

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, $7\mu\text{V}/75\Omega$ (stereo) 42.1dBf, $7\mu\text{V}/75\Omega$
Usable sensitivity (IHF)	19.5 dBf, $5\mu\text{V}/75\Omega$ 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 : $500\mu\text{V}/\text{m}$
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.



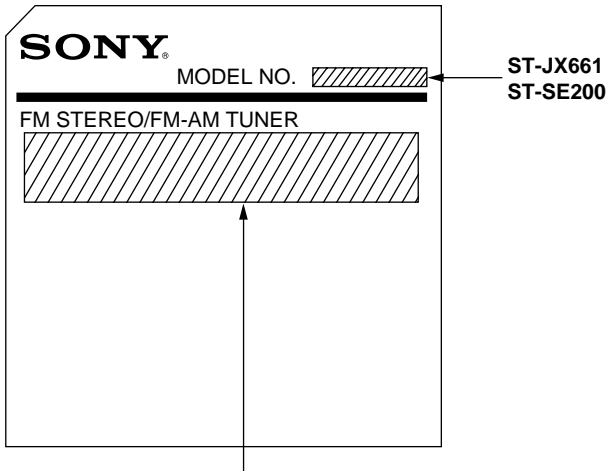
FM STEREO/FM-AM TUNER
SONY®

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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)

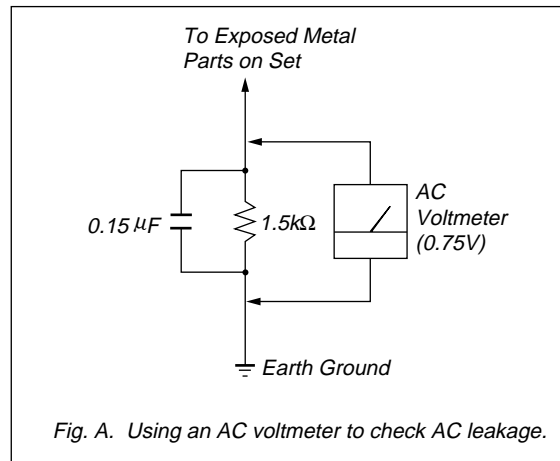


Fig. A. Using an AC voltmeter to check AC leakage.

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.

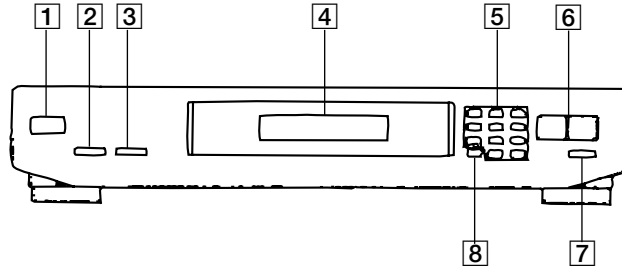
REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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

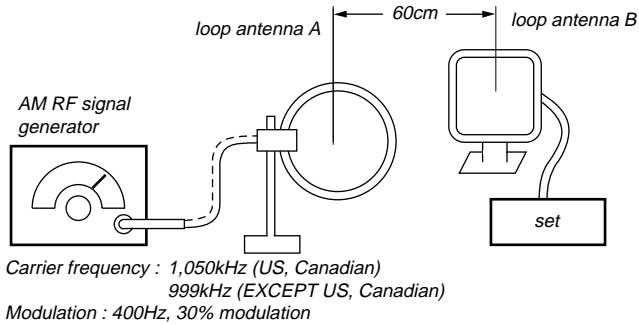
TUNER SECTION

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.

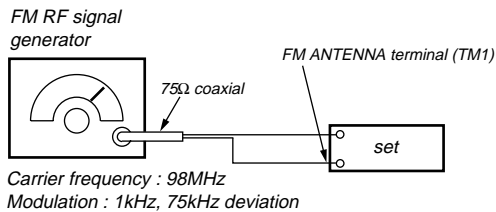
AM Section Adjustment

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

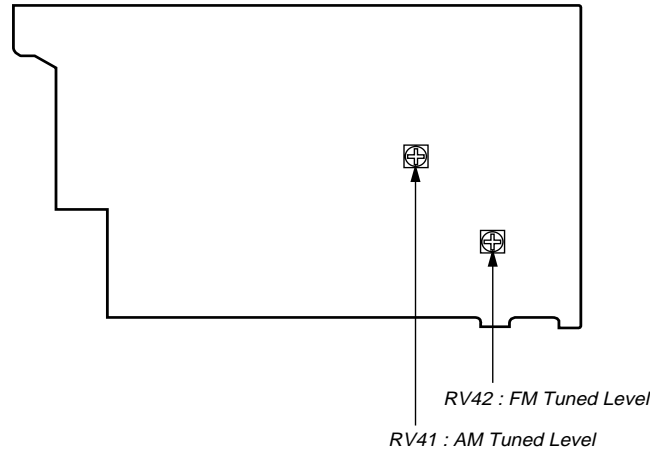
Band : FM

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

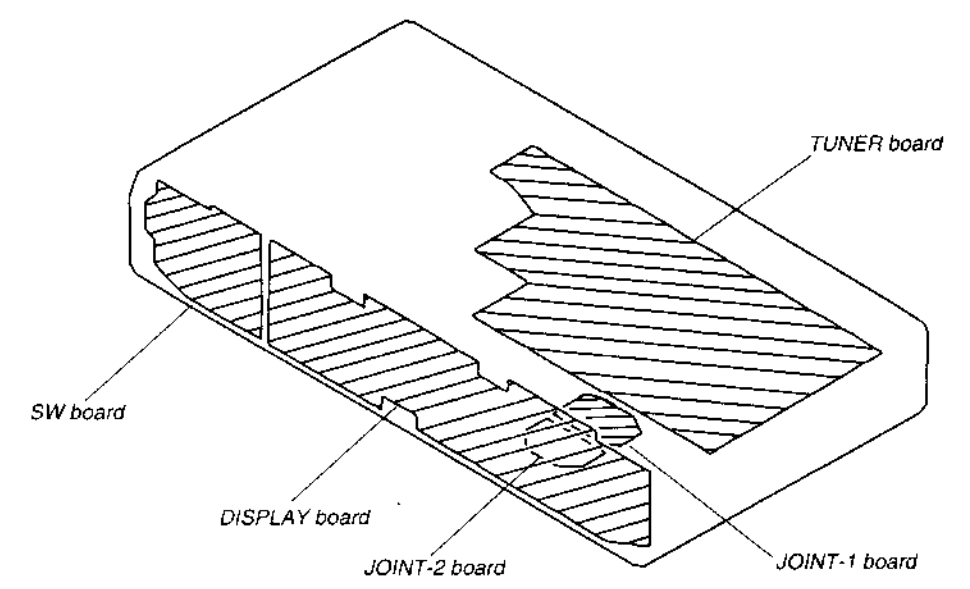
IC701 μ PD78042AGF-078-3B9 (FL DRIVER)

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

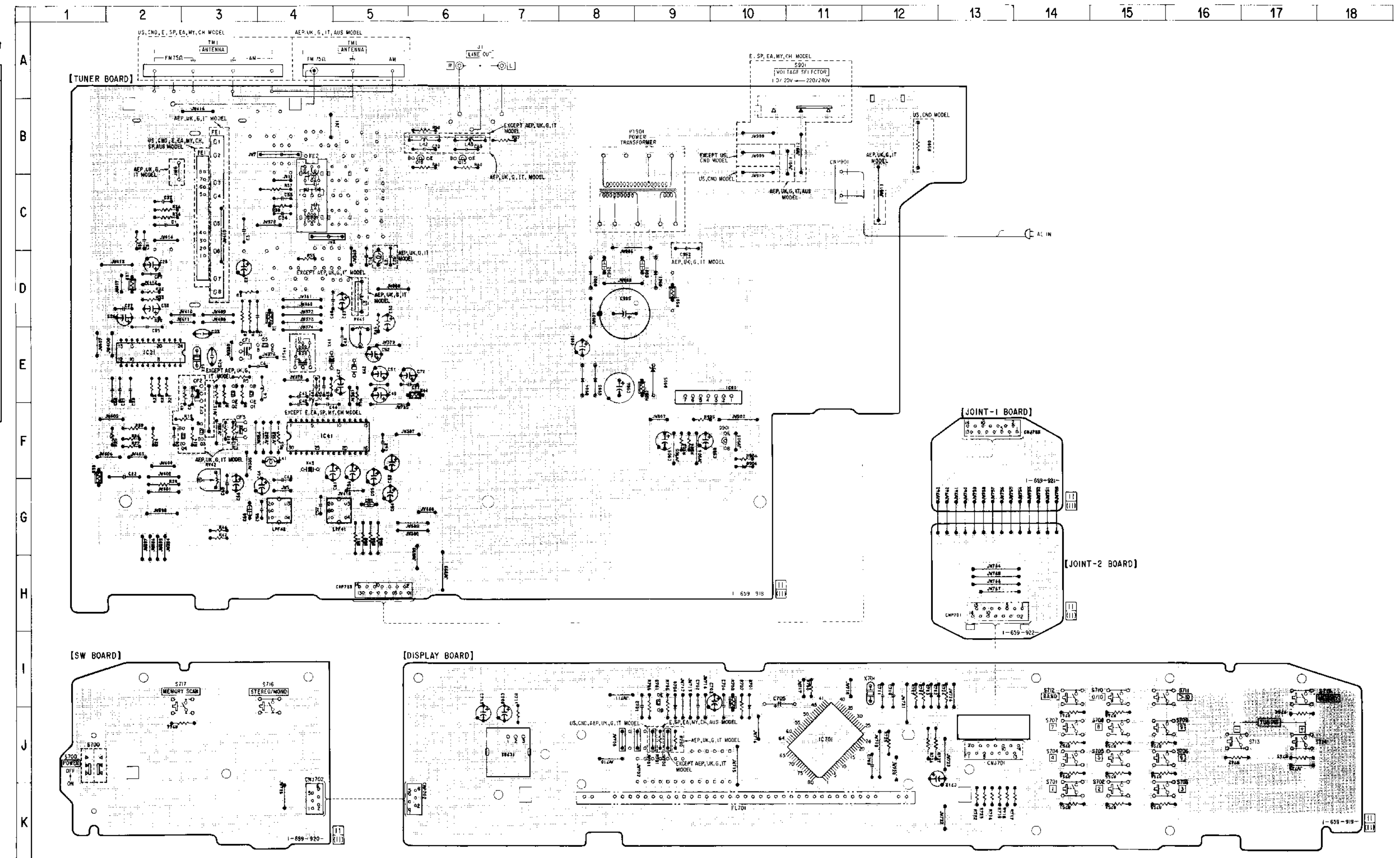


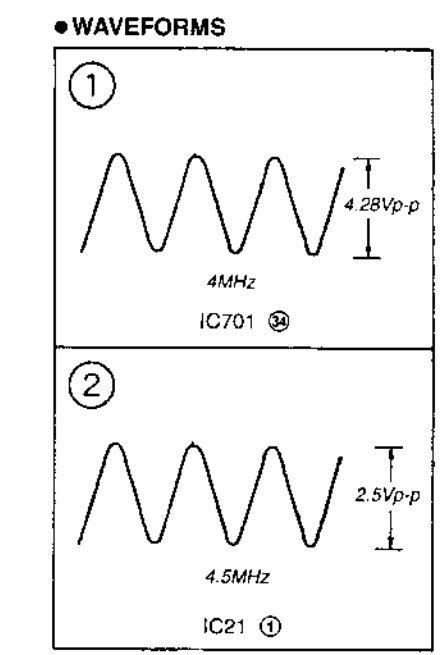
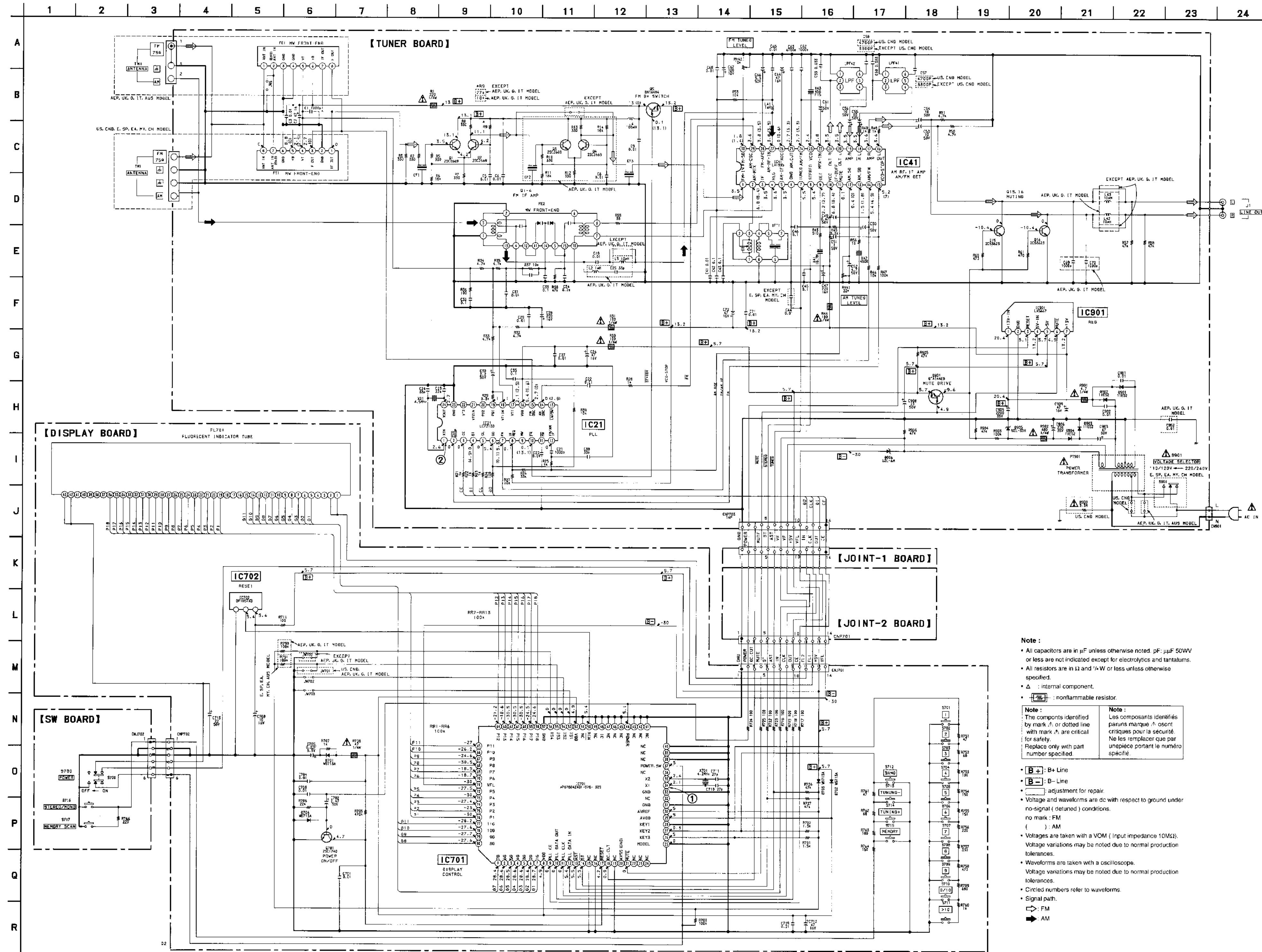
• SEMICONDUCTOR LOCATION

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

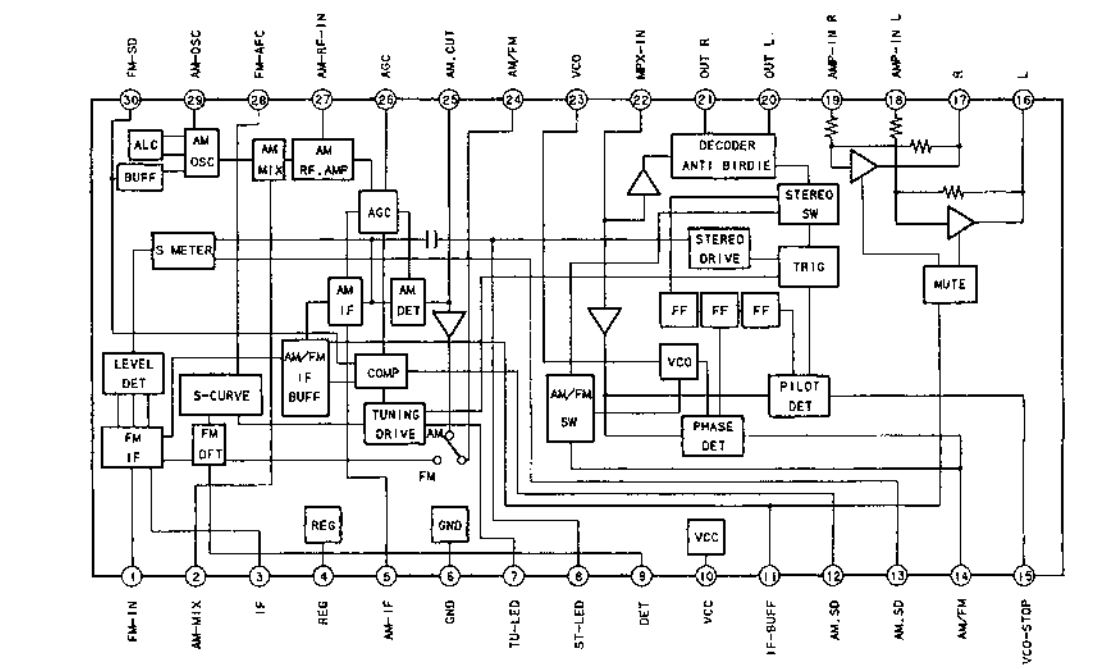
Note:
 • : parts extracted from the component side.
 • : Pattern on the side which is seen.

4-2. PRINTED WIRING BOARDS

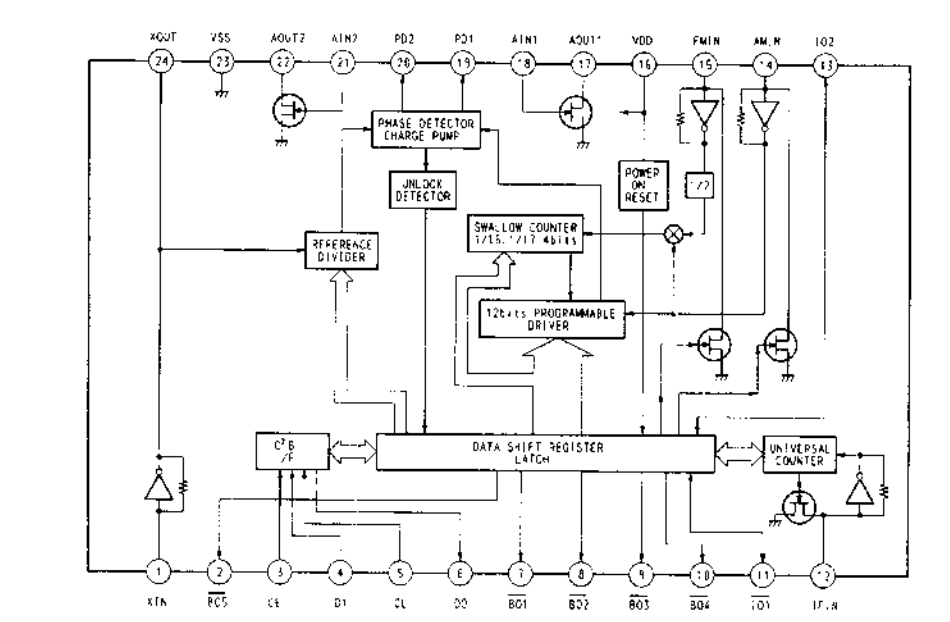




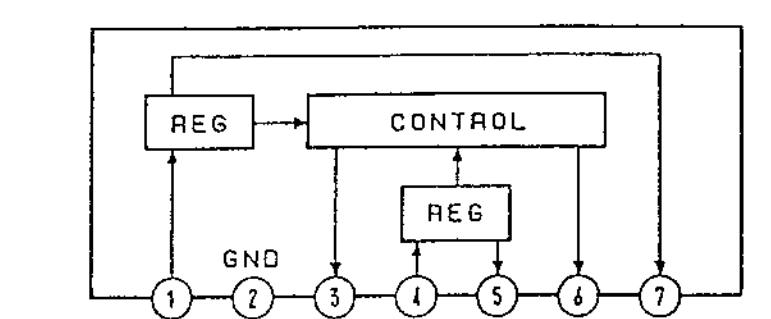
IC BLOCK DIAGRAMS
IC41 LA1835



IC21 LC72130



IC901 LA5667



Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV 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.
- Δ : internal component.
- \square : nonflammable resistor.

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.

• **B+**: B+ Line
• **B-**: B- Line
• \square : adjustment for repair

• Voltage 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 10M Ω). 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.

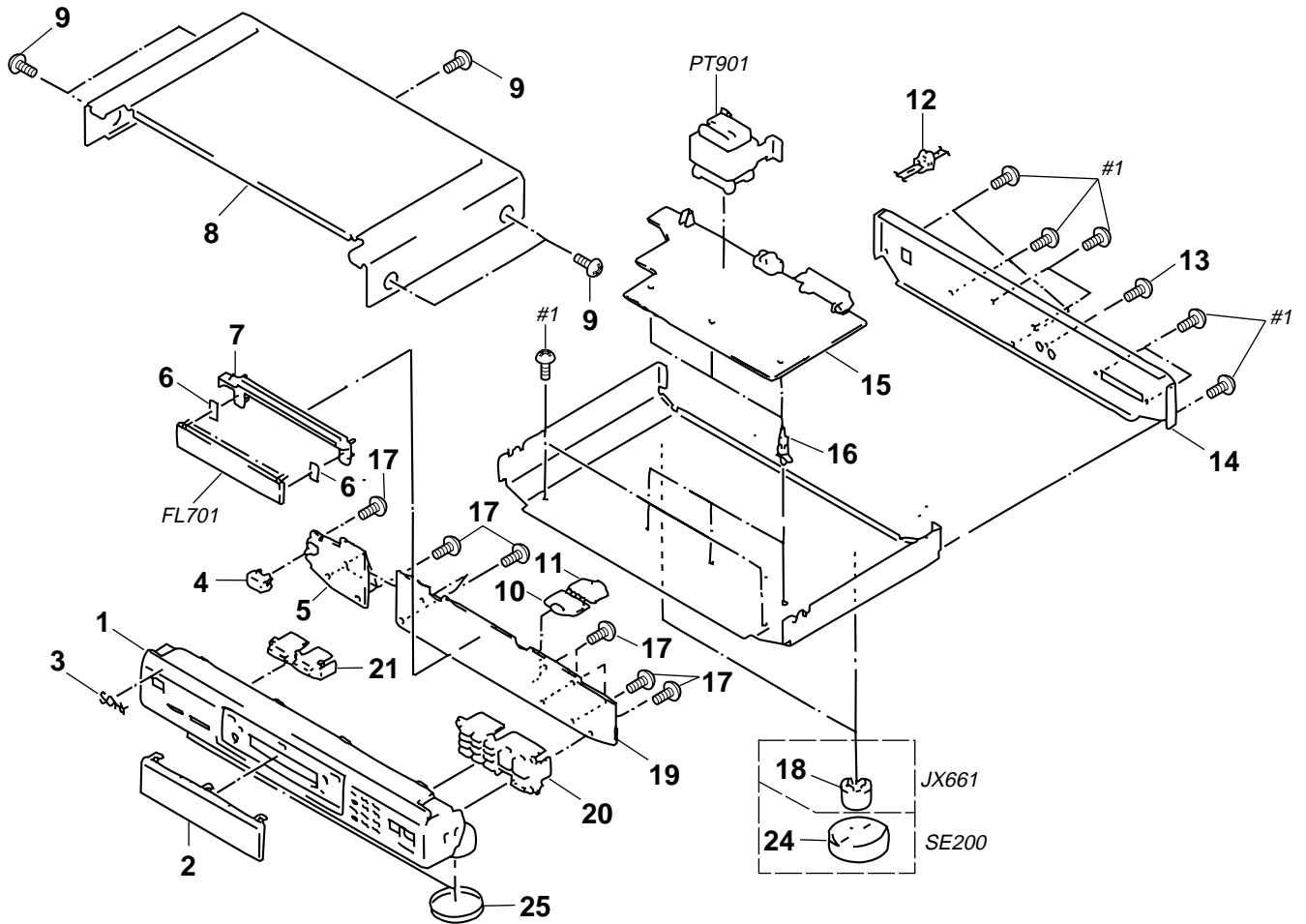
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

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

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

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5-1. FRONT SECTION

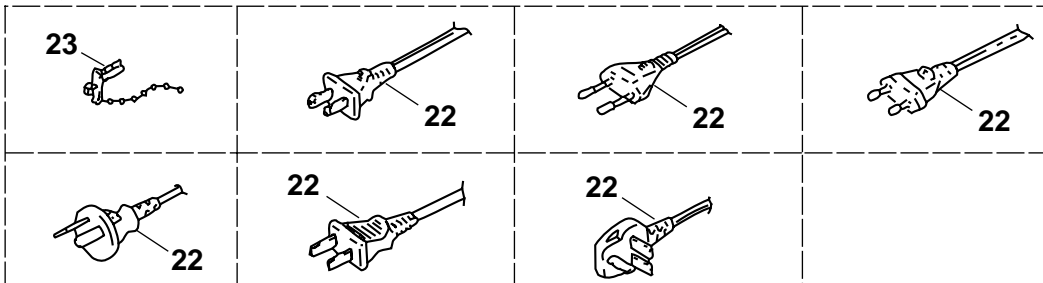


SE200 :
AUS,UK model

US, CND model

JX661 : UK model

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



SE200 : AUS model

E model

SE200 : UK model

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
1	4-979-926-01	PANEL, FRONT (JX661)		* 15	A-4389-243-A	TUNER BOARD, COMPLETE (AEP,UK,G,IT)	
1	4-979-926-11	PANEL, FRONT (SE200)		* 15	A-4389-245-A	TUNER BOARD, COMPLETE (E,SP,EA,MY,CH)	
2	4-979-927-01	WINDOW		* 15	A-4389- -A	TUNER BOARD, COMPLETE (AUS)	
3	4-963-404-21	EMBLEM (5-A), SONY		* 16	3-346-265-31	HOLDER, PC BOARD	
4	4-980-109-01	BUTTON (P-M)		17	4-951-620-01	SCREW (2.6X8), +BVTP	
* 5	1-659-920-11	SW BOARD		18	X-3371-405-1	FOOT (SMALL) ASSY (JX661)	
* 6	4-921-941-01	CUSHION (FL)		* 19	A-4389-239-A	DISPLAY BOARD, COMPLETE(US,CND)	
* 7	4-979-925-01	HOLDER (FL-D)		* 19	A-4389-244-A	DISPLAY BOARD, COMPLETE(AEP,UK,G,IT)	
* 8	4-979-924-01	CASE (407026)		* 19	A-4389-246-A	DISPLAY BOARD, COMPLETE(E,SP,EA,MY,CH)	
9	3-704-366-01	SCREW (CASE) (M3X8)		* 19	A-4389-2 -A	DISPLAY BOARD, COMPLETE(AUS)	
* 10	1-659-922-11	JOINT-2 BOARD		20	4-979-928-01	BUTTON (FUNCTION)	
* 11	1-659-921-11	JOINT-1 BOARD		21	4-979-929-01	BUTTON (ENTER)	
* 12	3-703-244-00	BUSHING (2104), CORD		△ 22	1-558-943-41	CORD, POWER (E)	
13	3-704-515-01	SCREW (BV/RING)		△ 22	1-558-945-21	CORD, POWER (POLAR.SPT-1)(US,CND)	
* 14	4-979-923-01	PANEL, BACK (JX661:US)		△ 22	1-575-651-21	CORD, POWER (AEP,IT,G,EA,MY,CH,SP, JX661:AUS)	
* 14	4-979-923-11	PANEL, BACK (JX661:AEP,G,IT)		△ 22	1-696-845-11	CORD, POWER (SE200:AUS)	
* 14	4-979-923-21	PANEL, BACK (JX661:E)		△ 22	1-751-529-11	CORD, POWER (SE200:UK)	
* 14	4-979-923-31	PANEL, BACK (JX661:UK)		△ 22	1-769-639-11	CORD, POWER (JX661:UK)	
* 14	4-979-923-41	PANEL, BACK (JX661:CND)		23	4-956-370-12	BAND, PLUG FIXED (SE200:AUS,UK)	
* 14	4-979-923-61	PANEL, BACK (JX661:SP)		24	X-4947-207-1	FOOT ASSY (F50150S) (SE200)	
* 14	4-979-923-71	PANEL, BACK (JX661:AUS)		25	4-977-593-11	RING (DIA 50), ORNAMENTAL (SE200)	
* 14	4-980-114-01	PANEL, BACK (SE200:AEP,IT)		FL701	1-517-516-11	INDICATOR TUBE, FLUORESCENT	
* 14	4-980-114-11	PANEL, BACK (SE200:E,SP,EA,MY,CH)		△ PT901	1-429-466-11	TRANSFORMER, POWER (US,CND)	
* 14	4-980-114-21	PANEL, BACK (SE200:UK)		△ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US,CND)	
* 14	4-980-114-31	PANEL, BACK (SE200:AUS)					
* 15	A-4389-238-A	TUNER BOARD, COMPLETE (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	SP : Singapore
AUS : Australian	G : German
EA : Saudi Arabia	IT : Italian
MY : Malaysia	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)					
		< CAPACITOR >					
	C701	1-162-306-11 CERAMIC	0.01uF 30% 16V		R700	1-249-441-11 CARBON	100K 5% 1/4W
	C702	1-124-465-00 ELECT	0.47uF 20% 50V		R701	1-249-419-11 CARBON	1.5K 5% 1/4W
	C703	1-162-306-11 CERAMIC	0.01uF 30% 16V		R702	1-249-419-11 CARBON	1.5K 5% 1/4W
	C704	1-162-306-11 CERAMIC	0.01uF 30% 16V		R705	1-247-895-00 CARBON	470K 5% 1/4W
	C705	1-104-905-11 CAPACITOR	0.22F 5.5V		R706	1-249-433-11 CARBON	22K 5% 1/4W
	C708	1-126-157-11 ELECT	10uF 20% 16V		R707	1-249-417-11 CARBON	1K 5% 1/4W
	C709	1-162-306-11 CERAMIC	0.01uF 30% 16V		Δ R708	1-249-401-11 CARBON	47 5% 1/4W F
	C710	1-***-***-*** CERAMIC	27PF		R711	1-247-807-31 CARBON	100 5% 1/4W
	C711	1-***-***-*** CERAMIC	27PF		R716	1-247-807-31 CARBON	100 5% 1/4W
	C712	1-104-664-11 ELECT	47uF 20% 16V		R717	1-247-807-31 CARBON	100 5% 1/4W
	C713	1-126-965-11 ELECT	22uF 20% 50V				
		< CONNECTOR >					
	CNJ701	1-774-342-11 PLUG, CONNECTOR (PC BOARD) 14P			R718	1-247-807-31 CARBON	100 5% 1/4W
	CNP702	1-750-195-11 CONNECTOR, BOARD TO BOARD 6P			R719	1-247-807-31 CARBON	100 5% 1/4W
		< DIODE >			R722	1-247-807-31 CARBON	100 5% 1/4W
	D701	8-719-987-63 DIODE 1N4148M			R723	1-247-807-31 CARBON	100 5% 1/4W
	D702	8-719-987-63 DIODE 1N4148M			R724	1-247-807-31 CARBON	100 5% 1/4W
	D703	8-719-987-63 DIODE 1N4148M					
	D704	8-719-987-63 DIODE 1N4148M			R725	1-247-807-31 CARBON	100 5% 1/4W
		< INDICATOR TUBE >			R726	1-249-437-11 CARBON	47K 5% 1/4W
	FL701	1-517-516-11 INDICATOR TUBE, FLUORESCENT			R727	1-249-437-11 CARBON	47K 5% 1/4W
		< IC >			R751	1-249-401-11 CARBON	47 5% 1/4W
	IC701	8-759-380-14 IC uPD78042AGF-078-3B9			R752	1-249-403-11 CARBON	68 5% 1/4W
	IC702	8-749-923-43 IC GP1U57XB					
					R753	1-247-807-31 CARBON	100 5% 1/4W
					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**

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 (EXCEPT US,CND)	FE1	1-233-541-11	FRONT END (4 GANG) (AEP,UK,G,IT)	
C58	1-162-600-11	CERAMIC	0.0047uF 30% 16V (US,CND)	FE2	1-239-260-11	ENCAPSULATED COMPONENT	
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			< IFT >	
C63	1-162-600-11	CERAMIC	0.0047uF 30% 16V	IFT41	1-409-636-11	TRANSFORMER,IF (CERAMIC FILTER)	
C64	1-126-967-11	ELECT	47uF 20% 16V			< JACK >	
C65	1-162-306-11	CERAMIC	0.01uF 30% 16V	J1	1-568-250-11	JACK, PIN 2P (LINE OUT)	
C66	1-126-962-11	ELECT	3.3uF 20% 50V			< COIL >	
C67	1-126-933-11	ELECT	100uF 20% 10V	L2	*_*_*_*_*_*_*_*	INDUCTOR	(AEP,UK,G,IT)
C68	1-162-306-11	CERAMIC	0.01uF 30% 16V	L3	1-410-509-11	INDUCTOR	10uH (AEP,UK,G,IT)
C69	1-162-294-31	CERAMIC	0.001uF 10% 50V (AEP,UK,G,IT)	L4	1-410-521-11	INDUCTOR	100uH
C70	1-162-294-31	CERAMIC	0.001uF 10% 50V (AEP,UK,G,IT)	L41	1-410-686-11	INDUCTOR	1mH
C71	1-162-306-11	CERAMIC	0.01uF 30% 16V	L42	1-410-509-11	INDUCTOR	10uH (AEP,UK,G,IT)
C72	1-126-967-11	ELECT	47uF 20% 16V	L43	1-410-509-11	INDUCTOR	10uH (AEP,UK,G,IT)
C901	1-101-004-00	CERAMIC	0.01uF 50V			< FILTER >	
C902	1-101-004-00	CERAMIC	0.01uF 50V	LPF41	1-239-597-11	FILTER, LOW PASS	
C903	1-126-967-11	ELECT	47uF 20% 50V	LPF42	1-239-597-11	FILTER, LOW PASS	
C905	1-126-953-11	ELECT	2200uF 20% 35V			< TRANSFORMER >	
C906	1-126-949-11	ELECT	220uF 20% 35V	△ PT901	1-429-466-11	TRANSFORMER, POWER (US,CND)	
C908	1-126-964-11	ELECT	10uF 20% 50V	△ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US,CND)	
C909	1-126-967-11	ELECT	47uF 20% 16V			< TRANSISTOR >	
C952	1-162-306-11	CERAMIC	0.01uF 30% 16V (AEP,UK,G,IT)	Q1	8-729-230-99	TRANSISTOR	2SC2669-OY
		< FILTER >		Q2	8-729-230-99	TRANSISTOR	2SC2669-OY
CF1	1-567-389-11	FILTER, CERAMIC (US,CND,E,SP,EA,MY,CH,AUS)		Q3	8-729-230-99	TRANSISTOR	2SC2669-OY (AEP,UK,G,IT)
CF1	1-579-374-71	FILTER, CERAMIC (AEP,UK,G,IT)		Q4	8-729-230-99	TRANSISTOR	2SC2669-OY (AEP,UK,G,IT)
CF2	1-760-393-11	FILTER, CERAMIC (AEP,UK,G,IT)		Q5	8-729-422-57	TRANSISTOR	UN4111
CF3	1-567-389-11	FILTER, CERAMIC (US,CND,E,SP,EA,MY,CH)		Q15	8-729-141-30	TRANSISTOR	2SC3623A-LK
CF3	1-760-393-11	FILTER, CERAMIC (AEP,UK,G,IT)		Q16	8-729-141-30	TRANSISTOR	2SC3623A-LK
		< CONNECTOR >		Q901	8-729-900-65	TRANSISTOR	DTA144ES
* CNP703	1-750-197-11	CONNECTOR, BOARD TO BOARD 14P				< RESISTOR >	
CNP901	1-580-230-11	PIN, CONNECTOR 2P		△ R1	1-249-409-11	CARBON	220 5% 1/4W F
		< DIODE >		R2	1-249-411-11	CARBON	330 5% 1/4W
D901	8-719-024-99	DIODE 11ES2-NTA2B		R3	1-249-411-11	CARBON	330 5% 1/4W
D902	8-719-024-99	DIODE 11ES2-NTA2B		R5	1-249-411-11	CARBON	330 5% 1/4W
D903	8-719-024-99	DIODE 11ES2-NTA2B		R6	1-249-432-11	CARBON	18K 5% 1/4W
D904	8-719-024-99	DIODE 11ES2-NTA2B		R7	1-249-411-11	CARBON	330 5% 1/4W
D905	8-719-934-22	DIODE HZS30-2L		R8	1-249-411-11	CARBON	330 5% 1/4W
D906	8-719-933-41	DIODE UZL-6H3		R9	1-249-434-11	CARBON	27K 5% 1/4W
		< FRONT END >		R9	1-249-432-11	CARBON	18K 5% 1/4W (EXCEPT:AEP,UK,G,IT) (AEP,UK,G,IT)
FE1	1-693-090-51	ENCAPSULATED COMPONENT (US,CND,E,SP,EA,MY,CH,AUS)					

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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			< 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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