DEKRA Testing and Certification, S.A.U.
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C.I.F. A29507456

ISED CABid: ES1909

Lab. Company Number: 4621A

Test Report No:
72575RRF.002

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

(*) Identification of item tested	Connected watch
(*) Trademark	Tissot SA
(*) Model and /or type reference	T153420 A
Other identification of the product	FCC ID: 2AH93T153420A IC: 25567-T153420A
(*) Features	Bluetooth Low Energy 5.0 HW version: T153420 A SW version: 1.0.0
Applicant	Tissot SA Chemin des Tourelles 17 CH-2400 Le Locle Switzerland
Test method requested, standard	USA FCC Part 15.247 (10-1-21 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.209 (10-1-21 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)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (C:A29507456)
Date of issue	2023-03-13
Report template No	FDT08_24 (*) "Data provided by the client"

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Acronyms

Acronym ID	Acronym Description
BW	Bandwidth
Detector	Detector used
Ebw	Emission Bandwidth
Equipment	Equipment Type
Freq Rng	Frequency Range
Lvl	Level
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 S.A.U. is an FCC-recognized accredited testing laboratory with appropriate scope of accreditation that covers the performed tests in this report.

DEKRA Testing and Certification S.A.U. is an ISED-recognized accredited testing laboratory, CABid: ES1909, Company Number: 4621A, 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.

The total uncertainty of the measurement system for the radiated emissions of EUT from 30 MHz to 1 GHz is: Measurement uncertainty ≤ ± 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 ≤ ± 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 ≤ ± 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 ≤ ± 0,80 dB
RF Average Output Power: Measurement uncertainty ≤ ± 0,99 dB
Power Spectral Density: Measurement uncertainty ≤ ± 0,99 dB
6dB Bandwidth: Measurement uncertainty ≤ ± 2,84 %
Occupied Channel Bandwidth: Measurement uncertainty ≤ ± 1,17 %
Conducted Band-edge spurious emissions: Measurement uncertainty ≤ ± 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 an analog-digital connected watch with typical Swiss watchmaking design. The product is equipped with features such as notifications, pedometer, heart-rate monitoring, etc. The product can be recharged by light and/or with an USB cable.

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 Nº	Date of Reception	Application
S/01	72575_10.1	Connected watch	Tissot SA	22MS0392055	2023-02-14	Element Under Test
S/01	72575_17.1	Charging cable-USB	--	--	2023-02-14	Element Under Test
S/02	72575_1.1	Connected watch	Tissot SA	--	2023-02-14	Element Under Test
S/02	72575_14.1	Cable USB dongle-4 pin connector	--	--	2023-02-14	Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Radiated
S/02	Conducted

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:					
	[X]	DC: 3.8 V (battery)					

Rated Power .....:	--
Clock frequencies.....:	--
Other parameters .....:	--
Software version .....:	1.0.0
Hardware version .....:	T1
Dimensions in cm (W x H x D) ....:	T153420 A

Mounting position .....:	[ ]	Table top equipment
	[ ]	Wall/Ceiling mounted equipment
	[ ]	Floor standing equipment
	[ ]	Hand-held equipment
	[X]	Other: Wearable

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

ETA SA, Manufacture Horlogère Suisse
Schmelzistrasse 16
2540 Grenchen
Switzerland

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2023-02-16
Date (finish)	2023-02-22

Document history

Report number	Date	Description
72575RRF.002	2023-03-06	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: Fernando Chito Solis, Miguel Manuel López Guzmán and Sergio Carrasco.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
6791	SEMIANECHOIC ABSORBER LINED CHAMBER IV	FACT 3 200 STP	ETS LINDGREN	--
6793	SHIELDED ROOM	S101	ETS LINDGREN	--
4848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	--
7817	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2023-12-30
6496	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK	2023-08-24
6143	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2023-10-29
6144	PRE-AMPLIFIER G>40dB 10MHz-6GHz	BLNA 0160-01N	BONN ELEKTRONIK	2023-03-17
3783	PRE-AMPLIFIER G>30dB 1GHz-18GHz	BLMA 0118-3A	BONN ELEKTRONIK	2023-12-29
4657	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2023-05-05
8856	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-4A	BONN ELEKTRONIK	2023-11-02
8848	OPEN SWITCH UNIT UP TO 7.5 GHz	OSP-B157W8 PLUS	ROHDE & SCHWARZ	2024-12-21
7445	DC POWER SUPPLY 30V/5A	U8002A	KEYSIGHT TECHNOLOGIES	--
5850	DIGITAL MULTIMETER	179	FLUKE	2023-11-02
7794	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2023-02-26
7791	SIGNAL GENERATOR 8kHz-6GHz	SMB100B	ROHDE AND SCHWARZ	2023-11-03
7793	SIGNAL GENERATOR 8kHz-6GHz	SMBV100B	ROHDE AND SCHWARZ	2023-11-18
7796	EXTENSION FOR OPEN SWITCH UNIT UP TO 40GHz	OSP-B157Wx	ROHDE AND SCHWARZ	2024-03-16
8847	VECTOR SIGNAL GENERATOR 100kHz-7.5GHz	SMW200A	ROHDE AND SCHWARZ	2023-08-20
7798	SOFTWARE FOR EMC/RF TESTING	WMS32	ROHDE AND SCHWARZ	--

Testing verdicts

Fail	F
Inconclusive	I
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	
Supplementary information and remarks: None			

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

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RSS-247 5.2 (b) / FCC 15.247 (e) Power spectral density 44
RSS-247 5.5 / FCC 15.247 (d) Emission limitations radiated (Transmitter) 51

TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal:	3.8 Vdc
Type of Power Supply:	Battery and DC external power supply.

ANTENNA (*):

Type of Antenna:	Integrated.
Maximum Declared Antenna Gain:	-8.1 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).

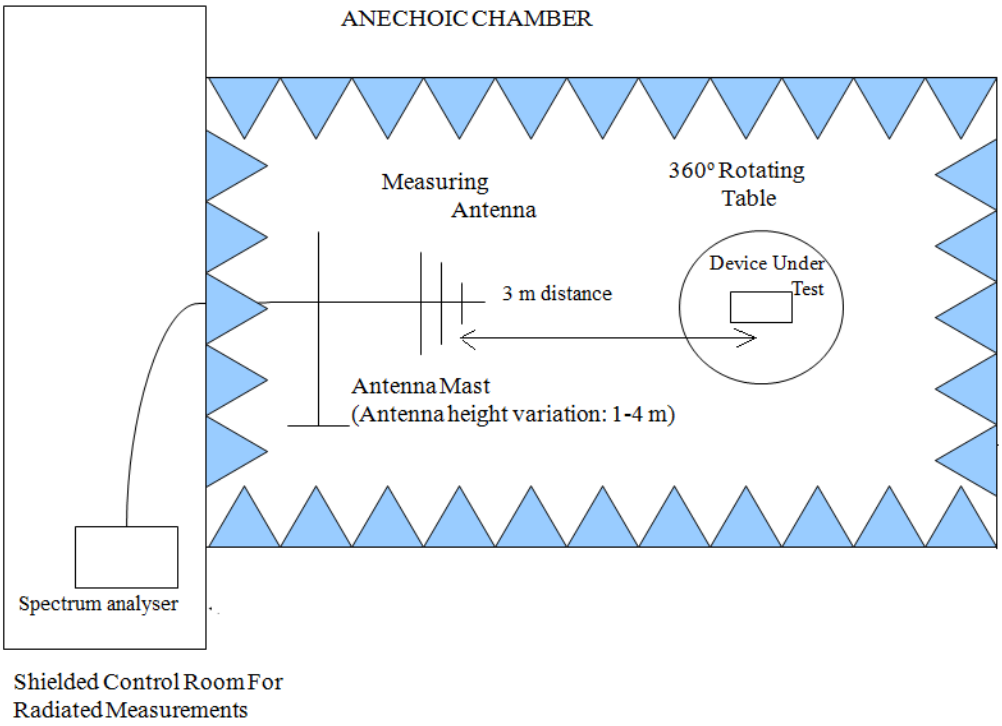
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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 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.

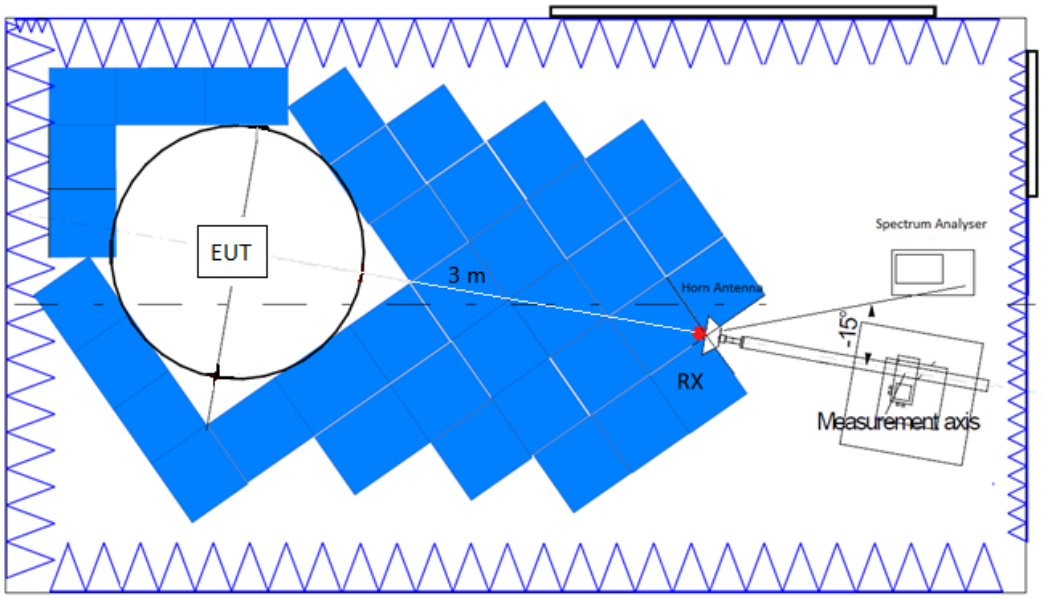
Measurements were made in both horizontal and vertical planes of polarization.

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

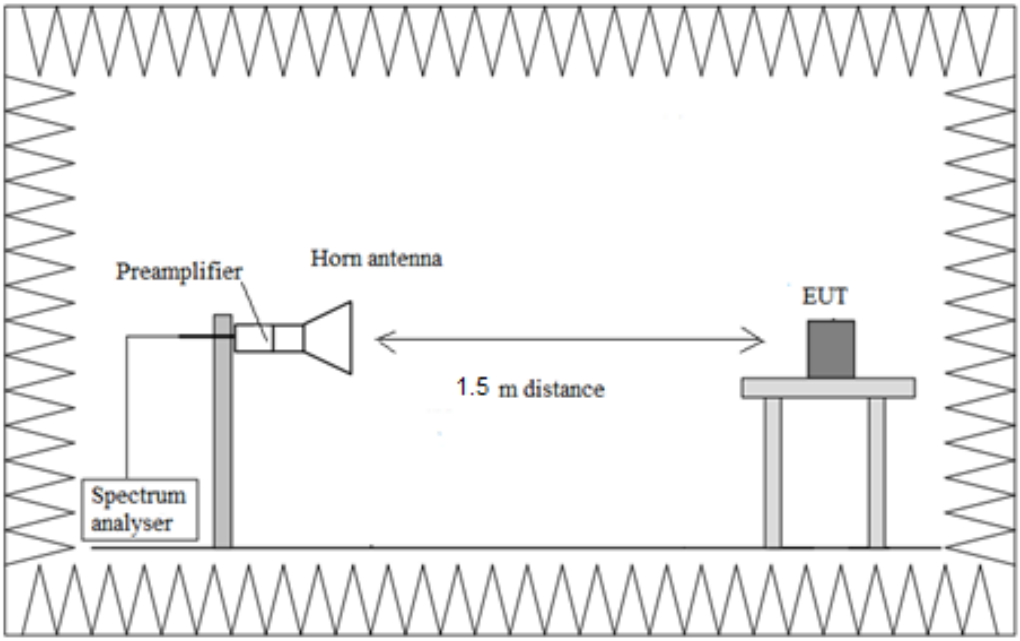
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup f > 17 GHz:



TEST CASES DETAILS

Occupied Channel Bandwidth 99%

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	Occ Ch BW (MHz)
2402.00000	Digital Transmission System (DTS)	1	1.050
2440.00000			1.050
2480.00000			1.050

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	Occ Ch BW (MHz)
2402.00000	Digital Transmission System (DTS)	2	2.050
2440.00000			2.050
2480.00000			2.050

