

STR-DE215

SERVICE MANUAL

AEP Model



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SPECIFICATIONS

Amplifier section				Outputs	TAPE/MD REC OUT :	S/N	Mono : 76dB Stereo : 70dB
Power output	(DIN 1kHz, 4ohms) 60W + 60W				Voltage : 150mV, Impedance : 10 kilohms		
Frequency response	PHONO : RIAA equalization curve ± 0.5dB CD, TAPE/MD, VIDEO : 10Hz - 50kHz ± 1dB				VIDEO AUDIO OUT : Voltage : 150mV, Impedance : 10 kilohms PHONES : Accepts low and high impedance headphones	Harmonic distortion at 1kHz	Mono : 0.3% Stereo : 0.5%
Inputs				BASS BOOST	+ 10dB at 70Hz	Separation	45dB at 1kHz
Sensitivity Impedance S/N (weighting network, input level)				TONE	± 8dB at 100Hz and 10kHz	Frequency response	30Hz - 15kHz ^{+0.5} / ₋₂ dB
PHONO (MM)	2.5mV	50 Kilohms	74dB 72dB* (A, 2.5mV)	FM tuner section		Selectivity	60dB at 400kHz
CD,	200mV			Tuning range	87.5 - 108.0MHz	AM tuner section	
TAPE/MD, TV/LD, VIDEO	150mV	50 Kilohms	82dB 82dB* (A, 150mV)	Aerial terminals	75ohms, unbalanced	Tuning range	522 - 1611 kHz
			*78 IHF	Sensitivity		Aerial	Loop aerial
					Mono : 18.3 dBf, 2.2µV /75ohms Stereo : 38.3 dBf, 22.5µV /75ohms	Usable sensitivity	50dB/m (at 999kHz)
				Usable sensitivity	11.2 dBf, 1µV /75ohms (IHF)	S/N	54dB (at 50mV/m)
						Harmonic distortion	0.5% (50mV/m, 400Hz)
						Selectivity	35dB

— Continued on next page —

FM STEREO/FM-AM RECEIVER



SONY®

TABLE OF CONTENTS

General System	Tuner section : PLL quartz-locked digital synthesizer system Preamplifier section : Low-noise NF type equalizer Power amplifier section : Pure-complimentary SEPP
Power requirements	230V AC, 50/60Hz
Power consumption	115W
Dimensions	430 × 145 × 295mm
Mass (Approx.)	5.5kg
Supplied accessories	FM wire aerial (1) AM loop aerial (1) Remote controller (remote) (1) Size AA (R6) batteries (2)

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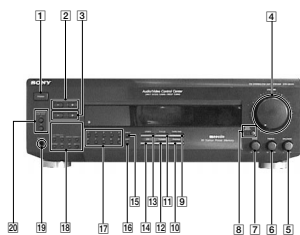
Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

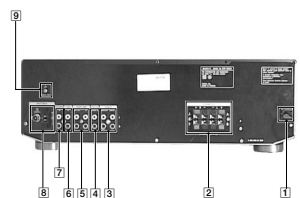
**SECTION 1
GENERAL**

**LOCATION AND FUNCTION OF CONTROLS
<FRONT>**



- | | |
|-------------------------------|---------------------------|
| 1 POWER switch | 11 TV/LD button |
| 2 CENTER LEVEL +/- buttons | 12 TUNER button |
| 3 REAR LEVEL +/- buttons | 13 VIDEO button |
| 4 MASTER VOLUME control | 14 CD button |
| 5 BALANCE control | 15 DIRECT button |
| 6 TREBLE control | 16 SHIFT button |
| 7 BASS control | 17 Numeric buttons |
| 8 BASS BOOST button/indicator | 18 Tuner control buttons |
| 9 TAPE/MD button | 19 PHONES jack |
| 10 PHONO button | 20 SPEAKERS (A/B) buttons |

<REAR>



- | | |
|------------------------|-------------------|
| 1 AC power cord | 6 CD |
| 2 FRONT SPEAKERS (A/B) | 7 PHONO |
| 3 VIDEO | 8 ANTENNA (FM/AM) |
| 4 TV/LD | 9 SIGNAL GND |
| 5 TAPE/MD | |

**SECTION 2
EXPLANATION OF IC TERMINALS**

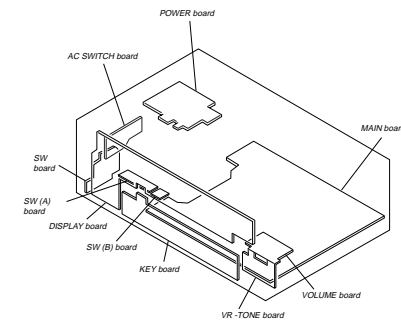
• IC201 μPD78044FGF-064-3B9

Pin No.	Pin Name	I/O	Description
1	DIG7	O	
2	DIG6	O	
3	DIG5	O	
4	DIG4	O	Fluorescent indicator tube drive.
5	DIG3	O	
6	DIG2	O	
7	DIG1	O	
8	+5V	—	Power supply (+5V).
9	S_CLK	I	System clock.
10	S_DATA	I	System data.
11	PLL_DATA	I	PLL_data input from TL1001.
12	S_CE (LCT288)	O	Chip enable output.
13	S_CE (LV100)	O	Chip enable output.
14	REAR_RY	—	Not used.
15	BRIDGE_CABLE	—	Not used.
16	PROTECT	I	Protecter detect input.
17	RESET	I	System reset terminal.
18	AUTO_STOP	I	Auto stop detect input.
19	STEREO_IN	I	Stereo detect input.
20	AVss	—	Ground.
21	SP_RY	O	Speaker relay drive.
22	SURR_RY	—	Not used.
23	POWER_RY	O	Power Relay.
24	NOT USED	—	Not used.
25	SIGNAL	I	A/D signal input terminal.
26	A/D1	I	A/D1 key input terminal.
27	A/D2	I	A/D2 key input terminal.
28	A/D1	I	A/D1 key input terminal.
29	AVDD	—	Power supply (+5V).
30	AV_REF	—	Reference voltage (+5V).
31	GND	—	Ground.
32	NC	—	Not used (Open).
33	Vss	—	Ground.
34	X1	I	System clock (4.194MHz).
35	X2	O	System clock (4.194MHz).
36	IC MUTE	O	Mute drive output for μPD2581V (IC701).
37	PROLOGIC	—	Not used (Open).
38	CSTUDD	—	Not used (Open).
39	HALL	—	Not used (Open).
40	T_MUTE	O	Tuner mute drive output.

Pin No.	Pin Name	I/O	Description
41	VOLUME UP	O	Volume Up Control.
42	VOLUME DOWN	O	Volume Down Control.
43	STANDBY	—	Not used (Open).
44	SYS_POWER	I	System power ON/OFF.
45	RDS_DATA_IN	I	RDS data input.
46	RDS_CLK_IN	I	RDS clock input.
47	STOP	I	Stop signal input from NIM2103D (IC950).
48	Vss	—	Ground.
49	SIRCS	I	Sircs signal input.
50	POWER_SW	I	Power switch input terminal.
51	5.1ch LED	—	Not used (Open).
52	+5V	—	Power supply (+5V).
53	BASS BOOST	—	Bass boost LED drive.
54	FUNC_MUTE	O	Line mute drive.
55	SL MUTE	—	Not used.
56	VERSION	I	Input for model select.
57	K14	I	Key in 4.
58	K13	I	Key in 3.
59	K12	I	Key in 2.
60	K11	I	Key in 1.
61	SR MUTE	—	Not used.
62	S15	O	Key out 15.
63	S14	O	Key out 14.
64	S13	O	Key out 13.
65	S12	O	Key out 12.
66	S11	O	Key out 11.
67	S10	O	Key out 10.
68	S9	O	Key out 9.
69	S8	O	Key out 8.
70	S7	O	Key out 7.
71	VLOAD	—	Connect to -24V.
72	S6	O	Key out 6.
73	S5	O	Key out 5.
74	S4	O	Key out 4.
75	S3	O	Key out 3.
76	S2	O	Key out 2.
77	S1	O	Key out 1.
78	DIG10	O	
79	DIG9	O	Fluorescent indicator tube drive.
80	DIG8	O	

**SECTION 3
DIAGRAMS**

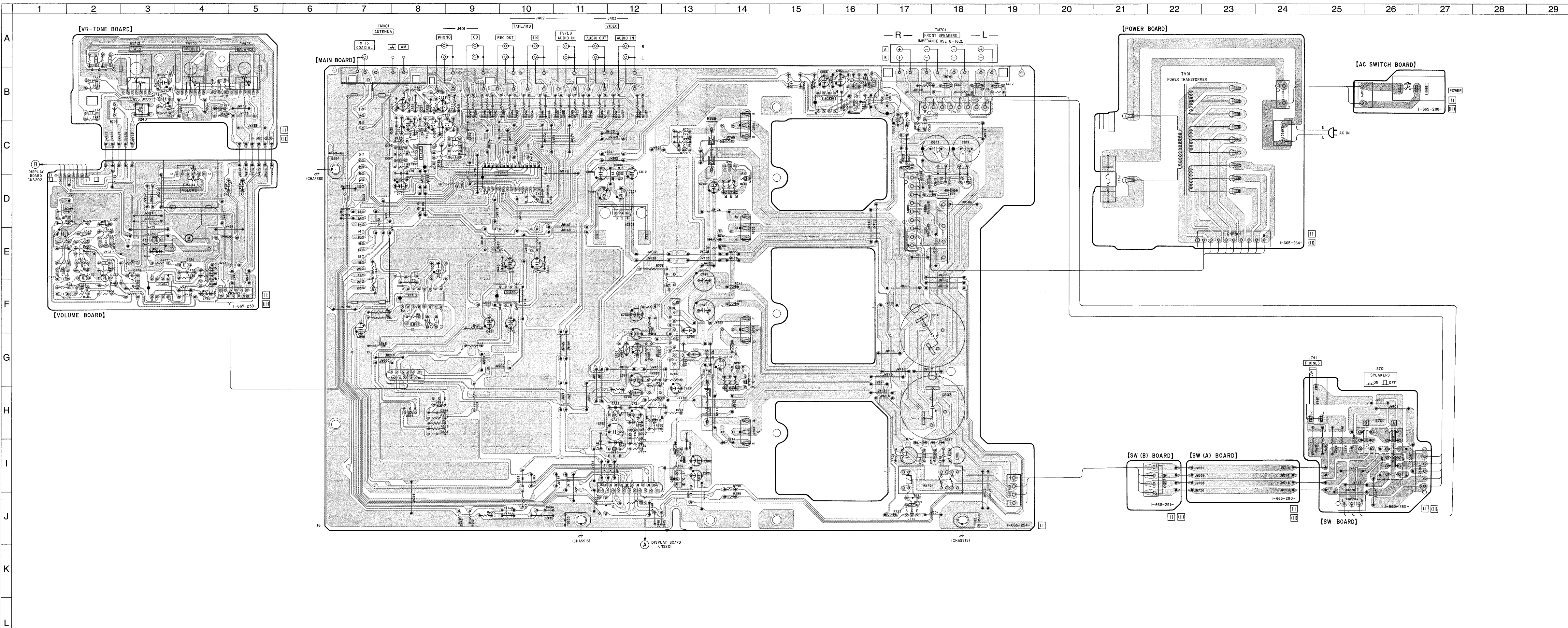
3-1. CIRCUIT BOARDS LOCATION



3-2. PRINTED WIRING BOARDS (MAIN SECTION)

• Semiconductor Location

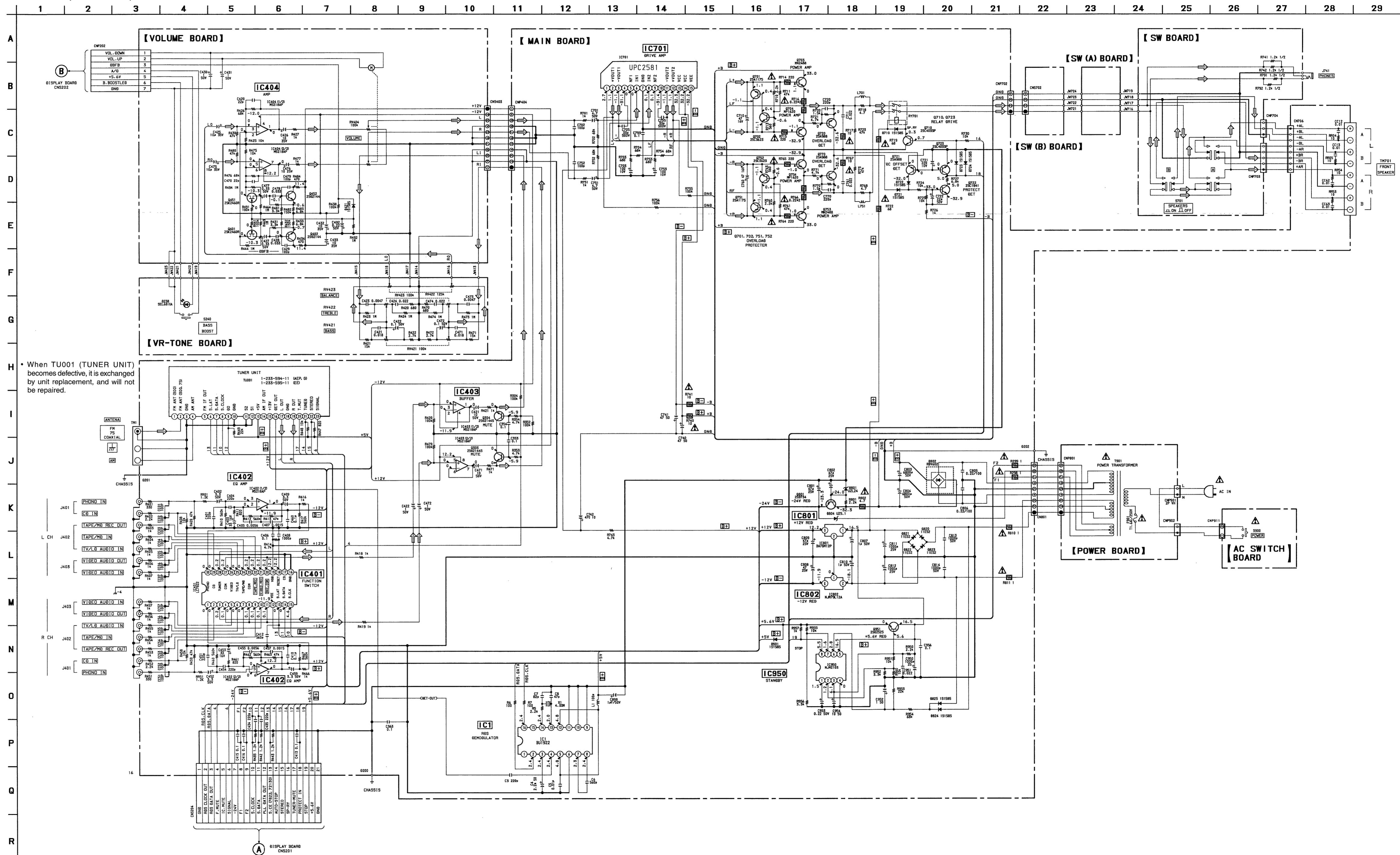
Ref. No.	Location	Ref. No.	Location
D721	H-12	IC802	C-12
D722	H-12	IC950	B-16
D723	J-12		
D238	B-2	Q303	H-8
D421	D-1	Q304	H-8
D710	I-17	Q401	E-2
D724	H-12	Q402	E-1
D801	H-13	Q451	E-2
D802	D-18	Q452	F-2
D804	I-13	Q701	G-14
D813	C-18	Q702	G-14
D820	C-18	Q703	H-14
D821	C-18	Q704	F-14
D822	C-18	Q710	J-17
D823	C-18	Q720	H-12
D824	C-17	Q721	H-12
D825	C-17	Q722	H-12
D901	I-10	Q723	I-12
		Q751	C-14
IC1	F-8	Q752	C-14
IC401	C-10	Q753	D-14
IC402	C-8	Q754	B-14
IC403	F-10	Q770	C-13
IC404	F-3	Q801	I-13
IC701	F-13	Q951	B-16
IC801	D-12		



Note:
 • : Parts extracted from the component side.
 • : Pattern on the side which is seen.

3-3. SCHEMATIC DIAGRAM (MAIN SECTION)

• Refer to page 15 for IC Block Diagrams.



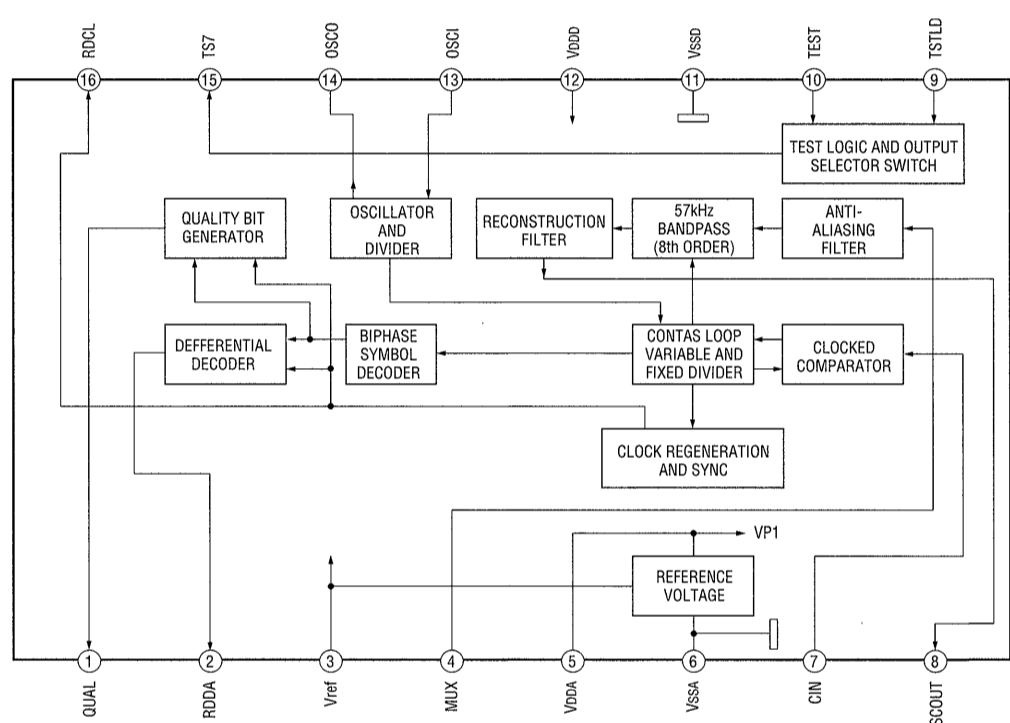
Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Δ : Internal component.
- \square : B+ Line.
- \square : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- No mark: FM
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \Rightarrow : FM

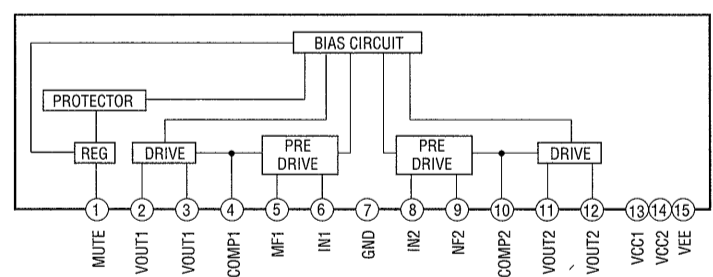
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

