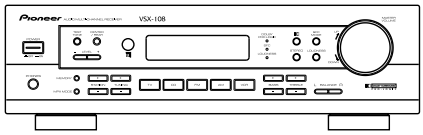
Service Manual



ORDER NO.
RRV2146

AUDIO MULTI - CHANNEL RECEIVER

VSX-108

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	VSX-108		
KUXCN	◯	AC120V	

CONTENTS

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
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PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
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T – IZE OCT. 1999 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

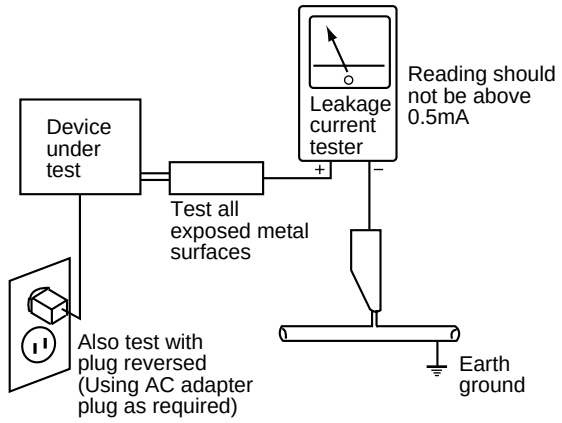
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

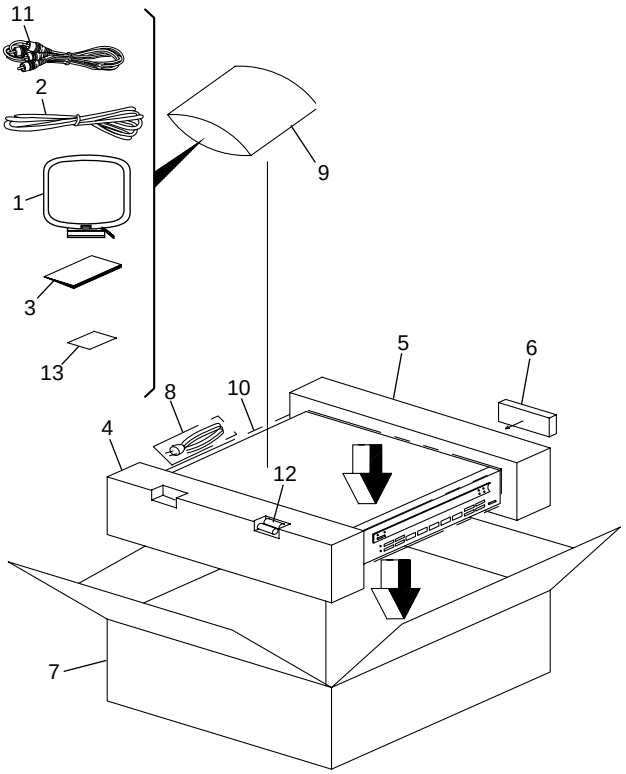
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

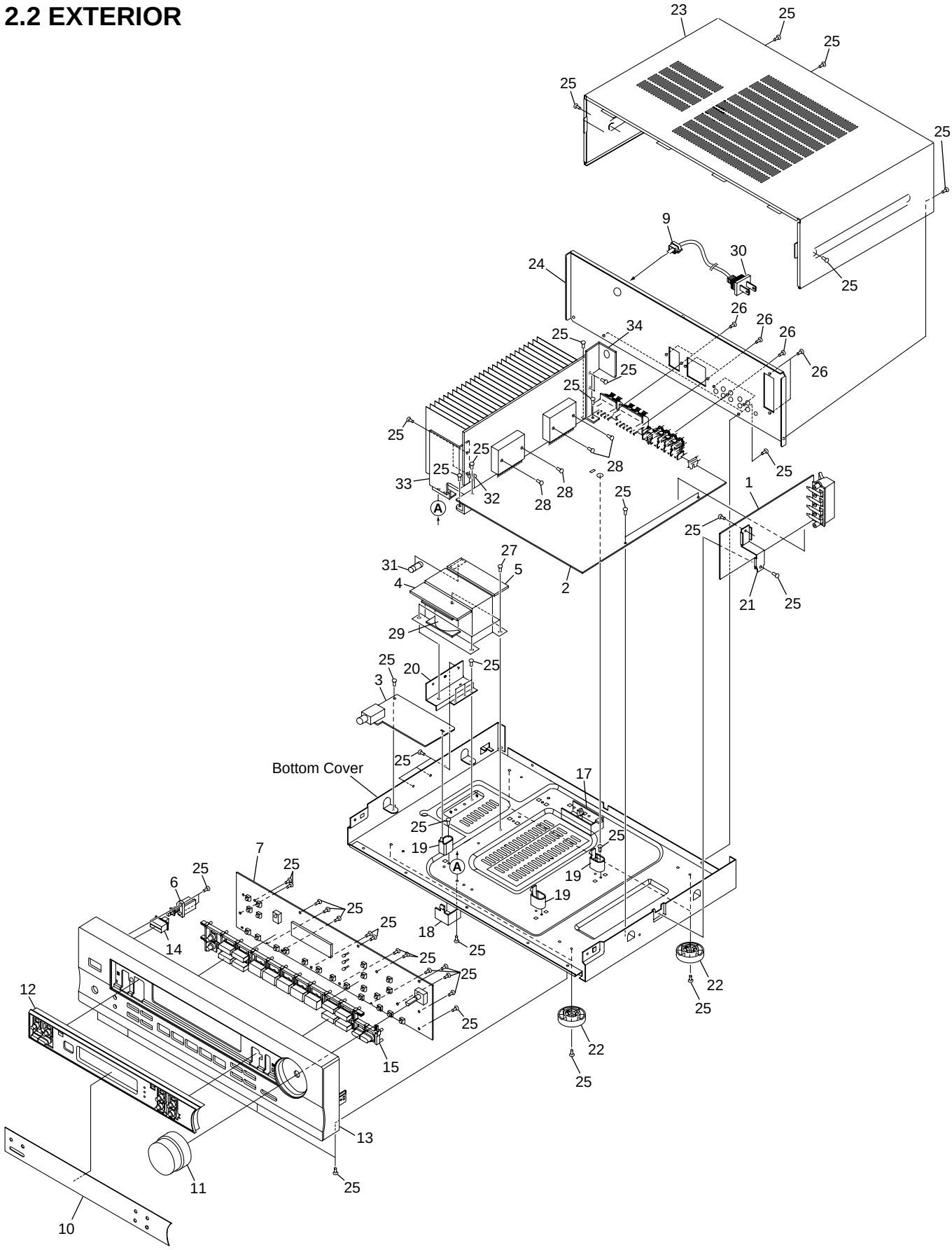
2.1 PACKING



● PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	AM Loop Antenna	01582100001S
	2	FM Antenna	06410001003S
	3	Operating Instructions (English)	152010801297
	4	Polyform L	14901081000S
	5	Polyform R	14901082000S
	6	Remote Control Unit	18201080001S
	7	Carton Box	153010820297
	8	Poly. Bag (4 × 20)	15004011210S
	9	Poly. Bag (10 × 15)	15010015510S
	10	Poly. Bag (20 × 26)	15020026510S
NSP	11	RCA Cable	• • • • •
NSP	12	Dry Cell Battery (LR6, AA)	• • • • •
NSP	13	Warranty Card	• • • • •

2.2 EXTERIOR

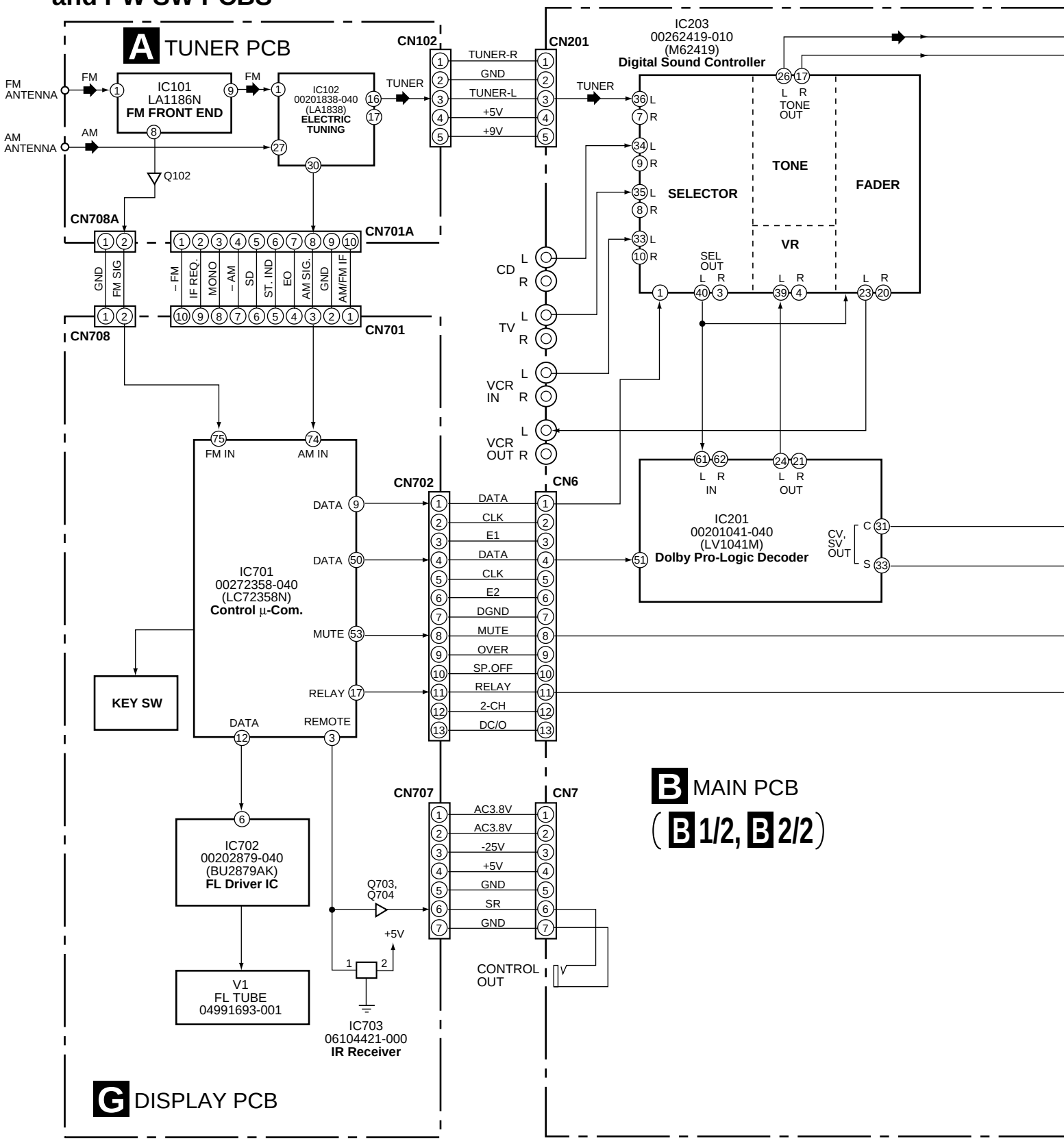


● EXTERIOR PARTS LIST

Mark	No.	Description	Part No.
NSP	1	TUNER PCB (Circuit Parts Assy)	AZW7259
NSP	2	MAIN PCB (Circuit Parts Assy)	AZW7259
NSP	3	PHONE PCB (Circuit Parts Assy)	AZW7259
NSP	4	AC O/P PCB (Circuit Parts Assy)	AZW7259
NSP	5	AC I/P PCB (Circuit Parts Assy)	AZW7259
NSP	6	PW SW PCB (Circuit Parts Assy)	AZW7259
NSP	7	DISPLAY PCB (Circuit Parts Assy)	AZW7259
	8	• • • • •	
	9	AC Cord Stopper	13000000001S
	10	Display Lens	11701080101S
	11	Volume Knob	12701081010S
	12	Front Panel	10801080010S
	13	Front Cabinet	10101080001AS
	14	Power Button	12801080001S
	15	Function Button	12801082001S
	16	• • • • •	
	17	Mounting Bracket A	12901089000S
	18	Mounting Bracket B	12901089100S
	19	PCB Holder	13001082000S
	20	Mounting Holder	13301082310S
	21	PCB Mounting Bracket	13301083310S
	22	Insullator	13821007010S
	23	Top Cover	18001083010S
	24	Rear Cover	18001085101S
	25	Screw	BBZ30P080FZK
	26	Screw	BBZ30P100FZK
	27	Screw	FBT40P080FZK
	28	Screw	14453016202S
⚠	29	Power transformar (AC120V)	01801088522S
⚠	30	AC Power Cord	02360040009S
⚠	31	Fuse (F801 : 4A/250V)	05005020402S
NSP	32	Metal Washer	• • • • •
NSP	33	PCB Mounting Bracket	• • • • •
NSP	34	Heatsink Mounting Bracket	• • • • •

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

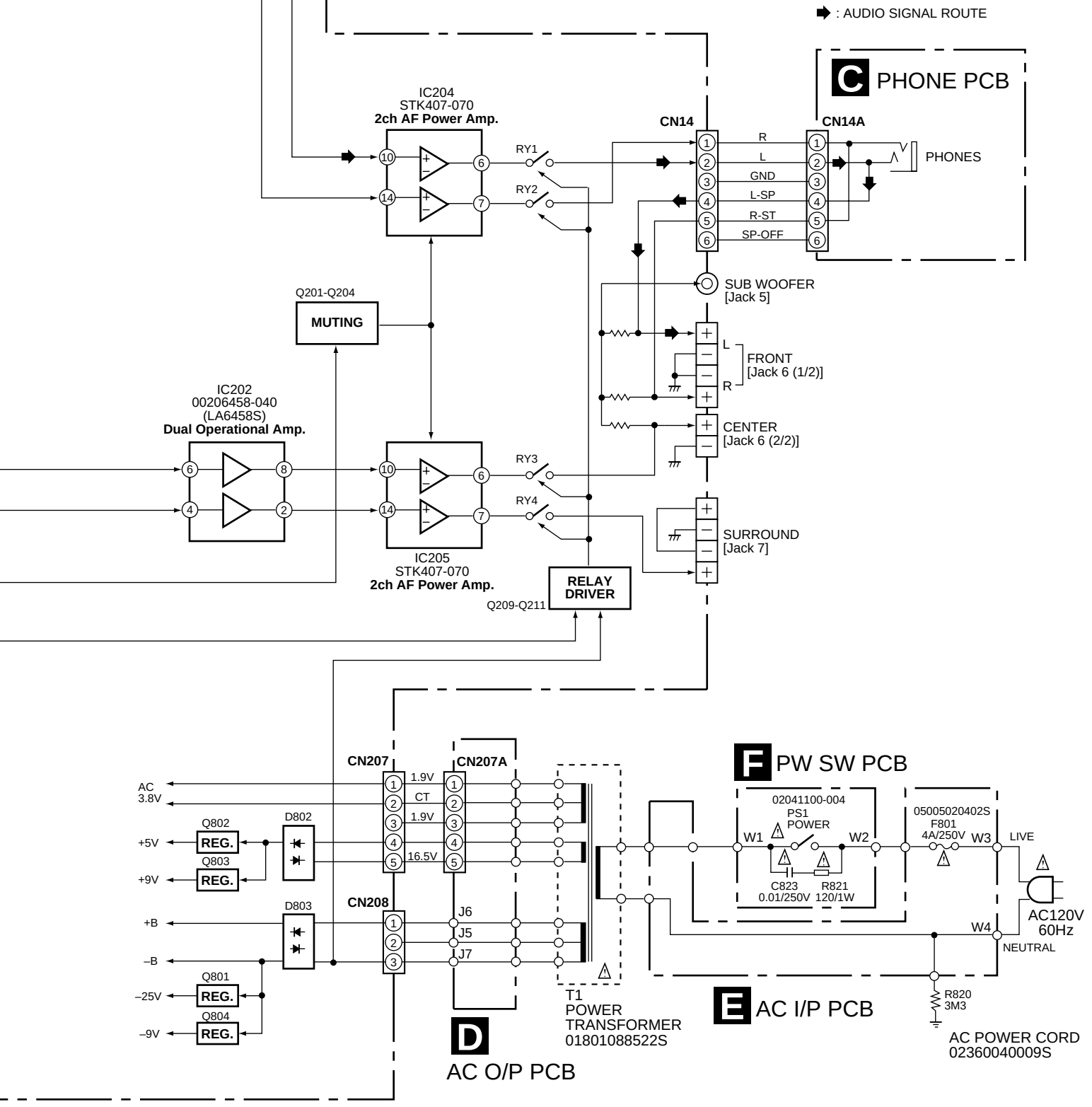
3.1 BLOCK DIAGRAM, OVERALL WIRING DIAGRAM, AC O/P, AC I/P and PW SW PCBS



Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

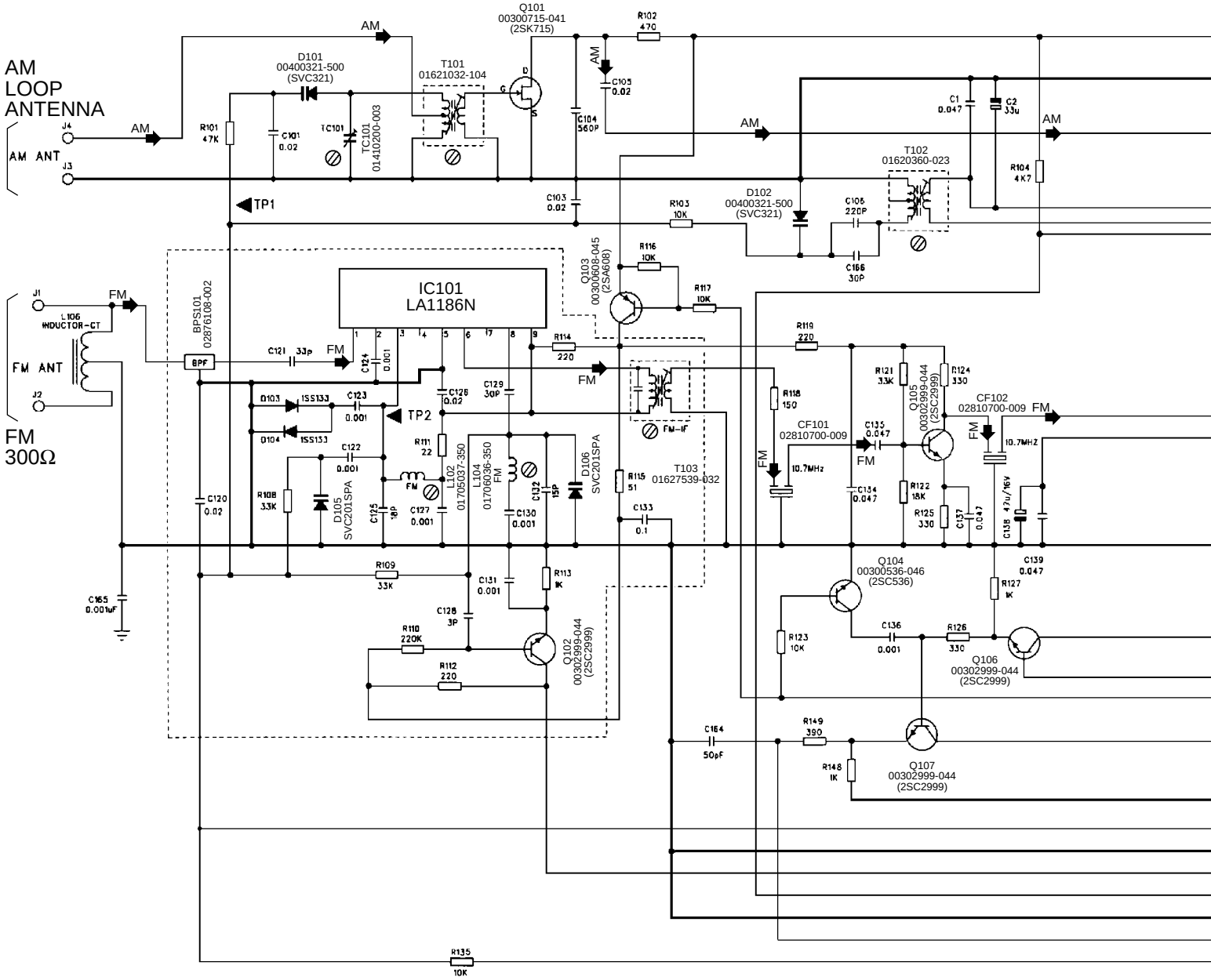
• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.



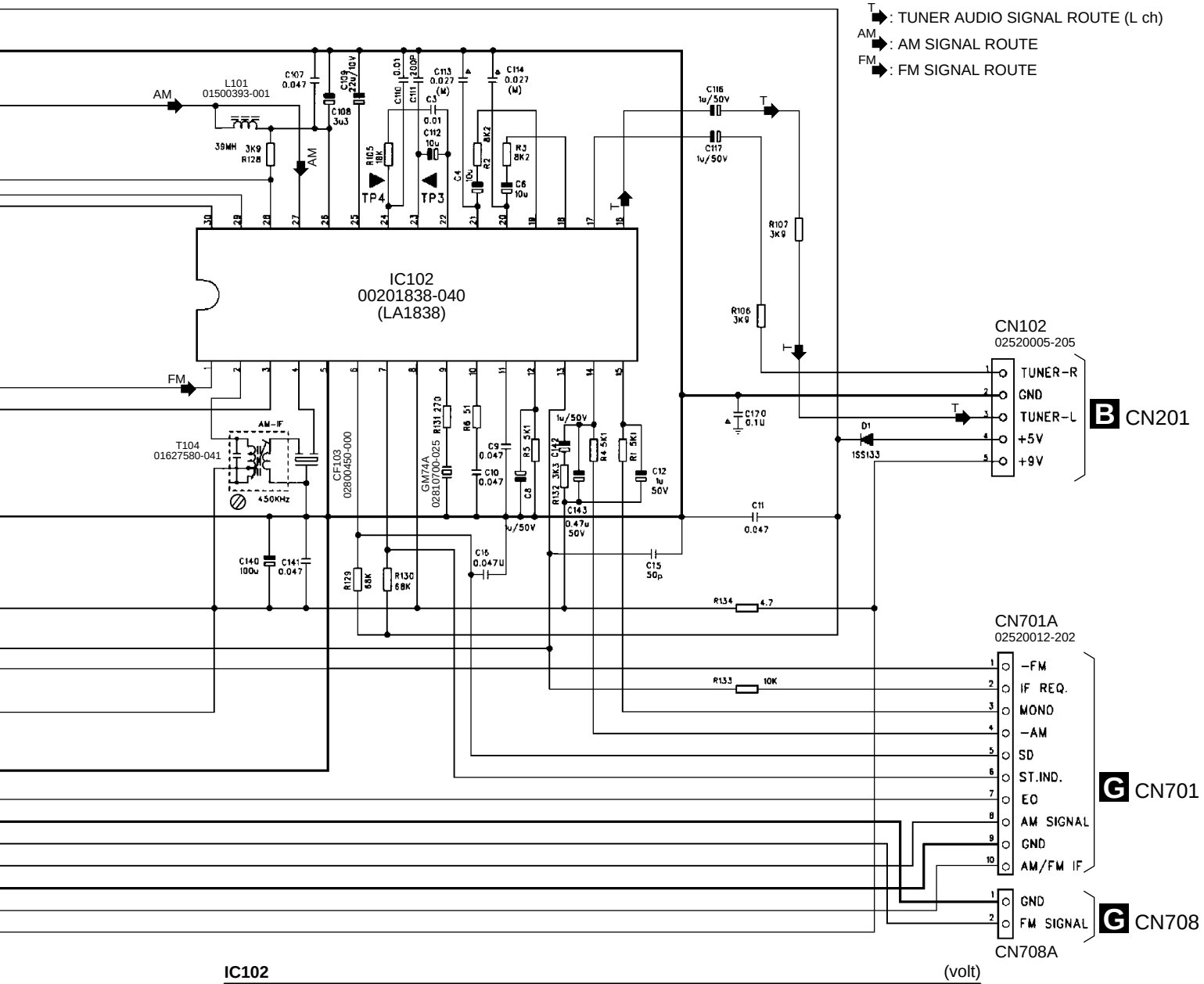
3.2 TUNER PCB

A TUNER PCB



IC101 (volt)

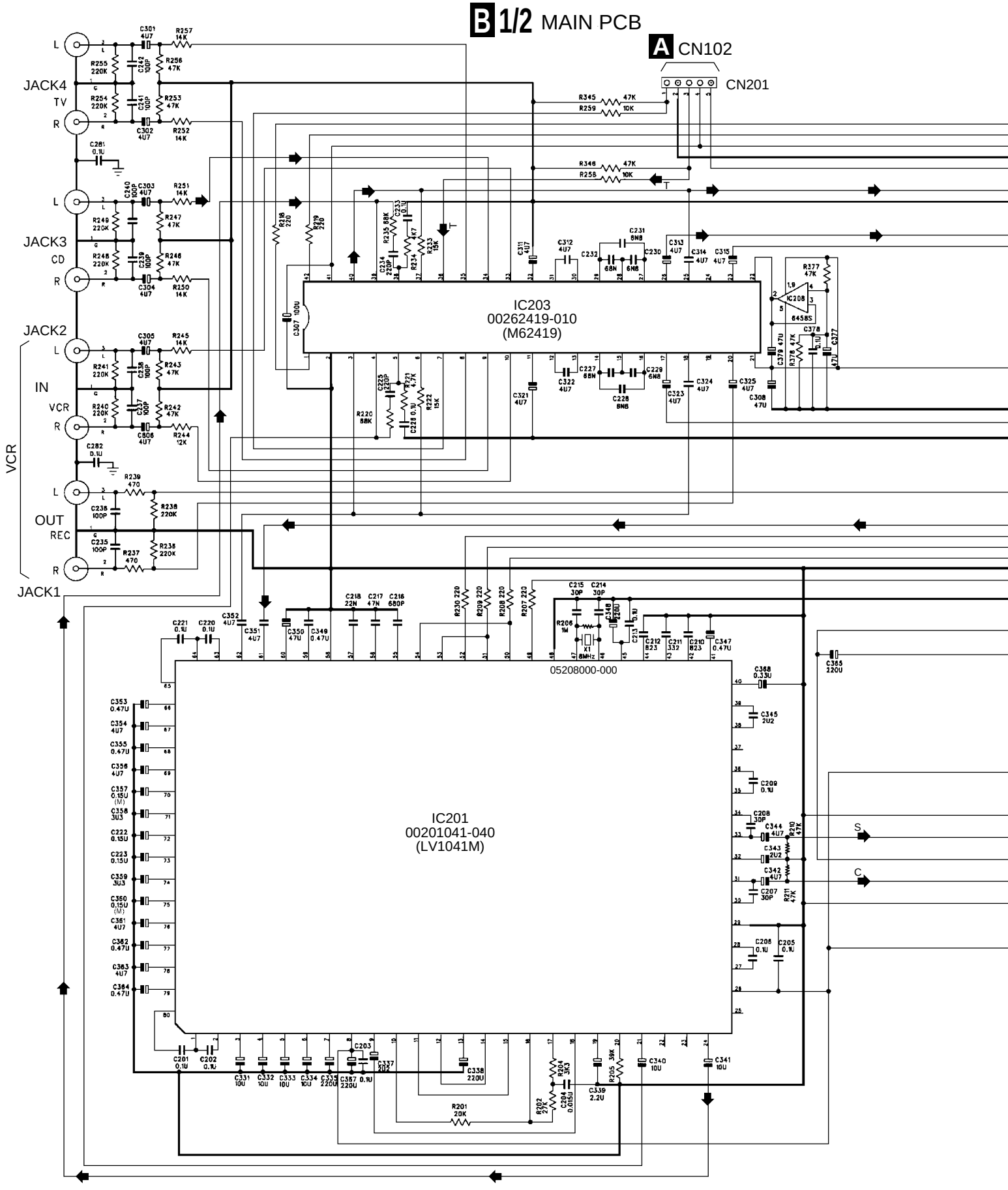
	1	2	3	4	5	6	7	8	9
AM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FM	0.9	1.5	4.8	0.0	0.0	4.8	0.0	4.0	4.8

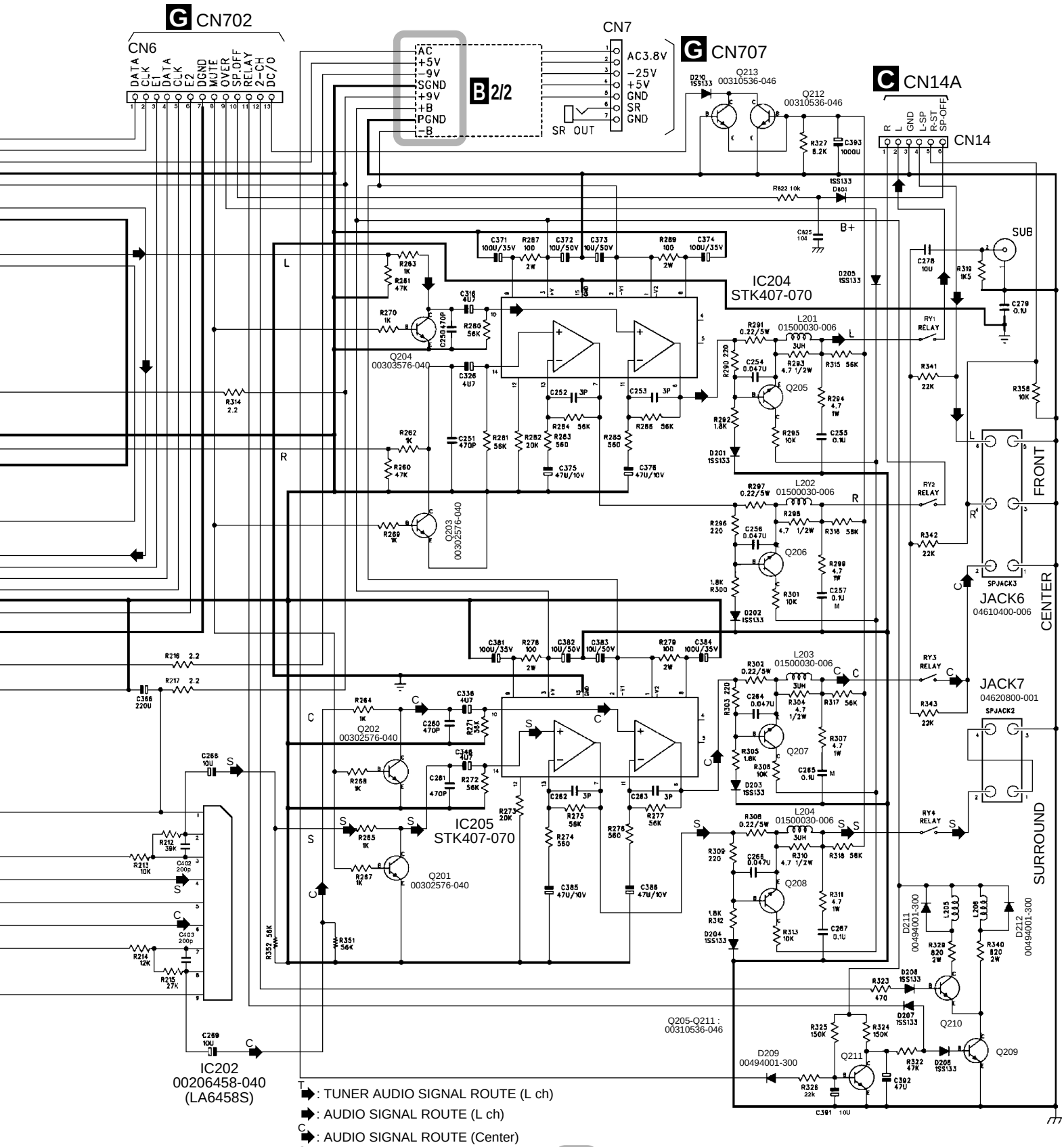


IC102 (volt)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AM	3.8	13.0	3.8	3.8	0.0	5.1	5.1	13.0	2.3	1.6	0.0	0.0	0.0	8.0	12.0
FM	3.8	13.0	3.8	3.8	0.0	4.9	4.9	13.0	2.3	1.6	0.4	0.0	0.0	12.0	12.0
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
AM	4.5	4.5	4.5	4.5	3.5	3.5	2.8	0.0	0.6	0.5	3.8	3.8	3.8	3.8	2.0
FM	4.5	4.5	4.5	4.5	3.5	3.5	2.8	3.0	0.0	0.0	4.2	4.0	3.8	3.8	2.2

3.3 MAIN PCB (1/2)

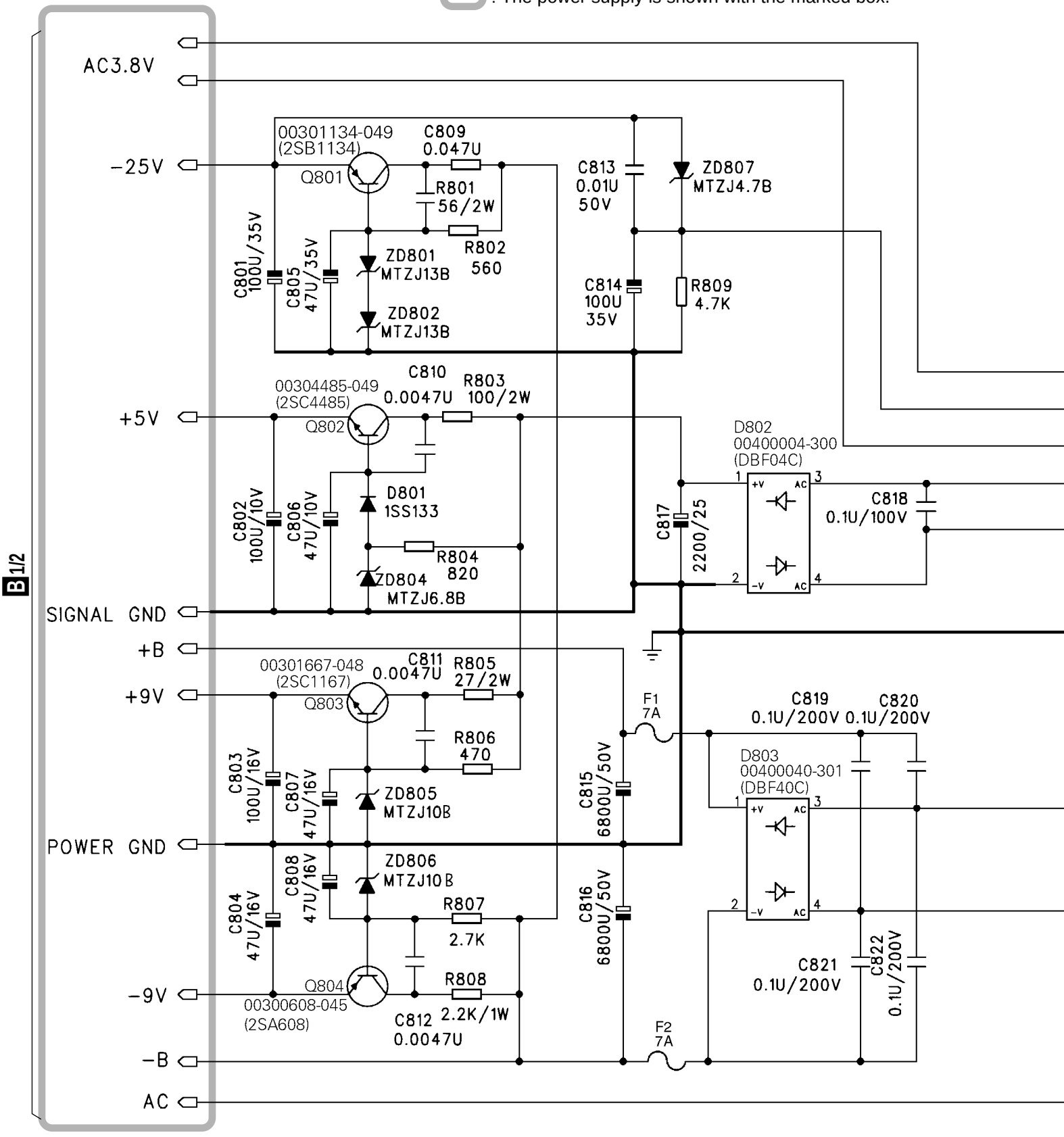


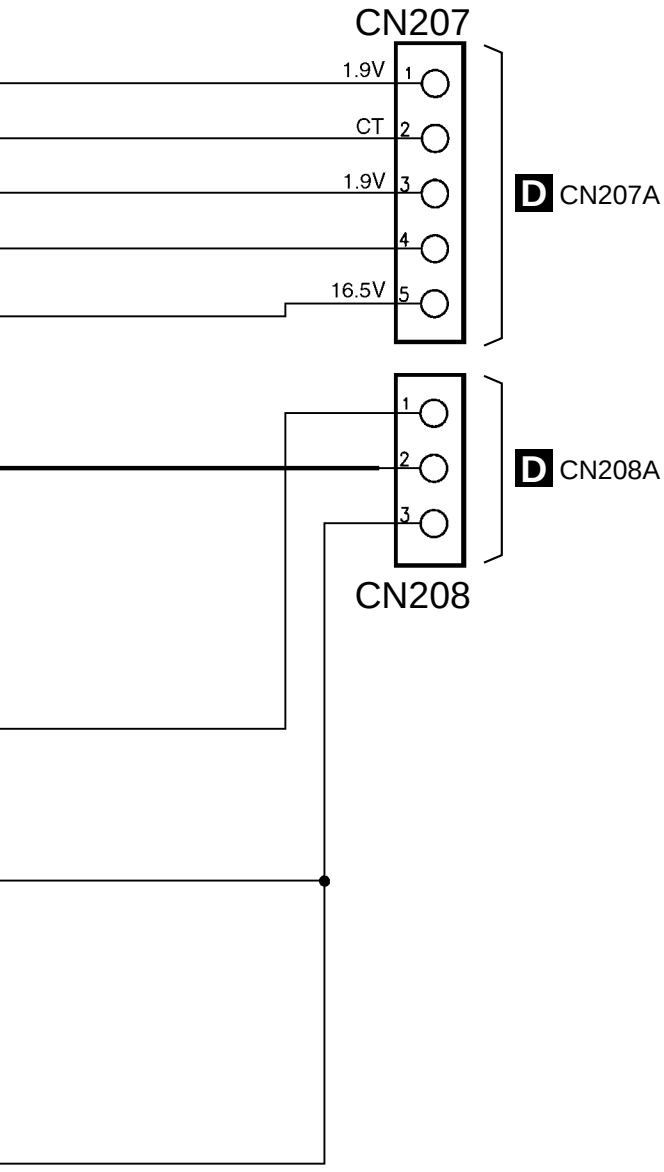

G CN702
CN6
DATA CLK E1 DATA CLK E2 DGND MUTE OVER SP.OFF RELAY 2-CH DC/O
B 2/2
AC +5V −9V SGND +9V +B PGND −B
CN7
AC3.8V −25V +5V GND SR GND
SR OUT
G CN707
C CN14A
R L GND L-SP R-ST SP-OFF
CN14
Q213 00310536-046
Q212 00310536-046
D210 1SS133
R327 8.2K
C393 1000U
R822 10k
D804 1SS133
C825 104
B+
SUB
C278 10U
R319 1K5
C279 0.1U
IC204
STK407-070
C371 100U/35V
R287 100 2W
C372 10U/50V
C373 10U/50V
R289 100 2W
C374 100U/35V
D205 1SS133
L201 01500030-006
L202 01500030-006
L203 01500030-006
L204 01500030-006
RY1 RELAY
RY2 RELAY
RY3 RELAY
RY4 RELAY
FRONT
CENTER
SURROUND
JACK6
04610400-006
JACK7
04620800-001
SPJACK3
SPJACK2
Q204 00303576-040
Q205
Q206
Q207
Q208
Q202 00302576-040
Q201 00302576-040
Q203 00302576-040
IC205
STK407-070
IC202
00206458-040
(LA6458S)
Q205-Q211 : 00310536-046
D211 00494001-300
D212 00494001-300
D209 00494001-300
Q209
Q210
Q211
T: TUNER AUDIO SIGNAL ROUTE (L ch)
: AUDIO SIGNAL ROUTE (L ch)
C: AUDIO SIGNAL ROUTE (Center)
S: AUDIO SIGNAL ROUTE (Surround)
: The power supply is shown with the marked box.

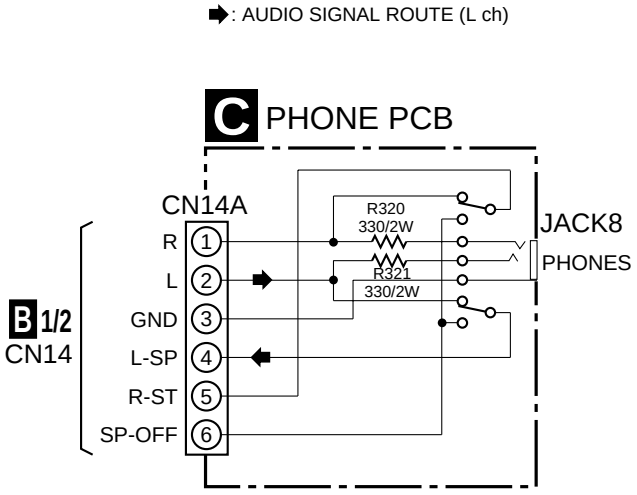
3.4 MAIN (2/2) and PHONE PCBS

B 2/2 MAIN PCB

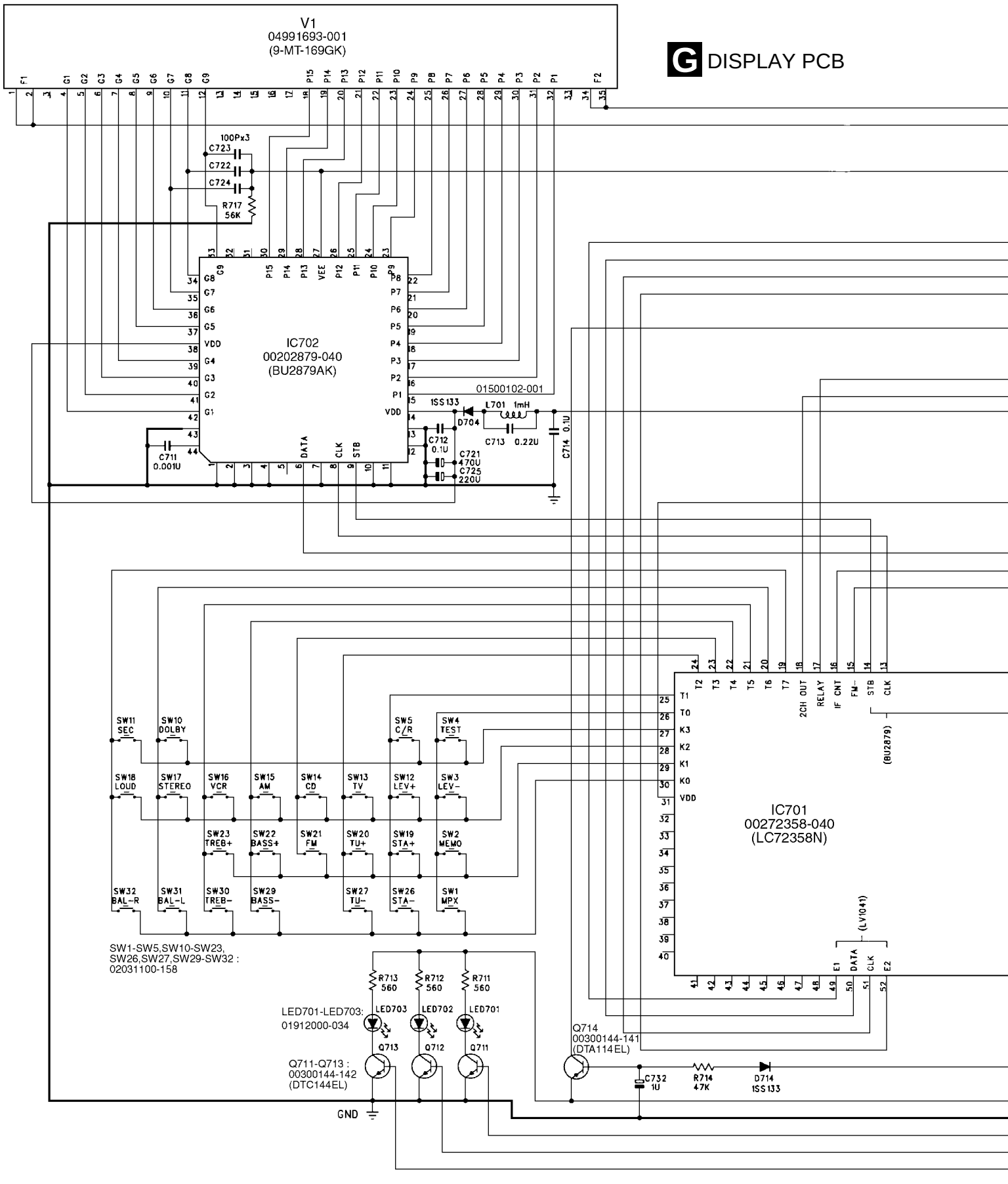
: The power supply is shown with the marked box.




CN207
1.9V
1
CT
2
1.9V
3
4
16.5V
5
D CN207A
1
2
3
D CN208A
CN208

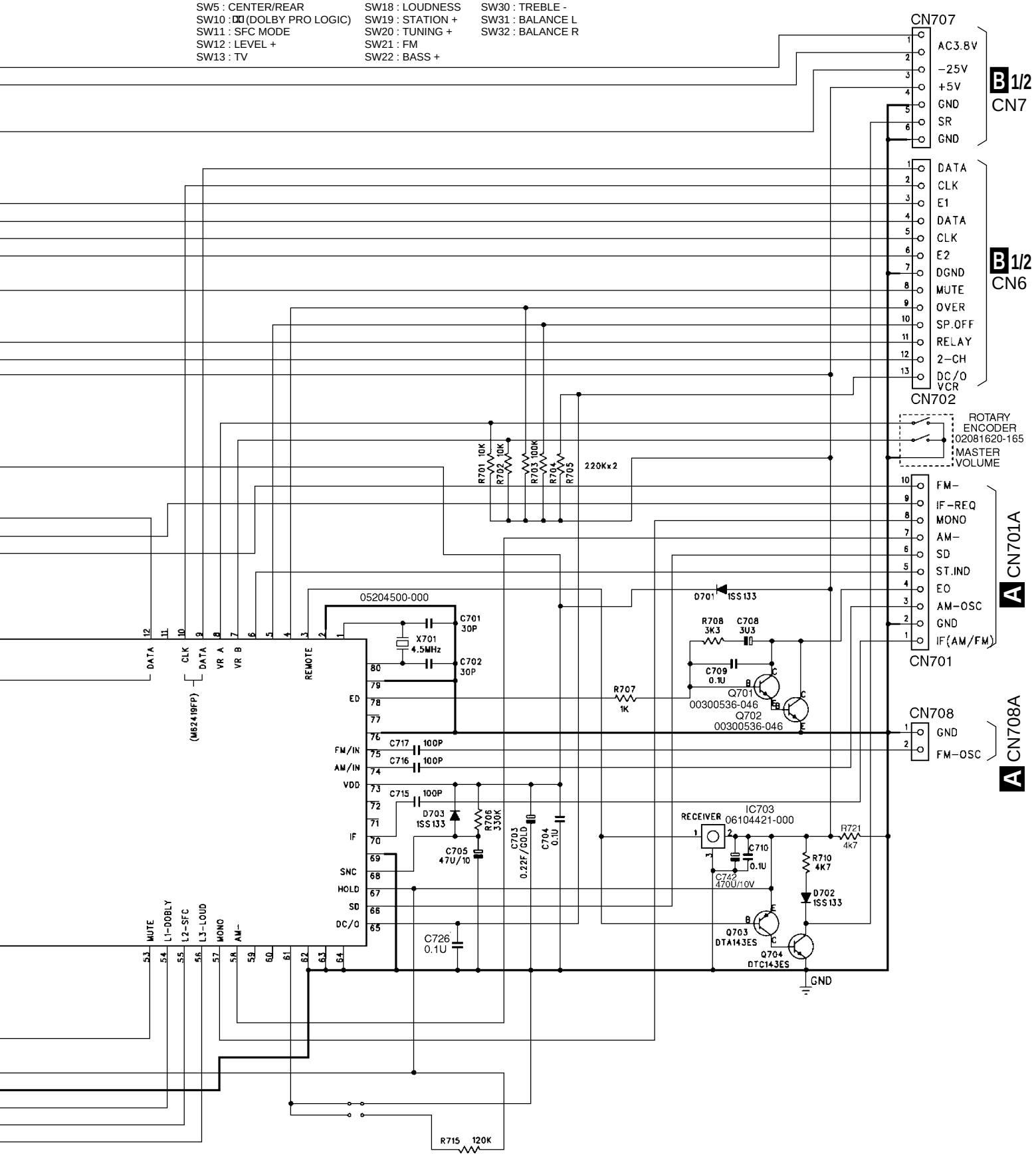

➡: AUDIO SIGNAL ROUTE (L ch)
C PHONE PCB
CN14A
R
L
GND
L-SP
R-ST
SP-OFF
1
2
3
4
5
6
B 1/2
CN14
R320
330/2W
R321
330/2W
JACK8
PHONES

3.5 DISPLAY PCB



DISPLAY PCB

SW1 : MPX MODE	SW14 : CD	SW23 : TREBLE +
SW2 : MEMORY	SW15 : AM	SW26 : STATION -
SW3 : LEVEL -	SW16 : VCR	SW27 : TUNING -
SW4 : TEST MODE	SW17 : STEREO	SW29 : BASS -
SW5 : CENTER/REAR	SW18 : LOUDNESS	SW30 : TREBLE -
SW10 : □□(DOLBY PRO LOGIC)	SW19 : STATION +	SW31 : BALANCE L
SW11 : SFC MODE	SW20 : TUNING +	SW32 : BALANCE R
SW12 : LEVEL +	SW21 : FM	
SW13 : TV	SW22 : BASS +	



IC201

Pin	Voltage (V)	Pin	Voltage (V)
1	6.0	41	6.0
2	6.0	42	6.0
3	6.0	43	6.0
4	6.0	44	6.2
5	6.0	45	5.4
6	6.0	46	0.1
7	6.0	47	2.2
8	13.0	48	0.0
9	6.0	49	5.0
10	6.0	50	5.0
11	6.0	51	0.0
12	6.0	52	5.0
13	6.0	53	0.0
14	6.0	54	5.0
15	6.0	55	0.0
16	6.0	56	5.6
17	6.0	57	6.0
18	1.8	58	0.0
19	0.7	59	6.0
20	0.8	60	6.0
21	6.0	61	4.8
22	6.0	62	4.8
23	6.0	63	6.0
24	6.0	64	6.0
25	0.0	65	6.0
26	6.0	66	6.0
27	1.8	67	6.0
28	1.1	68	6.0
29	0.0	69	6.0
30	6.0	70	1.8
31	6.0	71	1.8
32	2.8	72	1.6
33	6.0	73	1.4
34	6.0	74	1.5
35	1.2	75	1.5
36	1.8	76	6.0
37	6.0	77	6.0
38	1.8	78	6.0
39	6.0	79	6.0
40	6.0	80	6.0

IC202

Pin	Voltage (V)
1	13.0
2	0.0
3	0.0
4	0.0
5	-9.5
6	0.0
7	0.0
8	0.0
9	13.0

IC203

Pin	Voltage (V)	Pin	Voltage (V)
1	0.0	22	6.0
2	0.0	23	6.0
3	6.0	24	6.0
4	5.5	25	5.5
5	0.1	26	6.0
6	6.0	27	6.0
7	6.0	28	6.0
8	5.0	29	6.0
9	5.0	30	6.0
10	6.0	31	6.0
11	6.0	32	2.8
12	6.0	33	6.0
13	6.0	34	6.0
14	6.0	35	1.2
15	6.0	36	1.8
16	6.0	37	6.0
17	6.0	38	1.8
18	5.5	39	6.0
19	6.0	40	6.0
20	6.0	41	6.0
21	13.0	42	6.0

IC204, IC205

Pin	Voltage (V)
1	-46.0
2	-46.0
3	46.0
4	0.0
5	0.0
6	0.0
7	0.0
8	-45.0
9	45.0
10	0.0
11	0.0
12	-44.0
13	0.0
14	0.0
15	0.0

IC701

Pin	Voltage (V)		Pin	Voltage (V)	
	FM	AM		FM	AM
1	2.3	2.3	41	0.0	0.0
2	0.0	0.0	42	0.0	0.0
3	5.7	5.7	43	0.0	0.0
4	5.4	5.4	44	0.0	0.0
5	5.5	5.5	45	0.0	0.0
6	5.0	5.1	46	0.0	0.0
7	5.4	5.6	47	0.0	0.0
8	5.4	5.6	48	0.0	0.0
9	0.0	0.0	49	5.0	5.0
10	0.0	0.0	50	5.0	5.0
11	0.0	0.0	51	5.0	5.0
12	5.0	5.0	52	5.0	5.0
13	5.0	5.0	53	5.0	5.0
14	0.5	0.2	54	0.0	0.0
15	0.0	5.0	55	0.7	0.7
16	0.0	5.0	56	0.0	0.0
17	5.0	5.0	57	12.0	12.0
18	4.4	4.6	58	12.0	12.0
19	0.0	0.0	59	0.0	0.0
20	0.0	0.0	60	0.0	0.0
21	0.0	0.0	61	0.0	0.0
22	0.0	0.0	62	0.0	0.0
23	0.0	0.0	63	0.0	0.0
24	0.0	0.0	64	0.0	0.0
25	0.0	0.0	65	5.0	5.0
26	0.0	0.0	66	5.0	5.0
27	0.0	0.0	67	5.8	5.8
28	0.0	0.0	68	5.0	5.0
29	0.0	0.0	69	0.0	0.0
30	0.0	0.0	70	2.5	2.5
31	5.0	5.0	71	0.0	0.0
32	0.0	0.0	72	0.0	0.0
33	0.0	0.0	73	5.0	5.0
34	0.0	0.0	74	0.0	2.5
35	0.0	0.0	75	2.5	0
36	0.0	0.0	76	0.0	0.0
37	0.0	0.0	77	0.0	0.0
38	0.0	0.0	78	1.1	1.1
39	0.0	0.0	79	0.0	0.0
40	0.0	0.0	80	2.3	2.3

IC702

Pin	Voltage (V)		Pin	Voltage (V)	
	FM	AM		FM	AM
1	0.0	0.0	23	-12.0	-12.0
2	0.0	0.0	24	-21.5	-21.5
3	0.0	0.0	25	-23.6	-23.6
4	0.0	0.0	26	-21.5	-21.5
5	0.0	0.0	27	-29.0	-28.8
6	5.0	5.0	28	-17.1	-16.3
7	0.0	0.0	29	-17.1	-19.1
8	5.0	5.0	30	-21.3	-23.8
9	0.0	0.0	31	-23.0	-23.0
10	0.0	0.0	32	-27.0	-27.0
11	0.0	0.0	33	-25.0	-25.0
12	0.0	0.0	34	-25.0	-25.0
13	0.0	0.0	35	-25.0	-25.0
14	5.2	5.2	36	-25.0	-25.0
15	-12.2	-14.2	37	-25.0	-25.0
16	-25.0	-25.0	38	5.2	5.2
17	-22.0	-22.1	39	-25.0	-25.0
18	-18.0	-18.3	40	-25.0	-25.0
19	-10.8	-14.2	41	-25.0	-25.0
20	-12.1	-12.1	42	-25.0	-25.0
21	-14.2	-14.2	43	0.0	0.0
22	-16.3	-16.3	44	2.5	2.5

4. PCB CONNECTION DIAGRAM

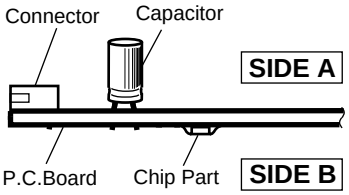
4.1 TUNER PCB

NOTE FOR PCB DIAGRAMS :

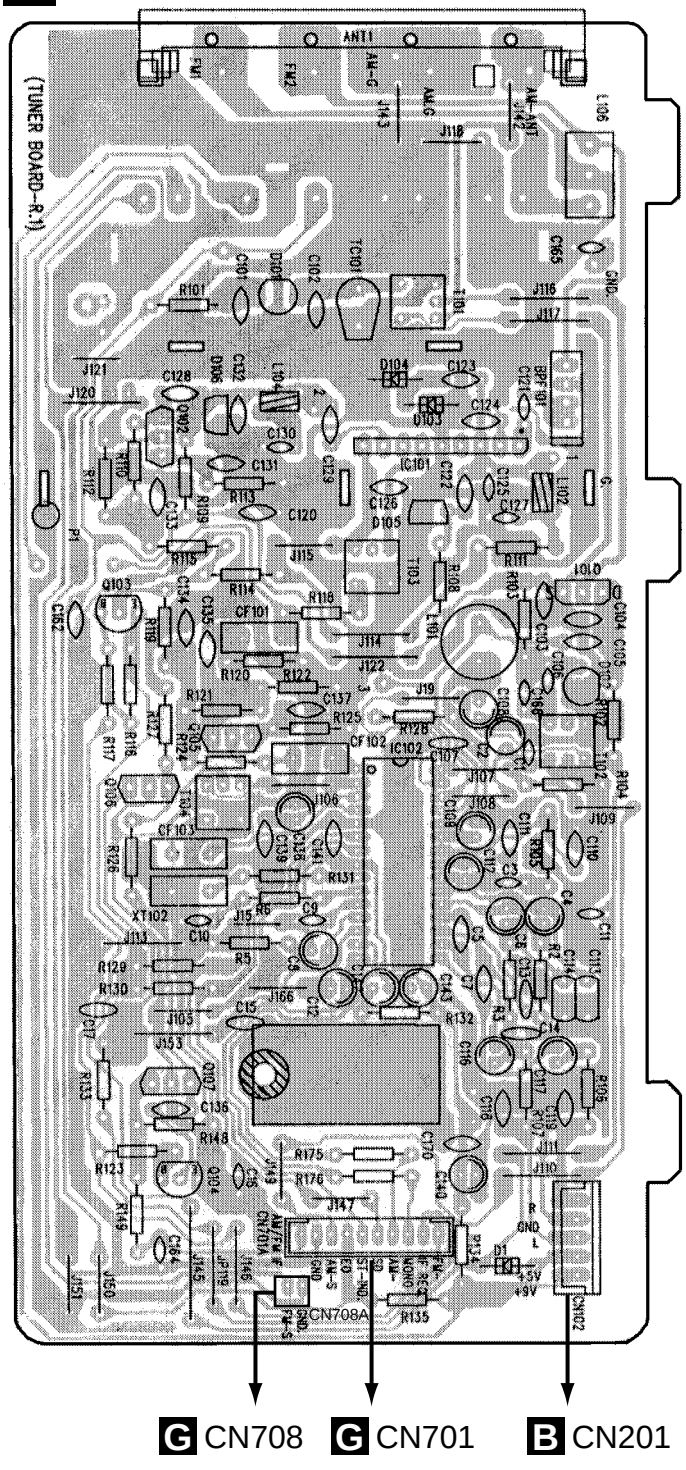
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



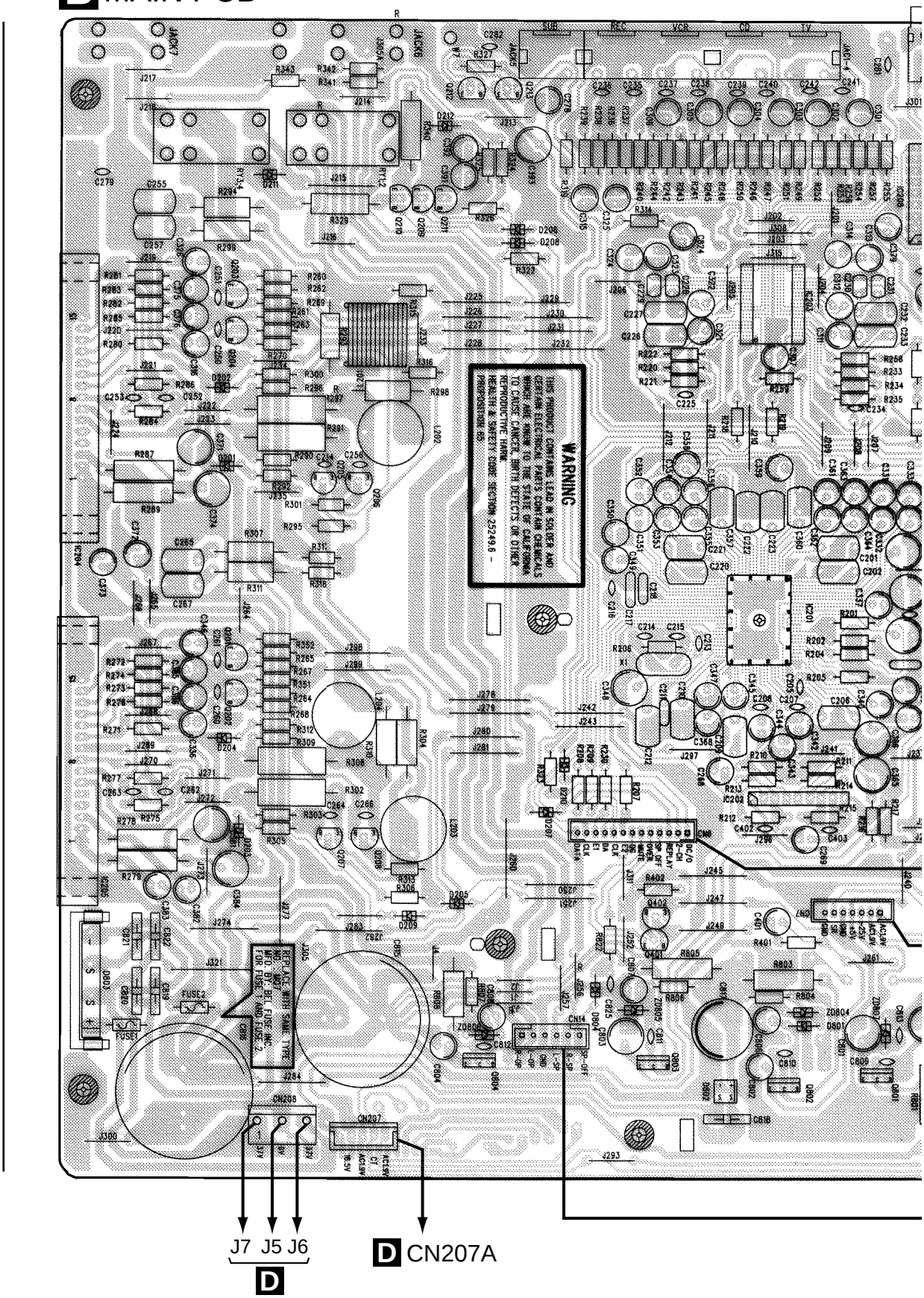
A TUNER PCB

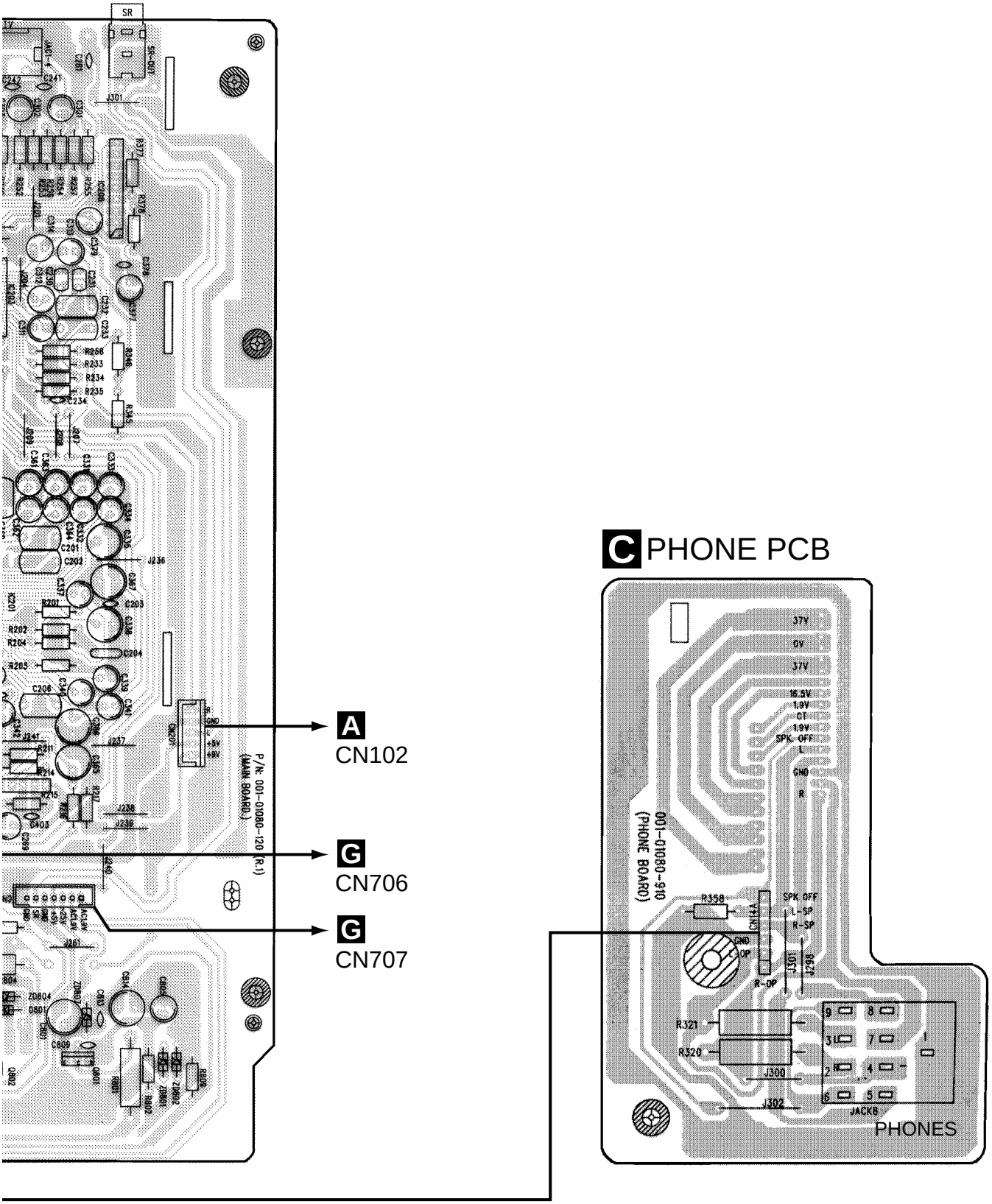


SIDE A

4.2 MAIN and PHONE PCBS

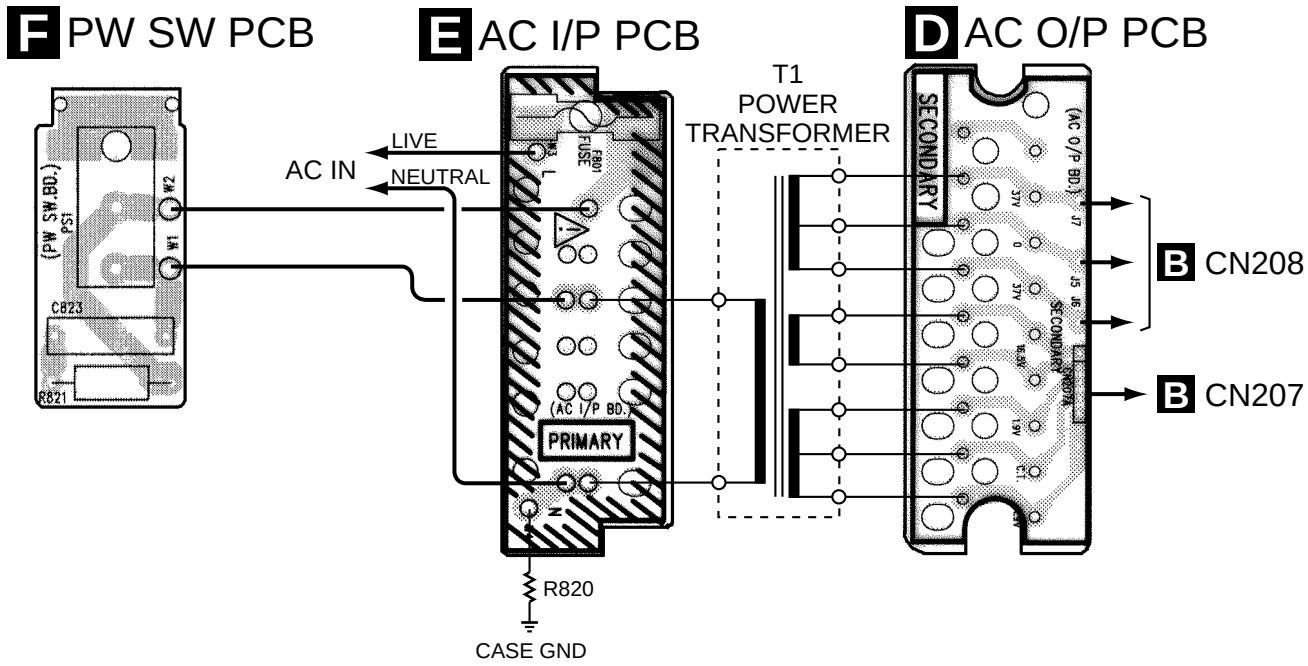
B MAIN PCB

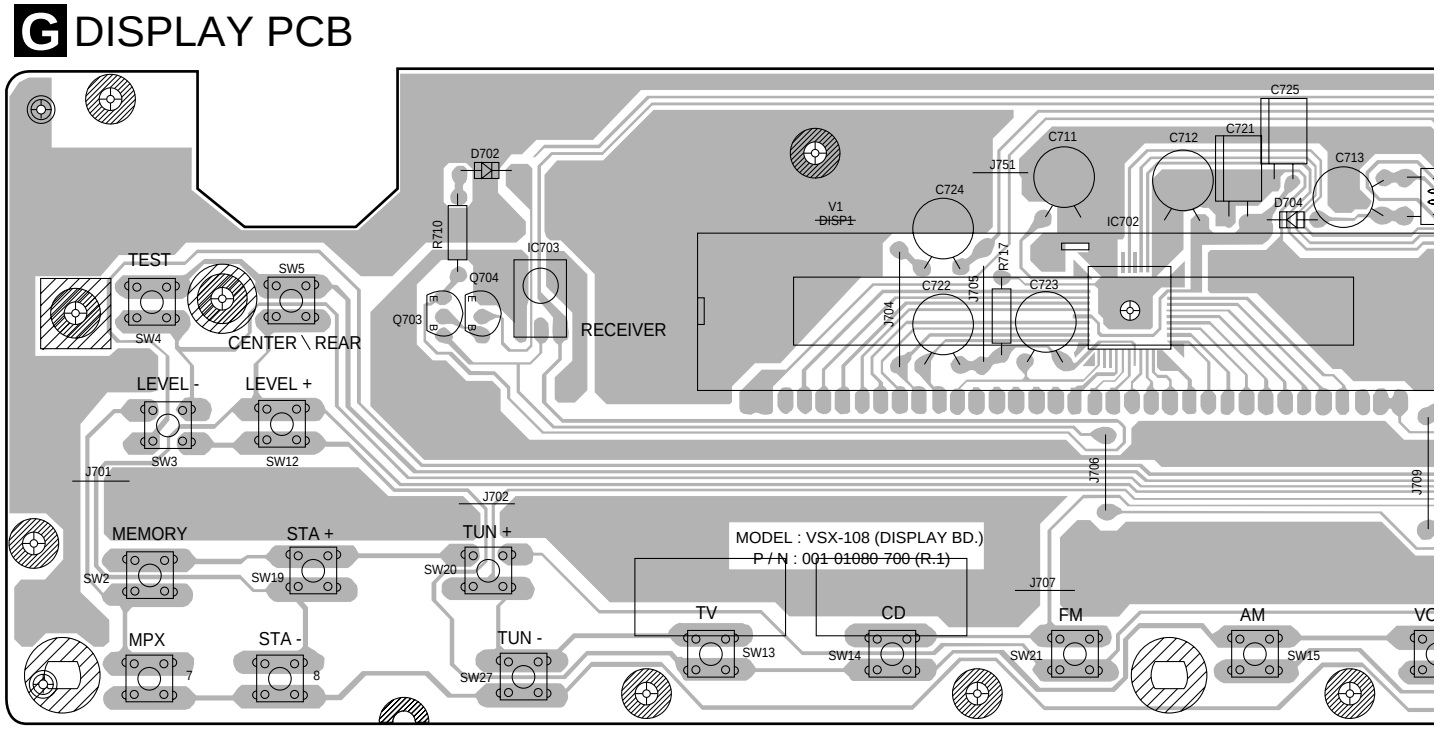



A
CN102
G
CN706
G
CN707
C PHONE PCB
37V
0V
37V
16.5V
1.9V
CT
1.9V
SPK OFF
L
GND
R
001-01080-910
(PHONE BOARD)
R358
SPK OFF
L-SP
R-SP
GND
OP
R-OP
R321
R320
J300
J302
JACK8
PHONES
P/N 001-01080-120 (R1)
(MAIN BOARD)

SIDE A

4.3 AC O/P, AC I/P, PW SW and DISPLAY PCBS





Q703 Q704 IC703 IC702

SIDE A

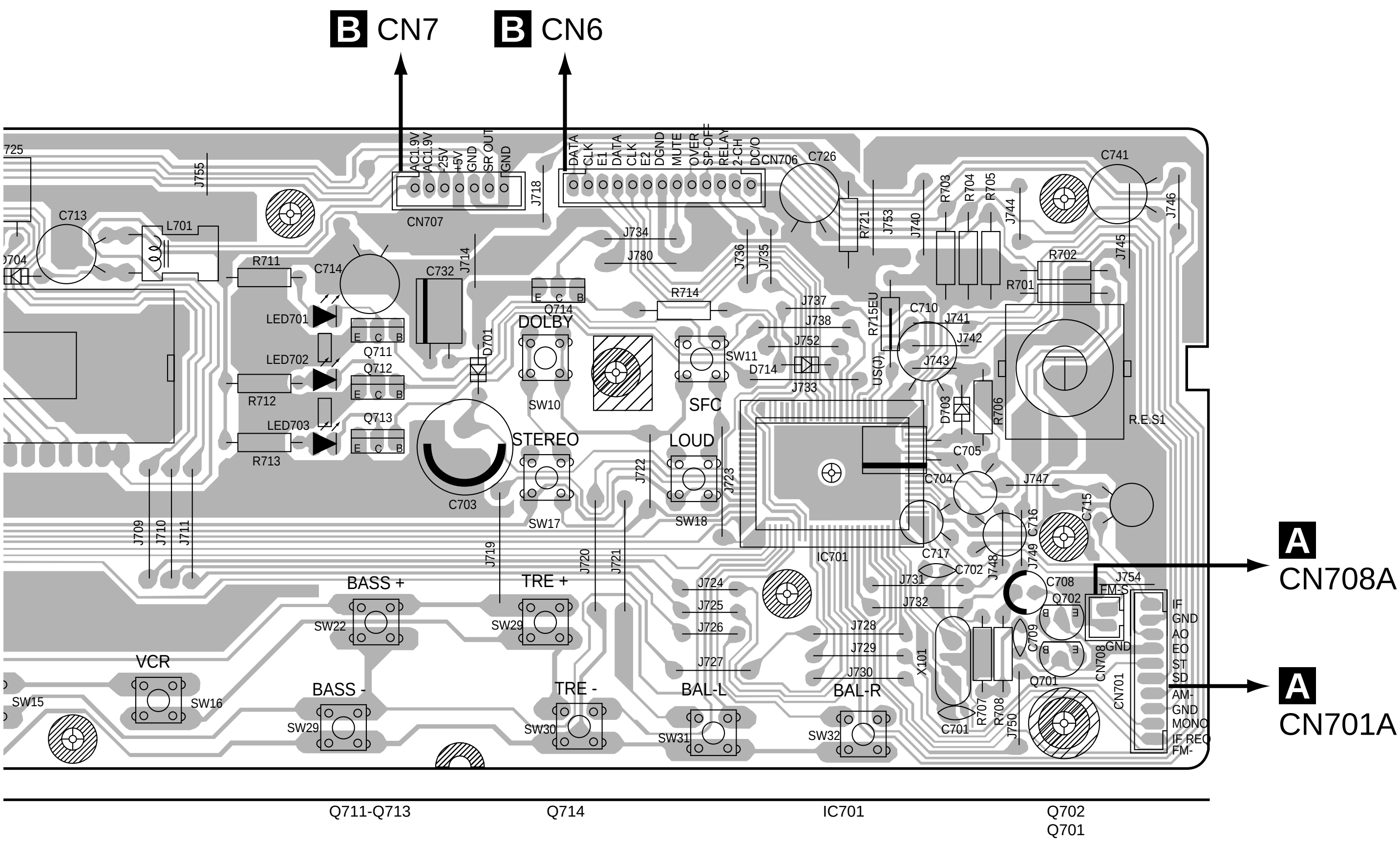
A

)8

B

)7

C


B CN7
B CN6
A CN708A
A CN701A
CN707
CN706
DOLBY
SFC
STEREO
LOUD
BASS +
TRE +
VCR
BASS -
TRE -
BAL-L
BAL-R
IC701
R.E.S1
Q711-Q713
Q714
IC701
Q702
Q701

D

5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→	*56 × 10¹*	→	*561* ..... *RD1/4PU 5 6 1 J*
47k Ω	→	*47 × 10³*	→	*473* ..... *RD1/4PU 4 7 3 J*
0.5 Ω	→	*R50*		..... *RN2H R 5 0 K*
1 Ω	→	*1R0*		..... *RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→	*562 × 10¹*	→	*5621* ..... *RN1/4PC 5 6 2 1 F*

Mark	No.	Description	Part No.

LIST OF ASSEMBLIES

	CIRCUIT PARTS ASSY	AZW7259
NSP	├ TUNER PCB	• • • • •
NSP	├ MAIN PCB	• • • • •
NSP	├ PHONE PCB	• • • • •
NSP	├ AC O/P PCB	• • • • •
NSP	├ AC I/P PCB	• • • • •
NSP	├ PW SW PCB	• • • • •
NSP	└ DISPLAY PCB	• • • • •

A B C D E F G

CIRCUIT PARTS ASSY

SEMICONDUCTORS

IC201	00201041-040
IC102	00201838-040
IC702	00202879-040
IC202,IC208	00206458-040
IC203	00262419-010
IC701	00272358-040
IC703	06104421-000
IC101	LA1186N
IC204,IC205	STK407-070
Q711-Q713	00300144-142
Q104,Q402,Q701,Q702	00300536-046
Q103,Q401,Q804	00300608-045
Q101	00300715-041
Q801	00301134-049
Q803	00301667-048
Q102,Q105-Q107	00302999-044
Q201-Q204	00303576-040
Q802	00304485-049
Q205-Q213	00310536-046
Q714	DTA114ES
Q703	DTA143ES
Q704	DTC143ES
D802	00400004-300
D803	00400040-301
D101,D102	00400321-500
D209,D211,D212	00494001-300
D7010,D7020,D7030	01912000-034
D1,D103,D104,D201-D208	1SS133
D210,D701-D704,D714,D801	1SS133
D8050,D8060	MTZJ10C
D8010,D8020	MTZJ13B
D8070	MTZJ4.7B
D8040	MTZJ6.8B
D105,D106	SVC201SPA

SWITCHES AND RELAYS

S1,S10-S19,S2	02031100-163
S20-S23,S26,S27,S29	02031100-163
S3,S30-S32,S4,S5	02031100-163
S1001	02041100-004
RY1,RY2	06500224-002

COILS

L202-L204	CHOKE COIL	01500030-006
L701	CHOKE COIL (1MHz)	01500102-001
L101	BIAS TRAP COIL	01500393-001
L102	FM COIL	01705037-350
L104	FM COIL	01706036-350
L201	CHOKE COIL	01710205-100
F103	CERAMIC FILTER	02800450-000
F101,F102	CERAMIC FILTER	02810700-009
F104	CERAMIC DTS.	02810700-025
F1010	BPF GFWB3	02876108-002

TRANSFORMERS

T102	OSC 7MM N00360	01620360-023
T101	AM ANT OH	01621032-104
T103	FM IFT OH-827539	01627539-032
T104	AM IFT OH-827539	01627580-041

CAPACITORS

C235-C242,C715-C717	00610101-250
C121-C124,C127,C130,C131	00610102-550
C136,C165,C711	00610102-550
C818	00610103-301
C813,C819-C823	00610103-503
C110,C3	00610103-550
C133,C226,C233,C281,C282	00610104-550
C378,C704,C709,C710,C712	00610104-550
C714	00610104-550
C111	00610201-250
C101,C103,C105,C120,C126	00610203-550
C106,C225,C234	00610221-250
C713	00610224-550
C250,C251,C260,C261	00610471-250
C810-C812	00610472-550

Mark	No.	Description	Part No.
	C1,C10,C107,C11		00610473-550
	C134,C135,C137,C139,C141		00610473-550
	C16,C809,C9		00610473-550
	C104		00610561-250
	C216		00610681-250
	C128,C252,C253,C262,C263		00620030-250
	C132		00620150-250
	C125		00620180-250
	C129,C166,C207,C208		00620300-250
	C214,C215,C701,C702		00620300-250
	C164		00620500-250
	C201-C203,C205,C206,C209		00700104-450
	C213,C220,C221,C255,C257		00700104-450
	C265,C267,C279		00700104-450
	C204		00700153-450
	C222,C223,C357,C360		00700154-450
	C218		00700223-450
	C113,C114		00700273-450
	C211		00700332-450
	C217,C256,C264,C266		00700473-450
	C228-C231		00700682-450
	C227,C232		00700683-450
	C210,C212		00700823-450
	C815,C816		00910688-450
	C703		04720224-505
	C278		CEANP100M50
	C312,C314,C322,C324		CEANP4R7M35
	C351,C352		CEANP4R7M35
	C112,C268,C269,C331-C334		CEAT100M50
	C340,C341,C372,C373		CEAT100M50
	C382,C383,C391,C4,C6		CEAT100M50
	C140,C307,C802		CEAT101M10
	C803		CEAT101M16
	C371,C374,C381,C384,C801		CEAT101M35
	C814		CEAT101M35
	C293		CEAT102M10
	C116,C117,C12,C142,C8		CEAT1R0M50
	C109		CEAT220M50
	C335,C338,C348,C365-C367		CEAT221M10
	C817		CEAT222M25
	C337,C339,C343,C345		CEAT2R2M50
	C2		CEAT330M16
	C108,C358,C359,C708		CEAT3R3M50
	C308,C350,C375-C377		CEAT470M10
	C385,C386,C705,C824		CEAT470M10
	C138,C804,C806-C808		CEAT470M25
	C392,C805		CEAT470M35
	C721		CEAT471M10
	C301-C306,C311,C313		CEAT4R7M50
	C315,C316,C321,C323		CEAT4R7M50
	C325,C326,C336,C342,C344		CEAT4R7M50
	C346,C354,C356,C361,C363		CEAT4R7M50
	C379		CEAT4R7M50
	C368		CEATR33M50
	C143,C347,C349,C353,C355		CEATR47M50
	C362,C364		CEATR47M50
	TC101		01410200-003

Mark	No.	Description	Part No.
RESISTORS			
	R278,R279,R287,R289,R803 (10Ω, 2W)		00510101-321
	R808 (2.2kΩ, 1W)		00510222-311
	R805 (27Ω, 2W)		00510270-321
	R294,R299,R307,R311 (4.7Ω, 1/2W)		00510479-311
	R293,R298,R304,R310 (4.7Ω, 1/2W)		00510479-312
	R801(56Ω, 2W)		00510560-321
	R329,R340 (82Ω, 2W)		00510821-321
	R291,R297,R302,R308 (0.22Ω, 5W)		00520228-351
	R320,R321 (33Ω, 2W)		00520331-321
	Other Resistors		RD1/4PU□□□J
OTHERS			
		ROTARY ENCODER	02081620-165
		MINI JACK	02113503-101
	JA301	HEADPHONE JACK	02126309-103
	CN2	2P WAFER V-TYPE	02520002-203
	CN208	3P WAFER V TYPE	02520003-206
	CN207	5P WAFER V-TYPE	02520005-203
	CN201	SOCKET 5P	02520005-205
	CN102	5P RIGHT ANGLE	02520005-301
	CN14	6P WAFER V-TYPE	02520006-204
	CN7	7P WAFER V-TYPE	02520007-203
	CN701	10P WAFER V-TYPE	02520010-202
	CN6	13P WAFER V-TYPE	02520013-202
	JA7	SPEAKER TERMINAL	04610400-012
	JA6	SPEAKER TERMINAL	04610600-001
		1P PIN JACK	04620100-009
		RCA JACK YKC21-3034	04620400-003
	V1	FL TUBE	04991693-001
	FU1,FU2	PROTECTOR (7A)	05020307-701
	X701	CRYSTAL RESONATOR (4.5MHz)	05204500-000
	X1	CRYSTAL RESONATOR (8MHz)	05208000-000

6. ADJUSTMENT
6.1 TUNER SECTION
6.1.1 AM IF ADJUSTMENT

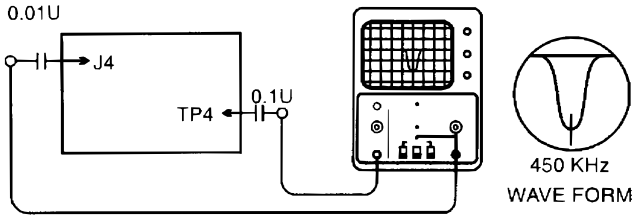


Fig.1

BAND	STEP	SIGN. FRE.	RADIO SETTING	ADJUST-MENT	REMARKS
AM-IF	1	450KHz		T104	ADJUST FOR BEST IF WAVE FORM

6.1.2 FM IF ADJUSTMENT

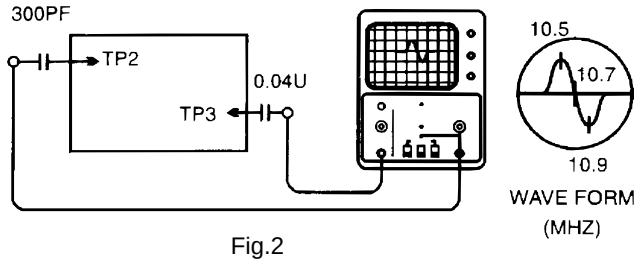


Fig.2

BAND	STEP	SIGN. FRE.	RADIO SETTING	ADJUST-MENT	REMARKS
FM-IF	1	10.7MHz		T103	ADJUST FOR BEST IF WAVE FORM & S CURVE

6.1.3 TUNING FREQUENCY RANGE ADJUSTMENTS

(FM, AM) DC Voltmeter.....Connect to TP1 and GND

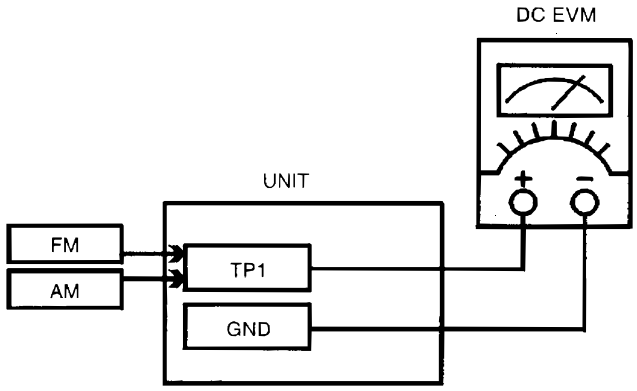
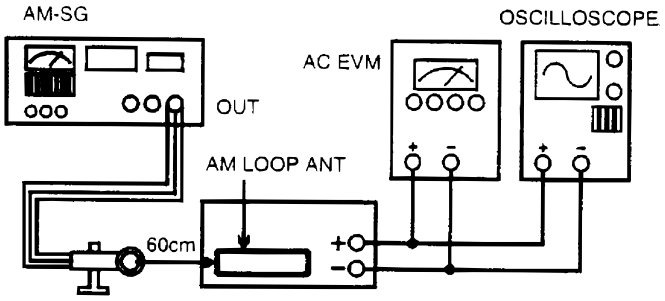


Fig.3

NO.	BAND	SIGN. FRE.	ADJUST FOR	ADJUSTMENT
1	FM	87.5MHz	2.0±0.1V	L104
2	FM	108MHz	CHECK 7.9±0.1V	
3	AM	530 KHz	1.5V±0.1V	T102
4	AM	1710KHz	CHECK 8±0.2V	

6.1.4 AM TRACKING ADJUSTMENT

Signal Generator.....Connects to the AM ANT. Coil through the Loop Antenna.
Adjustment for the indication of VTVM of the wave form scope to be maximum.

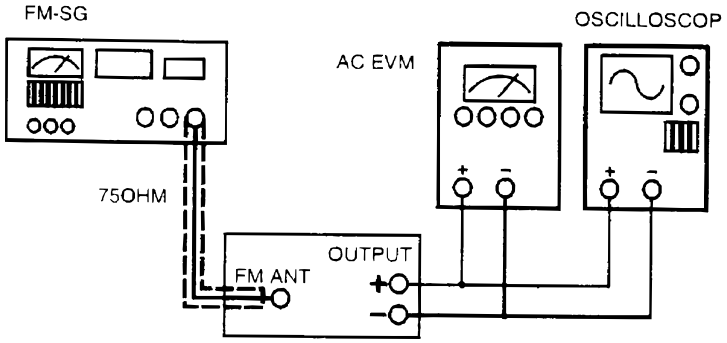


BAND	STEP	SIGN. FRE.	ADJUST FOR	ADJUSTMENT
AM	1	600KHz	MAXIMUM SENSITIVITY	T101
	2	1400KHz	MAXIMUM SENSITIVITY	TC101
	3	REPEAT STEP 1 AND 2 SEVERAL TIMES		

Fig.4

6.1.5 FM TRACKING ADJUSTMENT

Signal Generator.....Connects to the FM ANT Jack (FM IN) through the dummy.



STEP	SIGN. FRE.	ADJUST FOR	ADJUSTMENT
1	90MHz	MAXIMUM SENSITIVITY	L102

Fig.5

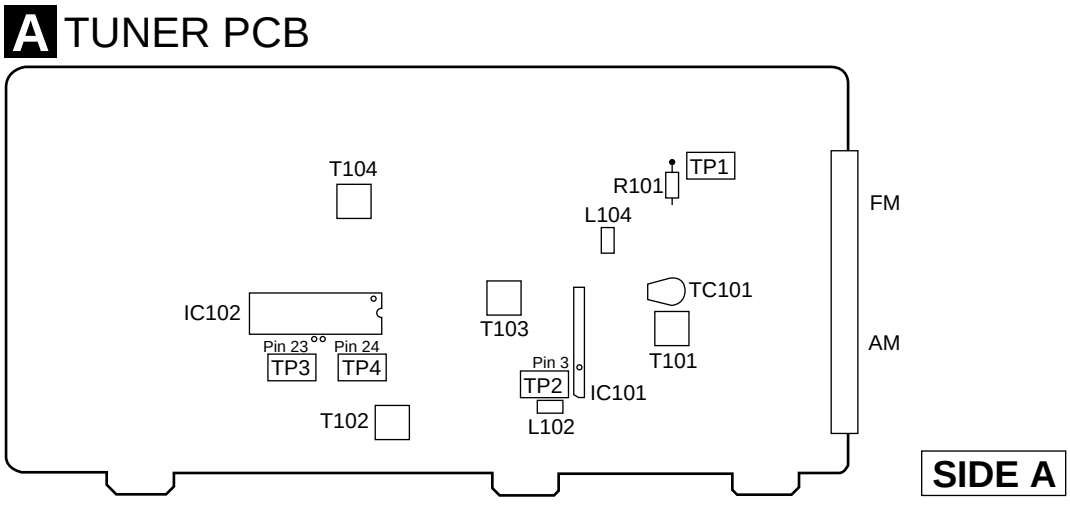


Fig.6 Adjustment Point

7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

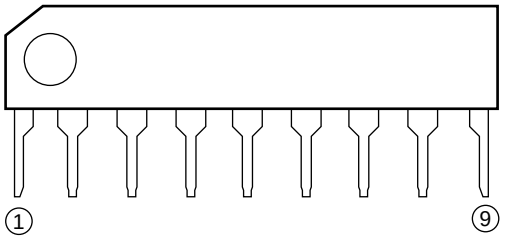
●List of IC

LA1186N, 00201838-040 (LA1838), 00206458-040 (LA6458S), 00201041-040 (LV1041M),
STK407-070, 00262419-010 (M62419FP), 00272358-040 (LC72358N), 00202879-040 (BU2879AK)

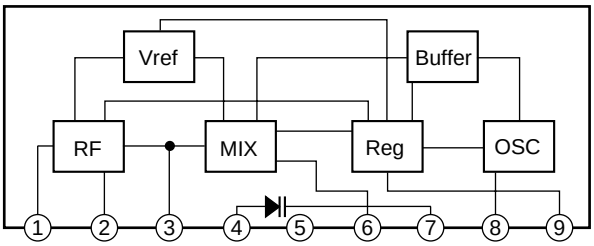
■ LA1186N (TUNER PCB : IC101)

• FM Front End IC

● Pin Arrangement



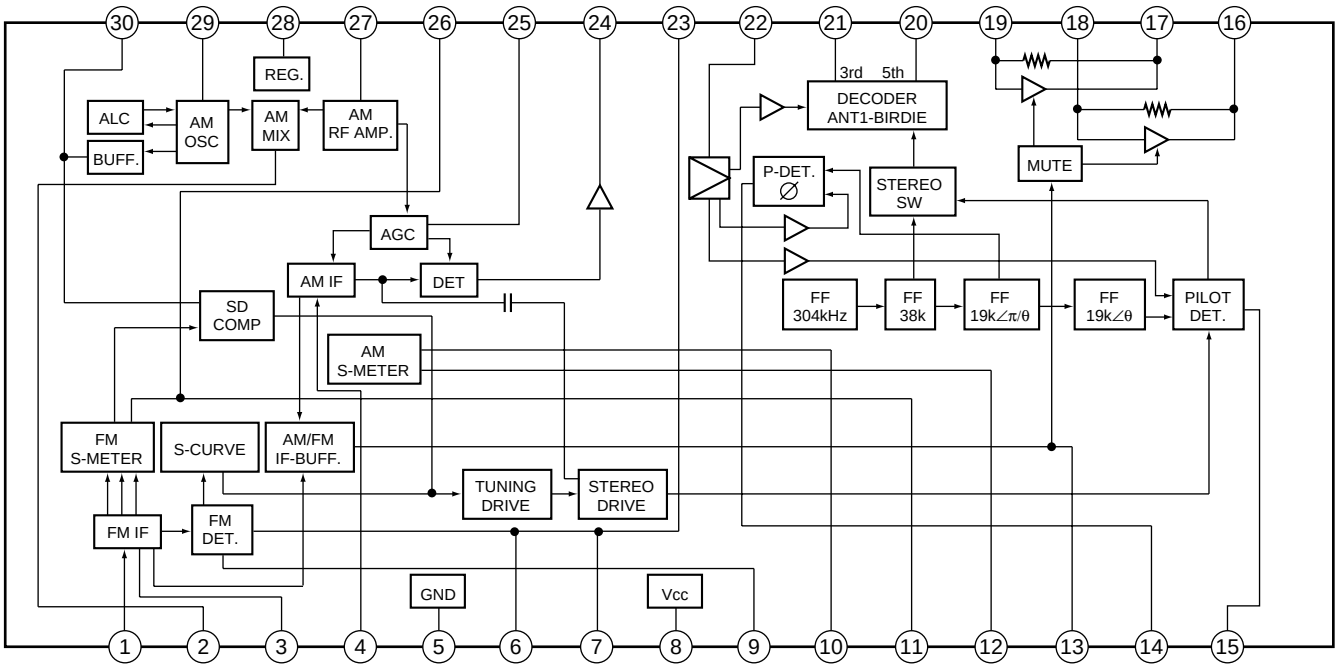
● Block Diagram



■ 00201838-040 (LA1838) (TUNER PCB : IC102)

• AM/FM IF, MPX 1-Chip Tuner IC

● Block Diagram



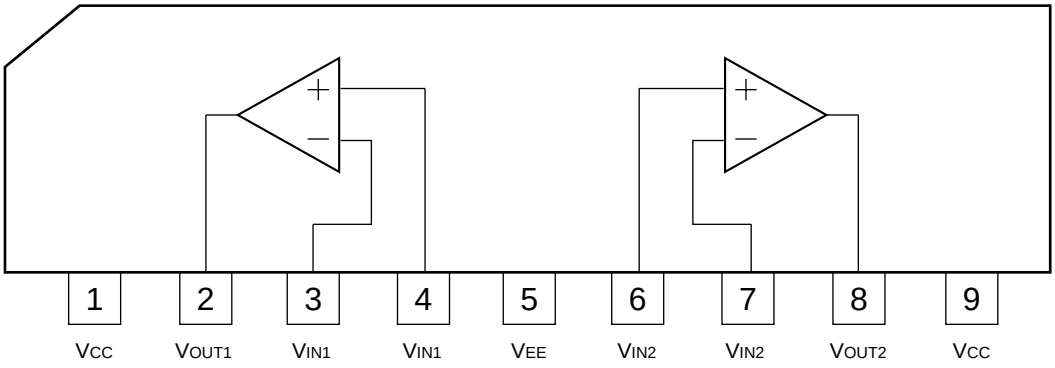
● **Pin Function**

No.	Function	No.	Function
1	FM IF input	16	Host amp. input/output
2	AM MIX output	17	
3	FM IF input by-pass	18	
4	AM IF input	19	
5	GND	20	MPX output
6	TU-LED	21	
7	ST-LED and AM IF output	22	MPX input
8	Power supply pin	23	FM demodulation output
9	FM detector	24	AM detection output
10	Connection pin of AM narrow Band-pass C.F	25	AM AGC
11	FM S-meter output	26	AFC
12	AM S-meter output and AM SD sensitivity adjustment	27	AM RF input
13	AM/FM IF buffer output and output control SW (mute SW)	28	REG
14	Phase comparator Low-pass filter (Switch the FM/AM)	29	OSC
15	Pilot detector Low-pass filter (Forced monoral)(VCO stop)	30	OSC buffer output and FM SD sensitivity adjustment

■ 00206458-040 (LA6458S) (MAIN PCB : IC202, IC208)

• Dual Operational Amplifier IC

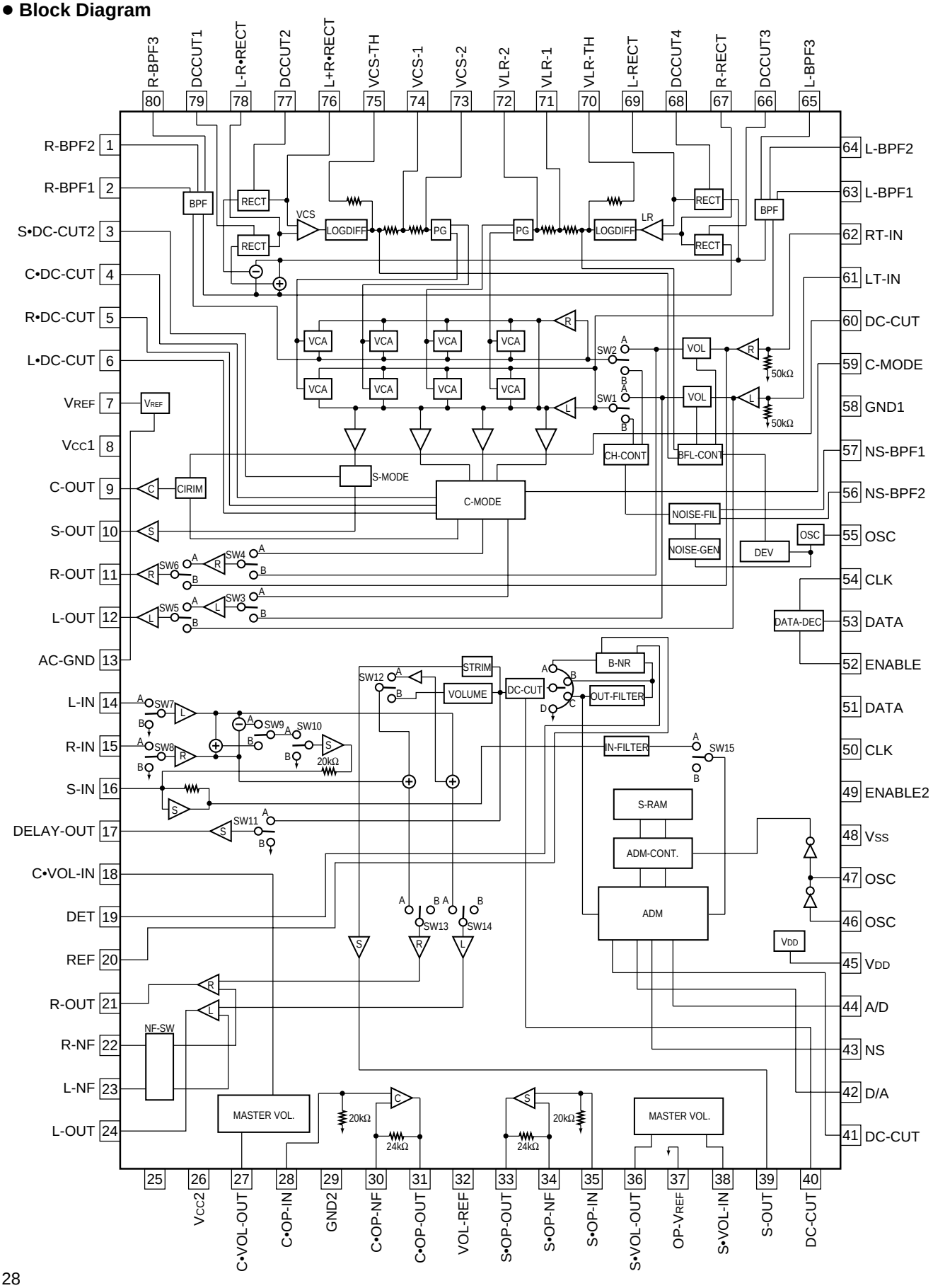
● **Block Diagram**



■ 00201041-040 (LV1041M) (MAIN PCB : IC201)

- **Dolby Pro-Logic Decoder IC**

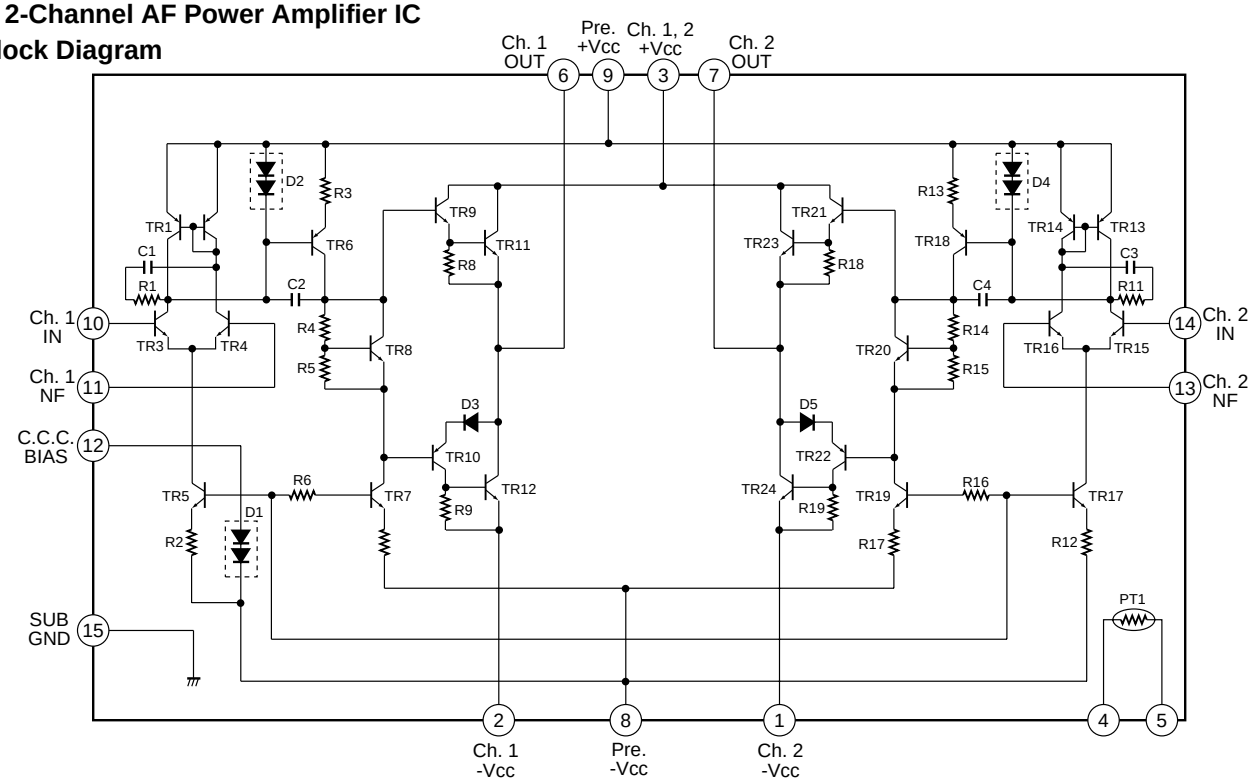
● **Block Diagram**



■ STK407-070 (MAIN PCB : IC204, IC205)

• 2-Channel AF Power Amplifier IC

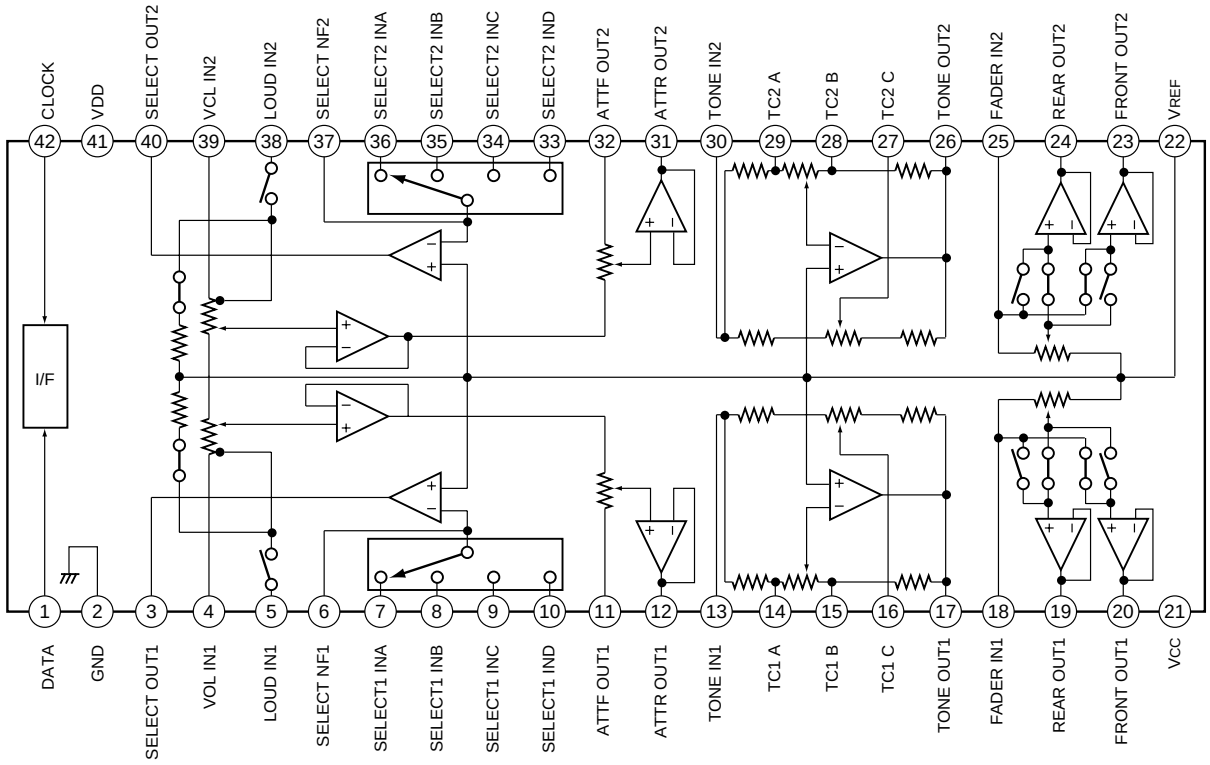
● Block Diagram



■ 00262419-010 (M62419FP) (MAIN PCB : IC203)

• Digital Sound Controller with Tone Control IC

● Block Diagram



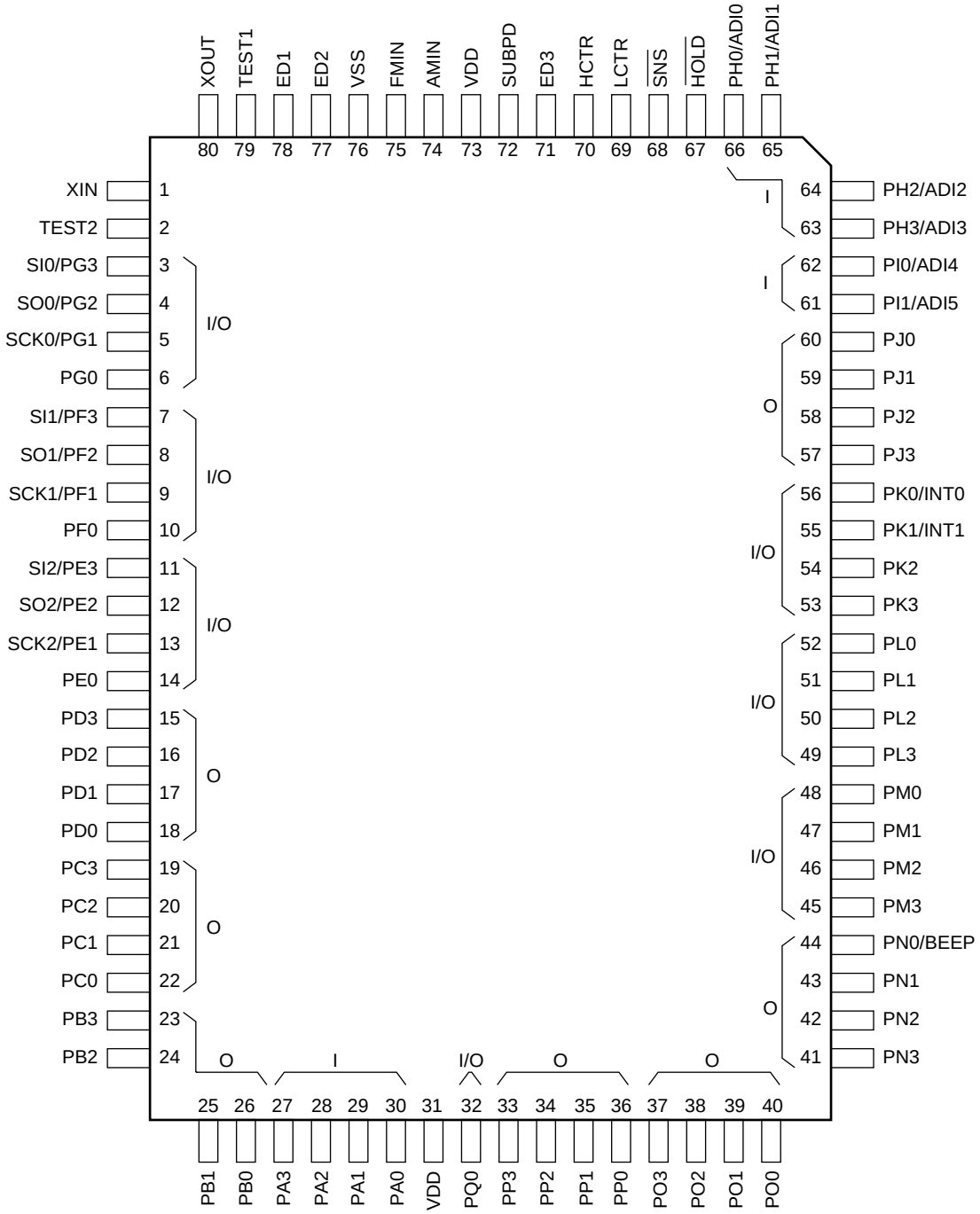
● Pin Function

No.	Name	Function	No.	Name	Function
1	DATA	Control data input Inputs a data by synchronizing with CLOCK.	22	V_{REF}	Signal ground of IC Apply a 1/2 VCC
2	GND	Ground	23	FRONT OUT2	Fader volume (front) output pin
3	SELECT OUT1	Output pin of the input selector switch section	24	REAR OUT2	Fader volume (rear) output pin
4	VOL IN1	Input pin of the volume section	25	FADER OUT2	Input pin of the fader volume section
5	LOUD IN1	Frequency characteristic setting pin of the loudness section	26	TONE OUT2	Output pin of the tone control section
6	SELECT NF1	Adjust each input gain by a resistor which is connected between this pin and SELECT OUT pin, and the resistor which is added to INA to IND.	27	TC2 C	Frequency characteristic setting pin of the CH2 tone control section
7	SELECT1 INA	CH1 input pins of the input selector switch section	28	TC2 B	
8	SELECT1 INB		29	TC2 A	
9	SELECT1 INC		30	TONE IN2	Input pin of the tone control section
10	SELECT1 IND		31	ATTR OUT2	Output pin of the volume section (later-stage)
11	ATTF OUT1	Output pin of the volume section (first-stage)	32	ATTF OUT2	Output pin of the volume section (first-stage)
12	ATTR OUT1	Output pin of the volume section (later-stage)	33	SELECT2 IND	CH2 input pin of the input selector switch section
13	TONE IN1	Input pin of the tone control section	34	SELECT2 INC	
14	TC1 A	Frequency characteristic setting pin of the CH1 tone control section	35	SELECT2 INB	
15	TC1 B		36	SELECT2 INA	
16	TC1 C		37	SELECT NF2	Adjust each input gain by a resistor which is connected between this pin and SELECT OUT pin, and the resistor which is added to INA to IND.
17	TONE OUT1	Output pin of the tone control section	38	LOUD IN2	Frequency characteristic setting pin of the loudness section
18	FADER IN1	Input pin of the fader volume section	39	VOL IN2	Input pin of the volume section
19	REAR OUT1	Fader volume (rear) output pin	40	SELECT OUT2	Output pin of the input selector switch section
20	FRONT OUT1	Fader volume (front) output pin	41	V_{DD}	Digital power supply pin
21	V_{CC}	Analog power supply pin	42	CLOCK	Clock input for serial data transfer

00272358-040 (LC72358N) (DISPLAY PCB : IC701)

- **1-Chip PLL Controller IC**

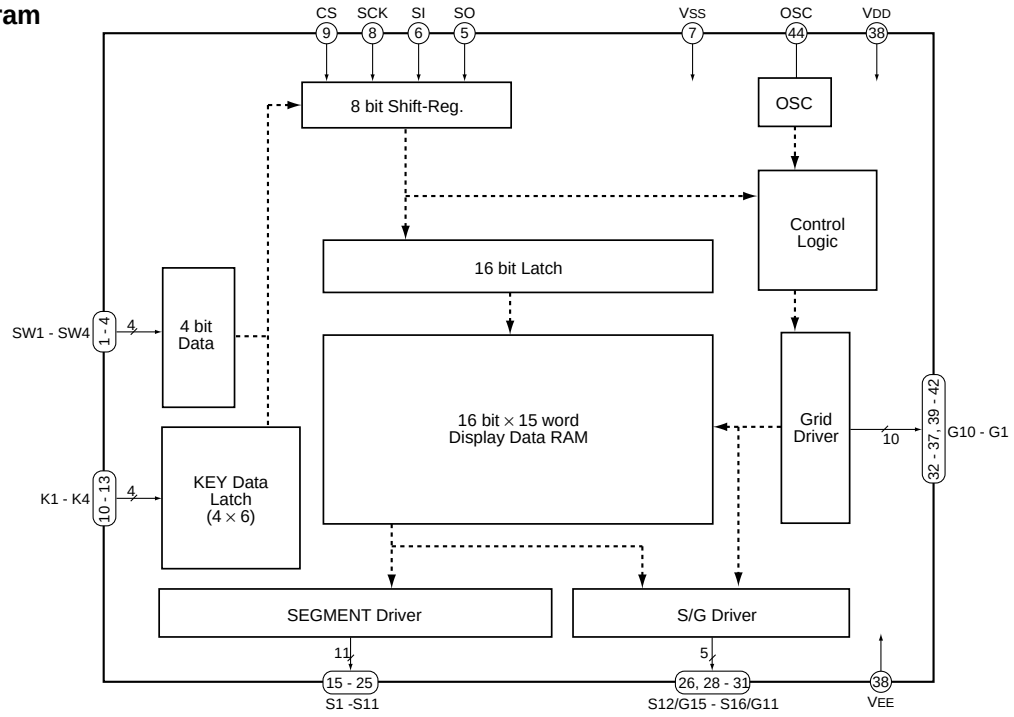
● **Block Diagram**



■ 00202879-040 (BU2879AK) (DISPLAY PCB : IC702)

- **FL Driver IC for VTR**

● **Block Diagram**



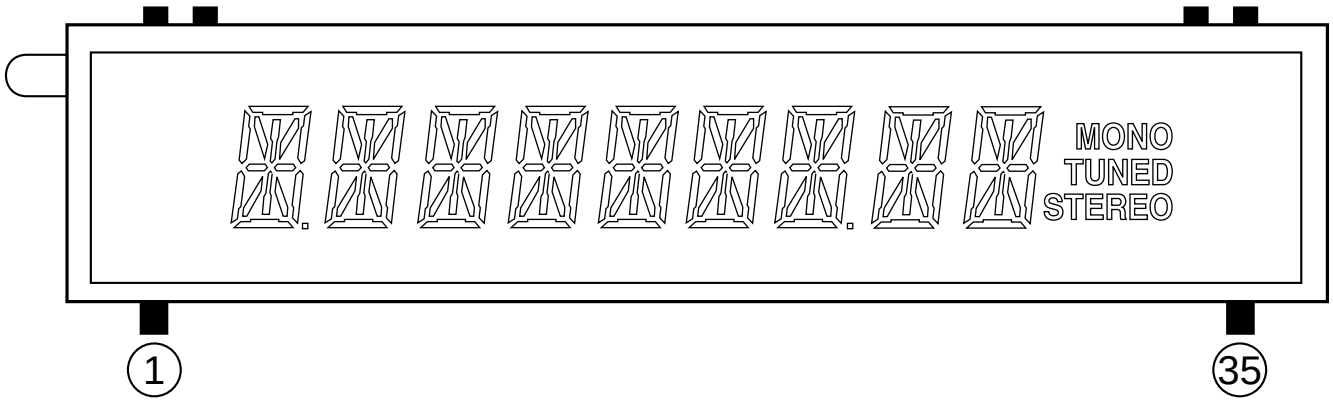
● **Pin Function**

No.	Name	I/O	Function	No.	Name	I/O	Function
1	SW1	I	General-purpose input Input data is able to transfer to the microcomputer with serial	23	S9	O	Output for segment Output is P ch open-drain and pull-down resistor
2	SW2			24	S10		
3	SW3			25	S11		
4	SW4			26	S12/G15	O	Output for segment and grid Output is P ch open-drain and pull-down resistor
5	SO	O	Serial data output from upper bit Output is N ch open-drain	27	VEE	I	Power supply pin 2 Connect a pull-down resistor of FLD driver ouput
6	SI	I	Serial data input from upper bit	28	S13/G14	O	Output for segment and grid Output is P ch open-drain and pull-down resistor
7	VSS	–	Connect to system GND	29	S14/G13		
8	SCK	I	Serial clock input at rising edge	30	S15/G12		
9	CS	I	Serial chip select L: serial initialize, H: effective	31	S16/G11		
10	K1	I	Key scan data input	32	G10	O	Output for grid Output is P ch open-drain and pull-down resistor
11	K2			33	G9		
12	K3			34	G8		
13	K4			35	G7		
14	VDD	I	Power supply pin 1 Connect to system power	36	G6		
15	S1	O	Output for segment Output is P ch open-drain and pull-down resistor	37	G5		
16	S2			38	VDD	I	Power supply pin 1 Connect to system power
17	S3			39	G4	O	Output for grid Output is P ch open-drain and pull-down resistor
18	S4			40	G3		
19	S5			41	G2		
20	S6			42	G1		
21	S7			43	VSS	I	Connect to system GND
22	S8			44	OSC	I/O	Connect a capacitor for oscillation

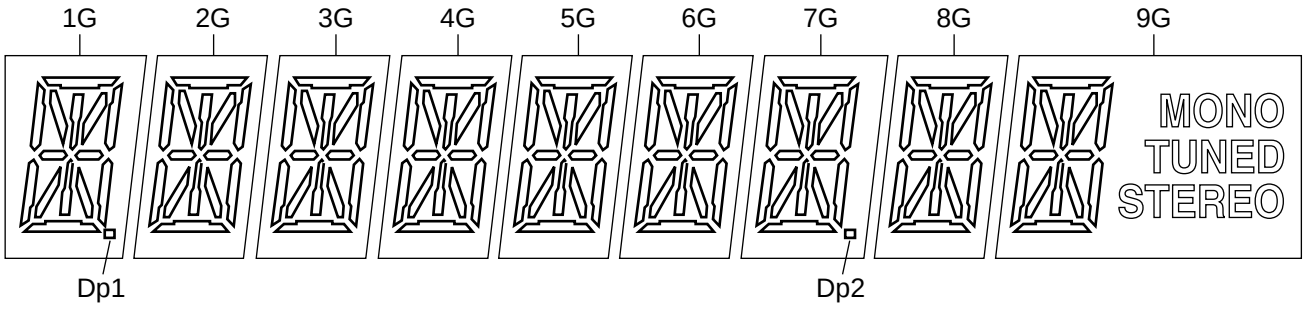
7.1.2 DISPLAY

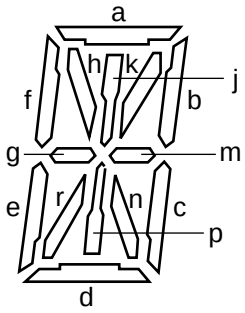
■ 04991693-001 (9-MT-169GK) (DISPLAY PCB : V1)

• FL TUBE



● Grid Assignment





● Pin Connection

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Connection	F1	F1	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	NC	NC	NC	NC	NC	P15
Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Connection	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	F2	F2	

Note 1) F1, F2 : Filament
2) NP : No Pin
3) NC : No connection
4) DL : Datum Line
5) 1G - 9G : Grid

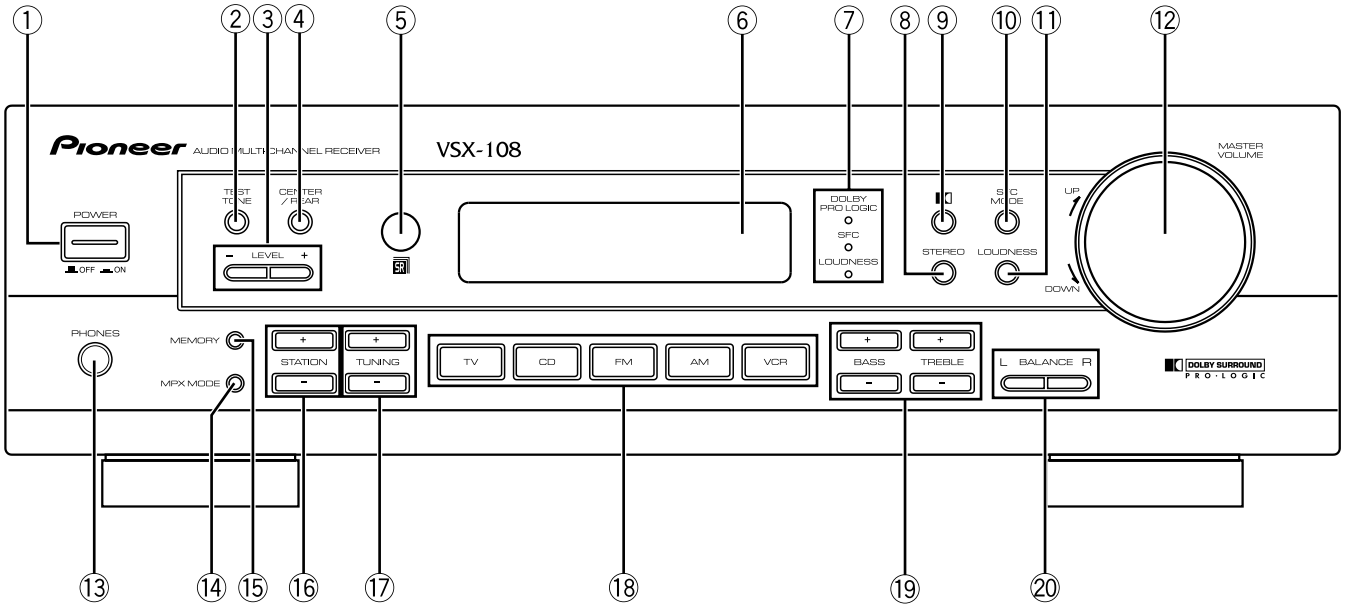
● **Anode Connection**

	1G	2G	3G	4G	5G	6G	7G	8G	9G
P1	a	a	a	a	a	a	a	a	a
P2	h	h	h	h	h	h	h	h	–
P3	j	j	j	j	j	j	j	j	j
P4	k	k	k	k	k	k	k	k	–
P5	b	b	b	b	b	b	b	b	b
P6	f	f	f	f	f	f	f	f	f
P7	m	m	m	m	m	m	m	m	m
P8	g	g	g	g	g	g	g	g	g
P9	c	c	c	c	c	c	c	c	c
P10	n	n	n	n	n	n	n	n	MONO
P11	p	p	p	p	p	p	p	p	p
P12	r	r	r	r	r	r	r	r	TUNED
P13	e	e	e	e	e	e	e	e	e
P14	d	d	d	d	d	d	d	d	d
P15	Dp1	–	–	–	–	–	Dp2	–	STEREO

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

■ Front Panel



① **POWER ON/OFF button**

② **TEST TONE ON/OFF button**
The TEST TONE signal will be output in the Dolby Pro logic mode.

③ **LEVEL button**
Use to adjust center or rear level

④ **CENTER/REAR button**
Use to select the Level Control.

⑤ **REMOTE SENSOR**

⑥ **DISPLAY**

⑦ **LED INDICATOR**
"DOLBY PRO LOGIC", SFC, LOUDNESS

⑧ **STEREO button**
Use to playback sound that DOLBY PRO LOGIC and SFC MODE turn off.

⑨ **DOLBY PRO LOGIC button**

⑩ **SFC MODE button**

⑪ **LOUDNESS button**
Press this button when the volume is low to raise the low and high range levels so that the sound can be heard more easily.

⑫ **MASTER VOLUME**

⑬ **PHONES JACK (Headphone terminal)**

⑭ **MPX MODE button**
Use to switch the auto stereo/monaural mode for receiving FM broadcasts. In case of "STEREO" indicator is not turn on because broadcast signal is too weak, sound is monaural automatically.

⑮ **MEMORY button**

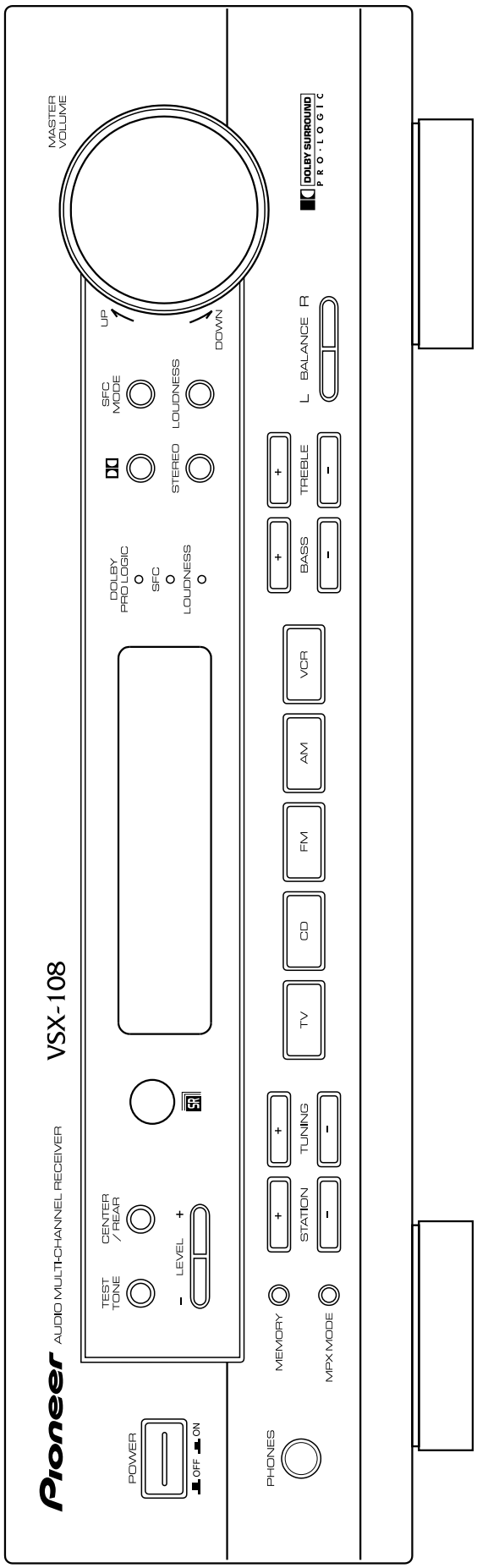
⑯ **STATION (+, -) button**
Use to select the station number when operating the tuner.

⑰ **TUNING (+, -) button**
Use to select the frequency when operating the tuner.

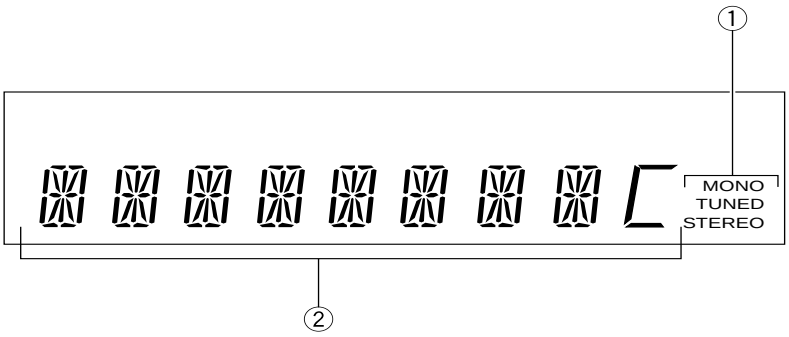
⑱ **FUNCTION buttons**

⑲ **TONE [BASS (+, -), TREBLE (+,-)] LEVEL button**
Use to adjust tone level.

⑳ **BALANCE (L, R) button**
Use to adjust volume balance.


MASTER VOLUME
UP
DOWN
SFC MODE
LOUDNESS
STEREO
DOLBY PRO LOGIC
SFC
LOUDNESS
BASS
TREBLE
L BALANCE R
DOLBY SURROUND PRO LOGIC
VCR
AM
FM
CD
TV
TUNING
STATION
MEMORY
MPX MODE
PHONES
POWER
OFF
ON
TEST TONE
CENTER / REAR
LEVEL
VSX-108
AUDIO MULTI-CHANNEL RECEIVER
Pioneer

■ Display



① **TUNER indicator**

MONO:

Lights when the monaural mode is set using the MPX MODE button.

TUNED:

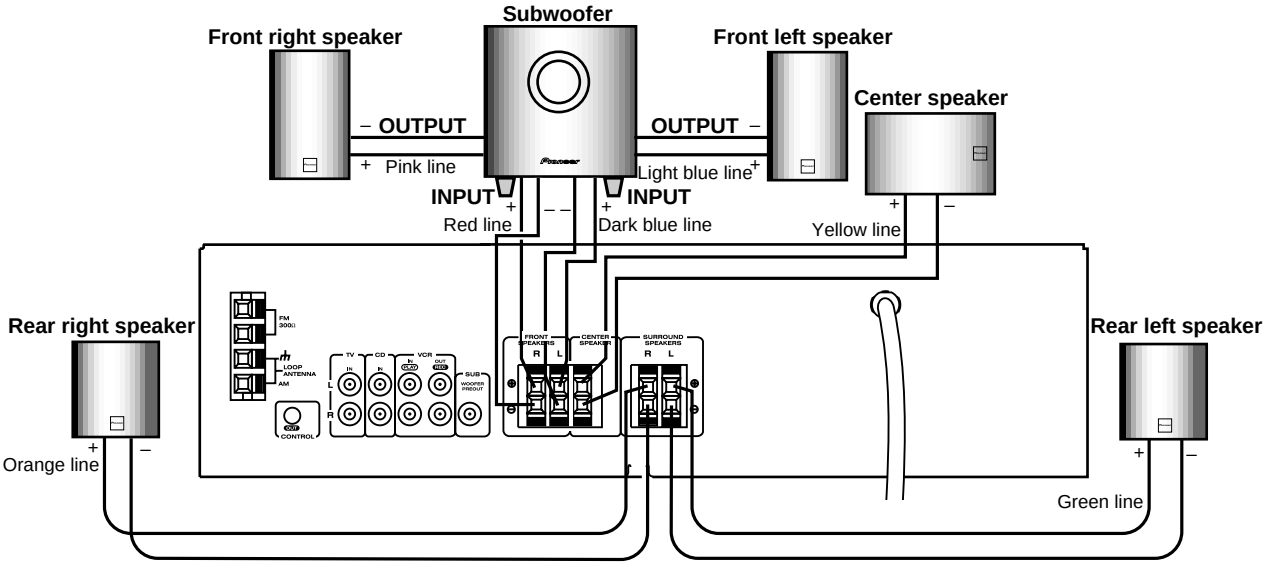
Lights when broadcasts are being received.

STEREO:

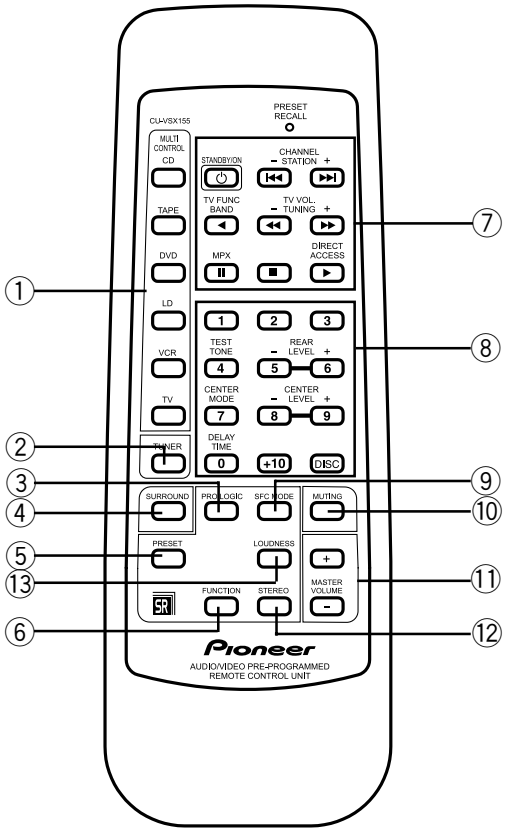
Lights when stereo broadcasts are received during auto stereo mode.

② **CHARACTER display**

■ When use packed speaker system



■ Remote Control Unit



① **MULTI CONTROL function buttons**
When operating other devices, press any one of these buttons to specify the device to be operated.

memo : This button cannot be used to switch the functions of this unit.

② **TUNER button**
Press to operate this unit when set to the TUNER.

③ **PRO LOGIC button**
Use to change the mode of DOLBY PRO LOGIC.

④ **SURROUND button**
Press to start the SURROUND function.

⑤ **PRESET button**
To preset other brand devices, press any one of the MULTI CONTROL function buttons together with this button.

⑥ **FUNCTION button**
Use to switch the function setting of this unit.

TV → CD → FM
VCR ← AM

⑦ **[TUNER operations]**
STATION -, +, BAND, TUNING -, +, MPX, D.ACCESS buttons.
[TV operations]
STANDBY/ON, CHANNEL -, +, TV FUNC., TV VOL. -, +, buttons
[CD, TAPE, DVD, LD, VCR, MD operations]
STANDBY/ON, ⏮, ⏭ (Chapter / Track search), ◄ (Play), ◄◄ (Rewind), ►► (Fast Forward), ❚❚ (Pause), ■ (Stop), ► (Play)

⑧ **Number/Surround setting buttons**
TEST TONE: When turned ON (while in DOLBY PRO LOGIC), volume balance adjustment signals are out put in order from the speakers and can adjusted.
REAR LEVEL -, +: Adjusts the rear level.
CENTER MODE: Switches the center mode.
CENTER LEVEL -, +: Adjusts the center level.
DELAY TIME: Use to set the delay time.

⑨ **SFC MODE button**
Use to switch the SFC mode.

⑩ **MUTING button**
Press to mute the volume.

⑪ **MASTER VOLUME -/+ button**
Use to adjust the volume.

⑫ **STEREO button**
Use to playback sound without DOLBY PRO LOGIC and SFC MODE.

⑬ **LOUDNESS button**
When LOUDNESS is turned ON at a small volume, the low frequency and high frequency levels increase, enabling the sound to be easier to hear.

8.2 SPECIFICATIONS

Continous Power Output
- Front ..... 50 W + 50 W (1kHz, 0.9%, 8 Ω)
- Center ..... 50 W (1kHz, 0.9%, 8 Ω)
- Surround ..... 50 W (1kHz, 0.9%, 8 Ω)

Input (Sensitivity/Impedance)
- CD, VCR / TV ..... 200 mV/47 k Ω

Frequency Response
- CD, VCR / TV ..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB

Output (Level/Impedance)
- VCR ..... 200 mV/2.2 k Ω

Tone Control
- BASS ..... ± 12 dB (100 Hz)
- TREBLE ..... ± 12 dB (10 kHz)
- LOUNDNESS ..... + 5 dB / + 4 dB (100 Hz/10 kHz)

Signal-to-Noise Ratio (IHF, short circuited, A network)
- CD, VCR / TV ..... 70 dB

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.
** Measured by Audio Spectrum Analyzer

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz (±3) dB
Antenna Input ..... 300 Ω

AM Tuner Section

Frequency Range ..... 530 kHz to 1,700 kHz
Antenna ..... Loop antenna

Miscellaneous

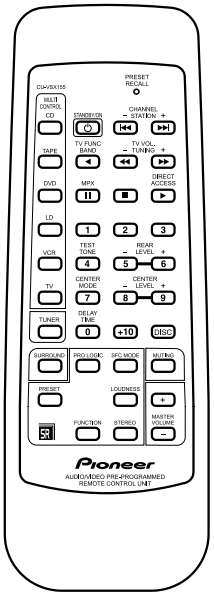
Power Requirements ..... AC 120 V, 60 Hz
Power Consumption ..... 210 W
Dimensions ..... 420 (W) x 123 (H) x 321 (D) mm
Weight (without package) ..... 6.0 kg

Furnished Parts

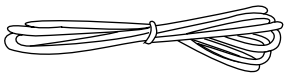
FM Antenna 1
AM Loop Antenna 1
Dry Cell Batteries
[size "AA" (IEC R6P)] 2
Remote Control Unit 1
RCA Cable 1
Operating Instructions 1

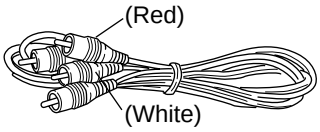
NOTE:
Specifications and the design are subject to possible modifications without notice, due to improvements.

■ Accessories

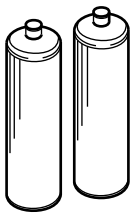


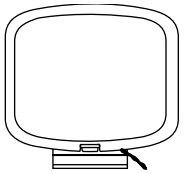
Remote Control Unit
(18201080001S)


FM Antenna
(06410001003S)



RCA Cable


Dry Cell Battery
(size "AA" IEC R6P) × 2


AM Loop Antena
(01582100001S)