Verdict

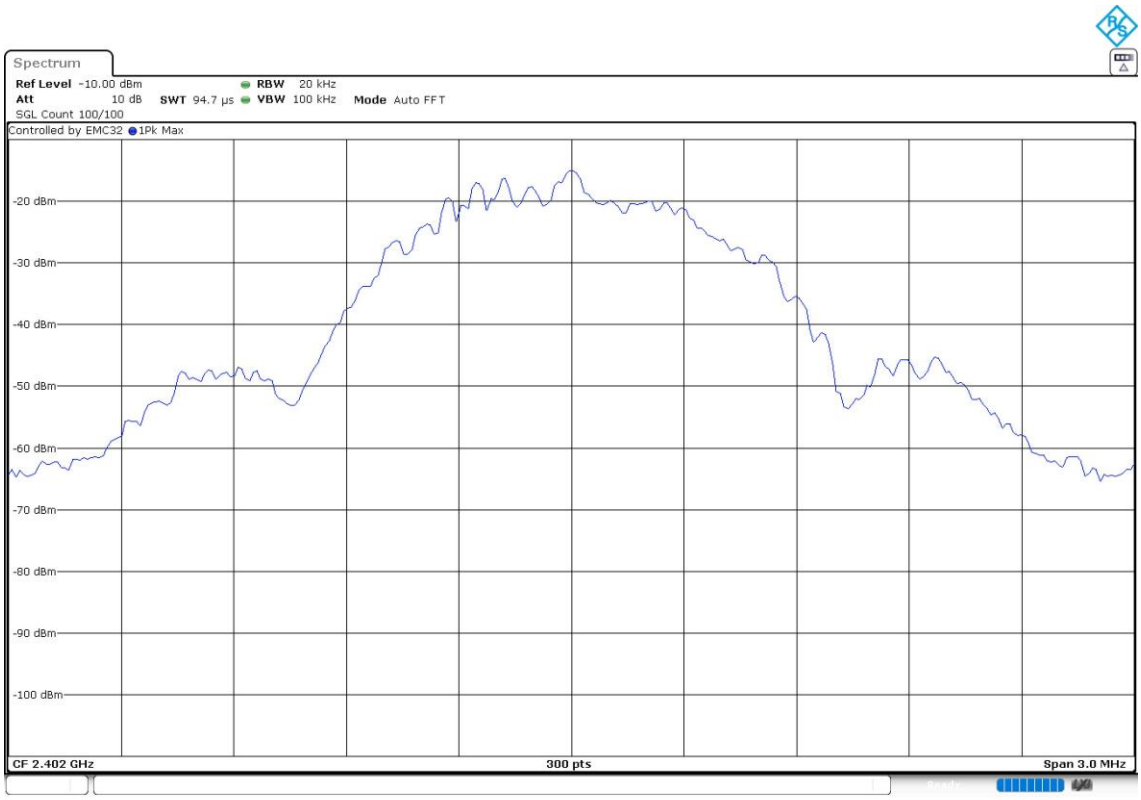
Pass

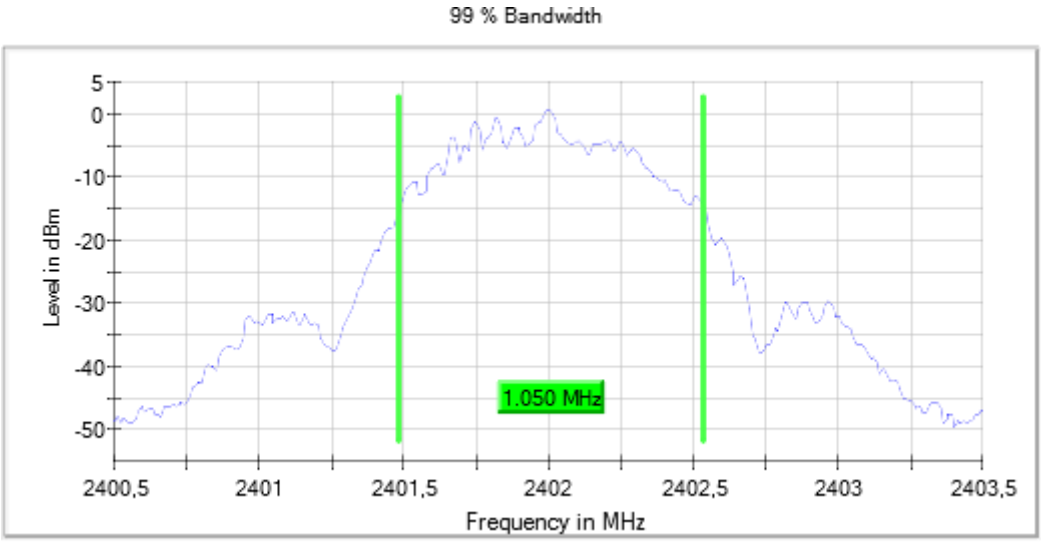
Attachments

Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

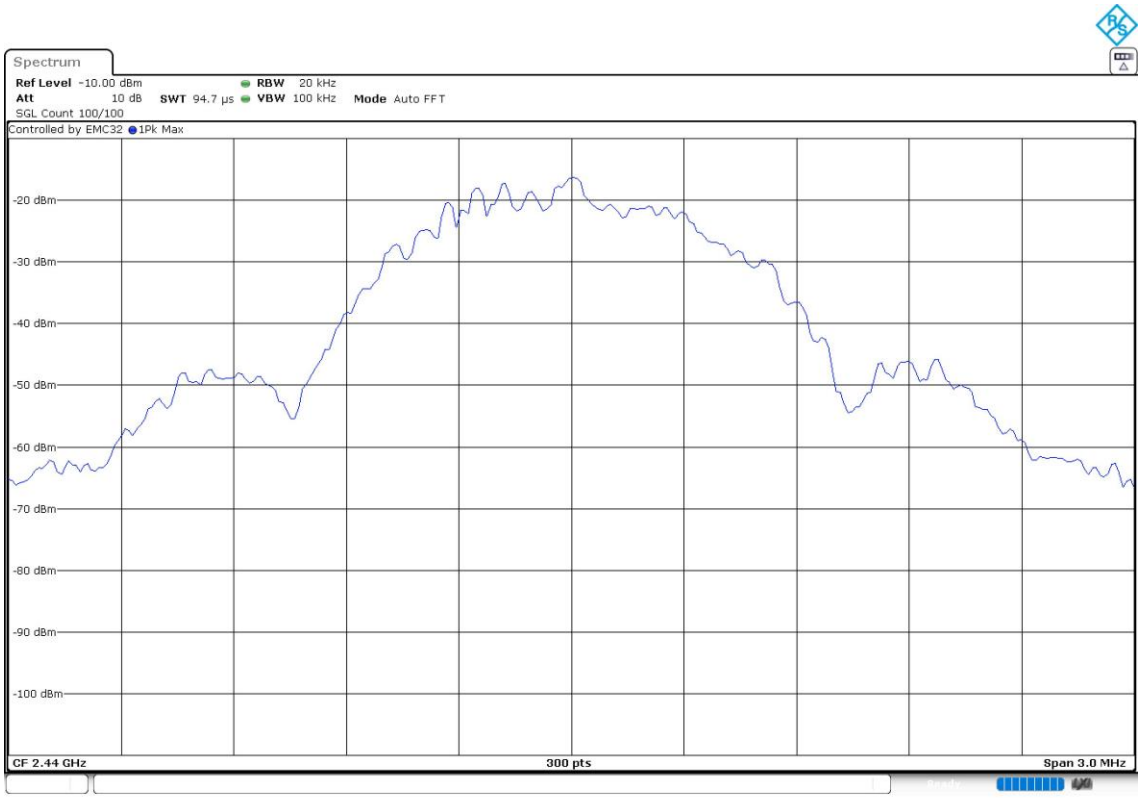


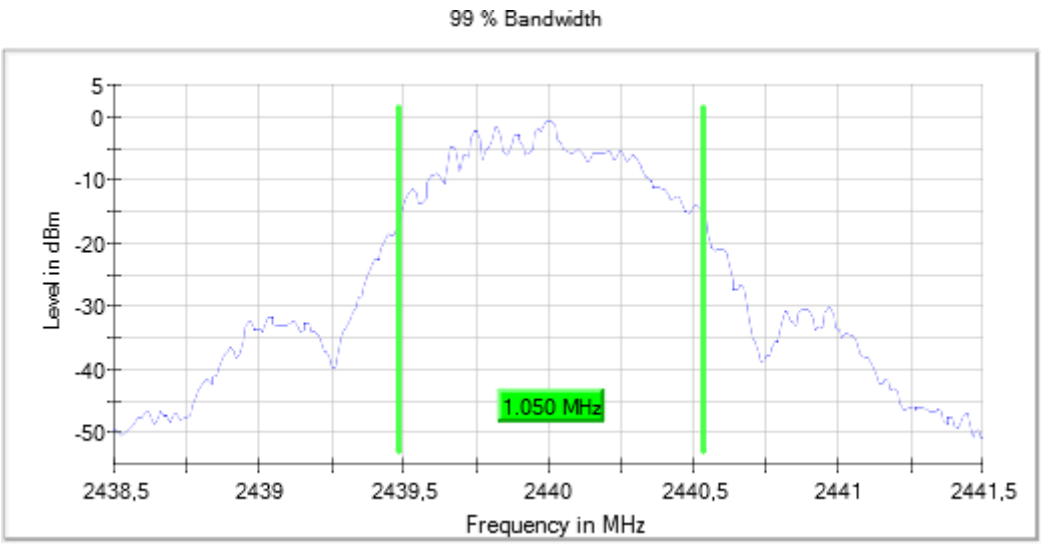


Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

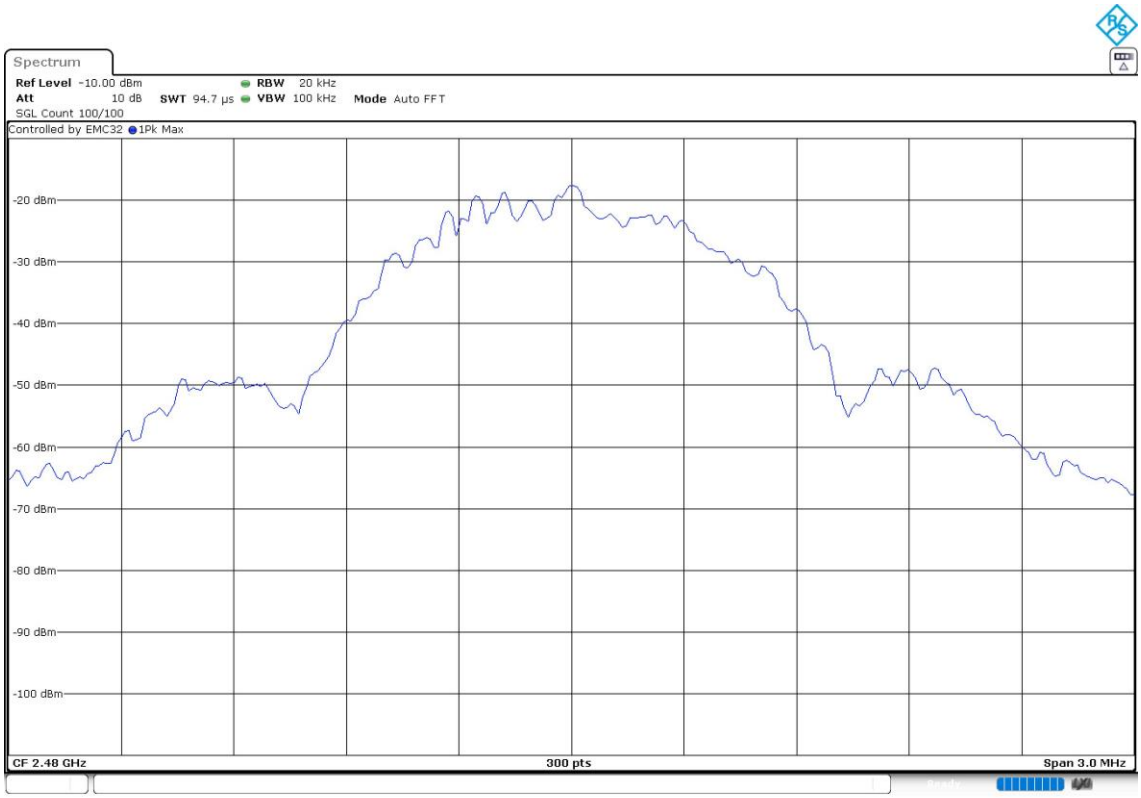


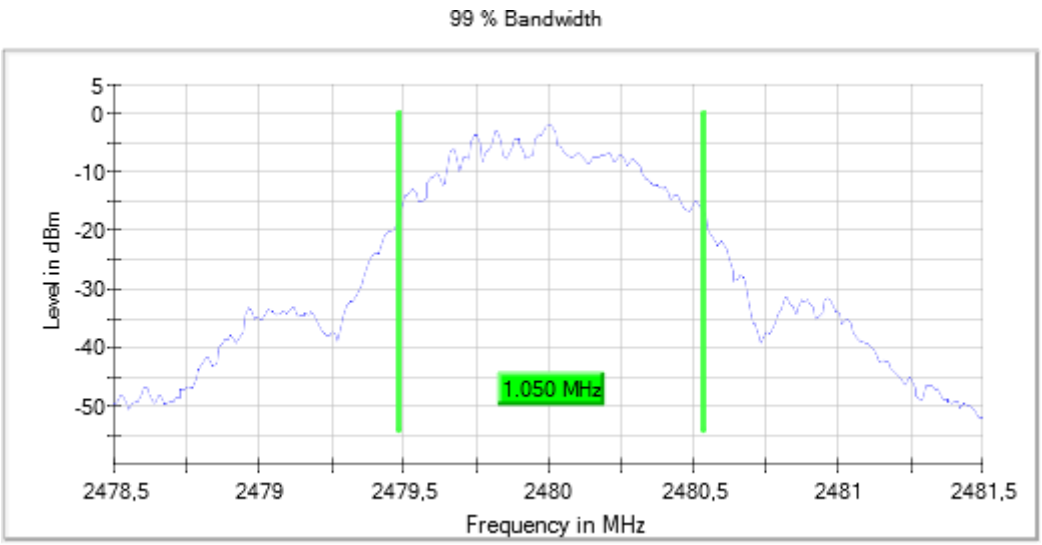


Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

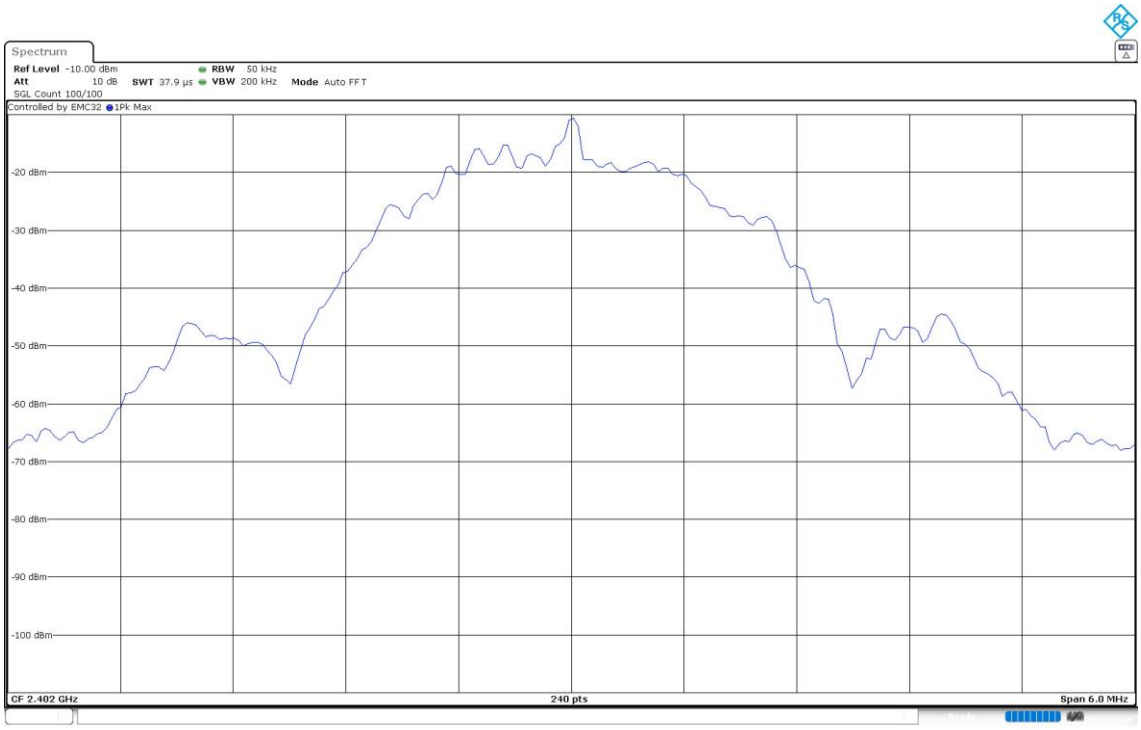




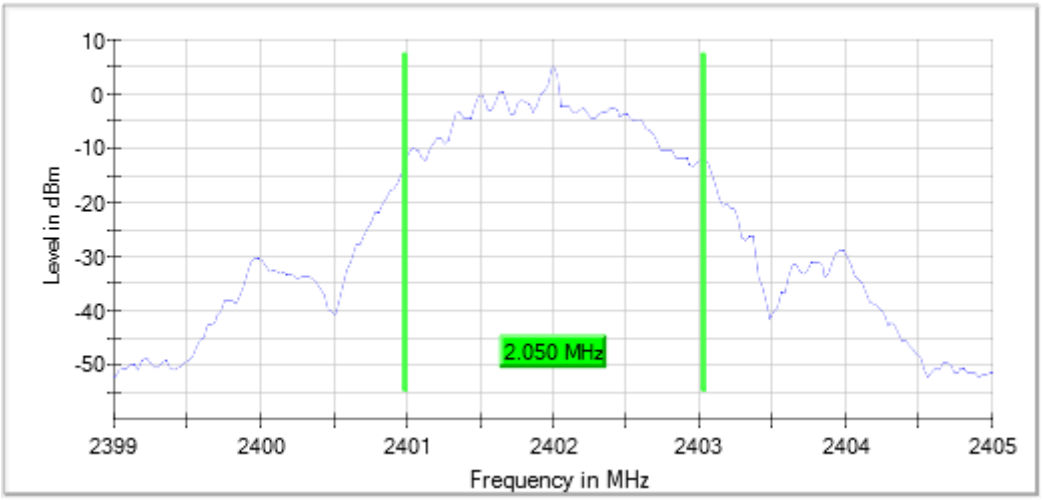
Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



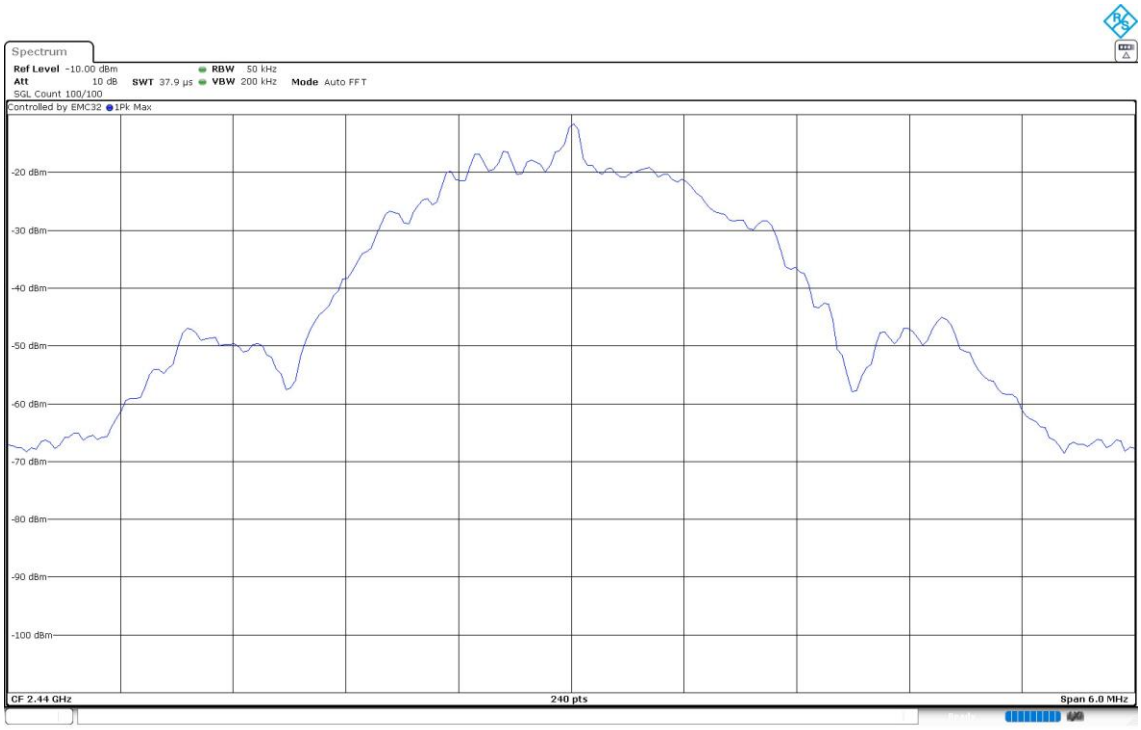
99 % Bandwidth



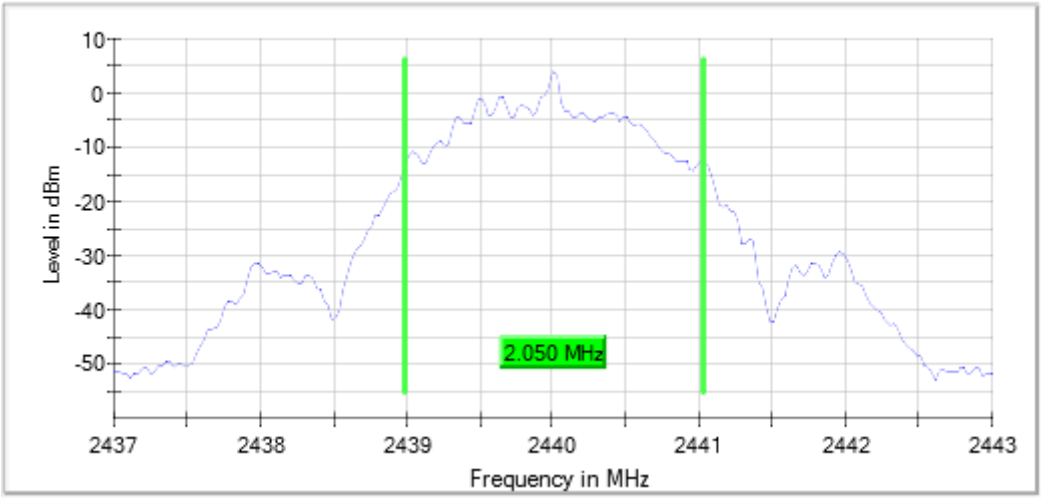
Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



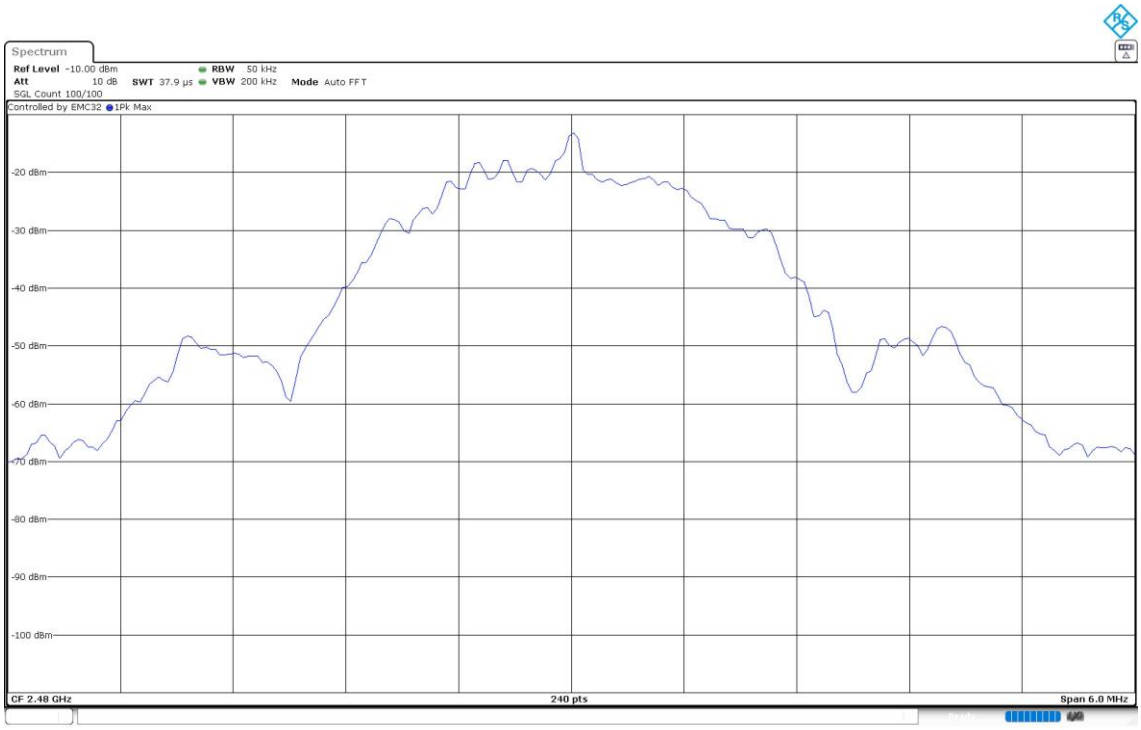
99 % Bandwidth



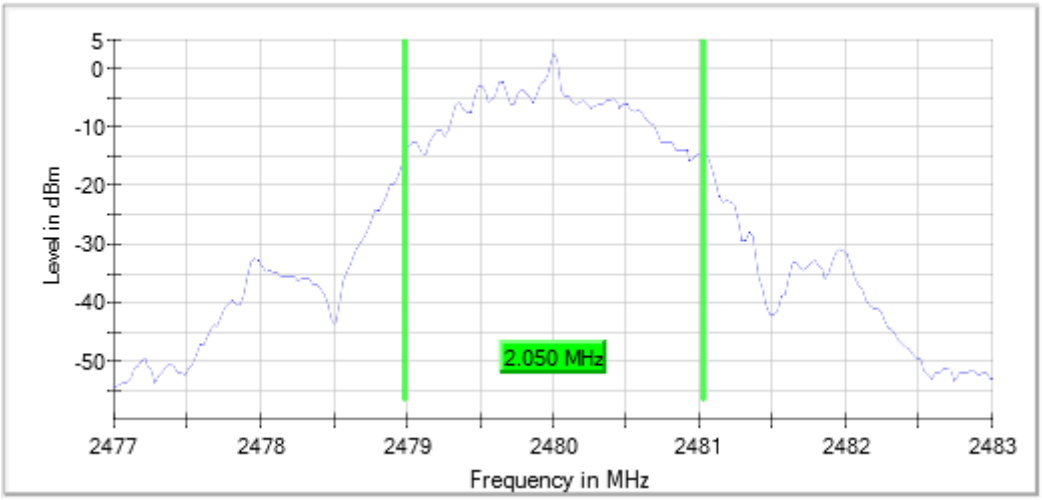
Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



99 % Bandwidth



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.

Results

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Freq (MHz)	BW (MHz)	Ebw (MHz)
2402.00000	1	0.733
2440.00000		0.733
2480.00000		0.713

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Freq (MHz)	BW (MHz)	Ebw (MHz)
2402.00000	2	1.188
2440.00000		1.188
2480.00000		1.228

Verdict

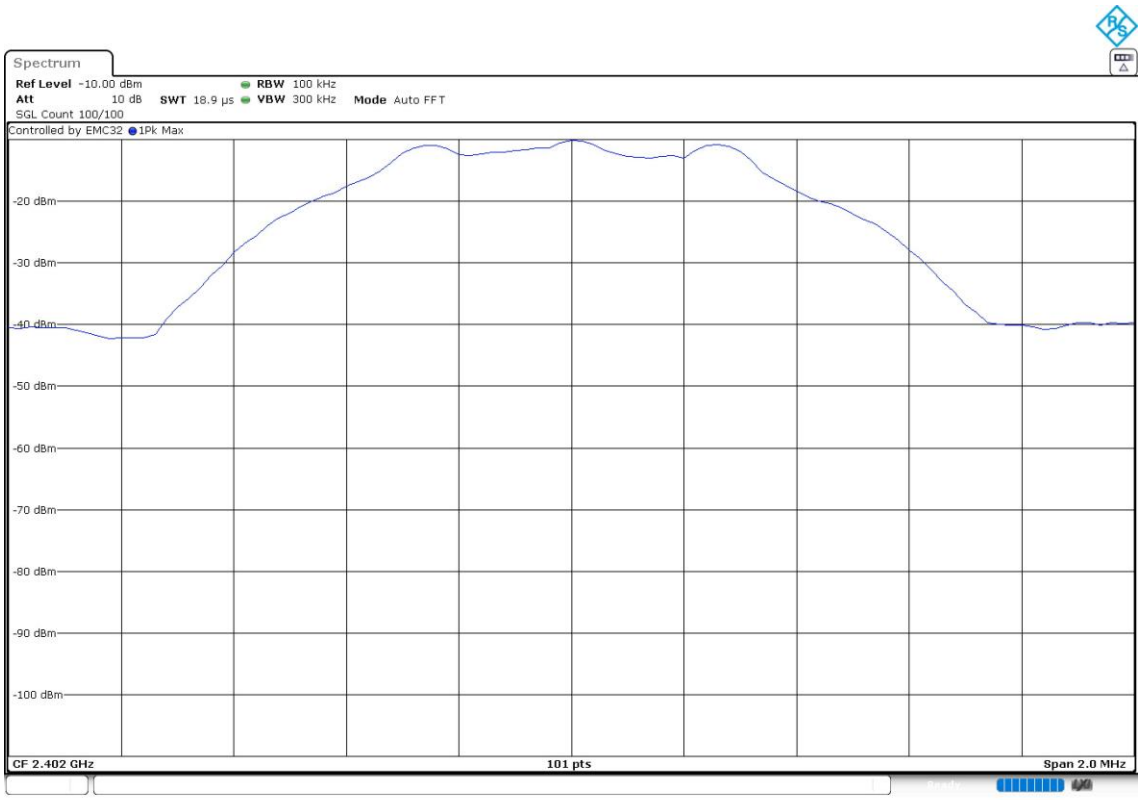
Pass

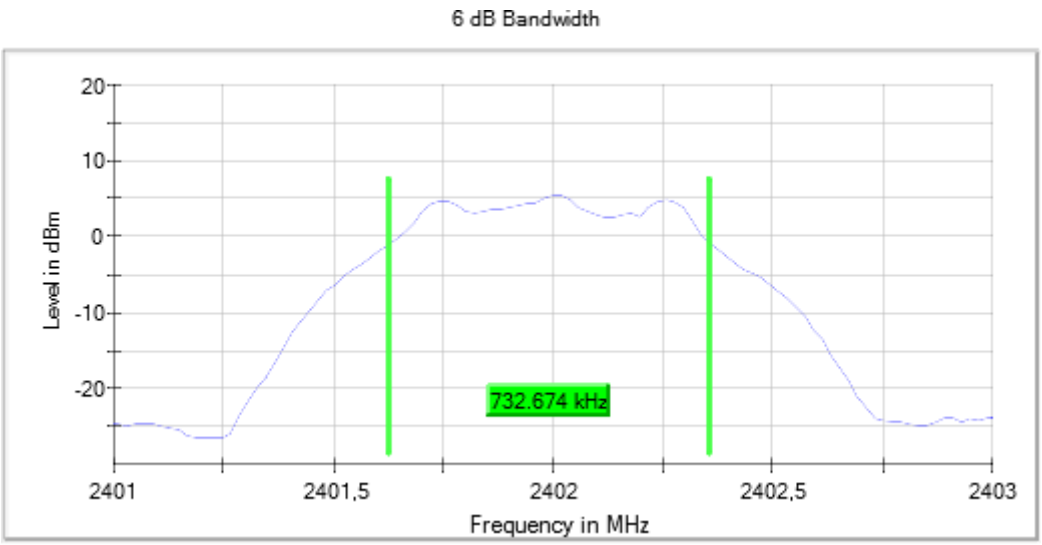
Attachments

Frequency MHz = 2402.00000 Bandwidth MHz = 1

Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

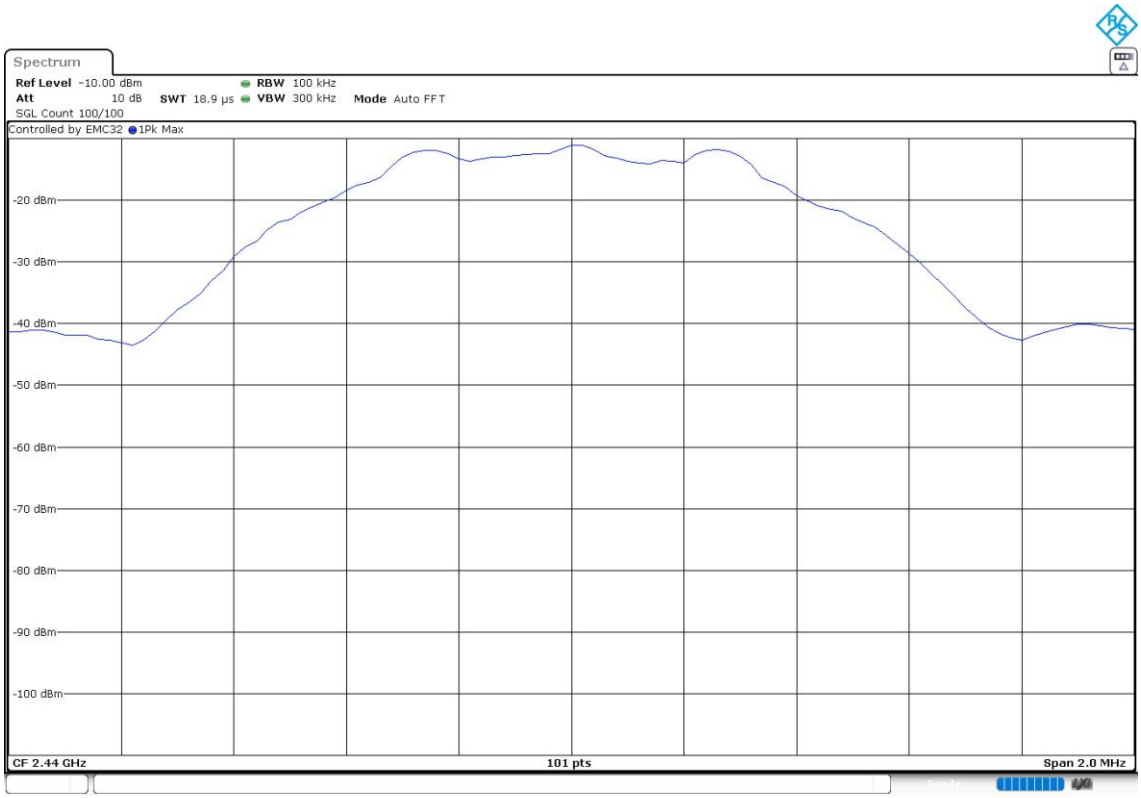




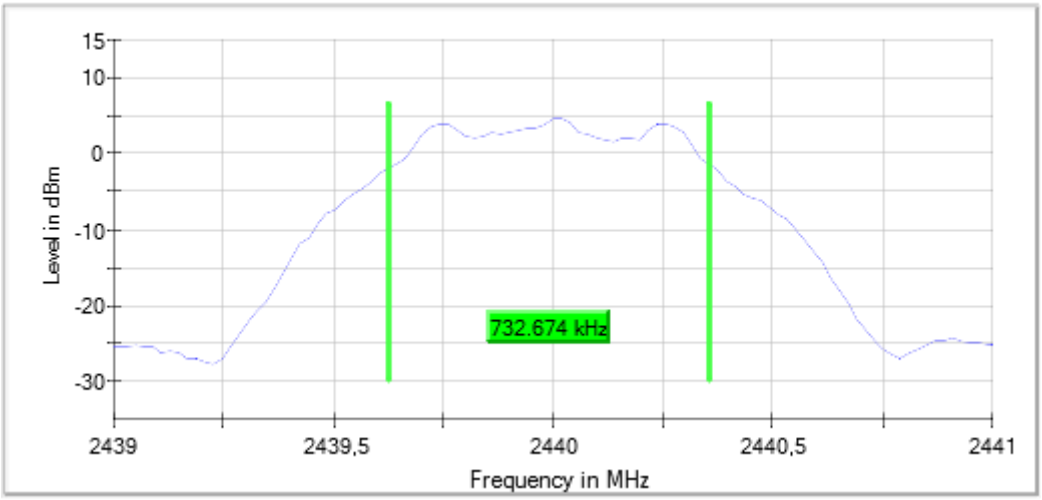
Frequency MHz = 2440.00000 Bandwidth MHz = 1

Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:



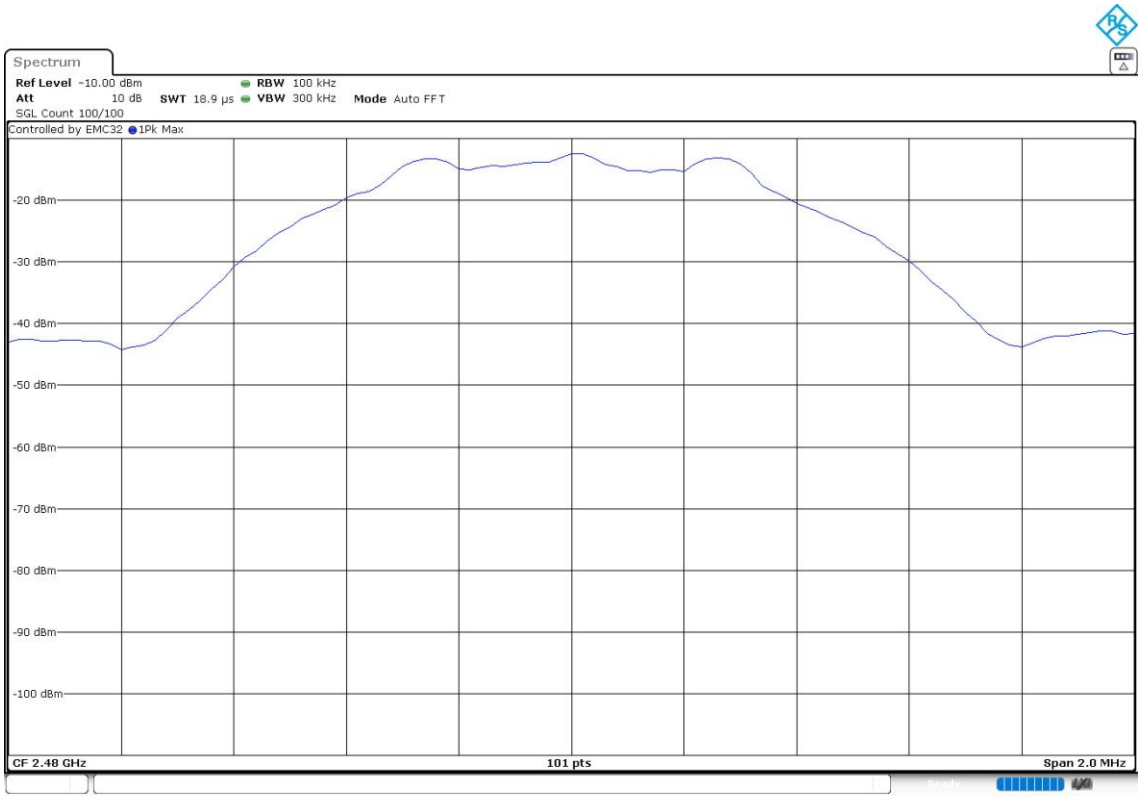
6 dB Bandwidth



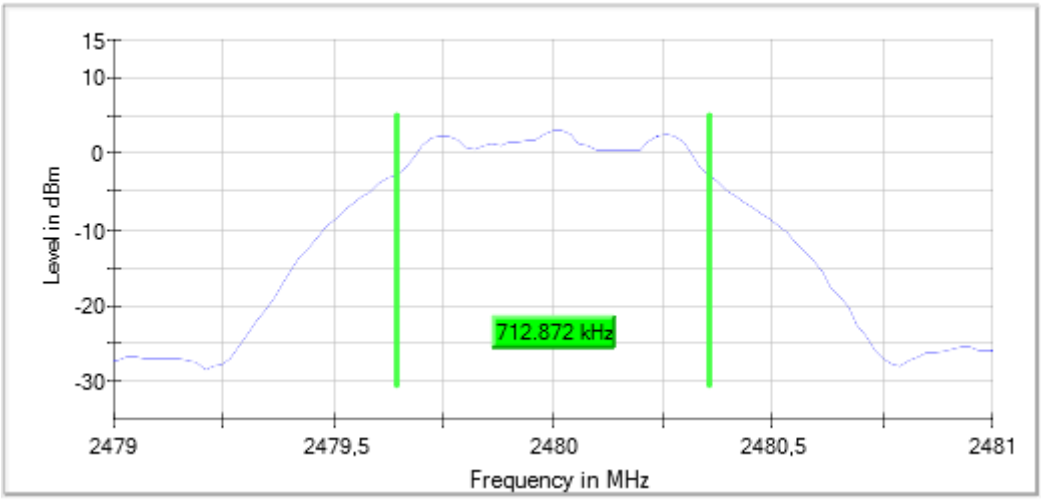
Frequency MHz = 2480.00000 Bandwidth MHz = 1

Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:



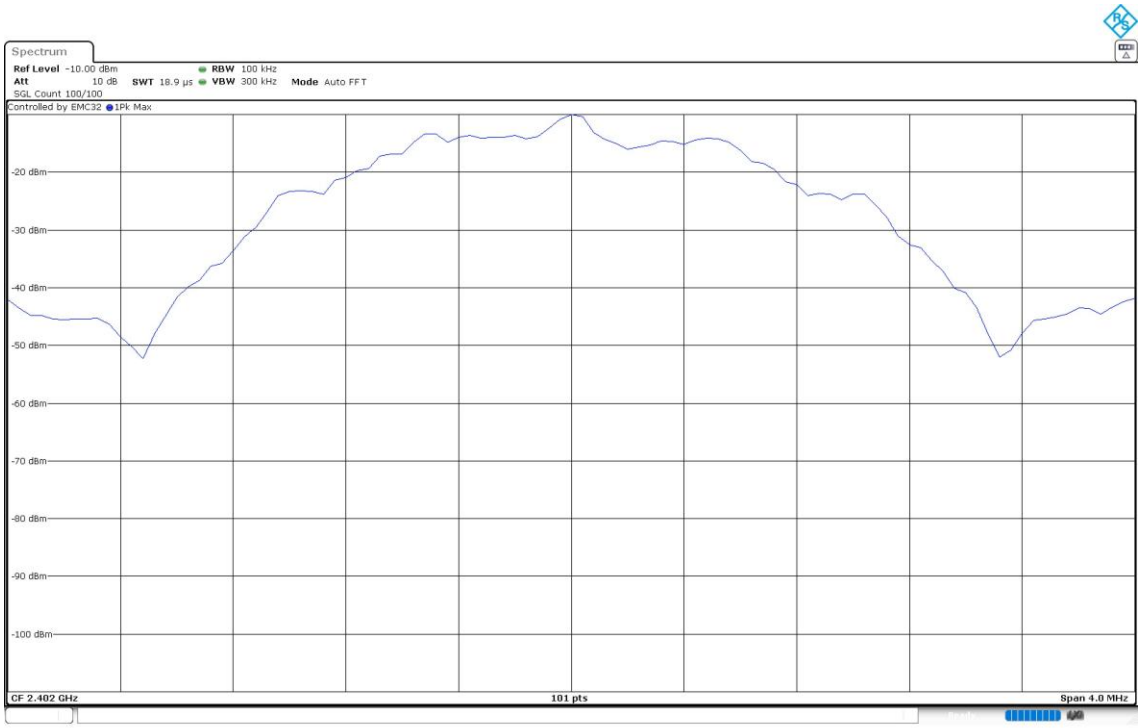
6 dB Bandwidth



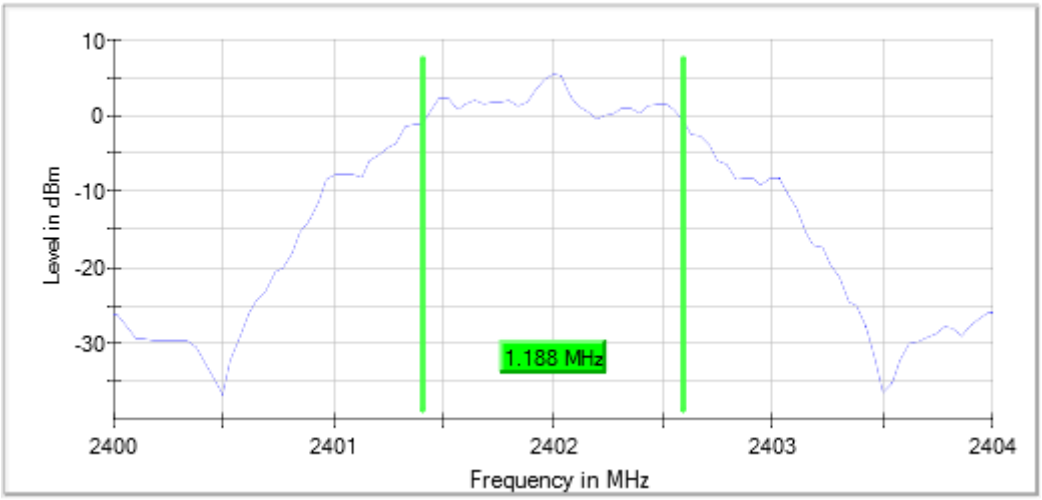
Frequency MHz = 2402.00000 Bandwidth MHz = 2

Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



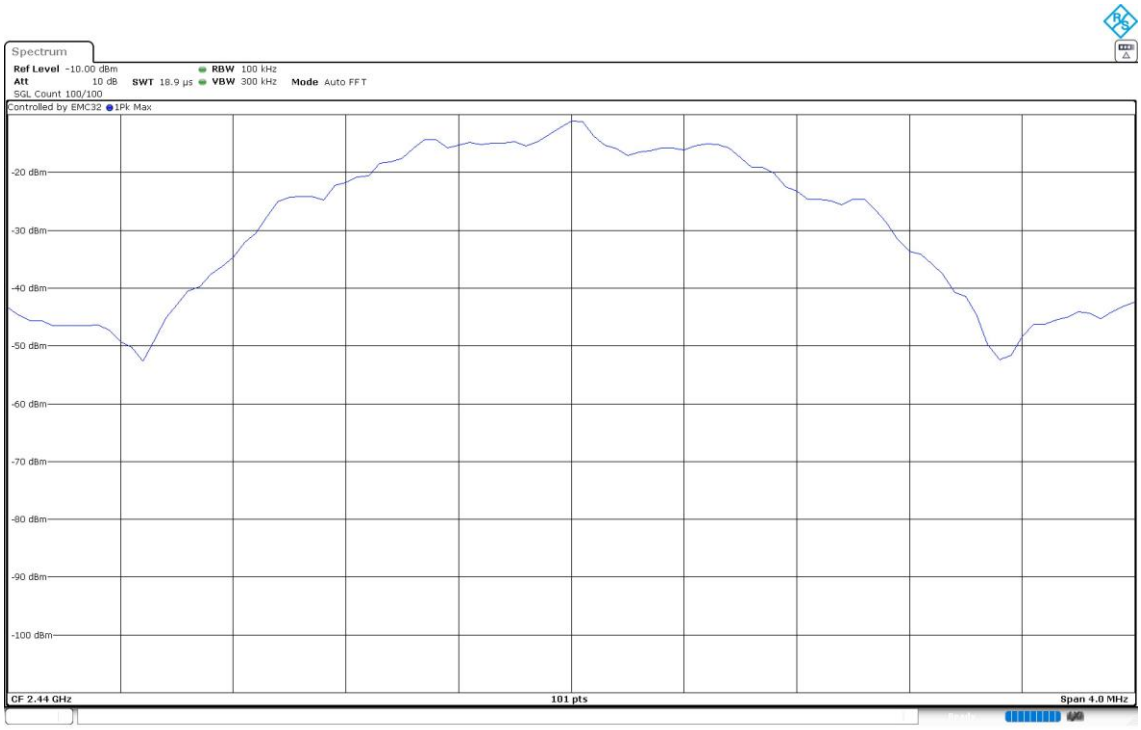
6 dB Bandwidth



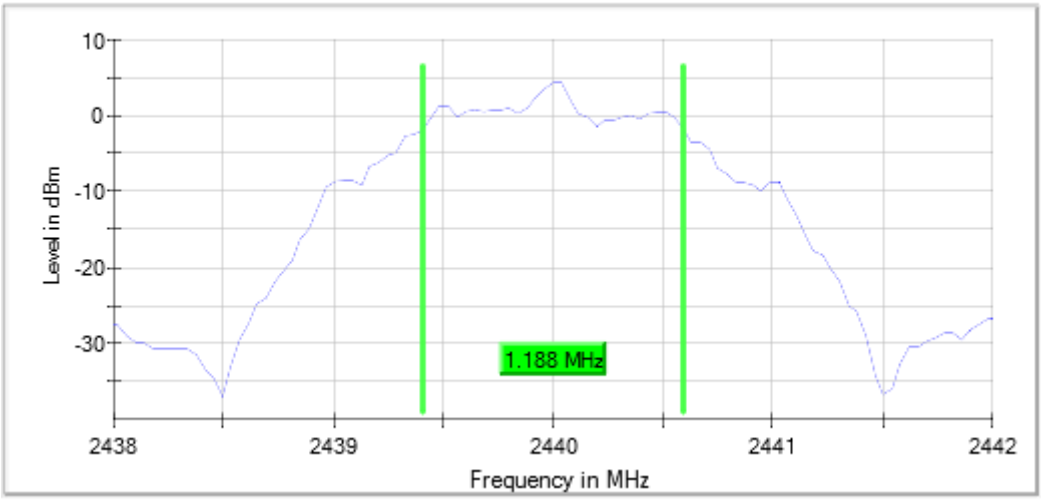
Frequency MHz = 2440.00000 Bandwidth MHz = 2

Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



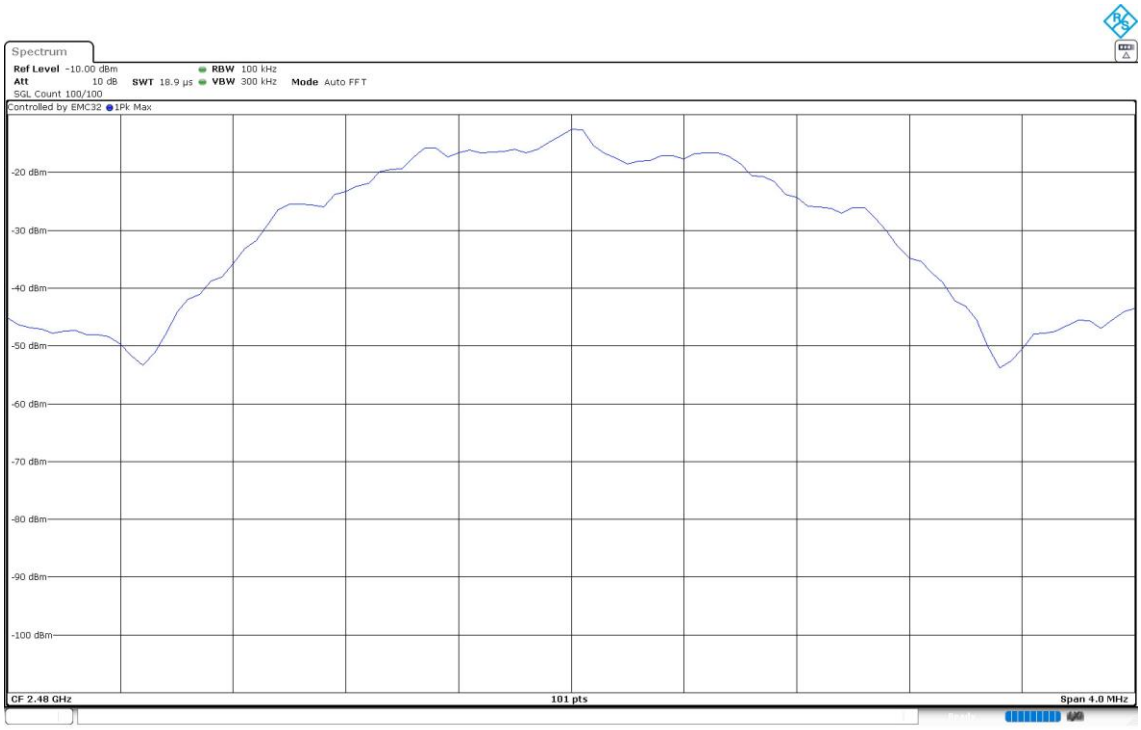
6 dB Bandwidth



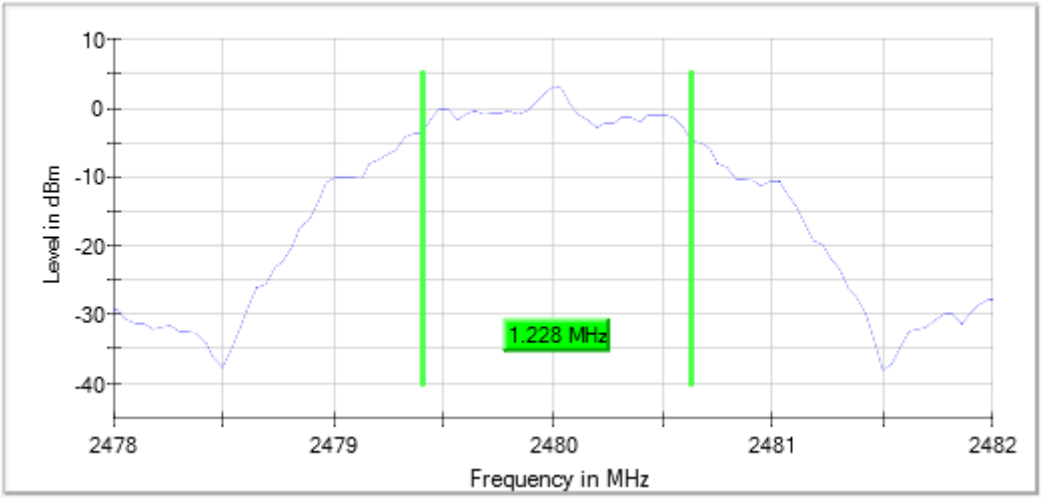
Frequency MHz = 2480.00000 Bandwidth MHz = 2

Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:



6 dB Bandwidth



RSS-247 5.4 (d) / FCC 15.247 (b) (3) Maximum Peak Conducted output power

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) (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.

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	Peak Power (dBm)	Maximum EIRP Power (dBm)
2402.00000	Digital Transmission System (DTS)	1	5.5770	-2.5230
2440.00000			4.6560	-3.4440
2480.00000			3.2020	-4.8980

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	Peak Power (dBm)	Maximum EIRP Power (dBm)
2402.00000	Digital Transmission System (DTS)	2	5.6720	-2.4280
2440.00000			4.7460	-3.3540
2480.00000			3.2690	-4.8310

