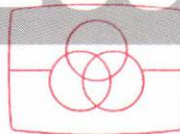


ST-JX230L/JX-4060

SERVICE MANUAL



Free service manuals

Gratis schema's

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ST-JX230L:

*AEP Model**UK Model**G-AEP Model*

ST-JX4060:

G-AEP Model

PHOTO: ST-JX230L

SPECIFICATION

Tuner

Circuit system FM stereo, FM/AM superheterodyne Quartz-locked digital synthesizer system

FM tuner

Frequency range 87.5 - 108 MHz

Antenna terminal 300 ohms, balanced: AEP, UK MODEL
75 ohms, unbalanced: G-AEP MODEL

IF 10.7 MHz

	(at 40 kHz deviation)
Sensitivity	at 46 dB quieting 19.5 dBf, 5 μ V (mono): AEP, UK model 2.5 μ V (mono): G-AEP model 39.5 dBf, 50 μ V (stereo): AEP, UK model 25 μ V (stereo): G-AEP model
Usable sensitivity	11.5 dBf, 2 μ V (IHF): AEP, UK model 1 μ V (IHF): G-AEP model
Signal-to-noise ratio	74 dB (mono) 69 dB (stereo)
Harmonic distortion at 1 kHz	0.3% (mono) 0.5% (stereo)
Separation at 1 kHz	40 dB
Frequency response	40 Hz - 12.5 kHz $\pm$ 0.5 dB
Selectivity	at 300 kHz 50 dB: AEP, UK model 60 dB: G-AEP model
AM suppression ratio	54 dB
Image response ratio	50 dB: AEP, UK model 80 dB: G-AEP model
IF response ratio	90 dB: AEP, UK model 93 dB: G-AEP model

	(at 40 kHz deviation)
Auto tuning threshold	30 dBf
Output	410mV, 4.7 k Ω (40 kHz dev)

MW/LW tuner section

	MW	LW
Frequency range	522 - 1.611 kHz	144 - 288 kHz
Antenna	Layout-free AM antenna, with external antenna terminal attached	
Intermediate frequency	450 kHz	
Sensitivity	500 μ V/m (when the Layout-free AM antenna is in use, at 999 kHz.)	700 μ V/m (when the Layout-free AM antenna is in use, at 230 kHz.)
Signal-to-noise ratio	54 dB	50 dB
Harmonic distortion	0.3%	
Selectivity	35 dB (9 kHz)	

— Continued on next page —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND 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.

FM STEREO/FM-AM TUNER

SONY®



Power and others**Power requirements**

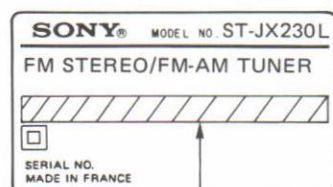
AEP model: 220V ac, 50/60 Hz
 (240V ac adjustable by authorized Sony personnel)
 UK model: 240V ac, 50/60 Hz
 (220V ac adjustable by authorized Sony personnel)

Power consumption

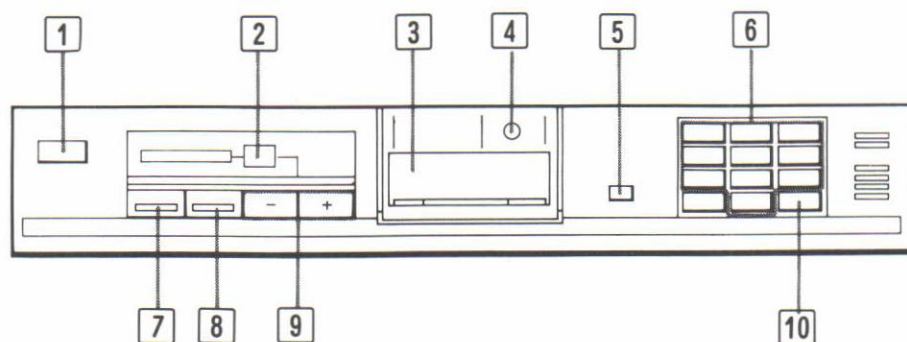
11 watts

Dimensions Approx. 430 x 80 x 250mm (w/h/d)
 (17 x 3 1/4 x 9 7/8 inches)

Weight Approx. 2.5 kg (5 lb 8 oz)

MODEL IDENTIFICATION**— Specification Labels —****ST-JX230L (AEP, UK model):**

AEP model: AC:220V~50/60Hz 11W
 UK model: AC:240V~50/60Hz 11W

ST-JX230L (G-AEP model):**ST-JX4060 (G-AEP model)****FUNCTION OF CONTROLS****Front panel / Panneau avant / Panel frontal****1 POWER switch****2 FM TUNING MODE select button**

Press this button to select the manual or auto tuning mode.

3 Display window**4 STEREO indicator****5 MEMORY button**

Press this button to preset the station.

6 Number buttons

Press this button to enter the preset number.

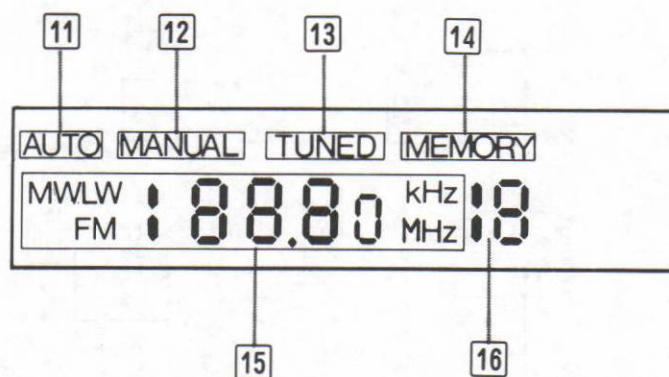
7 BAND select button**8 MEMORY SCAN button**

Press this button to sequentially receive broadcasting from the preset stations.

9 TUNING buttons**10 ENTER button**

To preset or recall a memorized station, press this button after pressing the appropriate number button.

