



TEST REPORT

Test Report No. : UL-RPT-RP13337971-1016A V2.0

Customer : Raspberry Pi (Trading) Ltd

Model No. / PMN : RPI-RM0

HVIN : RPI-RM0

FCC ID : 2ABCB-RPIRM0

ISED Certification No. : IC: 20953-RPIRM0

Technology : *Bluetooth* – BDR & EDR

Test Standard(s) : FCC Parts 15.247(a)(1), 15.247(a)(1)(iii), 15.247(b)(1) & 15.247(d)
Innovation, Science and Economic Development Canada
RSS-247 Issue 2 Sections 5.1(a), 5.1(b), 5.1(d), 5.4(b) & 5.5
RSS-Gen Issue 5 Sections 6.7 & 6.12

Test Laboratory : UL International (UK) Ltd, Basingstoke, Hampshire, RG24 8AH,
United Kingdom

1. This test report shall not be reproduced except in full, without the written approval of UL International (UK) Ltd.
2. The results in this report apply only to the sample(s) tested.
3. The sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.
5. Version 2.0 supersedes all previous versions.

Date of Issue: 30 October 2020

Checked by:

Sarah Williams
RF Operations Leader, Radio Laboratory

Company Signatory:

Ben Mercer
Lead Project Engineer, Radio Laboratory



5772

The *Bluetooth*® word mark and logos are owned by the *Bluetooth* SIG, Inc. and any use of such marks by UL International (UK) Ltd is under licence. Other trademarks and trade names are those of their respective owners.

UL International (UK) Ltd

Unit 1-3 Horizon, Kingsland Business Park, Wade Road, Basingstoke, Hampshire, RG24 8AH, UK
Telephone: +44 (0)1256 312000
Facsimile: +44 (0)1256 312001

Customer Information

Company Name:	Raspberry Pi (Trading) Ltd
Address:	Maurice Wilkes Building Cowley Road Cambridge CB4 0DS United Kingdom

Report Revision History

Version Number	Issue Date	Revision Details	Revised By
1.0	20/10/2020	Initial Version	Sarah Williams
2.0	30/10/2020	Lower Band Edge results added	Ben Mercer

Table of Contents

Customer Information	2
Report Revision History	2
1. Attestation of Test Results	4
1.1. Description of EUT	4
1.2. General Information	4
1.3. Summary of Test Results	4
1.4. Deviations from the Test Specification	4
2. Summary of Testing	5
2.1. Facilities and Accreditation	5
2.2. Methods and Procedures	5
2.3. Calibration and Uncertainty	6
2.4. Test and Measurement Equipment	7
3. Equipment Under Test (EUT)	8
3.1. Identification of Equipment Under Test (EUT)	8
3.2. Modifications Incorporated in the EUT	8
3.3. Additional Information Related to Testing	8
3.4. Description of Available Antennas	9
3.5. Description of Test Setup	10
4. Antenna Port Test Results	14
4.1. Transmitter 99% Emission Bandwidth	14
4.2. Transmitter 20 dB Bandwidth	18
4.3. Transmitter Carrier Frequency Separation	22
4.4. Transmitter Number of Hopping Frequencies and Average Time of Occupancy	26
4.5. Transmitter Maximum Peak Output Power	28
4.6. Transmitter Band Edge Conducted Emissions	35

1. Attestation of Test Results









1.1. Description of EUT

The equipment under test was a *Bluetooth* and WiFi radio module.

1.2. General Information

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.247
Specification Reference:	47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.209
Specification Reference:	RSS-Gen Issue 5 March 2019
Specification Title:	General Requirements for Compliance of Radio Apparatus
Specification Reference:	RSS-247 Issue 2 February 2017
Specification Title:	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
Site Registration:	FCC: 621311, ISEDC: 20903
Location of Testing:	Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
Test Dates:	28 July 2020 to 28 October 2020

1.3. Summary of Test Results

FCC Reference (47CFR)	ISED Canada Reference	Measurement	Result
N/A	RSS-Gen 6.7	99% Emission Bandwidth	
Part 15.247(a)(1)	RSS-Gen 6.7 / RSS-247 5.1(a)	Transmitter 20 dB Bandwidth	
Part 15.247(a)(1)	RSS-247 5.1(b)	Transmitter Carrier Frequency Separation	
Part 15.247(a)(1)(iii)	RSS-247 5.1(d)	Transmitter Number of Hopping Frequencies and Average Time of Occupancy	
Part 15.247(b)(1)	RSS-Gen 6.12 / RSS-247 5.4(b)	Transmitter Maximum Peak Output Power	
Part 15.247(d) & 15.209(a)	RSS-Gen 6.13 / RSS-247 5.5	Transmitter Band Edge conducted Emissions	
Key to Results  = Complied  = Did not comply			

1.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

2. Summary of Testing

2.1. Facilities and Accreditation

The test site and measurement facilities used to collect data are located at Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom.

UL International (UK) Ltd is accredited by UKAS. The tests reported herein have been performed in accordance with its terms of accreditation.

2.2. Methods and Procedures

Reference:	ANSI C63.10-2013
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Reference:	KDB 558074 D01 15.247 Meas Guidance v05r02, April 2, 2019
Title:	Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 of the FCC Rules

2.3. Calibration and Uncertainty

Measuring Instrument Calibration

In accordance with UKAS requirements all the measurement equipment is on a calibration schedule. All equipment was within the calibration period on the date of testing.

Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value measured (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
99% Emission Bandwidth	2.4 GHz to 2.4835 GHz	95%	±3.92 %
20 dB Bandwidth	2.4 GHz to 2.4835 GHz	95%	±4.59 %
Carrier Frequency Separation	2.4 GHz to 2.4835 GHz	95%	±4.59 %
Average Time of Occupancy	2.4 GHz to 2.4835 GHz	95%	±3.53 ns
Conducted Maximum Peak Output Power	2.4 GHz to 2.4835 GHz	95%	±1.13 dB
Conducted Band Edge Emissions	2.4 GHz to 2.4835 GHz	95%	±2.62 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

2.4. Test and Measurement Equipment**Test Equipment Used for Transmitter Conducted Tests**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2001	Thermohygrometer	Testo	608-H1	45041824	05 Jan 2021	12
M1999	RF Power Sensor	Dare Instruments	RPR3006W	15I00041SN 079	28 May 2021	12
A2525	Attenuator	AtlanTecRF	AN18W5-10	832827	Calibrated before use	-
M1835	Signal Analyser	Rohde & Schwarz	FSV30	103050	14 Apr 2021	12
G0614	Signal Generator	Rohde & Schwarz	SMB100A	177687	19 May 2023	36
M1886	Test Receiver	Rohde & Schwarz	ESU26	1000554	15 May 2021	12
G0628	Vector Signal Generator	Rohde & Schwarz	SMBV100A	261847	08 Oct 2023	36
A2527	Attenuator	AltanTechRF	AN18W5-20	832828#2	Calibrated before use	-

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	Raspberry Pi
Model Name or Number / PMN:	RPI-RM0
Test Sample Serial Number:	3185953 <i>(Conducted sample)</i>
Hardware Version:	V1.0
Software Version:	V1.0
FCC ID:	2ABCB-RPIRM0
ISED Canada Certification Number:	IC: 20953-RPIRM0

3.2. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.3. Additional Information Related to Testing

Tested Technology:	Bluetooth		
Power Supply Requirement:	Nominal	5.0 VDC	
Type of Unit:	Transceiver		
Channel Spacing:	1 MHz		
Mode:	Basic Rate	Enhanced Data Rate	
Modulation:	GFSK	$\pi/4$ -DQPSK	8DPSK
Packet Type: (Maximum Payload)	DH5	2DH5	3DH5
Data Rate (Mbps):	1	2	3
Maximum Conducted Output Power:	6.5 dBm		
Transmit Frequency Range:	2402 MHz to 2480 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480

3.4. Description of Available Antennas

The table below lists the internal niche antenna and the external antenna available.

Manufacturer	Type	Frequency Range (MHz)	Antenna Gain (dBi)
ProAnt	Internal	2400 to 2480	3.5
Raspberry Pi	External	2400 to 2480	2.0

3.5. Description of Test Setup

Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Pi4 board used as test jig
Brand Name:	Raspberry Pi4
Model Name or Number:	Pi4
Serial Number:	10000000ae5754eo

Description:	Micro SD Card with OS image
Brand Name:	SanDisk
Model Name or Number:	16 GB card
Serial Number:	Not marked or stated

Description:	USB Mouse
Brand Name:	Microsoft
Model Name or Number:	1113
Serial Number:	Not marked or stated

Description:	USB Keyboard
Brand Name:	Dell
Model Name or Number:	KB212-B
Serial Number:	Not marked or stated

Description:	Power Supply. 100-230 VAC Input / 5 VDC Output
Brand Name:	Raspberry Pi4
Model Name or Number:	KSA-15E-051300HK
Serial Number:	Not marked or stated

Description:	USB Mouse
Brand Name:	Raspberry Pi
Model Name or Number:	RPI-MOUSE
Serial Number:	Not marked or stated

Description:	USB Keyboard
Brand Name:	HP
Model Name or Number:	KU-0316
Serial Number:	Not marked or stated

Support Equipment (continued)

Description:	Monitor
Brand Name:	ASUS
Model Name or Number:	PA238
Serial Number:	D9LMTF114809

Operating Modes

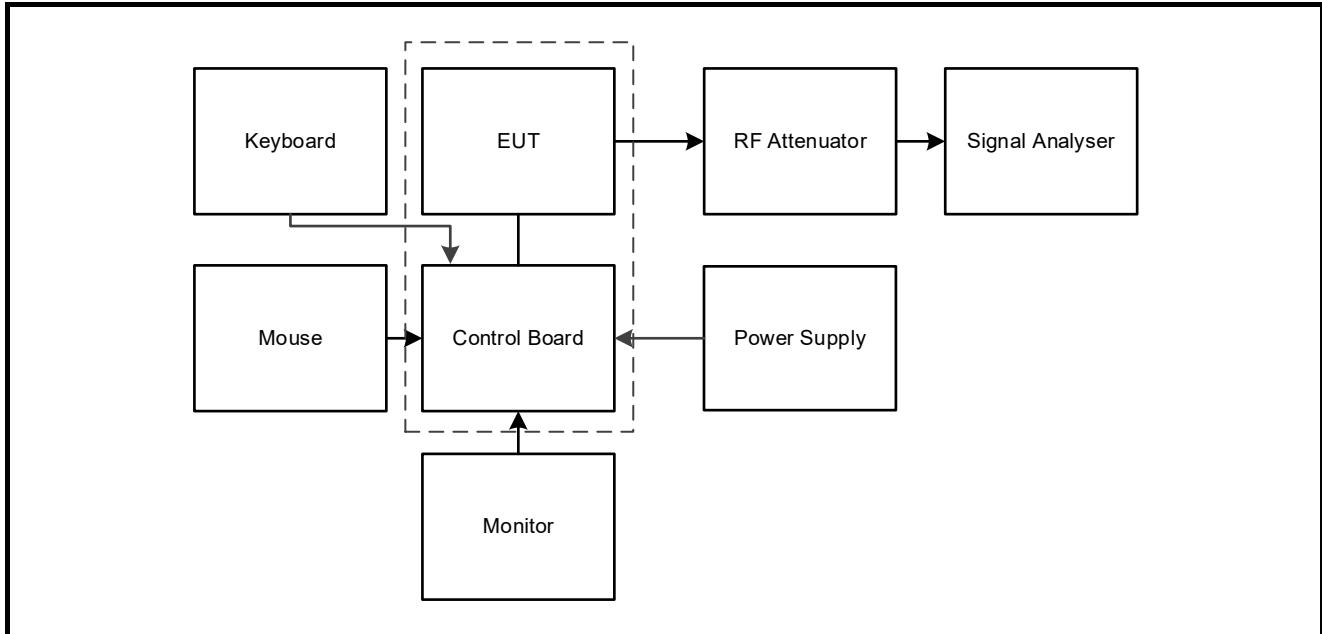
The EUT was tested in the following operating mode(s):

- Continuously transmitting at maximum power on bottom, middle and top channels in BDR (DH5 packets) or EDR (2DH5 or 3DH5 packets) as required.
- Continuously transmitting at maximum power in hopping mode on all channels in BDR (DH5 packets) or EDR (2DH5 or 3DH5 packets) as required.

Configuration and Peripherals

The EUT was tested in the following configuration(s):

- The Pi4 test jig was used to run *Bluetooth* test commands on the EUT. The Pi4 test jig was used to enable continuous transmission and to select the test channels and packet types as required.
- The EUT was powered via the Pi4 test jig which was powered from an AC/DC switch mode power supply.

Test Setup Diagrams**Conducted Tests:****Test Setup for Transmitter Conducted Tests**

4. Antenna Port Test Results

4.1. Transmitter 99% Emission Bandwidth

Test Summary:

Test Engineers:	Matthew Botfield & Jose Bayona	Test Date:	28 July 2020
Test Sample Serial Number:	3185953		

FCC Reference:	N/A
ISED Canada Reference:	RSS-Gen 6.7
Test Method Used:	RSS-Gen 6.7

Environmental Conditions:

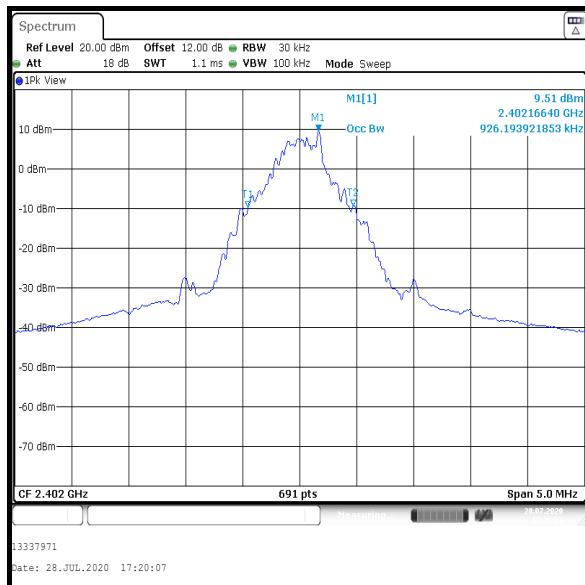
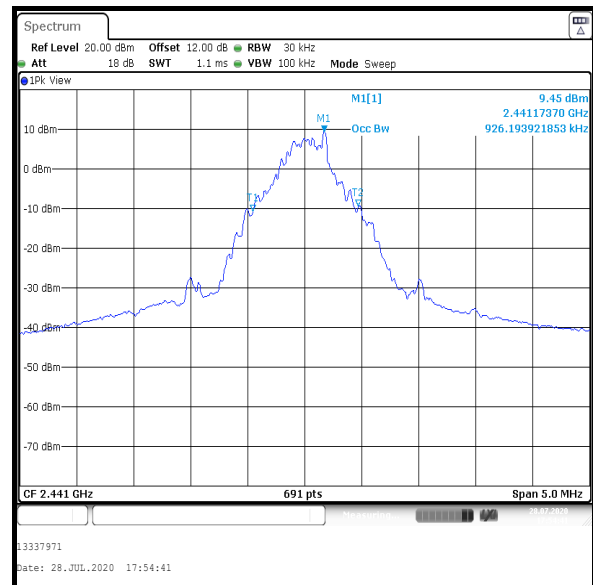
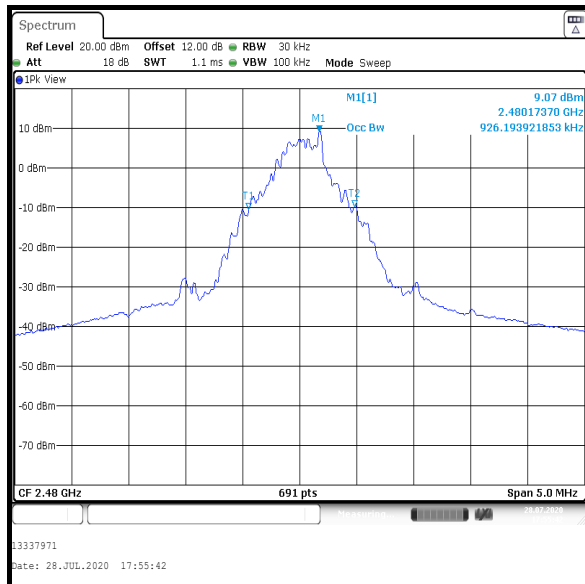
Temperature (°C):	23
Relative Humidity (%):	52

Note(s):

1. The signal analyser resolution bandwidth was set to 30 kHz and video bandwidth 100 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set to 5 MHz. The signal analyser occupied bandwidth function measured the 99% emission bandwidth.
2. The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable.

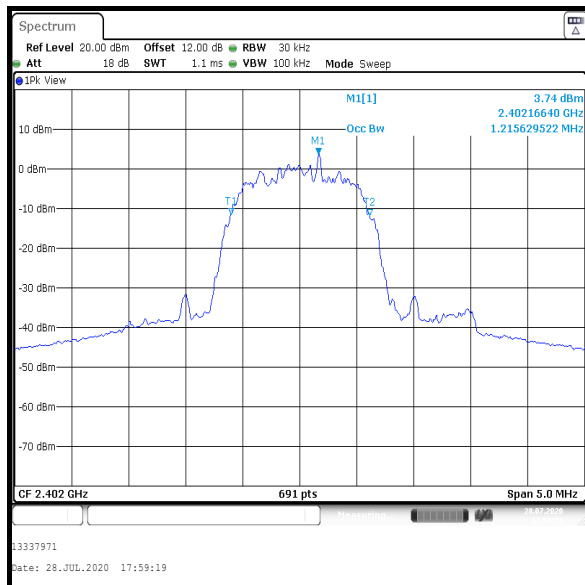
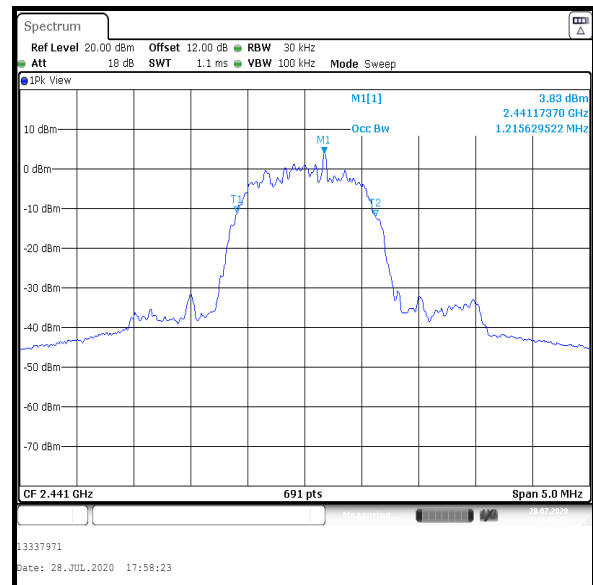
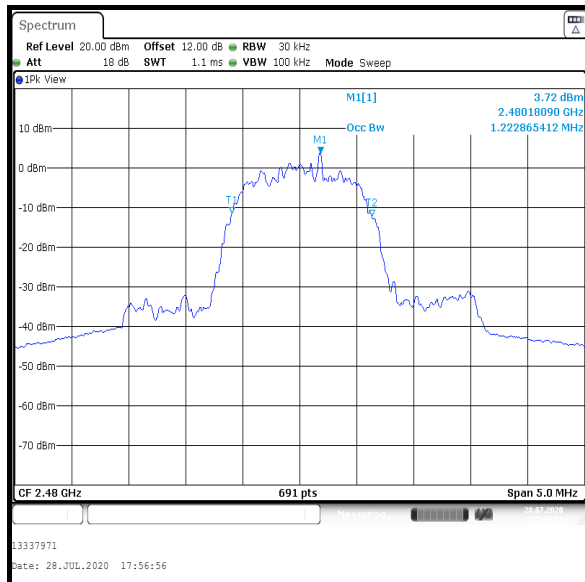
Transmitter 99% Emission Bandwidth (continued)**Results: DH5**

Channel	99% Emission Bandwidth (kHz)
Bottom	926.194
Middle	926.194
Top	926.194

**Bottom Channel****Middle Channel****Top Channel**

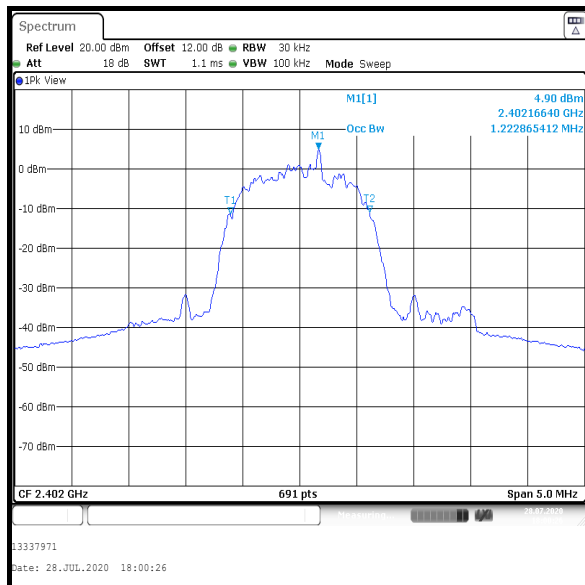
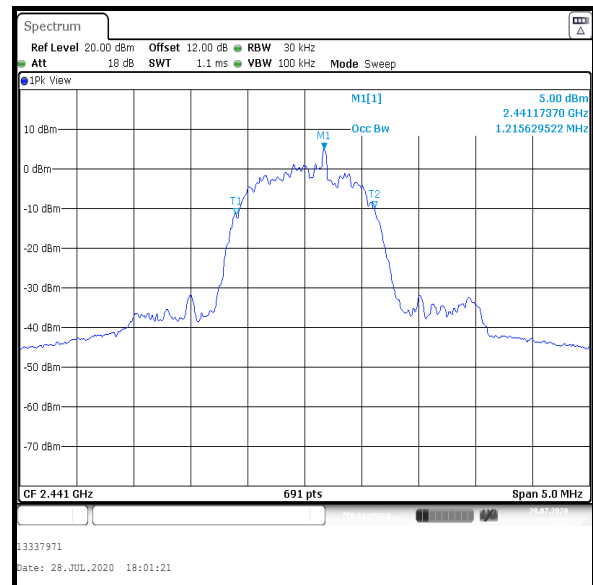
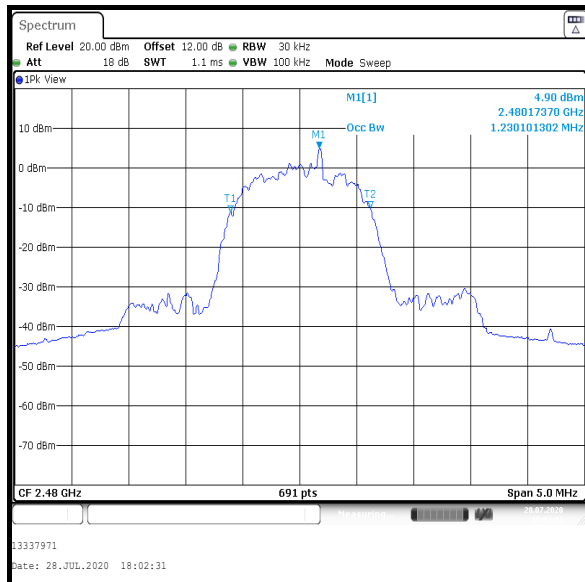
Transmitter 99% Emission Bandwidth (continued)**Results: 2DH5**

Channel	99% Emission Bandwidth (kHz)
Bottom	1215.630
Middle	1215.630
Top	1222.865

**Bottom Channel****Middle Channel****Top Channel**

Transmitter 99% Emission Bandwidth (continued)**Results: 3DH5**

Channel	99% Emission Bandwidth (kHz)
Bottom	1222.865
Middle	1215.630
Top	1230.101

**Bottom Channel****Middle Channel****Top Channel**

4.2. Transmitter 20 dB Bandwidth

Test Summary:

Test Engineers:	Matthew Botfield & Jose Bayona	Test Date:	29 July 2020
Test Sample Serial Number:	3185953		

FCC Reference:	Part 15.247(a)(1)
ISED Canada Reference:	RSS-Gen 6.7 / RSS-247 5.1(a)
Test Method Used:	ANSI C63.10 Section 6.9.2

Environmental Conditions:

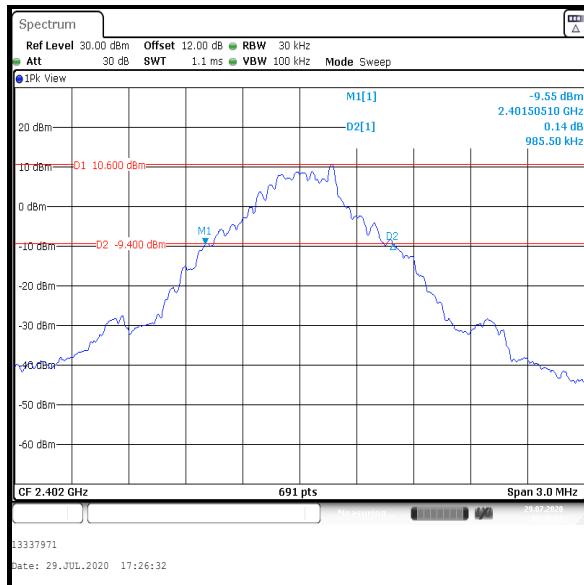
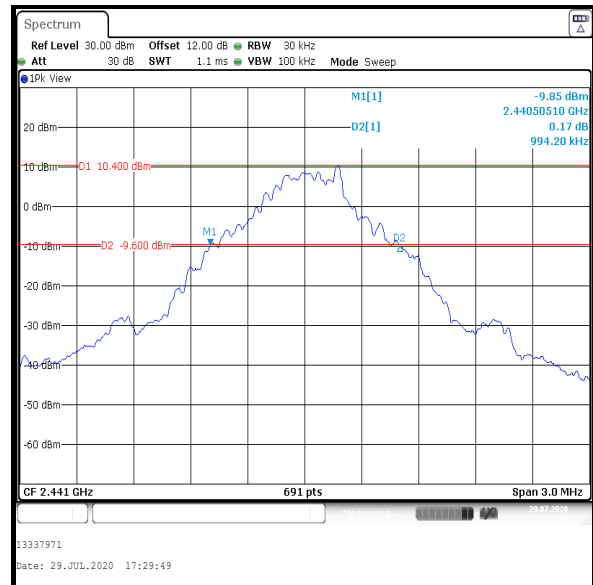
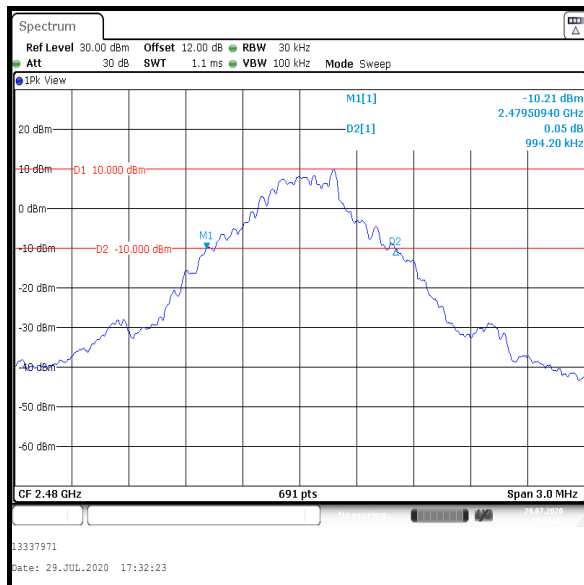
Temperature (°C):	23
Relative Humidity (%):	58

Note(s):

1. The signal analyser resolution bandwidth was set to 30 kHz and video bandwidth 100 kHz. A Peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set to 3 MHz. Normal and delta markers were placed 20 dB down from the peak of the carrier.
2. The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable.

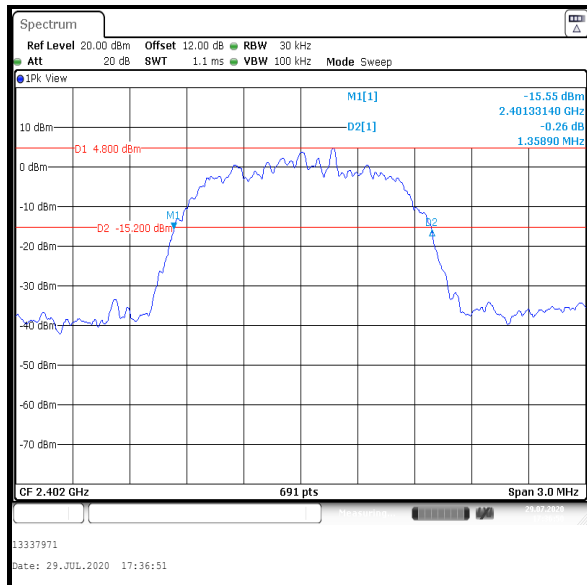
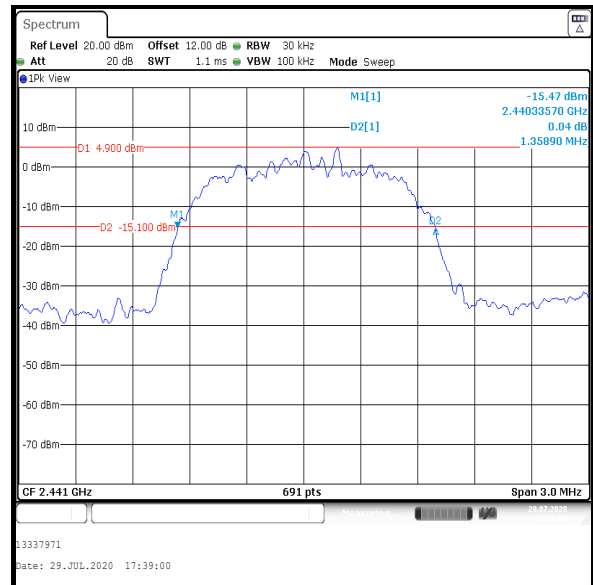
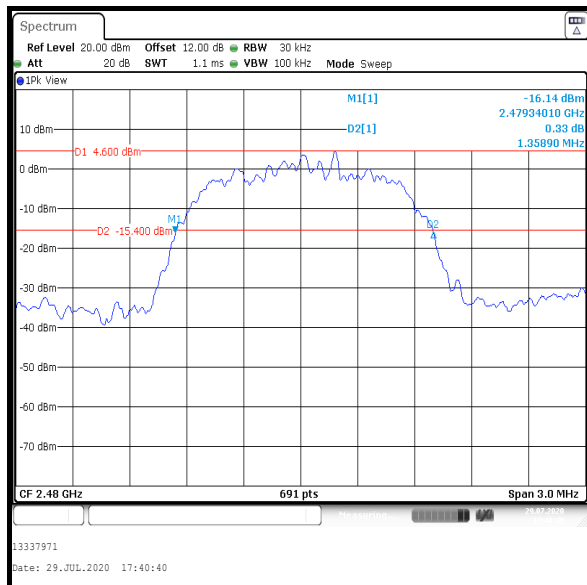
Transmitter 20 dB Bandwidth (continued)**Results DH5:**

Channel	20 dB Bandwidth (kHz)
Bottom	985.500
Middle	994.200
Top	994.200

**Bottom Channel****Middle Channel****Top Channel**

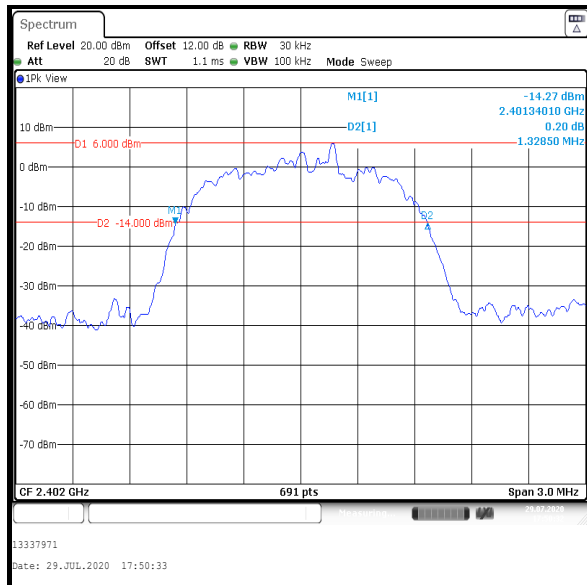
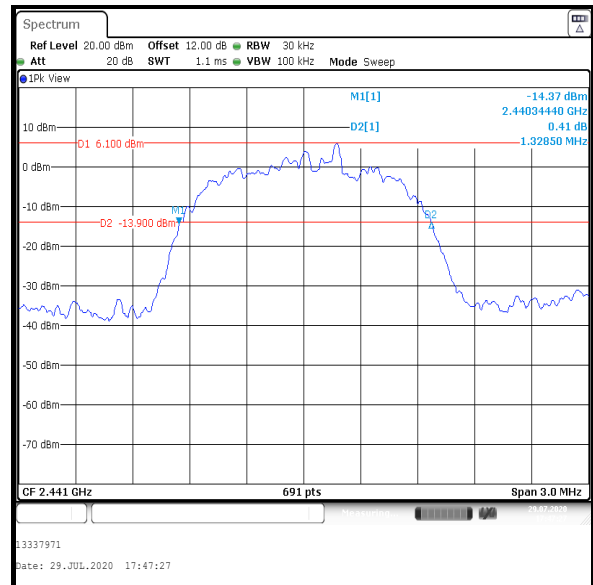
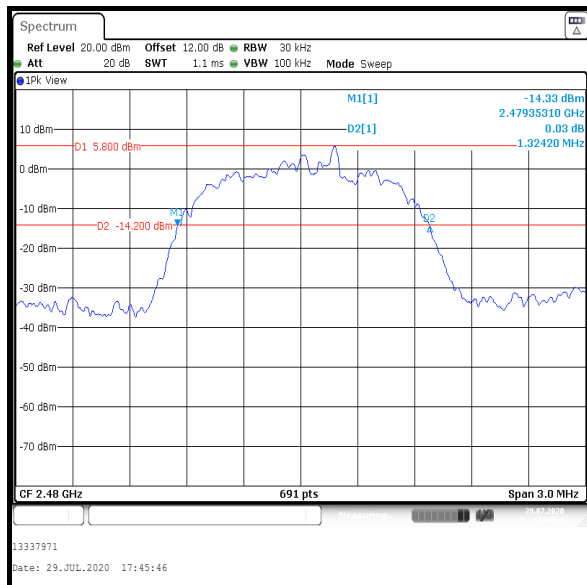
Transmitter 20 dB Bandwidth (continued)**Results 2DH5:**

Channel	20 dB Bandwidth (kHz)
Bottom	1358.900
Middle	1358.900
Top	1358.900

**Bottom Channel****Middle Channel****Top Channel**

Transmitter 20 dB Bandwidth (continued)**Results 3DH5:**

Channel	20 dB Bandwidth (kHz)
Bottom	1328.500
Middle	1328.500
Top	1324.200

**Bottom Channel****Middle Channel****Top Channel**

4.3. Transmitter Carrier Frequency Separation

Test Summary:

Test Engineers:	Matthew Botfield & Jose Bayona	Test Date:	29 July 2020
Test Sample Serial Number:	3185953		

FCC Reference:	Part 15.247(a)(1)
ISED Canada Reference:	RSS-247 5.1(b)
Test Method Used:	ANSI C63.10 Section 7.8.2

Environmental Conditions:

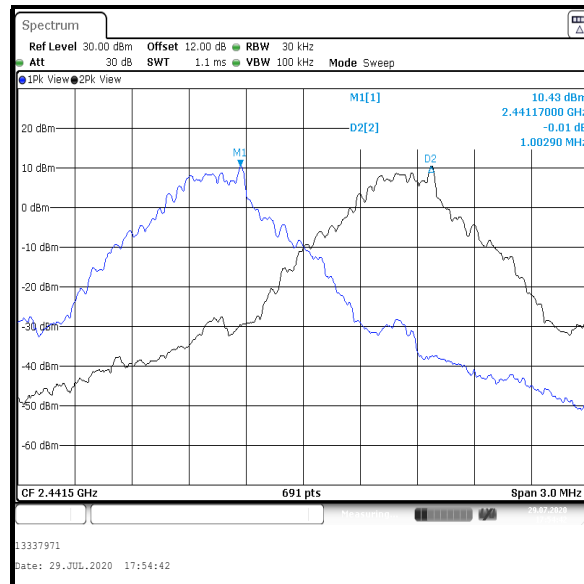
Temperature (°C):	23
Relative Humidity (%):	58

Note(s):

1. The 20 dB bandwidth measured for the middle channel operating at 2441 MHz was used to calculate the limit.
2. The signal analyser resolution bandwidth was set to 30 kHz and video bandwidth 100 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The span was set to 3 MHz. A marker was placed at the centre of one signal and then a delta marker was placed in the same place on the second signal.
3. The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable.

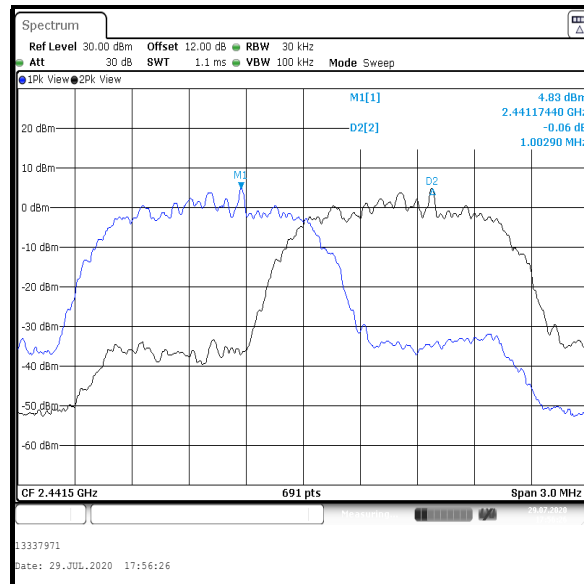
Transmitter Carrier Frequency Separation (continued)**Results: DH5**

Carrier Frequency Separation (kHz)	Limit ($2/3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
1002.900	662.800	340.100	Complied



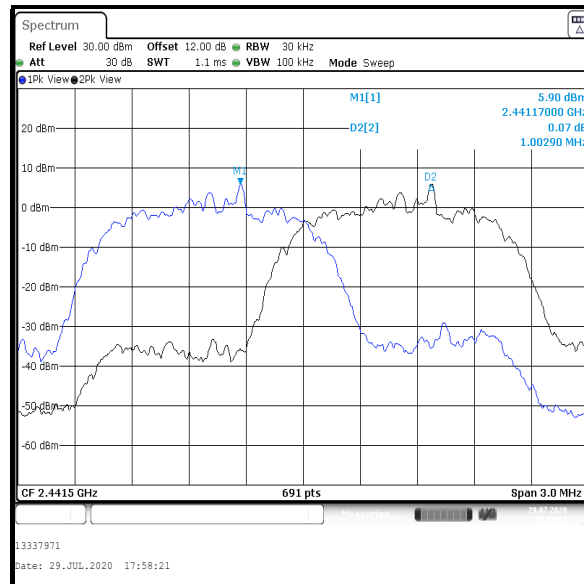
Transmitter Carrier Frequency Separation (continued)**Results: 2DH5**

Carrier Frequency Separation (kHz)	Limit ($2/3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
1002.900	905.933	96.967	Complied



Transmitter Carrier Frequency Separation (continued)**Results: 3DH5**

Carrier Frequency Separation (kHz)	Limit ($2/3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
1002.900	885.667	117.233	Complied



4.4. Transmitter Number of Hopping Frequencies and Average Time of Occupancy**Test Summary:**

Test Engineers:	Matthew Botfield & Jose Bayona	Test Date:	29 July 2020
Test Sample Serial Number:	3185953		

FCC Reference:	Part 15.247(a)(1)(iii)
ISED Canada Reference:	RSS-247 5.1(d)
Test Method Used:	ANSI C63.10 Sections 7.8.3 & 7.8.4

Environmental Conditions:

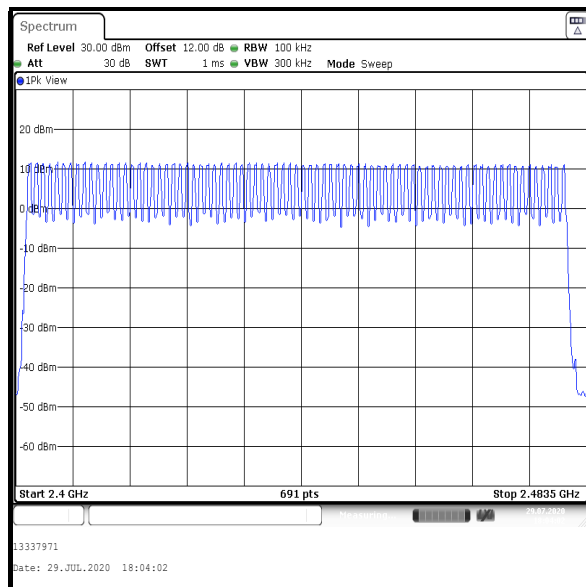
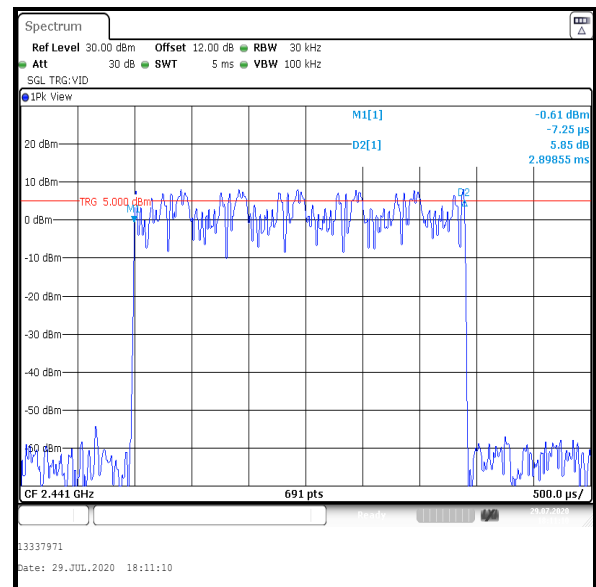
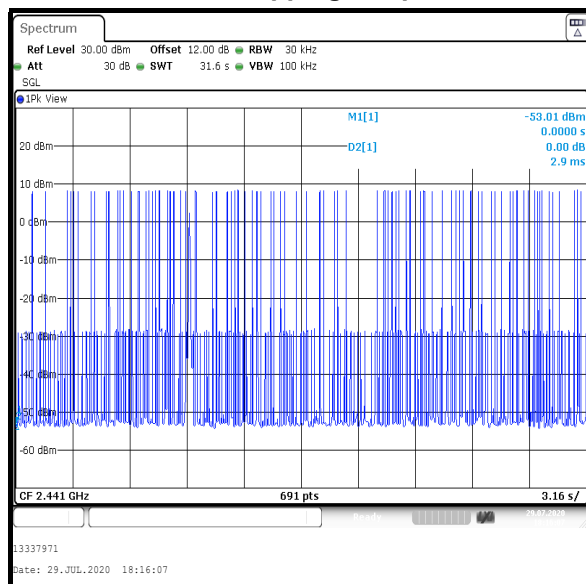
Temperature (°C):	23
Relative Humidity (%):	58

