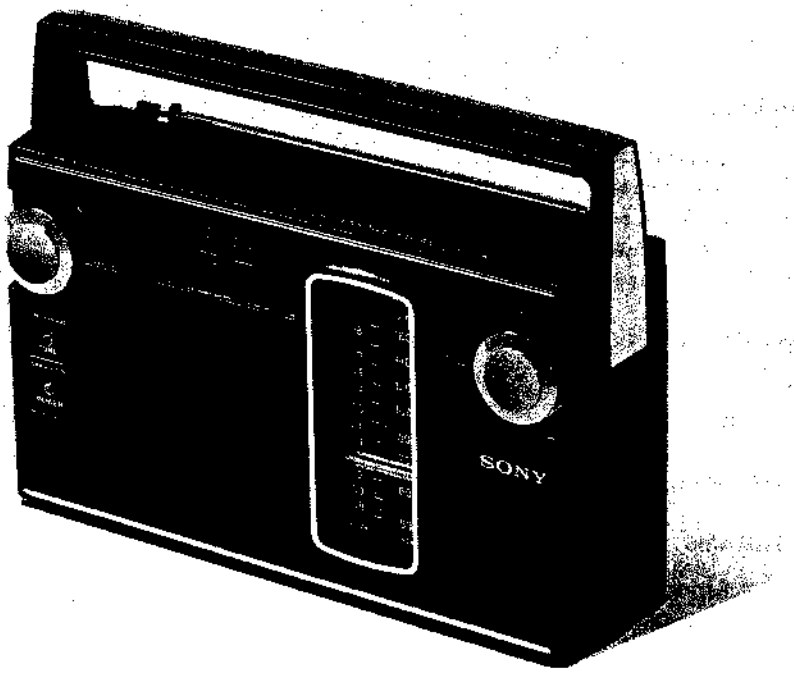
# TFM-7150W

*USA Model*
*Canada Model*




## FM-AM PORTABLE RADIO

### SPECIFICATIONS

| | |
|---|---|
| **Circuit:** | superheterodyne |
| **Frequency Range:** | FM 87.5 ~ 108 MHz (3.42 ~ 2.78 m)<br>AM 530 ~ 1,605 kHz (566 ~ 187 m) |
| **Intermediate Frequency:** | FM 10.7 MHz<br>AM 455 kHz |
| **Antennas:** | FM telescopic (5 section, 75 cm)<br>AM built-in ferrite bar (10 mm dia x 120 mm) |
| **Sensitivity at 50 mW output:** | FM 4.5 μV (13 dB) S/N = 30 dB<br>AM 56.3 μV/m (35 dB/m) S/N = 6 dB |
| **Selectivity:** | 25 dB at 1,400 kHz ± 10 kHz off-resonance |
| **Signal-to-Noise Ratio:** | FM 65 dB at 54 dB, 98 MHz input<br>AM 33 dB at 60 dB/m, 1,000 kHz input |
| **Output Power:** | 1 W maximum |
| **Power Consumption:** | 4 W AC |
| **Current Drain:** | FM 23 mA at no signal input<br>AM 20 mA at no signal input |
| **Power Requirement:** | 120 V AC, 60 Hz<br>6 V DC (battery size "AA" 4 pcs) |
| **Semiconductors:** | 10 transistors, 8 diodes |
| **Speaker:** | 9.2 cm (3¾") dia, 8 Ω |
| **Dimensions:** | 237 (w) x 178 (h) x 70 (d) mm<br>9⅜ (w) x 7 (h) x 2⅘ (d) inches |
| **Weight:** | 1.1 kg, 2 lb (with battery) |

SONY®
SERVICE MANUAL

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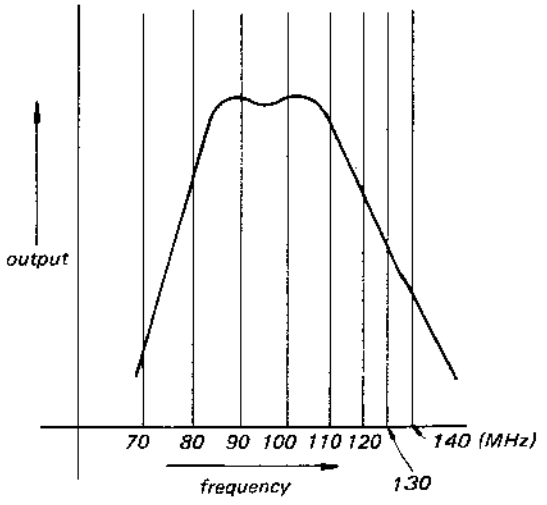
*When ordering replacement parts, use PART NUMBERS listed in Parts Lists or shown in EXPLODED VIEWS.*
*Parts List reference numbers should not be used.*

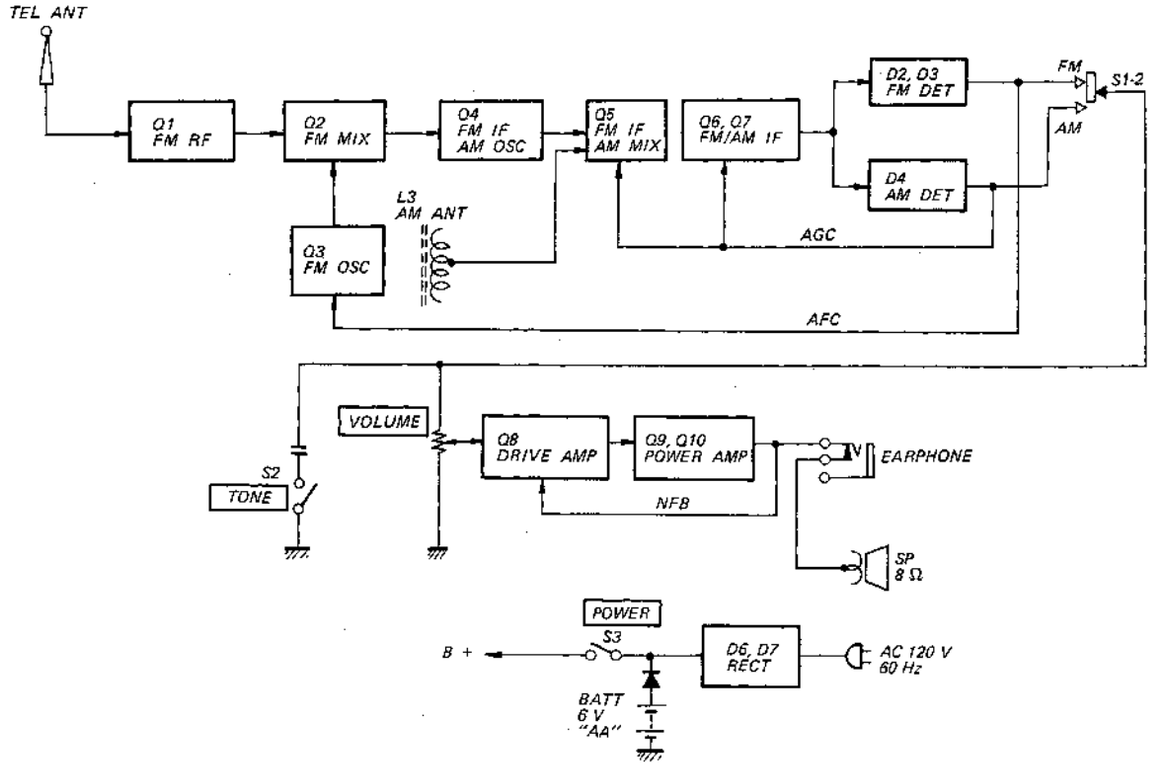
# SECTION 1
# OUTLINE

## 1-1. BANDPASS FILTER

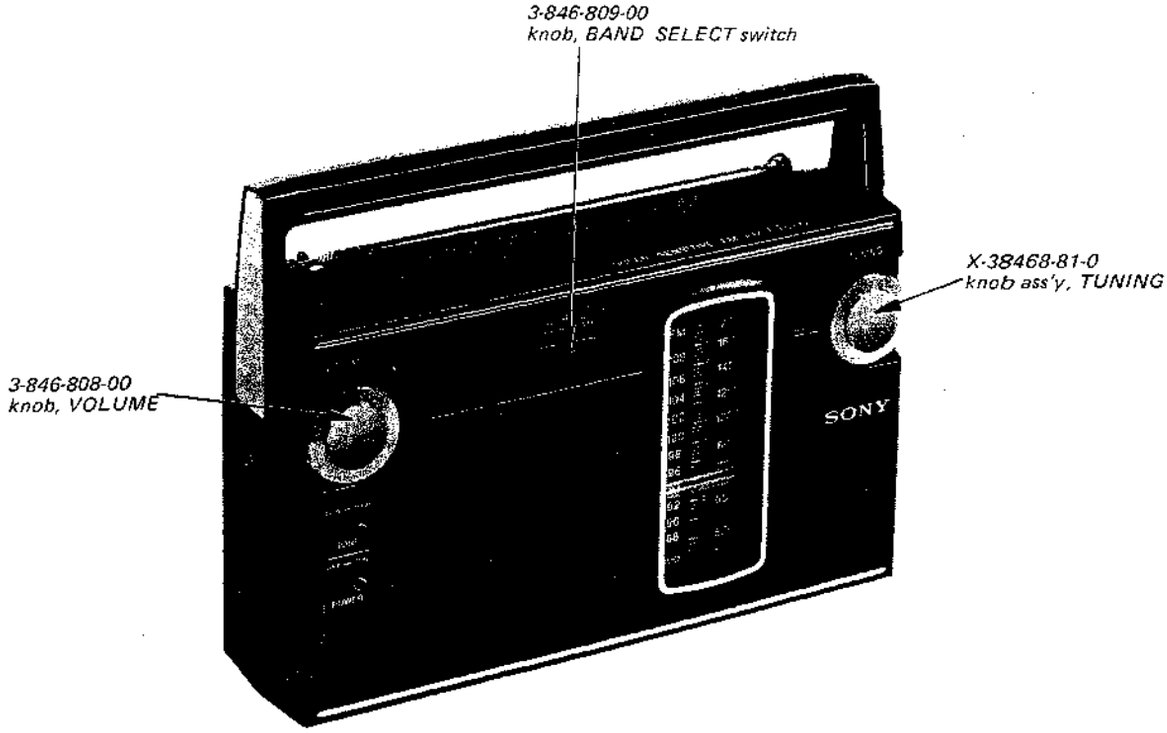
This model uses bandpass filter CL-1 for resonant circuit of FM rf amplifier. This bandpass filter passes frequencies between 87.5 MHz and 108 MHz, and does not pass undesired or image signals.



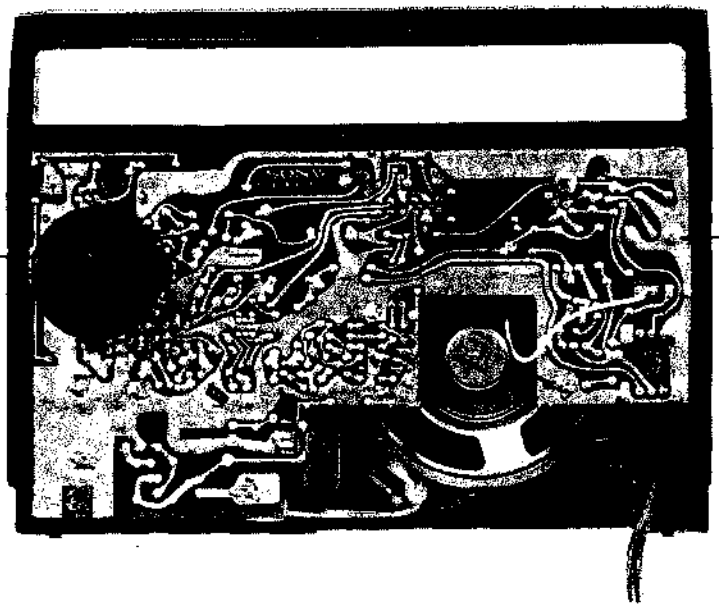
## 1-2. BLOCK DIAGRAM



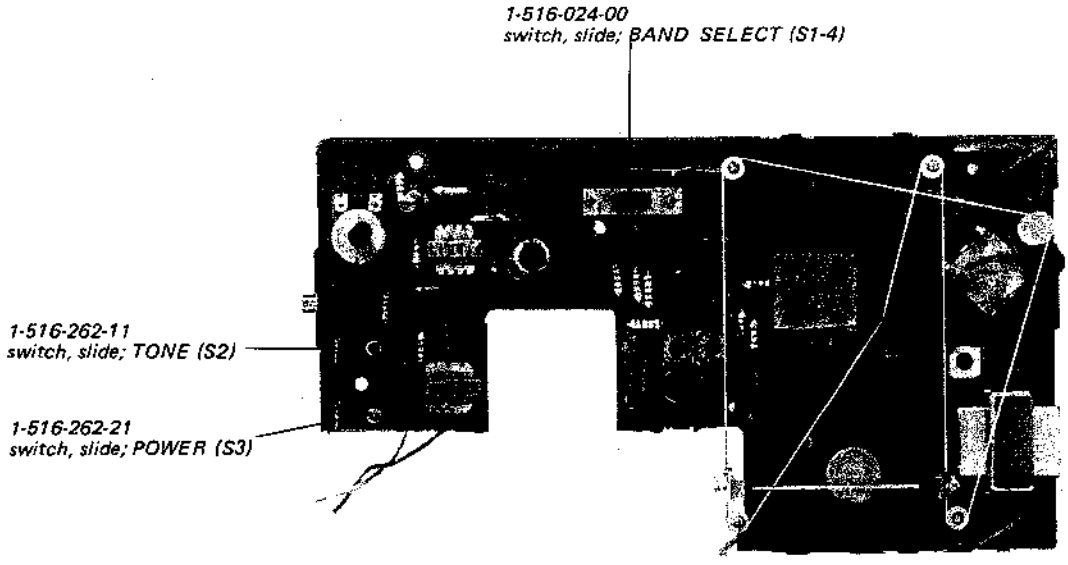

## 1-3. EXTERNAL VIEW



## 1-4. INTERNAL VIEW
— rear —

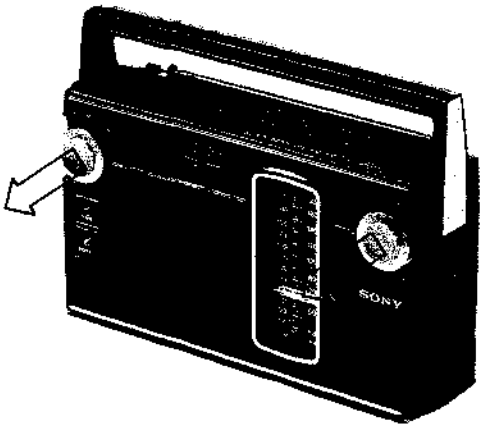



## 1-5. INTERNAL VIEW
— front —

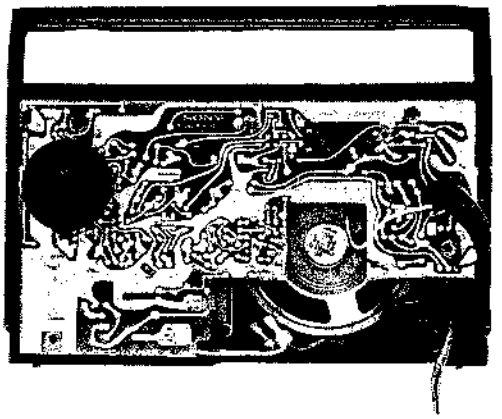


# SECTION 2
# DISASSEMBLY

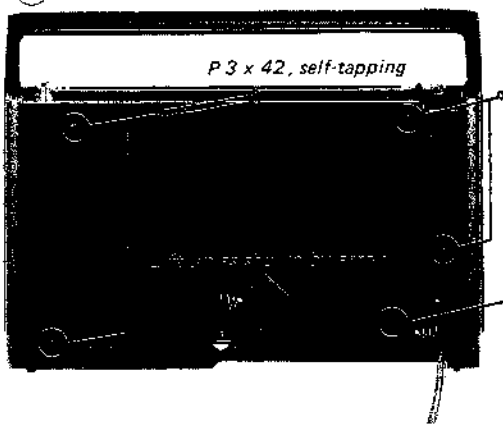
## 2-1. DISASSEMBLY



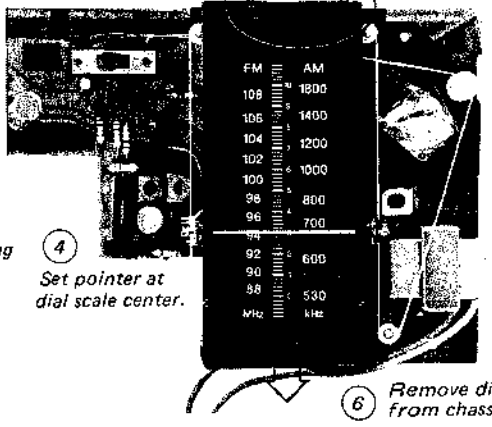

(1) *Remove two knobs.*



(3) *Lift up chassis as shown by arrow*




(2)




(4) *Set pointer at dial scale center.*

(5) *Push chassis claw as shown by arrows.*

*Push this chassis claw.*

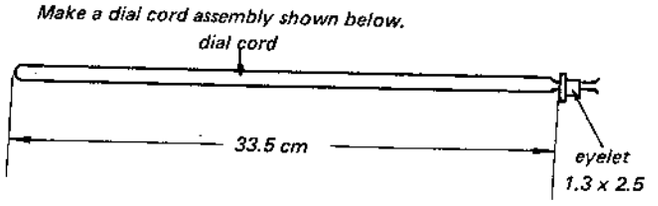
*dial scale*

(6) *Remove dial scale from chassis*

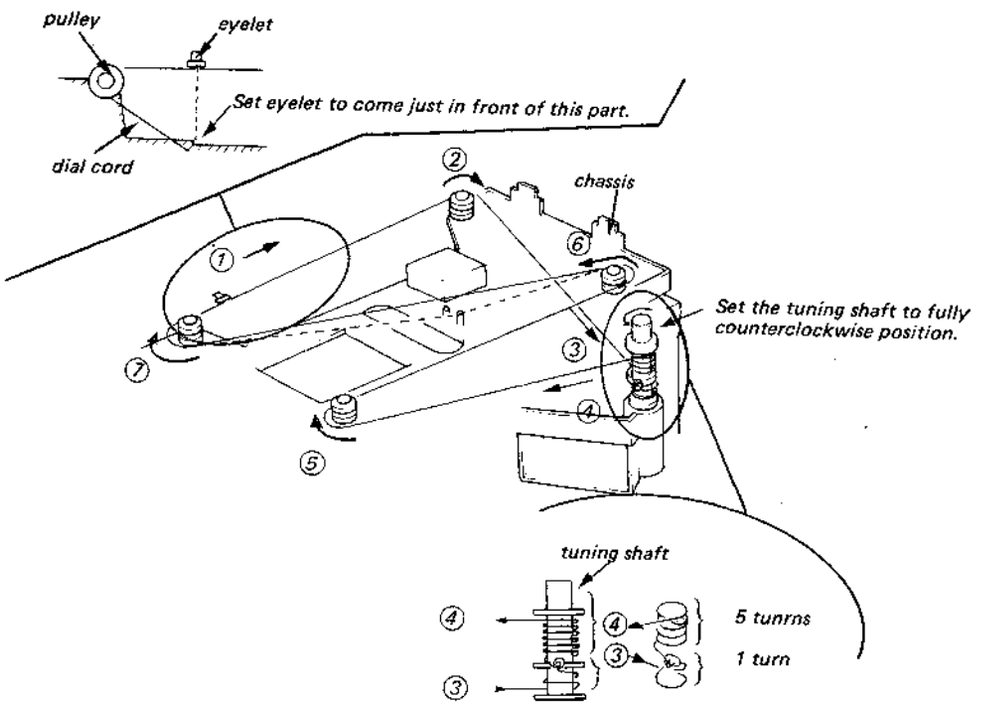
## 2-2. DIAL CORD STRINGING

**Note:** Do this dial cord stringing after removing dial scale.

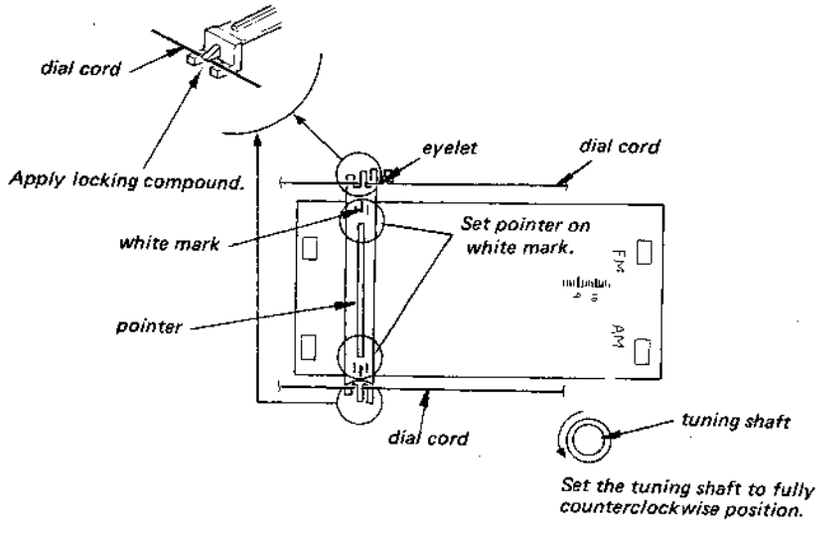
(1) *Make a dial cord assembly shown below.*




(2)




(3)



# SECTION 3

# ADJUSTMENTS

## Test Equipment/Tools Required

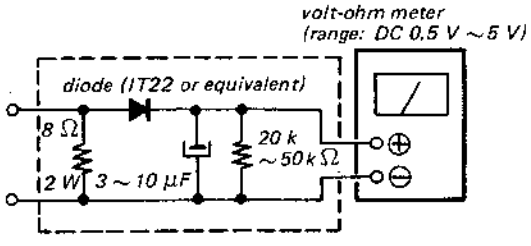
* AM rf signal generator
* FM rf signal generator
* volt-ohm meter
* capacitor 0.01 μF

**Note:** 1. Moduration
AM: 30 % amplitude modulation by 400 Hz signal
FM: ± 22.5 kHz frequency modulation by 400 Hz signal

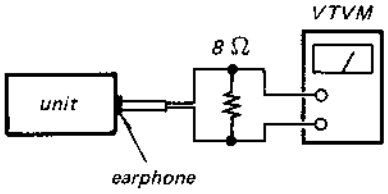
2. AM, FM rf signal generator output level should be as low as possible for following adjustment.

3. When your volt-ohm meter does not have 0.5 ~ 5 V AC range, use the DC range with rectifying network or use VTVM as shown below.

**rectfying network**




**VTVM connection**



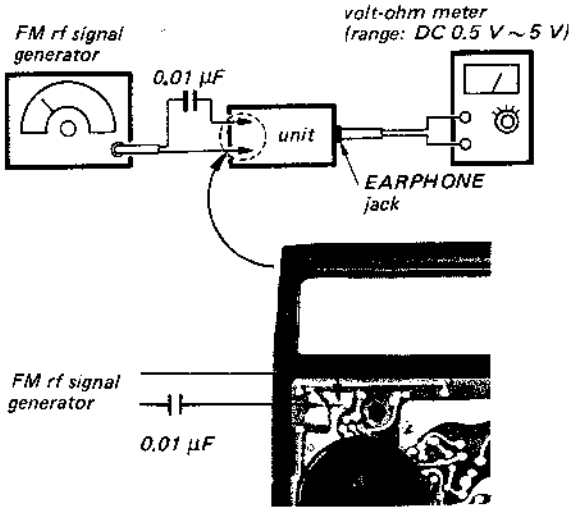

## 1. FM I-f Adjustment

**Control/Switch Setting:**

BAND SELECT switch: FM
VOLUME control: maximum

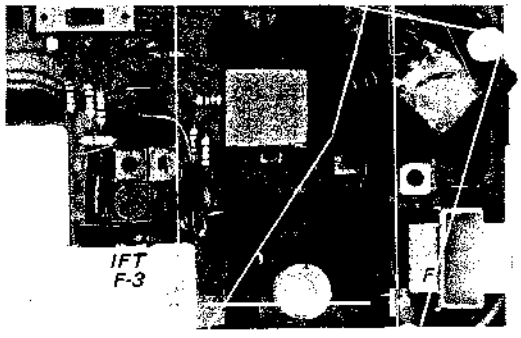
**Procedure:**

1. *FM rf signal generator*

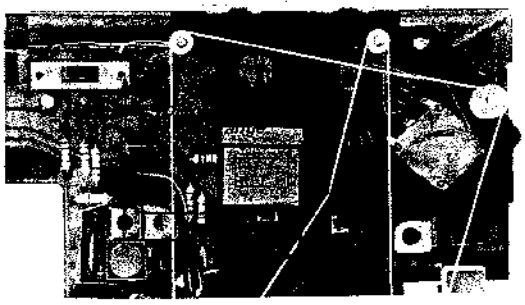



| Step | FM rf signal generator frequency | Tuning knob position | Adjust | Volt-ohm meter reading |
|---|---|---|---|---|
| 1 | 10.7 MHz | Detune broadcasting signals. | FM rf signal generator tuning knob | maximum |
| 2 | 10.7 MHz | Detune broadcasting signals. | IFT F1 ~ F3 | maximum |
| 3 | Repeat above steps two or three times. | | | |
| 4 | no signal | Detune broadcasting signals. | IFT F3 | DC 0 V |

**Adjustment Locations:**




**Volt-ohm Meter Connection in Step 4:**



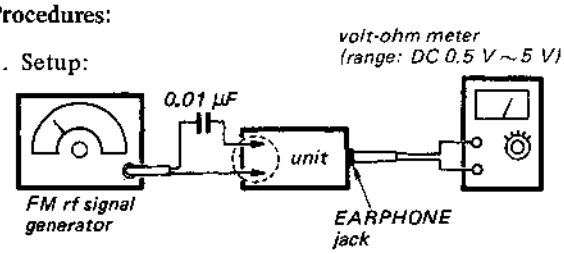
## 2. FM Frequency Coverage and Tracking Adjustment

**Control/Switch Setting:**

BAND SELECT switch: FM
VOLUME control: maximum

**Procedures:**

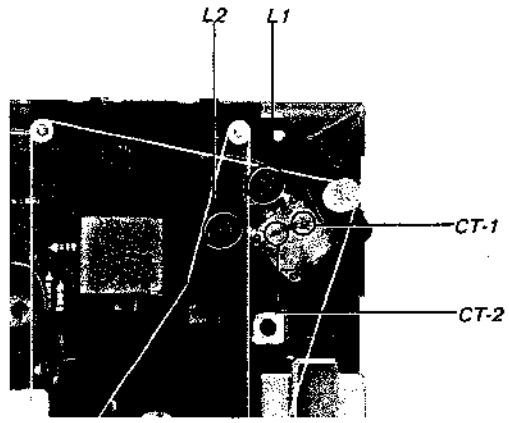
1. Setup:




| Adjustment | Step | FM rf signal generator frequency | Tuning knob | Adjust | Volt-ohm meter reading |
|---|---|---|---|---|---|
| Frequency coverage | 1 | 86.5 MHz | fully counter-clockwise | L2 | maximum |
| | 2 | 109.5 MHz | fully clockwise | CT2 | maximum |
| Tracking | 1 | 86.5 MHz | fully counter-clockwise | L1 | maximum |
| | 2 | 109.5 MHz | fully clockwise | CT1 | maximum |

**Note:** 1. Repeat above steps two or three times.
2. After this adjustment, fix the FM osc coil (L2) with wax.
3. Adjust the pitch of coils L1 and L2.

**Adjustment Locations:**



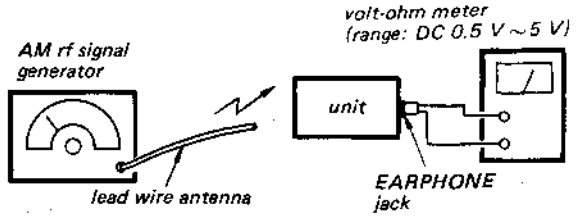

## 3. AM I-F Adjustment

**Control/Switch Setting:**

BAND SELECT switch: AM
VOLUME control: maximum

**Procedure:**

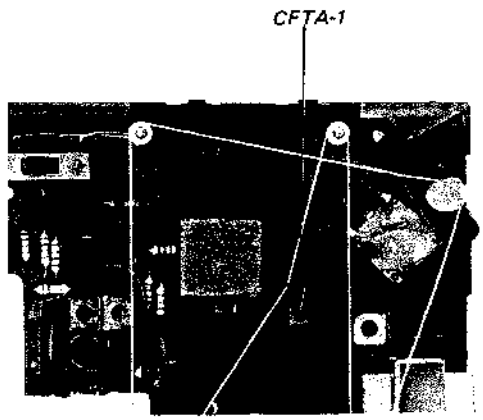
1. Setup:




| Step | AM rf signal generator frequency | Tuning knob | Adjust | Volt-ohm meter reading |
|---|---|---|---|---|
| 1 | 455 kHz | Detune broadcasting signals. | CFTA-1 | maximum |
| 2 | 455 kHz | Detune broadcasting signals. | AM rf signal generator tuning knob | maximum |

**Note:** Repeat above steps two or three times.

**Adjustment Location:**



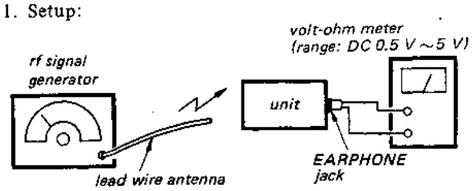
### 4. AM Frequency Coverage Adjustment and Tracking Adjustment

**Control/Switch Setting:**

BAND SELECT switch: AM
VOLUME control: maximum

**Procedure:**

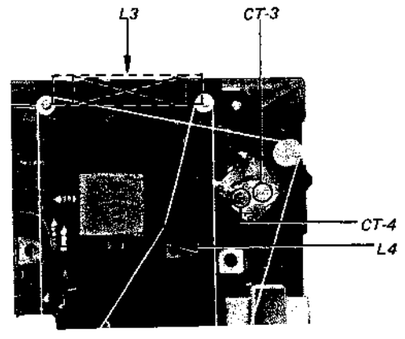
1. Setup:




| Adjustment | Step | AM rf signal generator frequency | Tuning knob | Adjust | Volt-ohm meter reading |
|---|---|---|---|---|---|
| Frequency coverage | 1 | 520 kHz | fully counter-clockwise | L4 | maximum |
| | 2 | 1,680 kHz | fully clockwise | CT4 | maximum |
| Tracking | 1 | 620 kHz | Tune to 620 kHz | L3 | maximum |
| | 2 | 1,400 kHz | Tune to 1,400 kHz | CT3 | maximum |

**Note:** 1. Repeat above steps two or three times.
2. After this adjustment, fix the ferrite bar antenna coil (L3) with wax.

**Adjustment Locations:**

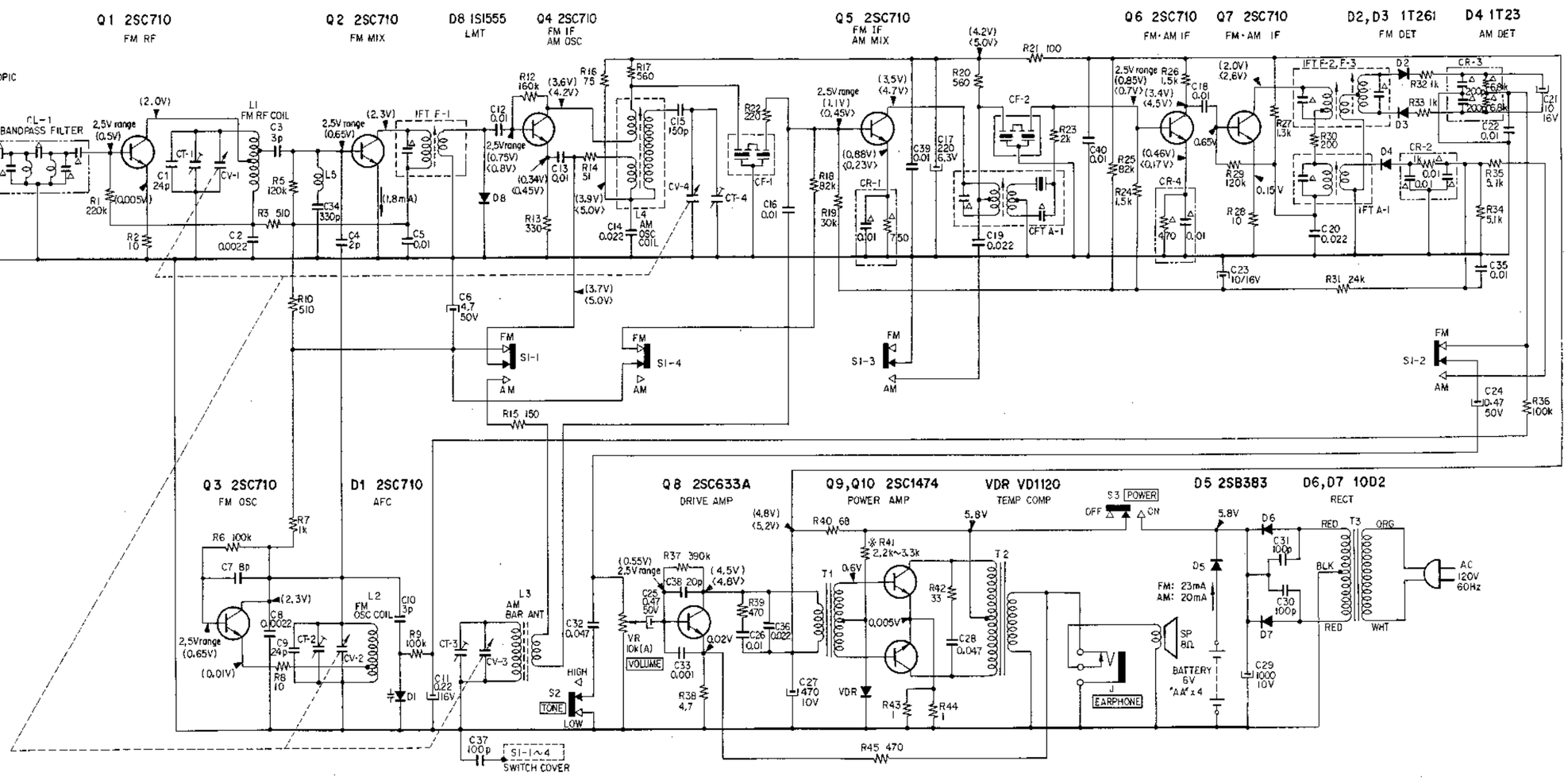





## MEMO

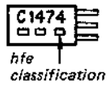
# SECTION 4
# DIAGRAMS

## 4-1. SCHEMATIC DIAGRAM




- ※ Resistance value of R41 is given by hfe rank of transistors Q9 and Q10.

| hfe rank | R41 (Ω) |
|---|---|
| 3 | 2.2 k |
| 4 | 2.7 k |
| 5 | 3.3 k |




Use transistors having the same hfe rank for Q11 and Q12.

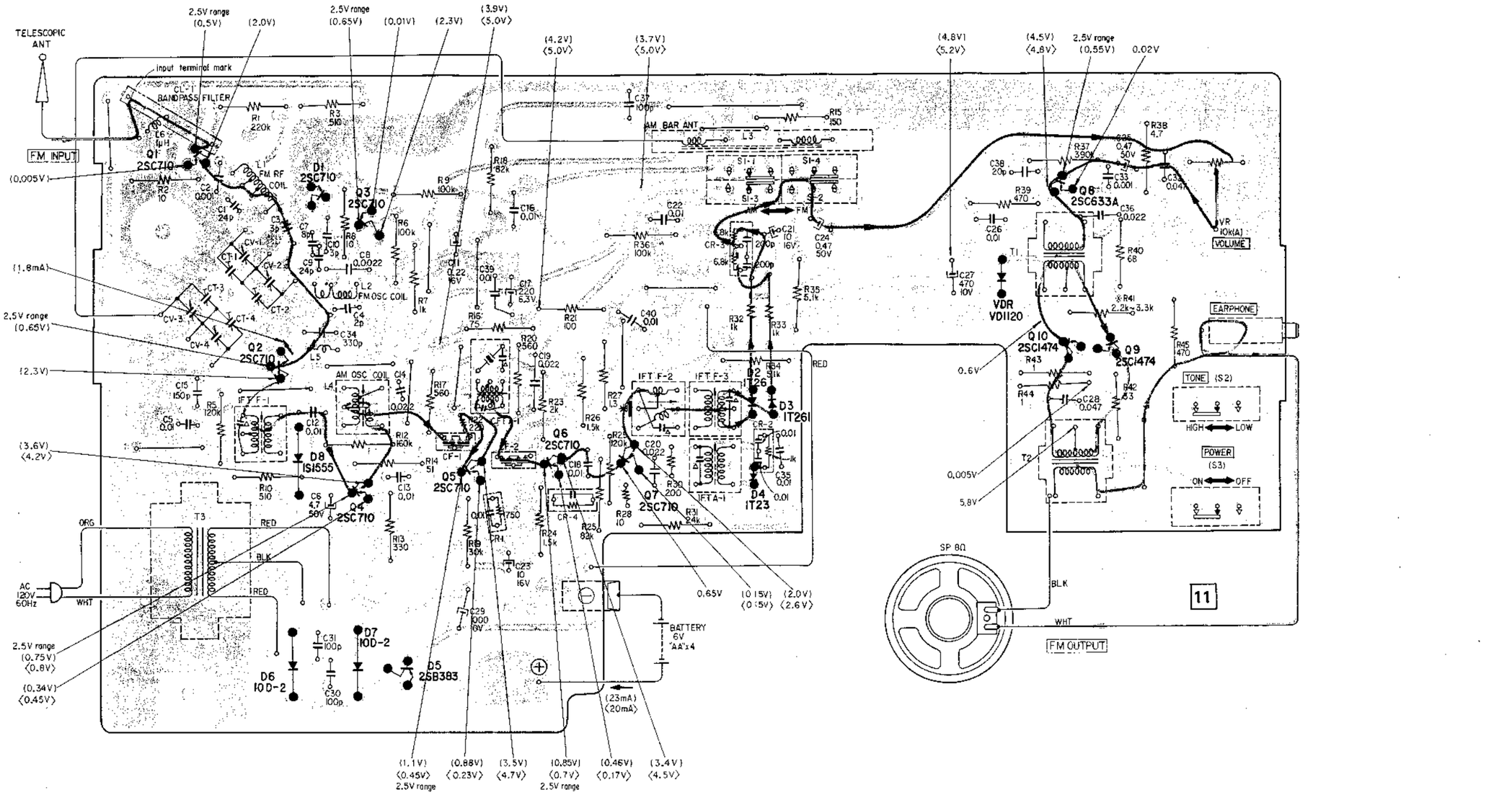
- When replacing ceramic filter, use one whose identification color is the same as the used one.
- Switch mode

| Ref. No. | Switch | Mode |
|---|---|---|
| S1 | FM/AM | FM |
| S2 | TONE | LOW |
| S3 | POWER | OFF |

**Note:**

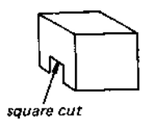
- All resistors and capacitors are in Ω and μF, unless otherwise specified.
- Letter in ( ) suffixed to variable resistor value indicates characteristics.
- Voltage values shown are measured with a voltmeter (20 kΩ/V). Variations may be noted due to normal production tolerances.
  The values in ( ) indicate readings on FM, in < > on AM, others are common.
- Capacitors marked △are included in i-f transformers.
- Transistors are used for D1 and D5 instead of diodes.

## 4-2. MOUNTING DIAGRAM



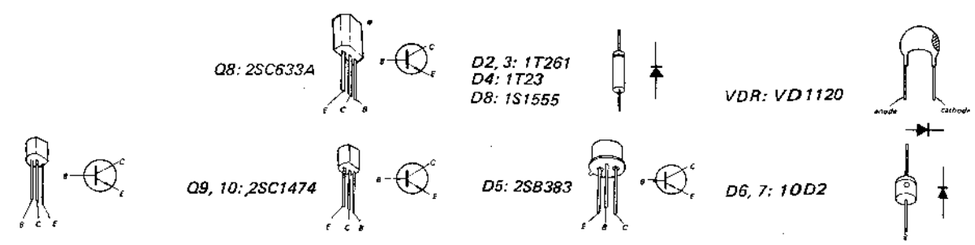

**Note:** Place IFT F-2 so that square cut comes the same direction as mark * ☐

: signal pass




**Transistor Location**

| | | | |
|---|---|---|---|
| Q1 | 2B | Q6 | 4E |
| Q2 | 3C | Q7 | 4F |
| Q3 | 2D | Q8 | 2I |
| Q4 | 4C | Q9 | 3I |
| Q5 | 4D | Q10 | 3I |

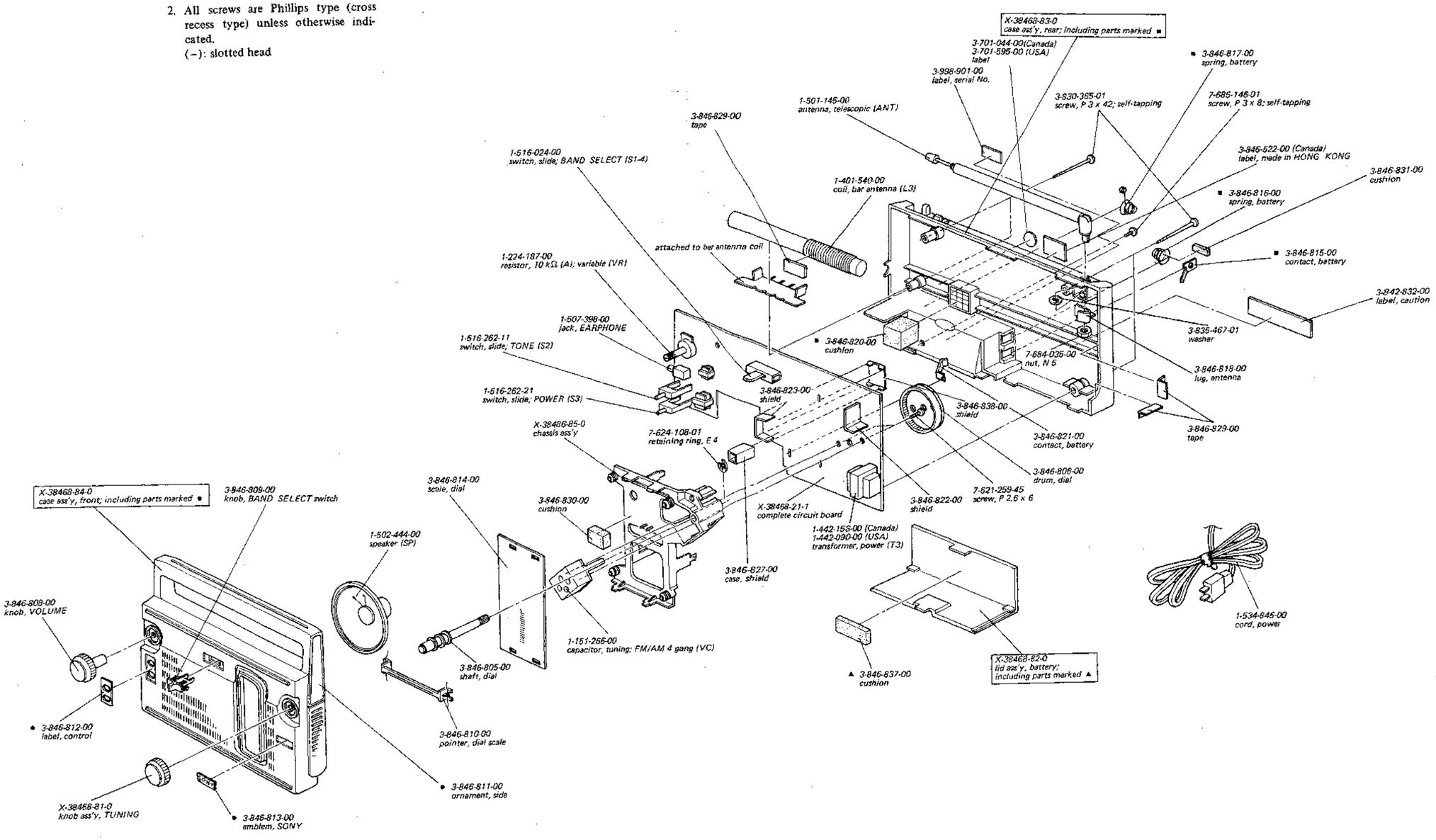


# SECTION 5
# EXPLODED VIEW AND PACKING

## 5-1. EXPLODED VIEW

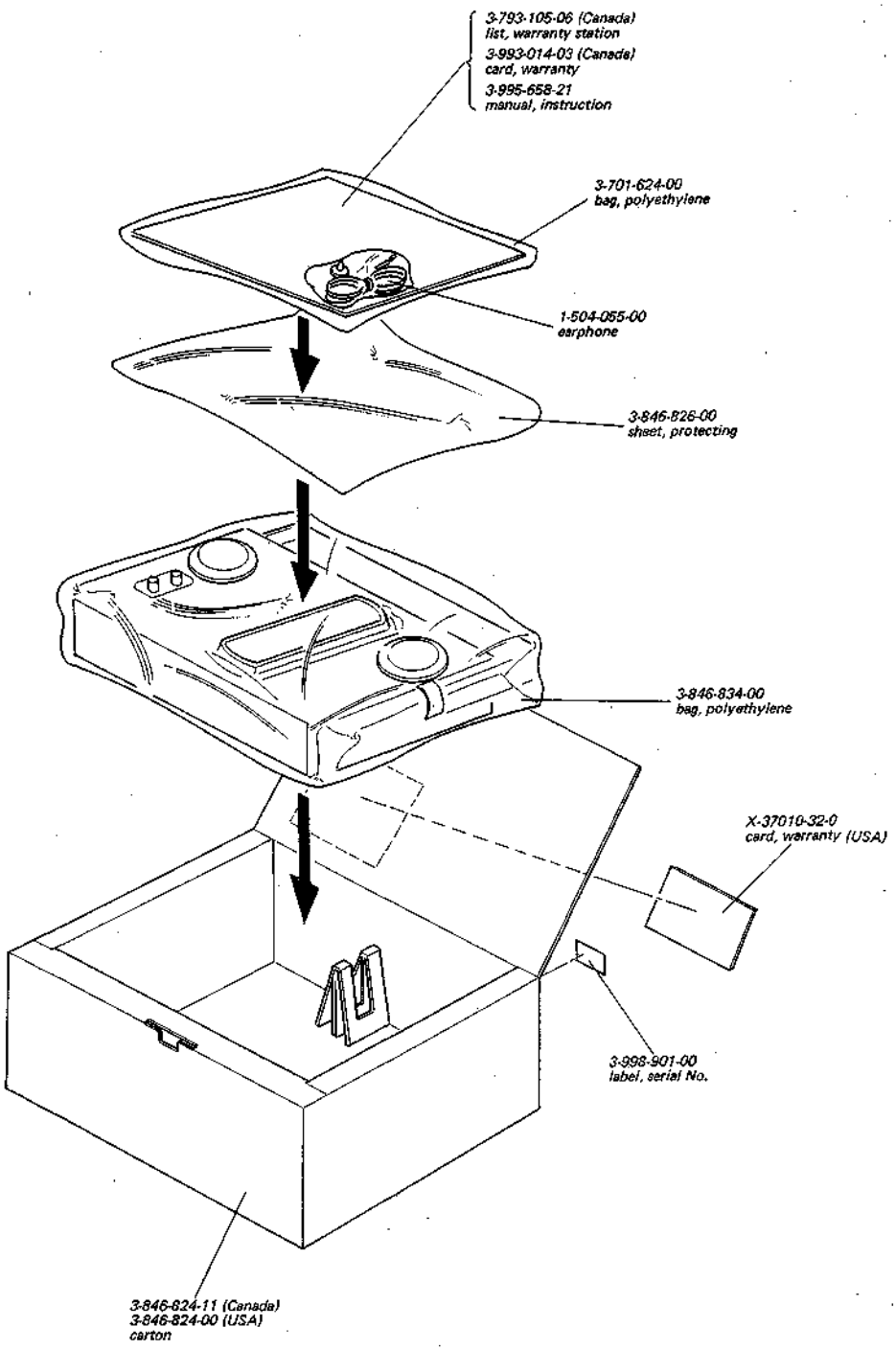
**Note:** 1. Parts without part numbers and names are not available.

2. All screws are Phillips type (cross recess type) unless otherwise indicated.
(−): slotted head



## 5-2. PACKING

**Note:** 1. Parts without part numbers and names are not available.



# SECTION 6

# ELECTRICAL PARTS

| Ref. No. | Part No. | Description |
|---|---|---|
| | X-38468-21-1 | complete circuit board |

### SEMICONDUCTORS

| | | |
|---|---|---|
| Q1, 2 | transistor | 2SC710 |
| Q3, 4 | transistor | 2SC710 |
| Q5, 6 | transistor | 2SC710 |
| Q7 | transistor | 2SC710 |
| Q8 | transistor | 2SC633 |
| Q9, 10 | transistor | 2SC1474 |
| D1 | transistor | 2SC710 |
| D2, 3 | diode | 1T261 |
| D4 | diode | 1T23 |
| D5 | transistor | 2SB383 |
| D6, 7 | diode | 10D2 |
| D8 | diode | 1S1555 |
| VDR | varistor | VD1120 |

### COILS & TRANSFORMERS

| | | |
|---|---|---|
| L1 | 1-425-791-00 | coil, FM rf |
| L2 | 1-425-792-00 | coil, FM osc |
| L3 | 1-401-540-00 | coil, bar antenna |
| L4 | 1-405-597-00 | coil, AM osc |
| L5 | 1-401-454-00 | coil, FM trap |
| L6 | 1-407-178-00 | coil, 1 μH |
| T1 | 1-423-193-00 | transformer, driver |
| T2 | 1-427-356-00 | transformer, output |
| T3 | 1-442-090-00 | transformer, power (USA) |
| | 1-442-156-00 | transformer, power (Canada) |
| IFTA-1 | 1-403-900-00 | AM IFT |
| IFTF-1 | 1-403-899-00 | FM IFT |
| IFTF-2 | 1-403-903-00 | FM IFT discriminator |
| IFTF-3 | 1-403-902-00 | FM IFT discriminator |

### CAPACITORS

All capacitors are in μF unless otherwise indicated.
P = μμ

| | | | | |
|---|---|---|---|---|
| C1 | 1-102-960-11 | 24 p | 50 V | ceramic |
| C2 | 1-102-100-11 | 0.0022 | 50 V | ceramic |
| C3 | 1-102-940-11 | 3 p | 50 V | ceramic |
| C4 | 1-102-939-11 | 2 p | 50 V | ceramic |
| C5 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C6 | 1-121-396-11 | 4.7 | 50 V | electrolytic |
| C7 | 1-102-945-11 | 8 p | 50 V | ceramic |
| C8 | 1-102-100-11 | 0.0022 | 50 V | ceramic |
| C9 | 1-102-642-11 | 24 p | 50 V | ceramic |
| C10 | 1-102-940-11 | 3 p | 50 V | ceramic |
| C11 | 1-127-046-00 | 0.22 | 50 V | solid aluminum electrolytic |
| C12 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C13 | 1-105-833-12 | 0.01 | 50 V | mylar |
| C14 | 1-105-837-12 | 0.022 | 50 V | mylar |
| C15 | 1-107-135-11 | 150 p | 50 V | silvered mica |
| C16 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C17 | 1-121-419-11 | 220 | 6.3 V | electrolytic |
| C18 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C19 | 1-102-005-11 | 0.022 | 50 V | ceramic |
| C20 | 1-102-005-11 | 0.022 | 50 V | ceramic |
| C21 | 1-121-651-11 | 10 | 16 V | electrolytic |
| C22 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C23 | 1-121-651-11 | 10 | 16 V | electrolytic |
| C24 | 1-121-726-11 | 0.47 | 50 V | electrolytic |
| C25 | 1-121-726-11 | 0.47 | 50 V | electrolytic |
| C26 | 1-105-833-12 | 0.01 | 50 V | mylar |
| C27 | 1-121-425-11 | 470 | 10 V | electrolytic |
| C28 | 1-105-841-12 | 0.047 | 50 V | mylar |
| C29 | 1-121-736-11 | 1000 | 10 V | electrolytic |
| C30 | 1-102-960-11 | 100 p | 50 V | ceramic |
| C31 | 1-102-960-11 | 100 p | 50 V | ceramic |
| C32 | 1-105-841-12 | 0.047 | 50 V | mylar |
| C33 | 1-101-455-11 | 0.001 | 50 V | ceramic |
| C34 | 1-102-112-11 | 330 p | 50 V | ceramic |
| C35 | 1-105-833-12 | 0.01 | 50 V | mylar |
| C36 | 1-105-837-12 | 0.022 | 50 V | mylar |
| C37 | 1-102-973-11 | 100 p | | ceramic |
| C38 | | ---------- | | |
| C39 | 1-101-923-11 | 0.01 | 50 V | ceramic |
| C40 | 1-101-923-11 | 0.01 | 50 V | ceramic |
| VC1-4, CT1-4 | 1-151-266-00 | tuning, FM/AM 4 gang | | |

### RESISTORS

All resistors are in Ω, carbon type and ¼ W unless otherwise indicated. k = 1,000

| | | |
|---|---|---|
| R1 | 1-244-729-11 | 220 k |
| R2 | 1-244-625-11 | 10 |
| R3 | 1-244-666-11 | 510 |
| R4 | | ---------- |
| R5 | 1-244-723-11 | 120 k |
| R6 | 1-244-721-11 | 100 k |
| R7 | 1-244-673-11 | 1 k |
| R8 | 1-244-625-11 | 10 |
| R9 | 1-244-721-11 | 100 k |
| R10 | 1-244-666-11 | 510 |
| R11 | | ---------- |
| R12 | 1-244-726-11 | 160 k |
| R13 | 1-244-661-11 | 330 |
| R14 | 1-244-642-11 | 51 |
| R15 | 1-244-653-11 | 150 |
| R16 | 1-244-646-11 | 75 |
| R17 | 1-244-667-11 | 560 |

| Ref. No. | Part No. | Description |
|---|---|---|
| R18 | 1-244-719-11 | 82 k |
| R19 | 1-244-708-11 | 30 k |
| R20 | 1-244-667-11 | 560 |
| R21 | 1-244-649-11 | 100 |
| R22 | 1-240-457-11 | 220 |
| R23 | 1-244-680-11 | 2 k |
| R24 | 1-244-677-11 | 1.5 k |
| R25 | 1-244-719-11 | 82 k |
| R26 | 1-244-677-11 | 1.5 k |
| R27 | 1-244-676-11 | 1.3 k |
| R28 | 1-244-625-11 | 10 |
| R29 | 1-244-723-11 | 120 k |
| R30 | 1-240-456-11 | 200 |
| R31 | 1-240-706-11 | 24 k |
| R32 | 1-244-673-11 | 1 k |
| R33 | 1-244-673-11 | 1 k |
| R34 | 1-244-690-11 | 5.1 k |
| R35 | 1-244-690-11 | 5.1 k |
| R36 | 1-244-721-11 | 100 k |
| R37 | 1-244-735-11 | 390 k |
| R38 | 1-244-617-11 | 4.7 |
| R39 | 1-244-665-11 | 470 |
| R40 | 1-244-645-11 | 68 |
| R41 | 1-244-681-11 | 2.2 k } for adjustment |
| | 1-244-683-11 | 2.7 k |
| | 1-244-685-11 | 3.3 k |
| R42 | 1-244-637-11 | 33 |
| R43 | 1-244-601-11 | 1 |
| R44 | 1-244-601-11 | 1 |
| R45 | 1-244-665-11 | 470 |
| VR | 1-224-187-00 | 10 k (A), variable |

| Ref. No. | Part No. | Description |
|---|---|---|
| | | **MISCELLANEOUS** |
| ANT | 1-501-145-00 | antenna, telescopic |
| CF1, 2 | 1-527-184-11 | filter, ceramic: FM red |
| | 1-527-184-12 | filter, ceramic: FM blue |
| | 1-527-184-13 | filter, ceramic: FM orange |
| | 1-527-184-14 | filter, ceramic: FM black |
| | 1-527-184-15 | filter, ceramic: FM white |
| CF3 | 1-403-163-11 | ceramic filter, 455 kHz |
| CL1 | 1-231-249-00 | bandpass filter |
| CR1 | 1-231-171-00 | C-R component |
| CR2 | 1-231-204-00 | C-R component |
| CR3 | 1-231-202-00 | C-R component |
| CR4 | 1-231-160-00 | C-R component |
| J | 1-507-398-00 | jack, EARPHONE |
| | 1-534-845-00 | cord, power |
| S1-4 | 1-516-024-00 | switch, slide; BAND SELECT |
| S2 | 1-516-262-11 | switch, slide; TONE |
| S3 | 1-516-262-21 | switch, slide; POWER |
| SP | 1-502-444-00 | speaker |

## — Hardware Nomenclature —

P – Pan Head Screw

PS – Pan Head Screw with Spring Washer

K – Flat Countersunk Head Screw

B – Binding Head Screw

RK – Oval Countersunk Head Screw

T – Truss Head Screw

R – Round Head Screw

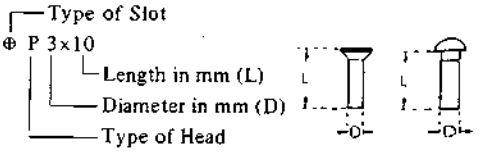
F – Flat Fillister Head Screw

SC – Set Screw

E – Retaining Ring (E Washer)

W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

**– Example –**




SONY CORPORATION



3C0537-1

Printed in Japan

FM-AM PORTABLE RADIO

# TFM-7150W

*USA Model*
*(Serial No. 30001 ~ 35000, 45501 ~ 55500)*

*Canada Model*
*(Serial No. 45001 ~ 45500)*

# SUPPLEMENT

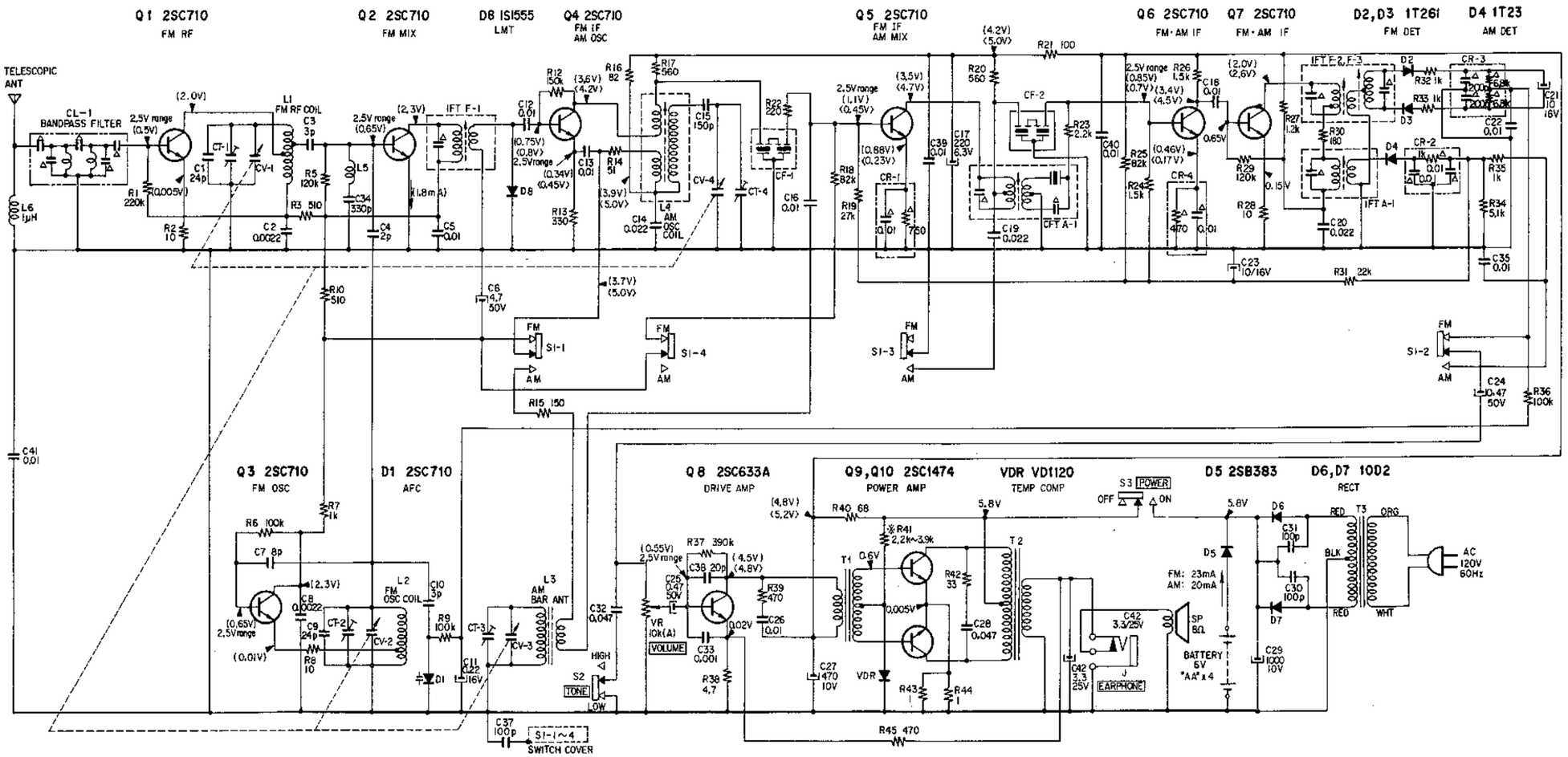
No. 1
July, 1973

This supplement updates the service manual to include production changes.
File this supplement with the service manual.

SONY®
SERVICE MANUAL

## MEMO

## 1. SCHEMATIC DIAGRAM




**Note:** ● ※ Resistance value of R41 is given by hfe rank of transistors Q9 and Q10.

| hfe rank | R41 (Ω) |
|---|---|
| 3 | 2.2 k |
| 4 | 3.3 k |
| 5 | 3.9 k |

*hfe classification*

Use transistors having the same hfe rank for Q11 and Q12.

● When replacing ceramic filter, use one whose identification color is the same as the used one.

● Switch mode

| Ref. No. | Switch | Mode |
|---|---|---|
| S1 | FM/AM | FM |
| S2 | TONE | LOW |
| S3 | POWER | OFF |

● All resistors and capacitors are in Ω and μF, unless otherwise specified.

● Letter in ( ) suffixed to variable resistor value indicates characteristics.

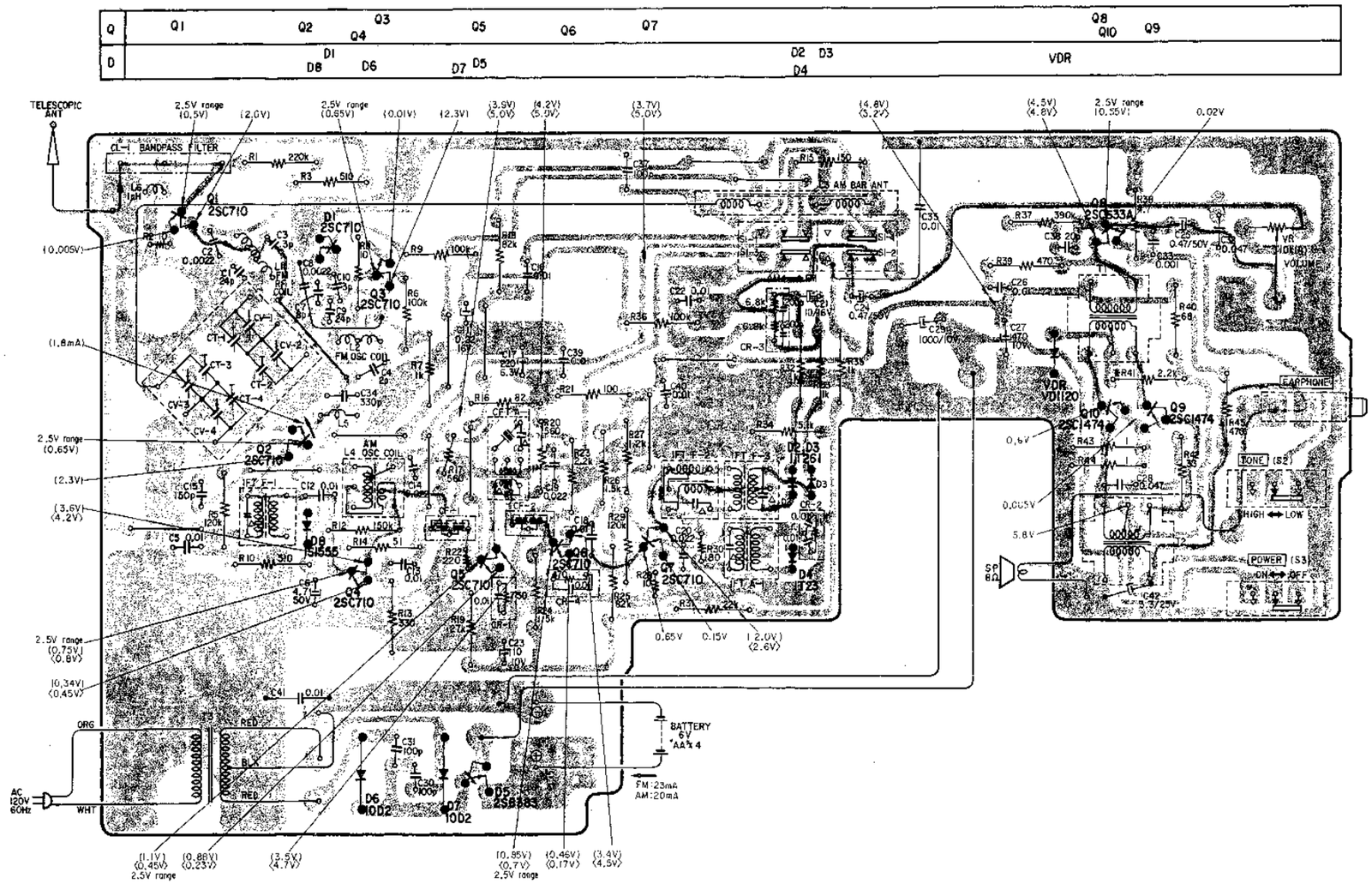
● Voltage values shown are measured with a voltmeter (20 kΩ/V). Variations may be noted due to normal production tolerances.
The values in { } indicate readings on FM, in < > on AM, others are common.

● Capacitors marked △ are included in i-f transformers.

● Transistors are used for D1 and D5 instead of diodes.

## 2. MOUNTING DIAGRAM

*– Conductor Side –*

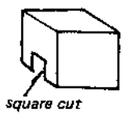


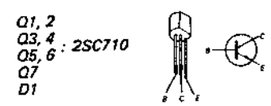

12

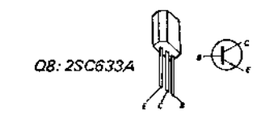
: signal path in FM mode

**Note:** 1. C8, C35, C41, C42 } mounted on conductor side

2. Place IFT F-2 so that square cut comes in the same direction as mark ※



## 3. ELECTRICAL PARTS LIST

| Ref. No. | Part No. | Description |
|---|---|---|
| | X-38468-21-1 | complete circuit board |

### SEMICONDUCTORS

| | | |
|---|---|---|
| Q1, 2 | transistor | 2SC710 |
| Q3, 4 | transistor | 2SC710 |
| Q5, 6 | transistor | 2SC710 |
| Q7 | transistor | 2SC710 |
| Q8 | transistor | 2SC633 |
| Q9, 10 | transistor | 2SC1474 |
| D1 | transistor | 2SC710 |
| D2, 3 | diode | 1T261 |
| D4 | diode | 1T23 |
| D5 | transistor | 2SB383 |
| D6, 7 | diode | 10D2 |
| D8 | diode | 1S1555 |
| VDR | varistor | VD1120 |

### COILS & TRANSFORMERS

| | | |
|---|---|---|
| L1 | 1-425-791-00 | coil, FM rf |
| L2 | 1-425-792-00 | coil, FM osc |
| L3 | 1-401-540-00 | coil, bar antenna |
| L4 | 1-405-597-00 | coil, AM osc |
| L5 | 1-401-454-00 | coil, FM trap |
| L6 | 1-407-178-00 | coil, 1 μH |
| T1 | 1-423-193-00 | transformer, driver |
| T2 | 1-427-356-00 | transformer, output |
| T3 | 1-442-090-00 | transformer, power (USA) |
| | 1-442-156-00 | transformer, power (Canada) |
| IFTA-1 | 1-403-900-00 | AM IFT |
| IFTF-1 | 1-403-899-00 | FM IFT |
| IFTF-2 | 1-403-903-00 | FM IFT discriminator |
| IFTF-3 | 1-403-902-00 | FM IFT discriminator |

### CAPACITORS

All capacitors are in μF unless otherwise indicated.
P = μμ

| | | | | |
|---|---|---|---|---|
| C1 | 1-102-960-11 | 24 p | 50 V | ceramic |
| C2 | 1-102-100-11 | 0.0022 | 50 V | ceramic |
| C3 | 1-102-940-11 | 3 p | 50 V | ceramic |
| C4 | 1-102-939-11 | 2 p | 50 V | ceramic |
| C5 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C6 | 1-121-396-11 | 4.7 | 50 V | electrolytic |
| C7 | 1-102-945-11 | 8 p | 50 V | ceramic |
| C8 | 1-102-100-11 | 0.0022 | 50 V | ceramic |
| C9 | 1-102-642-11 | 24 p | 50 V | ceramic |
| C10 | 1-102-940-11 | 3 p | 50 V | ceramic |
| C11 | 1-127-046-00 | 0.22 | 50 V | solid aluminum |
| C12 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C13 | 1-105-833-12 | 0.01 | 50 V | mylar |
| C14 | 1-105-837-12 | 0.022 | 50 V | mylar |
| C15 | 1-107-135-11 | 150 p | 50 V | silvered mica |
| C16 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C17 | 1-121-419-11 | 220 | 6.3 V | electrolytic |
| C18 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C19 | 1-102-005-11 | 0.022 | 50 V | ceramic |
| C20 | 1-102-005-11 | 0.022 | 50 V | ceramic |
| C21 | 1-121-651-11 | 10 | 16 V | electrolytic |
| C22 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C23 | 1-121-651-11 | 10 | 16 V | electrolytic |
| C24 | 1-121-726-11 | 0.47 | 50 V | electrolytic |
| C25 | 1-121-726-11 | 0.47 | 50 V | electrolytic |
| C26 | 1-105-833-12 | 0.01 | 50 V | mylar |
| C27 | 1-121-425-11 | 470 | 10 V | electrolytic |
| C28 | 1-105-841-12 | 0.047 | 50 V | mylar |
| C29 | 1-121-736-11 | 1000 | 10 V | electrolytic |
| C30 | 1-102-960-11 | 100 p | 50 V | ceramic |
| C31 | 1-102-960-11 | 100 p | 50 V | ceramic |
| C32 | 1-105-841-12 | 0.047 | 50 V | mylar |
| C33 | 1-101-455-11 | 0.001 | 50 V | ceramic |
| C34 | 1-102-112-11 | 330 p | 50 V | ceramic |
| C35 | 1-105-833-12 | 0.01 | 50 V | mylar |
| C36 | | ---------- | | |
| C37 | 1-102-973-11 | 100 p | | ceramic |
| C38 | | ---------- | | |
| C39 | 1-101-923-11 | 0.01 | 50 V | ceramic |
| C40 | 1-101-923-11 | 0.01 | 50 V | ceramic |
| C41 | 1-101-118-11 | 0.01 | 50 V | ceramic |
| C42 | 1-121-392-11 | 3.3 | 25 V | elect |
| VC1-4<br>CT1-4 | 1-151-266-00 | tuning, FM/AM 4 gang | | |

### RESISTORS

All resistors are in Ω, carbon type and ¼ W unless otherwise indicated. k = 1,000

| | | |
|---|---|---|
| R1 | 1-244-729-11 | 220 k |
| R2 | 1-244-625-11 | 10 |
| R3 | 1-244-666-11 | 510 |
| R4 | | ---------- |
| R5 | 1-244-723-11 | 120 k |
| R6 | 1-244-721-11 | 100 k |
| R7 | 1-244-673-11 | 1 k |
| R8 | 1-244-625-11 | 10 |
| R9 | 1-244-721-11 | 100 k |
| R10 | 1-244-666-11 | 510 |
| R11 | | ---------- |
| R12 | 1-244-725-11 | 150 k |
| R13 | 1-244-661-11 | 330 |
| R14 | 1-244-642-11 | 51 |

| Ref. No. | Part No. | Description |
|---|---|---|
| R15 | 1-244-653-11 | 150 |
| R16 | 1-244-647-11 | 82 |
| R17 | 1-244-667-11 | 560 |
| R18 | 1-244-719-11 | 82 k |
| R19 | 1-244-707-11 | 27 k |
| R20 | 1-244-667-11 | 560 |
| R21 | 1-244-649-11 | 100 |
| R22 | 1-240-457-11 | 220 |
| R23 | 1-244-681-11 | 2.2 k |
| R24 | 1-244-677-11 | 1.5 k |
| R25 | 1-244-719-11 | 82 k |
| R26 | 1-244-677-11 | 1.5 k |
| R27 | 1-244-675-11 | 1.2 k |
| R28 | 1-244-625-11 | 10 |
| R29 | 1-244-723-11 | 120 k |
| R30 | 1-244-655-11 | 180 |
| R31 | 1-240-705-11 | 22 k |
| R32 | 1-244-673-11 | 1 k |
| R33 | 1-244-673-11 | 1 k |
| R34 | 1-244-690-11 | 5.1 k |
| R35 | 1-244-673-11 | 1 k |
| R36 | 1-244-721-11 | 100 k |
| R37 | 1-244-735-11 | 390 k |
| R38 | 1-244-617-11 | 4.7 |
| R39 | 1-244-665-11 | 470 |
| R40 | 1-244-645-11 | 68 |
| R41 | 1-244-681-11 | 2.2 k |
| | 1-244-685-11 | 3.3 k |
| | 1-244-687-11 | 3.9 k |
| R42 | 1-244-637-11 | 33 |
| R43 | 1-244-601-11 | 1 |
| R44 | 1-244-601-11 | 1 |
| R45 | 1-244-665-11 | 470 |
| VR | 1-224-187-00 | 10 k (A), variable |

**MISCELLANEOUS**

| | | |
|---|---|---|
| ANT | 1-501-145-00 | antenna, telescopic |
| ※CF1, 2 | 1-527-184-11 | filter, ceramic: FM red |
| | 1-527-184-12 | filter, ceramic: FM blue |
| | 1-527-184-13 | filter, ceramic: FM orange |
| | 1-527-184-14 | filter, ceramic: FM black |
| | 1-527-184-15 | filter, ceramic: FM white |
| CF3 | 1-403-163-11 | ceramic filter, 455 kHz |
| CL1 | 1-231-249-00 | bandpass filter |
| CR1 | 1-231-171-00 | C-R component |
| CR2 | 1-231-204-00 | C-R component |
| CR3 | 1-231-202-00 | C-R component |
| CR4 | 1-231-160-00 | C-R component |
| J | 1-507-398-00 | jack, EARPHONE |
| | 1-534-845-00 | cord, power |
| S1-1～4 | 1-516-024-00 | switch, slide; BAND SELECT |
| S2 | 1-516-262-11 | switch, slide; TONE |
| S3 | 1-516-262-21 | switch, slide; POWER |
| SP | 1-502-444-00 | speaker |

**Note:** When replacing ceramic filter marked ※ , use one whose identification color is the same as the used one.

SONY CORPORATION



3G0536-1

Printed in Japan

SONY®

New Price

# Complete Spare Parts List

FM-AM PORTABLE RADIO

## Model TFM-7150W

**U. S. A. MODEL**
**CANADA MODEL**

USA: Serial No. 30001 - 35000, 45501 - 55500

Canada: Serial No. 45001 - 45500

IMPORTANT

When ordering parts, be sure to furnish the following information:

1. Part Number
2. Model Number
3. Description as contained in this parts list

Due to our use of an electronic data processing system, your orders are processed by the PART NUMBER specified by you.

Please order carefully-wrong part numbers result in wrong parts.

NOTE: Prices are subject to change without notice.

# COMPLETE SPARE PARTS LIST FOR TFM-7150W

USA Model (Serial No.30001~35000, 45501~55500)
Canada Model (Serial No. 45001~45500)

AUGUST, 1973

| *Part No.* | *Description* | *Unit Price* |
|---|---|---|
| | **I. MECHANICAL PARTS** | |
| X-38468-81-0 | Knob Ass'y, TUNING | $ 0.19 |
| X-38468-82-0 | Lid Ass'y, battery | 0.12 |
| including: | | |
| 3-846-837-00 | Cushion | 0.02 |
| X-38468-83-0 | Case Ass'y, rear | 0.95 |
| including: | | |
| 3-846-815-00 | Contact, battery | 0.05 |
| 3-846-816-00 | Spring, battery | 0.02 |
| 3-846-817-00 | Spring, battery | 0.03 |
| 3-846-820-00 | Cushion | 0.02 |
| X-38468-84-0 | Case Ass'y, front | 1.91 |
| including: | | |
| 3-846-811-00 | Ornament, side | 0.03 |
| 3-846-812-00 | Label, control | 0.03 |
| 3-846-813-00 | Emblem, SONY | 0.02 |
| X-38486-85-0 | Chassis Ass'y | 0.32 |
| 3-701-044-00 | Label (Canada) | 0.04 |
| 3-701-595-00 | Label (USA) | 0.02 |
| 3-830-365-01 | Screw, (+) P 3 x 42; self-tapping | 0.01 |
| 3-835-467-01 | Washer | 0.02 |
| 3-842-832-00 | Label, caution | 0.01 |
| 3-846-522-00 | Label, made in HONG KONG | 0.01 |
| 3-846-805-00 | Shaft, dial | 0.05 |
| 3-846-806-00 | Drum, dial | 0.05 |
| 3-846-808-00 | Knob, VOLUME | 0.11 |
| 3-846-809-00 | Knob BAND SELECT switch | 0.02 |
| 3-846-810-00 | Pointer, dial scale | 0.07 |
| 3-846-811-00 | Ornament, side | 0.03 |
| 3-846-812-00 | Label, control | 0.03 |
| 3-846-813-00 | Emblem, SONY | 0.02 |
| 3-846-814-00 | Scale, dial | 0.11 |
| 3-846-815-00 | Contact, battery | 0.05 |
| 3-846-816-00 | Spring | 0.02 |
| 3-846-817-00 | Spring, battery | 0.03 |
| 3-846-818-00 | Lug, antena | 0.05 |
| 3-846-820-00 | Cushion | 0.02 |

| *Part No.* | *Description* | *Unit Price* |
|---|---|---|
| 3-846-821-00 | Contact, battery | $ 0.04 |
| 3-846-822-00 | Shield | 0.02 |
| 3-846-823-00 | Shield | 0.02 |
| 3-846-827-00 | Case, shield | 0.02 |
| 3-846-829-00 | Tape | 0.01 |
| 3-846-830-00 | Cushion | 0.01 |
| 3-846-831-00 | Cushion | 0.01 |
| 3-846-837-00 | Cushion | 0.02 |
| 3-846-838-00 | Shield | 0.02 |
| 3-998-901-00 | Label, serial No. | 0.01 |

## II. HARDWARE

| | | |
|---|---|---|
| 7-621-259-45 | Screw, (+) P 2.6 x 6 | 0.10 / 100 |
| 7-685-146-01 | Screw, (+) P 3 x 8; self-tapping | 0.24 / 100 |
| 7-623-605-00 | Eyelet, 1.3 x 2.5 | 0.06 / 100 |
| 7-624-108-01 | Retaining Ring, E 4 | 0.48 / 100 |
| 7-684-035-00 | Nut 5 | 0.21 / 100 |



USA Model (Serial No.30001~35000, 45501~55500)
Canada Model (Serial No. 45001~45500)

| *Ref. No.* | *Part No.* | *Description* | *Unit Price* |
|---|---|---|---|

## III. ELECTRICAL PARTS

| | | | |
|---|---|---|---|
| | X-38468-21-1 | Complete Circuit Board . . . . | $ 10.65 |

### SEMICONDUCTORS

| | | | |
|---|---|---|---|
| Q1, 2 | | Transistor 2SC710 . . . . | 0.13 |
| Q3, 4 | | Transistor 2SC710 . . . . | 0.13 |
| Q5, 6 | | Transistor 2SC710 . . . . | 0.13 |
| Q7 | | Transistor 2SC710 . . . . | 0.13 |
| Q8 | | Transistor 2SC633A . . . . | 0.15 |
| Q9, 10 | | Transistor 2SC1474 . . . . | 0.20 |
| D1 | | Transistor 2SC710 . . . . | 0.13 |
| D2, 3 | | Diode 1T261 . . . . | 0.13 |
| D4 | | Diode 1T23 . . . . | 0.05 |
| D5 | | Transistor 2SB383 . . . . | 0.20 |
| D6, 7 | | Diode 10D2 . . . . | 0.12 |
| D8 | | Diode 1S1555 . . . . | 0.07 |
| VDR | | Varistor VD1120 . . . . | 0.07 |

### COILS AND TRANSFORMERS

| | | | |
|---|---|---|---|
| L1 | 1-425-791-00 | Coil, FM rf . . . . | 0.04 |
| L2 | 1-425-792-00 | Coil, FM osc . . . . | 0.03 |
| L3 | 1-401-540-00 | Coil, AM bar antenna . . . . | 0.24 |
| L4 | 1-405-597-00 | Coil, AM osc . . . . | 0.11 |
| L5 | 1-401-454-00 | Coil, FM trap . . . . | 0.04 |
| L6 | 1-407-178-00 | Coil, 1 uH . . . . | 0.04 |
| T1 | 1-423-193-00 | Transformer, driver . . . . | 0.19 |
| T2 | 1-427-356-00 | Transformer, output . . . . | 0.16 |
| T3 | 1-442-090-00 | Transformer, power (USA) . . . . | 0.64 |
| | 1-442-156-00 | Transformer, power (Canada) . . . . | 0.75 |
| IFT A-1 | 1-403-900-00 | AM IFT . . . . | 0.12 |
| IFT F-1 | 1-403-899-00 | FM IFT . . . . | 0.14 |
| IFT F-2 | 1-403-903-00 | FM IFT discriminator . . . . | 0.14 |
| IFT F-3 | 1-403-902-00 | FM IFT discriminator . . . . | 0.14 |



USA Model (Serial No.30001~35000, 45501~55500)
Canada Model (Serial No. 45001~45500)

| *Ref. No.* | *Part No.* | *Description* | | | *Unit Price* |
|---|---|---|---|---|---|
| | | **CAPACITORS** | | | |
| All capacitors are in uF unless otherwise indicated. | | | | | |
| p = uu. | | | | | |
| C1 | 1-102-960-11 | 24 p | 50 V | ceramic | $ 0.02 |
| C2 | 1-102-100-11 | 0.0022 | 50 V | ceramic | 0.02 |
| C3 | 1-102-940-11 | 3 p | 50 V | ceramic | 0.02 |
| C4 | 1-102-939-11 | 2 p | 50 V | ceramic | 0.02 |
| C5 | 1-101-118-11 | 0.01 | 50 V | ceramic | 0.02 |
| C6 | 1-121-396-11 | 4.7 | 50 V | electrolytic | 0.04 |
| C7 | 1-102-945-11 | 8 p | 50 V | ceramic | 0.02 |
| C8 | 1-102-100-11 | 0.0022 | 50 V | ceramic | 0.02 |
| C9 | 1-102-642-11 | 24 p | 50 V | ceramic | 0.02 |
| C10 | 1-102-940-11 | 3 p | 50 V | ceramic | 0.02 |
| C11 | 1-127-046-00 | 0.22 | 50 V | solid aluminum electrolytic | 0.05 |
| C12 | 1-101-118-11 | 0.01 | 50 V | ceramic | 0.02 |
| C13 | 1-105-833-12 | 0.01 | 50 V | mylar | 0.02 |
| C14 | 1-105-837-12 | 0.022 | 50 V | mylar | 0.02 |
| C15 | 1-107-135-11 | 150 p | 50 V | silvered mica | 0.02 |
| C16 | 1-101-118-11 | 0.01 | 50 V | ceramic | 0.02 |
| C17 | 1-121-419-11 | 220 | 6.3 V | electrolytic | 0.06 |
| C18 | 1-101-118-11 | 0.01 | 50 V | ceramic | 0.02 |
| C19 | 1-102-005-11 | 0.022 | 50 V | ceramic | 0.02 |
| C20 | 1-102-005-11 | 0.022 | 50 V | ceramic | 0.02 |
| C21 | 1-121-651-11 | 10 | 16 V | electrolytic | 0.04 |
| C22 | 1-101-118-11 | 0.01 | 50 V | ceramic | 0.02 |
| C23 | 1-121-651-11 | 10 | 16 V | electrolytic | 0.04 |
| C24 | 1-121-726-11 | 0.47 | 50 V | electrolytic | 0.03 |
| C25 | 1-121-726-11 | 0.47 | 50 V | electrolytic | 0.03 |
| C26 | 1-105-833-12 | 0.01 | 50 V | mylar | 0.02 |
| C27 | 1-121-425-11 | 470 | 10 V | electrolytic | 0.13 |
| C28 | 1-105-841-12 | 0.047 | 50 V | mylar | 0.02 |
| C29 | 1-121-736-11 | 1000 | 10 V | electrolytic | 0.13 |
| C30 | 1-102-960-11 | 100 p | 50 V | ceramic | 0.02 |
| C31 | 1-102-960-11 | 100 p | 50 V | ceramic | 0.02 |
| C32 | 1-105-841-12 | 0.047 | 50 V | mylar | 0.02 |
| C33 | 1-101-455-11 | 0.001 | 50 V | ceramic | 0.02 |
| C34 | 1-102-112-11 | 330 p | 50 V | ceramic | 0.02 |
| C35 | 1-105-833-12 | 0.01 | 50 V | mylar | 0.02 |
| C36 | | ---------- | | | |
| C37 | 1-102-973-11 | 100 p | | ceramic | 0.02 |
| C38 | 1-102-958-11 | 20 p | | ceramic | 0.02 |
| C39 | 1-101-923-11 | 0.01 | 50 V | ceramic | 0.02 |
| C40 | 1-101-923-11 | 0.01 | 50 V | ceramic | 0.02 |



USA Model (Serial No.30001~35000, 45501~55500)
Canada Model (Serial No. 45001~45500)

| *Ref. No.* | *Part No.* | *Description* | | | *Unit Price* |
|---|---|---|---|---|---|
| C41 | 1-101-118-11 | 0.01 | 50 V | ceramic | $ 0.02 |
| C42 | 1-121-392-11 | 3.3 | 25 V | elect | 0.04 |
| VC | 1-151-266-00 | tuning, FM/AM 4 gang | | | 0.85 |

## RESISTORS

All resistors are in ohms, carbon type and ¼ W unless otherwise indicated. (k=1,000)

| | | | |
|---|---|---|---|
| R1 | 1-244-729-11 | 220 k | 0.02 |
| R2 | 1-244-625-11 | 10 | 0.02 |
| R3 | 1-244-666-11 | 510 | 0.02 |
| R4 | | ---------- | |
| R5 | 1-244-723-11 | 120 k | 0.02 |
| R6 | 1-244-721-11 | 100 k | 0.02 |
| R7 | 1-244-673-31 | 1 k | 0.02 |
| R8 | 1-244-625-11 | 10 | 0.02 |
| R9 | 1-244-721-11 | 100 k | 0.02 |
| R10 | 1-244-666-11 | 510 | 0.02 |
| R11 | | ---------- | |
| R12 | 1-244-725-11 | 150 k | 0.02 |
| R13 | 1-244-661-11 | 330 | 0.02 |
| R14 | 1-244-642-11 | 51 | 0.02 |
| R15 | 1-244-653-11 | 150 | 0.02 |
| R16 | 1-244-647-11 | 82 | 0.02 |
| R17 | 1-244-667-11 | 560 | 0.02 |
| R18 | 1-244-719-11 | 82 k | 0.02 |
| R19 | 1-244-707-11 | 27 k | 0.02 |
| R20 | 1-244-667-11 | 560 | 0.02 |
| R21 | 1-244-649-11 | 100 | 0.02 |
| R22 | 1-240-457-11 | 220 | 0.02 |
| R23 | 1-244-681-11 | 2.2 k | 0.02 |
| R24 | 1-244-677-11 | 1.5 k | 0.02 |
| R25 | 1-244-719-11 | 82 k | 0.02 |
| R26 | 1-244-677-11 | 1.5 k | 0.02 |
| R27 | 1-244-675-11 | 1.2 k | 0.02 |
| R28 | 1-244-625-11 | 10 | 0.02 |
| R29 | 1-244-723-11 | 120 k | 0.02 |
| R30 | 1-244-655-11 | 180 | 0.02 |
| R31 | 1-240-705-11 | 22 k | 0.02 |
| R32 | 1-244-673-11 | 1 k | 0.02 |
| R33 | 1-244-673-11 | 1 k | 0.02 |
| R34 | 1-244-690-11 | 5.1 k | 0.02 |
| R35 | 1-244-673-11 | 1 k | 0.02 |



USA Model (Serial No.30001~35000, 45501~55500)
Canada Model (Serial No. 45001~45500)

| *Ref. No.* | *Part No.* | *Description* | *Unit Price* |
|---|---|---|---|
| R36 | 1-244-721-11 | 100 k | $ 0.02 |
| R37 | 1-244-735-11 | 390 k | 0.02 |
| R38 | 1-244-617-11 | 4.7 | 0.02 |
| R39 | 1-244-665-11 | 470 | 0.02 |
| R40 | 1-244-645-11 | 68 | 0.02 |
| *R41 | 1-244-681-11 | 2.2 k | 0.02 |
| | 1-244-685-11 | 3.3 k | 0.02 |
| | 1-244-687-11 | 3.9 k | 0.02 |
| R42 | 1-244-637-11 | 33 | 0.02 |
| R43 | 1-244-601-11 | 1 | 0.02 |
| R44 | 1-244-601-11 | 1 | 0.02 |
| R45 | 1-244-665-11 | 470 | 0.02 |
| VR | 1-224-187-00 | 10 k (A), variable | 0.14 |

**MISCELLANEOUS**

| | | | |
|---|---|---|---|
| ANT | 1-501-145-00 | Antenna, telescopic | 0.72 |
| CF-1, 2 | 1-527-184-11 ~ 15 | Ceramic Filter, 10.7 MHz | 0.13 |
| CF-3 | 1-403-163-11 | Ceramic Filter, 455 kHz | 0.21 |
| CL-1 | 1-231-249-00 | Band Pass Filter | 0.15 |
| CR-1 | 1-231-171-00 | C-R Component | 0.04 |
| CR-2 | 1-231-204-00 | C-R Component | 0.04 |
| CR-3 | 1-231-202-00 | C-R Component | 0.05 |
| CR-4 | 1-231-160-00 | C-R Component | 0.04 |
| J | 1-507-398-00 | Jack, EARPHONE | 0.06 |
| P | 1-534-845-00 | Cord, power | 0.32 |
| S1–4 | 1-516-024-00 | Switch, slide; BAND SELECT | 0.22 |
| S2 | 1-516-262-11 | Switch, slide; TONE | 0.18 |
| S3 | 1-516-262-21 | Switch, slide; POWER | 0.18 |
| SP | 1-502-444-00 | Speaker | 0.67 |

**Note:** *: to be selected.



USA Model (Serial No.30001~35000, 45501~55500)
Canada Model (Serial No. 45001~45500)

| *Part No.* | *Description* | *Unit Price* |
|---|---|---|

## IV. ACCESSORIES & PACKING MATERIALS

| | | |
|---|---|---|
| X-37010-32-0 | Card, warranty (USA) . . . . | $ 0.06 |
| 1-504-055-00 | Earphone . . . . | 0.16 |
| 3-701-624-00 | Bag, polyethylene . . . . | 0.01 |
| 3-793-105-06 | List, warranty station (Canada) . . . . | 0.04 |
| 3-846-824-00 | Carton . . . . | 0.27 |
| 3-846-826-00 | Sheet, protecting . . . . | 0.05 |
| 3-846-829-00 | Card Board . . . . | 0.01 |
| 3-846-834-00 | Bag, polyethylene . . . . | 0.02 |
| 3-993-014-03 | Card, warranty (Canada) . . . . | 0.06 |
| 3-995-658-21 | Manual, instruction . . . . | 0.05 |
| 3-998-901-00 | Label, serial No. . . . . | 0.01 |



USA Model (Serial No.30001~35000, 45501~55500)
Canada Model (Serial No. 45001~45500)