Verdict

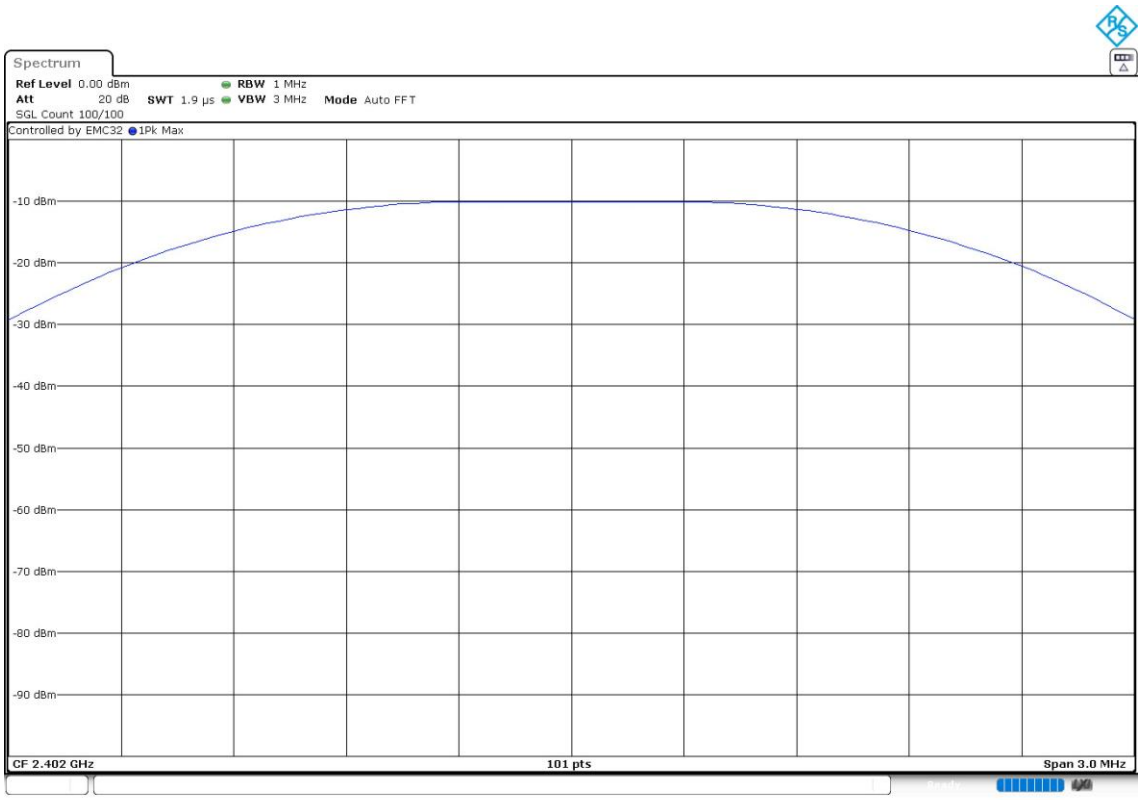
Pass

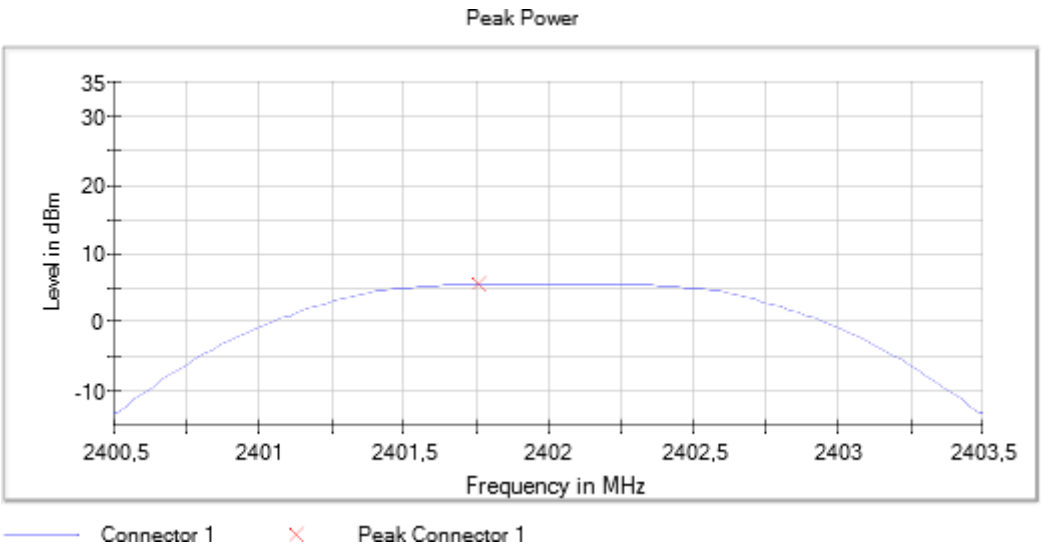
Attachments

Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

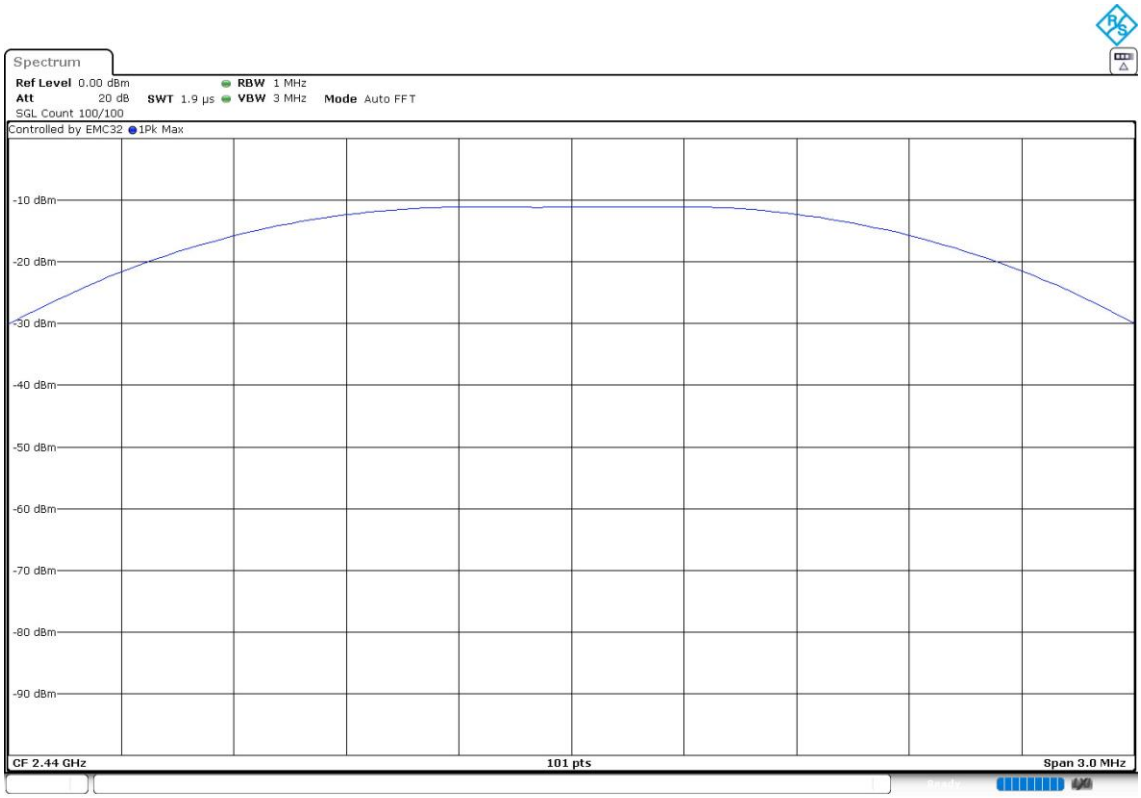


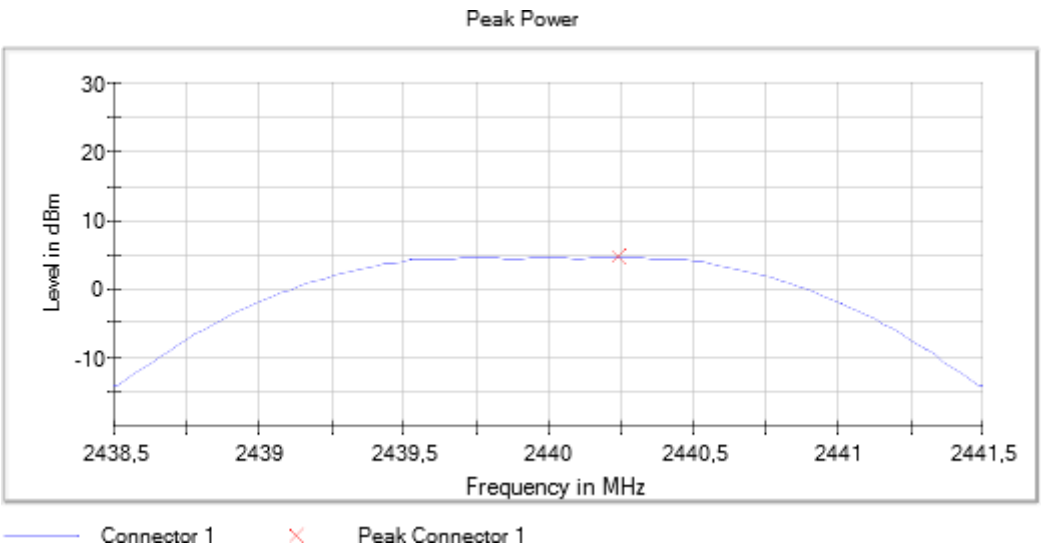


Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

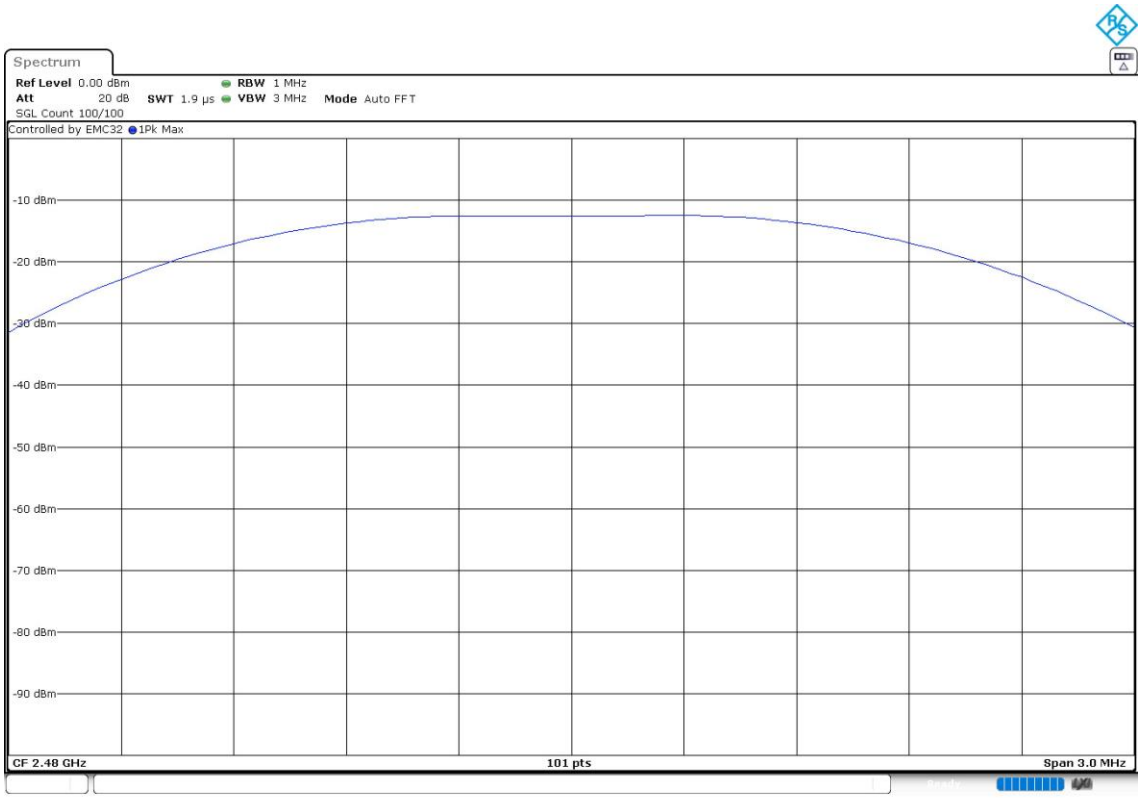


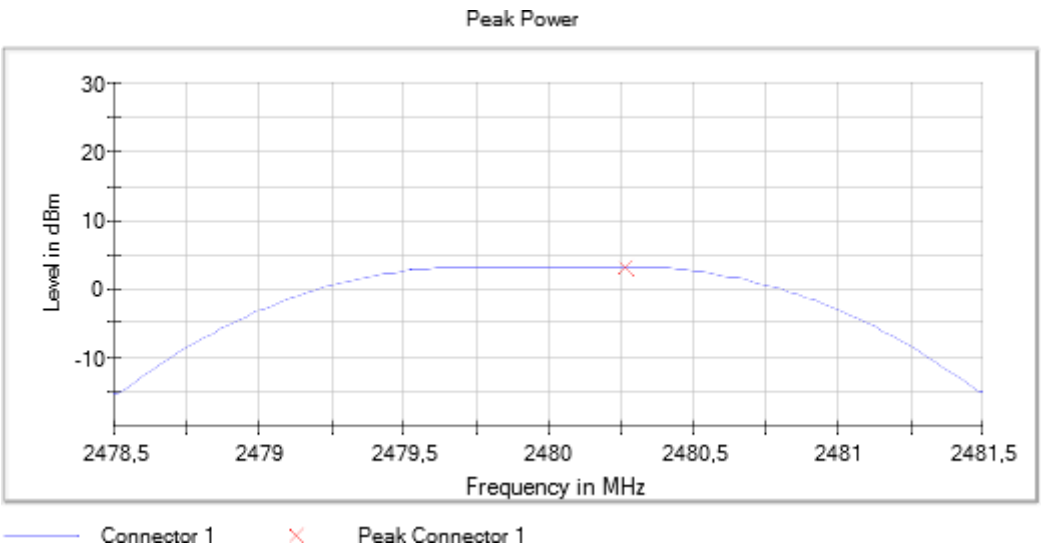


Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

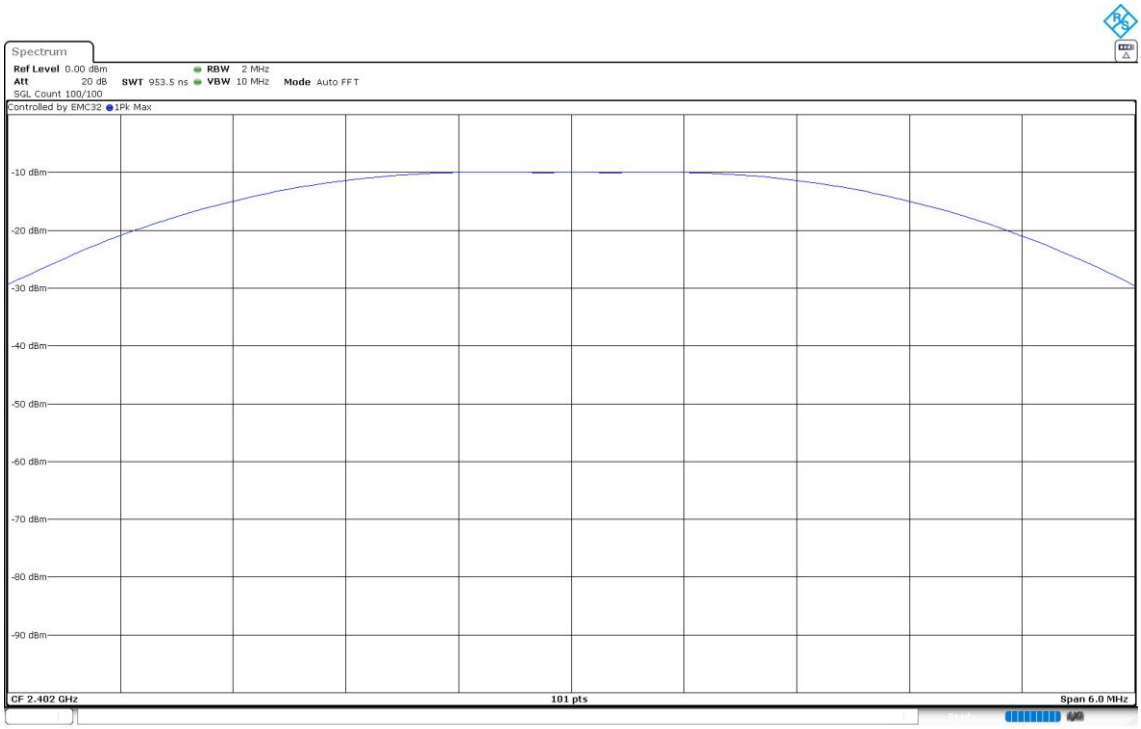


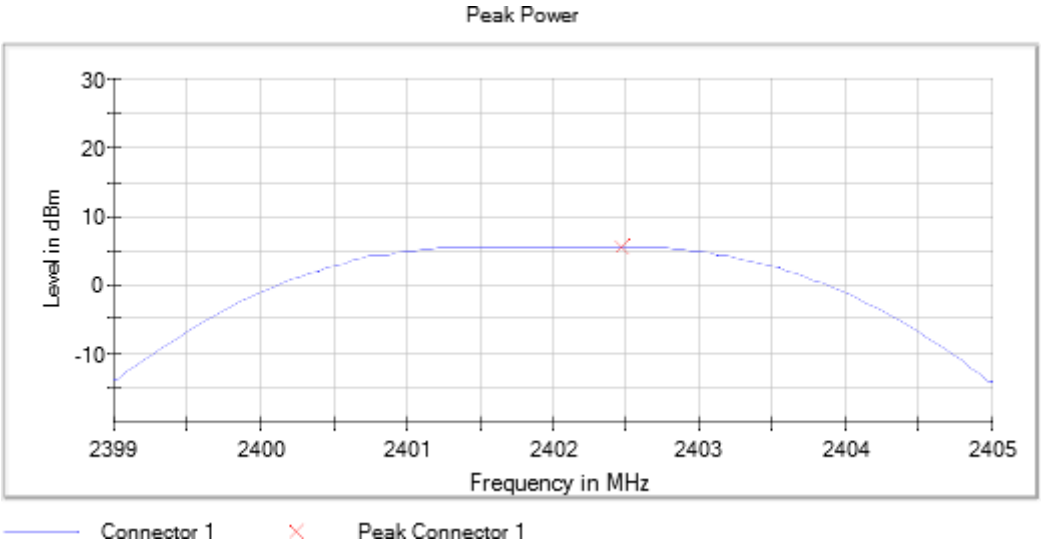


Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:

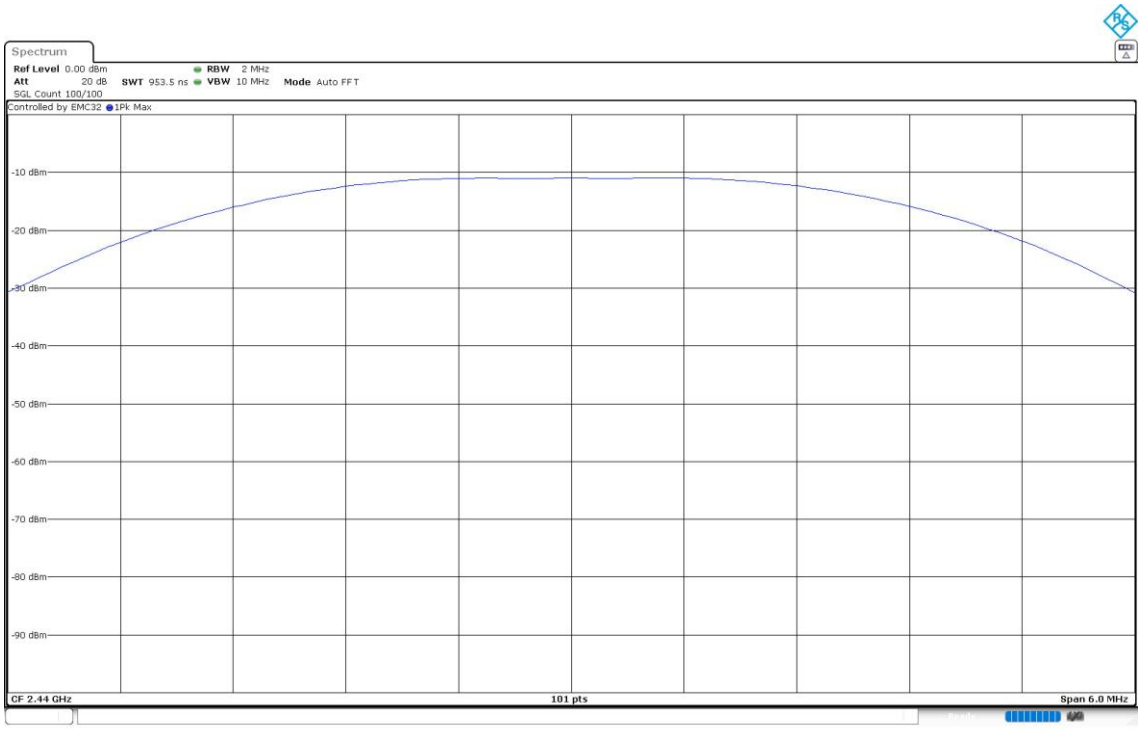


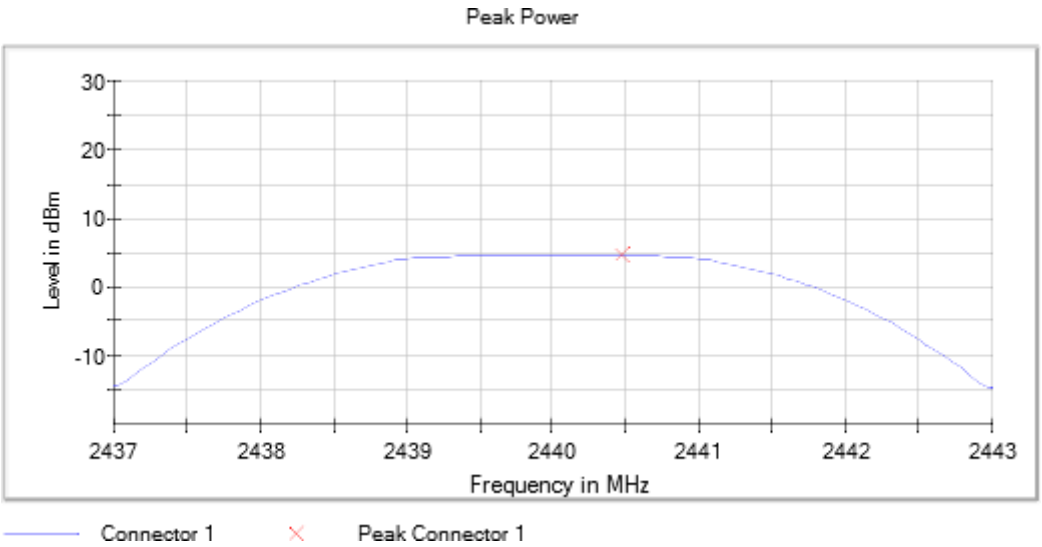


Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:

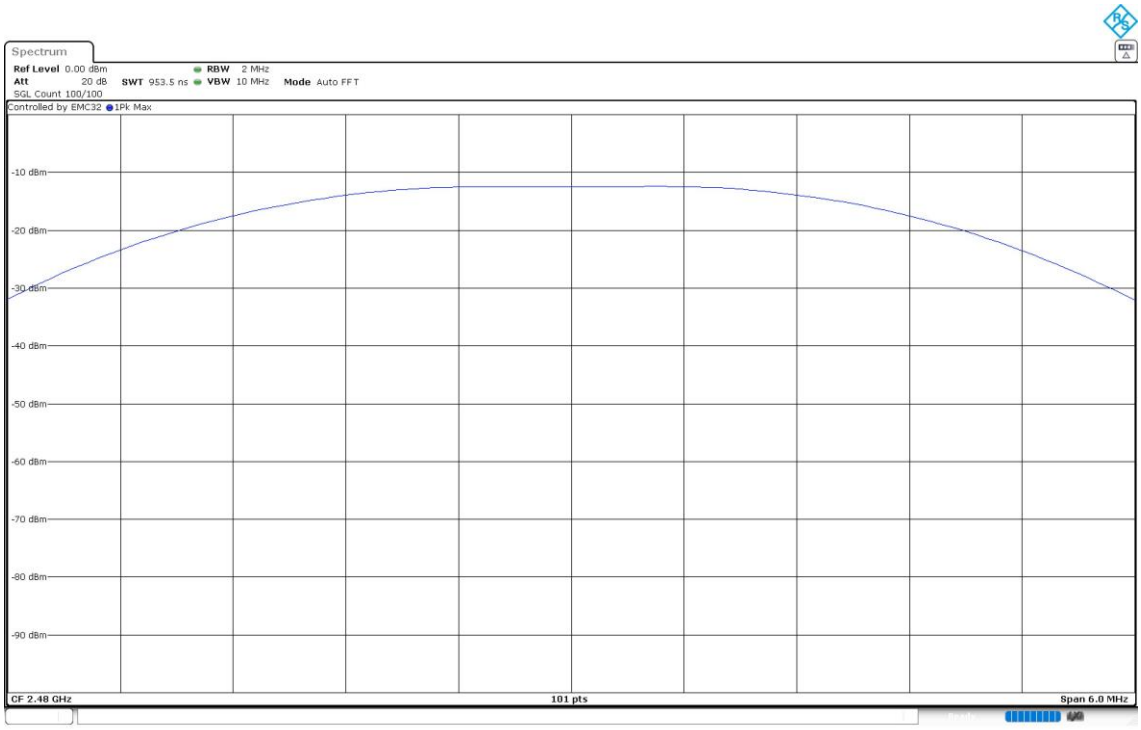


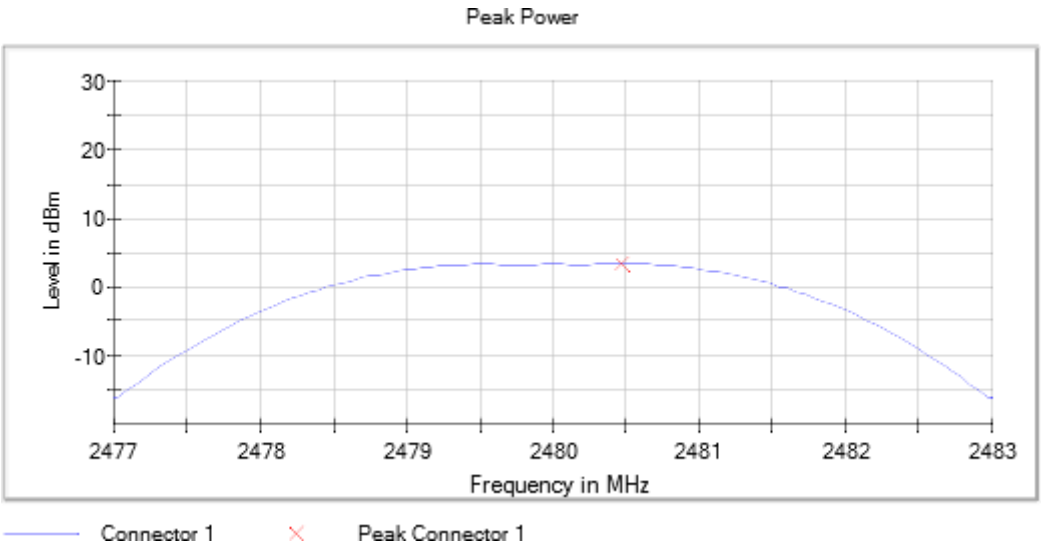


Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:





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

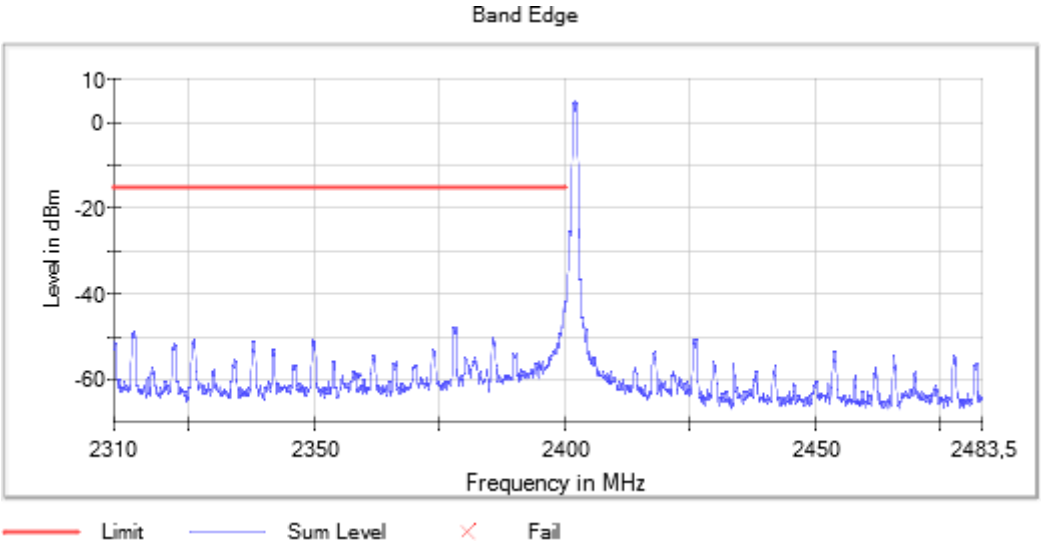
Limits

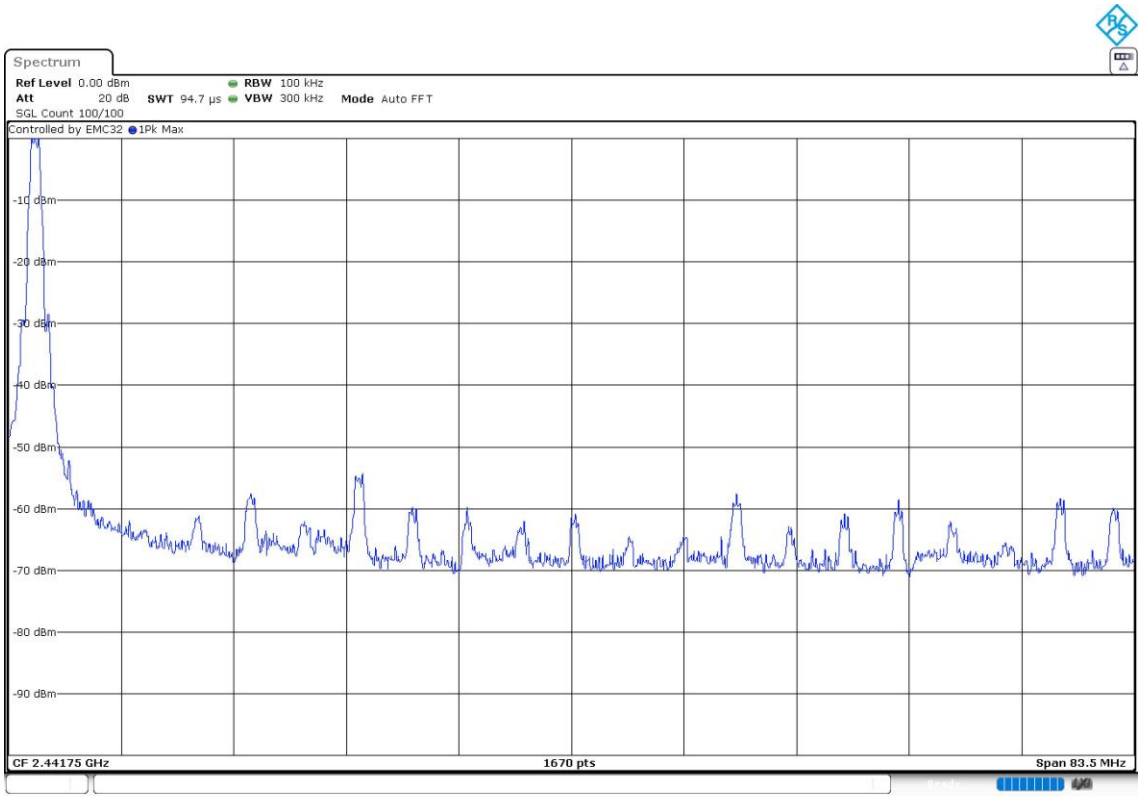
In any 100 kHz bandwidths outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, 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.

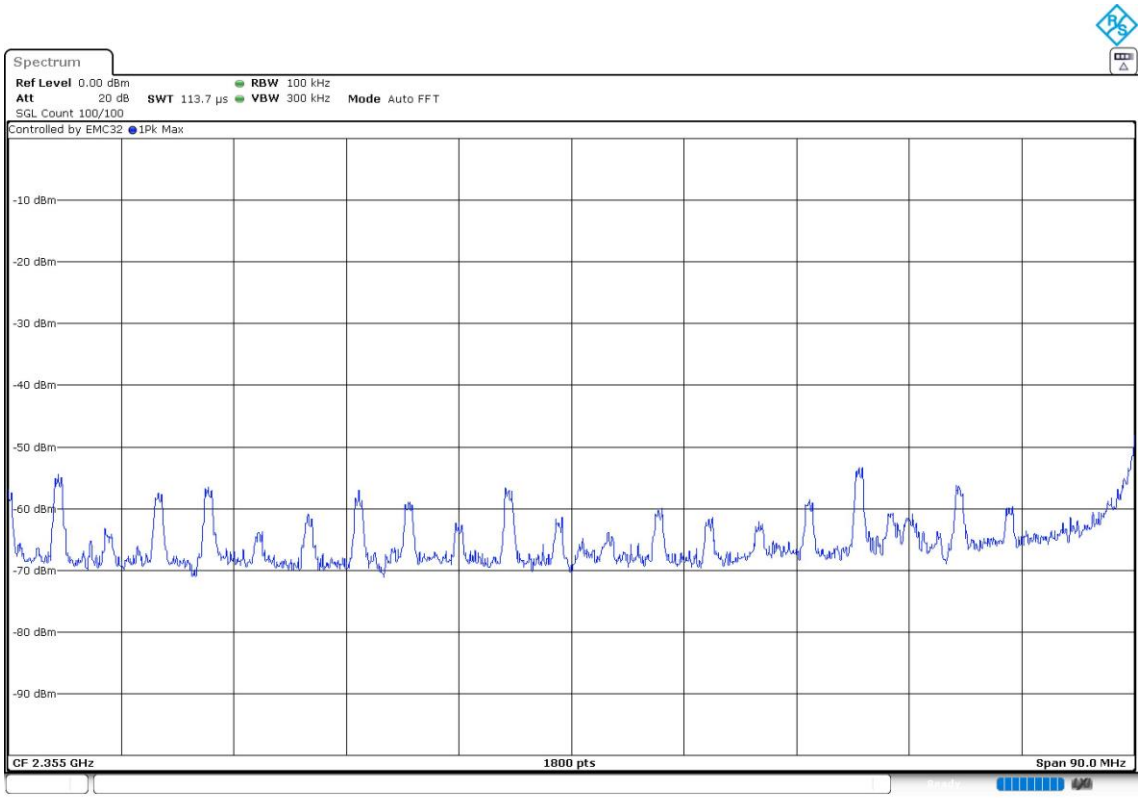
Results

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

Images:







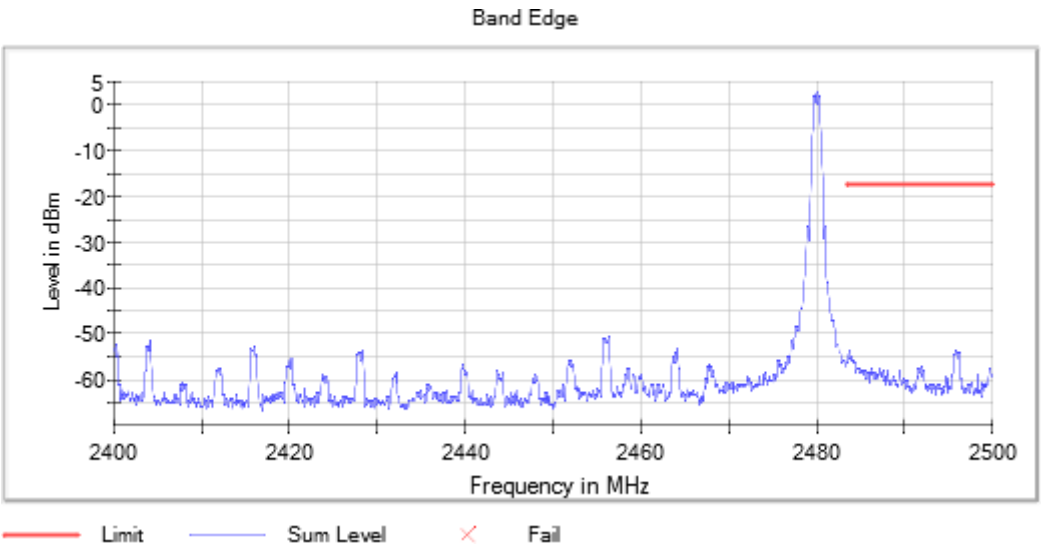
Verdict

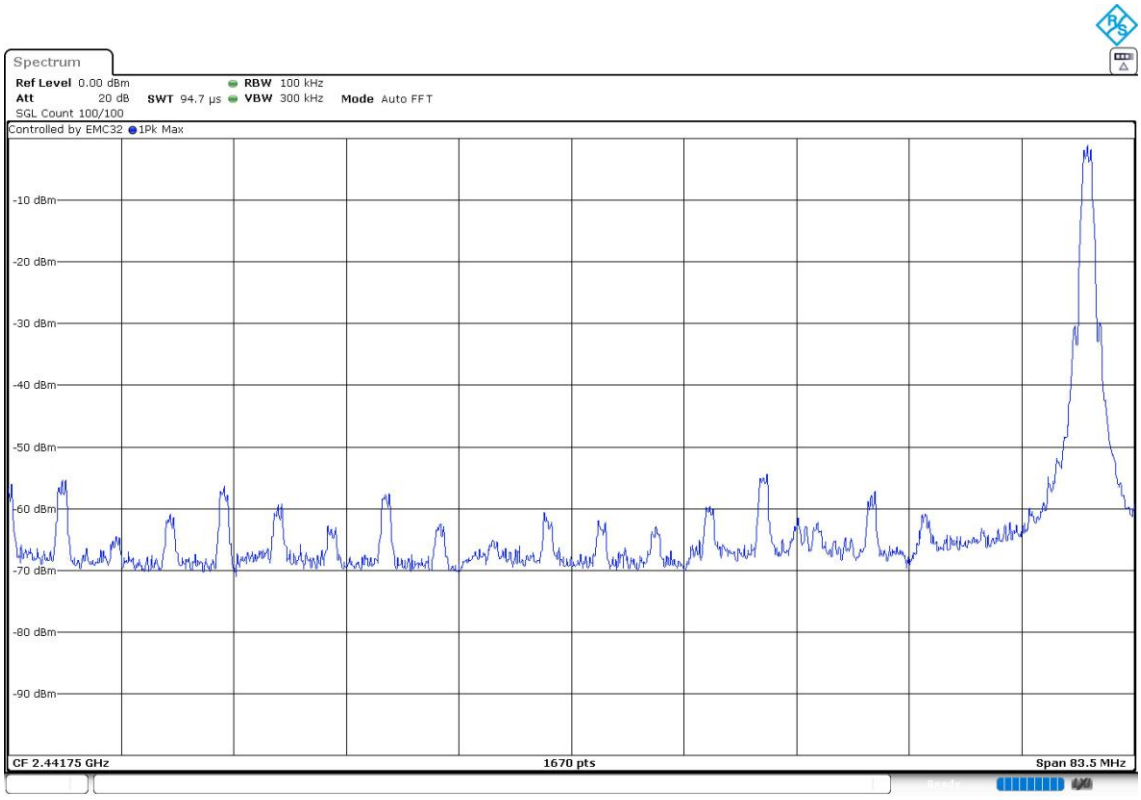
Pass

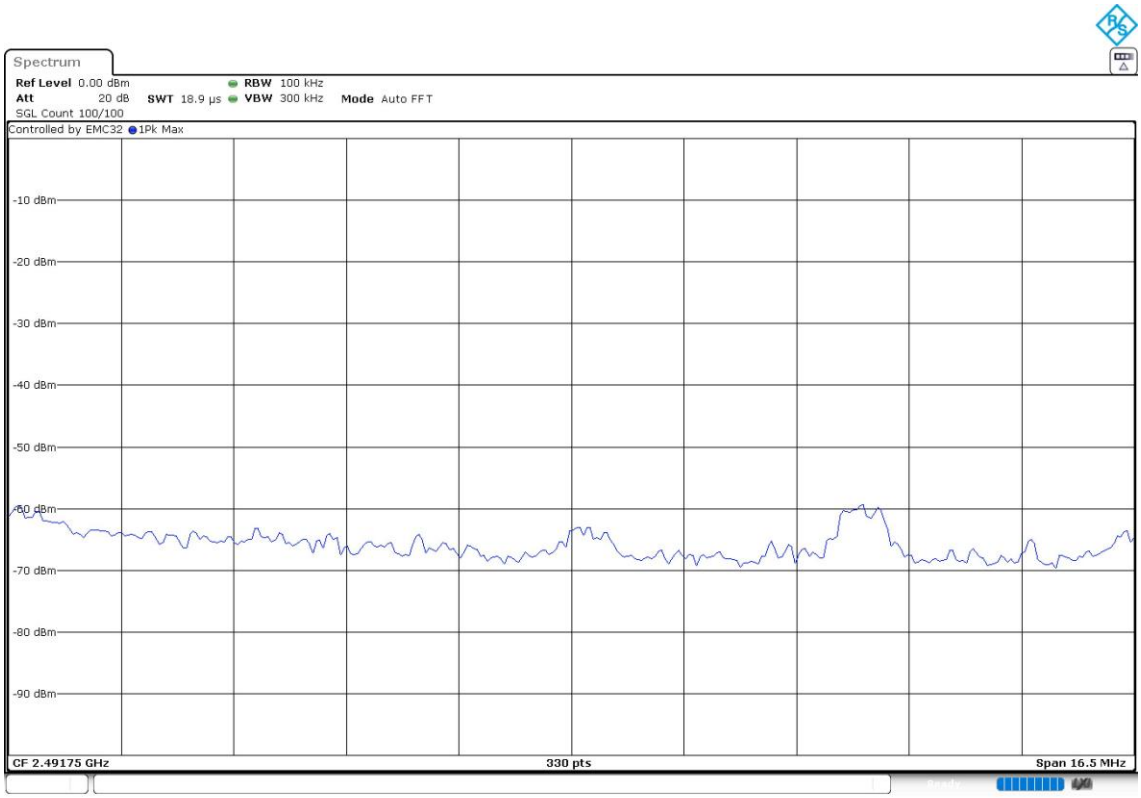
Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:







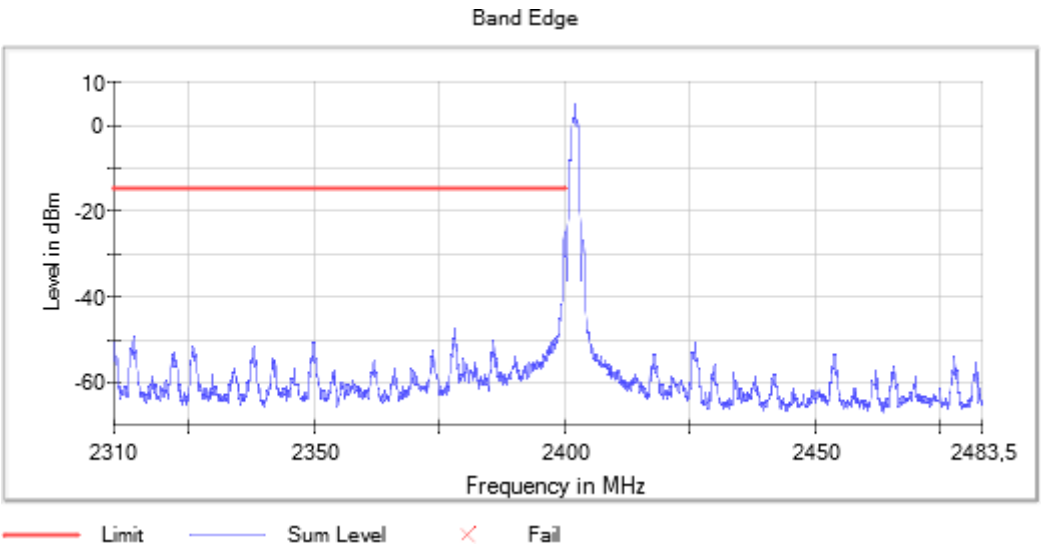
Verdict

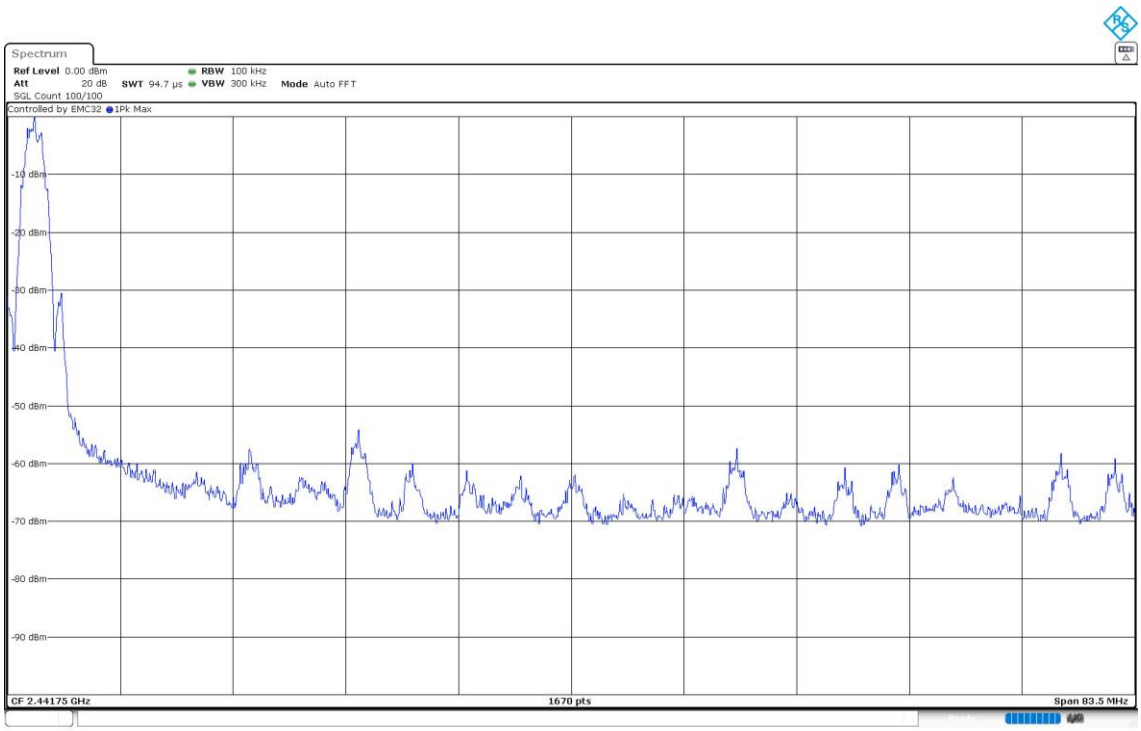
Pass

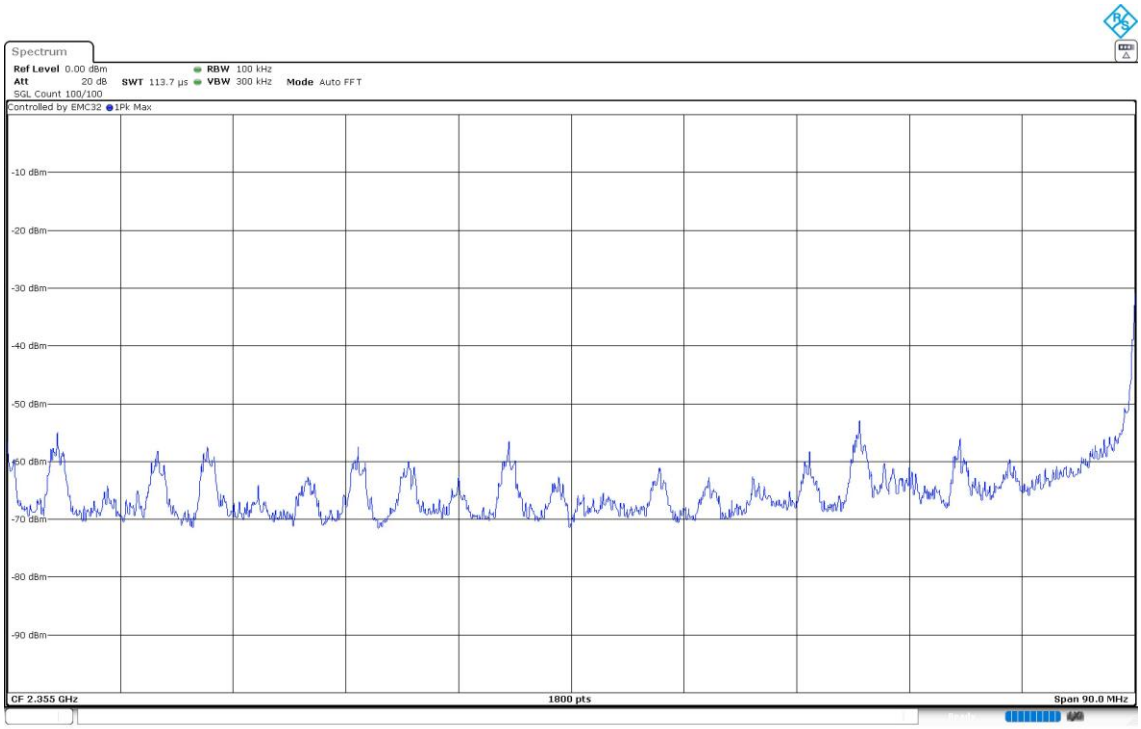
Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:







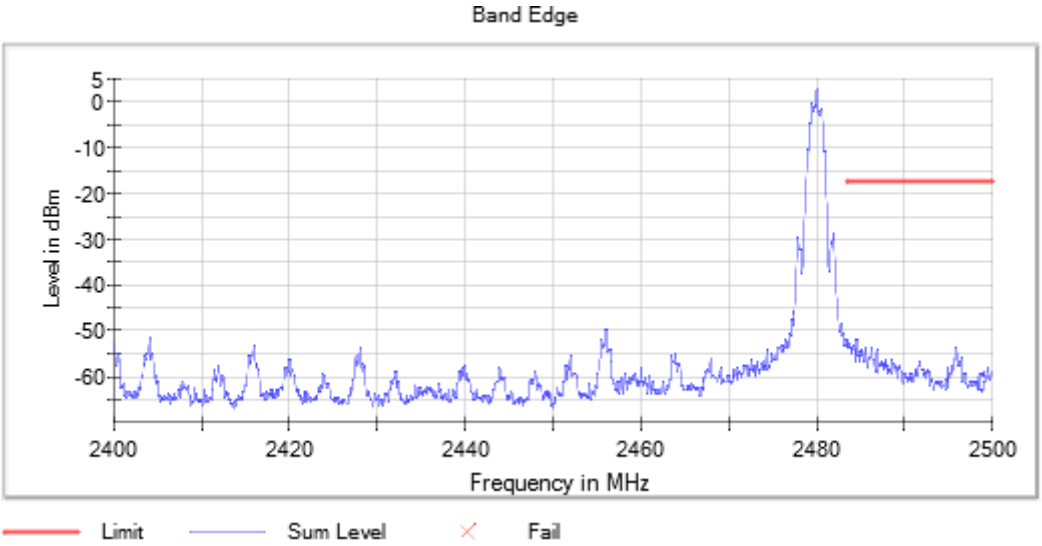
Verdict

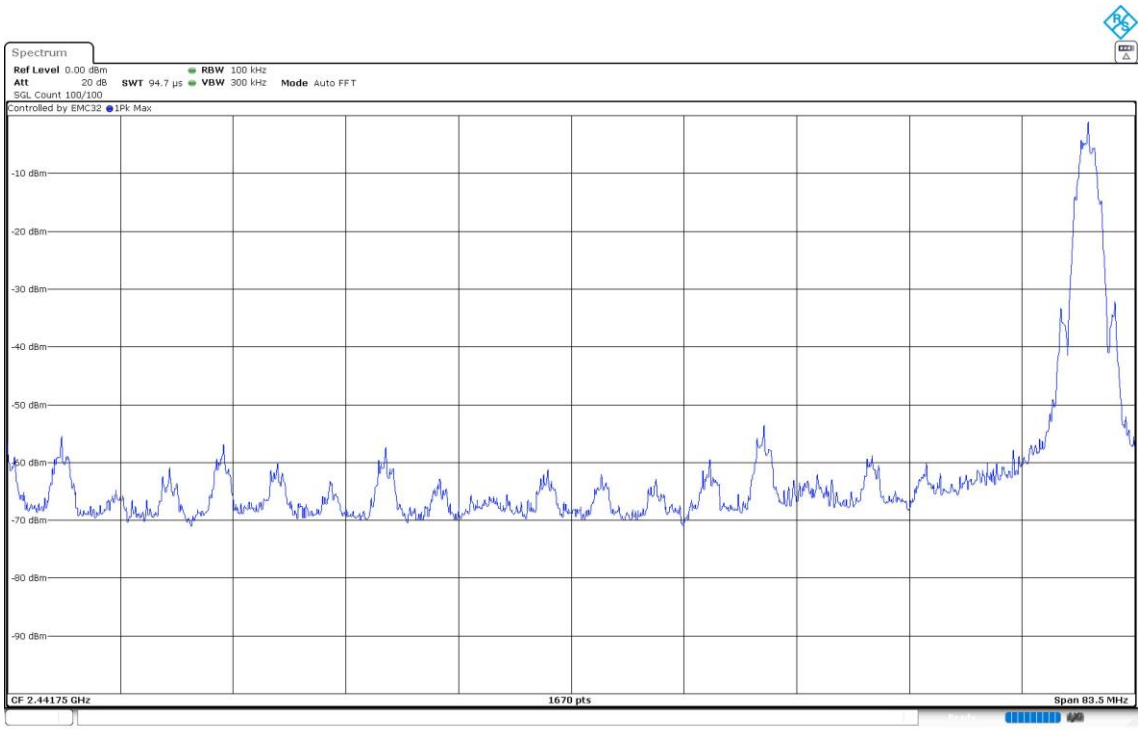
Pass

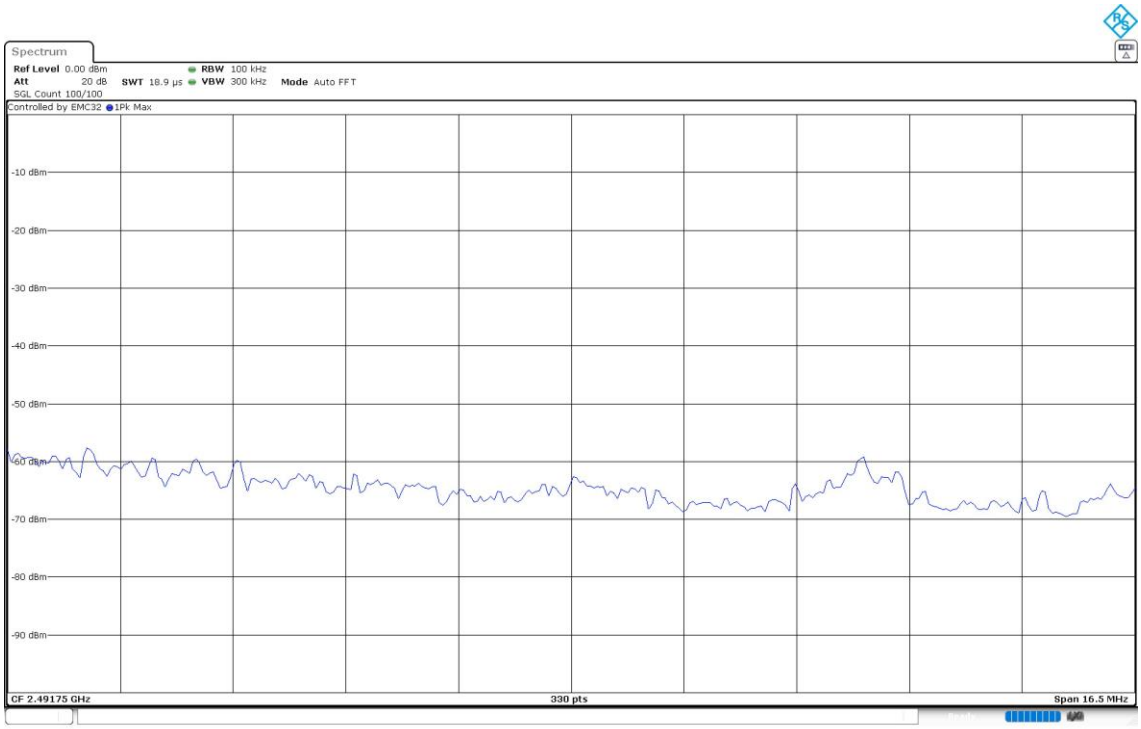
Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:







Verdict

Pass

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.

Results

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	PSD (dBm)
2402.00000	Digital Transmission System (DTS)	1	-4.13
2440.00000			-5.02
2480.00000			-6.47

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Freq (MHz)	Equipment	BW (MHz)	PSD (dBm)
2402.00000	Digital Transmission System (DTS)	2	-4.42
2440.00000			-5.54
2480.00000			-6.99

