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TA-F361R

SERVICE MANUAL

AEP Model
E Model

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SPECIFICATIONS

Amplifier

Power output (both channels driven simultaneously)

DIN, 1 kHz	4 ohms	65 W + 65 W
	8 ohms	55 W + 55 W
20 Hz – 20 kHz	8 ohms	40 W + 40 W

Input

Input jack	Jack type	Sensitivity	Impedance
PHONO	Phono	2.5 mV	50 kilohms
TUNER, CD, AUX, TAPE 1/DAT, TAPE 2/MD	Phono	150 mV	20 kilohms

S/N

PHONO A, 5 mV	80 dB
TUNER, CD, AUX, TAPE 1/DAT, TAPE 2/MD	105 dB

Output

Output jack	Jack type	Voltage/impedance
REC OUT	Phono jack	Voltage 150 mV Impedance 1 kilohm
SPEAKERS	—	4 – 16 ohms SPEAKERS A+B: 8 – 16 ohms
PHONES	Stereo phone jack	10 mW (at 8 ohms) Accepts low and high impedance headphones

Tone controls

	Response	Turnover frequency
BASS	± 7 dB (100 Hz)	300 Hz
TREBLE	± 7 dB (10 kHz)	3 kHz

Harmonic distortion — Less than 0.025% at 10 W output

Intermodulation (IM) distortion (60 Hz:7 kHz = 4:1) — Less than 0.025% at 10 W output

Frequency response — PHONO: RIAA equalization curve ± 0.5 dB
TUNER, CD, AUX, TAPE 1/DAT, TAPE 2/MD: 7 Hz – 100 kHz: $^{+0}_{-3}$ dB

Residual noise — Less than 170 μV (network A)

Damping factor — 50 (8 ohms, 1 kHz)

– Continued on next page –

INTEGRATED STEREO AMPLIFIER

SONY®

MICROFILM

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General

System	Preamplifier: Low-noise, equalizer amplifier Power amplifier: Pure-complementary SEPP OCL power amplifier with all stages directly coupled
Power requirements	AEP, German model: 220 – 230 V AC, 50/60 Hz E model: 120 V, 220 V or 240 V AC adjustable, 50/60 Hz
Power consumption	160 W
Dimensions	Approx. 430 × 135 × 315 mm (w/h/d) (17 × 5³/₈ × 12¹/₂ inches)
Mass	Approx. 5.6 kg (12 lb 6 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.

TABLE OF CONTENTS

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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.

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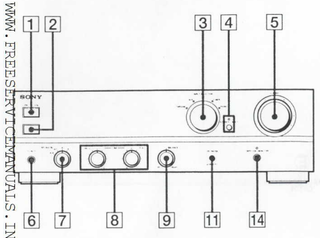
This section is extracted from instruction manual.

SECTION 1
GENERAL

LOCATION OF CONTROLS



Front Panel

1 SYSTEM POWER switch and STANDBY indicator
Immediately after turning on the SYSTEM POWER switch, the STANDBY indicator flashes, then goes off. If the STANDBY indicator is lit, press the POWER switch on the remote.

2 Remote control sensor

3 INPUT SELECTOR and indicators

4 SOURCE DIRECT button and indicator

5 VOLUME control

6 PHONES jack

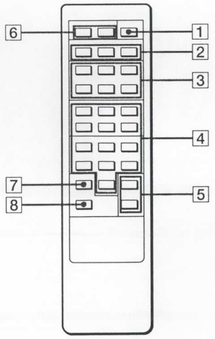
7 SPEAKERS selector

8 TONE (BASS/TREBLE) controls

9 BALANCE control

11 LOUDNESS button

14 TAPE 1/DAT MONITOR button and indicator



Remote Commander

1 POWER switch
If the STANDBY indicator on the TA-F361R is lit, press this 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.

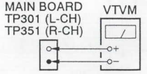
8 AUX button
Selects the AUX mode.

SECTION 2
ELECTRICAL ADJUSTMENT

Note:
1. DC BIAS adjustments should be made within 2 to 3 minutes after the POWER switch is turned on (POWER ON).
2. After replacing the power transistors, DC BIAS adjustments should be made.

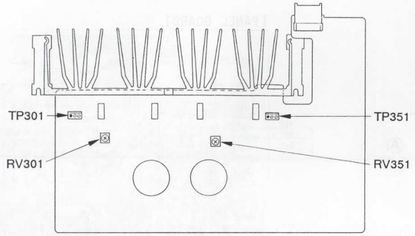
DC Bias Adjustment (with no signal input)

Procedure:



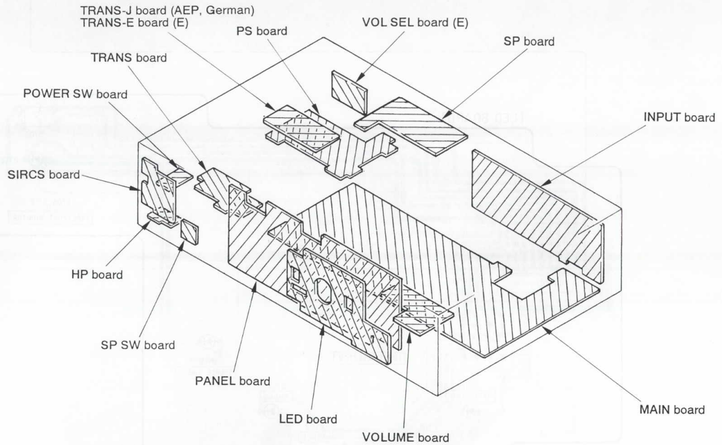
	Adjustment part	Reading on VTVM
L-CH	RV301	20 mV
R-CH	RV351	20 mV

[ADJUSTMENT LOCATIONS]



SECTION 3
DIAGRAMS

• **Circuit Boards Location**



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3-1. IC PIN FUNCTION DESCRIPTION
PANEL BOARD IC701 TMP47C200BN

Pin No.	Pin Name	I/O	Function
1	RCL	O	Clock } Serial data of EEPROM. (X24C01)
2	RDT	I/O	Data } Serial data of EEPROM. (X24C01)
3	VUP	O	Up } VR motor control signal. (Active: H, Stop: L-L, Brake: H-H)
4	VDW	O	Down } VR motor control signal. (Active: H, Stop: L-L, Brake: H-H)
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	94/95	I	Not used. (GND)
9	F3/F4	I	Model mode switch signal. (+5 V)
10	—	I	Not used. (GND)
11	SW0	I	Relativity position detection signal of rotary switch. (One of them terminal: L, the other terminal: H) Direction from SW5 to SW0, TUNER → CD → AUX → TAPE2 → 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. (Pull down to GND.)
28	—	I	Not used. (GND)
29	F3/F5	I	Model mode switch signal. (GND)
30	TEST		Test terminal. (Open)
31	XIN	—	Oscillation signal 8.19 MHz.
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	Not used. (Pull up to +5 V.)
37	SIRCS	I	SIRCS signal. (Active: L)
38	T1	O	RELAY DRIVE
39	SCE	O	Chip Enable } Serial control signal to IC101. (LC7821)
40	SDT	O	Data } Serial control signal to IC101. (LC7821)
41	SCK	O	Clock } Serial control signal to IC101. (LC7821)
42	VDD	—	Power supply (+5 V) terminal.

