

# ST-SE500

## SERVICE MANUAL

*AEP Model*  
*UK Model*



### SPECIFICATIONS

#### FM tuner section

Frequency range 87.5 - 108.0 MHz

Aerial terminals 75 ohms,  
unbalanced

Intermediate frequency 10.7 MHz

Sensitivity at 26 dB quieting  
(mono) 10.3 dBf,  
0.9  $\mu$ V/75 $\Omega$   
at 46 dB quieting  
(stereo) 38.5 dBf,  
23  $\mu$ V/75 $\Omega$

Usable sensitivity (IHF) 10.3 dBf, 0.9  $\mu$ V/  
75 $\Omega$

S/N at 40 kHz deviation  
74 dB (mono),  
69 dB (stereo)

Harmonic distortion 0.1 % (mono),  
0.2 % (stereo)

Frequency response 30 Hz - 15 kHz  
(+0.5/-1.0 dB)

Separation 40 dB at 1 kHz

Selectivity at 400 kHz  
80 dB  
at 300 kHz  
60 dB

Output at 40 kHz deviation  
600 mV

#### AM tuner section

Frequency range MW: 522 - 1,611 kHz  
(9 kHz step)  
LW: 144 - 288 kHz  
(1 kHz step)

Intermediate frequency 450 kHz

Usable Sensitivity (with AM loop  
aerial)  
MW: 300  $\mu$ V/m  
LW: 1 mV/m

Signal-to-noise ratio MW: 54 dB  
(50 mV/m,  
999 kHz)  
LW: 50 dB  
(50 mV/m,  
216 kHz)

Harmonic distortion 0.3% (50 mV/m,  
400 Hz)

Selectivity 32 dB

#### General

Power requirements 220-230 V, AC  
50/60 Hz

Power consumption 10 W

Input impedance 75 ohms

Input connector IEC-male

Dimensions 430 x 82 x 295 mm  
(w/h/d)

Weight 2.7 kg

Supplied accessories Audio cord (1)  
AM loop aerial (1)  
FM wire aerial (1)  
EON control cord  
(1)

Design and specifications are subject to  
change without notice.

## FM STEREO FM-AM TUNER

# SONY®

## TABLE OF CONTENTS

|                                                   |    |
|---------------------------------------------------|----|
| <b>1. GENERAL</b> .....                           | 2  |
| <b>2. TEST MODE</b> .....                         | 3  |
| <b>3. ELECTRICAL ADJUSTMENTS</b> .....            | 5  |
| <b>4. DIAGRAMS</b>                                |    |
| 4-1. IC Block Diagrams .....                      | 6  |
| 4-2. Schematic Diagram .....                      | 7  |
| 4-3. Printed Wiring Board .....                   | 11 |
| 4-4. IC Pin Function                              |    |
| • IC701 System Control (μPD78205GF-017-3BA) ..... | 14 |
| <b>5. EXPLODED VIEWS</b> .....                    | 16 |
| <b>6. ELECTRICAL PARTS LIST</b> .....             | 17 |

## SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## MODEL IDENTIFICATION

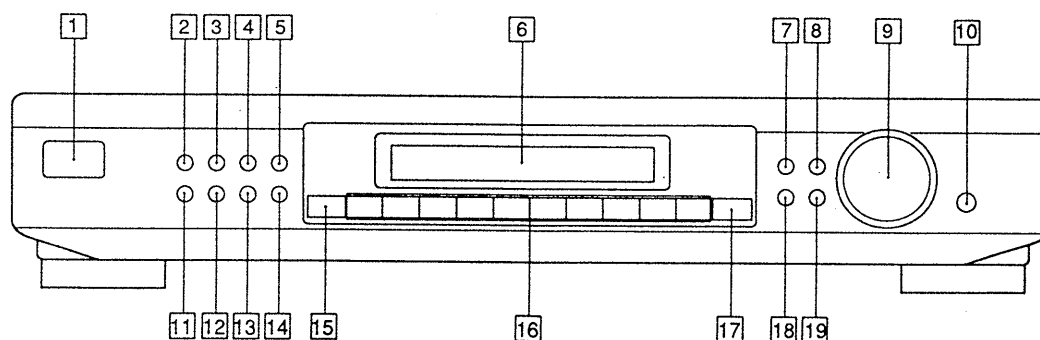
— BACK PANEL —

| PARTS No.    | MODEL      |
|--------------|------------|
| 4-981-268-2□ | AEP, G, EE |
| 4-981-268-5□ | UK         |

- Abbreviation
- G : German model
- EE : East European 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** CHAR button
- 8** TUNE MODE button
- 9** TUNING/SELECT knob
- 10** ENTER button

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

## SECTION 2 TEST MODE

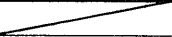
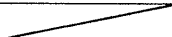
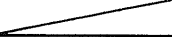
### 1. Circuit Check Mode

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      | $\overline{AST}$ signal =LOW | OK or NG |  | IC201 NG, RV201 adjustments                        |
| IF Frq     | IF COUNT OK                  | OK or NG | OK or NG                                                                          | TB101, IC201 NG, or IF count buffer amp (IC801) NG |
| Sig Level  | SI LEVELh70dB                | OK or NG | OK or NG                                                                          | TB101 NG                                           |
| Stereo     | $\overline{ST}$ signal=LOW   | OK or NG |  | TB101 NG                                           |
| RDS Signal | RDS DATA OK                  | OK or NG |  | IC802 NG                                           |

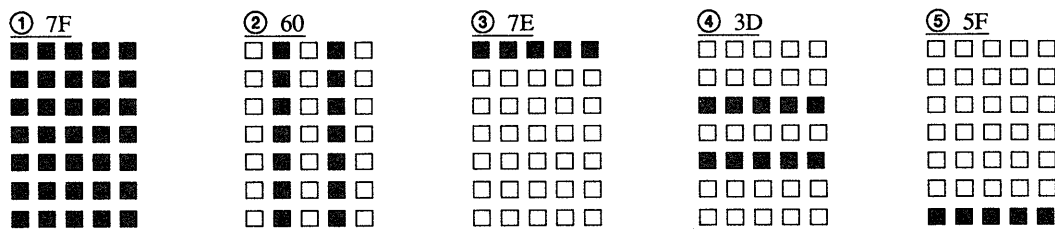
**NOTE :** The preset data will be erased when this test mode is used. Therefore, take down the data before setting this mode and preset the data again after completing operations in this mode.