Display window



11 Auto tuning indicator

12 Manual tuning indicator

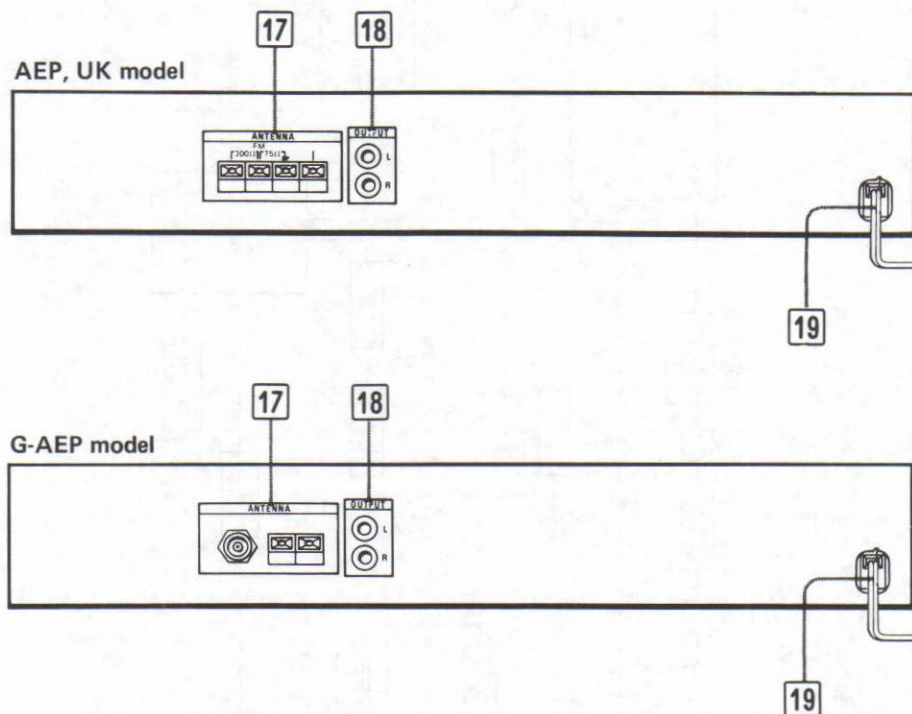
13 TUNED indicator

14 MEMORY indicator

15 Band/frequency indicator

16 Preset number Indicator

Rear Panel



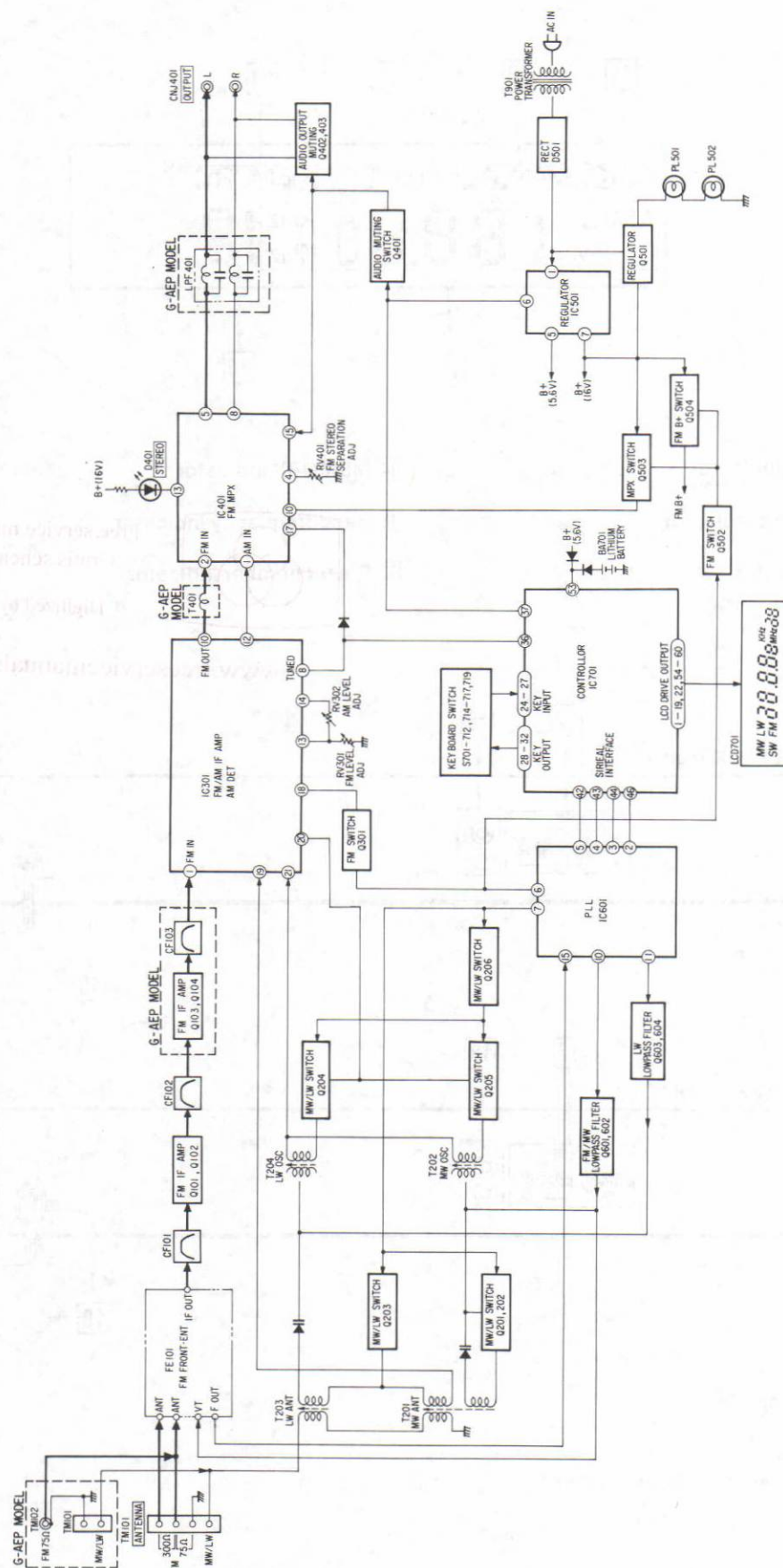
17 Antenna terminals

18 Output jacks

A jack to be connected to the amplifier.

19 Power cord

SECTION 1 BLOCK DIAGRAM



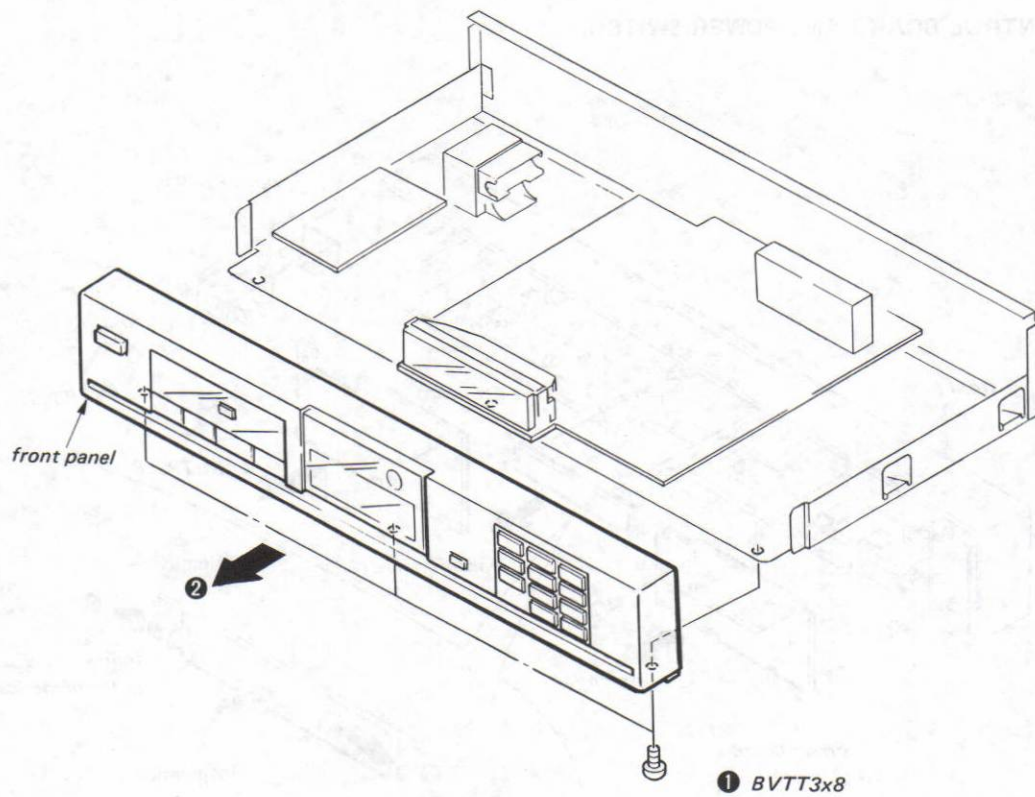
SECTION 2 DISASSEMBLY

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

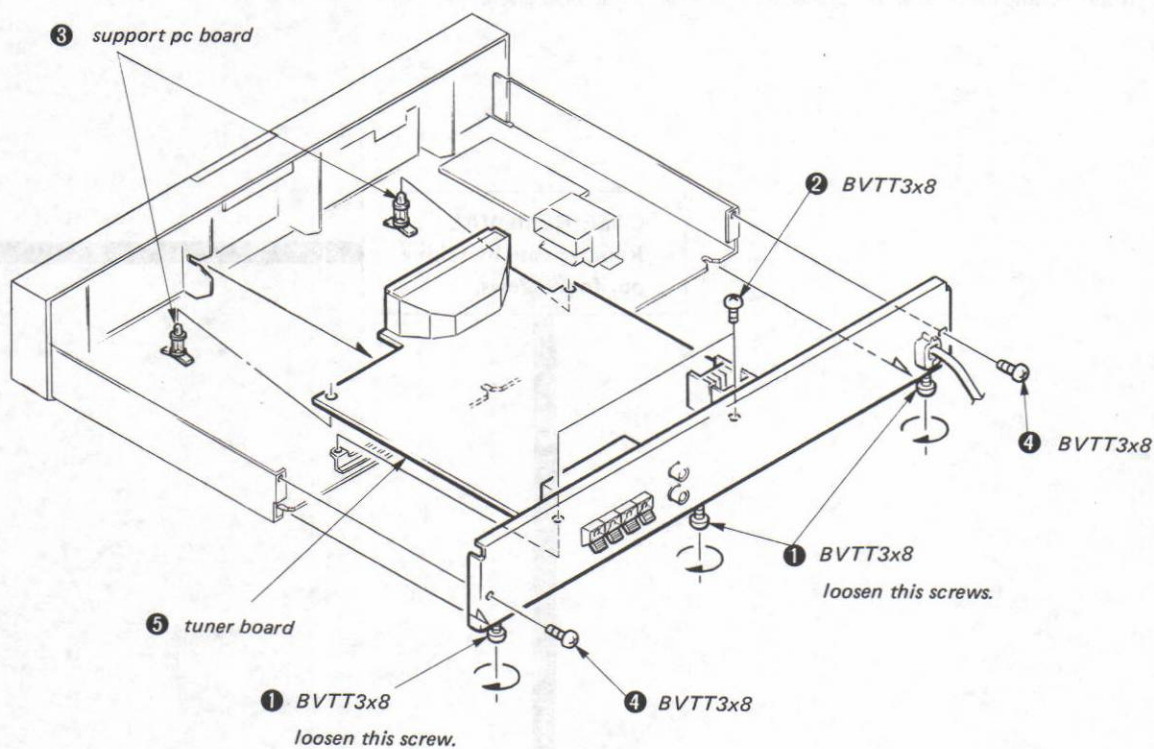
CASE REMOVAL

Remove case by taking out four screws.

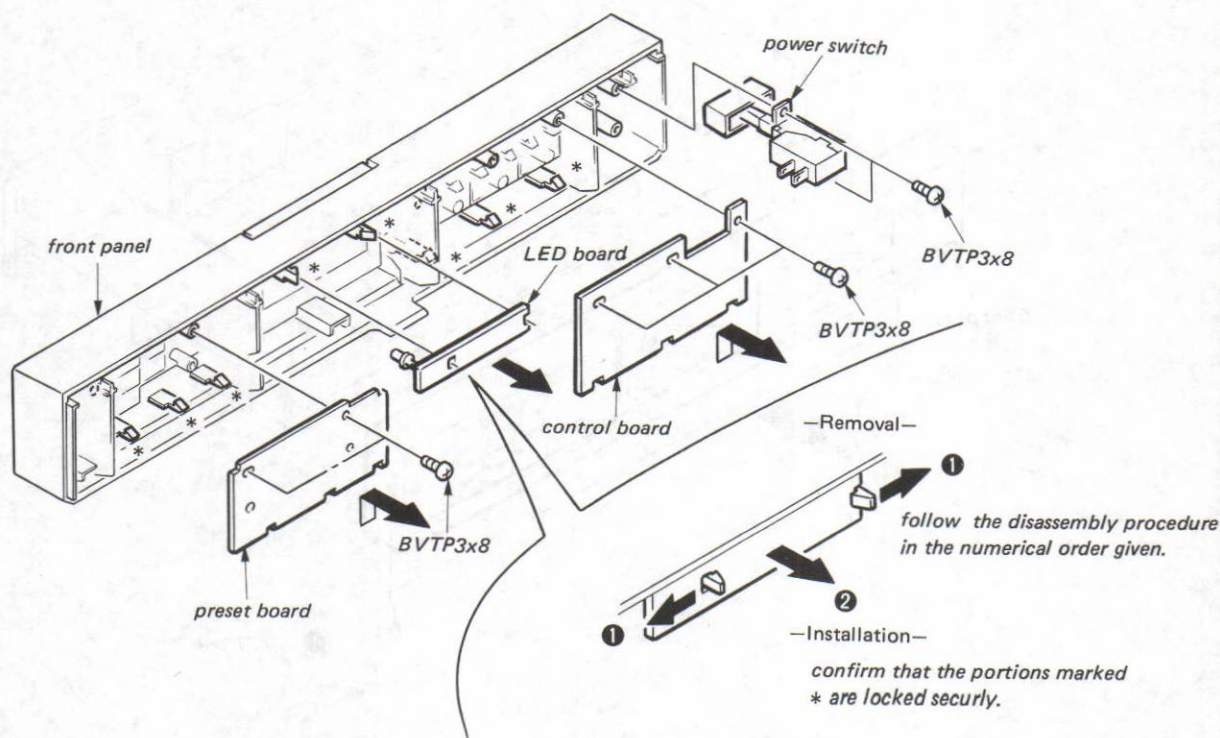
FRONT PANEL



TUNER BOARD



PRESET, LED, CONTROL BOARD AND POWER SWITCH

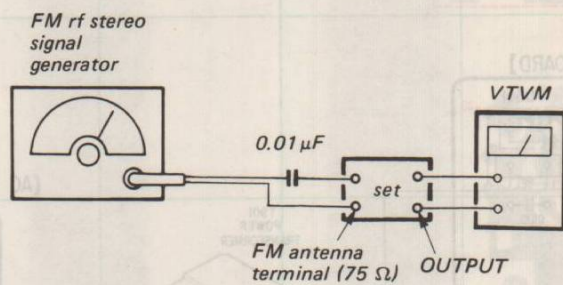


SECTION 3
ADJUSTMENTS

FM SECTION

FM stereo Separation Adjustment

Procedure:



Carrier frequency: 98 MHz
Output level: 1 mV (60 dB)
Mode: Stereo
Modulation:
Audio (1 kHz): 16.25 kHz deviation (40.6%)
Pilot (19 kHz): 7.5 kHz deviation (20.0%)
Sub-channel (38 kHz): 16.25 kHz deviation (40.6%)

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ [ⓑ] Adjust RV401 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ [ⓓ] Adjust RV401 for minimum reading.

L-CH Stereo separation: Ⓐ – Ⓑ

R-CH Stereo separation: Ⓒ – Ⓓ

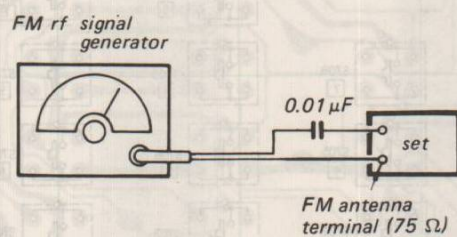
The separations of both channels should be equal.

FM Discriminator Alignment

Setting:

BAND select button: FM

Procedure:

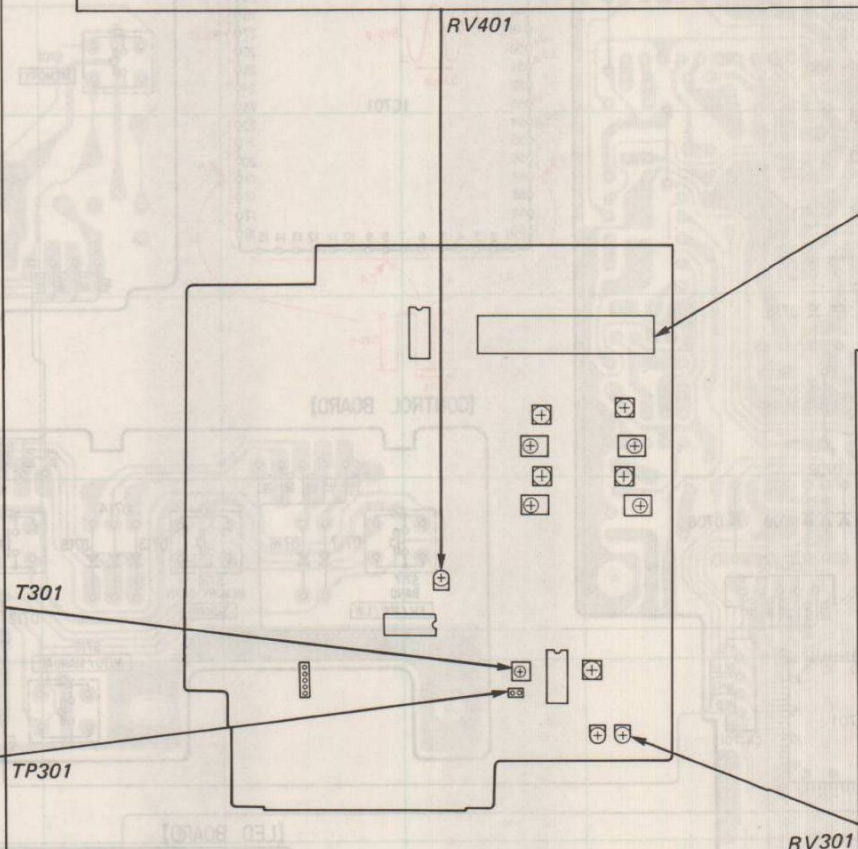
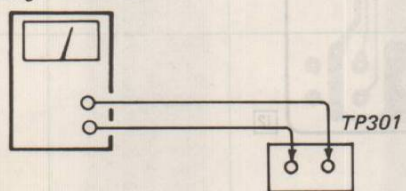


Carrier frequency: 98 MHz
Output level: 1 mV (60 dB)
Modulation: 1 kHz, 40 kHz deviation (100%)

1. Tune the set to 98 MHz.
2. Adjust T301 for 0 V reading on the VOM.
NULL Adjustment

Note: When the ceramic filter is replaced, these adjustments should be made.

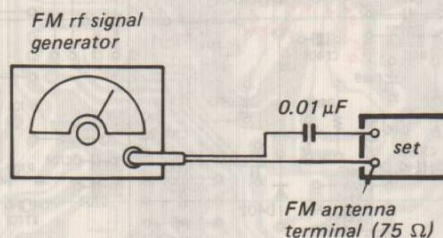
VOM
(range: 2.5 V dc)



The FM front-end is carefully adjusted at the factory and is supplied as one whole block for replacement.

FM TUNED Indication Lighting Level Adjustment

Setting:



Carrier frequency: 98 MHz
Modulation: 1 kHz, 40 kHz deviation (100%)
Output level: 17.8 μV (25 dB)

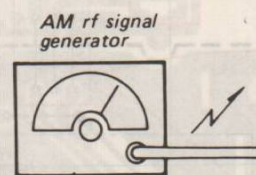
1. Tune the set to 98 MHz.
2. Adjust RV301 so that the TUNED indicator lights up.

MW/LW SECTION

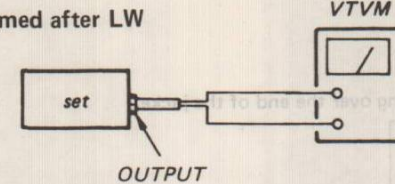
MW adjustment should be performed after LW

Setting:

BAND select button: MW/LW



Put the lead-wire antenna close to the set.



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
1,404 kHz	603 kHz
CT201	T201

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
162 kHz	270 kHz
T203	CT203

AM FREQUENCY COVERAGE ADJUSTMENT		
adjustment part	reading on VOM	frequency indication
T202	1.0 ± 0.2 V	522 kHz
CT202	9 ± 0.4 V	1,611 kHz

AM IF ALIGNMENT		
Adjust for a maximum reading on VTVM.		
450 kHz		
T302		

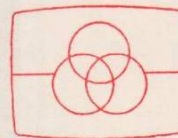
AM TUNED INDICATION LIGHTING LEVEL ADJUSTMENT

