

FCC and Industry Canada Testing of the
Paxton Access Ltd
Access control unit, Model: Net2 Entry Touchpanel
In accordance with FCC 47 CFR Part 15C,
Industry Canada RSS-310 and Industry Canada
RSS-GEN



Product Service

Choose certainty.
Add value.

Prepared for: Paxton Access Ltd
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United Kingdom

FCC ID: USE337620
IC: 10217A-337620

COMMERCIAL-IN-CONFIDENCE

Date: January 2017
Document Number: 75935869-04 | Issue: 02

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Authorised Signatory	Simon Bennett	27 January 2017	

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15C and Industry Canada RSS-310 and Industry Canada RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Dan Ralley	27 January 2017	
Testing	Graeme Lawler	27 January 2017	
Testing	Jack Tuckwell	27 January 2017	

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation
IC2932B-1 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be in compliance with FCC 47 CFR Part 15C: 2015, Industry Canada RSS-310: Issue 03 (2012-12) and Industry Canada RSS-GEN: Issue 04 (2014-11).

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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	23 January 2017
2	Inclusion of FCC references	27 January 2017

Table 1

1.2 Introduction

Applicant	Paxton Access Ltd
Manufacturer	Paxton Access Ltd
Model Number(s)	Net2 Entry Touchpanel
Serial Number(s)	4532447 and Not serialised (75935869-TSR0007)
Hardware Version(s)	z-n2tp ppc-n2tp
Software Version(s)	2.16 5523
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 15C (2015) Industry Canada RSS-310: Issue 03 (2012-12) Industry Canada RSS-GEN: Issue 04 (2014-11)
Order Number	158355
Date	01-August-2016
Date of Receipt of EUT	07-November-2016
Start of Test	16-December-2016
Finish of Test	17-January-2017
Name of Engineer(s)	Dan Ralley, Graeme Lawler and Jack Tuckwell
Related Document(s)	ANSI C63.10 (2013)



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C, Industry Canada RSS-310, Industry Canada RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-310	RSS-GEN			
Configuration: HiTag - 125 kHz RFID Transceiver						
2.1	-	3.1	6.6	Occupied Bandwidth	Pass	
2.2	-	3.1	6.11	Transmitter Frequency Stability	Pass	
2.3	-	3.1	6.12	Transmitter Output Power	Pass	
2.4	15.209	3.1	6.13	Transmitter Unwanted Emissions	Pass	

Table 2



1.4 Application Form

EQUIPMENT DESCRIPTION	
Model Name/Number	Net2 Entry Touchpanel 125KHz
Part Number	337-620
Hardware Version	z-n2tp ppc-n2tp
Software Version	2.16 5523
FCC ID (if applicable)	USE337620
Industry Canada ID (if applicable)	10217A-337620
Technical Description (Please provide a brief description of the intended use of the equipment)	The Net2 Entry Touchpanel will be the first point of contact for a visitor to a premises or entranceway allowing them to gain communication with the occupant so that they may then be allowed entrance.

POWER SOURCE	
<input type="checkbox"/> AC mains	State voltage
AC supply frequency (Hz)	
VAC	
Max Current	
Hz	
<input type="checkbox"/> Single phase	<input type="checkbox"/> Three phase
And / Or	
<input checked="" type="checkbox"/> External DC supply	
Nominal voltage	48 V Max Current 1.25 A
Extreme upper voltage	V
Extreme lower voltage	V
Battery	
<input type="checkbox"/> Nickel Cadmium	<input type="checkbox"/> Lead acid (Vehicle regulated)
<input type="checkbox"/> Alkaline	<input type="checkbox"/> Leclanche
<input type="checkbox"/> Lithium	<input type="checkbox"/> Other Details :
Volts nominal.	
End point voltage as quoted by equipment manufacturer	V

FREQUENCY INFORMATION	
Frequency Range	125kHz to MHz
Channel Spacing (where applicable)	Single Channel
Receiver Frequency Range (if different)	to MHz
Channel Spacing (if different)	
Test Frequencies*	Bottom MHz Channel Number (if applicable)
	Middle MHz Channel Number (if applicable)
	Top MHz Channel Number (if applicable)
Intermediate Frequencies	MHz
Highest Internally Generated Frequency :	MHz



POWER CHARACTERISTICS			
Maximum TX power	<1mW	W	
Minimum TX power		W (if variable)	
Is transmitter intended for :			
Continuous duty			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Intermittent duty			<input type="checkbox"/> Yes <input type="checkbox"/> No
If intermittent state DUTY CYCLE			
Transmitter ON		seconds	
Transmitter OFF		seconds	

ANTENNA CHARACTERISTICS			
<input type="checkbox"/>	Antenna connector		State impedance Ohm
<input type="checkbox"/>	Temporary antenna connector		State impedance Ohm
<input checked="" type="checkbox"/>	Integral antenna	Type Loop Coil	State gain dBi
<input type="checkbox"/>	External antenna	Type	State gain dBi

MODULATION CHARACTERISTICS			
<input checked="" type="checkbox"/>	Amplitude		<input type="checkbox"/> Frequency
<input type="checkbox"/>	Phase		<input type="checkbox"/> Other (please provide details):
Can the transmitter operate un-modulated?			<input type="checkbox"/> Yes <input type="checkbox"/> No

CLASS OF EMISSION USED	
ITU designation or Class of Emission:	
1	Non XX
(if applicable) 2	
(if applicable) 3	
If more than three classes of emission, list separately:	

BATTERY POWER SUPPLY	
Model name/number	Identification/Part number
Manufacturer	Country of Origin

ANCILLARIES (If applicable)	
Model name/number	Identification/Part number
Manufacturer	Country of Origin

EXTREME CONDITIONS			
Extreme test voltages (Max)	V	Extreme test voltages (Min)	V
Nominal DC Voltage	48 V	DC Maximum Current	1.25 A
Maximum temperature	50 °C	Minimum temperature	-20 °C



Product Service

I hereby declare that that the information supplied is correct and complete.

Name: Walter Riche

Position held:

Compliance Engineer

Date: 11/08/2016



1.5 Product Information

1.5.1 Technical Description

The Net2 Entry Touchpanel will be the first point of contact for a visitor to a premises or entrance way allowing them to gain communication with the occupant so that they may then be allowed entrance.

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme. The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Serial Number: 4532447			
0	As supplied by the customer	Not Applicable	Not Applicable
Serial Number: Not serialised (75935869-TSR0007)			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 3

1.8 Test Location

TÜV SÜD Product Service conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: HiTag - 125 kHz RFID Transceiver		
Occupied Bandwidth	Dan Ralley	UKAS
Transmitter Frequency Stability	Matthew Russell	UKAS
Transmitter Output Power	Graeme Lawler	UKAS
Transmitter Unwanted Emissions	Graeme Lawler and Jack Tuckwell	UKAS

Table 4

Office Address:

Octagon House
 Concorde Way
 Segensworth North
 Fareham
 Hampshire
 PO15 5RL
 United Kingdom



2 Test Details

2.1 Occupied Bandwidth

2.1.1 Specification Reference

Industry Canada RSS-310, Clause 3.1
Industry Canada RSS-GEN, Clause 6.6

2.1.2 Equipment Under Test and Modification State

Net2 Entry Touchpanel, S/N: TSR0007 - Modification State 0

2.1.3 Date of Test

10-January-2017

2.1.4 Test Method

This test was performed in accordance with Industry Canada RSS-GEN, clause 6.6.

2.1.5 Environmental Conditions

Ambient Temperature 21.3 °C
Relative Humidity 34.4 %

2.1.6 Test Results

HiTag - 125 kHz RFID Transceiver

Frequency (MHz)	Occupied Bandwidth (kHz)
0.12556	0.961

Table 5

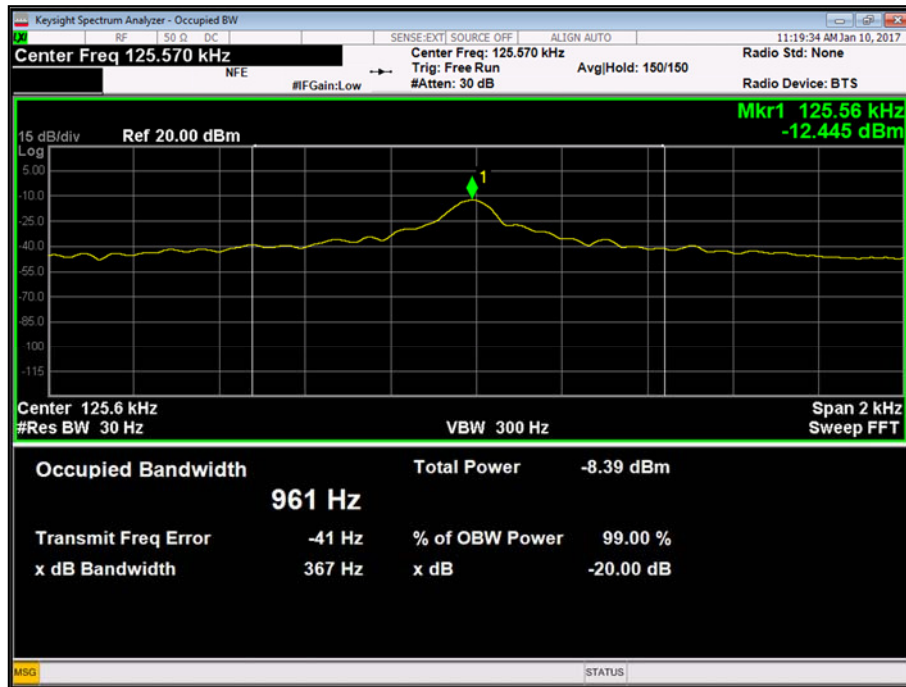


Figure 1 - 99% Occupied Bandwidth

Industry Canada RSS-310 and Industry Canada RSS-GEN, Limit Clause

None specified.

2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
RF Coupler	TUV SUD Product Service	RFC1	414	-	TU
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	5-Mar-2017
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	12	29-Jan-2017
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	5-Mar-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	6-Oct-2017

Table 6

TU - Traceability Unscheduled



2.2 Transmitter Frequency Stability

2.2.1 Specification Reference

Industry Canada RSS-310 and Industry Canada RSS-GEN, Clause 6.11 (RSS-Gen)

2.2.2 Equipment Under Test and Modification State

Net II Entry Touch Panel, S/N: 4532447 - Modification State 0

2.2.3 Date of Test

16-December-2016 to 17-December-2016

2.2.4 Test Method

This test was performed in accordance with Industry Canada RSS-Gen clause 6.11.

2.2.5 Environmental Conditions

Ambient Temperature 23.6 °C
 Relative Humidity 48.7 %

2.2.6 Test Results

HiTag - 125 kHz RFID Transceiver

Test Conditions		125.0 kHz	
Temperature	Voltage	Frequency Error (kHz)	Measured Frequency (kHz)
-30°C	48.0 V DC	-1.0192	123.9807
+20°C	44.5 V DC	-0.2404	124.7596
+20°C	48.0 V DC	-0.2414	124.7586
+20°C	55.2 V DC	-0.2372	124.7628
+50°C	48.0 V DC	0.0224	125.0224

Table 7

Note: Measurements were made at the minimum possible operating voltage. At -15 %, the EUT does not operate.

Industry Canada RSS-Gen, Limit Clause 8.11

Transmitter frequency stability for licence-exempt radio apparatus shall be measured in accordance with Section 6.11. For licence-exempt radio apparatus, the frequency stability shall be measured at temperatures of -20°C (-4°F), +20°C (+68°F) and +50°C (+122°F) instead of at the temperatures specified in Section 6.11.

If the frequency stability of the licence-exempt radio apparatus is not specified in the applicable standard (RSS), measurement of the frequency stability is not required provided that the occupied bandwidth of the licence-exempt radio apparatus lies entirely outside the restricted bands and the prohibited TV bands of 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-806 MHz.

Industry Canada RSS-310 Limit Clause

None specified.



2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Multimeter	Fluke	75 Mk3	455	12	14-Sep-2017
Temperature Chamber	Montford	2F3	467	-	O/P Mon
Rubidium Standard	Rohde & Schwarz	XSRM	1316	6	05-Mar-2017
Digital Temperature Indicator	Fluke	51	1385	12	13-Oct-2017
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	12	29-Jan-2017
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	05-Mar-2017
4 Channel PSU	Rohde & Schwarz	HMP4040	4736	-	O/P Mon

Table 8

O/P Mon – Output Monitored using calibrated equipment



2.3 Transmitter Output Power

2.3.1 Specification Reference

Industry Canada RSS-310, Clause 3.1
Industry Canada RSS-GEN, Clause 6.12

2.3.2 Equipment Under Test and Modification State

Net2 Entry Touchpanel, S/N: Not serialised (75935869-TSR0007) - Modification State 0

2.3.3 Date of Test

17-January-2017

2.3.4 Test Method

This test was performed in accordance with Industry Canada RSS-GEN, clause 6.12.

2.3.5 Environmental Conditions

Ambient Temperature 19.1 °C
Relative Humidity 30.0 %

2.3.6 Test Results

HiTag - 125 kHz RFID Transceiver

Frequency (kHz)	Transmitter Output Power (dBµV/m)
124.82	70.53

Table 9

Industry Canada RSS-Gen and Industry Canada RSS-310 Limit Clause

None specified.



2.3.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Antenna (Active Loop, 9kHz-30MHz)	Rohde & Schwarz	HFH2-Z2	333	24	9-Dec-2018
Antenna (Dish/Tripod/Adaptor, 1GHz-18GHz)	Rohde & Schwarz	AC-008	334	-	TU
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygrometer	Rotronic	HYGROPALM 1	2338	12	21-Sep-2017
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017

Table 10

TU - Traceability Unscheduled



2.4 Transmitter Unwanted Emissions

2.4.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.209
Industry Canada RSS-310, Clause 3.1
Industry Canada RSS-GEN, Clause 6.13

2.4.2 Equipment Under Test and Modification State

Net2 Entry Touchpanel, S/N: 4532447 - Modification State 0

2.4.3 Date of Test

06-January-2017

2.4.4 Test Method

This test was performed in accordance with Industry Canada RSS-GEN, clause 6.13.

Measurements were made at a distance of 3 m. The limit lines shown on the plot were extrapolated from either 300 m or 30 m to the measurement distance of 3 m in accordance with ANSI C63.10, Clause 6.4.4.2.

2.4.5 Environmental Conditions

Ambient Temperature 19.1 °C
Relative Humidity 30.0 %

2.4.6 Test Results

HiTag - 125 kHz RFID Transceiver

Transmit Mode, 9 kHz to 30 MHz

Frequency (MHz)	Quasi-Peak Level ($\mu\text{V}/\text{m}$) at 3m	Quasi-Peak Level ($\mu\text{V}/\text{m}$) at 30m
*		

Table 11

*No emissions were detected within 20 dB of the limit.

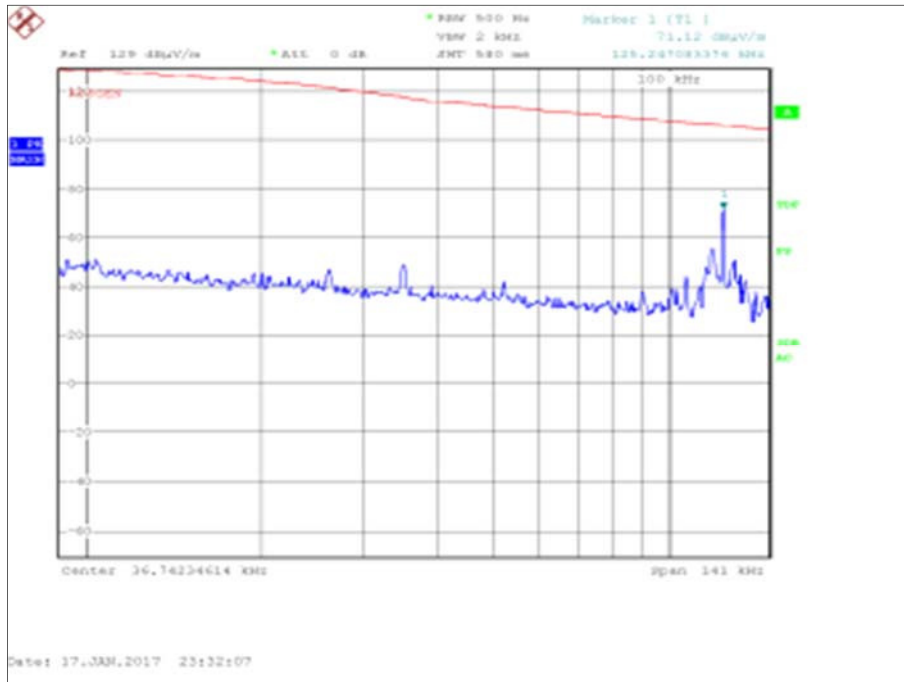


Figure 2 - Test Frequency Range 9 kHz to 150 kHz

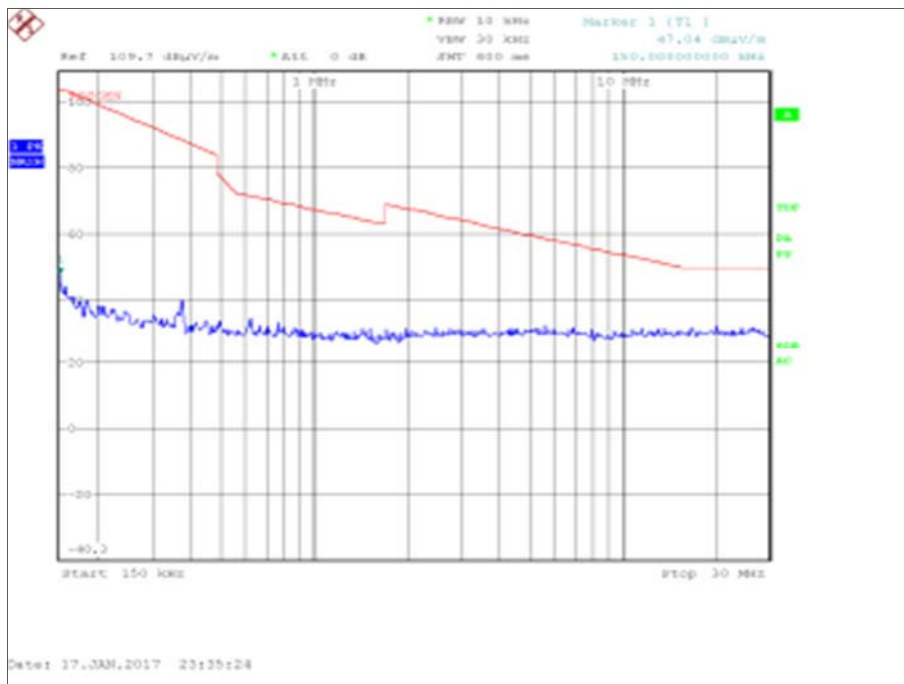


Figure 3 - Test Frequency Range 150 kHz to 30 MHz



Transmit Mode, 30 MHz to 1 GHz

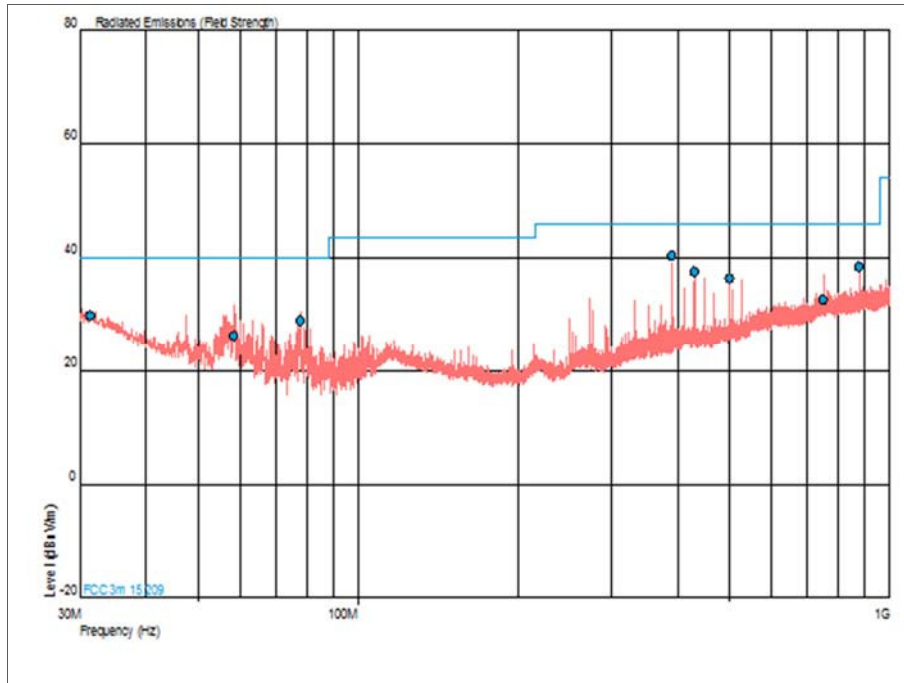


Figure 4 - Frequency Range Under Test: 30 MHz to 1 GHz

Frequency (MHz)	QP Level (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dBµV/m)	Angle(Deg)	Height(m)	Polarity
31.359	29.7	40.0	-10.3	103	1.00	Horizontal
58.513	26.2	40.0	-13.8	87	1.00	Vertical
77.987	28.9	40.0	-11.1	168	1.00	Vertical
390.009	40.4	46.0	-5.6	353	1.28	Vertical
429.016	37.5	46.0	-8.5	0	1.00	Vertical
500.070	36.3	46.0	-9.7	183	1.00	Vertical
750.284	32.6	46.0	-13.4	16	1.00	Horizontal
875.175	38.4	46.0	-7.6	121	1.00	Horizontal

Table 12



Industry Canada RSS-310, Limit Clause

None specified.

Industry Canada RSS-GEN, Limit Clause 8.9

Frequency (kHz)	Electric Field Strength ($\mu\text{V}/\text{m}$)	Magnetic Field Strength (H-Field) ($\mu\text{A}/\text{m}$)	Measurement Distance (metres)
9 to 490	2400/F (F in kHz)	2400/377F (F in kHz)	300
490 to 1705	24000/F (F in kHz)	24000/377F (F in kHz)	30
1705 to 30000	30	N/A	30

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$ at 3 metres)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

FCC 47 CFR Part 15C, Clause 15.209

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (metres)
9 to 490	2400/F(kHz)	300
490 to 1705	24000/F(kHz)	30
1705 to 30000	30	30
30 to 88	100	3
88 to 216	150	3
216 to 960	200	3
Above 960	500	3



2.4.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Antenna (Bilog)	Chase	CBL6143	2904	24	11-Jun-2017
Antenna (Active Loop, 9kHz-30MHz)	Rohde & Schwarz	HFH2-Z2	333	24	9-Dec-2018
Antenna (Dish/Tripod/Adaptor, 1GHz-18GHz)	Rohde & Schwarz	AC-008	334	-	TU
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Hygrometer	Rotronic	HYGROPALM 1	2338	12	21-Sep-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017

Table 13

TU – Traceability Unscheduled



3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Occupied Bandwidth	TBC by Lab
Transmitter Frequency Stability	TBC by Lab
Transmitter Output Power	Radiated: ± 5.1 dB Conducted: ± 0.96 dB
Transmitter Unwanted Emissions	9 kHz to 30 MHz: ± 3.4 dB 30 MHz to 1 GHz: ± 5.1 dB 1GHz to 40GHz: ± 6.3 dB

Table 14