

# EMC Technologies (NZ) Ltd

Test Report No 50511.1

Report date: 27 May 2005

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## TEST REPORT

### **ELPRO E900 Ethernet Radio Modem**

*tested for compliance with the*

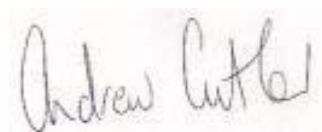
### **Code of Federal Regulations (CFR) 47**

### **Part 15 – Radio Frequency Devices, Subpart C – Intentional Radiators**

### **Section 15.247 – Operation in the band 902 – 928 MHz**

*for*

### **ELPRO Technologies Pty Ltd**



This Test Report is issued with the authority of:

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**Andrew Cutler - General Manager**



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**EMC Technologies (NZ) Ltd**

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## 1. CLIENT INFORMATION

**Company Name** ELPRO Technologies Pty Ltd

**Address** 9/12 Billabong Street  
Stafford

**State** Queensland 4053

**Country** Australia

**Contact** Mr John White

## 2. DESCRIPTION OF TEST SAMPLE

**Brand Name** ELPRO

**Model Number** E900

**Product** Ethernet Radio Modem

**Manufacturer** ELPRO Technologies Pty Ltd

**Country of Origin** Australia

**Serial Number** 0505 007 4179

**FCC ID** O9PE900BB01

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## 3. SUMMARY OF TEST RESULTS AND COMPLIANCE STATEMENT

The ELPRO E900 Ethernet Radio Modem **complies with** 47 CFR Part 15.

Testing was carried out in accordance with the test methods defined in 47 CFR Part 15 and in particular Sections, 15.111, 15.205, 15.207, 15.209 and 15.247.

<u>CLAUSE</u>	<u>TEST PERFORMED</u>	<u>RESULT</u>
15.111	Antenna power conduction for receivers	Complies
15.203	Antenna requirement	Complies
15.205	Operation in restricted bands	Complies
15.207	Conducted emissions	Complies
15.209	Radiated emissions	Complies
15.247:		
(a)(1)	Hopping channel separation	Complies
(a)(1)(i)	Channel occupancy / bandwidth	Complies
(b)(2)	Peak output power	Complies
(b)(4)	Antenna gain less than 6 dBi	Complies
(d)	Out of band emissions	Complies
(i)	Radio frequency hazards	Complies

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## 4. ARTICLES SUBMITTED

The following items were submitted:

- 902 – 928 MHz frequency hopping spread spectrum transceiver
- Yagi antenna
- Length of coax cable

The transmitter has no external user controls.

In order to test the device the client supplied software that allowed:

- Frequency hopping in two bands: 902 – 915 MHz and 915 – 928 MHz.
- Different rates of data transmission.

## 5. TEST SAMPLE DESCRIPTION

The sample tested is a frequency hopping spread spectrum transceiver with the following specifications:

### Rated Transmitter Maximum Output Power

1 watt (30 dBm)

### FCC frequency allocation

902 – 928 MHz

### Operating frequency ranges

50 channels between 902.3750 MHz – 914.8750 MHz in 250 kHz steps

50 channels between 915.1250 MHz – 927.6250 MHz in 250 kHz steps

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## Test frequencies

902.3750 MHz, 915.0000 MHz, 927.6250 MHz

## Hopping sequence

Pseudo random sequence.

## Power Supply

This system is sold with an AC power supply

Conducted measurements have been carried out using the supplied 110 Vac / 20 Vdc power supply.

## External Ports

- antenna port (unique connector)
- RS 232 port (configuration purposes only)
- Ethernet port

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## 6. ATTESTATION

This report describes the tests and measurements performed for the purpose of determining compliance with the specification with the following conditions:

**The test sample was selected by the client.**

**The report relates only to the sample tested.**

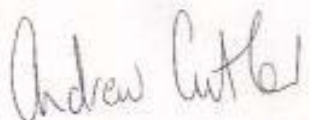
**This report does not contain corrections or erasures.**

Measurement uncertainties with statistical confidence intervals of 95% are shown below test results. Both Class A and Class B uncertainties have been accounted for, as well as influence uncertainties where appropriate.

In addition this equipment has been tested in accordance with the requirements contained in the appropriate Commission regulations.

To the best of my knowledge, these tests were performed using measurement procedures that are consistent with industry or Commission standards and demonstrate that the equipment complies with the appropriate standards.

I further certify that the necessary measurements were made by EMC Technologies NZ Ltd, 47 MacKelvie Street, Grey Lynn, Auckland, New Zealand.



Andrew Cutler  
General Manager  
EMC Technologies NZ Ltd

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## 7. RESULTS

### Section 15.111(a) – Antenna power conduction limits for receivers

In accordance with Section 15.109 (f) receiver power conduction measurements have been made at the antenna terminals.

Device operated in receive only mode when the transmitter was in standby.

Receive Frequency: 902.375 MHz

Measured Spurious Emission		
Emission (MHz)	Emission level (dBm)	Limit (dBm)
832.1430	-73.5	-57.0
1664.4260	-78.9	-57.0
2496.3900	-99.0	-57.0
3328.5200	-84.7	-57.0
5824.8681	-77.9	-57.0

Receive Frequency: 915.000 MHz

Measured Spurious Emission		
Emission (MHz)	Emission level (dBm)	Limit (dBm)
844.7510	-79.9	-57.0
1689.5140	-76.6	-57.0
2534.2640	-93.6	-57.0
3379.0270	-90.4	-57.0
5913.2424	-68.6	-57.0



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**Receive Frequency:** 927.625 MHz

Measured Spurious Emission		
Emission (MHz)	Emission level (dBm)	Limit (dBm)
857.3880	-77.5	-57.0
1714.7510	-74.5	-57.0
2572.1270	-85.9	-57.0
3429.5150	-98.7	-57.0
6001.6174	-72.1	-57.0

First IF = 70.25 MHz.

In accordance with Section 15.31(o) only levels within 20 dB of the limit have been reported.

In the range 30 – 10000 MHz the power at the antenna terminal shall not exceed 2 nW (-57 dBm).

**Result:** Complies.

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## **Section 15.203 – Antenna requirement**

The antenna to be used with this system is a 6 element yagi manufactured by Antenna Agencies Pty Ltd.

This antenna is attached to the system using a unique connector.

## **Section 15.205 – Restricted bands of operation**

Refer to measurements made with reference to Section 15.247 (d).

## **Section 15.207 – Conducted emissions**

This system is sold with an AC power supply in the form of a plug pack – Ever Glow Model number DDU 200045 110 Vac / 20 Vdc.

Measurements have been carried out using this power supply.

Conducted emissions testing was carried out over the frequency range of 150 kHz to 30 MHz using a 50 ohms / 50 microhenry artificial mains network.

Testing was carried out at the laboratory's MacKelvie Street screened room.

The device was placed on top of the test table, which is 1m x 1.5m, 80cm above the screened room floor which acts as the horizontal ground plane.

In addition the device was positioned 40cm away from the screened room wall which acts as the vertical ground plane.

The artificial mains network was bonded to the screened room floor. At all times the device was kept more than 80cm from the artificial mains network.

Quasi peak measurements were made with a receiver bandwidth of 9 kHz with a combined plot being produced showing the results of testing on the phase and neutral AC supply lines.

