

BEARCAT

PUBLIC SAFETY - POLICE - FIRE - BUSINESS

FM MONITOR RECEIVER

**MODEL BCL-BCH-BCU
SERIES 2**

MADE IN U.S.A.

OPERATING INSTRUCTIONS



Patent Applied for


Electra CORPORATION

CUMBERLAND, INDIANA 46229

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GENERAL DESCRIPTION

The several models of the Bearcat Receiver are designed to monitor frequency modulated radio signals over the radio spectrum assigned by the Federal Communications Commission as follows:

MODEL BCL 30-50 Megahertz
MODEL BCH 150-174 Megahertz
MODEL BCU 450-470 Megahertz

Each of these receivers is capable of receiving eight fixed frequency channels (when eight crystals are installed) within a 10 Megahertz spread, except the model BCL (30-50MHz) which is limited to a seven megahertz spread for the eight channels.

The feature which makes it fascinating and different is the automatic scan and manual channel select facility. It may be programmed to sample or

scan 8 fixed frequency channels, lock on the first channel which becomes active and continue to scan when the carrier is discontinued. Each channel may be scanned or omitted as desired by use of individual switches on the front panel. The scanner may be disabled and any channel selected manually when desired.

The receiver may be installed in mobile service or used as a fixed station device by selecting either of the two power cables supplied.

The most recent developments in solid state circuitry are incorporated in the receiver. Insulated gate field effect transistors are used in the front end to minimize cross modulation and spurious signals. Six integrated circuits are used in the switching and limiter-discriminator circuits.

SPECIFICATIONS

SIZE: 9"W x 4"H x 6-13/16" Deep (overall).

WEIGHT: 4 pounds.

POWER INPUT: 117 Vac, 6 W scanning, 9 W maximum; 12.6 Vdc, .15A scanning, .37A maximum; 2 Power cables supplied.

POWER OUT: 2 W at 5% distortion.

ANTENNA: 1. Telescoping antenna supplied.
2. Standard auto antenna connector.
3. Outside antenna may be used with 50 ohm coaxial cable.

INPUT IMPEDANCE: 50-70 ohms.

SENSITIVITY: Readable at .3 microvolt for + 5 kHz deviation; 1 microvolt for 20 dB quieting; 1 microvolt for 20 dB signal to noise ratio; Model BCU (450-470 MHz) slightly less.

CHANNELS: Up to 8 crystal controlled channels may be scanned automatically or selected individually or in any combination.

FREQUENCY RANGE: Model BCL 30-50 MHz, Total Spread 7 MHz;
Model BCH 150-174 MHz, Total Spread 12 MHz;
Model BCU 450-470 MHz, Total Spread 20 MHz.

SAMPLE RATE: Approximately 20 channels per second.

CRYSTALS: Miniature plug-in type HC-18/U which may be installed easily by user in any desired position.

MOBILE USE: Brackets supplied for mobile mounting under dash. The 12.6 Vdc power cable connects to "ACCESSORY" fuse block or regular "RADIO" fuse block.

NOTE: USE WITH NEGATIVE GROUND SYSTEMS ONLY.

FRONT PANEL CONTROLS: Squelch; Volume on-off; Manual-scan switch; Channel select switch; 8 channel programming switches; 8 channel indicator lamps.

INSTALLATION INSTRUCTIONS

The Bearcat Receiver is shipped ready for operation with all accessories necessary for installation in an automobile or as a fixed station receiver.

When operated as a fixed station device in areas of good signal strength the telescoping antenna supplied will give satisfactory results. Insert the five section antenna through the hole in the top of the cabinet, screw into the threaded bushing and extend full length. Select the appropriate power cable and attach to the receiver and 117 VAC source.

If the receiver is to be used in areas of low signal strength, best results will be obtained with a ground plane or coaxial type antenna and a coaxial cable lead in. For maximum signal pick up the antenna should be vertical and erected as high as possible. The automotive type connector supplied attaches to the coaxial transmission line with the center conductor to the center pin and the braid to the shell. A suitable transmission line is the 50 ohm coax such as RG/58 A/U. Suitable antennas are manufactured by Antenna Specialists and available at electronic parts dealers. For the 30-50 Mhz range, the fixed station antenna is model MON-4. For the 150-470 Mhz range, the fixed station antenna is model MON-3. Other equivalent antennas may be available from your dealer.

MOBILE INSTALLATION

To install in a vehicle:

1. Select the two mobile mounting brackets and four #6 self-tapping sheet metal screws. Locate the pair of holes which will be most appropriate on each end panel of the receiver.
2. Secure the mounting brackets to the receiver by inserting the #6 self-tapping screws through the elongated slots of the mounting brackets. The elongated slots will allow the receiver to tilt for best visibility and use.
3. Place the receiver in the desired position and mark location for the mounting holes under the dash by using the bracket holes as a guide.
4. Drill mounting holes with a 7/64 drill bit and attach with four #6 sheet metal screws.
5. Insert the automotive type plug from the regular auto antenna lead in into the "ANTENNA" jack on the back panel of the receiver.
6. Collapse the antenna to approximately 17" (1 section) for the model BCU. Extend the antenna full length for the model BCL (30-50 Mhz) and model BCH (150-174Mhz). If a separate mobile antenna is desired, the Antenna Specialists model MON-5 is satisfactory for the 30-50Mhz range and the model MON-2 for the 150-470Mhz range. Other equivalent antennas may be available from your Dealer.

7. Connect the 12 volt cable and plug to the receiver. Attach the other end to the "ACCESSORY" or "RADIO" fuse terminal.

NOTE: USE WITH 12 VOLT NEGATIVE GROUND SYSTEMS ONLY.

The noise generated by the auto electrical system and other parts of the car is sometimes a problem particularly in areas of low signal strength. The subject of noise elimination is too lengthy to deal with adequately in this instruction book.

It is recommended for those who wish to become familiar with the subject to purchase "The Radio Amateur's Handbook" or "The Mobile Manual" published by The American Radio Relay League and sold by most electronic parts stores. It is further recommended that the vehicle be taken to a service center which specializes in VHF-UHF two way radio communications equipment for correction of a noise problem.

In some localities, it is illegal for unauthorized personnel to receive on a mobile receiver a signal transmitted on a police frequency. It is the responsibility of the person making the installation to be sure that the user of this receiver is authorized or cleared through the local police department. Under no condition can Electra Corp., the manufacturer of this set, be held responsible for its unauthorized installation or use.

OPERATING INSTRUCTIONS

1. Turn the receiver "ON" by rotating the volume control knob to the right (clockwise) to a well advanced position.
2. Place the 8 channel-programming switches in the up (on) position.
3. Set the "MANUAL"- "SCAN" switch to "MAN."
4. Adjust the squelch control clockwise until the rushing noise is heard. Then adjust the squelch control counterclockwise until the rushing noise disappears.
5. Press the "CHANNEL"- "SELECT" switch downward and continue to step through all channels. If the noise should "break the squelch" on any channel adjust the squelch control counterclockwise again slightly to quiet the receiver. THIS MUST BE DONE BETWEEN STATION TRANSMISSIONS.
6. The "CHANNEL"- "SELECT" switch may now be used to select and monitor any desired channel.
7. To sample all channels automatically, return the "MAN"- "SCAN" switch to "SCAN." Any channel may be locked out as desired by moving the individual channel switch downward (off).

CRYSTAL INSTALLATION

DISCONNECT POWER BEFORE REMOVING COVER

To install or change a crystal, remove the four #4 sheet metal screws which secure the bottom cover to the case. When the bottom cover is removed the crystals and other components will be exposed to view. The crystals are in line and the crystal for each channel is adjacent to, and associated with, the panel lamp and number marked on the front panel.

Remove the crystal by a gentle pull upward. Insert the crystal by aligning the pins with the sockets and pushing straight down. DO NOT BEND THE SOCKETS. THESE MINIATURE SOCKETS ARE MADE OF SPRING BRONZE AND WILL BREAK OFF IF BENT EXCESSIVELY.

NOTE: Do not install two crystals of the same frequency.

Rigid quality standards are applied to crystals furnished by Electra Corporation to assure full performance, therefore our warranty does not include correcting poor operation caused by crystals from other sources.

Unless ordered otherwise the BCU alignment spread is 450 MHz to 470 MHz, the BCH 151 MHz to 163 MHz, and the BCL is aligned with a 7 MHz spread to include the frequencies ordered and factory installed. New frequencies may be added within these spreads; if they are outside, performance may be reduced or realignment may be required.

CRYSTAL FORMULAS

BCH - $\frac{\text{Received frequency}}{3} - 10.80 \text{ MHz} = \text{crystal frequency}$

Example: $\frac{155.01 \text{ MHz}}{3} - 10.80 \text{ MHz} = 48.07000 \text{ MHz}$

BCL - $\text{Received frequency} + 10.80 \text{ MHz} = \text{crystal frequency}$.
30-40 MHz, use high side conversion.
40-50 MHz, use low side conversion.

Example: $35.80 \text{ MHz} + 10.80 \text{ MHz} = 46.60000 \text{ MHz}$
 $44.70 \text{ MHz} - 10.80 \text{ MHz} = 33.90000 \text{ MHz}$

(Exception: 46.4 MHz thru 46.6 MHz -- use high side conversion)

BCU - For even multiples of 25 kHz (XXX.X00 or XXX.X50) use low side conversion.

$\frac{\text{Received frequency}}{9} - 10.80 \text{ MHz} = \text{crystal frequency}$

Example: $\frac{453.250 \text{ MHz}}{9} - 10.80 \text{ MHz} = 49.16111 \text{ MHz}$

For odd multiples of 25 kHz (XXX.X25 or XXX.X75) use high side conversion.

$\frac{\text{Receive frequency}}{9} + 10.80 \text{ MHz} = \text{crystal frequency}$

Example: $\frac{453.225 \text{ MHz}}{9} + 10.80 \text{ MHz} = 51.55833$

NOTE: ELECTRA CRYSTALS ARE MARKED WITH ELEC-TRA'S PART NUMBER.

USER HINTS

Radio equipment usually operates in an environment of man-made electro-magnetic noise which radiates from power lines, fluorescent lights, motors, appliances, ignition systems, etc. Modern radios are designed to minimize interference from such sources but operation may be affected under conditions of unusually strong noise.

Distant, weak, "skip" or noise signals may be received by your Bearcat because of its high sensitivity. Whenever such conditions interrupt scanning or whenever a very busy channel prevents reception of other desired signals, the affected channel may be bypassed by means of its individual panel switch.

In cases of strong interfering noise or signals it may be desirable to reduce the length of the antenna to reduce noise pick-up below a critical level. This may be very effective in medium and strong signal areas.

Single-channel operation may be obtained as described under Operating Instructions. It may also be accomplished with the "MAN-SCAN" switch in the "SCAN" position by locking out all but the desired channel. Continuous-carrier signals such as the ESSA weather broadcasts on 162.55 MHz, which are available in many areas, may be received when desired by use of the individual channel switches.

In mobile service the commonly encountered poor reception conditions are signal fading, nearby faulty ignition systems, power lines and proximity to strong, closely spaced signals. Careful setting of the squelch control will minimize these conditions. Crystals are very seldom the cause of such problems.

When moving or shipping the radio, remove the telescoping antenna to avoid damage to it or to the internal circuit assemblies.

RADIO SERVICES

Local Government
Police
Fire
Highway Maintenance
Forestry-Conservation
Special Emergency
Hospitals
Ambulances
Physicians
Disaster Relief
School busses
Power
Petroleum
Forest Products

Motion Pictures
Press
Special Industrial
Business
Manufacturers
Telephone Maintenance
Motor Carrier
Railroad
Taxicab
Automobile Emergency
Public Mobile Radio
Rural Radio
Mobile Telephones
Marine

ALIGNMENT

I. F. SECTION

MODELS BCH-BCL-BCU

Equipment Needed:

Oscilloscope

Sweep generator with 10.79, 10.80 and 10.81 MHz markers.

1. Connect sweep generator to: pin 3 of Q2, BCH; pin 3 of Q4, BCU; pin 3 of Q7, BCL.
2. Connect oscilloscope through detector to pin 4 of IC6. See Figure 1.

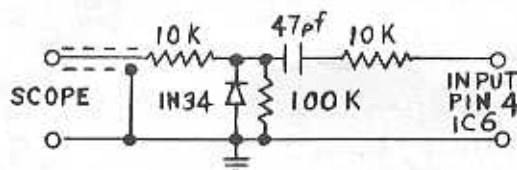


Figure 1

3. Maintain output of 10.8 MHz sweep generator at a low level to prevent distortion from overloading.
4. Adjust T2 top and bottom for maximum output.
5. Adjust T3 and T4 top and bottom for maximum output and best symmetry. See Fig. 2.
6. Disconnect detector from pin 4 of IC6.
7. Connect scope directly to pin 1 of IC 6 and adjust T5 so that 10.8 MHz is in center of discriminator curve and for best linearity. See Fig. 3.

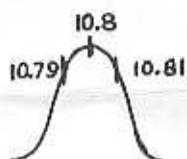


Figure 2

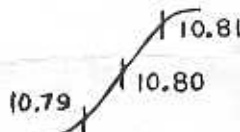


Figure 3

RF SECTION

Equipment Needed for All Models:

R. F. Signal generator, Measurements 560 FM or equivalent.
6 dB PAD, 50 Ohms in and out.
AC-VTVM, Ballantine 300 or equivalent.
Frequency meter (Electronic Counter) Berkeley 7175 or equivalent.
DC-VTVM
Swamping resistor, 100 Ohms.

MODEL BCH 150-174 MHz

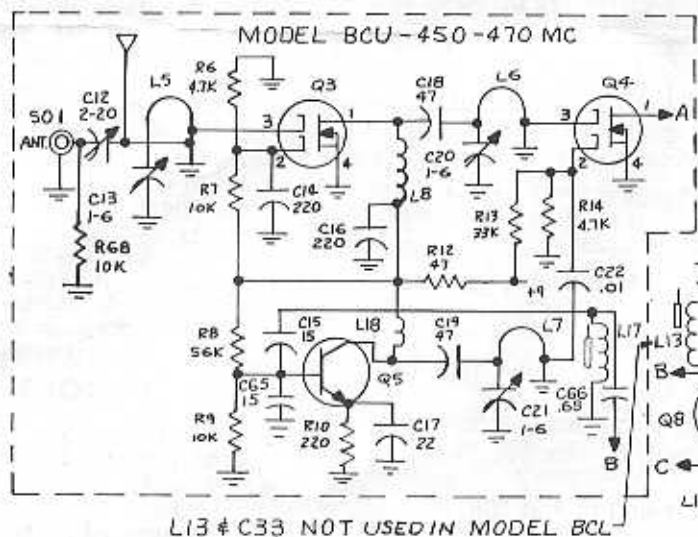
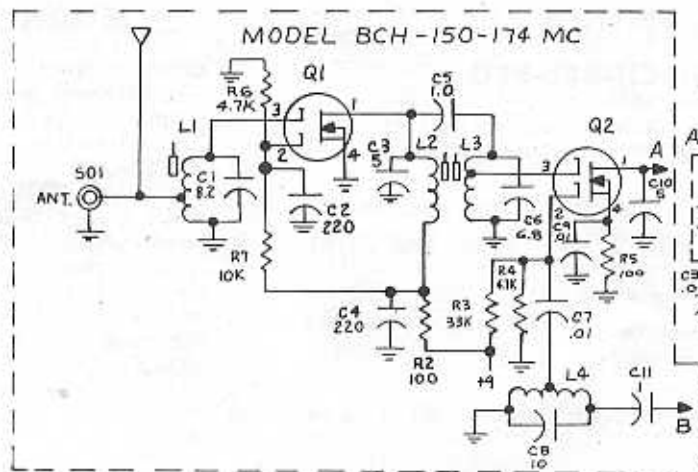
1. Connect signal generator through 6 dB pad to "ANT" input jack.
2. Connect AC-VTVM to speaker terminals. Set to .1 Volt scale.
3. Turn SQUELCH control fully clockwise.
4. Turn VOLUME control clockwise to obtain full scale meter reading of .1 Volt. (noise)
5. Select channel near center of band (156 MHz).
6. Adjust generator frequency (no modulation) to channel frequency.
7. Swamp L4 with 100 Ohm resistor and tune L13 for maximum quieting.
NOTE: Decrease generator output as necessary during alignment.
8. Swamp L13 and tune L4 for maximum quieting.
9. Swamp L2 and tune L1 and L3 for maximum quieting.
10. Swamp L3 and tune L2 for maximum quieting. Receiver should now have sensitivity of 1 microvolt or better for 20 dB quieting.
11. Couple frequency meter thru 15 pF capacitor to point "B." (collector of Q8)
12. Switch through all channels and read crystal frequency. Must be within .002%.
13. Check squelch action -- range should be 60° to 90°.
14. Check lock-in on each channel as follows:
A. Set squelch control at optimum.
B. Set "MAN-SCAN" switch to "SCAN."
C. Apply instantaneous 1 microvolt signal at each channel frequency. Receiver should lock-in at 1 uV or less.

MODEL BCL 30-50 MHz

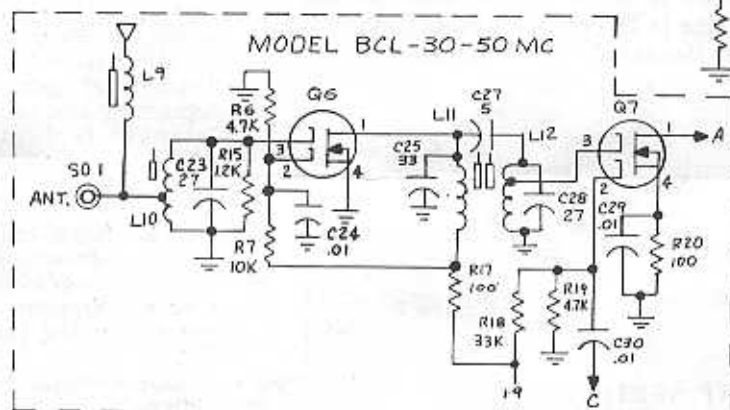
1. Connect signal generator and AC-VTVM as above with the generator frequency near the center of the 7 MHz spread and a corresponding crystal selected.
2. Swamp L11 with the 100 Ohm resistor and tune L10 and L12 for maximum quieting.
3. Swamp L12 and tune L11 for maximum quieting. Receiver should have sensitivity of 1 uV or better on all channels.
4. Disconnect generator from receiver and install top cover and vertical antenna.
5. Increase generator output so that vertical antenna will pick up signal from generator.
6. Adjust L9 (antenna loading coil) for maximum quieting.
NOTE: Keep the generator and receiver tuned to center of 7 MHz spread during all alignment steps.
7. Check frequency of all crystals by coupling frequency meter through a 15 pF capacitor to point "C."
8. Check squelch and lock-in as in steps 13 and 14 above.

MODEL BCU 450-470 MHz

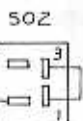
1. Connect generator and AC voltmeter as above with the generator frequency at the center of the 20 MHz spread and a corresponding crystal selected.
2. Adjust L13 and L17 for maximum quieting.
3. Adjust C13, C20, C21, and C12 for maximum quieting. Receiver should be 2 uV or better on all channels.
4. Check squelch action and lock-in as in steps 13 and 14 above except sensitivity will be 2 uV.



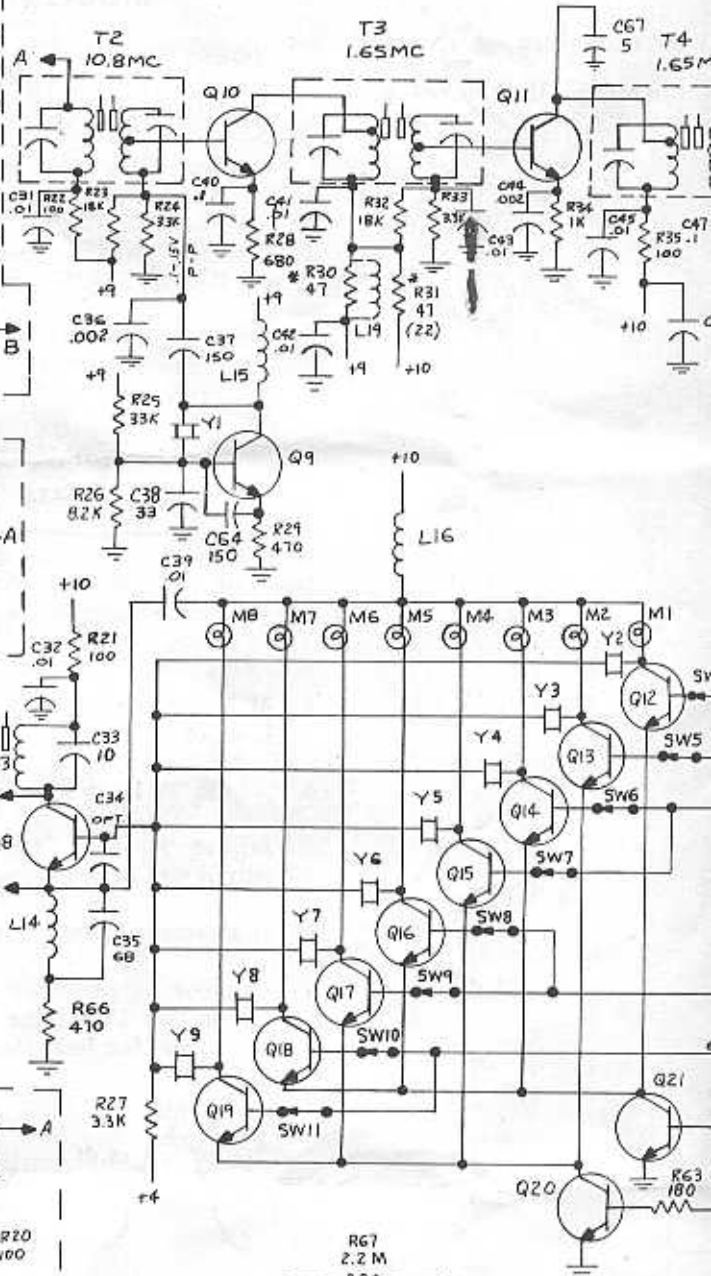
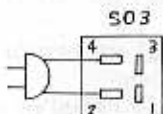
L13 & C33 NOT USED IN MODEL BCL

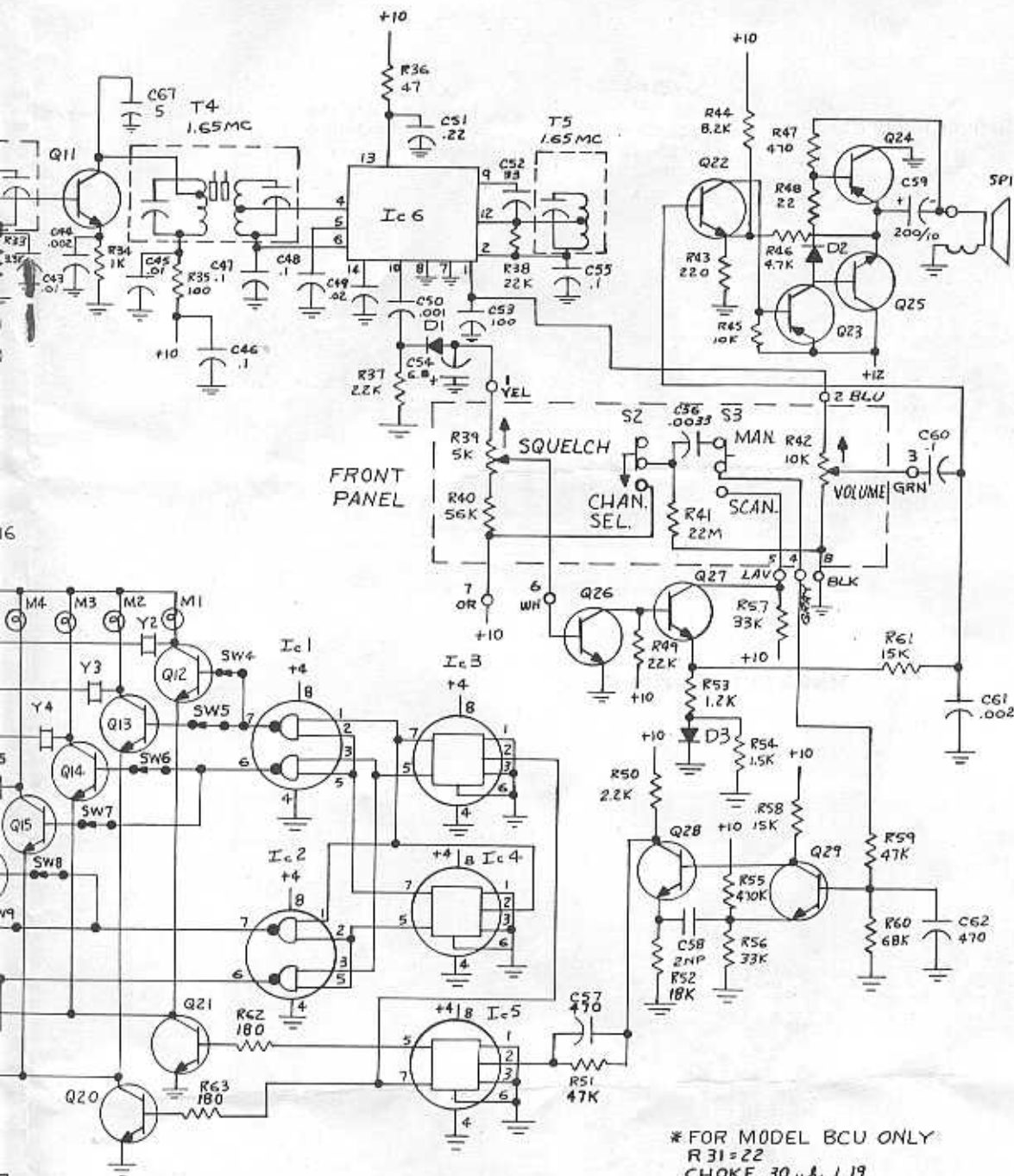


12.6 V.D.C.



117V
60~



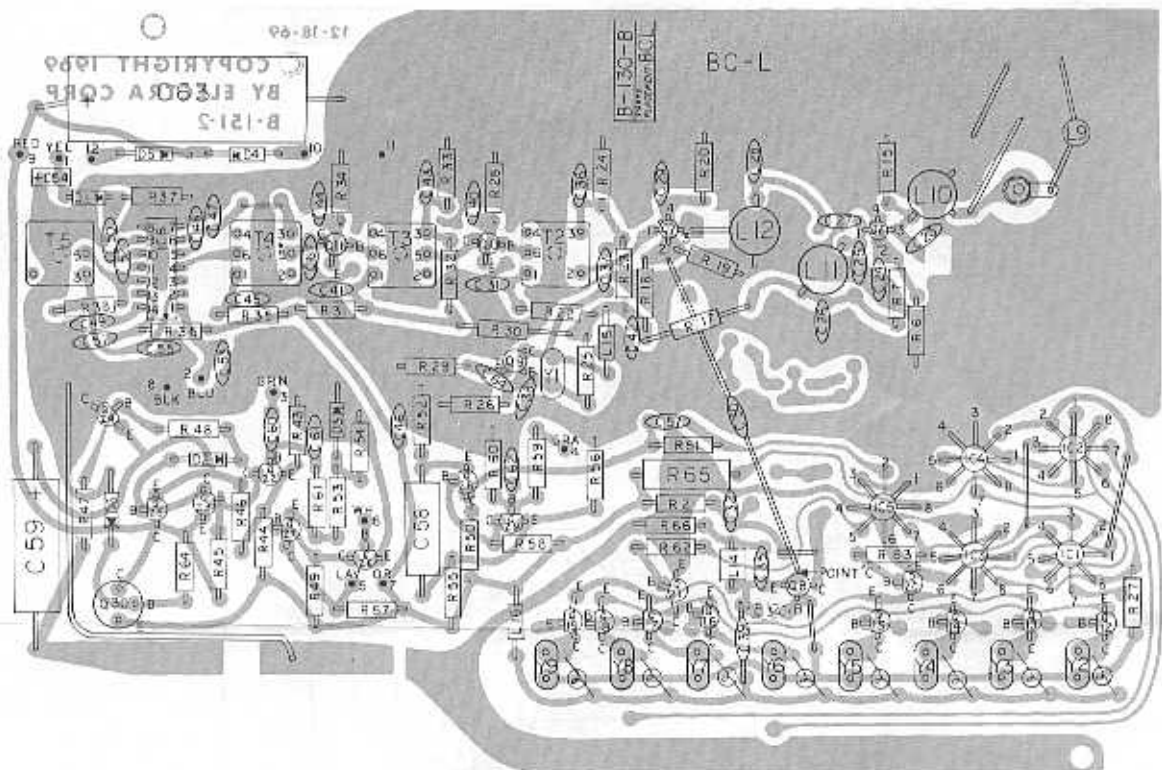


(PATENT APPLIED FOR)

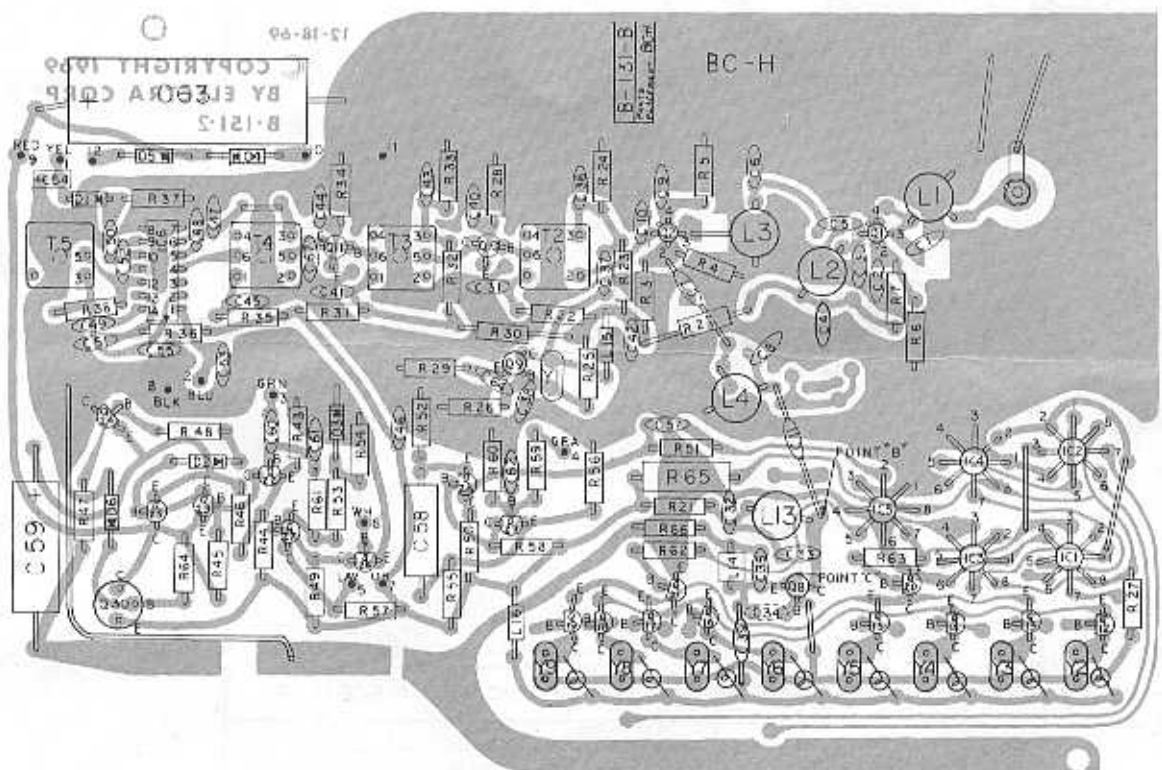
ELECTRA CORPORATION
INDIANAPOLIS INDIANA 46229

SCHEMATIC, BC RECEIVER

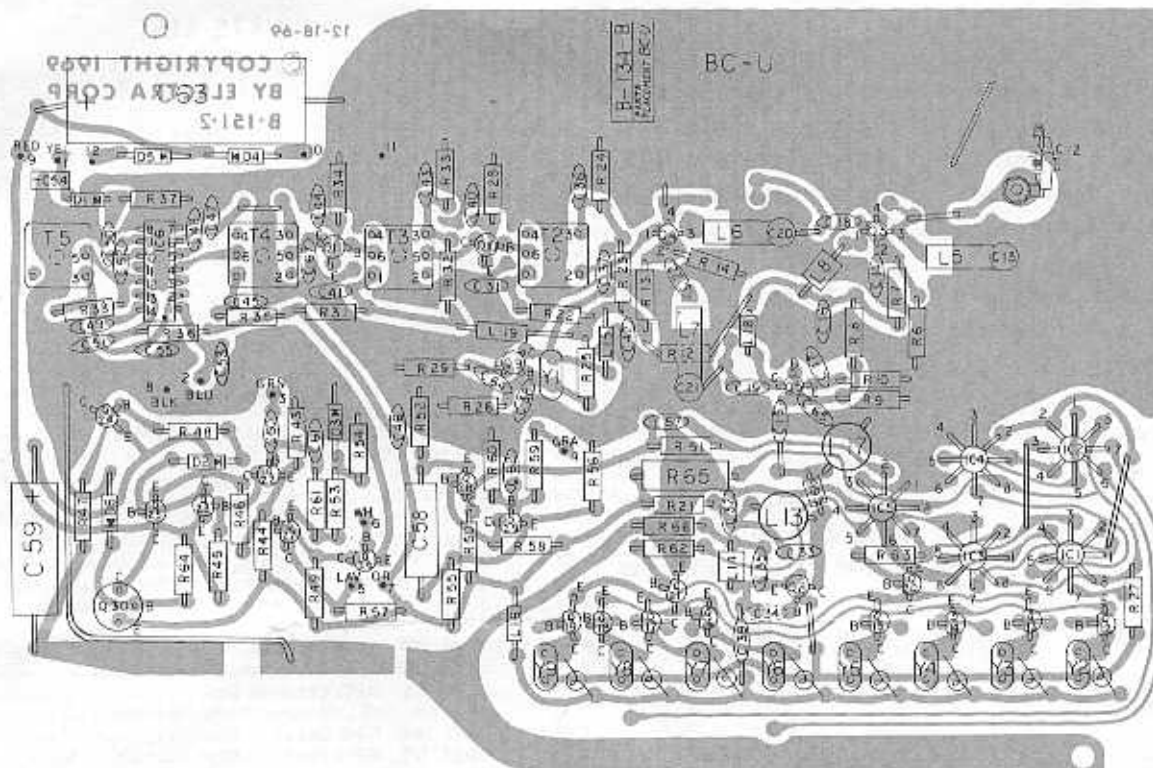
REVISIONS					
NO.	DATE	BY	DRWN BY	SCALE	DRAWING NO.
A	8-26-68	4L	M. BRANSON	NONE	C-145
B			CH'D		
C			4/1 Pate		
D			TRACED		
E					



Model BCL - Series 2



Model BCH - Series 2



Model BCU - Series 2

VOLTAGE CHART

PIN	1	2	4		E	B	C
Q1	6.5	2	0	Q19	.6	.15	8.5
Q2	7.5	1	.4	Q20	0	.2	.6
Q3	7.5	2	0	Q21	0	.7	.1
Q4	6.5	1	0	Q22	.23	0	14.3
Q6	7	2	0	*	.55	1.1	13.5
Q7	7.5	1	.2	Q23	14.3	14.3	.06
	E	B	C	*	14.	13.5	6.6
Q5	.9	.6	7	Q24	.23	0	0
Q8	2.5	3	8	*	6.2	5.8	0
Q9	.8	1.3	7.5	Q25	.23	0	14.4
Q10	.6	1	8	*	6.2	6.5	14.2
Q11	.7	1.3	8.5	Q26	0	.54	.06
Q12	.8	.85	.15	*	0	.3	1.7
Q13	.8	.85	8.5	Q27	0	.06	8.8
Q14	.1	.15	8.5	*	1.1	1.7	1.1
Q15	.6	.15	8.5	Q28	7.5	8	7.5
Q16	.1	.2	8.5	Q29	.5	0	8.5
Q17	.6	.2	8.5	Q30	8.8	9.5	14.4
Q18	.1	.15	8.5				

Taken with squelch working except (*). MAN.-SCAN. Switch in MAN. position with channel #1 on.

Voltages are approximate. Use as a general guide to locate short and open conditions only.

LOGIC CHART

IC#	Pin	Lamp or Count							
		1	2	3	4	5	6	7	8
5	5	1	0	1	0	1	0	1	0
	7	0	1	0	1	0	1	0	1
3	5	1	1	0	0	1	1	0	0
	7	0	0	1	1	0	0	1	1
4	5	1	1	1	1	0	0	0	0
	7	0	0	0	0	1	1	1	1
1	6	0	0	1	1	0	0	0	0
	7	1	1	0	0	0	0	0	0
2	6	0	0	0	0	0	0	1	1
	7	0	0	0	0	1	1	0	0
Q20		1	0	1	0	1	0	1	0
Q21		0	1	0	1	0	1	0	1

"1" = UP Voltage, .75V to 1.5V

"0" = Down Voltage

SERVICING

It is recommended that servicing of the Bearcat Receiver be done only by the factory or authorized service centers specializing in two way VHF-UHF radio service. Special test equipment and techniques are required to accomplish this service.

A customer service department is maintained at the factory to give fast and efficient service on all of our products.

When returning radio receivers to the factory or authorized service center for service, include both ac and dc power cables and telescoping antenna. Disconnect cables and antenna, pack carefully and include a brief, detailed description of the difficulty you are having.

SERVICE NOTES

The Bearcat Receiver circuitry is designed to utilize the best features of four types of semiconductors: rectifier diodes, conventional bi-polar transistors, insulated-gate field-effect transistors and integrated circuits. Servicing should not be attempted by anyone who is not familiar with the manufacturer's recommendations and cautions relating to each of these devices. The use of ohmmeters is particularly hazardous since they can deliver voltages and currents large enough to damage semiconductors.

Alignment will seldom be a cause of trouble unless tampering has occurred. Rf alignment may be necessary occasionally, especially in the BCL, to move the frequency spread.

Failure of the "MAN-SCAN" and "CHAN-SEL" switches is usually caused by hardened switch lubricant. This can be removed by a spray contact cleaner or by opening the switch assembly.

When a channel lamp does not light the failure may be either the lamp or the switching transistor. If the channel works, check the lamp; if not, check the transistor. When groups of lamps are out refer to the logic chart.

A radio to be installed in close proximity to a powerful transmitter, such as in a vehicle, should have paralleled forward and reverse diodes connected between the antenna input and ground in the usual manner. The 1N4009, 1N914 or equivalent may be used.

PARTS LIST

CAPACITORS

Ref. No.	Description	List Price
C1	8.2 pf, 10% NPO, Ceramic Disc.	\$.50
C2	220 pf, 20%, Ceramic Disc.	.50
C3	5 pf, 5% NPO, Ceramic Disc.	.50
C4	220 pf, 20%, Ceramic Disc.	.50
C5	1.0 pf, 5% (Quality Components)	.50
C6	6.8 pf, 5% NPO, Ceramic Disc.	.50
C7	.01 mf, 20%, 100V, Ceramic Disc.	.50
C8	10 pf, 5%, NPO, Ceramic Disc.	.50
C9	.01 mf, 20%, 100V, Ceramic Disc.	.50
C10	5 pf, 10%, NPO, Ceramic Disc.	.50
C11	1 pf, 5%, NPO Ceramic Disc.	.50
C12	1.5-20 pf, TRIMMER (Arco 402)	1.00
C13	1-6 pf, TRIMMER (Centralab #829-6)	1.00
C14	220 pf, 20%, Ceramic Disc.	.50
C15	15 pf, 10%, NPO Ceramic Disc.	.50
C16	220 pf, 20%, Ceramic Disc.	.50
C17	22 pf, 10%, NPO Ceramic Disc.	.50
C18	47 pf, N750 Ceramic Disc. 10%	.50
C19	47 pf, N750 Ceramic Disc. 10%	.50
C20	1-6 pf, TRIMMER (Centralab #829-6)	1.00
C21	1-6 pf, TRIMMER (Centralab #829-6)	1.00
C22	.01 mf, 20%, 100V Ceramic Disc.	.50
C23	27 pf, 5%, NPO Ceramic Disc.	.50
C24	.01 mf, 20%, 100V Ceramic Disc.	.50
C25	33 pf, 5%, NPO Ceramic Disc.	.50
C26	.001 mf, 20%, Ceramic Disc.	.50
C27	5 pf, 10%, NPO Ceramic Disc.	.50
C28	27 pf, 5%, NPO Ceramic Disc.	.50
C29	.01 mf, 20%, 100V Ceramic Disc.	.50
C30	.01 mf, 20%, 100V Ceramic Disc.	.50
C31	.01 mf, 20%, 100V Ceramic Disc.	.50
C32	.01 mf, 20%, 100V Ceramic Disc.	.50
C33	10 pf, 10%, NPO Ceramic Disc.	.50
C34	15 pf, 10%, NPO Ceramic Disc.	.50
C35	68 pf, 5%, NPO Ceramic Disc.	.50
C36	.002 mf, 20%, Ceramic Disc.	.50
C37	150 pf, 20%, Ceramic Disc.	.50
C38	33 pf, 20%, Ceramic Disc.	.50
C39	.01 mf, 20%, 100V Ceramic Disc.	.50
C40	.1 mf, 10V, Ceramic Disc.	.50
C41	.01 mf, 20%, 100V Ceramic Disc.	.50
C42	.01 mf, 20%, 100V Ceramic Disc.	.50
C43	.01 mf, 20%, 100V Ceramic Disc.	.50
C44	.002 mf, 20%, Ceramic Disc.	.50
C45	.01 mf, 20%, 100V Ceramic Disc.	.50
C46	.1 mf, GMV, 10V Ceramic Disc.	.50
C47	.1 mf, GMV, 10V Ceramic Disc.	.50
C48	.1 mf, GMV, 10V Ceramic Disc.	.50
C49	.02 mf, 20%, 50V Ceramic Disc.	.50
C50	.001 mf, 20%, Ceramic Disc.	.50
C51	.22 mf, GMV, 10V Ceramic Disc.	.50
C52	33 pf, 10%, NPO Ceramic Disc.	.50
C53	100 pf, 20%, Ceramic Disc.	.50
C54	6.8 mf, Tantalum (Kemet KGR8E6)	1.00
C55	.1 mf, GMV, 10V Ceramic Disc.	.50
C56	.0033 mf, 20%, 100V Ceramic Disc.	.50
C57	470 pf, 20%, Ceramic Disc.	.50
C58	2 mf, Electrolytic (Non-polar)	1.00
C59	200 mf, 10V Electrolytic	1.50
C60	.1 mf, 10V Ceramic Disc.	.50
C61	.002 mf, 20%, Ceramic Disc.	.50
C62	470 pf, 20%, Ceramic Disc.	.50
C63	1000 mf, 20V, Electrolytic	2.00
C64	150 pf, 20%, Ceramic Disc.	.50
C65	15 pf, 10%, Ceramic Disc.	.50
C66	.68 pf, 10%, Ceramic Disc.	.50
C67	5 pf, 10%, Ceramic Disc.	.50

TRANSISTORS

Ref. No.	Description	List Price
Q1	{ MFE-3008, 554C or	\$ 4.00
Q2	{ RCA 40601	
Q3	{ RCA 40600 or	4.00
Q4	{ RCA 40601	
Q5	{ 2N3563 Fairchild	2.00
Q6	{ MFE-3008, 554C or	4.00
Q7	{ RCA 40601	

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

TRANSISTORS (Continued)

Ref. No.	Description	List Price
Q8	2N3563 Fairchild	\$ 2.00
Q9	2N3563 Fairchild	2.00
Q10	MPS-3705 Motorola	2.00
Q11	2N3563 Fairchild	2.00
Q12	MPS 3393 Motorola	1.50
Q13	MPS 3393 Motorola	1.50
Q14	MPS 3393 Motorola	1.50
Q15	MPS 3393 Motorola	1.50
Q16	MPS 3393 Motorola	1.50
Q17	MPS 3393 Motorola	1.50
Q18	MPS 3393 Motorola	1.50
Q19	MPS 3393 Motorola	1.50
Q20	MPS 3393 Motorola	1.50
Q21	MPS 3393 Motorola	1.50
Q22	MPS 3393 Motorola	1.50
Q23	MPS 3702 Motorola	2.00
Q24	MPS U51 Motorola	4.00
Q25	MPS U01 Motorola	4.00
Q26	MPS 3393 Motorola	1.50
Q27	MPS 3393 Motorola	1.50
Q28	MPS 3393 Motorola	1.50
Q29	MPS 3393 Motorola	1.50
Q30	RCA 40323	3.00

RF COILS

Ref. No.	Part No.	Description	List Price
L1	B-146-1	RF Coil	\$ 1.00
L2	B-146-2	RF Coil	1.00
L3	B-146-3	RF Coil	1.00
L4	B-146-3	RF Coil	1.00
L5	A-158-2	RF Coil	1.00
L6	A-158-1	RF Coil	1.00
L7	A-158-2	RF Coil	1.00
L8	A-110	RF Choke	.50
L9	A-136-3	Ant. Loading Coil	1.00
L10	B-146-4	RF Coil	1.00
L11	B-146-5	RF Coil	1.00
L12	B-146-6	RF Coil	1.00
L13	B-146-2	Osc Coil	1.00
L14	A-110	Osc Coil	1.00
L15	A-149-1	RF Choke	.75
L16	A-149-1	RF Choke	.75
L17	B-146-2	Coil	1.00
L18	A-148	RF Choke	.50
L19		RF Choke, 30 Mh	1.00

MISCELLANEOUS

Ref. No.	Part No.	Description	List Price
IC1		Integrated Circuit	\$ 2.00
IC2		Integrated Circuit	2.00
IC3		Integrated Circuit	4.00
IC4		Integrated Circuit	4.00
IC5		Integrated Circuit	4.00
IC6		Integrated Circuit	8.00
M1-M8		Lamp, Indicator, GE2174D	.75
D1		Diode, IN34A	.75
D2		Diode, Silicon, Power, 50V, PIV	.75
D3		Diode, Silicon, Power, 50V, PIV	.75
D4		Diode, Silicon, Power, 50V, PIV	.75
D5		Diode, Silicon, Power, 50V, PIV	.75
D6		Diode, Zener, 10V±5%	1.50
SP	B-153-1	Speaker, 8ohm	4.00
Y1	A-101-2	Crystal, 12.45000 MC	5.00
Y2-Y9	A-135	Crystal, (Frequency as required)	5.00
S1		Switch, (on back of volume control)	...
S2		Switch, Slide, SPST (Spring return)	.75
S3-11		Switch, Slide, SPDT	.75
SO1		Ant. Socket, H. H. Smith #1207	...
SO2		Ant. Plug, H. H. Smith #1200	.50
		Socket, Power, Beauchaine	...
SO3		#S3304 FHT	...
		Socket, Power, Beauchaine	...
		#S3304 FHT	...
PL1		Plug, Power, Beauchaine #P3304AB	...
	A-121-1	Lens Cap	...
		Knob, Kurz Kaseh #S-1647-35L-4092	.75

MISCELLANEOUS (Continued)

Ref. No.	Part No.	Description	List Price
	A-138-A	Telescoping Antenna	\$ 1.50
	A-119-1	Mobile Mounting Bracket	.75

RESISTORS

Ref. No.	Description	List Price
R2	100 ohm, 10%, 1/2 Watt	\$.25
R3	33 K, 10%, 1/2 Watt	.25
R4	4.7 K, 10%, 1/2 Watt	.25
R5	100 ohm, 10%, 1/2 Watt	.25
R6	4.7 K, 10%, 1/2 Watt	.25
R7	10 K, 10%, 1/2 Watt	.25
R8	56 K, 10%, 1/2 Watt	.25
R9	10 K, 10%, 1/2 Watt	.25
R10	220 ohm, 10%, 1/2 Watt	.25
R12	47 ohm, 10%, 1/2 Watt	.25
R13	33 K, 10%, 1/2 Watt	.25
R14	4.7 K, 10%, 1/2 Watt	.25
R15	1.2 K, 10%, 1/2 Watt	.25
R17	100 ohm, 10%, 1/2 Watt	.25
R18	33 K, 10%, Watt	.25
R19	4.7 K, 10%, 1/2 Watt	.25
R20	100 ohm, 10%, 1/2 Watt	.25
R21	100 ohm, 10%, 1/2 Watt	.25
R22	100 ohm, 10%, 1/2 Watt	.25
R23	18 K, 10%, 1/2 Watt	.25
R24	3.3 K, 10%, 1/2 Watt	.25
R25	33 K, 10%, 1/2 Watt	.25
R26	8.2 K, 10%, 1/2 Watt	.25
R27	3.3 K, 10%, 1/2 Watt	.25
R28	680 ohm, 10%, 1/2 Watt	.25
R29	470 ohm, 10%, 1/2 Watt	.25
R30	47 ohm (or 22 ohm), 10%, 1/2 Watt	.25
R31	47 ohm (or 22 ohm), 10%, 1/2 Watt	.25
R32	18 K, 10%, 1/2 Watt	.25
R33	3.3 K, 10%, 1/2 Watt	.25
R34	1 K ohm, 10%, 1/2 Watt	.25
R35	100 ohm, 10%, 1/2 Watt	.25
R36	47 ohm, 10%, 1/2 Watt	.25
R37	2.2 K, 10%, 1/2 Watt	.25
R38	22 K, 10%, 1/2 Watt	.25
R39	5 K, SQUELCH CONTROL (Linear)	1.50
R40	56 K, 10%, 1/2 Watt	.25
R41	22 Meg, 10%, 1/2 Watt	.25
R42	10 K, AUDIO TAPER VOLUME	2.00
R43	220 ohm, 10%, 1/2 Watt	.25
R44	8.2 K, 10%, 1/2 Watt	.25
R45	10 K, 10%, 1/2 Watt	.25
R46	4.7 K, 10%, 1/2 Watt	.25
R47	470 ohm, 10%, 1/2 Watt	.25
R48	22 ohm, 10%, 1/2 Watt	.25
R49	22 K, 10%, 1/2 Watt	.25
R50	2.2 K, 10%, 1/2 Watt	.25
R51	47 K, 10%, 1/2 Watt	.25
R52	18 K, 10%, 1/2 Watt	.25
R53	1.2 K, 10%, 1/2 Watt	.25
R54	1.5 K, 10%, 1/2 Watt	.25
R55	470 K, 10%, 1/2 Watt	.25
R56	33 K, 10%, 1/2 Watt	.25
R57	33 K, 10%, 1/2 Watt	.25
R58	15 K, 10%, 1/2 Watt	.25
R59	47 K, 10%, 1/2 Watt	.25
R60	68 K, 10%, 1/2 Watt	.25
R61	15 K, 10%, 1/2 Watt	.25
R62	180 ohm, 10%, 1/2 Watt	.25
R63	180 ohm, 10%, 1/2 Watt	.25
R64	220 ohm, 10%, 1/2 Watt	.25
R65	68 ohm, 1 Watt, 10%	.25
R66	470 ohm, 10%, 1/2 Watt	.25
R67	2.2 M, 10%, 1/2 Watt	.25
R68	10 K, 10%, 1/2 Watt	.25

TRANSFORMERS

Ref. No.	Part No.	Description	List Price
T1	B-129-1	Power Transformer	\$ 4.00
T2	B-128-1	IF Transformer, 10.5 MC	2.50
T3	B-127-1	IF Transformer, 1.65 MC	2.50
T4	B-127-1	IF Transformer, 1.65 MC	2.50
T5	B-126-1	IF Transformer, 1.65 MC	2.50