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3-2. PRINTED WIRING BOARDS – PANEL SECTION –

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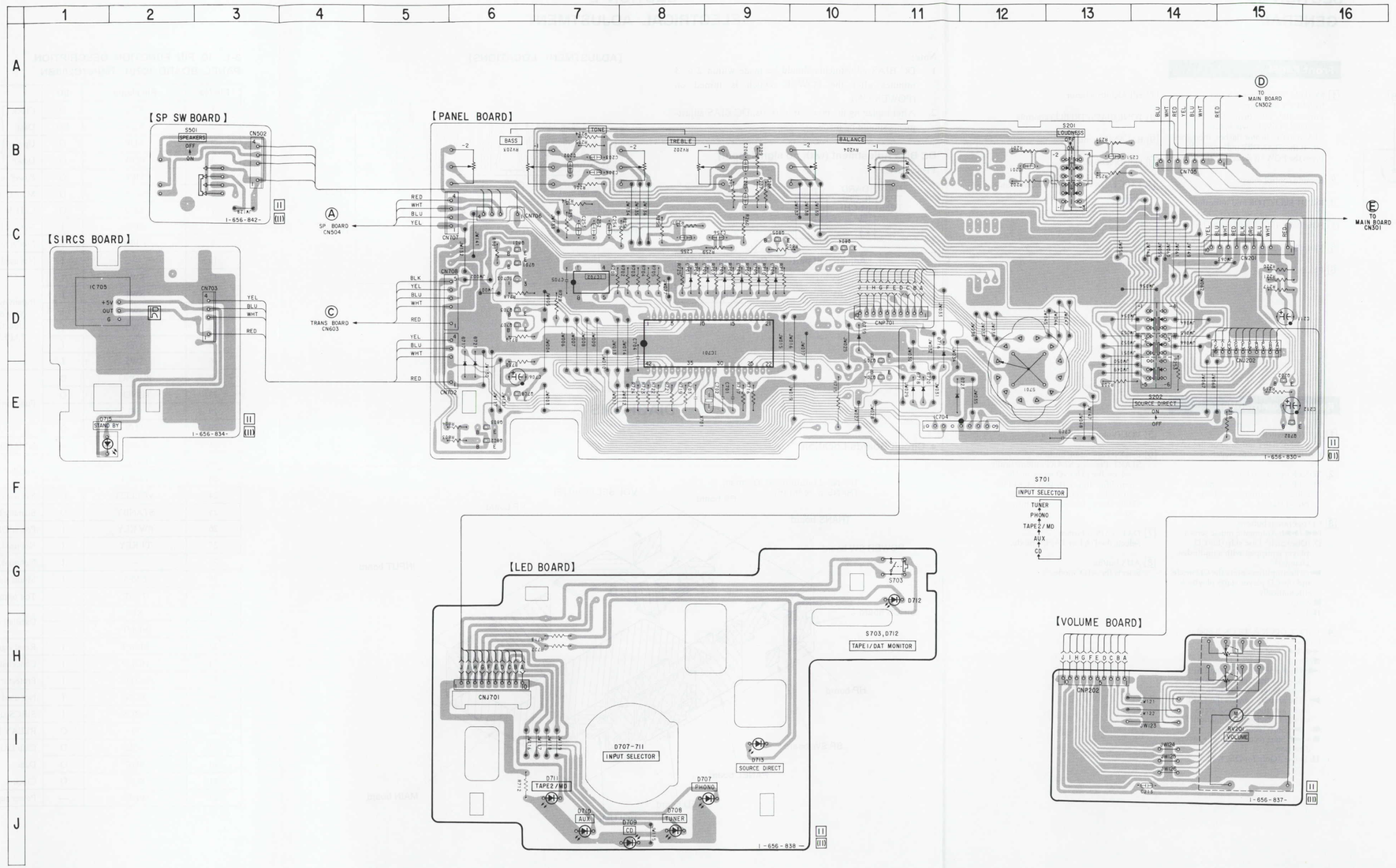
- **Semiconductor Location**

Ref. No.	Location
D701	D-8
D702	D-9
D703	D-9
D704	D-9
D705	D-9
D706	D-9
D707	J-9
D708	J-8
D709	J-8
D710	J-7
D711	J-7
D712	G-11
D713	I-9
D715	E-2
D716	D-11
D717	D-6
D718	E-11
D719	D-10
D720	E-11
D721	D-6
D723	E-12
IC701	D-8
IC702	D-7
IC703	D-6
IC704	E-11
IC705	D-1
Q202	E-15
Q701	C-6
Q702	E-15
Q703	D-6
Q704	E-11
Q705	D-11
Q707	D-6
Q708	E-6
Q801	C-6
Q802	E-6
Q803	E-6
Q804	C-10
Q805	C-9

Note:
- ○——— : parts extracted from the component side.



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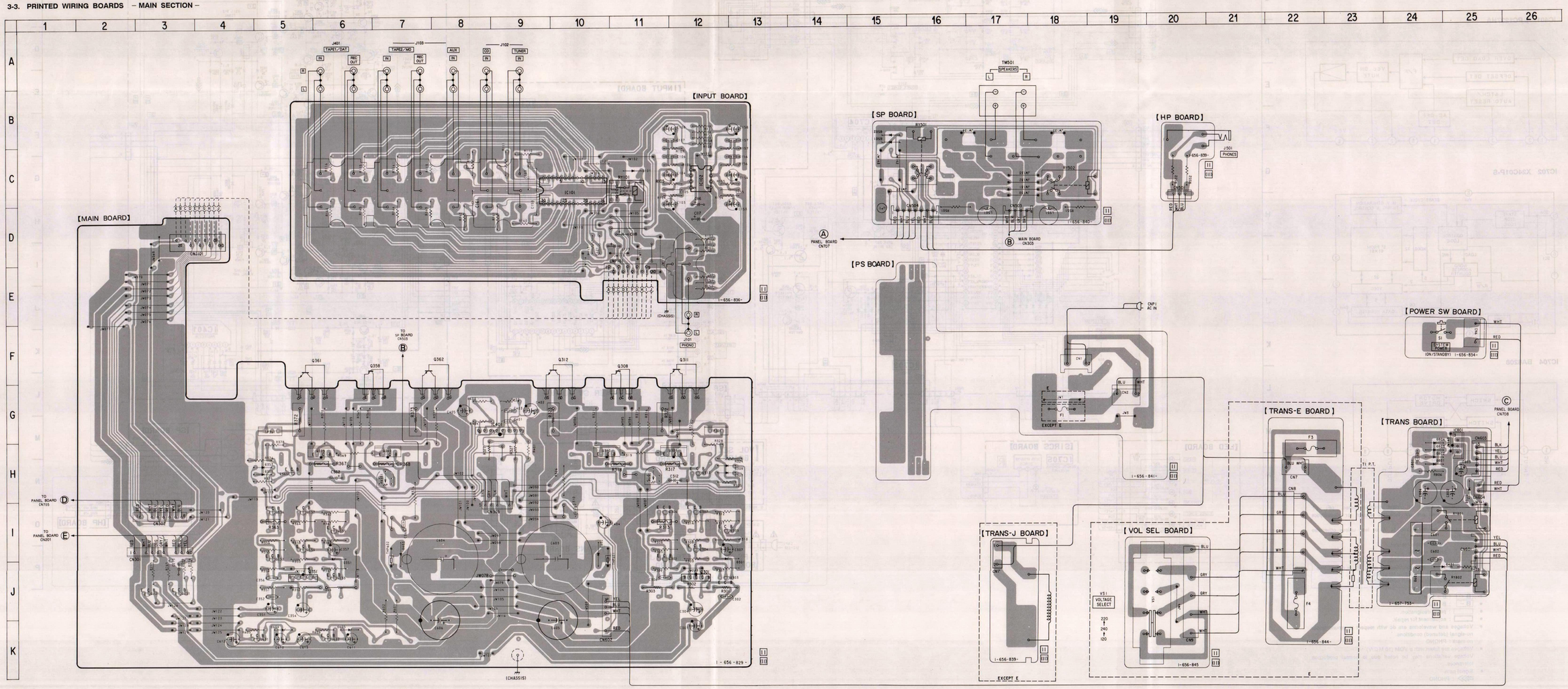
3-3. PRINTED WIRING BOARDS – MAIN SECTION –



