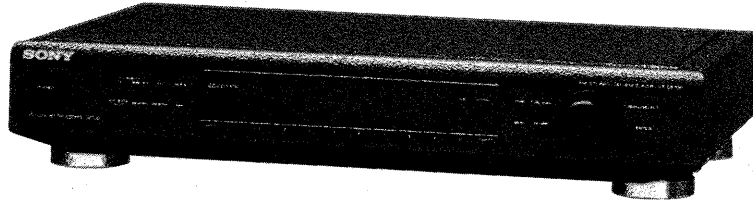


# ST-SE700

## SERVICE MANUAL

*AEP Model  
UK Model*



### SPECIFICATIONS

|                          |                                                                                                                                       |                         |                                                                          |                                                                    |                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>FM tuner section</b>  |                                                                                                                                       | <b>Output</b>           | at 40 kHz deviation<br>600 mV                                            | <b>General</b>                                                     |                                                                                       |
| Frequency range          | 87.5 - 108.0 MHz                                                                                                                      |                         |                                                                          | Power requirements                                                 | 220-230 V, AC<br>50/60 Hz                                                             |
| Aerial terminals         | 75 ohms,<br>unbalanced                                                                                                                | <b>AM tuner section</b> |                                                                          | Power consumption                                                  | 12 W                                                                                  |
| Intermediate frequency   | 10.7 MHz                                                                                                                              | Frequency range         | MW: 522 - 1,611 kHz<br>(9 kHz step)<br>LW: 144 - 288 kHz<br>(1 kHz step) | Input impedance                                                    | 75 ohms                                                                               |
| Sensitivity              | at 26 dB quieting<br>(mono) 10.3 dBf,<br>0.9 $\mu$ V/75 $\Omega$<br>at 46 dB quieting<br>(stereo) 38.5 dBf,<br>23 $\mu$ V/75 $\Omega$ | Intermediate frequency  | 450 kHz                                                                  | Input connector                                                    | IEC-male                                                                              |
| Usable sensitivity (IHF) | 10.3 dBf, 0.9 $\mu$ V/<br>75 $\Omega$                                                                                                 | Usable Sensitivity      | (with AM loop<br>aerial)<br>MW: 300 $\mu$ V/m<br>LW: 1 mV/m              | Dimensions                                                         | 430 x 82 x 295 mm<br>(w/h/d)                                                          |
| S/N                      | at 40 kHz deviation<br>80 dB (mono),<br>76 dB (stereo)                                                                                | Signal-to-noise ratio   | MW: 54 dB<br>(50 mV/m,<br>999 kHz)<br>LW: 50 dB<br>(50 mV/m,<br>216 kHz) | Weight                                                             | 2.9 kg                                                                                |
| Harmonic distortion      | WIDE<br>0.04 % (mono),<br>0.05 % (stereo)<br>NARROW<br>0.06 % (mono),<br>0.08 % (stereo)                                              | Harmonic distortion     | 0.3% (50 mV/m,<br>400 Hz)                                                | Supplied accessories                                               | Audio cord (1)<br>AM loop aerial (1)<br>FM wire aerial (1)<br>EON control cord<br>(1) |
| Frequency response       | 30 Hz - 15 kHz<br>(+0.3/-0.7 dB)                                                                                                      | Selectivity             | 32 dB                                                                    | Design and specifications are subject to<br>change without notice. |                                                                                       |
| Separation               | 50 dB at 1 kHz                                                                                                                        |                         |                                                                          |                                                                    |                                                                                       |
| Selectivity              | at 400 kHz<br>WIDE 80 dB<br>NARROW 90 dB<br>at 300 kHz<br>WIDE 45 dB<br>NARROW 70 dB                                                  |                         |                                                                          |                                                                    |                                                                                       |

**FM STEREO FM-AM TUNER**  
**SONY®**

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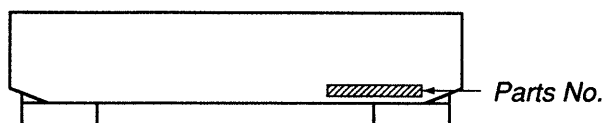
|                                                     |    |
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## SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  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.

## MODEL IDENTIFICATION

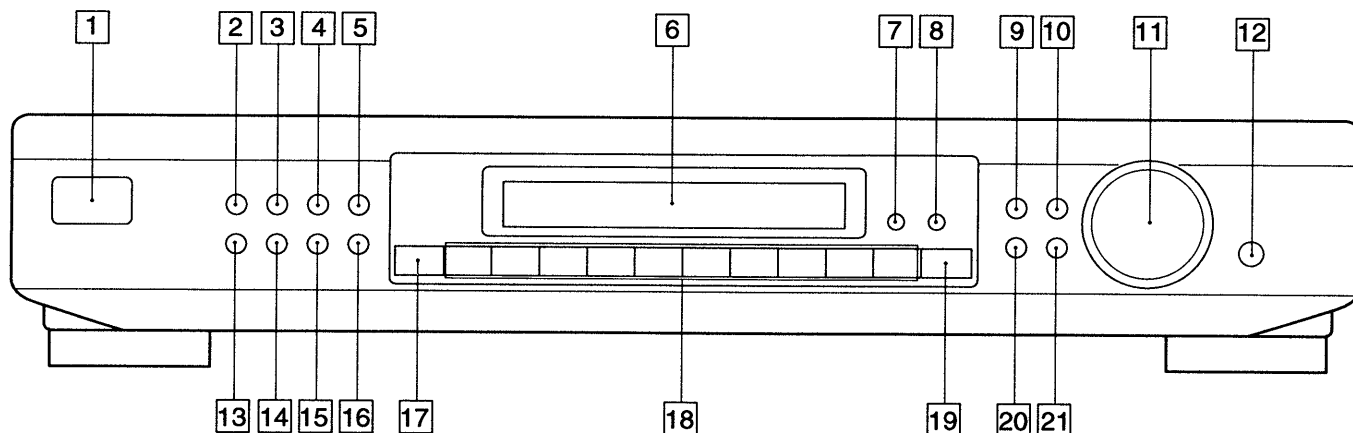
- BACK PANEL -



| PARTS No.    | MODEL             |
|--------------|-------------------|
| 4-981-268-0□ | AEP, German model |
| 4-981-268-1□ | UK model          |

## SECTION 1 GENERAL

### Location of Controls



- 1** POWER switch
- 2** TA button
- 3** NEWS/INFO button
- 4** PTY button
- 5** DISPLAY button
- 6** Display window
- 7** ASM button
- 8** ANTENNA button
- 9** CHAR button
- 10** TUNE MODE button
- 11** TUNING/SELECT knob

- 12** ENTER button
- 13** AUTO-BETICAL SELECT button
- 14** MEMORY button
- 15** FM MODE button
- 16** BAND button
- 17** SHIFT button
- 18** Preset button
- 19** DIRECT button
- 20** MENU button
- 21** RETURN button

## SECTION 2 TEST MODE

### 1. Circuit Check Mode

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

This enables circuit check to be performed in any of the reception modes-FM, AM (MW, LW). Set to a desired band before setting the test mode.

1. Turn OFF the power.
2. While pressing **[4]** and **AUTO-BETICAL SELECT** 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 Frq     | IF COUNT OK     | OK or NG | OK or NG    | FE101, IC251 NG, or IF count buffer amp (Q251, Q401) NG |
| Sig Level  | SILEVELh70dB    | OK or NG | OK or NG    | IC221 NG, RV221 adjustments                             |
| Stereo     | ST signal=LOW   | OK or NG |             | IC301 NG, RV301 adjustments                             |
| RDS Signal | RDS DATA OK     | OK or NG |             | IC801 NG                                                |

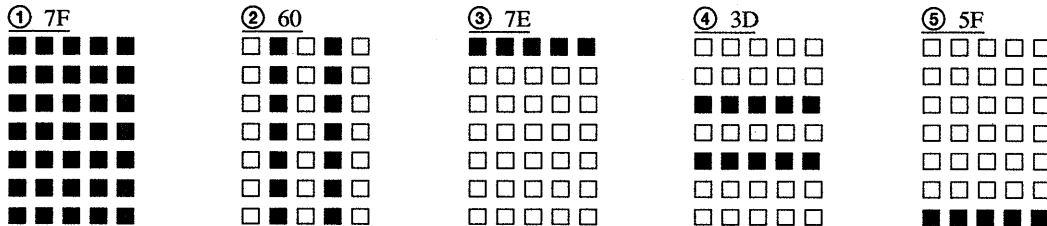
**NOTE :** The preset data will be erased when this test mode is used. Therefore, take down the data before setting this mode and preset the data again after completing operations in this mode.

## 2. Display Tube Check and KEY Check mode

1. Turn OFF the power.
2. While pressing [1] and [AUTO-BETICAL SELECT] together, turn ON [POWER] .
3. While continuously pressing [1] and [AUTO-BETICAL SELECT] 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 1 sec.

4. Release [1] and [AUTO-BETICAL SELECT] . The KEY CHECK mode will be set.
5. All key numbers will be displayed.  
Key Number : 27
6. Each time the key is pressed, the key number will be counted down.  
Each key will be counted only once, at the first time.
7. When all keys have been pressed, the process will end.

**NOTE :** As contents of the Factory Preset will be written into memory after completing this check mode, delete contents of memory according to 4. Forced RESET.

## 3. Entering the Factory Preset (In case perform just to write memory of the Factory Preset.)

1. Turn OFF the power.
2. While pressing [3] and [AUTO-BETICAL SELECT] together, turn ON [POWER] .

## 4. Forced RESET (Used to delete the contents of Factory Preset when it is written into the preset memory.)

Clears all the RAMs and sets the initial state

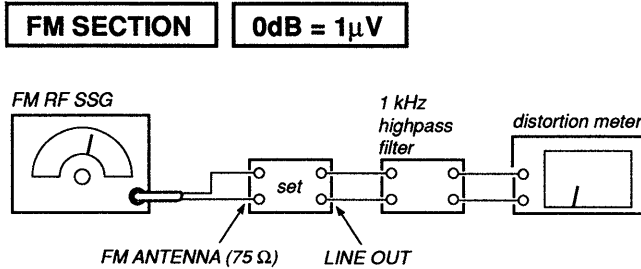
1. Turn OFF the power.
2. While pressing [5] and [AUTO-BETICAL SELECT] together, turn ON [POWER] .
3. When "All clear" is indicated on the display tube, it means that "Forced Reset" has been completed.

## 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.

Set "IF : WIDE" after the all adjustments.



- Standard Setting of FM Stereo RF Signal Generator.

| STEREO STANDARD SIGNAL                                                                                                                                               | MONAURAL STANDARD SIGNAL                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Carrier frequency : 98MHz<br>Modulation : Audio 1kHz<br>Main channel (L+R): 33.75kHz deviation<br>Sub channel (L-R) : 33.75kHz deviation<br>Pilot : 7.5kHz deviation | Carrier frequency : 98MHz<br>Modulation : Audio 1kHz<br>75kHz deviation |

### How to switch IF BAND : WIDE/NARROW and ANT ATT : ON/OFF

#### Method 1 :

1. Set the reception mode to FM.
2. Push the MENU button and turn the TUNING/SELECT to indicate "Reception" on the fluorescent display tube, then press the ENTER button.
3. Rotate the TUNING/SELECT knob in the clockwise direction. (Proceeds onto the step 5 when rotated in the counterclockwise direction.)
4. Turn the TUNING/SELECT knob to indicate "ANT ATT: OFF" on the fluorescent display tube, then press the ENTER button.
5. Turn the TUNING/SELECT knob to indicate "IF: NARROW" or "IF: WIDE" on the fluorescent display tube, then press the ENTER button.  
When the IF BAND: NARROW is set, "NARROW" is indicated on the fluorescent display tube.
6. Set WIDE after the operation.

