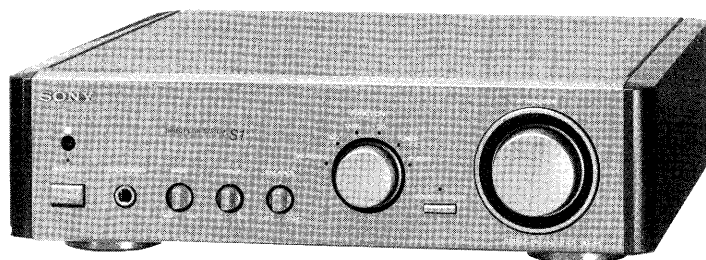


TAE-S1

SERVICE MANUAL

*AEP Model
UK Model
Singapore Model
Tourist Model*



TAE-S1 is the stereo preamplifier section in SHC-S1.

SPECIFICATIONS

Amplifier selection

Total harmonic distortion

0.005% at rated 1 kHz output

Frequency response

PHONO MM (10 Hz - 15 kHz):
RIAA equalization curve ± 1 dB
TUNER, CD, TAPE, MD, DAT/
VIDEO, ADAPTOR IN: 10 Hz -
100 kHz ± 3 dB

Input sensitivity

PHONO: 2.5 mV, 50 kilohms
TUNER, CD, TAPE, MD, DAT/
VIDEO, ADAPTOR IN: 150 mV,
50 kilohms

S/N (network)

PHONO: 85 dB(A) (SOURCE
DIRECT ON)
CD: 105 dB(A) (SOURCE
DIRECT ON)

Output voltage impedance

TAPE, MD, DAT/VIDEO,
ADAPTOR: 150 mV, 1 kilohms
OUTPUT: 1.5 V, 47 ohms
HEADPHONES: 10 milliwatts
at 8 ohms, Accepts low and
high impedance headphones.

Tone controls

BASS: ± 7 dB at 100 Hz
TREBLE: ± 6 dB at 10 kHz

Muting

-60 dB

General

Power requirements

AEP, UK, German, Italian Model :
220 - 230 V AC, 50/60 Hz

Singapore, Tourist Model :
110 - 120 V, 220 - 240 V AC,
adjustable, 50/60 Hz

Mains

3 switched, total 175 W max.

Dimensions

Approx. 310 $\times$ 90 $\times$ 360 mm (12
1/4 $\times$ 3 5/8 $\times$ 14 1/4 inches)
(w/h/d)

Mass

Approx. 3.2 kg (7 lb 1 oz)

Supplied accessories

Remote commander RM-S1 (1)
Sony SUM-3 (NS) (2)
Audio bus cable (for connecting
components) (1)

Design and specifications are subject to
change without notice.

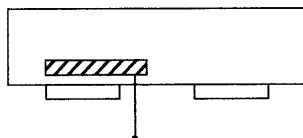
STEREO PREAMPLIFIER
SONY[®]

TABLE OF CONTENTS

Section	Title	Page
1.	GENERAL	2
2.	DIAGRAMS	
2-1.	Block Diagram	3
2-2.	Schematic Diagram	6
2-3.	Printed Wiring Boards	9
2-4.	Semiconductor Lead Layouts	12
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	• IC301 Main Controller (TMP87C846N-4109)	13
3.	EXPLODED VIEWS	
3-1.	Case and Front Panel Section	14
3-2.	Chassis Section	15
4.	ELECTRICAL PARTS LIST	16

MODEL IDENTIFICATION

— BACK PANEL —



AEP/German/Italian model : 4-967-151-1□
 UK model : 4-967-151-3□
 Singapore/Tourist model : 4-967-151-2□

SAFETY-RELATED COMPONENT WARNING !!

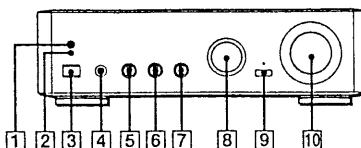
COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

This section is extracted from instruction manual.

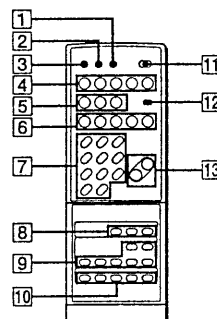
Index to Parts and Controls

Front Panel



- 1 Remote sensor
- 2 ON/STANDBY indicator (7)
- 3 POWER switch (7)
- 4 HEADPHONES jack (7)
- 5 BASS control (7)
- 6 TREBLE control (7)
- 7 BALANCE control (7)
- 8 FUNCTION control (7)
- 9 SOURCE DIRECT control (7)
- 10 ATTENUATOR control (7)

Remote Commander

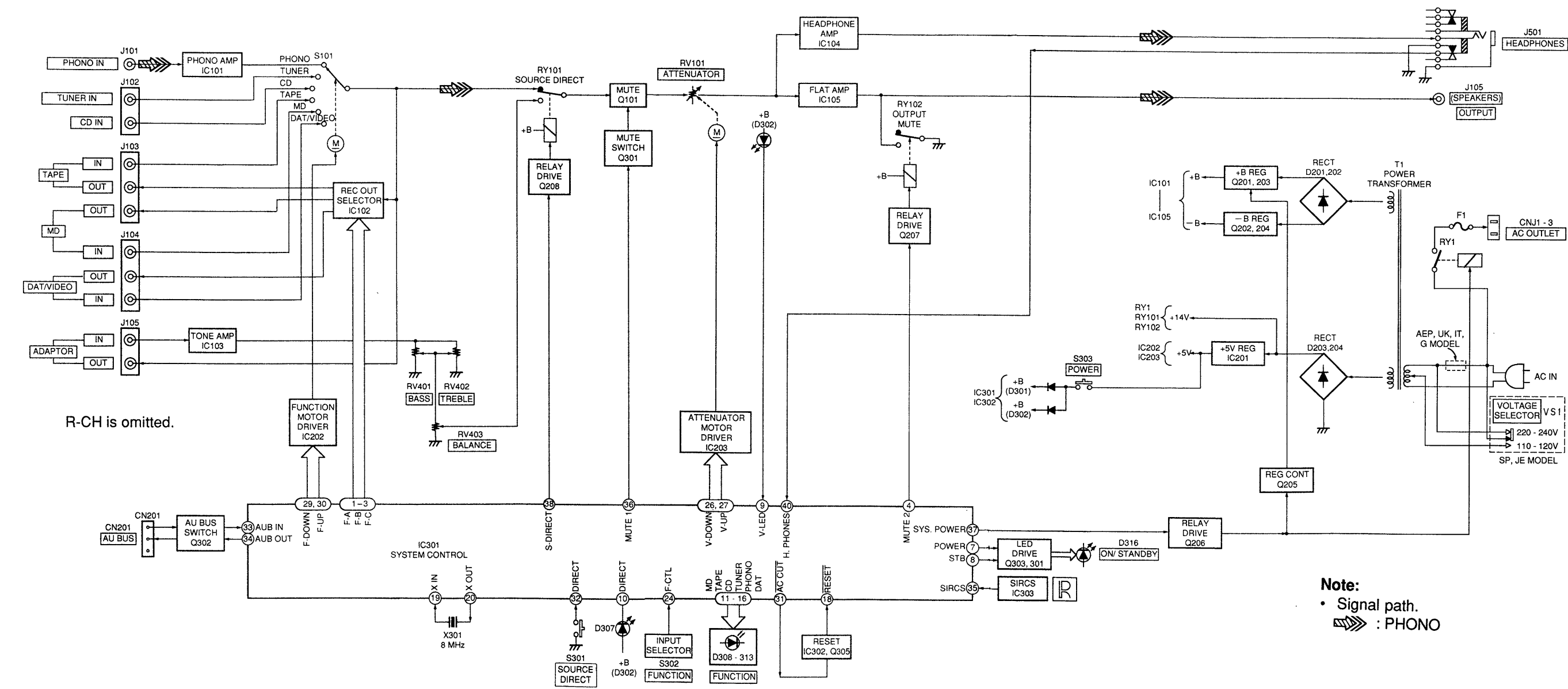


- 1 MUTE button (7)
- 2 SOURCE DIRECT button
- 3 FUNCTION button
Each time you press FUNCTION, the function changes as follows:
DAT/VIDEO → MD → TAPE → CD → TUNER → PHONO →...
- 4 Cassette deck operating buttons
◀ (reverse side play)
▶ (upper side play)
■ (stop)
◀▶ (fast leftward / rightward) (AMS*)
- 5 Tuner operating buttons
SHIFT: Each time you press SHIFT, the letter (A - C) changes as follows:
A → B → C → ...
PRESET -/+ : Press - or + to select the number (0 - 9).
- 6 CD operating buttons
▶ (play)
■ (pause)
■ (stop)
◀▶ (AMS*)
- 7 Tuner/CD numeric buttons
- 8 Tape control buttons
● REC (recording)
○ REC MUTE (recording mute)
■ (pause)
- 9 CD control buttons
CHECK: Press the button to check the programme.
CLEAR: Press the button to erase a specific track.
CONTINUE: Press the button to play tracks continuously.
SHUFFLE: Press the button to play tracks in random order.
PROGRAM: Press the button to play tracks in the desired order.
REPEAT: Press the button to play tracks repeatedly.
TIME: Press the button to change the time to be displayed.
- 10 MD control buttons
▶ (play)
■ (pause)
■ (stop)
◀▶ (AMS*)
- 11 SYSTEM POWER switch (8)
- 12 TUNER/CD switch
- 13 ATTENUATOR +/- buttons

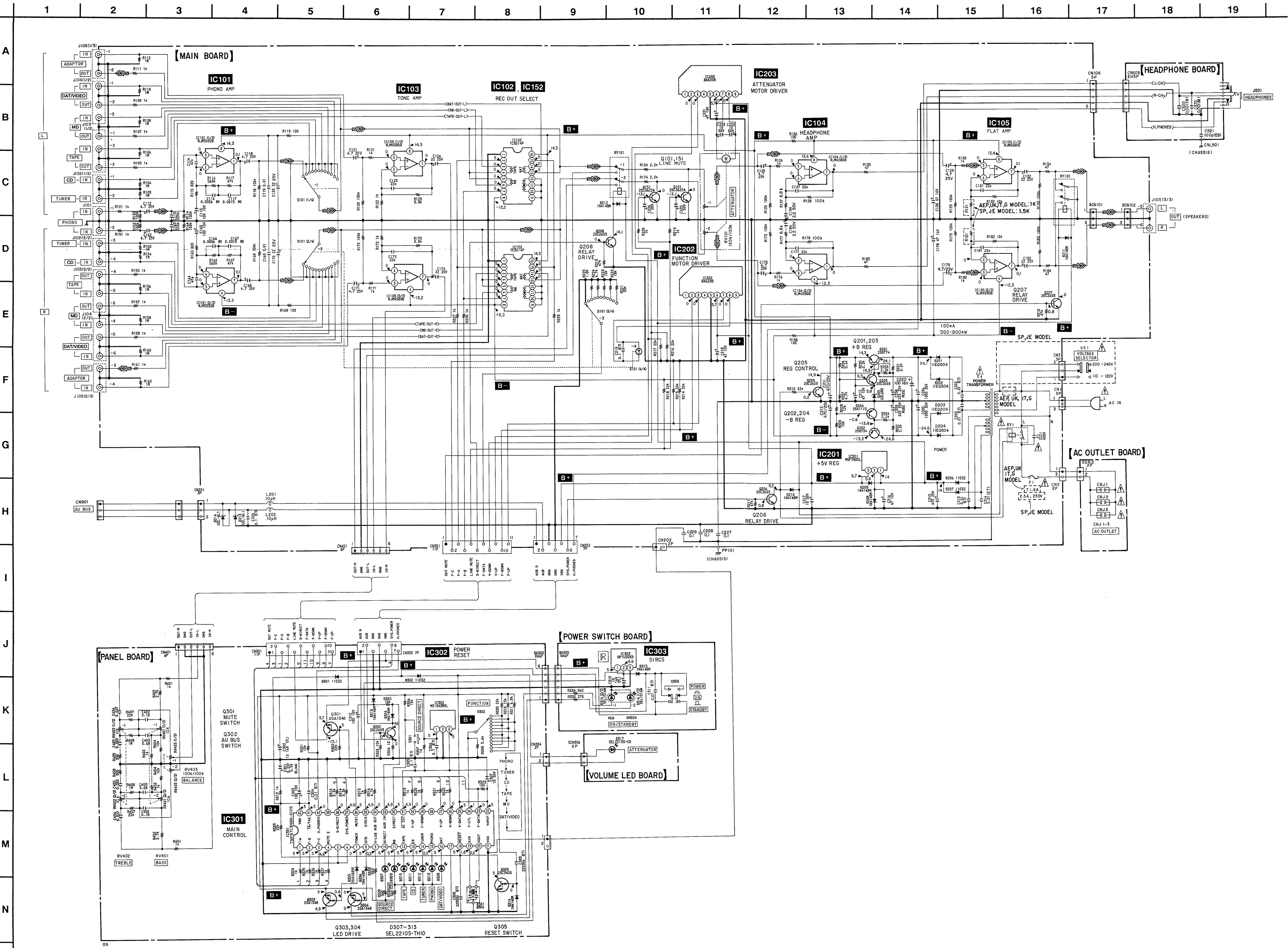
*AMS: Automatic Music Sensor

SECTION 2
DIAGRAMS

2-1. BLOCK DIAGRAM

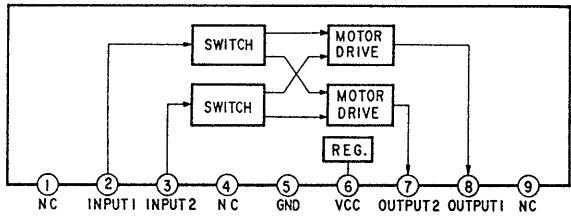


2-2. SCHEMATIC DIAGRAM
• See page 14 for IC Pin Function. (IC301)



• IC Block Diagram

IC202, 203 BA6208



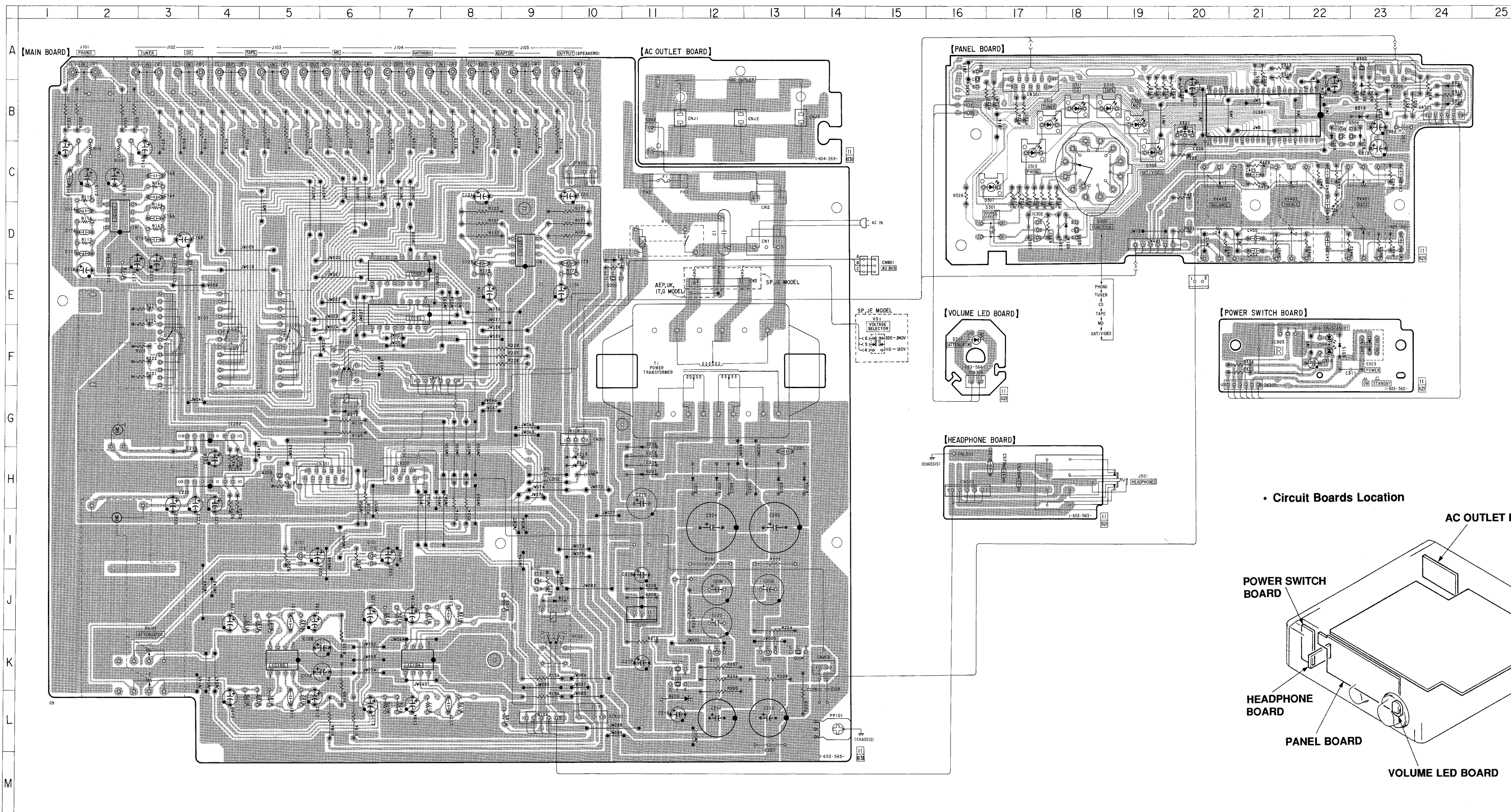
- Note:**
- All capacitors are in μF unless otherwise noted. $\text{pF}; \mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $1/3\text{W}$ or less unless otherwise specified.
 - Δ : internal component.
 - $\square$: panel designation.

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

- **B+** : B+ Line
- **B-** : B- Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\Rightarrow$: PHONO
- Abbreviation
 - G : German model.
 - IT : Italian model.
 - SP : Singapore model.
 - JE : Tourist model.

2-3. PRINTED WIRING BOARDS

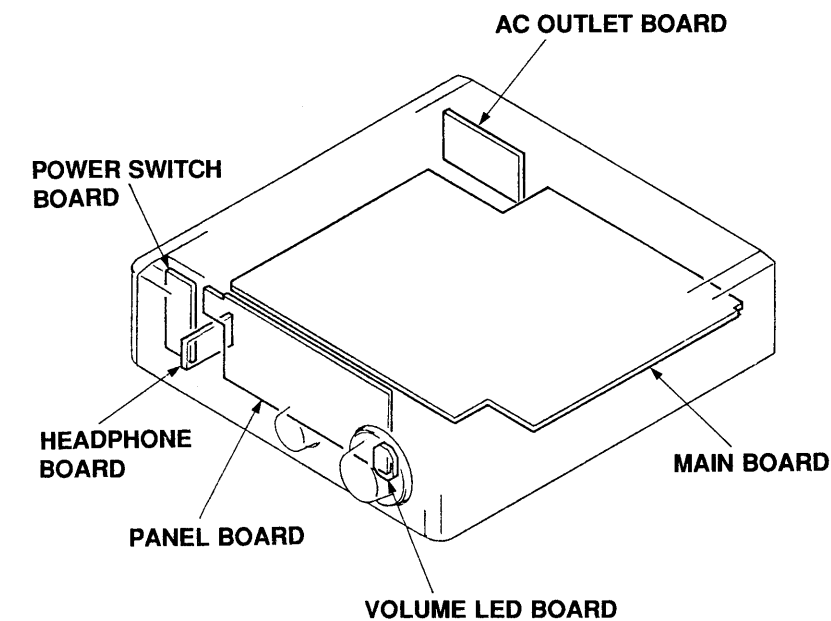
- See page 12 for Circuit Boards Location.
- See page 13 for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D201	H-12
D202	H-12
D203	H-13
D204	H-14
D205	L-11
D206	H-11
D207	H-11
D208	J-11
D209	J-11
D210	D-11
D211	J-10
D212	G-6
D213	H-10
D214	H-10
D301	B-24
D302	B-24
D304	B-23
D305	C-22
D306	C-23
D307	C-17
D308	C-19
D309	B-19
D310	B-19
D311	B-18
D312	B-18
D313	C-17
D314	D-18
D315	F-22
D316	F-22
D317	F-16
D319	B-23
IC101	D-2
IC102	E-7
IC103	D-9
IC104	K-7
IC105	K-5
IC152	E-7
IC201	J-11
IC202	G-4
IC203	H-4
IC301	B-21
IC302	D-17
IC303	F-21
Q101	I-6
Q151	I-5
Q201	K-12
Q202	K-13
Q203	K-11
Q204	K-13
Q205	K-11
Q206	E-10
Q207	J-9
Q208	H-5
Q301	A-17
Q302	A-23
Q303	B-22
Q304	B-23
Q305	D-18

• Circuit Boards Location

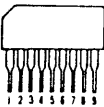


Note:

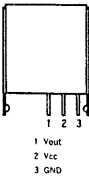
- : parts extracted from the component side.
- : internal component.
- : Pattern from the side which enable seeing.
- Abbreviation
 - G : German model.
 - IT : Italian model.
 - SP : Singapore model.
 - JE : Tourist model.

2-4. SEMICONDUCTOR LEAD LAYOUTS

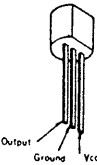
BA6208



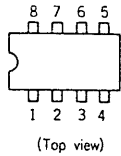
GP1U50XB



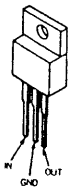
M51943BSL



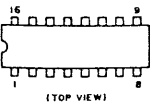
NJM4580D-D
RC5532DD



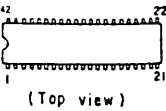
TA7805S



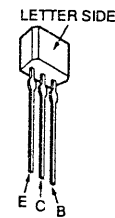
TC9214P



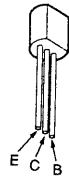
TMP87C846N-4109



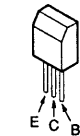
DTA114ES
DTA124ES
DTC124ES
2SA1175-HFE
2SC2603-EF



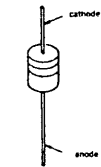
2SC3622A-LK



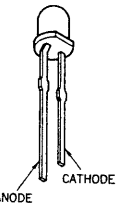
2SB734-34
2SD774-34



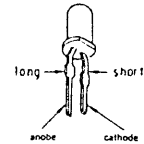
HZS6A1L
UZL-6M2
11EQS04
11ES2



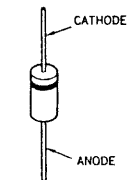
SEL1516W



SEL2210S-CD
SEL2210S-TH10



1N4148M



2-5. IC PIN FUNCTION

• IC301 MAIN CONTROLLER (TMP87C846N-4109)

Pin No.	Pin Name	I/O	Function
1	F-A	O	Output control A terminal, normal: "L".
2	F-B	O	Output control B terminal, normal: "L".
3	F-C	O	Output control C terminal, normal: "L".
4	MUTE 2	O	Output mute control terminal, normal: "L".
5	GND	—	GND terminal.
6	GND	—	GND terminal.
7	POWER	O	Power LED drive signal. (ON: L)
8	STB	O	Standby LED drive signal. (ON: L)
9	V-LED	O	Attenuator volume LED drive signal. (ON: L)
10	DIRECT	O	Source direct LED drive signal. (ON: L)
11	MD	O	Function LED drive signal. (ON: L)
12	TAPE	O	Function LED drive signal. (ON: L)
13	CD	O	Function LED drive signal. (ON: L)
14	TUNER	O	Function LED drive signal. (ON: L)
15	PHONO	O	Function LED drive signal. (ON: L)
16	DAT	O	Function LED drive signal. (ON: L)
17	TEST	I	GND terminal.
18	RESET	I/O	Reset signal. (Reset: L)
19	XIN	I	Clock signal input terminal.
20	XOUT	O	Clock signal output terminal.
21	Vss	—	GND terminal.
22	VAREF	I	A/D conversion power supply terminal.
23	F-DATA	I	Position data of function switch.
24	F-CTL	I	Position data of input selector switch.
25	V-DATA	—	Power supply terminal.
26	V-DOWN	O	Attenuator volume down control signal, normal: "L".
27	V-UP	O	Attenuator volume up control signal, normal: "L".
28	—	—	Not used. (Open)
29	F-DOWN	O	Function volume down control signal, normal: "L".
30	F-UP	O	Function volume up control signal, normal: "L".
31	AC CUT	I	AC cut signal. (Active: L)
32	DIRECT	I	Source direct key input terminal. (Active: L)
33	AUB IN	I	AU BUS signal input terminal, normal: "H".
34	AUB OUT	O	AU BUS signal output terminal, normal: "L".
35	SIRCS	I	SIRCS signal input terminal, normal: "H".
36	MUTE 1	O	Line mute control signal. (Active: L)
37	SYS.POWER	O	System power supply control signal. (Active: H)
38	S-DIRECT	O	Source direct control signal. (Active: H)
39	—	—	Not used. (GND)
40	H.PHONES	I	Headphones signal input terminal. (Active: H)
41	TA/TAE	I	TA/TAE select signal input terminal.
42	VDD	—	Power supply (+5V) terminal.

EXPLODED VIEWS

NOTE:

- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
 KNOB, BALANCE (WHITE) . . . (RED)

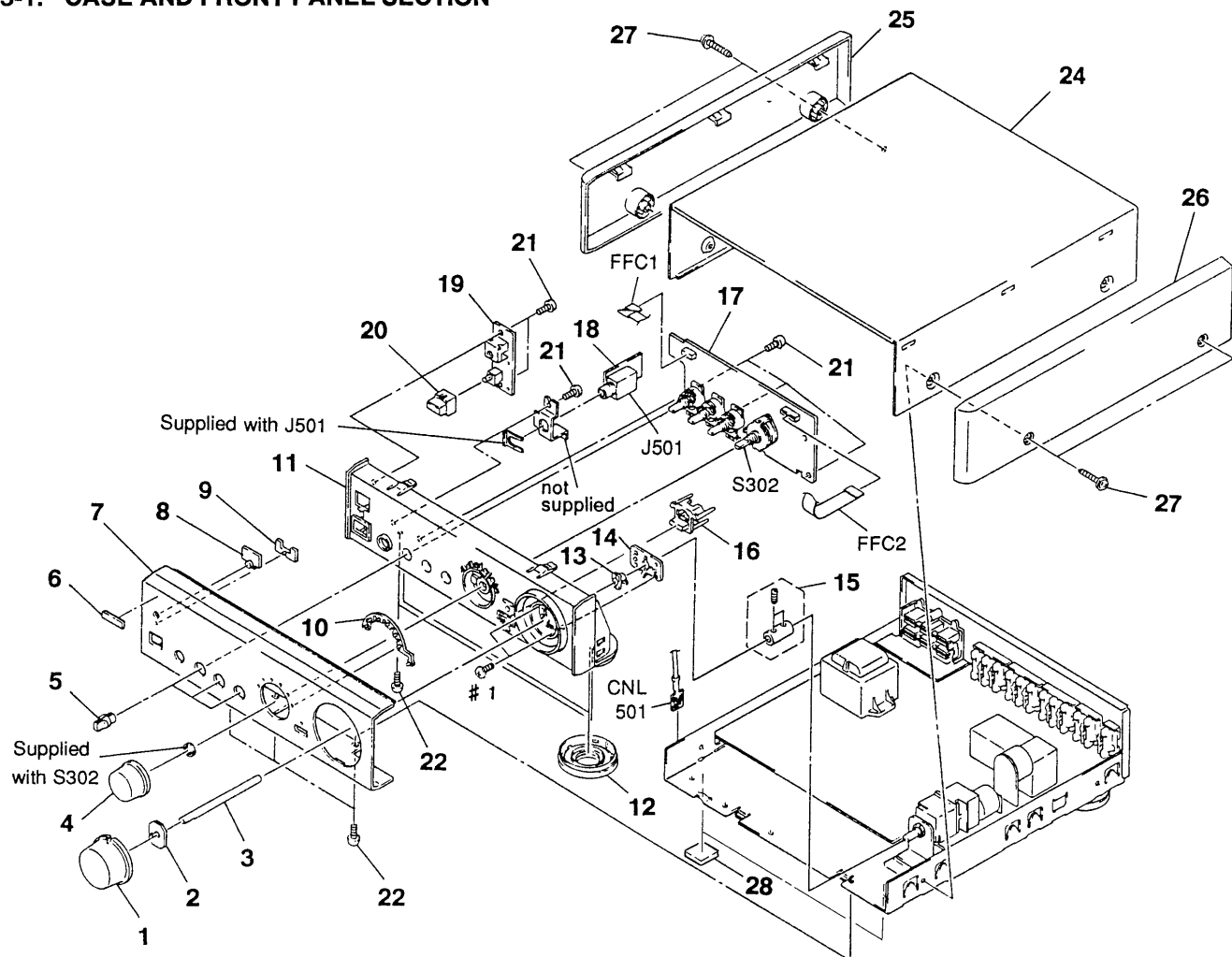

 Parts color


 Cabinet's color
- -XX, -X mean standardized parts, so they may have some difference from the original one.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
G : German model
IT : Italian model
SP : Singapore model
JE : Tourist model

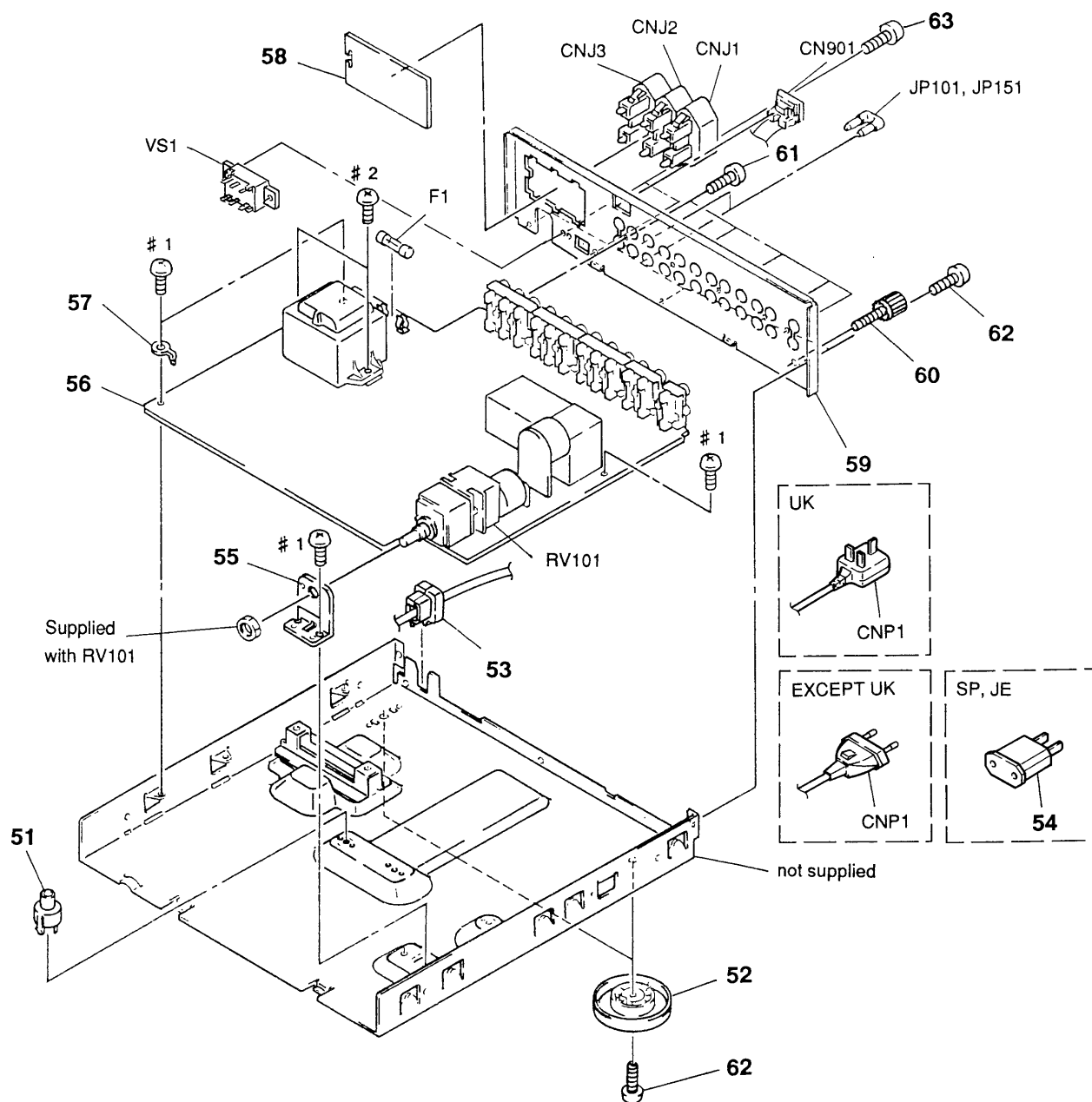
The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

3-1. CASE AND FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4945-130-1	KNOB (DIA. 43) ASSY (VOLUME)		16	4-968-089-01	BUTTON (1)(SOURCE DIRECT)	
* 2	1-653-564-11	VOLUME LED BOARD		* 17	A-4371-622-A	PANEL BOARD, COMPLETE	
* 3	4-968-086-01	SHAFT, JOINT		* 18	1-653-563-11	HEADPHONE BOARD	
4	X-4945-131-1	KNOB (DIA. 31) ASSY (FUNCTION)		* 19	1-653-562-11	POWER SWITCH BOARD	
5	4-968-107-01	KNOB (DIA. 13)		20	4-968-098-01	BUTTON (P)	
6	4-969-961-11	EMBLEM (NO. 4), SONY		21	4-951-620-01	SCREW (2. 6X8), +BVTP	
7	4-968-087-11	PANEL, FRONT		22	3-704-515-21	SCREW (BV/RING)	
8	4-968-092-01	FILTER		24	4-967-150-31	CASE	
9	4-968-091-01	INDICATOR (PO)		25	X-4945-476-1	PANEL (L) ASSY, SIDE	
10	4-968-090-01	INDICATOR (FU)		26	X-4945-477-1	PANEL (R) ASSY, SIDE	
11	X-4945-344-1	BASE ASSY, PANEL		27	4-969-954-01	SCREW (SIDE PANEL)	
12	X-4945-079-1	RING ASSY, FOOT		* 28	3-342-416-01	SHEET (F), INSULATING	
* 13	4-945-610-01	BEARING, VOL		CNL501	1-690-880-31	LEAD (WITH CONNECTOR)	
* 14	4-968-084-01	BRACKET (BEARING)		FFC1	1-575-904-31	WIRE, FLAT TYPE (7 CORE)	
* 15	4-946-330-01	JOINT		FFC2	1-590-575-11	WIRE, FLAT TYPE (11 CORE)	

3-2. CHASSIS SECTION



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	4-968-100-01	SUPPORT, PC		63	4-951-620-31	SCREW (2.6), +BVTP (SP, JE)	
52	X-4945-129-1	FOOT ASSY		$\triangle$ CNJ1	1-526-794-11	OUTLET, AC	
* 53	3-703-244-00	BUSHING (2104), CORD		$\triangle$ CNJ2	1-526-794-11	OUTLET, AC	
54	1-569-008-11	ADAPTOR, CONVERSION 2P (SP, JE)		$\triangle$ CNJ3	1-526-794-11	OUTLET, AC	
* 55	4-968-085-01	BRACKET (VO)		CN901	1-769-095-11	CORD (WITH CONNECTOR) (AU BUS)	
* 56	A-4377-195-A	MAIN BOARD, COMPLETE (SP, JE)		$\triangle$ CNP1	1-575-651-21	CORD, POWER (EXCEPT UK)	
* 56	A-4371-626-A	MAIN BOARD, COMPLETE (AEP, UK, IT, G)		$\triangle$ CNP1	1-696-571-11	CORD, POWER (UK)	
57	1-537-770-21	TERMINAL BOARD, GROUND		$\triangle$ F1	1-532-259-00	FUSE, TIME LAG (T1.6A) (AEP, UK, IT, G)	
* 58	1-654-269-11	AC OUTLET BOARD		$\triangle$ F1	1-532-286-00	FUSE (2.5A, 250V) (SP, JE)	
* 59	4-967-151-12	PANEL, BACK (AEP, IT, G)		JP101	1-535-706-11	PLUG, JUMPER	
* 59	4-967-151-21	PANEL, BACK (SP, JE)		JP151	1-535-706-11	PLUG, JUMPER	
* 59	4-967-151-31	PANEL, BACK (UK)		$\triangle$ VS1	1-570-046-21	SWITCH, VOLTAGE CHANGE (VOLTAGE SELECTOR) (SP, JE)	
60	4-947-010-01	SCREW, FEEDER FIXED					
61	3-704-515-41	SCREW (BV/RING)					
62	3-704-515-21	SCREW (BV/RING)					