Measurement uncertainty with a confidence interval of 95% is:

- Mains terminal tests (0.15 - 30 MHz)  $\pm$  2.2 dB

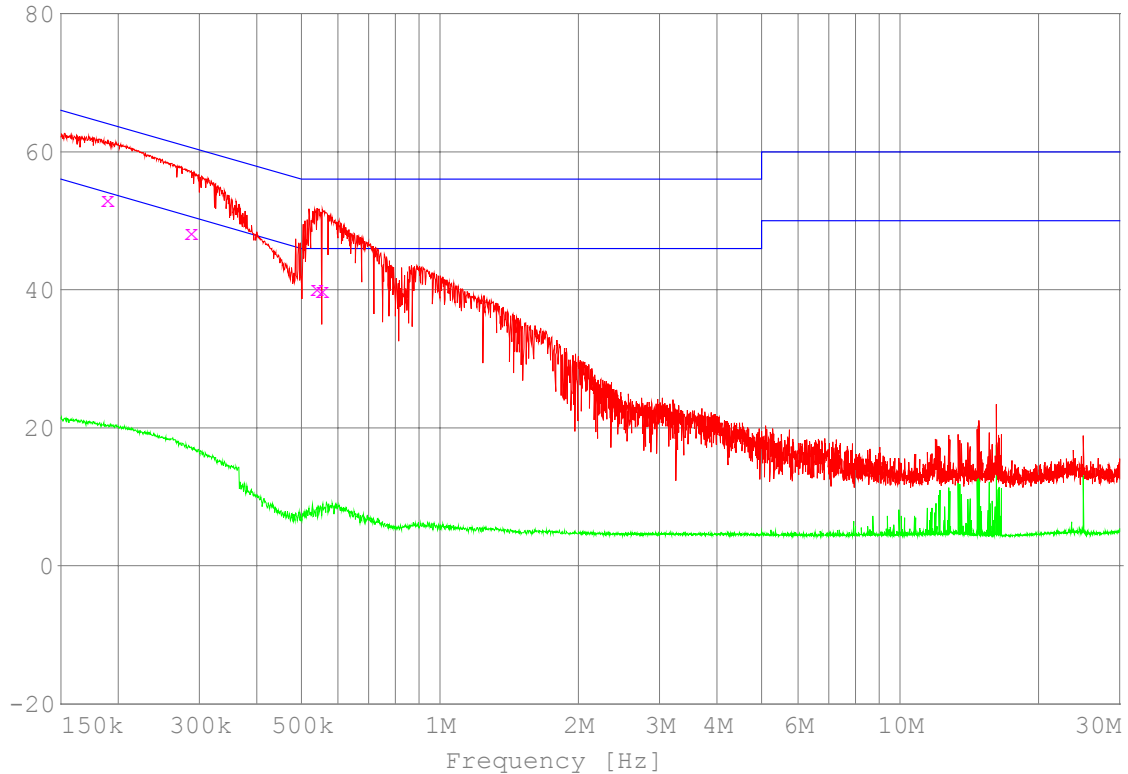
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## Conducted Emissions Test

Comments:	Device tested when powered at 110 Vac when transmitting continuously.
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Level [dB $\mu$ V]



Peak -----	Average -----	Quasi Peak X	Average +
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### Quasi-Peak Measurements

Frequency MHz	Level dB $\mu$ V	Limit dB $\mu$ V	Margin dB	Exceed	Phase	Rechecks dB $\mu$ V
0.189881	53.21	64.04	10.83		L1	53.5
0.287719	48.43	60.59	12.16		N	
0.539884	40.28	56.00	15.72		L1	
0.555199	39.94	56.00	16.06		L1	

### Average Measurements

Frequency MHz	Level dB $\mu$ V	Limit dB $\mu$ V	Margin dB	Exceed	Phase	Rechecks dB $\mu$ V
No measurements recorded						

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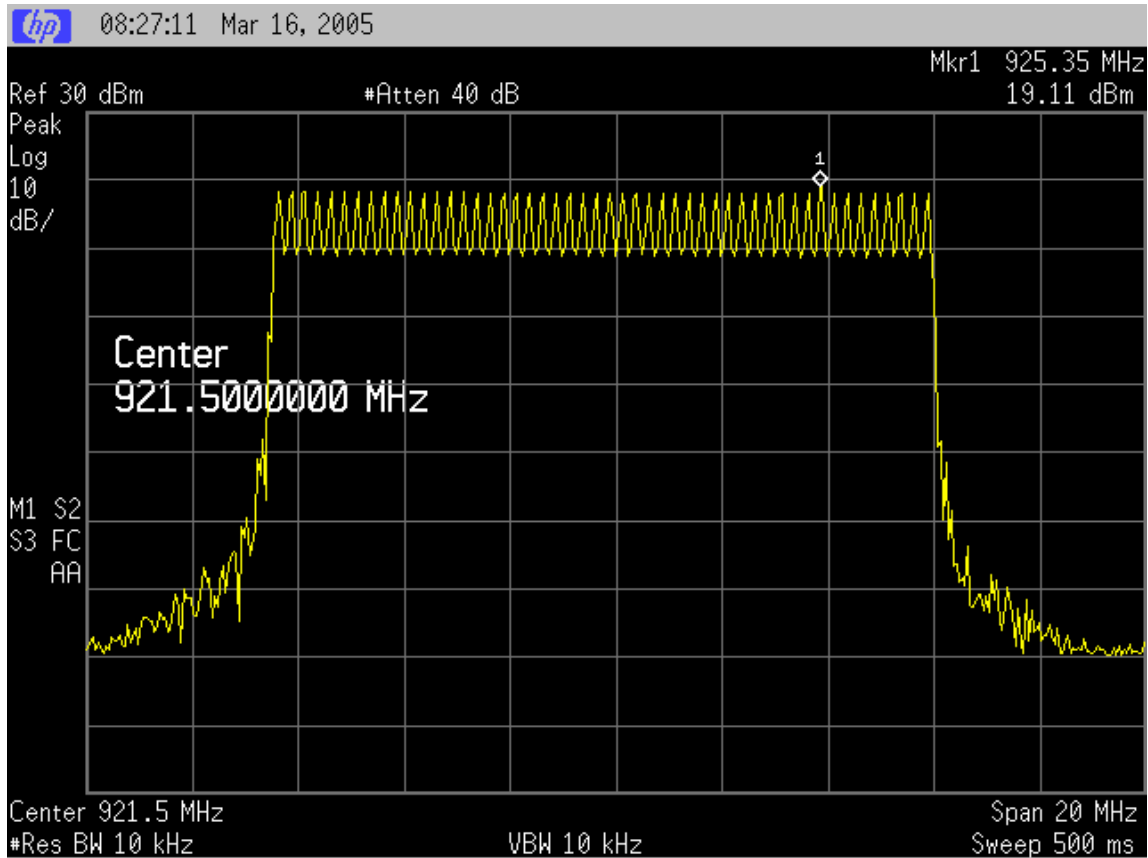
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50 channels can be observed in operation.

The device is required to operate with channel frequencies separated by 25 kHz or the 20 dB bandwidth of the hopping channel which ever is greater.

The 20 dB bandwidth has been measured below on three frequencies using the maximum modulation rate – data at 230 kB/sec.

