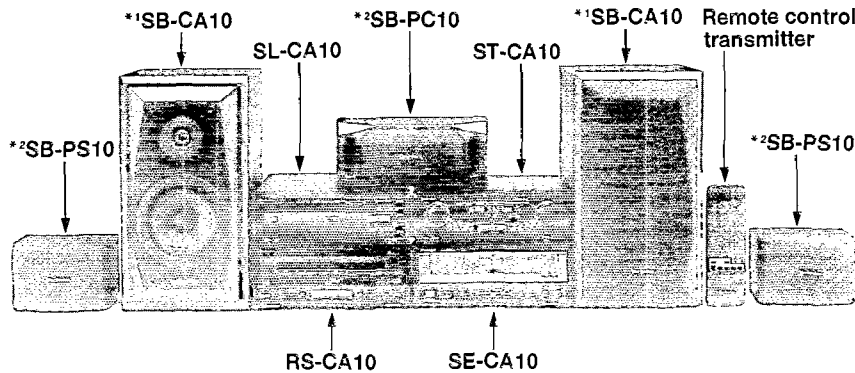


# Service Manual

Tuner

## ST-CA10

Tuner



Colour

(K)...Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EB)	Great Britain.	
(EG)	Germany and Italy.	
(GC)	Asia, Latin America, Middle Near east and Africa.	

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

### System: SC-CA10

### SPECIFICATIONS

#### Pre-amplifier section

Input sensitivity/impedance  
 PHONO 2.5 mV/ 47 kΩ  
 EXTERNAL, VCR, VDP 150 mV/15 kΩ

Output level  
 EXTERNAL/ VCR REC OUT 150 mV/1.5 kΩ

Frequency response  
 PHONO 30 Hz - 15 kHz/±1.5 to -2.0 dB  
 EXTERNAL, VCR, VDP 20 Hz-40 kHz

S/N  
 PHONO DIN 75 dB (77 dB, IHF)  
 EXTERNAL, VCR, VDP DIN 83 dB (85 dB, IHF)

#### DOLBY PRO LOGIC section

PRO LOGIC mode SURROUND, 3 STEREO  
 CENTER mode NORMAL, WIDE, PHANTOM  
 DELAY TIME 15, 20, 25, 30 ms.

#### FM tuner section

Frequency range 87.50-108.00 MHz  
 (0.05 MHz steps)  
 Sensitivity 1.8 μV (IHF usable)  
 S/N 1.5 μV  
 MONO 70 dB (75 dB, IHF)  
 Stereo separation 35 dB  
 1kHz  
 Antenna terminal(s) 75 Ω (unbalance)

#### AM tuner section

Frequency range  
 [For (E, EB) areas]  
 MW 522-1611 kHz (9 kHz steps)  
 530-1620 kHz (10 kHz steps)  
 144-288 kHz (9 kHz steps)

LW [For (EG, GC) areas]  
 AM 522-1611 kHz (9 kHz steps)  
 530-1620 kHz (10 kHz steps)

Sensitivity (S/N 20 dB)  
 [For (E, EB) areas]  
 MW 500 μV/m  
 LW 50 μV

[For (EG, GC) areas]  
 AM 500 μV/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×H×D) 280×89×291 mm  
 Weight 1.75 kg

#### Note:

Specifications are subject to change without notice.  
 Weight and dimensions are approximate.

System	Tuner	CD changer	Amplifier	Cassette deck	Speakers
SC-CA10	ST-CA10	SL-CA10	SE-CA10	RS-CA10	*1 SB-CA10 *2 SB-PT10 (SB-PC10+SB-PS10)

\*1 Made in PAES  
 \*2 For (E, EB, EG) areas....Made in PAES  
 For (GC, GN) areas....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®

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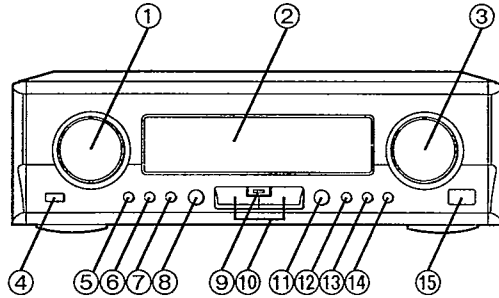
## CONTENTS

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**NOTE:**  
Refer to the service manual for Model No. SE-CA10 (ORDER No. AD9512272C8) for information on "ACCESSORIES", "INSTALLATION", "CONNECTIONS" and "PACKAGING".

## LOCATION OF CONTROLS

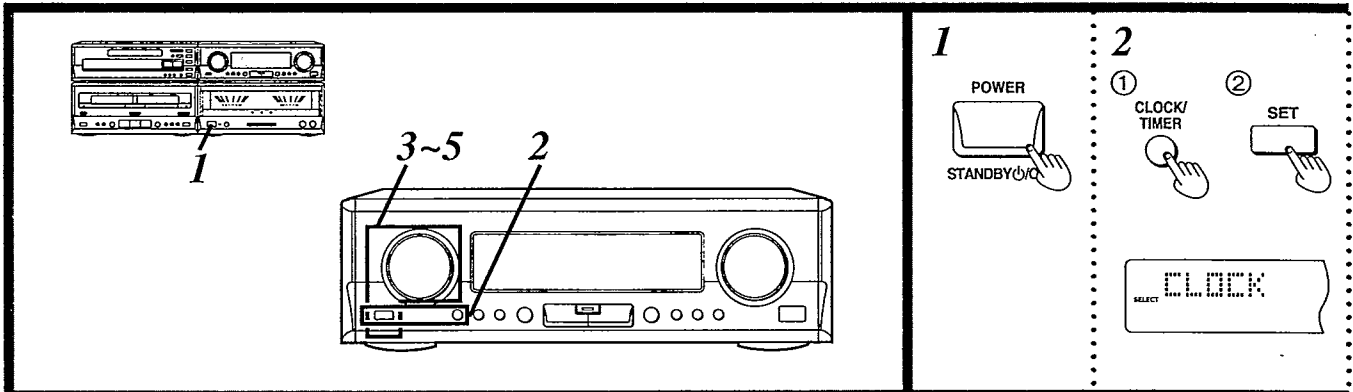


- ① JOG control (JOG)  
② Display

- ③ Volume control (VOLUME)  
④ Set button (SET)  
⑤ Clock/timer button (CLOCK/TIMER)  
⑥ Record timer button (Ⓞ REC)  
⑦ Play timer button (Ⓞ PLAY)  
⑧ Tuning mode select button (TUNING MODE)  
⑨ Tuner indicator (TUNER)  
⑩ Band select button (FM, LW/MW)  
⑪ Source input select button (INPUT SELECTOR)  
⑫ Display mode select button (DISP MODE)  
⑬ PTY select button (PTY SELECT)  
⑭ PTY search button (PTY SEARCH)  
⑮ Remote control signal sensor (SENSOR)

Note: ⑫, ⑬, ⑭: For [E, EG] areas.

## 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.

The very first time you turn ON the power or whenever you turn it ON after having unplugged and plugged the stereo in again, you will hear the sound of the tray mechanism. There is nothing wrong with your CD changer. This happens because of initial settings.

### 2 ① Press CLOCK/TIMER to show "CLOCK".

Within 10 seconds:

② Press SET.

### 3 ① Turn JOG to select the day.

② Press SET.

### 4 ① Turn JOG to select the hour.

② Press SET.

### 5 ① Turn JOG 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 CLOCK/TIMER.
2. Press SET 3 times.
3. Turn JOG to set the minute, and then press SET.

### To display the clock again:

Press CLOCK/TIMER.

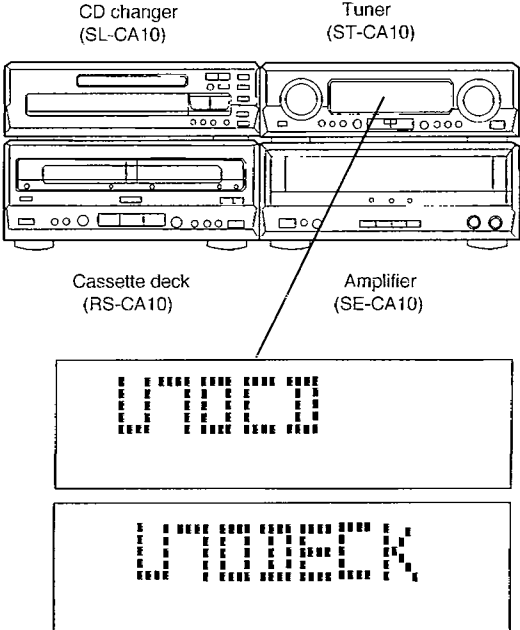
The clock display will appear for about 10 seconds.

### For your reference:

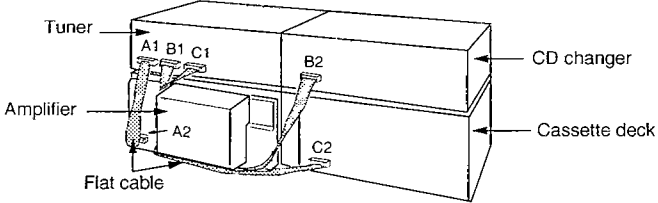
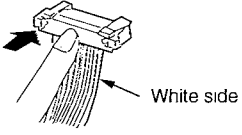
When you turn OFF the power from the POWER button, the stereo goes on standby and the STANDBY lamp lights up.

## ■ 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 malfunctions. Use this self-diagnostic function when servicing the unit.

Display method	Display location
<p><b>To display the malfunction code</b></p> <p>U70 CD: U70 DECK:.... Automatically displays on the tuner when a malfunction occurs.</p> <p>F61 ..... Automatically displays on the tuner when a malfunction occurs.</p> <p><b>To return to the normal display</b></p> <p><b>1. For U70 CD/U70 DECK:</b></p> <ul style="list-style-type: none"> <li>● Press an any operation button on the tuner.</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 F61:</b></p> <ul style="list-style-type: none"> <li>● If "F61" is displayed, the power will automatically be switched off and the standby indicator will light up.</li> <li>● "F61" will be displayed for 3 seconds, and then the clock will be displayed.</li> <li>● To re-display the code, switch the power on. "F61" 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

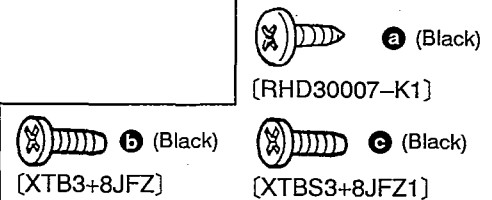
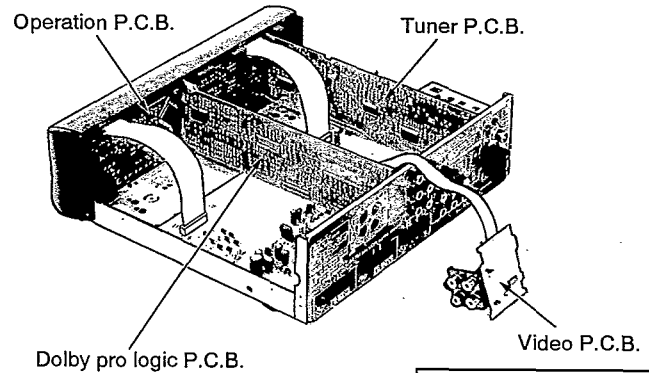
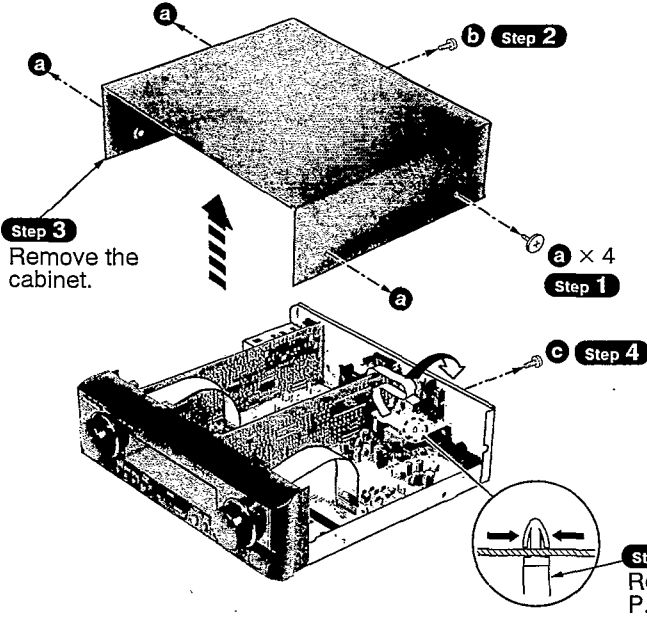
Display code	Problem or condition	Correction procedure
<p><b>U70 CD</b> <b>U70 DECK</b> (displayed automatically)</p>	<p>A bus-line communications error has occurred as a result of the flat cables being inserted incorrectly, thus preventing the system from operating.</p> <p>1. If "U70" is displayed on the tuner, the Cassette deck or CD changer cannot be operated by remote control.</p>	 <ol style="list-style-type: none"> <li>To check for correct insertion of the flat cables             <ol style="list-style-type: none"> <li>Match each connector with the color (black/ white) of the connection port and insert until you hear a click.</li> <li>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> </li> <li>Breakage of flat cable (Check and replace as necessary.)</li> <li>If the problem is not corrected by items (1.) and (2.) above, this indicates a faulty IC.             <p><b>ST-CA10:</b> IC901 (M38198MC064F)</p> <p><b>SL-CA10:</b> IC401 (LC66538A4G99)</p> <p><b>RS-CA10:</b> IC701 (M37471M4264F)</p> <p>Check these IC's and replace as necessary.</p></li> </ol> 
<p><b>F61</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-CA10) 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.

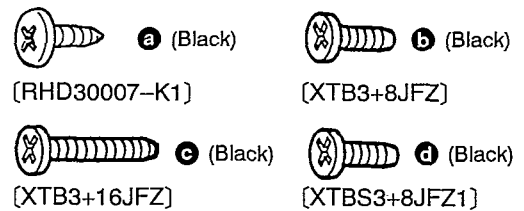
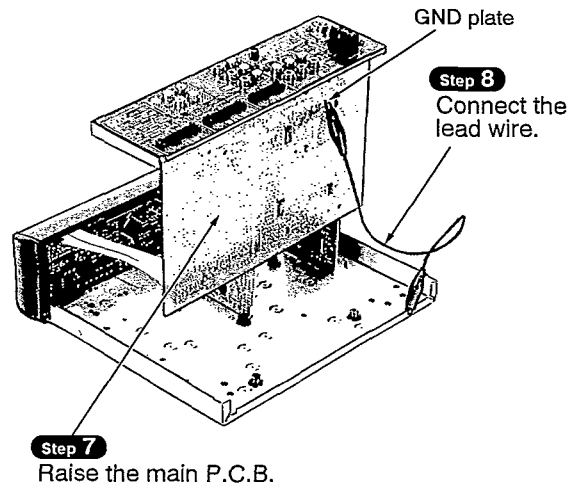
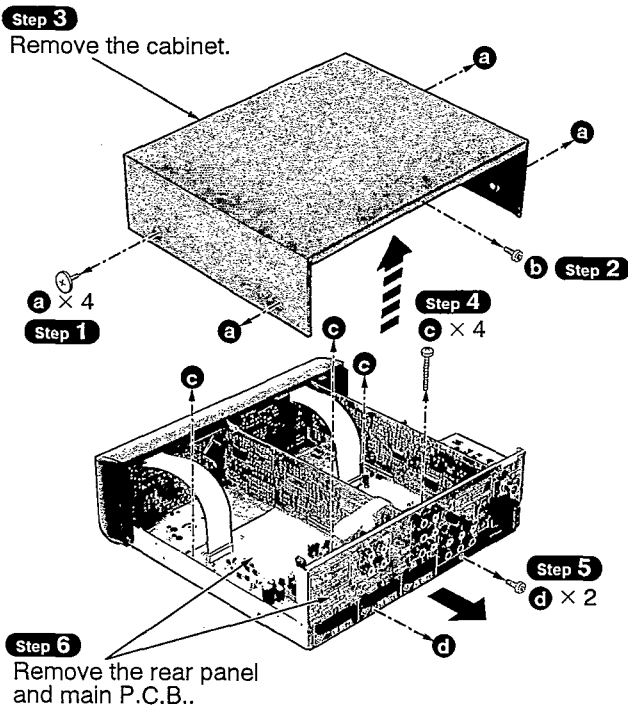
### 1. Checking for the tuner P.C.B., dolby pro logic P.C.B., operation P.C.B. and video jack P.C.B.

• Check the tuner P.C.B., dolby pro logic P.C.B., operation P.C.B. and video jack 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-CA10 is designed to operate on power supplied from the Amplifier SE-CA10.

When operating the unit ST-CA10 alone for testing and servicing, without having power supplied from the Amplifier SE-CA10, 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 11V 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 +12V 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.

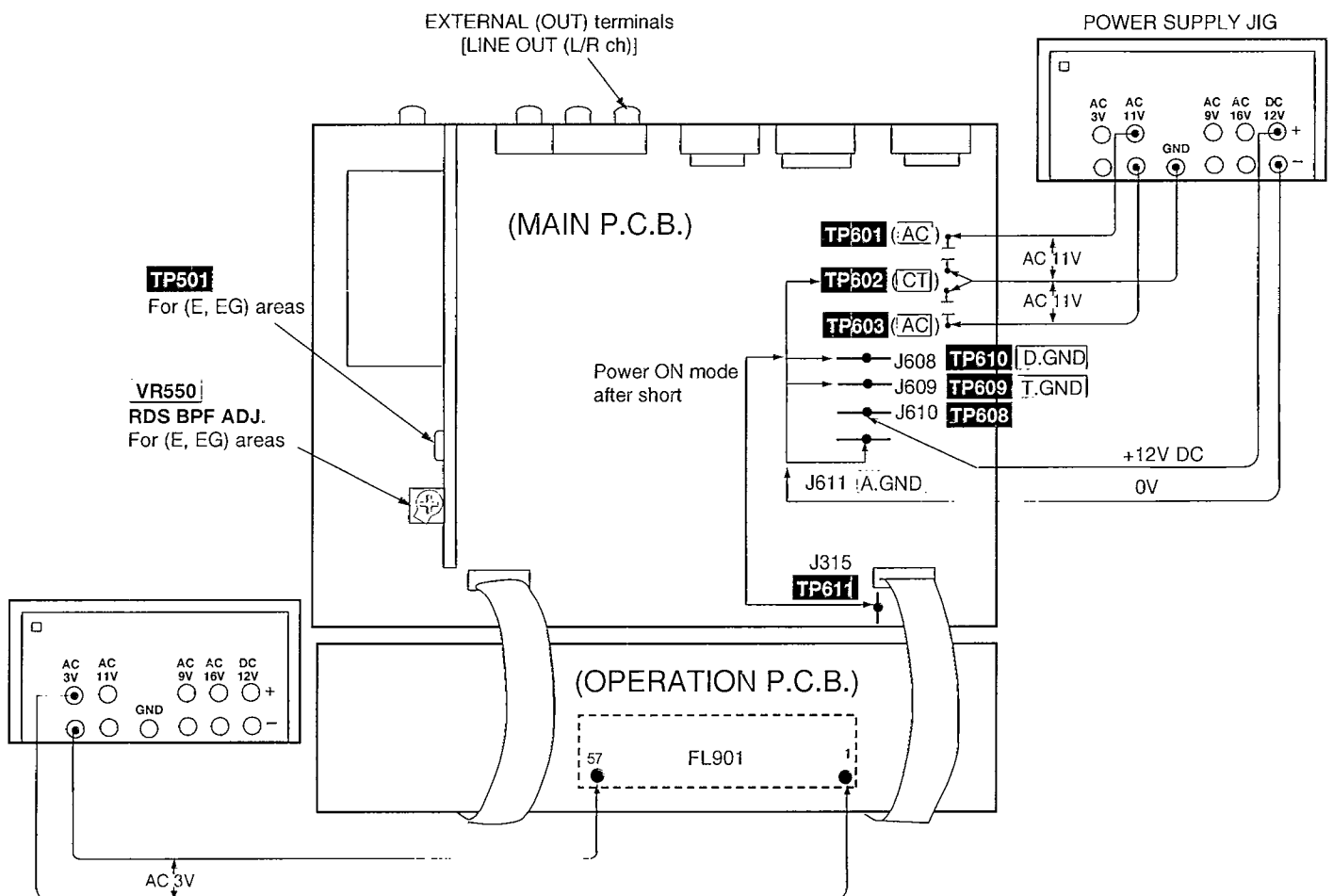


Fig. 1

## MEASUREMENTS AND ADJUSTMENTS [For (E, EG) areas.]

### Measuring Instruments and Special Tools

- FM signal generator (FM-SG)
- RDS modulator
- AC electronic voltmeter (AC EVM)\*  
(\*Min. 0.3 mV measurable)
- 75Ω 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.....	1kHz
RDS modulation.....	2.7%
Output level.....	60dB

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

1. Tuner into a FM broadcasted 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.

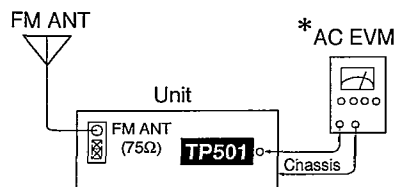


Fig. 3

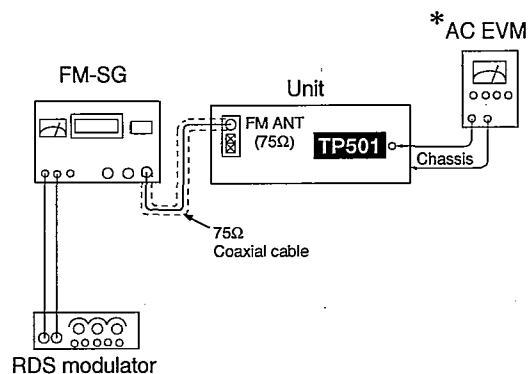


Fig. 2

**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

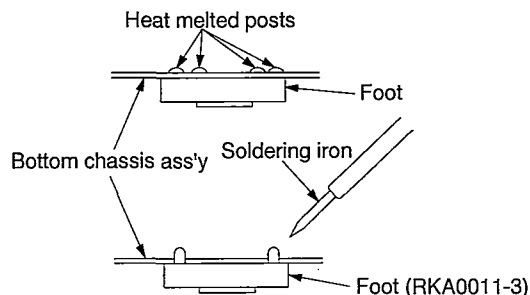
- **PS** (Program service name)  
Name of the broadcast station
- **PTY** (Program type)  
Identification signal for program types such as news and sport

#### Note

"PTY" may not be available in some areas.

## REPLACEMENT OF THE FOOT

1. Remove the 4 heat melted posts on the Bottom chassis ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0011-3) on the Bottom board ass'y melt the 4 posts with a soldering iron.



## ■ SCHEMATIC DIAGRAM (Parts list on pages 39 ~ 46.)


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

<b>A</b>	<b>TUNER CIRCUIT For (E) area</b> .....	8~10
<b>A</b>	<b>TUNER CIRCUIT For (EG) area</b> .....	11~13
<b>A</b>	<b>TUNER CIRCUIT For (EB) area</b> .....	14, 15
<b>A</b>	<b>TUNER CIRCUIT For (GC) area</b> .....	16, 17
<b>B</b>	<b>OPERATION CIRCUIT</b> .....	18, 19
<b>C</b>	<b>MAIN CIRCUIT</b> .....	20~23
<b>D</b>	<b>DOLBY PROLOGIC CIRCUIT</b> .....	24~26
<b>E</b>	<b>VIDEO CIRCUIT</b> .....	24

### Notes:

- **S901**: FM switch (FM)
- **S902**: LW/MW select switch (LW/MW)... For (E, EB) areas.  
AM switch (AM)... For (EG, GC) areas.
- **S903**: Tuning mode select switch (TUNING MODE)
- **S904**: Play timer switch (⏪ PLAY)
- **S905**: Record timer switch (⏸ REC)
- **S906**: Clock/ timer switch (CLOCK/TIMER)
- **S907**: Set switch (SET)
- **S911**: Source input select switch (INPUT SELECTOR)
- **S912**: Display mode select switch (DISP MODE)... For (E, EG) areas.
- **S913**: PTY select switch (PTY SELECT)... For (E, EG) areas.
- **S914**: PTY search switch (PTY SEARCH)... For (E,EG) areas.
- 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], and between **TP609** and [A, GND] are shorted.

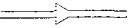
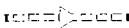







No mark: FM mode      (    ): AM (MW) mode      <    >: AM (LW) mode

- Important safety notice:  
Components identified by  mark have special characteristics important for safety.  
Furthermore, special parts which have purpose 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.

