

ISED CABid: ES1909

Lab. Company Number: 4621A

Test Report No:

76719RRF.001A1

Test Report

USA FCC Part 15.247, 15.209

CANADA RSS-247, RSS-Gen

(*) Identification of item tested	Central In-Vehicle Infotainment Computer CIVIC Gen20xi.3
(*) Trademark	BOSCH
(*) Model and /or type reference	BCI3L3N1 / vehicular architectures: Star3.0
(*) Derived model not tested	BCI3L3N1 / vehicular architectures: Star3.5
Other identification of the product	FCC ID: 2AUXS-BCI3L3N1 IC: 25847-BCI3L3N1
(*) Features	AM/FM/DAB(SXM US version)/(TV JP Version) W-LAN 2.4GHz /5GHz MIMO / SiSO - no DFS Bands, AP / Client Bluetooth 5.2 LE& EDR GNSS multiple HW version: D5 SW version: E064.4
Applicant	Robert Bosch GmbH Robert-Bosch-Strasse 200 31139 Hildesheim Germany
Test method requested, standard	USA FCC Part 15.247 (10-1-23 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.209 (10-1-23 Edition): Radiated emission limits; general requirements. CANADA RSS-247 Issue 3 (August 2023). 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)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager
Date of issue	2025-06-12
Report template No	FDT08_25 (*) "Data provided by the client"

Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (C:A29507456)

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Acronyms

Acronym ID	Acronym Description
Avg COT	Average Channel Occupancy Time
BW	Bandwidth
Detector	Detector used
Ebw	Emission Bandwidth
Equipment	Equipment Type
EUT	Equipment Under Test
Freq	Frequency
Freq Rng	Frequency Range
Freq Sep	Frequency Separation
Inband Peak Lvl	Inband Peak Level
Lvl	Level
MP	Measurement Point
Mod	Modulation
Mode	MIMO Mode
NHC	Number of Hopping Channels
NHp	Number of hops over the period
Occ Ch BW	Occupied Channel Bandwidth
PSD	Power Spectral Density
Peak Power	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.

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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 $\leq \pm 5,35$ dB with factor ($k = 2$).

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

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

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

RF Peak Output Power: Measurement uncertainty $\leq \pm 0,80$ dB
Power Spectral Density: Measurement uncertainty $\leq \pm 0,99$ dB
Accumulated Dwell Time: Measurement uncertainty $\leq \pm 0,16$ %
Minimum Frequency Occupation Time: Measurement uncertainty $\leq \pm 0,53$ %
Hopping Frequency Separation: Measurement uncertainty $\leq \pm 1,74$ %
6dB Bandwidth: Measurement uncertainty $\leq \pm 2,84$ %
Occupied Channel Bandwidth: Measurement uncertainty $\leq \pm 1,17$ %
Conducted Band-edge spurious emissions: Measurement uncertainty $\leq \pm 1,76$ dB

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample consists of a Central In-Vehicle Infotainment Computer CIVIC Gen20xi.3

Including:

GNSS (GPS, Galileo Beidou Glonass)

AM/FM/DAB (ROW/ECE)

AM/FM/SXM (NA)

AM/FM/TV (JP)

WLAN 2.4 &5GHz

Bluetooth

3. Declaration of similarity

Cross-Domain Computing Solutions



To whom it may concern

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FCC BCI3L3N1 - Product Variant Declaration Star 3.0 vs Star 3.5

May 13, 2025

Ladies and gentlemen,

We, Robert Bosch GmbH, herewith declare that our product **BCI3L3N1** exists in two variants, which are electrical identical in all aspects.

HVIN (Model Name)	BCI3L3N1
FCC ID:	2AUXS- BCI3L3N1
IC:	25847- BCI3L3N1

The product is mounted in two different vehicle types:

- one with a CAN Bus Vehicle communication system,
- the other one has vehicular Ethernet as communication system

In order to be operational in these vehicles, our product is preconfigured in two variants as described below. Both are **HW identical**, only that different path for in-vehicle communication is used.

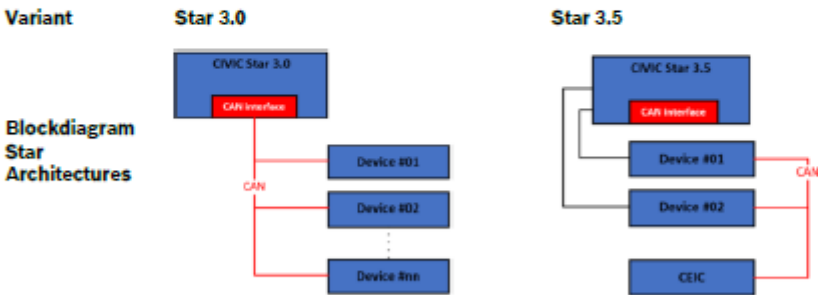
The CAN and Ethernet interface are always built on both Star architectures, but only Star 3.0 uses the CAN interface, and Star 3.5 uses Ethernet interface.

The following block diagrams show the architectures:

Cross-Domain Computing Solutions



May 13, 2025
Page 2 of 2



From regulatory point of view, we, BOSCH, consider the impact of the variant coding as follows:

	CAN Bus / Ethernet Bus
Radio Requirements	No impact
Health Requirements	No impact
Electrical Safety Requirements	No impact
EMC Requirements	Radiated emissions

Yours sincerely

Dirk_Zam

OW

Digitally signed by
Dirk_Zamow
Date: 2025.05.13
11:27:19 +02'00'

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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. The laboratory is not responsible for such information and it is not covered by accreditation.

Usage of samples

Samples undergoing test have been selected by: The client.

Id		Control Number	Description	Model	Serial N°	Date Reception	of	Application
S/01		76719D_149.1	Headunit A-PREMIUN USA	BCI3L3N1	CM0206R0016007	2024-10-25		Element Under Test
		76719D_111.1	Harness	---	---	2024-04-19		Auxiliary Element
		76719D_48.1	Farkra-USB adapter cable	---	---	2024-04-17		Auxiliary Element
		76719D_60.1	Termination box	---	---	2024-04-17		Auxiliary Element
		76719D_62.1	DC Block	---	---	2024-04-17		Auxiliary Element
		76719D_64.1	DC Block	---	---	2024-04-17		Auxiliary Element
		76719D_65.1	DC Block	---	---	2024-04-17		Auxiliary Element
		76719D_68.1	DC Block	---	---	2024-04-17		Auxiliary Element
		76719D_84.1	Antenna	A1779052902/002	---	2024-04-17		Auxiliary Element
		76719D_85.1	Antenna	A1779052902/002	---	2024-04-17		Auxiliary Element
		76719D_86.1	Antenna	A1779052902/002	---	2024-04-17		Auxiliary Element
		76719D_93.1	Antenna	A1779052902/002	---	2024-04-17		Auxiliary Element
S/02		76719D_149.1	Headunit A-PREMIUN USA	BCI3L3N1	CM0206R0016007	2024-10-25		Element Under Test
		76719D_111.1	Harness	---	---	2024-04-19		Auxiliary Element
		76719D_48.1	Farkra-USB adapter cable	---	---	2024-04-17		Auxiliary Element
		76719D_96.1	Farkra- 4 SMA cable	---	---	2024-04-17		Auxiliary Element

Notes referenced to samples during the project:

Id		Type
S/01		Samples used for radiated test
S/02		Samples used for conducted test

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test		Shielded		
	Main Connector	2m	[X]		[]		
	Fakra Quad Connector AM/FM/DAB		[X]		[]		
	Fakra Single Connector GPS						
	Fakra Quad Connector WLAN/BT		[X]		[]		
USB Cable			[X]		[]		
Supplementary information to the ports..... :	--						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[]	AC:					
	[X]	DC: 9-16V nominal 12 VDC by vehicle battery					
Rated Power	--						
Clock frequencies..... :	--						
Other parameters	IP20 ; -40C to +65C						
Software version	E064.4						
Hardware version	D5						
Dimensions in cm (W x H x D)	220mmx161mmx78mm						
Mounting position	[]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[]	Hand-held equipment					
	[X]	Other: Cluster in the car with separate antennas built into the cockpit of vehicle					
Modules/parts..... :	Module/parts of test item		Type		Manufacturer		
	--						
Accessories (not part of the test item)	Description		Type		Manufacturer		
	Antennas						
	Display						
	any other equipment to make device functional						
	Laptop						
Documents as provided by the applicant	Description		File name		Issue date		
	--						

Identification of the client

Robert Bosch GmbH
Robert-Bosch-Strasse 200, 31139 Hildesheim
Germany

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2024-12-10
Date (finish)	2025-03-12

Document history

Report number	Date	Description
76719RRF.001	2025-06-04	First release.
76719RRF.001A1	2025-06-12	Second release. Modification due to typos. This modification test report cancels and replaces the test report 76719RRF.001.

Environmental conditions

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

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

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

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

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

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

Remarks and comments

The tests have been performed by the technical personnel: Antonio Maireles, Carmen Vázquez Perez, Pablo Redondo Reyes, Rosa Maria Gallardo Perez and Valentin Andarias Diaz.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
06791	SEMIANECHOIC ABSORBER LINED CHAMBER IV	FACT 3 200 STP	ETS LINDGREN	N/A
06792	SHIELDED ROOM	S101	ETS LINDGREN	N/A
06609	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2026-04-21
06615	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2026-04-24
06143	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2027-01-22
06142	PRE-AMPLIFIER G>38dB 30MHz-6GHz	BLNA 0360-01N	BONN ELEKTRONIK	2025-07-25
06496	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK	2026-12-01
03783	PRE-AMPLIFIER G>30dB 1GHz-18GHz	BLMA 0118-3A	BONN ELEKTRONIK	2026-03-17
04657	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2026-06-12
10537	PRE-AMPLIFIER G>46dB 18-40 GHz	BLMA 1840-5G	BONN ELEKTRONIK	2026-03-07
07817	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2026-07-01
07445	DC POWER SUPPLY 30V/5A	U8002A	KEYSIGHT TECHNOLOGIES	N/A
07760	DIGITAL MULTIMETER	175	FLUKE	2025-11-07
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	N/A
06793	SHIELDED ROOM	S101	ETS LINDGREN	N/A
06611	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2026-04-21
06668	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2027-04-01
07796	EXTENSION FOR OPEN SWITCH UNIT UP TO 40GHz	OSP-B157Wx	ROHDE AND SCHWARZ	2027-01-09
08848	OPEN SWITCH UNIT UP TO 7.5 GHz	OSP-B157W8 PLUS	ROHDE AND SCHWARZ	2027-01-02
00922	POWER SUPPLY DC 40 V / 40 A	NGPE 40/40	ROHDE AND SCHWARZ	N/A
05850	DIGITAL MULTIMETER	179	FLUKE	2025-11-04
07798	SOFTWARE FOR EMC/RF TESTING	WMS32	ROHDE AND SCHWARZ	N/A

Testing verdicts

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

Summary

Bluetooth Low Energy (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 (e) / RSS-247 5.2. (b)	Power spectral density	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 (d) / RSS-247 5.5.	Emission limitations radiated (Transmitter)	P	
<u>Supplementary information and remarks:</u>			
None			

Bluetooth EDR

Requirement – Test case	FCC PART 15 PARAGRAPH / RSS-247	Verdict	Remark
FCC 15.247 (a) (1) / RSS-247 5.1 (b)	20 dB Bandwidth and Carrier frequency separation	P	
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d)	Time of Occupancy (Dwell Time)	P	
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d)	Number of hopping channels	P	
FCC 15.247 (b) / RSS-247 5.4. (b)	Maximum peak output power and	P	
FCC 15.247 (d) / RSS-247 5.5	Band-edge emissions compliance	P	
FCC 15.247 (d) / RSS-247 5.5	Emission limitations radiated (Transmitter)	P	
<u>Supplementary information and remarks:</u> None			

WLAN 2.4 GHz (B/G/N/AX 1x1)

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 (e) / RSS-247 5.2. (b)	Power spectral density	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 (d) / RSS-247 5.5.	Emission limitations radiated (Transmitter)	P	
<u>Supplementary information and remarks:</u> None			

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

TEST CONDITIONS	16
TEST CASES DETAILS	19
FCC 47 CFR PART 15.247 / RSS-247	19
<i>Occupied Channel Bandwidth 99%</i>	19
<i>RSS-247 5.2 (a) / FCC 15.247 (a) (2) 6 dB Bandwidth</i>	27
<i>RSS-247 5.2 (b) / FCC 15.247 (e) Power spectral density</i>	35
<i>RSS-247 5.4 (d) / FCC 15.247 (b) (3) Maximum Peak Conducted output power</i>	43
<i>RSS-247 5.5 / FCC 15.247 (d) Band-edge emissions compliance (Transmitter)</i>	51
<i>RSS-247 5.5 / FCC 15.247 (d) Emission limitations radiated (Transmitter)</i>	61

TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal: 12 Vdc
Type of Power Supply: Battery

ANTENNA (*):

Technology	Antenna Gain	Type
BTLE:	+0.1 dBi	External

TEST FREQUENCIES (*):

Modulation	Data rates	Low Channel	Middle Channel	High Channel
BTLE GFSK	1M 1 Mbit/s	2402 MHz	2440 MHz	2480 MHz
BTLE GFSK	2M 2 Mbit/s	2402 MHz	2440 MHz	2480 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).

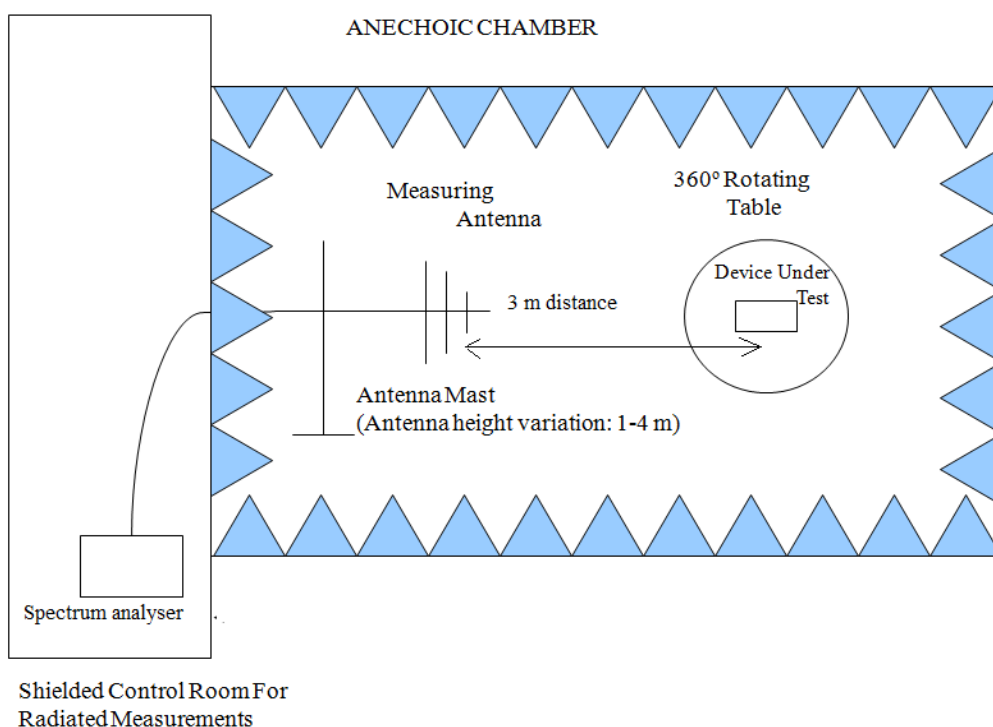
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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

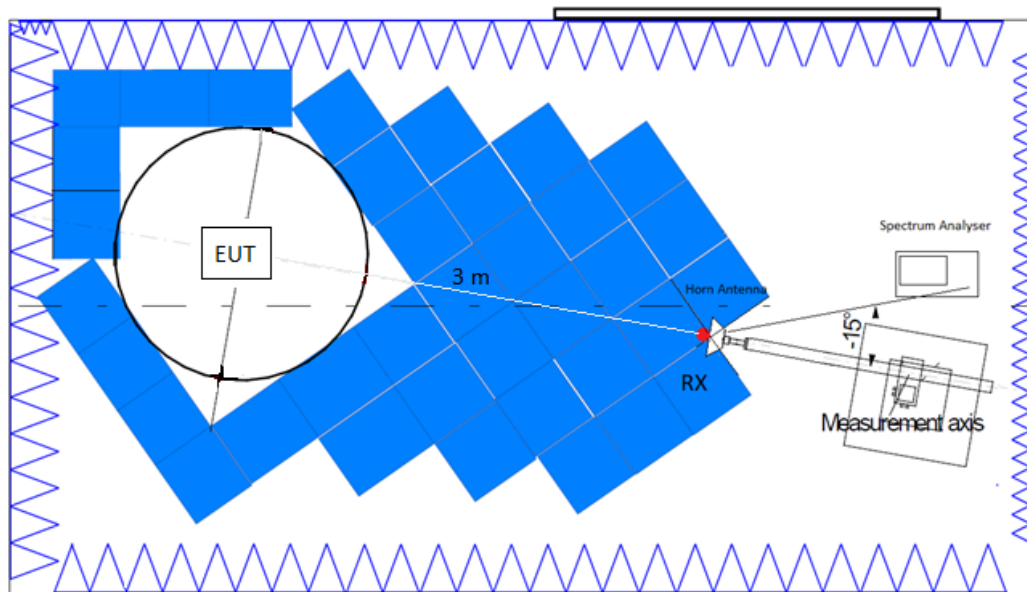
Measurements were made in both horizontal and vertical planes of polarization.

