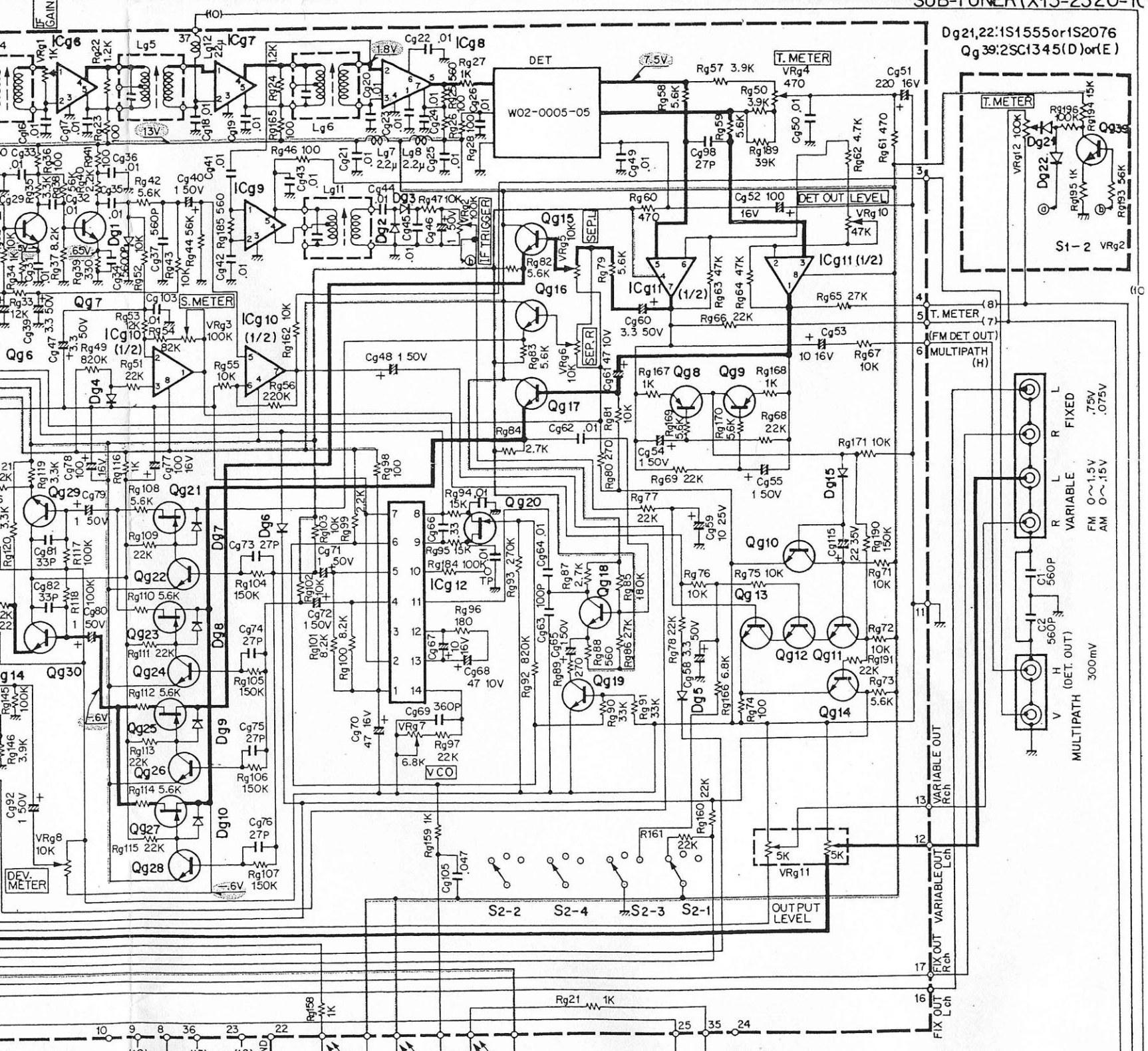






1mV (75KHz DEV.)

1mV (30% DEV.)

FM 75Ω  
F. CONNECTORFM  
GND 75Ω  
300Ω

AM

BALUN TRANS

S. METER

T. METER

D/M METER

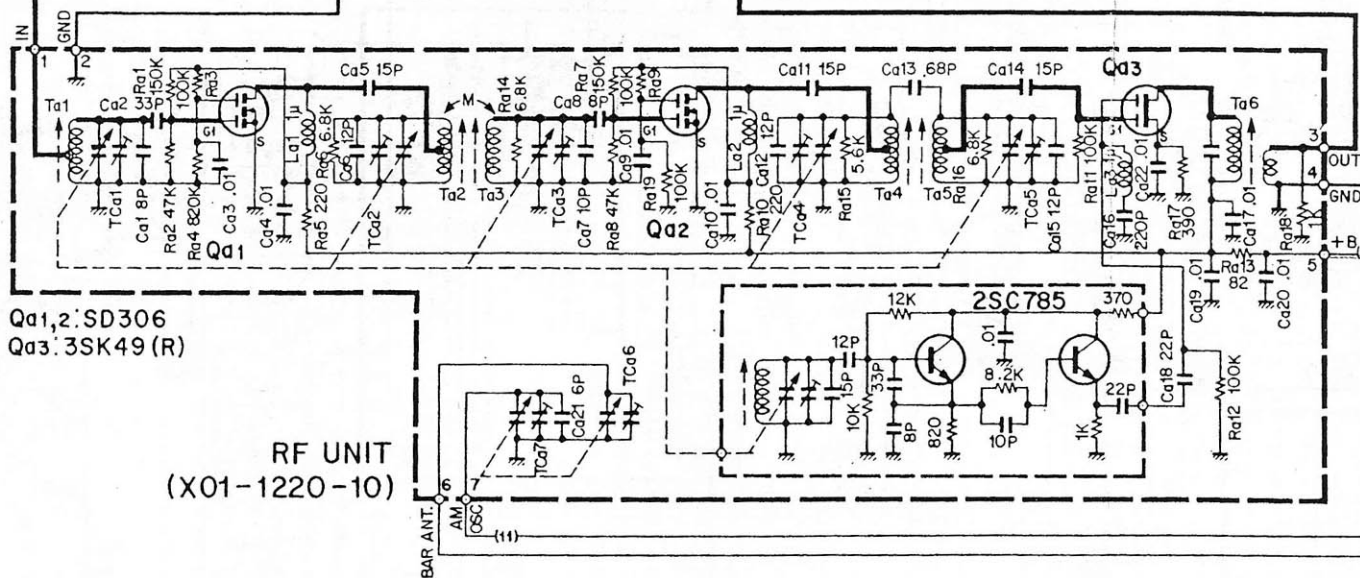
S4-3

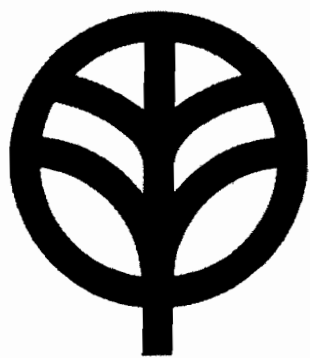
S4-1

T. METER

T. METER

AM METER

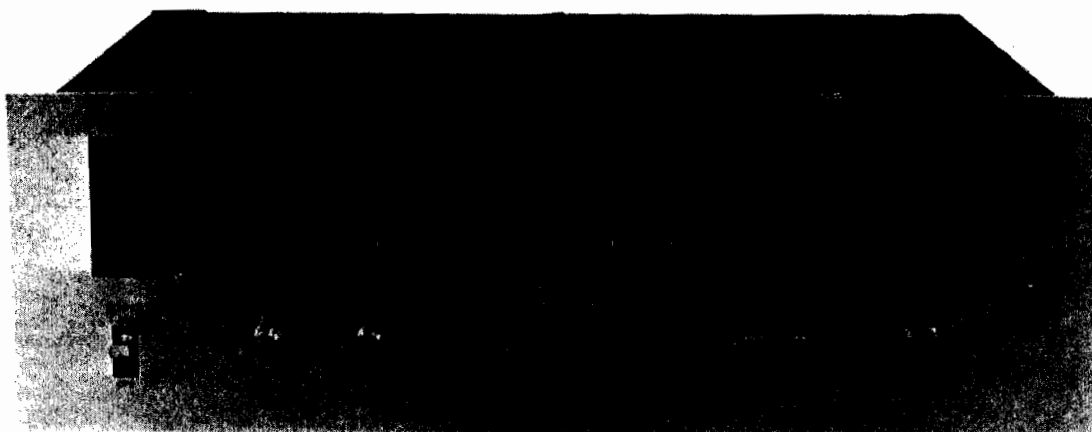




**KENWOOD**  
HI/FI STEREO COMPONENTS

# SERVICE MANUAL

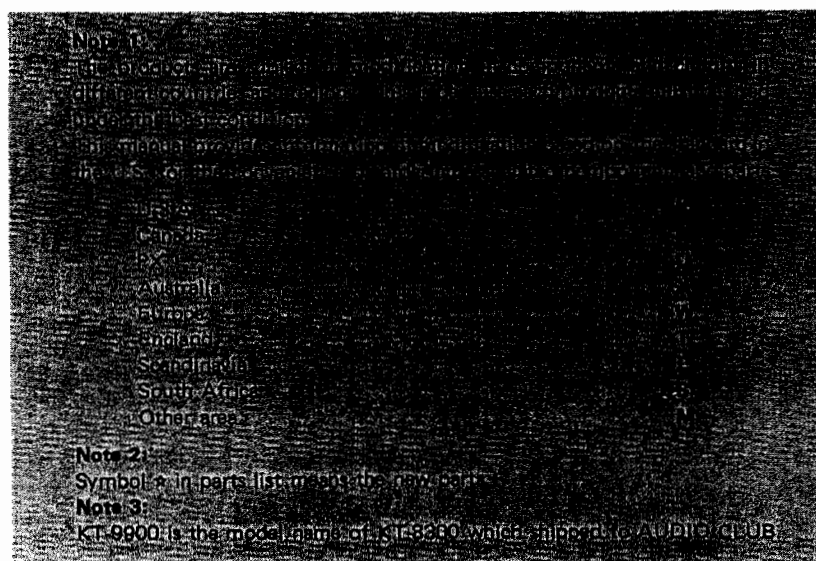
**KT-8300**  
**(KT-9900)**



**AM-FM STEREO TUNER**

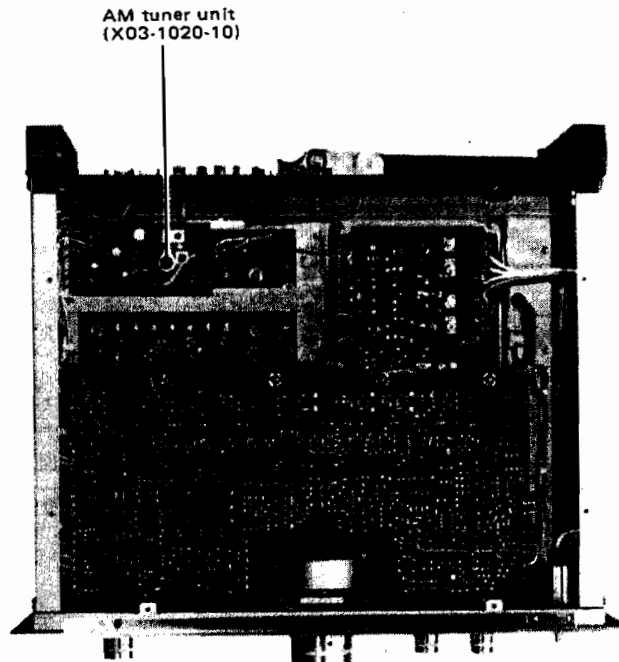
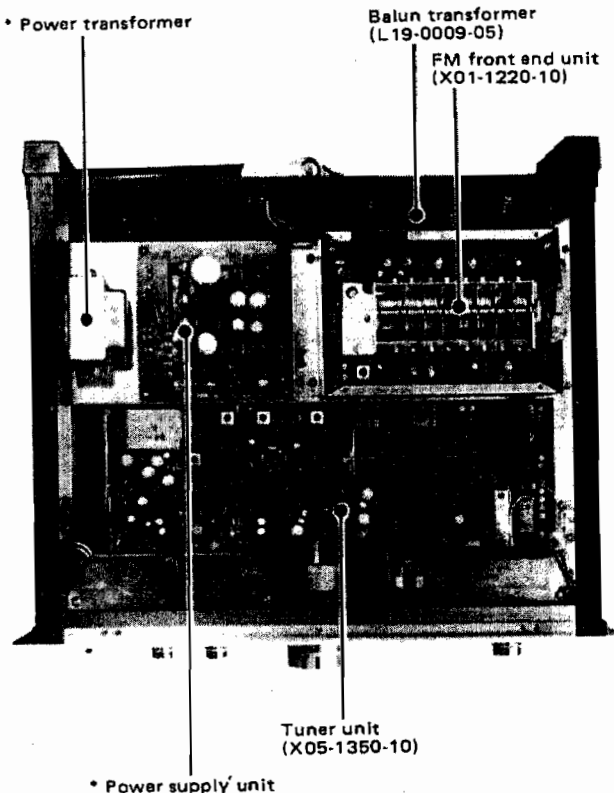
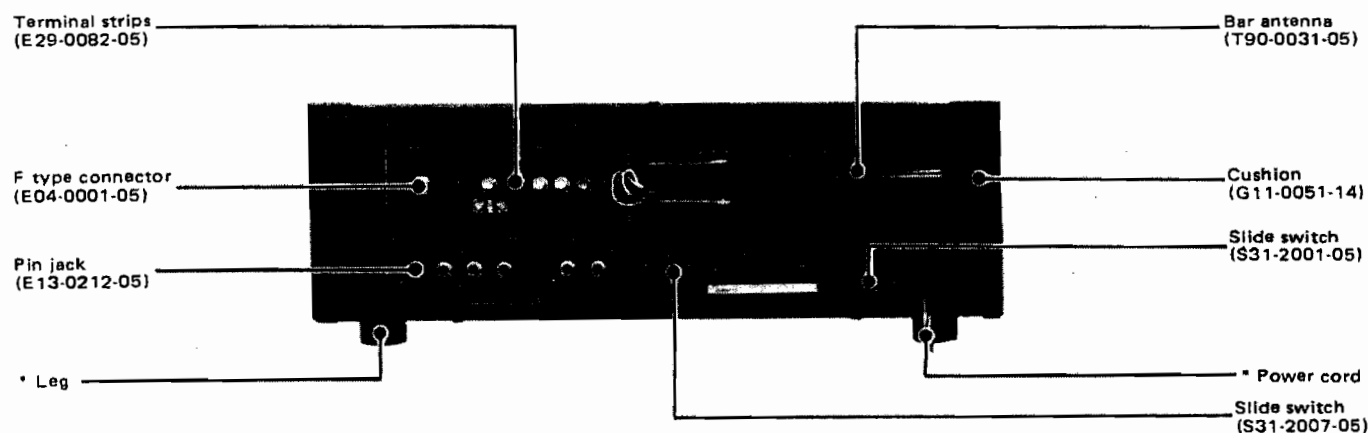
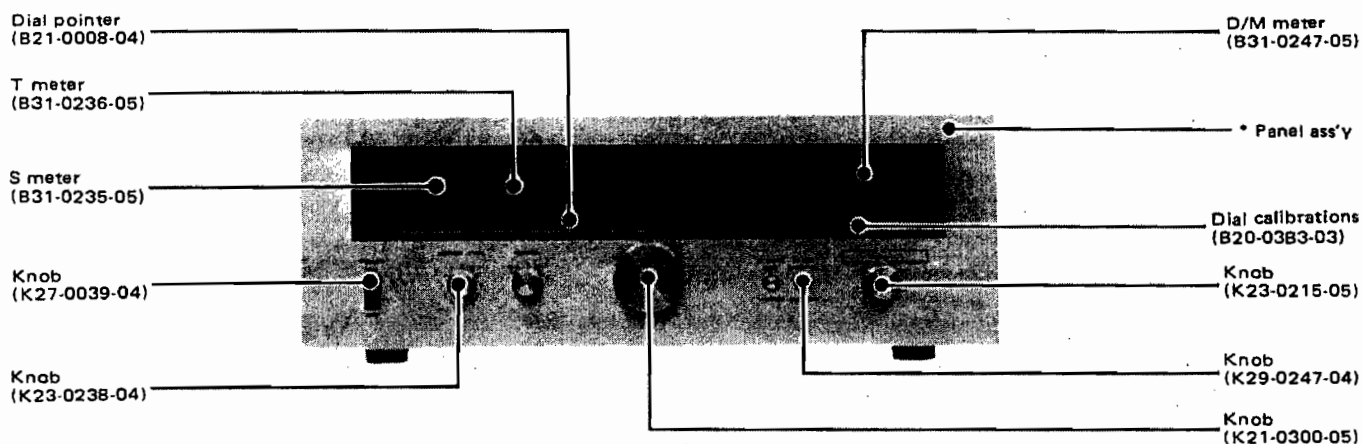
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# EXTERNAL & INTERNAL VIEW

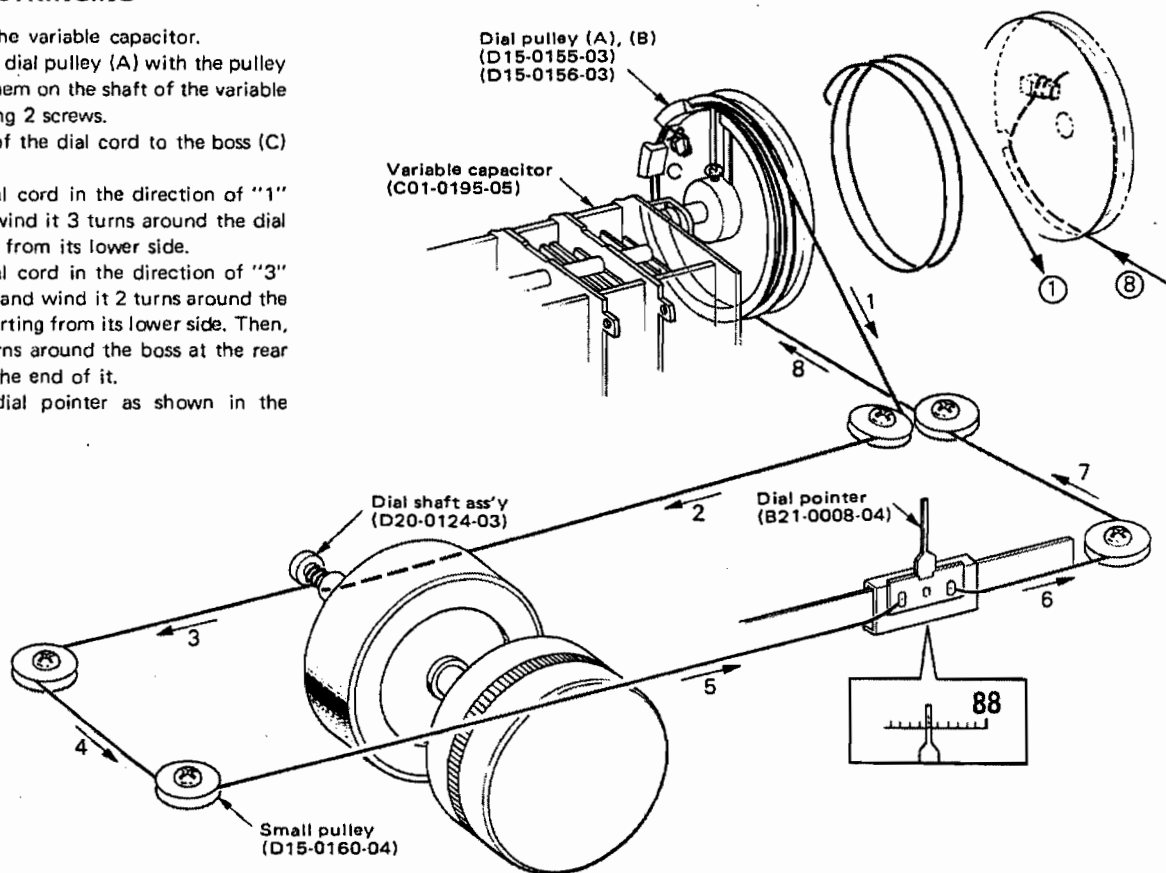


\* Refer to Destinations' parts list.

