




TEST REPORT

Test Report No. : UL-RPT-RP13337971-1616B V3.0

Customer : Raspberry Pi (Trading) Ltd
PMN : Raspberry Pi RM0
HVIN : Raspberry Pi RM0
ISED Certification No. : IC: 20953-RPIRM0
Technology : WLAN
Test Standard(s) : Innovation, Science and Economic Development Canada
RSS-247 Issue 2 Sections 6.2, 6.2.1.1, 6.2.2.1, 6.2.3.1 & 6.2.4.1 &
RSS-Gen Issue 5 Sections 6.7, 6.11, 6.12 & 8.2
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 3.0 supersedes all previous versions.

Date of Issue: 05 November 2020

Checked by: 
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Customer Information

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Report Revision History

Version Number	Issue Date	Revision Details	Revised By
1.0	02/07/2020	Initial Version	Sarah Williams
2.0	21/10/2020	Re-test with new Q values	Sarah Williams
3.0	05/11/2020	PMN/HVIN updated	Sarah Williams

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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:	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:	20903
Location of Testing:	Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
Test Date:	19 October 2020

1.3. Summary of Test Results

ISED Canada Reference	Measurement	Result
RSS-Gen 8.2	Transmitter Duty Cycle	Note 1
RSS-Gen 6.7 / RSS-247 6.2	Transmitter 99% Emission Bandwidth	
RSS-247 6.2.4.1	Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.2.1	Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.3.1	Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.4.1	Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.1.1	Transmitter Maximum Equivalent Isotropically Radiated Power (EIRP) (5.15-5.25 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.2.1	Transmitter Maximum Equivalent Isotropically Radiated Power (EIRP) (5.25-5.35 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.3.1	Transmitter Maximum Equivalent Isotropically Radiated Power (EIRP) (5.47-5.725 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.1.1	Transmitter EIRP Spectral Density (5.15-5.25 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.2.1	Transmitter Power Spectral Density (5.25-5.35 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.3.1	Transmitter Power Spectral Density (5.47-5.725 GHz band)	
RSS-Gen 6.12 / RSS-247 6.2.4.1	Transmitter Power Spectral Density (5.725-5.85 GHz band)	
RSS-Gen 6.11	Transmitter Frequency Stability (Temperature & Voltage Variation)	Note 2
RSS-247 6.2	Transmitter Power Control	Note 3
Key to Results		
 = Complied  = Did not comply		

Note(s):

1. The measurement was performed to assist in the calculation of the level of average output power, power spectral density and emissions as the EUT employs pulsed operation.
2. Frequency stability is better than 20 ppm which ensures that the signal remains in the allocated bands under all operational conditions stated in the user manual.
3. Transmit Power Control was not tested as the maximum EIRP is less than 500 mW (27 dBm).

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 specifications 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 789033 D02 General U-NII Test Procedures New Rules v02r01 December 14, 2017
Title:	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E)

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
Duty Cycle	5.15 GHz to 5.850 GHz	95%	±1.14 %
99% Emission Bandwidth	5.15 GHz to 5.850 GHz	95%	±3.92 %
Minimum 6 dB Emission Bandwidth	5.15 GHz to 5.850 GHz	95%	±4.59 %
Maximum Conducted Output Power	5.15 GHz to 5.850 GHz	95%	±1.13 dB
Maximum Power Spectral Density	5.15 GHz to 5.850 GHz	95%	±1.13 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)
M2004	Thermohygrometer	Testo	608-H1	45046425	05 Jan 2021	12
M2036	Signal Analyser	Rohde & Schwarz	FSV30	101791	18 May 2021	12
M2022	Power Sensor	Boonton	55006	9968	20 Jan 2021	12
A3027	Attenuator	Broadwave Technologies Inc.	351-311-006	#1	Calibrated before use	-
A3004	RF Switch	Pickering Interfaces	64-102-002	XZ363230	Calibrated before use	-
A3180	Attenuator	Pasternack	PE7047-3	Not stated	Calibrated before use	-
G0614	Signal Generator	Rohde & Schwarz	SMB100A	260473	19 May 2023	36
A3005	Replay Test Rack	N/A	N/A	N/A	Calibration not required	-

Test Measurement Software/Firmware Used

Name	Version	Release Date
UL VS LTD Replay	20190208	08 February 2019

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

PMN:	Raspberry Pi RM0
HVIN:	Raspberry Pi RM0
Test Sample Serial Number:	3157589 (<i>Conducted sample #1</i>)
Hardware Version:	V1.0
Software Version:	V1.0
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

Technology Tested:	WLAN (IEEE 802.11a,n,ac) / LE-LAN	
Type of Unit:	Transceiver	
Modulation:	BPSK, QPSK, 16QAM, 64QAM & 256QAM	
Data rates:	802.11a	6, 9, 12, 18, 24, 36, 48 & 54 Mbps
	802.11n HT20	MCS0 to MCS7 (SISO)
	802.11n HT40	MCS0 to MCS7 (SISO)
	802.11ac VHT20	MCS0 to MCS8 (SISO)
	802.11ac VHT40	MCS0 to MCS9 (SISO)
	802.11ac VHT80	MCS0 to MCS9 (SISO)
Power Supply Requirement(s):	Nominal	5.0 VDC
Maximum Conducted Output Power:	20 MHz	16.9 dBm
	40 MHz	18.2 dBm
	80 MHz	17.8 dBm

Additional Information Related to Testing (continued)

Channel Spacing:	20 MHz		
Transmit Frequency Band:	5150 MHz to 5250 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	36	5180
	Middle	40	5200
	Top	48	5240
Transmit Frequency Band:	5250 MHz to 5350 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	52	5260
	Middle	56	5280
	Top	64	5320
Transmit Frequency Band:	5470 MHz to 5600 MHz and 5650 MHz to 5725 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	100	5500
	Middle	116	5580
	Top	140	5700
Transmit Frequency Band:	5725 MHz to 5850 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	149	5745
	Middle	157	5785
	Top	165	5825

Additional Information Related to Testing (continued)

Channel Spacing:	40 MHz		
Transmit Frequency Band:	5150 MHz to 5250 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	38	5190
	Top	46	5230
Transmit Frequency Band:	5250 MHz to 5350 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	54	5270
	Top	62	5310
Transmit Frequency Band:	5470 MHz to 5600 MHz and 5650 MHz to 5725 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	102	5510
	Middle	110	5550
	Top	134	5670
Transmit Frequency Band:	5725 MHz to 5850 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	151	5755
	Top	159	5795

Additional Information Related to Testing (continued)

Channel Spacing:	80 MHz		
Transmit Frequency Band:	5150 MHz to 5250 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Single	42	5210
Transmit Frequency Band:	5250 MHz to 5350 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Single	58	5290
Transmit Frequency Band:	5470 MHz to 5600 MHz and 5650 MHz to 5725 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Single	106	5530
Transmit Frequency Band:	5725 MHz to 5850 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Single	155	5775

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	5150 to 5850	2.5
Raspberry Pi	External	5150 to 5850	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:	10000000ae575e0

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:	Raspberry Pi
Model Name or Number:	RPI-MOUSE
Serial Number:	Not marked or stated

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

Description:	Power Supply. 100-230 VAC Input / 5 VDC Output
Brand Name:	Belkin
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Operating Modes

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

- Continuously transmitting with a modulated carrier at maximum power on the bottom, middle and top channels as required using the supported data rates/modulation types.

Configuration and Peripherals

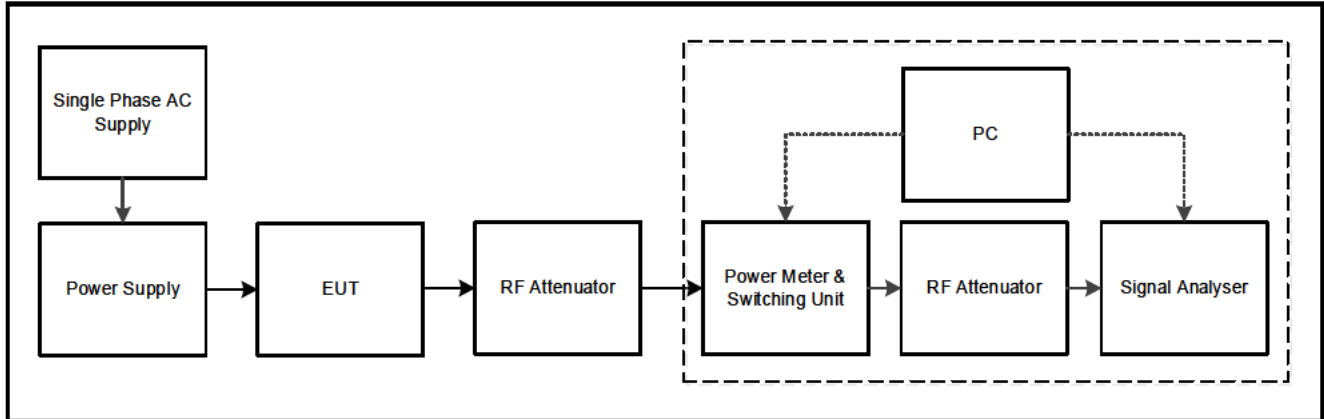
The EUT was tested in the following configuration(s):

- The customer supplied 'wl' chipset commands. Test commands were provided in the wlan_testing.sh file located on the /home/pi drive of the EUT. The test commands were entered into the automated test system and used to configure the EUT to enable a continuous transmission and to select the test channels, data rates and modulation schemes as required.
- The customer requested the following data rates to be used for all measurements.
 - 802.11a - BPSK / 6 Mbps
 - 802.11n HT20 - BPSK / MCS0
 - 802.11n HT40 - BPSK / MCS0
 - 802.11ac VHT80 - BPSK / MCS0
- RF cables and attenuators connecting the test equipment to the EUT were calibrated before use and the calibration data incorporated into the conducted measurement results.
- 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 Duty Cycle

Test Summary:

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 8.2
Test Method Used:	KDB 789033 D02 Section II.B.2.b)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

- In order to assist with the determination of the average level of fundamental and spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter. The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by using the following calculation:

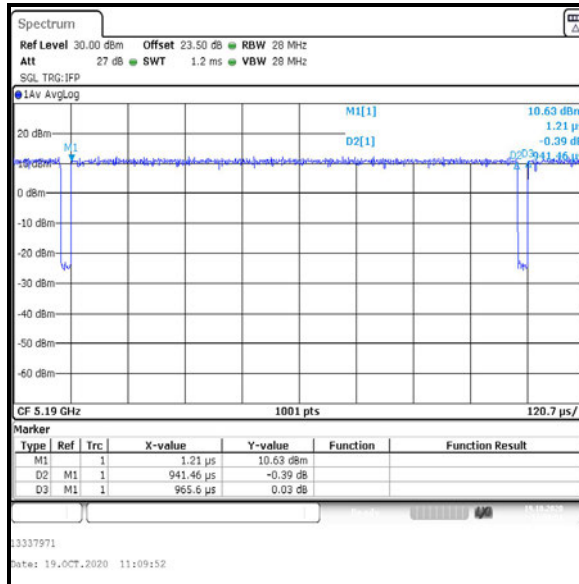
$$10 \log 1 / (\text{On Time} / [\text{Period or } 100\text{ms whichever is the lesser}]).$$

- Plots below are for data rates with a duty cycle less than 98%. Results for all other modes having a duty cycle >98% are archived on the UL International (UK) Ltd IT server and available for inspection if required.

Transmitter Duty Cycle (continued)

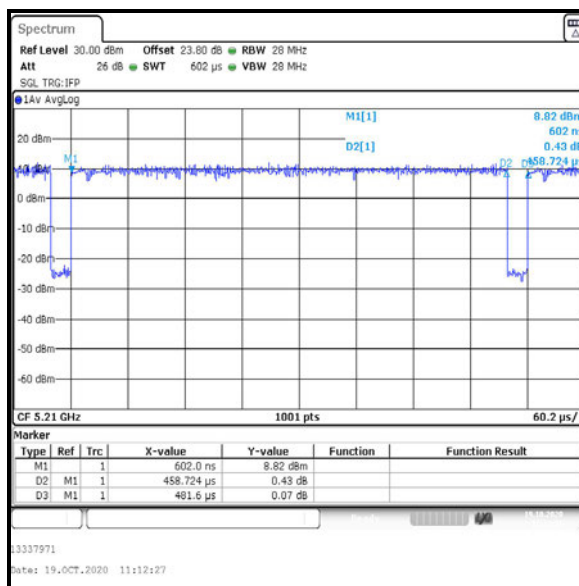
Results: 802.11n / 40 MHz / MCS0

Pulse Duration (ms)	Period (ms)	Duty Cycle (dB)
0.941	0.966	0.1



Results: 802.11ac / 80 MHz / MCS0x1

Pulse Duration (ms)	Period (ms)	Duty Cycle (dB)
0.459	0.482	0.2



4.2. Transmitter 99% Emission Bandwidth

Test Summary:

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 6.7 / RSS-247 6.2
Test Method Used:	RSS-Gen 6.7

Environmental Conditions:

Temperatures (°C):	24
Relative Humidity (%):	42

Note(s):

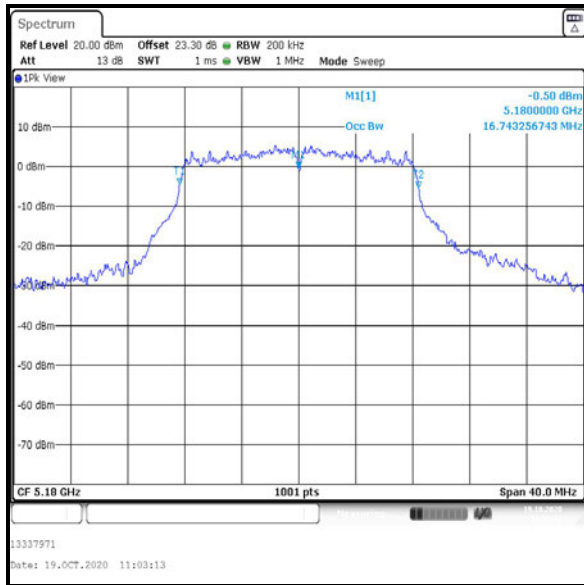
1. The 99% emission bandwidth was measured using the signal analyser occupied bandwidth function. The resolution bandwidth was set in the range of 1% to 5% of the occupied bandwidth and the video bandwidth set to approximately 3 times the resolution bandwidth as the signal analyser allowed without being below 3 x RBW. A peak detector was used.
2. Measurements were performed in each supported operating band on the bottom, middle and top or single channels.
3. For 20 MHz measurements the signal analyser resolution bandwidth was set to 200 kHz and video bandwidth 1 MHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set large enough to capture all products of the modulation process, including emission skirts, around the carrier frequency. The signal analyser function set the measurements to be made at 99% of the emission bandwidth. The results are given in the tables below.
4. For 40 MHz measurements the signal analyser resolution bandwidth was set to 500 kHz and video bandwidth 2 MHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set large enough to capture all products of the modulation process, including emission skirts, around the carrier frequency. The signal analyser function set the measurements to be made at 99% of the emission bandwidth. The results are given in the tables below.
5. For 80 MHz measurements the signal analyser resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set large enough to capture all products of the modulation process, including emission skirts, around the carrier frequency. The signal analyser function set the measurements to be made at 99% of the emission bandwidth. The results are given in the tables below.
6. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the switch, attenuators and RF cables.

