

ISED CABid: ES1909

Test Report No:
 NIE: 71612RRF.003A1

Test Report

USA FCC Part 15.247, 15.209

CANADA RSS-247, RSS-Gen

(*) Identification of item tested	Sports watch with GPS and BLE connectivity
(*) Trademark	SUUNTO
(*) Model and /or type reference	OW211
Other identification of the product	HW version: B2 SW version: 2.21 FCC ID: RYPOW211 IC: 5175A-OW211
(*) Features	BLE, GNSS
Manufacturer	Suunto Oy Tammiston kauppatie 7A 01510 Vantaa, Finland
Test method requested, standard	USA FCC Part 15.247 (10-1-20 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.209 (10-1-20 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
Date of issue	2022-08-09
Report template No	FDT08_24 (* "Data provided by the client")

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Acronyms

Acronym ID	Acronym Description
	Emission Bandwidth
# of Tx Chains	Number of Transmission Chains
Detector	Detector used
Equipment	Equipment Type
Freq	Frequency
Freq Rng	Frequency Range
Inband Peak Lvl	Inband Peak Level
Lvl	Level
MP	Measurement Point
Mod	Modulation
Occ Ch BW	Occupied Channel Bandwidth
PSD	Power Spectrum Density
Peak Power	Maximum Peak Conducted Output Power
Pol	Polarization
Unwanted Freq	Unwanted Emissions Frequency
Unwanted Lvl	Unwanted Emissions Level

Competences and guarantees

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

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

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Uncertainty

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

The total uncertainty of the measurement system for the radiated emissions of EUT from 30 MHz to 1 GHz is:
Measurement uncertainty $\leq \pm 5,35$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the radiated emissions of EUT from 1 GHz to 17 GHz is:
Measurement uncertainty $\leq \pm 4,32$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the radiated emissions of EUT from 17 GHz to 26 GHz is:
Measurement uncertainty $\leq \pm 5,51$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the conducted testing of EUT is:

RF Peak Output Power: Measurement uncertainty $\leq \pm 0,80$ dB

RF Average Output Power: Measurement uncertainty $\leq \pm 0,99$ dB

Power Spectral Density: Measurement uncertainty $\leq \pm 0,99$ dB

6dB Bandwidth: Measurement uncertainty $\leq \pm 2,84$ %

Occupied Channel Bandwidth: Measurement uncertainty $\leq \pm 1,17$ %

Conducted Band-edge spurious emissions: Measurement uncertainty $\leq \pm 1,76$ dB

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 sample consists of a Sports watch with GPS and BLE connectivity. Sports watch with GPS for tracking outdoor trainings, optical heart rate measurement and BLE connectivity to connect with a smart phone and the Suunto App for recording training logs and analyze training and 24/7 data.

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 results.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	71612_12.1	Sports watch	OW211	22191200105	2022-05-20	Element Under Test
S/01	71612_27.1	USB Charger	--	--	2022-06-01	Element Under Test
S/02	71612_11.1	Sports watch	OW211	22191200104	2022-05-20	Element Under Test

Notes referenced to samples during the project:

Id	Type
S/01	Sample for radiated test
S/02	Sample for conducted test

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:						
Rated Power						
Clock frequencies.....						
Other parameters						
Software version	2.21						
Hardware version	B2						
Dimensions in cm (W x H x D)	4.32 x 1.06 x 4.72						
Mounting position	[]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[X]	Hand-held equipment					
	[]	Other:					
Modules/parts..... :	Module/parts of test item		Type	Manufacturer			
	Sports watch		OW211	Suunto			
	Charging cable		100030830	Suunto			
			
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

Suunto Oy
Tammiston kauppatie 7A
01510 Vantaa, Finland

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2022-06-16
Date (finish)	2022-06-29

Document history

Report number	Date	Description
71612RRF003	2022-07-28	First release.
71612RRF.003A1	2022-08-09	Second release. First modification due to typographical error in the Model name. This modification test report cancels and replaces the test report 71612RRF.003

Environmental conditions

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

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

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

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

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

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

Remarks and comments

The tests have been performed by the technical personnel: Javier Miguel Nadales Lisbona, Pablo Redondo Reyes and Rafael Fernandez Martin.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
4825	SEMIANECHOIC ABSORBER LINED CHAMBER	FACT 3 200 STP	ETS LINDGREN	N/A
4826	SHIELDED ROOM	S101	ETS LINDGREN	N/A
4611	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS- ELEKTRONIK	2022-11-18
4657	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2023-05-05
4578	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2023-04-30
6145	PRE-AMPLIFIER G>40dB 10MHz-6GHz	BLNA 0160-01N	BONN ELEKTRONIK	2023-04-11
8856	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-4A	BONN ELEKTRONIK	2022-09-08
5705	PRE-AMPLIFIER G>40dB 1-18 GHz	BLMA 0118-1M	BONN ELEKTRONIK	2023-06-29
4716	SIGNAL AND SPECTRUM ANALYZER 2Hz-50GHz	FSW50	ROHDE AND SCHWARZ	2022-07-06
4848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	N/A
5880	DC POWER SUPPLY 30V/5A	U8002A	KEYSIGHT TECHNOLOGIES	N/A
5850	DIGITAL MULTIMETER	179	FLUKE	2022-10-19
7796	EXTENSION FOR OPEN SWITCH UNIT UP TO 40GHz	OSP-B157Wx	ROHDE AND SCHWARZ	2024-03-16
8848	OPEN SWITCH UNIT UP TO 7.5 GHz	OSP-B157W8 PLUS	ROHDE & SCHWARZ	2023-08-20
7794	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2023-02-26
7798	SOFTWARE FOR EMC/RF TESTING	WMS32	ROHDE AND SCHWARZ	N/A

Testing verdicts

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

Summary

Bluetooth Low Energy 5.0 (2M, 1M)

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

Appendix A: Test results. Bluetooth Low Energy 5.0 (2M, 1M)

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TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal:	3.8Vdc
Type of Power Supply:	Battery

ANTENNA (*):

Type of Antenna:	Integral antenna
Maximum Declared Antenna Gain:	-4.1 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 TS8997 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 1.5 m for the frequency range 17 GHz-26 GHz (17 GHz-40 GHz horn antenna).

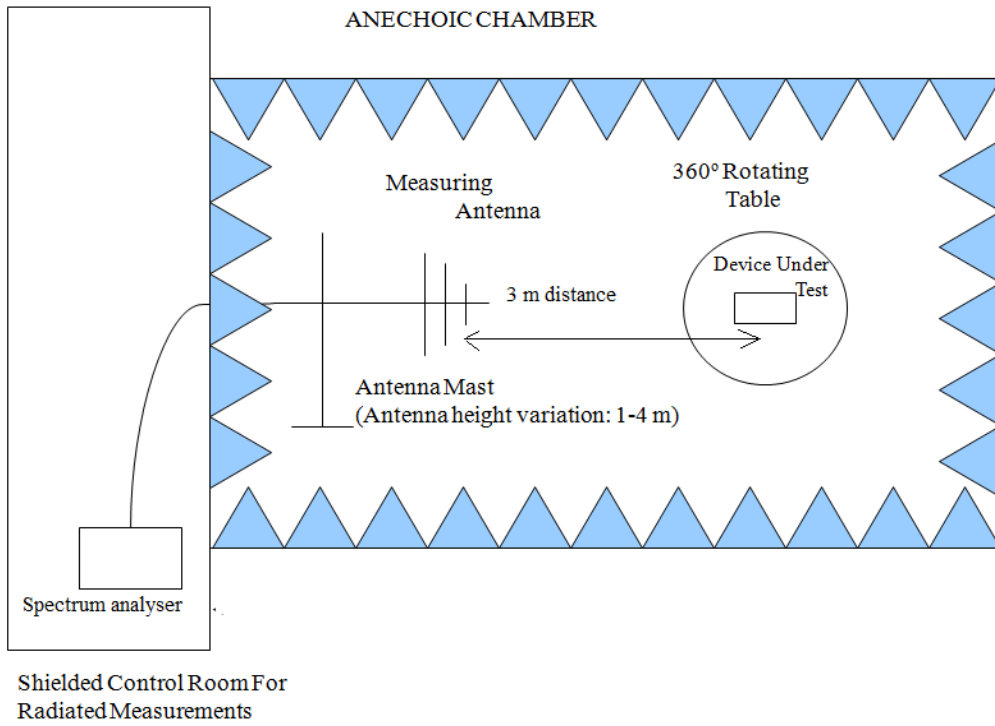
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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 360° and the antenna height (Bilog antenna and Double ridge horn antenna) was varied from 1 to 4 meters to find the maximum radiated emission.

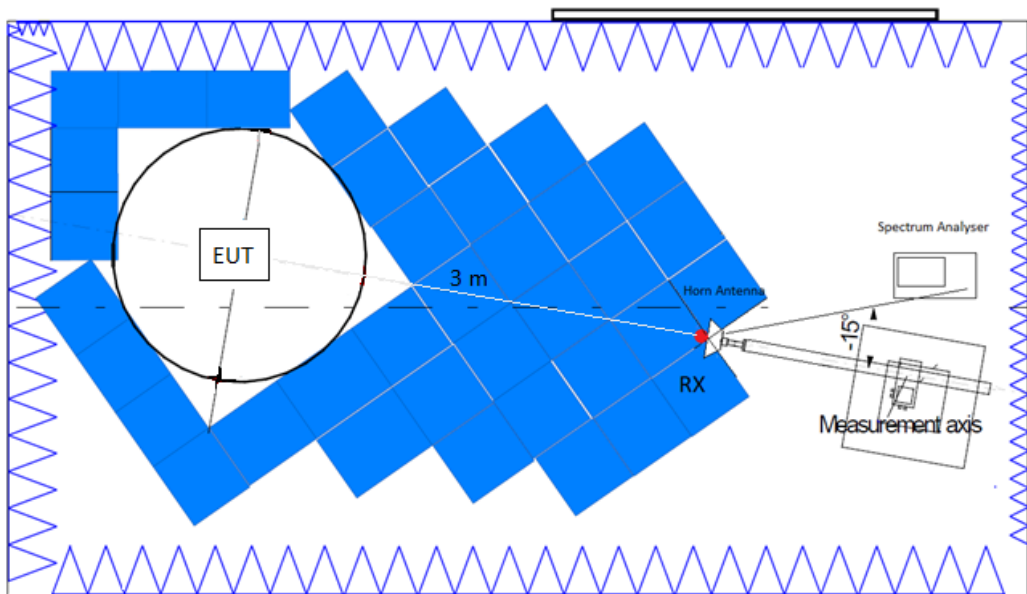
Measurements were made in both horizontal and vertical planes of polarization.

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

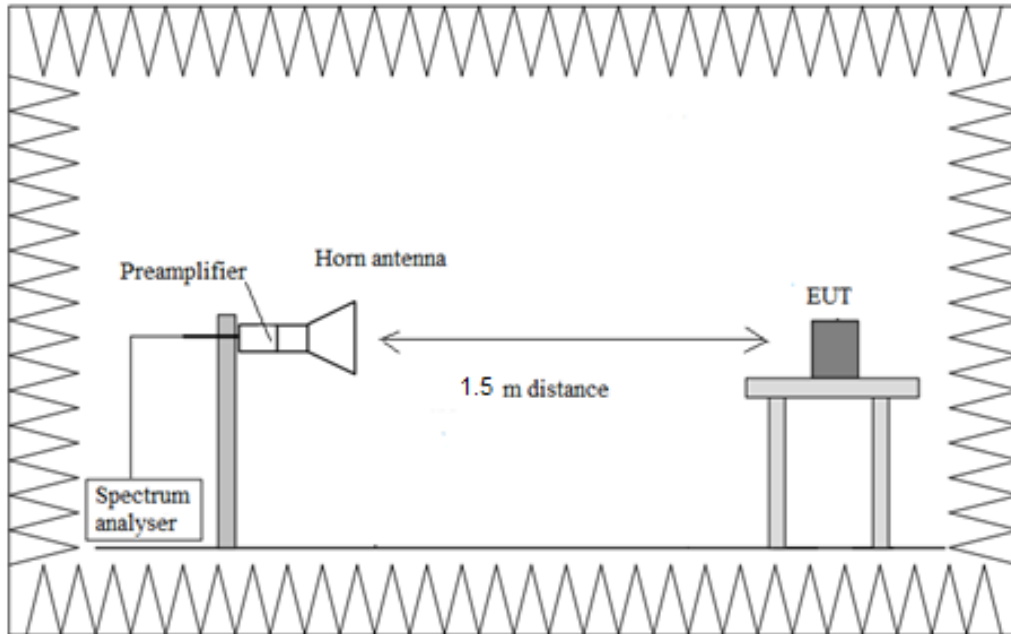
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup $f > 17$ GHz:



TEST CASES DETAILS

FCC 47 CFR Part 15.247 / RSS-247

Occupied Channel Bandwidth 99%

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Results

Freq (MHz)	Equipment	Occ Ch BW (MHz)
2402.00000	Digital Transmission System (DTS)	1.075
2440.00000	Digital Transmission System (DTS)	1.070
2480.00000	Digital Transmission System (DTS)	1.080

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

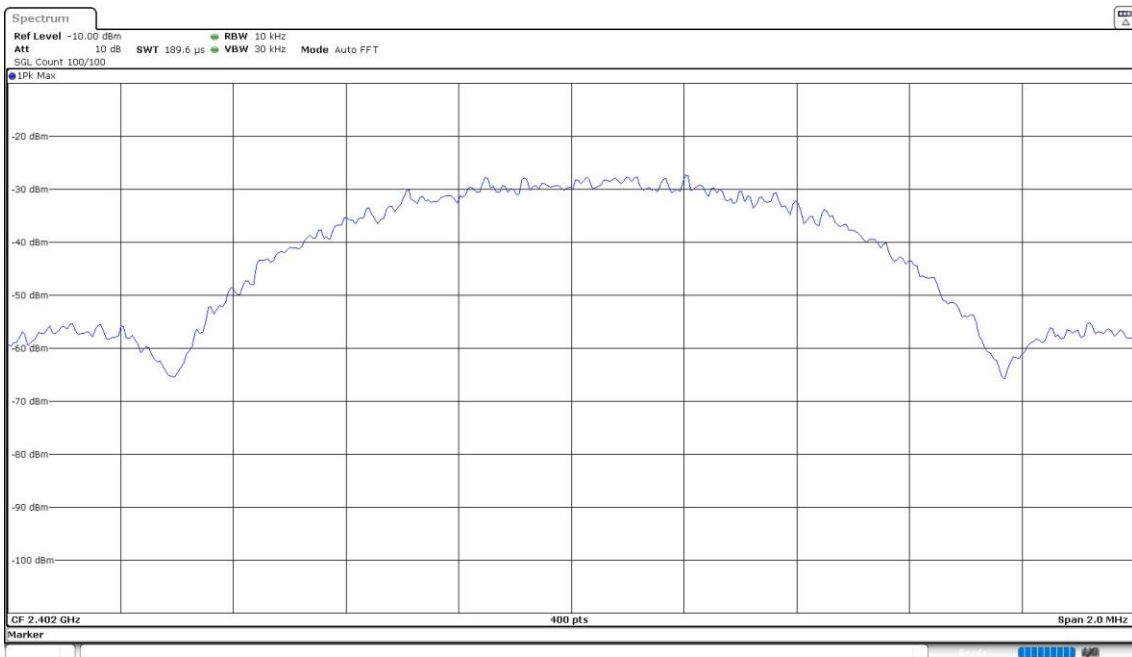
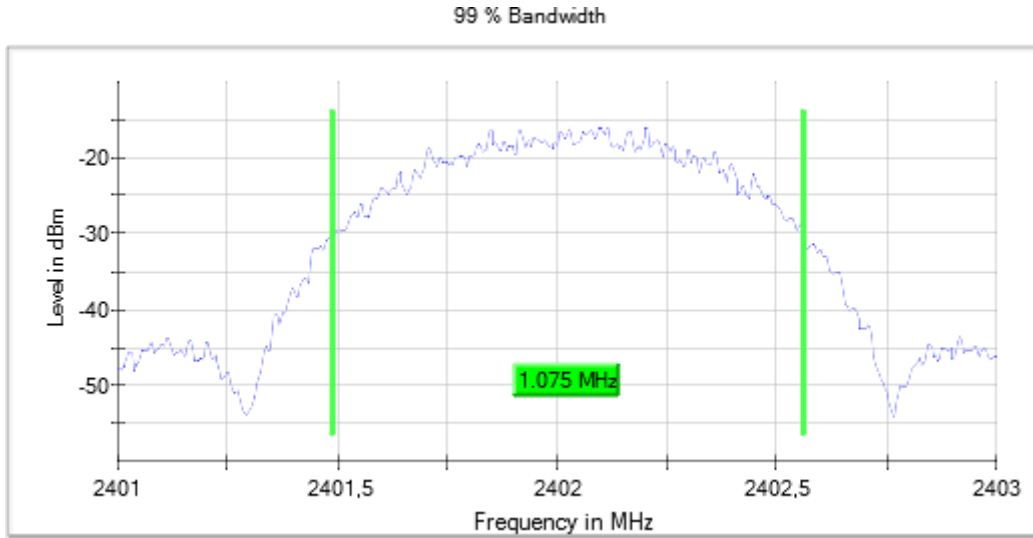
Results

Freq (MHz)	Equipment	Occ Ch BW (MHz)
2402.00000	Digital Transmission System (DTS)	2.090
2440.00000	Digital Transmission System (DTS)	2.100
2480.00000	Digital Transmission System (DTS)	2.110

Attachments

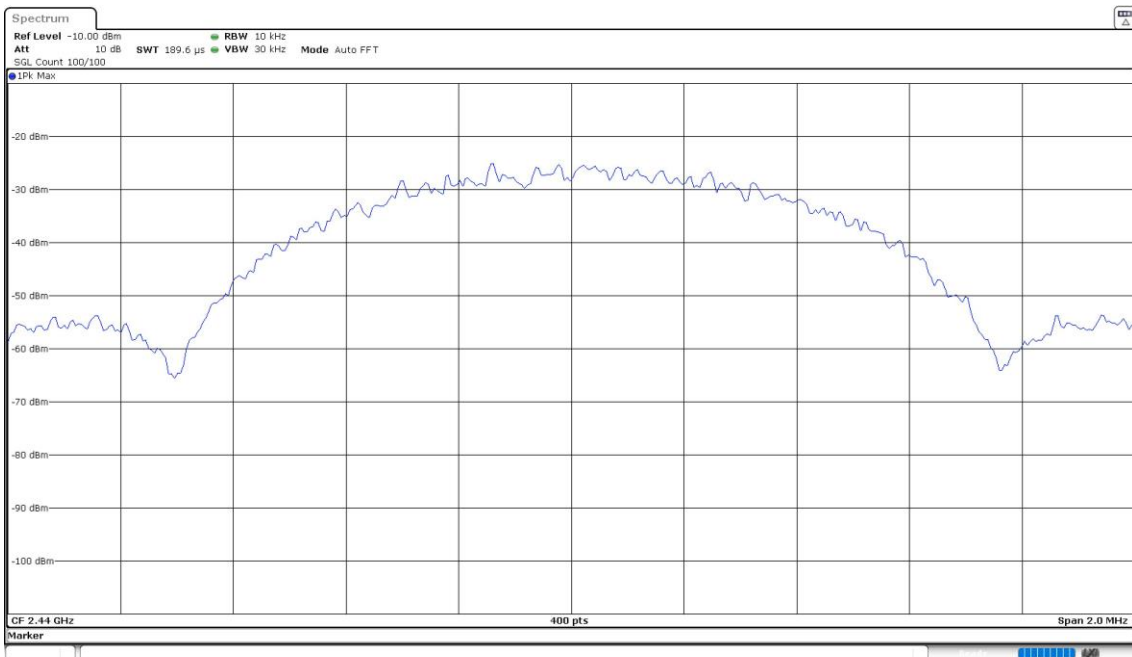
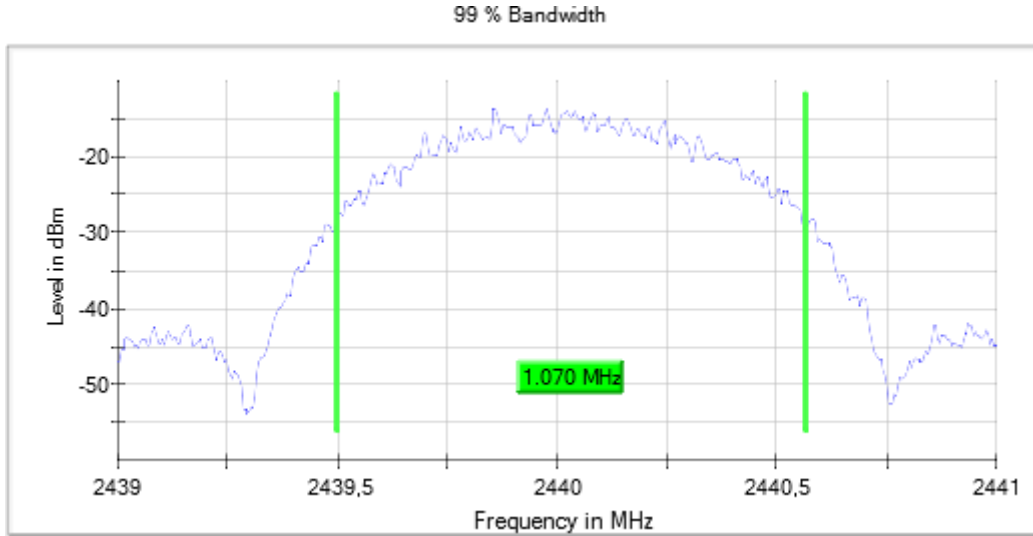
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



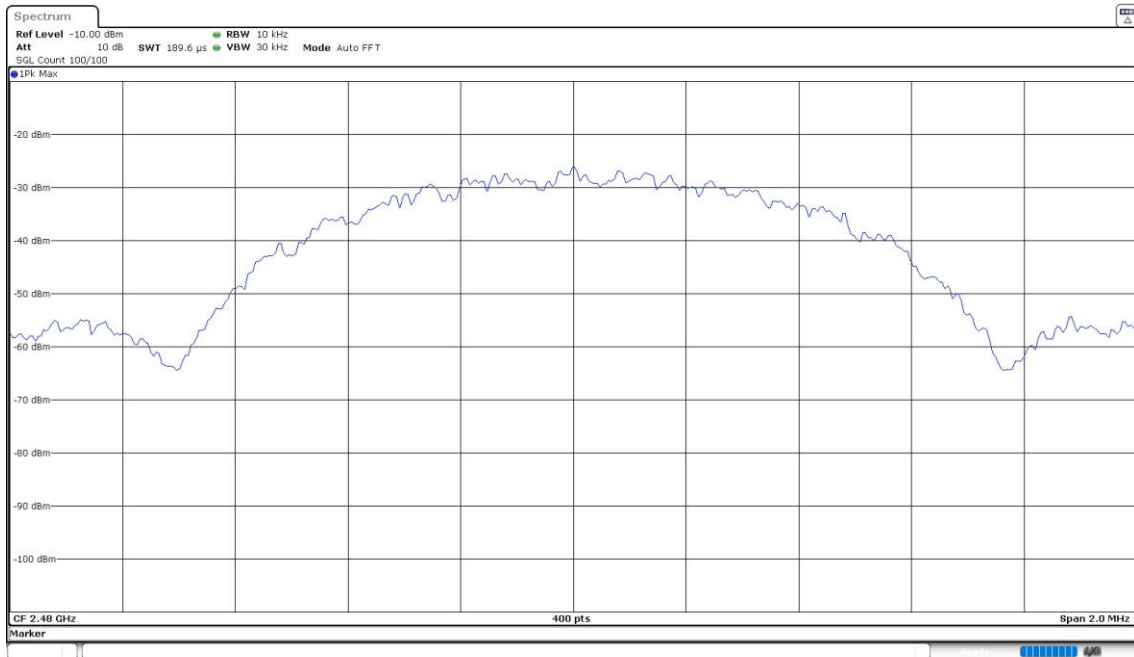
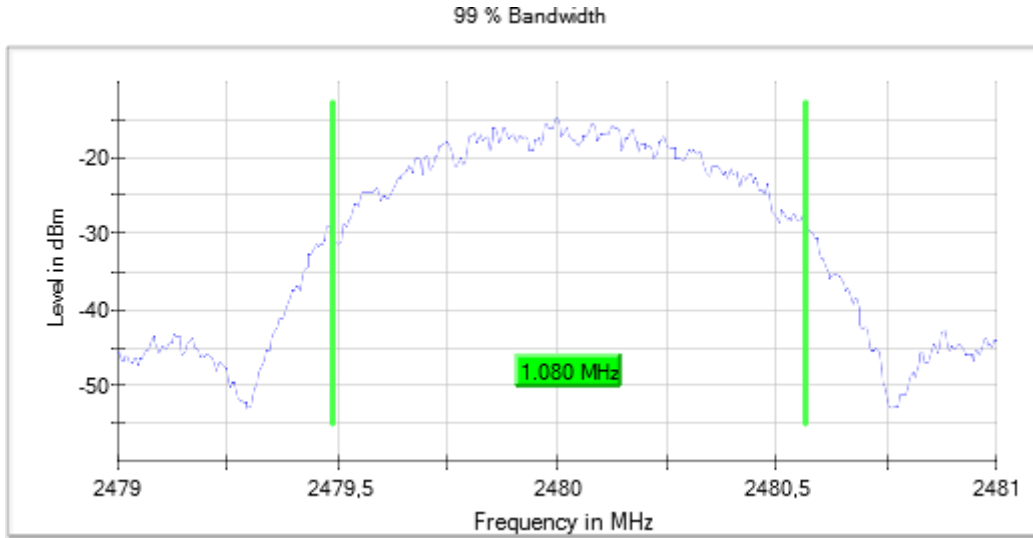
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



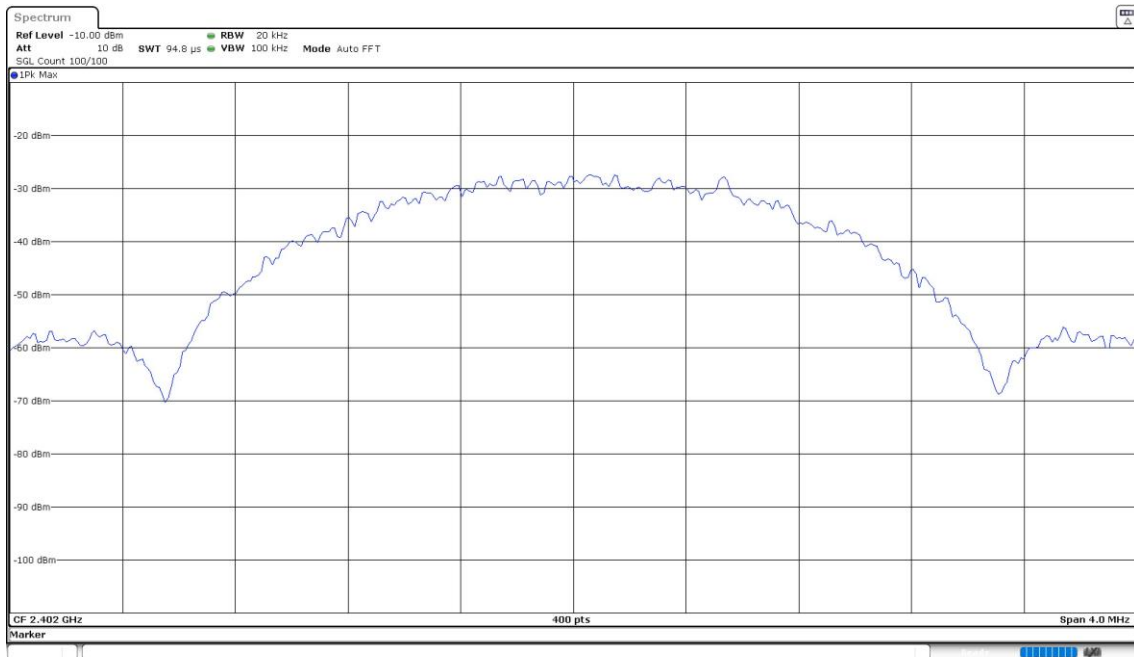
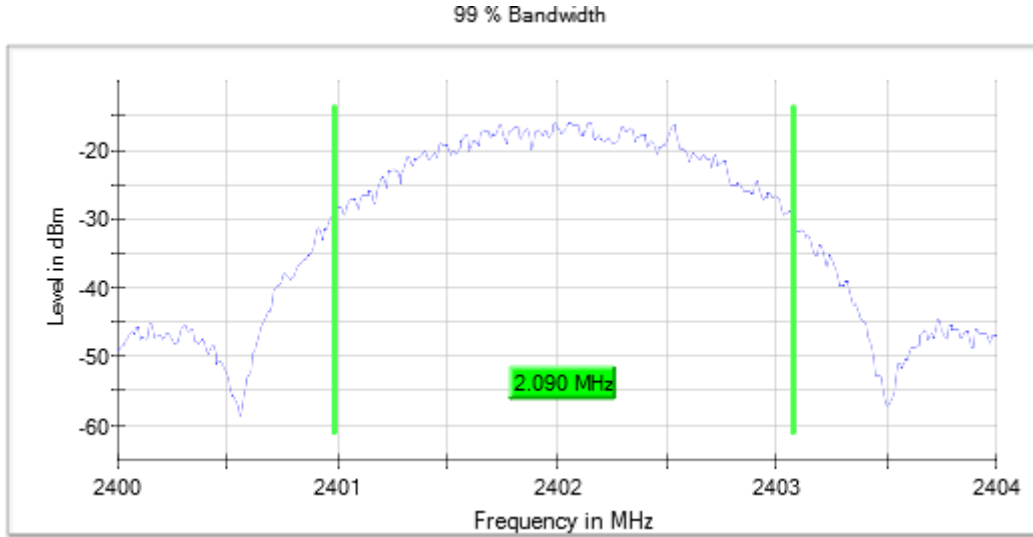
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



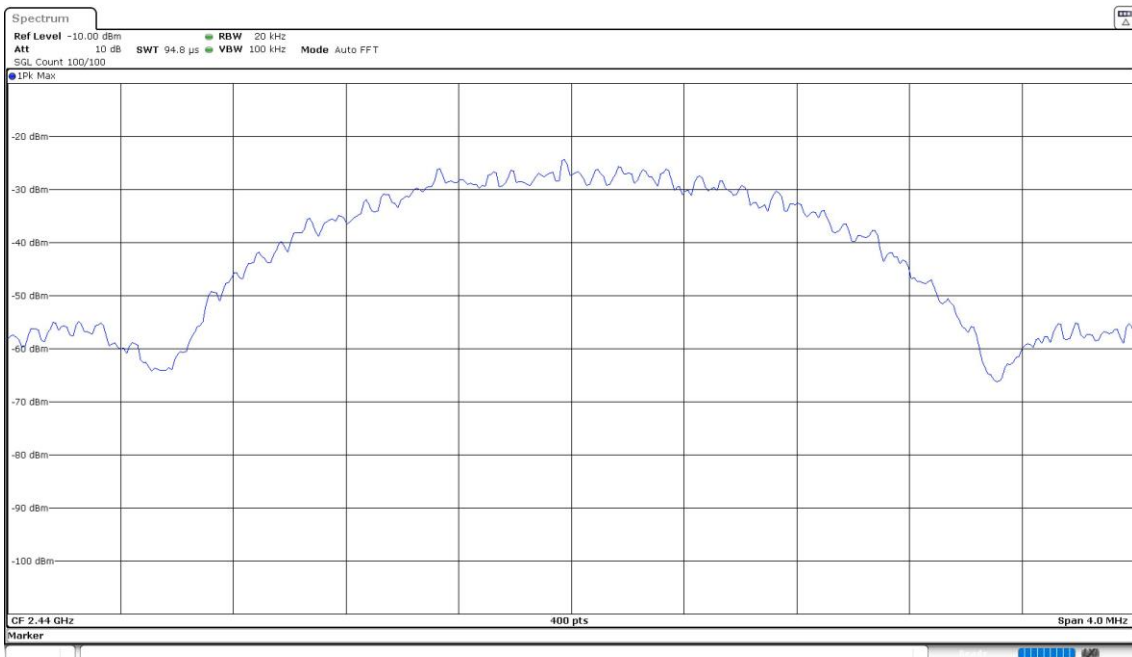
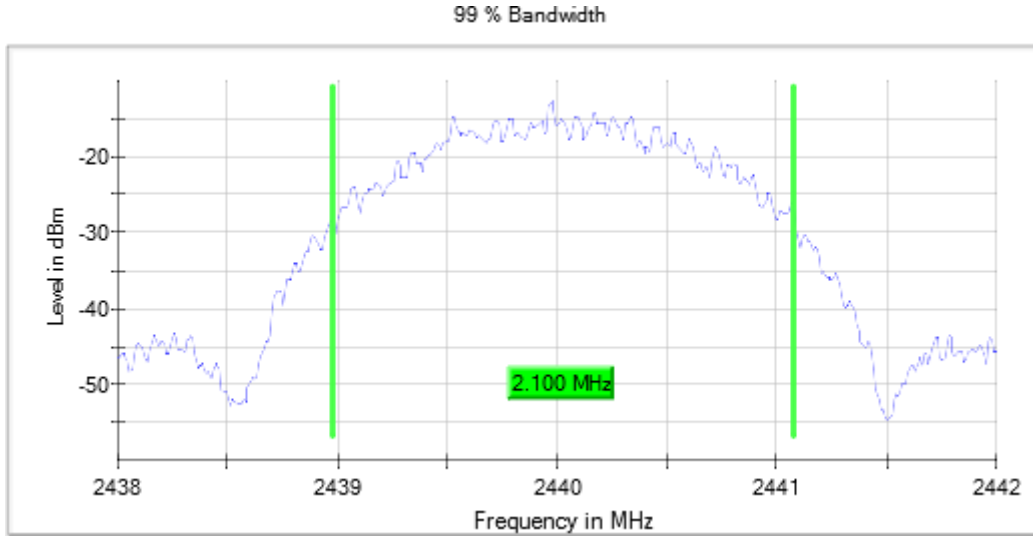
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



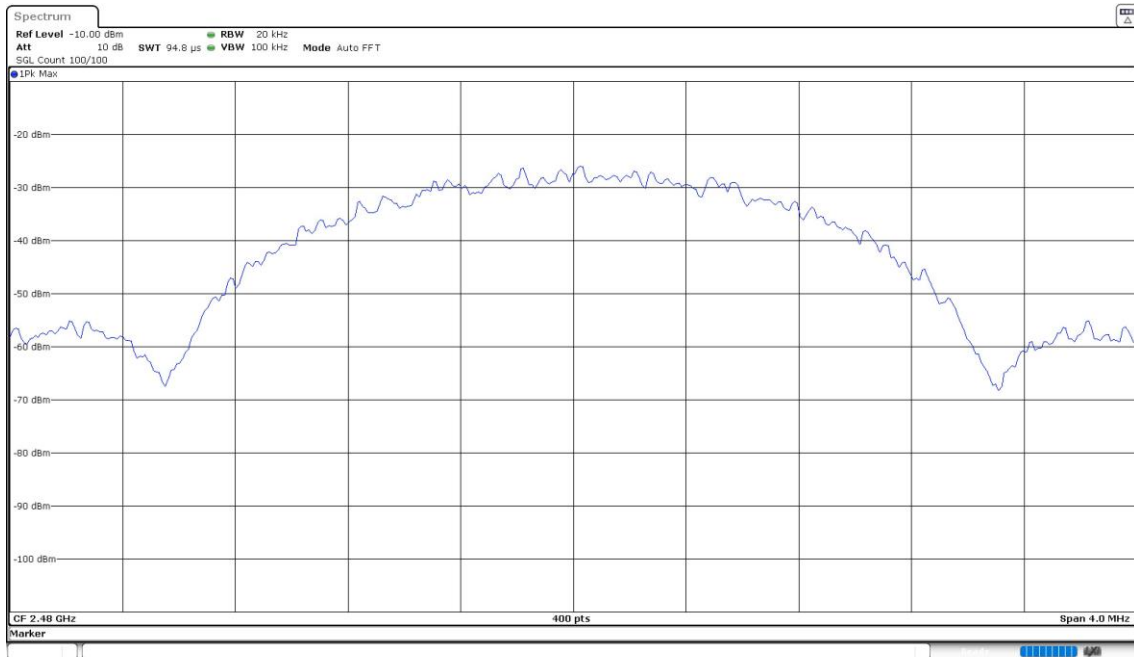
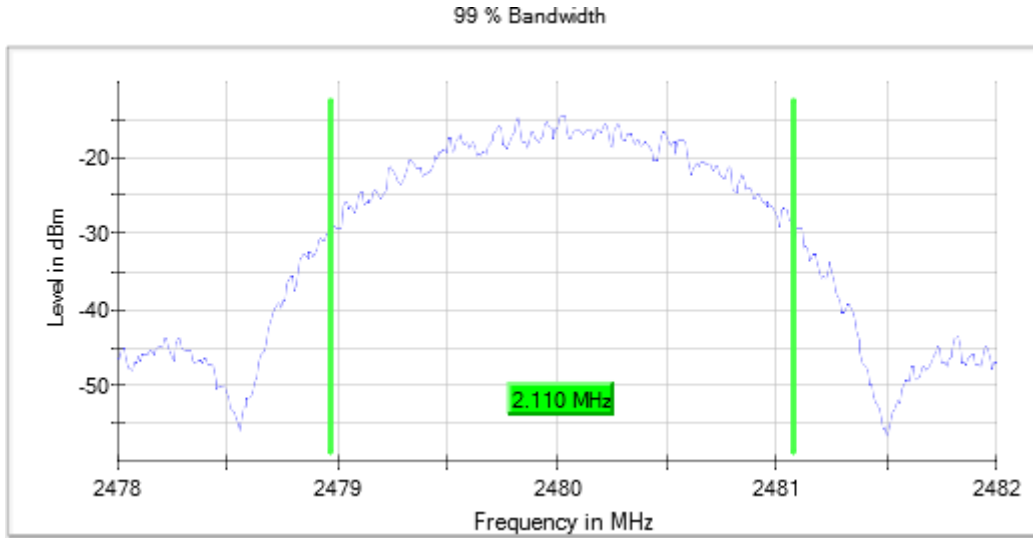
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



RSS-247 5.2 (a) / FCC 15.247 (a) (2) 6 dB Bandwidth

Limits

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

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Results

Freq (MHz)	Emission Bandwidth (MHz)
2402.00000	0.792
2440.00000	0.792
2480.00000	0.772

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Results

Freq (MHz)	Emission Bandwidth (MHz)
2402.00000	1.505
2440.00000	1.307
2480.00000	1.238

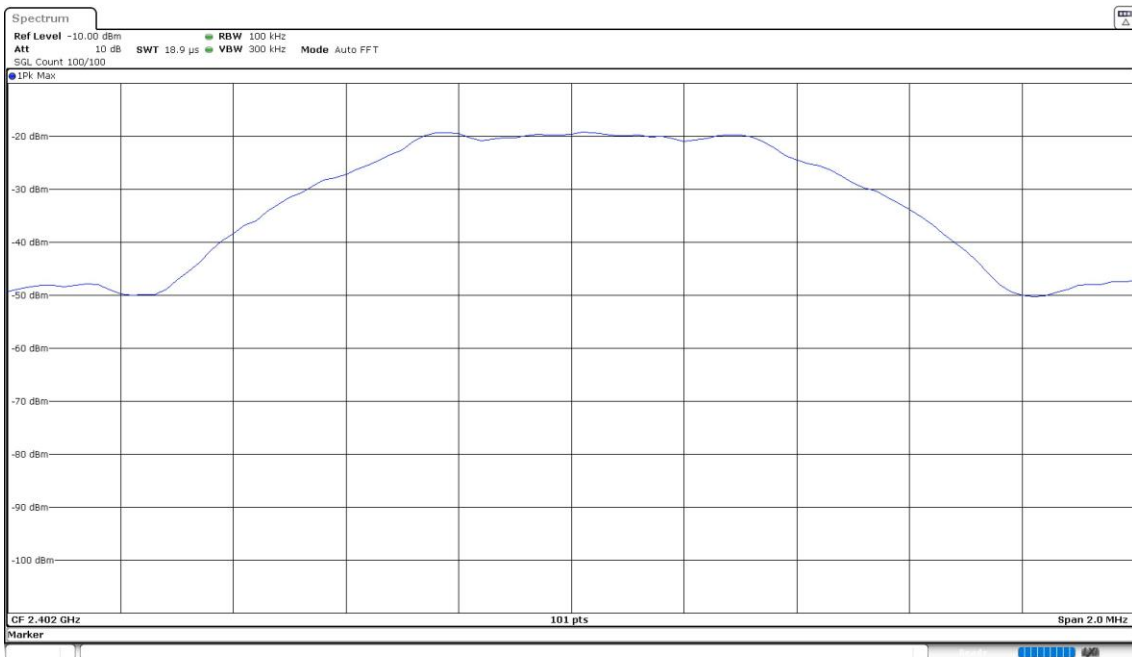
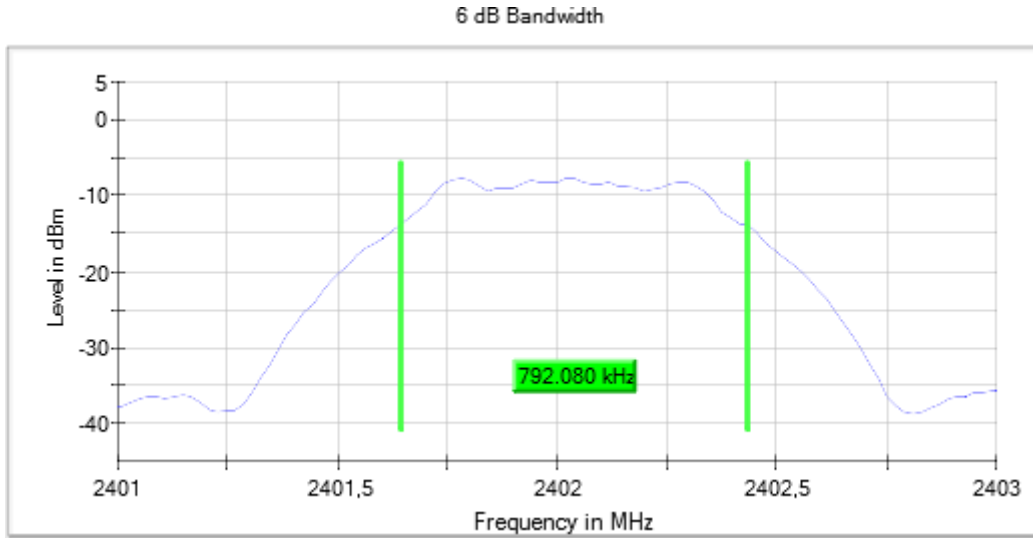
Verdict

Pass

Attachments

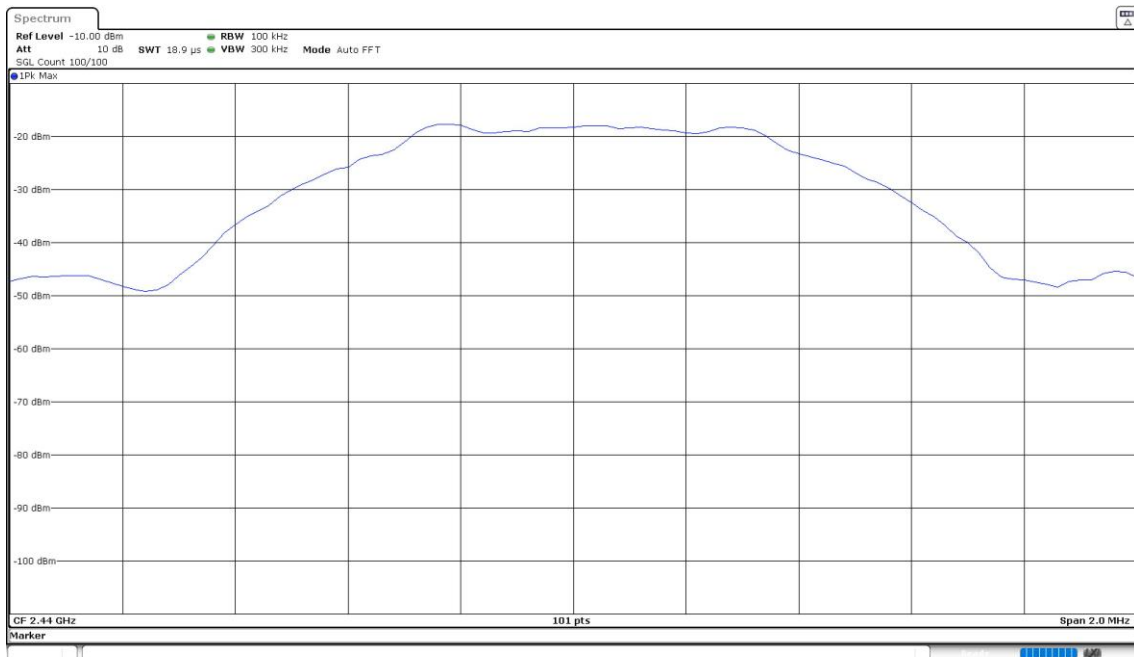
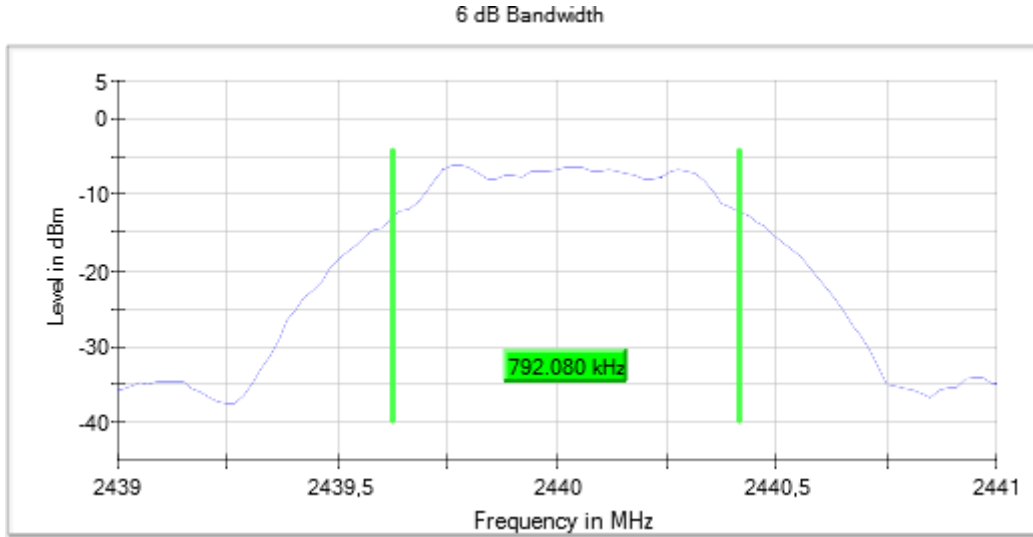
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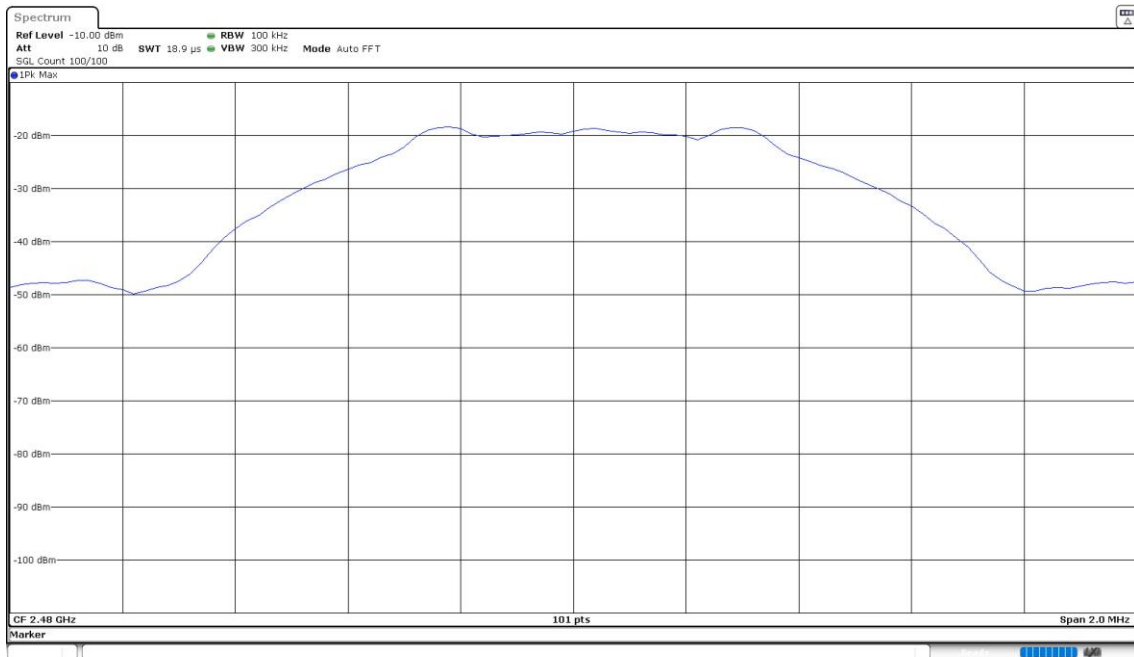
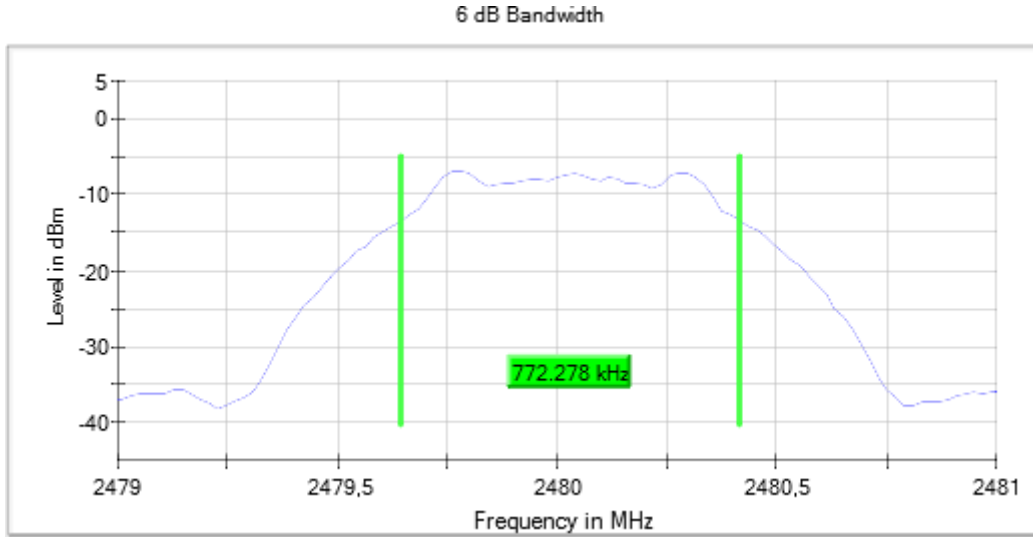
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Images:



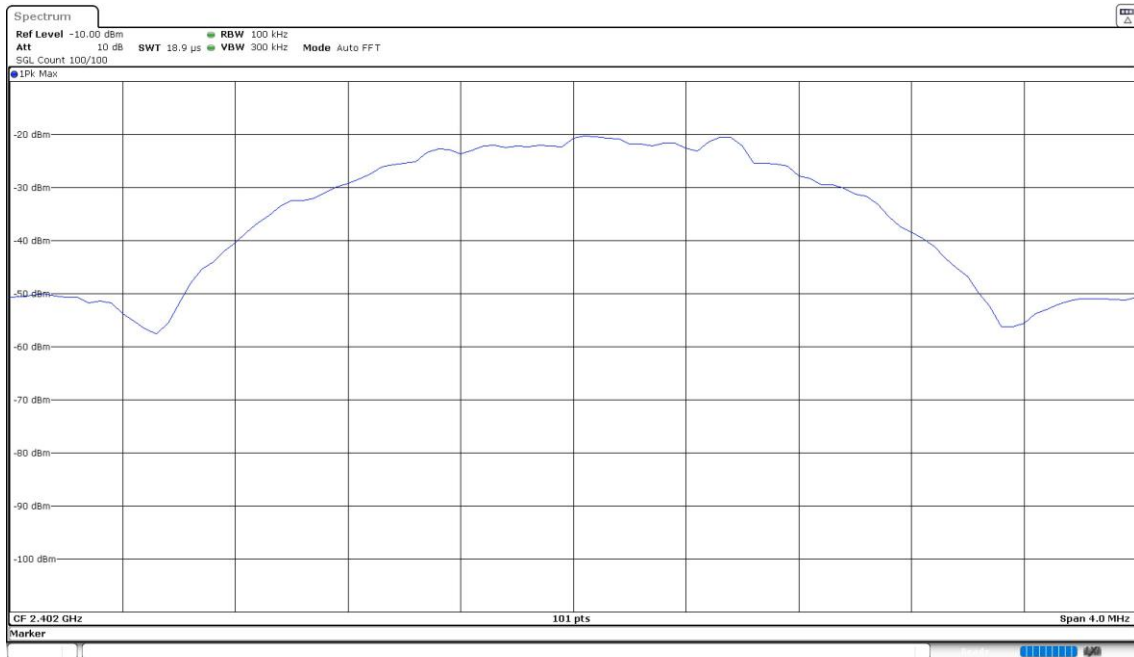
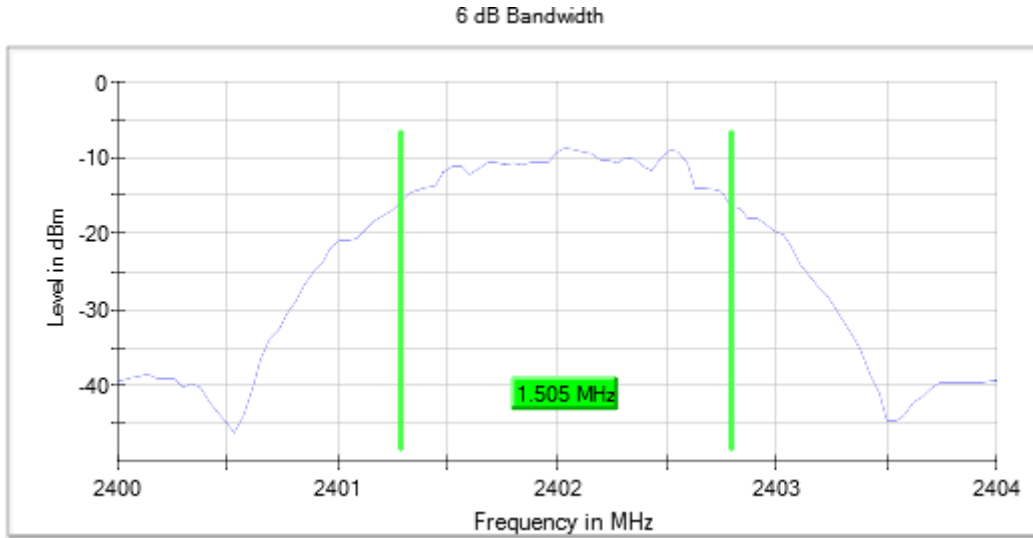
Frequency MHz = 2480.00000, Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



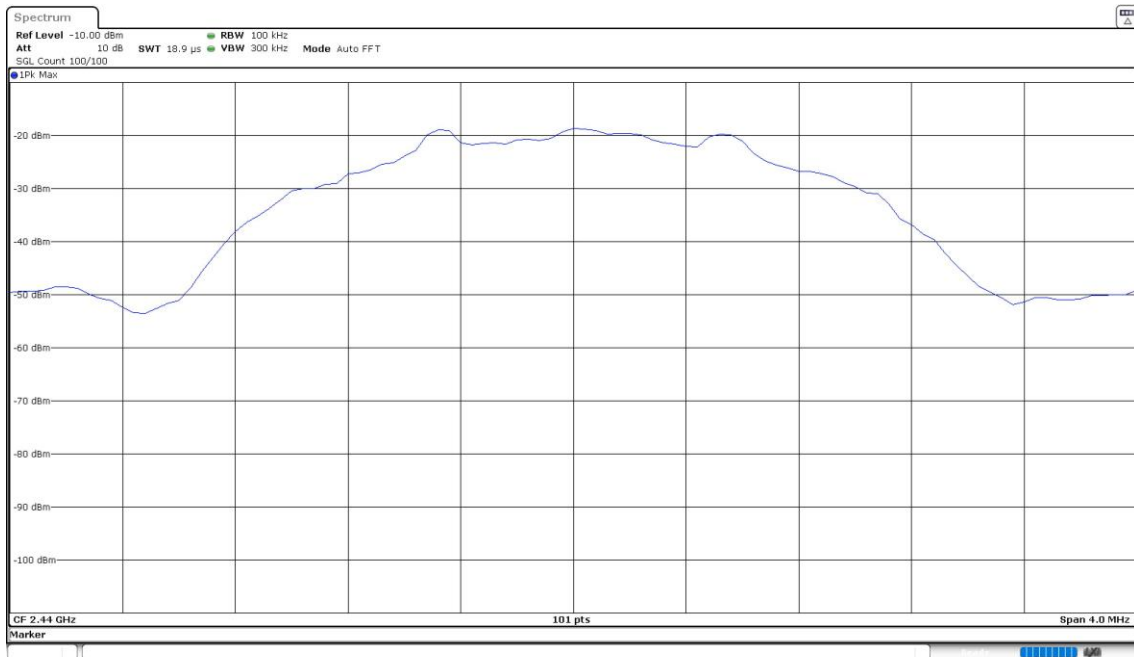
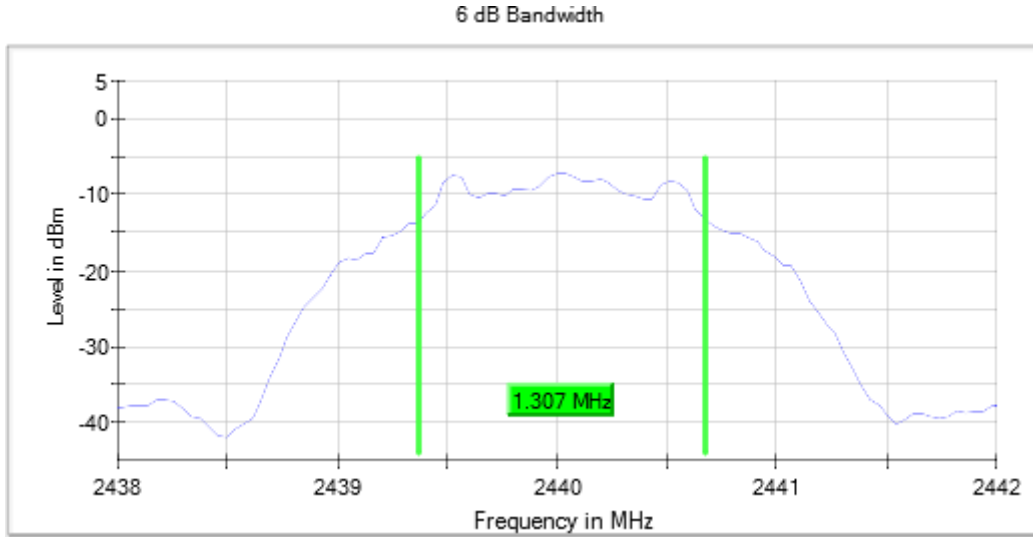
Frequency MHz = 2402.00000, Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



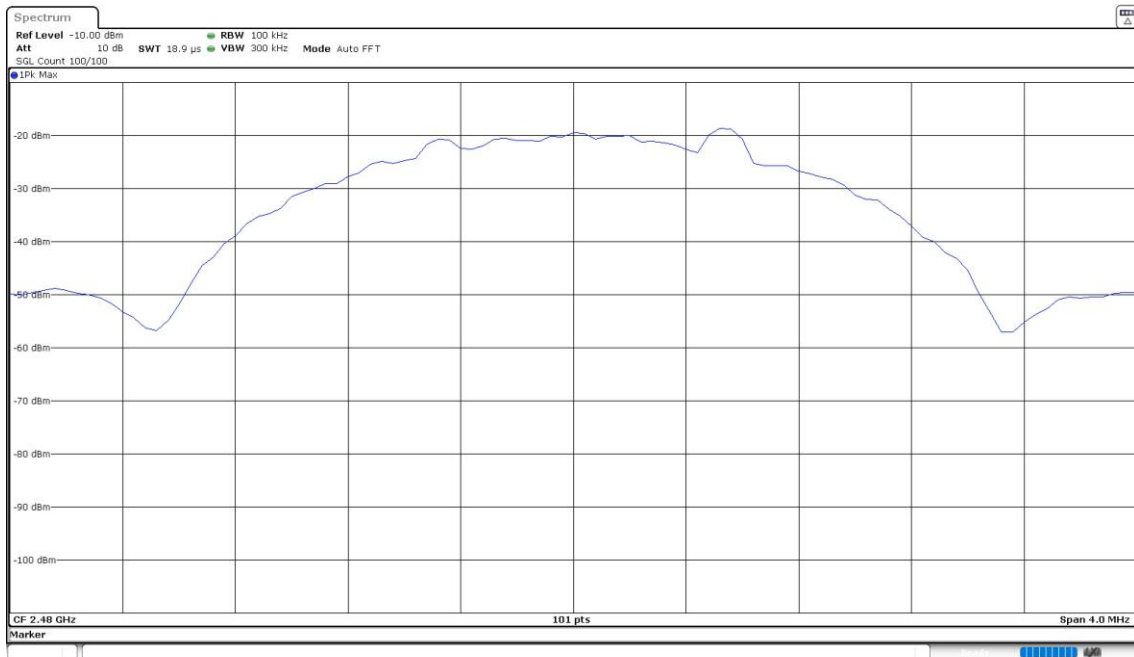
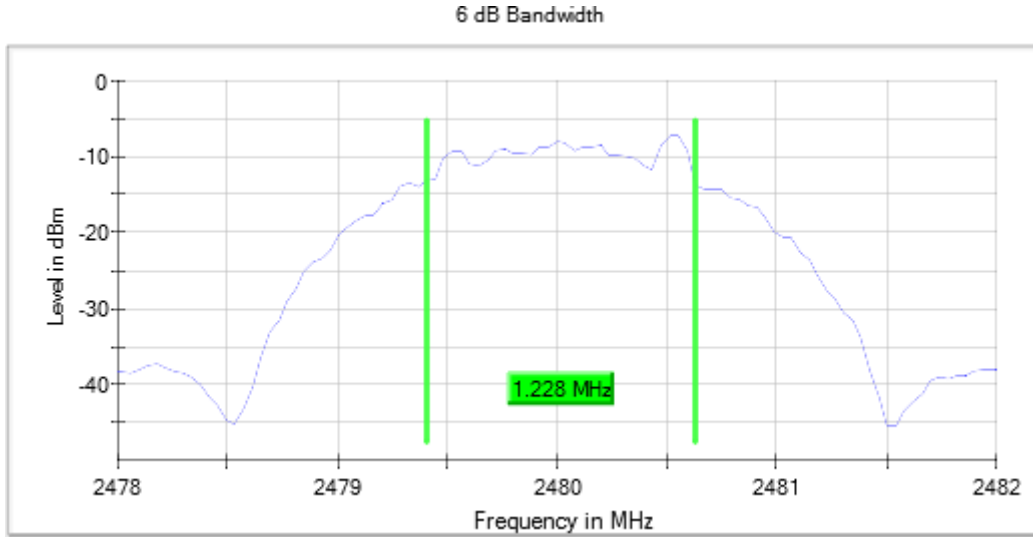
Frequency MHz = 2440.00000, Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



Frequency MHz = 2480.00000, Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



RSS-247 5.4 (d) / FCC 15.247 (b) (3) Maximum Output Power and Antenna Gain

Limits

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) (RSS-247).

Results

The maximum peak conducted output power level of the fundamental emission was measured according to clause 11.9.1.1 "RBW \geq DTS bandwidth" of ANSI C63.10-2013.

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

Maximum Declared Antenna Gain: -4.1 dBi

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.

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Results

Freq (MHz)	Equipment	Peak Power (dBm)	Peak Power E.I.R.P (dBm)
2402.00000	Digital Transmission System (DTS)	-6.7	-10.8
2440.00000	Digital Transmission System (DTS)	-5.3	-9.4
2480.00000	Digital Transmission System (DTS)	-6.3	-10.4

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Results

Freq (MHz)	Equipment	Peak Power (dBm)	Peak Power E.I.R.P (dBm)
2402.00000	Digital Transmission System (DTS)	-6.7	-10.8
2440.00000	Digital Transmission System (DTS)	-5.3	-9.4
2480.00000	Digital Transmission System (DTS)	-6.3	-10.4

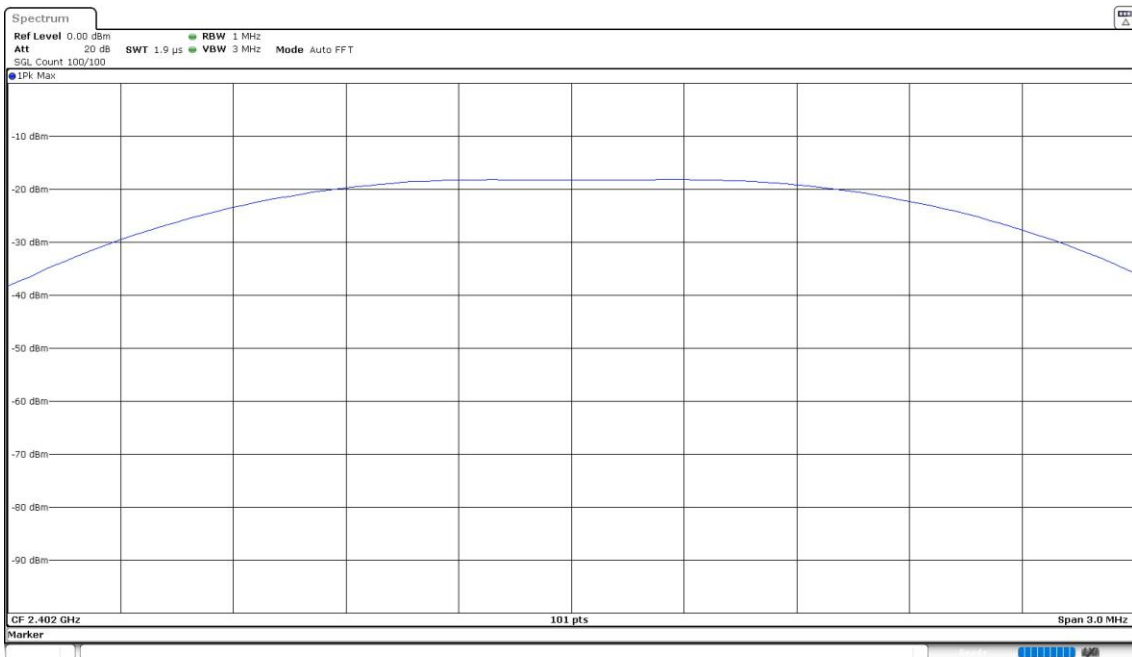
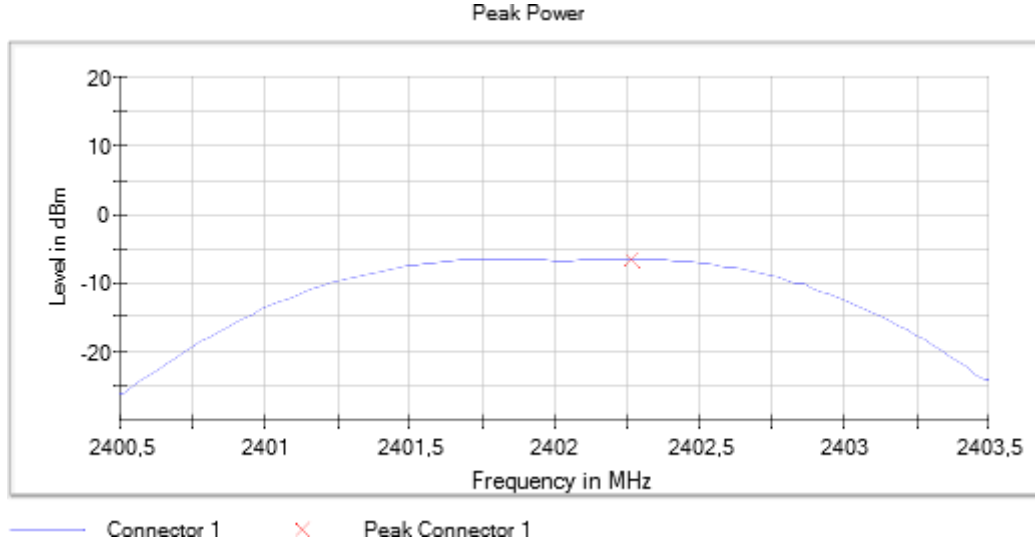
Verdict

Pass

Attachments

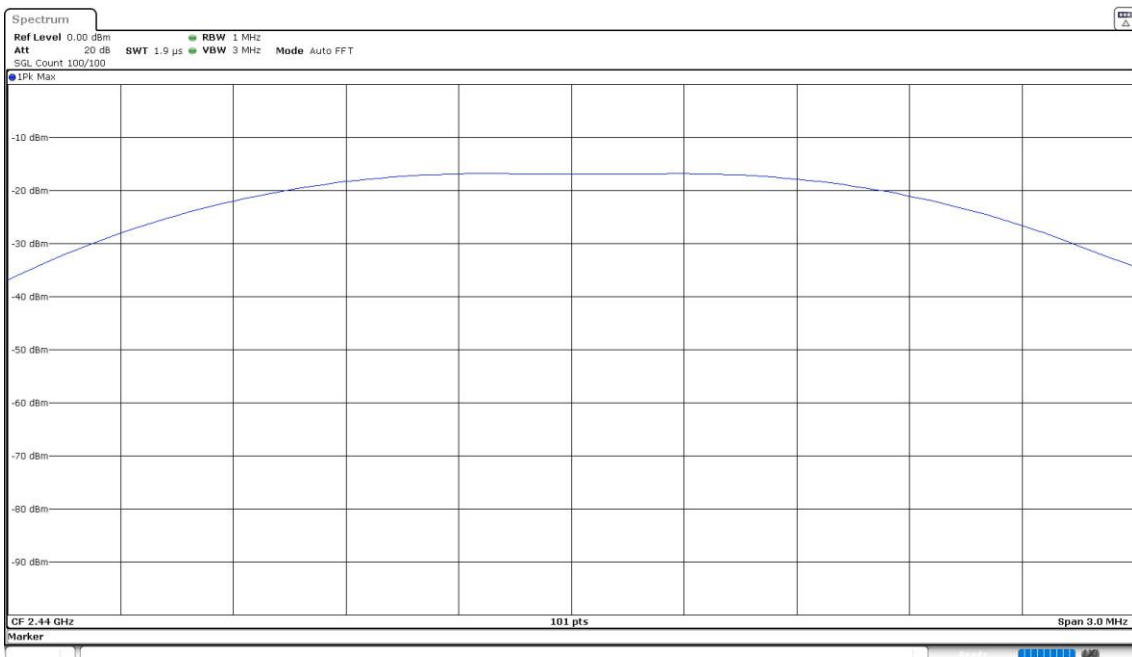
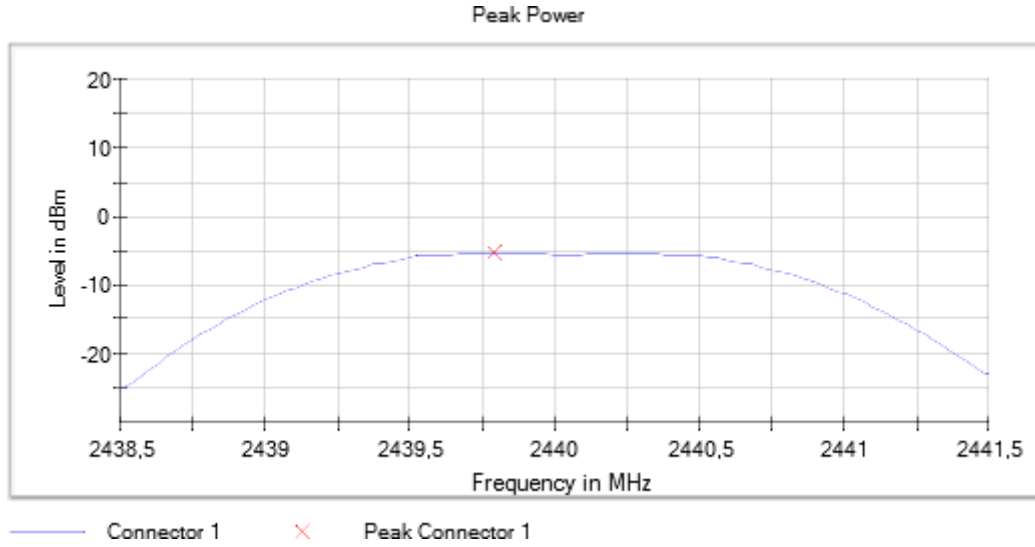
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



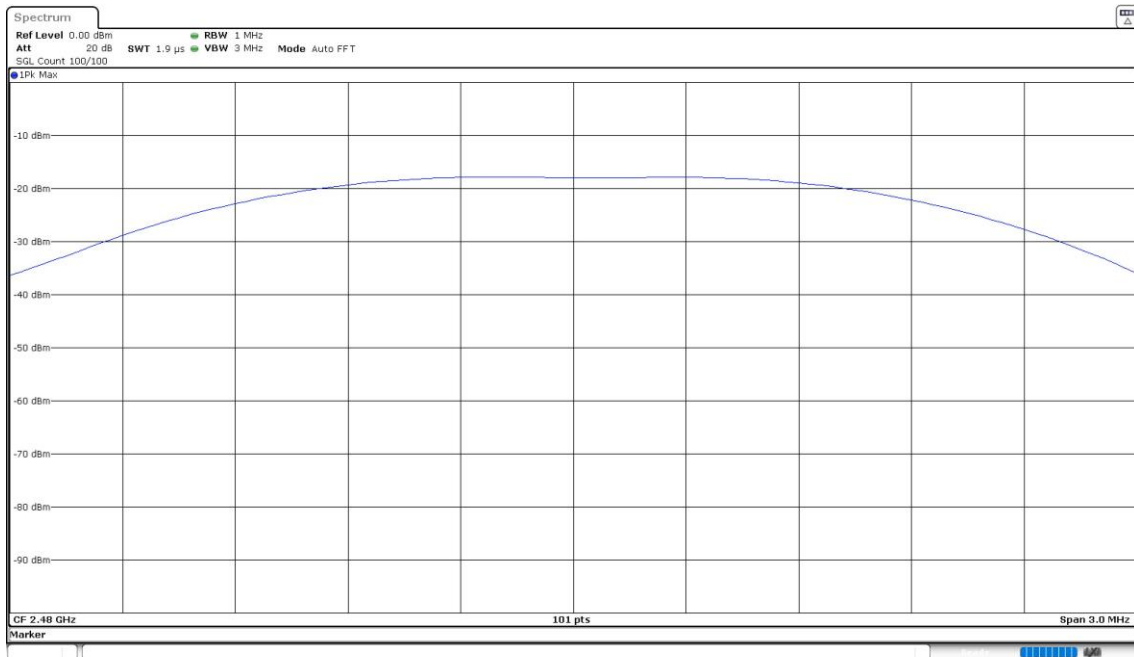
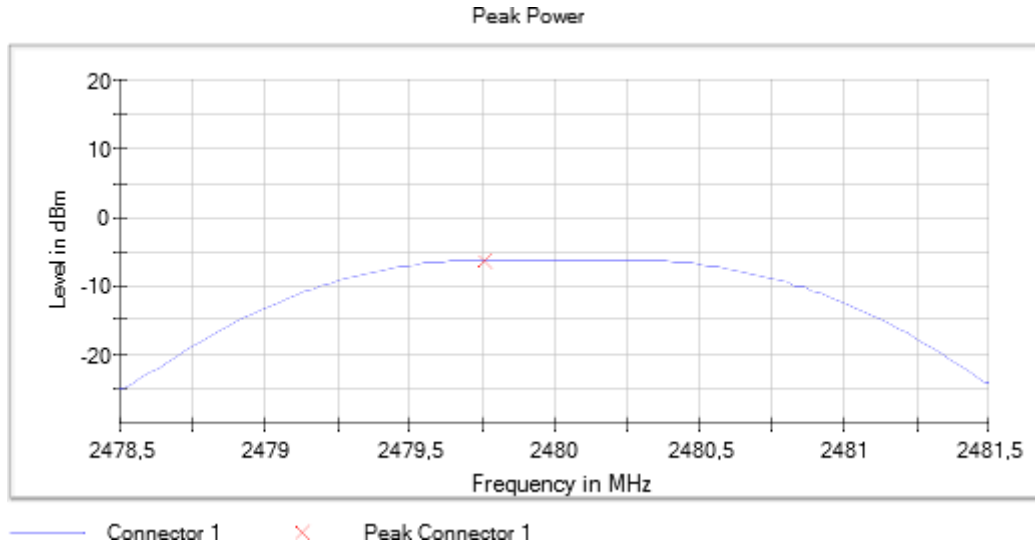
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



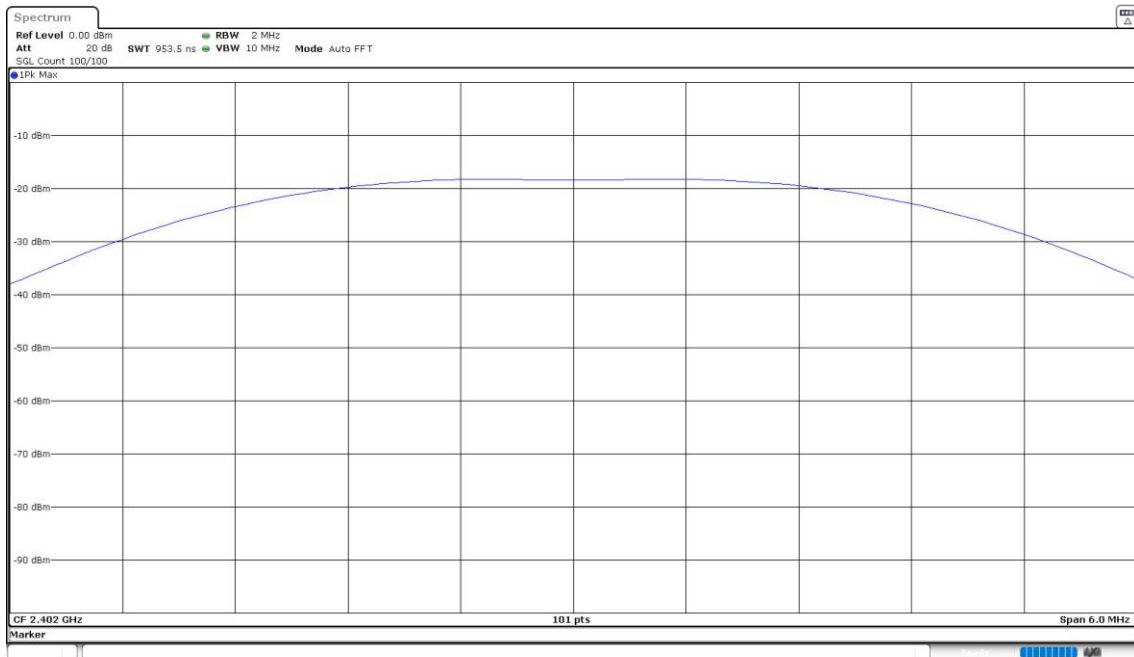
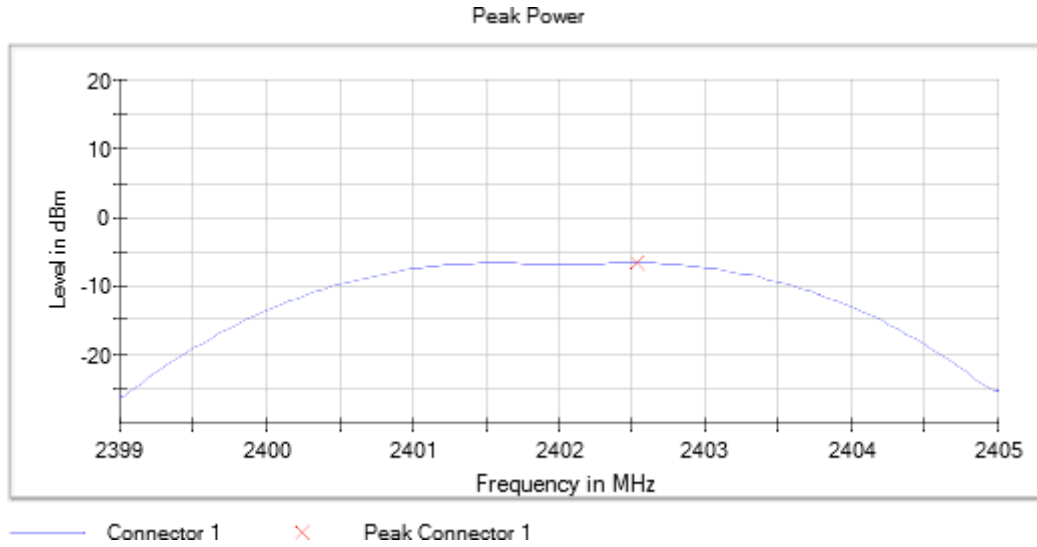
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



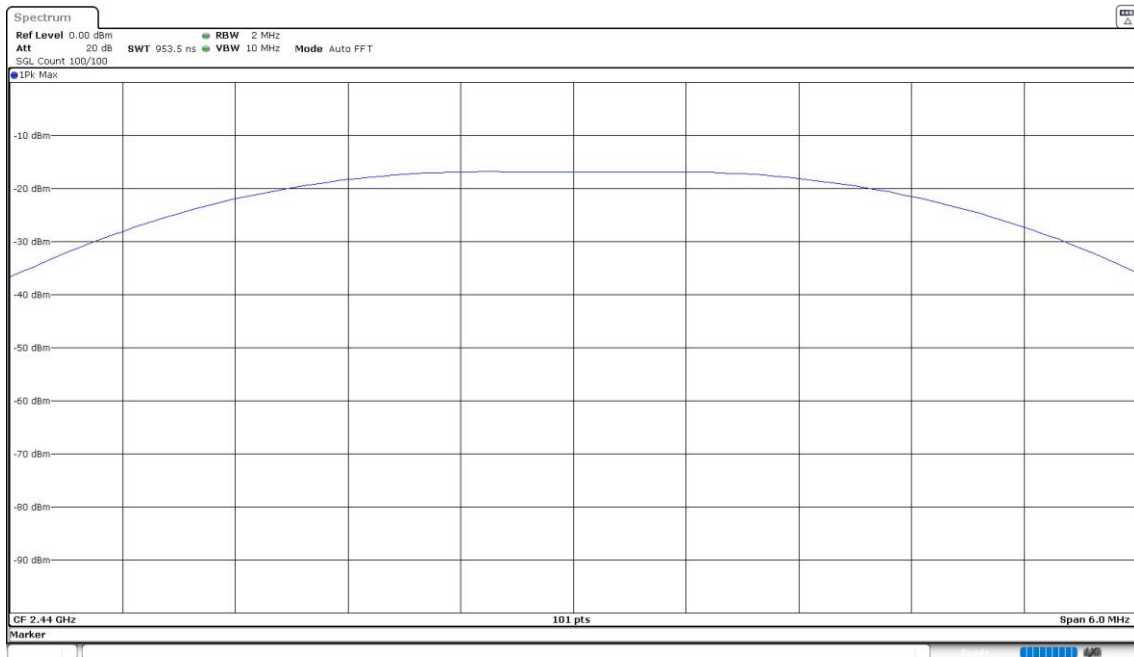
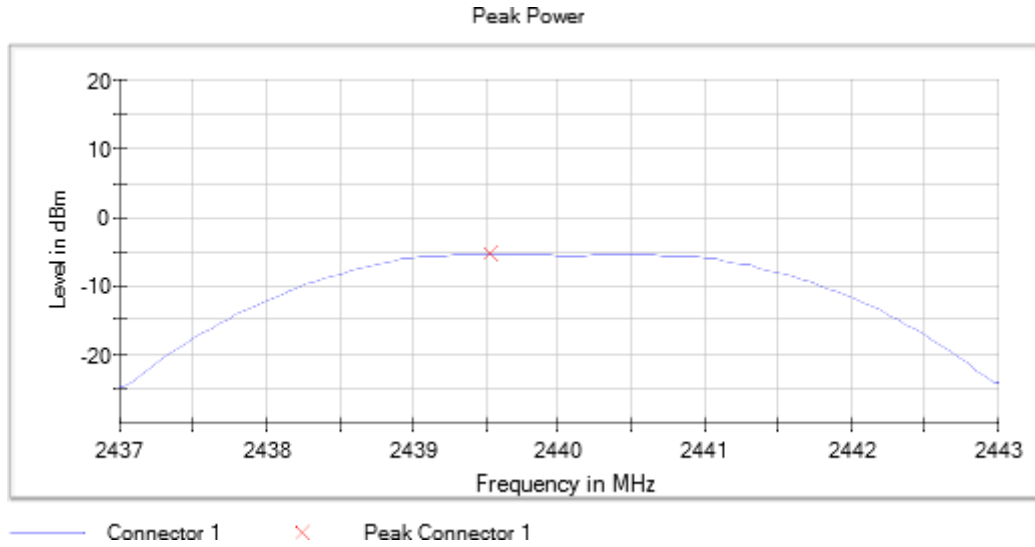
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



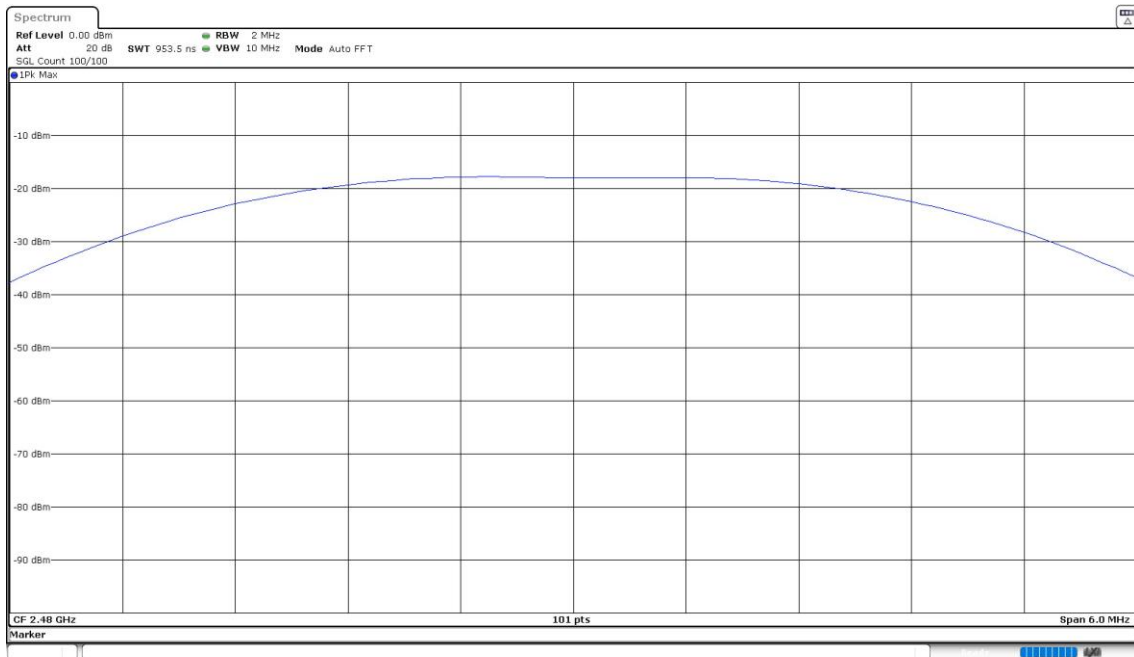
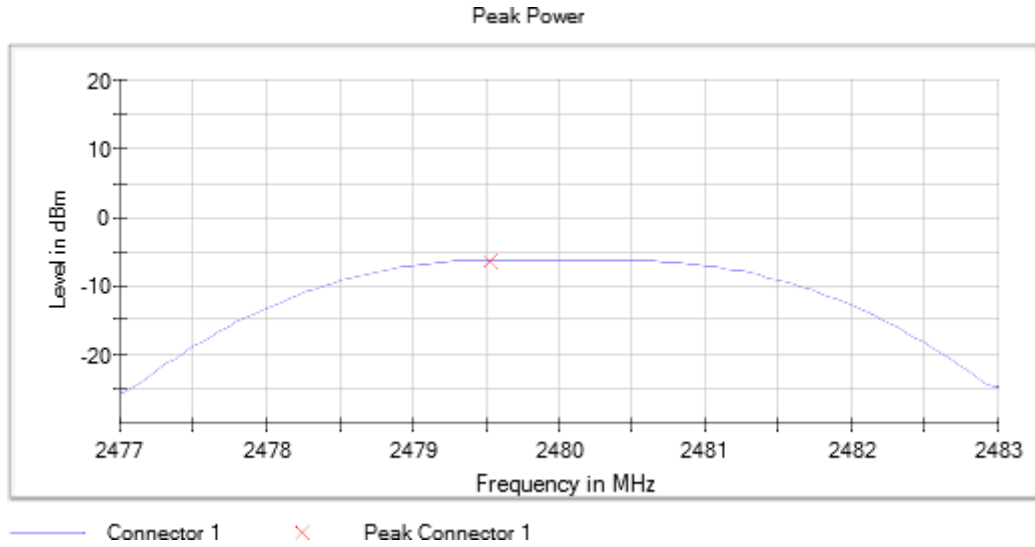
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



RSS-247 5.5 / FCC 15.247 (d) Band-edge emissions compliance (Transmitter)

Limits

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

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

Verdict

Pass

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

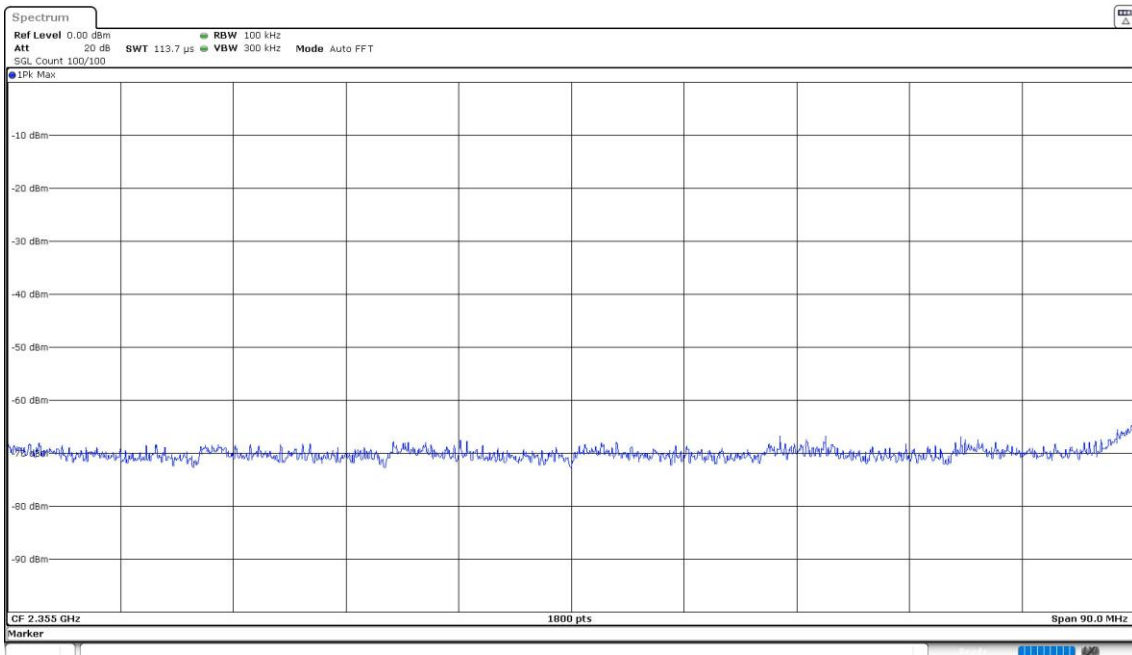
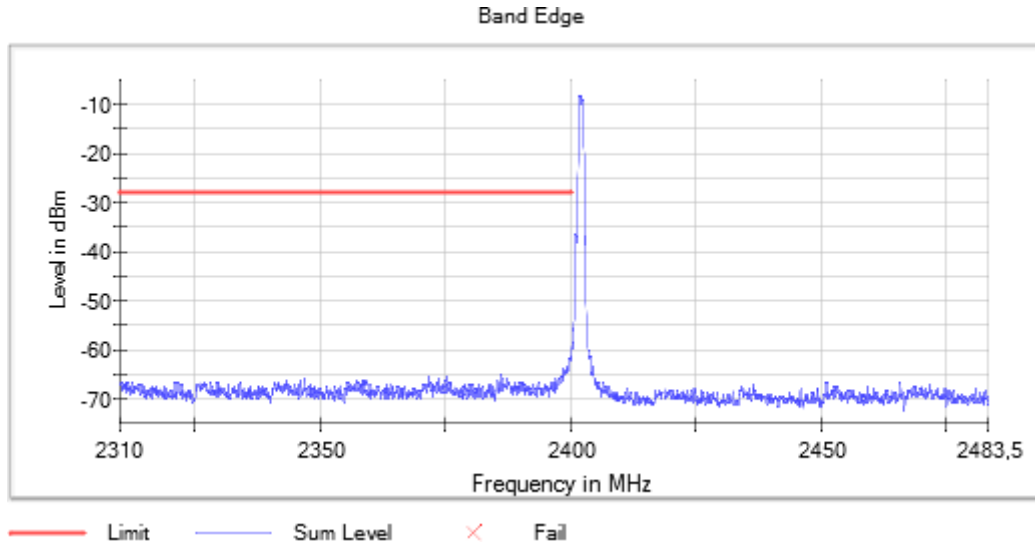
Verdict

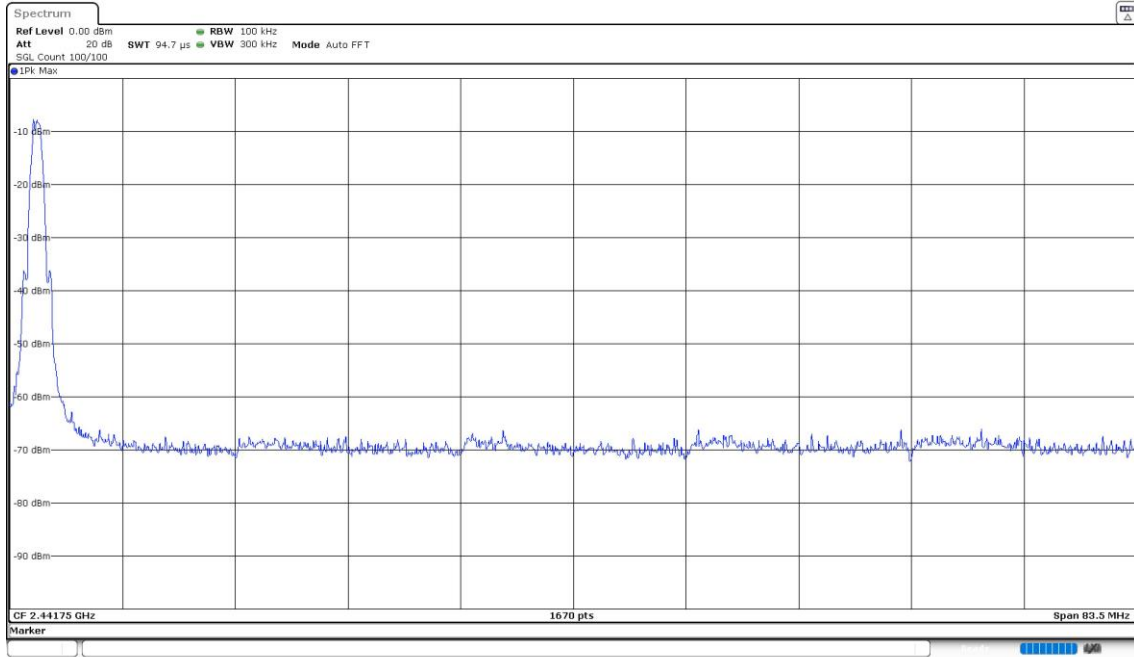
Pass

Attachments

Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1

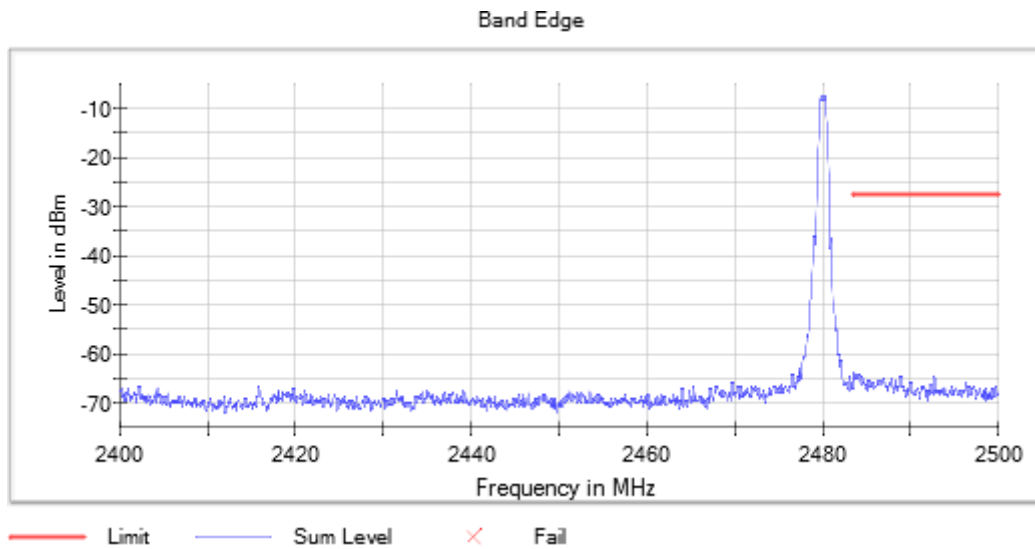
Images:

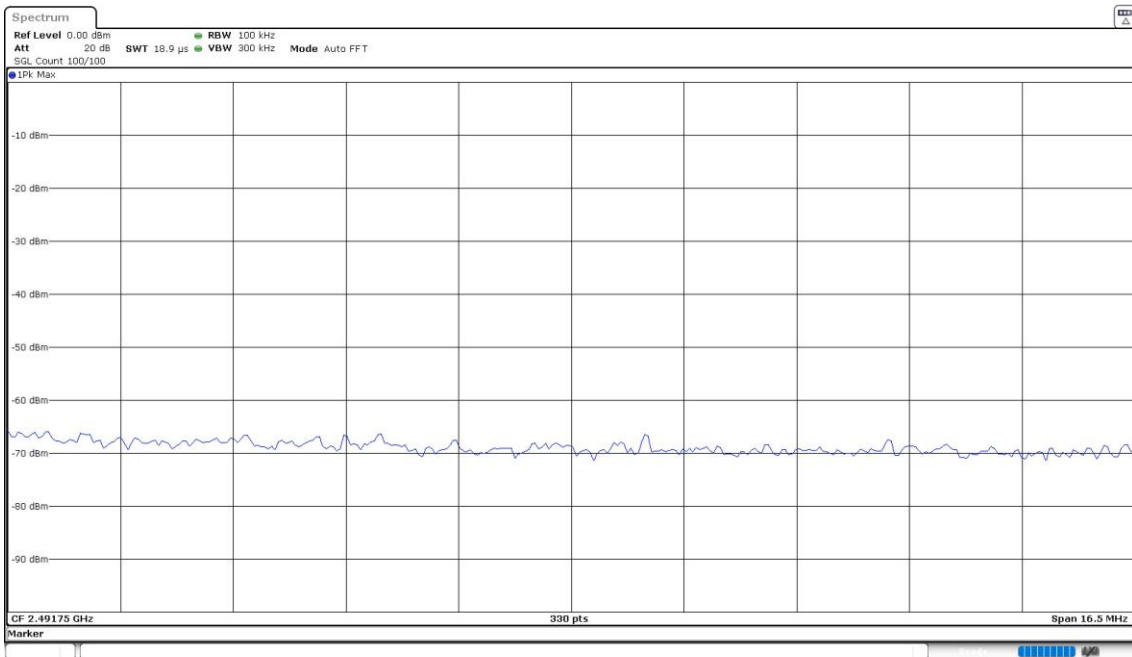
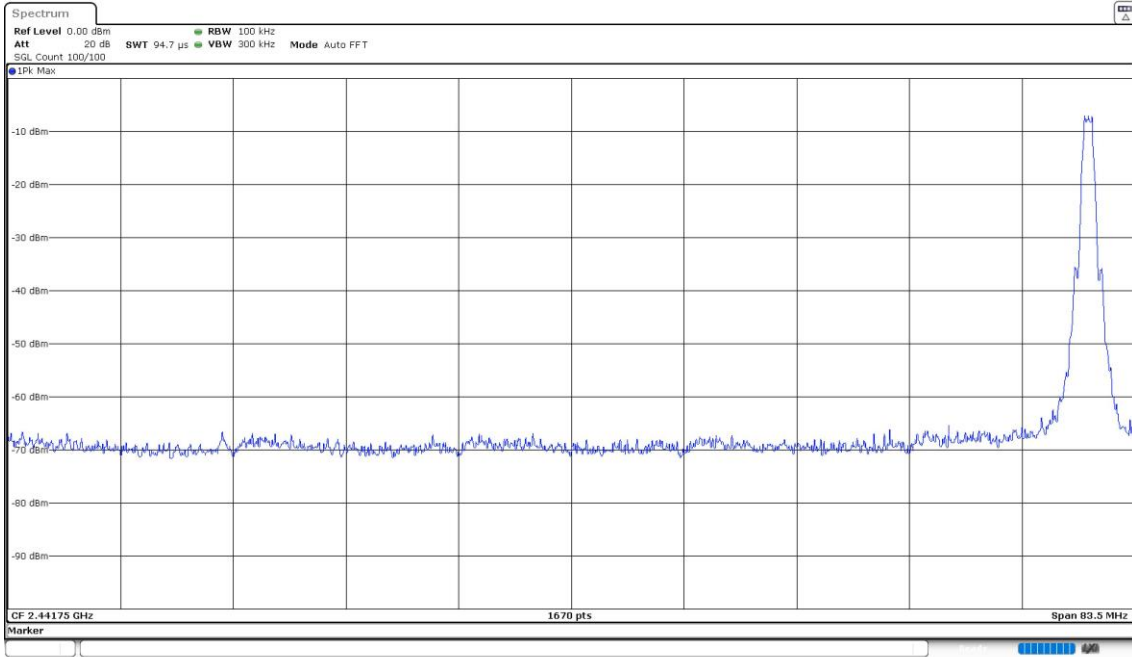




Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1

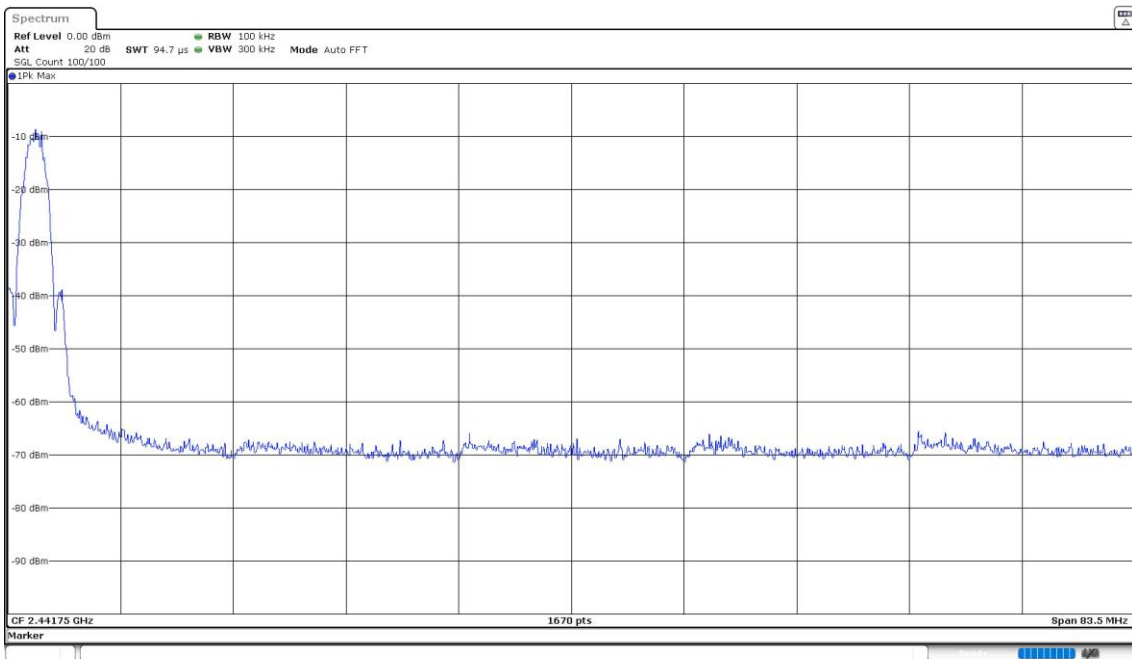
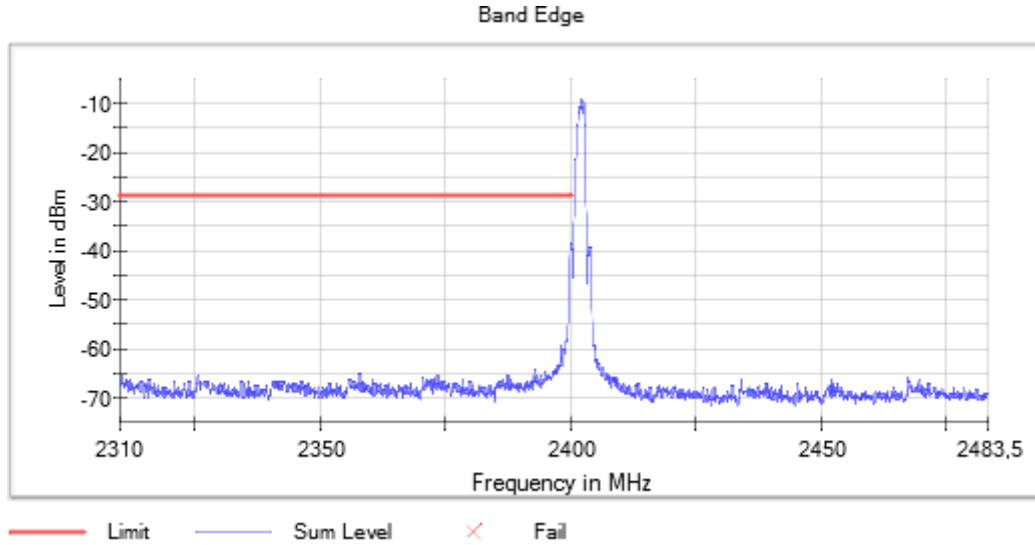
Images:

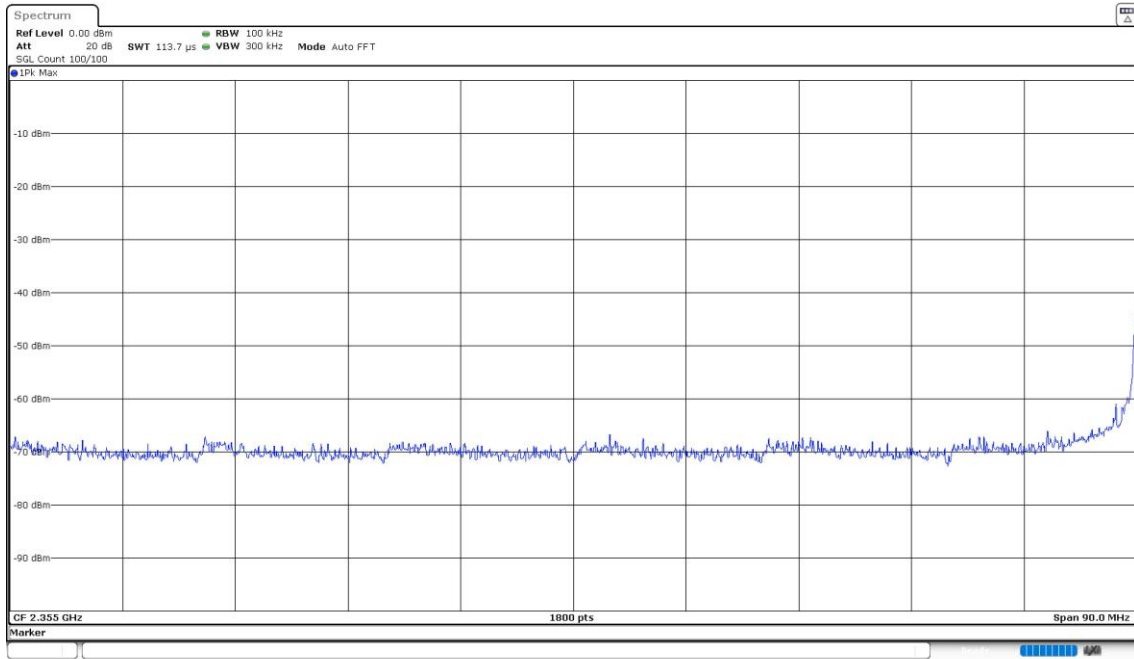




Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1

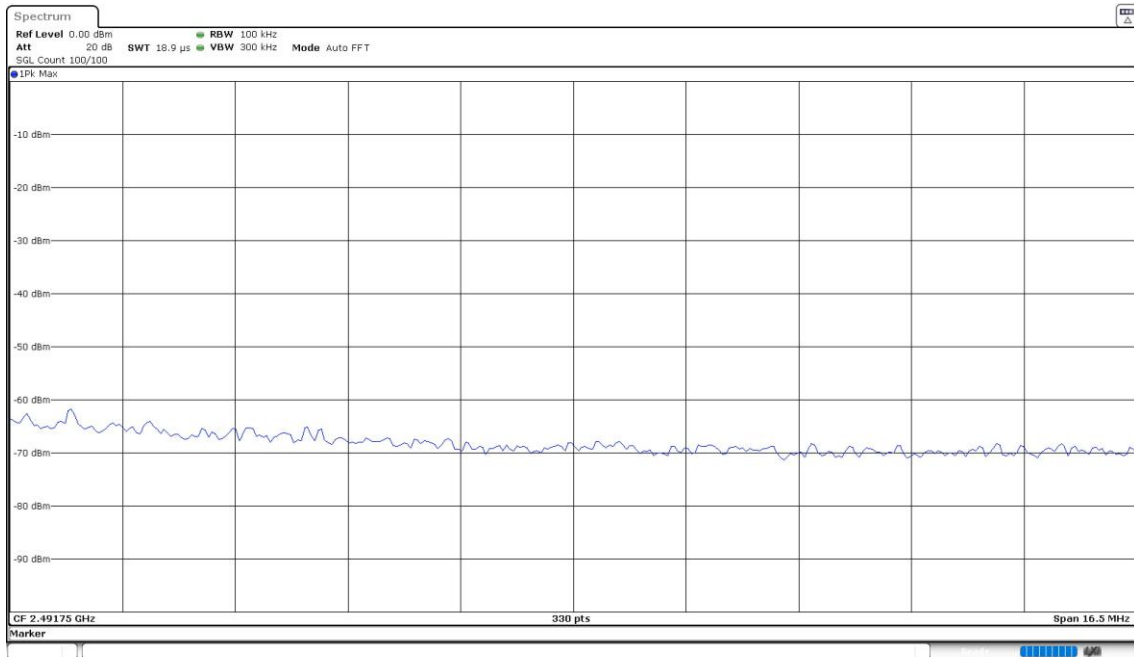
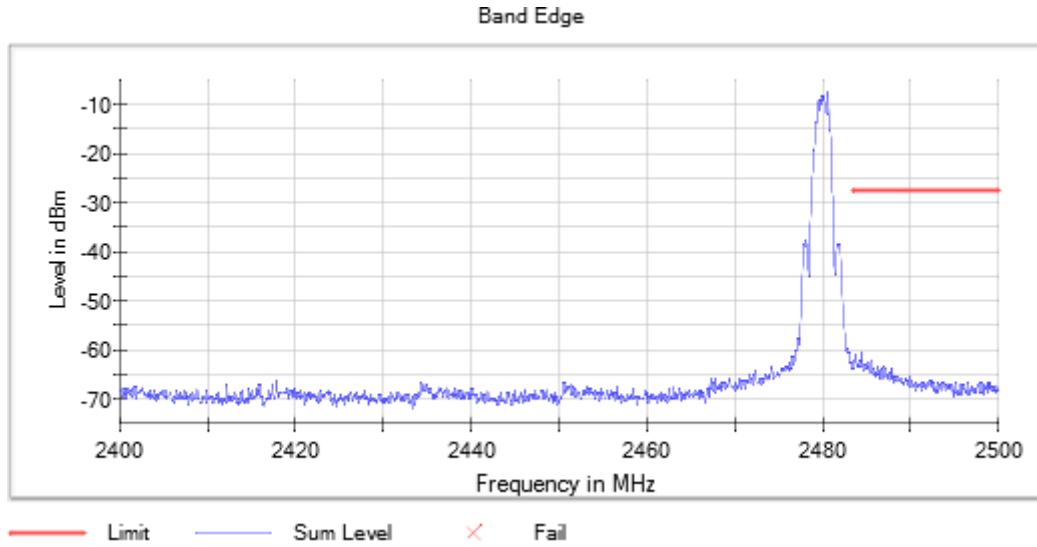
Images:

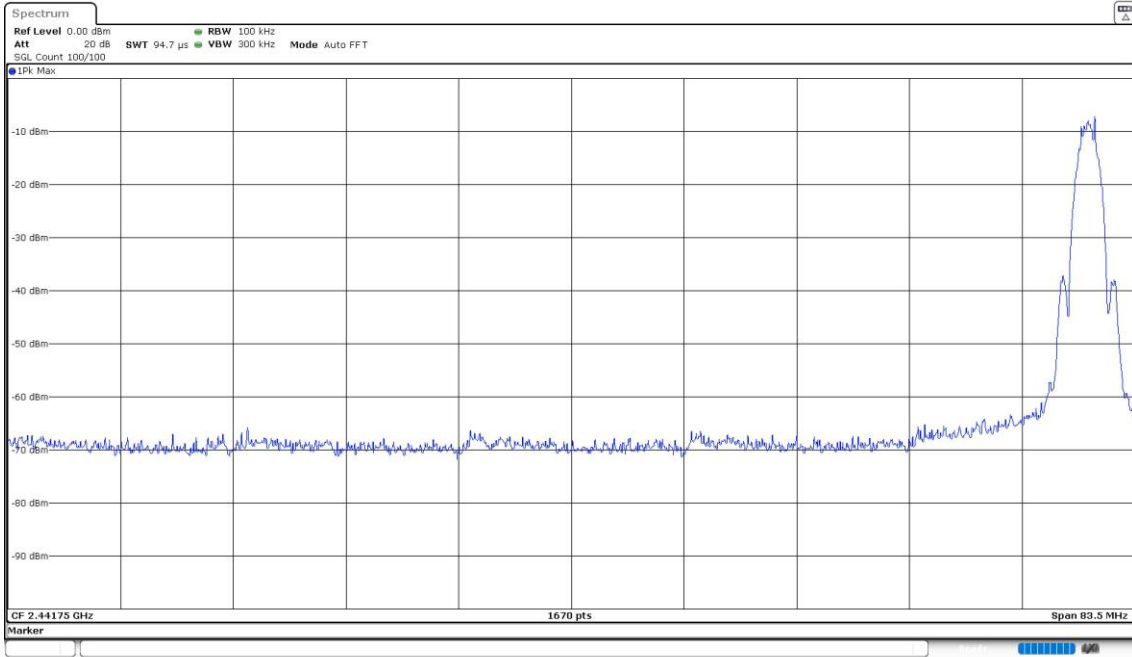




Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1, Measurement Point = 1

Images:





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

Limits

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.

The maximum power spectral density level of the fundamental emission was measured according to clause 11.10.2 "Method PKPSD (peak PSD)" of ANSI C63.10-2013.

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Results

Freq (MHz)	Equipment	PSD (dBm)
2402.00000	Digital Transmission System (DTS)	-15.76
2440.00000	Digital Transmission System (DTS)	-13.58
2480.00000	Digital Transmission System (DTS)	-14.56

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Results

Freq (MHz)	Equipment	PSD (dBm)
2402.00000	Digital Transmission System (DTS)	-17.53
2440.00000	Digital Transmission System (DTS)	-16.77
2480.00000	Digital Transmission System (DTS)	-17.34

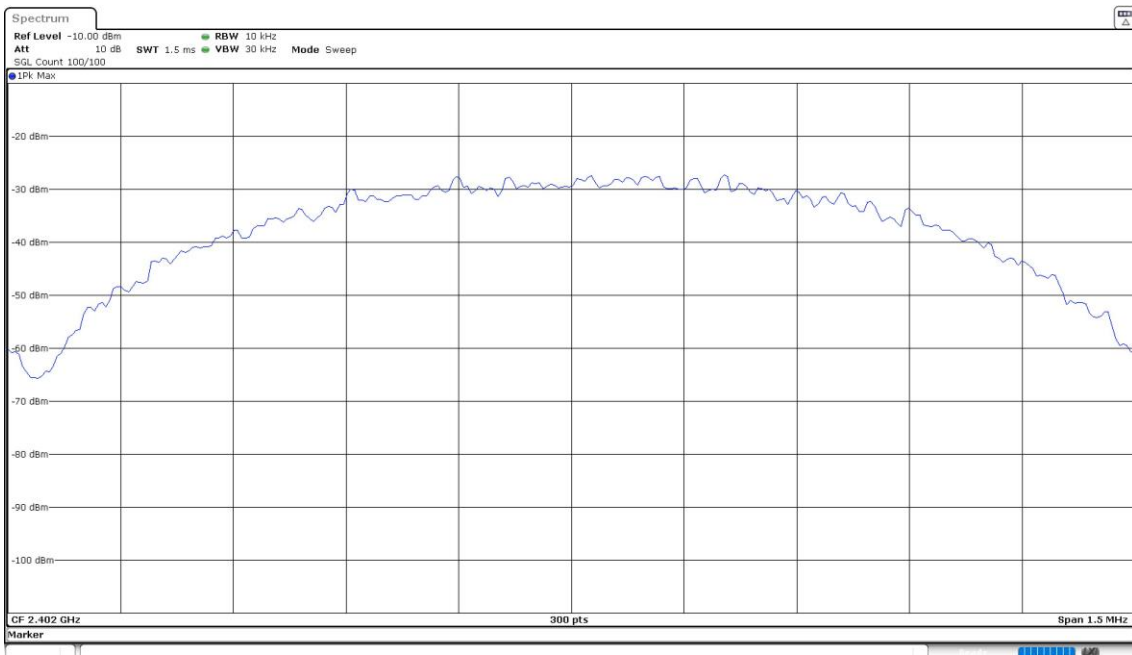
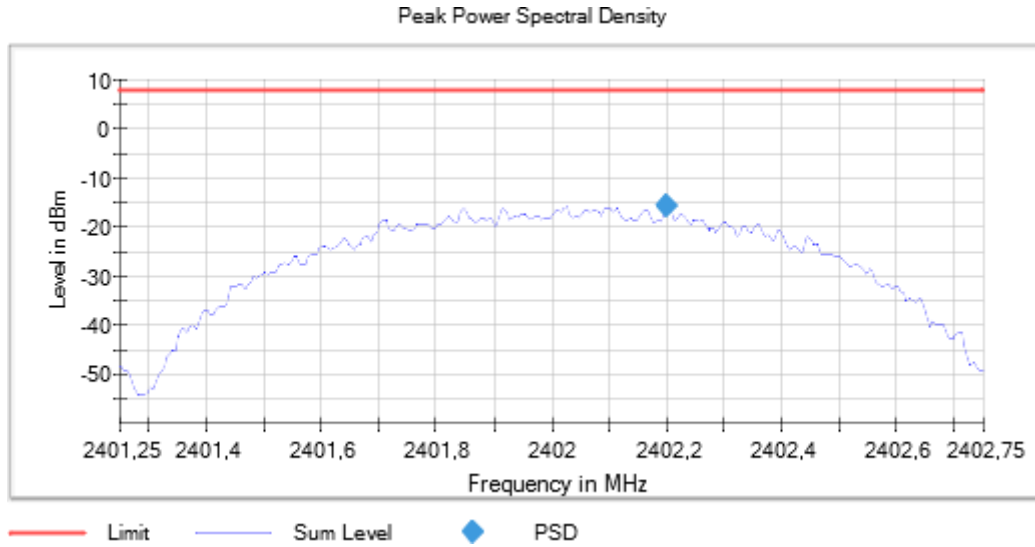
Verdict

Pass

Attachments

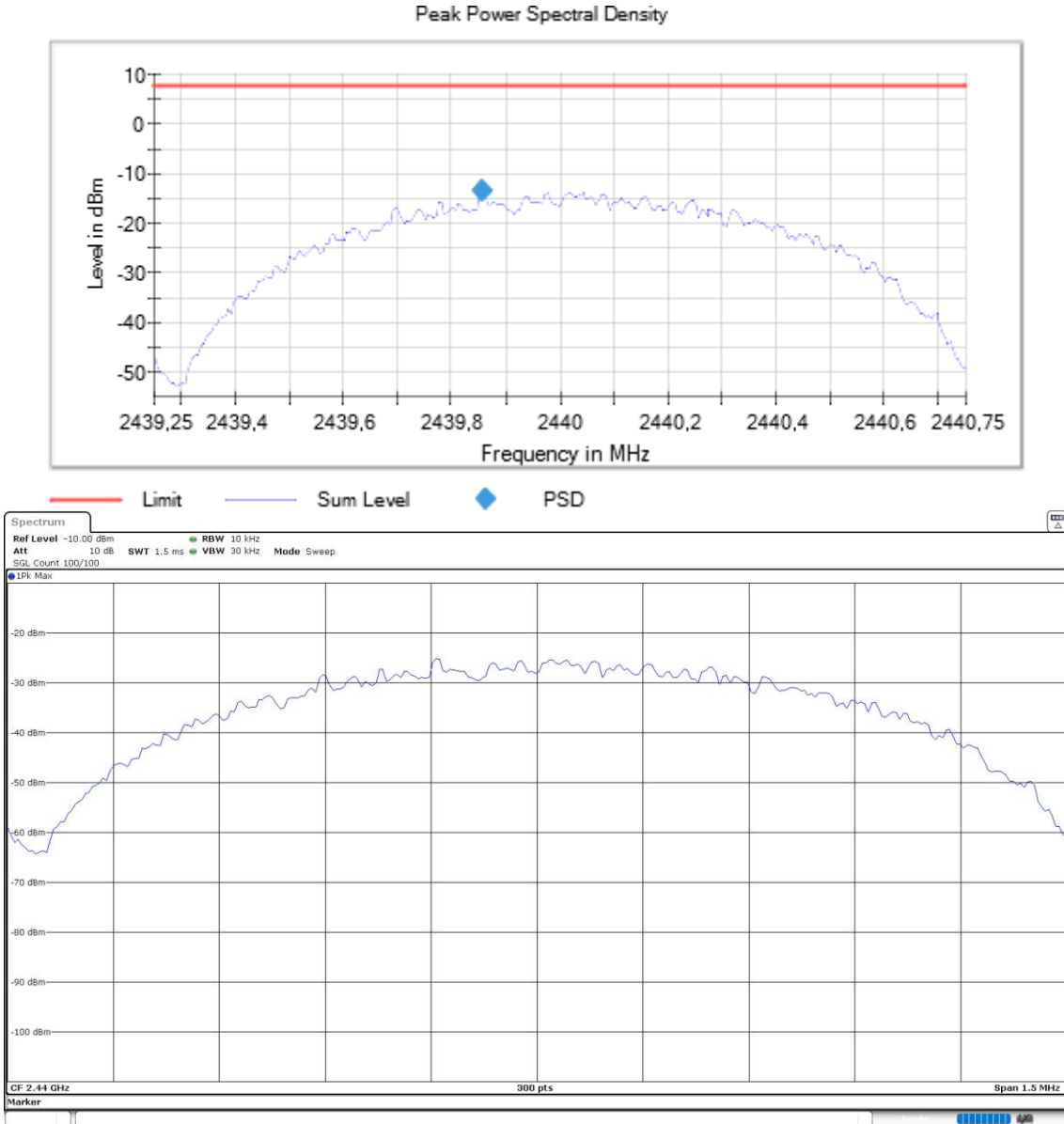
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



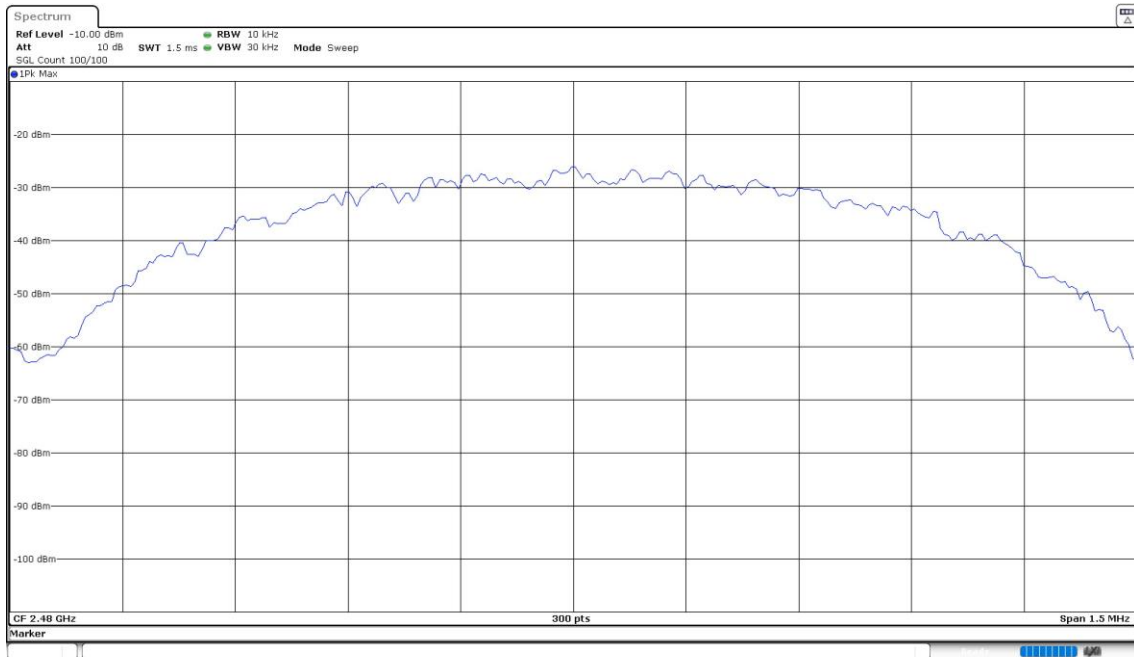
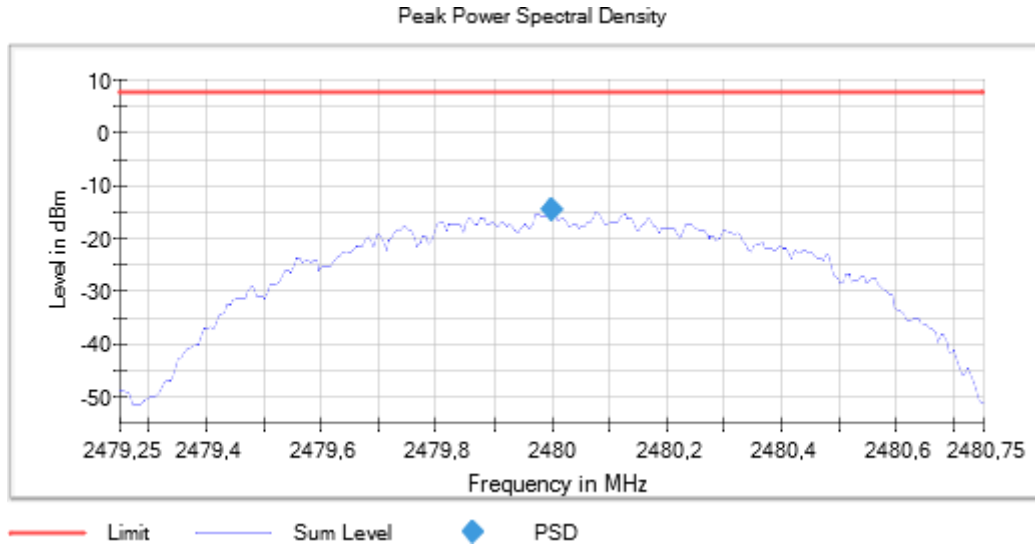
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



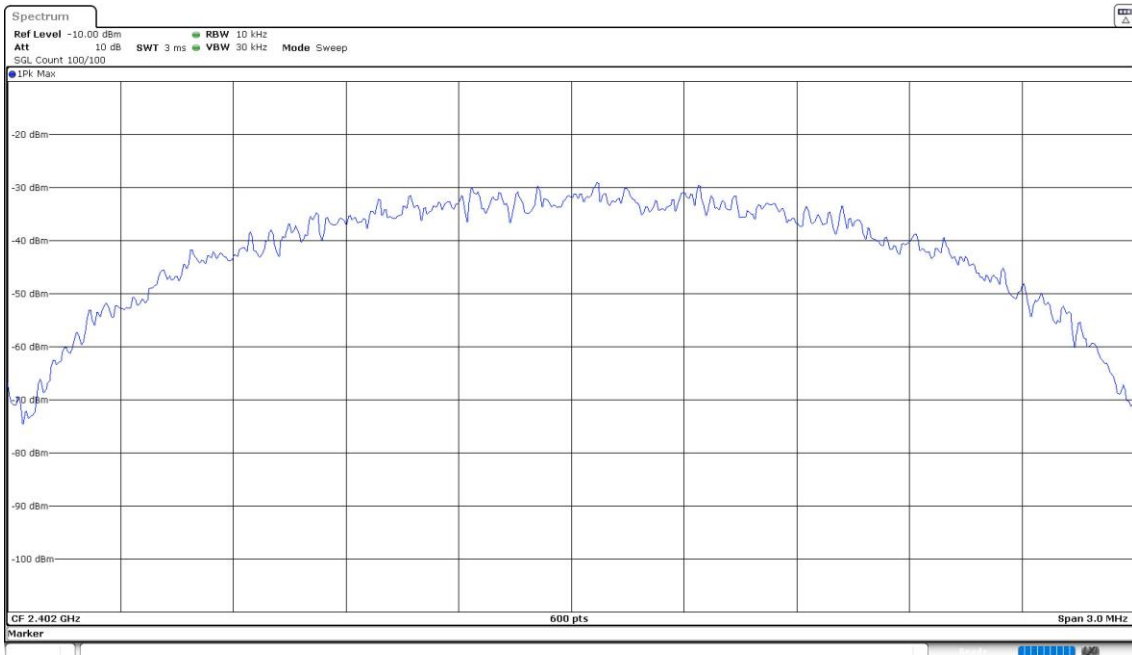
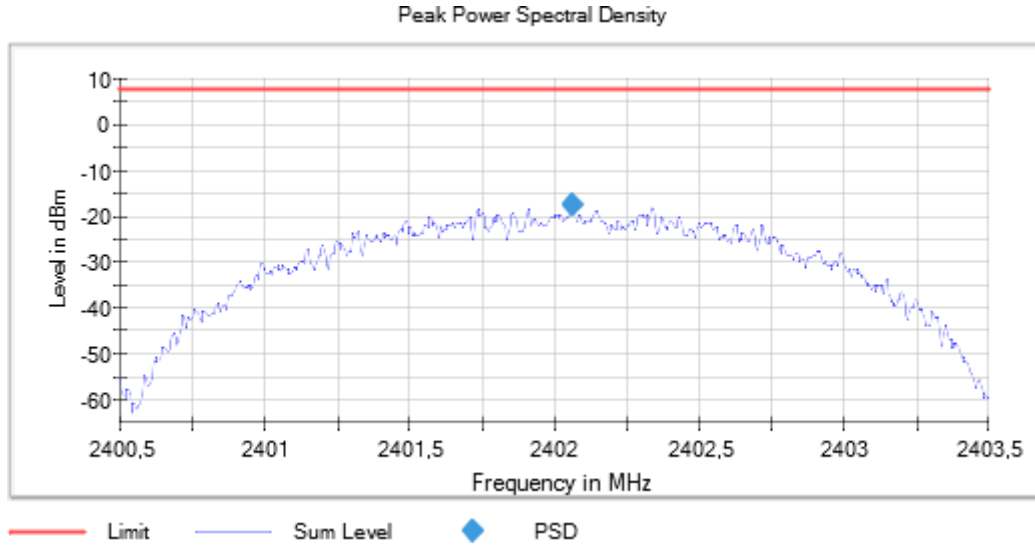
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Number of Transmission Chains = 1

Images:



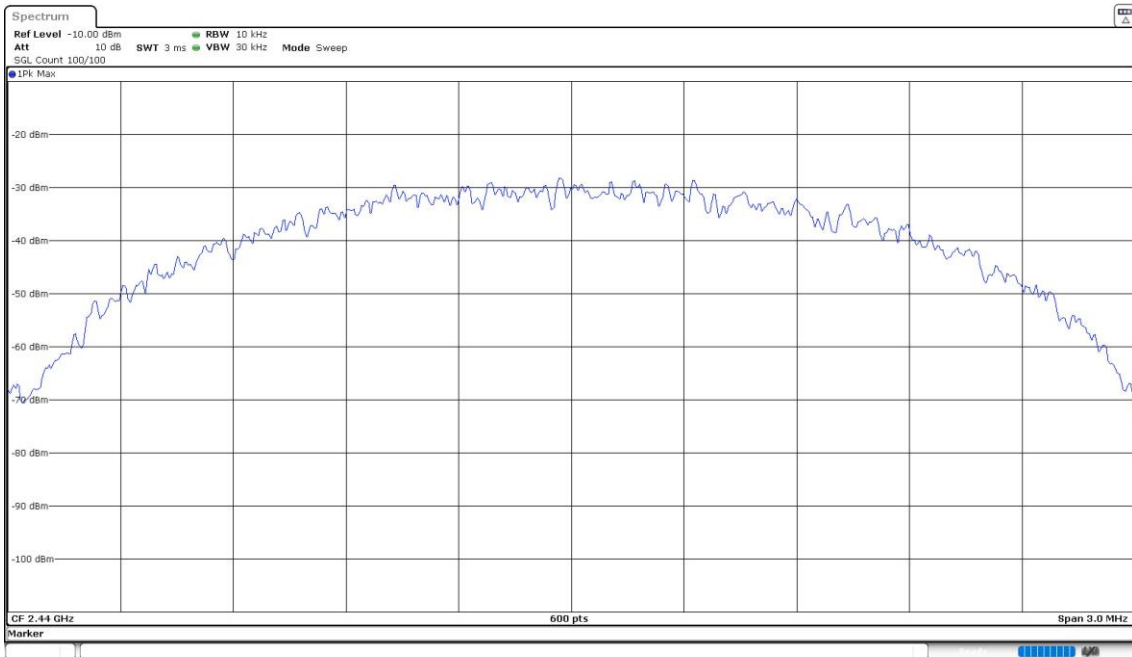
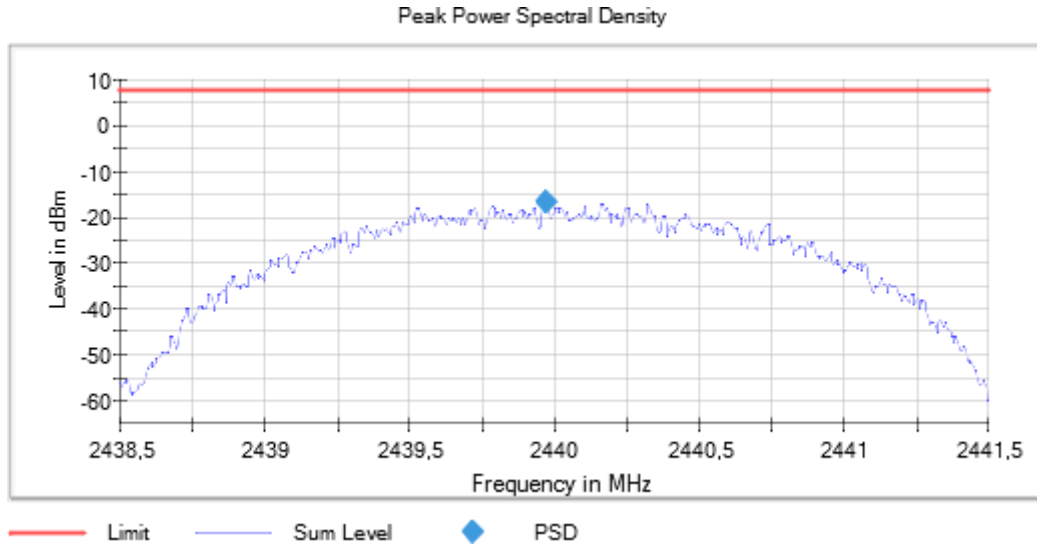
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



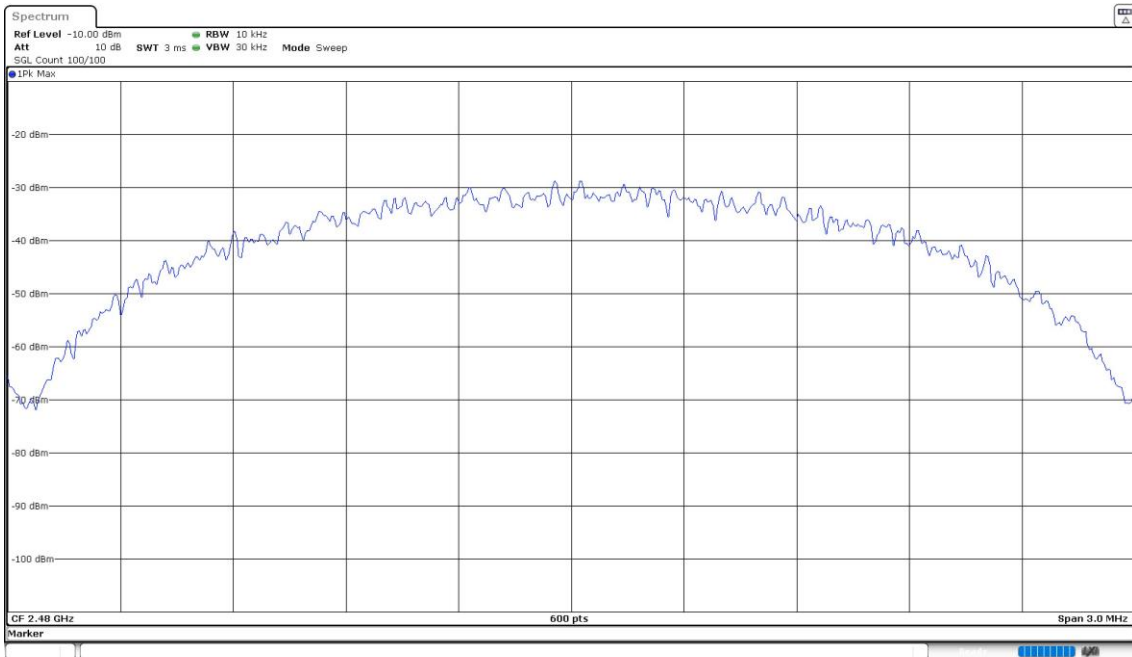
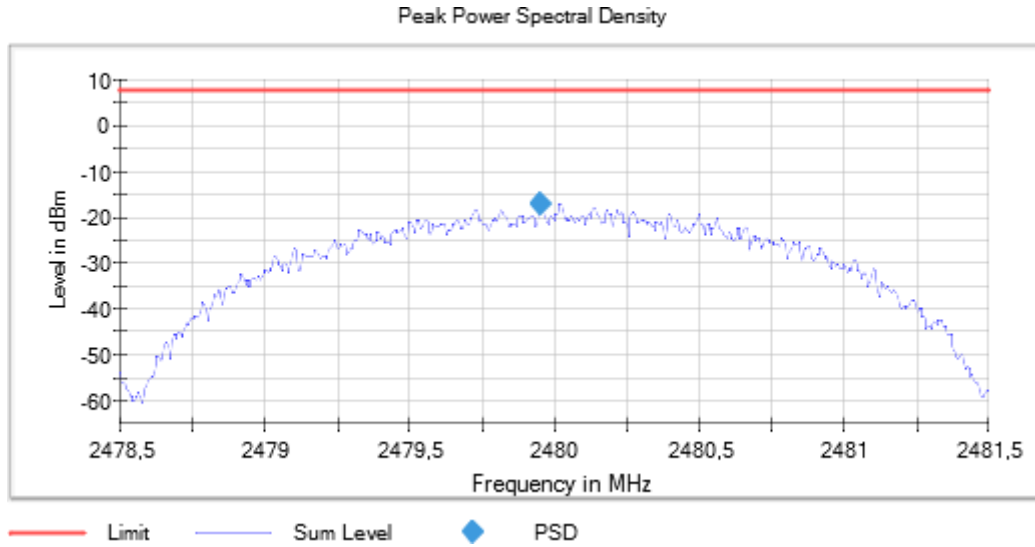
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Number of Transmission Chains = 1

Images:



RSS-247 5.5 / FCC 15.247 (d) Emission limitations radiated (Transmitter)

Limits

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 ($\mu\text{V/m}$)	Field strength ($\text{dB}\mu\text{V/m}$)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	-	300
0.490 – 1.705	24000/F(kHz)	-	30
1.705 – 30	30	-	30
30 – 88	100	40	3
88 – 216	150	43.5	3
216 – 960	200	46	3
Above 960	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 specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.

RSS-247:

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

Results

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

ID	Comments
--	No spurious frequencies detected at less than 20 dB below the limit.

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

ID	Comments
--	No spurious frequencies detected at less than 20 dB below the limit.

Verdict

Pass

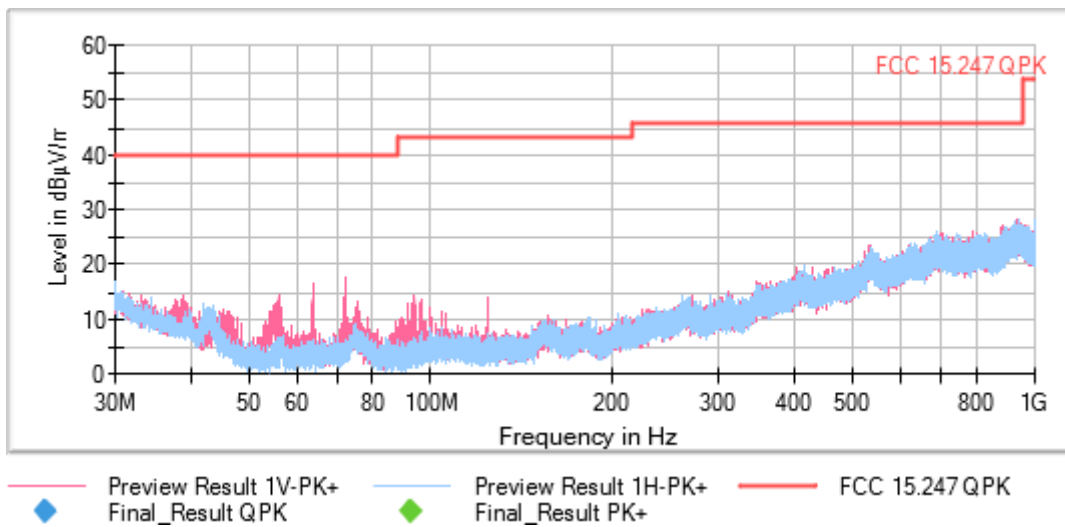
Attachments

The setting for each range of frequency is indicated in the following tables:

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB
Receiver: [FSW 50] 1 GHz - 3 GHz	200 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Receiver: [FSW 50] 3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Receiver: [FSW 50] 17 GHz - 26 GHz	90 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

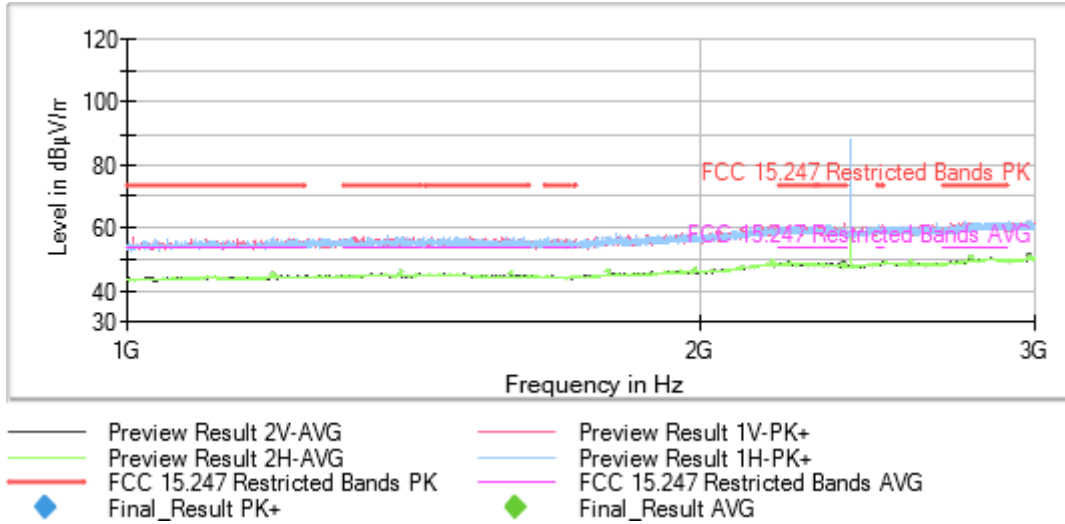
Frequency MHz = This plot is valid for all channel, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [0.03, 1], Number of Transmission Chains = 1, Measurement Point = 1

Images:

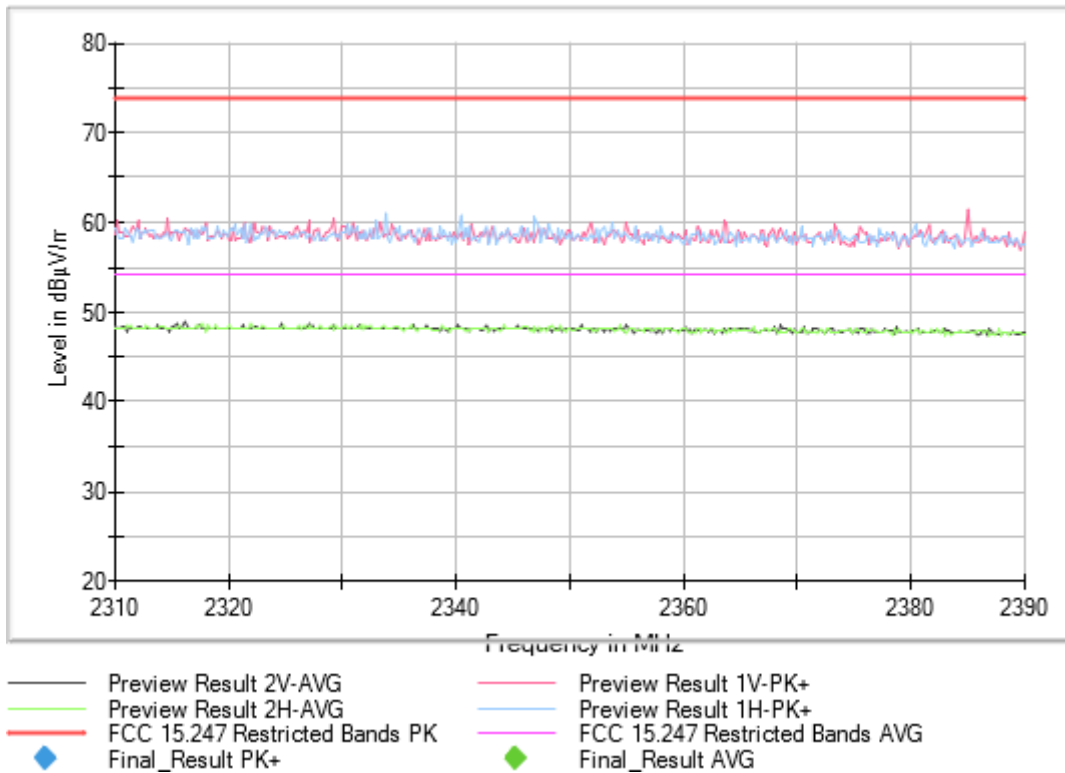


Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

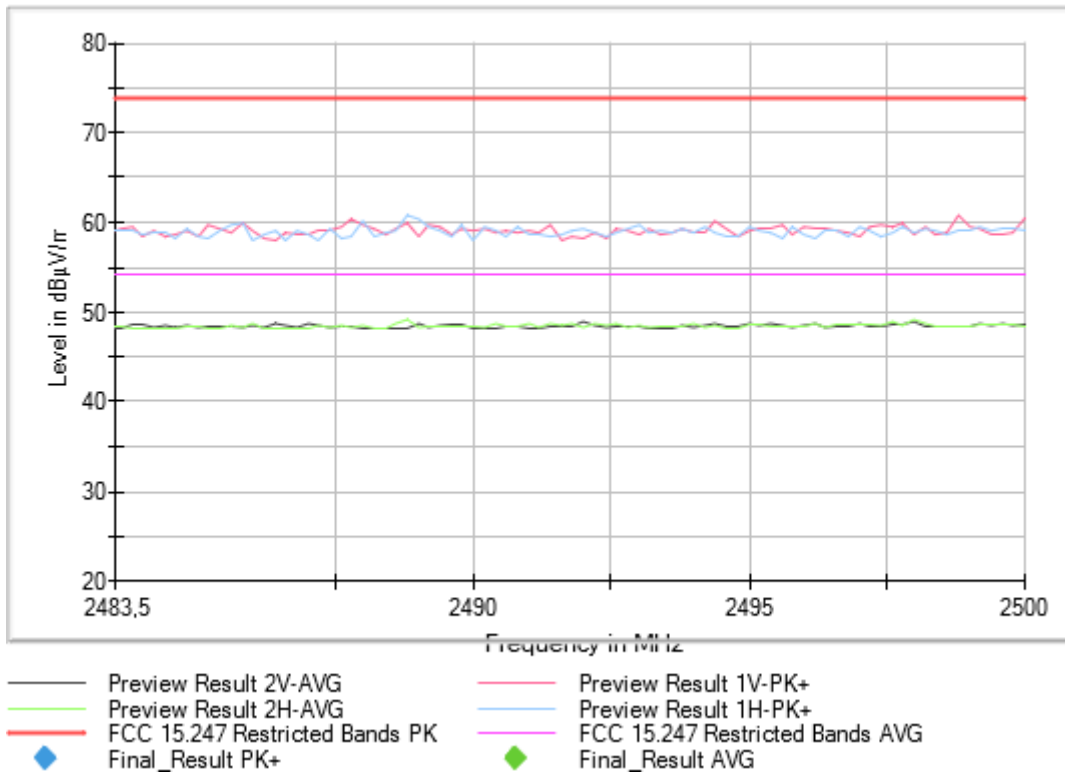
Images:



Full Spectrum

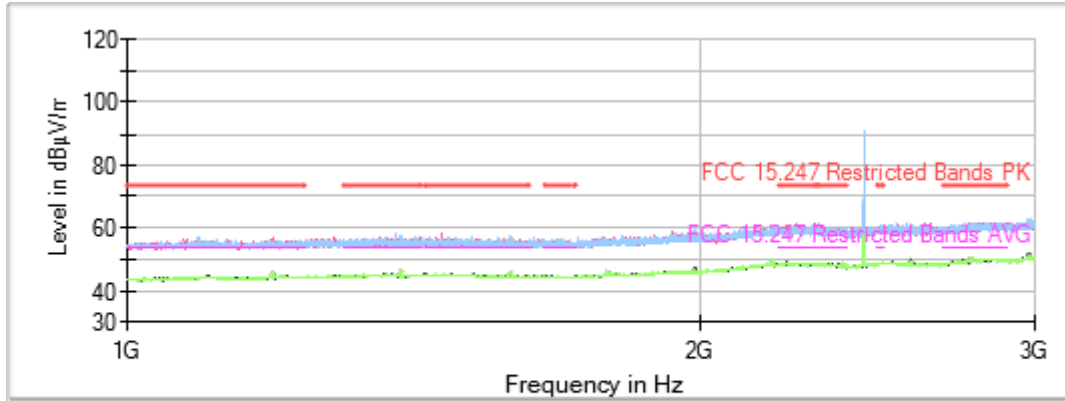


Full Spectrum



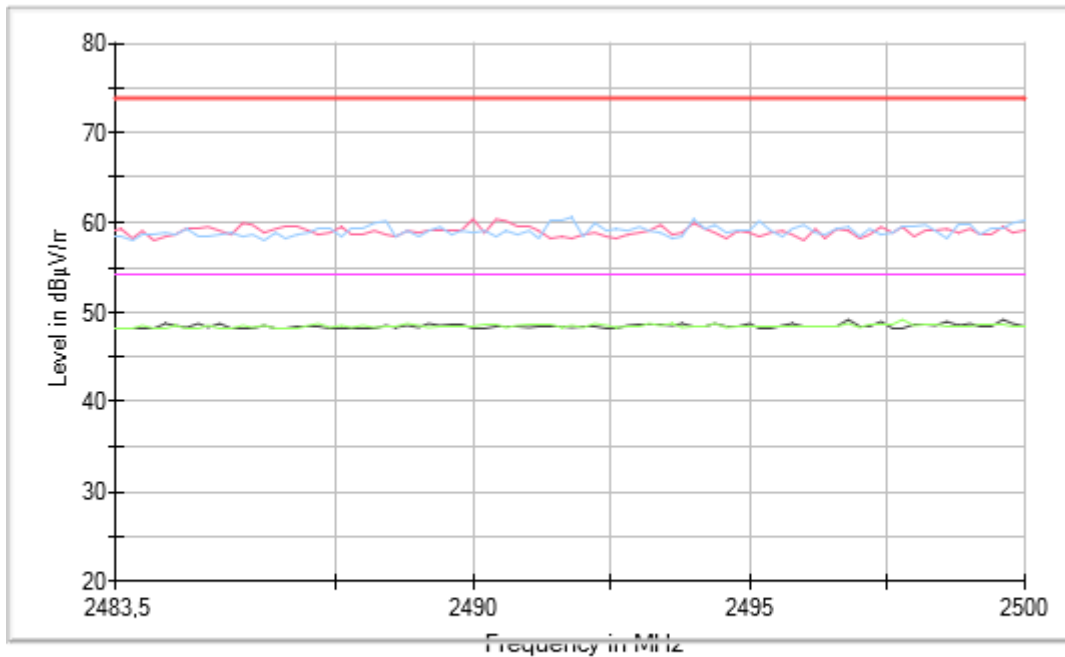
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

Images:



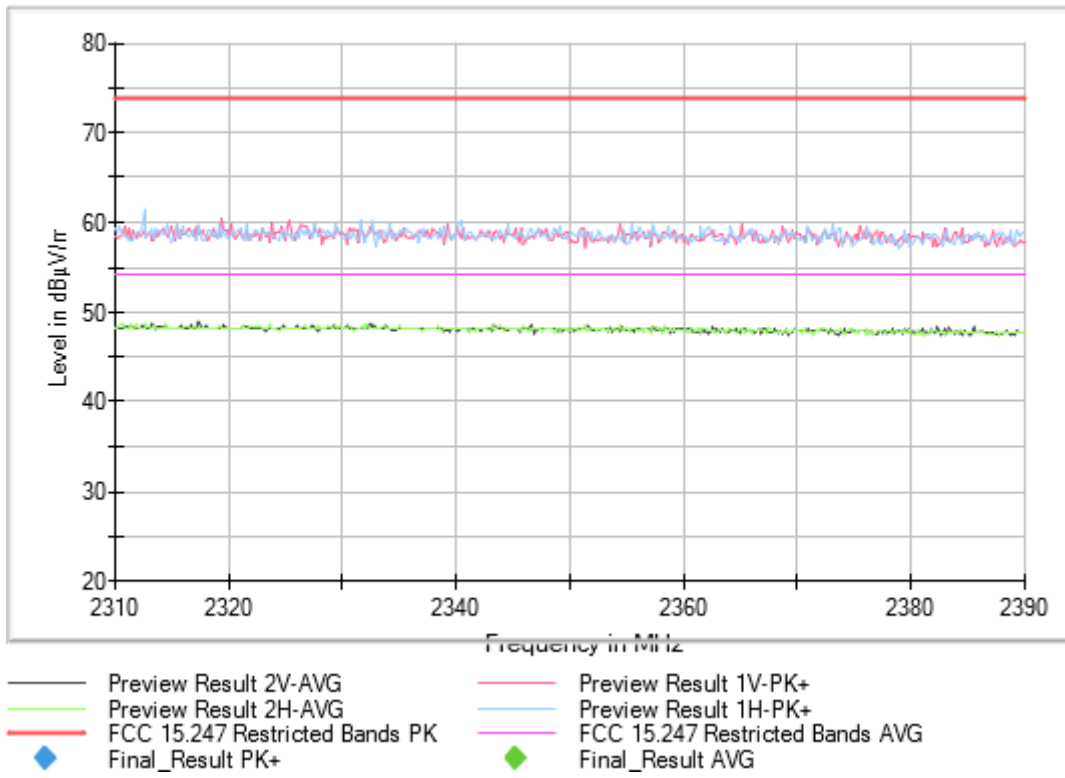
- Preview Result 2V-AVG
- Preview Result 2H-AVG
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands PK
- FCC 15.247 Restricted Bands AVG
- ◆ Final_Result PK+
- ◆ Final_Result AVG

Full Spectrum



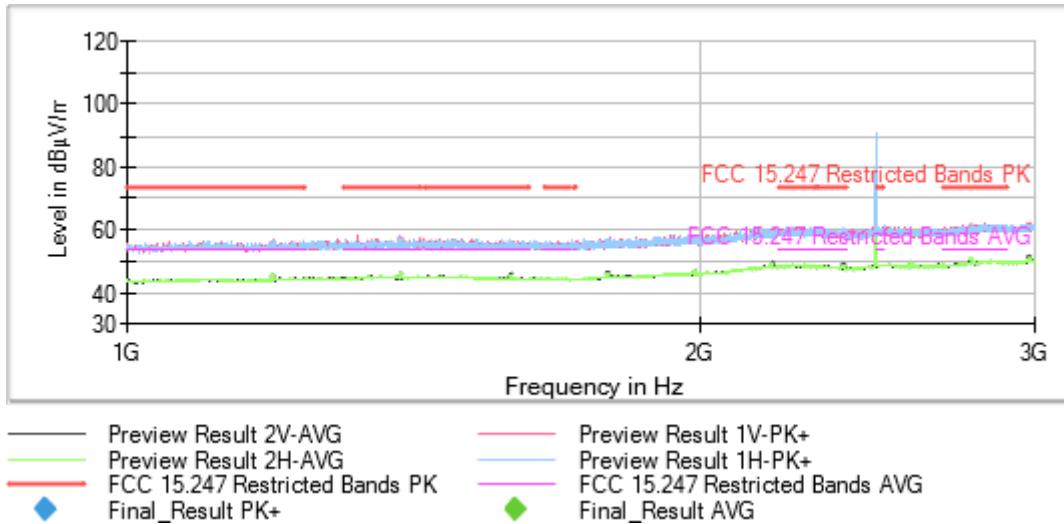
- Preview Result 2V-AVG
- Preview Result 2H-AVG
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands PK
- FCC 15.247 Restricted Bands AVG
- ◆ Final_Result PK+
- ◆ Final_Result AVG

Full Spectrum

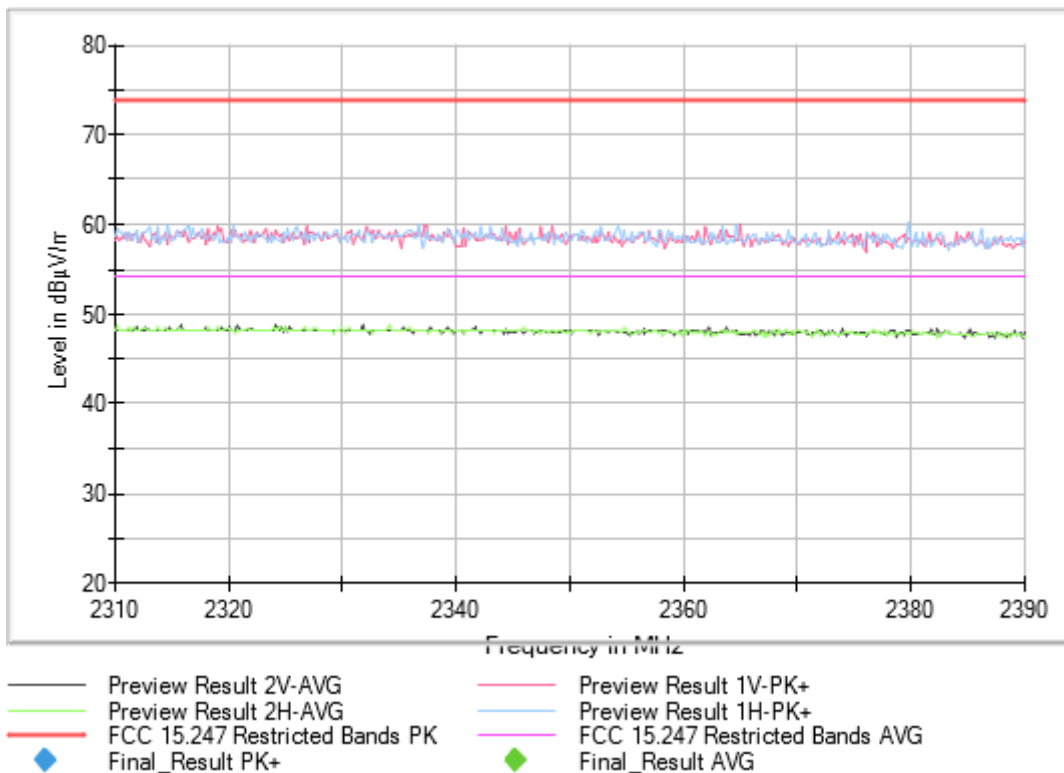


Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

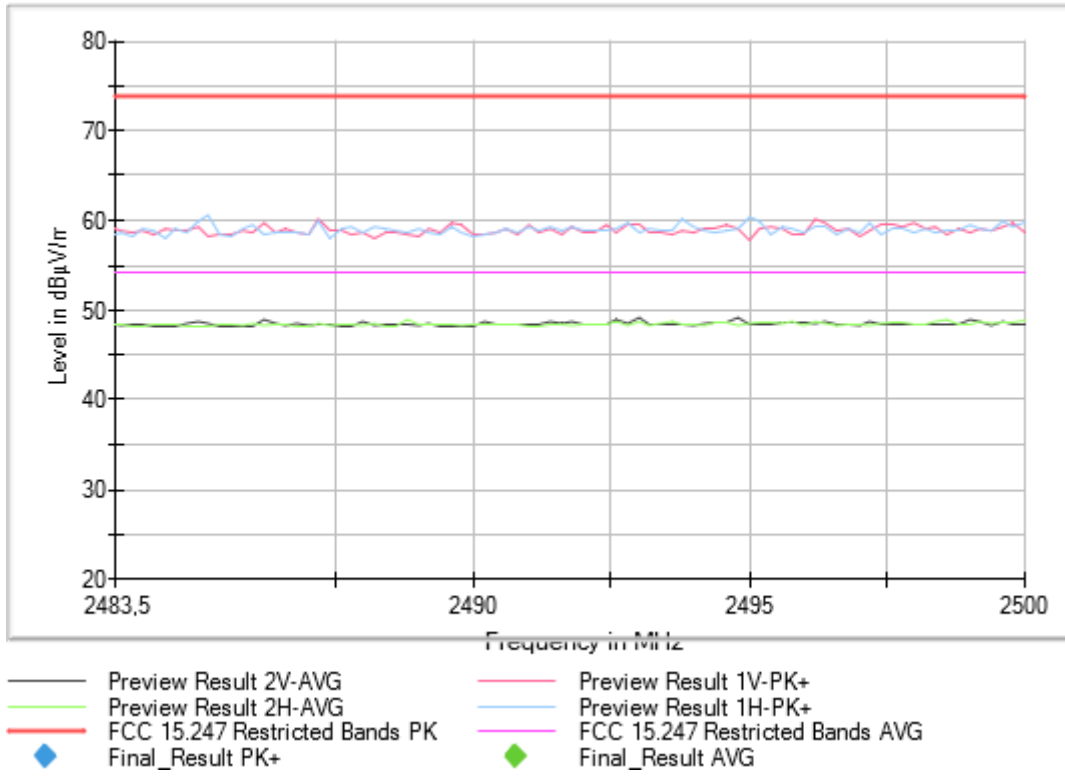
Images:



Full Spectrum

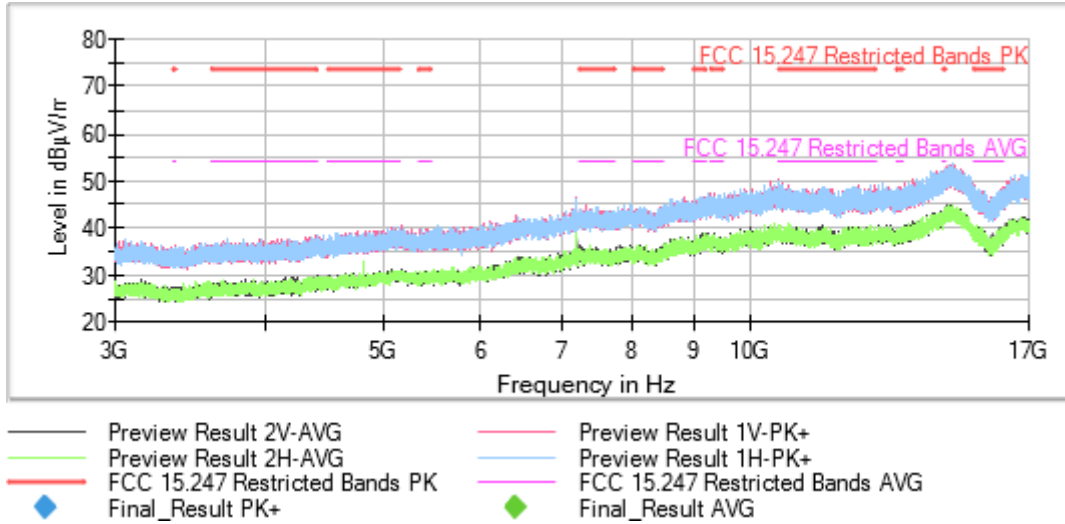


Full Spectrum



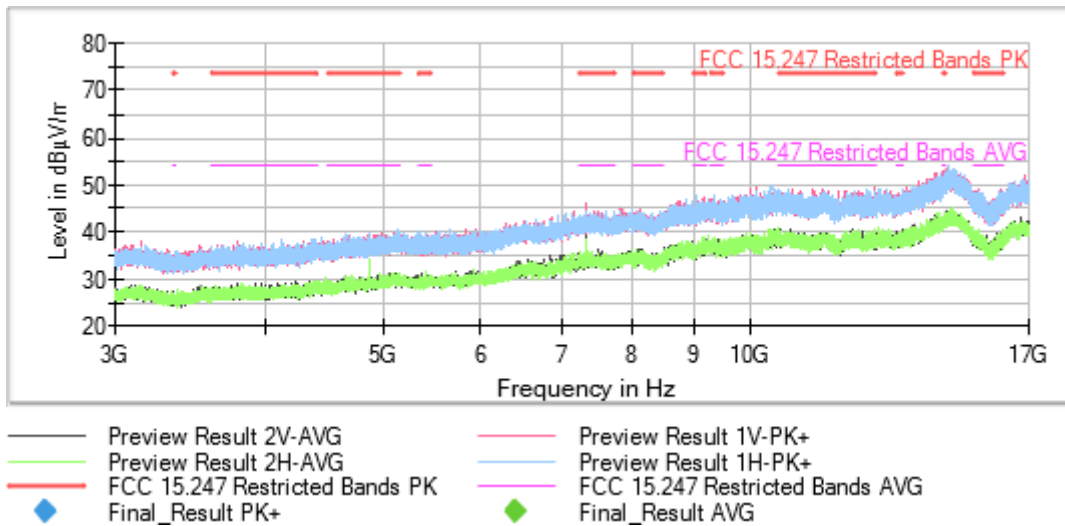
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



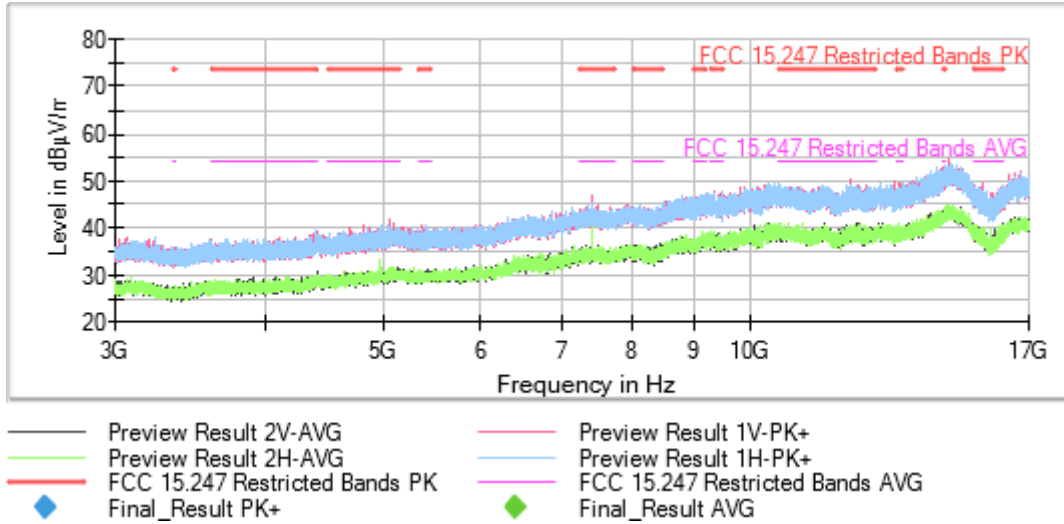
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



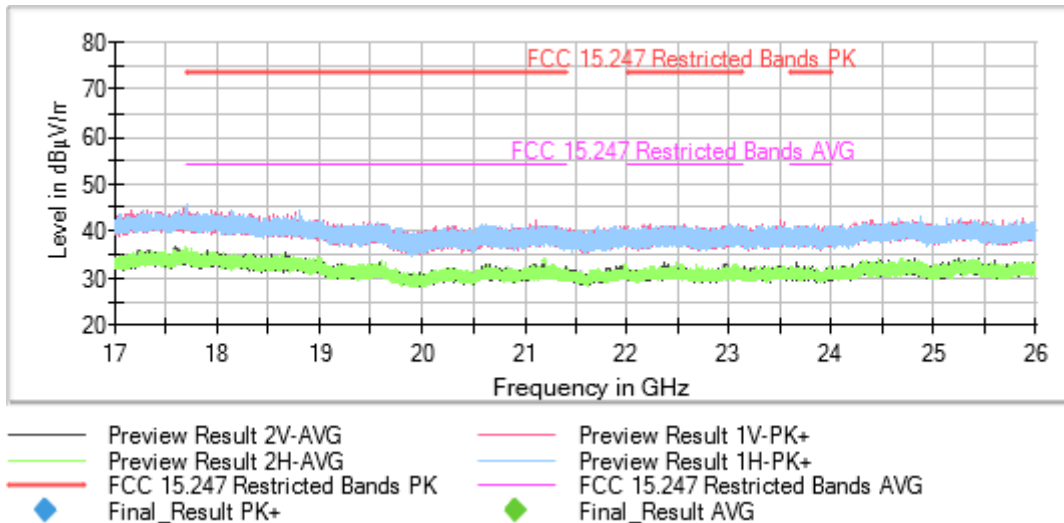
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



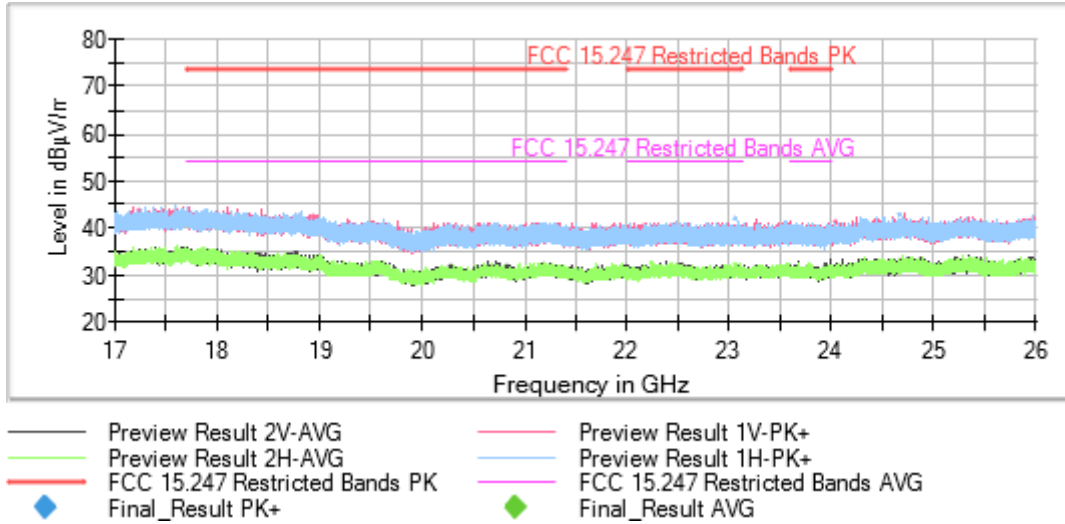
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [17, 26], Number of Transmission Chains = 1, Measurement Point = 1

Images:



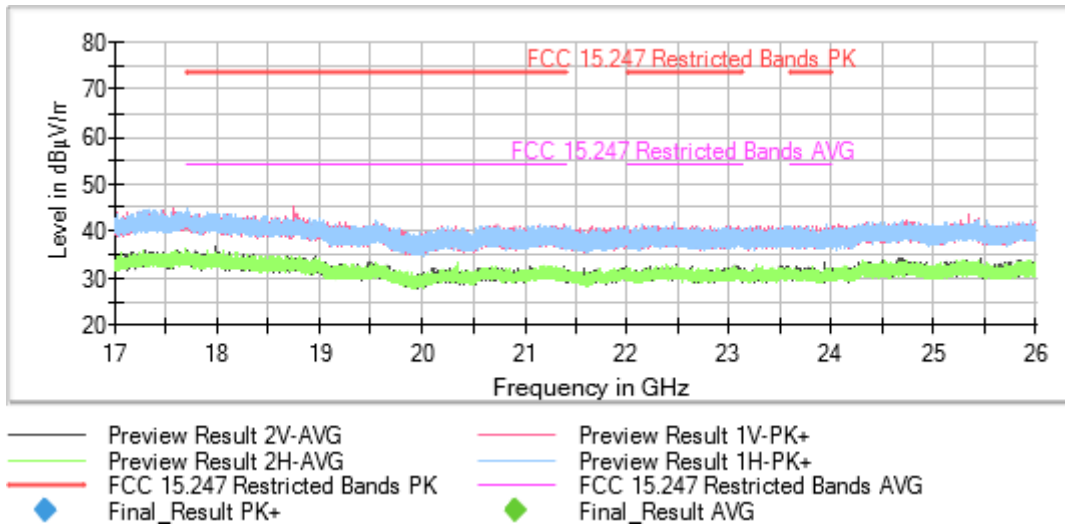
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [17, 26], Number of Transmission Chains = 1, Measurement Point = 1

Images:



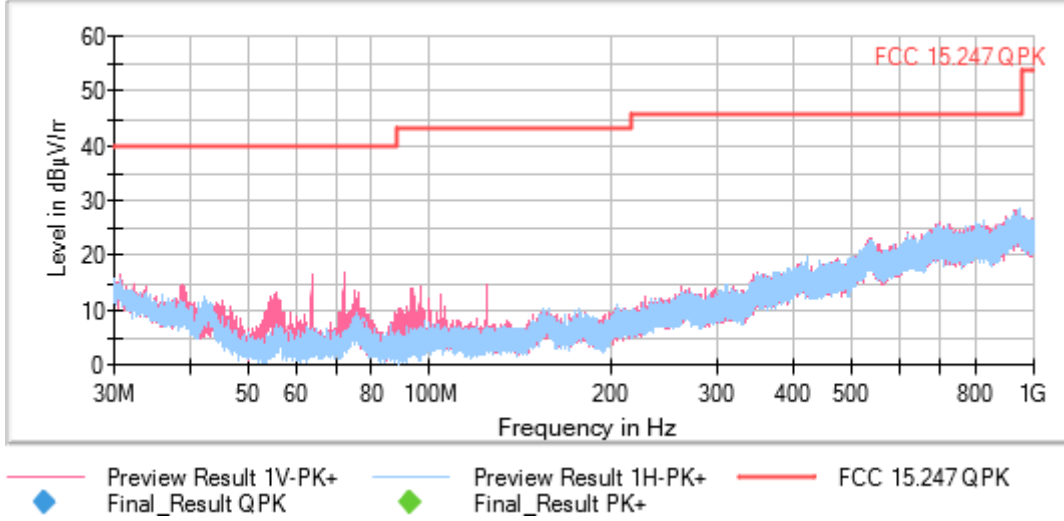
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 1 Mbit/s), Frequency Range GHz = [17, 26], Number of Transmission Chains = 1, Measurement Point = 1

Images:



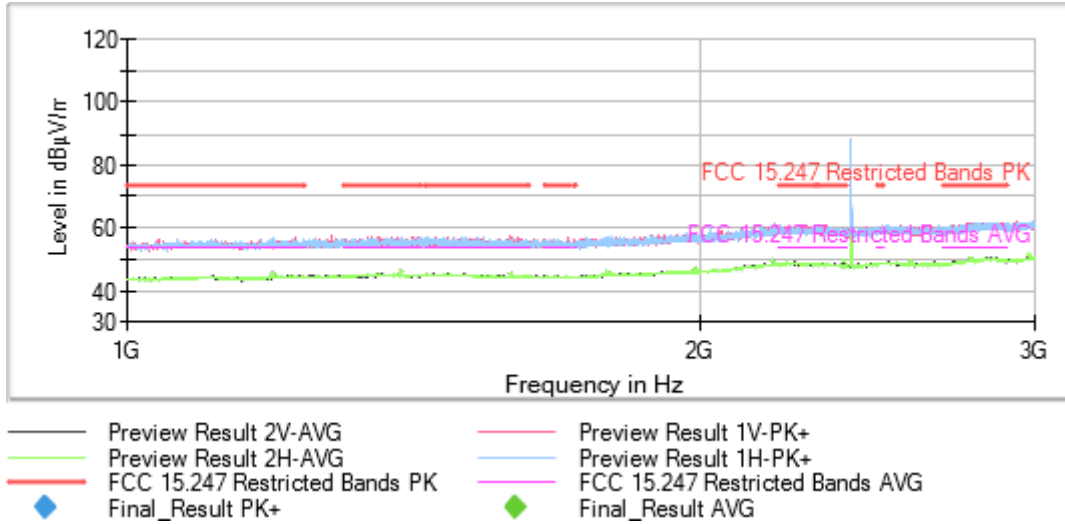
Frequency MHz = This plot is valid for all channel, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [0.03, 1], Number of Transmission Chains = 1, Measurement Point = 1

Images:

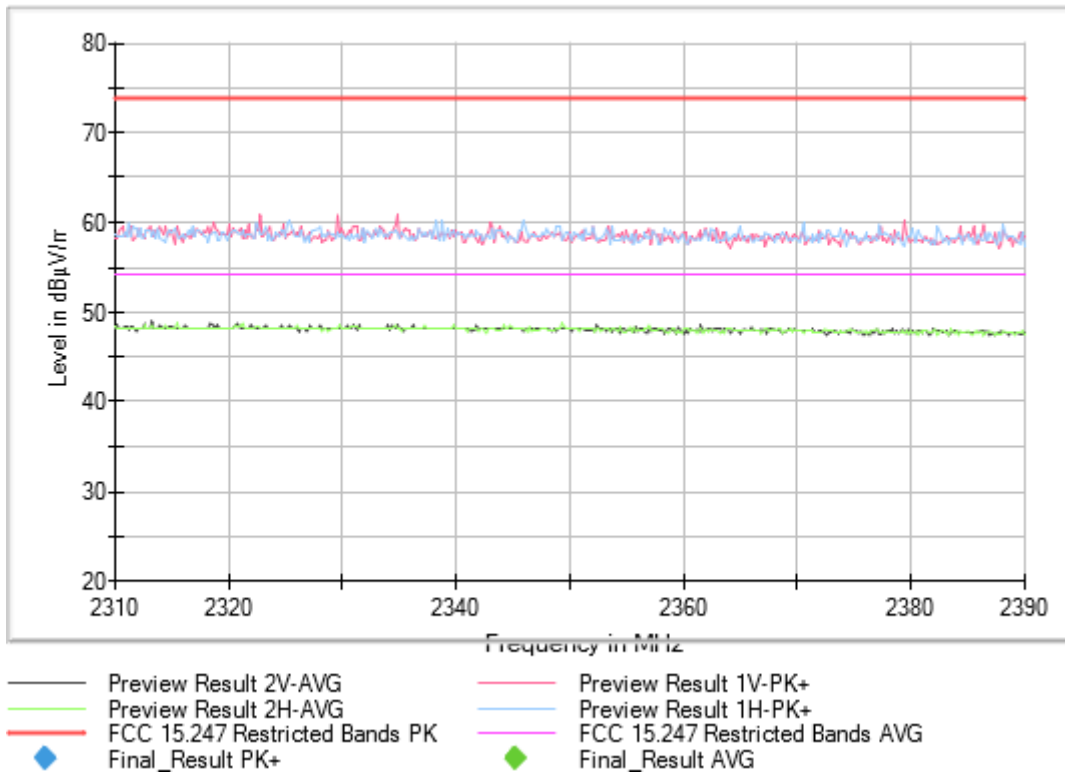


Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

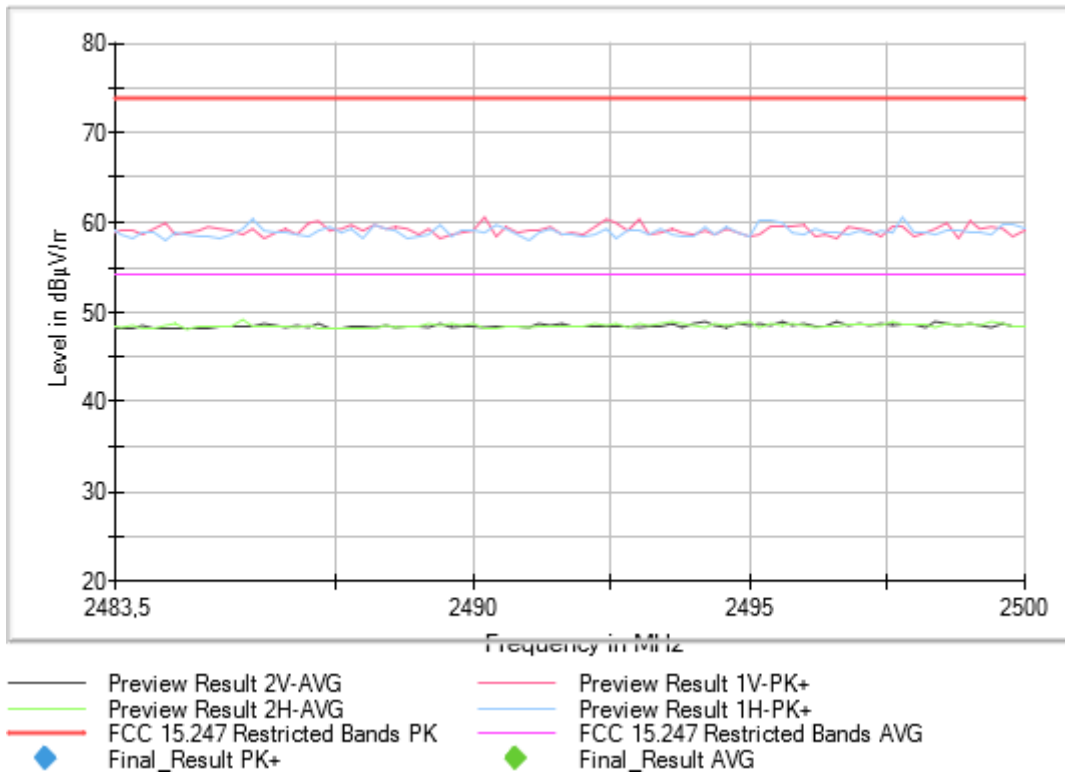
Images:



Full Spectrum

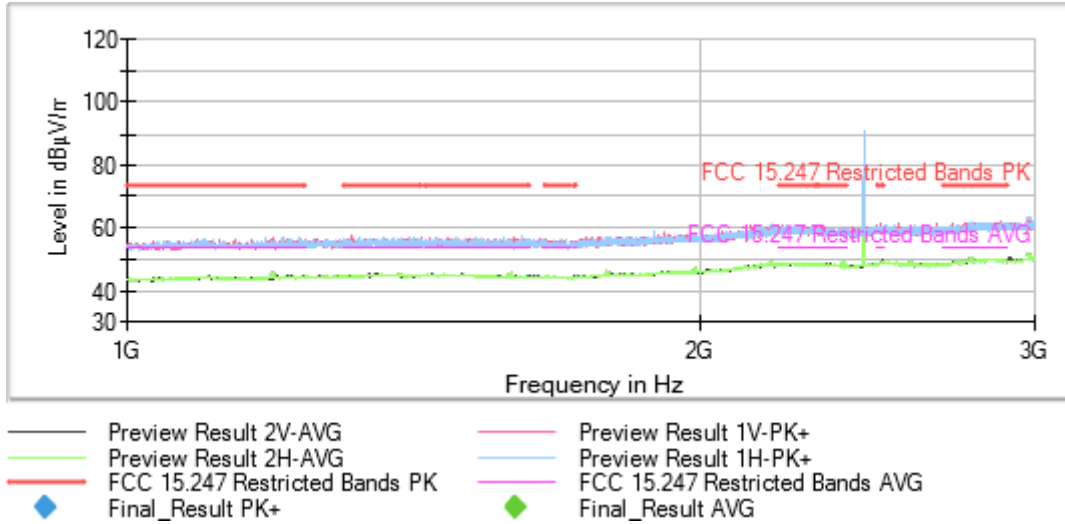


Full Spectrum

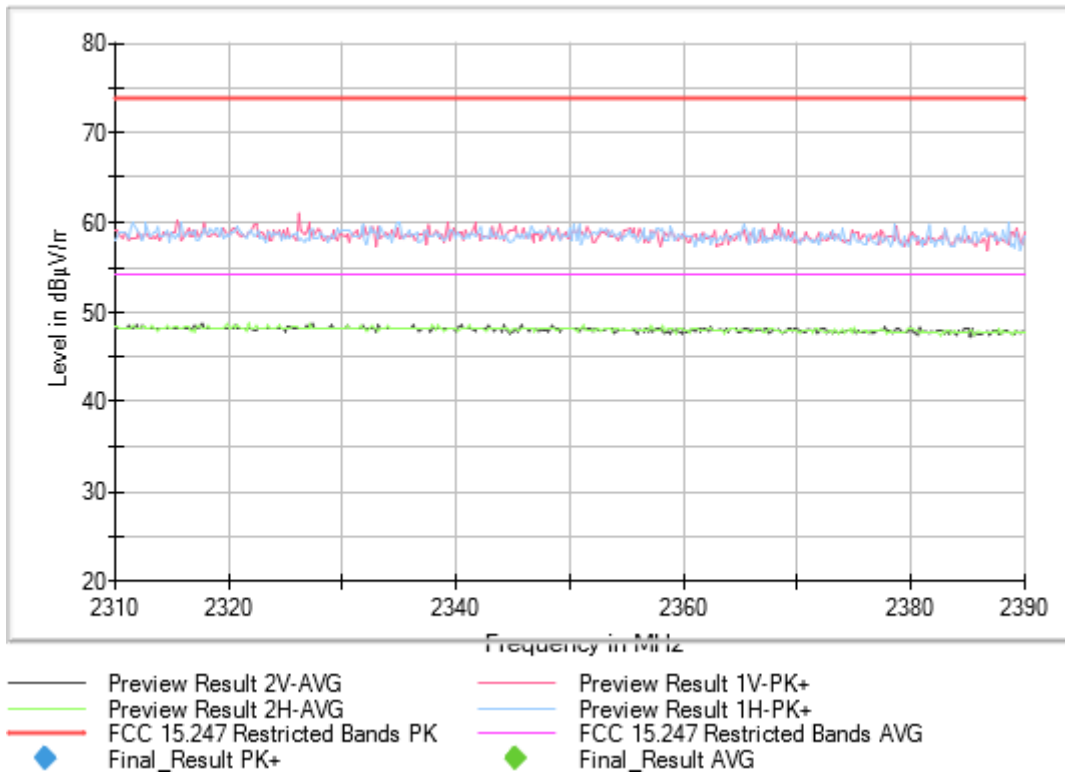


Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

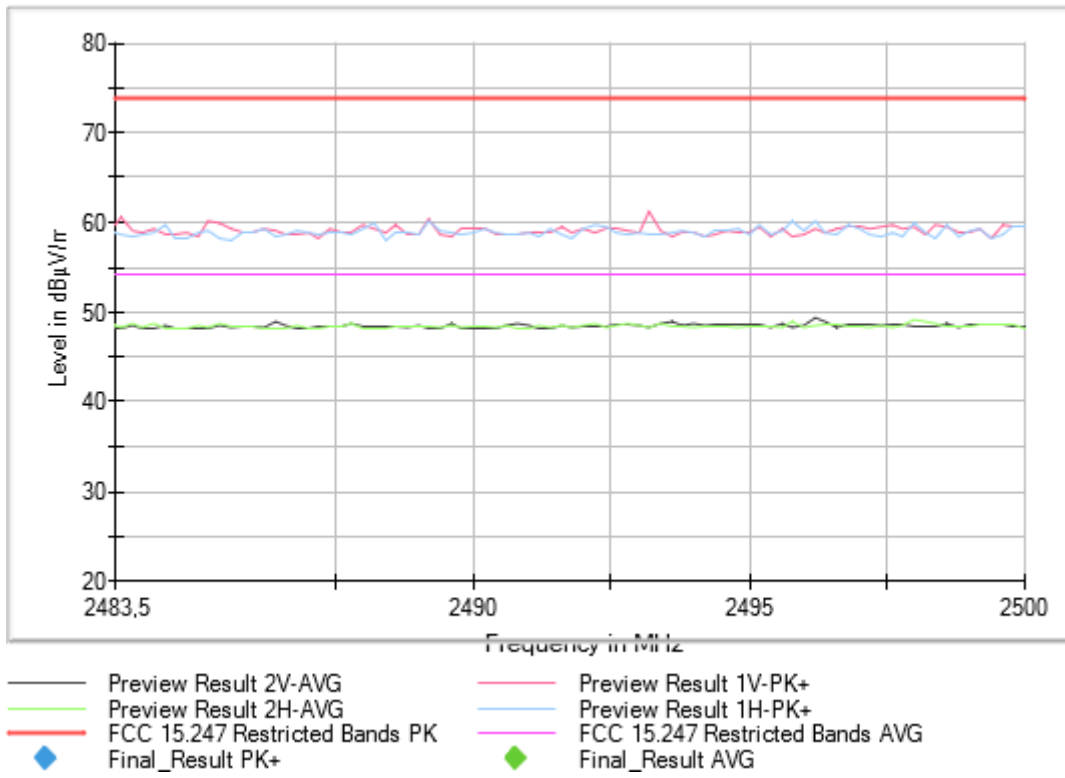
Images:



Full Spectrum

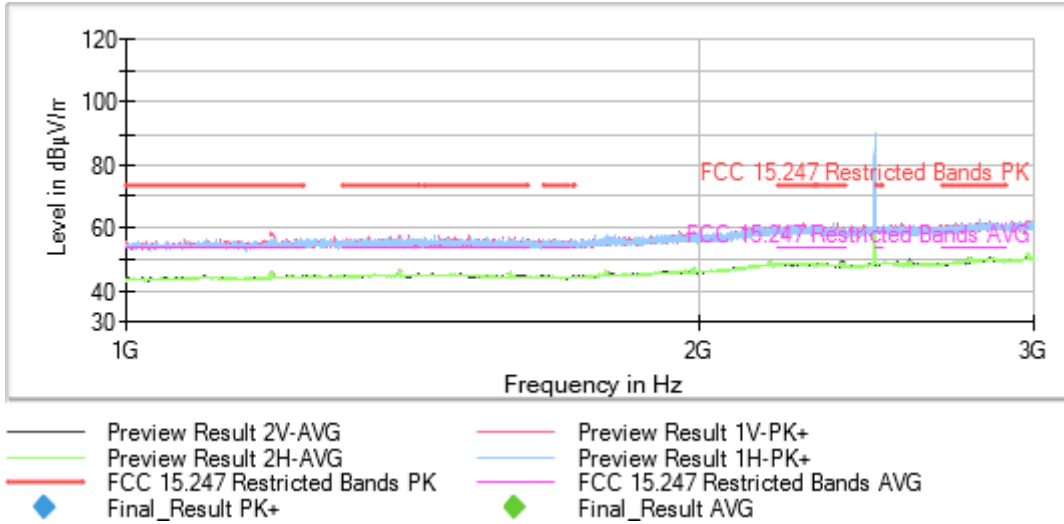


Full Spectrum

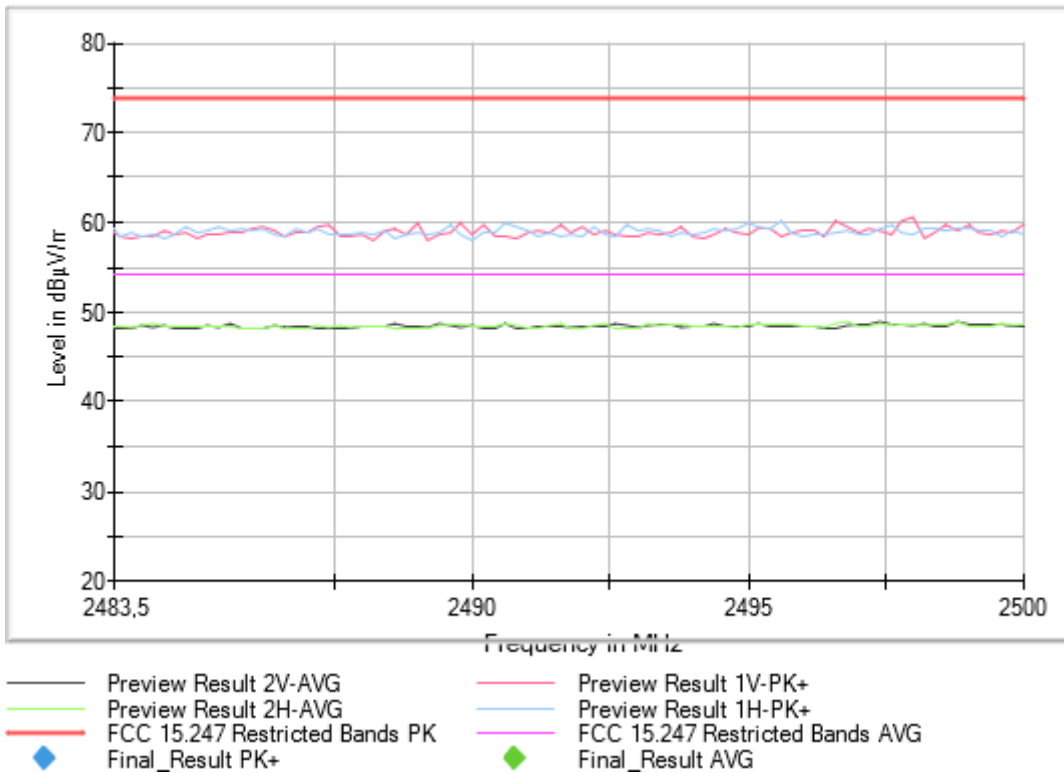


Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [1, 3], Number of Transmission Chains = 1, Measurement Point = 1

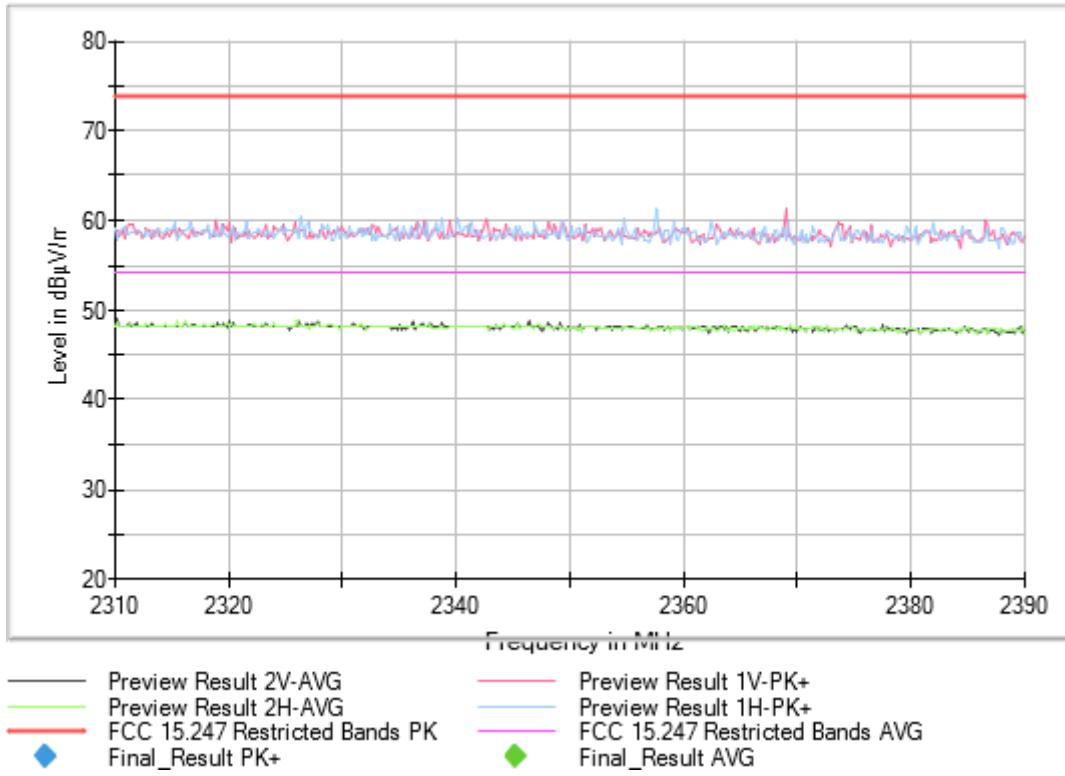
Images:



Full Spectrum

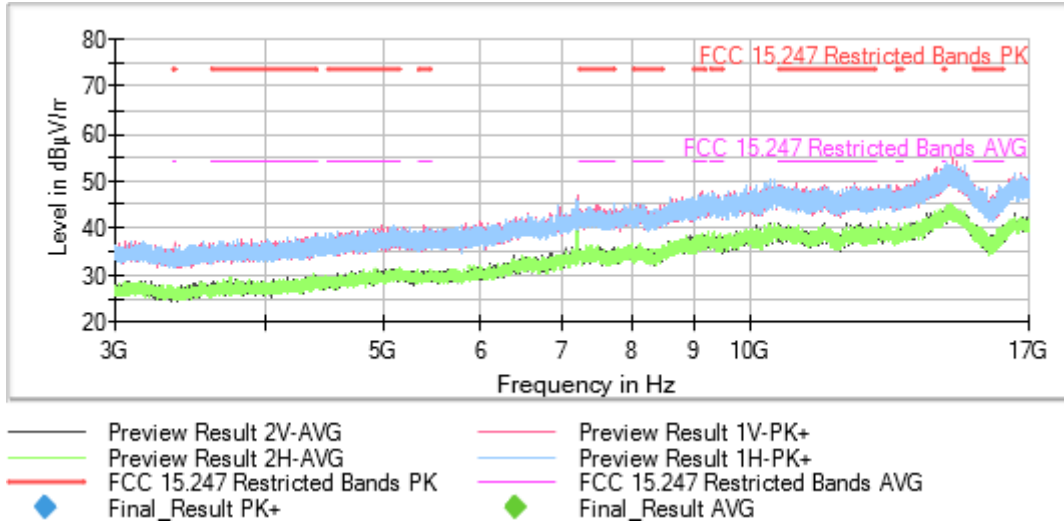


Full Spectrum



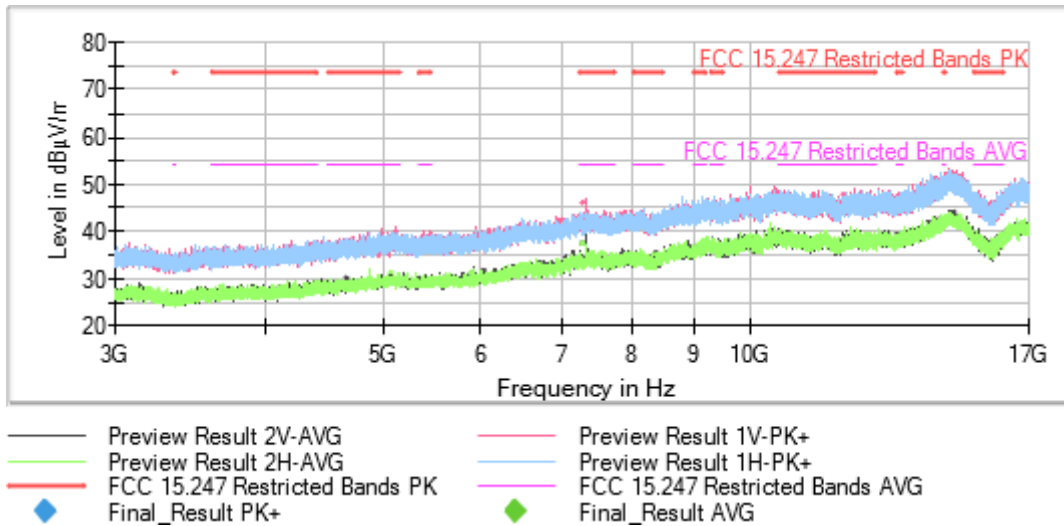
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



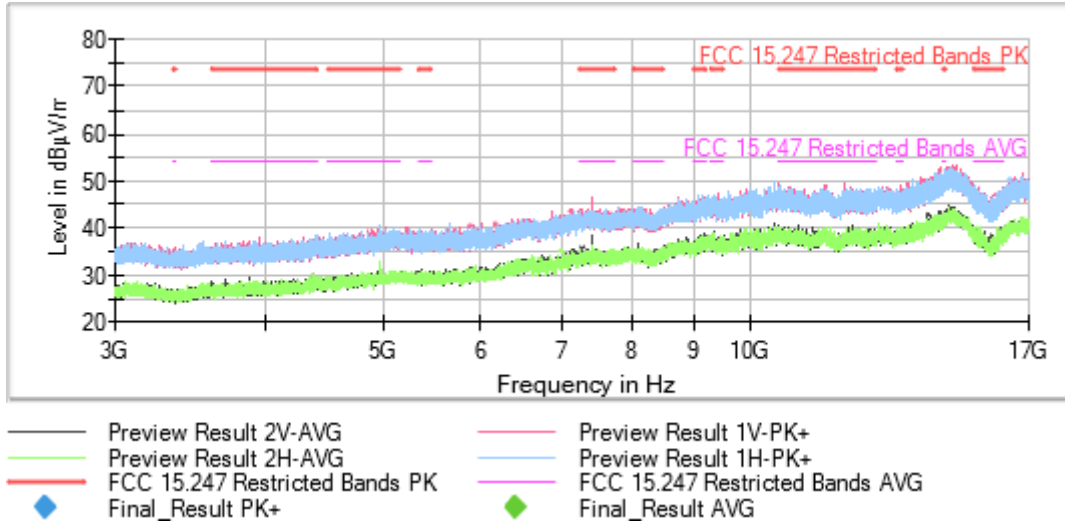
Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



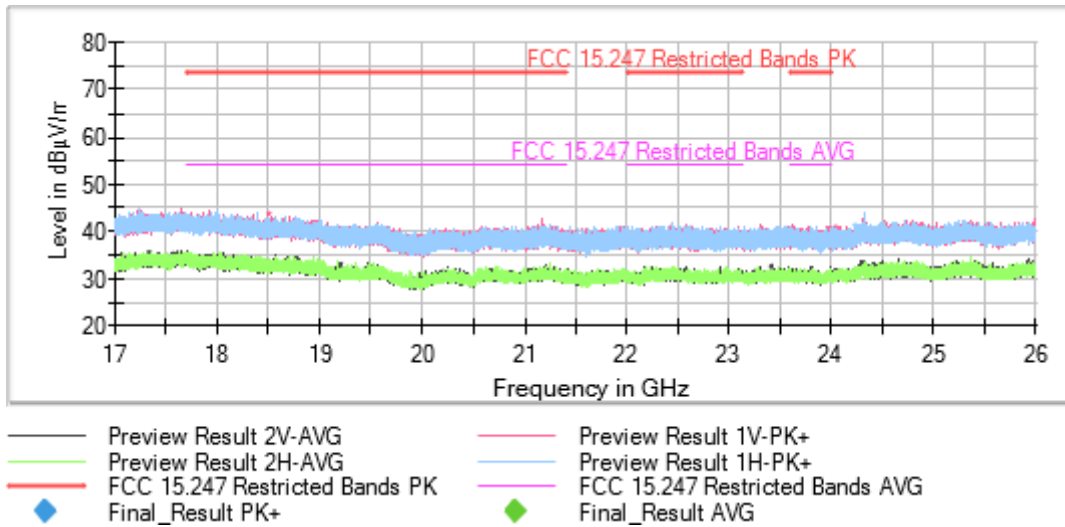
Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [3, 17], Number of Transmission Chains = 1, Measurement Point = 1

Images:



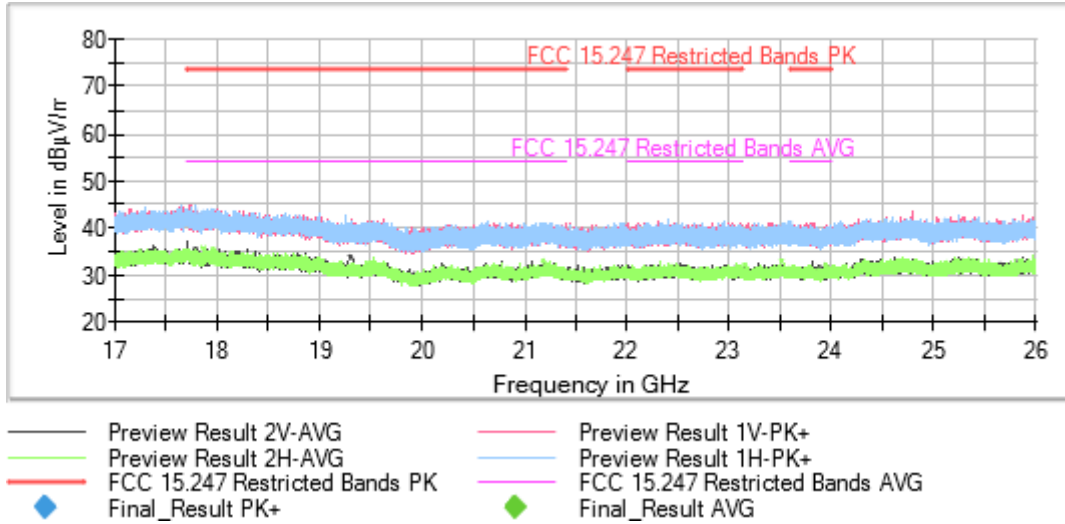
Frequency MHz = 2402.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [17, 26], Number of Transmission Chains = 1, Measurement Point = 1

Images:



Frequency MHz = 2440.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [17, 26], Number of Transmission Chains = 1, Measurement Point = 1

Images:



Frequency MHz = 2480.00000, Equipment Type = Digital Transmission System (DTS), Modulation = BTLE 5.0 (GFSK 2 Mbit/s), Frequency Range GHz = [17, 26], Number of Transmission Chains = 1, Measurement Point = 1

Images:

