |         |
| JK601      | RJR0054      | SPEAKERS(A) TERMINAL        |         |            |          |                         |         |
| JK602      | RJR0054      | SPEAKERS(B) TERMINAL        |         |            |          |                         |         |
| JK651      | RJS1A7402-1  | FAN MOTOR TERMINAL          |         |            |          |                         |         |
| JK791      | SJS9236      | AC INLET                    | △       |            |          |                         |         |
| HP601      | RJJ63TS01    | HEADPHONES JACK             |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
|            |              | GND PLATE(S)                |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |
| E401       | SNE1004-2    | GND PLATE                   |         |            |          |                         |         |
| E601       | SNE1004-2    | GND PLATE                   |         |            |          |                         |         |
|            |              |                             |         |            |          |                         |         |

# RESISTORS AND CAPACITORS

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

| Ref. No.  | Part No.    | Values & Remarks | Ref. No.  | Part No.     | Values & Remarks  | Ref. No.  | Part No.     | Values & Remarks  |
|-----------|-------------|------------------|-----------|--------------|-------------------|-----------|--------------|-------------------|
|           |             | RESISTORS        |           |              |                   |           |              |                   |
| R103      | ERDS2TJ101  | 1/4W 100         | R411-416  | ERDS2TJ102   | 1/4W 1K           | R623      | ERDS2TJ684   | 1/4W 680K         |
| R104      | ERDS2TJ102  | 1/4W 1K          | R417, 418 | ERDS2TJ473   | 1/4W 47K          | R624      | ERDS2TJ224T  | 1/4W 220K         |
| R105      | ERDS2TJ471  | 1/4W 470         | R419-422  | ERDS2TJ104   | 1/4W 100K         | R625      | ERD25FJ220   | 1/4W 22 $\Delta$  |
| R106      | ERDS2TJ224T | 1/4W 220K        | R423, 424 | ERDS2TJ102   | 1/4W 1K           | R626      | ERDS2TJ473   | 1/4W 47K          |
| R107      | ERDS2TJ471  | 1/4W 470         | R425-427  | ERDS2TJ103   | 1/4W 10K          | R627-630  | ERG1SJ101E   | 1W 100            |
| R110      | ERDS2TJ102  | 1/4W 1K          | R440      | ERDS1FVJ820T | 1/2W 82 $\Delta$  | R631, 632 | ERDS2TJ223   | 1/4W 22K          |
| R112      | ERDS2TJ104  | 1/4W 100K        | R441, 442 | ERDS2TJ473   | 1/4W 47K          | R633, 634 | ERDS2TJ103   | 1/4W 10K          |
| R113      | ERDS2TJ103  | 1/4W 10K         | R443      | ERDS2TJ330   | 1/4W 33           | R635, 636 | ERDS2TJ102   | 1/4W 1K           |
| R114      | ERDS2TJ562  | 1/4W 5.6K        | R451, 452 | ERDS2TJ224T  | 1/4W 220K         | R637      | ERDS2TJ472   | 1/4W 4.7K         |