BAND select switch: LW

1. Output 50.1mV(94dB), 216kHz from AM rf signal generator.
2. Adjust RV302 so that the LED lights up.

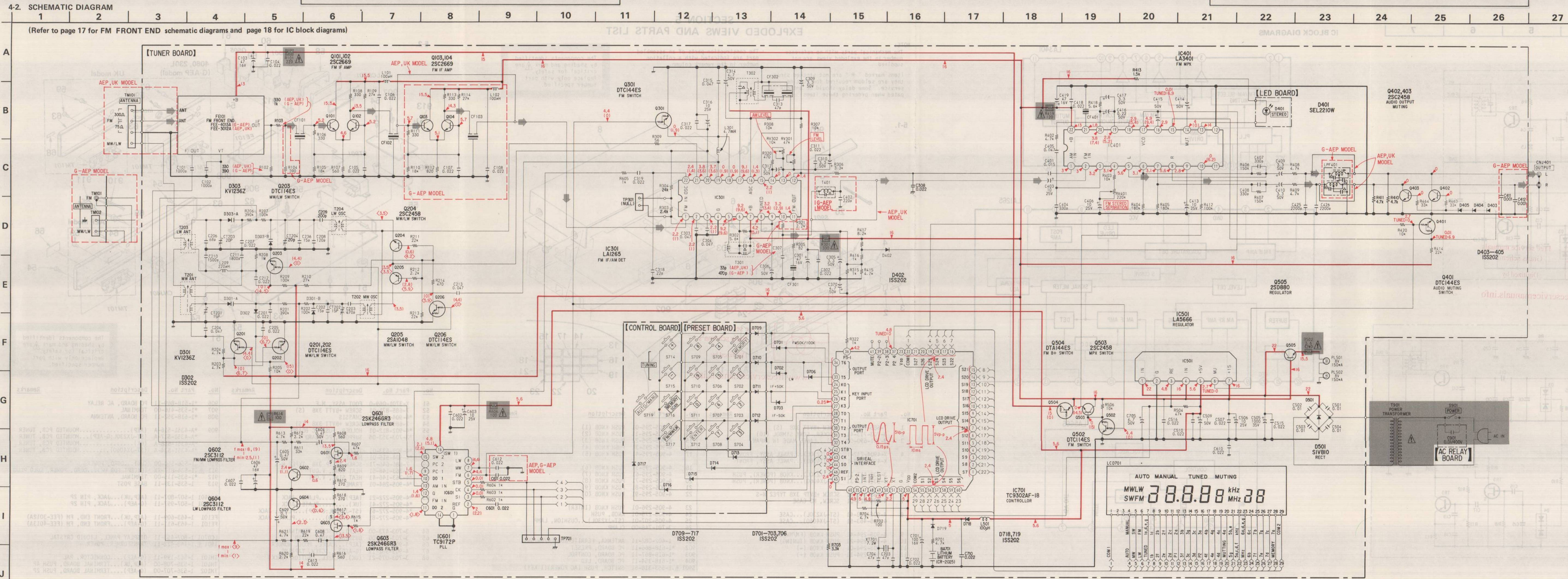
adjustment part	reading on VOM	frequency indication
T204	1 ± 0.2 V	144 kHz
CT204	9 ± 0.4 V	288 kHz

LW FREQUENCY COVERAGE ADJUSTMENT



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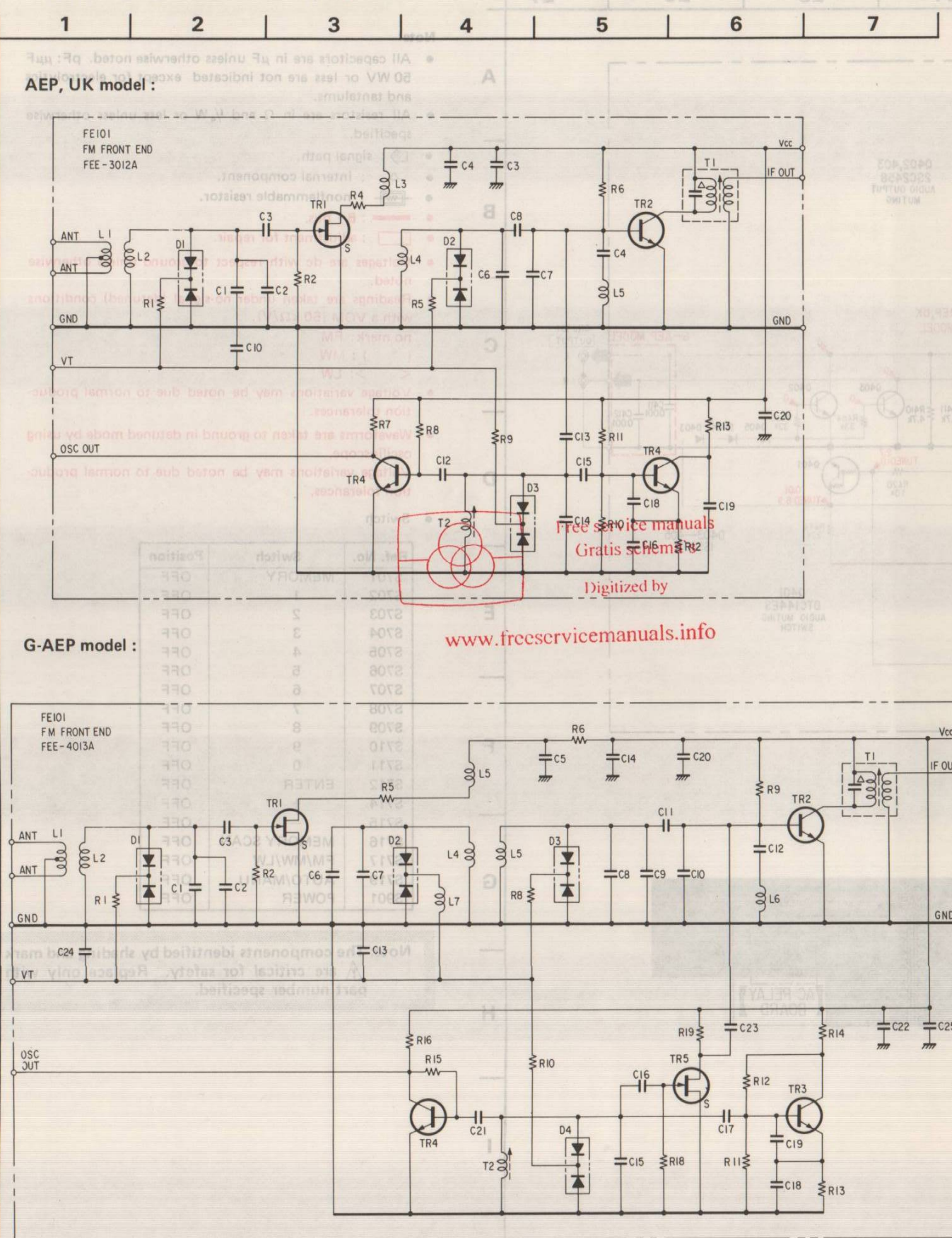
Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Signal path.
- Internal component.
- Nonflammable resistor.
- B+ bus.
- Adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 k Ω /V).
- Waveforms are taken to ground in detuned mode by using oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Switch

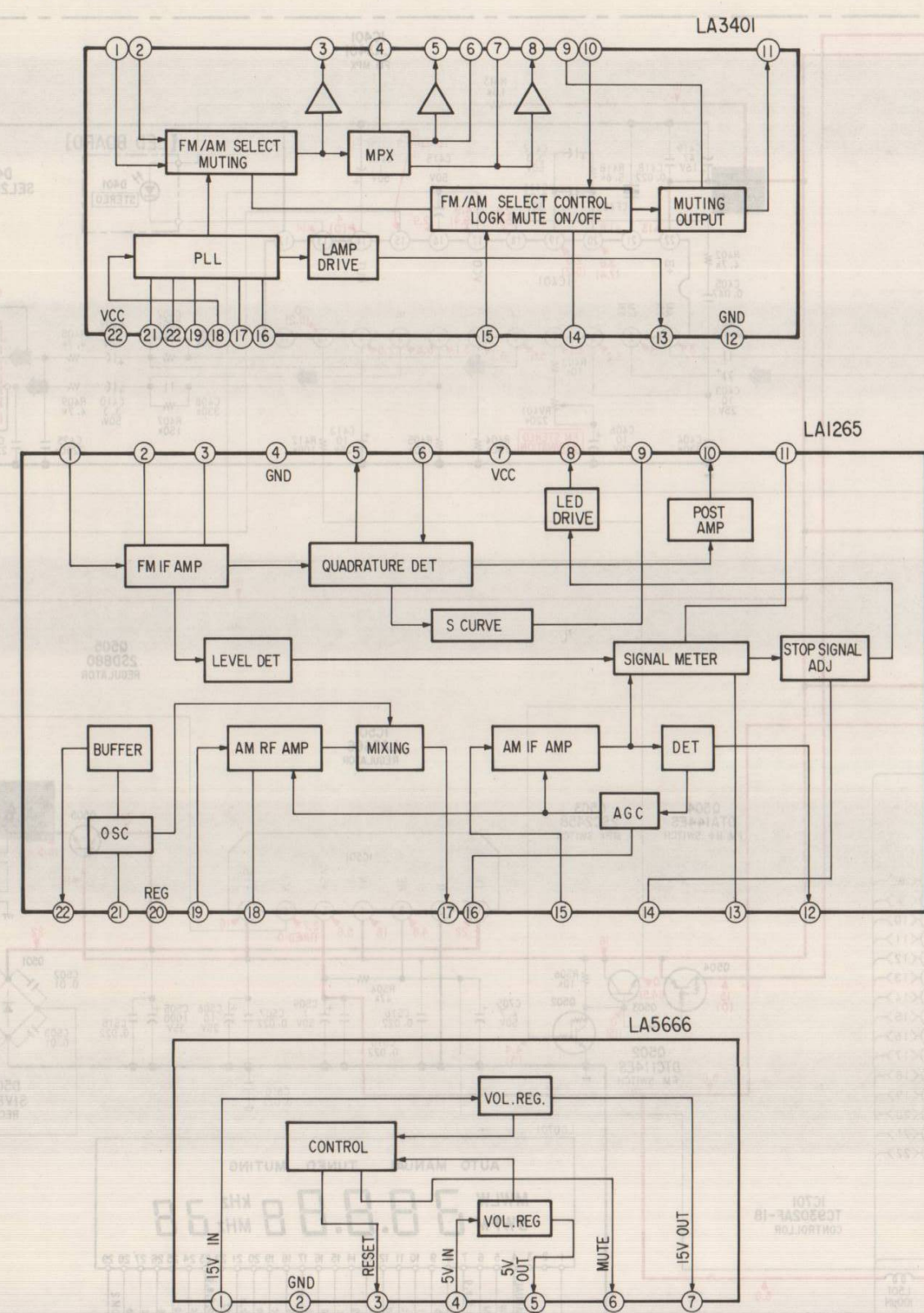
Ref. No.	Switch	Position
S701	MEMORY	OFF
S702	1	OFF
S703	2	OFF
S704	3	OFF
S705	4	OFF
S706	5	OFF
S707	6	OFF
S708	7	OFF
S709	8	OFF
S710	9	OFF
S711	0	OFF
S712	ENTER	OFF
S714	+	OFF
S715	-	OFF
S716	MEMORY SCAN	OFF
S717	FM/MW/LW	OFF
S719	AUTO/MANU	OFF
S901	POWER	OFF

