

ST-JX661/SE200

SERVICE MANUAL

US Model
Canadian Model
ST-JX661

AEP Model
UK Model

E Model
Australian Model
ST-JX661/SE200

Chinese Model
ST-SE200



Photo : ST-JX661

SPECIFICATIONS

FM tuner section

Frequency range	87.5–108 MHz
Antenna terminals	75 ohms, unbalanced
Intermediate frequency	10.7 MHz
Sensitivity	at 50 dB quieting (mono) 22.1 dBf, 7 μ V/75 Ω (stereo) 42.1dBf, 7 μ V/75 Ω
Usable sensitivity (IHF)	19.5 dBf, 5 μ V/75 Ω at 75 kHz deviation
S/N	80 dB (mono), 75 dB (stereo)
Harmonic distortion	at 1 kHz 0.3% (mono), 0.5% (stereo)
Frequency response	30 Hz–15 kHz (+0.5/–2.0 dB)
Separation	35 dB at 1 kHz
Selectivity	55 dB at 400 kHz
Output	at 75 kHz deviation 775 mV, 4.7 kilohms

AM tuner section

Frequency range	US, Canadian model : 531–1,710 kHz (9 kHz) 530–1,710 kHz (10 kHz) AEP, UK, German, Italian model : 522–1,611 kHz (9 kHz) E, Singapore, Australian, Chinese, Malaysia, Saudi Arabia model : 531–1,602 kHz (9 kHz) 530–1,710k Hz (10 kHz)
Intermediate frequency	450 kHz
Usable sensitivity	(with AM loop antenna) AM : 500 μ V/m
Signal-to-noise ratio	54 dB (500mV/m, 999 kHz)
Harmonic distortion	0.5 % (50 mV/m, 400Hz)
Selectivity	50 dB

General

Power requirements	US, Canadian model : 120 V AC, 60 Hz AEP, German, Italian model : 220-230 V AC, 50/60Hz UK, Australian model : 240 V AC, 50/60Hz E, Singapore, Chinese, Malaysia, Saudi Arabia model : 110-120 V/220-240 V AC, 50/60 Hz adjustable
Power consumption	7 W
Dimensions	430 x 82 x 279 mm (w/h/d) (17 x 3 $\frac{1}{4}$ x 11 inches)
Mass	Approx. 2.4 kg (5 lb 4 oz)
Supplied accessories	Audio cord (1) AM loop antenna (1) FM wire antenna (1)

Design and specifications are subject to change without notice.



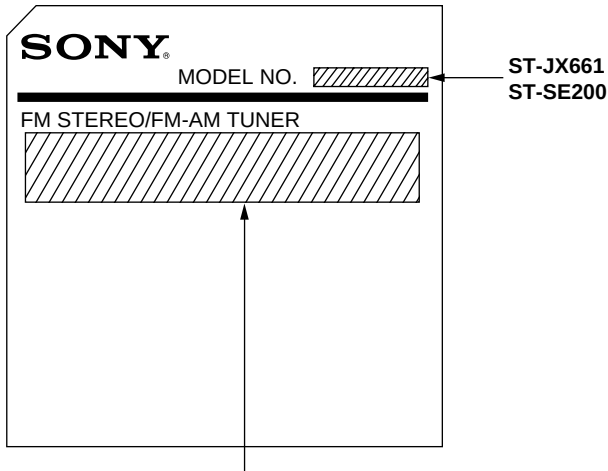
FM STEREO/FM-AM TUNER
SONY®

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MODEL IDENTIFICATION

– Model Number Label –



US, Canadian model : AC 120~60Hz

UK, Australian model : AC 240~50Hz

AEP, German, Italian model : AC 220~230V~50Hz

E, Singapore, Chinese,

Malaysia, Saudi Arabia model : AC 110~120 V/220~240 V
~50/60 Hz

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check 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 TEST

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 0.5mA (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 0.75V, 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)

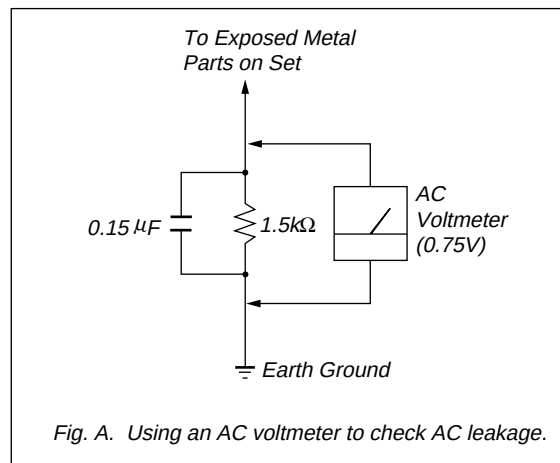


Fig. A. Using an AC voltmeter to check AC leakage.

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.

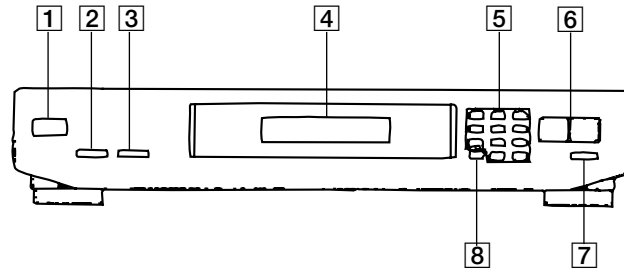
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

LOCATION OF CONTROLS



- 1** POWER button
- 2** MEMORY SCAN button
- 3** STEREO/MONO button
- 4** Display window

- 5** Numeric buttons
- 6** TUNING buttons
- 7** MEMORY button
- 8** BAND button

SECTION 2 ADJUSTMENTS

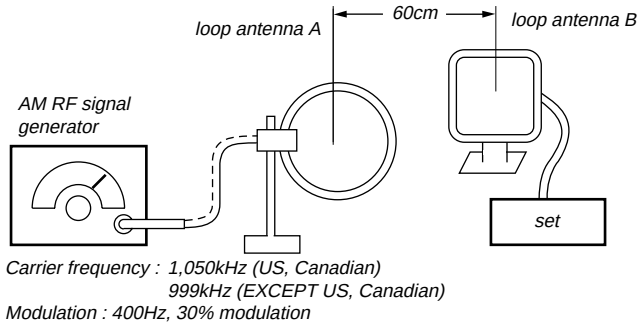
TUNER SECTION

Note 1 : The adjustment should be performed in the publication.
(AM → FM)

