JVC

# SERVICE MANUAL

## MODEL T-X3

## FM/AM STEREO TUNER

Above photo shows for U.S.A. and Canada

No. 2510
OCT. 1979

# Contents



**Warning** When replacing the parts marked with ⚠, be sure to use the designated parts to ensure safety.

# 1. Specifications

**FM Section**

| | |
|---|---|
| Tuning Range | : 87.5 MHz – 108 MHz |
| Usable Sensitivity | : 0.9 μV/75 Ω (10.3 dBf) |
| 50 dB S/N Sensitivity | : 1.8 μV/75 Ω (16.3 dBf) (Mono)<br>9.8 μV/75 Ω (31.0 dBf) (Stereo) |
| Signal to Noise Ratio | : 82 dB (Mono)<br>78 dB (Stereo) |
| Distortion at 100 Hz | : 0.08 % (Mono)<br>0.15 % (Stereo) |
| at 1 kHz | : 0.08 % (Mono)<br>0.10 % (Stereo) |
| at 6 kHz | : 0.08 % (Mono)<br>0.15 % (Stereo) |
| Intermodulation Distortion | : 0.05 % (Mono)<br>0.08 % (Stereo) |
| Capture Ratio | : 1.0 dB |
| Alternated Channel Selectivity | : 70 dB |
| Image Rejection | : 80 dB |
| IF Rejection | : 80 dB |
| Spurious Rejection | : 90 dB |
| RF Intermodulation Rejection | : 70 dB |
| AM Suppression | : 60 dB |
| Stereo Separation | |
| at 1 kHz | : 50 dB |
| Subcarrier Rejection | : 50 dB |
| Stereo Threshold | : 4.4 μV/75 Ω (24.1 dBf) |
| Muting Threshold | : 4.4 μV/75 Ω (24.1 dBf) |
| Frequency Response | : 30 Hz – 15 kHz +0.3 dB, -2.0 dB |
| De-emphasis | : 50/75 μsec. |
| Output Level | : 600 mV/1.6 kΩ<br>(For Europe, over 500 mV<br>±40 kHz Deviation, DIN 45301) |
| Antenna Input Impedance | : 75 Ω unbalanced |

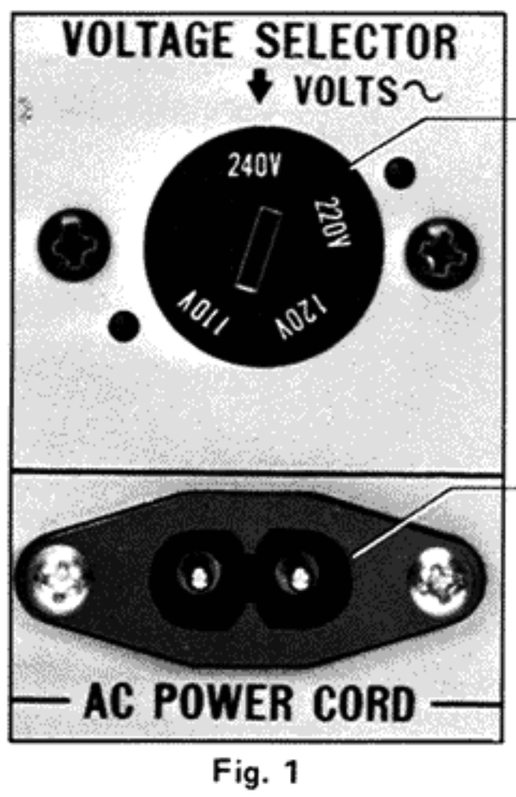
Specifications in FM Tuner section are based upon IHF standard.

**AM Section**

| | |
|---|---|
| Tuning Range | : 525 kHz – 1605 kHz |
| Usable Sensitivity | : 300 μV/m (Bar Antenna)<br>50 μV (Ext. Antenna) |
| Total Harmonic Distortion | : 0.5 % |
| Signal to Noise Ratio | : 50 dB |
| Selectivity | : 40 dB ±9 kHz |
| Image Rejection | : 45 dB |
| IF Rejection | : 35 dB |
| Spurious Rejection | : 45 dB |
| Output Level | : 400 mV/1.0 kΩ |

**Dimensions and Weight**

| Designated Areas | Dimensions (cm) | | | Weight (kg) | |
|---|---|---|---|---|---|
| | Height | Width | Depth | Net | Gross |
| U.S.A. & Canada | 8.9<br>(3-8/16") | 47.4<br>(18-10/16") | 36.4<br>(14-5/16") | 5.5<br>(12.1 lbs) | 6.5<br>(14.3 lbs) |
| U.K., Australia, Europe & Other Countries | 8.9<br>(3-8/16") | 45.0<br>(17-11/16") | 36.4<br>(14-5/16") | 5.0<br>(11.0 lbs) | 6.0<br>(13.2 lbs) |




QSR0074-001
Voltage Selector

QMC0239-002
AC Inlet

Fig. 1

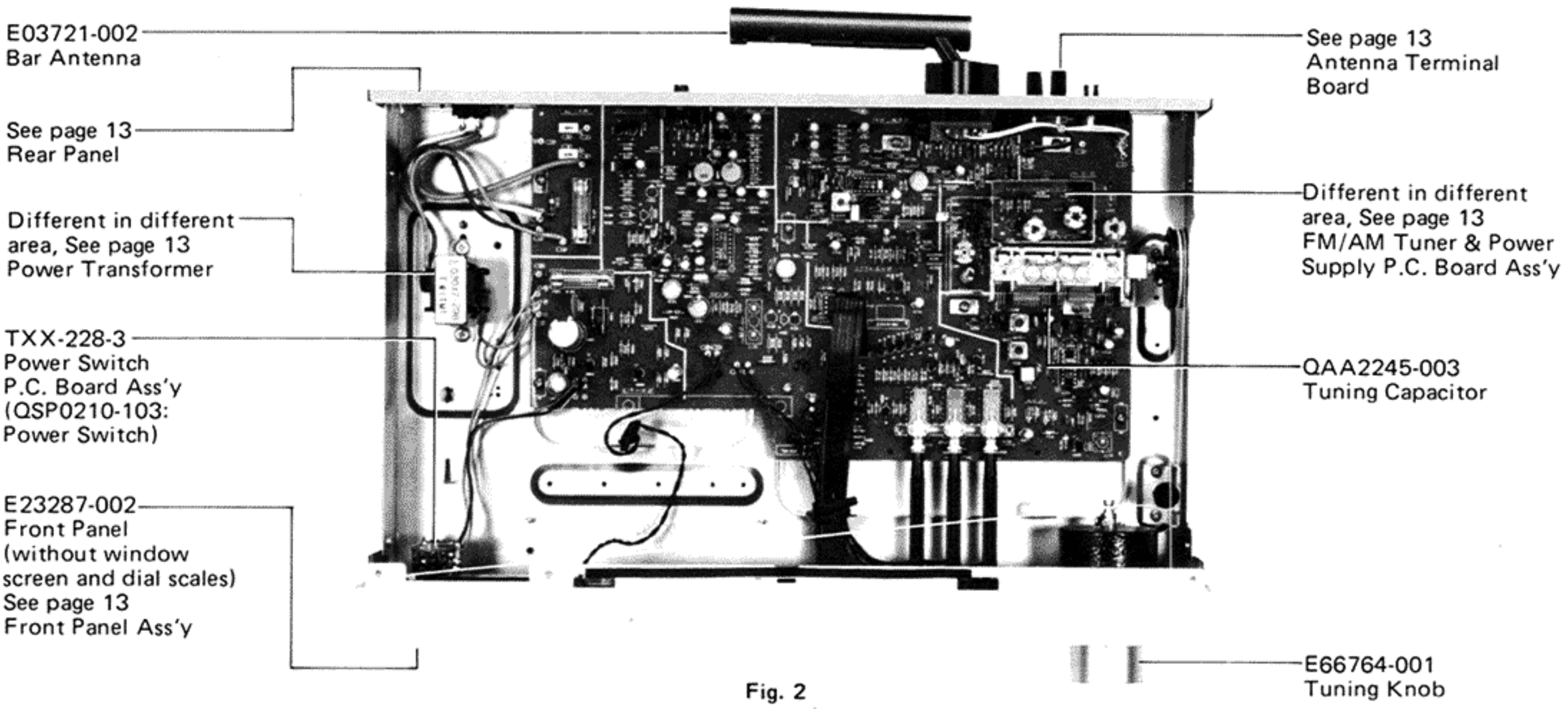
This set is switchable to the proper line voltage by turning the voltage selector with a screwdriver or coin.
Voltage selector is placed on the rear panel but not mounted for U.S.A. and Canada.

**POWER SPECIFICATIONS**

| Designated Areas | Line Voltage & Frequency | Power Consumption |
|---|---|---|
| U.S.A. | AC 120 V, 60 Hz | 9 W |
| CANADA | AC 120 V, 60 Hz | 9 W |
| U.K., AUSTRALIA | AC 240 V~, 50 Hz | 9 W |
| CONTINENTAL EUROPE | AC 220 V~, 50 Hz | 9 W |
| OTHER AREAS | AC 110/120/220/240 V Selectable, 50/60 Hz | 9 W |

# 2. Main Parts Location

## 2-(1) Top View



E03721-002
Bar Antenna

See page 13
Rear Panel

Different in different area, See page 13
Power Transformer

TXX-228-3
Power Switch P.C. Board Ass'y
(QSP0210-103: Power Switch)

E23287-002
Front Panel
(without window screen and dial scales)
See page 13
Front Panel Ass'y

See page 13
Antenna Terminal Board

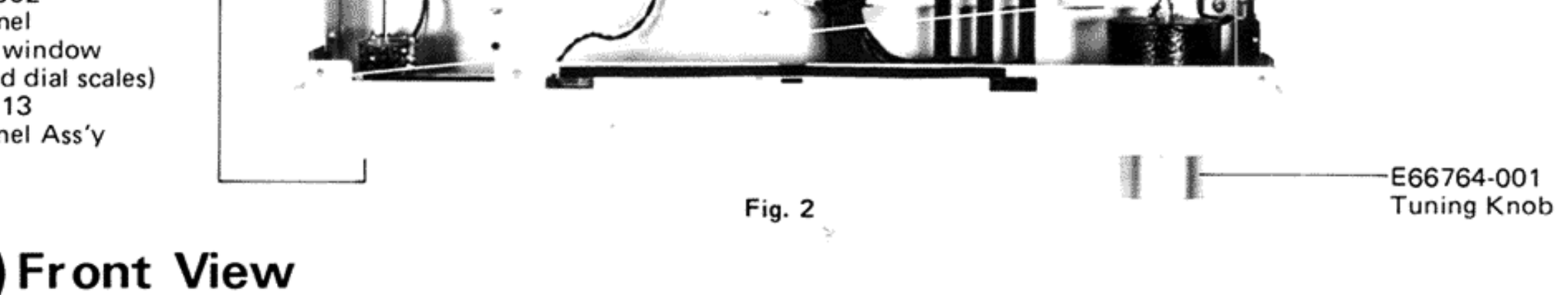
Different in different area, See page 13
FM/AM Tuner & Power Supply P.C. Board Ass'y

QAA2245-003
Tuning Capacitor

E66764-001
Tuning Knob

Fig. 2

## 2-(2) Front View




ED92934-001
Cosmetic Board – L
(U.S.A. & Canada only)

E23287-002
Front Panel
(without window screen and dial scales)
See page 13
Front Panel Ass'y

ED92934-002
Cosmetic Board – R
(U.S.A. & Canada only)

E66287-001
Power Switch Pushbutton

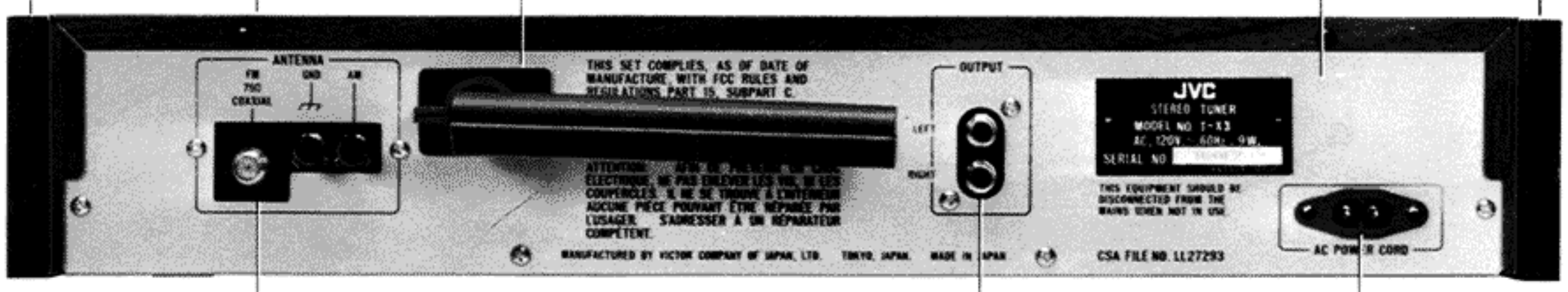
E66758-001
Pushbutton (without its shaft)

E66884-001
Pushbutton Ass'y

E66764-001
Tuning Knob

Fig. 3

# 2-(3) Rear View




ED92934-002
Cosmetic Board – R
(U.S.A. & Canada only)

See page 13
Top Cover (Metal)

E03721-002
Bar Antenna

See page 13
Rear Panel

ED92934-001
Cosmetic Board – L
(U.S.A. & Canada only)

See page 13
Antenna Terminal

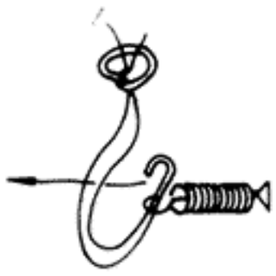
E03591-21F
Output Terminal

QMC0239-002
AC Inlet Socket

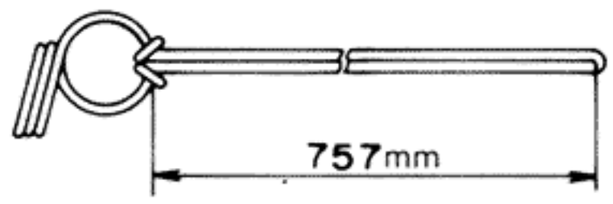
Fig. 4

# 3. Dial Stringing Procedure

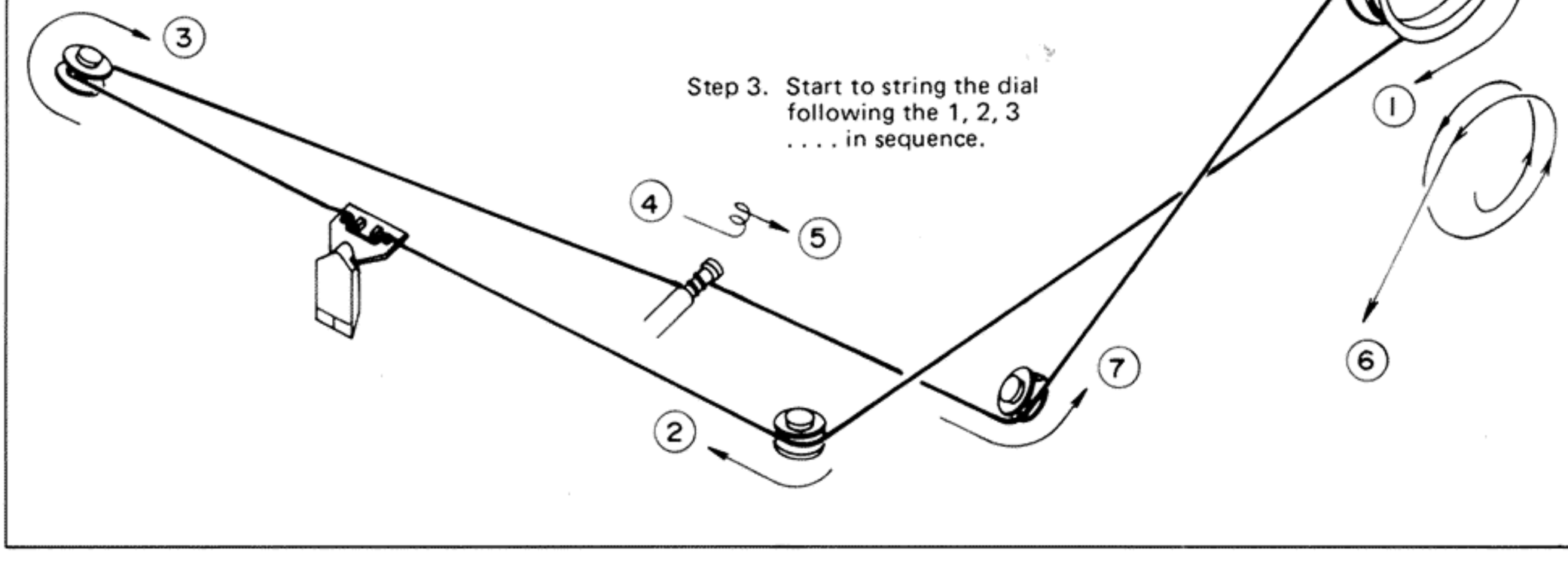
Rotate the tuning drum fully counterclockwise (maximum capacity) at first.



Step 1. Put the string through the spring loop.



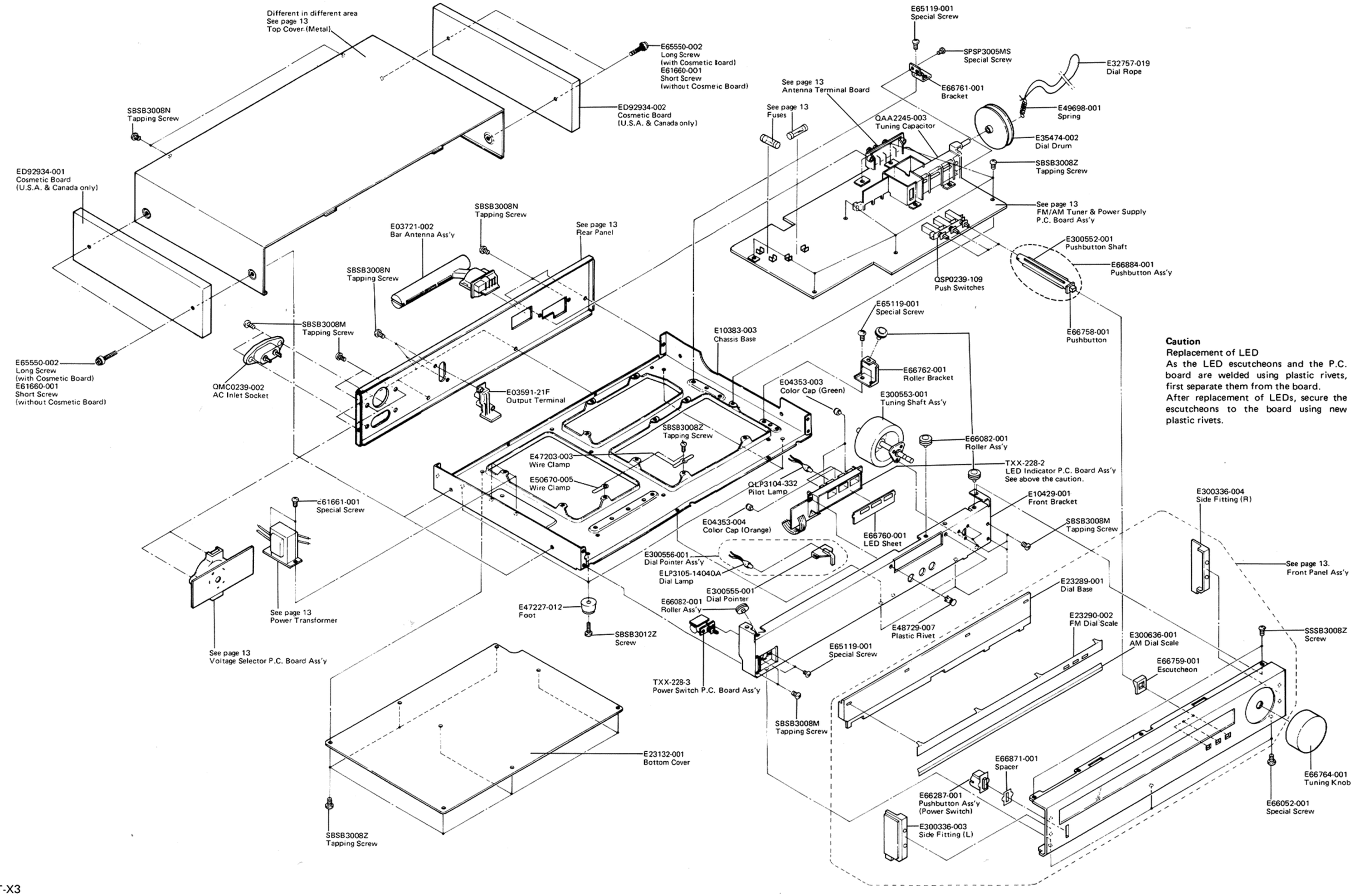

Step 2. Tie the string in a knot having an indicated remaining length.




Step 3. Start to string the dial following the 1, 2, 3 . . . . in sequence.

Fig. 5

# 4. Exploded View and Part Numbers




**Caution**
Replacement of LED
As the LED escutcheons and the P.C. board are welded using plastic rivets, first separate them from the board.
After replacement of LEDs, secure the escutcheons to the board using new plastic rivets.

# 5. FM/AM Tuner Alignment Procedures

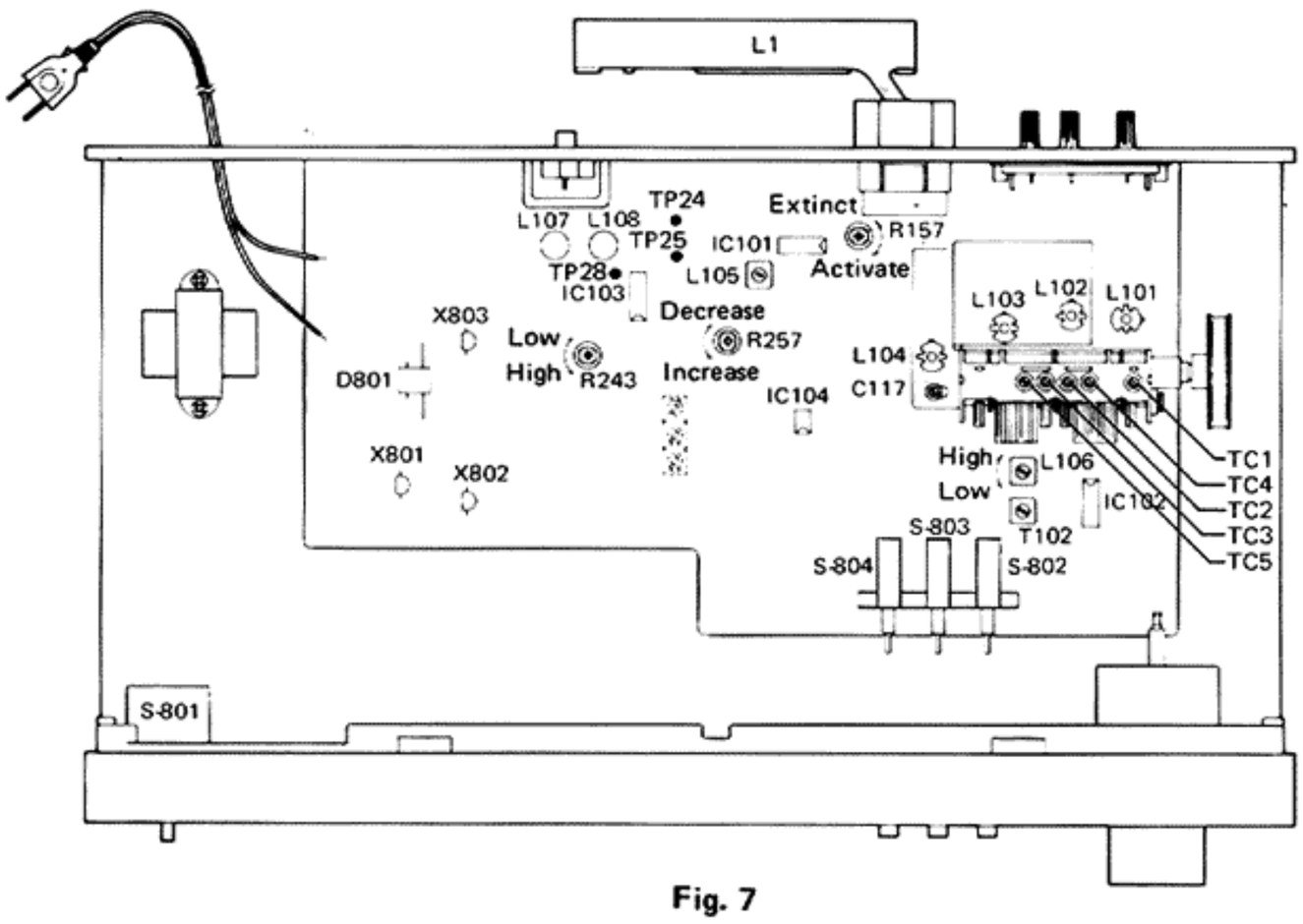



Fig. 7

**FM Connection**

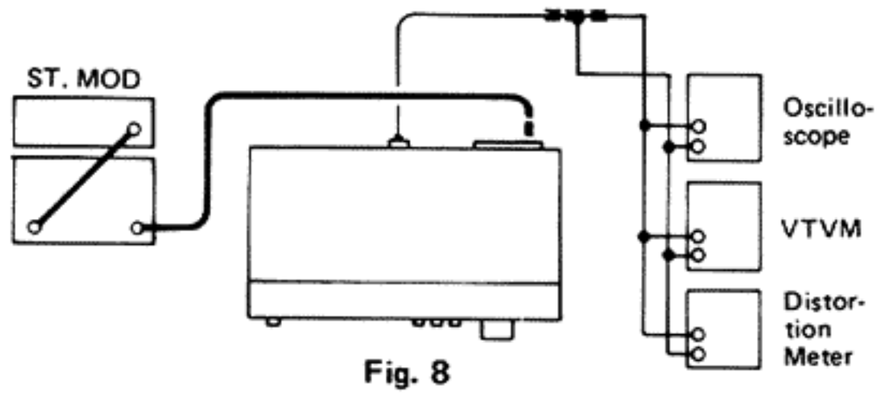



Fig. 8

**AM Connection**

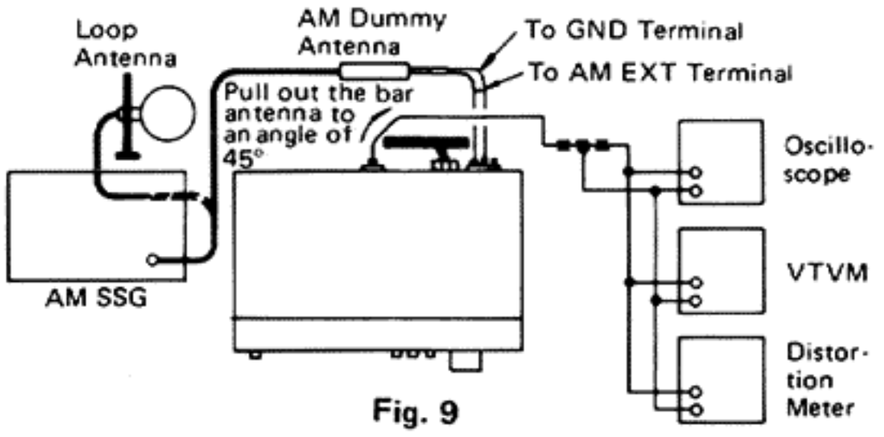



Fig. 9

## 5-(1) Frontend Section

L104 FM oscillator tuning coil:
Adjust the coil so that a 88 MHz signal can be received when the dial pointer indicates 88 MHz.

C117 FM oscillator tuning trimmer:
When the dial pointer indicates 108 MHz, adjust the tuning trimmer so that the set receives a 108 MHz signal.

L101 FM Antenna tuning coil:
L102 FM RF1 tuning coil:
L103 FM RF2 tuning coil:
} Maximize the sensitivity at 90 MHz.

TC1 FM Antenna tuning trimmer:
TC2 FM RF1 tuning trimmer:
TC3 FM RF2 tuning trimmer:
} Maximize the sensitivity at 106 MHz.

## 5-(2) FM Section

L105 FM tracking filter:
Connect the center meter to TP24 and 25 and adjust L105 for the center meter reading of "0" (zero).

R243 MPX VCO free-run frequency adjusting resistor:
Adjust it so that the free-run frequency becomes 19 kHz between TP28 and ground.

R257 Stereo separation adjusting resistor:
Adjust it so that the channel separation becomes maximum.

R157 Muting level adjusting resistor:
1. Turn a MUTING/STEREO switch on.
2. Set the RF generator to 98 MHz, 1 kHz modulation frequency and 75 kHz deviation, to provide an input of 14 dB/$\mu$V at 75 ohms loaded.
3. Tune the dial pointer to 98 MHz.
4. Turn an R157 counterclockwise fully so that the muting circuit ceases operating.
5. Return an R157 clockwise slightly until the muting circuit is activated.
6. Reset the RF generator output to 15 dB from 14 dB so that the i kHz signal waveform appears in the oscilloscope.
7. Repeat these procedures until the above step 6 is completed.

## 5-(3) AM Section

L106 AM oscillator tuning coil:
Adjust it to receive a 600 kHz signal when the dial pointer indicates 600 kHz.

TC5 AM oscillator tuning trimmer:
Adjust it to receive a 1400 kHz signal when the dial pointer indicates 1400 kHz.

L1 AM bar antenna coil:
Maximize the sensitivity at 600 kHz.

TC4 AM antenna tuning trimmer:
Maximize the sensitivity at 1400 kHz.

T102 AM IF transformer:
No adjustment is required since it is preadjusted at the factory.

# 6. Printed Circuit Board Ass'y and Parts List

## 6-(1) TXX-228 FM/AM Tuner and Power Supply P.C.Board Ass'y

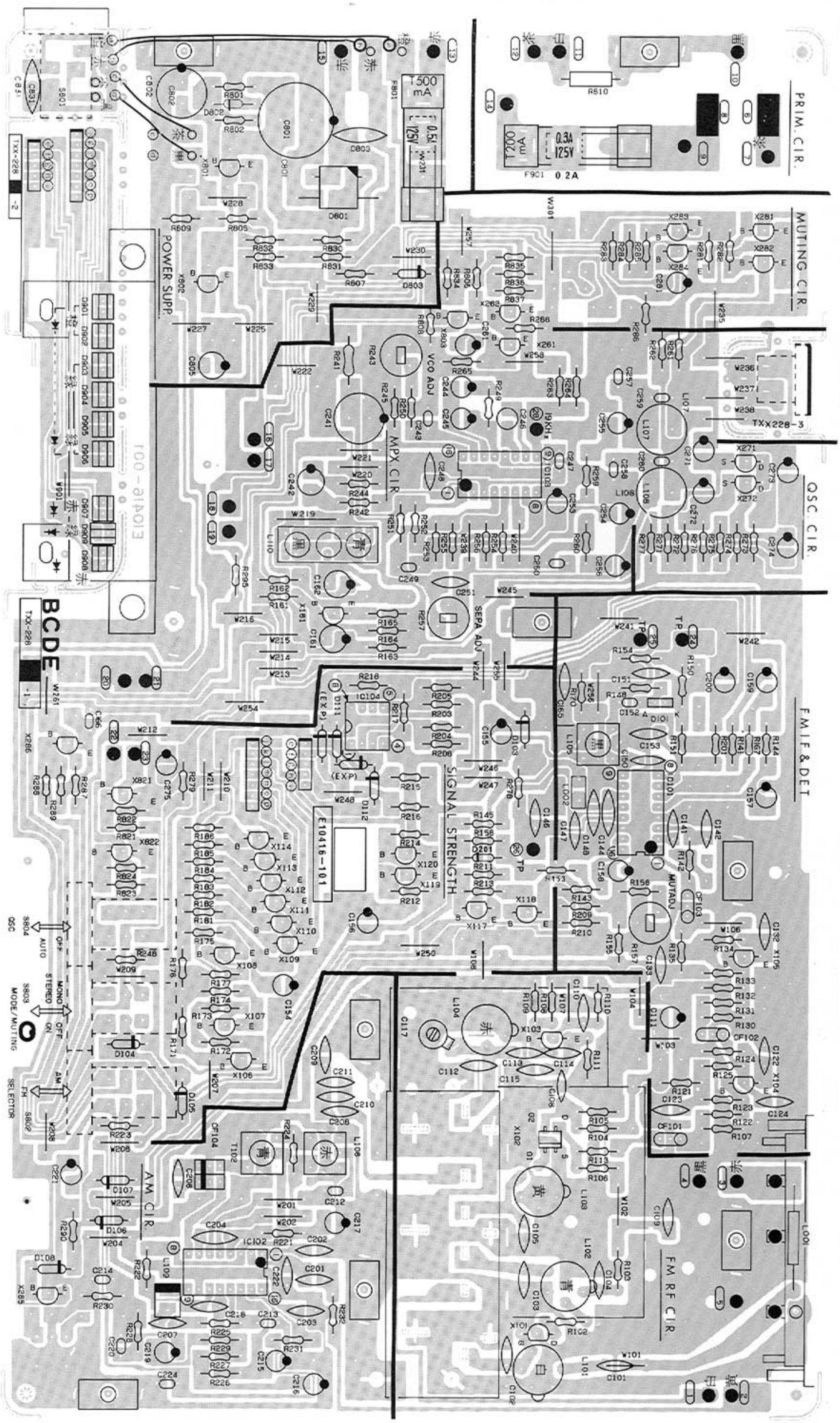



Fig. 10

## Each Individual P.C. Board Location

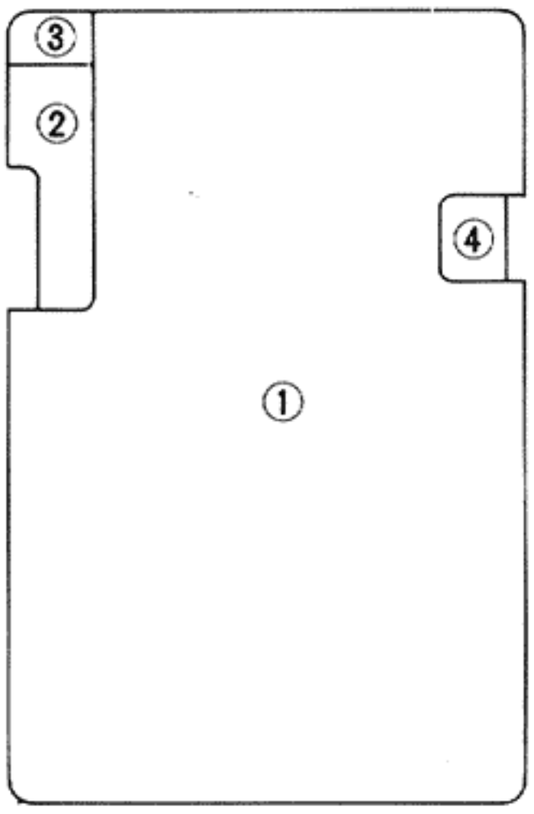



Fig. 11

**Note:**
The specific symbols ( ⚠ , ⚠ , ⚠ . . . etc.) on a surface of P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

**Note:** In ☐ should be indicated B, C or D according to the below table when placing an order.

| | | |
|---|---|---|
| ① | TXX-228 ☐ -1 | FM/AM Tuner & Power Supply P.C. Board Ass'y |
| ② | TXX-228-2 | LED Indicator P.C. Board Ass'y |
| ③ | TXX-228-3 | Power Switch P.C. Board Ass'y |
| ④ | | Output Terminal P.C. Board Ass'y |

| Designated Area | P.C. Board Ass'y |
|---|---|
| U.S.A. and Canada | TXX-228 B -1 |
| Europe | TXX-228 C -1 |
| Australia | TXX-228 D -1 |
| U.K. | TXX-228 E -1 |
| U.S. Military Market and Other Countries | TXX-228 F -1 |

## Transistors

| Item No. | Part Number | Rating | | Description | |
|---|---|---|---|---|---|
| | | Pc | fT | | Maker |
| X101 | 2SK168(E,F) | 0.2 W | | F.E.T. | Hitachi |
| X102 | 3SK73(Y,GR) | 0.3 W | | " | Toshiba |
| X103 | 2SC461(C) | 0.2 W | 230 MHz | Silicon | Hitachi |
| X104 | 2SC461(C) | " | " | " | " |
| X105 | 2SC461(C) | " | " | " | " |
| X106 | 2SA1029(C,D) | " | 200 MHz | " | " |
| X107 | 2SC458(D) | " | 230 MHz | " | " |
| X108 | 2SC458(D) | " | " | " | " |
| X109 | 2SC458(D) | " | " | " | " |
| X110 | 2SC458(D) | " | " | " | " |
| X111 | 2SC458(D) | " | " | " | " |
| X112 | 2SC458(D) | " | " | " | " |
| X113 | 2SC458(D) | " | " | " | " |
| X114 | 2SC458(D) | " | " | " | " |
| X117 | 2SA1029(C,D) | " | 200 MHz | " | " |
| X118 | 2SC458(D) | " | 230 MHz | " | " |
| X119 | 2SC458(D) | " | " | " | " |
| X120 | 2SC458(D) | " | " | " | " |
| X161 | 2SC1775AV(F) | " | 200 MHz | " (U.K. & Europe only) | " |
| X261 | 2SC458(D) | " | 230 MHz | Silicon | " |
| X262 | 2SC458(D) | " | " | " | " |
| X271 | 2SK105(F) | 0.25 W | | F.E.T. | NEC |
| X272 | 2SK105(F) | " | | " | " |
| X281 | 2SC458(D) | 0.2 W | 230 MHz | Silicon | Hitachi |
| X282 | 2SC458(D) | " | " | " | " |
| X283 | 2SA1029(C,D) | " | 200 MHz | " | " |
| X284 | 2SC458(D) | " | 230 MHz | " | " |
| X285 | 2SA1029(C,D) | " | 200 MHz | " | " |
| X286 | 2SC458(D) | " | 230 MHz | " | " |
| X801 | 2SC2235(Y) | 0.9 W | 120 MHz | " | Toshiba |
| X802 | 2SC2235(Y) | " | " | " | " |
| X803 | 2SA965(Y) | " | " | " | " |
| X821 | 2SC458(D) | 0.2 W | 230 MHz | " | Hitachi |
| X822 | 2SC458(D) | " | " | " | " |

## Integrated Circuits

| Item No. | Part Number | Rating | Description | |
|---|---|---|---|---|
| | | Pc | | Maker |
| IC101 | HA12412 | 0.45 W | I.C. | Hitachi |
| IC102 | HA1197 | | " | " |
| IC103 | UPC1161C | | " | NEC |
| IC104 | AN6552 | | " | Matsushita |

## Diodes

| Item No. | Part Number | Rating | Description | |
|---|---|---|---|---|
| | | | | Maker |
| D101 | KV1226 | | V. Cap. Diode | Toko |
| D103 | 1S2076-31 | | Silicon | Hitachi |
| D104 | 1S2076-31 | | " | " |
| D105 | 1S2076-31 | | " | " |
| D106 | 1S2076-31 | | " | " |
| D107 | 1S2076-31 | | " | " |
| D108 | 1S2076-31 | | " | " |
| D111 | 1S2076-31 | | " | " |
| D112 | 1S2076-31 | | " | " |
| D201 | 1S2076-31 | | " | " |
| D801 | ESAB03-02A | | " | Fuji |
| D802 | RD13EB3 | | Silicon (Zenner) | NEC |
| D803 | 1S2076-31 | | Silicon | Hitachi |
| D901~2 | LN02402P | | L.E.D. | Matsushita |
| D903~6 | LN04302P | | " | " |
| D907 | LN217RP | | " | " |
| D908 | LN217RP | | " | " |
| D909 | LN317GP | | " | " |

## Coils & Transformers

| Item No. | Part Number | Rating | Description |
|---|---|---|---|
| L001 | E03695-001 | | Choke Coil (U.K. & Europe only) |
| L002 | E03522-2R2KY | | Choke Coil |
| L101 | E03477-31 | | FM Antenna Coil (white) |
| L102 | E03477-059 | | FM RF Coil (blue) |
| L103 | E03477-054 | | FM RF Coil (yellow) |
| L104 | E03477-055 | | FM OSC Coil (red) |
| L105 | E03078-51 | | Detector Coil |
| L106 | E03079-36 | | AM OSC Coil (red) |
| L107 | Y00118-103 | | Inductor |
| L108 | Y00118-103 | | Inductor |
| L109 | E03522-391KY | | Choke Coil |
| L110 | E03735-003 | | Anti-birdy Filter (U.K. & Europe only) |
| T102 | E03613-009 | | AM IF Transformer (blue) |

## Filters

| Item No. | Part Number | Rating | Description |
|---|---|---|---|
| CF101 | E03357-011 | | Ceramic Filter (FM) |
| CF102 | E03357-011 | | " |
| CF103 | E03357-011 | | " |
| CF104 | E03613-016 | | Ceramic Filter (AM) |

## Capacitors

| Item No. | Part Number | Rating | | Description |
|---|---|---|---|---|
| C101 | QCS31HJ-101Z | 100 pF | 50 V | Ceramic (U.K. & Europe only) |
| C102 | QCS31HJ-150Z | 15 pF | " | Ceramic |
| C103 | QCS31HJ-180Z | 18 pF | " | " |
| C104 | QCF31HP-103Z | 0.01 μF | " | " |
| C105 | QCS31HJ-180Z | 18 pF | " | " |
| C108 | QCS21HJ-330 | 33 pF | " | " |
| C109 | QCF31HP-103Z | 0.01 μF | " | " |
| C110 | QCF31HP-223Z | 0.022 μF | " | " |
| C111 | QET61HR-105ZM | 1 μF | " | Tantalum Electrolytic |
| C112 | QCT25TH-150Z | 15 pF | " | Ceramic |
| C113 | QCT05CH-150 | " | " | " |
| C114 | QCT25TH-330Z | 33 pF | " | " |
| C115 | QCT25CH-150Z | 15 pF | " | " |
| C117 | QAT3001-014 | | | Trimmer |
| C122 | QCF31HP-223Z | 0.022 μF | 50 V | Ceramic |
| C123 | QCF31HP-223Z | " | " | " |
| C132 | QCF31HP-223Z | " | " | " |
| C133 | QCF31HP-223Z | " | " | " |
| C141 | QCC31EM-473Z | 0.047 μF | 25 V | " |
| C142 | QCC31EM-473Z | " | " | " |
| C144 | QCC21EM-473 | " | " | " |
| C146 | QCF31HP-223Z | 0.022 μF | 50 V | " |
| C147 | QCF31HP-223Z | " | " | " |
| C148 | QCC21EM-473 | 0.047 μF | 25 V | " |
| C150 | QCT25CH-100Z | 10 pF | 50 V | " |
| C151 | QCT26UJ-471A | 470 pF | " | " |
| C152 | QFM31HJ-223 | 0.022 μF | " | Mylar |
| C153 | QCS31HJ-101Z | 100 pF | " | Ceramic |
| C154 | QET61ER-106ZM | 10 μF | 25 V | Tantalum Electrolytic |
| C155 | QET61ER-106ZM | " | " | " |
| C156 | QET61HR-105ZM | 1 μF | 50 V | " |
| C157 | QET61HR-105ZM | " | " | " |
| C158 | QET61HR-105ZM | " | " | " |
| C159 | QET61ER-106ZM | 10 μF | 25 V | " |
| C161 | QET61HR-106ZM | " | " | Tantalum Electrolytic (U.K. & Europe only) |
| C162 | QET61HR-106ZM | " | " | " |
| C165 | QCF31HP-223Z | 0.022 μF | " | Ceramic |
| C166 | QFM31HJ-122Z | 1200 pF | " | Mylar |
| C200 | QET61HR-475ZM | 4.7 μF | " | Tantalum Electrolytic |
| C201 | QCF31HP-223Z | 0.022 μF | " | Ceramic |
| C202 | QCF31HP-223Z | " | " | " |
| C203 | QCF31HP-223Z | " | " | " |
| C204 | QCF31HP-223Z | " | " | " |
| C206 | QCS31HJ-470Z | 47 pF | " | " |
| C207 | QCS31HJ-331Z | 330 pF | " | " |
| C208 | QCS31HJ-330Z | 33 pF | " | " |
| C209 | QCT25UJ-150Z | 15 pF | " | " |
| C210 | QCT26CH-151A | 150 pF | " | " |
| C211 | QCT26CH-151A | " | " | " |
| C212 | QFM31HK-103Z | 0.01 μF | " | Mylar |
| C213 | QFM31HK-102Z | 1000 pF | " | " |
| C214 | QFM31HK-182Z | 1800 pF | " | " |
| C215 | QET61HR-105ZM | 1 μF | " | Tantalum Electrolytic |
| C216 | QET61ER-106ZM | 10 μF | 25 V | " |
| C217 | QET51ER-106H | " | " | " |
| C218 | QCF31HP-223Z | 0.022 μF | 50 V | Ceramic |
| C219 | QEB51HM-224 | 0.22 μF | " | Low Leak Current Electrolytic |
| C220 | QFM31HK-682Z | 6800 pF | " | Mylar |
| C221 | QET61HR-105ZM | 1 μF | " | Tantalum Electrolytic |
| C222 | QCS21HJ-470 | 47 pF | " | Ceramic |

## Capacitors

| Item No. | Part Number | Rating | | Description |
|---|---|---|---|---|
| C241 | QET51CR-227H | 220 μF | 16 V | Tantalum Electrolytic |
| C242 | QET61ER-106ZM | 10 μF | 25 V | " |
| C243 | QFP31HJ-471 | 470 pF | 50 V | Polypropyrene |
| C244 | QEB51EM-335 | 3.3 μF | 25 V | Low Leak Current Electrolytic |
| C245 | QEB51HM-105 | 1 μF | 50 V | " |
| C246 | QEZ0046-224 | 0.22 μF | | Electrolytic |
| C247 | QFM31HK-473Z | 0.047 μF | 50 V | Mylar |
| C248 | QCS31HJ-471Z | 470 pF | " | Ceramic |
| C249 | See page 13 | | " | Mylar |
| C250 | " | | " | " |
| C251 | QCS31HJ-820Z | 82 pF | " | Ceramic |
| C253 | QET51ER-106H | 10 μF | 25 V | Tantalum Electrolytic |
| C254 | QET61ER-106ZM | " | " | " |
| C255 | QET61HR-105ZM | 1 μF | 50 V | " |
| C256 | QET61HR-105ZM | " | " | " |
| C257 | See page 13 | | " | Mylar |
| C258 | " | | " | " |
| C259 | QFM31HK-182Z | 1800 pF | " | " |
| C260 | QFM31HK-182Z | " | " | " |
| C261 | QET61HR-475ZM | 4.7 μF | " | Tantalum Electrolytic |
| C271 | QET51HR-474H | 0.47 μF | " | " |
| C272 | QET61HR-474ZM | " | " | " |
| C273 | QET61HR-474ZM | " | " | " |
| C274 | QET61HR-474ZM | " | " | " |
| C275 | QET61HR-474ZM | " | " | " |
| C281 | QET61ER-106ZM | 10 μF | 25 V | " |
| C801 | QET51ER-228H | 2200 μF | " | " |
| C802 | QET51CR-227H | 220 μF | 16 V | " |
| C803 | QCF31HP-103Z | 0.01 μF | 50 V | Ceramic |
| C805 | QET61CR-476ZM | 47 μF | 16 V | Tantalum Electrolytic |
| C831 | QCF31HP-103Z | 0.01 μF | 50 V | Ceramic |

## Resistors

| Item No. | Part Number | Rating | | Description |
|---|---|---|---|---|
| R102 | QRD141J-330SY | 33 Ω | 1/4 W | Carbon |
| R103 | QRD141J-271SY | 270 Ω | " | " |
| R104 | QRD141J-563SY | 56 kΩ | " | " |
| R105 | QRD141J-222SY | 2.2 kΩ | " | " |
| R106 | QRD141J-331SY | 330 Ω | " | " |
| R107 | QRD141J-103SY | 10 kΩ | " | " |
| R108 | QRD141J-103SY | " | " | " |
| R109 | QRD141J-103SY | " | " | " |
| R110 | QRD141J-331SY | 330 Ω | " | " |
| R111 | QRD141J-122SY | 1.2 kΩ | " | " |
| R113 | QRD141J-330SY | 33 Ω | " | " |
| R121 | QRD141J-331SY | 330 Ω | " | " |
| R122 | QRD141J-101SY | 100 Ω | " | " |
| R123 | QRD141J-273SY | 27 kΩ | " | " |
| R124 | QRD141J-681SY | 680 Ω | " | " |
| R125 | QRD141J-331SY | 330 Ω | " | " |
| R130 | QRD141J-471SY | 470 Ω | " | " |
| R131 | QRD141J-101SY | 100 Ω | " | " |
| R133 | QRD141J-392SY | 3.9 kΩ | " | " |
| R134 | QRD141J-681SY | 680 Ω | " | " |
| R135 | QRD141J-331SY | 330 Ω | " | " |
| R141 | QRD141J-273SY | 27 kΩ | " | " |
| R142 | QRD141J-331SY | 330 Ω | " | " |
| R143 | QRD141J-472SY | 4.7 kΩ | " | " |
| R144 | QRD141J-123SY | 12 kΩ | " | " |
| R145 | QRD141J-222SY | 2.2 kΩ | " | " |

## Resistors

| Item No. | Part Number | Rating | | Description |
|---|---|---|---|---|
| R148 | QRD141J-334SY | 330 kΩ | 1/4 W | Carbon |
| R150 | QRD141J-332SY | 3.3 kΩ | " | " |
| R151 | QRD141J-562SY | 5.6 kΩ | " | " |
| R153 | QRD141J-333SY | 33 kΩ | " | " |
| R154 | QRD141J-102SY | 1 kΩ | " | " |
| R155 | QRD141J-104SY | 100 kΩ | " | " |
| R156 | QRD141J-472SY | 4.7 kΩ | " | " |
| R157 | QVP4A0B-103 | 10 kΩ | " | Variable |
| R161 | QRD141J-224SY | 220 kΩ | " | Carbon (U.K. & Europe only) |
| R162 | QRD141J-103SY | 10 kΩ | " | " |
| R164 | QRD141J-393SY | 39 kΩ | " | " |
| R165 | QRD141J-562SY | 5.6 kΩ | " | " |
| R167 | QRD141J-682SY | 6.8 kΩ | " | Carbon |
| R170 | QRD141J-473SY | 47 kΩ | " | " |
| R171 | QRD141J-103SY | 10 kΩ | " | " |
| R172 | QRD141J-223SY | 22 kΩ | " | " |
| R173 | QRD141J-123SY | 12 kΩ | " | " |
| R174 | QRD141J-271SY | 270 Ω | " | " |
| R175 | QRD141J-471SY | 470 Ω | " | " |
| R176 | QRD141J-561SY | 560 Ω | " | " |
| R177 | QRD141J-683SY | 68 kΩ | " | " |
| R181 | QRD141J-183SY | 18 kΩ | " | " |
| R182 | QRD141J-333SY | 33 kΩ | " | " |
| R183 | QRD141J-273SY | 27 kΩ | " | " |
| R184 | QRD141J-103SY | 10 kΩ | " | " |
| R185 | QRD141J-822SY | 8.2 kΩ | " | " |
| R186 | QRD141J-472SY | 4.7 kΩ | " | " |
| R201 | QRD141J-273SY | 27 kΩ | " | " |
| R203 | QRD141J-562SY | 5.6 kΩ | " | " |
| R204 | QRD141J-562SY | " | " | " |
| R205 | QRD141J-274SY | 270 kΩ | " | " |
| R206 | QRD141J-274SY | " | " | " |
| R209 | QRD141J-563SY | 56 kΩ | " | " |
| R210 | QRD141J-563SY | " | " | " |
| R211 | QRD141J-272SY | 2.7 kΩ | " | " |
| R212 | QRD141J-473SY | 47 kΩ | " | " |
| R213 | QRD141J-103SY | 10 kΩ | " | " |
| R214 | QRD141J-223SY | 22 kΩ | " | " |
| R215 | QRD141J-102SY | 1 kΩ | " | " |
| R216 | QRD141J-561SY | 560 Ω | " | " |
| R217 | QRD141J-102SY | 1 kΩ | " | " |
| R218 | QRD141J-102SY | " | " | " |
| R221 | QRD141J-152SY | 1.5 kΩ | " | " |
| R222 | QRD141J-151SY | 150 Ω | " | " |
| R223 | QRD141J-271SY | 270 Ω | " | " |
| R224 | QRD141J-561SY | 560 Ω | " | " |
| R225 | QRD141J-331SY | 330 Ω | " | " |
| R226 | QRD141J-103SY | 10 kΩ | " | " |
| R227 | QRD141J-103SY | " | " | " |
| R228 | QRD141J-103SY | " | " | " |
| R229 | QRD141J-332SY | 3.3 kΩ | " | " |
| R230 | QRD141J-152SY | 1.5 kΩ | " | " |
| R231 | QRD141J-332SY | 3.3 kΩ | " | " |
| R232 | QRD141J-221SY | 220 Ω | " | " |
| R241 | QRD129J-330 | 33 Ω | 1/2 W | " |
| R242 | QRD141J-682SY | 6.8 kΩ | 1/4 W | " |
| R243 | QVP4A0B-472 | 4.7 kΩ | " | Variable |
| R244 | QRD141J-473SY | 47 kΩ | " | Carbon |
| R245 | QRD141J-683SY | 68 kΩ | " | " |
| R248 | QRD141J-104SY | 100 kΩ | " | " |
| R249 | QRD141J-102SY | 1 kΩ | " | " |
| R250 | QRD141J-163SY | 16 kΩ | " | " |
| R251 | QRD141J-223SY | 22 kΩ | " | " |
| R252 | QRD141J-223SY | " | " | " |
| R253 | QRD141J-513SY | 51 kΩ | " | " |
| R254 | QRD141J-513SY | " | " | " |
| R255 | QRD141J-103SY | 10 kΩ | " | " |
| R256 | QRD141J-103SY | " | " | " |

## Resistors

| Item No. | Part Number | Rating | | Description |
|---|---|---|---|---|
| R257 | QVP4A0B-104 | 100 kΩ | 1/4 W | Variable |
| R259 | QRD141J-332SY | 3.3 kΩ | " | Carbon |
| R260 | QRD141J-332SY | " | " | " |
| R261 | See page 13 | | " | " |
| R262 | See page 13 | | " | " |
| R263 | QRD141J-273SY | 27 kΩ | " | " |
| R264 | QRD141J-223SY | 22 kΩ | " | " |
| R265 | QRD141J-562SY | 5.6 kΩ | " | " |
| R266 | QRD141J-103SY | 10 kΩ | " | " |
| R271 | QRD141J-104SY | 100 kΩ | " | " |
| R272 | QRD141J-104SY | " | " | " |
| R273 | QRD141J-224SY | 220 kΩ | " | " |
| R274 | QRD141J-224SY | " | " | " |
| R275 | QRD141J-103SY | 10 kΩ | " | " |
| R276 | QRD141J-103SY | " | " | " |
| R277 | QRD141J-183SY | 18 kΩ | " | " |
| R278 | QRD141J-223SY | 22 kΩ | " | " |
| R279 | QRD141J-223SY | " | " | " |
| R281 | QRD141J-223SY | " | " | " |
| R282 | QRD141J-223SY | " | " | " |
| R283 | QRD141J-273SY | 27 kΩ | " | " |
| R284 | QRD141J-473SY | 47 kΩ | " | " |
| R285 | QRD141J-103SY | 10 kΩ | " | " |
| R286 | QRD141J-563SY | 56 kΩ | " | " |
| R287 | QRD141J-472SY | 4.7 kΩ | " | " |
| R288 | QRD141J-473SY | 47 kΩ | " | " |
| R289 | QRD141J-393SY | 39 kΩ | " | " |
| R290 | QRD141J-104SY | 100 kΩ | " | " |
| R295 | QRD141J-473SY | 47 kΩ | " | " |
| R801 | QRD141J-102SY | 1 kΩ | " | " |
| R802 | QRD141J-681SY | 680 Ω | " | " |
| R805 | QRD141J-102SY | 1 kΩ | " | " |
| R806 | QRD141J-101SY | 100 Ω | " | " |
| R807 | QRD141J-102SY | 1 kΩ | " | " |
| R808 | QRD141J-103SY | 10 kΩ | " | " |
| R809 | QRD141J-153SY | 15 kΩ | " | " |
| R810 | QRC121K-275EM | 2.7 MΩ | 1/2 W | Composition (Refer to page 13) |
| R821 | QRD141J-223SY | 22 kΩ | 1/4 W | Carbon |
| R822 | QRD141J-103SY | 10 kΩ | " | " |
| R823 | QRD141J-223SY | 22 kΩ | " | " |
| R824 | QRD141J-103SY | 10 kΩ | " | " |
| R830 | QRD141J-330SY | 33 Ω | " | " |
| R831 | QRD141J-330SY | " | " | " |
| R832 | QRD141J-330SY | " | " | " |
| R833 | QRD141J-330SY | " | " | " |
| R834 | QRD141J-680SY | 68 Ω | " | " |
| R835 | QRD141J-680SY | " | " | " |
| R836 | QRD141J-680SY | " | " | " |
| R837 | QRD141J-680SY | " | " | " |

## Others

| Item No. | Part Number | Rating | Description |
|---|---|---|---|
| S801 | QSP0210-103 | | Push Switch (Power Switch) |
| S802 | QSP0239-109 | | Push Switches (QUIETING, MUTING & SELECTOR) |
| | see page 13 | | Antenna Terminal |
| | see page 13 | | Fuse Clip (F801, F901) |
| | E03591-21F | | Output Terminal |
| | QAA2245-003 | | Tuning Capacitor |
| | EWR35A-30NN | | Flat Wire (5 wires) |
| | EWR37A-25NN | | Flat Wire (7 wires) |
| | E300554-001 | | LED Escutcheon |
| | E65396-001 | | Earth Plate |

## 6-(2) TPS-266 Voltage Selector P.C.Board Ass'y

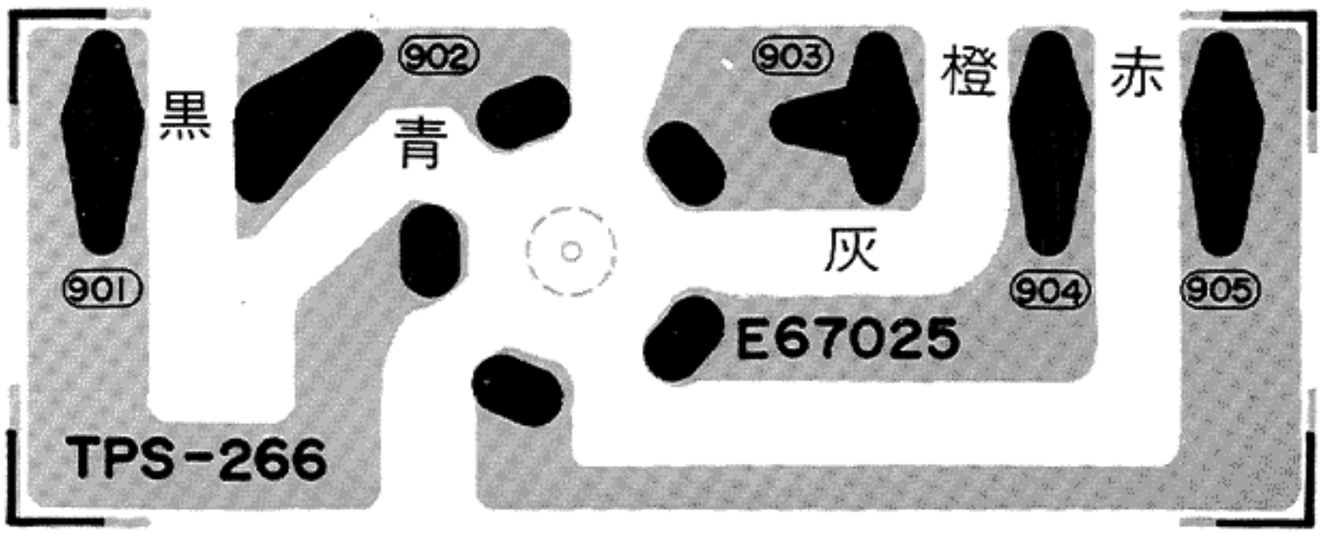



Fig. 12

| Part Number | Description |
|---|---|
| See page 13 | Voltage Selector |
| See page 13 | Voltage Selector Holder |
| See page 13 | Tab |

# 7. Packing Materials and Part Numbers

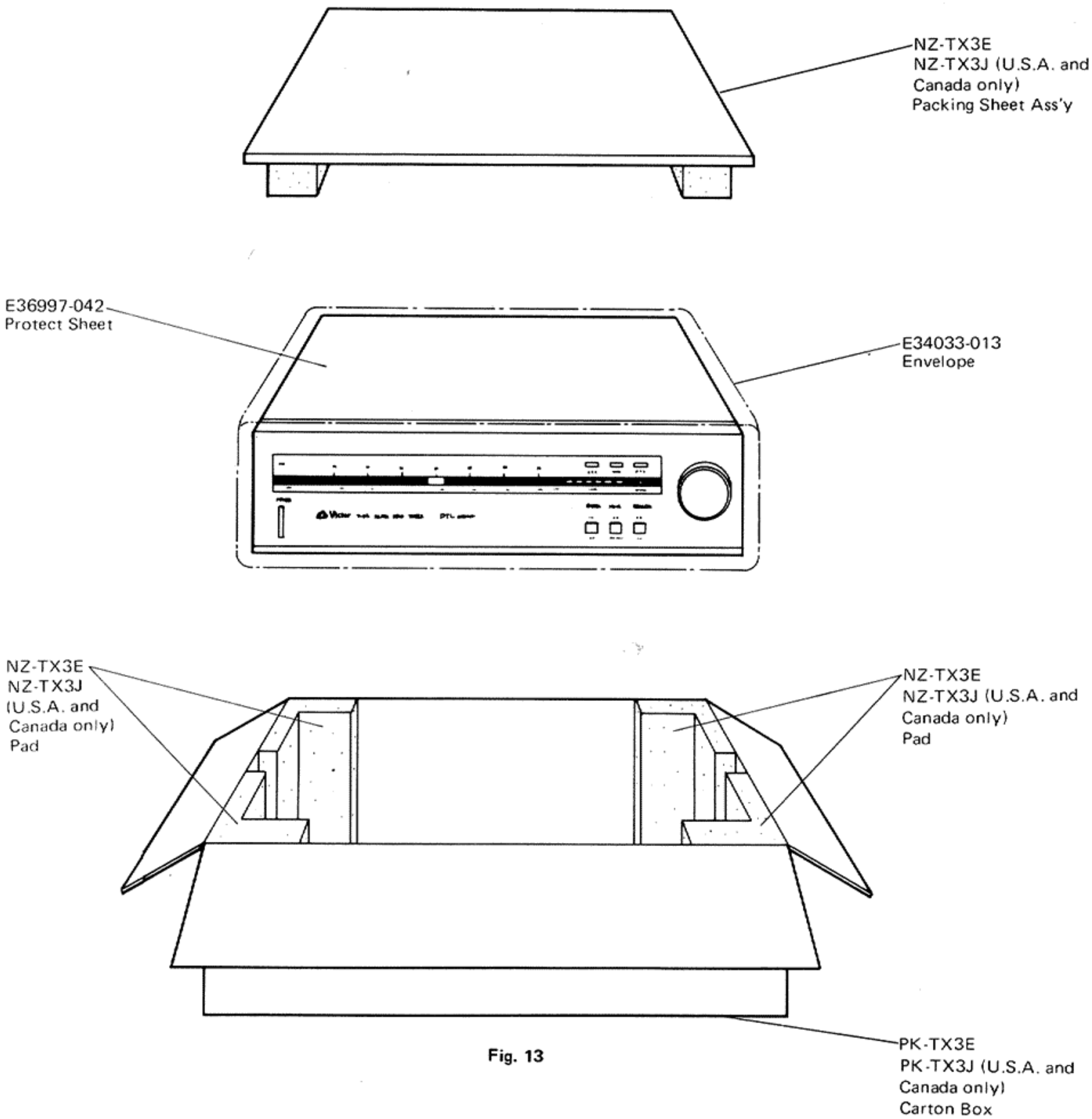



Fig. 13

# 9. Accessories List

| Item No. | Part Number | Description | Q'ty |
|---|---|---|---|
| 1 | E30580-803A | Instruction Book (for U.K., E30580-803ABS) | 1 |
| 2 | see below | Warranty Card | 1 |
| 3 | BT20042 | "JVC DOES IT BETTER" (for U.S.A. only) | 1 |
| 4 | see below | Caution Sheet | 1 |
| 5 | " | Information Sheet | 1 |
| 6 | E41202-2 | Envelope (Instruction Book & Others) | 1 |
| 7 | see below | FM Antenna | 1 |
| 8 | E47746-005 | FM Coaxial-Line Connector (except U.K. & Europe) | 1 |
| 9 | E03879-001 | Balun Transformer (except U.K. & Europe) | 1 |
| 10 | E03479-001B | Signal Cord | 1 |
| 11 | see below | Power Cord | 1 |
| 12 | E04056 | Siemens Plug (U.S. Military Market only) | 1 |

# 10. Parts List with Specified Numbers for Designated Areas

| Page | Item No. | Description | U.S.A. Canada | Australia | U.K. | Europe | U.S. Military Market and Other Countries |
|---|---|---|---|---|---|---|---|
| 2, 4 | | Front Panel Ass'y | EFP-TX3J | EFP-TX3E | EFP-TX3E | EFP-TX3E | EFP-TX3E |
| 3 | | Rear Panel | E23292-002 | E23292-004 | E23292-003 | E23292-003 | E23292-004 |
| 4 | | Top (Metal) Cover | E23133-003 | E23133-001 | E23133-001 | E23133-001 | E23133-001 |
| 3, 4 | | Antenna Terminal | E03572-019F | E03572-019F | E03572-019P | E03572-019P | E03572-019F |
| 3, 4 | | AC Inlet ⚠ | QMC0239-002 | QMC0239-002 | QMC0239-002BS | QMC0239-002 | QMC0239-002 |
| 4 | F901 | Fuse (Primary) ⚠ | QMF61U1-R30 (0.3 A) | QMF51A2-R20L (T200 mA) | QMF51A2-R20LBS (T200 mA) | QMF51A2-R20L (T200 mA) | QMF51A2-R20L (T200 mA) |
| 4 | F801 | Fuse (Secondary) ⚠ | QMF61U1-R50 (0.5 A) | QMF51A2-R315L (T315 mA) | QMF51A2-R315LBS (T315 mA) | QMF51A2-R315L (T315 mA) | QMF51A2-R315L (T315 mA) |
| 3, 4 | T1 | Power Transformer ⚠ | E03042-29B | E03042-29C | E03042-29CBS | E03042-29C | E03042-29C |
| 6, 7 | 6-(1) | FM/AM Tuner & Power Supply P.C. Board Ass'y | TXX-228B | TXX-228D | TXX-228E | TXX-228C | TXX-228F |
| 10 | 6-(2) | Voltage Selector P.C. Board Ass'y | — | TPS-266A | TPS-266BBS | TPS-266A | TPS-266A |
| 10 | 6-(2) | TPS-266 P.C. Board (without parts) | — | E67025-001 | E67025-001 | E67025-001 | E67025-001 |
| 10 | 6-(2) | Voltage Selector ⚠ | — | QSR0074-001 | QSR0074-001 | QSR0074-001 | QSR0074-001 |
| 10 | 6-(2) | Voltage Selector Holder | — | E66342-001 | E66342-001 | E66342-001 | E66342-001 |
| 10 | 6-(2) | Tab (TPS-266) | — | E43727-001 | E43727-001 | E43727-001 | E43727-001 |
| 8 | C249/ C250 | Capacitor (Mylar) | QFM31HK-152Z (1500 pF/50 V) | QFM31HK-102Z (1000 pF/50 V) | QFM31HK-102Z (1000 pF/50 V) | QFM31HK-102Z (1000 pF/50 V) | QFM31HK-152Z (1500 pF/50 V) |
| 8 | C257/ C258 | Capacitor (Mylar) | QFM31HK-222 (2200 pF/50 V) | QFM31HK-392 (3900 pF/50 V) | QFM31HK-392 (3900 pF/50 V) | QFM31HK-392 (3900 pF/50 V) | QFM31HK-222 (2200 pF/50 V) |
| 9 | R261/ R262 | Resistor (Carbon) | QRD141J-332SY (3.3 kΩ/1/4 W) | QRD141J-332SY (3.3 kΩ/1/4 W) | QRD141J-822 (8.2 kΩ/1/4 W) | QRD141J-822 (8.2 kΩ/1/4 W) | QRD141J-332SY (3.3 kΩ/1/4 W) |
| 9 | R810 | Resistor (Composition) ⚠ | QRC121K-275EM (2.7 MΩ/1/2 W) | — | — | — | |
| 9 | | Fuse Clip (R801, 901) ⚠ | E45524-002 | E48965-002 | E48965-002 | E48965-002 | E48965-002 |
| | | Power Cord | QMP1230-183 | QMP2530-200 | QMP9017-009BS | QMP3950-183 | QMP7630-183 |
| | | FM Antenna | E03614-002 | E03614-002 | E03614-005 | E03614-005 | E03614-002 |
| | | Warranty Card | BT20032B (for U.S.A.) BT20025C (for Canada) | BT20029B | BT20013C | — | BT20032B (for U.S. Military Market only) |
| | | Caution Sheet | — | E60932-008 | E60932-008 | E60932-007 | — |

NOTE: ⚠ SAFETY PARTS

JVC

VICTOR COMPANY OF JAPAN, LIMITED, TOKYO, JAPAN

Printed in Japan
9010-V

# 8. T-X3 Schematic Diagram




**Notes:**

1. Voltage values in ▭ are measured with a tester (impedance 20kΩ/V) without a signal applied to the unit. Values in ( ) of IC102 are measured with AM Signal.
2. Parts in red indicate transistors or ICs.
3. ▬ indicates signal path.
4. —— indicates positive B power supply.
5. When replacing the parts in the darkened area and those marked with ⚠ be sure to use the designated parts to ensure safety.
6. This is the standard circuit diagram.
   The design and contents are subject to change without notice.

- C101 and L001 are additional items only for E, A and BS.
- C249 and C250 are 0.001 μF for E, A and BS.
- C257 and C258 are 0.0039 μF for E, A and BS.
- R261 and R262 are 8.2 kΩ for E and BS.

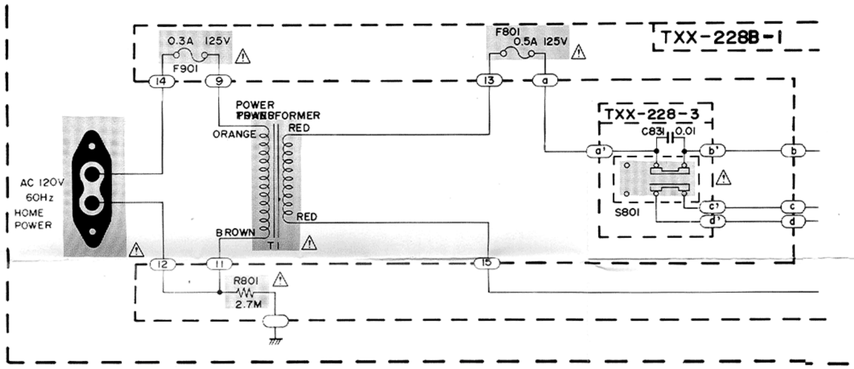
**Printed Circuit Board Ass'y Locations**

| P.C. Board Ass'y | Description | Page |
|---|---|---|
| TXX-228 | FM/AM Tuner and Power Supply P.C. Board Ass'y | 6 |
| TPS-266 | Voltage Selector P.C. Board Ass'y | 10 |

The schematic diagram shown seet is for the U.S.A.
The primary circuit and deemphasis circuit are different from the diagram for other areas, therefore please use the proper schematic diagram shown below.

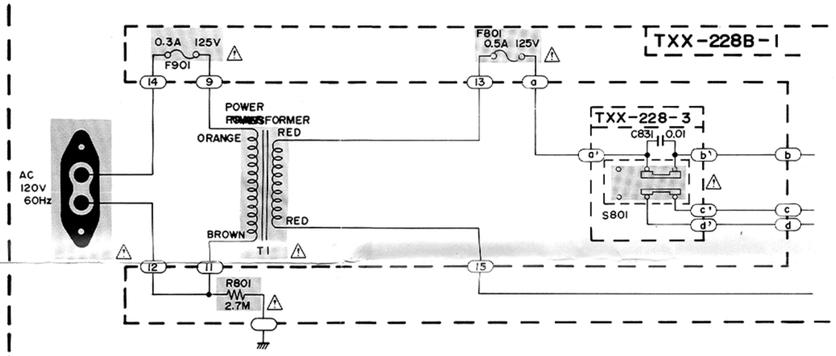
## T-X3 (J) FOR U.S.A.

PRIMARY CIRCUIT : AC 120V 60Hz.
DEEMPHASIS : 75μSEC (USE TXX-228B)



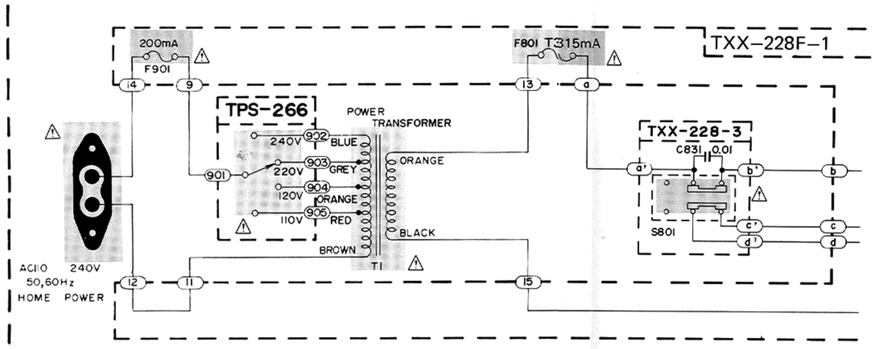

## T-X3 (C) FOR CANADA

PRIMARY CIRCUIT : AC 120V 60Hz.
DEEMPHASIS : 75μSEC (USE TXX-228B)



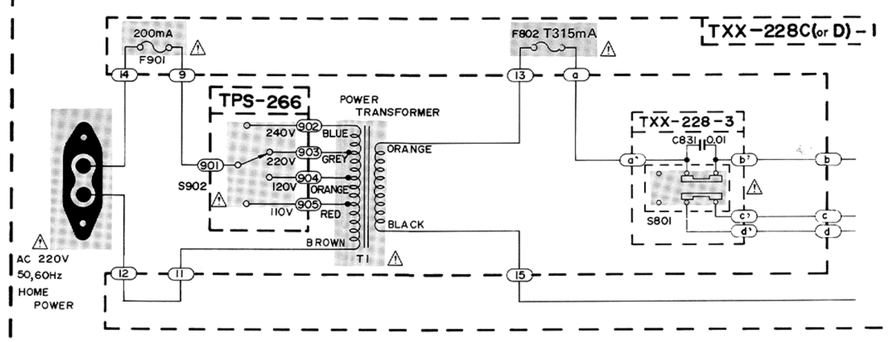

## T-X3 (U) FOR UNIVERSAL USE & (P) FOR PACEX

PRIMARY CIRCUIT : SELECTABLE 110/120/220/240V 50/60Hz.
DEEMPHASIS : 75μSEC (USE TXX-228B)
VOLTAGE SELECTOR (S902 MOUNTED ON THE REAR PANEL) MUST BE ADJUSTED FOR THE PROPER VOLTAGE OF HOME POWER.



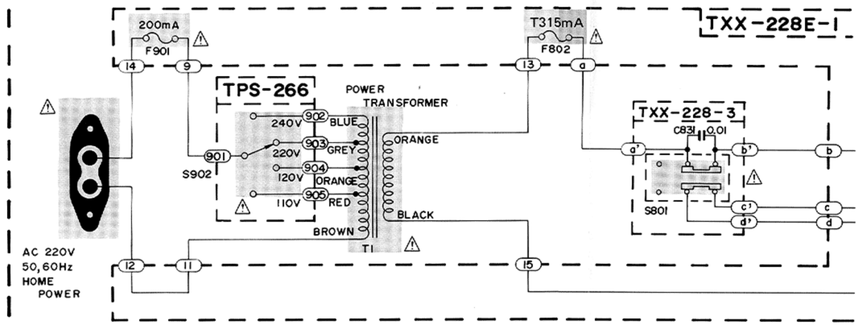

## T-X3 (E) FOR EUROPE & (A) FOR AUSTRALIA

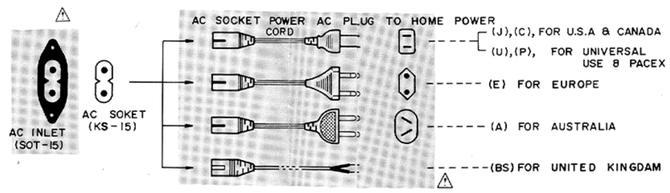
PRIMARY CIRCUIT : SELECTABLE AC 110/120/220/240V ~ 50Hz.
DEEMPHASIS : 50μSEC (USE TXX-228C or D)
VOLTAGE SELECTOR (S902 MOUNTED ON THE REAR PANEL) IS SET FOR 220V HOME POWER.




## T-X3 (BS) FOR UNITED KINGDAM

PRIMARY CIRCUIT : SELECTABLE AC 110/120/220/240V ~ 50Hz.
DEEMPHASIS : 50μSEC (USE TXX-228E)
VOLTAGE SELECTOR (S902 MOUNTED ON THE REAR PANEL) IS SET FOR 240V HOME POWER.




**Notes:**

1. Parts in red indicate transistors or ICs.
2. When replacing the parts in the darkened area and those marked with ⚠ be sure to use the designated parts to ensure safety.
3. This is the standard circuit diagram.
   The design and contents are subject to change without notice.

- C101 and L001 are additional items only for E, A and BS.
- C249 and C250 are 0.001 μF for E, A and BS.
- C257 and C258 are 0.0039 μF for E, A and BS.
- R261 and R262 are 8.2 kΩ for E and BS.

**Printed Circuit Board Ass'y Locations**

| P.C. Board Ass'y | Description | Page |
|---|---|---|
| TXX-228 | FM/AM Tuner and Power Supply P.C. Board Ass'y | 6 |
| TPS-266 | Voltage Selector P.C. Board Ass'y | 10 |