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

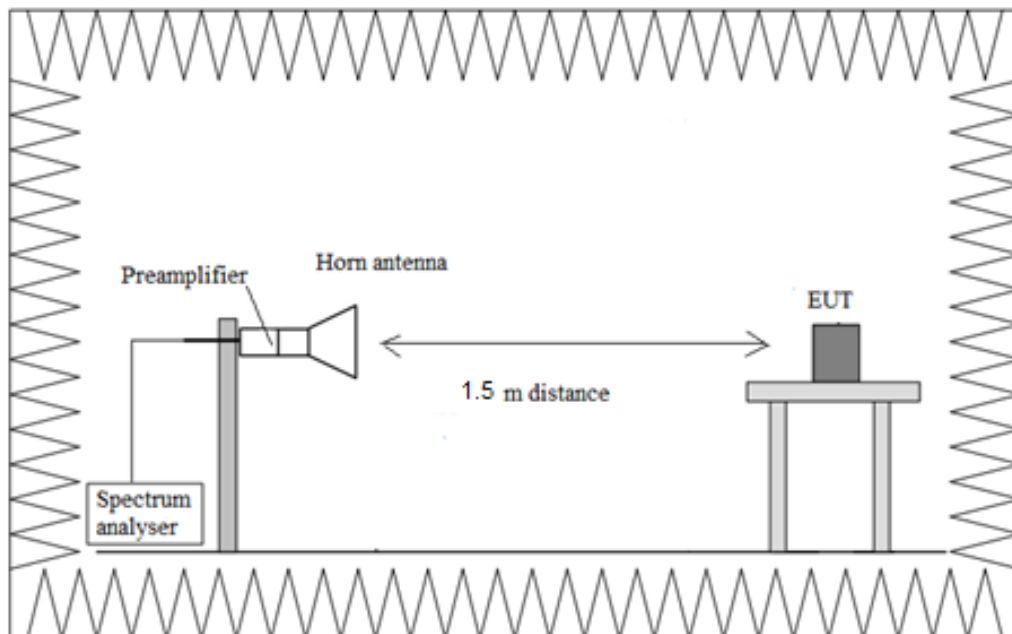
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup $f > 17$ GHz:



TEST CASES DETAILS

FCC 47 CFR Part 15.247 / RSS-247 Occupied Channel Bandwidth 99%

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

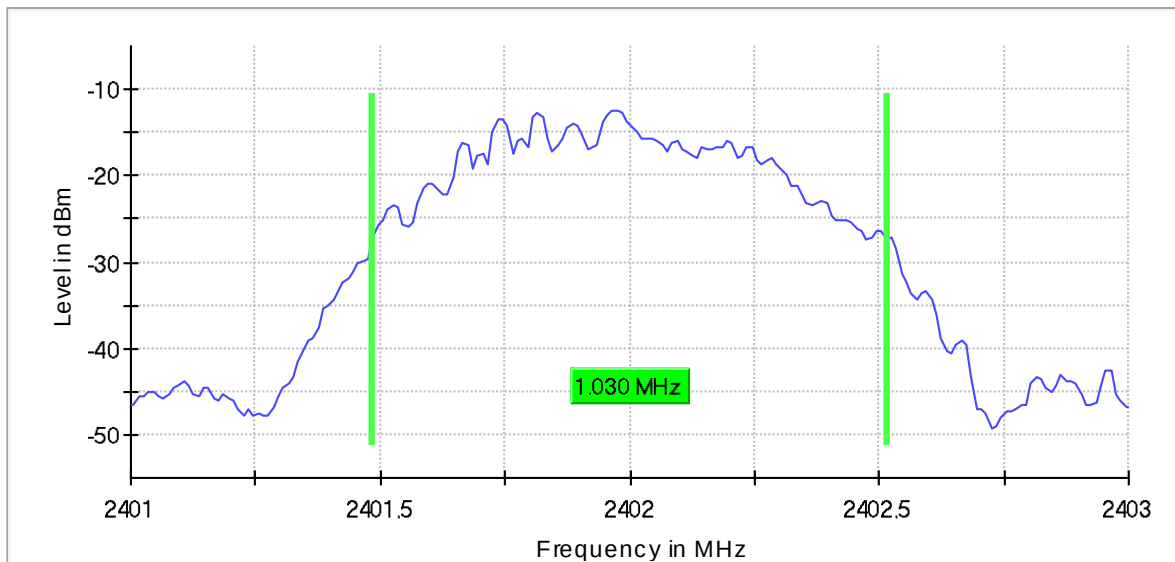
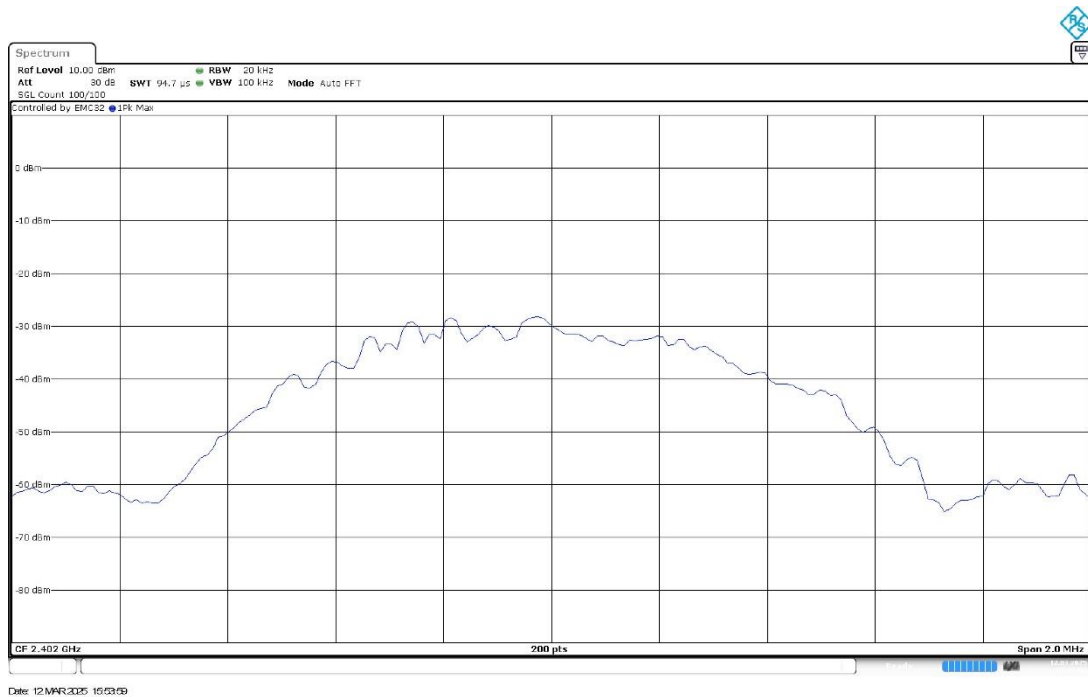
Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Digital Transmission System (DTS)	1	2402.00000	1	1.030
		2440.00000		1.030
		2480.00000		1.030

Attachments

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

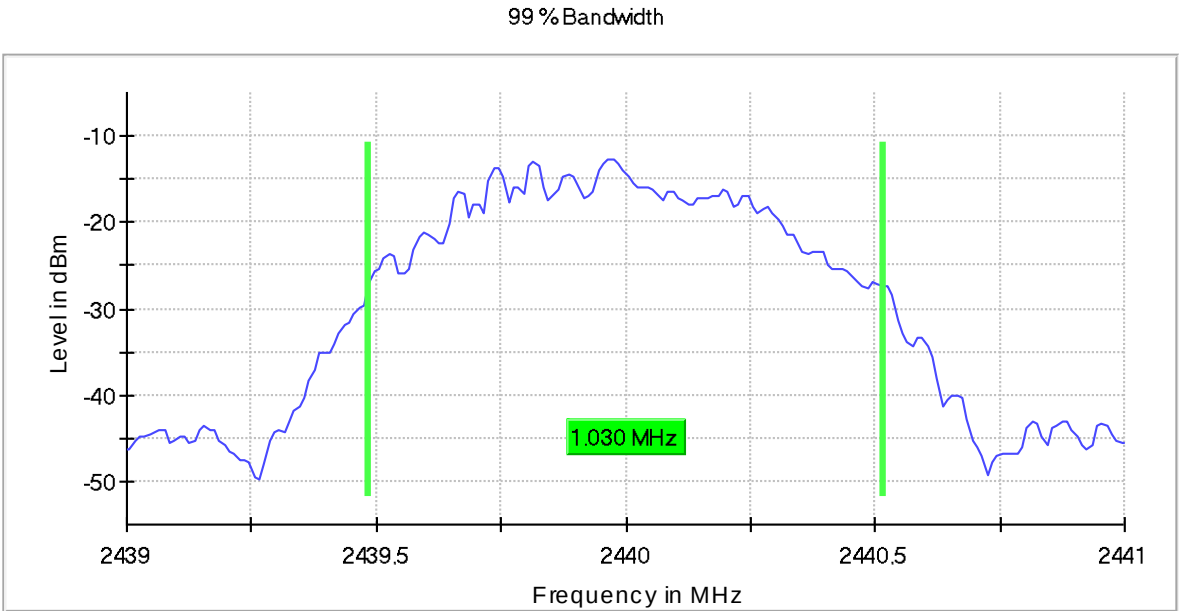
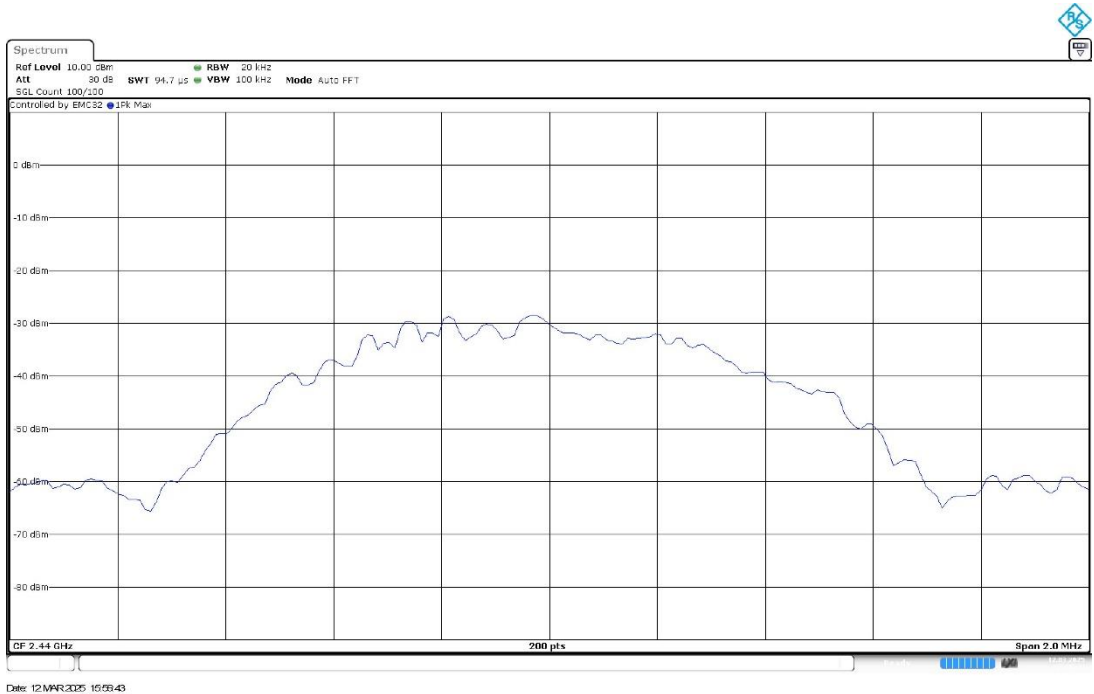
Images:

99 % Bandwidth



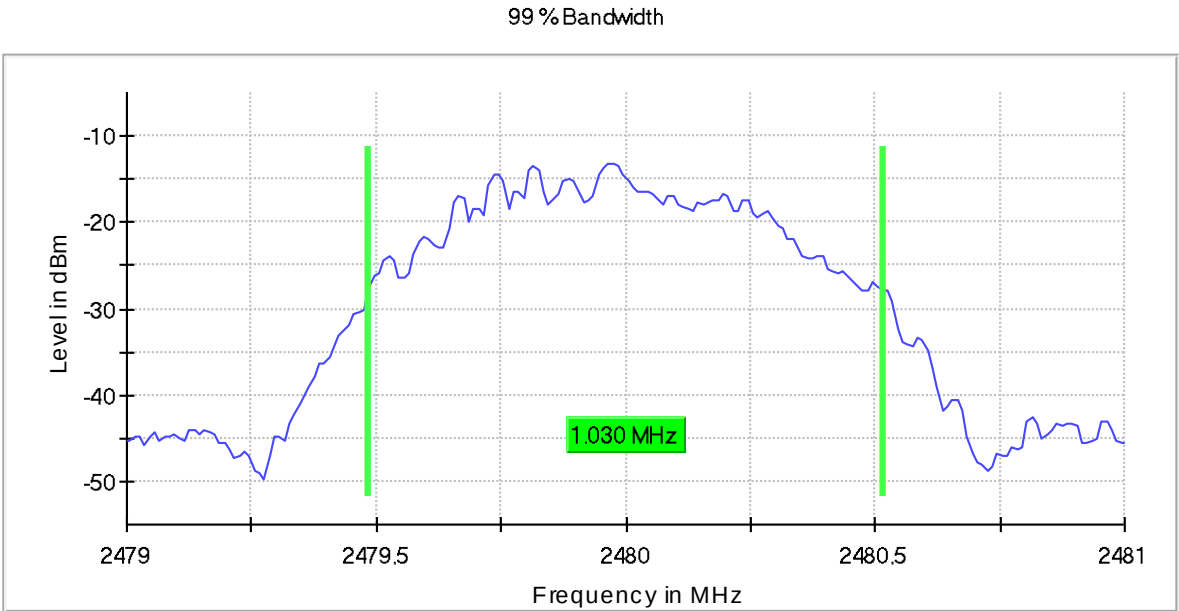
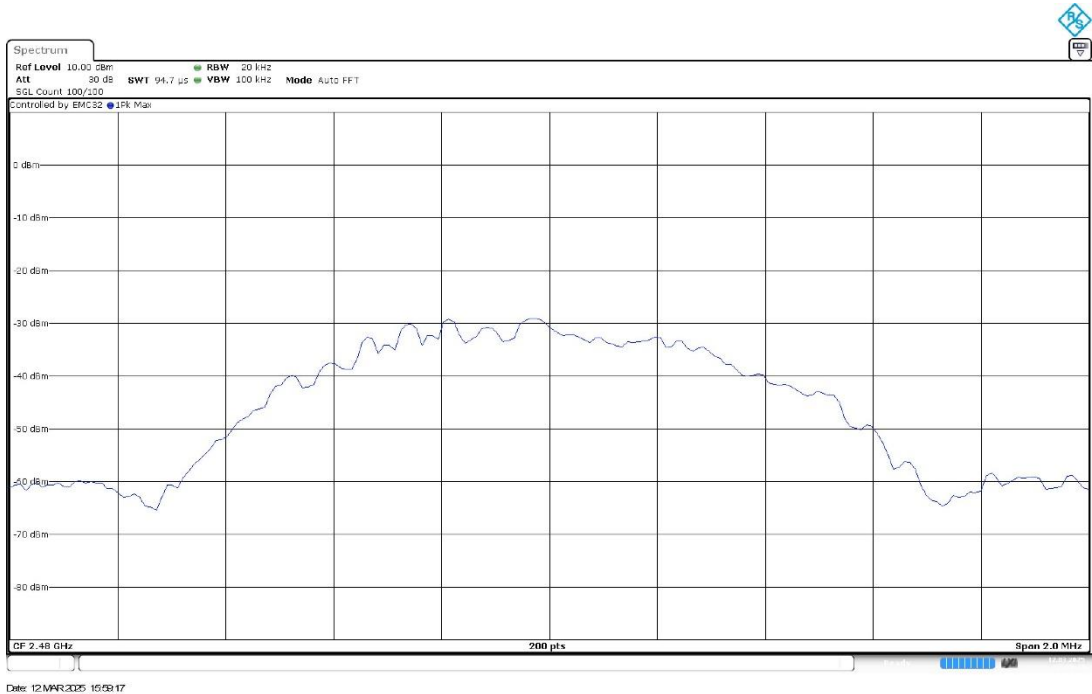
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



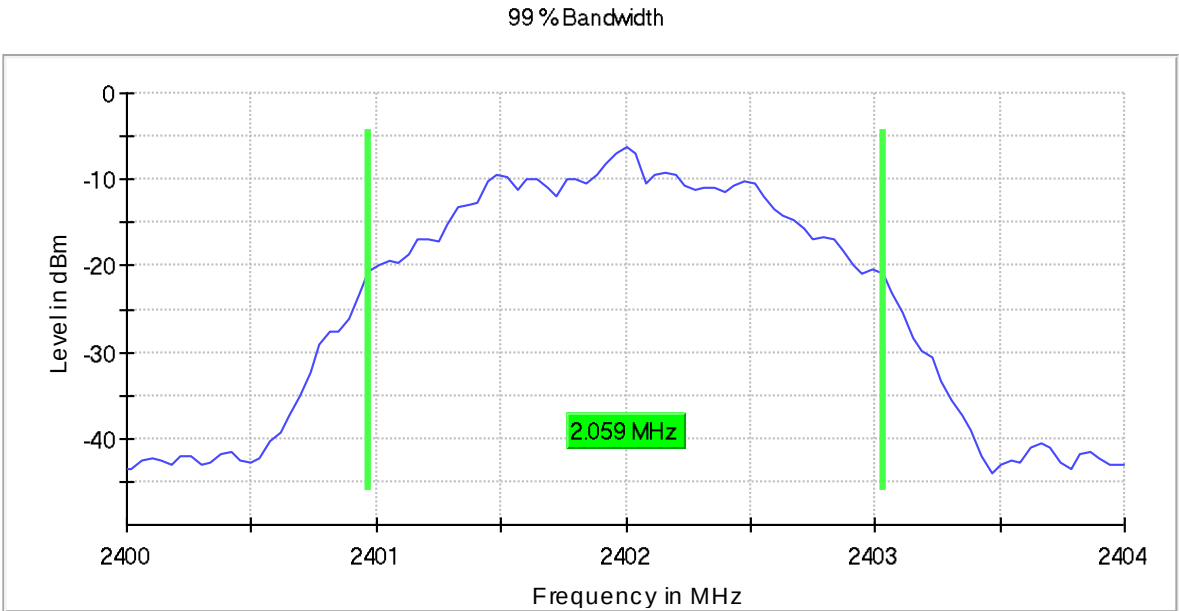
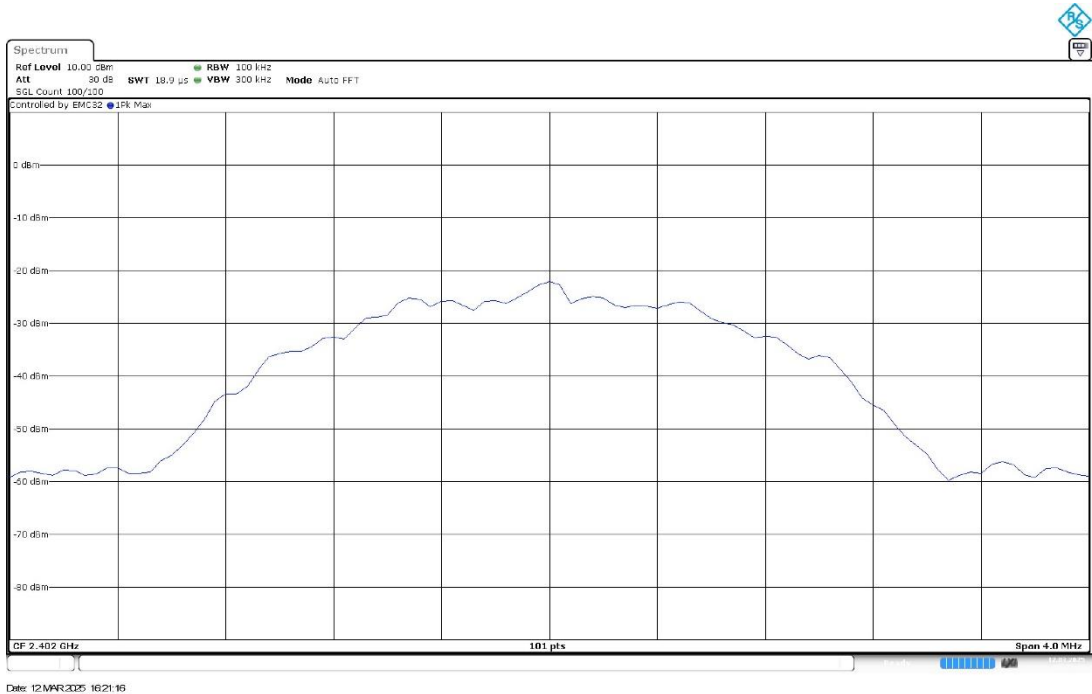
Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Digital Transmission System (DTS)	2	2402.00000	1	2.059
		2440.00000		2.059
		2480.00000		2.059