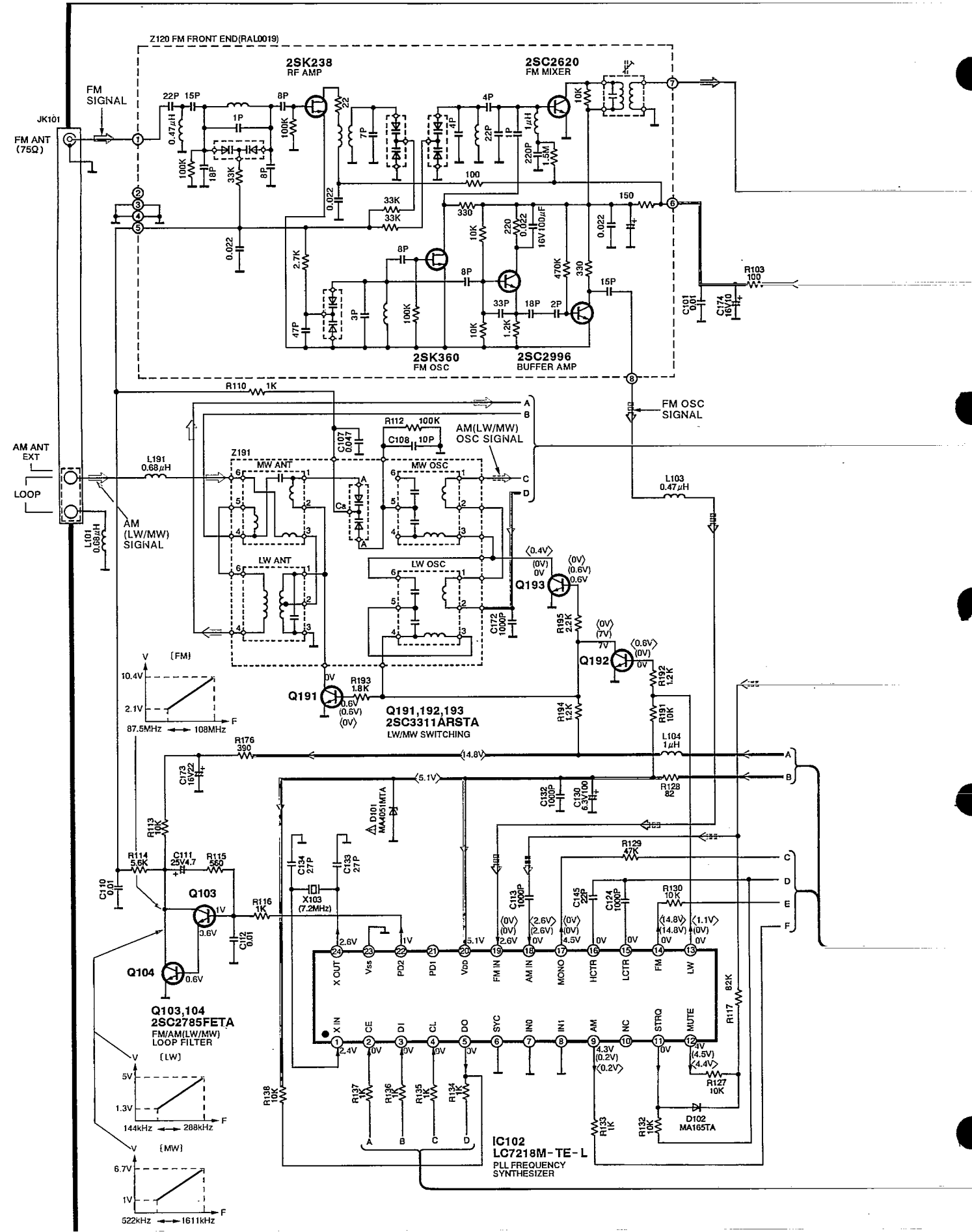
### • Caution!

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.

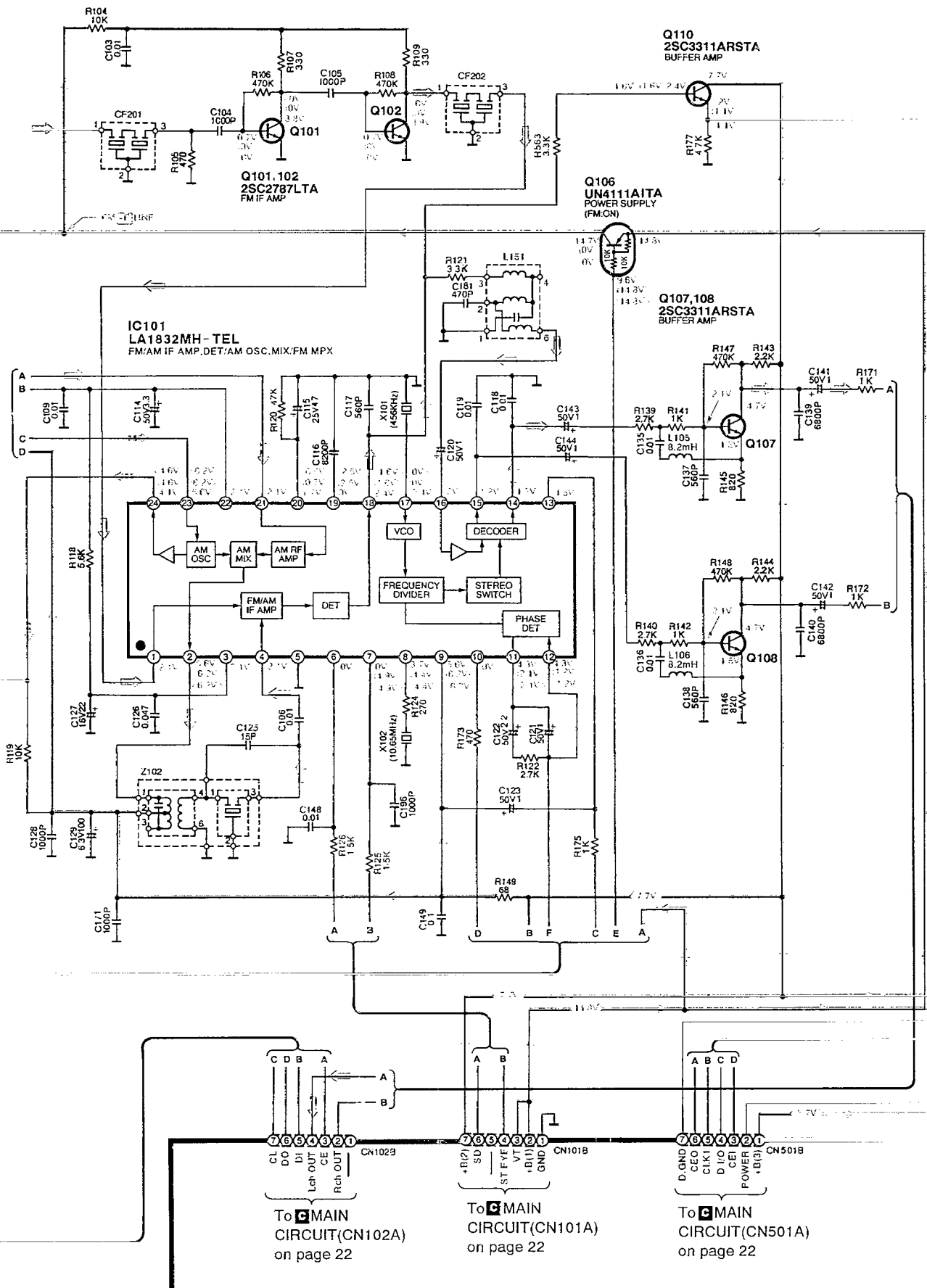
- Voltage and signal line

	: Positive voltage line		: Negative voltage line
	: FM signal line		: FM OSC signal line
	: AM (LW/ MW) signal line		: AM (LW/MW) OSC signal line
	: REC OUT line		: Center speaker drive signal line
	: Surround speaker drive signal line		

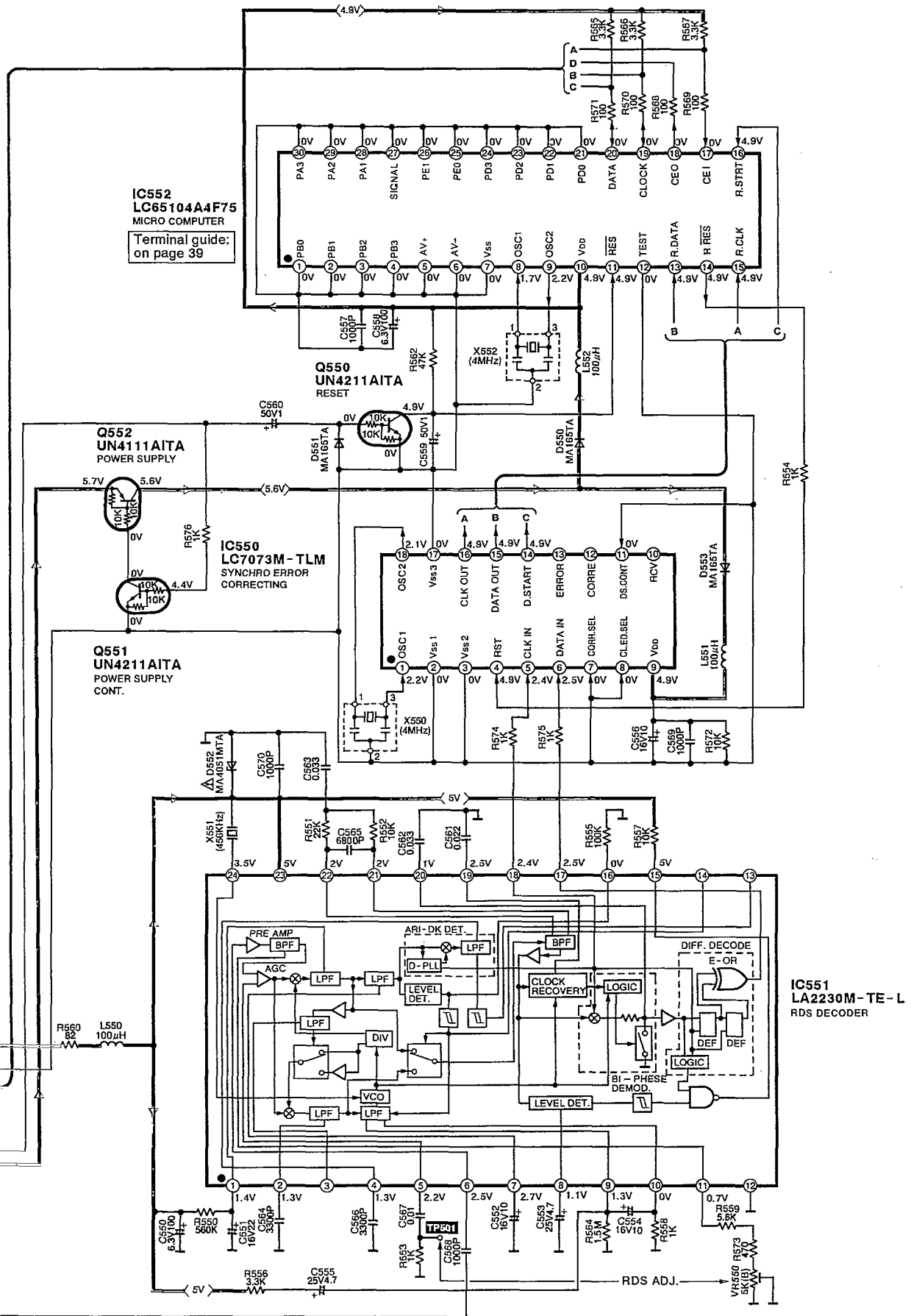
**A** TUNER CIRCUIT For [E] area. (P.C. Board: on page 27)