Note 2 : As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

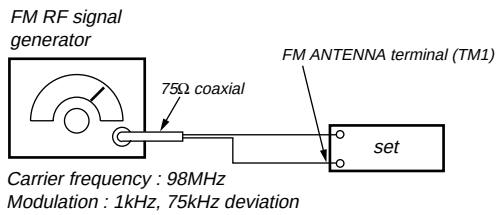
AM Section Adjustment

Setting :



FM Section Adjustment

Setting :



AM Tuned Indication Lighting Level Adjustment

Band : AM

Procedure :

1. Set loop antenna A so that the loop antenna B input level becomes 316.2μV (50dBμ).
2. Tune the set to 1,050kHz (US, Canadian) or 999kHz (EXCEPT US, Canadian).
3. Adjust RV41 so that the **TUNED** light up.
4. Confirm that the **TUNED** light off with AM RF signal generator output level set at 251.2μV (48dBμ).
5. Confirm the FM tuned indication lighting level and adjust if necessary.

Adjustment Location : TUNER board

FM Tuned Indication Lighting Level Adjustment

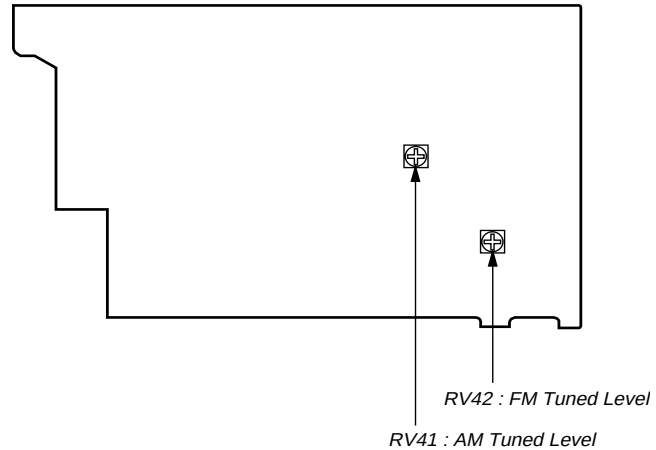
Band : FM

Procedure :

1. Supply a 31.6μV (30dBμ) 98 MHz signal to the ANTENNA terminal (TM1).
2. Tune the set to 98MHz.
3. Adjust RV42 so that the **TUNED** light up.
4. Confirm that the **TUNED** light off with FM RF signal generator output level set at 25.1μV (28dBμ).

Adjustment Location : TUNER board

[TUNER BOARD] – Component side –



SECTION 3

EXPLANATION OF IC TERMINAL

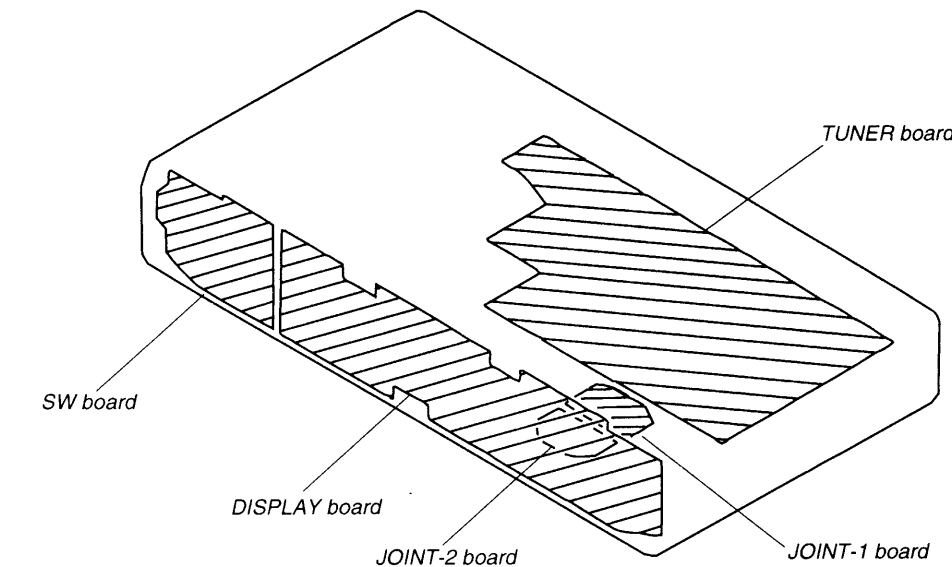
IC701 μ PD78042AGF-078-3B9 (FL DRIVER)

Pin No.	Pin name	I/O	Description
1	G7	O	FL drive.
2	G6	O	
3	G5	O	
4	G4	O	
5	G3	O	
6	G2	O	
7	G1	O	
8	VDD	–	Power supply (+5V)
9	PLL CE	O	Chip enable output to PLL IC.
10	PLL DATA OUT	O	PLL data output.
11	PLL CLK	I	PLL clock input.
12	PLL DATA IN	I	PLL data input.
13	AST	I	Tuned signal input.
14	ST	I	Stereo signal input.
15	NC	–	Not used. (Ground)
16	NC	–	Not used. (Ground)
17	RESET	I	System reset input.
18	DC CUT	–	Not used. (Open)
19	NC	–	Not used. (Open)
20	AVSS (GND)	–	Ground.
21	MUTE	O	Line mute output.
22	NC	–	Not used. (Open)
23	NC	–	Not used. (Open)
24	NC	–	Not used. (Open)
25	MODEL	–	Not used. (Ground)
26	KEY 3	I	Key input.
27	KEY 2	I	Key input.
28	KEY 1	I	Key input.
29	AVDD	–	Power supply (+5V)
30	AVREF	–	Analog voltage reference.
31	GND	–	Ground.
32	NC	–	Not used. (Open)
33	GND	–	Ground.
34	X1	I	System clock. (5MHz)
35	X2	O	System clock. (5MHz)
36	NC	–	Not used. (Open)
37	POWER SW	I	Power switch input.
38	NC	–	Not used. (Ground)
39	NC	–	Not used. (Ground)
40	NC	–	Not used. (Ground)

