

MRT AU9 End-of-Line (EOL) Test Procedure

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Equipment Needed

- 1 – 6V DC Bench Supply
- 2 – Ammeter with resolution down to 1uA
- 3 – Radio test set
- 4 – AU9 test harness (RadioCAD)
- 5 – Spectrum analyser with antenna connected to input^[1].

NOTE 1 – The spectrum analyser is useful for fault finding but not actually needed for confirming working samples.

Test Procedure

The Device Under Test (DUT) needs to be programmed with AU9 software version 1.36 or greater.

There are five test states. Each state is advanced when the test button on the DUT is pressed provided that the DUT is fitted in the AU9 test harness and powered.

On power up in the harness the DUT sounds a short chime to indicate it is in test mode. When powered up normally (in AU9 housing or plugged in to the development motherboard) the chime is absent.

Test 0: idle/asleep (low current) (the state on startup),

After the chime sounds and before the test button is pressed the unit is held in the idle state. With 6VDC applied check that the quiescent current is <20uA (nominally 10uA). Press the test button on the DUT for the next test

Testing LEDs, slide switch and beeper

At any time during tests 1→3 the slide switch and LEDs can be tested. When the slide switch is moved to the armed position one LED will flash (we think it's the red one) and the unit will beep. When the slide switch is moved to the other position the other LED will flash (we think it's the green one) and the unit will beep.

Test 1: low power test transmission

This is a test of the test button itself. With the radio test set connected to the RadioCAD supplied AU9 test harness and set to transmitter test @ 121.5 MHz AM one should hear the usual test transmission tone. TX power level is low at approximately 12uW. Press the test button on the DUT for the next test

Test 2: Full power unmodulated tx,

This allows the DUT's TX frequency to be aligned by adjusting R31. Adjust until within +/-100 Hz. Check that the TX power is between 85 and 110 mW. Press the test button on the DUT for the next test.

Test 3: Normal alarm transmission patter, at low power

This allows normal modulation to be checked. TX power level is low at approximately 12uW. Using the scope feature of the radio test set check that the modulation waveform is square, approximately 50/50 mark/space ratio, >85% modulation depth and without distortion. Press the test button on the DUT for the next test.

Test 4: Cover open/closed pin test

Finally check the cover open, water-pin contact. The unit is not now transmitting but should be beeping and flashing indicating the contact (SW1) is closed. Depress the contact slightly and the beeping and flashing will stop. Release the contact and the the beeping and flashing will restart. Press the test button on the DUT to finish test or start again at test 0.

<ENDS>