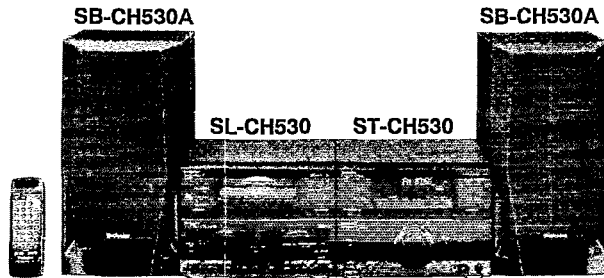


# Service Manual

Tuner/Sound Processor

Tuner

## ST-CH530

Remote Control  
Transmitter

RS-CH730

SE-CH530

Colour

(K) : Black

## Areas

| Suffix for Model No. | Area   | Colour |
|----------------------|--|--------|
| (E)                  | Europe   | (K)    |
| (EG)                 | Germany and Italy                                    |        |
| (GC)                 | Asia, Latin America, Middle East, Africa and Oceania |        |

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

## Specifications

### ■ Preamplifier section

Input sensitivity/impedance  
[For (E) and (EG) areas]

PHONO 2.5 mV/47 k $\Omega$   
EXTERNAL 250 mV/15 k $\Omega$

[For (GC) area]

AUX 250 mV/15 k $\Omega$   
EXTERNAL 250 mV/15 k $\Omega$

Output level

EXTERNAL REC OUT 150 mV/1.5 k $\Omega$

Frequency response

[For (E) and (EG) areas]

PHONO 30 Hz – 15 kHz/  
+1.5 to –2.0 dB  
EXTERNAL 20 Hz – 40 kHz

[For (GC) area]

AUX 20 Hz – 40 kHz  
EXTERNAL 20 Hz – 40 kHz

### ■ EQ, SFP section

EQ SPACE mode

3 modes

Mic Echo

HALL, CLEAR, HEAVY  
1.0, 1.2, 1.4, 1.6 sec.

### ■ FM tuner section

Frequency range

87.50 – 108.00 MHz  
(0.05 MHz steps)

Sensitivity

1.8  $\mu$ V (IHF usable)

S/N 26 dB

1.5  $\mu$ V

S/N

MONO 70 dB (75 dB, IHF)

Stereo separation 1 kHz

35 dB

Antenna terminal(s)

75  $\Omega$  (unbalance)

### ■ AM tuner section

Frequency range

[For (E) area]

MW

522 – 1611 kHz (9 kHz steps)

530 – 1620 kHz (10 kHz steps)

144 – 288 kHz (9 kHz steps)

LW

[For (EG) and (GC) areas]

AM

522 – 1611 kHz (9 kHz steps)

530 – 1620 kHz (10 kHz steps)

Sensitivity (S/N 20 dB)

[For (E) area]

MW

500  $\mu$ V/m

LW

50  $\mu$ V

[For (EG) and (GC) areas]

AM

500  $\mu$ V/m

### ■ Timer section

Clock

Quartz-lock type

Function

24-hour programmable;

Play timer (1 time), Rec timer (1 time),

Sleep (120 min., 30 min. intervals)

Setting 1 minute – 23 hours 59 minutes (1 min. intervals)

### ■ General

Dimensions (W x H x D)

270 x 89 x 274 mm

Weight

1.6 kg

Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

| System   | Tuner/sound processor | Compact disc player | Amplifier | Cassette deck | Speakers   |
|----------|-----------------------|---------------------|-----------|---------------|------------|
| SC-CH530 | ST-CH530              | SL-CH530            | SE-CH530  | RS-CH730      | *SB-CH530A |

\* :For (E) and (EG) areas..... Made in PAES  
For (GC) area ..... Made in NABEL

### ⚠ 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.

# Technics®

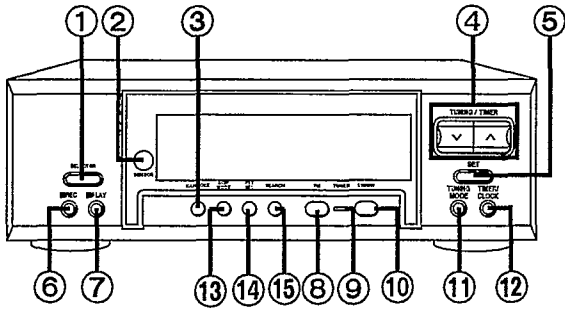
© 1995 Matsushita Electric Industrial Co., Ltd.  
All rights reserved. Unauthorized copying  
and distribution is a violation of law.

## Contents

|   | Page |                                     | Page   |
|---|------|-------------------------------------|--------|
| Location of Controls .....                  | 2    | Schematic Diagram .....             | 7~19   |
| Setting the Time .....                      | 2    | Printed Circuit Board Diagram ..... | 20~23  |
| About the Self-Diagnostic Mode .....        | 3    | Wiring Connection Diagram .....     | 23     |
| Operation Check and                         |      | Block Diagram .....                 | 24~28  |
| Main Component Replacement Procedures ..... | 4    | Function of IC Terminals .....      | 29, 30 |
| To Supply Power Source .....                | 5    | Replacement Parts List .....        | 31~36  |
| Measurements and Adjustments .....          | 6    | Cabinet Parts Location .....        | 37     |

**NOTE:**  
Refer to the service manual for Model No. SE-CH530 (ORDER No. AD9505126C2) for information on "Accessories", "Stacking the Components", "Connections" and "Packaging".

## Location of Controls



- ① Source input select button (SELECTOR)
- ② Remote control signal sensor (SENSOR)
- ③ Karaoke mode select button ((KARAOKE)
- ④ Tuning/timer select button (TUNING/TIMER, ^, V)
- ⑤ Set button (SET)
- ⑥ Record timer button ( [ ] REC)
- ⑦ Play timer button ( [ ] PLAY)
- ⑧ FM button (FM)
- ⑨ Tuner indicator (TUNER)
- ⑩ LW/MW select button (LW/MW)...for (E) area  
AM button.....for (EG) and (GC) areas
- ⑪ Tuning mode select button (TUNING MODE)
- ⑫ Timer/clock button (TIMER/CLOCK)
- ⑬ Display mode selector button (DISP MODE)...for (EG) area
- ⑭ PTY selector button (PTY SEL)...for (EG) area
- ⑮ PTY search button (PTY SEARCH)...for (EG) area

## Setting the Time

This is a 24-hours display clock.  
These instructions explain how to set the timer for 16:25 (4:25 p.m.) on Wednesday.

- 1** Switch on the power
- 2** ① Press **TIMER/CLOCK** to show "CLOCK".  
Within 8 seconds:  
② Press **SET**.
- 3** ① Press **TUNING/TIMER** V or ^ to select the day.  
② Press **SET**.
- 4** ① Press **TUNING/TIMER** V or ^ to select the hour.  
② Press **SET**.
- 5** ① Press **TUNING/TIMER** V or ^ to select the minutes.  
② Press **SET** to finish setting the time.  
The display will return to the previous display after about 3 seconds.

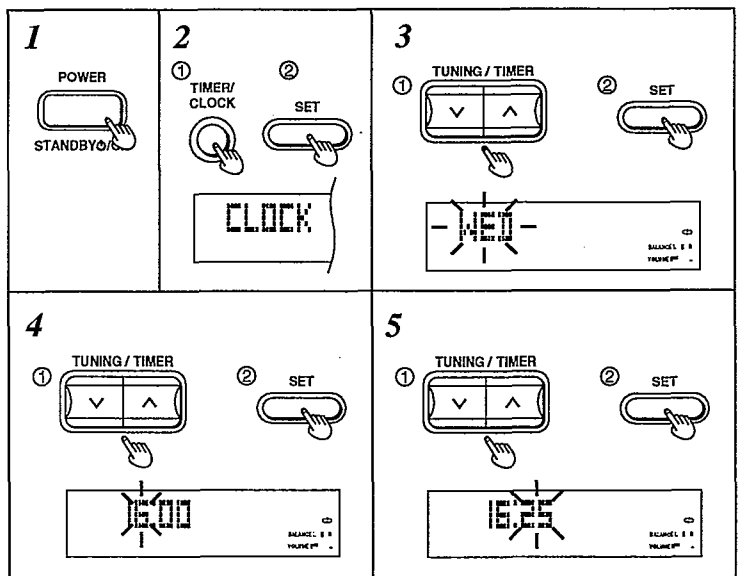
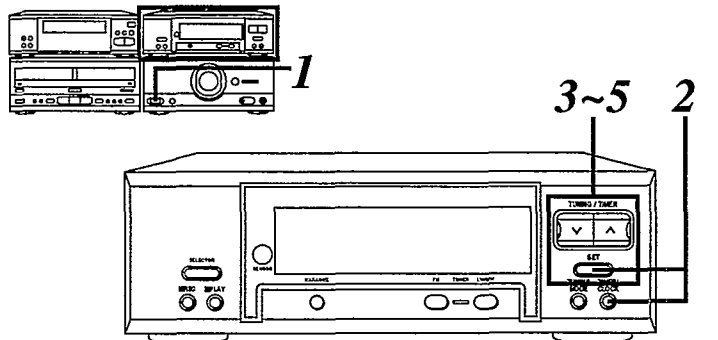
**When SUN "0:00" flashes**  
It flashes when you connect the AC power supply cord for the first time or if there has been a power failure.  
If this happens, reset the time.

### If the minutes setting has gone wrong:

1. Press **TIMER/CLOCK**.
2. Press **SET** 3 times.
3. Press **TUNING/TIMER** V or ^ to select the minutes, and then press **SET**.

### To display the clock again:

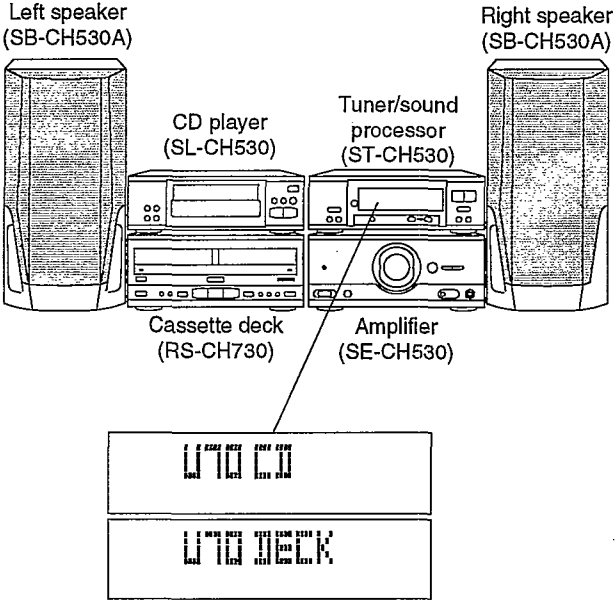
Press **TIMER/CLOCK**.  
The clock display will appear for about 8 second.



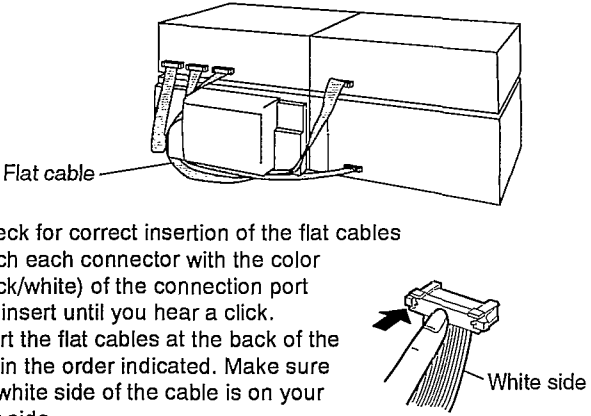
## ■About the Self-Diagnostic Mode

This unit is equipped with a self-diagnostic function which, in the event of a malfunction, automatically displays a code indicating the nature of the malfunction. Use this self-diagnostic function when servicing the unit.

**SC-CH530 (SL-CH530, ST-CH530, SE-CH530, RS-CH730, SB-CH530A)**

| Display method  | Display location   |
|---|--|
| <p><b>To display the malfunction code</b></p> <p>U-70 CD:<br/>U-70 DECK: ... Automatically displays on the tuner/sound processor when a malfunction occurs.</p> <p>F-61 ..... Automatically displays on the tuner/sound processor when a malfunction occurs.</p> <p><b>To return to the normal display</b></p> <p><b>1. For U-70 CD/U-70 DECK:</b></p> <ul style="list-style-type: none"> <li>● Press any operation button on the tuner/sound processor.</li> <li>● To re-display the code, switch the power off (POWER STANDBY button), and then switch power back on again.</li> </ul> <p><b>2. For F-61:</b></p> <ul style="list-style-type: none"> <li>● If "F-61" is displayed, the power will automatically be switched off and the standby indicator will light up.</li> <li>● "F-61" will be displayed for 3 seconds, and then the clock will be displayed.</li> <li>● To re-display the code, switch the power on. "F-61" will be re-displayed, and then after 3 seconds the clock will be displayed and the power will automatically switch off.</li> </ul> |  |

### Display contents

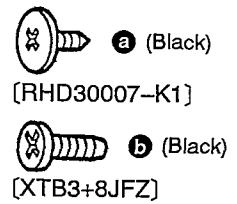
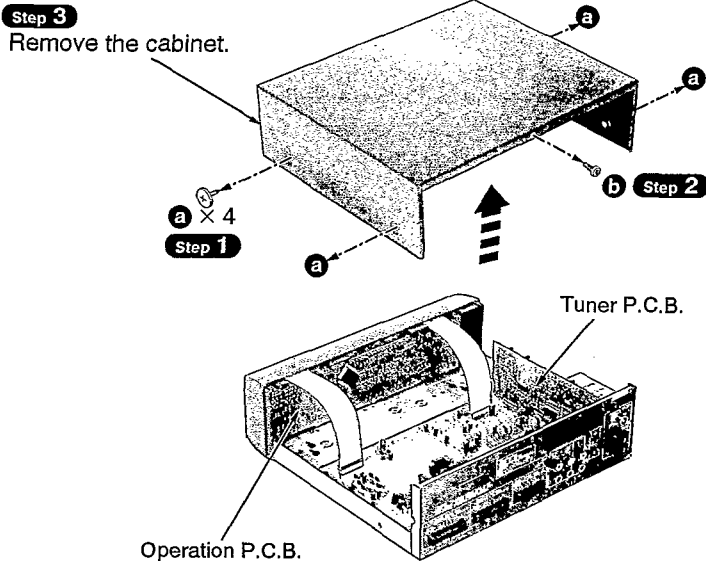
| Display code   | Problem or condition  | Correction procedure  |
|--|---|---|
| <p><b>U-70 CD</b><br/><b>U-70 DECK</b><br/>(displayed automatically)</p> | <p>A bus-line communications error has occurred as a result of the flat cables being inserted incorrectly, thus preventing the system from operating.</p> <p>1. If "U-70" is displayed on the tuner/sound processor, the tape deck or CD player cannot be operated by remote control.</p> |  <p>1. To check for correct insertion of the flat cables</p> <ol style="list-style-type: none"> <li>① Match each connector with the color (black/white) of the connection port and insert until you hear a click.</li> <li>② Insert the flat cables at the back of the unit in the order indicated. Make sure the white side of the cable is on your right side.</li> </ol> <p>2. Breakage of flat cable (Check and replace as necessary.)</p> <p>3. If the problem is not corrected by items (1.) and (2.) above, this indicates a faulty IC.</p> <p><b>ST-CH530:</b><br/>IC901 (M38197MA113F)</p> <p><b>SL-CH530:</b><br/>IC403 (LC66356B4F53)</p> <p><b>RS-CH730:</b><br/>IC701 (M37471M4264F)</p> <p>Check these IC's and replace as necessary.</p> |
| <p><b>F-61</b></p>   | <p>When the power switch is switched on, it automatically switches back off, making it impossible to switch power on.</p>   | <ul style="list-style-type: none"> <li>● Faulty amplifier (SE-CH530) output IC (IC501). (When a DC voltage is applied to the speaker terminals.)</li> </ul>   |

# Operation Check and Main Component Replacement Procedures

- 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. Illustrated screws are equivalent to actual size.

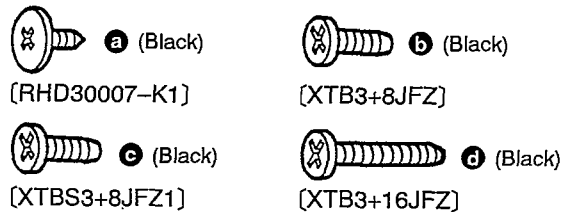
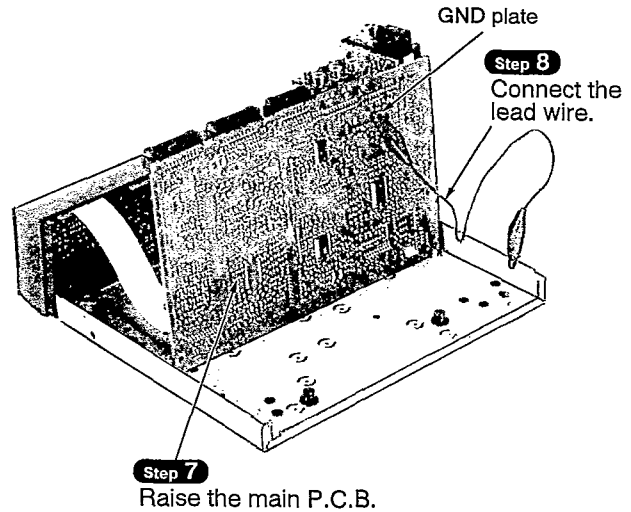
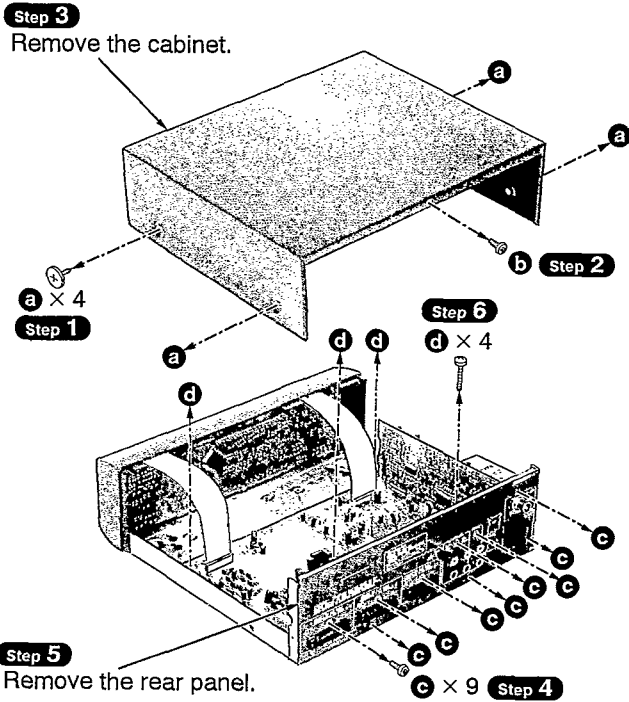
## 1. Checking for the tuner P.C.B. and operation P.C.B.

• Check the tuner P.C.B. and operation P.C.B. as shown below.



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

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



## ■ To Supply Power Source

This unit ST-CH530 is designed to operate on power supplied from the Amplifier SE-CH530.

When operating the unit ST-CH530 alone for testing and servicing, without having power supplied from the Amplifier SE-CH530, use the following method.

### Power Supply to Main Circuit

1. Short the section between the test points **TP602** and **TP610**, and as well as the section between the test points **A.GND** (J611) and **TP610**.
2. Connect the 3V AC power to pin 1 of the indicator module FL901 and the GND terminal to pin 57 of the same FL901 module.
3. Apply 11 V AC power to the section between the point **TP601** (AC) and the point **TP602** (CT) as well as the section between the point **TP603** (AC) and the point **TP602** (CT). This unit comes to stand-by mode.
4. Short the section between the jumper **J315** **TP611** and the point **D.GND** of the jumper **J608** **TP610** for a moment. The main circuit comes to power ON mode. (Whenever this operation is performed, power, ON/OFF mode is repeated.)

