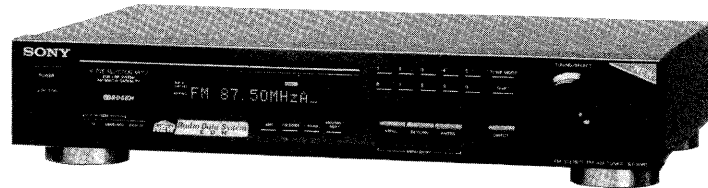


ST-S361

SERVICE MANUAL

AEP Model
UK Model



SPECIFICATIONS

FM tuner

Frequency range	87.5 - 108 MHz (50 kHz step)
Antenna terminals	75 Ω unbalanced
Intermediate frequency	10.7 MHz
Sensitivity	(mono S/N 26 dB) 10.3 dBf, 0.9 μ V/75 Ω (stereo S/N 46 dB) 38.5 dBf, 23 μ V/75 Ω
Usable sensitivity	10.3 dBf, 0.9 μ V/75 Ω (IHF)
Signal-to-noise ratio	(at 40 kHz deviation) 80 dB (mono) 76 dB (stereo)
Harmonic distortion	WIDE 0.04% (mono); 0.05% (stereo) (at 1 kHz) NARROW 0.06% (mono); 0.08% (stereo)
Frequency response	30 Hz - 15 kHz (+0.5 dB, -2.0 dB)
Separation	50 dB (at 1 kHz)
Selectivity	WIDE 80 dB (at 400 kHz) NARROW 90 dB (at 400 kHz) WIDE 45 dB (at 300 kHz) NARROW 70 dB (at 300 kHz)
Output/impedance	600 mV/470 Ω (at 40 kHz deviation)

AM tuner

Frequency range	MW: 531 - 1,602 kHz (9 kHz step) LW: 153 - 279 kHz (1 kHz step)
Intermediate frequency	450 kHz
Usable sensitivity	(with AM loop antenna) MW: 300 μ V/m (999 kHz) LW: 1 mV/m (216 kHz)
Signal-to-noise ratio	54 dB
Harmonic distortion	0.3%
Selectivity	32 dB

General

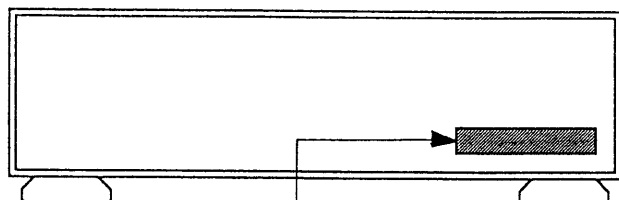
Power requirements	230 V AC, 50/60 Hz (U.K. model) 220 - 230 V AC, 50/60 Hz (European model)
Power consumption	12 W
Dimensions	Approx. 430 mm (W) x 85 mm (H) x 295 mm (D) (17 x 3 ¹ / ₂ x 11 ¹ / ₂ inches)
Mass	Approx. 2.9 kg (6 lb. 3 oz.)
Accessories supplied	Connecting cord (1) AM loop antenna (1) FM wire antenna (1) EON connecting cord (1)

Design and specifications are subject to change without notice.

FM STEREO FM-AM TUNER
SONY®

MODEL IDENTIFICATION

— BACK PANEL —



4-973-843-0□ (AEP, German model)
4-973-843-2□ (UK model)

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Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

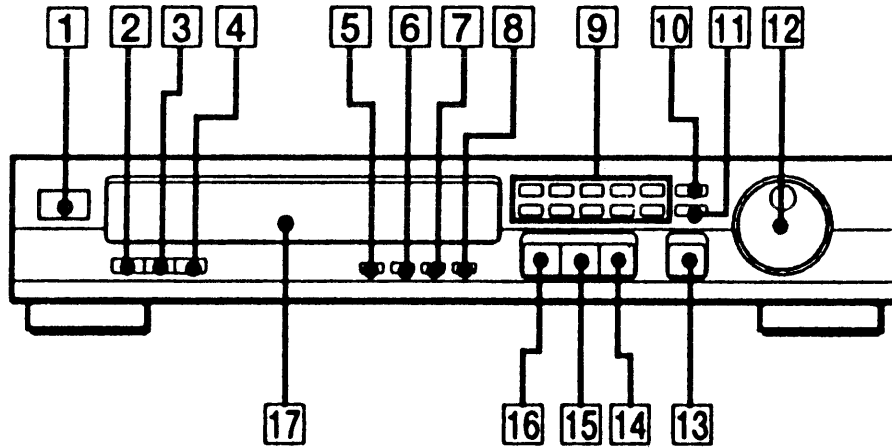
SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ 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.

SECTION 1 GENERAL

This section is extracted
from instruction manual.

Front Panel



- | | |
|---------------------------------|--|
| ❶ Power switch (10) | ❶❶ SHIFT button (36, 40) |
| ❷ EON TA button (58) | ❶❷ TUNING/SELECT knob (12, 16, 18, 20, 22, 28, 30, 32, 40, 42, 46, 62, 64) |
| ❸ EON NEWS/INFO button (58) | ❶❸ DIRECT button (24) |
| ❹ DISPLAY button (44, 56) | ❶❹ ENTER button (12, 16, 18, 28, 30, 32, 34, 42, 46, 62, 64) |
| ❺ ANT button (30) | ❶❺ RETURN button (12, 30, 34) |
| ❻ FM MODE button (26) | ❶❻ MENU button (12, 16, 18, 28, 32, 34, 42, 46, 62, 64) |
| ❼ BAND button (20, 22, 24) | ❶❼ Display window |
| ❽ MEMORY/NEXT button (36, 42) | |
| ❾ Preset buttons (24, 36, 40) | |
| ❿ TUNE MODE button (20, 22, 42) | |

(The numbers in parentheses indicate the page(s) where the control is described.)

Preset Tuning

This section shows you how to store and automatically tune in your favorite stations. Each station stored for preset tuning is first assigned a two-character code, consisting of a letter (A-C) followed by a one-digit number (0-9). To tune in a stored station, you simply enter the appropriate two-character code. You can store up to 30 stations.

Storing Stations Using "Auto-betel select"

"Auto-betel select" is the easiest way to automatically store all FM RDS and FM stations in your broadcast area. The tuner first selects FM RDS stations with the clearest RDS signal from among the FM RDS stations broadcasting the same program and stores them in alphabetical order without redundancy up to 30 stations. Then the tuner stores FM stations other than the FM RDS stations from low to high frequencies. If you want to store FM and AM (MW/LW) stations one by one, do the procedure on page 36.

1 Press MENU.

2 Rotate the TUNING/SELECT knob until "Auto-betel" appears and then press ENTER.

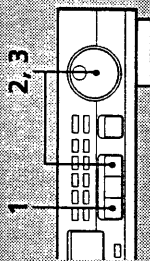
3 Rotate the TUNING/SELECT knob until "Y/N YES" appears and then press ENTER.

The tuner scans and stores all FM RDS and FM stations in the broadcast area. For RDS stations, the tuner first checks for stations broadcasting the same program, then stores only the stations with the clearest signal. The selected RDS stations are sorted alphabetically by their Program Service name, then assigned two-character codes. For more details on RDS, see page 50.

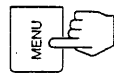
After scanning, the display shows the total number of the stored FM RDS stations and then the station stored in A1 is received.

(to be continued)

32



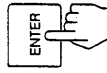
1



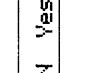
2



Auto-betel



3



Y/N Yes

Preset Tuning

(continued)

The following settings will be stored along with the station:
• ANT (A or B), ANT ATT, IF Band and FM MODE

If you perform the scanning again

Some of the preset stations may be replaced with new ones depending on the reception quality.

To cancel the scanning

Perform one of the following procedures.
• Press RETURN. The scanning stops and the display returns to the "Auto-betel" menu.

If you press RETURN again, the display shows the currently received frequency.
• Press ENTER. The scanning stops and the display shows the currently received frequency.

To tune in stored stations

See page 40.

To erase stored stations one by one

1 Press MENU.
2 Rotate the TUNING/SELECT knob until "Clear" appears and then press ENTER.
3 Rotate the TUNING/SELECT knob until the preset station to be erased appears and then press ENTER.
The frequency stored in the specified code is erased and the digit of the preset code disappears.
4 Repeat steps 1 through 3 for other stored stations to be erased.

To erase all stored stations at a time

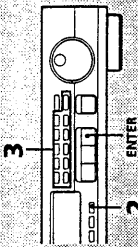
1 Turn off the power.
2 Hold down 5 and MENU, and press POWER to turn on the power again.

Notes

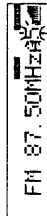
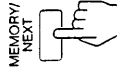
- If you move to another area, do this procedure again to store the stations for the new broadcast area.
- If you move the antenna after storing stations using "Auto-betel", the stored settings will no longer be valid. If this happens, store the stations again.

34

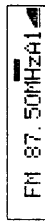
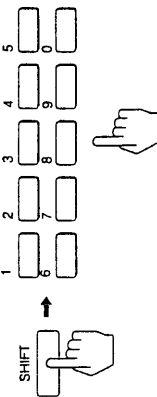
Preset Tuning



2



3



Storing Stations Manually

This procedure shows you how to select and store FM and AM (MW/LW) stations one by one. This procedure is useful if you want to select just which stations to store, and for storing FM stations or FM RDS stations with a very weak signal that may not be stored using "Auto-betzel select". If you want to automatically store FM and/or FM RDS station in your broadcast area, do one of the procedures described on page 32, depending on which tuner you have.

1 Tune in the desired station.
For details on tuning in stations, see pages 20-24 and 40.

2 Press MEMORY/NEXT.
"MEMORY" appears to show that the tuner is ready to store a station. If the stations is tuned in with the automatic tuning, manual tuning or direct tuning. The lowest vacant code appears. If you want to store the station in that preset code, press ENTER. If you want to specify the other preset code, go to step 3.

3 Enter the two-character code under which you want the station stored.

Press SHIFT to select A, B, or C. The letter you choose appears on the display. Each time you press SHIFT, the letter changes. Then, press a preset button 0-9. The tuner stores the station under the two-character code.

4 Perform steps 1 through 3 for other stations.

(to be continued)

Preset Tuning

(continued)

If you make a mistake during entry
Perform steps 2 and 3 again.

To cancel the storing while the MEMORY indicator is lit

- Press RETURN or
- Press MEMORY/NEXT.

The following settings will be stored along with the station
ANT (A or B)/ANT ATT, IF Band and FM MODE

If you store a new station in the same code
The previously stored station is erased. Each code can hold only one station.

To tune in stored stations
See page 40.

To erase stored stations one by one

- 1 Press MENU.
 - 2 Rotate the TUNING/SELECT knob until "Clear" appears and then press ENTER.
 - 3 Rotate the TUNING/SELECT knob until the preset station to be erased appears and then press ENTER.
- The frequency stored in the specified code is erased and the digit of the preset code disappears.
- 4 Repeat steps 1 through 3 for other stored stations to be erased.

To erase all stored stations at a time

- 1 Turn off the power.
- 2 Hold down 5 and MENU, and press POWER to turn on the power again.

Notes

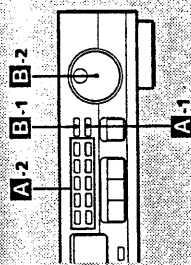
- If you move to another area, do this procedure again to store the stations for the new broadcast area.
- The stations remain stored in memory for up to one month after turning the power off.

Preset Tuning

Tuning in Stored Stations A

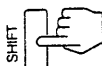
Enter the two-character code of the station you want to listen to.

- 1 First, press **SHIFT** to select **A**, **B**, or **C**.
- 2 Press a preset button **0-9**.
The tuner automatically tunes in the station stored under that two-character code.

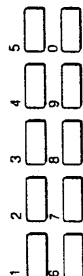


A

1



2



FM 87.50MHzA1

B

1



FM 87.50MHzA1

2



Preset Tuning

Assigning Names to Stored Stations

This procedure shows you how to assign a name of up to 5 characters for each stored station except the FM RDS stations. When you tune in a stored station by using the procedure on page 40, the name appears on the display instead of the frequency.

- 1 Tune in a preset station except the FM RDS stations.
See page 40.
- 2 Press **MENU**.
- 3 Rotate the **TUNING/SELECT** knob until "Character" appears and then press **ENTER**.
- 4 Rotate the **TUNING/SELECT** knob until the desired character appears and then press **MEMORY/NEXT**.
The first character stops blinking and the cursor of the second position blinks.
The list of characters you can choose from is shown on the next page.
To search forward through the list, turn the knob clockwise. To search backward through the list, turn the knob counterclockwise.
- 5 Repeat step 4 until you obtain the desired name.
- 6 Press **ENTER**.
The name you created is set and the preset code in which the name will be stored blinks.
- 7 Press **ENTER** again.

(to be continued)

Preset Tuning

(continued)

To modify a name

Even after pressing the ENTER button, you can change the character. In step 4 or 5, press the MEMORY/NEXT button so that the character to be changed blinks and then perform steps 4 through 7.

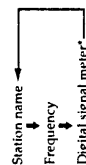
To store the station after assigning

the name
In step 1 above, even if you tuned in a station other than a preset station, you can store it with the assigned name.
After pressing ENTER in step 6, press the two-character code within 8 seconds and then press ENTER.

a) Character List

Displaying the Name A

You can assign names to stored stations by doing the procedure on page 42. To display the name of a stored station, press **DISPLAY**. Each time you press **DISPLAY**, the display alternates between the station frequency, name, and digital signal meter.



- For FM, the digital signal meter displays the strength of the received signal. For best reception, adjust the direction of the antenna until the digital signal meter indicates the signal at its peak strength. When you tune in an AM (M1W/LW) station, the digital signal meter shows “- dB” and it does not function.

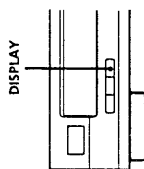
Notes on the DISPLAY button

Notes on the DISPLAY button
When receiving an RDS station, see page 56
for use of the DISPLAY button.

(a)

(space), A, B, C, D, E, F, G, H, I, J, K,
L, M, N, O, P, Q, R, S, T, U, V, W, X, Y,
Z, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, ., /, -,
_, !, ", #, \$, %, &, ' , (,), *, +, =,
>, ? , @

(escape)
(espacio)
(espacio)
(espacio)



A

Preset Tuning

Sorting the Preset Stations

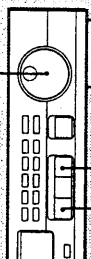
To easily search for a desired preset station, this unit has a preset station sorting alphabetical order ("Alphabet"), in order of signal strength ("Strength"), or according to the reception band ("Band"). In addition, you can sort the preset RDS stations in order of country code ("Country").

- 1 Press MENU.
- 2 Rotate the TUNING/SELECT knob until "Sort" appears and then press ENTER.
"Select" appears.
- 3 Rotate the TUNING/SELECT knob until the desired way of sorting appears.

By rotating the knob, the display changes in the following order:



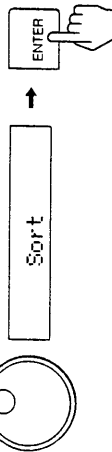
- Press ENTER.**
The unit sorts the preset stations in the order you selected and then receives the preset station stored in A1.



-



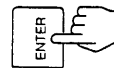
- ## 2 TUNING/SELECT



- 3



- 4



(to be continued)

Preset Tuning

(continued)

How the unit arranges the preset stations

"Alphabet":

The unit arranges the preset stations that have station names in alphabetical order. Station names that have a space as the first character are selected first, followed by names starting with an alphabetic character, symbol or numerical digit, in that order.

Preset stations that have no station names are arranged by frequency, from low to high.

"Strength":

The unit sorts FM preset stations in order of signal strength, starting with stations that have names, followed by stations that have no names.

The rest of the stations are arranged by frequency, from low to high.

"Country":

The unit arranges FM RDS stations that have a PI code (see page 54) in order of country code (1 - 9 and A - F). Stations that have the same country code are arranged in alphabetical order.)

The rest of the stations are arranged by frequency, from low to high.

Note

Since some countries have the same country code (or a certain country has two country codes), stations in different countries may be arranged together.

"Band":

The unit sorts FM RDS stations that have names in alphabetical order, followed by FM RDS stations that have no names. After that, the unit arranges regular FM stations from low to high frequencies, and then arranges the remaining stations in the same manner.

SECTION 2

TEST MODE

NOTE : The preset data will be erased when this test mode is used. Therefore, take down the data before setting this mode and preset the data again after completing operations in this mode.

1. Display Tube Key Check Mode

1-1. Display Tube Check

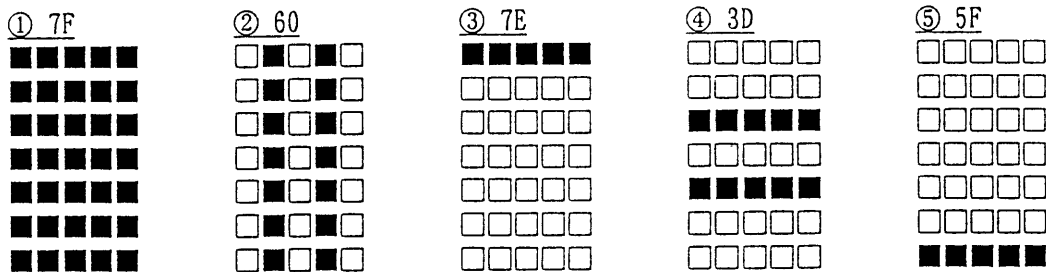
- 1-1-1. Turn OFF the power.
- 1-1-2. While pressing 1 and MENU together, turn ON POWER.
- 1-1-3. While continuously pressing 1 and MENU together, check the following.

Microcomputer version indication (1 sec) → All light up "7F" → Dot area only "60" → Dot area only "7E"

 ↑
 Dot area only "5F" ← Dot area only "3D"

 ↓

Indication test pattern



* The indication test patterns from ② to ⑤ are indicated on only even grids.

The display changes every 500 msec.

1-2. Setting the KEY CHECK MODE

- 1-2-1. Release 1 and MENU. The KEY CHECK mode will be set.
- 1-2-2. All key numbers will be displayed.
Key Number : 23
- 1-2-3. Each time the key is pressed, the key number will be counted down.
Each key will be counted only once, at the first time.
- 1-2-4. When all keys have been pressed, the process will end and the factory preset will be entered.

2. Entering the Factory Preset

To skip “1. Display Tube Key Check Mode”, and factory preset:

- (1) Turn OFF the power.
- (2) While pressing **[3]** and **[MENU]** together, turn ON **[POWER]**.

3. Circuit Check Mode

Set to the reception frequency that the circuit can STEREO RDS stations. (Set the input level to above 70 dB.)

- (1) Turn OFF the power.
- (2) While pressing **[4]** and **[MENU]** together, turn ON **[POWER]**.

• The items in the following table will be checked automatically in order every 2 seconds.

Display	Items	DISPLAY		NG
		FM RDS	AM (MW, LW)	
Tuned	AST signal =LOW	OK or NG		IC251 NG, RV251 adjustments
IF Fra	IF COUNT OK	OK or NG	OK or NG	IC501 NG, T252 adjustments
Sig Level	SI LEVEL $\geq$ 70dB	OK or NG	OK or NG	IC221 NG, RV221 adjustments
Stereo	ST signal=LOW	OK or NG		IC301 NG
RDS Signal	RDS DATA OK	OK or NG		IC801 NG

4. Forced RESET

Clears all the RAMs and sets the initial state

- (1) Turn OFF the power.
- (2) While pressing **[5]** and **[MENU]** together, turn ON **[POWER]**.
- (3) To return to the preset state, perform the display tube key check mode again.

SECTION 3

ELECTRICAL ADJUSTMENTS

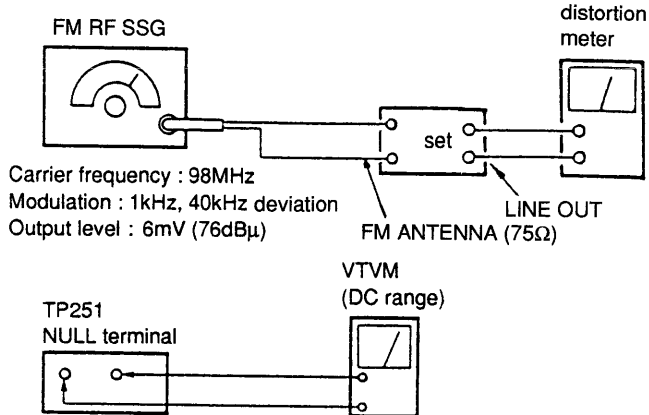
Precautions in Repairing

If the front end unit fails, it is difficult to repair the inner circuits, so replace the entire front end unit.