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C215	1-126-376-11	ELECT	470uF 20%	25V		< IC >	
C216	1-123-306-00	ELECT	47uF 20%	10V			
C217	1-126-059-11	ELECT	10uF 20%	50V	IC101	8-759-982-03 IC	RC5532DD
C218	1-123-306-00	ELECT	47uF 20%	10V	IC102	8-759-051-65 IC	TC9214P
C219	1-164-159-11	CERAMIC	0.1uF	50V	IC103	8-759-710-59 IC	NJM4580D-D
					IC104	8-759-710-59 IC	NJM4580D-D
C220	1-124-122-11	ELECT	100uF 20%	50V	IC105	8-759-710-59 IC	NJM4580D-D
C221	1-123-306-00	ELECT	47uF 20%	10V			
C222	1-126-059-11	ELECT	10uF 20%	50V	IC152	8-759-051-65 IC	TC9214P
C223	1-126-059-11	ELECT	10uF 20%	50V	IC201	8-759-231-53 IC	TA7805S
C224	1-164-159-11	CERAMIC	0.1uF	50V	IC202	8-759-962-08 IC	BA6208
					IC203	8-759-962-08 IC	BA6208
C225	1-126-301-11	ELECT	1uF 20%	50V		< JACK >	
C226	1-126-301-11	ELECT	1uF 20%	50V			
C227	1-164-159-11	CERAMIC	0.1uF	50V	J101	1-565-352-11 JACK, PIN 2P (PHONO)	
C228	1-164-159-11	CERAMIC	0.1uF	50V	J102	1-766-262-11 JACK, PIN 4P (CD, TUNER)	
C229	1-164-159-11	CERAMIC	0.1uF	50V	J103	1-565-320-61 JACK, PIN 6P (MD, TAPE)	
	< CONNECTOR >				J104	1-565-320-61 JACK, PIN 6P (DAT/VIDEO, MD)	
					J105	1-565-320-61 JACK, PIN 6P (ADAPTOR, OUTPUT(SPEAKERS))	
CN1	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P				< COIL >	
CN2	1-564-321-00	PIN, CONNECTOR 2P					
* CN3	1-564-687-11	PIN, CONNECTOR 3P (SP, JE)			L201	1-410-509-11 MICRO INDUCTOR 10uH	
* CN104	1-564-508-11	PLUG, CONNECTOR 5P			L202	1-410-509-11 MICRO INDUCTOR 10uH	
CN201	1-764-326-11	PIN, CONNECTOR (PCB) (V TYPE) 3P				< TERMINAL >	
CN202	1-564-505-21	PLUG, CONNECTOR 2P			PP101	1-537-770-21 TERMINAL BOARD, GROUND	
* CN351	1-568-830-11	SOCKET, CONNECTOR 11P				< TRANSISTOR >	
* CN352	1-568-826-11	SOCKET, CONNECTOR 7P					
* CN451	1-564-509-11	PLUG, CONNECTOR 6P			Q101	8-729-141-26 TRANSISTOR	2SC3622A-LK
	< DIODE >				Q151	8-729-141-26 TRANSISTOR	2SC3622A-LK
D201	8-719-210-21	DIODE 11EQS04			Q201	8-729-140-96 TRANSISTOR	2SD774-34
D202	8-719-210-21	DIODE 11EQS04			Q202	8-729-140-97 TRANSISTOR	2SB734-34
D203	8-719-210-21	DIODE 11EQS04			Q203	8-729-620-05 TRANSISTOR	2SC2603-EF
D204	8-719-210-21	DIODE 11EQS04					
D205	8-719-000-60	DIODE UZL-6M2			Q204	8-729-119-76 TRANSISTOR	2SA1175-HFE
					Q205	8-729-620-05 TRANSISTOR	2SC2603-EF
D206	8-719-200-82	DIODE 11ES2			Q206	8-729-620-05 TRANSISTOR	2SC2603-EF
D207	8-719-200-82	DIODE 11ES2			Q207	8-729-620-05 TRANSISTOR	2SC2603-EF
D208	8-719-987-63	DIODE 1N4148M			Q208	8-729-620-05 TRANSISTOR	2SC2603-EF
D209	8-719-987-63	DIODE 1N4148M				< RESISTOR >	
D210	8-719-987-63	DIODE 1N4148M					
					R101	1-249-210-11 CARBON	1K 5% 1/3W
D211	8-719-987-63	DIODE 1N4148M			R102	1-249-496-11 CARBON	100K 5% 1/3W
D212	8-719-987-63	DIODE 1N4148M			R103	1-214-937-00 METAL	1M 1% 1/2W
D213	8-719-933-33	DIODE HZS6A1L			R104	1-214-937-00 METAL	1M 1% 1/2W
D214	8-719-933-33	DIODE HZS6A1L			R105	1-249-210-11 CARBON	1K 5% 1/3W
	< FUSE >						
△F1	1-532-259-00	FUSE, TIME LAG (T1. 6A) (AEP, UK, IT, G)			R106	1-214-937-00 METAL	1M 1% 1/2W
△F1	1-532-286-00	FUSE (2. 5A, 250V) (SP, JE)			R107	1-249-210-11 CARBON	1K 5% 1/3W
	< FUSE HOLDER >				R108	1-214-937-00 METAL	1M 1% 1/2W
					R109	1-249-210-11 CARBON	1K 5% 1/3W
					R110	1-214-937-00 METAL	1M 1% 1/2W
FH1	1-533-293-11	FUSE HOLDER					
FH2	1-533-293-11	FUSE HOLDER			R111	1-249-210-11 CARBON	1K 5% 1/3W
					R112	1-214-937-00 METAL	1M 1% 1/2W