\* When set to standby for inputs using the TUNING/SELECT knob, "SELECT" is indicated on the fluorescent display tube.

#### Method 2 :

After the test modes "2. Display Tube Check and KEY Check mode" or "3. Entering the Factory Preset", "IF : NARROW" and "IF : WIDE" are switched every time pressing RETURN button the IF BAND : NARROW is set "NARROW" is indicated on the fluorescent display tube.

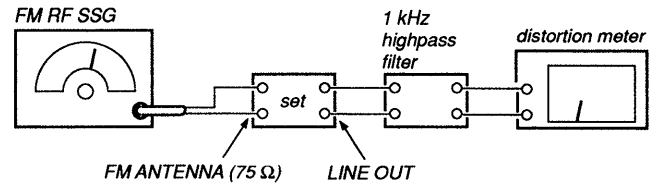
Likewise, the mode can be switched between "ANT ATT : ON" and "ANT ATT : OFF". When set to ANT ATT : ON, the fluorescent display tube indicates ANT ATT.

### FM Discriminator ADJUSTMENT (NULL and MONO Distortion Adjustment)

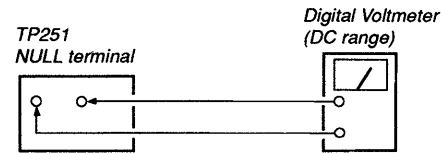
#### Setting :

IF BAND : WIDE

ANT ATT : OFF



Modulation: Monaural Standard signal  
Output level: 6mV (76dB) (at 75 Ω open)



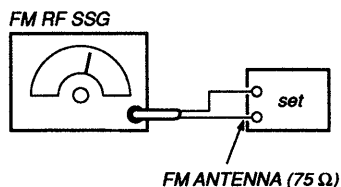
#### Procedure :

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

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

## Stereo Level Adjustment

**Setting :**  
IF BAND : WIDE  
ANT ATT : OFF



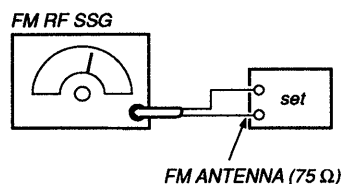
Modulation: Stereo Standard signal  
Output level: 18 $\mu$ V (25dB) (at 75  $\Omega$  open)

### Procedure :

1. Tune the set to 98 MHz.
2. Adjust RV251 to the point (moment) when the "STEREO" indicator will change from going off to going on.

## Narrow Gain Adjustment

**Setting :**  
IF BAND : NARROW  
ANT ATT : OFF



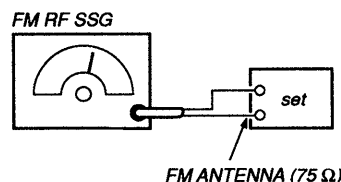
Modulation: Stereo Standard signal  
Output level: 18 $\mu$ V (25dB) (at 75  $\Omega$  open)

### Procedure :

1. Tune the set to 98 MHz.
2. Set "IF BAND : NARROW" according to the procedure of "How to switch IF BAND WIDE/NARROW" on page 6.
3. Adjust RV231 to the point (moment) when the "STEREO" indicator will change from going off to going on.

## FM Meter Level Adjustment

**Setting :**  
IF BAND : WIDE  
ANT ATT : OFF



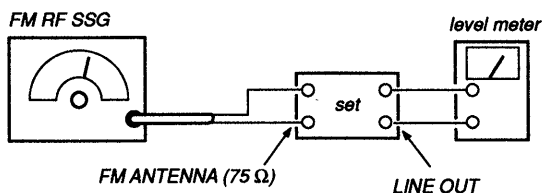
Modulation: Stereo Standard signal  
Output level: 3mV (76dB) (at 75  $\Omega$  open)

### Procedure :

1. Tune the set to 98 MHz.
2. Press DISPLAY button to display the digital signal, then adjust RV221 to be displayed as "SIG 70dB".

## Stereo Separation Adjustment

**Setting :**  
IF BAND : WIDE



Modulation: Stereo Standard signal  
Output level: 6mV (76dB) (at 75  $\Omega$  open)

### Procedure :

1. Refer to "How to switch IF BAND WIDE/NARROW" on page 6.

| FM stereo<br>Signal generator<br>Output channel | Level meter<br>connection | Level meter<br>reading (dB)                             |
|-------------------------------------------------|---------------------------|---------------------------------------------------------|
| L-CH                                            | L-CH                      | Ⓐ                                                       |
| R-CH                                            | L-CH                      | Ⓑ<br>Adjust RV301 for minimum<br>reading on Level meter |
| R-CH                                            | R-CH                      | Ⓒ                                                       |
| L-CH                                            | R-CH                      | Ⓓ<br>Adjust RV301 for minimum<br>reading on Level meter |

L-CH Stereo separation : Ⓐ - Ⓑ

R-CH Stereo separation : Ⓒ - Ⓓ

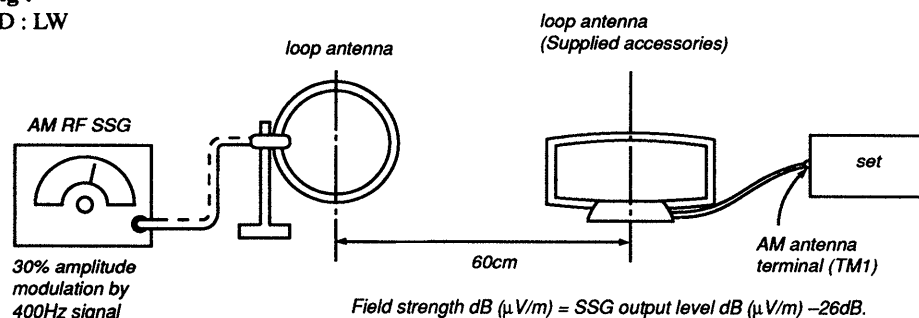
The separations of both channels should be equal.

## AM SECTION

### AM Meter Level Adjustment

Setting :

BAND : LW



Carrier frequency: 216kHz

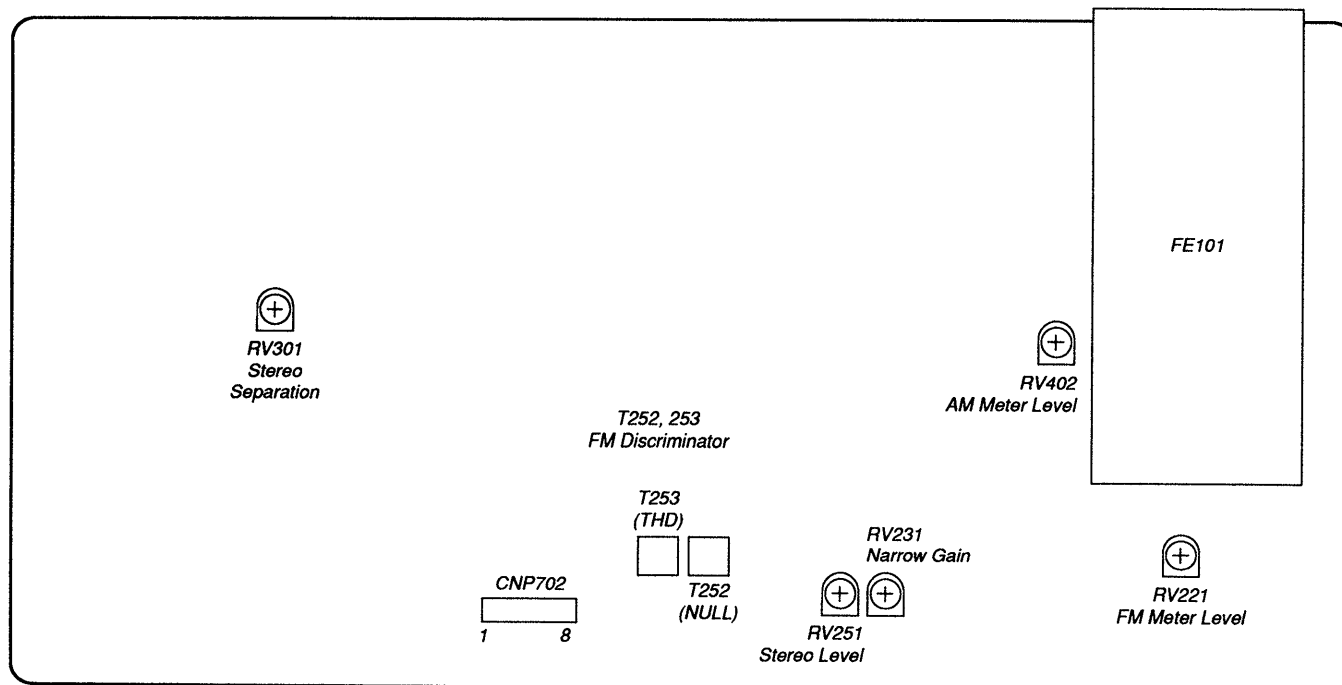
Modulation: AUDIO 400Hz, 30% modulation

### Procedure :

1. Set AM RF signal generator so that the AM antenna input level becomes 74dB $\mu\text{V/m}$ .
2. Adjust RV402 so that 1 to 10 indication bars light up on the signal meter.

### Adjustment Location

[TUNER BOARD] — Component Side —



## SECTION 4 DIAGRAMS

### 4-1. IC PIN FUNCTION

#### • IC701 System Control (μPD780205GF-017-3BA)

| Pin No. | Pin Name                    | I/O | Function                                     |
|---------|-----------------------------|-----|----------------------------------------------|
| 1       | VDD                         | —   | Power supply (+5V).                          |
| 2       | $\overline{\text{ANT}}$     | —   | Not used. (Open)                             |
| 3       | $\overline{\text{ATT}}$     | —   | Not used. (Open)                             |
| 4       | $\overline{\text{BAND1}}$   | —   | Not used. (Open)                             |
| 5       | $\overline{\text{BAND2}}$   | —   | Not used. (Open)                             |
| 6       | IF-B                        | —   | Not used. (Open)                             |
| 7       | NC                          | —   | Not used. (Open)                             |
| 8       | MONO                        | —   | Not used. (Open)                             |
| 9       | $\overline{\text{TUN}}$     | —   | Not used. (Open)                             |
| 10      | $\overline{\text{RESET}}$   | I   | System reset input.                          |
| 11      | X2                          | O   | Oscillation signal output (4.19MHz).         |
| 12      | X1                          | I   | Oscillation signal input (4.19MHz).          |
| 13      | GND                         | —   | Ground.                                      |
| 14      | NC                          | —   | Not used. (Open)                             |
| 15      | $\overline{\text{LOCK}}$    | I   | Lock signal input.                           |
| 16      | VDD                         | —   | Power supply (+5V).                          |
| 17      | $\overline{\text{CLK}}$     | O   | PLL clock to FE101.                          |
| 18      | DATA                        | O   | PLL data to FE101.                           |
| 19      | D-IN                        | I   | PLL data from FE101.                         |
| 20      | CE                          | O   | PLL Latch to FE101.                          |
| 21      | $\overline{\text{BLN}}$     | —   | Not used. (Open)                             |
| 22      | $\overline{\text{ST}}$      | I   | Stereo display detection.                    |
| 23      | CAL                         | —   | Not used. (Open)                             |
| 24      | AST                         | I   | Auto stop signal detection.                  |
| 25      | AVss                        | —   | Ground. (Analog)                             |
| 26      | MUTE                        | O   | Muting signal output.                        |
| 27      | EON                         | O   | External control.                            |
| 28      | $\overline{\text{PGM}}$     | —   | Not used. (Open)                             |
| 29      | DATA RDS                    | I   | RDS data input.                              |
| 30      | R2                          | O   | Rotary encoder phase detection.              |
| 31      | KEY 2                       | I   | Key input.                                   |
| 32      | KEY 1                       | I   | Key input.                                   |
| 33      | SI                          | I   | Signal input.                                |
| 34      | AVDD                        | —   | Analog power supply (+5V).                   |
| 35      | AVREF                       | I   | Reference voltage (+5V).                     |
| 36      | $\overline{\text{RIN}}$     | I   | Remote control input.                        |
| 37      | R1                          | I   | Rotary encoder number of rotation detection. |
| 38      | $\overline{\text{RDS CLK}}$ | I   | RDS data clock input.                        |
| 39      | $\overline{\text{POWER}}$   | I   | Power supply ON/OFF monitor.                 |
| 40      | GND                         | —   | Ground.                                      |

| Pin No.  | Pin Name                 | I/O | Function                |
|----------|--------------------------|-----|-------------------------|
| 41       | IS 5                     | I   | Model detection.        |
| 42       | IS 4                     | I   |                         |
| 43       | IS 3                     | I   |                         |
| 44       | IS 2                     | I   |                         |
| 45       | $\overline{\text{IS 1}}$ | I   |                         |
| 46       | VDD                      | —   | Power supply (+5V).     |
| 47 to 78 | P1 to P32                | O   | Drives indication tube. |
| 79       | V LOAD                   | —   | Power supply (–30V).    |
| 80       | P33                      | O   | Drives indication tube. |

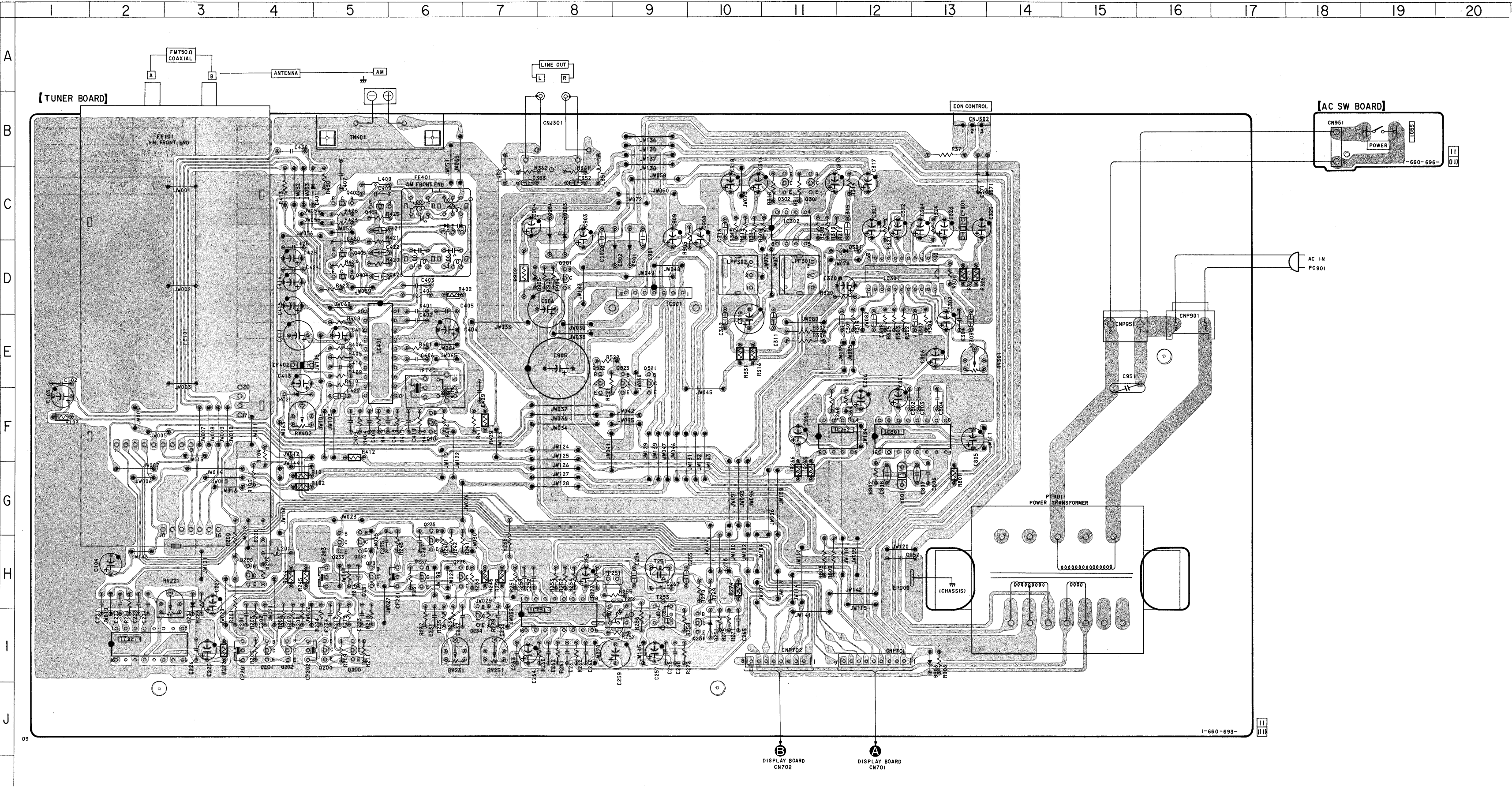
4-2. PRINTED WIRING BOARD — TUNER SECTION —

• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D221     | I-3      |
| D251     | I-10     |
| D301     | D-12     |
| D371     | C-14     |
| D401     | C-5      |
| D402     | F-4      |
| D901     | D-9      |
| D902     | D-9      |
| D903     | C-8      |
| D904     | C-8      |
| D905     | D-7      |
| D906     | I-13     |
| IC221    | I-2      |
| IC251    | H-8      |
| IC252    | F-12     |
| IC301    | D-12     |
| IC302    | C-11     |
| IC401    | E-5      |
| IC801    | F-12     |
| IC901    | D-9      |
| Q200     | H-4      |
| Q201     | I-4      |
| Q202     | I-4      |
| Q204     | I-5      |
| Q205     | I-5      |
| Q231     | H-5      |
| Q232     | H-5      |
| Q233     | H-5      |
| Q234     | I-7      |
| Q235     | G-6      |
| Q236     | H-6      |
| Q237     | H-6      |
| Q251     | I-10     |
| Q301     | C-11     |
| Q302     | C-11     |
| Q401     | F-6      |
| Q402     | C-5      |
| Q403     | C-5      |
| Q404     | D-5      |
| Q405     | D-5      |
| Q521     | F-9      |
| Q522     | F-8      |
| Q523     | F-9      |
| Q901     | D-8      |

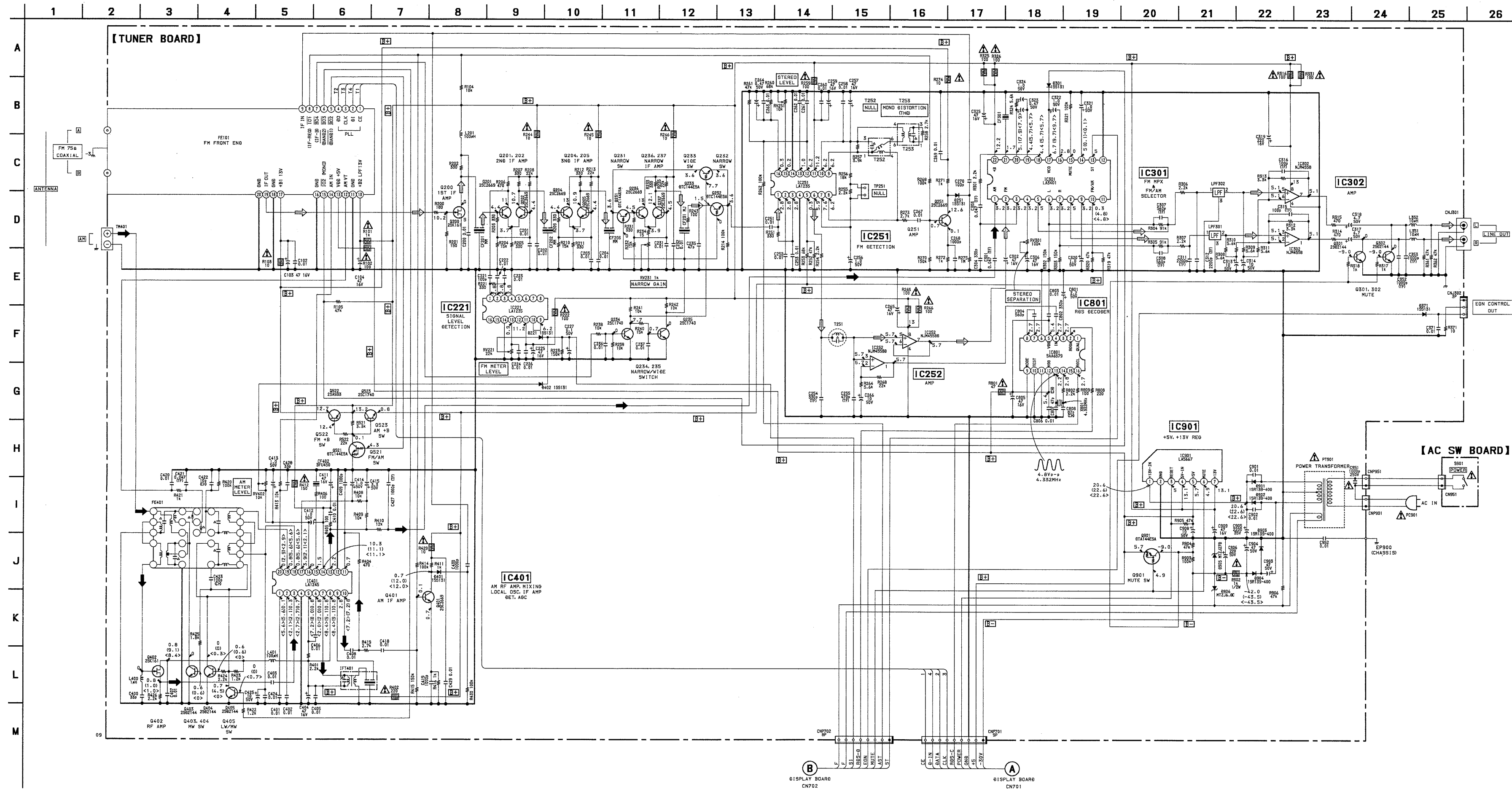
Note:

- — : parts extracted from the component side.
- Δ : internal component.
- [Pattern] : Pattern from the side which enable seeing.