## 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 : 25
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** .

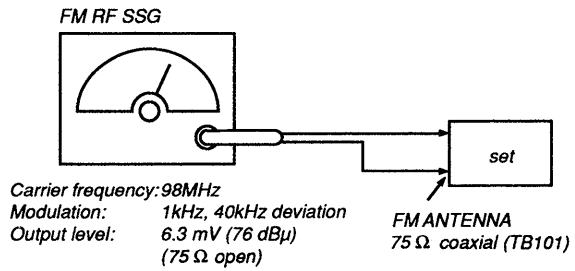
## 4. Forced RESET (Used to delete the contents of Factory Preset when it is written into the preset memory.)

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 fluorescent display tube, it means that “Forced Reset” has been completed.

## SECTION 3 ELECTRICAL ADJUSTMENTS

### FM Signal Level Adjustment

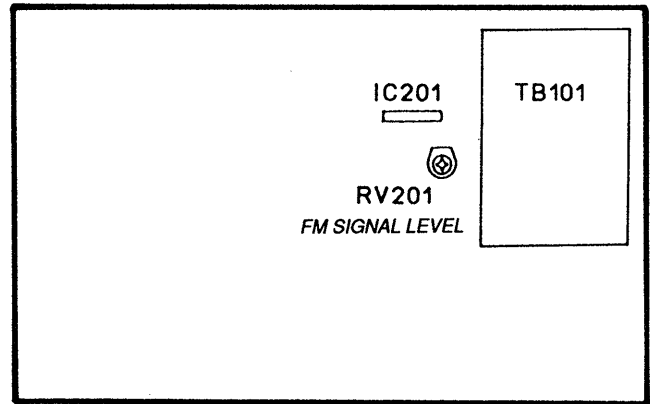


#### Procedure:

1. Tune the set to 98 MHz.
2. Push the DISPLAY button for digital signal meter indication.
3. Adjust RV201 to the place where level and “70dB ↑” indication lights on fluorescent indicator tube.

Adjustment Location:

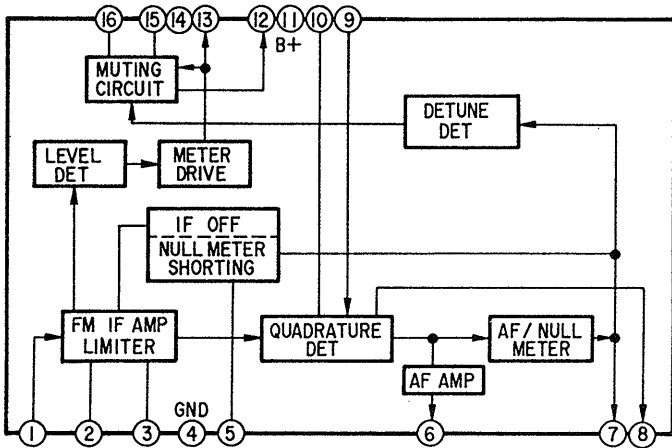
[TUNER BOARD] — Component Side —



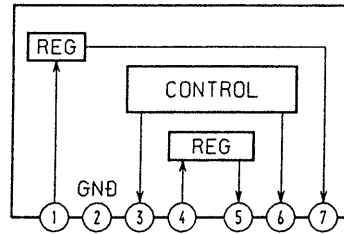
## SECTION 4 DIAGRAMS

### 4-1. IC BLOCK DIAGRAMS

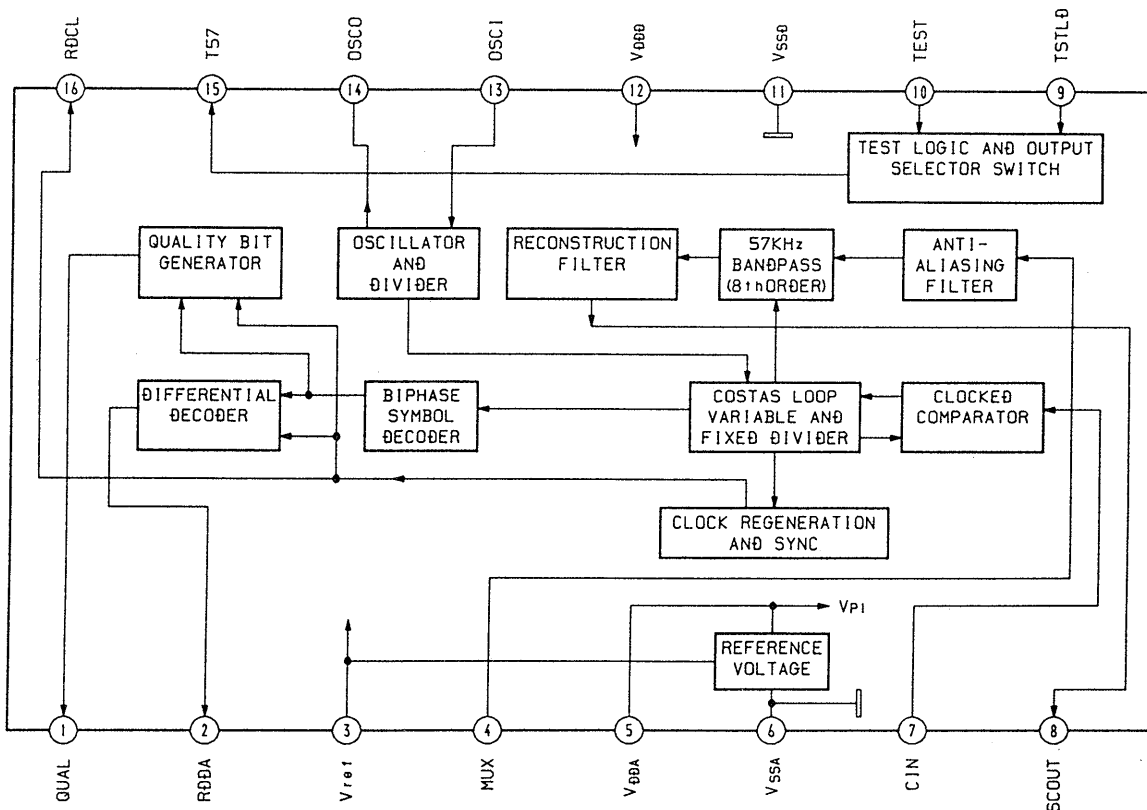
IC201 LA1235



IC901 LA5667

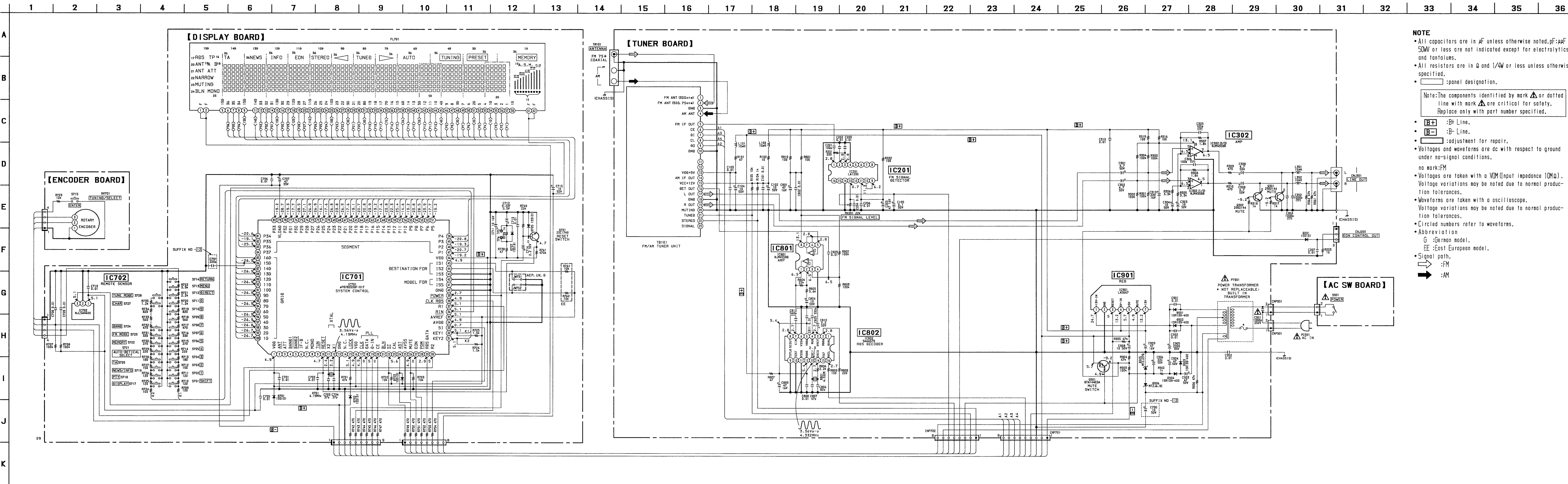


IC802 SAA6579



4-2. SCHEMATIC DIAGRAM

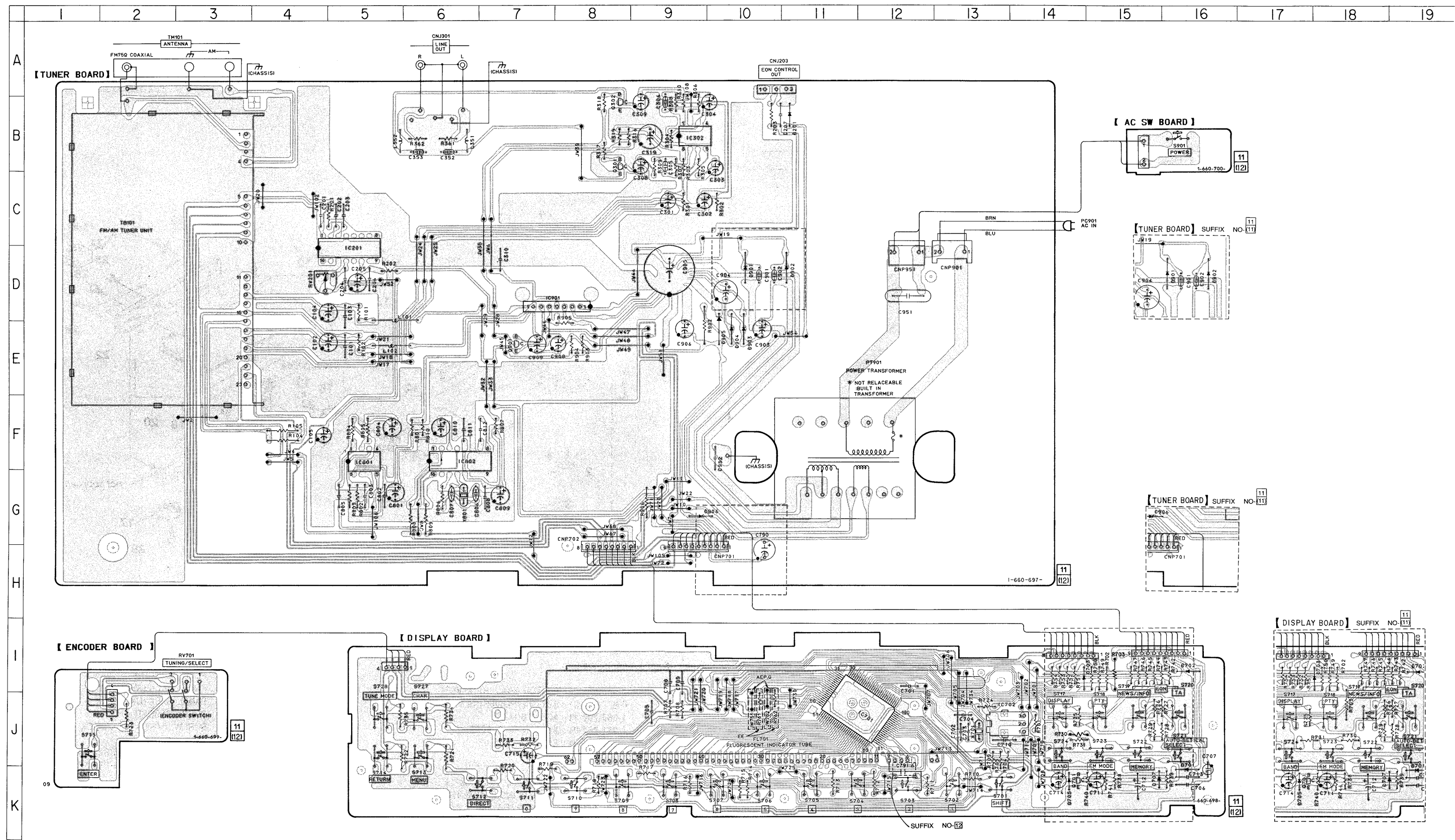
- See page 6 for IC Block Diagrams
- See page 14 for IC Pin Function. (IC701)