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

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R114	1-249-496-11	CARBON	100K 5% 1/3W	R177	1-247-762-11	CARBON	6. 8K 5% 1/2W
R115	1-249-208-31	CARBON	820 5% 1/3W	R178	1-249-496-11	CARBON	100K 5% 1/3W
R116	1-214-931-00	METAL	560K 1% 1/2W	R179	1-249-496-11	CARBON	100K 5% 1/3W
				R180	1-249-210-31	CARBON	1K 5% 1/3W
R117	1-249-492-11	CARBON	47K 5% 1/3W	R181	1-249-210-31	CARBON	1K 5% 1/3W
R118	1-249-496-11	CARBON	100K 5% 1/3W				(AEP, UK, IT, G)
R119	1-249-186-11	CARBON	100 5% 1/3W	R181	1-259-171-31	CARBON	1. 5K 5% 1/4W (SP, JE)
R120	1-249-496-11	CARBON	100K 5% 1/3W	R182	1-249-234-31	CARBON	10K 5% 1/3W
R121	1-249-210-11	CARBON	1K 5% 1/3W	R183	1-249-496-11	CARBON	100K 5% 1/3W
				R184	1-247-735-11	CARBON	47 5% 1/2W F
R122	1-249-210-11	CARBON	1K 5% 1/3W	R185	1-247-735-11	CARBON	47 5% 1/2W F
R123	1-247-759-11	CARBON	3. 9K 5% 1/3W	R186	1-249-186-11	CARBON	100 5% 1/3W
R124	1-249-218-11	CARBON	2. 2K 5% 1/3W	R201	1-249-218-11	CARBON	2. 2K 5% 1/3W
R125	1-249-496-11	CARBON	100K 5% 1/3W	R202	1-249-218-11	CARBON	2. 2K 5% 1/3W
R126	1-249-210-31	CARBON	1K 5% 1/3W	R203	1-249-218-11	CARBON	2. 2K 5% 1/3W
R127	1-247-762-21	CARBON	6. 8K 5% 1/2W	R204	1-249-218-11	CARBON	2. 2K 5% 1/3W
R128	1-249-496-11	CARBON	100K 5% 1/3W	R205	1-249-218-11	CARBON	2. 2K 5% 1/3W
R129	1-249-496-11	CARBON	100K 5% 1/3W	R206	1-247-761-11	CARBON	5. 6K 5% 1/3W
R130	1-249-210-31	CARBON	1K 5% 1/3W	R207	1-249-226-11	CARBON	4. 7K 5% 1/3W
R131	1-249-210-31	CARBON	1K 5% 1/3W	R208	1-249-486-11	CARBON	12K 5% 1/3W
			(AEP, UK, IT, G)				
R131	1-259-171-31	CARBON	1. 5K 5% 1/4W (SP, JE)	R209	1-249-234-11	CARBON	10K 5% 1/3W
R132	1-249-234-31	CARBON	10K 5% 1/3W	R210	1-249-433-11	CARBON	22K 5% 1/4W
R133	1-249-496-11	CARBON	100K 5% 1/3W	R211	1-249-437-11	CARBON	47K 5% 1/4W
R134	1-247-735-11	CARBON	47 5% 1/2W F	R212	1-249-437-11	CARBON	47K 5% 1/4W
R135	1-247-735-11	CARBON	47 5% 1/2W F	R213	1-249-437-11	CARBON	47K 5% 1/4W
R136	1-249-186-11	CARBON	100 5% 1/3W	R214	1-249-433-11	CARBON	22K 5% 1/4W
R151	1-249-210-11	CARBON	1K 5% 1/3W	R215	1-249-433-11	CARBON	22K 5% 1/4W
R152	1-249-496-11	CARBON	100K 5% 1/3W	R216	1-249-433-11	CARBON	22K 5% 1/4W
R153	1-214-937-00	METAL	1M 1% 1/2W	R217	1-249-433-11	CARBON	22K 5% 1/4W
R154	1-214-937-00	METAL	1M 1% 1/2W	R218	1-249-433-11	CARBON	22K 5% 1/4W
R155	1-249-210-11	CARBON	1K 5% 1/3W	R219	1-249-417-11	CARBON	1K 5% 1/4W F
R156	1-214-937-00	METAL	1M 1% 1/2W	R220	1-249-417-11	CARBON	1K 5% 1/4W F
R157	1-249-210-11	CARBON	1K 5% 1/3W	R221	1-249-436-11	CARBON	39K 5% 1/4W
R158	1-214-937-00	METAL	1M 1% 1/2W	R222	1-249-432-11	CARBON	18K 5% 1/4W
R159	1-249-210-11	CARBON	1K 5% 1/3W	R223	1-249-429-11	CARBON	10K 5% 1/4W
R160	1-214-937-00	METAL	1M 1% 1/2W	R224	1-249-425-11	CARBON	4. 7K 5% 1/4W F
R161	1-249-210-11	CARBON	1K 5% 1/3W	R225	1-249-420-11	CARBON	1. 8K 5% 1/4W F
R162	1-214-937-00	METAL	1M 1% 1/2W	R227	1-249-417-11	CARBON	1K 5% 1/4W F
R164	1-249-496-11	CARBON	100K 5% 1/3W	R228	1-249-417-11	CARBON	1K 5% 1/4W F
R165	1-249-208-31	CARBON	820 5% 1/3W	R229	1-249-417-11	CARBON	1K 5% 1/4W F
R166	1-214-931-00	METAL	560K 1% 1/2W				
R167	1-249-492-11	CARBON	47K 5% 1/3W				
R168	1-249-496-11	CARBON	100K 5% 1/3W				
R169	1-249-186-11	CARBON	100 5% 1/3W				
R170	1-249-496-11	CARBON	100K 5% 1/3W				
R171	1-249-210-11	CARBON	1K 5% 1/3W				
R172	1-249-210-11	CARBON	1K 5% 1/3W				
R173	1-247-759-11	CARBON	3. 9K 5% 1/3W				
R174	1-249-218-11	CARBON	2. 2K 5% 1/3W				
R175	1-249-496-11	CARBON	100K 5% 1/3W				
R176	1-249-210-31	CARBON	1K 5% 1/3W				

< VARIABLE RESISTOR >

RV101 1-241-908-11 RES, VAR, CARBON 120K/120K (ATTENUATOR)

< RELAY >

△RY1 1-515-849-11 RELAY
RY101 1-515-803-11 RELAY
RY102 1-515-803-11 RELAY

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

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
< SWITCH >							
S101	1-692-142-11	SWITCH, ROTARY (WITH MOTOR)		D314	8-719-987-63	DIODE 1N4148M	
< TRANSFORMER >				D319	8-719-987-63	DIODE 1N4148M	
△T1	1-426-968-11	TRANSFORMER, POWER		< IC >			
*****				IC301	8-759-284-90	IC TMP87C846N-4109	
				IC302	8-759-635-63	IC M51943BSL	
				< TRANSISTOR >			
				Q301	8-729-900-63	TRANSISTOR DTA124ES	
				Q302	8-729-620-05	TRANSISTOR 2SC2603-EF	
				Q303	8-729-900-61	TRANSISTOR DTA114ES	
				Q304	8-729-900-61	TRANSISTOR DTA114ES	
				Q305	8-729-900-36	TRANSISTOR DTC124ES	
				< RESISTOR >			
				R301	1-249-429-11	CARBON 10K 5% 1/4W	
				R302	1-249-433-11	CARBON 22K 5% 1/4W	
				R303	1-249-429-11	CARBON 10K 5% 1/4W	
				R304	1-249-393-11	CARBON 10 5% 1/4W F	
				R305	1-249-429-11	CARBON 10K 5% 1/4W	
				R306	1-249-429-11	CARBON 10K 5% 1/4W	
				R307	1-249-417-11	CARBON 1K 5% 1/4W F	
				R308	1-249-426-11	CARBON 5.6K 5% 1/4W	
				R309	1-249-433-11	CARBON 22K 5% 1/4W	
				R310	1-249-431-11	CARBON 15K 5% 1/4W	
				R311	1-249-427-11	CARBON 6.8K 5% 1/4W F	
				R312	1-249-417-11	CARBON 1K 5% 1/4W F	
				R313	1-249-423-11	CARBON 3.3K 5% 1/4W F	
				R314	1-249-423-11	CARBON 3.3K 5% 1/4W F	
				R315	1-249-417-11	CARBON 1K 5% 1/4W F	
				R316	1-249-425-11	CARBON 4.7K 5% 1/4W F	
				R319	1-249-417-11	CARBON 1K 5% 1/4W F	
				R320	1-249-417-11	CARBON 1K 5% 1/4W F	
				R321	1-249-417-11	CARBON 1K 5% 1/4W F	
				R322	1-249-417-11	CARBON 1K 5% 1/4W F	
				R323	1-249-429-11	CARBON 10K 5% 1/4W	
				R324	1-249-417-11	CARBON 1K 5% 1/4W F	
				R325	1-249-417-11	CARBON 1K 5% 1/4W F	
				R326	1-249-417-11	CARBON 1K 5% 1/4W F	
				R327	1-249-417-11	CARBON 1K 5% 1/4W F	
				R328	1-249-414-11	CARBON 560 5% 1/4W F	
				R329	1-249-414-11	CARBON 560 5% 1/4W F	
				R330	1-249-414-11	CARBON 560 5% 1/4W F	
				R333	1-249-433-11	CARBON 22K 5% 1/4W	
				R401	1-259-428-11	CARBON 1K 5% 1/6W	
				R402	1-259-438-11	CARBON 2.7K 5% 1/6W	
				R403	1-259-428-11	CARBON 1K 5% 1/6W	
				R404	1-259-452-11	CARBON 10K 5% 1/6W	
				R407	1-259-460-11	CARBON 22K 5% 1/6W	
				R408	1-259-500-11	CARBON 1M 5% 1/6W	
< CAPACITOR >							
C301	1-125-623-11	DOUBLE LAYERS 0.22F	5.5V				
C302	1-126-157-11	ELECT 10uF	20% 16V				
C303	1-124-994-11	ELECT 100uF	20% 10V				
C304	1-162-306-11	CERAMIC 0.01uF	30% 16V				
C305	1-164-159-11	CERAMIC 0.1uF	50V				
C306	1-164-159-11	CERAMIC 0.1uF	50V				
C307	1-126-059-11	ELECT 10uF	20% 50V				
C308	1-161-494-00	CERAMIC 0.022uF	25V				
C309	1-161-494-00	CERAMIC 0.022uF	25V				
C312	1-124-994-11	ELECT 100uF	20% 10V				
C402	1-136-168-00	FILM 0.18uF	5% 50V				
C403	1-136-175-00	FILM 0.68uF	5% 50V				
C404	1-136-158-00	FILM 0.027uF	5% 50V				
C405	1-136-164-00	FILM 0.082uF	5% 50V				
C452	1-136-168-00	FILM 0.18uF	5% 50V				
C453	1-136-175-00	FILM 0.68uF	5% 50V				
C454	1-136-158-00	FILM 0.027uF	5% 50V				
C455	1-136-164-00	FILM 0.082uF	5% 50V				
< CONNECTOR >							
* CN301	1-568-830-11	SOCKET, CONNECTOR 11P					
* CN302	1-568-826-11	SOCKET, CONNECTOR 7P					
CN304	1-564-517-11	PLUG, CONNECTOR 2P					
* CN401	1-564-509-11	PLUG, CONNECTOR 6P					
< DIODE >							
D301	8-719-200-82	DIODE 11ES2					
D302	8-719-200-82	DIODE 11ES2					
D304	8-719-987-63	DIODE 1N4148M					
D305	8-719-987-63	DIODE 1N4148M					
D306	8-719-987-63	DIODE 1N4148M					
D307	8-719-313-43	DIODE SEL2210S-TH10 (SOURCE DIRECT)					
D308	8-719-313-43	DIODE SEL2210S-TH10 (DAT/VIDEO)					
D309	8-719-313-43	DIODE SEL2210S-TH10 (MD)					
D310	8-719-313-43	DIODE SEL2210S-TH10 (TAPE)					
D311	8-719-313-43	DIODE SEL2210S-TH10 (CD)					
D312	8-719-313-43	DIODE SEL2210S-TH10 (TUNER)					
D313	8-719-313-43	DIODE SEL2210S-TH10 (PHONO)					

