TA-EX660/EX770

SERVICE MANUAL

AEP Model
UK Model

TA-EX660/EX770 is the amplifier section in MHC-EX660 and DHC-EX770MD.
The mechanical and electorical specifications of TA-EX660/EX770 is almost same as TA-EX66/EX77 AEP/UK model.
So this manual contains only the points which differ from TA-EX66/EX77.
For the informations not contained in this manual, please refer to the TA-EX66/EX77 service manuals (9-960-931-□□) previously issued.

•PARTS LIST (The difference between TA-EX66/EX77 and TA-EX660/770)

Page	TA-EX66/EX77			TA-EX660/EX770		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
22	1	4-985-925-01	KNOB(JOG)	1	4-985-925-11	KNOB(JOG)
	2	X-4947-837-1	KNOB(VOL)ASSY	2	X-4949-863-1	KNOB(VOL)ASSY
	4	X-4948-359-1	PANEL ASSY, FRONT(EX66)	4	X-4949-867-1	PANEL ASSY, FRONT(EX660)
	4	X-4948-436-1	PANEL ASSY, FRONT(EX77:AEP, UK)	4	X-4949-862-1	PANEL ASSY, FRONT(EX770)
23	* 58	4-985-927-11	PANEL, BACK(EX77:AEP,UK)	* 58	4-985-927-61	PANEL, BACK(EX770)
	* 58	4-985-927-41	PANEL, BACK(EX66:AEP,UK)	* 58	4-985-927-71	PANEL, BACK(EX660)

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

INTEGRATED STEREO AMPLIFIER

SONY®

MICROFILM

9-922-858-11

Sony Corporation
Home A&V Products Company

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Published by Quality Assurance Dept.
(Shibaura)

TA-EX66/EX77

SERVICE MANUAL

AEP Model
UK Model
E Model

TA-EX66/EX77 is the amplifier section in MHC-EX66, DHC-EX77MD/MD77.

Photo: TA-EX77 (AEP, UK model)

SPECIFICATIONS

AEP, UK model:
DIN power output 45 + 45 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output
60 + 60 watts (6 ohms at 1kHz, 10% THD)
Music power output 105 + 105 watts

HK, SP model:
Continuous RMS power output
55 + 55 watts (6 ohms at 1 kHz, 5% THD)
Inputs
CD IN, MD IN (phono jacks): voltage 450 mV, impedance 47 kilohms
TUNER IN, TAPE IN, VIDEO1 IN, VIDEO2/AUX IN (TA-EX66/EX77: AEP, UK model), VIDEO2 IN (TA-EX77: HK, SP model) (phono jacks): voltage 250 mV, impedance 47 kilohms
MIX MIC (phone jack):
sensitivity 1 mV, impedance 10 kilohms or more
Outputs
MD OUT, TAPE OUT, VIDEO1 OUT (phono jacks):
voltage 250 mV, impedance 1 kilohm
PHONES (stereo phone jack):
accepts headphones of 6 ohms or more.
SPEAKER: accepts impedance of 6 to 16 ohms.
Dimensions (w/h/d) incl. projecting parts and controls:
Approx. 280 × 122.5 × 298 mm
Mass Approx. 5.3 kg

General
Power requirements
AEP, UK model: 220 – 230 V AC, 50/60 Hz
HK, SP model: 220 – 240 V AC, 50/60 Hz
Power consumption 125 watts

Design and specifications are subject to change without notice.

• Abbreviation
HK : Hong Kong
SP : Singapore

INTEGRATED STEREO AMPLIFIER

MICROFILM

SONY®

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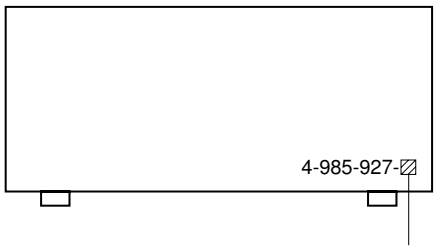
5. ELECTRICAL PARTS LIST 24

MODEL IDENTIFICATION

– BACK PANEL –



TA-EX77 (AEP, UK model) : 1☐ CED/CEK
TA-EX77 (Singapore model) : 2☐ SP
TA-EX77 (Hong Kong model) : 3☐ HK
TA-EX66 (AEP, UK model) : 4☐ CED/CEK
TA-EX66 (Singapore model) : 5☐ SP

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.

Connecting optional AV components

To enhance your system, you can connect optional components using audio cords (sold separately). Refer to the instructions of each component. Before making connections, take the cap off the jacks to be used, and keep it for future use.

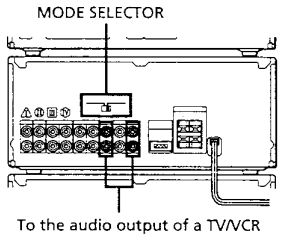
Connecting a TV/VCR

Make sure to match the color of the plugs and the jacks.

For DHC-MD77/EX77MD

Connect a TV/VCR to VIDEO1, VIDEO2 (DHC-MD77) or VIDEO2/AUX (DHC-EX77MD) on the amplifier.

Set MODE SELECTOR to ANALOG REC when you connect a TV/VCR to VIDEO2 (DHC-MD77) or VIDEO2/AUX (DHC-EX77MD).



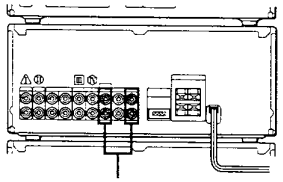
NOTE:

DHC-MD77:
TA-EX77; Hong Kong, Singapore model
DHC-EX77MD:
TA-EX77; AEP, UK model
MHC-EX66:
TA-EX66; AEP, UK, Singapore model

Connecting optional AV components (continued)

For MHC-EX66

Connect a TV/VCR to VIDEO1 or VIDEO2/AUX on the amplifier.



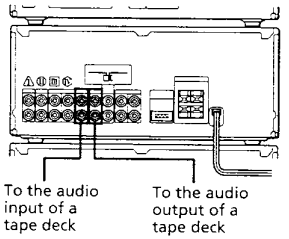
To listen to the sound of TV/VCR

Turn FUNCTION until the VIDEO 1, VIDEO 2 (DHC-MD77) or VIDEO 2/AUX (other models) indicator lights up.

Connecting audio components

Connecting a tape deck

Connect a tape deck to TAPE on the amplifier.
Make sure to match the color of the plugs and the jacks.

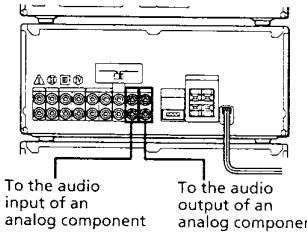


To listen to the sound of a tape deck

Turn FUNCTION until the TAPE indicator lights up.

Connecting other analog components

Connect an analog component to VIDEO1 on the amplifier.
Make sure to match the color of the plugs and the jacks.



To listen to the sound of the connected component

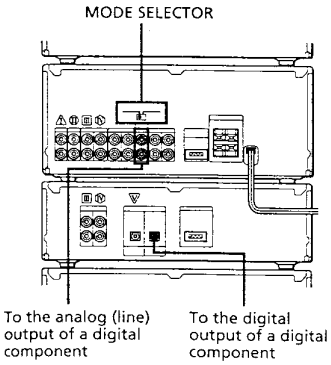
Turn FUNCTION until the VIDEO 1 indicator lights up.

Connecting digital components

For DHC-MD77/EX77MD

You can make a digital recording onto the system's own MD deck from the connected digital component (e.g., a DAT deck, BS tuner or another MD deck).

- Connect a digital component to VIDEO 2 DIGITAL IN on the MD deck using an optical cable.
- Connect a digital component to VIDEO2 (DHC-MD77) or VIDEO2/AUX (DHC-EX77MD) on the amplifier using audio cords.
- Set MODE SELECTOR to DIGITAL REC.



To listen to the sound of the connected component

Turn FUNCTION until the VIDEO 2 (DHC-MD77) or VIDEO 2/AUX (DHC-EX77MD) indicator lights up.

Tip

A built-in sampling rate converter automatically converts the sampling frequency of various digital sources to the 44.1 kHz sampling rate of the MD deck. This lets you record sources such as 32- and 48-kHz DAT or satellite broadcasts, as well as CDs and other MDs.

Notes

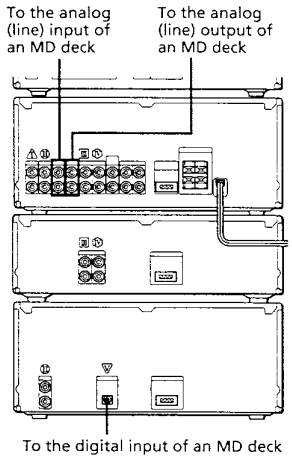
- If "Din Unlock" or "Cannot Copy" appears in the display, you cannot make a digital recording. In this case, record the sound source with MODE SELECTOR set to ANALOG REC.
- When you make a digital recording using an optical cable, you cannot adjust the recording level.
- When audio cords are not connected to VIDEO2 (DHC-MD77) or VIDEO2/AUX (DHC-EX77MD) on the amplifier, you cannot listen to the digital component.

This section is extracted from instruction manual.

For MHC-EX66

You can make a digital recording onto the connected MD deck from the system's own CD player. You can also make an analog recording if you connect the MD deck using audio cords.

- Connect an MD deck to DIGITAL OUT on the CD player using an optical cable.
- Connect an MD deck to MD on the amplifier using audio cords.



To listen to the sound of the MD deck

Turn FUNCTION until the MD indicator lights up.

Connecting a turntable with an MM cartridge

Connect a turntable to VIDEO2 (DHC-MD77) or VIDEO2/AUX (other models) on the amplifier using the optional MM cartridge equalizer and the audio cords.

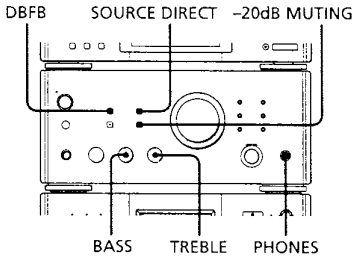
Set MODE SELECTOR to ANALOG REC (DHC-MD77/EX77MD only).

To listen to the sound of a turntable, turn FUNCTION until the VIDEO 2 (DHC-MD77) or VIDEO 2/AUX (other models) indicator lights up.

Other Features

Adjusting the sound

You can adjust the bass/treble, mute the sound or listen to the source directly.



To	Do this
Adjust the bass sound	Turn BASS clockwise to increase and counterclockwise to decrease.
Adjust the treble sound	Turn TREBLE clockwise to increase and counterclockwise to decrease.
Reinforce the bass sound	Press DBFB* until the LOW or HIGH** indicator lights up. Press the button repeatedly until the indicator turns off to cancel.
Mute the sound	Press –20dB MUTING to turn on the indicator. Press the button again to return to the original volume.

* DBFB: Dynamic Bass Feedback.
**HIGH is more effective than LOW.

To listen to music without any audio effects

Press SOURCE DIRECT to turn on the indicator.

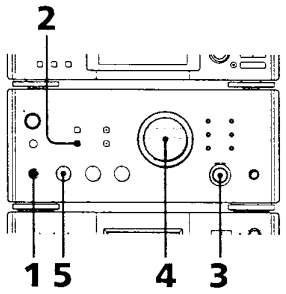
The system outputs the music signals directly without passing them through any circuit. Press the button again to cancel.

To listen through the headphones

Connect the headphones to PHONES.

Singing along: Karaoke

You can sing along with any stereo CD, MD or tape by turning down the singer's voice. You need to connect an optional microphone.



1 Connect an optional microphone to MIX MIC.

2 Press KARAOKE PON.
The indicator lights up.

3 Select the source, then start playing.

4 Turn VOLUME to adjust the total volume of the system.

5 Turn MIC LEVEL to adjust the microphone volume.

When you are done

Disconnect the microphone from MIX MIC and press KARAOKE PON to turn off the indicator.

Notes

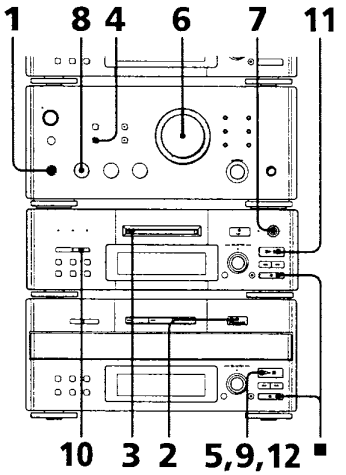
- The instrumental sound may be reduced as well as the singer's voice when the sound is recorded in monaural.
- The singer's voice may not be reduced when:
  - only a few instruments are playing.
  - a duet is being played.
  - the source has strong echoes or chorus.
  - the singer's voice deviates from the center.

Tip

If acoustic feedback (howling) occurs, move the microphone away from the speakers or change the direction of the microphone.

Mixing and recording sounds

For DHC-MD77/EX77MD



1 Connect an optional microphone to MIX MIC.

2 Place a CD on the disc tray.

3 Insert a recordable MD.

4 Press KARAOKE PON.
The indicator lights up.

5 Start playing the CD.

6 Turn VOLUME to adjust the total volume of the system.

7 Turn REC LEVEL to adjust the recording level.
See "Adjusting the recording level" on page 37.

8 Turn MIC LEVEL to adjust the microphone volume.

9 Select the track you want on the CD and set the CD player to pause.

10 Press ● REC on the MD deck.
The MD deck stands by for recording.

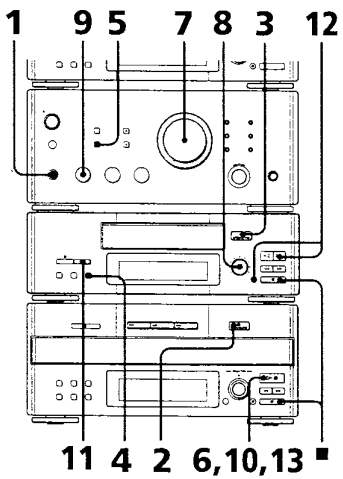
11 Press ▷ II on the MD deck.
Recording starts.

12 Press ▷ II on the CD player.
CD playback starts. Start singing along with the music.

To stop recording

Press ■ on the MD deck and the CD player.

For MHC-EX66



1 Connect an optional microphone to MIX MIC.

2 Place a CD on the disc tray.

3 Insert a blank tape.

4 Press DIRECTION repeatedly to select the side you want to record on.

5 Press KARAOKE PON.
The indicator lights up.

6 Start playing the CD.

7 Turn VOLUME to adjust the total volume of the system.

Singing along: Karaoke (continued)

8 Turn REC LEVEL to adjust the recording level.
See "Recording on a tape manually" on page 52.

9 Turn MIC LEVEL to adjust the microphone volume.

10 Select the track you want on the CD and set the CD player to pause.

11 Press ● REC on the tape deck.
The tape deck stands by for recording.

12 Press II or ▷ on the tape deck.
Recording starts.

13 Press ▷ II on the CD player.
CD playback starts. Start singing along with the music.

To stop recording

Press ■ on the tape deck and the CD player.

When you are done

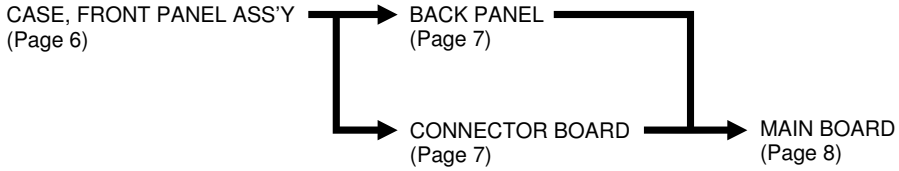
Disconnect the microphone from MIX MIC and press KARAOKE PON to turn off the indicator.

Tips

- If you want to record your voice only through the microphone, you can do so by selecting the CD with the FUNCTION control and not playing a CD.
- When you connect the microphone, the MD deck performs analog recording (for DHC-MD77/EX77MD).

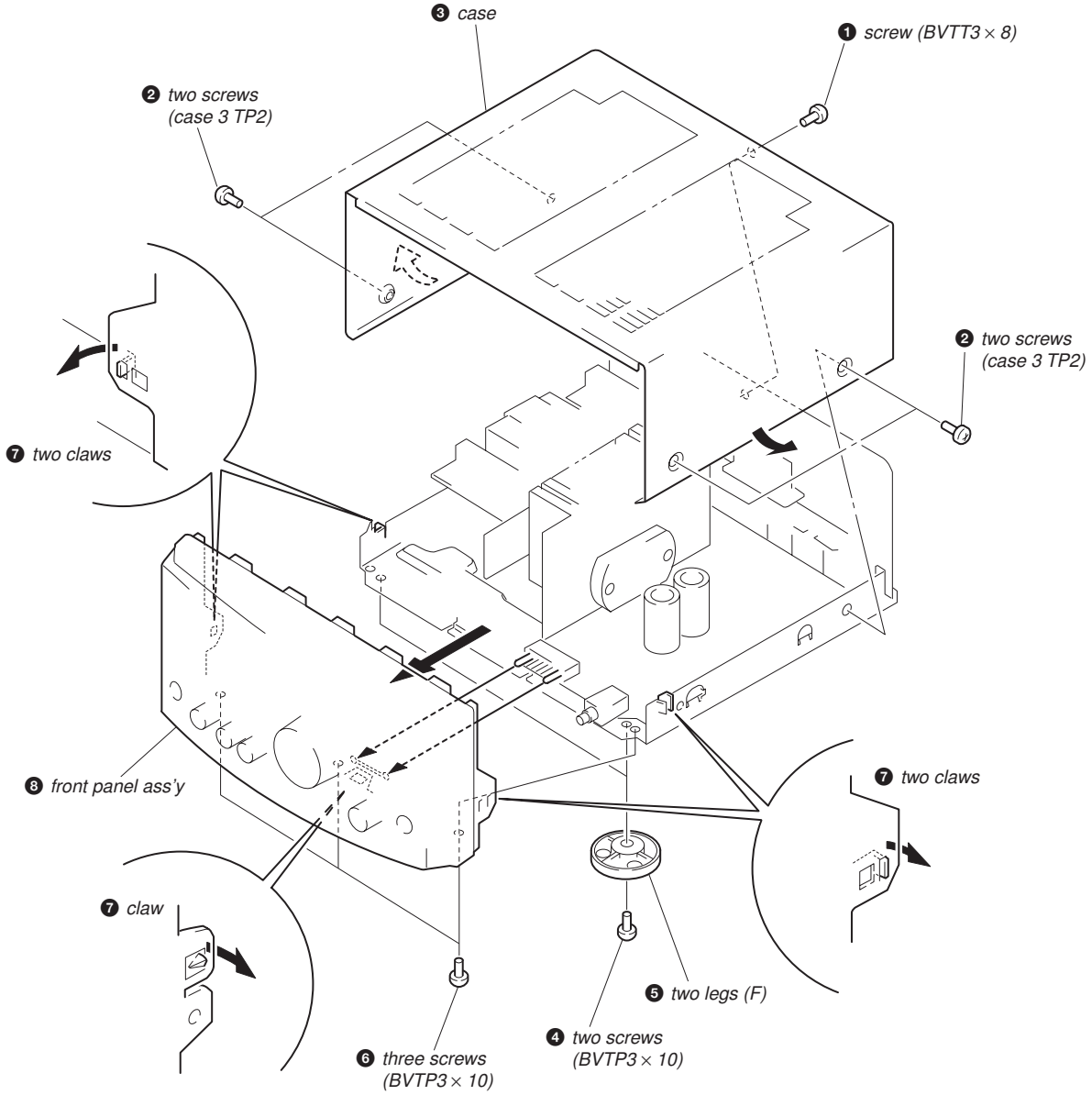
SECTION 2
DISASSEMBLY

• This set can be disassembled in the order shown below.

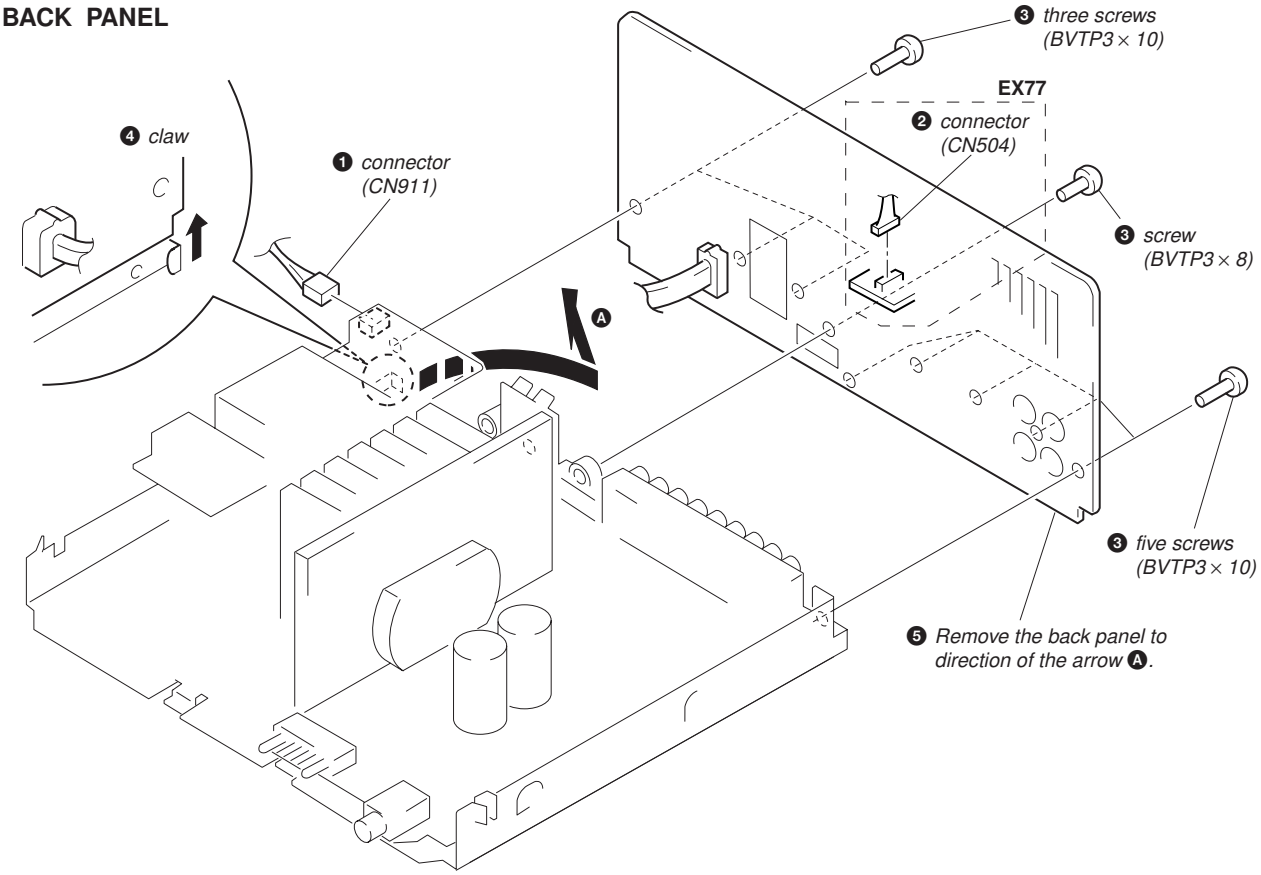


Note: Follow the disassembly procedure in the numerical order given.

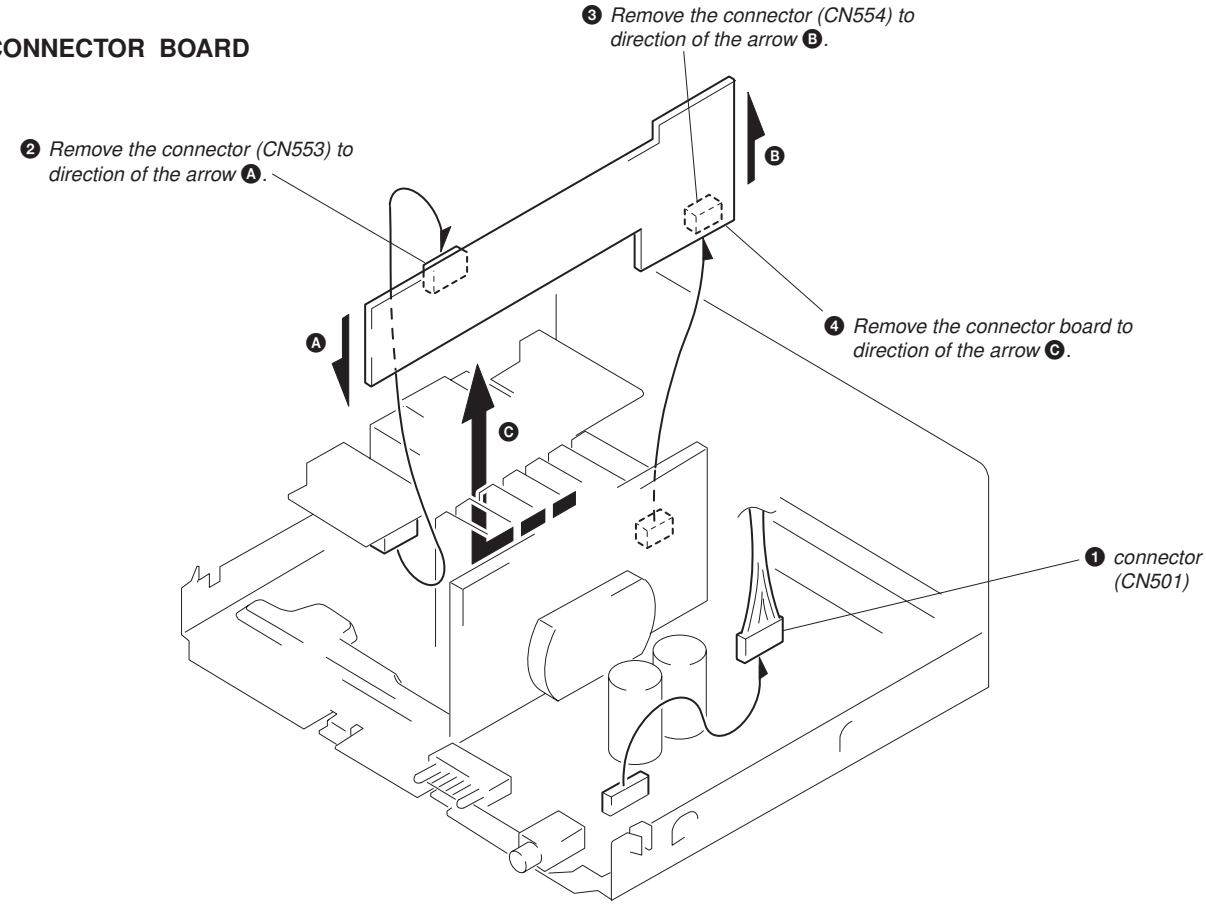
CASE, FRONT PANEL ASS'Y



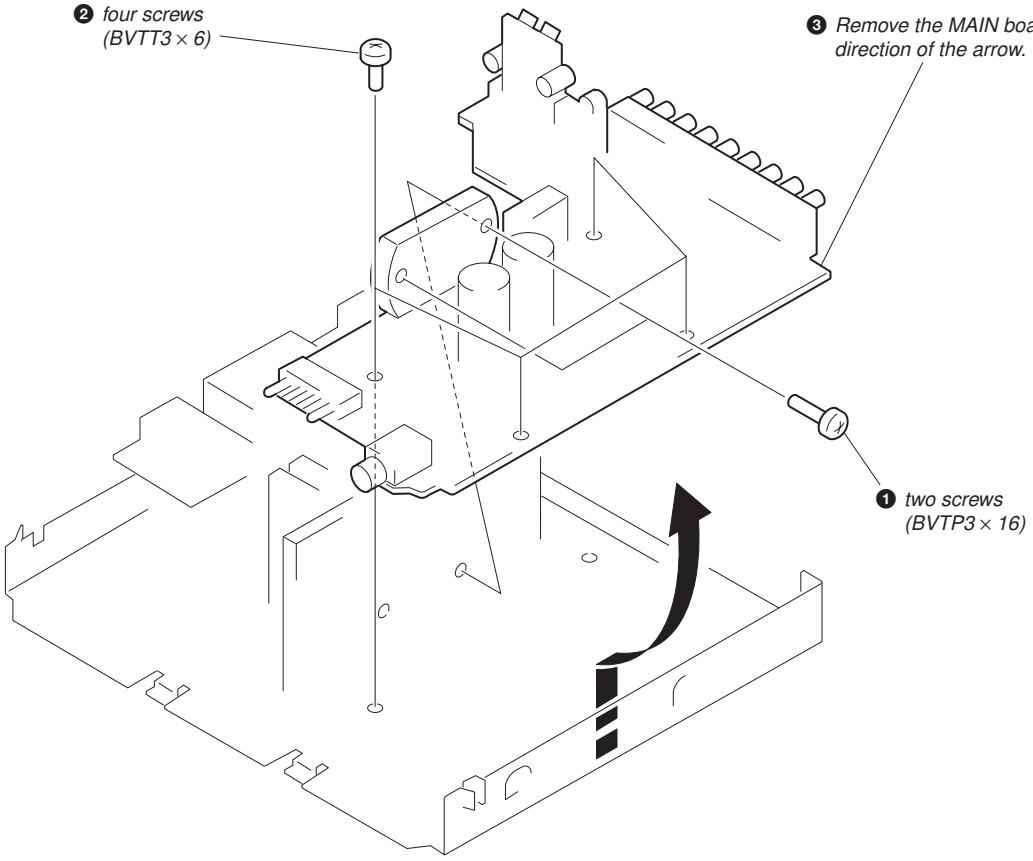
BACK PANEL



CONNECTOR BOARD



MAIN BOARD


❷ four screws
(BVTT3 × 6)
❸ Remove the MAIN board to direction of the arrow.
❶ two screws
(BVTP3 × 16)

SECTION 3
DIAGRAMS

3-1. IC PIN FUNCTION DESCRIPTION

• PANEL BOARD IC101 MB89193A-157 (SYSTEM CONTROLLER)