| R115      | ERDS2TJ561  | 1/4W 560         | R453, 454 | ERDS2TJ391   | 1/4W 390          | R639, 640 | ERDS2TJ474   | 1/4W 470K         |
| R116      | ERDS2TJ102  | 1/4W 1K          | R455, 456 | ERDS2TJ563   | 1/4W 56K          | R641, 642 | ERDS2TJ221   | 1/4W 220          |
| R117      | ERDS2TJ473  | 1/4W 47K         | R457, 458 | ERDS2TJ271   | 1/4W 270          | R643, 644 | ERDS2TJ154   | 1/4W 150K         |
| R118      | ERDS2TJ562  | 1/4W 5.6K        | R459, 460 | ERDS2TJ680T  | 1/4W 68           | R645      | ERDS2TJ183T  | 1/4W 18K          |
| R119      | ERDS2TJ183T | 1/4W 18K         | R461, 462 | ERDS2TJ184T  | 1/4W 180K         | R667, 668 | ERG1SJ121E   | 1W 120            |
| R120      | ERDS2TJ473  | 1/4W 47K         | R463, 464 | ERDS2TJ123   | 1/4W 12K          | R671-674  | ERDS2TJ223   | 1/4W 22K          |
| R121      | ERDS2TJ332  | 1/4W 3.3K        | R465, 466 | ERDS2TJ563   | 1/4W 56K          | R675      | ERDS2TJ682T  | 1/4W 6.8K         |
| R122      | ERDS2TJ272T | 1/4W 2.7K        | R467-470  | ERDS2TJ102   | 1/4W 1K           | R681      | ERDS2TJ332   | 1/4W 3.3K         |
| R124      | ERDS2TJ271  | 1/4W 270         | R475, 476 | ERDS2TJ471   | 1/4W 470          | R682      | ERDS1FVJ220T | 1/2W 22 $\Delta$  |
| R125, 126 | ERDS2TJ472  | 1/4W 4.7K        | R477-480  | ERDS2TJ474   | 1/4W 470K         | R683      | ERDS2TJ103   | 1/4W 10K          |
| R127      | ERDS2TJ103  | 1/4W 10K         | R481, 482 | ERDS2TJ152   | 1/4W 1.5K         | R684      | ERDS2TJ153   | 1/4W 15K          |
| R128      | ERDS2TJ820  | 1/4W 82          | R483, 484 | ERDS2TJ392T  | 1/4W 3.9K         | R685, 686 | ERDS2TJ333   | 1/4W 33K          |
| R129      | ERDS2TJ473  | 1/4W 47K         | R485, 486 | ERDS2TJ223   | 1/4W 22K          | R687      | ERDS2TJ103   | 1/4W 10K          |
| R130, 131 | ERDS2TJ102  | 1/4W 1K          | R487, 488 | ERDS2TJ392T  | 1/4W 3.9K         | R688      | ERDS2TJ222   | 1/4W 2.2K         |
| R132      | ERDS2TJ103  | 1/4W 10K         | R489, 490 | ERDS2TJ222   | 1/4W 2.2K         | R689      | ERDS2TJ270T  | 1/4W 27           |
| R133-137  | ERDS2TJ102  | 1/4W 1K          | R491, 492 | ERDS2TJ122   | 1/4W 1.2K         | R690      | ERDS2TJ223   | 1/4W 22K          |
| R139, 140 | ERDS2TJ272T | 1/4W 2.7K        | R493, 494 | ERDS2TJ333   | 1/4W 33K          | R691      | ERDS2TJ104   | 1/4W 100K         |
| R141, 142 | ERDS2TJ102  | 1/4W 1K          | R501, 502 | ERDS2TJ222   | 1/4W 2.2K         | R692      | ERDS2TJ103   | 1/4W 10K          |
| R143, 144 | ERDS2TJ222  | 1/4W 2.2K        | R503, 504 | ERDS2TJ103   | 1/4W 10K          | R693      | ERDS2TJ223   | 1/4W 22K          |
| R145, 146 | ERDS2TJ102  | 1/4W 1K (E)      | R509-512  | ERDS2TJ332   | 1/4W 3.3K         | R694      | ERDS2TJ335T  | 1/4W 3.3M         |