Pin No.	Pin name	I/O	Description
41	NC	–	Not used. (Ground)
42	NC	–	Not used. (Ground)
43	NC	–	Not used. (Ground)
44	POWER	O	Power ON/OFF control signal output.
45	NC	–	Not used. (Ground)
46	NC	–	Not used. (Ground)
47	NC	–	Not used. (Ground)
48	IC	–	Not used. (Ground)
49	NC	–	Not used. (Ground)
50	RIN	I	Reset signal input.
51	NC	–	Not used. (Ground)
52	VDD	–	Power supply. (+5V)
53	IS 1	I	Model identification check input.
54	IS 2	I	
55	IS 3	I	
56	IS 4	I	
57	GND	–	Ground.
58	P18	O	FL drive.
59	P17	O	
60	P16	O	
61	P15	O	
62	P14	O	
63	P13	O	
64	P12	O	
65	P11	O	
66	P10	O	
67	P9	O	
68	P8	O	
69	P7	O	
70	P6	O	
71	VFL	–	FL drive –25V power supply.
72	P5	O	FL drive.
73	P4	O	
74	P3	O	
75	P2	O	
76	P1	O	
77	G11	O	
78	G10	O	
79	G9	O	
80	G8	O	

SECTION 4
DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION

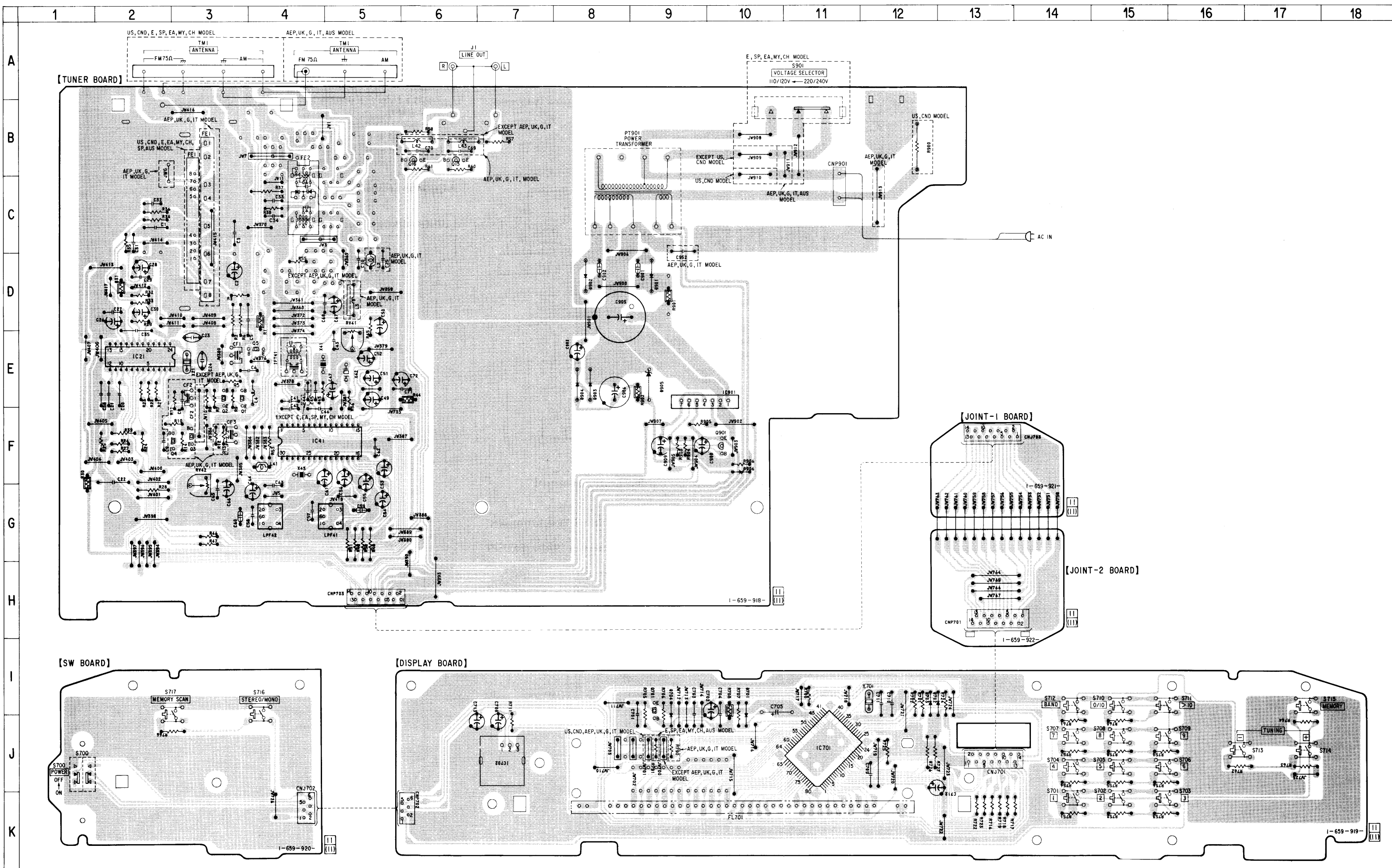


● SEMICONDUCTOR
LOCATION

Ref. No.	Location
D701	I-10
D702	I-12
D703	I-12
D704	I-9
D901	D-9
D902	D-8
D903	E-8
D904	E-8
D905	E-9
D906	F-10
IC21	E-2
IC41	F-4
IC701	J-11
IC702	J-7
IC901	E-10
Q1	E-3
Q2	E-3
Q3	F-3
Q4	F-3
Q5	E-4
Q15	B-6
Q16	B-6
Q701	I-9
Q901	F-10

Note:
○ : parts extracted from the component side.
□ : Pattern on the side which is seen.