FM SECTION

FM Discriminator ADJUSTMENT (NULL and MONO Distortion Adjustment)

Setting :
BAND : FM

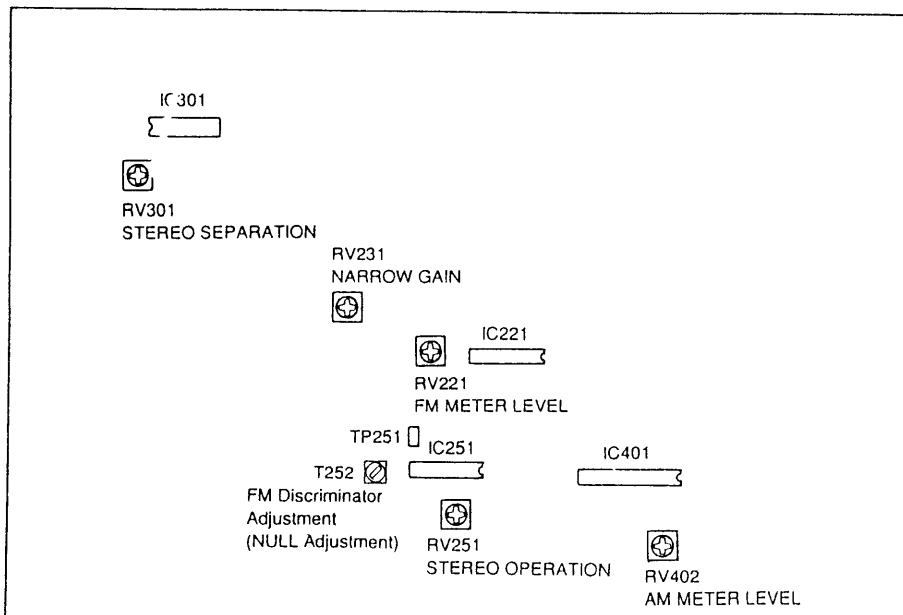


Procedure :

1. Tune the set to 98 MHz.
2. Adjust T252 for 0V reading on the VTVM.
..... NULL
3. Adjust T253 for a minimum reading on the distortion meter.
..... MONO Distortion
4. Repeat the adjustments of 2 and 3 several times.

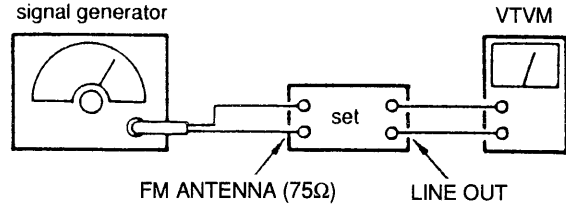
Note : When replacing the ceramic filter, perform this alignment.

Adjustment Location :



Stereo Separation Adjustment

Setting :
BAND : FM
FM RF stereo
signal generator



Carrier frequency : 98 MHz
Modulation : 1kHz, 16.25kHz deviation
Subchannel : 38kHz, 16.25kHz deviation
Pilot : 19kHz, 7.5kHz deviation
Output level : 6mV (76 dBμ)

Procedure :

FM stereo Signal generator Output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV301 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV301 for minimum reading.

L-CH Stereo separation : Ⓐ - Ⓑ

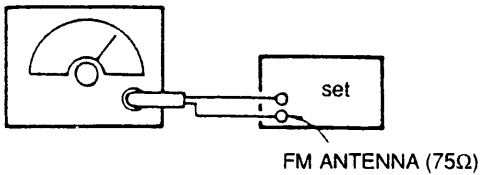
R-CH Stereo separation : Ⓒ - Ⓓ

The separations of both channels should be equal.

Stereo Indication and Muting Level Adjustment

Setting :
BAND : FM

FM RF Stereo
signal generator



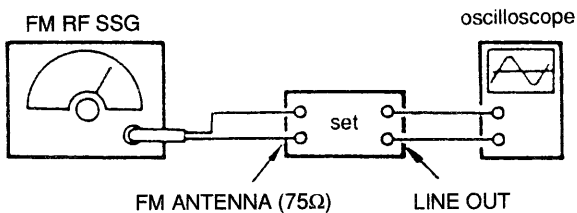
Carrier frequency : 98 MHz
Modulation : 1kHz, 16.25kHz deviation
Subchannel : 38kHz, 16.25kHz deviation
Pilot : 19kHz, 7.5kHz deviation
Output level : 32μV (30 dB)

Procedure :

1. Tune the set to 98 MHz.
Press FM MODE button to display "MUTING".
2. Adjust RV251 to light "STEREO" and "TUNED".

Narrow Gain Adjustment

Setting :
BAND : FM



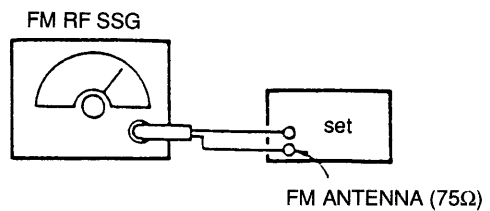
Carrier frequency : 98 MHz
Modulation : 1kHz, 40kHz deviation
Output level : 32μV (30 dB)

Procedure :

1. Tune the set to 98 MHz.
Press IF BAND button to display "NARROW".
Press FM MODE button to display "MUTING".
2. Adjust RV231 at the position where the waveform suddenly appears on the oscilloscope (Narrow Gain adj.)

FM Meter Level Adjustment

Setting :
BAND : FM



Carrier frequency : 98 MHz
Modulation : 1kHz, 40kHz deviation
Output level : 3mV (70 dBμ)

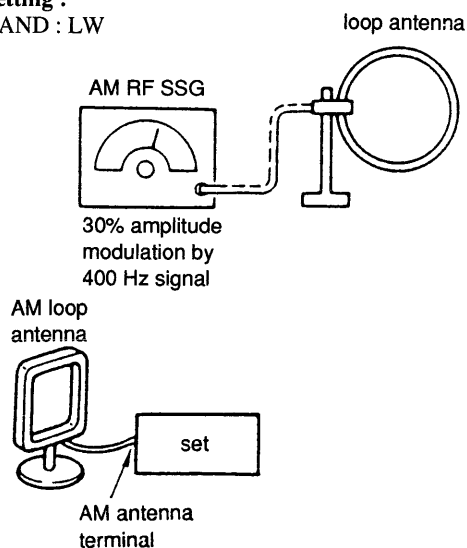
Procedure :

1. Tune the set to 98 MHz.
2. Adjust RV221 so that 1 to 10 indication bars light up on the signal meter.

AM SECTION

Setting :

BAND : LW



AM Meter Level Adjustment

Setting :

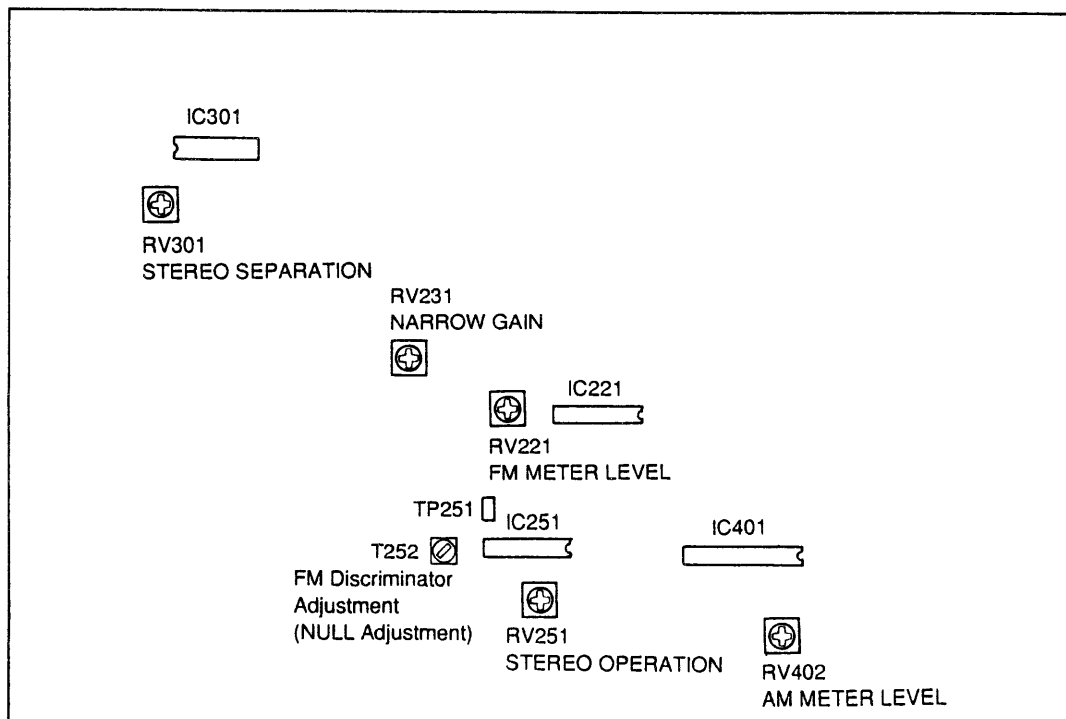
Carrier frequency : 216kHz

Modulation : 400Hz, 30% modulation

Procedure :

1. Set AM RF signal generator so that the AM antenna input level becomes 74dBμ/m.
2. Adjust RV402 so that 1 to 10 indication bars light up on the signal meter.

Adjustment Location :

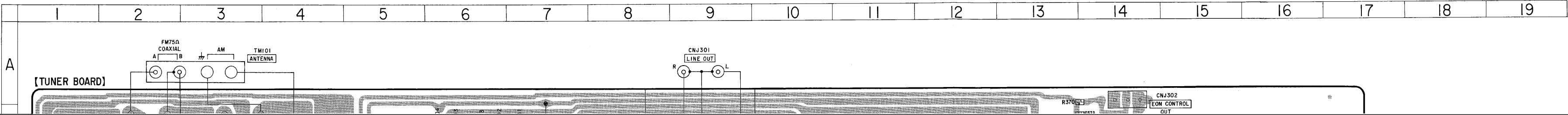


SECTION 4
DIAGRAMS

4-1. PRINTED WIRING BOARD — TUNER SECTION —

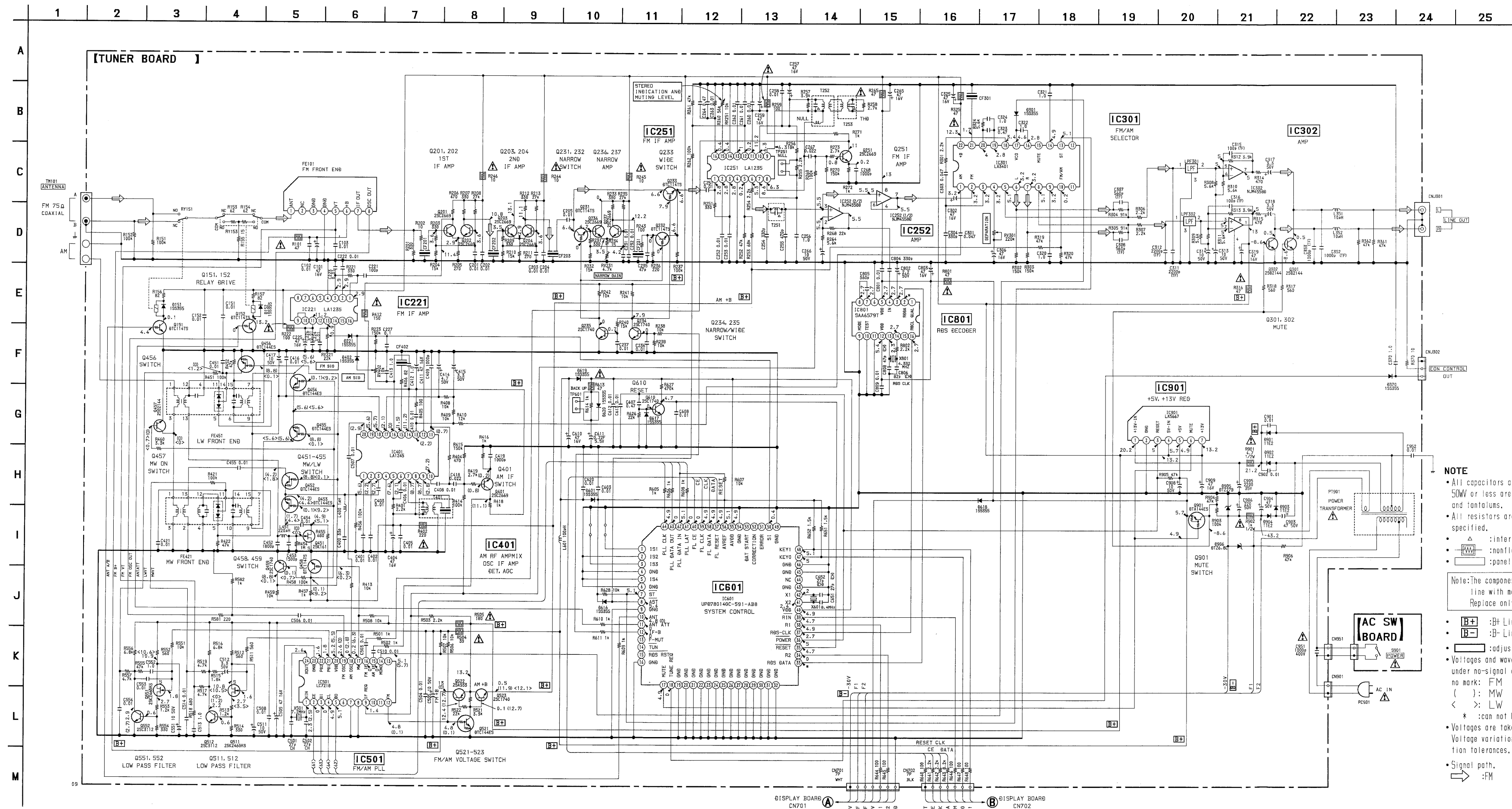
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D151	C-3	Q202	E-6
D152	C-2	Q203	E-7
D221	F-7	Q204	E-7



4-2. SCHEMATIC DIAGRAM — TUNER SECTION —

- See page 23 for IC Block Diagrams.
- See page 25 for IC Pin Function. (IC601)



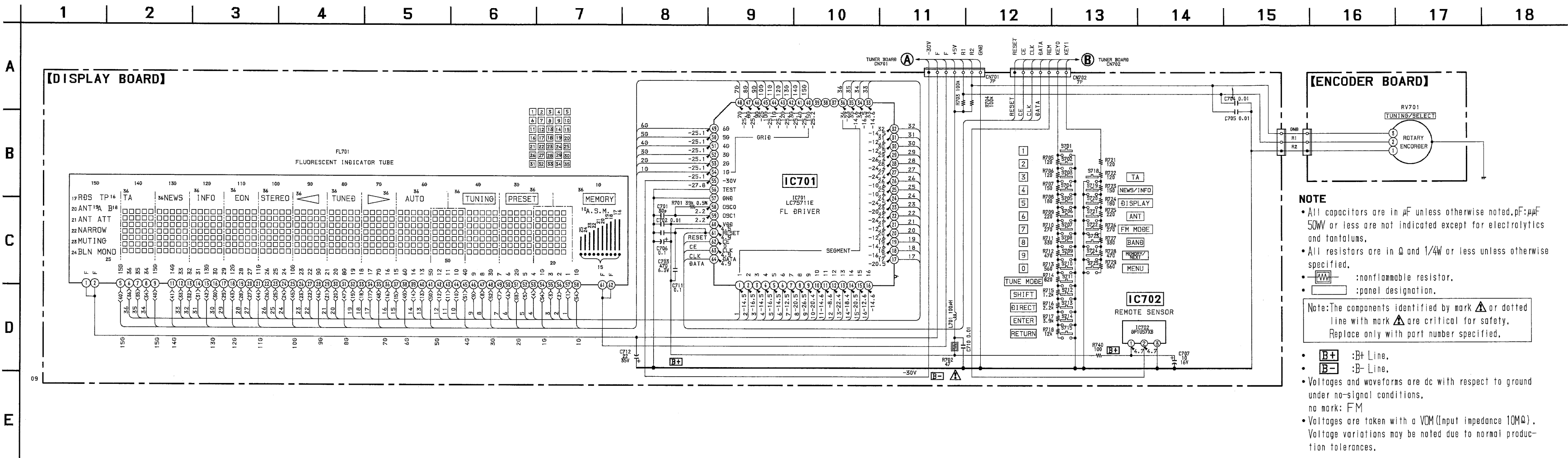
NOTE

- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\text{F} \times 10^{-6}$ 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.
- $\square$: panel designation.

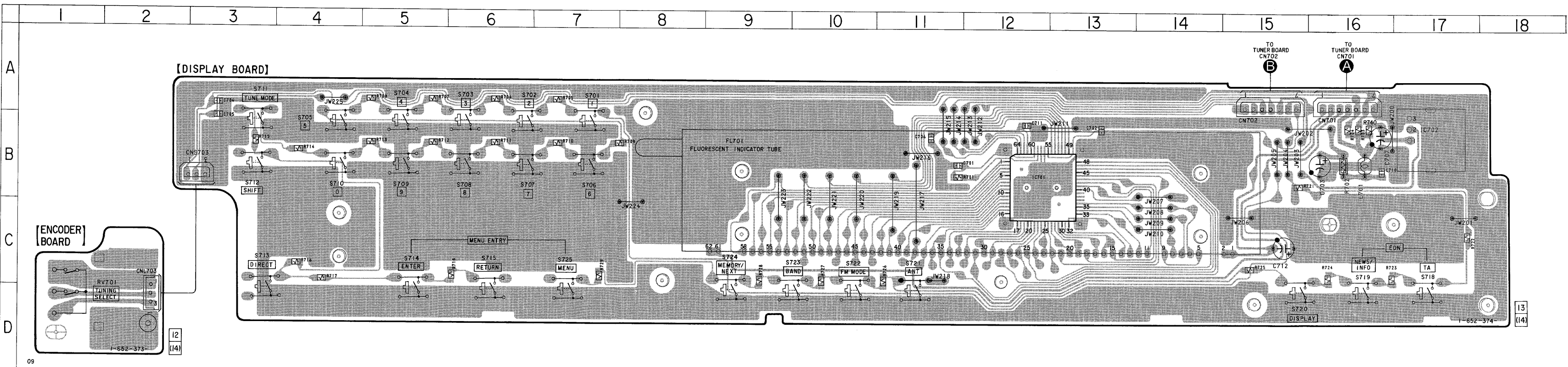
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- $\square$: B+ Line.
- $\square$: B- Line.
- $\square$: adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark: FM
(): MW
< : LW
- * : can not be measured.
- Voltages are taken with a VOM (input impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
 $\Rightarrow$: FM

