

TA-M7

SERVICE MANUAL

*US Model
Canadian Model
E Model
Tourist Model*



TA-M7 is the Amplifier section in DHC-MD7.

For the U.S. model AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6 ohm loads, both channels driven, from 20 – 20,000 Hz; rated 35 watts per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 100 milliwatts to rated output.

Continuous RMS power output

U.S. model: 35 W + 35 W (6 ohms, at 20 – 20,000 Hz, 0.9% THD)
50 W + 50 W (6 ohms, at 1 kHz, 5% THD)

Other models:

50 W + 50 W (6 ohms, at 1 kHz, 5% THD)

SPECIFICATIONS

Input	Jack type	Sensitivity	Impedance
CD	Phono	450 mV	47 kilohms
MD	Phono	450 mV	47 kilohms
TUNER	Phono	250 mV	47 kilohms
VIDEO1	Phono	250 mV	47 kilohms
VIDEO2	Phono	250 mV	47 kilohms
TAPE	Phono	250 mV	47 kilohms
MIX MIC	Phone	1 mV	10 kilohms
Output	Jack type	Voltage	Impedance
MD	Phono	250 mV	1 kilohm
VIDEO1	Phono	250 mV	1 kilohm
TAPE	Phono	250 mV	1 kilohm
PHONES	Stereo phone	—	Accepts headphones of 8 ohms or more

Dimensions

Approx. 280 x 122.5 x 295 mm
(11 1/8 x 4 7/8 x 11 5/8 in) (w/h/d)
incl. projecting parts and controls

Mass

Approx. 5.2 kg
(11 lb 7 oz)

Design and specifications are subject to change without notice.



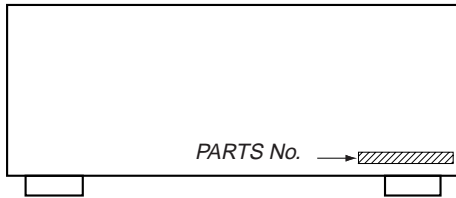
INTEGRATED STEREO AMPLIFIER
SONY®

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MODEL IDENTIFICATION

— BACK PANEL —



	PARTS No.
US, Canadian model	4-977-717-3□
Hong Kong model	4-977-717-0□
Singapore model	4-977-717-1□
Tourist model	4-977-717-2□

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

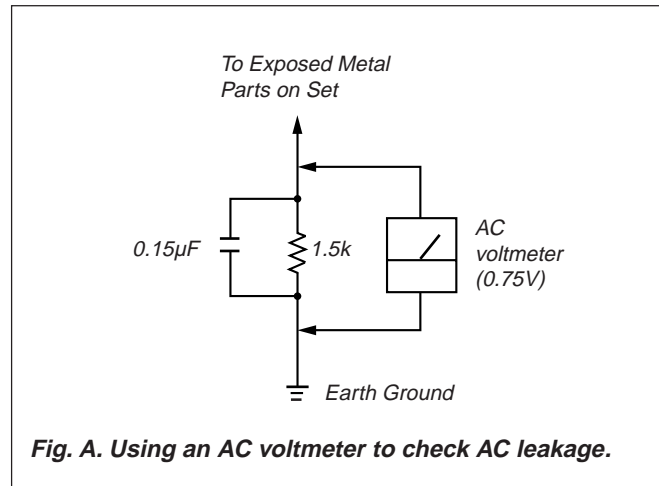


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING !!

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

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

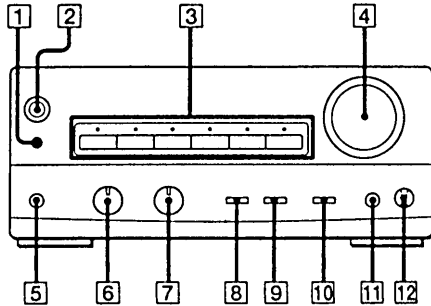
SECTION 1 GENERAL

This section is extracted from instruction manual.

Index to Parts and Controls

Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

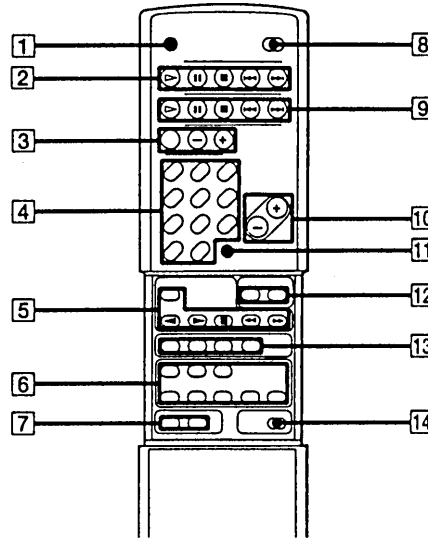
Front Panel



- 1 Remote sensor
- 2 SYSTEM POWER switch and ON / STANDBY indicator (7)
The indicator remains lit as long as the AC power cord is connected to a wall outlet.
- 3 Function buttons* (16, 27)
VIDEO 1 (28)
VIDEO 2 (28)
TAPE (28)
MD (12, 18)
CD (8, 15)
TUNER
- 4 VOLUME control (5, 7, 11, 24, 27)
- 5 PHONES jack (24, 28)
- 6 BASS control (24)
- 7 TREBLE control (24)
- 8 SOURCE DIRECT button* (24)
- 9 MUTING button* (24)
- 10 KARAOKE PON button* (27)
- 11 MIX MIC jack (phone jack) (27)
- 12 MIC LEVEL control (27)

Remote

For further operation, refer to the pages in parentheses.



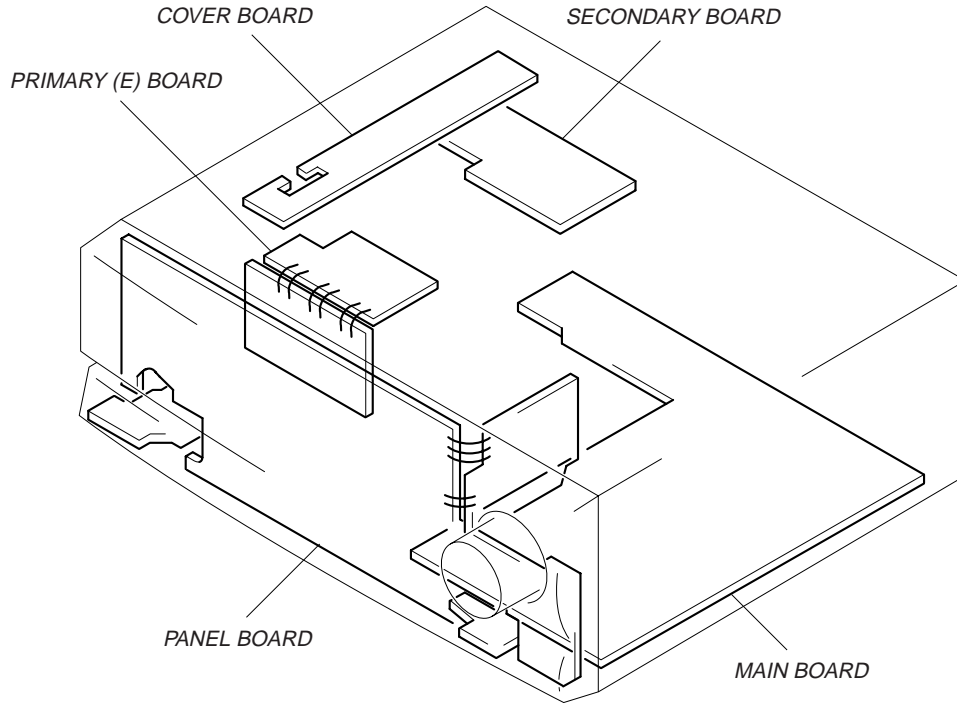
- 1 SLEEP button (25)
- 2 MD operating buttons
▷ (play) (11)
|| (pause) (11)
■ (stop) (11)
◀◀ / ▶▶ (AMS**) (11)
- 3 Tuner operating buttons (22)
BAND button
PRESET (+/-) buttons
- 4 CD/Tuner/MD numeric buttons (8, 12, 23)
- 5 Tape operating buttons
TAPE button
◀ (reverse side play)
▶ (front side play)
■ (stop)
◀◀ (fast leftward)
▶▶ (fast rightward)
- 6 CD operating buttons
CD button (8)
REPEAT button (10)
TIME button (7)
DISC 1 - 3 buttons (7)
CHECK button (9)
CLEAR button (9)
- 7 TUNER button
DISPLAY button (23)

- 8 SYSTEM POWER switch (7)
- 9 CD operating buttons
▷ (play) (7)
|| (pause) (7)
■ (stop) (7)
◀◀ / ▶▶ (AMS**) (8)
- 10 VOLUME (+/-) buttons (7, 11, 24, 27)
- 11 MUTING button (24)
- 12 VIDEO 1 button (28)
VIDEO 2 button (28)
- 13 MD operating buttons
REPEAT button (13)
DISPLAY button (12)
SCROLL button (21)
- 14 SOURCE DIRECT button (24)