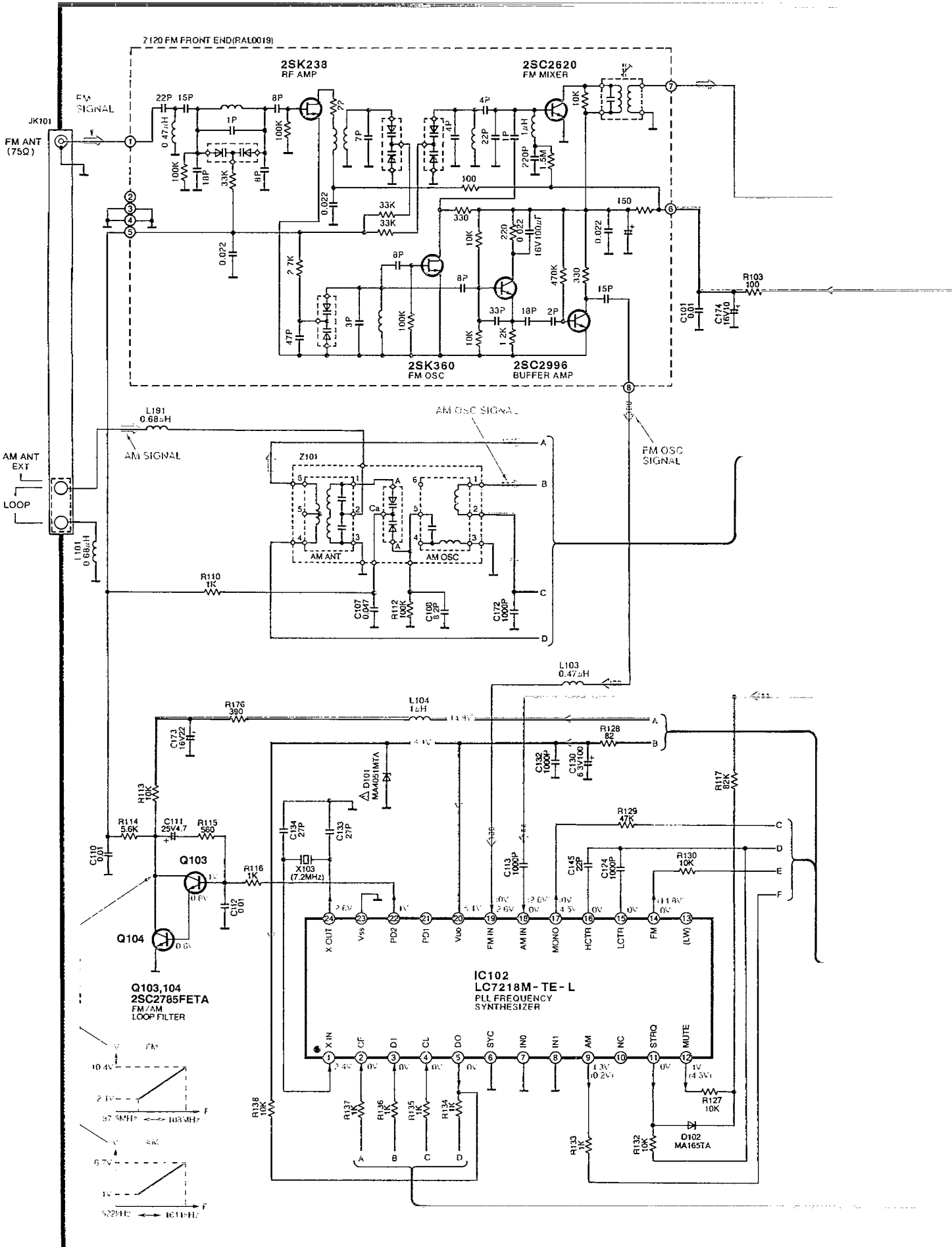


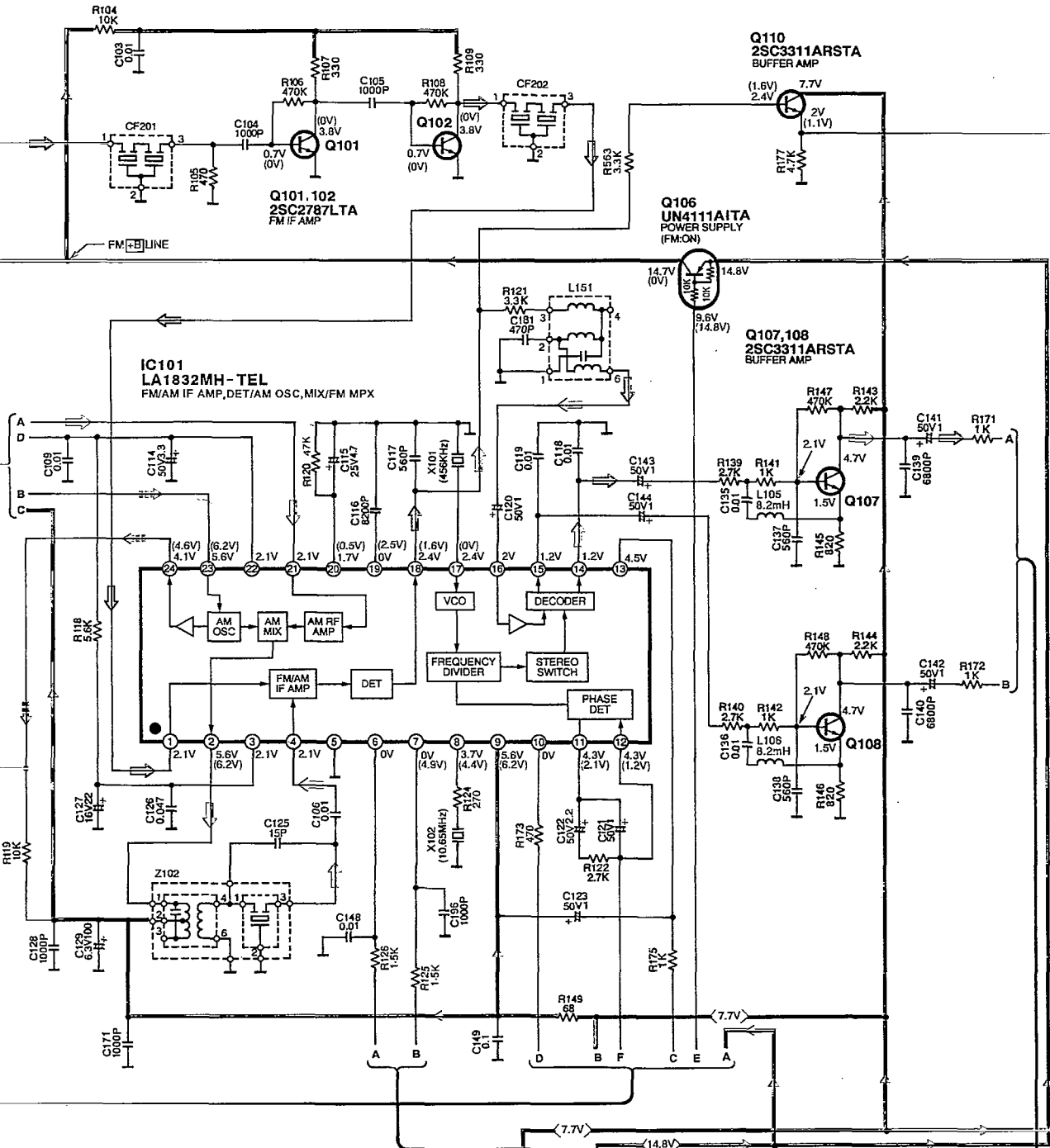


**A** TUNER CIRCUIT For [E] area. (P.C.Board: on page 27)



**A** TUNER CIRCUIT For (EG) area. (P.C. Board. on page 27)



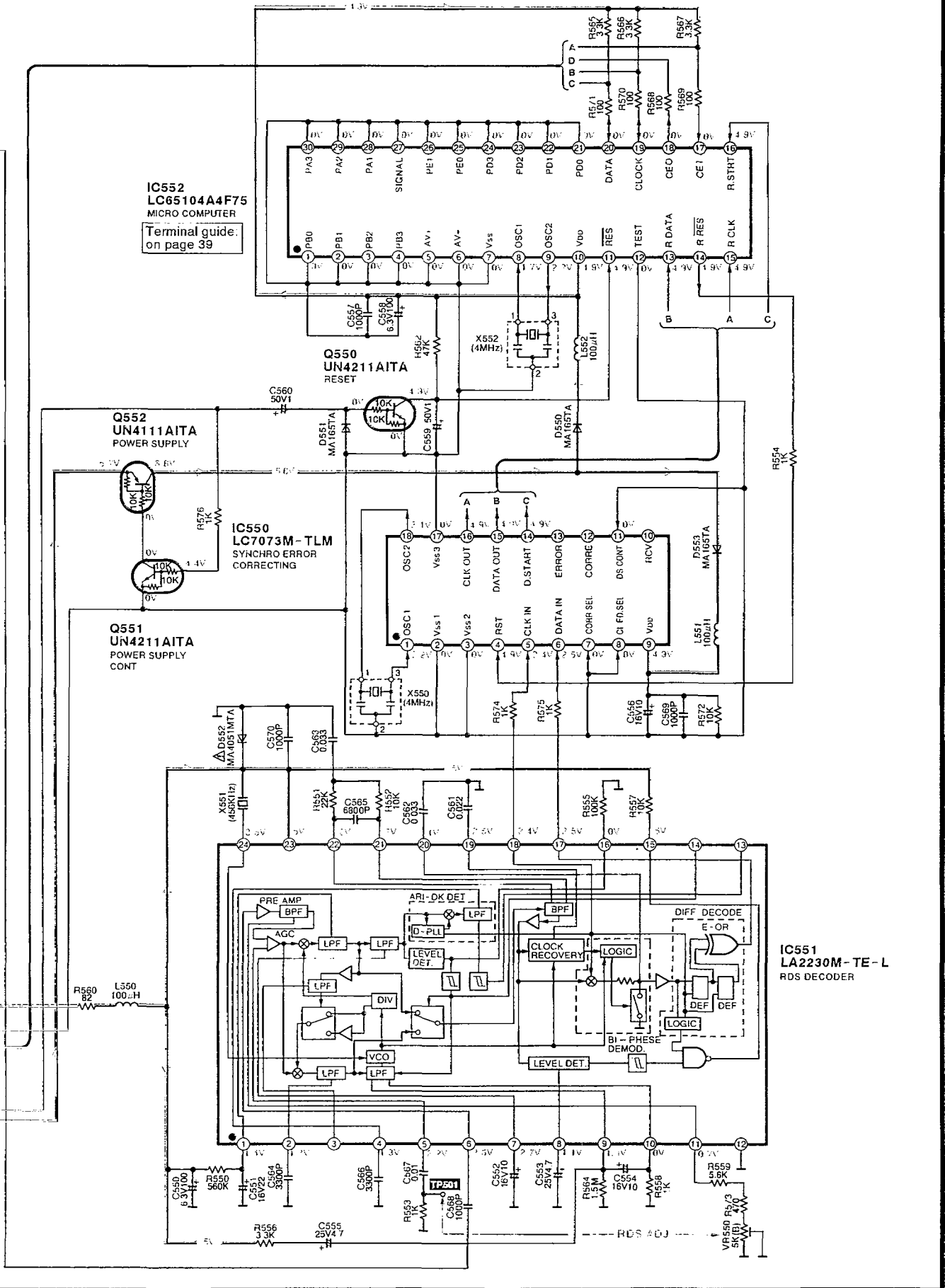


To MAIN CIRCUIT (CN102A) on page 22

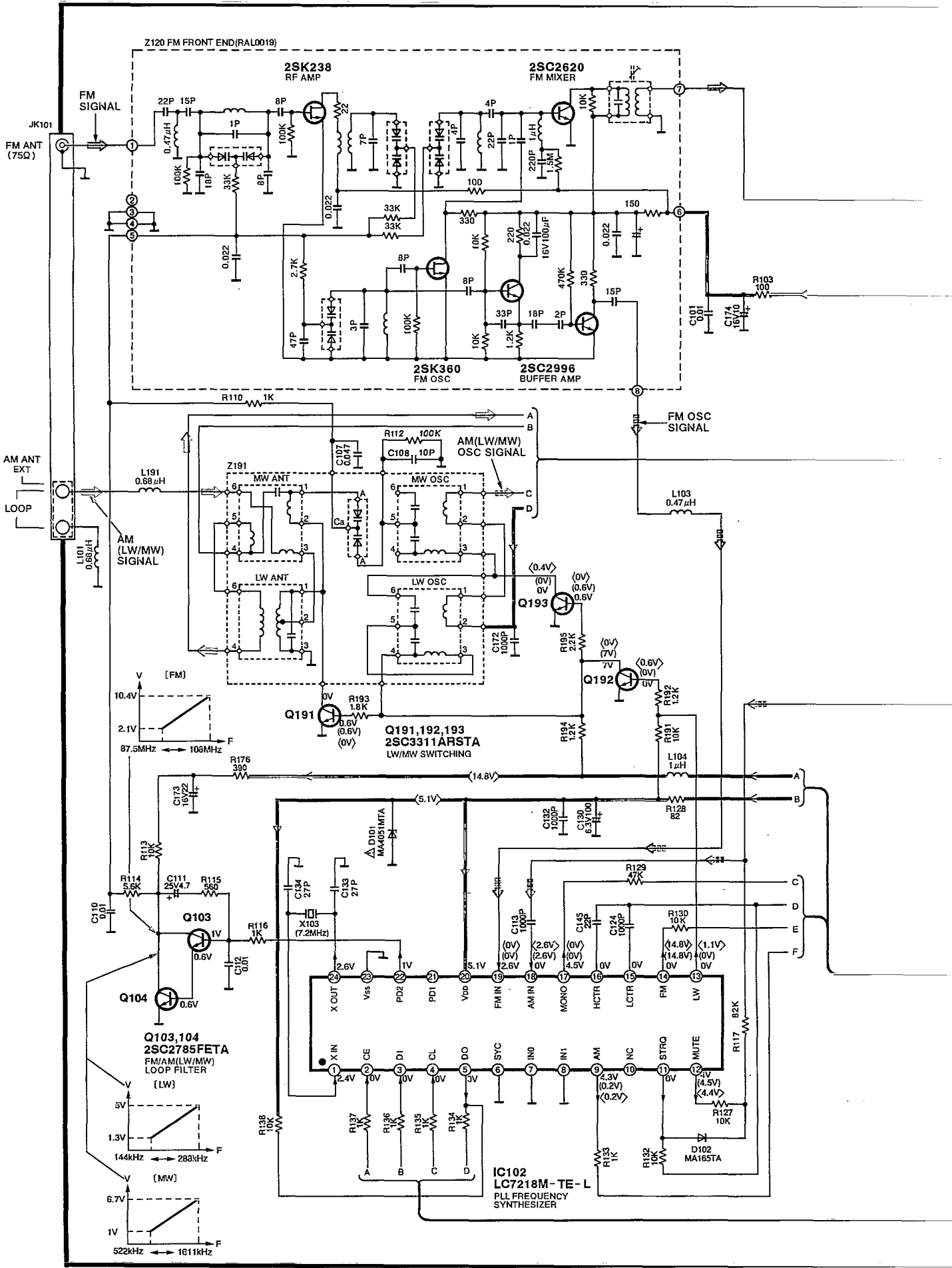
To MAIN CIRCUIT (CN101A) on page 22

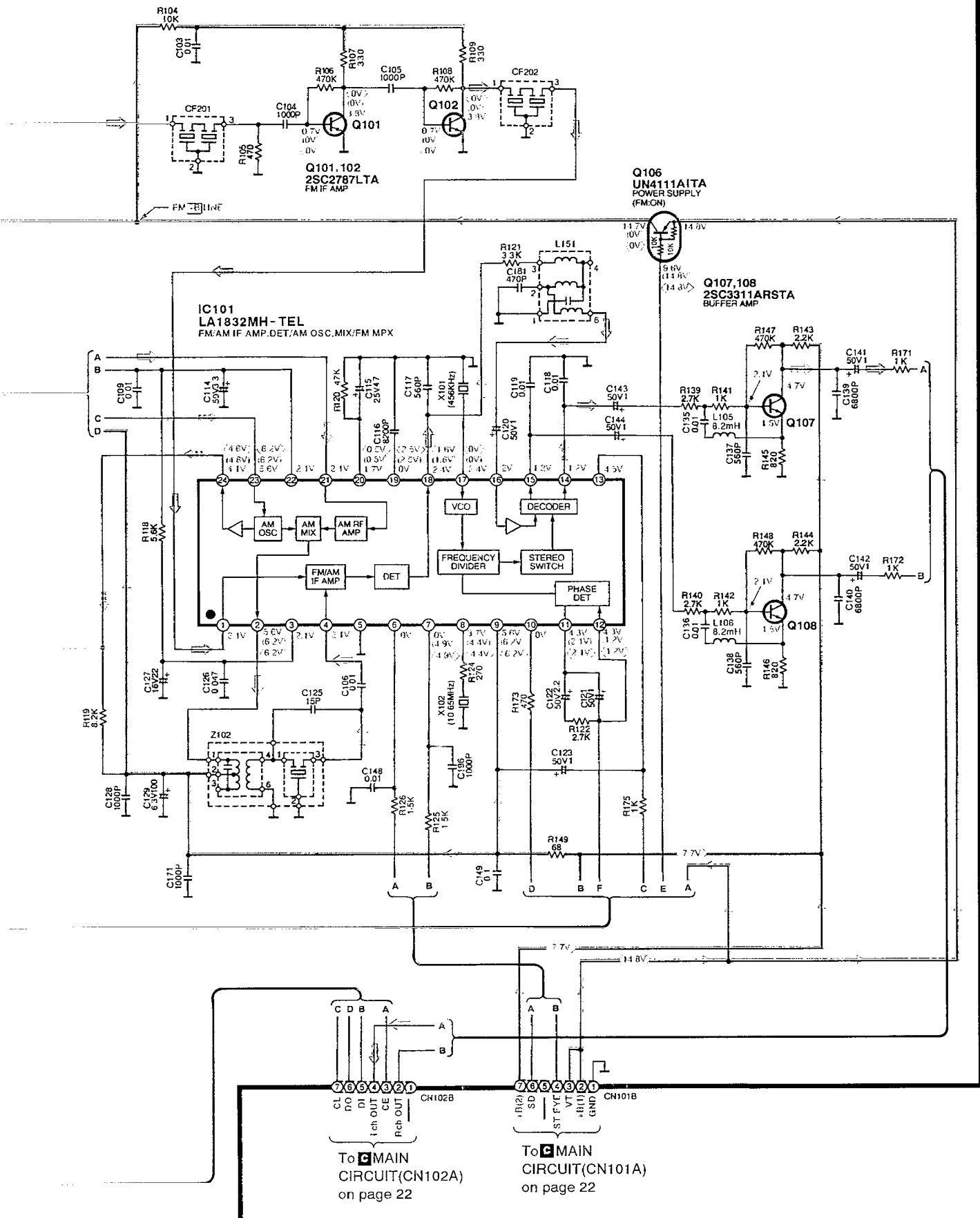
To MAIN CIRCUIT (CN501A) on page 22

A TUNER CIRCUIT For (EG) area. (P.C.Board: on page 27)

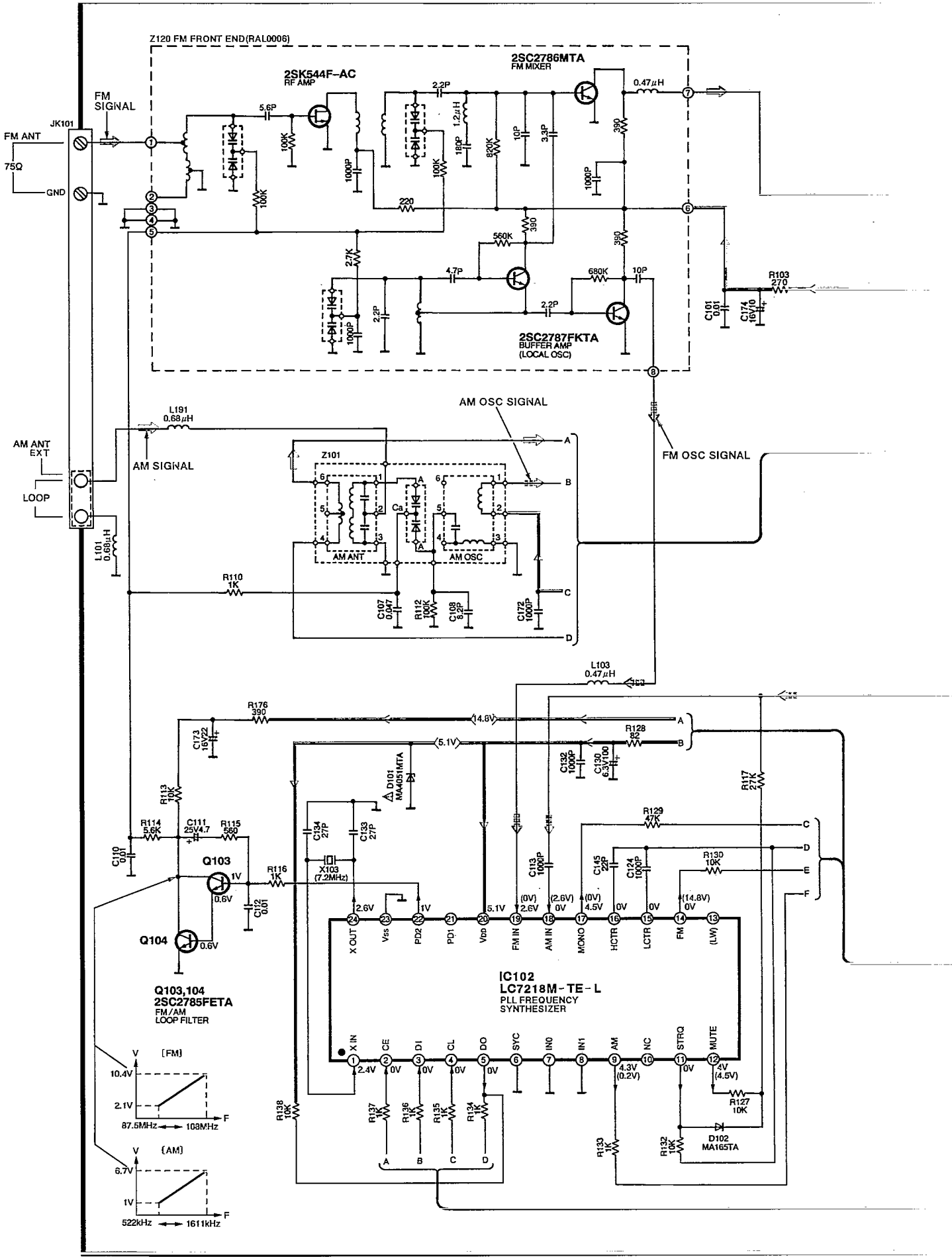


**A** TUNER CIRCUIT For [EB] area. (P.C. Board: on page 28)

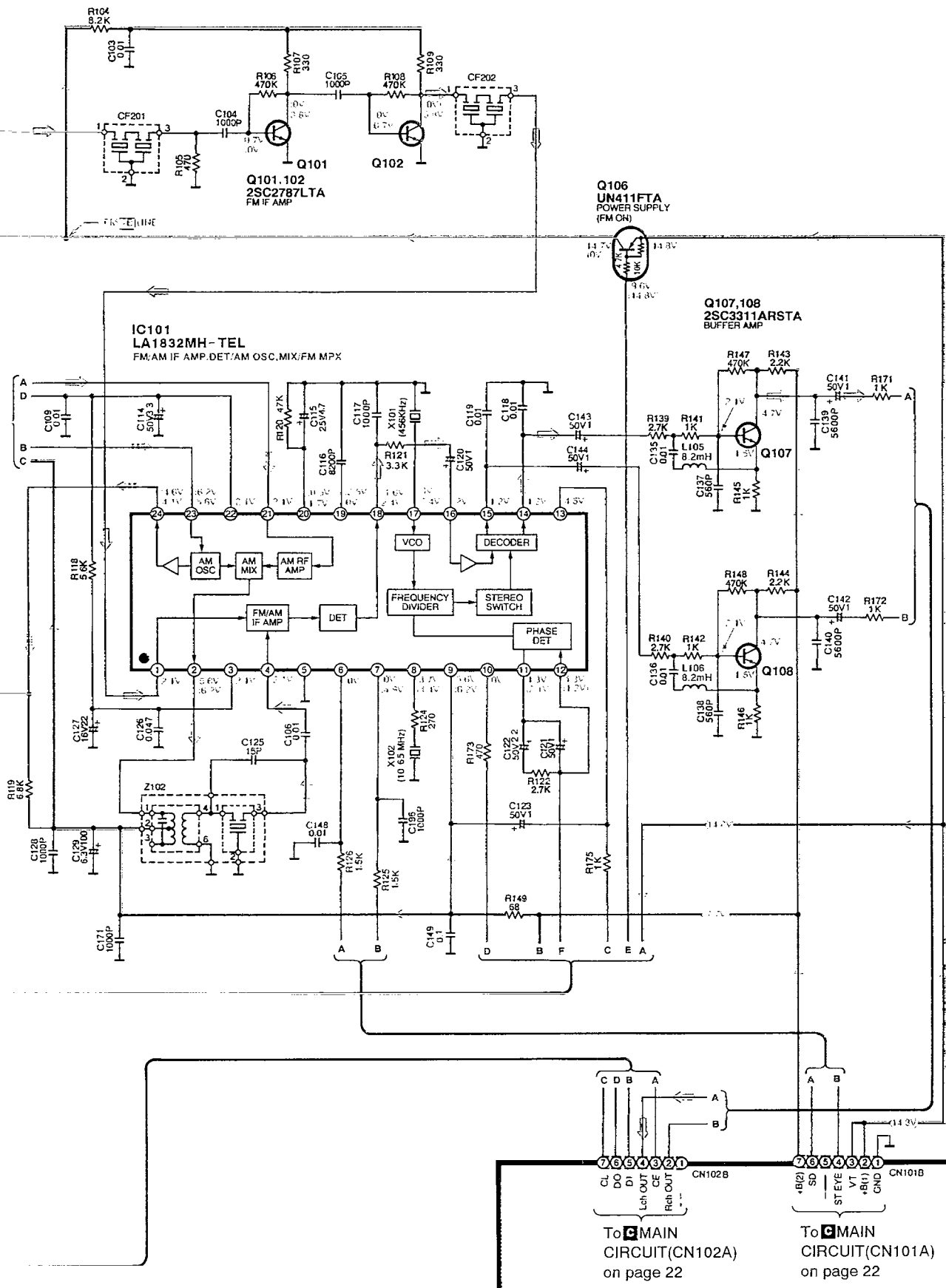




**A** TUNER CIRCUIT For [GC] area. (P.C. Board: on page 28)



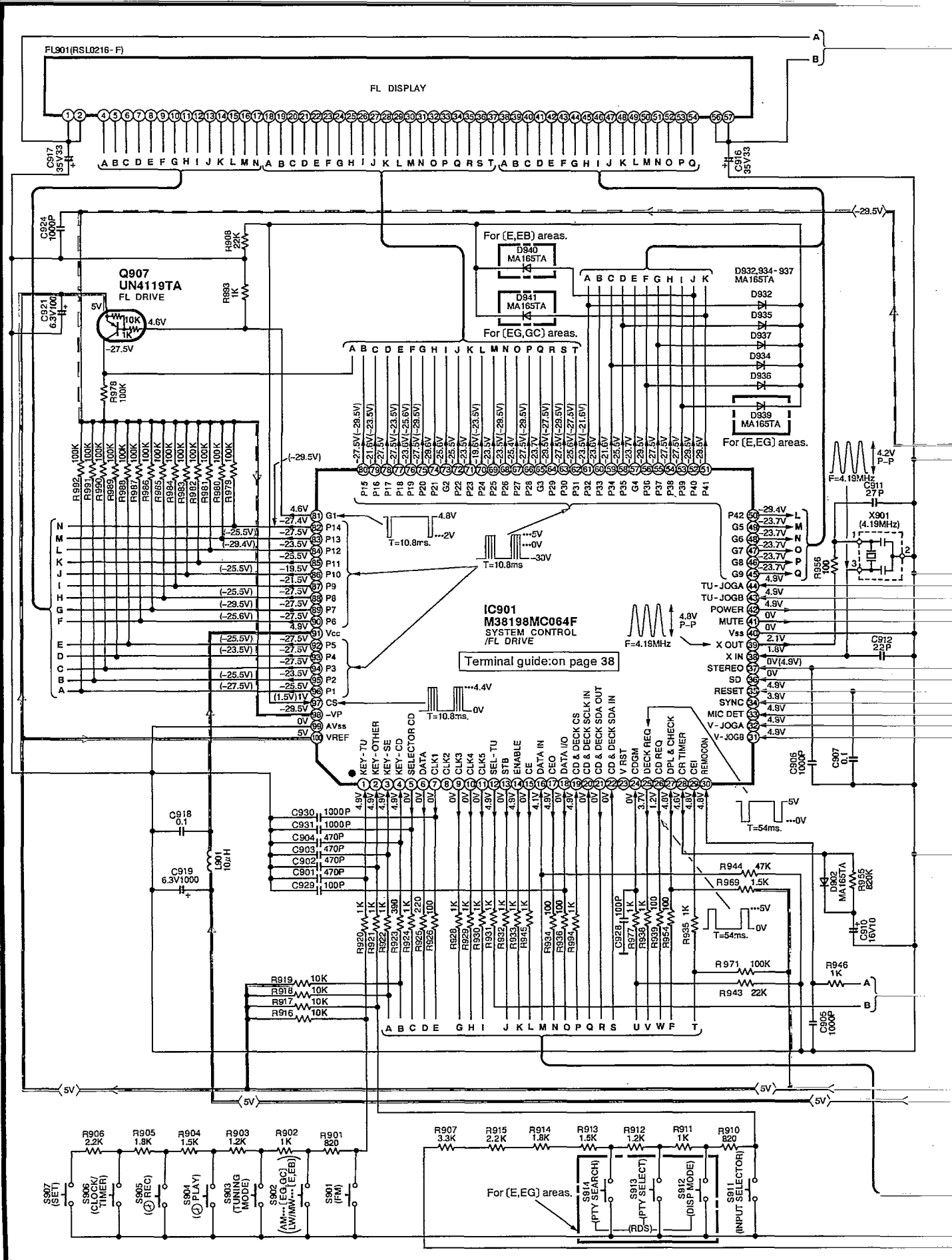


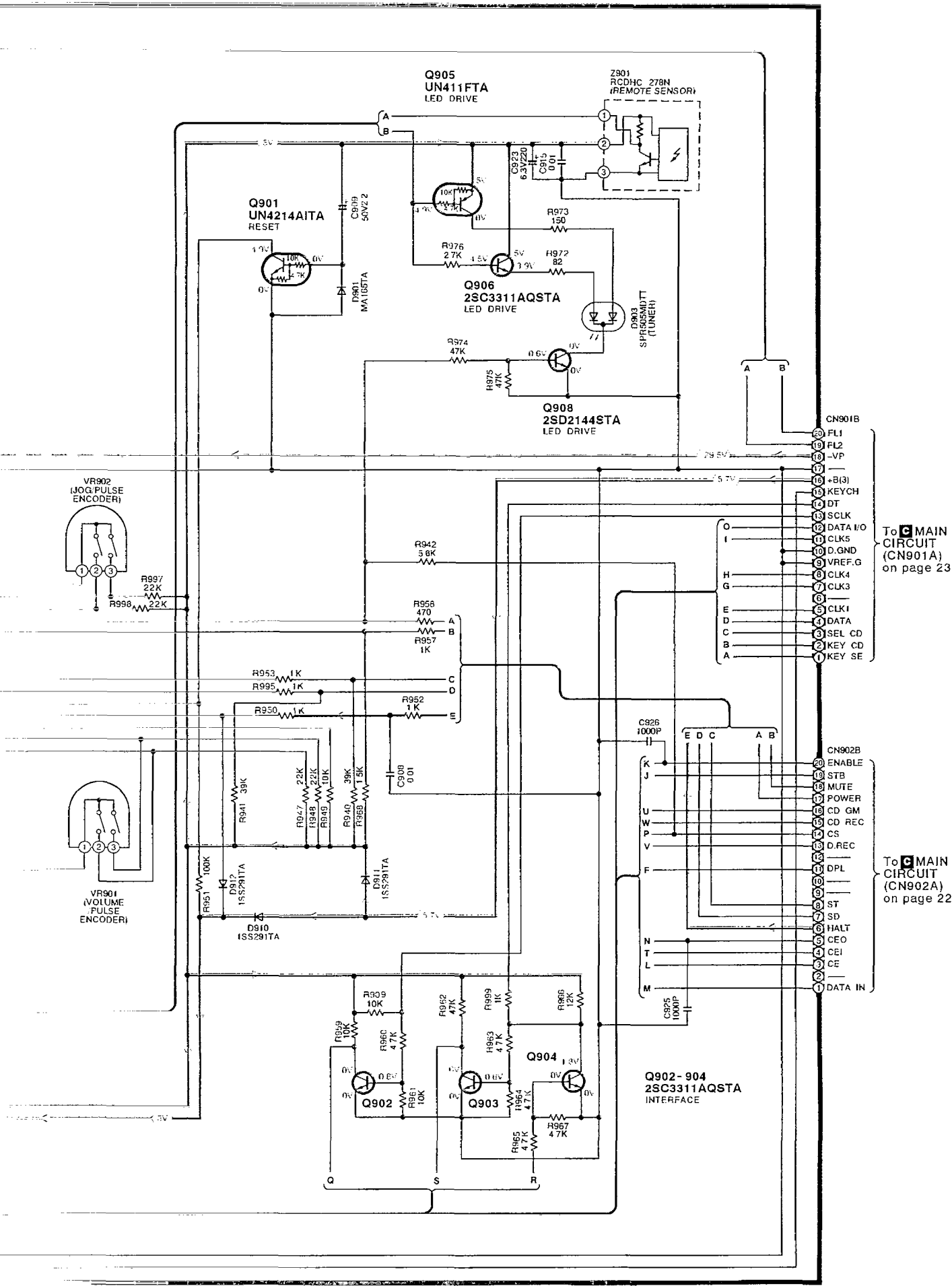


To MAIN CIRCUIT (CN102A) on page 22

To MAIN CIRCUIT (CN101A) on page 22

B OPERATION CIRCUIT (P.C.Board: on page 30)

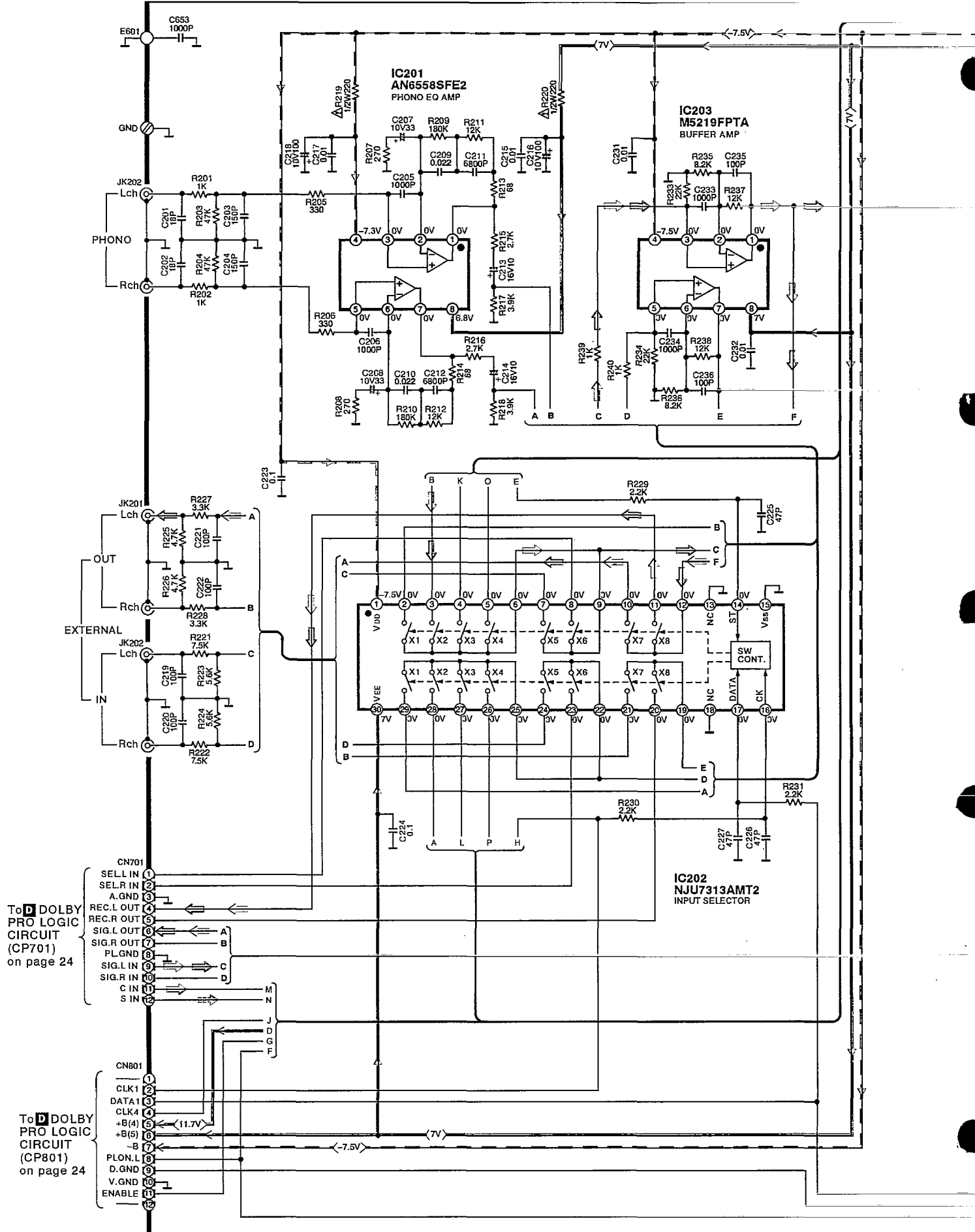


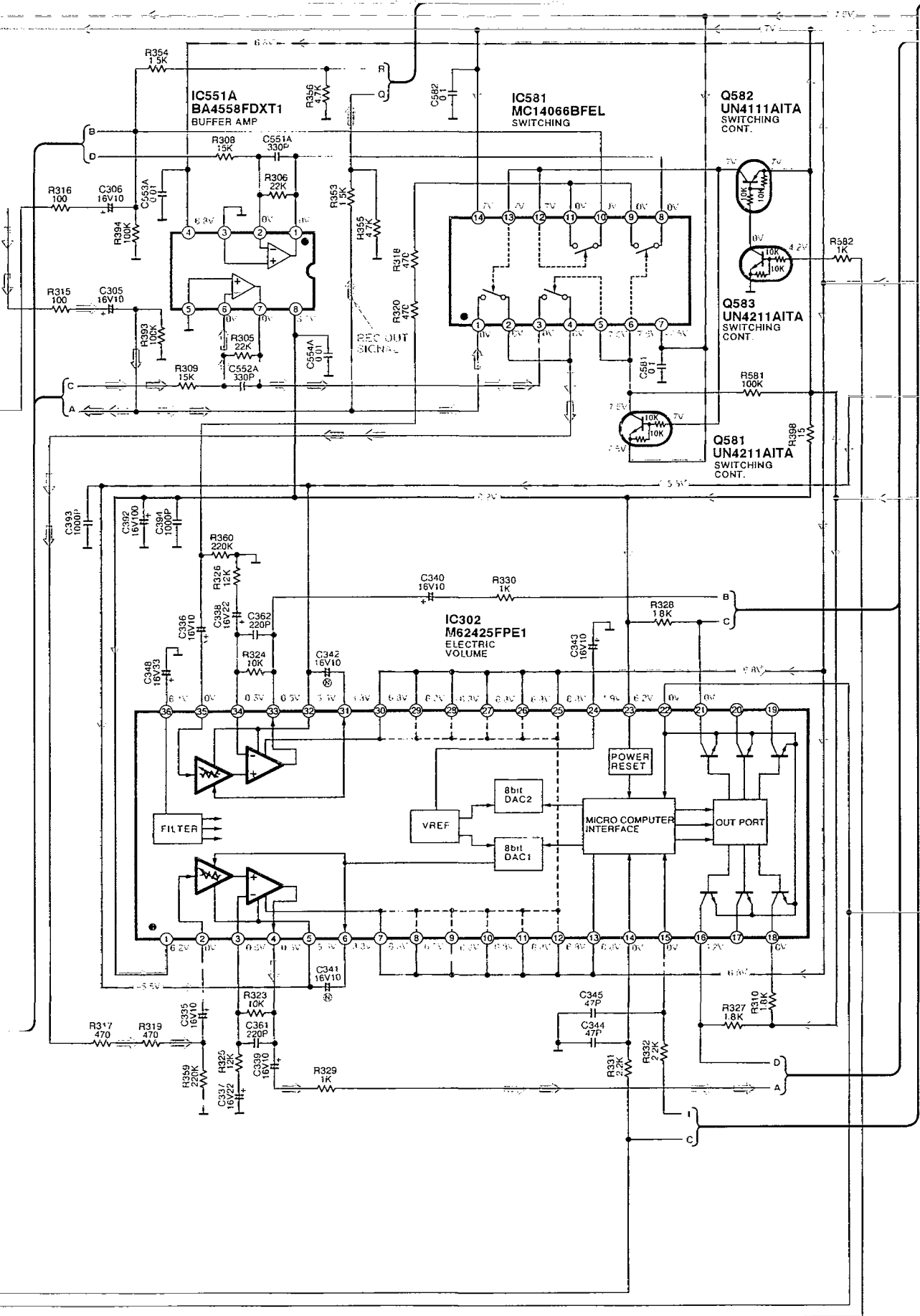


To MAIN CIRCUIT (CN901A) on page 23

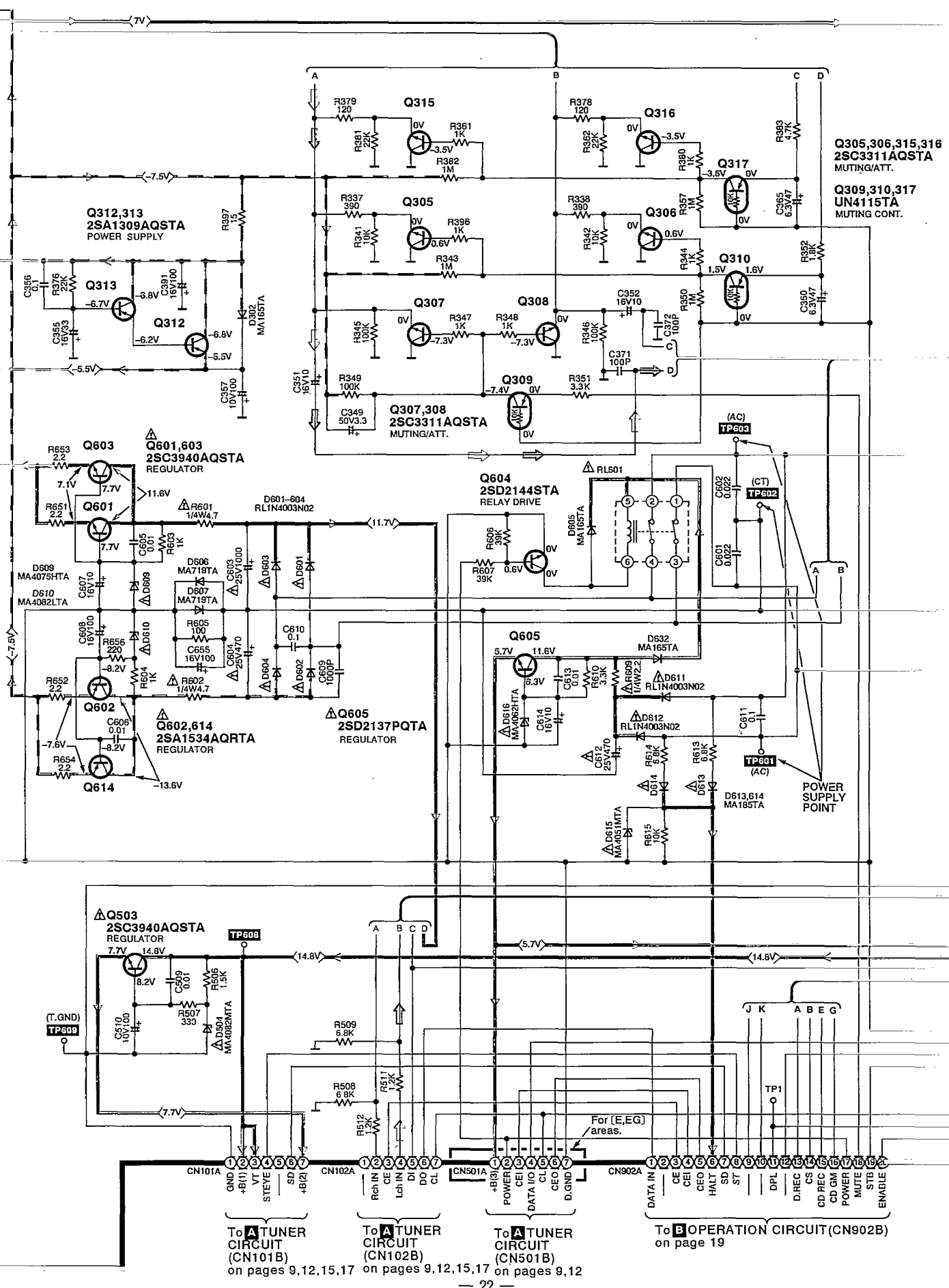
To MAIN CIRCUIT (CN902A) on page 22

C MAIN CIRCUIT (P.C.Board: on page 29)





MAIN CIRCUIT (P.C.Board: on page 29)



**Q606**  
2SB621AQRSTA  
REGULATOR

D618-621  
MA185TA

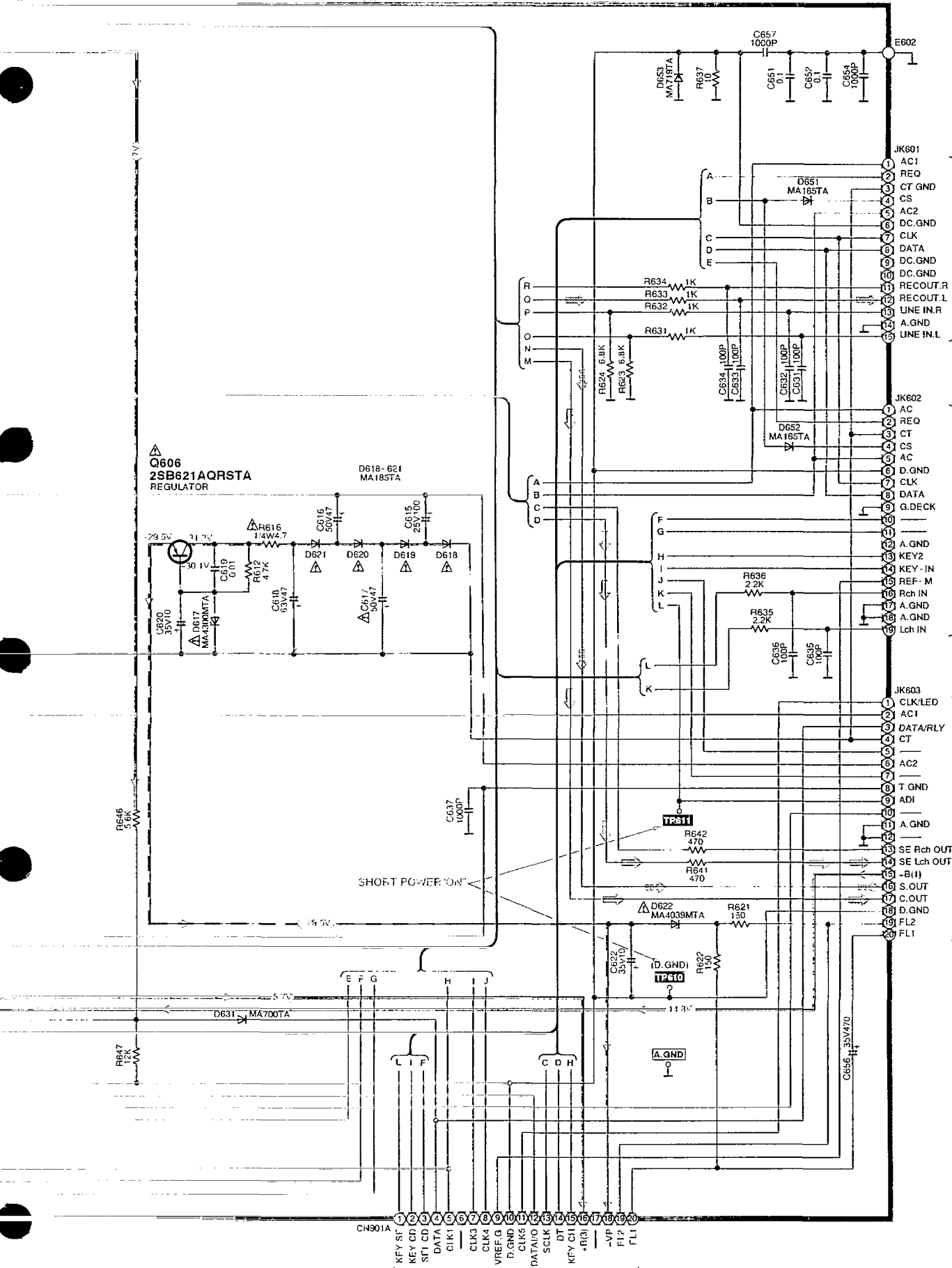
SHORT POWER ON

To **OPERATION CIRCUIT(CN901B)**  
on page 19

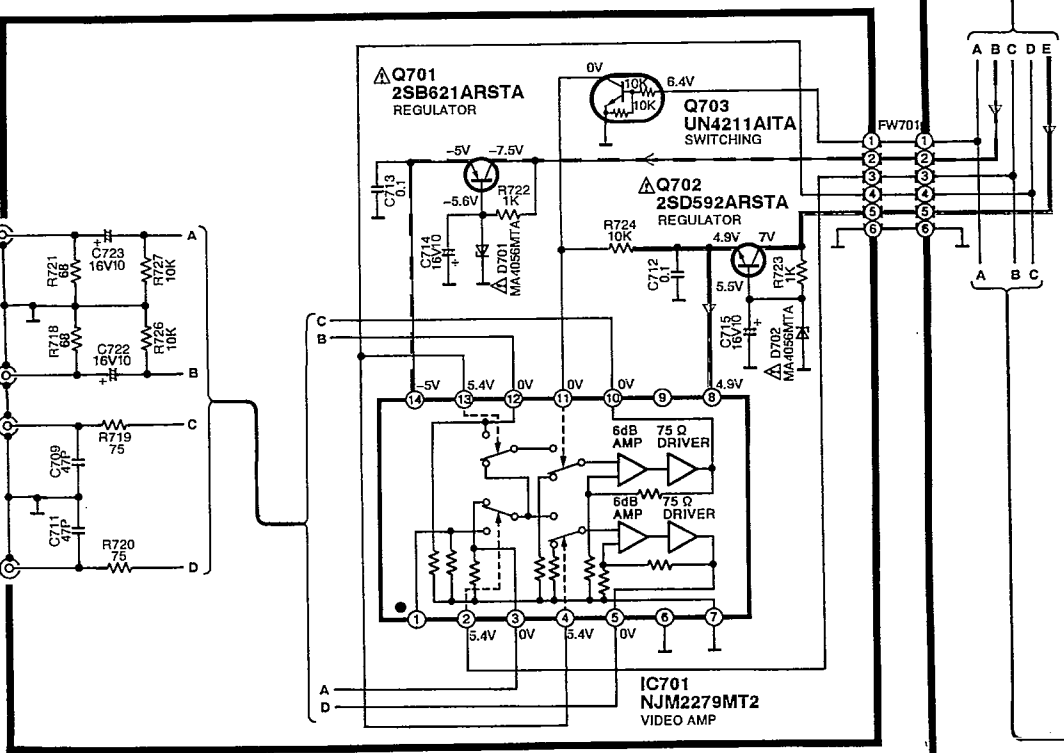
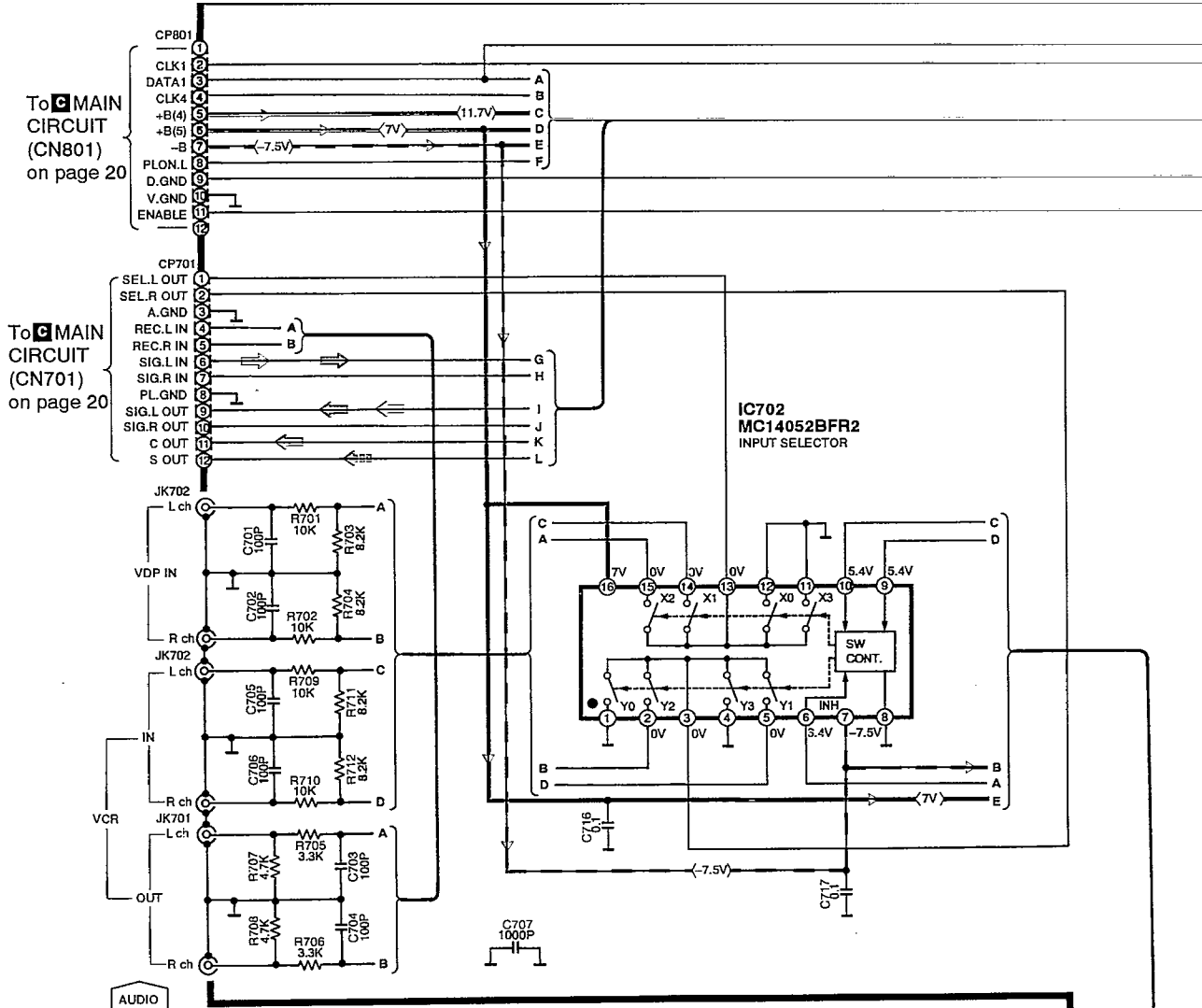
To RS-CA10  
.JK601  
on page 25

To SL-CA10  
.JK401  
on page 29

To SE-CA10  
.JK201  
on page 20

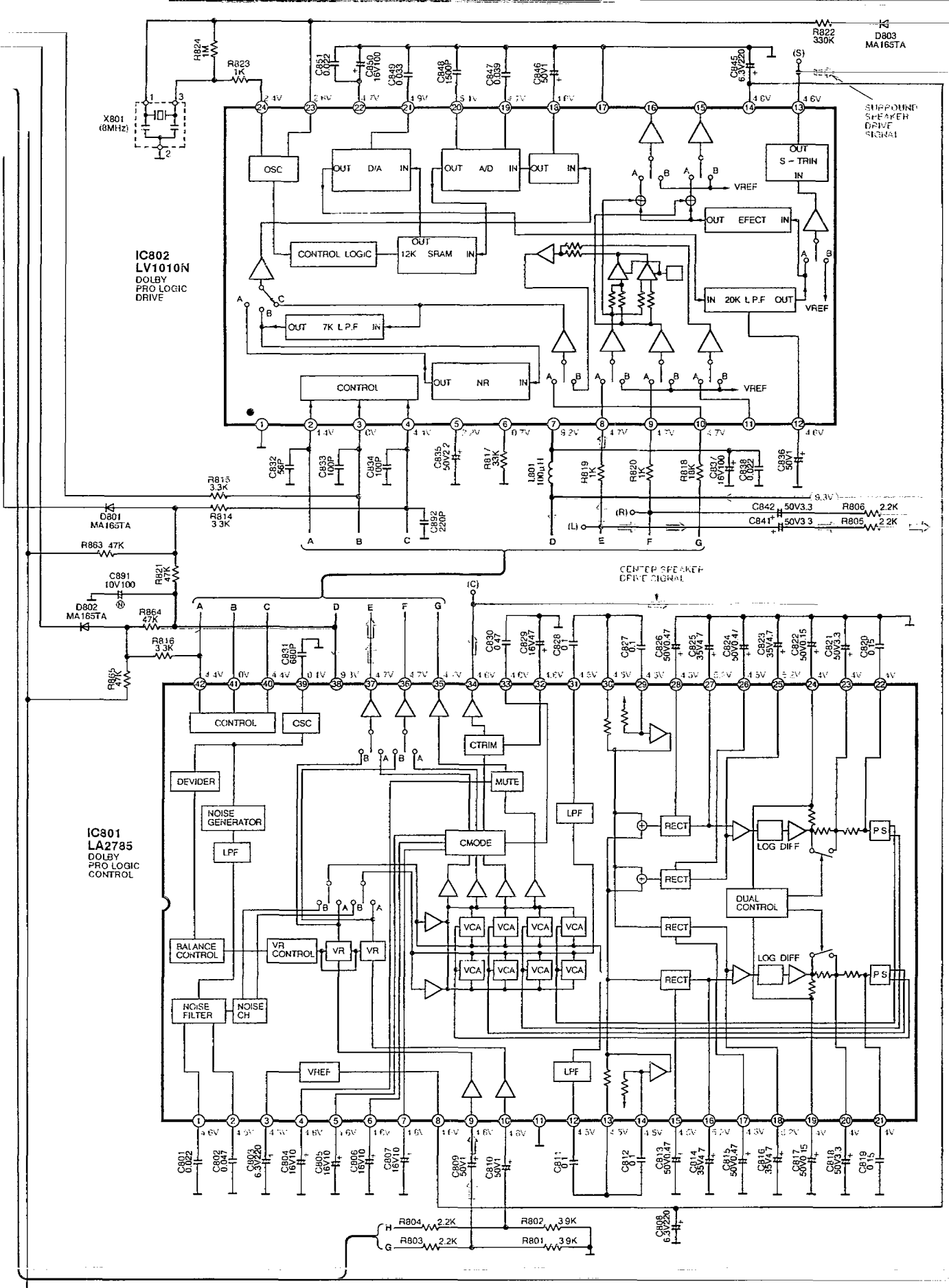


**D** DOLBY PRO LOGIC CIRCUIT (P.C.Board: on page 30)

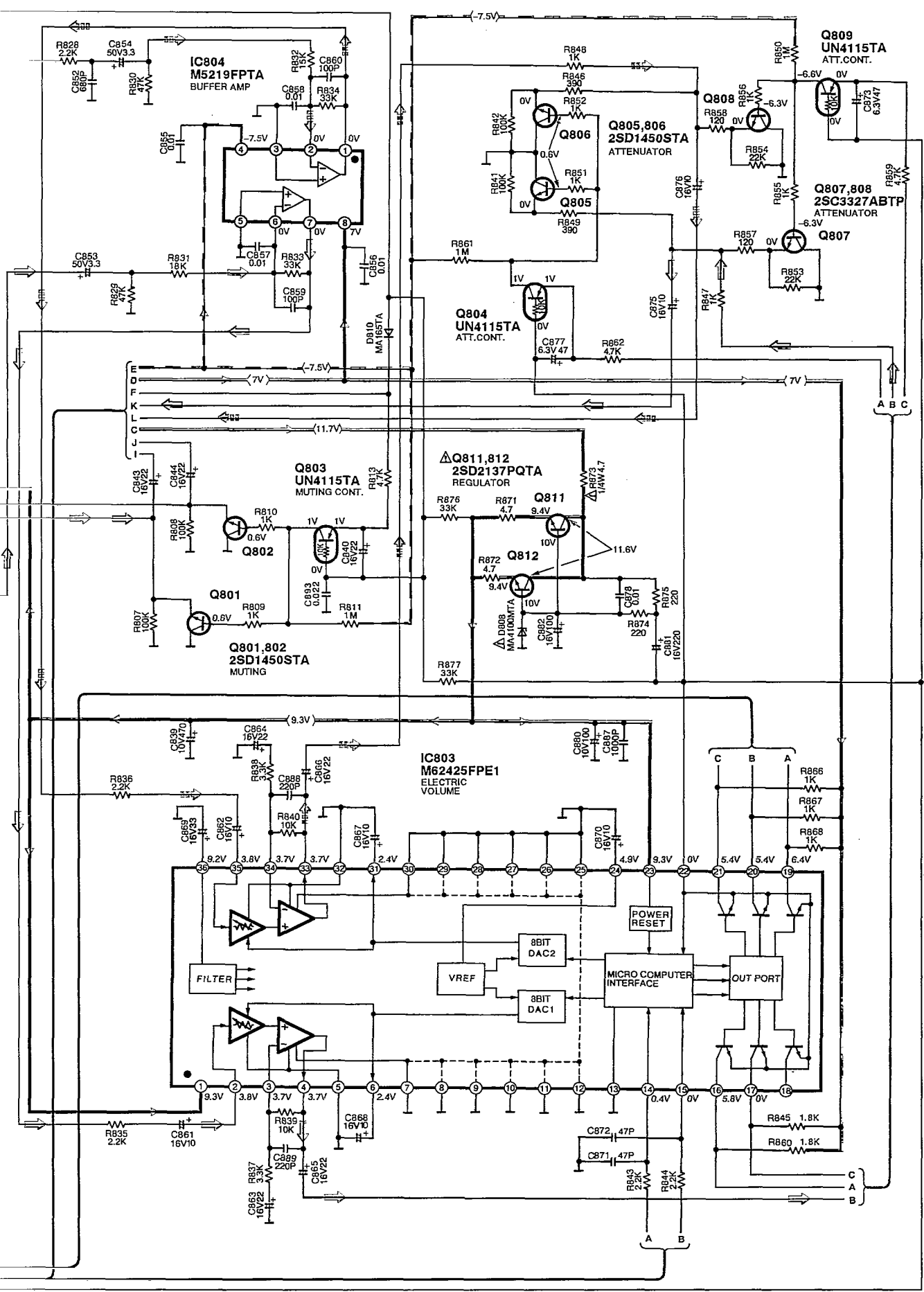


**E** VIDEO CIRCUIT (P.C.Board: on page 28)





D DOLBY PRO LOGIC CIRCUIT (P.C.Board: on page 30)

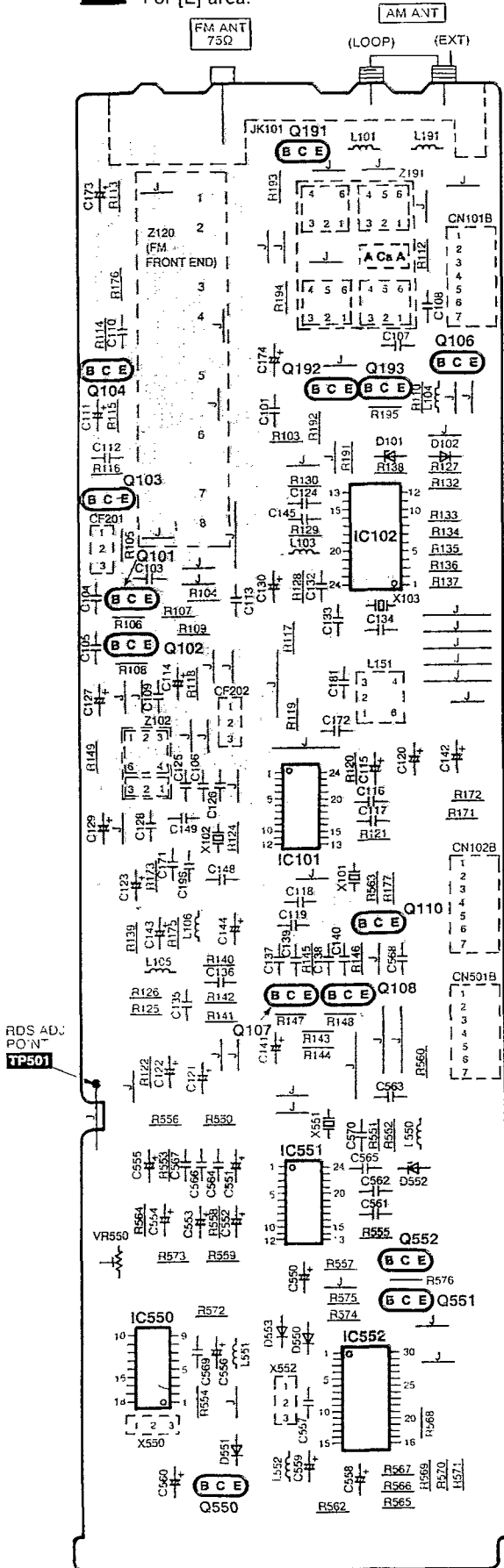


# PRINTED CIRCUIT BOARD DIAGRAM

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

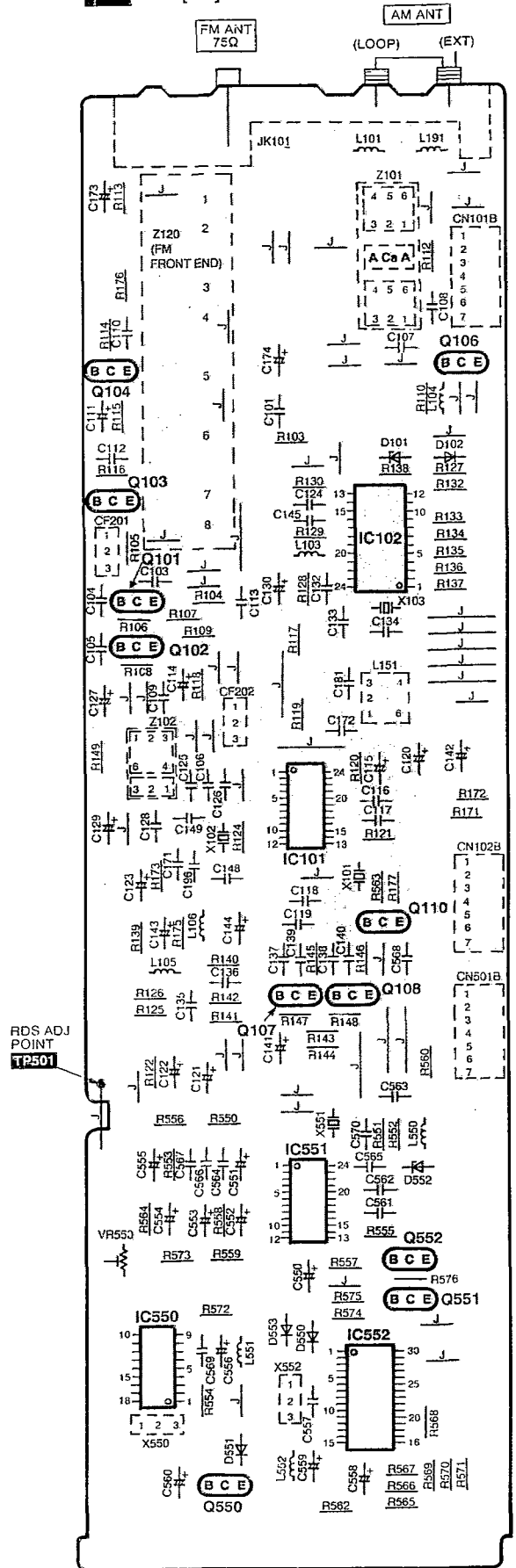
## A TUNER P.C.B. (REP2151B-T)

For [E] area.

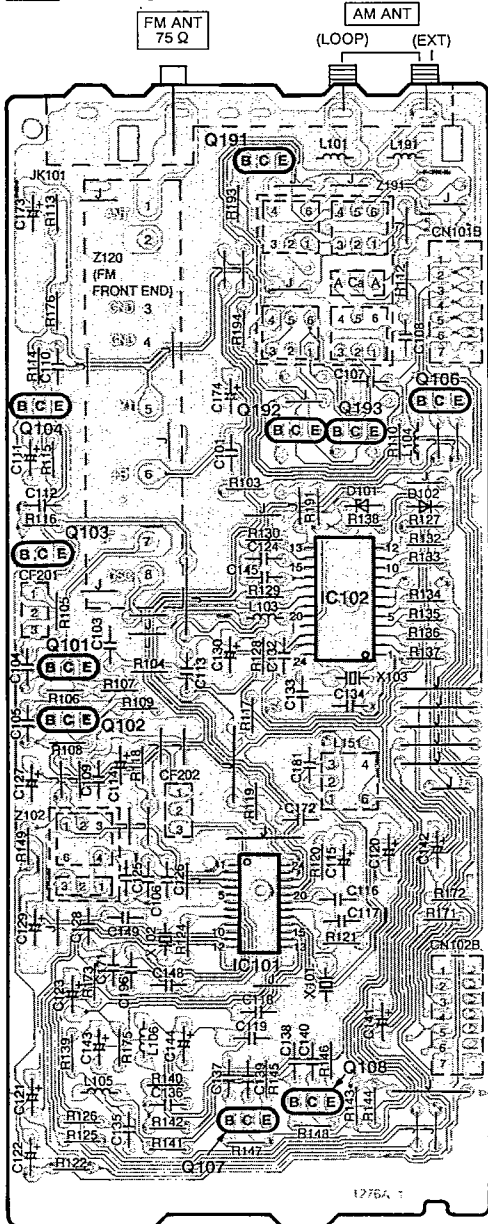


## A TUNER P.C.B. (REP2151A-T)

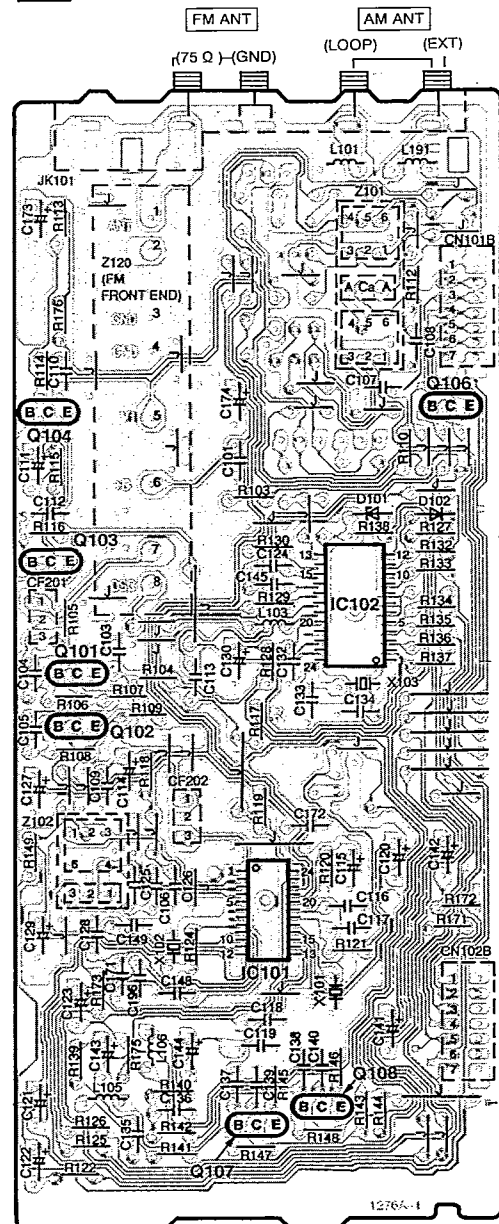
For [EG] area.



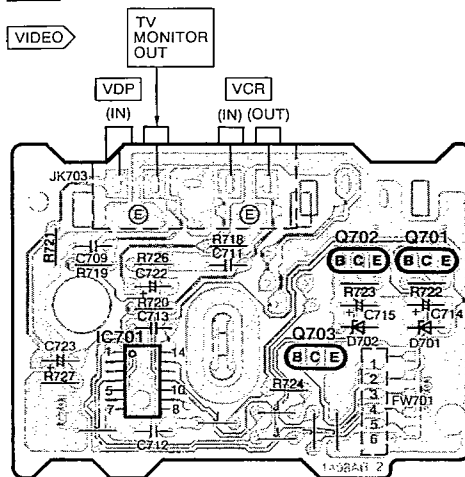
**A** TUNER P.C.B. (REP1930F-T)  
For [EB] area.



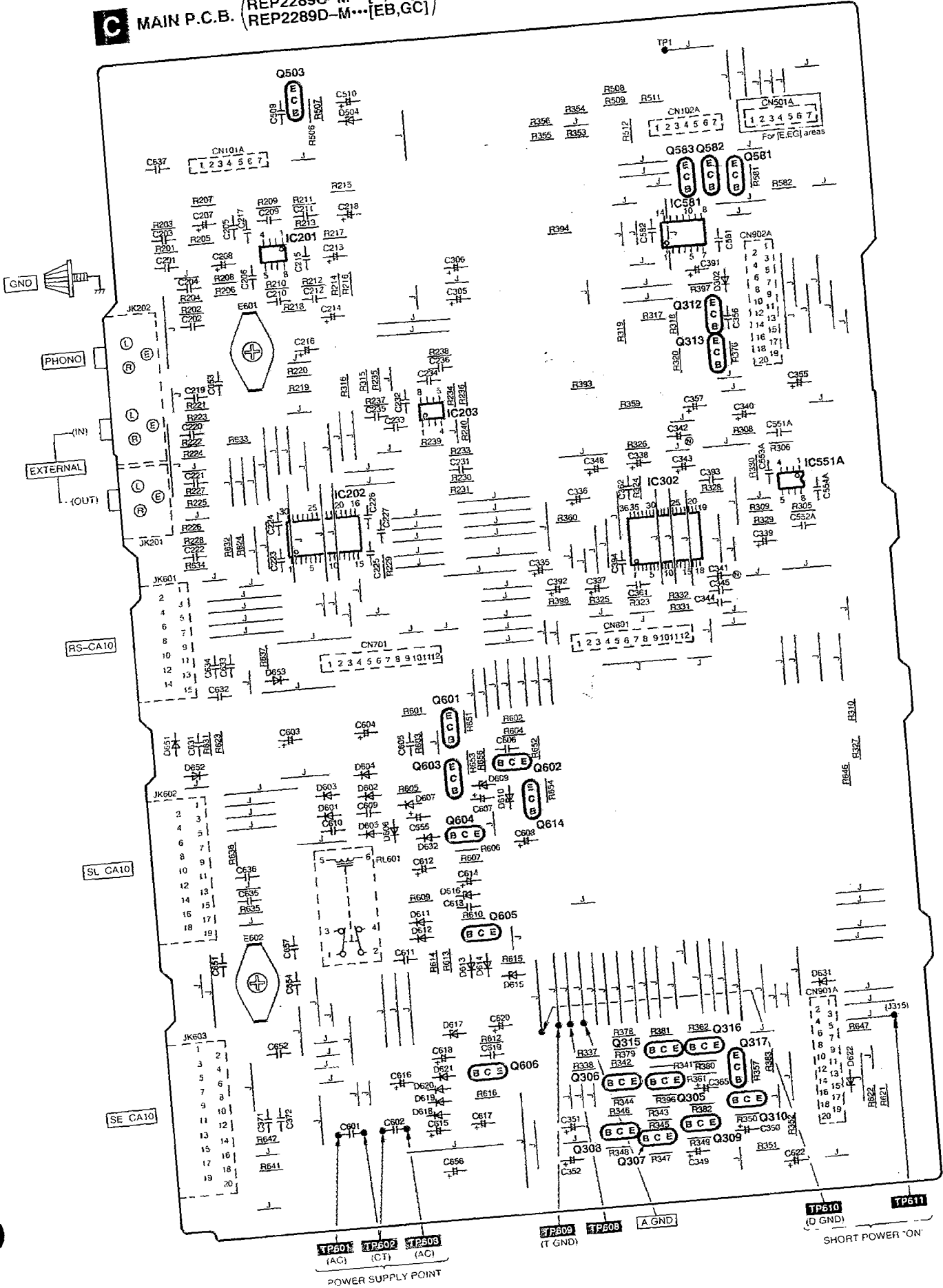
**A** TUNER P.C.B. (REP1930E-T)  
For [GC] area.



**E** VIDEO P.C.B. (REP2172A-T)



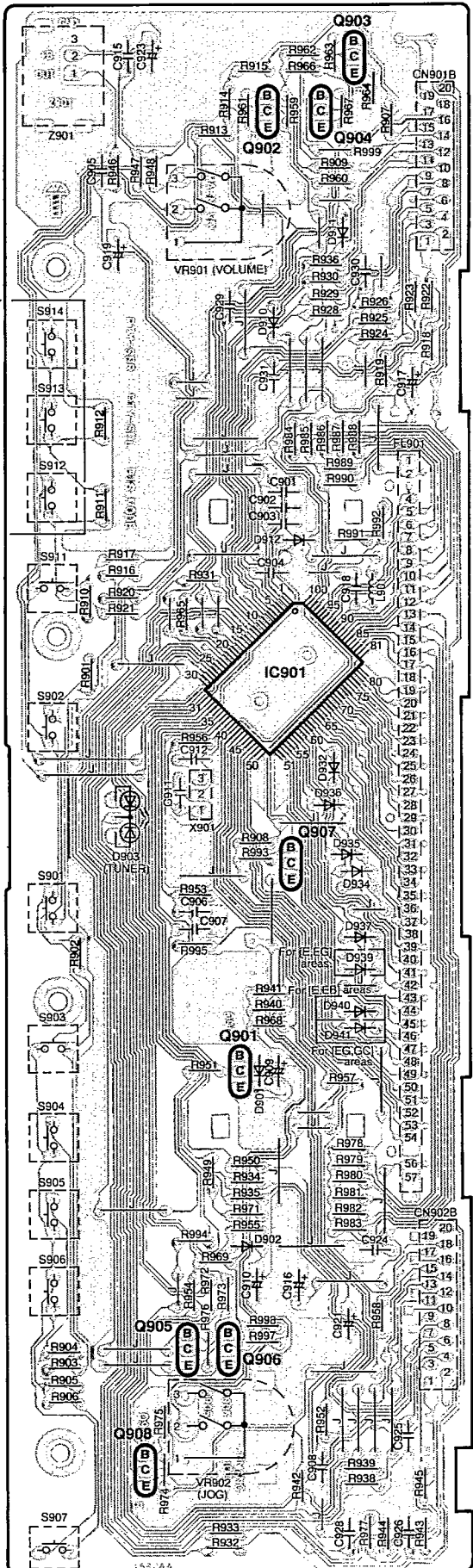
**C** MAIN P.C.B. (REP2289C-M...[E,EG]  
 REP2289D-M...[EB,GC])



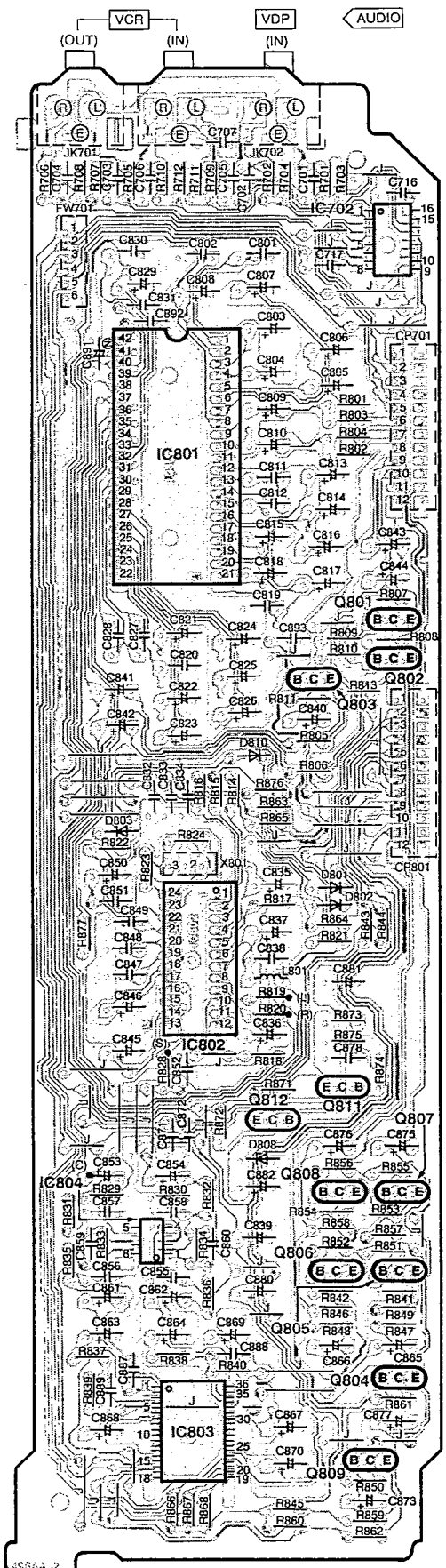
**B** OPERATION P.C.B.

REP2290D-S...[E]  
 REP2290E-S...[EG]  
 REP2290F-S...[GC]  
 REP2290J-S...[EB]

- SENSOR
- For [E,EG] areas.
  - (PTY SEARCH)
  - (PTY SELECT)
  - RDS
  - (DISP. MODE)
- INPUT SELECTOR
- [E,EB]...[LW/MW]  
 [EG,GC]...[AM]
- FM
- TUNING MODE
- PLAY
- REC
- CLOCK/TIMER
- SET



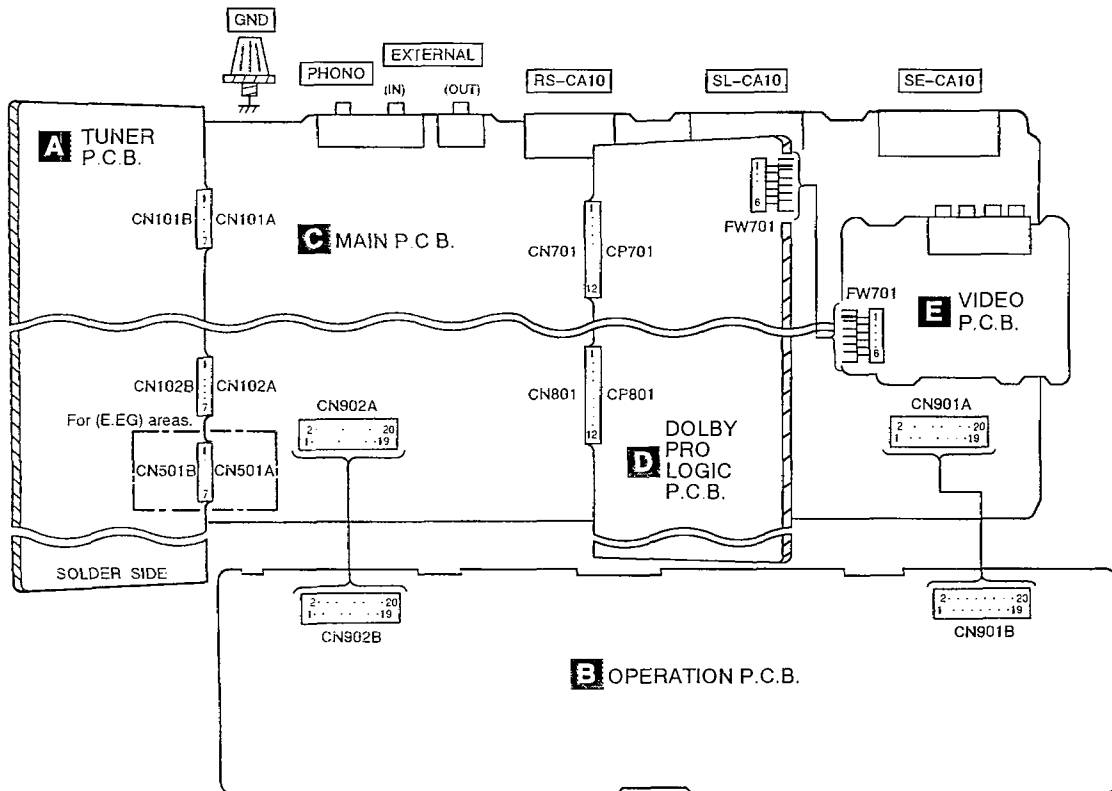
**D** DOLBY PRO LOGIC P.C.B.  
 (REP2172A-T)