Note(s):

1. Tests were performed to identify the average time of occupancy in number of channels (79) x 0.4 seconds. The calculated period is 31.6 seconds.
2. The signal analyser was set up for the Number of Hopping Frequencies measurement as follows: the resolution bandwidth was set to 100 kHz and video bandwidth of 300 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The span was set to 83.5 MHz.
3. The signal analyser was set up for the Emission Width measurement as follows: the resolution bandwidth was set to 30 kHz and video bandwidth of 100 kHz. A peak detector was used and sweep time was set to auto with a span of zero Hz. The signal analyser was set to trigger at 1 ms, with a marker placed at the start of the emission and a delta marked place at the end of the emission. The emission width is recorded in the table below
4. The signal analyser was set up for the Number of Hopping Frequencies in 32 seconds measurement as follows: the resolution bandwidth was set to 30 kHz and video bandwidth of 100 kHz. A peak detector was used and sweep time was set to 31.6 seconds. The EUT was set to transmit in a hopping frequency mode with zero span. The total number of hopping frequencies were recorded in the table below.
5. The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable.

Transmitter Number of Hopping Frequencies and Average Time of Occupancy (continued)**Results:**

Emission Width (μs)	Number of Hops in 31.6 Seconds	Average Time of Occupancy (s)	Limit (s)	Margin (s)	Result
2898.550	100	0.290	0.4	0.110	Complied

**Number of Hopping Frequencies****Emission Width****Number of Hopping Frequencies in 32 s**

4.5. Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	Matthew Botfield	Test Date:	07 September 2020
Test Sample Serial Number:	3185953		

FCC Reference:	Part 15.247(b)(1)
ISED Canada Reference:	RSS-Gen 6.12 / RSS-247 5.4(b)
Test Method Used:	ANSI C63.10 Section 7.8.5

Environmental Conditions:

Temperature (°C):	22
Relative Humidity (%):	56

Note(s):

1. The signal analyser resolution bandwidth was set to 2 MHz (>20 dB bandwidth) and video bandwidth of 10 MHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The span was set to 5 MHz (approximately five times the 20 dB bandwidth). A marker was placed at the peak of the signal and the results recorded in the tables below.
2. The highest declared antenna gain was added to the conducted peak power to obtain the EIRP.
3. The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable. An RF offset level was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

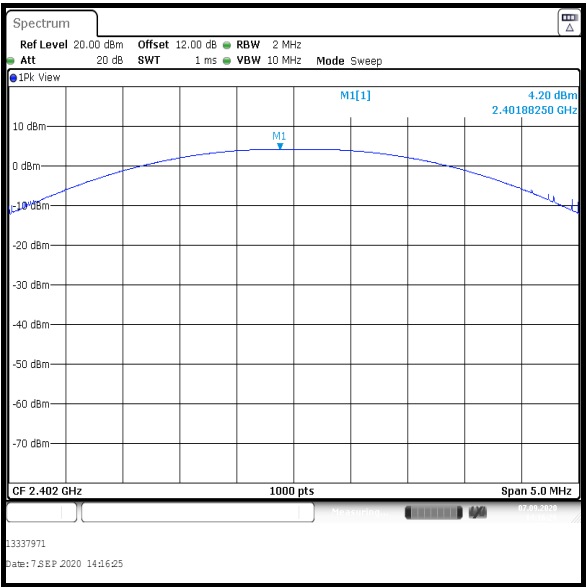
Transmitter Maximum Peak Output Power (continued)**Results: DH5**

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	4.2	30.0	25.8	Complied
Middle	4.8	30.0	25.2	Complied
Top	4.3	30.0	25.7	Complied

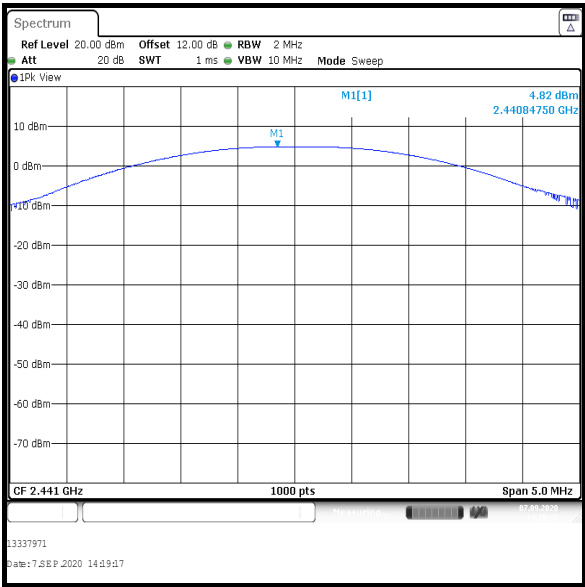
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	4.2	3.5	7.7	36.0	28.3	Complied
Middle	4.8	3.5	8.3	36.0	27.7	Complied
Top	4.3	3.5	7.8	36.0	28.2	Complied

Transmitter Maximum Peak Output Power (continued)

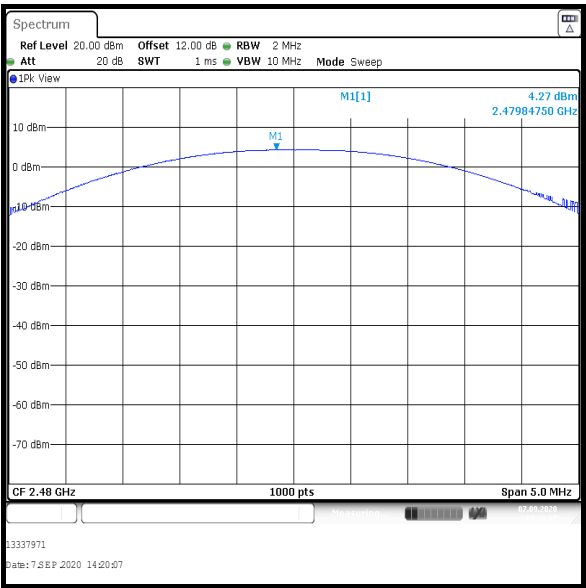
Results: DH5



Bottom Channel



Middle Channel

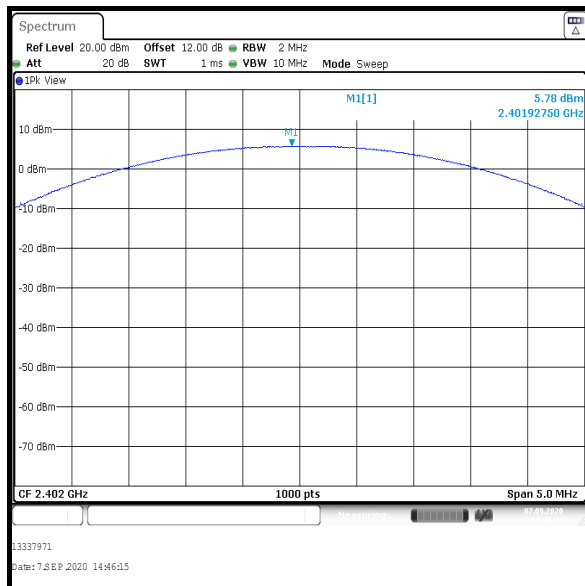
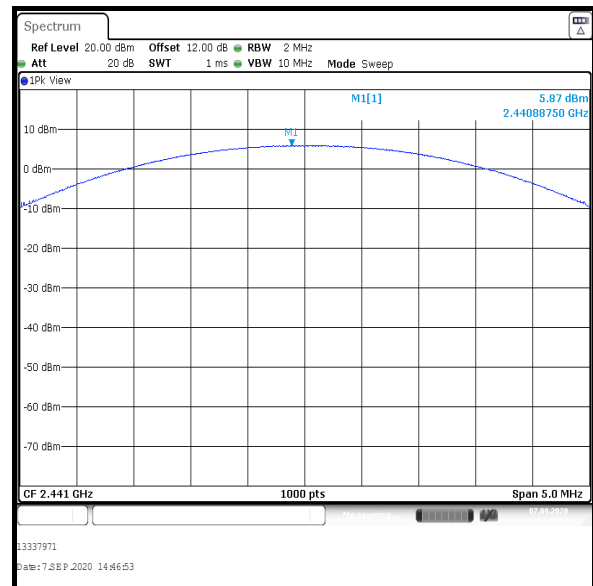
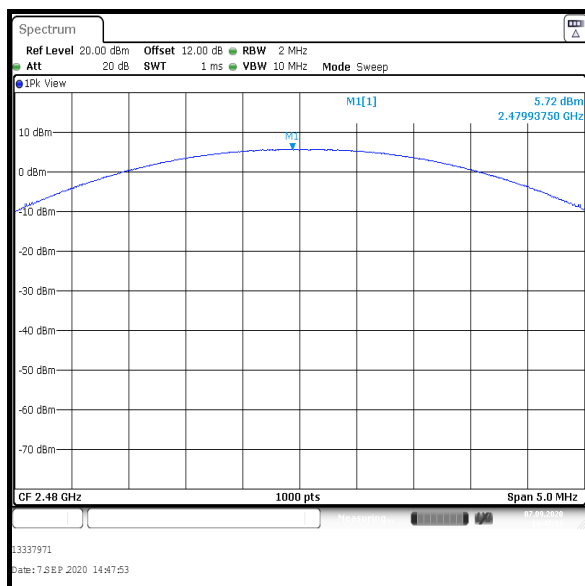


Top Channel

Transmitter Maximum Peak Output Power (continued)**Results: 2DH5**

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	5.8	21.0	15.2	Complied
Middle	5.9	21.0	15.1	Complied
Top	5.7	21.0	15.3	Complied

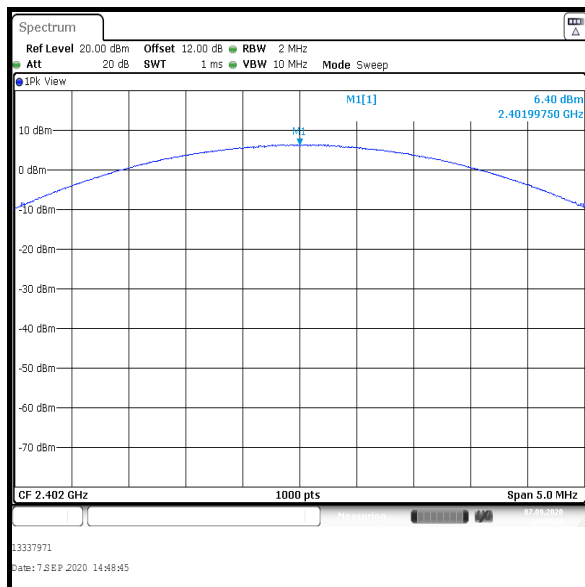
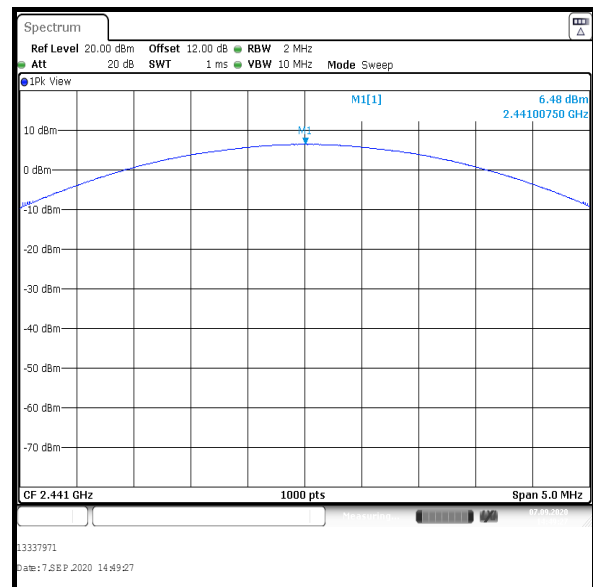
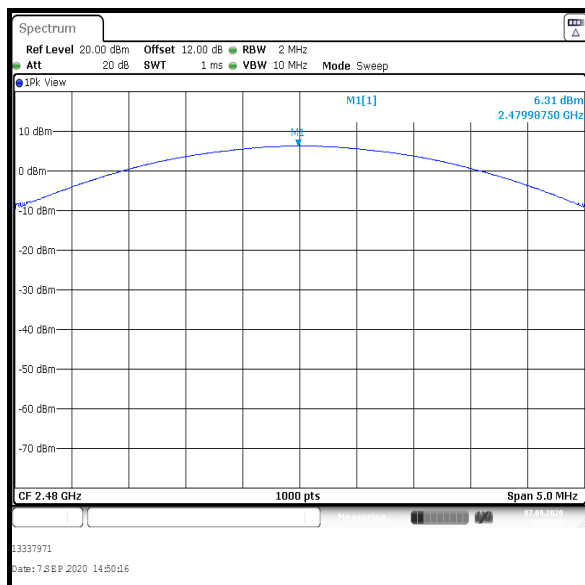
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	5.8	3.5	9.3	27.0	17.7	Complied
Middle	5.9	3.5	9.4	27.0	17.6	Complied
Top	5.7	3.5	9.2	27.0	17.8	Complied

Transmitter Maximum Peak Output Power (continued)**Results: 2DH5****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Peak Output Power (continued)**Results: 3DH5**

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	6.4	21.0	14.6	Complied
Middle	6.5	21.0	14.5	Complied
Top	6.3	21.0	14.7	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	6.4	3.5	9.9	27.0	17.1	Complied
Middle	6.5	3.5	10.0	27.0	17.0	Complied
Top	6.3	3.5	9.8	27.0	17.2	Complied

Transmitter Maximum Peak Output Power (continued)**Results: 3DH5****Bottom Channel****Middle Channel****Top Channel**

4.6. Transmitter Band Edge Conducted Emissions

Test Summary:

Test Engineer:	Matthew Botfield	Test Date:	28 October 2020
Test Sample Serial Number:	3185953		

FCC Reference:	Part 15.247(d)
ISED Canada Reference:	RSS-Gen 6.13, 8.9 & 8.10 / RSS-247 5.5
Test Method Used:	KDB 558074 Section 8.7 referencing ANSI C63.10 Section 11.11, 11.12 & 11.13

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	48

Note(s):

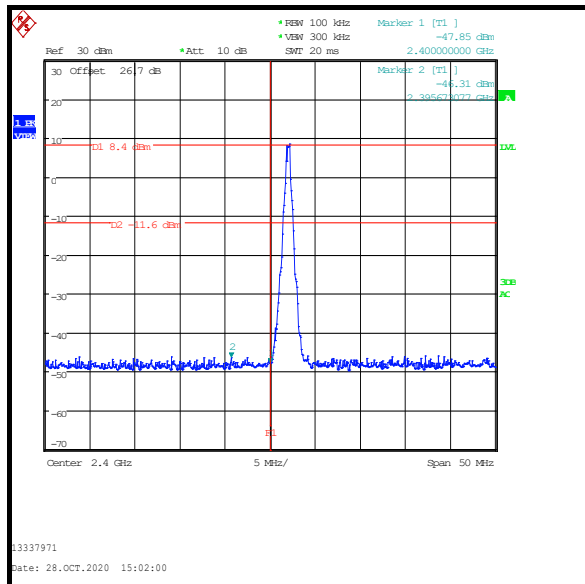
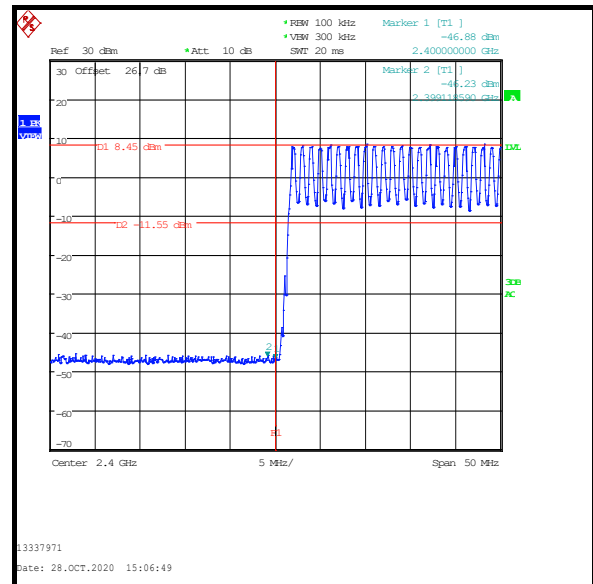
1. The EUT was set to transmit on the bottom channel when performing measurements at the lower band edge.
2. Upper band edge and lower restricted band results are contained within test report R13337971-E7 / E8.
3. As the band edges fall within non-restricted bands, only peak measurements are required. In accordance with FCC KDB 558074 Section 11.1, the test method in Section 11.3 was followed: the test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The test receiver was left to sweep for a sufficient length of time in order to maximise the carrier level and out-of-band emissions. A marker and corresponding reference level line were placed on the peak of the carrier. As the maximum peak conducted output power was measured using a peak detector in accordance with FCC KDB 558074 Section 9.1.1 an out-of-band limit line was placed 20 dB below the peak level (FCC KDB 558074 Section 11.1(a)). A marker was placed on the band edge spot frequencies and a second marker placed on the highest emission level in the adjacent non-restricted band of operation (where a higher level emission was present). Marker frequencies and levels were recorded.
4. The -20 dBc limit is incorrectly displayed on the 3DH5 static plot. The correct limit is stated in the result table.

Transmitter Band Edge Conducted Emissions (continued)**Results: Static Mode / DH5**

Frequency (MHz)	Level (dBm)	-20 dBc Limit (dBm)	Margin (dB)	Result
2395.673	-46.3	-11.6	34.7	Complied
2400.000	-47.9	-11.6	36.3	Complied

Results: Hopping Mode / DH5

Frequency (MHz)	Level (dBm)	-20 dBc Limit (dBm)	Margin (dB)	Result
2399.119	-46.2	-11.6	34.6	Complied
2400.000	-46.9	-11.6	35.3	Complied

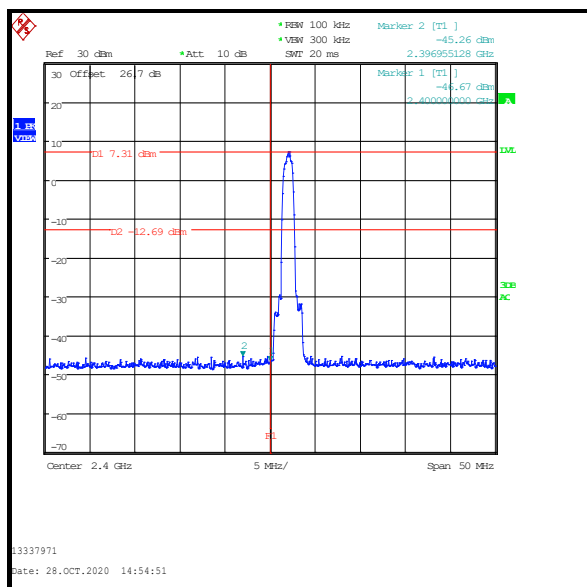
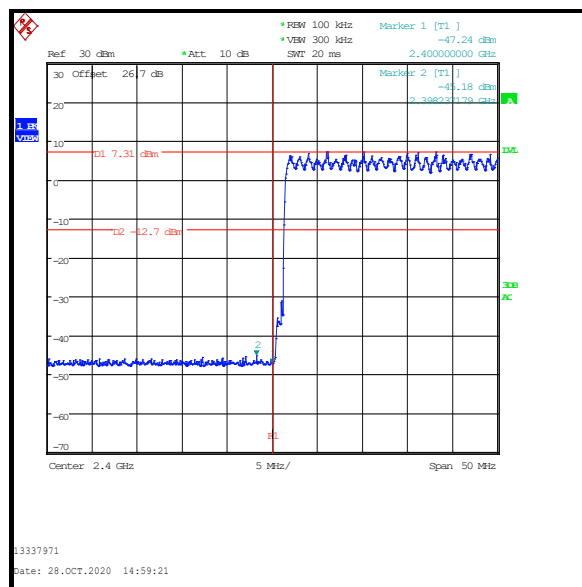
**Lower Band Edge / Bottom Channel / Static****Lower Band Edge / Bottom Channel / Hopping**

Transmitter Band Edge Conducted Emissions (continued)**Results: Static Mode / 2DH5**

Frequency (MHz)	Level (dBm)	-20 dBc Limit (dBm)	Margin (dB)	Result
2396.955	-45.3	-12.7	32.6	Complied
2400.000	-46.7	-12.7	34.0	Complied

Results: Hopping Mode / 2DH5

Frequency (MHz)	Level (dBm)	-20 dBc Limit (dBm)	Margin (dB)	Result
2398.237	-45.2	-12.7	32.5	Complied
2400.000	-47.2	-12.7	34.5	Complied

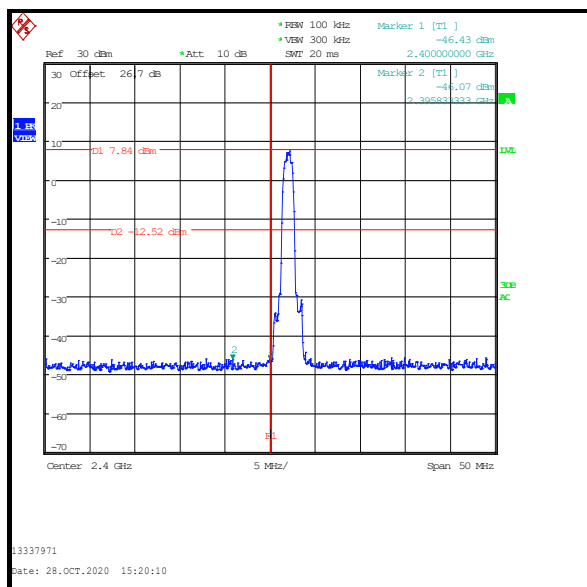
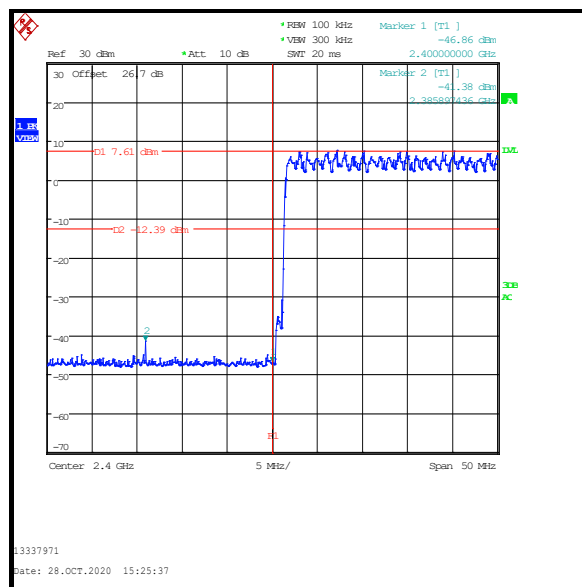
**Lower Band Edge / Bottom Channel / Static****Lower Band Edge / Bottom Channel / Hopping**

Transmitter Band Edge Conducted Emissions (continued)**Results: Static Mode / 3DH5**

Frequency (MHz)	Level (dBm)	-20 dBc Limit (dBm)	Margin (dB)	Result
2395.833	-46.1	-12.2	33.9	Complied
2400.000	-46.4	-12.2	34.2	Complied

Results: Hopping Mode / 3DH5

Frequency (MHz)	Level (dBm)	-20 dBc Limit (dBm)	Margin (dB)	Result
2385.897	-41.4	-12.4	29.0	Complied
2400.000	-46.9	-12.4	34.5	Complied

**Lower Band Edge / Bottom Channel / Static****Lower Band Edge / Bottom Channel / Hopping****--- END OF REPORT ---**