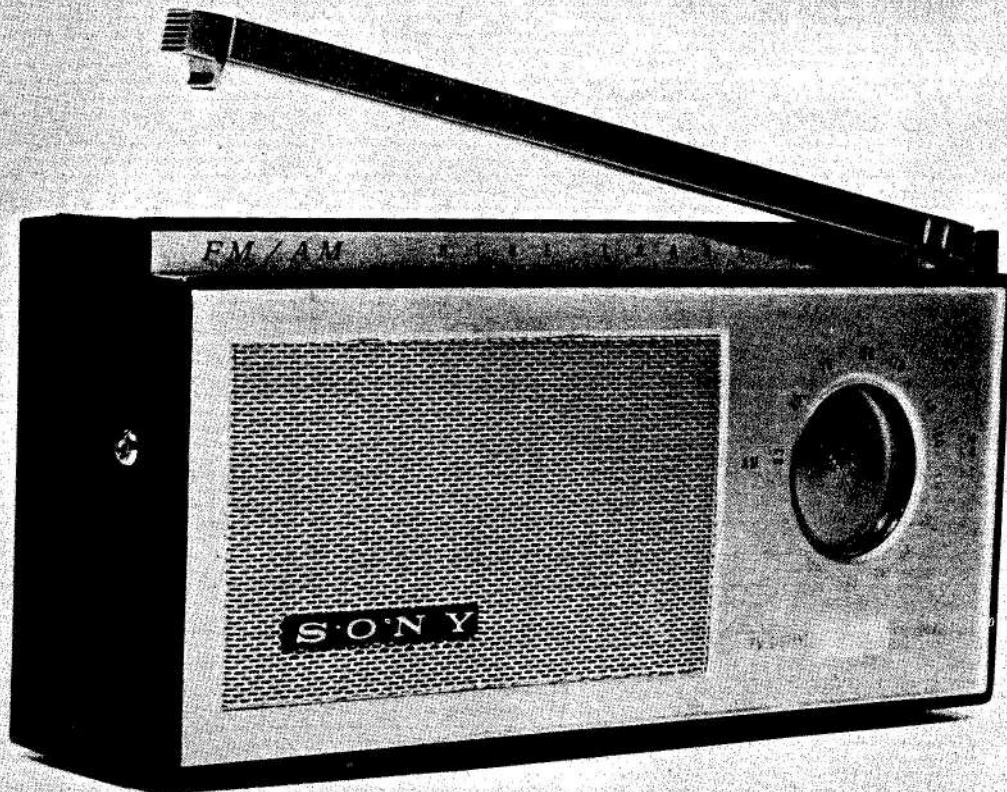


TFM-96



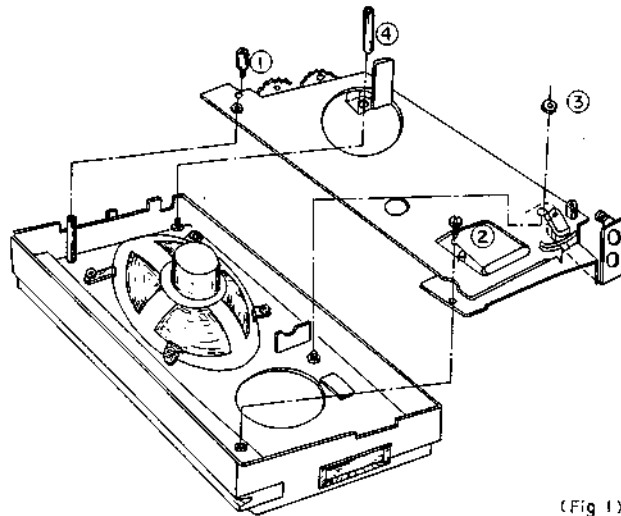
Specifications

- Circuit : 9 Transistor Superheterodyne
- Frequency Coverage : FM 86.5 ~ 108 Mc (3.53 ~ 2.78 m)
MW 530 ~ 1,605 Kc (566 ~ 187 m)
- Intermediate Frequency : FM 10.7 Mc
MW 455 Kc
- Antenna System : Built-in Ferrite Bar Antenna (MW)
Built-in Telescopic Antenna (FM)
Terminal for External Antenna (MW)
- Maximum Sensitivity : FM $4\mu\text{V/m}$
(at 10mW Output) MW $45\mu\text{V/m}$
- Selectivity : MW, 30 dB at 10 Kc off resonance, at 1,400 Kc
- Output Power : 260 mW (undistorted)
- Speaker : $4'' \times 2\text{-}1/2''$ PM dynamic, 35Ω
- Battery : Six size AA Penlight Batteries (9 Volts)
- Current Drain : 10mA (AM), 12mA (FM) at zero signal,
47mA at 260mW output
- Dimensions : $7\text{-}7/16'' \times 3\text{-}5/8'' \times 1\text{-}13/16''$
(190 × 92.5 × 46 mm)
- Weight : 1-7/16 pounds (660 gr.)
- Colours : Black, Brown

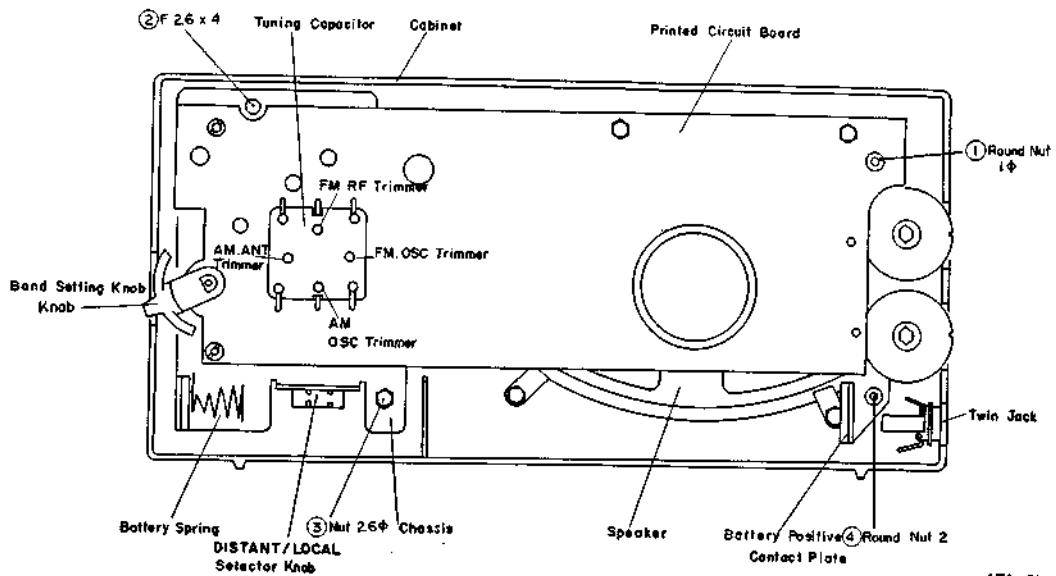
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SERVICING GUIDE

To Remove the Circuit Board from the Cabinet

1. Remove four Back Cover Holding Screws (RK 2.6×6).
2. Open the Back Cover.
3. Take out the Batteries.
4. Remove Screws and Nuts (①, ②, ③ and ④ in Fig. 1. and 2.)
5. Remove Twin Jack by pulling straight up.
6. Lift up the Circuit Board carefully paying attention to the lead wires.
7. Unsolder lead wires for Telescopic Antenna, External Antenna and for Speaker at the respective terminals.



(Fig 1)



(Fig 2)

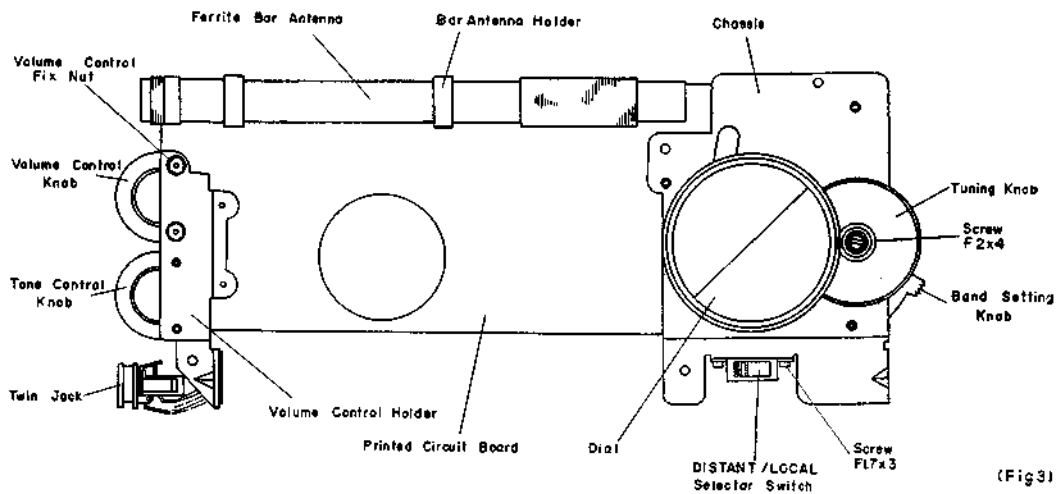
Adjustment and Alignment

a) Frequency Coverage

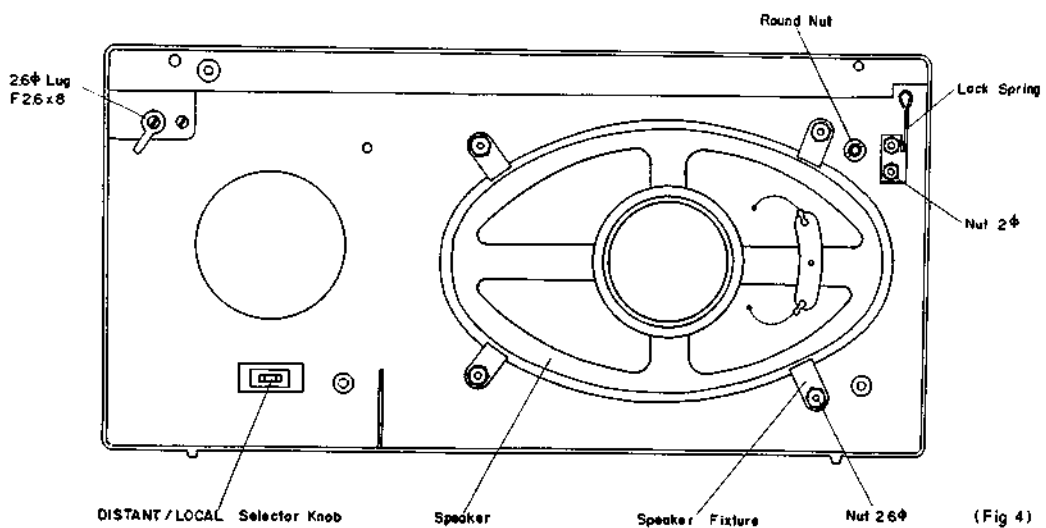
	Lower Limit	Adjust	Upper Limit	Adjust
FM	85.5 Mc	Core and gap of L_4	109.5 Mc	C_3
MW	520 Kc	Core of L_6	1,680 Kc	C_5

b) Tracking Alignment

	Checking Point	Adjust
FM	86.5 Mc	Core and gap of L_2
	108 Mc	C_2
MW	620 Kc	Position of L_5
	1,400 Kc	C_4

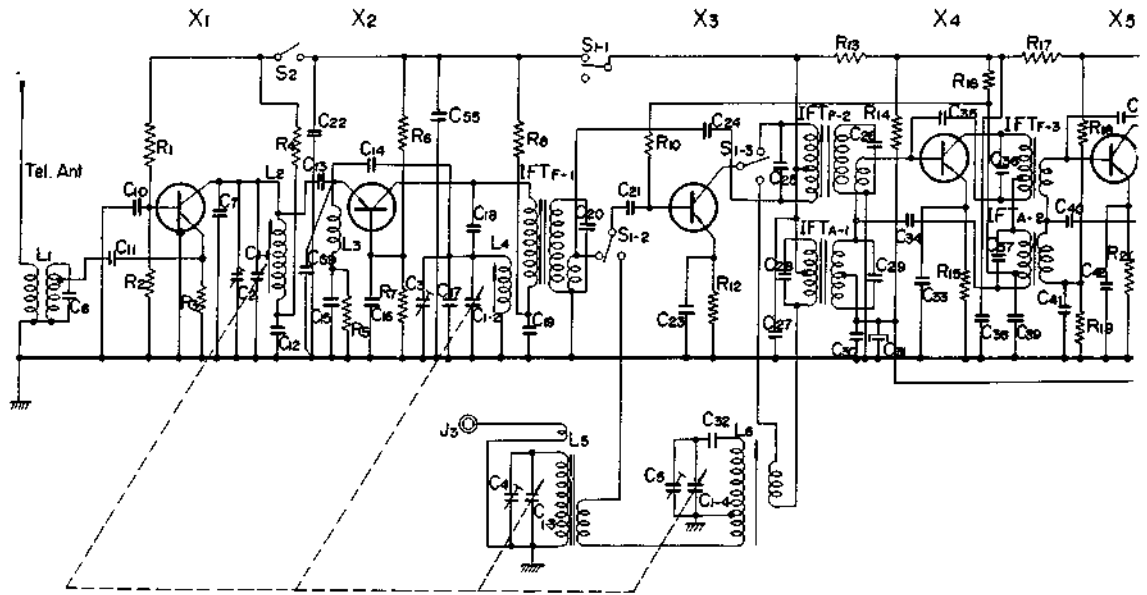


(Fig 3)



(Fig 4)

Schematic

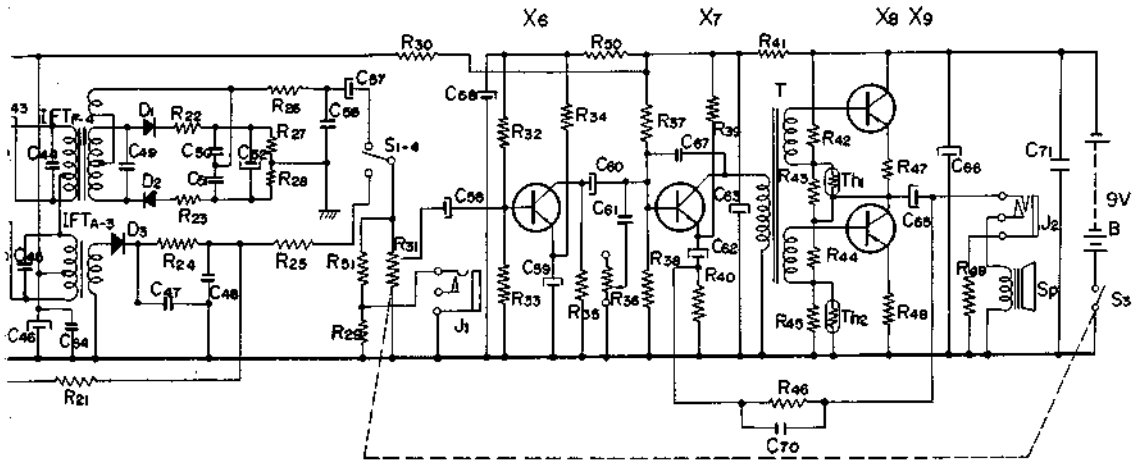


Electronic

Part No.	Symbol	Description	Part No.	Symbol	Description
1-501-028-11	Tel. ANT	Telescopic Antenna		D ₃	Diode 1T23
1-401-143-11	L ₁	FM, Antenna Coil		Th ₁	Thermistor CS-120
1-405-225-11	L ₂	FM, RF Coil		Th ₂	" CS-120
1-409-017-11	L ₃	FM, IF Trap Coil		Resistor	
1-405-225-11	L ₄	FM, Oscillator Coil	1-203-427-00	R ₁	Carbon 10K Ω ±5% 1/10W
1-401-142-13	L ₅	MW, Ferrite Bar Antenna	-434-00	R ₂	" 3.3K Ω " "
1-405-235-11	L ₆	MW, Oscillator Coil	-421-00	R ₃	" 1K Ω " "
1-403-226-11	IFTF ₋₁₋₁	FM, Double Tuned IFT	-445-00	R ₄	" 560 Ω " "
-226-12	IFTF ₋₁₋₂	FM, " "	-421-00	R ₅	" 1K Ω " "
-225-11	IFTF ₋₂₋₁	FM, " "	-439-00	R ₆	" 12K Ω " "
-225-12	IFTF ₋₂₋₂	FM, " "	-460-00	R ₇	" 2.7K Ω " "
-224-11	IFTF ₋₃	FM, IF Transformer	-446-00	R ₈	" 2K Ω " "
-227-11	IFTF ₋₄₋₁	FM, Double Tuned IFT for Discriminator		R ₉	-deleted-
-227-12	IFTF ₋₄₋₂	FM, " "	1-203-425-00	R ₁₀	Carbon 5.6K Ω ±5% 1/10W
-080-11	IFTA ₋₁₋₁	MW, Double Tuned IFT		R ₁₁	-deleted-
-080-12	IFTA ₋₁₋₂	MW, " "	1-203-427-00	R ₁₂	Carbon 10K Ω ±5% 1/10W
-082-11	IFTA ₋₂	MW, IF Transformer	-859-00	R ₁₃	" 22 Ω " "
-081-11	IFTA ₋₃	MW, " "	-618-00	*R ₁₄	" 91K Ω " "
1-423-054-11	T	Driver Transformer	-445-00	R ₁₅	" 560 Ω " "
1-513-172-11	S ₁₋₁₋₄	Band Setting Switch	-626-00	R ₁₆	" 9.1K Ω " "
-122-00	S ₂	FM, Distant/Local Selector Switch	-859-00	R ₁₇	" 22 Ω " "
	S ₃	Power Switch (built in Volume Control)	-634-00	R ₁₈	" 36K Ω " "
			-424-00	R ₁₉	" 4.7K Ω " "
			-445-00	R ₂₀	" 560 Ω " "
1-507-075-11	J ₁	DET Out Jack	-438-00	R ₂₁	" 6.8K Ω " "
-036-02	J ₂	Earphone Jack	-604-00	R ₂₂	" 330 Ω " "
1-502-075-12	J ₃	External Antenna Jack	-604-00	R ₂₃	" 330 Ω " "
1-528-003-00	SP	Speaker, 35 Ω	-423-00	R ₂₄	" 2.2K Ω " "
	B	Battery (9V)	-448-00	*R ₂₅	" 5.1K Ω " "
			-421-00	R ₂₆	" 1K Ω " "
	X ₁	Transistor 2SA166	-425-00	R ₂₇	" 5.6K Ω " "
	X ₂	" 2SA124	-425-00	R ₂₈	" 5.6K Ω " "
	X ₃	" 2SA122	-446-00	R ₂₉	" 2K Ω " "
	X ₄	" 2SA122	-859-00	R ₃₀	" 22 Ω " "
	X ₅	" 2SA122	1-221-374-11	R ₃₁	Volume Control, 5K Ω
	X ₆	" 2SD64	1-203-718-00	R ₃₂	Carbon 4.2K Ω ±5% 1/10W
	X ₇	" 2SD65	-429-00	R ₃₃	" 22K Ω " "
	X ₈	" 2SB51	-421-00	R ₃₄	" 1K Ω " "
	X ₉	" 2SB51	-446-00	R ₃₅	" 2K Ω " "
	D ₁	Diode 1T23	1-221-375-11	R ₃₆	Tone Control, 5K Ω
	D ₂	" 1T23	1-203-718-00	R ₃₇	Carbon 4.2K Ω ±5% 1/10W

* To be adjusted

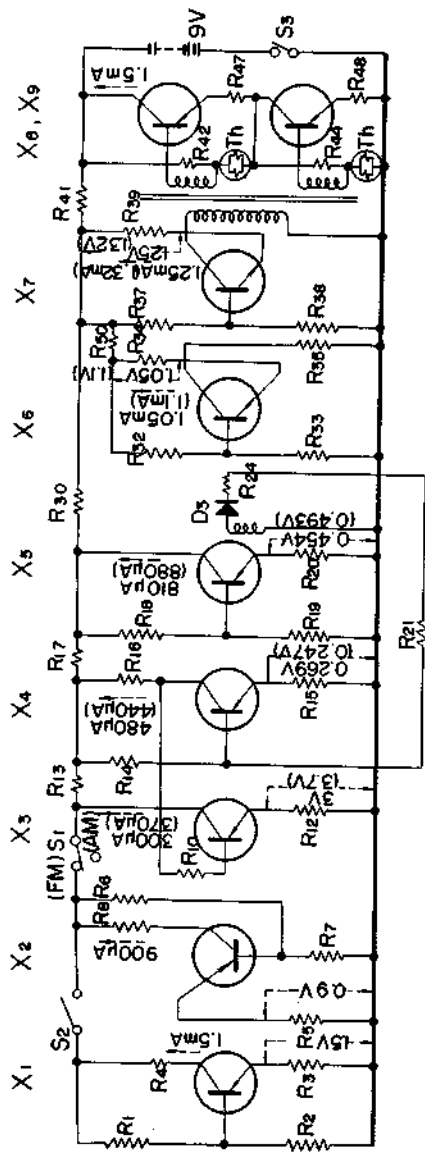
Diagram



Parts List

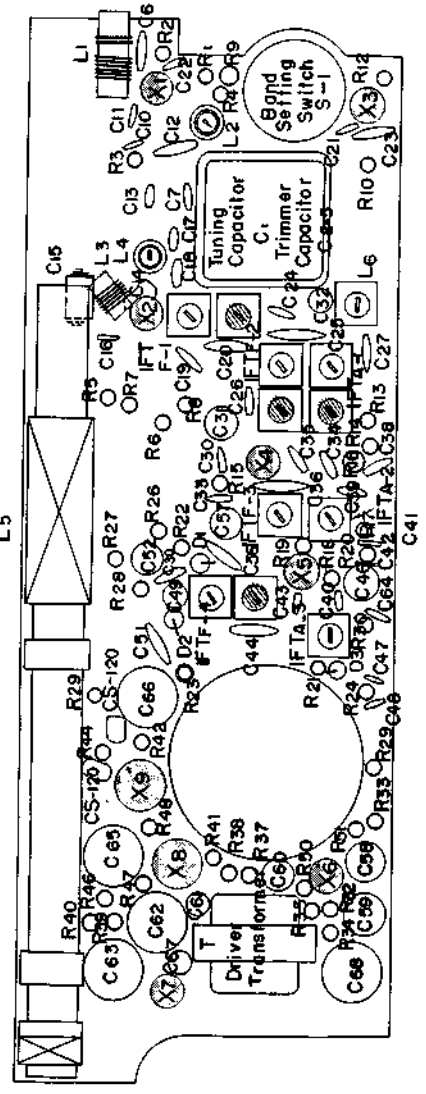
Part No.	Symbol	Description	Part No.	Symbol	Description
1-203-439-00	R ₃₈	Carbon 12K Ω ±5% 1/16W	1-121-104-00	C ₈₁	10μF 6V Electrolytic
-421-00	R ₃₉	" 1K Ω " "	1-103-024-11	C ₈₂	130pF ±5% Styrol
-418-00	R ₄₀	" 10 Ω " "	1-101-072-14	C ₈₃	0.01μF ±5% Ceramic
-594-00	R ₄₁	" 100 Ω " "	-009-11	C ₈₄	1pF ±0.5pF "
-434-00	R ₄₂	" 3.3K Ω " "	-010-11	C ₈₅	2pF " "
	R ₄₃	220 Ω, Built in Th ₁	-112-12	C ₈₆	50pF ±5% "
-434-00	R ₄₄	Carbon 3.3K Ω ±5% 1/16W		C ₈₇	150pF, Built in IFTA-3-1
	R ₄₅	220 Ω, Built in Th ₂	-141-11	C ₈₈	0.01μF ±5% Ceramic
-421-00	R ₄₆	Carbon 1K Ω ±5% 1/16W	-141-11	C ₈₉	0.01μF " "
-441-00	R ₄₇	" 3 Ω " "	-009-11	C ₉₀	1pF ±0.5pF "
-441-00	R ₄₈	" 3 Ω " "	-141-11	C ₉₁	0.01μF ±5% "
-895-00	R ₄₉	" 27 Ω " "	-072-14	C ₉₂	0.01μF " "
-594-00	R ₅₀	" 100 Ω " "	-010-11	C ₉₃	2pF ±0.5pF "
-429-00	R ₅₁	" 22K Ω " "	-115-12	C ₉₄	30pF " "
		Capacitor		C ₉₅	150pF, Built in IFTA-3
1-151-066-11	C ₁₋₁₋₄	PVC Tuning Capacitor, 4 gang	1-121-108-00	C ₉₆	10μF 10V Electrolytic
	C ₂₋₅	Trimmer Capacitor, 4 unit	1-101-073-14	C ₉₇	0.02μF ±5% Ceramic
1-101-056-11	C ₆	40pF ±5% Ceramic	-073-14	C ₉₈	0.02μF " "
-114-11	C ₇	15pF " "	1-103-024-11	C ₉₉	130pF ±5% Styrol
	C ₈	—deleted—	1-101-117-11	C ₁₀₀	200pF ±5% Ceramic
	C ₉	—deleted—	-117-11	C ₁₀₁	200pF " "
-141-11	C ₁₀	0.01μF ±5% Ceramic	1-121-112-00	C ₁₀₂	10μF 3V Electrolytic
-141-11	C ₁₁	0.01μF " "		C ₁₀₃	—deleted—
-073-11	C ₁₂	0.02μF " "		C ₁₀₄	—deleted—
-011-11	C ₁₃	3pF ±0.5pF "	1-101-072-14	C ₁₀₅	0.01μF ±5% Ceramic
-012-11	C ₁₄	5pF " "	-073-11	C ₁₀₆	0.02μF " "
1-103-058-12	C ₁₅	500pF ±5% Styrol	1-121-112-00	C ₁₀₇	10μF 3V Electrolytic
1-101-141-11	C ₁₆	0.01μF ±5% Ceramic	-108-00	C ₁₀₈	10μF 10V "
-539-11	C ₁₇	18pF ±5% "	-110-00	C ₁₀₉	30μF 10V "
-112-12	C ₁₈	50pF " "	-117-00	C ₁₁₀	5μF 12V "
-141-11	C ₁₉	0.01μF ±5% "	1-127-901-00	C ₁₁₁	0.3μF ±10% " (Alox)
-722-11	C ₂₀	25pF ±5% "	1-121-159-00	C ₁₁₂	100μF 10V "
-141-11	C ₂₁	0.01μF ±5% "	-159-00	C ₁₁₃	100μF 10V "
-141-11	C ₂₂	0.01μF " "	1-101-141-11	C ₁₁₄	0.01μF ±5% Ceramic
-073-11	C ₂₃	0.02μF " "	-159-00	C ₁₁₅	100μF 10V Electrolytic
-093-11	C ₂₄	6pF ±0.5pF "	-159-00	C ₁₁₆	100μF 10V "
-112-12	C ₂₅	50pF ±5% "	1-103-058-12	C ₁₁₇	500pF ±5% Styrol
-722-11	C ₂₆	25pF ±5% "	1-121-159-00	C ₁₁₈	100μF 10V Electrolytic
-141-11	C ₂₇	0.01μF ±5% "	1-101-010-11	C ₁₁₉	2pF ±0.5pF Ceramic
	C ₂₈	150pF, Built in IFTA-1-1	-075-11	C ₁₂₀	0.002μF ±5% "
	C ₂₉	150pF, Built in IFTA-1-2	-072-14	C ₁₂₁	0.01μF " "
-141-11	C ₃₀	0.01μF ±5% Ceramic			

Voltage and Current Distribution Chart at Zero Signal



Mounting Diagram

— Parts Side —
L5

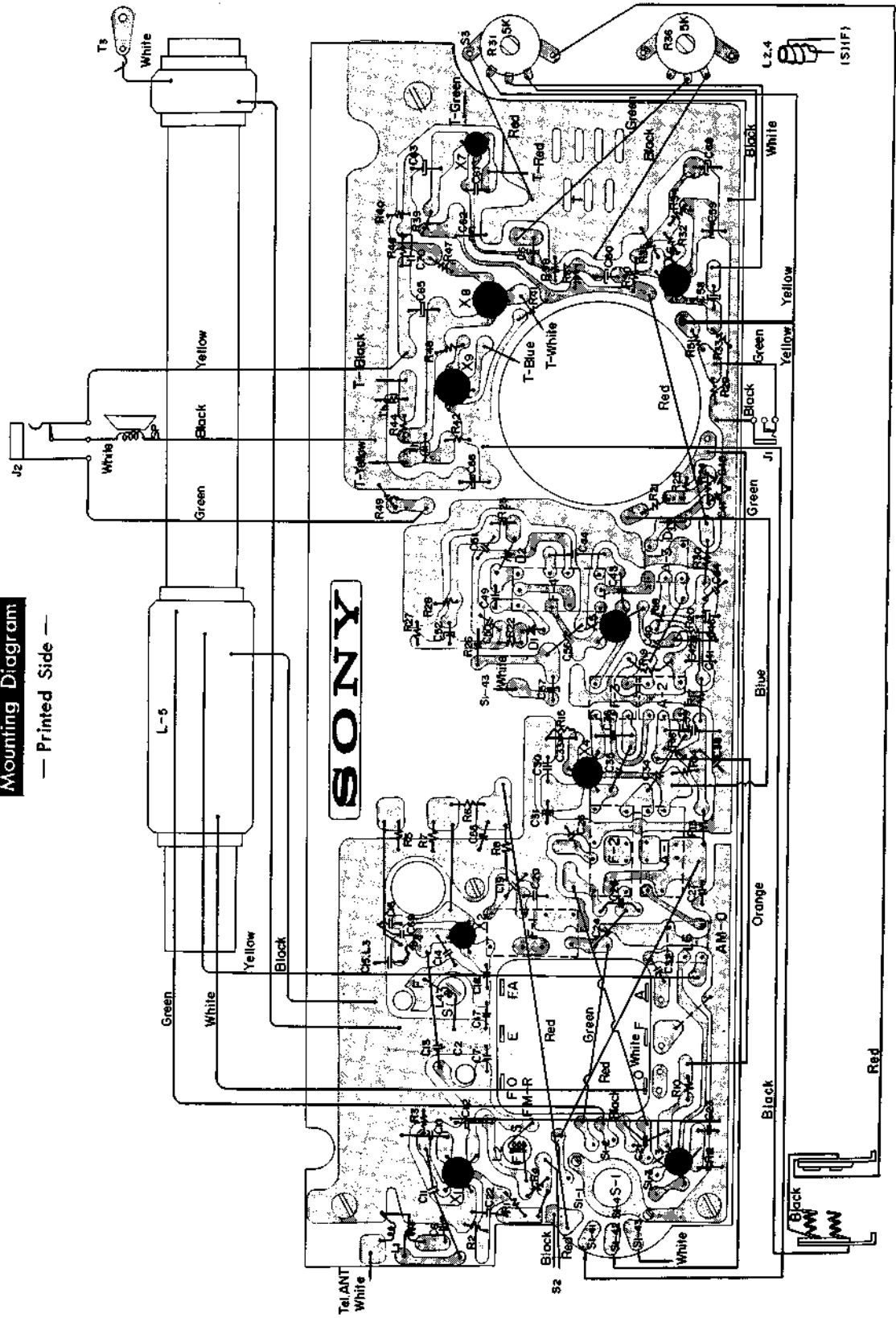


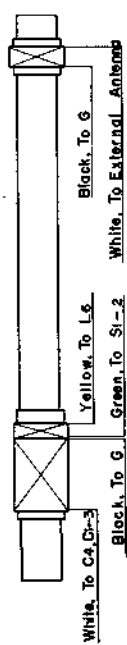
IFTF-1, IFTF-2, IFTF-4 & IFTA-1

-  Pink Core : Primary Winding
-  Blue Core : Secondary Winding

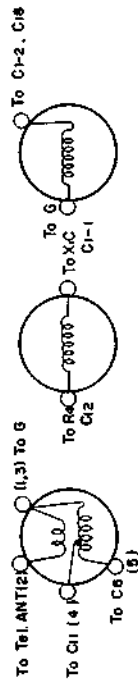
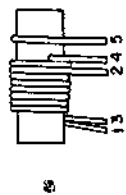
Mounting Diagram

— Printed Side —





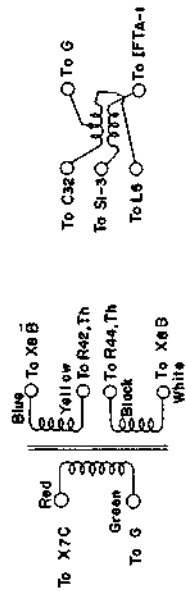
L5, MW, Ferrite Bar Antenna Coil



L1, FM ANT Coil

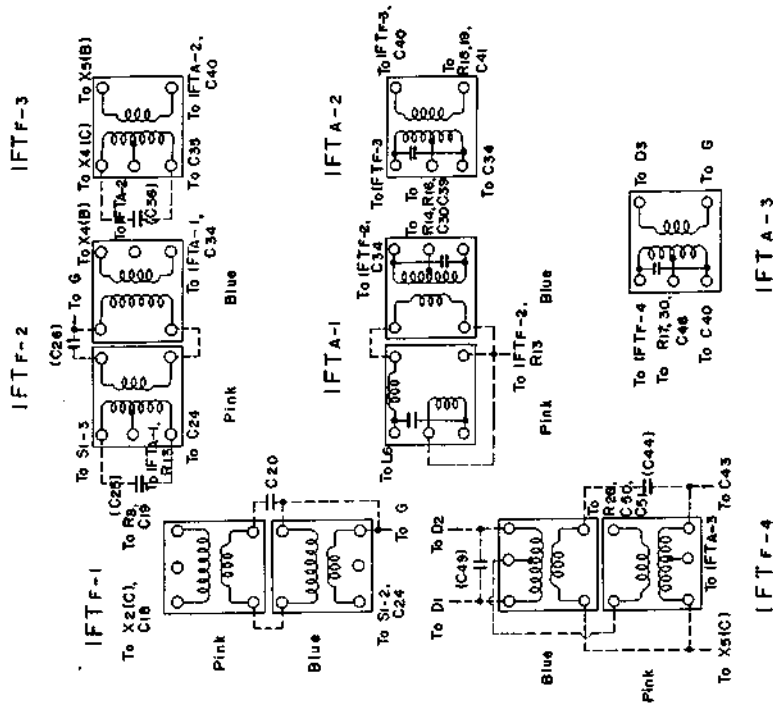
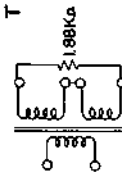
L2, FM RF Coil

L4, FM OSC Coil



T Driver Transformer

L6 MW OSC Coil



Driver Transformer	DC Resistance	375Ω
Impedance	5.6 KΩ	
Primary	470Ω X2	
Secondary		48Ω

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