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

4-3. FM FRONT END SCHEMATIC DIAGRAMS



IC BLOCK DIAGRAMS

SECTION 5
EXPLODED VIEWS AND PARTS LIST

NOTE:

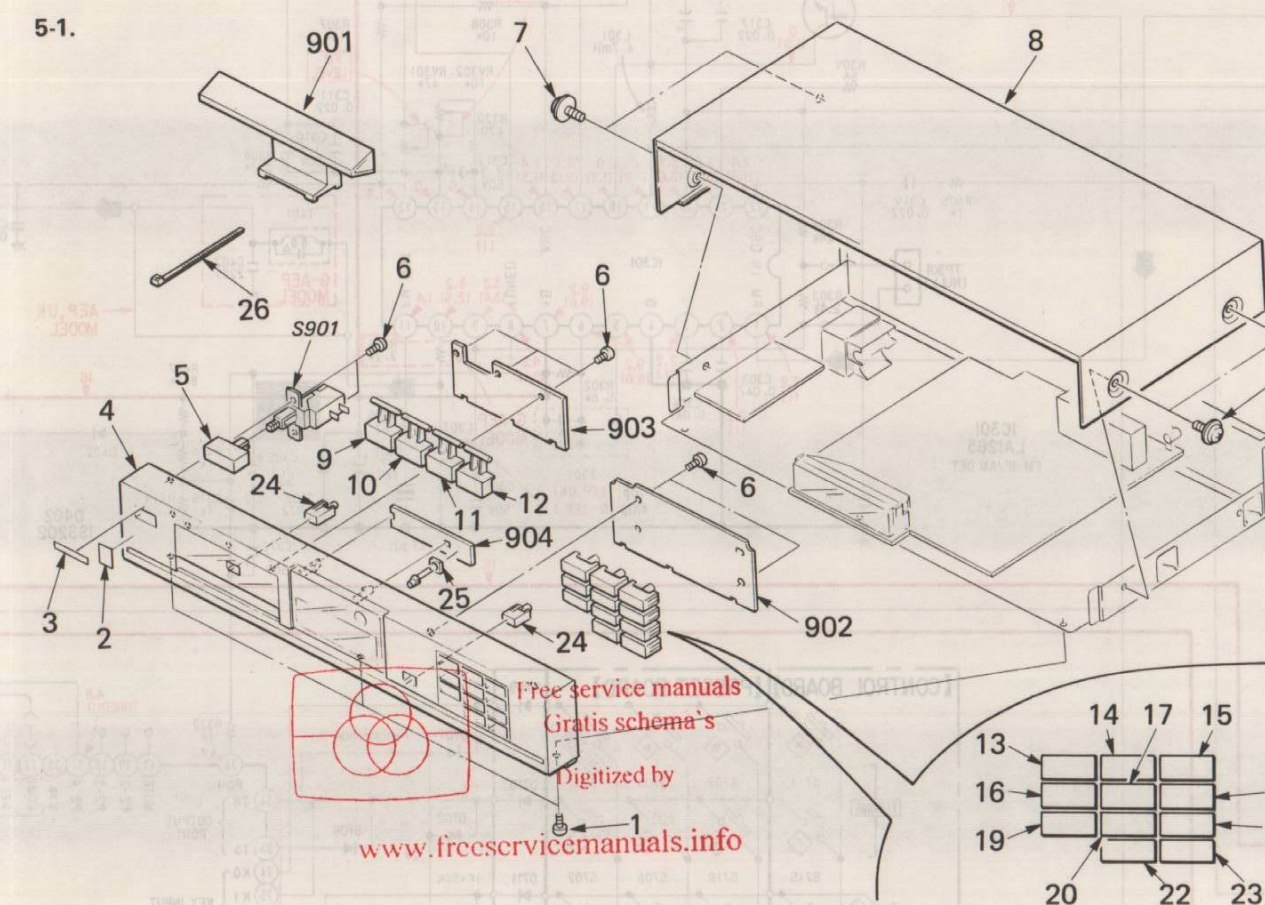
The mechanical parts with no reference number in the exploded views are not supplied.

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

The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

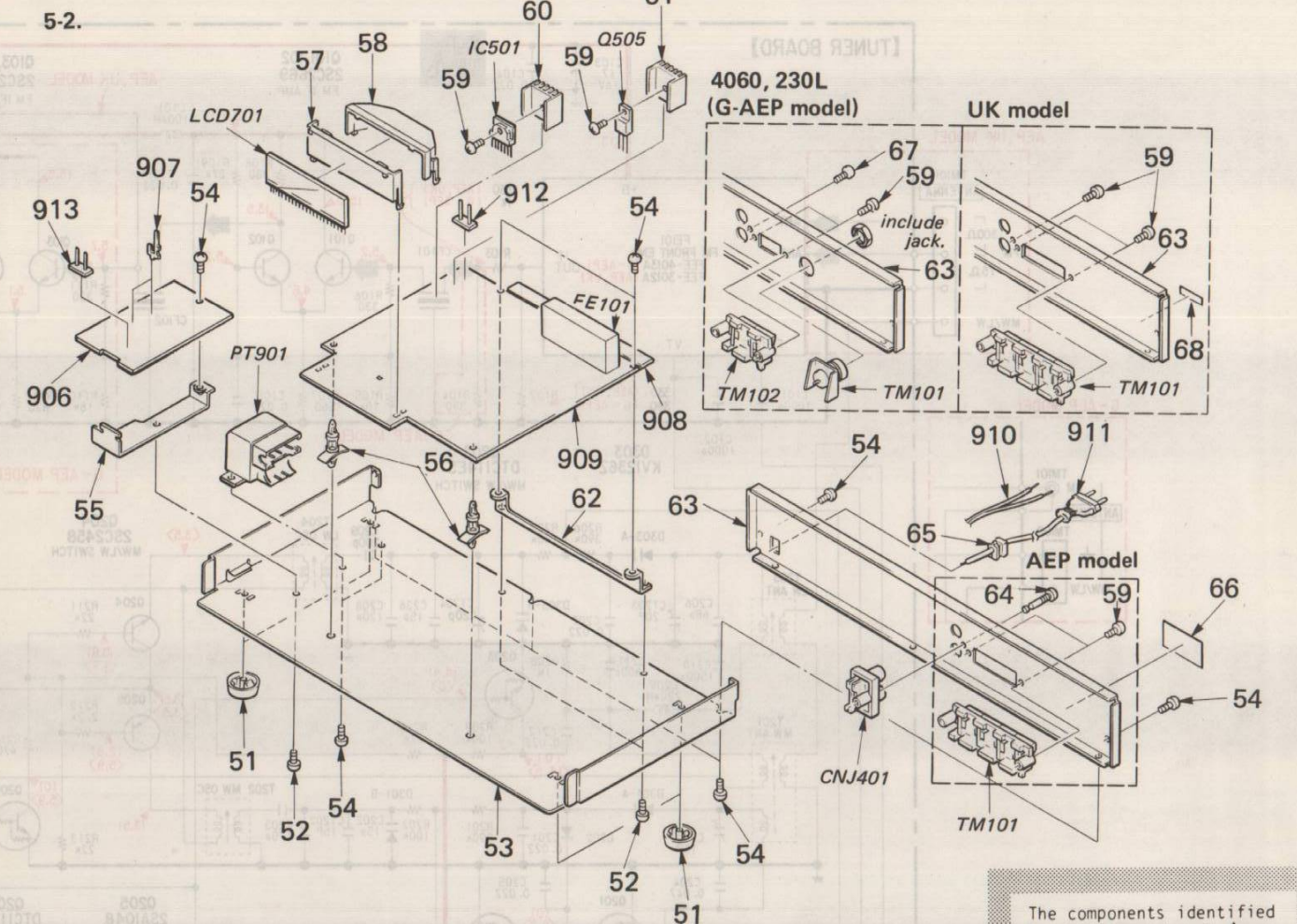
5-1.