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PANEL

POWER SWITCH

VOLUME LED

Ref.No.	Part No.	Description	Remark
R409	1-259-418-11	CARBON 390 5% 1/6W	
R451	1-259-428-11	CARBON 1K 5% 1/6W	
R452	1-259-438-11	CARBON 2.7K 5% 1/6W	
R453	1-259-428-11	CARBON 1K 5% 1/6W	
R454	1-259-452-11	CARBON 10K 5% 1/6W	
R457	1-259-460-11	CARBON 22K 5% 1/6W	
R458	1-259-500-11	CARBON 1M 5% 1/6W	
R459	1-259-418-11	CARBON 390 5% 1/6W	
< VARIABLE RESISTOR >			
RV401	1-241-972-11	RES, VAR, CARBON 10K/10K (BASS)	
RV402	1-241-974-11	RES, VAR, CARBON 10K/10K (TREBLE)	
RV403	1-241-973-11	RES, VAR, CARBON 100K/100K (BALANCE)	
< SWITCH >			
S301	1-554-303-21	SWITCH, TACTILE (SOURCE DIRECT)	
S302	1-692-974-11	SWITCH, ROTARY (FUNCTION)	
< VIBRATOR >			
X301	1-579-125-11	VIBRATOR, CERAMIC (8MHz)	

*	1-653-562-11	POWER SWITCH BOARD	

< CAPACITOR >			
C310	1-126-157-11	ELECT 10uF 20% 16V	
C311	1-162-306-11	CERAMIC 0.01uF 30% 16V	
< DIODE >			
D315	8-719-987-63	DIODE 1N4148M	
D316	8-719-313-40	DIODE SEL1516W (ON/STANDBY)	
< IC >			
IC303	8-749-922-36	IC GP1U50XB	
< RESISTOR >			
R334	1-249-414-11	CARBON 560 5% 1/4W F	
R335	1-249-410-11	CARBON 270 5% 1/4W F	
< SWITCH >			
S303	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)	

Ref.No.	Part No.	Description	Remark
*	1-653-564-11	VOLUME LED BOARD	

< DIODE >			
D317	8-719-301-37	DIODE SEL2210S-CD (ATTENUATOR)	

MISCELLANEOUS			

△CNP1	1-575-651-21	CORD, POWER (EXCEPT UK)	
△CNP1	1-696-571-11	CORD, POWER (UK)	
△CNJ1	1-526-794-11	OUTLET, AC	
△CNJ2	1-526-794-11	OUTLET, AC	
△CNJ3	1-526-794-11	OUTLET, AC	
CNL501	1-690-880-31	LEAD (WITH CONNECTOR)	
CN901	1-769-095-11	CORD (WITH CONNECTOR) (AU BUS)	
△F1	1-532-259-00	FUSE, TIME LAG (T1. 6A) (AEP, UK, IT, G)	
△F1	1-532-286-00	FUSE (2.5A, 250V) (SP, JE)	
FFC1	1-575-904-31	WIRE, FLAT TYPE (7 CORE)	
FFC2	1-590-575-11	WIRE, FLAT TYPE (11 CORE)	
JP101	1-535-706-11	PLUG, JUMPER	
JP151	1-535-706-11	PLUG, JUMPER	
△VS1	1-570-046-21	SWITCH, VOLTAGE CHANGE	
(VOLTAGE SELECTOR) (SP, JE)			

ACCESSORIES & PACKING MATERIALS			

1-467-796-11 REMOTE COMMANDER (RM-S1)			
1-590-219-11 CORD (WITH CONNECTOR)			
(AU BUS connecting cable)			
3-363-099-21 SCREW (CASE) (AEP, IT, G)			
3-759-589-11 MANUAL, INSTRUCTION (AEP, IT)			
(ENGLISH, FRENCH, SPANISH, PORTUGUESE)			
3-759-589-41 MANUAL, INSTRUCTION (AEP, IT, G)			
(GERMAN, DUTCH, SWEDISH, ITALIAN)			
3-759-589-51 MANUAL, INSTRUCTION (JE, SP)			
(ENGLISH, FRENCH, SPANISH, CHINESE)			
3-759-589-61 MANUAL, INSTRUCTION (UK) (ENGLISH)			
4-955-381-01 CASE, BATTERY (for RM-S1)			
*	4-968-991-01	CUSHION (AEP, IT, G)	
*	4-968-992-51	INDIVIDUAL CARTON (AEP, IT, G)	
*	4-970-587-21	PLATE (PIN JACK 2P) (SA)	
*	4-970-588-11	PLATE (PIN JACK 4P) (MD)	
*	4-970-607-01	PLATE (PIN JACK 8P) (ST, TC, CD)	

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<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		***** HARDWARE LIST *****	
#1	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	