## 4-3. SCHEMATIC DIAGRAM — TUNER SECTION —

• See page 19 for IC Block Diagrams.



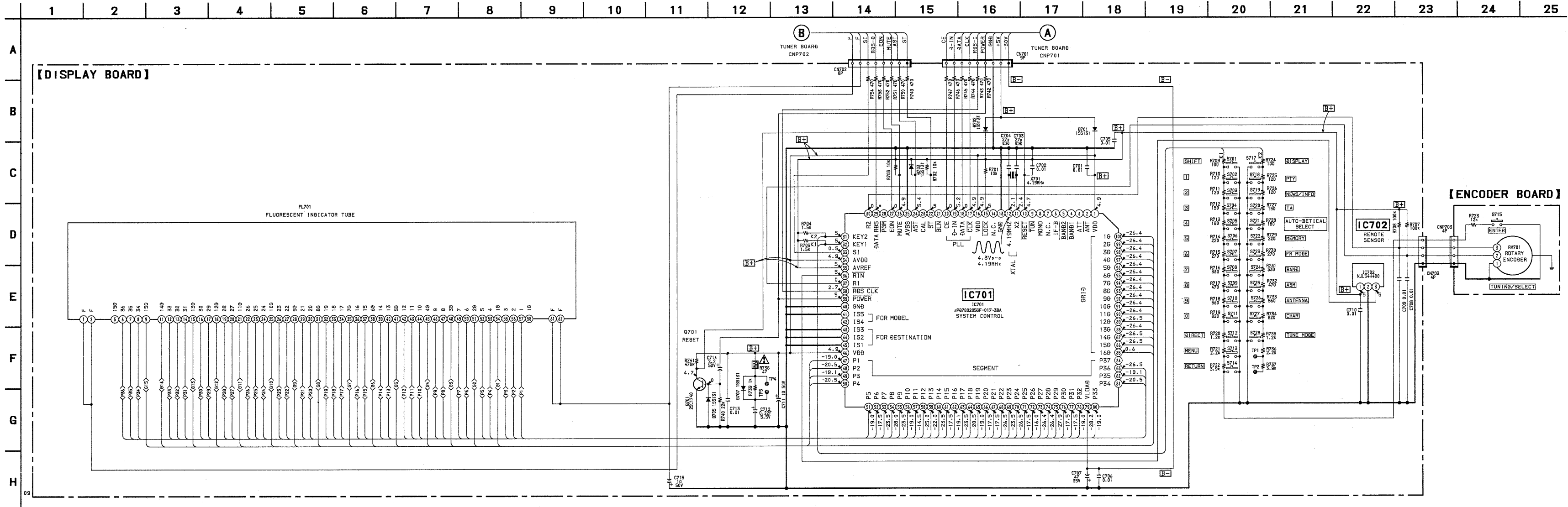
## NOTE

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} = \mu\text{F} \times 10^{-6}$ .  $50\text{W}$  or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- $\Delta$ : internal component.
- $\square$ : nonflammable resistor.
- $\square$ : panel designation.

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  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 (detuned) conditions.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\rightarrow$ : FM
- $\rightarrow$ : AM

4-4. SCHEMATIC DIAGRAM — DISPLAY SECTION — • See page 8 for IC Pin Function. (IC701)

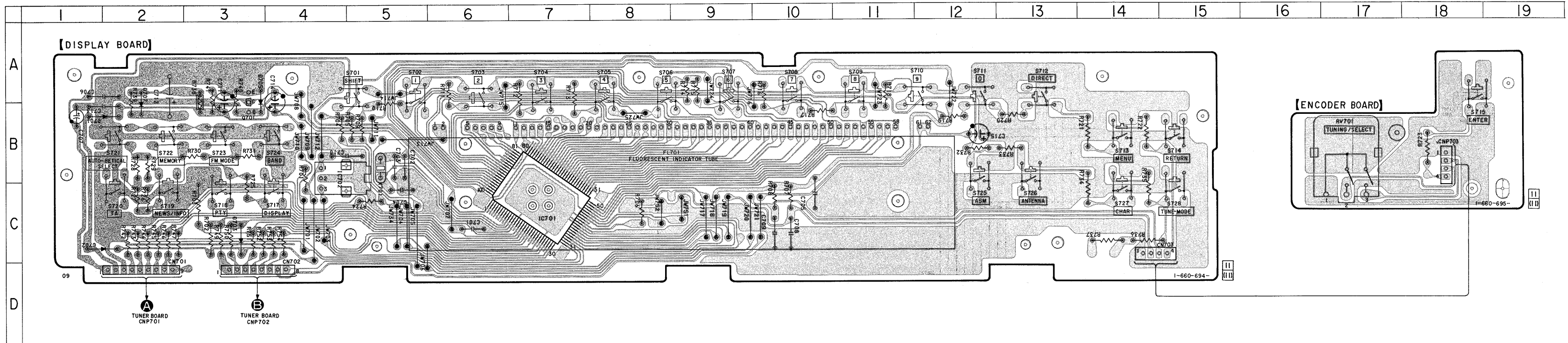


**NOTE**

- All capacitors are in  $\mu F$  unless otherwise noted.  $pF$ :  $\mu F$  50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4W$  or less unless otherwise specified.
- : nonflammable resistor.
- : panel designation.

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

4-5. PRINTED WIRING BOARD — DISPLAY SECTION —



• Semiconductor Location

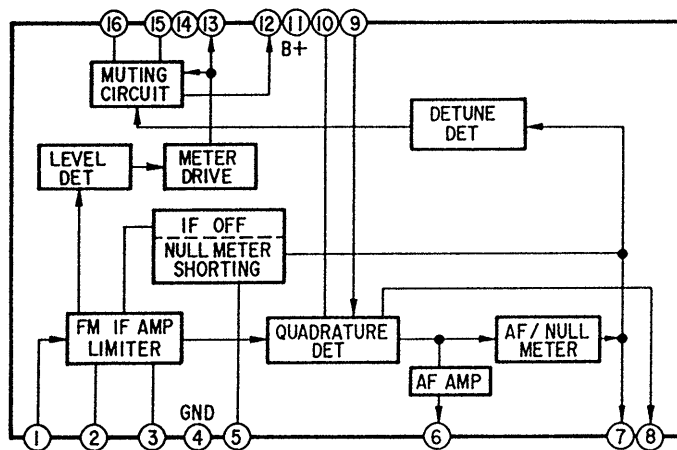
| Ref. No. | Location |
|----------|----------|
| D701     | B-1      |
| D702     | C-1      |
| D703     | C-3      |
| D705     | A-3      |
| D707     | A-2      |
| IC701    | C-7      |
| IC702    | B-4      |
| Q701     | B-3      |

**Note:**

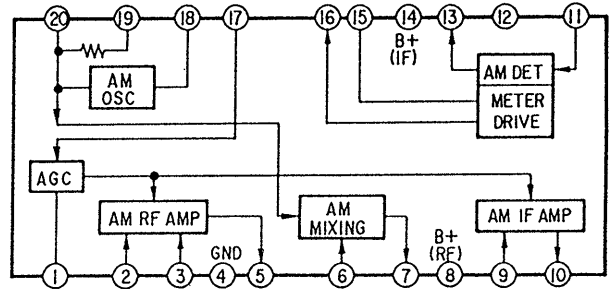
- : parts extracted from the component side.
- : Pattern from the side which enables seeing.