### Power Supply to Tuner Circuit

1. Apply power source to the main circuit.
2. Connect the DC +12 V terminal to the jumper **J610** **TP608**, and the GND terminal to both the point **T.GND** of the jumper **J609** **TP609** and the point **D.GND** of the jumper **J608** **TP610** using the DC power supply tool.

**Note:** If the GND terminal of the DC power supply tool is connected to the point **D.GND** of the jumper **J608** **TP610**, an error occurs in measurement values for voltage and waveform.

### To Check Signals

Connect the oscilloscope or the speaker with the built-in amplifier to the EXTERNAL (OUT) terminals and check if the signals are outputting from this unit.

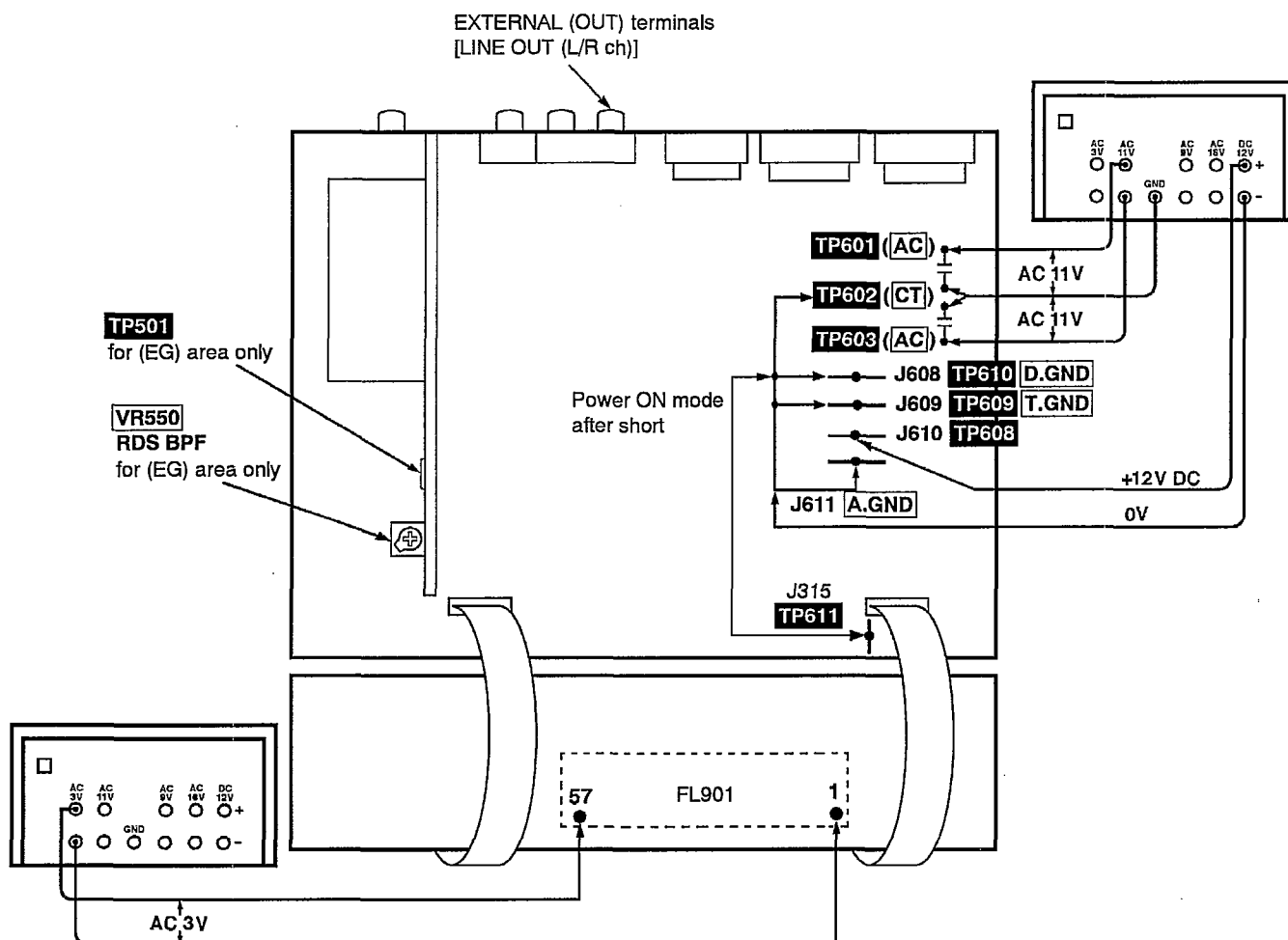


Fig. 1

## ■ Measurements and Adjustments [ For (EG) area only ]

### Measuring Instruments and Special Tools

- FM signal generator (FM-SG)
- RDS modulator
- AC electronic voltmeter (AC EVM) \*  
(\* Min. 0.3 mV measurable)
- 75 Ω coaxial cable

### RDS (Radio Data System) BPF Adjustment

1. Test equipment connection is shown in Fig. 2.
2. Set the unit to "FM" mode.
3. Set the radio frequency display and signal generator to 100.10 MHz.
4. Adjust VR550 so that the TP501 output is maximized.

#### FM Signal Generator Condition

|                            |       |
|----------------------------|-------|
| Modulation .....           | 100%  |
| Modulation frequency ..... | 1 kHz |
| RDS modulation .....       | 2.7%  |
| Output level .....         | 60 dB |

#### How to make simple adjustment without using a RDS modulator

1. Tuner into a FM broadcast with a RDS signal transmitted from a FM station whose electric field intensity is more than 50 dB.
2. Adjust VR550 so that the TP501 output is maximized.

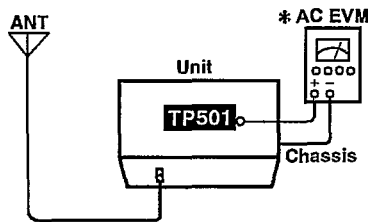


Fig. 3

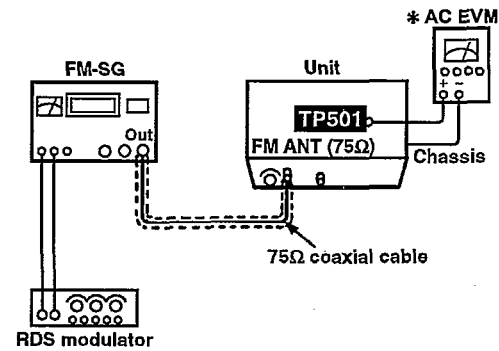


Fig. 2

**Note:** \* Use the voltmeter measurable up to 0.3 mV at the minimum.

### ● What is RDS (Radio Data System)?

RDS is a multiplex broadcasting system which adds a variety of message signal to the audio signals of FM broadcasts. This unit can utilize the following signals among the various RDS signals.

#### RDS messages used by this unit

- PS (Program service name)  
Name of the broadcast station
- PTY (Program type)  
Identification signal for program types such as news and sport

#### Note

"PTY" may not be available in some areas.

# Schematic Diagram


|  |        |
|--|--------|
|  | Page   |
| <b>A</b> TUNER CIRCUIT For (E, GC) areas. .... | 8, 9   |
| <b>A</b> TUNER CIRCUIT For (EG) area. ....     | 10~12  |
| <b>B</b> OPERATION CIRCUIT .....               | 13, 14 |
| <b>C</b> MAIN CIRCUIT .....                    | 15~19  |

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

**Notes:**

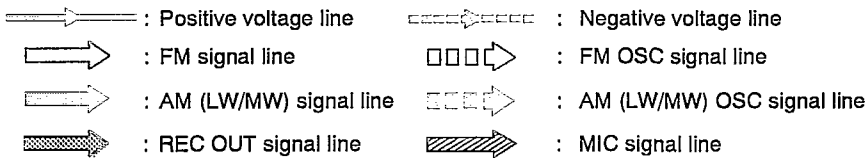
- **S901:** FM switch (FM)
- **S902:** LW/MW select switch (LW/MW)...for (E) area  
AM switch (AM)...for (EG) and (GC) areas
- **S903:** Tuning mode select switch (TUNING MODE)
- **S904:** Timer/clock switch (TIMER/CLOCK)
- **S905:** Set switch (SET)
- **S906:** Tuning/timer select switch (TUNING/TIMER V)
- **S907:** Tuning/timer select switch (TUNING/ TIMER ^)
- **S911:** PTY search switch (PTY SEARCH)...for (EG) area
- **S912:** PTY selector switch (PTY SEL)...for (EG) area
- **S913:** Display mode selector switch (DISP MODE)...for (EG) area
- **S915:** Karaoke mode select switch (KARAOKE)
- **S916:** Play timer switch (▶ PLAY)
- **S917:** Record timer switch (▶ REC)
- **S918:** Source input select switch (SELECTOR)
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Voltage values and waveforms are measured as indicated in the schematic diagram when test points between **TP602** and **TP610** , and between **TP610** and **A.GND** are shorted.

No mark : FM mode                    (    ) : AM (MW) mode                    <    > : AM (LW) mode

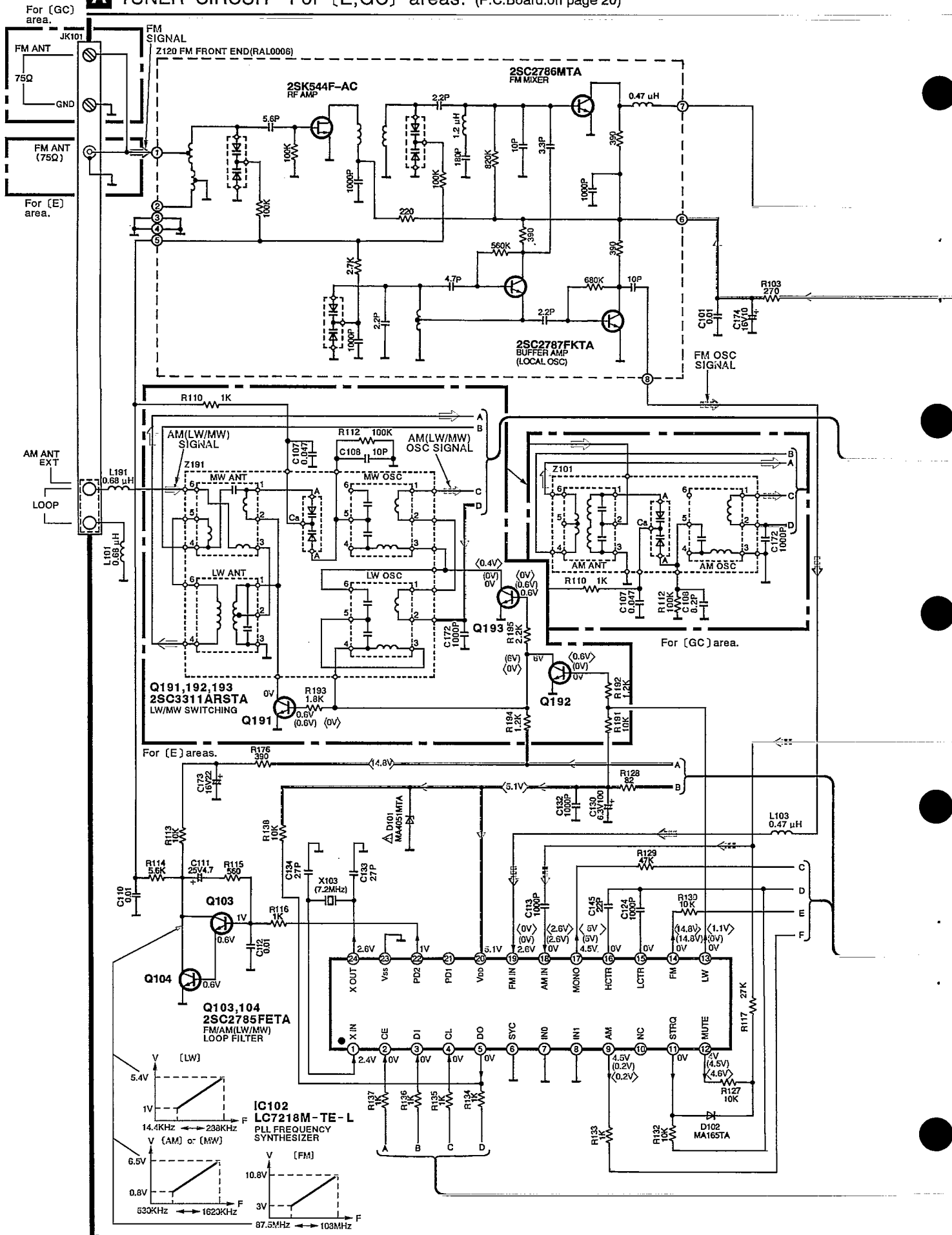
- **Important safety notice:**  
Components identified by  mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- **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.

**Voltage and signal line**

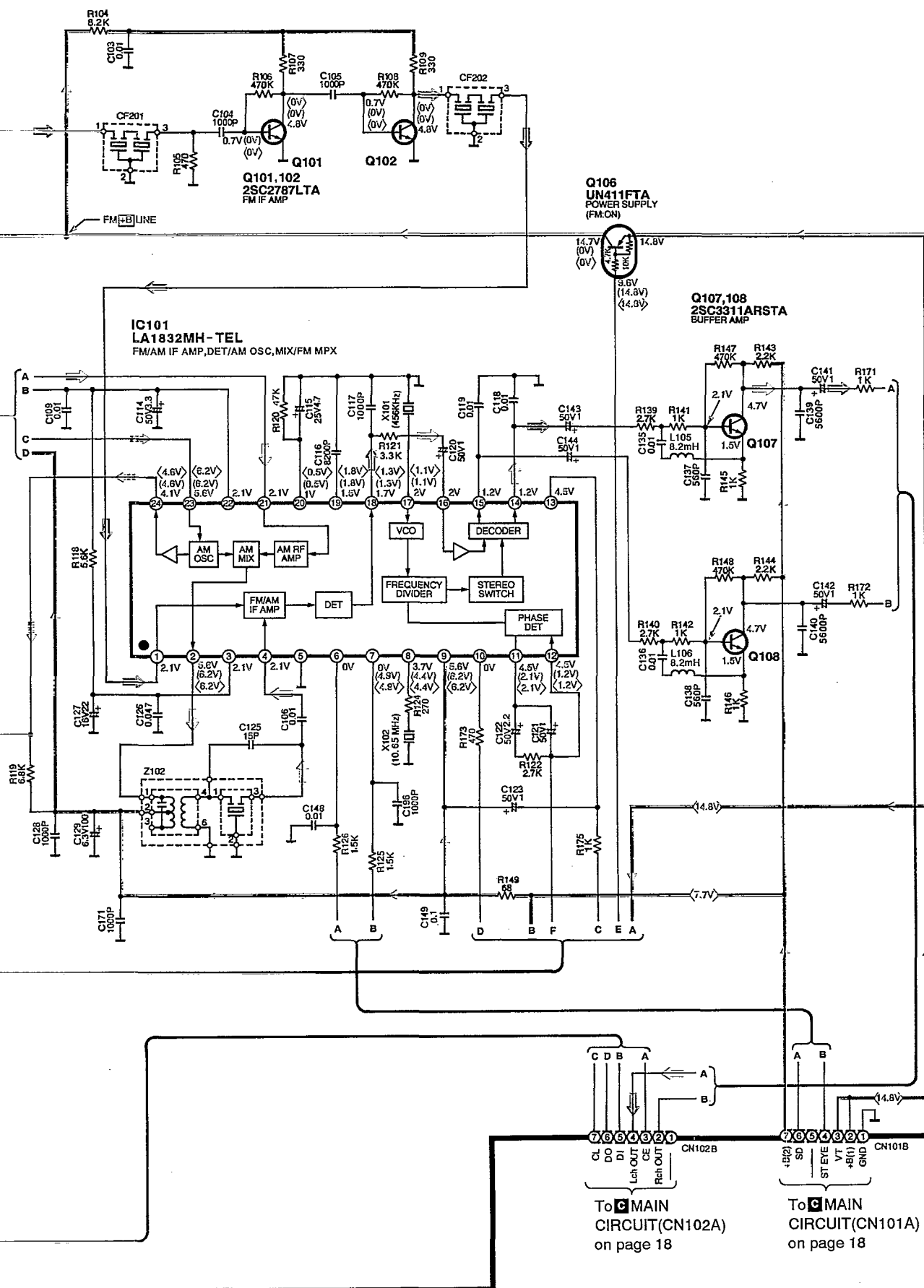


**A** TUNER CIRCUIT For [E,GC] areas. (P.C.Board: on page 20)

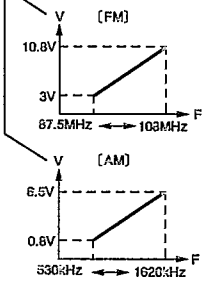
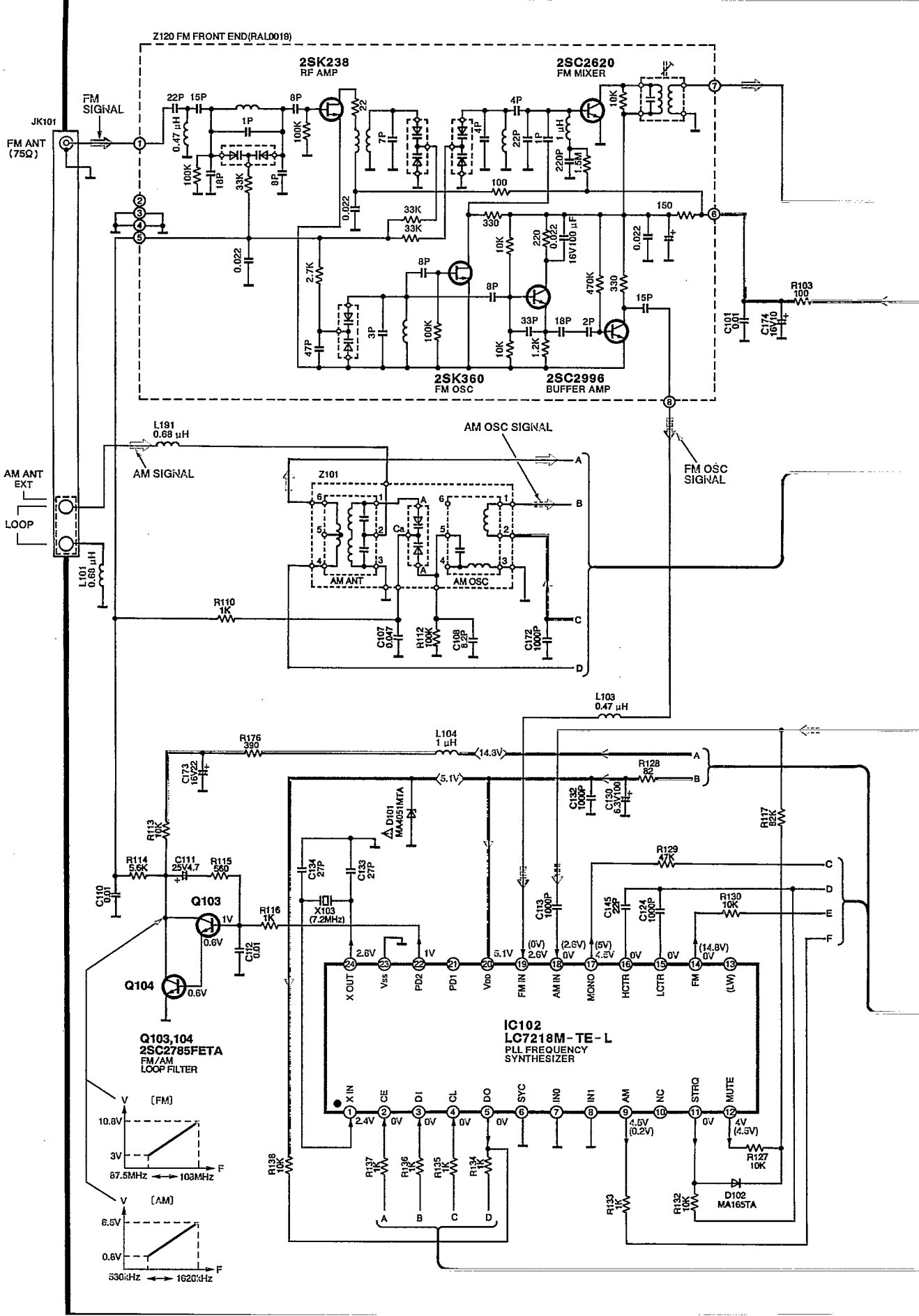