4-2. PRINTED WIRING BOARDS



①

4MHz

4.28V_{p-p}

IC701 ②④

②

4.5MHz

2.5V_{p-p}

IC21 ①

[illegible]

Note : The componts identified by mark Δ or dotted line with mark Δ are critical line for safety. Replace only with part number specified.	Note : Les composants identifiés paruns marque Δ osont critiques pour la sécurité. Ne les remplacer que par unepièce portant le numéro spécifié.
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 : B+ Line
 : B- Line
 : adjustment for repair.
 Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
 no mark : FM
 () : AM
 Voltages are taken with a VOM (Input impedance 10MΩ).
 Voltage variations may be noted due to normal production tolerances.
 Waveforms are taken with an oscilloscope.
 Voltage variations may be noted due to normal production tolerances.
 Circled numbers refer to waveforms.
 Signal path.
 : FM
 : AM

SECTION 5

EXPLODED VIEW

NOTE :

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

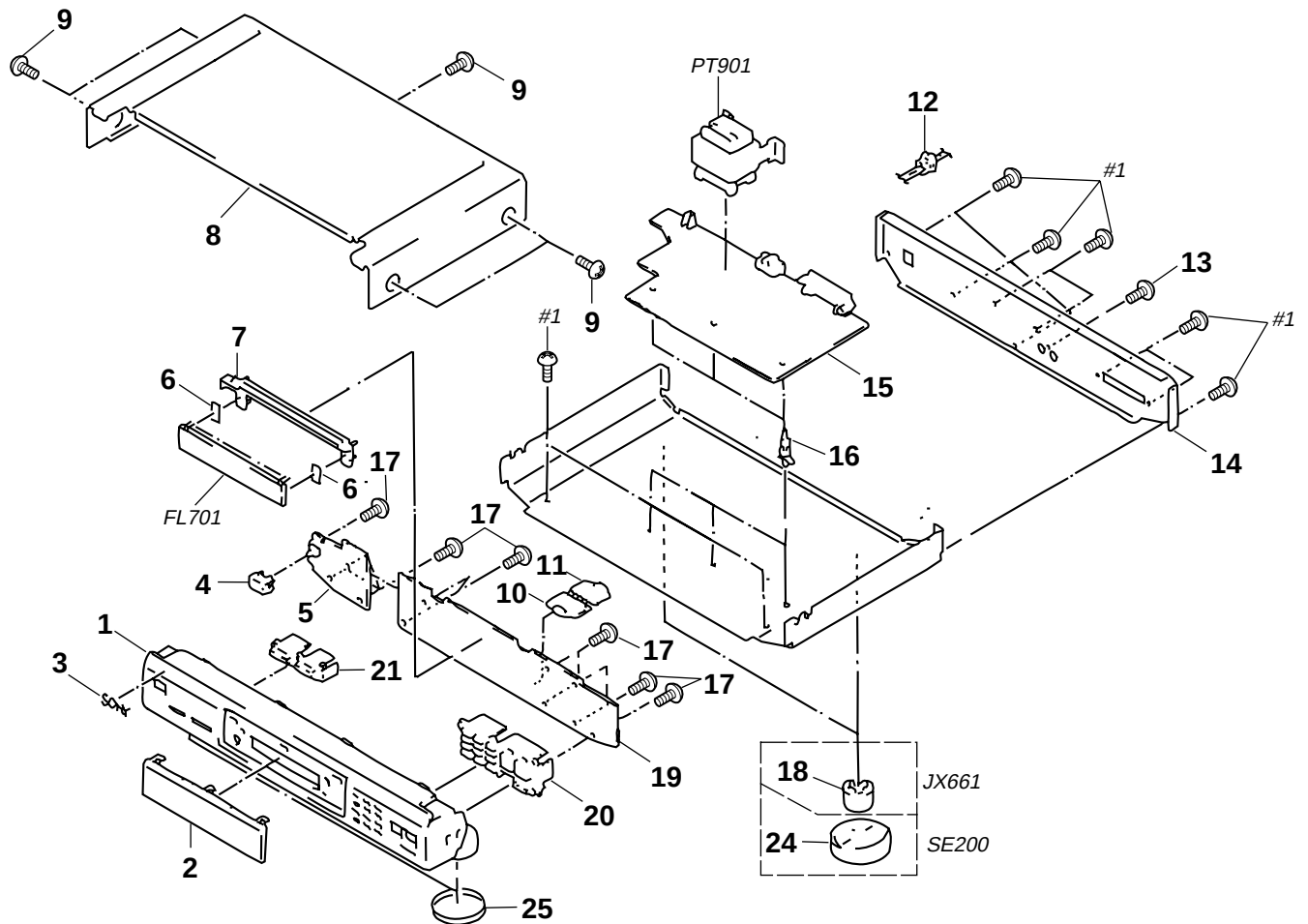
● Abbreviation

CND : Canadian	SP : Singapore
AUS : Australian	G : German
EA : Saudi Arabia	IT : Italian
MY : Malaysia	CH : Chinese

