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:
71728RRF.001A1

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

(*) Identification of item tested	Accessory to wireless hearing instrument
(*) Trademark	GN Hearing
(*) Model and /or type reference	SAS-4
Other identification of the product	FCC ID: X26SAS-4 IC: 6941C-SAS4
(*) Features	Features: Bluetooth LE HW version: PCBA, SAS-4 MAIN BOARD,V2 SW version: Farlander5
Manufacturer	GN Hearing A/S Lautrupbjerg 7, 2750 Ballerup, Denmark
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 2 (February 2021). 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)	Antonio José Jurado Industrial & Automotive EMC Lab. Manager 80157242B ANTONIO JOSE JURADO (C:A29507456) Firmado digitalmente por 80157242B ANTONIO JOSE JURADO (C:A29507456) Fecha: 2023.08.23 10:25:36 +02'00'
Date of issue	2023-08-23
Report template No	FDT08_24 (*) "Data provided by the client"

Index

Acronyms

Acronym ID	Acronym Description
BW	Bandwidth
Detector	Detector used
Ebw	Emission Bandwidth
Equipment	Equipment Type
Freq	Frequency
Freq Rng	Frequency Range
Inband Peak Lvl	Inband Peak Level
Lvl	Level
MP	Measurement Point
Mod	Modulation
Mode	MIMO Mode
Occ Ch BW	Occupied Channel Bandwidth
PSD	Power Spectrum Density
PeakPower	Maximum Peak Conducted Output Power
Pol	Polarization
Port	Active Port
Unwanted Freq	Unwanted Emissions Frequency
Unwanted Lvl	Unwanted Emissions Level

Competences and guarantees

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

DEKRA Testing and Certification 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.

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 accessory to wireless hearing instrument, which is capable of streaming Audio from a Television or other audio device, to multiple hearing instrument.

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	71728D_36.1	SAS-4	--	--	2023-04-28	Element Under Test
	71728D_62.1	USB cable	--	--	2023-04-28	Element Under Test
S/02	71728D_133.1	USB cable	--	--	2023-06-22	Element Under Test
	71728D_44.1	SAS-4	--	--	2023-04-28	Element Under Test
	71728D_8.1	SMA cable	--	--	2023-04-28	Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Sample for Radiated test. Firmware updated (date: 2023-08-04)
S/02	Sample for Conducted test. Firmware updated (date: 2023-08-04)

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)		
	USB cable (SIP/SOP)	1.0M	X				
Supplementary information to the ports..... :							
Rated power supply .....:	Voltage and Frequency			Reference poles			
				L1	L2	L3	N	PE
	X	AC:		X			X	
		DC:						
Rated Power .....:	1.0 A						
Clock frequencies.....:	2.48 GHz (BLE)						
Other parameters .....:							
Software version .....:	Farlander5						
Hardware version .....:	PCBA, SAS-4 MAIN BOARD,V2						
Dimensions in cm (W x H x D) ....:							
Mounting position .....:	X	Table top equipment					
		Wall/Ceiling mounted equipment					
		Floor standing equipment					
		Hand-held equipment					
		Other:					
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

GN Hearing A/S
Lautrupbjerg 7, 2750 Ballerup, Denmark

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2023-07-07
Date (finish)	2023-08-10

Document history

Report number	Date	Description
71728RRF.001	2023-08-10	First release.
71728RRF.001A1	2023-08-23	First modification. The report is generated with less image compression to avoid blurred images. This report cancels and replaces the previous 71728RRF.001.

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: Antonio Manuel Sánchez Carrizo, Daniel Mejías Herrera, and Victoria Olmedo Villalba.

Testing verdicts

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

List of equipment used during the test

Control No.	Equipment	Model	Manufacturer	Next Calibration
5862	EMI TEST RECEIVER 9kHz-7GHz	ESR7	ROHDE AND SCHWARZ	2025-02-15
7040	EXTENSION FOR OPEN SWITCH UNIT UP TO 40GHz	OSP-B157Wx	Rohde&Schwarz	2025-04-19
7763	HORN ANTENNA 1-18GHz	BBHA 9120D	SCHWARZBECK MESS-ELEKTRONIK	2026-01-16
6495	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2024-03-19
2932	HYBRID BILOG ANTENNA 30MHz-6GHz	JB6	SUNOL SCIENCES CORPORATION	2023-10-29
7862	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-3G	BONN ELEKTRONIK	2024-03-14
7769	PREAMPLIFIER 30dB 500MHz-18GHz	BBV 9718 C	SCHWARZBECK	2024-02-15
7039	Rohde&Schwarz	OSP-B157W8	ROHDE & SCHWARZ	2025-05-25
8130	SEMIANECHOIC ABSORBER LINED CHAMBER	P29419	ALBATROSS	--
8134	SHIELDED ROOM	P29419	ALBATROSS PROJECTS GMBH	--
8661	SHIELDED ROOM	-	SIEPEL	--
6158	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2023-10-22
8835	SIGNAL AND SPECTRUM ANALYZER 2Hz-50GHz	FSW50	ROHDE AND SCHWARZ	2025-02-08
4848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	--
7549	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02
7550	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02
7552	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02
7798	WMS32	WMS32	ROHDE AND SCHWARZ	--

Summary

Bluetooth Low Energy 5.0 (1M, 2M).

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 (1M, 2M)

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TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal:	5Vdc
Type of Power Supply:	External power supply (USB)

ANTENNA (*):

Type of Antenna:	Internal
Maximum Declared Antenna Gain:	2dBi

TEST FREQUENCIES (*):

Modulation	Data rates	Low Channel:	Middle Channel	High Channel
BTLE GFSK	1 Mbit/s	2402 MHz	2426 MHz	2480 MHz
BTLE GFSK	2 Mbit/s	2404 MHz	2440 MHz	2478 MHz

During transmitter test the EUT was controlled by a SW tool provided by the client to operate in a continuous transmit mode on the modulation schemes and test channels as required.

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).

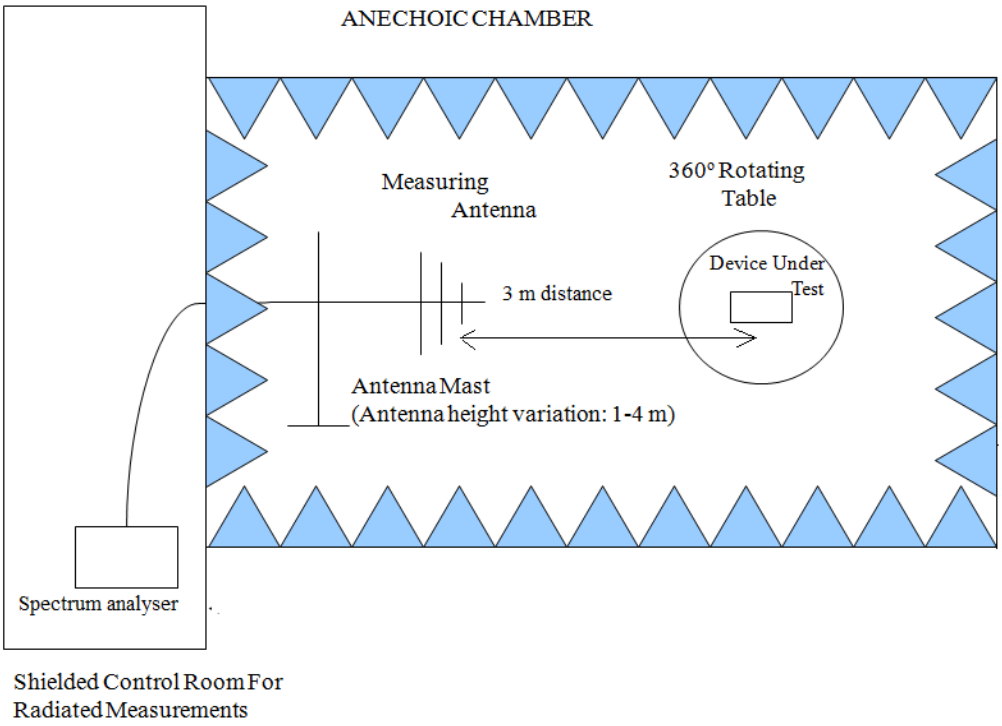
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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.

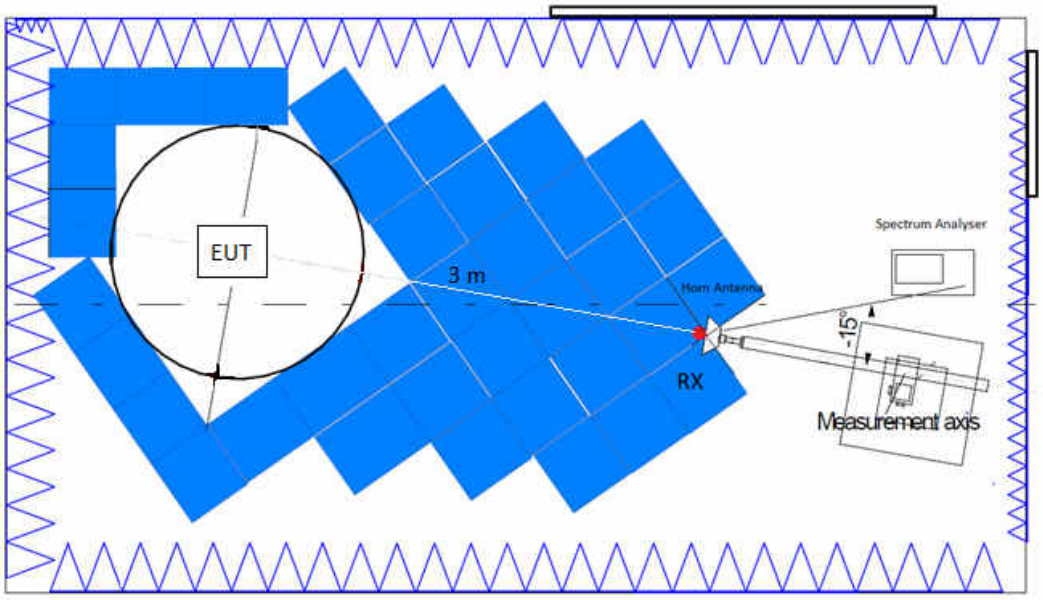
Measurements were made in both horizontal and vertical planes of polarization.

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.

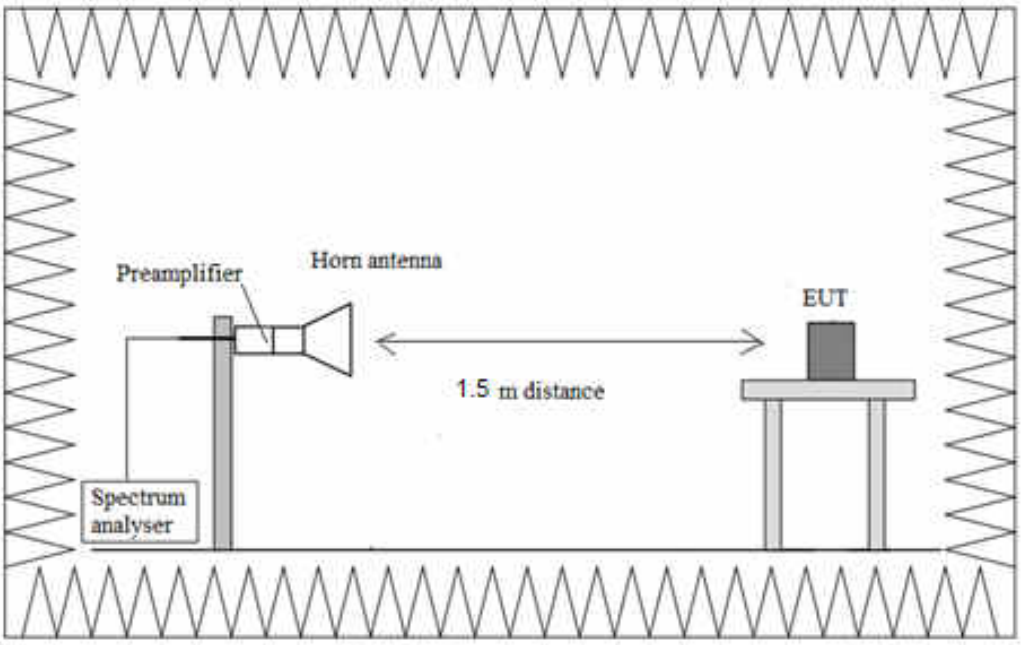
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup f > 17 GHz:



TEST CASES DETAILS

FCC 47 CFR Part 15.247 / RSS-247

99dBw Occupied Channel Bandwidth 99%

Modulation: BTLE 5.3 (GFSK 1 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	Occ Ch BW (MHz)
Digital Transmission System (DTS)	1	2402.00000	1.060
		2426.00000	1.065
		2480.00000	1.065

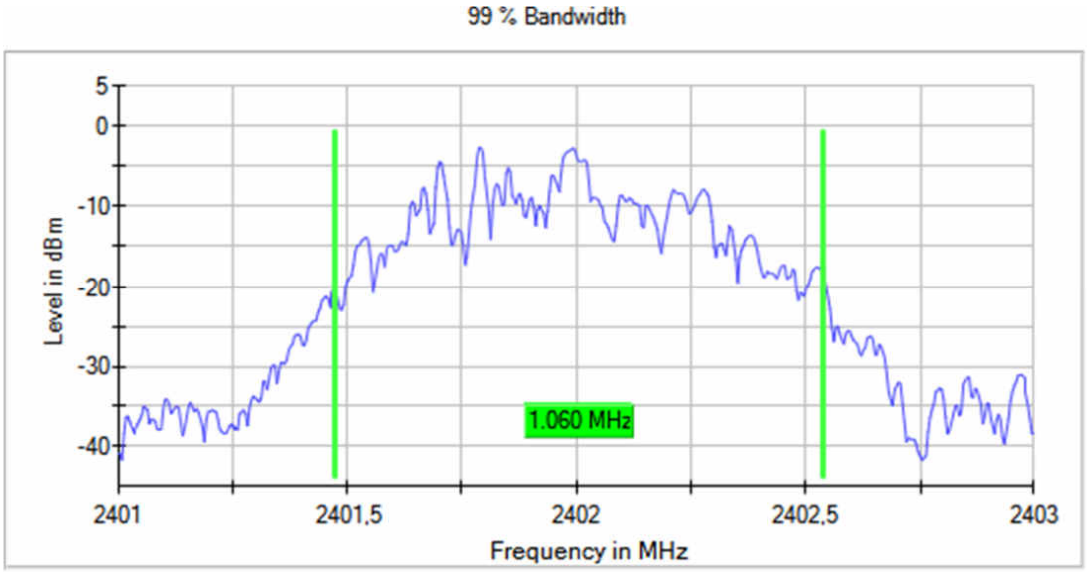
Verdict

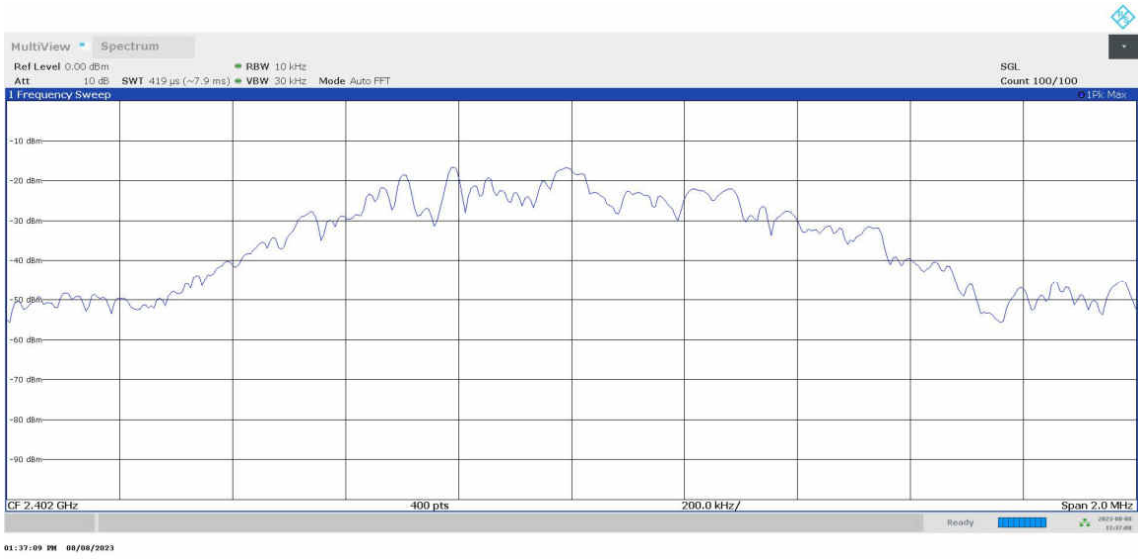
Pass

Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2402.00000
MIMO Mode = SISO	Active Port = 2

Images:

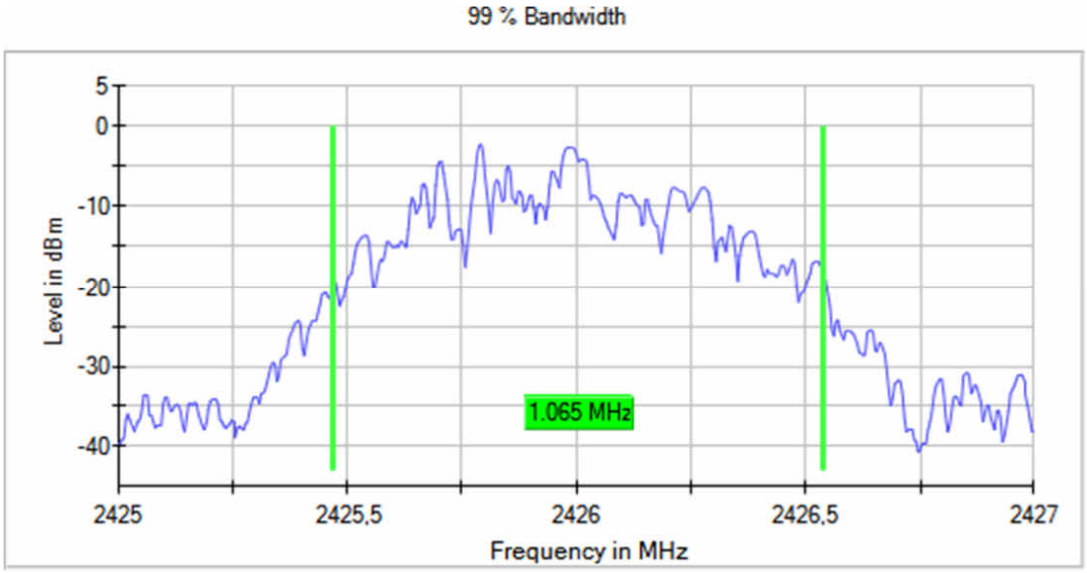


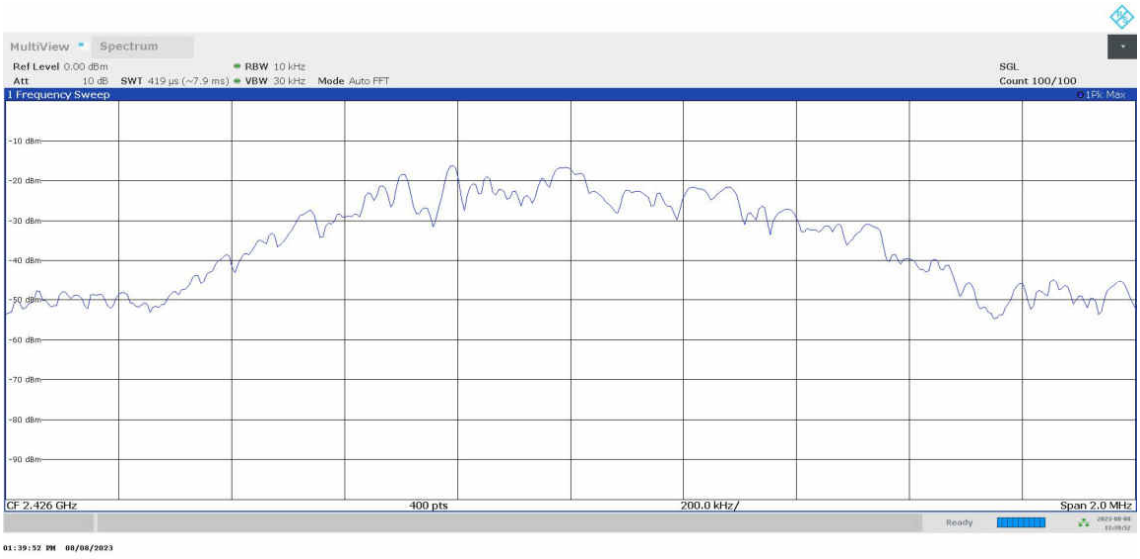


Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2426.00000
MIMO Mode = SISO	Active Port = 1

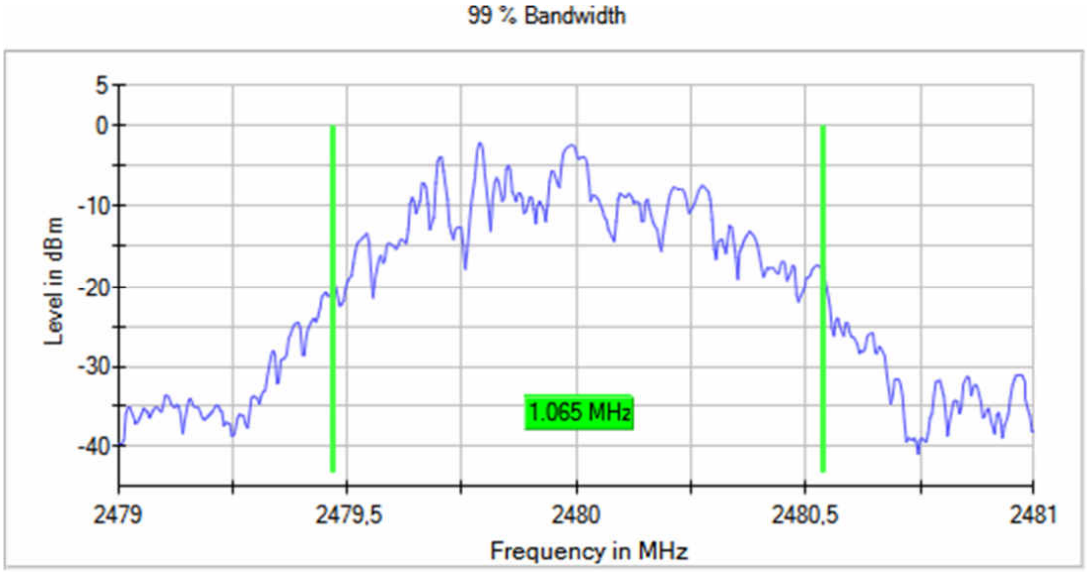
Images:

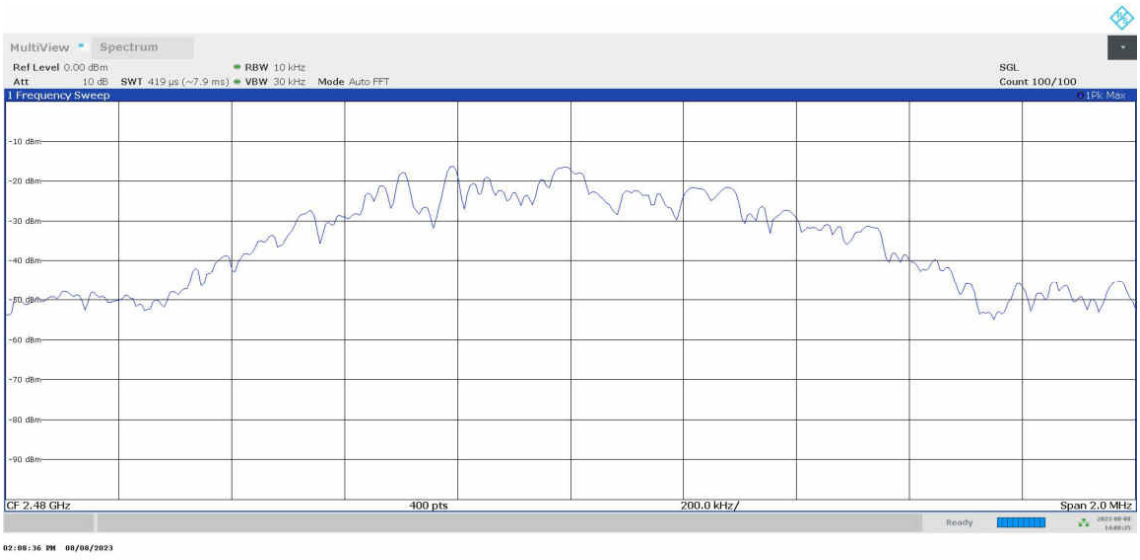




Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2480.00000
MIMO Mode = SISO	Active Port = 1

