28-341V

NAV5plus
Receiver PCB

PCB02121 Test

McMurdo Limited
Silver Point
Airport Service Road
Portsmouth
Hampshire
PO3 5PB

ISSUE RECORD

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COMPILED BY	CHECKED BY	ENGINEERING APPROVAL

1. Equipment Required

- It is assumed that an ATE shall be used to perform set up and test of the PCB02121 PCB
- All tests should be performed with 24V applied to the UUT

2. Setup Procedure

2.1.1 Connect the RF source to the UUT using J4 (marked 'PASSIVE' on the PCB)

2.1.2 Connect power and I & Q monitoring to J1

2.1.3 Apply power to the UUT

3. Alignments

The two local oscillators need to be set for correct frequency.
The 6 Toko coils need to be adjusted for maximum output.

3.1 518kHz Local Oscillator

3.1.1 Monitor U205 pin 6

3.1.2 Adjust C208 until the output frequency is 518.000kHz ± 1Hz

3.1.3 Check that the output is a square wave with 50% ± 1% duty cycle

3.1.4 Check that the output is a square wave at 0V and 5V levels ± 250mV

3.2 Second Receiver Local Oscillator

3.2.1 Monitor U305 pin 6.

3.2.2 For 490kHz operation : adjust C308 until the output frequency is 490.000kHz ± 1Hz

3.2.3 For 4209.5kHz operation : adjust C308 until the output frequency is 4209.500kHz ± 1Hz

3.2.4 Check that the output is a square wave with 50% ± 1% duty cycle

3.2.5 Check that the output is a square wave at 0V and 5V levels ± 250mV

3.3 518kHz Coil Alignment

3.3.1 Monitor U203 pin 8.

3.3.2 Set the signal generator to 518.085kHz, no modulation, signal level –80dBm

3.3.3 Adjust L504, L505 and L506 for maximum output.

3.3.4 Check that the output is an 85Hz ± 5Hz sine wave of at least 40mV p-p

3.3.5 Check that the output has a dc level of 5V ± 250mV

3.3.6 Reduce signal generator level to –107dBm

3.3.7 Check that 518kHz I & Q on J1 are toggling (pins 3 & 4) with 50% ± 2% duty cycle

3.4 Second Receiver Coil Alignment

3.4.1 Monitor U303 pin 8.

3.4.2 For 490kHz operation : set the signal generator to 490.085kHz, no modulation, signal level –80dBm

3.4.3 For 4209.5kHz operation : set the signal generator to 4209.585kHz, no modulation, signal level –80dBm

3.4.4 Adjust L501, L502 and L503 for maximum output.

3.4.5 Check that the output is an 85Hz ± 5Hz sine wave of at least 50mV p-p

3.4.6 Check that the output has a dc level of 5V ± 250mV

3.4.7 Reduce signal generator level to –107dBm

3.4.8 Check that second receiver I & Q on J1 are toggling (pins 7 & 8) with 50% ± 2% duty cycle

3.4.9 Remove power from the UUT

4. Connections to UUT

J1 Main Connector

Pin	***Function***
1	+24V
2	0V
3	518kHz I output with 10k pull-up
4	518kHz Q output with 10k pull-up
5	Not used
6	Not used
7	Second receiver I output with 10k pull-up
8	Second receiver Q output with 10k pull-up
9	Not used
10	Not used

J4 Antenna Connector

Pin	***Function***
1	RF signal input
2	RF return (screen)