• IC BLOCK DIAGRAMS — MAIN SECTION —

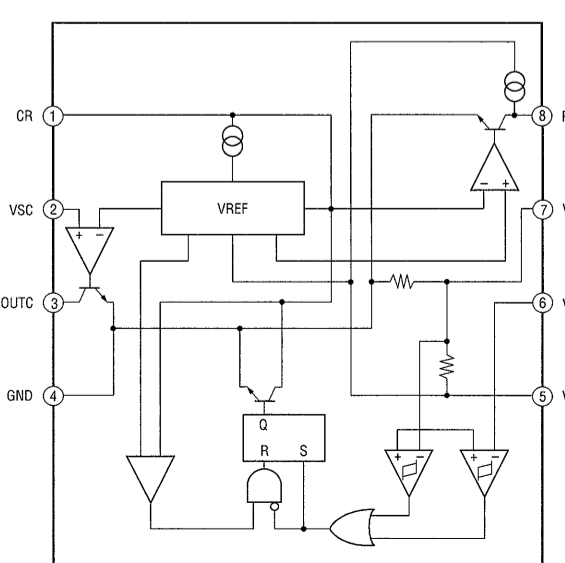
IC1 BU1922



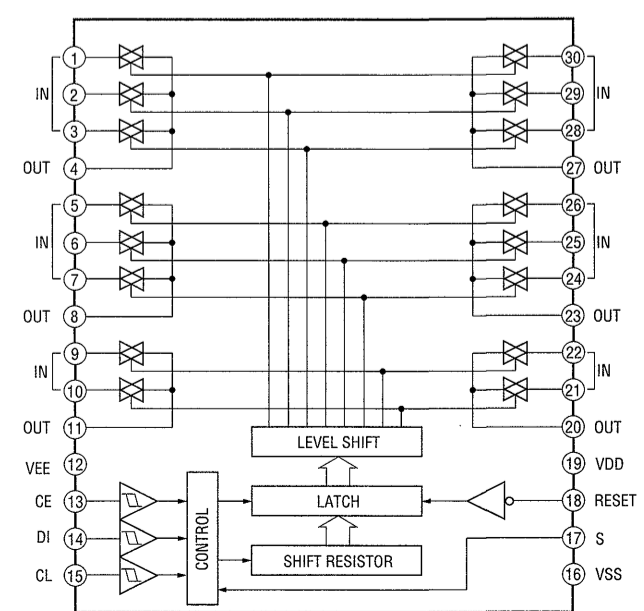
IC701 uPC2581V



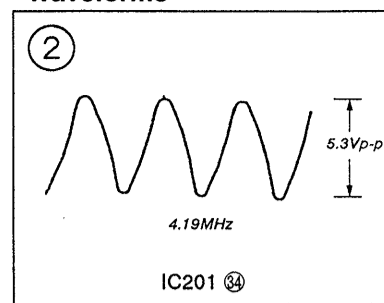
IC950 NJM2103D



IC401 LC7822

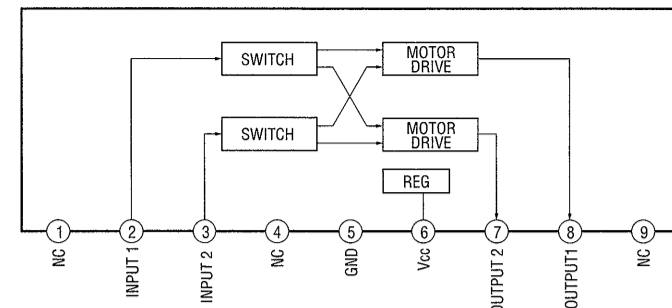


• Waveforms



• IC BLOCK DIAGRAM — DISPLAY SECTION —

IC202 BA6208



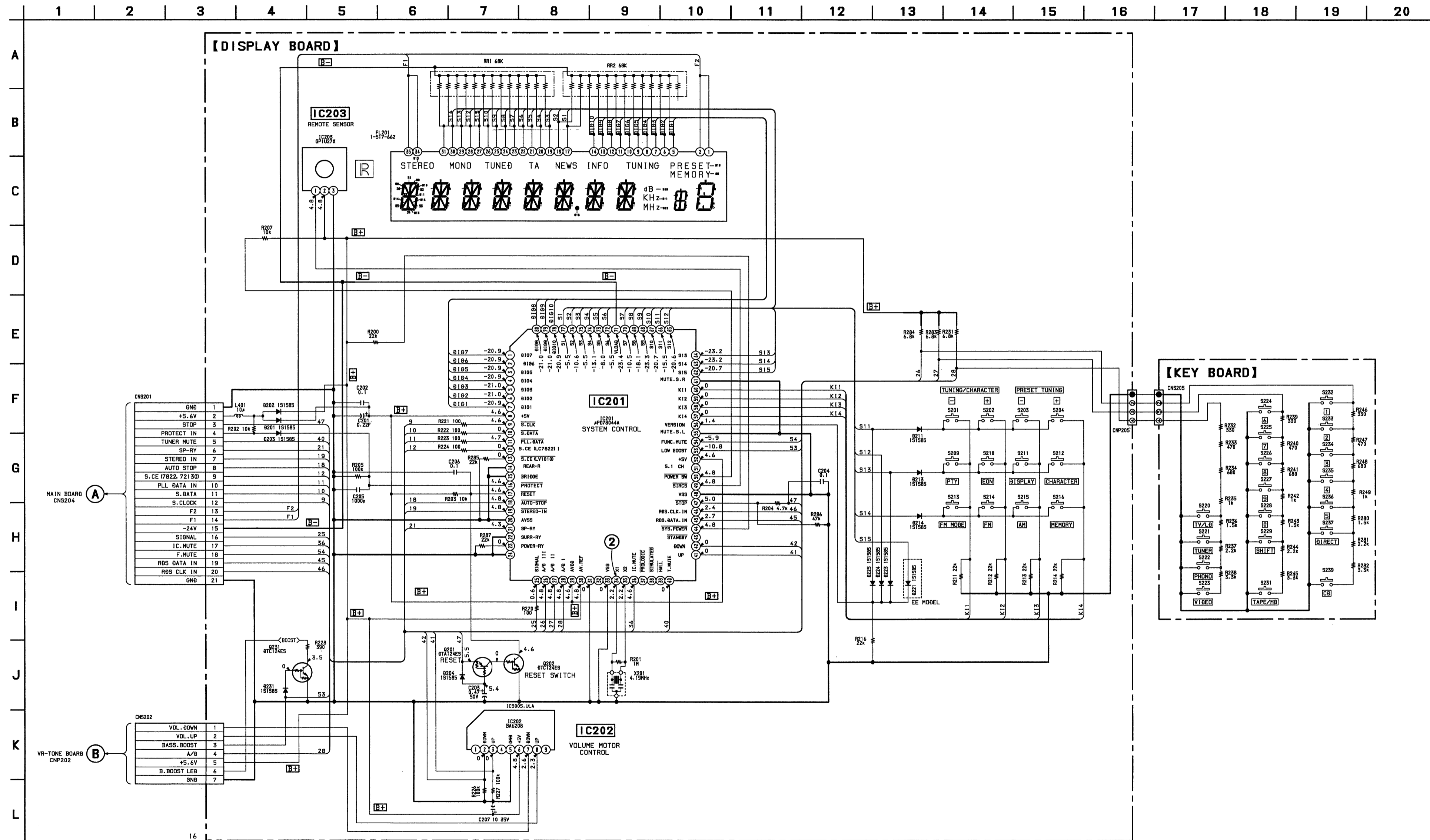
Note:

- All capacitors are in μF unless otherwise noted. pF: μF : 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Δ : Internal component.
- \square : B+ Line.
- \square : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- No mark: FM

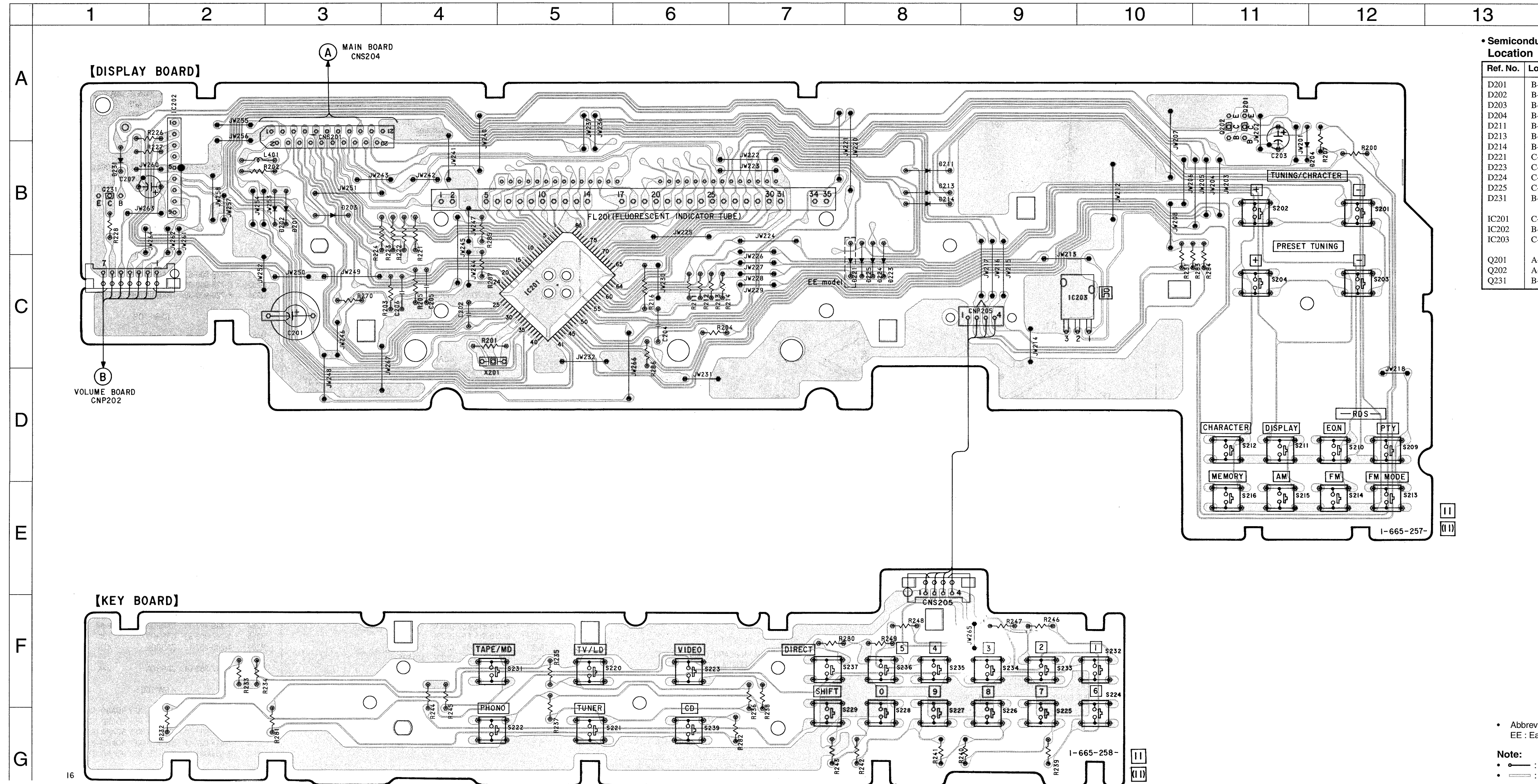
• Voltages are taken with a VOM (input impedance 10M Ω).

- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- \square : B+ Line.
- \square : B- Line.
- Circled numbers refer to waveforms.
- Signal path.
- FM
- EE: East European

3-4. SCHEMATIC DIAGRAM (DISPLAY SECTION)



3-5. PRINTED WIRING BOARDS (DISPLAY SECTION)



• Semiconductor Location

Ref. No.	Location
D201	B-3
D202	B-3
D203	B-3
D204	B-12
D211	B-9
D213	B-9
D214	B-9
D221	C-8
D223	C-8
D224	C-8
D225	C-8
D231	B-1
IC201	C-5
IC202	B-2
IC203	C-10
Q201	A-11
Q202	A-11
Q231	B-1

• Abbreviation
EE : East European

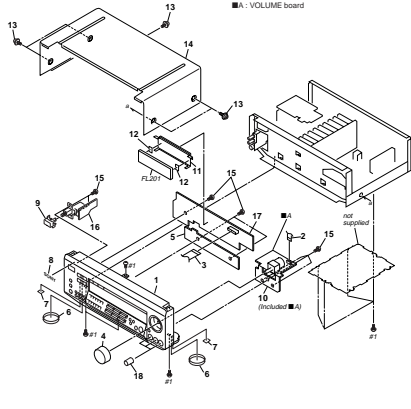
Note:
 • — : Parts extracted from the component side.
 • — : Pattern on the side which is seen.

SECTION 4 EXPLODED VIEWS

- NOTE:
- * X.X: X means standardized parts, or they may have some difference from the original one.
 - Bases marked "M" are not standard since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - The mechanical parts within reference number in the exploded views are not specified.
 - Hardware (Welds) list is given in the last of this part No.
 - Abbreviations:
 - G: Germany
 - E: East European
 - The components identified by mark A, or in some line with mark X, are critical for safety. Replace only with part number specified.

Ref. No. Part No. Description Remarks

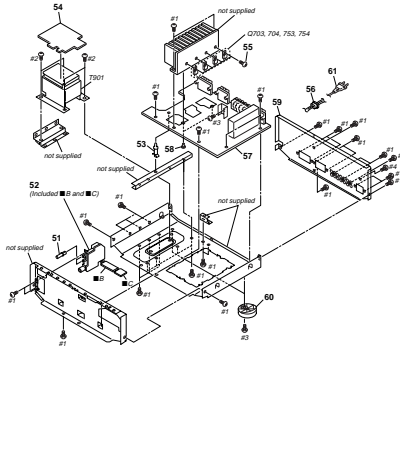
4-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	4-889-844-1	FRONT PANEL		1	1.709-941-1	WIRE (FLAT TYPE) (11 CORE)	
2	1.772-131-1	WIRE (FLAT TYPE) (21 CORE)		3	1.772-131-1	WIRE (FLAT TYPE) (21 CORE)	
4	4-896-871-1	KNOB (R40) ASSY		5	4-892-804-A	KEY BOARD, COMPLETE	
6	4-977-593-11	RING DIA. 58, ORNAMENTAL		7	4-977-598-11	CUSHION (R31.3) SQUARE	
8	3-966-600-11	SCREW (I.S.M.) 3.5X6		9	4-886-109-03	BUTTON (P-40)	
10	4-892-804-A	KEY BOARD, COMPLETE					

4-2. CHASSIS SECTION

- B: SW (A) board
- C: SW (B) board



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	1.493-801-01	HOLDER (FL TUBE)		5	4-932-801-A	MAIN BOARD, COMPLETE (EP)	
2	4-932-801-A	MAIN BOARD, COMPLETE (EP)		3	4-932-801-A	MAIN BOARD, COMPLETE (EP)	
4	4-932-801-A	MAIN BOARD, COMPLETE (EP)		5	4-932-801-A	MAIN BOARD, COMPLETE (EP)	
6	4-932-801-A	MAIN BOARD, COMPLETE (EP)		7	4-932-801-A	MAIN BOARD, COMPLETE (EP)	
8	4-932-801-A	MAIN BOARD, COMPLETE (EP)		9	4-932-801-A	MAIN BOARD, COMPLETE (EP)	
10	4-932-801-A	MAIN BOARD, COMPLETE (EP)		11	4-932-801-A	MAIN BOARD, COMPLETE (EP)	

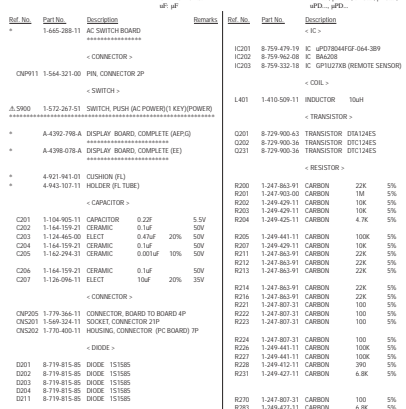
The components identified by mark A, or in some line with mark X, are critical for safety. Replace only with part number specified.

SECTION 5 ELECTRICAL PARTS LIST

- AC SWITCH
- DISPLAY
- DISPLAY
- KEY
- MAIN

- NOTE:
- When ordering parts by reference number please include the board name.
 - The components identified by mark A, or in some line with mark X, are critical for safety. Replace only with part number specified.

4-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	1.665-288-11	AC SWITCH BOARD		1	1.665-288-11	AC SWITCH BOARD	
2	1.665-288-11	AC SWITCH BOARD		3	1.665-288-11	AC SWITCH BOARD	
4	1.665-288-11	AC SWITCH BOARD		5	1.665-288-11	AC SWITCH BOARD	
6	1.665-288-11	AC SWITCH BOARD		7	1.665-288-11	AC SWITCH BOARD	
8	1.665-288-11	AC SWITCH BOARD		9	1.665-288-11	AC SWITCH BOARD	
10	1.665-288-11	AC SWITCH BOARD		11	1.665-288-11	AC SWITCH BOARD	

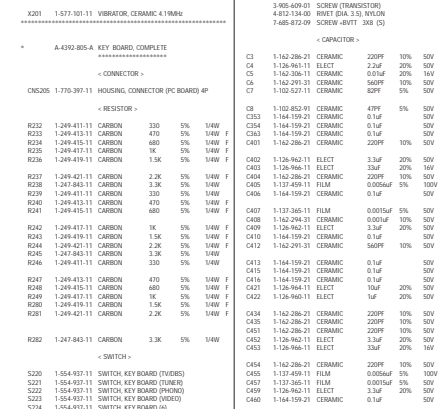


SECTION 5 ELECTRICAL PARTS LIST

- AC SWITCH
- DISPLAY
- DISPLAY
- KEY
- MAIN

- NOTE:
- When ordering parts by reference number please include the board name.
 - The components identified by mark A, or in some line with mark X, are critical for safety. Replace only with part number specified.

4-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	1.665-288-11	AC SWITCH BOARD		1	1.665-288-11	AC SWITCH BOARD	
2	1.665-288-11	AC SWITCH BOARD		3	1.665-288-11	AC SWITCH BOARD	
4	1.665-288-11	AC SWITCH BOARD		5	1.665-288-11	AC SWITCH BOARD	
6	1.665-288-11	AC SWITCH BOARD		7	1.665-288-11	AC SWITCH BOARD	
8	1.665-288-11	AC SWITCH BOARD		9	1.665-288-11	AC SWITCH BOARD	
10	1.665-288-11	AC SWITCH BOARD		11	1.665-288-11	AC SWITCH BOARD	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C722	1-126-965-11	ELECT	22uF 20% 50V			< DIODE >	
C740	1-126-967-11	ELECT	47uF 20% 50V				
C741	1-126-967-11	ELECT	47uF 20% 50V	D710	8-719-815-85	DIODE 1S1585	
C742	1-126-925-11	ELECT	470uF 20% 10V	D721	8-719-815-85	DIODE 1S1585	
C751	1-126-963-11	ELECT	4.7uF 20% 50V	D722	8-719-815-85	DIODE 1S1585	
				D723	8-719-815-85	DIODE 1S1585	
C752	1-102-973-00	CERAMIC	100PF 5% 50V	D724	8-719-815-85	DIODE 1S1585	
C753	1-126-933-11	ELECT	100uF 20% 10V				
C755	1-102-233-00	CERAMIC	33PF 10% 500V	D801	8-719-002-33	DIODE UZL-24L	
C760	1-126-967-11	ELECT	47uF 20% 16V	D802	8-719-302-38	DIODE RBV-602-01	
C761	1-137-372-11	FILM	0.022uF 5% 50V	D804	8-719-010-38	DIODE UZ-5.1BSB	
				D820	8-719-200-82	DIODE 11ES2	
C770	1-162-286-21	CERAMIC	220PF 10% 50V	D821	8-719-200-82	DIODE 11ES2	
C799	1-164-159-21	CERAMIC	0.1uF 50V				
C801	1-104-664-11	ELECT	47uF 20% 25V	D822	8-719-200-82	DIODE 11ES2	
C802	1-104-664-11	ELECT	47uF 20% 25V	D823	8-719-200-82	DIODE 11ES2	
C803	1-128-506-11	ELECT	6800uF 20% 50V	D824	8-719-815-85	DIODE 1S1585	
				D825	8-719-815-85	DIODE 1S1585	
C804	1-128-506-11	ELECT	6800uF 20% 50V	D901	8-719-815-85	DIODE 1S1585	
C805	1-130-781-00	FILM	0.22uF 10% 100V			< TERMINAL >	
C806	1-130-781-00	FILM	0.22uF 10% 100V				
C807	1-126-960-11	ELECT	1uF 20% 50V	* G200	1-537-738-21	TERMINAL, EARTH	
C808	1-104-664-11	ELECT	47uF 20% 25V	* G201	1-537-738-21	TERMINAL, EARTH	
				* G202	1-537-738-21	TERMINAL, EARTH	
C809	1-104-664-11	ELECT	47uF 20% 25V			< IC >	
C810	1-126-960-11	ELECT	1uF 20% 50V				
C811	1-126-942-61	ELECT	1000uF 20% 25V	IC1	8-759-450-86	IC BU1922	
C812	1-126-942-61	ELECT	1000uF 20% 25V	IC401	8-759-805-14	IC LC7822	
C813	1-101-001-00	CERAMIC	0.001uF 50V	IC402	8-759-636-74	IC M5218AP-22	
				IC403	8-759-636-74	IC M5218AP-22	
C814	1-101-001-00	CERAMIC	0.001uF 50V	IC701	8-759-326-52	IC uPC2581V	
C898	1-126-960-11	ELECT	1uF 20% 50V				
C950	1-126-942-61	ELECT	1000uF 20% 25V	IC801	8-759-391-87	IC BA78M12P	
C951	1-164-097-11	CERAMIC	0.022uF 50V	IC802	8-759-700-69	IC NJM79L12A	
C952	1-126-960-11	ELECT	1uF 20% 50V	IC950	8-759-333-83	IC NJM2103D	
						< JACK >	
C953	1-124-464-11	ELECT	0.22uF 20% 50V	J401	1-770-614-11	JACK, PIN 4P (PHONO/CD)	
C954	1-126-964-11	ELECT	10uF 20% 50V	J402	1-580-825-11	JACK, PIN 6P (CD/TAPE/MD)	
C956	1-164-159-21	CERAMIC	0.1uF 50V	J403	1-770-614-11	JACK, PIN 4P (VIDEO)	
CC01	1-162-282-31	CERAMIC	100PF 10% 50V			< COIL >	
CC02	1-162-282-31	CERAMIC	100PF 10% 50V	L1	1-410-521-11	INDUCTOR 100uH	
				L701	1-420-872-00	COIL, AIR-CORE	
CC03	1-162-282-31	CERAMIC	100PF 10% 50V	L751	1-420-872-00	COIL, AIR-CORE	
CC04	1-162-282-31	CERAMIC	100PF 10% 50V			< TRANSISTOR >	
CC05	1-162-282-31	CERAMIC	100PF 10% 50V	Q303	8-729-922-37	TRANSISTOR 2SD2144S	
CC06	1-162-282-31	CERAMIC	100PF 10% 50V	Q304	8-729-922-37	TRANSISTOR 2SD2144S	
CC07	1-162-282-31	CERAMIC	100PF 10% 50V	Q701	8-729-119-76	TRANSISTOR 2SA1175-HFE	
				Q702	8-729-141-30	TRANSISTOR 2SC3623A-LK	
CC12	1-164-096-11	CERAMIC	0.01uF 50V	Q703	8-749-010-25	IC MN2488-OPY-M	
CC13	1-164-096-11	CERAMIC	0.01uF 50V				
CC51	1-162-282-31	CERAMIC	100PF 10% 50V	Q704	8-749-010-26	IC MP1620-OPY-M	
CC52	1-162-282-31	CERAMIC	100PF 10% 50V	Q710	8-729-119-78	TRANSISTOR 2SC403SP-51	
CC53	1-162-282-31	CERAMIC	100PF 10% 50V	Q720	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
				Q721	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
CC54	1-162-282-31	CERAMIC	100PF 10% 50V	Q722	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
CC55	1-162-282-31	CERAMIC	100PF 10% 50V				
CC56	1-162-282-31	CERAMIC	100PF 10% 50V	Q723	8-729-119-78	TRANSISTOR 2SC403SP-51	
CC57	1-162-282-31	CERAMIC	100PF 10% 50V	Q751	8-729-119-76	TRANSISTOR 2SA1175-HFE	
CC62	1-164-096-11	CERAMIC	0.01uF 50V	Q752	8-729-141-30	TRANSISTOR 2SC3623A-LK	
				Q753	8-749-010-25	IC MN2488-OPY-M	
CC63	1-164-096-11	CERAMIC	0.01uF 50V	Q754	8-749-010-26	IC MP1620-OPY-M	
		< CONNECTOR >					
CNP404	1-569-060-11	SOCKET, CONNECTOR 11P					
CNP702	1-770-481-11	PIN, CONNECTOR 4P					
CNS204	1-569-324-11	SOCKET, CONNECTOR 21P					

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
Q770	8-729-140-82	TRANSISTOR 2SA988-PAFAEA		R704	1-249-439-11	CARBON 68K 5%	1/4W
Q801	8-729-140-97	TRANSISTOR 2SB734-34		R710	1-249-421-11	CARBON 2.2K 5%	1/4W F
Q951	8-729-030-18	TRANSISTOR 2SD2525		R711	1-249-437-11	CARBON 47K 5%	1/4W
		< RESISTOR >		R713	1-249-414-11	CARBON 560 5%	1/4W F
				△ R714	1-249-409-11	CARBON 220 5%	1/4W F
R5	1-249-421-11	CARBON 2.2K 5%	1/4W F	△ R715	1-249-409-11	CARBON 220 5%	1/4W F
R6	1-247-807-31	CARBON 100 5%	1/4W	△ R716	1-233-352-41	ENCAPSULATED COMPONENT	
R7	1-247-807-31	CARBON 100 5%	1/4W	△ R717	1-249-393-11	CARBON 10 5%	1/4W F
△ R298	1-249-381-11	CARBON 1 5%	1/4W F	R718	1-249-389-11	CARBON 4.7 5%	1/4W F
△ R299	1-249-381-11	CARBON 1 5%	1/4W F	△ R719	1-249-403-11	CARBON 68 5%	1/4W F
R304	1-249-441-11	CARBON 100K 5%	1/4W	R720	1-249-419-11	CARBON 1.5K 5%	1/4W F
R352	1-249-441-11	CARBON 100K 5%	1/4W	R721	1-249-425-11	CARBON 4.7K 5%	1/4W F
R353	1-249-425-11	CARBON 4.7K 5%	1/4W F	△ R722	1-249-403-11	CARBON 68 5%	1/4W F
R354	1-249-425-11	CARBON 4.7K 5%	1/4W F	R723	1-249-437-11	CARBON 47K 5%	1/4W
R401	1-249-411-11	CARBON 330 5%	1/4W	R724	1-249-429-11	CARBON 10K 5%	1/4W
R402	1-249-421-11	CARBON 2.2K 5%	1/4W F	R725	1-249-429-11	CARBON 10K 5%	1/4W
R403	1-249-417-11	CARBON 1K 5%	1/4W F	R726	1-249-417-11	CARBON 1K 5%	1/4W F
R404	1-249-417-11	CARBON 1K 5%	1/4W F	R727	1-249-427-11	CARBON 6.8K 5%	1/4W F
R405	1-249-417-11	CARBON 1K 5%	1/4W F	R730	1-249-429-11	CARBON 10K 5%	1/4W
R406	1-249-417-11	CARBON 1K 5%	1/4W F	△ R740	1-249-393-11	CARBON 10 5%	1/4W F
R407	1-249-417-11	CARBON 1K 5%	1/4W F	△ R741	1-249-393-11	CARBON 10 5%	1/4W F
R408	1-249-429-11	CARBON 10K 5%	1/4W	R743	1-249-425-11	CARBON 4.7K 5%	1/4W F
R409	1-249-437-11	CARBON 47K 5%	1/4W	R751	1-249-417-11	CARBON 1K 5%	1/4W F
R410	1-247-897-11	CARBON 560K 5%	1/4W	R752	1-249-439-11	CARBON 68K 5%	1/4W
R411	1-249-416-11	CARBON 820 5%	1/4W F	R753	1-249-415-11	CARBON 680 5%	1/4W F
R412	1-247-897-11	CARBON 560K 5%	1/4W	R754	1-249-439-11	CARBON 68K 5%	1/4W
R413	1-249-437-11	CARBON 47K 5%	1/4W	R755	1-249-441-11	CARBON 100K 5%	1/4W
R414	1-249-425-11	CARBON 4.7K 5%	1/4W F	R756	1-249-441-11	CARBON 100K 5%	1/4W
R416	1-249-417-11	CARBON 1K 5%	1/4W F	R760	1-249-421-11	CARBON 2.2K 5%	1/4W F
R417	1-247-897-11	CARBON 560K 5%	1/4W	R761	1-249-437-11	CARBON 47K 5%	1/4W
R418	1-249-417-11	CARBON 1K 5%	1/4W F	R763	1-249-414-11	CARBON 560 5%	1/4W F
R419	1-249-417-11	CARBON 1K 5%	1/4W F	△ R764	1-249-409-11	CARBON 220 5%	1/4W F
R420	1-249-441-11	CARBON 100K 5%	1/4W	△ R765	1-249-409-11	CARBON 220 5%	1/4W F
R421	1-249-417-11	CARBON 1K 5%	1/4W F	△ R766	1-233-352-41	ENCAPSULATED COMPONENT	
R435	1-249-418-11	CARBON 1.2K 5%	1/4W F	△ R767	1-249-393-11	CARBON 10 5%	1/4W F
R442	1-249-418-11	CARBON 1.2K 5%	1/4W F	R768	1-249-389-11	CARBON 4.7 5%	1/4W F
R443	1-249-418-11	CARBON 1.2K 5%	1/4W F	R770	1-249-419-11	CARBON 1.5K 5%	1/4W F
R447	1-249-416-11	CARBON 820 5%	1/4W F	R771	1-249-425-11	CARBON 4.7K 5%	1/4W F
R448	1-249-429-11	CARBON 10K 5%	1/4W	R773	1-249-437-11	CARBON 47K 5%	1/4W
R449	1-247-863-91	CARBON 22K 5%	1/4W	R801	1-249-421-11	CARBON 2.2K 5%	1/4W F
R451	1-249-411-11	CARBON 330 5%	1/4W	R801	1-249-425-11	CARBON 4.7K 5%	1/4W F
R452	1-249-421-11	CARBON 2.2K 5%	1/4W F	△ R802	1-249-389-11	CARBON 4.7 5%	1/4W F
R453	1-249-417-11	CARBON 1K 5%	1/4W F	△ R810	1-249-381-11	CARBON 1 5%	1/4W F
R454	1-249-417-11	CARBON 1K 5%	1/4W F	△ R811	1-249-381-11	CARBON 1 5%	1/4W F
R455	1-249-417-11	CARBON 1K 5%	1/4W F	R821	1-249-437-11	CARBON 47K 5%	1/4W
R456	1-249-417-11	CARBON 1K 5%	1/4W F	R950	1-249-421-11	CARBON 2.2K 5%	1/4W F
R457	1-249-417-11	CARBON 1K 5%	1/4W F	R951	1-249-429-11	CARBON 10K 5%	1/4W
R458	1-249-429-11	CARBON 10K 5%	1/4W	R952	1-247-843-11	CARBON 3.3K 5%	1/4W
R459	1-249-437-11	CARBON 47K 5%	1/4W	R953	1-247-863-91	CARBON 22K 5%	1/4W
R460	1-247-897-11	CARBON 560K 5%	1/4W	R954	1-249-439-11	CARBON 68K 5%	1/4W
R461	1-249-416-11	CARBON 820 5%	1/4W F	R955	1-249-429-11	CARBON 10K 5%	1/4W
R462	1-247-897-11	CARBON 560K 5%	1/4W	R956	1-247-843-11	CARBON 3.3K 5%	1/4W
R463	1-249-437-11	CARBON 47K 5%	1/4W	R957	1-249-417-11	CARBON 1K 5%	1/4W F
R466	1-249-417-11	CARBON 1K 5%	1/4W F	R960	1-249-429-11	CARBON 10K 5%	1/4W
R467	1-247-897-11	CARBON 560K 5%	1/4W	RR01	1-249-418-11	CARBON 1.2K 5%	1/4W F
R470	1-249-441-11	CARBON 100K 5%	1/4W	RR04	1-249-393-11	CARBON 10 5%	1/4W F
R471	1-249-417-11	CARBON 1K 5%	1/4W F				
R701	1-249-417-11	CARBON 1K 5%	1/4W F				
R702	1-249-439-11	CARBON 68K 5%	1/4W				
R703	1-249-415-11	CARBON 680 5%	1/4W F				

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

MAIN	POWER	SW	SW(A)	SW(B)	VOLUME	VR-TONE
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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
RR05	1-249-393-11	CARBON	10 5% 1/4W F	*	A-4392-800-A	VR-TONE BOARD, COMPLETE	
RR51	1-249-418-11	CARBON	1.2K 5% 1/4W F			*****	
RR54	1-249-393-11	CARBON	10 5% 1/4W F			VOLUME BOARD	
RR55	1-249-393-11	CARBON	10 5% 1/4W F			*****	
		< RELAY >				< CAPACITOR >	
RY701	1-515-921-11	RELAY (12V)		C420	1-162-207-31	CERAMIC	22PF 5% 50V
		< TERMINAL >		C421	1-137-440-11	FILM	0.018uF 5% 50V
TM1	1-694-266-11	TERMINAL BOARD, ANT		C422	1-124-463-00	ELECT	0.1uF 20% 50V
TM701	1-537-376-11	TERMINAL BOARD (SPEAKER)		C423	1-137-368-11	FILM	0.0047uF 5% 50V
		< TUNER >		C424	1-137-372-11	FILM	0.022uF 5% 50V
TU001	1-233-594-11	ENCAPSULATED COMPONENT (AEP,G)		C425	1-126-096-11	ELECT	10uF 20% 35V
TU001	1-233-595-11	ENCAPSULATED COMPONENT (EE)		C426	1-126-096-11	ELECT	10uF 20% 35V
		< VIBRATOR >		C427	1-124-252-00	ELECT	0.33uF 20% 50V
X1	1-579-900-21	VIBRATOR, CRYSTAL 4.33MHz		C428	1-130-489-00	MYLAR	0.033uF 5% 50V
		*****		C429	1-102-973-00	CERAMIC	100PF 5% 50V
*	1-665-264-11	POWER BOARD		C430	1-126-301-11	ELECT	1uF 20% 50V
		*****		C431	1-126-301-11	ELECT	1uF 20% 50V
	1-533-399-31	HOLDER, FUSE		C432	1-126-096-11	ELECT	10uF 20% 35V
		< CONNECTOR >		C433	1-126-096-11	ELECT	10uF 20% 35V
CNP801	1-764-478-11	PIN, CONNECTOR (PC BOARD) 9P		C470	1-162-207-31	CERAMIC	22PF 5% 50V
CNP901	1-564-321-00	PIN, CONNECTOR 2P		C471	1-137-440-11	FILM	0.018uF 5% 50V
		< FUSE >		C472	1-124-463-00	ELECT	0.1uF 20% 50V
△ F901	1-532-503-51	FUSE TIME LAG 1.6A		C473	1-137-368-11	FILM	0.0047uF 5% 50V
		< TRANSFORMER >		C474	1-137-372-11	FILM	0.022uF 5% 50V
△ T901	1-431-257-11	TRANSFORMER, POWER		C475	1-126-096-11	ELECT	10uF 20% 35V
		*****		C476	1-126-096-11	ELECT	10uF 20% 35V
*	A-4392-801-A	SW BOARD, COMPLETE		C477	1-124-252-00	ELECT	0.33uF 20% 50V
		*****		C478	1-130-489-00	MYLAR	0.033uF 5% 50V
		SW (A) BOARD		C479	1-102-973-00	CERAMIC	100PF 5% 50V
		*****		C492	1-124-464-11	ELECT	0.22uF 20% 50V
		SW (B) BOARD				< CONNECTOR >	
		*****		CNP202	1-770-391-11	PIN, CONNECTOR (PC BOARD) 7P	
		< CONNECTOR >		CNS403	1-569-060-11	SOCKET, CONNECTOR 11P	
CNP703	1-764-474-11	PIN, CONNECTOR (PC BOARD) 5P				< DIODE >	
CNP704	1-764-473-11	PIN, CONNECTOR (PC BOARD) 3P		D238	8-719-313-50	DIODE SEL6810A-TH12	
CNS702	1-770-482-11	CONNECTOR, BOARD TO BOARD 4P		D421	8-719-815-85	DIODE 1S1585	
		< JACK >				< IC >	
J741	1-750-733-11	JACK (LARGE TYPE)(PHONES)		IC404	8-759-636-74	IC M5218AP-22	
		< RESISTOR >				< TRANSISTOR >	
R741	1-260-100-11	CARBON	1.2K 5% 1/2W	Q401	8-729-202-67	TRANSISTOR 2SK246-GR3	
R742	1-260-100-11	CARBON	1.2K 5% 1/2W	Q402	8-729-922-37	TRANSISTOR 2SD2144S	
R791	1-260-100-11	CARBON	1.2K 5% 1/2W	Q451	8-729-202-67	TRANSISTOR 2SK246-GR3	
R792	1-260-100-11	CARBON	1.2K 5% 1/2W	Q452	8-729-922-37	TRANSISTOR 2SD2144S	
		< SWITCH >				< RESISTOR >	
S701	1-762-320-11	SWITCH, PUSH (2 KEY) (SPEAKERS)		R420	1-249-415-11	CARBON	680 5% 1/4W F
		*****		R421	1-249-431-11	CARBON	15K 5% 1/4W
				R422	1-249-422-11	CARBON	2.7K 5% 1/4W F
				R423	1-247-903-00	CARBON	1M 5% 1/4W
				R424	1-247-903-00	CARBON	1M 5% 1/4W

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VOLUME

VR-TONE

Ref. No.	Part No.	Description	Remarks
R425	1-249-429-11	CARBON 10K 5%	1/4W
R426	1-249-439-11	CARBON 68K 5%	1/4W
R427	1-249-417-11	CARBON 1K 5%	1/4W F
R430	1-249-437-11	CARBON 47K 5%	1/4W
R431	1-247-843-11	CARBON 3.3K 5%	1/4W
R432	1-247-883-00	CARBON 150K 5%	1/4W
R433	1-249-427-11	CARBON 6.8K 5%	1/4W F
R434	1-249-413-11	CARBON 470 5%	1/4W F
R438	1-249-441-11	CARBON 100K 5%	1/4W
R441	1-249-441-11	CARBON 100K 5%	1/4W
R444	1-247-903-00	CARBON 1M 5%	1/4W
R464	1-247-903-00	CARBON 1M 5%	1/4W
R469	1-247-903-00	CARBON 1M 5%	1/4W
R470	1-249-415-11	CARBON 680 5%	1/4W F
R471	1-249-431-11	CARBON 15K 5%	1/4W
R472	1-249-422-11	CARBON 2.7K 5%	1/4W F
R473	1-247-903-00	CARBON 1M 5%	1/4W
R474	1-247-903-00	CARBON 1M 5%	1/4W
R475	1-249-429-11	CARBON 10K 5%	1/4W
R476	1-249-439-11	CARBON 68K 5%	1/4W
R477	1-249-417-11	CARBON 1K 5%	1/4W F
R480	1-249-437-11	CARBON 47K 5%	1/4W
R481	1-247-843-11	CARBON 3.3K 5%	1/4W
R482	1-247-883-00	CARBON 150K 5%	1/4W
R483	1-249-427-11	CARBON 6.8K 5%	1/4W F
R484	1-249-413-11	CARBON 470 5%	1/4W F
R491	1-249-441-11	CARBON 100K 5%	1/4W
R492	1-247-903-00	CARBON 1M 5%	1/4W
R494	1-247-903-00	CARBON 1M 5%	1/4W
RV404	1-241-426-11	RES, VAR, CARBON 100KX2 (MASTER VOLUME)	
RV421	1-223-362-11	RES, VAR, CARBON 100K/100K (BASS)	
RV422	1-223-363-11	RES, VAR, CARBON 125K/125K (TREBLE)	
RV423	1-225-447-11	RES, VAR, CARBON 100K/100K (BALANCE)	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
S240	1-554-937-11	SWITCH, KEY BOARD (BASS BOOST)	

MISCELLANEOUS			

2	1-769-941-11	WIRE (FLAT TYPE) (11 CORE)	
3	1-773-151-11	WIRE (FLAT TYPE) (21 CORE)	
△ 61	1-769-744-11	CORD, POWER	
△ T901	1-431-257-11	TRANSFORMER, POWER	

ACCESSORIES & PACKING MATERIALS			

	1-473-633-11	REMOTE COMMANDER (RM-U265)	
	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM)	
	3-859-658-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/GERMAN/DUTCH/ITALIAN)(AEP,G)	
	3-859-658-21	MANUAL, INSTRUCTION (SPANISH/SWEDISH/FINNISH/RUSSIAN)(AEP)	
	3-859-658-31	MANUAL, INSTRUCTION (ENGLISH/POLISH/RUSSIAN)(EE)	
	4-681-643-01	COVER, BATTERY (For RM-U265)	

HARDWARE LIST			

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#2	7-685-881-09	SCREW +BVTT 4X8 (S)	
#3	7-685-872-09	SCREW +BVTT 3X8 (S)	
#4	7-685-646-71	SCREW +BTP 3X8	

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