Images:





Modulation: BTLE 5.3 (GFSK 2 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	Occ Ch BW (MHz)
Digital Transmission System (DTS)	2	2404.00000	2.040
		2440.00000	2.040
		2478.00000	2.040

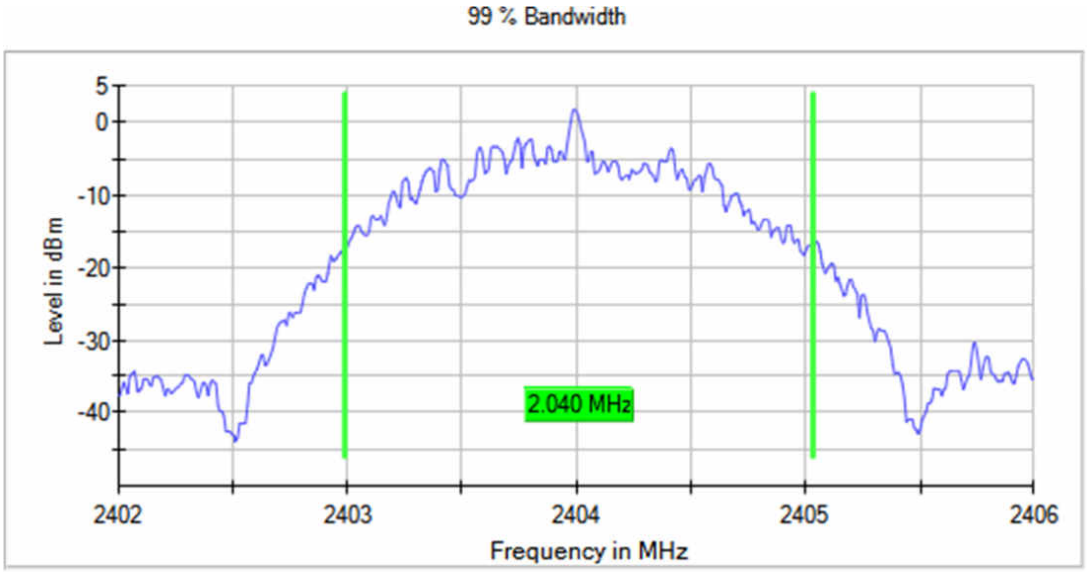
Verdict

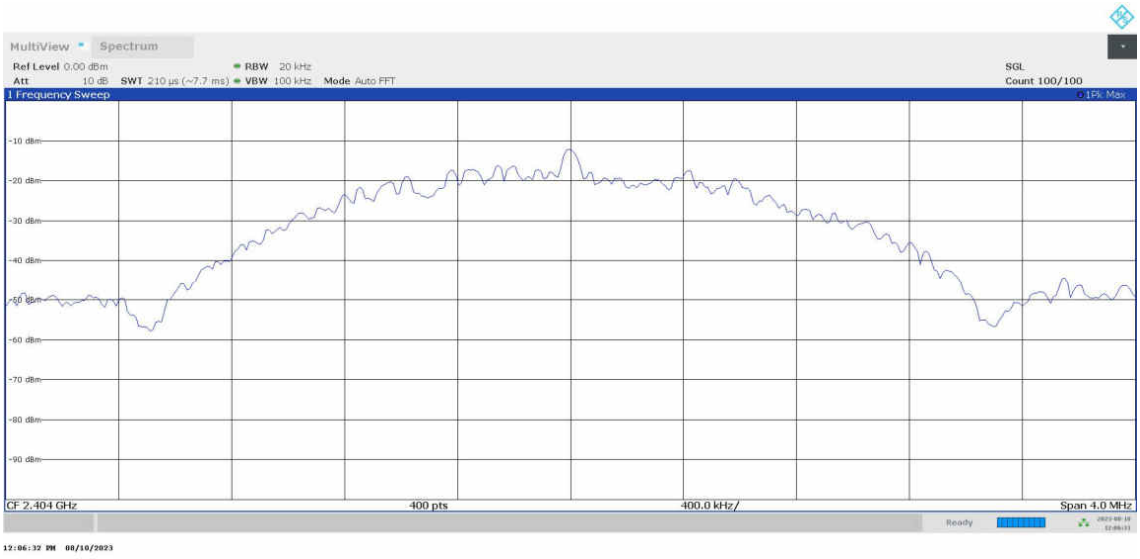
Pass

Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 2
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)	Frequency MHz = 2404.00000
MIMO Mode = SISO	Active Port = 1

Images:



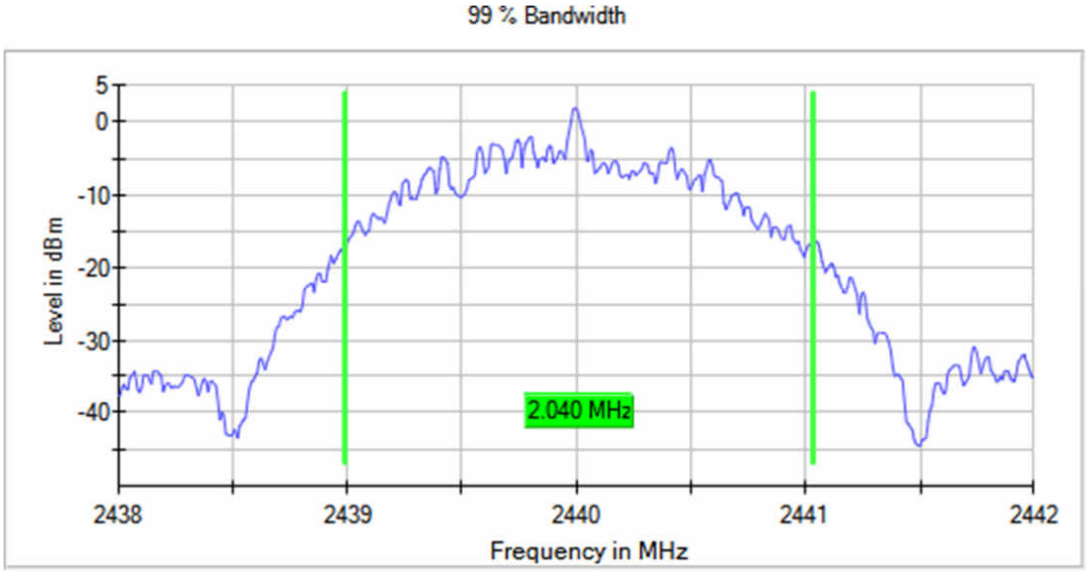


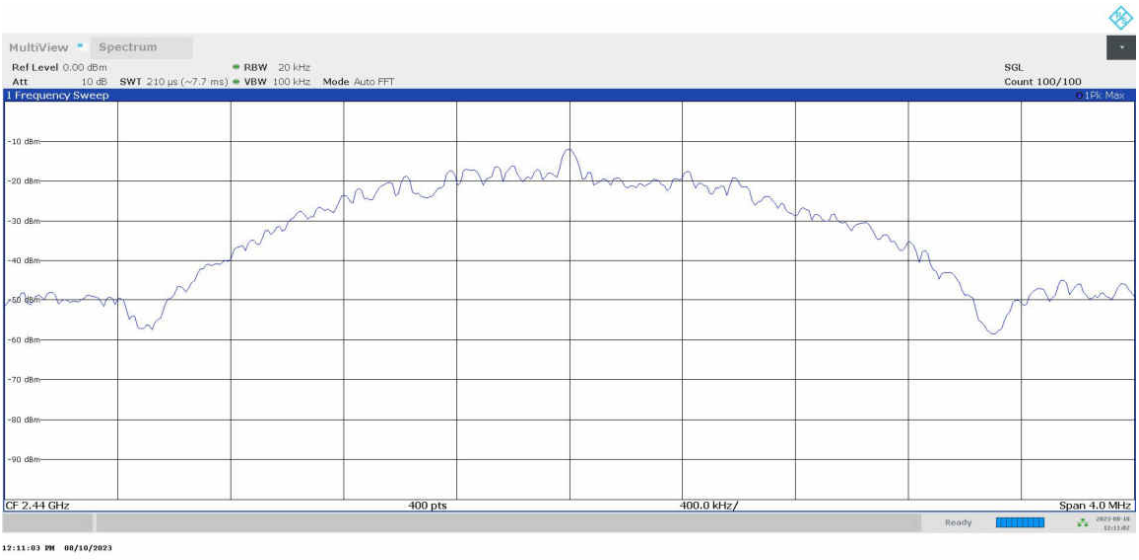
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000

MIMO Mode = SISO Active Port = 1

Images:



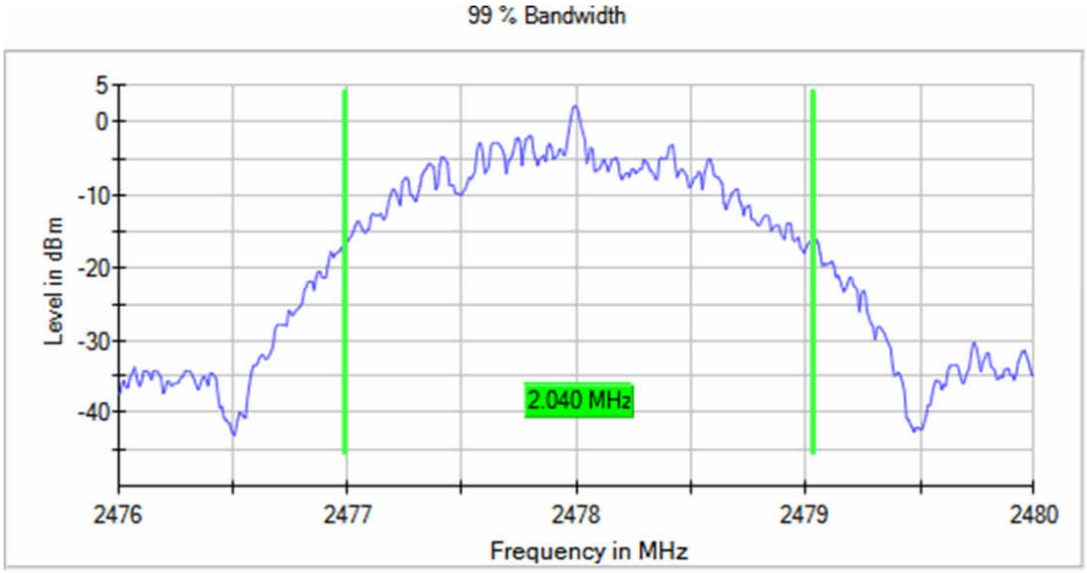


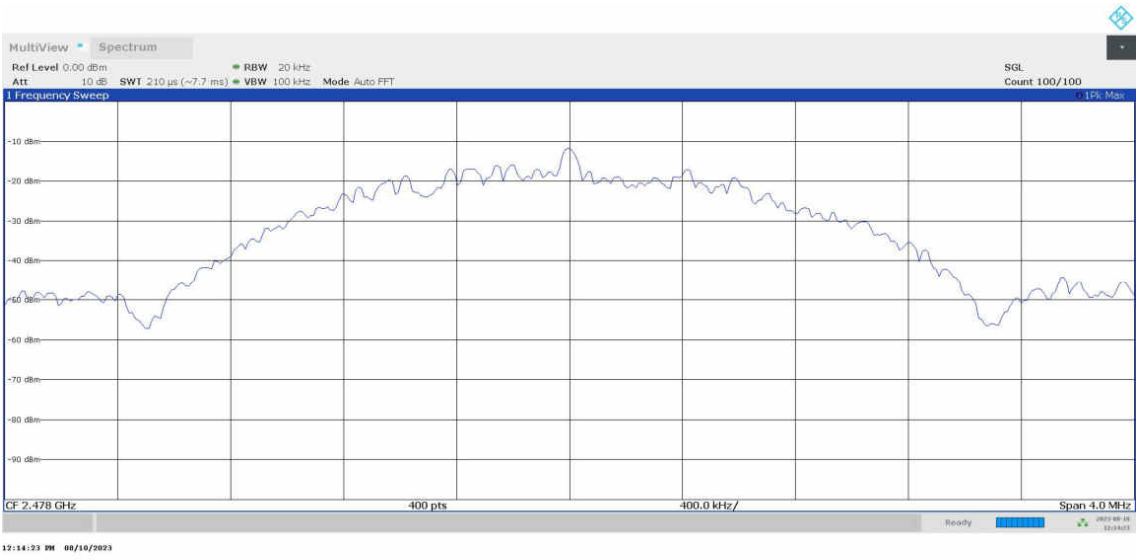
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2478.00000

MIMO Mode = SISO Active Port = 1

Images:





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

Limits

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

Modulation: BTLE 5.3 (GFSK 1 Mbit/s)

MIMO Mode: SISO

Results

BW (MHz)	Freq (MHz)	Ebw (MHz)
1	2402.00000	0.733
	2426.00000	0.733
	2480.00000	0.772

Verdict

Pass

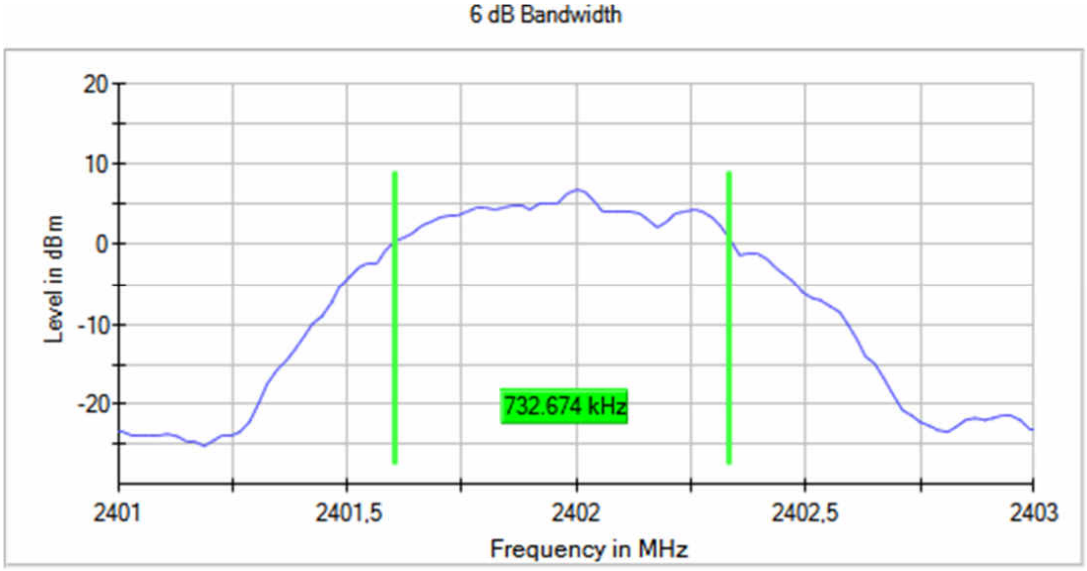
Attachments

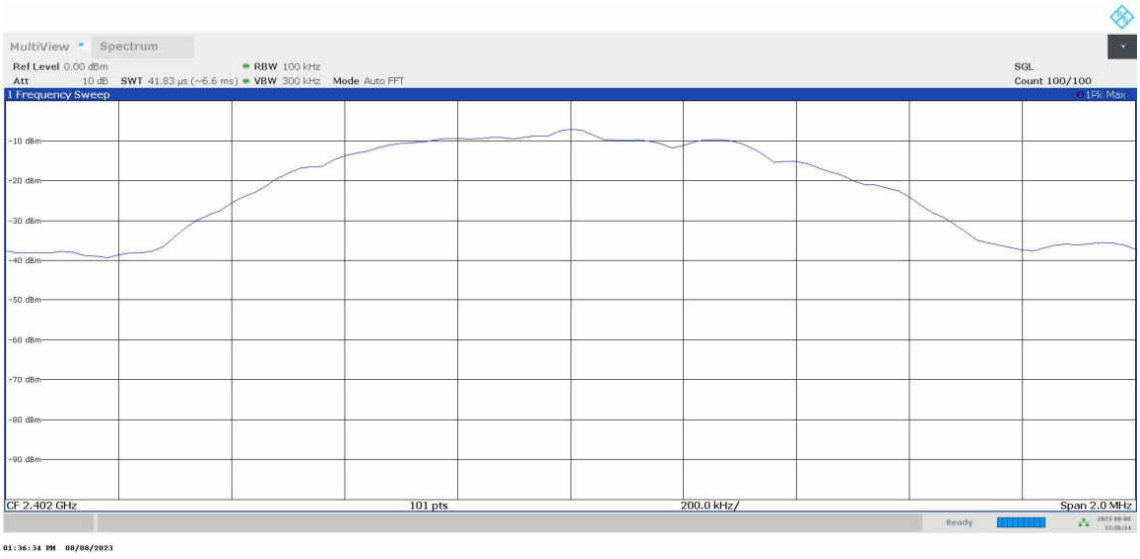
Bandwidth MHz = 1 Modulation = BTLE 5.3 (GFSK 1 Mbit/s)

Frequency MHz = 2402.00000 MIMO Mode = SISO

Active Port = 1

Images:





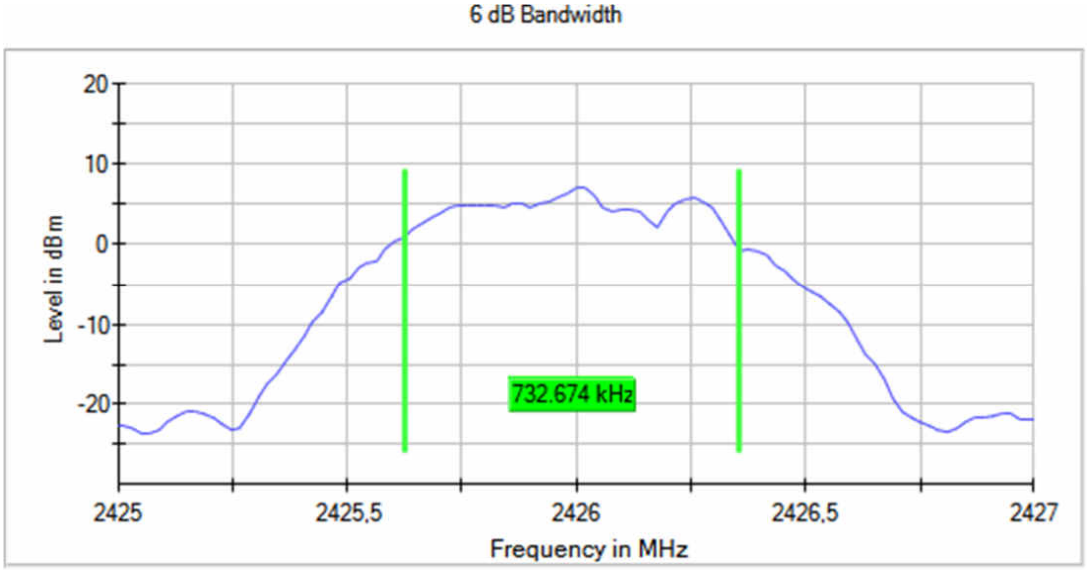
Attachments

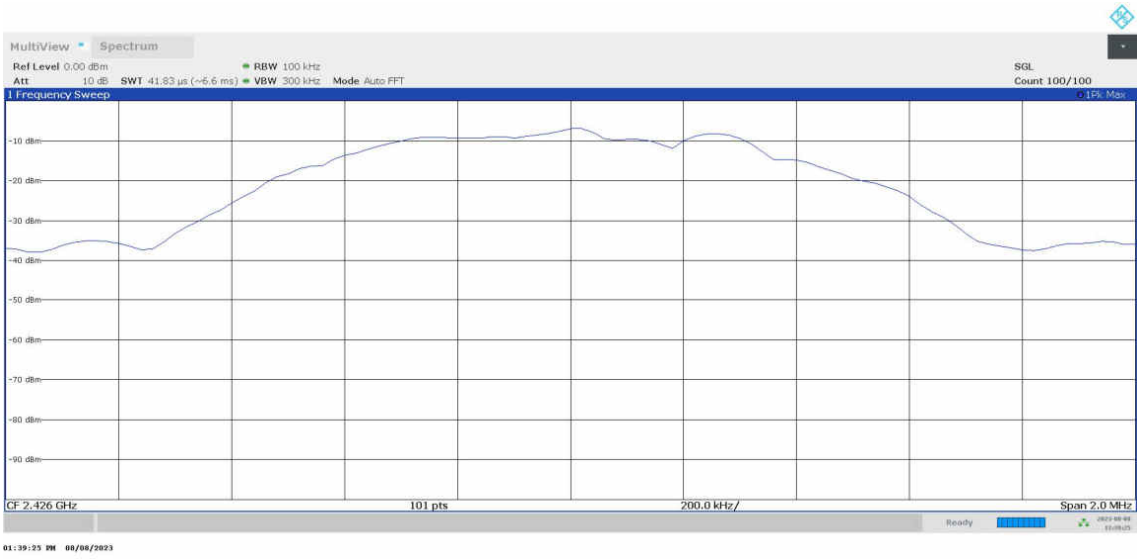
Bandwidth MHz = 1 Modulation = BTLE 5.3 (GFSK 1 Mbit/s)

Frequency MHz = 2426.00000 MIMO Mode = SISO

Active Port = 1

Images:



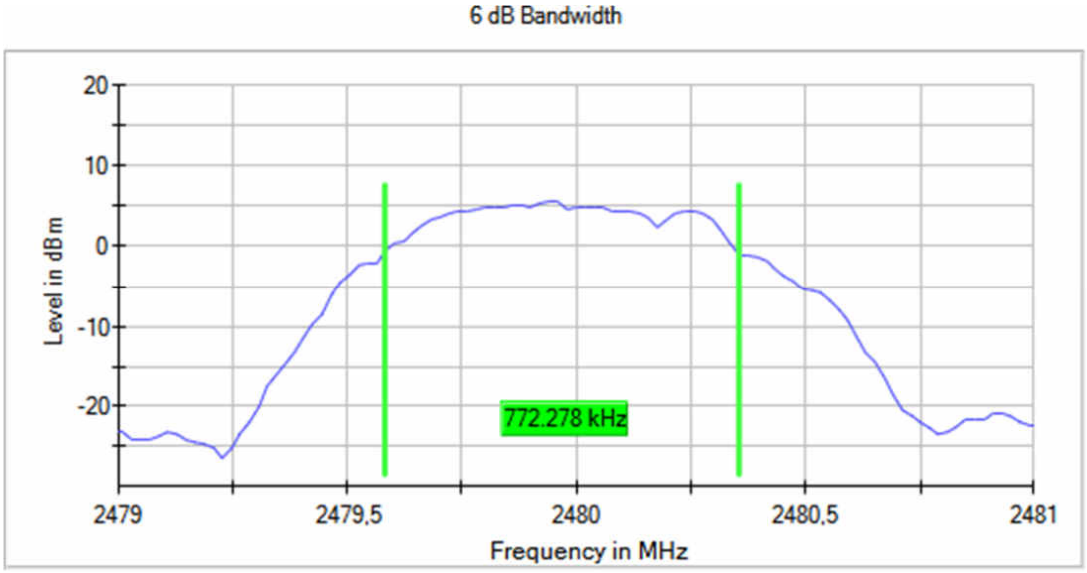


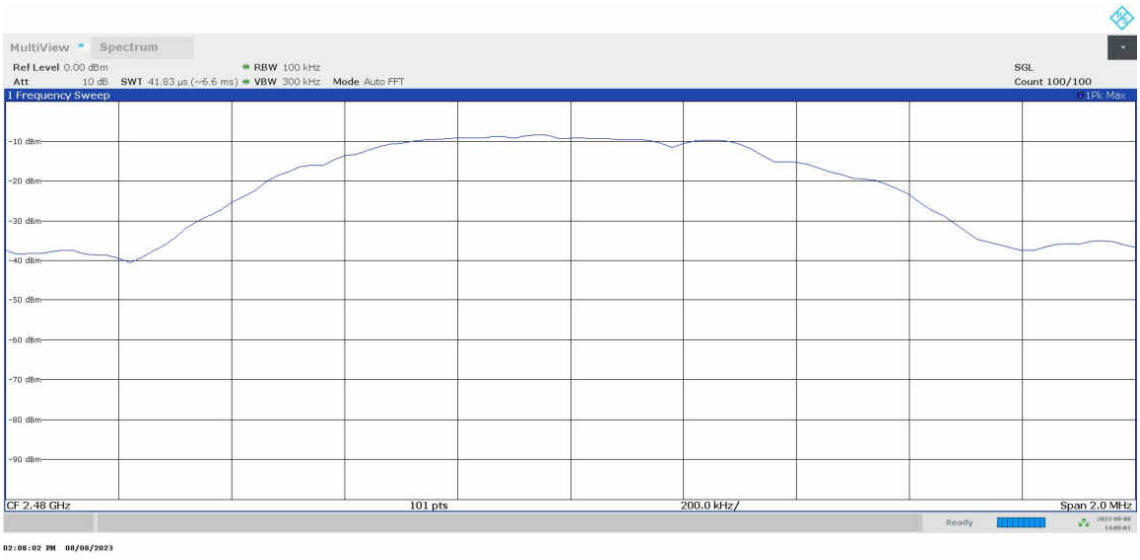
Bandwidth MHz = 1 Modulation = BTLE 5.3 (GFSK 1 Mbit/s)

