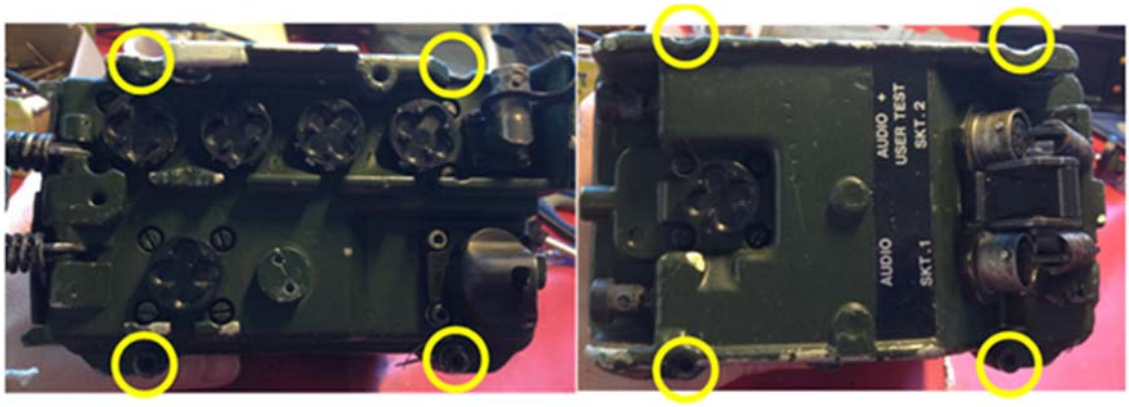
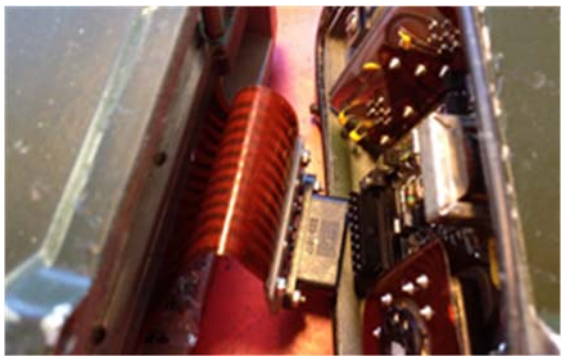
Clansman PRC-351 Repair Tips

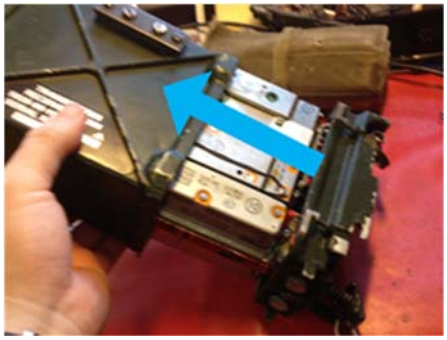
Taking it apart

Unscrew the 8 allen bolts on each end of the radio as shown below. They are self-retaining, so don't worry about them falling on the floor and don't try to unscrew them out of the body!



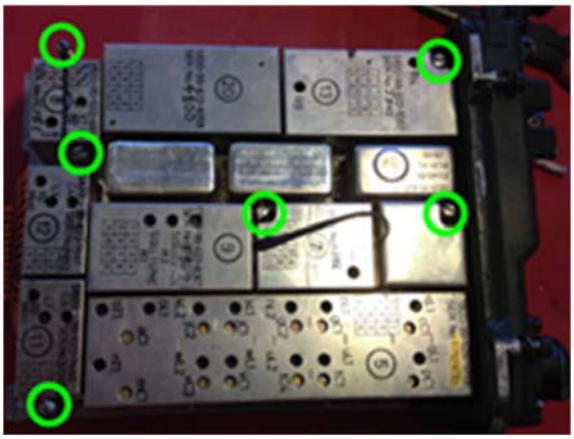
Remove the remote panel by unplugging it from the main body as shown in the picture on the right, then removing the case as shown below.

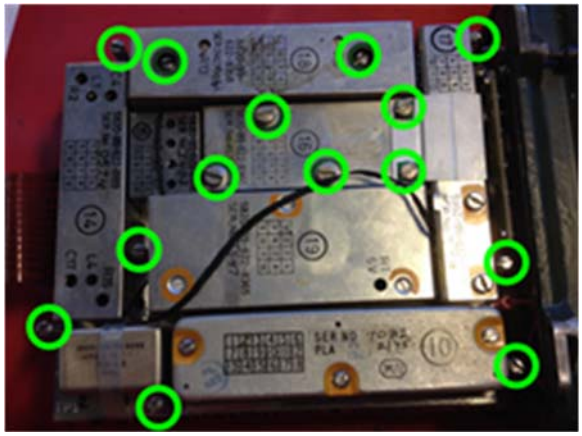




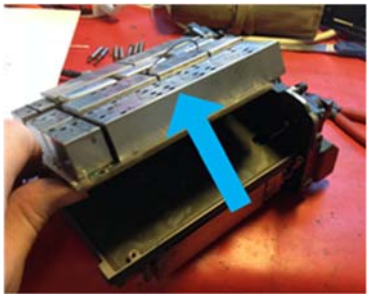
Separate the guts from the frame (only required if modules need replacing)

Now the main assembly needs to be separated from the frame. Remove all the bolts as shown with the green circles below (they are also circled green on the radio itself)

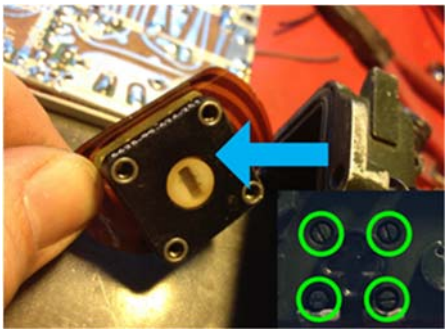


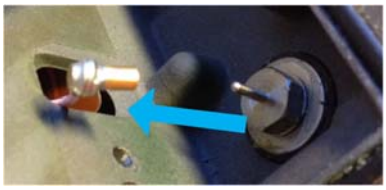


Note that the two bolts within module 18 should remain in place and the 5 screws in module 16 are screws not bolts and the little plate needs to be removed as well.. Note also that the bolt by assembly 17 is longer than the others (below left). Carefully unplug the RF connector linking the two halves as shown below centre, then the top half should fold away from the frame as shown below right.

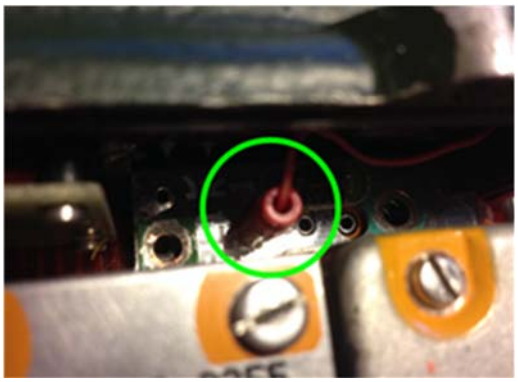


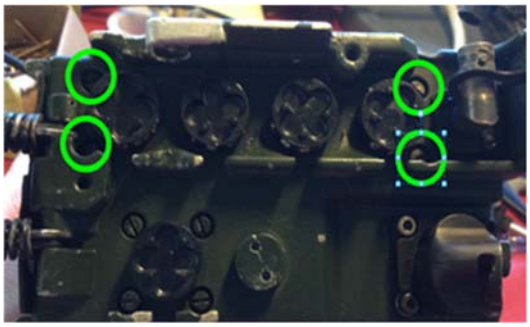
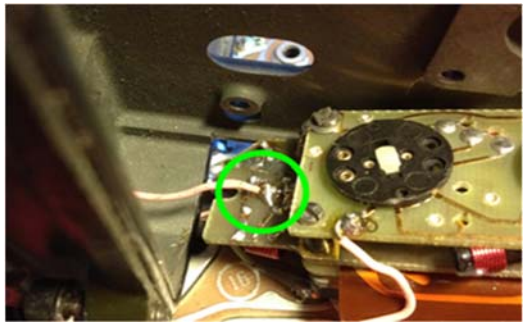
Now remove the flexi behind the On/Off switch as shown on the right, by unscrewing the 4 screws surrounding the switch (they are not self-retaining, so will come out). Unplug the battle antenna wire (below)





Turn the radio over and remove the power plug (top left below), unsolder the white and black wires from the frequency switch circuit board (top right below) Unscrew the four screws retaining the frequency switch circuit board (bottom left below) and desolder the pink wire (bottom right below)



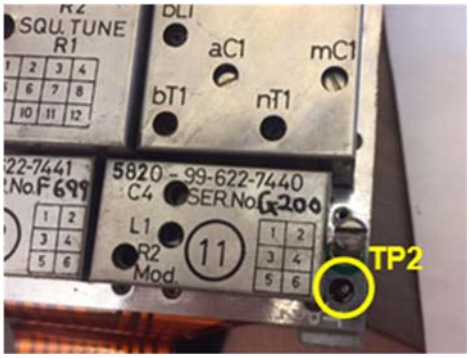
Common faults, fixes and alignments

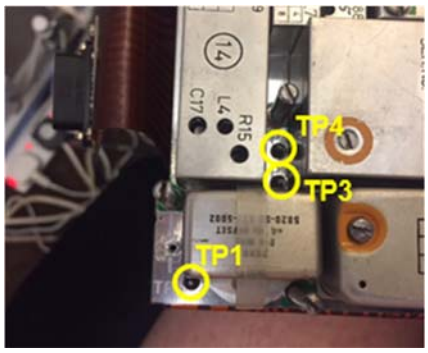
Note that these are just common examples of fixes/diagnoses for certain faults, there could be other problems causing your symptoms.

No remote Tx – change remote panel (the end with the audio sockets)
Poor Rx – assy 5 u/s
No power – FUSE wire, assy 19 u/s, earth terminal open cct
Clicking on * - assy 10 u/s
No sidetone on L – Remote panel u/s
No Rx, no * band 1 – open cct module 8 pin 12
No Tx Hi band – Assy 14 u/s
Permanent Tx – Remote panel
Permanent auto rebro – assy (u/s
No audio – remote panel
Sawtooth Tx waveform – flexi connector o/c
Noise on Rx – module 8 R2 adjust
Clicking on remote Rx – Remote panel
Tx frequency 11.525Mhz higher than dial – open cct module 10 pin 10
Crackling Rx – adjust NLA on module 8
Low volume – adjust R1 module 7
Pilot tone freq (150Hz) – R4 module 13
Pilot tone deviation – R9 module 13
No Rx L/W (Squelch) – R2 module 11 (Hi band) R2 12 (Low band) R2 module 9 either band
NLA (Non linear amp)- module 8, R2 top of band (2.3v), R7 bottom of band (4.3v). voltage at 2TP3
Tx Lo band – Module 14 L1/C4
Tx Hi band – Module 14 L4/C17
Modulation 5kHz deviation – Module 14 R2 lo band, R15 Hi band

Tx power – Module 18 R6
Sidetone wobbly – adjust NLA
No Rx on all bands – Motherboard RF connector disconnected
No Power (except when either coax or audio cable from Test Rig connected) – Earth battery terminal open circuit

Test points





Oscillator alignment:

Mode	Frequency	TP1 (V)	Module	adjust	Band
Rx	30.000 MHz	4.5 V	12	L1	Lo Band
Rx	47.975 MHz	82.0 V	12	C4	
Rx	48.000 MHz	4.5 V	11	L1	Hi Band
Rx	75.975 MHz	82.0 V	11	C4	
Tx	30.000 MHz	4.5 V	14	L1	Lo Band
Tx	47.975 MHz	82.0 V	14	C4	
Tx	48.000 MHz	4.5 V	14	L4	Hi Band
Tx	75.975 MHz	82.0 V	14	C17	

RF Head alignment (module 5)

Frequency	Coarse to fine tune
30.000 MHz	dL1 - bT1
47.975 MHz	cC1 - aC1
48.000 MHz	qL1 - nT1
75.975 MHz	pC1 - MC1

NLA alignment (module 8):

Frequency	2TP3 (V)	Module	Adjust
30.000 MHz	4.3 V	8	R7
48.000 MHz	4.3 V	8	
47.975 MHz	2.3 V	8	R2
75.975 MHz	2.3 V	8	

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