**NOTE**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} = \mu\text{F} \times 10^{-6}$ ,  $\text{nF} = \mu\text{F} \times 10^{-9}$ ,  $\text{pF} = \mu\text{F} \times 10^{-12}$ .
- All resistors are in  $\Omega$  and  $1/\text{W}$  or less unless otherwise specified.
- : 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.
- B+: B+ Line.
- B-: B- Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark: FM.
- Voltages are taken with a VOM (input impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Abbreviation
  - G: German model.
  - EE: East European model.
- Signal path:
  - $\Rightarrow$ : FM
  - $\Rightarrow$ : AM

4-3. PRINTED WIRING BOARD



• Semiconductor Location

| Ref. No. | Location |
|----------|----------|
| D201     | B-11     |
| D701     | K-17     |
| D702     | I-17     |
| D703     | I-15     |
| D705     | K-15     |
| D707     | K-16     |
| D901     | D-11     |
| D902     | D-11     |
| D903     | E-11     |
| D904     | E-11     |
| D905     | E-10     |
| D906     | G-10     |
| IC201    | D-6      |
| IC302    | B-10     |
| IC701    | J-12     |
| IC702    | J-14     |
| IC801    | F-16     |
| IC802    | F-7      |
| IC901    | D-8      |
| Q301     | B-9      |
| Q302     | B-9      |
| Q701     | K-15     |
| Q901     | E-8      |

Note:

- — : parts extracted from the component side.
- — : parts extracted from the conductor side.
- □ : parts mounted on the conductor side.
- ■ : Pattern from the side which enable seeing.
- Abbreviation  
G : German model.  
EE : East European model.

#### 4-4. IC PIN FUNCTION

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

| Pin No. | Pin Name | I/O | Function                                     |
|---------|----------|-----|----------------------------------------------|
| 1       | VDD      | —   | Power supply (+5V).                          |
| 2       | NC       | —   | Not used. (Open)                             |
| 3       | NC       | —   | Not used. (Open)                             |
| 4       | NC       | —   | Not used. (Open)                             |
| 5       | NC       | —   | Not used. (Open)                             |
| 6       | NC       | —   | Not used. (Open)                             |
| 7       | NC       | —   | Not used. (Open)                             |
| 8       | NC       | —   | Not used. (Open)                             |
| 9       | NC       | —   | Not used. (Open)                             |
| 10      | 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      | LOCK     | I   | Lock signal input.                           |
| 16      | VDD      | —   | Power supply (+5V).                          |
| 17      | CLK      | O   | PLL data to TB101.                           |
| 18      | DATA     | O   | PLL data to TB101.                           |
| 19      | D-IN     | I   | PLL data from TB101.                         |
| 20      | CE       | O   | PLL Latch to TB101.                          |
| 21      | BLN      | —   | Not used. (Open)                             |
| 22      | ST       | I   | Stereo display detection.                    |
| 23      | CAL      | —   | Not used. (Open)                             |
| 24      | AST      | I   | Auto stop signal detection.                  |
| 25      | AVss     | —   | Ground.                                      |
| 26      | MUTE     | O   | Muting signal output.                        |
| 27      | E ON     | O   | External control.                            |
| 28      | 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      | R IN     | I   | Remote control input.                        |
| 37      | R 1      | I   | Rotary encoder number of rotation detection. |
| 38      | RDS CLK  | I   | RDS data clock input.                        |
| 39      | 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       | 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. |

## SECTION 5 EXPLODED VIEWS

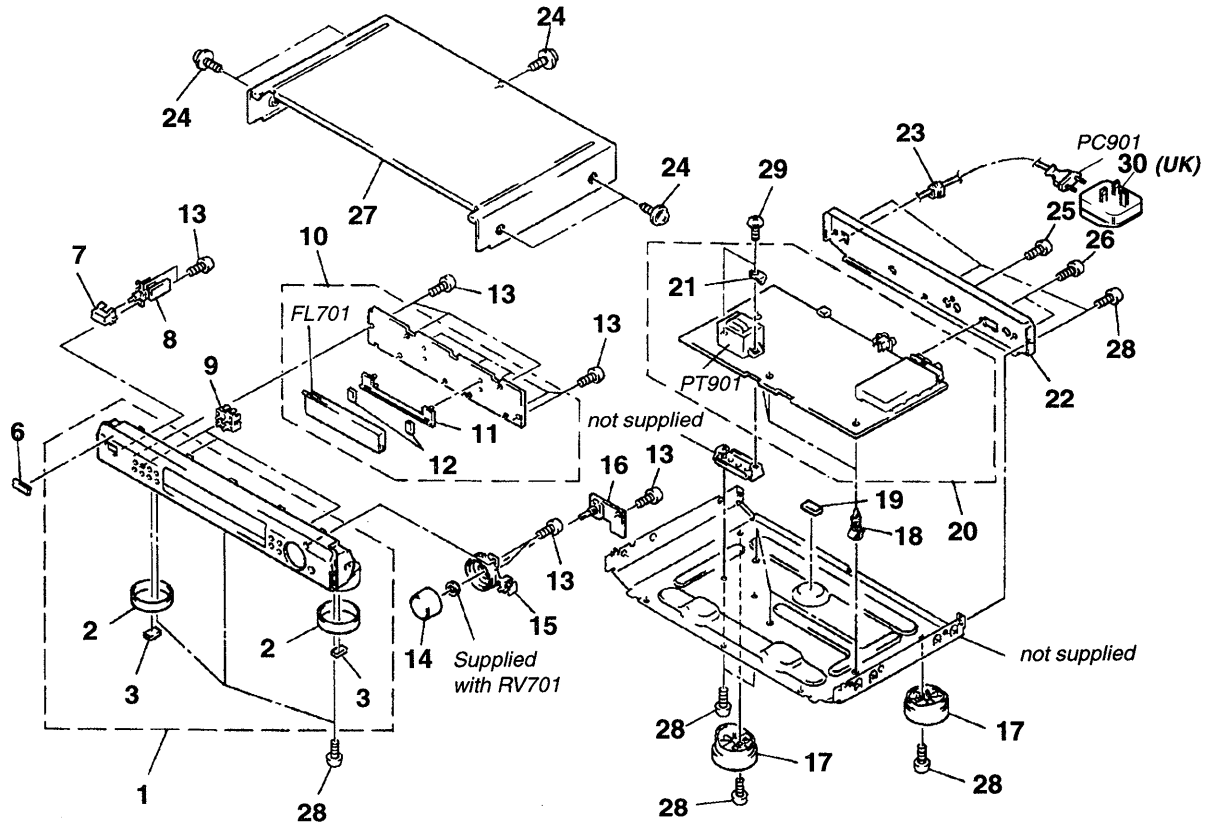
### NOTE:

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:  
KNOB, BALANCE (RED)

↓  
Cabinets color

- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation  
G : German model  
EE : East European model

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



| Ref. No. | Part No.     | Description                        | Remark | Ref. No.       | Part No.     | Description                      | Remark |
|----------|--------------|------------------------------------|--------|----------------|--------------|----------------------------------|--------|
| 1        | X-4947-320-1 | PANEL ASSY, FRONT (BLACK)          |        | * 18           | 3-346-265-31 | HOLDER, PC BOARD                 |        |
| 1        | X-4948-556-1 | PANEL ASSY, FRONT (SILVER)         |        | 19             | 9-911-840-XX | CUSHION, LS                      |        |
| 2        | 4-977-593-11 | RING (DIA. 50), ORNAMENTAL         |        | * 20           | A-4389-850-A | TUNER BOARD, COMPLETE (AEP,UK,G) |        |
| 3        | 4-977-358-11 | CUSHION (8X12.5)(BLACK)            |        | * 20           | A-4389-851-A | TUNER BOARD, COMPLETE (EE)       |        |
| 6        | 4-963-404-21 | EMBLEM (5-A), SONY                 |        | 21             | 4-957-933-01 | PLATE, GROUND                    |        |
| 7        | 4-977-589-11 | BUTTON (POWER)(SILVER)             |        | * 22           | 4-981-268-21 | PANEL, BACK (AEP,G,EE)           |        |
| 7        | 4-977-589-21 | BUTTON (POWER)(BLACK)              |        | * 22           | 4-981-268-51 | PANEL, BACK (UK)                 |        |
| * 8      | 1-660-700-11 | AC SW BOARD                        |        | 23             | 3-703-244-00 | BUSHING, CORD                    |        |
| 9        | 4-981-264-01 | BUTTON (4)(BLACK)                  |        | 24             | 3-363-099-01 | SCREW (CASE 3 TP2)(BLACK)        |        |
| 9        | 4-981-264-21 | BUTTON (4)(SILVER)                 |        | 24             | 3-363-099-11 | SCREW (CASE 3 TP2)(SILVER)       |        |
| * 10     | A-4389-852-A | DISPLAY BOARD, COMPLETE (AEP,UK,G) |        | 25             | 3-704-242-01 | SCREW, TERMINAL, + BVTP CLAW     |        |
| * 10     | A-4389-853-A | DISPLAY BOARD, COMPLETE (EE)       |        | 26             | 3-704-515-31 | SCREW (BV/RING)                  |        |
| * 11     | 4-945-292-01 | HOLDER, INDICATION TUBE            |        | * 27           | 4-978-901-51 | CASE (407026)(BLACK)             |        |
| * 12     | 4-921-941-01 | CUSHION (FL)                       |        | * 27           | 4-985-744-01 | CASE (407026)(SILVER)            |        |
| 13       | 4-951-620-01 | SCREW (2.6X8), +BVTP               |        | 28             | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 TT(B)      |        |
| 14       | X-4947-321-1 | KNOB (VOL) ASSY (BLACK)            |        | 29             | 7-685-872-09 | SCREW +BVTT 3X8 (S)              |        |
| 14       | X-4947-626-1 | KNOB (VOL) ASSY (SILVER)           |        | $\Delta$ 30    | 1-770-019-11 | ADAPTOR, CONVERSION PLUG 3P (UK) |        |
| 15       | 4-981-265-01 | ESCUTCHEON (BLACK)                 |        | FL701          | 1-517-177-21 | INDICATOR TUBE, FLUORESCENT      |        |
| 15       | 4-981-265-11 | ESCUTCHEON (SILVER)                |        | $\Delta$ PC901 | 1-575-651-21 | CORD, POWER                      |        |
| * 16     | 1-660-699-11 | ENCODER BOARD                      |        | $\Delta$ PT901 | 1-423-525-11 | TRANSFORMER, POWER               |        |
| 17       | X-4947-207-1 | FOOT ASSY (F50150S)                |        |                |              |                                  |        |

## 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.
- -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.
- 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
- Abbreviation  
G : German model  
EE : East European model

| Ref. No. | Part No.     | Description                                  | Remark |     |                       |      | Ref. No.     | Part No.     | Description                               | Remark |      |      |  |
|----------|--------------|----------------------------------------------|--------|-----|-----------------------|------|--------------|--------------|-------------------------------------------|--------|------|------|--|
| *        | 1-660-700-11 | AC SW BOARD<br>*****<br><br>< SWITCH >       |        |     |                       |      |              |              | < FLUORESCENT INDICATOR >                 |        |      |      |  |
| △S901    | 1-572-267-51 | SWITCH, PUSH (AC POWER)(1 KEY)(POWER)        |        |     |                       |      | FL701        | 1-517-177-21 | INDICATOR TUBE, FLUORESCENT<br><br>< IC > |        |      |      |  |
| *****    |              |                                              |        |     |                       |      | IC701        | 8-759-377-58 | IC uPD78205GF-017-3BA                     |        |      |      |  |
|          |              |                                              |        |     |                       |      | IC702        | 8-759-373-49 | IC NJL54H400                              |        |      |      |  |
| *        | A-4389-852-A | DISPLAY BOARD, COMPLETE (AEP,UK,G)<br>*****  |        |     |                       |      |              |              | < TRANSISTOR >                            |        |      |      |  |
| *        | A-4389-853-A | DISPLAY BOARD, COMPLETE (EE)<br>*****        |        |     |                       |      | Q701         | 8-729-119-78 | TRANSISTOR 2SC2785<br><br>< RESISTOR >    |        |      |      |  |
| *        | 4-921-941-01 | CUSHION (FL)                                 |        |     |                       |      | R701         | 1-249-437-11 | CARBON                                    | 47K    | 5%   | 1/4W |  |
| *        | 4-945-292-01 | HOLDER, INDICATION TUBE<br><br>< CAPACITOR > |        |     |                       |      | R702         | 1-249-429-11 | CARBON                                    | 10K    | 5%   | 1/4W |  |
| C701     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R703 | 1-249-429-11 | CARBON       | 10K                                       | 5%     | 1/4W |      |  |
| C702     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R704 | 1-249-419-11 | CARBON       | 1.5K                                      | 5%     | 1/4W |      |  |
| C703     | 1-162-209-31 | CERAMIC                                      | 27PF   | 5%  | 50V                   | R705 | 1-249-419-11 | CARBON       | 1.5K                                      | 5%     | 1/4W |      |  |
| C704     | 1-162-209-31 | CERAMIC                                      | 27PF   | 5%  | 50V                   | R707 | 1-249-441-11 | CARBON       | 100K                                      | 5%     | 1/4W |      |  |
| C705     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R708 | 1-249-441-11 | CARBON       | 100K                                      | 5%     | 1/4W |      |  |
| C706     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R709 | 1-247-807-31 | CARBON       | 100                                       | 5%     | 1/4W |      |  |
| C707     | 1-126-947-11 | ELECT                                        | 47uF   | 20% | 35V                   | R710 | 1-249-406-11 | CARBON       | 120                                       | 5%     | 1/4W |      |  |
| C708     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R711 | 1-249-406-11 | CARBON       | 120                                       | 5%     | 1/4W |      |  |
| C709     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R712 | 1-249-407-11 | CARBON       | 150                                       | 5%     | 1/4W |      |  |
| C710     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R713 | 1-249-408-11 | CARBON       | 180                                       | 5%     | 1/4W |      |  |
| C711     | 1-126-964-11 | ELECT                                        | 10uF   | 20% | 50V                   | R714 | 1-247-815-91 | CARBON       | 220                                       | 5%     | 1/4W |      |  |
| C712     | 1-104-905-11 | CAPACITOR                                    | 0.22F  |     | 5.5V                  | R715 | 1-249-410-11 | CARBON       | 270                                       | 5%     | 1/4W |      |  |
| C713     | 1-162-306-11 | CERAMIC                                      | 0.01uF | 30% | 16V                   | R716 | 1-249-411-11 | CARBON       | 330                                       | 5%     | 1/4W |      |  |
| C714     | 1-124-257-00 | ELECT                                        | 2.2uF  | 20% | 50V                   | R717 | 1-249-413-11 | CARBON       | 470                                       | 5%     | 1/4W |      |  |
| C715     | 1-126-964-11 | ELECT                                        | 10uF   | 20% | 50V                   | R718 | 1-249-414-11 | CARBON       | 560                                       | 5%     | 1/4W |      |  |
| C791     | 1-162-286-21 | CERAMIC                                      | 220PF  | 10% | 50V<br>(SUFFIX NO-12) | R719 | 1-249-416-11 | CARBON       | 820                                       | 5%     | 1/4W |      |  |
|          |              | < DIODE >                                    |        |     |                       |      | R720         | 1-249-418-11 | CARBON                                    | 1.2K   | 5%   | 1/4W |  |
| D701     | 8-719-815-85 | DIODE 1S1585                                 |        |     |                       |      | R721         | 1-249-421-11 | CARBON                                    | 2.2K   | 5%   | 1/4W |  |
| D702     | 8-719-815-85 | DIODE 1S1585                                 |        |     |                       |      | R722         | 1-249-424-11 | CARBON                                    | 3.9K   | 5%   | 1/4W |  |
| D703     | 8-719-815-85 | DIODE 1S1585                                 |        |     |                       |      | R723         | 1-249-430-11 | CARBON                                    | 12K    | 5%   | 1/4W |  |
| D705     | 8-719-815-85 | DIODE 1S1585                                 |        |     |                       |      | R724         | 1-247-807-31 | CARBON                                    | 100    | 5%   | 1/4W |  |
| D707     | 8-719-815-85 | DIODE 1S1585                                 |        |     |                       |      | R725         | 1-249-406-11 | CARBON                                    | 120    | 5%   | 1/4W |  |
|          |              |                                              |        |     |                       |      | R726         | 1-249-406-11 | CARBON                                    | 120    | 5%   | 1/4W |  |
|          |              |                                              |        |     |                       |      | R727         | 1-249-407-11 | CARBON                                    | 150    | 5%   | 1/4W |  |
|          |              |                                              |        |     |                       |      | R728         | 1-249-408-11 | CARBON                                    | 180    | 5%   | 1/4W |  |
|          |              |                                              |        |     |                       |      | R729         | 1-247-815-91 | CARBON                                    | 220    | 5%   | 1/4W |  |

# DISPLAY

# ENCODER

# TUNER

| Ref. No.   | Part No.     | Description                           | Remark           |
|------------|--------------|---------------------------------------|------------------|
| R732       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R733       | 1-249-414-11 | CARBON                                | 560 5% 1/4W      |
| R734       | 1-249-416-11 | CARBON                                | 820 5% 1/4W      |
| R735       | 1-249-418-11 | CARBON                                | 1.2K 5% 1/4W     |
| R738       | 1-249-401-11 | CARBON                                | 47 5% 1/4W       |
| R739       | 1-249-417-11 | CARBON                                | 1K 5% 1/4W       |
| 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      |
| R743       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R744       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R745       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R746       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R747       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R749       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R750       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R751       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R752       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R753       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R754       | 1-249-413-11 | CARBON                                | 470 5% 1/4W      |
| R761       | 1-249-429-11 | CARBON                                | 10K 5% 1/4W (EE) |
| R762       | 1-249-429-11 | CARBON                                | 10K 5% 1/4W (EE) |
| < 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)                |                  |
| S727       | 1-554-303-21 | SWITCH, TACTILE (CHAR)                |                  |
| S728       | 1-554-303-21 | SWITCH, TACTILE (TUNE MODE)           |                  |