Frequency MHz = 2480.00000 MIMO Mode = SISO

Active Port = 1

Images:





Modulation: BTLE 5.3 (GFSK 2 Mbit/s)

MIMO Mode: SISO

Results

BW (MHz)	Freq (MHz)	Ebw (MHz)
2	2404.00000	1.426
	2440.00000	1.505
	2478.00000	1.505

Verdict

Pass

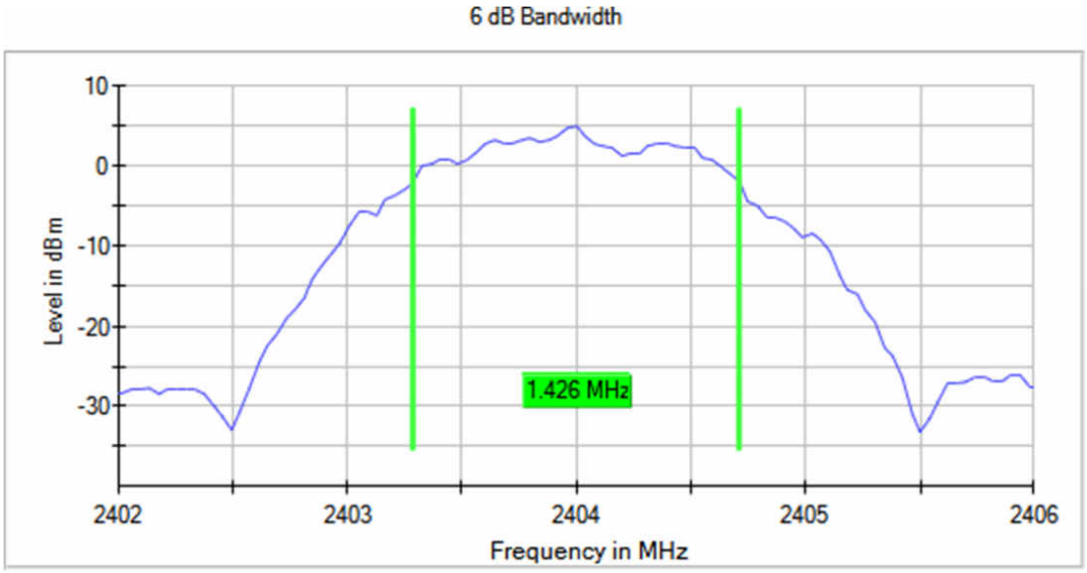
Attachments

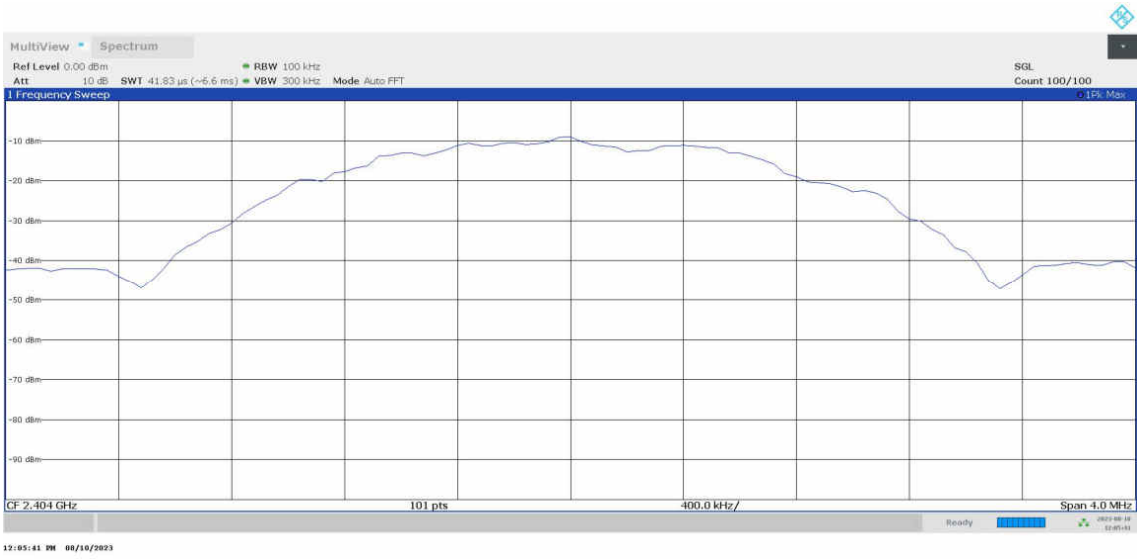
Bandwidth MHz = 2 Modulation = BTLE 5.3 (GFSK 2 Mbit/s)

Frequency MHz = 2404.00000 MIMO Mode = SISO

Active Port = 1

Images:



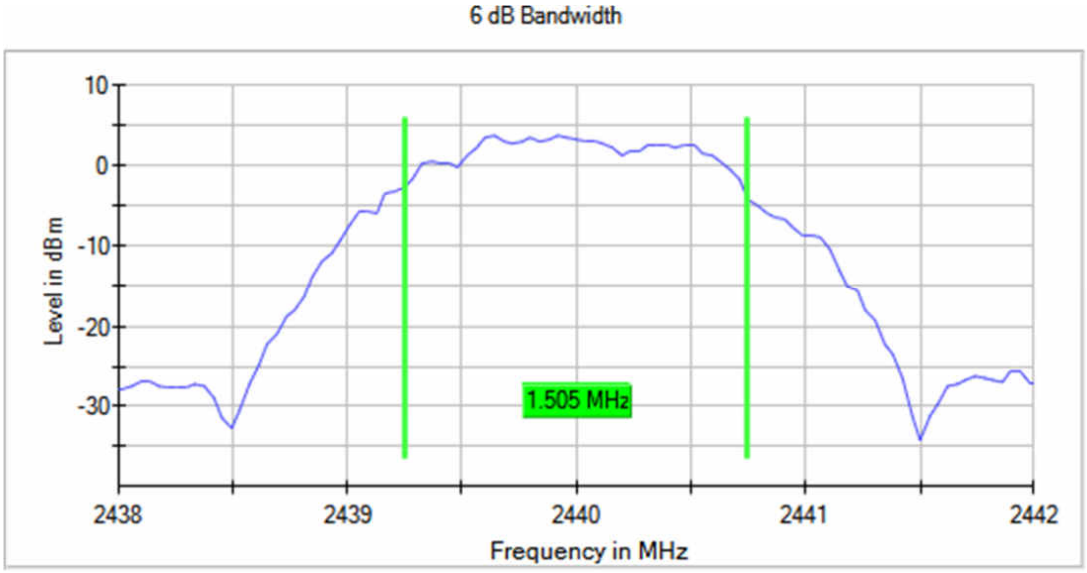


Bandwidth MHz = 2 Modulation = BTLE 5.3 (GFSK 2 Mbit/s)

Frequency MHz = 2440.00000 MIMO Mode = SISO

Active Port = 1

Images:

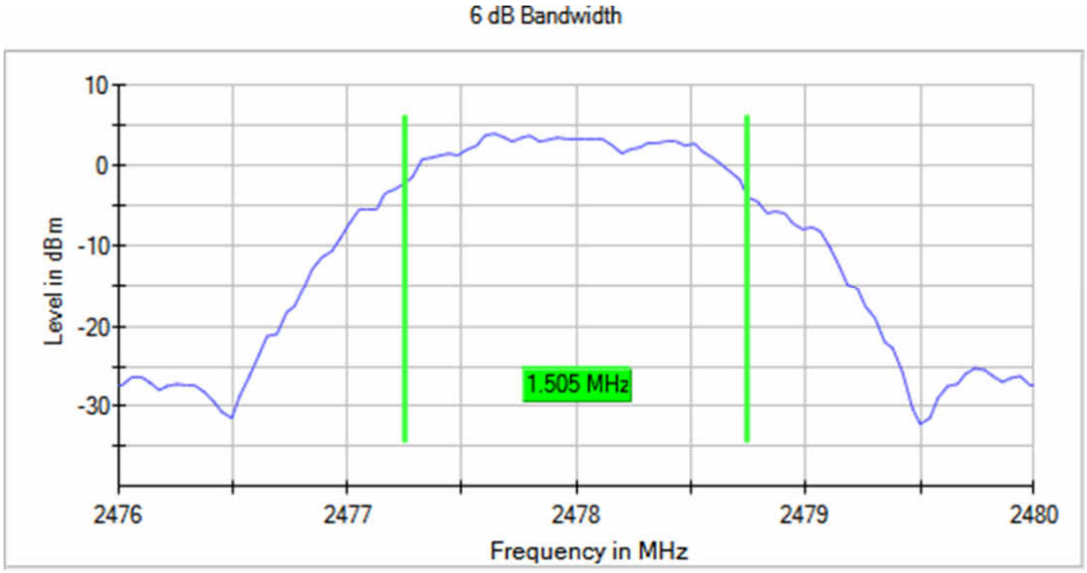


Bandwidth MHz = 2 Modulation = BTLE 5.3 (GFSK 2 Mbit/s)

Frequency MHz = 2478.00000 MIMO Mode = SISO

Active Port = 1

Images:



RSS-247 5.2 (b) / FCC 15.247 (e) [Psd] 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.

Modulation: BTLE 5.3 (GFSK 1 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	PSD (dBm)
Digital Transmission System (DTS)	1	2402.00000	-2.69
		2426.00000	-2.30
		2480.00000	-2.18

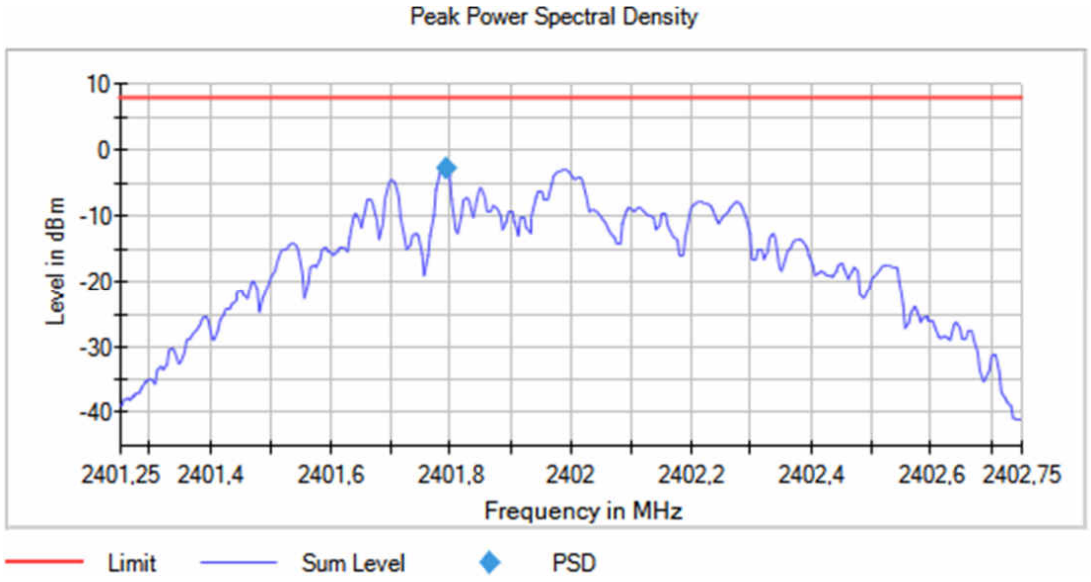
Verdict

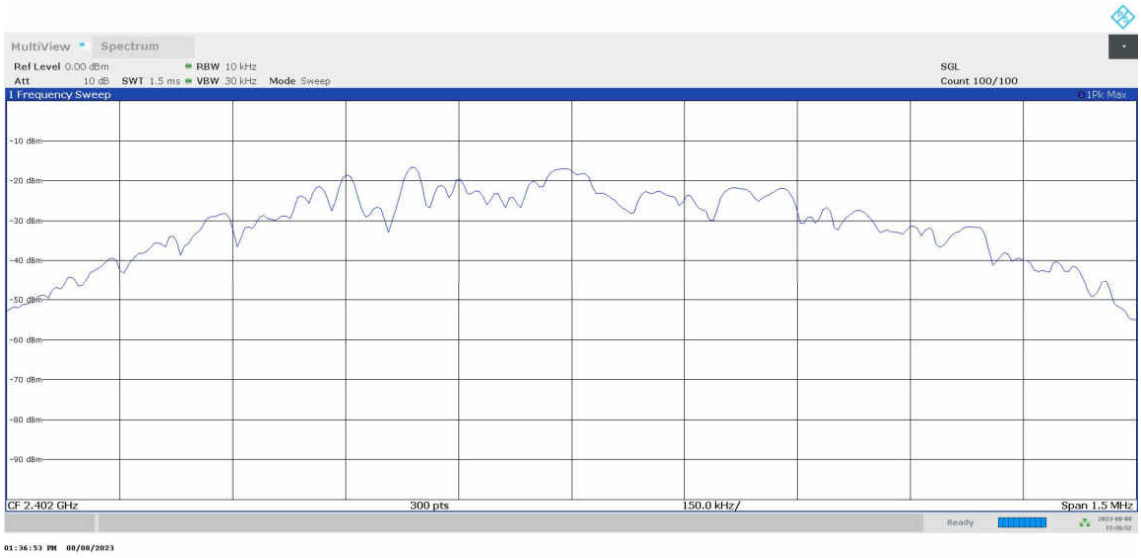
Pass

Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2402.00000
MIMO Mode = SISO	Active Port = 1

Images:

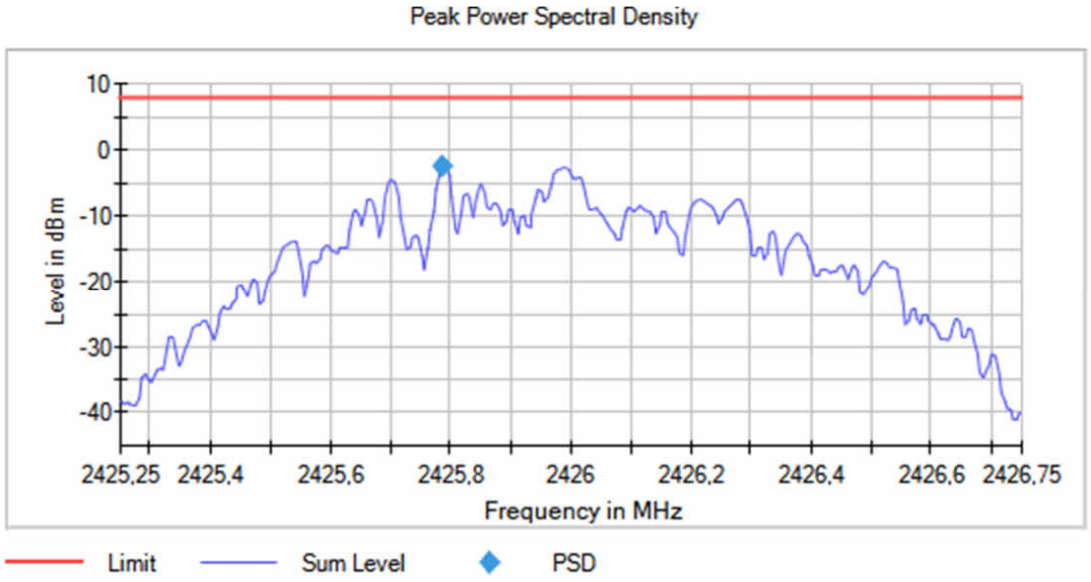


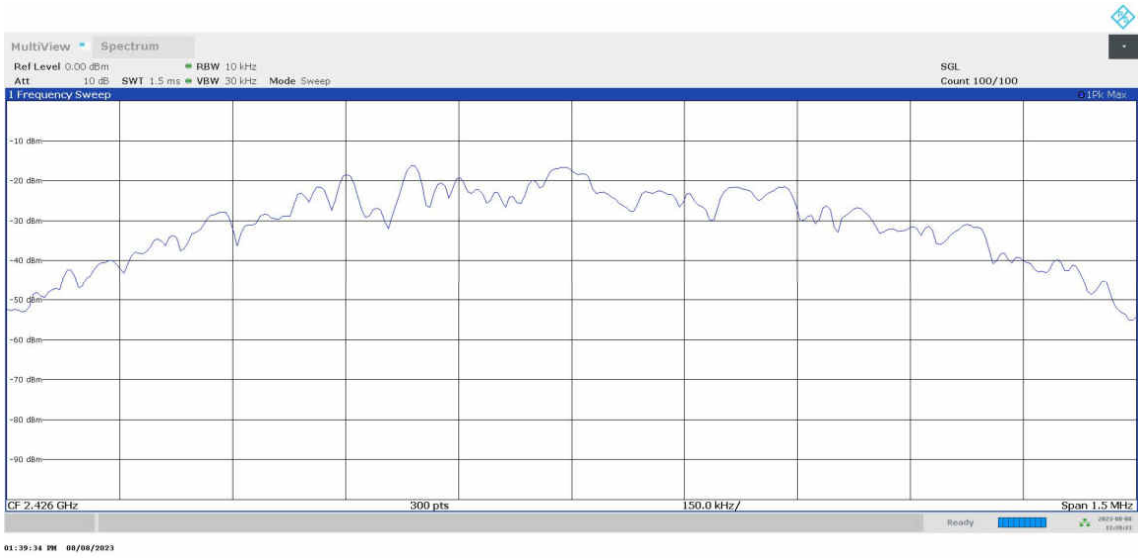


Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2426.00000
MIMO Mode = SISO	Active Port = 1

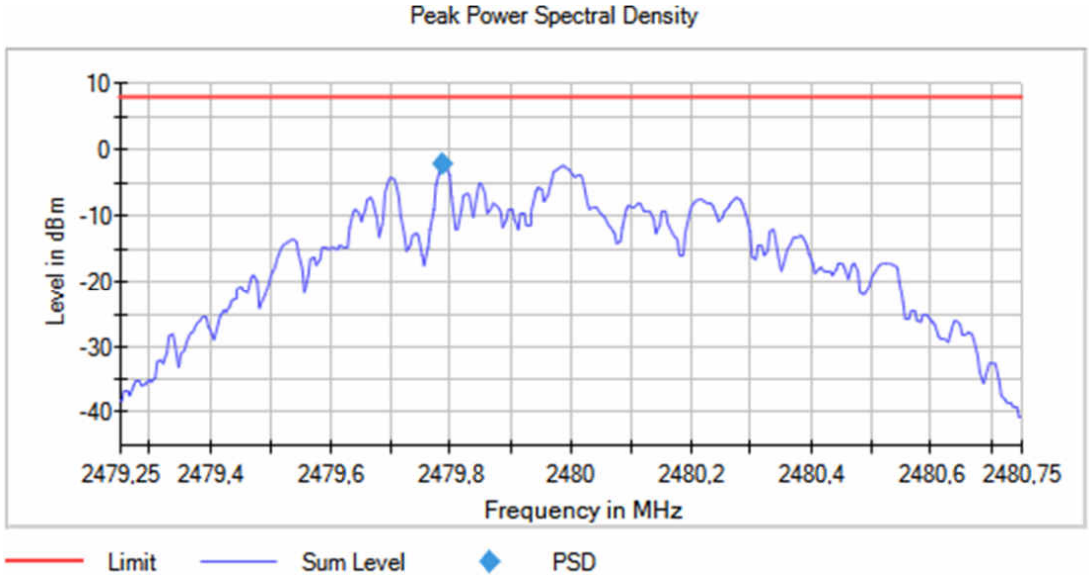
Images:

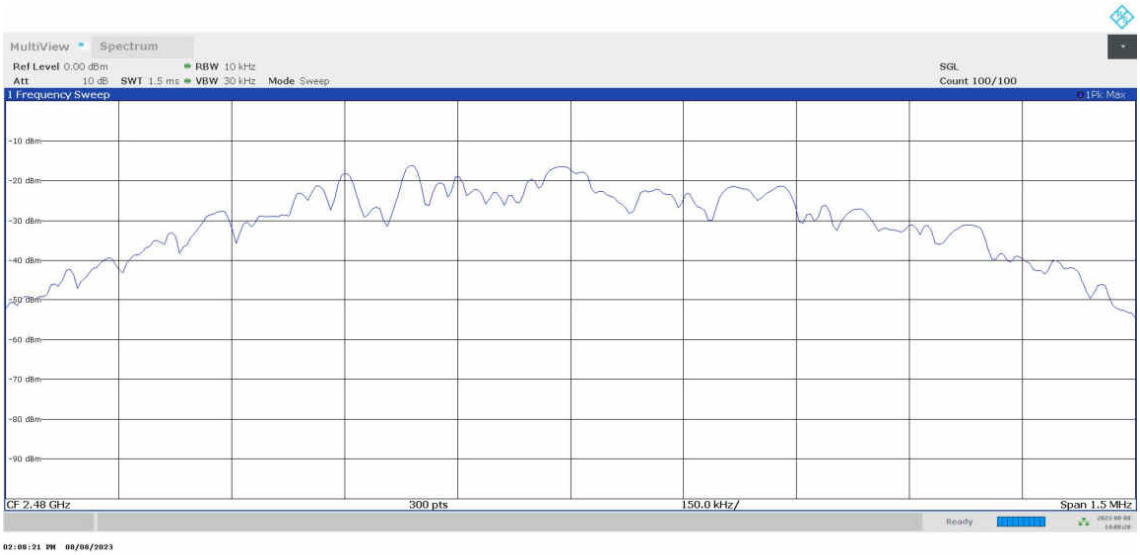




Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2480.00000
MIMO Mode = SISO	Active Port = 1

Images:





Modulation: BTLE 5.3 (GFSK 2 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	PSD (dBm)
Digital Transmission System (DTS)	2	2404.00000	-3.42
		2440.00000	-3.24
		2478.00000	-2.95

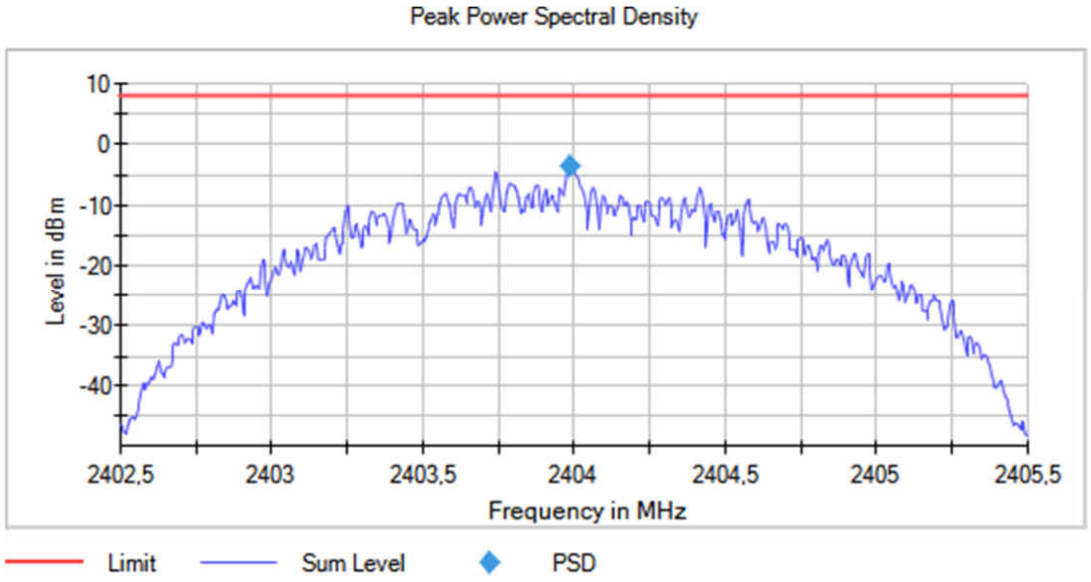
Verdict

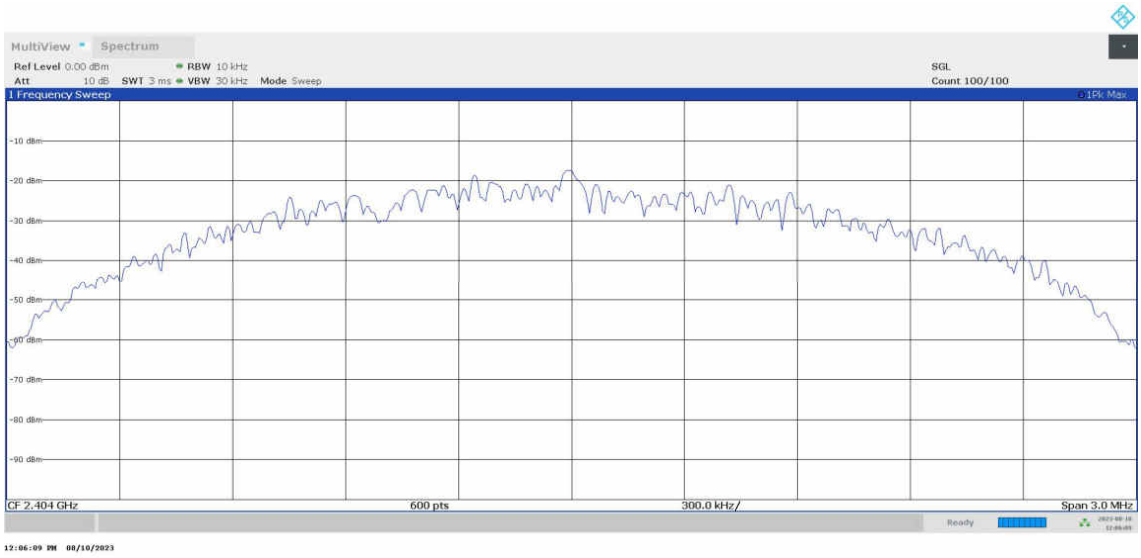
Pass

Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 2
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)	Frequency MHz = 2404.00000
MIMO Mode = SISO	Active Port = 1