## 4-6. IC BLOCK DIAGRAMS — TUNER SECTION —

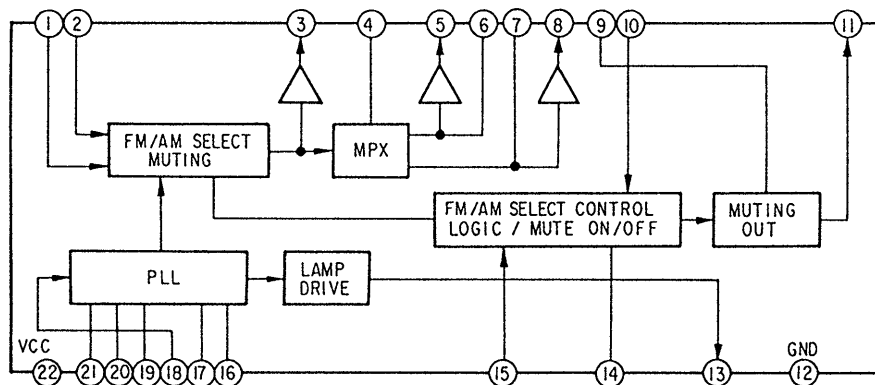
**IC221, 251 LA1235**



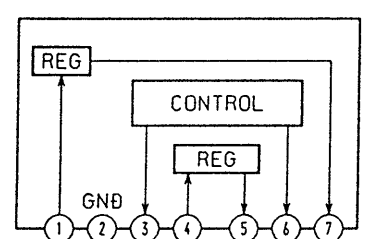
**IC401 LA1245**



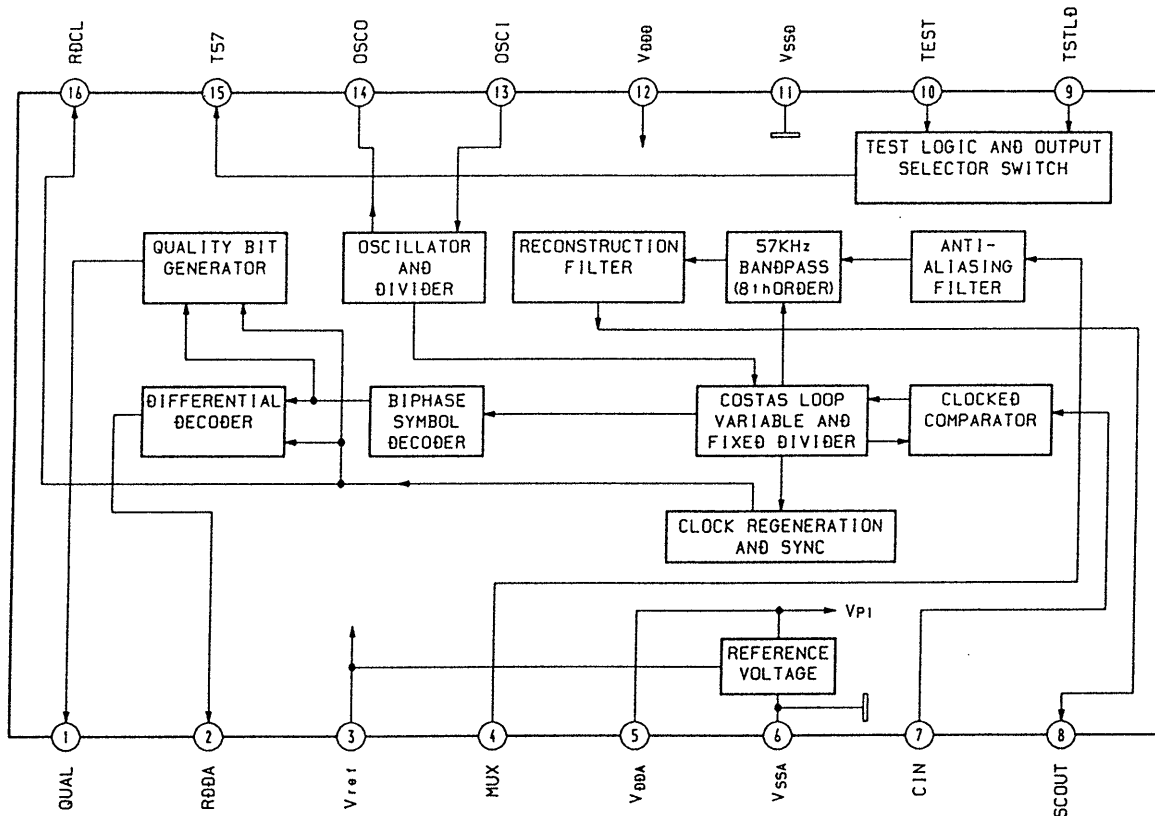
**IC301 LA3401**



**IC901 LA5667**



**IC801 SAA6579**



# SECTION 5

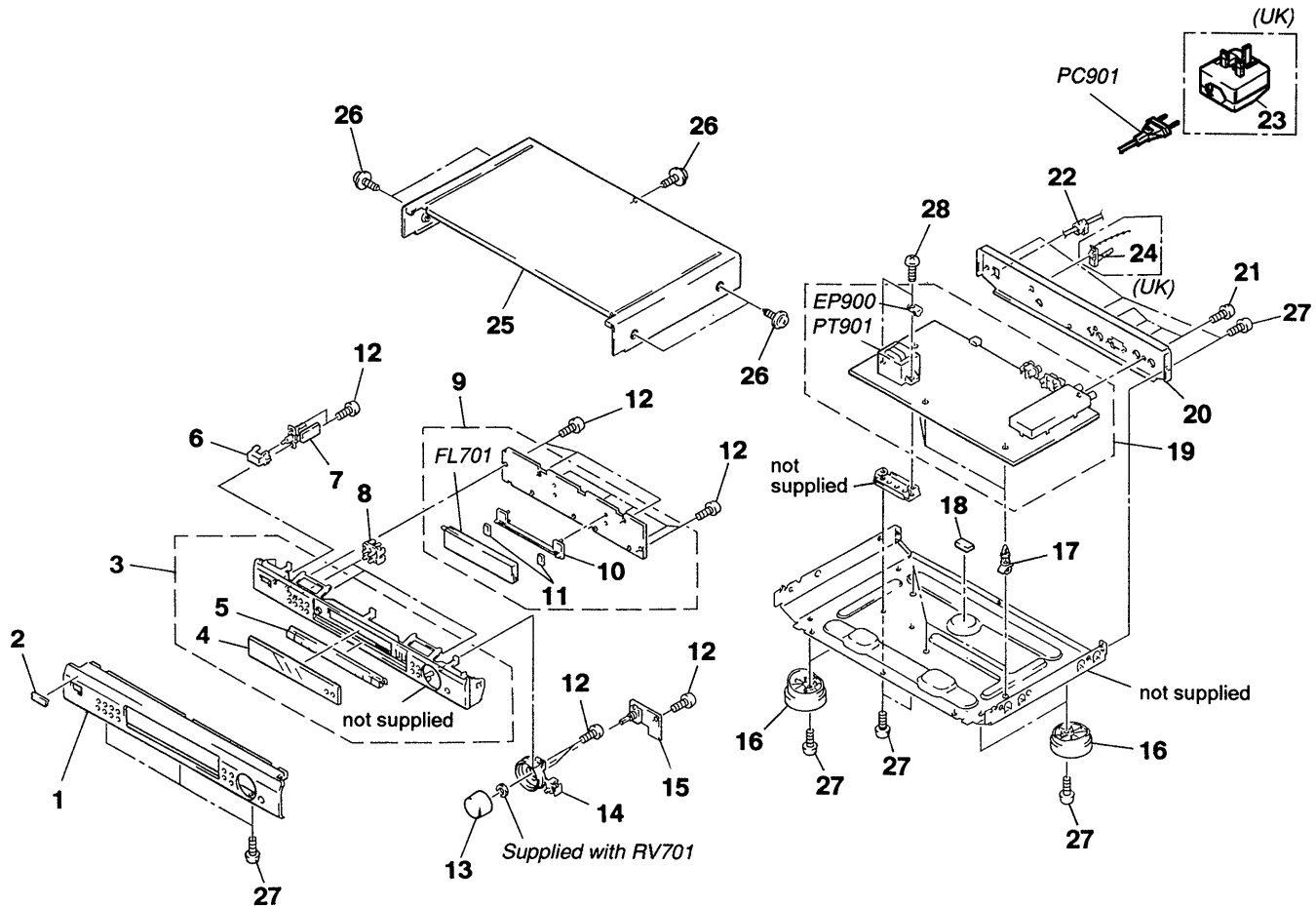
## EXPLODED VIEWS

### 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.

• Abbreviation  
G : German model

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



| Ref. No. | Part No.     | Description             | Remark | Ref. No.                                                                                  | Part No.     | Description                   | Remark |
|----------|--------------|-------------------------|--------|-------------------------------------------------------------------------------------------|--------------|-------------------------------|--------|
| 1        | 4-981-261-01 | PANEL, FRONT            |        | 18                                                                                        | 9-911-840-XX | CUSHION, LS                   |        |
| 2        | 4-979-587-01 | EMBLEM (NO.5), SONY     |        | * 19                                                                                      | A-4389-856-A | TUNER BOARD, COMPLETE         |        |
| 3        | X-4947-319-1 | BASE ASSY, PANEL        |        | * 20                                                                                      | 4-981-268-01 | PANEL, BACK (AEP, G)          |        |
| 4        | 4-981-266-02 | WINDOW, INDICATION      |        |                                                                                           |              |                               |        |
| 5        | 4-981-263-01 | BUTTON (10)             |        | * 20                                                                                      | 4-981-268-11 | PANEL, BACK (UK)              |        |
| 6        | 4-977-589-21 | BUTTON (POWER)          |        | 21                                                                                        | 3-704-515-31 | SCREW (BV/RING)               |        |
| * 7      | 1-660-696-11 | AC SW BOARD             |        | 22                                                                                        | 4-966-267-11 | BUSHING (FBS001), CORD        |        |
| 8        | 4-981-264-01 | BUTTON (4)              |        |  23    | 1-770-019-11 | ADAPTOR, CONVERSION PLUG (UK) |        |
| * 9      | A-4389-857-A | DISPLAY BOARD, COMPLETE |        | 24                                                                                        | 4-956-370-12 | BAND, PLUG FIXED (UK)         |        |
| * 10     | 4-945-292-01 | HOLDER, INDICATION TUBE |        |                                                                                           |              |                               |        |
|          |              |                         |        | * 25                                                                                      | 4-978-901-51 | CASE (407026)                 |        |
| * 11     | 4-921-941-01 | CUSHION (FL)            |        | 26                                                                                        | 3-363-099-01 | SCREW (CASE 3 TP2)            |        |
| 12       | 4-951-620-01 | SCREW (2.6X8), +BVTP    |        | 27                                                                                        | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 TT(B)   |        |
| 13       | 4-981-267-01 | KNOB (T-ZN) (VOLUME)    |        | 28                                                                                        | 7-682-548-04 | SCREW +BVTT 3X8 (S)           |        |
| 14       | 4-981-265-01 | ESCUTCHEON              |        | EP900                                                                                     | 4-957-933-01 | PLATE, GROUND                 |        |
| * 15     | 1-660-695-11 | ENCORDER BOARD          |        |                                                                                           |              |                               |        |
| 16       | X-4947-025-1 | FOOT ASSY               |        | FL701                                                                                     | 1-517-177-21 | INDICATOR TUBE, FLUORESCENT   |        |
| * 17     | 3-346-265-31 | HOLDER, PC BOARD        |        |  PC901 | 1-575-651-21 | CORD, POWER                   |        |
|          |              |                         |        |  PT901 | 1-423-525-11 | TRANSFORMER, POWER            |        |

# SECTION 6

## ELECTRICAL PARTS LIST

AC SW DISPLAY

### NOTE:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  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:  $\mu$ , for example:  
uA...:  $\mu$  A..., uPA...:  $\mu$  PA..., uPB...:  $\mu$  PB...,  
uPC...:  $\mu$  PC..., uPD...:  $\mu$  PD...
- CAPACITORS  
uF:  $\mu$  F
- COILS  
uH:  $\mu$  H

| Ref. No.                  | Part No.     | Description                                  | Remark | Ref. No. | Part No.     | Description                                | Remark |
|---------------------------|--------------|----------------------------------------------|--------|----------|--------------|--------------------------------------------|--------|
| *                         | 1-660-696-11 | AC SW BOARD<br>*****<br>< SWITCH >           |        | IC702    | 8-759-373-49 | IC NJL54H400<br><br>< TRANSISTOR >         |        |
| $\Delta$ S901             | 1-572-267-51 | SWITCH, PUSH (AC POWER) (1 KEY) (POWER)      |        | Q701     | 8-729-119-78 | TRANSISTOR 2SC2785-HFE<br><br>< RESISTOR > |        |
| *****                     |              |                                              |        | R701     | 1-249-429-11 | CARBON 10K 5% 1/4W                         |        |
| *                         | A-4389-857-A | DISPLAY BOARD, COMPLETE<br>*****             |        | R702     | 1-249-429-11 | CARBON 10K 5% 1/4W                         |        |
| *                         | 4-921-941-01 | CUSHION (FL)                                 |        | R703     | 1-249-429-11 | CARBON 10K 5% 1/4W                         |        |
| *                         | 4-945-292-01 | HOLDER, INDICATION TUBE<br><br>< CAPACITOR > |        | R704     | 1-249-419-11 | CARBON 1.5K 5% 1/4W F                      |        |
| C701                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R705     | 1-249-419-11 | CARBON 1.5K 5% 1/4W F                      |        |
| C702                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R707     | 1-249-441-11 | CARBON 100K 5% 1/4W                        |        |
| C703                      | 1-162-209-31 | CERAMIC 27PF 5% 50V                          |        | R708     | 1-249-441-11 | CARBON 100K 5% 1/4W                        |        |
| C704                      | 1-162-209-31 | CERAMIC 27PF 5% 50V                          |        | R709     | 1-247-807-31 | CARBON 100 5% 1/4W                         |        |
| C705                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R710     | 1-249-406-11 | CARBON 120 5% 1/4W F                       |        |
| C706                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R711     | 1-249-406-11 | CARBON 120 5% 1/4W F                       |        |
| C707                      | 1-126-947-11 | ELECT 47uF 20% 35V                           |        | R712     | 1-249-407-11 | CARBON 150 5% 1/4W F                       |        |
| C708                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R713     | 1-249-408-11 | CARBON 180 5% 1/4W F                       |        |
| C709                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R714     | 1-247-815-91 | CARBON 220 5% 1/4W                         |        |
| C710                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R715     | 1-249-410-11 | CARBON 270 5% 1/4W F                       |        |
| C711                      | 1-126-964-11 | ELECT 10uF 20% 50V                           |        | R716     | 1-249-411-11 | CARBON 330 5% 1/4W                         |        |
| C712                      | 1-104-905-11 | CAPACITOR 0.22F 5.5V                         |        | R717     | 1-249-413-11 | CARBON 470 5% 1/4W F                       |        |
| C713                      | 1-162-306-11 | CERAMIC 0.01uF 30% 16V                       |        | R718     | 1-249-414-11 | CARBON 560 5% 1/4W F                       |        |
| C714                      | 1-124-925-11 | ELECT 2.2uF 20% 100V                         |        | R719     | 1-249-416-11 | CARBON 820 5% 1/4W F                       |        |
| C715                      | 1-126-964-11 | ELECT 10uF 20% 50V                           |        | R720     | 1-249-418-11 | CARBON 1.2K 5% 1/4W F                      |        |
| < DIODE >                 |              |                                              |        | R721     | 1-249-421-11 | CARBON 2.2K 5% 1/4W F                      |        |
| D701                      | 8-719-815-85 | DIODE 1S1585                                 |        | R722     | 1-249-424-11 | CARBON 3.9K 5% 1/4W F                      |        |
| D702                      | 8-719-815-85 | DIODE 1S1585                                 |        | R724     | 1-247-807-31 | CARBON 100 5% 1/4W                         |        |
| D703                      | 8-719-815-85 | DIODE 1S1585                                 |        | R725     | 1-249-406-11 | CARBON 120 5% 1/4W F                       |        |
| D705                      | 8-719-815-85 | DIODE 1S1585                                 |        | R726     | 1-249-406-11 | CARBON 120 5% 1/4W F                       |        |
| D707                      | 8-719-815-85 | DIODE 1S1585                                 |        | R727     | 1-249-407-11 | CARBON 150 5% 1/4W F                       |        |
| < FLUORESCENT INDICATOR > |              |                                              |        | R728     | 1-249-408-11 | CARBON 180 5% 1/4W F                       |        |
| FL701                     | 1-517-177-21 | INDICATOR TUBE, FLUORESCENT                  |        | R729     | 1-247-815-91 | CARBON 220 5% 1/4W                         |        |
| < IC >                    |              |                                              |        | R730     | 1-249-410-11 | CARBON 270 5% 1/4W F                       |        |
| IC701                     | 8-759-377-58 | IC uPD780205GF-017-3BA                       |        | R731     | 1-249-411-11 | CARBON 330 5% 1/4W                         |        |
|                           |              |                                              |        | R732     | 1-249-413-11 | CARBON 470 5% 1/4W F                       |        |
|                           |              |                                              |        | R733     | 1-249-414-11 | CARBON 560 5% 1/4W F                       |        |
|                           |              |                                              |        | R734     | 1-249-416-11 | CARBON 820 5% 1/4W F                       |        |
|                           |              |                                              |        | R735     | 1-249-418-11 | CARBON 1.2K 5% 1/4W F                      |        |
|                           |              |                                              |        | R736     | 1-249-421-11 | CARBON 2.2K 5% 1/4W F                      |        |
|                           |              |                                              |        | R737     | 1-249-424-11 | CARBON 3.9K 5% 1/4W F                      |        |

