

ORDER NO.AD0303068C8

Service Manual

Sound Processor



SH-DV290EG

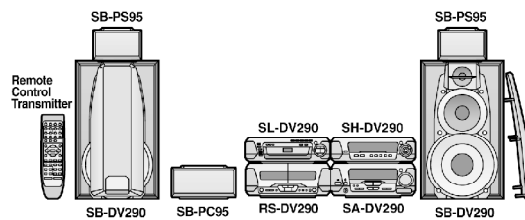
Colour

(S)Silver Type

System: SC-DV290

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

Note: Refer to the service manual for Model No. SA-DV290E/EG/EB (ORDER NO.AD0303067C2) for information on "ACCESSORIES"and "PACKAGING".



SPECIFICATIONS

Specification

■ EQ/SFP section

MANUAL GEQ

5-Band EQ

Center frequency 70/300/1 k/3.15 k/10 kHz
Level control ±2.0, 4.0, 6.0 dB

EQ/Space mode

4 modes HEAVY, CLEAR, SOFT, HALL

SUPER 3D AI EQ

3 modes AI EQ, SUPER 3D AI 1, SUPER 3D AI 2

■ Pre-amplifier section

Input sensitivity/impedance

VCR (EXT) 250 mV/15 k Ω
VDP (AUX) 250 mV/15 k Ω

Output level

VCR REC OUT 150 mV/1.5 k Ω

■ DOLBY PRO LOGIC section

PRO LOGIC mode SURROUND
CENTER mode NORMAL
DELAY TIME 20 ms (Fixed)

■ AV SURROUND section

AV surround mode SUPER SURROUND (MUSIC, MOVIE)

■ DSP CONTROL section

DSP control mode SUPER SOUND EQ
 CENTER FOCUS
 VIRTUAL REAR SURROUND
 MULTI REAR SURROUND
 SEAT POSITION

■ Spectrum analyzer section

Display mode NORMAL, PEAKHOLD, AURORA

■ General

Dimensions (W×H×D) 293×89×270 mm
Mass 1.5 kg
Power Supply DC±10V/ -25V, AC4.6V
Power Consumption 7W

Notes 1.Design and specifications are subject to
 change without notice.
 2.Dimensions and weight are approximate.
 3.Total harmonic distortion is measured by the
 digital spectrum analyzer.

■ System/SC-DV290

Sound processor: SH-DV290, DVD/ Video CD/ CD
changer: SL-DV290, Tuner/ Amplifier: SA-DV290 ,
Cassette Deck: RS-DV290, Speakers: Front* (SB-
DV290),Center* (SB-PC95),Surround* (SB-PS95)
(*Made in MAES.)

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“Dolby”, “Pro Logic” and the double-D symbol are
trademarks of Dolby Laboratories.

⚠ 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

1. Before Repair

This equipment (SH-DV290), which is the component of the system, is supplied with power from the amplifier (SA-DV290). When repairing this equipment or checking operation of the system, be sure to connect the amplifier with it.

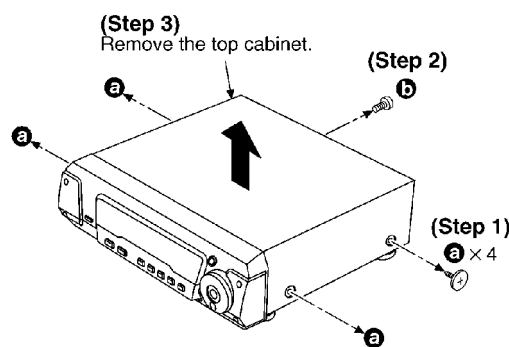
Power supply and operation check in the state of it as a single equipment are impracticable.

2. Operating Instructions

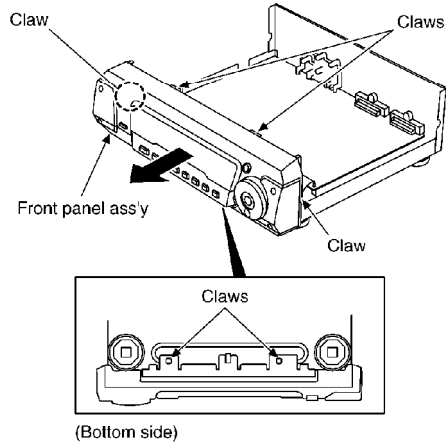
3. Operation Checks and Component Replacement Procedures

- This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
- For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

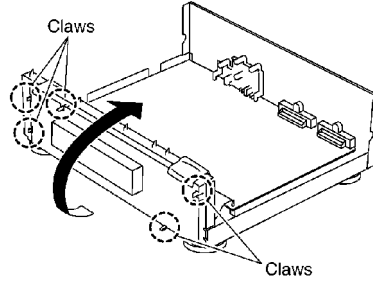
3.1. Checking for the FL P.C.B.



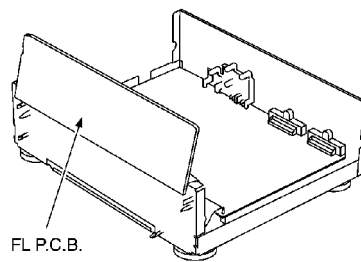
(Step 4)
Release the 6 claws, and then
remove the front panel ass'y.



(Step 5)
Release the 5 claws, and then
remove the FL P.C.B..

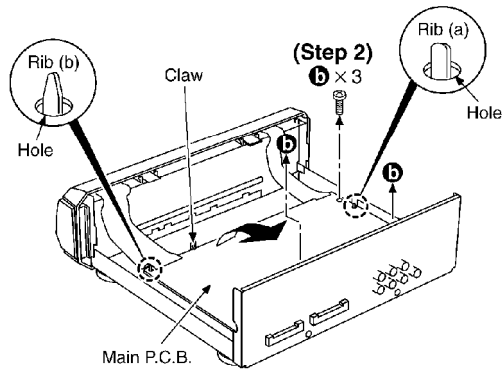
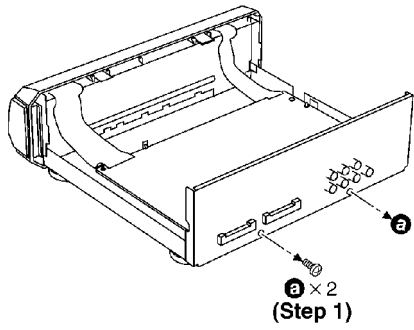


- Check the FL P.C.B. as shown below.

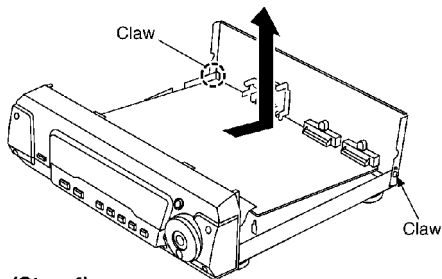


3.2. Checking for the main P.C.B.

- Follow the (Step 1) - (Step 3) of item 3.1.

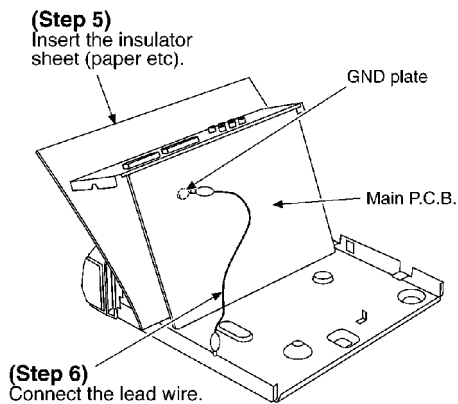


(Step 3)
 Release the claw, and then lift up the main P.C.B..
 (Lift up the main P.C.B. until the rib (a) and rib (b) are released from the hole of main P.C.B..)



(Step 4)
 Release the 2 claws, and then remove the main P.C.B. in the direction of arrow.

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



4. Wiring Connection Diagram

5. Block Diagram

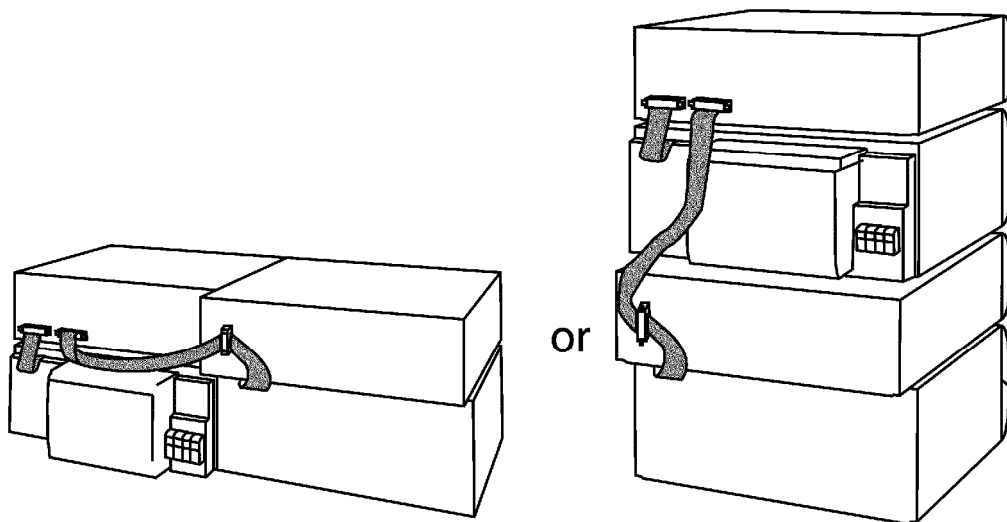
6. To Supply Power Source

This unit is designed to operate on power supplied from system connected.

When a component requires service, use the system connections to supply power source.

For system connections. (Refer to Fig. 1)

Fig. 1



7. Schematic Diagram Notes

7.1. Type Illustrations of IC's, Transistors and Diodes

7.2. Schematic Diagram Notes


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

Notes:

- S601: Display mode (DISPLAY MODE) switch.
- S602: DOLBY PRO LOGIC (DOLBY PRO LOGIC, OFF/ ON) switch.
- S603: Super surround (SUPER SURROUND) switch .
- S604: Super sound EQ (SUPER SOUND EQ) switch .
- S605: Center focus (CENTER FOCUS) switch.
- S606: Virtual rear surround (VIRTUAL REAR SURROUND) switch.
- S607: Multi rear surround (MULTI REAR SURROUND) switch.
- S608: Jog control (▶) switch.
- S609: Jog control (▲) switch.
- S610: Jog control (◀) switch.
- S611: Jog control (▼) switch.
- S612: Super 3D AI EQ (SUPER 3D AI EQ) switch.
- S613: Seat position (SEAT POSITION) switch.
- S614: Joystick (MULTI JOG) switch.
- 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. /

No mark: Power on

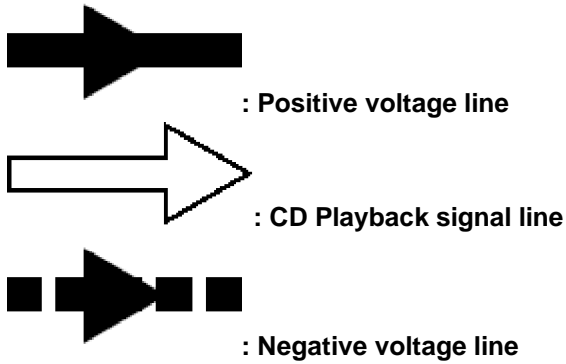
Important safety notice:

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



8. Schematic Diagram

9. Printed Circuit Board Diagram

10. Terminal Function of IC's

10.1. IC601(C2BBGF000425):System control/FL drive

Pin No.	Mark	I/O / Division	Function
1	KEY1	I	Operation key1 signal input terminal
2	KEY2	I	Operation key2 signal input terminal
3	SP IN	I	A/D signal input terminal from IC602
4	SP A	O	Band select signal output terminal for IC602
5	SP B	O	Band select signal output terminal for IC602
6	SP C	O	Band select signal output terminal for IC602
7	SA CS	I	Chip select signal input terminal
8	DSP RST	O	Reset signal output terminal for IC401
9	DSP CS	O	Chip select signal output terminal for IC401
10	DSP SNS	I	Sense signal input terminal from IC401
11	DSP ACK	I	Acknowledge signal input terminal from IC401
12	DSP CK	O	Clock signal output terminal for IC401

Pin No.	Mark	I/O / Division	Function
13	DSP DO	O	Data signal output terminal for IC401
14	DSP DI	I	Data signal input terminal for IC401
15	JOGA	I	JOG A signal input terminal
16	JOGB	I	JOG B signal input terminal
17	CNVSS	I	Connected to GND through resistor
18	RESET	I	System reset signal input terminal
19	NC	-	Not used, open
20	NC	-	Not used, open
21	VSS	-	GND terminal
22	XIN	I	Ceramic oscillator input terminal (f=4MHz)
23	XOUT	O	Ceramic oscillator output terminal (f=4MHz)
24	VCC	I	Power supply input terminal
25	NC	-	Not used, open
26	NC	-	Not used, open
27	LED CFO	O	ORANGE LED(CENTER FOCUS) signal output terminal
28	LED CFG	O	GREEN LED(CENTER FOCUS) signal output terminal
29	BR93 DATA	I	Data signal input terminal from EEPROM
30	BR93 CS	-	Not used, open
31	BR93 CK	-	Not used, open
32	SYNC	I	Power failure detect signal input terminal
33	SA REQ	O	Request signal output terminal for Tuner/Amplifier
34	SA CK	O	Serial communication signal output terminal for Tuner/Amplifier
35	SA DO	O	Serial communication signal output terminal for Tuner/Amplifier
36	SA DI	I	Serial communication signal input terminal from Tuner/Amplifier

Pin No.	Mark	I/O / Division	Function
37	LED SSS	O	LED(SUPER SURROUND)signal output terminal
38	LED DPL	O	LED(DOLBY PRO LOGIC) signal output terminal
39	LED SPO	O	ORANGE LED (SEAT POSITION) signal output terminal
40	LED SPG	O	GREEN LED (SEAT POSITION) signal output terminal
41	LED 3DO	O	ORANGE LED (3D ENHANCED SURROUND) signal output terminal
42	LED 3DG	O	GREEN LED (3D ENHANCED SURROUND) signal output terminal
43	LED MRO	O	ORANGE LED (MULTI REAR SURROUND) signal output terminal
44	LED MRG	O	GREEN LED (MULTI REAR SURROUND) signal output terminal
45	LED VRO	O	ORANGE LED (VIRTUAL REAR SURROUND) signal output terminal
46	LED VRG	O	GREEN LED (VIRTUAL REAR SURROUND) signal output terminal
47-80	P1-P34	O	Segment signal output terminal
81	---	-	Not used, open
82-88	7G-1G	O	Grid signal output terminal
89	VEE	I	Power supply input terminal
90	CD& DECK DI	I	Data signal input terminal (DVD and deck mechanism)
91	CD& DECK DO	O	Data signal output terminal (DVD and deck mechanism)
92	CD& DECK CK	I	Clock signal input terminal (DVD and deck mechanism)
93	NC	-	Not used, open

Pin No.	Mark	I/O / Division	Function
94	CD REQ	O	Serial data request signal output terminal for DVD
95	DECK REQ	O	Serial data request signal output terminal for deck mechanism
96	CD& DECK CS	I	Chip select signal input terminal (DVD and deck mechanism)
97	AVSS	-	GND terminal
98	VREF	I	Reference voltage input terminal
99	REG IN0	I	Destination select signal input terminal
100	REG IN1	I	Destination select signal input terminal

11. Replacement Parts List

Note:

***Important safety notice:**

Components identified by  mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fireretardant (resistors), high-quality sound (capacitors), lownoise (resistors), etc. are used.

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

***The markings (RTL) indicate the retention time is limited for this items. After the discontinuation of this assemblies in production, it will no longer be available.**

***Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)**

***Resistance values are in ohms, unless specified otherwise, 1K= 1,000 (OHM), 1M=1,000K (OHM)**

***All parts are supplied by SPC.**

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
<u>1</u>	RKA0105-K	RUBBER	4	
<u>2</u>	RKA0106-N	FOOT RING	4	
<u>3</u>	RYP1176-S	FRONT PANEL ASS'Y	1	
<u>3-1</u>	RGB0025-A	TECHNICS BADGE	1	
<u>3-2</u>	RKW0576A-1V	FL WINDOW	1	
<u>3-3</u>	RGK1242-S	JOG RING ORNAMENT	1	
<u>3-4</u>	RGW0344-S1	JOG KNOB	1	
<u>3-5</u>	RGW0345-S	JOY KNOB	1	
<u>3-6</u>	RMB0594	JOY SPRING	1	
<u>3-7</u>	RMQ0882	JOY LEVER	1	
<u>3-8</u>	RMQ0883	JOY SUPPORT	1	
<u>3-9</u>	RMQ0884	JOY BASE	1	
<u>3-10</u>	RMQ0885	JOG KNOB BASE	1	
<u>3-11</u>	RMX0169	RING	1	
4	XTB3+8JFZ	SCREW	11	
5	RHD30007-1S	SCREW	4	
6	RKM0400-S1	TOP CABINET	1	
7	RMN0526	FL HOLDER	1	
8	REZ1299	WIRE ASS'Y	1	
9	RGR0285E-F	REAR PANEL	1	
C109	ECA1CAK100XB	16V 10U	1	
C131-36	ECUV1H101KCV	50V 100P	6	ECJ1VC1H101K
C143	ECUV1H101KCV	50V 100P	1	ECJ1VC1H101K
C201-04	ECBT1H331KB3	50V 330P	4	
C205,06	ECBT1H330J5	50V 33P	2	F1D1H330A006
C207,08	ECEA1HKA4R7	50V 4.7U	2	
C209,10	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C211,12	ECBT1H104KB5	50V 0.1U	2	F1D1H1040002
C213-15	ECBT1H470J3	50V 47P	3	
C216,17	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C221,22	ECBA1H101KB5	50V 100P	2	
C223,24	ECA1CAK100XB	16V 10U	2	
C225-33	ECBA1H101KB5	50V 100P	9	
C288,89	ECA1CAK100XB	16V 10U	2	
C301-04	ECEA1HKA4R7	50V 4.7U	4	
C305,06	ECBA1H101KB5	50V 100P	2	
C307,08	ECBT1H100JC5	50V 10P	2	F1D1H100A015
C309,10	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C311	ECA1CAK100XB	16V 10U	1	
C312	ECA1CAK220XB	16V 22U	1	
C313,14	ECA1CAK100XB	16V 10U	2	
C315,16	ECBA1H101KB5	50V 100P	2	
C317	ECBT1C562KR5	16V 5600P	1	F1D1C562A010
C318	ECBT1H270J5	50V 27P	1	ECBT1H270J3
C319-22	ECA1CAK100XB	16V 10U	4	
C323,24	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C327	ECBT1H333KB5	50V 0.033U	1	ECBT1H333KB3
C328,29	ECA1CAK220XB	16V 22U	2	
C343,44	ECA1CAK100XB	16V 10U	2	
C345,46	ECBA1H101KB5	50V 100P	2	
C347,48	ECBT1H220J5	50V 22P	2	F1D1H220A006
C349,50	ECA1CAK100XB	16V 10U	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C351,52	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C354	ECA1CAK100XB	16V 10U	1	
C356	ECA1CAK100XB	16V 10U	1	
C401	ECJ1VB1E223K	25V 0.022U	1	
C402,03	ECUVNH103KBV	50V 0.01U	2	F1H1H103A748
C404	ECA0JAK470XH	6.3V 47U	1	
C501	ECBT1C103MS5	16V 0.01U	1	F1D1C103A004
C502	ECBT1H331KB3	50V 330P	1	
C503,04	ECBA1H101KB5	50V 100P	2	
C505	ECBT1C103MS5	16V 0.01U	1	F1D1C103A004
C506	ECA1CAK330XB	16V 33U	1	
C507	RCE1HKAR47BG	50V 0.47U	1	F2A1HR47A015
C508	ECA1CAK100XB	16V 10U	1	
C509,10	ECA1CAK220XB	16V 22U	2	
C511	ECA1CAK100XB	16V 10U	1	
C512	ECA1CAK330XB	16V 33U	1	
C601	ECBT1H104KB5	50V 0.1U	1	F1D1H1040002
C602	ECA0JM102	6.3V 1000U	1	
C603,04	ECBT1H102KB3	50V 1000P	2	
C605	ECA1VAK330XB	35V 33U	1	
C606,07	ECBT1H471KB3	50V 470P	2	
C608	ECBT1H221KB3	50V 220P	1	
C609,10	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C611	ECA1HAK3R3XB	50V 3.3U	1	
C612,13	F2A1C220A034	16V 22U	2	
C614	ECA1CAK100XB	16V 10U	1	
C615	ECA1VAK330XB	35V 33U	1	
C616	ECEA1VKS330Q	35V 33U	1	
C618,19	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C620,21	ECA1HAK0R1XB	50V 0.1U	2	
C622,23	ECBT1H104KB5	50V 0.1U	2	F1D1H1040002
C624	ECBT1C103MS5	16V 0.01U	1	F1D1C103A004
C625	ECA0JAK101XB	6.3V 100U	1	
C626	ECBT1H473KB5	50V 0.047U	1	F1D1H473A012
C627,28	F2A1C220A034	16V 22U	2	
C753,54	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C761-63	ECBT1C103MS5	16V 0.01U	3	F1D1C103A004
C764	ECA1AAK221XH	10V 220U	1	
C765	ECBT1C103MS5	16V 0.01U	1	F1D1C103A004
C766	ECA1CAK100XB	16V 10U	1	
C767	ECBT1C103MS5	16V 0.01U	1	F1D1C103A004
C768	ECA1CAK100XB	16V 10U	1	
C769	ECBT1C103MS5	16V 0.01U	1	F1D1C103A004
C770	ECA1CAK100XB	16V 10U	1	
C771,72	ECBT1C103MS5	16V 0.01U	2	F1D1C103A004
C773	ECA1AAK221XH	10V 220U	1	
C774	ECA1CAM221XB	16V 220U	1	
C801	ECJ1VC1H120J	50V 12P	1	
C802	ECJ1VC1H050C	50V 5P	1	
C803	ECJ1VB1H102K	50V 1000P	1	
C804	ECJ1VB1C104K	16V 0.1U	1	
C805	ECJ1VB0J105K	6.3V 1U	1	
C806,07	ECJ1VB1H222K	50V 2200P	2	
C808-10	ECUVNH103KBV	50V 0.01U	3	F1H1H103A748

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C811	ECJ1VB1E223K	25V 0.022U	1	
C812	ECJ1VB1C104K	16V 0.1U	1	
C813	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C814	ECJ1VB0J105K	6.3V 1U	1	
C815	ECJ1VB1E223K	25V 0.022U	1	
C816	ECJ1VB1C104K	16V 0.1U	1	
C818,19	ECJ1VB1H681K	50V 680P	2	
C820,21	ECEA1HKA4R7	50V 4.7U	2	
C822	ECA0JAK470XH	6.3V 47U	1	
C823	EEAFC0J101B	6.3V 100U	1	
C824	ECA0JAK470XH	6.3V 47U	1	
C825-32	ECEA1HKA4R7	50V 4.7U	8	
C833-35	ECA0JAK470XH	6.3V 47U	3	
C836,37	ECA1CAK100XB	16V 10U	2	
C838,39	ECA1HAK010XI	50V 1U	2	
C851,52	ECJ1VB1H222K	50V 2200P	2	
C853,54	ECA1CAK100XB	16V 10U	2	
C855,56	ECEA1HKA4R7	50V 4.7U	2	
C857,58	ECJ1VB1C104K	16V 0.1U	2	
C859	ECEA1HKA4R7	50V 4.7U	1	
C860	ECJ1VB1H222K	50V 2200P	1	
C861	ECJ1VB1H561K	50V 560P	1	
C862	ECUV1H471KBV	50V 470P	1	F1H1H471A013
C863,64	ECA0JAK470XH	6.3V 47U	2	
C865	ECJ1VB0J105K	6.3V 1U	1	
C866-68	ECA1HAK010XI	50V 1U	3	
C869	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C870	EEAFC0J101B	6.3V 100U	1	
C871,72	ECJ1VB1H222K	50V 2200P	2	
C873-76	ECA1HAK010XI	50V 1U	4	
C877,78	ECUVNH103KBV	50V 0.01U	2	F1H1H103A748
C879,80	ECJ1VB1H222K	50V 2200P	2	
C881,82	ECA1HAK010XI	50V 1U	2	
C883	ECA0JAK470XH	6.3V 47U	1	
C884	ECJ1VB1H222K	50V 2200P	1	
C886	EEAFC0J101B	6.3V 100U	1	
C887,88	ECA0JAK470XH	6.3V 47U	2	
C891	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C892	ECA0JAK470XH	6.3V 47U	1	
C893	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C894-97	ECJ1VB1E223K	25V 0.022U	4	
C898	EEAFC0J101B	6.3V 100U	1	
C899	ECA0JAK470XH	6.3V 47U	1	
CN201	RJT065A20	SYSTEM CONNECTOR(20P)	1	K1FA220B0007
CN202	RJT065K20	SYSTEM CONNECTOR(20P)	1	K1FA220B0006
D201	MAZ40560MF	DIODE	1	
D203	MA165TA5	DIODE	1	MA2C16500E
D204	MA719	DIODE	1	MA2C719
D301	MA700	DIODE	1	MA2C700
D302	MA165TA5	DIODE	1	MA2C16500E
D304,05	MA719	DIODE	2	MA2C719
D601-04	1SS291TA	DIODE	4	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D605-10	MA165TA5	DIODE	6	MA2C16500E
D611,12	LNJ301MPUJAD	LED	2	
D613-17	B3AHA0000012	LED	5	
D653	MA165TA5	DIODE	1	MA2C16500E
D761	MA4082LTA	DIODE	1	MAZ40820LF
D762	B0AAMM000009	DIODE	1	
D763-66	MA165TA5	DIODE	4	MA2C16500E
D767	MA4051M	DIODE	1	MAZ40510M
D770	MA4062H	DIODE	1	MAZ40620H
D771	MA4051-L	DIODE	1	MAZ40510L
D772	MA165TA5	DIODE	1	MA2C16500E
FL601	A2BD00000041	FL DISPLAY TUBE	1	
IC201	NJU7313AMT2	IC	1	C0JZAS000002
IC202	NJM4558MTE1	IC	1	C0ABBB000109
IC203	C0JBAR000292	IC	1	
IC301	M5218AP	IC	1	C0AABB000055
IC302,03	NJM4558MTE1	IC	2	C0ABBB000109
IC401	C2BBFD000246	IC	1	
IC501	NJM4558MTE1	IC	1	C0ABBB000109
IC601	C2BBGF000425	IC	1	
IC602	M62457AFPE1	IC	1	C1BB00000486
IC801	C2HBZC000010	IC	1	
IC802	C2HBZC000008	IC	1	
JK101	SJF3068-7N	JACK,VDP(AUX)	1	K2HA102B0046
JK102	SJF3069-5N	JACK,VCR(EXT)IN/OUT	1	K2HA204B0083
JK103	SJFD7	JACK,SUB WOOFER OUT	1	K4BK01B00002
L101	RLBV252AV-Y	COIL	1	J0JBC0000019
L301,02	RLQA3R3JT1-Y	COIL	2	G0C3R3JA0019
L401	RLQB100JTD-D	COIL	1	G0C100JA0030
L502	RLBV252AV-Y	COIL	1	J0JBC0000019
L601	G0C100JA0019	COIL	1	
L801	J0JCC0000077	COIL	1	
L802	RLBV102V-Y	COIL	1	J0JBC0000014
L804	RLBV102V-Y	COIL	1	J0JBC0000014
L806	RLBV102V-Y	COIL	1	J0JBC0000014
L807	G0A200D00002	COIL	1	
L808	RLQB100JTD-D	COIL	1	G0C100JA0030
L811	RLBV102V-Y	COIL	1	J0JBC0000014
L814	G0A200D00002	COIL	1	
L821,22	RLBV252AV-Y	COIL	2	J0JBC0000019
PCB1	REP3073H-M	MAIN P.C.B. ASS'Y	1	[RTL]
Q301-04	2SD2144S	TRANSISTOR	4	
Q305,06	UN411FTA	TRANSISTOR	2	UNR411F00A
Q307-10	2SD2144S	TRANSISTOR	4	
Q313-16	2SD2144S	TRANSISTOR	4	
Q501,02	UN411FTA	TRANSISTOR	2	UNR411F00A
Q503-05	2SD2144S	TRANSISTOR	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q506	UN411FTA	TRANSISTOR	1	UNR411F00A
Q507	2SD2144S	TRANSISTOR	1	
Q601	UN4211	TRANSISTOR	1	UNR4211
Q602-04	2SC3311A	TRANSISTOR	3	2SC3311AW
Q605,06	UN5211TX	TRANSISTOR	2	UNR521100L
Q761,62	2SD2137PQTA	TRANSISTOR	2	2SD21370PA
Q763	2SD592A	TRANSISTOR	1	2SD0592AW
Q764	2SB0621AHA	TRANSISTOR	1	
Q765	2SC3311A	TRANSISTOR	1	2SC3311AW
Q766	2SA1309ATA	TRANSISTOR	1	2SA1309AWA
Q767	2SC3311A	TRANSISTOR	1	2SC3311AW
Q768	2SC3940AQSTA	TRANSISTOR	1	2SC3940ARA
R101,02	ERDS2FJ104	1/4W 100K	2	
R103,04	ERDS2FJ102	1/4W 1K	2	
R105,06	ERDS2FJ123	1/4W 12K	2	
R107,08	ERDS2FJ332	1/4W 3.3K	2	
R111,12	ERDS2FJ332	1/4W 3.3K	2	
R113,14	ERDS2FJ123	1/4W 12K	2	
R127	ERDS2FJ104	1/4W 100K	1	
R128	ERDS2FJ102	1/4W 1K	1	
R129,30	ERDS2T0	1/4W 0	2	
R131	ERJ3GEY0R00V	1/16W 0	1	
R203,04	ERDS2FJ222	1/4W 2.2K	2	
R205,06	ERDS2FJ563	1/4W 56K	2	
R207,08	ERDS2FJ273	1/4W 27K	2	
R209,10	ERDS2FJ104	1/4W 100K	2	
R211-14	ERDS2FJ222	1/4W 2.2K	4	
R219	ERDS2FJ391	1/4W 390	1	
R220	ERDS2FJ104	1/4W 100K	1	
R221,22	ERDS2FJ221	1/4W 220	2	
R223,24	ERDS2FJ223	1/4W 22K	2	
R225,26	ERDS2FJ102	1/4W 1K	2	
R227,28	ERDS2TJ682	1/4W 6.8K	2	
R229,30	ERDS2FJ822	1/4W 8.2K	2	
R233-36	ERDS2FJ102	1/4W 1K	4	
R237,38	ERDS2FJ822	1/4W 8.2K	2	
R239	ERDS2FJ473	1/4W 47K	1	
R240	ERDS2FJ102	1/4W 1K	1	
R249,50	ERDS2FJ152	1/4W 1.5K	2	
R255,56	ERDS2FJ472	1/4W 4.7K	2	
R257,58	ERDS2FJ822	1/4W 8.2K	2	
R259,60	ERDS2T0	1/4W 0	2	
R284,85	ERDS2T0	1/4W 0	2	
R286,87	ERDS2FJ393	1/4W 39K	2	
R288-91	ERDS2T0	1/4W 0	4	
R295,96	ERDS2T0	1/4W 0	2	
R297,98	ERDS2FJ471	1/4W 470	2	
R303,04	ERDS2FJ223	1/4W 22K	2	
R305-08	ERDS2FJ102	1/4W 1K	4	
R309,10	ERDS2FJ561	1/4W 560	2	
R311	ERDS2FJ223	1/4W 22K	1	
R312	ERDS2FJ182	1/4W 1.8K	1	
R313,14	ERDS2TJ392	1/4W 3.9K	2	

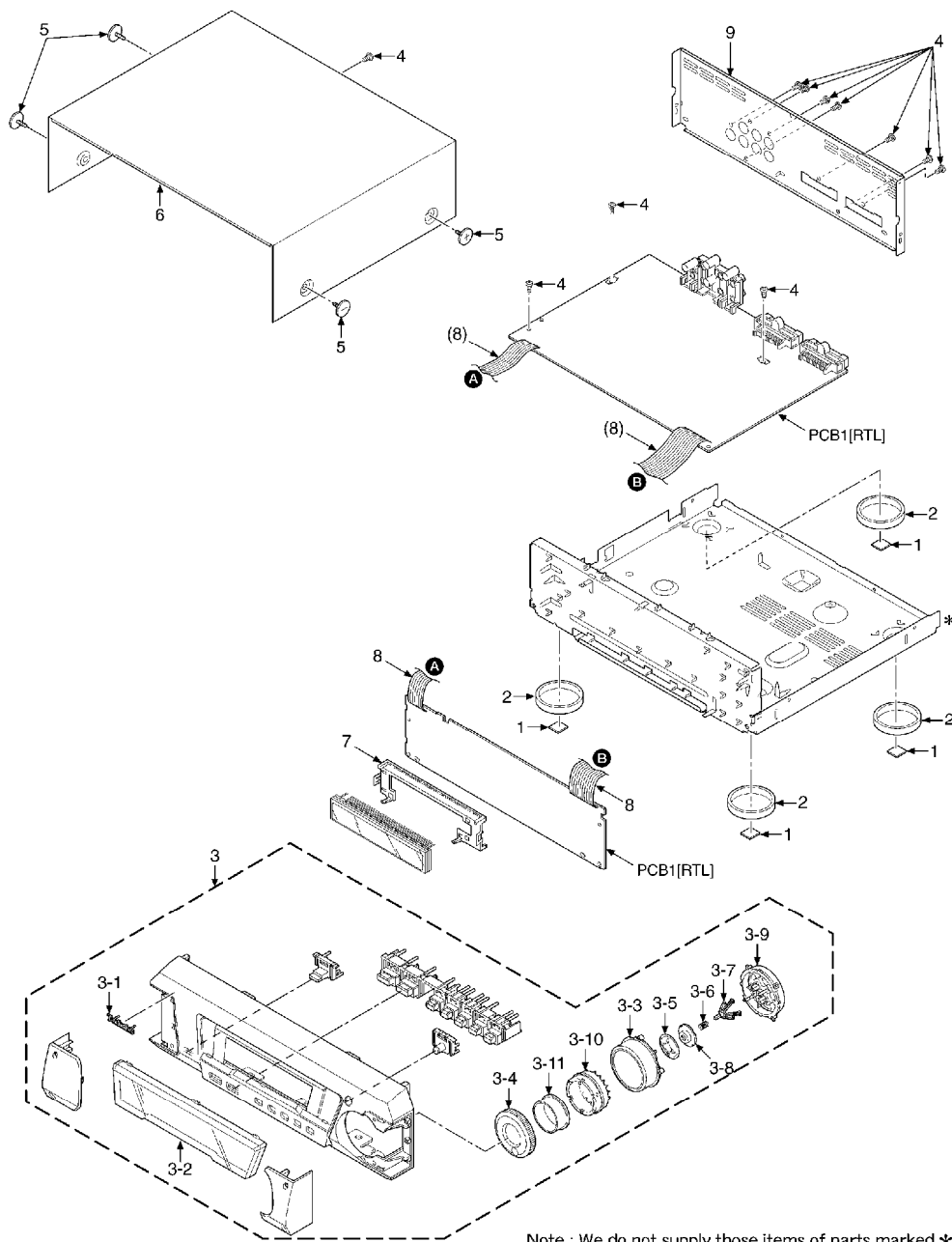
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R315,16	ERDS2FJ274	1/4W 270K	2	
R317	ERDS2FJ223	1/4W 22K	1	
R318	ERDS2FJ101	1/4W 100	1	
R319	ERDS2FJ154	1/4W 150K	1	
R322	ERJ3GEYJ822V	1/16W 8.2K	1	D0GB822JA002
R323,24	ERDS2FJ120	1/4W 12	2	
R325,26	ERDS2FJ102	1/4W 1K	2	
R327,28	ERDS2FJ561	1/4W 560	2	
R329	ERDS2FJ564	1/4W 560K	1	
R330	ERDS2TJ184T	1/4W 180K	1	
R331,32	ERDS2FJ222	1/4W 2.2K	2	
R333,34	ERDS2FJ563	1/4W 56K	2	
R335,36	ERDS2FJ102	1/4W 1K	2	
R337	ERDS2FJ391	1/4W 390	1	
R338	ERDS2FJ471	1/4W 470	1	
R345-47	ERDS2FJ102	1/4W 1K	3	
R348	ERDS2FJ222	1/4W 2.2K	1	
R349	ERDS2FJ123	1/4W 12K	1	
R350	ERDS2FJ103	1/4W 10K	1	
R351	ERDS2FJ224	1/4W 220K	1	
R352	ERDS2FJ103	1/4W 10K	1	
R353	ERDS2FJ224	1/4W 220K	1	
R354	ERDS2FJ562	1/4W 5.6K	1	
R357,58	ERDS2FJ223	1/4W 22K	2	
R359,60	ERDS2FJ821	1/4W 820	2	
R361,62	ERDS2TJ682	1/4W 6.8K	2	
R363,64	ERDS2FJ102	1/4W 1K	2	
R365,66	ERDS2TJ184T	1/4W 180K	2	
R367,68	ERDS2FJ471	1/4W 470	2	
R372	ERDS2T0	1/4W 0	1	
R374	ERDS2T0	1/4W 0	1	
R402	ERJ3GEYJ104	1/16W 100K	1	
R403	ERJ3GEYJ681V	1/16W 680	1	D0GB681JA002
R404	ERJ3GEYJ104	1/16W 100K	1	
R405-10	ERJ3GEYJ221V	1/16W 220	6	
R411	ERDS2FJ102	1/4W 1K	1	
R414,15	ERDS2FJ102	1/4W 1K	2	
R417	ERJ3GEYJ221V	1/16W 220	1	
R419	ERDS2FJ101	1/4W 100	1	
R420	ERDS2FJ102	1/4W 1K	1	
R421	ERDS2FJ101	1/4W 100	1	
R424	ERDS2FJ102	1/4W 1K	1	
R425,26	ERDS2FJ472	1/4W 4.7K	2	
R429	ERDS2FJ472	1/4W 4.7K	1	
R430,31	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R432	ERDS2FJ102	1/4W 1K	1	
R501	ERDS2FJ152	1/4W 1.5K	1	
R502	ERDS2FJ102	1/4W 1K	1	
R503	ERDS2FJ122	1/4W 1.2K	1	
R504	ERDS2TJ124	1/4W 120K	1	
R505	ERDS2FJ102	1/4W 1K	1	
R506	ERDS2TJ272T	1/4W 2.7K	1	
R507	ERDS2TJ105	1/4W 1M	1	
R508	ERDS2FJ104	1/4W 100K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R509	ERDS2FJ222	1/4W 2.2K	1	
R510	ERDS2FJ104	1/4W 100K	1	
R511	ERDS2TJ105	1/4W 1M	1	
R512	ERDS2FJ154	1/4W 150K	1	
R513	ERDS2FJ102	1/4W 1K	1	
R514	ERDS2FJ101	1/4W 100	1	
R515	ERDS2FJ223	1/4W 22K	1	
R517	ERDS2FJ821	1/4W 820	1	
R518	ERDS2FJ222	1/4W 2.2K	1	
R519	ERDS2FJ154	1/4W 150K	1	
R520	ERDS2FJ122	1/4W 1.2K	1	
R601-03	ERDS2FJ102	1/4W 1K	3	
R604,05	ERDS2FJ103	1/4W 10K	2	
R606	ERDS2FJ102	1/4W 1K	1	
R607,08	ERDS2FJ221	1/4W 220	2	
R609	ERDS2FJ222	1/4W 2.2K	1	
R610	ERDS2FJ332	1/4W 3.3K	1	
R611	ERDS2FJ101	1/4W 100	1	
R612	ERDS2FJ102	1/4W 1K	1	
R613	ERDS2FJ562	1/4W 5.6K	1	
R614-17	ERDS2FJ102	1/4W 1K	4	
R618	ERDS2FJ104	1/4W 100K	1	
R619	ERDS2FJ681	1/4W 680	1	
R622,23	ERDS2FJ104	1/4W 100K	2	
R624-29	ERDS2TJ181	1/4W 180	6	
R631	ERDS2FJ821	1/4W 820	1	
R632	ERDS2FJ102	1/4W 1K	1	
R633	ERDS2FJ122	1/4W 1.2K	1	
R634	ERDS2FJ152	1/4W 1.5K	1	
R635	ERDS2FJ182	1/4W 1.8K	1	
R636	ERDS2FJ222	1/4W 2.2K	1	
R637	ERDS2FJ821	1/4W 820	1	
R638	ERDS2FJ102	1/4W 1K	1	
R639	ERDS2FJ122	1/4W 1.2K	1	
R640	ERDS2FJ152	1/4W 1.5K	1	
R641	ERDS2FJ182	1/4W 1.8K	1	
R642	ERDS2FJ222	1/4W 2.2K	1	
R647	ERDS2FJ223	1/4W 22K	1	
R648-50	ERDS2FJ104	1/4W 100K	3	
R651	ERDS2FJ102	1/4W 1K	1	
R652,53	ERDS2FJ472	1/4W 4.7K	2	
R654-56	ERDS2FJ103	1/4W 10K	3	
R657	ERDS2FJ473	1/4W 47K	1	
R658,59	ERDS2FJ472	1/4W 4.7K	2	
R660	ERDS2FJ473	1/4W 47K	1	
R661	ERDS2FJ223	1/4W 22K	1	
R662	ERDS2FJ102	1/4W 1K	1	
R663,64	ERDS2FJ331	1/4W 330	2	
R665-67	ERDS2FJ473	1/4W 47K	3	
R668	ERDS2FJ222	1/4W 2.2K	1	
R671-80	ERJ6GEYJ104V	1/10W 100K	10	
R681	ERJ3GEYJ222V	1/16W 2.2K	1	
R682	ERJ3GEY0R00V	1/16W 0	1	
R686	ERJ3GEY0R00V	1/16W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R691,92	ERDS2FJ221	1/4W 220	2	
R716	ERDS2FJ821	1/4W 820	1	
R761,62	ERDS2FJ2R2	1/4W 2.2	2	
R763	ERQ16NKWR33E	1/6W 0.33	1	
R764	ERDS2FJ821	1/4W 820	1	
R765	ERDS2FJ221	1/4W 220	1	
R766	ERDS2FJ182	1/4W 1.8K	1	
R767	ERDS2FJ102	1/4W 1K	1	
R768,69	ERDS2FJ122	1/4W 1.2K	2	
R770	ERD2FCJ4R7	1/4W 4.7	1	
R771	ERDS2FJ102	1/4W 1K	1	
R772	ERDS2FJ122	1/4W 1.2K	1	
R773	ERDS2FJ102	1/4W 1K	1	
R774	ERDS2FJ221	1/4W 220	1	
R801	ERJ3GEYJ221V	1/16W 220	1	
R802	ERJ3GEYJ105V	1/16W 1M	1	
R803	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R804-07	ERJ3GEYJ271V	1/16W 270	4	
R808-10	ERJ3GEYJ331V	1/16W 330	3	
R811	ERJ3GEYJ472V	1/16W 4.7K	1	
R812	ERJ3GEYJ331V	1/16W 330	1	
R813	ERJ3GEYJ472V	1/16W 4.7K	1	
R814	ERJ3GEYJ104	1/16W 100K	1	
R815-20	ERJ3GEYJ102V	1/16W 1K	6	
R821	ERJ3GEYJ331V	1/16W 330	1	
R823	ERJ3GEYJ331V	1/16W 330	1	
R824,25	ERDS2TJ823	1/4W 82K	2	
R827	ERJ3GEY0R00V	1/16W 0	1	
R829	ERJ3GEYJ222V	1/16W 2.2K	1	
R830	ERJ3GEYJ472V	1/16W 4.7K	1	
R833,34	ERJ3GEYJ223V	1/16W 22K	2	D0GB223JA002
R835,36	ERJ3GEYJ152V	1/16W 1.5K	2	
R851,52	ERJ3GEYJ102V	1/16W 1K	2	
R854	ERJ3GEYJ183V	1/16W 18K	1	D0GB183JA002
R855	ERJ3GEYJ393V	1/16W 39K	1	D0GB393JA002
R856	ERJ3GEY0R00V	1/16W 0	1	
R857-59	ERJ3GEYJ103V	1/16W 10K	3	D0GB103JA002
R860	ERJ3GEYJ560V	1/16W 56	1	
R861	ERJ3GEYJ104	1/16W 100K	1	
R863,64	MCR03PZHJ561	1/16W 560	2	
R866	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R867,68	MCR03PZHJ561	1/16W 560	2	
R869-72	ERJ3GEYJ271V	1/16W 270	4	
R873,74	ERJ3GEYJ331V	1/16W 330	2	
R875,76	ERJ3GEYJ271V	1/16W 270	2	
R877,78	ERJ3GEYJ223V	1/16W 22K	2	D0GB223JA002
R879,80	ERJ3GEYJ222V	1/16W 2.2K	2	
R881	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R882	ERJ3GEYJ105V	1/16W 1M	1	
R888,89	ERJ3GEYJ331V	1/16W 330	2	
R890	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R891,92	ERJ3GEYJ222V	1/16W 2.2K	2	
R898	ERJ3GEY0R00V	1/16W 0	1	
R900	ERJ3GEY0R00V	1/16W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R903	ERDS2TJ124	1/4W 120K	1	
S601-07	EVQ11G05R	SW,PUSH	7	
S608-11	EVQ11G07K	SW,JOY STICK	4	
S612,13	EVQ11G05R	SW,PUSH	2	
S614	ESE24SV7	SW,MULTI JOG	1	
X401	RSXY8M00D01T	OSCILLATOR	1	H2B800400005
X601	H2B400400013	OSCILLATOR	1	
X801	RSXZ36M8M01T	OSCILLATOR	1	

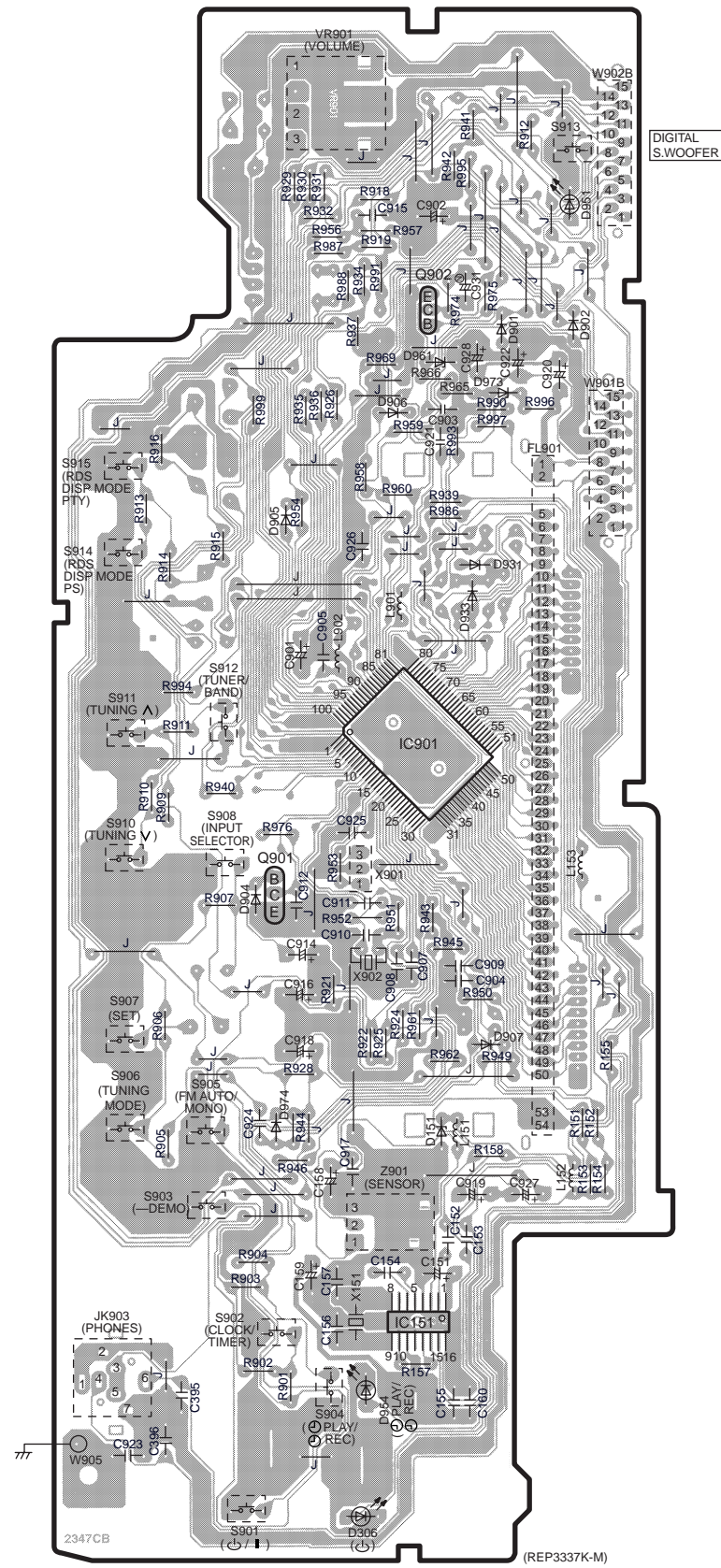
12. Cabinet Parts Location



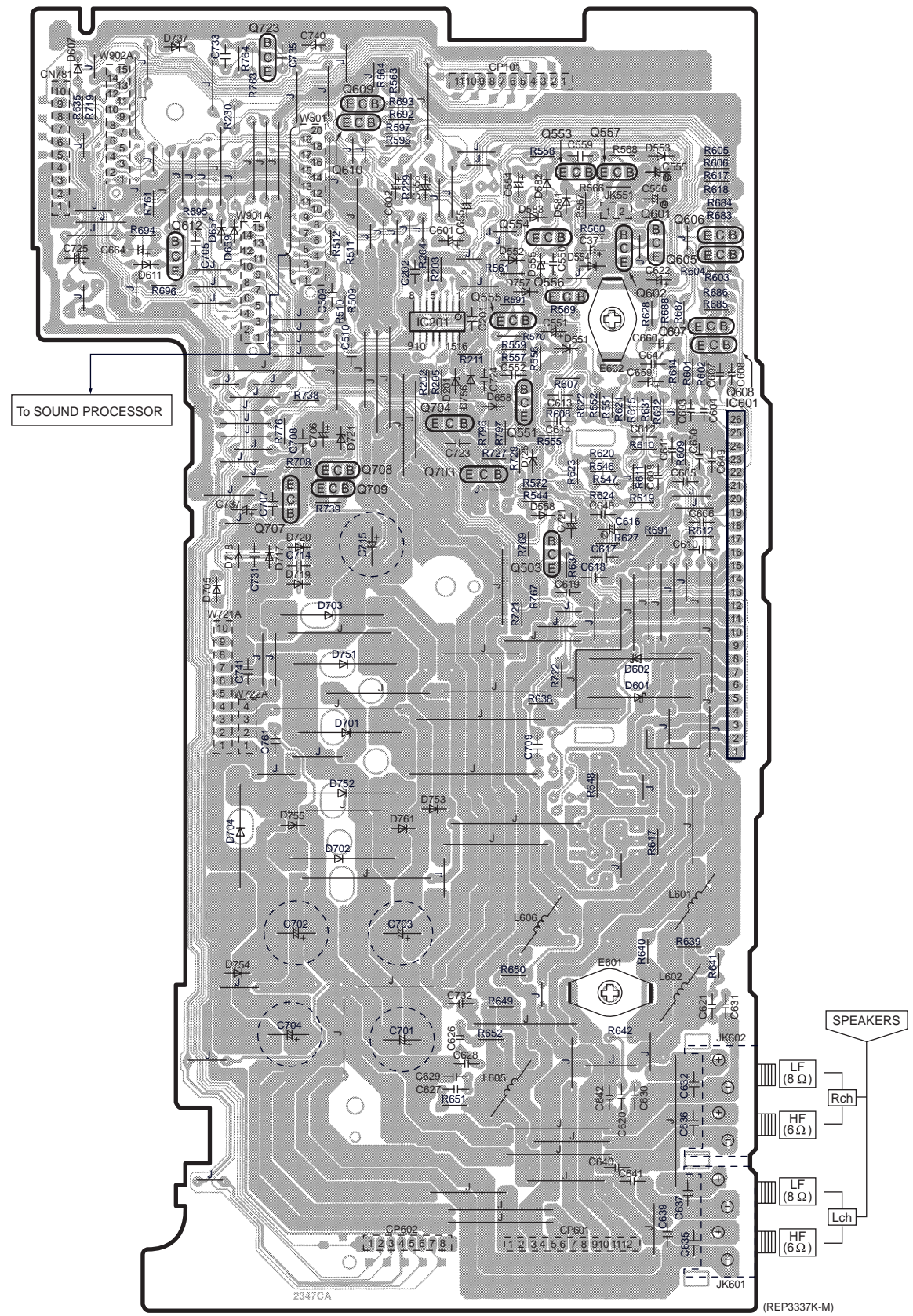
Note : We do not supply those items of parts marked * .
 This "PCB1" is a combination PCB.

13. Schematic Diagram for printing with A4 size K0304YH/HM

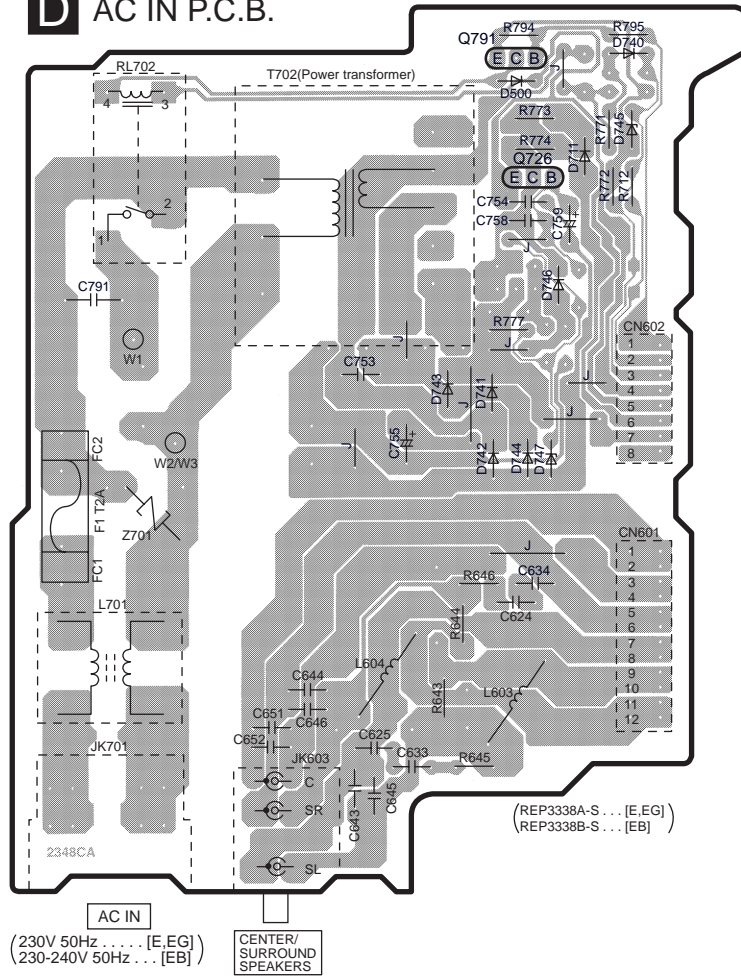
A OPERATION P.C.B.



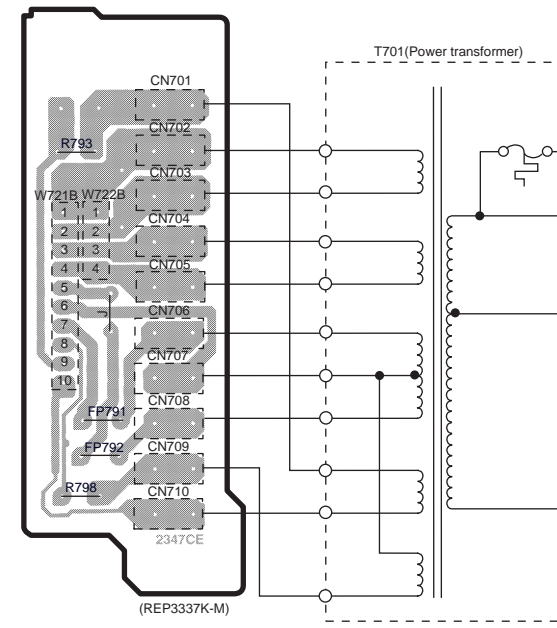
B MAIN P.C.B.



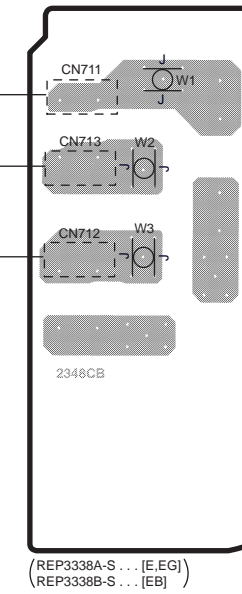
D AC IN P.C.B.



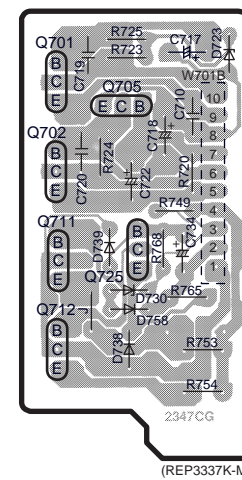
E POWER TRANSFORMER
(A) P.C.B.



F POWER TRANSFORMER
(B) P.C.B.

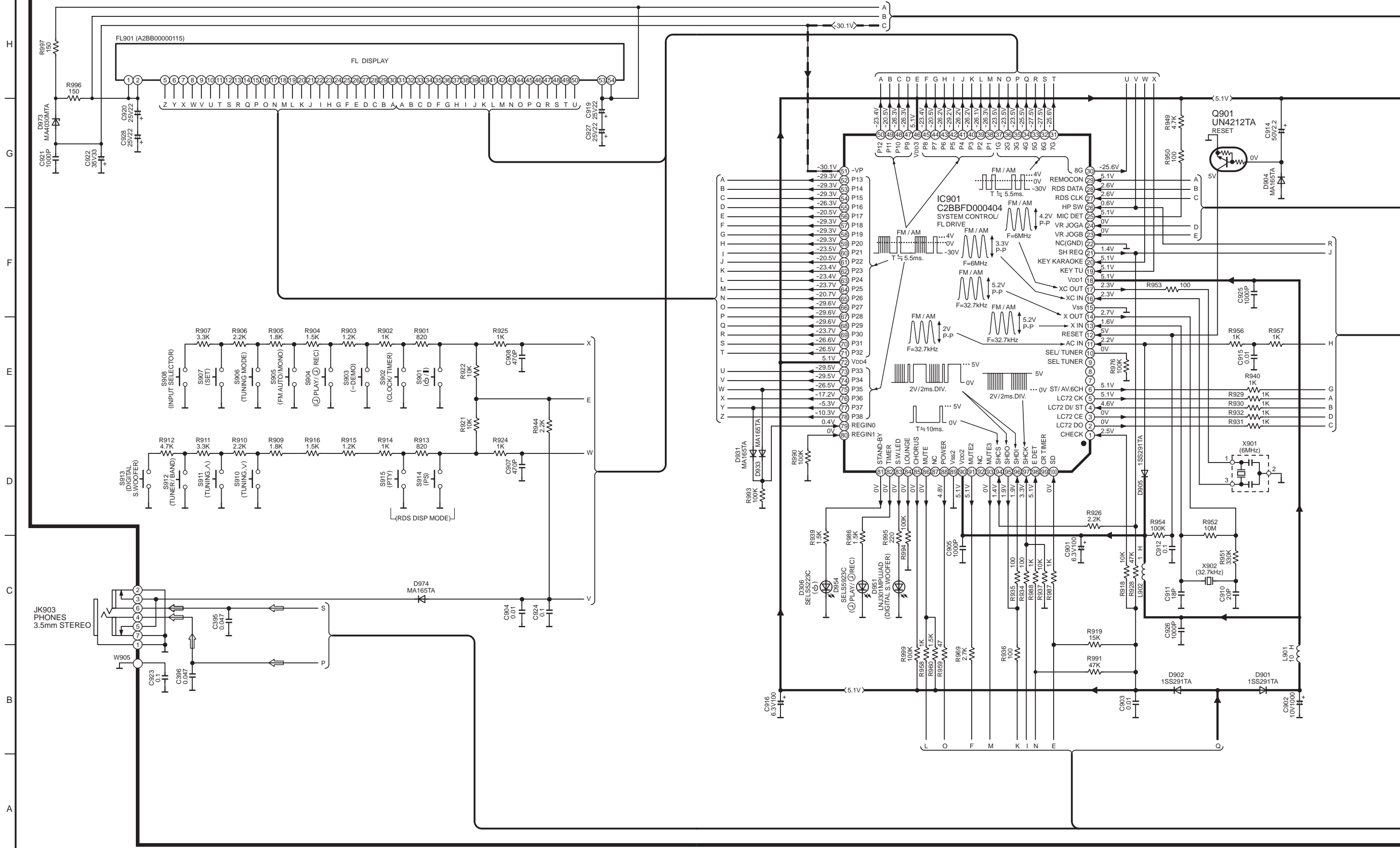


C POWER SUPPLY P.C.B.



A OPERATION CIRCUIT

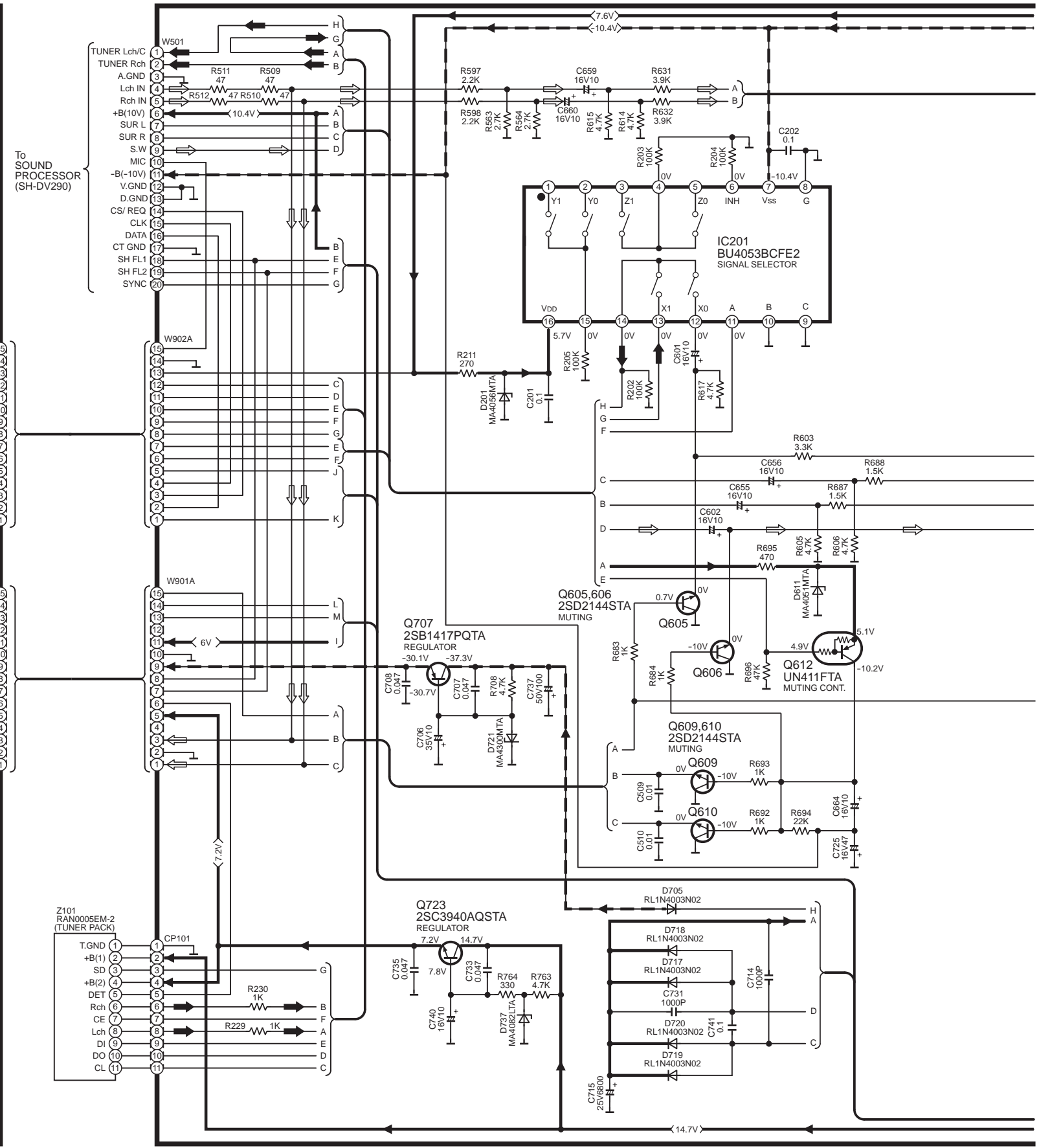
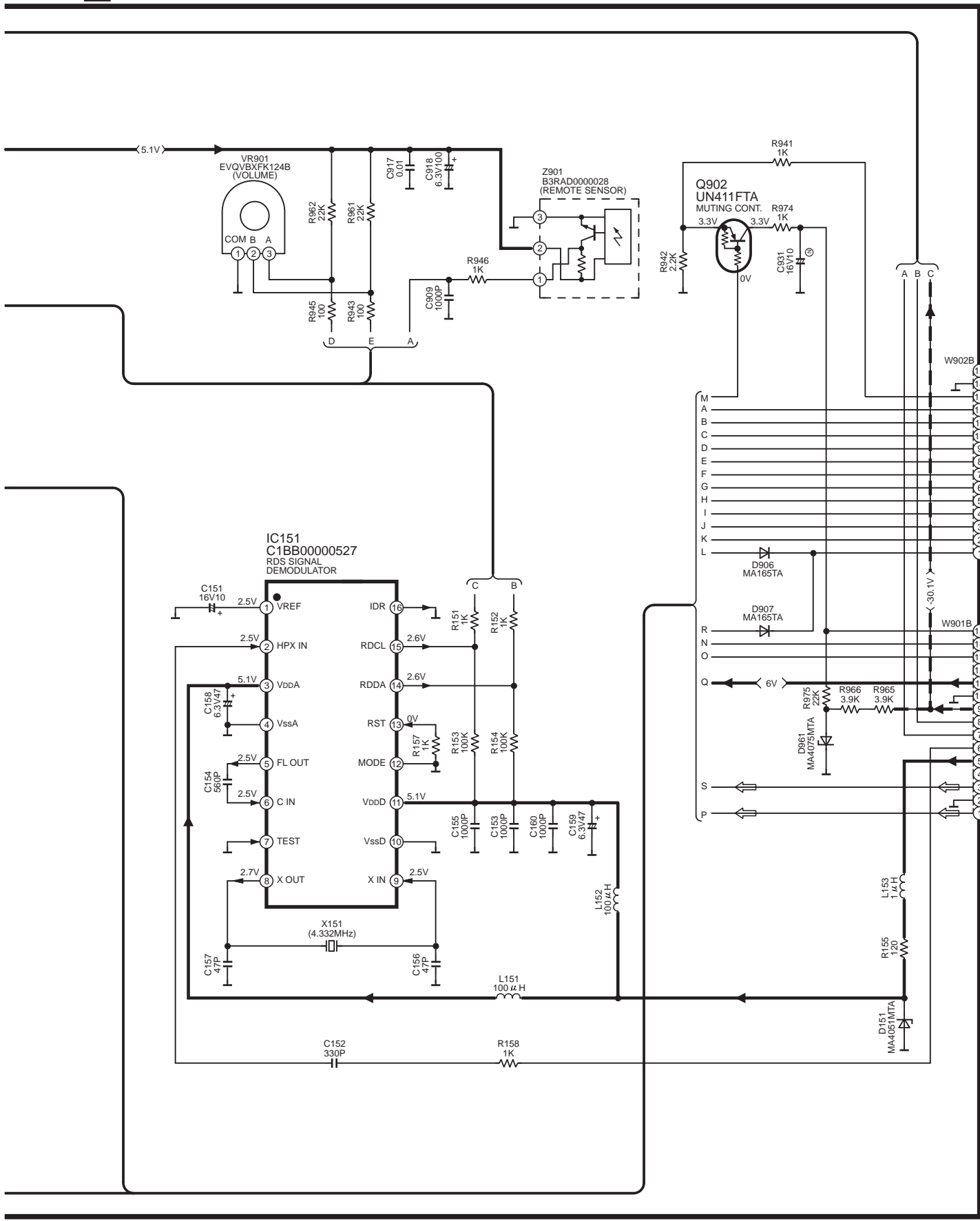
→ : POSITIVE VOLTAGE LINE - - - - - : NEGATIVE VOLTAGE LINE ⇨ : AUDIO SIGNAL LINE



A OPERATION CIRCUIT

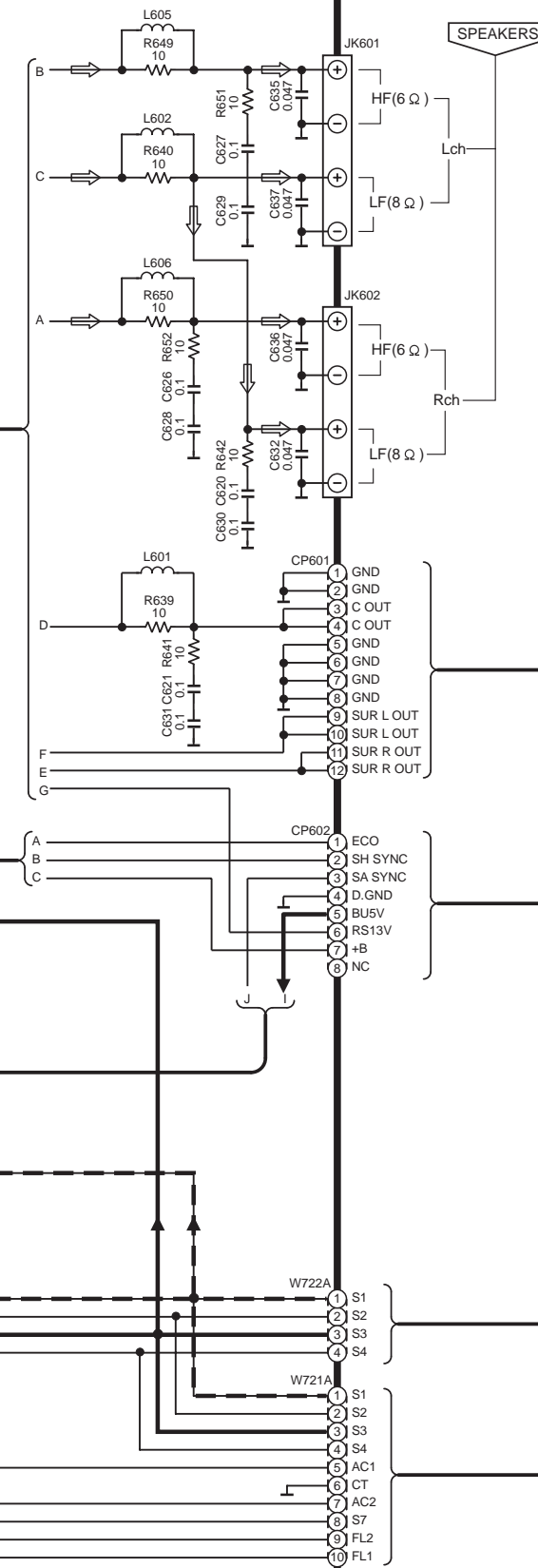
--- : NEGATIVE VOLTAGE LINE
---> : AUDIO SIGNAL LINE
---> : POSITIVE VOLTAGE LINE
---> : TUNER SIGNAL LINE

B MAIN CIRCUIT

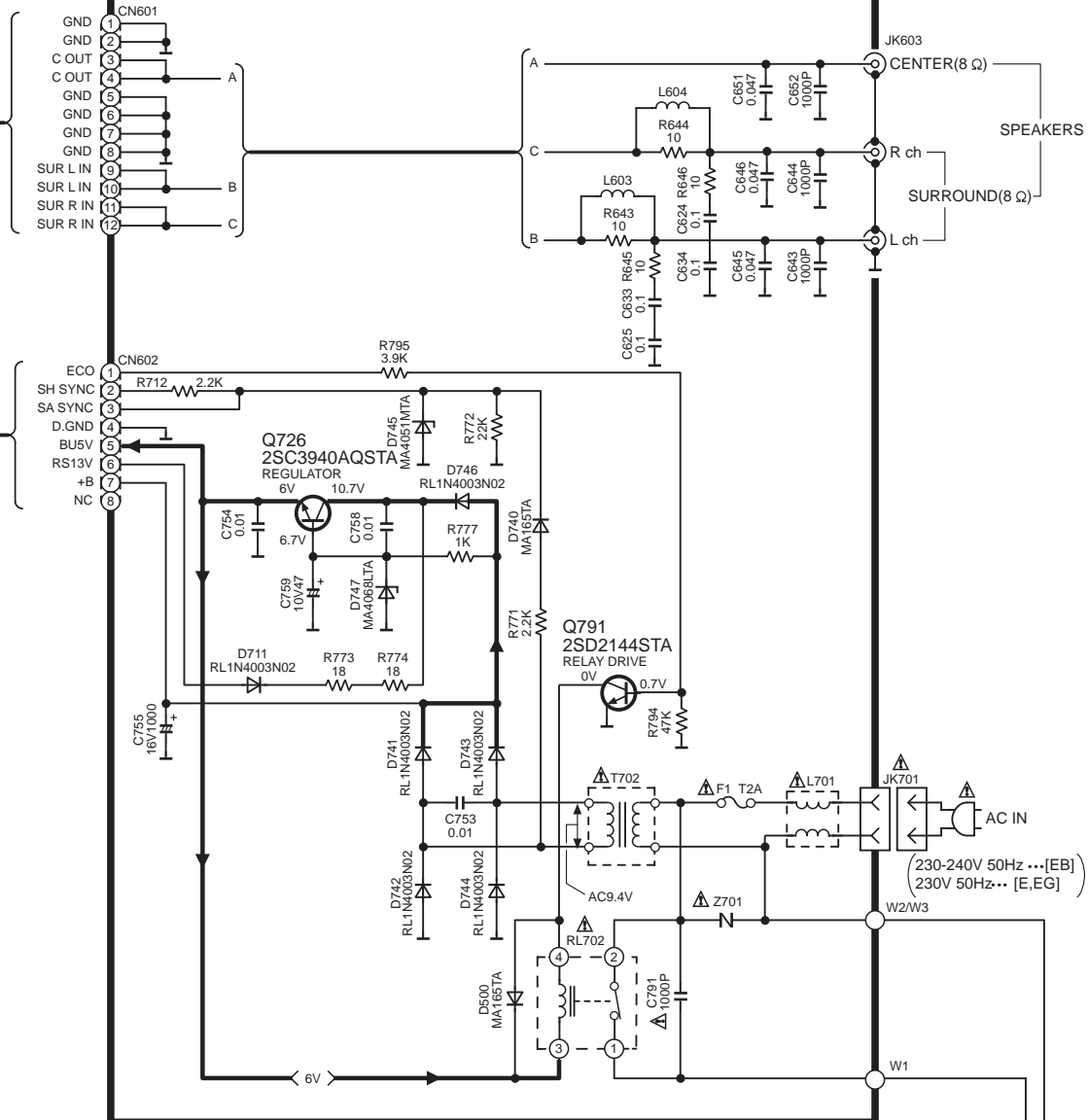


B MAIN CIRCUIT

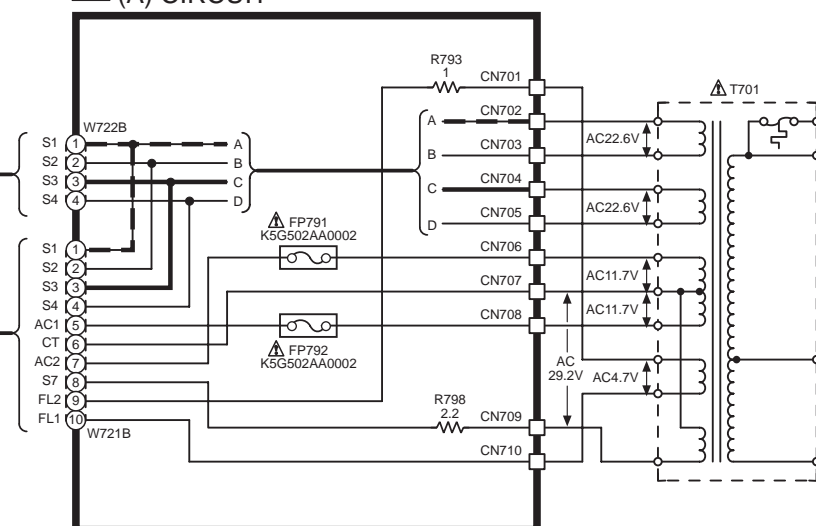
➔ : POSITIVE VOLTAGE LINE
 ➔- : NEGATIVE VOLTAGE LINE ➔ : AUDIO SIGNAL LINE



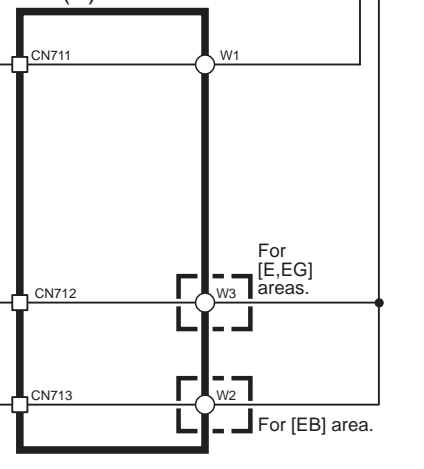
D AC IN CIRCUIT



E POWER TRANSFORMER (A) CIRCUIT

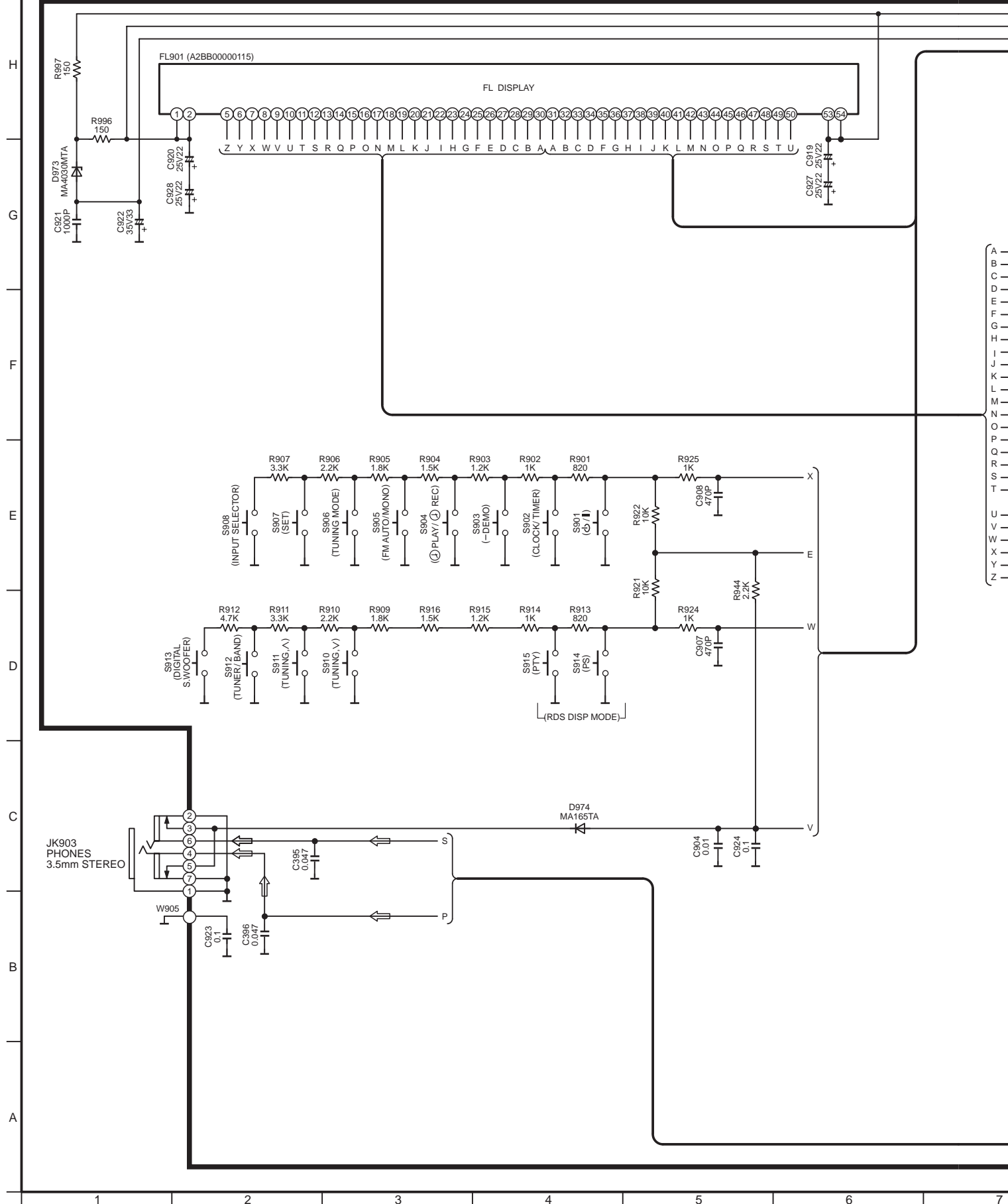


F POWER TRANSFORMER (B) CIRCUIT

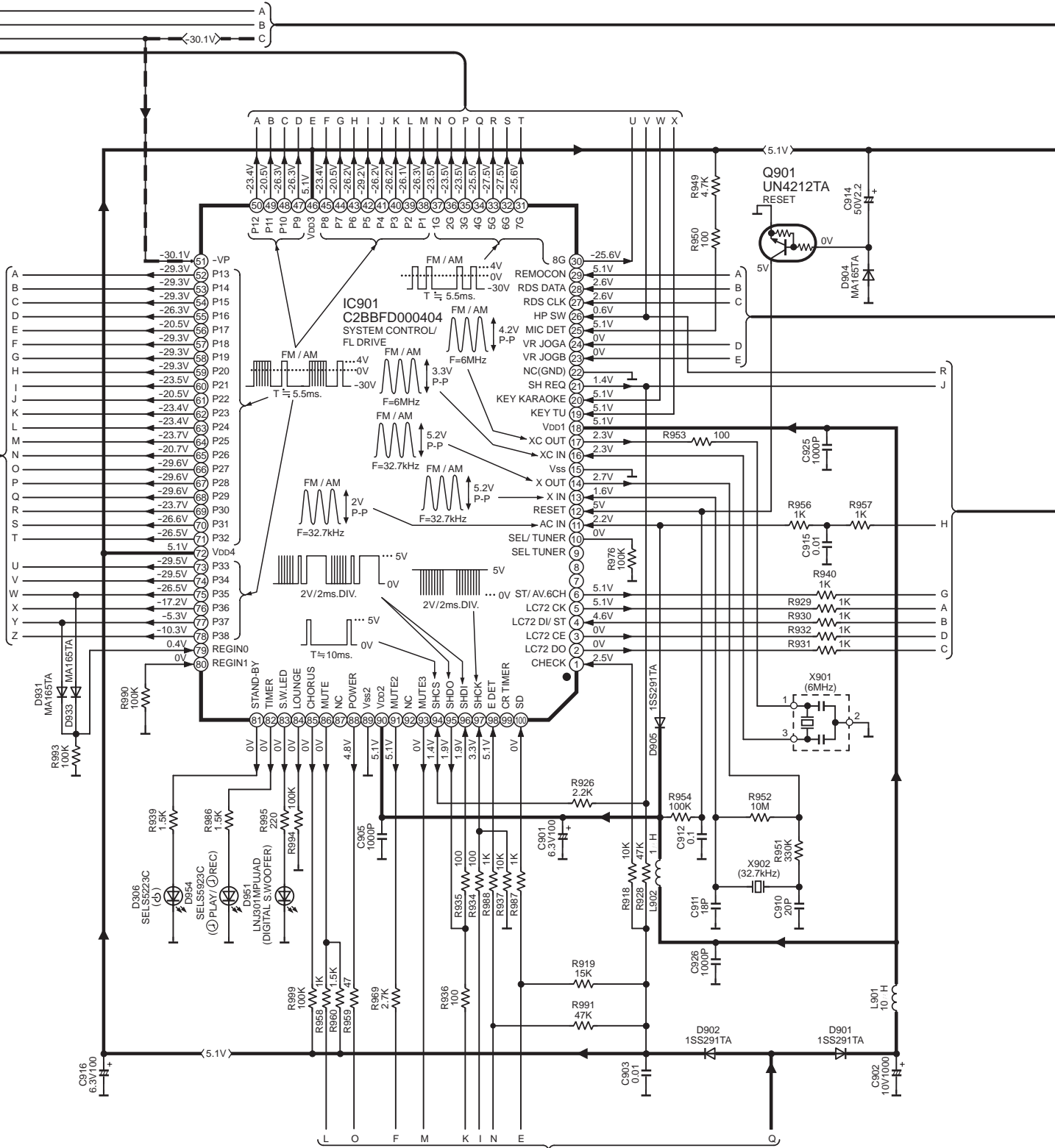


SA-DV290(E,EB,EG) MAIN, AC IN, POWER TRANSFORMER(A)&(B) CIRCUIT DIAGRAM

A OPERATION CIRCUIT



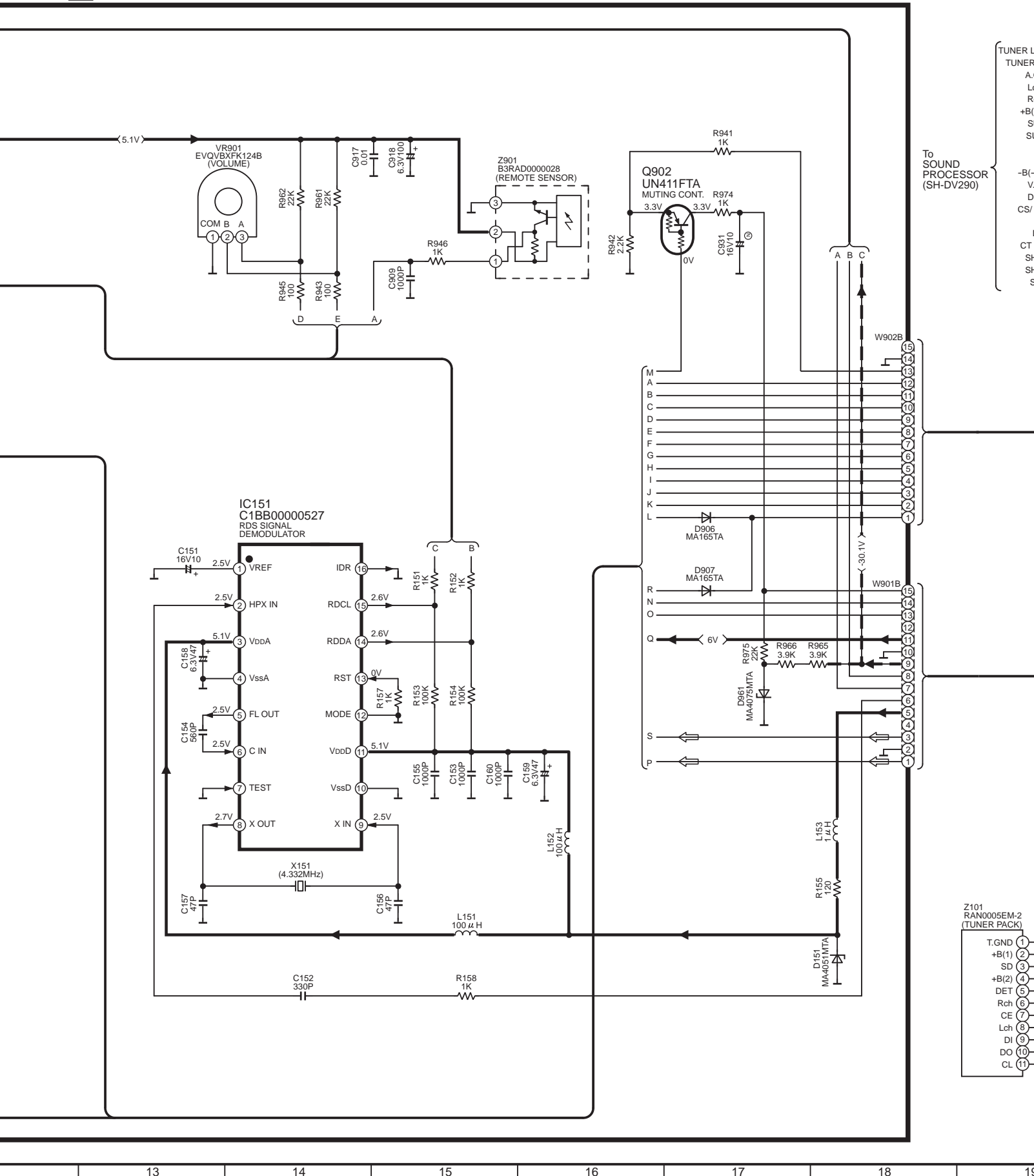
→ : POSITIVE VOLTAGE LINE ← : NEGATIVE VOLTAGE LINE ⇨ : AUDIO SIGNAL LINE



SA-DV290(E,EB,EG) OPERATION CIRCUIT DIAGRAM

A OPERATION CIRCUIT

: NEGATIVE VOLTAGE LINE : AUDIO SIGNAL LINE
 : POSITIVE VOLTAGE LINE : TUNER SIGNAL LINE

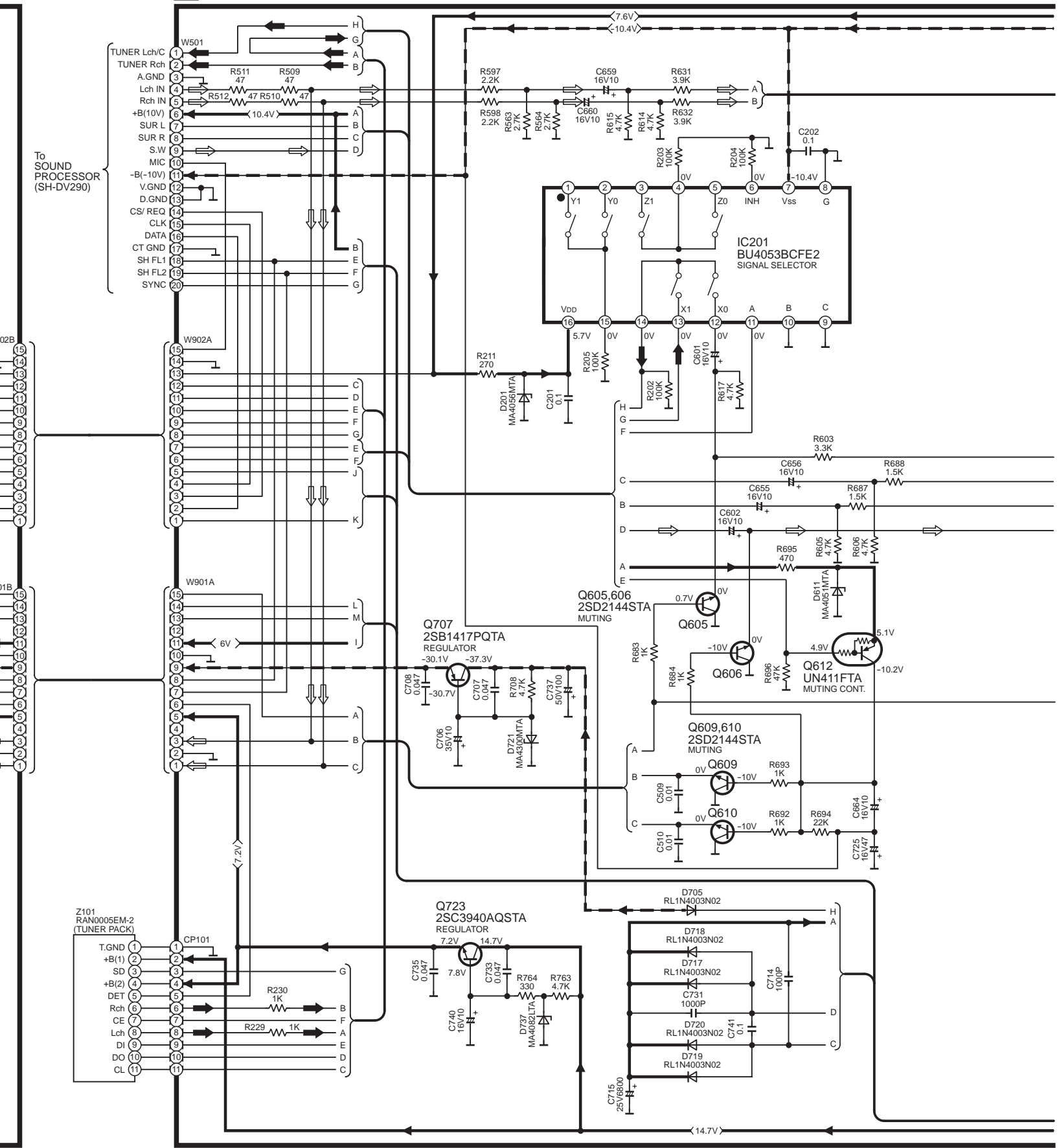


TUNER Lch
TUNER Rch
 A.GN
 Lch L
 Rch
 +B(10)
 SUR
 SUR
 SUR
 S.
 M
 -B(-10)
 V.GN
 D.GN
 CS/RE
 CT
 DA
 CT GN
 SH F
 SH F
 SYN

To SOUND PROCESSOR (SH-DV290)

Z101 RAN0005EM-2 (TUNER PACK)
 T.GND (1)
 +B(1) (2)
 SD (3)
 +B(2) (4)
 DET (5)
 Rch (6)
 CE (7)
 Lch (8)
 DI (9)
 DO (10)
 CL (11)

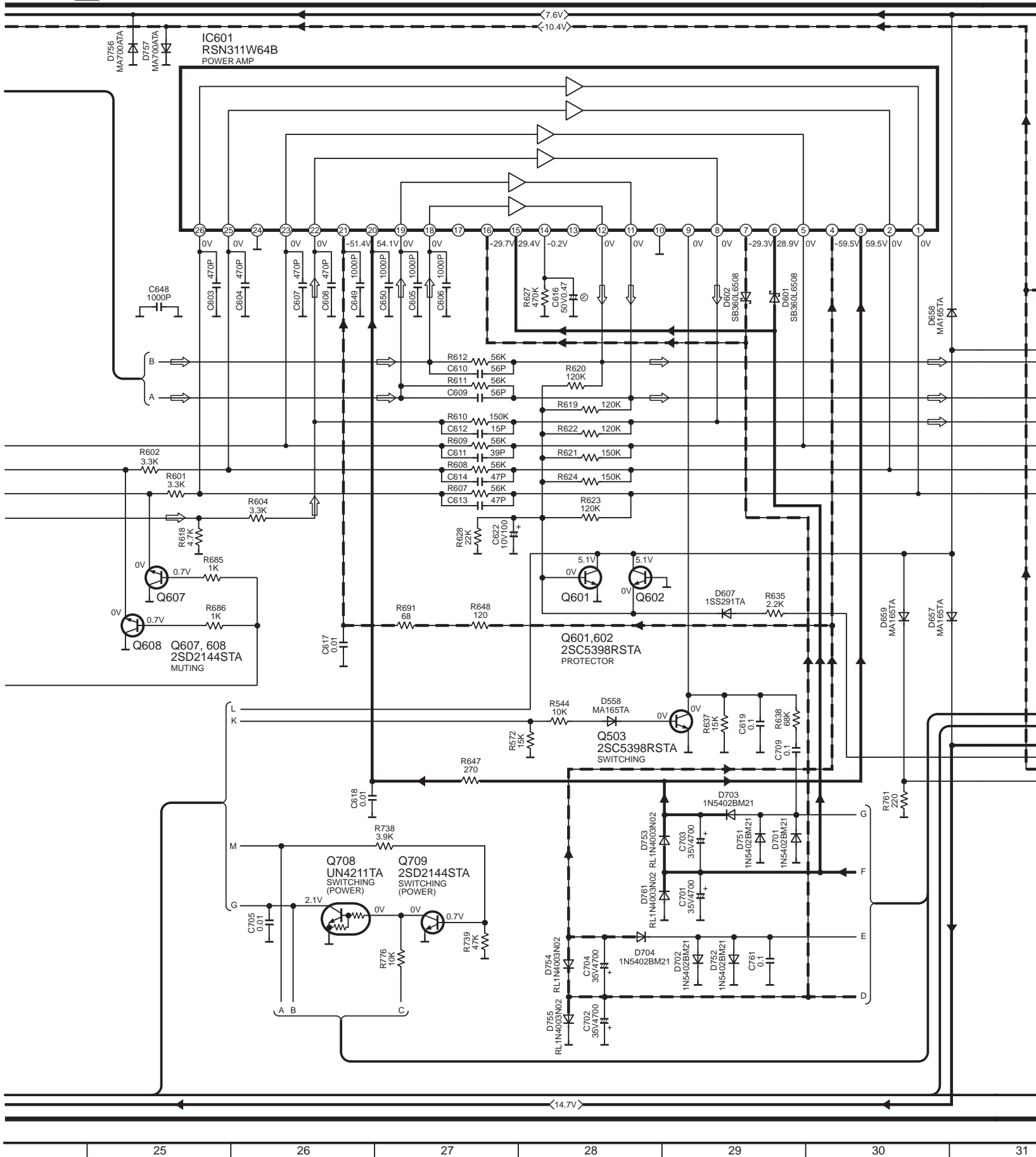
B MAIN CIRCUIT

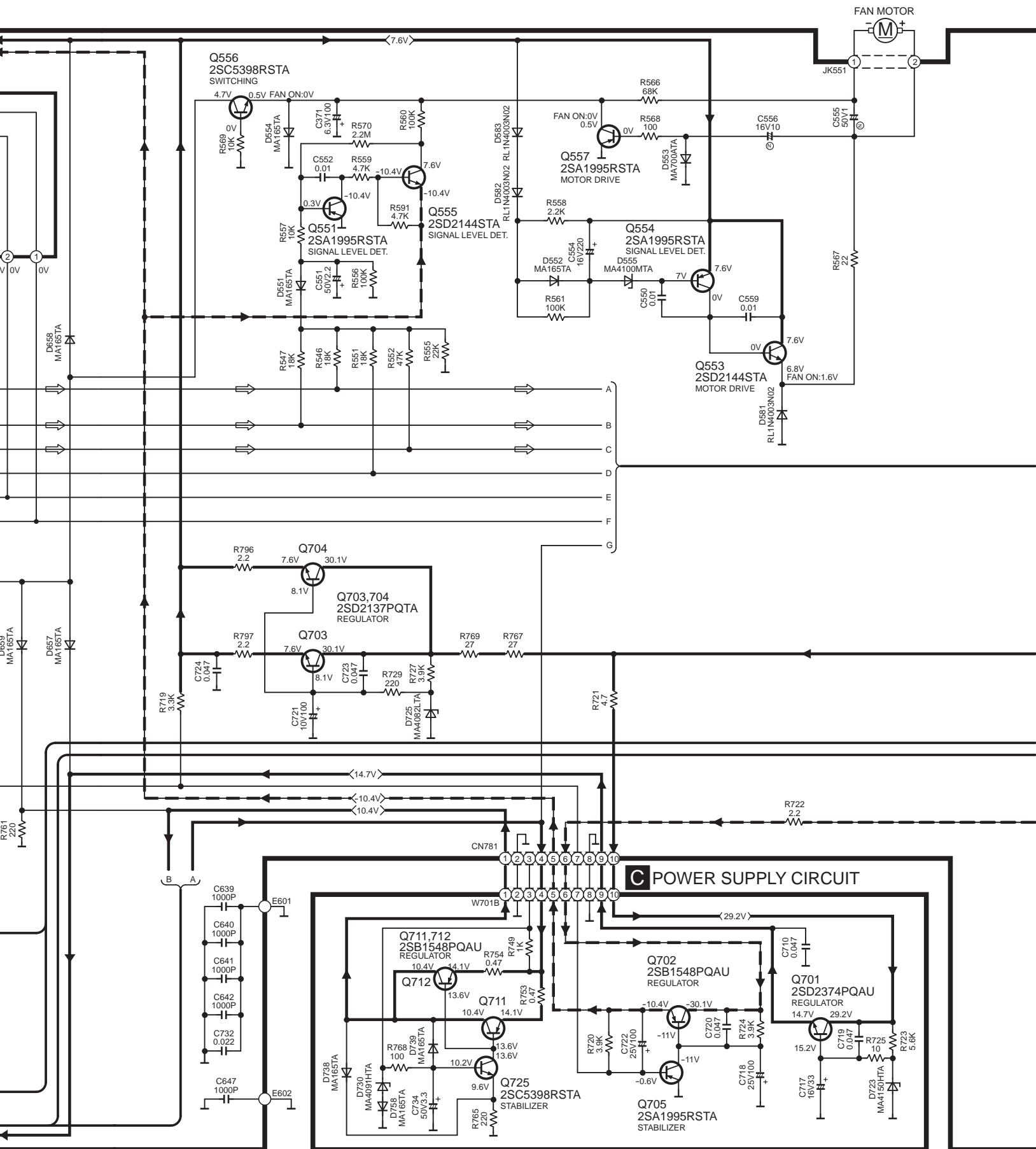


SA-DV290(E,EB,EG) OPERATION, MAIN CIRCUIT DIAGRAM

B MAIN CIRCUIT




: POSITIVE VOLTAGE LINE
 : NEGATIVE VOLTAGE LINE : AUDIO SIGNAL LINE

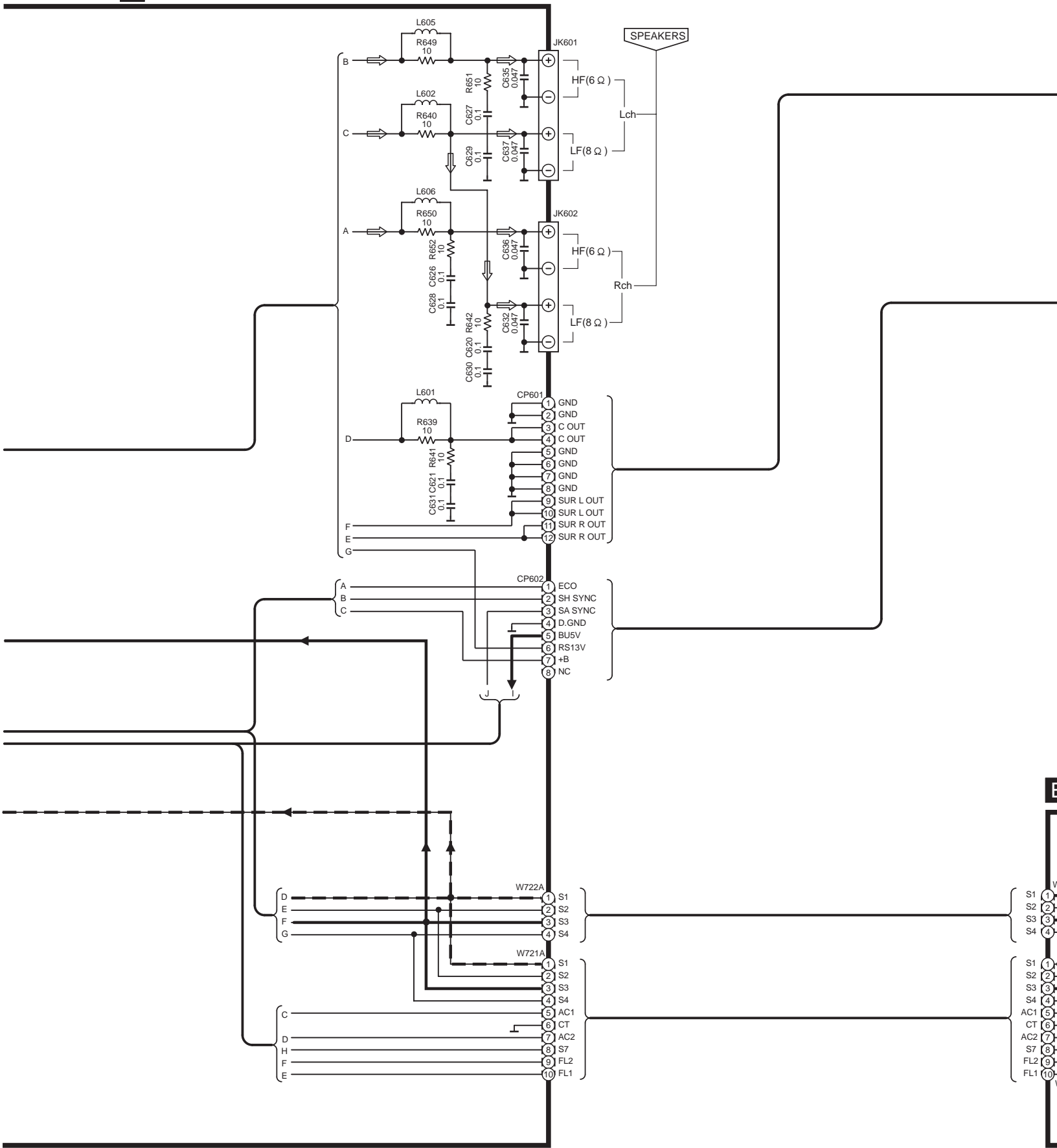




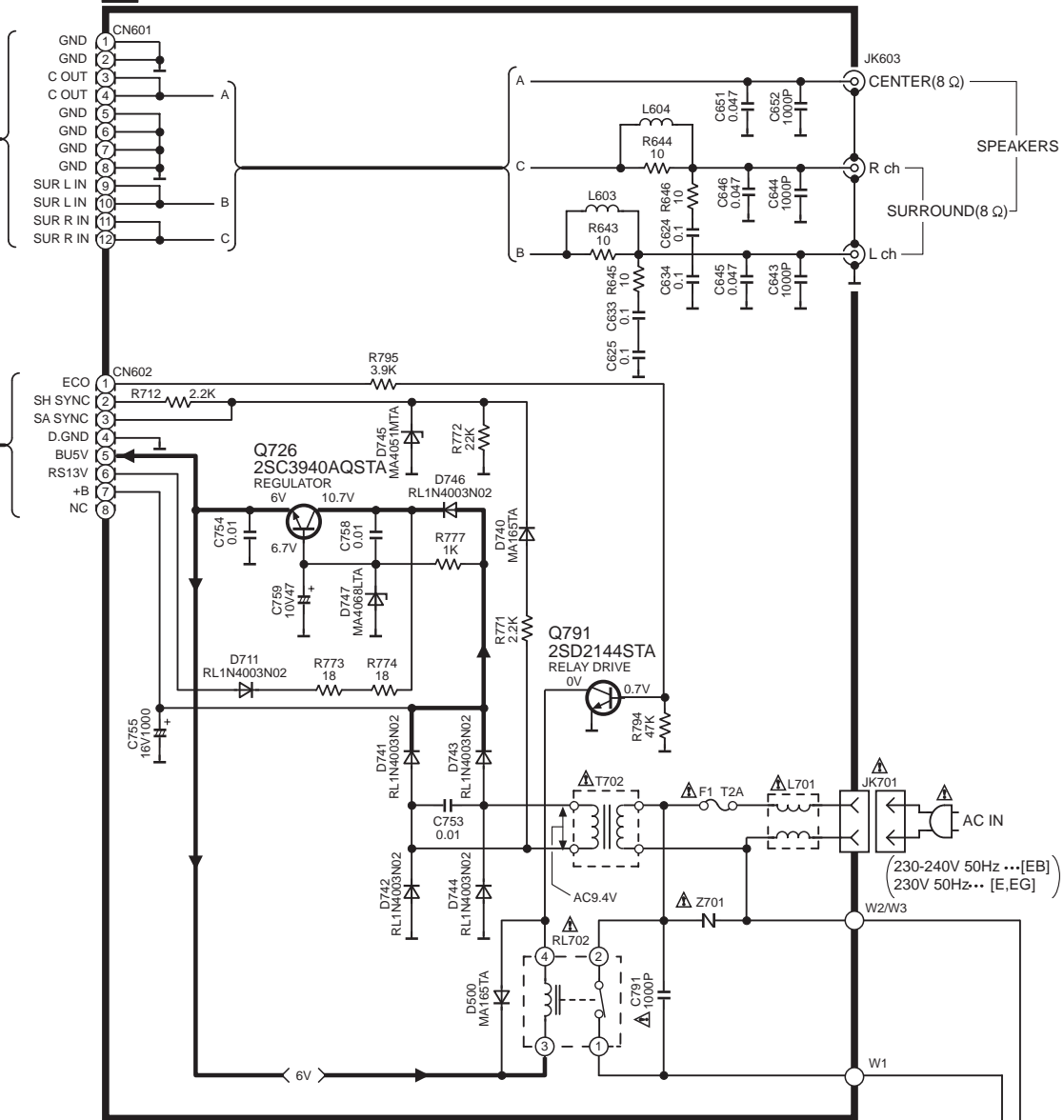
SA-DV290(E,EB,EG) MAIN POWER SUPPLY CIRCUIT DIAGRAM

B MAIN CIRCUIT

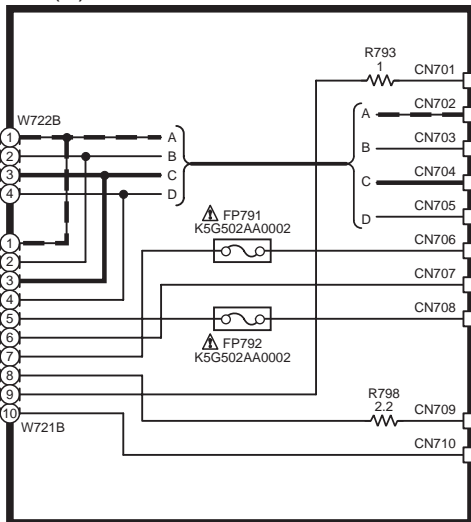
 : POSITIVE VOLTAGE LINE
 : NEGATIVE VOLTAGE LINE  : AUDIO SIGNAL LINE



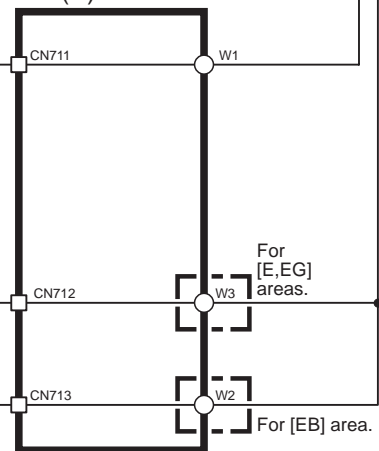
D AC IN CIRCUIT



E POWER TRANSFORMER (A) CIRCUIT



F POWER TRANSFORMER (B) CIRCUIT



SA-DV290(E,EB,EG) MAIN, AC IN, POWER TRANSFORMER(A)&(B) CIRCUIT DIAGRAM

H

G

F

E

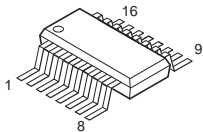
D

C

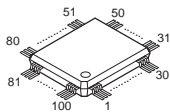
B

A

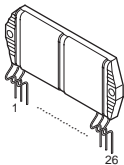
BU4053BCFE2
C1BB00000527



C2BBFD000404



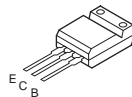
RSN311W64B



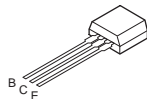
UN411FTA
UN4211TA
UN4212TA



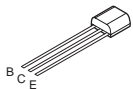
2SB1417PQTA
2SD2137PQTA



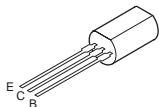
2SD2144STA



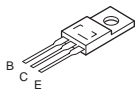
2SA1995RSTA
2SC5398RSTA



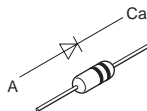
2SC3940AQSTA



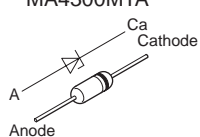
2SB1548PQAU
2SD2374PQAU



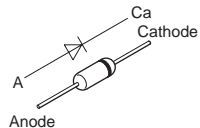
1SS291TA
MA700ATA



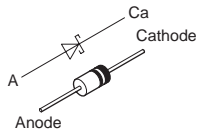
MA4100MTA
MA4150HTA
MA4300MTA



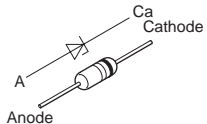
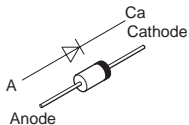
MA165TA



SB360L6508

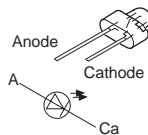


1N5402BM21
RL1N4003N02

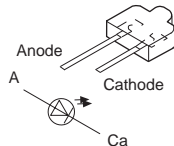


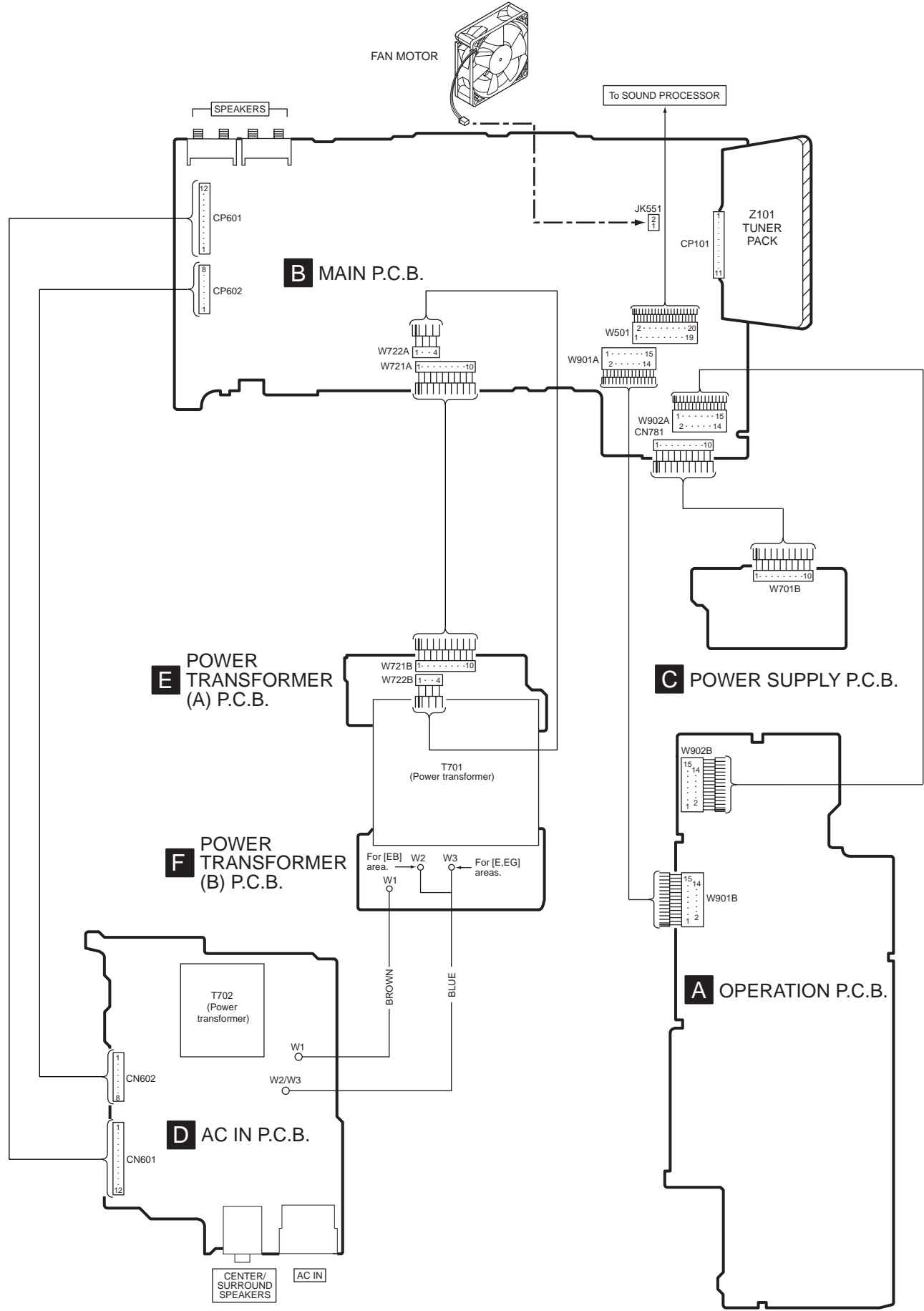
MA4030MTA
MA4051MTA
MA4056MTA
MA4068LTA
MA4075MTA
MA4082LTA
MA4091HTA

LNJ301MPUJAD



SELS5223C
SELS5923C





(For United Kingdom)

("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 OF 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

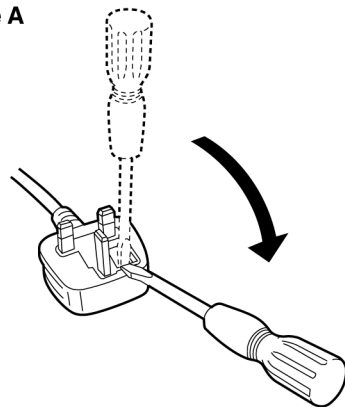
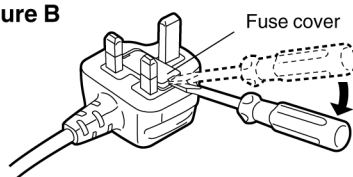


Figure B



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

Figure A

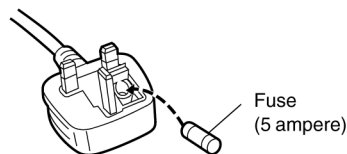
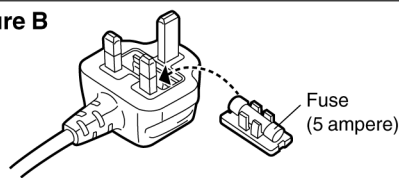
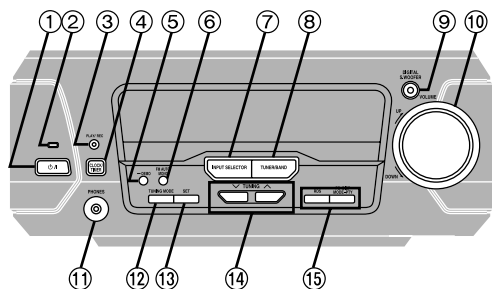
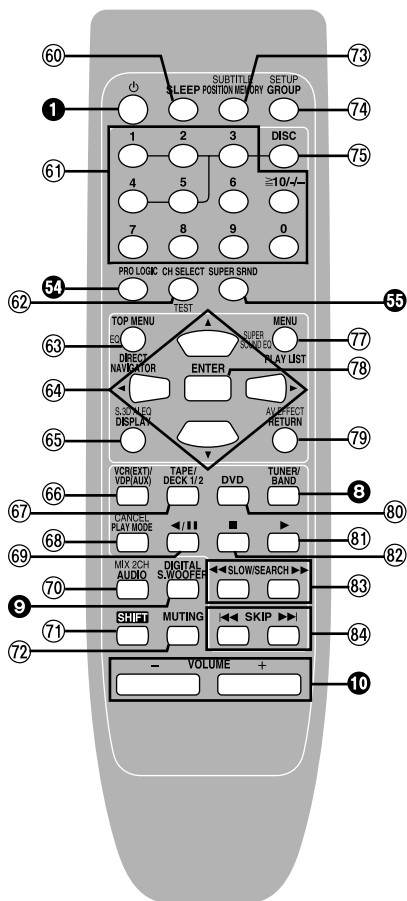


Figure B

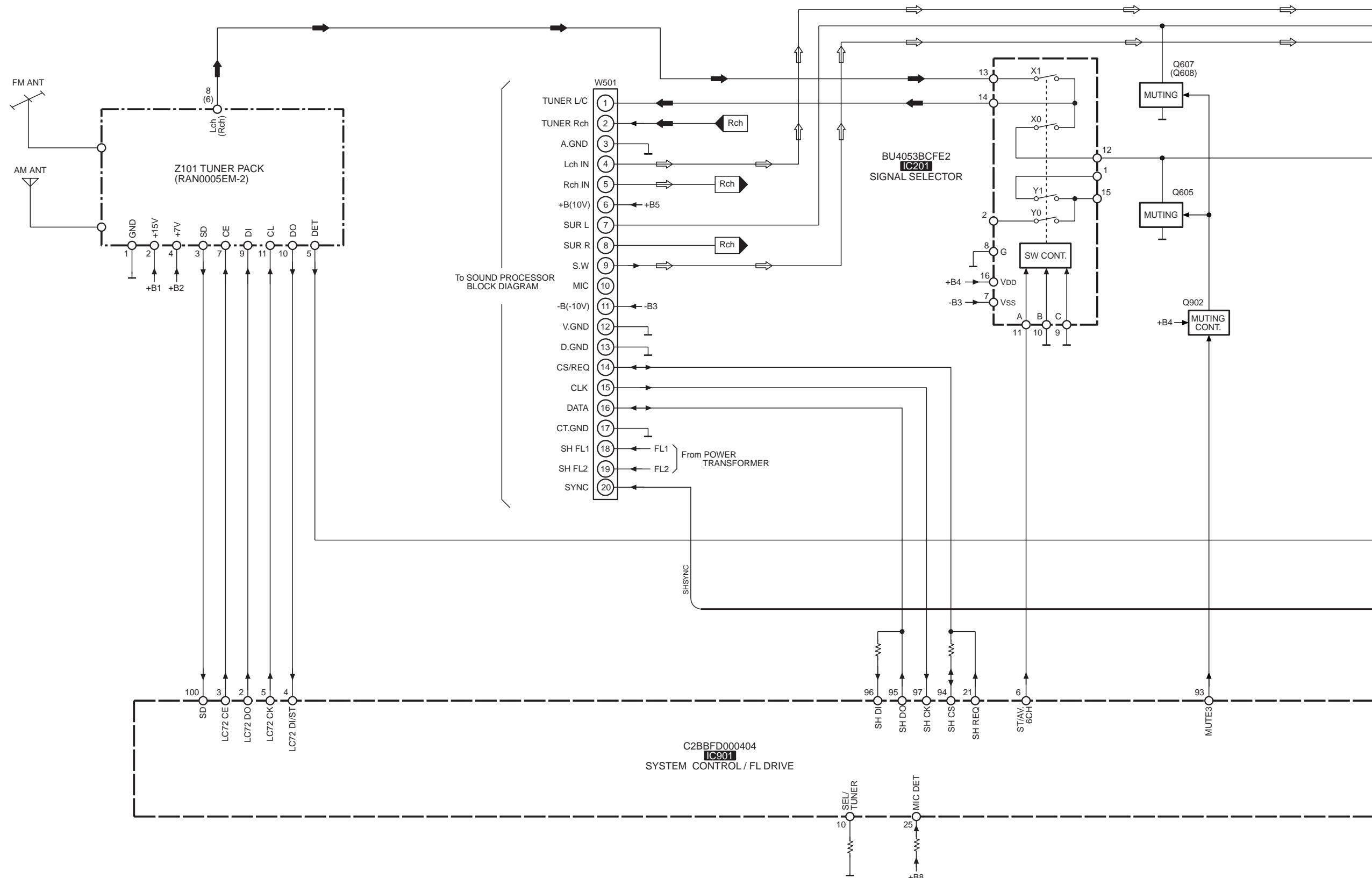


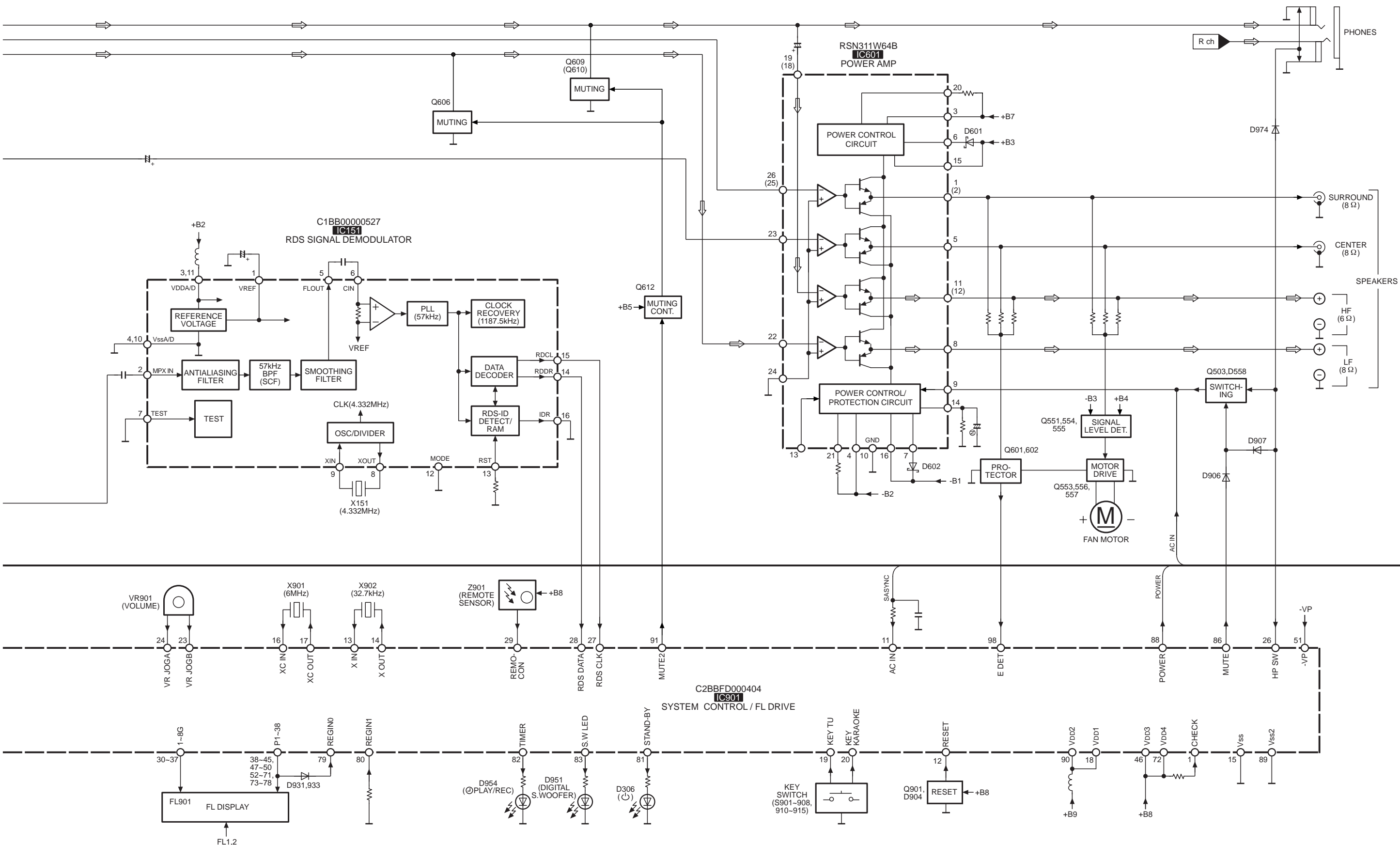
A**A Stereo tuner/amplifier**

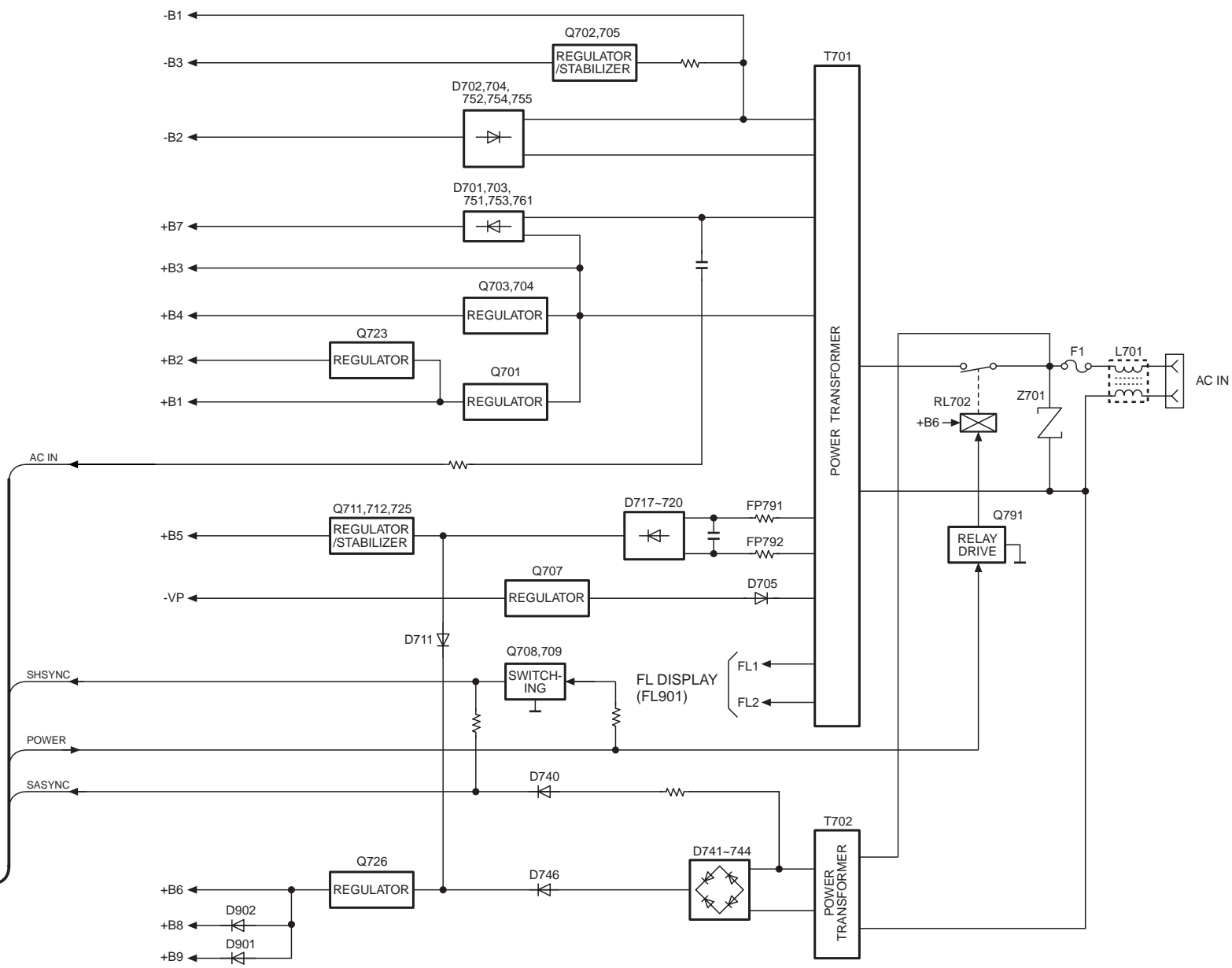
- ① **Standby/on switch (⏻/⏻)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- ② **Standby indicator (⏻)**
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.
- ③ **Play timer/record timer button and indicator (⏻/⏻)**
(⏻ PLAY/⏻ REC)
- ④ **Clock/timer button (CLOCK/TIMER)**
- ⑤ **Demo button (-DEMO)**
- ⑥ **FM mode button (FM AUTO/MONO)**
- ⑦ **Source input button (INPUT SELECTOR)**
- ⑧ **Tuner/band button (TUNER/BAND)**
- ⑨ **Digital super woofer button and indicator (DIGITAL S.WOOFER)**
- ⑩ **Volume control (VOLUME)**
- ⑪ **Headphone jack (PHONES)**
- ⑫ **Tuning mode button (TUNING MODE)**
- ⑬ **Set button (SET)**
- ⑭ **Tuning buttons (∇, ▲ TUNING)**
- ⑮ **RDS display mode button (RDS, PS-DISP MODE-PTY)**

B**B Remote control**

- Buttons ①, ③, ⑨, ⑩, ⑤④ and ⑤⑤ function in the same way as the controls on the main unit.
- ⑥① **Sleep timer button (SLEEP)**
 - ⑥② **Numbered buttons (1-9, 0, ≧10/-/-)**
 - ⑥③ **Channel select, Test signal button (CH SELECT, TEST)**
 - ⑥④ **Top menu, Direct navigator, EQ button (TOP MENU, DIRECT NAVIGATOR, EQ)**
 - ⑥⑤ **Cursor buttons (◀, ▶, ▲, ▼)**
 - ⑥⑥ **Display, Super 3D AI EQ button (DISPLAY, S.3D AI EQ)**
 - ⑥⑦ **Input select button [VCR (EXT)/VDP (AUX)]**
 - ⑥⑧ **Tape select, deck 1/deck 2 select button (TAPE/DECK 1/2)**
 - ⑥⑨ **Play mode, Cancel button (PLAY MODE, CANCEL)**
 - ⑦① **Disc pause, Tape reverse play button (⏻/⏻)**
 - ⑦② **Audio select, 2 channel down mixing button (AUDIO, MIX 2CH)**
 - ⑦③ **Shift button (SHIFT)**
To operate functions labeled in orange, press [SHIFT] and then the corresponding button at the same time.
 - ⑦④ **Muting button (MUTING)**
 - ⑦⑤ **Position memory, Subtitle select button (POSITION MEMORY, SUBTITLE)**
 - ⑦⑥ **Group, Initial setting button (GROUP, SETUP)**
 - ⑦⑦ **Disc button (DISC)**
 - ⑦⑧ **Menu, Play list, Super sound EQ button (MENU, PLAY LIST, SUPER SOUND EQ)**
 - ⑦⑨ **Enter button (ENTER)**
 - ⑦⑩ **Return, AV effect button (RETURN, AV EFFECT)**
 - ⑦⑪ **DVD button (DVD)**
 - ⑦⑫ **Disc play, Tape forward play button (▶)**
 - ⑦⑬ **Disc stop, Tape stop button (■)**
 - ⑦⑭ **Disc slow/search buttons (◀◀, ▶▶ SLOW/SEARCH)**
 - ⑦⑮ **Disc skip buttons (◀◀◀, ▶▶▶ SKIP)**







NOTES : ● SIGNAL LINE
 ⇄ : AUDIO SIGNAL
 → : TUNER SIGNAL
 ● () indicates pin No. Right channel.