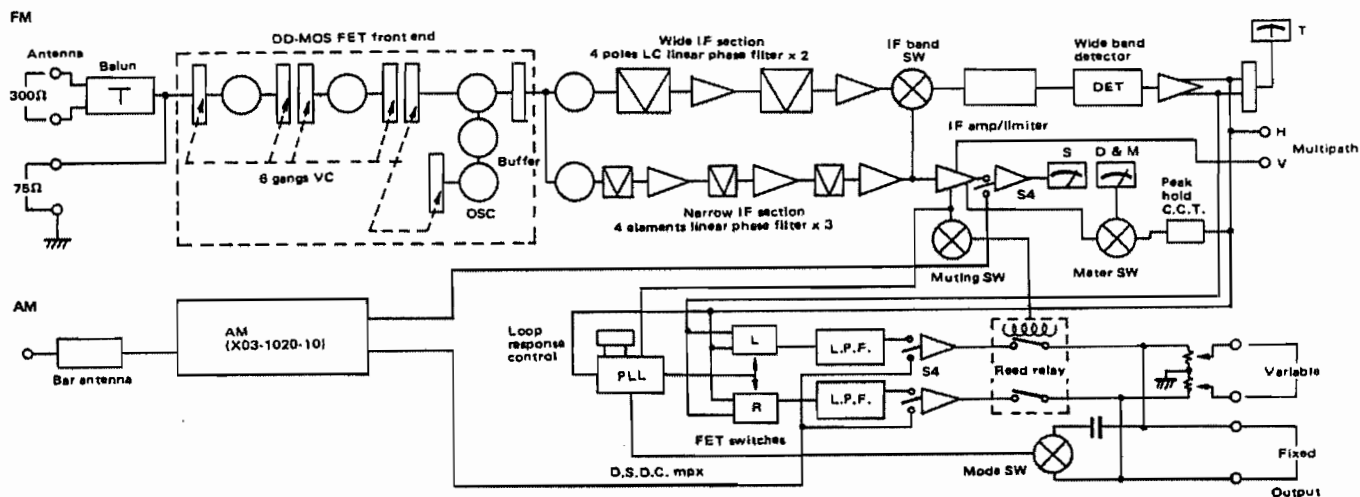
# DIAL CORD STRINGING/BLOCK DIAGRAM

## DIAL CORD STRINGING

1. Fully close the variable capacitor.
2. Assemble the dial pulley (A) with the pulley (B) and fix them on the shaft of the variable capacitor using 2 screws.
3. Tie the end of the dial cord to the boss (C) as shown.
4. Dress the dial cord in the direction of "1" to "2" and wind it 3 turns around the dial shaft starting from its lower side.
5. Dress the dial cord in the direction of "3" through "8" and wind it 2 turns around the pulley (B) starting from its lower side. Then, wind it 2 turns around the boss at the rear side and tie the end of it.
6. Mount the dial pointer as shown in the illustration.



## BLOCK DIAGRAM



# CIRCUIT DESCRIPTIONS

## FM-RF (X01-1220-10)

### 1. ADOPTION OF DD TYPE DUAL GATE MOS-FET (Qa1, Qa2)

The RF amplifier employs DD (Double-Diffused) type MOS-FET elements. This type of FET has been processed through diffusion repeated twice, and hence it offers a better high-frequency characteristic and a shorter channel length to be controlled by gate potential. The noteworthy features are (1) preferable large-input characteristic, (2) preferable spurious response and mutual modulation characteristics, (3) sensitivity with low noise figure (NF), and (4) stabilized performance with a small feedback capacity.

### 2. ADOPTION OF HIGH-ACCURACY 6-GANG VARIABLE CAPACITOR

The high-frequency selective circuit is composed of single-double-double tuning stages. Such a multistage type circuit may often result in degradation of distortion factor. However, this tuning circuit with an optimum Q has been designed by the adoption of a high-accuracy 6-gang variable capacitor with minimal tracking and gang errors, and by the reduction of load capacity realized by DD type MOS-FET. Thus, preferable image rejection, spurious response, and IF interference characteristics are obtained without sacrificing distortion characteristics.

### 3. MIXER WITH MOS-FET (Qa3)

A dual gate MOS-FET is employed to suppress mutual modulation in the mixing stage.

### 4. LOCAL OSCILLATOR

A buffer circuit assures the stabilized supply of local oscillation output to the mixer so that the characteristics for AM suppression and cross-modulation can be improved. Since the local oscillator is joined with the variable capacitor, there is no error between actual setting and circuit operation.

## TUNER (X05-1350-10)

### FM-IF

The IF circuit can be switched over to NARROW or WIDE. The wide-band circuit is composed of Qg1, FLg1, Qg35, ICg1, FLg2, Qg36, ICg2, and Lg4. FLg1 and FLg2 are a 4-pole LC concentrated filter having a ideal group-delay characteristic. Qg35 and Qg36 compose an emitter-follower circuit which prevents deterioration of group-delay characteristic when a large input is applied.

The narrow-band circuit is composed of Qg2, FLg3, ICg3, FLg4, ICg4, FLg5, ICg5, and Lg4. FLg3, FLg4, and FLg5 are a 4-element phase linear type ceramic filter with excellent group-delay characteristics. These make it possible to obtain a selectivity of 110 dB. Switching over between NARROW and WIDE is effected by switching on ICg2 or ICg5. (This selection is possible with S1.) ICg2 or ICg5 is switched off when No. 2 terminal is grounded. After passing through the wide band or narrow band circuit, the 10.7 MHz IF signal is amplified at ICg6, ICg7, and ICg8, and then transmitted to the DET circuit.

Function of Qg38: When the IF circuit is switched over either to NARROW or WIDE, the muting circuit is switched on to suppress shock noise.

### FM-DET

The detector circuit is assembled into a unit (W02-0005-05). It is a wide-band detector circuit of multicative detection system. This system is composed of phase shifter, wave shaping circuit, and multiplier having a low distortion characteristic. The detection band width is 5 MHz and a low distortion characteristic of 0.04% is realized over more than 1 MHz range. SN ratio is more than 85 dB. This detector circuit generates balanced output.

### FM-MPX

The balanced output from the detector circuit is amplified by ICg11 and the main signal is fed to DSDC (Double switching demodulator circuit) through emitter-follower Qg17. The sub-signal for left channel passes through emitter-follower Qg15 and that for right channel passes through emitter-follower Qg16, both fed to DSDC. In this way, the newly designed DSDC cancels the leak components of right and left demodulators with exclusively installed canceling circuits. Adjustment for channel separation is independently performed at right and left circuits. Therefore separation for both channels can be adjusted to optimum values respectively.

As an analog switch, an excellent FET is used for MPX demodulator switching to obtain low distortion factor and high separation characteristic. This FET switching system is put to practical use by uniquely-designed FET driving circuit. Distortion factor of this circuit is less than 0.02% in monaural and less than 0.05% in stereo reproduction. Qg22, Qg24, Qg26, and Qg28 repeat on-off performance at 38 kHz to obtain the function of FET switching. Dg7 ~ 10 are used for the improvement of distortion characteristics.



## CIRCUIT DESCRIPTIONS

The 38 kHz switching signal is generated by ICg12. The composite signal is amplified at Qg18 and applied to No. 11 terminal of ICg12. The 38 kHz sub-carrier signal is obtained from No. 4 and 5 terminals. A pilot signal is taken out of the composite signal by the aid of filter function of PLL. However, if the loop response is too fast, this filter function will be weakened and the sub-carrier will be mixed with main- and sub-signals, thus giving rise to a sort of cross-modulation distortion. Most part of distortion in the high-frequency range during stereo reproduction is caused by this phenomenon. Also in the low-frequency range, there will be a peak distortion in the vicinity of 200 Hz due to jitter in PLL (phase difference by LPF leakage). In order to eliminate high-frequency and jitter distortions, the input level of PLL (No. 11 terminal) is lowered after the stereo indicating lamp has been lit up. This delays the loop response (capture range narrowed), and increases the filter effect. In practical usage, emitter resistance of Qg18 is changed by Qg19 to give variation in amplification degree. In this manner, the amount of composite signal into ICg12 is increased or decreased. Qg19 is turned off while broadcast signals are received.

### AUDIO AMP

The audio signals demodulated for the right and left channels enter the emitter-follower circuit of Qg29 or Qg30. After a carrier leak has been removed at low-pass filter FLg6, these signals are amplified at the final amplifier of ICg13 and generated as tuner output.

### ACCESSORY CIRCUITS

#### 1. S METER (FM)

A signal for the S meter passes through the AGC AMP of Qg5 ~ 7, is amplified at 1/2 ICg10, and is detected at Dg5. Indication is almost linear up to 1 mV while the SN ratio is completely saturated.

#### 2. MULTIPATH METER

A signal for the multipath meter is amplified at 1/2 ICg10 and detected at Dg13. This meter is used to detect the AM component in 10.7 MHz IF signal and to supervise the amount of multi-path.

#### 3. DEVIATION METER

The peak value of modulation is indicated by percentage, regarding deviation of 75 kHz as 100%. The composite signal is amplified at ICg14 and detected at Dg11 and Dg12. The obtained output is used to give deflections at the deviation meter. Qg33 is used to prevent the deflection at the muting level or lower.

#### 4. T METER

A difference in balanced outputs (in reverse phase) from the multiplicative detector (W02-0005-05) is used to give deflections at the T meter.

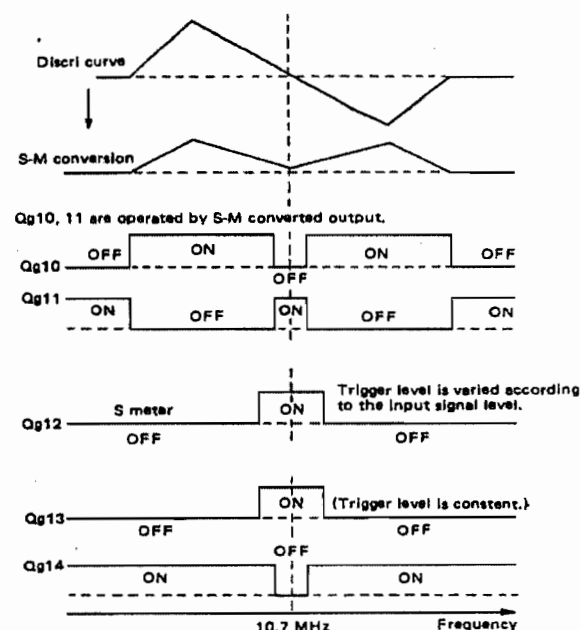
#### 5. MUTING

The muting control signal is obtained from the AND circuit by utilizing the following 3 signals: (1) signal for deflecting the S meter (varied with input level), (2) signal from IF circuit, and (3) signal obtained from the S curve of DET through S-M conversion.

When the signal of (1) above is obtained, Qg12 is turned on. The signal of (2) is the detection output obtained from the circuit consisting of ICg9, Lg11, Dg2, and Dg3. This signal causes Qg13 to be turned on. The signal of (3) is obtained from the S curve of DET through S-M conversion effected by the phase detector circuit consisting of Qg8 and Qg9. With this signal, Qg10 is turned off and Qg11 is turned on when broadcast signals are received. Qg14 is turned off when all of Qg11 ~ 13 are turned on. It clears the muting function. If at least one of Qg11 ~ 13 is turned off, Qg14 is turned on and the muting function is obtained.

Qg31 and Qg32 are used to compose a relay driving circuit which can be switched on or off by a muting control signal or by a signal which can be obtained after the set has been energized (rectified signal from Dk3).

The muting circuit can be set to either of the two purposes. It can be used for the major purpose of inter-station noise suppression, or when a high-quality station (SN ratio being 50 dB or higher) is selected for stereo reception.



# ADJUSTMENTS

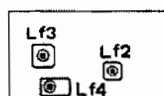
## TEST EQUIPMENTS

RF signal generator ..... RF-SG  
Oscilloscope ..... scope  
Solid state volt meter (input impedance: more than 1M $\Omega$ .. SSVM  
DC volt meter ..... DCVM  
FM stereo generator ..... MPX-SG  
Frequency counter  
Distortion meter

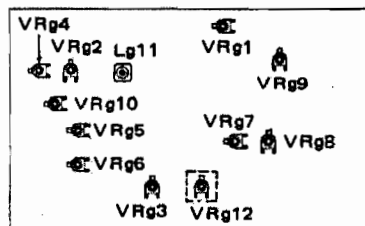
## NOTE

- \* Tuning dial is set to the proper point corresponding to no radio stations.
- \* RF-SG is set to the lower response possible on oscilloscope.
- \* The output level of RF-SG is made a 6 dB drop by the dummy ant.
- \* The input level 60 dB means 66 dB on RF-SG.
- \* Repeat TRACKING adjustment several times and confirm the reception of broadcasting.
- \* Test point is shown in the schematic diagram.

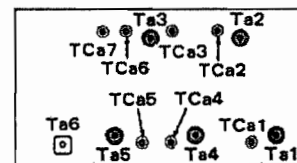
| No.                                 | ALIGN            | TEST EQUIPMENTS                                    |                                                                                            | TUNER SETTING | OUTPUT INDICATOR                                  | ADJUSTMENT POINTS  | REMARKS                                                               |
|-------------------------------------|------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------|---------------|---------------------------------------------------|--------------------|-----------------------------------------------------------------------|
|                                     |                  | CONNECTION                                         | SETTING                                                                                    |               |                                                   |                    |                                                                       |
| FM SECTION                          |                  |                                                    |                                                                                            |               |                                                   |                    |                                                                       |
| 1                                   | DISCRIMINATOR    | —                                                  | —                                                                                          | —             | T meter                                           | VRg4               | Make the pointer position in the center of the meter (at Narrow mode) |
|                                     |                  |                                                    |                                                                                            |               |                                                   | VRg12              | Make the pointer position in the center of the meter (at Wide mode)   |
| 2                                   | TRACKING         | RF-SG to ANT terminal via dummy ant.               | 90 MHz<br>1 kHz (Mod)<br>75 kHz (Dev)                                                      | 90 MHz        | SSVM, distortion meter & scope to output jack (L) | Ta1 ~ 5            | Maximum deflection, minimum distortion                                |
| 3                                   |                  |                                                    | 105 MHz<br>1 kHz (Mod)<br>75 kHz (Dev)                                                     | 105 MHz       |                                                   | TCa1 ~ 5           |                                                                       |
| 4 Repeat "DISCRIMINATOR" adjustment |                  |                                                    |                                                                                            |               |                                                   |                    |                                                                       |
| 5                                   | IF TRIGGER       | RF-SG to ANT terminal via dummy ant.               | 100 MHz<br>0 (Dev)<br>60 dB                                                                | 100 MHz       | DCVM to TP1                                       | Lg11               | Maximum DC voltage                                                    |
|                                     |                  |                                                    | 100 MHz<br>0 (Dev)<br>10 dB                                                                | - ditto -     | - ditto -                                         | Ta6                | Maximum DC voltage                                                    |
| 6                                   | IF TRIGGER LEVEL | - ditto -                                          | 100 MHz<br>0 (Dev)<br>60 dB                                                                | - ditto -     | - ditto -                                         | VRg2               | Adjust DC voltage to 1.8 V                                            |
| 7                                   | IF GAIN          | —                                                  | —                                                                                          | —             | - ditto -                                         | VRg1               | Adjust DC voltage to 0.6 V                                            |
| 8                                   | S METER          | RF-SG to ANT terminal via dummy ant.               | 100 MHz<br>0 (Dev)<br>60 dB                                                                | 100 MHz       | S meter                                           | VRg3               | Make the pointer indication "5" digit                                 |
| 9                                   | MUTING LEVEL     | - ditto -                                          | 100 MHz<br>0 (Dev)<br>16 dB                                                                | - ditto -     | SSVM & scope to output jack (L)                   | VRg9               | Adjust VRg9 so that muting operation is on                            |
| 10                                  | VCO              | —                                                  | —                                                                                          | —             | Frequency counter to TP2                          | VRg7               | Adjust VCO frequency to 19 kHz                                        |
| 11                                  | OUTPUT LEVEL     | - ditto -                                          | 100 MHz<br>1 kHz (Mod)<br>75 kHz (Dev)<br>60 dB                                            | 100 MHz       | SSVM & scope to FM DET OUT                        | VRg10              | Adjust OUTPUT LEVEL to 300 mV                                         |
| 12                                  | SEPARATION       | RF-SG to ANT terminal<br>MPX-SG to RF-SG ext. Mod. | MPX-SG:<br>SELECTOR → L or R<br>1 kHz (Mod)<br>RF-SG:<br>100 MHz, 60 dB<br>68.25 kHz (Dev) | - ditto -     | SSVM & scope to output jack (R)                   | VRg6               | Minimum deflection                                                    |
|                                     |                  |                                                    |                                                                                            |               | SSVM & scope to output jack (L)                   | VRg5               | Minimum deflection                                                    |
| 13                                  | DISTORTION       | - ditto -                                          | MPX-SG:<br>SELECTOR → L + R<br>1 kHz (Mod)<br>RF-SG:<br>100 MHz, 60 dB<br>75 kHz (Dev)     | - ditto -     | SSVM, scope & distortion meter to output jack (L) | Ta6                | Minimum distortion                                                    |
| 14                                  | DEVIATION METER  | RF-SG to ANT terminal via dummy ant.               | 100 MHz<br>1 kHz (Mod)<br>75 kHz (Dev)<br>60 dB                                            | - ditto -     | D meter                                           | VRg8               | 100% deflection                                                       |
| AM SECTION                          |                  |                                                    |                                                                                            |               |                                                   |                    |                                                                       |
| 1                                   | IF               | RF-SG to ANT terminal via dummy ant.               | 1000 kHz<br>400 Hz, 30% (Mod)<br>100 dB                                                    | 1000 kHz      | SSVM & scope to output jack (L)                   | L14                | Maximum deflection                                                    |
| 2                                   | TRACKING         | - ditto -                                          | 600 kHz<br>400 Hz, 30% (Mod)<br>100 dB                                                     | 600 kHz       | - ditto -                                         | L13<br>Bar antenna | - ditto -                                                             |
| 3                                   |                  |                                                    | 1400 kHz<br>400 Hz, 30% (Mod)<br>100 dB                                                    | 1400 kHz      |                                                   | TCa6, 7            |                                                                       |



AM UNIT  
(X03-1020-10)



FM TUNER  
(X05-1350-10)



RF UNIT  
(X01-1220-10)

# DESTINATIONS' PARTS LIST

\* : new parts

| Ref. No. | U.S.A. (K)      | Canada (P)      | PX (U)          | Australia (X)   | Europe (W)      | Scandinavia (L) | England (T)     | Other Area (M)  | KT-9900 (M2)    | Description                           |
|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------------------------------|
| C3, 4    | CQ09S1H-202G(B) | CQ09S1H-202G(B) | CQ09S1H-202G(B) | —               | —               | —               | —               | CQ09S1H-202G(B) | CQ09S1H-202G(B) | Polystyrene capacitor 2000pF ±2%      |
| C3, 4    | —               | —               | —               | CQ09S1H-102G(B) | CQ09S1H-102G(B) | CQ09S1H-102G(B) | CQ09S1H-102G(B) | —               | —               | Polystyrene capacitor 1000pF ±2%      |
| —        | A20-1060-02     | A20-1060-02     | A20-1060-02     | A20-1060-02     | A20-1060-02     | A20-1060-02     | A20-1060-02     | A20-1060-02     | A20-1078-02     | Panel ass'y *                         |
| —        | A30-0110-02     | A30-0110-02     | A30-0110-02     | A30-0110-02     | A30-0110-02     | A30-0110-02     | A30-0111-02     | A30-0110-02     | A30-0112-02     | Dial board *                          |
| —        | B46-0056-00     | B46-0055-10     | B46-0050-00     | —               | —               | —               | —               | —               | —               | Warranty card                         |
| —        | —               | —               | B46-0051-00     | —               | —               | —               | —               | —               | —               | Warranty card                         |
| —        | B50-1513-00     | B50-1513-00     | B50-1513-00     | B50-1513-00     | B50-1513-00     | B50-1513-00     | B50-1514-00     | B50-1513-00     | B50-1545-00     | Instruction manual *                  |
| —        | —               | —               | B59-0018-00     | —               | —               | —               | —               | —               | —               | Kenwood service stations' list        |
| —        | D32-0075-04 x 1 | D32-0075-04 x 1 | D32-0075-04 x 2 | D32-0075-04 x 2 | D32-0075-04 x 2 | D32-0075-04 x 1 | D32-0075-04 x 1 | D32-0075-04 x 2 | D32-0075-04 x 2 | Switch stopper                        |
| —        | E29-0047-04     | —               | —               | —               | —               | —               | —               | —               | —               | Lead hold for bar antenna             |
| —        | E30-0181-05     | E30-0181-05     | E30-0545-05     | E30-0185-05     | E30-0459-05     | E30-0292-05     | 040-0304-05     | E30-0545-05     | E30-0545-05     | Power cord                            |
| —        | H01-1589-14     | H01-1590-14     | H01-1597-14     | H01-1589-14     | H01-1589-14     | H01-1589-14     | H01-1591-14     | H01-1589-14     | H01-1592-14     | Carton case                           |
| —        | H20-0394-04     | H20-0394-04     | H20-0394-04     | H20-0394-04     | H20-0394-04     | H20-0394-04     | H20-0394-04     | H20-0416-04     | H20-0394-04     | Polyethylene cover                    |
| —        | —               | —               | —               | —               | —               | —               | —               | H40-0004-04     | —               | Rust preventing paper                 |
| —        | J02-0073-04     | J02-0049-14     | J02-0049-14     | J02-0049-14     | J02-0049-14     | J02-0049-14     | J02-0049-14     | J02-0049-14     | J02-0049-14     | Leg x 4                               |
| —        | J41-0034-05     | J41-0034-05     | J41-0034-05     | J41-0024-15     | J41-0033-05     | J41-0033-05     | J41-0024-15     | J41-0034-05     | J41-0034-05     | Power cord bushing                    |
| —        | —               | —               | —               | —               | —               | J61-0038-05     | J61-0038-05     | —               | —               | Cord band                             |
| —        | L01-1141-05     | L01-1141-05     | L01-1145-05     | L01-1145-05     | L01-1146-05     | L01-1142-05     | L01-1147-05     | L01-1145-05     | L01-1145-05     | Power transformer                     |
| S5       | S33-2008-15     | S33-2016-05     | S33-2008-15     | S33-2008-15     | S33-2017-05     | S33-2017-05     | S33-2017-05     | S33-2016-05     | S33-2008-15     | Lever switch (POWER)                  |
| —        | —               | —               | S31-2001-05     | —               | —               | —               | —               | S31-2001-05     | S31-2001-05     | Slide switch (Power voltage selector) |
| —        | X00-1760-11     | X00-1760-11     | X00-1760-00     | X00-1760-00     | X00-1760-61     | X00-1760-61     | X00-1760-61     | X00-1760-00     | X00-1760-00     | Power supply unit                     |

# PARTS LIST

☆ : new parts

| Ref. No.             | Parts No.   | Description                      | Re-<br>marks |
|----------------------|-------------|----------------------------------|--------------|
| <b>CAPACITOR</b>     |             |                                  |              |
| C1, 2                | CK45D1H561M | Ceramic 560pF ±20%               |              |
| <b>SEMICONDUCTOR</b> |             |                                  |              |
| CN1~3                | V11-0392-05 | LED GD-4-203CD x 3               |              |
| <b>SWITCH</b>        |             |                                  |              |
| S6                   | S31-2001-05 | Slide (DIMMER)                   |              |
| S7                   | S31-2007-05 | Slide (DE-EMPHASIS)              |              |
| <b>MISCELLANEOUS</b> |             |                                  |              |
| -                    | A48-0027-03 | Side plate x 2                   |              |
| -                    | A52-0016-03 | Top plate                        |              |
| -                    | B07-0162-04 | Ring x 2                         |              |
| -                    | B10-0204-03 | Front glass                      | ☆            |
| -                    | B19-0192-04 | Lighting acryl resin board       | ☆            |
| -                    | B19-0193-04 | Lighting acryl resin board       | ☆            |
| -                    | B20-0383-03 | Dial calibrations                | ☆            |
| -                    | B21-0008-04 | Dial pointer                     |              |
| -                    | B30-0116-05 | Pilot lamp(8V 300mA fuse type)x2 |              |
| -                    | B30-0123-05 | Pilot lamp(8V 300mA white) x 3   | ☆            |
| -                    | B31-0235-05 | S meter                          |              |
| -                    | B31-0236-05 | T meter                          |              |
| -                    | B31-0247-05 | D/M meter                        | ☆            |
| -                    | B42-0009-04 | Passed sticker                   |              |
| -                    | D15-0155-03 | Dial pulley (A)                  |              |
| -                    | D15-0156-03 | Dial pulley (B)                  |              |
| -                    | D15-0160-04 | Small pulley                     |              |
| -                    | D19-0050-14 | Back plate                       |              |
| -                    | D20-0124-03 | Dial shaft ass'y                 | ☆            |
| -                    | E04-0001-05 | F-type connector                 |              |
| -                    | E05-0125-05 | F-type plug                      |              |
| -                    | E13-0212-05 | Pin jack (2P) x 3                |              |
| -                    | E29-0082-05 | Antenna terminal                 |              |
| -                    | E30-0505-05 | Audio cord                       |              |
| -                    | F99-0011-04 | Slider                           |              |
| -                    | G01-0312-04 | Spring x 2                       |              |
| -                    | G01-0314-04 | Dial spring                      |              |
| -                    | G11-0051-14 | Cushion x 2                      |              |
| -                    | H10-1348-12 | Polystyrene foamed fixture       |              |
| -                    | H10-1349-12 | Polystyrene foamed fixture       |              |
| -                    | H25-0048-03 | Polyethylene bag (110 x 250mm)   |              |
| -                    | H25-0078-00 | Instruction bag                  |              |
| -                    | H25-0096-04 | Polyethylene bag                 |              |
| -                    | J13-0034-05 | Fuse holder x 2                  |              |
| -                    | J19-0306-05 | Lead holder x 2                  |              |
| -                    | J21-0480-13 | Antenna mounting hardware        |              |
| -                    | J32-0227-04 | Boss                             | ☆            |
| -                    | J42-0065-04 | Lamp bushing x 3                 |              |
| -                    | J61-0024-05 | Wire clip (small) x 2            |              |
| -                    | J61-0045-05 | Combex x 5                       |              |
| -                    | K21-0300-04 | Knob (TUNING)                    |              |
| -                    | K23-0215-04 | Knob (MODE)                      |              |
| -                    | K23-0238-04 | Knob (LEVEL, MUTING)             |              |
| -                    | K27-0039-04 | Knob (POWER)                     |              |
| -                    | K29-0247-04 | Knob (Pushbutton) x 2            |              |
| -                    | L19-0009-05 | Salun transformer                |              |
| -                    | N08-0125-05 | Dress screw (8 mm) x 8           |              |
| -                    | N09-0100-14 | Screw (small pulley) x 5         |              |

| Ref. No. | Parts No.   | Description       | Re-<br>marks |
|----------|-------------|-------------------|--------------|
| -        | T90-0002-05 | FM indoor antenna |              |
| -        | T90-0031-05 | AM bar antenna    |              |
| -        | X01-1220-00 | FM front-end      | ☆            |
| -        | X03-1020-10 | AM tuner unit     | ☆            |
| -        | X05-1350-10 | FM tuner unit     | ☆            |

## POWER SUPPLY (X00-1760-11, -61)

| Ref. No.             | Parts No.     | Description                    | Re-<br>marks |
|----------------------|---------------|--------------------------------|--------------|
| <b>CAPACITOR</b>     |               |                                |              |
| Ck1~4                | CK45E2H103P   | Ceramic 0.01μF 500WV           |              |
| Ck5                  | C90-0325-05   | Electrolytic 2200μF 25WV       |              |
| Ck6                  | CE04W1E471EL  | Electrolytic 470μF 25WV        |              |
| Ck7                  | CE04W1E221EL  | Electrolytic 220μF 25WV        |              |
| Ck8                  | CE04W1E101EL  | Electrolytic 100μF 25WV        |              |
| Ck9,10               | CQ93M1H223M   | Mylar 0.022μF ±20%             |              |
| Ck11                 | CE04W1C471EL  | Electrolytic 470μF 16WV        |              |
| Ck12                 | CE04W1C221EL  | Electrolytic 220μF 16WV        |              |
| Ck13                 | CS15E1E3R3M   | Tantalum 3.3μF 25WV            |              |
| Ck14                 | CS15E1E6R8M   | Tantalum 6.8μF 25WV            |              |
| Ck15                 | C91-0001-05   | Ceramic 0.01μF 125WV           | -11          |
|                      | CK45E3D103PMU | Ceramic 0.01μF 2kWV            | -61          |
| <b>RESISTOR</b>      |               |                                |              |
| Rk1                  | PD14BY2E183J  | Carbon 180Ω ±5% 1/4W           |              |
| Rk2                  | PD14BY2E471J  | Carbon 470Ω ±5% 1/4W           |              |
| Rk3                  | PD14BY2E181J  | Carbon 180Ω ±5% 1/4W           |              |
| Rk4                  | PD14BY2E331J  | Carbon 330Ω ±5% 1/4W           |              |
| Rk5                  | RN14AB3D4R7JB | Metal film 4.7Ω ±5% 2W         |              |
| Rk6                  | PD14BY2E824J  | Carbon 820kΩ ±5% 1/4W          |              |
| Rk7                  | PD14BY2E182J  | Carbon 1.8kΩ ±5% 1/4W          |              |
| Rk8                  | RC05GF2H225K  | Carbon 2.2MΩ ±10% 1/2W         | -11          |
| <b>SEMICONDUCTOR</b> |               |                                |              |
| Qk1                  | V03-0343-05   | Transistor 2SC1419 (C)         |              |
| Qk2                  | V01-0116-05   | Transistor 2SA755 (C)          |              |
| Qk3                  | V03-0270-05   | Transistor 2SC945 (Q) or (R)   |              |
| Dk1                  | V11-0252-05   | Diode 1SRB10 (100V, 1A)        |              |
| Dk2, 3               | V11-0295-05   | Diode W06B (100V, 0.75A)       |              |
| Dk4                  | V11-0273-05   | Diode 1S2076 (30V, 150mA)      |              |
| DZk1,2               | V11-0254-05   | Zener diode YZ-140(14V, 500mW) |              |
| <b>MISCELLANEOUS</b> |               |                                |              |
| Fk1,2                | F05-8018-05   | Fuse 800mA (UL) x 2            | -11          |
|                      | F05-8012-05   | Fuse 800mA (S) x 2             | -61          |
|                      | F05-8015-05   | Fuse 800mA (J) x 2             | -00          |
| Fk3                  | F05-3021-06   | Fuse 3A (UL)                   | -11          |
|                      | F05-3122-05   | Fuse 3.15A (S)                 | -61          |
|                      | F05-3022-05   | Fuse 3A (J)                    | -00          |
| -                    | J13-0020-05   | Fuse holder (φ6 x 30) x 6      | -00 -11      |
| -                    | J13-0039-05   | Fuse holder (φ5 x 20) x 6      | -61          |

## FM FRONT-END (X01-1220-10)

| Ref. No.         | Parts No.    | Description               | Re-<br>marks |
|------------------|--------------|---------------------------|--------------|
| <b>CAPACITOR</b> |              |                           |              |
| Ca1              | CC45CH1H080D | Ceramic 8pF ±0.5pF        |              |
| Ca2              | CC45SL1H330J | Ceramic 33pF ±5%          |              |
| Ca3,4            | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Ca5              | CC45SL1H150J | Ceramic 15pF ±5%          |              |
| Ca6              | CC45CH1H120J | Ceramic 12pF ±5%          |              |
| Ca7              | CC45CH1H100J | Ceramic 10pF ±5%          |              |
| Ca8              | CC45SL1H080D | Ceramic 8pF ±0.5pF        |              |
| Ca9,10           | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Ca11             | CC45SL1H150J | Ceramic 15pF ±5%          |              |
| Ca12             | CC45CH1H120J | Ceramic 12pF ±5%          |              |

# PARTS LIST

| Ref. No. | Parts No.    | Description               | Re-<br>marks |
|----------|--------------|---------------------------|--------------|
| Ca13     | C91-0020-05  | Ceramic 0.68pF ±20%       |              |
| Ca14     | CC45SL1H150J | Ceramic 15pF ±5%          |              |
| Ca15     | CC45CH1H120J | Ceramic 12pF ±5%          |              |
| Ca16     | CC45SL1H221K | Ceramic 220pF ±10%        |              |
| Ca17     | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Ca18     | CC45CH1H220J | Ceramic 22pF ±5%          |              |
| Ca19     | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Ca20     | CQ93M1H103K  | Mylar 0.01μF ±10%         |              |
| Ca21     | CC45CH1H060D | Ceramic 6pF ±0.5pF        |              |
| Ca22     | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |

## RESISTOR

|         |              |                       |  |
|---------|--------------|-----------------------|--|
| Ra1     | PD14CY2E154J | Carbon 150kΩ ±5% 1/4W |  |
| Ra2     | PD14CY2E473J | Carbon 47kΩ ±5% 1/4W  |  |
| Ra3     | PD14CY2E104J | Carbon 100kΩ ±5% 1/4W |  |
| Ra4     | PD14CY2E824J | Carbon 820kΩ ±5% 1/4W |  |
| Ra5     | PD14CY2E221J | Carbon 220Ω ±5% 1/4W  |  |
| Ra6     | PD14CY2E682J | Carbon 6.8kΩ ±5% 1/4W |  |
| Ra7     | PD14CY2E154J | Carbon 150kΩ ±5% 1/4W |  |
| Ra8     | PD14CY2E473J | Carbon 47kΩ ±5% 1/4W  |  |
| Ra9     | PD14CY2E104J | Carbon 100kΩ ±5% 1/4W |  |
| Ra10    | PD14CY2E221J | Carbon 220Ω ±5% 1/4W  |  |
| Ra11,12 | PD14CY2E104J | Carbon 100kΩ ±5% 1/4W |  |
| Ra13    | PD14CY2E820J | Carbon 82Ω ±5% 1/4W   |  |
| Ra14    | PD14CY2E682J | Carbon 6.8kΩ ±5% 1/4W |  |
| Ra15    | PD14CY2E562J | Carbon 5.6kΩ ±5% 1/4W |  |
| Ra16    | PD14CY2E682J | Carbon 6.8kΩ ±5% 1/4W |  |
| Ra17    | PD14CY2E391J | Carbon 390Ω ±5% 1/4W  |  |
| Ra18    | PD14CY2E102J | Carbon 1kΩ ±5% 1/4W   |  |
| Ra19    | PD14CY2E104J | Carbon 100kΩ ±5% 1/4W |  |

## SEMICONDUCTOR

|       |             |               |  |
|-------|-------------|---------------|--|
| Qa1,2 | V09-0108-05 | FET SD306     |  |
| Qa3   | V09-0103-05 | FET 3SK49 (R) |  |

## TRIMMER / COIL

|        |             |                 |  |
|--------|-------------|-----------------|--|
| TCa1~5 | C05-0010-15 | Ceramic trimmer |  |
| TCa6,7 | C05-0013-15 | Ceramic trimmer |  |
| Ta1    | L31-0377-05 | FM ANT coil     |  |
| Ta2    | L31-0382-05 | FM RF coil      |  |
| Ta3    | L31-0379-05 | FM RF coil      |  |
| Ta4,5  | L31-0382-05 | FM RF coil      |  |
| Ta6    | L30-0246-05 | FM IFT          |  |
| La1,2  | L33-0025-05 | Choke coil      |  |
| La3    | L40-1091-41 | Ferri-inductor  |  |

## MISCELLANEOUS

|   |             |                    |   |
|---|-------------|--------------------|---|
| — | C01-0195-05 | Variable capacitor | ☆ |
| — | E29-0086-04 | Lead plate         | ☆ |

## AM TUNER (X03-1020-10)

| Ref. No.  | Parts No.    | Description               | Re-<br>marks |
|-----------|--------------|---------------------------|--------------|
| CAPACITOR |              |                           |              |
| Cf1       | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Cf3       | CE04W1C101   | Electrolytic 100μF 16WV   |              |
| Cf4       | CE04W1E4R7   | Electrolytic 4.7μF 25WV   |              |
| Cf5       | CE04W1C100   | Electrolytic 10μF 16WV    |              |
| Cf6       | CE04W1H010   | Electrolytic 1μF 50WV     |              |
| Cf7       | CC45SL1H150K | Ceramic 15pF ±10%         |              |
| Cf8       | CQ93M1H102K  | Mylar 0.001μF ±10%        |              |
| Cf9       | CC45SL1H150K | Ceramic 15pF ±10%         |              |
| Cf10      | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Cf11      | CQ09S1H361J  | Polystyrene 360pF ±5%     |              |
| Cf12~14   | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Cf15      | CQ93M1H683K  | Mylar 0.068μF ±10%        |              |
| Cf16      | CE04W1H010   | Electrolytic 1μF 50WV     |              |

| Ref. No. | Parts No.    | Description               | Re-<br>marks |
|----------|--------------|---------------------------|--------------|
| Cf17     | CK45F1H103Z  | Ceramic 0.01μF +80%, -20% |              |
| Cf18     | CC45SL1H470K | Ceramic 47pF ±10%         |              |

## RESISTOR

|       |              |                       |  |
|-------|--------------|-----------------------|--|
| Rf2   | PD14BY2B272J | Carbon 2.7kΩ ±5% 1/8W |  |
| Rf3   | PD14BY2B122J | Carbon 1.2kΩ ±5% 1/8W |  |
| Rf4   | PD14BY2B101J | Carbon 100Ω ±5% 1/8W  |  |
| Rf5   | PD14BY2B682J | Carbon 6.8kΩ ±5% 1/8W |  |
| Rf6,7 | PD14BY2B103J | Carbon 10kΩ ±5% 1/8W  |  |
| Rf8   | PD14BY2B222J | Carbon 2.2kΩ ±5% 1/8W |  |
| Rf9   | PD14BY2B104J | Carbon 100kΩ ±5% 1/8W |  |
| Rf10  | PD14BY2B222J | Carbon 2.2kΩ ±5% 1/8W |  |
| Rf11  | PD14BY2B562J | Carbon 5.6kΩ ±5% 1/8W |  |
| Rf12  | PD14BY2B104J | Carbon 100kΩ ±5% 1/8W |  |
| Rf13  | PD14BY2B391J | Carbon 390Ω ±5% 1/8W  |  |
| Rf14  | PD14BY2B183J | Carbon 18kΩ ±5% 1/8W  |  |

## SEMICONDUCTOR

|      |             |                       |  |
|------|-------------|-----------------------|--|
| ICf1 | V30-0134-05 | IC HA1151             |  |
| Qf2  | V03-0270-05 | Transistor 2SC945 (Q) |  |
| Df1  | V11-0076-05 | Diode 1S1555          |  |

## COIL / INDUCTOR / FILTER

|     |             |                |  |
|-----|-------------|----------------|--|
| Lf1 | L40-1021-43 | Inductor 1 mH  |  |
| Lf2 | L30-0284-05 | IFT            |  |
| Lf3 | L32-0181-05 | OSC coil       |  |
| Lf4 | L72-0036-05 | Ceramic filter |  |

## FM TUNER (X05-1350-10)

| Ref. No. | Parts No. | Description | Re-<br>marks |
|----------|-----------|-------------|--------------|
|----------|-----------|-------------|--------------|

## CAPACITOR

|         |               |                           |  |
|---------|---------------|---------------------------|--|
| Cg1~33  | CK45F1H103Z   | Ceramic 0.01μF +80%, -20% |  |
| Cg34    | CQ93M1H562J   | Mylar 5600pF ±5%          |  |
| Cg35,36 | CK45F1H103Z   | Ceramic 0.01μF +80%, -20% |  |
| Cg37    | CK45D1H561M   | Ceramic 560pF ±20%        |  |
| Cg38    | CE04W1H010    | Electrolytic 1μF 50WV     |  |
| Cg39    | CE04W1H3R3    | Electrolytic 3.3μF 50WV   |  |
| Cg40    | CE04W1H010    | Electrolytic 1μF 50WV     |  |
| Cg41~45 | CK45F1H103Z   | Ceramic 0.01μF +80%, -20% |  |
| Cg46    | CE04W1H010MBR | Electrolytic 1μF 50WV     |  |
| Cg47    | CE04W1H3R3MBR | Electrolytic 3.3μF 50WV   |  |
| Cg48    | CE04W1H010MBR | Electrolytic 1μF 50WV     |  |
| Cg49,50 | CK45F1H103Z   | Ceramic 0.01μF +80%, -20% |  |
| Cg51    | CE04W1C221    | Electrolytic 220μF 16WV   |  |
| Cg52    | CE04W1C101    | Electrolytic 100μF 16WV   |  |
| Cg53    | CE04W1C100MBR | Electrolytic 10μF 16WV    |  |
| Cg54,55 | CE04W1H010MBR | Electrolytic 1μF 50WV     |  |
| Cg56    | CE04W1H3R3    | Electrolytic 3.3μF 50WV   |  |
| Cg57    | CE04W1E100    | Electrolytic 10μF 25WV    |  |
| Cg58    | CE04W1H3R3MBR | Electrolytic 3.3μF 50WV   |  |
| Cg59    | CE04W1C470MBR | Electrolytic 47μF 16WV    |  |
| Cg60    | CE04W1H3R3MBR | Electrolytic 3.3μF 50WV   |  |
| Cg61    | CE04W1C470MBR | Electrolytic 47μF 16WV    |  |
| Cg62    | CQ93M1H103K   | Mylar 0.01μF ±10%         |  |
| Cg63    | CC45SL1H101K  | Ceramic 100pF ±10%        |  |
| Cg64    | CQ93M1H103K   | Mylar 0.01μF ±10%         |  |
| Cg65    | CE04W1H010    | Electrolytic 1μF 50WV     |  |
| Cg66    | CQ93M1H334M   | Mylar 0.33μF ±20%         |  |
| Cg67    | CE04W1C100MBR | Electrolytic 10μF 16WV    |  |
| Cg68    | CE04W1C470MBR | Electrolytic 47μF 16WV    |  |
| Cg69    | CQ09S1H361J   | Polystyrene 360pF ±5%     |  |
| Cg70    | CE04W1C470    | Electrolytic 47μF 16WV    |  |
| Cg71,72 | CE04W1H010MBR | Electrolytic 1μF 50WV     |  |
| Cg73~76 | CC45SL1H270K  | Ceramic 27pF ±10%         |  |
| Cg77,78 | CE04W1C101    | Electrolytic 100μF 16WV   |  |
| Cg79,80 | CE04W1H010MBR | Electrolytic 1μF 50WV     |  |
| Cg81,82 | CC45SL1H330K  | Ceramic 33pF ±10%         |  |
| Cg83,84 | CQ09S1H102GB  | Polystyrene 1000pF ±2%    |  |
| Cg85~88 | CQ93M1H154K   | Mylar 0.15μF ±10%         |  |
| Cg89,90 | CE04W1A470EL  | Electrolytic 47μF 10WV    |  |

# PARTS LIST

| Ref. No.  | Parts No.      | Description                | Re-<br>marks | Ref. No.  | Parts No.       | Description               | Re-<br>marks |
|-----------|----------------|----------------------------|--------------|-----------|-----------------|---------------------------|--------------|
| Cg91      | CQ93M1H223K    | Mylar 0.022μF ±10%         |              | Rg55      | PD14BY2B103JKW  | Carbon 10kΩ ±5% 1/8W      |              |
| Cg92      | CE04W1H010     | Electrolytic 1μF 50WV      |              | Rg56      | PD14BY2B224JKW  | Carbon 220kΩ ±5% 1/8W     |              |
| Cg93      | CK45D1H391M    | Ceramic 390pF ±20%         |              | Rg57      | R92-0161-05     | Carbon 3.9kΩ ±5% 1/8W     |              |
| Cg94      | CE04W1H010     | Electrolytic 1μF 50WV      |              | Rg58,59   | RN14AB2E562JMA  | Metal film 5.6kΩ ±5% 1/4W |              |
| Cg95      | CQ93M1H473M    | Mylar 0.047μF 50WV         |              | Rg60      | PD14BY2B471JKW  | Carbon 470Ω ±5% 1/8W      |              |
| Cg96      | CE04W1E100     | Electrolytic 10μF 25WV     |              | Rg61      | PD14BY2B471JKW  | Carbon 470Ω ±5% 1/8W      |              |
| Cg97      | CE04W1A101     | Electrolytic 100μF 10WV    |              | Rg62      | PD14BY2B472JKW  | Carbon 4.7kΩ ±5% 1/8W     |              |
| Cg98      | CC45SL1H270K   | Ceramic 27pF ±10%          |              | Rg63,64   | PD14BY2B473JKW  | Carbon 47kΩ ±5% 1/8W      |              |
| Cg101~103 | CK45F1H103Z    | Ceramic 0.01μF +80%, -20%  |              | Rg65      | PD14BY2B273JKW  | Carbon 27kΩ ±5% 1/8W      |              |
| Cg104     | CC45SL1H030C   | Ceramic 3pF ±0.25pF        |              | Rg66      | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Cg105     | CK45F1H473Z    | Ceramic 0.047μF +80%, -20% |              | Rg67      | PD14BY2B103JKW  | Carbon 10kΩ ±5% 1/8W      |              |
| Cg106     | CK45F1H103Z    | Ceramic 0.01μF +80%, -20%  |              | Rg68,69   | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Cg107     | CC45SL1H050C   | Ceramic 5pF ±0.25pF        |              | Rg71,72   | PD14BY2B103JKW  | Carbon 10kΩ ±5% 1/8W      |              |
| Cg108,109 | CK45F1H103Z    | Ceramic 0.01μF +80%, -20%  |              | Rg73      | PD14BY2B562JKW  | Carbon 5.6kΩ ±5% 1/8W     |              |
| Cg110     | CC45SL1H050C   | Ceramic 5pF ±0.25pF        |              | Rg74      | PD14BY2B101JKW  | Carbon 100Ω ±5% 1/8W      |              |
| Cg111     | CK45F1H103Z    | Ceramic 0.01μF +80%, -20%  |              | Rg75,76   | PD14BY2B103JKW  | Carbon 10kΩ ±5% 1/8W      |              |
| Cg112     | CE04W1C101     | Electrolytic 100μF 16WV    |              | Rg77,78   | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Cg114     | CK45F1H103Z    | Ceramic 0.01μF +80%, -20%  |              | Rg79      | RN14AB2E562JMA  | Metal film 5.6kΩ ±5% 1/4W |              |
| Cg115     | CS15E1VR22M    | Tantalum 0.22μF 35WV       |              | Rg80      | PD14BY2B271JKW  | Carbon 270Ω ±5% 1/8W      |              |
| Cg116,117 | CE04W1C100MBR  | Electrolytic 10μF 16WV     |              | Rg81      | PD14BY2B103JKW  | Carbon 10kΩ ±5% 1/8W      |              |
| RESISTOR  |                |                            |              | Rg82,83   | PD14BY2B562JKW  | Carbon 5.6kΩ ±5% 1/8W     |              |
| Rg1       | PD14BY2B471JKW | Carbon 470Ω ±5% 1/8W       |              | Rg84      | PD14BY2B272JKW  | Carbon 2.7kΩ ±5% 1/8W     |              |
| Rg2       | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg85      | PD14BY2B184JKW  | Carbon 180kΩ ±5% 1/8W     |              |
| Rg3       | PD14BY2B561JKW | Carbon 560Ω ±5% 1/8W       |              | Rg86      | PD14BY2B273JKW  | Carbon 27kΩ ±5% 1/8W      |              |
| Rg4       | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W        |              | Rg87      | PD14BY2B272JKW  | Carbon 2.7kΩ ±5% 1/8W     |              |
| Rg5       | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg88      | PD14BY2B561JKW  | Carbon 560Ω ±5% 1/8W      |              |
| Rg6       | PD14BY2B561JKW | Carbon 560Ω ±5% 1/8W       |              | Rg89      | PD14BY2B271JKW  | Carbon 270Ω ±5% 1/8W      |              |
| Rg7       | PD14BY2B122JKW | Carbon 1.2kΩ ±5% 1/8W      |              | Rg90,91   | PD14BY2B333JKW  | Carbon 33kΩ ±5% 1/8W      |              |
| Rg8       | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg92      | PD14BY2E824JKW  | Carbon 820kΩ ±5% 1/8W     |              |
| Rg9,10    | PD14BY2B331JKW | Carbon 330Ω ±5% 1/8W       |              | Rg93      | PD14BY2E274JKW  | Carbon 270kΩ ±5% 1/8W     |              |
| Rg11      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg94,95   | PD14BY2B153JKW  | Carbon 15kΩ ±5% 1/8W      |              |
| Rg12,13   | PD14BY2B331JKW | Carbon 330Ω ±5% 1/8W       |              | Rg96      | PD14BY2B181JKW  | Carbon 180Ω ±5% 1/8W      |              |
| Rg14      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg97      | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Rg15      | PD14BY2B331JKW | Carbon 330Ω ±5% 1/8W       |              | Rg98      | PD14BY2B101JKW  | Carbon 100Ω ±5% 1/8W      |              |
| Rg16      | PD14BY2B561JKW | Carbon 560Ω ±5% 1/8W       |              | Rg99      | PD14BY2B222JKW  | Carbon 2.2kΩ ±5% 1/8W     |              |
| Rg17      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg100,101 | PD14BY2B822JKW  | Carbon 8.2kΩ ±5% 1/8W     |              |
| Rg21      | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W        |              | Rg102,103 | PD14BY2B103JKW  | Carbon 10kΩ ±5% 1/8W      |              |
| Rg22      | PD14BY2B122JKW | Carbon 1.2kΩ ±5% 1/8W      |              | Rg104~107 | PD14BY2B154JKW  | Carbon 150kΩ ±5% 1/8W     |              |
| Rg23      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg108     | PD14BY2B562JKW  | Carbon 5.6kΩ ±5% 1/8W     |              |
| Rg24      | PD14BY2B122JKW | Carbon 1.2kΩ ±5% 1/8W      |              | Rg109     | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Rg25      | PD14BY2B561JKW | Carbon 560Ω ±5% 1/8W       |              | Rg110     | PD14BY2B562JKW  | Carbon 5.6kΩ ±5% 1/8W     |              |
| Rg26      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg111     | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Rg27      | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W        |              | Rg112     | PD14BY2B562JKW  | Carbon 5.6kΩ ±5% 1/8W     |              |
| Rg28      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg113     | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Rg29      | PD14BY2B103JKW | Carbon 10kΩ ±5% 1/8W       |              | Rg114     | PD14BY2B562JKW  | Carbon 5.6kΩ ±5% 1/8W     |              |
| Rg30      | PD14BY2B222JKW | Carbon 2.2kΩ ±5% 1/8W      |              | Rg115     | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Rg31      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg116     | PD14BY2B102JKW  | Carbon 1kΩ ±5% 1/8W       |              |
| Rg32      | PD14BY2B103JKW | Carbon 10kΩ ±5% 1/8W       |              | Rg117,118 | PD14BY2B104JKW  | Carbon 100kΩ ±5% 1/8W     |              |
| Rg33      | PD14BY2B123JKW | Carbon 12kΩ ±5% 1/8W       |              | Rg119,120 | PD14BY2B332JKW  | Carbon 3.3kΩ ±5% 1/8W     |              |
| Rg34      | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W        |              | Rg121,122 | PD14BY2B222JKW  | Carbon 2.2kΩ ±5% 1/8W     |              |
| Rg35      | PD14BY2B332JKW | Carbon 3.3kΩ ±5% 1/8W      |              | Rg123,124 | PD14BY2E332JKW  | Carbon 3.3kΩ ±5% 1/4W     |              |
| Rg36      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg125,126 | RN14BK2E303KFMA | Metal film 30kΩ ±1% 1/4W  |              |
| Rg37      | PD14BY2B822JKW | Carbon 8.2kΩ ±5% 1/8W      |              | Rg127,128 | PD14BY2E563JKW  | Carbon 56kΩ ±5% 1/4W      |              |
| Rg38      | PD14BY2B563JKW | Carbon 56kΩ ±5% 1/8W       |              | Rg129,130 | PD14BY2E272JKW  | Carbon 2.7kΩ ±5% 1/4W     |              |
| Rg39      | PD14BY2B331JKW | Carbon 330Ω ±5% 1/8W       |              | Rg131~134 | PD14BY2E124JKW  | Carbon 120kΩ ±5% 1/4W     |              |
| Rg40      | PD14BY2B222JKW | Carbon 2.2kΩ ±5% 1/8W      |              | Rg135,136 | PD14BY2E102JKW  | Carbon 1kΩ ±5% 1/4W       |              |
| Rg41      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg137,138 | PD14BY2E104JKW  | Carbon 100kΩ ±5% 1/4W     |              |
| Rg42      | PD14BY2B562JKW | Carbon 5.6kΩ ±5% 1/8W      |              | Rg139~142 | PD14BY2E222JKW  | Carbon 2.2kΩ ±5% 1/4W     |              |
| Rg43      | PD14BY2B103JKW | Carbon 10kΩ ±5% 1/8W       |              | Rg144,145 | PD14BY2B104JKW  | Carbon 100kΩ ±5% 1/8W     |              |
| Rg44      | PD14BY2B563JKW | Carbon 56kΩ ±5% 1/8W       |              | Rg146     | PD14BY2B392JKW  | Carbon 3.9kΩ ±5% 1/8W     |              |
| Rg45      | PD14BY2B104JKW | Carbon 100kΩ ±5% 1/8W      |              | Rg147     | PD14BY2B104JKW  | Carbon 100kΩ ±5% 1/8W     |              |
| Rg46      | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W       |              | Rg148,149 | PD14BY2B563JKW  | Carbon 56kΩ ±5% 1/8W      |              |
| Rg47      | PD14BY2B103JKW | Carbon 10kΩ ±5% 1/8W       |              | Rg150~153 | PD14BY2E824JKW  | Carbon 820kΩ ±5% 1/4W     |              |
| Rg48      | PD14BY2B224JKW | Carbon 220kΩ ±5% 1/8W      |              | Rg154     | PD14BY2B332JKW  | Carbon 3.3kΩ ±5% 1/8W     |              |
| Rg49      | PD14BY2E824JKW | Carbon 820kΩ ±5% 1/8W      |              | Rg155     | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Rg50      | R92-0161-05    | Carbon 3.9kΩ ±5% 1/8W      |              | Rg156     | PD14BY2B473JKW  | Carbon 47kΩ ±5% 1/8W      |              |
| Rg51      | PD14BY2B223JKW | Carbon 22kΩ ±5% 1/8W       |              | Rg157     | PD14BY2B682JKW  | Carbon 6.8kΩ ±5% 1/8W     |              |
| Rg52      | PD14BY2B103JKW | Carbon 10kΩ ±5% 1/8W       |              | Rg158,159 | PD14BY2B102JKW  | Carbon 1kΩ ±5% 1/8W       |              |
| Rg53      | PD14BY2B123JKW | Carbon 12kΩ ±5% 1/8W       |              | Rg160,161 | PD14BY2B223JKW  | Carbon 22kΩ ±5% 1/8W      |              |
| Rg54      | PD14BY2B823JKW | Carbon 82kΩ ±5% 1/8W       |              | Rg162     | PD14BY2B103JKW  | Carbon 10kΩ ±5% 1/8W      |              |
|           |                |                            |              | Rg165     | PD14BY2B101JKW  | Carbon 100Ω ±5% 1/8W      |              |

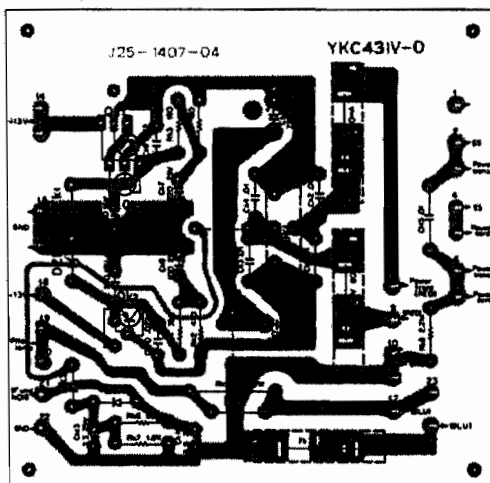


# PARTS LIST

| Ref. No.                 | Parts No.      | Description                   | Re-<br>marks |
|--------------------------|----------------|-------------------------------|--------------|
| Rg166                    | PD14BY2B682JKW | Carbon 6.8kΩ ±5% 1/8W         |              |
| Rg167,168                | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W           |              |
| Rg169,170                | PD14BY2B562JKW | Carbon 5.6kΩ ±5% 1/8W         |              |
| Rg171                    | PD14BY2B103JKW | Carbon 10kΩ ±5% 1/8W          |              |
| Rg173                    | PD14BY2B561JKW | Carbon 560Ω ±5% 1/8W          |              |
| Rg174                    | PD14BY2B223JKW | Carbon 22kΩ ±5% 1/8W          |              |
| Rg175                    | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W           |              |
| Rg176,177                | PD14BY2B122JKW | Carbon 1.2kΩ ±5% 1/8W         |              |
| Rg178                    | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W          |              |
| Rg179                    | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W           |              |
| Rg180,181                | PD14BY2B122JKW | Carbon 1.2kΩ ±5% 1/8W         |              |
| Rg182                    | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W          |              |
| Rg183                    | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W           |              |
| Rg184                    | PD14BY2B104JKW | Carbon 100kΩ ±5% 1/8W         |              |
| Rg185                    | PD14BY2B561JKW | Carbon 560Ω ±5% 1/8W          |              |
| Rg186                    | PD14BY2B223JKW | Carbon 22kΩ ±5% 1/8W          |              |
| Rg187                    | PD14BY2B561JKW | Carbon 560Ω ±5% 1/8W          |              |
| Rg188                    | PD14BY2B331JKW | Carbon 330Ω ±5% 1/8W          |              |
| Rg189                    | PD14BY2B393JKW | Carbon 39kΩ ±5% 1/8W          |              |
| Rg190                    | PD14BY2B154JKW | Carbon 150kΩ ±5% 1/8W         |              |
| Rg191                    | PD14BY2B223JKW | Carbon 22kΩ ±5% 1/8W          |              |
| Rg192                    | PD14BY2B101JKW | Carbon 100Ω ±5% 1/8W          |              |
| Rg193                    | PD14BY2B563JKW | Carbon 56kΩ ±5% 1/8W          |              |
| Rg194                    | PD14BY2B153JKW | Carbon 15kΩ ±5% 1/8W          |              |
| Rg195                    | PD14BY2B102JKW | Carbon 1kΩ ±5% 1/8W           |              |
| Rg196,197                | PD14BY2B104JKW | Carbon 100kΩ ±5% 1/8W         |              |
| SEMICONDUCTOR            |                |                               |              |
| Qg1,2                    | V09-0071-05    | FET 2SK55 (D)                 |              |
| Qg5~7                    | V03-0098-05    | Transistor 2SC535 (B)         |              |
| Qg8,9                    | V01-0084-05    | Transistor 2SA733 (P) or (Q)  |              |
| Qg10~14                  | V03-0405-05    | Transistor 2SC945 (P) or (Q)  |              |
| Qg15~17                  | V03-0309-05    | Transistor 2SC1345 (D) or (E) |              |
| Qg18,19                  | V03-0405-05    | Transistor 2SC945 (P) or (Q)  |              |
| Qg20,21                  | V09-0092-05    | FET 2SK68 (L) or (M)          |              |
| Qg22                     | V03-0271-05    | Transistor 2SC1345 (E)        |              |
| Qg23                     | V09-0092-05    | FET 2SK68 (L) or (M)          |              |
| Qg24                     | V03-0271-05    | Transistor 2SC1345 (E)        |              |
| Qg25                     | V09-0092-05    | FET 2SK68 (L) or (M)          |              |
| Qg26                     | V03-0271-05    | Transistor 2SC1345 (E)        |              |
| Qg27                     | V09-0092-05    | FET 2SK68 (L) or (M)          |              |
| Qg28                     | V03-0271-05    | Transistor 2SC1345 (E)        |              |
| Qg29,30                  | V03-0309-05    | Transistor 2SC1345 (D) or (E) |              |
| Qg31,32                  | V03-0405-05    | Transistor 2SC945 (P) or (Q)  |              |
| Qg33                     | V01-0084-05    | Transistor 2SA733 (P) or (Q)  |              |
| Qg35,36                  | V03-0098-05    | Transistor 2SC535 (B)         |              |
| Qg38                     | V03-0405-05    | Transistor 2SC945 (P) or (Q)  |              |
| Qg39                     | V03-0309-05    | Transistor 2SC1345 (D) or (E) |              |
| ICg1~7                   | V30-0087-05    | IC TA7060P                    |              |
| ICg8                     | V30-0177-05    | IC μPC577H (E) or (F)         |              |
| ICg9                     | V30-0087-05    | IC TA7060P                    |              |
| ICg10                    | V30-0088-05    | IC RC4558T                    |              |
| ICg11                    | V30-0091-05    | IC RC4558TA                   |              |
| ICg12                    | V30-0099-05    | IC HA1156W                    |              |
| ICg13                    | V30-0091-05    | IC RC4558TA                   |              |
| ICg14                    | V30-0088-05    | IC RC4558T                    |              |
| Dg1~5                    | V11-0051-05    | Diode 1N60                    |              |
| Dg6                      | V11-0076-05    | Diode 1S1555 or 1S2076        |              |
| Dg7~11                   | V11-0051-05    | Diode 1N60                    |              |
| Dg12,13                  | V11-0076-05    | Diode 1S1555 or 1S2076        |              |
| 15~18                    |                |                               |              |
| Dg19,20                  | V11-0051-05    | Diode 1N60                    |              |
| Dg21~23                  | V11-0076-05    | Diode 1S1555 or 1S2076        |              |
| POTENTIOMETER            |                |                               |              |
| VRg1                     | R12-1029-05    | PC trimmer 1kΩ                |              |
| VRg2,3                   | R12-5025-05    | PC trimmer 100kΩ              |              |
| VRg4                     | R12-0058-05    | PC trimmer 470Ω               |              |
| VRg5,6                   | R12-3041-05    | PC trimmer 10kΩ               |              |
| VRg7                     | R12-2020-05    | PC trimmer 6.8kΩ              |              |
| VRg8                     | R12-3041-05    | PC trimmer 10kΩ               |              |
| Ref. No.                 | Parts No.      | Description                   | Re-<br>marks |
| VRg9                     | R12-1029-05    | PC trimmer 1kΩ                |              |
| VRg10                    | R12-3042-05    | PC trimmer 47kΩ               |              |
| VRg11                    | R06-2008-05    | PC trimmer 5kΩ (B) x 2        | ☆            |
| VRg12                    | R12-5025-05    | PC trimmer 100kΩ              |              |
| SWITCH / RELAY           |                |                               |              |
| S1,3                     | S42-2013-05    | Pushbutton switch             | ☆            |
| S2                       | S29-1092-05    | IF BAND, METER                |              |
| S4                       | S29-1083-05    | Slide rotary switch MUTING    | ☆            |
| RLg2                     | S51-2033-05    | Slide rotary switch SELECTOR  |              |
|                          |                | Reed relay                    |              |
| COIL / INDUCTOR / FILTER |                |                               |              |
| Lg1                      | L40-2291-41    | Ferri-inductor                |              |
| Lg2,3                    | L40-2201-03    | Ferri-inductor                |              |
| Lg4 ~6                   | L30-0247-05    | FM IF coil                    |              |
| Lg7,8                    | L40-2291-41    | Ferri-inductor                |              |
| Lg9                      | L40-2201-03    | Ferri-inductor                |              |
| Lg11                     | L30-0274-05    | FM IF coil                    |              |
| Lg12                     | L40-2201-03    | Ferri-inductor                |              |
| FLg1,2                   | L79-0032-05    | FM IF LC filter               | ☆            |
| FLg3~5                   | L72-0040-05    | Ceramic filter                | ☆            |
| FLg6                     | L79-0033-05    | Low pass filter               |              |
| MISCELLANEOUS            |                |                               |              |
| -                        | E31-0027-05    | Connector (CN2)               | ☆            |
| -                        | E31-0028-05    | Connector (CN1)               | ☆            |
| -                        | E31-0029-05    | Connector (CN3)               | ☆            |
| -                        | J32-0232-04    | Hexagonal boss x 4            | ☆            |
| -                        | W02-0005-05    | FM detector unit              | ☆            |

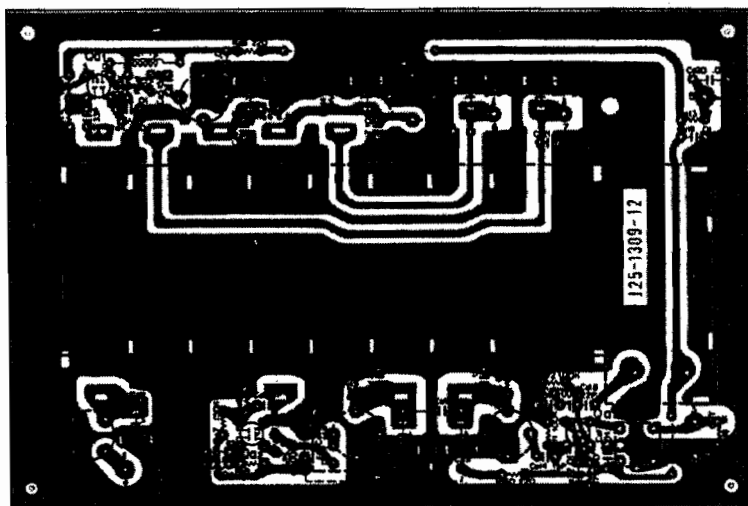
## PC BOARD

### ► POWER SUPPLY (X00-1760-11)



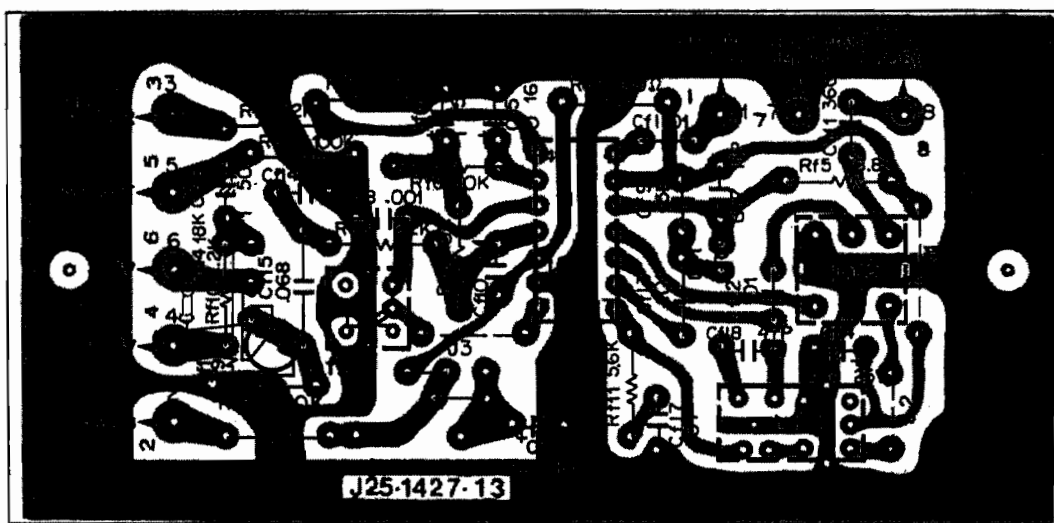
Qk1:2SC1419 (C), Qk2:2SA755 (C), Dk1:S1RB10, Qk3:2SC945 (Q) or (R)  
Dk2,3:W0-6B, Dk4:1S2076, DZk1, 2:YZ-140

### ► FM FRONT-END (X01-1220-10)



Qa1, 2:SD306, Qa3:3SK49 (R)

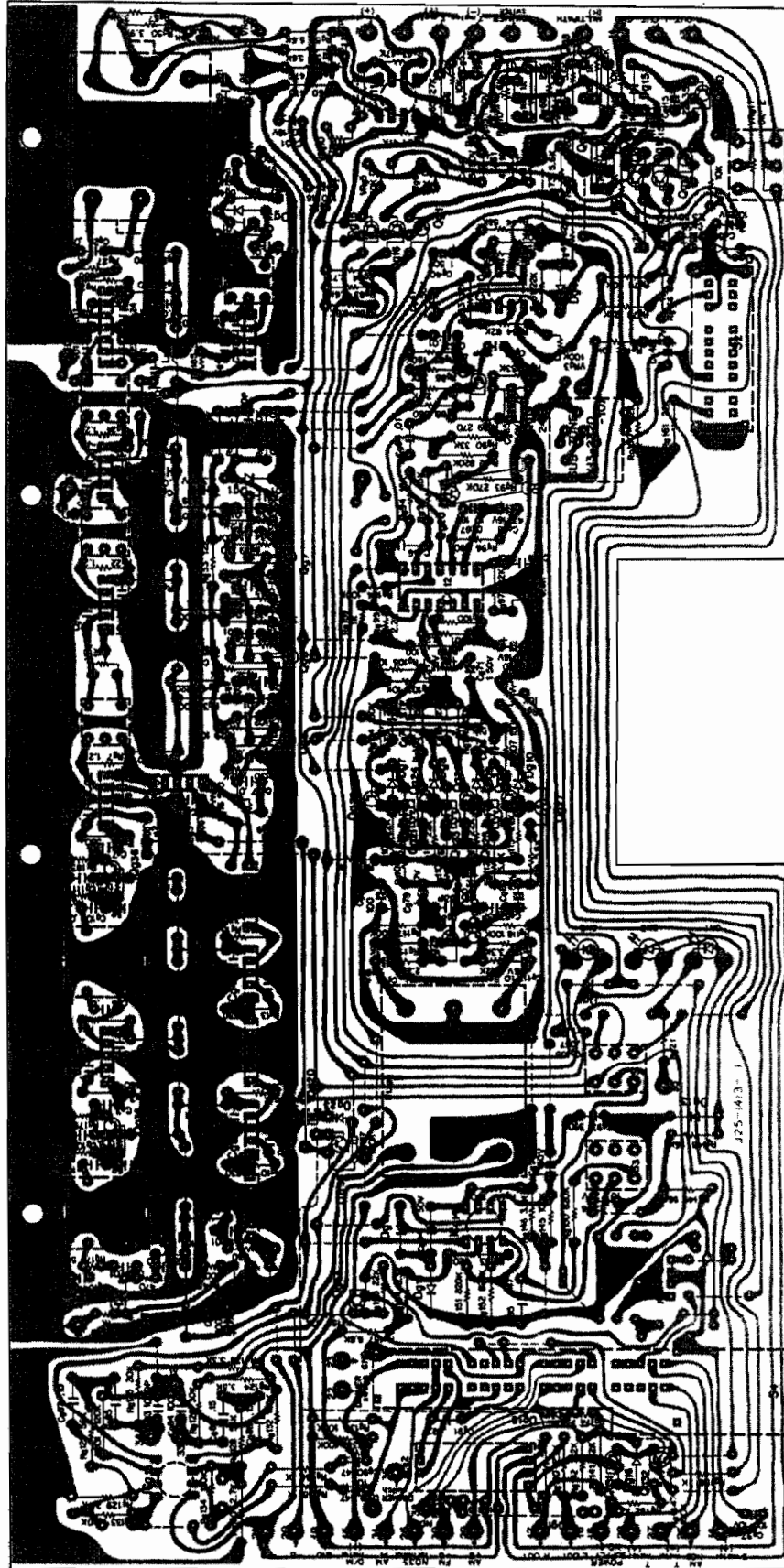
### ► AM TUNER (X03-1020-10)



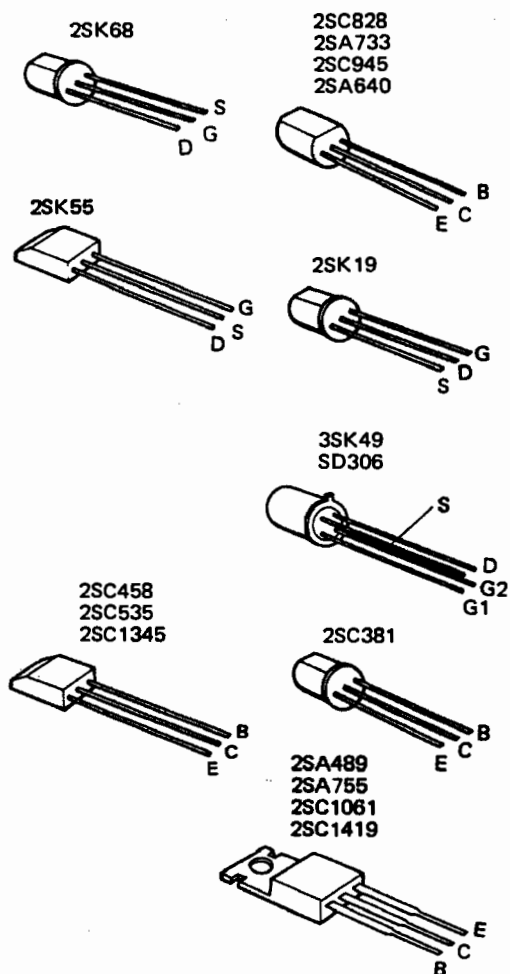
Qf2:2SC945 (Q), ICf1:HA1151, Df1:1S1555

## PC BOARD

► **FM TUNER**  
(X05-1350-10)

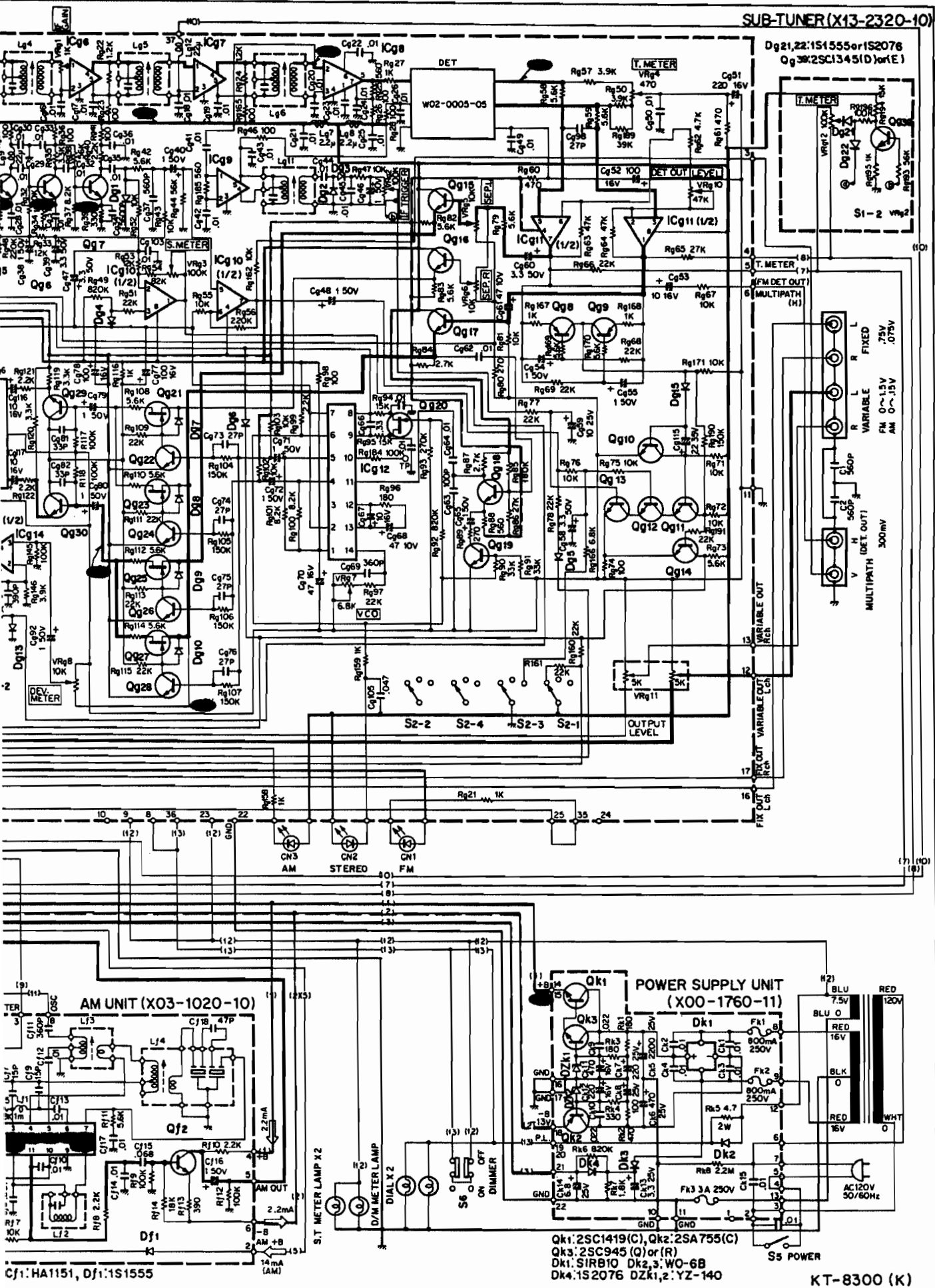


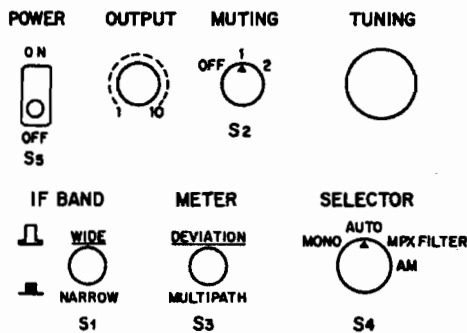
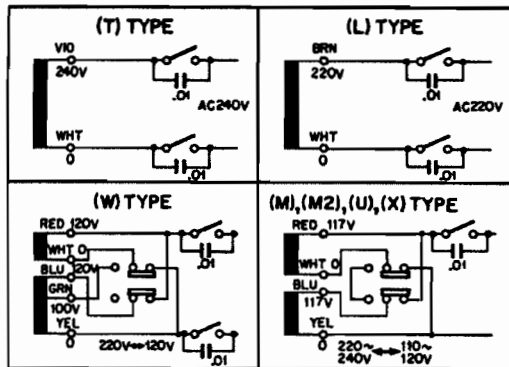
Qg1, 2:2SK55 (D), Qg10~14, 18, 19, 31, 32, 38:2SC945 (P) or (Q), Qg5~7, 35, 36:2SC535 (B), Qg8, 9, 33:2SA733 (P) or (Q), Qg15~17, 29, 30: 2SC1345 (D) or (E), Qg20, 21, 23, 25, 27:2SK68 (L) or (M), Qg22, 24, 26, 28:2SC1345 (E), ICg1~7, 9:TA7060P, ICg8:μPC577H (E) or (F), ICg10, 14:RC4558T, ICg11, 13:RC4558A, ICg12:HA1156W, Dg1~5, 7~11:1N60, Dg6, 12, 13, 15~18, 23:1S1555 or 1S2076



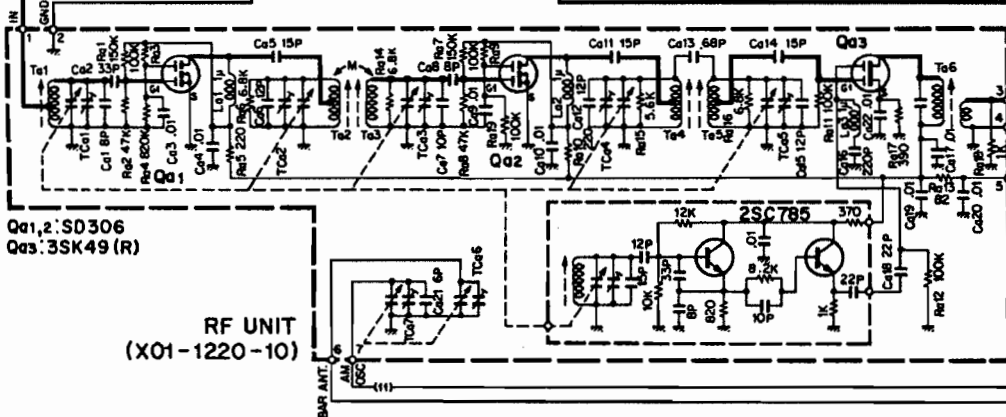
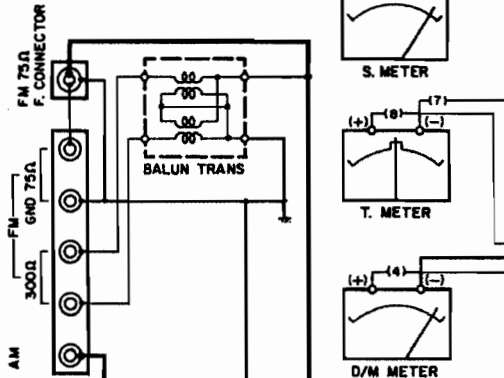
| Semiconductor name                     | Semiconductor substitutions |
|----------------------------------------|-----------------------------|
| <b>POWER SUPPLY (X00-1760-11)</b>      |                             |
| 2SA755                                 | 2SA489                      |
| 2SC945 (Q) or (R)                      | 2SC1345                     |
| 2SC1419 (C)                            | 2SC1061                     |
| <b>RF UNIT (X01-1220-10)</b>           |                             |
| SD306                                  | —                           |
| 3SK49 (R)                              | —                           |
| <b>AM UNIT (X03-1020-10)</b>           |                             |
| 2SC945 (Q)                             | 2SC1345                     |
| HA1151                                 | —                           |
| <b>IF MPX AUDIO UNIT (X05-1350-10)</b> |                             |
| 2SA733 (P) or (Q)                      | 2SA640                      |
| 2SC535 (B)                             | 2SC381                      |
| 2SC945 (P) or (Q)                      | 2SC828                      |
|                                        | 2SC1345                     |
| 2SC1345 (E)                            | 2SC1000                     |
| 2SK55                                  | 2SK19                       |
| 2SK68 (L) or (M)                       | 2SK30                       |
| HA1156W                                | —                           |
| RC4558TA                               | —                           |
| TA7060P                                | —                           |
| μPC577H (E) or (F)                     | —                           |

## SUB-TUNER (X13-2320-10)

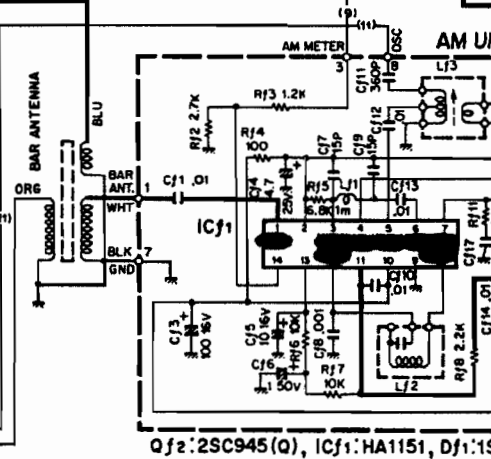
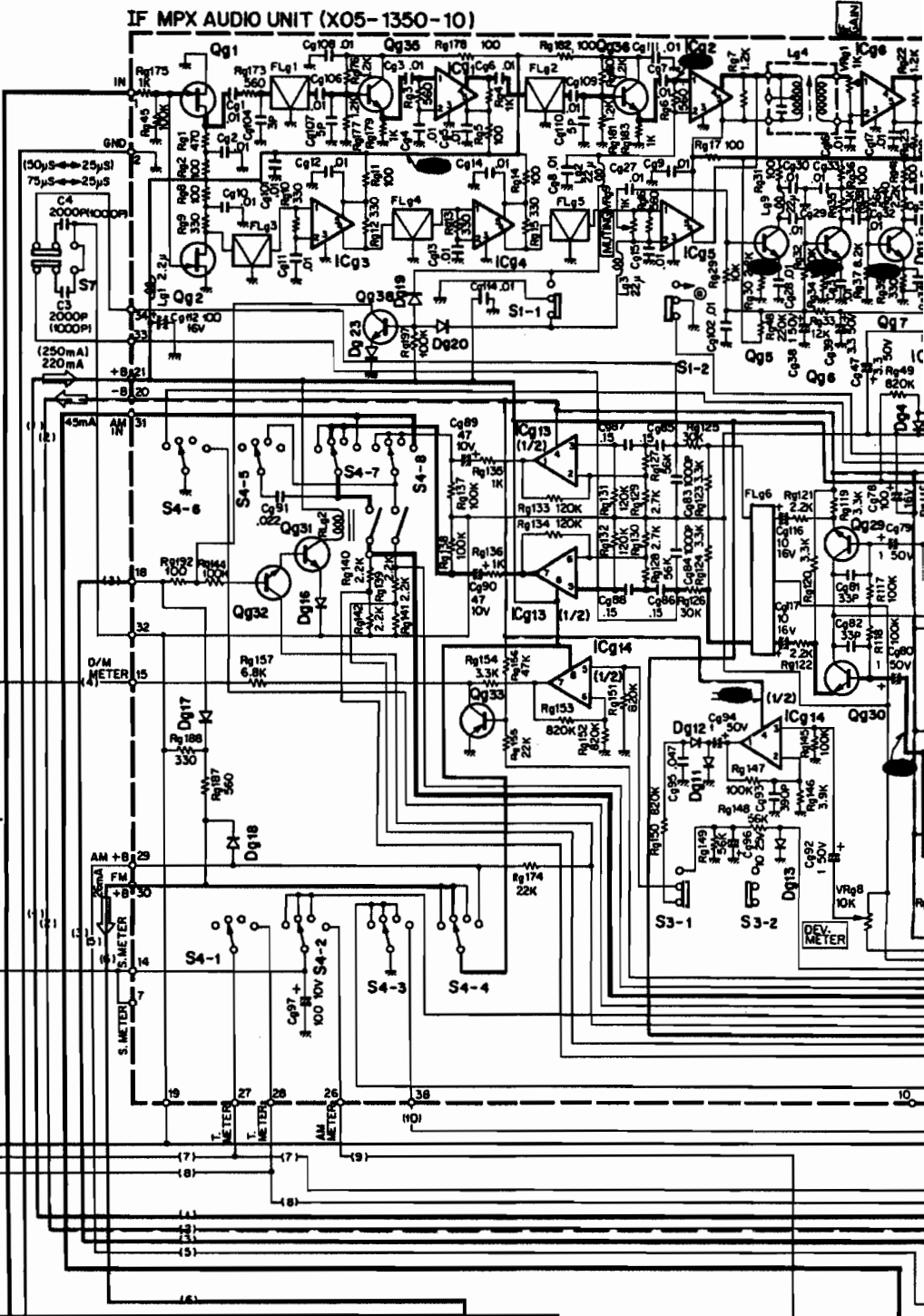




Qg1,2:2SK55(D), Qg10~14,18,19,31,32,36:2SC945(P)or(Q)  
 Qg5~7,35,36:2SC535(B), Qg8,9,33:2SA733(P)or(Q)  
 Qg15~17,29,30:2SC1345(D)or(E), Qg20,21,23,25,27:2SK68(L)  
 or(M), Qg22,24,26,28:2SC1345(E), Qg19,20:1N60  
 Dg1~5,7~11:1N60, Dg6,12,13,15~18,23:1S1555or1S2076  
 ICg1~7,9:TA7060P, ICg8:μPC577H(E)or(F), ICg10,14:RC4558T  
 ICg11,13:RC4558TA, ICg12:HA1156W



IF MPX AUDIO UNIT (X05-1350-10)





# SPECIFICATIONS/TROUBLESHOOTING

## SPECIFICATIONS

### FM TUNER SECTION

|                            |                     |                     |
|----------------------------|---------------------|---------------------|
| Usable Sensitivity         | 1.6 $\mu$ V         |                     |
| 50 dB Quieting Sensitivity | 2.8 $\mu$ V (Mono), | 30 $\mu$ V (Stereo) |
| Signal to Noise Ratio      | 78 dB (Mono),       | 75 dB (Stereo)      |
| Muting Threshold           |                     |                     |
| Muting 1                   | 7 $\mu$ V           |                     |
| Muting 2                   | 30 $\mu$ V          |                     |

### T.H. Distortion

|        |             | Mono  | Stereo |
|--------|-------------|-------|--------|
|        | 1,000Hz     | 0.08% | 0.1%   |
| Wide   | 50~10,000Hz | 0.1%  | 0.15%  |
|        | 15,000Hz    | 0.15% | 0.4%   |
| Narrow | 1,000Hz     | 0.15% | 0.4%   |

|                               |                                      |
|-------------------------------|--------------------------------------|
| Frequency Response            | 20 Hz to 15,000 Hz, +0.2 dB, -1.5 dB |
| Capture Ratio                 | 1.0 dB (Wide), 1.5 dB (Narrow)       |
| Alternate Channel Selectivity | 40 dB (Wide), 110 dB (Narrow)        |
| Spurious Response Ratio       | 110 dB                               |
| Image Response Ratio          | 110 dB                               |
| IF Response Ratio             | 110 dB                               |
| AM Suppression Ratio          | 60 dB                                |

### Stereo Separation

|        | 1,000 Hz | 50~10,000 Hz |
|--------|----------|--------------|
| Wide   | 50 dB    | 45 dB        |
| Narrow | 45 dB    | 35 dB        |

|                          |                                                         |
|--------------------------|---------------------------------------------------------|
| Subcarrier Product Ratio | 70 dB                                                   |
| SCA Rejection Ratio      | 75 dB                                                   |
| Antenna Impedance        | 300 ohms balanced &<br>75 ohms unbalanced               |
| FM Frequency Range       | 88 MHz to 108 MHz<br>88.5 MHz to 108 MHz (FTZ approved) |

### AM TUNER SECTION

|                          |            |
|--------------------------|------------|
| Usable Sensitivity (IHF) | 18 $\mu$ V |
| Signal to Noise Ratio    | 50 dB      |
| Image Rejection          | 60 dB      |
| Selectivity (IHF)        | 35 dB      |

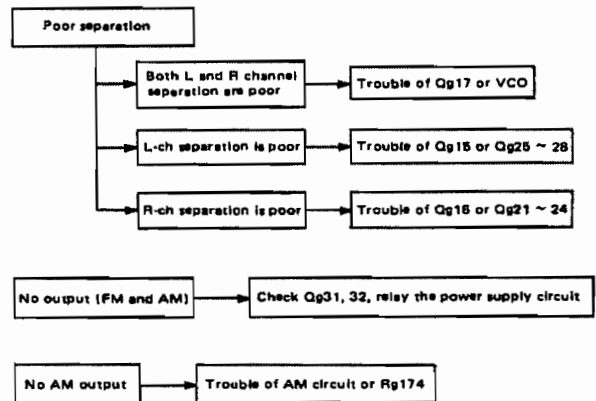
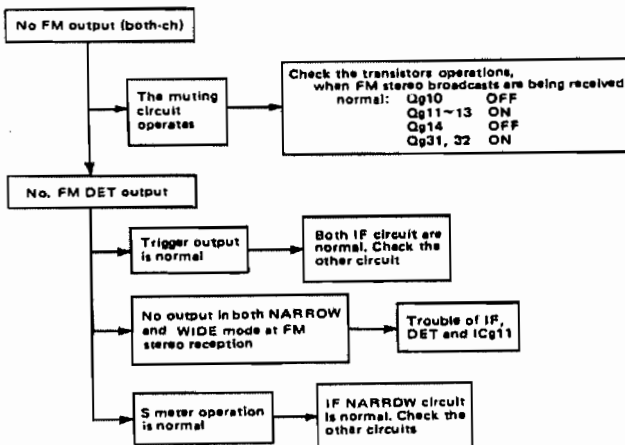
### OUTPUT LEVEL

|                        |                  |            |
|------------------------|------------------|------------|
| FM (400 Hz, 100% Mod.) | Variable 0~1.5V  | 1.2 k ohms |
|                        | Fixed 0.75V      | 1.0 k ohms |
| AM (400 Hz, 30% Mod.)  | Variable 0~0.15V | 1.2 k ohms |
|                        | Fixed 0.075V     | 1.0 k ohms |
| Multipath Output       | V: 0.1V          | H: 0.3V    |

### GENERAL

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| Power Requirement | 50/60 Hz 110~120V, 220~240V                                    |
| Power Consumption | 22 watts                                                       |
| Dimensions        | W 16-15/16" (430mm)<br>H 5-7/8" (149mm)<br>D 14-13/16" (376mm) |
| Weight            | 18.7 lbs. (8.5 kg)                                             |

## TROUBLESHOOTING



**KENWOOD ELECTRONICS, INC.**

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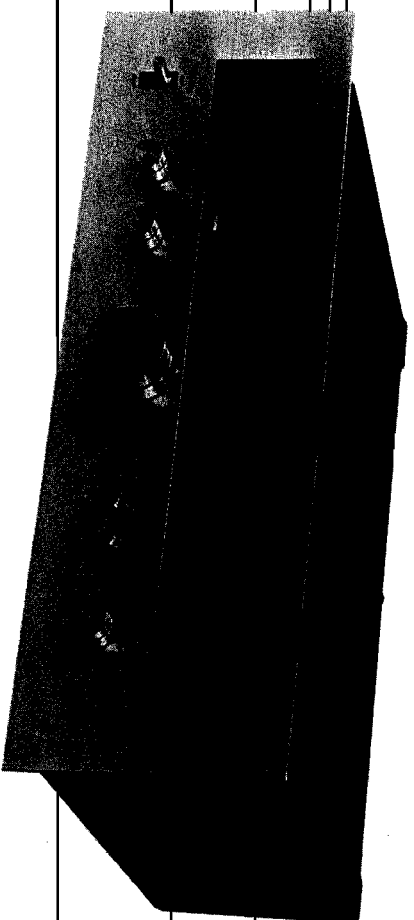
**TRIO-KENWOOD CORPORATION**

- 3-6-17 AOBADAI, MEGURO-KU, TOKYO, JAPAN.

AM-FM  
STEREO TUNER

# KT-8300

INSTRUCTION MANUAL



## INTRODUCTION

The purpose of this manual is to acquaint you with the operating features of your new tuner. You will notice that in every detail of planning, engineering, styling, operating convenience, and adaptability, we have sought to anticipate your needs and desires.

We suggest that you read this manual carefully. Knowing how to set up your tuner, to the best advantage, will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your tuner to meet your special requirements.

### CONCERNING TRANSISTORS

Transistors differ fundamentally from radio vacuum tubes and require special attention to ensure their full performance capabilities. Given proper care, transistors will provide years of practically trouble-free performance.

### PRECAUTIONS ON INSTALLATION

- (a) Avoid locations subject to direct sunlight.
- (b) Avoid high or low temperature extremes.
- (c) Keep the tuner away from heat radiating sources.

### WARNING:

**TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

## NOTES

1. Units shipped to the U.S.A. and CANADA are designed to be operated with 120 volts AC only. Units shipped to the Scandinavian countries are designed to be operated with 220 volts AC only. Units shipped to the U.K. are designed to be operated with 240 volts AC only. Therefore the above units are not equipped with an AC Voltage Selector Switch, so all reference to such a switch throughout this manual should be disregarded.
2. Units shipped to all other countries are equipped with an AC Voltage Selector Switch on the rear panel that is preset at the factory to the voltage generally available in the destination area. It is very important, however, to check the Voltage Selector Switch setting and make sure that it corresponds to your line voltage before connecting the power cord into an AC outlet. If the Voltage Selector Switch requires re-setting, follow the directions outlined on page 5.

### SERIAL NUMBER

Record your SERIAL NUMBER on the spaces designated on the warranty card. You will find the serial number on the back of the unit.

### AFTER UNPACKING

After unpacking, we recommend you inspect and examine the unit for any possible shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend you retain the original carton and packing materials to prevent any damage should you transport or ship your unit in the future.

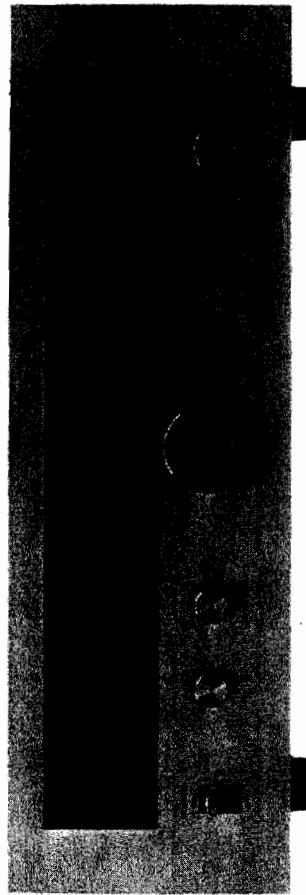
# FEATURES

1. Image response characteristic is improved by the adoption of high-accuracy 6-gang variable capacitor.
2. Cross-modulation characteristic is improved by the adoption of "Dual Gate MOS FET".
3. The IF band selector of WIDE/NARROW is installed. In the NARROW setting, high selectivity is assured by use of a 12-element phase linear ceramic filter.
4. The circuits of WIDE of the IF band are provided with LC concentrated filters. Because of their excellent group delay time characteristics, no distortion is generated in the IF stages.
5. Multiplicative Discriminator with Wide Range Linearity to 5 MHz.
6. The PLL of MPX is provided with automatic loop response control to reduce distortion in stereo reception.
7. Separation characteristic is quite favorable due to the effect of new D.S.D.C. MPX by FET switching.
8. Since dual power supply system is adopted for all audio signal lines, dynamic range is very wide.
9. Built-in De-emphasiser to match any \* Dolbyized FM broadcasts.

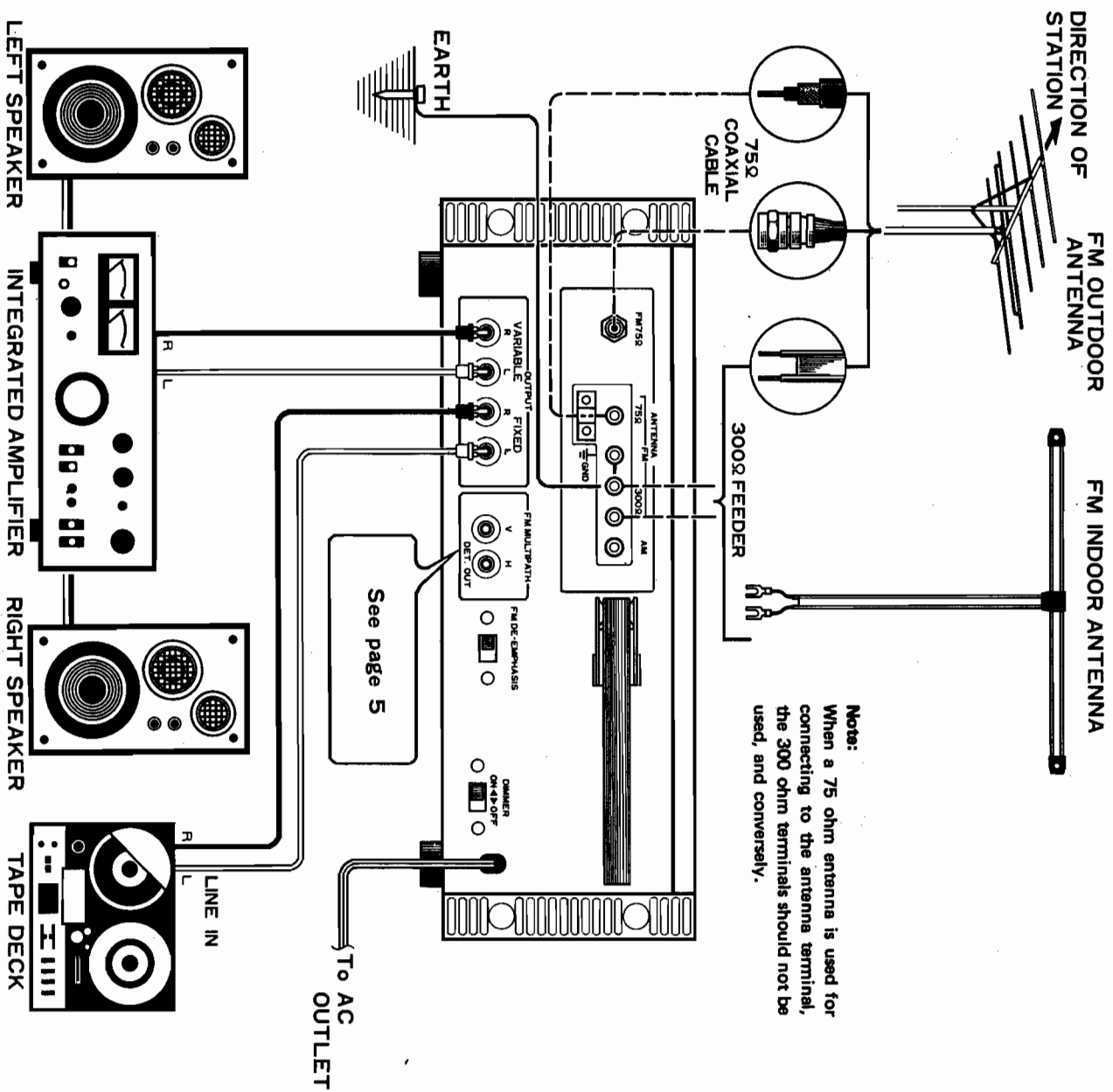
\* Dolby is a Trade Mark of Dolby Laboratories, Inc.

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# INTERCONNECTING DIAGRAM





# CONNECTING INSTRUCTIONS

## OUTPUT

### VARIABLE

These jacks connect to the stereo amplifier's TUNER or AUX input terminals. The level of these terminals is controlled by the Output Level knob on the front panel.

### FIXED

These jacks connect to the tape deck Line Input terminals. The signal level from the output terminals cannot be controlled from the KT-8300; this must be done with the tape deck input level controls.

## FM DE-EMPHASIS SWITCH

Selects  $75\mu\text{s}$  ( $50\mu\text{s}$ ) or  $25\mu\text{s}$  FM DE-EMPHASIS for accurate reception of Dolbyized FM signals. Normally, this switch should be left in the  $75\mu\text{s}$  ( $50\mu\text{s}$ ) position. However, if the station is broadcasting the Dolbyized signal using a  $25\mu\text{s}$  pre-emphasis, first connect the Dolby Decoder to the KT-8300 and put this switch in the " $25\mu\text{s}$ " position to obtain flat FM frequency response. If in doubt, call the station.

**Note:** For correct reception of Dolby broadcast, the Dolby Adaptor must be used without fail.

## FM MULTIPATH JACKS

This unit is provided with FM multipath jacks through which multipath distortion can be detected in two ways. In one way these jacks are connected with an oscilloscope and the antenna is positioned at the optimum height and in the best direction by observing the displayed wave form until distortion can be lowered to a minimum level. In the other way the antenna is positioned in a direction in which a deflection in the multipath meter on the front panel is reduced to a minimum.

**Note:** When handling the oscilloscope, please refer to the instruction manual attached to it.

## DIMMER SWITCH

The Dial illumination can be dimmed if desired by setting this ON-OFF switch to ON.

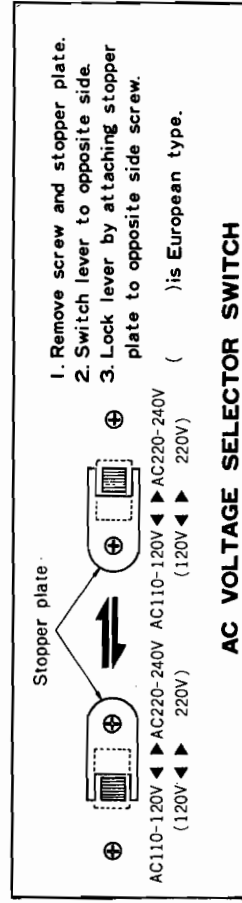
## DET. OUT (DETECT OUT)

The FM detector circuit output is made available here so that this tuner will be ready for 4-channel broadcasting developments in the future. When FM discrete 4-channel broadcasting becomes a reality, a simple demodulator connected here will enable you to fully enjoy this coming development.

## AC VOLTAGE SELECTION

This unit operates on 110-120 volts or 220-240 volts AC. If the AC Voltage Selector Switch is not set to your line voltage, it must be properly reset. The directions below can be referred to then.

**Note:** Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC Voltage Selector Switch.



# CONNECTING INSTRUCTIONS

## FM ANTENNA

Four terminals are provided for connection to a 300- or 75-ohm FM antenna as shown below.

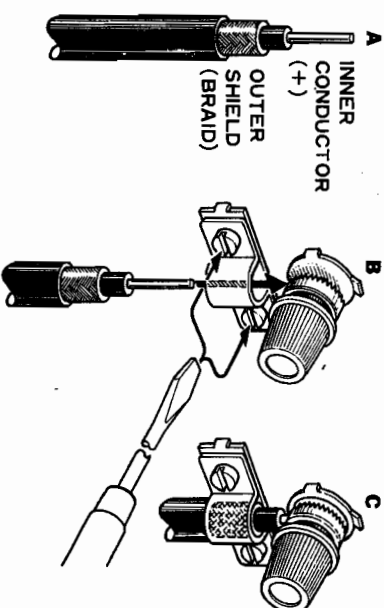
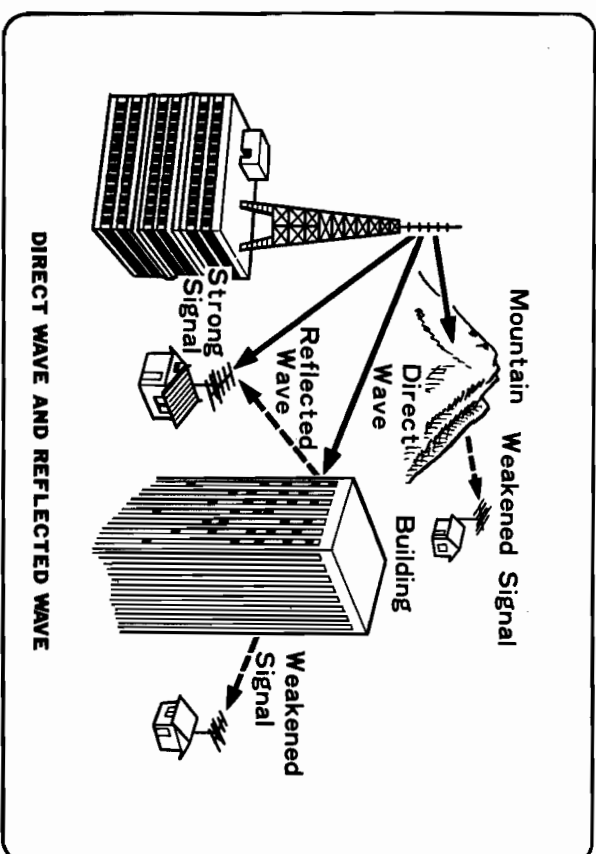
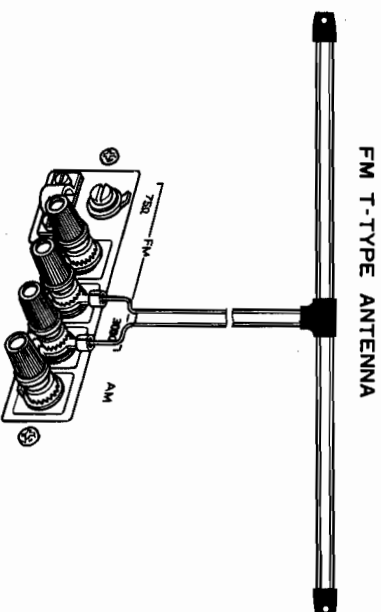
For good FM stereo reception, always use the best antenna possible. In areas close to the transmitting station, a simple T-type antenna may suffice. It should be remembered, however, that the pickup of reflections (similar to "ghosts" on TV) will result in poor stereo reception.

These reflections must, therefore, be reduced to a minimum, either by careful orientation of the T-type indoor antenna or, if this will not eliminate them, by using a more directional outdoor antenna.

In areas at a greater distance from the transmitting stations, the use of an outdoor antenna is highly recommended. It is available in various types. For reception of stations scattered in many directions, a non-directional type antenna will offer better results. When using a directional antenna, always orient it for the best reception of the desired station. The correct position will be indicated by maximum deflection of the SIGNAL meter on your tuner.

Keep FM antennas away from roads to avoid noises made by the ignition of car, motorcycle, etc.

**Note:** Consult audio dealer for detailed information on FM antennas and coaxial cable installations.



Strip the coaxial cable as shown in (A). Loosen the screws and connect the cable as shown in (B). Then tighten all screws for a connection like (C).

## TWIN LEAD (300Ω) CONNECTION

## COAXIAL CABLE (75Ω) CONNECTION

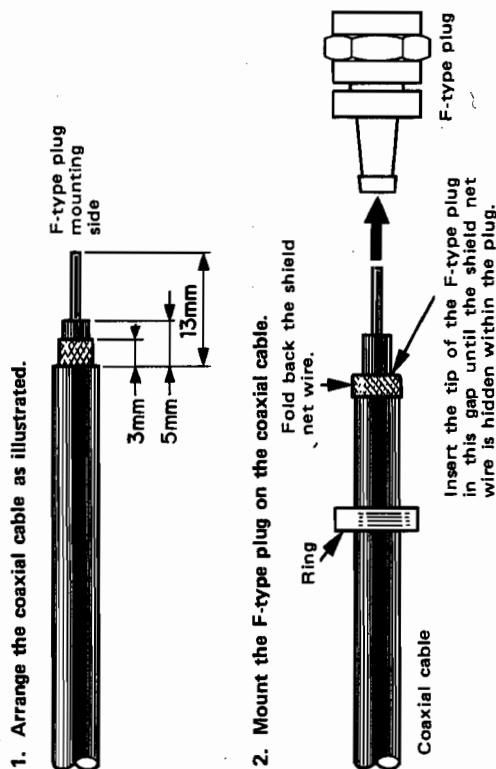
# CONNECTING INSTRUCTIONS

## AM ANTENNA

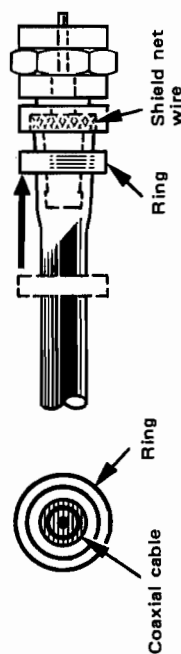
The ferrite stick antenna mounted at the rear panel of the tuner will provide satisfactory reception of local stations with strong signals. Because the ferrite stick antenna has directive properties, its direction should be adjusted for best reception while listening to a station. (See Figure below)

AC cords laid adjacent to AM ferrite stick antenna may interfere with reception. Keep them away as far as possible from the ferrite stick antenna.

In fringe areas or in locations surrounded by steel frame buildings where satisfactory reception cannot be obtained with the ferrite stick antenna, an AM outdoor antenna should be connected to the AM terminal.



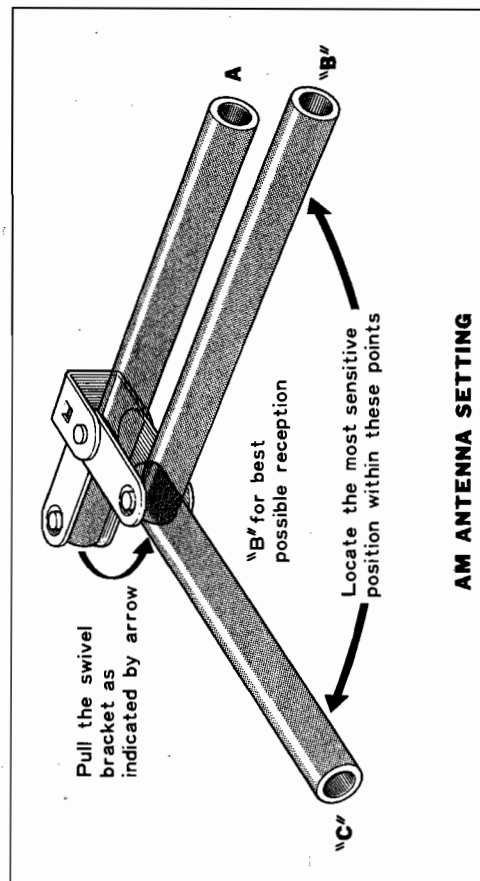
3. Move the ring to the illustrated position and flatten it with pliers.



Pull it by means of pliers, etc.



COAXIAL CABLE(75Ω) CONNECTION



AM ANTENNA SETTING

# CONTROLS AND THEIR FUNCTIONS

## ① POWER SWITCH

Move up to ON to power the set, down to turn it OFF. The dial indicator lights when the power is on.

## ② OUTPUT LEVEL CONTROL

The signals passing from the OUTPUT (VARIABLE) terminals can be controlled by the OUTPUT LEVEL knob. Use the controls in the following situations:

- 1) When the KT-8300 is connected to a stereo amplifier and the output level is too high for the input terminals, or too low.
- 2) When the tuner output level does not match that of other units (turntable, tape deck, etc.) connected to the amplifier. When there is a difference in output levels between AM performance and FM performance.

## ③ MUTING SWITCH

This switch silences interstation noise on the FM band.

The switch positions and functions are as follows:

- 1: Use this setting when the (2) setting cancels the desired station along with the noise.
- 2: To tune in a strong signal station.

**Note:** When tuning to a weak signal station, turn the MUTING switch off. This will not affect the noise, etc., but such interference usually disappears when you are near or right on the station at any rate.

## ④ TUNING KNOB

Use the tuning knob to select the AM and FM station desired.

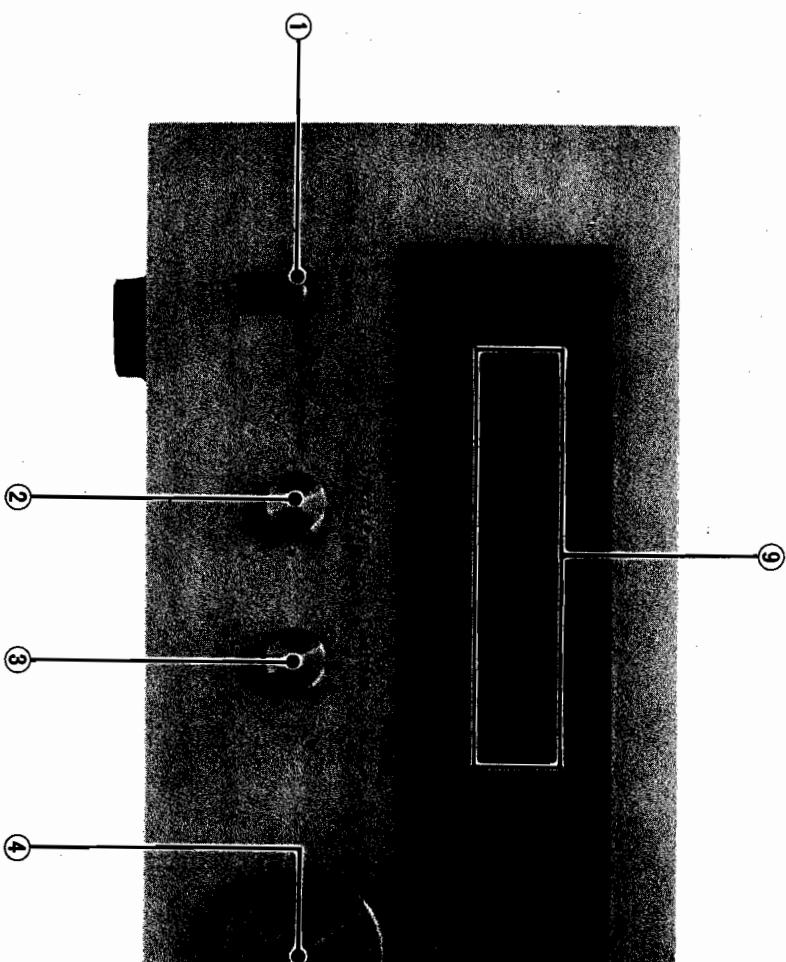
Adjust further by tuning for maximum deflection of the SIGNAL meter while listening to the speaker output.

## ⑤ IF BAND SELECTOR

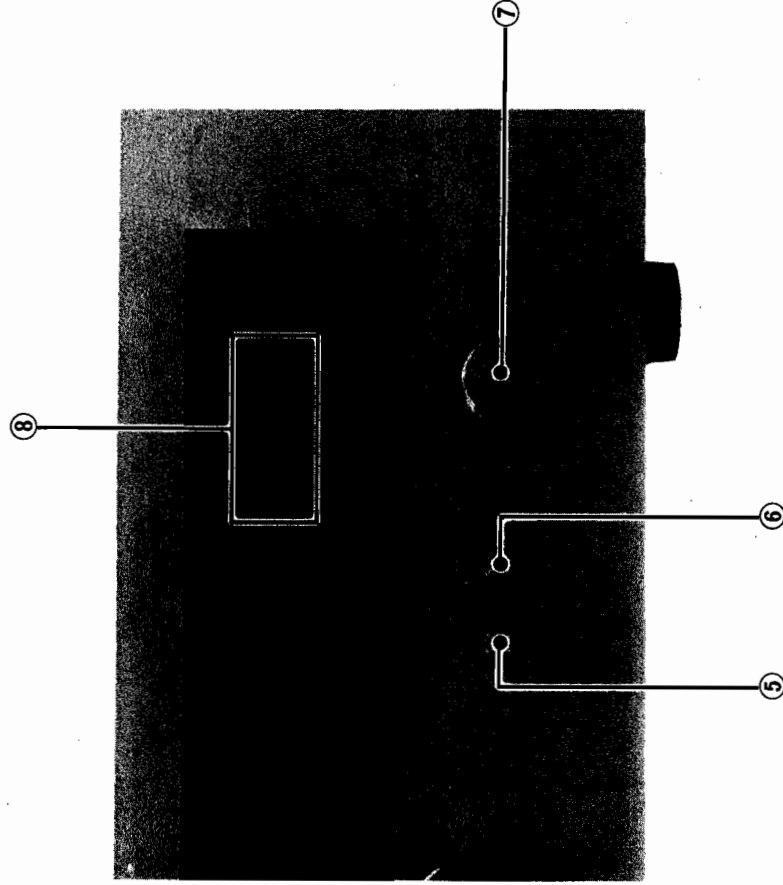
Switch positions and functions are as follows:

**WIDE** — This setting is suitable for normal usage in an area where no radio interference occurs. Reception with a low distortion can be expected.

**NARROW** — Depress this switch to increase selectivity against interference from a closely adjacent station.



# CONTROLS AND THEIR FUNCTIONS



## ⑥ METER SWITCH

Switch positions and functions are as follows:

**BUTTON DEPRESSED** — The DEVIATION/MULTIPATH Meter acts as a MULTIPATH Meter.  
**BUTTON RELEASED** — The DEVIATION/MULTIPATH Meter acts as a DEVIATION Meter.

## ⑦ SELECTOR SWITCH

**FM MONO** — For FM mono reception.

**FM AUTO** — For both FM mono and stereo receptions. The tuner will automatically identify and separate FM stereo broadcasts.

When an FM stereo broadcast is tuned in the STEREO indication lights up.

**MPX FILTER** — Unlike FM mono reception, high frequency noise may sometimes be encountered when receiving FM stereo broadcasts. The MPX FILTER in this tuner effectively cuts such disturbances. This switch has nothing to do with mono reception.

**AM** — For AM reception.

## ⑧ DEVIATION/MULTIPATH METER

**DEVIATION** — Functions as a meter which indicates a peak value of the modulation degree for FM broadcast. This meter makes it possible to monitor the maximum modulation degree for the received FM broadcast signal. If used in combination with the VU meter of the tape deck, an optimum recording level can be obtained.

**MULTIPATH** — Functions as a multipath detection meter. Reception with a minimum distortion is possible by depressing this switch and positioning the antenna in a direction where this meter gives a minimum deflection.

## ⑨ SIGNAL/TUNING METER

**SIGNAL METER** — This meter indicates incoming signal strength at the antenna with correct linearity from the weakest to the strongest signals.

**TUNING METER** — This meter is used for precise tuning to the center of the FM channel. Turn the tuning knob until meter pointer is at the center of the heavy black area of the meter scale. Center tuning provides maximum separation and minimum distortion.

# OPERATING INSTRUCTIONS

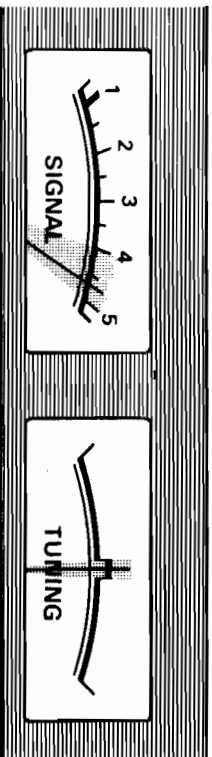
## FM RECEPTION

1. Set the Selector switch to FM AUTO.
2. Set the MUTING LEVEL switch to OFF.  
This switch cuts FM noise between stations with an efficiency that varies according to 1 (weak) or 2 (strong) settings. But it also affects reception of weak FM signals, and should therefore be left off except when tuning.
3. Turn the TUNING knob to select a station. First tune so that the SIGNAL meter pointer swings as far to the right as possible, then finish the precise tuning by centering the TUNING meter pointer. If the STEREO indicator lamp lights, the broadcast is in stereo; if not, it is mono.
4. Set the OUTPUT LEVEL knob to its central position.
5. If a stereo amplifier is used, set its controls to the desired volume level and tonal quality.
6. If continuous high-frequency noise occurs during FM stereo listening, set the Selector switch to MPX FILTER.

**Note:** It may be impossible to eliminate noise from an FM stereo broadcast if the signal is extremely weak. In such a case the relative signal strength can be improved by switching to FM MONO with the Selector switch. While the stereo effect will be lost somewhat, a great deal of the noise can be substantially eliminated in this way.

## AM RECEPTION

1. Set the Selector switch to AM.
2. Turn the tuning knob to select a station. Tune in so that the SIGNAL meter pointer swings as far to the right as possible.
3. If a stereo amplifier is used, set its controls to the desired volume level and tonal quality.



## GROUND

Broadcasts can be received without a ground connection. However, it is advisable to connect the GND terminal on the rear panel to the ground by using a buried grounding rod or iron-made water pipe to reduce the noise and ensure safety. However, never use a gas pipe for this purpose.

## CLEANING PRECAUTIONS

Do not use volatile liquid such as alcohol, thinner, gasoline, benzene, etc., when cleaning the unit surface. Use silicon cloth or soft dry cloth.

## PRECAUTIONS FOR SAFETY

- Switch off the unit and disconnect the power plug from your AC outlet immediately if the abnormality (smell, smoke, etc.) should take place.
- When you connect or disconnect the power plug from your AC outlet, never do it with wet hands to avoid unexpected accident from electric shock. Besides, do it by holding the power plug itself, not the power cord.
- Disconnect the power plug from your AC outlet when it begins to thunder terrifically. (It is advisable to disconnect the antenna feeder or coaxial cable from the unit if an outdoor antenna is installed. Do not touch the antenna feeder or coaxial cable disconnected then.)
- The power cord must not be pulled strongly, nor bent forcibly, nor scratched, nor extended by connecting an extra cord. This will damage the cord and be a cause of electric shock and a fire.
- Don not put a heavy thing on the power cord.
- Never dismantle the case from the unit and touch the internal part. Never modify the internal part. Otherwise, the danger of electric shock will be incurred.

# BEFORE ASKING SERVICE

When the unit does not operate as desired, it is often considered to have a trouble. In most cases, however, this is attributable to improper connection or improper setting of switch and control. Re-check your unit before asking service, referring to the table below.

| SYMPTOM                                                                                                | PROBABLE CAUSE                                                                                                                           | CORRECTION                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Continuous low frequency buzz. Most noticeable at night on weak signal stations.<br>Poor AM reception. | Interference from electrical appliances or atmospherics.<br>In ferroconcrete buildings or in areas remote from the broadcasting station. | Erecting a 10 meter outdoor antenna and securing good ground conditions should reduce interference considerably. Complete elimination is difficult.<br>An outdoor antenna necessary.                                                |
| Continuous high frequency whine which increases at night.                                              | TV interference.<br>10 kHz beat interference from adjacent AM station.                                                                   | Turn TV off. (Neighboring TV set may also be the cause).<br>Impossible to eliminate from tuner side.<br>Use HIGH Filter to cut off high frequency interference, amplifier side.                                                     |
| Intermittent buzzing or sharp crackling noise.                                                         | Lightning interference.<br>Interference from fluorescent lamps.<br>AC plug Connection.                                                   | Usually unavoidable in certain areas.<br>Occurs when lamps are on and cannot be helped.<br>Try reversing AC plug connections.<br>Occurs only on certain stations due to high voltage power line and cannot be helped in many areas. |
| Continuous hiss or buzzing interference with broadcast. Becomes louder during stereo.                  | Incoming signal too weak at ANT terminal.                                                                                                | Erect outdoor FM antenna if only indoor T-type is used.<br>A 5 or 7 element antenna is necessary if you are located at a considerable distance from the broadcasting station.                                                       |
| Occasional sharp buzzing or crackling noise.                                                           | Automobile ignition noise. More noticeable on weak signals.                                                                              | Erect outdoor FM antenna as far away from roads as practicable.                                                                                                                                                                     |
| FM Automatic Circuit fails to respond to stereo broadcast.                                             | Incoming signal is exceptionally weak.                                                                                                   | Erect an FM outdoor antenna.                                                                                                                                                                                                        |

## RATING

|                    |                                                                   |
|--------------------|-------------------------------------------------------------------|
| Power Consumption: | 22 watts                                                          |
| Dimensions:        | W 16-15/16" (430 mm)<br>H 5-7/8" (149 mm)<br>D 14-13/16" (376 mm) |
| Weight:            | 18.7 lbs. (8.5 kg)                                                |





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