ZRT170TR-5 MODEM TEST SPECIFICATION

The following procedure must be carried out on devices assembled with radio modules that have passed individual testing and processor cards that have passed the self test procedure. This ensures that most functions are operating and that filter responses are correct, all that is then required is final calibration.

The WINA4P program calibration option requires that the channel switches are both set to zero to put the radio into program mode. The radios may be tested with the top cover removed however it is advisable to use the R.F. cable fitted to the top cover for connection to a test set when calibrating the transmitter output power.

The radio should be programmed using the WINA4P programme for 9600 baud operation at a frequency at the dead centre of its specified band of operation. The modem should have been temperature cycled at   -10/+60 degrees C for a period of no less than 8 hours. This supplements the high temperature factory burn –in (+80 C) to assist stability of crystal filters, TCXO's etc.

Test Procedure:

1/ Connect a 12V 3A power supply to the radio power connector, connect the radio serial port to a PC running the WINA4P programme using a 9way serial cable. Connect the R.F. output connector of the radio to the R.F. test set which should be prepared to measure up to 8W of R.F. output power. Switch on the power supply, the radio should draw an idle current of approximately 70mA.

2/ Select TOOLS then MAX POWER AND MOD BALANCE option on the WINA4P programme, adjust the R.F. output power to 5W +0.5/-0 using the trimmer in the radio module, adjust the mod balance pot for best square wave modulation (50Hz square wave modulation is generated by the processor card during this test). Adjust the transmitter TCXO so that the transmit frequency is accurate to 300Hz. Check that the VCO tuning voltage is 2.5V+/-0.2V, if not adjust the RX VCO coil as necessary.

3/ Use the CALIBRATE TX POWER option on the WINA4P programme to calibrate the power steps (50mW, 100mW, 200mW, 500mW, 1W, 2W, 5W) as instructed by the programme. Each step must be saved using STORE.

4/ Using the SET INTERNAL MOD option on the WINA4P programme adjust internal modulation for 1.5kHz deviation. The modulation for this test is a 1kHz sine wave generated by the processor card. Stop the test, transmitter testing is

Approved: *A R Butterworth*	Date: 01/03/05	Page 1 of 2

File Location: C:\Documents and Settings\Ken\My Documents\Certificates\ZRT170-FCC-IC\ZRT170TR-5-AlignmentCalibration.doc

WORK INSTRUCTION	
Title: ZRT170TR-5 Modem Alignment Procedure	
Document No.: QWI-0023-605	Issue: 1

RFDataTech

now complete.

5/ Set the R.F. test set to output the programmed RX carrier frequency with a modulation of 1Khz at 1.5Khz Deviation. Using the CALIBRATE RSSI option on the WINA4P programme and follow the on screen prompts.   Verify the calibration using the RSSI TEST option at 2uV and 0.5uV, readings of +6 and – 6dBuV should be indicated within 2dB accuracy. Receiver testing is now complete.

6/ If, specified set the radio to operate to customer requirements using the WINA4P programme. The alignment range field in the main programme menu must be filled out to conform with the radio.

Approved: *A R Butterworth*	Date: 01/03/05	Page 2 of 2

File Location: C:\Documents and Settings\Ken\My Documents\Certificates\ZRT170-FCC-IC\ZRT170TR-5-AlignmentCalibration.doc