Images:



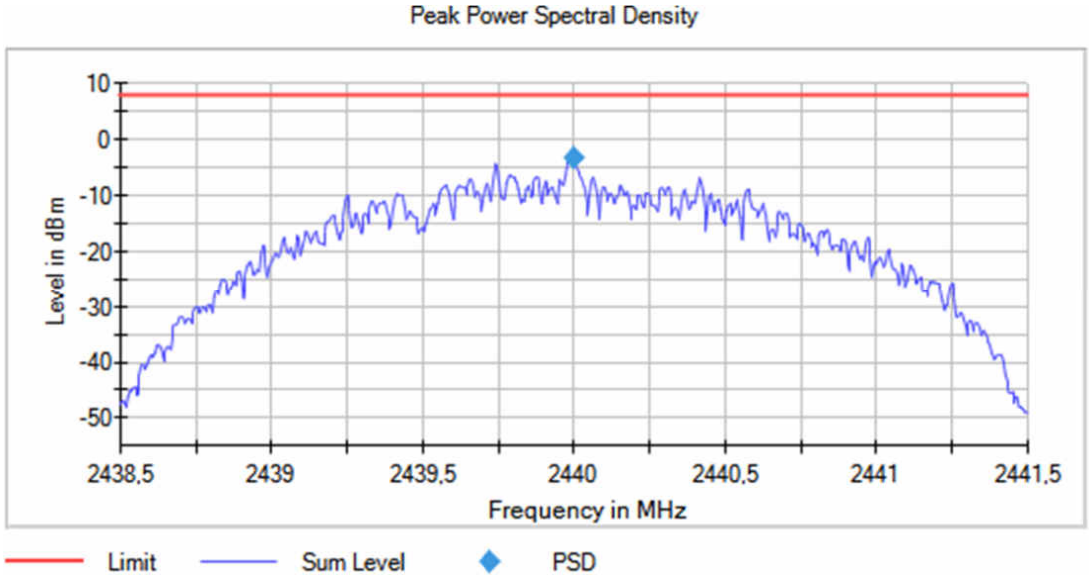


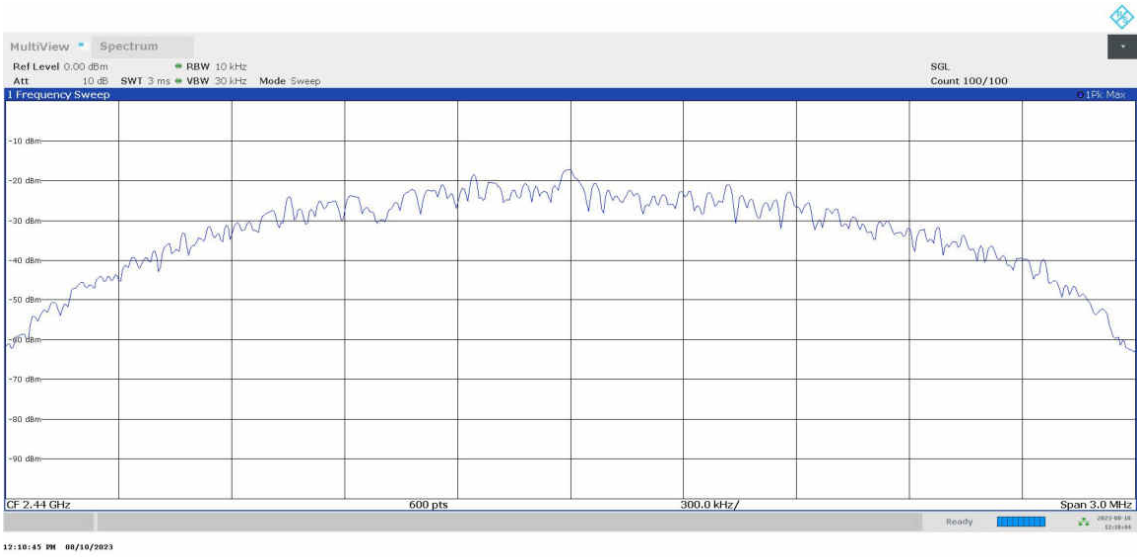
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000

MIMO Mode = SISO Active Port = 1

Images:



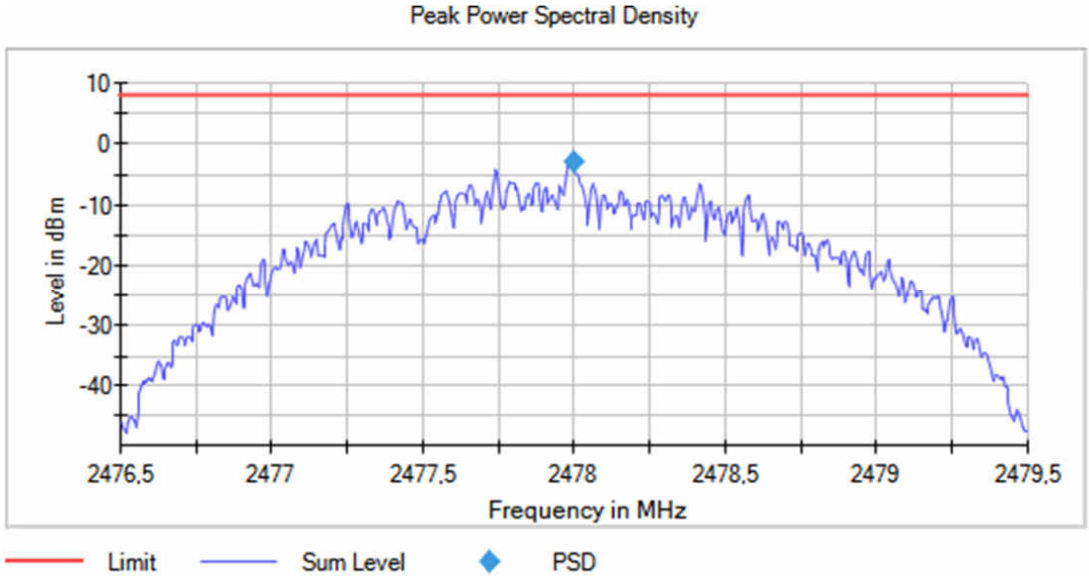


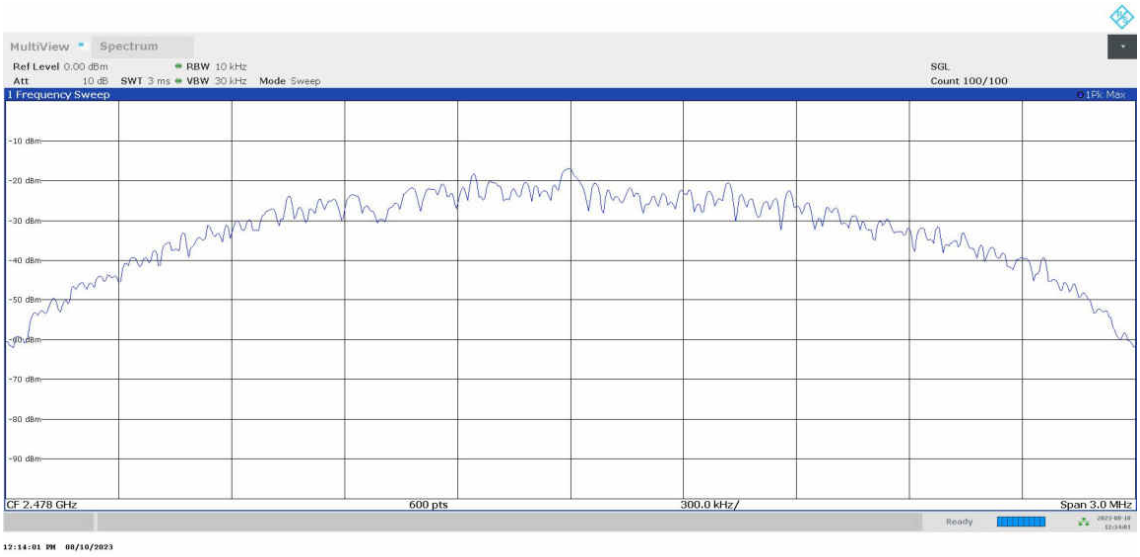
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2478.00000

MIMO Mode = SISO Active Port = 1

Images:





RSS-247 5.4 (d) / FCC 15.247 (b) (3) [Pkcp] 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).

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.

Modulation: BTLE 5.3 (GFSK 1 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	PeakPower (dBm)
Digital Transmission System (DTS)	1	2402.00000	7.0510
		2426.00000	7.3370
		2480.00000	7.4660

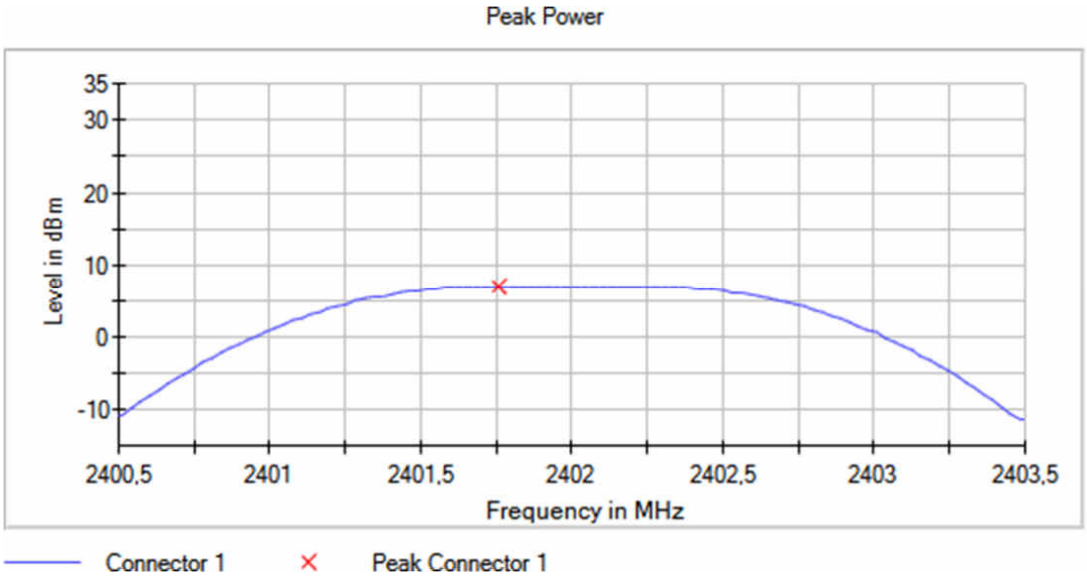
Verdict

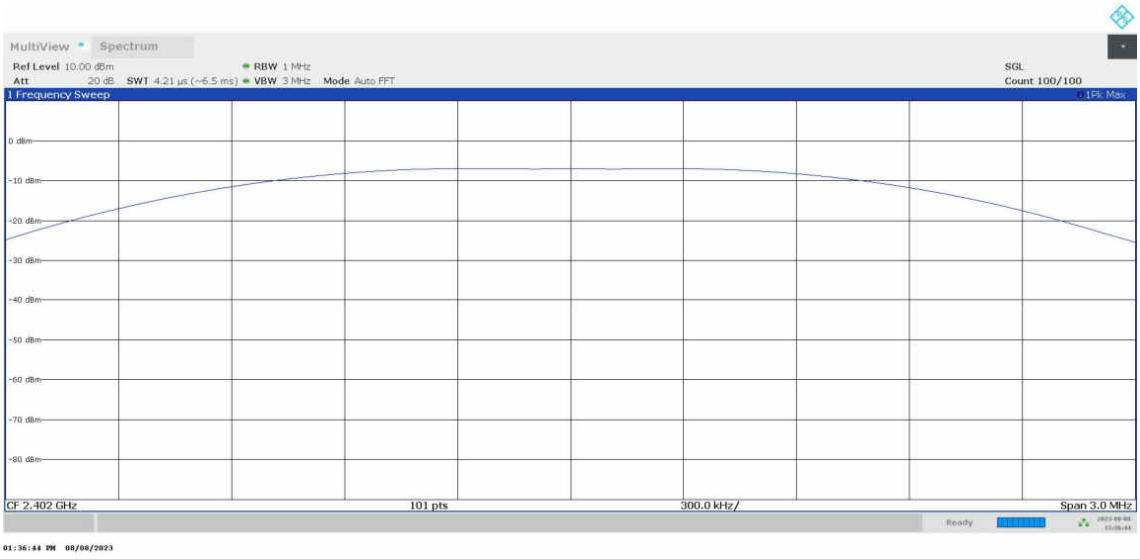
Pass

Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2402.00000
MIMO Mode = SISO	Active Port = 1

Images:

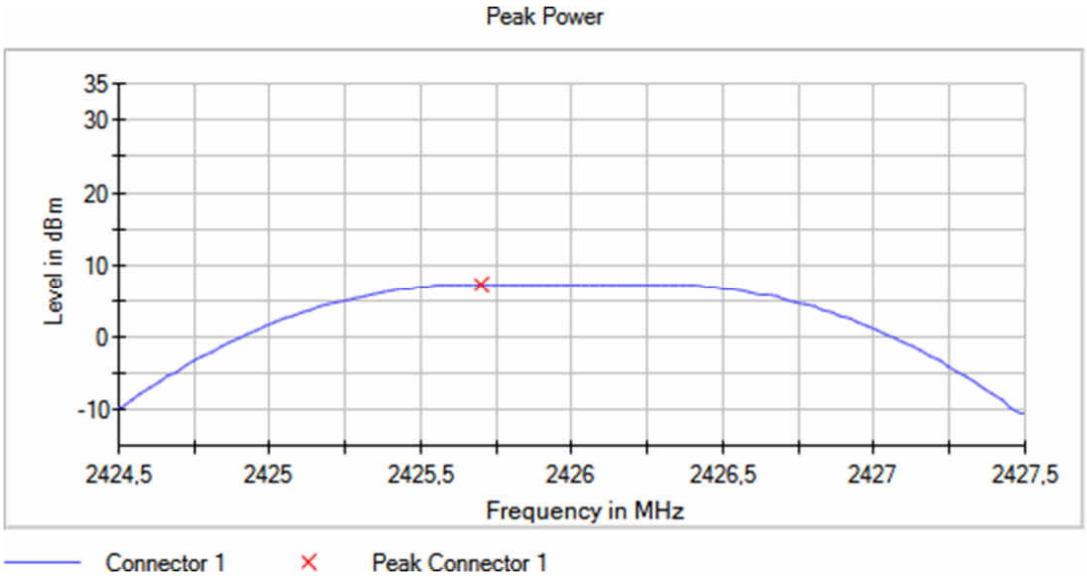


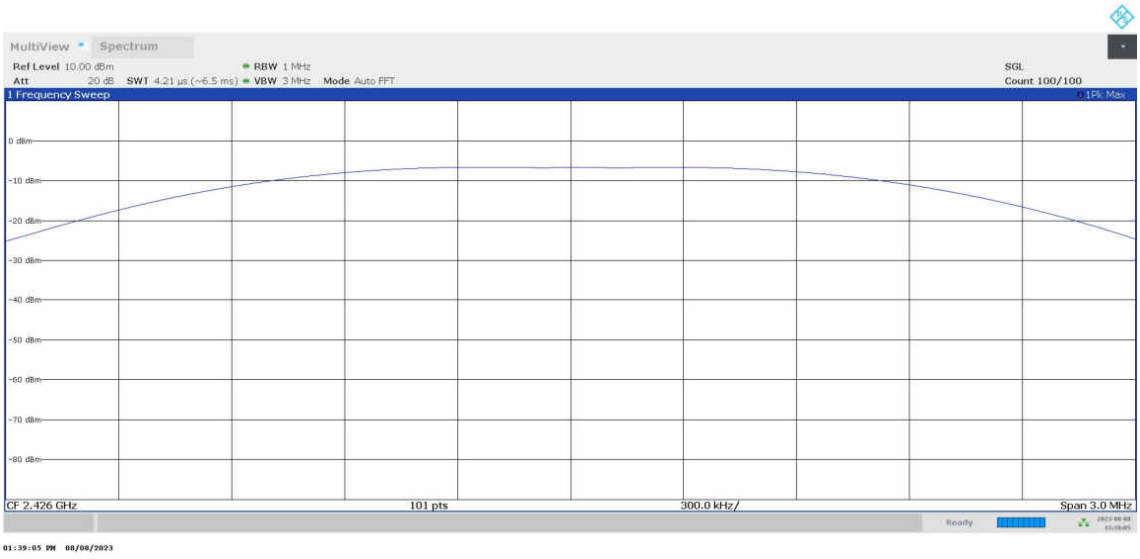


Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)	Frequency MHz = 2426.00000
MIMO Mode = SISO	Active Port = 1

Images:



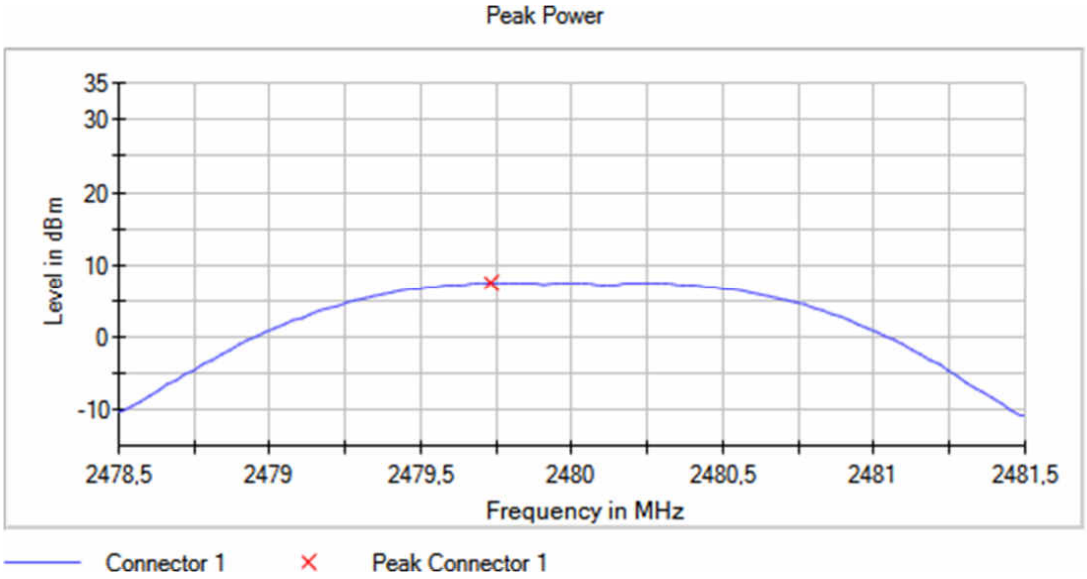


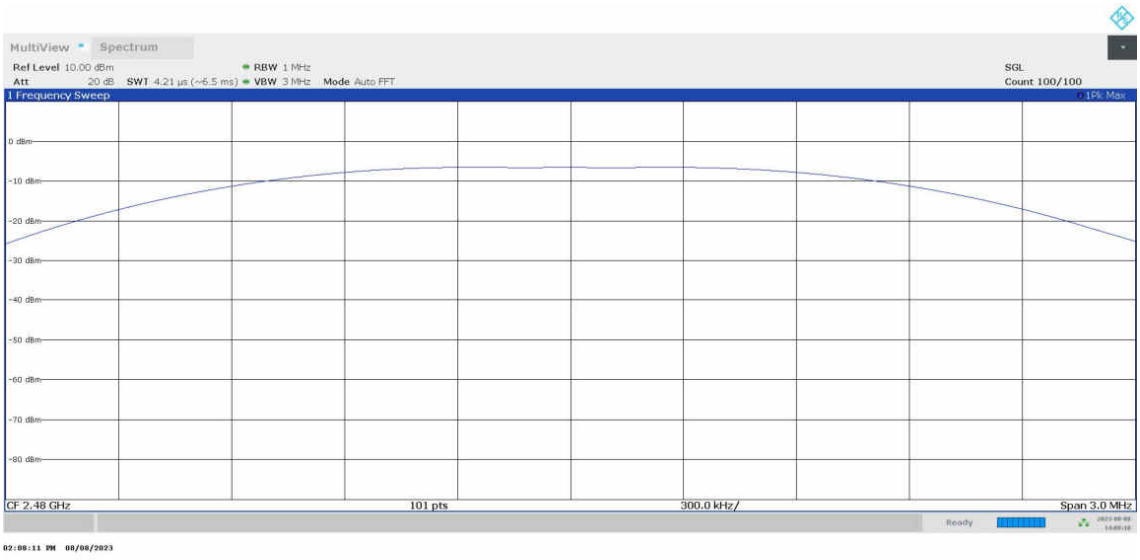
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1

Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000

MIMO Mode = SISO Active Port = 1

Images:





Modulation: BTLE 5.3 (GFSK 2 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	PeakPower (dBm)
Digital Transmission System (DTS)	2	2404.00000	7.2440
		2440.00000	7.3510
		2478.00000	7.5650

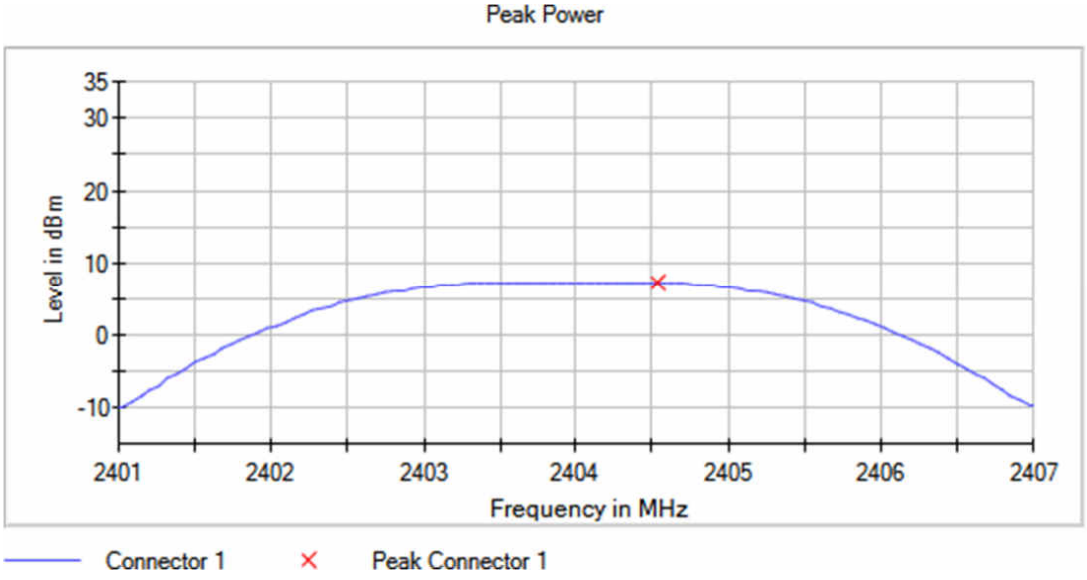
Verdict

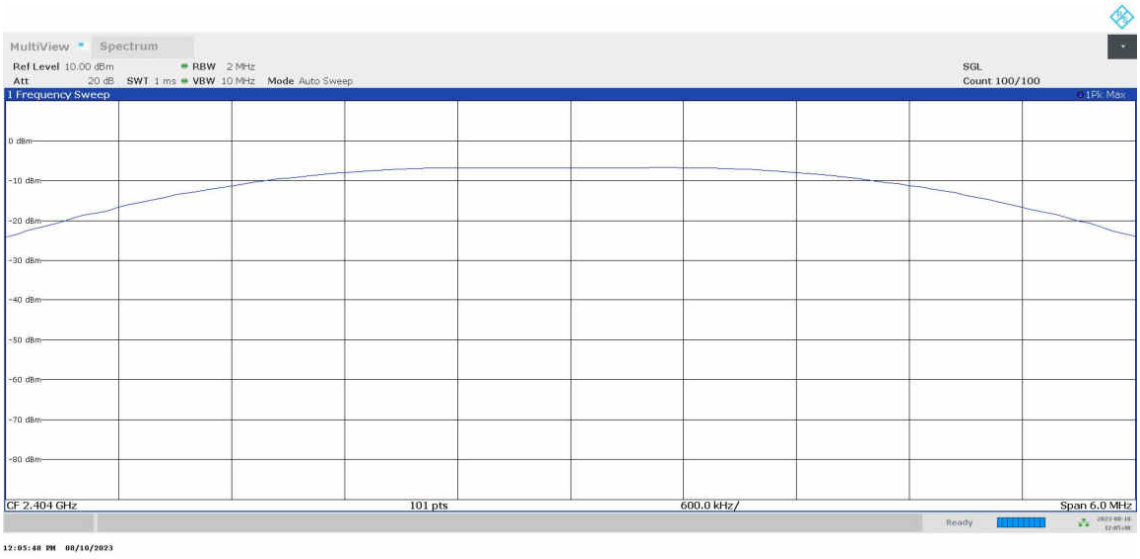
Pass

Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 2
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)	Frequency MHz = 2404.00000
MIMO Mode = SISO	Active Port = 1

Images:



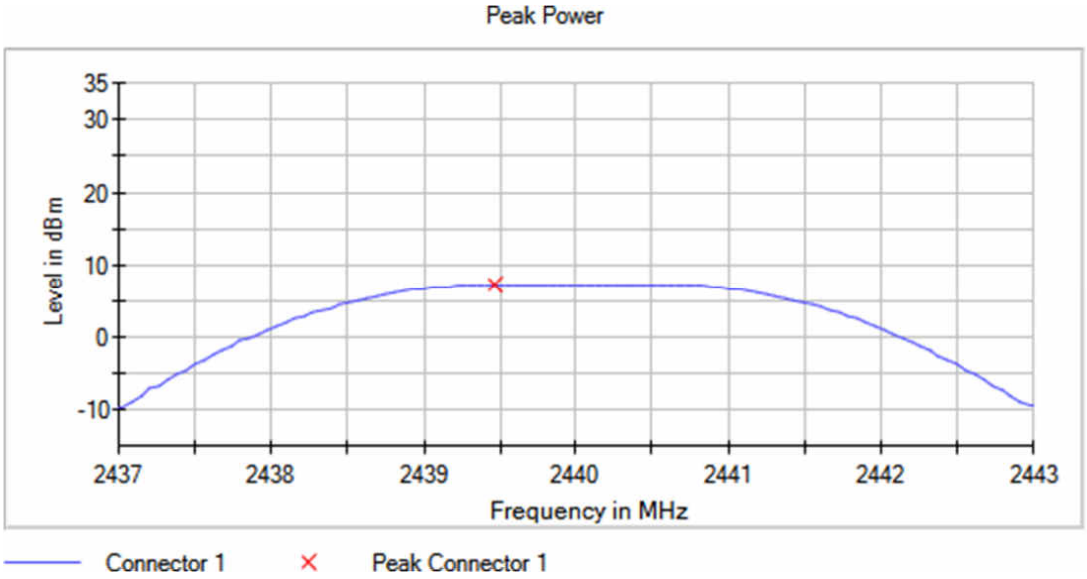


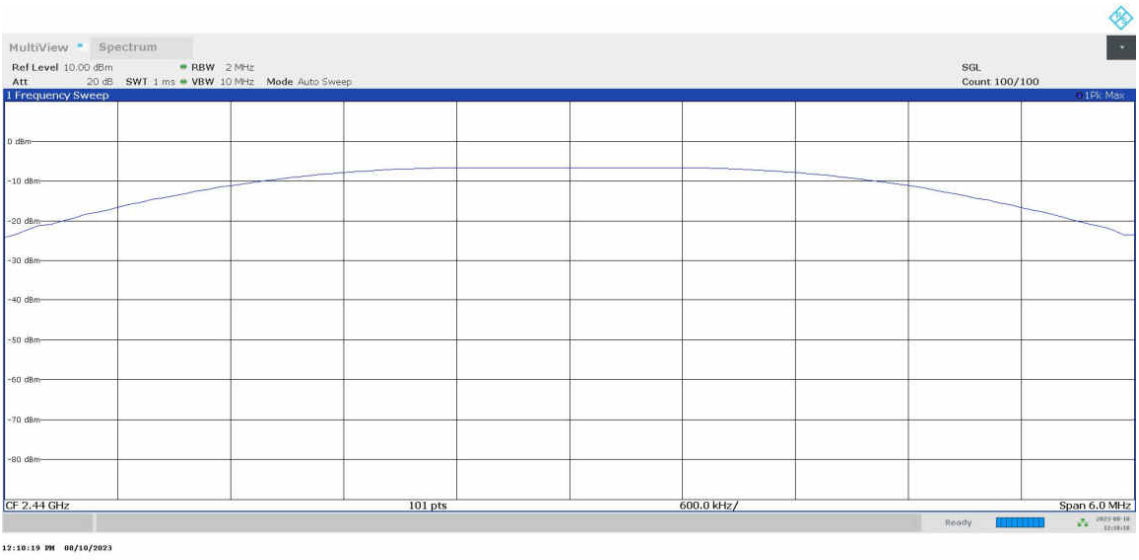
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000

MIMO Mode = SISO Active Port = 1

Images:



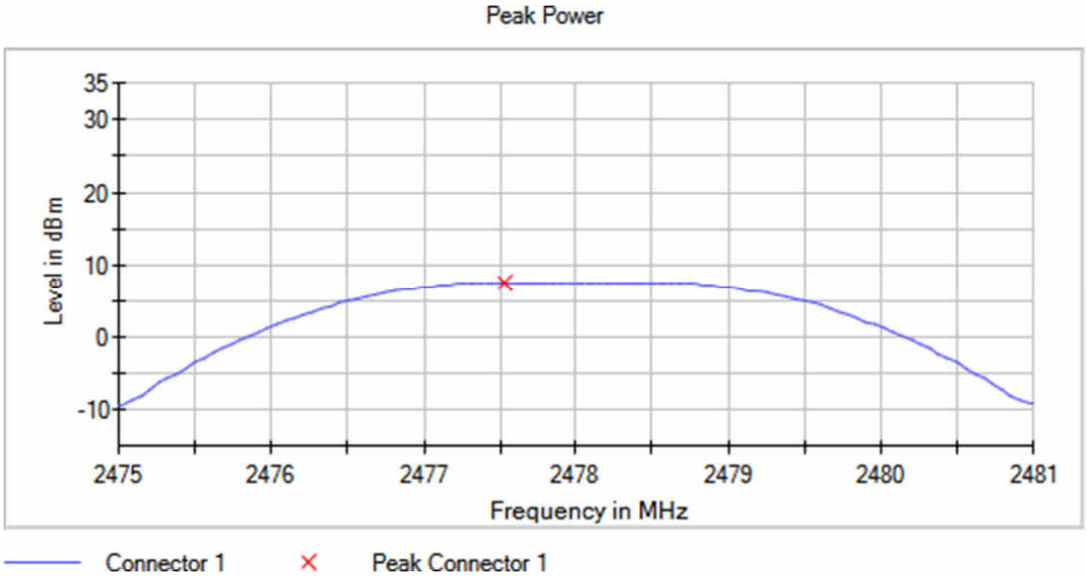


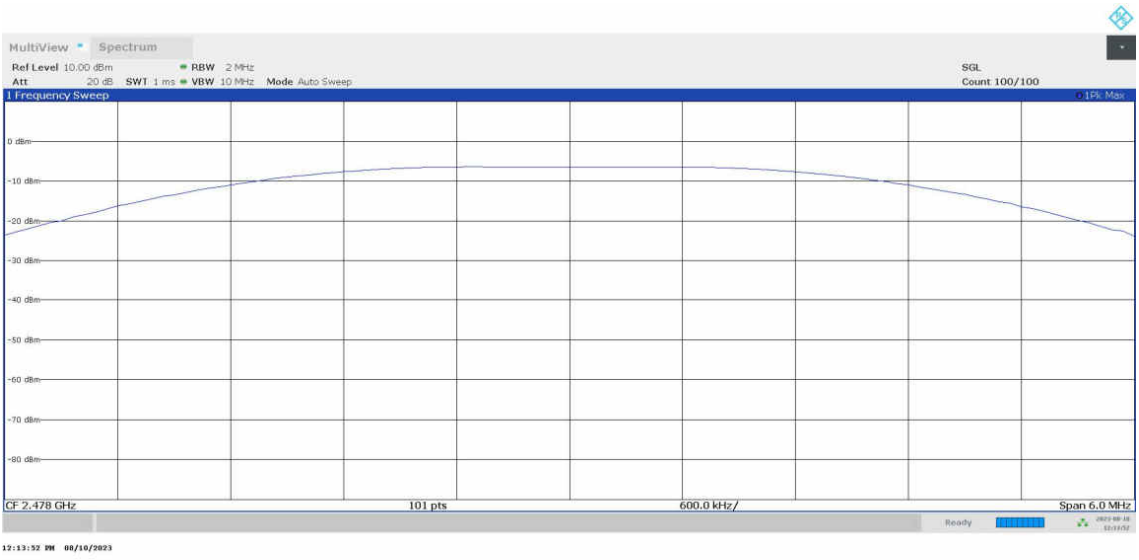
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2478.00000

MIMO Mode = SISO Active Port = 1

Images:





RSS-247 5.5 / FCC 15.247 (d) [Bndedge] 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.

Modulation: BTLE 5.3 (GFSK 1 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	Inband Peak Lvl Limit (dBm)	Freq (MHz)	Lvl (dBm)
Digital Transmission System (DTS)	1	2402.00000	-9.820	2399.975000	-35.727
			-9.820	2399.925000	-36.718
			-9.820	2399.875000	-36.865
			-9.820	2399.525000	-37.416
			-9.820	2399.575000	-37.474
			-9.820	2399.625000	-37.626
			-9.820	2399.825000	-37.659
			-9.820	2399.675000	-37.992
			-9.820	2399.475000	-38.224
			-9.820	2399.775000	-38.571
			-9.820	2399.725000	-38.640
			-9.820	2399.425000	-38.725
			-9.820	2399.375000	-39.606
			-9.820	2398.925000	-39.778
			-9.820	2398.875000	-39.830
			-9.820	2399.975000	-35.727
		2480.00000	-9.505	2483.525000	-44.518
			-9.505	2483.575000	-44.551
			-9.505	2483.625000	-45.004
			-9.505	2484.025000	-46.356
			-9.505	2484.125000	-46.362
			-9.505	2483.975000	-46.412
			-9.505	2484.075000	-46.506
			-9.505	2484.175000	-46.667
			-9.505	2484.625000	-46.924
			-9.505	2483.675000	-46.928

Equipment	BW (MHz)	Freq (MHz)	Inband Peak Lvl Limit (dBm)	Freq (MHz)	Lvl (dBm)
			-9.505	2483.725000	-47.105
			-9.505	2484.675000	-47.209
			-9.505	2484.275000	-47.236
			-9.505	2483.775000	-47.321
			-9.505	2484.575000	-47.466

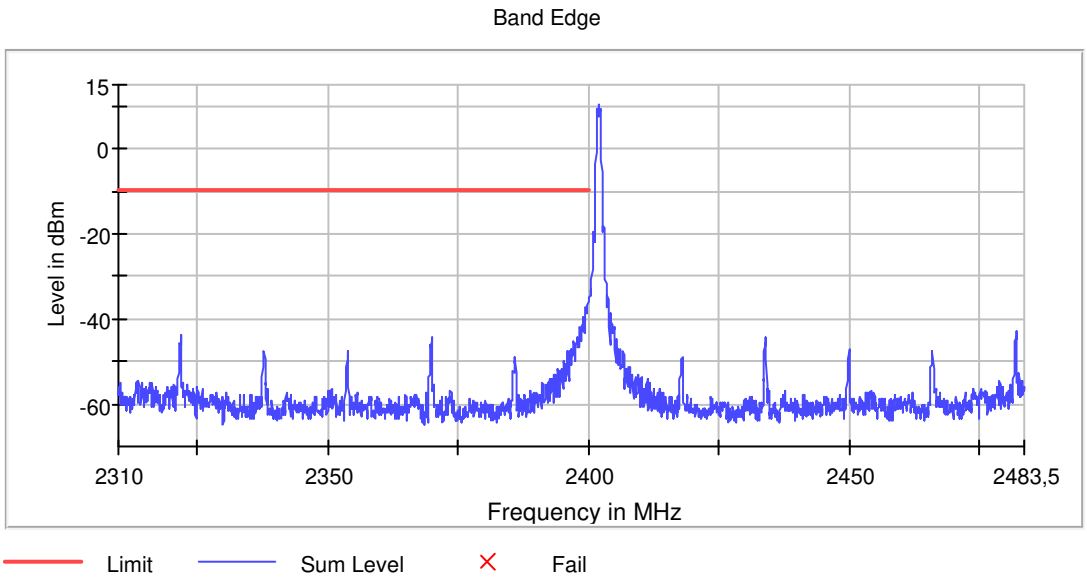
Verdict

Pass

Attachments

Equipment Type = Digital Transmission System (DTS)
Bandwidth MHz = 1
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)
Frequency MHz = 2402.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace

Setting	Instrument Value	Target Value
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

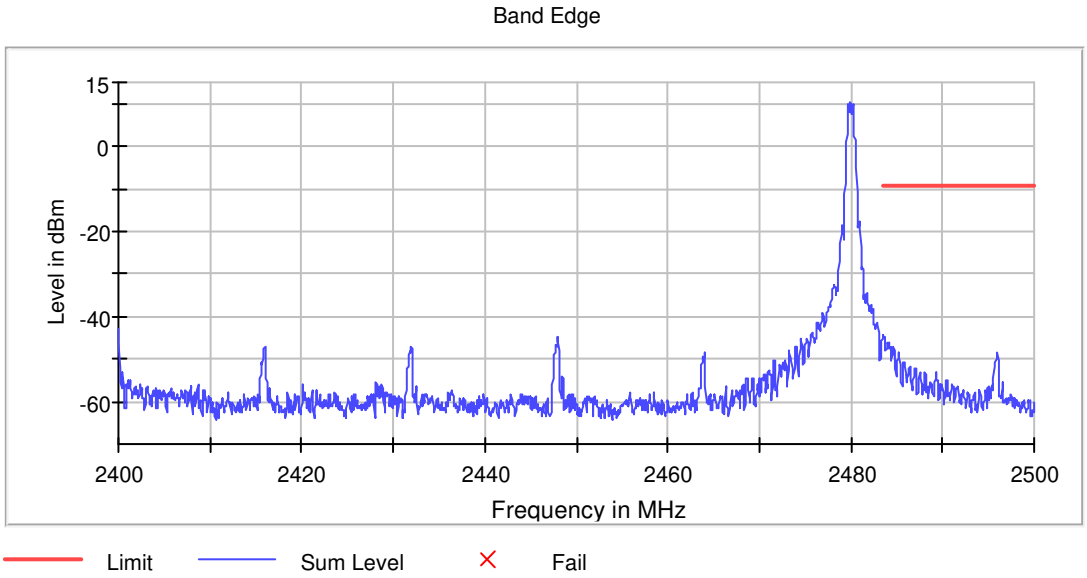
Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.50 dB

Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)
MIMO Mode = SISO
Active Port = 1

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Measurement Point = 1

Images:



Tables:
Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB

Setting	Instrument Value	Target Value
Run	14 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	11 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.50 dB

Modulation: BTLE 5.3 (GFSK 2 Mbit/s)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Freq (MHz)	Inband Peak Lvl Limit (dBm)	Freq (MHz)	Lvl (dBm)
Digital Transmission System (DTS)	2	2404.00000	-9.751	2399.825000	-43.5
			-9.751	2399.725000	-43.6
			-9.751	2399.775000	-43.7
			-9.751	2399.975000	-43.7
			-9.751	2399.925000	-43.8
			-9.751	2399.875000	-43.8
			-9.751	2399.675000	-44.2
			-9.751	2399.225000	-44.4
			-9.751	2323.925000	-44.4
			-9.751	2323.975000	-44.5
			-9.751	2399.275000	-44.7
			-9.751	2371.925000	-45.0
			-9.751	2399.125000	-45.0
			-9.751	2399.175000	-45.0
			-9.751	2371.975000	-45.0
		2478.00000	-9.751	2483.775000	-48.3
			-9.751	2493.975000	-48.6
			-9.751	2483.825000	-48.8
			-9.751	2494.025000	-48.9
			-9.751	2483.875000	-49.5
			-9.751	2493.925000	-49.5
			-9.751	2483.725000	-50.2
			-9.751	2484.425000	-50.3
			-9.751	2484.475000	-50.6
			-9.751	2494.075000	-51.0
			-9.751	2484.675000	-51.0
			-9.751	2484.375000	-51.2
			-9.751	2484.325000	-51.2
			-9.751	2484.775000	-51.2
			-9.751	2485.575000	-51.3

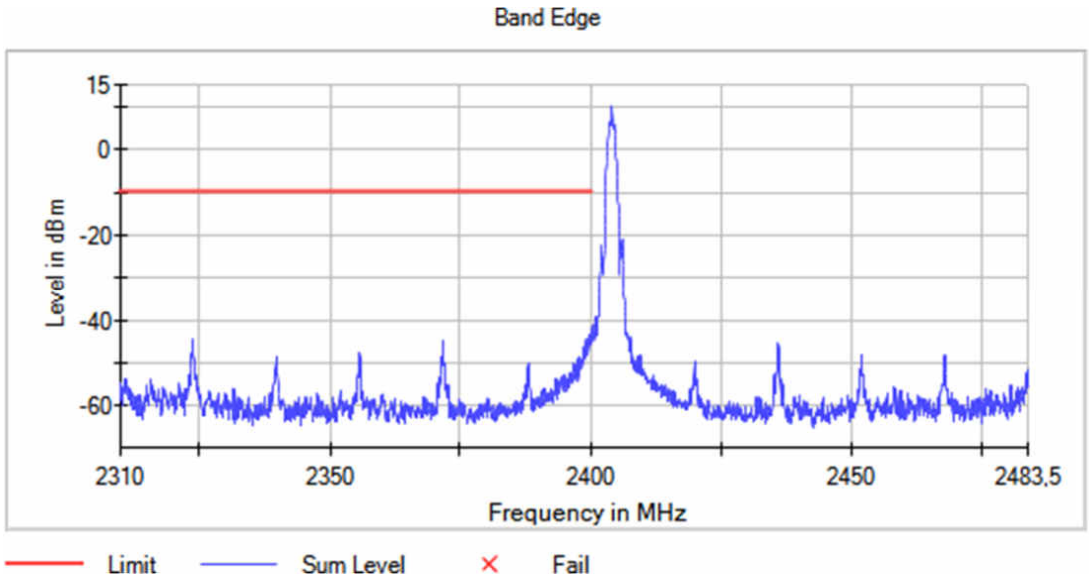
Verdict

Pass

Attachments

Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
MIMO Mode = SISO
Active Port = 1
Bandwidth MHz = 2
Frequency MHz = 2404.00000
Measurement Point = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB

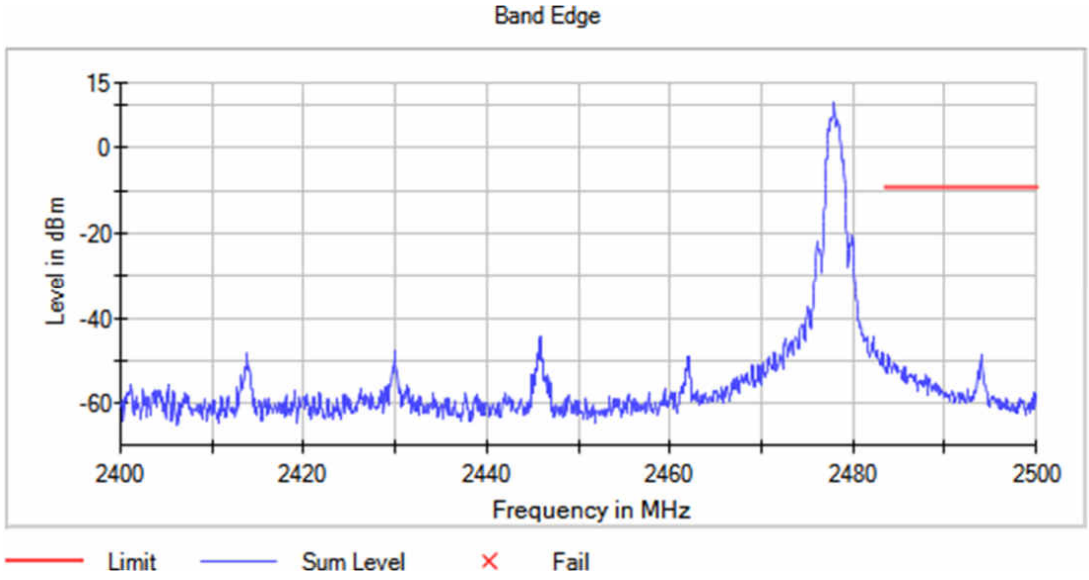
Setting	Instrument Value	Target Value
Run	19 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.09 dB	0.50 dB

Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
MIMO Mode = SISO
Active Port = 1
Bandwidth MHz = 2
Frequency MHz = 2478.00000
Measurement Point = 1

Images:



Tables:
Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	1.800 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB

Setting	Instrument Value	Target Value
Run	19 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	1.670 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.09 dB	0.50 dB

RSS-247 5.5 / FCC 15.247 (d) [RSE] 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.

Modulation: BTLE 5.3 (GFSK 1 Mbit/s)

MIMO Mode: SISO

Results

Equipment	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
Digital Transmission System (DTS)	[0.03, 1]	2402.00000	135.148	29.68	V	PK
	[0.03, 1]	2402.00000	135.148	13.21	V	QP
	[0.03, 1]	2426.00000	131.899	31.92	V	PK
	[0.03, 1]	2426.00000	131.899	26.52	V	QP
	[0.03, 1]	2426.00000	332.397	30.96	H	PK
	[0.03, 1]	2426.00000	332.397	22.79	H	QP
	[0.03, 1]	2426.00000	48.139	28.02	V	PK
	[0.03, 1]	2426.00000	48.139	23.99	V	QP
	[0.03, 1]	2426.00000	50.758	24.98	V	PK
	[0.03, 1]	2426.00000	50.758	21.83	V	QP
	[0.03, 1]	2426.00000	59.973	29.31	V	PK
	[0.03, 1]	2426.00000	59.973	24.80	V	QP

	[0.03, 1]	2426.00000	71.904	29.65	V	PK
	[0.03, 1]	2426.00000	71.904	24.19	V	QP
	[0.03, 1]	2426.00000	83.835	23.86	V	PK
	[0.03, 1]	2426.00000	83.835	18.01	V	QP
	[0.03, 1]	2480.00000	159.010	29.15	V	PK
	[0.03, 1]	2480.00000	159.010	11.29	V	QP
	[1, 3]	2402.00000	2274.067	49.45	H	AVG
	[1, 3]	2402.00000	2274.067	49.37	H	AVG
	[1, 3]	2402.00000	2289.733	49.82	H	AVG
	[1, 3]	2402.00000	2289.733	49.66	H	AVG
	[1, 3]	2402.00000	2498.133	50.95	H	AVG
	[1, 3]	2402.00000	2498.133	50.56	H	AVG
	[1, 3]	2480.00000	2351.667	59.65	H	PK
	[1, 3]	2480.00000	2351.667	49.20	H	AVG
	[1, 3]	2480.00000	2368.267	58.79	H	PK
	[1, 3]	2480.00000	2368.267	48.45	H	AVG
	[1, 3]	2480.00000	2486.267	58.41	H	PK
	[1, 3]	2480.00000	2486.267	48.08	H	AVG
	[3, 17]	2402.00000	4803.500	43.75	H	PK
	[3, 17]	2402.00000	4803.500	41.49	H	AVG
	[3, 17]	2426.00000	4852.500	42.19	H	PK
	[3, 17]	2480.00000	4959.500	46.00	H	PK
	[3, 17]	2480.00000	4959.500	44.93	H	AVG

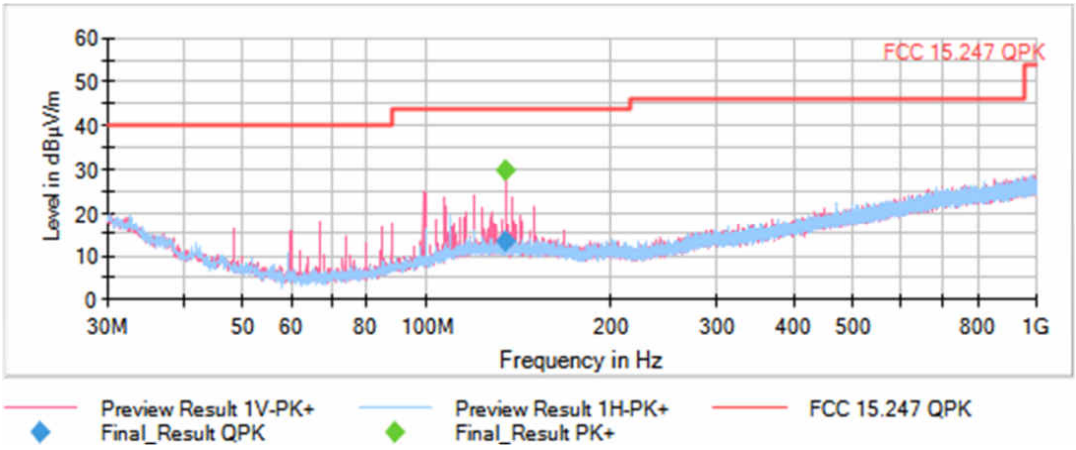
Verdict

Pass

Attachments

Frequency Range GHz = [0.03, 1]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)
Frequency MHz = 2402.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



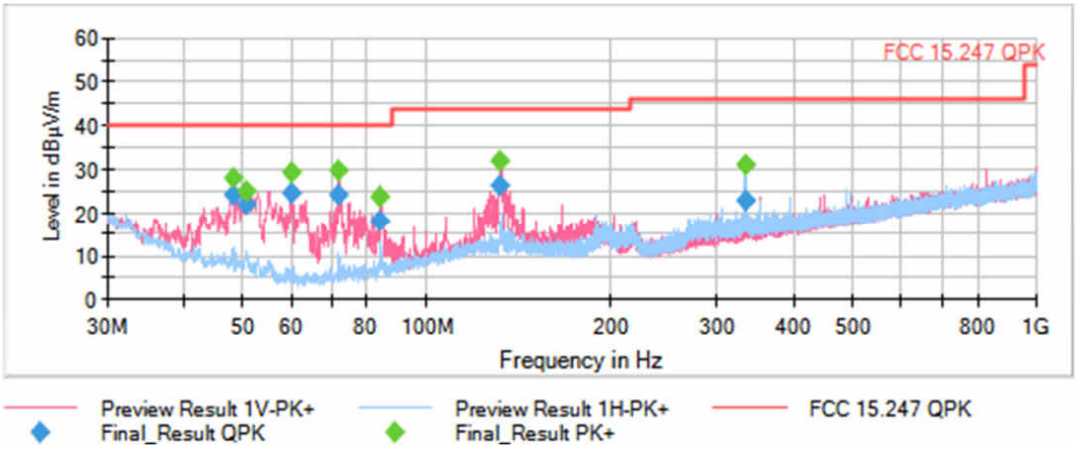
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

Frequency Range GHz = [0.03, 1]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)
Frequency MHz = 2426.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



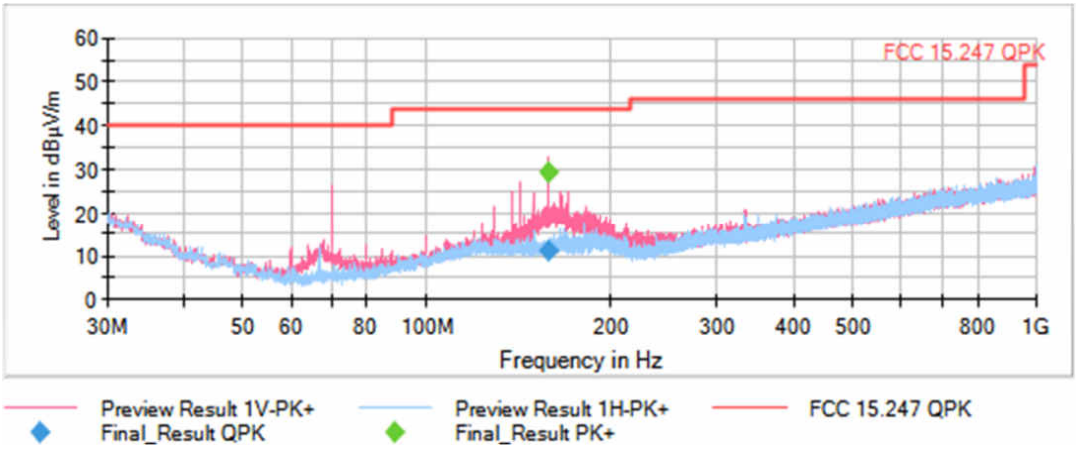
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

Frequency Range GHz = [0.03, 1]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)
Frequency MHz = 2480.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

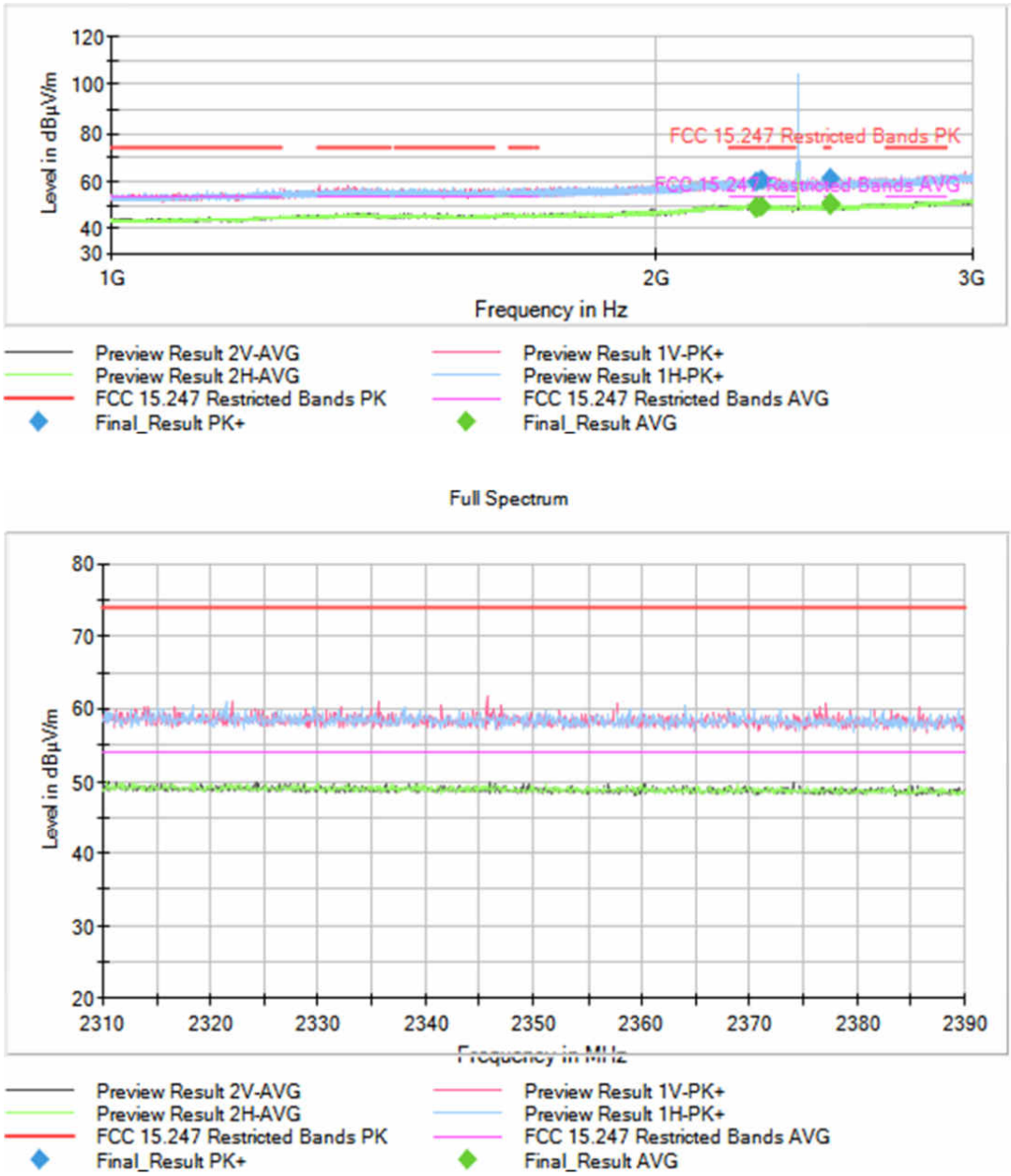
Frequency Range GHz = [1, 3] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2402.00000

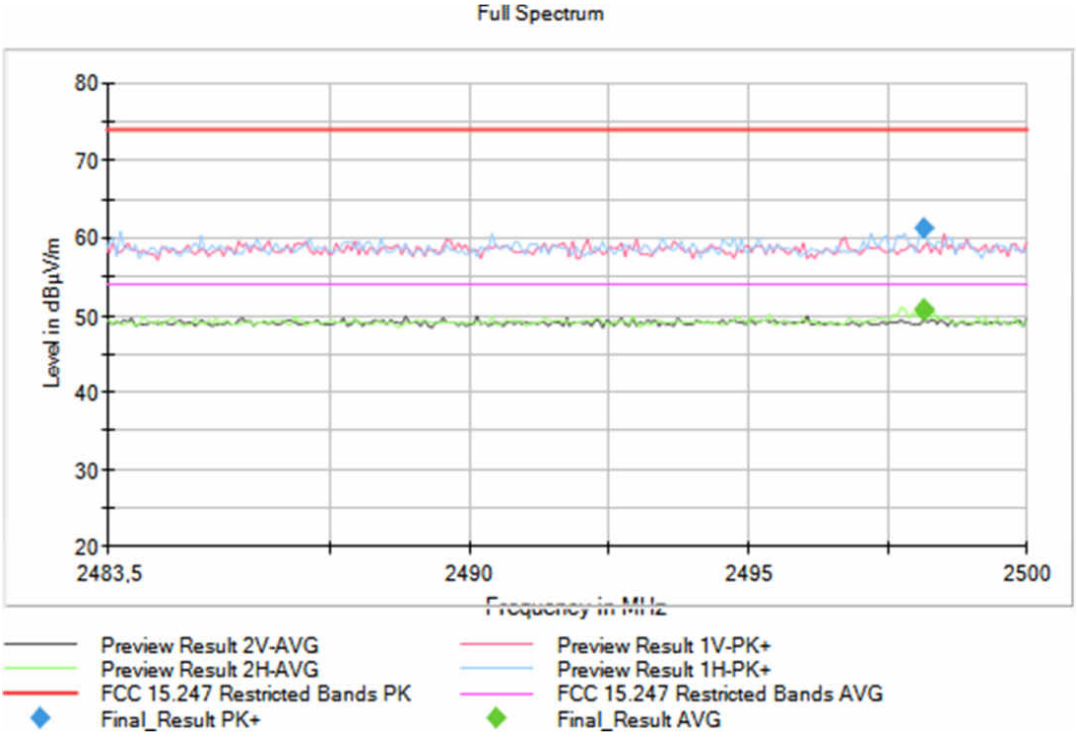
MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Full Spectrum



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

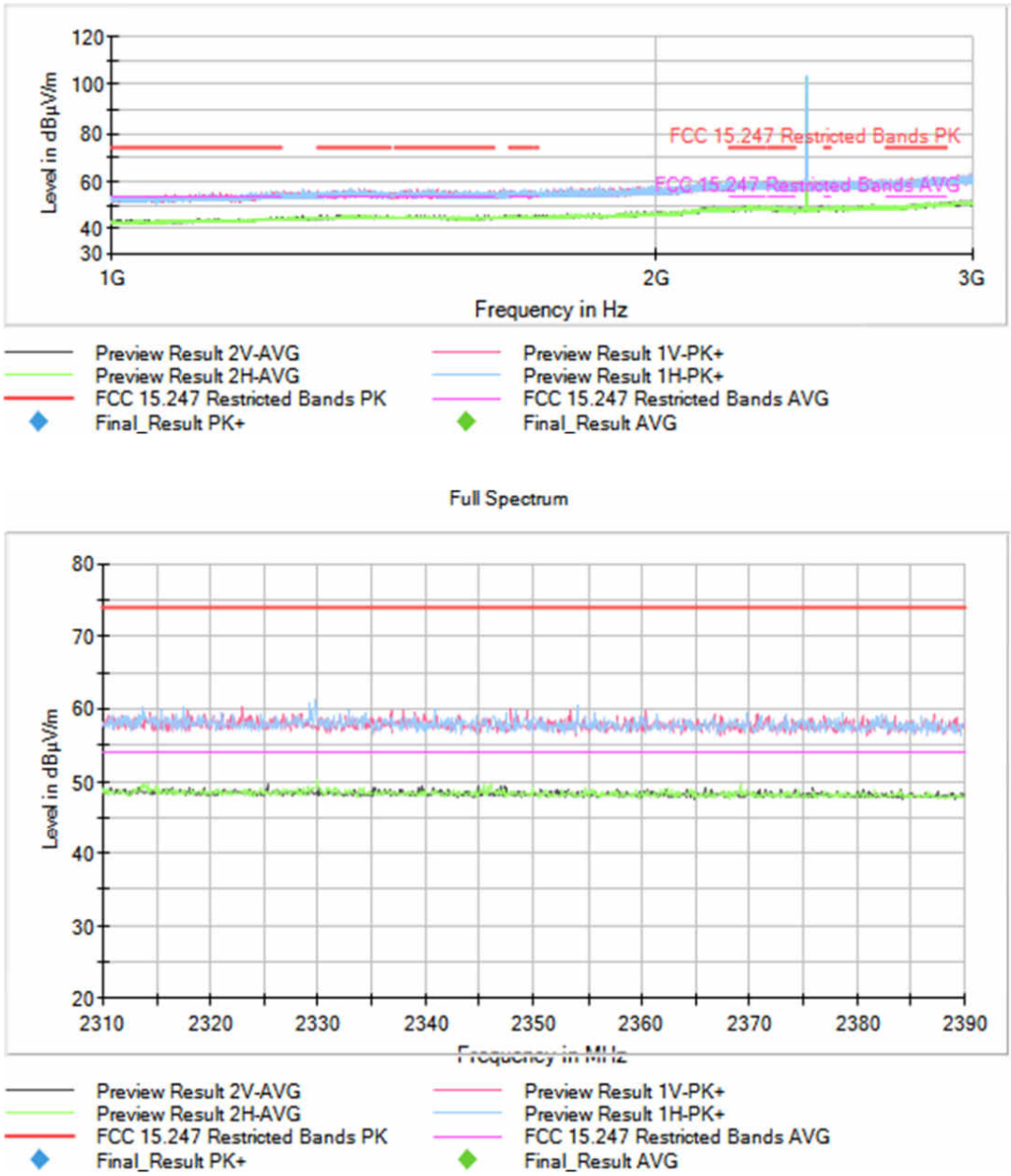
Frequency Range GHz = [1, 3] Equipment Type = Digital Transmission System (DTS)

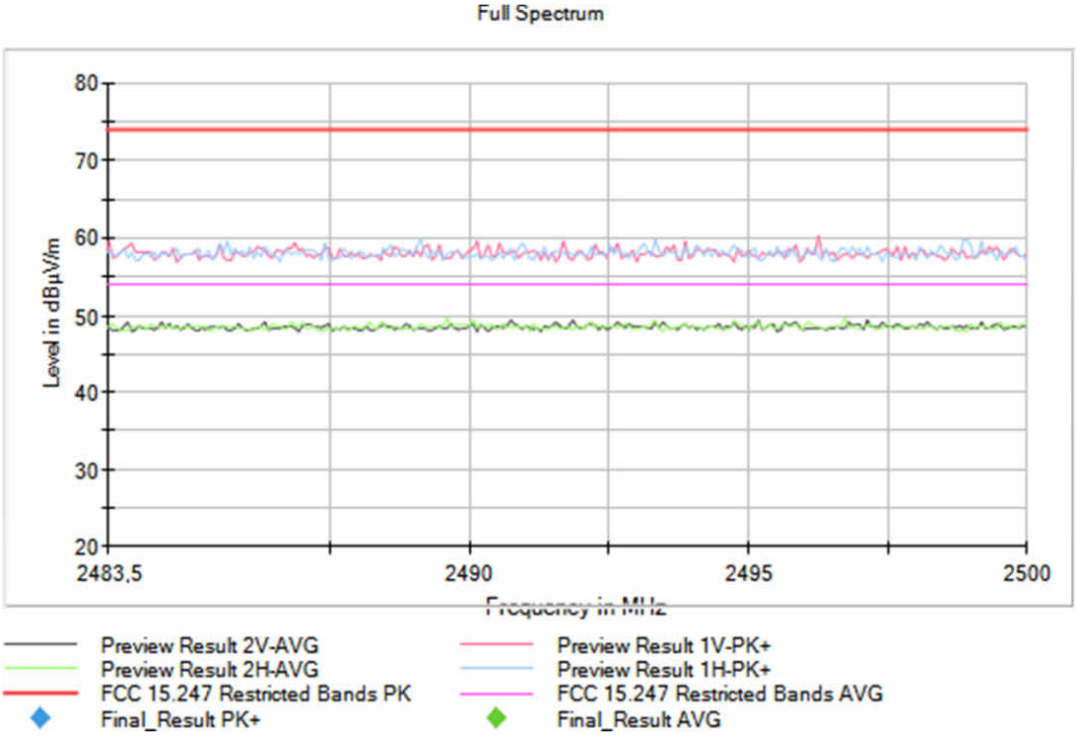
Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2426.00000

MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:





Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

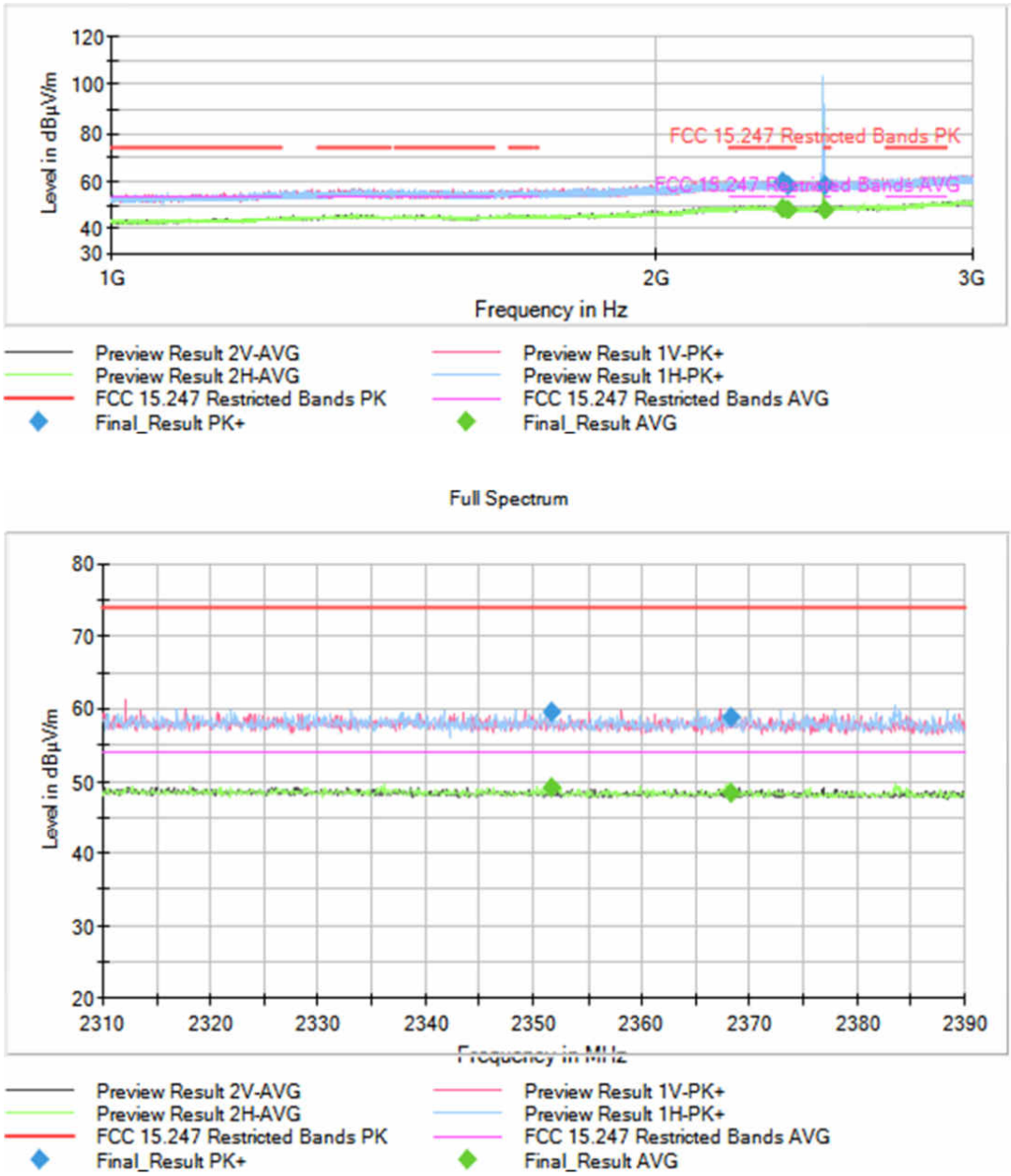
Frequency Range GHz = [1, 3] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000

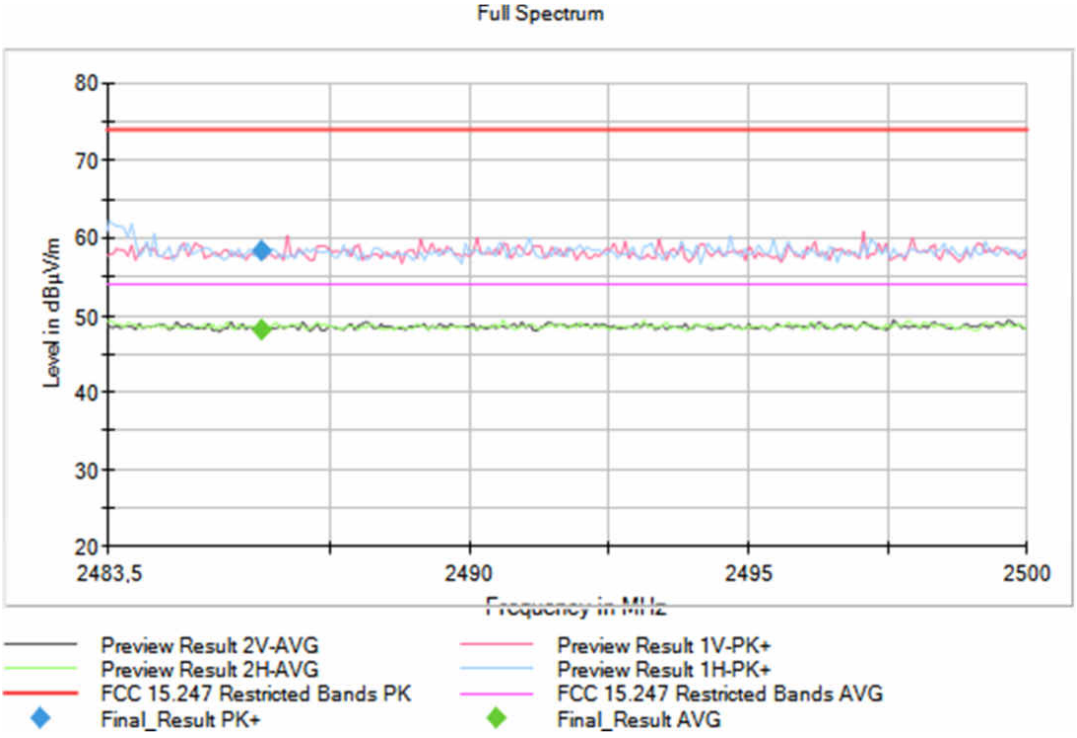
MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Full Spectrum