4-3. SCHEMATIC DIAGRAM — DISPLAY SECTION —



4-4. PRINTED WIRING BOARD — DISPLAY SECTION —

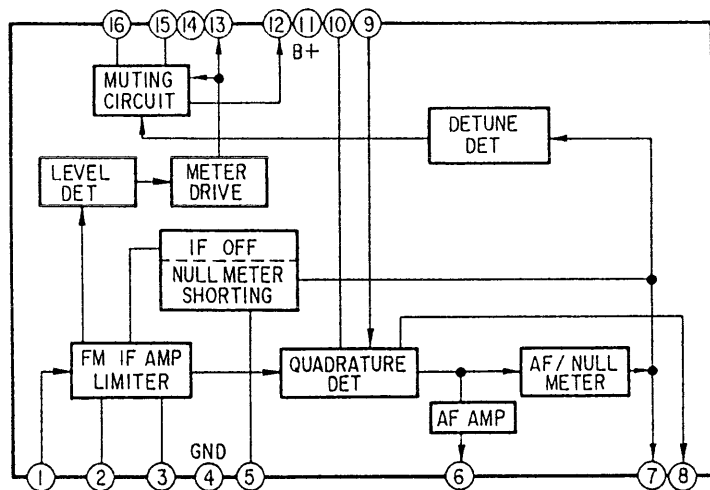


• Semiconductor Location

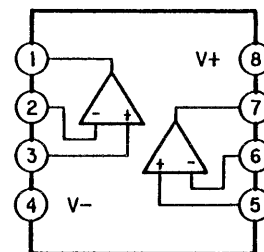
Ref. No.	Location
IC701	B-12
IC702	B-17

4-5. IC BLOCK DIAGRAMS

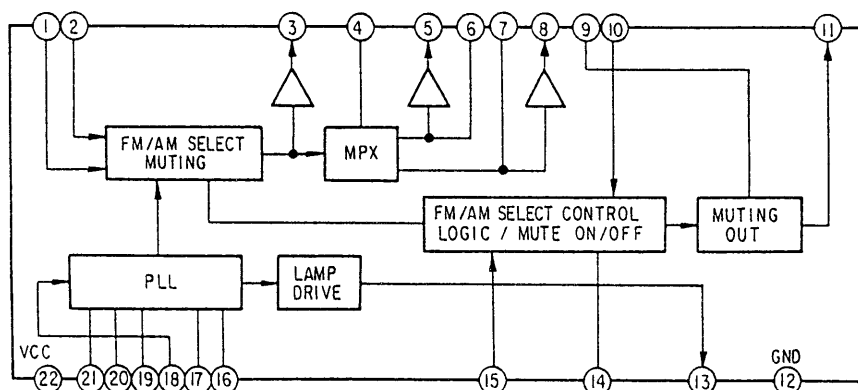
IC221, 251 LA1235



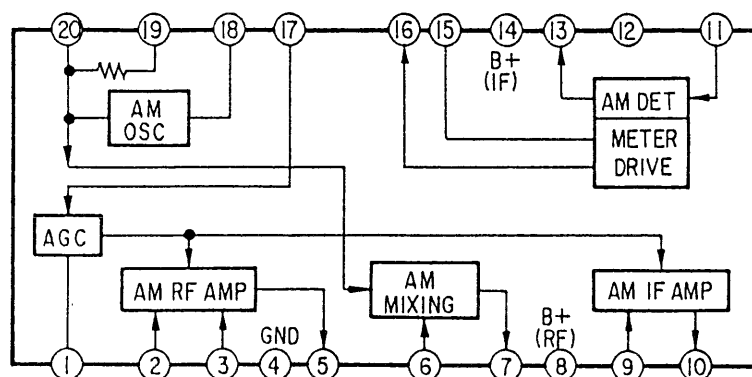
IC252, 302 M5218AP



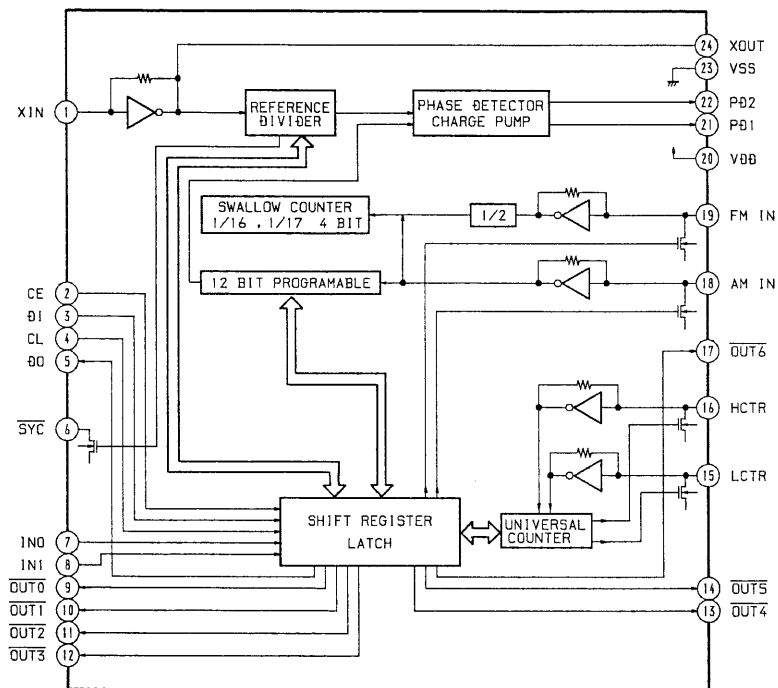
IC301 LA3401



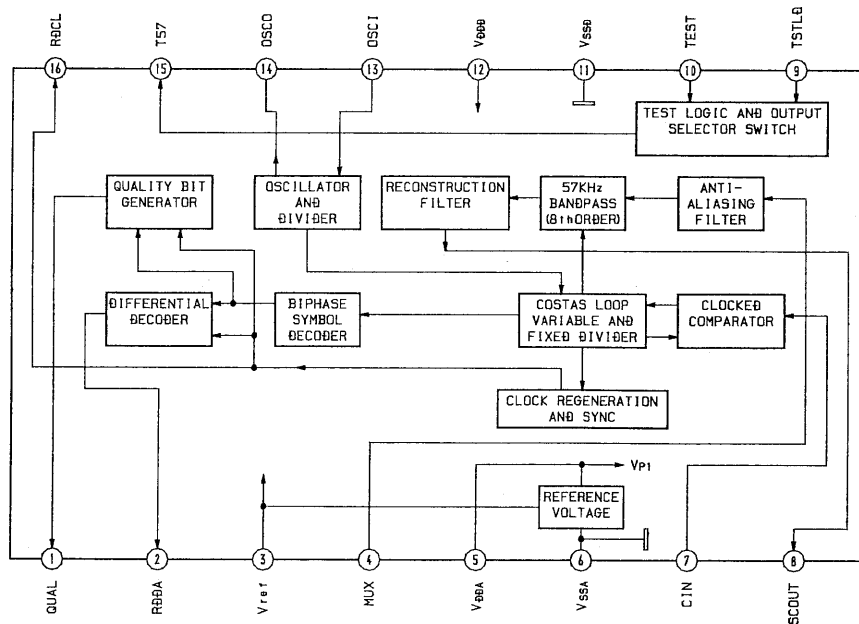
IC401 LA1245



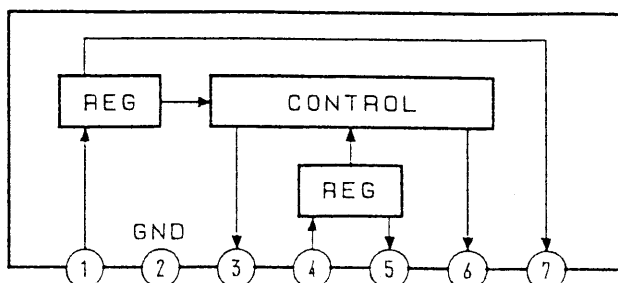
IC501 LC7218



IC801 SAA6579T



IC901 LA5667



4-6. IC PIN FUNCTION

• IC601 System Control IC (μPD78014GC-591-AB8)

Pin No.	Pin Name	I/O	Function						
1	IS1	I	Model detection <table><tr><td>IS1</td><td>IS2</td><td>IS3</td></tr><tr><td>L</td><td>L</td><td>L</td></tr></table>	IS1	IS2	IS3	L	L	L
IS1	IS2	IS3							
L	L	L							
2	IS2	I							
3	IS3	I							
4	GND	—	Not used (GND)						
5	IS4	I	ANTENNA SELECT input (GND)						
6	GND	—	Not used (GND)						
7	$\overline{ST}$	I	STEREO display detection						
8	$\overline{AST}$	I	AUTO STOP signal detection						
9	VSS	—	System GND						
10	ANT	O	ANT A/B switching						
11	ANT ATT	O	ANT ATT on/off switching						
12	IF-B	O	IF BAND wide/narrow switching						
13	F-MUT	O	Not used (open)						
14	$\overline{TUN}$	O	Not used (open)						
15	$\overline{RDS\ RESET}$	O	Not used (open)						
16	GND	—	Not used (GND)						
17	$\overline{MUTE}$	O	Muting signal output						
18	TUN REQ	O	TUNING REQUEST						
19 to 23	GND	—	Not used (GND)						
24	VSS	—	System GND						
25 to 32	GND	—	Not used (GND)						
33	RDS-DATA	I	RDS DATA input						
34	R2	I	Rotary encoder phase detection						
35	$\overline{RESET}$	I	System reset input						
36	$\overline{POWER}$	I	Power supply on/off monitor						
37	RDS-CLK	I	Not used (open)						
38	R1	I	Rotary encoder number of rotations detection						
39	$\overline{RIN}$	I	Remote controller input						
40	VDD	—	Power supply (+5V)						
41	X2	—	Oscillation signal output (8.38 MHz)						
42	X1	—	Oscillation signal input (8.38 MHz)						
43	GND	—	Not used (GND)						
44	NC	—	Not used (open)						
45, 46	GND	—	Not used (GND)						
47	KEY0	I	Key input						
48	KEY1	I	Key input						
49	GND	—	Not used (GND)						
50	SI	I	Signal input						

Pin No.	Pin Name	I/O	Function
51	ERROR	—	Not used (open)
52	CORRECTION	—	Not used (open)
53	DAT START	—	Not used (open)
54	GND	—	Not used (GND)
55	AVDD	—	Analog power supply of the A/D converter (+5V)
56	AVREF	I	Reference voltage of the A/D converter (+5V)
57	FL RESET	O	Reset for LC75711E
58	FL DATA	O	Display data for LC75711E
59	FL CLK	O	CLock for LC75711E
60	FL CE	O	Latch for LC75711E
61	PLL LAT	O	Latch for LC7218
62	PLL DATA IN	I	DATA from LC7218
63	PLL DATA OUT	O	DATA for LC7218
64	PLL CLK	O	Clock for LC7218

SECTION 5

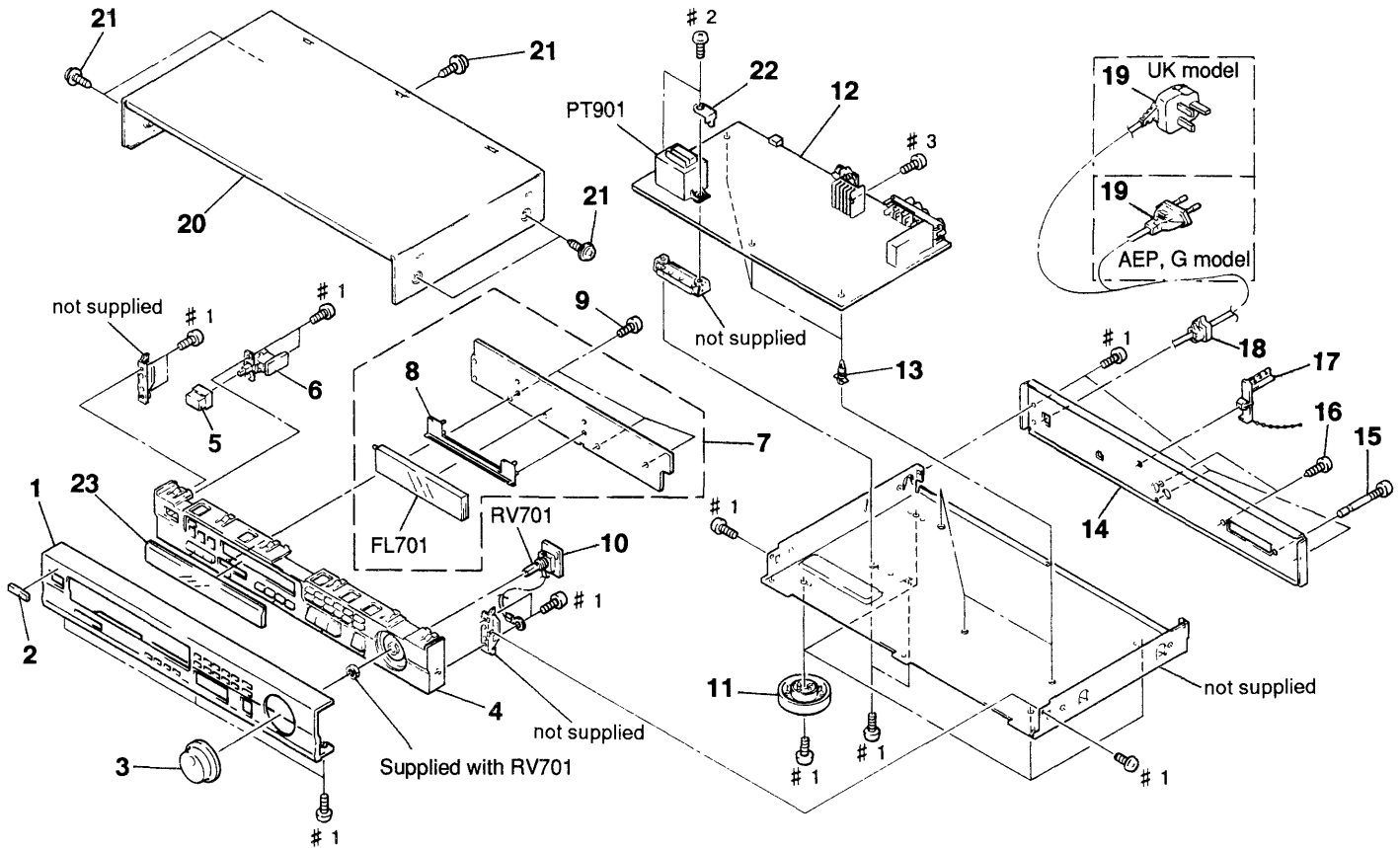
EXPLODED VIEWS

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
G : German model

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



Ref. No.	Part No.	Description
1	4-973-844-01	PANEL, FRONT
2	4-942-568-01	EMBLEM (NO. 5), SONY
3	4-965-471-01	KNOB (DIA. 48)
4	X-4945-897-1	BASE ASSY, PANEL
5	4-917-460-01	KNOB, POWER
* 6	1-652-372-11	AC SW BOARD
* 7	A-4371-010-A	DISPLAY BOARD, COMPLETE
* 8	4-945-292-01	HOLDER, INDICATION TUBE
9	4-951-620-01	SCREW (2.6X8), +BVTP
* 10	1-652-373-11	ENCODER BOARD
11	4-956-885-11	FOOT (F58175S2W)
* 12	A-4371-015-A	TUNER BOARD, COMPLETE
* 13	3-346-265-31	HOLDER, PC BOARD
* 14	4-973-843-01	PANEL, BACK (AEP, G)

Ref. No.	Part No.	Description	Remark
* 14	4-973-843-21	PANEL, BACK (UK)	
15	3-704-242-01	SCREW, TERMINAL, + BVTP CLAW	
16	3-704-515-11	SCREW (BV/RING)	
17	4-956-370-12	BAND, PLUG FIXED (UK)	
18	3-703-244-00	BUSHING, CORD	
$\triangle$ 19	1-575-651-21	CORD, POWER (AEP, G)	
$\triangle$ 19	1-696-907-11	CORD, POWER (UK)	
20	4-923-457-01	CASE	
21	3-704-366-01	SCREW (CASE) (M3X8)	
22	4-957-933-01	PLATE, GROUND	
* 23	4-973-920-01	WINDOW, INDICATION	
FL701	1-517-177-21	INDICATOR TUBE, FLUORESCENT	
$\triangle$ PT901	1-423-525-11	TRANSFORMER, POWER	

AC SW

DISPLAY

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
G : German model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-652-372-11	AC SW BOARD *****		R704	1-216-097-00	METAL CHIP 100K 5%	1/10W
		< SWITCH >		R705	1-216-027-00	METAL CHIP 120 5%	1/10W
Δ S901	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)		R706	1-216-027-00	METAL CHIP 120 5%	1/10W
*****				R707	1-216-029-00	METAL CHIP 150 5%	1/10W
*	A-4371-010-A	DISPLAY BOARD, COMPLETE *****		R708	1-216-031-00	METAL CHIP 180 5%	1/10W
*	4-945-292-01	HOLDER, INDICATION TUBE *****		R709	1-216-033-00	METAL CHIP 220 5%	1/10W
		< CAPACITOR >		R710	1-216-035-00	METAL CHIP 270 5%	1/10W
C701	1-163-104-00	CERAMIC CHIP 30PF 5%	50V	R711	1-216-037-00	METAL CHIP 330 5%	1/10W
C702	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R712	1-216-041-00	METAL CHIP 470 5%	1/10W
C703	1-128-183-11	ELECT 470uF 20%	6.3V	R713	1-216-043-00	METAL GLAZE 560 5%	1/10W
C704	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R714	1-216-047-00	METAL CHIP 820 5%	1/10W
C705	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R715	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
C706	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R716	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
C707	1-126-157-11	ELECT 10uF 20%	16V	R717	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
C710	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R718	1-216-075-00	METAL CHIP 12K 5%	1/10W
C711	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R721	1-216-027-00	METAL CHIP 120 5%	1/10W
C712	1-124-916-11	ELECT 22uF 20%	63V	R722	1-216-027-00	METAL CHIP 120 5%	1/10W
		< CONNECTOR >		R723	1-216-029-00	METAL CHIP 150 5%	1/10W
* CN701	1-568-934-11	PIN, CONNECTOR 7P		R724	1-216-031-00	METAL CHIP 180 5%	1/10W
* CN702	1-568-934-11	PIN, CONNECTOR 7P		R725	1-216-033-00	METAL CHIP 220 5%	1/10W
		< FLUORESCENT INDICATOR >		R726	1-216-035-00	METAL CHIP 270 5%	1/10W
FL701	1-517-177-21	INDICATOR TUBE, FLUORESCENT		R727	1-216-037-00	METAL CHIP 330 5%	1/10W
		< IC >		R728	1-216-041-00	METAL CHIP 470 5%	1/10W
IC701	8-759-823-57	IC LC75711E		R729	1-216-043-00	METAL GLAZE 560 5%	1/10W
IC702	8-749-923-43	IC GPIU57XB		R740	1-216-025-00	METAL CHIP 100 5%	1/10W
		< COIL >				< SWITCH >	
L701	1-410-521-11	INDUCTOR 100uH		S701	1-554-303-21	SWITCH, TACTILE (1)	
		< RESISTOR >		S702	1-554-303-21	SWITCH, TACTILE (2)	
R701	1-216-689-11	METAL CHIP 39K 0.5%	1/10W	S703	1-554-303-21	SWITCH, TACTILE (3)	
Δ R702	1-249-401-11	CARBON 47 5%	1/4W F	S704	1-554-303-21	SWITCH, TACTILE (4)	
R703	1-216-097-00	METAL CHIP 100K 5%	1/10W	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)	
				S711	1-554-303-21	SWITCH, TACTILE (TUNE MODE)	
				S712	1-554-303-21	SWITCH, TACTILE (SHIFT)	
				S713	1-554-303-21	SWITCH, TACTILE (DIRECT)	
				S714	1-554-303-21	SWITCH, TACTILE (ENTER)	
				S715	1-554-303-21	SWITCH, TACTILE (RETURN)	

DISPLAY

ENCODER

TUNER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
S718	1-554-303-21	SWITCH, TACTILE (TA)		C255	1-130-467-00	MYLAR 470PF 5%	50V
S719	1-554-303-21	SWITCH, TACTILE (NEWS/INFO)		C256	1-164-346-11	CERAMIC CHIP 1uF	16V
S720	1-554-303-21	SWITCH, TACTILE (DISPLAY)		C257	1-126-967-11	ELECT 47uF 20%	16V
S721	1-554-303-21	SWITCH, TACTILE (ANT)		C258	1-164-232-11	CERAMIC CHIP 0.01uF	50V
S722	1-554-303-21	SWITCH, TACTILE (FM MODE)					
S723	1-554-303-21	SWITCH, TACTILE (BAND)		C259	1-126-967-11	ELECT 47uF 20%	16V
S724	1-554-303-21	SWITCH, TACTILE (MEMORY/NEXT)		C260	1-164-232-11	CERAMIC CHIP 0.01uF	50V
S725	1-554-303-21	SWITCH, TACTILE (MENU)		C261	1-164-232-11	CERAMIC CHIP 0.01uF	50V
				C262	1-164-232-11	CERAMIC CHIP 0.01uF	50V
				C263	1-164-232-11	CERAMIC CHIP 0.01uF	50V

*	1-652-373-11	ENCODER BOARD		C264	1-164-005-11	CERAMIC CHIP 0.47uF	25V
		*****		C265	1-126-967-11	ELECT 47uF 20%	16V
		< VARIABLE RESISTOR >		C266	1-126-964-11	ELECT 10uF 20%	50V
				C267	1-163-037-11	CERAMIC CHIP 0.012uF 10%	25V
RV701	1-467-703-11	ENCODER, ROTARY (TUNING/SELECT)		C268	1-163-141-00	CERAMIC CHIP 0.01uF 5%	50V

*	A-4371-015-A	TUNER BOARD, COMPLETE		C301	1-163-035-00	CERAMIC CHIP 0.047uF	50V
		*****		C302	1-126-967-11	ELECT 47uF 20%	16V
				C303	1-163-035-00	CERAMIC CHIP 0.047uF	50V
				C304	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
				C306	1-126-967-11	ELECT 47uF 20%	16V
	4-957-933-01	PLATE, GROUND					
	7-682-548-09	SCREW +B 3X8		C307	1-130-468-00	MYLAR 560PF 5%	50V
		< CAPACITOR >		C308	1-130-468-00	MYLAR 560PF 5%	50V
				C311	1-130-475-00	MYLAR 0.0022uF 5%	50V
C101	1-126-967-11	ELECT 47uF 20%	16V	C312	1-130-475-00	MYLAR 0.0022uF 5%	50V
C102	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C313	1-126-964-11	ELECT 10uF 20%	50V
C103	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C151	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C314	1-126-964-11	ELECT 10uF 20%	50V
C152	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C315	1-110-335-11	MYLAR 100PF 5%	50V
				C316	1-110-335-11	MYLAR 100PF 5%	50V
C201	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C317	1-126-111-11	ELECT 3.3uF 20%	50V
C202	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C318	1-126-111-11	ELECT 3.3uF 20%	50V
C203	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C204	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C319	1-126-967-11	ELECT 47uF 20%	16V
C205	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C320	1-164-346-11	CERAMIC CHIP 1uF	16V
				C321	1-164-346-11	CERAMIC CHIP 1uF	16V
C221	1-163-117-00	CERAMIC CHIP 100PF 5%	50V	C322	1-164-346-11	CERAMIC CHIP 1uF	16V
C222	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C323	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C223	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C224	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C324	1-164-346-11	CERAMIC CHIP 1uF	16V
C225	1-126-967-11	ELECT 47uF 20%	16V	C325	1-126-967-11	ELECT 47uF 20%	16V
				C352	1-130-471-00	MYLAR 0.001uF 5%	50V
C226	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C353	1-130-471-00	MYLAR 0.001uF 5%	50V
C227	1-163-038-00	CERAMIC CHIP 0.1uF	25V	C370	1-164-346-11	CERAMIC CHIP 1uF	16V
C231	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C232	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C401	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C235	1-163-109-00	CERAMIC CHIP 47PF 5%	50V	C402	1-164-232-11	CERAMIC CHIP 0.01uF	50V
				C403	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C236	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C404	1-126-967-11	ELECT 47uF 20%	16V
C237	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C405	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C251	1-164-232-11	CERAMIC CHIP 0.01uF	50V				
C252	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C406	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C253	1-164-232-11	CERAMIC CHIP 0.01uF	50V	C408	1-164-232-11	CERAMIC CHIP 0.01uF	50V
				C409	1-163-141-00	CERAMIC CHIP 0.001uF 5%	50V
C254	1-110-341-11	MYLAR 330PF 5%	50V	C410	1-164-232-11	CERAMIC CHIP 0.01uF	50V
				C411	1-126-967-11	ELECT 47uF 20%	16V
				C412	1-164-346-11	CERAMIC CHIP 1uF	16V

TUNER

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
C413	1-164-346-11	CERAMIC CHIP	1uF	16V	C902	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C414	1-124-927-11	ELECT	4.7uF	20% 100V	C903	1-126-967-11	ELECT	47uF	20% 50V
C415	1-126-111-11	ELECT	3.3uF	20% 50V	C904	1-126-967-11	ELECT	47uF	20% 50V
C416	1-164-232-11	CERAMIC CHIP	0.01uF	50V	C905	1-126-953-11	ELECT	2200uF	20% 35V
C417	1-126-964-11	ELECT	10uF	20% 50V	C906	1-126-969-11	ELECT	220uF	20% 50V
C418	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	C908	1-126-964-11	ELECT	10uF	20% 50V
C419	1-163-141-00	CERAMIC CHIP	0.001uF	5% 50V	C909	1-126-967-11	ELECT	47uF	20% 16V
C421	1-164-232-11	CERAMIC CHIP	0.01uF	50V	△C951	1-161-741-00	CERAMIC	0.001uF	10% 400V
C451	1-164-232-11	CERAMIC CHIP	0.01uF	50V	C952	1-164-232-11	CERAMIC CHIP	0.01uF	50V
C452	1-164-693-11	CERAMIC CHIP	0.0018uF	5% 50V	< FILTER >				
C453	1-163-145-00	CERAMIC CHIP	0.0015uF	5% 50V	CF201	1-567-389-11	FILTER, CERAMIC		
C454	1-164-232-11	CERAMIC CHIP	0.01uF	50V	CF202	1-567-389-11	FILTER, CERAMIC		
C455	1-164-232-11	CERAMIC CHIP	0.01uF	50V	CF203	1-567-389-11	FILTER, CERAMIC		
C501	1-163-237-11	CERAMIC CHIP	27PF	5% 50V	CF231	1-567-107-71	FILTER, CERAMIC		
C502	1-163-237-11	CERAMIC CHIP	27PF	5% 50V	CF301	1-567-250-11	OSCILLATOR, CERAMIC		
C503	1-164-232-11	CERAMIC CHIP	0.01uF	50V	CF402	1-527-981-00	FILTER, CERAMIC		
C504	1-164-232-11	CERAMIC CHIP	0.01uF	50V	< CONNECTOR >				
C505	1-126-964-11	ELECT	10uF	20% 50V	* CN701	1-568-934-11	PIN, CONNECTOR 7P		
C506	1-164-232-11	CERAMIC CHIP	0.01uF	50V	* CN702	1-568-934-11	PIN, CONNECTOR 7P		
C507	1-164-232-11	CERAMIC CHIP	0.01uF	50V	CN901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P		
C508	1-164-232-11	CERAMIC CHIP	0.01uF	50V	CN951	1-564-321-00	PIN, CONNECTOR 2P		
C509	1-126-967-11	ELECT	47uF	20% 16V	CNJ301	1-568-250-11	JACK, PIN 2P (LINE OUT)		
C510	1-164-232-11	CERAMIC CHIP	0.01uF	50V	CNJ302	1-566-212-11	PIN, CONNECTOR 3P (EON CONTROL)		
C511	1-126-964-11	ELECT	10uF	20% 50V	< DIODE >				
C512	1-126-111-11	ELECT	3.3uF	20% 50V	D151	8-719-988-62	DIODE 1SS355		
C513	1-164-346-11	CERAMIC CHIP	1uF	16V	D152	8-719-988-62	DIODE 1SS355		
C514	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D221	8-719-988-62	DIODE 1SS355		
C551	1-126-964-11	ELECT	10uF	20% 50V	D301	8-719-988-62	DIODE 1SS355		
C552	1-164-346-11	CERAMIC CHIP	1uF	16V	D370	8-719-988-62	DIODE 1SS355		
C553	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D402	8-719-988-62	DIODE 1SS355		
C554	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D601	8-719-988-62	DIODE 1SS355		
C603	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D616	8-719-988-62	DIODE 1SS355		
C607	1-164-005-11	CERAMIC CHIP	0.47uF	25V	D617	8-719-988-62	DIODE 1SS355		
C608	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D618	8-719-988-62	DIODE 1SS355		
C610	1-126-967-11	ELECT	47uF	20% 16V	D619	8-719-988-62	DIODE 1SS355		
C611	1-104-905-11	CAP, DOUBLE LAYERS	0.22F	5.5V	D620	8-719-988-62	DIODE 1SS355		
C612	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D901	8-719-200-02	DIODE 10E2		
C613	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D902	8-719-200-02	DIODE 10E2		
C620	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D903	8-719-200-02	DIODE 10E2		
C651	1-163-237-11	CERAMIC CHIP	27PF	5% 50V	D904	8-719-200-02	DIODE 10E2		
C652	1-163-237-11	CERAMIC CHIP	27PF	5% 50V	D905	8-719-977-73	DIODE DTZ27B		
C801	1-164-232-11	CERAMIC CHIP	0.01uF	50V	D906	8-719-977-13	DIODE DTZ6.8C		
C802	1-124-925-11	ELECT	2.2uF	20% 100V	< FRONT END >				
C803	1-126-967-11	ELECT	47uF	20% 16V	FE101	1-693-212-21	FRONT END (FTZ)		
C804	1-163-129-00	CERAMIC CHIP	330PF	5% 50V	FE421	1-236-462-11	ENCAPSULATED COMPONENT		
C805	1-163-135-00	CERAMIC CHIP	560PF	5% 50V	FE451	1-236-463-11	ENCAPSULATED COMPONENT		
C806	1-163-249-11	CERAMIC CHIP	82PF	5% 50V					
C808	1-163-243-11	CERAMIC CHIP	47PF	5% 50V					
C809	1-164-232-11	CERAMIC CHIP	0.01uF	50V					
C901	1-164-232-11	CERAMIC CHIP	0.01uF	50V					

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
< IC >				< RESISTOR >			
IC221	8-759-812-35	IC LA1235		Q458	8-729-904-39	TRANSISTOR DTC114TS	
IC251	8-759-812-35	IC LA1235		Q459	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC252	8-759-634-51	IC M5218AP		Q511	8-729-202-67	TRANSISTOR 2SK246-GR3	
IC301	8-759-801-80	IC LA3401		Q512	8-729-201-84	TRANSISTOR 2SC3112-B	
IC302	8-759-634-51	IC M5218AP		Q521	8-729-900-89	TRANSISTOR DTC144ES	
				Q522	8-729-119-76	TRANSISTOR 2SA1175-HFE	
IC401	8-759-812-45	IC LA1245		Q523	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC501	8-759-175-87	IC LC7218-ST		Q551	8-729-202-67	TRANSISTOR 2SK246-GR3	
IC601	8-759-265-43	IC uPD78014GC-591-AB8		Q552	8-729-201-84	TRANSISTOR 2SC3112-B	
IC801	8-759-065-98	IC SAA6579T		Q610	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC901	8-759-820-09	IC LA5667		Q901	8-729-900-65	TRANSISTOR DTA144ES	
< COIL >				< RESISTOR >			
L351	1-410-509-11	INDUCTOR 10uH		△R101	1-249-401-11	CARBON 47 5% 1/4W F	
L352	1-410-509-11	INDUCTOR 10uH		R151	1-216-097-00	METAL CHIP 100K 5% 1/10W	
L451	1-410-525-11	INDUCTOR 220uH		R152	1-216-097-00	METAL CHIP 100K 5% 1/10W	
L601	1-410-521-11	INDUCTOR 100uH		R153	1-216-020-00	METAL GLAZE 62 5% 1/10W	
< FILTER >				R154	1-216-020-00	METAL GLAZE 62 5% 1/10W	
LPF301	1-235-164-00	FILTER, LOW PASS		R155	1-216-005-00	METAL CHIP 15 5% 1/10W	
LPF302	1-235-164-00	FILTER, LOW PASS		R156	1-216-023-00	METAL CHIP 82 5% 1/10W	
< TRANSFORMER >				R157	1-216-023-00	METAL CHIP 82 5% 1/10W	
△PT901	1-423-525-11	TRANSFORMER, POWER		R201	1-216-037-00	METAL CHIP 330 5% 1/10W	
< TRANSISTOR >				R202	1-216-001-00	METAL CHIP 10 5% 1/10W	
Q151	8-729-904-39	TRANSISTOR DTC114TS		R203	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q152	8-729-904-39	TRANSISTOR DTC114TS		R204	1-216-077-00	METAL CHIP 15K 5% 1/10W	
Q201	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		R205	1-216-035-00	METAL CHIP 270 5% 1/10W	
Q202	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		R206	1-216-041-00	METAL CHIP 470 5% 1/10W	
Q203	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		R207	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q204	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		R208	1-216-083-00	METAL CHIP 27K 5% 1/10W	
Q231	8-729-904-39	TRANSISTOR DTC114TS		R209	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q232	8-729-904-39	TRANSISTOR DTC114TS		R210	1-216-077-00	METAL CHIP 15K 5% 1/10W	
Q233	8-729-904-39	TRANSISTOR DTC114TS		R211	1-216-035-00	METAL CHIP 270 5% 1/10W	
Q234	8-729-119-78	TRANSISTOR 2SC2785-HFE		R212	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q235	8-729-119-78	TRANSISTOR 2SC2785-HFE		R213	1-216-083-00	METAL CHIP 27K 5% 1/10W	
Q236	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		R221	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q237	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		△R222	1-249-405-11	CARBON 100 5% 1/4W F	
Q251	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		R223	1-216-101-00	METAL CHIP 150K 5% 1/10W	
Q301	8-729-922-37	TRANSISTOR 2SD2144S-UVW		R231	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q302	8-729-922-37	TRANSISTOR 2SD2144S-UVW		R232	1-216-077-00	METAL CHIP 15K 5% 1/10W	
Q401	8-729-230-99	TRANSISTOR 2SC2669-OY-TPE4		R233	1-216-037-00	METAL CHIP 330 5% 1/10W	
Q451	8-729-231-20	TRANSISTOR 2SK161-YGR		R234	1-216-005-00	METAL CHIP 15 5% 1/10W	
Q452	8-729-900-89	TRANSISTOR DTC144ES		R235	1-216-083-00	METAL CHIP 27K 5% 1/10W	
Q453	8-729-900-89	TRANSISTOR DTC144ES		R236	1-216-033-00	METAL CHIP 220 5% 1/10W	
Q454	8-729-900-89	TRANSISTOR DTC144ES		R237	1-216-097-00	METAL CHIP 100K 5% 1/10W	
Q455	8-729-900-89	TRANSISTOR DTC144ES		R238	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q456	8-729-900-89	TRANSISTOR DTC144ES		R239	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q457	8-729-922-37	TRANSISTOR 2SD2144S-UVW		R240	1-216-077-00	METAL CHIP 15K 5% 1/10W	
				R241	1-216-073-00	METAL CHIP 10K 5% 1/10W	
				R242	1-216-073-00	METAL CHIP 10K 5% 1/10W	
				R243	1-216-025-00	METAL CHIP 100 5% 1/10W	