** AMS: Automatic Music Sensor

SECTION 2 DIAGRAMS

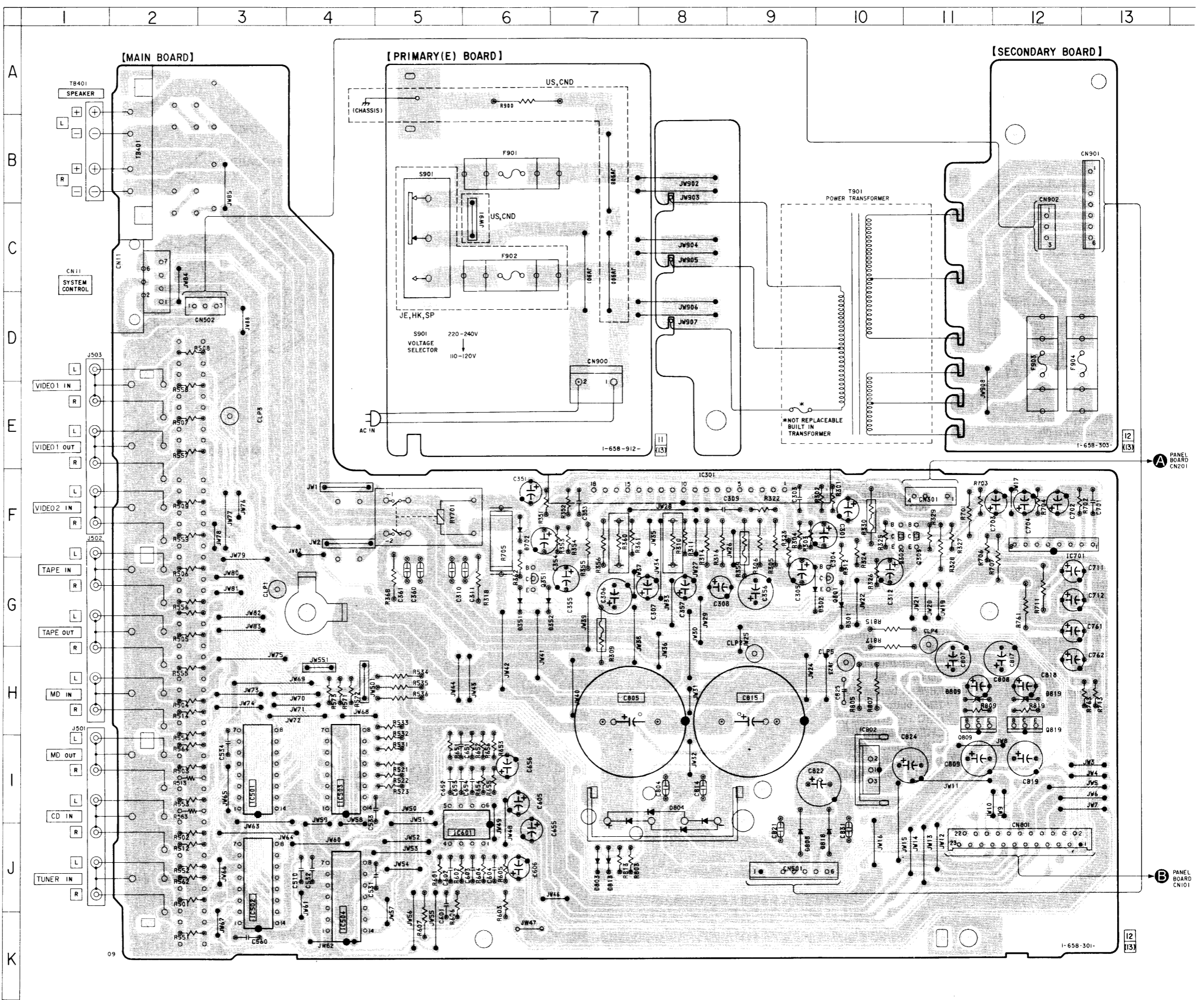
2-1. CIRCUIT BOARDS LOCATION



2-2. PRINTED WIRING BOARD — MAIN SECTION —
 • See page 4 for Circuit Boards Location.

• Semiconductor Location

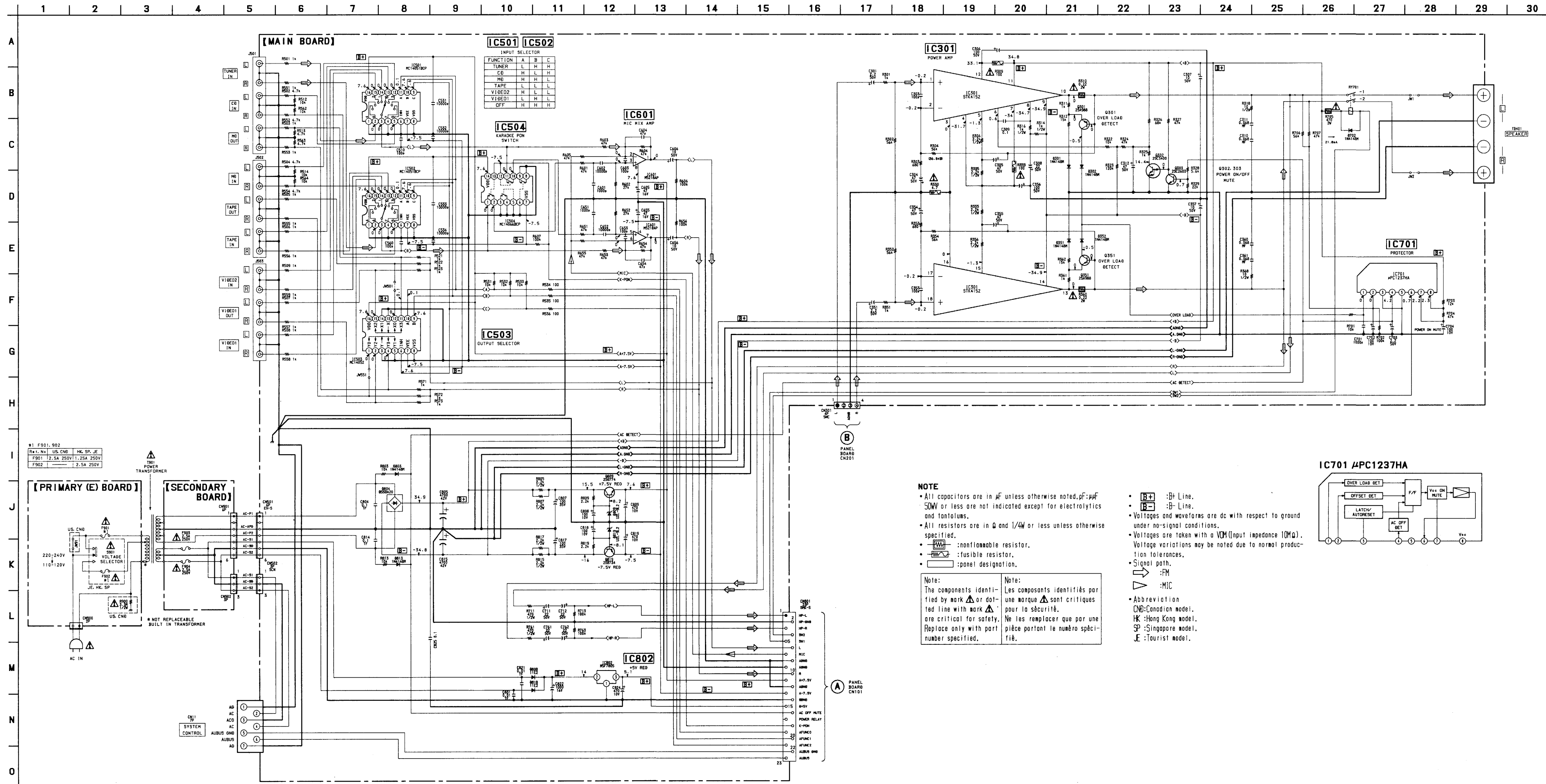
Ref. No.	Location
D301	G-10
D302	G-9
D351	G-6
D702	F-6
D803	J-7
D804	I-8
D808	J-9
D809	H-11
D813	J-7
D818	J-10
D819	H-12
IC301	F-8
IC501	I-3
IC502	J-3
IC503	I-4
IC504	J-4
IC601	J-6
IC701	F-12
IC802	I-10
Q301	G-10
Q302	F-10
Q303	F-11
Q351	G-6
Q809	H-11
Q819	H-12