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

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

5-1. FRONT SECTION

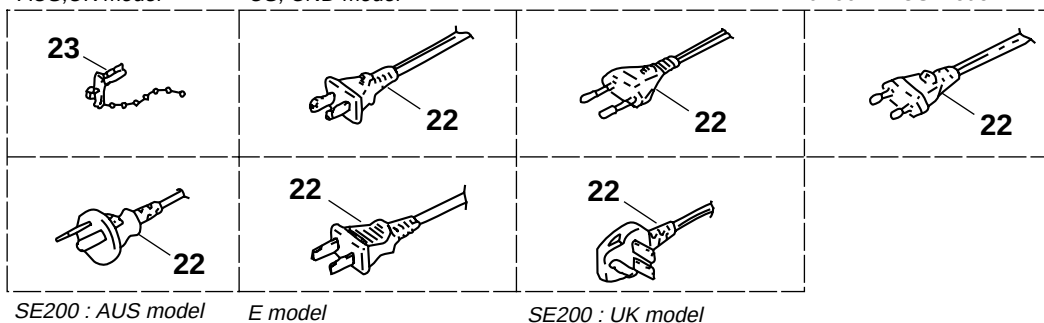


SE200 :
AUS, UK model

US, CND model

JX661 : UK model

AEP, IT, G, EA, MY, CH, SP,
JX661 : AUS model



Ref. No.	Part No.	Description	Remark
1	4-979-926-01	PANEL, FRONT (JX661)	
1	4-979-926-11	PANEL, FRONT (SE200)	
2	4-979-927-01	WINDOW	
3	4-963-404-21	EMBLEM (5-A), SONY	
4	4-980-109-01	BUTTON (P-M)	
* 5	1-659-920-11	SW BOARD	
* 6	4-921-941-01	CUSHION (FL)	
* 7	4-979-925-01	HOLDER (FL-D)	
* 8	4-979-924-01	CASE (407026)	
9	3-704-366-01	SCREW (CASE) (M3X8)	
* 10	1-659-922-11	JOINT-2 BOARD	
* 11	1-659-921-11	JOINT-1 BOARD	
* 12	3-703-244-00	BUSHING (2104), CORD	
13	3-704-515-01	SCREW (BV/RING)	
* 14	4-979-923-01	PANEL, BACK (JX661:US)	
* 14	4-979-923-11	PANEL, BACK (JX661:AEP,G,IT)	
* 14	4-979-923-21	PANEL, BACK (JX661:E)	
* 14	4-979-923-31	PANEL, BACK (JX661:UK)	
* 14	4-979-923-41	PANEL, BACK (JX661:CND)	
* 14	4-979-923-61	PANEL, BACK (JX661:SP)	
* 14	4-979-923-71	PANEL, BACK (JX661:AUS)	
* 14	4-980-114-01	PANEL, BACK (SE200:AEP,IT)	
* 14	4-980-114-11	PANEL, BACK (SE200:E,SP,EA,MY,CH)	
* 14	4-980-114-21	PANEL, BACK (SE200:UK)	
* 14	4-980-114-31	PANEL, BACK (SE200:AUS)	
* 15	A-4389-238-A	TUNER BOARD, COMPLETE (US,CND)	

Ref. No.	Part No.	Description	Remark
* 15	A-4389-243-A	TUNER BOARD, COMPLETE (AEP,UK,G,IT)	
* 15	A-4389-245-A	TUNER BOARD, COMPLETE (E,SP,EA,MY,CH)	
* 15	A-4389- -A	TUNER BOARD, COMPLETE (AUS)	
* 16	3-346-265-31	HOLDER, PC BOARD	
17	4-951-620-01	SCREW (2.6X8), +BVTP	
18	X-3371-405-1	FOOT (SMALL) ASSY (JX661)	
* 19	A-4389-239-A	DISPLAY BOARD, COMPLETE(US,CND)	
* 19	A-4389-244-A	DISPLAY BOARD, COMPLETE(AEP,UK,G,IT)	
* 19	A-4389-246-A	DISPLAY BOARD, COMPLETE(E,SP,EA,MY,CH)	
* 19	A-4389-2 -A	DISPLAY BOARD, COMPLETE(AUS)	
20	4-979-928-01	BUTTON (FUNCTION)	
21	4-979-929-01	BUTTON (ENTER)	
△ 22	1-558-943-41	CORD, POWER (E)	
△ 22	1-558-945-21	CORD, POWER (POLAR.SPT-1)(US,CND)	
△ 22	1-575-651-21	CORD, POWER (AEP,IT,G,EA,MY,CH,SP, JX661:AUS)	
△ 22	1-696-845-11	CORD, POWER (SE200:AUS)	
△ 22	1-751-529-11	CORD, POWER (SE200:UK)	
△ 22	1-769-639-11	CORD, POWER (JX661:UK)	
23	4-956-370-12	BAND, PLUG FIXED (SE200:AUS,UK)	
24	X-4947-207-1	FOOT ASSY (F50150S) (SE200)	
25	4-977-593-11	RING (DIA 50), ORNAMENTAL (SE200)	
FL701	1-517-516-11	INDICATOR TUBE, FLUORESCENT	
△ PT901	1-429-466-11	TRANSFORMER, POWER (US,CND)	
△ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US,CND)	

SECTION 6

ELECTRICAL PARTS LIST

DISPLAY

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, -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
- 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.... : 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

AUS : Australian

EA : Saudi Arabia

MY : Malaysia

SP : Singapore

G : German

IT : Italian

CH : Chinese

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.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4389-239-A	DISPLAY BOARD, COMPLETE(US,CND)				< TRANSISTOR >	
*	A-4389-244-A	DISPLAY BOARD, COMPLETE(AEP,UK,G,IT)					
*	A-4389-246-A	DISPLAY BOARD, COMPLETE(E,SP,EA,MY,CH)		Q701	8-729-620-05	TRANSISTOR 2SC2603-EF	
		*****				< RESISTOR >	
*	4-921-941-01	CUSHION (FL)					
*	4-979-925-01	HOLDER (FL-D)		R700	1-249-441-11	CARBON 100K	5% 1/4W
		< CAPACITOR >		R701	1-249-419-11	CARBON 1.5K	5% 1/4W
C701	1-162-306-11	CERAMIC 0.01uF	30% 16V	R702	1-249-419-11	CARBON 1.5K	5% 1/4W
C702	1-124-465-00	ELECT 0.47uF	20% 50V	R705	1-247-895-00	CARBON 470K	5% 1/4W
C703	1-162-306-11	CERAMIC 0.01uF	30% 16V	R706	1-249-433-11	CARBON 22K	5% 1/4W
C704	1-162-306-11	CERAMIC 0.01uF	30% 16V				
C705	1-104-905-11	CAPACITOR 0.22F	5.5V	R707	1-249-417-11	CARBON 1K	5% 1/4W
C708	1-126-157-11	ELECT 10uF	20% 16V	Δ R708	1-249-401-11	CARBON 47	5% 1/4W F
C709	1-162-306-11	CERAMIC 0.01uF	30% 16V	R711	1-247-807-31	CARBON 100	5% 1/4W
C710	1-***-***-***	CERAMIC 27PF		R716	1-247-807-31	CARBON 100	5% 1/4W
C711	1-***-***-***	CERAMIC 27PF		R717	1-247-807-31	CARBON 100	5% 1/4W
C712	1-104-664-11	ELECT 47uF	20% 16V				
C713	1-126-965-11	ELECT 22uF	20% 50V	R718	1-247-807-31	CARBON 100	5% 1/4W
		< CONNECTOR >		R719	1-247-807-31	CARBON 100	5% 1/4W
CNJ701	1-774-342-11	PLUG, CONNECTOR (PC BOARD) 14P		R722	1-247-807-31	CARBON 100	5% 1/4W
CNP702	1-750-195-11	CONNECTOR, BOARD TO BOARD 6P		R723	1-247-807-31	CARBON 100	5% 1/4W
		< DIODE >		R724	1-247-807-31	CARBON 100	5% 1/4W
D701	8-719-987-63	DIODE 1N4148M					
D702	8-719-987-63	DIODE 1N4148M		R725	1-247-807-31	CARBON 100	5% 1/4W
D703	8-719-987-63	DIODE 1N4148M		R726	1-249-437-11	CARBON 47K	5% 1/4W
D704	8-719-987-63	DIODE 1N4148M		R727	1-249-437-11	CARBON 47K	5% 1/4W
		< INDICATOR TUBE >		R751	1-249-401-11	CARBON 47	5% 1/4W
FL701	1-517-516-11	INDICATOR TUBE, FLUORESCENT		R752	1-249-403-11	CARBON 68	5% 1/4W
		< IC >					
IC701	8-759-380-14	IC uPD78042AGF-078-3B9		R753	1-247-807-31	CARBON 100	5% 1/4W
IC702	8-749-923-43	IC GP1U57XB		R754	1-249-407-11	CARBON 150	5% 1/4W
				R755	1-249-407-11	CARBON 150	5% 1/4W
				R756	1-249-409-11	CARBON 220	5% 1/4W
				R757	1-249-411-11	CARBON 330	5% 1/4W
				R758	1-249-413-11	CARBON 470	5% 1/4W
				R759	1-249-415-11	CARBON 680	5% 1/4W
				R760	1-249-417-11	CARBON 1K	5% 1/4W
				R761	1-249-401-11	CARBON 47	5% 1/4W
				R762	1-249-403-11	CARBON 68	5% 1/4W
				R763	1-247-807-31	CARBON 100	5% 1/4W
				R764	1-249-407-11	CARBON 150	5% 1/4W

DISPLAY	JOINT-1	JOINT-2	SW	TUNER
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Ref. No.	Part No.	Description	Remark
R790	1-249-441-11	CARBON 100K 5% 1/4W	(AEP,UK,G,IT)
R791	1-249-441-11	CARBON 100K 5% 1/4W	(E,SP,EA,MY,CH,AUS)
< SWITCH >			
S701	1-554-303-21	SWITCH, TACTILE (1)	
S702	1-554-303-21	SWITCH, TACTILE (2)	
S703	1-554-303-21	SWITCH, TACTILE (3)	
S704	1-554-303-21	SWITCH, TACTILE (4)	
S705	1-554-303-21	SWITCH, TACTILE (5)	
S706	1-554-303-21	SWITCH, TACTILE (6)	
S707	1-554-303-21	SWITCH, TACTILE (7)	
S708	1-554-303-21	SWITCH, TACTILE (8)	
S709	1-554-303-21	SWITCH, TACTILE (9)	
S710	1-554-303-21	SWITCH, TACTILE (0/10)	
S711	1-554-303-21	SWITCH, TACTILE (>10)	
S712	1-554-303-21	SWITCH, TACTILE (BAND)	
S713	1-554-303-21	SWITCH, TACTILE (TUNING -)	
S714	1-554-303-21	SWITCH, TACTILE (TUNING +)	
S715	1-554-303-21	SWITCH, TACTILE (MEMORY)	
< VIBRATOR >			
X701	1-760-422-11	VIBRATOR, CRYSTAL (4.2MHz)	

*	1-659-921-11	JOINT-1 BOARD	*****
< CONNECTOR >			
* CNJ703	1-750-188-11	CONNECTOR, BOARD TO BOARD 14P	*****

*	1-659-922-11	JOINT-2 BOARD	*****
< CONNECTOR >			
CNP701	1-774-336-11	SOCKET, CONNECTOR(PC BOARD)14P	*****

*	1-659-920-11	SW BOARD	*****
< CONNECTOR >			
CNJ702	1-750-186-11	CONNECTOR, BOARD TO BOARD 6P	
< RESISTOR >			
R766	1-249-407-11	CARBON 150 5% 1/4W	
< SWITCH >			
S700	1-554-303-21	SWITCH, TACTILE (POWER)	
S716	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)	
S717	1-554-303-21	SWITCH, TACTILE (MEMORY SCAN)	

Ref. No.	Part No.	Description	Remark
*	A-4389-238-A	TUNER BOARD, COMPLETE (US,CND)	
*	A-4389-243-A	TUNER BOARD, COMPLETE (AEP,UK,G,IT)	
*	A-4389-245-A	TUNER BOARD, COMPLETE (E,SP,EA,MY,CH)	*****
< CAPACITOR >			
C1	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C2	1-126-967-11	ELECT 47uF 20% 16V	
C3	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C5	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C6	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C8	1-162-306-11	CERAMIC 0.01uF 30% 16V	(AEP,UK,G,IT)
C9	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C10	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C20	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C21	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C22	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C23	1-102-959-00	CERAMIC 22PF 5% 50V	
C24	1-102-518-11	CERAMIC 33PF 5% 50V	
C25	1-162-211-31	CERAMIC 33PF 5% 50V	(AEP,UK,G,IT)
C26	1-126-967-11	ELECT 47uF 20% 16V	
C27	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C28	1-126-934-11	ELECT 220uF 20% 16V	
C29	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C30	1-124-925-11	ELECT 2.2uF 20% 100V	
C31	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C32	1-164-159-11	CERAMIC 0.1uF 50V	
C33	1-164-159-11	CERAMIC 0.1uF 50V	
C34	1-162-198-31	CERAMIC 8.2PF 10% 50V	
C35	1-164-159-11	CERAMIC 0.1uF 50V	
C38	1-162-211-31	CERAMIC 33PF 5% 50V	
C41	1-162-306-11	CERAMIC 0.01uF 30% 16V	
C42	1-164-159-11	CERAMIC 0.1uF 50V	
C43	1-164-159-11	CERAMIC 0.1uF 50V	
C44	1-162-306-11	CERAMIC 0.01uF 30% 16V	(EXCEPT E,SP,EA,MY,CH)
C45	1-164-159-11	CERAMIC 0.1uF 50V	
C46	1-164-159-11	CERAMIC 0.1uF 50V	
C47	1-126-934-11	ELECT 220uF 20% 16V	
C49	1-124-902-00	ELECT 0.47uF 20% 50V	
C50	1-124-903-11	ELECT 1uF 20% 50V	
C51	1-124-903-11	ELECT 1uF 20% 50V	
C52	1-126-963-11	ELECT 4.7uF 20% 50V	
C53	1-126-964-11	ELECT 10uF 20% 50V	
C54	1-126-964-11	ELECT 10uF 20% 50V	
C55	1-126-964-11	ELECT 10uF 20% 50V	
C56	1-126-964-11	ELECT 10uF 20% 50V	
C57	1-162-303-11	CERAMIC 0.0033uF 30% 16V	(EXCEPT US,CND)
C57	1-162-600-11	CERAMIC 0.0047uF 30% 16V	(US,CND)