- **Semiconductor Location**

Ref. No.	Location
D101	C-11
D301	J-12
D307	H-12
D308	H-12
D351	J-6
D357	H-5
D358	H-5
D401	J-25
D501	B-15
D502	B-15
D601	J-24
D602	I-11
D603	I-7
D604	K-5
D605	K-6
D801	H-24
D802	H-24
D803	H-24
D804	H-24
D805	H-25
IC101	C-10
IC102	C-12
IC401	G-9
IC801	H-25
Q201	J-3
Q251	J-3
Q301	J-12
Q302	J-12
Q303	J-12
Q304	I-12
Q305	I-12
Q306	I-11
Q307	I-12
Q308	F-11
Q309	H-11
Q310	H-11
Q311	F-12
Q312	F-10
Q313	H-12
Q351	J-5
Q352	J-5
Q353	J-6
Q354	I-5
Q355	I-6
Q356	I-5
Q357	I-5
Q358	F-6
Q359	H-6
Q360	H-7
Q361	F-5
Q362	F-7
Q363	H-5
Q601	K-5
Q602	K-6

Note:
- ○——: parts extracted from the component side.

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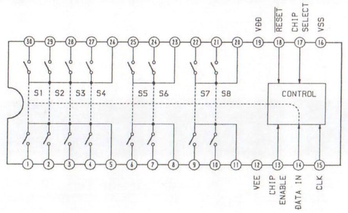
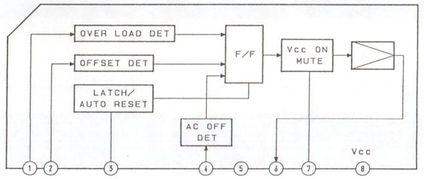
• IC Block Diagrams

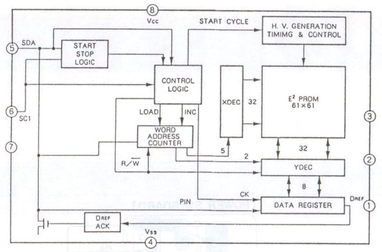
IC101 LC7821



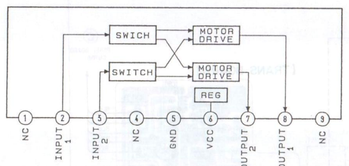
IC401 μPC1237HA



IC702 X24C01P-S



IC704 BA6208



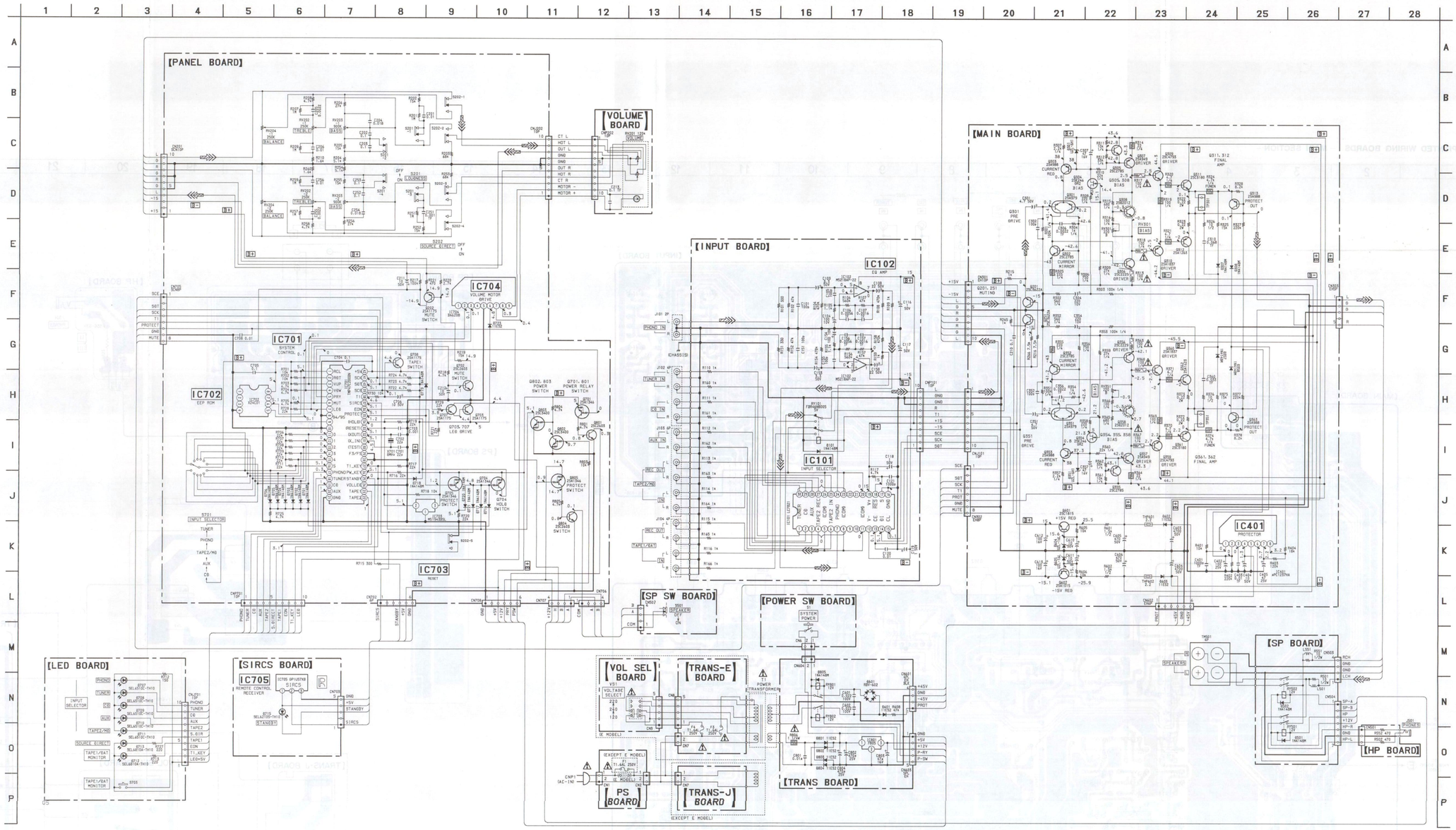
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

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

- B+ : B + Line.
- B− : B − Line.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PHONO
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : PHONO

3-4. SCHEMATIC DIAGRAM



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SECTION 4
EXPLODED VIEWS

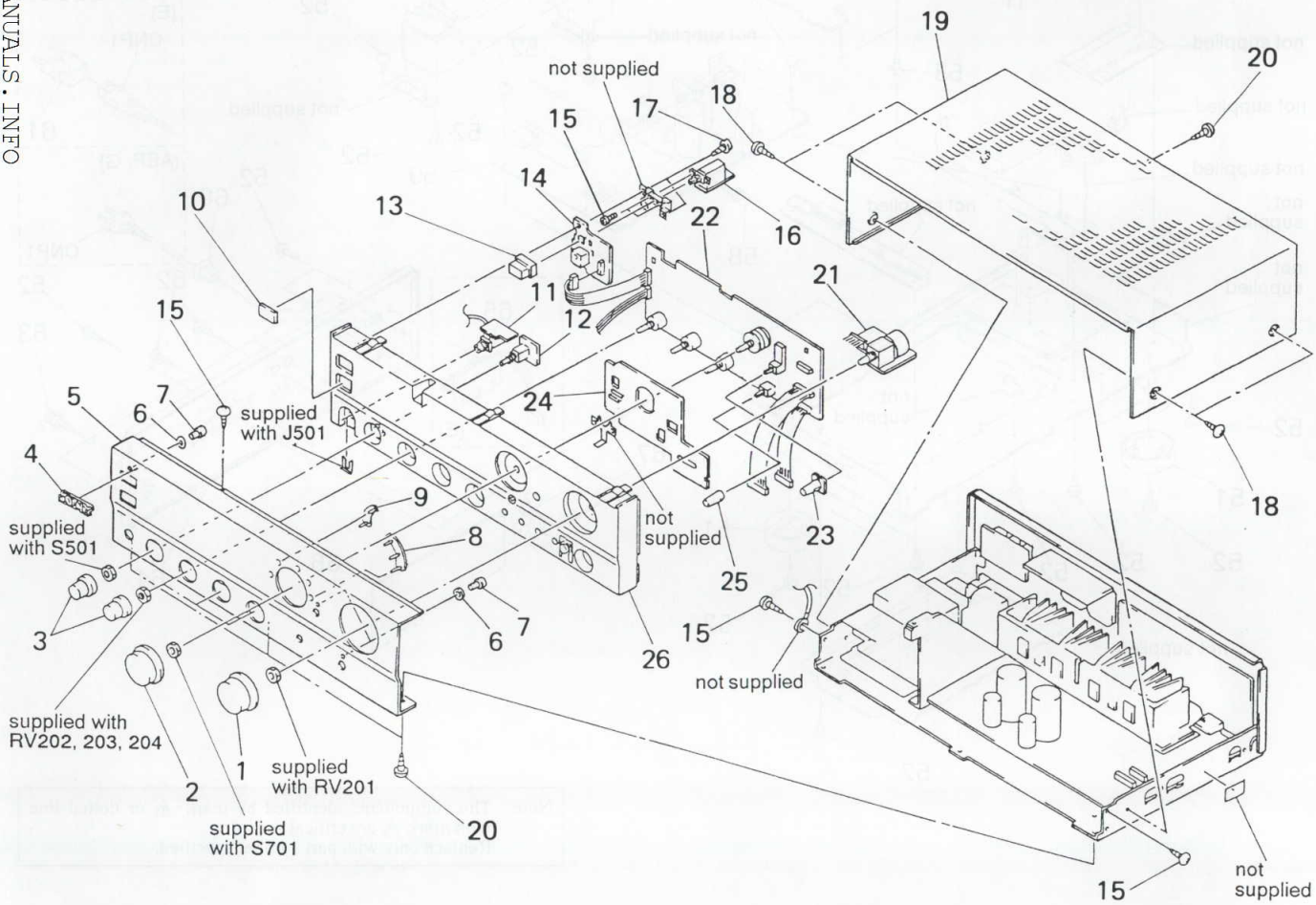
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

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

- Abbreviation
  G: German

(1) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-4944-844-1	KNOB (VOL) ASSY	
2	4-966-003-01	KNOB (SEL)	
3	4-965-996-01	KNOB (TONE)	
4	4-942-568-01	EMBLEM (NO. 5), SONY	
5	4-965-991-51	PANEL, FRONT	
* 6	4-927-881-01	SHEET, ADHESIVE	
7	4-938-518-01	INDICATOR (C)	
8	4-965-999-01	INDICATOR (3)	
9	4-965-999-11	INDUCATOR	
10	4-931-911-01	FILTER	
* 11	1-656-839-11	HP BOARD	
* 12	1-656-842-11	SP SW BOARD	
13	4-917-460-81	KNOB, POWER	

Ref. No.	Part No.	Description	Remark
* 14	1-656-831-11	SIRCS BOARD	
15	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 16	1-656-834-11	POWER SW BOARD	
17	4-969-221-01	SCREW (3X12)	
18	3-704-366-01	SCREW (CASE) (M3X8)	
19	4-976-672-11	CASE	
20	7-682-548-09	SCREW +BVTT 3X8 (S)	
* 21	1-656-837-11	VOLUME BOARD	
* 22	A-4378-189-A	PANEL BOARD, COMPLETE	
23	4-966-000-01	BUTTON (L)	
* 24	1-656-838-11	LED BOARD	
25	4-965-997-01	BUTTON (S)	
26	4-974-890-01	BASE, PANEL	

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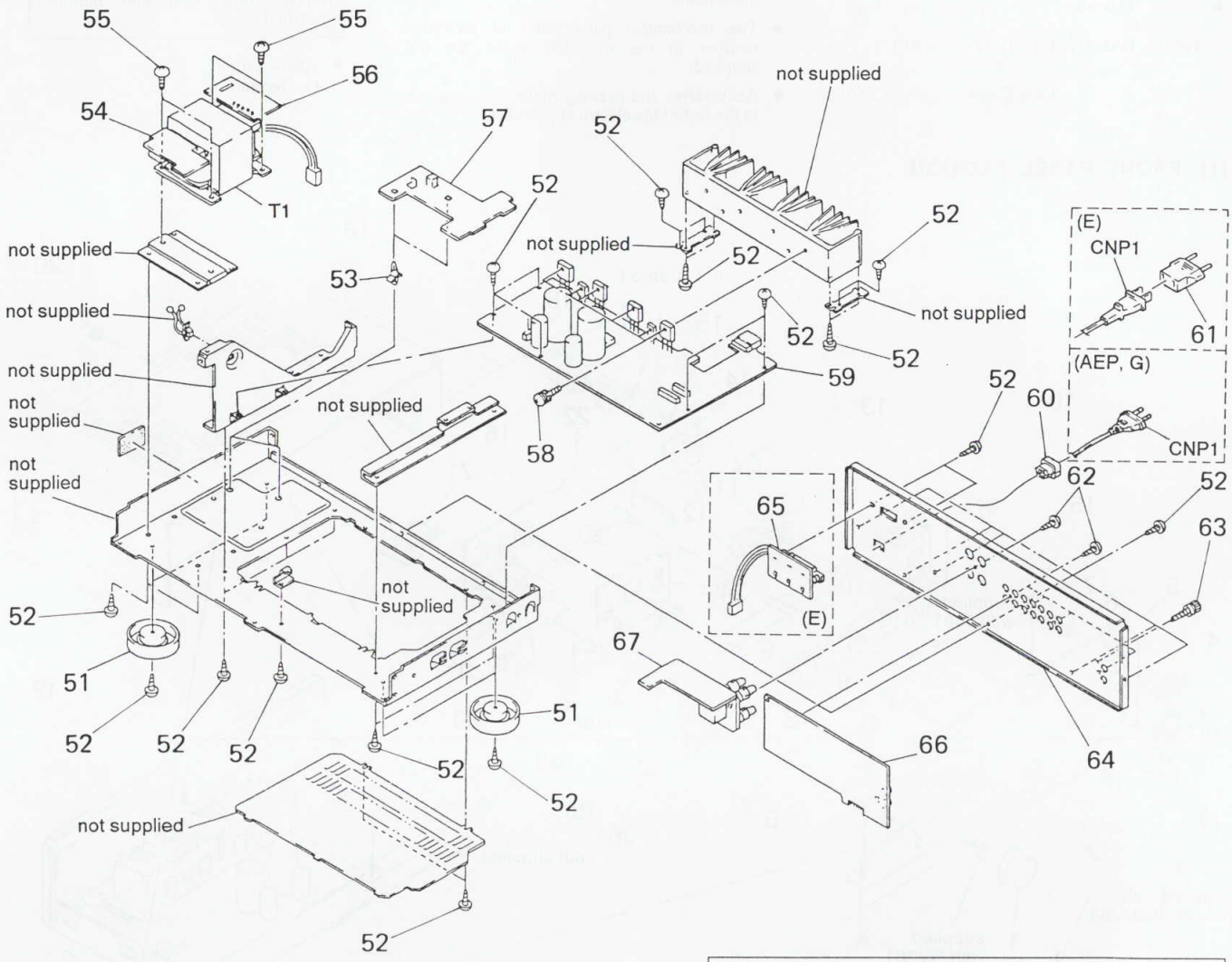
(2) CHASSIS SECTION