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

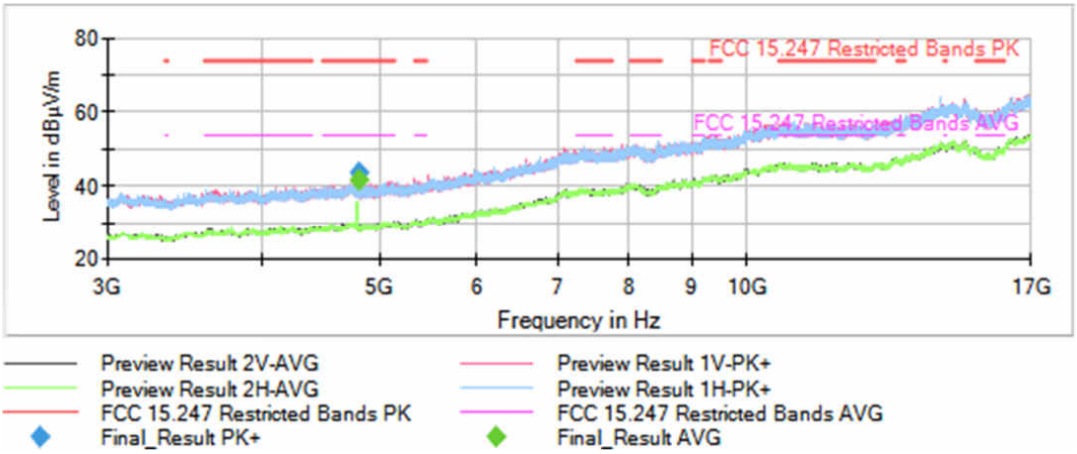
Frequency Range GHz = [3, 17] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2402.00000

MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



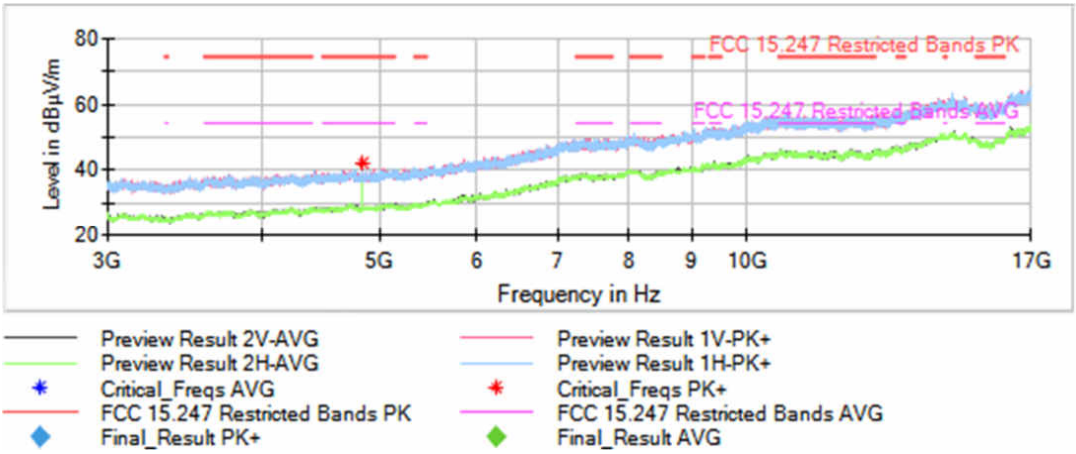
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [3, 17]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)
Frequency MHz = 2426.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



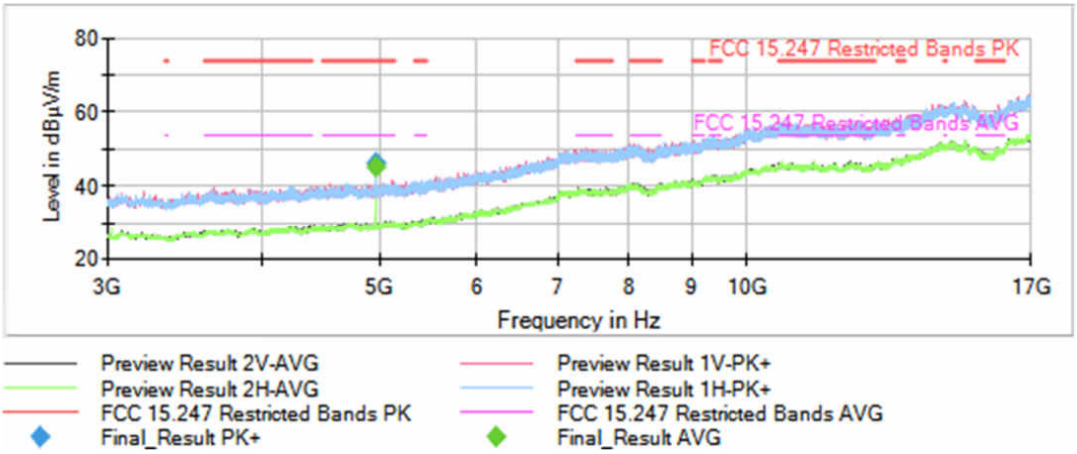
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [3, 17]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 1 Mbit/s)
Frequency MHz = 2480.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

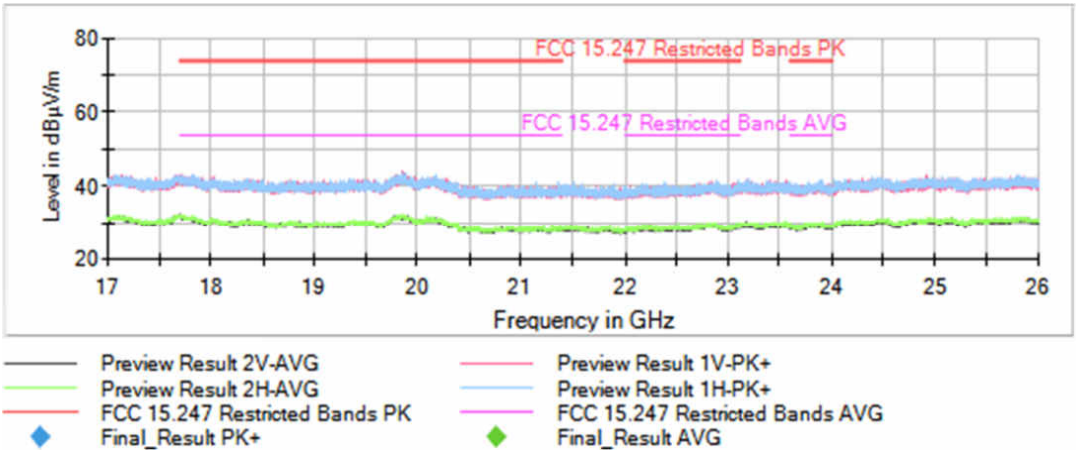
Frequency Range GHz = [17, 26] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2402.00000

MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	17 GHz - 26 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

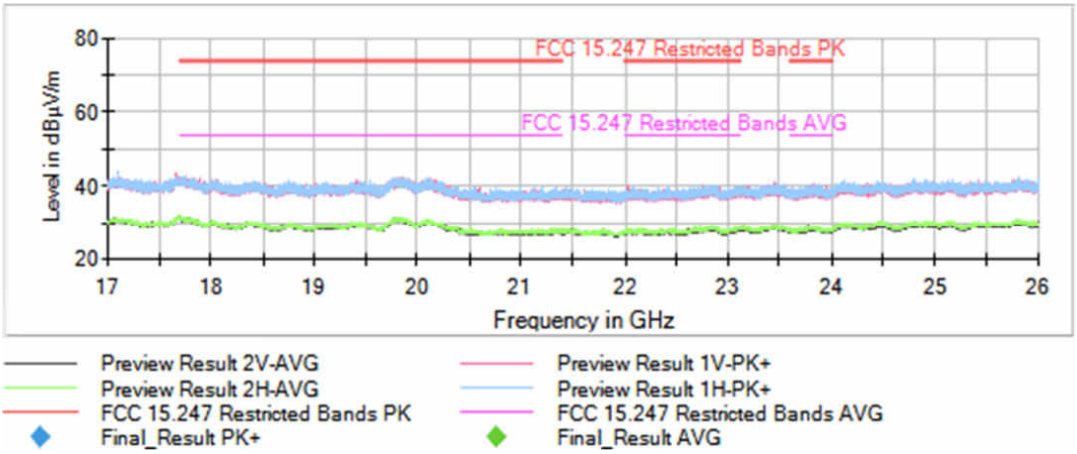
Frequency Range GHz = [17, 26] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2426.00000

MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	17 GHz - 26 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

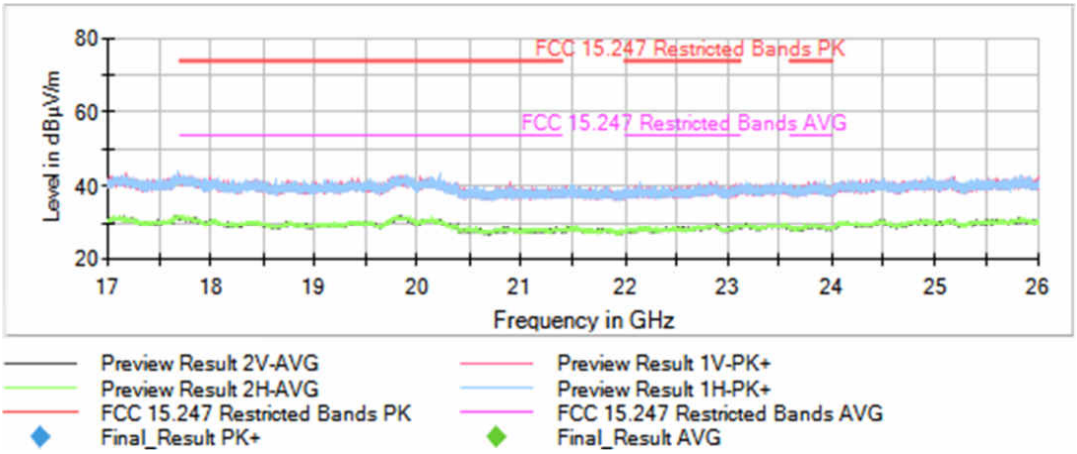
Frequency Range GHz = [17, 26] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000

MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	17 GHz - 26 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Modulation: BTLE 5.3 (GFSK 2 Mbit/s)

MIMO Mode: SISO

Results

Equipment	Freq Rng (GHz)	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
Digital Transmission System (DTS)	[0.03, 1]	2404.00000	1	131.947	33.28	V	PK
	[0.03, 1]	2404.00000	1	131.947	27.92	V	QP
	[0.03, 1]	2404.00000	1	332.495	30.62	H	PK
	[0.03, 1]	2404.00000	1	332.495	22.57	H	QP
	[0.03, 1]	2404.00000	1	48.139	25.45	V	PK
	[0.03, 1]	2404.00000	1	48.139	20.56	V	QP
	[0.03, 1]	2404.00000	1	59.973	26.53	V	PK
	[0.03, 1]	2404.00000	1	59.973	21.51	V	QP
	[0.03, 1]	2404.00000	1	71.904	25.76	V	PK
	[0.03, 1]	2404.00000	1	71.904	20.89	V	QP
	[0.03, 1]	2404.00000	1	83.883	24.67	V	PK
	[0.03, 1]	2404.00000	1	83.883	19.05	V	QP
	[0.03, 1]	2440.00000	1	132.529	31.14	V	PK
	[0.03, 1]	2440.00000	1	132.529	27.24	V	QP
	[0.03, 1]	2440.00000	1	332.786	31.27	H	PK
	[0.03, 1]	2440.00000	1	332.786	22.76	H	QP
	[0.03, 1]	2440.00000	1	48.188	28.88	V	PK
	[0.03, 1]	2440.00000	1	48.188	24.37	V	QP
	[0.03, 1]	2440.00000	1	50.806	27.79	V	PK
	[0.03, 1]	2440.00000	1	50.806	22.76	V	QP
	[0.03, 1]	2440.00000	1	55.462	25.30	V	PK
	[0.03, 1]	2440.00000	1	55.462	20.64	V	QP
	[0.03, 1]	2440.00000	1	59.973	29.99	V	PK
	[0.03, 1]	2440.00000	1	59.973	25.31	V	QP
	[0.03, 1]	2440.00000	1	71.953	30.03	V	PK
	[0.03, 1]	2440.00000	1	71.953	25.03	V	QP
	[0.03, 1]	2440.00000	1	83.835	24.36	V	PK
	[0.03, 1]	2440.00000	1	83.835	17.83	V	QP
	[0.03, 1]	2478.00000	1	131.899	30.53	V	PK
	[0.03, 1]	2478.00000	1	131.899	25.17	V	QP
	[0.03, 1]	2478.00000	1	332.688	29.07	H	PK
	[0.03, 1]	2478.00000	1	332.688	20.26	H	QP
	[0.03, 1]	2478.00000	1	48.090	25.07	V	PK
	[0.03, 1]	2478.00000	1	48.090	22.55	V	QP
	[0.03, 1]	2478.00000	1	50.855	26.35	V	PK
	[0.03, 1]	2478.00000	1	50.855	21.00	V	QP
	[0.03, 1]	2478.00000	1	55.462	24.20	V	PK

Equipment	Freq Rng (GHz)	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
	[0.03, 1]	2478.00000	1	55.462	19.53	V	QP
	[0.03, 1]	2478.00000	1	59.925	26.30	V	PK
	[0.03, 1]	2478.00000	1	59.925	22.19	V	QP
	[0.03, 1]	2478.00000	1	72.001	29.25	V	PK
	[0.03, 1]	2478.00000	1	72.001	24.60	V	QP
	[0.03, 1]	2478.00000	1	83.883	25.28	V	PK
	[0.03, 1]	2478.00000	1	83.883	19.58	V	QP
	[3, 17]	2404.00000	1	4807.500	43.08	H	PK
	[3, 17]	2440.00000	1	4878.500	44.46	H	PK
	[3, 17]	2478.00000	1	4954.500	43.47	H	PK

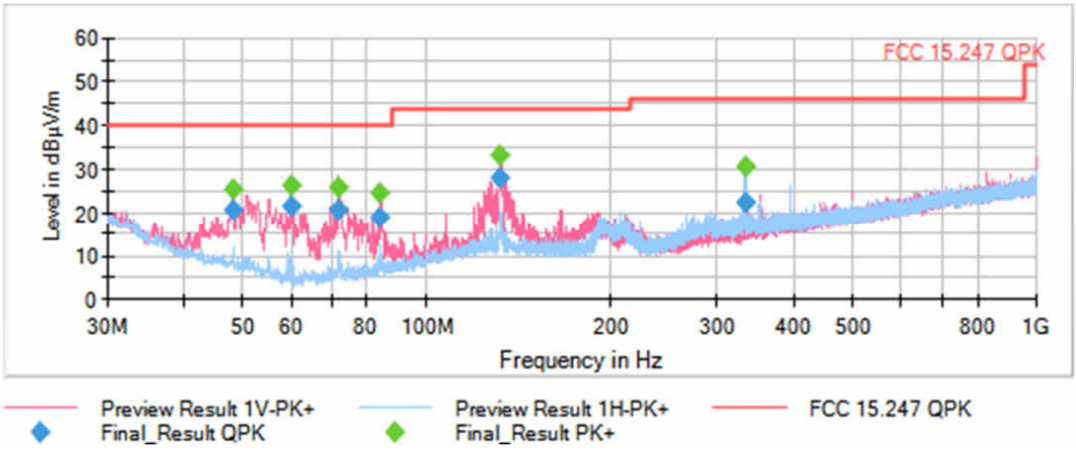
Verdict

Pass

Attachments

Frequency Range GHz = [0.03, 1]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
Frequency MHz = 2404.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



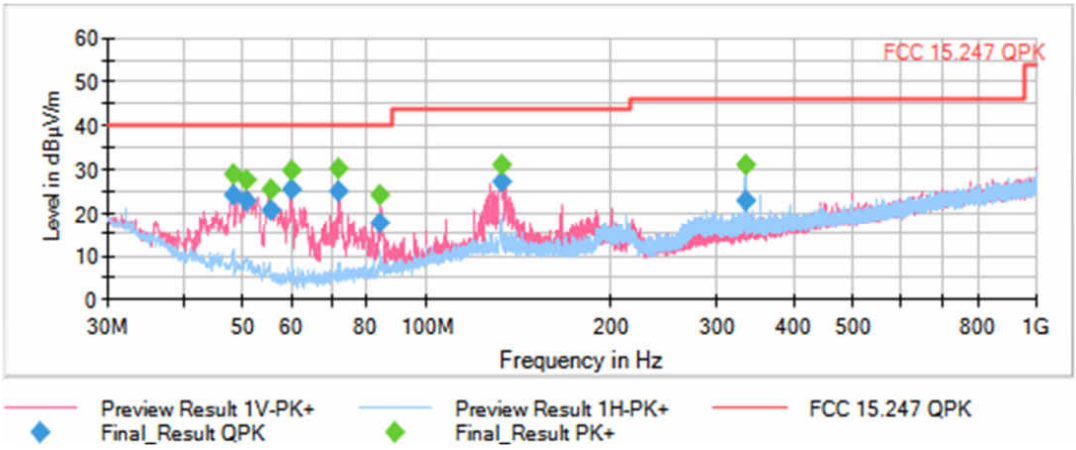
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

Frequency Range GHz = [0.03, 1]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
Frequency MHz = 2440.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



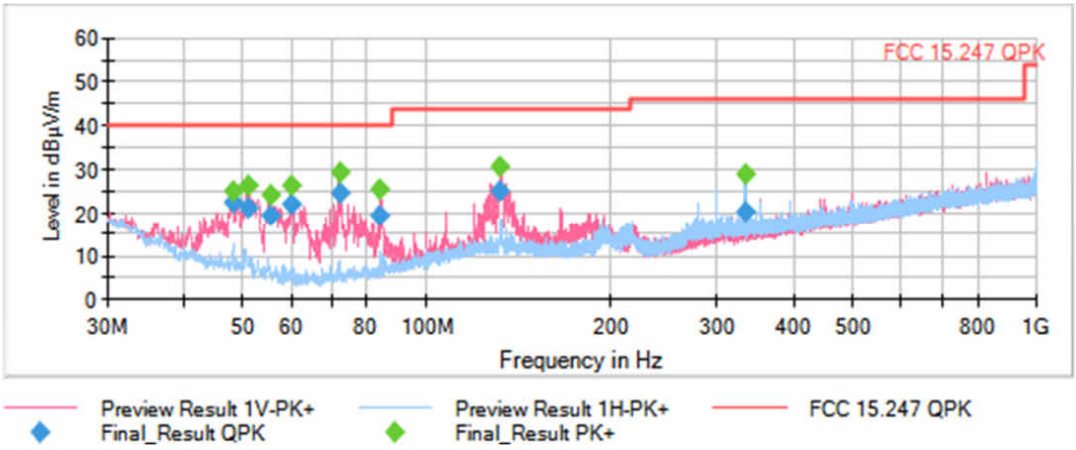
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

Frequency Range GHz = [0.03, 1]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
Frequency MHz = 2478.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

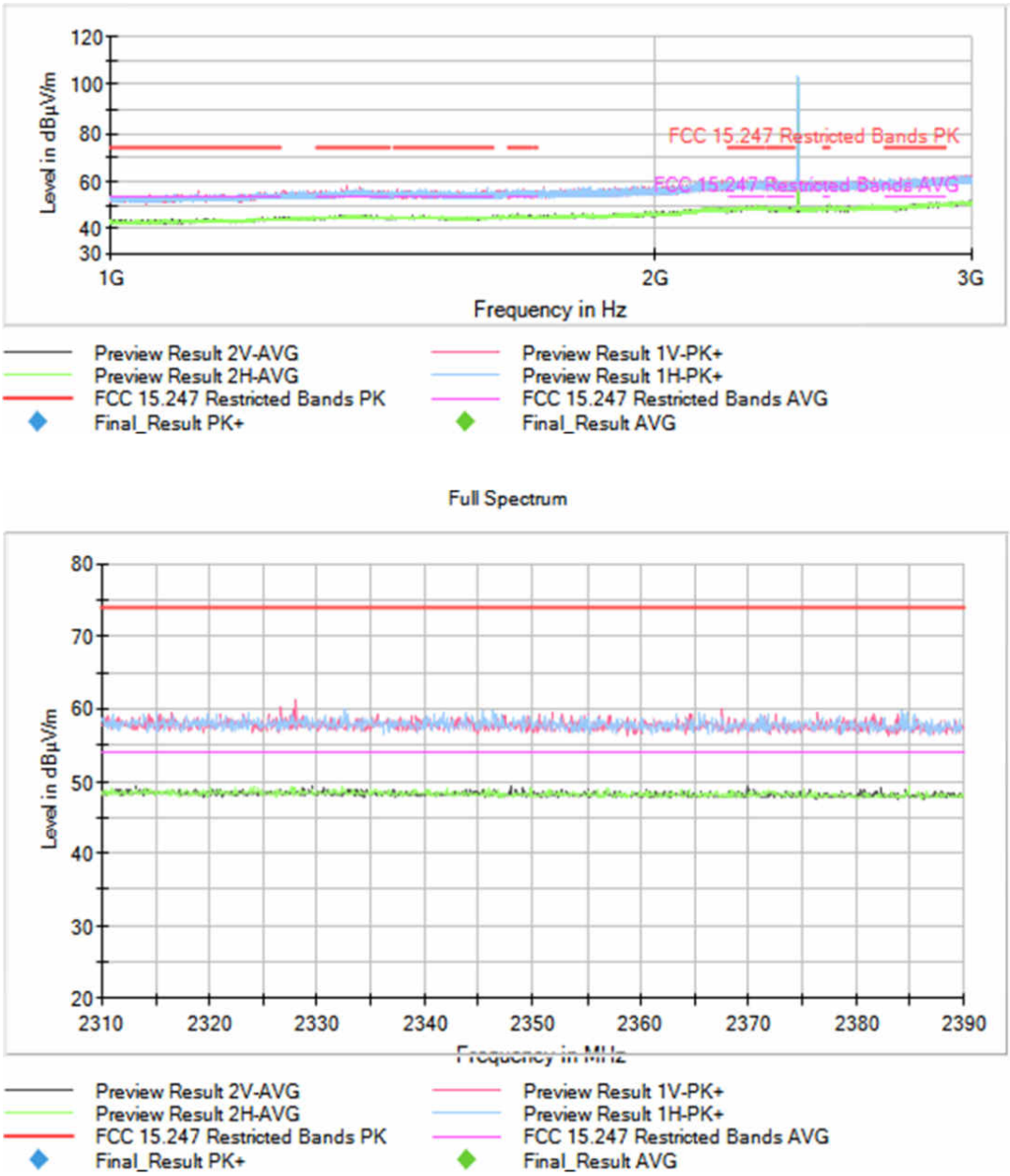
Frequency Range GHz = [1, 3] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2404.00000