No.	Part No.	Description	Remarks
1	7-685-752-04	SCREW +BVTT 3X8 (S)	
2	3-703-713-41	STICKER, SONY SYMBOL (10)	
3	3-701-690-00	(UK)...LABEL MADE IN JAPAN	
4	X-4904-242-1	(ST-JX230L)...PANEL ASSY, FRONT	
	X-4904-524-1	(ST-JX4060)...PANEL ASSY, FRONT	
5	3-332-417-11	(ST-JX230L)...KNOB (POWER), PUSH	
	3-332-417-31	(ST-JX4060)...KNOB (POWER), PUSH	
6	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
7	4-886-821-01	SCREW, M3 CASE	
8	4-905-463-41	(ST-JX230L)...CASE	
	4-905-463-51	(ST-JX4060)...CASE	
9	4-905-294-41	PUSH KNOB (FM/MW/LW)	
10	4-905-294-21	PUSH KNOB (TUNING)	
11	4-905-294-01	PUSH KNOB (-)	
12	4-905-294-11	PUSH KNOB (+)	

No.	Part No.	Description	Remarks
13	4-905-295-01	PUSH KNOB (1)	
14	4-905-295-11	PUSH KNOB (2)	
15	4-905-295-21	PUSH KNOB (3)	
16	4-905-295-31	PUSH KNOB (4)	
17	4-905-295-41	PUSH KNOB (5)	
18	4-905-295-51	PUSH KNOB (6)	
19	4-905-295-61	PUSH KNOB (7)	
20	4-905-295-71	PUSH KNOB (8)	
21	4-905-295-81	PUSH KNOB (9)	
22	4-905-295-91	PUSH KNOB (0)	
23	4-905-296-01	PUSH KNOB (INTER)	
24	4-905-275-01	KNOB, PUSH	
25	4-905-207-01	(ST-JX230L)...CUSHION, LAMP CLAMP	
26	3-701-748-00		
901	1-402-082-11	ANTENNA, FERRITE-ROD(LW/MW/SW)	
902	*1-618-866-11	PC BOARD, PRESET	
903	*1-618-867-11	PC BOARD, CONTROL	
904	*1-618-354-11	PC BOARD, LED	
S901	*1-553-318-51	SWITCH, PUSH (AC POWER)(1 KEY)	

5-2.



No.	Part No.	Description	Remarks
51	X-3701-069-0	FOOT ASSY, M.F	
52	7-685-871-01	SCREW +BVTT 3X6 (S)	
53	*4-904-481-11	CHASSIS	
54	7-685-752-04	SCREW +BVTT 3X8 (S)	
55	*4-902-812-01	HOLDER, FUSE PC BOARD	
56	*3-703-353-05	SUPPORT, PC BOARD	
57	*4-909-633-01	ILLUMINATOR	
58	*4-904-515-01	HOUSE, LAMP	
59	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
60	*4-363-146-51	HEAT SINK, V.OUT	
61	*4-363-146-41	HEAT SINK, V.OUT	
62	*4-905-284-01	FRAME	
63	*4-905-272-21	(AEP).....PLATE, JACK	
	*4-905-272-41	(UK).....PLATE, JACK	
	*4-905-272-61	(ST-JX230L:G-AEP)...PLATE, JACK	
	*4-905-272-81	(ST-JX4060).....PLATE, JACK	
64	3-703-473-00	(AEP)....SCREW TERMINAL	
65	3-703-244-00	BUSHING (2104), CORD	
66	4-905-276-01	(AEP)...LABEL, MODEL NUMBER	
67	4-909-982-11	(G-AEP)...SCREW, TAPPING	
68	3-703-079-21	(UK)...LABEL, CAUTION (BACK)	

No.	Part No.	Description	Remarks
906	*1-618-869-11	PC BOARD, AC RELAY	
907	*1-535-416-00	TERMINAL BOARD, ANTENNA	
908	*1-618-352-11	PC BOARD, ANTENNA	
909	*A-4351-516-A	(AEP).....MOUNTED PCB, TUNER	
	*A-4351-517-A	(ST-JX230L:G-AEP)...MOUNTED PCB, TUNER	
	*A-4351-518-A	(UK).....MOUNTED PCB, TUNER	
	*A-4351-534-A	(ST-JX4060).....MOUNTED PCB, TUNER	
910	*1-556-560-00	(UK)...CORD, POWER	
911	*1-534-817-XX	(EXCEPT FOR UK)...CORD, POWER, EULO PLUG	
912	*1-535-115-00	TERMINAL	
913	1-535-139-11	BASE POST	
CNJ401	1-507-807-11	(AEP,UK)...JACK, PIN 2P	
CNJ401	1-507-997-11	(G-AEP)...JACK, PIN 2P	
FE101	1-463-609-11	(AEP,UK)...FRONT END, FM (FEE-3012A)	
FE101	1-463-611-11	(G-AEP)...FRONT END, FM (FEE-4013A)	
LCD701	1-807-453-11	DISPLAY PANEL, LIQUID CRYSTAL	
T901	*1-448-422-11	TRANSFORMER, POWER	
TM101	1-563-199-11	(G-AEP)...CONNECTOR, PAL	
TM101	1-536-708-00	(AEP,UK)...TERMINAL BOARD, PUSH 4P	
TM102	1-536-707-00	(G-AEP)....TERMINAL BOARD, PUSH 2P	

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μF.

RESISTORS

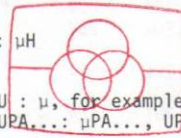
- All resistors are in ohms.
- F : nonflammable

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC...
UPD...: μPD...



Free service manuals
Gratis schemas

The components identified by shading and mark are essential for safety. Replace only with part number specified.

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	1-402-082-11	ANTENNA, FERRITE-ROD (LW/MW/SW)
902	*1-618-866-11	PC BOARD, PRESET
903	*1-618-867-11	PC BOARD, CONTROL
904	*1-618-354-11	PC BOARD, LED
906	*1-618-869-11	PC BOARD, AC RELAY
907	*1-535-416-00	TERMINAL
908	*1-618-352-11	PC BOARD, ANTENNA
909	*A-4351-516-A	(AEP).....MOUNTED PCB, TUNER
	*A-4351-517-A	(ST-JX230L:G-AEP)...MOUNTED PCB, TUNER
	*A-4351-518-A	(UK).....MOUNTED PCB, TUNER
	*A-4351-534-A	(ST-JX4060).....MOUNTED PCB, TUNER
910	△ 1-556-560-00	(UK)...CORD, POWER
911	△ 1-534-817-XX	(EXCEPT FOR UK)..CORD, POWER, EULO PLUG
912	*1-535-115-00	TERMINAL
913	1-535-139-11	BASE POST
BA701	1-528-120-00	BATTERY, LITHIUM (CR-2025)
C101	1-162-294-31	CERAMIC 0.001MF 10% 50V
C102	1-162-294-31	CERAMIC 0.001MF 10% 50V
C103	1-123-332-00	ELECT 47MF 20% 16V
C104	1-161-494-00	CERAMIC 0.022MF 30% 25V
C105	1-161-494-00	CERAMIC 0.022MF 30% 25V
C106	1-161-494-00	CERAMIC 0.022MF 30% 25V
C107	1-161-494-00	(G-AEP)...CERAMIC 0.022MF 30% 25V
C108	1-161-494-00	(G-AEP)...CERAMIC 0.022MF 30% 25V
C201	1-161-494-00	CERAMIC 0.022MF 30% 25V
C202	1-102-880-00	CERAMIC 15PF 5% 50V
C203	1-104-069-00	POLYSTYRENE 470PF 5% 50V
C204	1-101-006-00	CERAMIC 0.047MF 50V
C205	1-161-494-00	CERAMIC 0.022MF 30% 25V
C206	1-101-888-00	CERAMIC 68PF 5% 50V
C207	1-161-494-00	CERAMIC 0.022MF 30% 25V
C208	1-102-703-21	CERAMIC 120PF 5% 50V
C209	1-104-060-00	POLYSTYRENE 200PF 5% 50V
C210	1-162-301-31	CERAMIC 0.0015MF 30% 16V
C211	1-102-120-00	CERAMIC 0.0018MF 10% 50V
C212	1-161-494-00	CERAMIC 0.022MF 30% 25V
C213	1-101-006-00	CERAMIC 0.047MF 50V
C236	1-101-971-00	CERAMIC 15PF 5% 50V
C301	1-123-332-00	ELECT 47MF 20% 16V
C302	1-161-494-00	CERAMIC 0.022MF 30% 25V
C303	1-101-006-00	CERAMIC 0.047MF 50V
C304	1-101-006-00	CERAMIC 0.047MF 50V
C305	1-123-382-00	ELECT 3.3MF 20% 50V
C306	1-123-380-00	ELECT 1MF 20% 50V
C307	1-162-211-31	(AEP,UK)...CERAMIC 33PF 5% 50V
C307	1-162-290-31	(G-AEP)...CERAMIC 470PF 10% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C308	1-161-494-00	CERAMIC 0.022MF 30% 25V
C309	1-123-382-00	ELECT 3.3MF 20% 50V
C310	1-123-382-00	ELECT 3.3MF 20% 50V
C311	1-161-494-00	CERAMIC 0.022MF 30% 25V
C312	1-123-382-00	ELECT 3.3MF 20% 50V
C313	1-162-215-31	CERAMIC 47PF 5% 50V
C314	1-123-369-00	ELECT 4.7MF 20% 50V
C315	1-101-006-00	CERAMIC 0.047MF 50V
C316	1-123-356-00	ELECT 10MF 20% 25V
C317	1-161-494-00	CERAMIC 0.022MF 30% 25V
C318	1-162-207-31	CERAMIC 22PF 5% 50V
C319	1-161-494-00	CERAMIC 0.022MF 30% 25V
C370	1-123-369-00	ELECT 4.7MF 20% 50V
C401	1-108-583-00	MYLAR 0.015MF 5% 50V
C402	1-162-286-31	(G-AEP)...CERAMIC 220PF 10% 50V
C403	1-123-356-00	ELECT 10MF 20% 25V
C404	1-162-288-31	CERAMIC 330PF 10% 50V
C405	1-108-595-00	MYLAR 0.047MF 5% 50V
C406	1-123-356-00	ELECT 10MF 20% 25V
C407	1-162-288-31	CERAMIC 330PF 10% 50V
C408	1-162-288-31	CERAMIC 330PF 10% 50V
C409	1-123-382-00	ELECT 3.3MF 20% 50V
C410	1-123-382-00	ELECT 3.3MF 20% 50V
C411	1-162-294-31	(G-AEP)...CERAMIC 0.001MF 10% 50V
C412	1-162-294-31	(G-AEP)...CERAMIC 0.001MF 10% 50V
C413	1-123-356-00	ELECT 10MF 20% 25V
C414	1-123-380-00	ELECT 1MF 20% 50V
C415	1-123-380-00	ELECT 1MF 20% 50V
C416	1-123-608-00	ELECT 0.22MF 20% 50V
C417	1-123-382-00	ELECT 3.3MF 20% 50V
C418	1-161-494-00	CERAMIC 0.022MF 30% 25V
C419	1-123-332-00	ELECT 47MF 20% 16V
C425	1-102-121-00	CERAMIC 0.0022MF 10% 50V
C426	1-102-121-00	CERAMIC 0.0022MF 10% 50V
C501	1-101-004-00	CERAMIC 0.01MF 50V
C502	1-101-004-00	CERAMIC 0.01MF 50V
C503	1-101-004-00	CERAMIC 0.01MF 50V
C504	1-101-004-00	CERAMIC 0.01MF 50V
C505	1-124-901-00	ELECT 1000MF 20% 35V
C506	1-123-356-00	ELECT 10MF 20% 25V
C507	1-161-494-00	CERAMIC 0.022MF 30% 25V
C509	1-123-380-00	ELECT 1MF 20% 50V
C510	1-161-494-00	CERAMIC 0.022MF 30% 25V
C515	1-101-005-00	CERAMIC 0.022MF 50V
C516	1-101-005-00	CERAMIC 0.022MF 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C601	1-161-494-00	CERAMIC 0.022MF 30% 25V
C602	1-161-494-00	CERAMIC 0.022MF 30% 25V
C603	1-123-356-00	ELECT 10MF 20% 25V
C604	1-123-379-00	ELECT 0.47MF 20% 50V
C605	1-123-379-00	ELECT 0.47MF 20% 50V
C606	1-123-332-00	ELECT 47MF 20% 16V
C607	1-161-494-00	CERAMIC 0.022MF 30% 25V
C608	1-130-776-00	FILM 0.47MF 5% 63V
C609	1-123-607-00	ELECT 0.1MF 20% 50V
C610	1-101-005-00	CERAMIC 0.022MF 50V
C611	1-101-005-00	(AEP,G-AEP)...CERAMIC 0.022MF 50V
C612	1-101-005-00	(AEP,G-AEP)...CERAMIC 0.022MF 50V
C613	1-101-005-00	CERAMIC 0.022MF 50V
C701	1-123-333-00	ELECT 100MF 20% 16V
C702	1-161-494-00	CERAMIC 0.022MF 30% 25V
C703	1-102-852-00	CERAMIC 47PF 5% 50V
C704	1-102-852-00	CERAMIC 47PF 5% 50V
C705	1-123-369-00	ELECT 4.7MF 20% 50V
C710	1-161-494-00	CERAMIC 0.022MF 30% 25V
C901	1-161-744-00	CERAMIC 0.01MF 400V
CF101	1-567-389-11	FILTER, CERAMIC
CF102	1-567-389-11	(G-AEP)...FILTER, CERAMIC
CF103	1-567-389-11	(G-AEP)...FILTER, CERAMIC
CF301	1-527-981-00	FILTER, CERAMIC
CF302	1-527-937-00	FILTER, CERAMIC
CF401	1-567-250-11	OSCILLATOR, CERAMIC
CNJ401	1-507-807-11	(AEP,UK)...JACK, PIN 2P
CNJ401	1-507-997-11	(G-AEP)...JACK, PIN 2P
CNJ701*1-564-507-11		PLUG, CONNECTOR 4P
CNJ702*1-564-508-11		PLUG, CONNECTOR 5P
CT201	1-141-180-00	CAP, TRIMMER 15P
CT202	1-141-180-00	CAP, TRIMMER 15P
CT203	1-141-171-00	CAP, TRIMMER 20P
CT204	1-141-171-00	CAP, TRIMMER 20P
D301	8-719-902-79	DIODE KV1236Z
D302	8-719-107-94	DIODE 1SS202-1
D303	8-719-902-79	DIODE KV1236Z
D401	8-719-302-74	DIODE SEL2210W-C
D402	8-719-107-94	DIODE 1SS202-1
D403	8-719-107-94	DIODE 1SS202-1
D404	8-719-107-94	DIODE 1SS202-1
D405	8-719-107-94	DIODE 1SS202-1
D501	8-719-511-20	DIODE SLVB20
D701	8-719-107-94	DIODE 1SS202-1
D702	8-719-107-94	DIODE 1SS202-1
D703	8-719-107-94	DIODE 1SS202-1