| R145, 146 | ERDS2TJ561  | 1/4W 560 (EG)    | R525, 526 | ERDS2TJ102   | 1/4W 1K           | R705      | ERDS1FVJ6R8T | 1/2W 6.8 $\Delta$ |
| R147, 148 | ERDS2TJ474  | 1/4W 470K        | R528      | ERDS2TJ822   | 1/4W 8.2K         | R707      | ERDS2TJ332   | 1/4W 3.3K         |
| R149      | ERDS2TJ680T | 1/4W 68          | R529      | ERDS2TJ824   | 1/4W 820K         | R708      | ERDS2TJ102   | 1/4W 1K           |
| R171, 172 | ERDS2TJ102  | 1/4W 1K          | R532-534  | ERDS2TJ102   | 1/4W 1K           | R711      | ERD25FVJ221T | 1/4W 220 $\Delta$ |
| R173      | ERDS2TJ471  | 1/4W 470         | R537      | ERDS2TJ102   | 1/4W 1K           | R714      | ERDS2TJ472   | 1/4W 4.7K         |
| R175      | ERDS2TJ102  | 1/4W 1K          | R538      | ERDS2TJ472   | 1/4W 4.7K         | R715, 716 | ERDS2TJ1R5T  | 1/4W 1.5          |
| R176      | ERDS2TJ391  | 1/4W 390         | R547, 548 | ERG1SJ820E   | 1W 82             | R717      | ERDS2TJ752T  | 1/4W 7.5K         |
| R181      | ERDS2TJ332  | 1/4W 3.3K        | R591      | ERDS1FVJ2R2T | 1/2W 2.2 $\Delta$ | R718      | ERDS2TJ682T  | 1/4W 6.8K         |
| R191      | ERDS2TJ103  | 1/4W 10K (E)     | R601, 602 | ERDS2TJ221   | 1/4W 220          | R719      | ERDS1FVJ220T | 1/2W 22 $\Delta$  |
| R192      | ERDS2TJ122  | 1/4W 1.2K (E)    | R603, 604 | ERDS2TJ563   | 1/4W 56K          | R721      | ERDS2TJ182   | 1/4W 1.8K         |
| R193      | ERDS2TJ182  | 1/4W 1.8K (E)    | R605, 606 | ERDS2TJ182   | 1/4W 1.8K         | R723      | ERD25FVJ4R7T | 1/4W 4.7 $\Delta$ |
| R194      | ERDS2TJ122  | 1/4W 1.2K (E)    | R607, 608 | ERDS2TJ563   | 1/4W 56K          | R724      | ERDS2TJ122   | 1/4W 1.2K         |
| R195      | ERDS2TJ222  | 1/4W 2.2K (E)    | R609, 610 | ERDS2TJ100   | 1/4W 10           | R727      | ERD25FVJ180T | 1/4W 18 $\Delta$  |
| R375, 376 | ERDS2TJ102  | 1/4W 1K          | R611, 612 | ERDS1FVJ100T | 1/2W 10 $\Delta$  | R728      | ERDS1FVJ100T | 1/2W 10 $\Delta$  |
| R377, 378 | ERDS2TJ223  | 1/4W 22K         | R613, 614 | ERDS2TJ102   | 1/4W 1K           | R729      | ERDS2TJ152   | 1/4W 1.5K         |
| R401, 402 | ERDS2TJ102  | 1/4W 1K          | R615      | ERDS2TJ184T  | 1/4W 180K         | R754      | ERDS2TJ102   | 1/4W 1K           |
| R405-408  | ERDS2TJ102  | 1/4W 1K          | R616      | ERDS2TJ154   | 1/4W 150K         | R901      | ERDS2TJ102   | 1/4W 1K           |
|           |             |                  | R619      | ERDS2TJ684   | 1/4W 680K         | R902      | ERDS2TJ681   | 1/4W 680          |
|           |             |                  | R620      | ERDS2TJ473   | 1/4W 47K          | R907-911  | ERDS2TJ104   | 1/4W 100K         |
|           |             |                  | R621, 622 | ERD25FVJ180T | 1/4W 18 $\Delta$  | R912      | ERDS2TJ102   | 1/4W 1K           |