Verdict

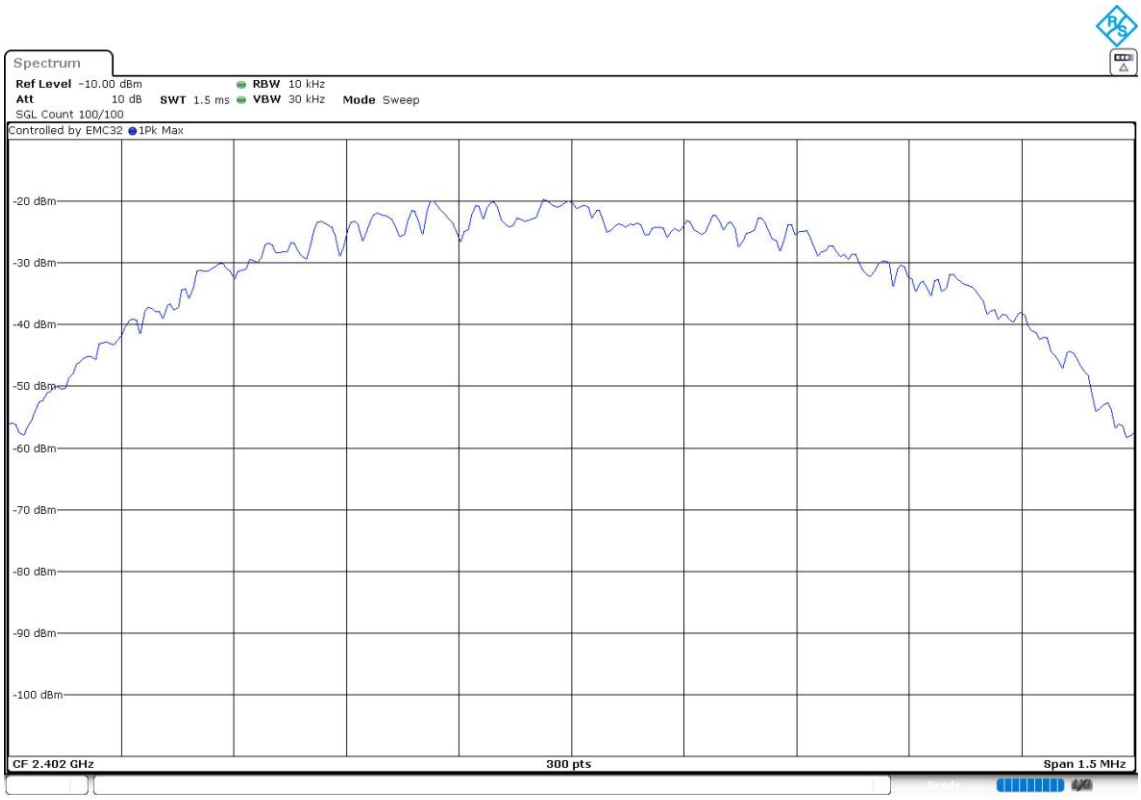
Pass

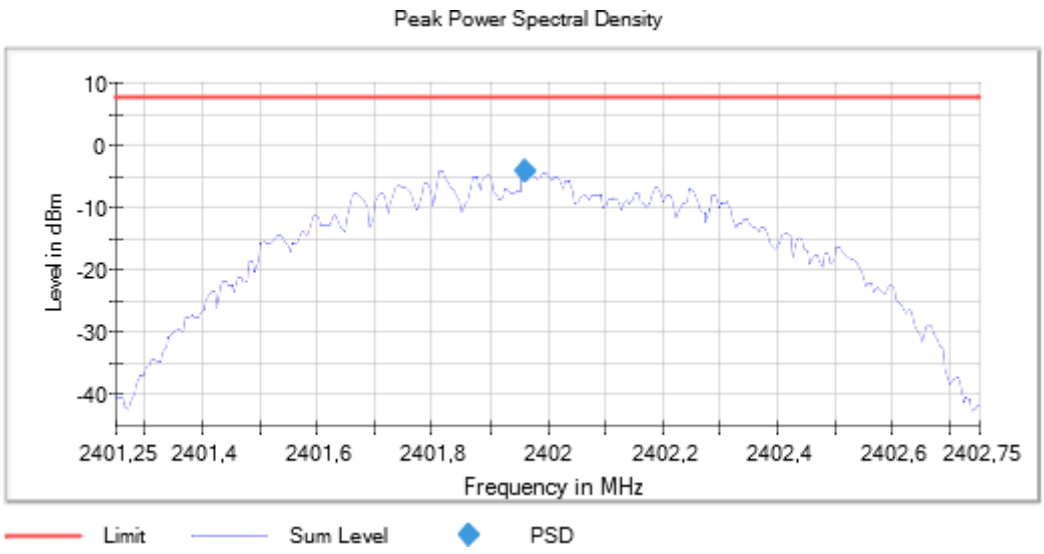
Attachments

Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

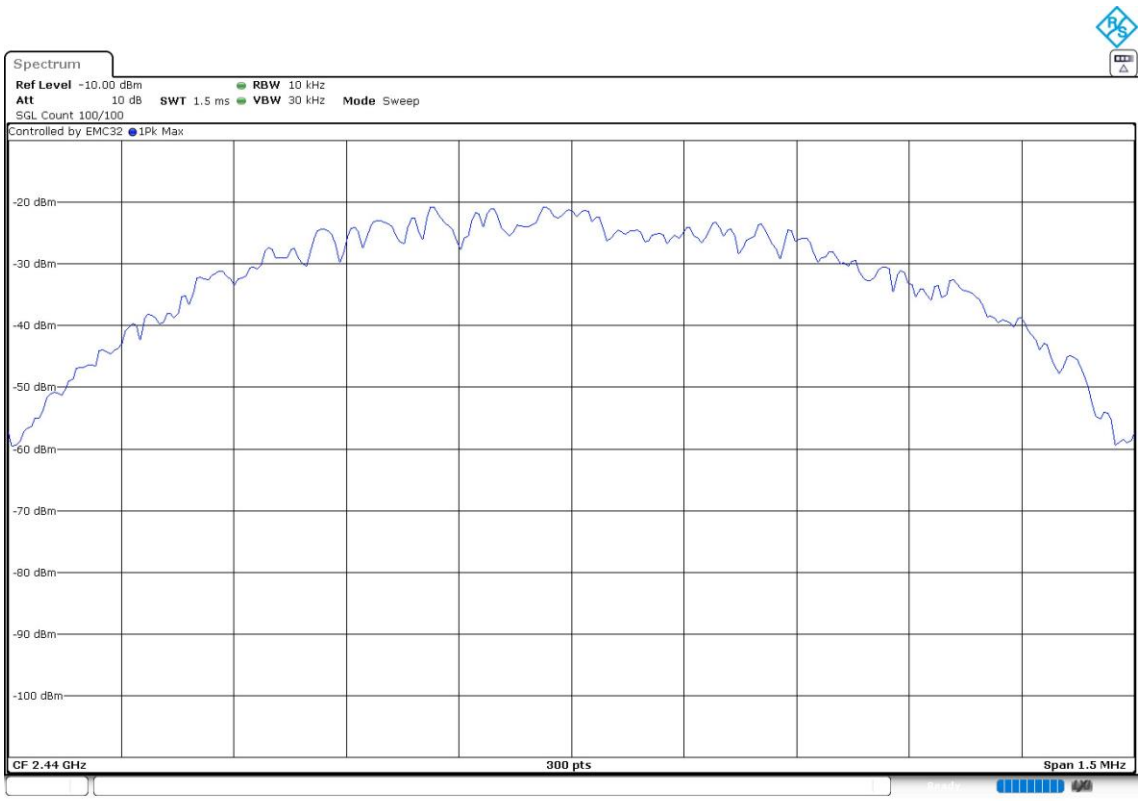


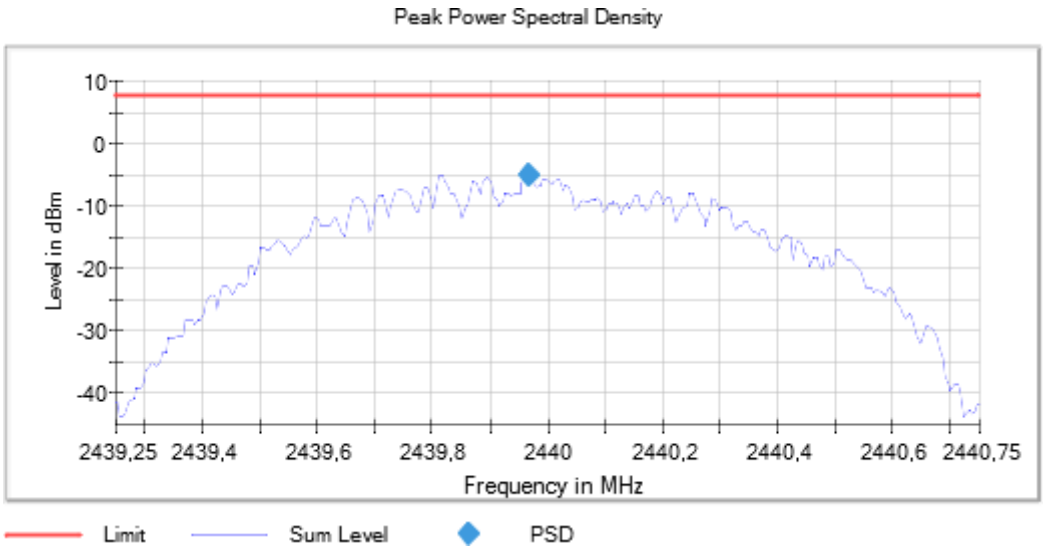


Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

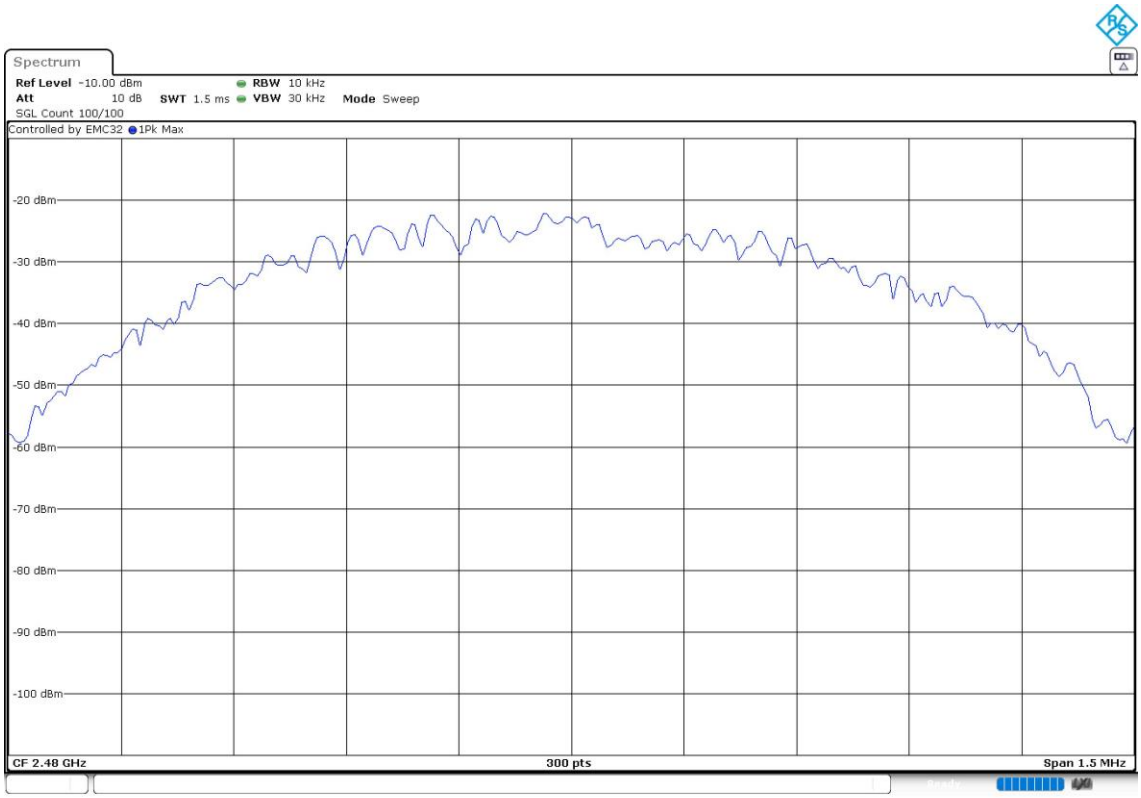


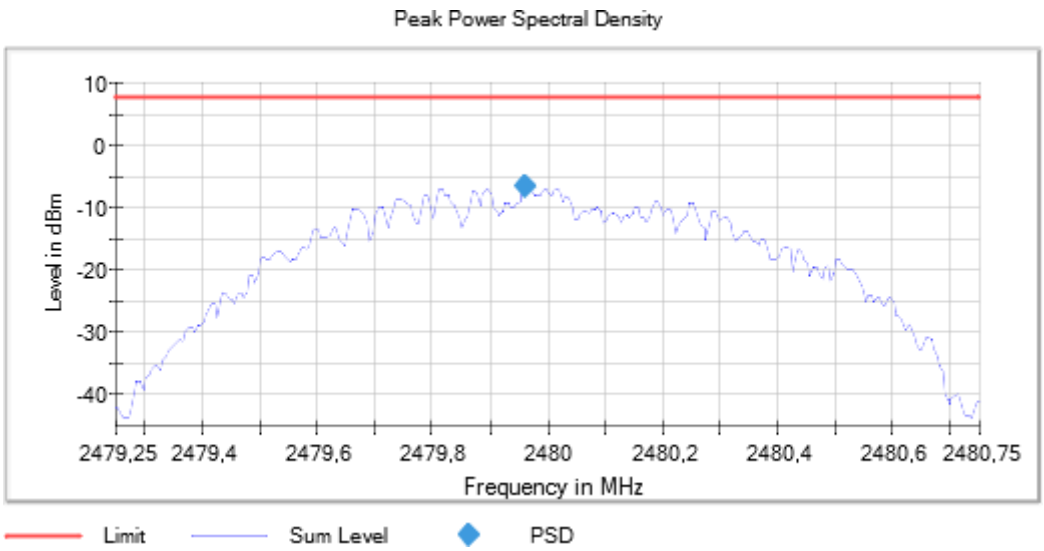


Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)

Images:

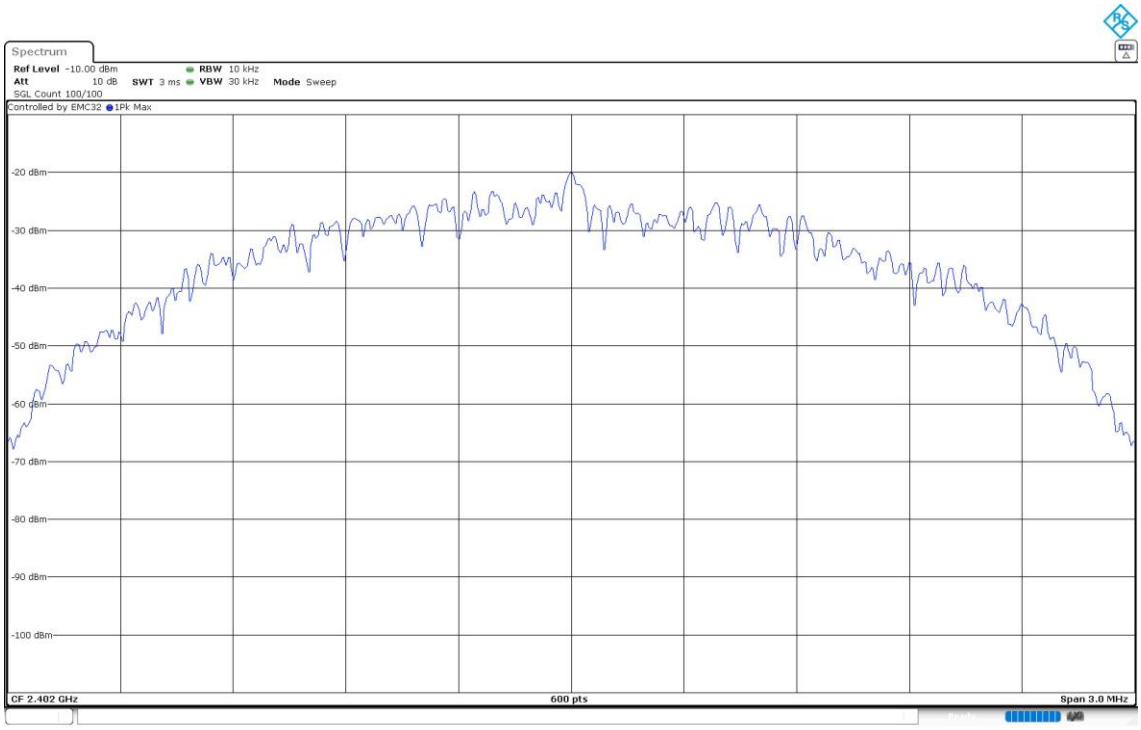


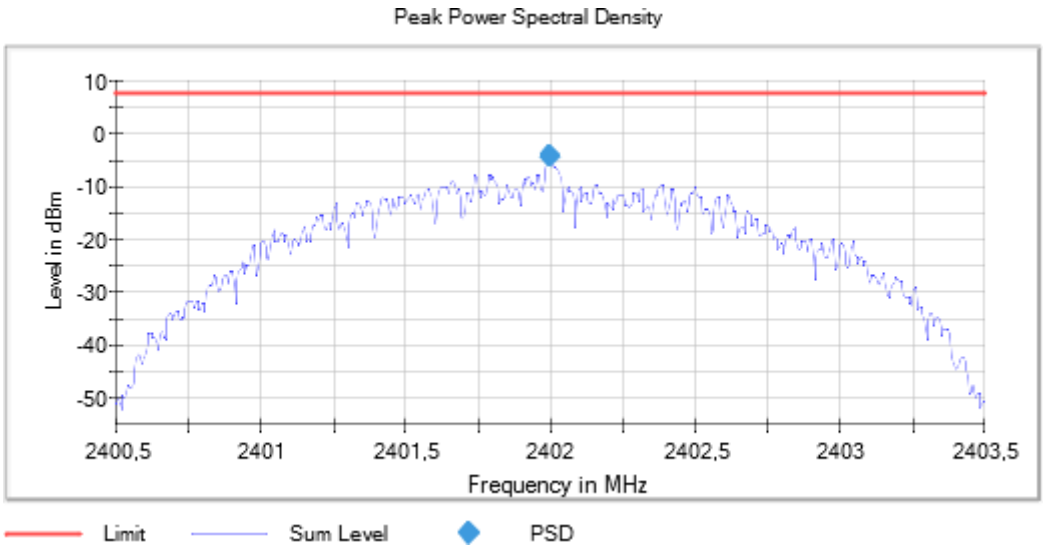


Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:

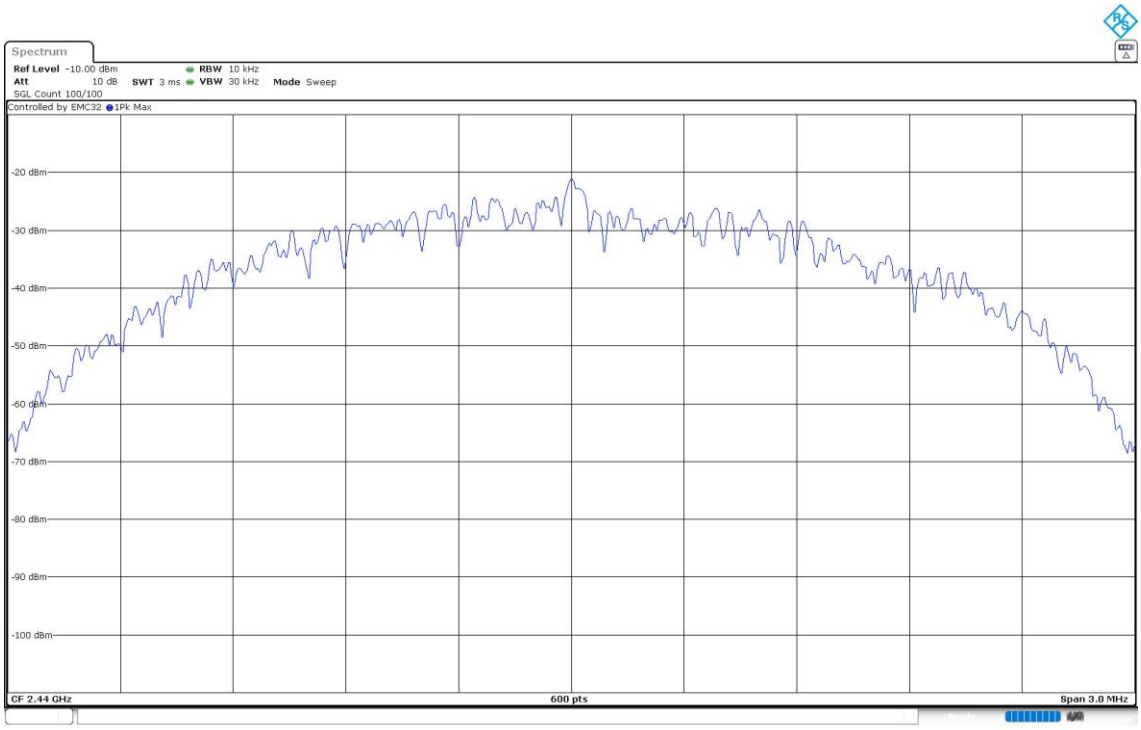


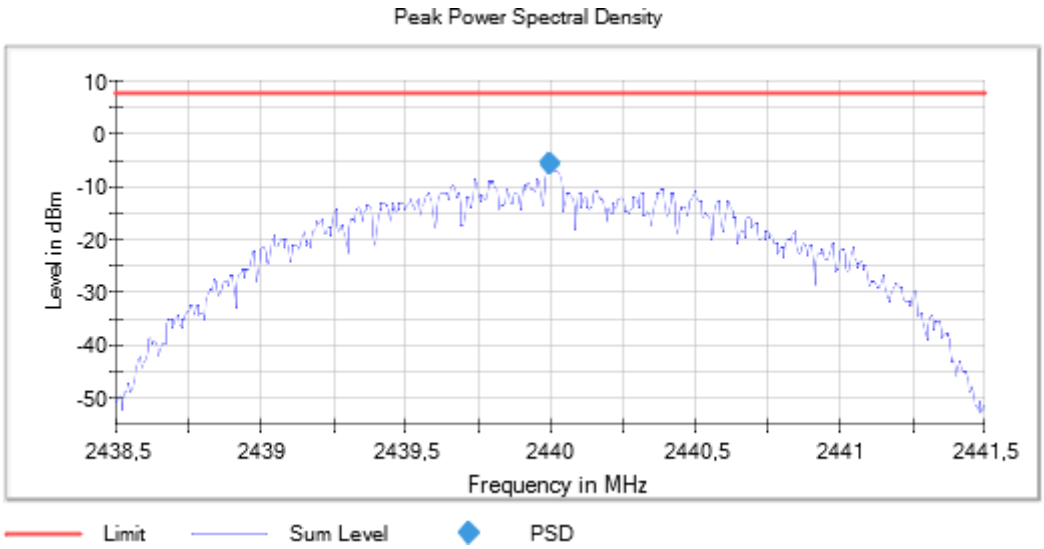


Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

Images:

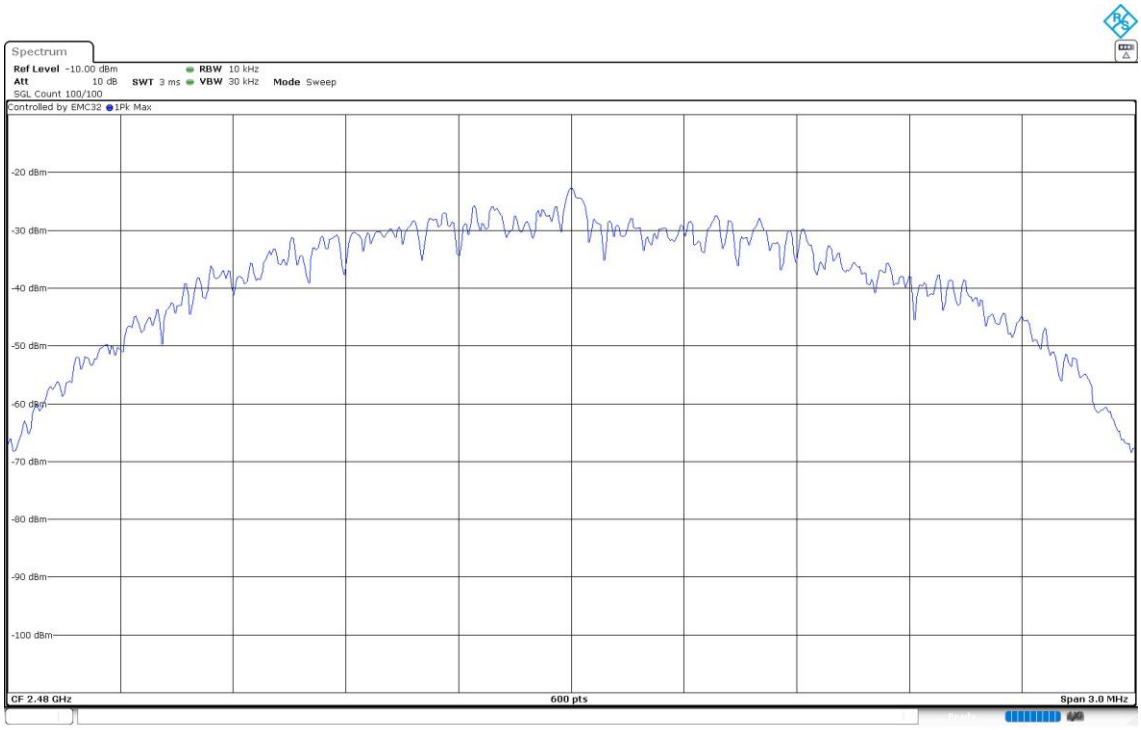


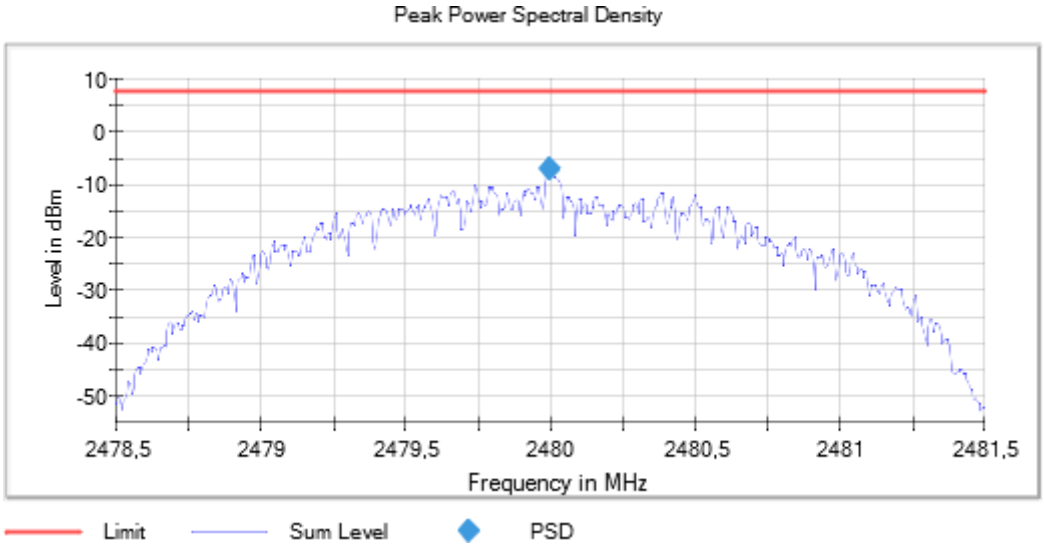


Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)

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 (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
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 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

Frequency range 30 MHz – 1 GHz

The spurious signals detected do not depend on either the operating channel or the modulation.

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

Frequency range 1 GHz – 26 GHz

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Freq (MHz)	Equipment	Freq Rng (GHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
2402.00000	Digital Transmission System (DTS)	[3, 17]	4804.040	43.70	H	PK
			7206.860	49.50	H	PK
2440.00000			4880.340	42.87	V	PK
			7319.280	49.76	H	PK
2480.00000			4960.280	45.43	V	PK
			7440.520	50.33	H	PK

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Freq (MHz)	Equipment	Freq Rng (GHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
2402.00000	Digital Transmission System (DTS)	[3, 17]	4804.600	41.90	H	PK
			7207.140	48.54	H	PK
2440.00000			4880.760	44.75	H	PK
			7318.300	49.35	H	PK
2480.00000			4960.840	44.77	H	PK
			7438.700	50.50	H	PK

Verdict

Pass

Attachments

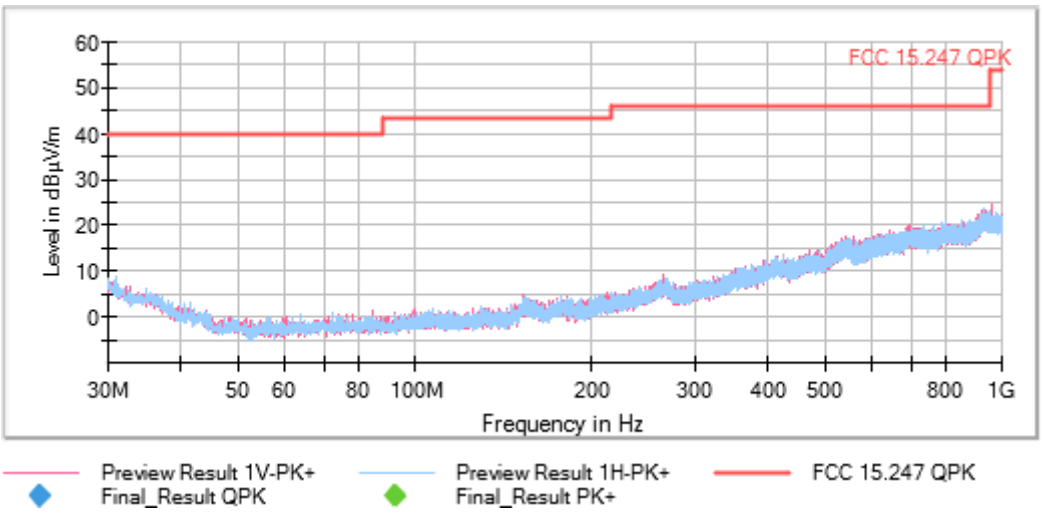
Frequency Range GHz = [0.03, 1]

Frequency MHz = The spurious signals detected do not depend on either the operating channel or the modulation.