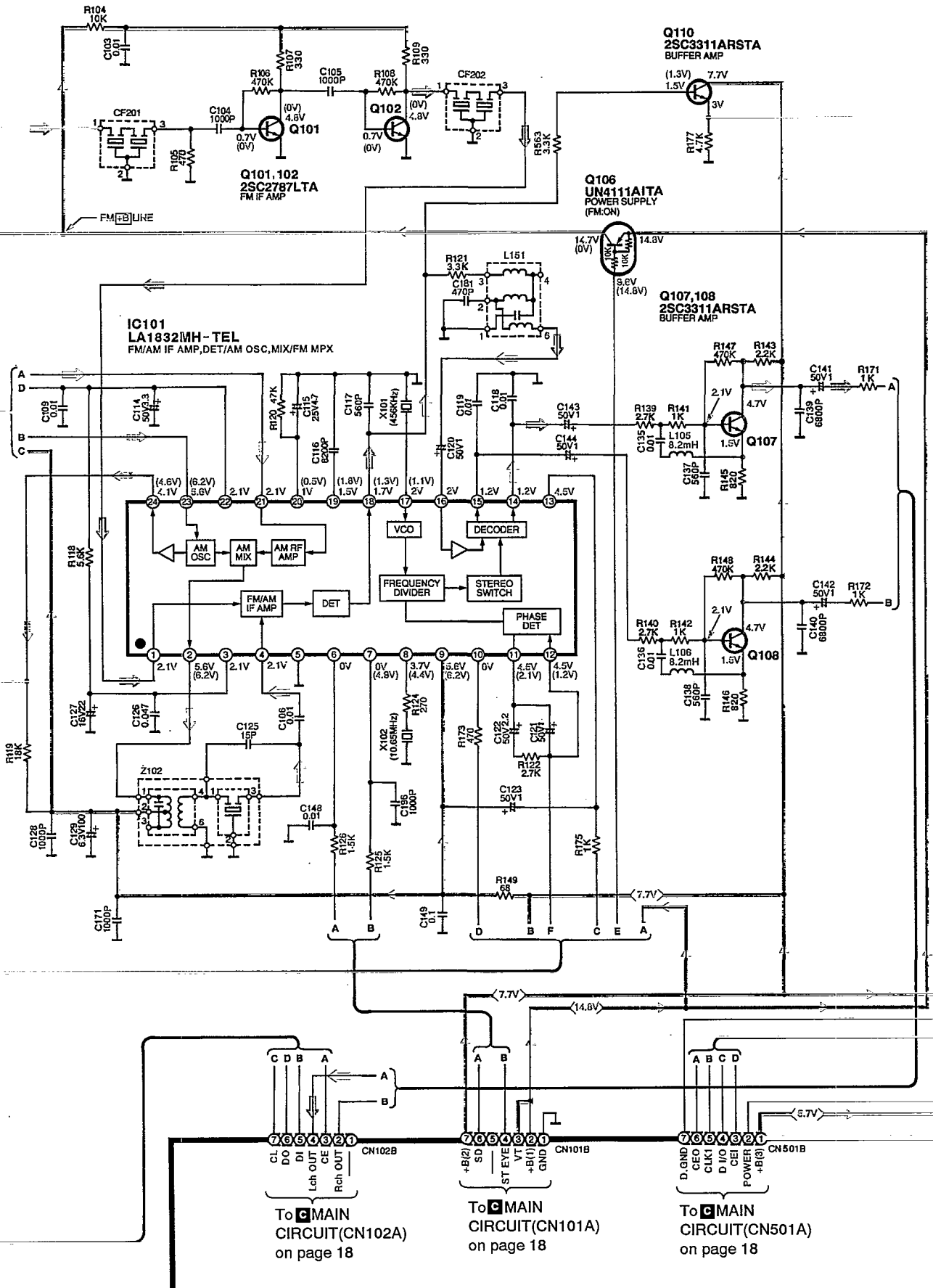
 : Positive voltage line    
  : FM signal line    
  : FM OSC signal line  
 : AM (LW/MW) signal line    
  : AM (LW/MW) OSC signal line

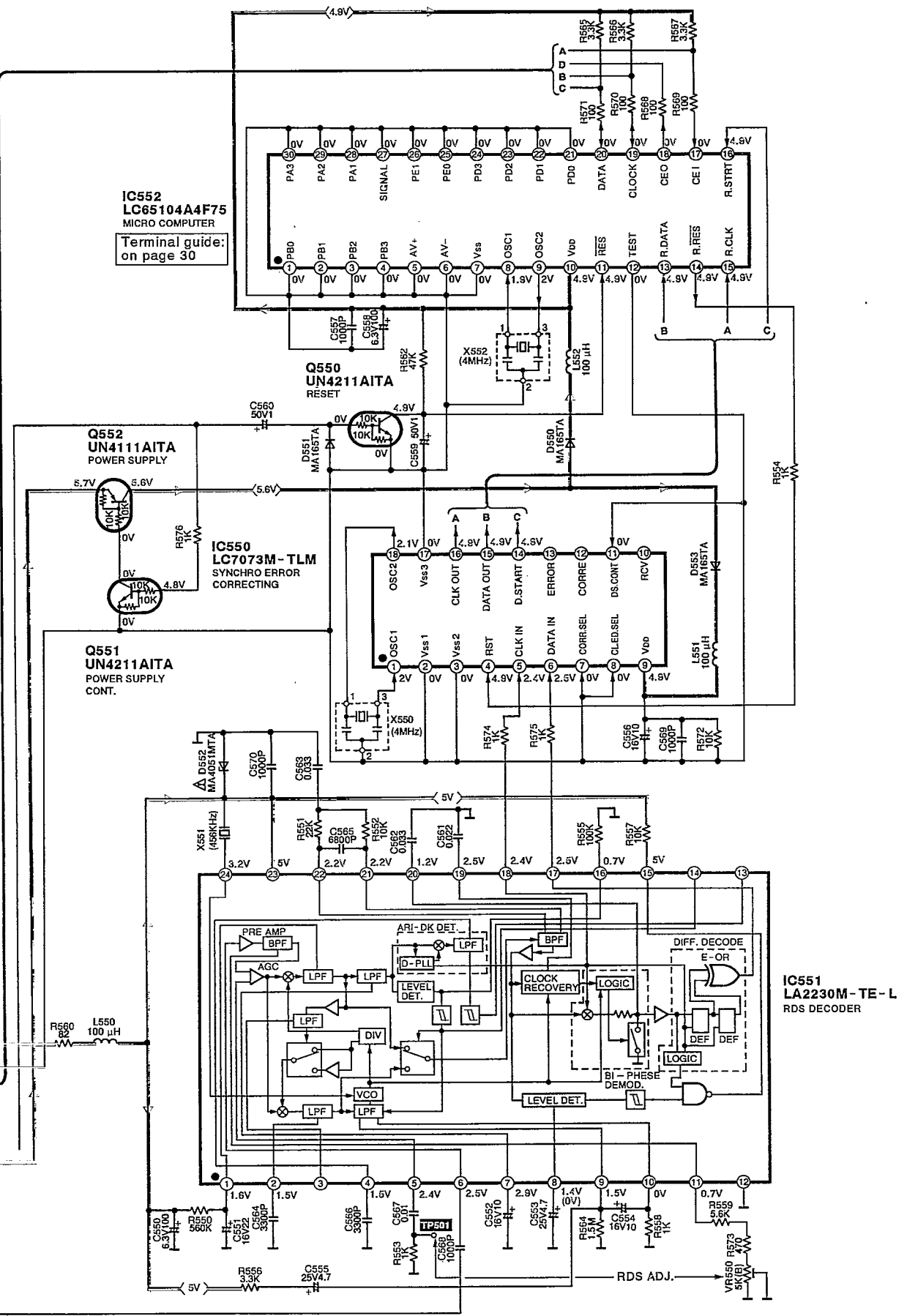


**A** TUNER CIRCUIT For [EG] area. (P.C. Board: on page 20)



: Positive voltage line   
  : FM signal line   
  : FM OSC signal line  
 : AM (LW/MW) signal line   
  : AM (LW/MW) OSC signal line





**IC552**  
**LC65104A4F75**  
MICRO COMPUTER  
Terminal guide:  
on page 30

**Q550**  
**UN4211AITA**  
RESET

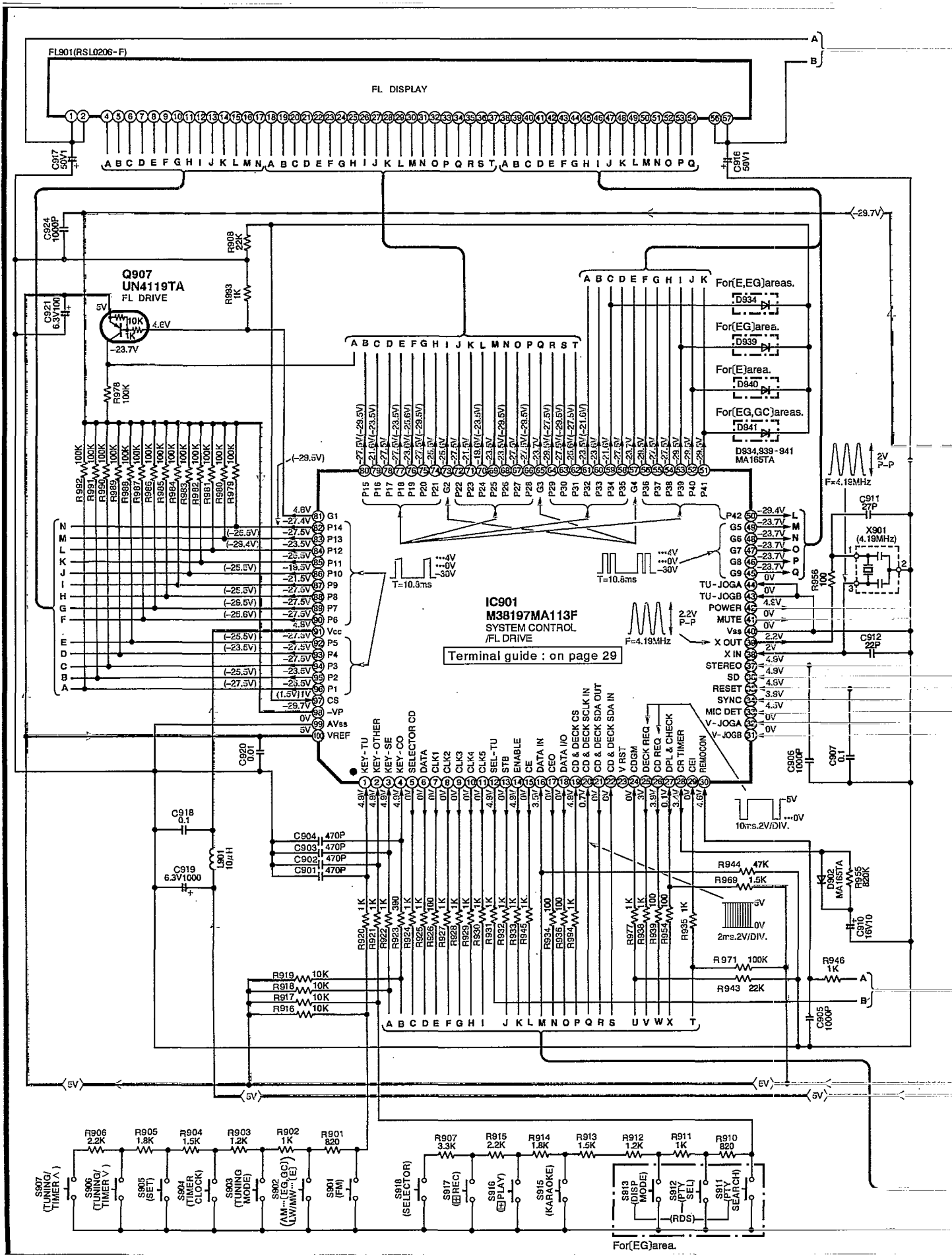
**Q552**  
**UN4111AITA**  
POWER SUPPLY

**IC550**  
**LC7073M-TLM**  
SYNCHRO ERROR  
CORRECTING

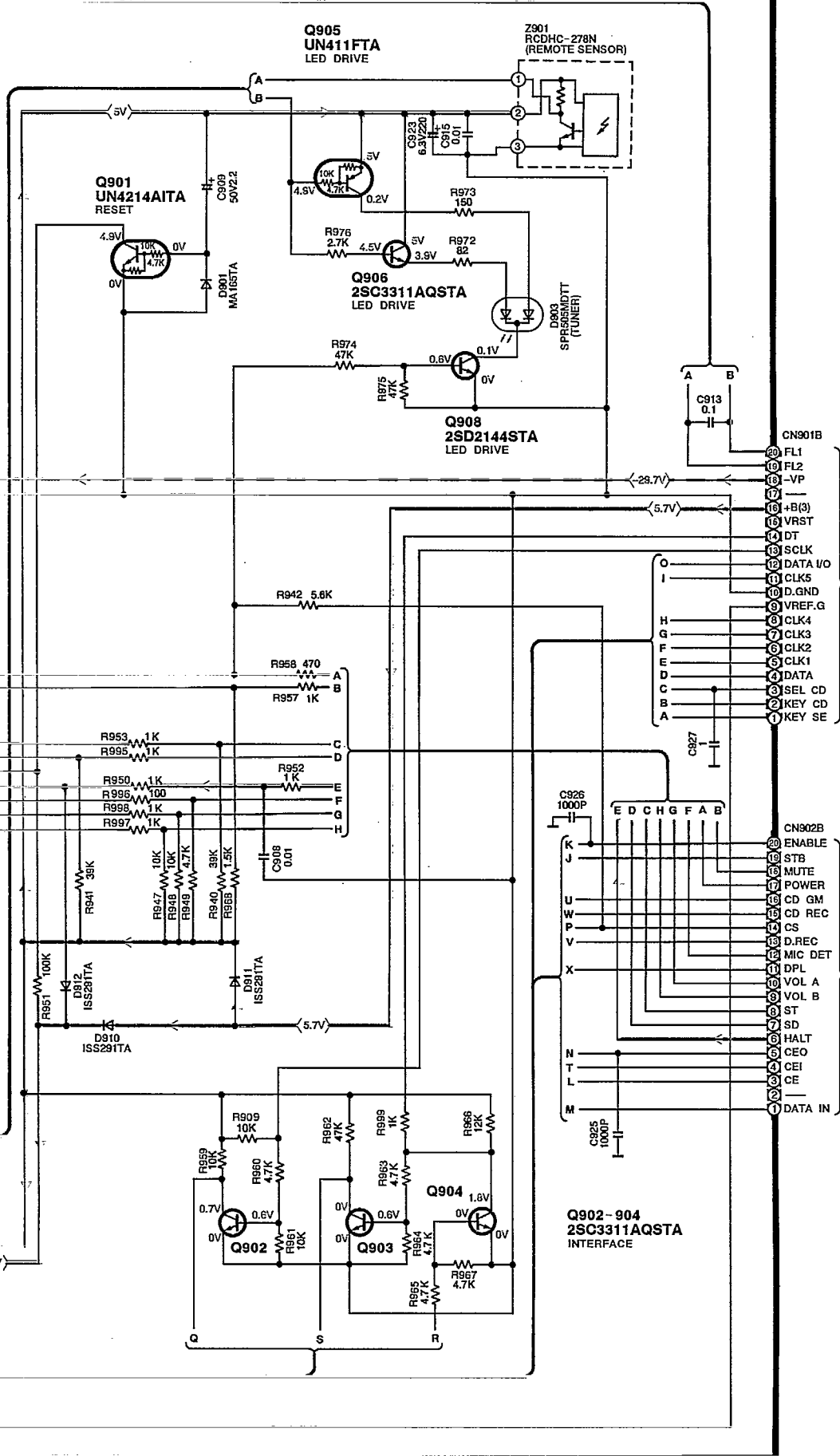
**Q551**  
**UN4211AITA**  
POWER SUPPLY  
CONT.

**IC551**  
**LA2230M-TE-L**  
RDS DECODER

**B** OPERATION CIRCUIT (P.C.Board : on page 22)



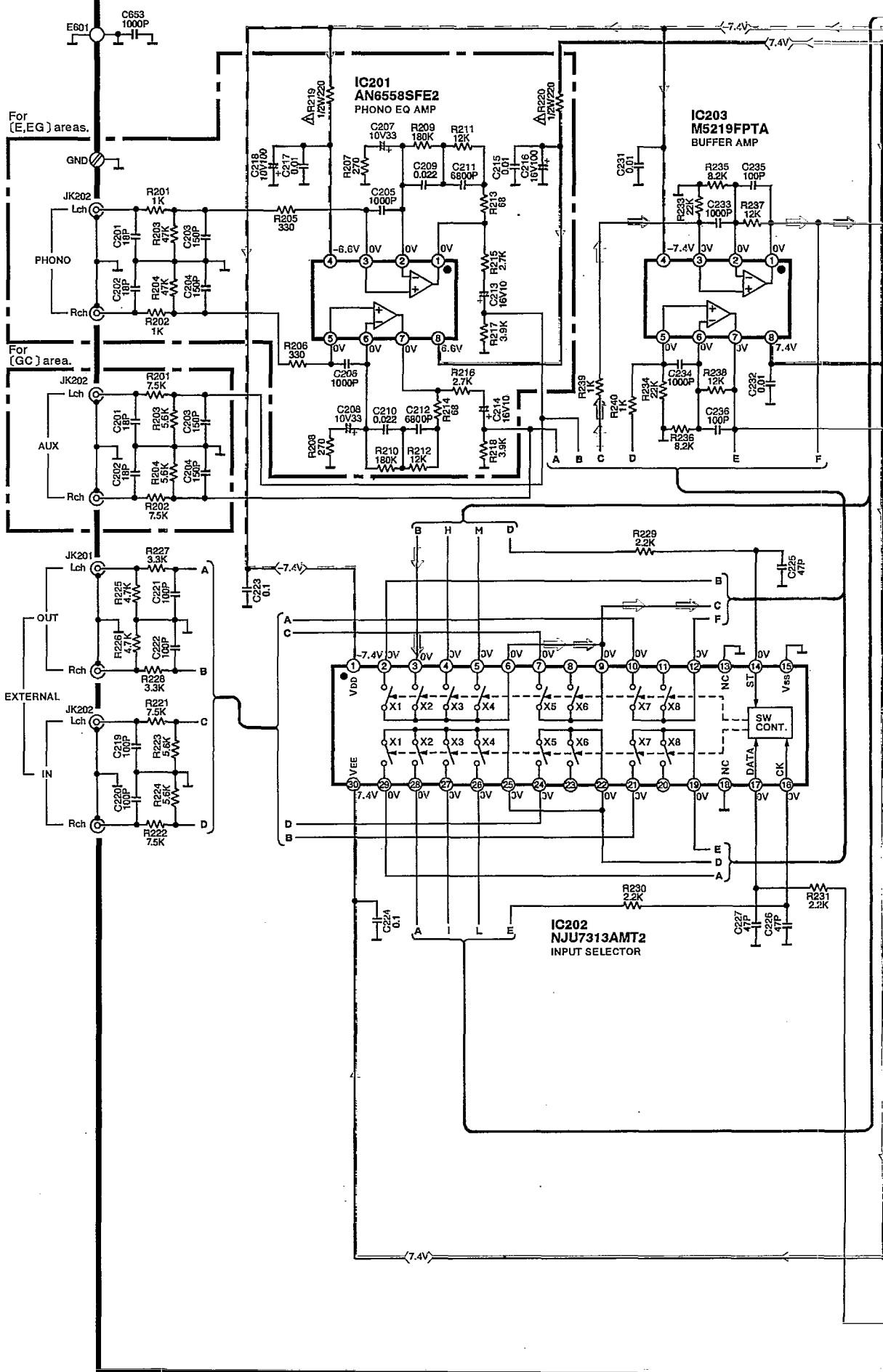
: Positive voltage line    
  : Negative voltage line    
 ⇨ : FM signal line    
 ⇨ : AM (LW/MW) signal line



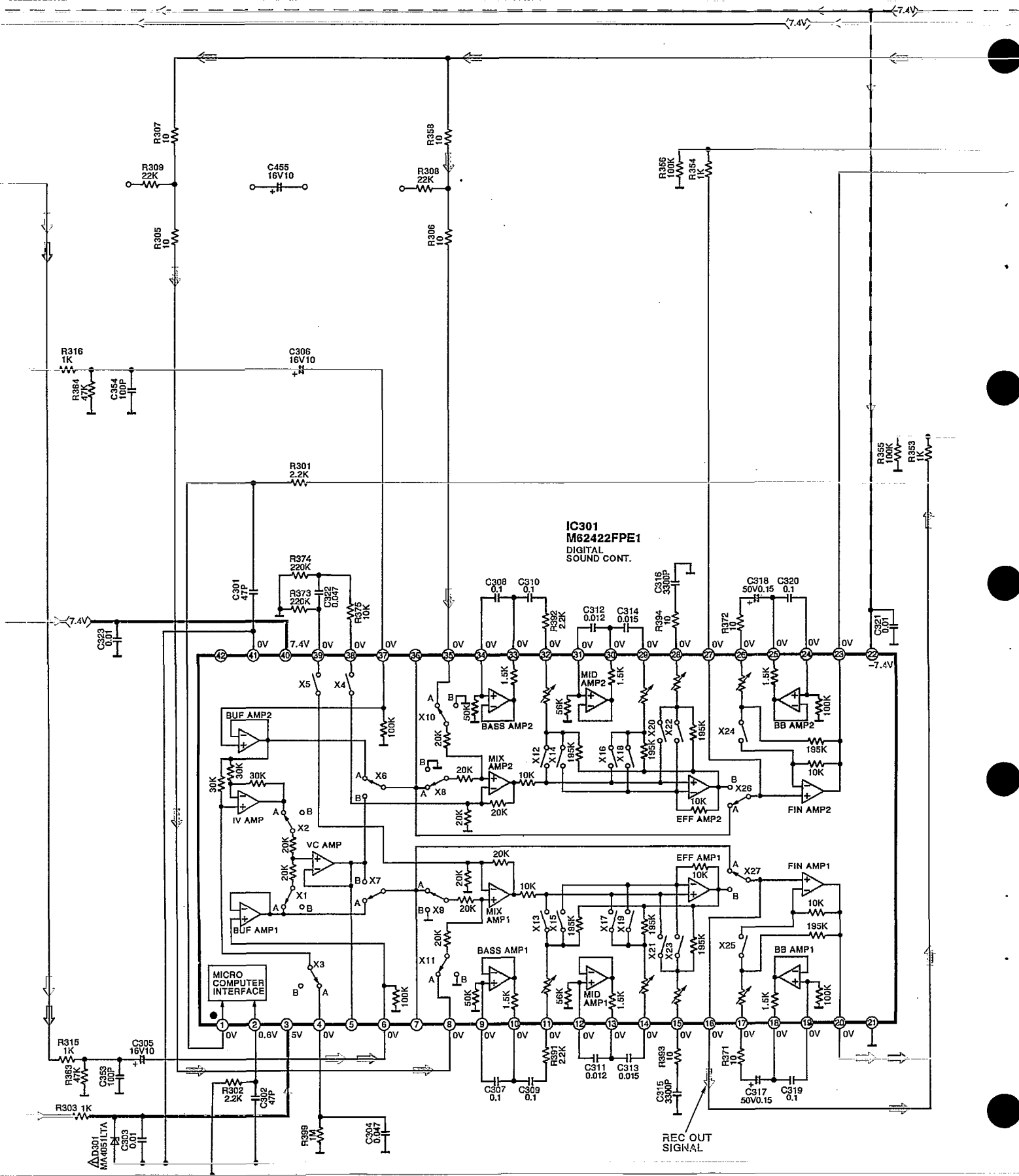
To MAIN CIRCUIT (CN901A) on page 19

To MAIN CIRCUIT (CN902A) on page 18

**C** MAIN CIRCUIT (P.C.Board: on page 21)

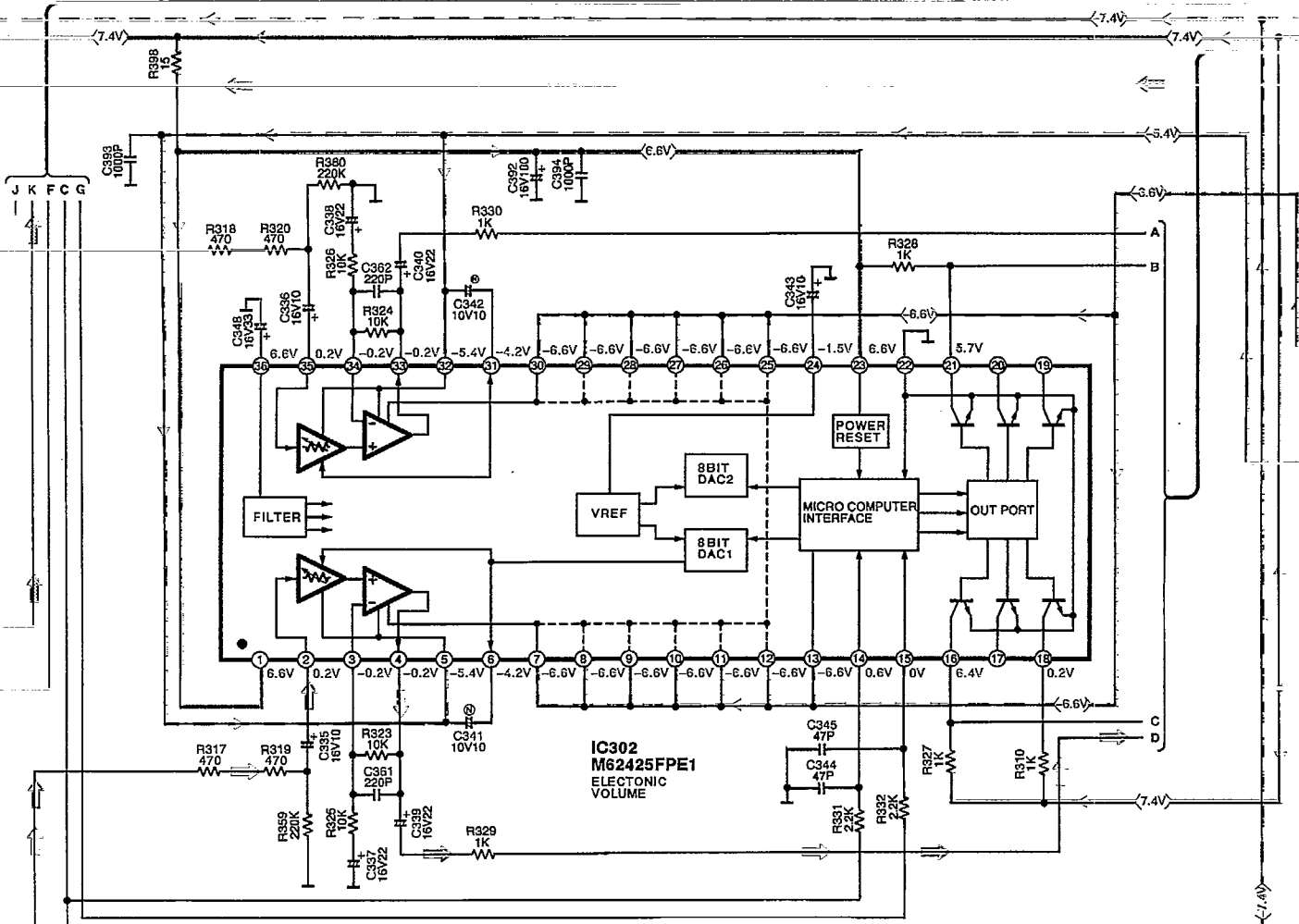


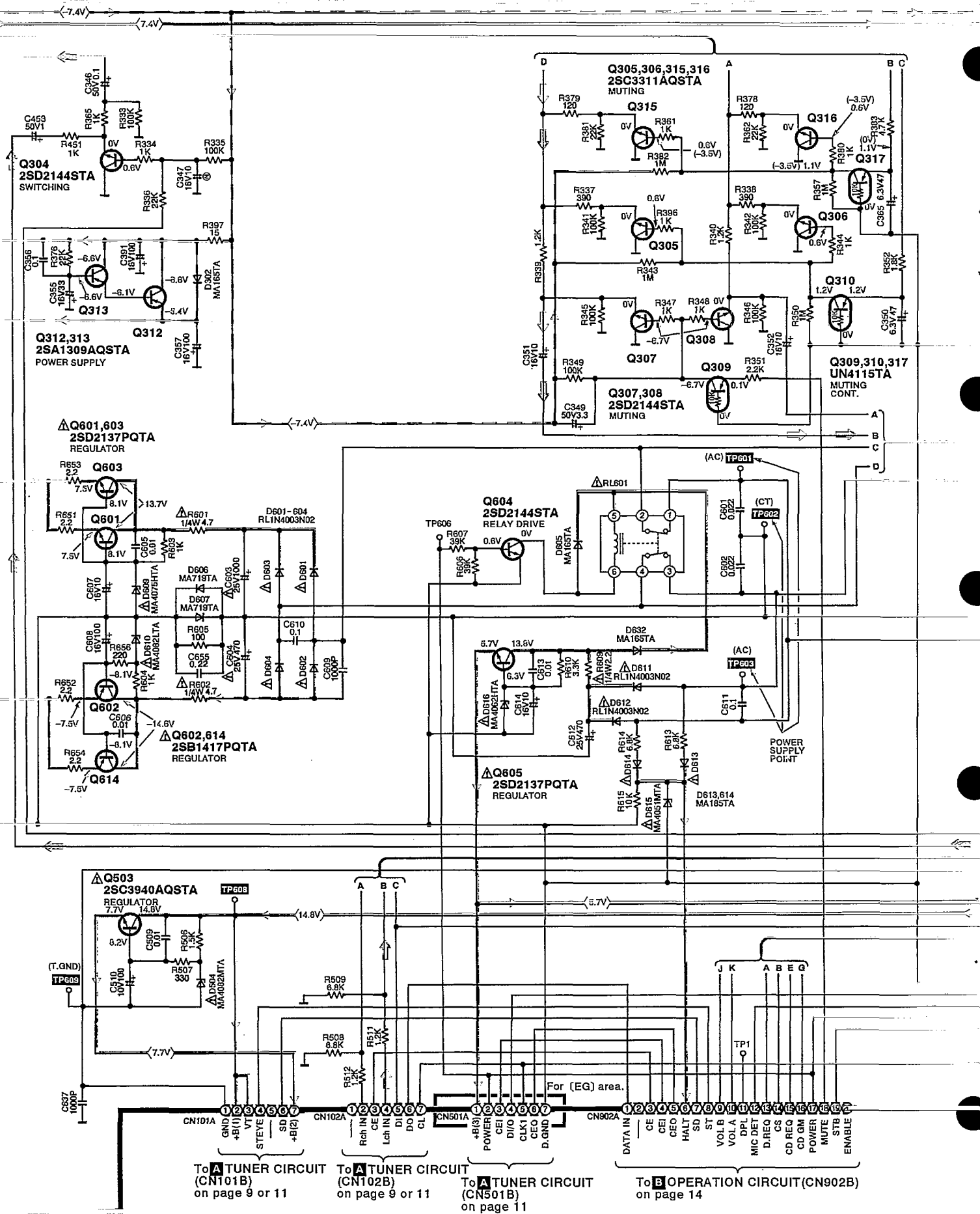
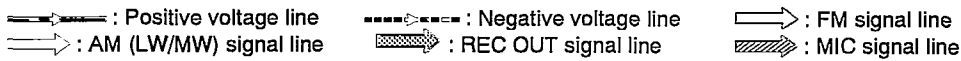
: Positive voltage line  
 : Negative voltage line  
 : FM signal line  
 : AM (LW/MW) signal line  
 : REC OUT signal line  
 : MIC signal line



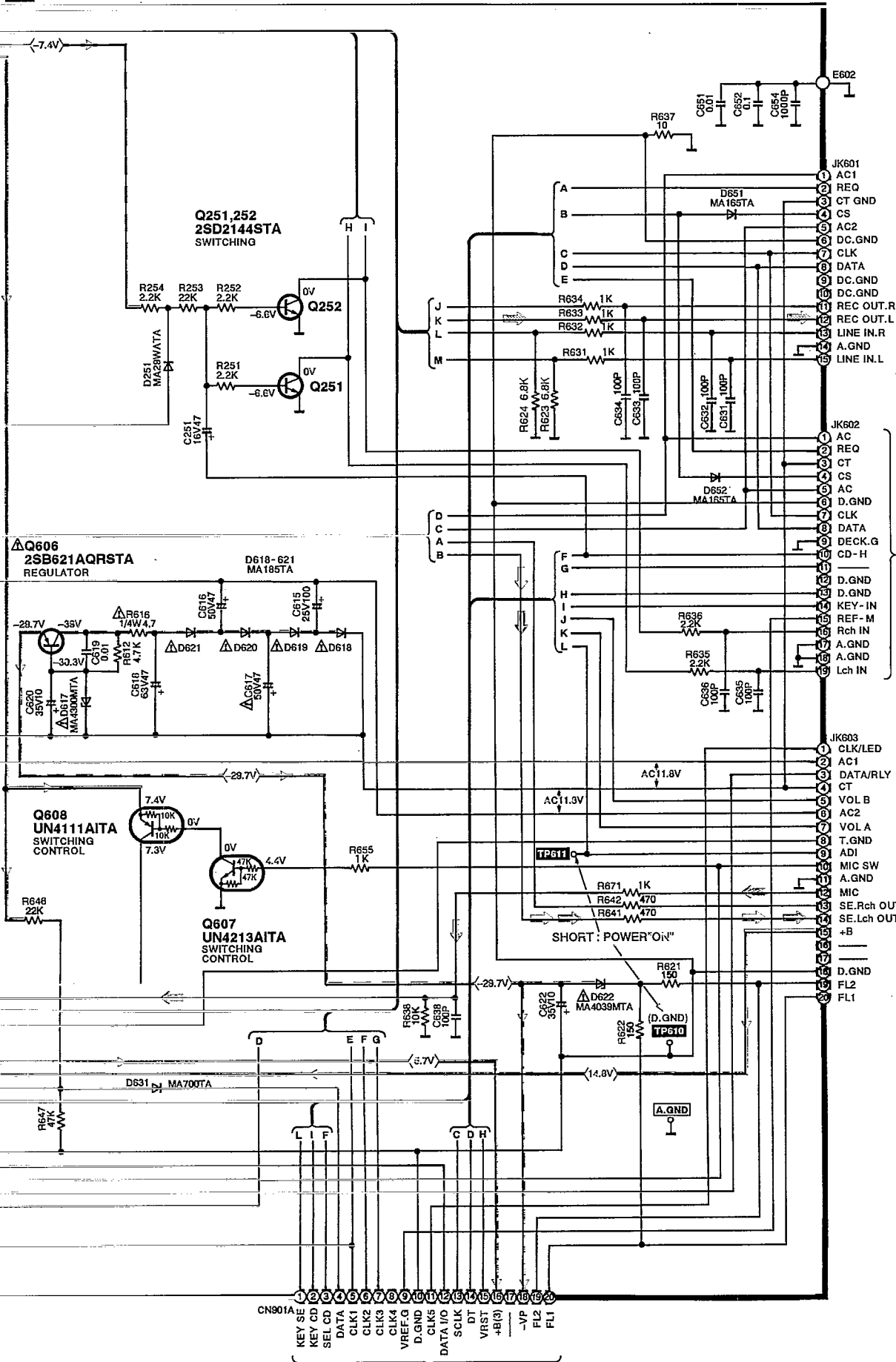


C MAIN CIRCUIT (P.C.Board: on page 21)





C MAIN CIRCUIT (P.C.Board: on page 21)



To RS-CH730 :JK601 on page 18

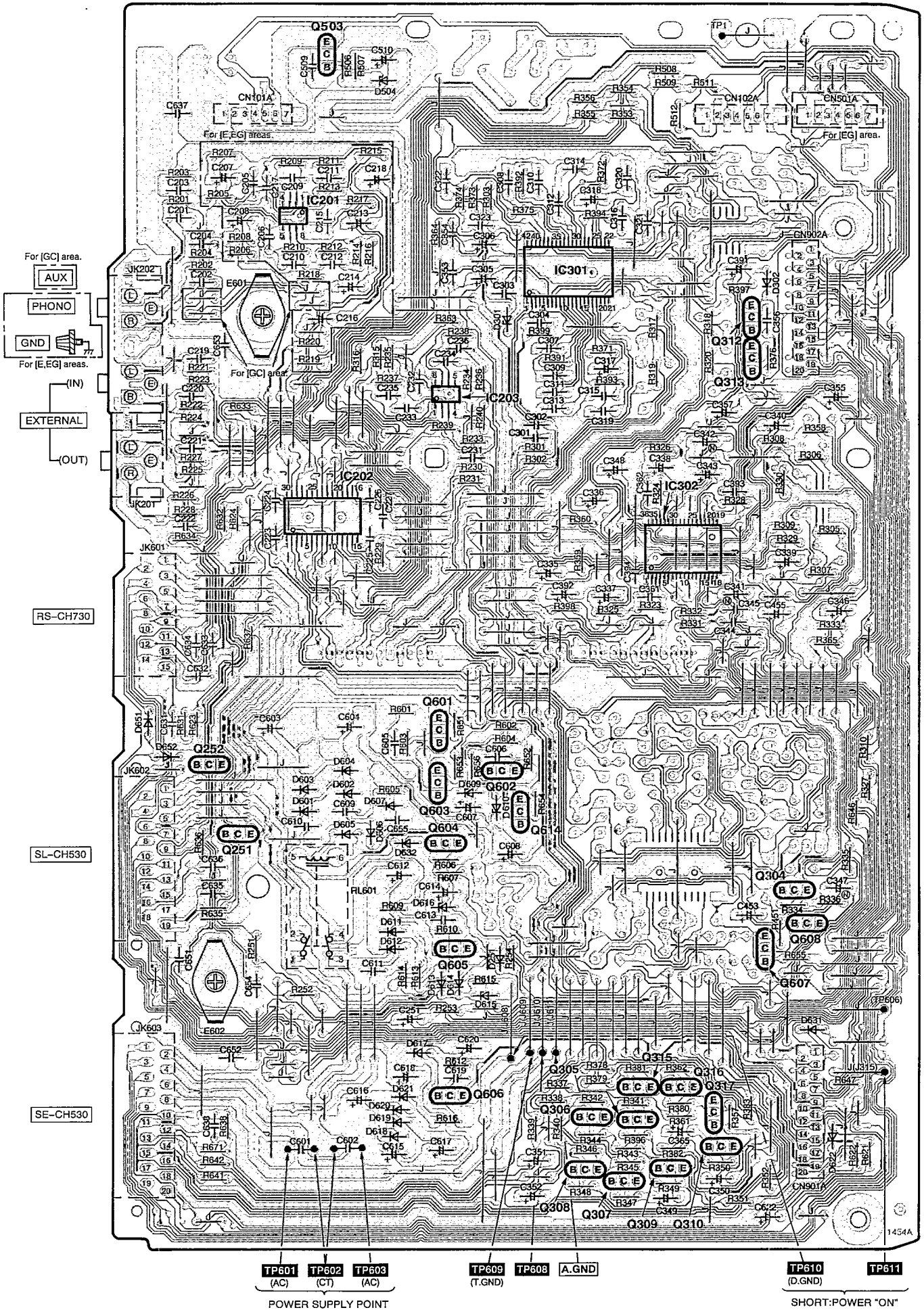
To SL-CH530 :JK401 on page 15

To SE-CH530 :JK201 on page 12

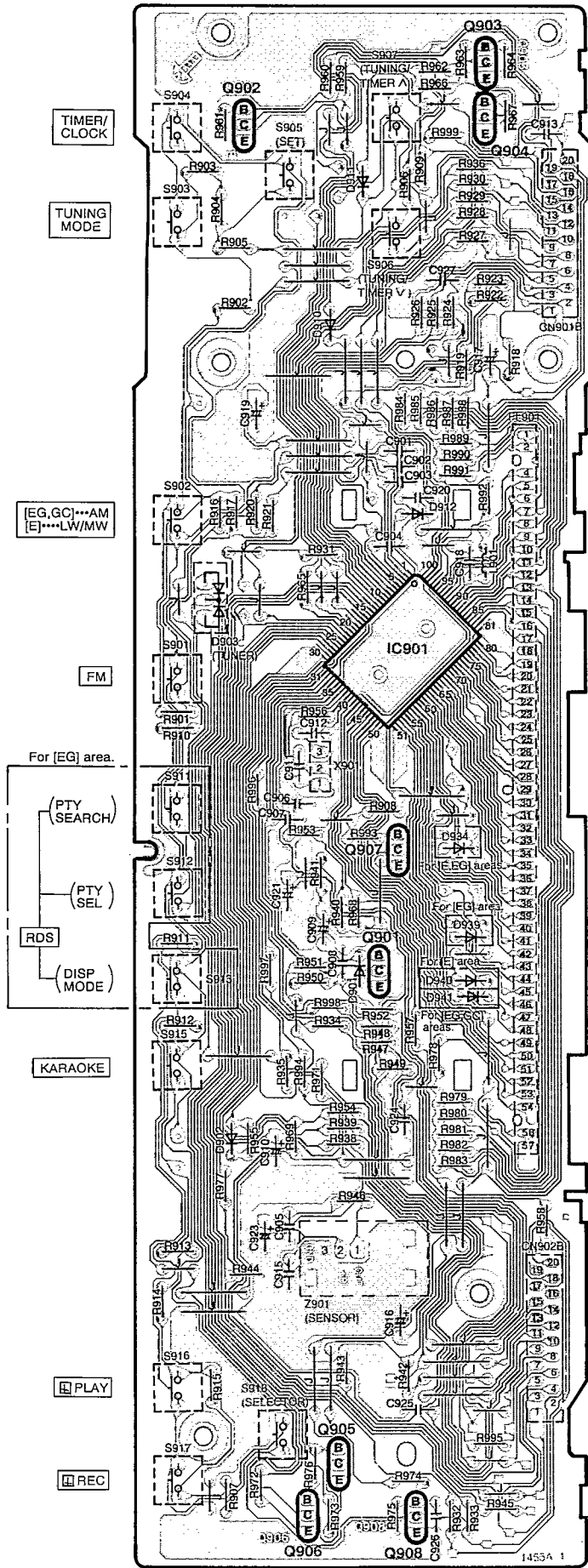
To OPERATION CIRCUIT(CN901B) on page 14



**C** MAIN P.C.B. (REP2120A-M...[E]  
REP2120B-M...[EG]  
REP2120C-M...[GC])

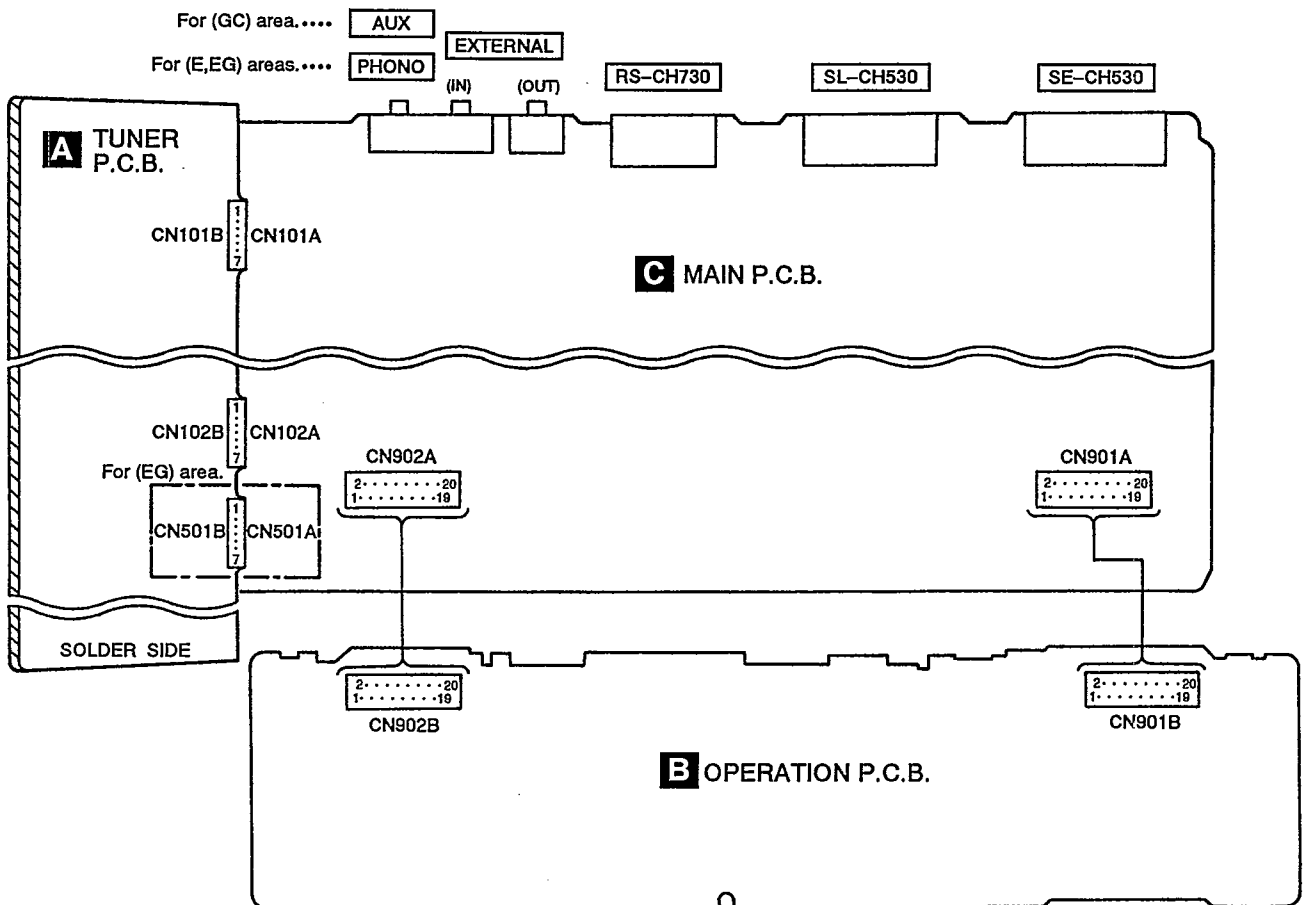


**B** OPERATION P.C.B. (REP2150A-S...[E]  
REP2150B-S...[EG]  
REP2150C-S...[GC])

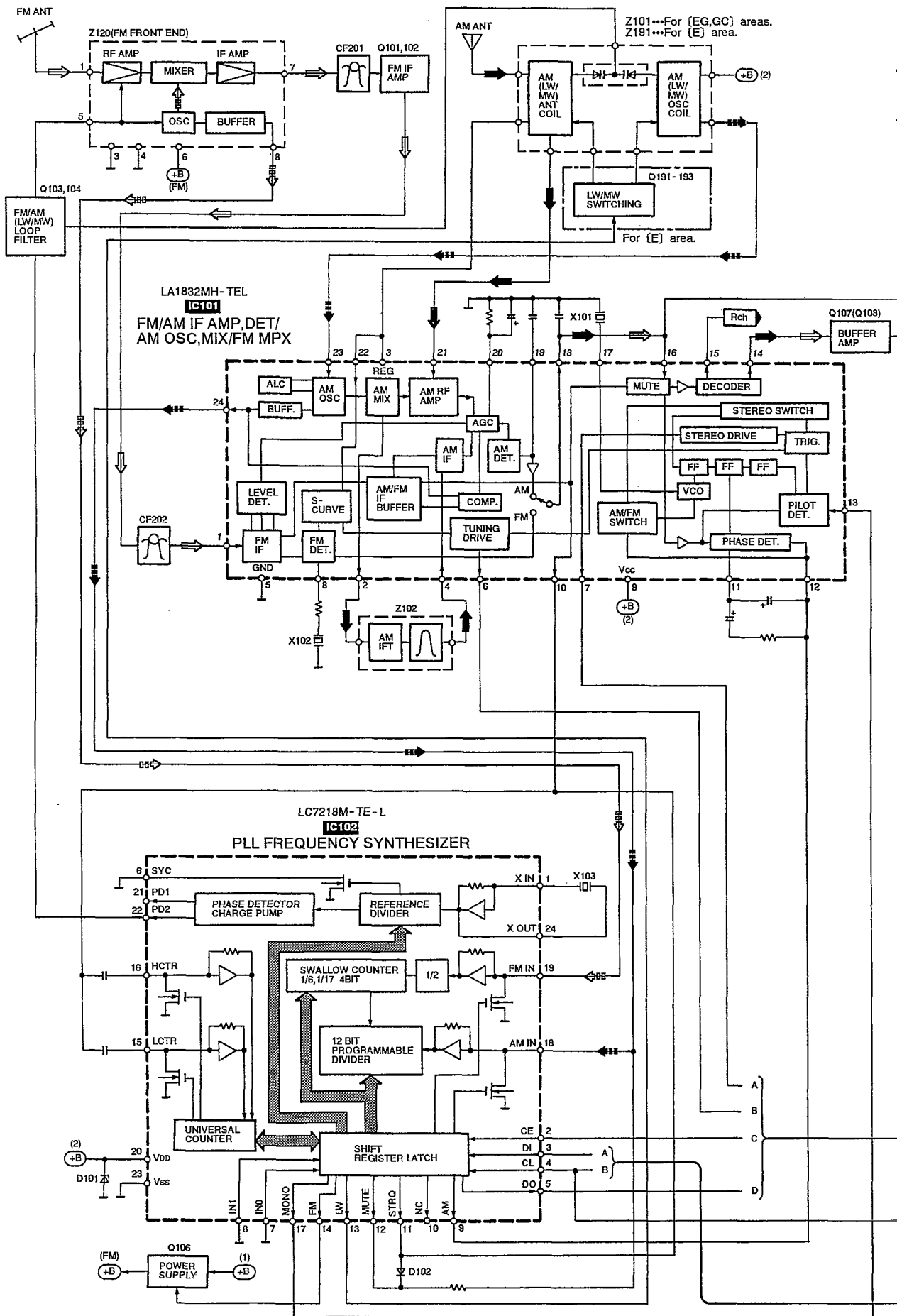


|             |              |             |              |         |                     |                     |                  |              |
|-------------|--------------|-------------|--------------|---------|---------------------|---------------------|------------------|--------------|
| <p>No.1</p> | M5219FPTA    | 8 Pin       | LA1832MH-TEL | 24 Pin  | <p>M38197MA113F</p> | 2SB621A-R           | <p>2SB621A-R</p> | 2SC3940AQSTA |
|             | AN6558SFE2   | 8 Pin       | LC7218M-TE-L | 24 Pin  |                     | <p>2SC3940AQSTA</p> |                  |              |
|             | LC7073M-TLM  | 18 Pin      | LC65104A4F75 | 30 Pin  |                     |                     |                  |              |
|             | LA2230M-TE-L | 24 Pin      | NJU7313AMT2  | 30 Pin  |                     |                     |                  |              |
|             |              |             | M62425FPE1   | 36 Pin  |                     |                     |                  |              |
|             |              | M62422FPE1  | 42 Pin       |         |                     |                     |                  |              |
| 2SD2144S    | 2SB1417PQTA  | 2SD2137PQTA |              |         | UN411FTA            | 2SA1309A-R          | MA165            |              |
|             |              |             |              |         | UN4111              | 2SC2785FE           | MA700TA          |              |
|             |              |             |              |         | UN4115              | 2SC2787L            | MA29WATA         |              |
|             |              |             |              |         | UN4119              | 2SC3311A-Q          |                  |              |
|             |              |             |              |         | UN4211              | 2SC3311ARSTA        | Anode            |              |
|             |              |             |              |         | UN4213AITA          |                     |                  |              |
|             |              |             |              |         | UN4214TA            |                     |                  |              |
| RL1N4003N02 |              |             | MA4039MTA    | MA4300M | 1SS291TA            | SPR505MDTT          |                  |              |
|             |              |             | MA4051-L     |         | MA185TA             |                     |                  |              |
|             |              |             | MA4051MTA    |         | MA719TA             |                     |                  |              |
|             |              |             | MA4062-H     |         |                     |                     |                  |              |
|             |              |             | MA4075HTA    |         |                     |                     |                  |              |
|             |              |             | MA4082LTA    |         |                     |                     |                  |              |
|             |              |             | MA4082MTA    |         |                     |                     |                  |              |

### Wiring Connection Diagram

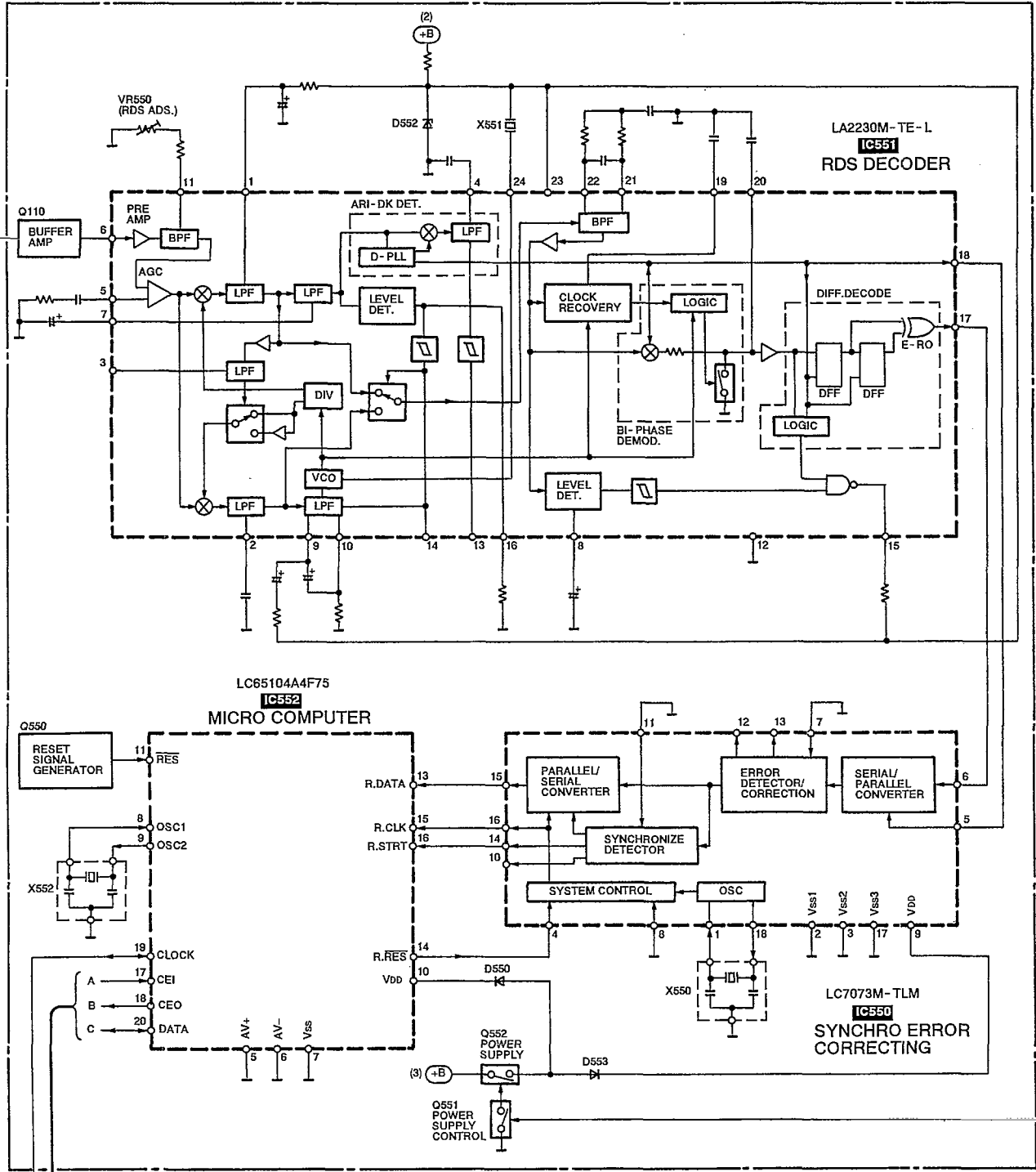


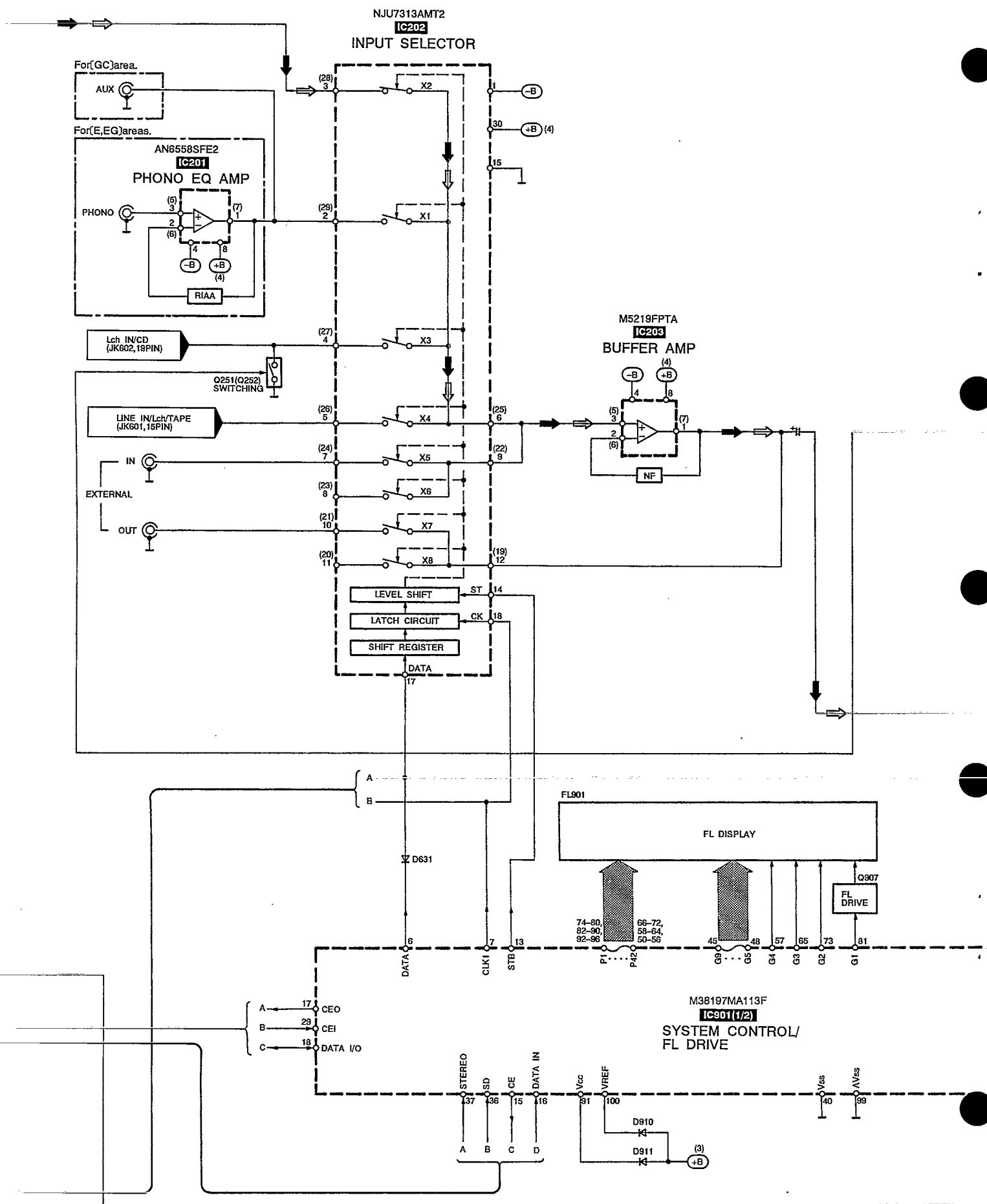
# Block Diagram

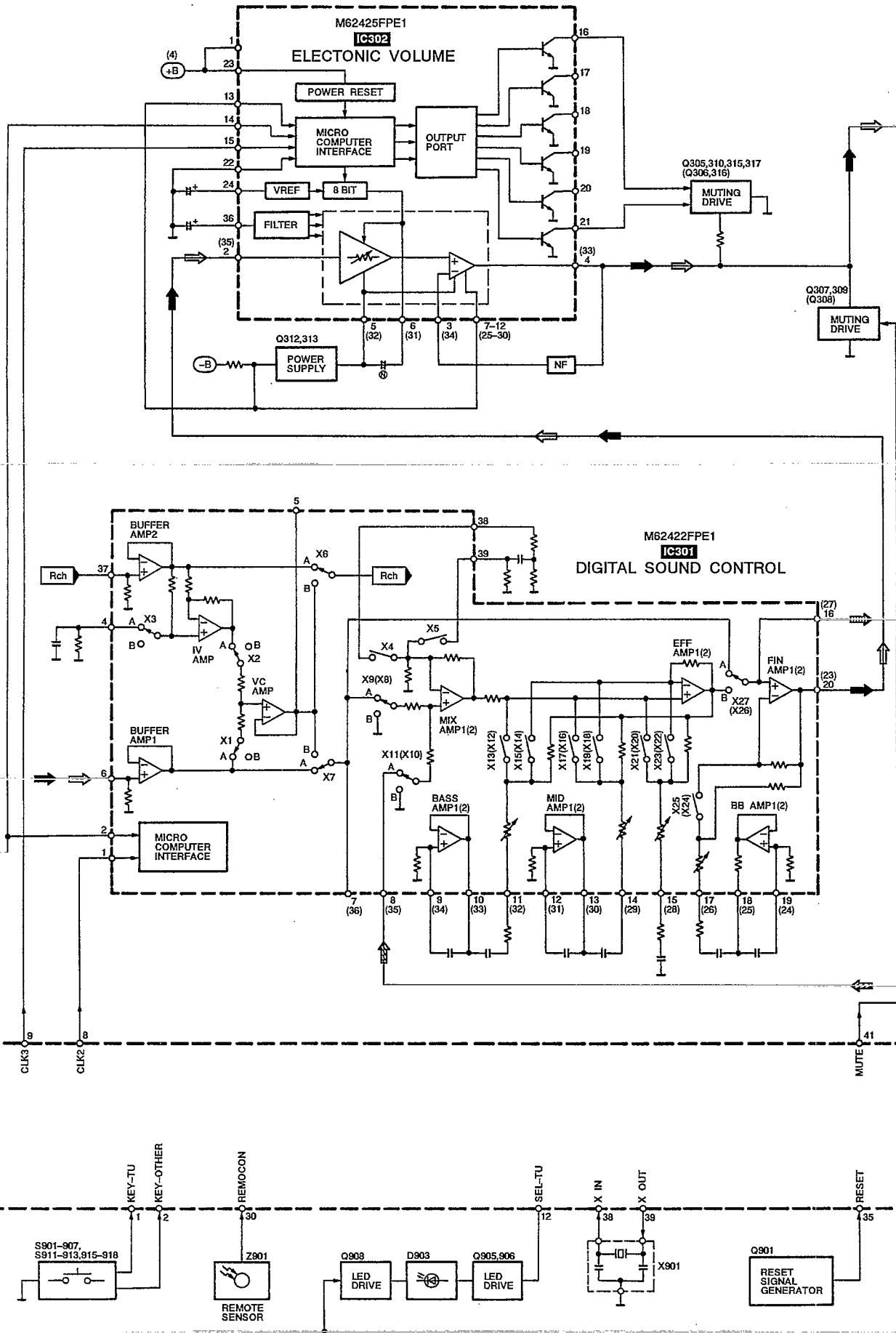


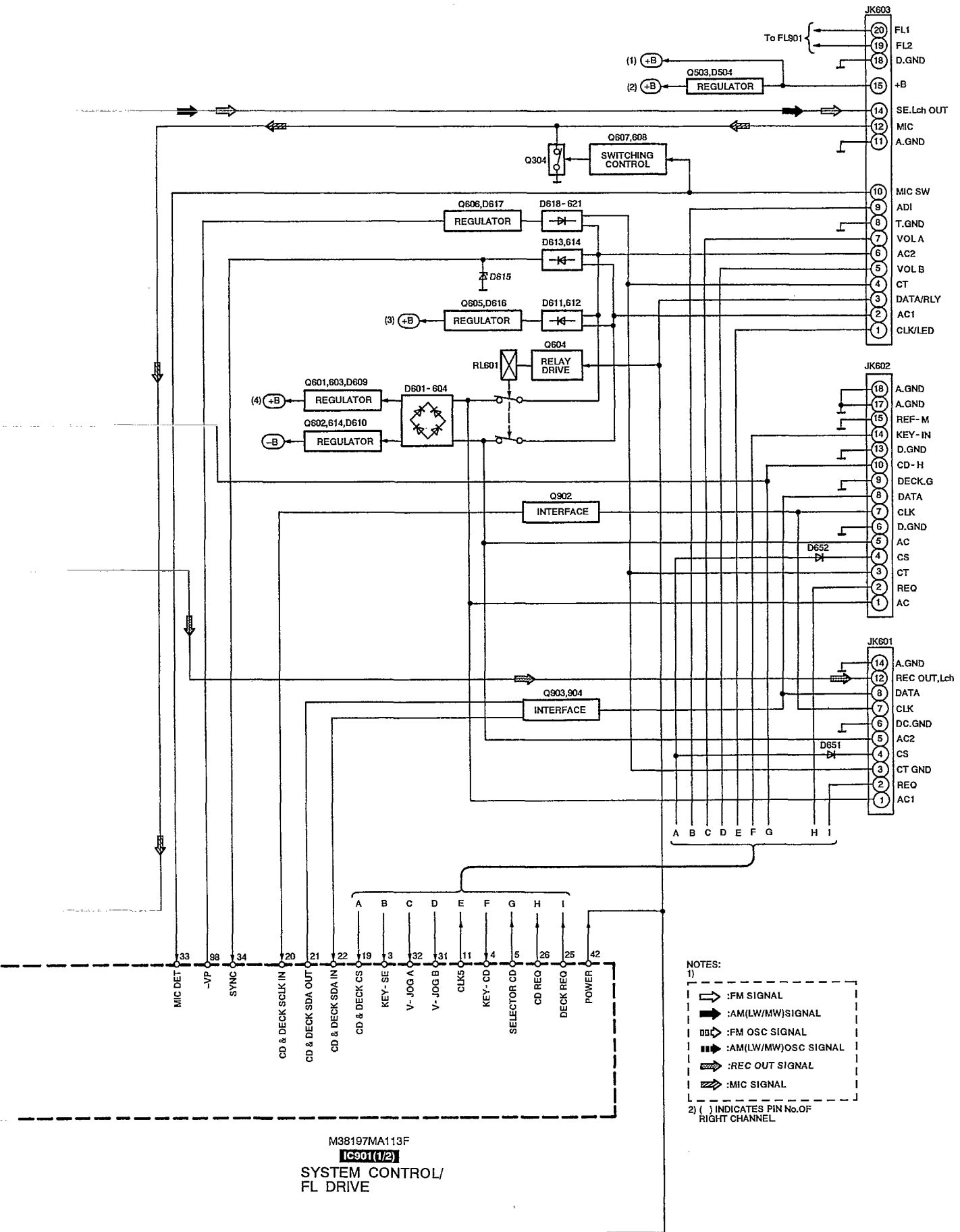


For (EG) area.









## ■ Function of IC Terminals

### ● IC901 (M38197MA113F)

| Pin No. | Terminal Name     | I/O | Function   |
|---------|-------------------|-----|--|
| 1       | KEY_TU            | I   | Tuner operation switch signal input  |
| 2       | KEY_OTHER         | I   | Other operation switch signal input  |
| 3       | KEY_SE            | I   | SE-CH530 operation switch signal input                                     |
| 4       | KEY_CD            | I   | SL-CH530 operation switch signal input                                     |
| 5       | SELECTOR          | O   | SL-CH530 power control signal output                                       |
| 6       | DATA              | O   | Data output for NJU7313, M62422, M62425, LC7218, LA2785, LV1011 and BU2040 |
| 7       | CLK1              | O   | Clock output for NJU7313, LC7218, LA2785, LV1011 and LC65104               |
| 8       | CLK2              | O   | Clock output for M62422 (sound controller)                                 |
| 9       | CLK3              | O   | Clock output for M62425 (main volume)                                      |
| 10      | CLK4              | O   | Not used   |
| 11      | CLK5              | O   | LED (D601, D602) (SE-CH530) drive signal output                            |
| 12      | SEL_TU            | O   | LED (D903-TUNER ON) drive signal output                                    |
| 13      | STB               | O   | STB signal output for NJU7313  |
| 14      | ENABLE            | O   | Enable signal output for LA2785 and LV1011                                 |
| 15      | CE                | O   | Chip enable signal output for LC7218                                       |
| 16      | DATA IN           | I   | Data input for LC7218  |
| 17      | CEO               | O   | Serial data output terminal for (EG) area only                             |
| 18      | DATA I/O          | I/O | Serial data input/output terminal for (EG) area only                       |
| 19      | CD & DECK CS      | I   | Serial data communication starting signal input                            |
| 20      | CD & DECK SCLK IN | I   | Serial clock input   |
| 21      | CD & DECK SDA OUT | O   | Serial data output   |
| 22      | CD & DECK SDA IN  | I   | Serial data input  |
| 23      | V RST             | —   | Not used   |
| 24      | CDGM              | —   | Not used   |
| 25      | DECK REQ          | O   | RS-CH730 request signal output   |
| 26      | CD REQ            | O   | SL-CH530 request signal output   |
| 27      | CHECK             | I/O | Clock check signal   |
| 28      | CR TIMER          | I/O | Capacitor and resistor oscillation terminal                                |
| 29      | CEI               | I   | Serial data input terminal for (EG) area only                              |
| 30      | REMOCON           | I   | Remote control signal input  |
| 31      | V_JOGB            | I   | Volume control signal input  |
| 32      | V-JOGA            | I   |  |

| Pin No. | Terminal Name | I/O | Function                                  |
|---------|---------------|-----|---|
| 33      | MIC DET       | I   | Microphone connecting detect signal input |
| 34      | SYNC          | I   | AC power source input terminal            |
| 35      | RESET         | I   | Reset signal input                        |
| 36      | SD            | I   | SD signal input for tuner circuit         |
| 37      | STEREO        | I   | STEREO signal input for tuner circuit     |
| 38      | XIN           | I   | Connected to the ceramic oscillator       |
| 39      | XOUT          | O   |   |
| 40      | Vss           | —   | GND terminal                              |
| 41      | MUTE          | O   | Muting signal output                      |
| 42      | POWER         | O   | Power control signal output               |
| 43      | TU_JOGB       | I   | Not used                                  |
| 44      | TU_JOGA       | I   |   |
| 45-49   | G9 ~ G5       | O   | Grid signal output                        |
| 50-56   | P42 ~ P36     | O   | Segment signal output                     |
| 57      | G4            | O   | Grid signal output                        |
| 58-64   | P35 ~ P29     | O   | Segment signal output                     |
| 65      | G3            | O   | Grid signal output                        |
| 66-72   | P28 ~ P22     | O   | Segment signal output                     |
| 73      | G2            | O   | Grid signal output                        |
| 74-80   | P21 ~ P15     | O   | Segment signal output                     |
| 81      | G1            | O   | Grid signal output                        |
| 82-90   | P14 ~ P6      | O   | Segment signal output                     |
| 91      | VCC           | —   | Power supply (+5V)                        |
| 92-96   | P5 ~ P1       | O   | Segment signal output                     |
| 97      | CS            | I   | Scan signal input                         |
| 98      | -VP           | —   | Negative power supply                     |
| 99      | AVSS          | —   | Connect to GND                            |
| 100     | VREF          | —   | Reference voltage input                   |

## ● IC552 (LC65104A4F75) for (EG) area only

| Pin No. | Terminal Name | I/O | Function                              |
|---------|---------------|-----|---------------------------------------|
| 1       | PB0           | —   | Not used                              |
| 2       | PB1           | —   | Not used                              |
| 3       | PB2           | —   | Not used                              |
| 4       | PB3           | —   | Not used                              |
| 5       | AV +          | —   | Not used                              |
| 6       | AV -          | —   | Not used                              |
| 7       | VSS           | —   | GND terminal                          |
| 8       | OSC1          | I   | Oscillating terminal (f = 4 MHz)      |
| 9       | OSC2          | O   | Oscillating terminal (f = 4 MHz)      |
| 10      | VDD           | —   | +5 V                                  |
| 11      | /RES          | I   | Reset signal input                    |
| 12      | TEST          | —   | Not used                              |
| 13      | R. DATA       | I   | RDS data signal input                 |
| 14      | /R. RST       | O   | RDS reset signal output               |
| 15      | R. CLK        | I   | RDS clock signal input                |
| 16      | R. STRT       | I   | RDS start signal input                |
| 17      | CEI           | I   | Serial data input detection terminal  |
| 18      | CEO           | O   | Serial data output detection terminal |
| 19      | CLK           | I/O | Serial clock input/output terminal    |
| 20      | DATA          | I/O | Serial data input/output terminal     |
| 21      | PD0           | —   | Not used                              |
| 22      | PD1           | —   | Not used                              |
| 23      | PD2           | —   | Not used                              |
| 24      | PD3           | —   | Not used                              |
| 25      | PE0           | —   | Not used                              |
| 26      | PE1           | —   | Not used                              |
| 27      | SSL           | —   | Not used                              |
| 28      | PA1           | —   | Not used                              |
| 29      | PA2           | —   | Not used                              |
| 30      | PA3           | —   | Not used                              |

# 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.

| Ref. No.  | Part No.     | Part Name & Description      | Remarks  | Ref. No.  | Part No.    | Part Name & Description  | Remarks       |
|-----------|--------------|------------------------------|----------|-----------|-------------|--------------------------|---------------|
|           |              | INTEGRATED CIRCUIT(S)        |          | Q902-904  | 2SC3311A-Q  | TRANSISTOR               |               |
|           |              |                              |          | Q905      | UN411FTA    | TRANSISTOR               |               |
|           |              |                              |          | Q906      | 2SC3311A-Q  | TRANSISTOR               |               |
| IC101     | LA1832MH-TEL | IC, FM/AM IF AMP.            |          | Q907      | UN4119      | TRANSISTOR               |               |
| IC102     | LC7218M-TE-L | IC, PLL FREQ. SYNTHESIZER    |          | Q908      | 2SD2144S    | TRANSISTOR               |               |
| IC201     | AN6558SFE2   | IC, PHONO EQ AMP.            | (E, EG)  |           |             | DIODE(S)                 |               |
| IC202     | NJU7313AMT2  | IC, INPUT SELECTOR           |          |           |             |                          |               |
| IC203     | M5219FPTA    | IC, BUFFER AMP               |          | D101      | MA4051MTA   | DIODE                    | $\Delta$      |
| IC301     | M62422FPE1   | IC, DIGITAL SOUND CONT       |          | D102      | MA165       | DIODE                    |               |
| IC302     | M62425FPE1   | IC, ELECTRONIC VOLUME        |          | D251      | MA29WATA    | DIODE                    |               |
| IC550     | LC7073M-TLM  | IC, SYNCHRO ERROR CORRECTION | (EG)     | D301      | MA4051-L    | DIODE                    | $\Delta$      |
| IC551     | LA2230M-TE-L | IC, RDS DECODER              | (EG)     | D302      | MA165       | DIODE                    |               |
| IC552     | LC65104AAF75 | IC, MICRO COMPUTER           | (EG)     | D504      | MA4082MTA   | DIODE                    | $\Delta$      |
| IC901     | M38197MA113F | IC, SYSTEM CONTROL/FL DRIVE  |          | D550      | MA165       | DIODE                    | (EG)          |
|           |              | TRANSISTOR(S)                |          | D551      | MA165       | DIODE                    | (EG)          |
|           |              |                              |          | D552      | MA4051MTA   | DIODE                    | (EG) $\Delta$ |
| Q101, 102 | 2SC2787L     | TRANSISTOR                   |          | D553      | MA165       | DIODE                    | (EG)          |
| Q103, 104 | 2SC2785FE    | TRANSISTOR                   |          | D601-604  | RL1N4003N02 | DIODE                    | $\Delta$      |
| Q106      | UN411FTA     | TRANSISTOR                   | (E, GC)  | D605      | MA165       | DIODE                    |               |
| Q106      | UN4111AITA   | TRANSISTOR                   | (EG)     | D606, 607 | MA719TA     | DIODE                    |               |
| Q107, 108 | 2SC3311ARSTA | TRANSISTOR                   |          | D609      | MA4075HTA   | DIODE                    | $\Delta$      |
| Q110      | 2SC3311ARSTA | TRANSISTOR                   | (EG)     | D610      | MA4082LTA   | DIODE                    | $\Delta$      |
| Q191-193  | 2SC3311ARSTA | TRANSISTOR                   | (E)      | D611, 612 | RL1N4003N02 | DIODE                    | $\Delta$      |
| Q251, 252 | 2SD2144S     | TRANSISTOR                   |          | D613, 614 | MA185TA     | DIODE                    | $\Delta$      |
| Q304      | 2SD2144S     | TRANSISTOR                   |          | D615      | MA4051MTA   | DIODE                    | $\Delta$      |
| Q305, 306 | 2SC3311A-Q   | TRANSISTOR                   |          | D616      | MA4062-H    | DIODE                    | $\Delta$      |
| Q307, 308 | 2SD2144S     | TRANSISTOR                   |          | D617      | MA4300M     | DIODE                    | $\Delta$      |
| Q309, 310 | UN4115       | TRANSISTOR                   |          | D618-621  | MA185TA     | DIODE                    | $\Delta$      |
| Q312, 313 | 2SA1309A-R   | TRANSISTOR                   |          | D622      | MA4039MTA   | DIODE                    | $\Delta$      |
| Q315, 316 | 2SC3311A-Q   | TRANSISTOR                   |          | D631      | MA700TA     | DIODE                    |               |
| Q317      | UN4115       | TRANSISTOR                   |          | D632      | MA165       | DIODE                    |               |
| Q503      | 2SC3940AQSTA | TRANSISTOR                   | $\Delta$ | D651, 652 | MA165       | DIODE                    |               |
| Q550      | UN4211       | TRANSISTOR                   | (EG)     | D901, 902 | MA165       | DIODE                    |               |
| Q551      | UN4211       | TRANSISTOR                   | (EG)     | D903      | SPR505MDTT  | LED                      |               |
| Q552      | UN4111       | TRANSISTOR                   | (EG)     | D910-912  | 1SS291TA    | DIODE                    |               |
| Q601      | 2SD2137PQTA  | TRANSISTOR                   | $\Delta$ | D934      | MA165       | DIODE                    | (E, EG)       |
| Q602      | 2SB1417PQTA  | TRANSISTOR                   | $\Delta$ | D939      | MA165       | DIODE                    | (EG)          |
| Q603      | 2SD2137PQTA  | TRANSISTOR                   | $\Delta$ | D940      | MA165       | DIODE                    | (E)           |
| Q604      | 2SD2144S     | TRANSISTOR                   |          | D941      | MA165       | DIODE                    | (EG, GC)      |
| Q605      | 2SD2137PQTA  | TRANSISTOR                   | $\Delta$ |           |             | COMPONENT COMBINATION(S) |               |
| Q606      | 2SB621A-R    | TRANSISTOR                   | $\Delta$ |           |             |                          |               |
| Q607      | UN4213AITA   | TRANSISTOR                   |          | Z101      | RLA2Z002M-T | COMPONENT COMBINATION    | (EG, GC)      |
| Q608      | UN4111       | TRANSISTOR                   |          | Z102      | RLI2Z006M-T | COMPONENT COMBINATION    |               |
| Q614      | 2SB1417PQTA  | TRANSISTOR                   | $\Delta$ | Z120      | RAL0006     | FM FRONT END             | (E, GC)       |
| Q901      | UN4214TA     | TRANSISTOR                   |          |           |             |                          |               |

| Ref. No.   | Part No.     | Part Name & Description | Remarks | Ref. No.  | Part No.     | Part Name & Description    | Remarks |
|------------|--------------|-------------------------|---------|-----------|--------------|----------------------------|---------|
| Z120       | RAL0019      | FM FRONT END            | (EG)    |           |              |                            |         |
| Z191       | RLA6Z005M-T  | COMPONENT COMBINATION   | (E)     |           |              | CONNECTOR(S)               |         |
| Z901       | RCDHC-278N   | REMOTE SENSOR           |         |           |              |                            |         |
|            |              | COIL(S)                 |         | CN101A    | RJT057W007-1 | CONNECTOR(7P)              |         |
| L101       | ELESNR68MA   | COIL                    |         | CN101B    | RJU057W007   | SOCKET(7P)                 |         |
| L103       | ELEXTR47MA9  | COIL                    |         | CN102A    | RJT057W007-1 | CONNECTOR(7P)              |         |
| L104       | ELEXT1R0KA9  | COIL                    | (EG)    | CN102B    | RJU057W007   | SOCKET(7P)                 |         |
| L105, 106  | ELELN822KL   | COIL                    |         | CN501A    | RJT057W007-1 | CONNECTOR(7P)              | (EG)    |
| L151       | SLM1B10M-1M  | COIL                    | (EG)    | CN501B    | RJU057W007   | SOCKET(7P)                 | (EG)    |
| L191       | ELESNR68MA   | COIL                    |         | CN901A    | RJS1A6820    | CONNECTOR(20P)             |         |
| L550       | ELEXT101KA9  | COIL                    | (EG)    | CN902A    | RJS1A6820    | CONNECTOR(20P)             |         |
| L551       | ELEXT101KA9  | COIL                    | (EG)    | CN901B    | RJS1A6820    | CONNECTOR(20P)             |         |
| L552       | ELEXT101KA9  | COIL                    | (EG)    | CN902B    | RJS1A6820    | CONNECTOR(20P)             |         |
| L901       | RLQA100JT-Y  | COIL                    |         |           |              | EARTH TERMINAL(S)          |         |
|            |              | FILTER(S)               |         | E601, 602 | SNE1D04-2    | GND PLATE                  |         |
| CF201, 202 | RLFFETWND01M | CERAMIC FILTER          | (E, GC) |           |              | RELAY                      |         |
| CF201, 202 | RLFFETMGD01L | CERAMIC FILTER          | (EG)    | RL601     | RSY0017M-0   | RELAY                      | △       |
|            |              | OSCILLATOR(S)           |         |           |              | JACK(S)                    |         |
| X101       | RSXZ456KM07M | OSCILLATOR(456KHz)      |         | JK101     | RJH5404M     | EXT ANT                    | (GC)    |
| X102       | RLFDGT05DD   | OSCILLATOR(10. 65MHz)   |         | JK101     | RJH5210M     | EXT ANT                    | (E, EG) |
| X103       | RSXC7M20S05T | OSCILLATOR(7. 2MHz)     |         | JK201     | SJF3068-7N   | EXT OUT                    |         |
| X550       | RVBCST4R00MT | OSCILLATOR(4MHz)        | (EG)    | JK202     | SJF3069-5N   | EXT IN/PHONO(AUX)          |         |
| X551       | RSXZ456KM07M | OSCILLATOR(456KHz)      | (EG)    | JK601     | RJT065K15    | CONNECTOR(15P)             |         |
| X552       | RVBCST4R00MT | OSCILLATOR(4MHz)        | (EG)    | JK602     | RJT065K19    | CONNECTOR(19P)             |         |
| X901       | RSXC4M19S02T | OSCILLATOR(4. 19MHz)    |         | JK603     | RJT065K20    | CONNECTOR(20P)             |         |
|            |              | DISPLAY TUBE            |         |           |              | VARIABLE RESISTOR          |         |
| FL901      | RSL0206-F    | DISPLAY TUBE            |         | VR550     | EVNDCBA03B53 | VARIABLE RESISTOR RDS ADJ. | (EG)    |
|            |              | SWITCH(ES)              |         |           |              |                            |         |
| S901       | EVQ21405R    | SW, FM                  |         |           |              |                            |         |
| S902       | EVQ21405R    | SW, AM(MW/LW)           |         |           |              |                            |         |
| S903       | EVQ21405R    | SW, TUNING MODE         |         |           |              |                            |         |
| S904       | EVQ21405R    | SW, TIMER CLOCK         |         |           |              |                            |         |
| S905       | EVQ21405R    | SW, SET                 |         |           |              |                            |         |
| S906       | EVQ21405R    | SW, TUNING/TIMER DOWN   |         |           |              |                            |         |
| S907       | EVQ21405R    | SW, TUNING/TIMER UP     |         |           |              |                            |         |
| S911       | EVQ21405R    | SW, PTY SEARCH          | (EG)    |           |              |                            |         |
| S912       | EVQ21405R    | SW, PTY SEL             | (EG)    |           |              |                            |         |
| S913       | EVQ21405R    | SW, DISP MODE           | (EG)    |           |              |                            |         |
| S915       | EVQ21405R    | SW, KARAOKE             |         |           |              |                            |         |
| S916       | EVQ21405R    | SW, PLAY                |         |           |              |                            |         |
| S917       | EVQ21405R    | SW, REC                 |         |           |              |                            |         |
| S918       | EVQ21405R    | SW, SELECTOR INC        |         |           |              |                            |         |



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

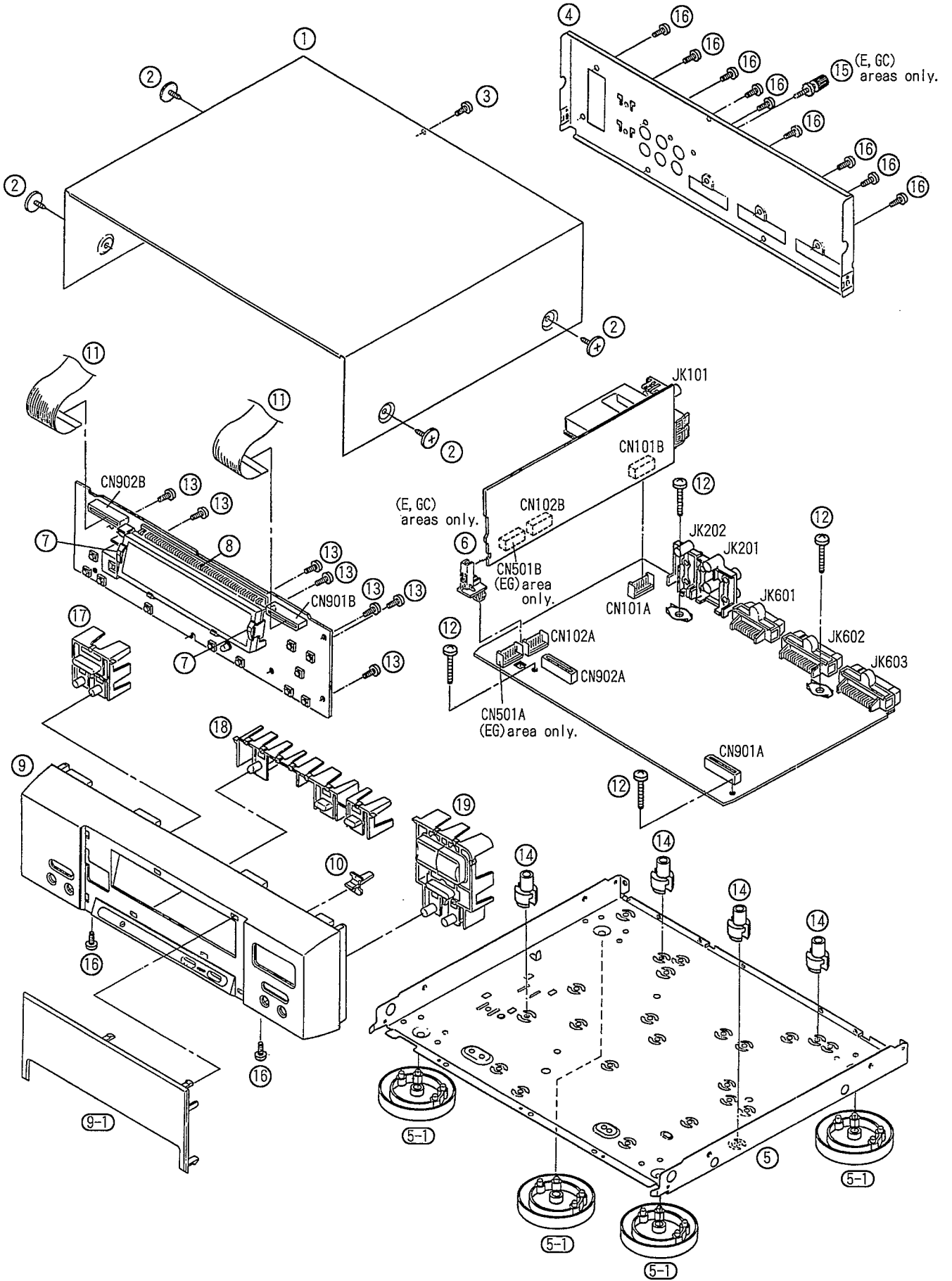
| Ref. No.  | Part No.    | Values & Remarks  | Ref. No.           | Part No.     | Values & Remarks  | Ref. No.  | Part No.    | Values & Remarks |
|-----------|-------------|-------------------|--------------------|--------------|-------------------|-----------|-------------|------------------|
|           |             | RESISTORS         | R193               | ERDS2TJ182   | 1/4W 1.8K (E)     | R350      | ERDS2TJ105T | 1/4W 1M          |
|           |             |                   | R194               | ERDS2TJ122   | 1/4W 1.2K (E)     | R351      | ERDS2TJ222  | 1/4W 2.2K        |
|           |             |                   | R195               | ERDS2TJ222   | 1/4W 2.2K (E)     | R352      | ERDS2TJ182  | 1/4W 1.8K        |
| R103      | ERDS2TJ271  | 1/4W 270 (E, GC)  | R201, 202          | ERDS2TJ102   | 1/4W 1K (E, EG)   | R353, 354 | ERDS2TJ102  | 1/4W 1K          |
| R103      | ERDS2TJ101T | 1/4W 100 (EG)     | R201, 202          | ERDS2TJ752T  | 1/4W 7.5K (GC)    | R355, 356 | ERDS2TJ104  | 1/4W 100K        |
| R104      | ERDS2TJ822  | 1/4W 8.2K (E, GC) | R203, 204          | ERDS2TJ473   | 1/4W 47K (E, EG)  | R357      | ERDS2TJ105T | 1/4W 1M          |
| R104      | ERDS2TJ103T | 1/4W 10K (EG)     | R203, 204          | ERDS2TJ562T  | 1/4W 5.6K (GC)    | R358      | ERDS2TJ100  | 1/4W 10          |
| R105      | ERDS2TJ471  | 1/4W 470          | R205, 206          | ERDS2TJ331   | 1/4W 330 (E, EG)  | R359, 360 | ERDS2TJ224T | 1/4W 220K        |
| R106      | ERDS2TJ474  | 1/4W 470K         | R207, 208          | ERDS2TJ271   | 1/4W 270 (E, EG)  | R361      | ERDS2TJ102  | 1/4W 1K          |
| R107      | ERDS2TJ331  | 1/4W 330          | R209, 210          | ERDS2TJ184T  | 1/4W 180K (E, EG) | R362      | ERDS2TJ223  | 1/4W 22K         |
| R108      | ERDS2TJ474  | 1/4W 470K         | R211, 212          | ERDS2TJ123   | 1/4W 12K (E, EG)  | R363, 364 | ERDS2TJ473  | 1/4W 47K         |
| R109      | ERDS2TJ331  | 1/4W 330          | R213, 214          | ERDS2TJ680T  | 1/4W 68 (E, EG)   | R365      | ERDS2TJ102  | 1/4W 1K          |
| R110      | ERDS2TJ102  | 1/4W 1K           | R215, 216          | ERDS2TJ272T  | 1/4W 2.7K (E, EG) | R371, 372 | ERDS2TJ100  | 1/4W 10          |
| R112      | ERDS2TJ104  | 1/4W 100K         | R217, 218          | ERDS2TJ392T  | 1/4W 3.9K (E, EG) | R373, 374 | ERDS2TJ224T | 1/4W 220K        |
| R113      | ERDS2TJ103  | 1/4W 10K          | R219, 220 $\Delta$ | ERDS1FVJ221T | 1/2W 220 (E, EG)  | R375      | ERDS2TJ103  | 1/4W 10K         |
| R114      | ERDS2TJ562  | 1/4W 5.6K         | R221, 222          | ERDS2TJ752T  | 1/4W 7.5K         | R376      | ERDS2TJ223  | 1/4W 22K         |
| R115      | ERDS2TJ561  | 1/4W 560          | R223, 224          | ERDS2TJ562   | 1/4W 5.6K         | R378, 379 | ERDS2EJ121  | 1/4W 120         |
| R116      | ERDS2TJ102  | 1/4W 1K           | R225, 226          | ERDS2TJ472   | 1/4W 4.7K         | R380      | ERDS2TJ102  | 1/4W 1K          |
| R117      | ERDS2TJ273  | 1/4W 27K (E, GC)  | R227, 228          | ERDS2TJ332   | 1/4W 3.3K         | R381      | ERDS2TJ223  | 1/4W 22K         |
| R117      | ERDS2TJ823T | 1/4W 82K (EG)     | R229-231           | ERDS2TJ222   | 1/4W 2.2K         | R382      | ERDS2TJ105T | 1/4W 1M          |
| R118      | ERDS2TJ562  | 1/4W 5.6K         | R233, 234          | ERDS2TJ223   | 1/4W 22K          | R383      | ERDS2TJ472  | 1/4W 4.7K        |
| R119      | ERDS2TJ682T | 1/4W 6.8K (E, GC) | R235, 236          | ERDS2TJ822   | 1/4W 8.2K         | R391, 392 | ERDS2TJ222  | 1/4W 2.2K        |
| R119      | ERDS2TJ183T | 1/4W 18K (EG)     | R237, 238          | ERDS2TJ123   | 1/4W 12K          | R393, 394 | ERDS2TJ100  | 1/4W 10          |
| R120      | ERDS2TJ473  | 1/4W 47K          | R239, 240          | ERDS2TJ102   | 1/4W 1K           | R396      | ERDS2TJ102  | 1/4W 1K          |
| R121      | ERDS2TJ332  | 1/4W 3.3K         | R251, 252          | ERDS2TJ222   | 1/4W 2.2K         | R397, 398 | ERDS2TJ150T | 1/4W 15          |
| R122      | ERDS2TJ272T | 1/4W 2.7K         | R253               | ERDS2TJ223   | 1/4W 22K          | R399      | ERDS2TJ105T | 1/4W 1M          |
| R124      | ERDS2TJ271  | 1/4W 270          | R254               | ERDS2TJ222   | 1/4W 2.2K         | R451      | ERDS2TJ102  | 1/4W 1K          |
| R125, 126 | ERDS2TJ152  | 1/4W 1.5K         | R301, 302          | ERDS2TJ222   | 1/4W 2.2K         | R506      | ERDS2TJ152  | 1/4W 1.5K        |
| R127      | ERDS2TJ103  | 1/4W 10K          | R303               | ERDS2TJ102   | 1/4W 1K           | R507      | ERDS2TJ331  | 1/4W 330         |
| R128      | ERDS2TJ820  | 1/4W 82           | R305-307           | ERDS2TJ100   | 1/4W 10           | R508, 509 | ERDS2TJ682T | 1/4W 6.8K        |
| R129      | ERDS2TJ473  | 1/4W 47K          | R308, 309          | ERDS2TJ223   | 1/4W 22K          | R511, 512 | ERDS2TJ122  | 1/4W 1.2K        |
| R130      | ERDS2TJ103  | 1/4W 10K          | R310               | ERDS2TJ102   | 1/4W 1K           | R550      | ERDS2TJ564T | 1/4W 560K (EG)   |
| R132      | ERDS2TJ103  | 1/4W 10K          | R315, 316          | ERDS2TJ102   | 1/4W 1K           | R551      | ERDS2TJ223T | 1/4W 22K (EG)    |
| R133-137  | ERDS2TJ102  | 1/4W 1K           | R317-320           | ERDS2TJ471   | 1/4W 470          | R552      | ERDS2TJ103T | 1/4W 10K (EG)    |
| R138      | ERDS2TJ103  | 1/4W 10K          | R323-326           | ERDS2TJ103   | 1/4W 10K          | R553      | ERDS2TJ102T | 1/4W 1K (EG)     |
| R139, 140 | ERDS2TJ272T | 1/4W 2.7K         | R327-330           | ERDS2TJ102   | 1/4W 1K           | R554      | ERDS2TJ102T | 1/4W 1K (EG)     |
| R141, 142 | ERDS2TJ102  | 1/4W 1K           | R331, 332          | ERDS2TJ222   | 1/4W 2.2K         | R555      | ERDS2TJ104T | 1/4W 100K (EG)   |
| R143, 144 | ERDS2TJ222  | 1/4W 2.2K         | R333               | ERDS2TJ104   | 1/4W 100K         | R556      | ERDS2TJ332T | 1/4W 3.3K (EG)   |
| R145, 146 | ERDS2TJ102  | 1/4W 1K (E, GC)   | R334               | ERDS2TJ102   | 1/4W 1K           | R557      | ERDS2TJ103T | 1/4W 10K (EG)    |
| R145, 146 | ERDS2TJ821  | 1/4W 820 (EG)     | R335               | ERDS2TJ104   | 1/4W 100K         | R558      | ERDS2TJ102T | 1/4W 1K (EG)     |
| R147, 148 | ERDS2TJ474  | 1/4W 470K         | R336               | ERDS2TJ223   | 1/4W 22K          | R559      | ERDS2TJ562T | 1/4W 5.6K (EG)   |
| R149      | ERDS2TJ680T | 1/4W 68           | R337, 338          | ERDS2TJ391   | 1/4W 390          | R560      | ERDS2TJ820T | 1/4W 82 (EG)     |
| R171, 172 | ERDS2TJ102  | 1/4W 1K           | R339, 340          | ERDS2TJ122   | 1/4W 1.2K         | R562      | ERDS2TJ473T | 1/4W 47K (EG)    |
| R173      | ERDS2TJ471  | 1/4W 470          | R341, 342          | ERDS2TJ104   | 1/4W 100K         | R563      | ERDS2TJ332T | 1/4W 3.3K (EG)   |
| R175      | ERDS2TJ102  | 1/4W 1K           | R343               | ERDS2TJ105T  | 1/4W 1M           | R564      | ERDS2TJ155T | 1/4W 1.5M (EG)   |
| R176      | ERDS2TJ391  | 1/4W 390          | R344               | ERDS2TJ102   | 1/4W 1K           | R565      | ERDS2TJ332T | 1/4W 3.3K (EG)   |
| R177      | ERDS2TJ472T | 1/4W 4.7K (EG)    | R345, 346          | ERDS2TJ104   | 1/4W 100K         | R566      | ERDS2TJ332T | 1/4W 3.3K (EG)   |
| R191      | ERDS2TJ103  | 1/4W 10K (E)      | R347, 348          | ERDS2TJ102   | 1/4W 1K           | R567      | ERDS2TJ332T | 1/4W 3.3K (EG)   |
| R192      | ERDS2TJ122  | 1/4W 1.2K (E)     | R349               | ERDS2TJ104   | 1/4W 100K         | R568      | ERDS2TJ101T | 1/4W 100 (EG)    |

