

Test Report
FCC/Industry Canada Testing of
NET2 ENTRY PANEL
for
PAXTON ACCESS

Document number B1768TR3
Project number B1880

A. Dace
Author:
Mr A Dace, BA, iNCE
Principal Engineer

E. Warren
Checked / Approved:
Mr E Warren BSc., MIET
Principal Engineer

Issue	Description	Issued by	Date
1	Initial Issue	EW	4 August 2015
2	Version with photographs removed	EW	27 August 2015
3	Results for variation with supply voltage added	EW	9 September 2015

Disclaimers: Tests marked "not UKAS accredited" are not included in the UKAS accreditation schedule of our laboratory. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report shall not be reproduced, except in full, without the prior written approval of York EMC Services Ltd
This test report relates only to the unit(s) tested



**A BIS
designated
Notified Body
No 1892**
Consultancy



**INVESTORS
IN PEOPLE**

York EMC Services Ltd
Market Square
UNIVERSITY of York
Heslington
York
YO10 5DD
UK

T: +44 (0)1904 324440
F: +44 (0)1904 324434
E: enquiry@yorkemc.co.uk
www.yorkemc.co.uk
Registered in England and Wales
Company Reg No. 6048589
VAT Reg No. 647 2055 41

CONTENTS

1	Introduction	3
2	Summary.....	5
2.1	Equipment under Test and Environment	5
2.2	Emissions FCC Testing	5
2.3	Emissions Industry Canada Testing	7
2.4	Mode of Operation	10
2.5	Compliance Statement	10
3	Radiated Spurious Emissions (9kHz to 8000MHz).....	11
3.1	Test Summary	11
3.2	Test Setup Photographs (removed from this report)	17
3.3	Laboratory set-up.....	19
3.4	Test Results	20
3.5	Test Method	36
4	Radiated Emissions 13.56MHz Fundamental Frequency Error or Frequency Drift	38
4.1	Test Results	38
4.2	Test Setup Photograph (removed from this report)	40
4.3	Test Method	40
5	Radiated Emissions 13.56MHz Fundamental and bands (13.110- 14.010MHz)	40
5.1	Test Results	40
5.2	Test Setup Photograph (removed from this report)	43
5.3	Test Method	43
6	Radiated Emissions 125kHz Fundamental and bands (114-148kHz)	44
6.1	Test Results	44
6.2	Test Setup Photograph (removed from this report)	46
6.3	Test Method	46
7	Appendices	47
7.1	Appendix 1 Customers Test Equipment Used.....	47
7.2	Appendix 2 Modification States	48
7.3	Appendix 3 Test Report History.....	49
7.4	Appendix 4 Documentation.....	50
7.5	Appendix 5 Test Equipment Correction Factors.....	51

1 Introduction

Name and address of laboratory: York EMC Services Ltd
46 Waverley Road
Beeches Industrial Estate
Yate
Bristol
BS37 5QT
UKAS testing laboratory N° 1574

Name and address of customer: Paxton Access Ltd
Paxton House
Home Farm Road
Brighton
East Sussex
BN1 9HU

The test results contained in this test report relate only to the unit(s) tested.

Equipment under test POE door entry panel with integral radio transmitter.

Designer and Manufacturer Paxton Access Ltd

Product name NET2 ENTRY

Model names NET2 ENTRY STD (Standard Panel)
NET2 ENTRY VR (Vandal Resistant Panel)

Part numbers 337-420 (STD), 337-520 (VR)

COP numbers Production samples:
3167B (STD), 3168B (VR)
Continuous 13.56MHz transmit samples:
3161B (VR), 3162B (STD)
Continuous 125kHz transmit samples:
3163B (VR), 3164B (STD)

Circuit revision Fully defined by Part Number

EUT Firmware Fully defined by Part Number

No. tested of each item One

Customer supplied test plan ref. None

Date of receipt of EUT	22 July 2015
Method of receipt	By customer
Date(s) of test(s)	22 July – 7 September 2015
Date(s) when EUT was out of laboratory's control	None
Method of disposal	Returned to customer
Personnel witnessing tests	Testing was partially witnessed by Mr Kevin Feeney who was representing the customer
Any other relevant information	<p>The products are powered by POE (Power over Ethernet). A Standard (STD) version of each model (plastic enclosure) and a Vandal Proof (VR) version (metal enclosure) were provided for test.</p> <p>In normal operating mode the Transmitter polls between 125kHz and 13.56MHz.</p>
Issue 2 report	This issue of the report is identical to Issue 1 except that all photographs have been removed from this report and are provided for filing separately to maintain confidentiality.
Issue 3 report	The results for variation of the transmitter output with supply voltage have been added under section 4.1

2 Summary

2.1 Equipment under Test and Environment

The equipment under test is the NET2 ENTRY PANEL with integral radio transmitter. It is a door entry panel intended for use in a RCL/ domestic office/ retail/ light industrial environment. The EUT falls into the category of an Intentional Radiator and Digital Devices, subject to Subpart C, Section 15.209; Subpart A Section 15.33, and Subpart C Section 15.225. The frequencies of the intentional transmitters are 125kHz and 13.56MHz. The customer has advised that the highest frequency used within the EUT is 800MHz, generated by the IMx6 processor.

2.2 Emissions FCC Testing

47CFR: 2008 Part 15, Sub Part C Intentional Radiators; Conducted (clause § 15.207), Radiated (clause § 15.209) Emission Limits, Operation within the band 13.110-14.010 MHz, (clause § 15.225)		
Which references the following specification:		
ANSI C63-4: 2009 Methods of Measurements of Radio Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range 9kHz to 40GHz		
Test	Class/Limits	Result (Pass/Fail)
Conducted Emissions, Note 1 (0.15 – 30MHz)	Class B	Not applicable POE
Radiated Emissions, 125kHz Fundamental (0.009– 1000MHz) Note 4, Note 5	Average Detector 2400/F(kHz) at 300m	Pass
Radiated Spurious Emissions (0.009– 8000MHz) Note 4, Note 5	Average Detector 0.009-0.490MHz 2400/F(kHz)µV/m at 300m	Pass
	Quasi –Peak Detector 0.490-1.705MHz 24000/F(kHz)µV/m at 30m	Pass
	1.705-30MHz 30µV/m at 30m	Pass
	30-88MHz 100µV/m at 3m	Pass
	88-216MHz 150µV/m at 3m	Pass
	216-960MHz 200µV/m at 3m	Pass
	Above 960MHz 200µV/m at 3m	Pass

Radiated Emissions 13.56MHz Fundamental and bands (13.110- 14.010MHz) Frequency Tolerance of transmitter	Quasi-Peak Detector a)13.533-13.567MHz <15,848µV/m @ 30m	Pass
	b)13.410-13.533MHz 13.567-13.710MHz <334µV/m @ 30m	Pass
	c)13.110-13.410MHz 13.710-14.010MHz <106µV/m @ 30m	Pass
	d) Outside13.110 -14.010MHz § 15.209 limits apply	Pass
	e) Frequency tolerance of the carrier maintained within 0.01% -20°C to +50°C Frequency tolerance of the carrier maintained within 0.01% (20°C) 85% to 115% of primary voltage	Pass Not Applicable Stabilised POE supply

The EMC Test Centre, York EMC Services, is a registered test facility with the Federal Communications Commission (FCC). The appropriate FCC registration number is 338697, dated 13th November 2014. York EMC Services is also listed as a Conformity Assessment Body (CAB) under the Sectional Annex of the EU-US Mutual Recognition Agreement

FCC Registration Number FRN:	0023463508	Test Firm Registration TFR:	338697
-------------------------------------	------------	------------------------------------	--------

- Note 1 :For the Conducted Emissions test EUTs with plug top power supplies are excluded from the UKAS schedule of the Bristol Laboratory of York EMC Services.
- Note 2 :To determine the conditional radiated disturbance testing procedure (Subpart A Section 15.33) the highest frequency generated or used within the EUT has been advised by the customer as 800MHz.
- Note 3 :Tests above 40GHz are not offered.
- Note 4 :Because at the specified 300/30m measurement distance the signal to noise ratio of the test receiver is insufficient, measurements were made at 3m in a Semi Anechoic Chamber (SAC) To translate the measurements (or limits) to the 300/30m distance we refer to the journal paper: Extrapolating Near-Field Emission of low frequency Loop Transmitters EMC, Vol 47 No 3 August 2005. The worst case field conversion tables were used. This is a deviation from the standard.
- Note 5 :The Harmonics must be below the fundamental.

2.3 Emissions Industry Canada Testing

<p>Industry Canada RSS-Gen:2010– General Requirements and information for the Certification of Radio Apparatus</p>		
<p>Industry Canada RSS-210:2010- Licence exempt Radio Apparatus Category 1 Equipment (Not UKAS accredited)</p>		
<p>Which references the following specification:</p>		
<p>ANSI C63-4: 2009 Methods of Measurements of Radio Noise Emissions from Low Voltage Electrical and Electronic Equipment in the Range 9kHz to 40GHz</p>		
Test	Class/Limits	Result (Pass/Fail)
Conducted Emissions, Note 2 (0.15 – 30MHz)	B	Not applicable POE
Radiated Emissions, 125kHz Fundamental (0.009– 1000MHz) Note 4	Average Detector 2400/F(kHz) at 300m	Pass Tested as part of 47CFR: 2008 Part 15
Radiated Spurious Emissions (0.009– 8000MHz) Note 4	<p style="text-align: center;">Average Detector 0.009-0.490MHz 2400/F(kHz)μV/m at 300m</p> <p style="text-align: center;">Quasi –Peak Detector 0.490-1.705MHz 24000/F(kHz)μV/m at 30m</p> <p style="text-align: center;">1.705-30MHz 30μV/m at 30m</p> <p style="text-align: center;">30-88MHz 100μV/m at 3m</p> <p style="text-align: center;">88-216MHz 150μV/m at 3m</p> <p style="text-align: center;">216-960MHz 200μV/m at 3m</p> <p style="text-align: center;">Above 960MHz 200μV/m at 3m</p>	Pass Tested as part of 47CFR: 2008 Part 15

<p>A.2.6 Radiated Emissions 13.56MHz Fundamental and bands (13.110- 14.010MHz) Frequency Tolerance</p>	<p>Quasi-Peak Detector a)13.533-13.567MHz <15,848µV/m @ 30m b)13.410-13.533MHz 13.567-13.710MHz <334µV/m @ 30m c)13.110-13.410MHz 13.710-14.010MHz <106µV/m @ 30m d) Outside13.110 -14.010MHz RSS-210 clause A2.6 limits apply Frequency tolerance of the carrier maintained within 0.01% (20°C) 85% to 115% of primary voltage</p>	<p>Pass Tested as part of 47CFR: 2008 Part 15</p>
<p>Radiated Emissions, 125kHz Fundamental (0.009– 1000MHz) Note 4, Note 7</p>	<p>Average Detector 2400/F(kHz) at 300m</p>	<p>Pass Tested as part of 47CFR: 2008 Part 15</p>
<p>Radiated Spurious Emissions (0.009– 1000MHz) Note 4, Note 7</p>	<p>Average Detector 0.009-0.490MHz 2400/F(kHz)µV/m at 300m Quasi –Peak Detector 0.490-1.705MHz 24000/F(kHz)µV/m at 30m 1.705-30MHz 30µV/m at 30m 30-88MHz 100µV/m at 3m 88-216MHz 150µV/m at 3m 216-960MHz 200µV/m at 3m Above 960MHz 200µV/m at 3m</p>	<p>Pass Tested as part of 47CFR: 2008 Part 15</p>
<p>The EMC Test Centre, York EMC Services, is a registered test facility with the Federal Communications Commission (FCC). The appropriate FCC registration number is 338697, dated 13th November 2014. York EMC Services is also listed as a Conformity Assessment Body (CAB) under the Sectional Annex of the EU-US Mutual Recognition Agreement. The Bristol Laboratory FRN is 0023463508.</p>		

<p>Industry Canada Registration Number:</p>	<p>12509A</p>
--	---------------

Note 1 : Below compliance can be demonstrated in 3 ways:

- (i) By complying with IC RSS Gen/RSS-210 - Radio disturbance characteristics – Limits and methods of measurements
- (ii) By complying with the limits using methods of measurement described in ANSI C63.4.
- (iii) By complying with limits whilst using methods of measurement described in ANSI C63.4.

Method (ii) will be applied in this report.

Note 2 :For the Conducted Emissions test EUTs with plug top power supplies are excluded from the UKAS schedule of the Bristol Laboratory of York EMC Services.

Note 3 :To determine the conditional radiated disturbance testing procedure (Subpart A Section 15.33) the highest frequency generated or used within the EUT has been advised by the customer as 800MHz

Note 4 :Tests above 40GHz are not offered.

Note 5 :Class A limits are for non residential operation and Class B limits (more stringent) are for residential.

Note 6 :Because at the specified 300/30m measurement distance the signal to noise ratio of the test receiver is insufficient, measurements were made at 3m (SAC). To translate the measurements (or limits) to the 300/30m distances we refer to the journal paper: Extrapolating Near-Field Emission of low frequency Loop Transmitters EMC, Vol 47 No 3 August 2005. The worst case field conversion tables were used. This is a deviation from the standard.

Note 7 :The Harmonics must be below the fundamental.

2.4 Mode of Operation

Mode of operation	Description	Mode No.
Live call to monitor	Two way communication between EUT and monitor via switch Transmit frequency polling loop as follows: 16ms downtime 125kHz coil powered Various 125kHz versions checked, that is HID, EM4100, HITAG Powers down coil if no response 13.56MHz coil powered Checks for MIFARE cards/token Powers down coils if no response 16ms downtime. (Operation as described by the customer)	1
Live call to monitor	Two way communication between EUT and monitor via switch 125kHz Transmit frequency continuous	2
Live call to monitor	Two way communication between EUT and monitor via switch 13.56MHz Transmit frequency continuous	3

The units supplied for test, were the maximum configuration necessary for verifying the system's performance. It was tested as a transmit/receive system. The equipment provided a continuous communication link. The only cable was the Ethernet cable from the Ethernet POE switch to the EUT. The customer provides this 3m Ethernet cable with the EUT. This cable was used for all tests.

2.5 Compliance Statement

The NET2 ENTRY Panel, as tested, was shown to meet requirements of the standards listed in Section 2.2 and 2.3 of this report.

3 Radiated Spurious Emissions (9kHz to 8000MHz)

3.1 Test Summary

Mode of operation	Description	Mode No.
Normal operation	Two way communication between EUT and monitor via switch and polling between 125kHz/13.56MHz	1
Test Mode	125kHz Transmit frequency continuous	2
Test Mode	13.56MHz Transmit frequency continuous	3

Test standard	Test description	Class/Limit
ANSI C63-4: 2009	Radiated emissions	FCC:15.205; 15,225,15.35 RSS-210, 2.6 Tables 1&3

Climatic conditions	Temperature (°C)	Humidity (%)	Pressure (kPa)
	21	49	99.9

9-490kHz

Average Results	Mode	Figure	Result Pass/Fail	Comments
	3	3.4.1	Pass	Sample 3161B (VR) 13.56MHz continuous transmit

Average Results	Mode	Freq (kHz)	Ave level (dBµV/m)	Comments
	3	9-490	>20dB below limits	Tested at 3m and limits changed accordingly due to noise floor limitation of receiver

9-490kHz

Average Results	Mode	Figure	Result Pass/Fail	Comments
	3	3.4.2	Pass	Sample 3162B (STD) 13.56MHz continuous transmit

Average Results	Mode	Freq (kHz)	Ave level (dBµV/m)	Comments
	3	9-490	>20dB below limits	Tested at 3m and limits changed accordingly due to noise floor limitation of receiver

9-490kHz

Average Results	Mode	Figure	Result Pass/Fail	Comments
	2	3.4.3	Pass	Sample 3163B (VR) 125kHz continuous transmit

Average Results	Mode	Freq (kHz)	Ave level (dBµV/m)	Comments
	2	9-490	>20dB below limits	Tested at 3m and limits changed accordingly due to noise floor limitation of receiver

9-490kHz

Average Results	Mode	Figure	Result Pass/Fail	Comments
	2	3.4.4	Pass	Sample 3164B (STD) 125Hz continuous transmit

Average Results	Mode	Freq (kHz)	Ave level (dB μ V/m)	Comments
	2	9-490	>20dB below limits	Tested at 3m and limits changed accordingly due to noise floor limitation of receiver

9-490kHz

Average Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.5	Pass	Sample 3167B (STD) polling transmit

Average Results	Mode	Freq (kHz)	Ave level (dB μ V/m)	Comments
	1	9-490	>20dB below limits	Tested at 3m and limits changed accordingly due to noise floor limitation of receiver

9-490kHz

Average Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.6	Pass	Sample 3168B (VR) polling transmit

Average Results	Mode	Freq (kHz)	Ave level (dB μ V/m)	Comments
	1	9-490	>20dB below limits	Tested at 3m and limits changed accordingly due to noise floor limitation of receiver

0.490-30MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	3	3.4.7	N/A	Sample 3161B (VR) 13.56MHz continuous transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	3	3.4.7	N/A	Sample 3161B (VR) 13.56MHz continuous transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dB μ V/m)	Comments
	3	0.49-30	>20dB below limits	Result corrected to 30m

0.490-30MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	3	3.4.8	N/A	Sample 3162B (STD) 13.56MHz continuous transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	3	3.4.8	Pass	Sample 3162B (STD) 13.56MHz continuous transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dB μ V/m)	Comments
	3	13.561	14.06	Result corrected to 30m

0.490-30MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	2	3.4.9	N/A	Sample 3163B (VR) 125kHz continuous transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	2	3.4.9	Pass	Sample 3163B (VR) 125kHz continuous transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dB μ V/m)	Comments
	2	0.49-30	>20dB below limits	Result corrected to 30m

0.490-30MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	2	3.4.10	N/A	Sample 3164B (STD) 125Hz continuous transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	2	3.4.10	Pass	Sample 3164B (STD) 125Hz continuous transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dBμV/m)	Comments
	2	0.49-30	>20dB below limits	Result corrected to 30m

0.490-30MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.11	N/A	Sample 3167B (STD) polling transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.11	Pass	Sample 3167B (STD) polling transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dBμV/m)	Comments
	1	0.49-30	>20dB below limits	Result corrected to 30m

0.490-30MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.12	N/A	Sample 3168B (VR) polling transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.12	Pass	Sample 3168B (VR) polling transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dBμV/m)	Comments
	1	0.49-30	>20dB below limits	Result corrected to 30m

30-1000MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.13	N/A	Sample 3167B (STD) polling transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.13	Pass	Sample 3167B (STD) polling transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dBμV/m)	Comments
	1	51.798	36.48	None

30-1000MHz

Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.14	N/A	Sample 3168B (VR) polling transmit

Quasi Peak Results	Mode	Figure	Result Pass/Fail	Comments
	1	3.4.14	Pass	Sample 3168B (VR) polling transmit

Quasi Peak Results	Mode	Freq (MHz)	QP level (dBμV/m)	Comments
	1	37.374	37.83	None

1000-8000MHz

Results	Mode	Figure	Result Pass/Fail	Comments
	1	4.3.15	Pass	Vertical and Horizontal test result

Peak Results	Mode	Freq (GHz)	Peak level (dBμV/m)	Comments
	1	2.112	47.49	None

Average Results	Mode	Freq (GHz)	AV level (dBμV/m)	Comments
	1	2.112	40.39	None

1000-8000MHz

Results	Mode	Figure	Result Pass/Fail	Comments
	1	4.3.16	Pass	Vertical and Horizontal test result

Peak Results	Mode	Freq (GHz)	Peak level (dBμV/m)	Comments
	1	7.97	53.49	None

Average Results	Mode	Freq (GHz)	AV level (dBμV/m)	Comments
	1	7.97	40.01	None

Modifications	Required for this test	Modification state
	None	0

3.2 Test Setup Photographs (removed from this report)

Photograph 3.2.1 VR Radiated Emissions Testing below 30MHz

Photograph 3.2.2 STD Radiated Emissions Testing below 30MHz

Photograph 3.2.3 STD Radiated Emissions Testing 30-1000MHz

Photograph 3.2.4 VR Radiated Emissions Testing 30-1000MHz

Photograph 3.2.5 STD Radiated Emissions Testing 1000-8000MHz

Photograph 3.2.6 VR Radiated Emissions Testing 1000-8000MHz

Photograph 3.2.3 Exploratory Radiated Emission maximisation above 1GHz

Frequencies identified during Exploratory Radiated Emission maximisation:

Frequency (MHz)	Mode of operation	EUT face *	Turntable Angle	Height	Polarization
None Identified					

Note 1 : * The front face of the EUT is deemed to be 0°, which is then turned in a clockwise direction through 270°.

Note 2 : The method for the exploratory radiated emission maximisation is as detailed in Annex E of ANSI C63.4-2009.

3.3 Laboratory set-up

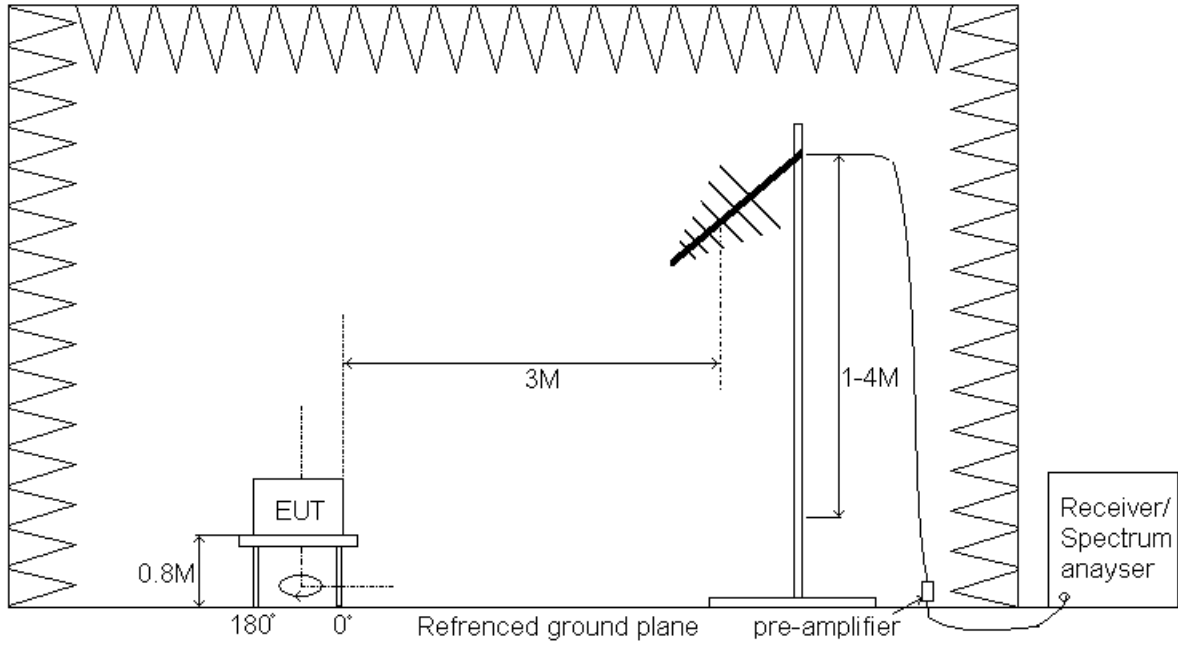


Figure 4.3.1 - Test set-up for radiated emissions below 1000MHz

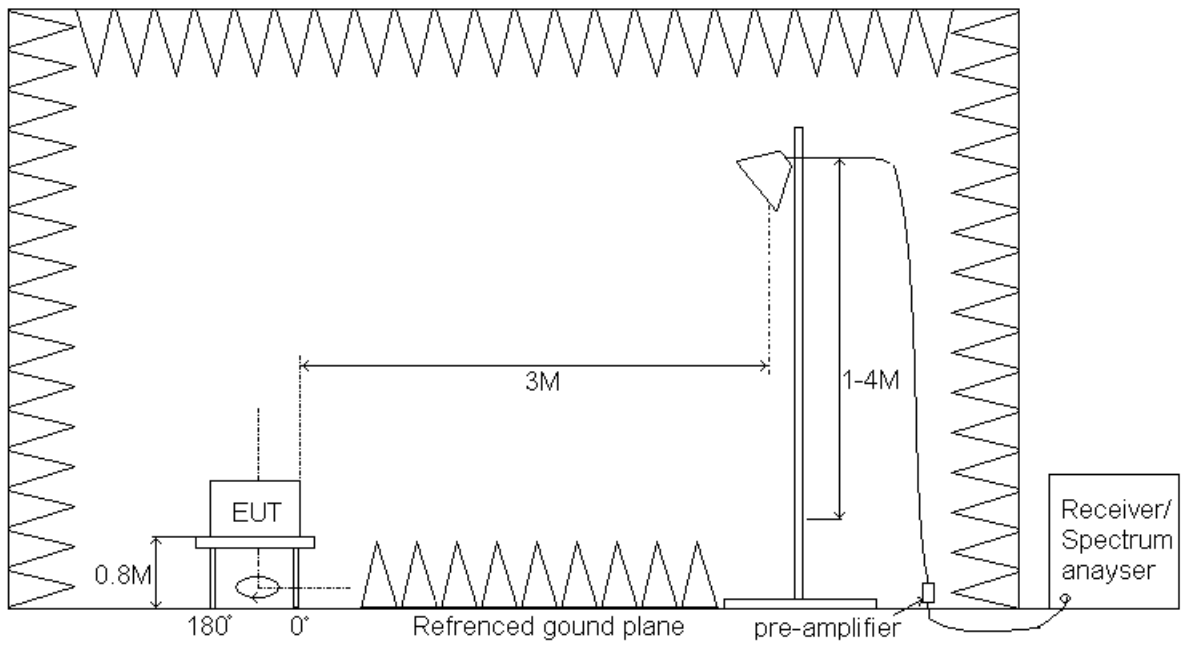


Figure 4.3.2 - Test set-up for radiated emissions above 1000MHz

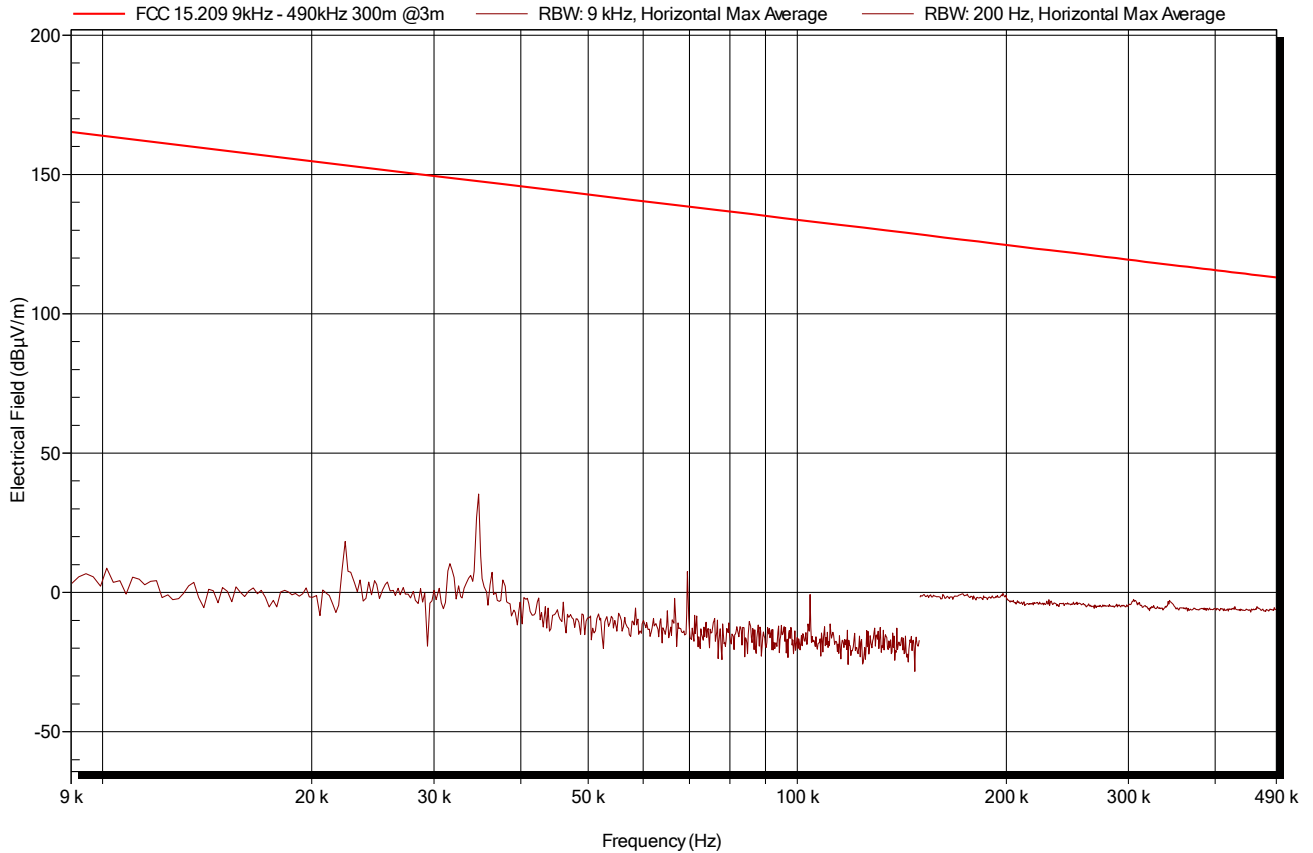
3.4 Test Results

Note: NET2 ENTRY
VR 3161B TX

Description: 19) 9kHz-490kHz (300-3m) measured at 3m

Time of Measurement: 30 July 2015, 13:25:37

From 9 kHz to 490 kHz



Detected Peaks: No average measurements detected within 20dB of the limits

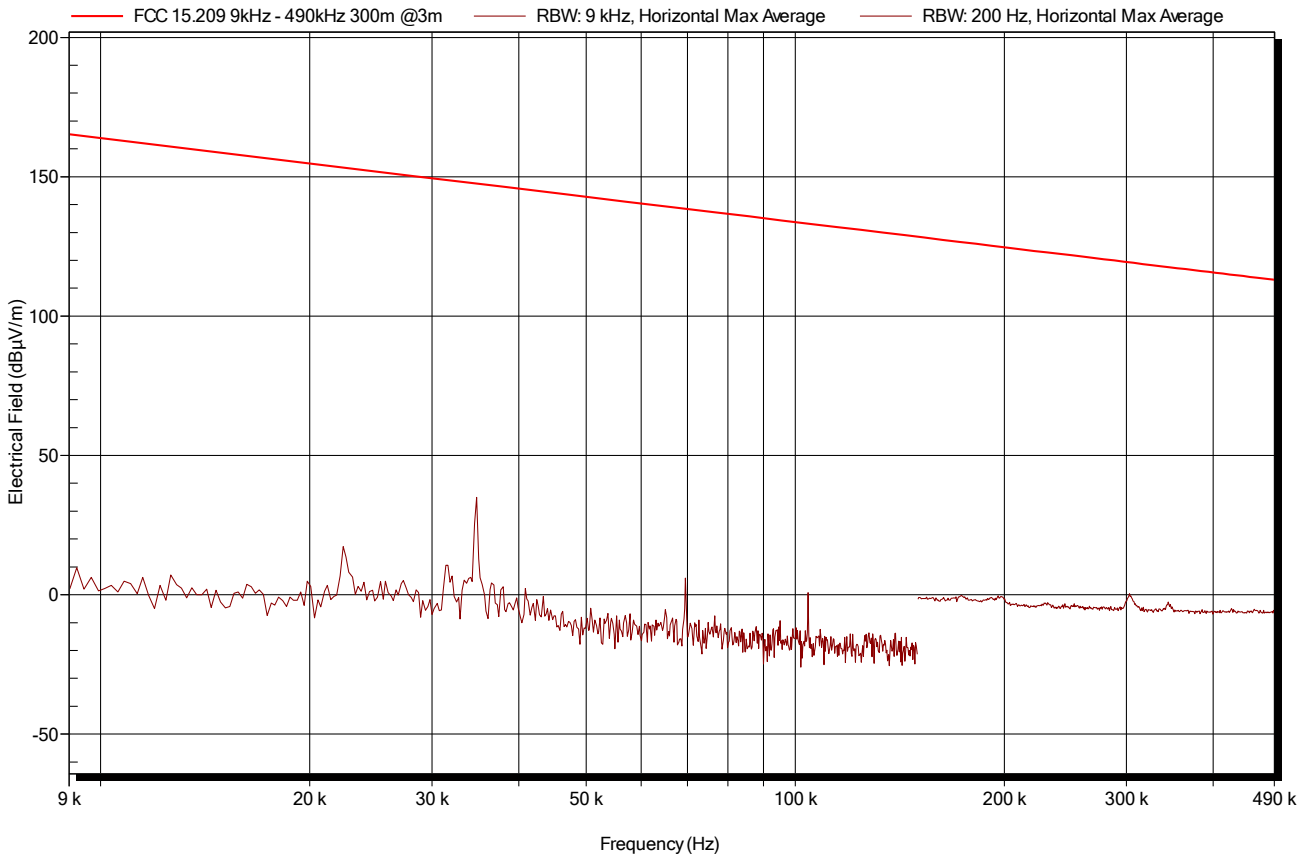
Figure 3.4.1 Radiated Emissions Results 3161B (VR)

Note: NET2 ENTRY
STD 3162B TX

Description: 20) 9kHz-490kHz (300-3m) measured at 3m

Time of Measurement: 30 July 2015, 13:31:07

From 9 kHz to 490 kHz



Detected Peaks: No average measurements detected within 20dB of the limits

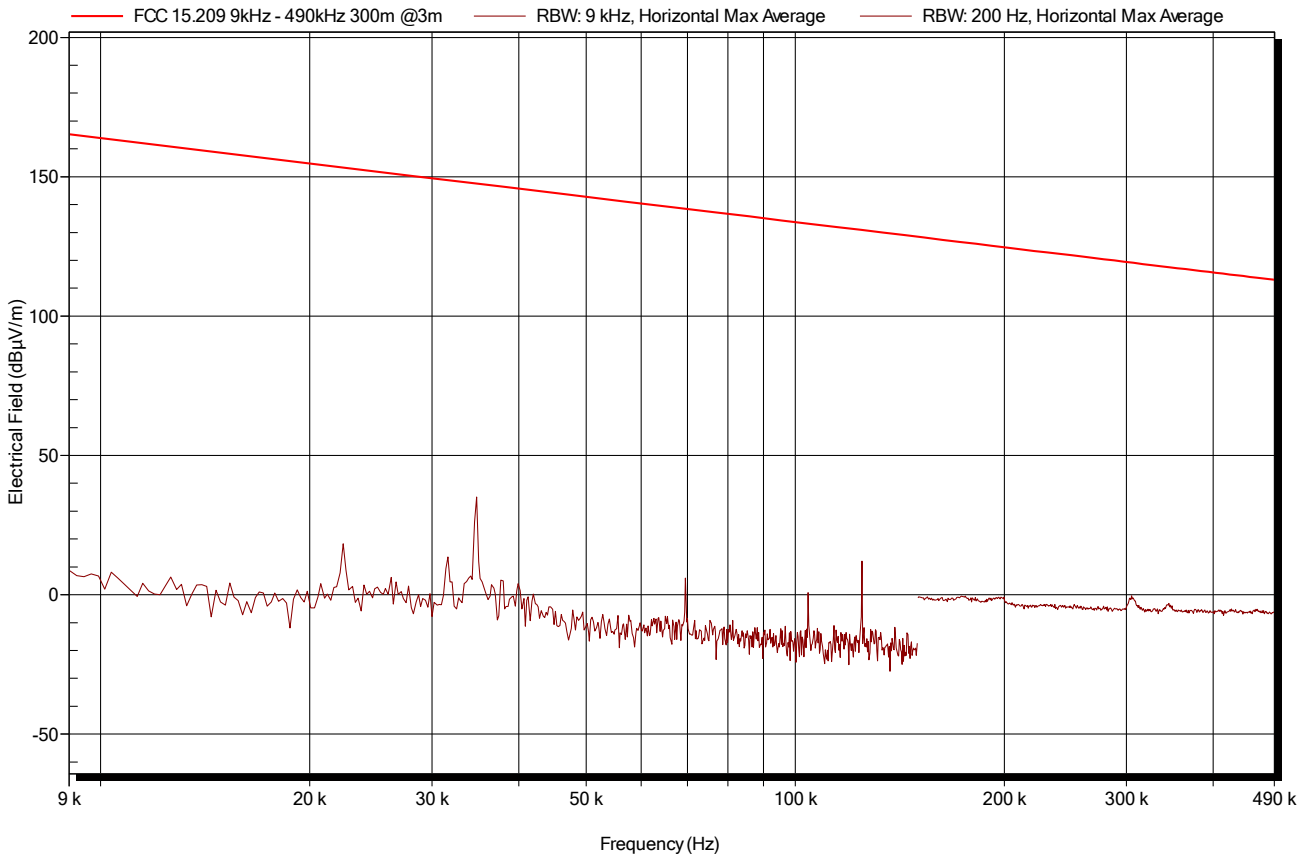
Figure 3.4.2 Radiated Emissions Results 3162B (STD)

Note: NET2 ENTRY
VR 3163B TX

Description: 21) 9kHz-490kHz (300-3m) measured at 3m

Time of Measurement: 30 July 2015, 13:37:47

From 9 kHz to 490 kHz



Detected Peaks: No average measurements detected within 20dB of the limits

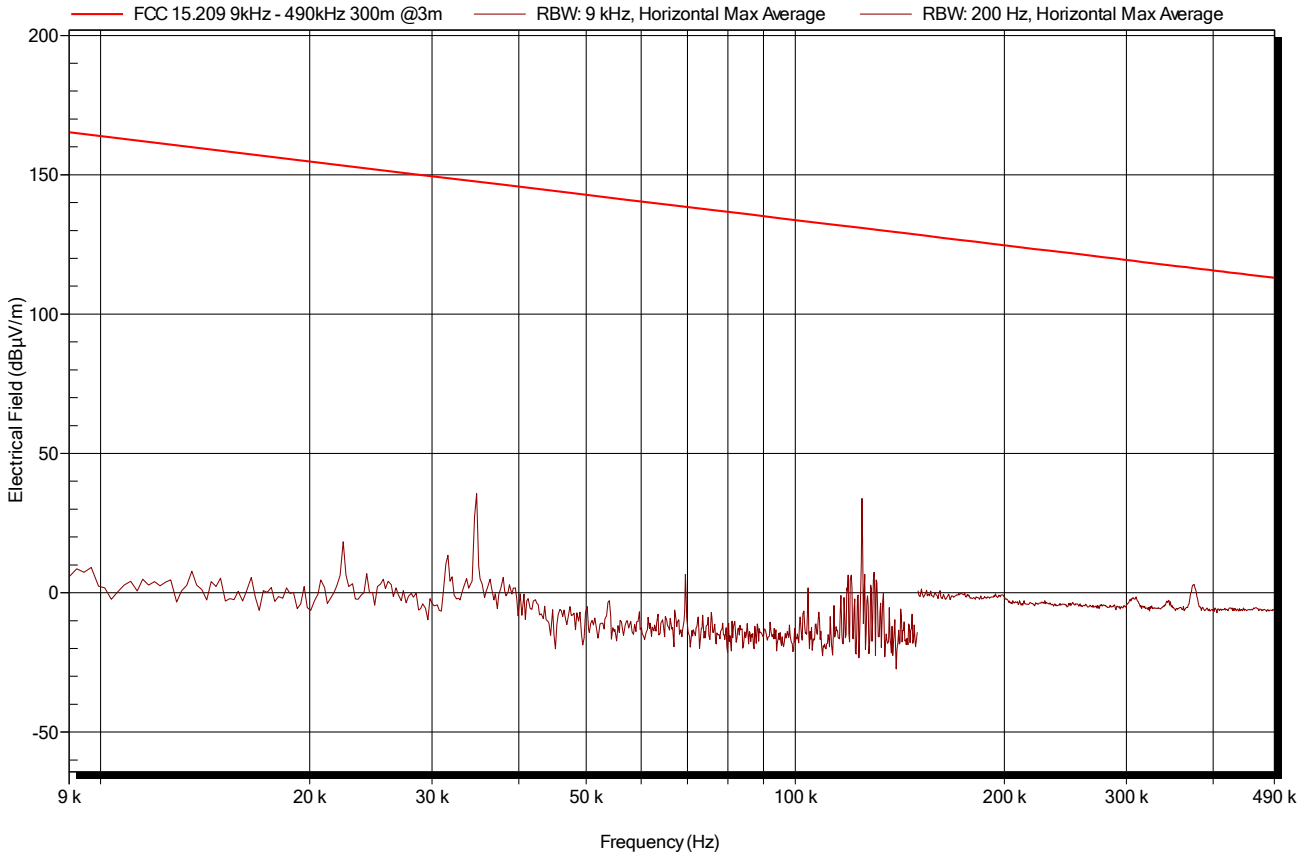
Figure 3.4.3 Radiated Emissions Results 3163B (VR)

Note: NET2 ENTRY
VR 3164B TX

Description: 22) 9kHz-490kHz (300-3m) measured at 3m

Time of Measurement: 30 July 2015, 13:43:30

From 9 kHz to 490 kHz



Detected Peaks: No average measurements detected within 20dB of the limits

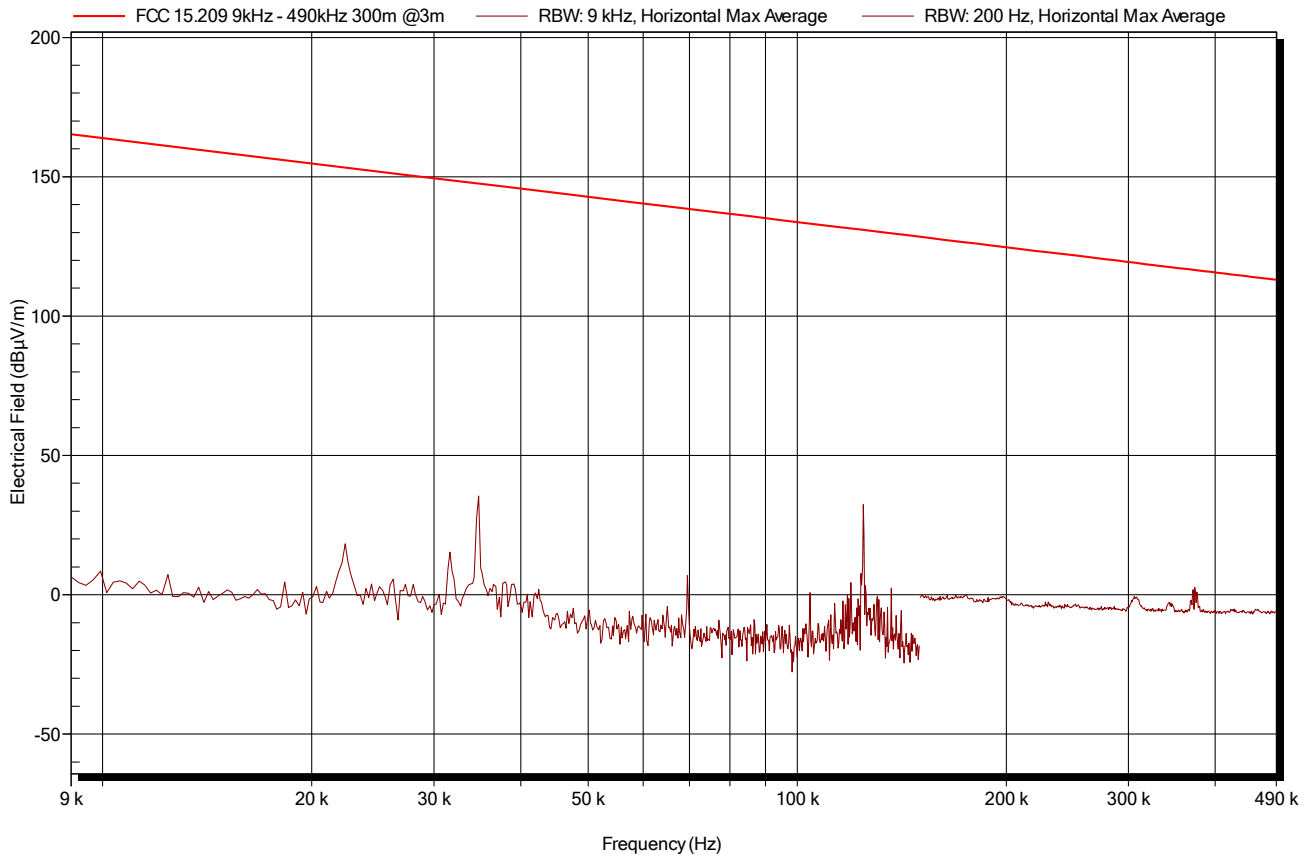
Figure 3.4.4 Radiated Emissions Results 3164B (STD)

Note: NET2 ENTRY
STD 3167B POLLING

Description: 23) 9kHz-490kHz (300-3m) measured at 3m

Time of Measurement: 30 July 2015, 13:46:44

From 9 kHz to 490 kHz



Detected Peaks: No average measurements detected within 20dB of the limits

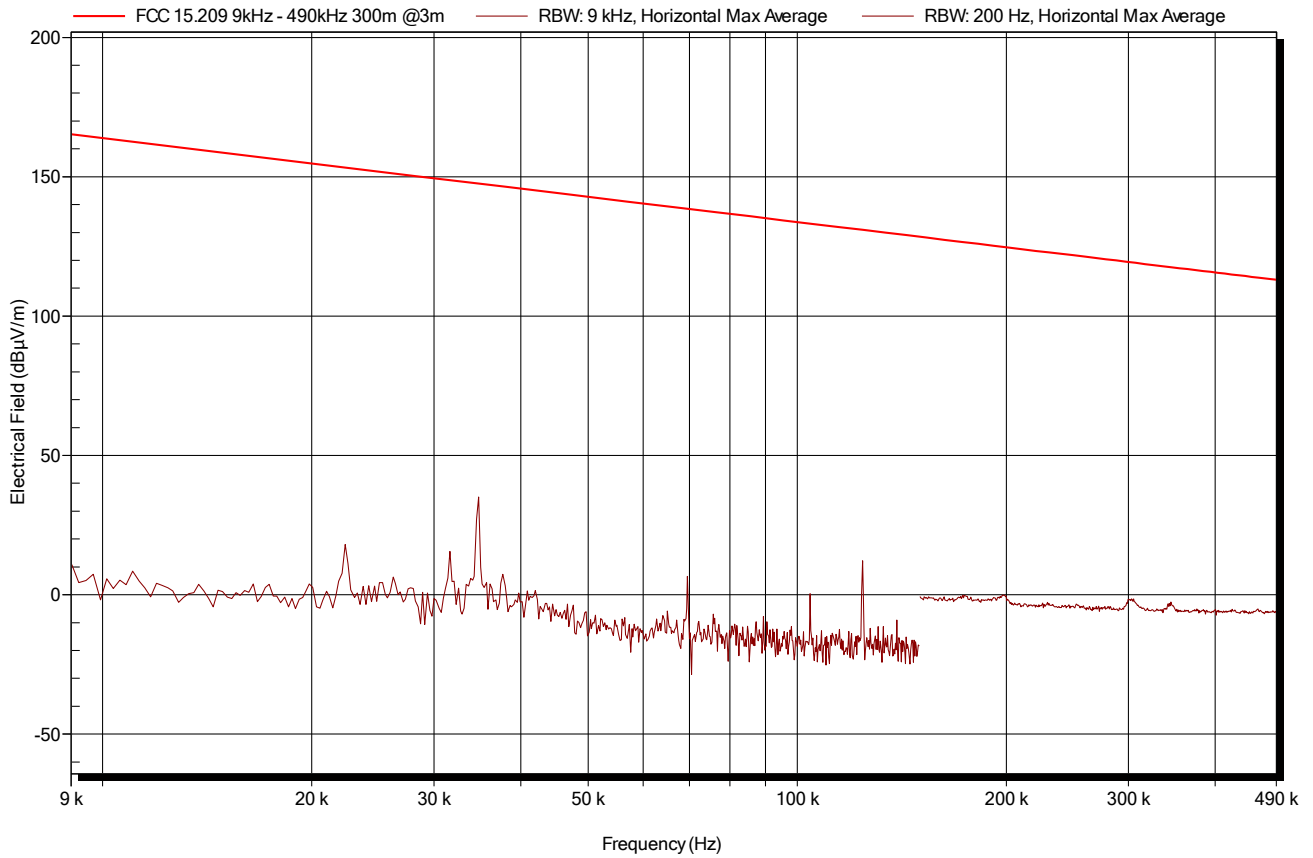
Figure 3.4.5 Radiated Emissions Results 3167B (STD)

Note: NET2 ENTRY
VR 3168B POLLING

Description: 24) 9kHz-490kHz (300-3m) measured at 3m

Time of Measurement: 30 July 2015, 13:51:31

From 9 kHz to 490 kHz



Detected Peaks: No average measurements detected within 20dB of the limits

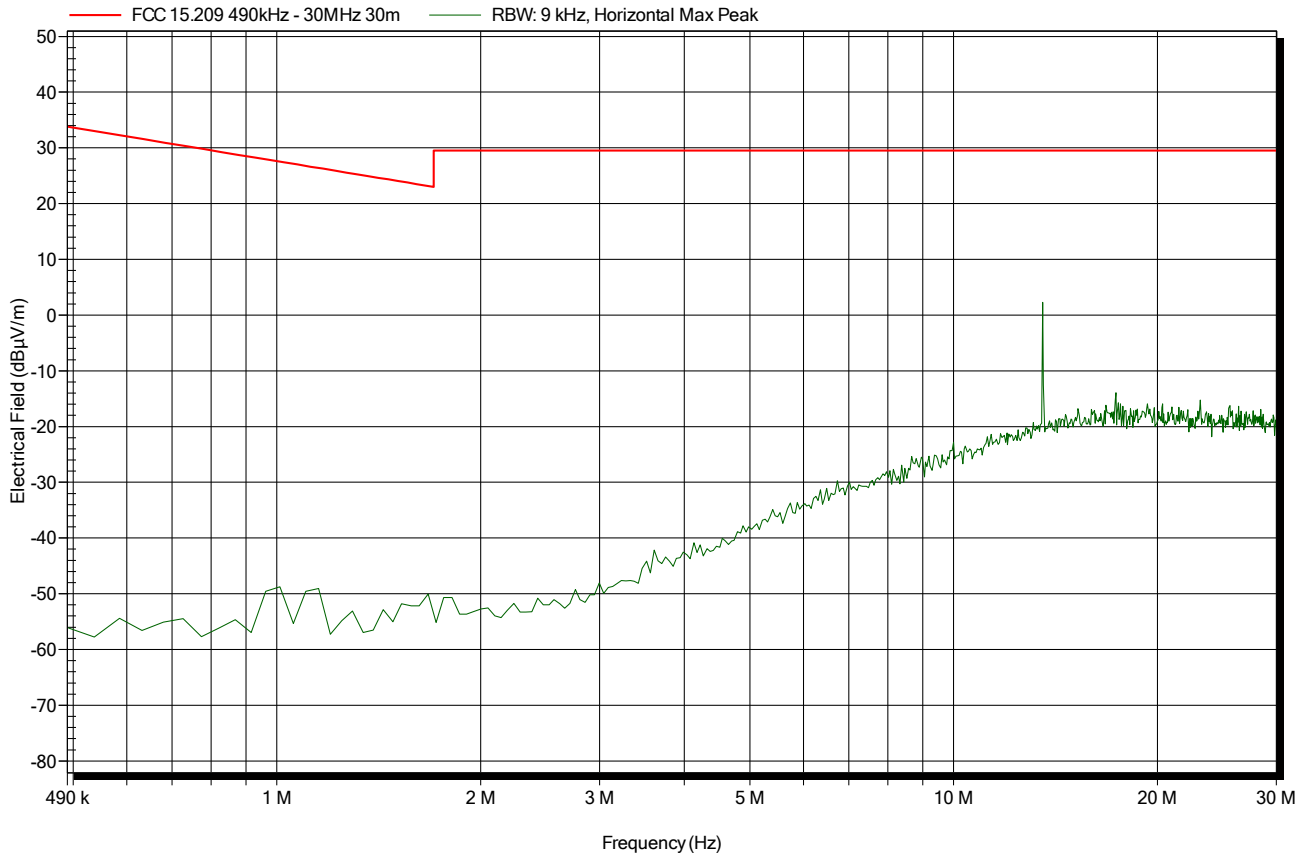
Figure 3.4.6 Radiated Emissions Results 3168B (VR)

Note: NET2 ENTRY
VR 3161B TX

Description: 14) Radiated Emission - 490kHz-30MHz (30-3m)

Time of Measurement: 27 July 2015, 11:04:35

From 490 kHz to 30 MHz



Detected Peaks: No peak measurements within 20dB of the limits

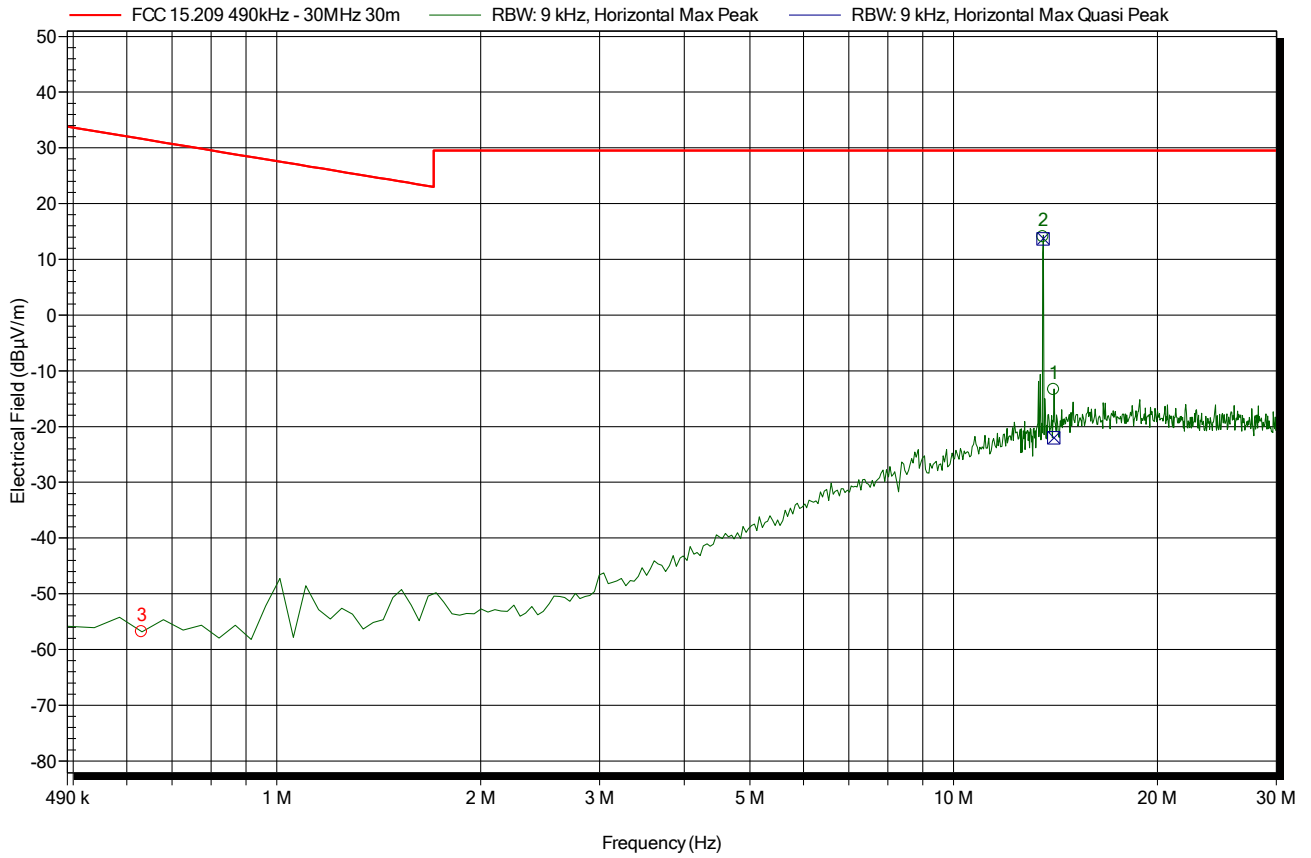
Figure 3.4.7 Radiated Emissions Results 3161B (VR)

Note: NET2 ENTRY
STD 3162B TX

Description: 12) Radiated Emission - 490kHz-30MHz (30-3m)

Time of Measurement: 27 July 2015, 10:44:29

From 490 kHz to 30 MHz



Detected Peaks:

Frequency	Peak	Quasi-Peak	Angle
14.067 MHz	-13.36 dBµV/m	-19.0dBµV/m	103 Degree
13.561 MHz	14.06 dBµV/m	13.90dBµV/m	272 Degree
631.648 kHz	-56.82 dBµV/m	N/A	45 Degree

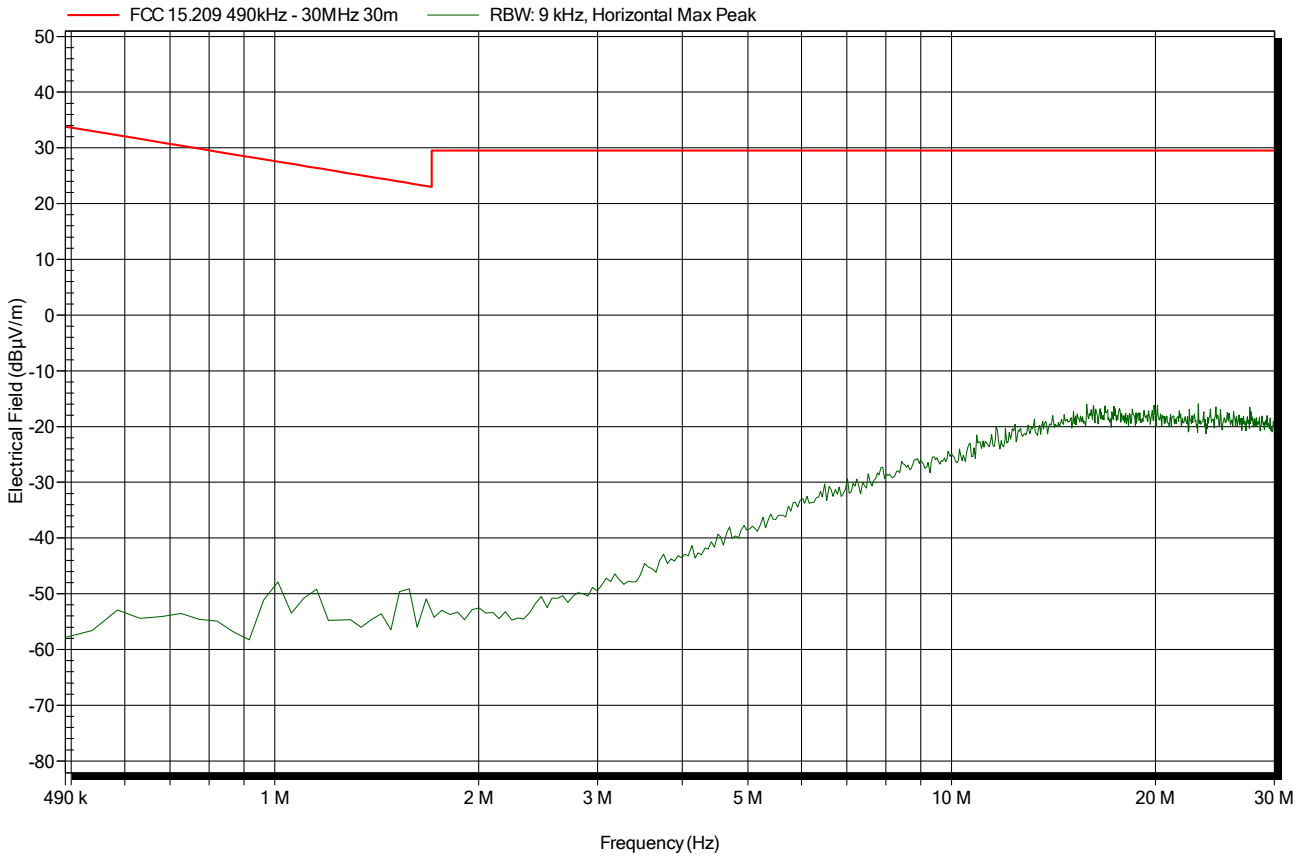
Figure 3.4.8 Radiated Emissions Results 3162B (STD)

Note: NET2 ENTRY
VR 3163B TX

Description: 18) Radiated Emission - 490kHz-30MHz (30-3m)

Time of Measurement: 27 July 2015, 11:46:55

From 490 kHz to 30 MHz



Detected Peaks: No peak measurements within 20dB of limits

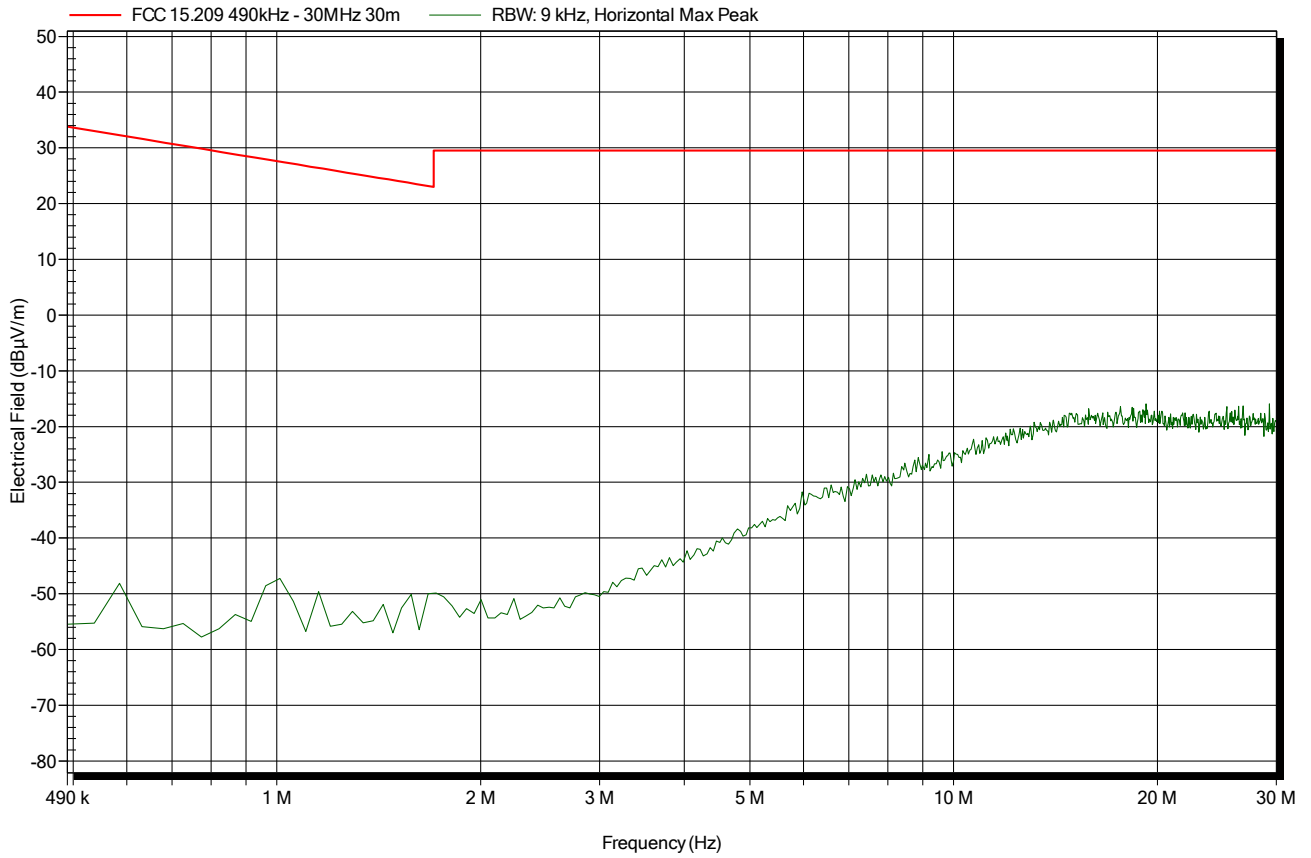
Figure 3.4.9 Radiated Emissions Results 3163B (VR)

Note: NET2 ENTRY
STD 3164B TX

Description: 16) Radiated Emission - 490kHz-30MHz (30-3m)

Time of Measurement: 27 July 2015, 11:31:46

From 490 kHz to 30 MHz



Detected Peaks: No peak measurements within 20dB of limits

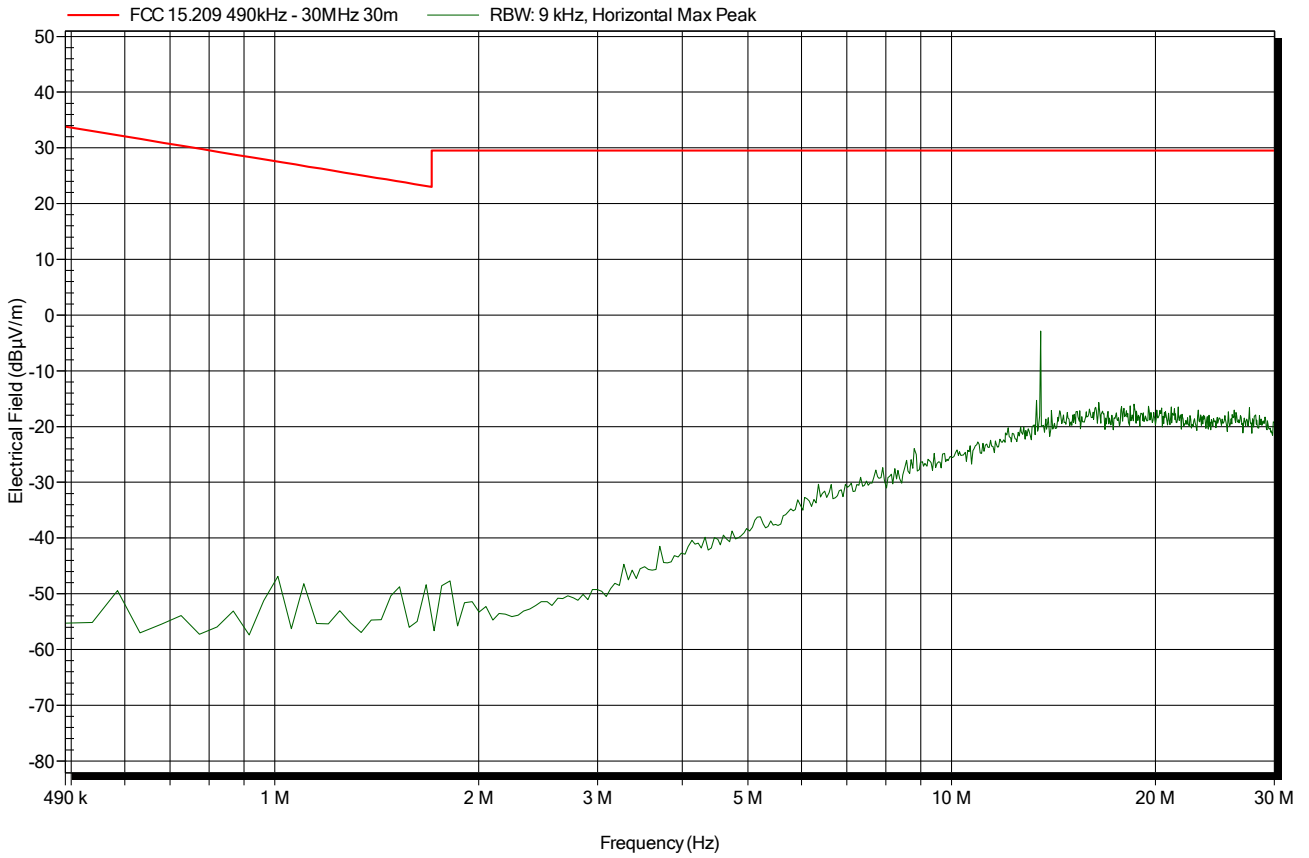
Figure 3.4.20 Radiated Emissions Results 3164B (STD)

Note: NET2 ENTRY
STD 3167B

Description: 8) Radiated Emission - 490kHz-30MHz (30-3m)

Time of Measurement: 27 July 2015, 10:12:18

From 490 kHz to 30 MHz



Detected Peaks: No peak measurements within 20dB of limits

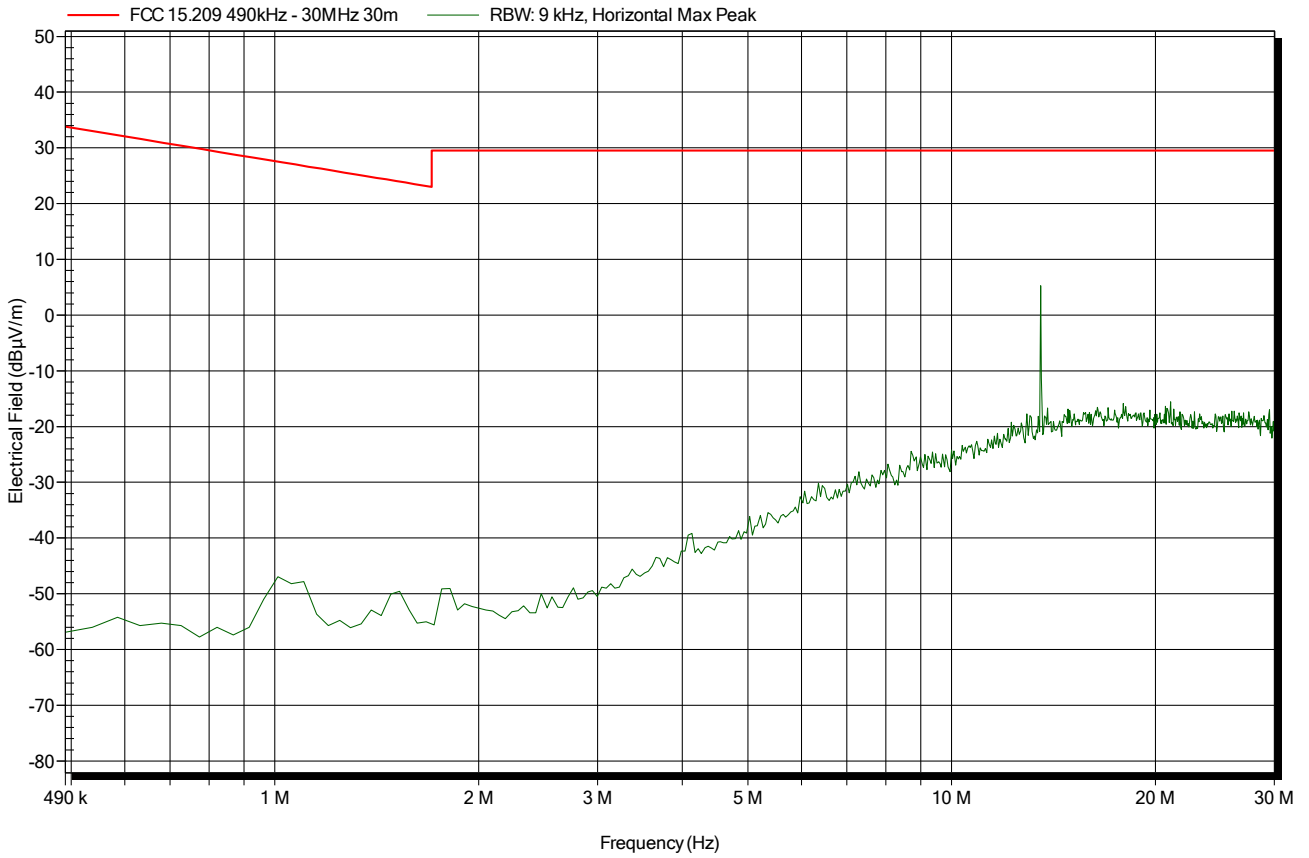
Figure 3.4.30 Radiated Emissions Results 3167B (STD)

Note: NET2 ENTRY
VR 3168B

Description: 10) Radiated Emission - 490kHz-30MHz (30-3m)

Time of Measurement: 27 July 2015, 10:30:08

From 490 kHz to 30 MHz



Detected Peaks: No peak measurements within 20dB of limits

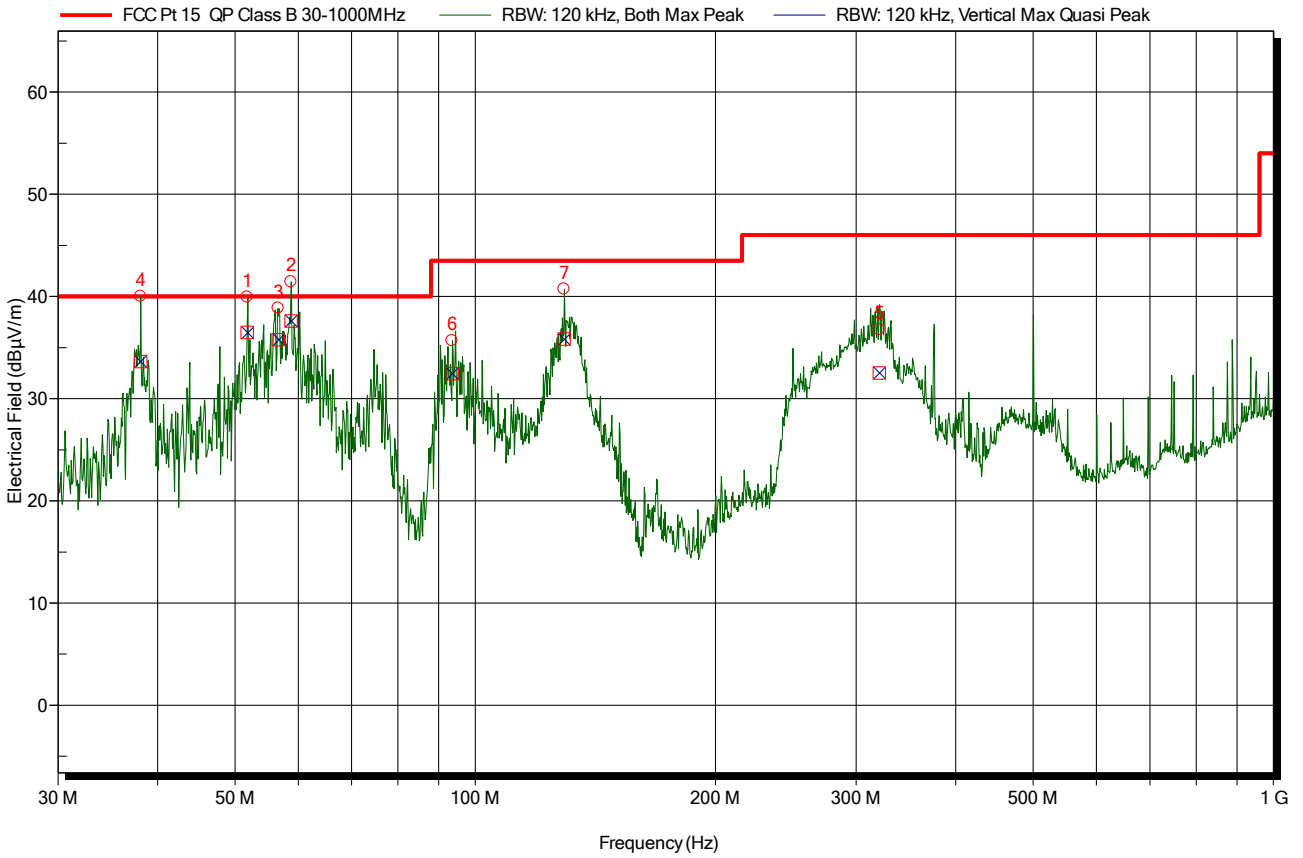
Figure 3.4.42 Radiated Emissions Results 3168B (VR)

Note: NET2 ENTRY
STD 3167B

Description: 1) FCC Radiated Emission 30-1000MHz

Time of Measurement: 23 July 2015, 13:05:10

From 30 MHz to 1 GHz



Detected Peaks:

Frequency	Peak	Quasi-Peak	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height	Polarization
51.798 MHz	39.93 dBµV/m	36.48 dBµV/m	-3.52 dB	Pass	355 Degree	1 m	Vertical
58.758 MHz	41.45 dBµV/m	37.62 dBµV/m	-2.38 dB	Pass	16 Degree	1.09 m	Vertical
56.664 MHz	38.85 dBµV/m	35.78 dBµV/m	-4.22 dB	Pass	20 Degree	1.6 m	Vertical
38.094 MHz	40 dBµV/m	33.65 dBµV/m	-6.35 dB	Pass	271 Degree	1.29 m	Vertical
320.82 MHz	36.76 dBµV/m	32.53 dBµV/m	-13.47 dB	Pass	260 Degree	1.7 m	Vertical
93.564 MHz	35.67 dBµV/m	32.43 dBµV/m	-11.07 dB	Pass	254 Degree	1.09 m	Vertical
129.252 MHz	40.73 dBµV/m	35.83 dBµV/m	-7.67 dB	Pass	150 Degree	1.09 m	Vertical

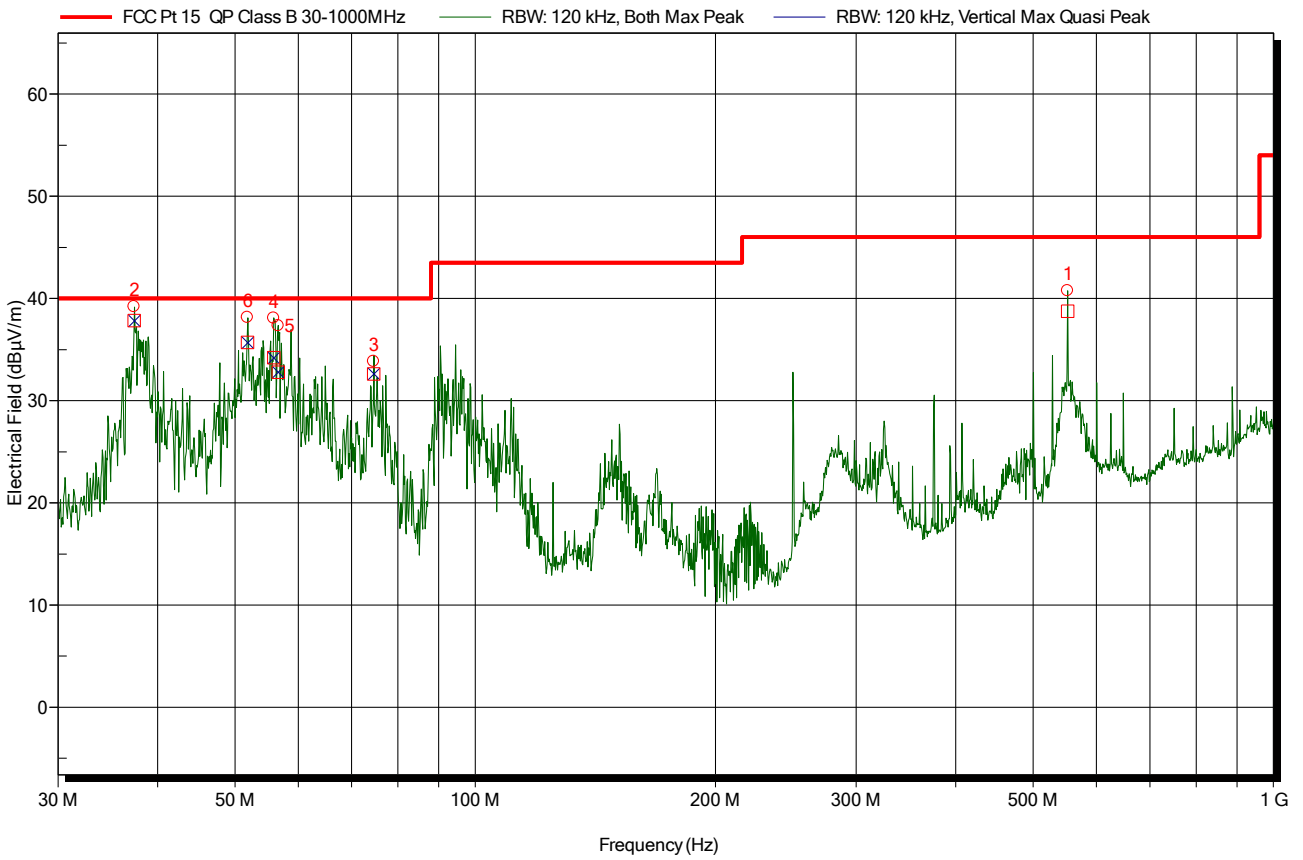
Figure 3.4.53 Radiated Emissions Results 3167B (STD)

Note: NET2 ENTRY
VR 3168B

Description: 2) FCC Radiated Emission 30-1000MHz

Time of Measurement: 23 July 2015, 14:22:18

From 30 MHz to 1 GHz



Detected Peaks:

Frequency	Peak	Quasi-Peak	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height	Polarization
552.006 MHz	40.76 dBµV/m	38.75 dBµV/m	-7.25 dB	Pass	95 Degree	1.6 m	Horizontal
37.374 MHz	39.18 dBµV/m	37.83 dBµV/m	-2.17 dB	Pass	96 Degree	1 m	Vertical
74.568 MHz	33.83 dBµV/m	32.6 dBµV/m	-7.4 dB	Pass	201 Degree	1.9 m	Vertical
55.89 MHz	38.08 dBµV/m	34.21 dBµV/m	-5.79 dB	Pass	301 Degree	1 m	Vertical
56.64 MHz	37.34 dBµV/m	32.8 dBµV/m	-7.2 dB	Pass	342 Degree	1.29 m	Vertical
51.816 MHz	38.14 dBµV/m	35.71 dBµV/m	-4.29 dB	Pass	324 Degree	1 m	Vertical

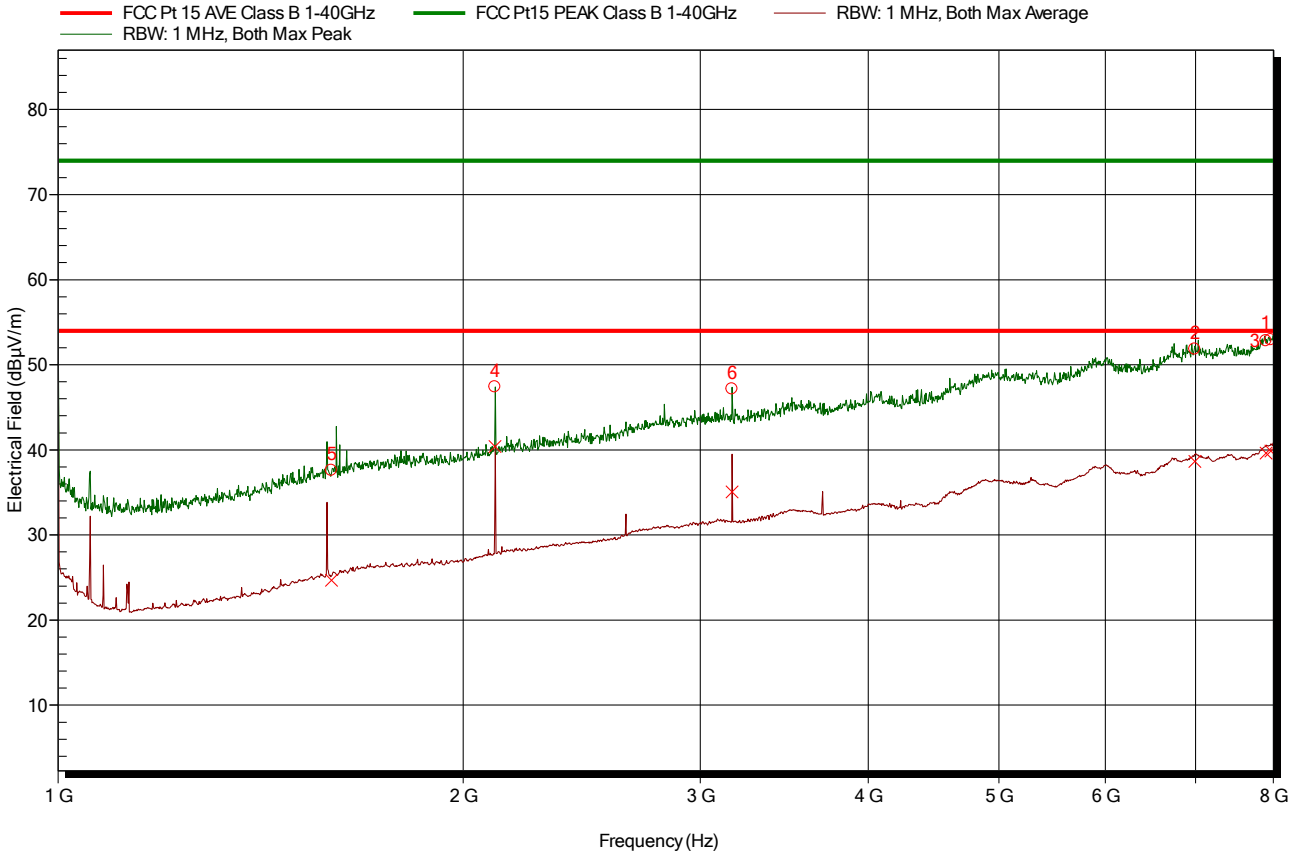
Figure 3.4.64 Radiated Emissions Results 3168B (VR)

Note: NET2 ENTRY
STD 3167B

Description: 48) FCC Radiated Emission - 1- 6GHz 15degree steps & height scan

Time of Measurement: 29 July 2015, 15:03:09

From 1 GHz to 8 GHz



Detected Peaks:

Frequency	Peak	Peak Difference	Peak Status	Average	Average Difference	Average Status	Angle	Height	Polarization
7.964 GHz	52.93dBµV/m	-21.07 dB	Pass	39.87dBµV/m	-14.13 dB	Pass	88 Degree	2 m	Horizontal
6.995 GHz	51.86 BµV/m	-22.14 dB	Pass	38.64dBµV/m	-15.36 dB	Pass	103 Degree	3 m	Horizontal
7.899 GHz	52.8dBµV/m	-21.2 dB	Pass	39.62dBµV/m	-14.38 dB	Pass	108 Degree	1.8 m	Horizontal
2.112 GHz	47.39dBµV/m	-26.61 dB	Pass	40.39dBµV/m	-13.61 dB	Pass	292 Degree	1.7 m	Horizontal
1.597 GHz	37.57dBµV/m	-36.43 dB	Pass	24.67dBµV/m	-29.33 dB	Pass	78 Degree	2.5 m	Vertical
3.168 GHz	47.15dBµV/m	-26.85 dB	Pass	35.06dBµV/m	-18.94 dB	Pass	347 Degree	1.2 m	Horizontal

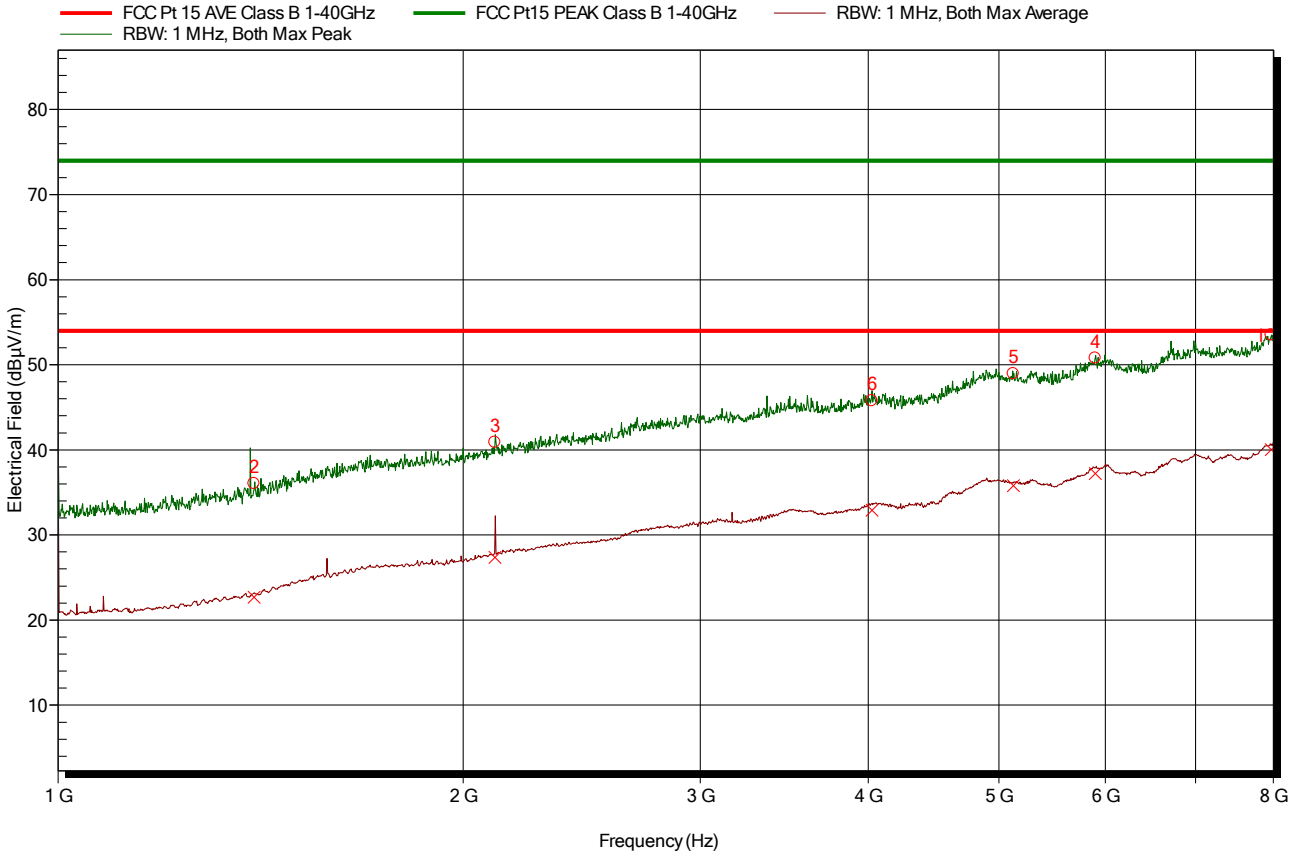
Figure 3.4.75 Radiated Emissions Results 3167B (STD)

Note: NET2 ENTRY
VR 3168B

Description: 47) FCC Radiated Emission - 1- 6GHz 15degree steps & height scan

Time of Measurement: 29 July 2015, 14:01:49

From 1 GHz to 8 GHz



Detected Peaks:

Frequency	Peak	Peak Difference	Peak Status	Average	Average Difference	Average Status	Angle	Height	Polarization
7.97 GHz	53.49dBµV/m	-20.51 dB	Pass	40.01dBµV/m	-13.99 dB	Pass	328 Degree	3.2 m	Horizontal
1.399 GHz	36.05dBµV/m	-37.95 dB	Pass	22.67dBµV/m	-31.33 dB	Pass	253 Degree	1.4 m	Vertical
2.112 GHz	40.88dBµV/m	-33.12 dB	Pass	27.38dBµV/m	-26.62 dB	Pass	28 Degree	1.4 m	Horizontal
5.898 GHz	50.77dBµV/m	-23.23 dB	Pass	37.23dBµV/m	-16.77 dB	Pass	313 Degree	1.3 m	Horizontal
5.128 GHz	48.97dBµV/m	-25.03 dB	Pass	35.78dBµV/m	-18.22 dB	Pass	118 Degree	2.8 m	Horizontal
4.025 GHz	45.75dBµV/m	-28.25 dB	Pass	32.89dBµV/m	-21.11 dB	Pass	193 Degree	3 m	Horizontal

Figure 3.4.86 Radiated Emissions Results 3168B (VR)

3.5 Test Method

Standards	ANSI C63-4: 2009
YES Test Method	BEP23/BEP27
Measurement uncertainty	5.12dB as defined by EN55016-4-2:2004 (<1GHz) 4.78dB as defined by EN55016-4-2:2004 (1-6GHz) 5.12dB as defined by EN55016-4-2:2004 (6-18GHz)

Test Equipment Used

Instrument	YES Serial No.	Last Calibration Date	Calibration Interval
Rainford Shielded Room Ferrite/hybrid lined semi/anechoic chamber 8.9m x 4.8m x 5.4m	LAB1	24/02/2015	3 years, Note 2
60A Mains Filter DS23335C	(Fixed)	N/A	N/A
R&S ESU40 Measuring Receiver	B0984	13/01/2015	1 year
Agilent Spectrum Analyser 8594E	B0878	17/02/2015	1 year
Chase Bilog Antenna, 30MHz - 1GHz CBL6111A	B0544	21/01/2013	3 years
3dB Attenuator (3GHz)	B0941	31/10/2014	1 year
Mini circ, 10-1000MHz Preamplifier ZFL-1000VH2	B1373	23/12/2014	1 year
Schaffner HLA6120 amplified loop	78538	21/12/2014	3 year
ETS-Lindgren 6512 loop antenna	B0921	21/12/2014	3 year
Philips PM5145 generator	B0636	23/12/2014	1 year
2m 26GHz Gigalink test cable	B0957	23/12/2014	1 year
5m 26GHz Gigalink test cable	B0959	23/12/2014	1 year
5m 26GHz Gigalink test cable	B0960	23/12/2014	1 year
9m 26GHz Gigalink test cable	B0961	23/12/2014	1 year
9m 26GHz Gigalink test cable	B0962	23/12/2014	1 year
YES emission reference source CNE V	B0855	N/A	N/A
R&S HL050 Log Periodic Antenna	B0936	05/03/2013	3 years
3dB Attenuator (18GHz)	B1327	31/10/2014	1 year
18GHz Bonn Preamplifier BLM0118-5A	B1333	03/01/2014	1 year
YES emission reference source CGE01C	B0996	N/A	N/A
YES emission ref. source CGE03 (MCN No1)	B1409	N/A	N/A
Maturo Antenna Mast	B1405	N/A	N/A
Clark Compressor (Mast)	B0953	N/A	N/A
Vaisala Temp/RH Meter HM34C	B1332	30/05/2014	2 year
Auriol Scientific Environmental Monitor	B1376	15/04/2015	1 year

Frequency MHz	Bandwidth		Detector function	Unit of measurement
	RBW	VBW		
0.009-0.150	200Hz	Auto	Average	dB μ V/m
0.15-30	9kHz	Auto	Quasi Peak	dB μ V/m
30 – 1000	120kHz	Auto	Quasi Peak	dB μ V/m
1000 – 40000	1MHz	Auto	Peak & Average	dB μ V/m

York EMC test procedure (below 9kHz-30MHz)	BEP22 Issue 3 Feb 2015
York EMC test procedure (below 30MHz-1GHz)	BEP23 Issue 8 April 2015
York EMC test procedure (above 1GHz)	BEP27 Issue 5 April 2015
Test software	Radimation Version 2014.1.5

Note 1 : Specific set-ups for the EUT are shown in EUT test configurations section of this report (where applicable).

Note 2 : The chamber is an 'alternative test site' that provides an environment to ensure valid, repeatable measurement results that meet the requirements of Clause 5.4.2 of ANSI C63.4-2009, and additionally complying with the NSA and the site VSWR requirements of Clause 5.4.4 of ANSI C63.4-2009 and CISPR 22. The site description and attenuation are on file with the Federal Communications Commission (FCC) and Industry Canada.

Note 3 : The antennae used for measurement have been calibrated in accordance with ANSI C63.5.

4 Radiated Emissions 13.56MHz Fundamental Frequency Error or Frequency Drift

4.1 Test Results

Mode of operation	Description	Mode No.
Test Mode	125kHz Transmit frequency continuous	2
Test Mode	13.56MHz Transmit frequency continuous	3

Test standard	Test description	Class/limit
47CFR: 2008 Part 15, Sub Part C Intentional Radiators Operation within the band 13.110-14.010 MHz, (clause § 15.225) RSS-210:2010	Frequency error and drift under extreme test conditions	0.01%

Results	Mode	Pass/Fail	Comments
	3	Pass	0.0022% frequency drift

Results	Mode	Test condition	Frequency (MHz)	Comments
	3	20°C +/- 3°C	13.56065	Sample 3162B
		-20°C	13.56100	Sample 3162B
		50°C	13.56070	Sample 3162B

Variation of output frequency with voltage						
Sample Mifare VR - COP reference 3161B – Mode 3						
	Supply Voltage (Volts)	Supply Frequency (Hz)	Output frequency (MHz)	Relative Output level (dBuV)	Pass/Fail	
Mifare VR	102	60	13.560800	62.17	Pass	
	114	60	13.560802	62.22	Pass	
	126	60	13.560802	61.78	Pass	
	138	60	13.560803	62.84	Pass	
	99% Occupied Bandwidth					Pass/Fail
		T1	13.558317 MHz		-	
		T2	13.562964 MHz		-	
		T2 – T1	4.6474 kHz		Pass	

Results	Mode	Result Pass/Fail	Comments
	2	N/A	For information only, Note 1

Results	Mode	Test condition	Frequency (kHz)	Comments
	2	20°C +/- 3°C	124.79	Sample 3164B
		-20°C	124.56	Sample 3164B
		50°C	124.88	Sample 3164B

Note 1 : The requirements of Clause 15.225 only apply to the 13.56MHz transmit frequency.

Variation of output frequency with voltage						
Sample Hitag VR - COP reference 3163B						
	Supply Voltage (Volts)	Supply Frequency (Hz)	Output frequency (MHz)	Relative Output level (dBuV)	Pass/Fail	
Hitag VR	102	60	124.699	99.39	Pass	
	114	60	124.674	99.54	Pass	
	126	60	124.710	99.56	Pass	
	138	60	124.670	99.48	Pass	
	99% Occupied Bandwidth					Pass/Fail
		T1	116.8910 kHz		-	
		T2	135.6891 kHz		-	
		T2 – T1	18.4294 kHz		Pass	

Modifications	Required for this test	Modification state
-	None	0

4.2 Test Setup Photograph (removed from this report)

Photograph 4.2.1 Frequency Drift Testing

4.3 Test Method

Standard	47CFR: 2008 Part 15 Industry Canada RSS-210:2010
-----------------	---

Test Equipment Used

Instrument	YES Serial No.
Test Location	LAB5
SML02 Signal generator	B0744
Agilent 8594E Spectrum analyser	B0878
TF830 frequency counter	B0772
Environmental Chamber	B0964
Variable DC Voltage Source Farnell LT50-0.5	B0763
Fluke 50S Digital Thermometer	B0618

Note 1 : Specific set-ups for the EUT are shown in EUT test configurations section of this report (where applicable).

5 Radiated Emissions 13.56MHz Fundamental and bands (13.110- 14.010MHz)

5.1 Test Results

Mode of operation	Description	Mode No.
Test Mode	13.56MHz Transmit frequency continuous	3

Test standard	Test description	Class/limit
47CFR: 2008 Part 15, Sub Part C Intentional Radiators Operation within the band 13.110-14.010 MHz, (clause § 15.225) IC RSS-210:2010 2.6 Tables 1 &3	Field Strength of any emissions in the band 13.110-14.010MHz	Quasi-Peak Detector a)13.533-13.567MHz <15,848µV/m @ 30m (84dBµV/m) b)13.410-13.533MHz 13.567-13.710MHz <334µV/m @ 30m (50.5dBµV/m) c)13.110-13.410MHz 13.710-14.010MHz <106µV/m @ 30m (40.5dBµV/m)

Quasi Peak Results	Mode	Result Pass/Fail	Comments
	3	Pass	Set to continuous transmit at nominal level

Quasi Peak Results	Mode	Frequency (MHz)	Field strength at 10m (dBuV/m)	Corrected field strength at 30m (dBuV/m)	Result Pass/Fail	Comments
	3	13.56	48.00	39.00	Pass	Sample 3161B (VR)
		13.533-13.410	-35.84	-44.84	Pass	Sample 3161B (VR)
		13.110-13.410	-47.00	-56.00	Pass	Sample 3161B (VR)
		12.660-13.110	-60.78	-69.78	Pass	Sample 3161B (VR)
		13.567-13.710	-35.24	-44.24	Pass	Sample 3161B (VR)
		13.710-14.010	-43.69	-52.69	Pass	Sample 3161B (VR)
		14.010-14.460	-55.40	-64.40	Pass	Sample 3161B (VR)

Quasi Peak Results	Mode	Frequency (MHz)	Field strength at 10m (dBuV/m)	Corrected field strength at 30m (dBuV/m)	Result Pass/Fail	Comments
	3	13.56	64.5	55.5	Pass	Sample 3162B (STD)
		13.533-13.410	-21.38	-30.38	Pass	Sample 3162B (STD)
		13.110-13.410	-30.01	-39.01	Pass	Sample 3162B (STD)
		12.660-13.110	-40.29	-49.29	Pass	Sample 3162B (STD)
		13.567-13.710	-18.77	-27.77	Pass	Sample 3162B (STD)
		13.710-14.010	-27.61	-36.61	Pass	Sample 3162B (STD)
		14.010-14.460	-39.47	-48.47	Pass	Sample 3162B (STD)

Modifications	Required for this test	Modification state
-	None	0

5.2 Test Setup Photograph (removed from this report)

Photograph 5.2.1 Loop Substitution antenna

Photograph 5.2.2 13.56MHz Fundamental and bands

5.3 Test Method

Standards	ANSI C63-4: 2009
YES Test Method	BEP22
Measurement uncertainty	5.12dB as defined by EN55016-4-2:2004 (<1GHz)

Test Equipment Used

Instrument	YES Serial No.	Last Calibration Date	Calibration Interval
Rainford Shielded Room Ferrite/hybrid lined semi/anechoic chamber 8.9m x 4.8m x 5.4m	LAB1	24/02/2015	3 years, Note 2
60A Mains Filter DS23335C	(Fixed)	N/A	N/A
R&S ESU40 Measuring Receiver	B0984	13/01/2015	1 year
Agilent Spectrum Analyser 8594E	B0878	17/02/2015	1 year
Schaffner HLA6120 amplified loop	78538	21/12/2014	3 year
ETS-Lindgren 6512 loop antenna	B0921	21/12/2014	3 year
Philips PM5145 generator	B0636	23/12/2014	1 year
9m 26GHz Gigalink test cable	B0961	23/12/2014	1 year
9m 26GHz Gigalink test cable	B0962	23/12/2014	1 year
Maturo Antenna Mast	B1405	N/A	N/A
Clark Compressor (Mast)	B0953	N/A	N/A
Vaisala Temp/RH Meter HM34C	B1332	30/05/2014	2 year
Auriol Scientific Environmental Monitor	B1376	15/04/2015	1 year

Frequency MHz	Bandwidth		Detector function	Unit of measurement
	RBW	VBW		
0.009-0.150	200Hz	Auto	Average	dB μ V/m
0.15-30	9kHz	Auto	Quasi Peak	dB μ V/m

York EMC test procedure (0.009-30MHz)	BEP22 Issue 3 Feb 2015
Test software	Radimation Version 2014.1.5

Note 1 : Specific set-ups for the EUT are shown in EUT test configurations section of this report (where applicable).

Note 2 : The chamber is an 'alternative test site' that provides an environment to ensure valid, repeatable measurement results that meet the requirements of Clause 5.4.2 of ANSI C63.4-2009, and additionally complying with the NSA and the site VSWR requirements of Clause 5.4.4 of ANSI C63.4-2009 and CISPR 22. The site description and attenuation are on file with the Federal Communications Commission (FCC) and Industry Canada.

Note 3 : The antennae used for measurement have been calibrated in accordance with ANSI C63.5.

Note 4 : Specific set-ups for the EUT are shown in EUT test configurations section of this report (where applicable).

6 Radiated Emissions 125kHz Fundamental and bands (114-148kHz)

6.1 Test Results

Mode of operation	Description	Mode No.
Test Mode	125kHz Transmit frequency continuous	2

Test standard	Test description	Class/limit
47CFR: 2008 Part 15, Sub Part C Intentional Radiators Clause 15.205, 15.35 IC RSS-210:2010, 2.6 Tables 1 & 3	Field Strength of any emissions in the band 114-148.5kHz	Quasi-Peak Detector a)125kHz 25.7dB μ V/m @ 300m b)114-119kHz 26.5 -26.1dB μ V/m @ 300m c)105.5-114kHz 27.1 -26.5dB μ V/m @ 300m d) <105kHz see Section 3 results e)135 -140kHz 25.0-24.7dB μ V/m @ 300m f)140-148.5kHz 24.7 -24.2dB μ V/m @ 300m g) >148.5kHz see Section 3 results

Quasi Peak Results	Mode	Result Pass/Fail	Comments
	2	Pass	Set to continuous transmit at nominal level

Quasi Peak Results	Mode	Frequency (kHz)	Field strength at 10m (dB μ V/m)	Corrected field strength at 300m (dB μ V/m)	Result Pass/Fail	Comments
	2	125	47.90	-35.4	Pass	Sample 3163B (VR)
		114-119	-27.95	-111.25	Pass	Sample 3163B (VR)
		105.5-114	-38.85	-122.15	Pass	Sample 3163B (VR)
		<105.5	-42.25	-125.55	Pass	Sample 3163B (VR)
		135-140	-40.25	-123.55	Pass	Sample 3163B (VR)
		140-148	-38.40	-121.17	Pass	Sample 3163B (VR)

Quasi Peak Results	Mode	Frequency (kHz)	Field strength at 10m (dBuV/m)	Corrected field strength at 300m (dBuV/m)	Result Pass/Fail	Comments
	2	125	69.3	-14.0	Pass	Sample 3164B (STD)
		114-119	-5.32	-88.62	Pass	Sample 3164B (STD)
		105.5-114	-15.43	-98.73	Pass	Sample 3164B (STD)
		<105.5	-20.08	-103.38	Pass	Sample 3164B (STD)
		135-140	-17.61	-100.91	Pass	Sample 3164B (STD)
		140-148	-16.85	-100.15	Pass	Sample 3164B (STD)

Modifications	Required for this test	Modification state
-	None	0

6.2 Test Setup Photograph (removed from this report)

Photograph 6.2.1 Loop Substitution antenna

Photograph 6.2.2 125kHz Fundamental and bands

6.3 Test Method

Standards	ANSI C63-4: 2009
YES Test Method	BEP22
Measurement uncertainty	5.12dB as defined by EN55016-4-2:2004 (<1GHz)

Test Equipment Used

Instrument	YES Serial No.	Last Calibration Date	Calibration Interval
Rainford Shielded Room Ferrite/hybrid lined semi/anechoic chamber 8.9m x 4.8m x 5.4m	LAB1	24/02/2015	3 years, Note 2
60A Mains Filter DS23335C	(Fixed)	N/A	N/A
R&S ESU40 Measuring Receiver	B0984	13/01/2015	1 year
Agilent Spectrum Analyser 8594E	B0878	17/02/2015	1 year
Schaffner HLA6120 amplified loop	78538	21/12/2014	3 year
ETS-Lindgren 6512 loop antenna	B0921	21/12/2014	3 year
Philips PM5145 generator	B0636	23/12/2014	1 year
9m 26GHz Gigalink test cable	B0961	23/12/2014	1 year
9m 26GHz Gigalink test cable	B0962	23/12/2014	1 year
Maturo Antenna Mast	B1405	N/A	N/A
Clark Compressor (Mast)	B0953	N/A	N/A
Vaisala Temp/RH Meter HM34C	B1332	30/05/2014	2 year
Auriol Scientific Environmental Monitor	B1376	15/04/2015	1 year

Frequency MHz	Bandwidth		Detector function	Unit of measurement
	RBW	VBW		
0.009-0.150	200Hz	Auto	Average	dB μ V/m
0.15-30	9kHz	Auto	Quasi Peak	dB μ V/m

York EMC test procedure (0.009-30MHz)	BEP22 Issue 3 Feb 2015
Test software	Radimation Version 2014.1.5

Note 1 : Specific set-ups for the EUT are shown in EUT test configurations section of this report (where applicable).

Note 2 : The chamber is an 'alternative test site' that provides an environment to ensure valid, repeatable measurement results that meet the requirements of Clause 5.4.2 of ANSI C63.4-2009, and additionally complying with the NSA and the site VSWR requirements of Clause 5.4.4 of ANSI C63.4-2009 and CISPR 22. The site description and attenuation are on file with the Federal Communications Commission (FCC) and Industry Canada.

Note 3 : The antennae used for measurement have been calibrated in accordance with ANSI C63.5.

Note 4 : Specific set-ups for the EUT are shown in EUT test configurations section of this report (where applicable).

7 Appendices**7.1 Appendix 1 Customers Test Equipment Used**

Equipment	Serial number	Cal status
None	Not applicable	N/A

7.2 Appendix 2 Modification States**Statement of the EUT modification**

According to the rules of ANSI C63.4-2009 Clause 10.2.13 the following equipment EUT:

Equipment under test POE door entry panel with integral radio transmitter.

Model Nos. 337-420 (STD), 337-520 (VR)

Model series NET2 ENTRY PANEL

Applicant Paxton Access Ltd

Address Paxton House
Home Farm Road
Brighton
East Sussex
BN1 9HU

should be without any modifications as the EUT already complies with the appropriate specifications (47 CFR Part 15, Subpart B)

Modification state	Modification	Reason for the modification
0	As supplied by the customer	N/A

7.3 Appendix 3 Test Report History

Issue	Description
1	Original issue of the test report

7.4 Appendix 4 Documentation

No documentation was supplied for inclusion in this report

7.5 Appendix 5 Test Equipment Correction Factors

The calibration correction factors for antennae, preamps, cables, LISNs etc are stored within the test software, reference Radimation Version 2014.1.5 in electronic format as .COR files. These files are updated with new calibrations at intervals detailed in the Test Equipment sections of this report.

These files are considered too extensive files to be reproduced, in full, in this report however they can be made available if required by the customer.