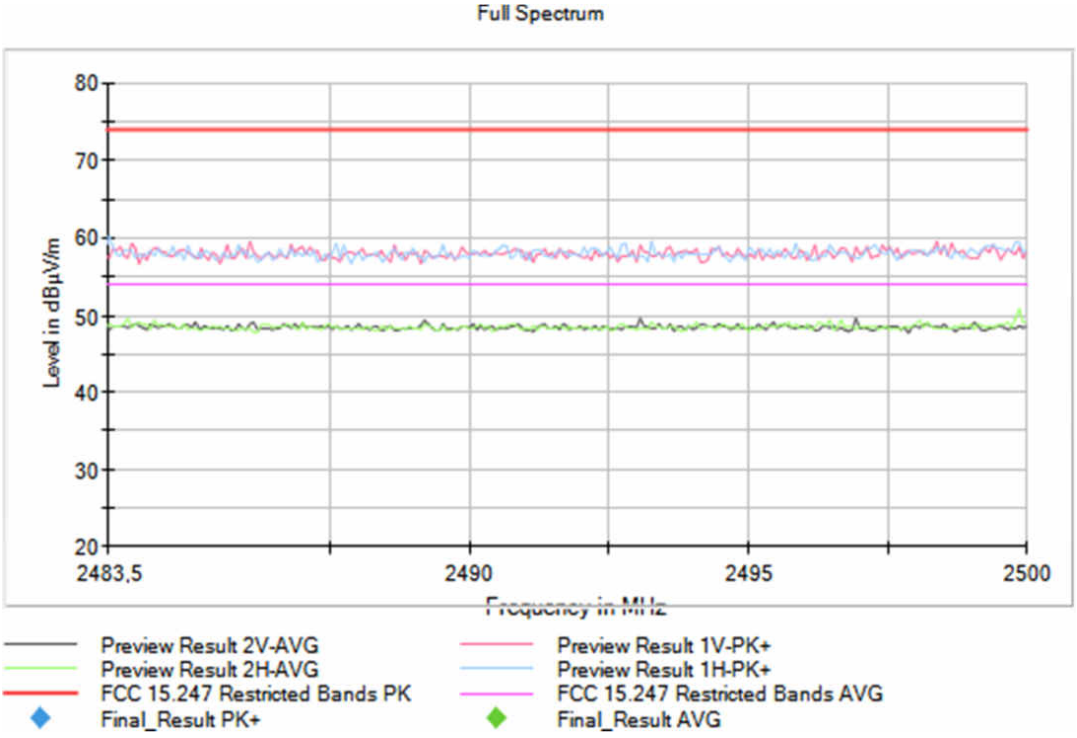
MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Full Spectrum



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

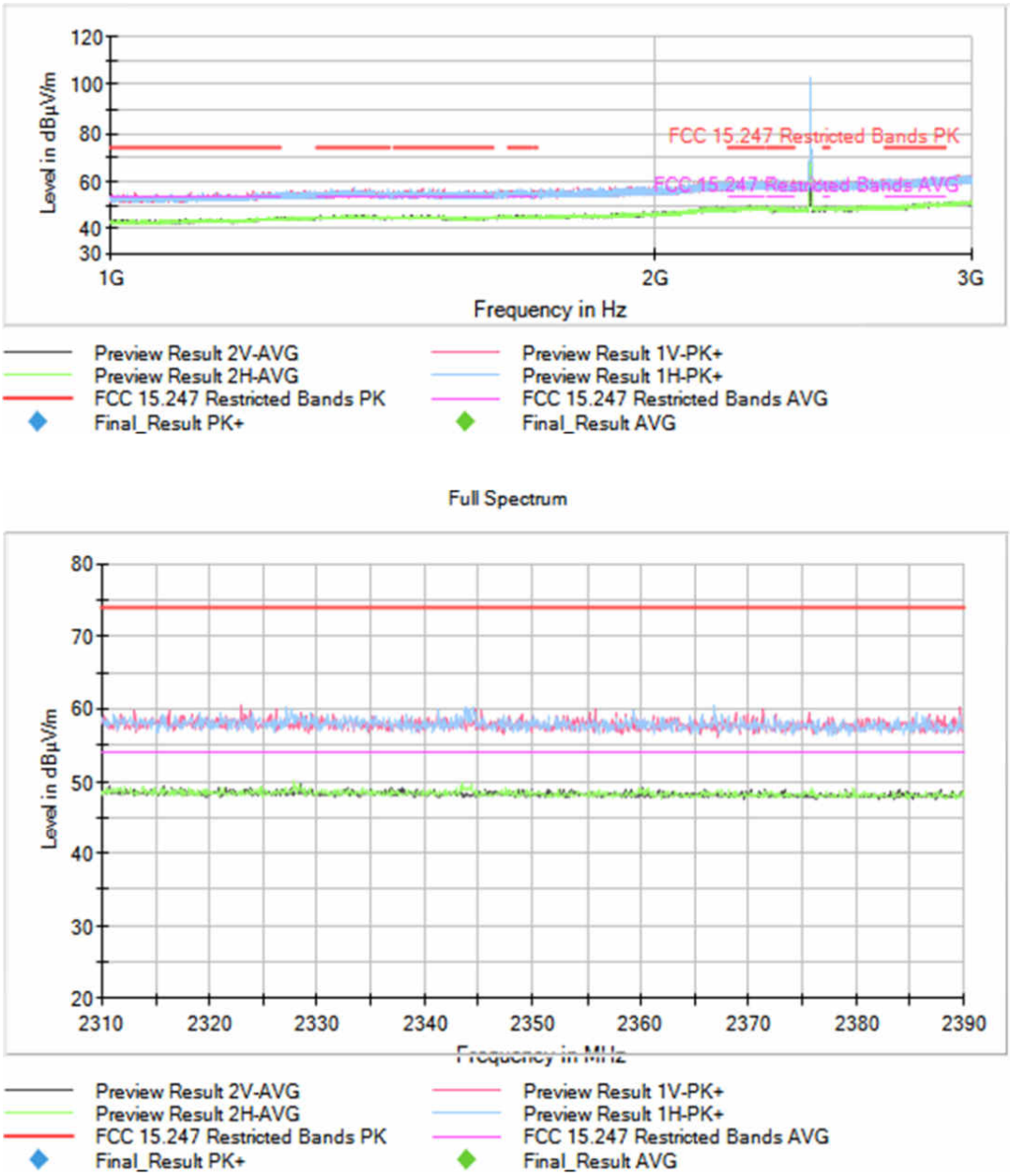
Frequency Range GHz = [1, 3] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000

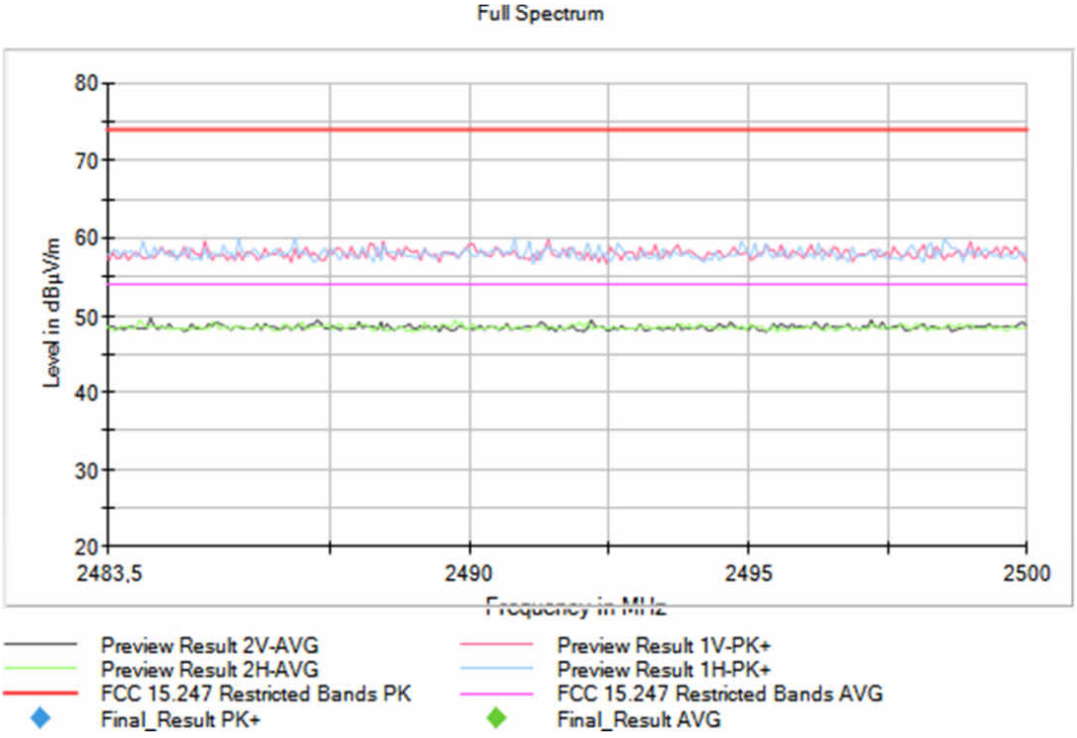
MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Full Spectrum



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

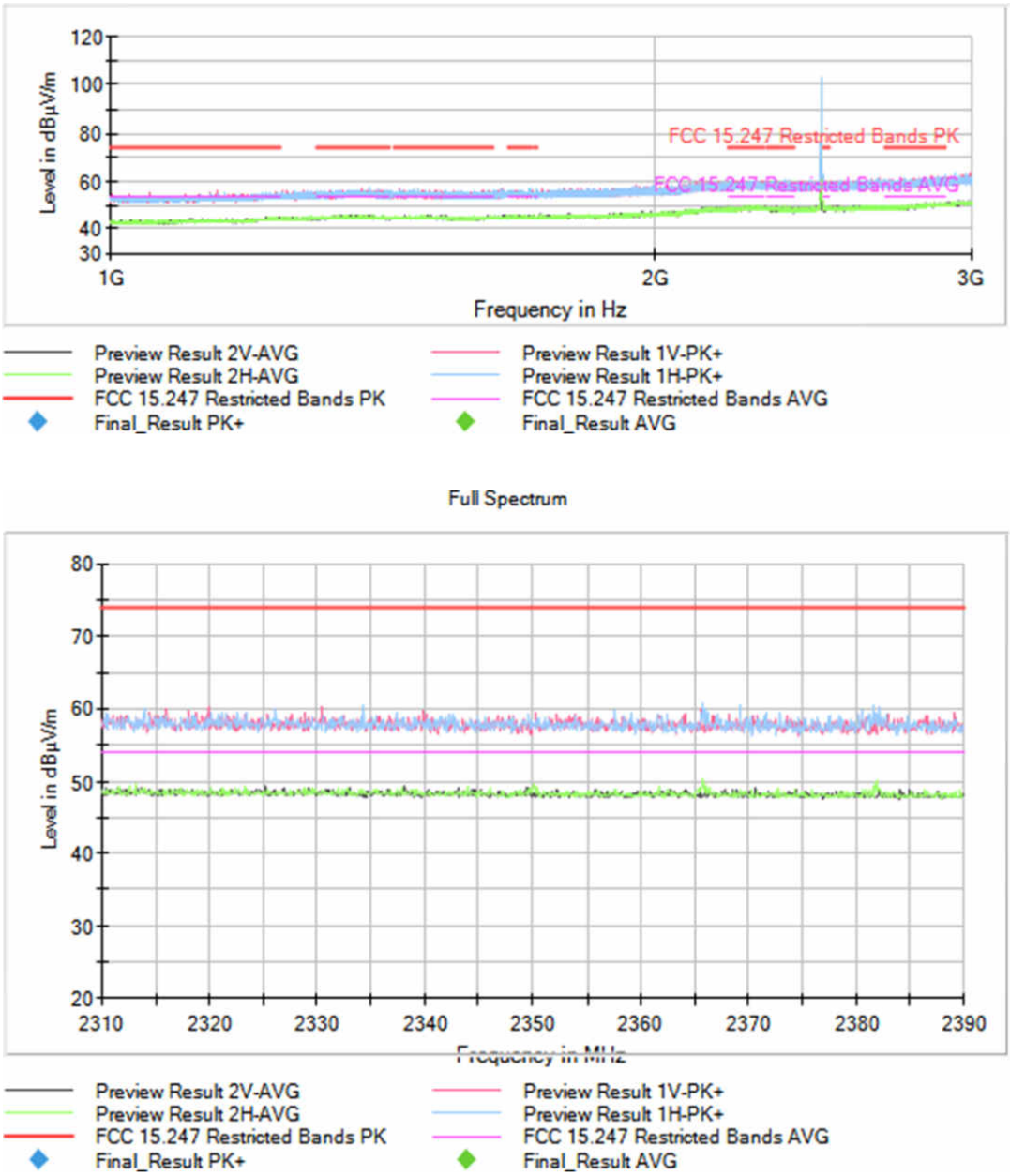
Frequency Range GHz = [1, 3] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2478.00000

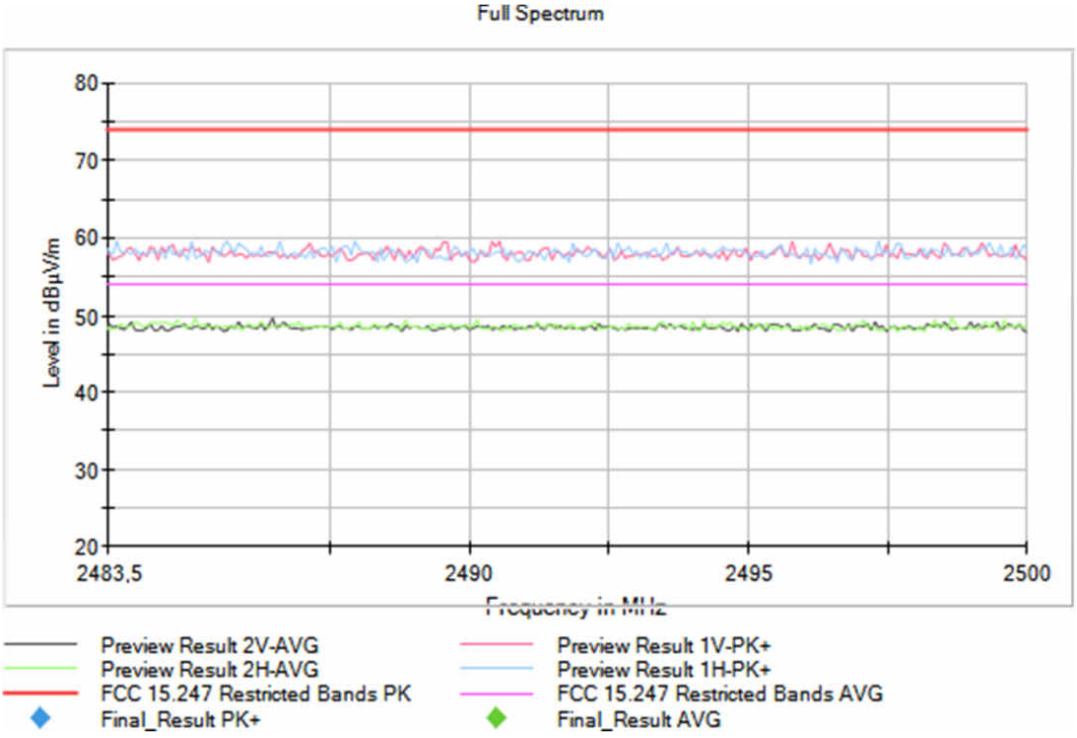
MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Full Spectrum



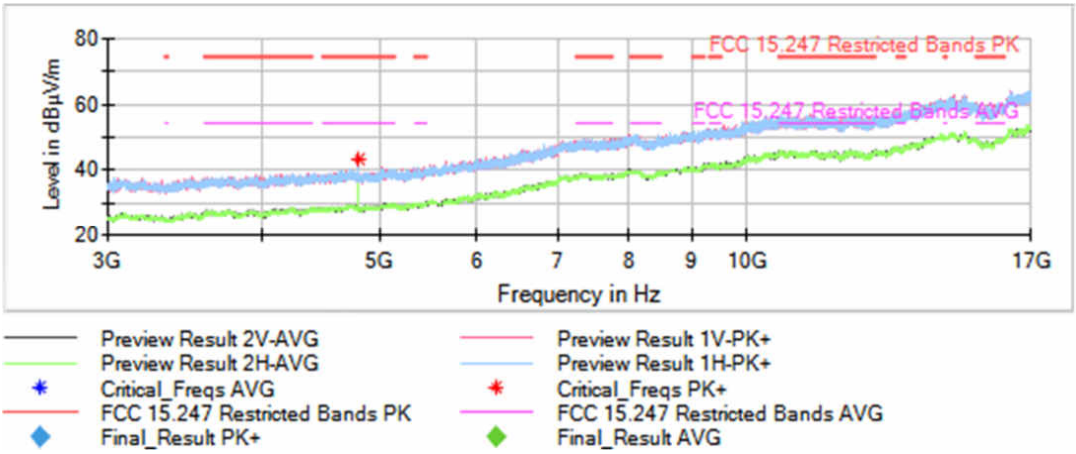
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [3, 17]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
Frequency MHz = 2404.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



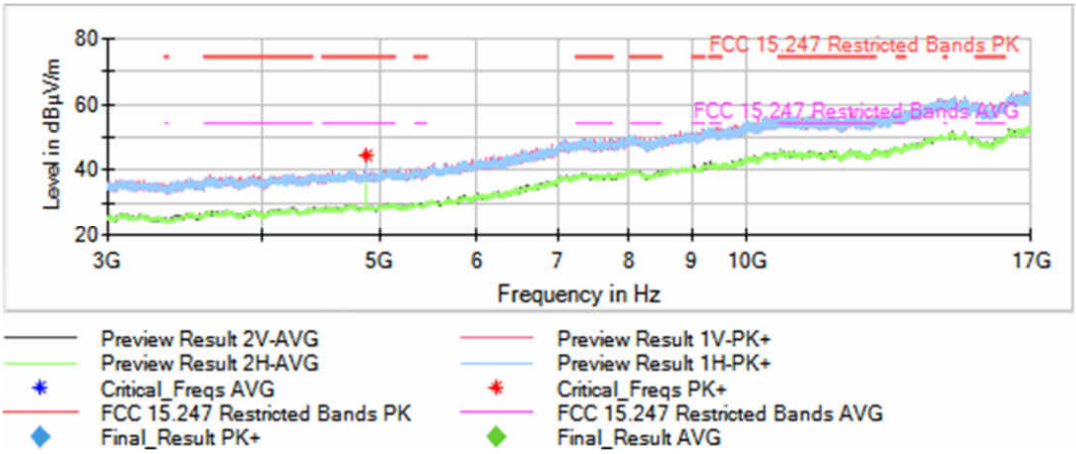
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [3, 17]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
Frequency MHz = 2440.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



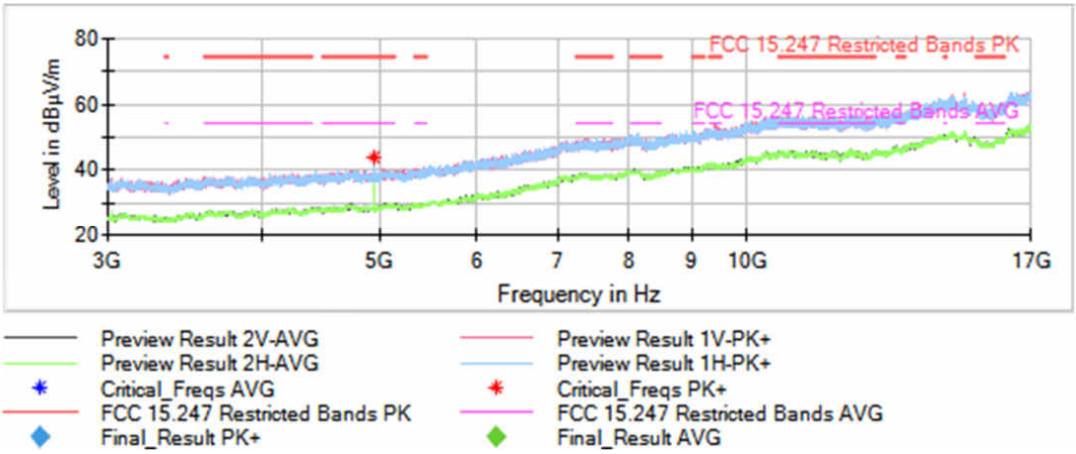
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [3, 17]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
Frequency MHz = 2478.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



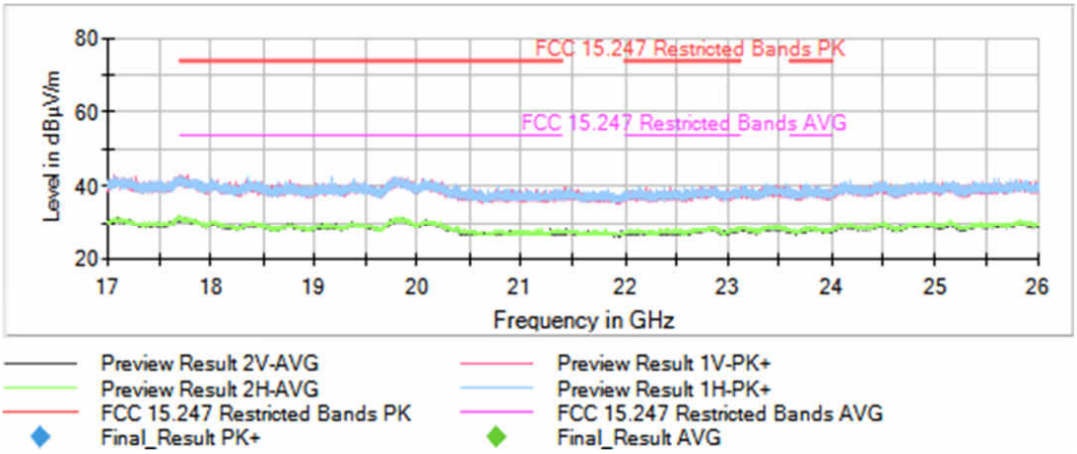
Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [17, 26]
Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.3 (GFSK 2 Mbit/s)
Frequency MHz = 2404.00000
MIMO Mode = SISO
Measurement Point = 1
Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	17 GHz - 26 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

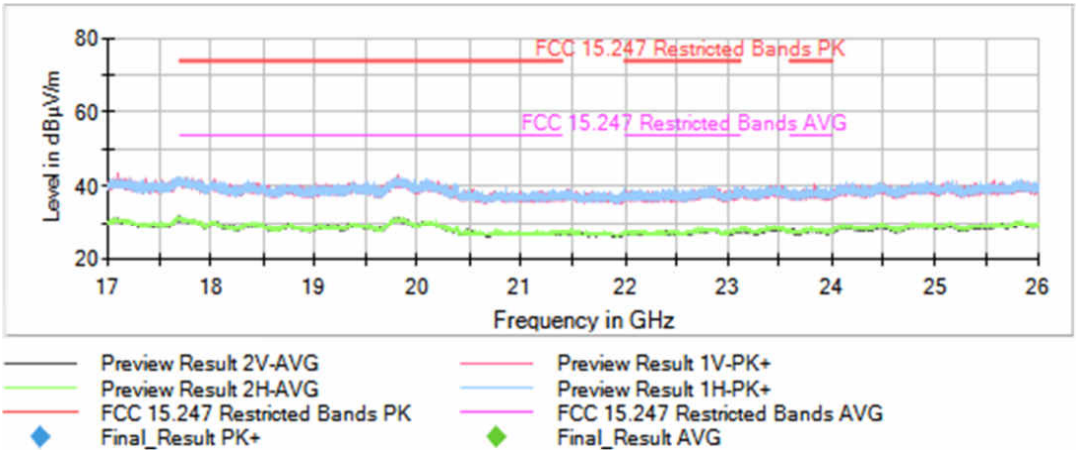
Frequency Range GHz = [17, 26] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000

MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	17 GHz - 26 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

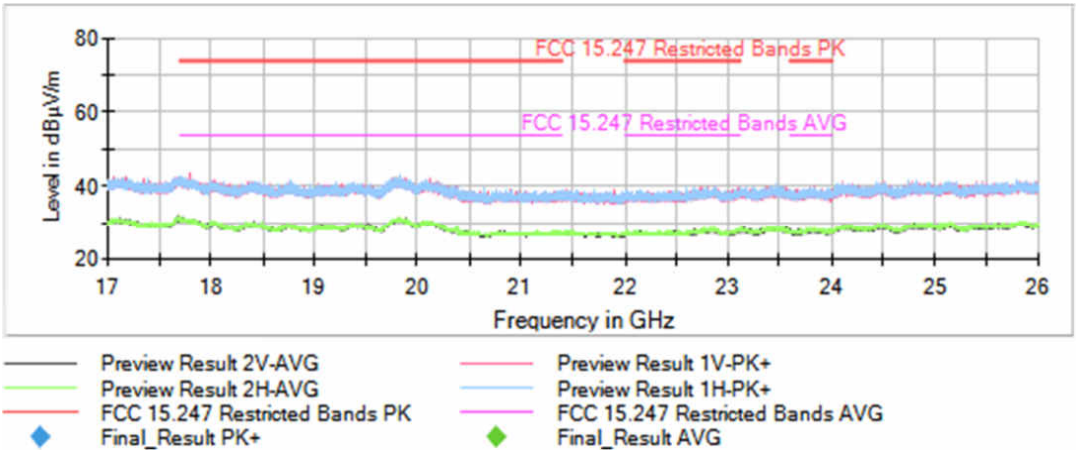
Frequency Range GHz = [17, 26] Equipment Type = Digital Transmission System (DTS)

Modulation = BTLE 5.3 (GFSK 2 Mbit/s) Frequency MHz = 2478.00000

MIMO Mode = SISO Measurement Point = 1

Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [FSV 40]					
	17 GHz - 26 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB