

Service Manual

AV Control Stereo Receiver



Receiver

SA-EX310

Colour

(K) Black Type



Area

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	

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PACKAGING\ УПАКОВКА

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■ Specifications

■ FM Tuner Section

Frequency range	87.50 — 108.00 MHz
Sensitivity	
S/N 30 dB	1.5 µV / 75Ω
S/N 26 dB	1.3 µV / 75Ω
S/N 20 dB	1.2 µV / 75Ω
IHF usable sensitivity	1.5 µV / 75Ω (IHF '58)
IHF 46 dB stereo quieting sensitivity	22 µV / 75Ω
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	60 dB (75 dB, IHF)
STEREO	58 dB (71 dB, IHF)
Frequency response	20Hz — 15 kHz (+1dB, -2dB)
Alternate channel selectivity	+ 400 kHz
Capture ratio	65 dB
Image rejection at 98MHz	1 dB
IF rejection at 98MHz	40 dB
Spurious response rejection at 98MHz	70 dB
AM suppression	70 dB
Stereo separation 1kHz	50 dB
Carrier leak	40 dB
19kHz	-30 dB (-35 dB, IHF)
IF rejection (at 999 kHz)	55 dB

■ Amplifier Section

Power output (at 240 V)	
DIN 1 kHz (T.H.D. 1%)	2 X 60 W(4Ω)
40 Hz-20 kHz continuous power output both channels driven	2 X 40 W(8Ω)
Total harmonic distortion	
Rated power at 40 Hz – 20kHz	0.8 % (8Ω)
Half power at 1 kHz	0.07 % (8Ω)
Power output at the Dolby Pro Logic operation	
DIN 1 kHz (T.H.D. 1%)	
Front	2 X 50 W (4Ω)
Center	50 W (8Ω)
Surround	50 W (8Ω)
Damping factor	30 (8Ω)
Load impedance	
Front	4 - 16 Ω
Center	8 - 16 Ω
Surround	4 - 16 Ω
Power bandwidth both channels driven, -3 dB 10 Hz - 40 kHz (8Ω)	
Intermodulation distortion rated power at 60 Hz : 7 kHz = 4:1, SMPTE	0.5 % (8Ω)
Frequency response	
PHONO	RIAA standard curve(30Hz-15kHz) ±0.8 dB
CD, TAPE, VCR, TV/DVD	10Hz – 40kHz, ±3 dB
Input sensitivity and impedance	
PHONO	3 mV / 47 kΩ
CD, TAPE, VCR, TV/DVD	200 mV / 22 kΩ
S/N at rated power (8Ω)	
PHONO	70 dB (IHF, A: 80 dB)
CD, TAPE, VCR, TV/DVD	75 dB (IHF, A: 85 dB)

■ Protection Circuitry

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

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

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

38kHz	-50 dB (-55 dB, IHF)
Channel balance (250 Hz - 6.3 kHz)	+1.5 dB
Limiting point	1.2 µV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminal(s)	75Ω (unbalanced)

■ Video Section

Output voltage at 1V input (unbalanced)	1±0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω (unbalanced)

■ AM Tuner Section

Frequency range	AM	
	(9 kHz steps)	522 — 1611 kHz
	(10 kHz steps)	530 — 1620 kHz
Sensitivity		20 µV, 330 µV / m
Selectivity (at 999 kHz)		55 dB
Image rejection (at 999 kHz)		40 dB

Tone controls

BASS	50 Hz , +10 to -10 dB
TREBLE	20 kHz, +10 to -10 dB

Output voltage

TAPE REC (OUT), VCR OUT	200 mV
Channel balance (250 Hz - 6.3 kHz)	± 1 dB
Channel separation	55 dB
Headphones output level and impedance	430 mV / 330 Ω
Subwoofer frequency response	7 –100 Hz, ± 3 dB

■ General

Power consumption	160 W
Power supply	
E , EG	AC 230 V, 50 Hz
EB	AC 230 - 240 V, 50 Hz
Dimensions (W x H x D)	430 x 136 x 309 mm
Weight	7.3 kg

Notes :

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

the indicated rated impedance of the amplifier are used.
If this occurs, follow the procedure outlines below:

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

Note:

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

■ Caution for AC Main Leads

(For "EB" area code model only.)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

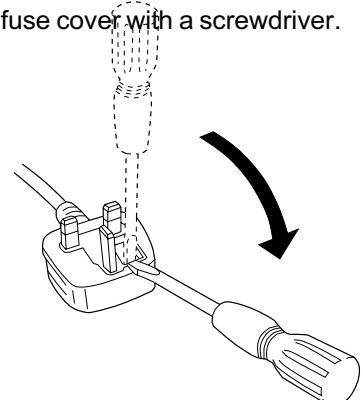
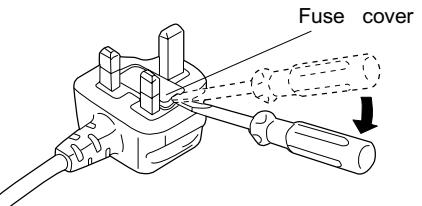


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

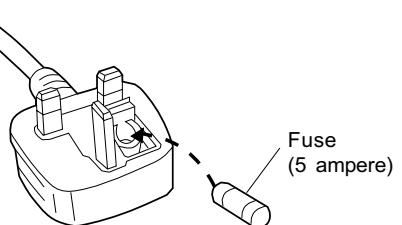
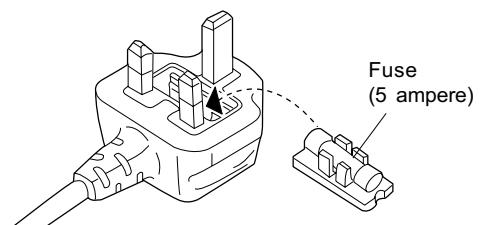


Figure B



■ Operation Checks and Main Component Replacement Procedures

"ATTENTION SERVICER" Some chassis components may have sharp edges. Be careful when disassembling and servicing. Please take note that the diagrams shown are for model SA-EX510 which is similar to SA-EX310.

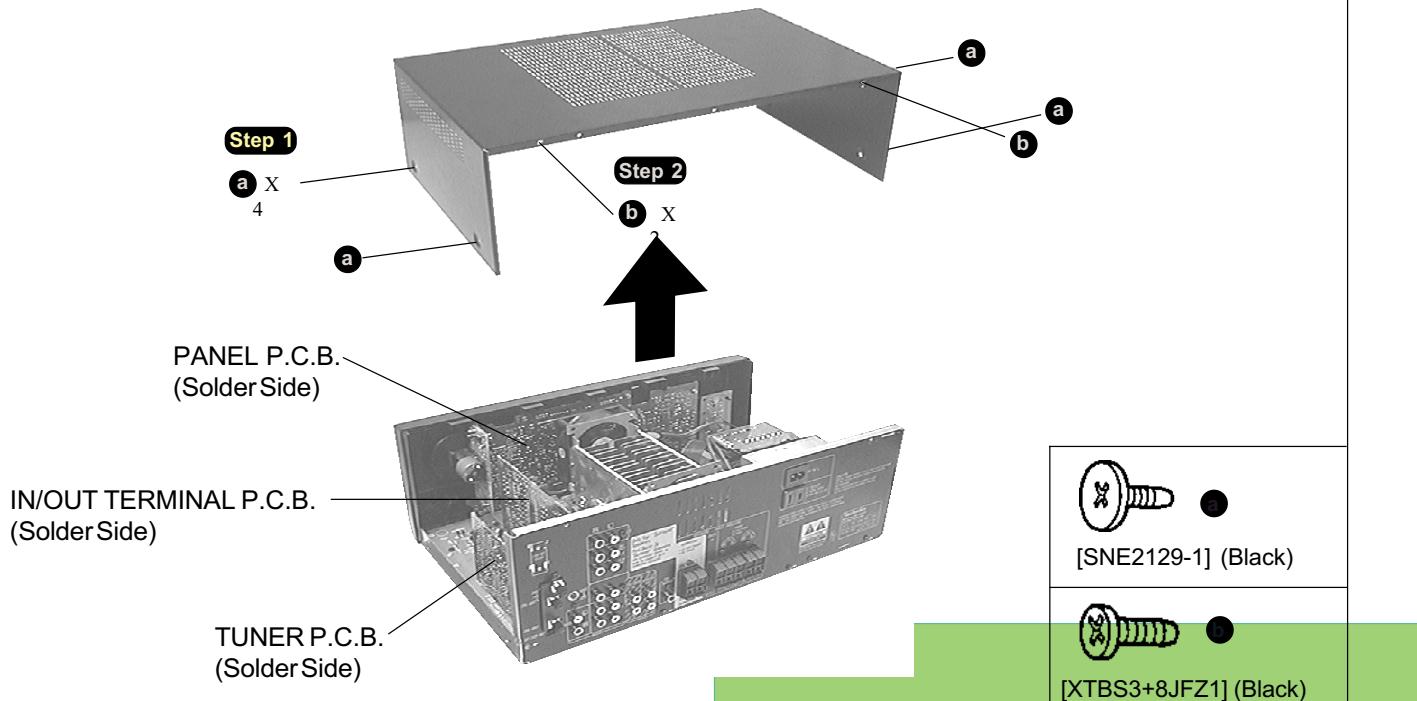
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.

- **Contents**

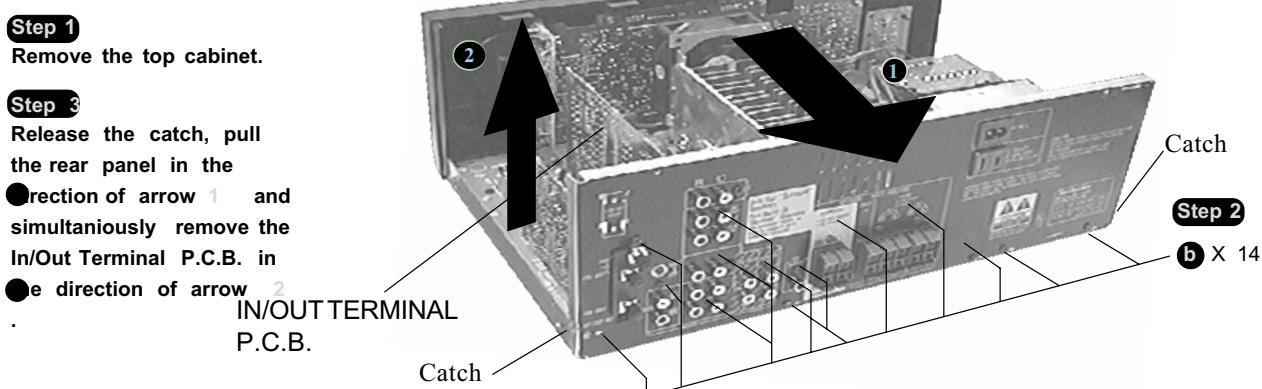
• Checking Procedure For Each Major P.C.B.	4~6
• Main Component Replacement Procedures.....	6~8

■ Checking Procedure For Each Major P.C.B.

1. Checking of the Panel P.C.B., and Tuner P.C.B.



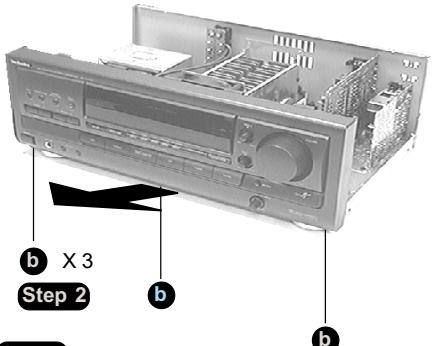
2. Checking of the In/Out Terminal P.C.B.



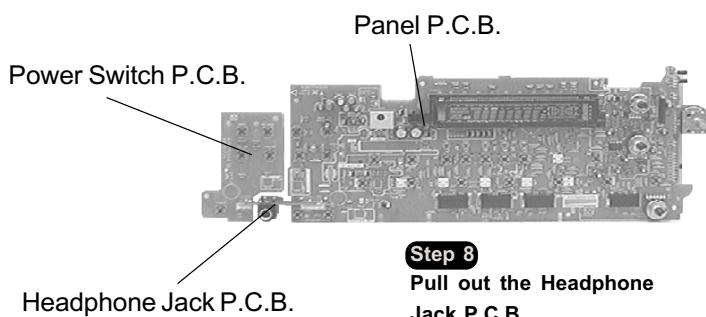
To Remove Front Panel, Panel P.C.B., Power Switch P.C.B. and Headphone Jack P.C.B.

Step 1

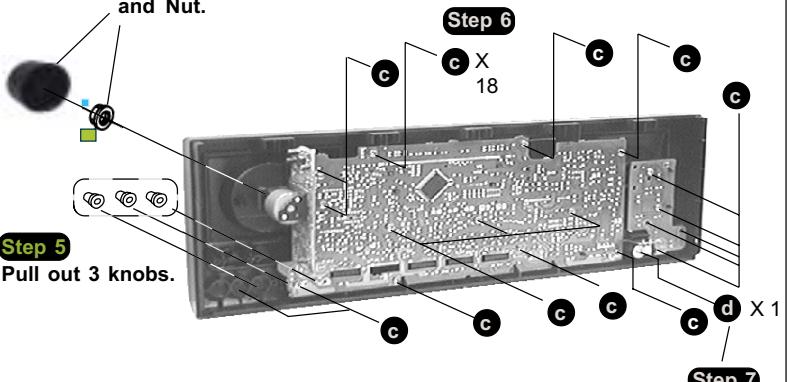
Remove the top cabinet.



Step 3
Remove the front panel in
the direction of arrow.



Step 4
Remove the Volume Knob
and Nut.

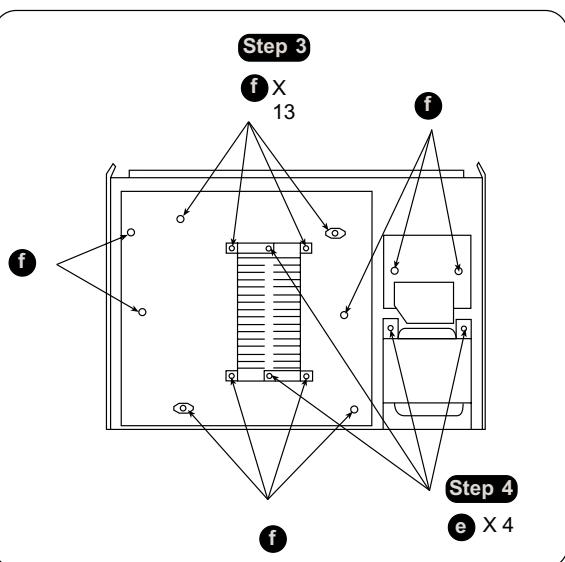


Step 5
Pull out 3 knobs.

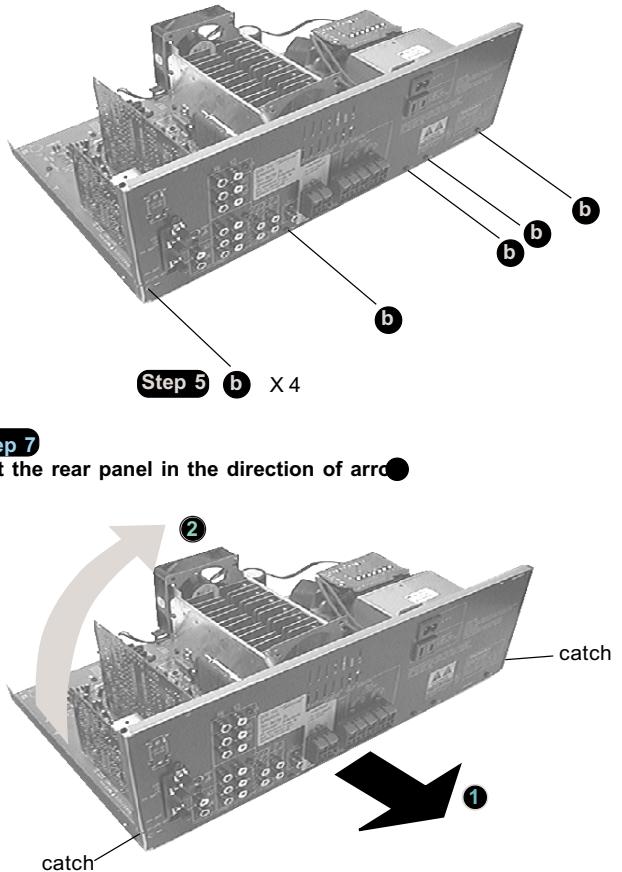
3. Checking of the MAIN P.C.B.

Step 1

Step 2

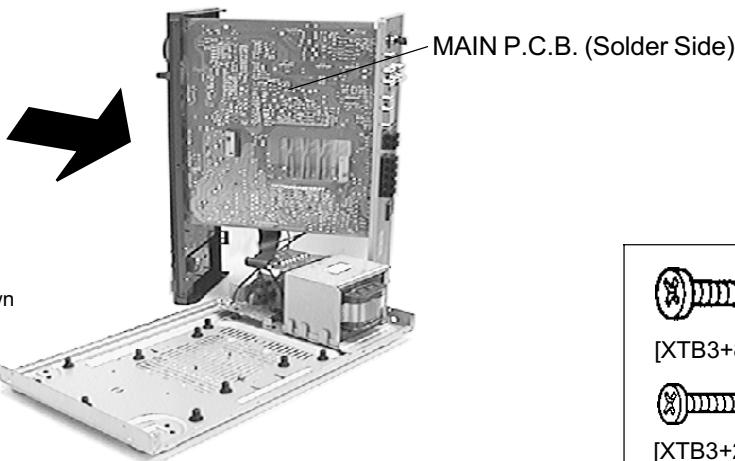


Step 6
Release 2 catches and pull the rear panel in the direction of arrow ● for about 10mm.
(Note : Main, Tuner and In/Out Terminal P.C.B. are attach to the rear panel)

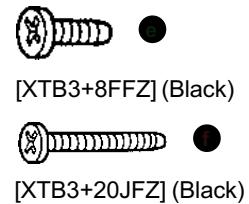


Step 1

Connect the front panel to the main P.C.B. as shown.



- Check the Main P.C.B. as shown
-

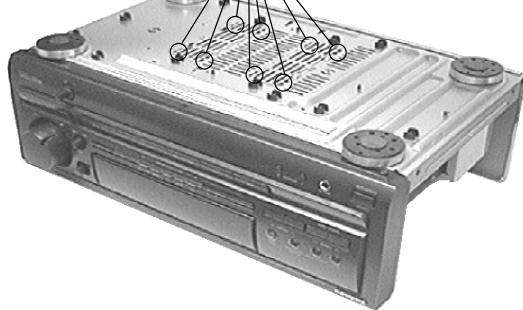
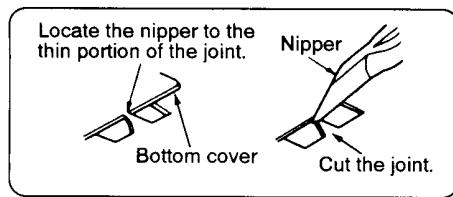
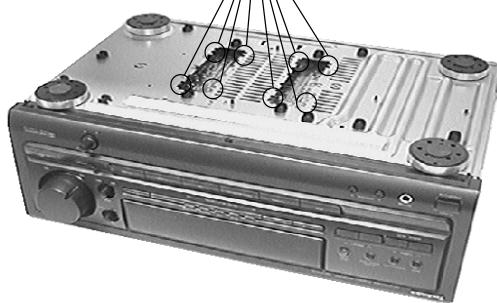
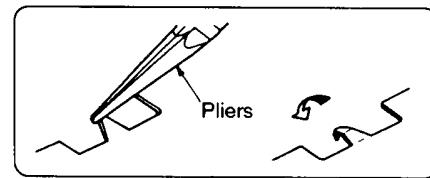


■ Main Component Replacement Procedures

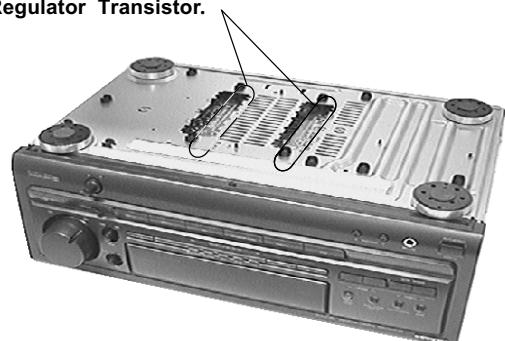
1. Replacement of the Power IC and Regulator Transistor

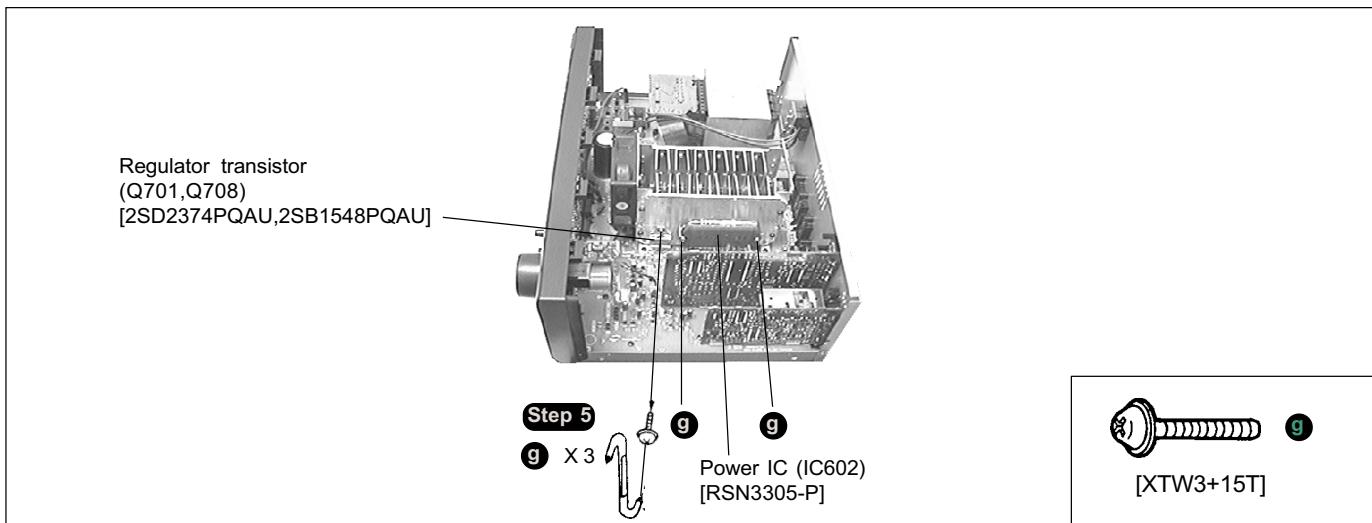
Step 1

Remove the top cabinet.

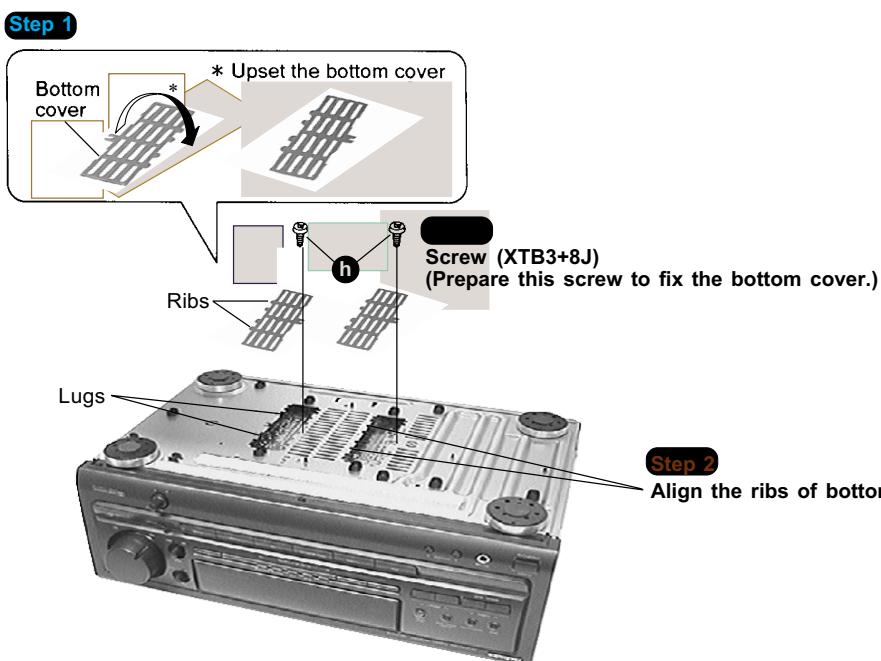
Step 2 Cut the joints as shown below. (6 joints)**Step 3** Fold the joints. (6 joints)**Step 4**

Desolder the terminals of Power IC and Regulator Transistor.





Installation of the bottom cover after replacement

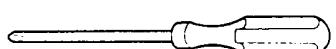


CAUTION

- After replacing the power IC or regulator transistor, apply a sufficient quantity of compound grease (RFKX0002/SZZ0L15) between the heat sink and the power IC or regulator transistor (Radiation of power IC).
 - Tighten enough the screws (g) after replacing the power IC and regulator transistor. Otherwise, the heat radiation works little.
 - When installing or removing the power IC or transistor holder, be sure to use an offset screwdriver.
- A long straight screwdriver cannot be used for removing or mounting the screws since its long grip interferes with the neighbouring P.C.B. and transformer.(See Fig.1 & 3)
 - A short straight screwdriver may be used for removal, but cannot be used for mounting because the limited space in the unit will not allow sufficient tightening torque.(See Fig.2 & 3)



A short straight screwdriver



A long straight screwdriver

Fig.2

Fig.1

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

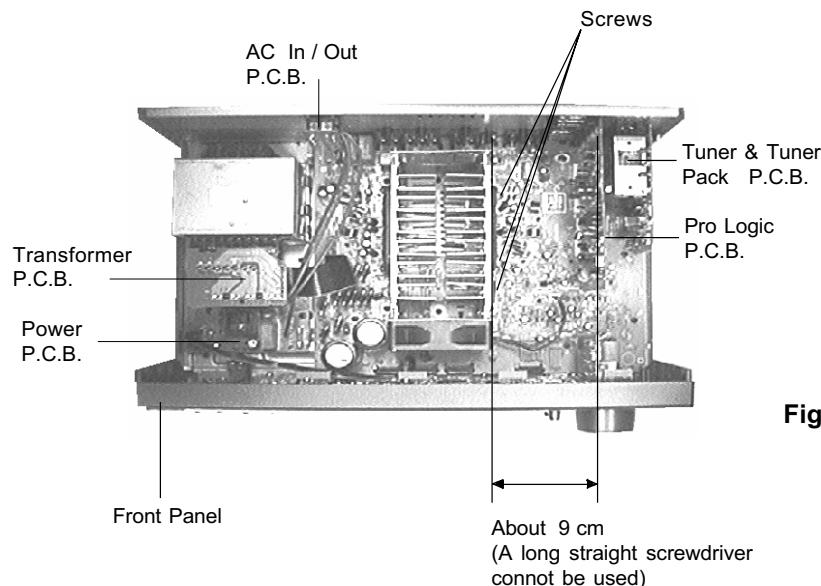
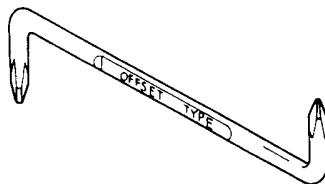


Fig.3

—OFFSET SCREWDRIVER—

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



No.		L
34 1/4	1 & 2	4 3/4"

- The address of PROTO International Sales is as follows.

**International Sales**

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

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

Singapore, Indonesia,
Philippines, Korea, Hong
Kong, Malaysia, China.

Stanley-Proto Asia Pacific
12 Gul Drive
Singapore 2262

Fax: 65-861-3206
Phone: 65-862-0883

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

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

Mexico
Herramientas Stanley S.A.
DE C.V.
Apartado Postal 675
72030 Puebla, Pue, Maxico

Fax: 52-22-494-4880
Phone: 52-22-495-300

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

Phone: 305-591-3828

Europe
Stanley-Proto Europe
Woodside, Sheffield
539PD
England
Fax: 44-742-739-038
Phone: 44-742-768-888

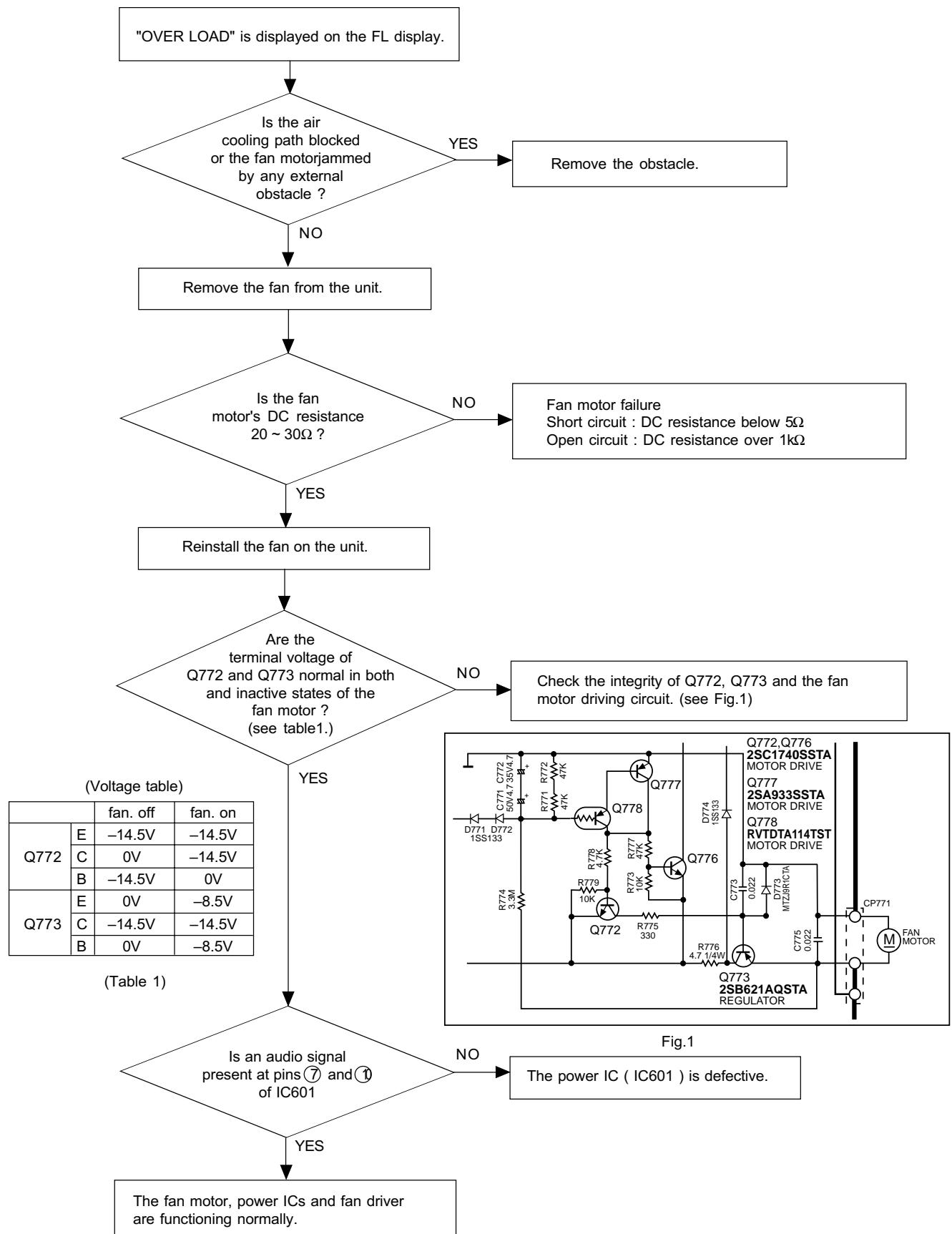
Canada
Stanley-Proto Canada
1100 Corporate Drive
Burlington, Ontario
Canada, L7L 5R6
Fax: 416-335-0075
Phone: 416-335-0075

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

■ Fan Motor Troubleshooting

The Model SA-EX310 employ fan motor error sensing electronics.

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

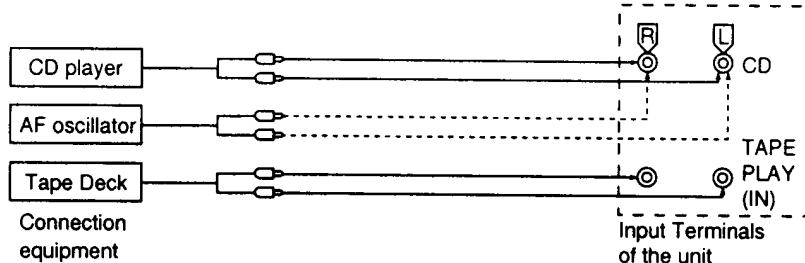


■ Troubleshooting

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

CONNECTION

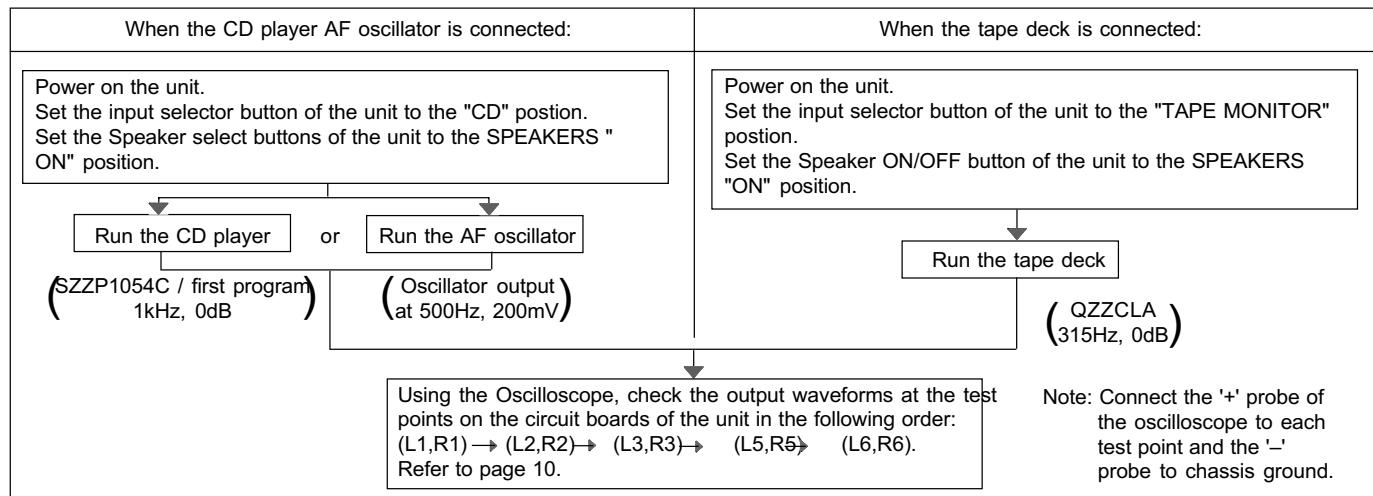
Connect either a CD player, tape deck or AF oscillator to the input terminals of the unit.



REQUIRED ITEMS

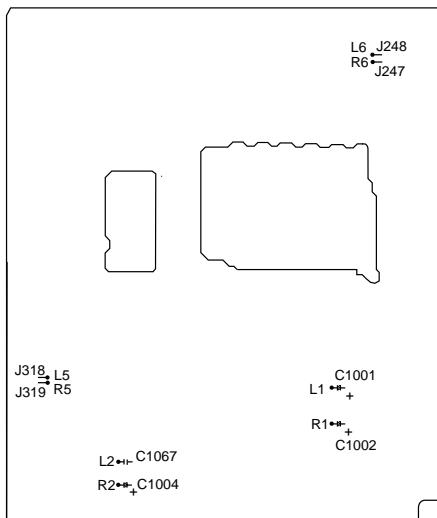
1. Testing with a CD player Test disc (SZZP1054C / first program, 1kHz, 0dB)
2. Testing with a tape deck Test tape (QZZCLA / 315Hz, 0dB)
3. Testing with a AF oscillator Set the output at 500Hz, 200mV
4. Oscilloscope (min. 10MHz) To measure the output waveform at the test points.

TEST PROCEDURE FOR AMPLIFIER CIRCUIT

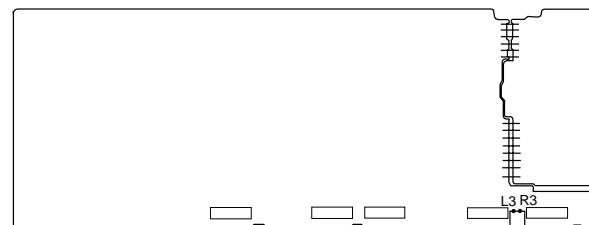


TEST POINTS POSITIONS OF AMPLIFIER CIRCUIT

MAIN P.C.B. (component side)



PANEL P.C.B. (component side)



NORMAL WAVEFORMS OF AMPLIFIER CIRCUIT AND LIKELY FAULTY BLOCKS

TP	CD player	Tape deck	AF oscillator	Likely faulty block if the normal waveform shown at the left is not present.
L1/R1 area				Input selector block IC402 & area
L2/R2	0.5msec 2V 	1msec 500mV 	1msec 500mV 	Dolby pro logic block IC1001 and IC1002& area
L3/R3	0.5msec 2V 	1msec 500mV 	1msec 500mV 	Master volume block VR501 & area
L5/R5 Q602	0.5msec 500mV 	1msec 50mV 	1msec 100mV 	Power limiter block Q601 to & area
L6/R6	0.5msec 100mV* 	1msec 500mV 	1msec 500mV 	Main amplifier block IC601 & area
	0.5msec 5V*	1msec 10V	1msec 10V	

Measurement conditions.

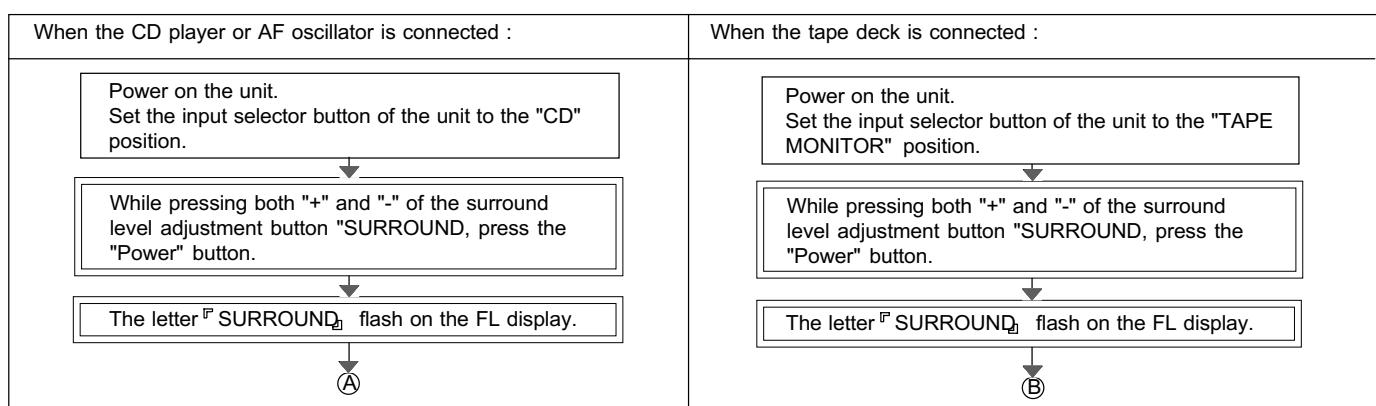
control (VR512) and Bass control (VR511) positions

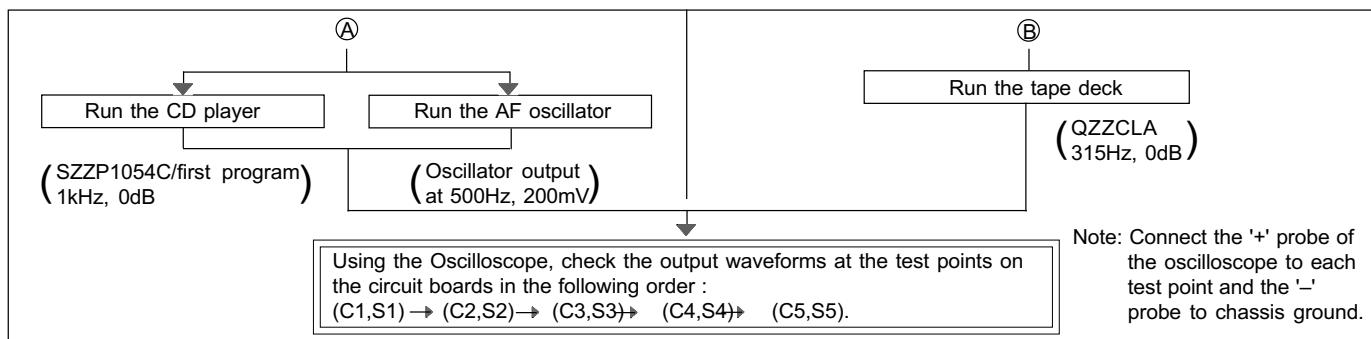
*Volume control position (VR501) for these test

Volume control (VR501), Treble :

CHECKING PROCEDURE FOR SURROUND CIRCUIT

Outputting surround signal normally requires that opposite phase signals be applied to both the left and right channels. However, this unit incorporates a service mode, allowing the surround circuit to be tested using in-phase signals.

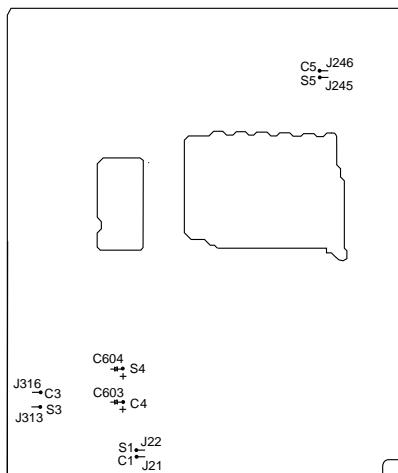




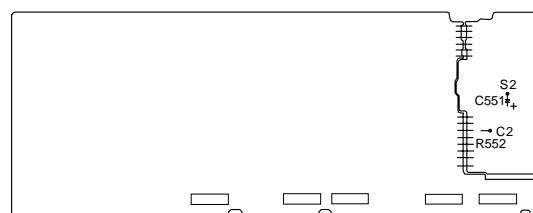
- To exit the service mode, power off the unit.

TEST POINTS POSITIONS OF SURROUND CIRCUIT

MAIN P.C.B. (component side)



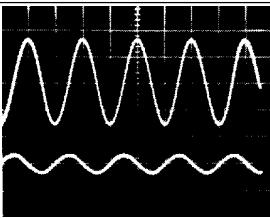
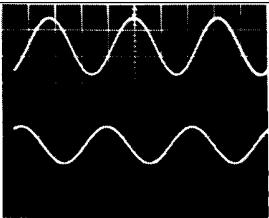
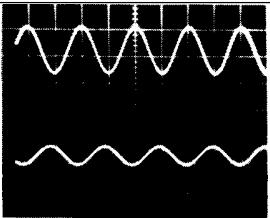
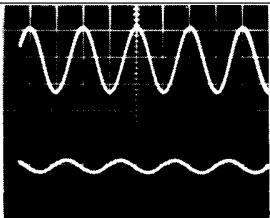
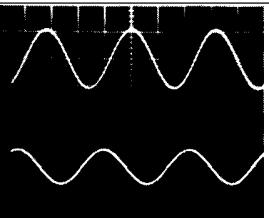
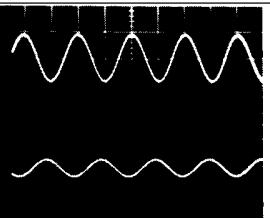
PANEL P.C.B. (component side)



NORMAL WAVEFORMS OF AMPLIFIER CIRCUIT AND LIKELY FAULTY BLOCKS

TP	CD player	Tape deck	AF oscillator	Likely faulty block if the normal waveform shown at the left is not present.
C1 S1				Dolby pro logic block IC1001 and IC1002 & area
C2 S2				Master volume block VR501 & area
C3 S3				Tone control block IC551 & area

NORMAL WAVEFORMS OF AMPLIFIER CIRCUIT AND LIKELY FAULTY BLOCKS

TP	CD player	Tape deck	AF oscillator	Likely faulty block if the normal waveform shown at the left is not present.
C4 S4				Power limiter block Q551 to Q552 & area
C5 area S5				Main amplifier block IC601 & IC602 & area

Measurement conditions.

control (VR512) and Bass control (VR511) positions

*Volume control position (VR501) for these test

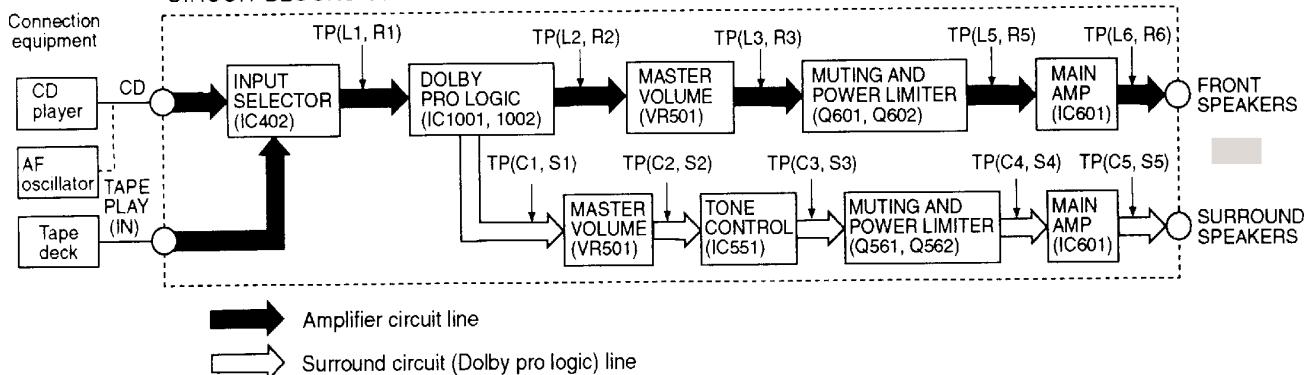
Volume control (VR501), Tremble

: ○



CIRCUIT BLOCKS

CIRCUIT BLOCKS OF THE MAIN UNIT



■ OVERLOAD DETECTION FUNCTION

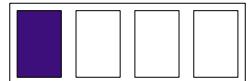
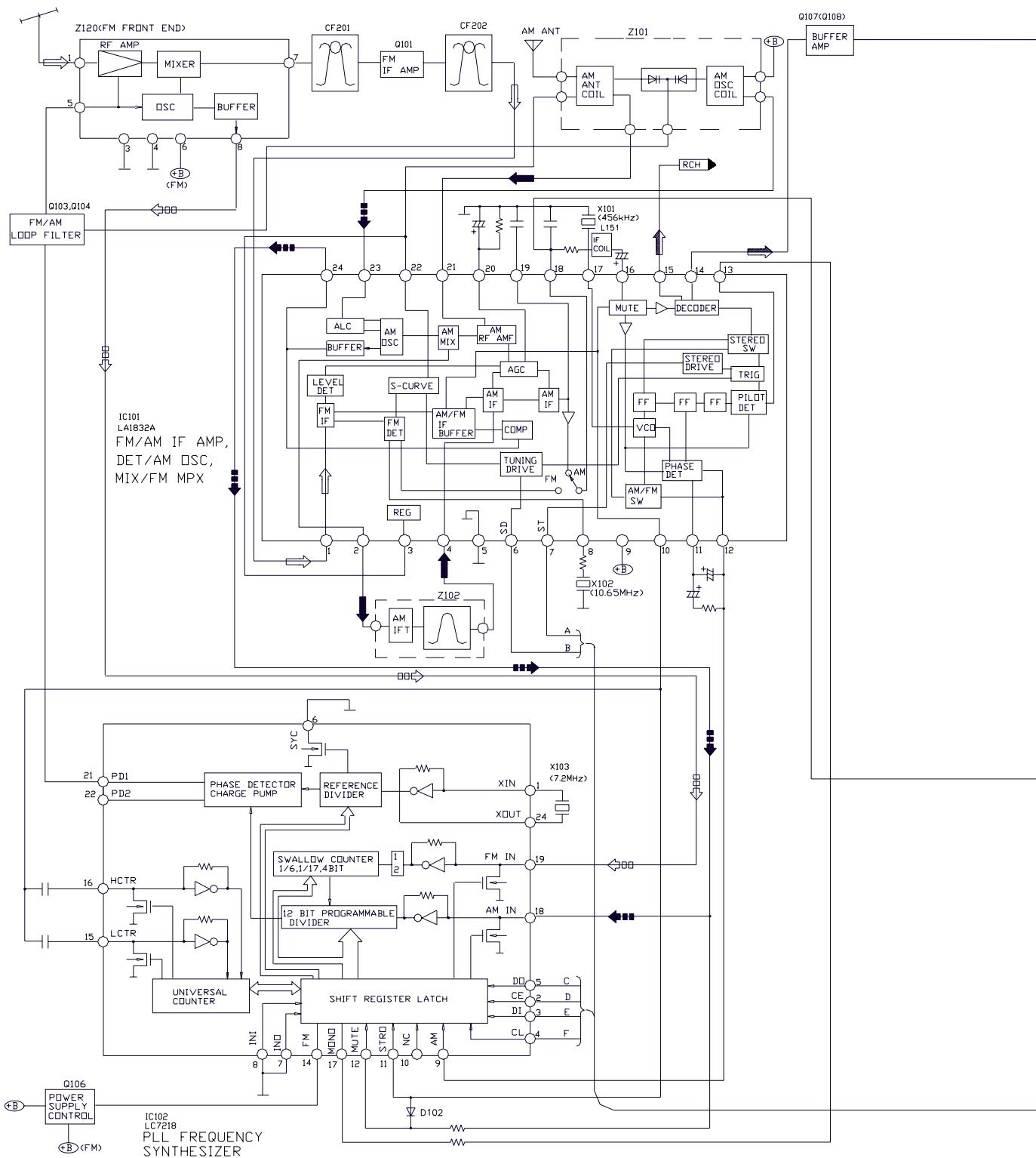
The HIC protection circuit functions if any cord at a speaker terminal is short-circuited or if the unit overheats because of improper operation. At the same time, "OVERLOAD" scrolls across the FL display.

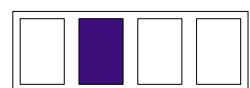
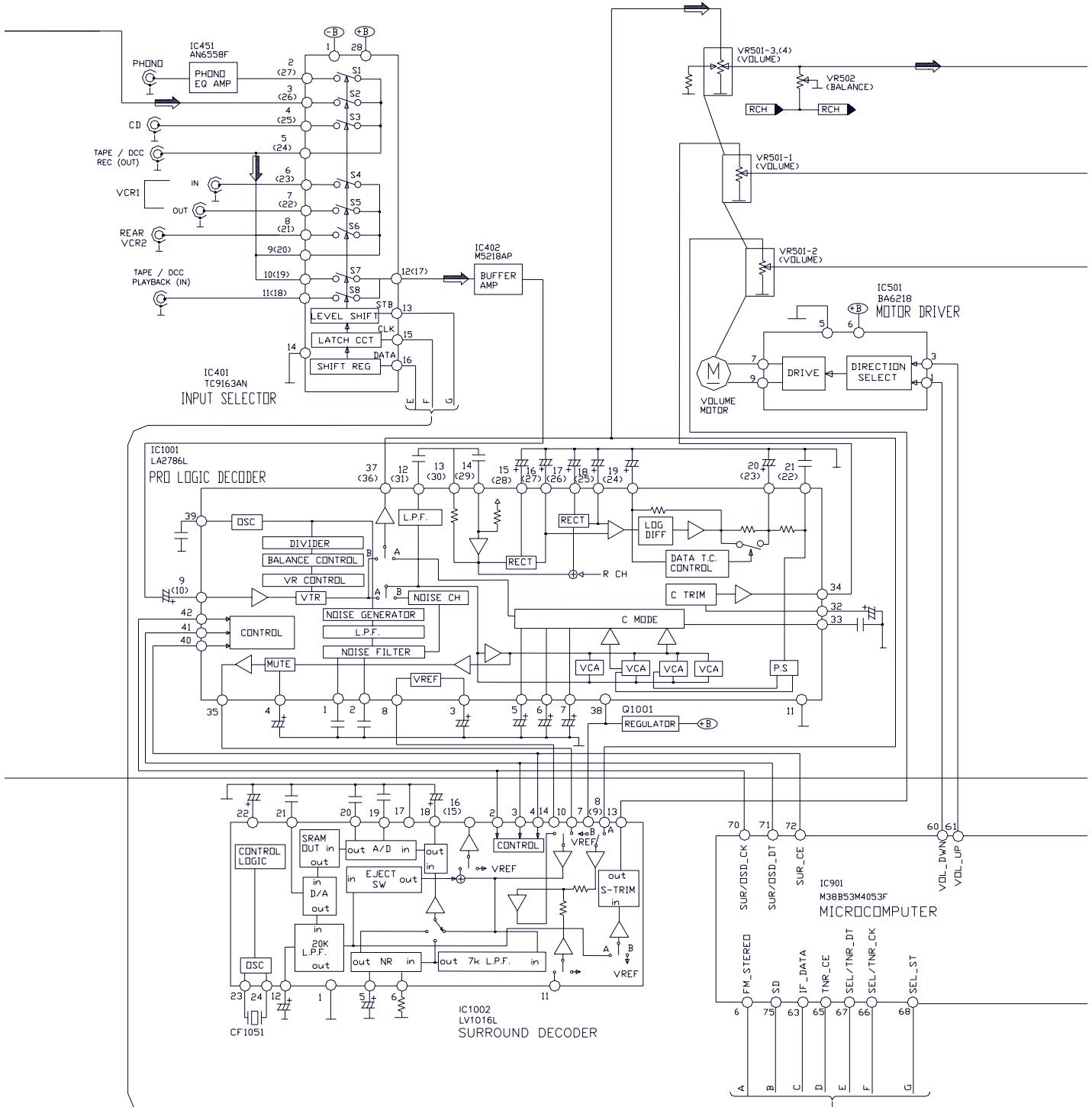
In this state, all keys remain in operative; if any key is pressed, "SWITCH OFF POWER" scrolls across the FL display.

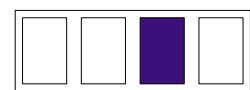
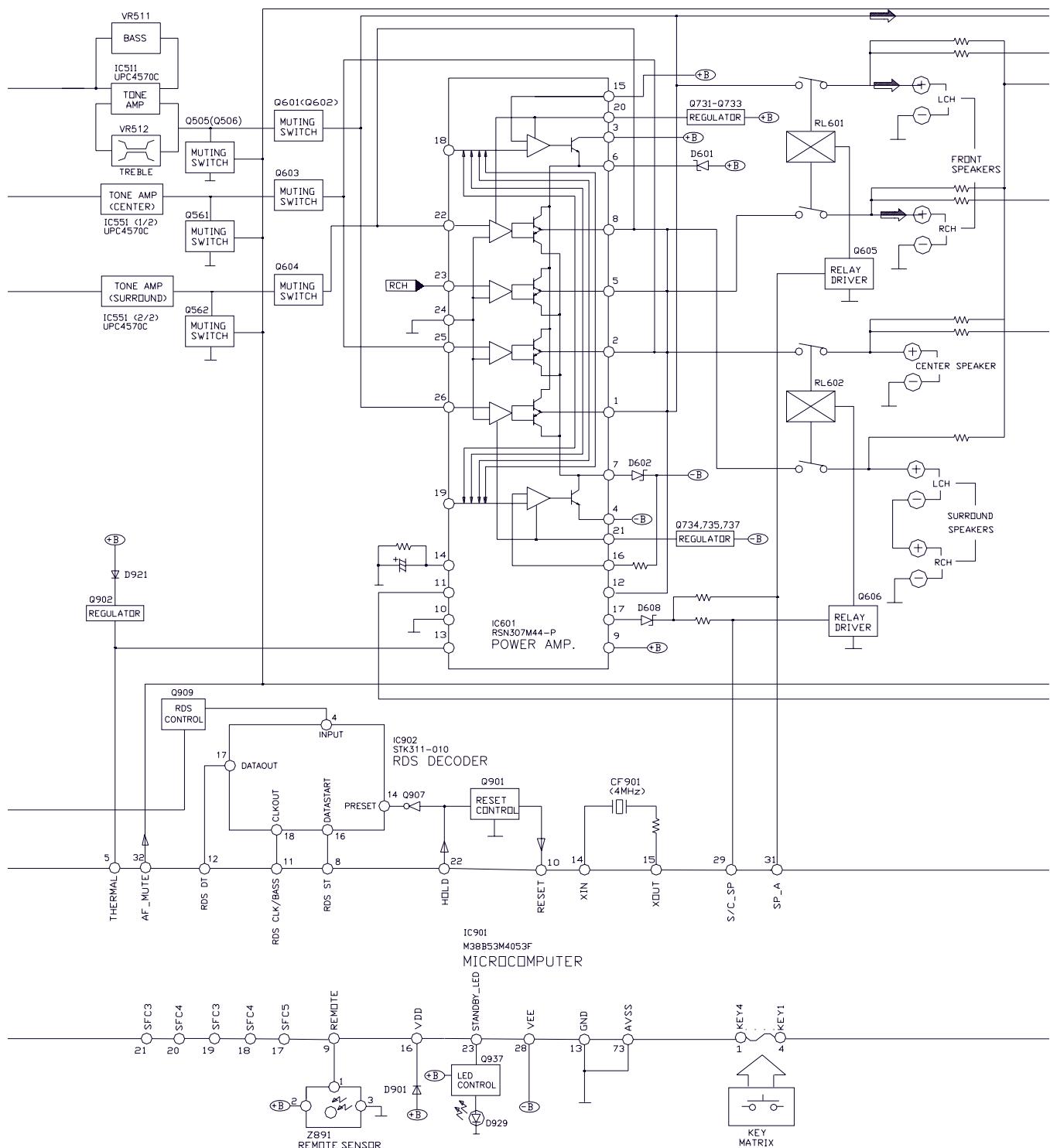
If an overload occurs, immediately power off the unit and check the speaker connection, venting holes and cooling fans. After fixing any faults, power on the unit again and check for proper operation.

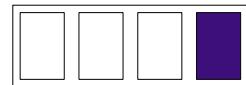
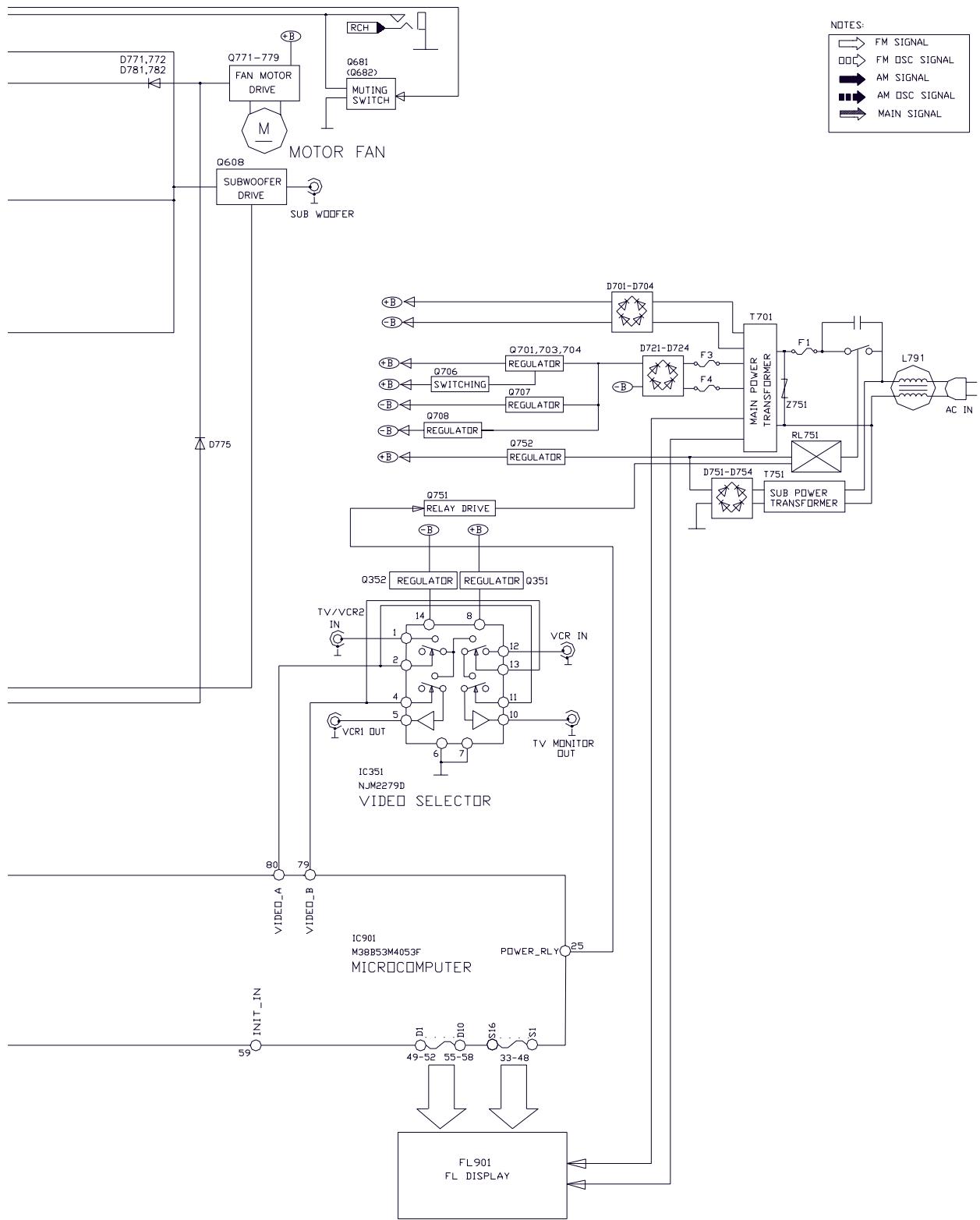
If no defects are found, or if the unit remains overload after it is power on again, check the circuit for faults.

■ Block Diagram









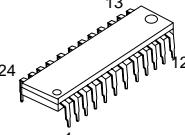
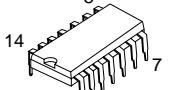
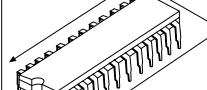
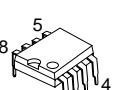
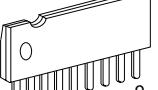
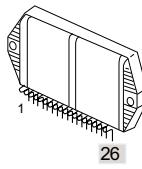
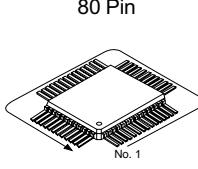
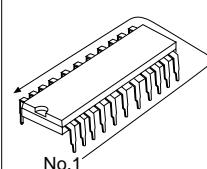
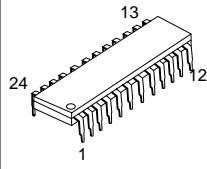
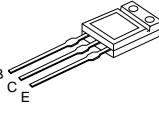
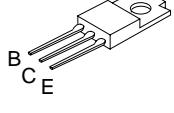
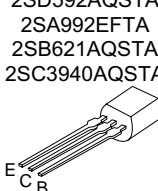
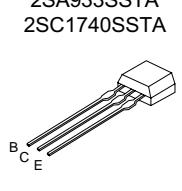
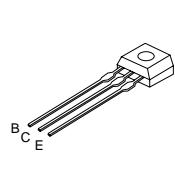
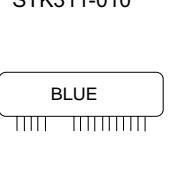
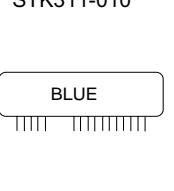
■ Terminal Functions Of ICs

• IC901 (M38B53M4053F) System Microprocessor

Pin No.	Mark	I/O	Function
1~4	KEY4~KEY1	I	Key matrix detect terminal
5	THERMOLD	I	Thermal/Over load detect terminal
6	FM_ST	I	Stereo signal detect terminal
7	6CH_ST	-	Not used
8	RDS_ST	-	Not used
9	REMOTE	I	Remote control terminal
10	RESET	I	Reset detect terminal
11	RDS_CK	-	Not used
12	RDS_DT	-	Not used
13	GND	-	GND terminal
14	XIN	I	Crystal oscillator terminal
15	XOUT	O	(4 MHz)
16	VDD	I	Power supply terminal
17~21	SFC5~SFC1	O	SFC LED indicator output
22	HOLD	I	Power trip detection input
23	STANDBY_LED	-	Not used
24	FAN_STOP	-	Not used
25	RLY	O	Power relay control output
26	TV/DVD	I	TV/DVD select control input
27	LIMITTER	O	Power limitter control output
28	VEE	I	FL driver pull down voltage
29	S/C_SP	O	Surround/center speaker control output
30	SP_B	O	Speaker B control output
31	SP_A	O	Speaker A control output
32	AF_MUTE	O	Muting control output

Pin No.	Mark	I/O	Function
33~48	SEG16-SEG1	O	FL segment signal output
49~58	DEG1-DEG10	O	FL digit signal output
59	INIT_IN	I	Diode input
60	VOL_DOWN	O	
61	VOL_UP	O	Rotate control terminal of volume motor
62	LOUDNESS	-	Not used
63	IF_DATA	I	Serial data signal
64	REC_MUTE	-	Not used
65	TNR_CE	O	Chip enable signal
66	SEL/TNR_CK	O	Serial clock signal
67	SEL/TNR_DT	O	Serial data signal
68	SEL_ST	O	Level shift control terminal
69	OSD_ST	-	Not used
70	SURROSD_CK	O	Serial clock signal
71	SURROSD_DT	O	Serial data signal
72	SURR_CE	O	Chip enable signal
73	AVSS	-	GND for A-D conveter
74	VREF	I	Reference voltage for A-D convertion
75	SD	I	SD signal detect input
76	AC3_LED	-	Not used
77	HELP_LED	O	LED drive signal (HELP)
78	VIDEO_DET	-	Not used
79	VIDEO_B	O	Video selector controloutput B
80	VIDEO_A	O	Video selector controloutput A

■ Terminal Guide of ICs, Transistors and Diodes

LA1832A LC7218 	NJM2279D 	TC9163AN 28Pin 	M5218P 	AN6558F UPC4570C 	BA6218 
RSN307M44-P 	M38B53M4053F 80 Pin 	LA2786L 42Pin 	LV1016L 	2SD2137PQTA 2SB1417PQTA 	2SB1548PQAU 2SD2374PQAU 
2SD592AQSTA 2SA992EFTA 2SB621AQSTA 2SC3940AQSTA 	2SA933SSTA 2SC1740SSTA 	RVTDTA113ZST RVTDTA114EST RVTDTC143XST RVTDTA143XST RVTDTC114YST RVTDTA114YST RVTDTA114EST 		2SC2787LTA 2SC2785FETA 2SC331ARTA 2SD1915FTA 	STK311-010 

1N5402BM21 SB360L6508		RVD1SS133TA 1SR35200TB 1SS291TA MA165TA		MTZJ5R1BTA MTZJ5R6BTA MTZJ7R5CTA MTZJ9R1CTA MTZJ6R2BTA MTZJ15CTA MTZJ6R8BTA MTZJ4R7BTA MTZJ3R9ATA MTZJ10CTA MTZJ27DTA MTZJ24DTA		LN846RPH	
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■ Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

- S946 : Power switch
- S947 : Phono select switch
- S948 : Muting switch
- S950 : FM Auto/ Mono switch
- S951 : Band select switch
- S952 : Tuning decrease switch
- S953 : Tuning increase switch
- S955 : Memory manual/auto switch
- S956 : Preset decrease switch
- S957 : Preset increase switch
- S960 : Tuner select switch
- S961 : CD select switch
- S962 : Tape select switch
- S963 : TV/DVD select switch
- S964 : VCR select switch
- S970 : Search switch
- S971 : EON switch
- S972 : PTY up switch
- S973 : PTY down switch
- S974 : Display mode switch
- S980 : Speaker switch
- S983 : Dolby Pro Logic/SFC off on switch
- S984 : Dolby Pro Logic mode select switch
- S985 : Center mode select switch
- VR501-1 ~ VR501-4 : Volume control
- VR502 : Balance control
- VR511-1 ~ VR511-2 : Bass control
- VR512-1 ~ VR512-2 : Treble control

• Signal line

: +B line

: Main signal line

: -B line

: AM signal line

: AM OSC signal line

: FM/AM signal line

: FM signal line

: FM OSC signal line

The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.

Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

() AM

< > FM

• Importance 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, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

• Cover the parts boxes made of plastics with aluminium foil.

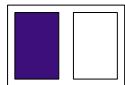
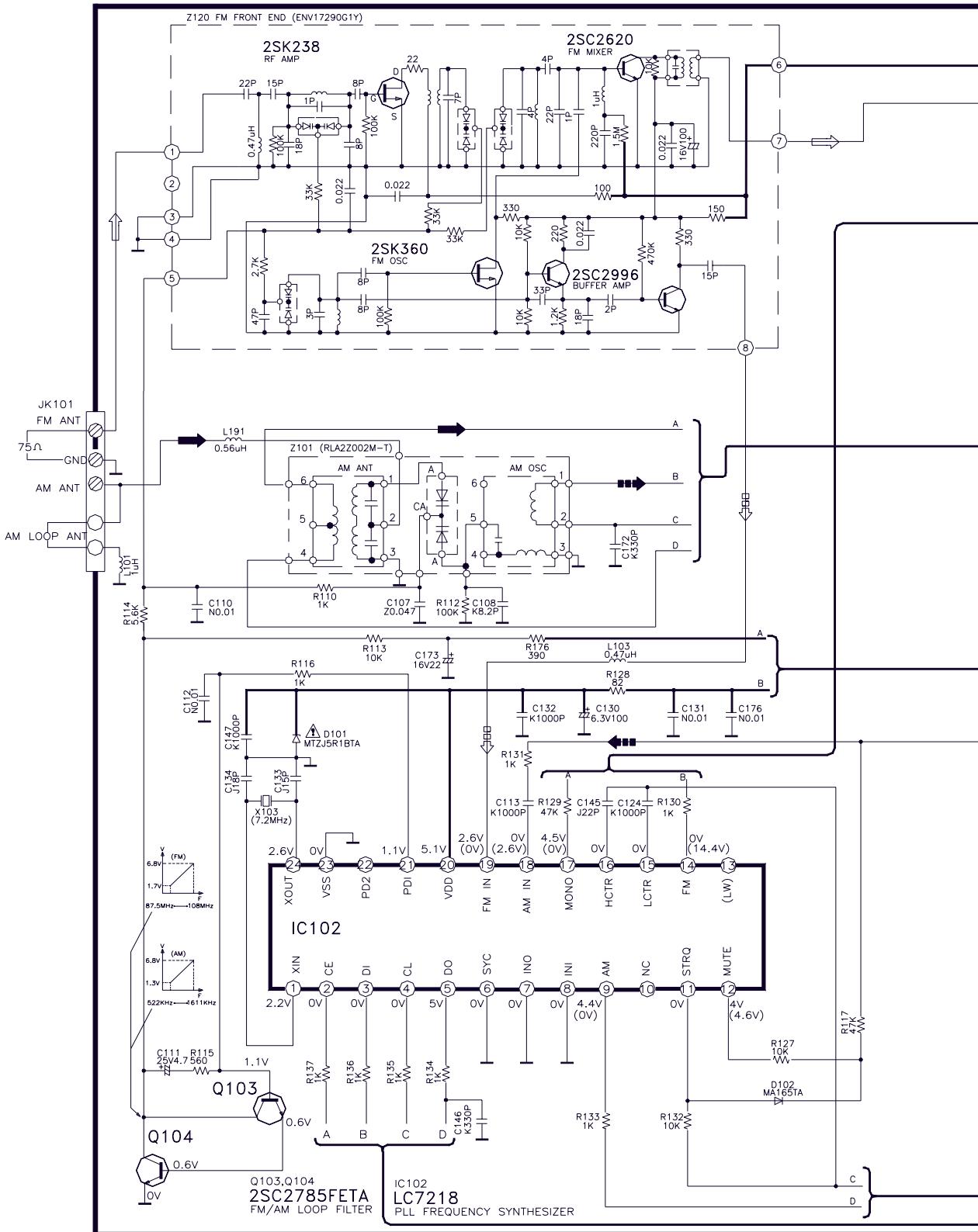
• Ground the soldering iron.

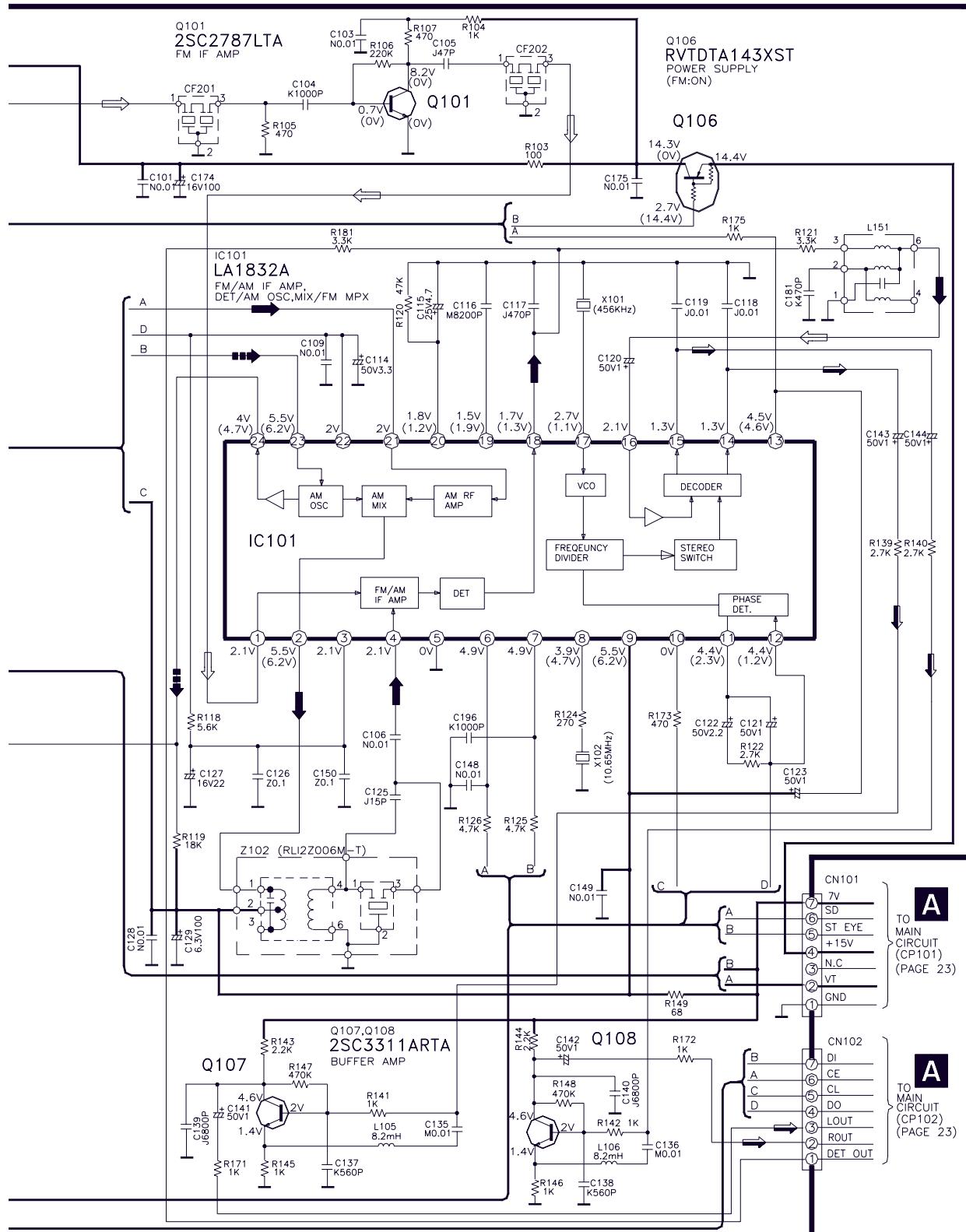
• Do not touch the pins of IC, LSI or VLSI with fingers directly.

• Put a conductive mat on the work table.