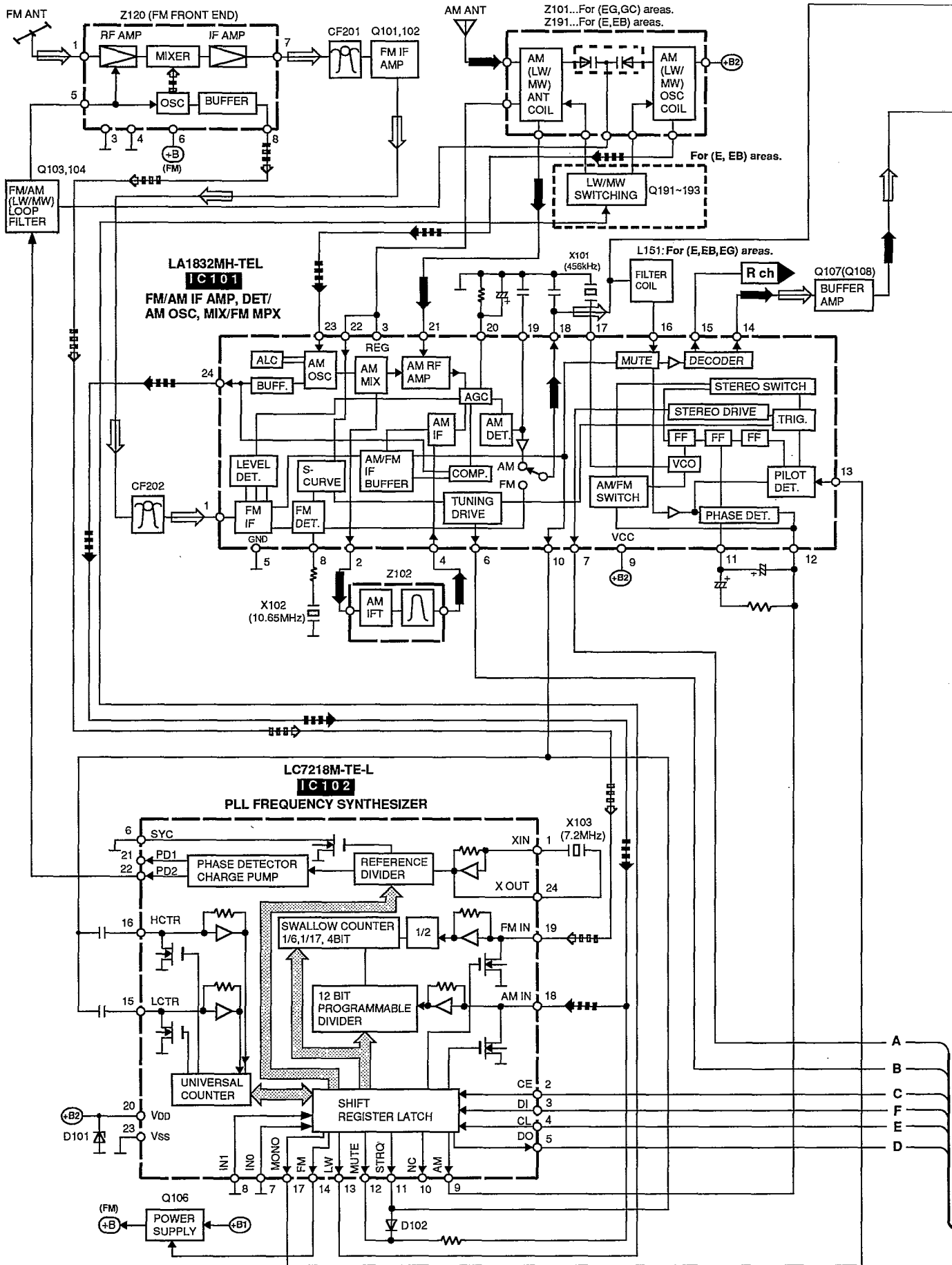
● Terminal guide of IC's transistors and diodes

<p>No 1</p>	<table border="1"> <tr> <td>AN6558SFE2</td> <td>8PIN</td> <td>LA2230M-TE-L</td> <td>24PIN</td> </tr> <tr> <td>M5219FPTA</td> <td>8PIN</td> <td>LC7218M-TE-L</td> <td>24PIN</td> </tr> <tr> <td>MC14066BFEL</td> <td>14PIN</td> <td>LC65104A4F75</td> <td>30PIN</td> </tr> <tr> <td>MC14052BFR2</td> <td>16PIN</td> <td>NJU7313AMT2</td> <td>30PIN</td> </tr> <tr> <td>NJM2279MT2</td> <td>16PIN</td> <td>M62425FPE1</td> <td>36PIN</td> </tr> <tr> <td>LC7073M-TLM</td> <td>18PIN</td> <td></td> <td></td> </tr> <tr> <td>LA1832MH-TEL</td> <td>24PIN</td> <td></td> <td></td> </tr> </table>	AN6558SFE2	8PIN	LA2230M-TE-L	24PIN	M5219FPTA	8PIN	LC7218M-TE-L	24PIN	MC14066BFEL	14PIN	LC65104A4F75	30PIN	MC14052BFR2	16PIN	NJU7313AMT2	30PIN	NJM2279MT2	16PIN	M62425FPE1	36PIN	LC7073M-TLM	18PIN			LA1832MH-TEL	24PIN				
	AN6558SFE2	8PIN	LA2230M-TE-L	24PIN																											
	M5219FPTA	8PIN	LC7218M-TE-L	24PIN																											
	MC14066BFEL	14PIN	LC65104A4F75	30PIN																											
	MC14052BFR2	16PIN	NJU7313AMT2	30PIN																											
	NJM2279MT2	16PIN	M62425FPE1	36PIN																											
LC7073M-TLM	18PIN																														
LA1832MH-TEL	24PIN																														
<p>LA2785</p>	<p>M38198MC064F</p>	<p>E C B</p>	<p>2SA1309AQSTA 2SC2785FETA 2SC2787LTA 2SC3311AQSTA 2SC3311ARSTA 2SD1450STA UN411FTA UN4111AITA</p>	<p>UN4115TA UN4119TA UN4211AITA UN4214AITA</p>	<p>2SB621AQRSTA 2SB621ARSTA 2SD592ARSTA</p> <p>E C B</p>																										
<p>2SA1534AQRSTA 2SC3940AQSTA</p> <p>E C B</p>	<p>2SD2144STA 2SC3327ABTP</p> <p>B C E</p>	<p>2SD2137PQTA</p> <p>B C E</p>	<p>MA4100MTA MA4300MTA</p> <p>Anode</p>	<p>Anode</p>	<p>1SS291TA MA165TA MA700TA</p>																										
<p>MA185TA MA719TA</p> <p>Anode</p>	<p>Anode</p>	<p>MA4039MTA MA4051MTA MA4056MTA MA4062HTA MA4075HTA MA4082LTA MA4082MTA</p>	<p>SPR505MDTT</p> <p>Anode</p>	<p>RL1N4003N02</p> <p>Anode</p>																											

■ WIRING CONNECTION DIAGRAM

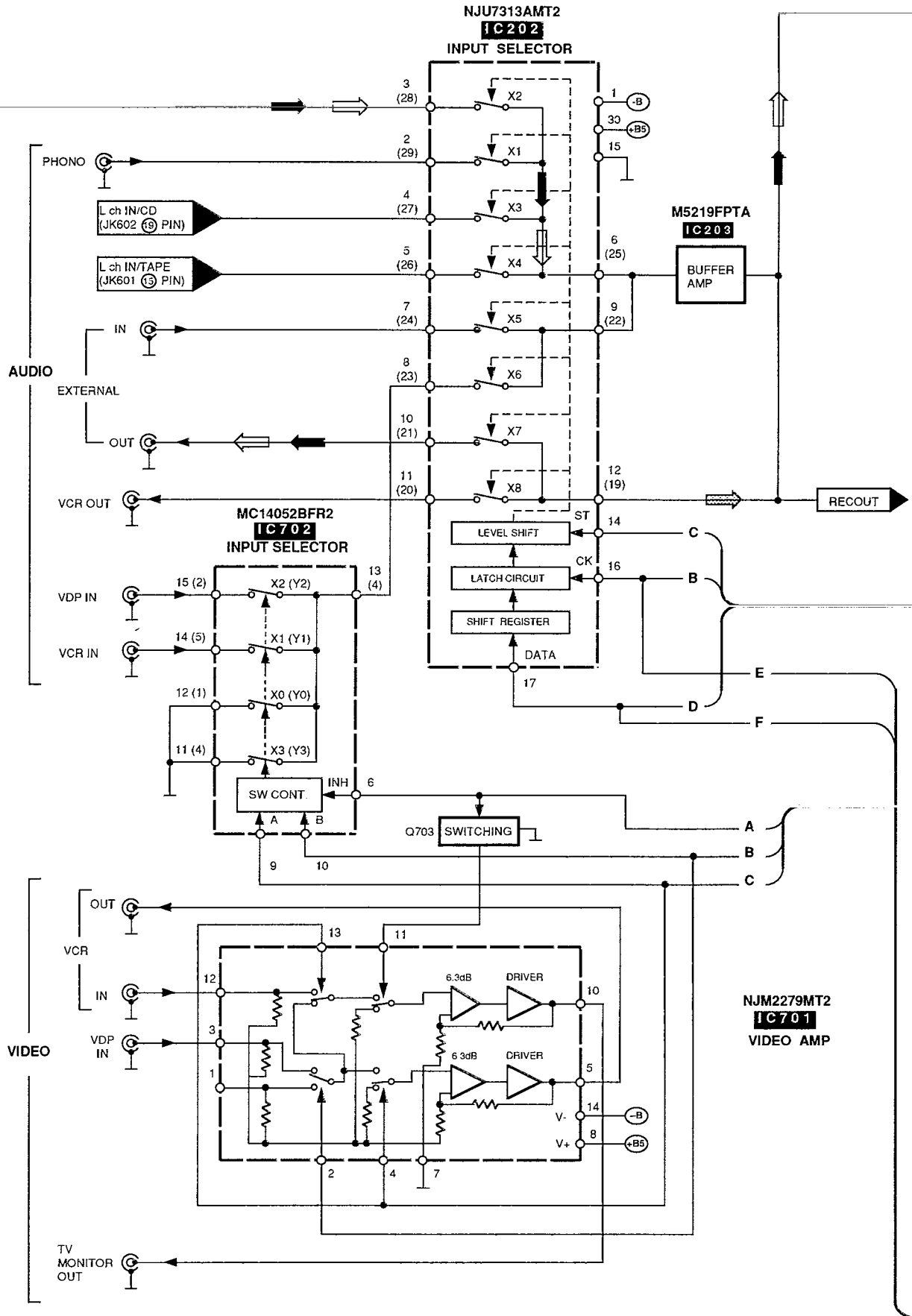


**BLOCK DIAGRAM**



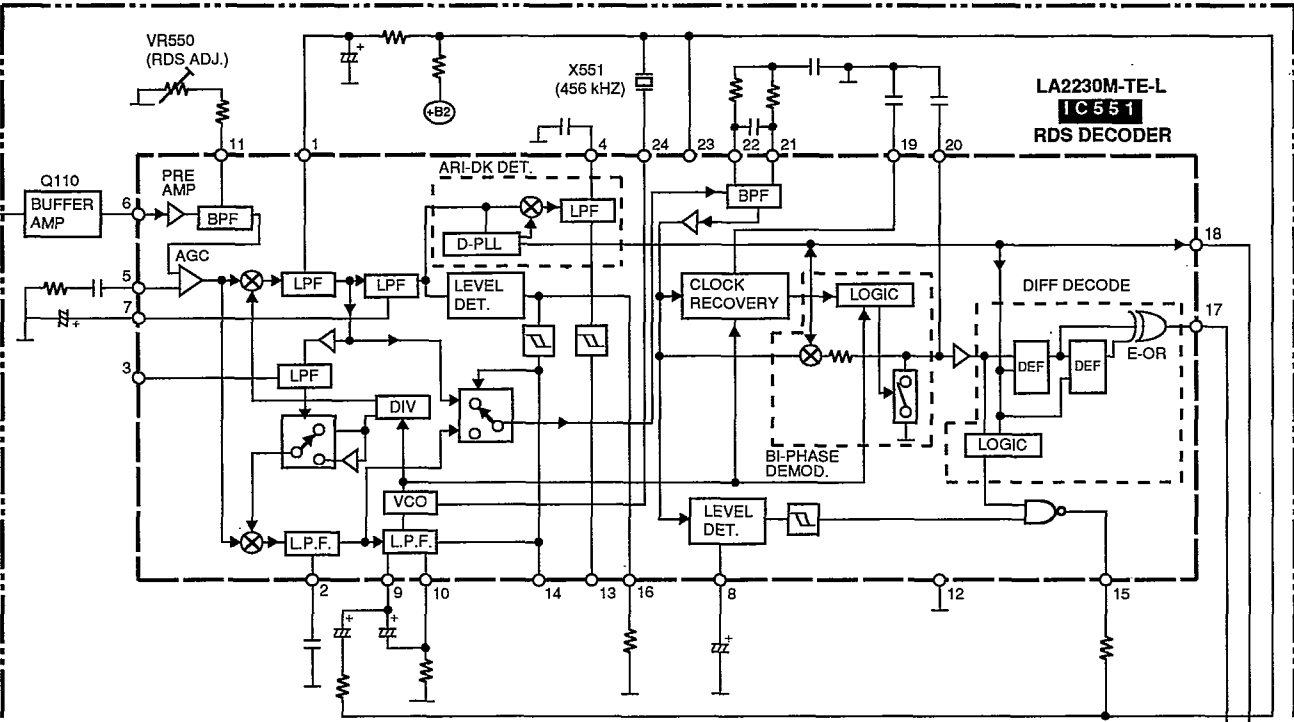


● Signal line     $\Rightarrow$  : FM signal     $\square\square\square$  : FM OSC signal     $\blackrightarrow$  : AM signal     $\square\square\square$  : AM OSC signal  
 $\Rightarrow$  : Rec out signal     $\blackrightarrow$  : Center speaker drive signal     $\square\square\square$  : Surround speaker drive signal

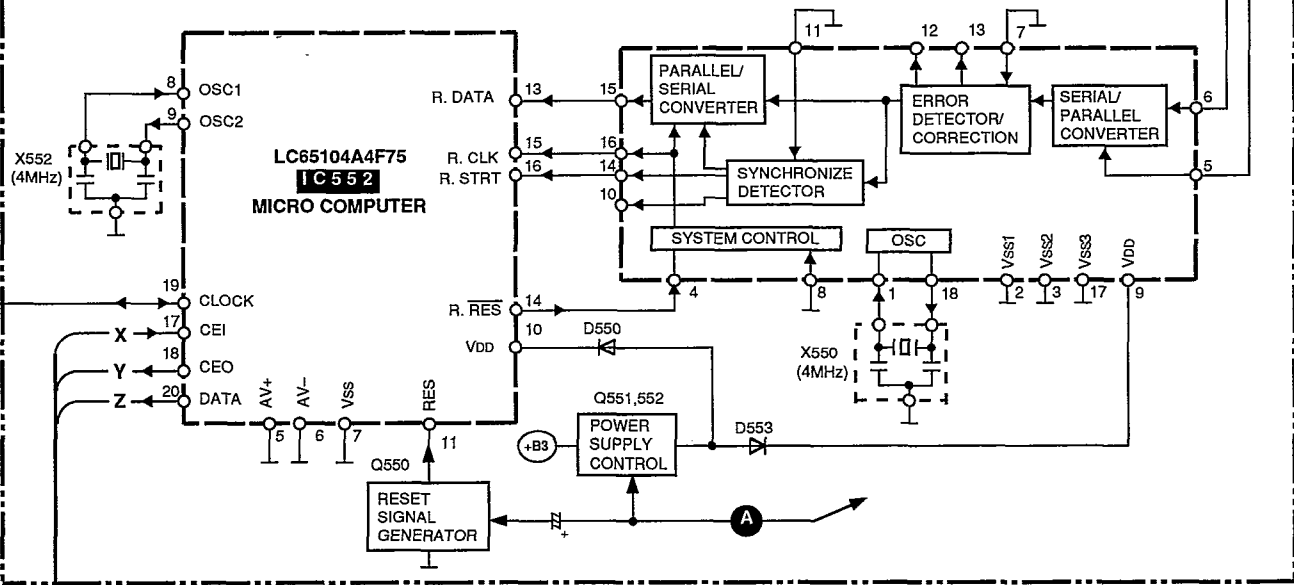


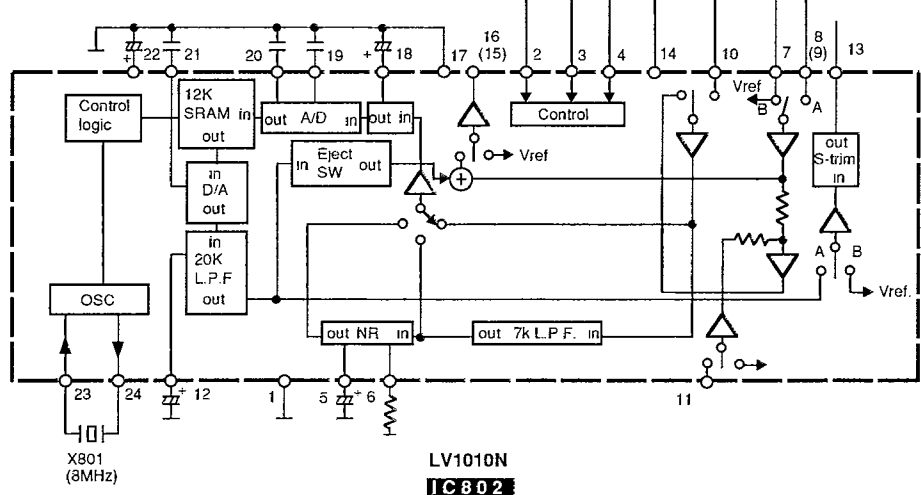
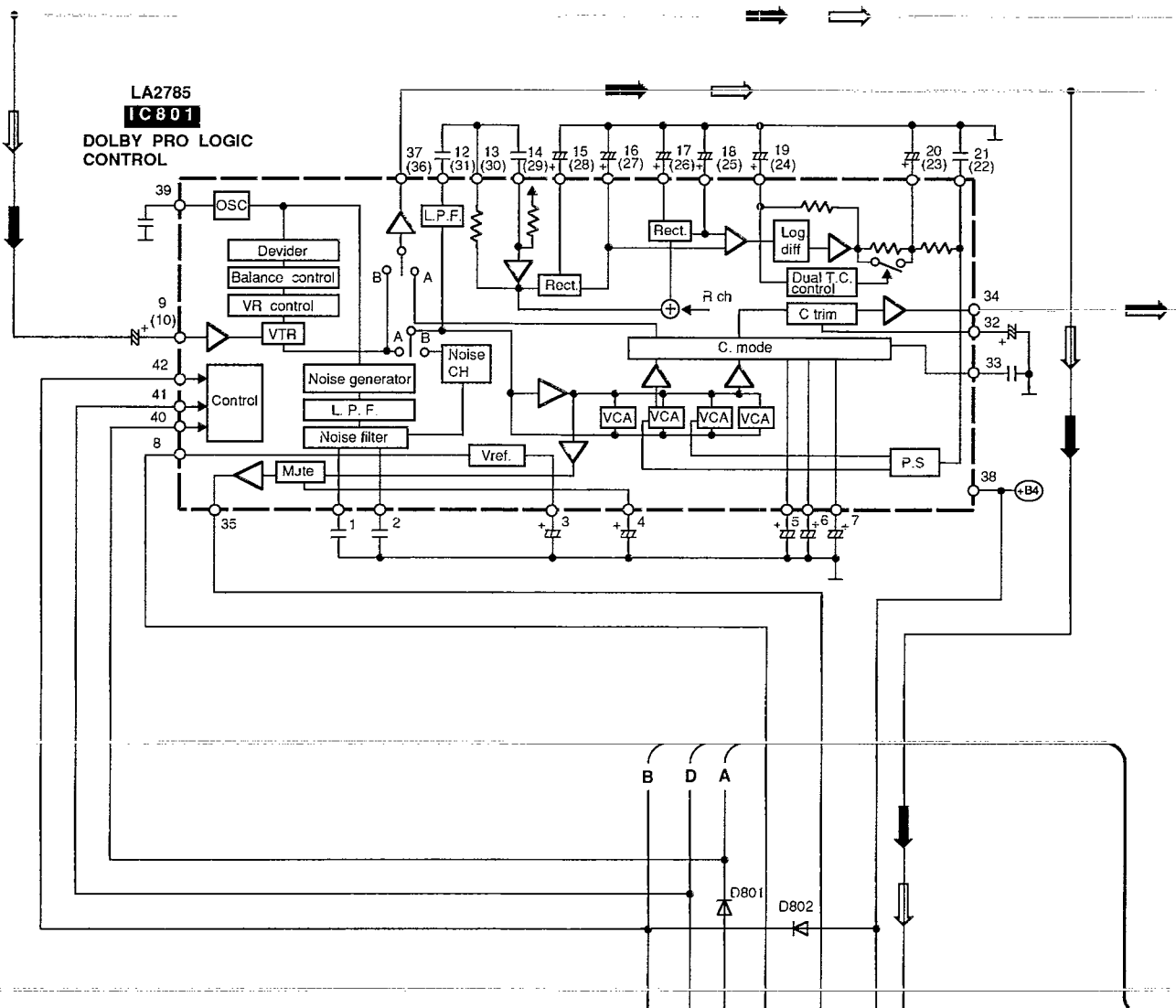
- Signal line  $\Rightarrow$  : FM signal     $\square\square\square$  : FM OSC signal     $\blacksquare$  : AM signal     $\blacksquare\square\square$  : AM OSC signal
- $\Rightarrow$  : Rec out signal     $\Rightarrow$  : Center speaker drive signal     $\blacksquare\square$  : Sourround speaker drive signal

For (E, EG) areas.

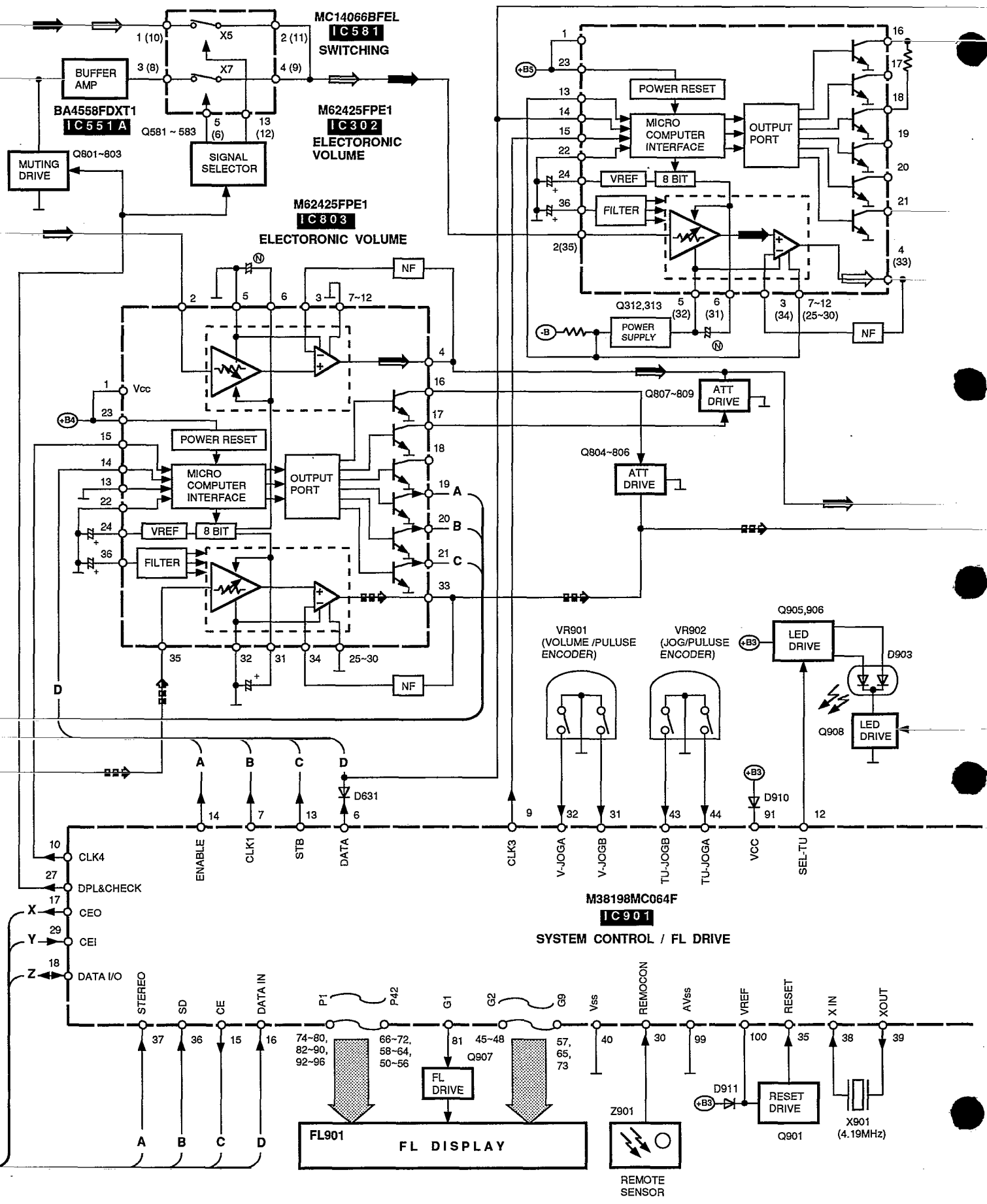


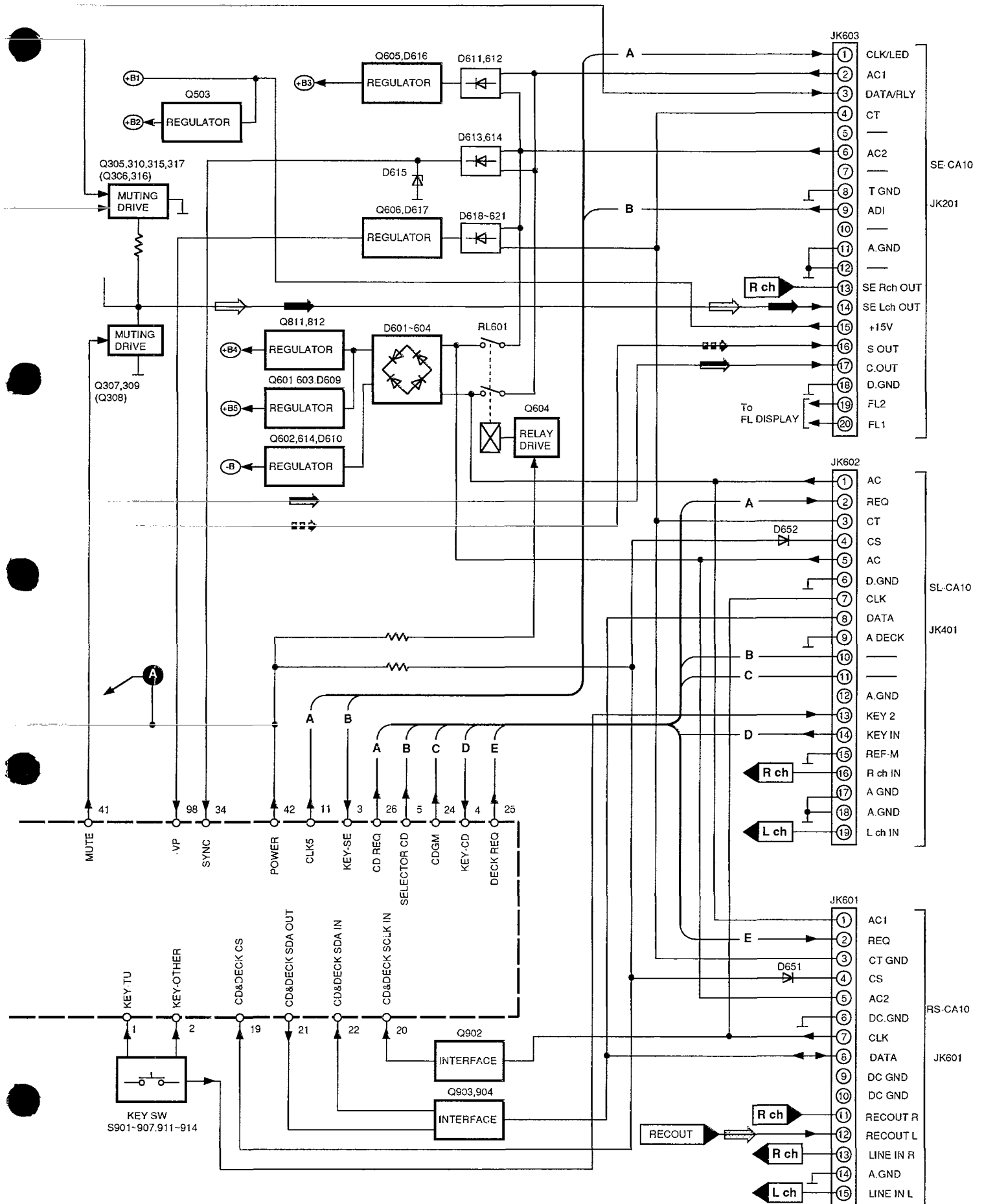
LC7073M-TLM  
IC550  
SYNCHRO ERROR CORRECTING





● Signal line    : FM signal    : FM OSC signal    : AM signal    : AM OSC signal  
 : Rec out signal    : Center speaker drive signal    : Sourround speaker drive signal





## ■ TERMINAL GUIDE

### ● IC901 (M38198MC064F): SYSTEM CONTROL/ FL DRIVE

Pin No.	Mark	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-CA10 operation switch signal input
4	KEY-CD	I	SL-CA10 operation switch signal input
5	SELECTOR CD	O	SL-CA10 power control signal output
6	DATA	O	Data output for NJU7313, M62425, LC7218, LA2785, and LV1010
7	CLK1	O	Clock output for NJU7313, LC7218, LA2785, LV1010 and LC65104
8	CLK2	O	Clock output (Not used, open)
9	CLK3	O	Clock output for M62425 (Main volume)
10	CLK4	O	Clock output for M62425 (Surround volume)
11	CLK5	O	SE-CA10 LED drive (BU209F-E2) 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 LV1010
15	CE	O	Chip enable signal output for LC7218
16	DATA IN	I	Data input from LC7218
17	CEO	O	Serial data output terminal for (E, EG) areas.
18	DATA I/O	I/O	Serial data input/output terminal for (E, EG) areas.
19	CE & 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	VRST	—	Not used
24	CDGM	—	Not used
25	DECK REQ	O	RS-CA10 request signal output
26	CD REQ	O	SL-CA10 request signal output
27	DPL & 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	Remove control signal input
31	V-JOGB	I	Volume control signal input
32	V-JOGA	I	

Pin No.	Mark	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	X IN	I	Connected to the ceramic oscillator (F=4.19MHz)
39	X OUT	O	
40	Vss	—	GND terminal
41	MUTE	O	Muting signal output
42	POWER	O	Power control signal output
43	TU-JOGB	I	JOG (TUNING) control terminal
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): MICROCOMPUTER [For (E, EG) areas.]

Pin No.	Mark	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=4MHz)
9	OSC2	O	Oscillating terminal (f=4MHz)
10	VDD	I	+5V
11	/RES	I	Reset signal input
12	TEST	—	Not used
13	R. DATA	I	RDS data signal input
14	/R. RES	O	RDS reset signal output
15	R. CLK	I	RDS clock signal input

Pin No.	Mark	I/O	Function
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	CLOCK	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	SIGNAL	—	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)		IC803	M62425FPE1	ELECTRONIC VOLUME	
				IC804	M5219FPTA	BUFFER AMP	
				IC901	M38198MC064F	SYSTEM CONTROL/FL DRIVE	
IC101	LA1832MH-TEL	FM/AM IF AMP/AM OSC				TRANSISTOR(S)	
IC102	LC7218M-TE-L	PLL FREQUENCY SYNTHESIZER		Q101, 102	2SC2787L	TRANSISTOR	
IC201	AN6558SFE2	PHONO EQ AMP		Q103, 104	2SC2785FE	TRANSISTOR	
IC202	NJU7313AMT2	INPUT SELECTOR		Q106	UN4111	TRANSISTOR	(E, EB, EG)
IC203	M5219FPTA	BUFFER AMP		Q106	UN411FTA	TRANSISTOR	(GC)
IC302	M62425FPE1	ELECTRONIC VOLUME		Q107, 108	2SC3311ARSTA	TRANSISTOR	
IC550	LC7073M-TLM	SYNCH ERROR CORRECTION	(E, EG)	Q110	2SC3311ARSTA	TRANSISTOR	(E, EG)
IC551	LA2230M-TE-L	RDS DECODER	(E, EG)	Q191-193	2SC3311ARSTA	TRANSISTOR	(E, EB)
IC551A	BA4558FDXT1	BUFFER AMP		Q305-308	2SC3311A-Q	TRANSISTOR	
IC552	LC65104A4F75	MICROCOMPUTER	(E, EG)	Q309, 310	UN4115	TRANSISTOR	
IC581	MC14066BFEL	SIGNAL SELECTOR		Q312, 313	2SA1309A-R	TRANSISTOR	
IC701	NJM2279MT2	VIDEO SIGNAL SELECTOR		Q315, 316	2SC3311A-Q	TRANSISTOR	
IC702	MC14052BFR2	VIDEO SIGNAL SELECTOR		Q317	UN4115	TRANSISTOR	
IC801	LA2785	DOLBY PRO LOGIC CONTROL					
IC802	LV1010N	DOLBY PRO LOGIC DRIVE					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
Q503	2SC3940AQSTA	TRANSISTOR	△	D651, 652	MA165	DIODE	
Q550, 551	UN4211	TRANSISTOR	(E, EG)	D653	MA719TA	DIODE	
Q552	UN4111	TRANSISTOR	(E, EG)	D701, 702	MA4056MTA	DIODE	△
Q581	UN4211	TRANSISTOR		D801-803	MA165	DIODE	
Q582	UN4111	TRANSISTOR		D808	MA4100MTA	DIODE	△
Q583	UN4211	TRANSISTOR		D810	MA165	DIODE	
Q601	2SC3940AQSTA	TRANSISTOR	△	D901, 902	MA165	DIODE	
Q602	2SA1534AQRTA	TRANSISTOR	△	D903	SPR505MDTT	L. E. D	
Q603	2SC3940AQSTA	TRANSISTOR	△	D910-912	1SS291TA	DIODE	
Q604	2SD2144S	TRANSISTOR		D932	MA165	DIODE	
Q605	2SD2137PQTA	TRANSISTOR	△	D934-937	MA165	DIODE	
Q606	2SB621A-R	TRANSISTOR	△	D939	MA165	DIODE	(E, EG)
Q614	2SA1534AQRTA	TRANSISTOR	△	D940	MA165	DIODE	(E, EB)
Q701	2SB621A-R	TRANSISTOR	△	D941	MA165	DIODE	(EG, GC)
Q702	2SD592ARSTA	TRANSISTOR	△			VARIABLE RESISTOR (S)	
Q703	UN4211	TRANSISTOR					
Q801, 802	2SD145ORTA	TRANSISTOR		VR550	EVNDCBA03B53	RDS ADJ.	(E, EG)
Q803, 804	UN4115	TRANSISTOR		VR901, 902	EVQW2BF2024B	VOLUME/TUNING	
Q805, 806	2SD145ORTA	TRANSISTOR				COMPONENT COMBINATION (S)	
Q807, 808	2SC3327-A	TRANSISTOR					
Q809	UN4115	TRANSISTOR		Z101	RLA2Z002M-T	COMPONENT COMBINATION	(EG, GC)
Q811, 812	2SD2137PQTA	TRANSISTOR	△	Z102	RL12Z006M-T	COMPONENT COMBINATION	
Q901	UN4214TA	TRANSISTOR		Z191	RLA6Z005M-T	COMPONENT COMBINATION	(E, EB)
Q902-904	2SC3311A-Q	TRANSISTOR		Z901	RCDHC-278N	REMOTE SENSOR	
Q905	UN411FTA	TRANSISTOR				COIL (S)	
Q906	2SC3311A-Q	TRANSISTOR		L101	ELESNR68MA	COIL	
Q907	UN4119	TRANSISTOR		L103	ELETR47MA9	COIL	
Q908	2SD2144S	TRANSISTOR		L104	ELEXT1ROKA9	COIL	(E, EB, EG)
		DIODE (S)		L105, 106	ELELN822KL	COIL	
D101	MA4051MTA	DIODE	△	L151	SLM1B10M-1M	COIL	(E, EB, EG)
D102	MA165	DIODE		L191	ELESNR68MA	COIL	
D302	MA165	DIODE		L550-552	ELEXT101KA9	COIL	(E, EG)
D504	MA4082MTA	DIODE	△	L801	ELESN101KA	COIL	
D550, 551	MA165	DIODE	(E, EG)	L901	RLQA100JT-Y	COIL	
D552	MA4051MTA	DIODE	(E, EG) △			FILTER (S)	
D553	MA165	DIODE	(E, EG)	CF201	RLFFETNGD01L	CERAMIC FILTER	(E, EB, EG)
D601-604	RL1N4003N02	DIODE	△	CF201	RLFFETWNO1M	CERAMIC FILTER	(GC)
D605	MA165	DIODE		CF202	RLFFETMGD01L	CERAMIC FILTER	(E, EB, EG)
D606, 607	MA719TA	DIODE		CF202	RLFFETWNO1M	CERAMIC FILTER	(GC)
D609	MA4075HTA	DIODE	△			OSCILLATOR (S)	
D610	MA4082LTA	DIODE	△				
D611, 612	RL1N4003N02	DIODE	△	X101	RSXZ456KM07M	OSCILLATOR (456KHz)	
D613, 614	MA185TA	DIODE	△	X102	RLFDGT05DD	OSCILLATOR (10.65MHz)	
D615	MA4051MTA	DIODE	△	X103	RSXC7M20S05T	OSCILLATOR (7.2MHz)	
D616	MA4062-H	DIODE	△	X550	RVBCST4R00MT	OSCILLATOR (4MHz)	(E, EG)
D617	MA4300M	DIODE	△				
D618-621	MA185TA	DIODE	△				
D622	MA4039MTA	DIODE	△				
D631	MA700TA	DIODE					
D632	MA165	DIODE					



Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
X551	RSXZ456KM07M	OSCILLATOR(456KHz)	(E, EG)			JACK(S)	
X552	RVBCST4R00MT	OSCILLATOR(4MHz)	(E, EG)				
X801	EFOEC8004T4	OSCILLATOR(8MHz)		JK101	RJH5210M	FM/AM ANT	(E, EB, EG)
X901	RSXC4M19S02T	OSCILLATOR(4.19MHz)		JK101	RJH5404M	FM/AM ANT	(GC)
		DISPLAY TUBE(S)		JK201	SJF3068-7N	EXT OUT	
				JK202	SJF3069-5N	EXT IN/PHONO	
FL901	RSL0216-F	DISPLAY TUBE		JK701	SJF3068-7N	VCR OUT	
		FM FRONT END(S)		JK702	SJF3069-5N	VCR IN/VDP IN(AUDIO)	
				JK703	SJF3069-3N	VCR/TV/VDP IN-OUT(VIDEO)	
Z120	RAL0019	FM FRONT END	(E, EB, EG)			EARTH PLATE(S)	
Z120	RAL0006	FM FRONT END	(GC)	E601, 602	SNE1004-2	EARTH PLATE	
		SWITCH(ES)					
S901	EVQ21405R	FM					
S902	EVQ21405R	AM(MW/LW)					
S903	EVQ21405R	TUNING MODE					
S904	EVQ21405R	TIMER PLAY					
S905	EVQ21405R	TIMER REC					
S906	EVQ21405R	CLOCK/TIMER MODE					
S907	EVQ21405R	CLOCK/TIMER SET					
S911	EVQ21405R	INPUT SELECTOR					
S912	EVQ21405R	DISPLAY MODE	(E, EG)				
S913	EVQ21405R	PTY SEL	(E, EG)				
S914	EVQ21405R	PTY SEARCH	(E, EG)				
		RELAY(S)					
RL601	RSY0017M-0	RELAY	△				
		CONNECTOR(S) AND SOKET					
CN701	RJT057W012-1	CONNECTOR(12P)					
CN801	RJT057W012-1	CONNECTOR(12P)					
CN101A	RJT057W007-1	CONNECTOR(7P)					
CN101B	RJU057W007	SOCKET(7P)					
CN102A	RJT057W007-1	CONNECTOR(7P)					
CN102B	RJU057W007	SOCKET(7P)					
CN501A	RJT057W007-1	CONNECTOR(7P)	(E, EG)				
CN501B	RJU057W007	SOCKET(7P)	(E, EG)				
CN901A	RJS1A6820	CONNECTOR(20P)					
CN901B	RJS1A6820	CONNECTOR(20P)					
CN902A	RJS1A6820	CONNECTOR(20P)					
CN902B	RJS1A6820	CONNECTOR(20P)					
CP801	RJU057W012	SOCKET(12P)					
CP701	RJU057W012	SOCKET(12P)					
JK601	RJT065K15	CONNECTOR(15P)					
JK602	RJT065K19	CONNECTOR(19P)					
JK603	RJT065K20	CONNECTOR(20P)					

## REPLACEMENT PARTS LIST

Notes: \* 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.

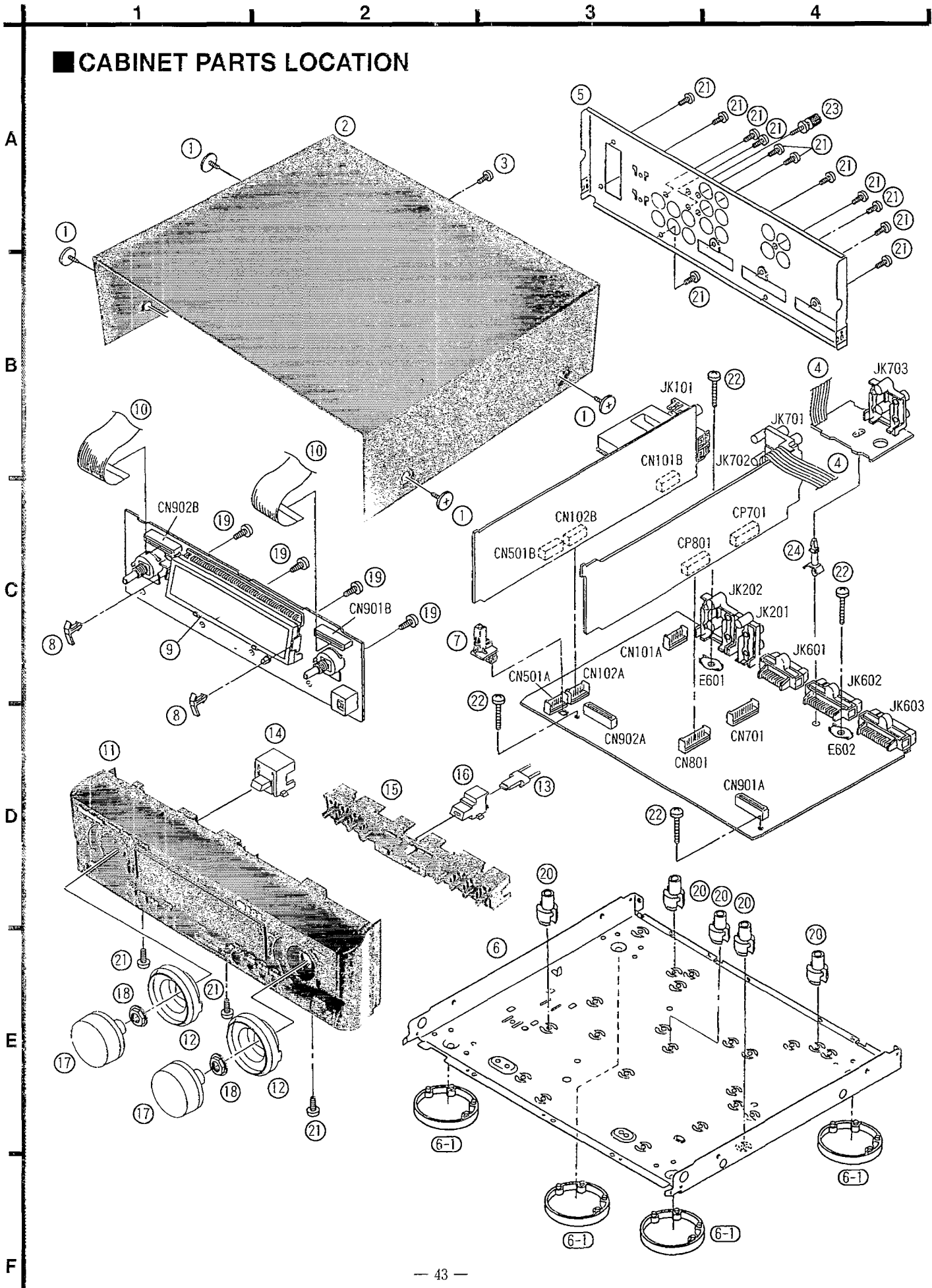
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		11	RFKGTCA10EBK	FRONT PANEL ASS' Y	(EB, GC)
1	RHD30007-K1	SCREW		12	RGK0790-1S	VOLUME ORNAMENT	
2	RKMD302-K	CABINET		13	RGLO315-Q	PANEL LIGHT	
3	XTB3+8JFZ	SCREW		14	RFKNTCA10EA	SET BUTTON ASS' Y	(E, EB)
4	REZ0813	CONNECTOR ASS' Y(6P)		14	RFKNTCA10EGA	SET BUTTON ASS' Y	(EG, GC)
5	RGR0216B-G	REAR PANEL	(E, EB)	15	RFKNTCA10EB	SELECTOR BUTTON ASS' Y	(E, EB)
5	RGR0216B-H	REAR PANEL	(EG)	15	RFKNTCA10EGB	SELECTOR BUTTON ASS' Y	(EG, GC)
5	RGR0216B-J	REAR PANEL	(GC)	16	RFKNTCA10EC	PANEL LIGHT ORNAMENT ASS' Y	(E, EB)
6	RFKJTVCS10-K	BOTTOM CHASSIS ASS' Y		16	RFKNTCA10EGC	PANEL LIGHT ORNAMENT ASS' Y	(EG, GC)
6-1	RKA0011-3	SET FOOT		17	RGW0242-K	VOLUME KNOB	
7	RMN0337	P. C. B. HOLDER	(EB, GC)	18	RHN90001	NUT	
8	RMN0195	FL HOLD PIECE		19	XTBS26+8J	SCREW	
9	RMN0370	FL HOLDER		20	SHE185-2	P. C. B. SUPPORT	
10	REZ0777	FLAT CABLE (20P)		21	XTBS3+8JFZ1	SCREW	
11	RFKGTCA10E-K	FRONT PANEL ASS' Y	(E, EG)	22	XTB3+16JFZ	SCREW	
				23	RHD30070	GND SCREW	
				24	RMN0059	P. C. B. SUPPORT	

## RESISTORS AND CAPACITORS

Notes: \* Capacity values are in microfarads ( $\mu\text{F}$ ) unless specified otherwise, P=Pico-farads ( $\text{pF}$ ) F=Farads ( $\text{F}$ )  
\* 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	R119	ERDS2TJ103	1/4W 10K (E, EG)	R149	ERDS2TJ680T	1/4W 68
			R119	ERDS2TJ822T	1/4W 8.2K (EB)	R171, 172	ERDS2TJ102	1/4W 1K
			R119	ERDS2TJ682T	1/4W 6.8K (GC)	R173	ERDS2TJ471	1/4W 470
R103	ERDS2TJ101	1/4W 100 (E, EB, EG)	R120	ERDS2TJ473	1/4W 47K	R175	ERDS2TJ102	1/4W 1K
R103	ERDS2TJ271T	1/4W 270 (GC)	R121	ERDS2TJ332	1/4W 3.3K	R176	ERDS2TJ391	1/4W 390
R104	ERDS2TJ103	1/4W 10K (E, EB, EG)	R122	ERDS2TJ272T	1/4W 2.7K	R177	ERDS2TJ472	1/4W 4.7K (E, EG)
R104	ERDS2TJ822T	1/4W 8.2K (GC)	R124	ERDS2TJ271	1/4W 270	R191	ERDS2TJ103	1/4W 10K (E, EB)
R105	ERDS2TJ471	1/4W 470	R125, 126	ERDS2TJ152	1/4W 1.5K	R192	ERDS2TJ122	1/4W 1.2K (E, EB)
R106	ERDS2TJ474	1/4W 470K	R127	ERDS2TJ103	1/4W 10K	R193	ERDS2TJ182	1/4W 1.8K (E, EB)
R107	ERDS2TJ331	1/4W 330	R128	ERDS2TJ820	1/4W 82	R194	ERDS2TJ122	1/4W 1.2K (E, EB)
R108	ERDS2TJ474	1/4W 470K	R129	ERDS2TJ473	1/4W 47K	R195	ERDS2TJ222	1/4W 2.2K (E, EB)
R109	ERDS2TJ331	1/4W 330	R130	ERDS2TJ103	1/4W 10K	R201, 202	ERDS2TJ102	1/4W 1K
R110	ERDS2TJ102	1/4W 1K	R132	ERDS2TJ103	1/4W 10K	R203, 204	ERDS2TJ473	1/4W 47K
R112	ERDS2TJ104	1/4W 100K	R133-137	ERDS2TJ102	1/4W 1K	R205, 206	ERDS2TJ331	1/4W 330
R113	ERDS2TJ103	1/4W 10K	R138	ERDS2TJ103	1/4W 10K	R207, 208	ERDS2TJ271	1/4W 270
R114	ERDS2TJ562	1/4W 5.6K	R139, 140	ERDS2TJ272T	1/4W 2.7K	R209, 210	ERDS2TJ184T	1/4W 180K
R115	ERDS2TJ561	1/4W 560	R141, 142	ERDS2TJ102	1/4W 1K	R211, 212	ERDS2TJ123	1/4W 12K
R116	ERDS2TJ102	1/4W 1K	R143, 144	ERDS2TJ222	1/4W 2.2K	R213, 214	ERDS2TJ680T	1/4W 68
R117	ERDS2TJ823T	1/4W 82K (E, EB, EG)	R145, 146	ERDS2TJ821	1/4W 820 (E, EB, EG)	R215, 216	ERDS2TJ272T	1/4W 2.7K
R117	ERDS2TJ273T	1/4W 27K (GC)	R145, 146	ERDS2TJ102T	1/4W 1K (GC)	R217, 218	ERDS2TJ392T	1/4W 3.9K
R118	ERDS2TJ562	1/4W 5.6K	R147, 148	ERDS2TJ474	1/4W 470K	R219, 220	ERDS1FVJ221T	1/2W 220 $\Delta$

# CABINET PARTS LOCATION



Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R221, 222	ERDS2TJ752T	1/4W 7.5K	R555	ERDS2TJ104	1/4W 100K (E, EG)	R811	ERDS2TJ105T	1/4W 1M
R223, 224	ERDS2TJ562	1/4W 5.6K	R556	ERDS2TJ332	1/4W 3.3K (E, EG)	R813	ERDS2TJ472	1/4W 4.7K
R225, 226	ERDS2TJ472	1/4W 4.7K	R557	ERDS2TJ103	1/4W 10K (E, EG)	R814-816	ERDS2TJ332	1/4W 3.3K
R227, 228	ERDS2TJ332	1/4W 3.3K	R558	ERDS2TJ102	1/4W 1K (E, EG)	R817	ERDS2TJ333	1/4W 33K
R229-231	ERDS2TJ222	1/4W 2.2K	R559	ERDS2TJ562	1/4W 5.6K (E, EG)	R818	ERDS2TJ183T	1/4W 18K
R233, 234	ERDS2TJ223	1/4W 22K	R560	ERDS2TJ820	1/4W 82 (E, EG)	R819, 820	ERDS2TJ102	1/4W 1K
R235, 236	ERDS2TJ822	1/4W 8.2K	R562	ERDS2TJ473	1/4W 47K (E, EG)	R821	ERDS2TJ473	1/4W 47K
R237, 238	ERDS2TJ123	1/4W 12K	R563	ERDS2TJ332	1/4W 3.3K (E, EG)	R822	ERDS2TJ334	1/4W 330K
R239, 240	ERDS2TJ102	1/4W 1K	R564	ERDS2TJ155	1/4W 1.5M (E, EG)	R823	ERDS2TJ102	1/4W 1K
R305, 306	ERDS2TJ223	1/4W 22K	R565-567	ERDS2TJ332	1/4W 3.3K (E, EG)	R824	ERDS2TJ105T	1/4W 1M
R308, 309	ERDS2TJ153	1/4W 15K	R568-571	ERDS2TJ101	1/4W 100 (E, EG)	R828	ERDS2TJ222	1/4W 2.2K
R310	ERDS2TJ182	1/4W 1.8K	R572	ERDS2TJ103	1/4W 10K (E, EG)	R829, 830	ERDS2TJ473	1/4W 47K
R315, 316	ERDS2TJ101	1/4W 100	R573	ERDS2TJ471	1/4W 470 (E, EG)	R831	ERDS2TJ183T	1/4W 18K
R317-320	ERDS2TJ471	1/4W 470	R574-576	ERDS2TJ102	1/4W 1K (E, EG)	R832	ERDS2TJ153	1/4W 15K
R323, 324	ERDS2TJ103	1/4W 10K	R581	ERDS2TJ104	1/4W 100K	R833, 834	ERDS2TJ333	1/4W 33K
R325, 326	ERDS2TJ123	1/4W 12K	R582	ERDS2TJ102	1/4W 1K	R835, 836	ERDS2TJ222	1/4W 2.2K
R327, 328	ERDS2TJ182	1/4W 1.8K	R601, 602	ERD2FCVJ4R7T	1/4W 4.7 $\Delta$	R837, 838	ERDS2TJ332	1/4W 3.3K
R329, 330	ERDS2TJ102	1/4W 1K	R603, 604	ERDS2TJ102	1/4W 1K	R839, 840	ERDS2TJ103	1/4W 10K
R331, 332	ERDS2TJ222	1/4W 2.2K	R605	ERDS2TJ101	1/4W 100	R841, 842	ERDS2TJ104	1/4W 100K
R337, 338	ERDS2TJ391	1/4W 390	R606, 607	ERDS2TJ393	1/4W 39K	R843, 844	ERDS2TJ222	1/4W 2.2K
R341, 342	ERDS2TJ103	1/4W 10K	R609	ERD25FJ2R2	1/4W 2.2 $\Delta$	R845	ERDS2TJ182	1/4W 1.8K
R343	ERDS2TJ105T	1/4W 1M	R610	ERDS2TJ332	1/4W 3.3K	R846	ERDS2TJ391	1/4W 390
R344	ERDS2TJ102	1/4W 1K	R612	ERDS2TJ472	1/4W 4.7K	R847, 848	ERDS2TJ102	1/4W 1K
R345, 346	ERDS2TJ104	1/4W 100K	R613, 614	ERDS2TJ682T	1/4W 6.8K	R849	ERDS2TJ391	1/4W 390
R347, 348	ERDS2TJ102	1/4W 1K	R615	ERDS2TJ103	1/4W 10K	R850	ERDS2TJ105T	1/4W 1M
R349	ERDS2TJ104	1/4W 100K	R616	ERD25FVJ4R7T	1/4W 4.7 $\Delta$	R851, 852	ERDS2TJ102	1/4W 1K
R350	ERDS2TJ105T	1/4W 1M	R621, 622	ERDS2TJ151	1/4W 150	R853, 854	ERDS2TJ223	1/4W 22K
R351	ERDS2TJ332	1/4W 3.3K	R623, 624	ERDS2TJ682T	1/4W 6.8K	R855, 856	ERDS2TJ102	1/4W 1K
R352	ERDS2TJ182	1/4W 1.8K	R631-634	ERDS2TJ102	1/4W 1K	R857, 858	ERDS2EJ121	1/4W 120
R353, 354	ERDS2TJ152	1/4W 1.5K	R635, 636	ERDS2TJ222	1/4W 2.2K	R859	ERDS2TJ472	1/4W 4.7K
R355, 356	ERDS2TJ472	1/4W 4.7K	R637	ERDS2TJ100	1/4W 10	R860	ERDS2TJ182	1/4W 1.8K
R357	ERDS2TJ105T	1/4W 1M	R641, 642	ERDS2TJ471	1/4W 470	R861	ERDS2TJ105T	1/4W 1M
R359, 360	ERDS2TJ224T	1/4W 220K	R646	ERDS2TJ562	1/4W 5.6K	R862	ERDS2TJ472	1/4W 4.7K
R361	ERDS2TJ102	1/4W 1K	R647	ERDS2TJ123	1/4W 12K	R863-865	ERDS2TJ473	1/4W 47K
R362	ERDS2TJ223	1/4W 22K	R651-654	ERDS2TJ2R2T	1/4W 2.2	R866-868	ERDS2TJ102	1/4W 1K
R376	ERDS2TJ223	1/4W 22K	R656	ERDS2TJ221	1/4W 220	R871, 872	ERDS2TJ4R7T	1/4W 4.7
R378, 379	ERDS2EJ121	1/4W 120	R701, 702	ERDS2TJ103	1/4W 10K	R873	ERD2FCVJ4R7T	1/4W 4.7 $\Delta$
R380	ERDS2TJ102	1/4W 1K	R703, 704	ERDS2TJ822	1/4W 8.2K	R874, 875	ERDS2TJ221	1/4W 220
R381	ERDS2TJ223	1/4W 22K	R705, 706	ERDS2TJ332	1/4W 3.3K	R876, 877	ERDS2TJ333	1/4W 33K
R382	ERDS2TJ105T	1/4W 1M	R707, 708	ERDS2TJ472	1/4W 4.7K	R901	ERDS2TJ821	1/4W 820
R383	ERDS2TJ472	1/4W 4.7K	R709, 710	ERDS2TJ103	1/4W 10K	R902	ERDS2TJ102	1/4W 1K
R393, 394	ERDS2TJ104	1/4W 100K	R711, 712	ERDS2TJ822	1/4W 8.2K	R903	ERDS2TJ122	1/4W 1.2K
R396	ERDS2TJ102	1/4W 1K	R718	ERDS2TJ680T	1/4W 68	R904	ERDS2TJ152	1/4W 1.5K
R397, 398	ERDS2TJ150T	1/4W 15	R719, 720	ERDS2TJ750	1/4W 75	R905	ERDS2TJ182	1/4W 1.8K
R506	ERDS2TJ152	1/4W 1.5K	R721	ERDS2TJ680T	1/4W 68	R906	ERDS2TJ222	1/4W 2.2K
R507	ERDS2TJ331	1/4W 330	R722, 723	ERDS2TJ102	1/4W 1K	R907	ERDS2TJ332	1/4W 3.3K
R508, 509	ERDS2TJ682T	1/4W 6.8K	R724	ERDS2TJ103	1/4W 10K	R908	ERDS2TJ223	1/4W 22K
R511, 512	ERDS2TJ122	1/4W 1.2K	R726, 727	ERDS2TJ103	1/4W 10K	R909	ERDS2TJ103	1/4W 10K
R550	ERDS2TJ564	1/4W 560K (E, EG)	R801, 802	ERDS2TJ392T	1/4W 3.9K	R910	ERDS2TJ821	1/4W 820
R551	ERDS2TJ223	1/4W 22K (E, EG)	R803-806	ERDS2TJ222	1/4W 2.2K	R911	ERDS2TJ102	1/4W 1K
R552	ERDS2TJ103	1/4W 10K (E, EG)	R807, 808	ERDS2TJ104	1/4W 100K	R912	ERDS2TJ122	1/4W 1.2K
R553, 554	ERDS2TJ102	1/4W 1K (E, EG)	R809, 810	ERDS2TJ102	1/4W 1K	R913	ERDS2TJ152	1/4W 1.5K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R914	ERDS2TJ182	1/4W 1.8K	C104, 105	ECBT1H102KB5	50V 1000P	C225-227	ECBT1H470J5	50V 47P
R915	ERDS2TJ222	1/4W 2.2K	C106	ECBT1C103NS5	16V 0.01U	C231, 232	ECBT1E103ZF	25V 0.01U
R916-919	ERDS2TJ103	1/4W 10K	C107	ECBT1H473ZF5	50V 0.047U	C233, 234	ECBT1H102KB5	50V 1000P
R920-922	ERDS2TJ102	1/4W 1K	C108	ECBT1H100JC5	50V 10P (E, EB)	C235, 236	ECBT1H101KB5	50V 100P
R923	ERDS2TJ391	1/4W 390	C108	ECBT1H8R2KC5	50V 8.2P (EG, GC)	C305, 306	RCE1CA100BG	16V 10U
R924	ERDS2TJ102	1/4W 1K	C109, 110	ECBT1C103NS5	16V 0.01U	C335, 336	RCE1CA100BG	16V 10U
R925	ERDS2TJ221	1/4W 220	C111	ECEA1EKA4R7B	25V 4.7U	C337, 338	RCE1CA220BG	16V 22U
R926	ERDS2TJ101	1/4W 100	C112	ECBT1C103NS5	16V 0.01U	C339, 340	RCE1CA100BG	16V 10U
R928-933	ERDS2TJ102	1/4W 1K	C113	ECBT1H102KB5	50V 1000P	C341, 342	ECEA1CKN100B	16V 10U
R934	ERDS2TJ101	1/4W 100	C114	RCE1HKA3R3BG	50V 3.3U	C343	RCE1CA100BG	16V 10U
R935	ERDS2TJ102	1/4W 1K	C115	ECEA1EKA4R7B	25V 4.7U	C344, 345	ECBT1H470J5	50V 47P
R936	ERDS2TJ101	1/4W 100	C116	ECBT1C822KS5	16V 8200P	C348	ECEA1CA330B	16V 33U
R938	ERDS2TJ102	1/4W 1K	C117	ECQB1H561JF3	50V 560P (E, EB, EG)	C349	RCE1HKA3R3BG	50V 3.3U
R939	ERDS2TJ101	1/4W 100	C117	ECQB1H102JF3	50V 1000P (GC)	C350	RCE0JKA470BG	6.3V 47U
R940, 941	ERDS2TJ393	1/4W 39K	C118, 119	ECFR1C103KR	16V 0.01U	C351, 352	RCE1CA100BG	16V 10U
R942	ERDS2TJ562	1/4W 5.6K	C120, 121	ECEA1HKA010B	50V 1U	C355	ECEA1CA330B	16V 33U
R943	ERDS2TJ223	1/4W 22K	C122	ECEA1HKA2R2B	50V 2.2U	C356	ECBT1H104ZF5	50V 0.1U
R944	ERDS2TJ473	1/4W 47K	C123	ECEA1HKA010B	50V 1U	C357	RCE1AKA101BG	10V 100U
R945, 946	ERDS2TJ102	1/4W 1K	C124	ECBT1H102KB5	50V 1000P	C361, 362	ECBT1H221KB5	50V 220P
R947, 948	ERDS2TJ223	1/4W 22K	C125	ECBT1H150JC5	50V 15P	C365	RCE0JKA470BG	6.3V 47U
R949	ERDS2TJ103	1/4W 10K	C126	ECBT1H473ZF5	50V 0.047U	C371, 372	ECBT1H101KB5	50V 100P
R950	ERDS2TJ102	1/4W 1K	C127	RCE1CA220BG	16V 22U	C391, 392	RCE1GM101BV	16V 100U
R951	ERDS2TJ104	1/4W 100K	C128	ECBT1H102KB5	50V 1000P	C393, 394	ECBT1H102KB5	50V 1000P
R952, 953	ERDS2TJ102	1/4W 1K	C129, 130	RCE0JKA101BV	6.3V 100U	C509	ECBT1E103ZF	25V 0.01U
R954	ERDS2TJ101	1/4W 100	C132	ECBT1H102KB5	50V 1000P	C510	RCE1AKA101BG	10V 100U
R955	ERDS2TJ824	1/4W 820K	C133, 134	ECBT1H270J05	50V 27P	C550	RCE0JKA101BV	6.3V 100U (E, EG)
R956	ERDS2TJ101	1/4W 100	C135, 136	ECBT1C103KS5	16V 0.01U	C551	RCE1CA220BG	16V 22U (E, EG)
R957	ERDS2TJ102	1/4W 1K	C137, 138	ECBT1H561KB5	50V 560P	C551A	ECBT1H331KB5	50V 330P
R958	ERDS2TJ471	1/4W 470	C139, 140	ECBT1C682KR5	16V 6800P (E, EB, EG)	C552	RCE1CA100BG	16V 10U (E, EG)
R959	ERDS2TJ103	1/4W 10K	C139, 140	ECBT1C562KR5	16V 5600P (GC)	C552A	ECBT1H331KB5	50V 330P
R960	ERDS2TJ472	1/4W 4.7K	C141-144	ECEA1HKA010B	50V 1U	C553	ECEA1EKA4R7B	25V 4.7U (E, EG)
R961	ERDS2TJ103	1/4W 10K	C145	ECBT1H220JC5	50V 22P	C553A	ECBT1E103ZF	25V 0.01U
R962	ERDS2TJ473	1/4W 47K	C148	ECBT1C103NS5	16V 0.01U	C554	RCE1CA100BG	16V 10U (E, EG)
R963-965	ERDS2TJ472	1/4W 4.7K	C149	ECBT1H104ZF5	50V 0.1U	C554A	ECBT1E103ZF	25V 0.01U
R966	ERDS2TJ123	1/4W 12K	C171, 172	ECBT1H102KB5	50V 1000P	C555	ECEA1EKA4R7B	25V 4.7U (E, EG)
R967	ERDS2TJ472	1/4W 4.7K	C173	RCE1CA220BG	16V 22U	C556	RCE1CA100BG	16V 10U (E, EG)
R968, 969	ERDS2TJ152	1/4W 1.5K	C174	RCE1CA100BG	16V 10U	C557	ECBT1H102KB5	50V 1000P (E, EG)
R971	ERDS2TJ104	1/4W 100K	C181	ECBT1H471KB5	50V 470P (E, EB, EG)	C558	RCE0JKA101BV	6.3V 100U (E, EG)
R972	ERDS2TJ820	1/4W 82	C196	ECBT1H102KB5	50V 1000P	C559, 560	ECEA1HKA010B	50V 1U (E, EG)
R973	ERDS2TJ151	1/4W 150	C201, 202	ECBT1H180J5	50V 18P	C561	ECFR1C223KR	16V 0.022U (E, EG)
R974, 975	ERDS2TJ473	1/4W 47K	C203, 204	ECBT1H151KB5	50V 150P	C562, 563	ECFR1C333KR	16V 0.033U (E, EG)
R976	ERDS2TJ272T	1/4W 2.7K	C205, 206	ECBT1H102KB5	50V 1000P	C564	ECBT1C332KR5	16V 3300P (E, EG)
R977	ERDS2TJ102	1/4W 1K	C207, 208	RCE1AKA330BG	10V 33U	C565	ECBT1C682KR5	16V 6800P (E, EG)
R978-992	ERDS2TJ104	1/4W 100K	C209, 210	ECBT0J223MS5	6.3V 0.022U	C566	ECBT1C332KR5	16V 3300P (E, EG)
R993-995	ERDS2TJ102	1/4W 1K	C211, 212	ECBT1C682KR5	16V 6800P	C567	ECBT1C103KS5	16V 0.01U (E, EG)
R997, 998	ERDS2TJ223	1/4W 22K	C213, 214	RCE1CA100BG	16V 10U	C568-570	ECBT1H102KB5	50V 1000P (E, EG)
R999	ERDS2TJ102	1/4W 1K	C215	ECBT1E103ZF	25V 0.01U	C581, 582	ECBT1H104ZF5	50V 0.1U
			C216	RCE1AKA101BG	10V 100U	C601, 602	ECKT1H223ZF	50V 0.022U
		CAPACITORS	C217	ECBT1E103ZF	25V 0.01U	C603	ECA1EM102B	25V 1000U Δ
			C218	RCE1AKA101BG	10V 100U	C604	RCE1EM471BV	25V 470U Δ
C101	ECBT1C103NS5	16V 0.01U	C219-222	ECBT1H101KB5	50V 100P	C605, 606	ECBT1E103ZF	25V 0.01U
C103	ECBT1C103NS5	16V 0.01U	C223, 224	ECBT1H104ZF5	50V 0.1U	C607	RCE1CA100BG	16V 10U

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C608	RCE1CM101BV	16V 100U	C814	ECEA1VKA4R7B	35V 4.7U	C859, 860	ECBT1H101KB5	50V 100P
C609	ECBT1H102KB5	50V 1000P	C815	RCE1HKAR47BG	50V 0.47U	C861, 862	RCE1CKA100BG	16V 10U
C610, 611	ECBT1H104ZF5	50V 0.1U	C816	ECEA1VKA4R7B	35V 4.7U	C863-866	RCE1CKA220BG	16V 22U
C612	RCE1EM471BV	25V 470U $\Delta$	C817	ECEA1HKAR15B	50V 0.15U	C867, 868	RCE1CKA100BG	16V 10U
C613	ECBT1E103ZF	25V 0.01U	C818	RCE1HKA3R3BG	50V 3.3U	C869	ECEA1CKA330B	16V 33U
C614	RCE1CKA100BG	16V 10U	C819, 820	ECQV1H154JM3	50V 0.15U	C870	RCE1CKA100BG	16V 10U
C615	ECA1EM101B	25V 100U	C821	RCE1HKA3R3BG	50V 3.3U	C871, 872	ECBT1H470J5	50V 47P
C616	ECA1HM470B	50V 47U	C822	ECEA1HKAR15B	50V 0.15U	C873	RCE0JKA470BG	6.3V 47U
C617	ECA1HM470B	50V 47U $\Delta$	C823	ECEA1VKA4R7B	35V 4.7U	C875, 876	RCE1CKA100BG	16V 10U
C618	ECA1JM470B	63V 47U	C824	RCE1HKAR47BG	50V 0.47U	C877	RCE0JKA470BG	6.3V 47U
C619	ECBT1E103ZF	25V 0.01U	C825	ECEA1VKA4R7B	35V 4.7U	C878	ECBT1E103ZF	25V 0.01U
C620	RCE1VKA100BG	35V 10U	C826	RCE1HKAR47BG	50V 0.47U	C880	RCE1AKA101BG	10V 100U
C622	RCE1VKA100BG	35V 10U	C827, 828	ECQV1H104JM3	50V 0.1U	C881	ECA1CM221B	16V 220U
C631-636	ECBT1H101KB5	50V 100P	C829	RCE1CKA470BG	16V 47U	C882	RCE1CKA101BV	16V 100U
C637	ECBT1H102KB5	50V 1000P	C830	ECQV1H474JM3	50V 0.47U	C887	ECBT1H102KB5	50V 1000P
C651, 652	ECBT1H104ZF5	50V 0.1U	C831	ECBA1H681KB5	50V 680P	C888, 889	ECBT1H221KB5	50V 220P
C653, 654	ECBT1H102KB5	50V 1000P	C832	ECBT1H560J5	50V 56P	C891	ECEA1AN101XB	10V 100U
C655	RCE1CM101BV	16V 100U	C833, 834	ECBT1H101KB5	50V 100P	C892	ECBT1H221KB5	50V 220P
C656	RCE1VM471BV	35V 470U	C835	ECEA1HKA2R2B	50V 2.2U	C893	ECBT1E223ZF	25V 0.022U
C657	ECBT1H102KB5	50V 1000P	C836	ECEA1HKA010B	50V 1U	C901-904	ECBT1H471KB5	50V 470P
C701-706	ECBT1H101KB5	50V 100P	C837	RCE1CKA101BV	16V 100U	C905, 906	ECBT1H102KB5	50V 1000P
C707	ECBT1H102KB5	50V 1000P	C838	ECBT1E223ZF	25V 0.022U	C907	ECBT1H104ZF5	50V 0.1U
C709	ECBT1H470J5	50V 47P	C839	ECA1AM471B	10V 470U	C908	ECBT1E103ZF	25V 0.01U
C711	ECBT1H470J5	50V 47P	C840	RCE1CKA220BG	16V 22U	C909	ECEA1HKS2R2B	50V 2.2U
C712, 713	ECBT1H104ZF5	50V 0.1U	C841, 842	RCE1HKA3R3BG	50V 3.3U	C910	RCE1CKA100BG	16V 10U
C714, 715	RCE1CKA100BG	16V 10U	C843, 844	RCE1CKA220BG	16V 22U	C911	ECBT1H270JU5	50V 27P
C716, 717	ECBT1H104ZF5	50V 0.1U	C845	RCE0JKA221BV	6.3V 220U	C912	ECBT1H220GC5	50V 22P
C722, 723	RCE1CKA100BG	16V 10U	C846	ECEA1HKA010B	50V 1U	C915	ECBT1E103ZF	25V 0.01U
C801	ECFR1C223KR	16V 0.022U	C847	ECQB1H393JF3	50V 0.039U	C916, 917	ECEA1VKA330B	35V 33U
C802	ECFR1E473KR	25V 0.047U	C848	ECFR1E152KR	25V 1500P	C918	ECBT1H104ZF5	50V 0.1U
C803	RCE0JKA221BV	6.3V 220U	C849	ECQV1H333JM3	50V 0.033U	C919	RCE0JU102BV	6.3V 1000U
C804-807	RCE1CKA100BG	16V 10U	C850	RCE1CKA101BV	16V 100U	C921	ECA0JKF101B	6.3V 100U
C808	RCE0JKA221BV	6.3V 220U	C851	ECBT1E223ZF	25V 0.022U	C923	RCE0JKA221BV	6.3V 220U
C809, 810	ECEA1HKA010B	50V 1U	C852	ECBA1H681KB5	50V 680P	C924-926	ECBT1H102KB5	50V 1000P
C811, 812	ECQV1H104JM3	50V 0.1U	C853, 854	RCE1HKA3R3BG	50V 3.3U	C928, 929	ECBT1H101KB5	50V 100P
C813	RCE1HKAR47BG	50V 0.47U	C855-858	ECBT1E103ZF	25V 0.01U	C930, 931	ECBT1H102KB5	50V 1000P