Note: 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
51	4-956-885-11	FOOT (F58175S2W)	
52	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 53	3-346-265-11	HOLDER, PC BOARD	
* 54	1-657-753-11	TRANS BOARD	
55	4-967-960-01	SCREW (4X8)	
* 56	1-656-844-11	TRANS-E BOARD (E)	
* 56	1-656-835-11	TRANS-J BOARD (AEP, G)	
* 57	1-656-841-11	PS BOARD	
58	3-905-609-11	SCREW (TRANSISTOR)	
* 59	A-4378-188-A	MAIN BOARD, COMPLETE	
* 60	3-703-244-00	BUSHING (2104), CORD (AEP, G)	
* 60	3-703-571-11	BUSHING (S) (4516), CORD (E)	

Ref. No.	Part No.	Description	Remark
⚠61	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
62	3-704-515-41	SCREW (BV/RING)	
63	4-947-010-01	SCREW, FEEDER FIXED	
* 64	4-966-005-51	PANEL, BACK (AEP, G)	
* 64	4-966-005-61	PANEL, BACK (E)	
* 65	1-656-845-11	VOL SEL BOARD (E)	
* 66	A-4378-192-A	INPUT BOARD, COMPLETE	
* 67	1-656-840-11	SP BOARD	
⚠CNP1	1-558-943-41	CORD, POWER (E)	
⚠CNP1	1-575-651-21	CORD, POWER (AEP, G)	
⚠T1	1-429-080-11	TRANSFORMER, POWER (AEP, G)	
⚠T1	1-429-081-11	TRANSFORMER, POWER (E)	

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SECTION 5
ELECTRICAL PARTS LIST

HP **INPUT**

NOTE:
- 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.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreiavation
  G:German
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

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

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

Ref. No.	Part No.	Description				Remark
*	1-656-839-11	HP BOARD				
		********				
		< CONNECTOR >				
* CN501	1-564-506-11	PLUG, CONNECTOR 3P				
		< JACK >				
J501	1-750-162-61	JACK (LARGE TYPE) (PHONES)				
		< RESISTOR >				
R502	1-247-747-11	CARBON	470	5%	1/2W	
R552	1-247-747-11	CARBON	470	5%	1/2W	
**********						
*	A-4378-192-A	INPUT BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C101	1-162-282-31	CERAMIC	100PF	10%	50V	
C103	1-126-962-11	ELECT	3.3uF	20%	50V	
C104	1-124-443-00	ELECT	100uF	20%	10V	
C105	1-162-282-31	CERAMIC	100PF	10%	50V	
C106	1-130-480-00	MYLAR	0.0056uF	5%	50V	
C107	1-136-229-11	MYLAR	0.0016uF	5%	50V	
C108	1-124-916-11	ELECT	22uF	20%	63V	
C116	1-124-903-11	ELECT	1uF	20%	50V	
C117	1-124-903-11	ELECT	1uF	20%	50V	
C118	1-124-903-11	ELECT	1uF	20%	50V	
C119	1-124-903-11	ELECT	1uF	20%	50V	
C120	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C121	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C151	1-162-282-31	CERAMIC	100PF	10%	50V	
C153	1-126-962-11	ELECT	3.3uF	20%	50V	
C154	1-124-443-00	ELECT	100uF	20%	10V	
C155	1-162-282-31	CERAMIC	100PF	10%	50V	
C156	1-130-480-00	MYLAR	0.0056uF	5%	50V	
C157	1-136-229-11	MYLAR	0.0016uF	5%	50V	
C158	1-124-916-11	ELECT	22uF	20%	63V	

Ref. No.	Part No.	Description				Remark
		< CONNECTOR >				
* CNP101	1-568-322-21	PLUG, CONNECTOR 10P				
		< DIODE >				
D101	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC101	8-759-805-13	IC LC7821				
IC102	8-759-636-74	IC M5218AP-22				
		< JACK >				
J101	1-573-141-21	JACK 2P (PHONO)				
* J102	1-573-142-21	JACK, PIN 4P (TUNER) (CD)				
J103	1-568-978-11	JACK 6P (AUX) (TAPE2/MD)				
* J104	1-573-142-21	JACK, PIN 4P (TAPE1/DAT)				
		< RESISTOR >				
R101	1-249-411-11	CARBON	330	5%	1/4W	
R102	1-249-437-11	CARBON	47K	5%	1/4W	
R104	1-247-895-00	CARBON	470K	5%	1/4W	
R105	1-247-832-11	CARBON	1.1K	5%	1/4W	
R106	1-247-897-11	CARBON	560K	5%	1/4W	
R107	1-249-437-11	CARBON	47K	5%	1/4W	
R108	1-247-895-00	CARBON	470K	5%	1/4W	
R109	1-249-417-11	CARBON	1K	5%	1/4W	
R110	1-249-417-11	CARBON	1K	5%	1/4W	
R111	1-249-417-11	CARBON	1K	5%	1/4W	
R112	1-249-417-11	CARBON	1K	5%	1/4W	
R113	1-249-417-11	CARBON	1K	5%	1/4W	
R114	1-249-417-11	CARBON	1K	5%	1/4W	
R115	1-249-417-11	CARBON	1K	5%	1/4W	
R116	1-249-417-11	CARBON	1K	5%	1/4W	
R117	1-249-425-11	CARBON	4.7K	5%	1/4W	
R151	1-249-411-11	CARBON	330	5%	1/4W	
R152	1-249-437-11	CARBON	47K	5%	1/4W	
R154	1-247-895-00	CARBON	470K	5%	1/4W	
R155	1-247-832-11	CARBON	1.1K	5%	1/4W	

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INPUT LED MAIN

Ref. No.	Part No.	Description			Remark
R156	1-247-897-11	CARBON	560K	5%	1/4W
R157	1-249-437-11	CARBON	47K	5%	1/4W
R158	1-247-895-00	CARBON	470K	5%	1/4W
R159	1-249-417-11	CARBON	1K	5%	1/4W
R160	1-249-417-11	CARBON	1K	5%	1/4W
R161	1-249-417-11	CARBON	1K	5%	1/4W
R162	1-249-417-11	CARBON	1K	5%	1/4W
R163	1-249-417-11	CARBON	1K	5%	1/4W
R164	1-249-417-11	CARBON	1K	5%	1/4W
R165	1-249-417-11	CARBON	1K	5%	1/4W
R166	1-249-417-11	CARBON	1K	5%	1/4W
		< RELAY >			
RY101	1-515-622-11	RELAY			

****

*	1-656-838-11	LED BOARD	
		*********	
		< CONNECTOR >	
* CNJ701	1-691-244-11	SOCKET, CONNECTOR 10P	
		< DIODE >	
D707	8-719-303-02	LED	SEL6510C-TH10 (PHONO)
D708	8-719-303-02	LED	SEL6510C-TH10 (TUNER)
D709	8-719-303-02	LED	SEL6510C-TH10 (CD)
D710	8-719-303-02	LED	SEL6510C-TH10 (AUX)
D711	8-719-303-02	LED	SEL6510C-TH10 (TAPE2/MD)
D712	8-719-301-49	LED	SEL6810A-TH10 (TAPE1/DAT MONITOR)
D713	8-719-301-49	LED	SEL6810A-TH10 (SOURCE DIRECT)
		< RESISTOR >	
R712	1-249-407-11	CARBON	150 5% 1/4W
R713	1-249-409-11	CARBON	220 5% 1/4W
R727	1-249-409-11	CARBON	220 5% 1/4W
		< SWITCH >	
S703	1-554-303-21	SWITCH, TACTILE (TAPE1/DAT MONITOR)	

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*	A-4378-188-A	MAIN BOARD, COMPLETE	
		**********	
		< CAPACITOR >	
C210	1-136-165-00	FILM	0.1uF 5% 50V
C301	1-126-963-11	ELECT	4.7uF 20% 50V
C302	1-110-335-11	MYLAR	100PF 5% 50V
C304	1-104-666-11	ELECT	220uF 20% 10V
C306	1-130-475-00	MYLAR	0.0022uF 5% 50V
C307	1-104-664-11	ELECT	47uF 20% 16V
C310	1-136-159-00	FILM	0.033uF 5% 50V
C351	1-126-963-11	ELECT	4.7uF 20% 50V
C352	1-110-335-11	MYLAR	100PF 5% 50V
C354	1-104-666-11	ELECT	220uF 20% 10V
C356	1-130-475-00	MYLAR	0.0022uF 5% 50V
C357	1-104-664-11	ELECT	47uF 20% 16V
C360	1-136-159-00	FILM	0.033uF 5% 50V
C401	1-130-471-00	MYLAR	0.001uF 5% 50V
C402	1-124-478-11	ELECT	100uF 20% 25V
C403	1-136-153-00	FILM	0.01uF 5% 50V
C404	1-124-907-11	ELECT	10uF 20% 50V
C405	1-124-477-11	ELECT	47uF 20% 25V
C603	1-126-138-11	ELECT	4700uF 20% 50V
C604	1-126-138-11	ELECT	4700uF 20% 50V
C605	1-124-913-11	ELECT	470uF 20% 50V
C606	1-124-913-11	ELECT	470uF 20% 50V
C610	1-124-907-11	ELECT	10uF 20% 50V
C611	1-124-907-11	ELECT	10uF 20% 50V
C612	1-104-665-11	ELECT	100uF 20% 16V
C613	1-104-665-11	ELECT	100uF 20% 16V
		< CONNECTOR >	
CN301	1-691-771-11	PLUG (MICRO CONNECTOR) 9P	
CN302	1-691-769-11	PLUG (MICRO CONNECTOR) 7P	
CN303	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
CN602	1-691-767-11	PLUG (MICRO CONNECTOR) 5P	
CNJ101	1-568-321-11	SOCKET, CONNECTOR 10P	
		< DIODE >	
D301	8-719-933-39	DIODE	HZS6C1L
D307	8-719-987-63	DIODE	1N4148M
D308	8-719-987-63	DIODE	1N4148M
D351	8-719-933-39	DIODE	HZS6C1L
D357	8-719-987-63	DIODE	1N4148M
D358	8-719-987-63	DIODE	1N4148M
D602	8-719-024-99	DIODE	11ES2-NTA2B
D603	8-719-024-99	DIODE	11ES2-NTA2B
D604	8-719-933-88	DIODE	HZS16-2L
D605	8-719-933-88	DIODE	HZS16-2L
		< IC >	
IC401	8-759-111-68	IC	uPC1237HA
		< TRANSISTOR >	
Q201	8-729-141-26	TRANSISTOR	2SC3622A-LK
Q251	8-729-141-26	TRANSISTOR	2SC3622A-LK
Q301	8-729-620-18	TRANSISTOR	2SA979-FG
Q302	8-729-620-05	TRANSISTOR	2SC2603-EF

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MAIN

Ref. No.	Part No.	Description				Remark
Q303	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q304	8-729-201-56	TRANSISTOR	2SK246-GR2			
Q305	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q306	8-729-021-73	TRANSISTOR	2SC2229-OY-TPE6			
Q307	8-729-021-74	TRANSISTOR	2SA949-OY-TPE6			
Q308	8-729-209-15	TRANSISTOR	2SD2012			
Q309	8-729-017-06	TRANSISTOR	2SC4793			
Q310	8-729-017-05	TRANSISTOR	2SA1837			
Q311	8-729-020-84	TRANSISTOR	2SC3180N-RO			
Q312	8-729-020-85	TRANSISTOR	2SA1263N-RO			
Q313	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q351	8-729-620-18	TRANSISTOR	2SA979-FG			
Q352	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q353	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q354	8-729-201-56	TRANSISTOR	2SK246-GR2			
Q355	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q356	8-729-021-73	TRANSISTOR	2SC2229-OY-TPE6			
Q357	8-729-021-74	TRANSISTOR	2SA949-OY-TPE6			
Q358	8-729-209-15	TRANSISTOR	2SD2012			
Q359	8-729-017-06	TRANSISTOR	2SC4793			
Q360	8-729-017-05	TRANSISTOR	2SA1837			
Q361	8-729-020-84	TRANSISTOR	2SC3180N-RO			
Q362	8-729-020-85	TRANSISTOR	2SA1263N-RO			
Q363	8-729-140-82	TRANSISTOR	2SA988-PAFAEA			
Q601	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q602	8-729-201-53	TRANSISTOR	2SA1015-GR			
		< RESISTOR >				
R215	1-249-417-11	CARBON	1K	5%	1/4W	
R216	1-247-852-11	CARBON	7.5K	5%	1/4W	
R219	1-249-431-11	CARBON	15K	5%	1/4W	
R265	1-249-417-11	CARBON	1K	5%	1/4W	
R266	1-247-852-11	CARBON	7.5K	5%	1/4W	
R301	1-249-441-11	CARBON	100K	5%	1/4W	
R302	1-249-414-11	CARBON	560	5%	1/4W	
R303	1-249-441-11	CARBON	100K	5%	1/4W	
R304	1-249-417-11	CARBON	1K	5%	1/4W	
R305	1-249-409-11	CARBON	220	5%	1/4W	F
R306	1-247-828-11	CARBON	750	5%	1/4W	
R307	1-249-421-11	CARBON	2.2K	5%	1/4W	
R308	1-249-409-11	CARBON	220	5%	1/4W	
R309	1-249-434-11	CARBON	27K	5%	1/4W	
R310	1-249-433-11	CARBON	22K	5%	1/4W	
R311	1-249-429-11	CARBON	10K	5%	1/4W	
R312	1-249-435-11	CARBON	33K	5%	1/4W	
⚠R313	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R314	1-249-397-11	CARBON	22	5%	1/4W	F
R315	1-249-415-11	CARBON	680	5%	1/4W	
R316	1-247-807-31	CARBON	100	5%	1/4W	
⚠R317	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R318	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R319	1-249-405-11	CARBON	100	5%	1/4W	F
R320	1-249-389-11	CARBON	4.7	5%	1/4W	F
R321	1-249-389-11	CARBON	4.7	5%	1/4W	F
R322	1-217-151-00	METAL PLATE	0.22		2W	
R323	1-217-151-00	METAL PLATE	0.22		2W	
R324	1-249-425-81	CARBON	4.7K	5%	1/4W	F
R325	1-249-431-11	CARBON	15K	5%	1/4W	
R326	1-247-727-11	CARBON	10	5%	1/2W	
R327	1-247-887-00	CARBON	220K	5%	1/4W	
R328	1-249-428-11	CARBON	8.2K	5%	1/4W	
R351	1-249-441-11	CARBON	100K	5%	1/4W	
R352	1-249-414-11	CARBON	560	5%	1/4W	
R353	1-249-441-11	CARBON	100K	5%	1/4W	
R354	1-249-417-11	CARBON	1K	5%	1/4W	
R355	1-249-409-11	CARBON	220	5%	1/4W	F
R356	1-247-828-11	CARBON	750	5%	1/4W	
R357	1-249-421-11	CARBON	2.2K	5%	1/4W	
R358	1-249-409-11	CARBON	220	5%	1/4W	
R359	1-249-434-11	CARBON	27K	5%	1/4W	
R360	1-249-433-11	CARBON	22K	5%	1/4W	
R361	1-249-429-11	CARBON	10K	5%	1/4W	
R362	1-249-435-11	CARBON	33K	5%	1/4W	
⚠R363	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R364	1-249-397-11	CARBON	22	5%	1/4W	F
R365	1-249-415-11	CARBON	680	5%	1/4W	
R366	1-247-807-31	CARBON	100	5%	1/4W	
⚠R367	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R368	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R369	1-249-405-11	CARBON	100	5%	1/4W	F
R370	1-249-389-11	CARBON	4.7	5%	1/4W	F
R371	1-249-389-11	CARBON	4.7	5%	1/4W	F
R372	1-217-151-00	METAL PLATE	0.22		2W	
R373	1-217-151-00	METAL PLATE	0.22		2W	
R374	1-249-425-81	CARBON	4.7K	5%	1/4W	F
R375	1-249-431-11	CARBON	15K	5%	1/4W	
R376	1-247-727-11	CARBON	10	5%	1/2W	
R377	1-247-887-00	CARBON	220K	5%	1/4W	
R378	1-249-428-11	CARBON	8.2K	5%	1/4W	
R401	1-249-429-11	CARBON	10K	5%	1/4W	
R402	1-247-887-00	CARBON	220K	5%	1/4W	
R403	1-247-881-00	CARBON	120K	5%	1/4W	
R404	1-249-432-11	CARBON	18K	5%	1/4W	
R601	1-247-754-11	CARBON	1.5K	5%	1/2W	
R602	1-247-754-11	CARBON	1.5K	5%	1/2W	
R605	1-249-429-11	CARBON	10K	5%	1/4W	
R606	1-249-429-11	CARBON	10K	5%	1/4W	

