

SPECIFICATIONS
REALISTIC®

Service Manual

20-152

SECOND EDITION

DX-160

SOLID STATE FIVE BAND COMMUNICATIONS RECEIVER

Catalog Number: 20 - 152



This service manual is relevant to products manufactured after APR 20, 1975
(After serial number 418411 for U.S.A., 417544 Canada, 429012 for
Australia, Belgium and U.K.)

CUSTOM MANUFACTURED FOR RADIO SHACK  A TANDY CORPORATION COMPANY

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SPECIFICATIONS

Description	Condition	Nominal Spec.	Limit Spec.
Frequency coverage	Band A Band B Band C Band D Band E	145 – 405 kHz 520 – 1610 kHz 1.47 – 4.55 MHz 4.3 – 13.2 MHz 12.7 – 30.2 MHz	150 – 400 kHz 535 – 1605 kHz 1.5 – 4.5 MHz 4.5 – 13 MHz 13 – 30 MHz
Sensitivity (S+N)/N = 10 dB Output = 50 mW (Thru I.E.C. Dummy ANT.)	250 kHz 1 MHz 2.5 MHz 7 MHz 21 MHz	50 μ V 100 μ V 3 μ V 4 μ V 4 μ V	200 μ V 300 μ V 10 μ V 10 μ V 10 μ V
Selectivity	-6 dB -40 dB	4 kHz 18 kHz	4.5 kHz 20 kHz
Image ratio (Thru I.E.C. Dummy ANT.)	250 kHz 1 MHz 2.5 MHz 7 MHz 21 MHz	48 dB 65 dB 45 dB 35 dB 15 dB	40 dB 50 dB 40 dB 30 dB 10 dB
Signal-to-Noise ratio	1 mV at 7 MHz AM SSB	50 dB 40 dB	40 dB 30 dB
Intermediate frequency		455 kHz	455 \pm 2 kHz
B.F.O. pitch		\pm 2.5 kHz	\pm 2 kHz
AVC action	50 μ V to 20 mV at 7 MHz	\pm 6 dB	\pm 10 dB
Audio frequency response	AM: 300 Hz to 3 kHz SSB: 300 Hz to 3 kHz	-6 dB -6 dB	+3, -10 dB +3, -10 dB
Audio output power	Less than 10% T.H.D.	700 mW	500 mW
Hum and noise	AF Gain Minimum AM SSB	4.5 mV 6 mV	10 mV 10 mV
Power drain	1. Idling AC 120V, 60 Hz DC 12V 2. Full power AC 120V, 60 Hz DC 12V	3 W 30 mA 6 W 180 mA	4 W 60 mA 10 W 300 mA
Dial calibration accuracy	Main Tuning Bandspread	\pm 1 % \pm 0.1 %	\pm 3 % \pm 0.5 %
Oscillator drop-out	AC DC	80 V 7 V	100 V 9 V

- Semiconductors : 1 IC, 5 FET's, 7 transistors and 15 diodes
 Reception : AM, CW and Single Side Band (USB/LSB)
 Power source : 120 Volt AC 60 Hz or
 12 Volt DC negative ground only.
 Antenna : Low impedance
 Phone jack matching impedance : More than 8 ohm
 Operating temperature : 0°C to 40°C
 Dimensions : 6-9/16"(H) x 14-1/5"(W) x 8-7/8"(D)
 Weight : 16 lbs.

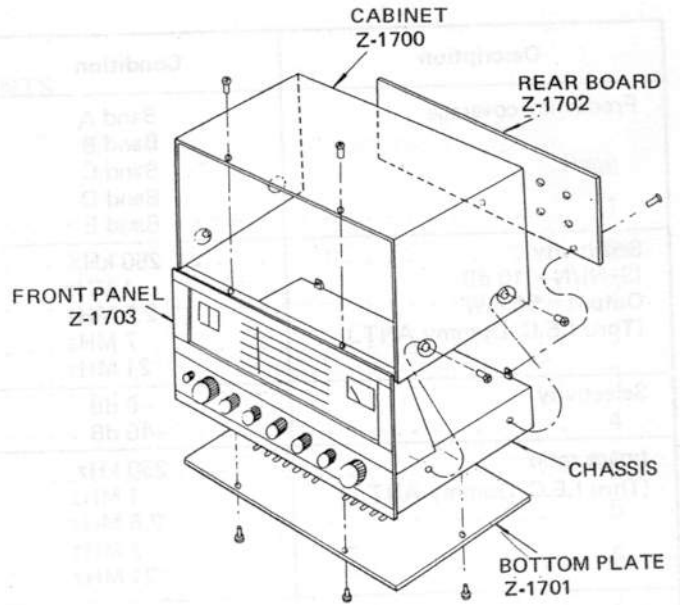
NOTE: Nominal Specs represent the design specs; all units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit Specs represent the absolute worst condition which still might be considered acceptable; in no case should a unit perform to less than within any Limit Spec.

DISASSEMBLY

SPECIFICATIONS

DISASSEMBLY INSTRUCTIONS

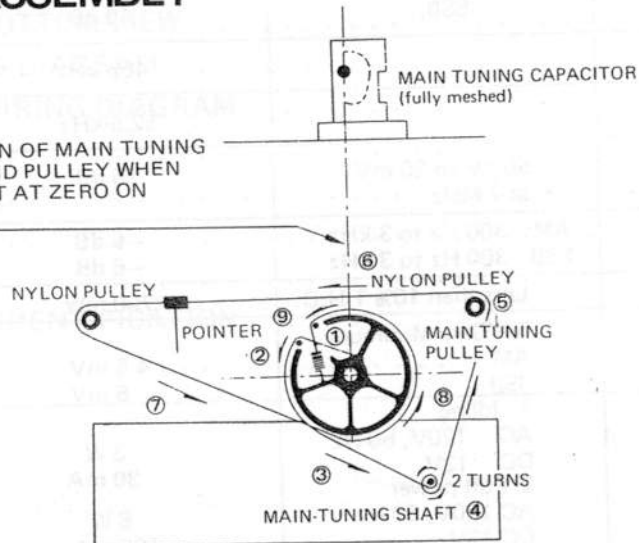
1. Remove 6 screws from bottom plate.
2. Remove 6 screws from rear board.
3. Remove 4 screws holding cabinet.



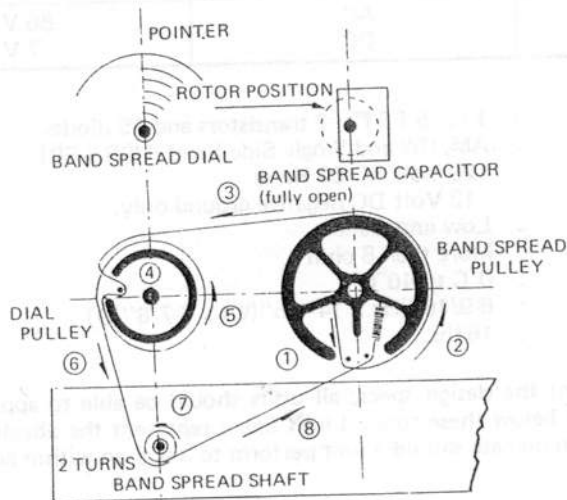
DIAL STRING ASSEMBLY

MAIN TUNING

NOTE: POSITION OF MAIN TUNING CAPACITOR AND PULLEY WHEN POINTER IS SET AT ZERO ON LOG SCALE



BAND SPREAD



NOTE: THE POSITION OF BAND SPREAD DIAL, BOTH PULLEYS AND BAND SPREAD CAPACITOR PLATES.

GENERAL ALIGNMENT INSTRUCTIONS

Test instrument required:

1. Signal Generator (150 kHz – 30 MHz)
2. I.E.C. Dummy antenna
3. AC VTVM
4. Oscilloscope

PREPARATION FOR DIAL TRACKING ALIGNMENT

Note 1: Before attempting alignment, warm up the test instrument and the receiver for a minimum of 15 minutes to allow the components to stabilize.

Note 2: During alignment, reduce the signal generator output as the VTVM readings become higher. Always use the lowest signal generator output.

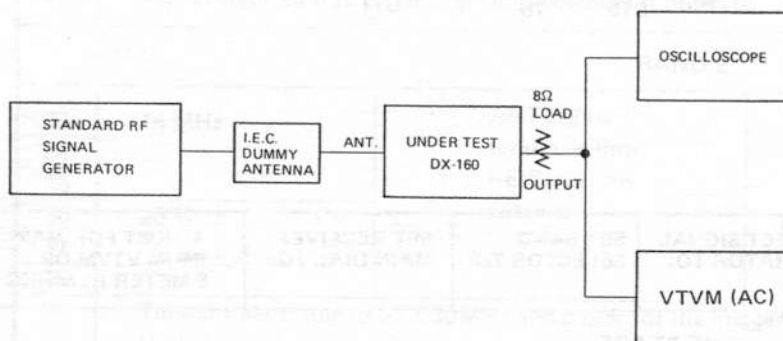
Note 3: A non metallic alignment tool is required for complete alignment.

Note 4: Before alignment confirm that, when the MAIN TUNING knob is rotated fully counterclockwise (main tuning capacitor fully meshed) the dial pointer rests exactly on the 0 mark on the LOG scale.

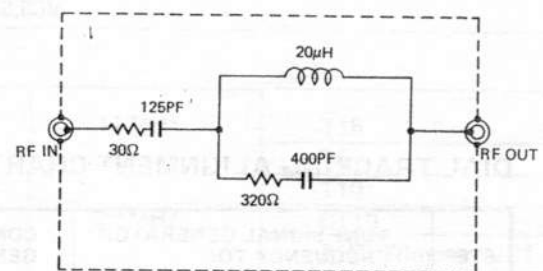
Step 1: Set the front panel controls as follows:

- BAND SPREAD — Fully clockwise (fully open).
- AF GAIN — Adjust as necessary during alignment
- RF GAIN — Fully clockwise
- MODE SW — AM position
- OPR SW — REC position

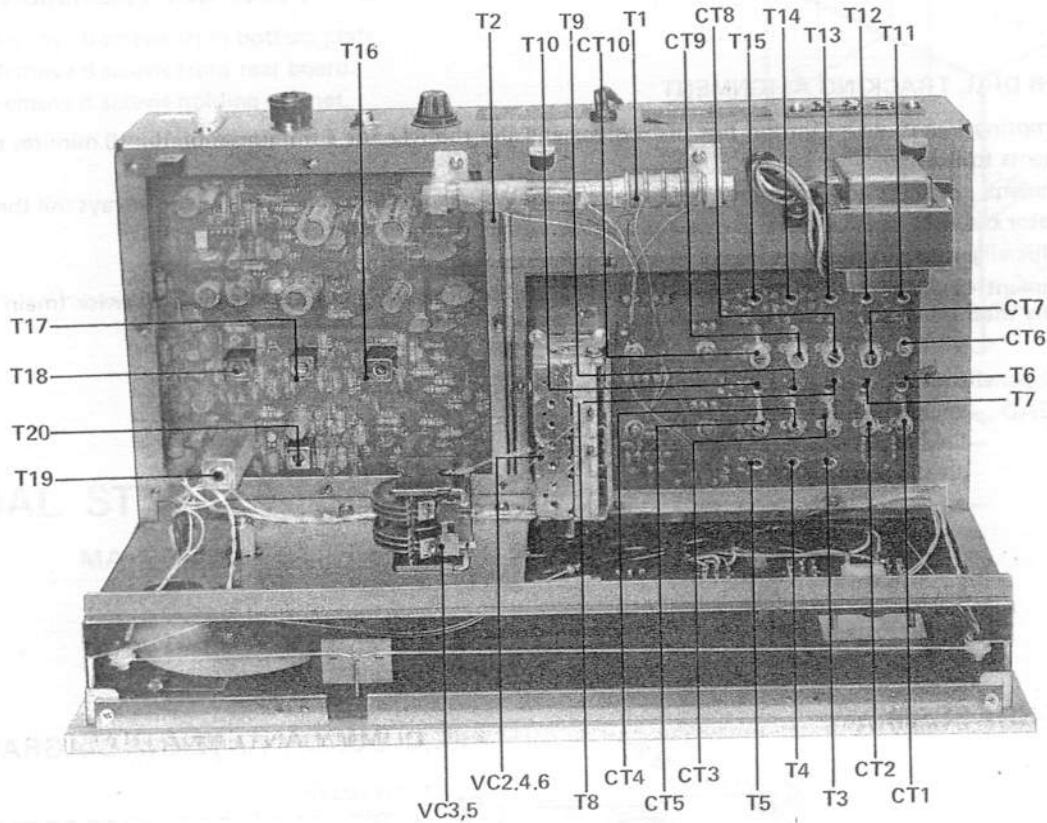
ALIGNMENT SET-UP DIAGRAM



I.E.C. DUMMY ANTENNA DIAGRAM



ALIGNMENT POSITIONS



DIAL TRACKING ALIGNMENT CHART

STEP	TUNE SIGNAL GENERATOR FREQUENCY TO: (MODULATION 1 kHz 30%)	CONNECT SIGNAL GENERATOR TO:	SET BAND SELECTOR TO:	SET RECEIVER MAIN DIAL TO:	ADJUST FOR MAXIMUM VTVM OR S METER READING:
IF STAGE					
1	455 kHz	Across VC3 or VC4 thru a 0.01 μ F capacitor	E	30 MHz	T16 (RED)
2					T17 (WHT)
3					T18 (BLK)
4	Repeat Steps 1 thru 3.				
BAND A					
5	170 kHz	ANTENNA terminals thru I.E.C. dummy antenna	A	170 kHz	T11 (OSC coil)
6					T1 (ANT coil)
7					T6 (RF coil)
8	380 kHz			380 kHz	CT6 (OSC trimmer)
9					ANT Trimmer, VC1
10					CT1 (RF trimmer)
11	Repeat steps 5 thru 10 until no improvement is observed.				

BAND B					
12	600 kHz	ANTENNA terminals thru I.E.C. dummy antenna	B	600 kHz	T12 (OSC coil)
13					T2 (ANT coil)
14					T7 (RF coil)
15					1400 kHz
16	ANT Trimmer, VC1				
17	CT2 (RF trimmer)				
18	Repeat steps 12 thru 17 until no improvement is observed.				
BAND C					
19	1.7 MHz	ANTENNA terminals thru I.E.C. dummy antenna	C	1.7 MHz	T13 (OSC coil)
20					T3 (ANT coil)
21					T8 (RF coil)
22	4 MHz			CT8 (OSC trimmer)	
23				ANT Trimmer, VC1	
24				CT3 (RF trimmer)	
25				Repeat steps 19 thru 24 until no improvement is observed.	
BAND D					
26	5 MHz	ANTENNA terminals thru I.E.C. dummy antenna	D	5 MHz	T14 (OSC coil)
27					T4 (ANT coil)
28					T9 (RF coil)
29	12 MHz			CT9 (OSC trimmer)	
30				ANT Trimmer, VC1	
31				CT4 (RF trimmer)	
32				Repeat steps 26 thru 31 until no improvement is observed.	
BAND E					
33	14 MHz	ANTENNA terminals thru I.E.C. dummy antenna	E	14 MHz	T15
34					T5
35					T10
36	28 MHz			CT10	
37				ANT Trimmer, VC1	
38				CT5	
39				Tune the generator to 27.090MHz and check for the image frequency. If the image frequency does not appear at this point, repeat steps 33 thru 38, being careful to align to the correct frequency.	

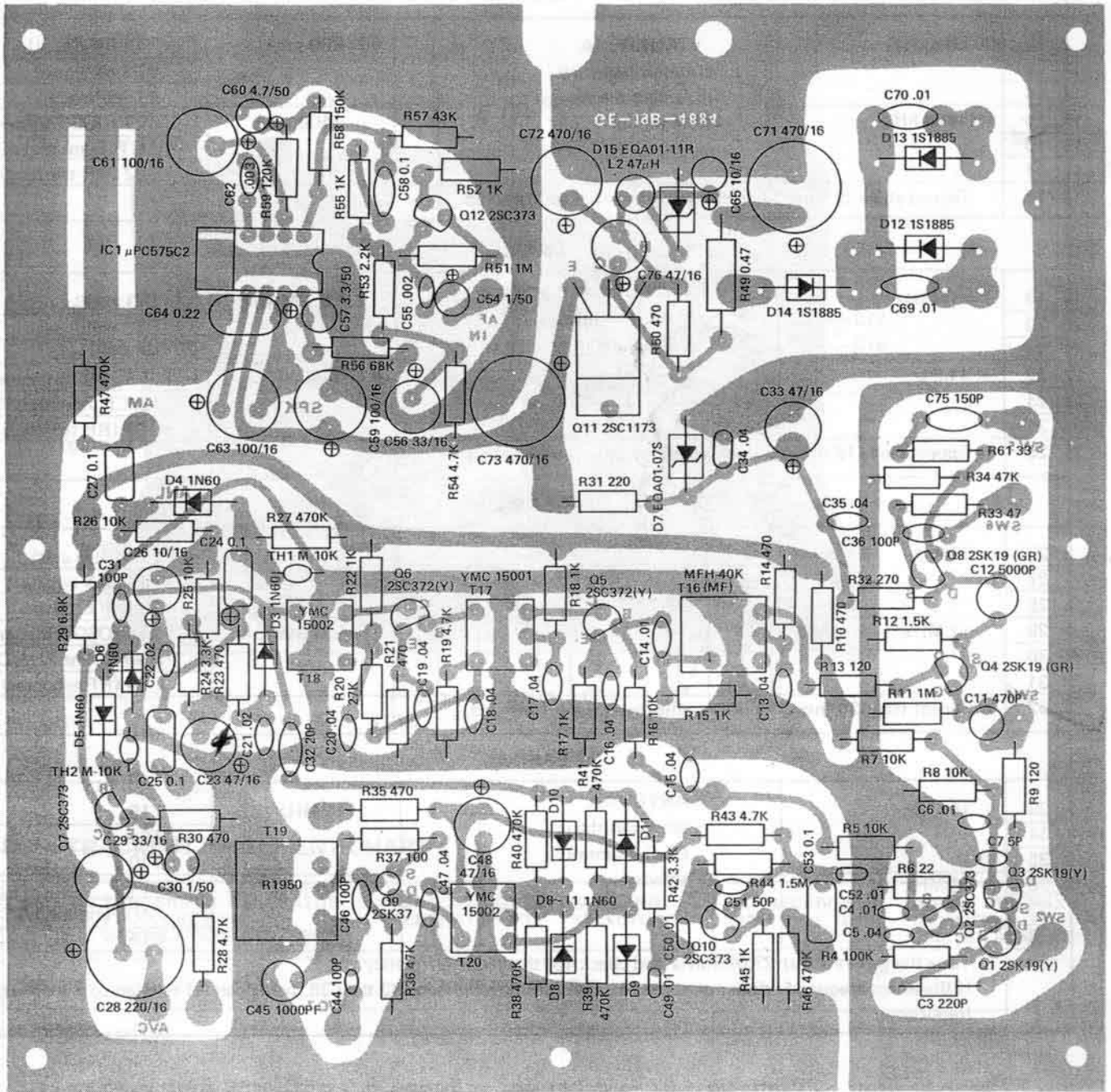
Note: The image frequency is 910 kHz above the signal frequency on Bands A, B, C and D, and 910 kHz below the signal frequency on Band E.

BFO ALIGNMENT

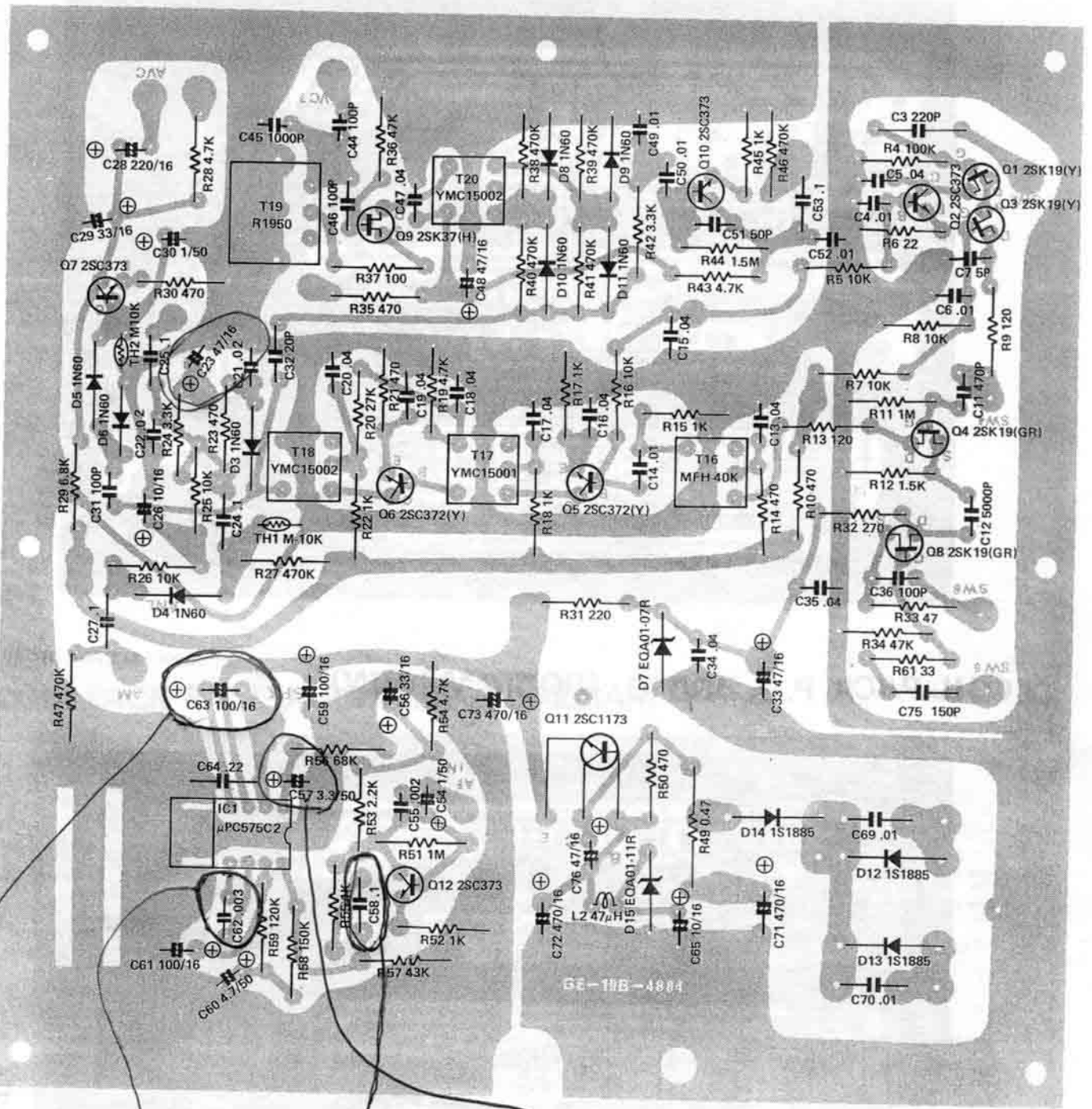
Note: Confirm that the BFO capacitor is fully meshed when the BFO control is at 9 o'clock. If not, reset the knob on the shaft.

- Step 1: Set MODE switch to SSB/CW. Set BFO to the one o'clock position.
- Step 2: Connect an antenna to the antenna terminals, then tune in a station to exactly the maximum reading on the S-meter.
- Step 3: Set the AC VTVM to the 1.5 volt range. Connect the VTVM between T20 secondary and chassis ground.
- Step 4: Adjust the core of T19 for a zero beat note in the loudspeaker.
- Step 5: Adjust the core of T20 for maximum VTVM deflection.

MAIN P.C. BOARD (TOP VIEW)



MAIN P.C. BOARD (BOTTOM VIEW)



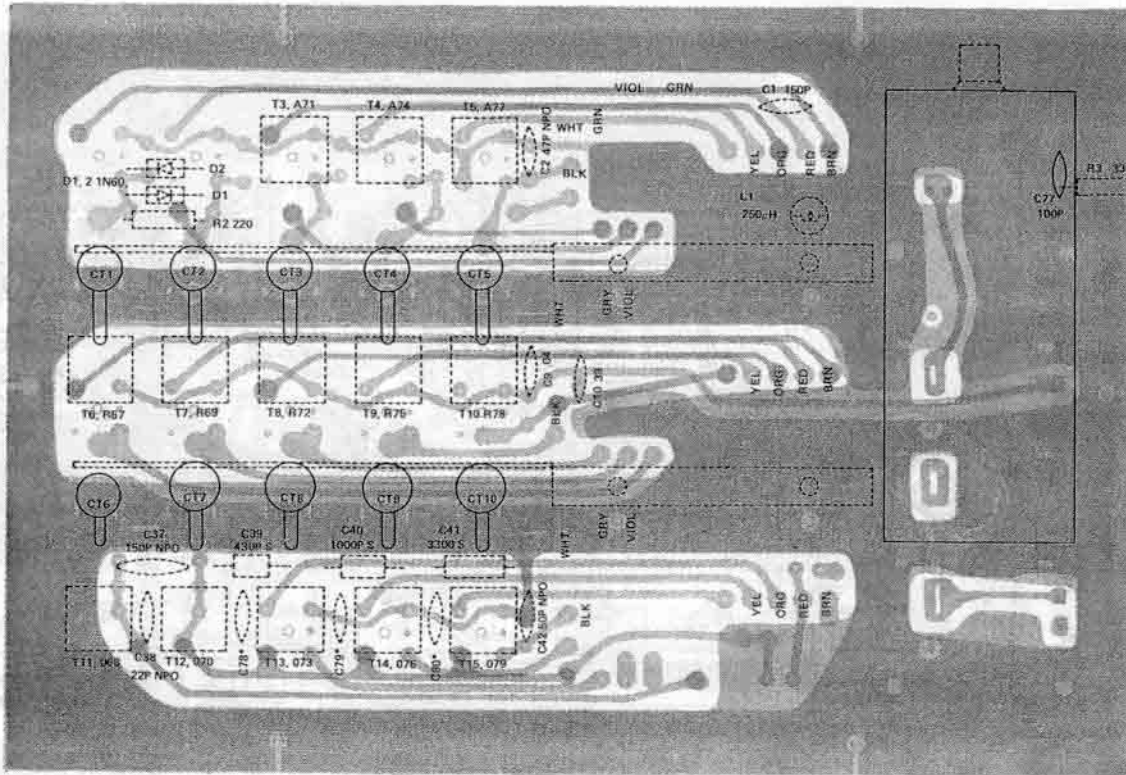
Change to
470uF/16v

Change
To 120pF ceramic
cap

Change
To 5uF/16v

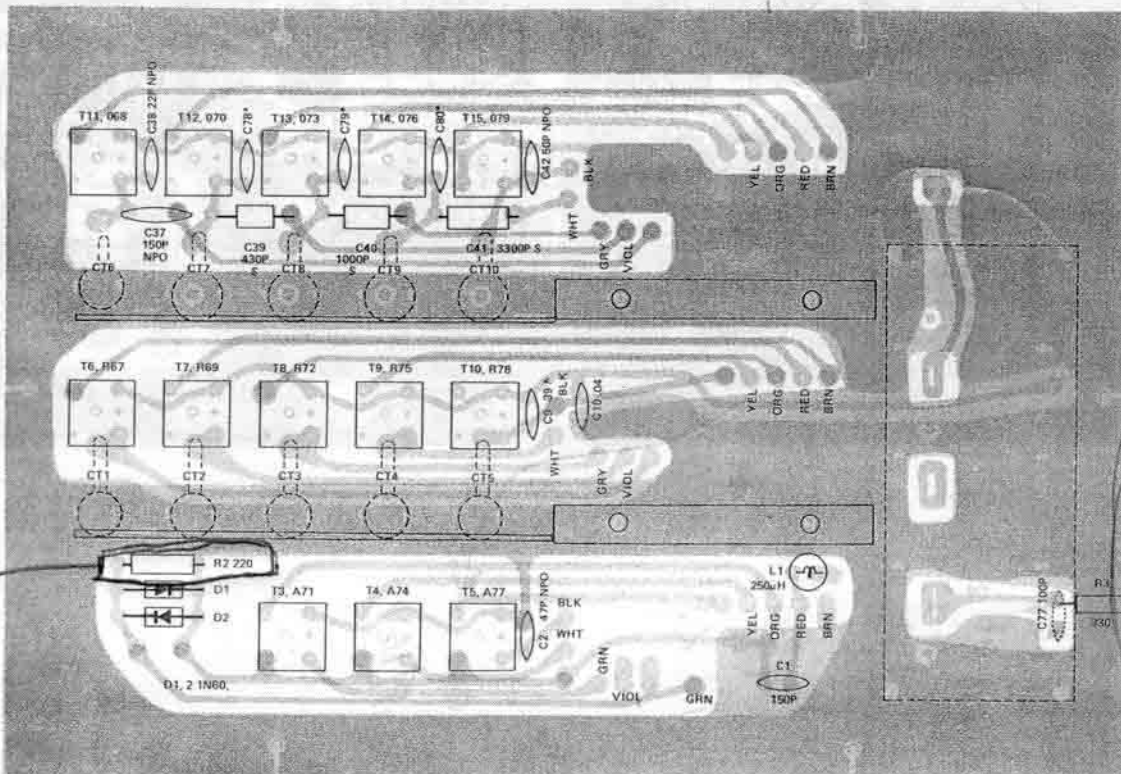
Replace
with 100uF/16v

COIL PACK P.C. BOARD (TOP VIEW)



COIL PACK P.C. BOARD (BOTTOM VIEW)

*Deletion C78,C79,C80

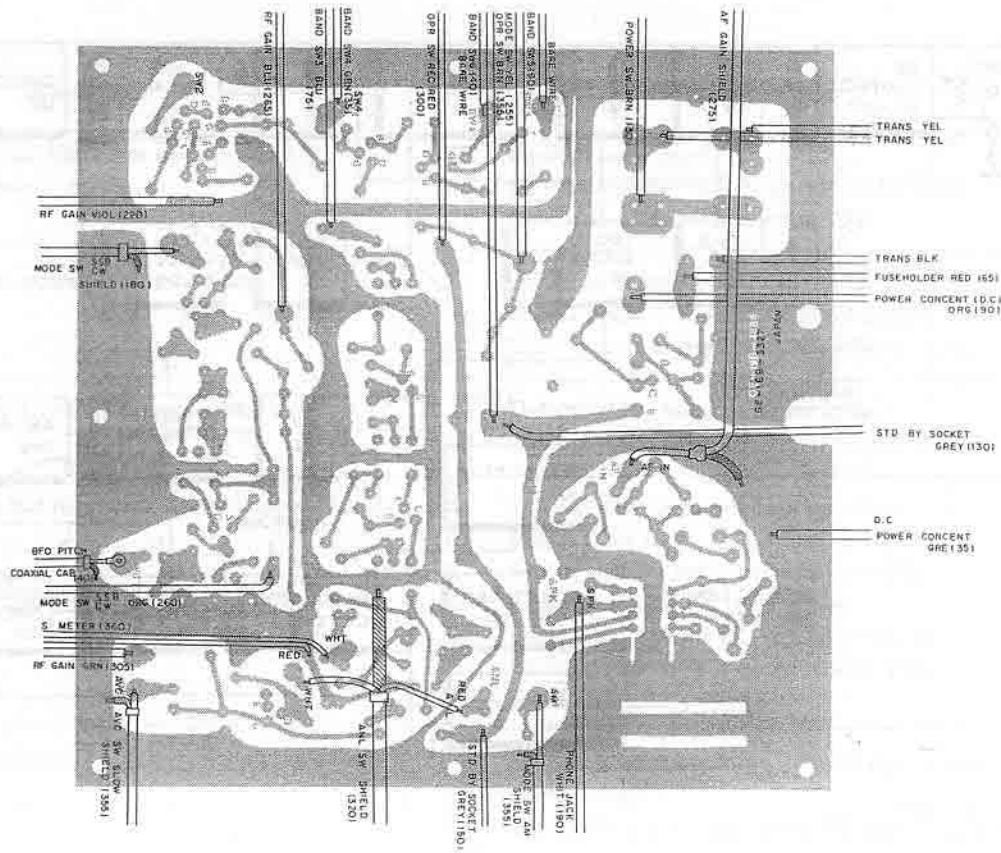


*With Replace
5K Ohm
Resistor*

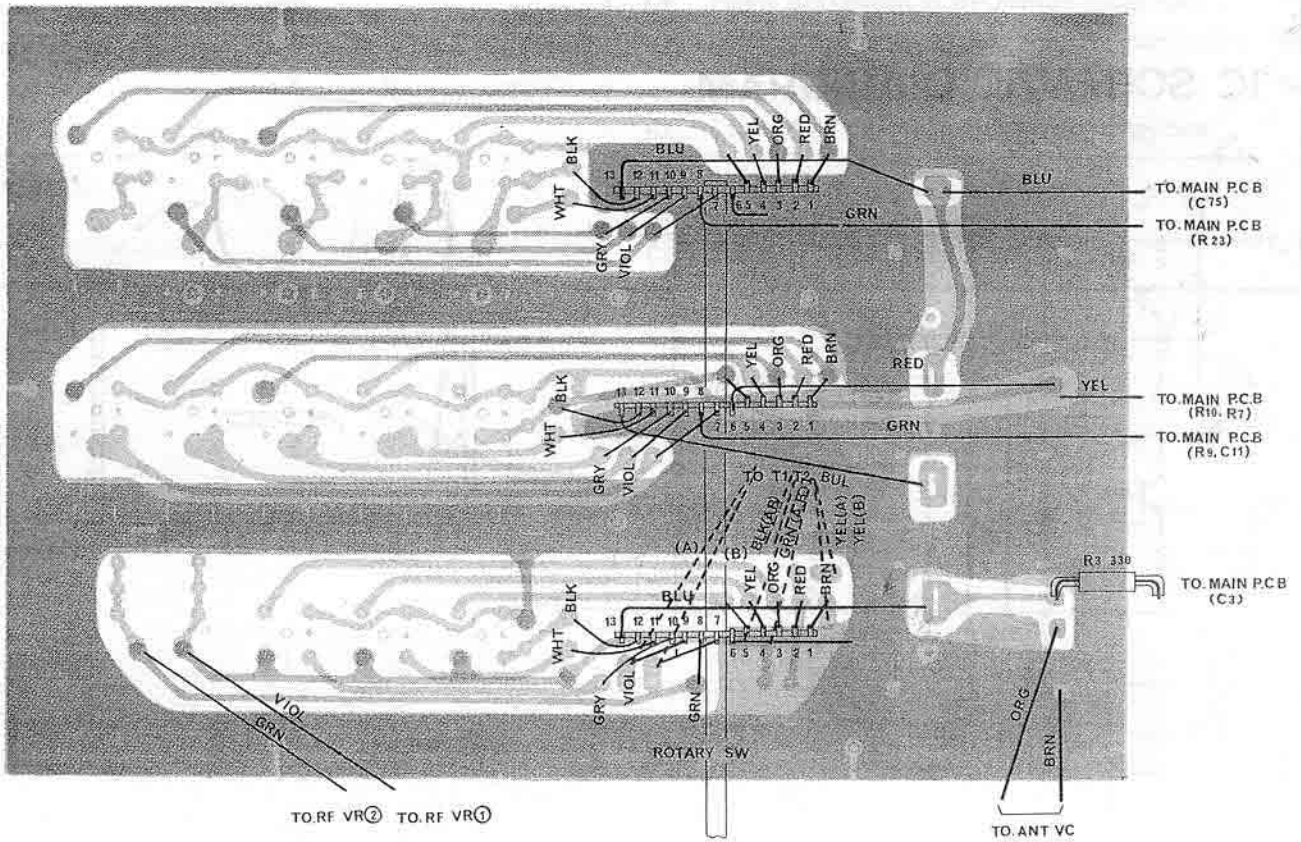
*C27
Short out!
this cap!*

*Deletion C78,C79,C80

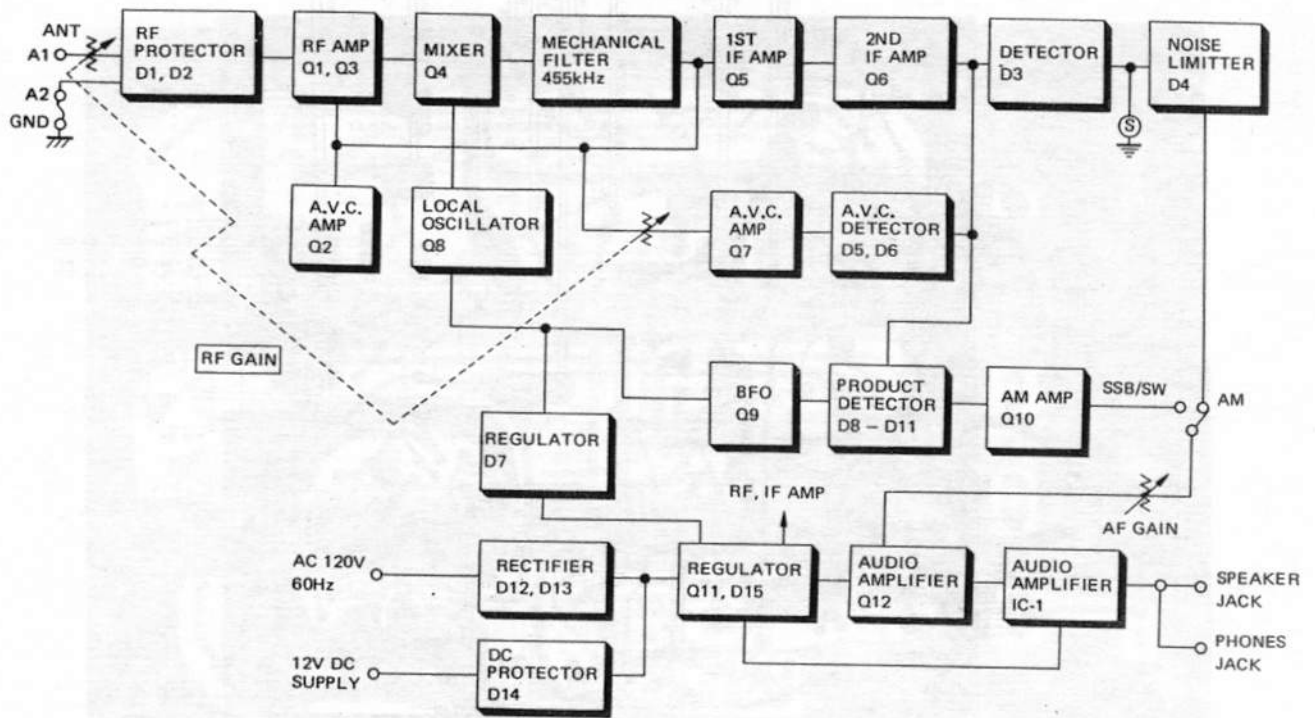
MAIN P.C. BOARD WIRING DIAGRAM



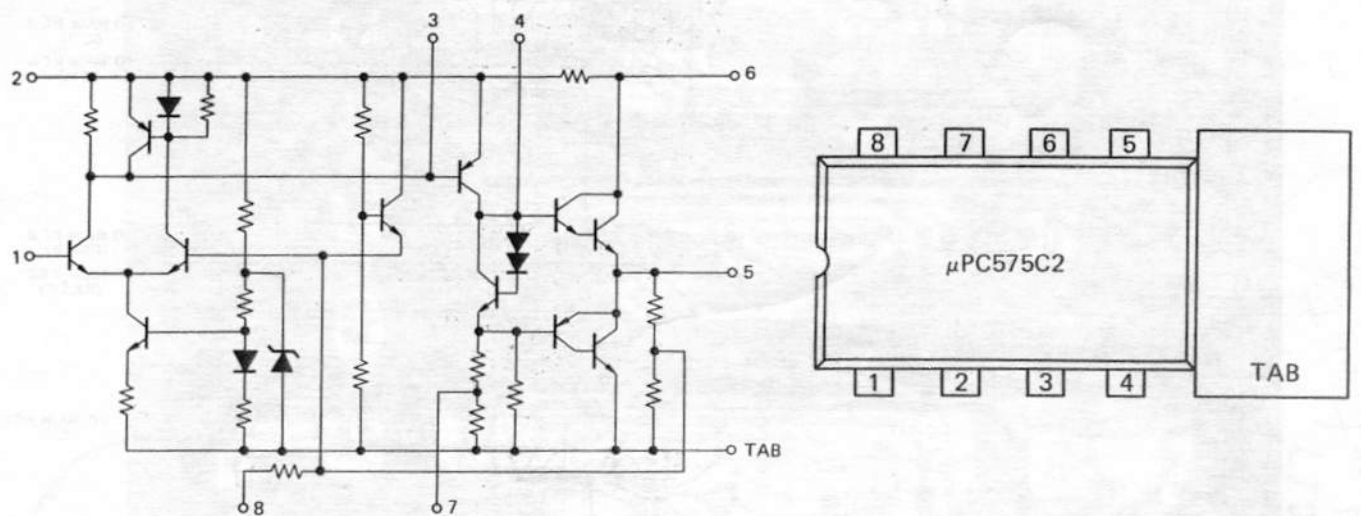
COIL PACK P.C. BOARD WIRING DIAGRAM



BLOCK DIAGRAM



IC SCHEMATIC DIAGRAM



TROUBLESHOOTING

Symptom	Possible Cause
1) Pilot lamp does not light, nor does the unit function when power is ON.	A) Faulty power cord. B) Defective power switch on AF GAIN VR3. C) Defective power transformer T21.
2) Fuse blows when power is switched on.	A) Defective electrolytic capacitor C71. B) Short-circuit in the DC regulator circuit. C) Short-circuit in the power amplifier circuit.
3) Dial lamp and meter lamp do not light.	A) Defective dial lamp or meter lamp. B) Defective power switch on AF GAIN VR3.
4) Dial lamp glows but no sound is heard on any band.	A) Speaker jack or phone jack defective. B) Blown 0.5A fuse. C) Faulty speaker coupling capacitor C63 D) Power amplifier (IC1) defective. E) Short circuit in the DC regulator circuit. F) Faulty power switch on AF GAIN VR3. G) Faulty STD BY switch.
5) No audio on any band.	A) Defective local oscillator or oscillator circuit component. B) Faulty RF stage amplifier or RF stage amplifier circuit component.
6) BFO Control has no effect.	A) Defective MODE slide switch, SW9. B) Defective capacitor C45. C) Faulty BFO circuit or BFO circuit component.
7) S-meter not operating.	A) Defective S-meter B) Defective capacitor C23. C) Faulty AVC circuit or AVC circuit component.
8) Noisy	A) Defective RF stage amplifier. B) Defective IF stage amplifier. C) Defective AF amplifier IC1.

PARTS LIST

✓ = means change out to
Black Gate E Serrise Cap.
OR PANASONIC FC
CAPS.

Just
Electrolytic
Capacitors only!

Ref. No.	Description	RS Part Number	MFR's Part Number
	TYPE uF CAPACITORS Volts		
C1	Ceramic 150pF ±10% 50WV		FC-80
C2	Ceramic 47pF ±10% 50WV		FCC
C3	Styrol 220pF ±5% 50WV		S0A1H221J
C4	Ceramic 0.01µF +80 -20% 25WV		MC-70
C5	Ceramic 0.04µF +80 -20% 25WV		MC-100
C6	Ceramic 0.01µF +80 -20% 25WV		MC-70
C7	Ceramic 5pF ±0.5pF 50WV		FC-50
C8	Not used		
C9	Ceramic 27pF ±10% 50WV		FCC
C10	Ceramic 0.04µF +80 -20% 25WV		MC-100
C11	Styrol 470pF ±10% 50WV		S0C1H471K
C12	Styrol 5000pF ±5% 50WV		S0A1H502J
C13	Ceramic 0.04µF +80 -20% 25WV		MC-100
C14	Ceramic 0.01µF +80 -20% 25WV		FC-70
C15-20	Ceramic 0.04µF +80 -20% 25WV		MC-100
C21, 22	Ceramic 0.02µF +80 -20% 25WV		FC-70
C23	Electrolytic 47µF ±20% 16WV		CE04W1C470
C24, 25	Mylar 0.1µF ±20% 50WV		MS1H-104
C26	Electrolytic 10µF ±20% 16WV		CE04-W1C100
C27	Mylar 0.1µF ±20% 50WV		MS1H-104
C28	Electrolytic 220µF ±20% 16WV		CE04W1C221
C29	Electrolytic 33µF ±20% 16WV		CE04W1C330
C30	Electrolytic 1µF ±20% 50WV		CE04W1H010
C31	Ceramic 100pF ±10% 50WV		FC-70
C32	Ceramic 20pF ±10% 50WV		FC-50
C33	Electrolytic 47µF ±20% 16WV		CE04W1C470
C34	Mylar 0.04µF ±20% 50WV		MS1H-403
C35	Ceramic 0.04µF +80 -20% 25WV		MC-100
C36	Ceramic 100pF ±10% 50WV		FCC
C37	Ceramic 150pF ±10% 50WV		FCC
C38	Ceramic 22pF ±10% 50WV		FCC
C39	Styrol 430pF ±5% 50WV		S0A1H431J
C40	Styrol 1000pF ±5% 50WV		S0A1H102J
C41	Styrol 3300pF ±5% 50WV		S0A1H332J
C42	Ceramic 50pF ±10% 50WV		FCC
C43	Styrol 3300pF ±5% 50WV		S0A1H332J
C44	Ceramic 100pF ±10% 50WV		FC-70
C45	Styrol 1000pF ±10% 50WV		S0C1H102K
C46	Ceramic 100pF ±10% 50WV		FCC
C47	Mylar 0.04µF ±20% 50WV		MS1H-403
C48	Electrolytic 47µF ±20% 16WV		CE04W1C470
C49, 50	Mylar 0.01µF ±20% 50WV		MS1H-103
C51	Ceramic 50pF ±10% 50WV		FC-60
C52	Mylar 0.01µF ±20% 50WV		MS1H103
C53	Mylar 0.1µF ±20% 50WV		MS1H-104
C54	Electrolytic 1µF ±20% 50WV		CE04W1H010
C55	Ceramic 0.002µF +80 -20% 50WV		MC-50
C56	Electrolytic 33µF ±20% 16WV		CE04W1C330
C57	Electrolytic 3.3µF ±20% 50WV		CE04W1V3R3
C58	Ceramic 0.1µF +80 -20% 25WV		MC-135

Ref. No.	Description	RS Part Number	MFR's Part Number
C59	Electrolytic 100 μ F 16WV		CE04W1C101
C60	Electrolytic 4.7 μ F 50WV		CE04W1V4R7
C61	Electrolytic 100 μ F 16WV		CE04W1C101
C62	Ceramic 0.003 μ F +80 -20% 25WV		MC-50
C63	Electrolytic 100 μ F 16WV		CE04W1C101
C64	Mylar 0.22 μ F \pm 20% 50WV		MS1H-224
C65	Electrolytic 10 μ F 16WV		CE04W1C100
C66, 67	Not used		
C68	Ceramic 0.001 μ F UL Listed 150WV		ECK DDL102ZE
C69, 70	Ceramic 0.01 μ F 500WV		CK2150
C71, 72, 73	Electrolytic 470 μ F 16WV		CE04W1C471
C74	Not used		
C75	Ceramic 150pF \pm 10% 50WV		FCC
C76	Electrolytic 47 μ F 16WV		CE04W1C470
C77	Ceramic 100pF \pm 10% 50WV		FC-70

RESISTORS

R1	Carbon film 1.8M Ω \pm 5% 1/2W		ERD-12TJ-185
R2	Carbon film 220 Ω \pm 5% 1/4W		ERD-14TJ-221
R3	Carbon film 330 Ω \pm 5% 1/4W		ERD-14TJ-331
R4	Carbon film 100K Ω \pm 5% 1/4W		ERD-14TJ-104
R5	Carbon film 10K Ω \pm 5% 1/4W		ERD-14TJ-103
R6	Carbon film 22 Ω \pm 5% 1/4W		ERD-14TJ-220
R7, 8	Carbon film 10K Ω \pm 5% 1/4W		ERD-14TJ-103
R9	Carbon film 120 Ω \pm 5% 1/4W		ERD-14TJ-121
R10	Carbon film 470 Ω \pm 5% 1/4W		ERD-14TJ-471
R11	Carbon film 1M Ω \pm 5% 1/4W		ERD-14TJ-105
R12	Carbon film 1.5K Ω \pm 5% 1/4W		ERD-14TJ-152
R13	Carbon film 120 Ω \pm 5% 1/4W		ERD-14TJ-121
R14	Carbon film 470 Ω \pm 5% 1/4W		ERD-14TJ-471
R15	Carbon film 1K Ω \pm 5% 1/4W		ERD-14TJ-102
R16	Carbon film 10K Ω \pm 5% 1/4W		ERD-14TJ-103
R17, 18	Carbon film 1K Ω \pm 5% 1/4W		ERD-14TJ-102
R19	Carbon film 4.7K Ω \pm 5% 1/4W		ERD-14TJ-472
R20	Carbon film 27K Ω \pm 5% 1/4W		ERD-14TJ-273
R21	Carbon film 470 Ω \pm 5% 1/4W		ERD-14TJ-471
R22	Carbon film 1K Ω \pm 5% 1/4W		ERD-14TJ-102
R23	Carbon film 470 Ω \pm 5% 1/4W		ERD-14TJ-471
R24	Carbon film 3.3K Ω \pm 5% 1/4W		ERD-14TJ-332
R25, 26	Carbon film 10K Ω \pm 5% 1/4W		ERD-14TJ-103
R27	Carbon film 470K Ω \pm 5% 1/4W		ERD-14TJ-474
R28	Carbon film 4.7K Ω \pm 5% 1/4W		ERD-14TJ-472
R29	Carbon film 6.8K Ω \pm 5% 1/4W		ERD-14TJ-682
R30	Carbon film 470 Ω \pm 5% 1/4W		ERD-14TJ-471
R31	Carbon film 220 Ω \pm 5% 1/4W		ERD-14TJ-221
R32	Carbon film 270 Ω \pm 5% 1/4W		ERD-14TJ-271
R33	Carbon film 47 Ω \pm 5% 1/4W		ERD-14TJ-470
R34	Carbon film 47K Ω \pm 5% 1/4W		ERD-14TJ-473
R35	Carbon film 470 Ω \pm 5% 1/4W		ERD-14TJ-471
R36	Carbon film 47K Ω \pm 5% 1/4W		ERD-14TJ-473
R37	Carbon film 100 Ω \pm 5% 1/4W		ERD-14TJ-101
R38-41	Carbon film 470K Ω \pm 5% 1/4W		ERD-14TJ-474

Change
To
5k
Ohms

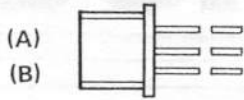
Ref. No.	Description			RS Part Number	MFR's Part Number
R42	Carbon film	3.3K Ω	$\pm 5\%$	1/4W	ERD-14TJ-332
R43	Carbon film	4.7K Ω	$\pm 5\%$	1/4W	ERD-14TJ-472
R44	Carbon film	1.5M Ω	$\pm 5\%$	1/4W	ERD-14TJ-155
R45	Carbon film	1K Ω	$\pm 5\%$	1/4W	ERD-14TJ-102
R46, 47	Carbon film	470K Ω	$\pm 5\%$	1/4W	ERD-14TJ-474
R48	Carbon film	1.8M Ω	$\pm 5\%$	1/2W	ERD-12TJ-185
R49	Carbon film	0.47 Ω	$\pm 5\%$	1W	ERX1ANJ0.47
R50	Carbon film	470 Ω	$\pm 5\%$	1/4W	ERD-14TJ-471
R51	Carbon film	1M Ω	$\pm 5\%$	1/4W	ERD-14TJ-105
R52	Carbon film	1K Ω	$\pm 5\%$	1/4W	ERD-14TJ-102
R53	Carbon film	2.2K Ω	$\pm 5\%$	1/4W	ERD-14TJ-222
R54	Carbon film	4.7K Ω	$\pm 5\%$	1/4W	ERD-14TJ-472
R55	Carbon film	1K Ω	$\pm 5\%$	1/4W	ERD-14TJ-102
R56	Carbon film	68K Ω	$\pm 5\%$	1/4W	ERD-14TJ-683
R57	Carbon film	43K Ω	$\pm 5\%$	1/4W	ERD-14TJ-433
R58	Carbon film	150K Ω	$\pm 5\%$	1/4W	ERD-14TJ-154
R59	Carbon film	120K Ω	$\pm 5\%$	1/4W	ERD-14TJ-124
R60	Carbon film	82 Ω	$\pm 5\%$	1/4W	ERD-14TJ-820
R61	Carbon film	33 Ω	$\pm 5\%$	1/4W	ERD-14TJ-330
R62	Carbon film	33K Ω	$\pm 5\%$	1/4W	ERD-14TJ-333
COILS/TRANSFORMERS/FILTERS					
T1, 2	A, B BAND	BAR Antenna coil		CA-3003	12BNA-066
T3	C BAND	Antenna coil		CA-3004	6PNA-071
T4	D BAND	Antenna coil		CA-3005	6PNA-074
T5	E BAND	Antenna coil		CA-3006	6PNA-077
T6	A BAND	RF coil		CA-4470	6PNR067
T7	B BAND	RF coil		CA-4471	6PNR-069
T8	C BAND	RF coil		CA-4472	6PNR-072
T9	D BAND	RF coil		CA-4473	6PNR-075
T10	E BAND	RF coil		CA-4474	6PNR-078
T11	A BAND	OSC coil		CA-4465	6PNO-068
T12	B BAND	OSC coil		CA-4466	6PNO-070
T13	C BAND	OSC coil		CA-4467	6PNO-073
T14	D BAND	OSC coil		CA-4468	6PNO-076
T15	E BAND	OSC coil		CA-4469	6PNO-079
T16	455 kHz Mechanical Filter			CA-3009	MFH-40K
T17	455 kHz IFT			CA-7306	YMC-15001
T18	455 kHz IFT			CA-3008	YMC-15002
T19	BFO coil			CA-3007	R 1950
T20	455 kHz IFT			CA-3008	YMC-15002
T21	Power Trans (U.S.A. model) UL Listed			TA-0417	Y-0136
	Power Trans (Canada model) CSA Listed				K-2635
	Power Trans (Australia and Europe model)				K-3639
L1	RFC 250 μ H				LF1-251
L2	RFC 47 μ H				LF1-470

Ref. No.	Description	RS Part Number	MFR's Part Number
POTENTIOMETERS			
VR1, 2 VR3	RF Gain control AF Gain control	P-0725 P-0726	2KBX2(GJ10A) 5KA(VJ11ASF21)
SEMICONDUCTORS			
D1-6 D7 D8-11 D12-14 D15 IC1 Q1 Q2 Q3 Q4 Q5, 6 Q7 Q8 Q9 Q10 Q11 Q12 Th-1, 2	Diode Germanium Diode Zener 7V Diode Germanium Diode Silicon Diode Zener 11V IC Transistor Silicon Transistor Silicon Transistor Silicon F.E.T. Transistor Silicon F.E.T. Transistor Silicon Transistor Silicon Transistor Silicon F.E.T. Transistor Silicon F.E.T. Transistor Silicon Transistor Silicon Transistor Silicon Thermistor	NEC Toshiba Toshiba Toshiba Toshiba Toshiba Toshiba Toshiba Toshiba NEC Toshiba Toshiba Toshiba	1N60 EQA01-07R 1N60 1S1885 EQA01-11R μ PC575C2 2SK19(Y) 2SC373 2SK19(Y) 2SK19(GR) 2SC372(Y) 2SC373 2SK19(GR) 2SK37 or 2SK19 2SC373 2SC1173(C) 2SC373 M-10K
SWITCHES			
SW1-6 SW7-10	BAND Selector switch Y-394 ANL/MODE/AVC/OPR	S-1130 S-2202	GE-18C-4093 6P14L Slide
VARIABLE CAPACITORS/TRIMMER CAPACITORS			
VC1 VC2, 4, 6 VC3, 5 VC7 CT1-6 CT7-10	ANT TRIMMER MAIN Tuning 3gangs BAND SPREAD Tuning 2gangs BFO PITCH RF PC Trimmer OSC PC Trimmer	C-4469 C-4467 C-4468 C-4469 CA-4463 CA-4464	GE-18D-4083 7MD34X24A GE-18D-4082 GE-18D-4083 EVC-12W30P32 AT1-6
MISCELLANEOUS			
	Chassis Front chassis Cabinet Bottom Plate Back Board Front Panel Tuning Dial Plate Band Spread Dial Plate Tuning Dial Shaft Band Spread Dial Shaft	Z-1700 Z-1701 Z-1702 Z-1703 G-0142 G-0143 D-3115 D-3114	GE-19A-4854 GE-19A-4870 GE-15B-2256 GE-11C-535A GE-17C-3387 GE-18C-4068 GE-18C-4069 GE-18D-4070 GE-18D-4072 GE-18D-4071

Ref. No.	Description	RS Part Number	MFR's Part Number
	Dial Spread Shaft	D-3116	GE-12D-728
	Band Spread Sleeve		9φ
	Pully Stud	HB-0440	GE-11C-543A
	Rotary Switch Bearing	HB-0442	GE-11C-575(1)
	Flywheel	RA-3185	GE-12D-734
	Pully 40φ	RA-2408	
	Pully 70φ	RA-2409	
	Pully 90φ	RA-2410	
	Dial Back Panel		GE-19B-4871
	Main Dial Pointer		GE-19D-4881
	Spread Dial Pointer		GE-19D-4931
	Shield Bar	HB-0446	GE-11C-609
	Main P.C. Board UL Type		GE-19B-4884
	Coil Pack P.C. Board	V-4682	GE-18D-3966
	S Meter	M-0233	KL218L59
	Fuse Holder	F-1092	SN-2055
	3P Power Connector	J-0567	No. 1476
	2P Lug & Socket	J-6236	No. 3822
	3P Screws Terminal	KJ-4327	3-210
	Phone Jacks	J-0568	L-J079
	Speaker Jack	J-0569	SG7615
	Lamp Grommet	HB-0449	No. 4108 10φ
	Lamp Grommet (Band Spread Dial)		GE-19D-4924
	Bar Antenna Holder	HB-0450	
	Plastic Foot	F-0139	No. 7003
	Fuse 0.5A Cartridge Type	HF-0079	
	Lead Lamp 7V 50mA	L-0470	L=90mm
	Lead Lamp 7V 50mA	L-0471	L=440mm
	Line Cord (U.S.A. model) UL Listed	W-1670	BLK 6 Feet
	Line Code (Canada model)		UP329-3
	Line Code (Europe model)		#1212
	Line Code (Australia model)		N999
	Line Cord Strain Relief UL Listed	HB-0451	SR-3P-4
	Dial Spring 9L	RA-5996	
	Dial Spring 5L	RA-5997	
	Nylon Pully	RA-2411	7009
	Tuning Knob	K-1497	GE-18D-4073
	Control Knob	K-1498	GE-18D-4074
	Terminal Strip 1L1P UL Type	J-4328	
	Terminal Strip 1L1P	J-4329	
	AMP Terminal UL Listed		#36964
SPEAKER BOX			
	Speaker	S-4478	
	Speaker Box	Z-1704	
	Box Rear Plate	Z-1705	
	Front Panel	Z-1706	
	1/4" Plug W/Cord		
	Screws 1 Kit	HB-0455	

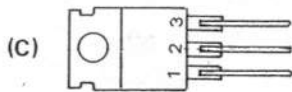
SEMICONDUCTOR LEAD IDENTIFICATION

- (A): 2SC372(Y), 2SC373
- (B): 2SK19(Y), 2SK19(GR)
- (C): 2SC1173(C)
- (D): 2SK37

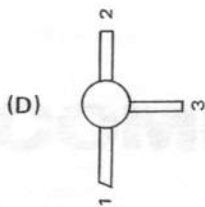


- (A)
1. Emitter
 2. Collector
 3. Base

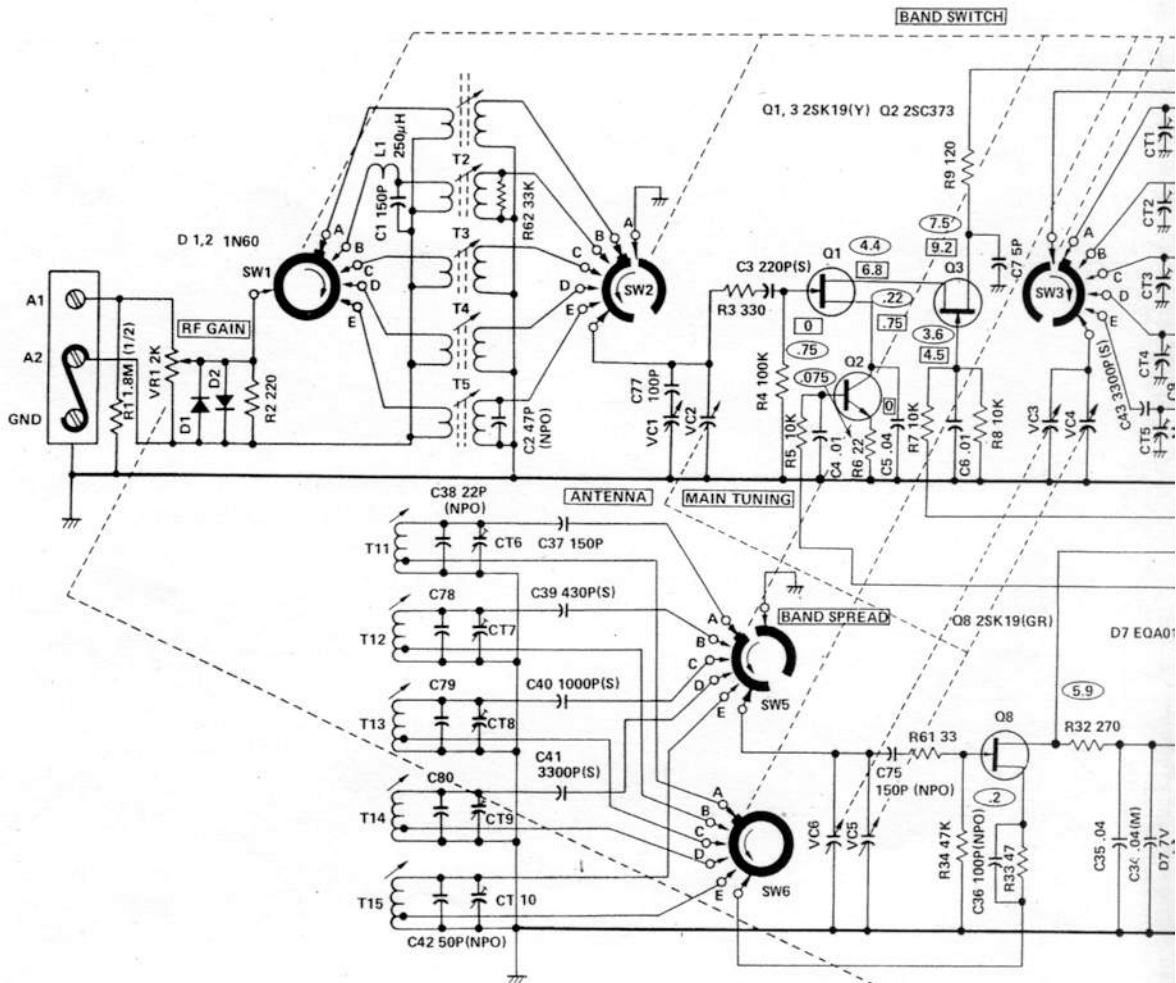
- (B)
1. Drain
 2. Source
 3. Gate



- (C)
1. Base
 2. Collector (Heat Sink)
 3. Emitter



- (D)
1. Source
 2. Drain
 3. Gate

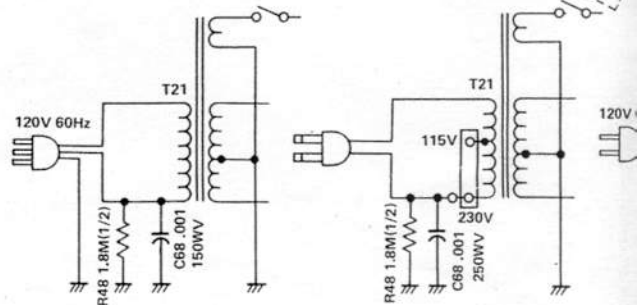


REMARKS

1. SW1-6 BAND SWITCH
2. SW7: ANL SWITCH
3. SW8: AVC SWITCH
4. SW9: STAND BY SWITCH
5. SW10-1, 2: MODE AM SSB CW SWITCH
6. VR1, 2: RF GAIN CONTROL
7. VR3/SW11-1, 2 AF GAIN CONTROL/OFF, ON
8. RESISTANCE VALUES IN OHMS, K=1000
9. CAPACITANCE VALUES IN MFD, P MMF. (M)=MYLAR
10. RATING OR TYPE NUMBER OF COMPONENT PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT NOTICE.
11. VOLTAGES MARKED MEASURED BY V. T. V. M. RF AND AF VOLUME CONTROLS AT MAXIMUM, WITHOUT SIGNAL, BFO ON.
12. VOLTAGES MARKED MEASURED BY V. T. V. M. UNDER THE CONDITION OF RF VOLUME CONTROL MINIMUM, AF VOLUME CONTROL, AT MINIMUM, WITHOUT SIGNAL, BFO ON.

POWER LINE FOR CSA MODEL

POWER LINE FOR 115 - 230V MODEL



CHEMATIC DIAGRAM

