

TUNE UP PROCEDURE

Unless otherwise specified, the component numbering refers to schematic page 2 at the following descriptions.

1.0 Receive

Connect the antenna terminal to a RF signal generator with output set at -60dbm and modulation of 2KHz and 1KHz tone. Output frequency should be set at the middle channel. Connect the speaker terminal to a SINAD meter and AC voltmeter. Tune B1 until audio signal is observed. Tune volume until the best SINAD is read. Tune B1 again until best SINAD is read. Set signal generator to -113dbm and observe SINAD to be better than 12db. Loosen L12 if necessary to improve SINAD.

2.0 Transmit

Connect the antenna terminal to a spectrum analyser with a 20db attenuator. Set frequency to read from 400MHz to 2.5GHz. Set device to transmit, observe fundamental frequency to read 27dbm maximum. Loosen L4 if necessary to obtain correct reading. Observe all harmonics and spurious to be 60 db down from the fundamental. Loosen L15 to L17 if necessary. Now tune analyser center frequency to be the transmit frequency, span 25KHz, resolution 300Hz. Connect microphone input to audio generator with output set to 100mv. Sweep frequency from 300Hz to 3KHz. Observe spread to be within 15KHz, i.e., either side of the plateau to be 30db down from the top. With a demodulation meter, also observe that the deviation from 300Hz to 3KHz to be less than 4KHz and that modulation at 3KHz should rolled off 6db from 1KHz. Adjust R40,67 (schematic page 1) so that this figure is achieved.

3.0 PLL synthesizer

At receive, tune L11 such that the voltage at R39 appears to be 0.6V. At transmit, it should read 1.8V. Put epox onto L11 after tuning.