SERVICE MANUAL REVISIONS

ENGINEERING CHANGES

REVISION B

Components Changed	Schematic Location	From	To	New Part Number	Reason for Change
C22	C6	2.2 μF	6.8 μF	510-2045-689	Self modulation
R3	A7	1.2K	4.7K	569-1004-472	Improved AGC
U1	A1	Remove pin 6			Improved AGC
U3	A5	Remove pin 1 and 2			Improved AGC

Components Added	Schematic Location	Description	New Part Number	Reason for Change
CR11	A2	Delayed AGC diode	523-1000-067	Improved AGC
CR12	A6	Delayed AGC diode	523-1000-067	Improved AGC
R4	A3	Q2 B+ resistor	569-1002-102	Improved AGC
R8	A5	Q4 resistor	569-1002-104	Improved AGC
C19	A2	Q1 emitter bypass capacitor	510-3003-103	Improved AGC
R19	A2	Q1 emitter resistor	569-1002-152	Improved AGC
C14	A3	Z4 bypass capacitor	510-3003-103	Improved AGC

Page 15

4.2.3 "B" Model Automatic Gain Control (AGC)

A sample of the second IF amplifier output is coupled by C5 to a rectifier filter network consisting of CR1, R3 and C6. This network develops a voltage (designated AGC1) which connects to the base of Q1. When the received signal level increases, a negative going voltage is applied to the base of Q1, which effectively reduces its gain. When Q1 gain is reduced, an amplified AGC voltage (designated AGC2) is coupled from the emitter of Q1 to squelch control R7, through diode CR11 to base of Q2, base of Q4 and through CR12 to base of Q5. This applied voltage effectively reduces the overall receiver gain and prevents overloading.

Diodes CR11 and CR12 delay the application of AGC2 voltage to the base of Q2 and Q5, allowing more positive squelch gate operation with weak received signal levels.

When the received signal level decreases, Q1 gain is increased, which in turn increases the gain of Q2, Q4 and Q5.

The end result of AGC1 and AGC2 action is a relatively constant audio output with varying RF signal inputs.

Page 21

b. AGC Troubleshooting

1. Measure the no signal input AGC voltage at the junction of R3 and C7. It should read approximately 1.0 VDC.

2. Increase the RF signal generator output from 1 μV to 100,000 μV while observing the audio output meter indication. Refer to Table 1 for typical AGC levels.

3. Isolate the AGC circuitry from the squelch stage by disconnecting the interconnecting lead from squelch control R7. This will separate squelch problems from defective AGC indications.

4. If the audio output meter indication does not follow the general trend of the data shown in Table 1, check Q1, CR1 CR11, CR12 and associated components.

Serial number stickers can be used as a guide to unit revisions but should not be considered absolutely accurate in every instance. For example, a D Model unit might not include every D Model change and an E Model unit might include an F Model change.

REVISION C

Components Changed	Schematic Location	From	To	New Part Number	Reason for Change
C4	A7	+80 -20%	±20%	510-3002-103	Availability
C7	A7	+80 -20%	±20%	510-3002-103	Availability

Components Deleted	Schematic Location	Part Description	Reason for Change
CH3		Overlay, upper, dummy	New overlay

REVISION D

Components Changed	Schematic Location	From	To	New Part Number	Reason for Change
CH4	--(Overlay, lower)	5001	4002	559-2054-002	New overlay
Accessory Pkg.	---	1001	1002	023-2931-002	New overlay

REVISION E

Components Changed	Schematic Location	From	To	New Part Number	Reason for Change
CH5	--(Mounting plate)	1001	1003	016-1881-003	New Volume control
CH6	--(Mounting plate)	1002	1004	016-1881-004	New Squelch control
Q7	C5	1014	1017	576-0001-017	Availability
Q8	C7	1009	1017	576-0001-017	Availability
U3	A5	3033	3043	544-0003-043	Availability
U6	A8	2035	2015	544-0002-015	Availability

Components Deleted	Schematic Location	Part Description	Reason for Change
R4	A3	1KΩ ±10%, 1/4 W	Incorporated in U3
R8	A5	100KΩ ±10%, 1/4 W	Incorporated in U3
X105	---	Component sockets	Improved reliability
X107	---	Component sockets	Improved reliability

Components Added	Schematic Location	Part Description	New Part Number	Reason for Change
C14	A3	0.01 μF ±20%, Y5U	510-3002-103	New U3

REVISION F

Components Changed	Schematic Location	From	To	New Part Number	Reason for Change
R2	A5	470 Ω	2.2KΩ	562-0019-222	Insufficient IF gain
Z4	A4	2001	4001	023-3254-001	Availability

Components Added	Schematic Location	Part Description	New Part Number	Reason for Change
C500	A4	470 pF ±5%, 1DM15	510-0001-471	New 455 kHz filter

PARTS LIST CORRECTIONS

C34	0.0047 μF +80/-20%, 500V, Y5U	510-3005-472
C36	0.001 μF ±20%, 1 KV, Y5S	510-3061-102
J2	Jack, antenna	142-0101-002
J3	Jack, DC power	515-4100-001
MP2	Pushbutton (S1B-S1H)	547-0006-020
MP4	Pushbutton (S1A)	547-0006-120
R7	5KΩ squelch potentiometer	562-0025-004
R16	10KΩ volume potentiometer	562-0025-003
R33	1.2KΩ ±10%, 1/2 W	569-1004-222
U9	Rear panel, stacked, assembly	023-2919-003