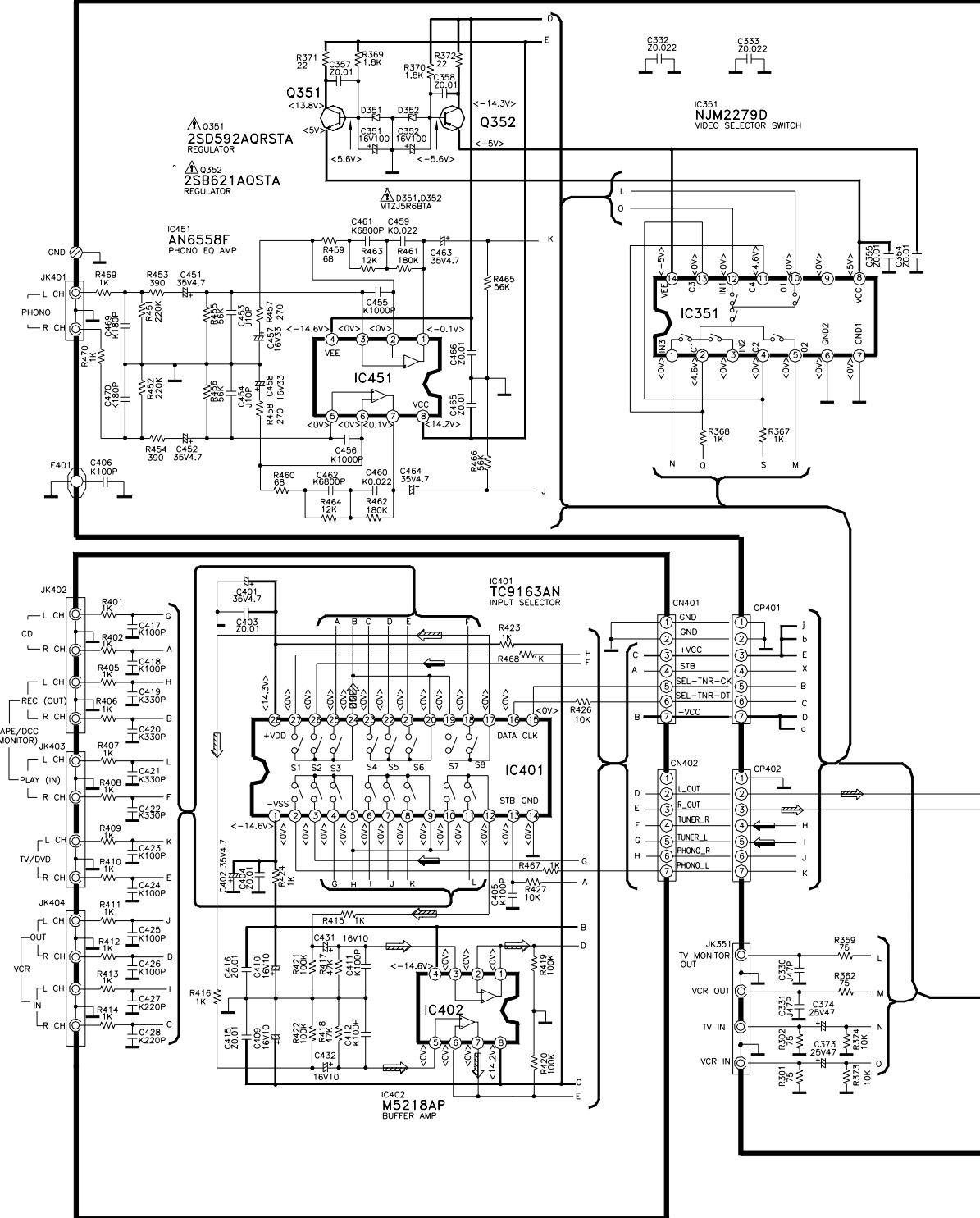
■ Schematic Diagram

F TUNER CIRCUIT

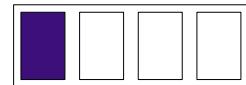


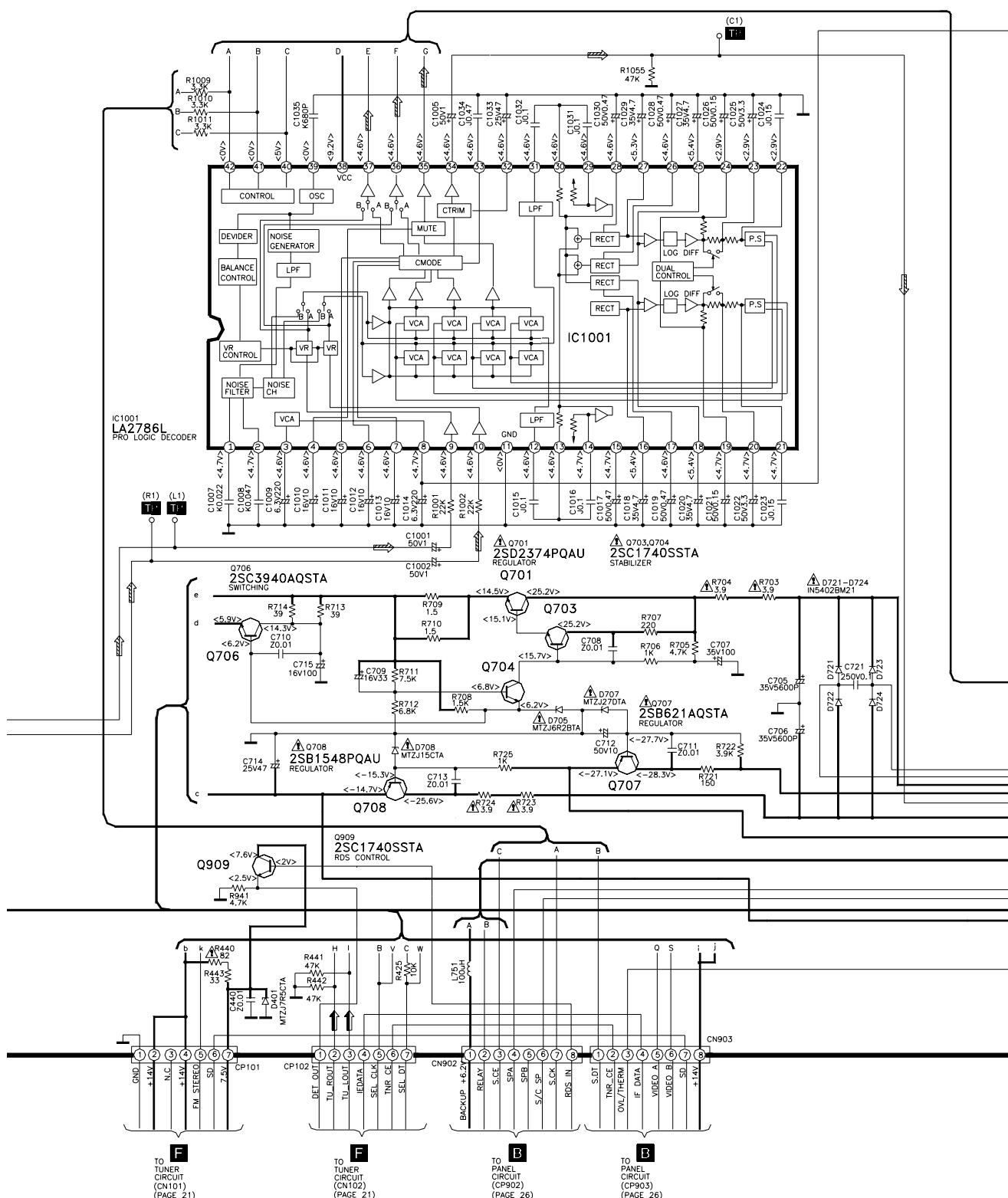


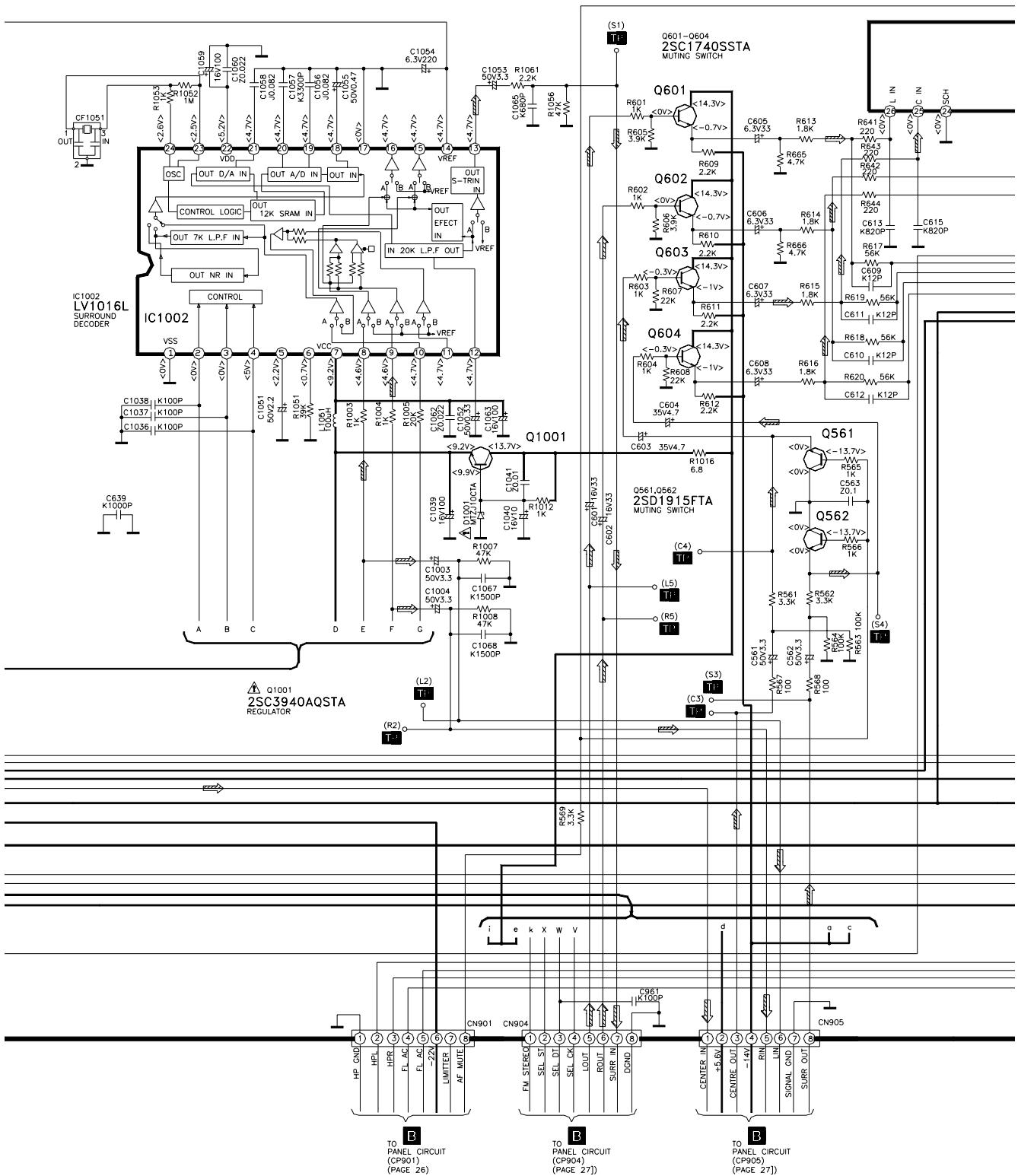
A MAIN CIRCUIT

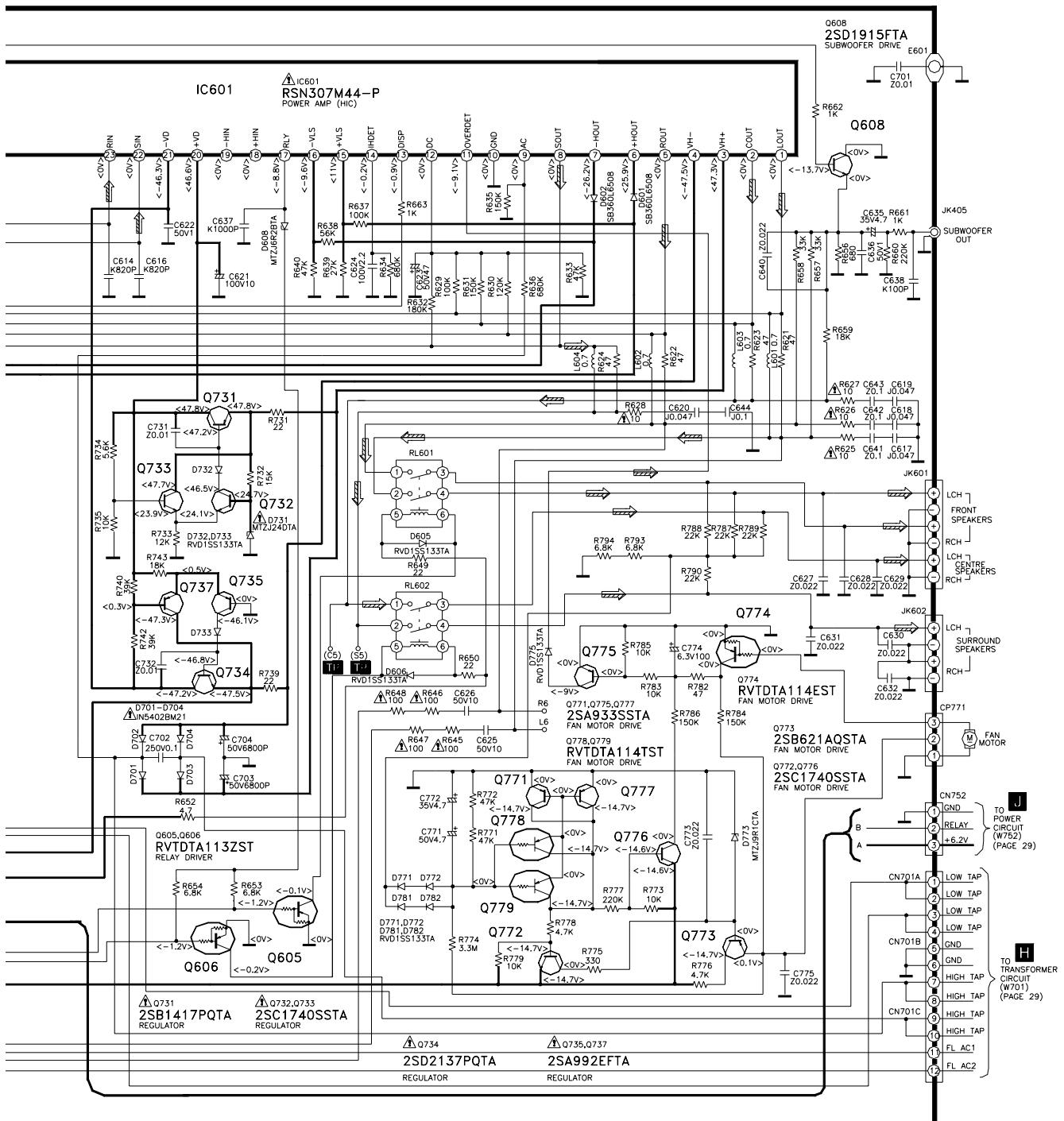


G IN/OUT TERMINAL CIRCUIT

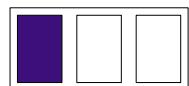
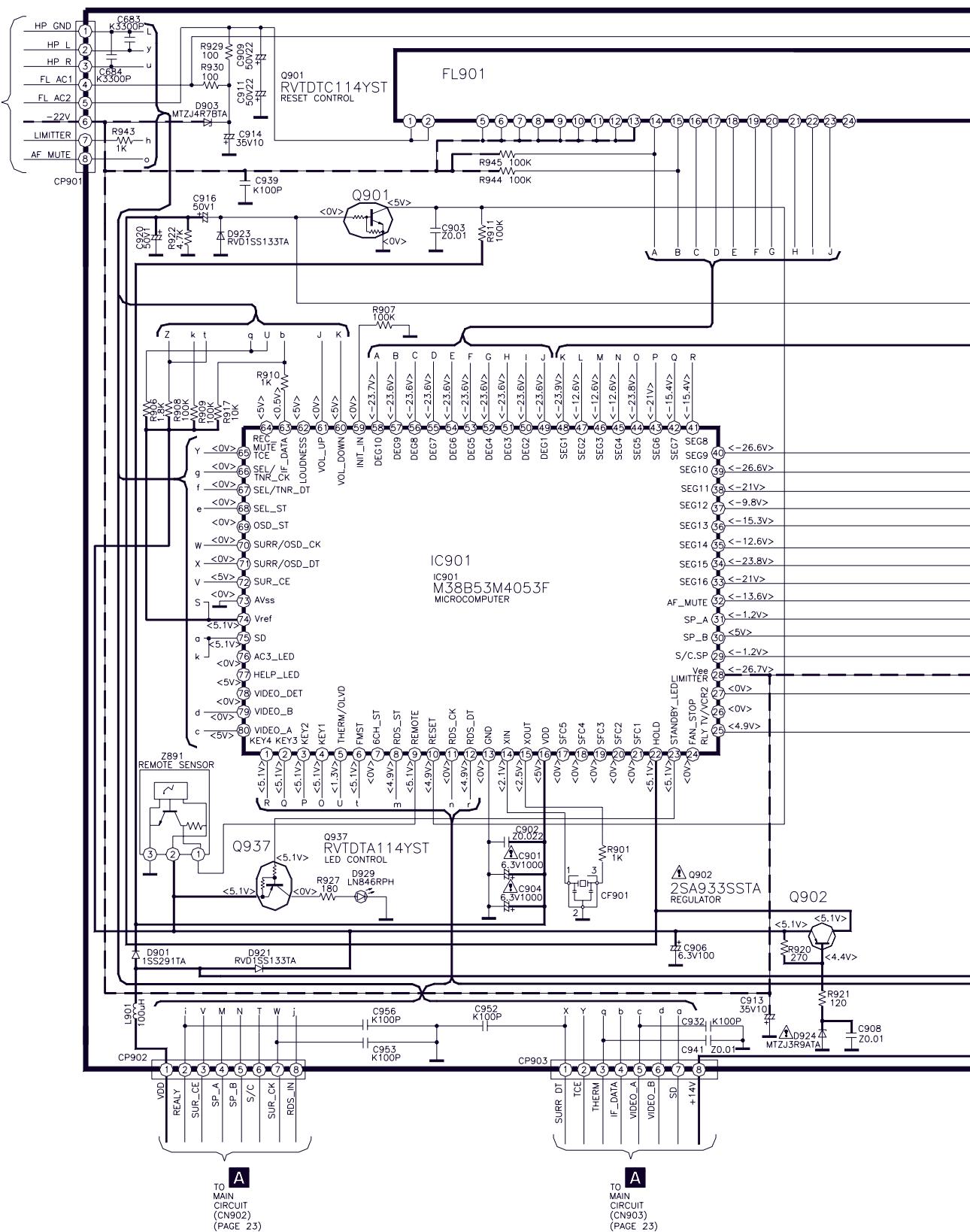


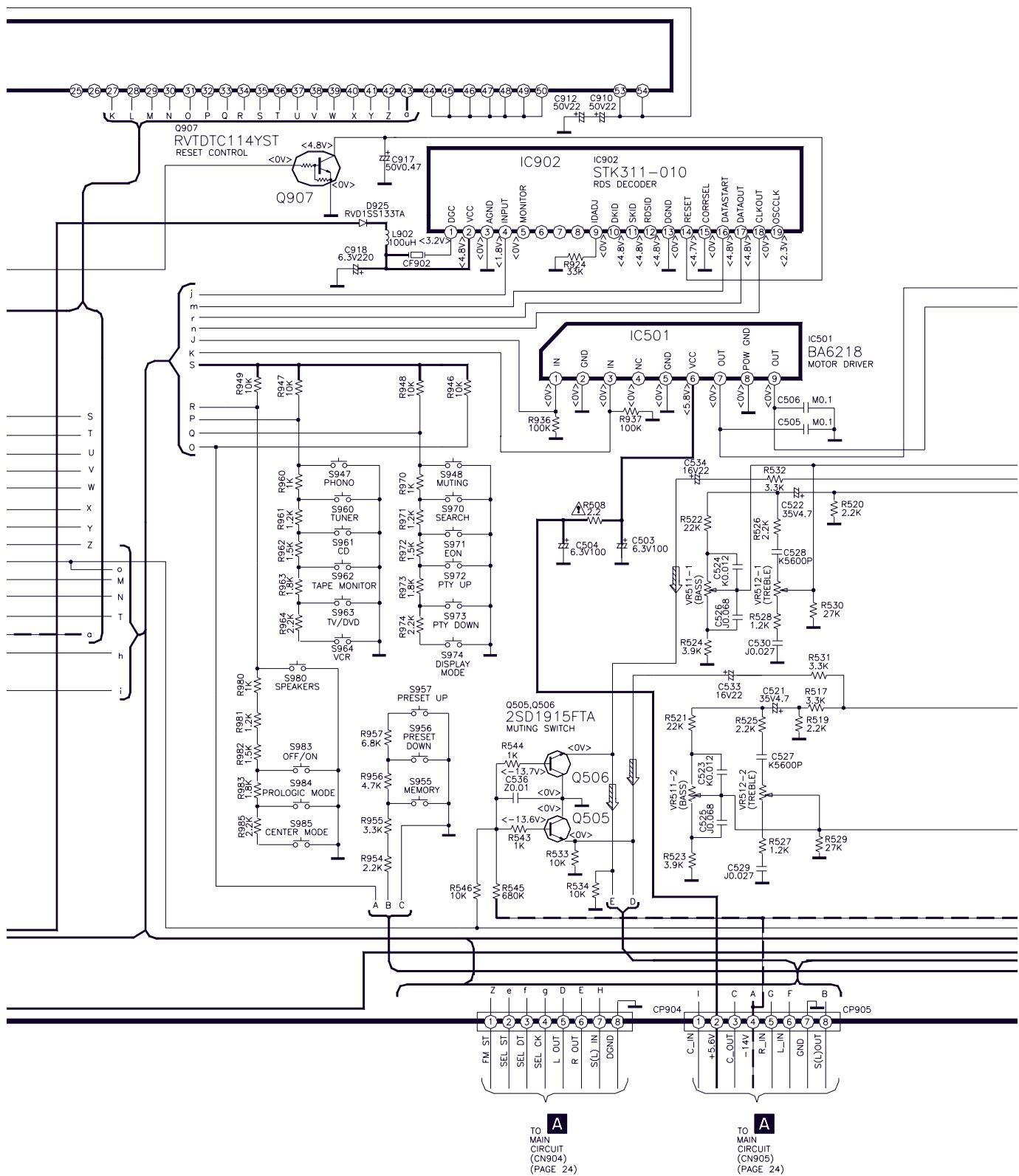






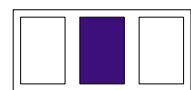
B PANEL CIRCUIT

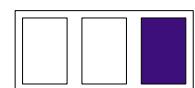
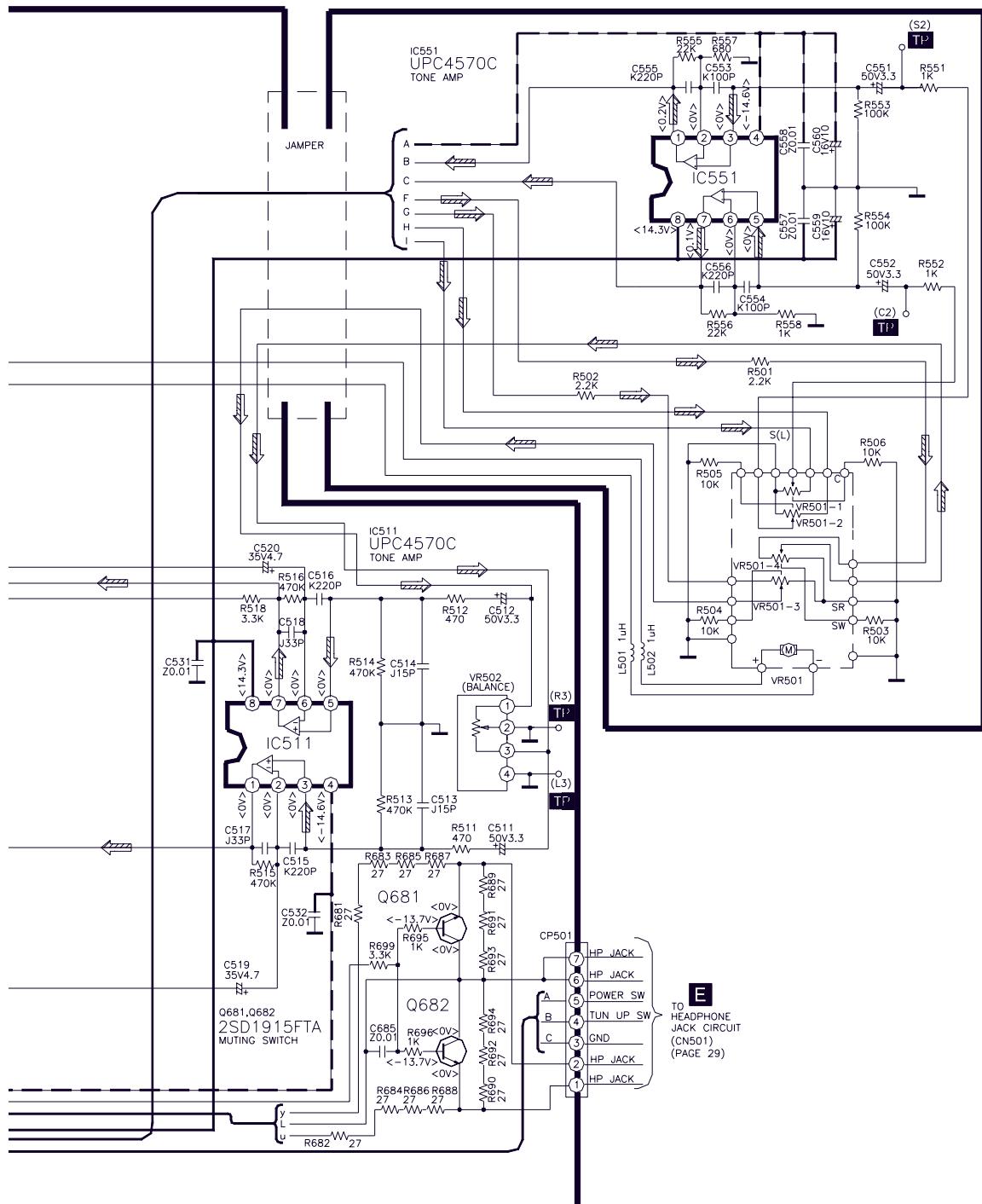
A
 TO
 MAIN
 CIRCUIT
 (CN901)
 (PAGE 24)


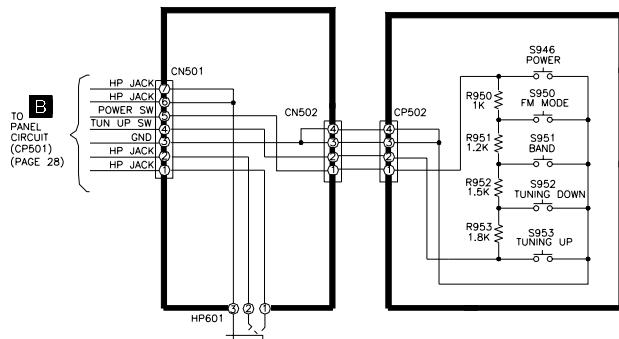
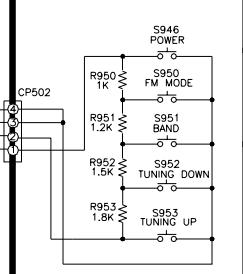
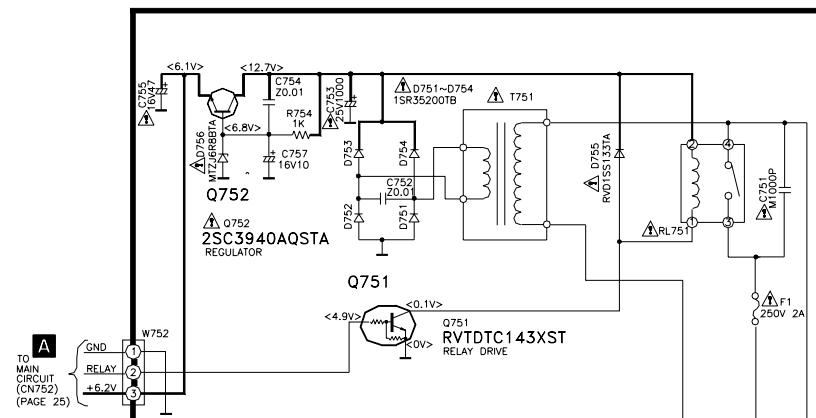
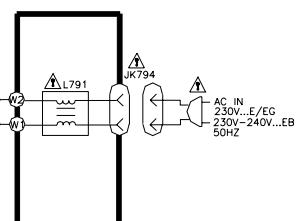
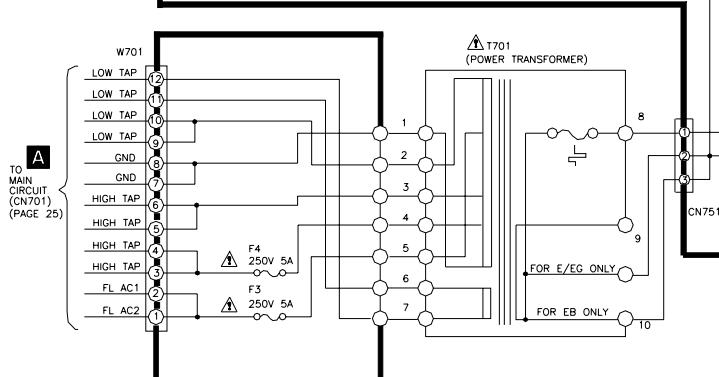