# DISPLAY

# ENCORDER

# TUNER

| Ref. No.     | Part No.     | Description                           | Remark        |
|--------------|--------------|---------------------------------------|---------------|
| △R738        | 1-249-401-11 | CARBON                                | 47 5% 1/4W F  |
| R739         | 1-249-417-11 | CARBON                                | 1K 5% 1/4W F  |
| R740         | 1-247-863-91 | CARBON                                | 22K 5% 1/4W   |
| R741         | 1-247-895-91 | CARBON                                | 470K 5% 1/4W  |
| R742         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R743         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R744         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R745         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R746         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R747         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R749         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R750         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R751         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R752         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R753         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| R754         | 1-249-413-11 | CARBON                                | 470 5% 1/4W F |
| < SWITCH >   |              |                                       |               |
| S701         | 1-554-303-21 | SWITCH, TACTILE (SHIFT)               |               |
| S702         | 1-554-303-21 | SWITCH, TACTILE (1)                   |               |
| S703         | 1-554-303-21 | SWITCH, TACTILE (2)                   |               |
| S704         | 1-554-303-21 | SWITCH, TACTILE (3)                   |               |
| S705         | 1-554-303-21 | SWITCH, TACTILE (4)                   |               |
| S706         | 1-554-303-21 | SWITCH, TACTILE (5)                   |               |
| S707         | 1-554-303-21 | SWITCH, TACTILE (6)                   |               |
| S708         | 1-554-303-21 | SWITCH, TACTILE (7)                   |               |
| S709         | 1-554-303-21 | SWITCH, TACTILE (8)                   |               |
| S710         | 1-554-303-21 | SWITCH, TACTILE (9)                   |               |
| S711         | 1-554-303-21 | SWITCH, TACTILE (0)                   |               |
| S712         | 1-554-303-21 | SWITCH, TACTILE (DIRECT)              |               |
| S713         | 1-554-303-21 | SWITCH, TACTILE (MENU)                |               |
| S714         | 1-554-303-21 | SWITCH, TACTILE (RETURN)              |               |
| S717         | 1-554-303-21 | SWITCH, TACTILE (DISPLAY)             |               |
| S718         | 1-554-303-21 | SWITCH, TACTILE (PTY)                 |               |
| S719         | 1-554-303-21 | SWITCH, TACTILE (NEWS/INFO)           |               |
| S720         | 1-554-303-21 | SWITCH, TACTILE (TA)                  |               |
| S721         | 1-554-303-21 | SWITCH, TACTILE (AUTO-BETICAL SELECT) |               |
| S722         | 1-554-303-21 | SWITCH, TACTILE (MEMORY)              |               |
| S723         | 1-554-303-21 | SWITCH, TACTILE (FM MODE)             |               |
| S724         | 1-554-303-21 | SWITCH, TACTILE (BAND)                |               |
| S725         | 1-554-303-21 | SWITCH, TACTILE (ASM)                 |               |
| S726         | 1-554-303-21 | SWITCH, TACTILE (ANTENNA)             |               |
| S727         | 1-554-303-21 | SWITCH, TACTILE (CHAR)                |               |
| S728         | 1-554-303-21 | SWITCH, TACTILE (TUNE MODE)           |               |
| < VIBRATOR > |              |                                       |               |
| X701         | 1-760-422-11 | VIBRATOR, CRYSTAL (4.19MHz)           |               |

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| Ref. No.              | Part No.     | Description                     | Remark         |
|-----------------------|--------------|---------------------------------|----------------|
| *                     | 1-660-695-11 | ENCORDER BOARD                  | *****          |
|                       | 1-690-880-41 | LEAD (WITH CONNECTOR)           |                |
| < RESISTOR >          |              |                                 |                |
| R723                  | 1-249-430-11 | CARBON                          | 12K 5% 1/4W    |
| < VARIABLE RESISTOR > |              |                                 |                |
| RV701                 | 1-467-703-11 | ENCODER, ROTARY (TUNING/SELECT) |                |
| < SWITCH >            |              |                                 |                |
| S715                  | 1-554-303-21 | SWITCH, TACTILE (ENTER)         |                |
| *****                 |              |                                 |                |
| *                     | A-4389-856-A | TUNER BOARD, COMPLETE           | *****          |
|                       | 7-682-548-04 | SCREW +BVTT 3X8 (S)             |                |
| < CAPACITOR >         |              |                                 |                |
| C102                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C103                  | 1-126-967-11 | ELECT                           | 47uF 20% 16V   |
| C104                  | 1-126-967-11 | ELECT                           | 47uF 20% 16V   |
| C200                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C201                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C202                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C203                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C204                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C221                  | 1-162-282-31 | CERAMIC                         | 100PF 10% 50V  |
| C222                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C223                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C224                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C225                  | 1-126-967-11 | ELECT                           | 47uF 20% 16V   |
| C226                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C227                  | 1-126-956-91 | ELECT                           | 0.1uF 20% 50V  |
| C231                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C232                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C235                  | 1-162-215-31 | CERAMIC                         | 47PF 5% 50V    |
| C236                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C237                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C251                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C252                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C253                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C254                  | 1-110-341-11 | MYLAR                           | 330PF 5% 50V   |
| C255                  | 1-130-467-00 | MYLAR                           | 470PF 5% 50V   |
| C256                  | 1-124-903-11 | ELECT                           | 1uF 20% 50V    |
| C257                  | 1-126-967-11 | ELECT                           | 47uF 20% 16V   |
| C258                  | 1-162-306-11 | CERAMIC                         | 0.01uF 30% 16V |
| C259                  | 1-126-967-11 | ELECT                           | 47uF 20% 16V   |