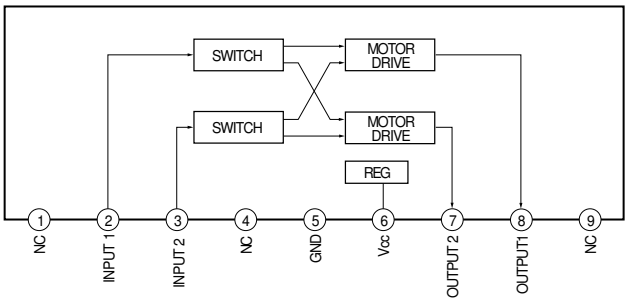
Pin No.	Pin Name	I/O	Function
1	MIC-IN	I	Plug in detection signal input of the MIX MIC jack (J201) Insert the microphone plug with the jack when "H"
2	STANBY	O	Power on/off control signal output terminal "H": power on, "L": standby mode
3	K-PON	O	Control signal output to the KARAOKE PON circuit "H": KARAOKE PON on
4	KEY0	I	Key input terminal (A/D input) POWER key (S101) input
5	VSS	—	Ground terminal
6	$\overline{\text{RST}}$	I	Power on reset signal input from the reset signal generator (IC103) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
7	XIN	I	System clock input terminal (4 MHz)
8	XOUT	O	System clock output terminal (4 MHz)
9	VSS	—	Ground terminal
10	AUB-OUT	O	Output terminal of the audio bus signal
11	AUB-IN	I	Input terminal of the audio bus signal
12	SIRCS-IN	I	Sircs signal input from the remote control receiver (IC102)
13	VOL-UP	O	Motor control signal output to the volume up/down motor driver IC (IC104) "H": volume up
14	VOL-DOWN	O	Motor control signal output to the volume up/down motor driver IC (IC104) "H": volume down
15	–20dB MUTE	O	Control signal output of the –20 dB mute "H": –20 dB mute on
16	DIRECT	O	Control signal output to the SOURCE DIRECT circuit "H": SOURCE DIRECT on
17	DBFB LEVEL	O	DBFB level select signal output terminal "H" : DBFB LOW, "L": DBFB HIGH
18	MUTE	O	Control signal output of the line mute "H": line mute on
19	KEY1	I	Key input terminal (A/D input) –20 dB MUTING, SOURCE DIRECT, KARAOKE PON, DBFB keys (S104 to S107) and rotary encoder (S110) for the FUNCTION
20	DBFB ON/OFF	O	Control signal output to the DBFB circuit "H": DBFB off, "L": DBFB on
21	OPEN	—	Not used (open)
22	VSS	—	Ground terminal
23	VCC	—	Power supply terminal (+5V)
24	ANALOG/ DIGITAL	I	Digital/analog recording mode select input (ANALOG/DIGITAL select switch (S901) input) of the AUX/VIDEO 2 IN terminal "H": analog recording mode, "L": digital recording mode (TA-EX77 only)
25	FUNCA	O	Function select signal output terminal *1
26	FUNCB	O	
27	FUNCC	O	
28	VCC	—	Power supply terminal (+5V)

*1

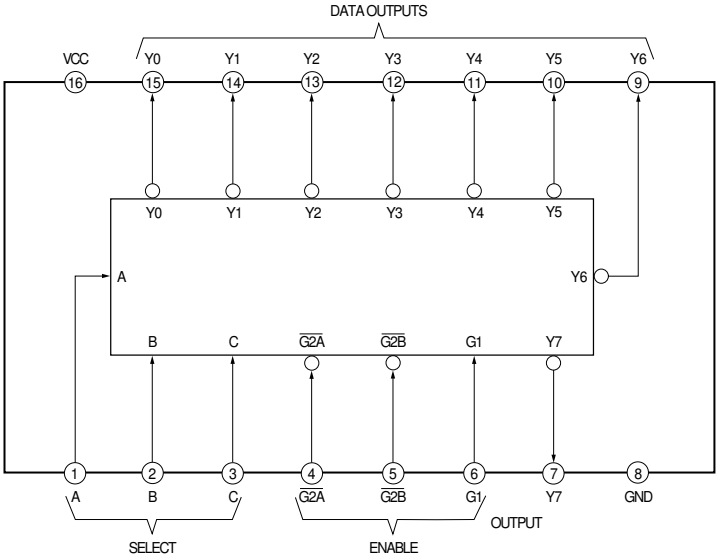
Terminal / Function	FUNCA (pin ㉕)	FUNCB (pin ㉖)	FUNCC (pin ㉗)
TAPE	"H"	"H"	"H"
VIDEO 2	"L"	"H"	"H"
VIDEO 1	"H"	"L"	"H"
MD	"L"	"L"	"H"
CD	"L"	"H"	"L"
TUNER	"H"	"L"	"L"

• IC Block Diagrams

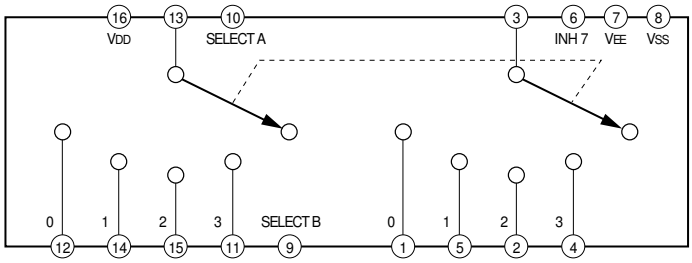
IC104 BA6208



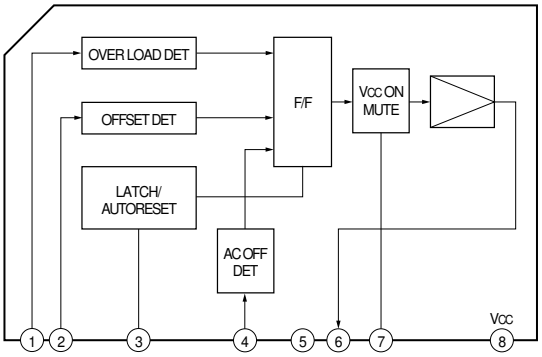
IC105 SN74HC138AN



IC203, 503 MC14052BCP

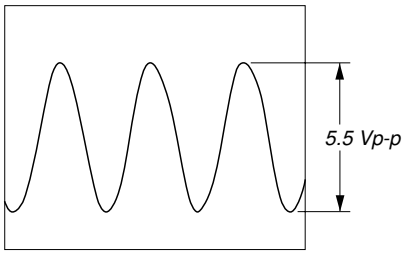


IC701 µPC1237HA



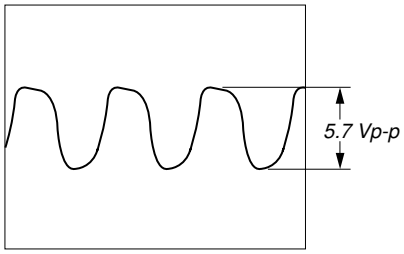
• Waveforms

❶ IC101 ⑦ (XIN)



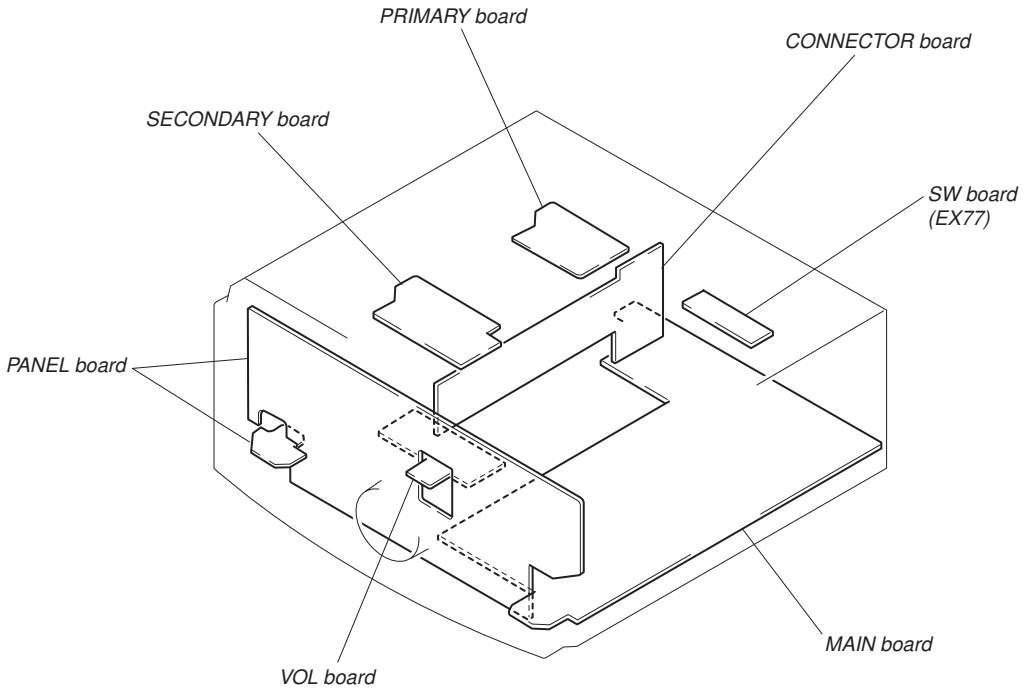
4 MHz

❷ IC101 ⑧ (XOUT)



4 MHz

• **Circuit Boards Location**



Note on Schematic Diagram:

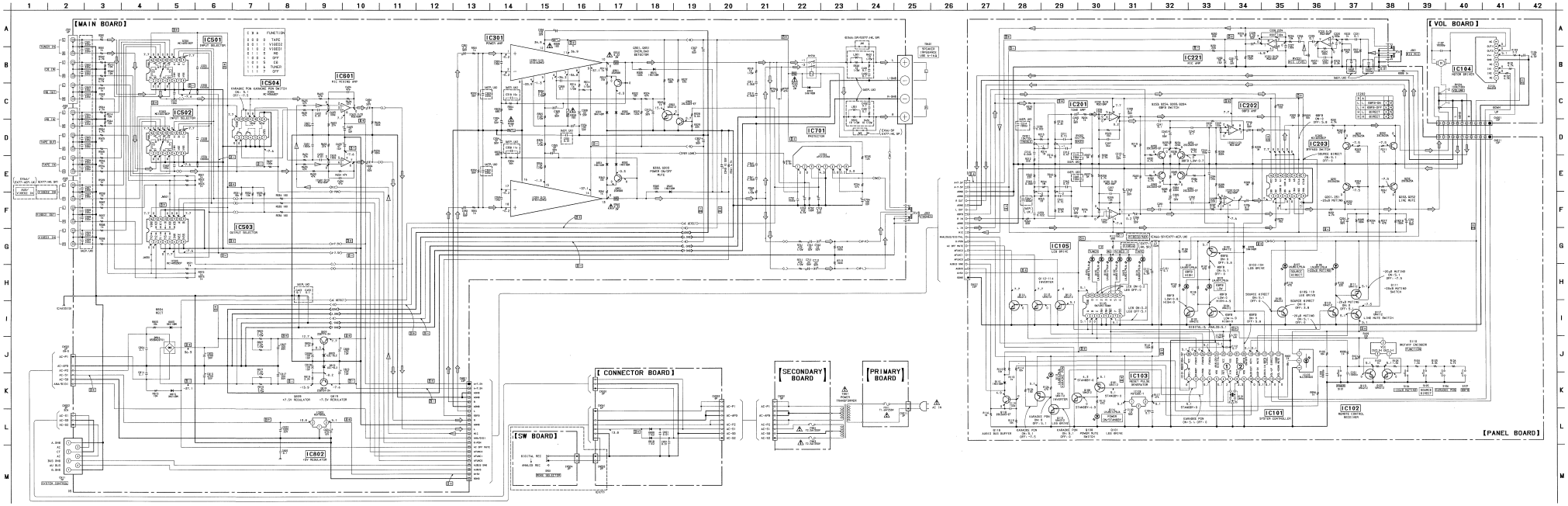
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

