TUNING AND SET UP PROCEDURE

Apparatus required

Signal generator FM +\-4KHz @ 460.000 MHZ carrier (HP 8920A).
Oscilloscope Dual trace.
DMM meter (20 volts)
12v power supply, limited to 100mA (SALCOM).
Trimming tool for coil cores (SALCOM).
Hewlett Packard test set to generate alpha message POCSAG RIC
0116358 level 1(HP8920A)

Tuning Set-up

Solder test crystal to pcb.
Connect Signal generator to input BNC of 12-04 board.
Connect test lead between 12-04 test connector P3 pin 1 and oscilloscope.
Connect DC supply +12v current limited to 100mA.
Check supply +3v on test pad.
Inject a carrier level to give a 50mV sine wave on the scope, approx -
50dBm. Some units may require a higher level.

Tuning Method

Adjust C4 for a frequency of approx 2KHz (0.5mSec between peaks) on the
scope (very small amplitude). Either of the two settings found will suffice.
Maintain a scope display of approx 30mV pp by adjusting the input carrier
level.
Adjust C1, C2,C3 (in that order) for maximum signal on scope. Repeat this
several times to maximise the output. Maintain a scope display of approx
50mV pp by adjusting input carrier level. The final scope display should be
approx. 20 to 25mV for a carrier input of -95 to -100dBm.
Set signal input amplitude to -80dBm.
Re-adjust C4 to reduce the scope signal frequency until it reaches <100Hz.

Sensitivity check

Connect test connector lead Adata≅ (pin 3) to a other input on scope with
0.1V/div, AC coupled.
Increase the carrier frequency by +4Khz.
Set the scope trace to lie on the centre grid line, reduce the carrier level until the
scope display baseline shifts by 0.2v.
This should correspond to <-123 +/-3 dBm

Decoder check

Cycle power off then on.
Check RED led D1 flashes once per second approx.
Reset the carrier to +0KHz,
Press K1 five times. This does the following:
<Inject the following POCSAG message signal at -120dbm using the test set.
RIC 0116358. Type Alphanumeric. Function level 4. Message 01109.>
Check relay led 1 on 12-04 flashes on then off 5 times.
Check message is repeated on serial output, monitor with AControl V≅ on PSD.
Reliable decoding should be obtained at a carrier level of <-123dBm .