DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29 507 456

ISED CABid: ES1909

Test report No:
NIE: 65059RRF.002

Test report

USA FCC Part 15.247, 15.209
CANADA RSS-247, RSS-Gen

Radio Frequency Devices. Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz.
Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.
General Requirements and Information for the Certification of Radio Apparatus.

(*) Identification of item tested	The Water Control Bluetooth can be used to automatically irrigate your garden by scheduling the timer on the smart phone and send it to the product via Bluetooth
(*) Trademark	GARDENA
(*) Model and /or type reference	Water Control Bluetooth (Art. 1889)
Other identification of the product	HW version: EP1 SW version: 1.4.4.8 FCC ID: 2AZXO-1889 IC: 27370-1889
(*) Features	Bluetooth LE 5.1
Applicant	GARDENA Germany AB PO Box 7454 S-103 92 Stockholm Sweden
Test method requested, standard	USA FCC Part 15.247 (10-1-19 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.209 (10-1-19 Edition): Radiated emission limits; general requirements. CANADA RSS-247 Issue 2 (February 2017). CANADA RSS-Gen Issue 5 Amendment 1 (March 2019). Guidance for Performing Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid Systems Devices Operating Under Section 15.247 of the FCC Rules. 558074 D01 Meas Guidance v05r02 dated April 2, 2019. ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López Martín EMC Consumer & RF Lab. Manager 2021.07.15 14:29:05 +02'00'
Date of issue	2021-07-15
Report template No	FDT08_23 (*) "Data provided by the client"

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Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification is a FCC-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report.

DEKRA Testing and Certification S.A.U. is an ISED-recognized accredited testing laboratory, CABid: ES1909, with the appropriate scope of accreditation that covers the performed tests in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Testing and Certification S.A.U.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification S.A.U. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").

2. The GARDENA Water Control (Art. 1889) is intended for private use in domestic and hobby gardens, exclusively for outdoor use, to control sprinklers and watering systems. The GARDENA Water Control can be used for automatic watering during holidays. The Water Control Bluetooth® Art. 1889 forms part of an irrigation system in conjunction with the Bluetooth® App.

3. Factory: Kitron Electronics Manufacturing (Ningbo) Co. Ltd.No. 189 Donghui Road, Nordic Industry Park, Zhenhai District, Ningbo 315221, China

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of result.

Usage of samples

Samples undergoing test have been selected by: The client.

- Sample S/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
65059B/034	GARDENA Water Control	Water Control Bluetooth (Art. 1889)	--	2020/08/04

Sample S/01 has undergone the following test(s): All RADIATED tests indicated in Appendix A.

- Sample S/02 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
65059B/002	GARDENA Water Control	Water Control Bluetooth (Art. 1889)	--	2020/08/04

Sample S/02 has undergone the following test(s): All CONDUCTED tests indicated in Appendix A.

- Sample S/03 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
65059B/074	GARDENA Water Control	Water Control Bluetooth (Art. 1889)	--	2020/11/09
65059B/057	Valve	--	--	2020/11/09

Sample S/03 has undergone the following test(s): Radiated emissions Spot-check with full plastic enclosure sample (commercial sample).

Test sample description

Ports…… :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)		
	--		☐	☐	☐		
Supplementary information to the ports…… :	--						
Rated power supply .....:	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 9V battery					
Rated Power .....:	< 1W						
Clock frequencies .....:	48 MHz, 32.768 kHz						
Other parameters.....:	--						
Software version .....:	1.4.4.8						
Hardware version.....:	EP1						
Dimensions in cm (W x H x D)....:	--						
Mounting position.....:	☐	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☐	Other: SoC					
Modules/parts .....:	Module/parts of test item		Type	Manufacturer			
	--						
Accessories (not part of the test item) .....:	Description		Type	Manufacturer			
	--						
Documents as provided by the applicant.....:	Description		File name	Issue date			
	--						

(3) Only for Medical Equipment

Identification of the client

GARDENA Manufacturing GmbH

Hans-Lorenser-Str. 40, 89079 Ulm, Germany

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-08-20
Date (finish)	2020-10-08

Document history

Report number	Date	Description
65059RRF.002	2021-07-15	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 75 %

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 75 %

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Nicolás Salguero, José Manuel Jiménez, Pablo Redondo and Cristina Calle.

Used instrumentation:

Conducted Measurements:

		Last Calibration	Due Calibration
1.	Shielded room ETS LINDGREN S101	N.A.	N.A.
2.	Signal and Spectrum Analyzer ROHDE AND SCHWARZ FSV40	2019/09	2021/09
3.	OPEN SWITCH UNIT OSP120 ROHDE AND SCHWARZ	2019/10	2021/10
4.	OPEN SWITCH UNIT UP TO 18 GHz OSP150 ROHDE AND SCHWARZ	2019/09	2021/09
5.	DC Power Supply 40V/40A ROHDE AND SCHWARZ NGPE 40/40	N.A.	N.A.
6.	Digital Multimeter FLUKE 179	2020/10	2021/10

Radiated Measurements:

		Last Calibration	Due Calibration
1.	Semianechoic Absorber Lined Chamber ETS LINDGREN FACT 3 200 STP	N.A.	N.A.
2.	Shielded Room ETS LINDGREN S101	N.A.	N.A.
3.	Biconical/Log Antenna 30MHz - 6GHz ETS LINDGREN 3142E	2020/04	2023/04
4.	RF Pre-amplifier 40 dB, 10 MHz - 6 GHz BONN ELEKTRONIK BLNA 0160-01N	2020/02	2021/02
5.	EMI Test Receiver 7 GHz ROHDE AND SCHWARZ ESR7	2019/10	2021/10
6.	Broadband Horn antenna 1-18 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9120 D	2019/11	2022/11
7.	RF pre-amplifier 1-18 GHz Bonn Elektronik BLMA 0118-1M	2020/05	2021/05
8.	Signal and Spectrum Analyzer ROHDE AND SCHWARZ FSV40	2019/09	2021/09
9.	Pre-amplifier, 18 - 40 GHz BONN ELEKTRONIK BLMA 1840-3G	2019/11	2021/11
10.	Broadband Horn antenna 18 - 40 GHz SCHWARZBECK BBHA 9170	2018/07	2021/07
11.	DC Power Supply 30V/5A KEYSIGHT TECHNOLOGIES U8002A	N.A.	N.A.
12.	Digital Multimeter FLUKE 175	2019/10	2020/10

Testing verdicts

Not applicable:	N/A
Pass:	P
Fail:	F
Not measured:	N/M

Summary

1. Bluetooth Low Energy 5.1 (2M, 1M).

FCC PART 15 PARAGRAPH/ RSS-247			
Requirement – Test case		**Verdict**	**Remark**
Section 15.247 Subclause (a) (2) / RSS-247 5.2. (a)	6 dB Bandwidth	P	
Section 15.247 Subclause (b) / RSS-247 5.4. (d)	Maximum output power and antenna gain	P	
Section 15.247 Subclause (d) / RSS-247 5.5.	Band-edge emissions compliance (Transmitter)	P	
Section 15.247 Subclause (e) / RSS-247 5.2. (b)	Power spectral density	P	
Section 15.247 Subclause (d) / RSS-247 5.5.	Emission limitations radiated (Transmitter)	P	
Supplementary information and remarks: None.			

Appendix A: Test results. Bluetooth Low Energy 5.1 (2M, 1M)

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TEST CONDITIONS

POWER SUPPLY (V):

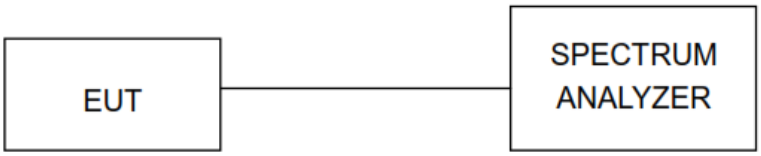
V nonimal:	9 Vdc
Type of Power Supply:	Battery.
Type of Antenna:	Integral PCB antenna (printed).
Maximum Declared Antenna Gain:	+3.3 dBi

TEST FREQUENCIES:

Low Channel:	2402 MHz
Middle Channel:	2440 MHz
High Channel:	2480 MHz

CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and it is connected to the spectrum analyser using a low loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.



RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (bilog antenna for the range between 30 MHz to 1000 MHz and 1 GHz-17 GHz double ridge horn antenna) is situated at a distance of 3 m and at a distance of 1m for the frequency range 17 GHz-26 GHz (17 GHz-40 GHz horn antenna).

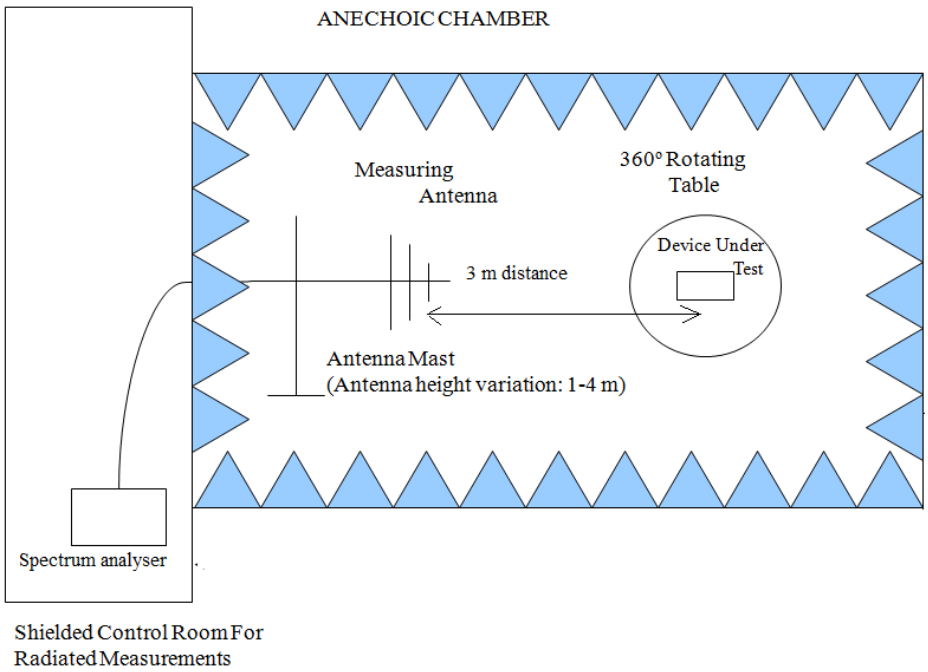
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height (Bilog antenna and Double ridge horn antenna) was varied from 1 to 4 meters to find the maximum radiated emission.

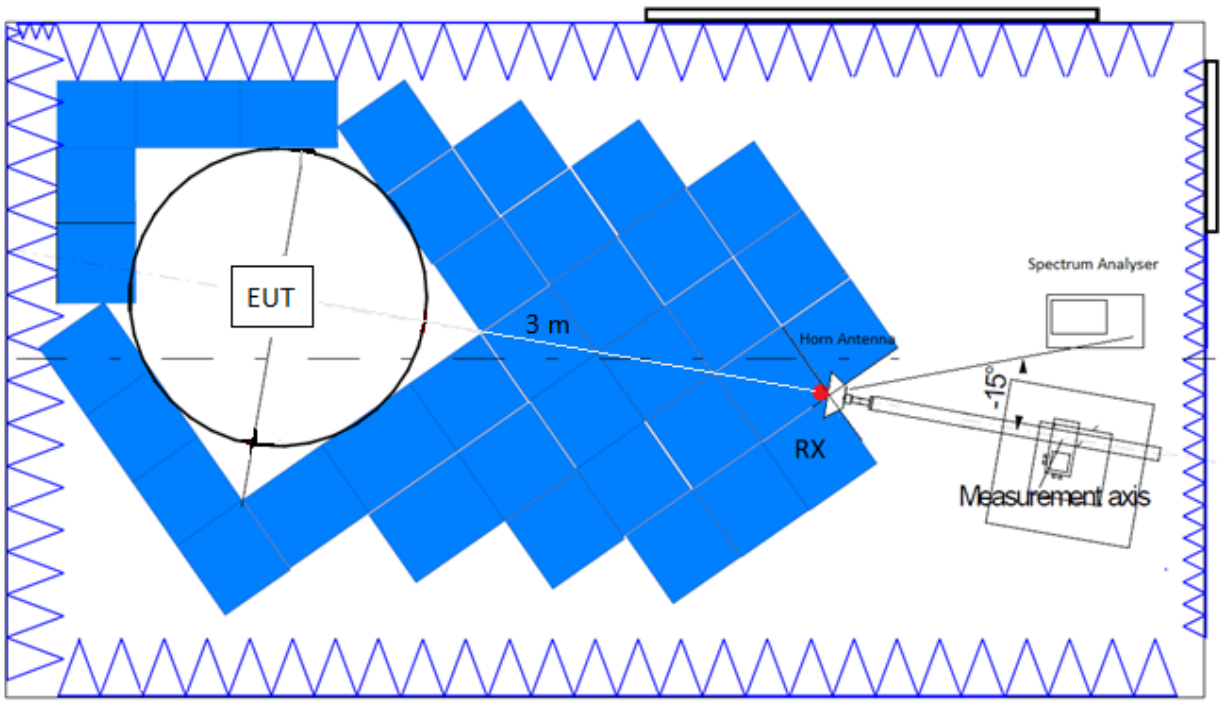
Measurements were made in both horizontal and vertical planes of polarization.

A resolution bandwidth/video bandwidth of 100 kHz/300 kHz was used for frequencies below 1 GHz and 1MHz/3MHz for frequencies above 1 GHz.

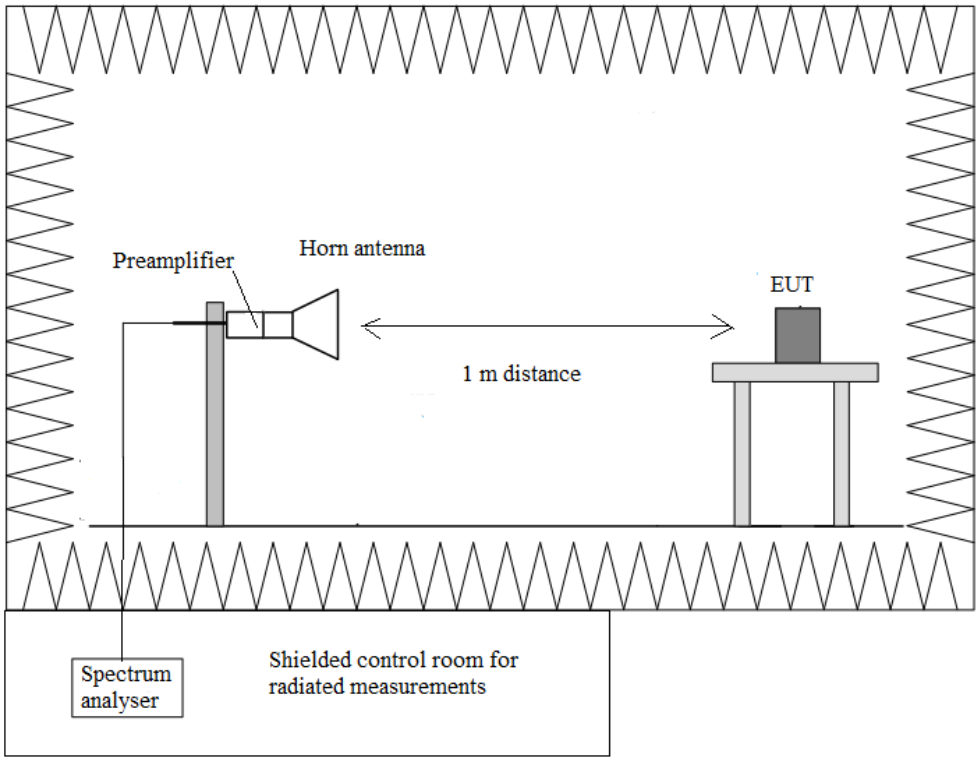
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1GHz to 17 GHz:



Radiated measurements setup f > 17 GHz:



Occupied Bandwidth

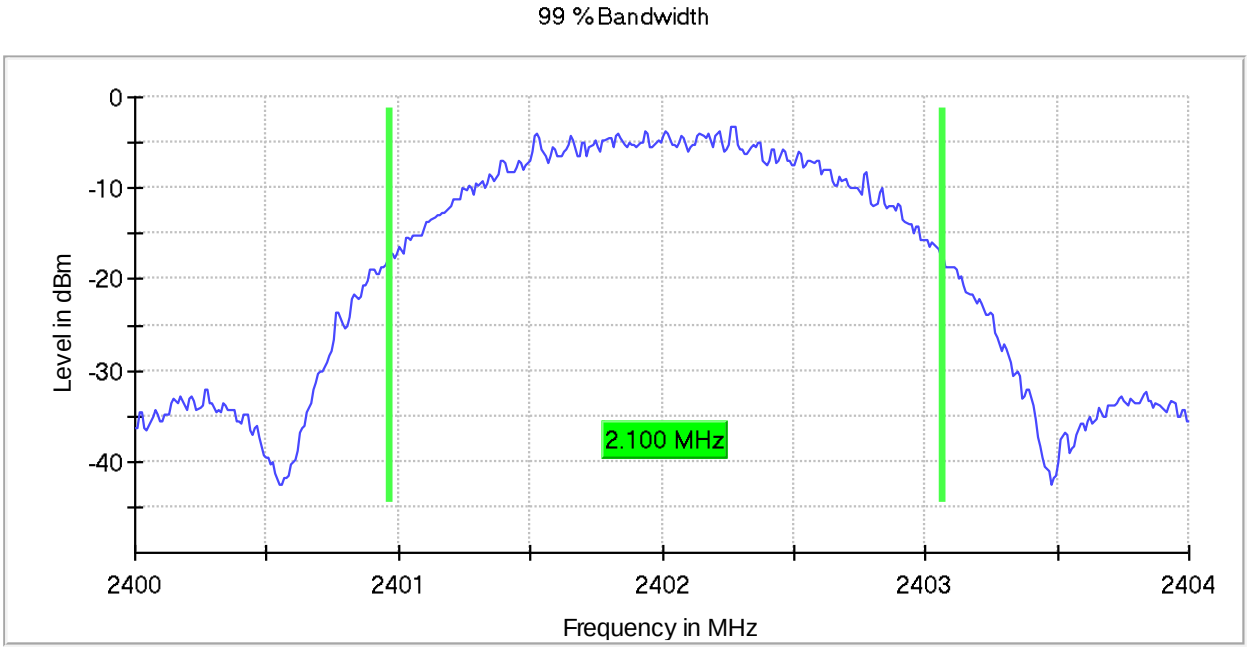
RESULTS:

- **2M modulation**

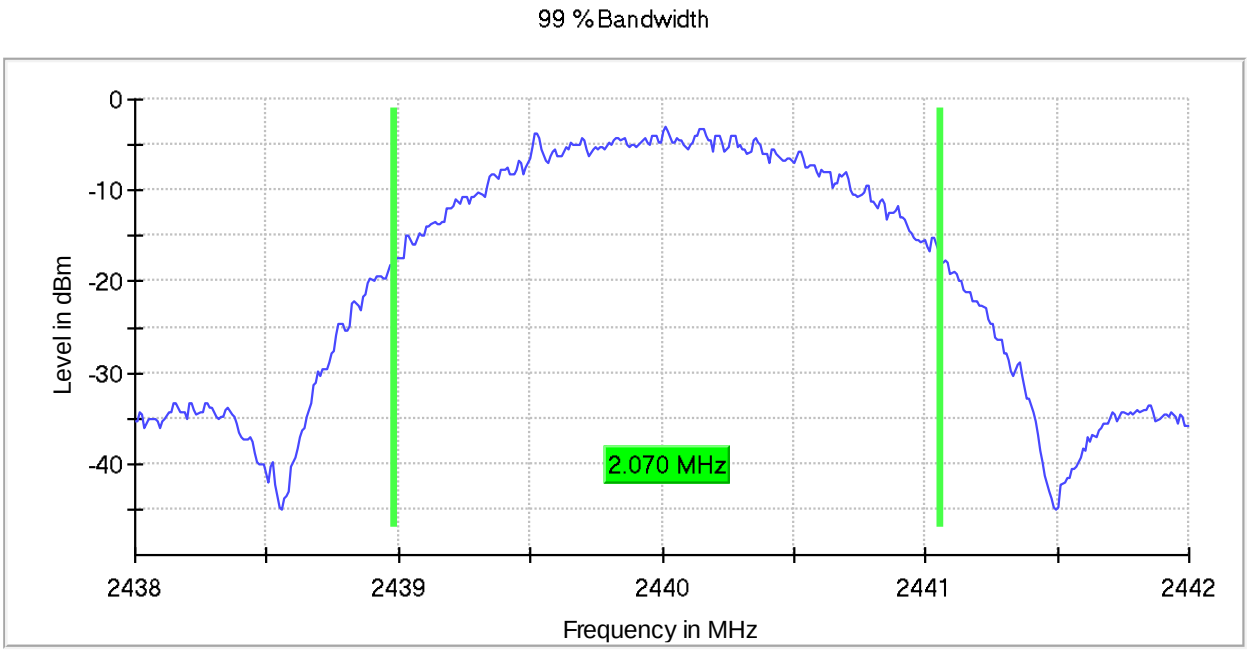
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
99% bandwidth (MHz)	2.100	2.070	2.080
Measurement uncertainty (%)	<± 2.08		

Verdict: PASS

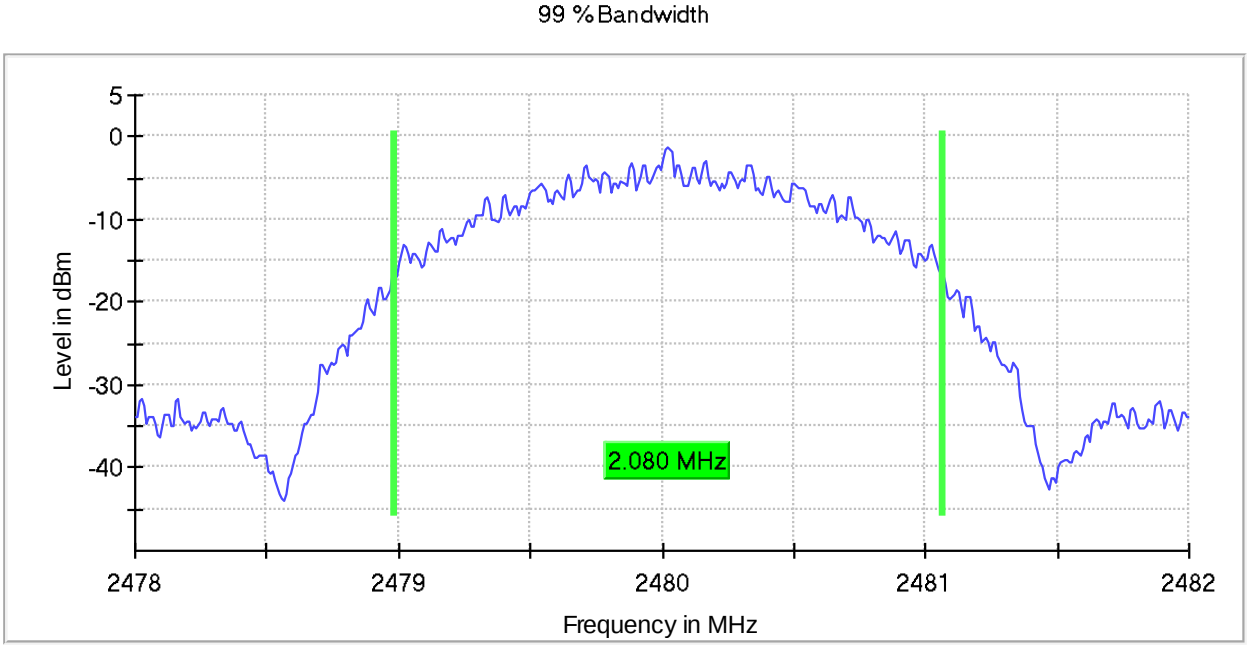
- Low Channel:



- Middle Channel:



- High Channel:

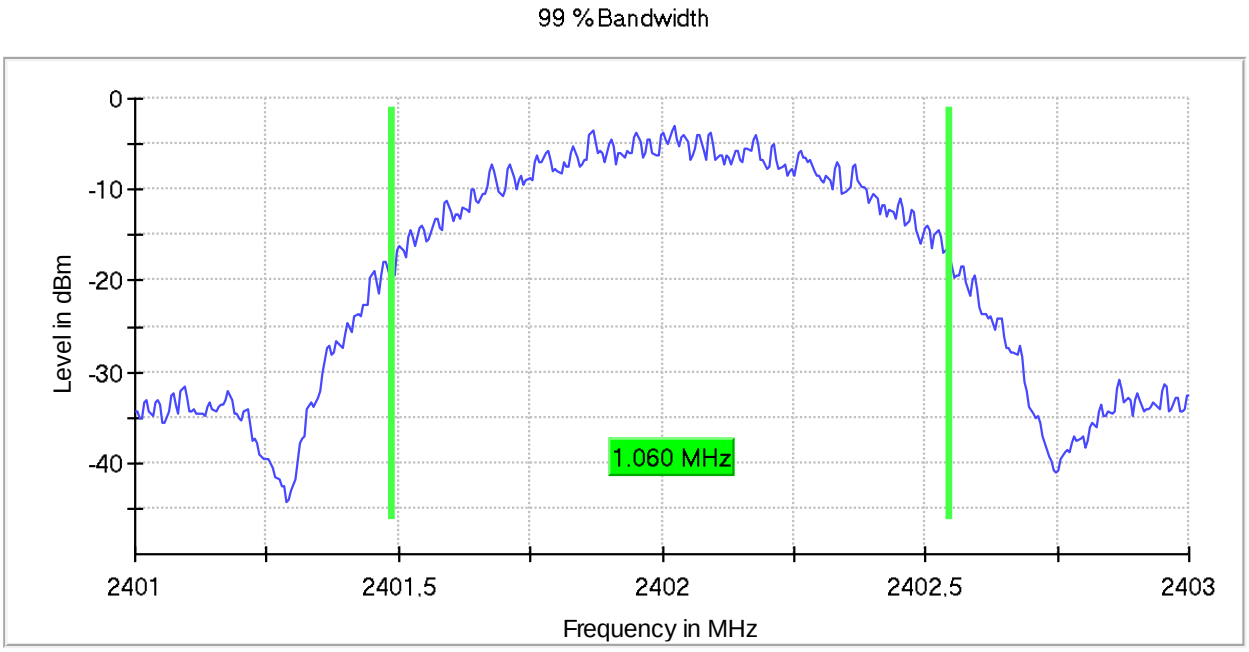


- **1M modulation**

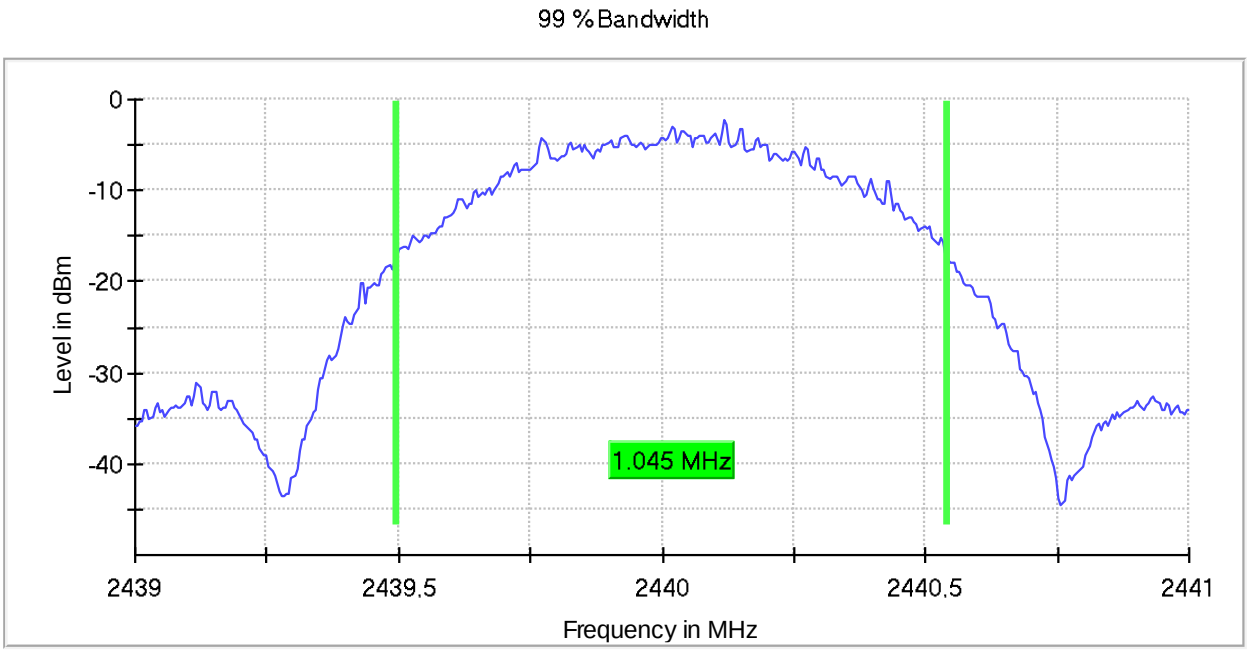
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
99% bandwidth (MHz)	1.060	1.045	1.055
Measurement uncertainty (%)	<± 2.08		

Verdict: PASS

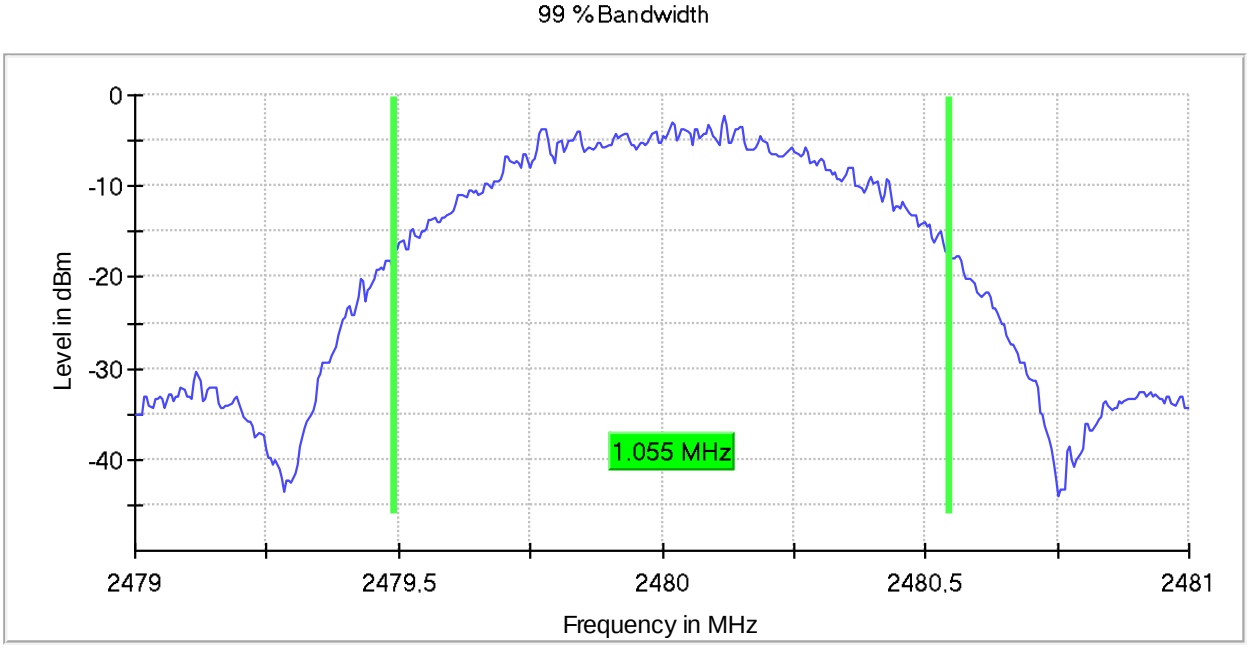
- Low Channel:



- Middle Channel:



- High Channel:



FCC Section 15.247 Subclause (a) (2) / RSS-247 Clause 5.2 (a) 6 dB Bandwidth.

SPECIFICATION:

The minimum 6 dB bandwidth shall be at least 500 kHz.

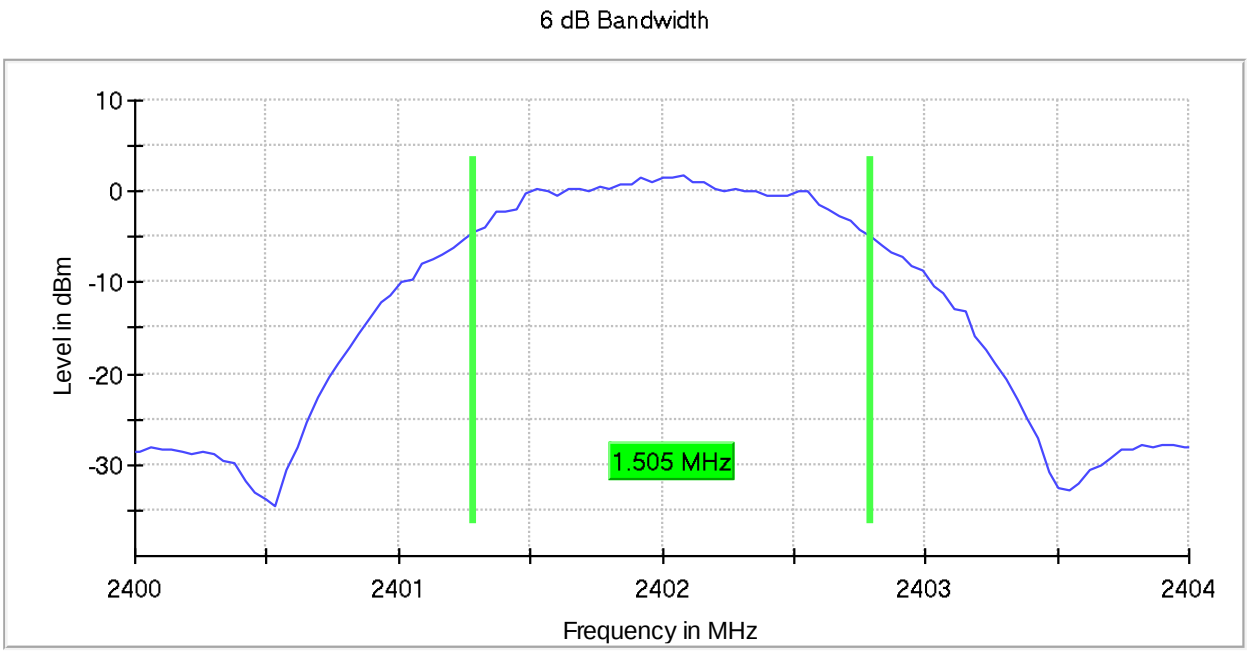
RESULTS:

- **2M modulation**

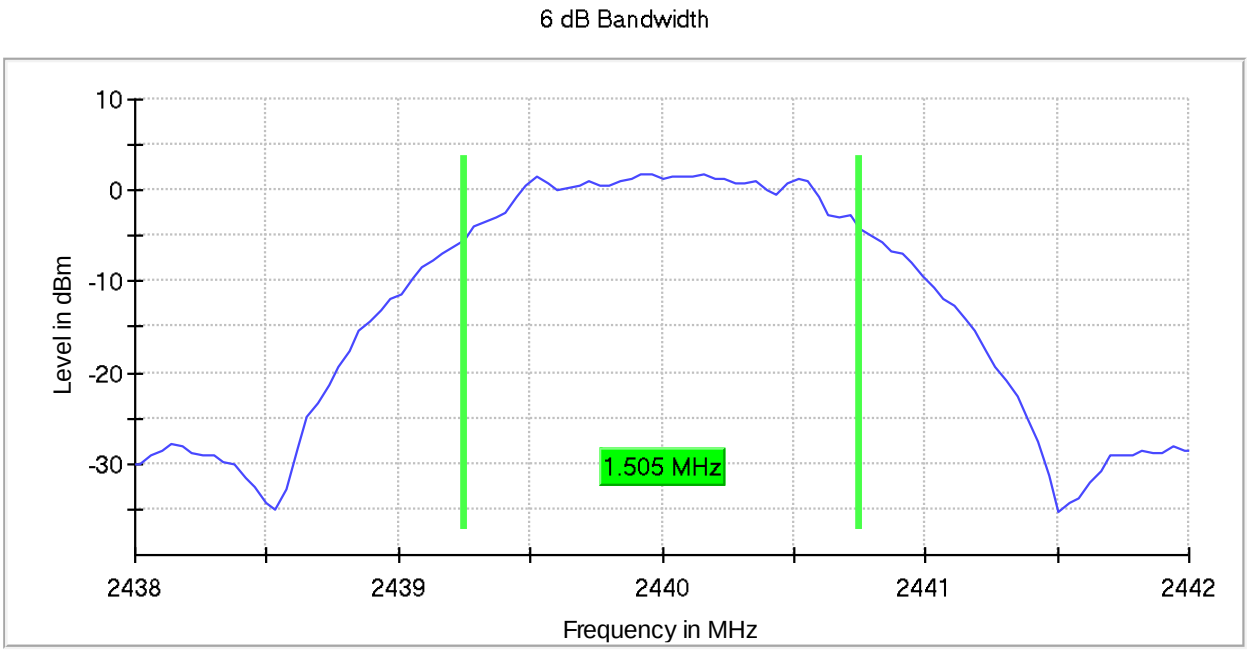
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
6 dB Spectrum bandwidth (MHz)	1.505	1.505	1.426
Measurement uncertainty (%)	<±2.08		

Verdict: PASS

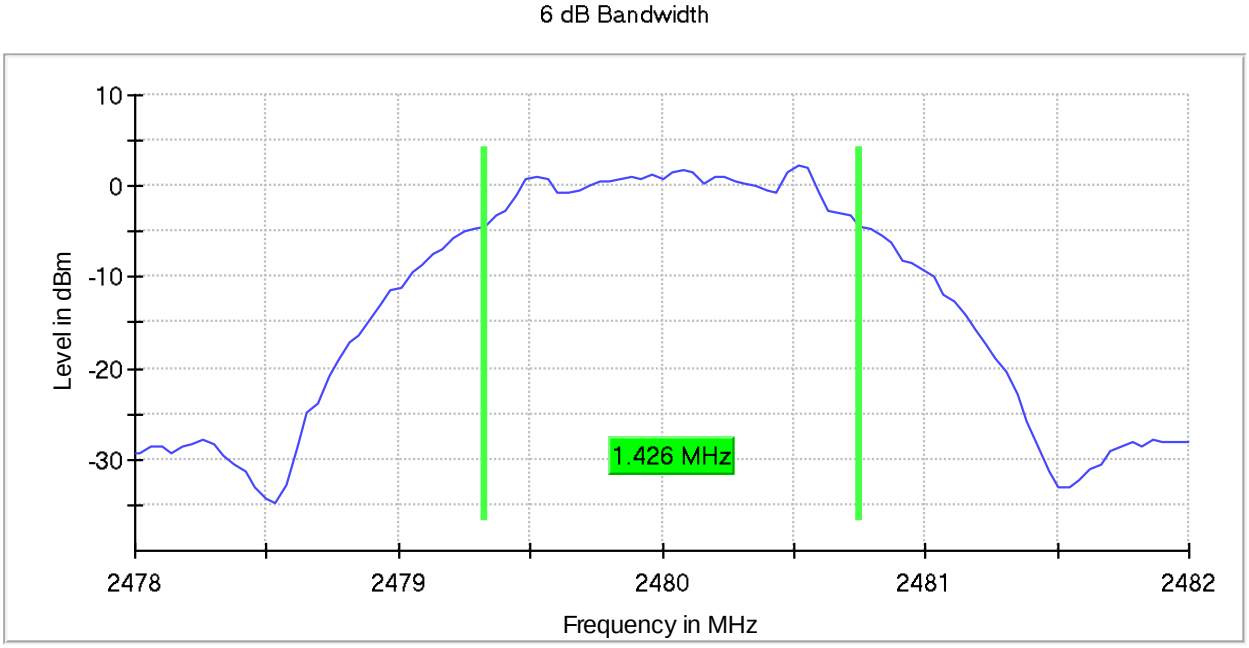
- Low Channel:



- Middle Channel:



- High Channel:

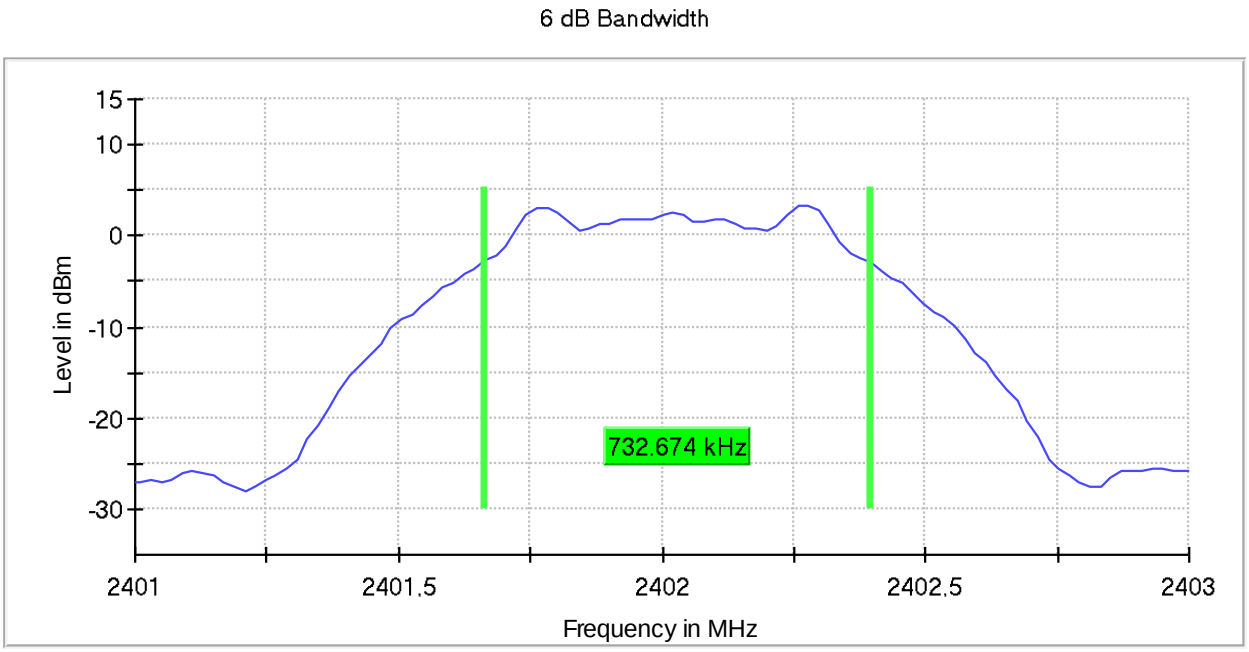


- **1M modulation**

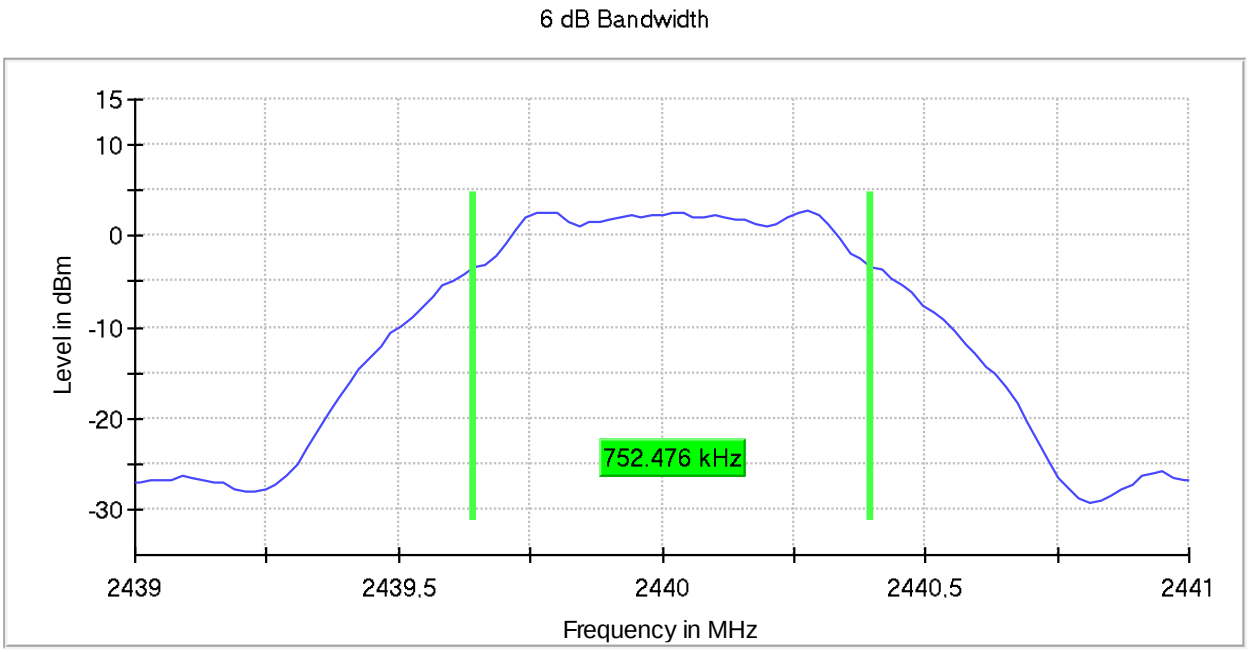
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
6 dB Spectrum bandwidth (MHz)	0.732674	0.752476	0.712872
Measurement uncertainty (%)	<±2.08		

Verdict: PASS

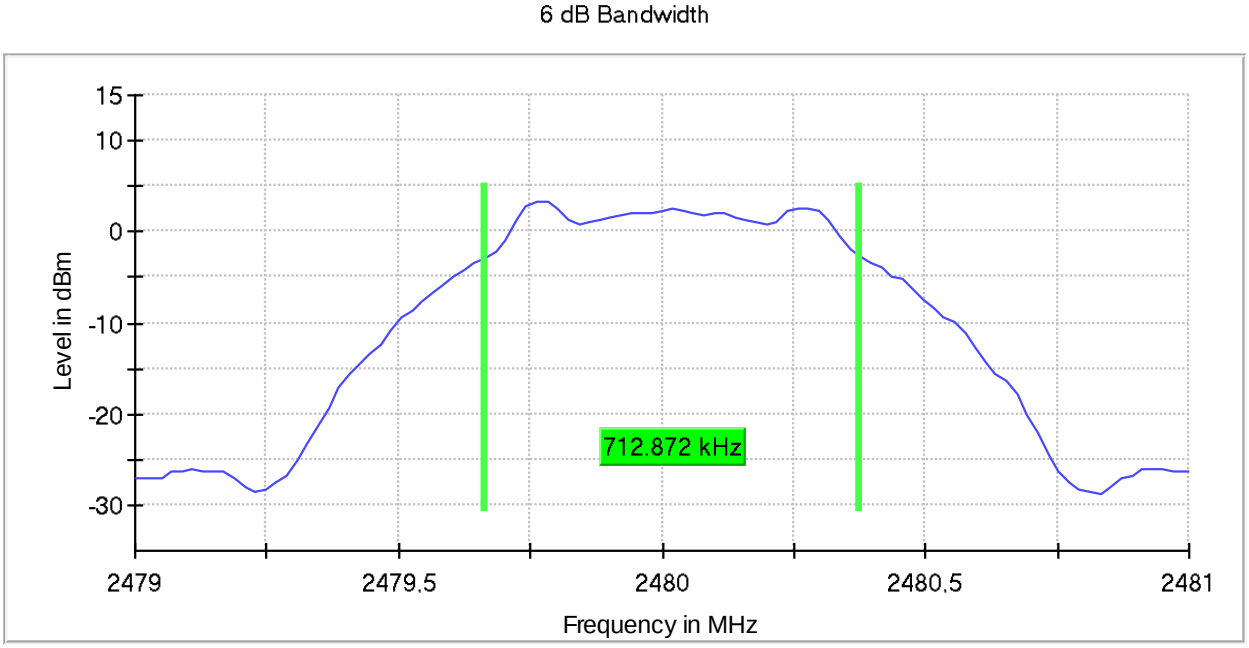
- Low Channel:



- Middle Channel:



- High Channel:



FCC Section 15.247 Subclause (b) / RSS-247 Clause 5.4 (d) Maximum output power and antenna gain

SPECIFICATION:

For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).

The e.i.r.p. shall not exceed 4 W (36 dBm) (Canada).

RESULTS:

The maximum peak conducted output power level in the fundamental emission was measured using the method according to point 11.9.1.1 ”RBW ≥ DTS bandwidth” of ANSI C.63.10-2013.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

Maximum Declared Antenna Gain: +3.3 dBi

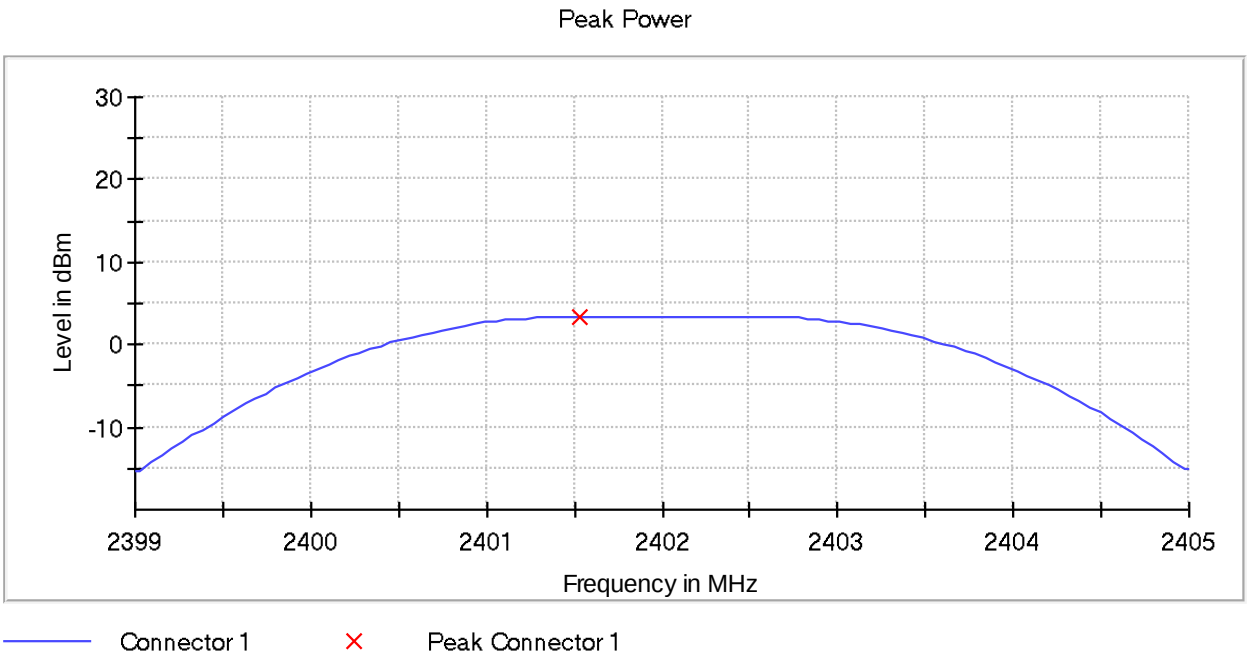
- **2M modulation**

	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
Maximum Conducted Power (dBm)	3.4	3.7	3.6
Maximum EIRP Power (dBm)	6.7	7	6.9
Measurement uncertainty (dB)	<±0.99		

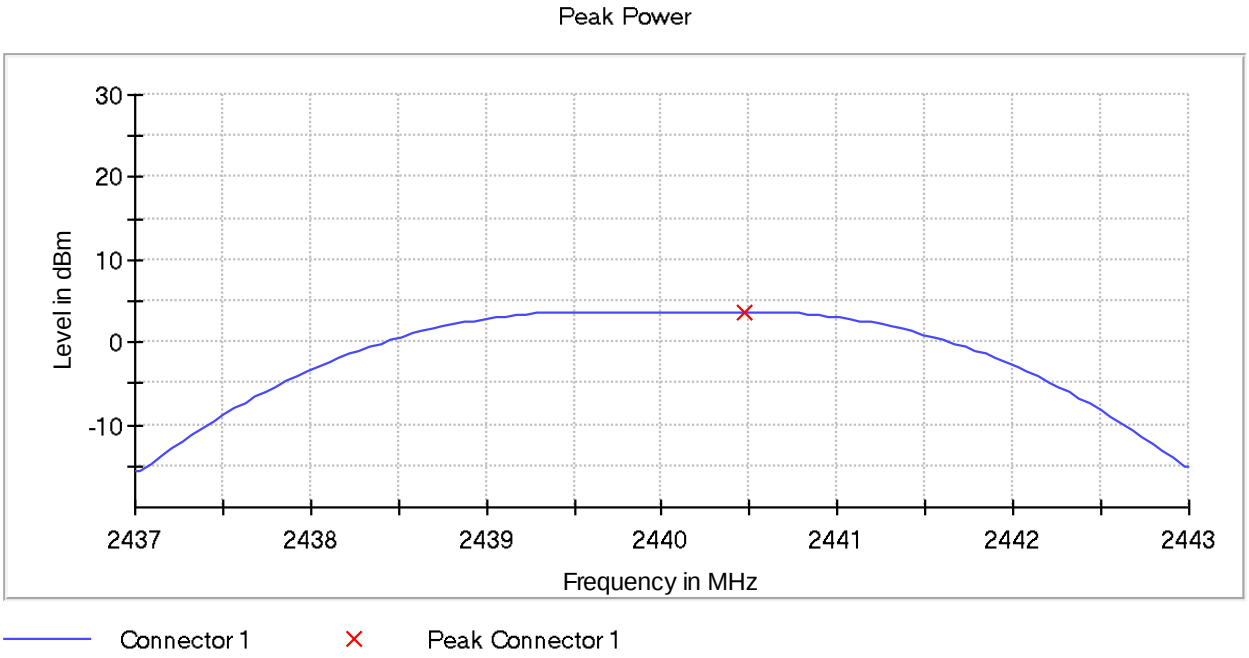
The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Verdict: PASS

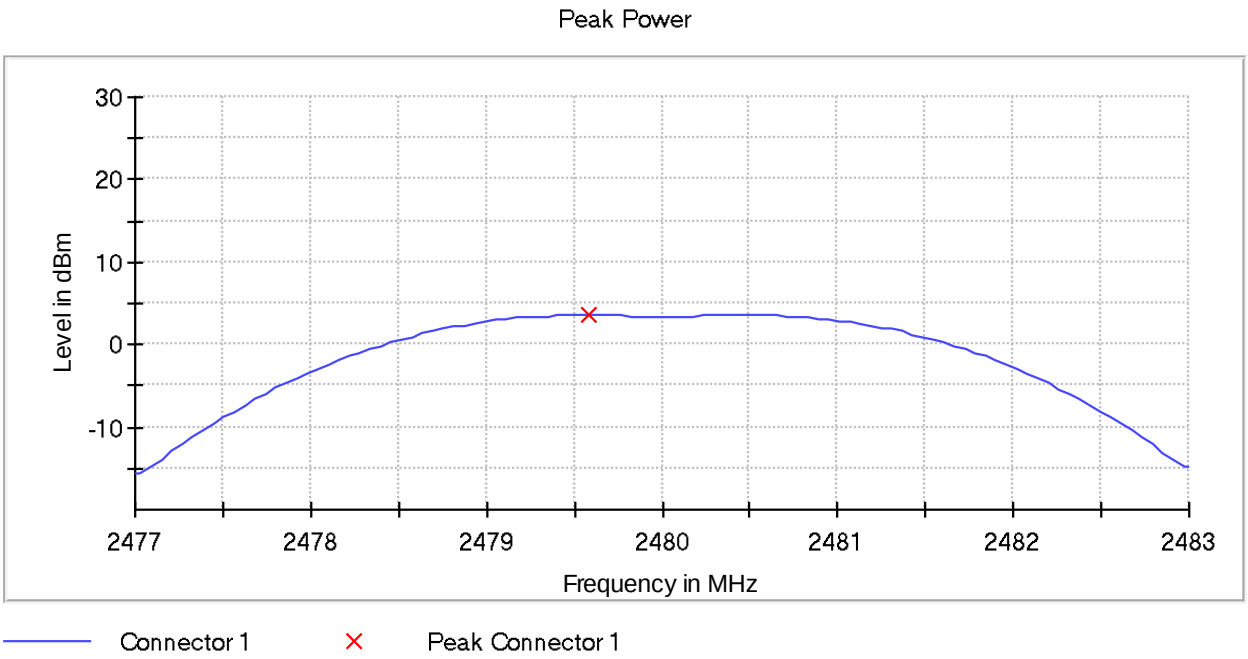
- Low Channel:



- Middle Channel:



- High Channel:



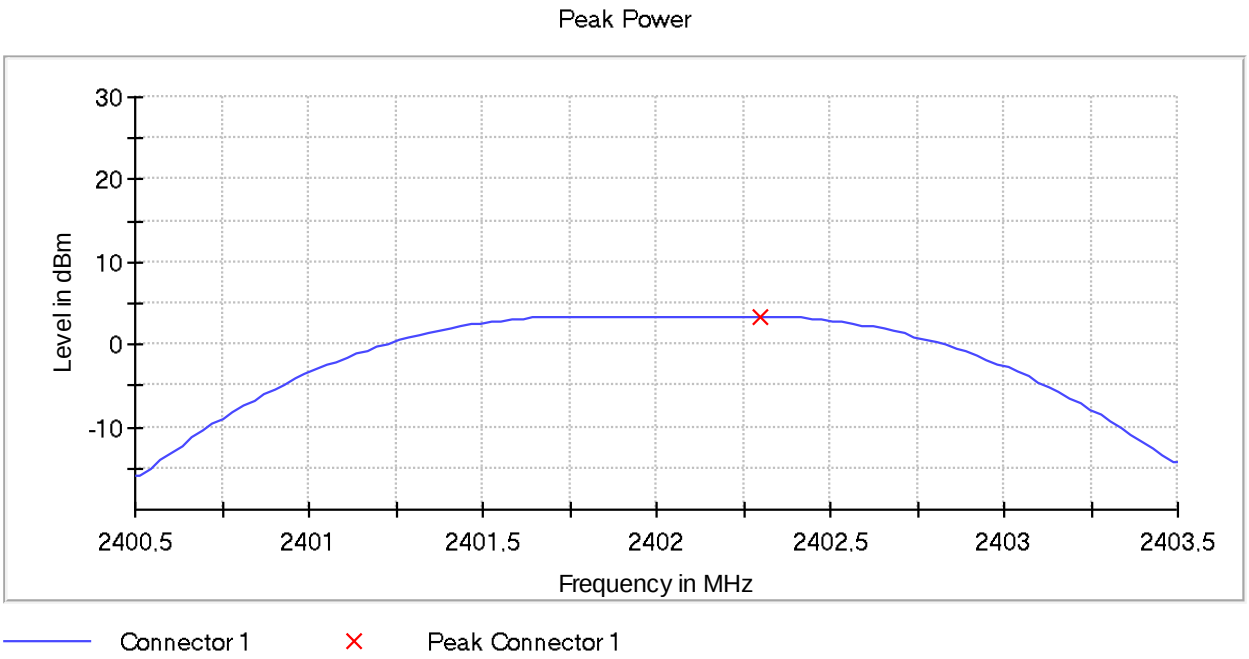
- **1M modulation**

	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
Maximum Conducted Power (dBm)	3.4	3.7	3.6
Maximum EIRP Power (dBm)	6.7	7	6.9
Measurement uncertainty (dB)	<±0.99		

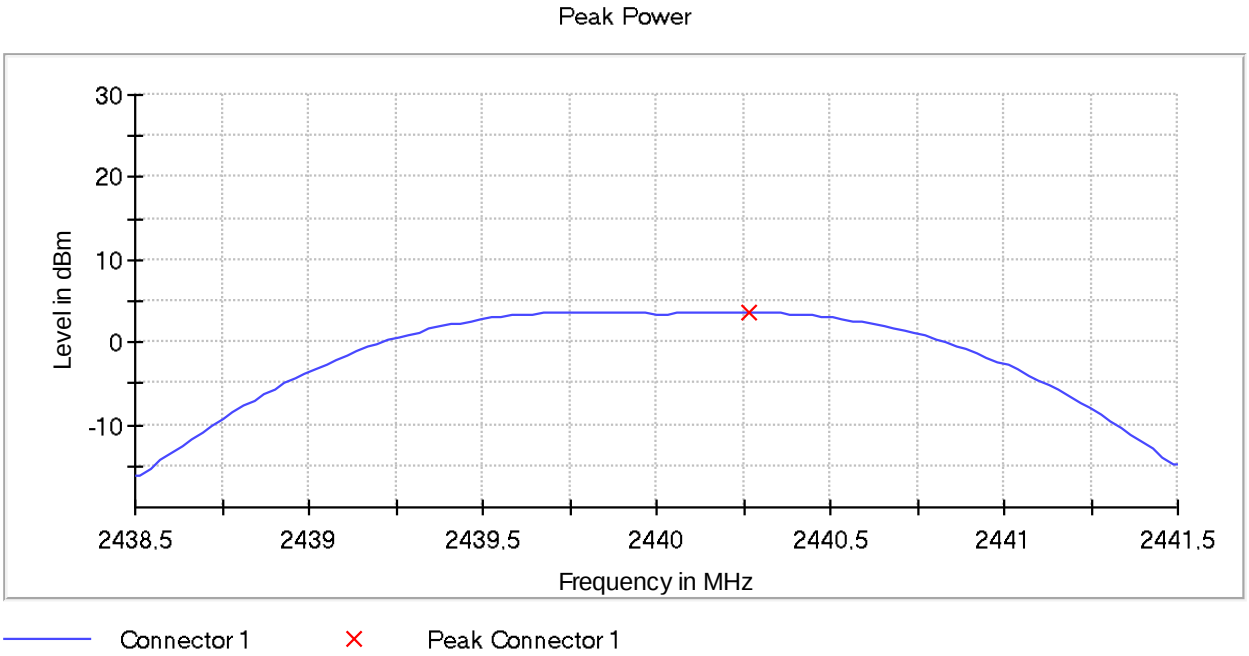
The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Verdict: PASS

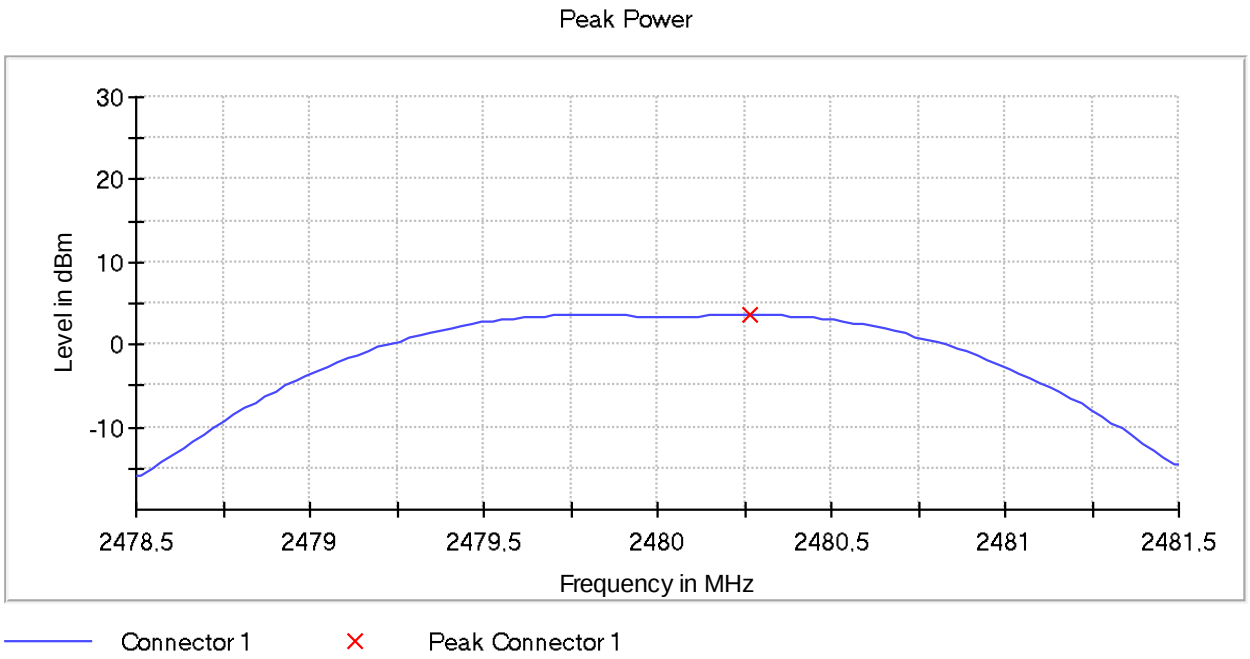
- Low Channel:



- Middle Channel:



- High Channel:



FCC Section 15.247 Subclause (d) / RSS-247 Clause 5.5. Band-edge emissions compliance (Transmitter)

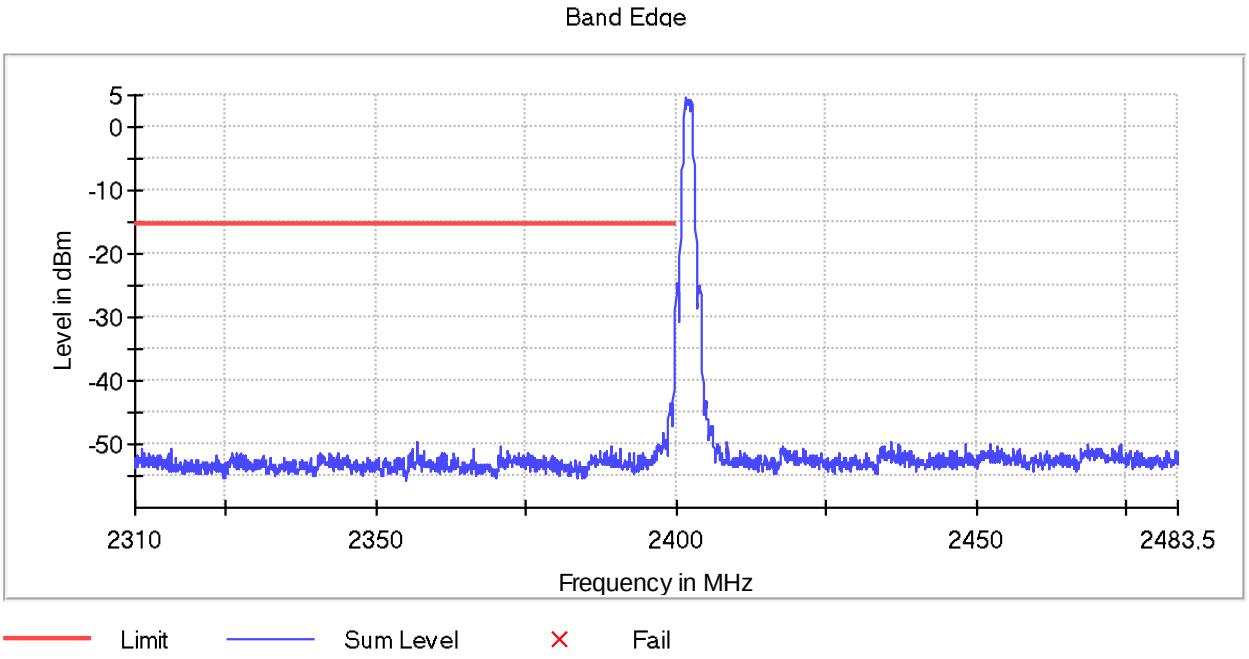
SPECIFICATION:

In any 100 kHz bandwidths outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

RESULTS:

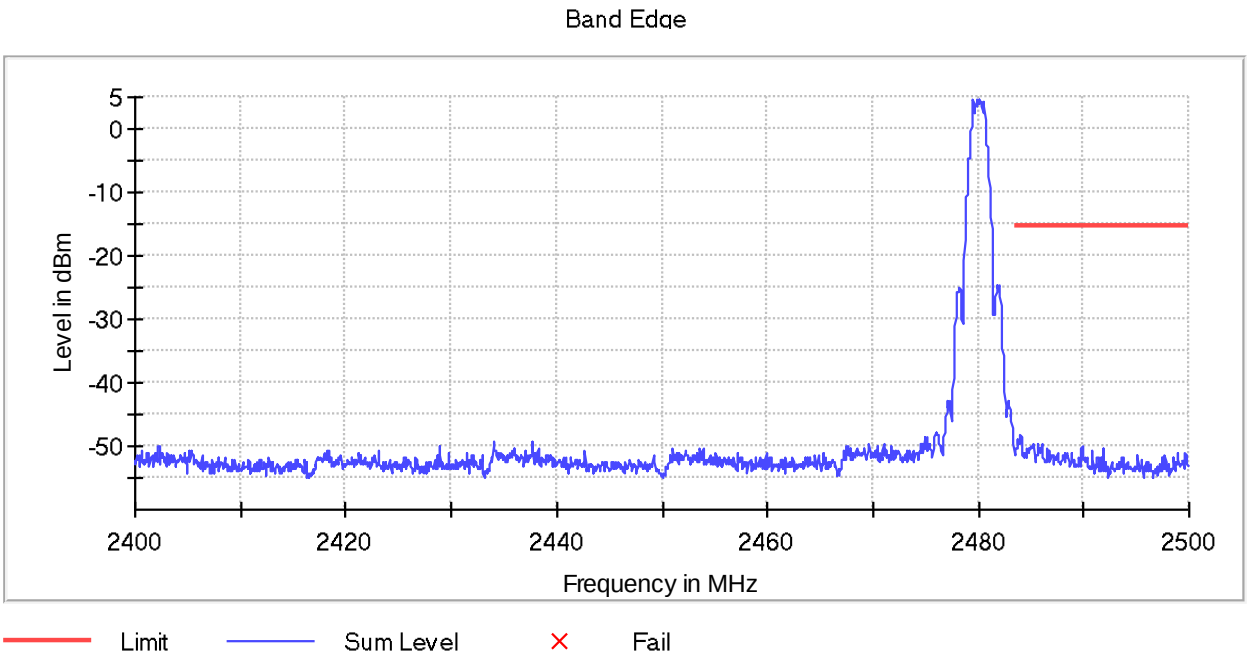
- **2M modulation**

- Low Channel:



Verdict: PASS

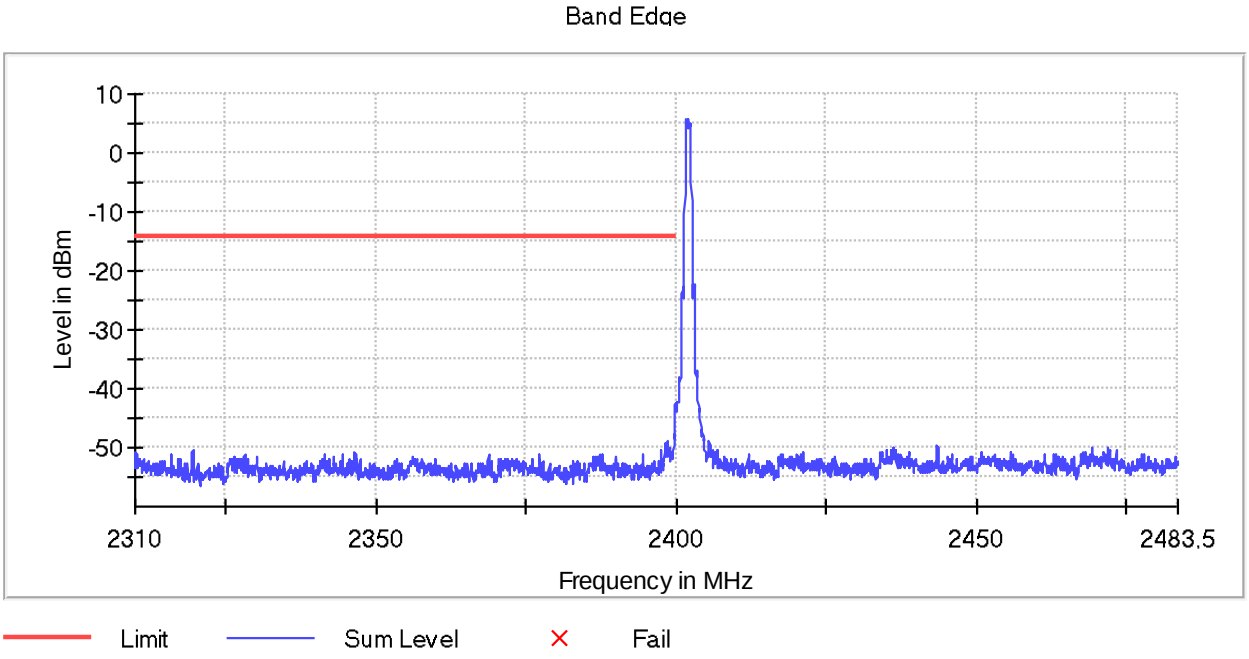
- High Channel:



Verdict: PASS

- **1M modulation**

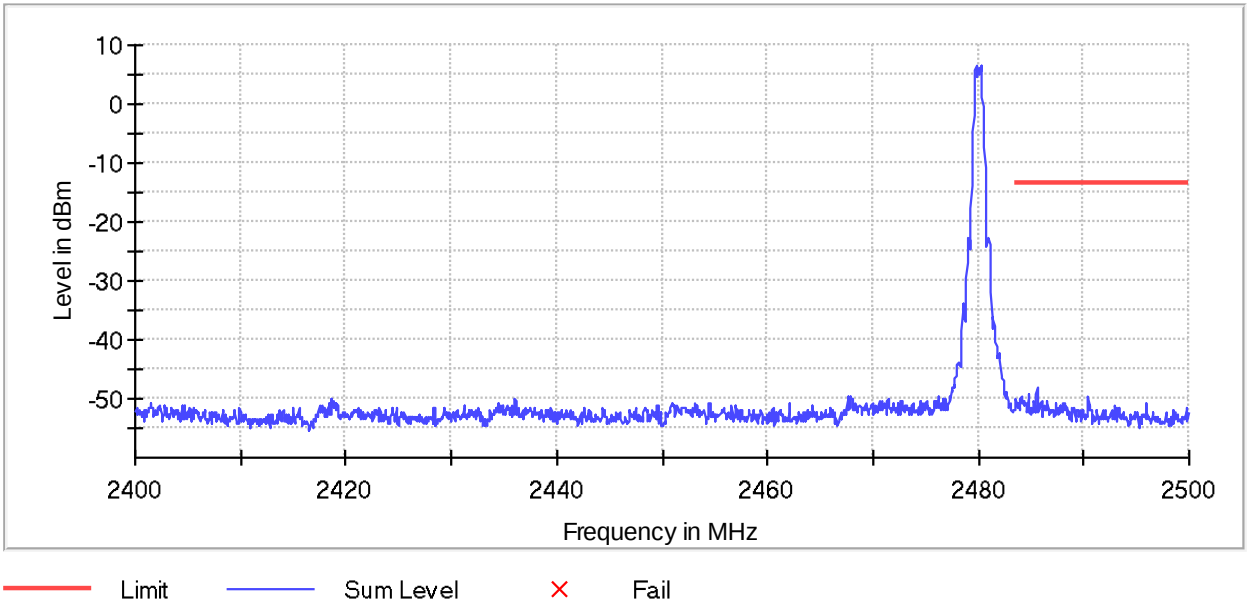
- Low Channel:



Verdict: PASS

- High Channel:

Band Edge



Measurement uncertainty (dB) <±0.89

Verdict: PASS

FCC Section 15.247 Subclause (e) / RSS-247 5.2. (b) Power spectral density

SPECIFICATION:

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS:

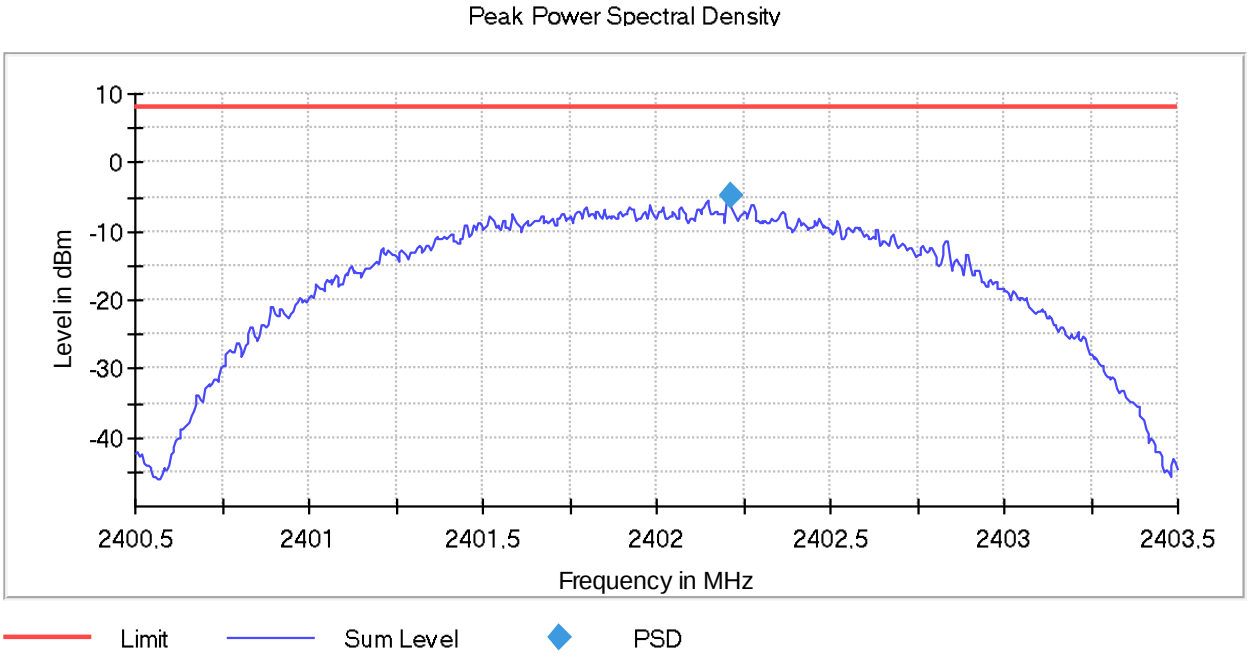
The maximum power spectral density level in the fundamental emission was measured using the method according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v05 F and ANSI C.63.10-2013.

- **2M modulation**

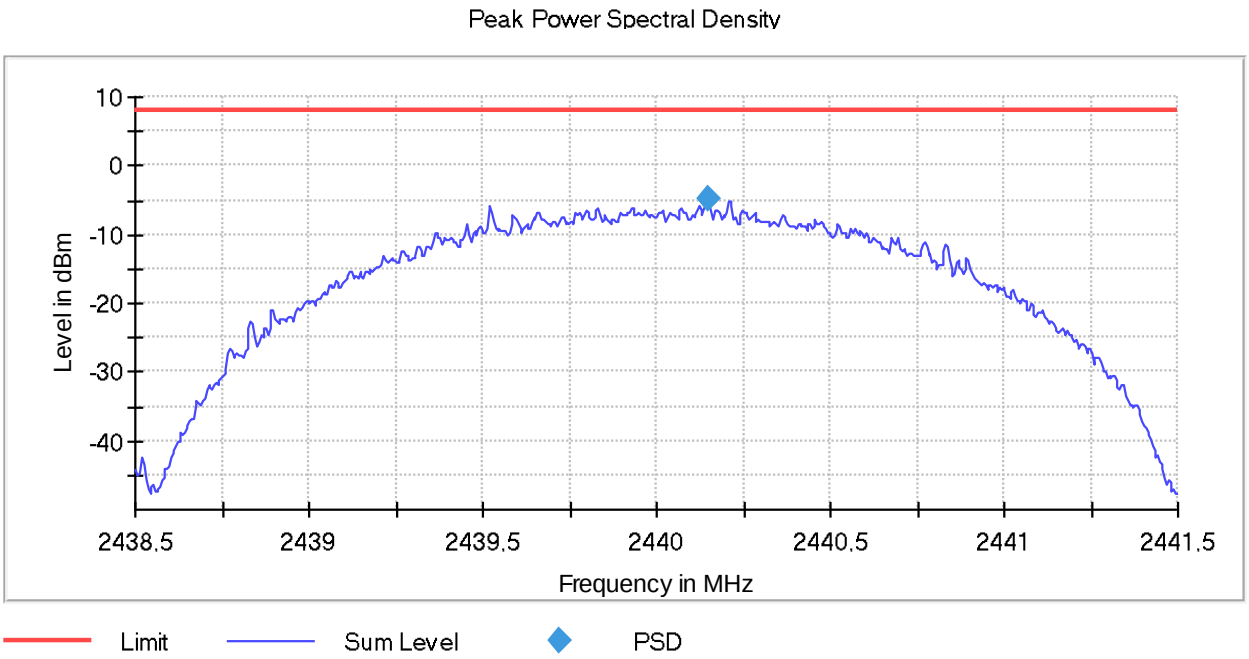
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
Power Spectral Density (dBm)	-4.929	-4.826	-3.222
Measurement uncertainty (dB)	<±0.99		

Verdict: PASS

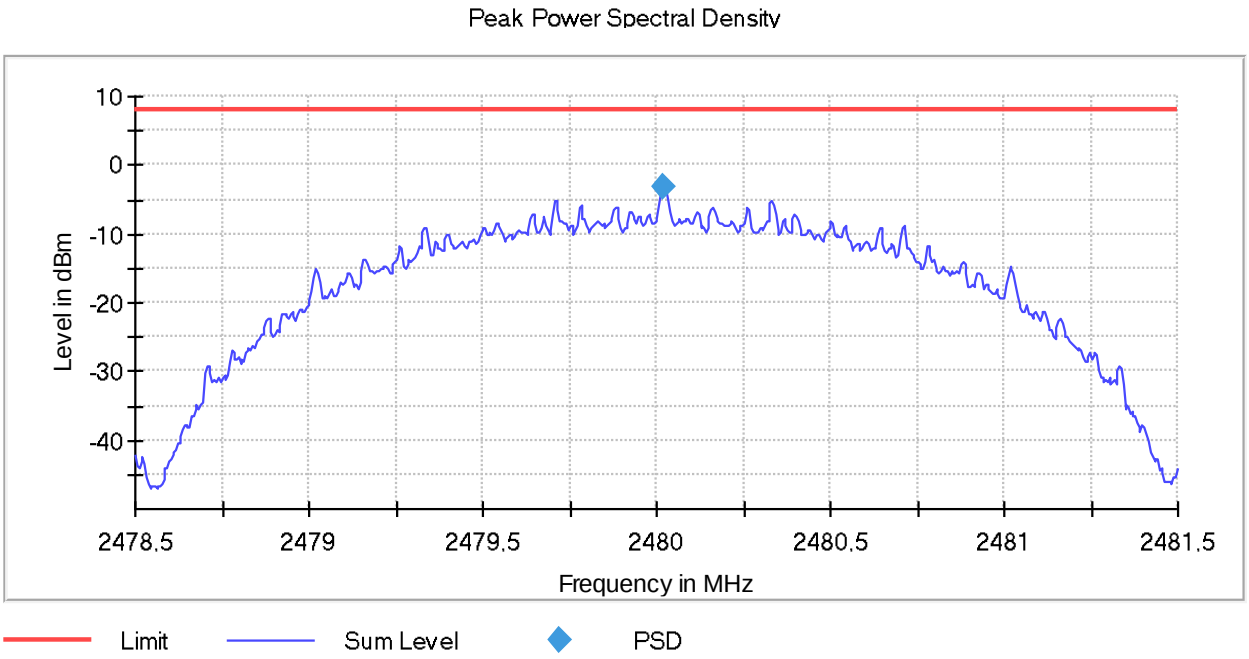
- Low Channel:



- Middle Channel:



- High Channel:

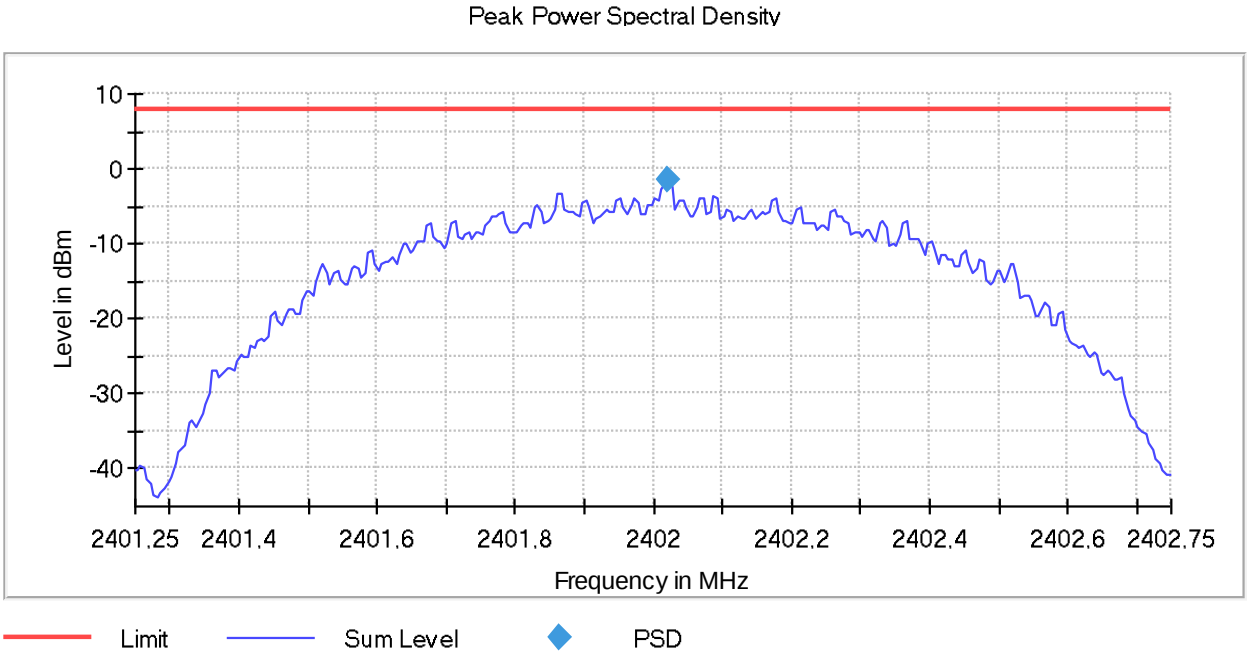


- **1M modulation**

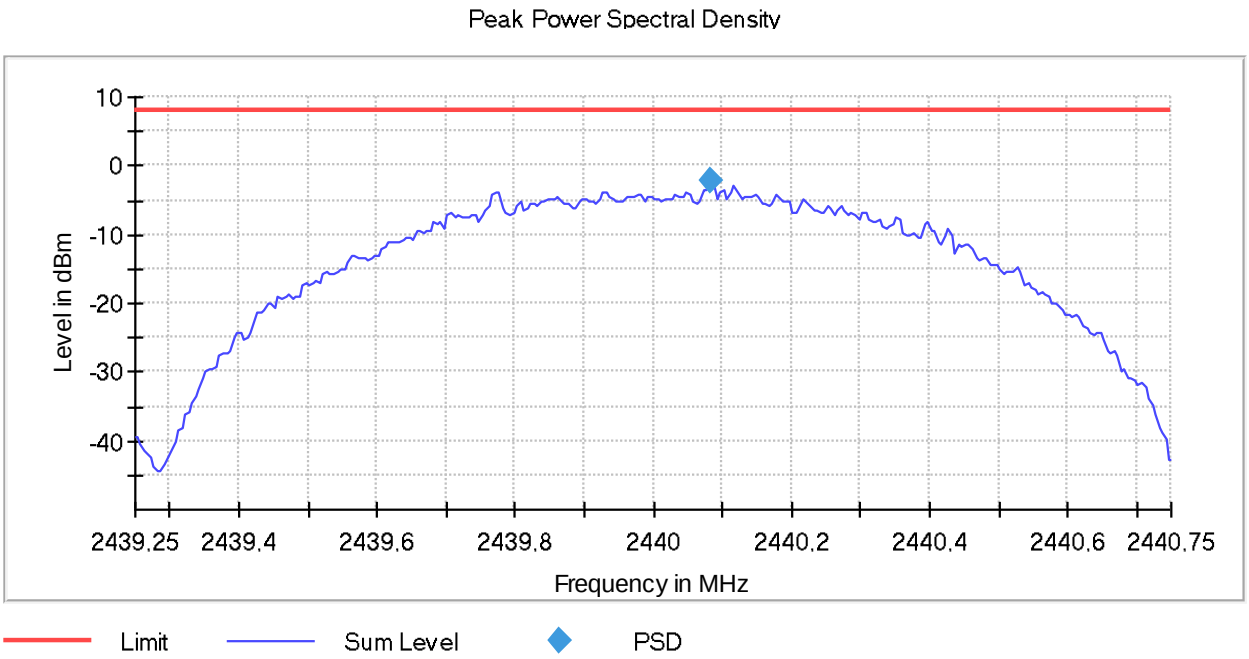
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
Power Spectral Density (dBm)	-1.375	-2.221	-2.960
Measurement uncertainty (dB)	<±0.99		

Verdict: PASS

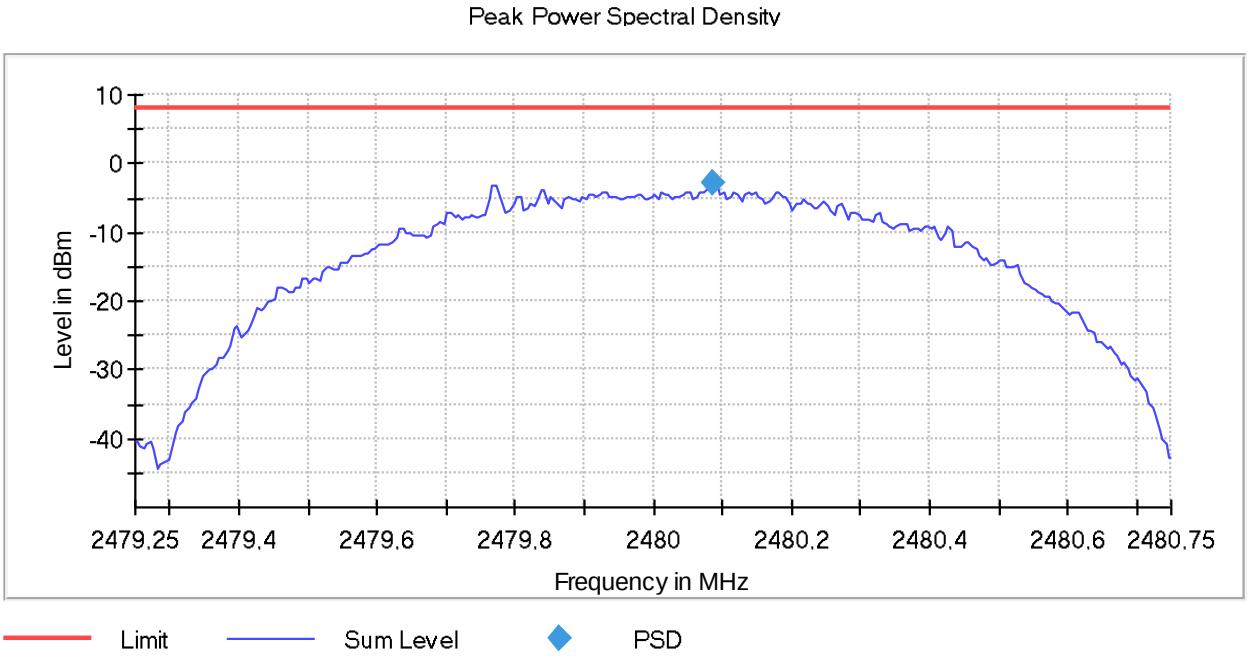
- Low Channel:



- Middle Channel:



- High Channel:



FCC Section 15.247 Subclause (d) / RSS-247 Clause 5.5. Emission limitations radiated (Transmitter)

SPECIFICATION:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)/RSS-Gen):

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 10000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RSS-247: Attenuation below the general field strength limits specified in RSS-Gen is not required.

RESULTS:

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 3 m for the frequency range 30 MHz-17 GHz and at distance of 1m for the frequency range 17 GHz-26 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

The level of spurious emissions was measured as their power when radiated by electrical parts of the device (without plastic enclosure), due to test mode with continuous transmission was only available in sample S/01.

Radiated spot-check was performed with commercial sample (S/03) in order to evaluate the influence of the final enclosure of the device. No significant differences were found.

Frequency range 30 MHz - 1 GHz:

The spurious frequencies detected do not depend neither on the operating channel nor the modulation mode.

Spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (MHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
31.940	Quasi-peak	15.10	V	<± 4.99
55.996	Quasi-peak	13.10	V	<± 4.99
63.998	Quasi-peak	25.61	V	<± 4.99

Verdict: PASS

Frequency range 1 - 26 GHz:

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

Spurious frequencies with peak levels above the average limit (54 dBµV/m at 3 m) are measured with average detector for checking compliance with the average limit.

- **2M modulation**

- LOW CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
4.805000	Peak	51.93	H	<± 4.98
12.012500	Peak	55.80	H	<± 4.98
	Average	45.53		

- MIDDLE CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
4.881000	Peak	50.88	H	<± 4.98
7.318500	Peak	50.22	V	<± 4.98
12.202500	Peak	53.81	H	<± 4.98

- HIGH CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
3.839500	Peak	38.92	H	<± 4.98
4.960500	Peak	45.66	H	<± 4.98
7.441500	Peak	48.00	H	<± 4.98
12.402500	Peak	54.73	H	<± 4.98
	Average	44.25		

Measurement Uncertainty (dB): 17 GHz to 26 GHz <± 5.08

Verdict: PASS

- **1M modulation**

- LOW CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
4.803500	Peak	51.93	H	<± 4.98
12.011500	Peak	55.60	H	<± 4.98
	Average	45.20		

- MIDDLE CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
4.880000	Peak	50.33	H	<± 4.98
7.320500	Peak	49.39	V	<± 4.98
12.201500	Peak	54.74	H	<± 4.98
	Average	44.81		

- HIGH CHANNEL. Spurious frequencies detected at less than 20 dB below the limit:

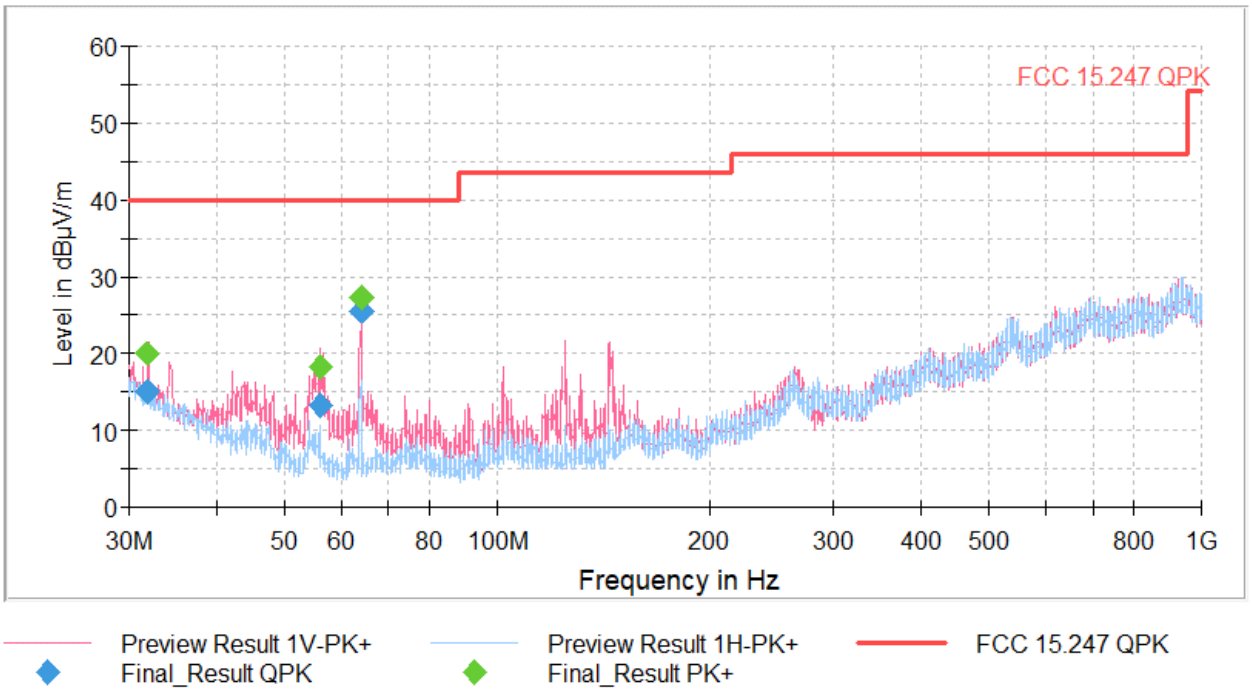
Spurious frequency (GHz)	Detector	Emission Level (dBµV/m)	Polarization	Measurement Uncertainty (dB)
4.960500	Peak	49.00	H	<± 4.98
7.439500	Peak	47.27	V	<± 4.98
12.399000	Peak	54.47	H	<± 4.98
	Average	44.73		

Measurement Uncertainty (dB): 17 GHz to 26 GHz <± 5.08

Verdict: PASS

FREQUENCY RANGE 30 MHz - 1 GHz:

The spurious frequencies detected do not depend neither on the operating channel nor the modulation mode.

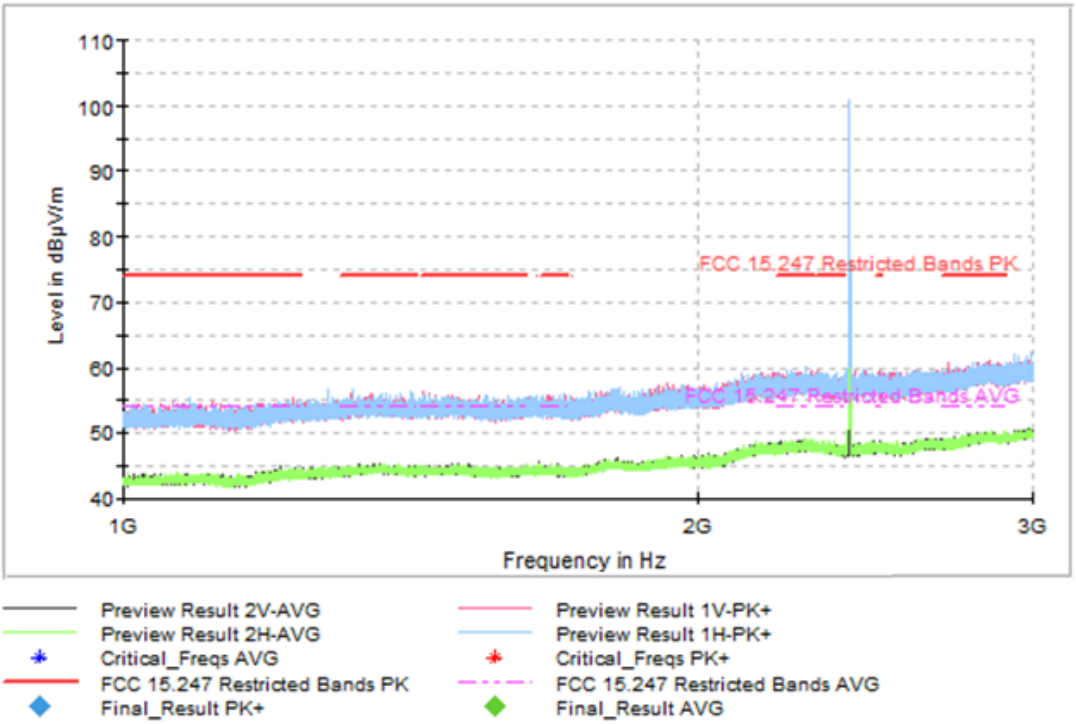


This plot is valid for the Low, Middle and High Channels.

FREQUENCY RANGE 1 - 3 GHz:

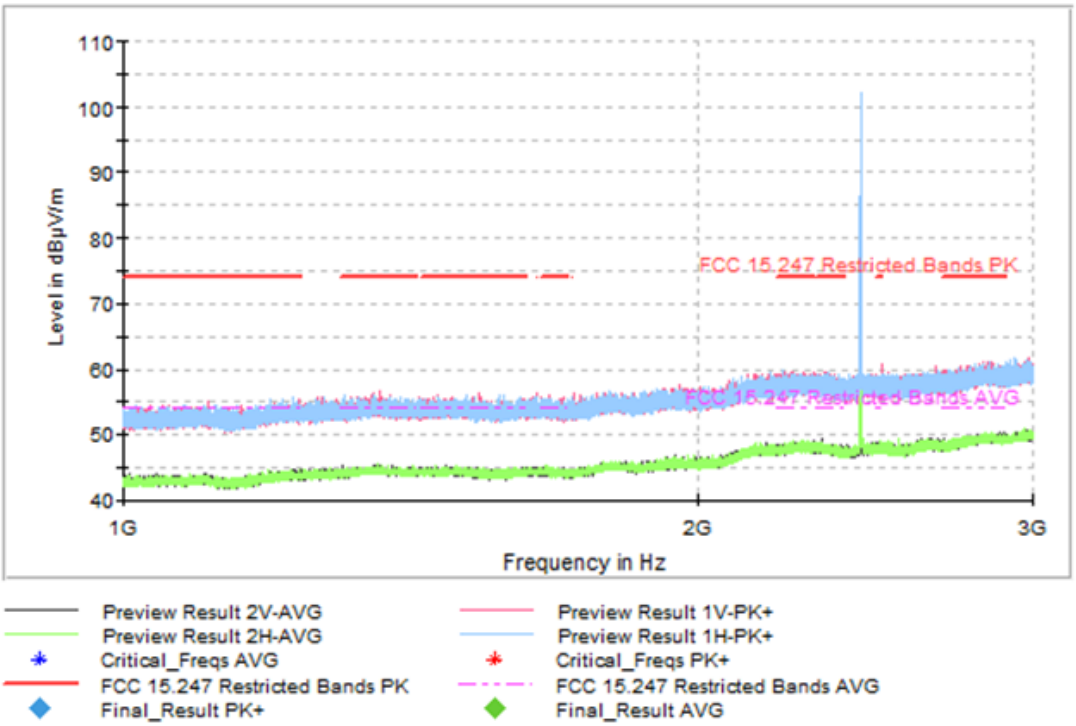
- **2M modulation**

- Low Channel:



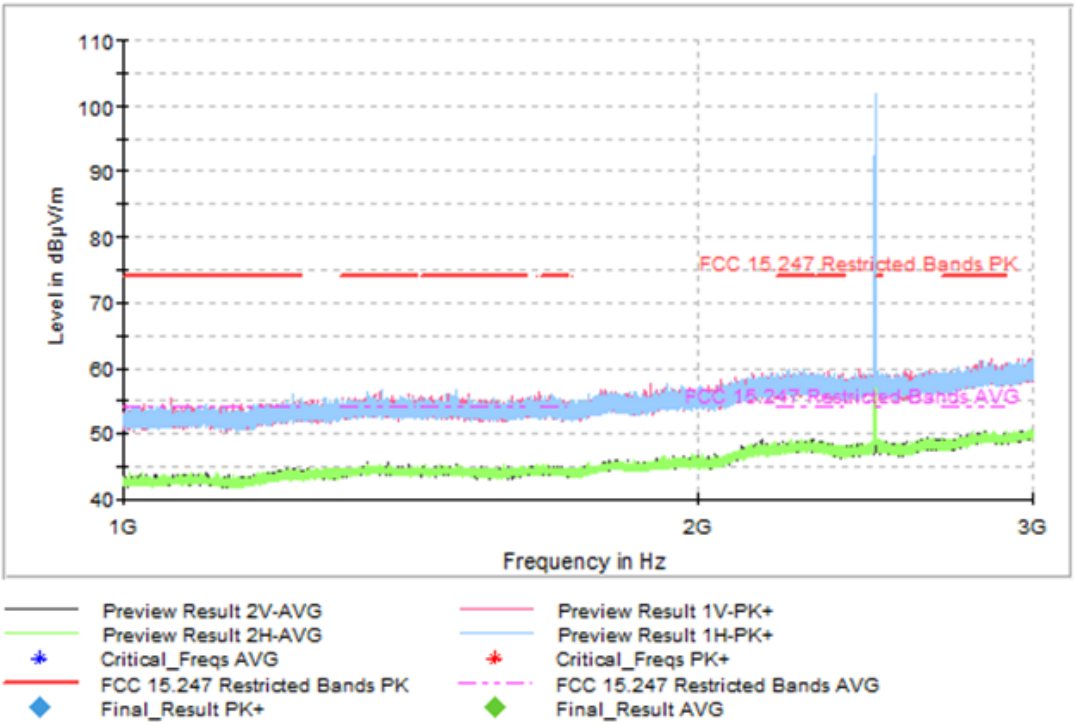
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

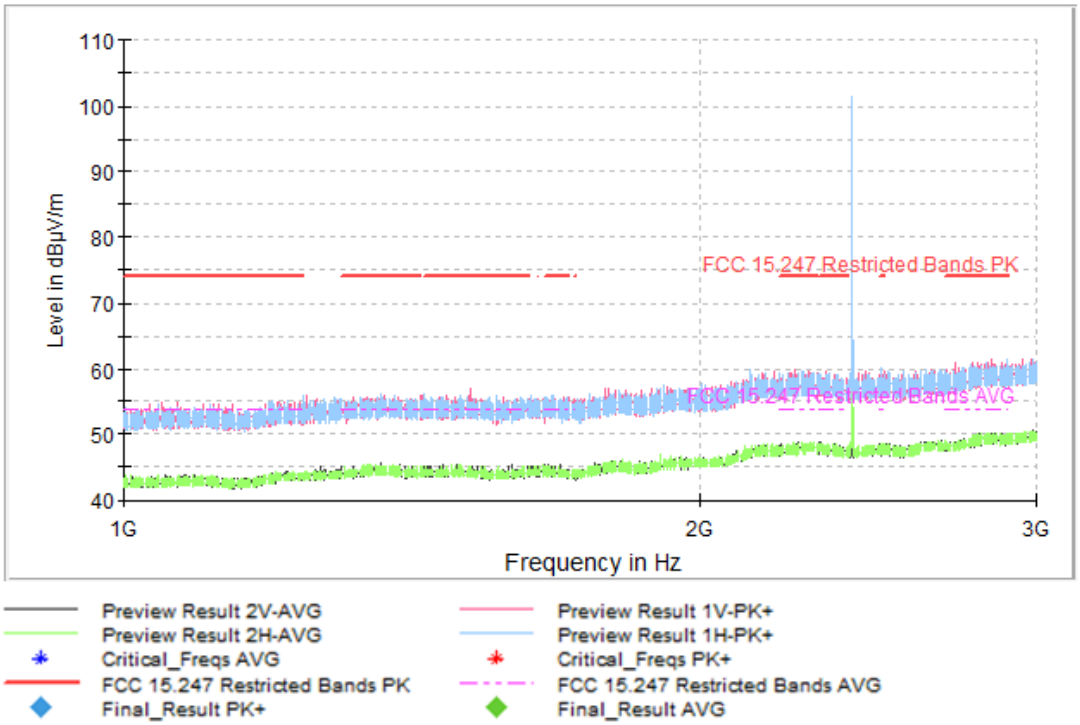
- High Channel:



The peak above the limit is the carrier frequency.

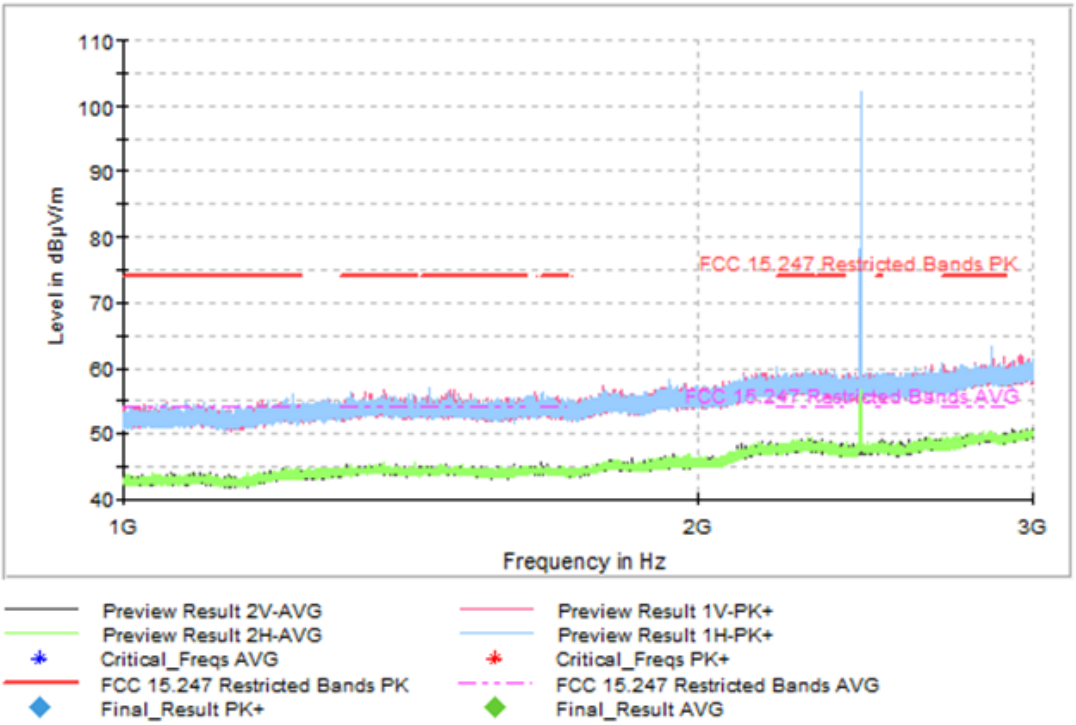
- **1M modulation**

- Low Channel:



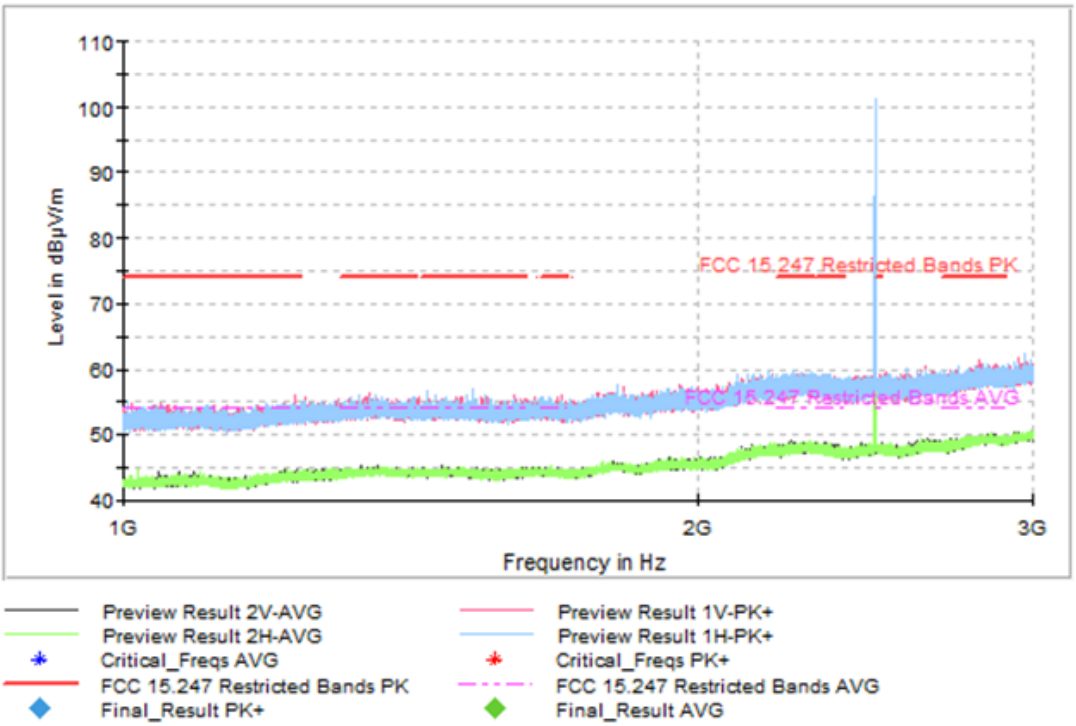
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

- High Channel:

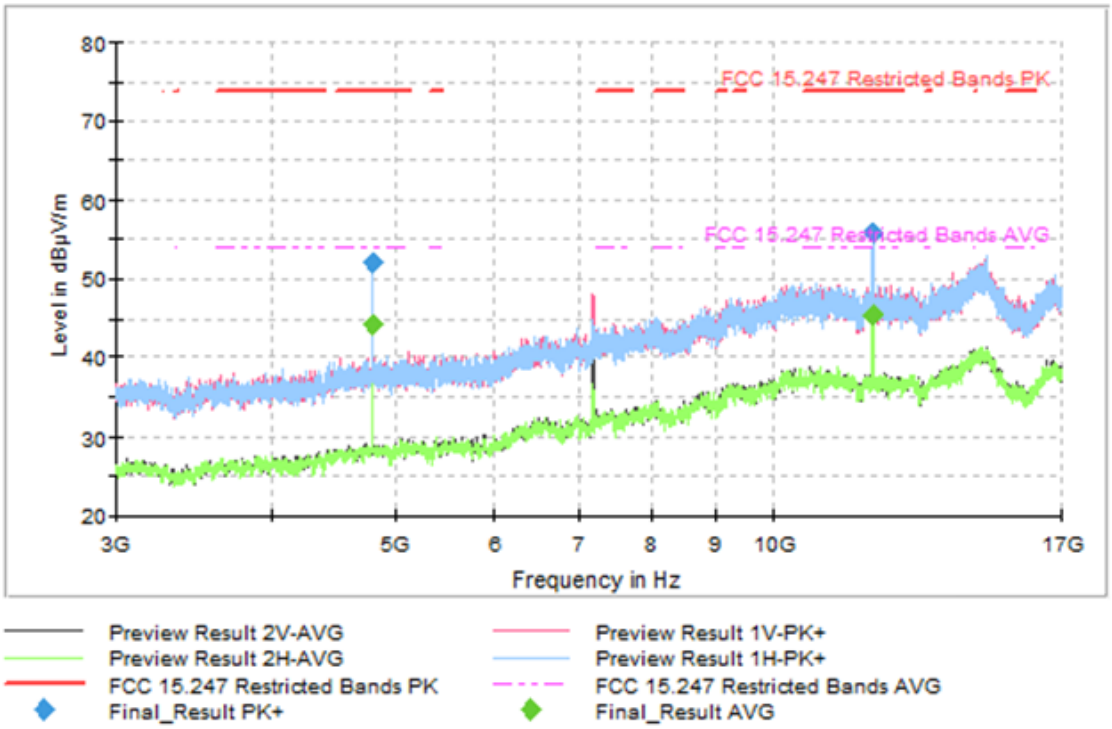


The peak above the limit is the carrier frequency.

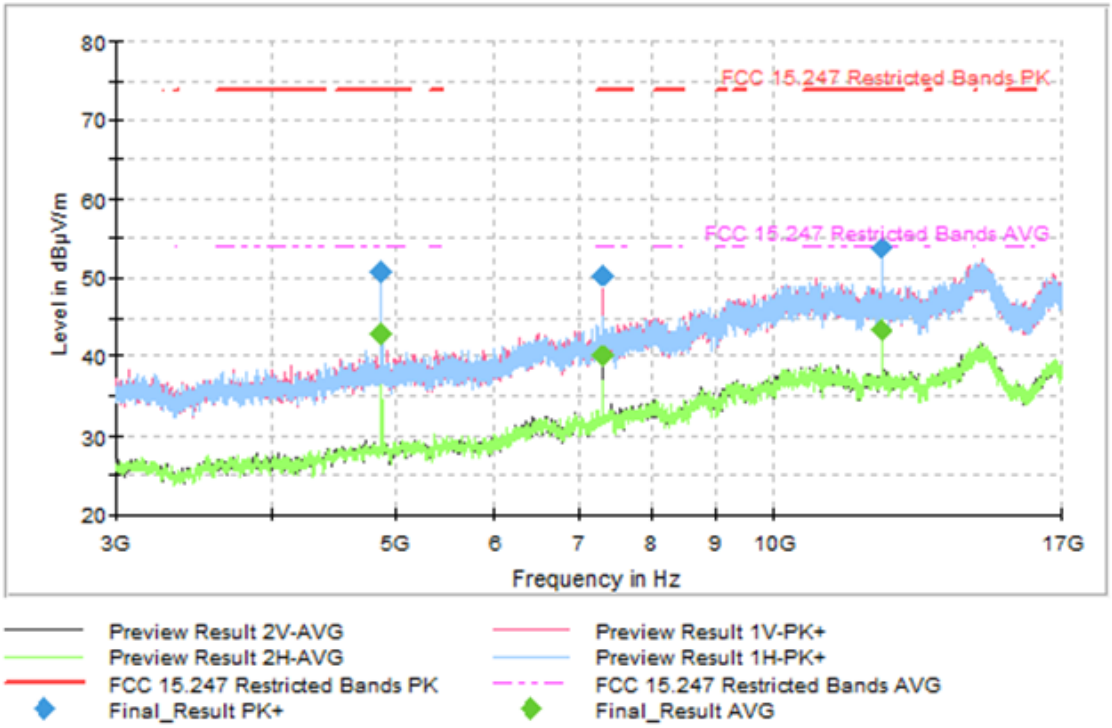
FREQUENCY RANGE 3 - 17 GHz:

- **2M modulation**

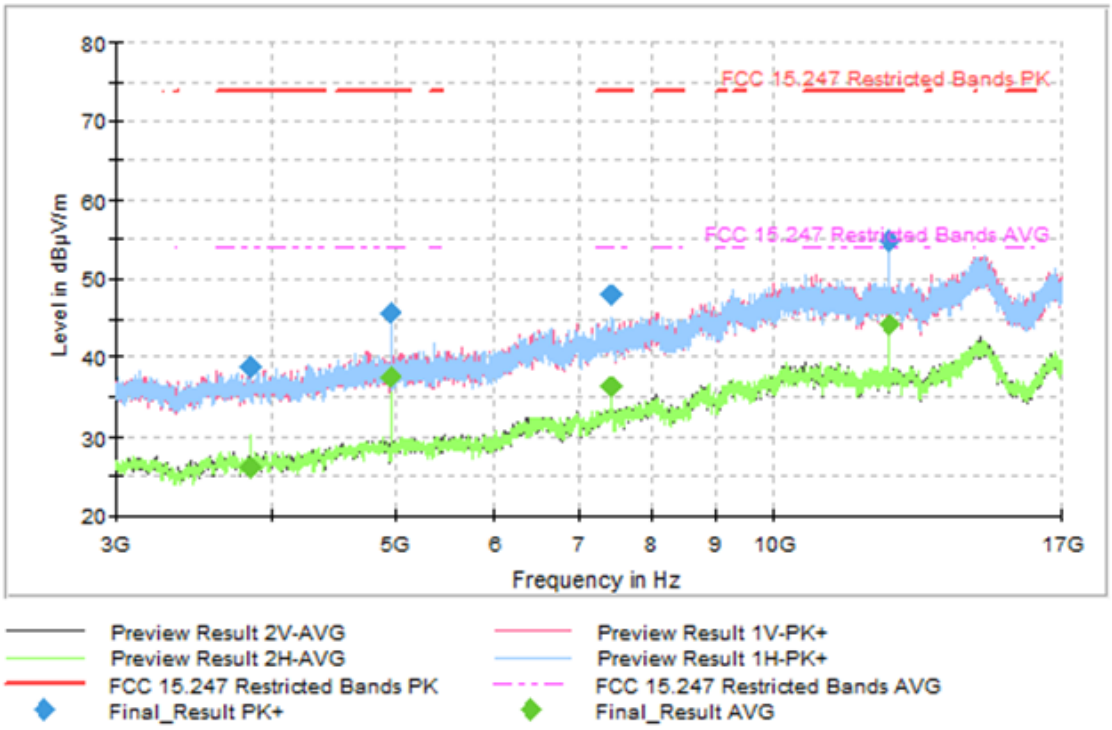
- Low Channel:



- Middle Channel:

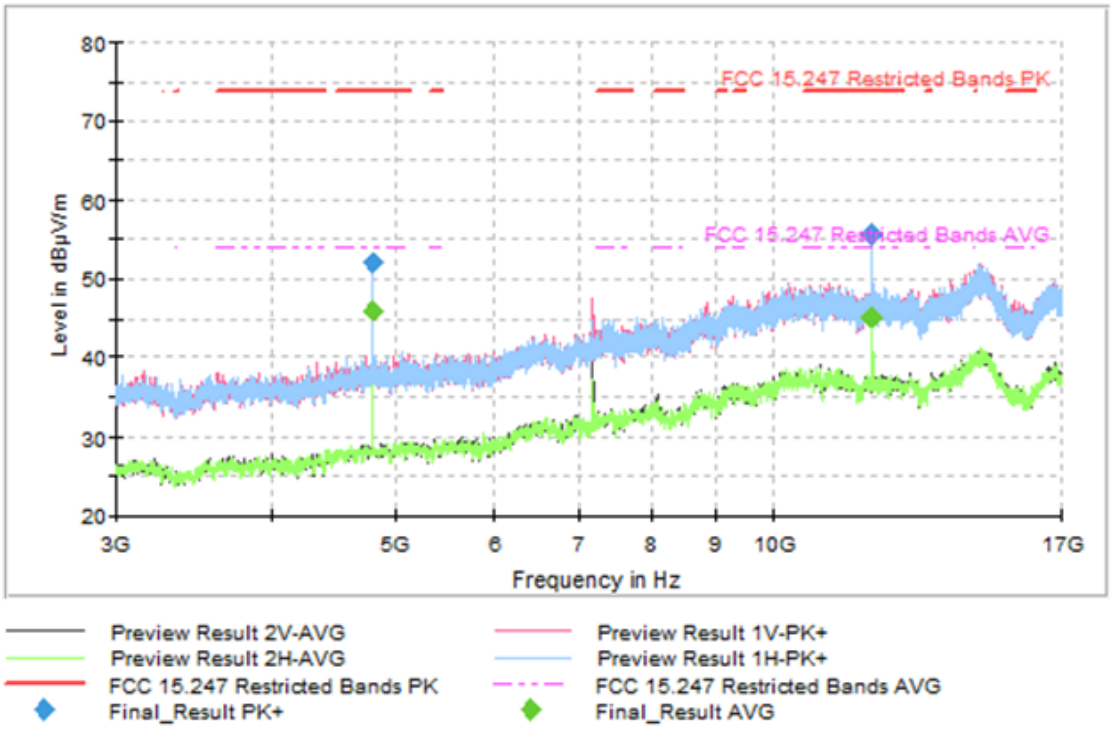


- High Channel:

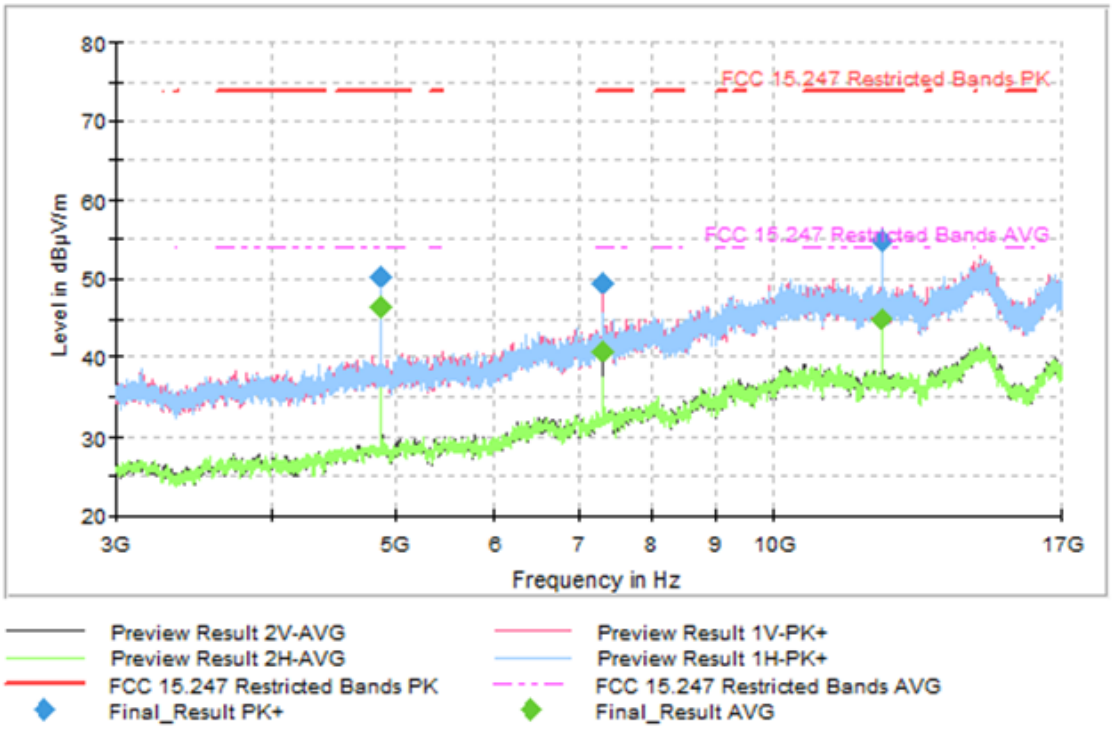


- **1M modulation**

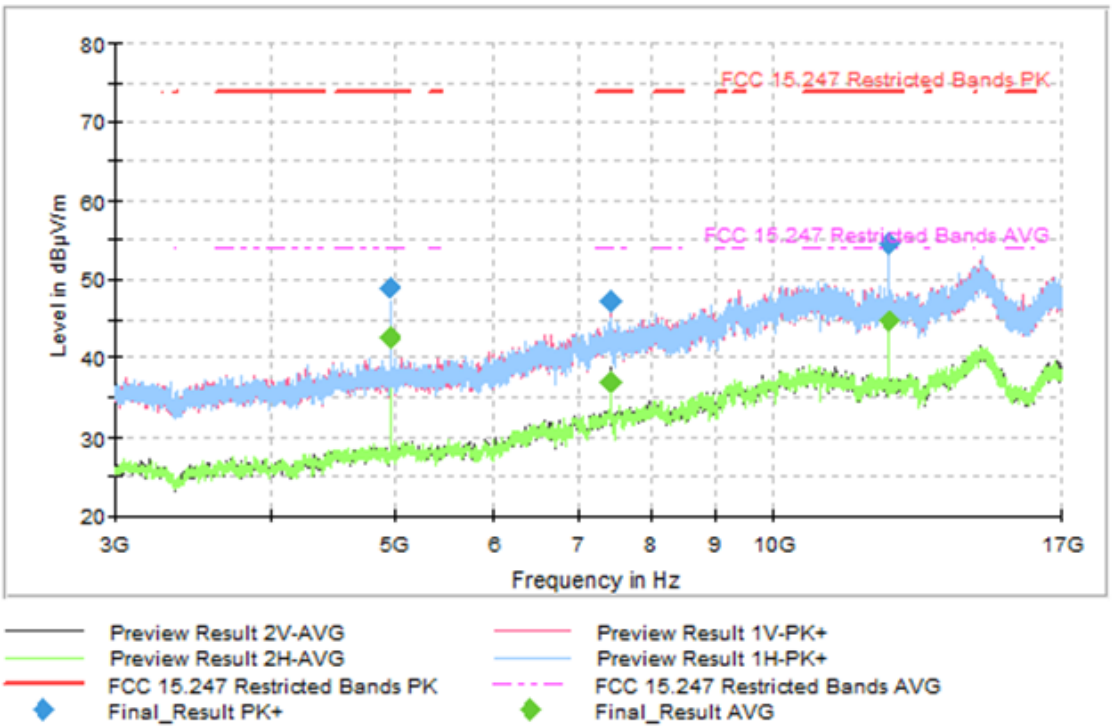
- Low Channel:



- Middle Channel:



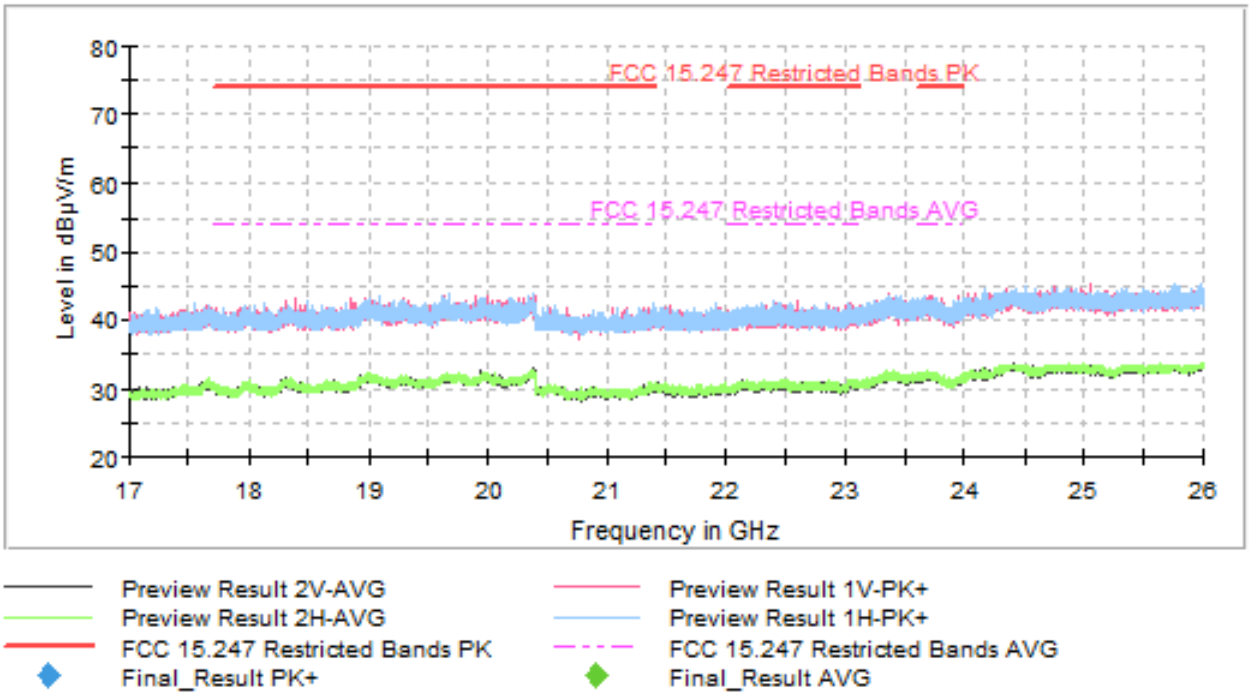
- High Channel:



FREQUENCY RANGE 17 - 26 GHz:

- **2M modulation**

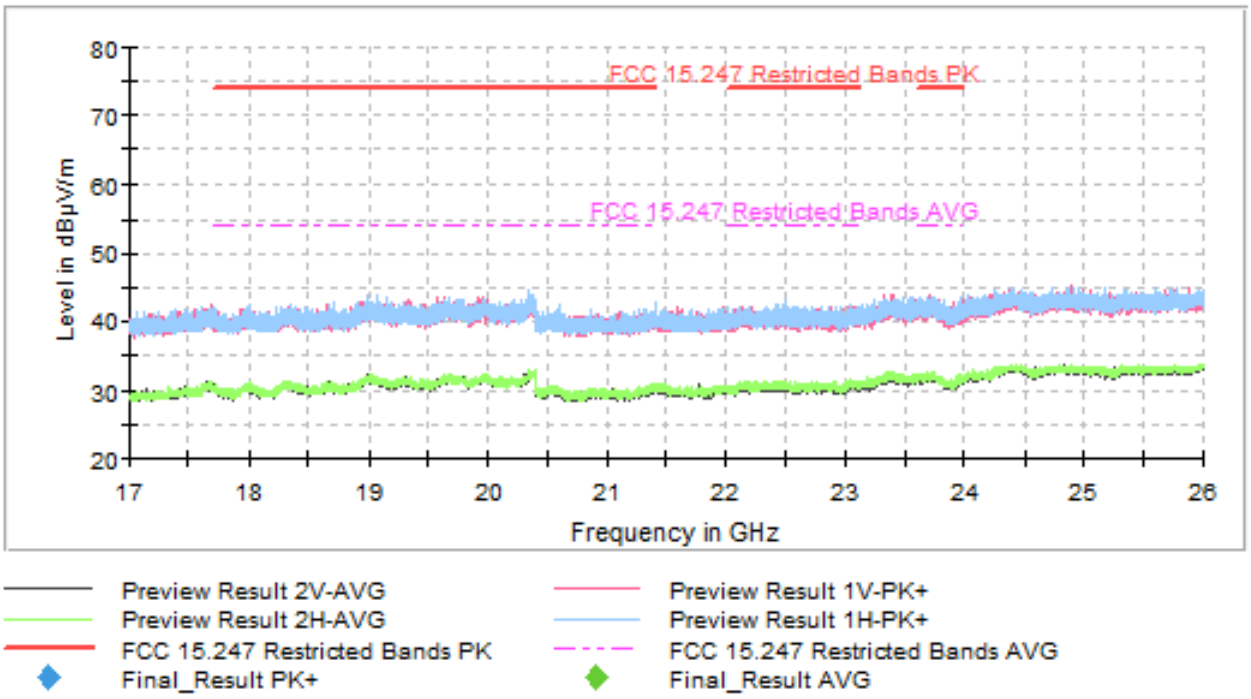
The spurious frequencies detected do not depend on the operating channel.



This plot is valid for the Low, Middle and High Channels.

- **1M modulation**

The spurious frequencies detected do not depend on the operating channel.

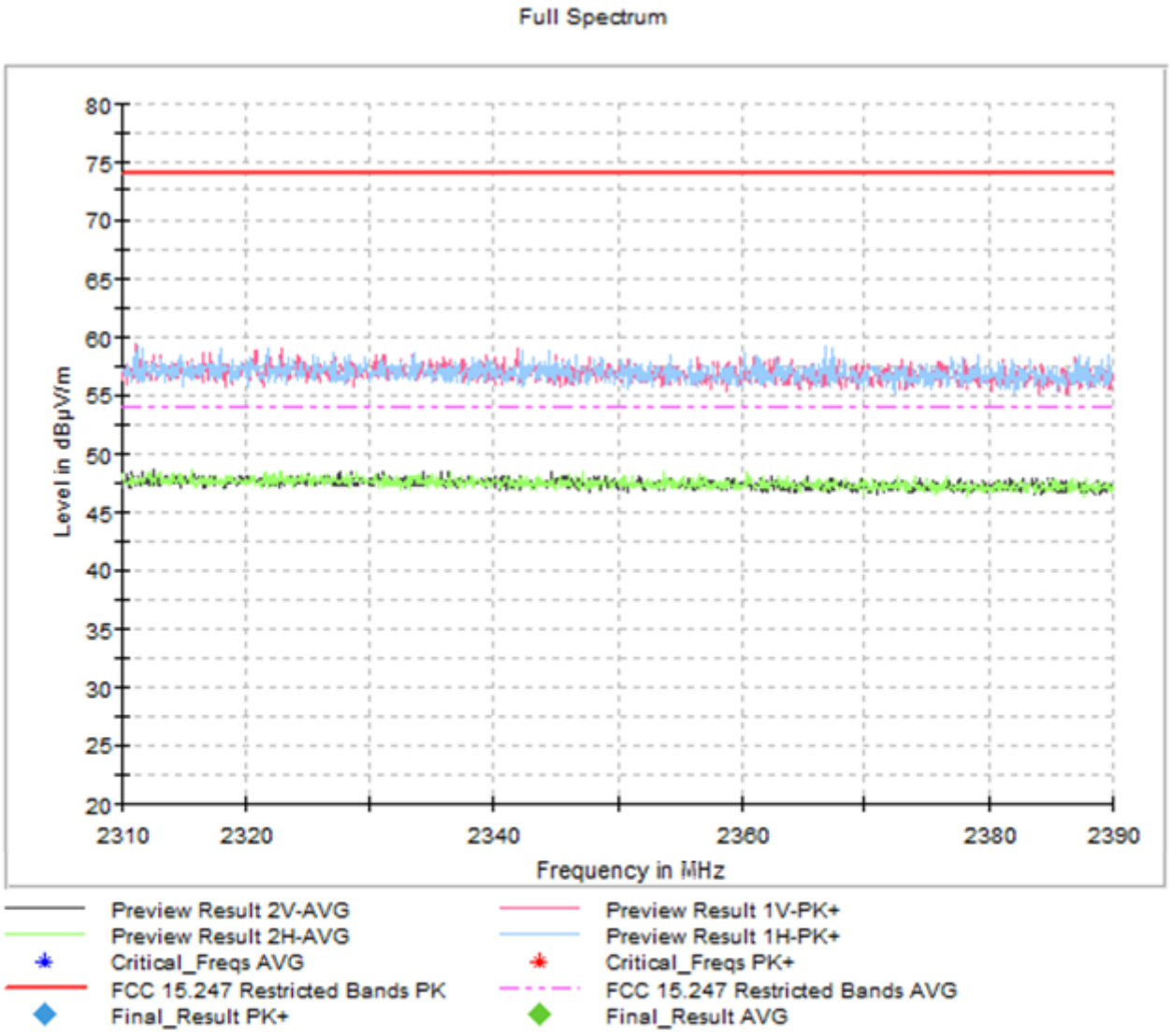


This plot is valid for the Low, Middle and High Channels.

FREQUENCY RANGE 2.31-2.39 GHz:

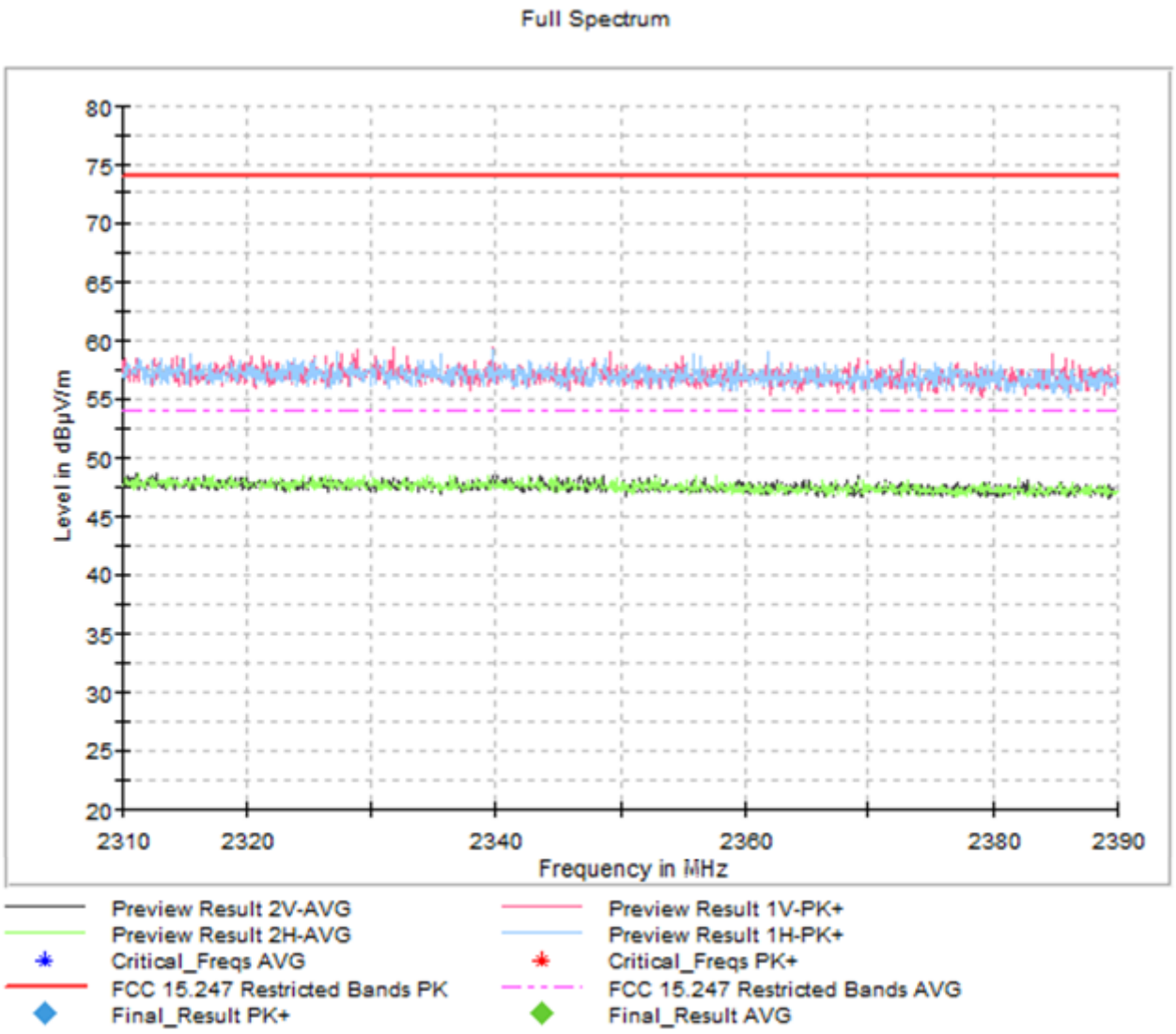
- **2M modulation**

- Low Channel:



- **1M modulation**

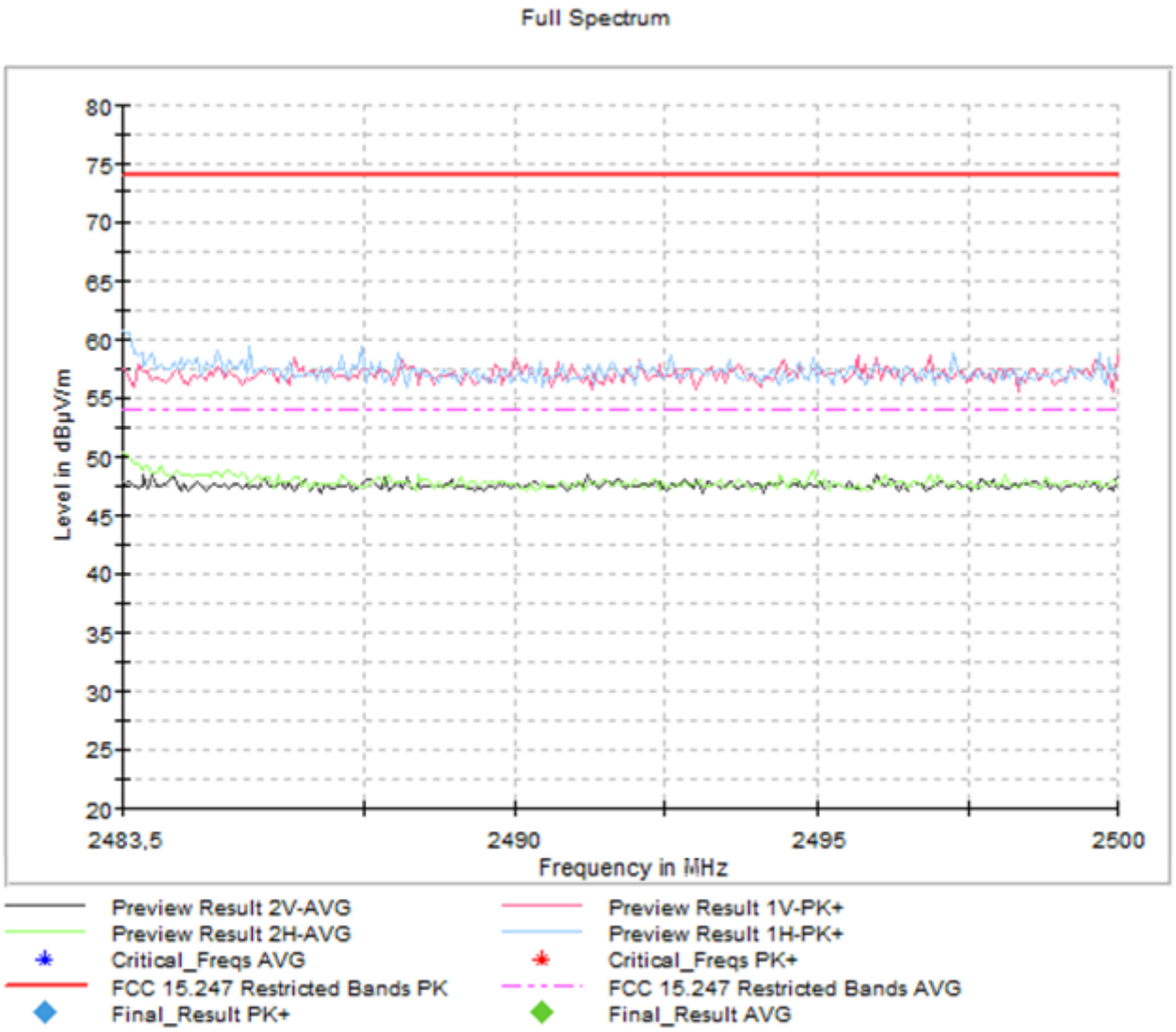
- Low Channel:

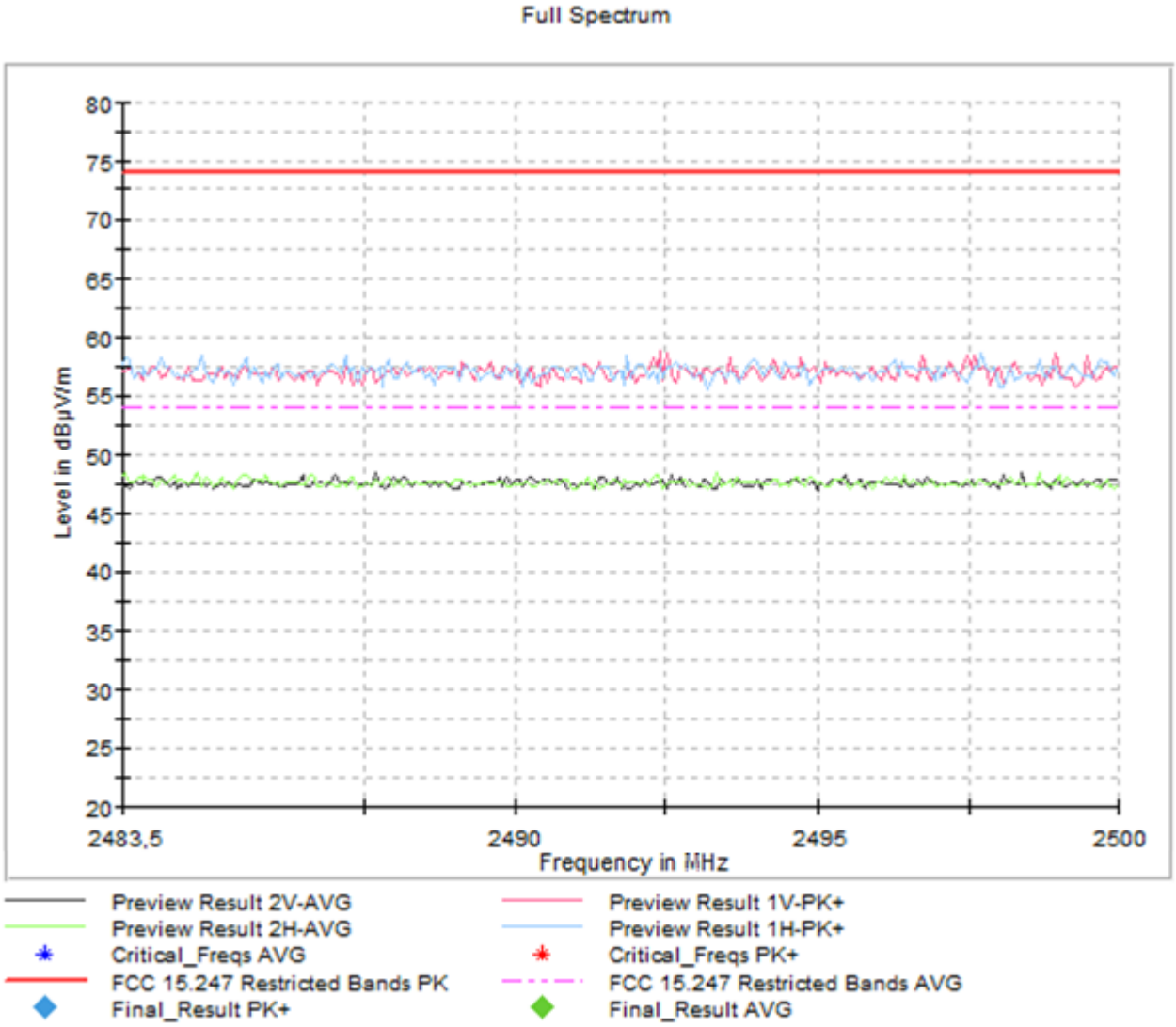


FREQUENCY RANGE 2.4835-2.5 GHz:

- **2M modulation**

- High Channel:



- **1M modulation**

- High Channel: