

TA-F545R/F645R

SERVICE MANUAL

AEP Model



Photo : TA-F645R

SPECIFICATIONS

Amplifier

Continuous RMS power output (both channels driven simultaneously)

Model for Scandinavian countries, Switzerland, Spain and Portugal

		TA-F645R	TA-F545R
DIN, 1 kHz	8 ohms	100 W + 100 W	75 W + 75 W
20 Hz - 20 kHz	8 ohms	70 W + 70 W	55 W + 55 W

Model for other countries

		TA-F645R	TA-F545R
DIN, 1 kHz	4 ohms	125 W + 125 W	95 W + 95 W
	8 ohms	100 W + 100 W	75 W + 75 W
20 Hz - 20 kHz	8 ohms	70 W + 70 W	55 W + 55 W

Input

Input jack	Jack type	Sensitivity	Impedance
PHONO (MM)	Phono	2.5 mV	50 kilohms
PHONO (MC)*	Phono	0.25 mV	100 ohms
TUNER, CD, AUX, TAPE 1/DAT, TAPE 2/MD	Phono	150 mV	50 kilohms

S/N

	TA-F645R	TA-F545R
PHONO (MM) A, 5 mV	94 dB	87 dB
PHONO (MC)* A, 0.5 mV	76 dB	—
TUNER, CD, AUX, TAPE 1/DAT, TAPE 2/MD	100 dB	100 dB

*PHONO (MC): only for TA-F645R

Output

Output jack	Jack type	Voltage/impedance
REC OUT	Phono jack	Voltage 150 mV Impedance 1 kohm
SPEAKERS	—	Model for Scandinavian countries, Switzerland, Spain and Portugal: 8 - 16 ohms Model for other countries: 4 - 16 ohms
HEADPHONES	Stereo phone jack	Accepts low and high impedance headphones

Tone controls

	Response	Turnover frequency
BASS	±10 dB (100 Hz)	300 Hz
TREBLE	±10 dB (10 kHz)	5 kHz

Harmonic distortion Less than 0.008 % at 10 W output
Intermodulation (IM) distortion (60 Hz : 7 kHz = 4:1)

Frequency response Less than 0.008 % at 10 W output
PHONO: RIAA equalization curve ±0.5 dB

TUNER, CD, AUX, TAPE 1/DAT, TAPE 2/MD: 7 Hz - 100 kHz ±3 dB
Residual noise Less than 170 µV (network A)
Damping factor 60 (8 ohms, 1 kHz)

— Continued on next page —

INTEGRATED STEREO AMPLIFIER
SONY®

General

System

Preamplifier: Low-noise, equalizer amplifier

Power amplifier: Pure-complementary SEPP OCL power amplifier with all stages directly coupled

Power requirements

220 V – 230 V AC, 50/60 Hz

Power consumption

Model for Scandinavian countries, Switzerland, Spain and Portugal

TA-F645R: 180 W

TA-F545R: 140 W

Model for other countries

TA-F645R: 260 W

TA-F545R: 200 W

Dimensions

Approx. 430 x 135 x 375 mm (w/h/d)
(17 x 5 ³/₈ x 14 ⁷/₈ inches)

Mass

TA-F645R: Approx. 9.4 kg (20 lb 12 oz)

TA-F545R: Approx. 8.5 kg (18 lb 12 oz)

Supplied accessories

Remote commander RM-S311 (1)

Sony SUM-3 (NS) batteries (2)

The above values are measured at 230 V AC.

Design and specifications are subject to change without notice.

Note

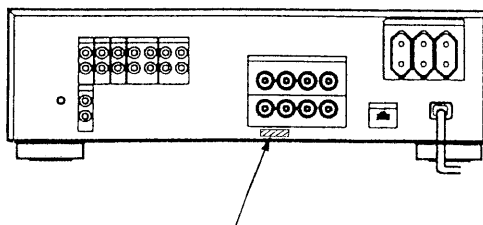
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

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MODEL IDENTIFICATION

— BACK PANEL —



- 992-0□ AE1: F645R AEP1 model
- 992-1□ AE2: F645R AEP2 model
- 992-2□ AE4: F645R German model
- 992-3□ AE1: F545R AEP1 model
- 992-4□ AE2: F545R AEP2 model
- 992-5□ AE4: F545R German model

Note:

There are two type of AEP models which are depend on countries.

AEP2 : Model for Scandinavian countries, Switzerland, Spain and Portugal.

AEP1 : Model for other European countries.

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.

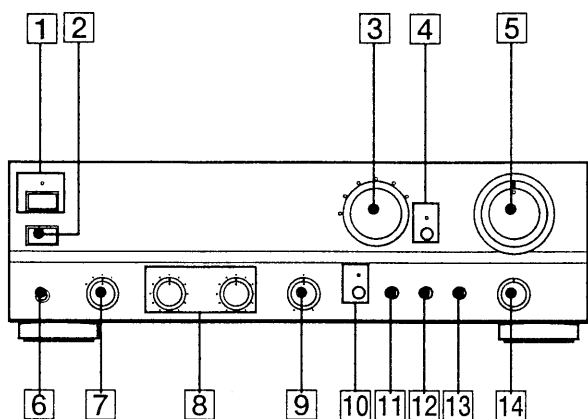
SECTION 1 GENERAL

This section is extracted from instruction manual.

Identifying the Parts and Controls

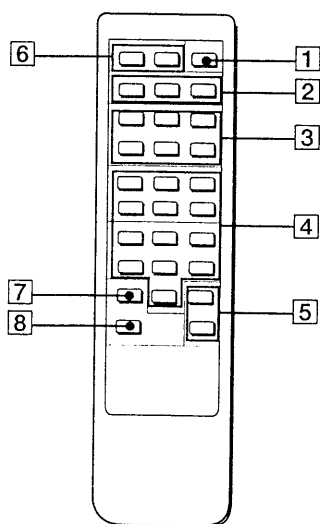
This section describes about each name of this amplifier and remote commander.

Front Panel



- 1 POWER switch and STANDBY indicator
Immediately after turning on the POWER switch, the STANDBY indicator blinks and then goes off. In case of short-circuit of the speaker outputs, etc., the indicator remains blinking. In such case, turn off the unit and check the connected components and speaker system.
- 2 Remote control sensor
- 3 INPUT SELECTOR and indicators
TAPE 1/DAT
TAPE 2/MD
AUX
CD
TUNER
PHONO
- 4 SOURCE DIRECT button and indicator
- 5 VOLUME control
- 6 HEADPHONES jack
- 7 SPEAKERS selector
- 8 TONE (BASS/TREBLE) controls
- 9 BALANCE control
- 10 EON button and indicator
- 11 LOUDNESS button
- 12 SUBSONIC button
- 13 CARTRIDGE button (TA-F645R)
- 14 REC OUT SELECTOR

Remote Commander



- 1 POWER switch
- 2 TUNER operation buttons
TUNER: Select the TUNER mode.
PRESET +/- buttons: Select the preset station.
- 3 CD operation buttons
◀▶/▶▶: Automatic music sensor.
D. (Disc) SKIP: Disc skip (for CD player equipped with a multi-disc changer)
▶▶: The amplifier enters the CD mode and the CD player starts playback automatically.
■: Stop.
||: Pause.
- 4 TAPE 2 DECK A/DECK B operation buttons
◀▶/▶▶: Fast winding.
■: Stop.
◀: The amplifier enters the TAPE 2 mode and the tape deck starts reverse playback automatically.
▶: The amplifier enters the TAPE 2 mode and the tape deck starts forward playback automatically.
● + ▶: Start recording
● + ◀: Start recording in the reverse direction
||: Pause. (Only for DECK B)
- 5 VOL (Volume) +/- buttons
- 6 PHONO operation buttons
START: Pressing START automatically selects the PHONO mode on the amplifier and starts playback of the turntable system.
STOP: Stops playback of the turntable system.
- 7 DAT/TAPE 1 button
Selects the DAT or TAPE 1 mode.
- 8 AUX button
Selects the AUX mode.

SECTION 2

ELECTRICAL ADJUSTMENTS

Note :

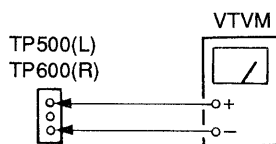
1. DC BIAS adjustments should be made 30 seconds after the POWER switch is turned on (POWER ON).
2. After replacing the power transistors, DC BIAS adjustments should be made.

DC Bias Adjustment (with no signal input)

Setting :

Volume... minimum

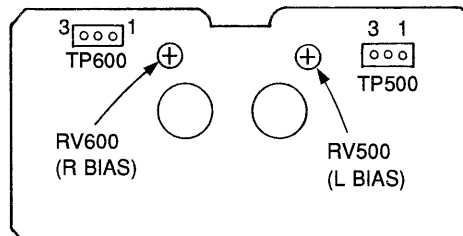
Procedure :



Adjustment Location :

[AMP(B) BOARD]

— Component Side —

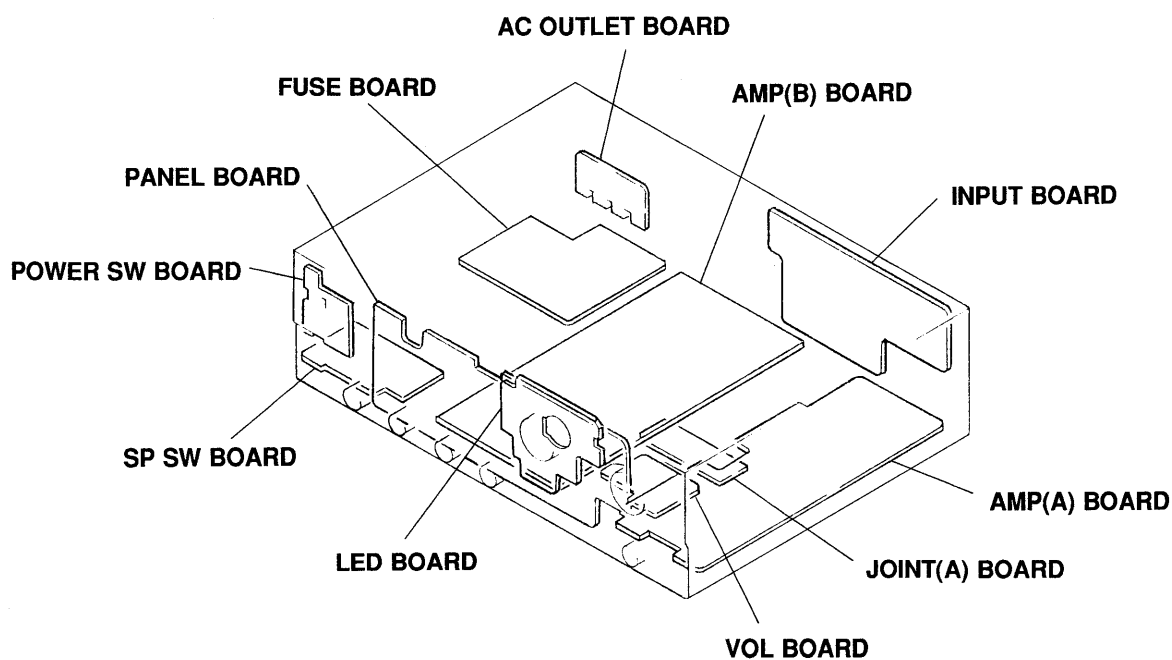


	Adjustment part	Reading on VTVM
L-CH	RV500	18mV $\pm$ 2mV
R-CH	RV600	18mV $\pm$ 2mV

SECTION 3

DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION





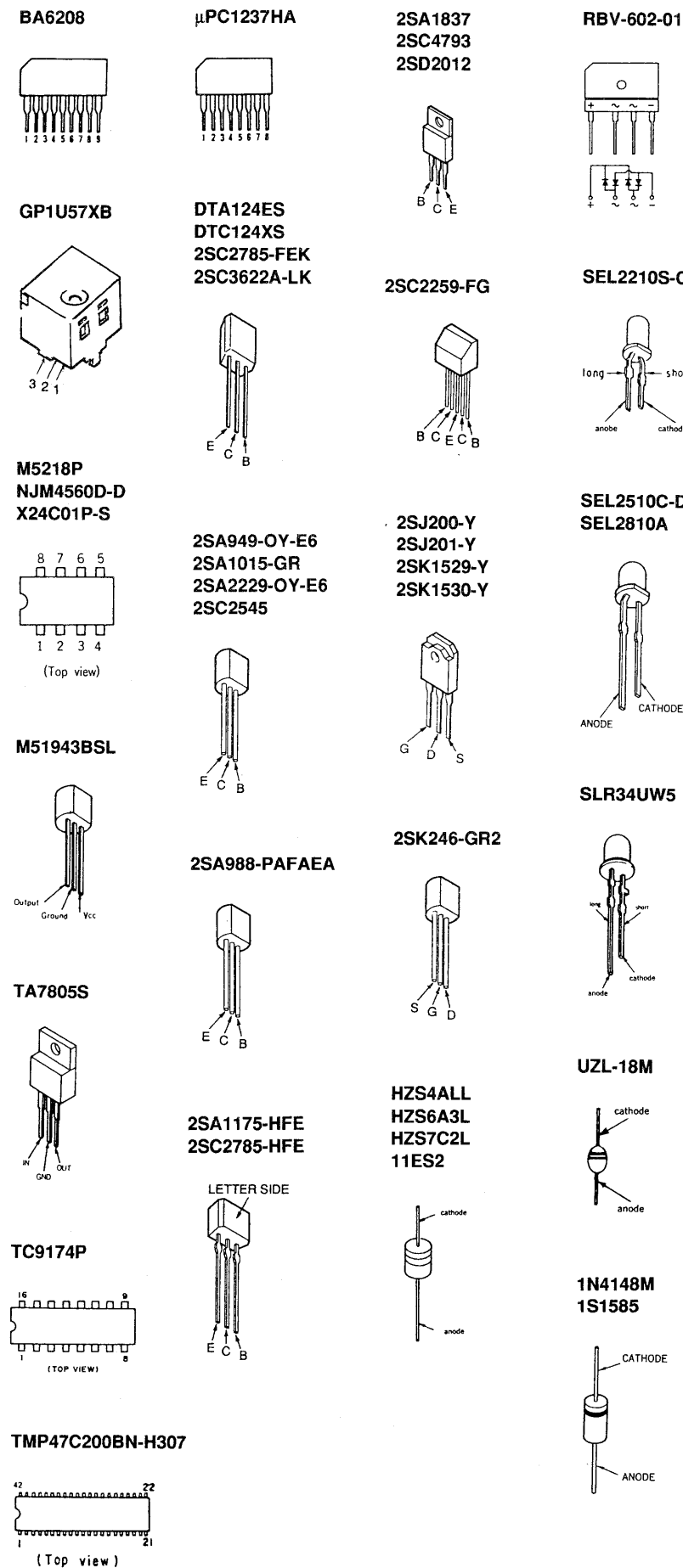
3-3. IC PIN FUNCTIONS

• IC701 TMP74C200BN-H307

Pin No.	Pin Name	I/O	Function
1	RCL	O	Clock Data } Serial data of EEPROM (X24C01).
2	RDT	I/O	
3	VUP	O	Up Down } VR motor control signal. (Active: H, Stop: L-L, Brake: H-H)
4	VDW	O	
5	PRY	O	Power relay ON/OFF control signal. (ON: L)
6	MUT	O	Mute control signal output when switching. (Mute: H)
7	LED	O	LED display signal. (L: Function LED is turned on.)
8	SIM	I	SIRCS decode/mode switching signal. (Pull down to GND.)
9	—	I	Not used. (Pull down to GND.)
10	—	I	Not used. (Pull down to GND.)
11	SW0	I	Relativity position detection signal of rotary switch. (one of them terminal: L, the other terminal: H) Direction from SW0 to SW5, TUNER → CD → AUX → TAPE2 → TAPE1 → PHONO → TUNER →
12	SW1	I	
13	SW2	I	
14	SW3	I	
15	SW4	I	
16	SW5	I	
17	PHONO	O	Function LED drive signal. (ON: L)
18	TUNER	O	
19	CD	O	
20	AUX	O	
21	GND	—	GND terminal.
22	TAPE2	O	Function LED drive signal. (ON: L)
23	TAPE1	O	
24	VOLLED	O	Not used. (Pull down to GND.)
25	STANBY	O	Standby LED drive signal. (ON: L)
26	PW KEY	I	Power ON/OFF signal. (SW ON: L)
27	T1 KEY	I	Not used (Open.)
28	—	I	Not used (Pull down to GND.)
29	F3/F5	I	Model mode switch signal. (Pull up to VDD.)
30	TEST	—	Test terminal. (Open)
31	XIN	—	Oscillation signal. 8.19MHz
32	XOUT	—	
33	RESET	I	Reset signal. (Reset: L)
34	HOLD	I	Cancellation of hold mode signal. (Start: H)
35	PROTEC	I	Protector detection signal. (Active: H)
36	EON	I	EON detection signal. (Switch ot TUNER, when H to L.)
37	SIRCS	I	SIRCS signal (Active: L)
38	T1	O	Not used. (Pull down to GND.)
39	SCE	O	Chip Enable Data Clock } Serial control signal to TC9173.
40	SDT	O	
41	SCK	O	
42	VDD	—	Power supply (+5V) terminal.

3-5. PRINTED WIRING BOARDS — PANEL SECTION —
• See page 4 for Circuit Boards Location.

3-4. SEMICONDUCTOR LEAD LAYOUTS

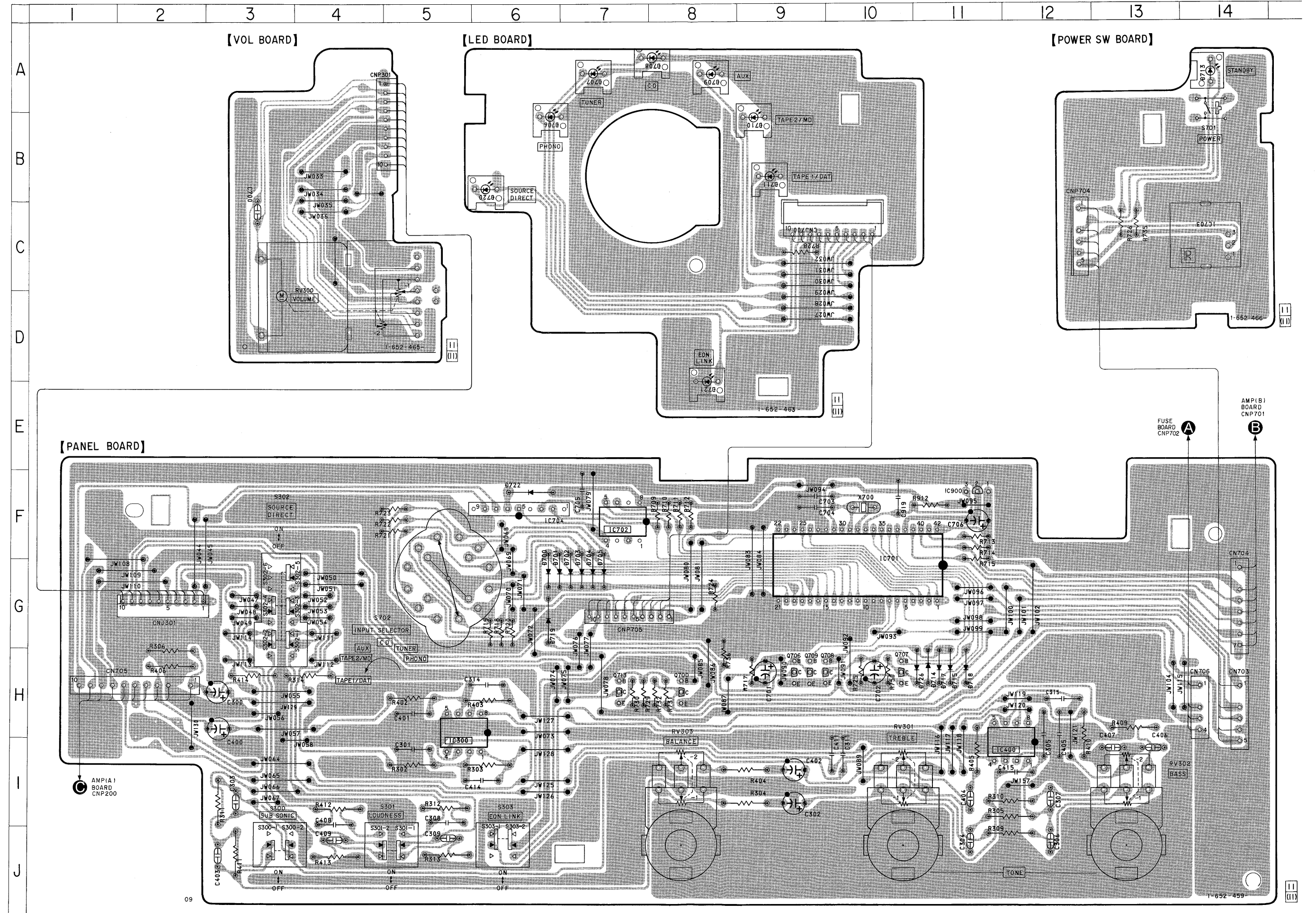


• Semiconductor Location

Ref. No.	Location
D700	G-6
D701	G-6
D702	G-7
D703	G-7
D704	G-7
D705	G-7
D706	B-6
D707	A-7
D708	A-8
D709	A-8
D710	B-9
D711	B-9
D713	A-14
D714	H-11
D715	H-11
D717	H-11
D718	H-11
D719	G-6
D720	B-6
D721	E-8
D722	F-6
D726	H-11
IC300	I-5
IC400	I-12
IC701	G-10
IC702	F-7
IC703	C-14
IC704	F-6
IC900	F-11
Q700	H-8
Q706	H-9
Q707	H-10
Q708	H-10
Q709	H-9
Q713	H-7

Note:

- : parts extracted from the component side.
- : Pattern from the side which enable seeing.
- Abbreviations.
- G : German model.

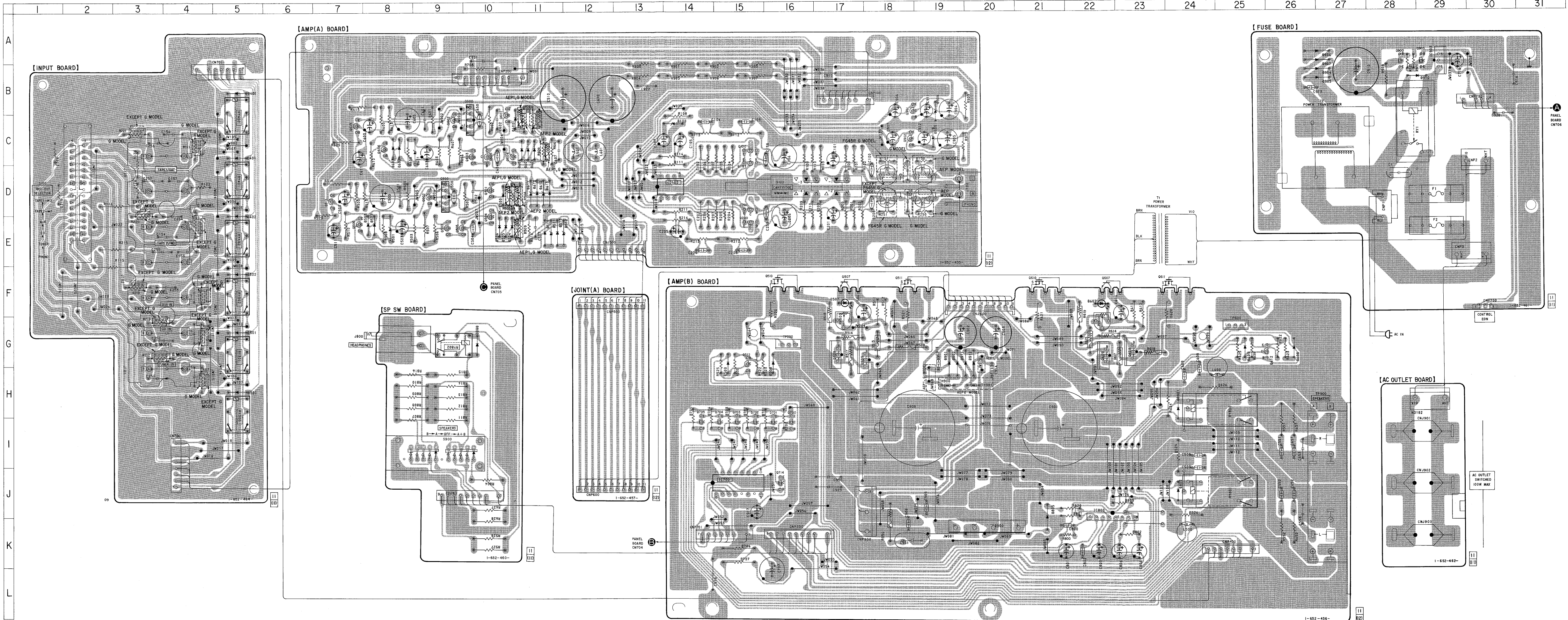


3-6. PRINTED WIRING BOARDS — MAIN SECTION —
• See page 4 for Circuit Boards Location.
• See page 8 for Semiconductor Lead Layouts.

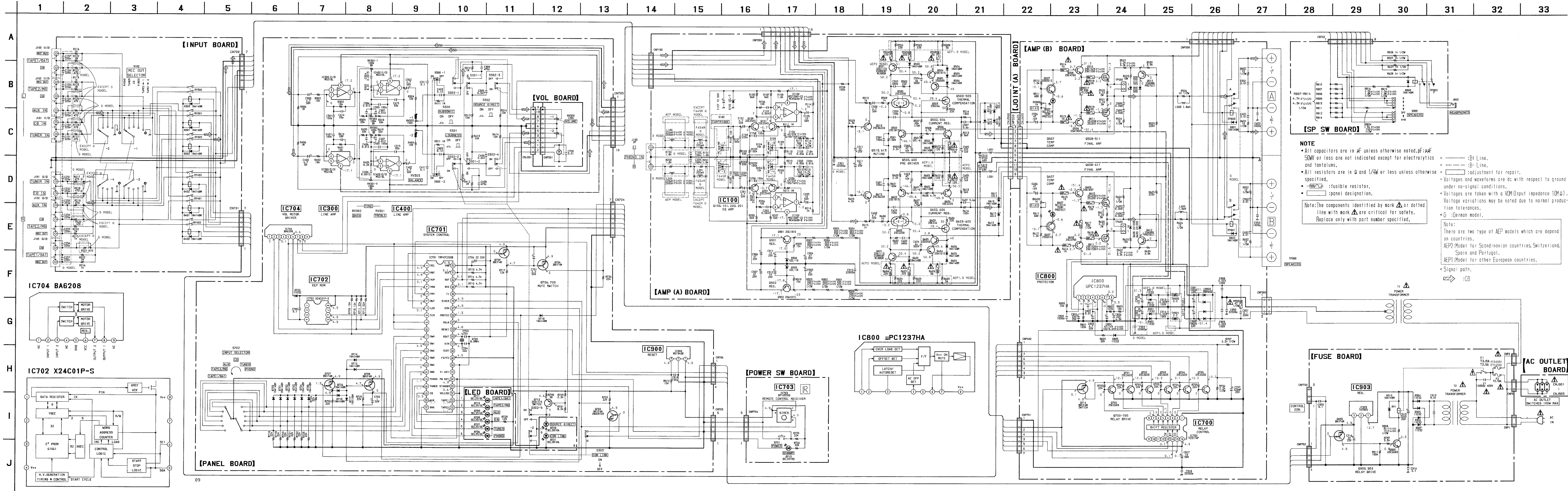
Semiconductor Location			
Ref. No.	Location	Ref. No.	Location
D100	C-14	D912	G-20
D300	H-5		
D301	G-5	IC100	D-14
D302	F-5	IC700	J-15
D400	B-5	IC800	J-22
D401	C-5	IC903	A-29
D402	D-5		
D500	D-10	Q100	C-15
D501	E-8	Q101	C-15
D502	E-8	Q200	C-15
D503	E-8	Q201	D-15
D504	E-10	Q500	D-9
D505	E-10	Q501	D-10
D506	E-10	Q502	D-9
D507	F-17	Q503	E-9
D508	H-16	Q504	E-10
D509	H-15	Q505	E-9
D510	E-11	Q506	E-7
D511	E-11	Q507	F-17
D512	E-12	Q508	G-17
D513	E-11	Q509	G-17
D600	C-11	Q510	F-16
D601	C-9	Q511	F-18
D602	C-8	Q512	G-15
D603	C-8	Q513	D-7
D604	C-11	Q600	B-10
D605	C-11	Q601	C-10
D606	C-11	Q602	C-9
D607	F-22	Q603	C-10
D608	G-26	Q604	C-10
D609	G-25	Q605	C-10
D610	D-11	Q606	C-8
D611	D-11	Q607	F-22
D612	D-11	Q608	G-23
D613	D-11	Q609	G-22
D800	G-10	Q610	F-21
D801	H-24	Q611	F-24
D802	J-24	Q612	G-26
D805	J-21	Q613	C-7
D900	K-20	Q700	H-16
D901	G-19	Q701	H-15
D902	G-19	Q702	H-15
D904	B-27	Q703	H-15
D905	B-27	Q704	H-15
D906	A-27	Q705	H-14
D907	A-27	Q714	J-16
D908	B-19	Q900	A-28
D909	C-19	Q901	B-18
D910	B-29	Q902	C-18
D911	G-20	Q903	A-29

Note:
• : parts extracted from the component side.
• : Pattern from the side which enable seeing.
• Abbreviations.
G : German model.

Note:
There are two type of AEP models which are depend on countries.
AEP2 : Model for Scandinavian countries, Switzerland, Spain and Portugal.
AEP1 : Model for other European countries.



3-7. SCHEMATIC DIAGRAM — PANEL/MAIN SECTION —
 • See page 7 for IC Pin Functions. (IC701)
 • See page 8 for Printed Wiring Boards of Panel section.



SECTION 4

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

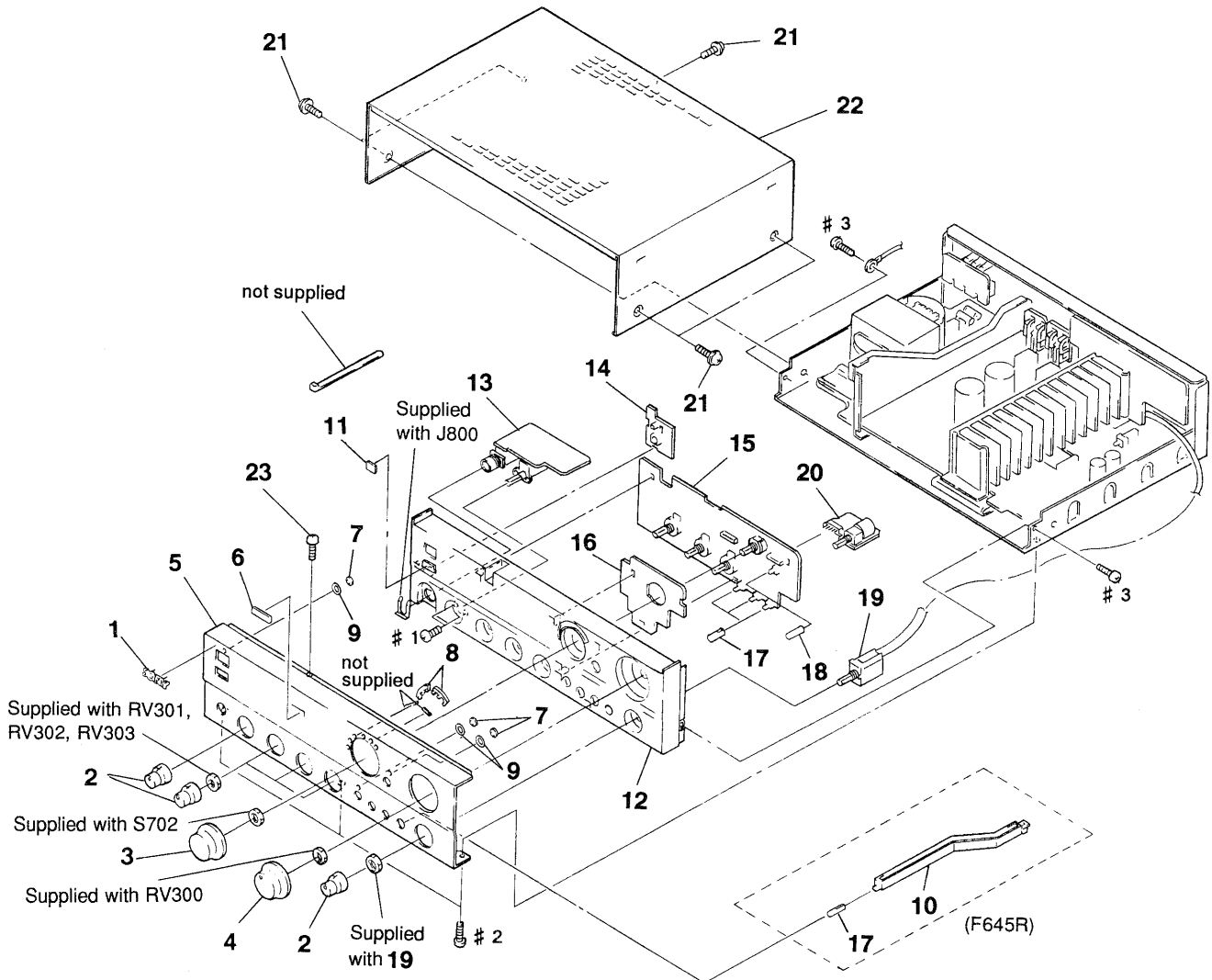
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
G : German model.

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

4-1. FRONT PANEL SECTION

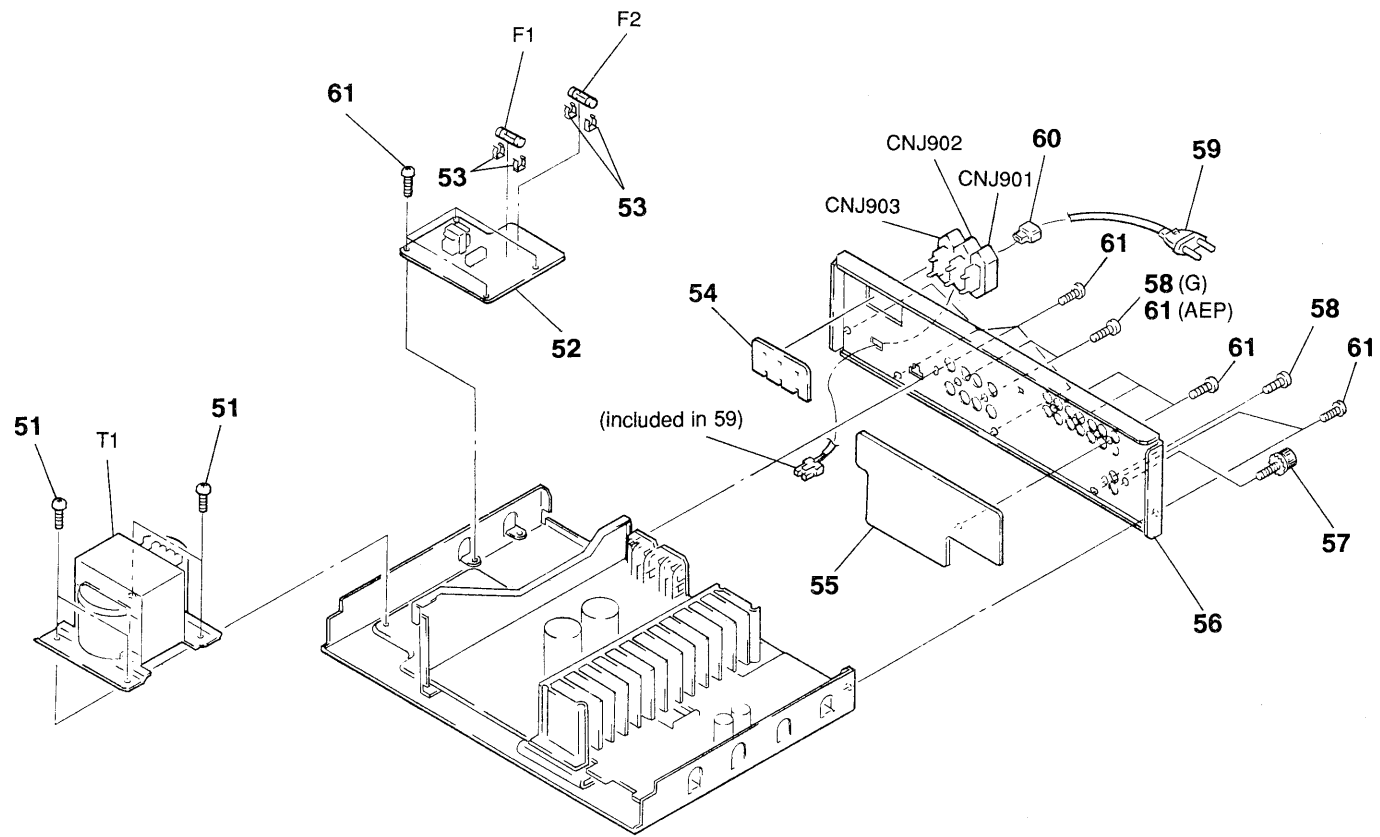
Note:

There are two type of AEP models which are depend on countries.
AEP2: Model for Scandinavian countries, Swetzerland, Spain and Portugal.
AEP1: Model for other European countries.



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
1	4-942-568-01	EMBLEM (NO. 5), SONY		* 14	1-652-466-11	POWER SW BOARD	
2	4-965-996-01	KNOB (TONE)		* 15	A-4371-058-A	PANEL BOARD, COMPLETE (F645R:G)	
3	4-966-003-01	KNOB (SEL)		* 15	A-4371-065-A	PANEL BOARD, COMPLETE (F645R:AEP)	
4	X-4944-844-1	KNOB (VOL) ASSY		* 15	A-4371-077-A	PANEL BOARD, COMPLETE (F545R:AEP)	
5	4-965-991-11	PANEL, FRONT (F545R)		* 15	A-4371-085-A	PANEL BOARD, COMPLETE (F545R:G)	
5	4-965-991-21	PANEL, FRONT (F645R)		* 16	1-652-463-11	LED BOARD	
6	4-965-651-01	EMBLEM (MOS)		17	4-965-997-01	BUTTON (S)	
7	4-938-518-01	INDICATOR (C)		18	4-966-000-01	BUTTON (L)	
8	4-965-999-01	INDICATOR (3)		19	1-692-968-11	SWITCH, ROTARY	
* 9	4-927-881-01	SHEET, ADHESIVE		* 20	1-652-465-11	VOL BOARD	
* 10	4-965-998-01	ROD (F645R)		21	3-704-366-01	SCREW (CASE) (M3X8)	
11	4-931-911-01	FILTER		* 22	4-924-920-71	CASE	
12	X-4944-846-2	BASE ASSY, PANEL		23	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 13	1-652-460-11	SP SW BOARD					

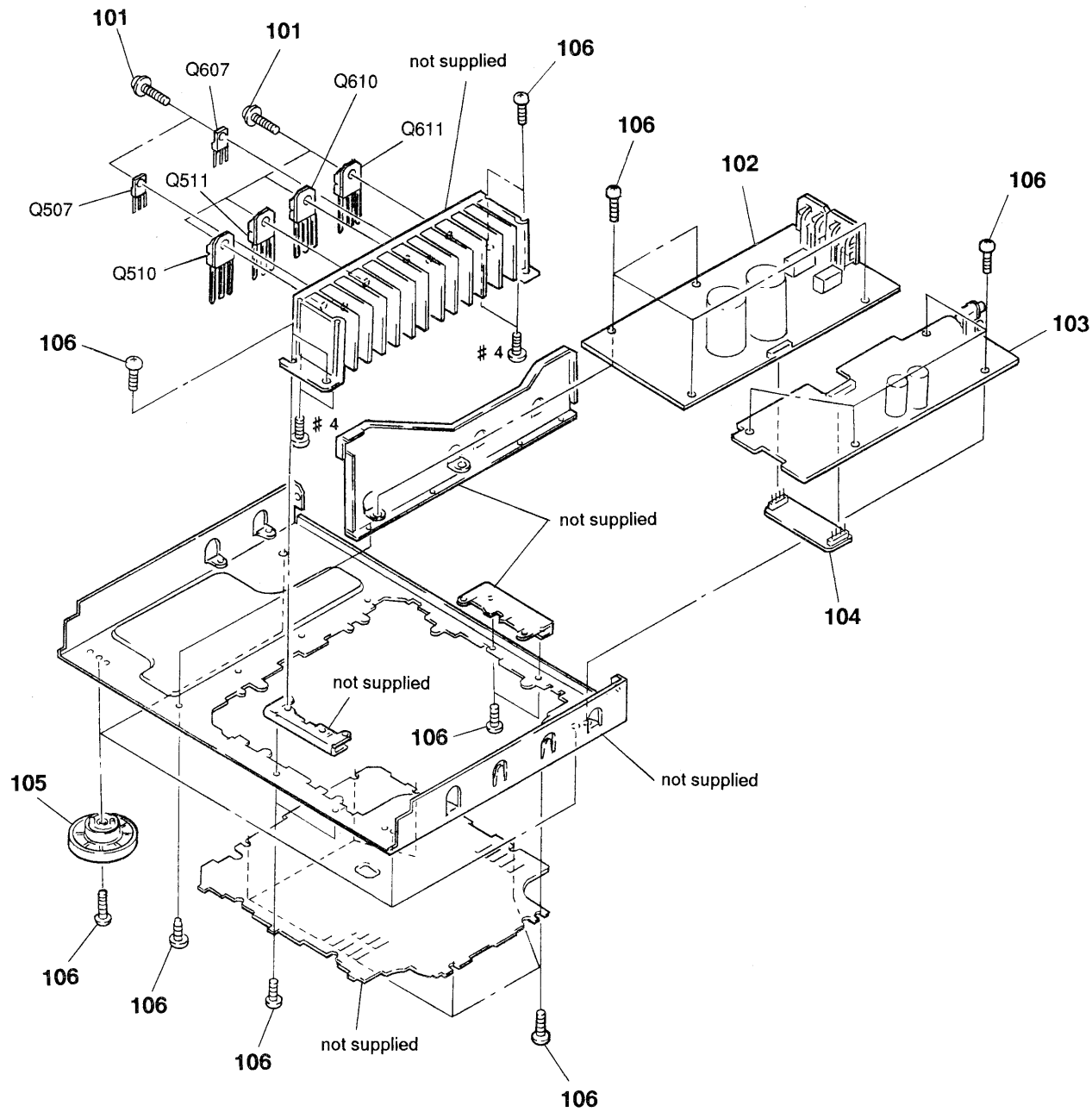
4-2. BACK PANEL SECTION



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-967-960-01	SCREW (4X8)		58	3-704-515-41	SCREW (BV/RING)	
* 52	1-652-461-11	FUSE BOARD		Δ 59	1-575-651-21	CORD, POWER	
53	1-533-293-11	FUSE HOLDER		* 60	3-703-244-00	BUSHING (2104), CORD	
* 54	1-652-462-11	AC OUTLET BOARD		61	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 55	1-652-464-11	INPUT BOARD		Δ CNJ901	1-526-794-11	OUTLET, AC	
* 56	4-965-992-01	PANEL, BACK (F645R:AEP1)		Δ CNJ902	1-526-794-11	OUTLET, AC	
* 56	4-965-992-11	PANEL, BACK (F645R:AEP2)		Δ CNJ903	1-526-794-11	OUTLET, AC	
* 56	4-965-992-21	PANEL, BACK (F645R:G)		Δ F1	1-532-237-00	FUSE, TIME LAG (T3.15A) (F645R)	
* 56	4-965-992-31	PANEL, BACK (F545R:AEP1)		Δ F1	1-532-286-00	FUSE, TIME LAG (T2.5A) (F545R)	
* 56	4-965-992-41	PANEL, BACK (F545R:AEP2)		Δ F2	1-532-286-00	FUSE, TIME LAG (T2.5A)	
* 56	4-965-992-51	PANEL, BACK (F545R:G)		Δ T1	1-426-798-11	TRANSFORMER, POWER (F545R)	
57	4-947-010-01	SCREW, FEEDER FIXED		Δ T1	1-426-799-11	TRANSFORMER, POWER (F645R)	

4-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-905-609-11	SCREW (TRANSISTOR)		105	4-956-885-11	FOOT (F58175S2W)	
* 102	A-4371-062-A	AMP (B) BOARD, COMPLETE (F645R:G)		106	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 102	A-4371-064-A	AMP (B) BOARD, COMPLETE (F645R:AEP2)		Q507	8-729-209-15	TRANSISTOR 2SD2012	
* 102	A-4371-074-A	AMP (B) BOARD, COMPLETE (F645R:AEP1)		Q510	8-729-015-30	TRANSISTOR 2SK1530-Y (F645R)	
* 102	A-4371-082-A	AMP (B) BOARD, COMPLETE (F545R:AEP1)		Q510	8-729-232-45	TRANSISTOR 2SK1529-Y (F545R)	
* 102	A-4371-084-A	AMP (B) BOARD, COMPLETE (F545R:AEP2)		Q511	8-729-015-31	TRANSISTOR 2SJ201-Y (F645R)	
* 102	A-4371-089-A	AMP (B) BOARD, COMPLETE (F545R:G)		Q511	8-729-232-46	TRANSISTOR 2SJ200-Y (F545R)	
* 103	A-4371-061-A	AMP (A) BOARD, COMPLETE (F645R:G)		Q607	8-729-209-15	TRANSISTOR 2SD2012	
* 103	A-4371-063-A	AMP (A) BOARD, COMPLETE (F645R:AEP2)		Q610	8-729-015-31	TRANSISTOR 2SJ201-Y (F645R)	
* 103	A-4371-073-A	AMP (A) BOARD, COMPLETE (F645R:AEP1)		Q610	8-729-232-46	TRANSISTOR 2SJ200-Y (F545R)	
* 103	A-4371-081-A	AMP (A) BOARD, COMPLETE (F545R:AEP1)		Q611	8-729-015-30	TRANSISTOR 2SK1530-Y (F645R)	
* 103	A-4371-083-A	AMP (A) BOARD, COMPLETE (F545R:AEP2)		Q611	8-729-232-45	TRANSISTOR 2SK1529-Y (F545R)	
* 103	A-4371-088-A	AMP (A) BOARD, COMPLETE (F545R:G)					
* 104	1-652-457-11	JOINT (A) BOARD					

AC OUTLET

AMP (A)

SECTION 5 ELECTRICAL PARTS LIST

NOTE:

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

When indicating parts by reference number, please include the board name.

Note:

There are two type of AEP models which are depend on countries.
AEP2: Model for Scandinavian countries, Swtzerland, Spain and Portugal.

AEP1: Model for other European countries.

• Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

• Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• -XX, -X mean standardized parts, so they may have some difference from the original one.

• Abbreviation

G : German model.

• RESISTORS

All resistors are in ohms

METAL: Metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F : nonflammable

• SEMICONDUCTORS

In each case, u: μ , for example:

uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,

uPC...: μ PC..., uPD...: μ PD...

• CAPACITORS

uF : μ F

• COILS

uH : μ H

• Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-652-462-11	AC OUTLET BOARD *****		C205	1-126-059-11	ELECT 10uF 20% 50V	
		< CONNECTOR >		C206	1-124-122-11	ELECT 100uF 20% 50V (F645R)	
Δ CNJ901	1-526-794-11	OUTLET, AC		C206	1-124-910-11	ELECT 47uF 20% 50V (F545R)	
Δ CNJ902	1-526-794-11	OUTLET, AC		C250	1-162-284-31	CERAMIC 150PF 10% 50V (G)	
Δ CNJ903	1-526-794-11	OUTLET, AC		C258	1-164-073-11	CERAMIC 100PF 10% 50V	
*****				C500	1-124-927-11	ELECT 4.7uF 20% 100V	
*	A-4371-061-A	AMP (A) BOARD, COMPLETE (F645R:G) *****		C501	1-162-282-31	CERAMIC 100PF 10% 50V	
*	A-4371-063-A	AMP (A) BOARD, COMPLETE (F645R:AEP2) *****		C502	1-162-292-31	CERAMIC 680PF 10% 50V	
*	A-4371-073-A	AMP (A) BOARD, COMPLETE (F645R:AEP1) *****		C503	1-124-910-11	ELECT 47uF 20% 50V	
*	A-4371-081-A	AMP (A) BOARD, COMPLETE (F545R:AEP1) *****		C504	1-102-230-00	CERAMIC 4PF 0.25PF 500V	
*	A-4371-083-A	AMP (A) BOARD, COMPLETE (F545R:AEP2) *****		C505	1-124-120-11	ELECT 220uF 20% 25V	
*	A-4371-088-A	AMP (A) BOARD, COMPLETE (F545R:G) *****		C507	1-162-196-31	CERAMIC 5.6PF 10% 50V	
		< CAPACITOR >		C510	1-104-845-11	ELECT 2700uF 20% 63V	
C100	1-164-077-11	CERAMIC 220PF 10% 50V		C511	1-126-233-11	ELECT 22uF 20% 50V	
C101	1-124-927-11	ELECT 4.7uF 20% 100V		C550	1-164-073-11	CERAMIC 100PF 10% 50V	
C102	1-161-377-00	CERAMIC 0.0047uF 30% 16V		C600	1-124-927-11	ELECT 4.7uF 20% 100V	
C103	1-136-162-00	FILM 0.056uF 5% 50V		C601	1-162-282-31	CERAMIC 100PF 10% 50V	
C104	1-137-471-11	FILM 0.016uF 5% 50V		C602	1-162-292-31	CERAMIC 680PF 10% 50V	
C105	1-126-059-11	ELECT 10uF 20% 50V		C603	1-124-910-11	ELECT 47uF 20% 50V	
C106	1-124-122-11	ELECT 100uF 20% 50V (F645R)		C604	1-102-230-00	CERAMIC 4PF 0.25PF 500V	
C106	1-124-910-11	ELECT 47uF 20% 50V (F545R)		C605	1-124-120-11	ELECT 220uF 20% 25V	
C107	1-126-059-11	ELECT 10uF 20% 50V		C607	1-162-196-31	CERAMIC 5.6PF 10% 50V	
C150	1-162-284-31	CERAMIC 150PF 10% 50V (G)		C610	1-104-845-11	ELECT 2700uF 20% 63V	
C158	1-164-073-11	CERAMIC 100PF 10% 50V		C611	1-126-233-11	ELECT 22uF 20% 50V	
C200	1-164-077-11	CERAMIC 220PF 10% 50V		C650	1-164-073-11	CERAMIC 100PF 10% 50V	
C201	1-124-927-11	ELECT 4.7uF 20% 100V		C904	1-124-918-11	ELECT 47uF 20% 63V	
C202	1-161-377-00	CERAMIC 0.0047uF 30% 16V		C905	1-124-918-11	ELECT 47uF 20% 63V	
C203	1-136-162-00	FILM 0.056uF 5% 50V		C906	1-124-910-11	ELECT 47uF 20% 50V	
C204	1-137-471-11	FILM 0.016uF 5% 50V		C907	1-124-910-11	ELECT 47uF 20% 50V	
				C911	1-124-915-11	ELECT 10uF 20% 63V	
				C912	1-124-915-11	ELECT 10uF 20% 63V	
				C915	1-161-494-00	CERAMIC 0.022uF 25V	
				C921	1-161-494-00	CERAMIC 0.022uF 25V (G)	
						< CONNECTOR >	
				* CNJ500	1-563-381-11	SOCKET, CONNECTOR 11P	
				CNP100	1-766-269-11	PLUG (MICRO CONNECTOR) 7P	
				CNP200	1-766-271-11	PLUG (MICRO CONNECTOR) 10P	
						< DIODE >	
				D100	8-719-933-50	DIODE HZS7C2L	
				D500	8-719-987-63	DIODE 1N4148M	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D501	8-719-933-35	DIODE	HZS6A3L	Q504	8-729-201-53	TRANSISTOR	2SA1015-GR
D502	8-719-987-63	DIODE	1N4148M	Q505	8-729-021-74	TRANSISTOR	2SA949-OY-E6
D503	8-719-987-63	DIODE	1N4148M				
D504	8-719-987-63	DIODE	1N4148M	Q506	8-729-021-73	TRANSISTOR	2SC2229-OY-E6
D505	8-719-987-63	DIODE	1N4148M	Q513	8-729-141-26	TRANSISTOR	2SC3622A-LK
D506	8-719-987-63	DIODE	1N4148M	Q600	8-729-620-17	TRANSISTOR	2SC2259-FG
D510	8-719-987-63	DIODE	1N4148M	Q601	8-729-119-76	TRANSISTOR	2SA1175-HFE
D511	8-719-985-53	DIODE	HZS4ALL	Q602	8-729-119-78	TRANSISTOR	2SC2785-HFE
D512	8-719-985-53	DIODE	HZS4ALL				
D513	8-719-987-63	DIODE	1N4148M	Q603	8-729-201-56	TRANSISTOR	2SK246-GR2
D600	8-719-987-63	DIODE	1N4148M	Q604	8-729-201-53	TRANSISTOR	2SA1015-GR
D601	8-719-933-35	DIODE	HZS6A3L	Q605	8-729-021-74	TRANSISTOR	2SA949-OY-E6
D602	8-719-987-63	DIODE	1N4148M	Q606	8-729-021-73	TRANSISTOR	2SC2229-OY-E6
				Q613	8-729-141-26	TRANSISTOR	2SC3622A-LK
D603	8-719-987-63	DIODE	1N4148M				
D604	8-719-987-63	DIODE	1N4148M	Q901	8-729-119-78	TRANSISTOR	2SC2785-HFE
D605	8-719-987-63	DIODE	1N4148M	Q902	8-729-201-53	TRANSISTOR	2SA1015-GR
D606	8-719-987-63	DIODE	1N4148M			< RESISTOR >	
D610	8-719-987-63	DIODE	1N4148M	R100	1-247-700-11	CARBON	100 5% 1/4W F (F645R)
				R101	1-249-469-11	CARBON	100K 5% 1/4W
D611	8-719-985-53	DIODE	HZS4ALL	R102	1-247-706-11	CARBON	330 5% 1/4W F
D612	8-719-985-53	DIODE	HZS4ALL	R103	1-249-469-11	CARBON	100K 5% 1/4W
D613	8-719-987-63	DIODE	1N4148M	R104	1-247-725-11	CARBON	10K 5% 1/4W
D908	8-719-002-09	DIODE	UZL-18M				
D909	8-719-002-09	DIODE	UZL-18M	R105	1-247-710-11	CARBON	560 5% 1/4W
		< IC >		R106	1-247-700-11	CARBON	100 5% 1/4W F
IC100	8-759-634-51	IC	M5218AP (F545R)	R107	1-247-710-11	CARBON	560 5% 1/4W
IC100	8-759-745-61	IC	NJM4560D-D (F645R)	R108	1-247-716-11	CARBON	1.8K 5% 1/4W
				R109	1-249-504-11	CARBON	10 5% 1/4W (F645R)
		< JACK >		R110	1-249-529-11	CARBON	110 5% 1/4W
J100	1-580-054-11	JACK, PIN 2P (PHONO IN)		R111	1-246-545-00	CARBON	1.0M 5% 1/4W
				R112	1-249-844-11	CARBON	56K 5% 1/2W
		< COIL >		R113	1-249-689-11	CARBON	4.7K 5% 1/2W
L100	1-410-979-11	INDUCTOR	200uH (F545R:G)	R114	1-247-713-11	CARBON	1K 5% 1/4W F
L100	1-424-397-11	COIL, CHOKE	220uH (F645R:G)	R150	1-259-434-11	CARBON	1.8K 5% 1/6W (F645R:G)
L101	1-424-397-11	COIL, CHOKE	220uH (F645R:G)	R150	1-259-446-11	CARBON	5.6K 5% 1/6W (F545R:G)
L200	1-410-979-11	INDUCTOR	200uH (F545R:G)	R151	1-259-434-11	CARBON	1.8K 5% 1/6W (F645R:G)
L200	1-424-397-11	COIL, CHOKE	220uH (F645R:G)	R200	1-247-700-11	CARBON	100 5% 1/4W F(F645R)
				R201	1-249-469-11	CARBON	100K 5% 1/4W
L201	1-424-397-11	COIL, CHOKE	220uH (F645R:G)				
* L501	1-428-203-11	COIL, AIR-CORE		R202	1-247-706-11	CARBON	330 5% 1/4W F
* L601	1-428-203-11	COIL, AIR-CORE		R203	1-249-469-11	CARBON	100K 5% 1/4W
		< TRANSISTOR >		R204	1-247-725-11	CARBON	10K 5% 1/4W
Q100	8-729-354-52	TRANSISTOR	2SC2545	R205	1-247-710-11	CARBON	560 5% 1/4W
Q101	8-729-354-52	TRANSISTOR	2SC2545	R206	1-247-700-11	CARBON	100 5% 1/4W F
Q200	8-729-354-52	TRANSISTOR	2SC2545				
Q201	8-729-354-52	TRANSISTOR	2SC2545	R207	1-247-710-11	CARBON	560 5% 1/4W
Q500	8-729-620-17	TRANSISTOR	2SC2259-FG	R209	1-249-504-11	CARBON	10 5% 1/4W (F645R)
				R210	1-249-529-11	CARBON	110 5% 1/4W
Q501	8-729-119-76	TRANSISTOR	2SA1175-HFE	R211	1-246-545-00	CARBON	1.0M 5% 1/4W
Q502	8-729-119-78	TRANSISTOR	2SC2785-HFE	R212	1-249-844-11	CARBON	56K 5% 1/2W
Q503	8-729-201-56	TRANSISTOR	2SK246-GR2				
				R213	1-249-689-11	CARBON	4.7K 5% 1/2W
				R214	1-247-713-11	CARBON	1K 5% 1/4W F
				R250	1-259-434-11	CARBON	1.8K 5% 1/6W (F645R:G)
				R250	1-259-446-11	CARBON	5.6K 5% 1/6W (F545R:G)

AMP (A)

AMP (B)

Ref. No.	Part No.	Description	Remark
R251	1-259-434-11	CARBON	1.8K 5% 1/6W (F645R:G)
R315	1-247-713-11	CARBON	1K 5% 1/4W F
R415	1-247-713-11	CARBON	1K 5% 1/4W F
R500	1-247-713-11	CARBON	1K 5% 1/4W F
R501	1-249-469-11	CARBON	100K 5% 1/4W
R502	1-247-704-11	CARBON	220 5% 1/4W
R503	1-247-717-11	CARBON	2.2K 5% 1/4W F
△R504	1-212-889-00	FUSIBLE	220 5% 1/4W F (AEP2)
R504	1-247-704-11	CARBON	220 5% 1/4W (AEP1, G)
△R505	1-212-889-00	FUSIBLE	220 5% 1/4W F (AEP2)
R505	1-247-704-11	CARBON	220 5% 1/4W (AEP1, G)
R506	1-247-704-11	CARBON	220 5% 1/4W
R507	1-249-709-11	CARBON	33K 5% 1/2W (F545R)
R507	1-249-711-11	CARBON	39K 5% 1/2W (F645R)
R508	1-247-721-11	CARBON	4.7K 5% 1/4W
△R509	1-212-875-00	FUSIBLE	56 5% 1/4W F (AEP2)
R509	1-249-522-11	CARBON	56 5% 1/4W (AEP1, G)
△R510	1-212-883-00	FUSIBLE	120 5% 1/4W F (AEP2)
R510	1-247-701-11	CARBON	120 5% 1/4W F (AEP1, G)
R513	1-247-710-11	CARBON	560 5% 1/4W
R516	1-249-469-11	CARBON	100K 5% 1/4W
R529	1-247-846-11	CARBON	4.3K 5% 1/4W
R600	1-247-713-11	CARBON	1K 5% 1/4W F
R601	1-249-469-11	CARBON	100K 5% 1/4W
R602	1-247-704-11	CARBON	220 5% 1/4W
R603	1-247-717-11	CARBON	2.2K 5% 1/4W F
△R604	1-212-889-00	FUSIBLE	220 5% 1/4W F (AEP2)
R604	1-247-704-11	CARBON	220 5% 1/4W (AEP1, G)
△R605	1-212-889-00	FUSIBLE	220 5% 1/4W F (AEP2)
R605	1-247-704-11	CARBON	220 5% 1/4W (AEP1, G)
R606	1-247-704-11	CARBON	220 5% 1/4W
R607	1-249-709-11	CARBON	33K 5% 1/2W (F545R)
R607	1-249-711-11	CARBON	39K 5% 1/2W (F645R)
R608	1-247-721-11	CARBON	4.7K 5% 1/4W
△R609	1-212-875-00	FUSIBLE	56 5% 1/4W F (AEP2)
R609	1-249-522-11	CARBON	56 5% 1/4W (AEP1, G)
△R610	1-212-883-00	FUSIBLE	120 5% 1/4W F (AEP2)
R610	1-247-701-11	CARBON	120 5% 1/4W F (AEP1, G)
R613	1-247-710-11	CARBON	560 5% 1/4W
R616	1-249-469-11	CARBON	100K 5% 1/4W
R629	1-247-846-11	CARBON	4.3K 5% 1/4W
R708	1-249-441-11	CARBON	100K 5% 1/4W
R736	1-249-433-11	CARBON	22K 5% 1/4W
R900	1-247-745-11	CARBON	330 5% 1/2W (F545R)
R900	1-247-747-11	CARBON	470 5% 1/2W (F645R)
R901	1-247-745-11	CARBON	330 5% 1/2W (F545R)
R901	1-247-747-11	CARBON	470 5% 1/2W (F645R)
R902	1-247-745-11	CARBON	330 5% 1/2W (F545R)
R902	1-247-747-11	CARBON	470 5% 1/2W (F645R)
R903	1-247-745-11	CARBON	330 5% 1/2W (F545R)

Ref. No.	Part No.	Description	Remark
R903	1-247-747-11	CARBON	470 5% 1/2W (F645R)
R904	1-247-227-00	CARBON	300 5% 1/2W (F545R)
R904	1-247-746-11	CARBON	390 5% 1/2W (F645R)
R905	1-247-227-00	CARBON	300 5% 1/2W (F545R)
R905	1-247-746-11	CARBON	390 5% 1/2W (F645R)
R906	1-247-227-00	CARBON	300 5% 1/2W (F545R)
R906	1-247-746-11	CARBON	390 5% 1/2W (F645R)
R907	1-247-227-00	CARBON	300 5% 1/2W (F545R)
R907	1-247-746-11	CARBON	390 5% 1/2W (F645R)
R909	1-249-460-11	CARBON	15K 5% 1/4W
R910	1-249-460-11	CARBON	15K 5% 1/4W
< SWITCH >			
S100	1-571-111-11	SWITCH, PUSH (1 KEY) (CARTRIDGE) (F645R)	

*	A-4371-062-A	AMP (B) BOARD, COMPLETE (F645R:G)	

*	A-4371-064-A	AMP (B) BOARD, COMPLETE (F645R:AEP2)	

*	A-4371-074-A	AMP (B) BOARD, COMPLETE (F645R:AEP1)	

*	A-4371-082-A	AMP (B) BOARD, COMPLETE (F545R:AEP1)	

*	A-4371-084-A	AMP (B) BOARD, COMPLETE (F545R:AEP2)	

*	A-4371-089-A	AMP (B) BOARD, COMPLETE (F545R:G)	

< CAPACITOR >			
C506	1-124-910-11	ELECT	47uF 20% 50V
C508	1-136-163-00	FILM	0.068uF 5% 50V
C509	1-136-163-00	FILM	0.068uF 5% 50V
C551	1-136-153-00	FILM	0.01uF 5% 50V (G)
C552	1-136-153-00	FILM	0.01uF 5% 50V (G)
C553	1-162-294-31	CERAMIC	0.001uF 10% 50V (G)
C606	1-124-910-11	ELECT	47uF 20% 50V
C608	1-136-163-00	FILM	0.068uF 5% 50V
C609	1-136-163-00	FILM	0.068uF 5% 50V
C651	1-136-153-00	FILM	0.01uF 5% 50V (G)
C652	1-136-153-00	FILM	0.01uF 5% 50V (G)
C653	1-162-294-31	CERAMIC	0.001uF 10% 50V (G)
C707	1-124-120-11	ELECT	220uF 20% 25V
C800	1-164-085-11	FILM	1000P 10% 50V
C801	1-124-120-11	ELECT	220uF 20% 25V
C802	1-136-153-00	FILM	0.01uF 5% 50V
C803	1-124-927-11	ELECT	4.7uF 20% 100V

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

AMP (B)

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C804	1-124-126-00	ELECT	47uF 20% 10V (F545R)	< TRANSISTOR >			
C804	1-124-443-00	ELECT	100uF 20% 10V (F645R)	Q507	8-729-209-15	TRANSISTOR	2SD2012
C806	1-126-176-11	ELECT	220uF 20% 10V	Q508	8-729-017-06	TRANSISTOR	2SC4793
C900	1-109-867-11	ELECT	10000uF 20% 63V (F645R)	Q509	8-729-017-05	TRANSISTOR	2SA1837
C900	1-109-868-11	ELECT	10000uF 20% 63V (F545R)	Q510	8-729-015-30	TRANSISTOR	2SK1530-Y (F645R)
C901	1-109-867-11	ELECT	10000uF 20% 63V (F645R)	Q510	8-729-232-45	TRANSISTOR	2SK1529-Y (F545R)
C901	1-109-868-11	ELECT	10000uF 20% 63V (F545R)	Q511	8-729-015-31	TRANSISTOR	2SJ201-Y (F645R)
C902	1-126-365-51	ELECT	100uF 20% 63V	Q511	8-729-232-46	TRANSISTOR	2SJ200-Y (F545R)
C903	1-126-365-51	ELECT	100uF 20% 63V	Q512	8-729-140-82	TRANSISTOR	2SA988-PAFAEA
C908	1-106-379-12	MYLAR	0.033uF 5% 200V	Q607	8-729-209-15	TRANSISTOR	2SD2012
C909	1-106-379-12	MYLAR	0.033uF 5% 200V	Q608	8-729-017-06	TRANSISTOR	2SC4793
C913	1-106-379-12	MYLAR	0.033uF 5% 200V	Q609	8-729-017-05	TRANSISTOR	2SA1837
C914	1-106-379-12	MYLAR	0.033uF 5% 200V	Q610	8-729-015-31	TRANSISTOR	2SJ201-Y (F645R)
C917	1-124-907-11	ELECT	10uF 20% 50V	Q610	8-729-232-46	TRANSISTOR	2SJ200-Y (F545R)
C918	1-161-494-00	CERAMIC	0.022uF 25V	Q611	8-729-015-30	TRANSISTOR	2SK1530-Y (F645R)
C922	1-161-494-00	CERAMIC	0.022uF 25V (G)	Q611	8-729-232-45	TRANSISTOR	2SK1529-Y (F545R)
C950	1-161-494-00	CERAMIC	0.022uF 25V	Q612	8-729-140-82	TRANSISTOR	2SA988-PAFAEA
C951	1-106-391-12	MYLAR	0.1uF 5% 200V	Q700	8-729-900-83	TRANSISTOR	DTC124XS
< CONNECTOR >				Q701	8-729-119-79	TRANSISTOR	2SC2785-FEK
* CNJ600	1-563-381-11	SOCKET, CONNECTOR 11P		Q702	8-729-119-79	TRANSISTOR	2SC2785-FEK
CNP300	1-766-271-11	PLUG (MICRO CONNECTOR) 9P		Q703	8-729-119-79	TRANSISTOR	2SC2785-FEK
CNP400	1-766-269-11	PLUG (MICRO CONNECTOR) 7P		Q704	8-729-119-79	TRANSISTOR	2SC2785-FEK
CNP701	1-766-269-11	PLUG (MICRO CONNECTOR) 7P		Q705	8-729-119-79	TRANSISTOR	2SC2785-FEK
* CNP900	1-564-687-11	PIN, CONNECTOR 3P		Q714	8-729-900-63	TRANSISTOR	DTA124ES
< DIODE >				< RESISTOR >			
D507	8-719-900-19	DIODE	SLR34UW5	R511	1-247-711-11	CARBON	680 5% 1/4W
D508	8-719-815-85	DIODE	1S1585	R512	1-247-714-11	CARBON	1.2K 5% 1/4W
D509	8-719-815-85	DIODE	1S1585	△R514	1-212-857-00	FUSIBLE	10 5% 1/4W F
D607	8-719-900-19	DIODE	SLR34UW5	△R515	1-212-857-00	FUSIBLE	10 5% 1/4W F
D608	8-719-815-85	DIODE	1S1585	△R517	1-212-994-00	FUSIBLE	330 5% 1/2W F
D609	8-719-815-85	DIODE	1S1585	△R518	1-212-881-11	FUSIBLE	100 5% 1/4W F
D801	8-719-987-63	DIODE	1N4148M	△R519	1-212-881-11	FUSIBLE	100 5% 1/4W F
D802	8-719-987-63	DIODE	1N4148M	R520	1-217-151-00	METAL PLATE	0.22 2W
D805	8-719-024-99	DIODE	11ES2	R521	1-217-151-00	METAL PLATE	0.22 2W
D900	8-719-302-38	DIODE	RBV-602-01	R522	1-249-421-11	CARBON	2.2K 5% 1/4W F (F545R)
D901	8-719-024-99	DIODE	11ES2	R522	1-249-423-11	CARBON	3.3K 5% 1/4W F (F645R)
D902	8-719-024-99	DIODE	11ES2	R523	1-249-432-11	CARBON	18K 5% 1/4W
D911	8-719-024-99	DIODE	11ES2	R524	1-247-727-11	CARBON	10 5% 1/2W
D912	8-719-024-99	DIODE	11ES2	R525	1-247-887-00	CARBON	220K 5% 1/4W
< IC >				R526	1-247-727-11	CARBON	10 5% 1/2W
IC700	8-759-202-07	IC	TC9174P	R530	1-249-424-11	CARBON	3.9K 5% 1/4W F
IC800	8-759-111-68	IC	UPC1237HA	R551	1-247-727-11	CARBON	10 5% 1/2W (G)
< COIL >				R552	1-247-727-11	CARBON	10 5% 1/2W (G)
* L500	1-420-872-00	COIL, AIR-CORE		R611	1-247-711-11	CARBON	680 5% 1/4W
* L600	1-420-872-00	COIL, AIR-CORE		R612	1-247-714-11	CARBON	1.2K 5% 1/4W
△R614	1-212-857-00	FUSIBLE	10 5% 1/4W F	△R615	1-212-857-00	FUSIBLE	10 5% 1/4W F
△R615	1-212-857-00	FUSIBLE	10 5% 1/4W F	△R617	1-212-994-00	FUSIBLE	330 5% 1/2W F
△R617	1-212-994-00	FUSIBLE	330 5% 1/2W F	△R618	1-212-881-11	FUSIBLE	100 5% 1/4W F
△R618	1-212-881-11	FUSIBLE	100 5% 1/4W F				

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

AMP (B) FUSE

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
△R619	1-212-881-11	FUSIBLE 100 5% 1/4W F		*	1-652-461-11	FUSE BOARD *****	
R620	1-217-151-00	METAL PLATE 0.22 2W			1-533-293-11	FUSE HOLDER	
R621	1-217-151-00	METAL PLATE 0.22 2W			< CAPACITOR >		
R622	1-249-421-11	CARBON 2.2K 5% 1/4W F (F545R)		△C1	1-161-744-51	CERAMIC 0.01uF 400V	
R622	1-249-423-11	CARBON 3.3K 5% 1/4W F (F645R)		C716	1-126-233-11	ELECT 22uF 20% 50V	
R623	1-249-432-11	CARBON 18K 5% 1/4W		C910	1-124-563-11	ELECT 2200uF 20% 25V	
R624	1-247-727-11	CARBON 10 5% 1/2W		C913	1-136-153-00	FILM 0.01uF 5% 50V	
R625	1-247-887-00	CARBON 220K 5% 1/4W		C916	1-164-159-11	CERAMIC 0.1uF 50V	
R626	1-247-727-11	CARBON 10 5% 1/2W		C920	1-164-159-11	CERAMIC 0.1uF 50V	
R630	1-249-424-11	CARBON 3.9K 5% 1/4W F		< CONNECTOR >			
R651	1-247-727-11	CARBON 10 5% 1/2W (G)		CNP1	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
R652	1-247-727-11	CARBON 10 5% 1/2W (G)		* CNP2	1-564-321-21	PIN, CONNECTOR 2P	
R700	1-249-433-11	CARBON 22K 5% 1/4W		CNP3	1-580-629-11	PIN, CONNECTOR 2P	
R701	1-249-433-11	CARBON 22K 5% 1/4W		CNP700	1-566-212-11	PIN, CONNECTOR 3P	
R702	1-249-433-11	CARBON 22K 5% 1/4W		CNP702	1-766-266-11	PLUG (MICRO CONNECTOR) 4P	
R703	1-249-433-11	CARBON 22K 5% 1/4W		< DIODE >			
R704	1-249-433-11	CARBON 22K 5% 1/4W		D904	8-719-024-99	DIODE 11ES2	
R705	1-249-433-11	CARBON 22K 5% 1/4W		D905	8-719-024-99	DIODE 11ES2	
R706	1-247-755-11	CARBON 1.8K 5% 1/2W (F645R)		D906	8-719-024-99	DIODE 11ES2	
R706	1-247-756-11	CARBON 2.2K 5% 1/2W (F545R)		D907	8-719-024-99	DIODE 11ES2	
R707	1-247-756-11	CARBON 2.2K 5% 1/2W		D910	8-719-987-63	DIODE 1N4148M	
R800	1-249-429-11	CARBON 10K 5% 1/4W		< FUSE >			
R801	1-249-441-11	CARBON 100K 5% 1/4W		△F1	1-532-237-00	FUSE, TIME LAG (T3. 15A) (F645R)	
R802	1-247-881-00	CARBON 120K 5% 1/4W		△F1	1-532-286-00	FUSE, TIME LAG (T2. 5A) (F545R)	
R803	1-249-432-11	CARBON 18K 5% 1/4W		△F2	1-532-286-00	FUSE, TIME LAG (T2. 5A)	
R820	1-249-435-11	CARBON 33K 5% 1/4W		< IC >			
△R950	1-212-974-00	FUSIBLE 47 5% 1/2W F		IC903	8-759-231-53	IC TA7805S	
< VARIABLE RESISTOR >				< TRANSISTOR >			
RV500	1-241-761-11	RES, ADJ, CARBON 1K		Q900	8-729-119-79	TRANSISTOR 2SC2785-FEK	
RV600	1-241-761-11	RES, ADJ, CARBON 1K		Q903	8-729-900-63	TRANSISTOR DTA124ES	
< RELAY >				< RESISTOR >			
RY800	1-515-676-11	RELAY (F645R)		R737	1-249-423-11	CARBON 3.3K 5% 1/4W F	
RY800	1-515-920-11	RELAY (24V) (F545R)		R908	1-247-209-00	CARBON 51 5% 1/2W (F545R)	
RY801	1-515-676-11	RELAY (F645R)		R908	1-247-727-11	CARBON 10 5% 1/2W (F645R)	
RY801	1-515-920-11	RELAY (24V) (F545R)		R911	1-249-441-11	CARBON 100K 5% 1/4W	
< CONNECTOR >				< RELAY >			
* TP500	1-564-506-11	PLUG, CONNECTOR 3P		△RY1	1-515-684-31	RELAY (F545R)	
* TP600	1-564-506-11	PLUG, CONNECTOR 3P		△RY1	1-515-701-21	RELAY (F645R)	
* TP900	1-537-519-11	TERMINAL BOARD (SP) (AEP1)					
TP900	1-537-699-11	TERMINAL BOARD (SP) (G)					
TP900	1-537-762-11	TERMINAL BOARD (SP) (AEP2)					
< THERMISTOR >							
TH900	1-806-882-11	THERMISTOR, POSITIVE 2.2 (AEP2)					
TH901	1-806-882-11	THERMISTOR, POSITIVE 2.2 (AEP2)					

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

FUSE

INPUT

JOINT (A)

LED

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
		< TRANSFORMER >					
△T2	1-449-071-21	TRANSFORMER, POWER		R218	1-247-708-11	CARBON 470 5% 1/4W (G)	
*****				R219	1-247-708-11	CARBON 470 5% 1/4W (G)	
*	1-652-464-11	INPUT BOARD		R220	1-247-708-11	CARBON 470 5% 1/4W (G)	
		*****		R221	1-247-708-11	CARBON 470 5% 1/4W (G)	
		< CAPACITOR >		R222	1-247-903-00	CARBON 1M 5% 1/4W	
C151	1-162-286-31	CERAMIC 220PF 10% 50V (G)		R223	1-247-903-00	CARBON 1M 5% 1/4W	
C152	1-162-286-31	CERAMIC 220PF 10% 50V (G)				< RELAY >	
C153	1-162-286-31	CERAMIC 220PF 10% 50V (G)		RY300	1-515-614-11	RELAY	
C154	1-162-286-31	CERAMIC 220PF 10% 50V (G)		RY301	1-515-614-11	RELAY	
C155	1-162-286-31	CERAMIC 220PF 10% 50V (G)		RY302	1-515-614-11	RELAY	
C156	1-162-286-31	CERAMIC 220PF 10% 50V (G)		RY400	1-515-614-11	RELAY	
C157	1-162-286-31	CERAMIC 220PF 10% 50V (G)		RY401	1-515-614-11	RELAY	
C251	1-162-286-31	CERAMIC 220PF 10% 50V (G)		RY402	1-515-614-11	RELAY	
C252	1-162-286-31	CERAMIC 220PF 10% 50V (G)				< SWITCH >	
C253	1-162-286-31	CERAMIC 220PF 10% 50V (G)		S102	1-571-115-11	SWITCH, SLIDE (REC OUT SELECTOR)	
C254	1-162-286-31	CERAMIC 220PF 10% 50V (G)		*****			
C255	1-162-286-31	CERAMIC 220PF 10% 50V (G)		*	1-652-457-11	JOINT (A) BOARD	
C256	1-162-286-31	CERAMIC 220PF 10% 50V (G)				*****	
C257	1-162-286-31	CERAMIC 220PF 10% 50V (G)				< CONNECTOR >	
		< DIODE >		* CNP500	1-560-667-00	PIN, CONNECTOR 11P	
D300	8-719-987-63	DIODE 1N4148M		* CNP600	1-560-667-00	PIN, CONNECTOR 11P	
D301	8-719-987-63	DIODE 1N4148M		*****			
D302	8-719-987-63	DIODE 1N4148M		*	1-652-463-11	LED BOARD	
D400	8-719-987-63	DIODE 1N4148M				*****	
D401	8-719-987-63	DIODE 1N4148M				< CONNECTOR >	
D402	8-719-987-63	DIODE 1N4148M		* CNJ700	1-691-244-11	SOCKET, CONNECTOR 10P	
		< JACK >				< DIODE >	
* J101	1-573-142-11	JACK, PIN 4P (AUX IN) (CD IN)		D706	8-719-303-02	DIODE SEL2510C-D (PHONO)	
J102	1-568-978-11	JACK 6P (TUNER IN) (TAPE2/MD)		D707	8-719-303-02	DIODE SEL2510C-D (TUNER)	
* J103	1-573-142-21	JACK, PIN 4P (TAPE1/DAT)		D708	8-719-303-02	DIODE SEL2510C-D (CD)	
		< RESISTOR >		D709	8-719-303-02	DIODE SEL2510C-D (AUX)	
R115	1-247-713-11	CARBON 1K 5% 1/4W F		D710	8-719-303-02	DIODE SEL2510C-D (TAPE2/MD)	
R116	1-247-713-11	CARBON 1K 5% 1/4W F		D711	8-719-303-02	DIODE SEL2510C-D (TAPE1/DAT)	
R117	1-247-708-11	CARBON 470 5% 1/4W (G)		D720	8-719-301-49	DIODE SEL2810A (SOURCE DIRECT)	
R118	1-247-708-11	CARBON 470 5% 1/4W (G)		D721	8-719-301-49	DIODE SEL2810A (EON LINK)	
R119	1-247-708-11	CARBON 470 5% 1/4W (G)				< RESISTOR >	
R120	1-247-708-11	CARBON 470 5% 1/4W (G)		R728	1-249-406-11	CARBON 120 5% 1/4W F	
R121	1-247-708-11	CARBON 470 5% 1/4W (G)		*****			
R122	1-247-903-00	CARBON 1M 5% 1/4W					
R123	1-247-903-00	CARBON 1M 5% 1/4W					
R215	1-247-713-11	CARBON 1K 5% 1/4W F					
R216	1-247-713-11	CARBON 1K 5% 1/4W F					
R217	1-247-708-11	CARBON 470 5% 1/4W (G)					

PANEL

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4371-058-A	PANEL BOARD, COMPLETE (F645R:G) *****				< DIODE >	
*	A-4371-065-A	PANEL BOARD, COMPLETE (F645R:AEP) *****		D700	8-719-987-63	DIODE 1N4148M	
*	A-4371-077-A	PANEL BOARD, COMPLETE (F545R:AEP) *****		D701	8-719-987-63	DIODE 1N4148M	
*	A-4371-085-A	PANEL BOARD, COMPLETE (F545R:G) *****		D702	8-719-987-63	DIODE 1N4148M	
		< CAPACITOR >		D703	8-719-987-63	DIODE 1N4148M	
C300	1-124-927-11	ELECT 4.7uF 20% 100V		D704	8-719-987-63	DIODE 1N4148M	
C301	1-162-282-31	CERAMIC 100PF 10% 50V		D705	8-719-987-63	DIODE 1N4148M	
C302	1-124-927-11	ELECT 4.7uF 20% 100V		D714	8-719-987-63	DIODE 1N4148M	
C303	1-136-166-00	FILM 0.12uF 5% 50V		D715	8-719-987-63	DIODE 1N4148M	
C304	1-130-473-00	MYLAR 0.0015uF 5% 50V		D717	8-719-987-63	DIODE 1N4148M	
C305	1-162-282-31	CERAMIC 100PF 10% 50V		D718	8-719-987-63	DIODE 1N4148M	
C306	1-136-154-00	FILM 0.012uF 5% 50V		D719	8-719-987-63	DIODE 1N4148M	
C307	1-136-154-00	FILM 0.012uF 5% 50V		D722	8-719-024-99	DIODE 11ES2	
C308	1-162-290-31	CERAMIC 470PF 10% 50V		D726	8-719-987-63	DIODE 1N4148M	
C309	1-136-161-00	FILM 0.047uF 5% 50V				< IC >	
C311	1-164-159-11	CERAMIC 0.1uF 50V		IC300	8-759-634-51	IC M5218AP	
C314	1-162-211-31	CERAMIC 33PF 5% 50V		IC400	8-759-634-51	IC M5218AP	
C315	1-162-211-31	CERAMIC 33PF 5% 50V		IC701	8-759-711-78	IC TMP47C200BN-H307	
C400	1-124-927-11	ELECT 4.7uF 20% 100V		IC702	8-759-500-31	IC X24C01P-S	
C401	1-162-282-31	CERAMIC 100PF 10% 50V		IC704	8-759-962-08	IC BA6208	
C402	1-124-927-11	ELECT 4.7uF 20% 100V		IC900	8-759-635-63	IC M51943BSL	
C403	1-136-166-00	FILM 0.12uF 5% 50V				< TRANSISTOR >	
C404	1-130-473-00	MYLAR 0.0015uF 5% 50V		Q700	8-729-900-83	TRANSISTOR DTC124XS	
C405	1-162-282-31	CERAMIC 100PF 10% 50V		Q706	8-729-900-63	TRANSISTOR DTA124ES	
C406	1-136-154-00	FILM 0.012uF 5% 50V		Q707	8-729-900-63	TRANSISTOR DTA124ES	
C407	1-136-154-00	FILM 0.012uF 5% 50V		Q708	8-729-900-63	TRANSISTOR DTA124ES	
C408	1-162-290-31	CERAMIC 470PF 10% 50V		Q709	8-729-900-63	TRANSISTOR DTA124ES	
C409	1-136-161-00	FILM 0.047uF 5% 50V		Q713	8-729-119-76	TRANSISTOR 2SA1175-HFE	
C411	1-164-159-11	CERAMIC 0.1uF 50V				< RESISTOR >	
C414	1-162-211-31	CERAMIC 33PF 5% 50V		R302	1-247-725-11	CARBON 10K 5% 1/4W	
C415	1-162-211-31	CERAMIC 33PF 5% 50V		R303	1-247-725-11	CARBON 10K 5% 1/4W	
C701	1-124-925-11	ELECT 2.2uF 20% 100V		R304	1-247-700-11	CARBON 100 5% 1/4W F	
C702	1-124-903-11	ELECT 1uF 20% 50V		R305	1-247-152-00	CARBON 8.2K 5% 1/4W	
C703	1-162-207-31	CERAMIC 22PF 5% 50V		R306	1-246-545-00	CARBON 1.0M 5% 1/4W	
C704	1-162-207-31	CERAMIC 22PF 5% 50V		R309	1-249-497-11	CARBON 33K 5% 1/4W	
C705	1-164-159-11	CERAMIC 0.1uF 50V		R310	1-249-497-11	CARBON 33K 5% 1/4W	
C706	1-126-233-11	ELECT 22uF 20% 50V		R311	1-246-545-00	CARBON 1.0M 5% 1/4W	
C919	1-162-282-31	CERAMIC 100PF 10% 50V		R312	1-246-545-00	CARBON 1.0M 5% 1/4W	
		< CONNECTOR >		R313	1-247-725-11	CARBON 10K 5% 1/4W	
CNP703	1-766-267-11	PLUG (MICRO CONNECTOR) 5P		R314	1-247-725-11	CARBON 10K 5% 1/4W	
CNP705	1-766-257-11	PIN, CONNECTOR (PC BOARD) 10P		R402	1-247-725-11	CARBON 10K 5% 1/4W	
CNP706	1-766-266-11	PLUG (MICRO CONNECTOR) 4P		R403	1-247-725-11	CARBON 10K 5% 1/4W	
				R404	1-247-700-11	CARBON 100 5% 1/4W F	
				R405	1-247-152-00	CARBON 8.2K 5% 1/4W	
				R406	1-246-545-00	CARBON 1.0M 5% 1/4W	
				R409	1-249-497-11	CARBON 33K 5% 1/4W	

PANEL

POWER SW

SP SW

Ref. No.	Part No.	Description	Remark
R410	1-249-497-11	CARBON 33K 5% 1/4W	
R411	1-246-545-00	CARBON 1.0M 5% 1/4W	
R412	1-246-545-00	CARBON 1.0M 5% 1/4W	
R413	1-247-725-11	CARBON 10K 5% 1/4W	
R414	1-247-725-11	CARBON 10K 5% 1/4W	
R709	1-249-429-11	CARBON 10K 5% 1/4W	
R710	1-249-429-11	CARBON 10K 5% 1/4W	
R711	1-249-433-11	CARBON 22K 5% 1/4W	
R712	1-249-433-11	CARBON 22K 5% 1/4W	
R713	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R714	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R715	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R717	1-249-430-11	CARBON 12K 5% 1/4W	
R718	1-249-433-11	CARBON 22K 5% 1/4W	
R719	1-249-433-11	CARBON 22K 5% 1/4W	
R720	1-249-433-11	CARBON 22K 5% 1/4W	
R721	1-249-433-11	CARBON 22K 5% 1/4W	
R722	1-249-433-11	CARBON 22K 5% 1/4W	
R723	1-249-433-11	CARBON 22K 5% 1/4W	
R724	1-249-433-11	CARBON 22K 5% 1/4W	
R725	1-249-433-11	CARBON 22K 5% 1/4W	
R729	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R730	1-247-794-11	CARBON 30 5% 1/4W	
R731	1-249-428-11	CARBON 8.2K 5% 1/4W F	
R732	1-249-433-11	CARBON 22K 5% 1/4W	
R750	1-249-433-11	CARBON 22K 5% 1/4W	
R912	1-249-429-11	CARBON 10K 5% 1/4W	
< VARIABLE RESISTOR >			
RV301	1-223-657-11	RES, VAR, CARBON 100K/100K (TREBLE)	
RV302	1-223-657-11	RES, VAR, CARBON 100K/100K (BASS)	
RV303	1-223-658-11	RES, VAR, CARBON 100K/100K (BALANCE)	
< SWITCH >			
S300	1-571-112-21	SWITCH, PUSH (1 KEY) (SUBSONIC)	
S301	1-571-112-21	SWITCH, PUSH (1 KEY) (LOUDNESS)	
S302	1-572-642-11	SWITCH, PUSH (1 KEY) (SOURCE DIRECT)	
S303	1-571-112-21	SWITCH, PUSH (1 KEY) (EON LINK)	
S702	1-692-967-11	SWITCH, ROTARY (INPUT SELECTOR)	
< VIBRATOR >			
X700	1-579-223-11	OSCILLATOR, CERAMIC (8MHz)	

*	1-652-466-11	POWER SW BOARD	

< CONNECTOR >			
CNP704	1-766-267-11	PLUG (MICRO CONNECTOR) 5P	

Ref. No.	Part No.	Description	Remark
< DIODE >			
D713	8-719-301-37	DIODE SEL2210S-CD (STANDBY)	
< IC >			
IC703	8-749-923-43	IC GP1U57XB	
< RESISTOR >			
R726	1-249-411-11	CARBON 330 5% 1/4W	
R735	1-249-433-11	CARBON 22K 5% 1/4W	
< SWITCH >			
S701	1-554-303-21	SWITCH, TACTILE (POWER)	

*	1-652-460-11	SP SW BOARD	

< DIODE >			
D800	8-719-987-63	DIODE 1N4148M	
< JACK >			
J800	1-750-162-61	JACK (LARGE TYPE) (HEADPHONES)	
< RESISTOR >			
R527	1-247-752-11	CARBON 1K 5% 1/2W	
R528	1-247-752-11	CARBON 1K 5% 1/2W	
R627	1-247-752-11	CARBON 1K 5% 1/2W	
R628	1-247-752-11	CARBON 1K 5% 1/2W	
R804	1-244-858-11	CARBON 240 5% 1/2W (F645R)	
R804	1-247-736-11	CARBON 56 5% 1/2W (F545R)	
R807	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R807	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R808	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R808	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R809	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R809	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R810	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R810	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R811	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R811	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R812	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R812	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R813	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R813	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R814	1-247-255-00	CARBON 4.3K 5% 1/2W (F645R)	
R814	1-247-760-11	CARBON 4.7K 5% 1/2W (F545R)	
R815	1-247-754-11	CARBON 1.5K 5% 1/2W (F545R)	
R815	1-247-755-11	CARBON 1.8K 5% 1/2W (F645R)	

SP SW	VOL
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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R816	1-247-754-11	CARBON 1.5K 5% 1/2W (F545R)		Q610	8-729-232-46	TRANSISTOR 2SJ200-Y (F545R)	
R816	1-247-755-11	CARBON 1.8K 5% 1/2W (F645R)		Q611	8-729-015-30	TRANSISTOR 2SK1530-Y (F645R)	
		< RELAY >		Q611	8-729-232-45	TRANSISTOR 2SK1529-Y (F545R)	
RY802	1-515-614-11	RELAY		△T1	1-426-798-11	TRANSFORMER, POWER (F545R)	
		< SWITCH >		△T1	1-426-799-11	TRANSFORMER, POWER (F645R)	
S900	1-692-147-11	SWITCH, ROTARY SLIDE (SPEAKERS)		*****			
*****				ACCESSORIES & PACKING MATERIALS			
		< CAPACITOR >		*****			
C700	1-136-153-00	FILM 0.01uF 5% 50V		1-693-131-11	REMOTE COMMANDER (RM-S311)		
		< CONNECTOR >		2-181-754-21	COVER, BATTERY (for REMOTE COMMANDER)		
* CNJ301	1-568-451-11	HOUSING, CONNECTOR(PC BOARD)10P		3-758-606-11	MANUAL, INSTRUCTION		
* CNP301	1-568-455-11	PIN, CONNECTOR (PC BOARD) 10P			(ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)		
		< VARIABLE RESISTOR >		3-758-606-41	MANUAL, INSTRUCTION		
RV300	1-223-656-11	RES, VAR, CARBON 120K/120K (VOLUME)			(GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)		
*****				3-758-606-51	MANUAL, INSTRUCTION (GERMAN) (G)		
		MISCELLANEOUS		* 4-967-232-01	INDIVIDUAL CARTON (F645R)		
		*****		* 4-967-233-01	INDIVIDUAL CARTON (F545R)		
19	1-692-968-11	SWITCH, ROTARY		* 4-967-239-01	CUSHION		
△59	1-575-651-21	CORD, POWER		*****			
△CNJ901	1-526-794-11	OUTLET, AC		HARDWARE LIST			
△CNJ902	1-526-794-11	OUTLET, AC		*****			
△CNJ903	1-526-794-11	OUTLET, AC		#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
△F1	1-532-237-00	FUSE, TIME LAG (T3.15A) (F645R)		#2	7-685-646-19	SCREW +BTP 3X8	
△F1	1-532-286-00	FUSE, TIME LAG (T2.5A) (F545R)		#3	7-685-546-19	SCREW +BTP 3X8	
△F2	1-532-286-00	FUSE, TIME LAG (T2.5A)		#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
Q507	8-729-209-15	TRANSISTOR 2SD2012					
Q510	8-729-015-30	TRANSISTOR 2SK1530-Y (F645R)					
Q510	8-729-232-45	TRANSISTOR 2SK1529-Y (F545R)					
Q511	8-729-015-31	TRANSISTOR 2SJ201-Y (F645R)					
Q511	8-729-232-46	TRANSISTOR 2SJ200-Y (F545R)					
Q607	8-729-209-15	TRANSISTOR 2SD2012					
Q610	8-729-015-31	TRANSISTOR 2SJ201-Y (F645R)					

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