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TEST REPORT

EROAD EHUBO Gen1 Electronic Hubometer

tested to

47 Code of Federal Regulations

Part 15 - Radio Frequency Devices

Subpart A and B – Unintentional Radiators

for

EROAD Ltd

This Test Report is issued with the authority of:

Andrew Cutler – General Manager

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

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1. STATEMENT OF COMPLIANCE

The **EROAD EHUBO Gen1 Electronic Hubometer** comply with FCC Part 15 Subparts A and B as a Class B Unintentional Radiator when the methods as described in ANSI C63.4 - 2003 are applied.

2. RESULTS SUMMARY

The results of testing, carried out on 30th May 2012, are summarised below.

Clause	Parameter	Result
15.101	Equipment authorisation requirement.	Verification required as the device contains a FCC compliant cellphone module.
15.103	Exempted devices.	Device is not exempt as it contains a digital device.
15.107	Conducted Emissions 0.15 - 30 MHz	Not applicable.
15.109	Radiated Emissions 30 - 1000 MHz	Complies .
15.111	Antenna Terminal Disturbance 30 – 950 MHz	Not applicable.

3. INTRODUCTION

This report describes the tests and measurements performed for the purpose of determining compliance with the specification.

The client selected the test sample.

This report relates only to the sample tested.

This report contains no 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.

4. CLIENT INFORMATION

Company Name	EROAD Ltd
Address	102 Rosedale Rd, Abany,
City	Auckland 0632
Country	New Zealand.
Contact	Barry Hayworth

5. DESCRIPTION OF TEST SAMPLE

Brand Name	EROAD
Model Number	EHUBO Gen1
Product	Electronic Hubometer
Manufacturer	EROAD Ltd
Country of Origin	New Zealand
Serial Number	-

6. RESULTS

Standard

The sample was tested in accordance with 47 CFR Part 15 Subparts A and B as a Class B digital device.

Methods and Procedures

The measurement methods and procedures as described in ANSI C63.4 - 2003 were used.

Section 15.109: Radiated emission limits

Radiated emissions testing was carried out over the frequency range of 30 to 6000 MHz .

Testing was carried out at the laboratory's open area test site - located at 670 Kawakawa-Orere Road, Orere Point, Auckland, New Zealand.

This site conforms to the requirements of CISPR 16 and ANSI C63.4 - 2003.

Before testing was carried out, a receiver Self Test and Internal Calibration was undertaken along with a check of all connecting cables and programmed antenna factors.

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

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

Testing is carried out by manually scanning between 30 and 6000 MHz in 100 kHz steps while aurally and visually monitoring for emissions.

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.

During the test, a number of ambient emissions are identified (list of which can be provided upon request).

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

Level (dBµV/m) = Receiver Reading (dBµV) + Antenna Factor (dB/m) + Coax Loss (dB)

Measurement uncertainty with a confidence interval of 95% is:

- Free radiation tests (30 – 6000 MHz) ± 4.1 dB

Radiated Emissions: 30 – 6000 MHz:

The device was powered from at 12 Vdc and 24 Vdc using lead acid batteries.

The device was Placed in the center of the test table standing upright connected via the data and power supply cables to the supply batteries and test simulator box located on the test site ground plane.

The device was tested with the ODO indicating 316 Hz, the ignition was on, the GPS was activated but the cell was not activated as there is no cellphone coverage at the test site.

No emissions were detected within 15 dB of the applicable limit when measurements were attempted between 30 MHz & 6 GHz using both vertical and horizontal polarisations.

Result: Complies.

7. TEST EQUIPMENT USED

Instrument	Manufacturer	Model	Serial No	Ref
Aerial Controller	EMCO	1090	9112-1062	3710
Aerial Mast	EMCO	1070-1	9203-1661	3708
Artificial Mains Network	Rohde & Schwarz	ESH 2-Z5	881362/032	3628
Biconical Antenna	Schwarzbeck	BBA 9106	-	3612
Coax Cable	Sucoflex	104PA	2736/4PA	-
Log Periodic Antenna	Schwarzbeck	VUSLP 9111	9111-228	3785
Horn Antenna	EMCO	3115	9511 – 4629	E1526
Measurement Receiver	Rohde & Schwarz	ESHS 10	838693/002	3800
Measurement Receiver	Rohde & Schwarz	ESIB-40	100171	R-27-1
Personal Computer	DECpc	LPx 433dx	-	3737
Software	Rohde & Schwarz	ES-K1 140	-	-
Turntable	EMCO	1080-1-2.1	9109-1578	3709
AC Source	Hewlett Packard	6843A	3531A-00133	RFS 3777
Variac	Variac	1592	-	RFS 3690

8. ACCREDITATIONS

Testing was carried out in accordance with EMC Technologies Ltd registration with the Federal Communications Commission as a listed facility, registration number: 90838, which was updated on February 15th 2011.

All testing was carried out in accordance with the terms of EMC Technologies (NZ) Ltd International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025, 2005.

All measurement equipment has been calibrated in accordance with the terms of the EMC Technologies (NZ) Ltd International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025, 2005.

International Accreditation New Zealand has Mutual Recognition Arrangements for testing and calibration with accreditation bodies in a number of economies. This includes NATA (Australia), UKAS (UK), SANAS (South Africa), NVLAP (USA), A2LA (USA), SWEDAC (Sweden). Further details can be supplied on request.

9. PHOTOGRAPHS

Radiated emission test set up.