| Ref. No.  | Part No.     | Values & Remarks | Ref. No.  | Part No.     | Values & Remarks | Ref. No.  | Part No.     | Values & Remarks |
|-----------|--------------|------------------|-----------|--------------|------------------|-----------|--------------|------------------|
| R913      | ERDS2TJ104   | 1/4W 100K        | C111      | ECEA1EKA4R7B | 25V 4. 7U        | C440      | ECBT1E103ZF  | 25V 0. 01U       |
| R920      | ERDS2TJ271   | 1/4W 270         | C112      | ECBT1C103NS5 | 16V 0. 01U       | C451, 452 | ECEA1VKA4R7B | 35V 4. 7U        |
| R921      | ERDS2EJ121   | 1/4W 120         | C113      | ECBT1H102KB5 | 50V 1000P        | C453, 454 | ECBT1H100JC5 | 50V 10P          |
| R922      | ERDS2TJ472   | 1/4W 4. 7K       | C114      | ECEA1HKA3R3B | 50V 3. 3U        | C455, 456 | ECBT1H102KB5 | 50V 1000P        |
| R923      | ERDS2TJ102   | 1/4W 1K          | C115      | ECEA1EKA4R7B | 25V 4. 7U        | C457, 458 | ECEA1AKA330B | 10V 33U          |
| R924      | ERDS2TJ333   | 1/4W 33K         | C116      | ECBT1C822MS5 | 16V 8200P        | C459, 460 | ECFR1E223KR  | 25V 0. 022U      |
| R925      | ERDS2TJ472   | 1/4W 4. 7K       | C117      | ECQB1H471JF3 | 50V 470P         | C461, 462 | ECFR1E682KR  | 25V 6800P        |
| R926      | ERDS2TJ122   | 1/4W 1. 2K       | C118, 119 | ECQB1H103JF3 | 50V 0. 01U       | C463, 464 | ECEA1VKA4R7B | 35V 4. 7U        |
| R927      | ERDS2TJ181T  | 1/4W 180         | C120, 121 | ECEA1HKA010B | 50V 1U           | C465, 466 | ECBT1E103ZF  | 25V 0. 01U       |
| R928      | ERDS2TJ222   | 1/4W 2. 2K       | C122      | ECEA1HKA2R2B | 50V 2. 2U        | C469, 470 | ECBT1H181KB5 | 50V 180P         |
| R929      | ERDS2TJ562   | 1/4W 5. 6K       | C123      | ECEA1HKA010B | 50V 1U           | C471, 472 | ECEA1HKA3R3B | 50V 3. 3U        |
| R930, 931 | ERDS2TJ101   | 1/4W 100         | C124      | ECBT1H102KB5 | 50V 1000P        | C475, 476 | ECBT1H150J5  | 50V 15P          |
| R932-940  | ERDS2TJ102   | 1/4W 1K          | C125      | ECBT1H150JC5 | 50V 15P          | C477, 478 | ECBT1H221KB5 | 50V 220P         |
| R941      | ERDS2TJ472   | 1/4W 4. 7K       | C126      | ECBT1H104ZF5 | 50V 0. 1U        | C479, 480 | ECBT1H560J5  | 50V 56P          |
| R946-948  | ERDS2TJ103   | 1/4W 10K         | C127      | ECEA1CKA220B | 16V 22U          | C481-484  | ECEA1VKA4R7B | 35V 4. 7U        |
| R949      | ERDS2TJ104   | 1/4W 100K        | C128      | ECBT1C103NS5 | 16V 0. 01U       | C485, 486 | ECFR1E123KR  | 25V 0. 012U      |
| R950      | ERDS2TJ102   | 1/4W 1K          | C129, 130 | ECEA0JKA101B | 6. 3V 100U       | C487, 488 | ECQV1H683JZ3 | 50V 0. 068U      |
| R951      | ERDS2TJ122   | 1/4W 1. 2K       | C131      | ECBT1C103NS5 | 16V 0. 01U       | C489, 490 | ECBT1C562KR5 | 16V 5600P        |
| R952      | ERDS2TJ152   | 1/4W 1. 5K       | C132      | ECBT1H102KB5 | 50V 1000P        | C491, 492 | ECFR1E273KR  | 25V 0. 027U      |
| R953      | ERDS2TJ182   | 1/4W 1. 8K       | C133      | ECBT1H150JC5 | 50V 15P          | C495, 496 | ECBT1E103ZF  | 25V 0. 01U       |
| R954      | ERDS2TJ222   | 1/4W 2. 2K       | C134      | ECBT1H180JC5 | 50V 18P          | C503, 504 | ECEA1VKA4R7B | 35V 4. 7U        |
| R955      | ERDS2TJ332   | 1/4W 3. 3K       | C135, 136 | ECBT1C103MS5 | 16V 0. 01U       | C518      | ECEA1HKN010B | 50V 1U           |
| R956      | ERDS2TJ472   | 1/4W 4. 7K       | C137, 138 | ECBT1H561KB5 | 50V 560P         | C541, 542 | ECEA1HN100SB | 50V 10U          |
| R960      | ERDS2TJ102   | 1/4W 1K          | C139, 140 | ECQB1H682JF3 | 50V 6800P        | C543, 544 | ECBT1C332KR5 | 16V 3300P        |
| R961      | ERDS2TJ122   | 1/4W 1. 2K       | C141-144  | ECEA1HKA010B | 50V 1U           | C591, 592 | ECEA0JKA101B | 6. 3V 100U       |
