Report on the FCC and IC Testing of the

Paxton Access Ltd
Access Reader, Model: Entry Touchpanel

In accordance with FCC 47 CFR Part 15, Industry Canada RSS-247, Industry Canada, RSS-210 and Industry Canada RSS-GEN (Simultaneous Transmission)

Product Service

Choose certainty.
Add value.

Prepared for: Paxton Access Ltd
Paxton House
Home Farm Road
Brighton, BN1 9HU
United Kingdom

FCC ID: USE377620A IC: 10217A-377620A

COMMERCIAL-IN-CONFIDENCE

Date: July2018
Document Number: 75942506-04 | Issue: 01

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Natalie Bennett	05 July 2018	
Authorised Signatory	Matthew Russell	05 July 2018	

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 15, Industry Canada RSS-247, Industry Canada RSS-210 and Industry Canada RSS-GEN (Simultaneous Transmission). The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Graeme Lawler	05 July 2018	

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 compliant with FCC 47 CFR Part 15: 2017, Industry Canada RSS-247: Issue 2 (2017-02), Industry Canada RSS-210: Issue 9 (2016-08) and Industry Canada RSS-GEN: Issue 5 (2018-04)

TÜV SÜD Product Service
is a trading name of TUV SUD Ltd
Registered in Scotland at East Kilbride,
Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TUV SUD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuv-sud.co.uk

TÜV SÜD Product Service
Octagon House
Concorde Way
Fareham
Hampshire PO15 5RL
United Kingdom

Product Service

Contents

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	05 July 2018

Table 1

1.2 Introduction

Applicant	Paxton Access Ltd
Manufacturer	Paxton Access Ltd
Model Number(s)	Entry Touchpanel
Serial Number(s)	5365549
Hardware Version(s)	z-n2erv
Software Version(s)	2.19.7707.0
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 15: 2017 Industry Canada RSS-247: Issue 2 (2017-02) Industry Canada RSS-210: Issue 9 (2016-08) Industry Canada RSS-GEN: Issue 5 (2018-04)
Order Number Date	174737 18-April-2018
Date of Receipt of EUT	12-June-2018
Start of Test	12-June-2018
Finish of Test	17-June-2018
Name of Engineer(s)	Graeme Lawler
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 15, Industry Canada RSS-247, Industry Canada RSS-210 and Industry Canada RSS-GEN is shown below.

Section	Specification Clause				Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-210	RSS-GEN			
Configuration and Mode: 125 kHz (RFiD), 13.56 MHz (RFiD) and Bluetooth Low Energy							
2.1	15.247 (d), 15.209 and 15.225.	5.5	B.6	6.13	Radiated Spurious Emissions (Simultaneous Transmission)	Pass	

Table 2

1.4 Application Form

EQUIPMENT DESCRIPTION	
Model Name/Number	Entry Touchpanel
Part Number	337-620
Hardware Version	z-n2erv
Software Version	2.19.7707.0
FCC ID (if applicable)	USE377620A
Industry Canada ID (if applicable)	10217A-377620A
Technical Description (Please provide a brief description of the intended use of the equipment)	The Entry panel is used as part of an access control system and 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

INTENTIONAL RADIATORS									
Technology	Frequency Band (MHz)	Conducted Declared Output Power (dBm)	Antenna Gain (dBi)	Supported Bandwidth (s) (MHz)	Modulation Scheme(s)	ITU Emission Designator	Test Channels (MHz)		
							Bottom	Middle	Top
RFiD	13.56	<13			AM		13.533		13.567
RFiD	0.125	<13			AM		0.125		0.125
Bluetooth	2480								

UN-INTENTIONAL RADIATOR	
Highest frequency generated or used in the device or on which the device operates or tunes	2485 MHz
Lowest frequency generated or used in the device or on which the device operates or tunes	
Class A Digital Device (Use in commercial, industrial or business environment) ☐ Class B Digital Device (Use in residential environment only) ☒	

Power Source			
AC	Single Phase	Three Phase	Nominal Voltage
External DC	Nominal Voltage	Maximum Current	
	48 V	1.25 A	
Battery	Nominal Voltage	Battery Operating End Point Voltage	
Can EUT transmit whilst being charged?		Yes ☐ No ☐	

EXTREME CONDITIONS					
Maximum temperature	50	°C	Minimum temperature	-20	°C

Ancillaries
Please list all ancillaries which will be used with the device.

ANTENNA CHARACTERISTICS					
☐	Antenna connector			State impedance	Ohm
☐	Temporary antenna connector			State impedance	Ohm
☒	Integral antenna	Type	Loop Coil		
☐	External antenna	Type			

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

Name: Walter Riche

Position held: Compliance Engineer Date: 23.05.2018

1.5 Product Information

1.5.1 Technical Description

The Entry panel is used as part of an access control system and 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.

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: 5365549			
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: 125 kHz (RFiD), 13.56 MHz (RFiD) and Bluetooth Low Energy		
Radiated Spurious Emissions (Simultaneous Transmission)	Graeme Lawler	UKAS

Table 4

Office Address:

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

2 Test Details

2.1 Radiated Spurious Emissions (Simultaneous Transmission)

2.1.1 Specification Reference

FCC 47 CFR Part 15, Clause 15.247 (d), 15.209 and 15.225
Industry Canada RSS-247, Clause 5.5
Industry Canada RSS-210, Clause B.6
Industry Canada RSS-GEN, Clause 6.13

2.1.2 Equipment Under Test and Modification State

Entry Touchpanel, S/N: 5365549 - Modification State 0

2.1.3 Date of Test

12-June-2018 to 17-June-2018

2.1.4 Test Method

The test was performed in accordance with ANSI C63.10, clauses 6.3, 6.4, 6.5 and 6.6.

2.1.5 Environmental Conditions

Ambient Temperature	20.0 - 20.5 °C
Relative Humidity	51.8 - 58.2 %

2.1.6 Test Results

125 kHz (RFiD), 13.56 MHz (RFiD) and Bluetooth Low Energy

The EUT was configured for simultaneous transmission in the following mode of operation:

Technology	Frequency Band (MHz)	Channel Frequency (MHz)
Bluetooth	2400 MHz to 2483.5 MHz	2402 MHz, 2426 MHz and 2480 MHz
SRD	13.110 MHz to 14.010 MHz	13.56 MHz
SRD	Not Specified	125 kHz

Table 5 - Modes of Operation

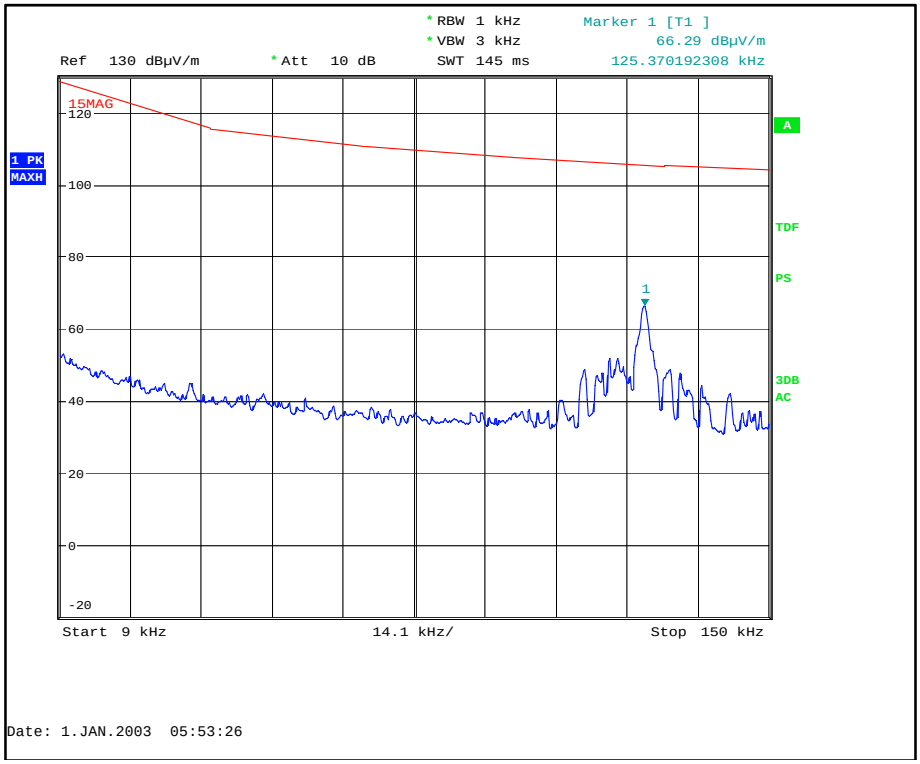

Figure 1 - 9 kHz to 150 kHz - Vertical

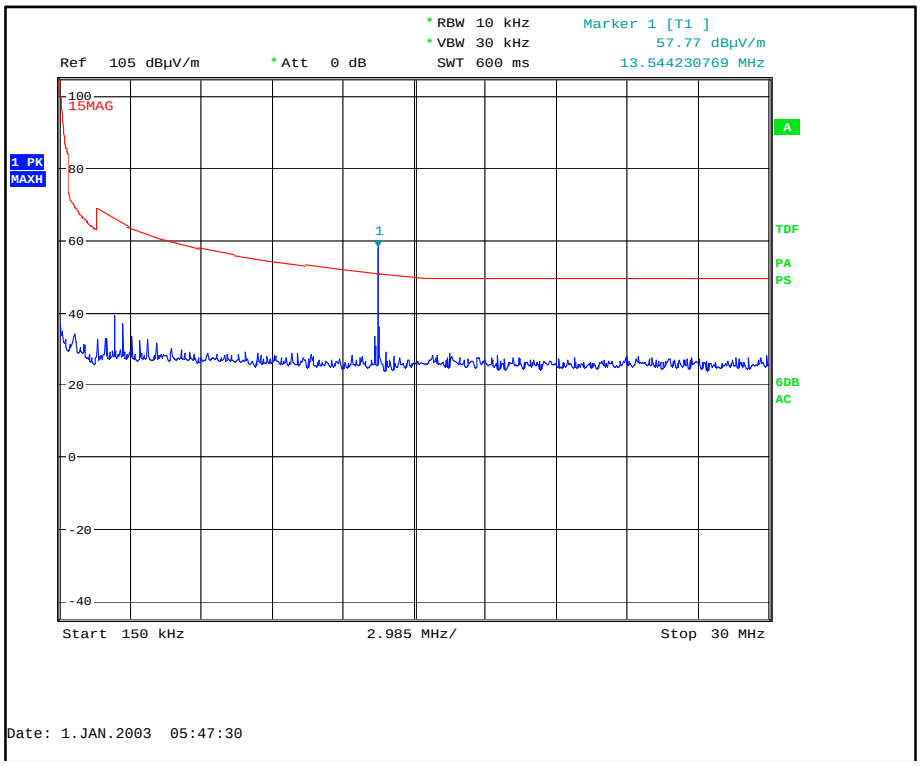

Figure 2 - 150 kHz to 30 MHz – Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
37.785	36.90	N/A	100	N/A	63.10	N/A
74.853	27.83	N/A	100	N/A	72.17	N/A
116.256	7.15	N/A	150	N/A	142.85	N/A
249.999	45.97	N/A	200	N/A	154.03	N/A
333.481	43.80	N/A	200	N/A	156.20	N/A
960.000	26.36	N/A	200	N/A	176.64	N/A

Table 6 - 30 MHz to 1 GHz Emissions Results

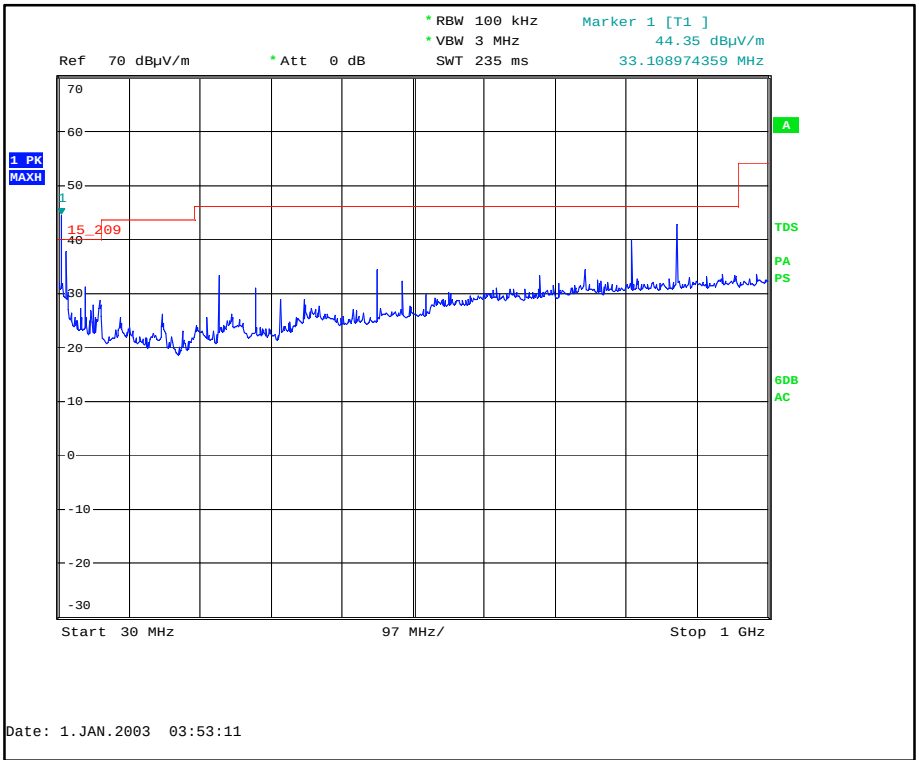

Figure 3 - 30 MHz to 1 GHz - Horizontal and Vertical

NOTE: Any emission shown on the above plot that are not detailed in the table above do not fall within a restricted band of operation, therefore the least stringent limit is -20 dBc of the BLE transmitter, therefore there is more than 10 dB margin and this emission was investigated no further.

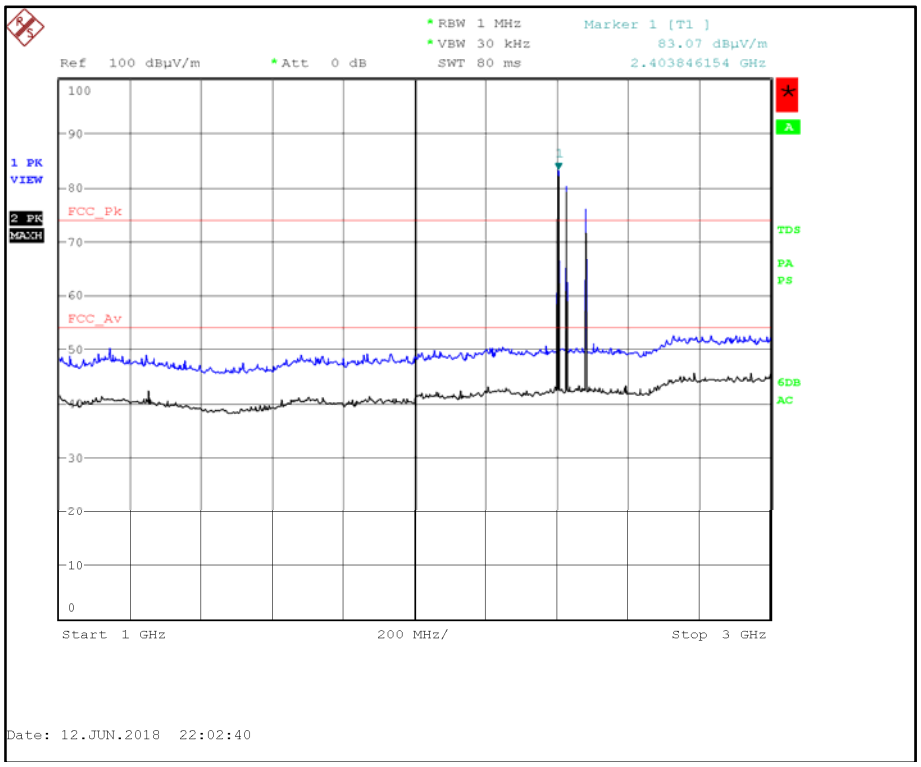

Figure 4 - 1 GHz to 3 GHz - Horizontal and Vertical

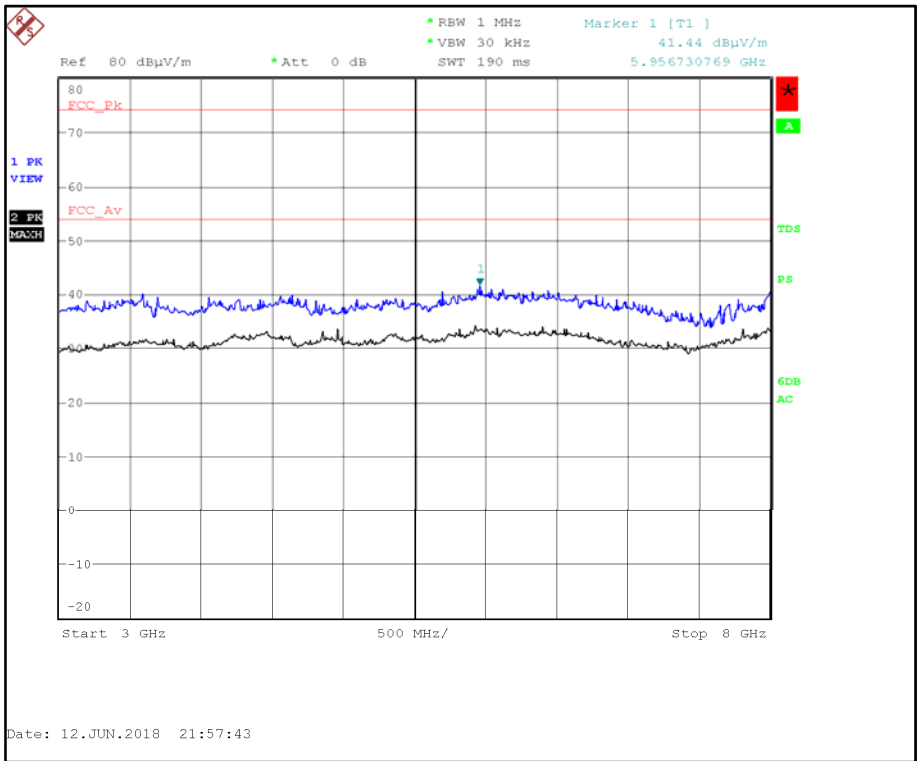

Figure 5 - 3 GHz to 8 GHz - Horizontal and Vertical

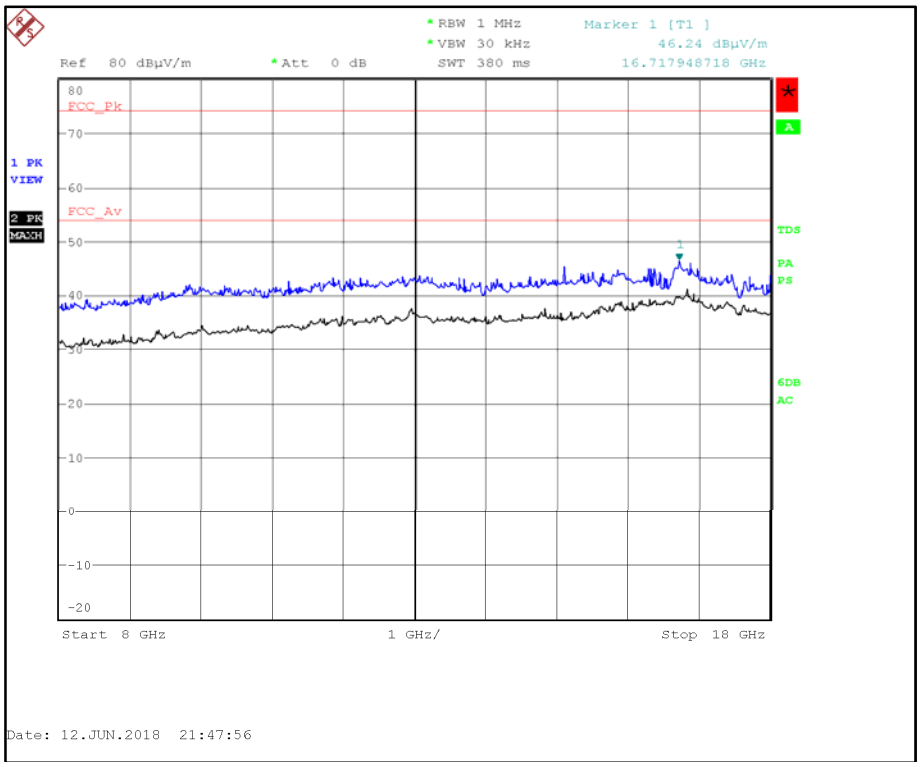

Figure 6 - 8 GHz to 18 GHz - Horizontal and Vertical

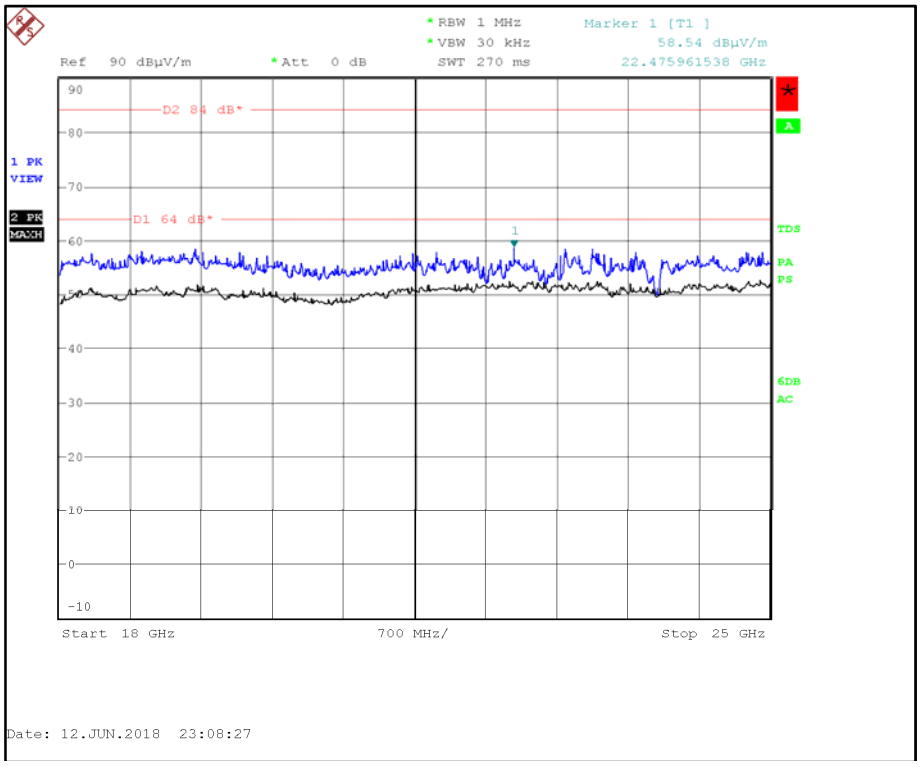

Figure 7 - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Parts 15.247(d), 15.209, and 15.225

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
15.209 (Below 30 MHz)	9 kHz to 490 kHz: 2400/F (kHz) dBµV/m at 300 m 490 kHz to 1.705 MHz: 24000/F (kHz) dBµV/m at 30 m 1.705 MHz to 30 MHz: 30 dBµV/m at 30 m
Part 15.247 (d) (Above 30 MHz)	-20 dBc Within Restricted Bands of Operation as stated in 15.205: 74/54 dBµV at 3 m (Peak/Average)

Table 7 - FCC Limit Table

Industry Canada RSS-247, Limit Clause 5.5, Industry Canada RSS-210, Limit Clause B.6 and Industry Canada RSS-GEN, Limit Clause 8.9

The least stringent limit from the applicable rule parts was used to determine compliance for Radiated Emissions testing of multiple transmission sources.

The least stringent applicable limit was:

Rule Part	Limit
RSS-GEN (Below 30 MHz)	9 kHz to 490 kHz: 6.37/F (F in kHz) dBµA/m at 300 m 490 kHz to 1705 kHz: 63.7/F (Fin kHz) dBµA/m at 30 m 1.705 MHz to 30 MHz 0.08 dBµA/m at 30 m
RSS-247 (Above 30 MHz)	-20 dBc Within Restricted Bands of Operation as stated in RSS-GEN 8.10: 74/54 dBµV at 3 m (Peak/Average)

Table 8 - Limit Table

2.1.7 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	09-Dec-2018
Antenna (Dish/Tripod/Adaptor, 1GHz-18GHz)	Rohde & Schwarz	AC-008	334	-	TU
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	1002	12	20-Oct-2018
Antenna 18-40GHz (Double Ridge Guide)	Q-Par Angus Ltd	QSH 180K	1511	24	07-Dec-2018
Pre-Amplifier	Phase One	PS04-0086	1533	12	12-Jan-2019
18GHz - 40GHz Pre-Amplifier	Phase One	PSO4-0087	1534	12	02-Feb-2019
Screened Room (5)	Rainford	Rainford	1545	36	19-Jul-2019
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Antenna (Bilog)	Chase	CBL6143	2904	24	08-Aug-2019
Comb Generator	Schaffner	RSG1000	3034	-	TU
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	22-Nov-2018
1501A 4.0M Km Km Cable	Rhophase	KPS-1501A-4000-KPS	4301	12	19-Feb-2019
1GHz to 8GHz Low Noise Amplifier	Wright Technologies	APS04-0085	4365	12	18-Oct-2018
Suspended Substrate Highpass Filter	Advance Power Components	11SH10-3000/X18000-O/O	4412	12	15-Jun-2018*
Cable (Rx, Nm-Nm, 7m)	Scott Cables	SLU18-NMNM-07.00M	4498	6	19-Jun-2018
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	02-Jul-2018
Cable (Rx, SMAm-SMAm 0.5m)	Scott Cables	SLSLL18-SMSM-00.50M	4528	6	15-Aug-2018
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	01-Mar-2019
Mast Controller	Maturo Gmbh	NCD	4810	-	TU
Tilt Antenna Mast	Maturo Gmbh	TAM 4.0-P	4811	-	TU
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	12-Feb-2019
Hygrometer	Rotronic	HP21	4989	12	26-Apr-2019

Table 9

TU - Traceability Unscheduled
NOTE: *Used on 12 June only.

3 Measurement Uncertainty

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

Test Name	Measurement Uncertainty
Radiated Spurious Emissions (Simultaneous Transmission)	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB

Table 10