The results are as follows:

Frequency	20 dB Bandwidth
902.375 MHz	233 kHz
915.000 MHz	233 kHz
927.625 MHz	230 kHz

Plots of these measurements are detailed below.

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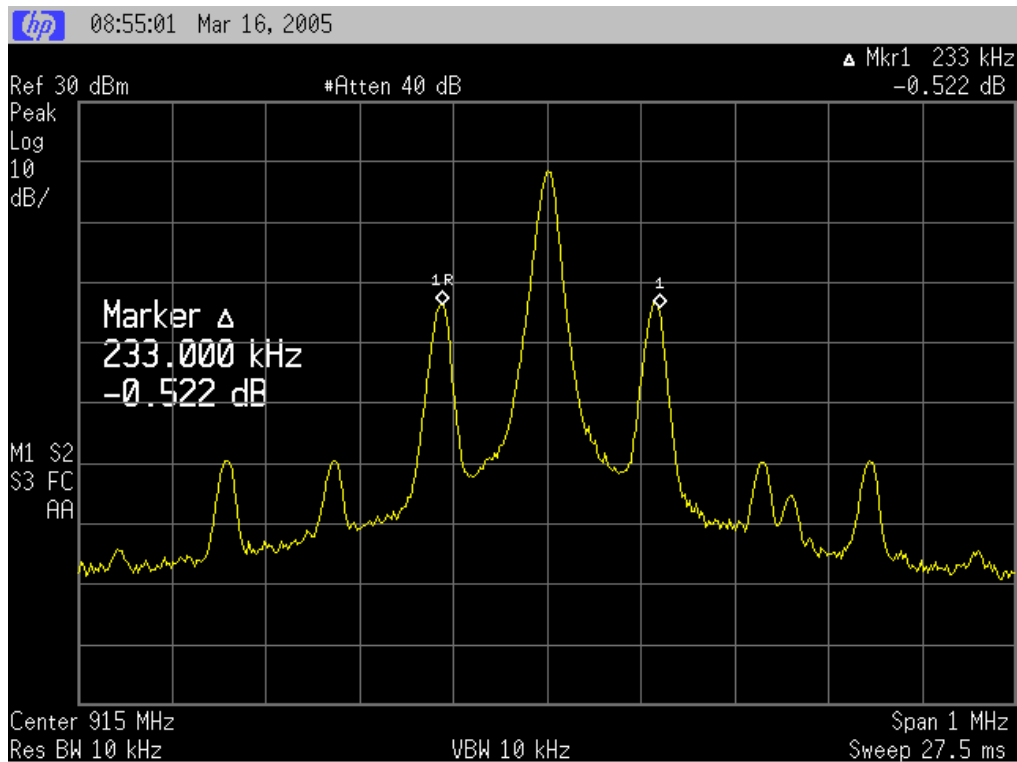
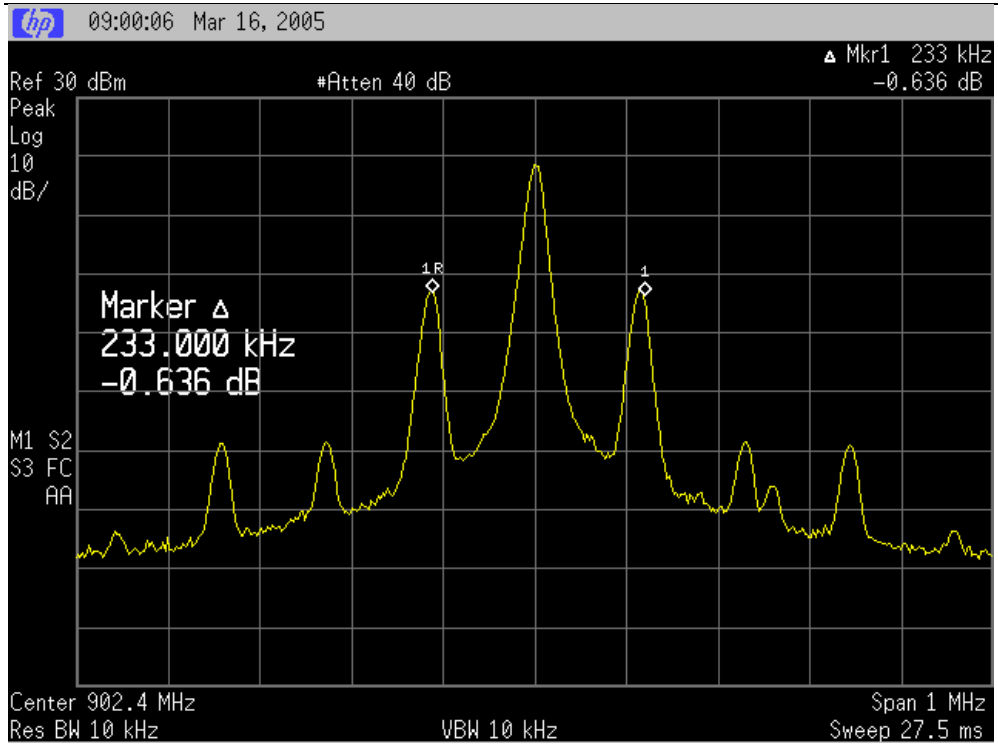
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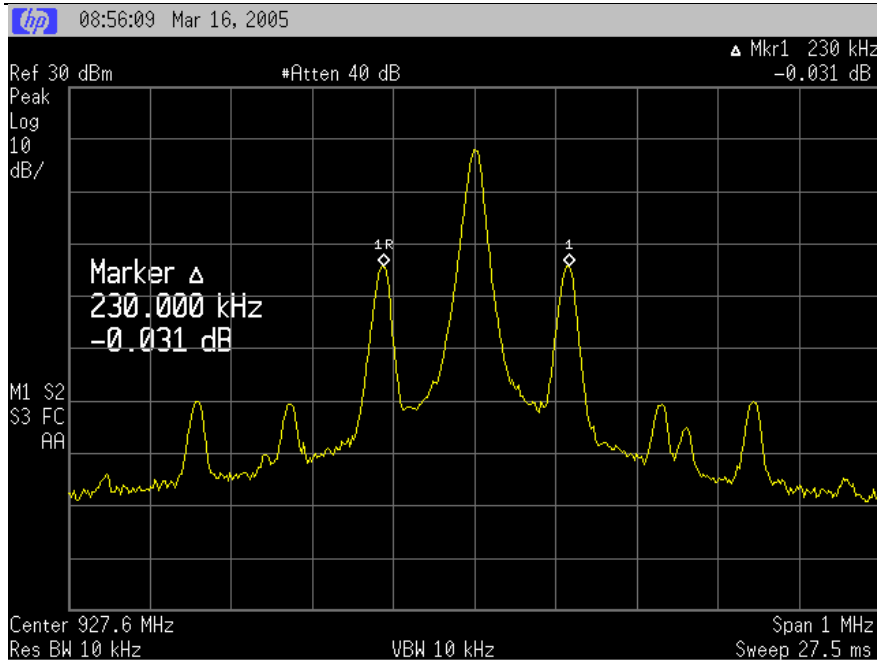
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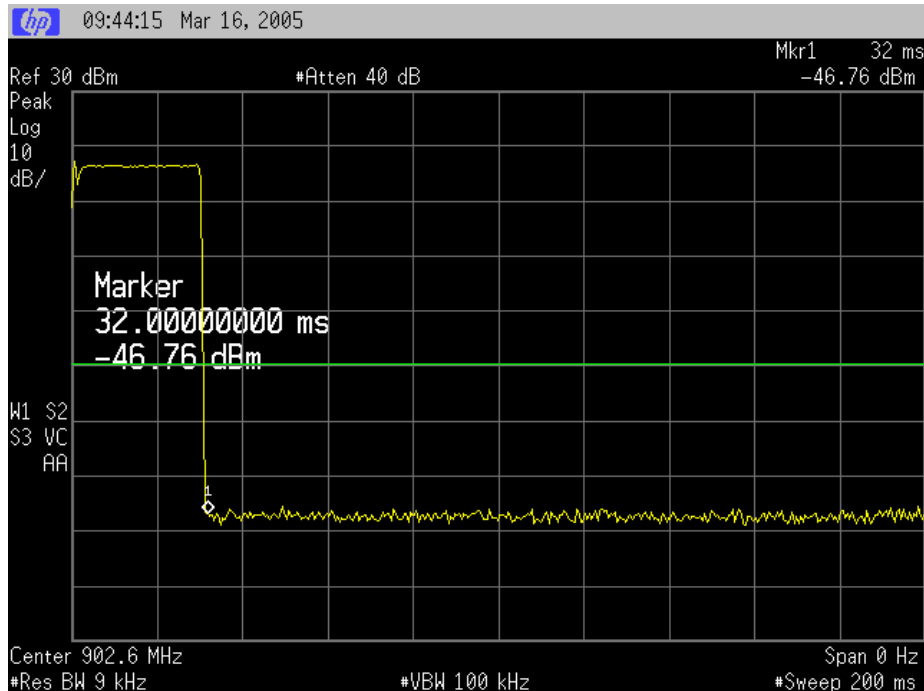
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As the 20 dB bandwidth is less than 250 kHz the average time of occupancy shall not be greater than 0.4 seconds in any 20 second period.

Using a spectrum analyser with a 0 Hz span each channel was observed to be ON for approx 32 mS.



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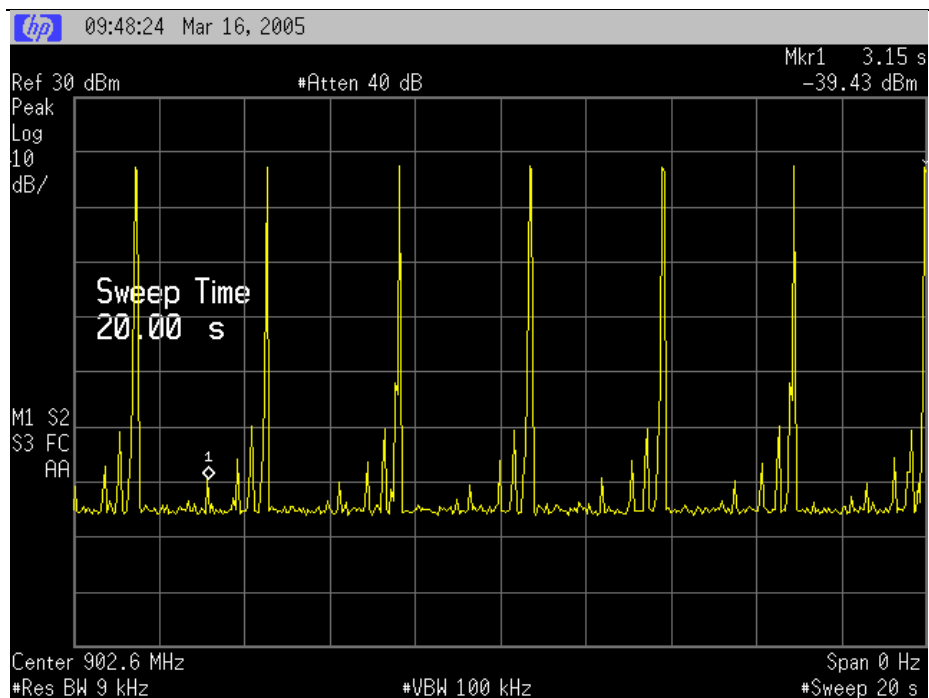
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The above 20 second sweep shows 7 transmissions.

The dwell time would therefore be  $32 \text{ milliseconds} \times 7 = 225 \text{ milliseconds}$  or 0.225 seconds.

**Result:** Complies

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## Section 15.247 (b) (2)– Peak output power

Measurements were carried out at the RF output terminals of the transmitter using a spectrum analyser.

Measurements were carried out using a span of 5 MHz and a resolution bandwidth of 1 MHz.

Measurements were made using the 110Vac to 20 Vdc AC adaptor where the input voltage was varied between –15% and +15%.

RF power output (dBm)			
Frequency	-15%	Nominal	+15%
902.375	29.3	29.3	29.3
915.000	29.3	29.3	29.3
927.625	29.0	29.0	29.0

The nominal power of this device is +30 dBm.

### *Limits:*

The maximum peak output power for frequency hopping systems operating in the 902 – 928 MHz shall not exceed 1 watt (+30 dBm) for systems employing at least 50 channels.

**Result:** Complies

***Measurement Uncertainty:***  $\pm 0.5$  dB

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## Section 15.247 (b)(4) Radiated transmitter power

Frequency (MHz)	Level (dBuV/m)	Power (dBm)	Limit (dBm)	Polarity	Margin (dB)
902.620	130.6	35.4	36.0	Horizontal	0.6
902.620	109.2	14.0	36.0	Vertical	22.0
915.000	129.6	34.4	36.0	Horizontal	1.6
915.000	110.0	14.8	36.0	Vertical	21.2
927.625	129.1	33.9	36.0	Horizontal	2.1
927.625	108.1	10.8	36.0	Vertical	25.2

Device was tested on an open area test site at a distance of 3 metres.

The transmitter was tested while transmitting continuously on discrete frequencies while attached to the antenna with the greatest gain (Yagi Antenna).

The antenna has a gain of approximately 10 dBi and the supplied coax has a loss of approximately 4 dB giving an overall gain of 6 dBi.

The nominal transmitter output is +30 dBm which has been measured at +29.3 dBm.

*Limit:*

The conducted power shall not exceed 1 watt (+30 dBm) and the antenna system gain shall not exceed 6 dBi.

Therefore the radiated power shall not exceed +36 dBm EIRP.

**Result:** Complies

**Measurement Uncertainty:**  $\pm 4.1$  dB

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## **Section 15.247 (b) (5) – Radio Frequency Hazard Information**

As per Section 15.247 (b) (4) spread spectrum transmitters operating in the 902 – 928 MHz band are required to be operated in a manner that ensures that the public is not exposed to RF energy levels in accordance with CFR 47, Section 1.1307(b)(1).

In accordance with this section, and also Section 2.1091, this device has been defined as a mobile device whereby a distance of 20 cm can normally be maintained between the user and the device.

In accordance with Section 1.1310 the Maximum Permissible Exposure (MPE) limits for the General Population / Uncontrolled Exposure of f/1500 have been applied.

The maximum distance from the antenna at which the MPE is met or exceeded is calculated from the equation relating field strength in V/m, transmit power in watts, transmit antenna gain and separation distance in metres:

$$E, \text{ V/m} = (\sqrt{30 * P * G}) / d$$

$$\text{Power density, mW/m}^2 = E^2/3770$$

$$E \text{ for MPE: } (902/1500) = E^2/3770$$

$$E = \sqrt{(902/1500)*3770}$$

$$E = \underline{47.6 \text{ V/m}}$$

The antenna used with this system has a gain of 10.0 dBi and a coax loss of 4 dB which gives an overall gain of 6 dBi (3.98).

The maximum transmitter power measured being measured at 29.3 dBm or 0.85 watts.

Therefore:

$$\begin{aligned} E &= \sqrt{30 * P * G} / d \\ &= \sqrt{30 * 0.85 * 3.98} / 0.2 \\ &= \underline{50.3 \text{ V/m}} \end{aligned}$$

Calculations show that this device with the described antenna does not meet the MPE requirement for mobile devices falling below the 20 cm clearance required and a minimum safe distance of at least 25 cm will be required.

**Result:** Complies

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## Section 15.247 (c) – Out of band emissions

Measurements were made at the antenna port with a resolution bandwidth of 100 kHz.

Frequency: 902.375 MHz

Measured Spurious Emission		
Emission (MHz)	Emission level (dBm)	Limit (dBm)
Harmonics		
1804.763	-33.8	+9.3
2707.138	-40.0	+9.3
3609.500	-50.8	+9.3
4511.875	-50.6	+9.3
5414.238	-49.0	+9.3
6316.613	-47.1	+9.3
7218.988	-55.4	+9.3
8121.363	-	+9.3
9023.738	-	+9.3

Frequency: 915.000 MHz

Measured Spurious Emission		
Emission (MHz)	Emission level (dBm)	Limit (dBm)
Harmonics		
1830.000	-35.2	+9.3
2745.013	-43.2	+9.3
3659.988	-45.9	+9.3
4574.975	-54.4	+9.3
5489.975	-45.1	+9.3
6404.988	-43.5	+9.3
7320.000	-51.5	+9.3
8235.000	-	+9.3
9150.000	-	+9.3

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Frequency: 927.625 MHz

Measured Spurious Emission		
Emission (MHz)	Emission level (dBm)	Limit (dBm)
Harmonics		
1855.250	-40.3	+9.3
2782.888	-46.5	+9.3
3710.488	-42.8	+9.3
4638.113	-51.3	+9.3
5565.738	-41.9	+9.3
6493.350	-49.4	+9.3
7420.975	-	+9.3
8348.600	-	+9.3
9276.225	-	+9.3

**Result:** Complies

*Limit:*

In any 100 kHz bandwidth outside the frequency band of operation, the RF power produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

A limit of +9.3 has been applied as the highest level of desired power observed was +29.3 dBm.

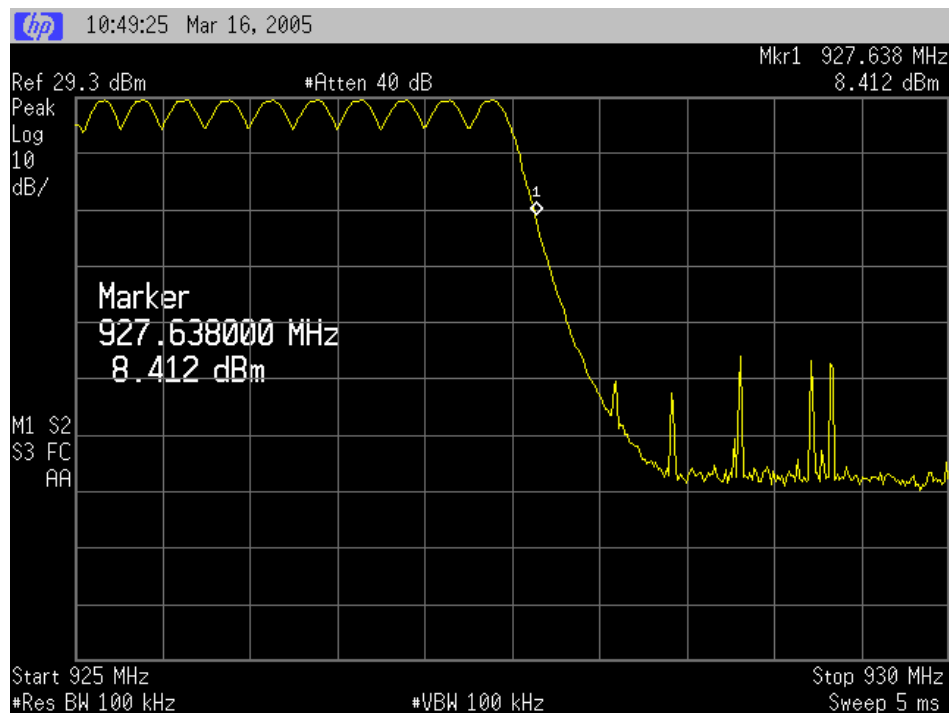
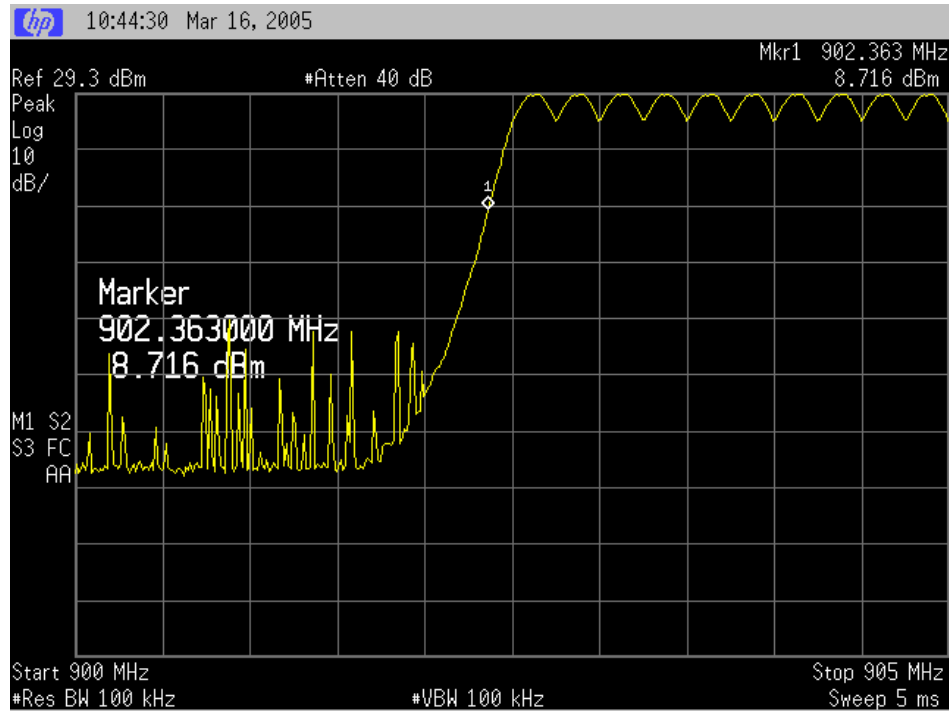
*Measurement Uncertainty:*  $\pm 3.3$  dB

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## Band edge measurements:



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Measurements were made with the reference level of the spectrum analyser set to +29.3 dBm.

The -20 dB points were determined using a 100 kHz resolution bandwidth.

All emissions close to the band edge were observed to be below the -20 dB points of 902.363 MHz and 927.638 MHz.

The allowable band is 902.000 – 928.000 MHz.

**Result:** Complies

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## **Restricted band radiated emission measurements**

A number of out of band emissions have been shown to fall within the restricted bands of operation as defined in section 15.205(a).

Radiated emission measurements were carried out with the limits as per section 15.209 applied when these emissions fell within the restricted bands.

Testing was carried out at EMC Technologies NZ Ltd Open Area Test Site, which is located at Driving Creek, Orere Point, Auckland. Details of this site have been filed with the Commission, Registration Number: 90838, which was last updated on Feb 17<sup>th</sup>, 2004.

The device was placed on the test table top which was a total of 0.8 m above the test site ground plane.

The device was powered at 110 Vac using a representative AC adaptor while transmitting continuously on the channels described with a laptop computer attached.

Measurements of the radiated field were made with the antenna located at a 3 m horizontal distance from the boundary of the device under test.

Measurements below 1000 MHz were made using an Quasi Peak Detector with a bandwidth of 120 kHz.

Measurements above 1000 MHz were made using an average detector with a bandwidth of 1.0 MHz and also a peak detector with a bandwidth of 1.0 MHz.

When an emission is located, it is positively identified and its maximum level is found by rotating the automated turntable, and by varying the antenna height with an automated antenna tower. The emission is measured in both vertical and horizontal antenna polarisations.

The emission level is determined in field strength by taking the following into consideration:

Level (dB $\mu$ V/m) = Receiver Reading (dB $\mu$ V) + Antenna Factor (dB) + Coax Loss (dB)



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## Results:

General emissions observed regardless of the transmitter operating frequency.

Frequency MHz	Level Vertical dBuV/m	Horizontal dBuV/m	Limit dBuV/m	Margin dB	Antenna Polarity
Restricted bands					
249.810	34.0	37.7	46.0	8.3	Horizontal
Non restricted					
66.000	20.0		40.0	20.0	Vertical
80.000	22.7		43.5	20.8	Vertical
112.000	31.7		43.5	11.8	Vertical
132.000	32.0		43.5	11.5	Vertical
144.000	28.6	32.1	43.5	11.4	Horizontal
160.000	20.0		43.5	23.5	Vertical
176.000	34.1		43.5	9.4	Vertical
192.000	29.7		43.5	13.8	Vertical
198.000	29.7	34.1	43.5	9.4	Horizontal
208.000	22.1		43.5	21.4	Vertical
384.000	23.5		46.0	22.5	Vertical
660.000	33.1	32.2	46.0	8.3	Horizontal
726.000	41.1	43.6	46.0	22.5	Vertical

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Transmitting on 902.3750 MHz.

Frequency MHz	Level Vertical dBuV/m	Horizontal dBuV/m	Limit dBuV/m	Margin dB	Antenna Polarity	Detector
1805.240	49.6	55.7	110.6	54.9	Horizontal	QP
2707.860	less than 40.0	42.5	54.0	11.5	Horizontal	Average
2707.860	less than 50.0	47.8	74.0	26.2	Horizontal	Peak
3610.480	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
3610.480	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
4513.100	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
4513.100	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
5415.720	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
5415.720	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
6318.340	less than 40.0	less than 40.0	110.6	-	Vert/Hort	Average
6318.340	less than 50.0	less than 50.0	110.6	-	Vert/Hort	Peak
7220.960	less than 40.0	less than 40.0	110.6	-	Vert/Hort	Average
7220.960	less than 50.0	less than 50.0	110.6	-	Vert/Hort	Peak
8123.580	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
8123.580	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
9026.200	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
9026.200	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak

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# EMC Technologies (NZ) Ltd

Test Report No 50511.1

Report date: 28 June 2005

Transmitting on 915.000 MHz

Frequency	Level Vertical	Horizontal	Limit	Margin	Antenna Polarity	Detector
MHz	dBuV/m	dBuV/m	dBuV/ m	dB		
1830.000	44.1	56.4	110.6	54.2	Horizontal	QP
2745.000	less than 40.0	44.1	54.0	9.9	Horizontal	Average
2745.000	less than 50.0	48.1	74.0	25.9	Horizontal	Peak
3660.000	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
3660.000	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
4575.000	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
4575.000	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
5490.000	less than 40.0	less than 40.0	110.6	-	Vert/Hort	Average
5490.000	less than 50.0	less than 50.0	110.6	-	Vert/Hort	Peak
6405.000	less than 40.0	less than 40.0	110.6	-	Vert/Hort	Average
6405.000	less than 50.0	less than 50.0	110.6	-	Vert/Hort	Peak
7320.000	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
7320.000	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
8235.000	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
8235.000	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
9150.000	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
9150.000	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak

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# EMC Technologies (NZ) Ltd

Test Report No 50511.1

Report date: 28 June 2005

Transmitting on 927.6250 MHz.

Frequency MHz	Level Vertical dBuV/m	Horizontal dBuV/m	Limit dBuV/m	Margin dB	Antenna Polarity	Detector
1855.250	65.0	63.4	110.6	45.6	Horizontal	QP
2782.875	less than 40.0	less than 40.0	54.0	13.0	Horizontal	Average
2782.875	less than 50.0	less than 50.0	74.0	24.9	Horizontal	Peak
3710.500	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
3710.500	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
4638.125	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
4638.125	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
5565.750	less than 40.0	less than 40.0	110.6	-	Vert/Hort	Average
5565.750	less than 50.0	less than 50.0	110.6	-	Vert/Hort	Peak
6493.375	less than 40.0	less than 40.0	110.6	-	Vert/Hort	Average
6493.375	less than 50.0	less than 50.0	110.6	-	Vert/Hort	Peak
7421.000	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
7421.000	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
8348.625	less than 40.0	less than 40.0	54.0	-	Vert/Hort	Average
8348.625	less than 50.0	less than 50.0	74.0	-	Vert/Hort	Peak
9276.250	less than 40.0	less than 40.0	110.6	-	Vert/Hort	Average
9276.250	less than 50.0	less than 50.0	110.6	-	Vert/Hort	Peak

Where an emission falls outside of the restricted bands a limit being -20 dB below the highest fundamental emission level has been applied (130.6 dBuV/m).

The general limits as per section 15.209(a) have been applied to those emissions falling within the restricted bands.

**Result:** Complies

Measurement uncertainty with a confidence interval of 95% is  $\pm 4.1$  dB over the range 30 - 10000 MHz.

# EMC Technologies (NZ) Ltd

Test Report No 50511.1

Report date: 28 June 2005

## 8. TEST EQUIPMENT USED

Instrument	Manufacturer	Model	Serial #	Asset
Aerial Controller	EMCO	1090	9112-1062	RFS 3710
Aerial Mast	EMCO	1070-1	9203-1661	RFS 3708
Turntable	EMCO	1080-1-2.1	9109-1578	RFS 3709
Biconical Antenna	Schwarzbeck	BBA 9106	-	RFS 3612
Log Periodic Antenna	Schwarzbeck	VUSLP 9111	9111-228	3785
UHF Dipole Antenna	Schwarzbeck	UHA 9105	-	RFS 3679
Horn Antenna	EMCO	3115	9511-4629	E1526
VHF Dipole Antenna	Schwarzbeck	VHA 9103	-	RFS 3603
Horn Antenna	Electrometrics	RGA-60	6234	E1494
Coax Cable	Sucoflex	104PA	2736/4PA	-
Signal Generator	Rohde & Schwarz	SMHU.58	838923/028	E1493
Measurement Receiver	Rohde & Schwarz	ESCS 30	847124/020	E1595
Spectrum Analyzer	Hewlett Packard	E7405A	US39150142	3776

## 9. ACCREDITATIONS

Testing was carried out at EMC Technologies NZ Ltd Open Area Test Site, which is located at Driving Creek, Orere Point, Auckland. Details of this site have been filed with the Commission, Registration Number: 90838, which was last updated on February 17<sup>th</sup>, 2004.

The tests were carried out in accordance with the terms of EMC Technologies (NZ) Ltd's International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025: 1999.

All measurement equipment has been calibrated in accordance with the terms of EMC Technologies (NZ) Ltd's International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025: 1999.

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# EMC Technologies (NZ) Ltd

Test Report No 50511.1

Report date: 28 June 2005

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## 10. PHOTOGRAPH (S)

Conducted emissions test set up:



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# EMC Technologies (NZ) Ltd

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## Radiated emissions test set up



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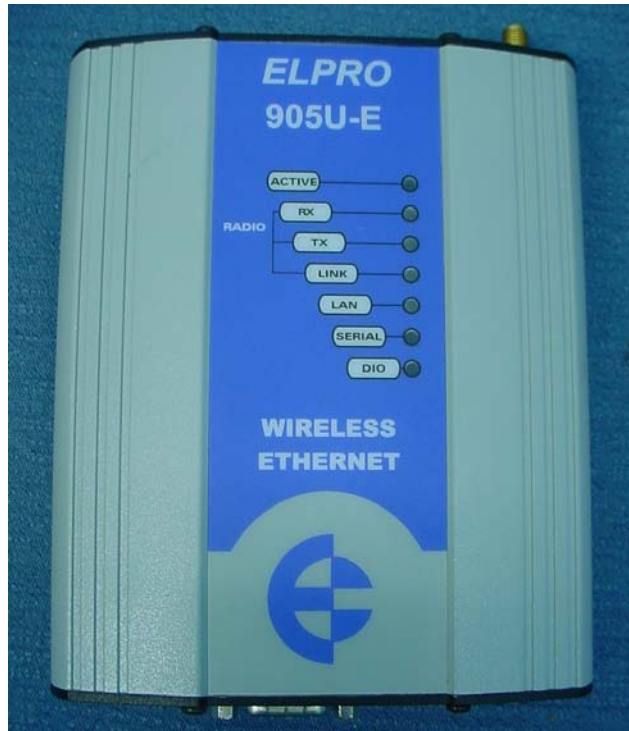
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## External views



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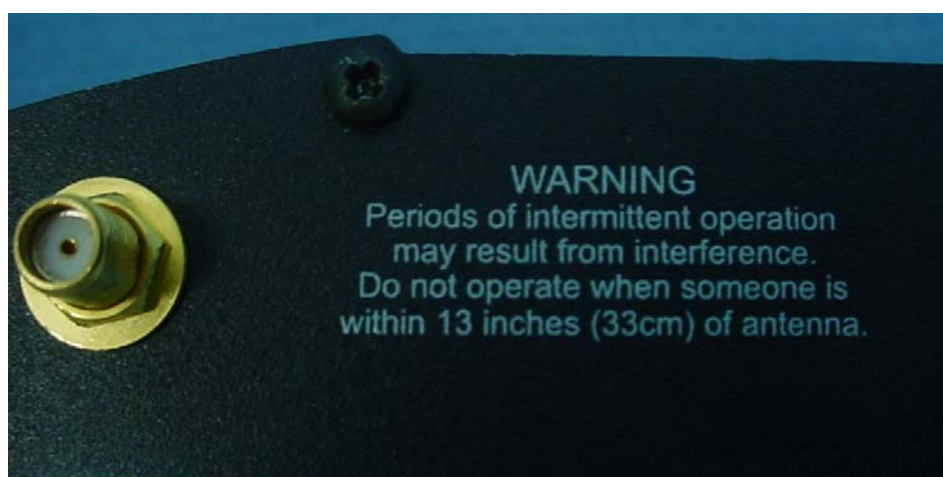
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## Labels



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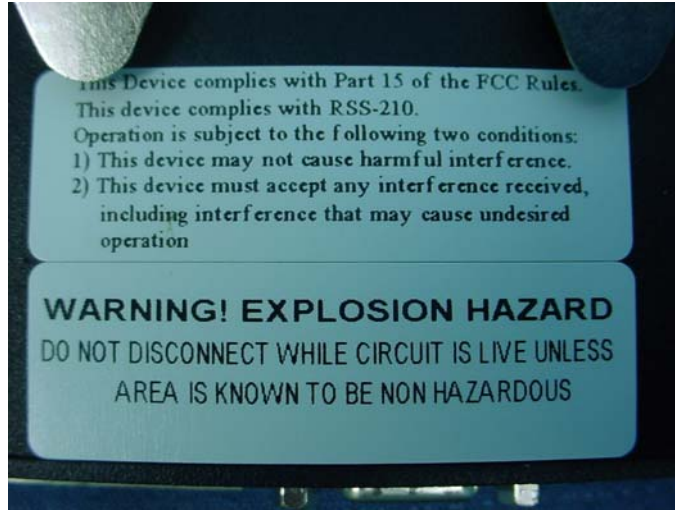
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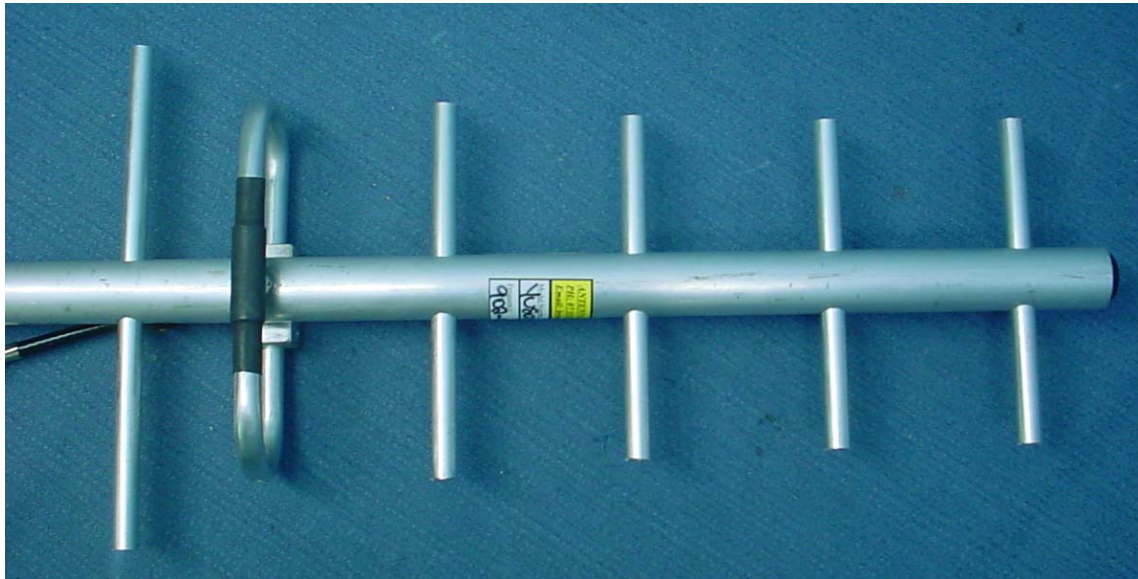
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**Antenna**



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# EMC Technologies (NZ) Ltd

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## Internal main board topside



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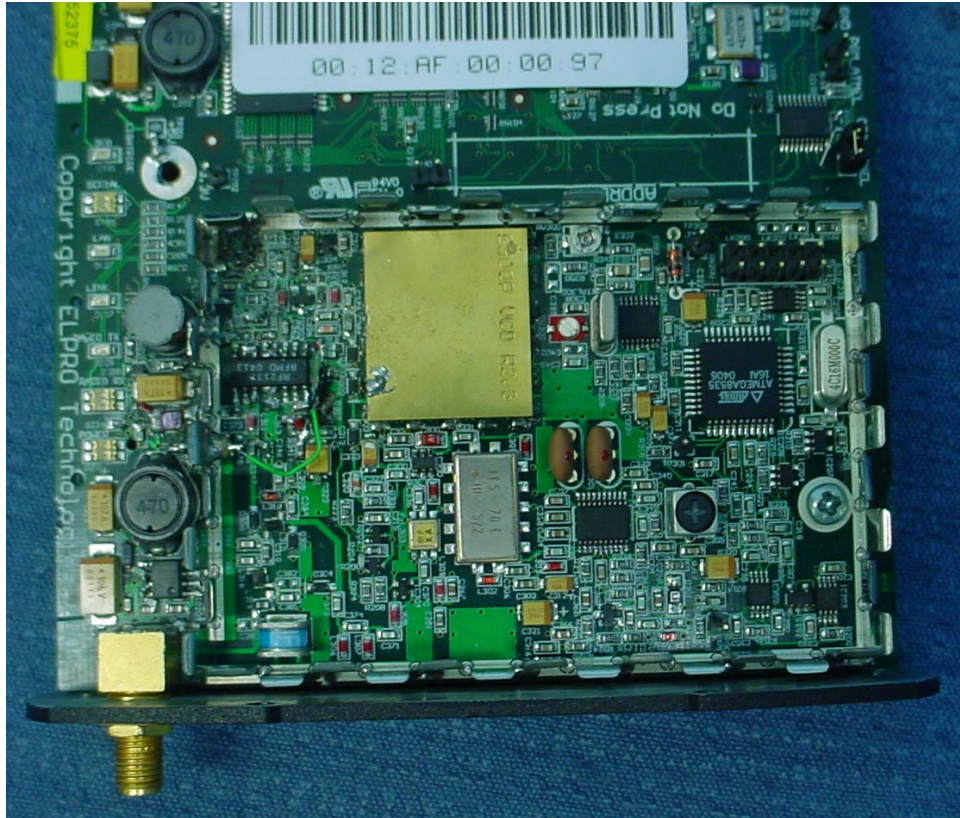
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# EMC Technologies (NZ) Ltd

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## Circuit board beneath the shield



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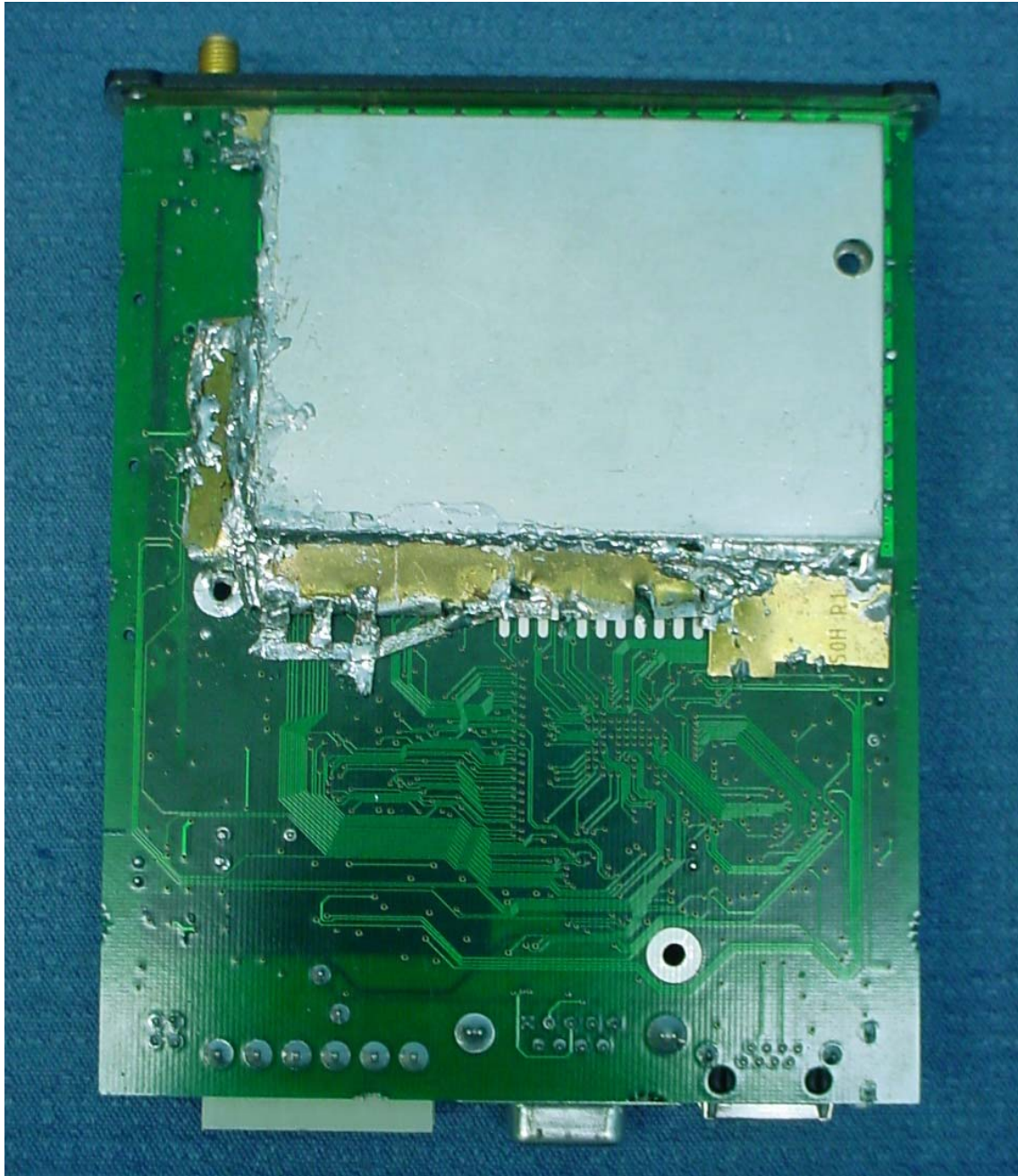


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## Internal main board bottom side



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