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D706	8-719-107-94	DIODE 1SS202-1
D709	8-719-107-94	DIODE 1SS202-1
D710	8-719-107-94	DIODE 1SS202-1
D711	8-719-107-94	DIODE 1SS202-1
D712	8-719-107-94	DIODE 1SS202-1
D713	8-719-107-94	DIODE 1SS202-1
D714	8-719-107-94	DIODE 1SS202-1
D715	8-719-107-94	DIODE 1SS202-1
D716	8-719-107-94	DIODE 1SS202-1
D717	8-719-107-94	DIODE 1SS202-1
D718	8-719-107-94	DIODE 1SS202-1
D719	8-719-107-94	DIODE 1SS202-1
FE101	1-463-609-11	(AEP,UK)...FRONT END, FM (FEE-3012A)
FE101	1-463-611-11	(G-AEP)...FRONT END, FM (FEE-4013A)
IC301	8-759-801-81	IC LA1265
IC401	8-759-801-80	IC LA3401
IC501	8-759-802-61	IC LA5666
IC601	8-759-202-63	IC TC9172P
IC701	8-759-207-45	IC TC9302AF-018
L101	1-410-564-21	MICRO INDUCTOR 100UH
L102	1-410-564-21	MICRO INDUCTOR 100UH
L209	1-410-568-21	MICRO INDUCTOR 220UH
L301	1-408-920-00	MICRO INDUCTOR 4.7MMH
L501	1-410-564-21	MICRO INDUCTOR 100UH
LCD701	1-807-453-11	DISPLAY PANEL, LIQUID CRYSTAL
LPF401	1-235-221-00	(G-AEP)...FILTER, LOW PASS
PL501	1-518-576-31	LAMP, PILOT
PL502	1-518-576-31	LAMP, PILOT
Q101	8-729-266-93	TRANSISTOR 2SC2669
Q102	8-729-266-93	TRANSISTOR 2SC2669
Q103	8-729-266-93	(G-AEP)...TRANSISTOR 2SC2669
Q104	8-729-266-93	(G-AEP)...TRANSISTOR 2SC2669
Q201	8-729-900-80	TRANSISTOR DTC114ES
Q202	8-729-900-80	TRANSISTOR DTC114ES
Q203	8-729-900-80	TRANSISTOR DTC114ES
Q204	8-729-606-33	TRANSISTOR 2SC2603F
Q205	8-729-117-54	TRANSISTOR 2SA1175
Q206	8-729-900-80	TRANSISTOR DTC114ES
Q301	8-729-900-80	TRANSISTOR DTC114ES
Q401	8-729-900-80	TRANSISTOR DTC114ES
Q402	8-729-606-33	TRANSISTOR 2SC2603F
Q403	8-729-606-33	TRANSISTOR 2SC2603F
Q502	8-729-900-80	TRANSISTOR DTC114ES