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

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MAIN PANEL

Ref. No.	Part No.	Description			Remark
		< VARIABLE RESISTOR >			
RV301	1-241-759-21	RES, ADJ, CARBON 220			
RV351	1-241-759-21	RES, ADJ, CARBON 220			
		< THERMISTOR(POSITIVE) >			
THP601	1-806-882-11	THERMISTOR, POSITIVE 2.2			
THP602	1-806-882-11	THERMISTOR, POSITIVE 2.2			
		< TEST PIN >			
* TP301	1-564-506-11	PLUG, CONNECTOR 3P			
* TP351	1-564-506-11	PLUG, CONNECTOR 3P			
**********					
*	A-4378-189-A	PANEL BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C201	1-130-471-00	MYLAR	0.001uF	5%	50V
C202	1-136-165-00	FILM	0.1uF	5%	50V
C203	1-136-165-00	FILM	0.1uF	5%	50V
C204	1-136-156-00	FILM	0.018uF	5%	50V
C205	1-130-475-00	MYLAR	0.0022uF	5%	50V
C206	1-136-153-00	FILM	0.01uF	5%	50V
C211	1-124-907-11	ELECT	10uF	20%	50V
C212	1-124-907-11	ELECT	10uF	20%	50V
C251	1-130-471-00	MYLAR	0.001uF	5%	50V
C252	1-136-165-00	FILM	0.1uF	5%	50V
C253	1-136-165-00	FILM	0.1uF	5%	50V
C254	1-136-156-00	FILM	0.018uF	5%	50V
C255	1-130-475-00	MYLAR	0.0022uF	5%	50V
C256	1-136-153-00	FILM	0.01uF	5%	50V
C701	1-162-207-31	CERAMIC	22PF	5%	50V
C702	1-162-207-31	CERAMIC	22PF	5%	50V
C703	1-162-294-31	CERAMIC	0.001uF	10%	50V
C704	1-164-159-11	CERAMIC	0.1uF		50V
C705	1-164-159-11	CERAMIC	0.1uF		50V
C706	1-124-907-11	ELECT	10uF	20%	50V
C708	1-162-306-11	CERAMIC	0.01uF	30%	16V
		< CONNECTOR >			
* CN707	1-564-507-11	PLUG, CONNECTOR 4P			
* CNJ202	1-568-451-11	HOUSING, CONNECTOR(PC BOARD) 10P			
CNP701	1-766-257-11	PIN, CONNECTOR (PC BOARD) 10P			
		< DIODE >			
D701	8-719-987-63	DIODE	1N4148M		
D702	8-719-987-63	DIODE	1N4148M		
D703	8-719-987-63	DIODE	1N4148M		
D704	8-719-987-63	DIODE	1N4148M		
D705	8-719-987-63	DIODE	1N4148M		
D706	8-719-987-63	DIODE	1N4148M		
D716	8-719-987-63	DIODE	1N4148M		
D717	8-719-987-63	DIODE	1N4148M		
D718	8-719-987-63	DIODE	1N4148M		
D719	8-719-987-63	DIODE	1N4148M		
D720	8-719-987-63	DIODE	1N4148M		
D721	8-719-987-63	DIODE	1N4148M		
D723	8-719-024-99	DIODE	11ES2-NTA2B		
		< IC >			
IC701	8-759-343-64	IC	TMP47C200BN		
IC702	8-759-188-67	IC	X24C01P-S		
IC703	8-759-635-63	IC	M51943BSL		
IC704	8-759-962-08	IC	BA6208		
		< TRANSISTOR >			
Q202	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q701	8-729-900-63	TRANSISTOR	DTA124ES		
Q702	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q703	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q704	8-729-900-63	TRANSISTOR	DTA124ES		
Q705	8-729-900-63	TRANSISTOR	DTA124ES		
Q707	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q708	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q801	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q802	8-729-900-36	TRANSISTOR	DTC124ES		
Q803	8-729-900-36	TRANSISTOR	DTC124ES		
Q804	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q805	8-729-900-63	TRANSISTOR	DTA124ES		
		< RESISTOR >			
R201	1-247-903-00	CARBON	1M	5%	1/4W
R202	1-249-431-11	CARBON	15K	5%	1/4W
R203	1-249-439-11	CARBON	68K	5%	1/4W
R204	1-247-848-11	CARBON	5.1K	5%	1/4W
R205	1-249-431-11	CARBON	15K	5%	1/4W
R206	1-249-434-11	CARBON	27K	5%	1/4W
R207	1-247-903-00	CARBON	1M	5%	1/4W
R208	1-249-425-11	CARBON	4.7K	5%	1/4W
R209	1-247-903-00	CARBON	1M	5%	1/4W
R210	1-247-836-11	CARBON	1.6K	5%	1/4W
R217	1-249-441-11	CARBON	100K	5%	1/4W
R218	1-249-425-11	CARBON	4.7K	5%	1/4W
R220	1-249-422-11	CARBON	2.7K	5%	1/4W
R221	1-249-413-11	CARBON	470	5%	1/4W
R251	1-247-903-00	CARBON	1M	5%	1/4W