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

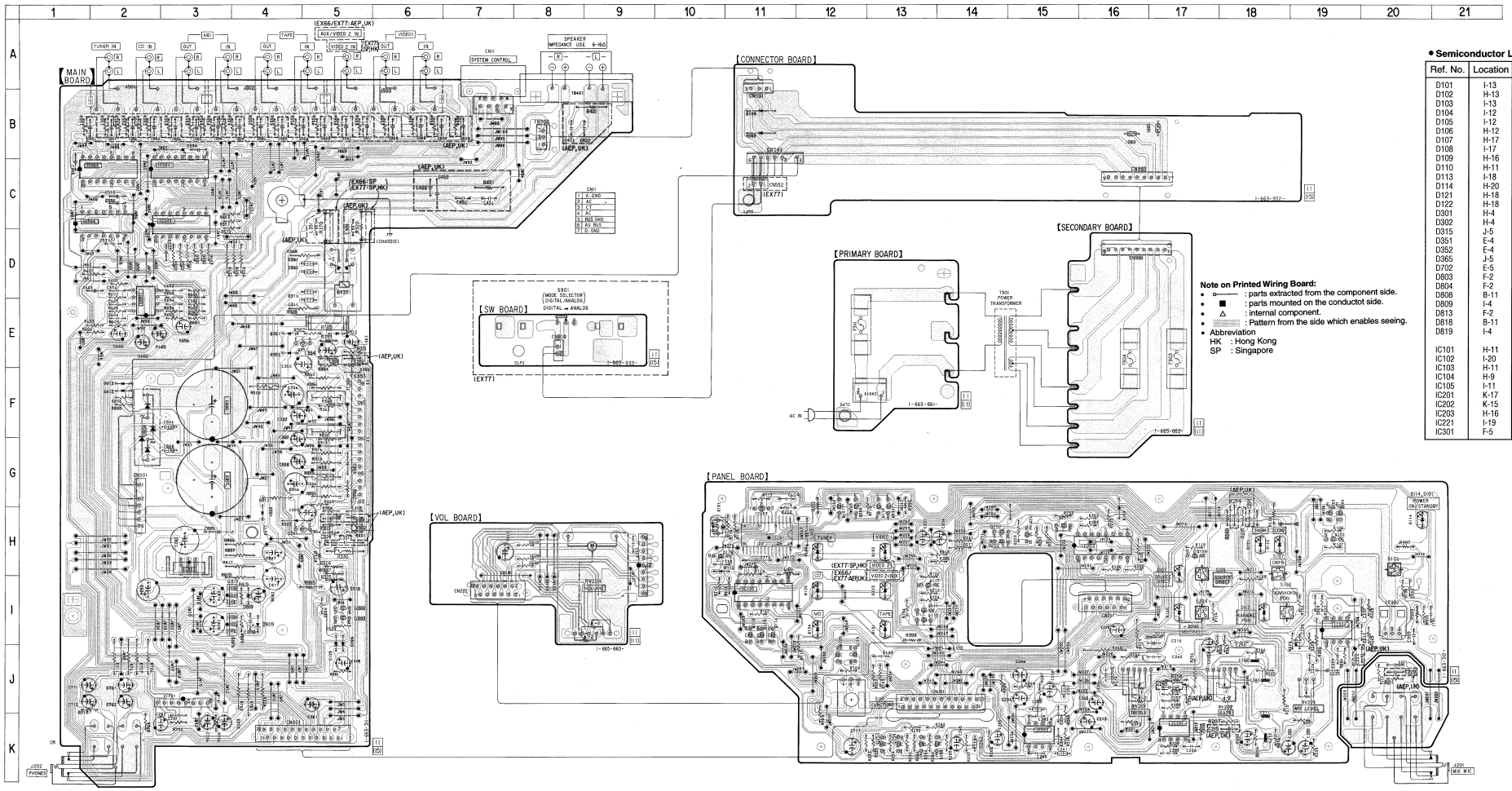
- B+ : B+ Line.
- B− : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark :FUNCTION switch TUNER position
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : TUNER input
  ▷ : MIC input
- Abbreviation
  HK : Hong Kong
  SP : Singapore

3-2. SCHEMATIC DIAGRAM

• See page 9 for IC Pin Function Description, see page 10 for IC Block Diagrams, see page 11 for Waveforms, and see page 13 for notes.



3-3. PRINTED WIRING BOARDS • See page 12 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	I-13	IC501	C-3
D102	H-13	IC502	C-2
D103	I-13	IC503	C-3
D104	I-12	IC504	C-2
D105	I-12	IC601	E-2
D106	H-12	IC701	J-3
D107	H-17	IC802	H-3
D108	I-17		
D109	H-16	Q101	H-12
D110	H-11	Q102	H-19
D113	I-18	Q103	H-19
D114	H-20	Q104	H-19
D121	H-18	Q108	H-12
D122	H-18	Q109	H-17
D301	H-4	Q110	I-13
D302	H-4	Q111	I-13
D315	J-5	Q112	I-11
D351	E-4	Q113	I-11
D352	E-4	Q114	I-11
D365	J-5	Q115	H-13
D702	E-5	Q116	H-13
D803	F-2	Q117	I-13
D804	F-2	Q118	H-10
D808	B-11	Q119	J-12
D809	I-4	Q120	J-12
D813	F-2	Q201	H-15
D818	B-11	Q202	H-14
D819	I-4	Q251	H-15
		Q252	H-14
IC101	H-11	Q253	K-13
IC102	I-20	Q254	K-13
IC103	H-11	Q283	K-14
IC104	H-9	Q284	K-13
IC105	I-11	Q301	H-4
IC201	K-17	Q302	I-5
IC202	K-15	Q303	I-5
IC203	H-16	Q351	E-5
IC221	I-19	Q809	I-4
IC301	F-5	Q819	I-4

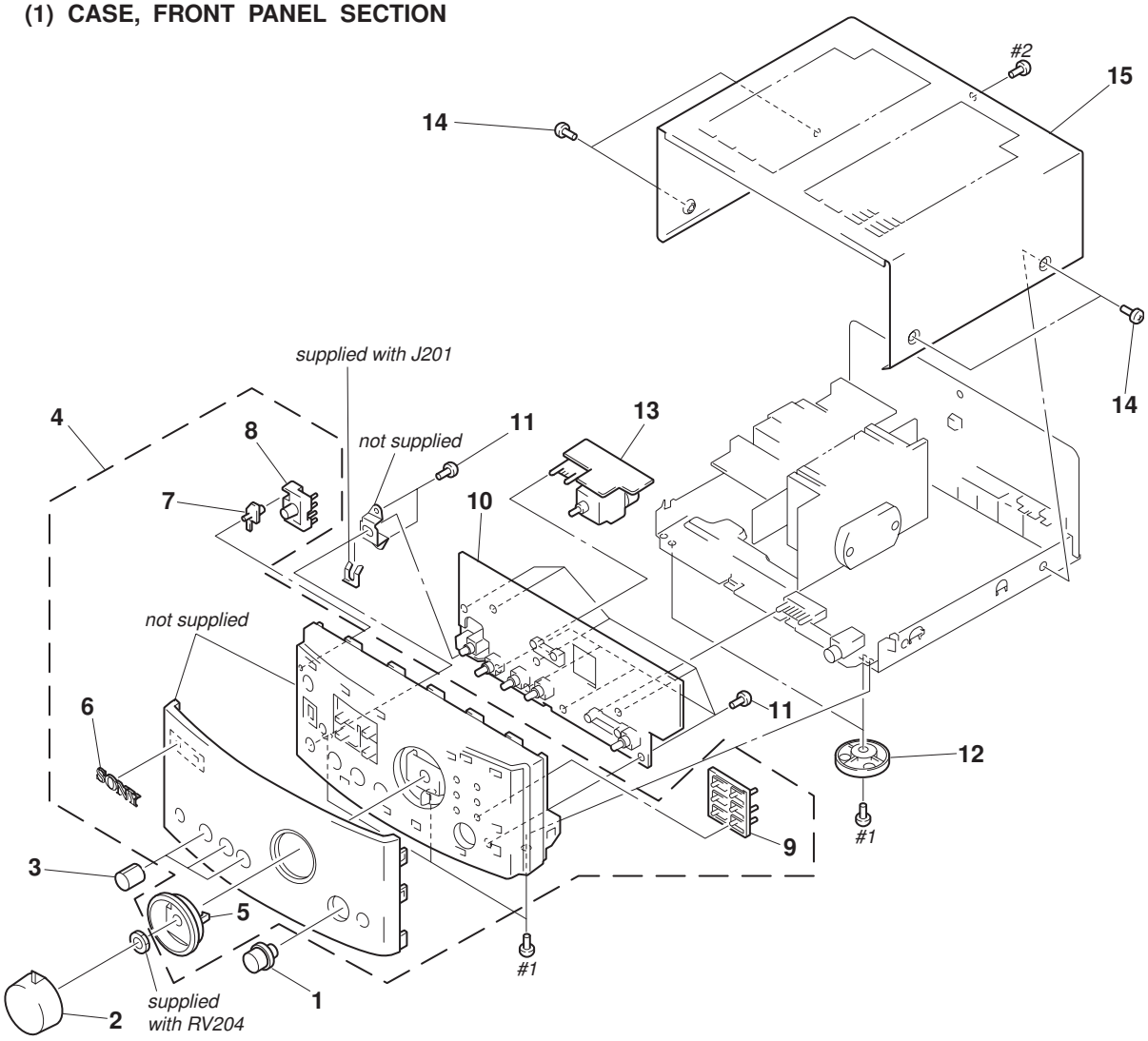
SECTION 4
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearrance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  HK : Hong Kong
  SP : Singapore
- 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 are given in the last of the electrical parts list.

