



**COMPLIANCE
ENGINEERING**
EMC - Shielding - Environmental

90 Indian Drive
Keysborough VIC 3173 Australia
Telephone: + 61 3 9763 3079
Email: info@compeng.com.au
Web: www.compeng.com.au
ABN: 56 101 639 588

EMC Compliance Test Report

AS/NZS CISPR 32: 2013

Report Number: TR2316A



Comtest
4G Wireless Modem
(Model: MSM 485- 4G)

The results detailed in this test report relate only to the specific sample/s tested. It is the Manufacturer's responsibility to ensure that all production units are manufactured with equivalent EMC characteristics.

COMPLIANCE CERTIFICATE

Client Contact: Robert Norris
 Comtest
 Telephone: 03 9645 5933
 Email: rnorris@comtest.com.au

Device: 4G Wireless Modem
 Model No: MSM 485 (4G)
 Serial No: N/A



Reference Standard: AS/NZS CISPR 32: 2013
 Electromagnetic compatibility of multimedia equipment-Emission requirement

Summary Result: AS/NZS CISPR 32: 2013
 Radiated RF emission measurements (Class B) **Complied**

Test Date: 1st March 2018

Tests Performed by: Gabriel Mendez
 Compliance Engineering Pty Ltd
 90 Indian Drive, Keysborough
 Victoria, Australia 3173
 Telephone: +61 3 9763 3079
 Facsimile: +61 3 9763 9706
 Email: info@compeng.com.au

The 4G Wireless Modem (Model: MSM 485-4G) complied with the "class B" requirements detailed in AS/NZS CISPR 32: 2013 Electromagnetic compatibility of multimedia equipment - Emission requirement

		17 th April 2018
Prepared By: Gabriel Mendez Test Engineer Compliance Engineering Pty Ltd	Approved By: Andrew Burden Technical Manager Compliance Engineering Pty Ltd	Date

EMC Compliance Test Report

1. INTRODUCTION

Electromagnetic compatibility (EMC) measurements were performed on the 4G Wireless Modem in accordance with the requirements of AS/NZS CISPR 32: 2013.

2. RESULTS SUMMARY

AS/NZS CISPR 32: 2013

Radiated RF emission measurements (Class B): Complied

3. TEST SAMPLE

The equipment under test (EUT) is described as follows:

4G Wireless Modem

Model No: MSM 485-4G

Serial No: N/A



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4. CONFIGURATION

The EUT shown above was powered from a smart meter via a short Ethernet cable. The smart meter was powered from 240VAC.

5. MODIFICATIONS

No modifications were performed on the above sample by Compliance Engineering.

6. TEST FACILITY

All measurements were performed at Compliance Engineering Pty Ltd: 90 Indian Drive, Keysborough Victoria, Australia.

7. RADIATED RF EMISSION MEASUREMENTS

7.1 REQUIREMENTS

Frequency Range: 30 MHz to 6,000 MHz
Measurement Distance: 3 metres
Limit: AS/NZS CISPR 32: 2013 (Class B)

7.2 TEST EQUIPMENT

Asset No	Equipment	Model No	Serial No	Cal Due
1	Spectrum Analyser	HP8595EM	3536A00126	Oct 18
465	EMC Receiver	EMC-30MKIV	44195	Nov 19
261	Biconical Antenna	CE300E	2	Sep 19
6	Log Periodic Antenna	LP1000	LP01	Sep 19
94	Preamplifier	UTC10-221-1	9603-4230	Aug 19
278	Preamplifier	LA1018N4009	J1012090727001	Nov 18
23	Horn Antenna	96001	2245	Sep 19

7.3 PROCEDURE

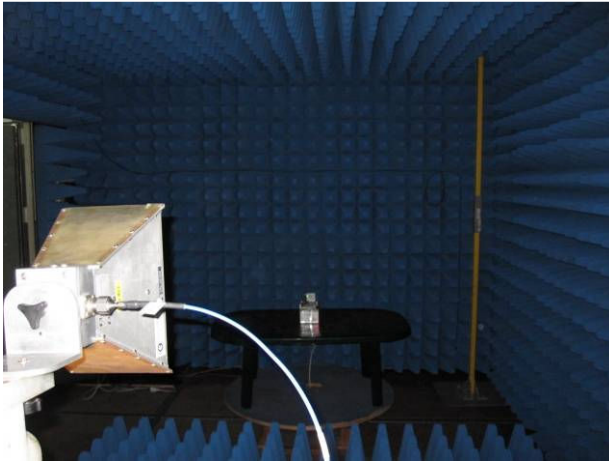
Radiated RF emission measurements were performed inside a fully anechoic enclosure at a distance of 3 metres. The measuring antenna was set at a height of 1.6 metres in both horizontal and vertical polarisations in turn.

Preliminary investigations were performed on the EUT orientation to determine the position which produced the highest detectable emissions.

The EUT was placed directly onto the turntable and slowly rotated through 360° in order to capture the highest emission profile.

Plots of the accumulated measurement data, including all site and transducer correction factors were then produced.

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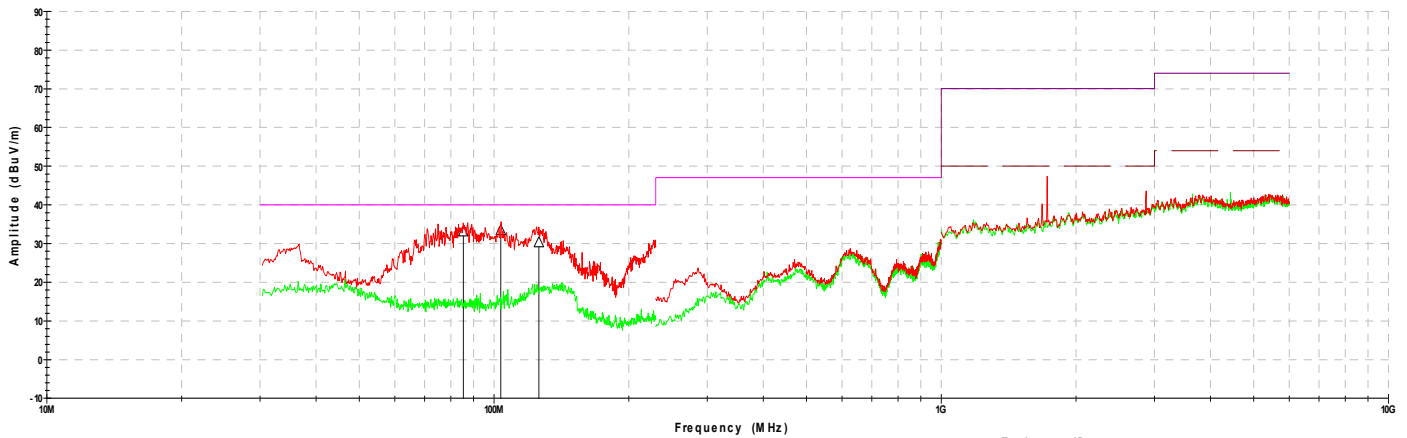
7.4 RESULTS

Radiated RF Emission Measurements – Vertical Polarisation					
Frequency (MHz)	Peak (dB μ V/m)	Quasi-Peak (dB μ V/m)	(3 Metre) Quasi-Peak Limit (dB μ V/m)	Delta Limit (dB)	Result
85.4	35.2	33	40	-7.0	Pass
103.6	35.6	33.4	40	-6.6	Pass
125.9	34.2	30.2	40	-9.8	Pass

Radiated Emission Measurement - Vertical

MSM 485
Com test

△ Quasi Peak
 — Quasi Peak Limit Class B
 — Peak Limit Class B
 — Average Limit
 — Ambient Measurement
 — Vertical Peak Polarisation Measurement



Operator: Gabriel Mendez
04:22:02 PM, Thursday, March 01, 2018

Equipment ID:
Contact:
Company:

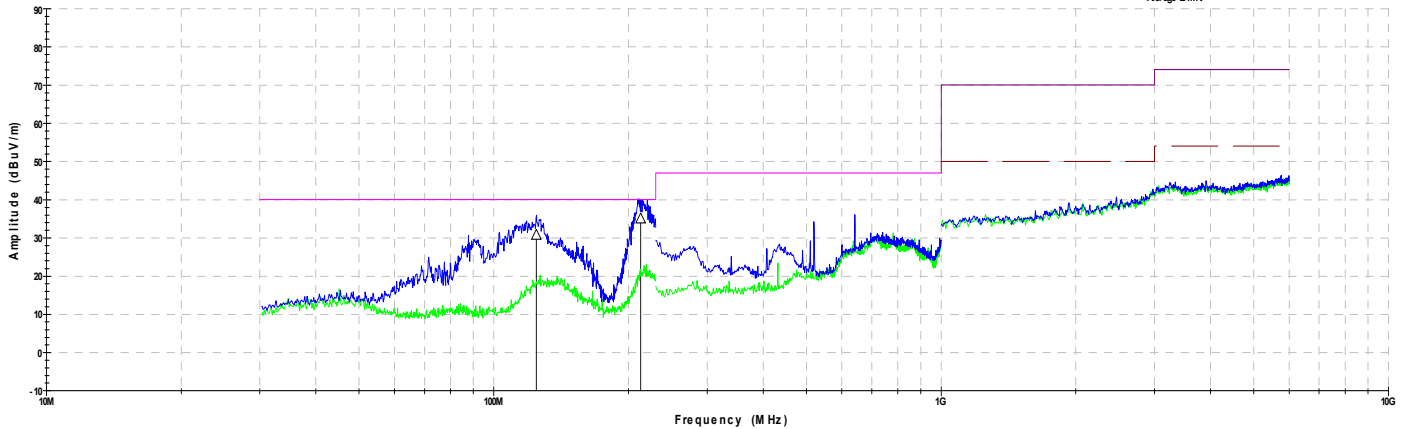
Radiated RF Emission Measurements – Horizontal Polarisation					
Frequency (MHz)	Peak (dBµV/m)	Quasi-Peak (dBµV/m)	(3 Metre) Quasi-Peak Limit (dBµV/m)	Delta Limit (dB)	Result
124.5	35.9	30.7	40	-9.3	Pass
213.1	39.8	35	40	-5.0	Pass



Radiated Emission Measurement - Horizontal

MSM 485
Com test

△ Quasi Peak
 — Ambient Measurement
 — Horizontal Polarisation Measurement
 — Quasi Peak Limit Class B
 — Peak Limit Class B
 — Average Limit



Operator: Gabriel Mendez

04:16:50 PM, Thursday, March 01, 2018

Equipment ID:

Contact:

Company:

Environmental Conditions: Temperature 26°C, Humidity 47%
Measurement Uncertainty: ± 5.86 dB.

7.5 ASSESSMENT

The 4G Wireless Modem complies with the AS/NZS CISPR 32: 2013 (Class B) radiated RF emission requirements.

8. CONCLUSION

The 4G Wireless Modem (Model: MSM 485-4G) complied with the “class B” requirements detailed in AS/NZS CISPR 32: 2013 Electromagnetic compatibility of multimedia equipment - Emission requirement