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Ref. No.	Part No.	Description	Remark
R252	1-249-431-11	CARBON 15K 5% 1/4W	
R253	1-249-439-11	CARBON 68K 5% 1/4W	
R254	1-247-848-11	CARBON 5.1K 5% 1/4W	
R255	1-249-431-11	CARBON 15K 5% 1/4W	
R256	1-249-434-11	CARBON 27K 5% 1/4W	
R257	1-247-903-00	CARBON 1M 5% 1/4W	
R258	1-249-425-11	CARBON 4.7K 5% 1/4W	
R259	1-247-903-00	CARBON 1M 5% 1/4W	
R260	1-247-836-11	CARBON 1.6K 5% 1/4W	
R701	1-249-429-11	CARBON 10K 5% 1/4W	
R702	1-249-429-11	CARBON 10K 5% 1/4W	
R703	1-249-425-11	CARBON 4.7K 5% 1/4W	
R704	1-249-425-11	CARBON 4.7K 5% 1/4W	
R705	1-249-425-11	CARBON 4.7K 5% 1/4W	
R706	1-249-433-11	CARBON 22K 5% 1/4W	
R707	1-249-433-11	CARBON 22K 5% 1/4W	
R708	1-249-433-11	CARBON 22K 5% 1/4W	
R709	1-249-433-11	CARBON 22K 5% 1/4W	
R710	1-249-433-11	CARBON 22K 5% 1/4W	
R711	1-249-433-11	CARBON 22K 5% 1/4W	
R715	1-247-818-11	CARBON 300 5% 1/4W	
R716	1-249-433-11	CARBON 22K 5% 1/4W	
R717	1-249-433-11	CARBON 22K 5% 1/4W	
R718	1-249-429-11	CARBON 10K 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	1-249-425-11	CARBON 4.7K 5% 1/4W	
R723	1-249-425-11	CARBON 4.7K 5% 1/4W	
R724	1-249-425-11	CARBON 4.7K 5% 1/4W	
R725	1-249-425-11	CARBON 4.7K 5% 1/4W	
R728	1-249-433-11	CARBON 22K 5% 1/4W	
R729	1-249-433-11	CARBON 22K 5% 1/4W	
R730	1-249-429-11	CARBON 10K 5% 1/4W	
R801	1-249-425-11	CARBON 4.7K 5% 1/4W	
R803	1-249-429-11	CARBON 10K 5% 1/4W	
R804	1-249-425-11	CARBON 4.7K 5% 1/4W	
R805	1-249-425-11	CARBON 4.7K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV202	1-223-934-11	RES, VAR, CARBON 250K/250K (TREBLE)	
RV203	1-223-935-11	RES, VAR, CARBON 900K/900K (BASS)	
RV204	1-223-933-11	RES, VAR, CARBON 250K/250K (BALANCE)	
		< SWITCH >	
S201	1-762-387-11	SWITCH, PUSH (LOUDNESS)	
S202	1-572-642-11	SWITCH, PUSH (1 KEY) (SOURCE DIRECT)	
S701	1-692-967-11	SWITCH, ROTARY (INPUT SELECTOR)	

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X701	1-579-223-11	OSCILLATOR, CERAMIC (8MHz)	
**********			
*	1-656-834-11	POWER SW BOARD	
		**********	
		< CONNECTOR >	
CN6	1-564-321-00	PIN, CONNECTOR 2P	
		< SWITCH >	
S1	1-554-920-11	SWITCH, PUSH (1 KEY) (SYSTEM POWER)	
**********			
*	1-656-841-11	PS BOARD	
		********	
		< CONNECTOR >	
CN1	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN2	1-564-321-21	PIN, CONNECTOR 2P	
⚠F1	1-532-259-00	FUSE T1.6A/250V (AEP, G)	
⚠F3	1-532-259-00	FUSE T1.6A/250V (E)	
⚠F4	1-532-259-00	FUSE T1.6A/250V (E)	
**********			
*	1-656-831-11	SIRCS BOARD	
		**********	
		< CONNECTOR >	
CN703	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
		< DIODE >	
D715	8-719-313-43	LED SEL6210S-TH10 (STANDBY)	
		< IC >	
IC705	8-749-923-43	IC GP1U57XB	
**********			
*	1-656-840-11	SP BOARD	
		********	
		< CONNECTOR >	
* CN503	1-564-519-11	PLUG, CONNECTOR 4P	
* CN504	1-564-522-11	PLUG, CONNECTOR 7P	
		< COIL >	
* L501	1-420-872-00	COIL, AIR-CORE	
* L551	1-420-872-00	COIL, AIR-CORE	

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

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SP | SP SW | TRANS | TRANS-E | TRANS-J | VOLUME

Ref. No.	Part No.	Description				Remark
		< DIODE >				
D501	8-719-987-63	DIODE 1N4148M				
D502	8-719-987-63	DIODE 1N4148M				
		< RESISTOR >				
R501	1-247-727-11	CARBON	10	5%	1/2W	
R551	1-247-727-11	CARBON	10	5%	1/2W	
		< RELAY >				
RY501	1-515-921-11	RELAY (12V)				
RY502	1-515-921-11	RELAY (12V)				
		< TERMINAL >				
TM501	1-537-921-11	TERMINAL BOARD (SPEAKERS)				

****

*	1-656-842-11	SP SW BOARD				
		**********				
		< CONNECTOR >				
CN502	1-691-766-11	PLUG (MICRO CONNECTOR) 4P				
		< SWITCH >				
S501	1-762-389-11	SWITCH, ROTARY (SPEAKERS)				

****

*	1-657-753-11	TRANS BOARD				
		**********				
	1-533-233-11	HOLDER, FUSE (AEP, G)				
		< CAPACITOR >				
C601	1-106-375-12	MYLAR	0.022uF	5%	200V	
C602	1-106-375-12	MYLAR	0.022uF	5%	200V	
C801	1-136-153-00	FILM	0.01uF	5%	50V	
C802	1-126-941-11	ELECT	470uF	20%	25V	
C803	1-104-664-11	ELECT	47uF	20%	16V	
C804	1-126-941-11	ELECT	470uF	20%	25V	
		< CONNECTOR >				
* CN601	1-564-519-11	PLUG, CONNECTOR 4P				
* CN603	1-564-520-11	PLUG, CONNECTOR 5P				
		< DIODE >				
D401	8-719-024-99	DIODE 11ES2-NTA2B				
D601	8-719-302-38	DIODE RBV-602-01				
D801	8-719-024-99	DIODE 11ES2-NTA2B				
D802	8-719-024-99	DIODE 11ES2-NTA2B				
D803	8-719-024-99	DIODE 11ES2-NTA2B				
D804	8-719-024-99	DIODE 11ES2-NTA2B				
D805	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC801	8-759-231-53	IC TA7805S				
		< RESISTOR >				
R408	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R806	1-249-447-11	CARBON	1	5%	1/4W	F
		< RELAY >				
RY801	1-755-018-11	RELAY				
RY802	1-755-018-11	RELAY				

****

*	1-656-844-11	TRANS-E BOARD (E)				
		**********				
	1-533-233-11	HOLDER, FUSE (E)				
		< CONNECTOR >				
* CN8	1-580-618-11	PIN, CONNECTOR 5P (E)				

****

*	1-656-835-11	TRANS-J BOARD (AEP, G)				
		**********				

****

*	1-656-837-11	VOLUME BOARD				
		**********				
		< CAPACITOR >				
C213	1-136-165-00	FILM	0.1uF	5%	50V	
		< CONNECTOR >				
* CNP202	1-568-455-11	PIN, CONNECTOR (PC BOARD) 10P				
		< VARIABLE RESISTOR >				
RV201	1-223-932-11	RES, VAR, CARBON 120K/120K (VOLUME)				

****

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VOL SEL

Ref. No.	Part No.	Description	Remark
*	1-656-845-11	VOL SEL BOARD (E)	
		**********	
		< VOLTAGE SELECTOR >	
⚠VS1	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECT)	(E)
		**********	
		MISCELLANEOUS	
		**********	
⚠61	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠CNP1	1-558-943-41	CORD, POWER (E)	
⚠CNP1	1-575-651-21	CORD, POWER (AEP, G)	
⚠T1	1-429-080-11	TRANSFORMER, POWER (AEP, G)	
⚠T1	1-429-081-11	TRANSFORMER, POWER (E)	
		**********	
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-693-131-11	REMOTE COMMANDER (RM-S311)	
	2-181-754-01	COVER, BATTERY (FOR RM-S311)	
	3-798-913-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, E)	
	3-798-913-21	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	
	3-798-913-31	MANUAL, INSTRUCTION (GERMAN) (German)	
*	4-967-239-01	CUSHION	
*	4-977-071-01	INDIVIDUAL, CARTON	

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