| Ref. No.   | Part No.     | Values & Remarks | Ref. No.  | Part No.     | Values & Remarks  | Ref. No.  | Part No.     | Values & Remarks    |
|------------|--------------|------------------|-----------|--------------|-------------------|-----------|--------------|---------------------|
| R569       | ERDS2TJ101T  | 1/4W 100 (EG)    | R935      | ERDS2TJ102   | 1/4W 1K           | C115      | ECEA1EKA4R7B | 25V 4.7U            |
| R570       | ERDS2TJ101T  | 1/4W 100 (EG)    | R936      | ERDS2TJ101   | 1/4W 100          | C116      | ECBT1C822KS5 | 16V 8200P           |
| R571       | ERDS2TJ101T  | 1/4W 100 (EG)    | R938      | ERDS2TJ102   | 1/4W 1K           | C117      | ECQB1H102JF3 | 50V 1000P (E, GC)   |
| R572       | ERDS2TJ103T  | 1/4W 10K (EG)    | R939      | ERDS2TJ101   | 1/4W 100          | C117      | ECQB1H561JF3 | 50V 560P (EG)       |
| R573       | ERDS2TJ471T  | 1/4W 470 (EG)    | R940, 941 | ERDS2TJ393   | 1/4W 39K          | C118, 119 | ECFR1C103KR  | 16V 0.01U           |
| R574, 575  | ERDS2TJ102   | 1/4W 1K (EG)     | R942      | ERDS2TJ562   | 1/4W 5.6K         | C120, 121 | ECEA1HKA010B | 50V 1U              |
| R576       | ERDS2TJ102   | 1/4W 1K (EG)     | R943      | ERDS2TJ223   | 1/4W 22K          | C122      | ECEA1HKA2R2B | 50V 2.2U            |
| R601, 602△ | ERD2FCVJ4R7T | 1/4W 4.7         | R944      | ERDS2TJ473   | 1/4W 47K          | C123      | ECEA1HKA010B | 50V 1U              |
| R603, 604  | ERDS2TJ102   | 1/4W 1K          | R945, 946 | ERDS2TJ102   | 1/4W 1K           | C124      | ECBT1H102KB5 | 50V 1000P           |
| R605       | ERDS2TJ101   | 1/4W 100         | R947, 948 | ERDS2TJ103   | 1/4W 10K          | C125      | ECBT1H150JC5 | 50V 15P             |
| R606, 607  | ERDS2TJ393   | 1/4W 39K         | R949      | ERDS2TJ472   | 1/4W 4.7K         | C126      | ECBT1H473ZF5 | 50V 0.047U          |
| R609 △     | ERD25FJ2R2   | 1/4W 2.2         | R950      | ERDS2TJ102   | 1/4W 1K           | C127      | RCE1CKA220BG | 16V 22U             |
| R610       | ERDS2TJ332   | 1/4W 3.3K        | R951      | ERDS2TJ104   | 1/4W 100K         | C128      | ECBT1H102KB5 | 50V 1000P           |
| R612       | ERDS2TJ472   | 1/4W 4.7K        | R952, 953 | ERDS2TJ102   | 1/4W 1K           | C129, 130 | RCE0JKA101BV | 6.3V 100P           |
| R613, 614  | ERDS2TJ682T  | 1/4W 6.8K        | R954      | ERDS2TJ101   | 1/4W 100          | C132      | ECBT1H102KB5 | 50V 1000P           |
| R615       | ERDS2TJ103   | 1/4W 10K         | R955      | ERDS2TJ824   | 1/4W 820K         | C133, 134 | ECBT1H270JU5 | 50V 27P             |
| R616 △     | ERD25FVJ4R7T | 1/4W 4.7         | R956      | ERDS2TJ101   | 1/4W 100          | C135, 136 | ECBT1C103KS5 | 16V 0.01U           |
| R621, 622  | ERDS2TJ151   | 1/4W 150         | R957      | ERDS2TJ102   | 1/4W 1K           | C137, 138 | ECBT1H561KB5 | 50V 560P            |
| R623, 624  | ERDS2TJ682   | 1/4W 6.8K        | R958      | ERDS2TJ471   | 1/4W 470          | C139, 140 | ECBT1C562KR5 | 16V 5600P (E, GC)   |
| R631-634   | ERDS2TJ102   | 1/4W 1K          | R959      | ERDS2TJ103   | 1/4W 10K          | C139, 140 | ECBT1C682KR5 | 16V 6800P (EG)      |
| R635, 636  | ERDS2TJ222   | 1/4W 2.2K        | R960      | ERDS2TJ472   | 1/4W 4.7K         | C141-144  | ECEA1HKA010B | 50V 1U              |
| R637       | ERDS2TJ100   | 1/4W 10          | R961      | ERDS2TJ103   | 1/4W 10K          | C145      | ECBT1H220JC5 | 50V 22P             |
| R638       | ERDS2TJ103   | 1/4W 10K         | R962      | ERDS2TJ473   | 1/4W 47K          | C148      | ECBT1C103NS5 | 16V 0.01U           |
| R641, 642  | ERDS2TJ471   | 1/4W 470         | R963-965  | ERDS2TJ472   | 1/4W 4.7K         | C149      | ECBT1H104ZF5 | 50V 0.1U            |
| R646       | ERDS2TJ223   | 1/4W 22K         | R966      | ERDS2TJ123   | 1/4W 12K          | C171, 172 | ECBT1H102KB5 | 50V 1000P           |
| R647       | ERDS2TJ473   | 1/4W 47K         | R967      | ERDS2TJ472   | 1/4W 4.7K         | C173      | RCE1CKA220BG | 16V 22P             |
| R651-654   | ERDS2TJ2R2T  | 1/4W 2.2         | R968, 969 | ERDS2TJ152   | 1/4W 1.5K         | C174      | RCE1CKA100BG | 16V 10P             |
| R655       | ERDS2TJ102   | 1/4W 1K          | R971      | ERDS2TJ104   | 1/4W 100K         | C181      | ECBT1H471KB5 | 50V 470P (EG)       |
| R656       | ERDS2TJ221   | 1/4W 220         | R972      | ERDS2TJ820   | 1/4W 82           | C196      | ECBT1H102KB5 | 50V 1000P           |
| R671       | ERDS2TJ102   | 1/4W 1K          | R973      | ERDS2TJ151   | 1/4W 150          | C201, 202 | ECBT1H180J5  | 50V 18P             |
| R901       | ERDS2TJ821   | 1/4W 820         | R974, 975 | ERDS2TJ473   | 1/4W 47K          | C203, 204 | ECBT1H151KB5 | 50V 150P            |
| R902       | ERDS2TJ102   | 1/4W 1K          | R976      | ERDS2TJ272T  | 1/4W 2.7K         | C205, 206 | ECBT1H102KB5 | 50V 1000P (E, EG)   |
| R903       | ERDS2TJ122   | 1/4W 1.2K        | R977      | ERDS2TJ102   | 1/4W 1K           | C207, 208 | RCE1AKA330BG | 10V 33 (E, EG)      |
| R904       | ERDS2TJ152   | 1/4W 1.5K        | R978-992  | ERDS2TJ104   | 1/4W 100K         | C209, 210 | ECBT0J223MS5 | 6.3V 0.022U (E, EG) |
| R905       | ERDS2TJ182   | 1/4W 1.8K        | R993-995  | ERDS2TJ102   | 1/4W 1K           | C211, 212 | ECBT1C682KR5 | 16V 6800P (E, EG)   |
| R906       | ERDS2TJ222   | 1/4W 2.2K        | R996      | ERDS2TJ101   | 1/4W 100          | C213, 214 | RCE1CKA100BG | 16V 10U (E, EG)     |
| R907       | ERDS2TJ332   | 1/4W 3.3K        | R997-999  | ERDS2TJ102   | 1/4W 1K           | C215      | ECBT1E103ZF  | 25V 0.01U (E, EG)   |
| R908       | ERDS2TJ223   | 1/4W 22K         |           |              |                   | C216      | RCE1CM101BV  | 16V 100U (E, EG)    |
| R909       | ERDS2TJ103   | 1/4W 10K         |           |              | CAPACITORS        | C217      | ECBT1E103ZF  | 25V 0.01U (E, EG)   |
| R910       | ERDS2TJ821   | 1/4W 820         |           |              |                   | C218      | RCE1AKA101BG | 10V 100U (E, EG)    |
| R911       | ERDS2TJ102   | 1/4W 1K          | C101      | ECBT1C103NS5 | 16V 0.01U         | C219-222  | ECBT1H101KB5 | 50V 100P            |
| R912       | ERDS2TJ122   | 1/4W 1.2K        | C103      | ECBT1C103NS5 | 16V 0.01U         | C223, 224 | ECBT1H104ZF5 | 50V 0.1U            |
| R913       | ERDS2TJ152   | 1/4W 1.5K        | C104, 105 | ECBT1H102KB5 | 50V 1000P         | C225-227  | ECBT1H470J5  | 50V 47P             |
| R914       | ERDS2TJ182   | 1/4W 1.8K        | C106      | ECBT1C103NS5 | 16V 0.01U         | C231, 232 | ECBT1E103ZF  | 25V 0.01U           |
| R915       | ERDS2TJ222   | 1/4W 2.2K        | C107      | ECBT1H473ZF5 | 50V 0.047U        | C233, 234 | ECBT1H102KB5 | 50V 1000P           |
| R916-919   | ERDS2TJ103   | 1/4W 10K         | C108      | ECBT1H100JC5 | 50V 10P (E)       | C235, 236 | ECBT1H101KB5 | 50V 100P            |
| R920-922   | ERDS2TJ102   | 1/4W 1K          | C108      | ECBT1H8R2KC5 | 50V 8.2P (EG, GC) | C251      | RCE1CKA470BG | 16V 47U             |
| R923       | ERDS2TJ391   | 1/4W 390         | C109, 110 | ECBT1C103NS5 | 16V 0.01U         | C301, 302 | ECBT1H470J5  | 50V 47P             |
| R924, 925  | ERDS2TJ102   | 1/4W 1K          | C111      | ECEA1EKA4R7B | 25V 4.7U          | C303      | ECBT1E103ZF  | 25V 0.01U           |
| R926       | ERDS2TJ101   | 1/4W 100         | C112      | ECBT1C103NS5 | 16V 0.01U         | C304      | ECFR1C473KR  | 16V 0.047U          |
| R927-933   | ERDS2TJ102   | 1/4W 1K          | C113      | ECBT1H102KB5 | 50V 1000P         | C305, 306 | RCE1CKA100BG | 16V 10U             |
| R934       | ERDS2TJ101   | 1/4W 100         | C114      | RCE1HKA3R3BG | 50V 3.3P          | C307-310  | ECFR1C104KR  | 16V 0.1U            |

| Ref. No.  | Part No.     | Values & Remarks | Ref. No.  | Part No.     | Values & Remarks |  |  |  |
|-----------|--------------|------------------|-----------|--------------|------------------|--|--|--|
| C311, 312 | ECFR1C123KR  | 16V 0.012U       | C601, 602 | ECKT1H223ZF  | 50V 0.022U       |  |  |  |
| C313, 314 | ECFR1C153KR  | 16V 0.015U       | C603 △    | ECA1EM102B   | 25V 1000U        |  |  |  |
| C315, 316 | ECBT1C332KR5 | 16V 3300P        | C604 △    | RCE1EM471BV  | 25V 470U         |  |  |  |
| C317, 318 | ECEA1HKAR15B | 50V 0.15U        | C605, 606 | ECBT1E103ZF  | 25V 0.01U        |  |  |  |
| C319, 320 | ECFR1C104KR  | 16V 0.1U         | C607      | RCE1CKA100BG | 16V 10U          |  |  |  |
| C321      | ECBT1E103ZF  | 25V 0.01U        | C608      | RCE1CM101BV  | 16V 100U         |  |  |  |
| C322      | ECFR1C473KR  | 16V 0.047U       | C609      | ECBT1H102KB5 | 50V 1000P        |  |  |  |
| C323      | ECFR1C103KR  | 16V 0.01U        | C610, 611 | ECBT1H104ZF5 | 50V 0.1U         |  |  |  |
| C335, 336 | RCE1CKA100BG | 16V 10U          | C612      | RCE1EM471BV  | 25V 470U         |  |  |  |
| C337-340  | RCE1CKA220BG | 16V 22U          | C613      | ECBT1E103ZF  | 25V 0.01U        |  |  |  |
| C341, 342 | ECEA1AKN100B | 10V 10U          | C614      | RCE1CKA100BG | 16V 10U          |  |  |  |
| C343      | RCE1CKA100BG | 16V 10U          | C615      | ECEA1EKA101B | 25V 100U         |  |  |  |
| C344, 345 | ECBT1H470J5  | 50V 47P          | C616      | ECA1HM470B   | 50V 47U          |  |  |  |
| C346      | ECEA1HKAOR1B | 50V 0.1U         | C617 △    | ECA1HM470B   | 50V 47U          |  |  |  |
| C347      | ECEA1CN100SB | 16V 10U          | C618      | ECA1JM470B   | 63V 47U          |  |  |  |
| C348      | ECEA1CKA330B | 16V 33U          | C619      | ECBT1E103ZF  | 25V 0.01U        |  |  |  |
| C349      | RCE1HKA3R3BG | 50V 3.3U         | C620      | RCE1VKA100BG | 35V 10U          |  |  |  |
| C350      | RCE0JKA470BG | 6.3V 47U         | C622      | RCE1VKA100BG | 35V 10U          |  |  |  |
| C351, 352 | RCE1CKA100BG | 16V 10U          | C631-636  | ECBT1H101KB5 | 50V 100P         |  |  |  |
| C353, 354 | ECBT1H101KB5 | 50V 100P         | C637      | ECBT1H102KB5 | 50V 1000P        |  |  |  |
| C355      | ECEA1CKA330B | 16V 33U          | C638      | ECBT1H101KB5 | 50V 100P         |  |  |  |
| C356      | ECBT1H104ZF5 | 50V 0.1U         | C651, 652 | ECBT1H104ZF5 | 50V 0.1U         |  |  |  |
| C357      | RCE1CM101BV  | 16V 100U         | C653, 654 | ECBT1H102KB5 | 50V 1000P        |  |  |  |
| C361, 362 | ECBT1H221KB5 | 50V 220P         | C655      | ECQV1H224JM3 | 50V 0.22U        |  |  |  |
| C365      | RCE0JKA470BG | 6.3V 47U         | C901-904  | ECBT1H471KB5 | 50V 470P         |  |  |  |
| C391, 392 | RCE1CM101BV  | 16V 100U         | C905, 906 | ECBT1H102KB5 | 50V 1000P        |  |  |  |
| C393, 394 | ECBT1H102KB5 | 50V 1000P        | C907      | ECBT1H104ZF5 | 50V 0.1U         |  |  |  |
| C453      | ECEA1HKA010B | 50V 1U           | C908      | ECBT1E103ZF  | 25V 0.01U        |  |  |  |
| C455      | RCE1CKA100BG | 16V 10U          | C909      | ECEA1HKA2R2B | 50V 2.2U         |  |  |  |
| C509      | ECBT1E103ZF  | 25V 0.01U        | C910      | RCE1CKA100BG | 16V 10U          |  |  |  |
| C510      | RCE1AKA101BG | 10V 100U         | C911      | ECBT1H270JU5 | 50V 27P          |  |  |  |
| C550      | RCE0JKA101BV | 6.3V 100U (EG)   | C912      | ECBT1H220GC5 | 50V 22P          |  |  |  |
| C551      | RCE1CKA220BG | 16V 22U (EG)     | C913      | ECBT1H104ZF5 | 50V 0.1U         |  |  |  |
| C552      | RCE1CKA100BG | 16V 10U (EG)     | C915      | ECBT1E103ZF  | 25V 0.01U        |  |  |  |
| C553      | ECEA1EKA4R7B | 25V 4.7U (EG)    | C916, 917 | ECEA1HKA010B | 50V 1U           |  |  |  |
| C554      | RCE1CKA100BG | 16V 10U (EG)     | C918      | ECBT1H104ZF5 | 50V 0.1U         |  |  |  |
| C555      | ECEA1EKA4R7B | 25V 4.7U (EG)    | C919      | RCE0JU102BV  | 6.3V 1000U       |  |  |  |
| C556      | RCE1CKA100BG | 16V 10U (EG)     | C920      | ECBT1E103ZF  | 25V 0.01U        |  |  |  |
| C557      | ECBT1H102KB5 | 50V 1000P (EG)   | C921      | ECA0JKF101B  | 6.3V 100U        |  |  |  |
| C558      | RCE0JKA101BV | 6.3V 100U (EG)   | C923      | RCE0JKA221BV | 6.3V 220U        |  |  |  |
| C559      | ECEA1HKA010B | 50V 1U (EG)      | C924-926  | ECBT1H102KB5 | 50V 1000P        |  |  |  |
| C560      | ECEA1HKA010B | 50V 1U (EG)      | C927      | ECBT1C105ZF5 | 16V 1U           |  |  |  |
| C561      | ECFR1C223KR  | 16V 0.022U (EG)  |           |              |                  |  |  |  |
| C562      | ECFR1C333KR  | 16V 0.033U (EG)  |           |              |                  |  |  |  |
| C563      | ECFR1C333KR  | 16V 0.033U (EG)  |           |              |                  |  |  |  |
| C564      | ECBT1C332KR5 | 16V 3300P (EG)   |           |              |                  |  |  |  |
| C565      | ECBT1C682KR5 | 16V 6800P (EG)   |           |              |                  |  |  |  |
| C566      | ECBT1C332KR5 | 16V 3300P (EG)   |           |              |                  |  |  |  |
| C567      | ECBT1C103KS5 | 16V 0.01U (EG)   |           |              |                  |  |  |  |
| C568      | ECBT1H102KB5 | 50V 1000P (EG)   |           |              |                  |  |  |  |
| C569      | ECBT1H102KB5 | 50V 1000P (EG)   |           |              |                  |  |  |  |
| C570      | ECBT1H102KB5 | 50V 1000P (EG)   |           |              |                  |  |  |  |



# Cabinet Parts Location



993