| R962      | ERDS2TJ152   | 1/4W 1. 5K       | C145      | ECBT1H220JC5 | 50V 22P          | C593, 594 | ECFR1E104KR  | 25V 0. 1U        |
| R963      | ERDS2TJ182   | 1/4W 1. 8K       | C146      | ECBT1H331KB5 | 50V 330P         | C595      | ECBT1E103ZF  | 25V 0. 01U       |
| R964      | ERDS2TJ222   | 1/4W 2. 2K       | C147      | ECBT1H102KB5 | 50V 1000P        | C601, 602 | ECEA1HKN2R2B | 50V 2. 2U        |
| R965      | ERDS2TJ332   | 1/4W 3. 3K       | C148, 149 | ECBT1C103NS5 | 16V 0. 01U       | C603, 604 | ECBT1H561KB5 | 50V 560P         |
| R966      | ERDS2TJ472   | 1/4W 4. 7K       | C150      | ECBT1H104ZF5 | 50V 0. 1U        | C605, 606 | ECA1JM330B   | 63V 33U          |
| R967      | ERDS2TJ682T  | 1/4W 6. 8K       | C172      | ECBT1H331KB5 | 50V 330P         | C607, 608 | ECCR1H100K5  | 50V 10P          |
| R970      | ERDS2TJ102   | 1/4W 1K          | C173      | ECEA1CKA220B | 16V 22U          | C609, 610 | ECBT1H151KB5 | 50V 150P         |
| R971      | ERDS2TJ122   | 1/4W 1. 2K       | C174      | ECEA1CKA101B | 16V 100U         | C611, 612 | ECQV1H473JZ3 | 50V 0. 047U      |
| R972      | ERDS2TJ152   | 1/4W 1. 5K       | C175, 176 | ECBT1C103NS5 | 16V 0. 01U       | C613, 614 | ECBA1H681KB5 | 50V 680P         |
| R973      | ERDS2TJ182   | 1/4W 1. 8K       | C181      | ECBT1H471KB5 | 50V 470P         | C615      | ECEA2AN2R2SB | 100V 2. 2U       |
| R974      | ERDS2TJ222   | 1/4W 2. 2K       | C196      | ECBT1H102KB5 | 50V 1000P        | C616      | ECEA2AU100   | 100V 10U         |
| R975      | ERDS2TJ332   | 1/4W 3. 3K       | C375, 376 | ECBT1H221KB5 | 50V 220P         | C617      | ECA1HM470B   | 50V 47U          |
| R976      | ERDS2TJ472   | 1/4W 4. 7K       | C377, 378 | ECBT1H821KB5 | 50V 820P         | C618      | ECEA2AU100   | 100V 10U         |
| R977      | ERDS2TJ682T  | 1/4W 6. 8K       | C401      | ECEA1VKA4R7B | 35V 4. 7U        | C621      | ECEA2AU100   | 100V 10U         |
| R991      | ERDS2TJ103   | 1/4W 10K         | C402, 403 | ECBT1E103ZF  | 25V 0. 01U       | C623-626  | ECKT1H223ZF  | 50V 0. 022U      |
|           |              |                  | C404      | ECEA1VKA4R7B | 35V 4. 7U        | C627      | ECKR2H101KB5 | 500V 100P        |
|           |              |                  | C405      | ECBT1H101KB5 | 50V 100P         | C628      | ECBT1H101KB5 | 50V 100P         |
|           |              | CAPACITORS       | C406      | ECBT1H102KB5 | 50V 1000P        | C629      | ECBT1E223ZF  | 25V 0. 022U      |
| C101      | ECBT1C103NS5 | 16V 0. 01U       | C409, 410 | ECEA1CKA220B | 16V 22U          | C651      | ECEA1HKA2R2B | 50V 2. 2U        |
| C103      | ECBT1C103NS5 | 16V 0. 01U       | C411, 412 | ECBT1H101KB5 | 50V 100P         | C652      | ECEA1CKA100B | 16V 10U          |
| C104      | ECBT1H102KB5 | 50V 1000P        | C413, 414 | ECEA1CKA100B | 16V 10U          | C653      | ECBT1E223ZF  | 25V 0. 022U      |
| C105      | ECBT1H470J5  | 50V 47P          | C415, 416 | ECBT1E103ZF  | 25V 0. 01U       | C655      | ECEA0JKA221B | 6. 3V 220U       |
| C106      | ECBT1C103NS5 | 16V 0. 01U       | C417, 418 | ECBT1H101KB5 | 50V 100P         | C701      | ECBT1E103ZF  | 25V 0. 01U       |
| C107      | ECBT1H473ZF5 | 50V 0. 047U      | C419-422  | ECBT1H331KB5 | 50V 330P         | C702      | ECQE2104KF3  | 250V 0. 1U       |
| C108      | ECBT1H100JC5 | 50V 10P (E)      | C425, 426 | ECBT1H101KB5 | 50V 100P         | C703, 704 | ECES56V472NX | 56V 4700U △      |
| C108      | ECBT1H8R2KC5 | 50V 8. 2 (EG)    | C427, 428 | ECBT1H221KB5 | 50V 220P         | C705, 706 | ECA1VM472B   | 35V 4700U △      |
| C109, 110 | ECBT1C103NS5 | 16V 0. 01U       | C431, 432 | ECEA1CKA100B | 16V 10U          | C707      | RCE1VM101BV  | 35V 100P         |