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
△R244	1-249-393-11	CARBON	10 5% 1/4W F	R404	1-216-041-00	METAL CHIP	470 5% 1/10W
△R245	1-249-393-11	CARBON	10 5% 1/4W F	R405	1-216-025-00	METAL CHIP	100 5% 1/10W
△R246	1-249-393-11	CARBON	10 5% 1/4W F	R406	1-216-023-00	METAL CHIP	82 5% 1/10W
R251	1-216-037-00	METAL CHIP	330 5% 1/10W	R408	1-216-073-00	METAL CHIP	10K 5% 1/10W
R252	1-216-089-00	METAL CHIP	47K 5% 1/10W	R409	1-216-073-00	METAL CHIP	10K 5% 1/10W
R253	1-216-093-00	METAL CHIP	68K 5% 1/10W	R410	1-216-075-00	METAL CHIP	12K 5% 1/10W
R254	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	△R412	1-249-407-11	CARBON	150 5% 1/4W F
R255	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R413	1-216-073-00	METAL CHIP	10K 5% 1/10W
R256	1-216-079-00	METAL CHIP	18K 5% 1/10W	R414	1-216-097-00	METAL CHIP	100K 5% 1/10W
R257	1-216-063-00	METAL CHIP	3.9K 5% 1/10W	R415	1-216-101-00	METAL CHIP	150K 5% 1/10W
R258	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	R416	1-216-049-00	METAL CHIP	1K 5% 1/10W
△R259	1-249-405-11	CARBON	100 5% 1/4W F	R418	1-216-049-00	METAL CHIP	1K 5% 1/10W
R260	1-216-091-00	METAL CHIP	56K 5% 1/10W	R419	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R261	1-216-089-00	METAL CHIP	47K 5% 1/10W	R421	1-216-097-00	METAL CHIP	100K 5% 1/10W
R262	1-216-097-00	METAL CHIP	100K 5% 1/10W	R422	1-216-089-00	METAL CHIP	47K 5% 1/10W
R264	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R451	1-216-097-00	METAL CHIP	100K 5% 1/10W
R265	1-249-401-11	CARBON	47 5% 1/4W F	R452	1-216-089-00	METAL CHIP	47K 5% 1/10W
R268	1-216-081-00	METAL CHIP	22K 5% 1/10W	R454	1-216-121-00	METAL CHIP	1M 5% 1/10W
R269	1-216-097-00	METAL CHIP	100K 5% 1/10W	R455	1-216-045-00	METAL CHIP	680 5% 1/10W
R270	1-216-101-00	METAL CHIP	150K 5% 1/10W	R456	1-216-097-00	METAL CHIP	100K 5% 1/10W
R271	1-216-049-00	METAL CHIP	1K 5% 1/10W	R457	1-216-049-00	METAL CHIP	1K 5% 1/10W
R272	1-216-049-00	METAL CHIP	1K 5% 1/10W	R458	1-216-097-00	METAL CHIP	100K 5% 1/10W
R273	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	R459	1-216-073-00	METAL CHIP	10K 5% 1/10W
R301	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R460	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R302	1-216-101-00	METAL CHIP	150K 5% 1/10W	R501	1-216-049-00	METAL CHIP	1K 5% 1/10W
R303	1-216-101-00	METAL CHIP	150K 5% 1/10W	R502	1-216-049-00	METAL CHIP	1K 5% 1/10W
R304	1-216-096-00	METAL GLAZE	91K 5% 1/10W	R503	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R305	1-216-096-00	METAL GLAZE	91K 5% 1/10W	△R504	1-249-400-11	CARBON	39 5% 1/4W F
R306	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R505	1-249-408-11	CARBON	180 5% 1/4W F
R307	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R506	1-216-073-00	METAL CHIP	10K 5% 1/10W
R308	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R507	1-216-073-00	METAL CHIP	10K 5% 1/10W
R309	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R508	1-216-073-00	METAL CHIP	10K 5% 1/10W
R310	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R511	1-216-043-00	METAL GLAZE	560 5% 1/10W
R311	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R512	1-216-043-00	METAL GLAZE	560 5% 1/10W
R312	1-216-063-00	METAL CHIP	3.9K 5% 1/10W	R513	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R313	1-216-063-00	METAL CHIP	3.9K 5% 1/10W	R514	1-216-037-00	METAL CHIP	330 5% 1/10W
R314	1-216-041-00	METAL CHIP	470 5% 1/10W	R515	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R315	1-216-041-00	METAL CHIP	470 5% 1/10W	R516	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
△R316	1-249-401-11	CARBON	47 5% 1/4W F	R517	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R317	1-216-043-00	METAL GLAZE	560 5% 1/10W	R518	1-216-045-00	METAL CHIP	680 5% 1/10W
R318	1-216-043-00	METAL GLAZE	560 5% 1/10W	R519	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R319	1-216-089-00	METAL CHIP	47K 5% 1/10W	R521	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R320	1-216-089-00	METAL CHIP	47K 5% 1/10W	R522	1-216-081-00	METAL CHIP	22K 5% 1/10W
R324	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R551	1-216-073-00	METAL CHIP	10K 5% 1/10W
R325	1-249-401-11	CARBON	47 5% 1/4W F	R552	1-216-043-00	METAL GLAZE	560 5% 1/10W
R361	1-216-089-00	METAL CHIP	47K 5% 1/10W	R553	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R362	1-216-089-00	METAL CHIP	47K 5% 1/10W	R554	1-216-037-00	METAL CHIP	330 5% 1/10W
R370	1-216-001-00	METAL CHIP	10 5% 1/10W	R555	1-216-089-00	METAL CHIP	47K 5% 1/10W
R401	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R556	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
△R402	1-249-409-11	CARBON	220 5% 1/4W F	R557	1-216-065-00	METAL CHIP	4.7K 5% 1/10W

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R581	1-216-033-00	METAL CHIP	220 5% 1/10W			< TERMINAL >	
R582	1-216-049-00	METAL CHIP	1K 5% 1/10W				
R605	1-216-049-00	METAL CHIP	1K 5% 1/10W	* TM101	1-537-406-11	TERMINAL BOARD (ANT) (ANTENNA)	
R606	1-216-049-00	METAL CHIP	1K 5% 1/10W			< TEST PIN >	
R607	1-216-073-00	METAL CHIP	10K 5% 1/10W				
R608	1-216-049-00	METAL CHIP	1K 5% 1/10W	* TP251	1-565-513-11	PIN, CONNECTOR 2P	
R609	1-216-049-00	METAL CHIP	1K 5% 1/10W	* TP601	1-565-513-11	PIN, CONNECTOR 2P	
R610	1-216-049-00	METAL CHIP	1K 5% 1/10W			< VIBRATOR >	
R611	1-216-049-00	METAL CHIP	1K 5% 1/10W				
△R613	1-249-401-11	CARBON	47 5% 1/4W F	X501	1-577-126-21	VIBRATOR, CRYSTAL (7.2MHz)	
R614	1-216-049-00	METAL CHIP	1K 5% 1/10W	X601	1-760-403-21	VIBRATOR, CRYSTAL (8.4MHz)	
R626	1-216-081-00	METAL CHIP	22K 5% 1/10W	X801	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)	
R627	1-216-113-00	METAL CHIP	470K 5% 1/10W			*****	
R628	1-216-073-00	METAL CHIP	10K 5% 1/10W			MISCELLANEOUS	
R640	1-216-025-00	METAL CHIP	100 5% 1/10W			*****	
R641	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	△19	1-575-651-21	CORD, POWER (AEP, G)	
R642	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	△19	1-696-907-11	CORD, POWER (UK)	
R643	1-216-071-00	METAL CHIP	8.2K 5% 1/10W	FL701	1-517-177-21	INDICATOR TUBE, FLUORESCENT	
R644	1-216-025-00	METAL CHIP	100 5% 1/10W	△PT901	1-423-525-11	TRANSFORMER, POWER	
R645	1-216-025-00	METAL CHIP	100 5% 1/10W			*****	
R646	1-216-025-00	METAL CHIP	100 5% 1/10W			ACCESSORIES & PACKING MATERIALS	
R647	1-216-025-00	METAL CHIP	100 5% 1/10W			*****	
R648	1-216-025-00	METAL CHIP	100 5% 1/10W			1-501-374-11	ANTENNA, LOOP
R651	1-216-053-00	METAL CHIP	1.5K 5% 1/10W			1-501-594-11	ANTENNA (FM)
R652	1-216-053-00	METAL CHIP	1.5K 5% 1/10W			1-558-271-11	CORD, CONNECTION (AUDIO 108cm)
△R801	1-249-401-11	CARBON	47 5% 1/4W F			1-765-383-11	CORD (WITH CONNECTOR)
R802	1-216-057-00	METAL CHIP	2.2K 5% 1/10W				(EON connecting cable)
R901	1-249-482-11	CARBON	4.7 5% 1/2W F			3-800-227-11	MANUAL, INSTRUCTION
△R902	1-247-752-11	CARBON	1K 5% 1/2W F				(ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, UK)
R903	1-216-097-00	METAL CHIP	100K 5% 1/10W			3-800-227-21	MANUAL, INSTRUCTION
R904	1-216-089-00	METAL CHIP	47K 5% 1/10W				(GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)
R905	1-216-089-00	METAL CHIP	47K 5% 1/10W			3-800-227-31	MANUAL, INSTRUCTION (GERMAN) (G)
R906	1-216-089-00	METAL CHIP	47K 5% 1/10W	*		3-948-574-01	SHEET (ROLL), PROTECTION
		< VARIABLE RESISTOR >		*		4-966-661-01	CUSHION
RV221	1-241-765-11	RES, ADJ, CARBON 22K		*		4-966-660-31	INDIVIDUAL CARTON
RV231	1-241-763-11	RES, ADJ, CARBON 4.7K				*****	
RV251	1-241-630-11	RES, ADJ, CARBON 10K				*****	
RV301	1-241-768-11	RES, ADJ, CARBON 220K				HARDWARE LIST	
RV402	1-241-630-11	RES, ADJ, CARBON 10K				*****	
		< RELAY >		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
RY151	1-755-034-11	RELAY		#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
RY153	1-515-614-11	RELAY		#3	7-682-548-09	SCREW +B 3X8	
		< TRANSFORMER >					
T251	1-235-126-00	ENCAPSULATED COMPONENT					
T252	1-404-845-11	COIL, DISCRI (PRIMARY)					
T253	1-404-846-11	COIL, DISCRI (SECONDARY)					
T401	1-404-713-11	TRANSFORMER, IF					

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