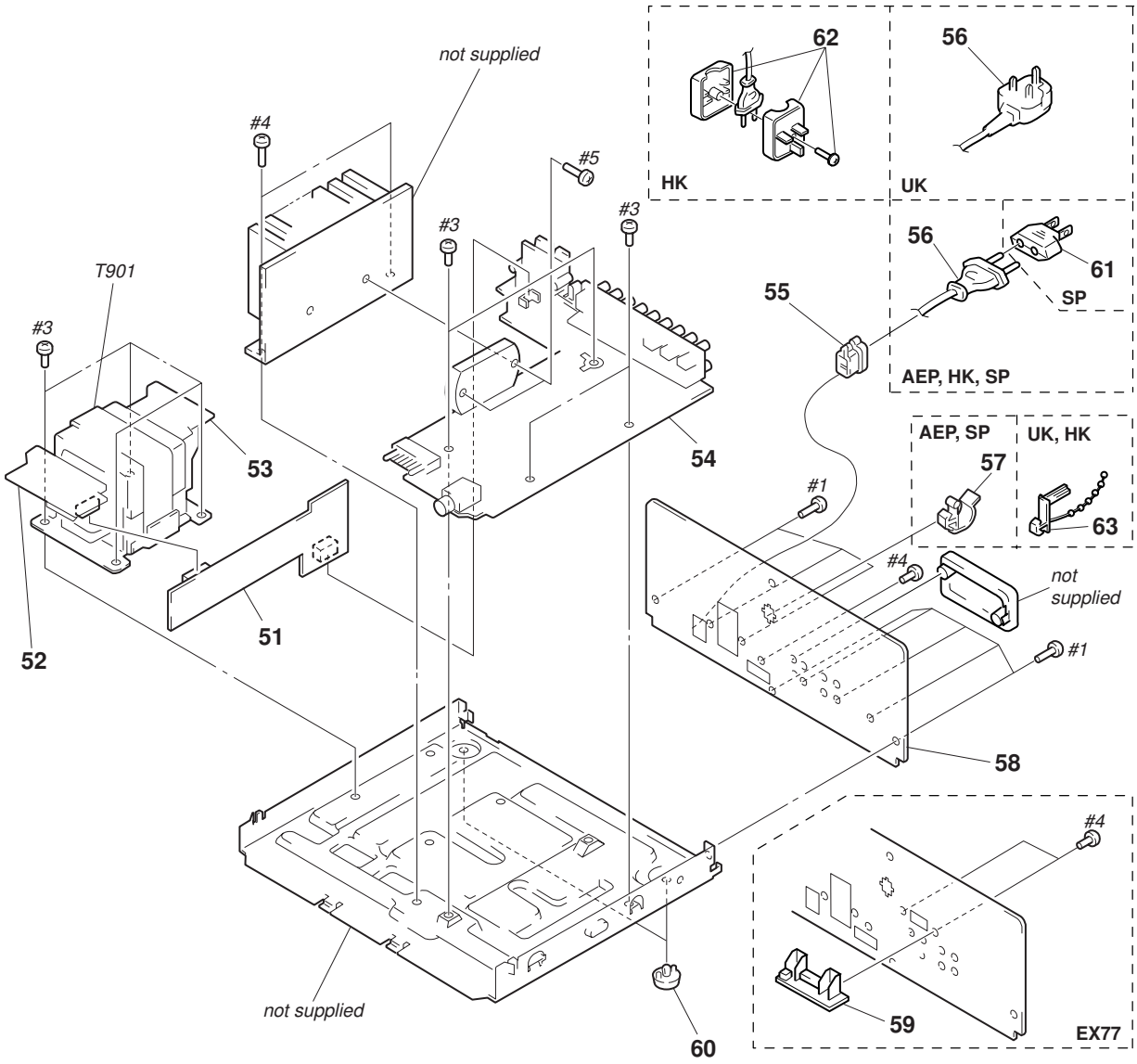
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) CASE, FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	4-985-925-01	KNOB (JOG)	
2	X-4947-837-1	KNOB (VOL) ASSY	
3	4-985-926-01	KNOB	
4	X-4947-655-1	PANEL ASSY, FRONT (EX77: SP, HK)	
4	X-4948-359-1	PANEL ASSY, FRONT (EX66)	
4	X-4948-436-1	PANEL ASSY, FRONT (EX77: AEP, UK)	
5	4-985-922-01	RING, ORNAMENTAL	
6	4-962-708-01	EMBLEM (4-A), SONY	
7	4-985-918-01	INDICATOR (POWER)	
8	4-985-917-01	BUTTON (POWER)	
9	4-985-920-01	INDICATOR (6)	
* 10	A-4398-059-A	PANEL BOARD, COMPLETE (AEP, UK)	
* 10	A-4398-061-A	PANEL BOARD, COMPLETE (SP, HK)	
11	4-951-620-01	SCREW (2.6X8), +BVTP	
12	4-977-699-11	LEG (F)	
* 13	1-665-663-11	VOL BOARD	
14	3-363-099-01	SCREW (CASE 3 TP2)	
15	4-978-245-11	CASE	

(2) MAIN SECTION



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	1-663-932-11	CONNECTOR BOARD	
* 52	1-665-662-11	SECONDARY BOARD	
* 53	1-665-661-11	PRIMARY BOARD	
* 54	A-4398-060-A	MAIN BOARD, COMPLETE (EX77: AEP, UK)	
* 54	A-4398-062-A	MAIN BOARD, COMPLETE (EX77: HK, SP)	
* 54	A-4403-012-A	MAIN BOARD, COMPLETE (EX66: SP)	
* 54	A-4403-013-A	MAIN BOARD, COMPLETE (EX66: AEP, UK)	
* 55	3-703-244-00	BUSHING (2104), CORD	
⚠56	1-575-651-11	CORD, POWER (AEP, HK, SP)	
⚠56	1-696-570-21	CORD, POWER (UK)	
* 57	4-949-235-01	HOOK (AEP, SP)	

Ref. No.	Part No.	Description	Remark
* 58	4-985-927-11	PANEL, BACK (EX77: AEP, UK)	
* 58	4-985-927-21	PANEL, BACK (EX77: SP)	
* 58	4-985-927-31	PANEL, BACK (EX77: HK)	
* 58	4-985-927-41	PANEL, BACK (EX66: AEP, UK)	
* 58	4-985-927-51	PANEL, BACK (EX66: SP)	
* 59	1-663-933-11	SW BOARD (EX77)	
60	4-965-822-01	FOOT	
⚠61	1-569-008-11	ADAPTOR, CONVERSION 2P (SP)	
⚠62	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
63	4-956-370-02	BAND, PLUG FIXED (UK, HK)	
⚠T901	1-431-301-11	TRANSFORMER, POWER	

CONNECTOR MAIN

SECTION 5
ELECTRICAL PARTS LIST

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
- Abbreviation
  HK : Hong Kong
  SP : Singapore
- 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
*	1-663-932-11	CONNECTOR BOARD			
		**********			
		< CAPACITOR >			
C821	1-136-153-00	FILM	0.01uF	5%	50V
C831	1-136-153-00	FILM	0.01uF	5%	50V
		< CONNECTOR >			
* CN531	1-569-499-11	PIN, CONNECTOR 3P			
CN541	1-770-966-11	PIN, CONNECTOR (PCB) (V TYPE) 6P			
CN552	1-764-325-11	PIN, CONNECTOR (PCB) (V TYPE) 2P (EX77)			
* CN553	1-569-504-11	PIN, CONNECTOR 9P			
		< DIODE >			
D808	8-719-023-05	DIODE 11E2-TA2B			
D818	8-719-023-05	DIODE 11E2-TA2B			
**********					
*	A-4403-012-A	MAIN BOARD, COMPLETE (EX66: SP)			
*	A-4403-013-A	MAIN BOARD, COMPLETE (EX66: AEP, UK)			
*	A-4398-060-A	MAIN BOARD, COMPLETE (EX77: AEP, UK)			
*	A-4398-062-A	MAIN BOARD, COMPLETE (EX77: HK, SP)			
		**********			
*	4-942-204-01	PLATE, GROUND			
	7-685-871-01	SCREW +BVTT	3X6 (S)		
		< CAPACITOR >			
C301	1-126-045-11	ELECT	2.2uF	20%	50V
C302	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C303	1-162-282-31	CERAMIC	100PF	10%	50V
C304	1-126-868-11	ELECT	47uF	20%	50V
C305	1-126-868-11	ELECT	47uF	20%	50V
C306	1-124-122-11	ELECT	100uF	20%	50V
C307	1-126-059-11	ELECT	10uF	20%	50V
C308	1-126-233-11	ELECT	22uF	20%	50V
C309	1-164-159-11	CERAMIC	0.1uF		50V
C310	1-136-163-00	FILM	0.068uF	5%	50V
C311	1-136-163-00	FILM	0.068uF	5%	50V
C312	1-126-868-11	ELECT	47uF	20%	50V
C318	1-162-200-31	CERAMIC	11PF	5%	50V
					(AEP, UK)
C331	1-162-306-11	CERAMIC	0.01uF	20%	16V
					(AEP, UK)
C340	1-126-059-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remark
C351	1-126-045-11	ELECT	2.2uF	20%	50V
C352	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C353	1-162-282-31	CERAMIC	100PF	10%	50V
C354	1-126-868-11	ELECT	47uF	20%	50V
C355	1-126-868-11	ELECT	47uF	20%	50V
C356	1-124-122-11	ELECT	100uF	20%	50V
C357	1-126-059-11	ELECT	10uF	20%	50V
C358	1-162-200-31	CERAMIC	11PF	5%	50V
					(AEP, UK)
C360	1-136-163-00	FILM	0.068uF	5%	50V
C361	1-136-163-00	FILM	0.068uF	5%	50V
C401	1-164-159-11	CERAMIC	0.1uF		50V
					(AEP, UK)
C402	1-164-159-11	CERAMIC	0.1uF		50V
					(AEP, UK)
C403	1-164-159-11	CERAMIC	0.1uF		50V
					(AEP, UK)
C451	1-164-159-11	CERAMIC	0.1uF		50V
					(AEP, UK)
C452	1-164-159-11	CERAMIC	0.1uF		50V
					(AEP, UK)
C453	1-164-159-11	CERAMIC	0.1uF		50V
					(AEP, UK)
C501	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C502	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C503	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C504	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C505	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C506	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C507	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C508	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C509	1-162-286-31	CERAMIC	220PF	10%	50V
					(AEP, UK)
C510	1-162-282-31	CERAMIC	100PF	10%	50V
C531	1-162-306-11	CERAMIC	0.01uF	20%	16V
C532	1-162-306-11	CERAMIC	0.01uF	20%	16V
C533	1-162-306-11	CERAMIC	0.01uF	20%	16V
C534	1-162-306-11	CERAMIC	0.01uF	20%	16V

Ref. No.	Part No.	Description			Remark
C551	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C552	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C553	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C554	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C555	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C556	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C557	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C558	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C559	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C560	1-162-282-31	CERAMIC	100PF	10%	50V
C601	1-162-294-31	CERAMIC	0.001uF	10%	50V
C602	1-162-306-11	CERAMIC	0.01uF	20%	16V
C603	1-162-282-31	CERAMIC	100PF	10%	50V
C604	1-162-215-31	CERAMIC	47PF	5%	50V
C605	1-126-022-11	ELECT	47uF	20%	16V
C606	1-126-059-11	ELECT	10uF	20%	50V
C651	1-162-294-31	CERAMIC	0.001uF	10%	50V
C652	1-162-306-11	CERAMIC	0.01uF	20%	16V
C653	1-162-282-31	CERAMIC	100PF	10%	50V
C654	1-162-215-31	CERAMIC	47PF	5%	50V
C655	1-126-022-11	ELECT	47uF	20%	16V
C656	1-126-059-11	ELECT	10uF	20%	50V
C701	1-162-294-31	CERAMIC	0.001uF	10%	50V
C702	1-104-666-11	ELECT	220uF	20%	6.3V
C703	1-126-045-11	ELECT	2.2uF	20%	50V
C704	1-126-052-11	ELECT	100uF	20%	10V
C711	1-126-233-11	ELECT	22uF	20%	50V
C712	1-126-233-11	ELECT	22uF	20%	50V
C761	1-126-233-11	ELECT	22uF	20%	50V
C762	1-126-233-11	ELECT	22uF	20%	50V
C804	1-136-165-00	FILM	0.1uF	5%	50V
C805	1-126-138-11	ELECT	4700uF	20%	50V
C807	1-126-052-11	ELECT	100uF	20%	35V
C808	1-126-052-11	ELECT	100uF	20%	10V
C809	1-124-997-11	ELECT	470uF	20%	10V
C814	1-136-165-00	FILM	0.1uF	5%	50V
C815	1-126-138-11	ELECT	4700uF	20%	50V
C817	1-126-052-11	ELECT	100uF	20%	35V
C818	1-126-052-11	ELECT	100uF	20%	10V
C819	1-124-997-11	ELECT	470uF	20%	10V
C822	1-126-942-61	ELECT	1000uF	20%	25V
C824	1-124-997-11	ELECT	470uF	20%	10V
C825	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN11	1-770-158-21	HOUSING, CONNECTOR 7P (SYSTEM CONTROL)			
CN501	1-770-966-11	PIN, CONNECTOR (PCB) (V TYPE) 6P			
CN502	1-569-490-11	SOCKET, CONNECTOR 3P			
CN801	1-764-289-11	PIN, CONNECTOR (PC BOARD) 22P			
		< DIODE >			
D301	8-719-987-63	DIODE 1N4148M			
D302	8-719-987-63	DIODE 1N4148M			
D315	8-719-987-63	DIODE 1N4148M			
D351	8-719-987-63	DIODE 1N4148M			
D352	8-719-987-63	DIODE 1N4148M			
D365	8-719-987-63	DIODE 1N4148M			
D702	8-719-987-63	DIODE 1N4148M			
D803	8-719-987-63	DIODE 1N4148M			
D804	8-719-510-68	DIODE D5SBA20F01			
D809	8-719-933-54	DIODE HZS9A2L			
D813	8-719-987-63	DIODE 1N4148M			
D819	8-719-933-54	DIODE HZS9A2L			
		< IC >			
IC301	8-749-900-24	IC STK-4162MK2			
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/PIN JACK >			
J202	1-764-256-21	JACK (LARGE TYPE) (PHONES)			
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 OUT, TAPE IN)			
J503	1-770-015-11	JACK, PIN 6P (AUX/VIDEO2 IN, VIDEO1 OUT, VIDEO1 IN) (EX66/EX77: AEP, UK)			
J503	1-770-015-11	JACK, PIN 6P (VIDEO2 IN, VIDEO1 OUT, VIDEO1 IN) (EX77: HK, SP)			
		< COIL >			
L301	1-420-872-00	COIL, AIR-CORE (AEP, UK)			
L351	1-420-872-00	COIL, AIR-CORE (AEP, UK)			
		< 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
R302	1-249-438-11	CARBON	56K	5%	1/4W
R303	1-249-415-11	CARBON	680	5%	1/4W
R304	1-249-438-11	CARBON	56K	5%	1/4W
R305	1-260-103-11	CARBON	2.2K	5%	1/2W

MAIN

Ref. No.	Part No.	Description			Remark
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	RES, METAL PLATE		0.22	2W
R311	1-249-417-11	CARBON	1K	5%	1/4W
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
R320	1-260-076-11	CARBON	10	5%	1/2W (AEP, UK)
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
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
R335	1-249-441-11	CARBON	100K	5%	1/4W
R341	1-249-425-11	CARBON	4.7K	5%	1/4W
R351	1-249-417-11	CARBON	1K	5%	1/4W
R352	1-249-438-11	CARBON	56K	5%	1/4W
R353	1-249-415-11	CARBON	680	5%	1/4W
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	RES, METAL PLATE		0.22	2W
R361	1-249-417-11	CARBON	1K	5%	1/4W
R362	1-249-431-11	CARBON	15K	5%	1/4W
R368	1-260-076-11	CARBON	10	5%	1/2W
R370	1-260-076-11	CARBON	10	5%	1/2W (AEP, UK)
R385	1-249-441-11	CARBON	100K	5%	1/4W
R401	1-260-076-11	CARBON	10	5%	1/2W (AEP, UK)
R451	1-260-076-11	CARBON	10	5%	1/2W (AEP, UK)
R501	1-249-417-11	CARBON	1K	5%	1/4W
R502	1-249-425-11	CARBON	4.7K	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W
R504	1-249-425-11	CARBON	4.7K	5%	1/4W
R505	1-249-417-11	CARBON	1K	5%	1/4W
R506	1-249-417-11	CARBON	1K	5%	1/4W
R507	1-249-417-11	CARBON	1K	5%	1/4W
R508	1-249-417-11	CARBON	1K	5%	1/4W
R509	1-249-417-11	CARBON	1K	5%	1/4W
R512	1-249-429-11	CARBON	10K	5%	1/4W
R514	1-249-429-11	CARBON	10K	5%	1/4W
R521	1-249-417-11	CARBON	1K	5%	1/4W
R522	1-249-417-11	CARBON	1K	5%	1/4W
R523	1-249-417-11	CARBON	1K	5%	1/4W
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
R552	1-249-425-11	CARBON	4.7K	5%	1/4W
R553	1-249-417-11	CARBON	1K	5%	1/4W
R554	1-249-425-11	CARBON	4.7K	5%	1/4W
R555	1-249-417-11	CARBON	1K	5%	1/4W
R556	1-249-417-11	CARBON	1K	5%	1/4W
R557	1-249-417-11	CARBON	1K	5%	1/4W
R558	1-249-417-11	CARBON	1K	5%	1/4W
R559	1-249-417-11	CARBON	1K	5%	1/4W
R562	1-249-429-11	CARBON	10K	5%	1/4W
R564	1-249-429-11	CARBON	10K	5%	1/4W
R571	1-249-417-11	CARBON	1K	5%	1/4W
R572	1-249-417-11	CARBON	1K	5%	1/4W
R573	1-249-417-11	CARBON	1K	5%	1/4W
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
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	1-249-424-11	CARBON	3.9K	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
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
		< RELAY >			
RY701	1-755-126-11	RELAY			

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

Ref. No.	Part No.	Description			Remark
		< SPEAKER TERMINAL >			
TB401	1-537-240-11	TERMINAL BOARD (CHECKER PIN) (SPEAKER)			
**********					
*	A-4398-059-A	PANEL BOARD, COMPLETE (AEP, UK)			
*	A-4398-061-A	PANEL BOARD, COMPLETE (HK, SP)			
		**********			
		< CAPACITOR >			
C100	1-162-306-11	CERAMIC	0.01uF	20%	16V
C101	1-162-306-11	CERAMIC	0.01uF	20%	16V
C102	1-124-907-11	ELECT	10uF	20%	50V
C104	1-164-159-11	CERAMIC	0.1uF		50V
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
C121	1-164-159-11	CERAMIC	0.1uF		50V
C201	1-124-257-00	ELECT	2.2uF	20%	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
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
C214	1-162-294-31	CERAMIC	0.001uF	10%	50V (AEP, UK)
C215	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
C220	1-162-294-31	CERAMIC	0.001uF	10%	50V (AEP, UK)
C221	1-164-159-11	CERAMIC	0.1uF		50V
C222	1-162-294-31	CERAMIC	0.001uF	10%	50V (AEP, UK)
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	1-126-957-11	ELECT	0.22uF	20%	50V
C230	1-104-663-11	ELECT	33uF	20%	16V
C231	1-104-663-11	ELECT	33uF	20%	16V
C241	1-136-165-00	FILM	0.1uF	5%	50V
C242	1-136-165-00	FILM	0.1uF	5%	50V
C243	1-162-282-31	CERAMIC	100PF	10%	50V
C244	1-162-282-31	CERAMIC	100PF	10%	50V
C245	1-126-301-11	ELECT	1uF	20%	50V
C246	1-126-163-11	ELECT	4.7uF	20%	50V
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
C264	1-162-294-31	CERAMIC	0.001uF	10%	50V (AEP, UK)
C265	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
C291	1-136-165-00	FILM	0.1uF	5%	50V
C292	1-136-165-00	FILM	0.1uF	5%	50V
C293	1-162-282-31	CERAMIC	100PF	10%	50V
C294	1-162-282-31	CERAMIC	100PF	10%	50V
C295	1-126-301-11	ELECT	1uF	20%	50V
C296	1-126-163-11	ELECT	4.7uF	20%	50V
C999	1-162-306-11	CERAMIC	0.01uF	20%	16V
		< CONNECTOR >			
CN101	1-764-301-11	HOUSING, CONNECTOR (PC BOARD) 22P			
CN211	1-764-296-11	HOUSING, CONNECTOR (PC BOARD) 12P			
		< DIODE >			
D101	8-719-057-09	LED LNJ801LPDJA (TAPE)			
D102	8-719-057-09	LED LNJ801LPDJA (VIDEO1)			
D103	8-719-057-09	LED LNJ801LPDJA (VIDEO2/AUX) (EX66/EX77: AEP, UK)			
D103	8-719-057-09	LED LNJ801LPDJA (VIDEO2) (EX77: HK, SP)			
D104	8-719-057-09	LED LNJ801LPDJA (MD)			
D105	8-719-057-09	LED LNJ801LPDJA (CD)			
D106	8-719-057-09	LED LNJ801LPDJA (TUNER)			
D107	8-719-057-09	LED LNJ801LPDJA (SOURCE DIRECT)			
D108	8-719-057-09	LED LNJ801LPDJA (–20dB MUTING)			
D109	8-719-987-63	DIODE 1N4148M			
D110	8-719-987-63	DIODE 1N4148M			
D113	8-719-057-09	LED LNJ801LPDJA (KARAOKE PON)			
D114	8-719-057-09	LED LNJ801LPDJA (POWER ON/STANDBY)			
D121	8-719-057-09	LED LNJ801LPDJA (DBFB HIGH)			
D122	8-719-057-09	LED LNJ801LPDJA (DBFB LOW)			
		< IC >			
IC101	8-759-439-41	IC MB89193A-157			
IC102	8-759-373-48	IC NJL53H400			
IC103	8-759-165-80	IC PST600C-T			
IC105	8-759-917-43	IC SN74HC138AN			
IC201	8-759-634-51	IC M5218AP			
IC202	8-759-634-51	IC M5218AP			
IC203	8-759-000-48	IC MC14052BCP			
IC221	8-759-634-51	IC M5218AP			
		< JACK >			
J201	1-770-226-11	JACK (LARGE TYPE) (MIX MIC)			
		< COIL >			
L101	1-414-142-11	INDUCTOR 1uH			
L102	1-410-509-11	INDUCTOR 10uH			
L103	1-410-509-11	INDUCTOR 10uH			
		< TRANSISTOR >			
Q101	8-729-900-63	TRANSISTOR DTA124ES			
Q102	8-729-900-63	TRANSISTOR DTA124ES			
Q103	8-729-422-73	TRANSISTOR UN4212			
Q104	8-729-422-73	TRANSISTOR UN4212			
Q108	8-729-422-73	TRANSISTOR UN4212			