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C58	1-162-303-11	CERAMIC	0.0033uF	30%	16V	FE1	1-233-541-11	FRONT END (4 GANG) (AEP,UK,G,IT)	(EXCEPT US,CND)		
C58	1-162-600-11	CERAMIC	0.0047uF	30%	16V	FE2	1-239-260-11	ENCAPSULATED COMPONENT			
					(US,CND)			< IC >			
C59	1-136-159-00	FILM	0.033uF	5%	50V	IC21	8-759-288-54	IC LC72130			
C60	1-136-159-00	FILM	0.033uF	5%	50V	IC41	8-759-176-03	IC LA1835			
C61	1-124-903-11	ELECT	1uF	20%	50V	IC901	8-759-820-09	IC LA5667			
C62	1-162-294-31	CERAMIC	0.001uF	10%	50V						
C63	1-162-600-11	CERAMIC	0.0047uF	30%	16V			< IFT >			
C64	1-126-967-11	ELECT	47uF	20%	16V	IFT41	1-409-636-11	TRANSFORMER,IF (CERAMIC FILTER)			
C65	1-162-306-11	CERAMIC	0.01uF	30%	16V			< JACK >			
C66	1-126-962-11	ELECT	3.3uF	20%	50V						
C67	1-126-933-11	ELECT	100uF	20%	10V						
C68	1-162-306-11	CERAMIC	0.01uF	30%	16V	J1	1-568-250-11	JACK, PIN 2P (LINE OUT)			
C69	1-162-294-31	CERAMIC	0.001uF	10%	50V			< COIL >			
					(AEP,UK,G,IT)						
C70	1-162-294-31	CERAMIC	0.001uF	10%	50V	L2	*-***-***-*	INDUCTOR		(AEP,UK,G,IT)	
					(AEP,UK,G,IT)	L3	1-410-509-11	INDUCTOR	10uH	(AEP,UK,G,IT)	
C71	1-162-306-11	CERAMIC	0.01uF	30%	16V	L4	1-410-521-11	INDUCTOR	100uH		
C72	1-126-967-11	ELECT	47uF	20%	16V	L41	1-410-686-11	INDUCTOR	1mH		
C901	1-101-004-00	CERAMIC	0.01uF		50V	L42	1-410-509-11	INDUCTOR	10uH	(AEP,UK,G,IT)	
						L43	1-410-509-11	INDUCTOR	10uH	(AEP,UK,G,IT)	
C902	1-101-004-00	CERAMIC	0.01uF		50V						
C903	1-126-967-11	ELECT	47uF	20%	50V			< FILTER >			
C905	1-126-953-11	ELECT	2200uF	20%	35V						
C906	1-126-949-11	ELECT	220uF	20%	35V	LPF41	1-239-597-11	FILTER, LOW PASS			
C908	1-126-964-11	ELECT	10uF	20%	50V	LPF42	1-239-597-11	FILTER, LOW PASS			
C909	1-126-967-11	ELECT	47uF	20%	16V			< TRANSFORMER >			
C952	1-162-306-11	CERAMIC	0.01uF	30%	16V						
					(AEP,UK,G,IT)	△ PT901	1-429-466-11	TRANSFORMER, POWER (US,CND)			
						△ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US,CND)			
		< FILTER >						< TRANSISTOR >			
CF1	1-567-389-11	FILTER, CERAMIC									
		(US,CND,E,SP,EA,MY,CH,AUS)				Q1	8-729-230-99	TRANSISTOR	2SC2669-OY		
CF1	1-579-374-71	FILTER, CERAMIC (AEP,UK,G,IT)				Q2	8-729-230-99	TRANSISTOR	2SC2669-OY		
CF2	1-760-393-11	FILTER, CERAMIC (AEP,UK,G,IT)				Q3	8-729-230-99	TRANSISTOR	2SC2669-OY (AEP,UK,G,IT)		
CF3	1-567-389-11	FILTER, CERAMIC (US,CND,E,SP,EA,MY,CH)				Q4	8-729-230-99	TRANSISTOR	2SC2669-OY (AEP,UK,G,IT)		
CF3	1-760-393-11	FILTER, CERAMIC (AEP,UK,G,IT)				Q5	8-729-422-57	TRANSISTOR	UN4111		
		< CONNECTOR >									
						Q15	8-729-141-30	TRANSISTOR	2SC3623A-LK		
						Q16	8-729-141-30	TRANSISTOR	2SC3623A-LK		
* CNP703	1-750-197-11	CONNECTOR, BOARD TO BOARD 14P				Q901	8-729-900-65	TRANSISTOR	DTA144ES		
CNP901	1-580-230-11	PIN, CONNECTOR 2P						< RESISTOR >			
		< DIODE >									
						△ R1	1-249-409-11	CARBON	220	5%	1/4W F
D901	8-719-024-99	DIODE 11ES2-NTA2B				R2	1-249-411-11	CARBON	330	5%	1/4W
D902	8-719-024-99	DIODE 11ES2-NTA2B				R3	1-249-411-11	CARBON	330	5%	1/4W
D903	8-719-024-99	DIODE 11ES2-NTA2B				R5	1-249-411-11	CARBON	330	5%	1/4W
D904	8-719-024-99	DIODE 11ES2-NTA2B				R6	1-249-432-11	CARBON	18K	5%	1/4W
D905	8-719-934-22	DIODE HZS30-2L									
D906	8-719-933-41	DIODE UZL-6H3				R7	1-249-411-11	CARBON	330	5%	1/4W
						R8	1-249-411-11	CARBON	330	5%	1/4W
		< FRONT END >				R9	1-249-434-11	CARBON	27K	5%	1/4W
								(EXCEPT:AEP,UK,G,IT)			
FE1	1-693-090-51	ENCAPSULATED COMPONENT				R9	1-249-432-11	CARBON	18K	5%	1/4W
		(US,CND,E,SP,EA,MY,CH,AUS)						(AEP,UK,G,IT)			