A
TO
MAIN
CIRCUIT
(CN904)
(PAGE 24)

A
TO
MAIN
CIRCUIT
(CN905)
(PAGE 24)



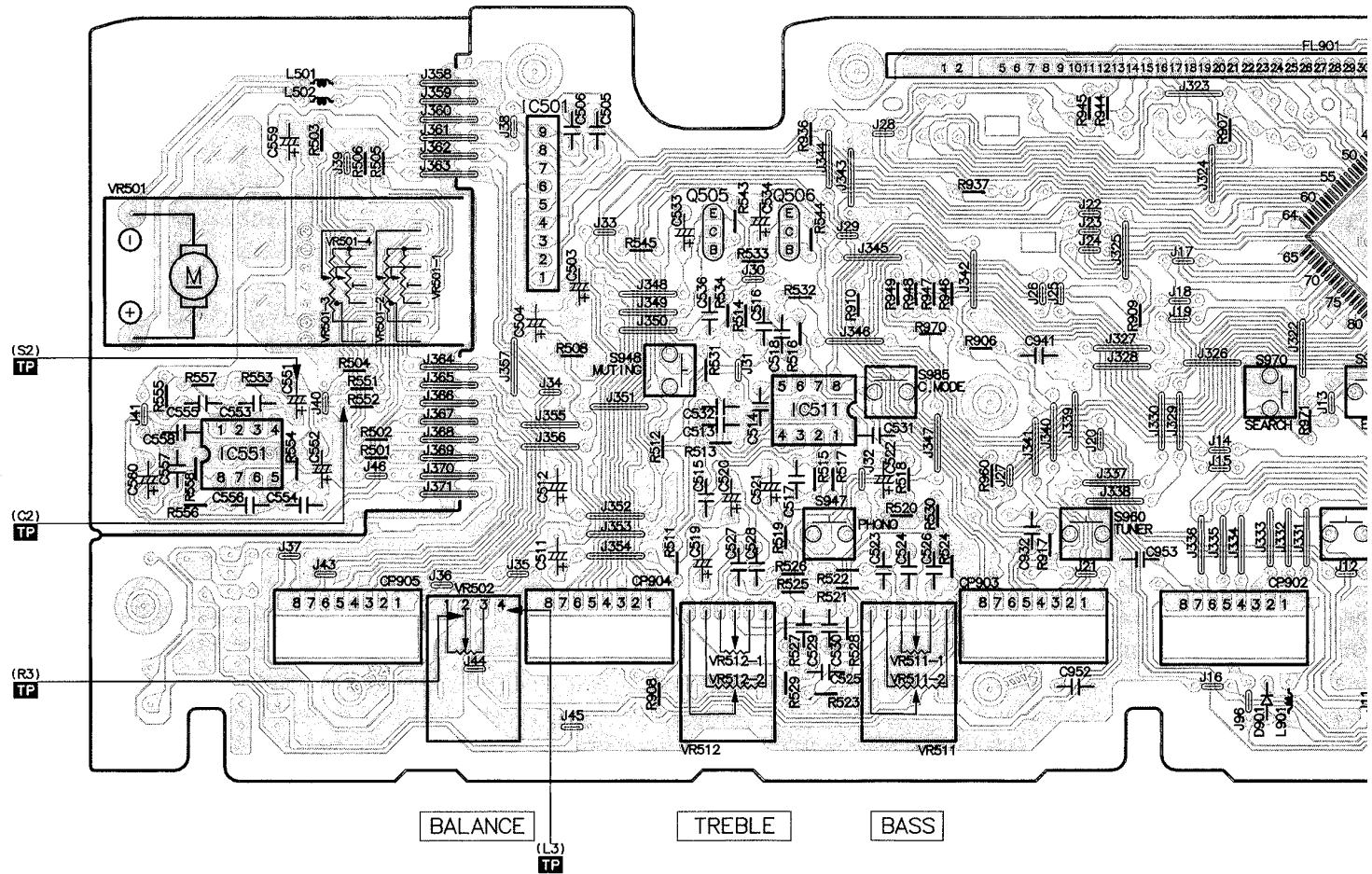
C MOTOR CIRCUIT


E HEADPHONE JACK CIRCUIT

D POWER SWITCH CIRCUIT

J POWER CIRCUIT

K AC IN/OUT CIRCUIT

H TRANSFORMER CIRCUIT


■ Printed Circuit Board

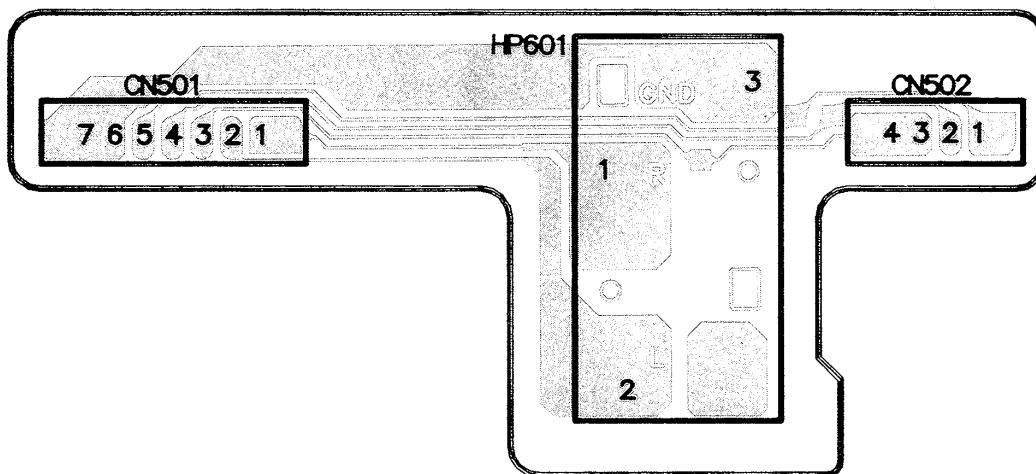
C MOTOR P.C.B. (REP2445D-S)

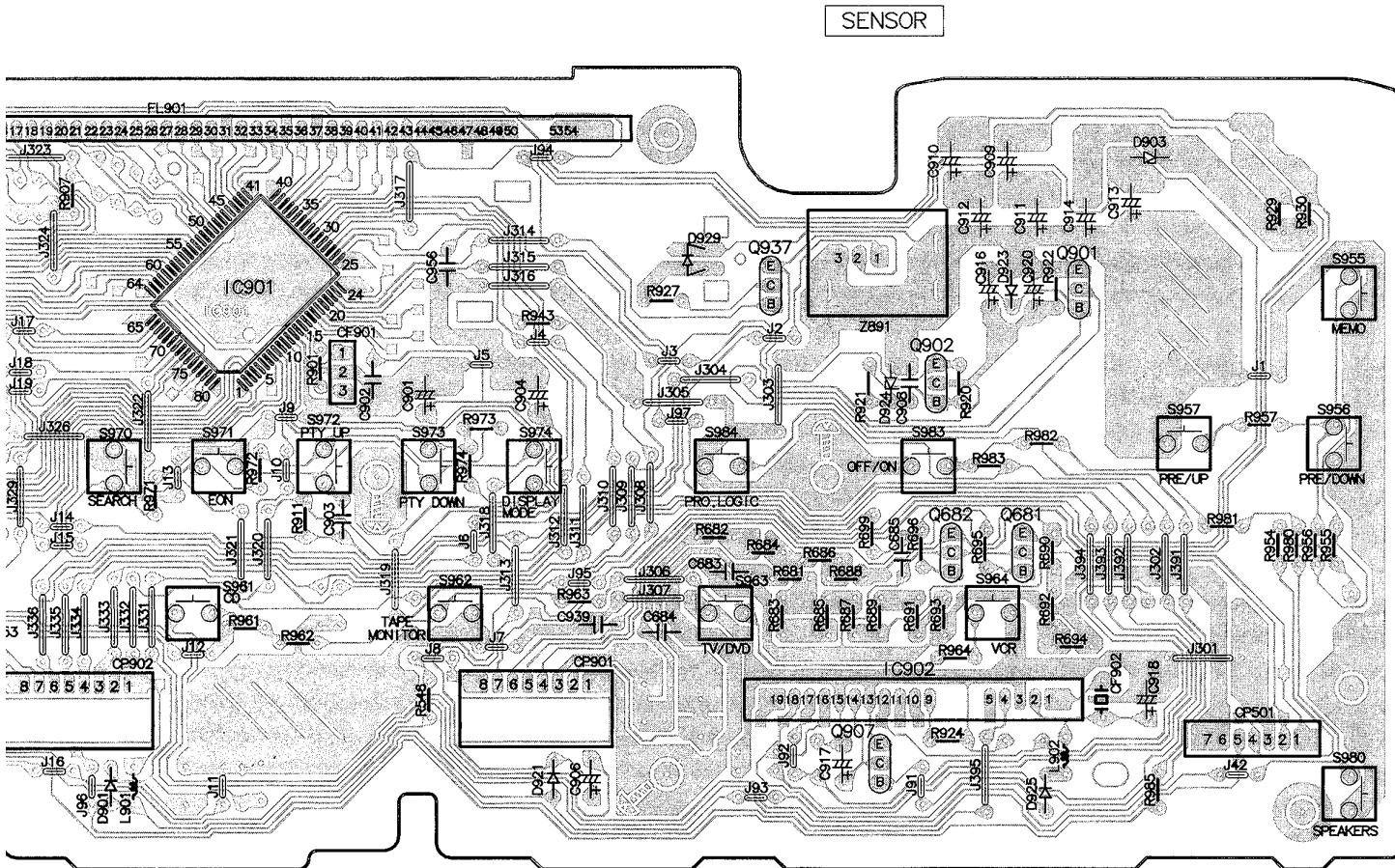
B PANEL P.C.B. (REP2445D-S)



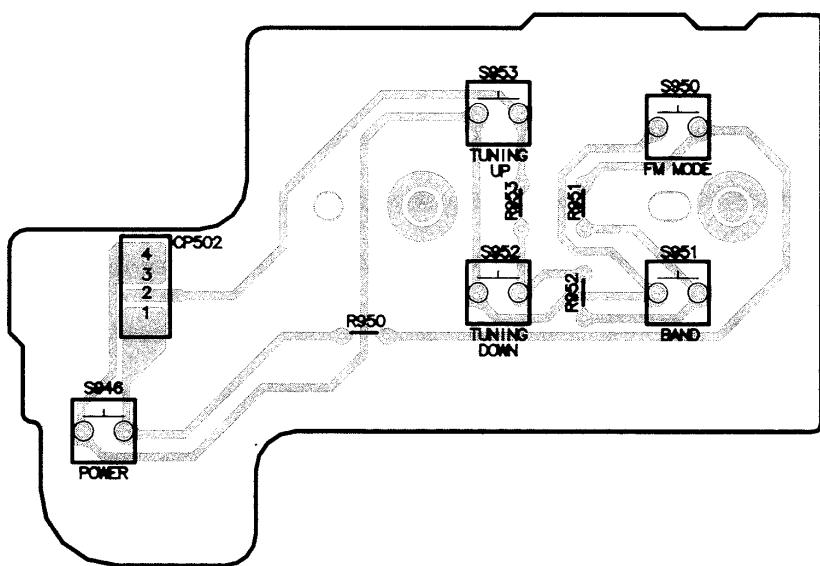
E HEADPHONE JACK P.C.B. (REP2445D-S)

PHONES

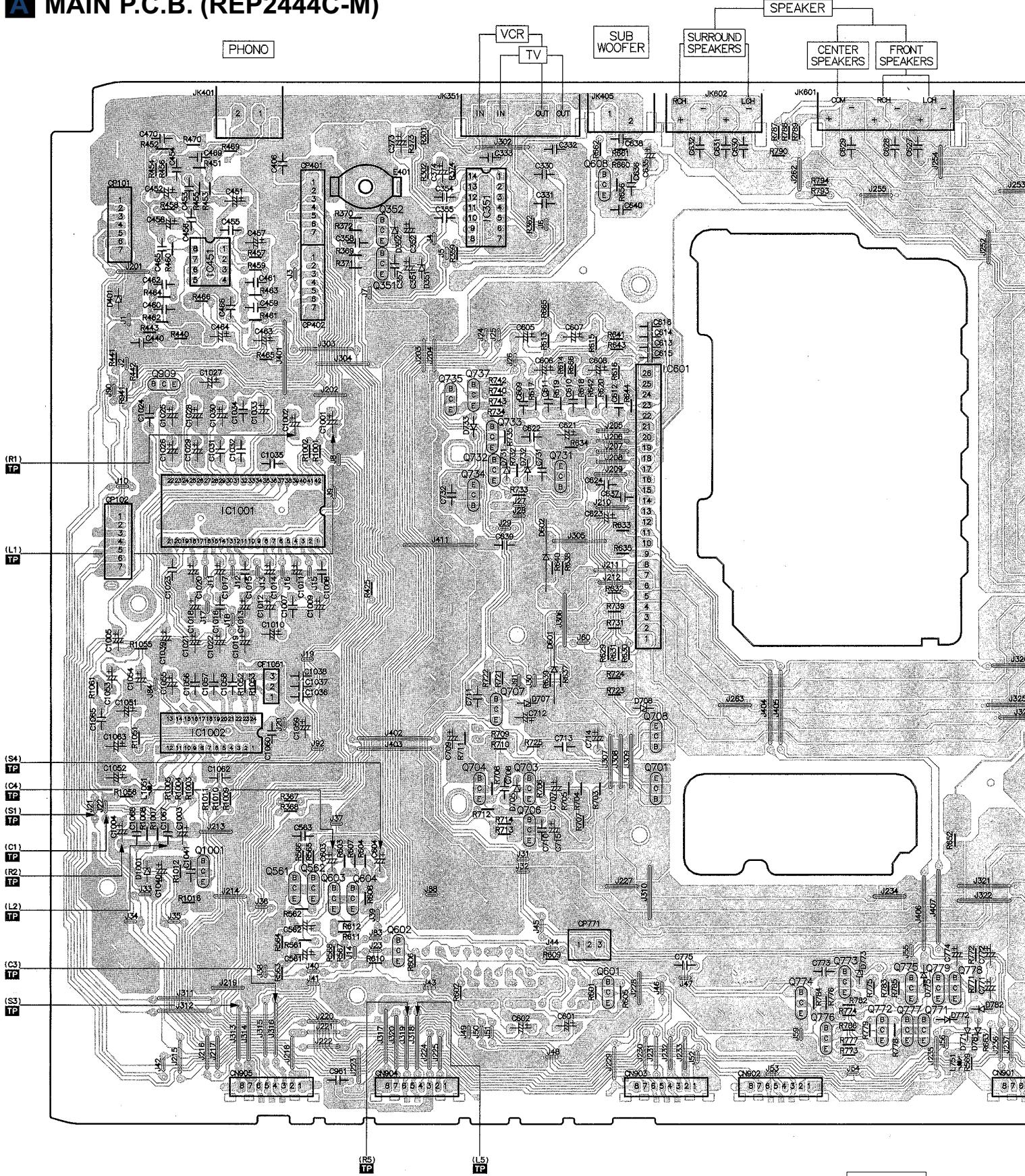


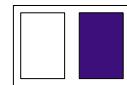
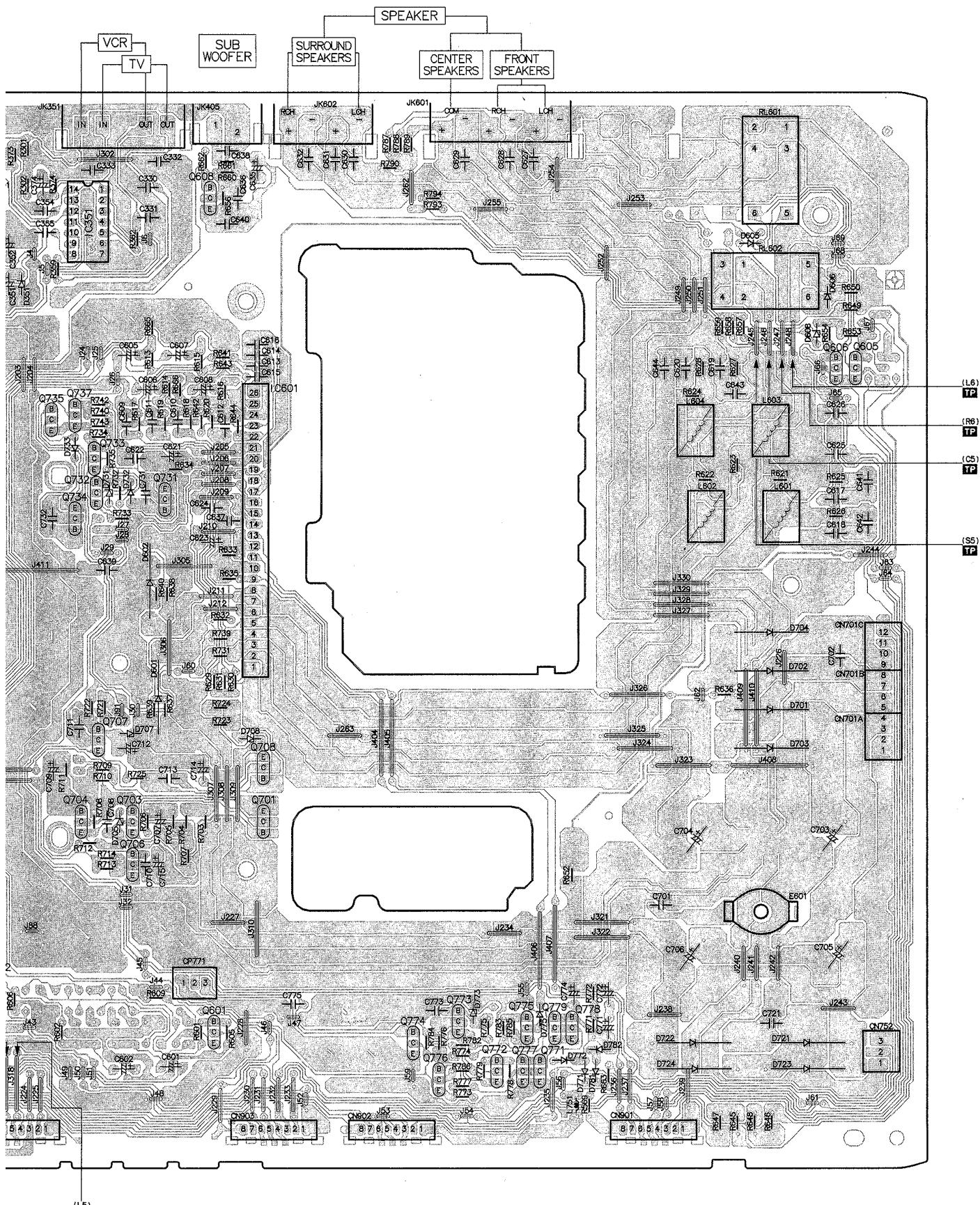


D POWER SWITCH P.C.B. (REP2445D-S)

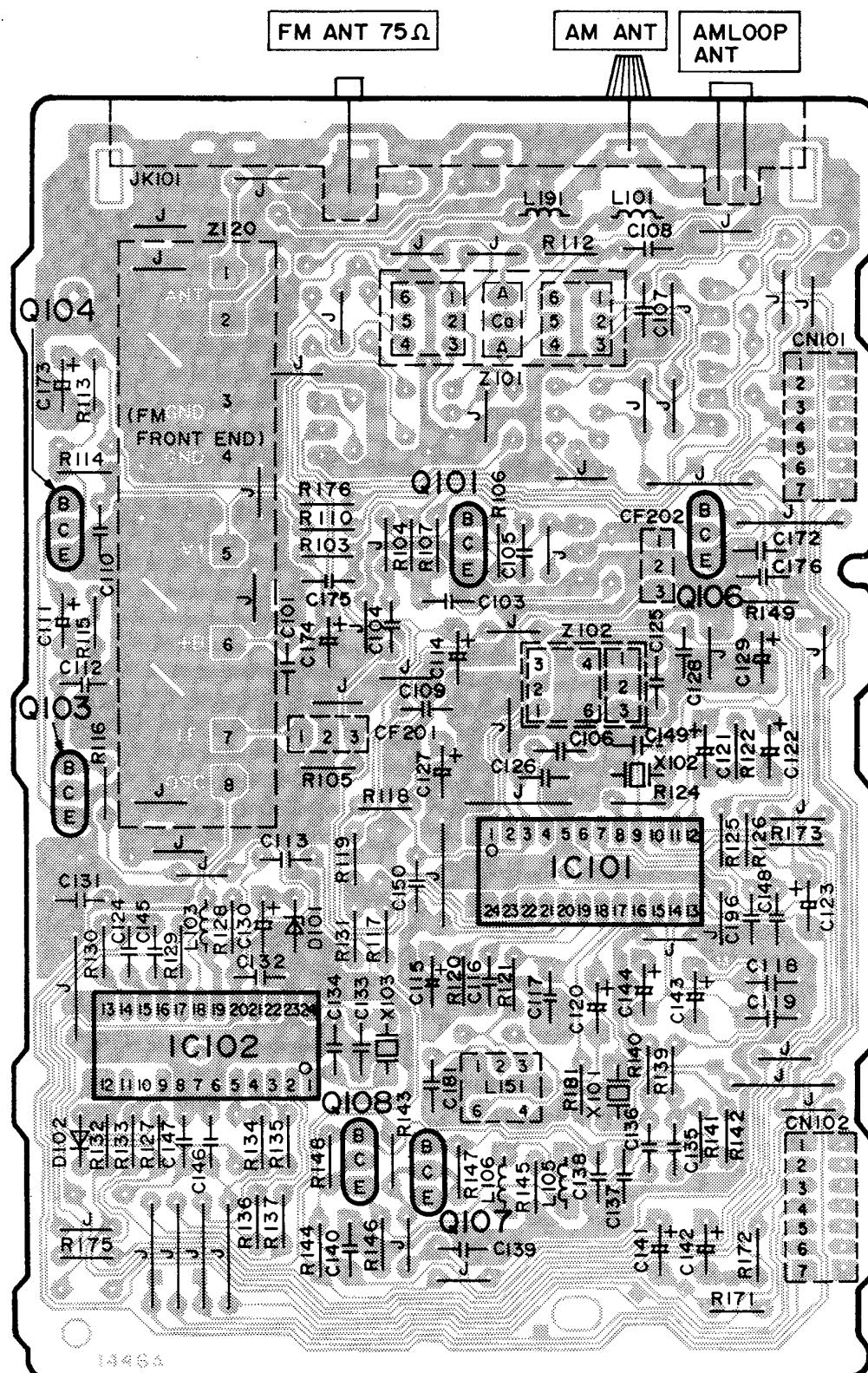


A MAIN P.C.B. (REP2444C-M)

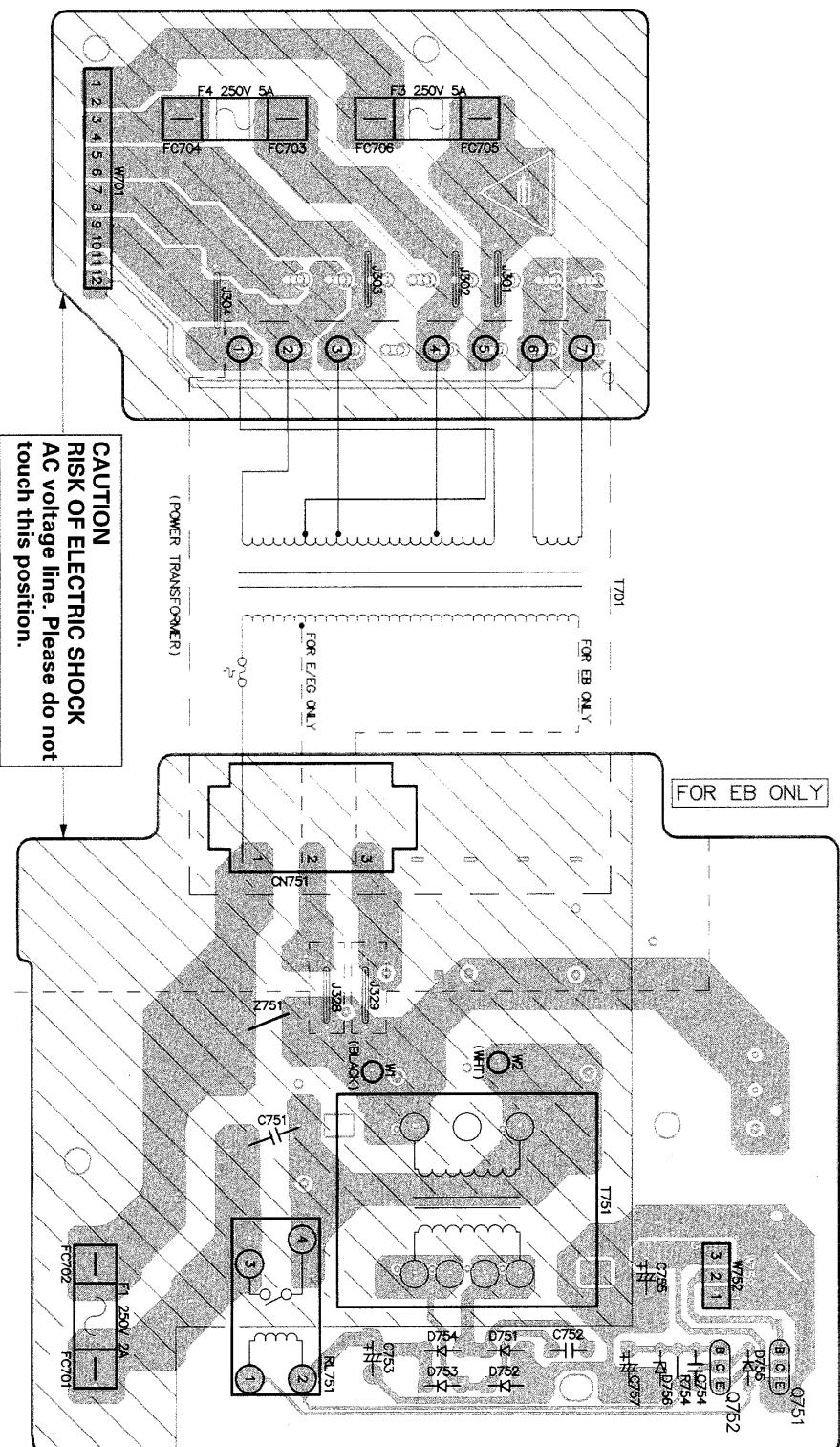




**F TUNER P.C.B. (REP2158A-T).....EG
(REP2158D-T).....E/EB**

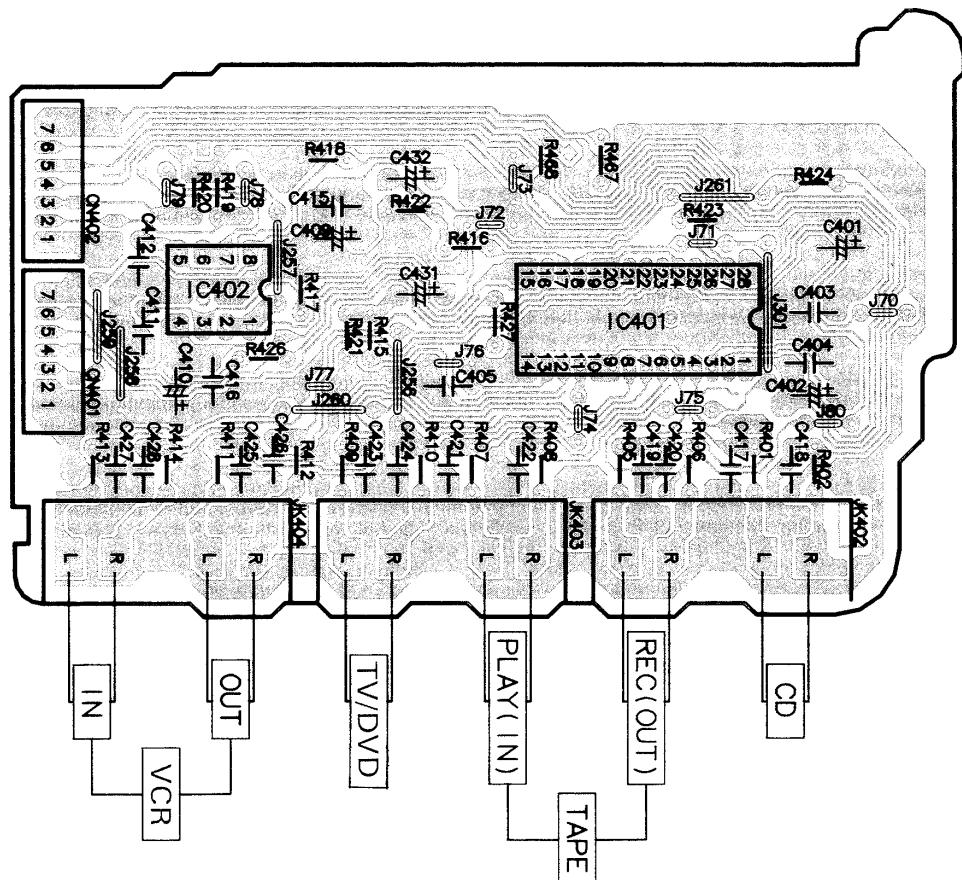


H TRANSFORMER P.C.B. (REP2444C-M)

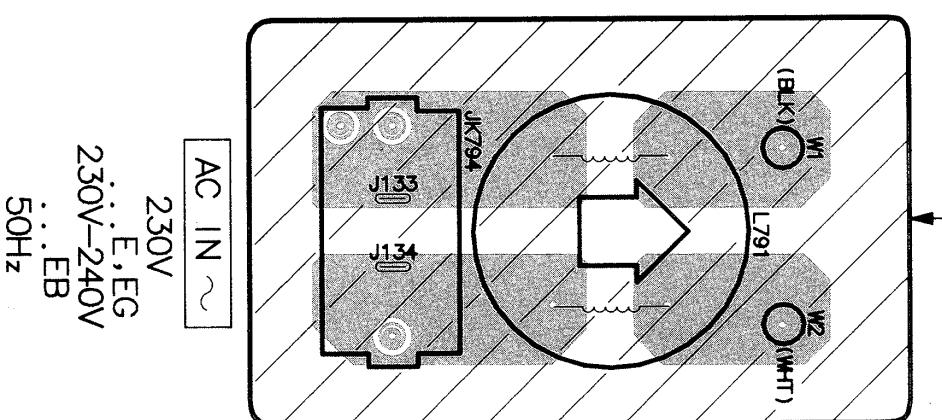


■ POWER P.C.B. (REP2446D-P).....E/EG (REP2446E-P).....EB

I IN / OUT TERMINAL P.C.B.
(REP2446D-P).....E/EG
(REP2446E-P).....EB

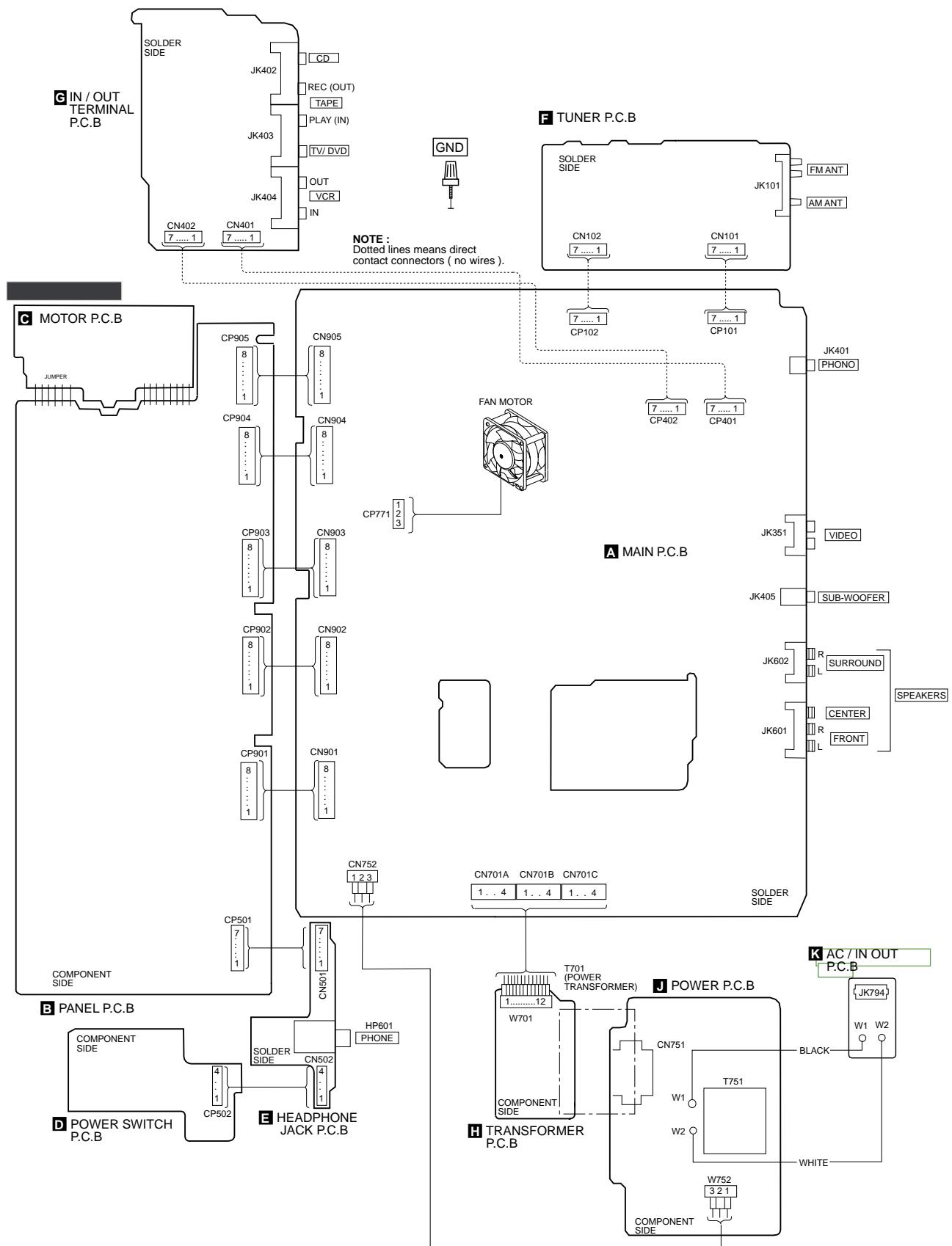


K AC IN/OUT P.C.B.
(REP2446D-P).....E/EG
(REP2446E-P).....EB

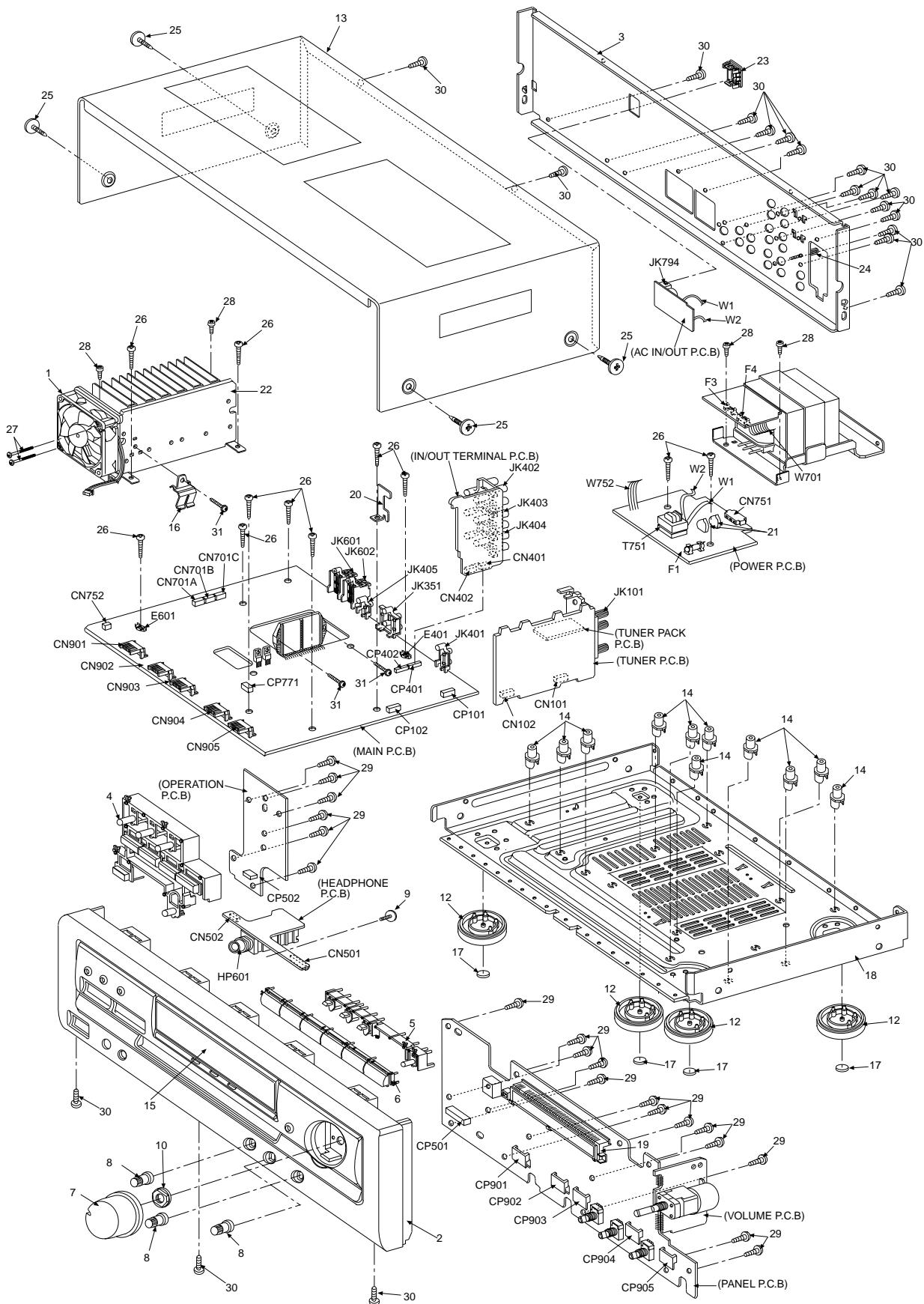


CAUTION
RISK OF ELECTRIC SHOCK
AC voltage line. Please do not
touch this portion.

■ Wiring Connection Diagram



■ Cabinet Parts Location



■ Replacement Parts List

Notes: * 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.

* The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)

Parts without these indication can be used for all areas.

* [M] in Remarks column indicates parts that are supplied by MESA.

* Remote Control Unit : Supply period for three years from terminal of production.

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

RefNo.	Part No.	Part Name & Description	Remarks	RefNo.	Part No.	Part Name & Description	Remarks	RefNo.	Part No.	Part Name & Description	Remarks	
		CABINETANDCHASSIS		IC402	M5218AP	IC, BUFFER AMP	[M]	Q131	ZSB1417QSTA	TRANSISTOR		[M]
				IC451	AN6558F	IC, OP AMP	[M]	Q132	ZSC1740SSTA	TRANSISTOR		[M]
1	REM0069	FAN UNIT	[M]	IC501	BA6218	IC, MOTOR DRIVER	[M]	Q133	ZSC1740SSTA	TRANSISTOR		[M]
2	RFKGEX310EK	FRONT PANEL ASSY	[M]	IC511	UPC4570C	IC, TONE CONTROL	[M]	Q134	ZSD2137QSTA	TRANSISTOR		[M]
3	RGR0251B-A	REAR PANEL	[M]EG E	IC551	UPC4570C	IC, TONE CONTROL	[M]	Q135	ZSA692EFTA	TRANSISTOR		[M]
3	RGR0251B-B	REAR PANEL	[M]EB	IC601	RSN307M44P	IC, HIC	[M]	Q137	ZSA692EFTA	TRANSISTOR		[M]
4	RGU1350-K	MODE BUTTON	[M]	IC901	M38B53M4053F	IC, MICO M	[M]	Q151	RV/TDT143ST	TRANSISTOR		[M]
5	RGU1352M-K	DOLBY BUTTON	[M]	IC902	STK311-010	IC, RDS DECODER	[M]	Q152	ZSC3940AQSTA	TRANSISTOR		[M]
6	RGU1493-K	SELECTOR BUTTON	[M]	IC1001	LA2786L	IC, DPL	[M]	Q171	ZSA693SSTA	TRANSISTOR		[M]
7	RGW0243A-K	VOLUME KNOB	[M]	IC1002	LV1016L	IC, Surr DECODER	[M]	Q172	ZSC1740SSTA	TRANSISTOR		[M]
8	RGW0244-K1	BASS TREBLE KNOB	[M]					Q173	ZSB621AQSTA	TRANSISTOR		[M]
9	RHD26016	SCREW	[M]			TRANSISTORS		Q174	RV/TDTA114EST	TRANSISTOR		[M]
10	RHN90001	M9 NUT	[M]	Q101	ZSC2789LSTA	TRANSISTOR	[M]	Q175	ZSA693SSTA	TRANSISTOR		[M]
12	RKA0079-A	LEG	[M]	Q103	ZSC2789EFTA	TRANSISTOR	[M]	Q176	ZSC1740SSTA	TRANSISTOR		[M]
13	RKM0260D-K	TOP CABINET	[M]EG E	Q104	ZSC2789EFTA	TRANSISTOR	[M]	Q177	ZSA693SSTA	TRANSISTOR		[M]
14	RKQ0089-J	POB HOLDER	[M]	Q106	RV/TDTA143ST	TRANSISTOR	[M]	Q178	RV/TDTA114ST	TRANSISTOR		[M]
15	RKW0436E-Q	FL WINDOW	[M]	Q107	ZSC311ARTA	TRANSISTOR	[M]	Q179	RV/TDTA114ST	TRANSISTOR		[M]
16	RMC0158-S	TRANSISTOR HOLDER	[M]	Q108	ZSC311ARTA	TRANSISTOR	[M]	Q181	RV/TDTA114YST	TRANSISTOR		[M]
17	RMG0270-K	LEG CUSHION	[M]	Q109	ZSD592AQSTA	TRANSISTOR	[M]	Q182	ZSA693SSTA	TRANSISTOR		[M]
18	RMK0350	BOTTOM CHASSIS	[M]	Q110	ZSB621AQSTA	TRANSISTOR	[M]	Q187	RV/TDTA114YST	TRANSISTOR		[M]
19	RMN0372	FL HOLDER	[M]	Q115	ZSD1919FTA	TRANSISTOR	[M]	Q10012SC3940AQSTA	TRANSISTOR		[M]	
20	RMQ0709	TUNER PCB BRACKET	[M]	Q116	ZSD1919FTA	TRANSISTOR	[M]			DIODES		
21	RMZ0339	ZNR COVER	[M]	Q117	ZSD1919FTA	TRANSISTOR	[M]	D101	MTZJBR1BTA	DIODE		[M]
22	RXX0186	HEAT SINK UNIT	[M]	Q118	ZSC1740SSTA	TRANSISTOR	[M]	D102	MA165TA	DIODE		[M]
23	SJS9231A	A/C INLET COVER	[M]	Q119	ZSC1740SSTA	TRANSISTOR	[M]	D851	MTZJBR6BTA	DIODE		[M]
24	SNE2123	EARTH TERMINAL	[M]	Q120	ZSC1740SSTA	TRANSISTOR	[M]	D852	MTZJBR6BTA	DIODE		[M]
25	SNE2129-1	SCREW (CABINET)	[M]	Q124	ZSC1740SSTA	TRANSISTOR	[M]	D401	MTZJTRCTA	DIODE		[M]
26	XTB3+20JFZ	SCREW	[M]	Q125	ZSD1919FTA	TRANSISTOR	[M]	D801	SB360L6608	DIODE		[M]
27	XTB3+30J	SCREW (FAN)	[M]	Q126	RV/TDTA113ST	TRANSISTOR	[M]	D802	SB360L6608	DIODE		[M]
28	XTB3+8FFZ	SCREW	[M]	Q127	ZSD1919FTA	TRANSISTOR	[M]	D805	RV/D1SS133TA	DIODE		[M]
29	XTBS26+10J	SCREW (FRONT)	[M]	Q128	ZSD1919FTA	TRANSISTOR	[M]	D806	RV/D1SS133TA	DIODE		[M]
30	XTBS3+8JFZ1	SCREW	[M]	Q129	ZSD1919FTA	TRANSISTOR	[M]	D808	MTZJBR2BTA	DIODE		[M]
31	XTW3+15T	SCREW	[M]	Q130	ZSD1919FTA	TRANSISTOR	[M]	D101	1N5402BM21	DIODE		[M]
		INTEGRATEDCIRCUITS		Q131	ZSD2374PQAU	TRANSISTOR	[M]	D102	1N5402BM21	DIODE		[M]
IC101	LA1832A	IC, IFMPX	[M]	Q132	ZSC1740SSTA	TRANSISTOR	[M]	D103	1N5402BM21	DIODE		[M]
IC102	LC7218	IC, PLL	[M]	Q133	ZSC3940AQSTA	TRANSISTOR	[M]	D104	1N5402BM21	DIODE		[M]
IC351	NJM2279D	IC, VIDEO SELECTOR	[M]	Q134	ZSB621AQSTA	TRANSISTOR	[M]					
IC401	TC9163AN	IC, SELECTOR	[M]	Q135	ZSB1540PQAU	TRANSISTOR	[M]					