| Ref. No. | Part No.     | Values & Remarks    | Ref. No. | Part No.     | Values & Remarks   | Ref. No.  | Part No.     | Values & Remarks |
|----------|--------------|---------------------|----------|--------------|--------------------|-----------|--------------|------------------|
| C708     | ECKR1H103ZF5 | 50V 0.01U           | C753     | ECA1EM102B   | 25V 1000U $\Delta$ | C908      | ECBT1E103ZF  | 25V 0.01U        |
| C709     | ECEA1CKA330B | 16V 33U             | C756     | ECBT1E103ZF  | 25V 0.01U          | C911, 912 | ECEA2AU100   | 100V 10U         |
| C710     | ECBT1E103ZF  | 25V 0.01U           | C757     | ECEA1CKA470B | 16V 47U            | C913, 914 | ECEA1VKA100B | 35V 10U          |
| C711     | ECKR1H103ZF5 | 50V 0.01U           | C758     | ECEA1AKA101B | 10V 100U           | C916      | ECEA1HKA010B | 50V 1U           |
| C712     | ECA1HM470B   | 50V 47U             | C759     | ECEA1EKA220B | 25V 22U            | C917      | ECEA1HKA47B  | 50V 0.47U        |
| C713     | ECKR1H103ZF5 | 50V 0.01U           | C891     | ECFR1E392KR  | 25V 3900P          | C918      | ECEA0JKA221B | 6.3V 220U        |
| C716     | ECEA2AU100   | 100V 10U            | C901     | ECA0JM102B   | 6.3V 1000U         | C919      | ECBT1H331KB5 | 50V 330P         |
| C720     | ECEA1EKA220B | 25V 22U             | C902     | ECBT0J223MS5 | 6.3V 0.022U        | C920      | ECEA1HKA010B | 50V 1U           |
| C722     | ECQE2104KF3  | 250V 0.1U           | C903     | ECBT1E103ZF  | 25V 0.01U          | C921-928  | ECBT1H331KB5 | 50V 330P         |
| C751     | ECKWNS102MBM | 400V 1000P $\Delta$ | C904     | ECA0JM471B   | 6.3V 470U          | C929-932  | ECBT1H101KB5 | 50V 100P         |
| C752     | ECKR1H103ZF5 | 50V 0.01U           | C906     | ECEA0JKA101B | 6.3V 100U          | C933      | ECBT1E103ZF  | 25V 0.01U        |