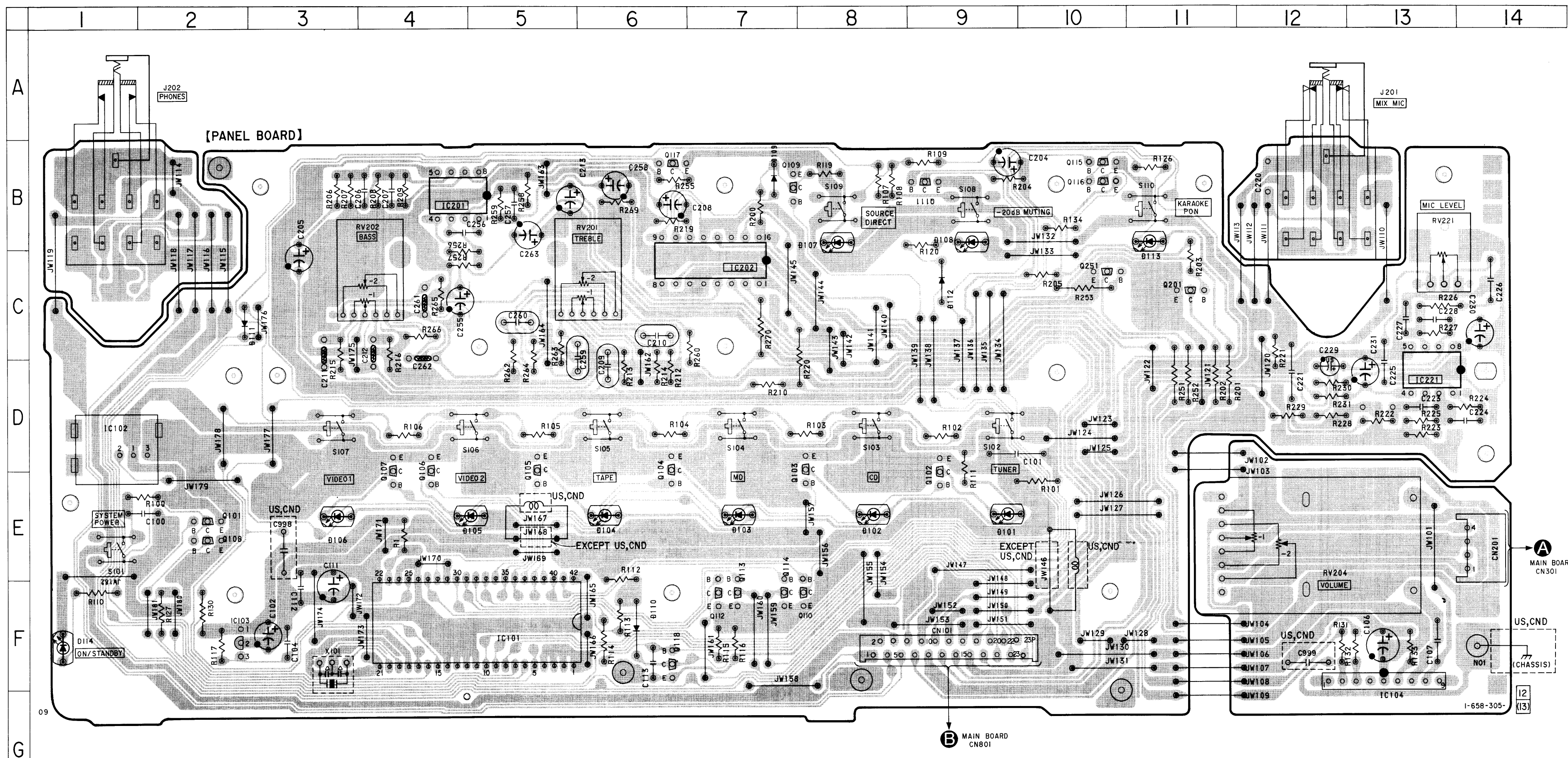
Note:

- — : parts extracted from the component side.
- — : Pattern from the side which enable seeing.
- Abbreviation
 CND : Canadian model.
 HK : Hong Kong model.
 SP : Singapore model.
 JE : Tourist model.

2-3. SCHEMATIC DIAGRAM — MAIN SECTION —



2-4. PRINTED WIRING BOARD — PANEL SECTION —
 • See page 4 for Circuit Boards Location.



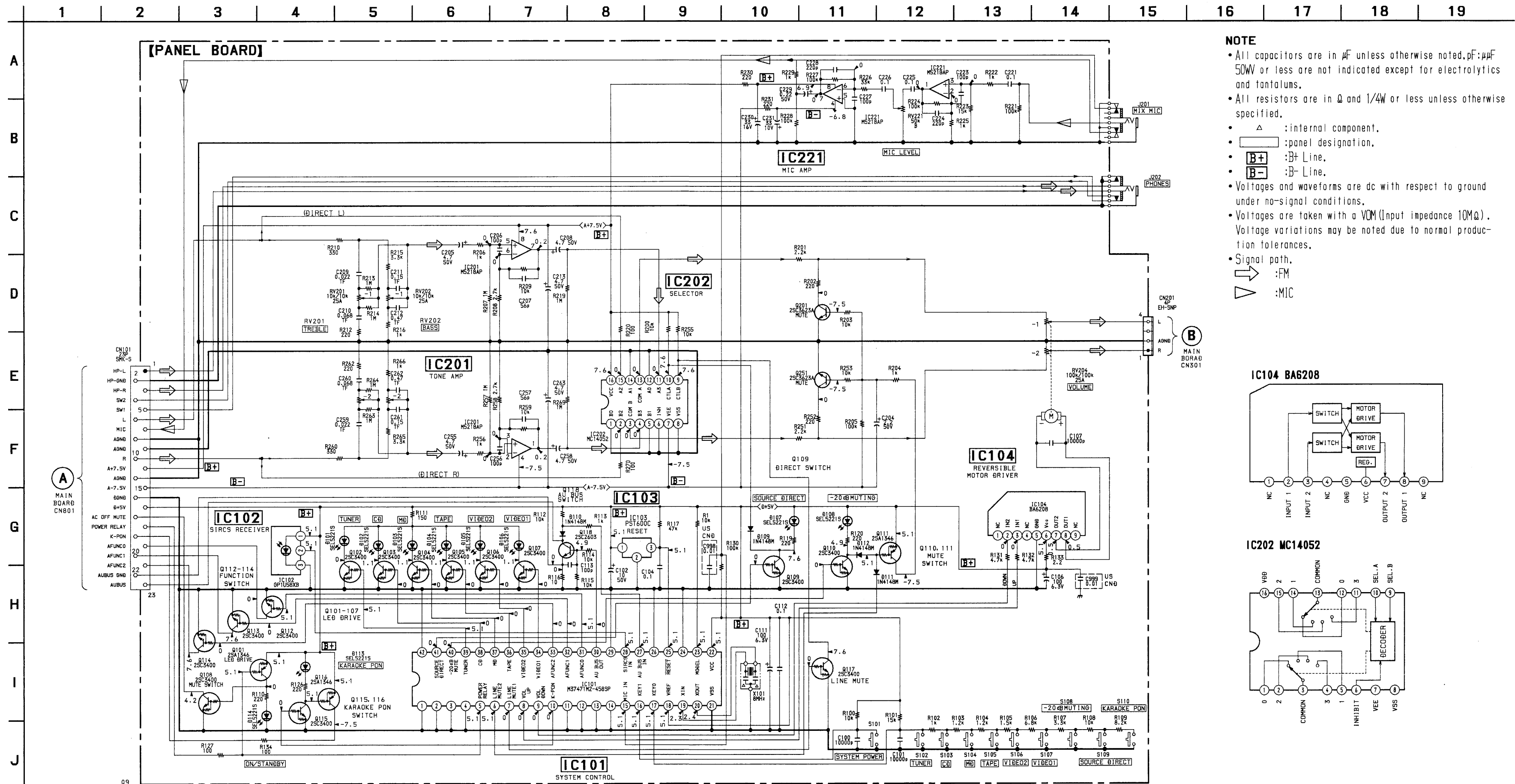
• Semiconductor Location

Ref. No.	Location
D101	E-9
D102	E-8
D103	E-7
D104	E-6
D105	E-5
D106	E-3
D107	C-8
D108	C-9
D110	F-6
D111	C-3
D112	C-9
D113	B-11
D114	F-1
IC101	F-5
IC102	D-1
IC103	F-2
IC104	F-13
IC201	B-4
IC202	C-7
IC221	D-13
Q101	E-2
Q102	E-9
Q103	E-8
Q104	E-6
Q105	E-5
Q106	E-4
Q107	E-4
Q108	E-2
Q109	B-8
Q110	F-8
Q111	B-9
Q112	F-7
Q113	F-7
Q114	F-7
Q115	B-10
Q116	B-10
Q117	B-6
Q118	F-6
Q201	C-11
Q251	C-10

Note:
 • ○ : parts extracted from the component side.
 • △ : internal component.
 • ■ : Pattern from the side which enable seeing.

• Abbreviation
 CND : Canadian model.

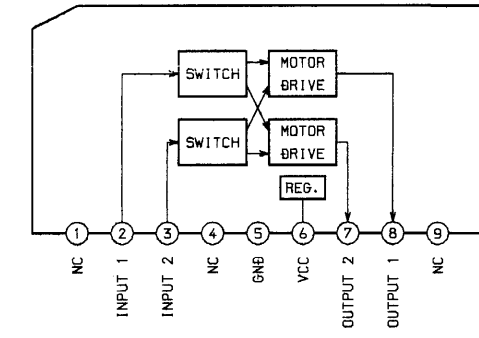
2-5. SCHEMATIC DIAGRAM — PANEL SECTION —
 • See page 16 for IC Pin Function. (IC101)



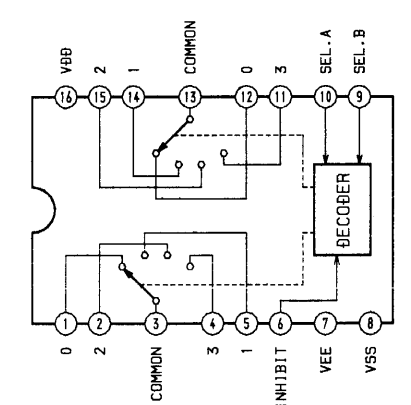
NOTE

- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\text{F} / 100$. 50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- \triangle : internal component.
- \square : panel designation.
- **B+** : B+ Line.
- **B-** : B- Line.
- Voltages 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 : FM
- ∇ : MIC

IC104 BA6208



IC202 MC14052



2-6. IC PIN FUNCTION

• IC101 SYSTEM CONTROL (M37471M2-458SP)

Pin No.	Pin Name	I/O	Function
1 to 4	—	I	Not used. (Connected to ground)
5	POWER RELAY	O	Power relay control output.
6	LINE MUTE 2	O	Pre amp mute output.
7	LINE MUTE 1	O	Line mute output.
8	VOL UP	O	Volume up control output.
9	VOL DOWN	O	Volume down control output.
10	KARAOKE PON	O	KARAOKE PON control output.
11 to 14	—	I	Not used. (Connected to ground)
15	MIC IN	I	Microphone detect input. "L": Mic in
16	KEY 1	I	Key input. (analog)
17	KEY 0	I	
18	VREF	—	Reference voltage input (+5V).
19	XIN	I	System clock input (8 MHz).
20	XOUT	O	System clock output (8 MHz).
21	Vss	—	Ground
22	Vcc	—	Power supply (+5V).
23	MODEL	I	Destination identification input. (Fixed at "H")
24	—	I	Not used. (Connected to ground)
25	$\overline{\text{RESET}}$	I	Reset signal input.
26	—	—	Not used. (Connected to ground)
27	AU BUS IN	I	Audio bus signal input.
28	SIRCS IN	I	SIRCS signal input.
29	—	I	Not used. (Connected to ground)
30	AU BUS OUT	O	Audio bus signal output.
31	AFUNC 0	O	Function control output.*1
32	AFUNC 1	O	
33	AFUNC 2	O	
34	VIDEO 1	O	Function LED control output.
35	VIDEO 2	O	
36	TAPE	O	
37	MD	O	
38	CD	O	
39	TUNER	O	
40	-20 dB MUTE	O	
41	SOURCE DIRECT	O	SOURCE DIRECT control output.
42	—	I	Not used. (Connected to ground)

*1

	TUNER	CD	MD	TAPE	VIDEO1	VIDEO2	OFF
AFUNC0	L	H	H	L	L	H	H
AFUNC1	H	L	H	L	H	L	H
AFUNC2	H	H	L	L	L	L	H

SECTION 3 EXPLODED VIEWS

NOTE:

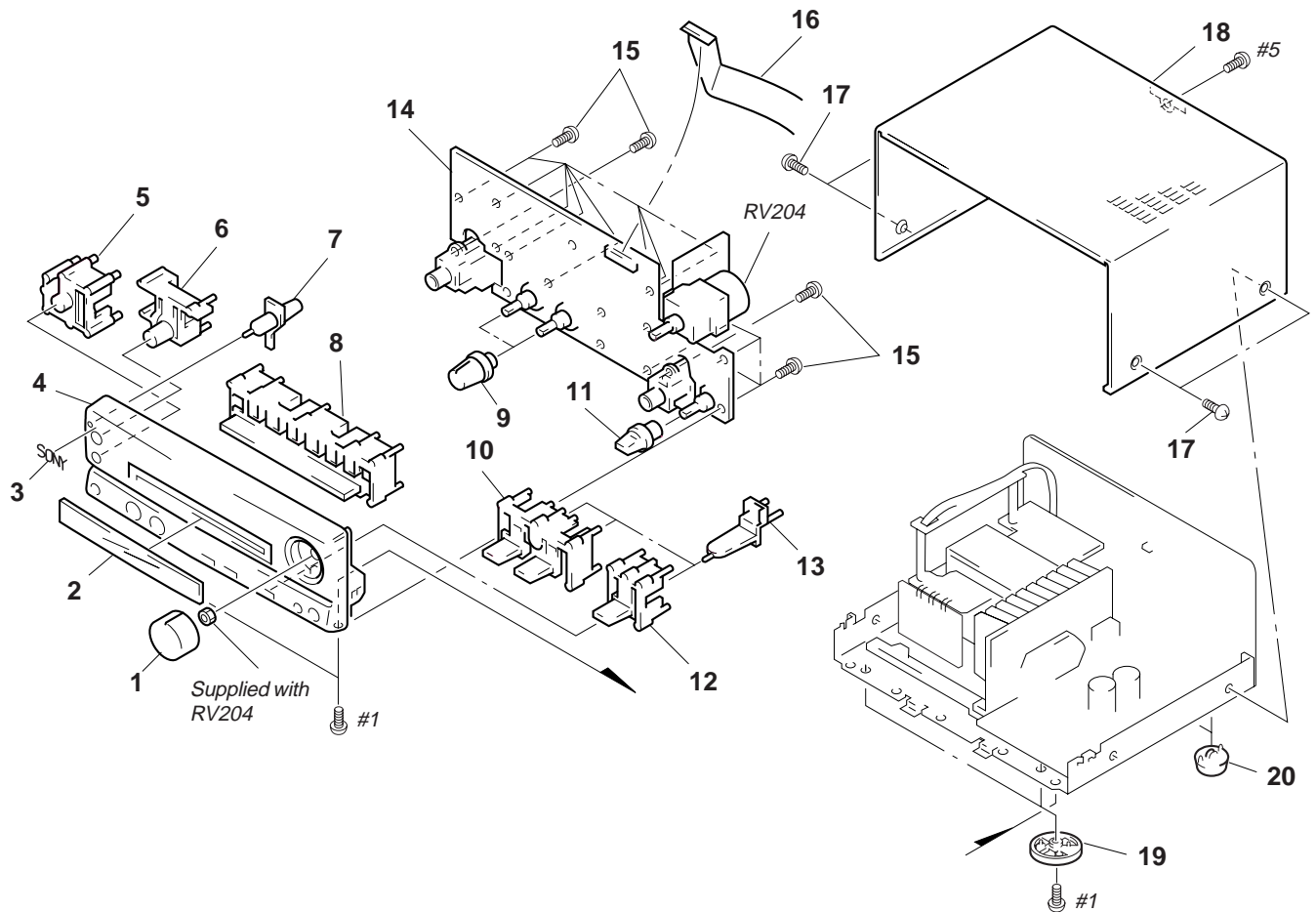
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- Abbreviation
 CND : Canadian model
 JE : Tourist model
 HK : Hong Kong model
 SP : Singapore model