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

| Ref. No. | Part No.     | Description |          |     | Remark | Ref. No.      | Part No.     | Description                     |         |       | Remark |
|----------|--------------|-------------|----------|-----|--------|---------------|--------------|---------------------------------|---------|-------|--------|
| C260     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | C414          | 1-124-903-11 | ELECT                           | 1uF     | 20%   | 50V    |
| C261     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | C415          | 1-126-962-11 | ELECT                           | 3.3uF   | 20%   | 50V    |
| C262     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | C418          | 1-162-306-11 | CERAMIC                         | 0.01uF  | 30%   | 16V    |
| C263     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | C419          | 1-162-294-31 | CERAMIC                         | 0.001uF | 10%   | 50V    |
| C264     | 1-124-902-00 | ELECT       | 0.47uF   | 20% | 50V    | C420          | 1-162-306-11 | CERAMIC                         | 0.01uF  | 30%   | 16V    |
| C265     | 1-126-967-11 | ELECT       | 47uF     | 20% | 16V    | C421          | 1-136-161-00 | FILM                            | 0.047uF | 5%    | 50V    |
| C266     | 1-126-964-11 | ELECT       | 10uF     | 20% | 50V    | C422          | 1-102-508-91 | CERAMIC                         | 10PF    | 0.5PF | 50V    |
| C267     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | C423          | 1-102-973-00 | CERAMIC                         | 100PF   | 5%    | 50V    |
| C268     | 1-162-294-31 | CERAMIC     | 0.001uF  | 10% | 50V    | C424          | 1-162-306-11 | CERAMIC                         | 0.01uF  | 30%   | 16V    |
| C269     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | C425          | 1-126-964-11 | ELECT                           | 10uF    | 20%   | 50V    |
| C270     | 1-162-282-31 | CERAMIC     | 100PF    | 10% | 50V    | C427          | 1-130-471-00 | MYLAR                           | 0.001uF | 5%    | 50V    |
| C301     | 1-136-161-00 | FILM        | 0.047uF  | 5%  | 50V    | C428          | 1-162-211-31 | CERAMIC                         | 33PF    | 5%    | 50V    |
| C302     | 1-126-967-11 | ELECT       | 47uF     | 20% | 16V    | C429          | 1-162-306-11 | CERAMIC                         | 0.01uF  | 30%   | 16V    |
| C303     | 1-136-161-00 | FILM        | 0.047uF  | 5%  | 50V    | C430          | 1-162-294-31 | CERAMIC                         | 0.001uF | 10%   | 50V    |
| C304     | 1-162-288-31 | CERAMIC     | 330PF    | 10% | 50V    | C801          | 1-124-925-11 | ELECT                           | 2.2uF   | 20%   | 100V   |
| C306     | 1-126-967-11 | ELECT       | 47uF     | 20% | 16V    | C802          | 1-162-288-31 | CERAMIC                         | 330PF   | 10%   | 50V    |
| C307     | 1-130-468-00 | MYLAR       | 560PF    | 5%  | 50V    | C803          | 1-162-306-11 | CERAMIC                         | 0.01uF  | 30%   | 16V    |
| C308     | 1-130-468-00 | MYLAR       | 560PF    | 5%  | 50V    | C804          | 1-162-291-31 | CERAMIC                         | 560PF   | 10%   | 50V    |
| C311     | 1-130-475-00 | MYLAR       | 0.0022uF | 5%  | 50V    | C805          | 1-126-967-11 | ELECT                           | 47uF    | 20%   | 16V    |
| C312     | 1-130-475-00 | MYLAR       | 0.0022uF | 5%  | 50V    | C806          | 1-162-306-11 | CERAMIC                         | 0.01uF  | 30%   | 16V    |
| C313     | 1-126-964-11 | ELECT       | 10uF     | 20% | 50V    | C807          | 1-102-852-91 | CERAMIC                         | 47PF    | 5%    | 50V    |
| C314     | 1-126-964-11 | ELECT       | 10uF     | 20% | 50V    | C808          | 1-102-527-11 | CERAMIC                         | 82PF    | 5%    | 50V    |
| C315     | 1-110-335-11 | MYLAR       | 100PF    | 5%  | 50V    | C901          | 1-101-004-00 | CERAMIC                         | 0.01uF  |       | 50V    |
| C316     | 1-110-335-11 | MYLAR       | 100PF    | 5%  | 50V    | C902          | 1-101-004-00 | CERAMIC                         | 0.01uF  |       | 50V    |
| C317     | 1-126-963-11 | ELECT       | 4.7uF    | 20% | 50V    | C903          | 1-126-967-11 | ELECT                           | 47uF    | 20%   | 50V    |
| C318     | 1-126-963-11 | ELECT       | 4.7uF    | 20% | 50V    | C904          | 1-126-967-11 | ELECT                           | 47uF    | 20%   | 50V    |
| C319     | 1-126-934-11 | ELECT       | 220uF    | 20% | 16V    | C905          | 1-126-953-11 | ELECT                           | 220uF   | 20%   | 35V    |
| C320     | 1-124-903-11 | ELECT       | 1uF      | 20% | 50V    | C906          | 1-126-969-11 | ELECT                           | 220uF   | 20%   | 50V    |
| C321     | 1-124-903-11 | ELECT       | 1uF      | 20% | 50V    | C908          | 1-126-964-11 | ELECT                           | 10uF    | 20%   | 50V    |
| C322     | 1-124-903-11 | ELECT       | 1uF      | 20% | 50V    | C909          | 1-126-967-11 | ELECT                           | 47uF    | 20%   | 16V    |
| C323     | 1-124-902-00 | ELECT       | 0.47uF   | 20% | 50V    | △C951         | 1-113-915-11 | CERAMIC                         | 0.001uF | 20%   | 250V   |
| C324     | 1-124-903-11 | ELECT       | 1uF      | 20% | 50V    | C952          | 1-162-306-11 | CERAMIC                         | 0.01uF  | 30%   | 16V    |
| C325     | 1-126-967-11 | ELECT       | 47uF     | 20% | 16V    | < FILTER >    |              |                                 |         |       |        |
| C352     | 1-130-471-00 | MYLAR       | 0.001uF  | 5%  | 50V    | CF201         | 1-567-389-11 | FILTER, CERAMIC                 |         |       |        |
| C353     | 1-130-471-00 | MYLAR       | 0.001uF  | 5%  | 50V    | CF202         | 1-567-389-11 | FILTER, CERAMIC                 |         |       |        |
| C371     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | CF203         | 1-567-389-11 | FILTER, CERAMIC                 |         |       |        |
| C400     | 1-162-211-31 | CERAMIC     | 33PF     | 5%  | 50V    | CF231         | 1-579-554-31 | FILTER, CERAMIC                 |         |       |        |
| C401     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | CF301         | 1-567-250-11 | OSCILLATOR, CERAMIC             |         |       |        |
| C402     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | CF402         | 1-527-981-00 | FILTER, CERAMIC                 |         |       |        |
| C403     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | < JACK >      |              |                                 |         |       |        |
| C404     | 1-126-967-11 | ELECT       | 47uF     | 20% | 16V    | CNJ301        | 1-568-250-11 | JACK, PIN 2P (LINE OUT)         |         |       |        |
| C405     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | < CONNECTOR > |              |                                 |         |       |        |
| C406     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | CNJ302        | 1-566-212-11 | PIN, CONNECTOR 3P (EON CONTROL) |         |       |        |
| C407     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | * CNP701      | 1-568-936-11 | PIN, CONNECTOR 9P               |         |       |        |
| C408     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    | * CNP702      | 1-568-935-11 | PIN, CONNECTOR 8P               |         |       |        |
| C409     | 1-162-294-31 | CERAMIC     | 0.001uF  | 10% | 50V    | CNP901        | 1-580-230-11 | PIN, CONNECTOR (PC BOARD) 2P    |         |       |        |
| C410     | 1-162-306-11 | CERAMIC     | 0.01uF   | 30% | 16V    |               |              |                                 |         |       |        |
| C411     | 1-126-967-11 | ELECT       | 47uF     | 20% | 16V    |               |              |                                 |         |       |        |
| C412     | 1-124-903-11 | ELECT       | 1uF      | 20% | 50V    |               |              |                                 |         |       |        |
| C413     | 1-124-903-11 | ELECT       | 1uF      | 20% | 50V    |               |              |                                 |         |       |        |

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

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| Ref. No.            | Part No.     | Description                         | Remark | Ref. No.       | Part No.     | Description             | Remark |
|---------------------|--------------|-------------------------------------|--------|----------------|--------------|-------------------------|--------|
| CNP951              | 1-564-321-00 | PIN, CONNECTOR 2P                   |        | < TRANSISTOR > |              |                         |        |
| < DIODE >           |              |                                     |        | Q200           | 8-729-231-20 | TRANSISTOR 2SK161-YGR   |        |
| D221                | 8-719-815-85 | DIODE 1S1585                        |        | Q201           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| D251                | 8-719-815-85 | DIODE 1S1585                        |        | Q202           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| D301                | 8-719-815-85 | DIODE 1S1585                        |        | Q204           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| D371                | 8-719-815-85 | DIODE 1S1585                        |        | Q205           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| D401                | 8-719-815-85 | DIODE 1S1585                        |        | Q231           | 8-729-030-03 | TRANSISTOR DTC144ESA-TP |        |
| D402                | 8-719-815-85 | DIODE 1S1585                        |        | Q232           | 8-729-030-03 | TRANSISTOR DTC144ESA-TP |        |
| D901                | 8-719-970-02 | DIODE 1SR139-400                    |        | Q233           | 8-729-030-03 | TRANSISTOR DTC144ESA-TP |        |
| D902                | 8-719-970-02 | DIODE 1SR139-400                    |        | Q234           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE  |        |
| D903                | 8-719-970-02 | DIODE 1SR139-400                    |        | Q235           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE  |        |
| D904                | 8-719-970-02 | DIODE 1SR139-400                    |        | Q236           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| D905                | 8-719-110-69 | DIODE RD27ES-B4                     |        | Q237           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| D906                | 8-719-109-97 | DIODE RD6.8ES-B2                    |        | Q251           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| < GROUND >          |              |                                     |        | Q301           | 8-729-922-37 | TRANSISTOR 2SD2144S     |        |
| EP900               | 4-957-933-01 | PLATE, GROUND                       |        | Q302           | 8-729-922-37 | TRANSISTOR 2SD2144S     |        |
| < FRONT END >       |              |                                     |        | Q401           | 8-729-230-99 | TRANSISTOR 2SC2669-OY   |        |
| FE101               | 1-233-524-11 | ENCAPSULATED COMPONENT (ANTENNA FM) |        | Q402           | 8-729-231-20 | TRANSISTOR 2SK161-YGR   |        |
| FE401               | 1-233-525-11 | ENCAPSULATED COMPONENT              |        | Q403           | 8-729-922-37 | TRANSISTOR 2SD2144S     |        |
| < IC >              |              |                                     |        | Q404           | 8-729-922-37 | TRANSISTOR 2SD2144S     |        |
| IC221               | 8-759-812-35 | IC LA1235                           |        | Q405           | 8-729-922-37 | TRANSISTOR 2SD2144S     |        |
| IC251               | 8-759-812-35 | IC LA1235                           |        | Q521           | 8-729-030-03 | TRANSISTOR DTC144ESA-TP |        |
| IC252               | 8-759-634-51 | IC M5218AP                          |        | Q522           | 8-729-026-41 | TRANSISTOR 2SA933AS-QRT |        |
| IC301               | 8-759-801-80 | IC LA3401                           |        | Q523           | 8-729-119-78 | TRANSISTOR 2SC2785-HFE  |        |
| IC302               | 8-759-634-51 | IC M5218AP                          |        | Q901           | 8-729-029-56 | TRANSISTOR DTA144ESA    |        |
| IC401               | 8-759-812-45 | IC LA1245                           |        | < RESISTOR >   |              |                         |        |
| IC801               | 8-759-169-99 | IC SAA6579                          |        | △R101          | 1-249-417-11 | CARBON 1K 5% 1/4W F     |        |
| IC901               | 8-759-820-09 | IC LA5667                           |        | △R102          | 1-249-405-11 | CARBON 100 5% 1/4W F    |        |
| < IFT >             |              |                                     |        | △R103          | 1-249-393-11 | CARBON 10 5% 1/4W F     |        |
| IFT401              | 1-404-713-11 | TRANSFORMER, IF                     |        | R104           | 1-249-429-11 | CARBON 10K 5% 1/4W      |        |
| < COIL >            |              |                                     |        | R105           | 1-249-437-11 | CARBON 47K 5% 1/4W      |        |
| L201                | 1-410-521-11 | INDUCTOR 100uH                      |        | R200           | 1-249-408-11 | CARBON 180 5% 1/4W F    |        |
| L351                | 1-410-509-11 | INDUCTOR 10uH                       |        | R201           | 1-249-407-11 | CARBON 150 5% 1/4W F    |        |
| L352                | 1-410-509-11 | INDUCTOR 10uH                       |        | R202           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
| L400                | 1-414-142-11 | INDUCTOR 1uH                        |        | R203           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
| L401                | 1-410-521-11 | INDUCTOR 100uH                      |        | R204           | 1-249-431-11 | CARBON 15K 5% 1/4W      |        |
| < LOW PASS FILTER > |              |                                     |        | R205           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
| LPF301              | 1-235-164-00 | FILTER, LOW PASS                    |        | R206           | 1-249-413-11 | CARBON 470 5% 1/4W F    |        |
| LPF302              | 1-235-164-00 | FILTER, LOW PASS                    |        | R207           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
| < TRANSFORMER >     |              |                                     |        | R208           | 1-247-863-91 | CARBON 22K 5% 1/4W      |        |
| △PT901              | 1-423-525-11 | TRANSFORMER, POWER                  |        | R209           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
|                     |              |                                     |        | R210           | 1-249-431-11 | CARBON 15K 5% 1/4W      |        |
|                     |              |                                     |        | R211           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
|                     |              |                                     |        | R212           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
|                     |              |                                     |        | R213           | 1-247-863-91 | CARBON 22K 5% 1/4W      |        |
|                     |              |                                     |        | R214           | 1-249-441-11 | CARBON 100K 5% 1/4W     |        |
|                     |              |                                     |        | R221           | 1-249-411-11 | CARBON 330 5% 1/4W      |        |
|                     |              |                                     |        | △R222          | 1-249-405-11 | CARBON 100 5% 1/4W F    |        |
|                     |              |                                     |        | R223           | 1-247-883-00 | CARBON 150K 5% 1/4W     |        |