Transmitter 99% Emission Bandwidth (5.15-5.25 GHz band) (continued)

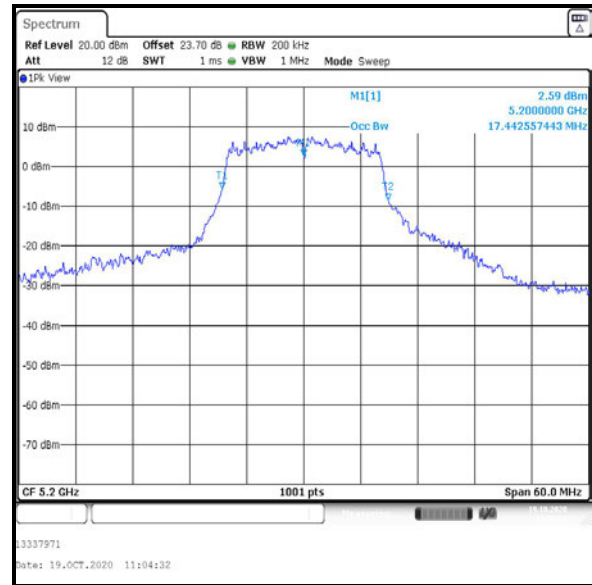
4.2.1. 5.15-5.25 GHz band

Results: 802.11a / 20 MHz / BPSK / 6 Mbps

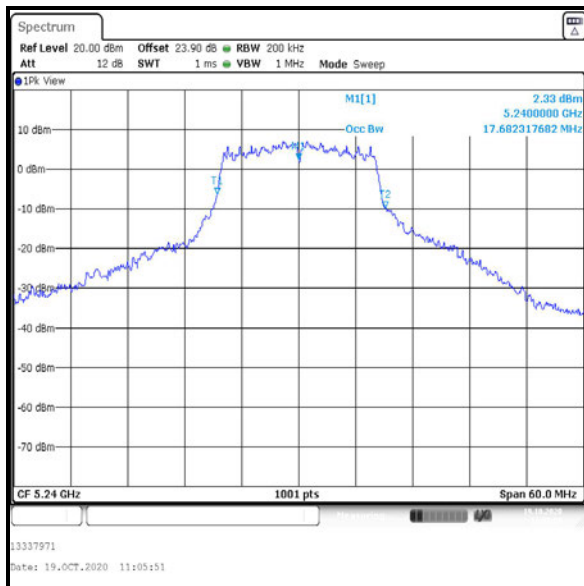
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5180	16.743
Middle	5200	17.443
Top	5240	17.682



Bottom Channel



Middle Channel

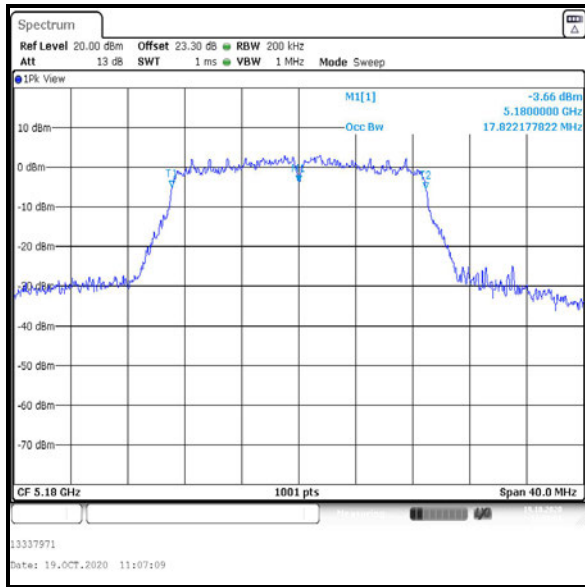


Top Channel

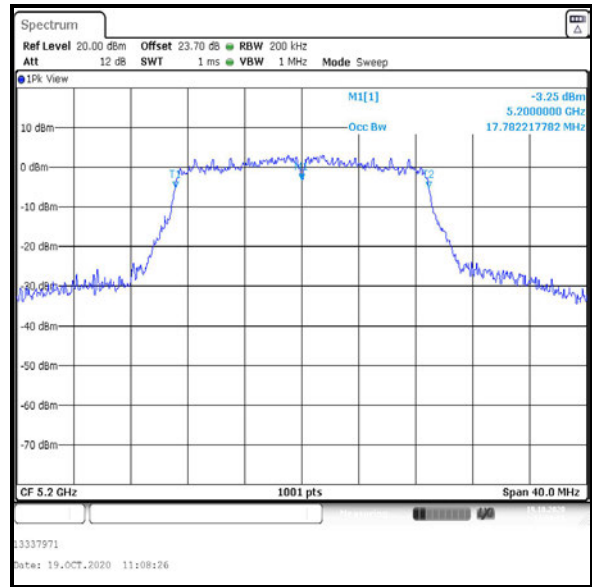
Transmitter 99% Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

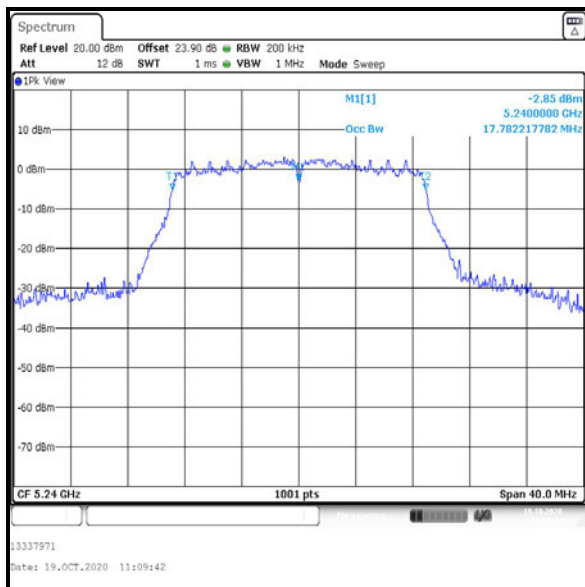
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5180	17.822
Middle	5200	17.782
Top	5240	17.782



Bottom Channel



Middle Channel

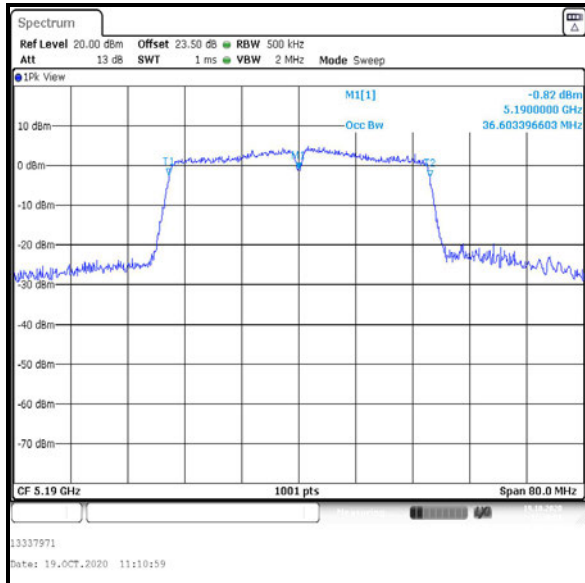


Top Channel

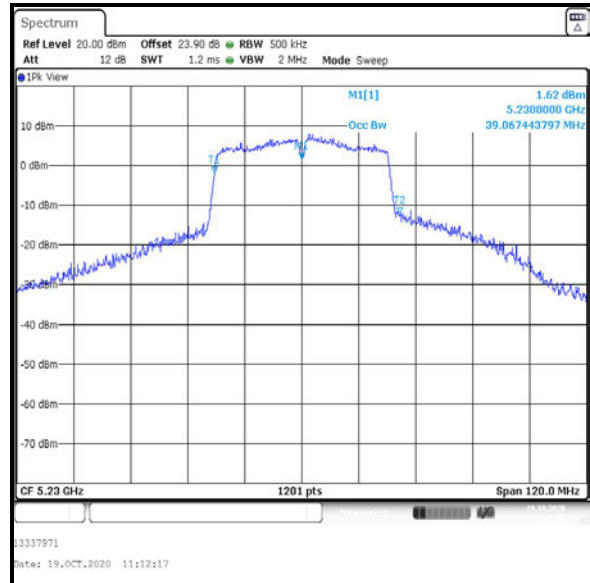
Transmitter 99% Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5190	36.603
Top	5230	39.067



Bottom Channel

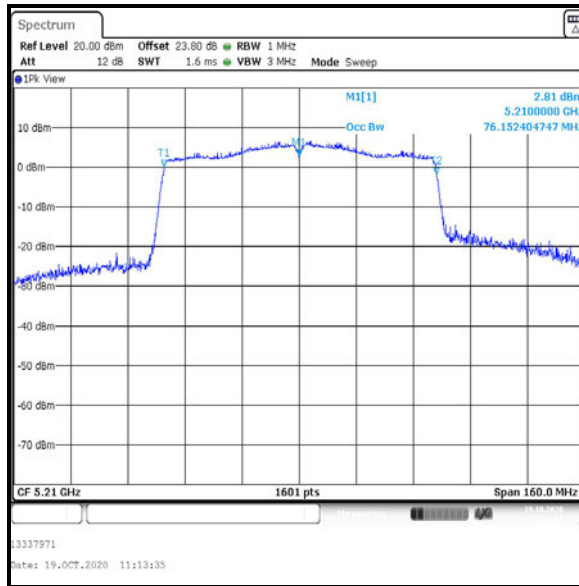


Top Channel

Transmitter 99% Emission Bandwidth (5.15-5.25 GHz band) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Single	5210	76.152



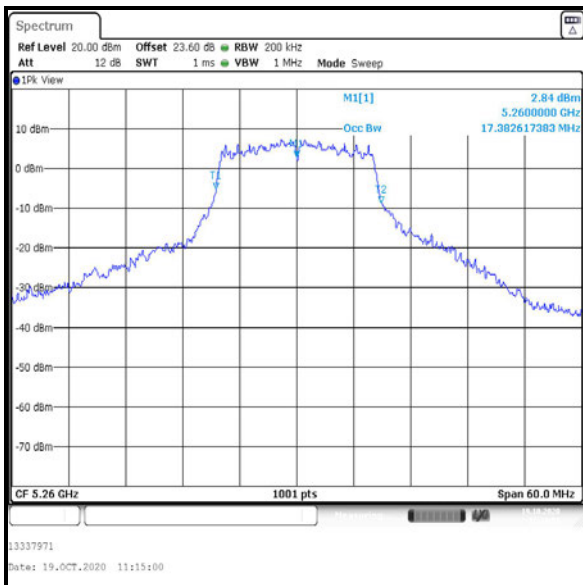
Single Channel

Transmitter 99% Emission Bandwidth (5.25-5.35 GHz band) (continued)

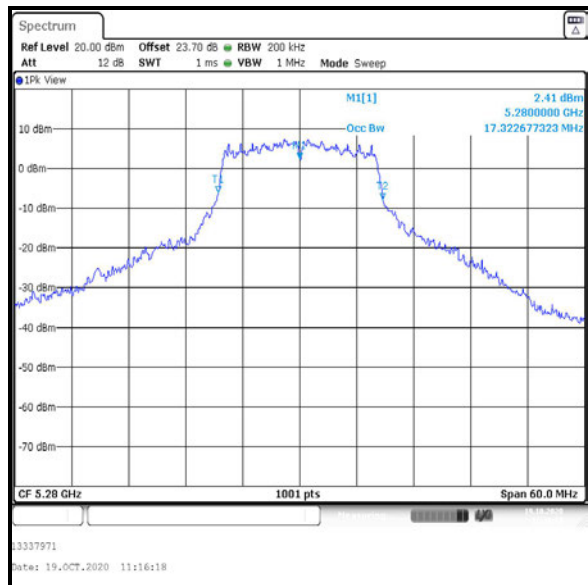
4.2.2. 5.25-5.35 GHz band

Results: 802.11a / 20 MHz / BPSK / 6 Mbps

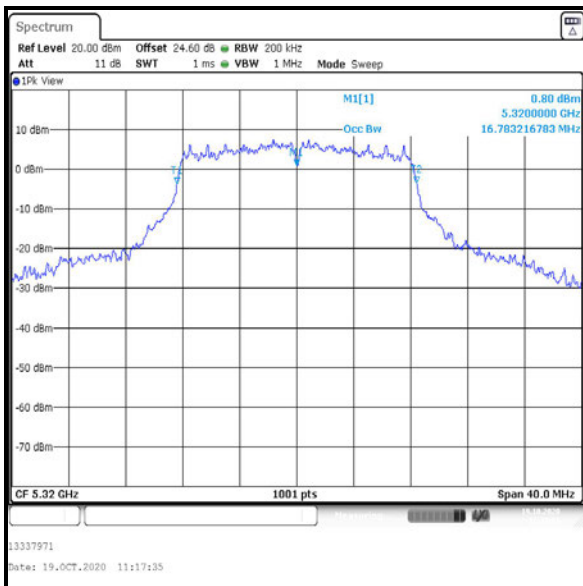
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5260	17.383
Middle	5280	17.323
Top	5320	16.783



Bottom Channel



Middle Channel

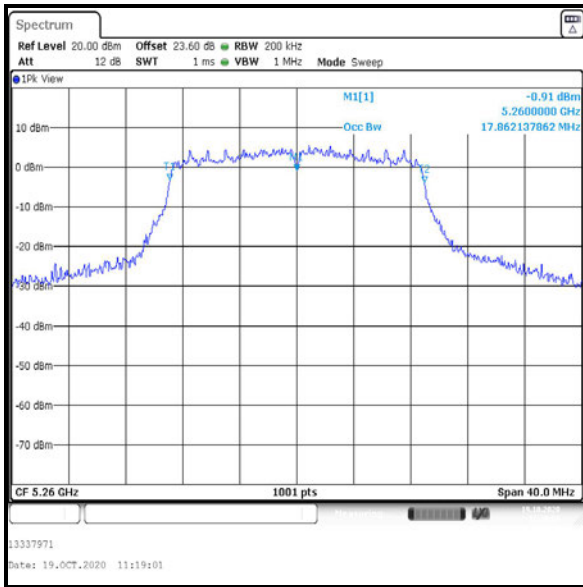


Top Channel

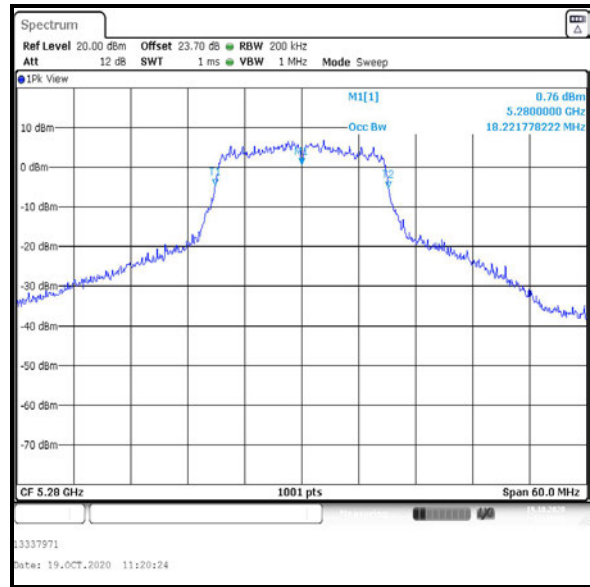
Transmitter 99% Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

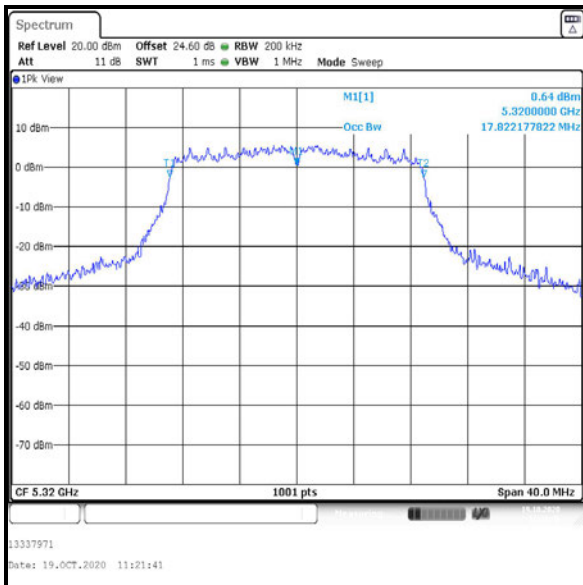
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5260	17.862
Middle	5280	18.222
Top	5320	17.822



Bottom Channel



Middle Channel

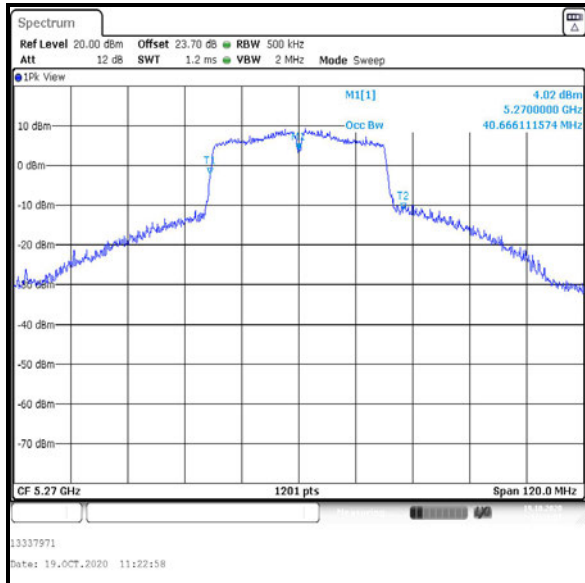


Top Channel

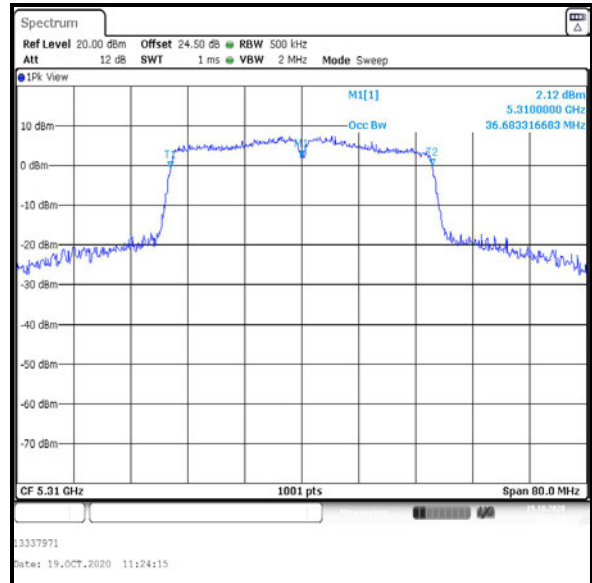
Transmitter 99% Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5270	40.666
Top	5310	36.683



Bottom Channel

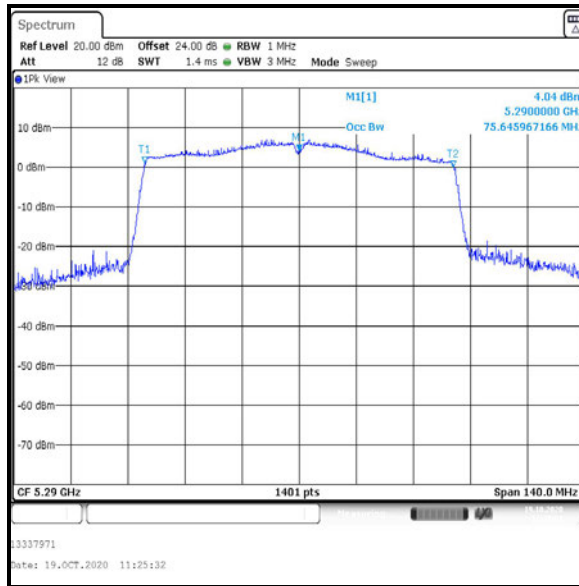


Top Channel

Transmitter 99% Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Single	5290	75.646



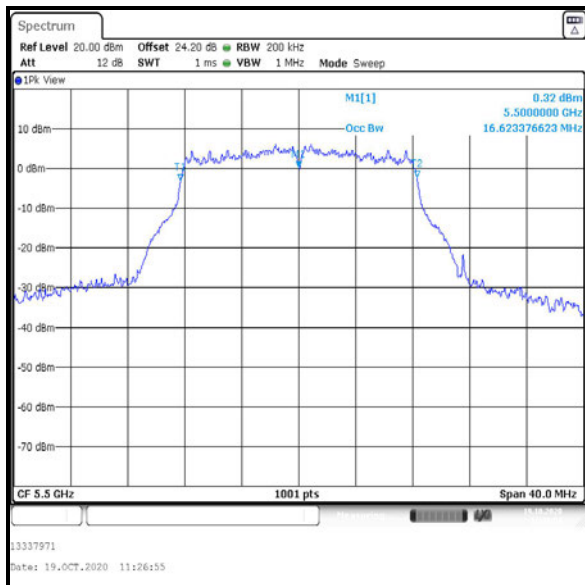
Single Channel

Transmitter 99% Emission Bandwidth (5.47-5.6 GHz & 5.65-5.725 GHz band) (continued)

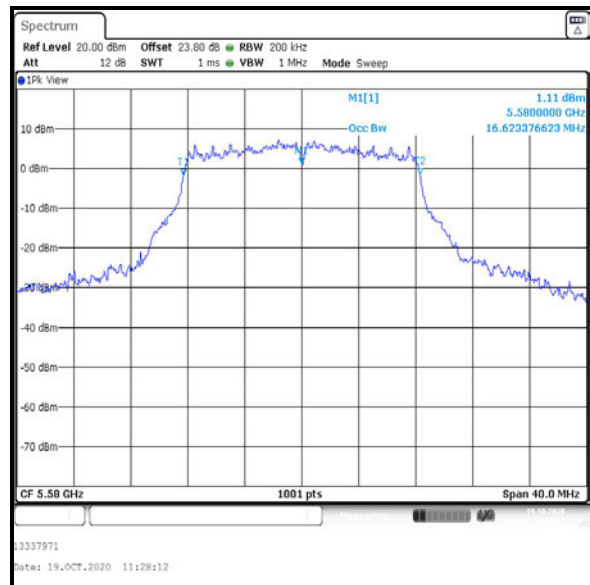
4.2.3. 5.47-5.6 GHz & 5.65-5.725 GHz bands

Results: 802.11a / 20 MHz / BPSK / 6 Mbps

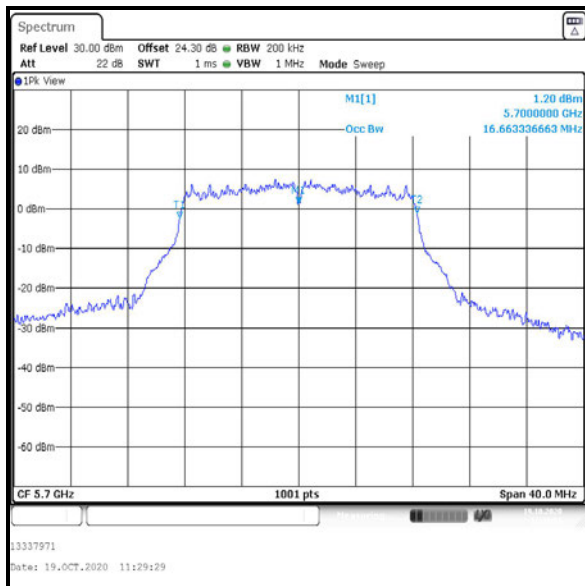
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5500	16.623
Middle	5580	16.623
Top	5700	16.663



Bottom Channel



Middle Channel

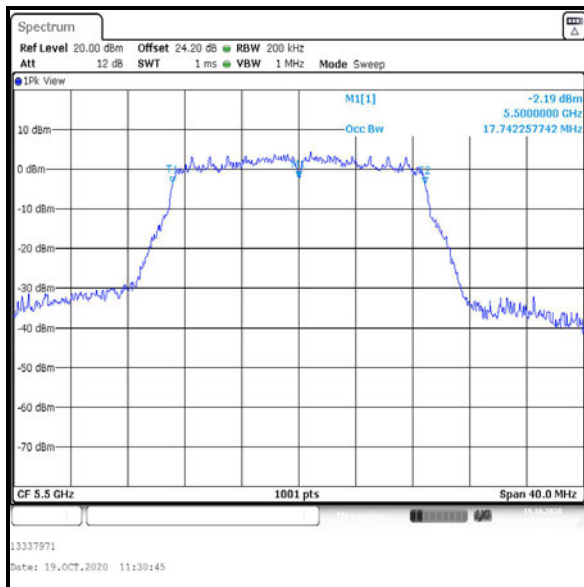


Top Channel

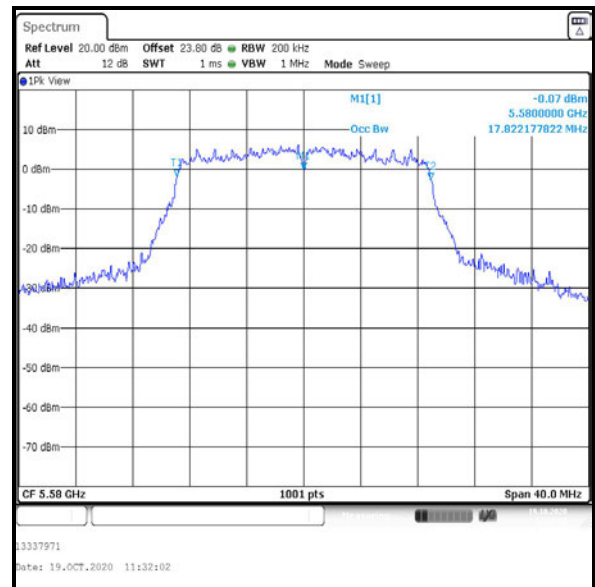
Transmitter 99% Emission Bandwidth (5.47-5.6 GHz & 5.65-5.725 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

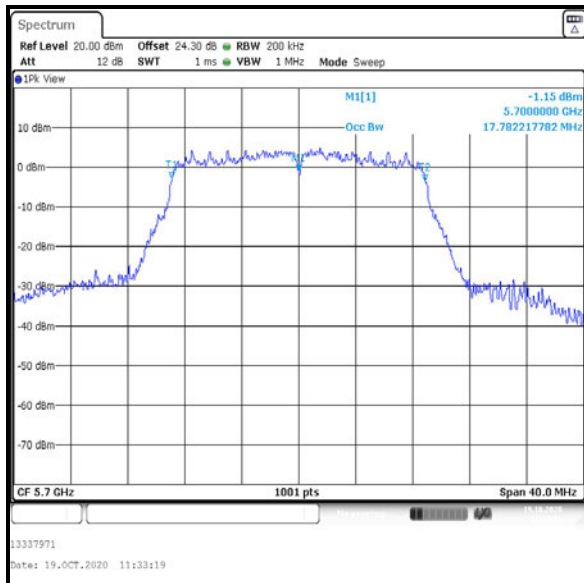
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5500	17.742
Middle	5580	17.822
Top	5700	17.782



Bottom Channel



Middle Channel

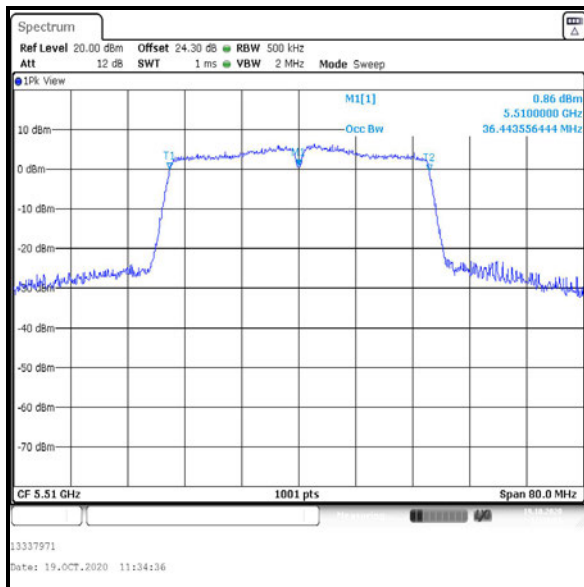


Top Channel

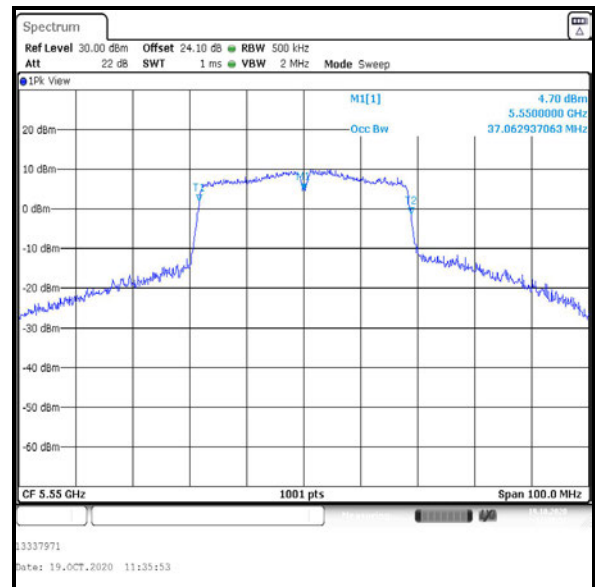
Transmitter 99% Emission Bandwidth (5.47-5.6 GHz & 5.65-5.725 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

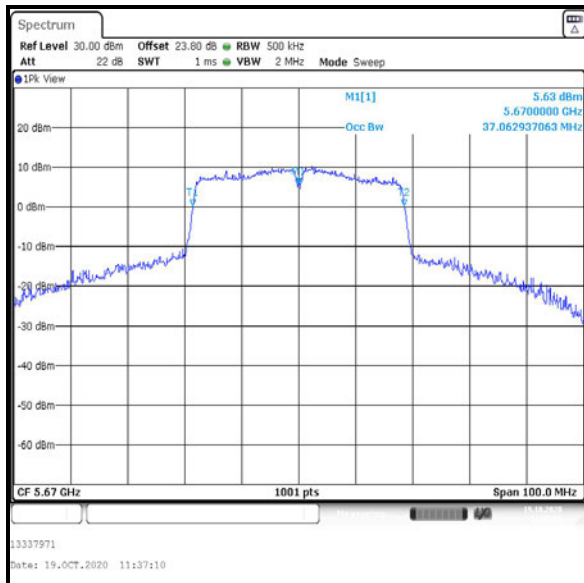
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5510	36.444
Middle	5550	37.063
Top	5670	37.063



Bottom Channel



Middle Channel

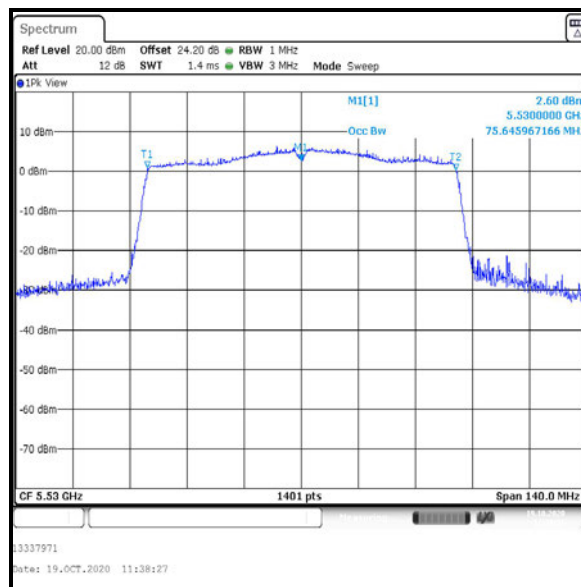


Top Channel

Transmitter 99% Emission Bandwidth (5.47-5.6 GHz & 5.65-5.725 GHz band) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Single	5530	75.646



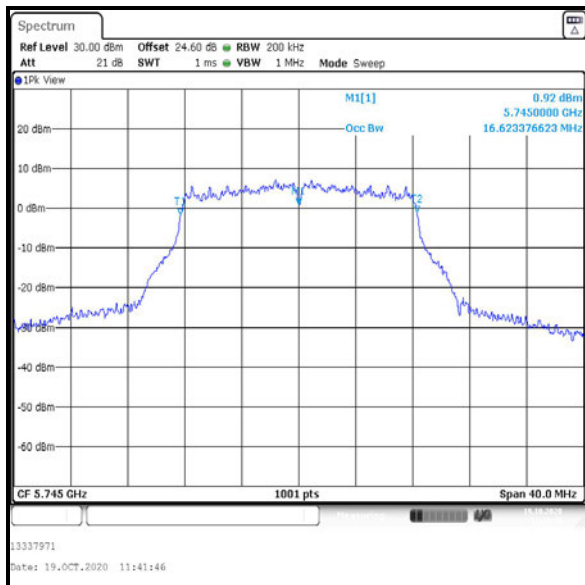
Single Channel

Transmitter 99% Emission Bandwidth (5.725-5.85 GHz band) (continued)

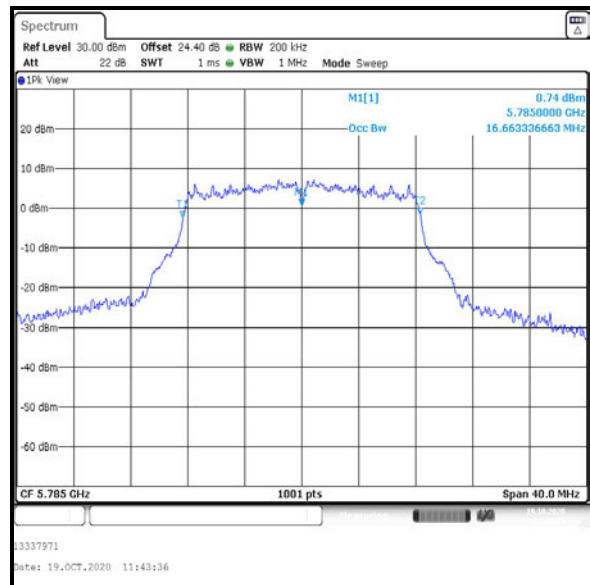
4.2.4. 5.725-5.85 GHz band

Results: 802.11a / 20 MHz / BPSK / 6 Mbps

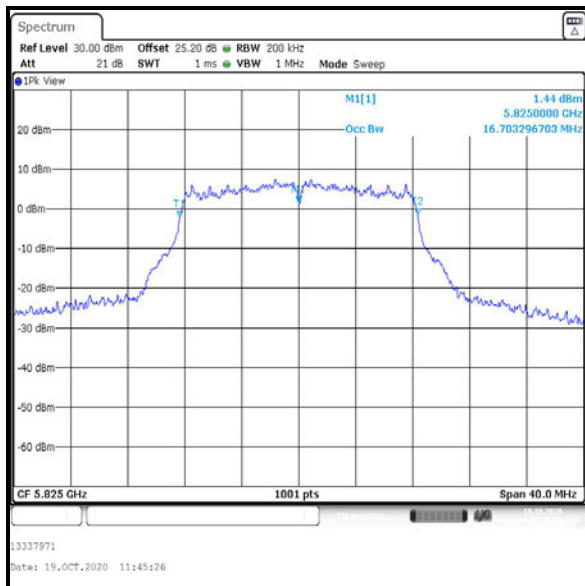
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5745	16.623
Middle	5785	16.663
Top	5825	16.703



Bottom Channel



Middle Channel

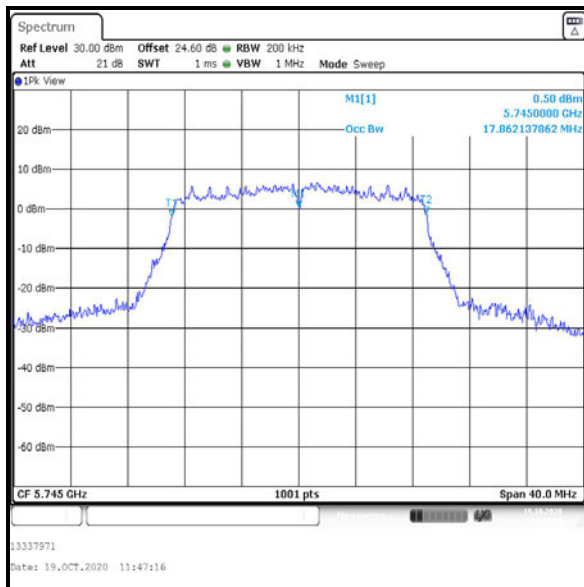


Top Channel

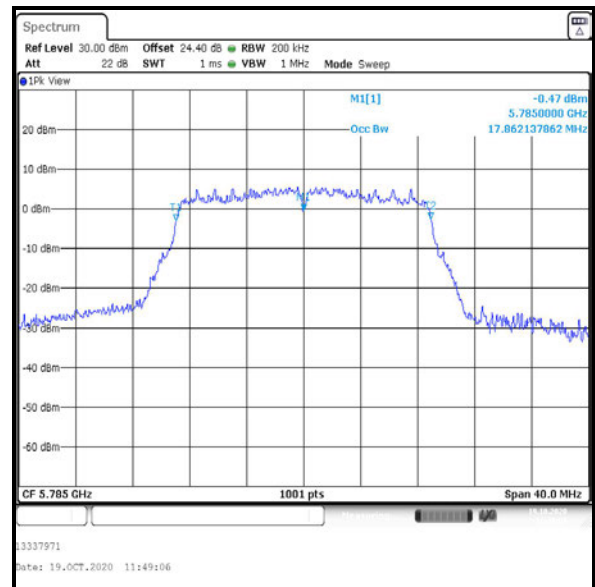
Transmitter 99% Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

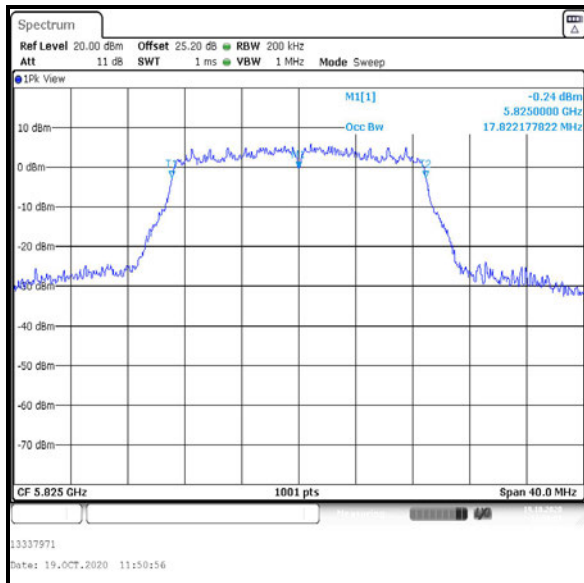
Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5745	17.862
Middle	5785	17.862
Top	5825	17.822



Bottom Channel



Middle Channel

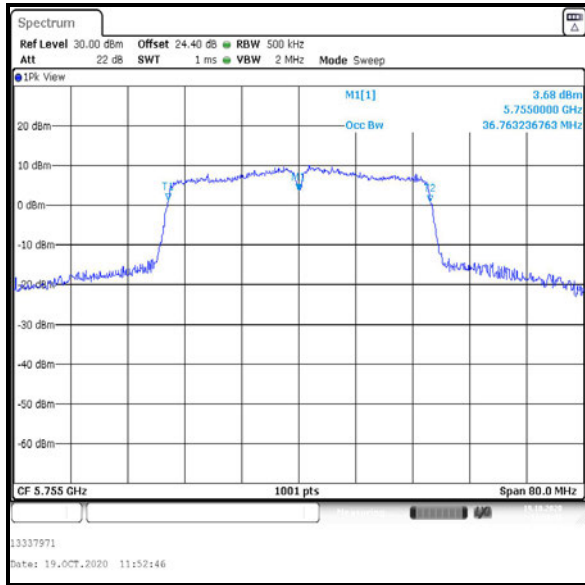


Top Channel

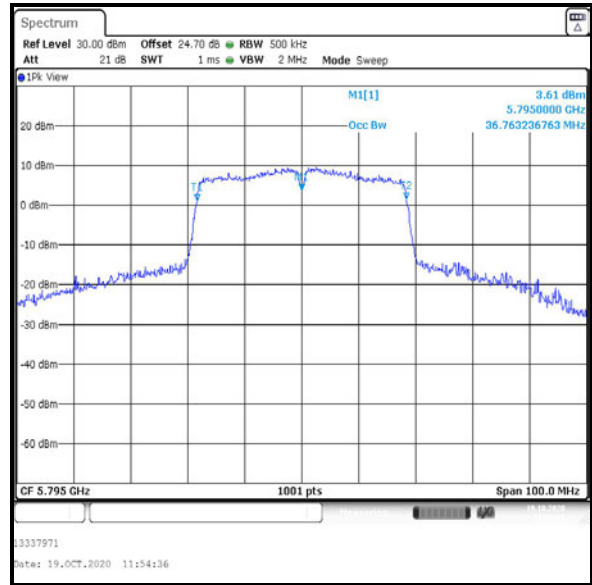
Transmitter 99% Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Bottom	5755	36.763
Top	5795	36.763



Bottom Channel

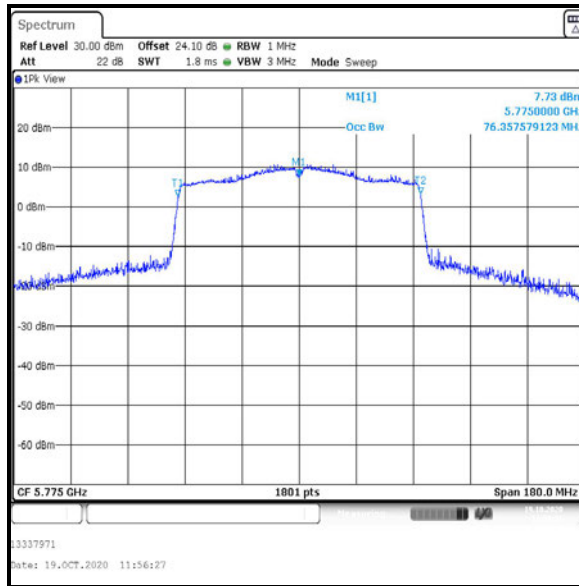


Top Channel

Transmitter 99% Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802. 11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)
Single	5775	76.358



Single Channel

4.3. Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band)**Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-247 6.2.4.1
Test Method Used:	KDB 789033 D02 Section II.C.2.

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

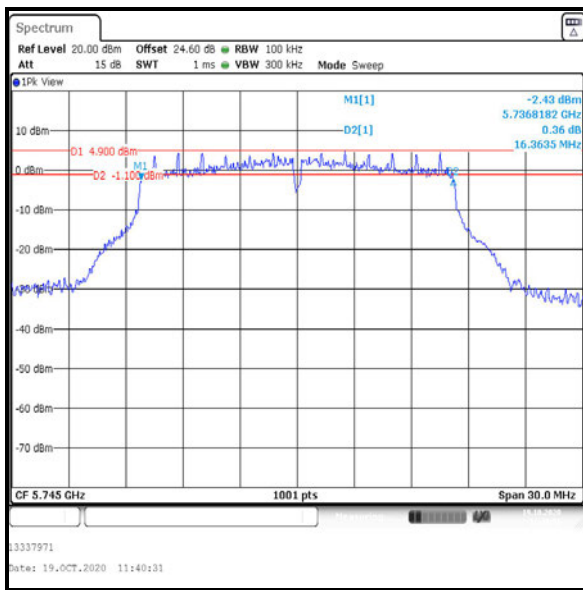
1. Measurements were performed in accordance with KDB 789033 Section II.C.2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz measurement procedure on d the relevant channels in all supported operating bands.
2. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the switch, attenuators and RF cables.

Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

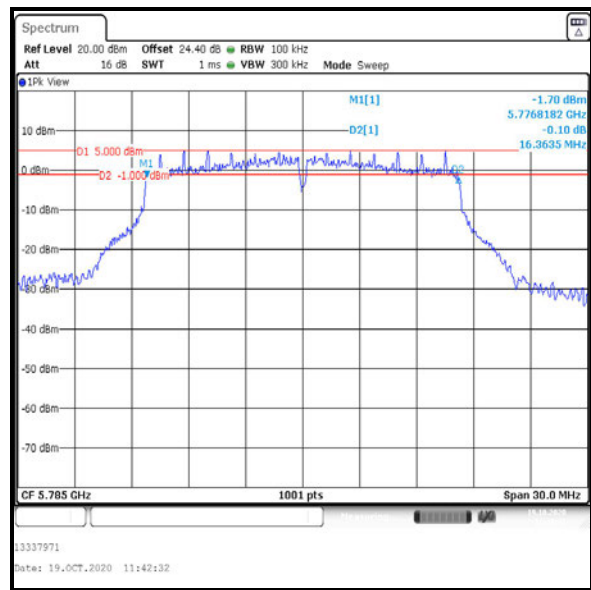
4.3.1. 5.725-5.85 GHz band

Results: 802.11a / 20 MHz / BPSK / 6 Mbps

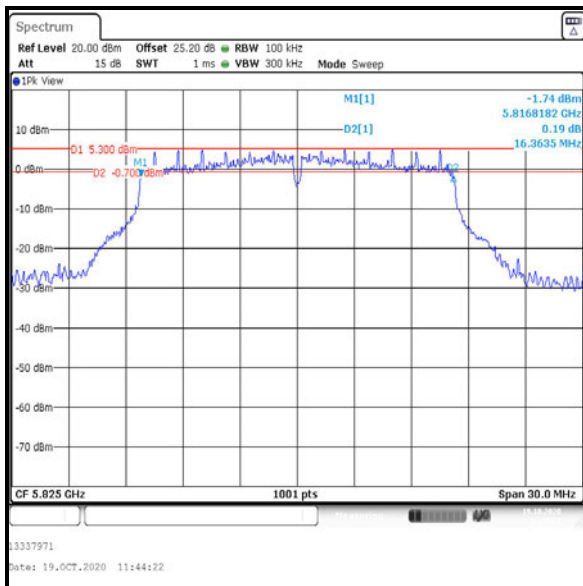
Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	16364	≥500	15864	Complied
Middle	16364	≥500	15864	Complied
Top	16364	≥500	15864	Complied



Bottom Channel



Middle Channel

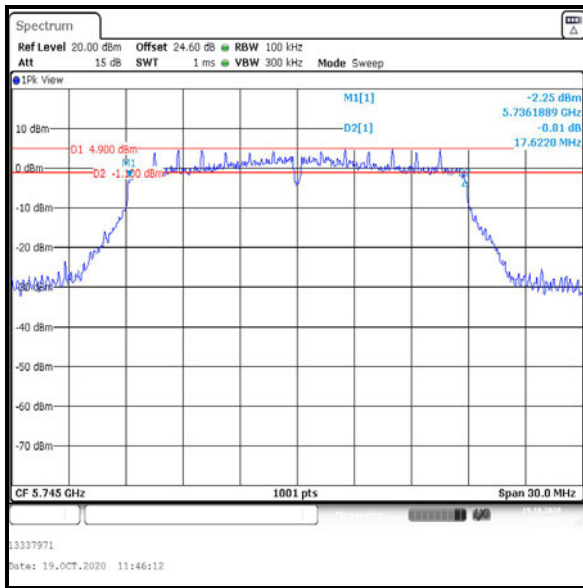


Top Channel

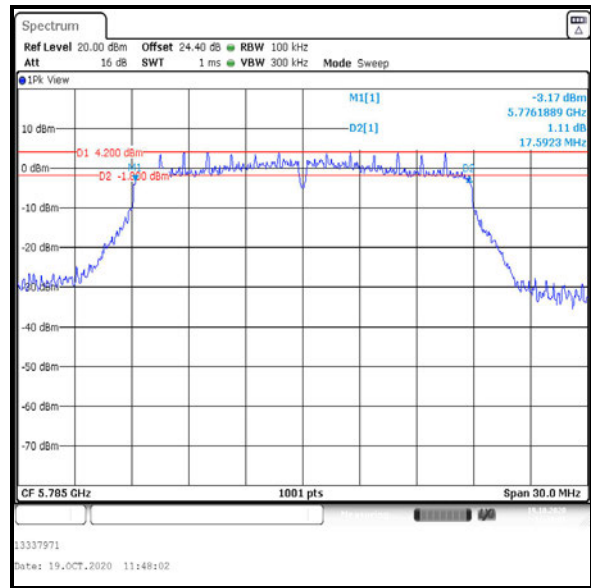
Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

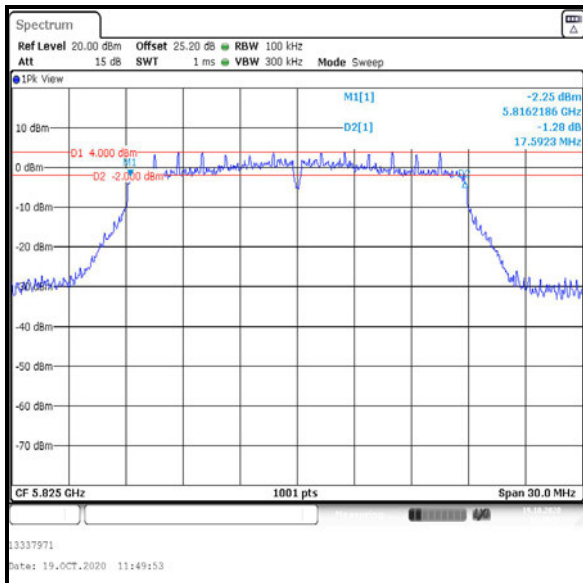
Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	17622	≥500	17122	Complied
Middle	17592	≥500	17092	Complied
Top	17592	≥500	17092	Complied



Bottom Channel



Middle Channel

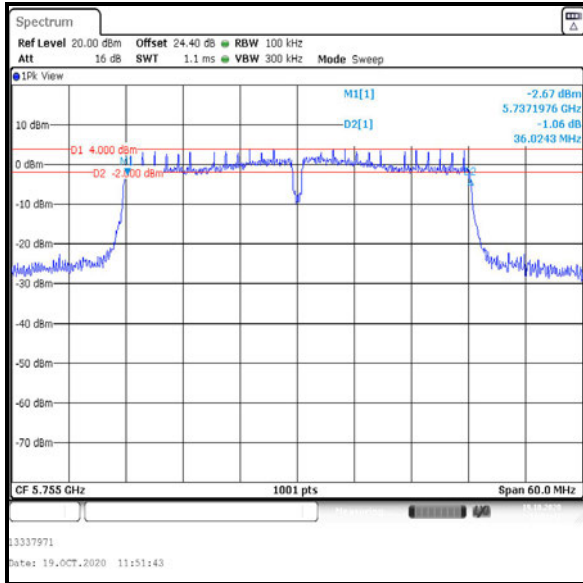


Top Channel

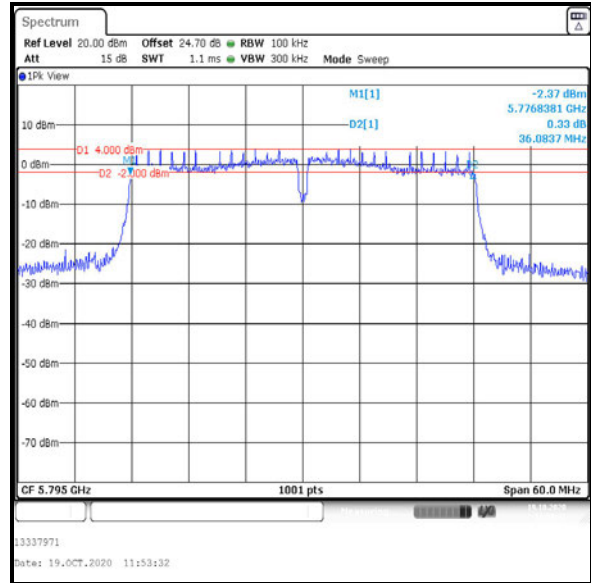
Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	36024	≥500	35524	Complied
Top	36084	≥500	35584	Complied



Bottom Channel

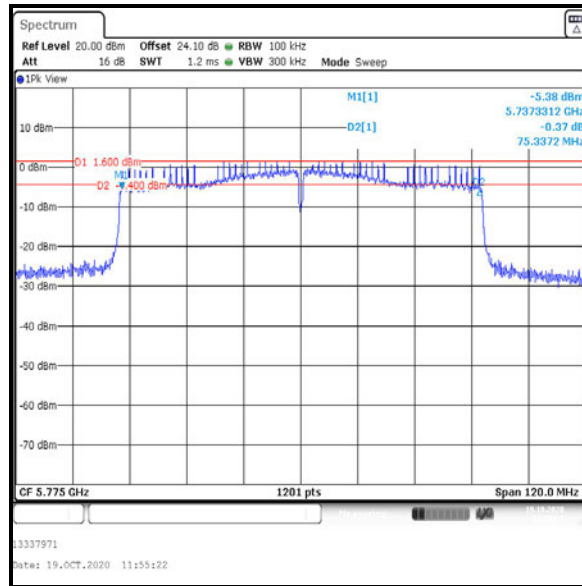


Top Channel

Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Single	75337	≥500	74837	Complied



Single Channel

4.4. Transmitter Maximum Conducted Output Power**Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band)****4.4.1. 5.25-5.35 GHz band****Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 6.12 / RSS-247 6.2.2.1
Test Method Used:	KDB 789033 D02 Section II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)**Note(s):**

1. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 99 % emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 100 traces performed. The span was set to encompass the entire 99 % emission bandwidth. The channel power results are recorded in the tables below.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured power in order to compute the average power during the actual transmission time.
3. The RSS-247 6.2.2.1 conducted limit is the lesser of 250 mW (24.0 dBm) or $11 \text{ dBm} + 10 \log_{10} B$, where B is the previously measured 99% emission bandwidth in MHz.

$$\begin{aligned}
 &\text{For } B > 20 \text{ MHz} \rightarrow \\
 &\rightarrow \log_{10} B > \log_{10} 20 \rightarrow \\
 &\rightarrow 10 \log_{10} B > 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 11 + 10 \log_{10} B > 11 + 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 11 + 10 \log_{10} B > 24.0 \text{ dBm}
 \end{aligned}$$

Therefore for measured emission bandwidths greater than 20 MHz, the lesser of the two limits is the fixed limit of 250 mW (24.0 dBm). This was applied to the results.

For measured emission bandwidths of less than 20 MHz, the limit for each channel was calculated as below:

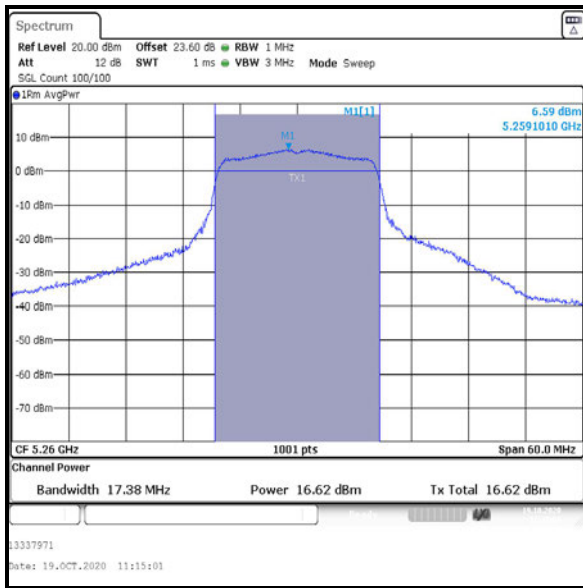
$$\begin{aligned}
 802.11a \text{ 20 MHz channel width / Bottom channel} &= 11 \text{ dBm} + 10 \log_{10} 17.383 = 23.4 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Middle channel} &= 11 \text{ dBm} + 10 \log_{10} 17.323 = 23.4 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Top channel} &= 11 \text{ dBm} + 10 \log_{10} 16.783 = 23.2 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Bottom channel} &= 11 \text{ dBm} + 10 \log_{10} 17.862 = 23.5 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Middle channel} &= 11 \text{ dBm} + 10 \log_{10} 18.222 = 23.6 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Top channel} &= 11 \text{ dBm} + 10 \log_{10} 17.822 = 23.5 \text{ dBm}
 \end{aligned}$$

4. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

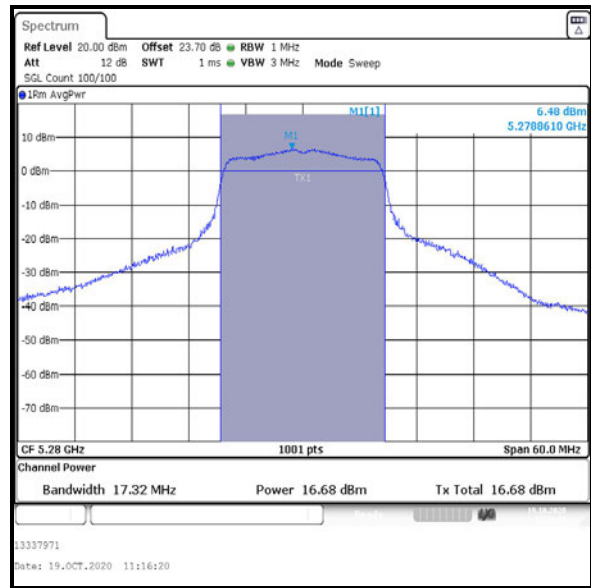
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / BPSK / 6 Mbps

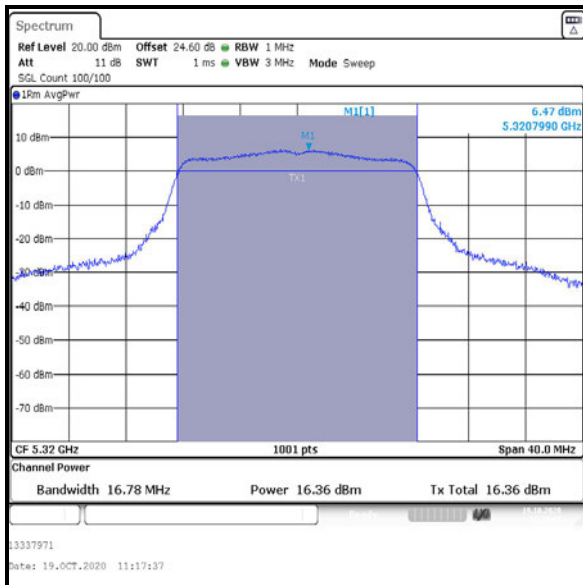
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	16.6	23.4	6.8	Complied
Middle	5280	16.7	23.4	6.7	Complied
Top	5320	16.4	23.2	6.8	Complied



Bottom Channel



Middle Channel

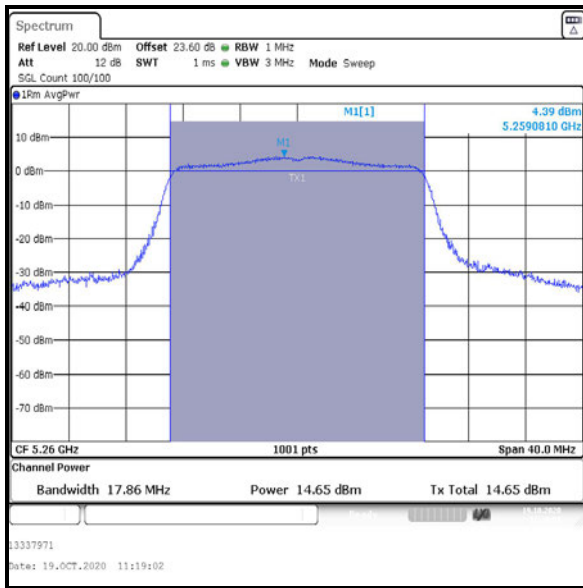


Top Channel

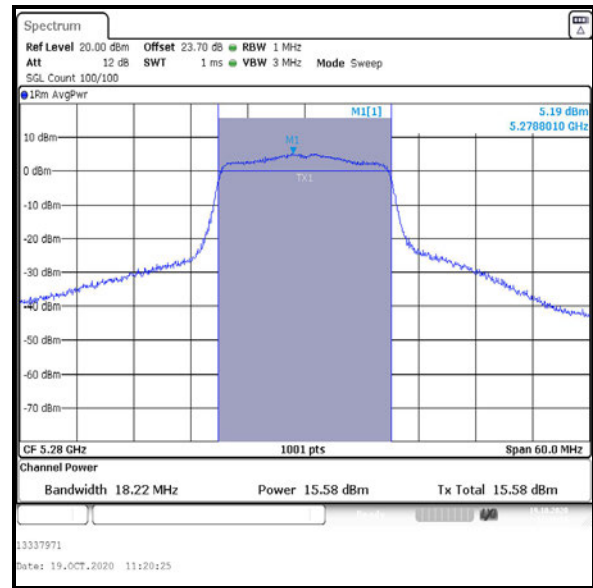
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

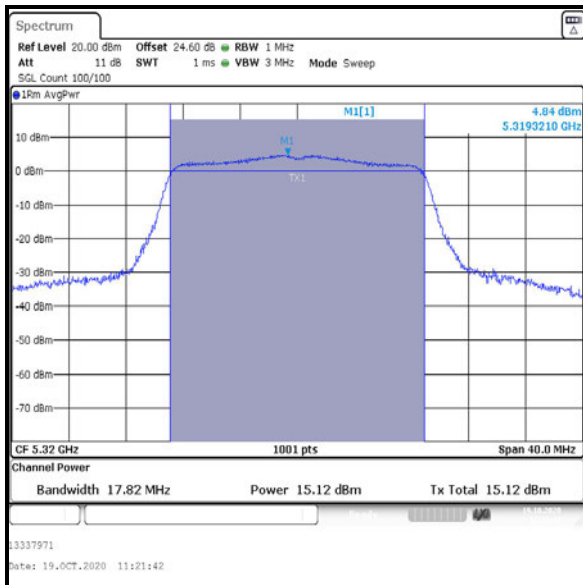
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	14.7	23.5	8.8	Complied
Middle	5280	15.6	23.6	8.0	Complied
Top	5320	15.1	23.5	8.4	Complied



Bottom Channel



Middle Channel

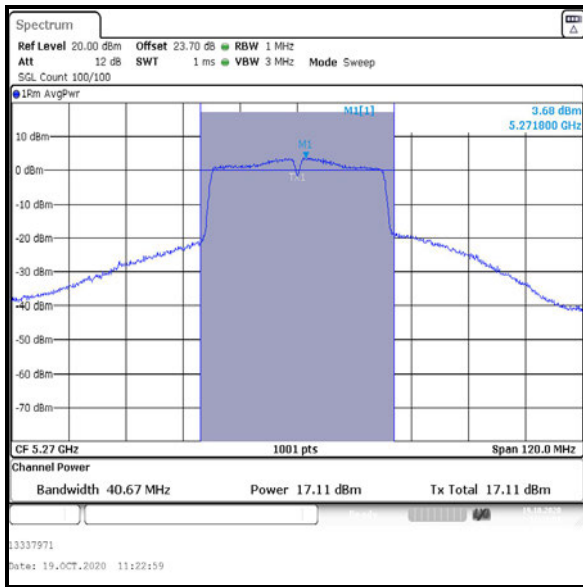


Top Channel

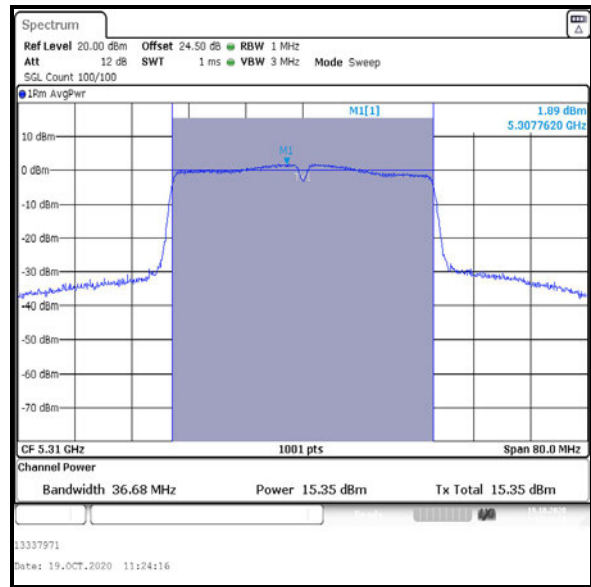
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5270	17.1	0.1	17.2	24.0	6.8	Complied
Top	5310	15.4	0.1	15.5	24.0	8.5	Complied



Bottom Channel

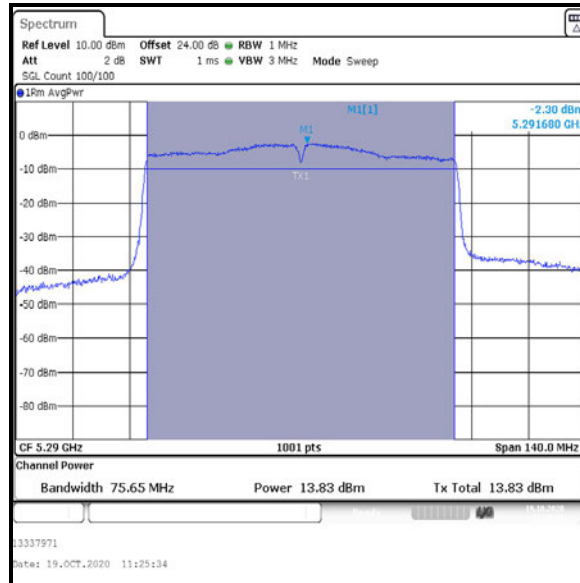


Top Channel

Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5290	13.8	0.2	14.0	24.0	10.0	Complied



Single Channel

Transmitter Maximum Conducted Output Power (5.47-5.6 GHz & 5.65-5.725 GHz bands)**4.4.2. 5.47-5.6 GHz & 5.65-5.725 GHz bands****Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 6.12 / RSS-247 6.2.3.1
Test Method Used:	KDB 789033 D02 Section II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

- For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 99 % emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 100 traces performed. The span was set to encompass the entire 99 % emission bandwidth. The channel power results are recorded in the tables below.
- For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured power in order to compute the average power during the actual transmission time.
- The RSS-247 6.2.3.1 conducted limit is the lesser of 250 mW (24.0 dBm) or 11 dBm + 10 log₁₀ B, where B is the previously measured 99% emission bandwidth in MHz.

$$\begin{aligned}
 &\text{For } B > 20 \text{ MHz} \rightarrow \\
 &\rightarrow \log_{10} B > \log_{10} 20 \rightarrow \\
 &\rightarrow 10 \log_{10} B > 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 11 + 10 \log_{10} B > 11 + 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 11 + 10 \log_{10} B > 24.0 \text{ dBm}
 \end{aligned}$$

Therefore for measured emission bandwidths greater than 20 MHz, the lesser of the two limits is the fixed limit of 250 mW (24.0 dBm). This was applied to the results.

For measured emission bandwidths of less than 20 MHz, the limit for each channel was calculated as below:

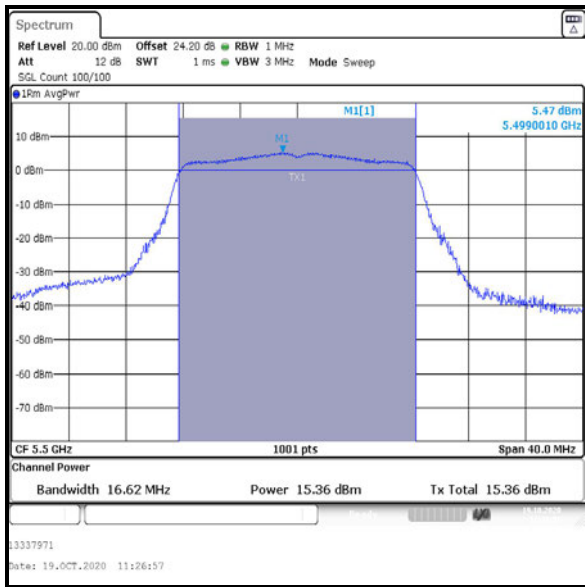
$$\begin{aligned}
 802.11a \text{ 20 MHz channel width / Bottom channel} &= 11 \text{ dBm} + 10 \log_{10} 16.623 = 23.2 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Middle channel} &= 11 \text{ dBm} + 10 \log_{10} 16.623 = 23.2 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Top channel} &= 11 \text{ dBm} + 10 \log_{10} 16.663 = 23.2 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Bottom channel} &= 11 \text{ dBm} + 10 \log_{10} 17.742 = 23.5 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Middle channel} &= 11 \text{ dBm} + 10 \log_{10} 17.822 = 23.5 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Top channel} &= 11 \text{ dBm} + 10 \log_{10} 17.782 = 23.5 \text{ dBm}
 \end{aligned}$$

- The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable

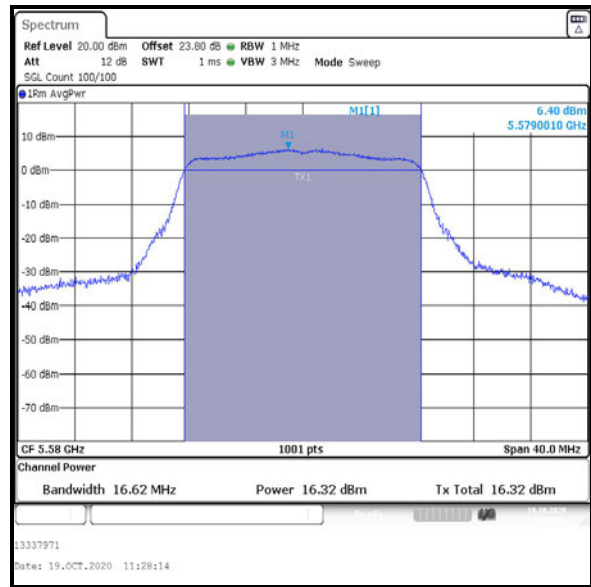
**Transmitter Maximum Conducted Output Power (5.47-5.6 GHz & 5.65-5.725 GHz bands)
(continued)**

Results: 802.11a / 20 MHz / BPSK / 6 Mbps

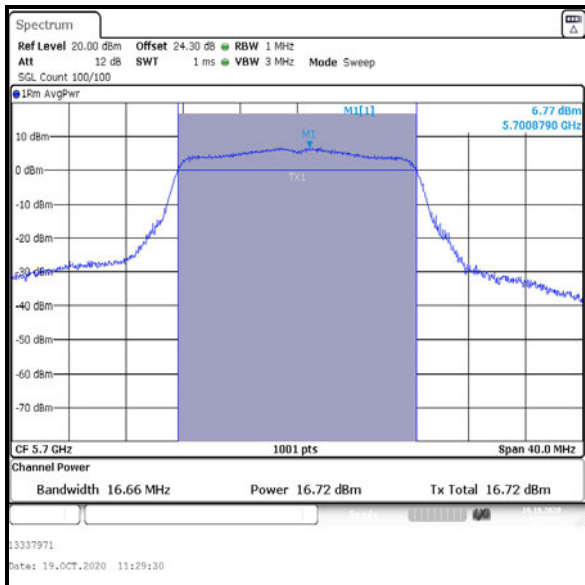
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5500	15.4	23.2	7.8	Complied
Middle	5580	16.3	23.2	6.9	Complied
Top	5700	16.7	23.2	6.5	Complied



Bottom Channel



Middle Channel

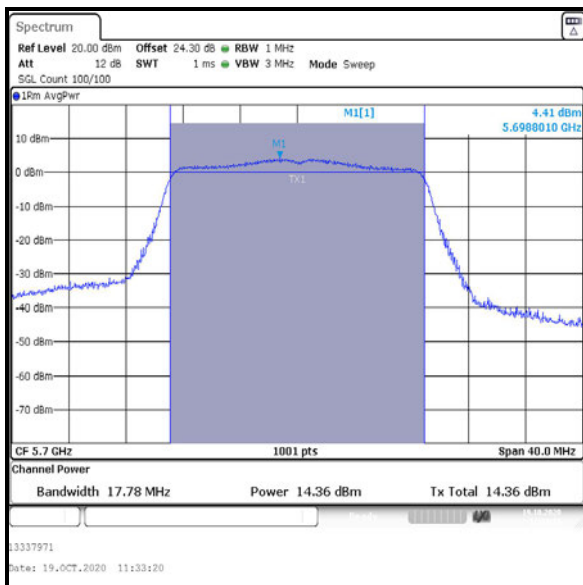
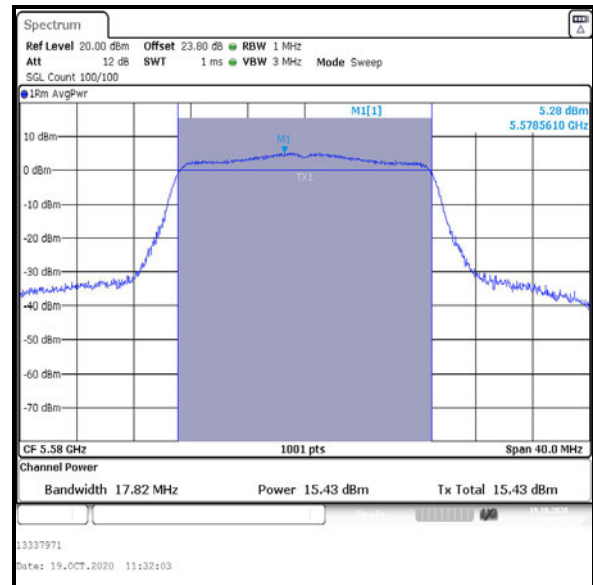
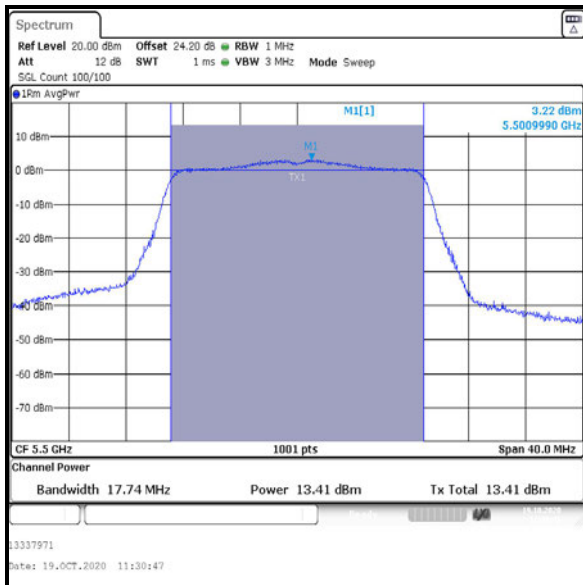


Top Channel

**Transmitter Maximum Conducted Output Power (5.47-5.6 GHz & 5.65-5.725 GHz bands)
(continued)**

Results: 802.11n / 20 MHz / BPSK / MCS0

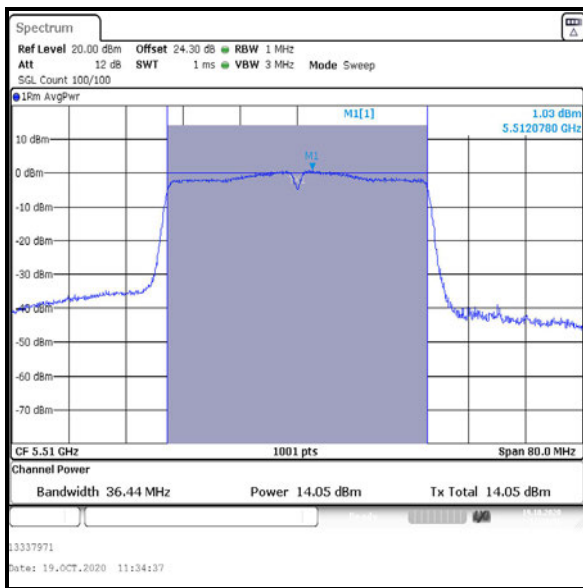
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5500	13.4	23.5	10.1	Complied
Middle	5580	15.4	23.5	8.1	Complied
Top	5700	14.4	23.5	9.1	Complied



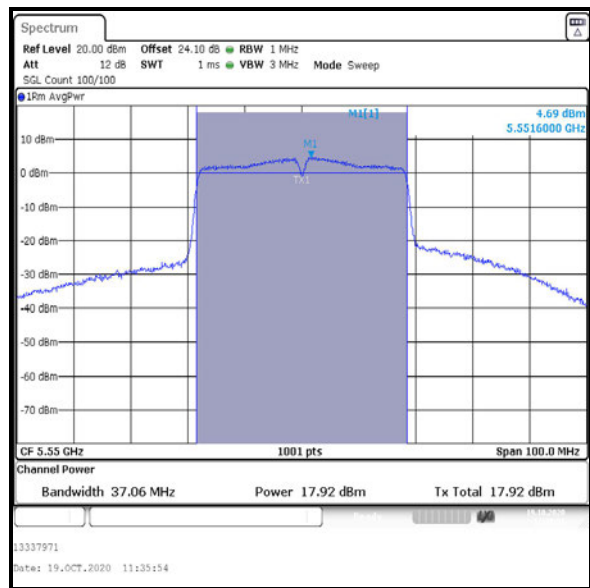
**Transmitter Maximum Conducted Output Power (5.47-5.6 GHz & 5.65-5.725 GHz bands)
(continued)**

Results: 802.11n / 40 MHz / BPSK / MCS0

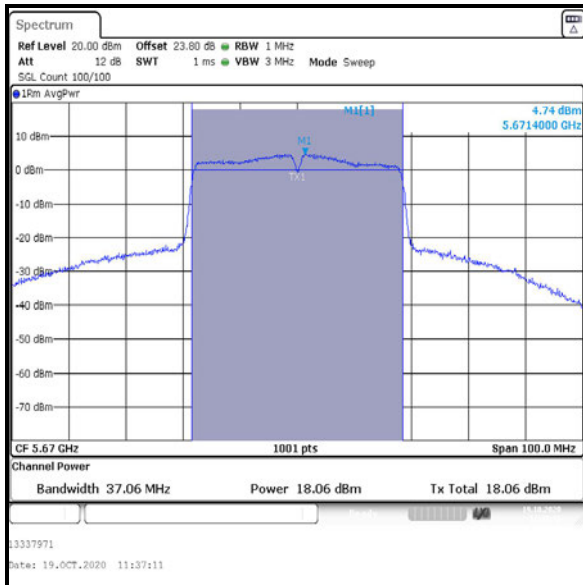
Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5510	14.1	0.1	14.2	24.0	9.8	Complied
Middle	5550	17.9	0.1	18.0	24.0	6.0	Complied
Top	5670	18.1	0.1	18.2	24.0	5.8	Complied



Bottom Channel



Middle Channel

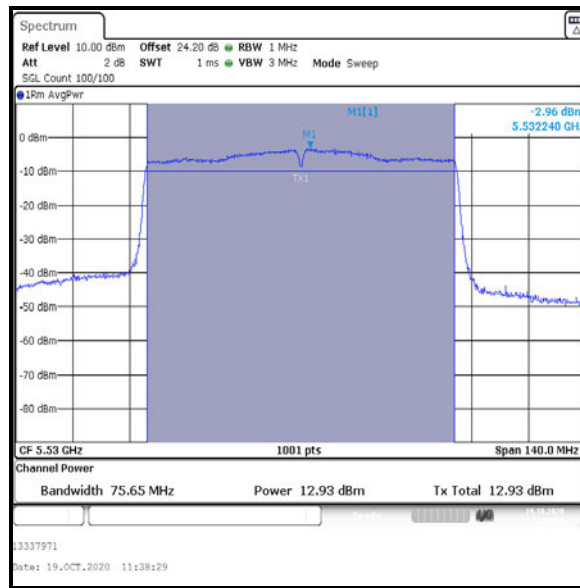


Top Channel

Transmitter Maximum Conducted Output Power (5.47-5.6 GHz & 5.65-5.725 GHz bands)
(continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5530	12.9	0.2	13.1	24.0	10.9	Complied



Single Channel

Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band)**4.4.3. 5.725-5.85 GHz band****Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 6.12 / RSS-247 6.2.4.1
Test Method Used:	KDB 789033 D02 Section II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

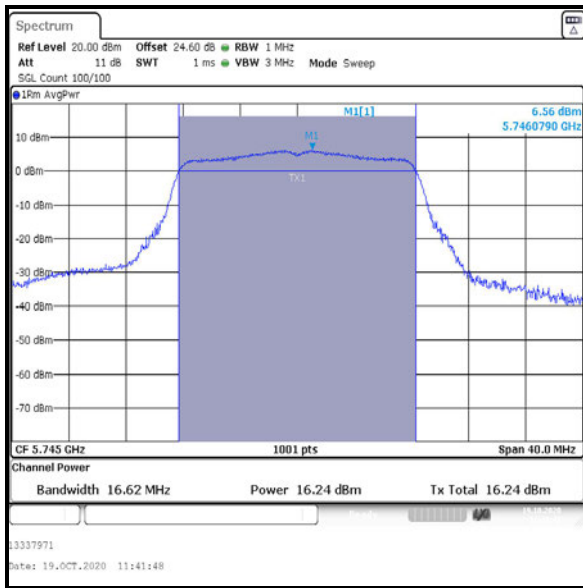
Note(s):

1. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 99 % emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 100 traces performed. The span was set to encompass the entire 99 % emission bandwidth. The channel power results are recorded in the tables below.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured power in order to compute the average power during the actual transmission time.
3. The RSS-247 6.2.4.1 conducted limit shall not exceed 1 W (30.0 dBm).
4. For all modes of operation, the antenna gain is < 6 dBi.
5. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

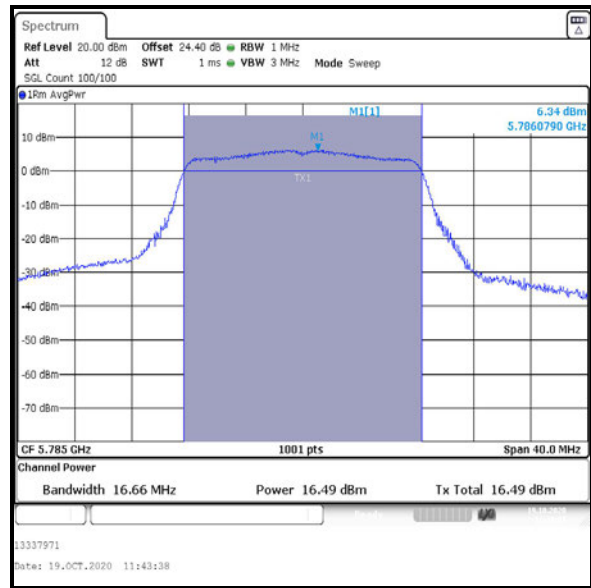
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)

Results: 802.11a / 20 MHz / 6 Mbps

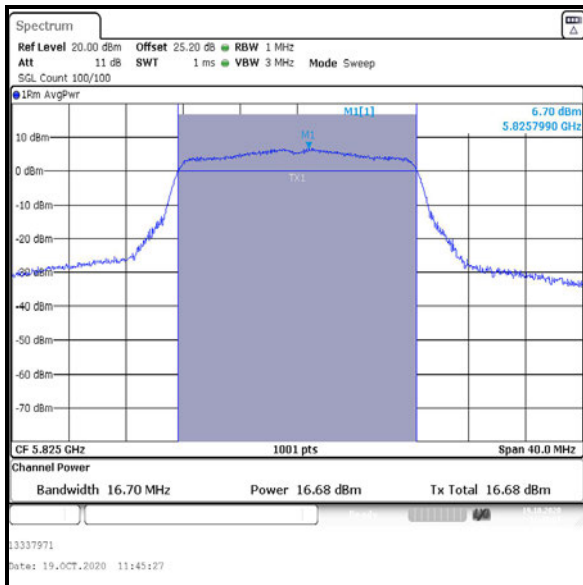
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5745	16.2	30.0	13.8	Complied
Middle	5785	16.5	30.0	13.5	Complied
Top	5825	16.7	30.0	13.3	Complied



Bottom Channel



Middle Channel

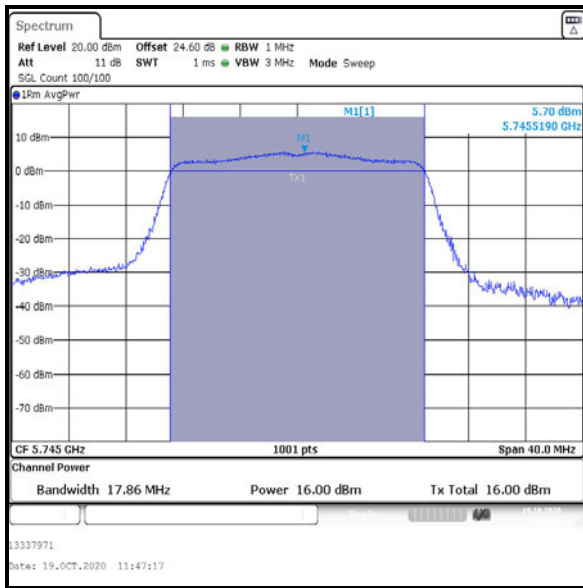


Top Channel

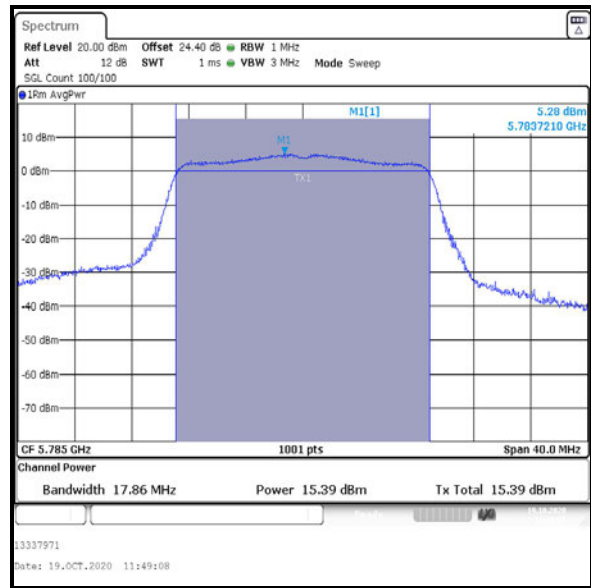
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

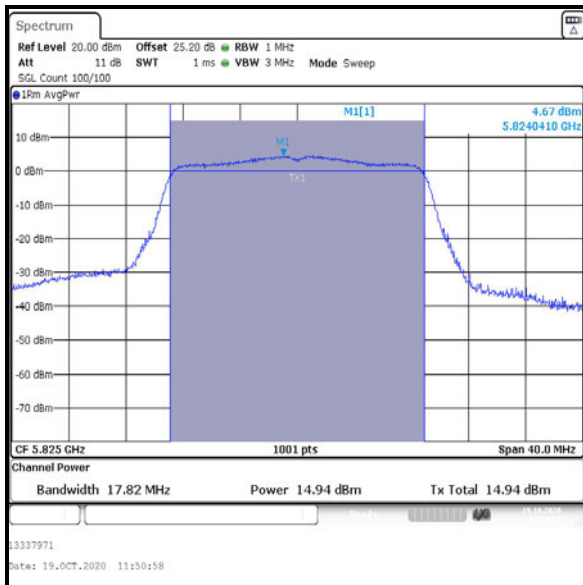
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5745	16.0	30.0	14.0	Complied
Middle	5785	15.4	30.0	14.6	Complied
Top	5825	14.9	30.0	15.1	Complied



Bottom Channel



Middle Channel

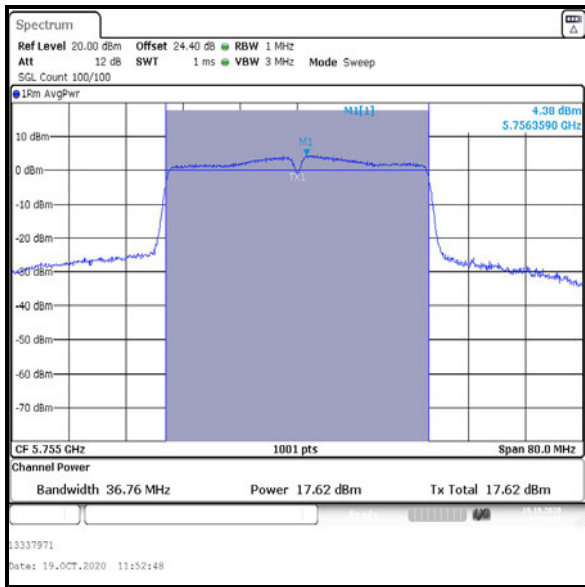


Top Channel

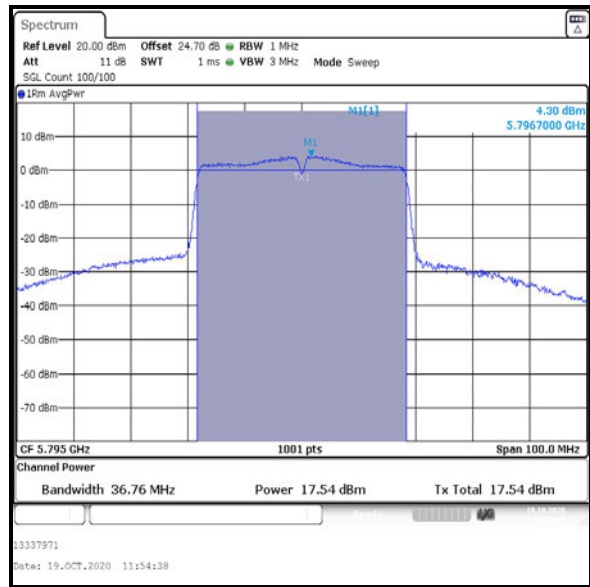
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5755	17.6	0.1	17.7	30.0	12.3	Complied
Top	5795	17.5	0.1	17.6	30.0	12.4	Complied



Bottom Channel

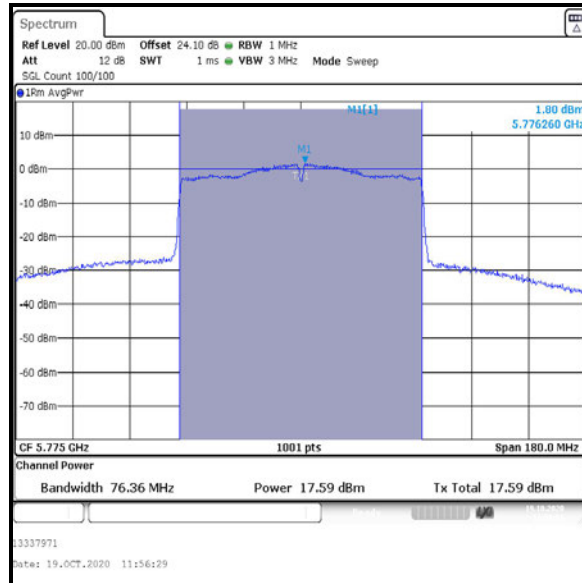


Top Channel

Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5775	17.6	0.2	17.8	30.0	12.2	Complied



Single Channel

4.5. Transmitter Maximum Equivalent Isotropically Radiated Power**4.5.1. 5.15-5.25 GHz band****Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 6.12 / RSS-247 6.2.2.1
Test Method Used:	KDB 789033 D02 Section II.E.2.b) and II.E.2.d) & Notes below

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Transmitter Maximum Equivalent Isotropically Radiated Power (5.15-5.25 GHz band) **(continued)**

Note(s):

1. For the 5.15-5.25 GHz band, conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 99 % emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 100 traces performed. The span was set to encompass the entire 99 % emission bandwidth. The channel power results are recorded in the tables below.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured power in order to compute the average power during the actual transmission time.
3. The antenna gain was added to the conducted output power results to determine the EIRPs.
4. The RSS-247 6.2.1.1 e.i.r.p. limit is the lesser of 200 mW (23 dBm) or $10 + 10 \log_{10} B$, where B is the previously measured 99% emission bandwidth in MHz.

$$\begin{aligned}
 &\text{For } B > 20 \text{ MHz} \rightarrow \\
 &\rightarrow \log_{10} B > \log_{10} 20 \rightarrow \\
 &\rightarrow 10 \log_{10} B > 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 10 + 10 \log_{10} B > 10 + 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 10 + 10 \log_{10} B > 23.0 \text{ dBm}
 \end{aligned}$$

Therefore for measured emission bandwidths greater than 20 MHz, the lesser of the two limits is the fixed limit of 200 mW (23.0 dBm). This was applied to the results.

For measured emission bandwidths of less than 20 MHz, the limit for each channel was calculated as below:

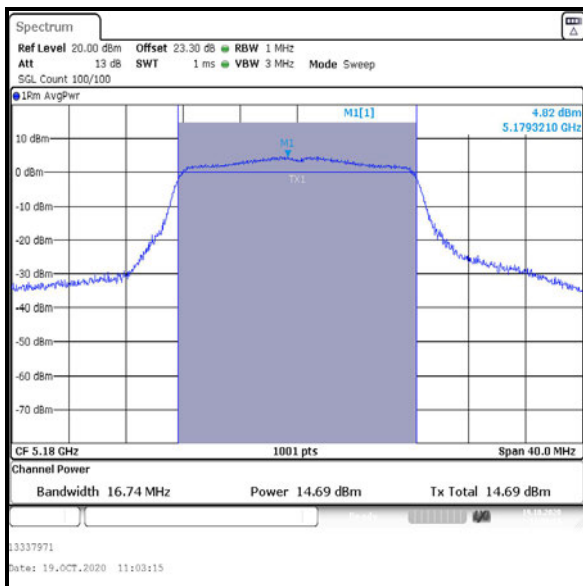
$$\begin{aligned}
 &802.11a \text{ 20 MHz channel width / Bottom channel} = 10 + 10 \log_{10} 16.743 = 22.2 \text{ dBm} \\
 &802.11a \text{ 20 MHz channel width / Middle channel} = 10 + 10 \log_{10} 17.443 = 22.4 \text{ dBm} \\
 &802.11a \text{ 20 MHz channel width / Top channel} = 10 + 10 \log_{10} 17.682 = 22.5 \text{ dBm} \\
 &802.11n \text{ 20 MHz channel width SISO / Bottom channel} = 10 + 10 \log_{10} 17.822 = 22.5 \text{ dBm} \\
 &802.11n \text{ 20 MHz channel width SISO / Middle channel} = 10 + 10 \log_{10} 17.782 = 22.5 \text{ dBm} \\
 &802.11n \text{ 20 MHz channel width SISO / Top channel} = 10 + 10 \log_{10} 17.782 = 22.5 \text{ dBm}
 \end{aligned}$$

5. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

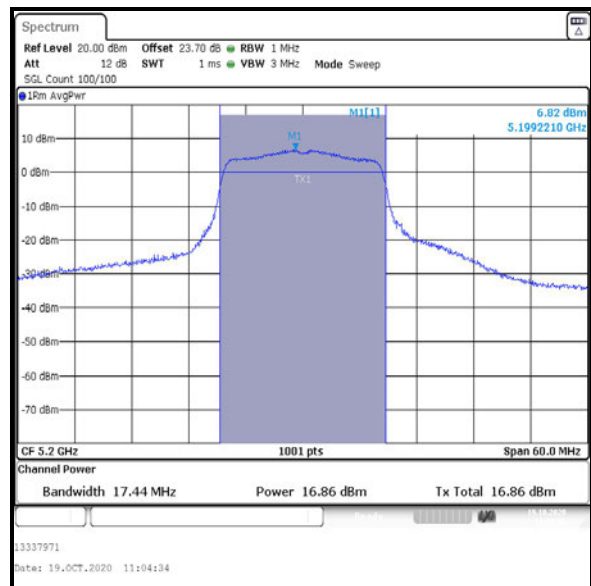
**Transmitter Maximum Equivalent Isotropically Radiated Power (5.15-5.25 GHz band)
(continued)**

Results: 802.11a / 20 MHz / 6 Mbps

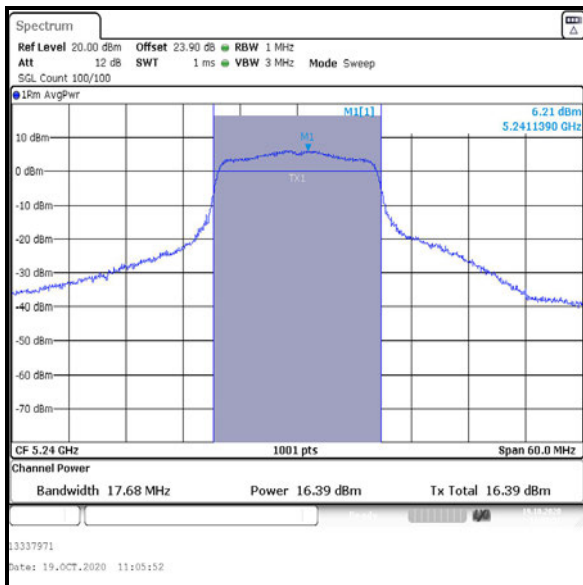
Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	14.7	2.5	17.2	22.2	5.0	Complied
Middle	5200	16.9	2.5	19.4	22.4	3.0	Complied
Top	5240	16.4	2.5	18.9	22.5	3.6	Complied



Bottom Channel



Middle Channel

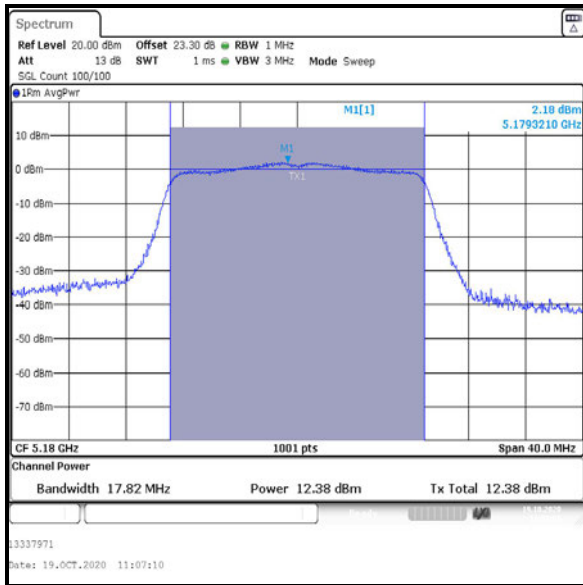


Top Channel

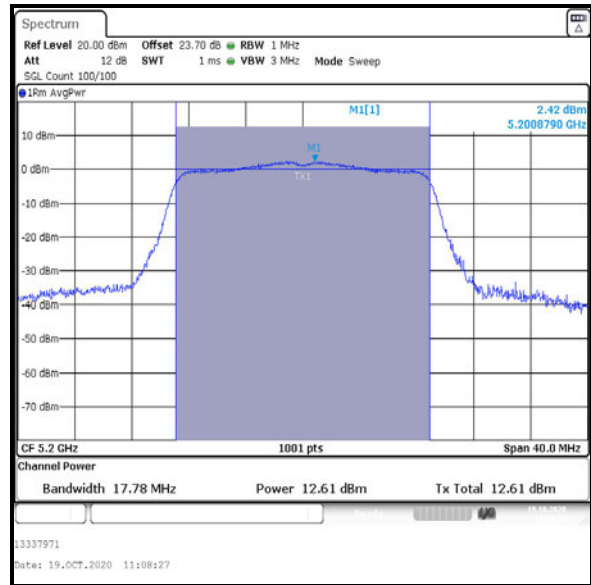
**Transmitter Maximum Equivalent Isotropically Radiated Power (5.15-5.25 GHz band)
(continued)**

Results: 802.11n / 20 MHz / BPSK / MCS0

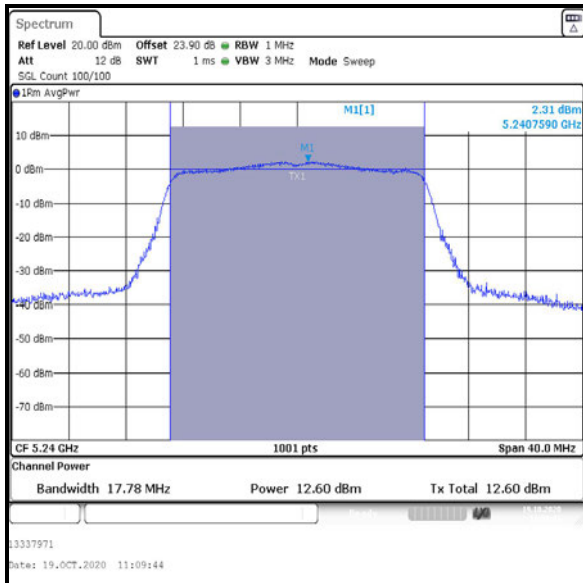
Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	12.4	2.5	14.9	22.5	7.6	Complied
Middle	5200	12.6	2.5	15.1	22.5	7.4	Complied
Top	5240	12.6	2.5	15.1	22.5	7.4	Complied



Bottom Channel



Middle Channel



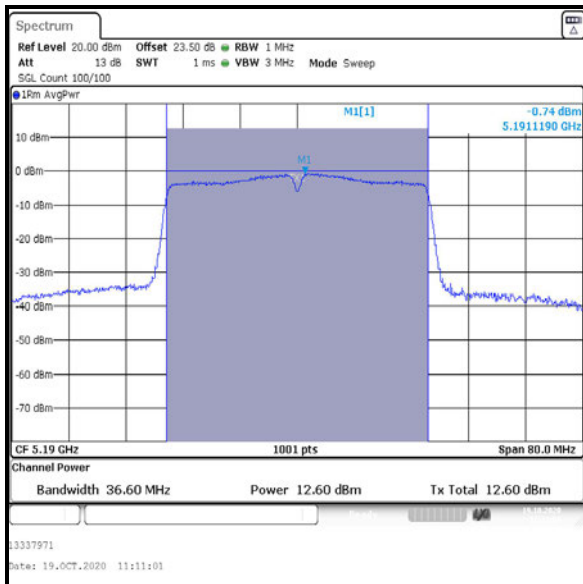
Top Channel

**Transmitter Maximum Equivalent Isotropically Radiated Power (5.15-5.25 GHz band)
(continued)**

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)
Bottom	5190	12.6	0.1	12.7	2.5	15.2
Top	5230	15.6	0.1	15.7	2.5	18.2

Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5190	15.2	23.0	7.8	Complied
Top	5230	18.2	23.0	4.8	Complied



Bottom Channel



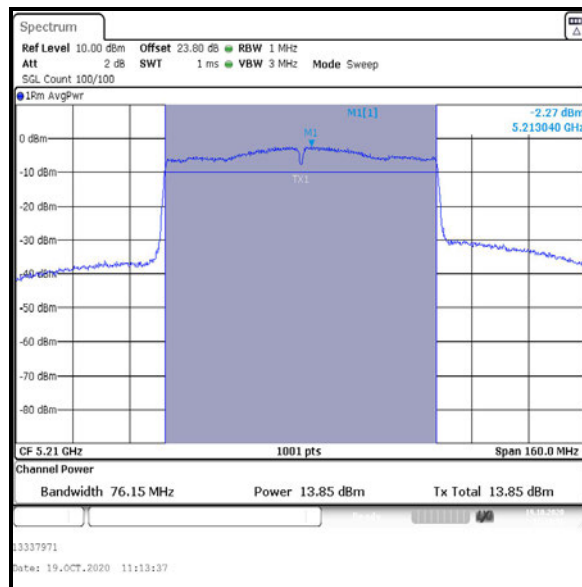
Top Channel

Transmitter Maximum Equivalent Isotropically Radiated Power (5.15-5.25 GHz band)
(continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)
Single	5210	13.9	0.2	14.1	2.5	16.6

Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5210	16.6	23.0	6.4	Complied



Single Channel

4.5.2. 5.25-5.35 GHz band**Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 6.12 / RSS-247 6.2.2.1
Test Method Used:	KDB 789033 D02 Section II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Transmitter Maximum Equivalent Isotropically Radiated Power (5.25-5.35 GHz band) **(continued)**

Note(s):

1. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 99 % emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 100 traces performed. The span was set to encompass the entire 99 % emission bandwidth. The channel power results are recorded in the tables below.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured power in order to compute the average power during the actual transmission time.
3. The antenna gain was added to the conducted output power results taken from Section 4.4.1 to determine the EIRPs.
4. The RSS-247 6.2.2.1 e.i.r.p. limit is the lesser of 1.0 W (30.0 dBm) or $17 + 10 \log_{10} B$, where B is the previously measured 99% emission bandwidth in MHz.

$$\begin{aligned}
 &\text{For } B > 20 \text{ MHz} \rightarrow \\
 &\rightarrow \log_{10} B > \log_{10} 20 \rightarrow \\
 &\rightarrow 10 \log_{10} B > 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 17 + 10 \log_{10} B > 17 + 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 17 + 10 \log_{10} B > 30.0 \text{ dBm}
 \end{aligned}$$

Therefore for measured emission bandwidths greater than 20 MHz, the lesser of the two limits is the fixed limit of 1.0 W (30.0 dBm). This was applied to the results.

For measured emission bandwidths of less than 20 MHz, the limit for each channel was calculated as below:

$$\begin{aligned}
 802.11a \text{ 20 MHz channel width / Bottom channel} &= 17 + 10 \log_{10} 17.383 = 29.4 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Middle channel} &= 17 + 10 \log_{10} 17.323 = 29.4 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Top channel} &= 17 + 10 \log_{10} 16.783 = 29.2 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Bottom channel} &= 17 + 10 \log_{10} 17.862 = 29.5 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Middle channel} &= 17 + 10 \log_{10} 18.222 = 29.6 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Top channel} &= 17 + 10 \log_{10} 17.822 = 29.5 \text{ dBm}
 \end{aligned}$$

5. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

Transmitter Maximum Equivalent Isotropically Radiated Power (5.25-5.35 GHz band)
(continued)**Results: 802.11a / 20 MHz / 6 Mbps**

Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	16.6	2.5	19.1	29.4	10.3	Complied
Middle	5280	16.7	2.5	19.2	29.4	10.2	Complied
Top	5320	16.4	2.5	18.9	29.2	10.3	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	14.7	2.5	17.2	29.5	12.3	Complied
Middle	5280	15.6	2.5	18.1	29.6	11.5	Complied
Top	5320	15.1	2.5	17.6	29.5	11.9	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)
Bottom	5270	17.1	0.1	17.2	2.5	19.7
Top	5310	15.4	0.1	15.5	2.5	18.0

Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5270	19.7	30.0	10.3	Complied
Top	5310	18.0	30.0	12.0	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)
Single	5290	13.8	0.2	14.0	2.5	16.5

Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5290	16.5	30.0	13.5	Complied

4.5.3. 5.47-5.6 GHz & 5.65-5.725 GHz bands**Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-Gen 6.12 / RSS-247 6.2.3.1
Test Method Used:	KDB 789033 D02 Section II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Transmitter Maximum Equivalent Isotropically Radiated Power (5.47-5.6 GHz & 5.65-5.725 GHz bands) (continued)

Note(s):

1. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 99 % emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 100 traces performed. The span was set to encompass the entire 99 % emission bandwidth. The channel power results are recorded in the tables below.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured power in order to compute the average power during the actual transmission time.
3. The antenna gain was added to the conducted output power results taken from Section 4.4.2 to determine the EIRPs.
4. The RSS-247 6.2.3.1 e.i.r.p. limit is the lesser of 1.0 W (30.0 dBm) or $17 + 10 \log_{10} B$, where B is the previously measured 99% emission bandwidth in MHz.

$$\begin{aligned}
 &\text{For } B > 20 \text{ MHz} \rightarrow \\
 &\rightarrow \log_{10} B > \log_{10} 20 \rightarrow \\
 &\rightarrow 10 \log_{10} B > 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 17 + 10 \log_{10} B > 17 + 10 \log_{10} 20 \rightarrow \\
 &\rightarrow 17 + 10 \log_{10} B > 30.0 \text{ dBm}
 \end{aligned}$$

Therefore for measured emission bandwidths greater than 20 MHz, the lesser of the two limits is the fixed limit of 1.0 W (30.0 dBm). This was applied to the results.

For measured emission bandwidths of less than 20 MHz, the limit for each channel was calculated as below:

$$\begin{aligned}
 802.11a \text{ 20 MHz channel width / Bottom channel} &= 17 + 10 \log_{10} 16.623 = 29.2 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Middle channel} &= 17 + 10 \log_{10} 16.623 = 29.2 \text{ dBm} \\
 802.11a \text{ 20 MHz channel width / Top channel} &= 17 + 10 \log_{10} 16.663 = 29.2 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Bottom channel} &= 17 + 10 \log_{10} 17.742 = 29.5 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Middle channel} &= 17 + 10 \log_{10} 17.822 = 29.5 \text{ dBm} \\
 802.11n \text{ 20 MHz channel width / Top channel} &= 17 + 10 \log_{10} 17.782 = 29.5 \text{ dBm}
 \end{aligned}$$

5. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

Transmitter Maximum Equivalent Isotropically Radiated Power (5.47-5.6 GHz & 5.65-5.725 GHz bands) (continued)**Results: 802.11a / 20 MHz / 6 Mbps**

Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5500	15.4	2.5	17.9	29.2	11.3	Complied
Middle	5580	16.3	2.5	18.8	29.2	10.4	Complied
Top	5700	16.7	2.5	19.2	29.2	10.0	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5500	13.4	2.5	15.9	29.5	13.6	Complied
Middle	5580	15.4	2.5	17.9	29.5	11.6	Complied
Top	5700	14.4	2.5	16.9	29.5	12.6	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)
Bottom	5510	14.1	0.1	14.2	2.5	16.7
Middle	5550	17.9	0.1	18.0	2.5	20.5
Top	5670	18.1	0.1	18.2	2.5	20.7

Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5510	16.7	30.0	13.3	Complied
Middle	5550	20.5	30.0	9.5	Complied
Top	5670	20.7	30.0	9.3	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)
Single	5530	12.9	0.2	13.1	2.5	15.6

Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5530	15.6	30.0	14.4	Complied

4.6. Transmitter Power Spectral Density

4.6.1. 5.15-5.25 GHz band

Test Summary:

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-247 6.2.1.1
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

1. Transmitter Power Spectral Density tests were performed using a signal analyser in accordance with KDB 789033 II. F referencing II.E.2.b) Method SA-1 where the duty cycle is >98% and and II.E.2.d) Method SA-2 where the duty cycle was <98%. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time set to auto and 100 traces performed. The span was set to encompass the entire 99% emission bandwidth.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured maximum power spectral density in order to compute the average power spectral density during the actual transmission time.
3. RSS-247 6.2.1.1 limit for e.i.r.p. spectral density shall not exceed 10 dBm in any 1 MHz band.
4. The antenna gain was added to the conducted PSD results to determine the EIRP spectral density.
5. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.
6. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the emission bandwidth, the conducted power spectral density plots are located in the Transmitter Maximum EIRP results, Section 4.5.1 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Transmitter EIRP Spectral Density (5.15-5.25 GHz band) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	PSD (dBm /MHz)	Antenna Gain (dBi)	EIRP PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5180	4.8	2.5	7.3	10.0	2.7	Complied
Middle	5200	6.8	2.5	9.3	10.0	0.7	Complied
Top	5240	6.2	2.5	8.7	10.0	1.3	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm /MHz)	Antenna Gain (dBi)	EIRP PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5180	2.2	2.5	4.7	10.0	5.3	Complied
Middle	5200	2.4	2.5	4.9	10.0	5.1	Complied
Top	5240	2.3	2.5	4.8	10.0	5.2	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm/MHz)	Antenna Gain (dBi)	EIRP PSD (dBm/MHz)
Bottom	5190	-0.7	0.1	-0.6	2.5	1.9
Top	5230	2.5	0.1	2.6	2.5	5.1

Channel	Frequency (MHz)	EIRP PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5190	1.9	10.0	8.1	Complied
Top	5230	5.1	10.0	4.9	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	PSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm/MHz)	Antenna Gain (dBi)	EIRP PSD (dBm/MHz)
Single	5210	-2.3	0.2	-2.1	2.5	0.4

Channel	Frequency (MHz)	EIRP PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5210	0.4	10.0	9.6	Complied

Transmitter Power Spectral Density (5.25-5.35 GHz band)**4.6.2. 5.25-5.35 GHz band****Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-247 6.2.2.1
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

1. Transmitter Power Spectral Density tests were performed using a signal analyser in accordance with KDB 789033 II. F referencing II.E.2.b) Method SA-1 where the duty cycle is >98% and and II.E.2.d) Method SA-2 where the duty cycle was <98%. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time set to auto and 100 traces performed. The span was set to encompass the entire 99% emission bandwidth.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured maximum power spectral density in order to compute the average maximum power spectral density during the actual transmission time.
3. RSS-247 6.2.2.1 limit for power spectral density shall not exceed 11 dBm in any 1 MHz band.
4. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.
5. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the emission bandwidth, the conducted power spectral density plots are located in the conducted output power results, Section 4.4.1 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Transmitter Power Spectral Density (5.25-5.35 GHz band) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5260	6.6	11.0	4.4	Complied
Middle	5280	6.5	11.0	4.5	Complied
Top	5320	6.5	11.0	4.5	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5260	4.4	11.0	6.6	Complied
Middle	5280	5.2	11.0	5.8	Complied
Top	5320	4.8	11.0	6.2	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5270	3.7	0.1	3.8	11.0	7.2	Complied
Top	5310	1.9	0.1	2.0	11.0	9.0	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	PSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5290	-2.3	0.2	-2.1	11.0	13.1	Complied

Transmitter Power Spectral Density (5.47-5.6 GHz & 5.65-5.725 GHz bands)**4.6.3. 5.47-5.6 GHz & 5.65-5.725 GHz band****Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-247 6.2.3.1
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

1. Transmitter Power Spectral Density tests were performed using a signal analyser in accordance with KDB 789033 II. F referencing II.E.2.b) Method SA-1 where the duty cycle is >98% and II.E.2.d) Method SA-2 where the duty cycle was <98%. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time set to auto and 100 traces performed. The span was set to encompass the entire 99% emission bandwidth.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured maximum power spectral density in order to compute the average maximum power spectral density during the actual transmission time.
3. RSS-247 6.2.3.1 limit for power spectral density shall not exceed 11 dBm in any 1 MHz band.
4. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.
5. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the emission bandwidth, the conducted power spectral density plots are located in the conducted output power results, Section 4.4.2 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Transmitter Power Spectral Density (5.47-5.6 GHz & 5.65-5.725 GHz bands) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5500	5.5	11.0	5.5	Complied
Middle	5580	6.4	11.0	4.6	Complied
Top	5700	6.8	11.0	4.2	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5500	3.2	11.0	7.8	Complied
Middle	5580	5.3	11.0	5.7	Complied
Top	5700	4.4	11.0	6.6	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5510	1.0	0.1	1.1	11.0	9.9	Complied
Middle	5550	4.7	0.1	4.8	11.0	6.2	Complied
Top	5670	4.7	0.1	4.8	11.0	6.2	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	PSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5530	-3.0	0.2	-2.8	11.0	13.8	Complied

Transmitter Power Spectral Density (5.725-5.85 GHz band)**4.6.4. 5.725-5.85 GHz band****Test Summary:**

Test Engineer:	Max Passell	Test Date:	19 October 2020
Test Sample Serial Number:	3157589		

ISED Canada Reference:	RSS-247 6.2.4.1
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

1. Transmitter Power Spectral Density tests were performed using a signal analyser in accordance with KDB 789033 II. F referencing II.E.2.b) Method SA-1 where the duty cycle is >98% and and II.E.2.d) Method SA-2 where the duty cycle was <98%. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time set to auto and 100 traces performed. The span was set to encompass the entire 99% emission bandwidth.
2. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 was added to the measured maximum power spectral density in order to compute the average maximum power spectral density during the actual transmission time.
3. RSS-247 6.2.4.1 limit for power spectral density shall not exceed 30 dBm in any 500 kHz band.
4. In accordance with ANSI C63.10 Section 4.1.4.1, use of bandwidths greater than those specified can produce higher readings. Compliance against the applicable limits is shown using a 1 MHz resolution bandwidth. This was deemed worst case.
5. For all modes of operation, the antenna gain is < 6 dBi.
6. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.
7. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the emission bandwidth, the conducted power spectral density plots are located in the conducted output power results, Section 4.4.3 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Transmitter Power Spectral Density (5.725-5.85 GHz band) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	PSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5745	6.6	30.0	23.4	Complied
Middle	5785	6.3	30.0	23.7	Complied
Top	5825	6.7	30.0	23.3	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5745	5.7	30.0	24.3	Complied
Middle	5785	5.3	30.0	24.7	Complied
Top	5825	4.7	30.0	25.3	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	PSD (dBm / 1 MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm / 500 kHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5755	4.4	0.1	4.5	30.0	25.5	Complied
Top	5795	4.3	0.1	4.4	30.0	25.6	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	PSD (dBm / 1 MHz)	Duty cycle correction factor (dB)	Corrected PSD dBm/500 kHz	Limit (dBm / 500 kHz)	Margin (dB)	Result
Single	5775	1.8	0.2	2.0	30.0	28.0	Complied

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