| Ref. No.              | Part No.     | Description                      | Remark         |
|-----------------------|--------------|----------------------------------|----------------|
| < VIBRATOR >          |              |                                  |                |
| X701                  | 1-760-422-11 | VIBRATOR, CRYSTAL (4.192MHz)     |                |
| *****                 |              |                                  |                |
| *                     | 1-660-699-11 | ENCODER BOARD                    | *****          |
| < VARIABLE RESISTOR > |              |                                  |                |
| RV701                 | 1-467-703-11 | ENCODER, ROTARY (TUNING/SELECT)  |                |
| < SWITCH >            |              |                                  |                |
| S715                  | 1-554-303-21 | SWITCH, TACTILE (ENTER)          |                |
| *****                 |              |                                  |                |
| *                     | A-4389-850-A | TUNER BOARD, COMPLETE (AEP,UK,G) | *****          |
| < CAPACITOR >         |              |                                  |                |
| C101                  | 1-162-306-11 | CERAMIC                          | 0.01uF 30% 16V |
| C102                  | 1-126-964-11 | ELECT                            | 10uF 20% 50V   |
| C103                  | 1-162-306-11 | CERAMIC                          | 0.01uF 30% 16V |
| C104                  | 1-126-964-11 | ELECT                            | 10uF 20% 50V   |
| C105                  | 1-124-463-00 | ELECT                            | 0.1uF 20% 50V  |
| C201                  | 1-162-282-31 | CERAMIC                          | 100PF 10% 50V  |
| 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 |
| C205                  | 1-126-967-11 | ELECT                            | 47uF 20% 16V   |
| C206                  | 1-162-306-11 | CERAMIC                          | 0.01uF 30% 16V |
| C207                  | 1-162-306-11 | CERAMIC                          | 0.01uF 30% 16V |
| C301                  | 1-126-963-11 | ELECT                            | 4.7uF 20% 50V  |
| C302                  | 1-126-963-11 | ELECT                            | 4.7uF 20% 50V  |
| C303                  | 1-126-964-11 | ELECT                            | 10uF 20% 50V   |
| C304                  | 1-126-964-11 | ELECT                            | 10uF 20% 50V   |
| C305                  | 1-110-335-11 | MYLAR                            | 100PF 5% 50V   |
| C306                  | 1-110-335-11 | MYLAR                            | 100PF 5% 50V   |
| C308                  | 1-126-963-11 | ELECT                            | 4.7uF 20% 50V  |
| C309                  | 1-126-963-11 | ELECT                            | 4.7uF 20% 50V  |
| C310                  | 1-162-306-11 | CERAMIC                          | 0.01uF 30% 16V |
| C319                  | 1-126-934-11 | ELECT                            | 220uF 20% 16V  |
| C352                  | 1-130-471-00 | MYLAR                            | 0.001uF 5% 50V |
| C353                  | 1-130-471-00 | MYLAR                            | 0.001uF 5% 50V |
| C790                  | 1-126-964-11 | ELECT                            | 10uF 20% 50V   |
| (SUFFIX NO-12)        |              |                                  |                |
| C801                  | 1-126-967-11 | ELECT                            | 47uF 20% 16V   |

| Ref. No.      | Part No.     | Description                         | Remark |
|---------------|--------------|-------------------------------------|--------|
| C802          | 1-162-306-11 | CERAMIC 0.01uF 30% 16V              |        |
| C803          | 1-162-306-11 | CERAMIC 0.01uF 30% 16V              |        |
| C804          | 1-126-964-11 | ELECT 10uF 20% 50V                  |        |
| C805          | 1-162-288-31 | CERAMIC 330PF 10% 50V               |        |
| C806          | 1-102-527-11 | CERAMIC 82PF 5% 50V                 |        |
| C807          | 1-102-852-91 | CERAMIC 47PF 5% 50V                 |        |
| C808          | 1-162-306-11 | CERAMIC 0.01uF 30% 16V              |        |
| C809          | 1-126-967-11 | ELECT 47uF 20% 16V                  |        |
| C810          | 1-126-961-11 | ELECT 2.2uF 20% 50V                 |        |
| C811          | 1-162-306-11 | CERAMIC 0.01uF 30% 16V              |        |
| C812          | 1-162-291-31 | CERAMIC 560PF 10% 50V               |        |
| C901          | 1-101-004-00 | CERAMIC 0.01uF 50V                  |        |
| C902          | 1-101-004-00 | CERAMIC 0.01uF 50V                  |        |
| C903          | 1-126-967-11 | ELECT 47uF 20% 50V                  |        |
| C904          | 1-126-967-11 | ELECT 47uF 20% 50V                  |        |
| C905          | 1-126-953-11 | ELECT 2200uF 20% 35V                |        |
| C906          | 1-126-969-11 | ELECT 220uF 20% 50V                 |        |
| C908          | 1-126-964-11 | ELECT 10uF 20% 50V                  |        |
| C909          | 1-126-967-11 | ELECT 47uF 20% 16V                  |        |
| △C951         | 1-113-915-11 | CERAMIC 0.001uF 20% 250V            |        |
| C952          | 1-162-306-11 | CERAMIC 0.01uF 30% 16V              |        |
| < CONNECTOR > |              |                                     |        |
| CNJ203        | 1-566-212-11 | PIN, CONNECTOR 3P (EON CONTROL OUT) |        |
| CNJ301        | 1-568-250-11 | JACK, PIN 2P (LINE OUT)             |        |
| * CNP701      | 1-568-936-11 | PIN, CONNECTOR 9P                   |        |
| * CNP702      | 1-568-935-11 | PIN, CONNECTOR 8P                   |        |
| CNP901        | 1-580-230-11 | PIN, CONNECTOR (PC BOARD) 2P        |        |
| CNP951        | 1-564-321-00 | PIN, CONNECTOR 2P                   |        |
| < DIODE >     |              |                                     |        |
| D201          | 8-719-815-85 | DIODE 1S1585                        |        |
| D901          | 8-719-970-02 | DIODE 1SR139-400                    |        |
| D902          | 8-719-970-02 | DIODE 1SR139-400                    |        |
| D903          | 8-719-970-02 | DIODE 1SR139-400                    |        |
| D904          | 8-719-970-02 | DIODE 1SR139-400                    |        |
| D905          | 8-719-110-69 | DIODE RD27ES-B4                     |        |
| D906          | 8-719-109-97 | DIODE RD6.8ES-B2                    |        |
| < IC >        |              |                                     |        |
| IC201         | 8-759-812-35 | IC LA1235                           |        |
| IC302         | 8-759-634-51 | IC M5218AP                          |        |
| IC801         | 8-759-634-51 | IC M5218AP                          |        |
| IC802         | 8-759-169-99 | IC SAA6579                          |        |
| IC901         | 8-759-820-09 | IC LA5667                           |        |
| < COIL >      |              |                                     |        |
| L101          | 1-410-509-11 | INDUCTOR 10uH                       |        |
| L102          | 1-410-509-11 | INDUCTOR 10uH                       |        |
| L351          | 1-410-509-11 | INDUCTOR 10uH                       |        |
| L352          | 1-410-509-11 | INDUCTOR 10uH                       |        |

| Ref. No.              | Part No.     | Description          | Remark |
|-----------------------|--------------|----------------------|--------|
| < TRANSFORMER >       |              |                      |        |
| △ PT901               | 1-423-525-11 | TRANSFORMER, POWER   |        |
| < TRANSISTOR >        |              |                      |        |
| Q301                  | 8-729-922-37 | TRANSISTOR 2SD2144S  |        |
| Q302                  | 8-729-922-37 | TRANSISTOR 2SD2144S  |        |
| Q901                  | 8-729-029-56 | TRANSISTOR DTA144ESA |        |
| < RESISTOR >          |              |                      |        |
| R101                  | 1-249-401-11 | CARBON 47 5% 1/4W    |        |
| R102                  | 1-249-393-11 | CARBON 10 5% 1/4W    |        |
| R104                  | 1-249-417-11 | CARBON 1K 5% 1/4W    |        |
| R105                  | 1-249-429-11 | CARBON 10K 5% 1/4W   |        |
| R201                  | 1-249-411-11 | CARBON 330 5% 1/4W   |        |
| R202                  | 1-249-405-11 | CARBON 100 5% 1/4W   |        |
| R203                  | 1-249-393-11 | CARBON 10 5% 1/4W    |        |
| R301                  | 1-249-441-11 | CARBON 100K 5% 1/4W  |        |
| R302                  | 1-249-441-11 | CARBON 100K 5% 1/4W  |        |
| R303                  | 1-249-441-11 | CARBON 100K 5% 1/4W  |        |
| R304                  | 1-249-441-11 | CARBON 100K 5% 1/4W  |        |
| R305                  | 1-247-843-11 | CARBON 3.3K 5% 1/4W  |        |
| R306                  | 1-247-843-11 | CARBON 3.3K 5% 1/4W  |        |
| R307                  | 1-249-420-11 | CARBON 1.8K 5% 1/4W  |        |
| R308                  | 1-249-420-11 | CARBON 1.8K 5% 1/4W  |        |
| R309                  | 1-249-413-11 | CARBON 470 5% 1/4W   |        |
| R310                  | 1-249-413-11 | CARBON 470 5% 1/4W   |        |
| R316                  | 1-249-405-11 | CARBON 100 5% 1/4W   |        |
| R317                  | 1-249-417-11 | CARBON 1K 5% 1/4W    |        |
| R318                  | 1-249-417-11 | CARBON 1K 5% 1/4W    |        |
| R319                  | 1-249-405-11 | CARBON 100 5% 1/4W   |        |
| R361                  | 1-249-437-11 | CARBON 47K 5% 1/4W   |        |
| R362                  | 1-249-437-11 | CARBON 47K 5% 1/4W   |        |
| R801                  | 1-249-405-11 | CARBON 100 5% 1/4W   |        |
| R802                  | 1-249-441-11 | CARBON 100K 5% 1/4W  |        |
| R803                  | 1-249-441-11 | CARBON 100K 5% 1/4W  |        |
| R804                  | 1-247-863-91 | CARBON 22K 5% 1/4W   |        |
| R805                  | 1-249-426-11 | CARBON 5.6K 5% 1/4W  |        |
| R806                  | 1-249-421-11 | CARBON 2.2K 5% 1/4W  |        |
| R807                  | 1-249-401-11 | CARBON 47 5% 1/4W    |        |
| R808                  | 1-247-815-91 | CARBON 220 5% 1/4W   |        |
| R809                  | 1-247-807-31 | CARBON 100 5% 1/4W   |        |
| R810                  | 1-249-405-11 | CARBON 100 5% 1/4W   |        |
| R902                  | 1-247-752-11 | CARBON 1K 5% 1/2W    |        |
| R903                  | 1-249-441-11 | CARBON 100K 5% 1/4W  |        |
| R904                  | 1-249-437-11 | CARBON 47K 5% 1/4W   |        |
| R905                  | 1-249-437-11 | CARBON 47K 5% 1/4W   |        |
| R906                  | 1-249-437-11 | CARBON 47K 5% 1/4W   |        |
| < VARIABLE RESISTOR > |              |                      |        |
| RV201                 | 1-241-765-11 | RES, ADJ, CARBON 22K |        |

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

TUNER

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u>                      | <u>Remark</u> |
|-----------------|-----------------|-----------------------------------------|---------------|
|                 |                 | < ENCAPSULATED >                        |               |
| TB101           | 1-233-596-12    | ENCAPSULATED COMPONENT (TUNER UNIT)     | (AEP,UK,G)    |
| TB101           | 1-233-526-12    | ENCAPSULATED COMPONENT (TUNER UNIT)(EE) |               |
|                 |                 | < TERMINAL >                            |               |
| TM101           | 1-537-488-11    | TERMINAL BOARD (ANT)(ANTENNA)           |               |
|                 |                 | < VIBRATOR >                            |               |
| X801            | 1-579-900-21    | VIBRATOR, CRYSTAL (4.332MHz)            |               |

\*\*\*\*\*

MISCELLANEOUS  
\*\*\*\*\*

|         |              |                                  |
|---------|--------------|----------------------------------|
| △ 30    | 1-770-019-11 | ADAPTOR, CONVERSION PLUG 3P (UK) |
| 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)                                              |
| 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 (ENGLISH,POLISH)(EE)                           |
| 3-856-667-51 | MANUAL, INSTRUCTION (GERMAN)(G)                                    |

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