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| Ref. No. | Part No.     | Description | Remark |    |        | Ref. No. | Part No.     | Description | Remark |    |        |
|----------|--------------|-------------|--------|----|--------|----------|--------------|-------------|--------|----|--------|
| R231     | 1-249-411-11 | CARBON      | 330    | 5% | 1/4W   | R314     | 1-249-413-11 | CARBON      | 470    | 5% | 1/4W F |
| R232     | 1-249-431-11 | CARBON      | 15K    | 5% | 1/4W   | R315     | 1-249-413-11 | CARBON      | 470    | 5% | 1/4W F |
| R233     | 1-249-411-11 | CARBON      | 330    | 5% | 1/4W   | △R316    | 1-249-405-11 | CARBON      | 100    | 5% | 1/4W F |
| R234     | 1-249-395-11 | CARBON      | 15     | 5% | 1/4W F | R317     | 1-249-417-11 | CARBON      | 1K     | 5% | 1/4W F |
| R235     | 1-247-863-91 | CARBON      | 22K    | 5% | 1/4W   | R318     | 1-249-417-11 | CARBON      | 1K     | 5% | 1/4W F |
| R238     | 1-249-429-11 | CARBON      | 10K    | 5% | 1/4W   | R319     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   |
| R239     | 1-249-429-11 | CARBON      | 10K    | 5% | 1/4W   | R320     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   |
| R240     | 1-249-431-11 | CARBON      | 15K    | 5% | 1/4W   | R321     | 1-249-441-11 | CARBON      | 100K   | 5% | 1/4W   |
| R241     | 1-249-429-11 | CARBON      | 10K    | 5% | 1/4W   | R324     | 1-249-426-11 | CARBON      | 5.6K   | 5% | 1/4W   |
| R242     | 1-249-429-11 | CARBON      | 10K    | 5% | 1/4W   | △R325    | 1-249-405-11 | CARBON      | 100    | 5% | 1/4W F |
| R243     | 1-247-807-31 | CARBON      | 100    | 5% | 1/4W   | △R326    | 1-249-405-11 | CARBON      | 100    | 5% | 1/4W F |
| △R244    | 1-249-393-11 | CARBON      | 10     | 5% | 1/4W F | △R331    | 1-249-405-11 | CARBON      | 100    | 5% | 1/4W F |
| △R245    | 1-249-393-11 | CARBON      | 10     | 5% | 1/4W F | R361     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   |
| △R246    | 1-249-393-11 | CARBON      | 10     | 5% | 1/4W F | R362     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   |
| R251     | 1-249-411-11 | CARBON      | 330    | 5% | 1/4W   | R371     | 1-249-393-11 | CARBON      | 10     | 5% | 1/4W F |
| R252     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   | R401     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F |
| R253     | 1-249-439-11 | CARBON      | 68K    | 5% | 1/4W   | △R402    | 1-249-409-11 | CARBON      | 220    | 5% | 1/4W F |
| R254     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F | R404     | 1-249-413-11 | CARBON      | 470    | 5% | 1/4W F |
| R255     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F | R405     | 1-247-807-31 | CARBON      | 100    | 5% | 1/4W   |
| R256     | 1-249-432-11 | CARBON      | 18K    | 5% | 1/4W   | R406     | 1-247-807-31 | CARBON      | 100    | 5% | 1/4W   |
| R257     | 1-249-424-11 | CARBON      | 3.9K   | 5% | 1/4W F | R408     | 1-249-429-11 | CARBON      | 10K    | 5% | 1/4W   |
| R258     | 1-249-422-11 | CARBON      | 2.7K   | 5% | 1/4W F | R409     | 1-249-429-11 | CARBON      | 10K    | 5% | 1/4W   |
| △R259    | 1-249-405-11 | CARBON      | 100    | 5% | 1/4W F | R410     | 1-249-430-11 | CARBON      | 12K    | 5% | 1/4W   |
| R260     | 1-249-439-11 | CARBON      | 68K    | 5% | 1/4W   | R411     | 1-249-417-11 | CARBON      | 1K     | 5% | 1/4W F |
| R261     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   | △R412    | 1-249-407-11 | CARBON      | 150    | 5% | 1/4W F |
| R262     | 1-249-441-11 | CARBON      | 100K   | 5% | 1/4W   | R413     | 1-249-429-11 | CARBON      | 10K    | 5% | 1/4W   |
| R264     | 1-249-426-11 | CARBON      | 5.6K   | 5% | 1/4W   | R414     | 1-249-441-11 | CARBON      | 100K   | 5% | 1/4W   |
| △R265    | 1-249-405-11 | CARBON      | 100    | 5% | 1/4W F | R415     | 1-247-883-00 | CARBON      | 150K   | 5% | 1/4W   |
| △R266    | 1-249-405-11 | CARBON      | 100    | 5% | 1/4W F | R416     | 1-249-417-11 | CARBON      | 1K     | 5% | 1/4W F |
| R268     | 1-247-863-91 | CARBON      | 22K    | 5% | 1/4W   | R419     | 1-249-422-11 | CARBON      | 2.7K   | 5% | 1/4W F |
| R269     | 1-249-441-11 | CARBON      | 100K   | 5% | 1/4W   | R420     | 1-249-441-11 | CARBON      | 100K   | 5% | 1/4W   |
| R270     | 1-247-883-00 | CARBON      | 150K   | 5% | 1/4W   | R421     | 1-249-417-11 | CARBON      | 1K     | 5% | 1/4W F |
| R271     | 1-249-417-11 | CARBON      | 1K     | 5% | 1/4W F | R422     | 1-249-418-11 | CARBON      | 1.2K   | 5% | 1/4W F |
| R272     | 1-249-417-11 | CARBON      | 1K     | 5% | 1/4W F | R423     | 1-249-418-11 | CARBON      | 1.2K   | 5% | 1/4W F |
| R273     | 1-249-422-11 | CARBON      | 2.7K   | 5% | 1/4W F | R424     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F |
| △R274    | 1-249-393-11 | CARBON      | 10     | 5% | 1/4W F | R425     | 1-249-420-11 | CARBON      | 1.8K   | 5% | 1/4W F |
| R275     | 1-247-903-00 | CARBON      | 1M     | 5% | 1/4W   | R426     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F |
| R301     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F | △R429    | 1-249-393-11 | CARBON      | 10     | 5% | 1/4W F |
| R302     | 1-247-883-00 | CARBON      | 150K   | 5% | 1/4W   | R430     | 1-249-441-11 | CARBON      | 100K   | 5% | 1/4W   |
| R303     | 1-247-883-00 | CARBON      | 150K   | 5% | 1/4W   | R521     | 1-247-843-11 | CARBON      | 3.3K   | 5% | 1/4W   |
| R304     | 1-247-878-00 | CARBON      | 91K    | 5% | 1/4W   | R522     | 1-247-863-91 | CARBON      | 22K    | 5% | 1/4W   |
| R305     | 1-247-878-00 | CARBON      | 91K    | 5% | 1/4W   | △R801    | 1-249-401-11 | CARBON      | 47     | 5% | 1/4W F |
| R306     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F | R802     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F |
| R307     | 1-249-421-11 | CARBON      | 2.2K   | 5% | 1/4W F | R808     | 1-247-815-91 | CARBON      | 220    | 5% | 1/4W   |
| R308     | 1-249-426-11 | CARBON      | 5.6K   | 5% | 1/4W   | R809     | 1-247-807-31 | CARBON      | 100    | 5% | 1/4W   |
| R309     | 1-249-426-11 | CARBON      | 5.6K   | 5% | 1/4W   | R902     | 1-247-752-11 | CARBON      | 1K     | 5% | 1/2W F |
| R310     | 1-249-426-11 | CARBON      | 5.6K   | 5% | 1/4W   | R903     | 1-249-441-11 | CARBON      | 100K   | 5% | 1/4W   |
| R311     | 1-249-426-11 | CARBON      | 5.6K   | 5% | 1/4W   | R904     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   |
| R312     | 1-247-843-11 | CARBON      | 3.3K   | 5% | 1/4W   | R905     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   |
| R313     | 1-247-843-11 | CARBON      | 3.3K   | 5% | 1/4W   | R906     | 1-249-437-11 | CARBON      | 47K    | 5% | 1/4W   |

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Replace only with part number specified.

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| Ref. No.                        | Part No.     | Description                                                             | Remark |
|---------------------------------|--------------|-------------------------------------------------------------------------|--------|
| < VARIABLE RESISTOR >           |              |                                                                         |        |
| RV221                           | 1-241-765-11 | RES, ADJ, CARBON 22K                                                    |        |
| RV231                           | 1-241-761-11 | RES, ADJ, CARBON 1K                                                     |        |
| RV251                           | 1-241-630-11 | RES, ADJ, CARBON 10K                                                    |        |
| RV301                           | 1-241-767-21 | RES, ADJ, CARBON 100K                                                   |        |
| RV402                           | 1-241-630-11 | RES, ADJ, CARBON 10K                                                    |        |
| < TRANSFORMER >                 |              |                                                                         |        |
| T251                            | 1-235-126-00 | ENCAPSULATED COMPONENT                                                  |        |
| T252                            | 1-404-845-11 | COIL, DISCRI (PRIMARY)                                                  |        |
| T253                            | 1-404-846-11 | COIL, DISCRI (SECONDARY)                                                |        |
| < TERMINAL >                    |              |                                                                         |        |
| TM401                           | 1-537-897-11 | TERMINAL BOARD, PUSH(ANTENNA) 2P<br>(ANTENNA AM)                        |        |
| < VIBRATOR >                    |              |                                                                         |        |
| X801                            | 1-579-900-21 | VIBRATOR, CRYSTAL (4.33MHz)                                             |        |
| *****                           |              |                                                                         |        |
| MISCELLANEOUS                   |              |                                                                         |        |
| *****                           |              |                                                                         |        |
| △23                             | 1-770-019-11 | ADAPTOR, CONVERSION PLUG (UK)                                           |        |
| EP900                           | 4-957-933-01 | PLATE, GROUND                                                           |        |
| FL701                           | 1-517-177-21 | INDICATOR TUBE, FLUORESCENT                                             |        |
| △PC901                          | 1-575-651-21 | CORD, POWER                                                             |        |
| △PT901                          | 1-423-525-11 | TRANSFORMER, POWER                                                      |        |
| *****                           |              |                                                                         |        |
| ACCESSORIES & PACKING MATERIALS |              |                                                                         |        |
| *****                           |              |                                                                         |        |
|                                 | 1-501-594-11 | ANTENNA (FM)                                                            |        |
|                                 | 1-501-721-11 | ANTENNA (LOOP)                                                          |        |
|                                 | 1-558-271-11 | CORD, CONNECTION (AUDIO 108CM)                                          |        |
|                                 | 1-765-383-11 | CORD (WITH CONNECTOR) (EON)                                             |        |
|                                 | 3-856-667-11 | MANUAL, INSTRUCTION<br>(ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, UK) |        |
|                                 | 3-856-667-21 | MANUAL, INSTRUCTION<br>(GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)          |        |
|                                 | 3-856-667-41 | MANUAL, INSTRUCTION<br>(ENGLISH, POLISH, RUSSIAN) (UK)                  |        |
|                                 | 3-856-667-51 | MANUAL, INSTRUCTION (GERMAN) (G)                                        |        |
| *                               | 4-980-991-01 | CUSHION                                                                 |        |
| *                               | 4-984-555-01 | INDIVIDUAL CARTON                                                       |        |

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