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TUNER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R10	1-249-411-11	CARBON	330 5% 1/4W (AEP,UK,G,IT)	< VARIABLE RESISTOR >			
R11	1-249-432-11	CARBON	18K 5% 1/4W (AEP,UK,G,IT)	RV41	1-238-601-11	RES, ADJ, CARBON 22K (AM TUNED LEVEL)	
R12	1-249-411-11	CARBON	330 5% 1/4W (AEP,UK,G,IT)	RV42	1-238-600-11	RES, ADJ, CARBON 10K (FM TUNED LEVEL)	
R13	1-249-411-11	CARBON	330 5% 1/4W (AEP,UK,G,IT)	< SWITCH >			
R14	1-249-432-11	CARBON	18K 5% 1/4W (AEP,UK,G,IT)	△ S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(E,SP,EA,MY,CH)	
R21	1-249-417-11	CARBON	1K 5% 1/4W (AEP,UK,G,IT)	< TERMINAL >			
R22	1-249-417-11	CARBON	1K 5% 1/4W	TM1	1-537-238-21	TERMINAL BOARD (ANTENNA) (US,CND,E,SP,EA,MY,CH)	
R23	1-249-417-11	CARBON	1K 5% 1/4W	TM1	1-537-488-11	TERMINAL BOARD (ANT) (ANTENNA) (AEP,UK,G,IT,AUS)	
R24	1-247-807-31	CARBON	100 5% 1/4W	< VIBRATOR >			
R25	1-249-417-11	CARBON	1K 5% 1/4W	X21	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)	
R26	1-249-435-11	CARBON	33K 5% 1/4W	X41	1-760-220-11	FILTER, CERAMIC (10.7MHz)	
R27	1-249-429-11	CARBON	10K 5% 1/4W	X42	1-527-981-00	FILTER, CERAMIC (450kHz)	
R28	1-249-417-11	CARBON	1K 5% 1/4W	X43	1-577-075-11	OSCILLATOR, CERAMIC (19kHz)	
R29	1-249-423-11	CARBON	3.3K 5% 1/4W	*****			
△ R30	1-249-405-11	CARBON	100 5% 1/4W F	MISCELLANEOUS			
△ R31	1-249-405-11	CARBON	100 5% 1/4W F	*****			
R32	1-249-425-11	CARBON	4.7K 5% 1/4W	△ 22	1-558-943-41	CORD, POWER (E)	
R33	1-249-425-11	CARBON	4.7K 5% 1/4W	△ 22	1-558-945-21	CORD, POWER (POLAR.SPT-1)(US,CND)	
R34	1-249-425-11	CARBON	4.7K 5% 1/4W	△ 22	1-575-651-21	CORD, POWER (AEP,IT,G,EA,MY,CH,SP,JX661:AUS)	
R35	1-249-425-11	CARBON	4.7K 5% 1/4W	△ 22	1-696-845-11	CORD, POWER (SE200:AUS)	
R36	1-247-807-31	CARBON	100 5% 1/4W	△ 22	1-751-529-11	CORD, POWER (SE200:UK)	
R37	1-249-429-11	CARBON	10K 5% 1/4W	△ 22	1-769-639-11	CORD, POWER (JX661:UK)	
R38	1-249-437-11	CARBON	47K 5% 1/4W	FL701	1-517-516-11	INDICATOR TUBE, FLUORESCENT	
R39	1-249-429-11	CARBON	10K 5% 1/4W	△ PT901	1-429-466-11	TRANSFORMER, POWER (US,CND)	
R43	1-249-442-11	CARBON	510 5% 1/4W	△ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US,CND)	
△ R44	1-249-408-11	CARBON	180 5% 1/4W F	△ S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(E,SP,EA,MY,CH)	
R45	1-249-423-11	CARBON	3.3K 5% 1/4W	*****			
R46	1-249-429-11	CARBON	10K 5% 1/4W	ACCESSORIES & PACKING MATERIALS			
R47	1-249-441-11	CARBON	100K 5% 1/4W	*****			
R48	1-249-417-11	CARBON	1K 5% 1/4W	1-501-374-11	ANTENNA, LOOP		
R49	1-249-417-11	CARBON	1K 5% 1/4W	1-501-594-11	ANTENNA (FM)(AEP,UK,G,IT,AUS)		
R50	1-249-425-11	CARBON	4.7K 5% 1/4W	1-501-659-41	ANTENNA (FM) (US,CND,E,SP,EA,MY,CH)		
R51	1-249-425-11	CARBON	4.7K 5% 1/4W	1-551-734-11	CORD, CONNECTION		
R53	1-249-429-11	CARBON	10K 5% 1/4W	3-810-504-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH) (US,CND)		
R56	1-249-393-11	CARBON	10 5% 1/4W	3-810-504-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,CHINESE)(E,SP,EA,MY,CH,AUS)		
R57	1-249-437-11	CARBON	47K 5% 1/4W	3-810-504-31	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,PORTUGUESE)(AEP,UK)		
R58	1-249-437-11	CARBON	47K 5% 1/4W	3-810-504-41	MANUAL, INSTRUCTION (GERMAN,DUTCH, SWEDISH,ITALIAN)(AEP,G,IT)		
R60	1-249-413-11	CARBON	470 5% 1/4W	*	4-980-413-01	CUSHION (JX661:AUS)	
R61	1-249-413-11	CARBON	470 5% 1/4W	*	4-980-413-01	CUSHION (EXCEPT JX661:AUS)	
△ R900	1-202-725-00	SOLID	3.3M 10% 1/2W F (US,CND)				
△ R901	1-249-389-11	CARBON	4.7 5% 1/4W F				
△ R902	1-249-415-11	CARBON	680 5% 1/4W F				
R903	1-249-441-11	CARBON	100K 5% 1/4W				
R904	1-249-437-11	CARBON	47K 5% 1/4W				
R905	1-249-437-11	CARBON	47K 5% 1/4W				
R906	1-249-437-11	CARBON	47K 5% 1/4W				

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
*	4-981-470-01	INDIVIDUAL CARTON (US)	
*	4-981-470-11	INDIVIDUAL CARTON (JX661:AEP,UK,G,IT)	
*	4-981-470-21	INDIVIDUAL CARTON (SE200:AEP,UK,IT)	
*	4-981-470-31	INDIVIDUAL CARTON (SE200:AUS,E,SP,EA,MY,CH)	

HARDWARE LIST

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 TT(B)
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