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

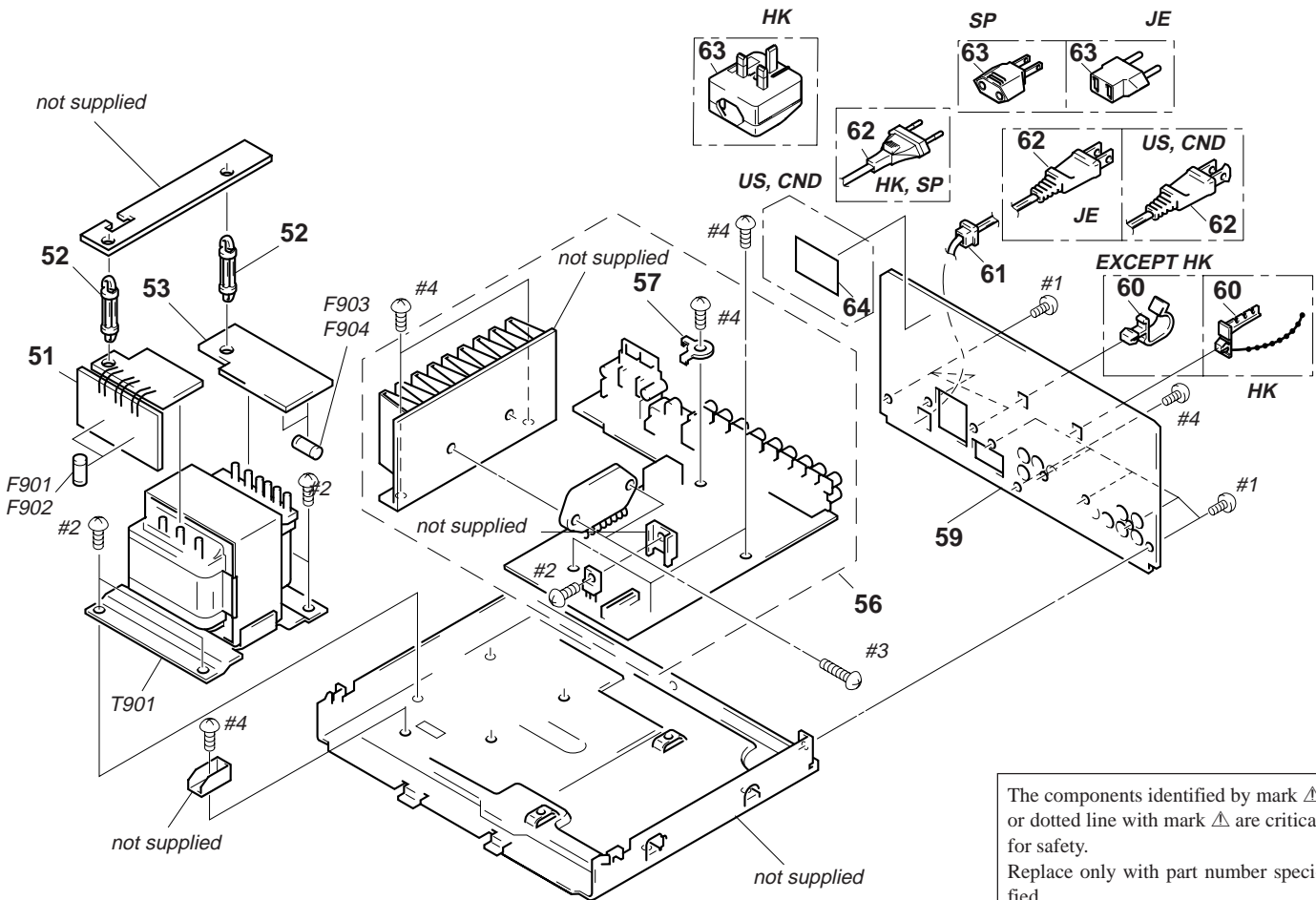
Les composants identifiés par une marque Δ sont critiques pour la sécurité.
 Ne les remplacer que par une pièce portant le numéro spécifié.

3-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-970-944-31	KNOB (VOL)		12	4-977-711-01	BUTTON (KP)	
2	X-4946-945-1	WINDOW (FUNC) ASSY		13	4-977-713-11	INDICATOR (KP)	
3	4-962-708-11	EMBLEM (4-A), SONY		* 14	A-4378-764-A	PANEL BOARD, COMPLETE (JE,HK,SP)	
4	4-977-707-01	PANEL, FRONT		* 14	A-4390-215-A	PANEL BOARD, COMPLETE (US,CND)	
5	4-977-715-11	WINDOW (RM)		15	4-951-620-01	SCREW (2.6X8), +BVTP	
6	4-977-708-11	BUTTON (POWER)		16	1-773-188-11	WIRE (FLAT TYPE) (23 CORE)	
7	4-977-712-11	INDICATOR (POWER)		17	3-363-099-01	SCREW (CASE 3 TP2)	
8	4-977-709-01	BUTTON (FUNC)		18	4-978-245-11	CASE	
9	4-970-965-31	KNOB (TONE)		19	4-977-699-11	LEG (F)	
10	4-977-710-01	BUTTON (MUTE)		20	4-965-822-01	FOOT	
11	4-973-043-31	KNOB (KR)		RV204	1-223-811-11	RES, VAR, CARBON 100K/100K (VOLUME)	

3-2. CHASSIS SECTION



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

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	1-658-912-11	PRIMARY (E) BOARD		Δ 62	1-575-651-11	CORD, POWER (HK,SP)	
* 52	4-385-948-01	HOLDER, PCB		Δ 62	1-590-771-11	CORD, POWER (US,CND)	
* 53	1-658-303-11	SECONDARY BOARD		Δ 63	1-569-007-11	ADAPTER, CONVERSION 2P (JE)	
* 56	A-4390-216-A	MAIN BOARD, COMPLETE (JE,HK,SP)		Δ 63	1-569-008-11	ADAPTER, CONVERSION 2P (SP)	
* 56	A-4390-218-A	MAIN BOARD, COMPLETE (US,CND)		Δ 63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
* 57	4-942-204-01	PLATE, GROUND		64	3-703-044-26	LABEL, CAUTION (US,CND)	
* 59	4-977-717-01	PANEL, BACK (HK)		Δ F901	1-532-502-51	FUSE, TIME-LAG (1.25A, 250V)(JE,HK,SP)	
* 59	4-977-717-12	PANEL, BACK (SP)		Δ F901	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
* 59	4-977-717-22	PANEL, BACK (JE)		Δ F902	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK,SP)	
* 59	4-977-717-31	PANEL, BACK (US,CND)		Δ F903	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK,SP)	
* 60	4-949-235-01	HOOK (US,CND,JE,SP)		Δ F903	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
60	4-956-370-02	BAND, PLUG FIXED (HK)		Δ F904	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK,SP)	
* 61	3-703-244-00	BUSHING (2104), CORD (US,CND,HK,SP)		Δ F904	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
* 61	3-703-571-11	BUSHING (S) (4516), CORD (JE)		Δ T901	1-429-598-11	TRANSFORMER, POWER (JE,HK,SP)	
Δ 62	1-574-902-11	CORD, POWER (JE)		Δ T901	1-429-599-11	TRANSFORMER, POWER (US,CND)	

SECTION 4 ELECTRICAL PARTS LIST

MAIN

Note:

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

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

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

- 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.
- 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
- Abbreviation
CND : Canadian model
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4390-216-A	MAIN BOARD, COMPLETE (JE,HK,SP) *****		C654	1-162-215-31	CERAMIC 47PF 5%	50V
*	A-4390-218-A	MAIN BOARD, COMPLETE (US,CND) *****		C655	1-126-022-11	ELECT 47uF 20%	16V
				C656	1-126-059-11	ELECT 10uF 20%	50V
*	4-942-204-01	PLATE, GROUND		C701	1-162-294-31	CERAMIC 0.001uF 10%	50V
	7-685-871-01	SCREW +BVTT 3X6 (S)		C702	1-126-052-11	ELECT 100uF 20%	10V
		< CAPACITOR >		C703	1-126-045-11	ELECT 2.2uF 20%	50V
C301	1-126-045-11	ELECT 2.2uF 20%	50V	C704	1-126-052-11	ELECT 100uF 20%	10V
C303	1-162-282-31	CERAMIC 100PF 10%	50V	C711	1-126-233-11	ELECT 22uF 20%	50V
C304	1-126-868-11	ELECT 47uF 20%	50V	C712	1-126-233-11	ELECT 22uF 20%	50V
C305	1-126-868-11	ELECT 47uF 20%	50V	C761	1-126-233-11	ELECT 22uF 20%	50V
C306	1-124-122-11	ELECT 100uF 20%	50V	C762	1-126-233-11	ELECT 22uF 20%	50V
C307	1-126-059-11	ELECT 10uF 20%	50V	C804	1-136-165-00	FILM 0.1uF 5%	50V
C308	1-126-233-11	ELECT 22uF 20%	50V	C805	1-126-224-11	ELECT 4700uF 20%	42V
C309	1-164-159-11	CERAMIC 0.1uF	50V	C807	1-126-052-11	ELECT 100uF 20%	35V
C310	1-136-163-00	FILM 0.068uF 5%	50V	C808	1-126-052-11	ELECT 100uF 20%	10V
C311	1-136-163-00	FILM 0.068uF 5%	50V	C809	1-124-997-11	ELECT 470uF 20%	10V
C312	1-126-868-11	ELECT 47uF 20%	50V	C814	1-136-165-00	FILM 0.1uF 5%	50V
C351	1-126-045-11	ELECT 2.2uF 20%	50V	C815	1-126-224-11	ELECT 4700uF 20%	42V
C353	1-162-282-31	CERAMIC 100PF 10%	50V	C817	1-126-052-11	ELECT 100uF 20%	35V
C354	1-126-868-11	ELECT 47uF 20%	50V	C818	1-126-052-11	ELECT 100uF 20%	10V
C355	1-126-868-11	ELECT 47uF 20%	50V	C819	1-124-997-11	ELECT 470uF 20%	10V
C356	1-124-122-11	ELECT 100uF 20%	50V	C821	1-136-153-00	FILM 0.01uF 5%	50V
C357	1-126-059-11	ELECT 10uF 20%	50V	C822	1-126-952-11	ELECT 1000uF 20%	16V
C360	1-136-163-00	FILM 0.068uF 5%	50V	C824	1-124-997-11	ELECT 470uF 20%	10V
C361	1-136-163-00	FILM 0.068uF 5%	50V	C825	1-164-159-11	CERAMIC 0.1uF	50V
C510	1-162-282-31	CERAMIC 100PF 10%	50V	C831	1-136-153-00	FILM 0.01uF 5%	50V
C531	1-162-306-11	CERAMIC 0.01uF 30%	16V	< CONNECTOR >			
C532	1-162-306-11	CERAMIC 0.01uF 30%	16V	CN11	1-770-158-21	HOUSING, CONNECTOR 7P (SYSTEM CONTROL)	
C533	1-162-306-11	CERAMIC 0.01uF 30%	16V	CN501	1-770-966-11	PIN, CONNECTOR (PCB)(V TYPE)6P	
C534	1-162-306-11	CERAMIC 0.01uF 30%	16V	* CN801	1-568-839-11	SOCKET, CONNECTOR 23P	
C560	1-162-282-31	CERAMIC 100PF 10%	50V	< DIODE >			
C601	1-162-294-31	CERAMIC 0.001uF 10%	50V	D301	8-719-987-63	DIODE 1N4148M	
C602	1-162-306-11	CERAMIC 0.01uF 30%	16V	D302	8-719-987-63	DIODE 1N4148M	
C603	1-162-282-31	CERAMIC 100PF 10%	50V	D351	8-719-987-63	DIODE 1N4148M	
C604	1-162-215-31	CERAMIC 47PF 5%	50V	D352	8-719-987-63	DIODE 1N4148M	
C605	1-126-022-11	ELECT 47uF 20%	16V	D702	8-719-987-63	DIODE 1N4148M	
C606	1-126-059-11	ELECT 10uF 20%	50V	D803	8-719-987-63	DIODE 1N4148M	
C651	1-162-294-31	CERAMIC 0.001uF 10%	50V	D804	8-719-510-68	DIODE D5SBA20F01	
C652	1-162-306-11	CERAMIC 0.01uF 30%	16V	D808	8-719-200-02	DIODE 10E2	
C653	1-162-282-31	CERAMIC 100PF 10%	50V	D809	8-719-933-54	DIODE HZS9A2L	
				D813	8-719-987-63	DIODE 1N4148M	

MAIN

Ref. No.	Part No.	Description	Remark
D818	8-719-200-02	DIODE 10E2	
D819	8-719-933-54	DIODE HZS9A2L	
		< IC >	
IC301	8-749-941-52	IC STK-4152II	
IC501	8-759-000-47	IC MC14051BCP	
IC502	8-759-000-47	IC MC14051BCP	
IC503	8-759-000-48	IC MC14052BCP	
IC504	8-759-000-49	IC MC14066BCP	
IC601	8-759-634-51	IC M5218AP	
IC701	8-759-111-68	IC uPC1237HA	
IC802	8-759-231-53	IC TA7805S	
		< JACK >	
J501	1-770-015-11	JACK, PIN 6P (TUNER IN,CD IN,MD OUT)	
J502	1-770-015-11	JACK, PIN 6P (MD IN,TAPE IN/OUT)	
J503	1-770-015-11	JACK, PIN 6P (VIDEO1 IN/OUT,VIDEO2 IN)	
		< TRANSISTOR >	
Q301	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q302	8-729-422-73	TRANSISTOR UN4212	
Q303	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q351	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q809	8-729-140-96	TRANSISTOR 2SD774-34	
Q819	8-729-140-97	TRANSISTOR 2SB734-34	
		< RESISTOR >	
R301	1-249-417-11	CARBON 1K	5% 1/4W F
R302	1-249-438-11	CARBON 56K	5% 1/4W
R303	1-249-415-11	CARBON 680	5% 1/4W F
R304	1-249-438-11	CARBON 56K	5% 1/4W
R305	1-260-103-11	CARBON 2.2K	5% 1/2W
R306	1-260-103-11	CARBON 2.2K	5% 1/2W
△R309	1-212-881-11	FUSIBLE 100	5% 1/4W F
△R310	1-217-151-00	METAL PLATE 0.22	2W F
R311	1-249-417-11	CARBON 1K	5% 1/4W F
R312	1-249-431-11	CARBON 15K	5% 1/4W
R314	1-260-099-11	CARBON 1K	5% 1/2W
R316	1-260-099-11	CARBON 1K	5% 1/2W
R318	1-260-076-11	CARBON 10	5% 1/2W
R322	1-249-429-11	CARBON 10K	5% 1/4W
R323	1-247-881-00	CARBON 120K	5% 1/4W
R324	1-249-437-11	CARBON 47K	5% 1/4W
R325	1-249-417-11	CARBON 1K	5% 1/4W F
R326	1-249-439-11	CARBON 68K	5% 1/4W
R327	1-249-437-11	CARBON 47K	5% 1/4W
R328	1-249-426-11	CARBON 5.6K	5% 1/4W
R329	1-249-433-11	CARBON 22K	5% 1/4W
△R330	1-212-849-00	FUSIBLE 4.7	5% 1/4W F
R351	1-249-417-11	CARBON 1K	5% 1/4W F
R352	1-249-438-11	CARBON 56K	5% 1/4W
R353	1-249-415-11	CARBON 680	5% 1/4W F

Ref. No.	Part No.	Description	Remark
R354	1-249-438-11	CARBON 56K	5% 1/4W
R355	1-260-103-11	CARBON 2.2K	5% 1/2W
R356	1-260-103-11	CARBON 2.2K	5% 1/2W
△R359	1-212-881-11	FUSIBLE 100	5% 1/4W F
△R360	1-217-151-00	METAL PLATE 0.22	2W F
R361	1-249-417-11	CARBON 1K	5% 1/4W F
R362	1-249-431-11	CARBON 15K	5% 1/4W
R368	1-260-076-11	CARBON 10	5% 1/2W
R501	1-249-417-11	CARBON 1K	5% 1/4W F
R502	1-249-425-11	CARBON 4.7K	5% 1/4W F
R503	1-249-417-11	CARBON 1K	5% 1/4W F
R504	1-249-425-11	CARBON 4.7K	5% 1/4W F
R505	1-249-417-11	CARBON 1K	5% 1/4W F
R506	1-249-417-11	CARBON 1K	5% 1/4W F
R507	1-249-417-11	CARBON 1K	5% 1/4W F
R508	1-249-417-11	CARBON 1K	5% 1/4W F
R509	1-249-417-11	CARBON 1K	5% 1/4W F
R512	1-249-429-11	CARBON 10K	5% 1/4W
R513	1-249-425-11	CARBON 4.7K	5% 1/4W F
R514	1-249-429-11	CARBON 10K	5% 1/4W
R521	1-249-417-11	CARBON 1K	5% 1/4W F
R522	1-249-417-11	CARBON 1K	5% 1/4W F
R523	1-249-417-11	CARBON 1K	5% 1/4W F
R531	1-249-429-11	CARBON 10K	5% 1/4W
R532	1-249-429-11	CARBON 10K	5% 1/4W
R533	1-249-429-11	CARBON 10K	5% 1/4W
R534	1-247-807-31	CARBON 100	5% 1/4W
R535	1-247-807-31	CARBON 100	5% 1/4W
R536	1-247-807-31	CARBON 100	5% 1/4W
R551	1-249-417-11	CARBON 1K	5% 1/4W F
R552	1-249-425-11	CARBON 4.7K	5% 1/4W F
R553	1-249-417-11	CARBON 1K	5% 1/4W F
R554	1-249-425-11	CARBON 4.7K	5% 1/4W F
R555	1-249-417-11	CARBON 1K	5% 1/4W F
R556	1-249-417-11	CARBON 1K	5% 1/4W F
R557	1-249-417-11	CARBON 1K	5% 1/4W F
R558	1-249-417-11	CARBON 1K	5% 1/4W F
R559	1-249-417-11	CARBON 1K	5% 1/4W F
R562	1-249-429-11	CARBON 10K	5% 1/4W
R563	1-249-425-11	CARBON 4.7K	5% 1/4W F
R564	1-249-429-11	CARBON 10K	5% 1/4W
R571	1-249-417-11	CARBON 1K	5% 1/4W F
R572	1-249-417-11	CARBON 1K	5% 1/4W F
R573	1-249-417-11	CARBON 1K	5% 1/4W F
R601	1-249-437-11	CARBON 47K	5% 1/4W
R602	1-249-434-11	CARBON 27K	5% 1/4W
R603	1-249-437-11	CARBON 47K	5% 1/4W
R604	1-249-437-11	CARBON 47K	5% 1/4W
R605	1-249-437-11	CARBON 47K	5% 1/4W
R606	1-249-441-11	CARBON 100K	5% 1/4W
R607	1-249-441-11	CARBON 100K	5% 1/4W
R651	1-249-437-11	CARBON 47K	5% 1/4W

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Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
R652	1-249-434-11	CARBON 27K 5%	1/4W
R653	1-249-437-11	CARBON 47K 5%	1/4W
R654	1-249-437-11	CARBON 47K 5%	1/4W
R655	1-249-437-11	CARBON 47K 5%	1/4W
R656	1-249-441-11	CARBON 100K 5%	1/4W
R701	1-249-429-11	CARBON 10K 5%	1/4W
R702	1-249-441-11	CARBON 100K 5%	1/4W
R703	1-249-430-11	CARBON 12K 5%	1/4W
R704	1-249-437-11	CARBON 47K 5%	1/4W
△ R705	1-215-890-11	METAL OXIDE 470 5%	2W F
R706	1-249-438-11	CARBON 56K 5%	1/4W
R707	1-249-437-11	CARBON 47K 5%	1/4W
R711	1-260-095-11	CARBON 470 5%	1/2W
R713	1-249-441-11	CARBON 100K 5%	1/4W
R761	1-260-095-11	CARBON 470 5%	1/2W
R763	1-249-441-11	CARBON 100K 5%	1/4W
R803	1-249-429-11	CARBON 10K 5%	1/4W
R805	1-260-103-11	CARBON 2.2K 5%	1/2W
R807	1-260-103-11	CARBON 2.2K 5%	1/2W
R809	1-249-421-11	CARBON 2.2K 5%	1/4W F
R813	1-249-429-11	CARBON 10K 5%	1/4W
R815	1-260-103-11	CARBON 2.2K 5%	1/2W
R817	1-260-103-11	CARBON 2.2K 5%	1/2W
R819	1-249-421-11	CARBON 2.2K 5%	1/4W F
		< RELAY >	
RY701	1-755-126-11	RELAY	
		< TERMINAL >	
TB401	1-537-240-11	TERMINAL BOARD (CHECKER PIN)(SPEAKER)	

*	A-4378-764-A	PANEL BOARD, COMPLETE (JE,HK,SP)	

*	A-4390-215-A	PANEL BOARD, COMPLETE (US,CND)	

		< CAPACITOR >	
C100	1-162-306-11	CERAMIC 0.01uF 30%	16V
C101	1-162-306-11	CERAMIC 0.01uF 30%	16V
C102	1-124-907-11	ELECT 10uF 20%	50V
C104	1-164-159-11	CERAMIC 0.1uF 50V	
C106	1-126-968-11	ELECT 100uF 20%	6.3V
C107	1-162-306-11	CERAMIC 0.01uF 30%	16V
C111	1-126-968-11	ELECT 100uF 20%	6.3V
C112	1-164-159-11	CERAMIC 0.1uF 50V	
C113	1-162-282-31	CERAMIC 100PF 10%	50V
C204	1-124-257-00	ELECT 2.2uF 20%	50V
C205	1-126-163-11	ELECT 4.7uF 20%	50V
C206	1-162-282-31	CERAMIC 100PF 10%	50V

Ref. No.	Part No.	Description	Remark
C207	1-162-217-31	CERAMIC 56PF 5%	50V
C208	1-126-163-11	ELECT 4.7uF 20%	50V
C209	1-136-157-00	FILM 0.022uF 5%	50V
C210	1-136-163-00	FILM 0.068uF 5%	50V
C211	1-136-167-00	FILM 0.15uF 5%	50V
C212	1-136-173-00	FILM 0.47uF 5%	50V
C213	1-126-163-11	ELECT 4.7uF 20%	50V
C221	1-164-159-11	CERAMIC 0.1uF 50V	
C223	1-162-282-31	CERAMIC 100PF 10%	50V
C224	1-162-286-31	CERAMIC 220PF 10%	50V
C225	1-164-159-11	CERAMIC 0.1uF 50V	
C226	1-164-159-11	CERAMIC 0.1uF 50V	
C227	1-162-282-31	CERAMIC 100PF 10%	50V
C228	1-162-286-31	CERAMIC 220PF 10%	50V
C229	1-124-464-11	ELECT 0.22uF 20%	50V
C230	1-104-663-11	ELECT 33uF 20%	16V
C231	1-104-663-11	ELECT 33uF 20%	16V
C255	1-126-163-11	ELECT 4.7uF 20%	50V
C256	1-162-282-31	CERAMIC 100PF 10%	50V
C257	1-162-217-31	CERAMIC 56PF 5%	50V
C258	1-126-163-11	ELECT 4.7uF 20%	50V
C259	1-136-157-00	FILM 0.022uF 5%	50V
C260	1-136-163-00	FILM 0.068uF 5%	50V
C261	1-136-167-00	FILM 0.15uF 5%	50V
C262	1-136-173-00	FILM 0.47uF 5%	50V
C263	1-126-163-11	ELECT 4.7uF 20%	50V
C998	1-162-306-11	CERAMIC 0.01uF 20%	16V (US,CND)
C999	1-162-306-11	CERAMIC 0.01uF 20%	16V (US,CND)
		< CONNECTOR >	
* CN101	1-568-839-11	SOCKET, CONNECTOR 23P	
CN201	1-764-341-11	PIN, CONNECTOR (PCB)(L TYPE)4P	
		< DIODE >	
D101	8-719-046-44	DIODE SEL5221S (TUNER)	
D102	8-719-046-44	DIODE SEL5221S (CD)	
D103	8-719-046-44	DIODE SEL5221S (MD)	
D104	8-719-046-44	DIODE SEL5221S (TAPE)	
D105	8-719-046-44	DIODE SEL5221S (VIDEO2)	
D106	8-719-046-44	DIODE SEL5221S (VIDEO1)	
D107	8-719-046-44	DIODE SEL5221S (SOURCE DIRECT)	
D108	8-719-046-44	DIODE SEL5221S (-20dB MUTING)	
D109	8-719-987-63	DIODE 1N4148M	
D110	8-719-987-63	DIODE 1N4148M	
D111	8-719-987-63	DIODE 1N4148M	
D112	8-719-987-63	DIODE 1N4148M	
D113	8-719-046-44	DIODE SEL5221S (KARAOKE PON)	
D114	8-719-046-44	DIODE SEL5221S (ON/STANDBY)	

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PANEL

Ref. No.	Part No.	Description	Remark
		< IC >	
IC101	8-759-359-32	IC M37471M2-458SP	
IC102	8-749-923-11	IC GP1U58XB	
IC103	8-759-165-80	IC PST600C-T	
IC104	8-759-962-08	IC BA6208	
IC201	8-759-634-51	IC M5218AP	
IC202	8-759-000-48	IC MC14052BCP	
IC221	8-759-634-51	IC M5218AP	
		< JACK >	
J201	1-507-854-00	JACK,PHONE (MIX MIC)	
J202	1-507-854-00	JACK,PHONE (PHONES)	
		< TRANSISTOR >	
Q101	8-729-900-63	TRANSISTOR DTA124ES	
Q102	8-729-422-73	TRANSISTOR UN4212	
Q103	8-729-422-73	TRANSISTOR UN4212	
Q104	8-729-422-73	TRANSISTOR UN4212	
Q105	8-729-422-73	TRANSISTOR UN4212	
Q106	8-729-422-73	TRANSISTOR UN4212	
Q107	8-729-422-73	TRANSISTOR UN4212	
Q108	8-729-422-73	TRANSISTOR UN4212	
Q109	8-729-422-73	TRANSISTOR UN4212	
Q110	8-729-422-73	TRANSISTOR UN4212	
Q111	8-729-900-63	TRANSISTOR DTA124ES	
Q112	8-729-422-73	TRANSISTOR UN4212	
Q113	8-729-422-73	TRANSISTOR UN4212	
Q114	8-729-422-73	TRANSISTOR UN4212	
Q115	8-729-422-73	TRANSISTOR UN4212	
Q116	8-729-900-63	TRANSISTOR DTA124ES	
Q117	8-729-422-73	TRANSISTOR UN4212	
Q118	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q201	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q251	8-729-141-30	TRANSISTOR 2SC3623A-LK	
		< RESISTOR >	
R1	1-249-429-11	CARBON 10K	5% 1/4W
R100	1-249-429-11	CARBON 10K	5% 1/4W
R101	1-249-431-11	CARBON 15K	5% 1/4W
R102	1-249-417-11	CARBON 1K	5% 1/4W F
R103	1-249-418-11	CARBON 1.2K	5% 1/4W F
R104	1-249-418-11	CARBON 1.2K	5% 1/4W F
R105	1-249-419-11	CARBON 1.5K	5% 1/4W F
R106	1-249-427-11	CARBON 6.8K	5% 1/4W F
R107	1-249-423-11	CARBON 3.3K	5% 1/4W F
R108	1-249-429-11	CARBON 10K	5% 1/4W
R109	1-249-428-11	CARBON 8.2K	5% 1/4W F
R110	1-249-409-11	CARBON 220	5% 1/4W F
R111	1-249-407-11	CARBON 150	5% 1/4W F
R112	1-249-429-11	CARBON 10K	5% 1/4W
R113	1-249-417-11	CARBON 1K	5% 1/4W F
R114	1-249-429-11	CARBON 10K	5% 1/4W

Ref. No.	Part No.	Description	Remark
R115	1-249-429-11	CARBON 10K	5% 1/4W
R116	1-249-393-11	CARBON 10	5% 1/4W F
R117	1-249-437-11	CARBON 47K	5% 1/4W
R119	1-249-409-11	CARBON 220	5% 1/4W F
R120	1-249-409-11	CARBON 220	5% 1/4W F
R126	1-249-409-11	CARBON 220	5% 1/4W F
R127	1-247-807-31	CARBON 100	5% 1/4W
R130	1-249-441-11	CARBON 100K	5% 1/4W
R131	1-249-425-11	CARBON 4.7K	5% 1/4W F
R132	1-249-425-11	CARBON 4.7K	5% 1/4W F
R133	1-249-385-11	CARBON 2.2	5% 1/6W F
R134	1-247-807-31	CARBON 100	5% 1/4W
R200	1-249-429-11	CARBON 10K	5% 1/4W
R201	1-249-421-11	CARBON 2.2K	5% 1/4W F
R202	1-249-409-11	CARBON 220	5% 1/4W F
R203	1-249-429-11	CARBON 10K	5% 1/4W
R204	1-249-417-11	CARBON 1K	5% 1/4W F
R205	1-249-441-11	CARBON 100K	5% 1/4W
R206	1-249-417-11	CARBON 1K	5% 1/4W F
R207	1-247-903-00	CARBON 1M	5% 1/4W
R208	1-249-422-11	CARBON 2.7K	5% 1/4W F
R209	1-249-429-11	CARBON 10K	5% 1/4W
R210	1-249-411-11	CARBON 330	5% 1/4W
R212	1-249-409-11	CARBON 220	5% 1/4W F
R213	1-247-903-00	CARBON 1M	5% 1/4W
R214	1-247-903-00	CARBON 1M	5% 1/4W
R215	1-249-423-11	CARBON 3.3K	5% 1/4W F
R216	1-249-417-11	CARBON 1K	5% 1/4W F
R219	1-247-903-00	CARBON 1M	5% 1/4W
R220	1-247-807-31	CARBON 100	5% 1/4W
R221	1-249-441-11	CARBON 100K	5% 1/4W
R222	1-249-417-11	CARBON 1K	5% 1/4W F
R223	1-249-431-11	CARBON 15K	5% 1/4W
R224	1-249-441-11	CARBON 100K	5% 1/4W
R225	1-249-417-11	CARBON 1K	5% 1/4W F
R226	1-249-435-11	CARBON 33K	5% 1/4W
R227	1-249-441-11	CARBON 100K	5% 1/4W
R228	1-249-441-11	CARBON 100K	5% 1/4W
R229	1-249-417-11	CARBON 1K	5% 1/4W F
R230	1-249-409-11	CARBON 220	5% 1/4W F
R231	1-249-409-11	CARBON 220	5% 1/4W F
R251	1-249-421-11	CARBON 2.2K	5% 1/4W F
R252	1-249-409-11	CARBON 220	5% 1/4W F
R253	1-249-429-11	CARBON 10K	5% 1/4W
R255	1-249-429-11	CARBON 10K	5% 1/4W
R256	1-249-417-11	CARBON 1K	5% 1/4W F
R257	1-247-903-00	CARBON 1M	5% 1/4W
R258	1-249-422-11	CARBON 2.7K	5% 1/4W F
R259	1-249-429-11	CARBON 10K	5% 1/4W
R260	1-249-411-11	CARBON 330	5% 1/4W
R262	1-249-409-11	CARBON 220	5% 1/4W F
R263	1-247-903-00	CARBON 1M	5% 1/4W
R264	1-247-903-00	CARBON 1M	5% 1/4W

PANEL	PRIMARY (E)	SECONDARY
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Ref. No.	Part No.	Description				Remark
R265	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R266	1-249-417-11	CARBON	1K	5%	1/4W	F
R269	1-247-903-00	CARBON	1M	5%	1/4W	
R270	1-247-807-31	CARBON	100	5%	1/4W	
< VARIABLE RESISTOR >						
RV201	1-223-973-11	RES, VAR, CARBON 10K/10K (TREBLE)				
RV202	1-223-973-11	RES, VAR, CARBON 10K/10K (BASS)				
RV204	1-223-811-11	RES, VAR, CARBON 100K/100K (VOLUME)				
RV221	1-223-974-11	RES, VAR, CARBON 50K (MIC LEVEL)				
< SWITCH >						
S101	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)				
S102	1-554-303-21	SWITCH, TACTILE (TUNER)				
S103	1-554-303-21	SWITCH, TACTILE (CD)				
S104	1-554-303-21	SWITCH, TACTILE (MD)				
S105	1-554-303-21	SWITCH, TACTILE (TAPE)				
S106	1-554-303-21	SWITCH, TACTILE (VIDEO2)				
S107	1-554-303-21	SWITCH, TACTILE (VIDEO1)				
S108	1-554-303-21	SWITCH, TACTILE (-20dB MUTING)				
S109	1-554-303-21	SWITCH, TACTILE (SOURCE DIRECT)				
S110	1-554-303-21	SWITCH, TACTILE (KARAOKE PON)				
< VIBRATOR >						
X101	1-579-125-11	VIBRATOR, CERAMIC (8MHz)				

*	1-658-912-11	PRIMARY (E) BOARD *****				
< CONNECTOR >						
CN900	1-564-321-00	PIN, CONNECTOR 2P				
< FUSE >						
△F901	1-532-502-51	FUSE, TIME-LAG (1.25A 250V)(JE,HK,SP)				
△F901	1-576-105-11	FUSE (2.5A 250V)(US,CND)				
△F902	1-532-464-51	FUSE, TIME-LAG (2.5A 250V)(JE,HK,SP)				
< FUSE HOLDER >						
FH901	1-533-293-11	FUSE HOLDER				
FH902	1-533-293-11	FUSE HOLDER (JE,HK,SP)				
FH911	1-533-293-11	FUSE HOLDER				
FH912	1-533-293-11	FUSE HOLDER (JE,HK,SP)				
< RESISTOR >						
△R900	1-202-725-00	SOLID	3.3M	10%	1/2W	(US,CND)
< SWITCH >						
△S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(JE,HK,SP)				

Ref. No.	Part No.	Description	Remark
*	1-658-303-11	SECONDARY BOARD *****	
< CONNECTOR >			
CN901	1-770-966-11	PIN, CONNECTOR (PCB)(V TYPE)6P	
CN902	1-764-326-11	PIN, CONNECTOR (PCB)(V TYPE)3P	
< FUSE >			
△F903	1-576-105-11	FUSE (2.5A 250V)(US,CND)	
△F903	1-532-464-51	FUSE, TIME-LAG (2.5A 250V)(JE,HK,SP)	
△F904	1-576-105-11	FUSE (2.5A 250V)(US,CND)	
△F904	1-532-464-51	FUSE, TIME-LAG (2.5A 250V)(JE,HK,SP)	
< FUSE HOLDER >			
FH903	1-533-293-11	FUSE HOLDER	
FH904	1-533-293-11	FUSE HOLDER	
FH913	1-533-293-11	FUSE HOLDER	
FH914	1-533-293-11	FUSE HOLDER	

MISCELLANEOUS *****			
16	1-773-188-11	WIRE (FLAT TYPE) (23 CORE)	
△62	1-574-902-11	CORD, POWER (JE)	
△62	1-575-651-11	CORD, POWER (HK,SP)	
△62	1-590-771-11	CORD, POWER (US,CND)	
△63	1-569-007-11	ADAPTER, CONVERSION 2P (JE)	
△63	1-569-008-11	ADAPTER, CONVERSION 2P (SP)	
△63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
△F901	1-532-502-51	FUSE, TIME-LAG (1.25A, 250V)(JE,HK,SP)	
△F901	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
△F902	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK,SP)	
△F903	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK,SP)	
△F903	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
△F904	1-532-464-51	FUSE, TIME-LAG (2.5A, 250V)(JE,HK,SP)	
△F904	1-576-105-11	FUSE (2.5A, 250V)(US,CND)	
RV204	1-223-811-11	RES, VAR, CARBON 100K/100K (VOLUME)	
△T901	1-429-598-11	TRANSFORMER, POWER (JE,HK,SP)	
△T901	1-429-599-11	TRANSFORMER, POWER (US,CND)	

***** HARDWARE LIST *****			
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#5	7-685-872-09	SCREW +BVTT 3X8 (S)	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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