PANEL

Ref. No.	Part No.	Description	Remark
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	8-729-900-63	TRANSISTOR DTA124ES	
Q118	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q119	8-729-422-73	TRANSISTOR UN4212	
Q120	8-729-422-73	TRANSISTOR UN4212	
Q201	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q202	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q251	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q252	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q253	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q254	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q283	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q284	8-729-620-05	TRANSISTOR 2SC2603-EF	

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R100	1-249-429-11	CARBON	10K	5%	1/4W
R101	1-249-427-11	CARBON	6.8K	5%	1/4W
R102	1-249-417-11	CARBON	1K	5%	1/4W
R103	1-249-419-11	CARBON	1.5K	5%	1/4W
R104	1-249-419-11	CARBON	1.5K	5%	1/4W
R105	1-247-843-11	CARBON	3.3K	5%	1/4W
R106	1-249-425-11	CARBON	4.7K	5%	1/4W
R107	1-249-413-11	CARBON	470	5%	1/4W
R108	1-249-417-11	CARBON	1K	5%	1/4W
R109	1-249-429-11	CARBON	10K	5%	1/4W
R110	1-249-413-11	CARBON	470	5%	1/4W
R111	1-249-415-11	CARBON	680	5%	1/4W
R112	1-249-429-11	CARBON	10K	5%	1/4W
R113	1-249-417-11	CARBON	1K	5%	1/4W
R114	1-249-429-11	CARBON	10K	5%	1/4W
R115	1-249-429-11	CARBON	10K	5%	1/4W
R116	1-249-393-11	CARBON	10	5%	1/4W
R117	1-249-437-11	CARBON	47K	5%	1/4W
R119	1-249-413-11	CARBON	470	5%	1/4W
R120	1-249-409-11	CARBON	220	5%	1/4W
R126	1-249-413-11	CARBON	470	5%	1/4W
R130	1-249-441-11	CARBON	100K	5%	1/4W
R134	1-247-807-31	CARBON	100	5%	1/4W
R141	1-249-441-11	CARBON	100K	5%	1/4W
R153	1-247-807-31	CARBON	100	5%	1/4W
R200	1-249-429-11	CARBON	10K	5%	1/4W
R201	1-249-425-11	CARBON	4.7K	5%	1/4W
R202	1-249-413-11	CARBON	470	5%	1/4W
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-417-11	CARBON	1K	5%	1/4W
R205	1-249-441-11	CARBON	100K	5%	1/4W
R206	1-249-417-11	CARBON	1K	5%	1/4W
R207	1-247-903-00	CARBON	1M	5%	1/4W
R208	1-249-422-11	CARBON	2.7K	5%	1/4W
R209	1-249-429-11	CARBON	10K	5%	1/4W
R210	1-249-411-11	CARBON	330	5%	1/4W
R211	1-249-417-11	CARBON	1K	5%	1/4W
R212	1-249-409-11	CARBON	220	5%	1/4W
R213	1-247-903-00	CARBON	1M	5%	1/4W
R214	1-247-903-00	CARBON	1M	5%	1/4W
R215	1-247-843-11	CARBON	3.3K	5%	1/4W
R216	1-249-417-11	CARBON	1K	5%	1/4W
R217	1-249-413-11	CARBON	470	5%	1/4W
R218	1-249-441-11	CARBON	100K	5%	1/4W
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
R223	1-249-431-11	CARBON	15K	5%	1/4W
R224	1-249-441-11	CARBON	100K	5%	1/4W
R225	1-247-843-11	CARBON	3.3K	5%	1/4W
R226	1-249-429-11	CARBON	10K	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
R230	1-249-409-11	CARBON	220	5%	1/4W
R231	1-249-409-11	CARBON	220	5%	1/4W
R232	1-249-425-11	CARBON	4.7K	5%	1/4W
R233	1-249-432-11	CARBON	18K	5%	1/4W
R234	1-247-887-00	CARBON	220K	5%	1/4W
R235	1-247-903-00	CARBON	1M	5%	1/4W
R236	1-249-425-11	CARBON	4.7K	5%	1/4W
R237	1-249-421-11	CARBON	2.2K	5%	1/4W
R238	1-247-891-00	CARBON	330K	5%	1/4W
R239	1-247-903-00	CARBON	1M	5%	1/4W
R251	1-249-425-11	CARBON	4.7K	5%	1/4W
R252	1-249-413-11	CARBON	470	5%	1/4W
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
R257	1-247-903-00	CARBON	1M	5%	1/4W
R258	1-249-422-11	CARBON	2.7K	5%	1/4W
R259	1-249-429-11	CARBON	10K	5%	1/4W
R260	1-249-411-11	CARBON	330	5%	1/4W
R261	1-249-417-11	CARBON	1K	5%	1/4W
R262	1-249-409-11	CARBON	220	5%	1/4W
R263	1-247-903-00	CARBON	1M	5%	1/4W
R264	1-247-903-00	CARBON	1M	5%	1/4W
R265	1-247-843-11	CARBON	3.3K	5%	1/4W
R266	1-249-417-11	CARBON	1K	5%	1/4W
R269	1-247-903-00	CARBON	1M	5%	1/4W
R270	1-247-807-31	CARBON	100	5%	1/4W
R282	1-249-425-11	CARBON	4.7K	5%	1/4W
R283	1-249-432-11	CARBON	18K	5%	1/4W
R284	1-247-887-00	CARBON	220K	5%	1/4W
R285	1-247-903-00	CARBON	1M	5%	1/4W
R286	1-249-425-11	CARBON	4.7K	5%	1/4W
R287	1-249-421-11	CARBON	2.2K	5%	1/4W
R288	1-247-891-00	CARBON	330K	5%	1/4W
R289	1-247-903-00	CARBON	1M	5%	1/4W
R996	1-249-417-11	CARBON	1K	5%	1/4W
R997	1-249-417-11	CARBON	1K	5%	1/4W
R998	1-249-417-11	CARBON	1K	5%	1/4W
R999	1-249-417-11	CARBON	1K	5%	1/4W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV201	1-223-973-11	RES, VAR, CARBON 10K/10K (TREBLE)

Ref. No.	Part No.	Description	Remark
RV202	1-223-973-11	RES, VAR, CARBON 10K/10K (BASS)	
RV221	1-223-974-11	RES, VAR, CARBON 50K (MIC LEVEL)	
		< SWITCH >	
S101	1-762-196-21	SWITCH, TACT (POWER)	
S104	1-762-196-21	SWITCH, TACT (–20dB MUTING)	
S105	1-762-196-21	SWITCH, TACT (SOURCE DIRECT)	
S106	1-762-196-21	SWITCH, TACT (KARAOKE PON)	
S107	1-762-196-21	SWITCH, TACT (DBFB)	
S110	1-762-848-11	SWITCH, ROTARY (FUNCTION)	
		< VIBRATOR >	
X101	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	
**********			
*	1-665-661-11	PRIMARY BOARD **********	
		< CONNECTOR >	
* CN911	1-695-044-11	PIN, CONNECTOR 2P	
		< FUSE >	
⚠F911	1-532-259-00	FUSE, TIME-LAG (T1.6/250V)	
		< FUSE HOLDER >	
FH901	1-533-293-11	FUSE HOLDER	
FH911	1-533-293-11	FUSE HOLDER	
**********			
*	1-665-662-11	SECONDARY BOARD **********	
		< CONNECTOR >	
* CN901	1-569-495-11	SOCKET, CONNECTOR 9P	
		< FUSE >	
⚠F903	1-532-286-00	FUSE, TIME-LAG (T2.5/250V)	
⚠F904	1-532-286-00	FUSE, TIME-LAG (T2.5/250V)	
		< 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	
**********			
*	1-663-933-11	SW BOARD (EX77) *********	
		< CONNECTOR >	
CN504	1-764-325-11	PIN, CONNECTOR (PCB) (V TYPE) 2P	

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S901	1-762-884-11	SWITCH, SLIDE (MODE SELECTOR DIGITAL REC/ANALOG REC)			
**********					
*	1-665-663-11	VOL BOARD **********			
		< CAPACITOR >			
C106	1-126-968-11	ELECT	100uF	20%	6.3V
C107	1-162-306-11	CERAMIC	0.01uF	20%	16V
		< CONNECTOR >			
CN201	1-764-311-11	PIN, CONNECTOR (PC BOARD) 12P			
		< IC >			
IC104	8-759-962-08	IC BA6208			
		< RESISTOR >			
R131	1-249-425-11	CARBON	4.7K	5%	1/4W
R132	1-249-425-11	CARBON	4.7K	5%	1/4W
R133	1-249-385-11	CARBON	2.2	5%	1/6W
		< VARIABLE RESISTOR >			
RV204	1-223-811-11	RES, VAR, CARBON 100K/100K (VOLUME)			
**********					
		MISCELLANEOUS **********			
⚠56	1-575-651-11	CORD, POWER (AEP, HK, SP)			
⚠56	1-696-570-21	CORD, POWER (UK)			
⚠61	1-569-008-11	ADAPTOR, CONVERSION 2P (SP)			
⚠62	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (EX77: HK)			
⚠T901	1-431-301-11	TRANSFORMER, POWER			
**********					
		********** HARDWARE LIST **********			
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S			
#2	7-685-872-09	SCREW +BVTT 3X8 (S)			
#3	7-685-871-01	SCREW +BVTT 3X6 (S)			
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
#5	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3			

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