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
R4	XBA2C50TB0	FUSE	⚠ [M]	JK402	SJF309N	JK LINE IN	[M]	A2	RJA00192K	AC CORD (SF)	⚠ [M] EGE
		FUSECLIPS		JK403	SJF309N	JK LINE IN	[M]	A2	VJA0733	AC CORD (SF)	⚠ [M] EB
FC701EYF52BC	FUSEHOLDER		[M]	JK404	SJF309N	JK LINE IN	[M]	A3	RRKSEX310BK	INSTR.MANUALASSY	[M] E
FC702EYF52BC	FUSEHOLDER		[M]	JK405	SFD7	JKFM MULTIOUT	[M]	A3	RRKSEX310BK	INSTR.MANUALASSY	[M] EB
FC703EYF52BC	FUSEHOLDER		[M]	JK601	RJH601	JKSP TERMINAL	[M]	A3	RRKSEX310EGK	INSTR.MANUALASSY	[M] EG
FC704EYF52BC	FUSEHOLDER		[M]	JK602	RR0054	JKSP TERMINAL	[M]	A4	RSA0007	FMANTENA	[M]
FC705EYF52BC	FUSEHOLDER		[M]	JK794	SJS9231-1B	JK AC IN	⚠ [M]	A5	RSA0010	LOOPANTUNIT	[M]
FC706EYF52BC	FUSEHOLDER		[M]			HEADPHONE		A6	SJP9009	ANTADAPTER	[M] EB
		RELAYS		HR601	RJL63TS01	HEADPHONE JACK	[M]	A7	SPSD152	ACCESSORYBOX	[M]
RL601	RSY0013M0	RELAY	[M]			PACKING MATERIALS		A8	RPG352	GIFTBOX	[M] BEG
RL602	RSY0013M0	RELAY	[M]	P1	RPG342	PACKINGCASE	[M]				
RJ751	RSY0019M0	12V-T5RELAY	⚠ [M]	P2	RPFX0005	MIRAMATBAG	[M]	W1	REED814	WRE	[M]
		JACKS		P3	RPN0855	POLYFOAM	[M]	W2	REED818	WRE	[M]
JK101	RJH202	JKANTTERMINAL	[M]			ACCESSORIES					
JK351	SJF3093N	JKRCAPIN	[M]	A1	EUR84377	REMOTECONTROL	[M]				
JK401	SJF30687N	JKRCATERMINAL	[M]	A1-1	UR64EC18223	REMOTECONTROLCOVER	[M]				

■ Resistors & Capacitors

Notes : * 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.

* Capacitor values are in microfarad (μ F) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)

* Resistors 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	Ref No.	Part No.	Values & Remarks
	RESISTORS		R124	ERDS2TJ1271T	20 14W [M]	R144	ERDS2TJ122T	22K 14W [M]	R388	ERDS2TJ102T	1K 14W [M]
			R125	ERDS2TJ472T	47K 14W [M]	R145	ERDS2TJ102T (EB/E)	1K 14W [M]	R389	ERDS2TJ182T	18K 14W [M]
R103	ERDS2TJ101T	10 14W [M]	R126	ERDS2TJ472T	47K 14W [M]	R146	ERDS2TJ561T (EG)	50 14W [M]	R390	ERDS2TJ182T	18K 14W [M]
R104	ERDS2TJ102T	1K 14W [M]	R127	ERDS2TJ103T	10K 14W [M]	R147	ERDS2TJ102T (EB/E)	1K 14W [M]	R391	ERD2FOVG20T	2 14W [M]
R105	ERDS2TJ471T	40 14W [M]	R128	ERDS2TJ820T	8 14W [M]	R148	ERDS2TJ561T (EG)	50 14W [M]	R392	ERD2FOVG20T	2 14W [M]
R106	ERDS2TJ24T	22K 14W [M]	R129	ERDS2TJ473T	4K 14W [M]	R149	ERDS2TJ474T	47K 14W [M]	R393	ERDS2TJ103T	10K 14W [M]
R107	ERDS2TJ471T	40 14W [M]	R130	ERDS2TJ102T	1K 14W [M]	R150	ERDS2TJ474T	47K 14W [M]	R394	ERDS2TJ103T	10K 14W [M]
R110	ERDS2TJ102T	1K 14W [M]	R131	ERDS2TJ102T	1K 14W [M]	R151	ERDS2TJ680T	8 14W [M]	R395	ERDS2TJ102T	1K 14W [M]
R112	ERDS2TJ104T	10K 14W [M]	R132	ERDS2TJ103T	10K 14W [M]	R171	ERDS2TJ102T	1K 14W [M]	R396	ERDS2TJ102T	1K 14W [M]
R113	ERDS2TJ103T	10K 14W [M]	R133	ERDS2TJ102T	1K 14W [M]	R172	ERDS2TJ102T	1K 14W [M]	R397	ERDS2TJ102T	1K 14W [M]
R114	ERDS2TJ562T	56K 14W [M]	R134	ERDS2TJ102T	1K 14W [M]	R173	ERDS2TJ471T	40 14W [M]	R398	ERDS2TJ102T	1K 14W [M]
R115	ERDS2TJ561T	50 14W [M]	R135	ERDS2TJ102T	1K 14W [M]	R175	ERDS2TJ102T	1K 14W [M]	R399	ERDS2TJ102T	1K 14W [M]
R116	ERDS2TJ102T	1K 14W [M]	R136	ERDS2TJ102T	1K 14W [M]	R176	ERDS2TJ391T	30 14W [M]	R400	ERDS2TJ102T	1K 14W [M]
R117	ERDS2TJ473T	4K 14W [M]	R137	ERDS2TJ102T	1K 14W [M]	R181	ERDS2TJ332T	33K 14W [M]	R401	ERDS2TJ102T	1K 14W [M]
R118	ERDS2TJ562T	56K 14W [M]	R138	ERDS2TJ222T	27K 14W [M]	R301	ERDS2TJ750T	5 14W [M]	R402	ERDS2TJ102T	1K 14W [M]
R119	ERDS2TJ183T	18K 14W [M]	R140	ERDS2TJ122T	27K 14W [M]	R302	ERDS2TJ750T	5 14W [M]	R403	ERDS2TJ102T	1K 14W [M]
R120	ERDS2TJ473T	4K 14W [M]	R141	ERDS2TJ102T	1K 14W [M]	R309	ERDS2TJ750T	5 14W [M]	R404	ERDS2TJ102T	1K 14W [M]
R121	ERDS2TJ332T	33K 14W [M]	R142	ERDS2TJ102T	1K 14W [M]	R302	ERDS2TJ750T	5 14W [M]	R413	ERDS2TJ102T	1K 14W [M]
R122	ERDS2TJ222T	27K 14W [M]	R143	ERDS2TJ102T	22K 14W [M]	R307	ERDS2TJ102T	1K 14W [M]	R414	ERDS2TJ102T	1K 14W [M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
R740	ERDS2TJ08T	3K 1A/W [M]	R949	ERDS2TJ103T	10K 1A/W [M]		CAPACITORS		C148	ECBT1C103NS5	001 1A/ [M]
R742	ERDS2TJ08T	3K 1A/W [M]	R950	ERDS2TJ102T	1K 1A/W [M]				C149	ECBT1C103NS5	001 1A/ [M]
R743	ERDS2TJ18T	18K 1A/W [M]	R951	ERDS2TJ122T	12K 1A/W [M]	C101	ECBT1C103NS5	001 1A/ [M]	C150	ECBT1H104Z5	01 50V [M]
R754	ERDS2TJ102T	1K 1A/W [M]	R952	ERDS2TJ182T	15K 1A/W [M]	C103	ECBT1C103NS5	001 1A/ [M]	C172	ECBT1H331KB5	33P 50V [M]
R771	ERDS2TJ47T	47K 1A/W [M]	R953	ERDS2TJ182T	18K 1A/W [M]	C104	ECBT1H102KB5	100P 50V [M]	C173	ECEA1CKA22B	2 1A/ [M]
R772	ERDS2TJ47T	47K 1A/W [M]	R954	ERDS2TJ122T	22K 1A/W [M]	C105	ECBT1H470J5	4P 50V [M]	C174	ECEA1CKA10B	10 1A/ [M]
R773	ERDS2TJ103T	10K 1A/W [M]	R955	ERDS2TJ032T	33K 1A/W [M]	C106	ECBT1C103NS5	001 1A/ [M]	C175	ECBT1C103NS5	001 1A/ [M]
R774	ERDS2TJ33T	33M 1A/W [M]	R956	ERDS2TJ472T	47K 1A/W [M]	C107	ECBT1H473Z5	0047 50V [M]	C176	ECBT1C103NS5	001 1A/ [M]
R775	ERDS2TJ33T	33 1A/W [M]	R957	ERDS2TJ682T	68K 1A/W [M]	C108	ECBT1H82K5	82P 50V [M]	C181	ECBT1H471KB5	47P 50V [M]
R776	ERD2FVJAR7T	47 1A/W [M]	R958	ERDS2TJ102T	1K 1A/W [M]	C109	ECBT1C103NS5	001 1A/ [M]	C186	ECBT1H102KB5	100P 50V [M]
R777	ERDS2TJ22T	22K 1A/W [M]	R959	ERDS2TJ122T	12K 1A/W [M]	C110	ECBT1C103NS5	001 1A/ [M]	C330	ECBT1H470J5	4P 50V [M]
R778	ERDS2TJ47T	47K 1A/W [M]	R960	ERDS2TJ182T	15K 1A/W [M]	C111	ECEA1KA4R7B	47 25V [M]	C331	ECBT1H470J5	4P 50V [M]
R779	ERDS2TJ103T	10K 1A/W [M]	R961	ERDS2TJ122T	12K 1A/W [M]	C112	ECBT1C103NS5	001 1A/ [M]	C332	EOKRH233Z5	0022 50V [M]
R782	ERDS2TJ47T	47 1A/W [M]	R962	ERDS2TJ182T	22K 1A/W [M]	C113	ECBT1H102KB5	100P 50V [M]	C333	EOKRH233Z5	0022 50V [M]
R783	ERDS2TJ103T	10K 1A/W [M]	R963	ERDS2TJ102T	1K 1A/W [M]	C114	ECEA1HK4R3B	33 50V [M]	C361	ECEA1CU10B	10 1A/ [M]
R784	ERDS2TJ54T	150K 1A/W [M]	R964	ERDS2TJ122T	18K 1A/W [M]	C115	ECEA1HK4R7B	47 25V [M]	C362	ECEA1CU10B	10 1A/ [M]
R785	ERDS2TJ103T	10K 1A/W [M]	R965	ERDS2TJ182T	18K 1A/W [M]	C116	ECBT1C822MS5	820P 16V [M]	C364	ECBT1E103Z5	001 25V [M]
R786	ERDS2TJ54T	150K 1A/W [M]	R966	ERDS2TJ182T	18K 1A/W [M]	C117	ECQB1H471J3	47P 50V [M]	C365	ECBT1E103Z5	001 25V [M]
R787	ERDS2TJ22T	22K 1A/W [M]	R967	ERDS2TJ22T	22K 1A/W [M]	C118	ECQB1H103J3	001 50V [M]	C367	ECBT1E103Z5	001 25V [M]
R788	ERDS2TJ22T	22K 1A/W [M]	R968	ERDS2TJ102T	1K 1A/W [M]	C119	ECQB1H103J3	001 50V [M]	C368	ECBT1E103Z5	001 25V [M]
R789	ERDS2TJ22T	22K 1A/W [M]	R969	ERDS2TJ122T	12K 1A/W [M]	C120	ECEA1HK401B	1 50V [M]	C373	ECA1EM470B	4 25V [M]
R790	ERDS2TJ22T	22K 1A/W [M]	R970	ERDS2TJ182T	15K 1A/W [M]	C121	ECEA1HK401B	1 50V [M]	C374	ECA1EM470B	4 25V [M]
R793	ERDS2TJ68T	68K 1A/W [M]	R971	ERDS2TJ102T	1K 1A/W [M]	C122	ECEA1HK420B	22 50V [M]	C401	ECEA1VK4R7B	47 35V [M]
R794	ERDS2TJ68T	68K 1A/W [M]	R972	ERDS2TJ182T	15K 1A/W [M]	C123	ECEA1HK401B	1 50V [M]	C402	ECEA1VK4R7B	47 35V [M]
R801	ERDS2TJ102T	1K 1A/W [M]	R973	ERDS2TJ182T	18K 1A/W [M]	C124	ECBT1H102KB5	100P 50V [M]	C403	ECBT1E103Z5	001 25V [M]
R806	ERDS2TJ182T	18K 1A/W [M]	R974	ERDS2TJ102T	2K 1A/W [M]	C125	ECBT1H160J05	15P 50V [M]	C404	ECBT1E103Z5	001 25V [M]
R807	ERDS2TJ104T	10K 1A/W [M]	R975	ERDS2TJ182T	22K 1A/W [M]	C126	ECBT1H402Z5	01 50V [M]	C405	ECBT1H101KB5	10P 50V [M]
R808	ERDS2TJ104T	10K 1A/W [M]	R976	ERDS2TJ102T	2K 1A/W [M]	C127	ECEA1OKA22B	2 16V [M]	C406	ECBT1H101KB5	10P 50V [M]
R809	ERDS2TJ104T	10K 1A/W [M]	R977	ERDS2TJ103T	20K 1A/W [M]	C128	ECBT1C103NS5	001 16V [M]	C409	ECEA1CKA10B	0 1A/ [M]
R810	ERDS2TJ102T	1K 1A/W [M]	R978	ERDS2TJ182T	15K 1A/W [M]	C129	ECEA0KA101B	10 63V [M]	C410	ECEA1OKA10B	0 1A/ [M]
R811	ERDS2TJ104T	10K 1A/W [M]	R979	ERDS2TJ102T	1K 1A/W [M]	C130	ECEA0KA101B	10 63V [M]	C411	ECBT1H101KB5	10P 50V [M]
R817	ERDS2TJ103T	10K 1A/W [M]	R980	ERDS2TJ103T	20K 1A/W [M]	C131	ECBT1C103NS5	001 16V [M]	C412	ECBT1H101KB5	10P 50V [M]
R820	ERDS2TJ22T	20 1A/W [M]	R981	ERDS2TJ182T	33K 1A/W [M]	C132	ECBT1H102KB5	100P 50V [M]	C415	ECBT1E103Z5	001 25V [M]
R821	ERDS2TJ12T	10 1A/W [M]	R982	ERDS2TJ102T	33K 1A/W [M]	C133	ECBT1H160J05	15P 50V [M]	C416	ECBT1E103Z5	001 25V [M]
R822	ERDS2TJ47T	47K 1A/W [M]	R983	ERDS2TJ102T	1K 1A/W [M]	C134	ECBT1H180J05	15P 50V [M]	C417	ECBT1H101KB5	10P 50V [M]
R824	ERDS2TJ33T	33K 1A/W [M]	R984	ERDS2TJ1473T	4K 1A/W [M]	C135	ECBT1C103MS5	001 16V [M]	C418	ECBT1H101KB5	10P 50V [M]
R827	ERDS2TJ18T	18 1A/W [M]	R985	ERDS2TJ1473T	4K 1A/W [M]	C136	ECBT1C103MS5	001 16V [M]	C419	ECBT1H331KB5	33P 50V [M]
R829	ERDS2TJ10T	10 1A/W [M]	R986	ERDS2TJ102T	1M 1A/W [M]	C137	ECBT1H561KB5	56P 50V [M]	C420	ECBT1H331KB5	33P 50V [M]
R830	ERDS2TJ10T	10 1A/W [M]	R987	ERDS2TJ102T	1K 1A/W [M]	C138	ECBT1H561KB5	56P 50V [M]	C421	ECBT1H331KB5	33P 50V [M]
R836	ERDS2TJ10T	10K 1A/W [M]	R988	ERDS2TJ1473T	4K 1A/W [M]	C139	ECBT1H682J3	6800P 50V [M]	C422	ECBT1H331KB5	33P 50V [M]
R837	ERDS2TJ10T	10K 1A/W [M]	R989	ERDS2TJ1473T	4K 1A/W [M]	C140	ECBT1H682J3	6800P 50V [M]	C423	ECBT1H101KB5	10P 50V [M]
R841	ERDS2TJ47T	47K 1A/W [M]	R990	ERDS2TJ122T	22K 1A/W [M]	C141	ECEA1HK401B	1 50V [M]	C424	ECBT1H101KB5	10P 50V [M]
R843	ERDS2TJ102T	1K 1A/W [M]				C142	ECEA1HK401B	1 50V [M]	C425	ECBT1H101KB5	10P 50V [M]
R844	ERDS2TJ104T	10K 1A/W [M]				C143	ECEA1HK401B	1 50V [M]	C426	ECBT1H101KB5	10P 50V [M]
R845	ERDS2TJ104T	10K 1A/W [M]				C144	ECEA1HK401B	1 50V [M]	C427	ECBT1H221KB5	22P 50V [M]
R846	ERDS2TJ103T	10K 1A/W [M]				C145	ECBT1H220J05	2P 50V [M]	C428	ECBT1H221KB5	22P 50V [M]
R847	ERDS2TJ103T	10K 1A/W [M]				C146	ECBT1H331KB5	33P 50V [M]	C431	ECEA1CKA10B	0 1A/ [M]
R848	ERDS2TJ103T	10K 1A/W [M]				C147	ECBT1H102KB5	100P 50V [M]	C432	ECEA1CKA10B	0 1A/ [M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
C106	ECBT1H101K65	10P 5V [M]	C104	ECEA0U221B	2D 63V [M]	C105	ECBT1H631K65	63P 5V [M]			
C107	ECBT1H101K65	10P 5V [M]	C105	ECA1HMR47B	047 5V [M]	C107	ECBT1C152K5	150P 16V [M]			
C108	ECBT1H101K65	10P 5V [M]	C106	ECQV1H823JZ3	0082 5V [M]	C108	ECBT1C152K5	150P 16V [M]			
C109	ECEA1CU101B	10 16V [M]	C107	ECBT1C321K5	320P 16V [M]						
C110	ECEA1CKA100B	1 16V [M]	C108	ECQV1H823JZ3	0082 5V [M]						
C101	ECBT1E102F5	001 28V [M]	C109	ECEA1CU101B	10 16V [M]						
C101	ECA1HMR2B	22 50V [M]	C100	ECBT1E222F5	0022 28V [M]						
C102	ECA1HMR3B	033 50V [M]	C101	ECBT1E222F5	0022 28V [M]						
C103	ECA1HMR3B	33 50V [M]	C103	ECEA1CU101B	10 16V [M]						

■ Packaging (Refer to page 41 for the Parts List.)