## REPLACEMENT PARTS LIST

**Notes:** \*Important safety notice:

Components identified by  $\Delta$  mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

\*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.

\*[M] Indicates in Remarks columns parts that are supplied by MESA.

\*The "(SF)" mark denotes the standard part.

| Ref. No. | Part No.     | Part Name & Description  | Remarks       | Ref. No. | Part No.   | Part Name & Description    | Remarks             |
|----------|--------------|--------------------------|---------------|----------|------------|----------------------------|---------------------|
|          |              |                          |               | A5-1     | RMN0244    | AM ANTENNA HOLDER          |                     |
|          |              | PACKING MATERIAL         |               | A5-2     | XTN3+12AFZ | SCREW                      |                     |
|          |              |                          |               | A6       | SSA270M    | FM INDOOR ANTENNA          |                     |
| P1       | RPG2584      | PACKING CASE             | [M]           | A7       | EUR643861  | REMOTE CONTROL TRANSMITTER | [M]                 |
| P2       | RPN0865      | CUSHION                  | [M]           | A7-1     | UR64EC1371 | BATTERY COVER              | FOR R/C TRANSMITTER |
| P3       | RPNX0047     | POLYFORM PAD             | [M]           |          |            |                            |                     |
| P4       | SPSD152      | ACCESSORIES BOX          |               |          |            | <GREASE OR JIG/TOOL>       |                     |
| P5       | XZB24X33C04  | PROTECTION BAG (F. B. )  |               |          |            | GREASE                     |                     |
| P6       | RPFXX0005    | PROTECTION BAG (UNIT)    | [M]           |          |            |                            |                     |
|          |              |                          |               | SA1      | RFIX0002   | COMPOUND GREASE            |                     |
|          |              | ACCESSORIES              |               |          |            |                            |                     |
|          |              |                          |               |          |            | TEST DISC                  |                     |
| A1       | RFKSAGX180E  | INSTRUCTION MANUAL ASS'Y | [M] (E)       |          |            |                            |                     |
| A1       | RFKSAGX180EG | INSTRUCTION MANUAL ASS'Y | [M] (EG)      | SA2      | SZZP1054C  | UNEVEN TEST DISC           |                     |
| A2       | RJA0019-2K   | AC POWER SUPPLY CORD     | $\Delta$ (SF) |          |            |                            |                     |
| A3       | RQA0013      | WARRANTY CARD            |               |          |            | TEST TAPE                  |                     |
| A4       | RQCB0169     | SERVICENTER LIST         |               |          |            |                            |                     |
| A5       | RSA0010      | AM LOOP ANTENNA SET      |               | SA3      | QZZCLA     | DISTORTION ADJUSTMENT      |                     |

## ■ PACKAGING