Modulation = BTLE 5.0 (GFSK 1 Mbit/s & 2 Mbit/s)

Equipment Type = Digital Transmission System (DTS)

Images:



Tables:

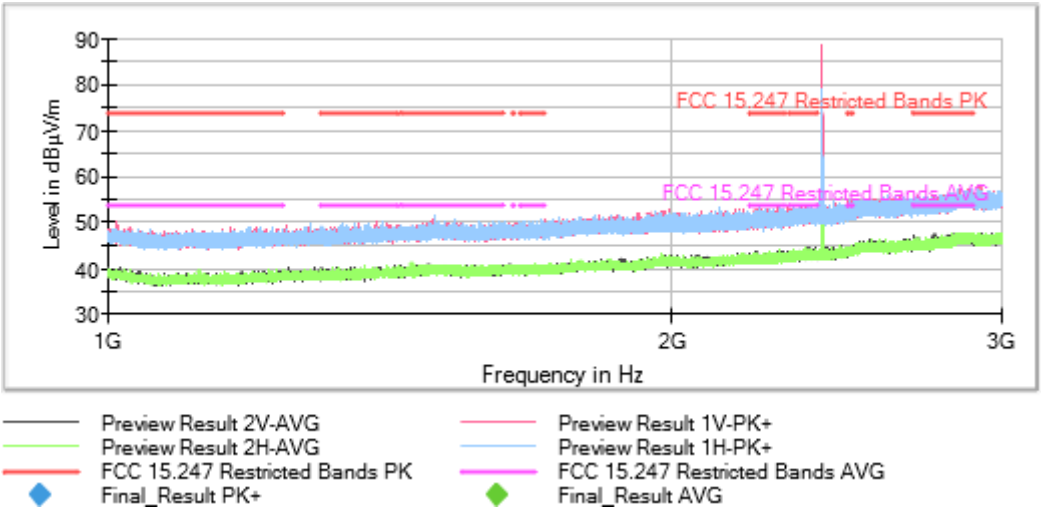
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB

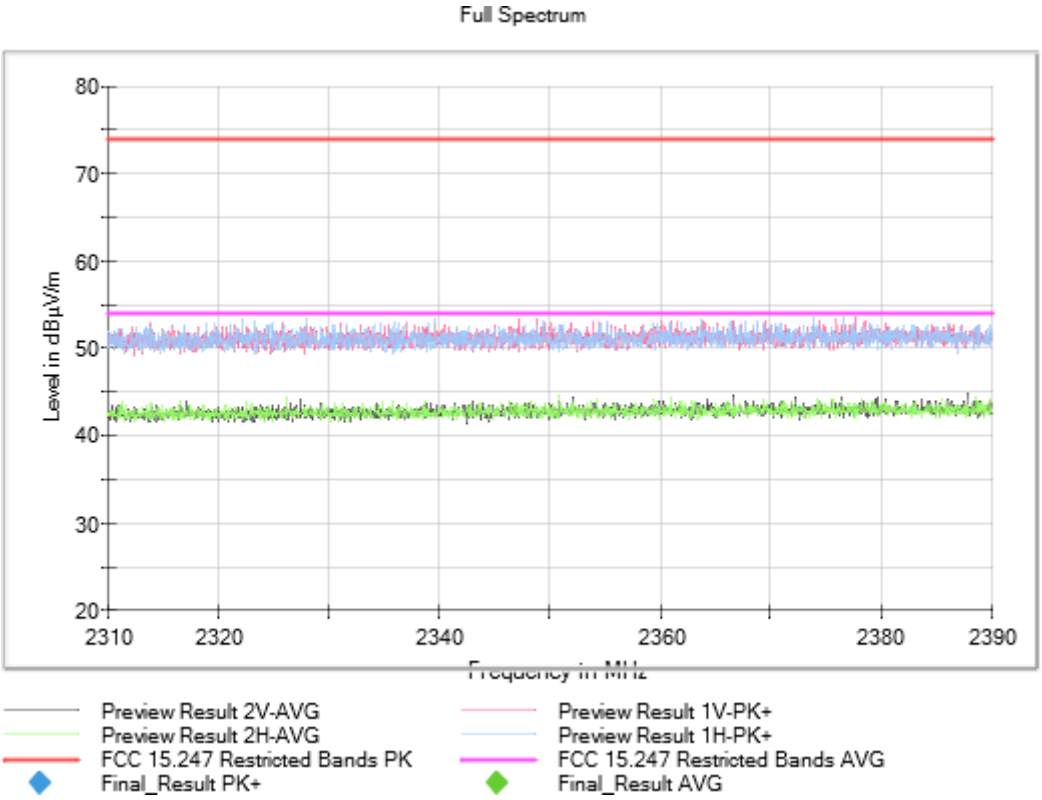
Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

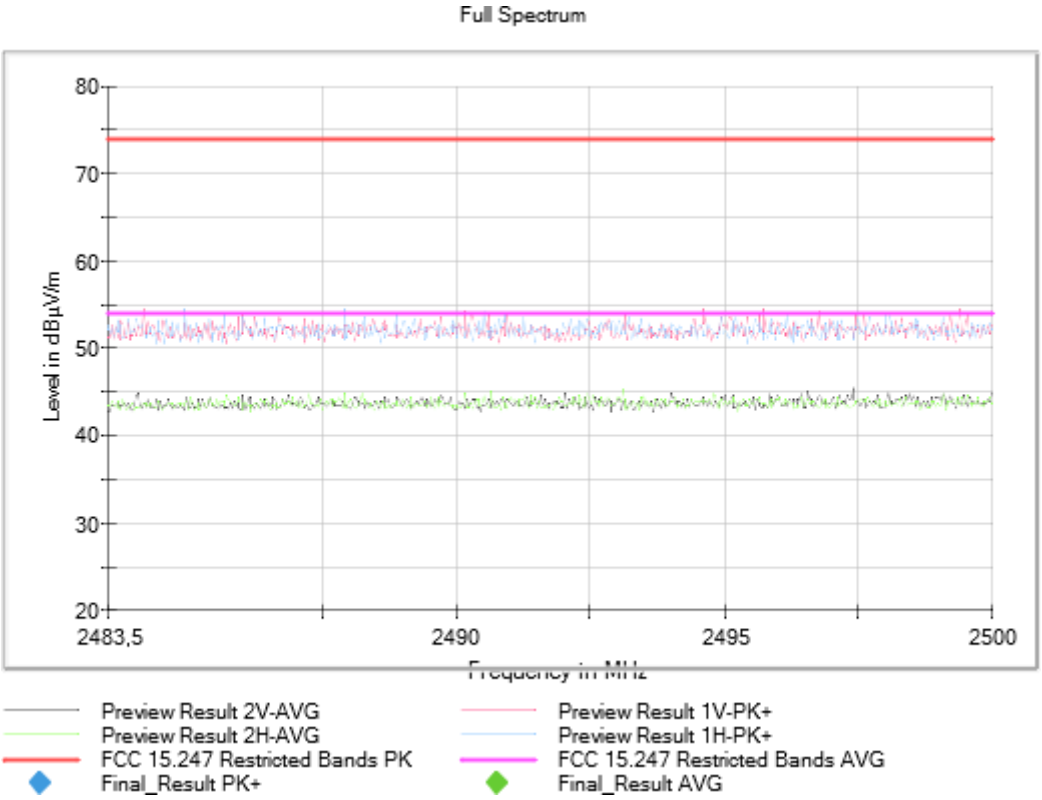
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency Range GHz = [1, 3]

Images:



The highest peak is the carrier frequency.





Tables:

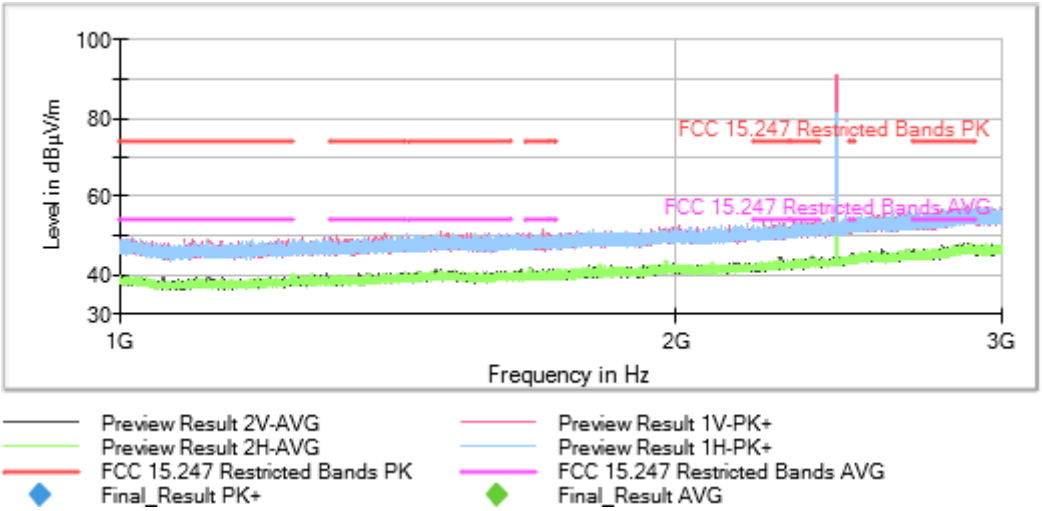
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

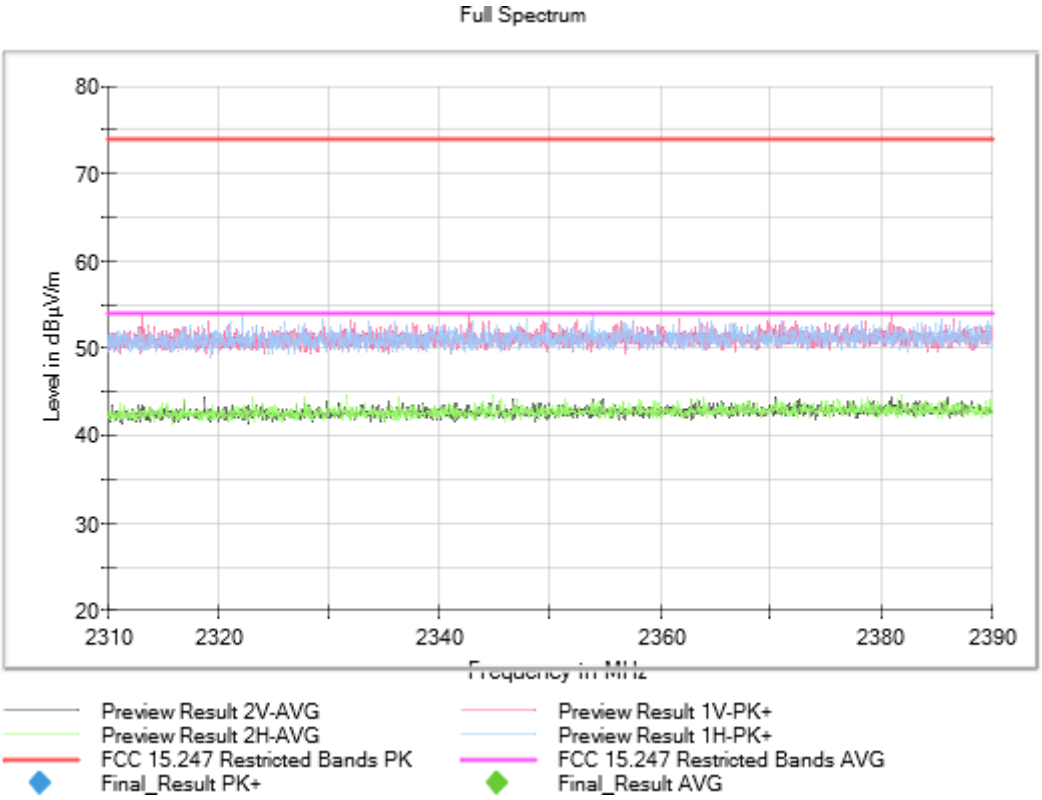
Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

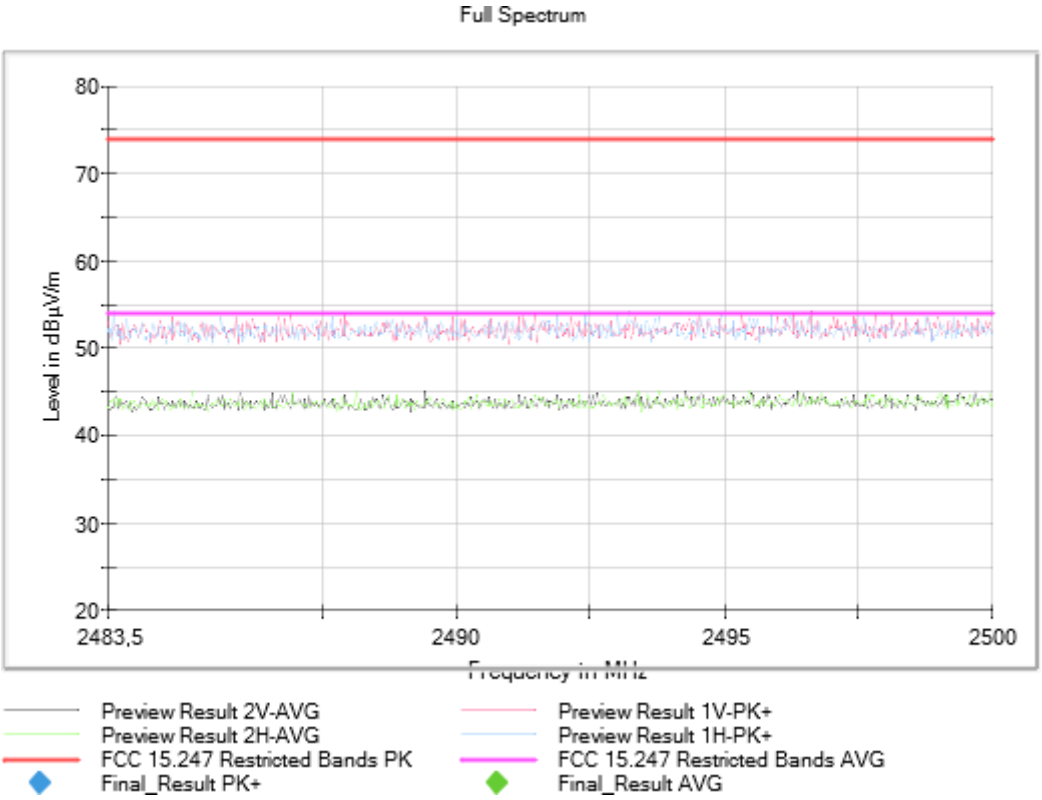
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency Range GHz = [1, 3]

Images:



The highest peak is the carrier frequency.





Tables:

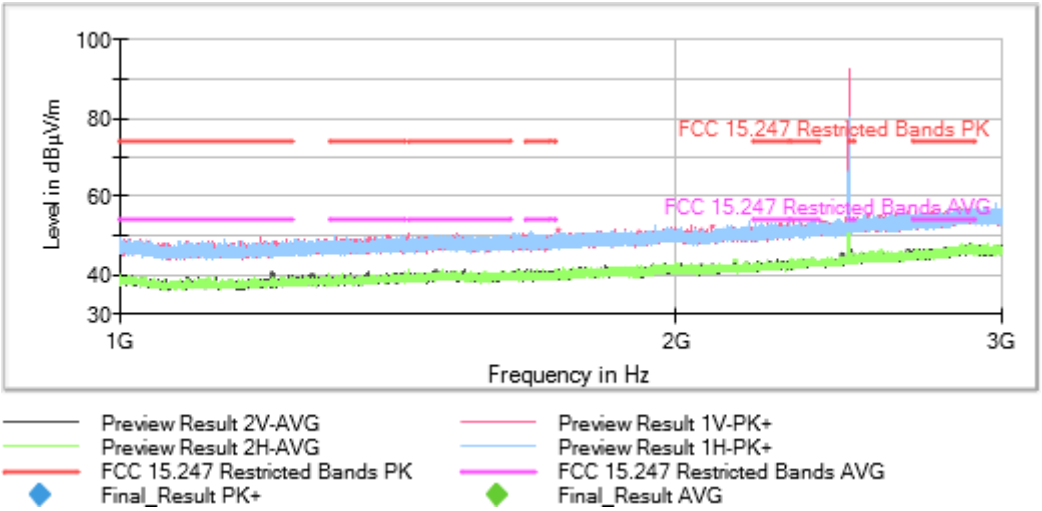
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

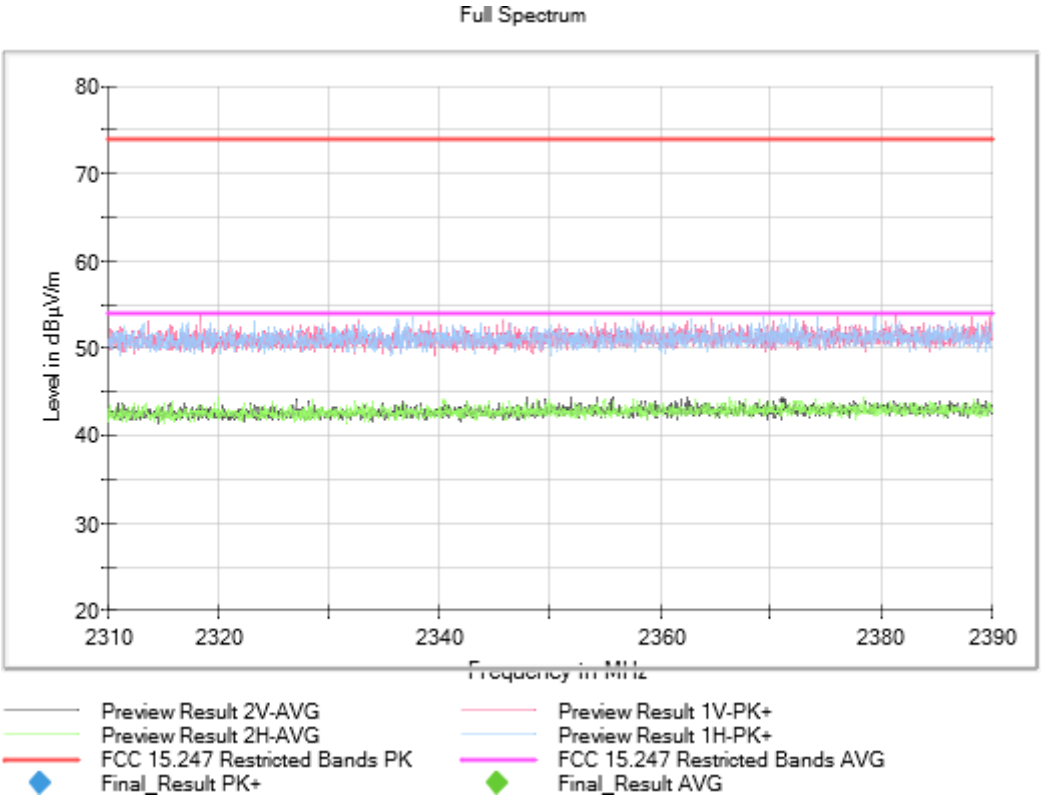
Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

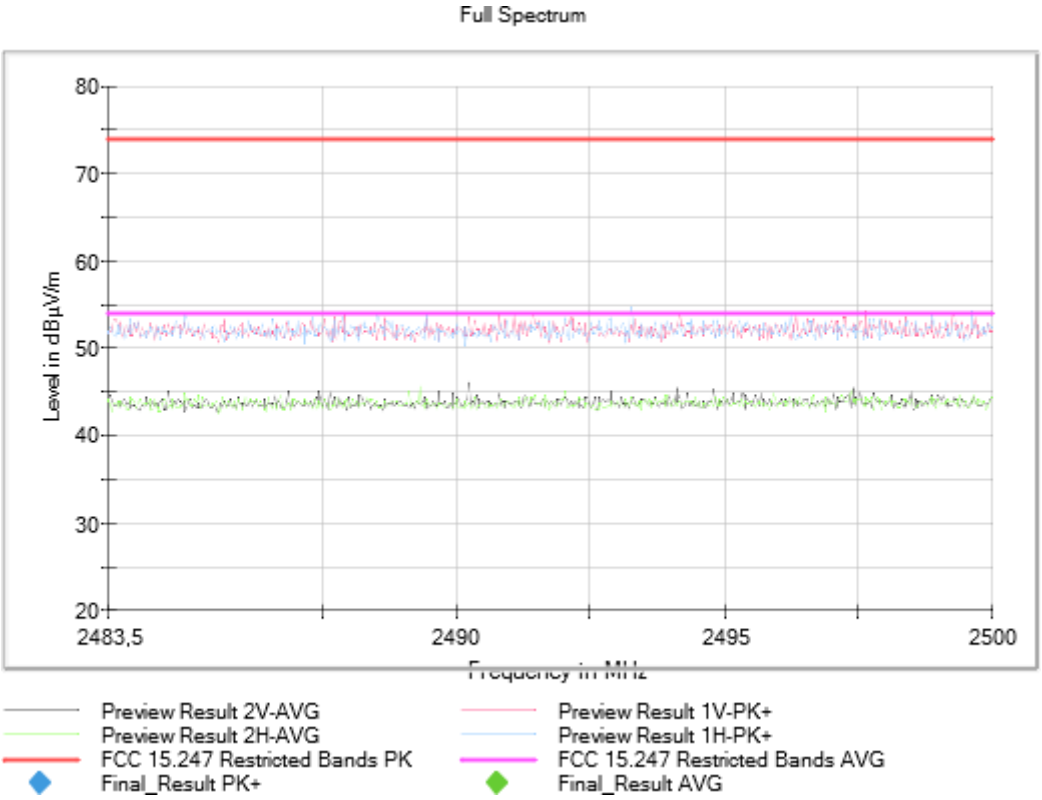
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency Range GHz = [1, 3]

Images:



The highest peak is the carrier frequency.





Tables:

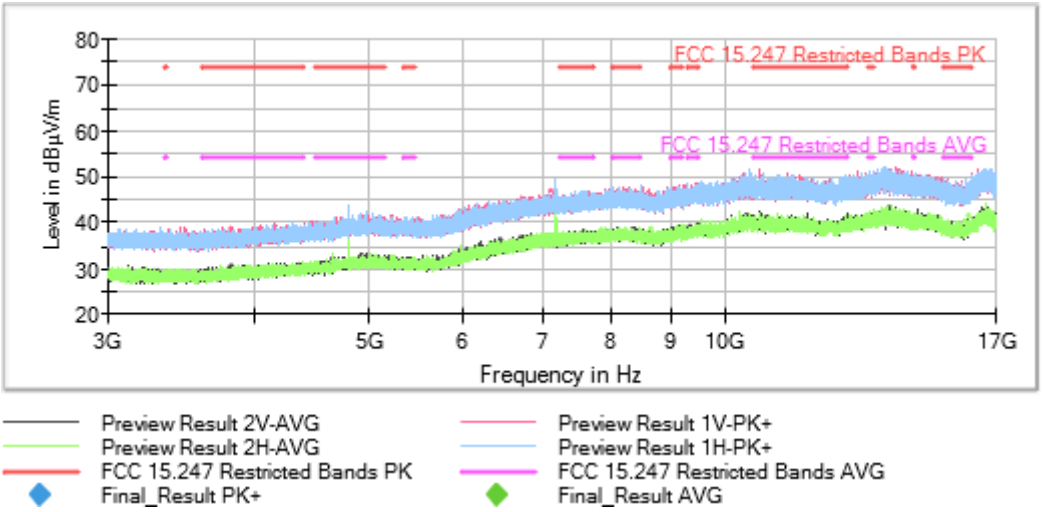
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency Range GHz = [3, 17]

Images:



Tables:

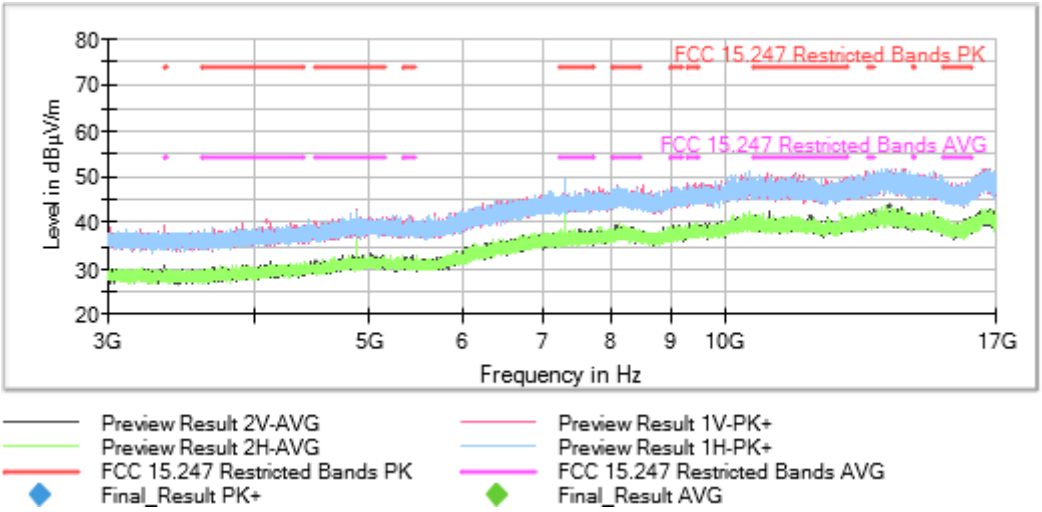
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB

Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency Range GHz = [3, 17]

Images:



Tables:

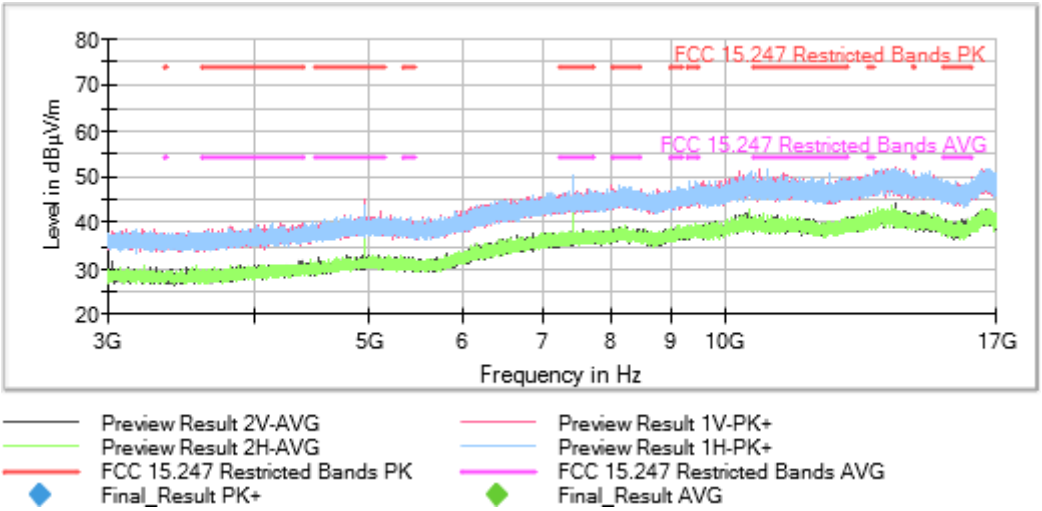
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB

Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency Range GHz = [3, 17]

Images:



Tables:

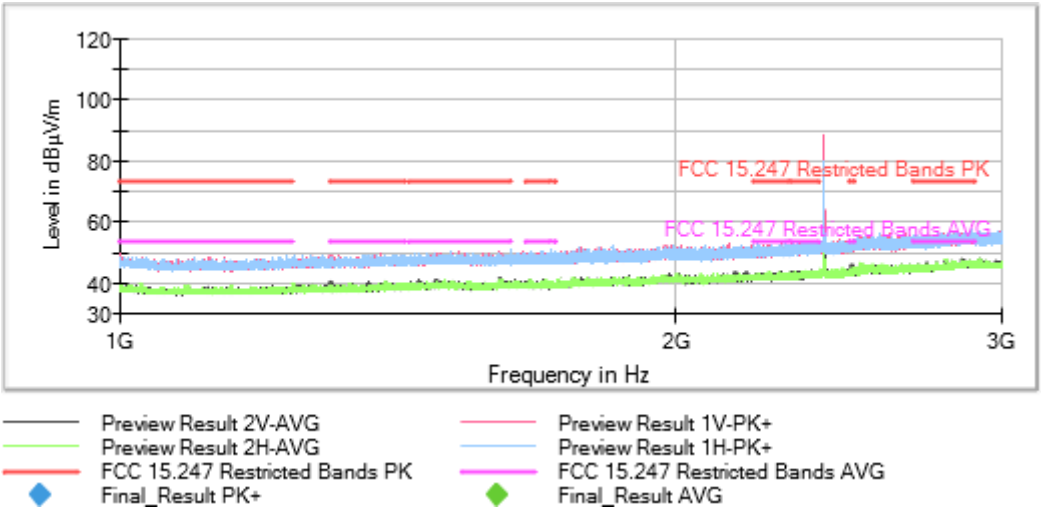
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB

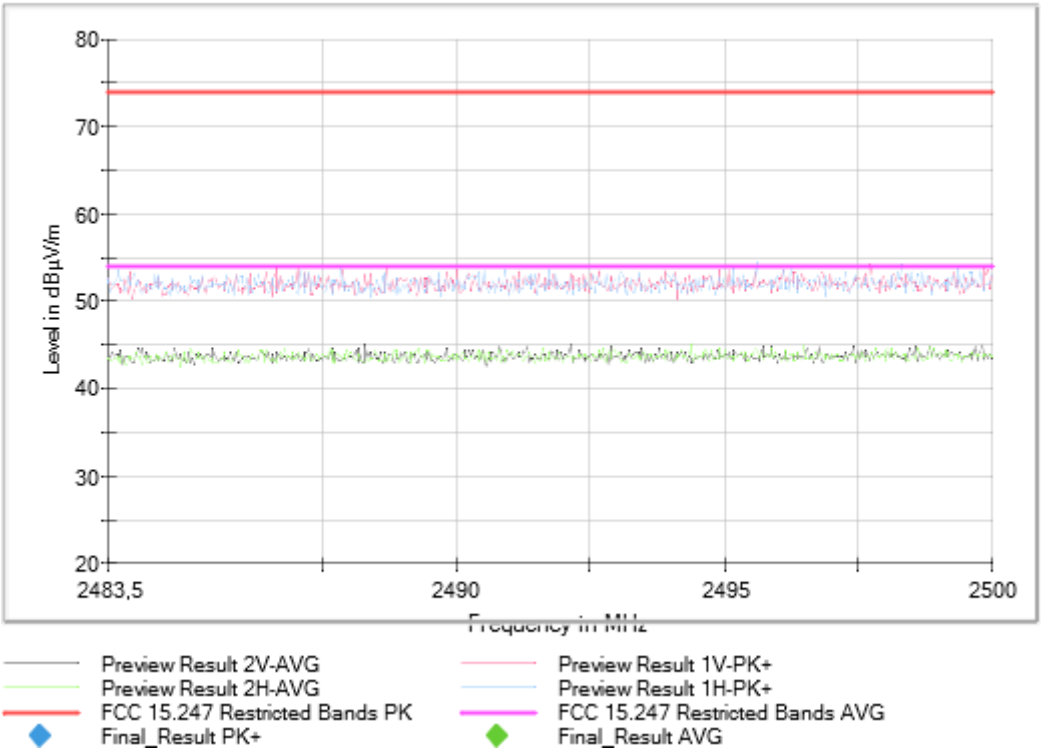
Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

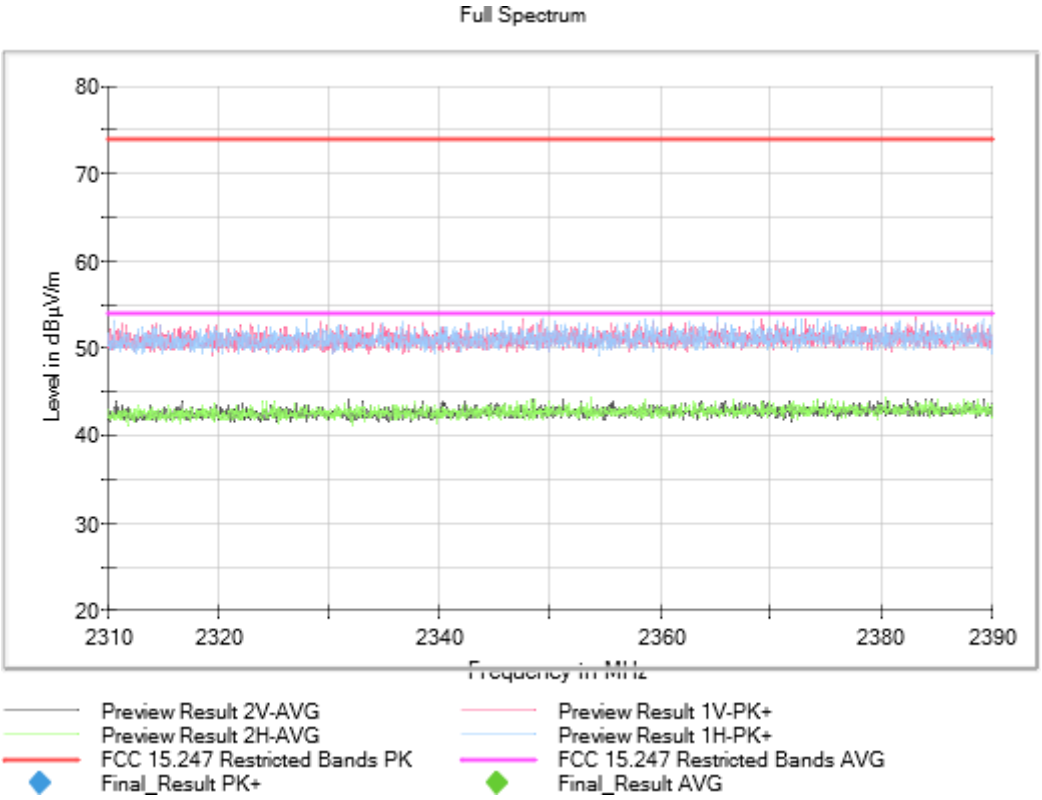
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency Range GHz = [1, 3]

Images:



Full Spectrum





Tables:

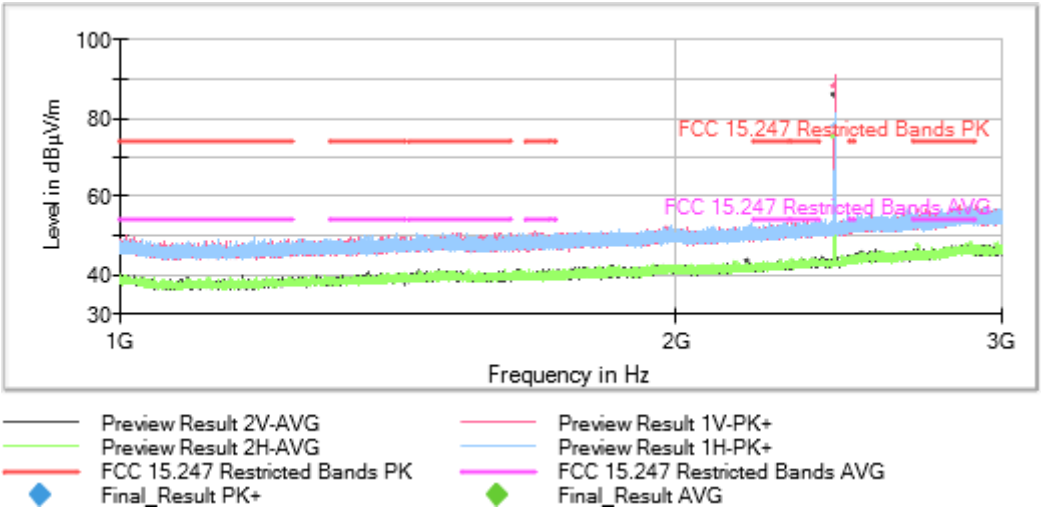
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

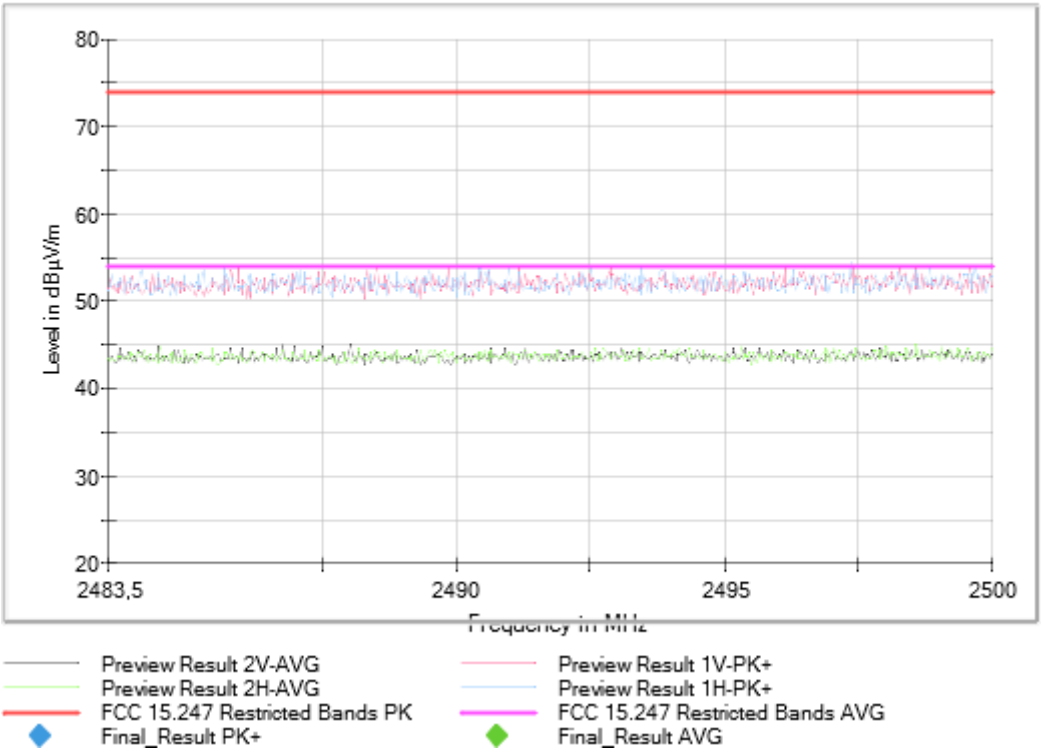
Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

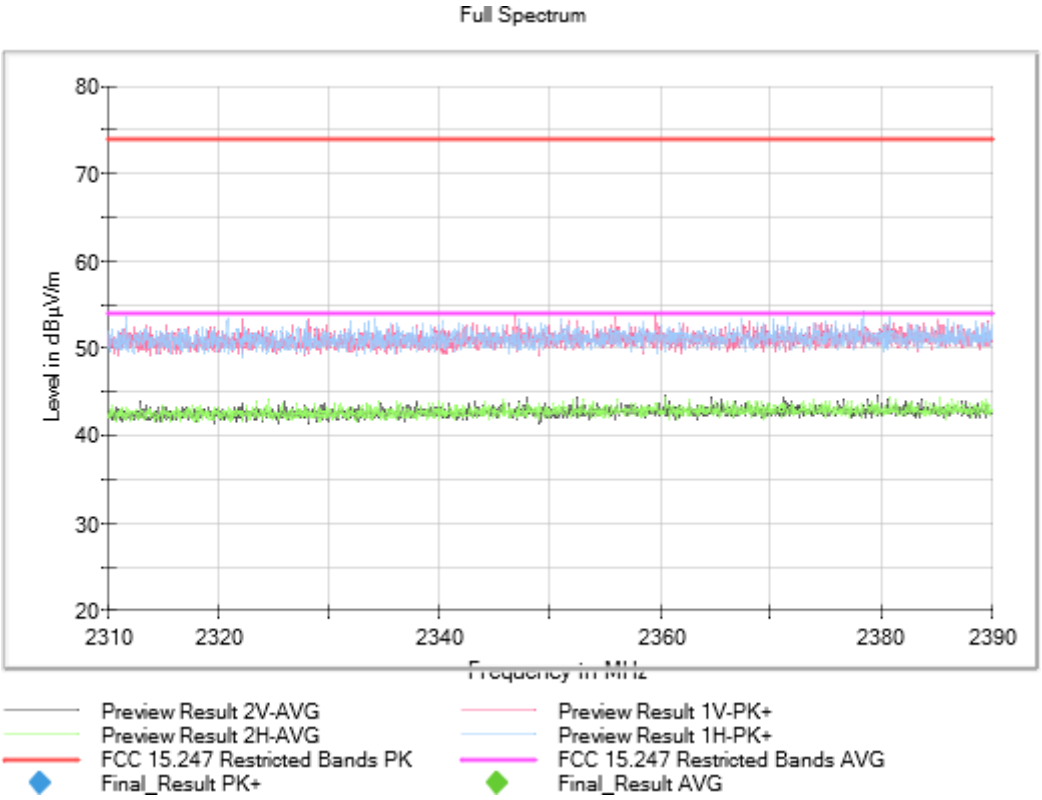
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency Range GHz = [1, 3]

Images:



Full Spectrum





Tables:

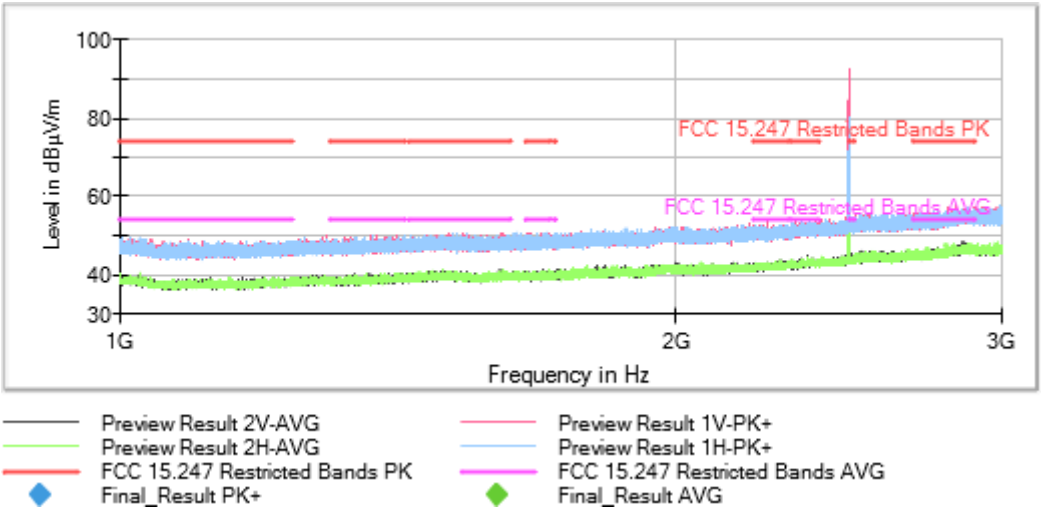
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

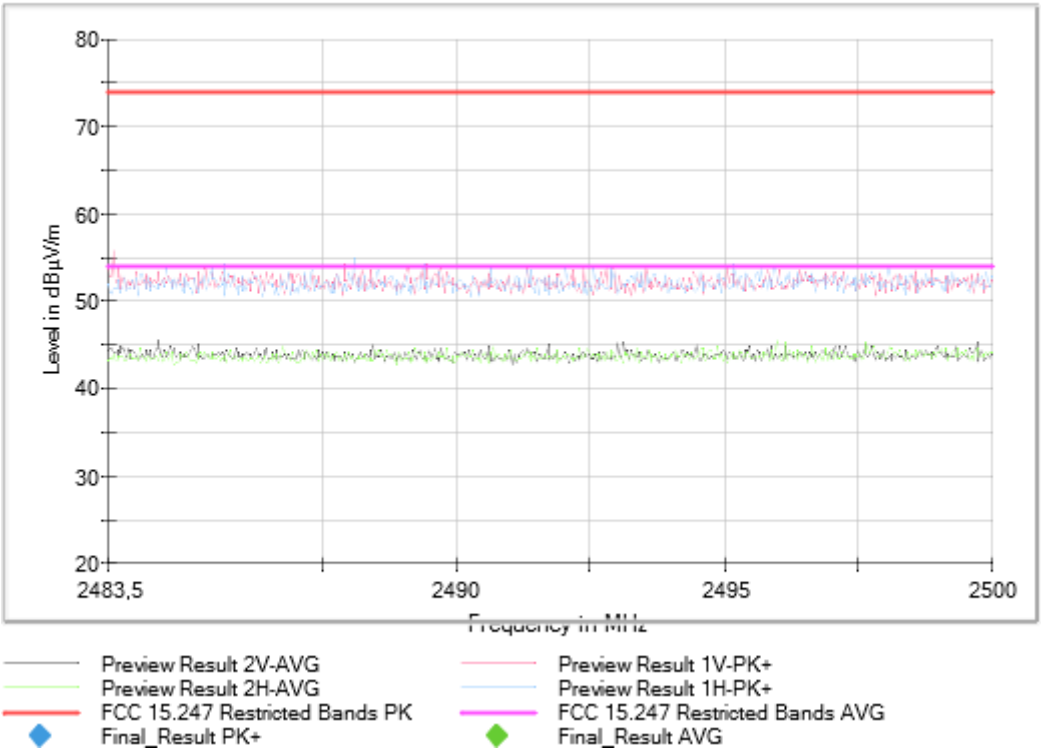
Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

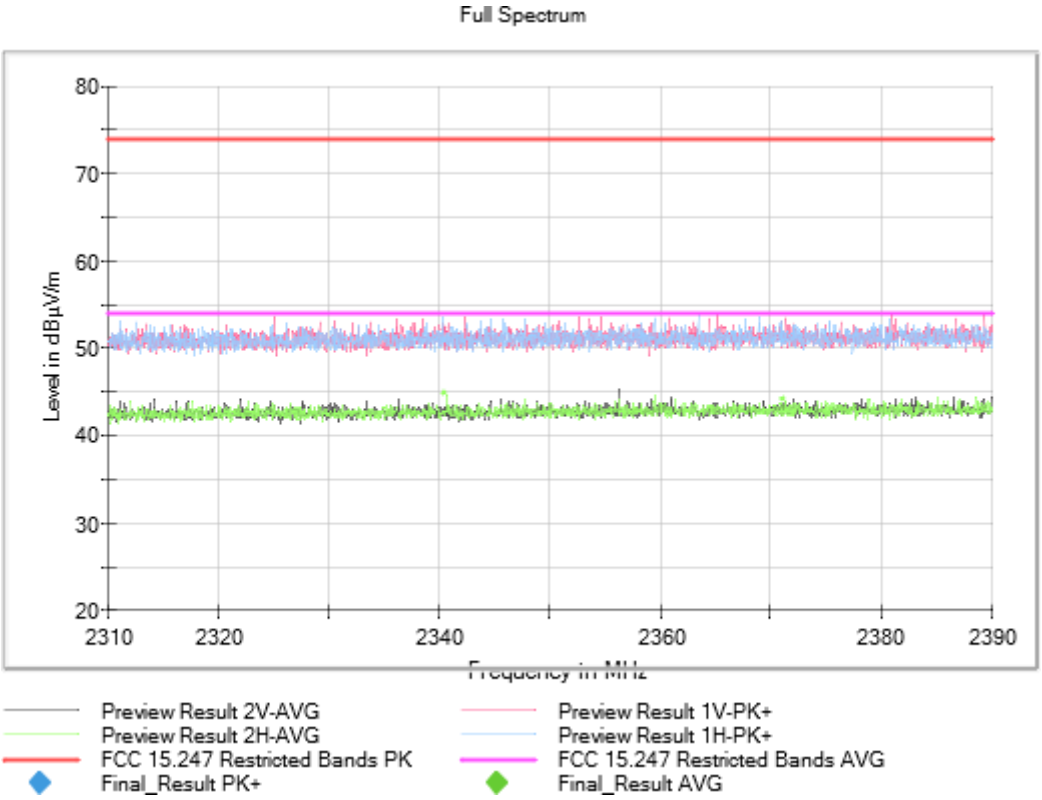
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency Range GHz = [1, 3]

Images:



Full Spectrum





Tables:

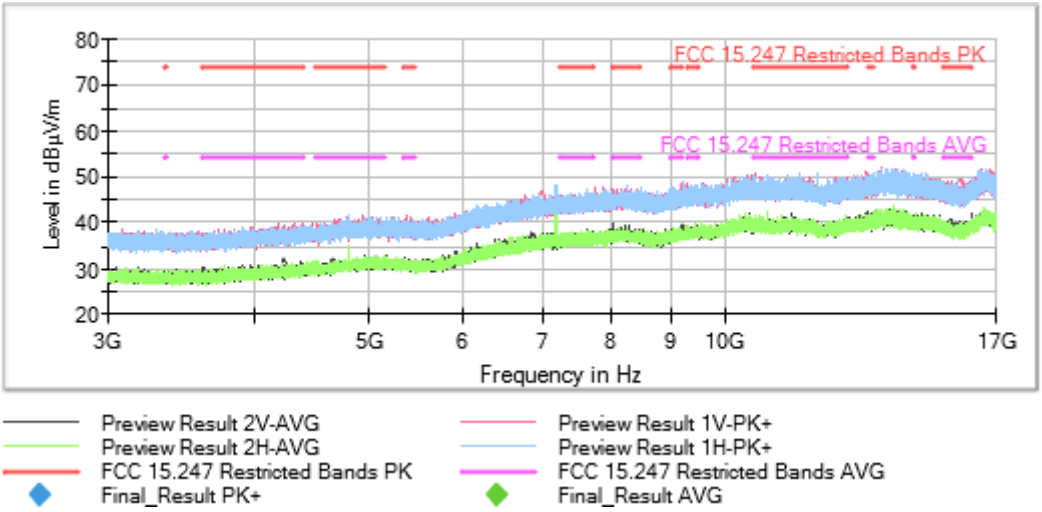
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency MHz = 2402.00000 Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency Range GHz = [3, 17]

Images:



Tables:

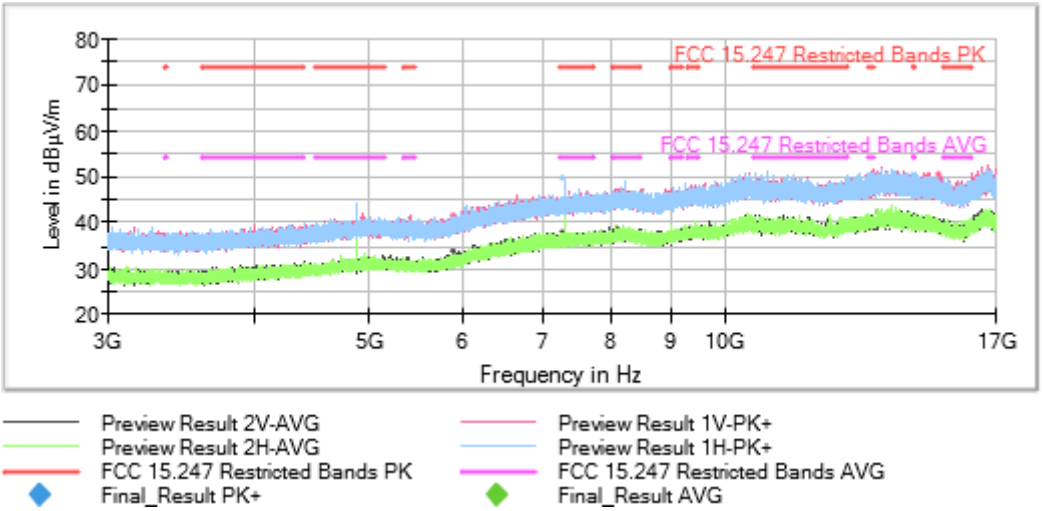
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB

Frequency MHz = 2440.00000 Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency Range GHz = [3, 17]

Images:



Tables:

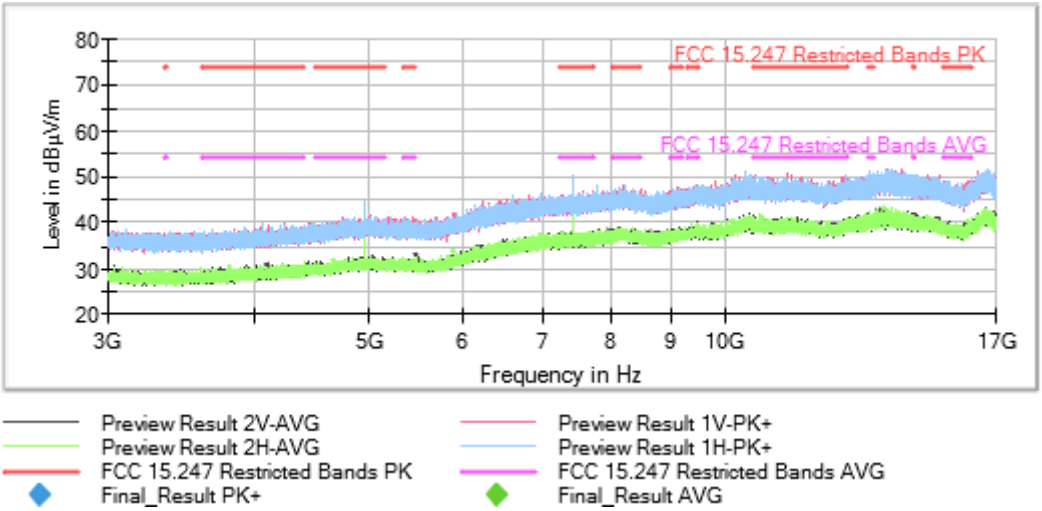
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB

Frequency MHz = 2480.00000 Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency Range GHz = [3, 17]

Images:



Tables:

Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB

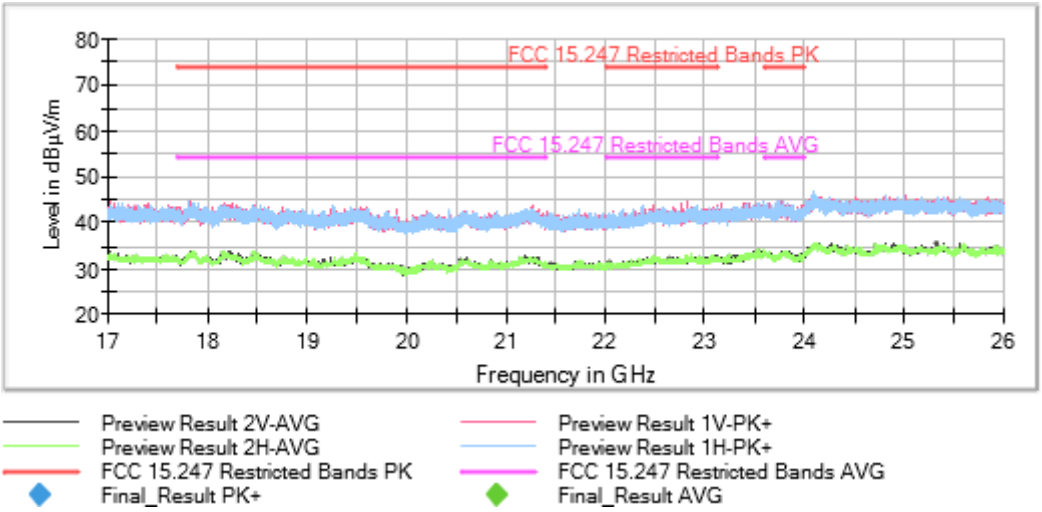
Frequency Range GHz = [17, 26]

Frequency MHz = The spurious signals detected do not depend on either the operating channel or the modulation

Modulation = BTLE 5.0 (GFSK 1 Mbit/s & 2 Mbit/s)

Equipment Type = Digital Transmission System (DTS)

Images:



Tables:

Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
17 GHz - 26 GHz	300 kHz	PK+ ; AVG	1 MHz	1 s	0 dB