



EMC Technologies Pty Ltd

ABN 82 057 105 549

176 Harrick Road, Keilor Park,
Victoria 3042, Australia

Ph: + 61 (0)3 9365 1000

Fax: + 61 (0)3 9331 7455

Email: sales@emctech.com.au

**RADIO REPORT FOR CERTIFICATION
to
FCC PART 15 Subpart C (Section 15.225)**

FCC ID: 2AIKG-PCP6100

Test Sample: Platform Card Processor
Model: PCP6100

Client: Vix Technology (Australia) Pty Ltd

Report Number: M160508-5

Issue Date: 06 September 2016

EMC Technologies Pty Ltd reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. EMC Technologies Pty Ltd shall have no liability for any deductions, inferences or generalisations drawn by the client or others from EMC Technologies Pty Ltd issued reports. This report shall not be used to claim, constitute or imply product endorsement by EMC Technologies Pty Ltd.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

RADIO REPORT FOR CERTIFICATION
to
FCC PART 15 Subpart C (Section 15.225)
EMC Technologies Report No.: M160508-5
Issue Date: 06 September 2016

CONTENTS

1.0	INTRODUCTION
2.0	GENERAL INFORMATION
3.0	TEST RESULTS
3.1	§15.203 Antenna Requirement
3.2	§15.205 Restricted Bands of Operation
3.3	§15.207 Conducted Limits
3.4	§15.209 Radiated Emission Limits; General Requirements
3.5	§15.225(a) Fundamental Field Strength
3.6	§15.225(b and c) Transmission Mask 13.110-14.010 MHz
3.7	§15.225(d) Spurious Emissions
3.8	§15.225(e) Frequency Tolerance
4.0	COMPLIANCE STATEMENT
5.0	MEASUREMENT UNCERTAINTY



Accreditation No. 5292

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

RADIO REPORT FOR CERTIFICATION
to
FCC PART 15 Subpart C (Section 15.225)

Report Number: M160508-5
Issue Date: 06 September 2016

Sample: Platform Card Processor
Model: PCP6100
Serial Number: S16211749
Manufacturer: Vix Technology (Australia) Pty Ltd

FCC ID: 2AIKG-PCP6100
Equipment Type: Intentional Radiator (13.56 MHz Transceiver)

Tested for: Vix Technology (Australia) Pty Ltd
Address: Level 4, 50 St Georges Terrace
Perth 6000, Western Australia
Phone: +61 (0)8 6180 4613
Contact: Gino Bertino
Email: gino.bertino@vixtechnology.com

Standard: FCC Part 15 – *Radio Frequency Devices*

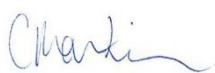
FCC Part 15 Subpart C – *Intentional Radiators*
Section 15.225 – *Operation within the band 13.110-14.010 MHz*

Test Dates: 2, 12, 17 and 19 August 2016

Test Engineers:



Larry Phuah
Test Engineer



Chris Martin



James Fitzgerald

Attestation: *I hereby certify that the device(s) described herein were tested as described in this report and that the data included is that which was obtained during such testing.*

Authorised Signatory:



Chris Zombolas
Technical Director
EMC TECHNOLOGIES PTY LTD

Issued by: EMC Technologies Pty. Ltd., 176 Harrick Road, Keilor Park, VIC 3042, Australia.
Phone : +61 3 9365 1000 **Fax:** +61 3 9331 7455 **Web:** www.emctech.com.au



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

RADIO REPORT FOR CERTIFICATION to FCC PART 15 SUBPART C (SECTION 15.225)

1.0 INTRODUCTION

Test results and procedures were performed in accordance with the following Federal Communications Commission (FCC) standards/regulations that were deemed applicable for the PCP6100:

47 CFR, Part 15, Subpart C:	Rules for intentional radiators
Section 2.1049:	Occupied Bandwidth
Section 15.203:	Antenna requirements
Section 15.205:	Restricted bands of operation
Section 15.207:	Conducted Limits
Section 15.209:	Radiated emission limits (General requirements)
Section 15.225:	Operation within the band 13.110-14.010 MHz

The sample **complied** with the applicable requirements of 47 CFR, Part 15 Subpart C - Section 15.225.

The measurement procedure used was in accordance with ANSI C63.10: 2013. The instrumentation conformed to the requirements of ANSI C63.2: 2009.

1.1 Summary of Results

FCC Part 15 Subpart C	Test Performed	Results
15.203	Antenna Requirement	Complied
15.205	Restricted bands of operation	Complied
15.207	Conducted Limits	Complied
15.209	Radiated Emissions Limits; General Requirements	Complied
15.225(a)	Fundamental Field Strength	Complied
15.225(b and c)	Transmission Mask 13.110-14.010 MHz	Complied
15.225(d)	Spurious Emissions	Complied
15.225(e)	Frequency Tolerance	Complied
2.1049	Occupied Bandwidth	135.6 Hz

1.2 Modifications by EMC Technologies

No modifications were performed.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

2.0 GENERAL INFORMATION

(Information supplied by the Client)

2.1 EUT (Transmitter) Details

Wireless Radio: 13.56 MHz
Antenna type: Integral, loop

2.2 EUT (Host) Details

Test Sample: Platform Card Processor
Model Number: PCP6100
Serial Number: S16211749
Manufacturer: Vix Technology (Australia) Pty Ltd
Supply Rating: 24 VDC, 1.66 A
Highest operating Frequency: 400 MHz
Radio Module: CLRC663 multi-protocol NFC frontend IC

2.3 Test Configuration

The EUT was transmitting continuously during the test.

2.4 Test Facility

2.4.1 General

EMC Technologies Pty Ltd is listed by the FCC as a test laboratory able to perform compliance testing for the public. EMC Technologies is listed as an FCC part 47CFR2.948 test lab and may perform the testing required under Parts 15 and 18 – **FCC Registration Number 90560**

EMC Technologies Pty Ltd has also been accredited as a Conformity Assessment Body (CAB) by Australian Communications and Media Authority (ACMA) under the APECTEL MRA and is designated to perform compliance testing on equipment subject to Declaration of Conformity (DoC) and Certification under Parts 15 and 18 of the FCC Commission's rules – **Registration Number 494713 & Designation number AU0001.**

EMC Technologies indoor open area test site (iOATS) have been accepted by Industry Canada for the performance of radiated measurements in accordance with RSS-Gen, Issue 8 - **Industry Canada iOATS number - IC 3569B**

Measurements in this report were performed at EMC Technologies' laboratory in Keilor Park, Victoria Australia.

2.4.2 NATA Accreditation

NATA is the Australian National laboratory accreditation body and has accredited EMC Technologies to operate to the IEC/ISO17025 requirements. A major requirement for accreditation is the assessment of the company and its personnel as being technically competent in testing to the standards. This requires fully documented test procedures, continued calibration of all equipment to the National Standard at the National Measurements Institute (NMI) and an internal quality system to ISO 9002. NATA has mutual recognition agreements with the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Association for Laboratory Accreditation (A²LA).

EMC Technologies is accredited in Australia by the National Association of Testing Authorities (NATA). All testing in this report has been conducted in accordance with EMC Technologies' scope of NATA accreditation.

The current full scope of accreditation can be found on the NATA website: www.nata.asn.au



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

2.5 Test Equipment Calibration

Measurement instrumentation and transducers were calibrated in accordance with the applicable standards by an independent NATA registered laboratory such as Agilent Technologies (Australia) Pty Ltd or the National Measurement Institute (NMI) or in-house. All equipment calibration is traceable to Australian national standards at the National Measurements Institute.

Equipment Type	Make/Model/Serial Number	Last Cal. dd/mm/yy	Due Date dd/mm/yy	Cal. Interval
Chamber	Frankonia SAC-10-2 (R-139)	8/01/2016	8/01/2017	1 Year, *1
EMI Receiver	R&S ESU40 20 Hz – 40 GHz Sn: 100392 (R-140)	19/11/2015	19/11/2016	1 Year, *2
	R&S ESU40 20 Hz – 40 GHz Sn: 100182 (R-037)	18/02/2016	18/02/2017	1 Year, *2
Antennas	EMCO 6502 Active Loop 9 kHz – 30 MHz Sn. 9311-2801 (A-231)	20/07/2015	20/07/2018	3 Year, *2
	SUNOL JB6 Biconilog 30 – 6000 MHz Sn. A012312 (A-363)	26/05/2016	26/05/2018	2 Year, *3
	EMCO 3115 Double Ridge Horn 1 – 18 GHz Sn: 8908-3282 (A-004)	15/07/2016	15/07/2019	3 Year, *1
Cables	Room 12 inbuilt cable Panel 1 to 10 m (C-422)	09/05/2016	09/05/2017	1 Year, *1
	Room 12 inbuilt cable Panel 1 to 3 m (C-421)	09/05/2016	09/05/2017	1 Year, *1
	Room 12 Antenna cable (C-437)	09/05/2016	09/05/2017	1 Year, *1

Note *1. In-house calibration. Refer to Quality Manual.

Note *2. NATA calibration by Rohde & Schwarz (Australia) Pty Ltd

Note *3. A2LA Accredited calibration by Liberty Labs, Inc.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.0 TEST RESULTS

3.1 §15.203 Antenna Requirement

An internal, permanently attached antenna was incorporated within the PCP6100 Reader ensuring that it could not be replaced.

3.2 §15.205 Restricted Bands of Operation

The limits of §15.209 were applied across the applicable spectrum and therefore complied with the restricted band requirements. The device was exempt from the restricted band limits for the band 13.36-13.41 MHz.

3.3 §15.207 Conducted Limits

3.3.1 Test Procedure

The arrangement specified in ANSI C63.10: 2013 was adhered to for the conducted EMI measurements. The EUT was placed in the RF screened enclosure and a CISPR EMI Receiver as defined in ANSI C63.2: 2009 was used to perform the measurements.

The EMI Receiver was operated under program control, using the Max-Hold function and automatic frequency scanning, measurement and data logging techniques. The specified 0.15 MHz to 30 MHz frequency range was sub-divided into sub-ranges to ensure that all short duration peaks were captured.

3.3.2 Peak Maximising Procedure

For each of the sub-ranges, the EMI receiver was set to continuous scan with the Peak detector set to Max-Hold mode. The Quasi-Peak detector and the Average detector were then used to measure the actual Quasi-Peak and Average level of the most significant peaks detected.

3.3.3 Calculation of Voltage Levels

The voltage levels were automatically measured in software and compared to the test limit. The method of calculation was as follows:

$$V_{EMI} = V_{Rx} + L_{BPF}$$

Where:

- V_{EMI} = the Measured EMI voltage in dBμV to be compared to the limit.
- V_{Rx} = the Voltage in dBμV read directly at the EMI receiver.
- L_{BPF} = the insertion loss in dB of the LISN, cables and limiter.

3.3.4 Plotting of Conducted Emission Measurement Data

The measurement data pertaining to each frequency sub-range were concatenated to form a single graph of (peak) amplitude versus frequency. This was performed for both Active and Neutral lines and the composite graph was subsequently plotted. A list of the highest relevant peaks and the respective Quasi-Peak and Average values were also plotted on the graph.

3.3.5 Results of Conducted Emission Measurement

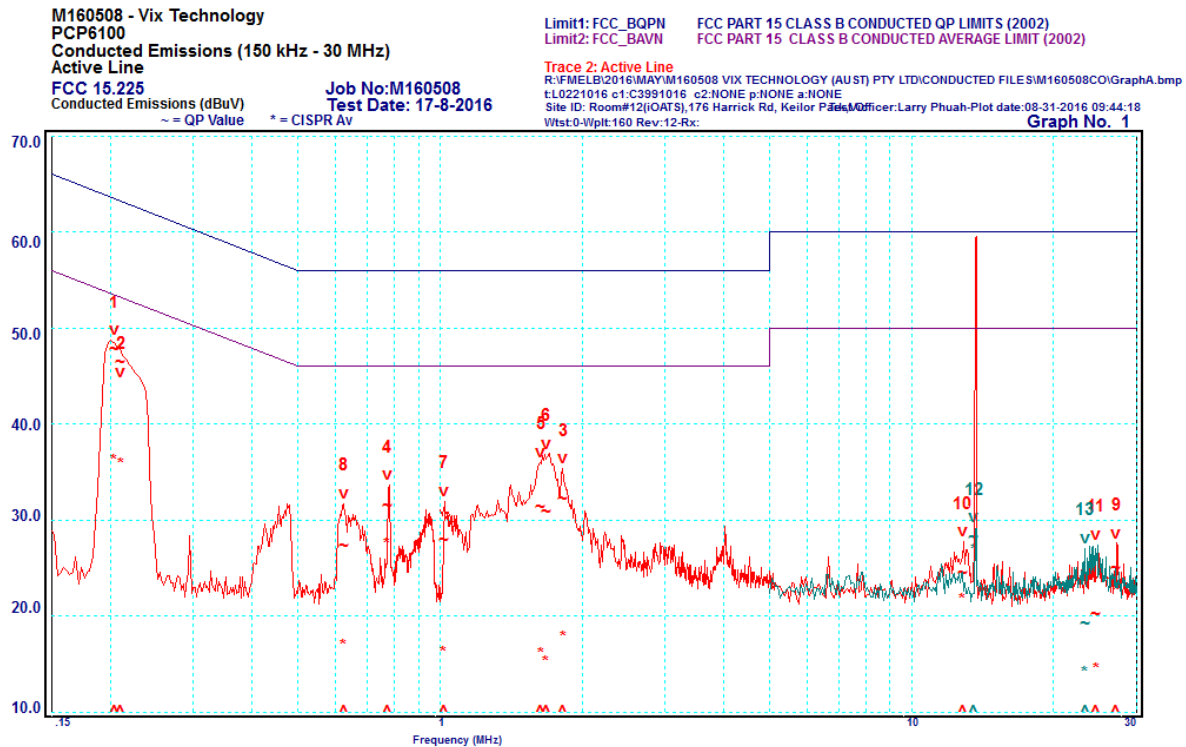
The highest conducted emission measured was -12.9 dBμV below the quasi-peak limit (point 1 on the neutral line graph below) as outlined in §15.207. All other measured peaks were below this point.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.3.5.1 Active Line



Red trace = Antenna connected
Blue trace = Antenna disconnected

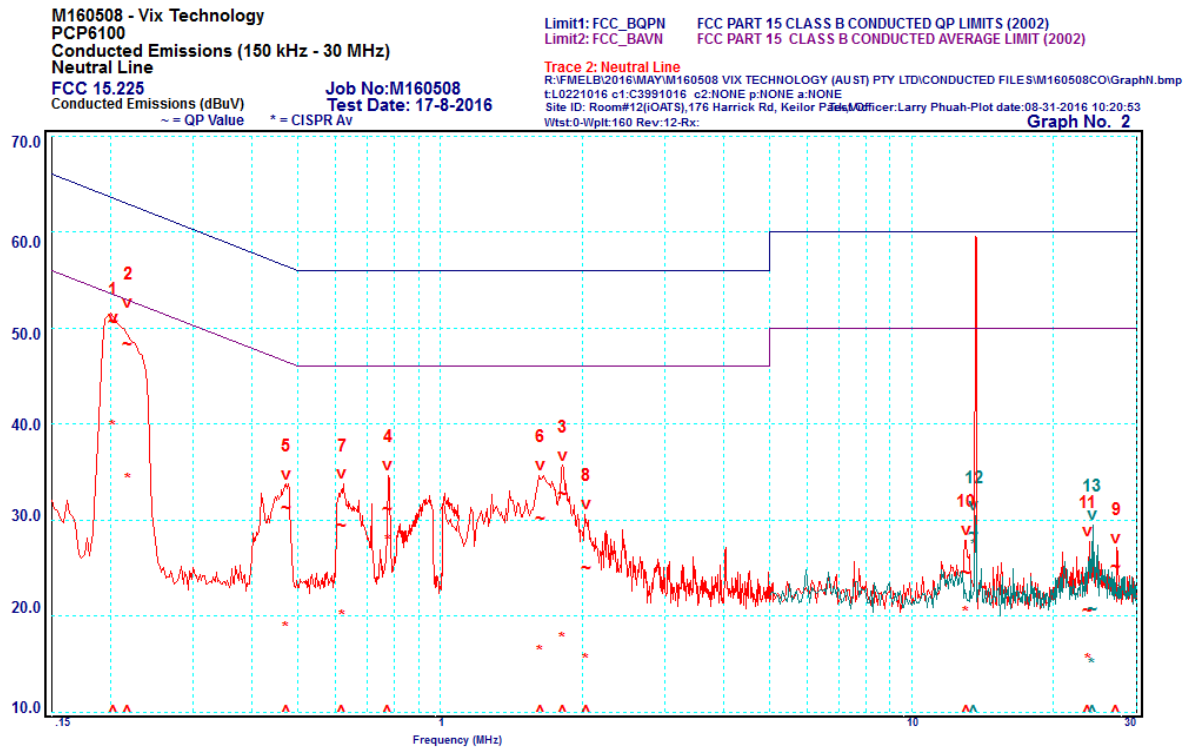
Peak	Frequency (MHz)	Quasi-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	0.204	47.8	63.4	-15.6	36.1	53.4	-17.3
2	0.211	46.4	63.2	-16.8	35.7	53.2	-17.5
3	1.826	32.2	56.0	-23.8	17.7	46.0	-28.3
4	0.774	31.4	56.0	-24.6	27.4	46.0	-18.6
5	1.638	31.4	56.0	-24.6	16.0	46.0	-30.0
6	1.682	30.8	56.0	-25.2	15.1	46.0	-30.9
7	1.019	27.8	56.0	-28.2	16.1	46.0	-29.9
8	0.627	27.3	56.0	-28.7	16.8	46.0	-29.2
9	27.120	24.9	60.0	-35.1	22.5	50.0	-27.5
10	12.840	24.4	60.0	-35.6	21.6	50.0	-28.4
11	24.660	20.1	60.0	-39.9	14.3	50.0	-35.7
12	13.560	28.1	60.0	-31.9	26.8	50.0	-23.2
13	23.320	19.1	60.0	-40.9	14.0	50.0	-36.0



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.2.5.2 Neutral Line



Red trace = Antenna connected
Blue trace = Antenna disconnected

Peak	Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	0.203	50.6	63.5	-12.9	39.7	53.5	-13.8
2	0.218	48.2	62.9	-14.7	34.1	52.9	-18.8
3	1.821	32.7	56.0	-23.3	17.5	46.0	-28.5
4	0.775	31.1	56.0	-24.9	27.7	46.0	-18.3
5	0.473	31.2	56.5	-25.3	18.7	46.5	-27.8
6	1.633	30.1	56.0	-25.9	16.2	46.0	-29.8
7	0.621	29.4	56.0	-26.6	19.9	46.0	-26.1
8	2.043	25.0	56.0	-31.0	15.4	46.0	-30.6
9	27.130	25.0	60.0	-35.0	22.6	50.0	-27.4
10	13.040	24.5	60.0	-35.5	20.2	50.0	-29.8
11	23.640	20.5	60.0	-39.5	15.4	50.0	-34.6
12	13.560	28.5	60.0	-31.5	27.2	50.0	-22.8
13	24.140	20.6	60.0	-39.4	14.8	50.0	-35.2

3.2.6 Conclusion

The conducted emissions were below the average and quasi-peak limits of §15.207.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.4 §15.209 Radiated emission limits; general requirements

The general requirement limits were applied to the measurements of §15.225(d).

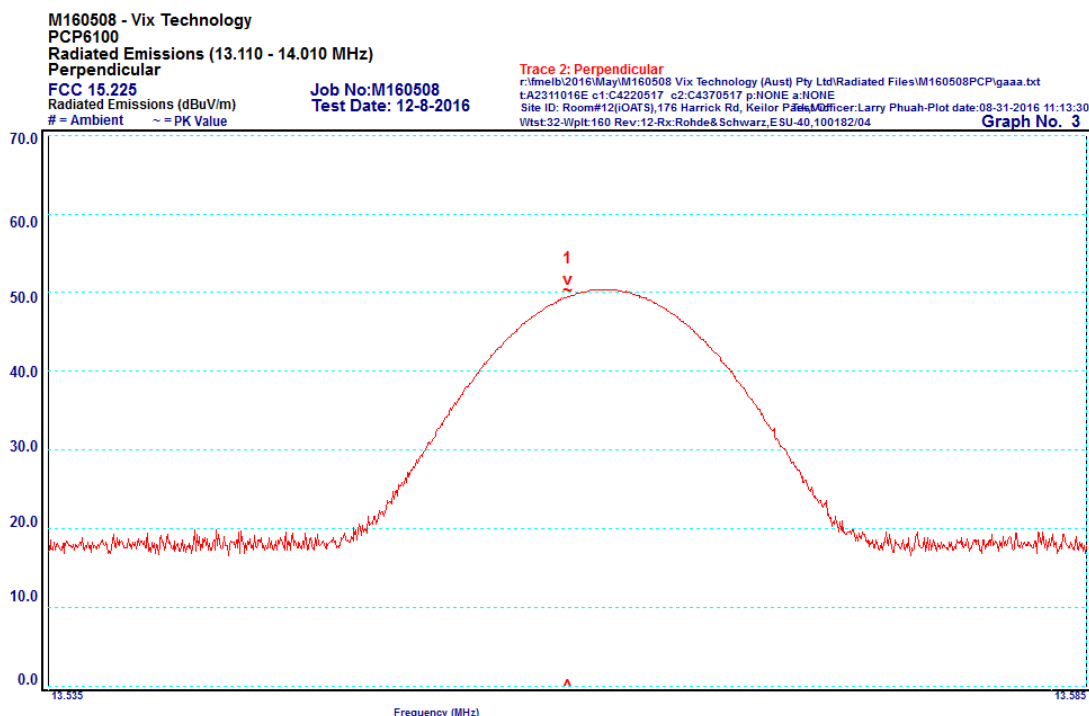
3.5 §15.225(a) Fundamental Field Strength

The field strength of the fundamental transmitted frequency was measured inside a compliant CISPR16-1-4 semi-anechoic chamber. The EUT was positioned on a test turn-table and rotated through 360° to determine the highest emissions. The measurement antenna was also varied between 1 and 4 metres height. The measurements were made with the loop antenna in three orthogonal orientations.

3.5.1 Result

All measurements were made at a distance of 10 metres. The fundamental emissions were measured using a peak detector and as the level did not exceed the limit further measurements were not made.

Loop Antenna Orientation	Frequency MHz	E- field dBμV/m	E-field μV/m	30 m Limit μV/m	10 m Limit μV/m	Result
Parallel	13.5618	40.63	108	15,848	47,315	Complied
Perpendicular	13.5618	50.25	325	15,848	47,315	Complied
Horizontal	13.5618	44.77	173	15,848	47,315	Complied



3.5.2 Conclusion

The field strength of the fundamental transmitted signal complied with the limit of §15.225(a).



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

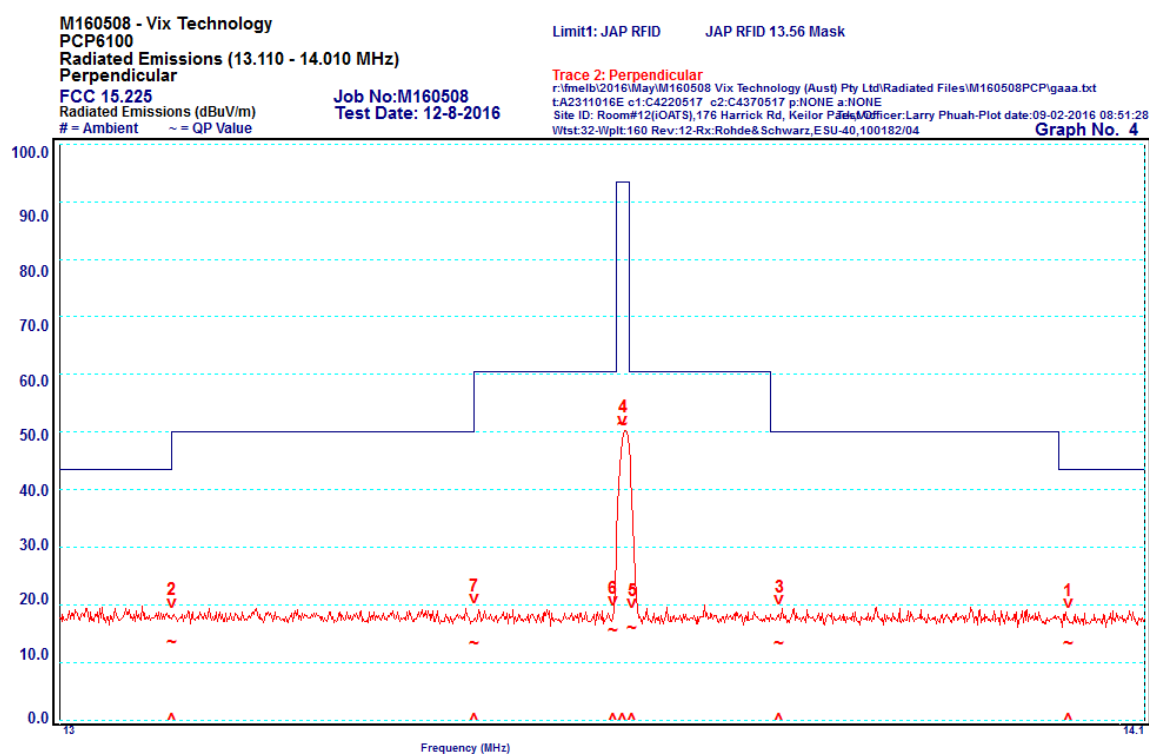
3.6 §15.225(b and c) Transmission Mask 13.110-14.010 MHz

Measurements were made at 10 metres using a 0.6 metre loop antenna. Initial investigations were made to find the EUT and measuring antenna orientations that produce the highest reading on the EMI receiver/spectrum analyser. These measurements were made at the transmit frequency, 13.56 MHz.

With the EUT and measuring antenna orientated in the position giving maximum emission measurements with a bandwidth of 9 kHz were made between 13.110 MHz and 14.010 MHz. The following limit mask applied:

Frequency band (MHz)	Field strength limit at 30 m (µV/m)	Equivalent field strength at 10 m (dBµV/m)
13.110 to 13.410	106	59.6
13.410 to 13.553	334	69.6
13.553 to 13.567	15,848	103.1
13.567 to 13.710	334	69.6
13.710 to 14.010	106	59.6

3.6.1 Result



Point	Frequency (MHz)	Peak at 10 m (dBµV/m)	Limit at 10 m (dBµV/m)	Result
1	14.02	13.1	43.5	-30.4
2	13.11	13.4	50.0	-36.6
3	13.72	13.2	50.0	-36.8
4	13.56	51.2	93.5	-42.3
5	13.57	15.8	60.5	-44.7
6	13.55	15.5	60.5	-45.0
7	13.41	13.2	60.5	-47.3

3.6.2 Conclusion

The transmitted signal complied with the limit mask of §15.225(b and c).



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7 §15.225(d) Spurious Emissions

Radiated EMI tests were performed in a semi-anechoic chamber compliant with CISPR16-1-4. The chamber allows a 2m x 2m x 2m test volume up to 6 GHz, at a test distance of 3 metres and 10 metres.

The test frequency range was sub-divided into smaller bands with sufficient frequency resolution to permit reliable display and identification of possible EMI peaks. Measurements in the range of 9 kHz-30 MHz were made at 10 metres distance using a 0.6 metre loop antenna. A calibrated Biconilog antenna (at 10 m distance) and horn antenna (at 3 m distance) were used for measurements in the frequency range of 30-1000 MHz and 1-2 GHz, respectively.

The EUT was slowly rotated with the spectrum analyser was set to Max-Hold. This was performed for two antenna heights. When an emission was located, it was positively identified and its maximum level found by rotating the automated turntable and by varying the antenna height. The procedure was repeated with the device orientated in three orthogonal axis to further maximise the emission.

Each significant peak was investigated with the Peak/Average Detectors. The measurement data for each frequency range was corrected for cable losses, antenna factors and preamplifier gain. This process was performed for both horizontal and vertical antenna polarisations.

3.7.1 Calculation of field strength

The field strength was calculated automatically by the software using all the pre-stored calibration data. The method of calculation is shown below:

$$E = V + AF - G + L$$

Where:

- E** = Radiated Field Strength in dBμV/m.
- V** = EMI Receiver Voltage in dBμV. (measured value)
- AF** = Antenna Factor in dB. (stored as a data array)
- G** = Preamplifier Gain in dB. (stored as a data array)
- L** = Cable loss in dB. (stored as a data array of Insertion Loss versus frequency)



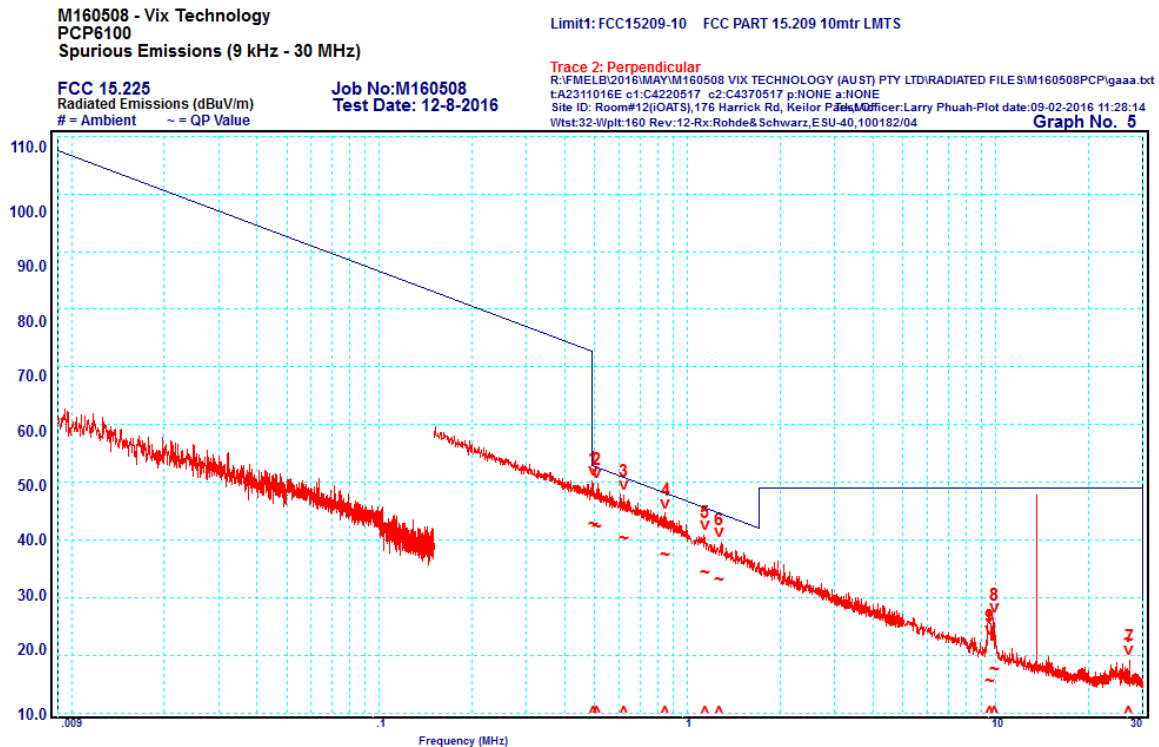
Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.2 Frequency Band: 9 kHz - 30 MHz

Measurements were made at a distance of 10 metres. The measurement of emissions between 9 kHz – 150 kHz were made with a resolution bandwidth (RBW) of 200 Hz and the video bandwidth (VBW) of 3 kHz, 150 kHz – 30 MHz were measured with the resolution bandwidth (RBW) of 9 kHz and the video bandwidth (VBW) of 30 kHz.

3.7.2.1 Perpendicular



Point	Frequency (MHz)	Quasi-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	0.494	42.6	52.8	-10.2
2	0.507	42.2	52.6	-10.4
3	0.621	40.2	50.9	-10.7
4	0.848	37.4	48.1	-10.7
5	1.142	34.3	45.6	-11.3
6	1.266	33.0	44.7	-11.7
7	27.120	22.6	49.0	-26.4
8	9.915	17.4	49.0	-31.6
9	9.572	15.5	49.0	-33.5



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.2.2 Parallel

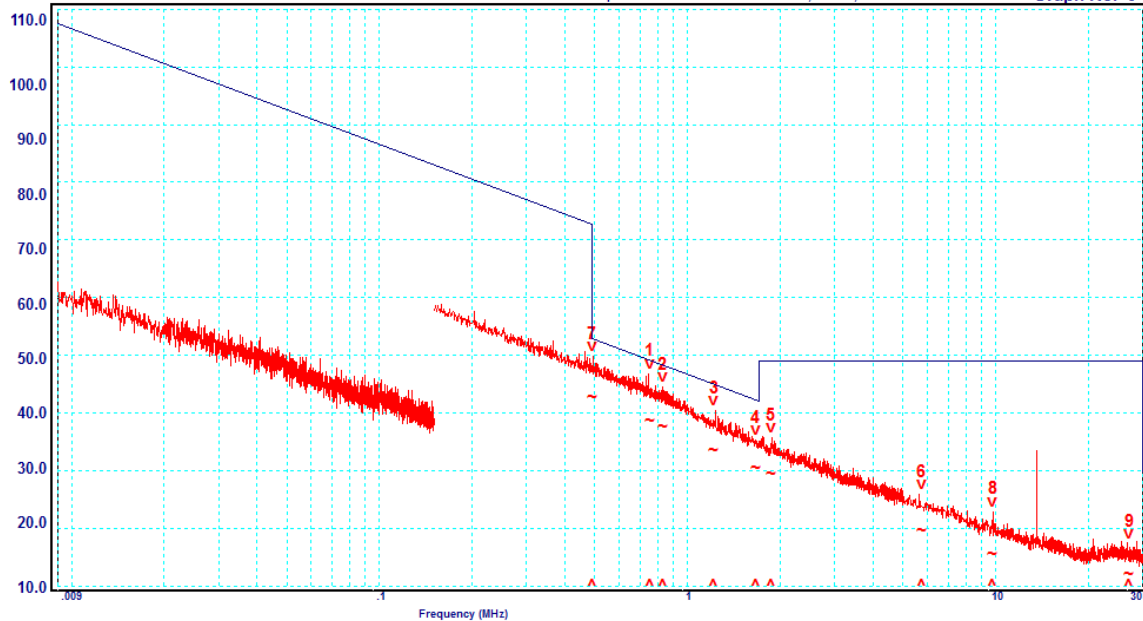
M160508 - Vix Technology
PCP6100
Spurious Emissions (9 kHz - 30 MHz)

Limit1: FCC15209-10 FCC PART 15.209 10mtr LMTS

FCC 15.225
Radiated Emissions (dBuV/m)
= Ambient ~ = QP Value

Job No: M160508
Test Date: 12-8-2016

Trace 2: Parallel
R:\FME\B\2016\MAY\M160508 VIX TECHNOLOGY (AUST) PTY LTD\RADIATED FILES\M160508PCP1gaaa.txt
t:A2311016E c1:C4220517 c2:C4370517 p:NONE a:NONE
Site ID: Room#12(IQAT5), 176 Harrick Rd, Keilor Park, VIC 3049
Wtst: 32-Wpit: 160 Rev: 12-Rx: Rohde & Schwarz, ESU-40, 100182/04
Graph No. 6



Point	Frequency (MHz)	Quasi-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	0.754	38.6	49.2	-10.6
2	0.832	37.5	48.3	-10.8
3	1.218	33.4	45.0	-11.6
4	1.662	30.4	42.3	-11.9
5	1.867	29.3	49.0	-19.7
6	5.747	19.5	49.0	-29.5
7	0.490	42.6	72.8	-30.2
8	9.805	15.5	49.0	-33.5
9	27.130	11.9	49.0	-37.1



Accreditation No. 5292

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.2.1 Z-Axis

M160508 - Vix Technology
PCP6100
Spurious Emissions (9 kHz - 30 MHz)

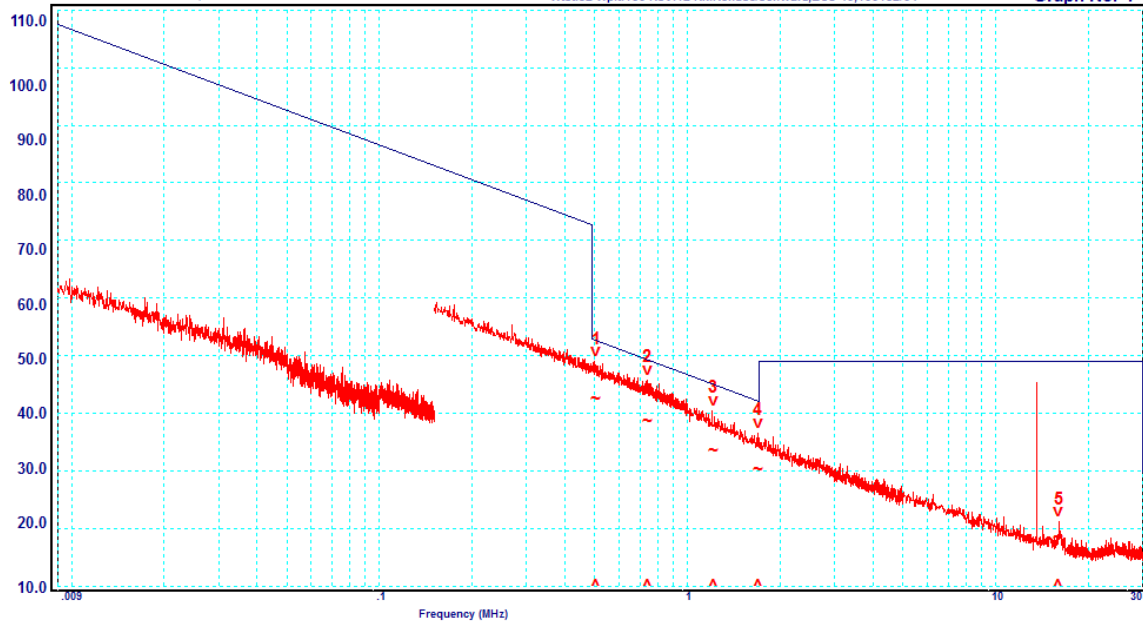
Limit1: FCC15209-10 FCC PART 15.209 10mtr LMTS

FCC 15.225
Radiated Emissions (dBuV/m)
= Ambient ~ = QP Value

Job No: M160508
Test Date: 12-8-2016

Trace 2: Z-Axis
R:\FME\B\2016\MAY\M160508 VIX TECHNOLOGY (AUST) PTY LTD\RADIATED FILES\M160508PCP6100.txt
t:A2311016E c1:C4220517 c2:C4370517 p:NONE a:NONE
Site ID: Room#12(jOATS),176 Harrick Rd, Keilor Park, VIC 3049
File No: M160508-5
Plot date: 09-02-2016 12:54:34
Wkst: 32-Wpit:160 Rev:12-Rx: Rohde & Schwarz, ESU-40, 100182/04

Graph No. 7



Point	Frequency (MHz)	Quasi-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	0.505	42.5	52.6	-10.1
2	0.742	38.6	49.3	-10.7
3	1.213	33.5	45.0	-11.5
4	1.692	30.2	42.2	-12.0
5	16.020	18.4	49.0	-30.6



Accreditation No. 5292

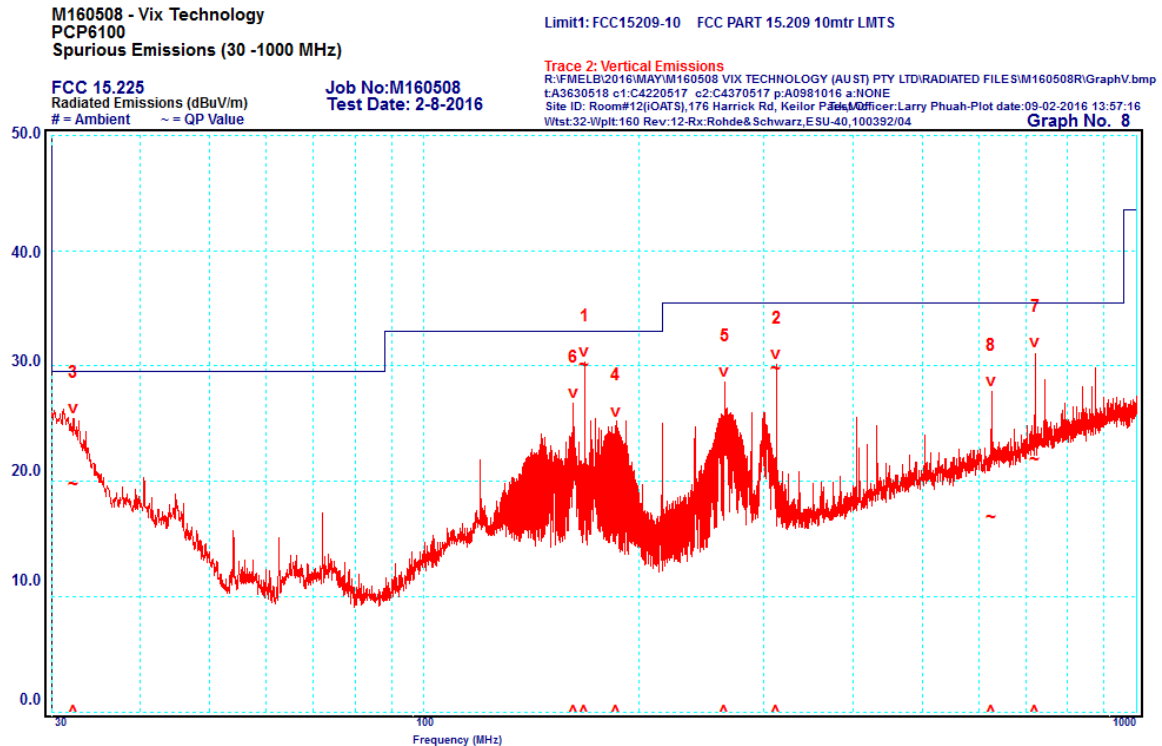
Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.3 Frequency Band: 30 - 1000 MHz

Measurements were made at a distance of 10 metres. The measurement of emissions between 30 - 1000 MHz were made with a resolution bandwidth (RBW) of 120 kHz and the video bandwidth (VBW) of 300 kHz. Measurements results are shown in the following graphs.

3.7.3.1 Vertical



Point	Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	168.010	30.1	33.0	-2.9*
2	312.000	29.7	35.5	-5.8
3	32.220	19.7	29.5	-9.8
4	185.830	23.2	33.0	-9.8
5	264.050	24.8	35.5	-10.7
6	162.070	20.6	33.0	-12.4
7	719.900	21.8	35.5	-13.7
8	624.850	16.9	35.5	-18.6

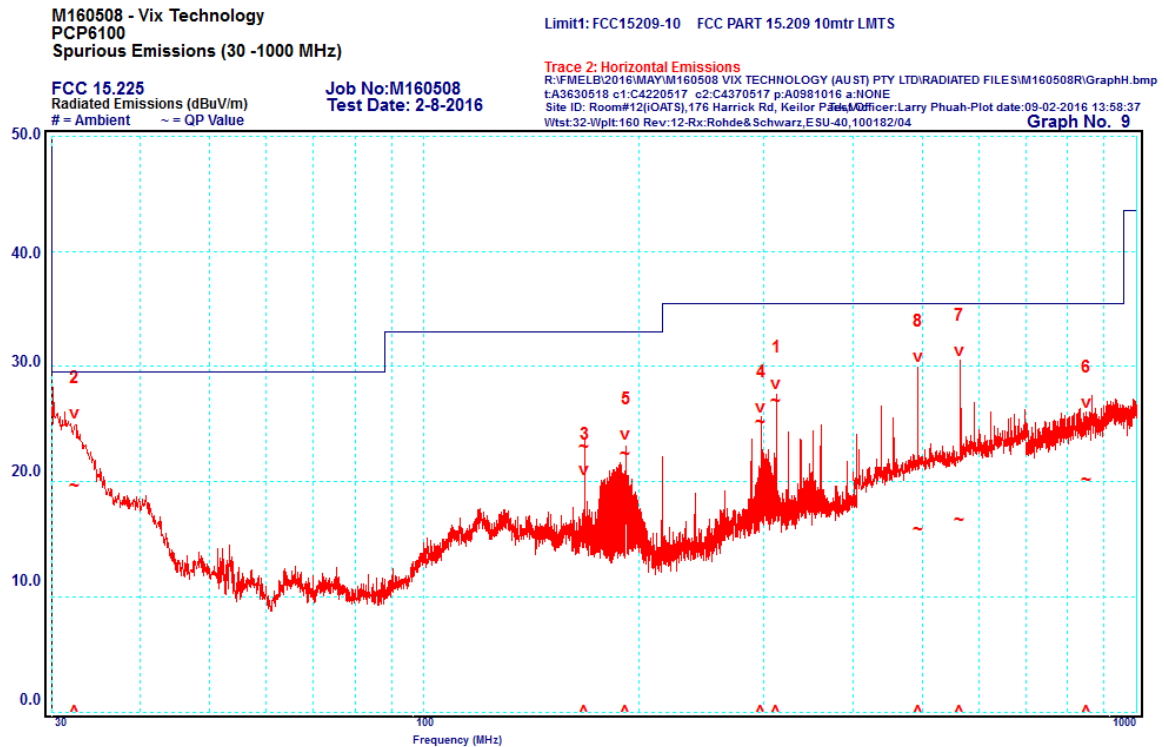
* Within measurement uncertainty, results are below the limit therefore comply with §15.225(d) as the laboratory measurement uncertainty is below the ANSI requirement.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.3.2 Horizontal



Point	Frequency (MHz)	Quasi-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	312.000	27.0	35.5	-8.5
2	32.300	19.6	29.5	-9.9
3	167.990	23.0	33.0	-10.0
4	296.920	25.1	35.5	-10.4
5	192.010	22.4	33.0	-10.6
6	850.410	20.1	35.5	-15.4
7	564.050	16.6	35.5	-18.9
8	493.240	15.9	35.5	-19.6



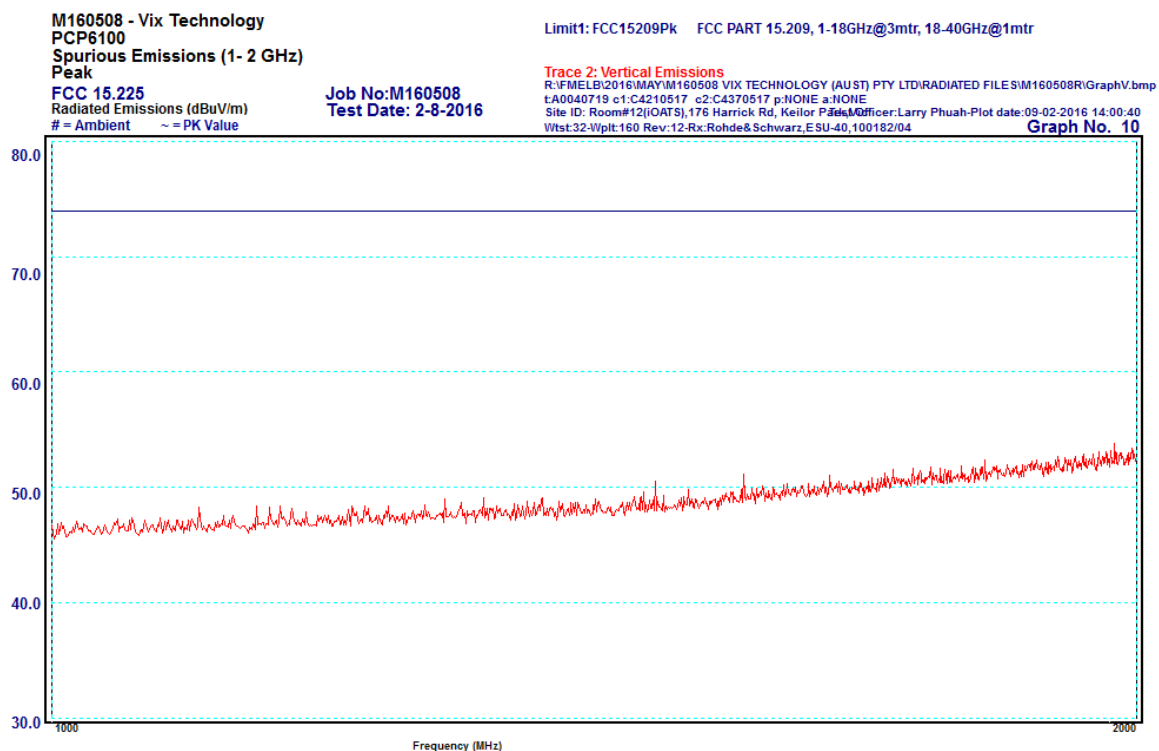
Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.4 Frequency Band: 1000 - 2000 MHz

Measurements were made at a distance of 3 metres. The measurement of emissions between 1000 - 2000 MHz were made with a resolution bandwidth (RBW) of 1 MHz and the video bandwidth (VBW) of 3 MHz. Measurements were performed using Peak and average detectors for both polarizations. Measurement results are shown in the following graphs.

3.7.4.1 Vertical (Peak)



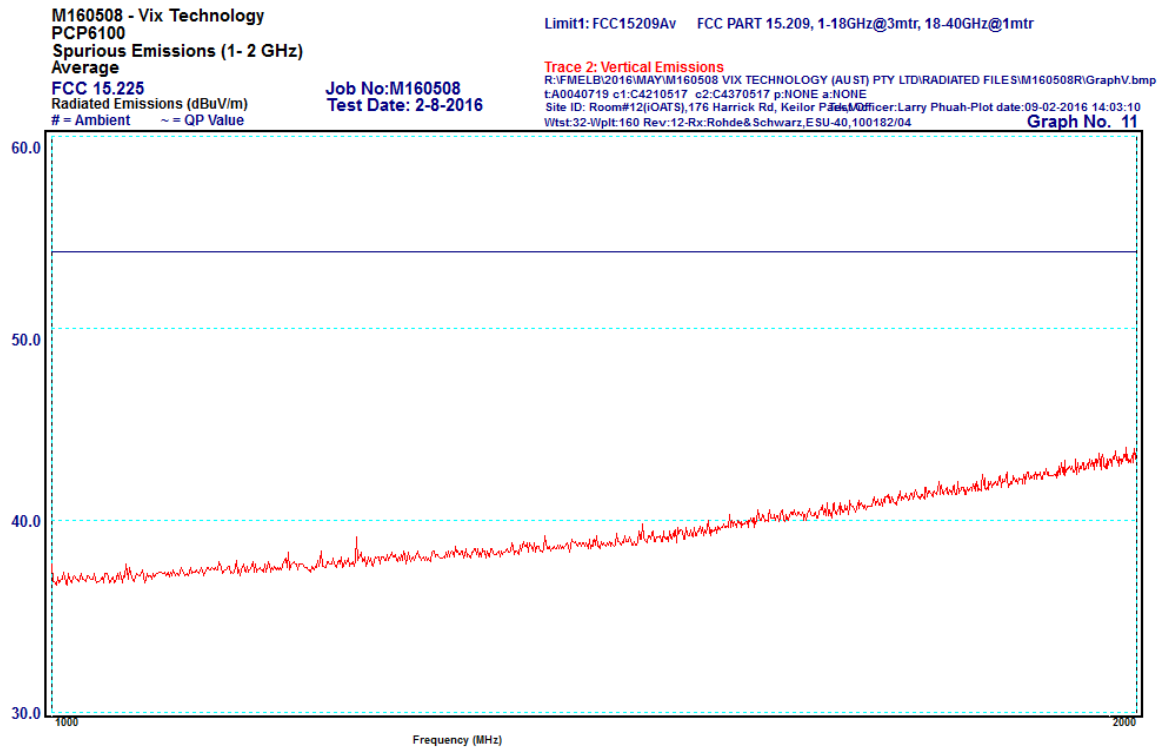
No peaks were measured within 10 dB of the limit.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

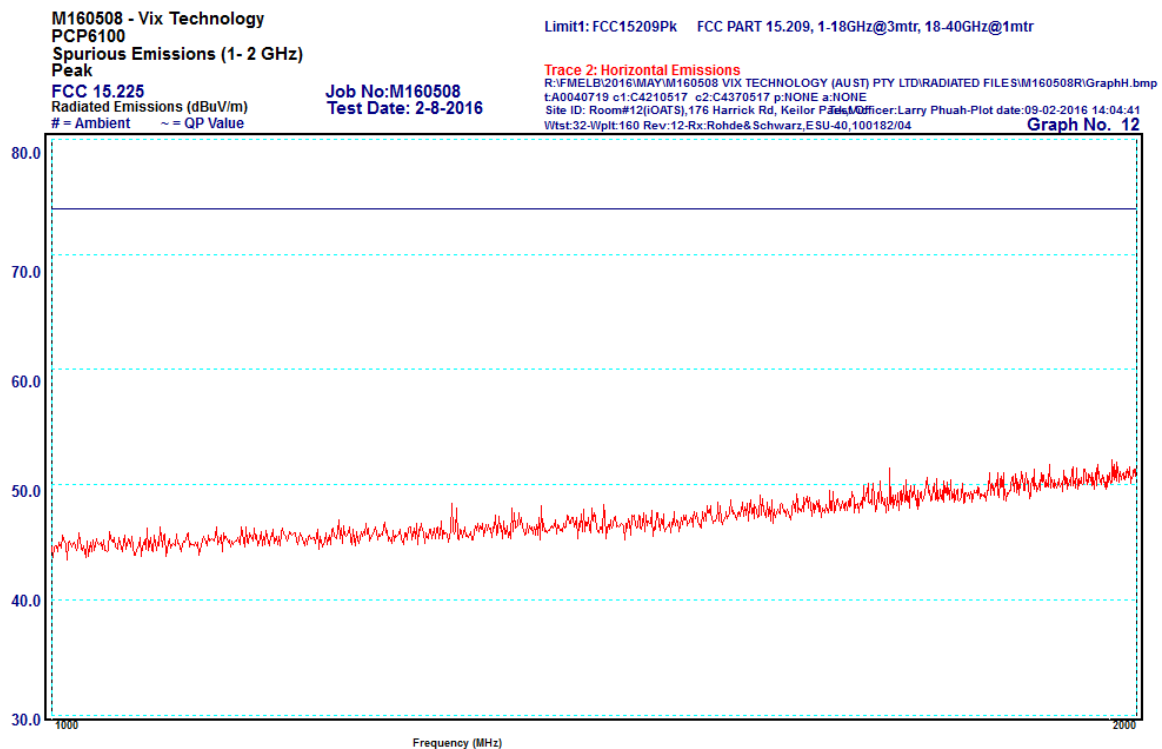
With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.4.2 Vertical (Average)



No peaks were measured within 10 dB of the limit.

3.7.4.3 Horizontal (Peak)



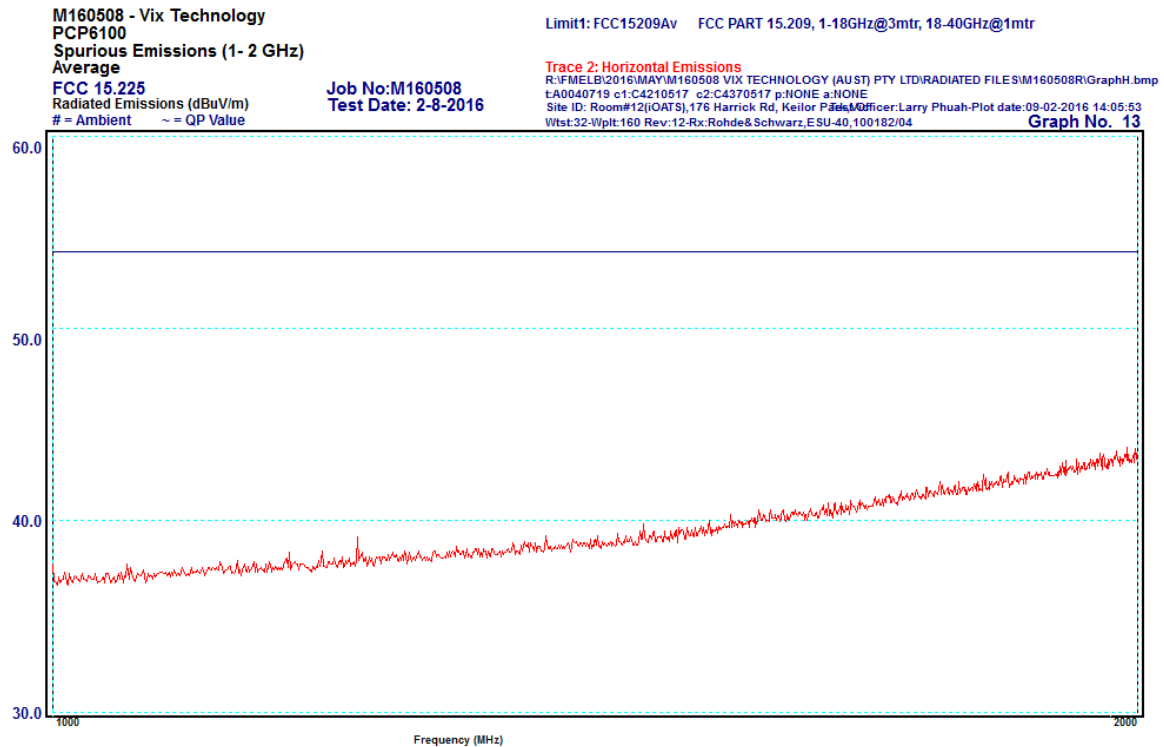
No peaks were measured within 10 dB of the limit.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.7.4.4 Horizontal (Average)



No peaks were measured within 10 dB of the limit.

3.7.5 Conclusion

The spurious emissions complied with the general limits of §15.209 by a margin of 0.2 dB.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.8 §15.225(e) Frequency Tolerance

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency (13.5618 MHz) over a temperature variation of $-20\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$ at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of $20\text{ }^{\circ}\text{C}$. Measurements were performed according to ANSI C63.10, Clause 6.8.

Temperature $^{\circ}\text{C}$	Voltage V	Measured frequency (MHz)				Limit (MHz)	Result
		start up	2 min	5 min	10 min		
50	24.0	13.561765	13.561768	13.561757	13.561754	13.56044382-13.56315618	Pass
40	24.0	13.561808	13.561801	13.561793	13.561784	13.56044382-13.56315618	Pass
30	24.0	13.561807	13.561804	13.561802	13.561801	13.56044382-13.56315618	Pass
20	20.4	13.561842	13.561841	13.561843	13.561843	13.56044382-13.56315618	Pass
	24.0	13.561801	13.561842	13.561840	13.561840*	13.56044382-13.56315618	Pass
	27.6	13.561842	13.561844	13.561844	13.561844	13.56044382-13.56315618	Pass
10	24.0	13.561869	13.561889	13.561887	13.561886	13.56044382-13.56315618	Pass
0	24.0	13.561869	13.561866	13.561865	13.561864	13.56044382-13.56315618	Pass
-10	24.0	13.561875	13.561874	13.561875	13.561874	13.56044382-13.56315618	Pass
-20	24.0	13.561875	13.561876	13.561874	13.561870	13.56044382-13.56315618	Pass

* Reference value used as operating frequency.

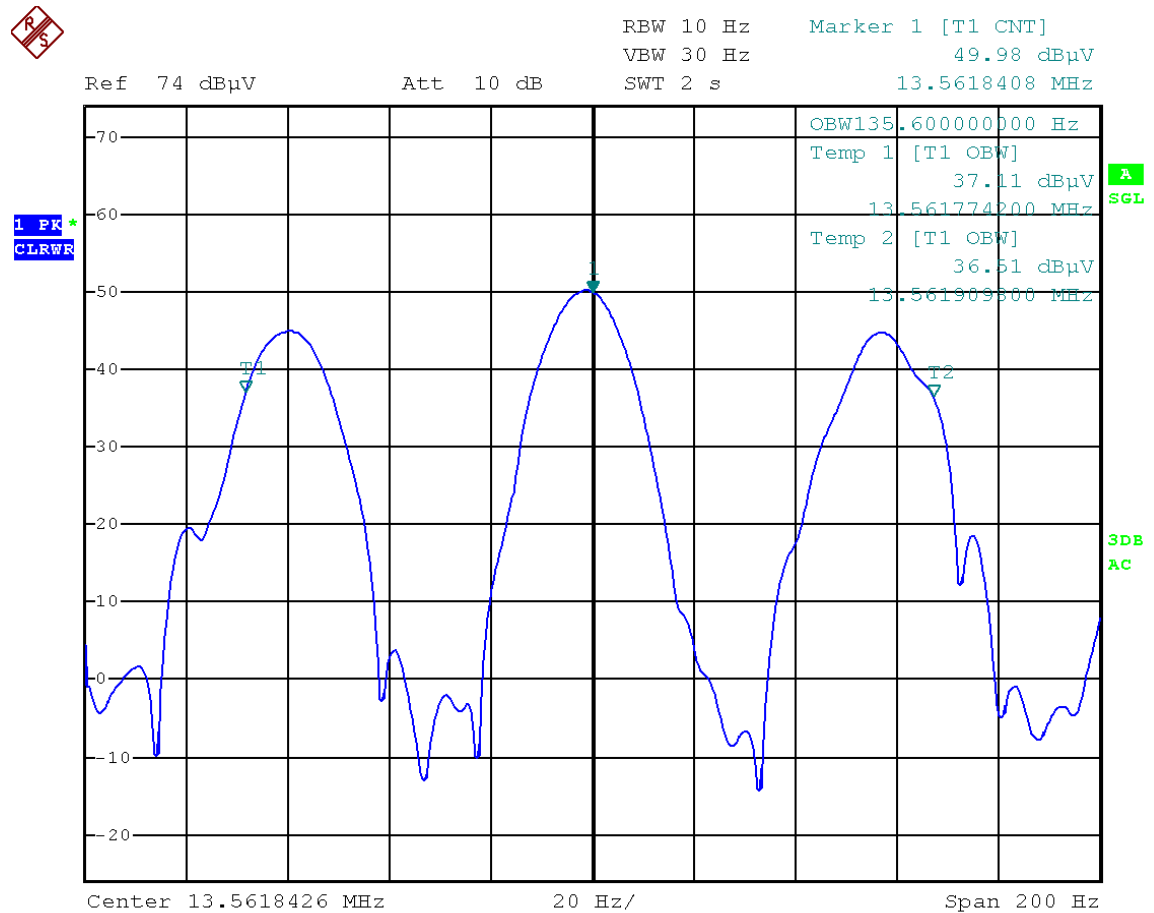


Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.

3.9 §2.1049 Occupied Bandwidth

The occupied bandwidth was determined using the 99% transmit power function of a spectrum analyzer. The EUT was set to transmit continuously. Resolution bandwidth and video bandwidth was set to 10 Hz and 30 Hz respectively.



Operating Frequency (MHz)	Occupied Bandwidth
13.5618	135.6 Hz

4.0 COMPLIANCE STATEMENT

The Platform Card Processor, Model PCP6100, tested on behalf of Vix Technology **complied** with the requirements of 47 CFR, Part 15 Subpart C - Rules for Radio Frequency Devices (intentional radiators), Section 15.225 - Operation within the band 13.110-14.010 MHz.

Results were as follows:

FCC Part 15 Subpart C	Test Performed	Results
15.203	Antenna Requirement	Complied
15.205	Restricted bands of operation	Complied
15.207	Conducted Limits	Complied
15.209	Radiated Emissions Limits; General Requirements	Complied
15.225(a)	Fundamental Field Strength	Complied
15.225(b and c)	Transmission Mask 13.110-14.010 MHz	Complied
15.225(d)	Spurious Emissions	Complied
15.225(e)	Frequency Tolerance	Complied
2.1049	Occupied Bandwidth	135.6 Hz

5.0 MEASUREMENT UNCERTAINTY

EMC Technologies has evaluated the equipment and the methods used to perform the emissions testing. The estimated measurement uncertainties for emissions tests shown within this report are as follows:

Conducted Emissions: 9 kHz to 30 MHz ± 3.2 dB

Radiated Emissions:

9 kHz to 30 MHz	± 4.1 dB
30 MHz to 300 MHz	± 5.1 dB
300 MHz to 1000 MHz	± 4.7 dB
1 GHz to 18 GHz	± 4.6 dB

Peak Output Power: ± 1.5 dB

The above expanded uncertainties are based on standard uncertainties multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.



Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

With the exception of the certificate on page 3 this document shall only be reproduced in full.