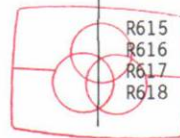
The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
Q503	8-729-606-33	TRANSISTOR 2SC2603F				
Q504	8-729-900-65	TRANSISTOR DTA114ES				
Q505	8-729-288-02	TRANSISTOR 2SD880				
Q601	8-729-202-67	TRANSISTOR 2SK246GR3				
Q602	8-729-201-84	TRANSISTOR 2SC3112-B				
Q603	8-729-202-67	TRANSISTOR 2SK246GR3				
Q604	8-729-201-84	TRANSISTOR 2SC3112-B				
R101	△ 1-247-704-11	CARBON	220	5%	1/4W	F
R102	1-247-819-00	(AEP,UK)...CARBON	330	5%	1/6W	
R102	1-247-821-00	(G-AEP)...CARBON	390	5%	1/6W	
R103	1-247-819-00	(AEP,UK)...CARBON	330	5%	1/6W	
R103	1-249-417-11	(G-AEP)...CARBON	1K	5%	1/6W	
R104	1-247-821-00	(G-AEP)...CARBON	390	5%	1/6W	
R105	1-249-432-11	CARBON	18K	5%	1/6W	
R106	1-247-819-00	CARBON	330	5%	1/6W	
R107	1-249-414-11	CARBON	560	5%	1/6W	
R108	1-247-819-00	CARBON	330	5%	1/6W	
R109	1-249-434-11	CARBON	27K	5%	1/6W	
R110	1-249-432-11	(G-AEP)...CARBON	18K	5%	1/6W	
R111	1-247-819-00	(G-AEP)...CARBON	330	5%	1/6W	
R112	1-247-829-00	(G-AEP)...CARBON	820	5%	1/6W	
R113	1-247-819-00	(G-AEP)...CARBON	330	5%	1/6W	
R114	1-249-434-11	(G-AEP)...CARBON	27K	5%	1/6W	
R201	1-247-893-00	CARBON	390K	5%	1/6W	
R202	1-249-441-11	CARBON	100K	5%	1/6W	
R203	1-249-425-11	CARBON	4.7K	5%	1/6W	
R204	1-249-425-11	CARBON	4.7K	5%	1/6W	
R205	1-249-429-11	CARBON	10K	5%	1/6W	
R206	1-247-893-00	CARBON	390K	5%	1/6W	
R207	1-249-441-11	CARBON	100K	5%	1/6W	
R208	1-247-903-00	CARBON	1M	5%	1/6W	
R209	1-249-441-11	CARBON	100K	5%	1/6W	
R210	1-249-434-11	CARBON	27K	5%	1/6W	
R211	1-249-433-11	CARBON	22K	5%	1/6W	
R212	1-247-839-00	CARBON	2.2K	5%	1/6W	
R213	1-249-433-11	CARBON	22K	5%	1/6W	
R214	1-247-823-00	CARBON	470	5%	1/6W	
R301	△ 1-247-706-11	CARBON	330	5%	1/4W	F
R302	1-247-849-00	CARBON	5.6K	5%	1/6W	
R303	1-247-840-00	CARBON	2.4K	5%	1/6W	
R304	1-247-864-00	CARBON	24K	5%	1/6W	
R305	1-247-805-00	CARBON	82	5%	1/6W	
R306	1-249-423-11	CARBON	3.3K	5%	1/6W	
R307	1-249-429-11	CARBON	10K	5%	1/6W	
R308	1-249-429-11	CARBON	10K	5%	1/6W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R309	1-247-801-00	CARBON	56	5%	1/6W	
R315	1-249-417-11	CARBON	1K	5%	1/6W	
R320	1-247-823-00	CARBON	470	5%	1/6W	
R321	1-247-839-00	(G-AEP)...CARBON	2.2K	5%	1/6W	
R322	1-249-417-11	CARBON	1K	5%	1/6W	
R402	1-249-425-11	CARBON	4.7K	5%	1/6W	
R403	1-249-429-11	CARBON	10K	5%	1/6W	
R404	1-247-885-00	CARBON	180K	5%	1/6W	
R405	1-247-885-00	CARBON	180K	5%	1/6W	
R406	1-247-883-00	CARBON	150K	5%	1/6W	
R407	1-247-883-00	CARBON	150K	5%	1/6W	
R408	1-249-425-11	CARBON	4.7K	5%	1/6W	
R409	1-249-425-11	CARBON	4.7K	5%	1/6W	
R410	1-249-425-11	CARBON	4.7K	5%	1/6W	
R411	1-249-425-11	CARBON	4.7K	5%	1/6W	
R412	1-249-441-11	CARBON	100K	5%	1/6W	
R413	1-247-135-00	CARBON	1.5K	5%	1/4W	
R414	1-249-433-11	CARBON	22K	5%	1/6W	
R415	1-249-425-11	CARBON	4.7K	5%	1/6W	
R416	1-249-417-11	CARBON	1K	5%	1/6W	
R417	1-247-853-00	CARBON	8.2K	5%	1/6W	
R418	1-247-849-00	CARBON	5.6K	5%	1/6W	
R419	△ 1-247-109-00	CARBON	120	5%	1/4W	F
R420	1-249-429-11	CARBON	10K	5%	1/6W	
R463	1-249-435-11	CARBON	33K	5%	1/6W	
R464	1-249-435-11	CARBON	33K	5%	1/6W	
R502	△ 1-206-452-00	METAL OXIDE	3.6	5%	2W	F
R504	1-249-437-11	CARBON	47K	5%	1/6W	
R506	1-249-429-11	CARBON	10K	5%	1/6W	
R602	1-249-417-11	CARBON	1K	5%	1/6W	
R603	1-249-417-11	CARBON	1K	5%	1/6W	
R604	1-249-417-11	CARBON	1K	5%	1/6W	
R605	1-249-417-11	CARBON	1K	5%	1/6W	
R606	△ 1-247-107-00	CARBON	100	5%	1/4W	F
R607	1-249-437-11	CARBON	47K	5%	1/6W	
R608	1-249-414-11	CARBON	560	5%	1/6W	
R609	1-247-829-00	CARBON	820	5%	1/6W	
R610	1-247-817-00	CARBON	270	5%	1/6W	
R611	1-249-435-11	CARBON	33K	5%	1/6W	
R612	1-247-839-00	CARBON	2.2K	5%	1/6W	
R613	1-249-425-11	CARBON	4.7K	5%	1/6W	
R614	△ 1-247-107-00	CARBON	100	5%	1/4W	F
R615	1-249-417-11	CARBON	1K	5%	1/6W	
R616	1-249-414-11	CARBON	560	5%	1/6W	
R617	1-247-833-00	CARBON	1.2K	5%	1/6W	
R618	1-247-817-00	CARBON	270	5%	1/6W	



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ELECTRICAL PARTS

Ref.No.	Part No.	Description
R619	1-249-433-11	CARBON 22K 5% 1/6W
R620	1-247-839-00	CARBON 2.2K 5% 1/6W
R621	1-249-425-11	CARBON 4.7K 5% 1/6W
R701	1-249-425-11	CARBON 4.7K 5% 1/6W
R702	1-249-405-11	CARBON 100 5% 1/6W
R703	1-249-423-11	CARBON 3.3K 5% 1/6W
R704	1-249-425-11	CARBON 4.7K 5% 1/6W
RV301	1-228-996-00	RES, ADJ, CARBON 47K
RV302	1-230-630-11	RES, ADJ, CARBON 10K
RV401	1-230-635-11	RES, ADJ, CARBON 220K
S701	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S702	1-554-303-21	SWITCH, KEY BOARD (1)
S703	1-554-303-21	SWITCH, KEY BOARD (2)
S704	1-554-303-21	SWITCH, KEY BOARD (3)
S705	1-554-303-21	SWITCH, KEY BOARD (4)
S706	1-554-303-21	SWITCH, KEY BOARD (5)
S707	1-554-303-21	SWITCH, KEY BOARD (6)
S708	1-554-303-21	SWITCH, KEY BOARD (7)
S709	1-554-303-21	SWITCH, KEY BOARD (8)
S710	1-554-303-21	SWITCH, KEY BOARD (9)
S711	1-554-303-21	SWITCH, KEY BOARD (0)
S712	1-554-303-21	SWITCH, KEY BOARD (ENTER)
S714	1-554-303-21	SWITCH, KEY BOARD (+)
S715	1-554-303-21	SWITCH, KEY BOARD (-)
S716	1-554-303-21	SWITCH, KEY BOARD (MEMORY SCAN)
S717	1-554-303-21	SWITCH, KEY BOARD (FM/MW/LW)
S719	1-554-303-21	SWITCH, KEY BOARD (AUTO/MANU)
S901 A	1-553-318-51	SWITCH, PUSH (AC POWER) (1 KEY)
T201	1-402-080-11	COIL, ANT (MW)
T202	1-406-089-11	COIL (OSC)
T203	1-402-071-11	COIL (ANT)
T204	1-406-207-11	COIL, LW (OSC)
T301	1-404-659-11	COIL, DISCRIMINATOR
T302	1-404-535-11	COIL (WITH IFT)
T401	1-235-126-00	(G-AEP)...ENCAPSULATED COMPONENT
T901 A	1-448-422-11	TRANSFORMER, POWER
TM101	1-536-708-00	(AEP,UK)...TERMINAL BOARD, PUSH 4P
TM101	1-563-199-11	(G-AEP)...CONNECTOR, PAL
TM102	1-536-707-00	(G-AEP)...TERMINAL BOARD, PUSH 2P
TP301	*1-560-060-00	PIN, CONNECTOR 2P
TP701	*1-560-063-00	PIN, CONNECTOR 5P
XT701	1-567-125-00	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-501-351-21	(AEP,UK)...ANTENNA, FEEDER
1-558-543-21	CORD, CONNECTION
1-558-787-21	(EXCEPT FOR AEP)...CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-765-296-11	(AEP,UK).....MANUAL, INSTRUCTION
3-765-296-41	(AEP,230L:G-AEP)...MANUAL, INSTRUCTION
3-765-413-61	(ST-JX4060).....MANUAL, INSTRUCTION
4-876-352-00	SHEET, PROTECTION
4-905-268-01	(AEP)...HOLDER ANTENNA
4-905-240-01	CUSHION, LOWER
4-905-242-01	CUSHION (LEFT), UPPER
4-905-243-01	CUSHION (RIGHT), UPPER
4-905-292-51	(ST-JX230L)...INDIVIDUAL CARTON
4-905-292-71	(ST-JX4060)...INDIVIDUAL CARTON

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ST-JX230L/JX4060

SONY[®] SERVICE MANUAL

*AEP Model
UK Model*

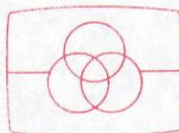
ST-JX230L

G-AEP Model

ST-JX4060

CORRECTION-1

File this correction with the Service Manual.



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Page20 and 22

INCORRECT

LCD701 1-807-453-11 DISPLAY PANEL, LIQUID
CRYSTAL

CORRECT

1-807-453-21 (ST-JX230L)
1-807-453-11 (ST-JX4060)
DISPLAY PANEL, LIQUID
CRYSTAL

ST-JX230L/JX4060

SERVICE MANUAL

AEP Model

No.1

November, 1986

SUPPLEMENT

Please file this supplement with the Service Manual.

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WARNING !!

ADVARSEL!

Lithiumbatteri – Eksplosionsfare
Udskiftning må kun foretages
af en sagkyndig, og som
beskrevet i servicemanualen.

LITHIUM BATTERY

SHOULD ONLY BE CHANGED BY TECHNICAL
PERSONNEL. THERE IS A RISK FOR EXPLOSION
AT A WRONG HANDLING.

“Batteriet må kun udskiftes med et batteri af samme
fabrikat og type”.

Because of the risk for explosion the battery must
be replaced with the same type and manufacture.

FM STEREO/FM-AM TUNER
SONY®



9-952-427-81

Sony Corporation

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AUD