Attachments

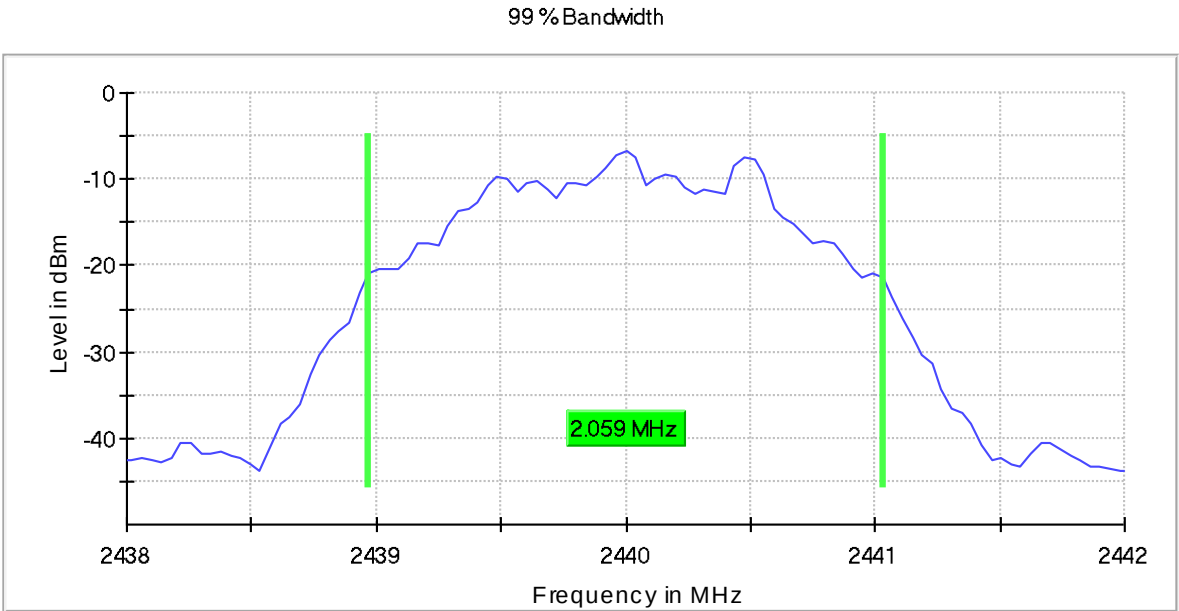
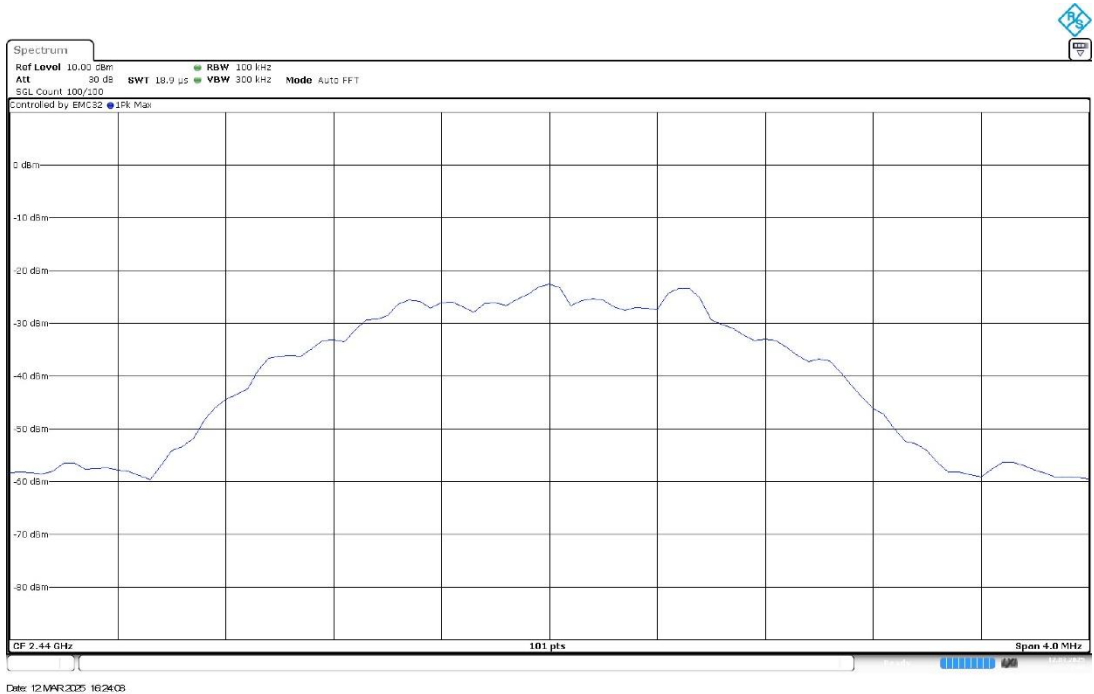
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



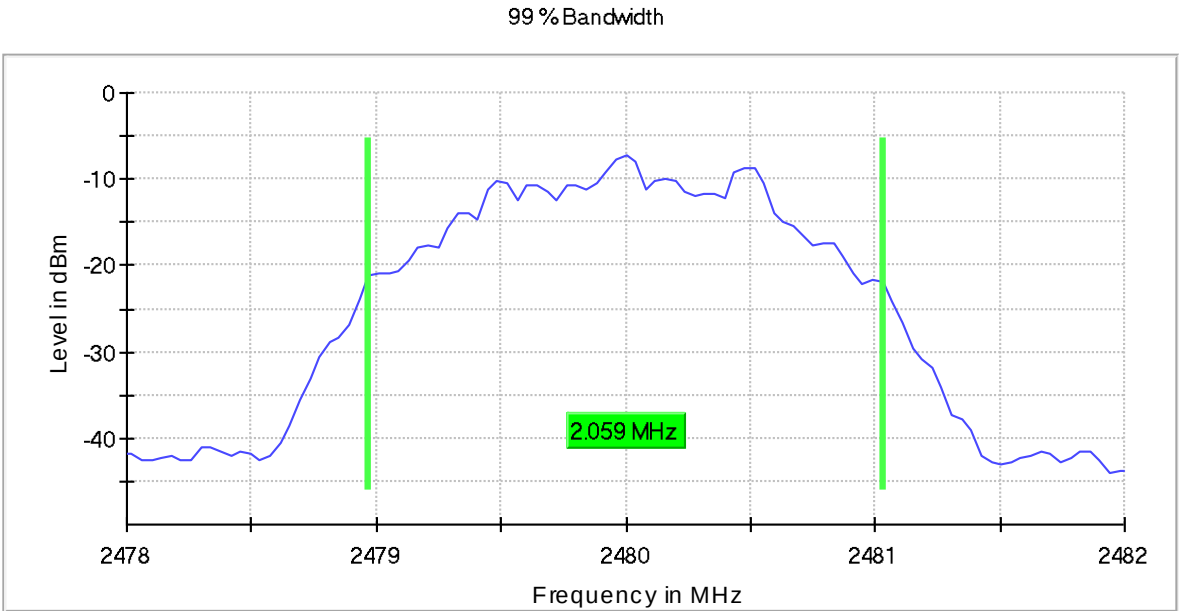
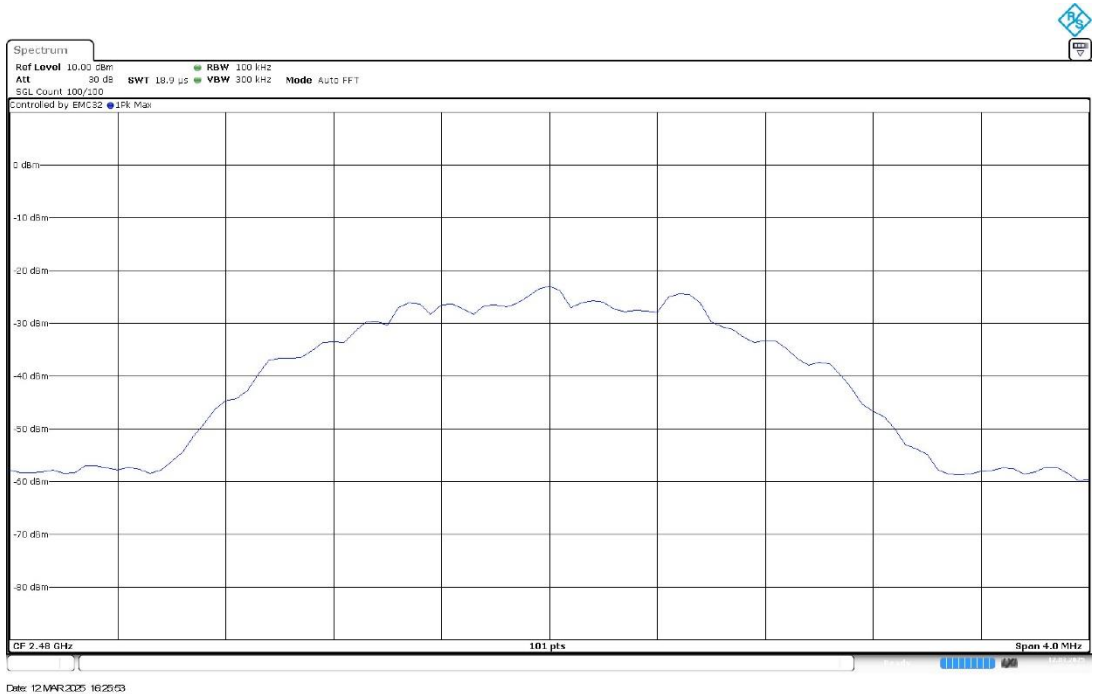
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



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

Limits

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

Results

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

BW (MHz)	Freq (MHz)	Port	Ebw (kHz)
1	2402.00000	1	693.070
	2440.00000		693.070
	2480.00000		693.070

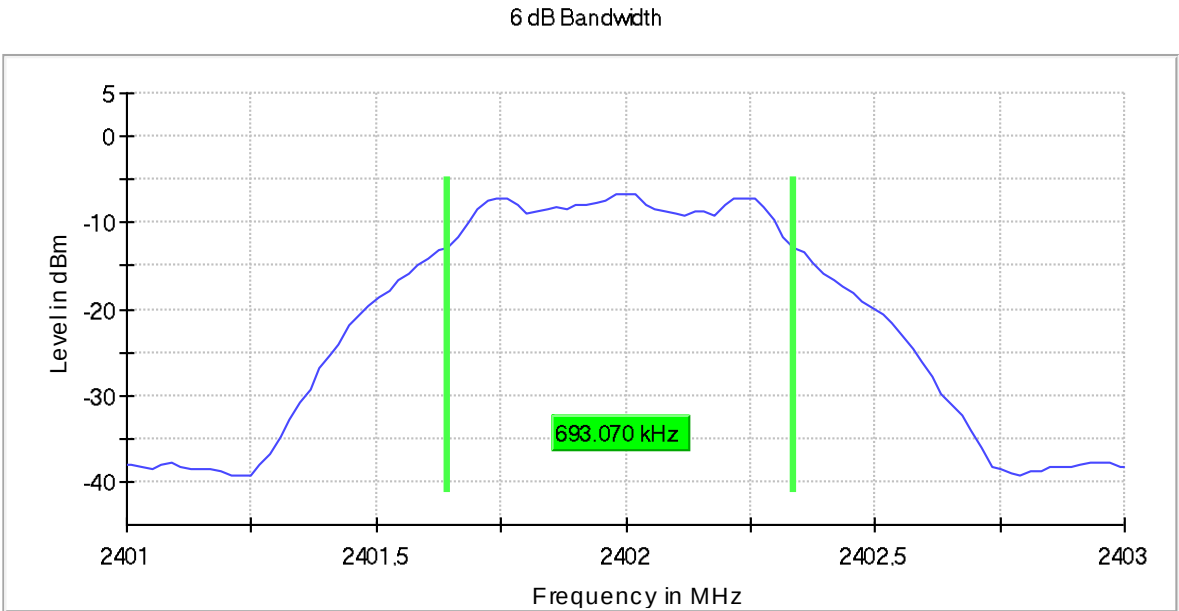
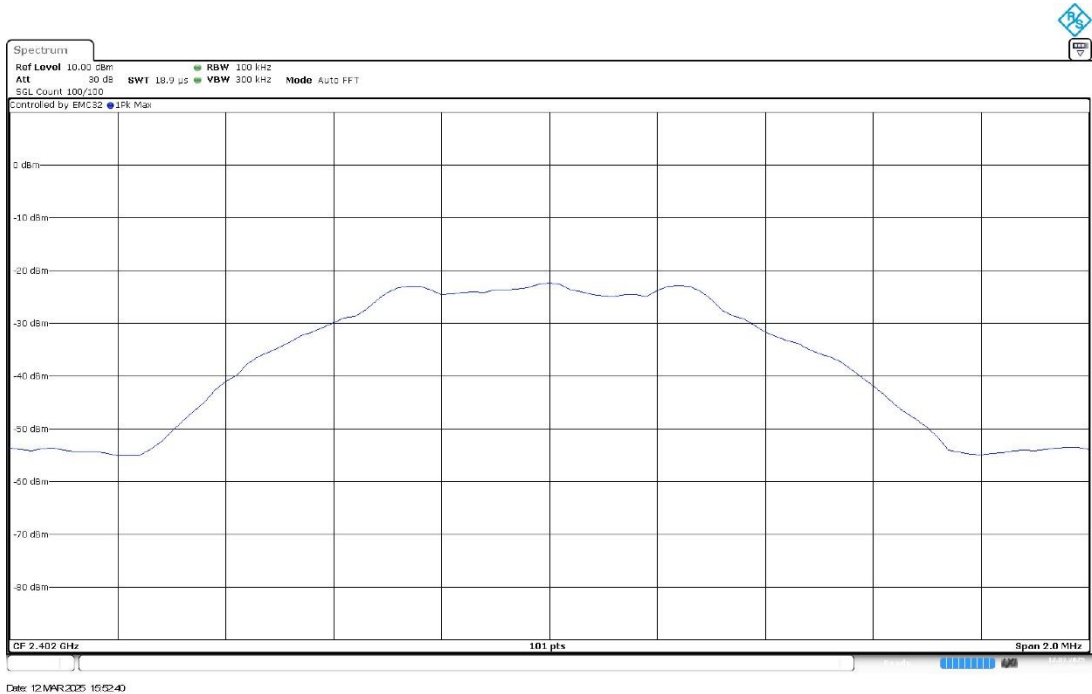
Verdict

Pass

Attachments

Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)
Frequency MHz = 2402.00000 MIMO Mode = SISO
Active Port = 1

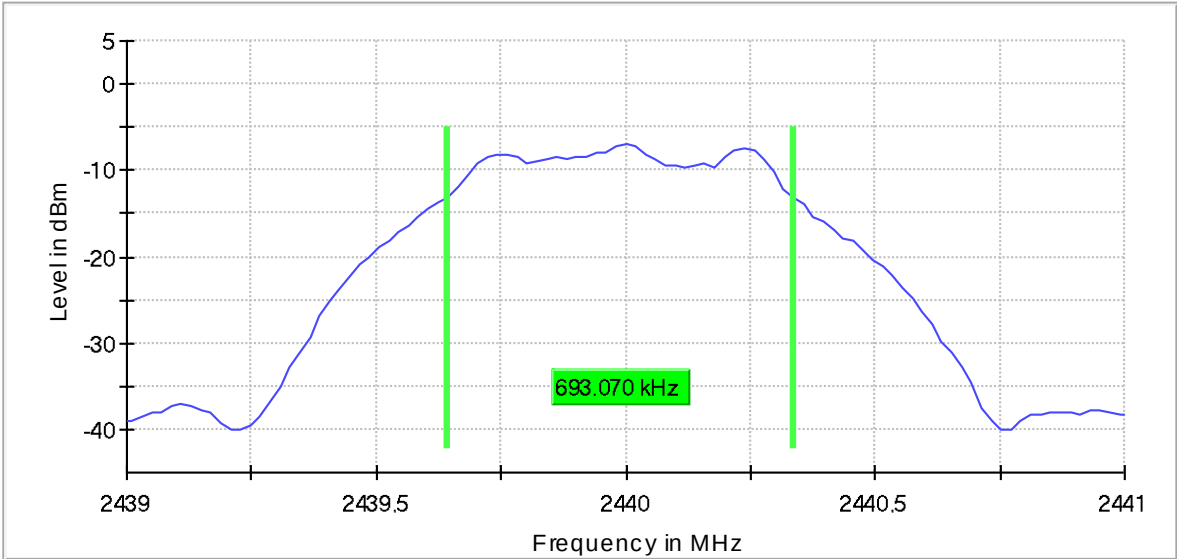
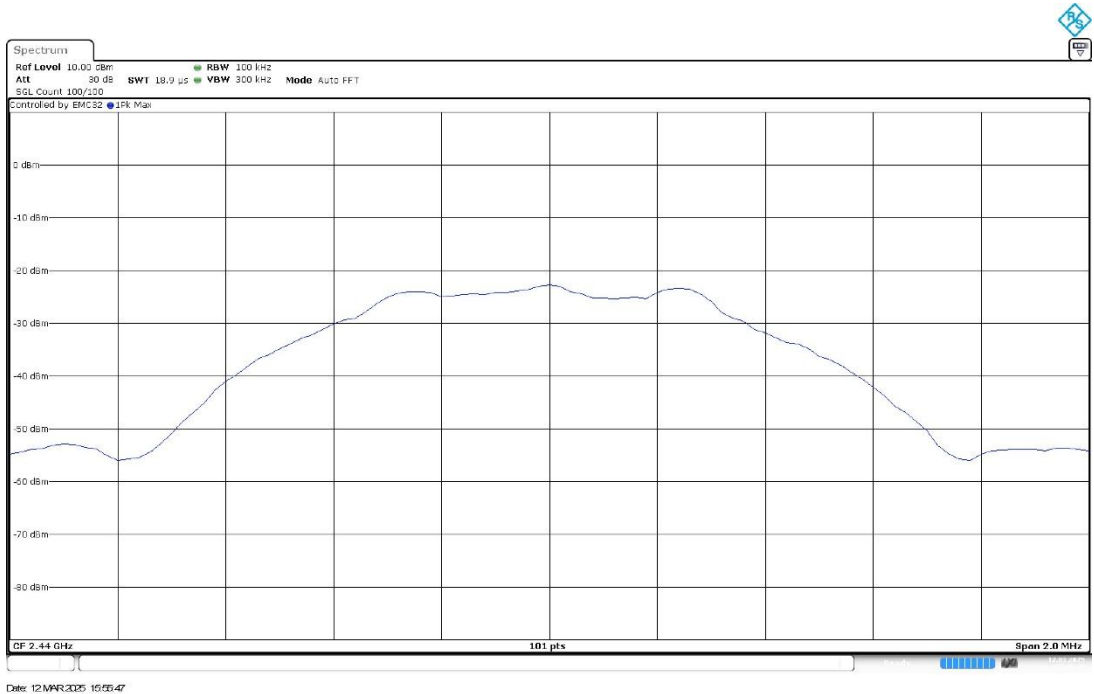
Images:



Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)
Frequency MHz = 2440.00000 MIMO Mode = SISO
Active Port = 1

Images:

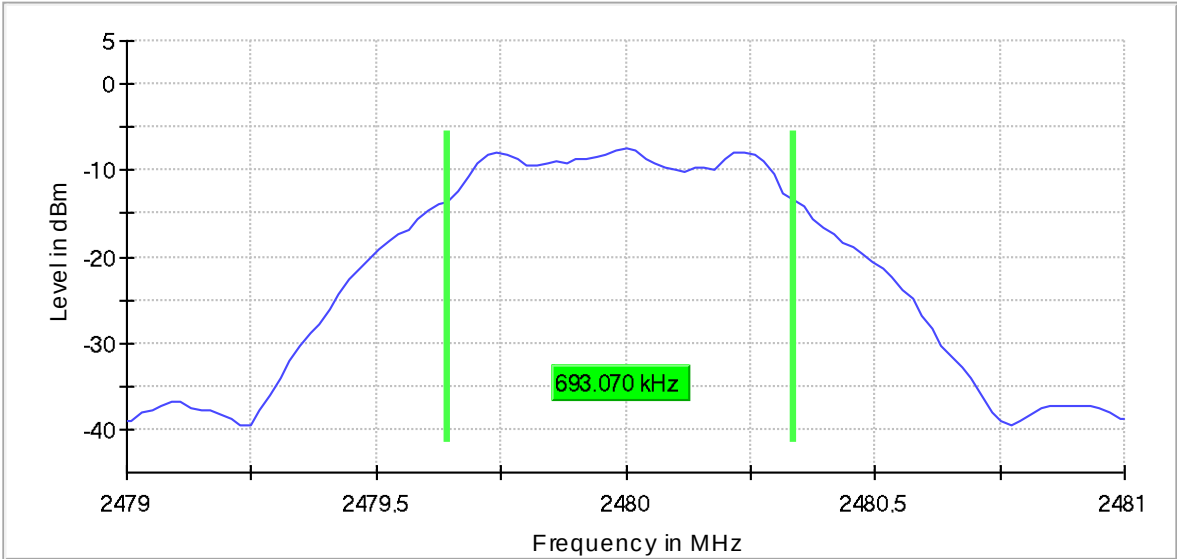
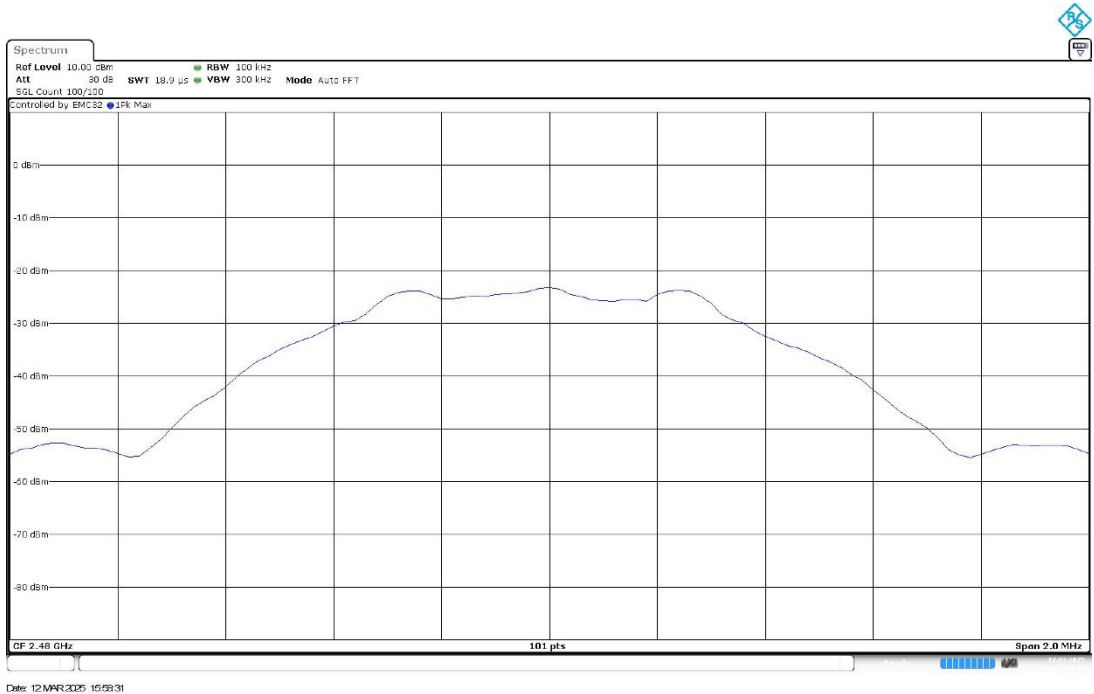
6 dB Bandwidth



Bandwidth MHz = 1 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)
Frequency MHz = 2480.00000 MIMO Mode = SISO
Active Port = 1

Images:

6 dB Bandwidth



Results

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
2	2402.00000	1	1.188
	2440.00000		1.188
	2480.00000		1.228

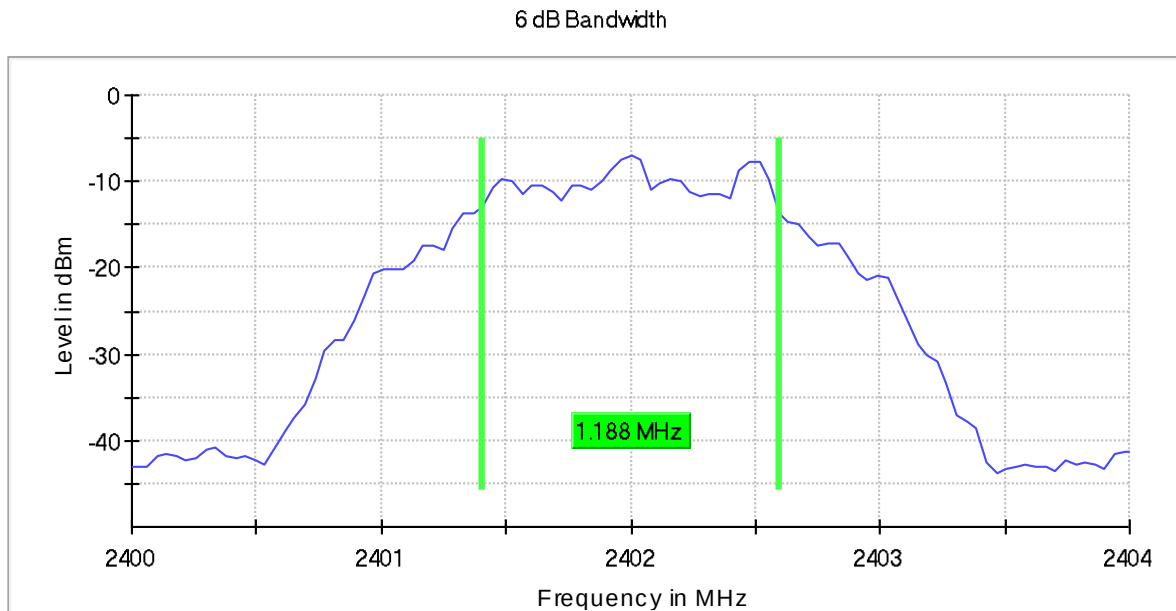
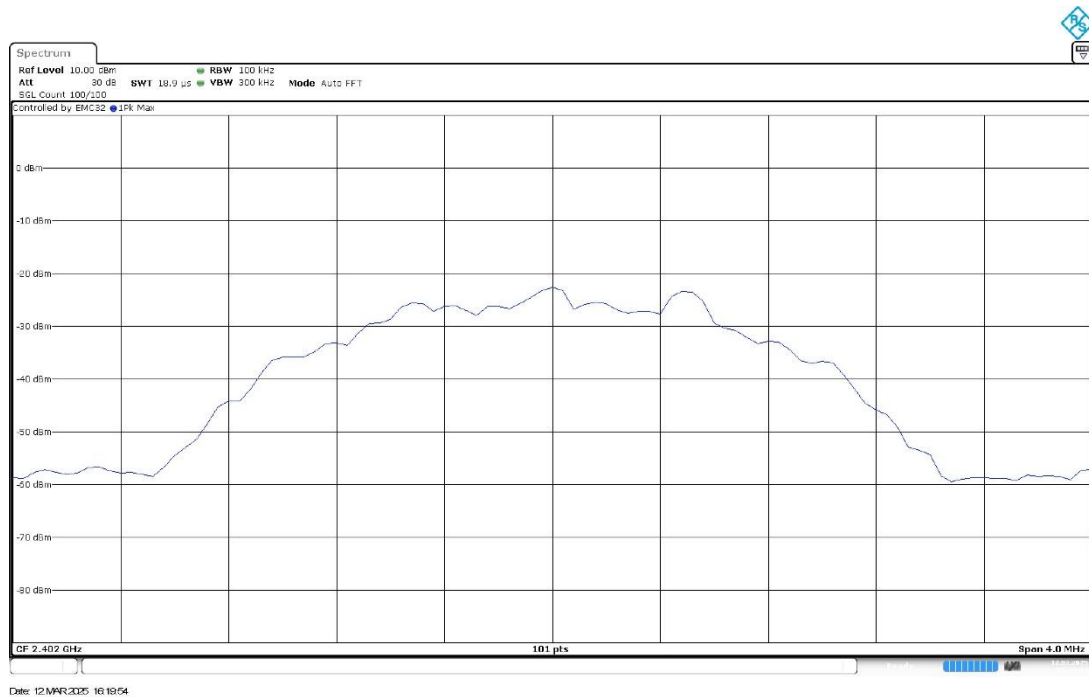
Verdict

Pass

Attachments

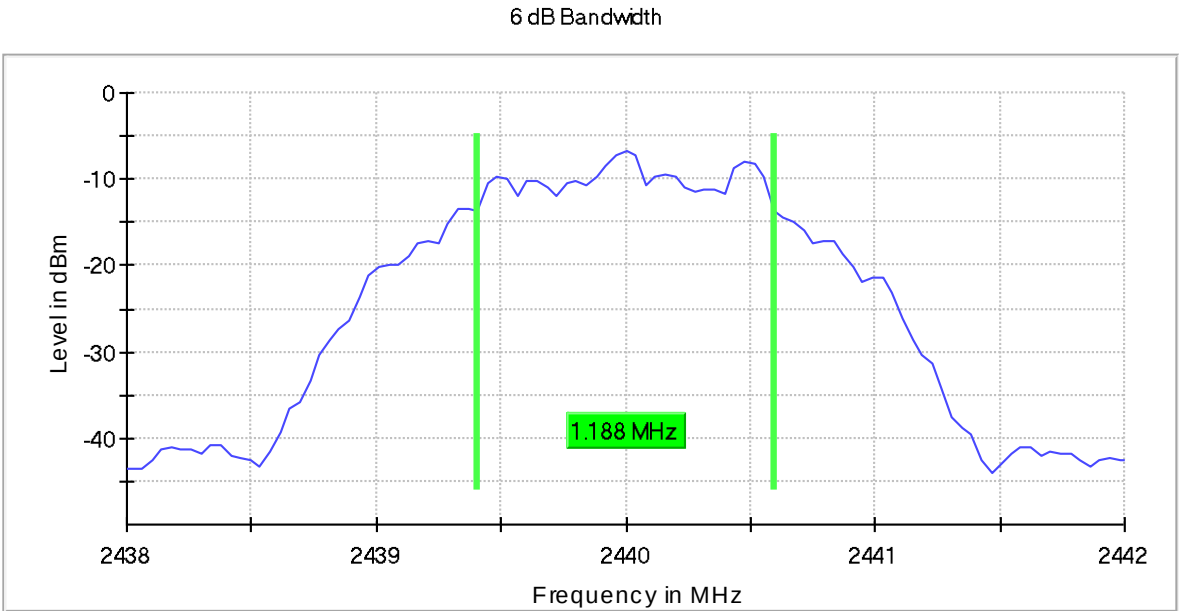
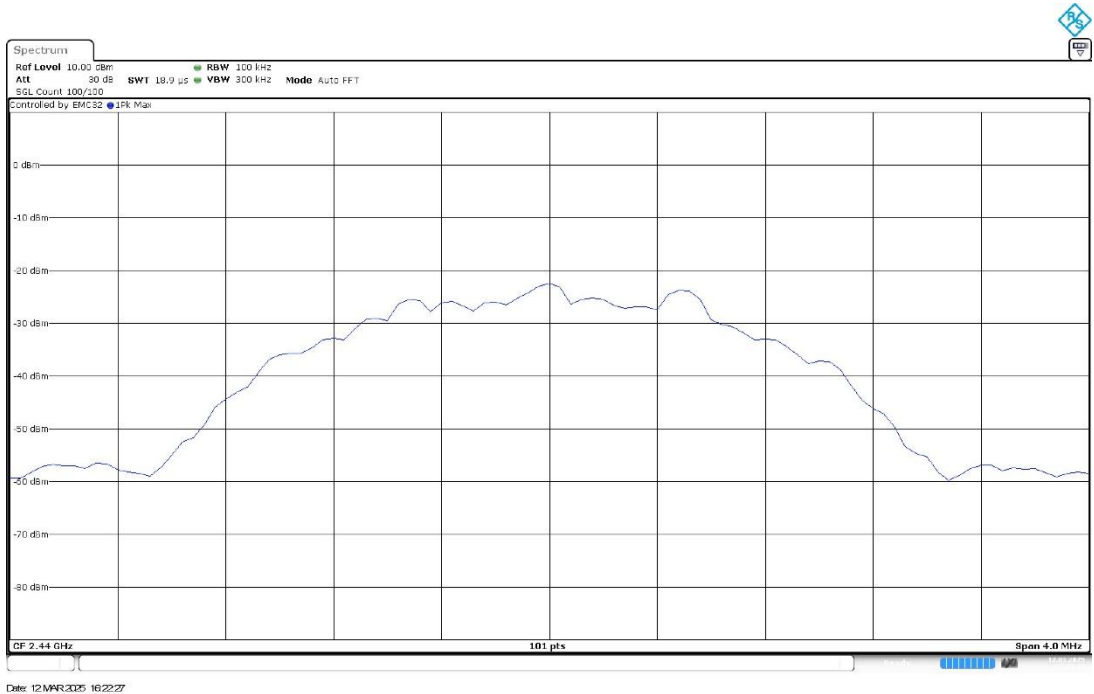
Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)
Frequency MHz = 2402.00000 MIMO Mode = SISO
Active Port = 1

Images:



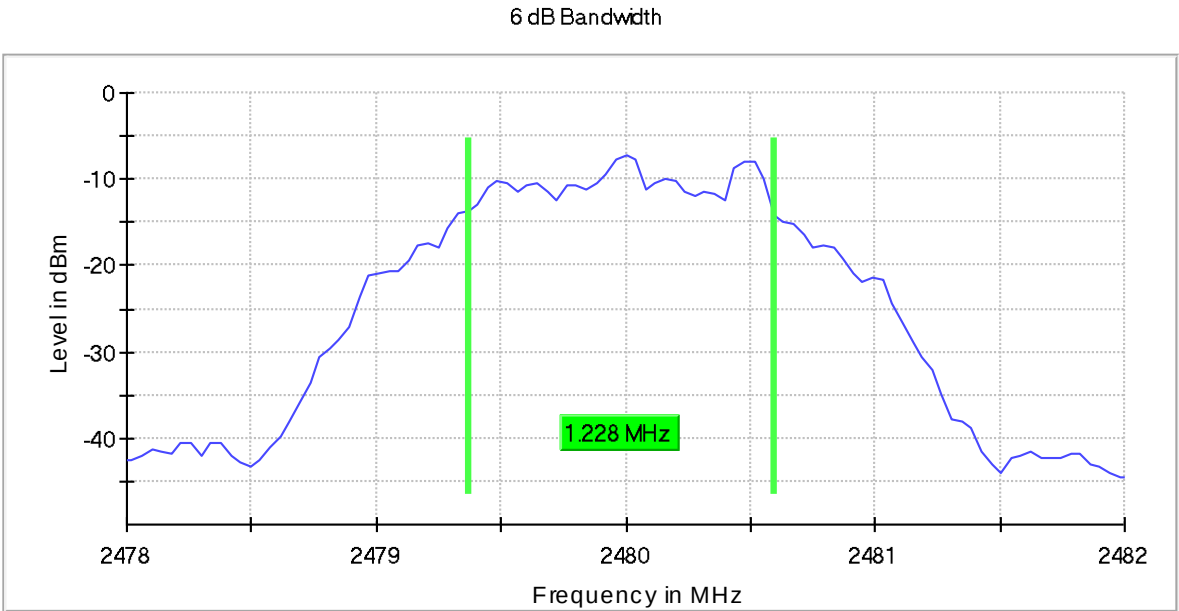
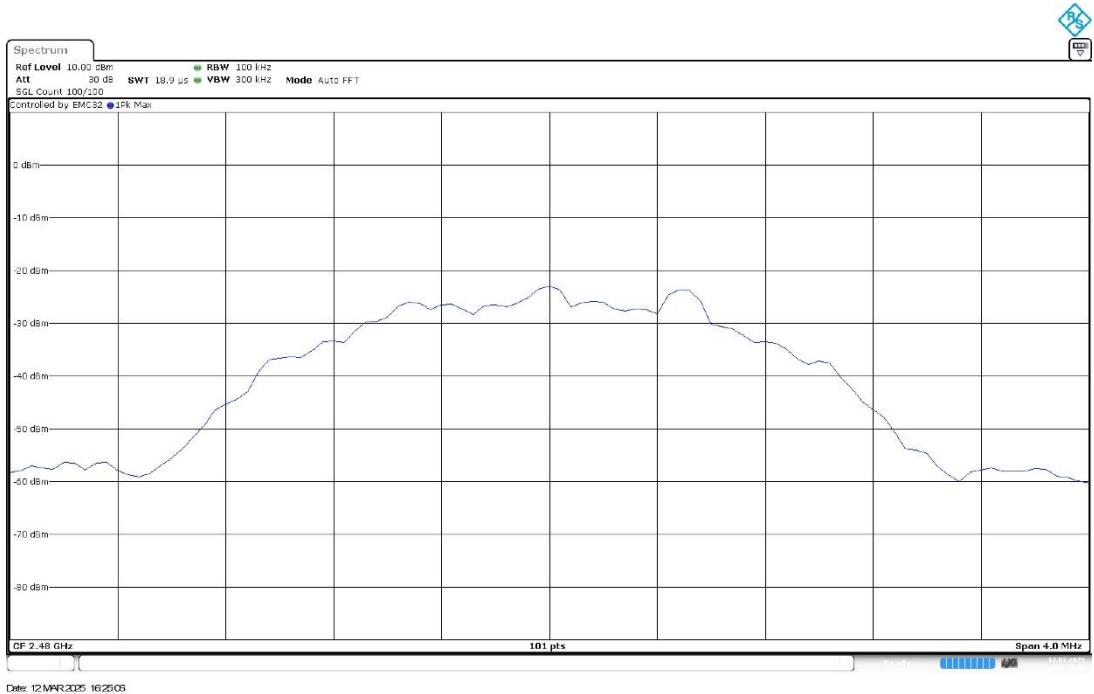
Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)
Frequency MHz = 2440.00000 MIMO Mode = SISO
Active Port = 1

Images:



Bandwidth MHz = 2 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)
Frequency MHz = 2480.00000 MIMO Mode = SISO
Active Port = 1

Images:



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

Limits

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

Results

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Equipment	BW (MHz)	Freq (MHz)	Port	PSD (dBm)
Digital Transmission System (DTS)	1	2402.00000	1	-16.34
		2440.00000		-16.64
		2480.00000		-17.16

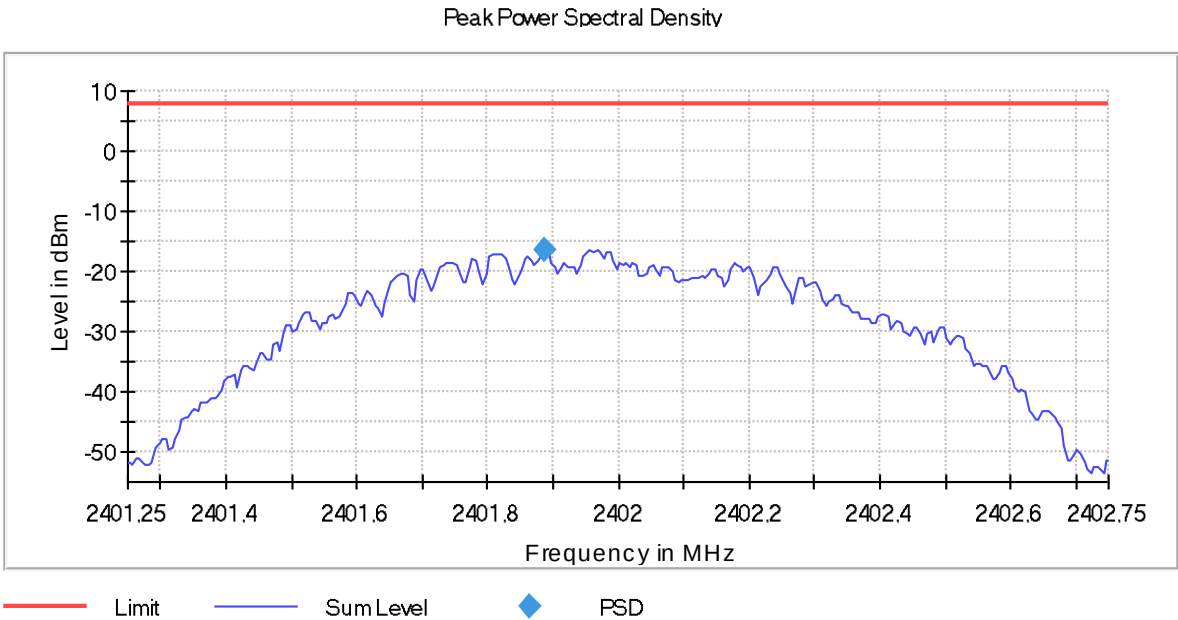
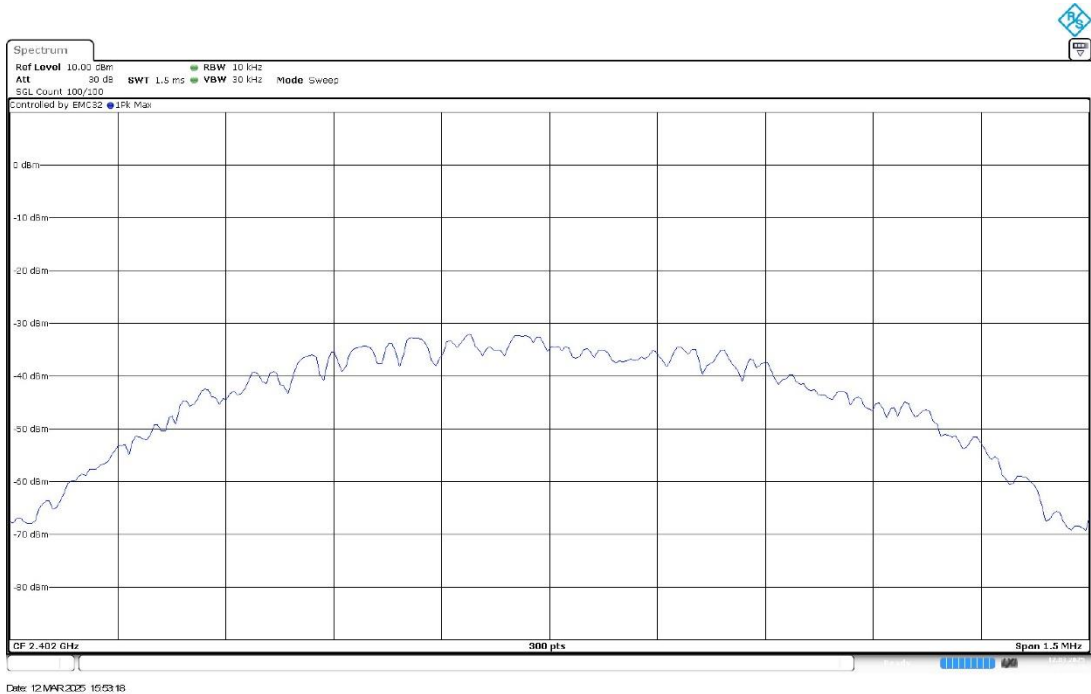
Verdict

Pass

Attachments

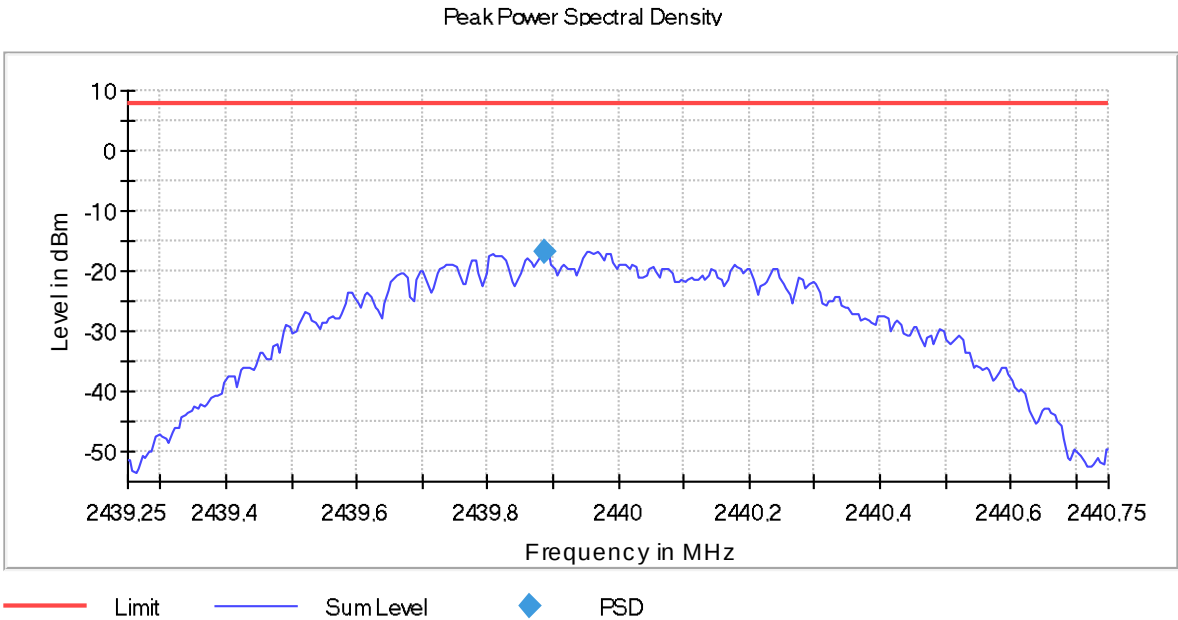
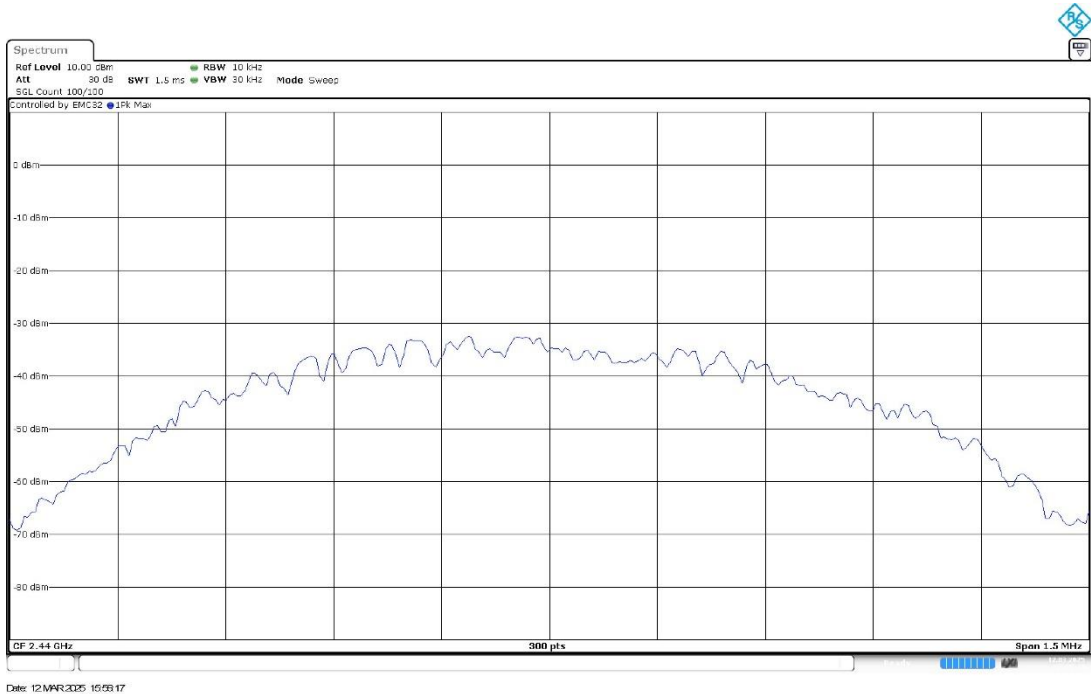
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



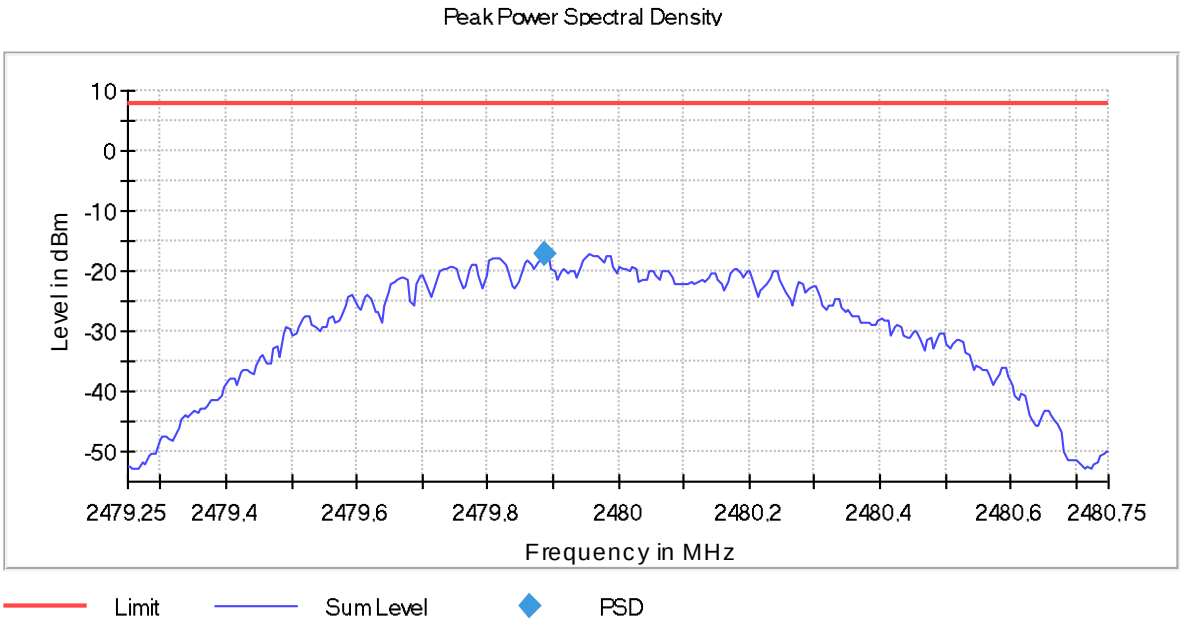
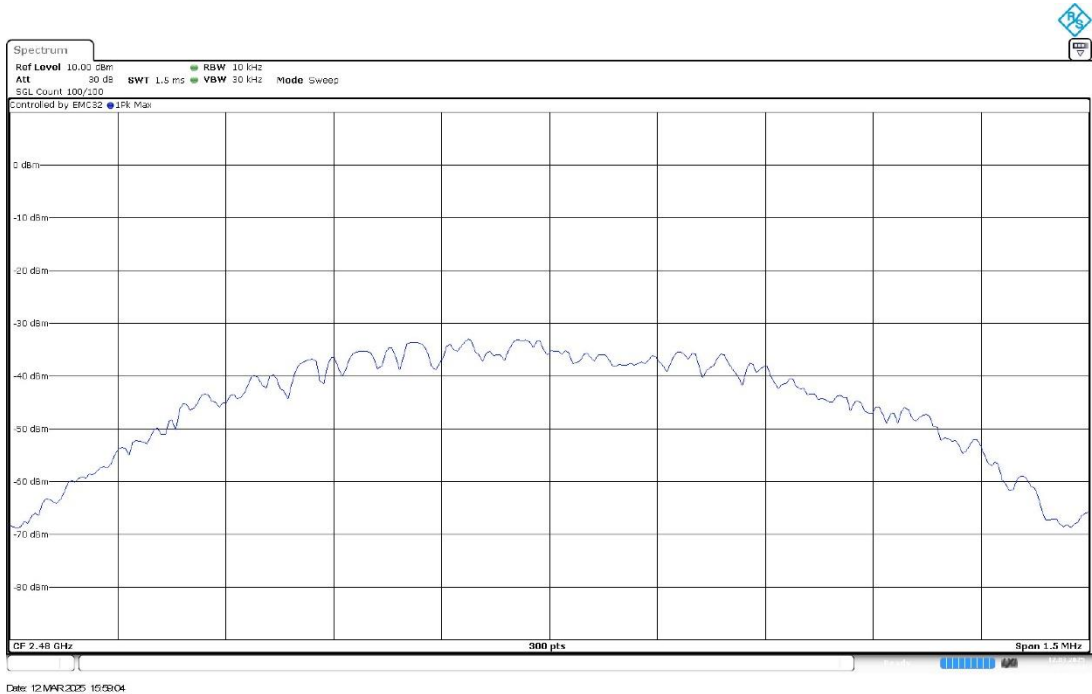
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



Results

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Equipment	BW (MHz)	Freq (MHz)	Port	PSD (dBm)
Digital Transmission System (DTS)	2	2402.00000	1	-18.48
		2440.00000		-18.92
		2480.00000		-19.22

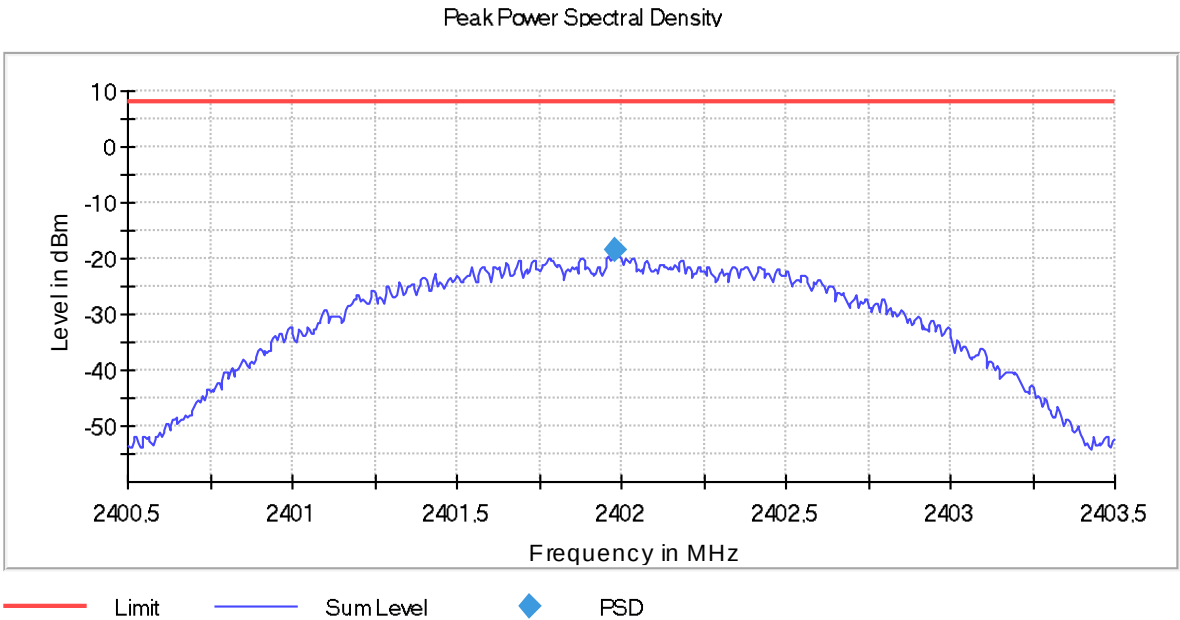
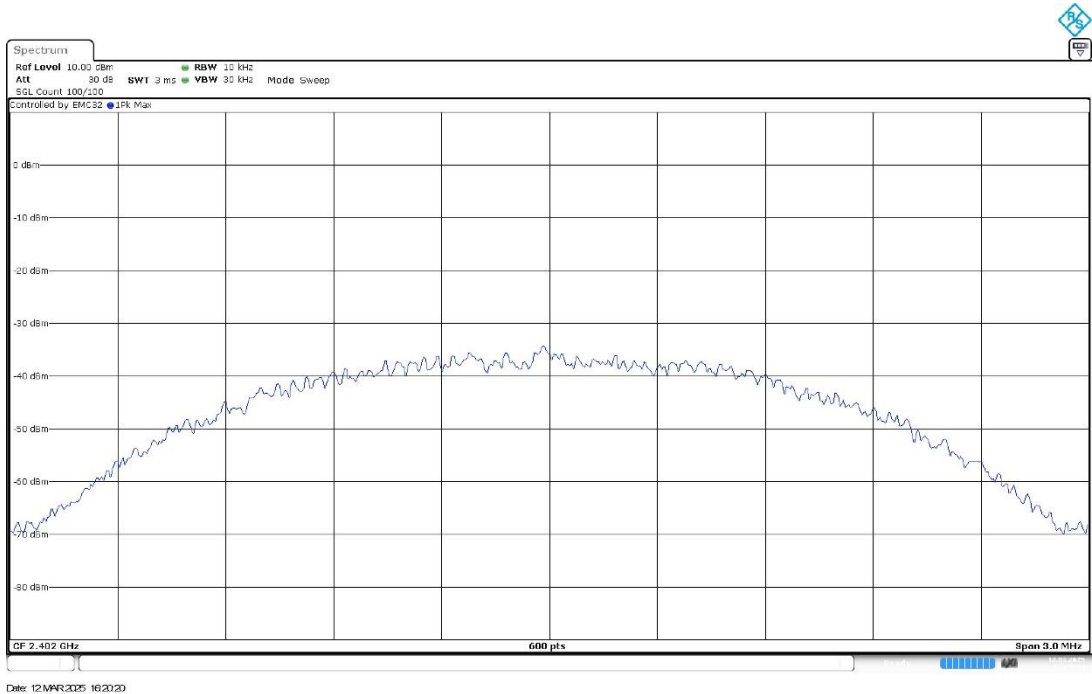
Verdict

Pass

Attachments

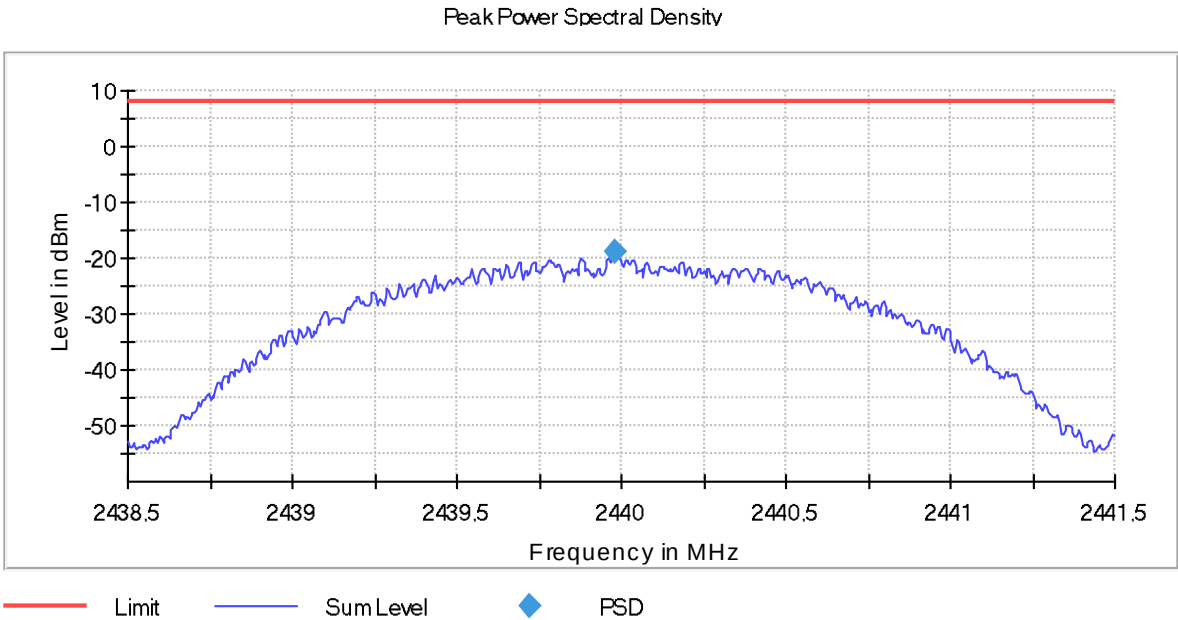
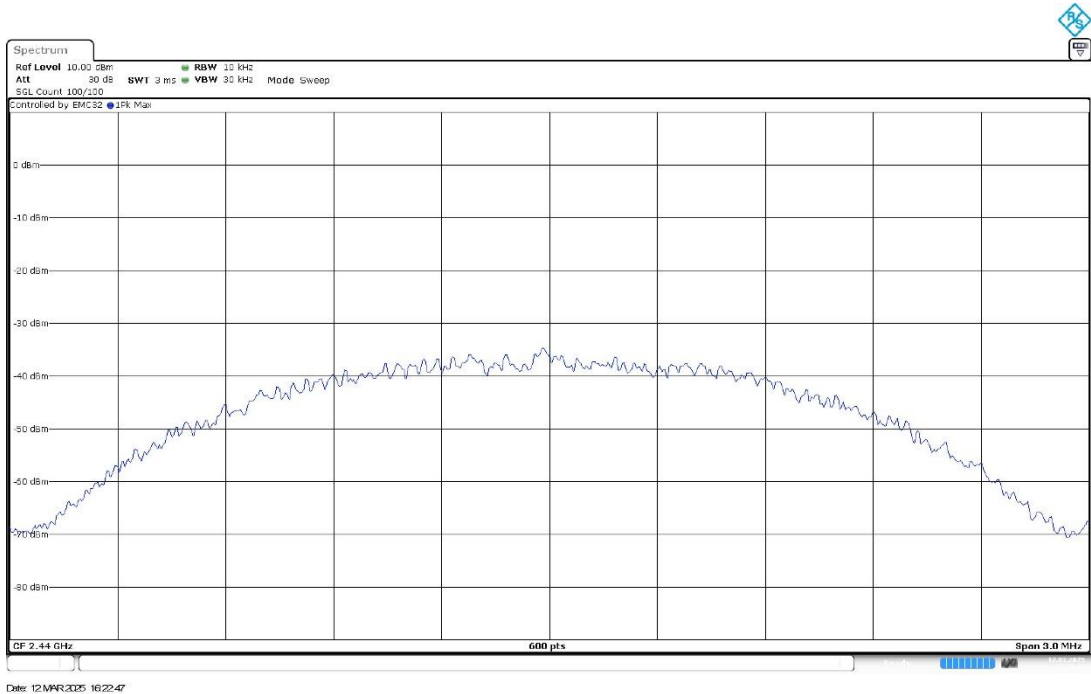
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



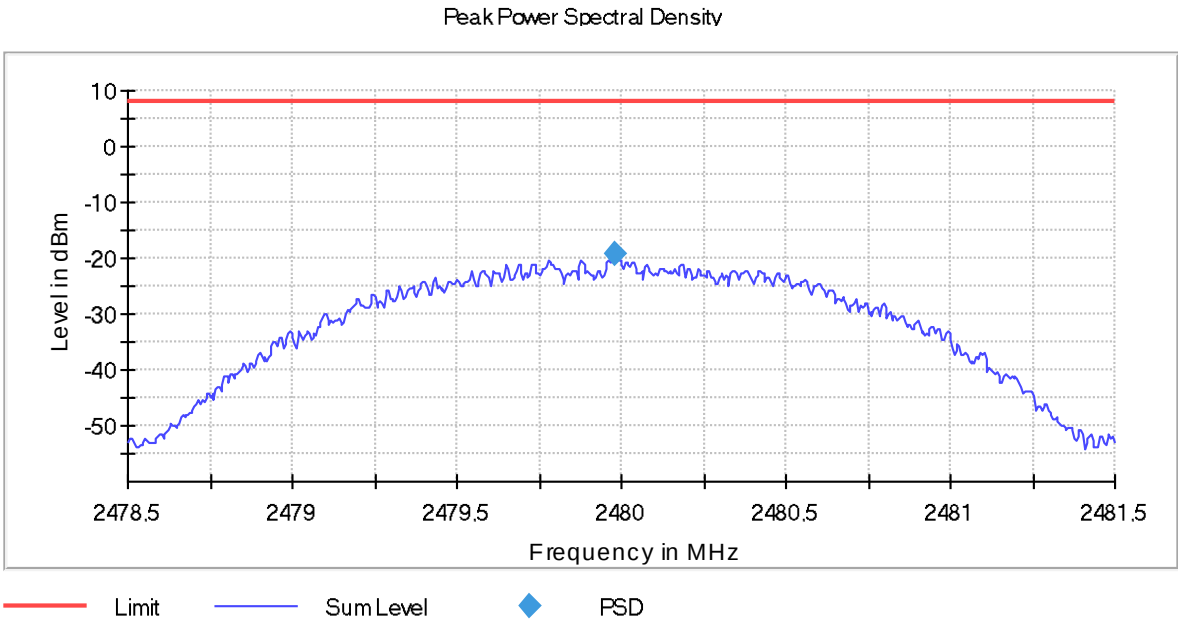
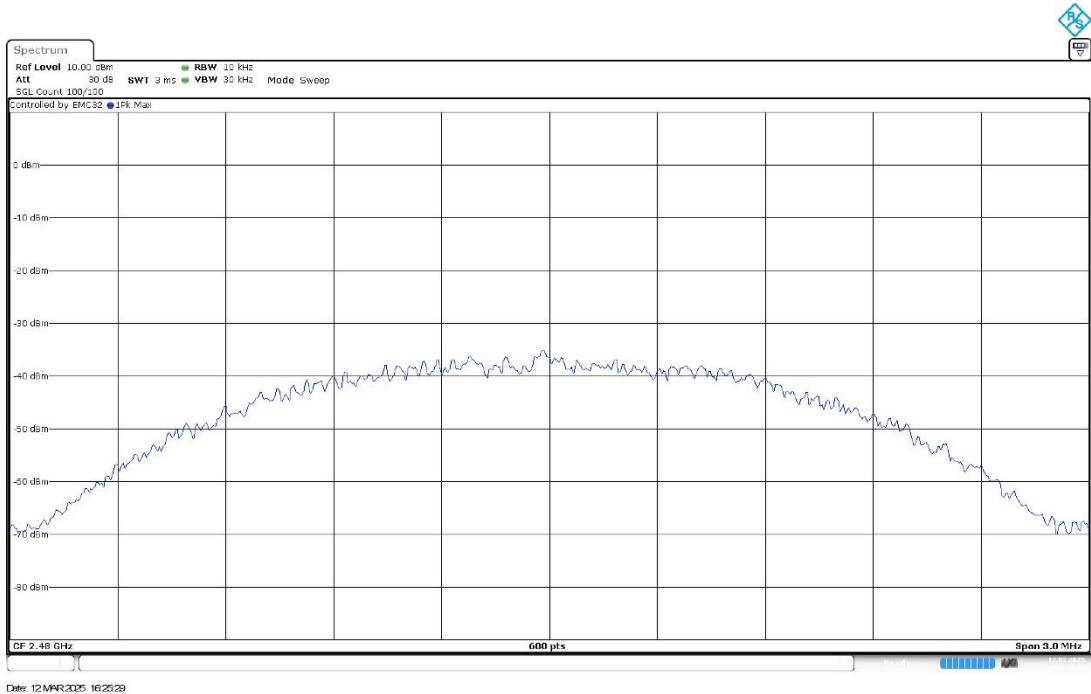
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



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) (RSS-247).

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

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.

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Max EIRP Power (dBm)
Digital Transmission System (DTS)	1	2402.00000	1	-5.31	-5.21
		2440.00000		-5.46	-5.36
		2480.00000		-5.84	-5.74

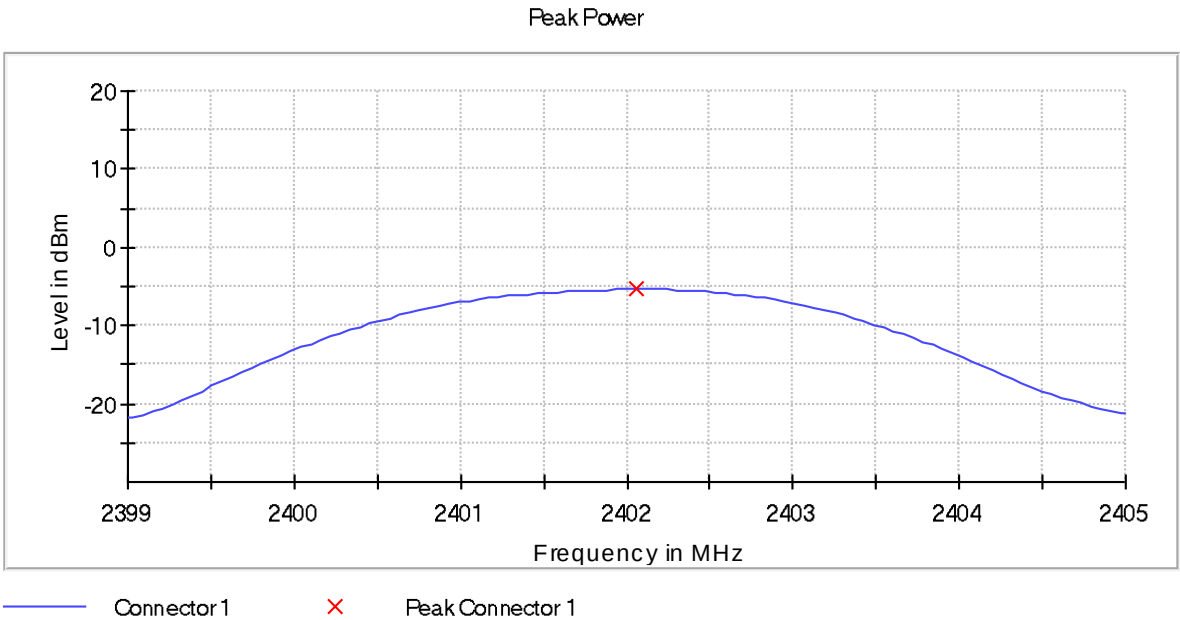
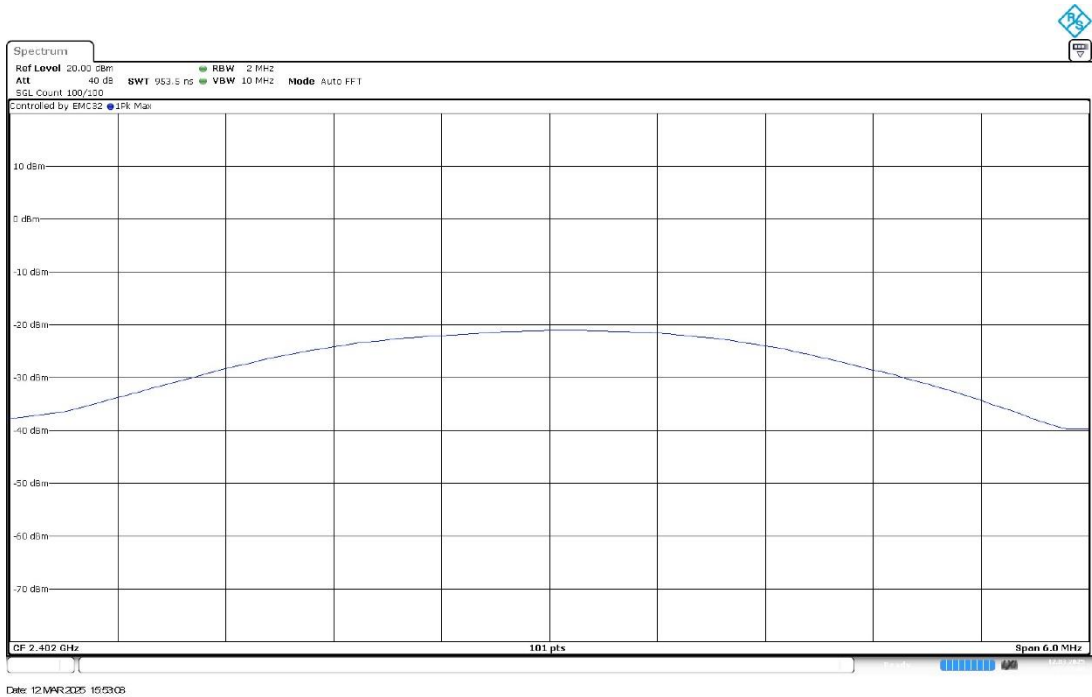
Verdict

Pass

Attachments

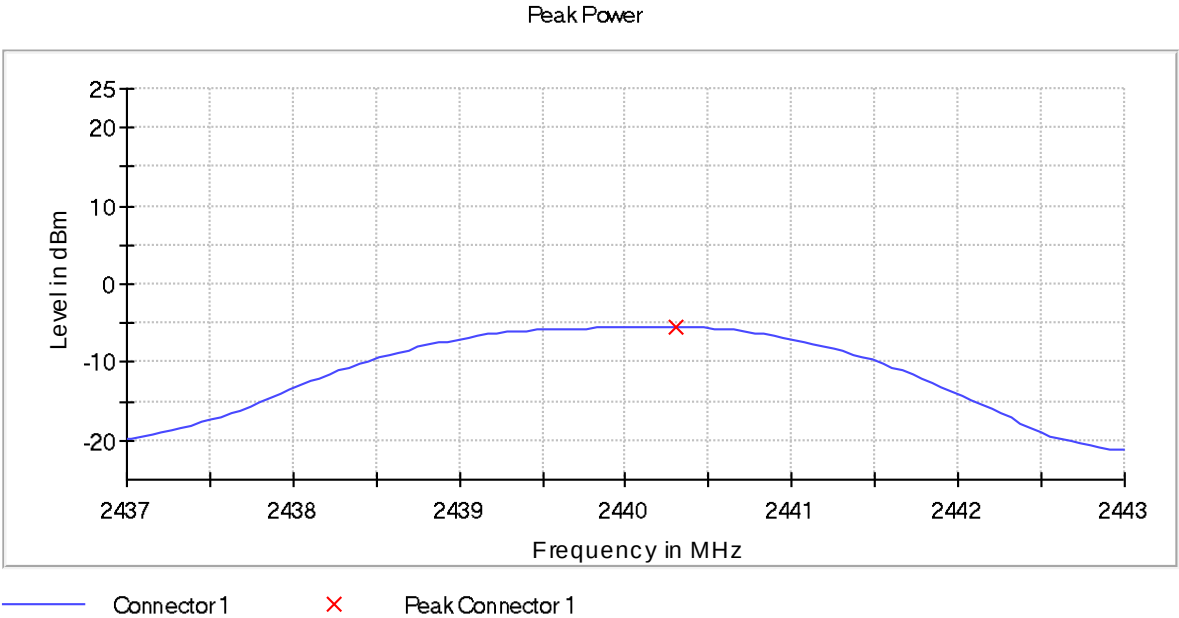
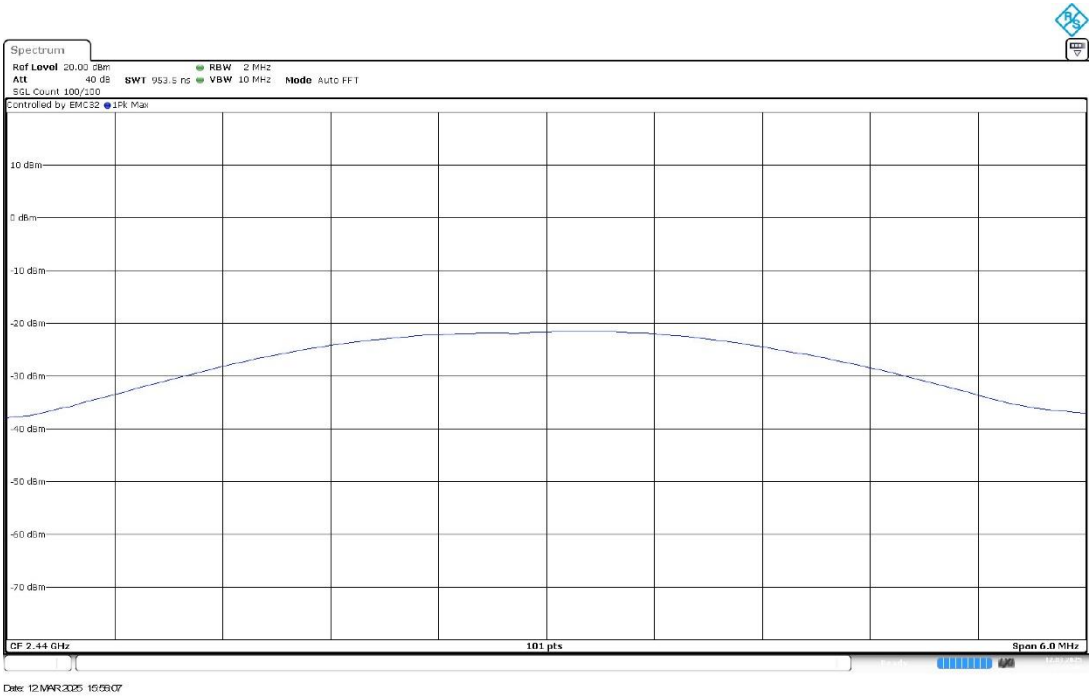
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



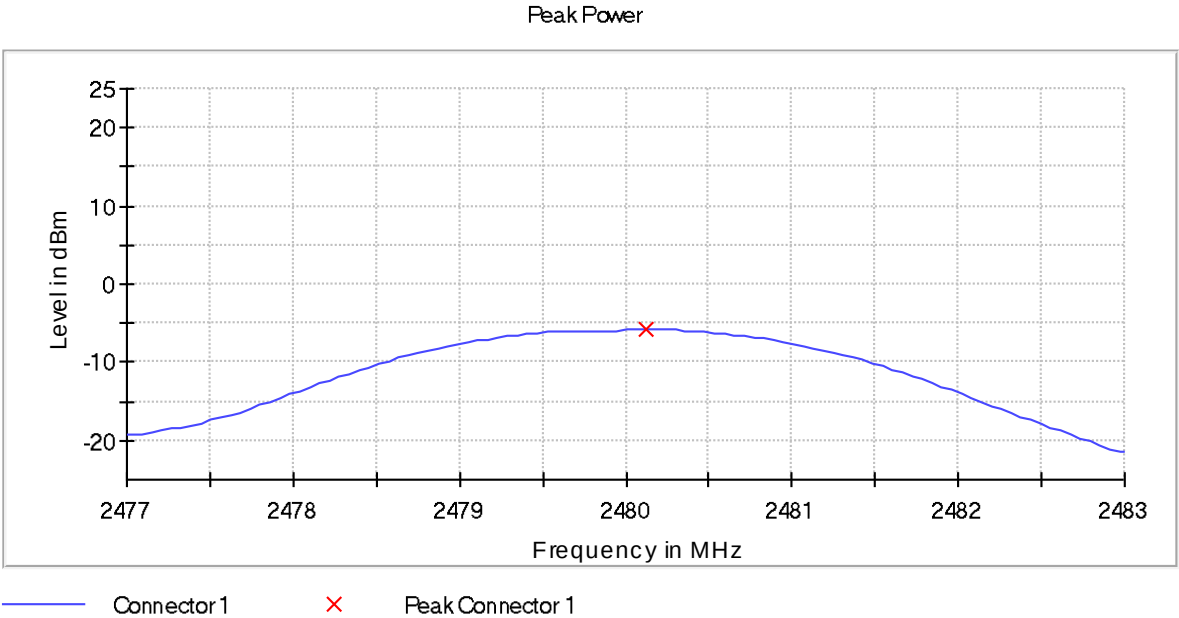
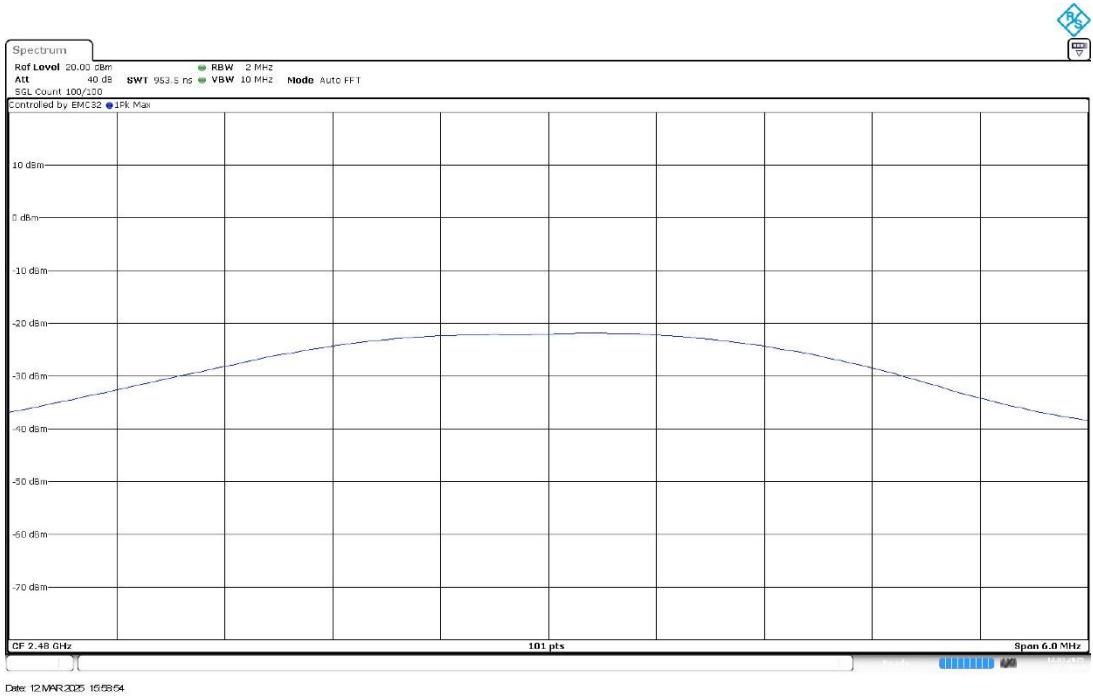
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



Results

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Max EIRP Power (dBm)
Digital Transmission System (DTS)	2	2402.00000	1	-5.54	-5.44
		2440.00000		-5.43	-5.33
		2480.00000		-5.64	-5.54

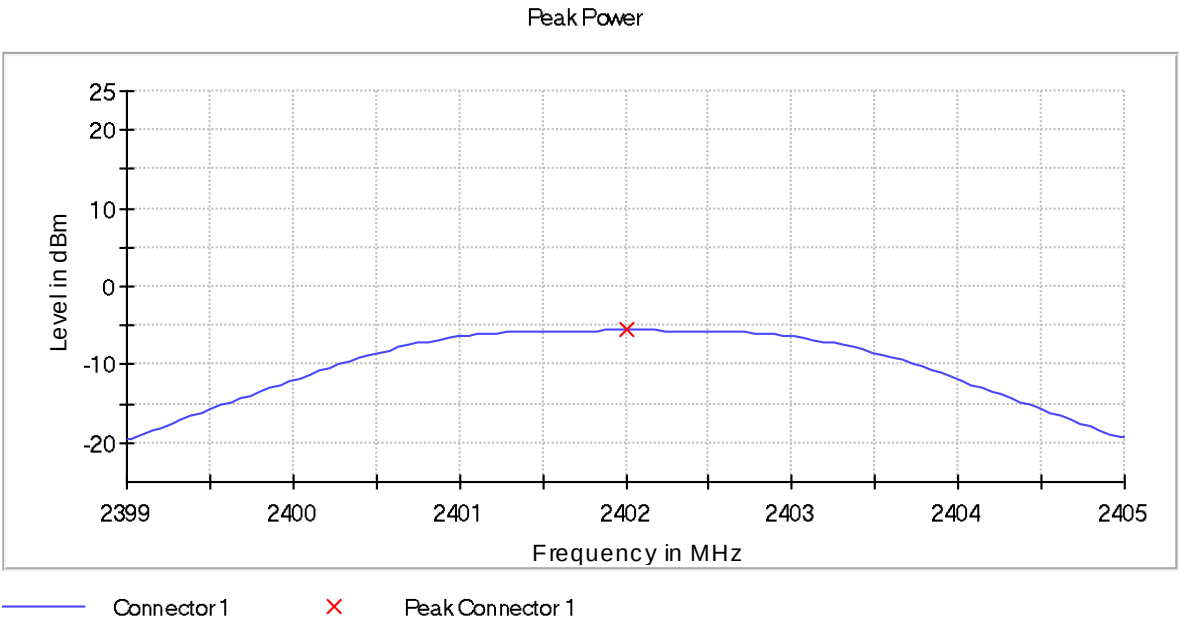
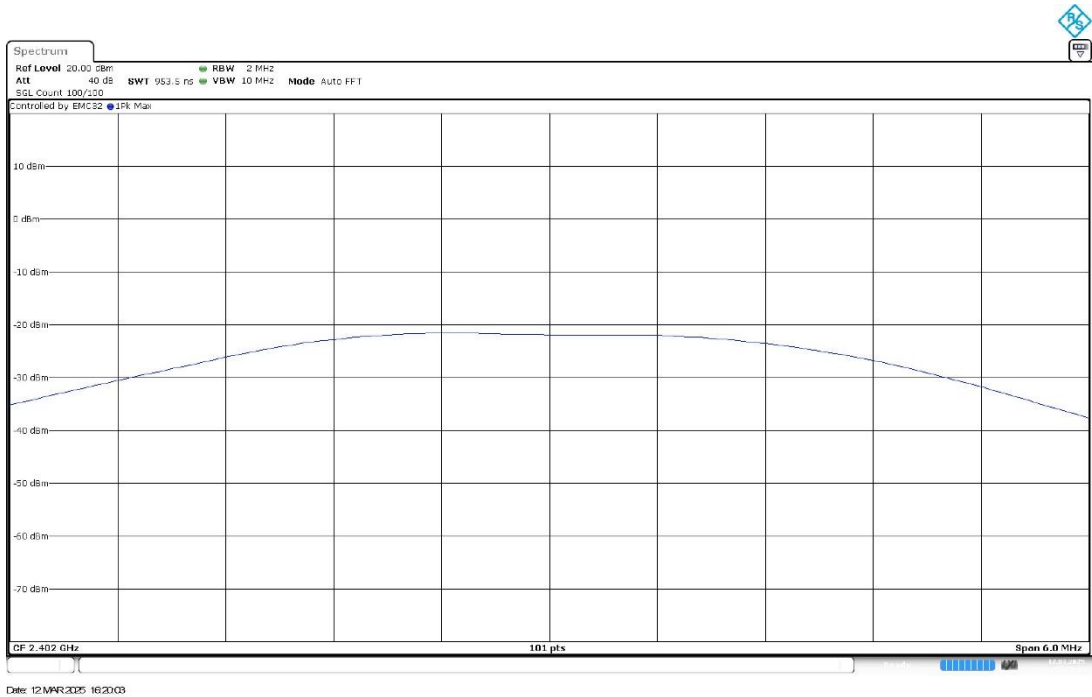
Verdict

Pass

Attachments

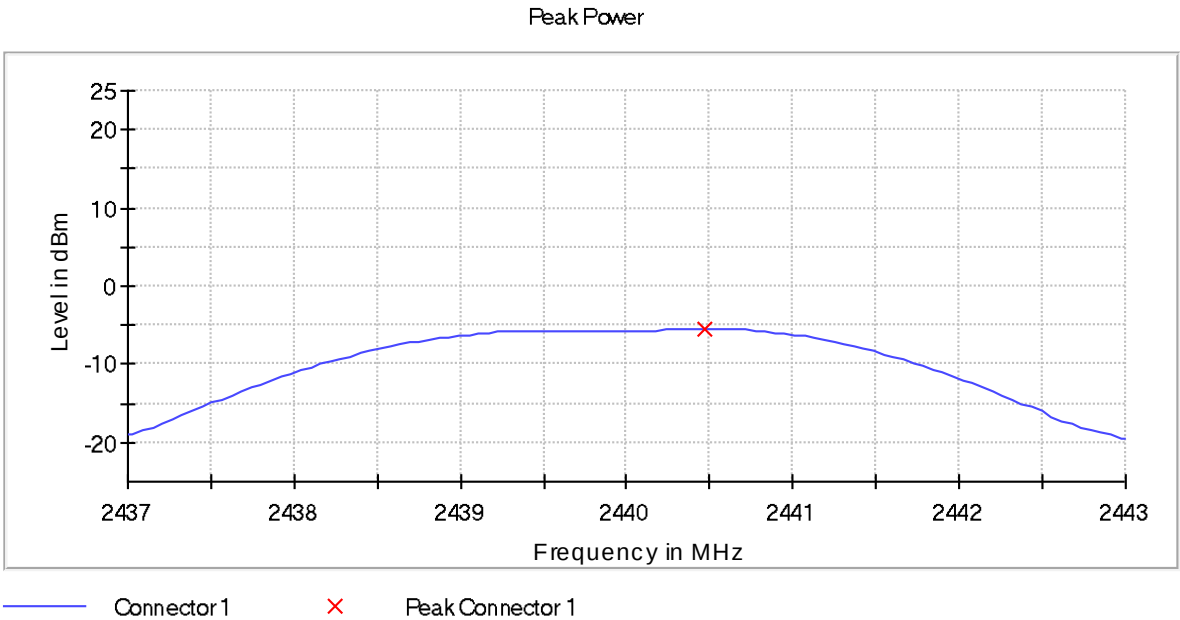
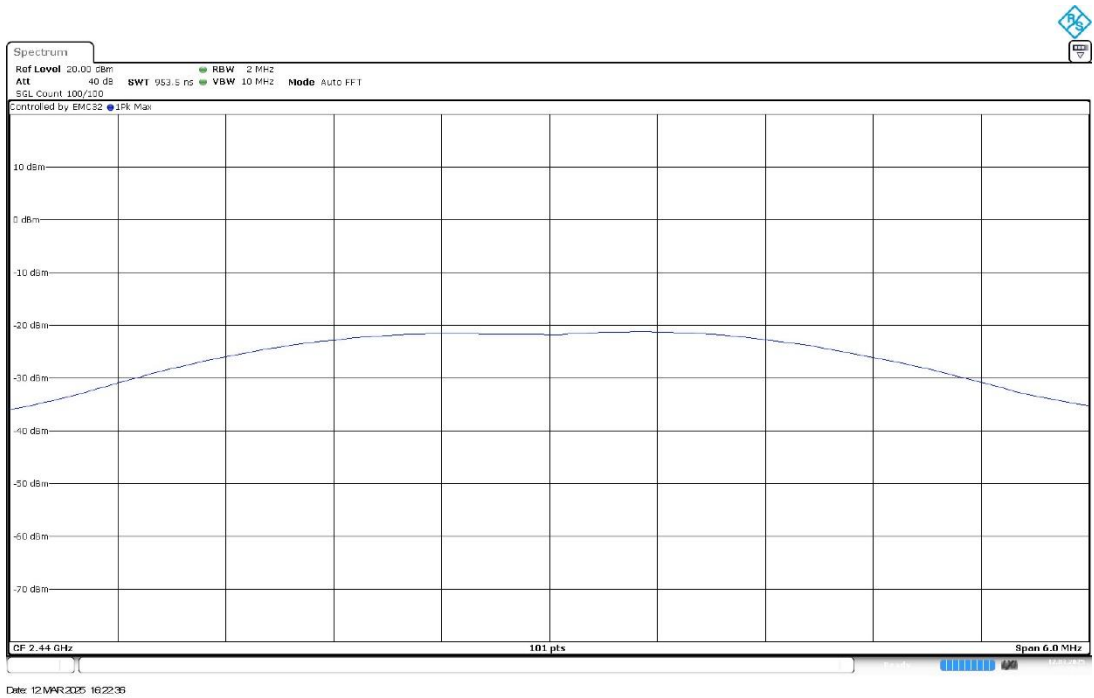
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



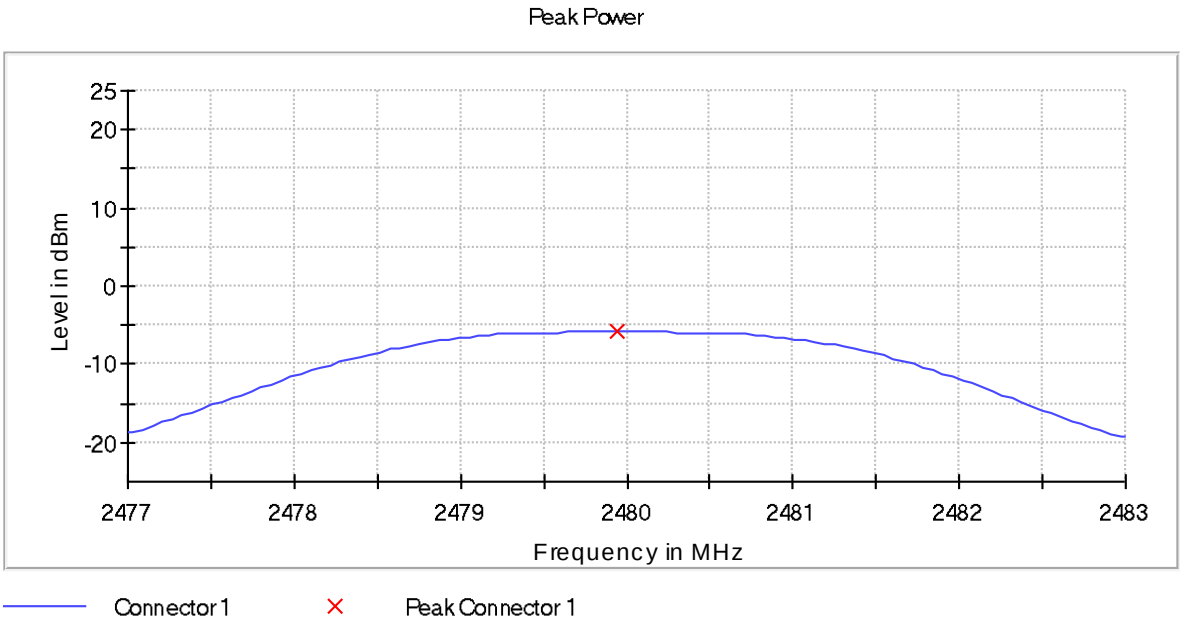
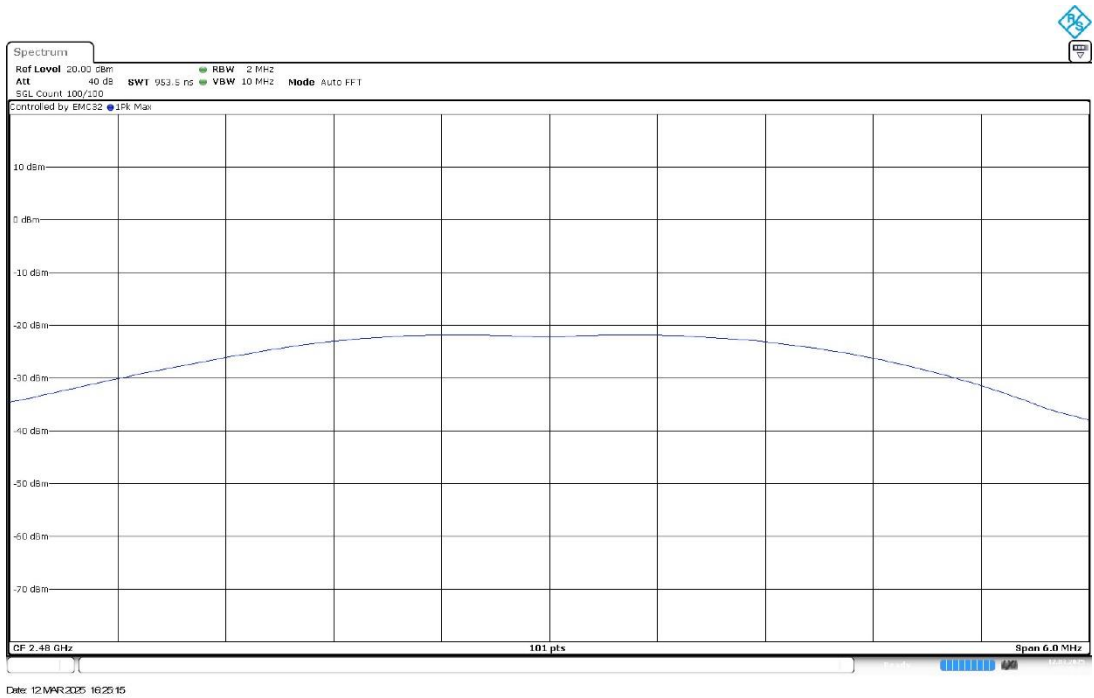
Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



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

Limits

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

Results

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

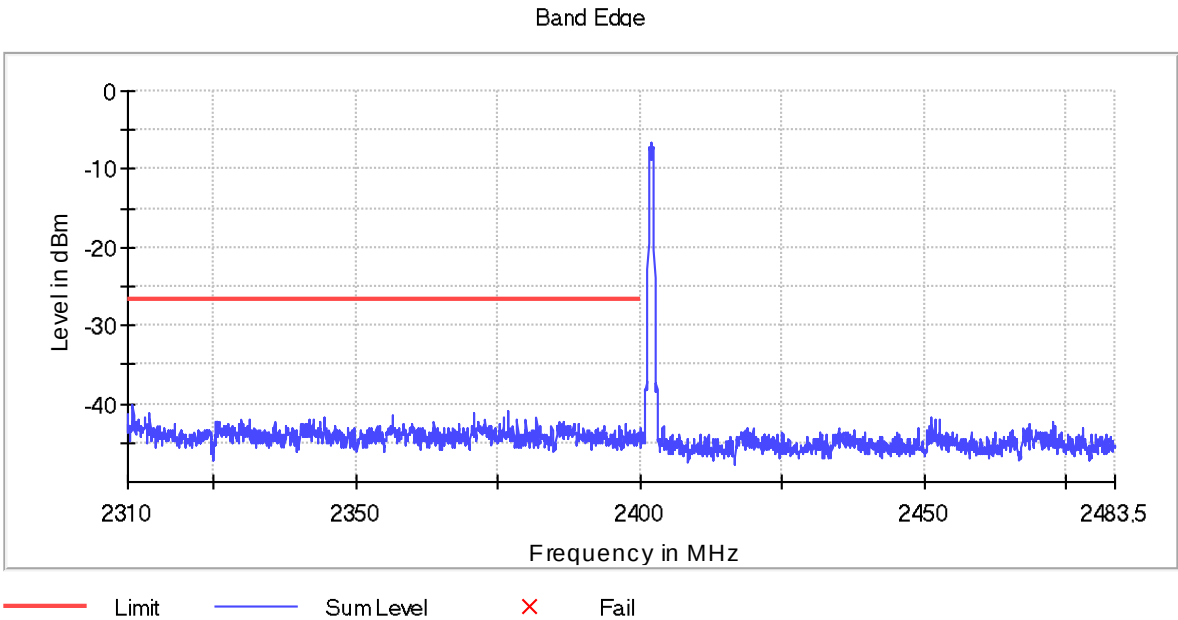
Verdict

Pass

Attachments

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

Images:



Tables:

Spectrum Analyzer Parameters 1

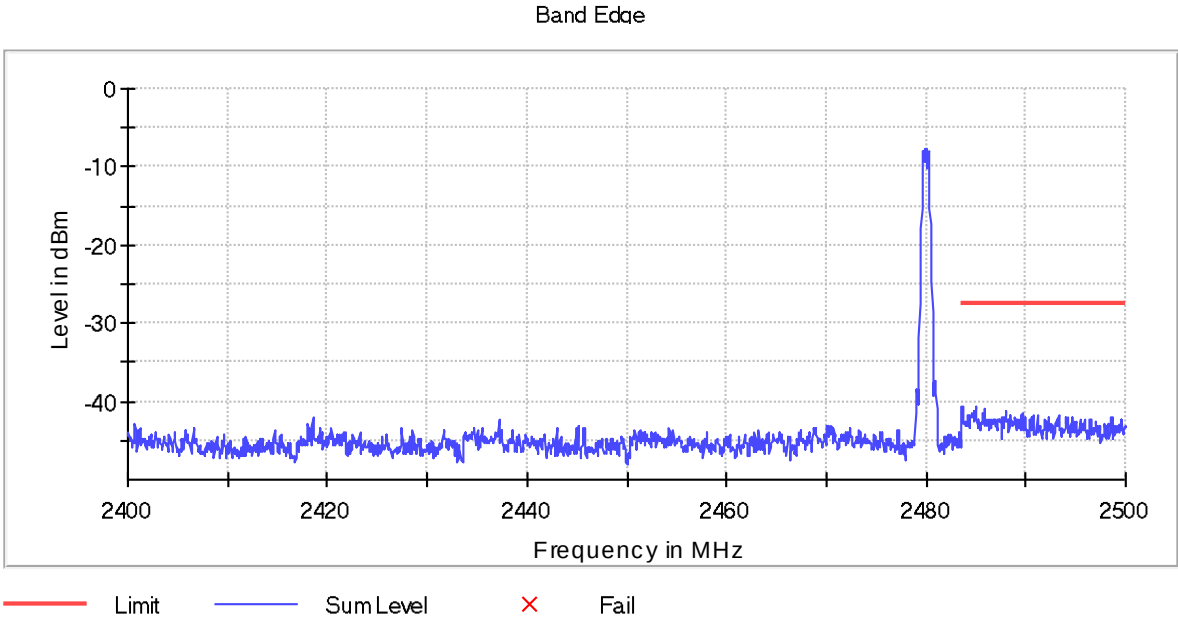
Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
SweepTime	113.672 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / 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	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 1
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

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	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.01 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
SweepTime	18.945 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Results

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

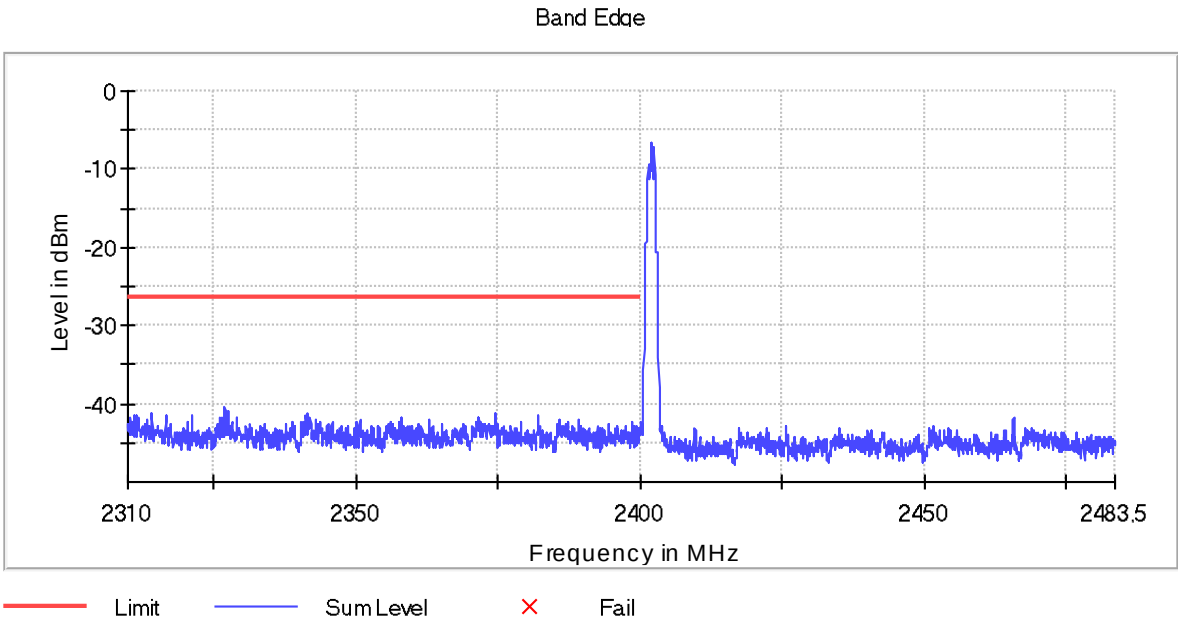
Verdict

Pass

Attachments

Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

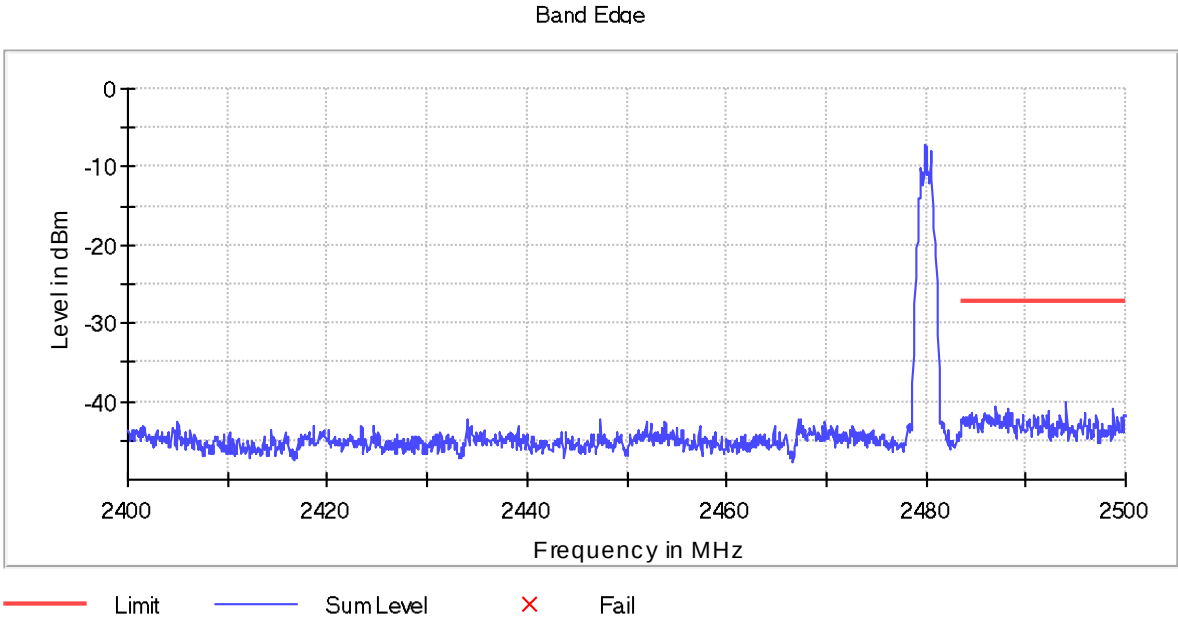
Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / 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	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

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	94.727 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.01 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.48350 GHz	2.48350 GHz
Stop Frequency	2.50000 GHz	2.50000 GHz
Span	16.500 MHz	16.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	330	~ 330
SweepTime	18.945 µs	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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

Frequency range tested for Radiated emissions:

Start frequency: no radiofrequency signal generated in the device found below 10th sub-harmonic, no further investigation required.

Stop frequency: it has been performed the radiated spurious emissions until 10th harmonic.

Results

Frequency range 30MHz - 1GHz

Modulation: The spurious frequencies detected do not depend on either the modulation or the operating channel.

Freq Rng (GHz)	Equipment	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[0.03, 1]	Digital Transmission System (DTS)	2402.00000	1	46.9750	24.71	V	QP
					22.88	V	PK
				73.1650	20.64	V	PK
					17.06	V	QP
				731.6495	23.60	V	PK
					18.52	V	QP

Verdict

Pass

Attachments

Frequency Range GHz = [0.03, 1]

Equipment Type = Digital Transmission System (DTS)

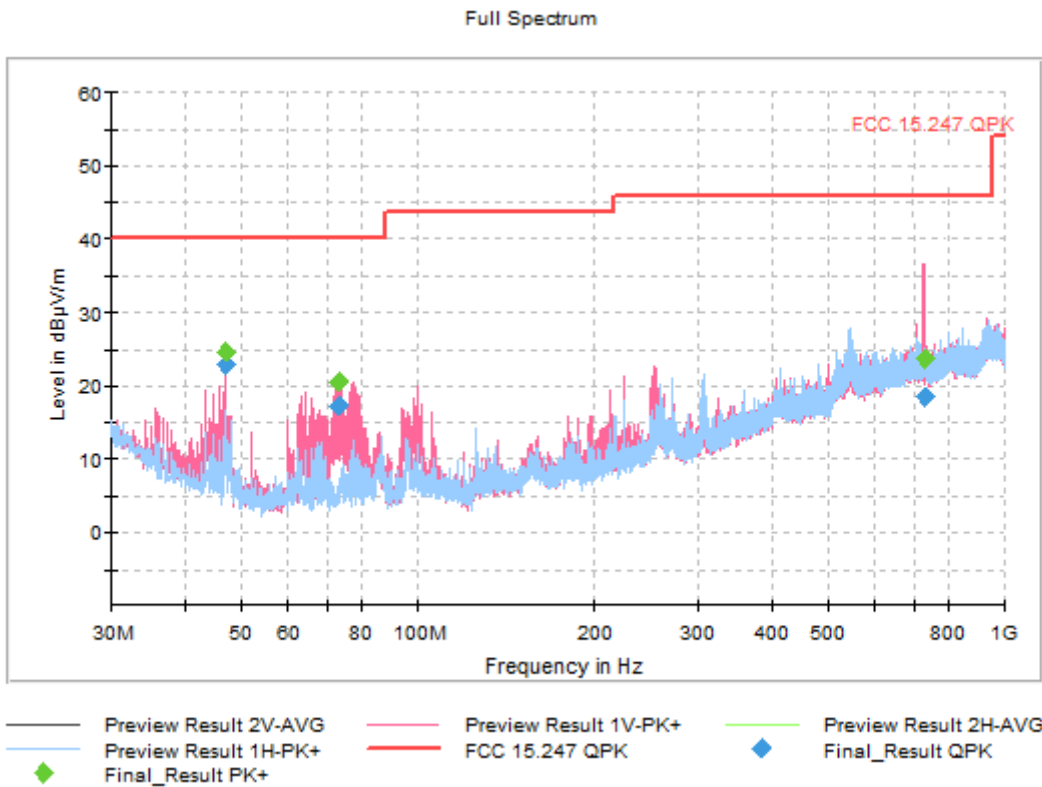
Modulation = The spurious frequencies detected do not depend on the modulation.

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

MIMO Mode = SISO

Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	0 dB

Frequency range 1GHz - 17GHz

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

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

Verdict

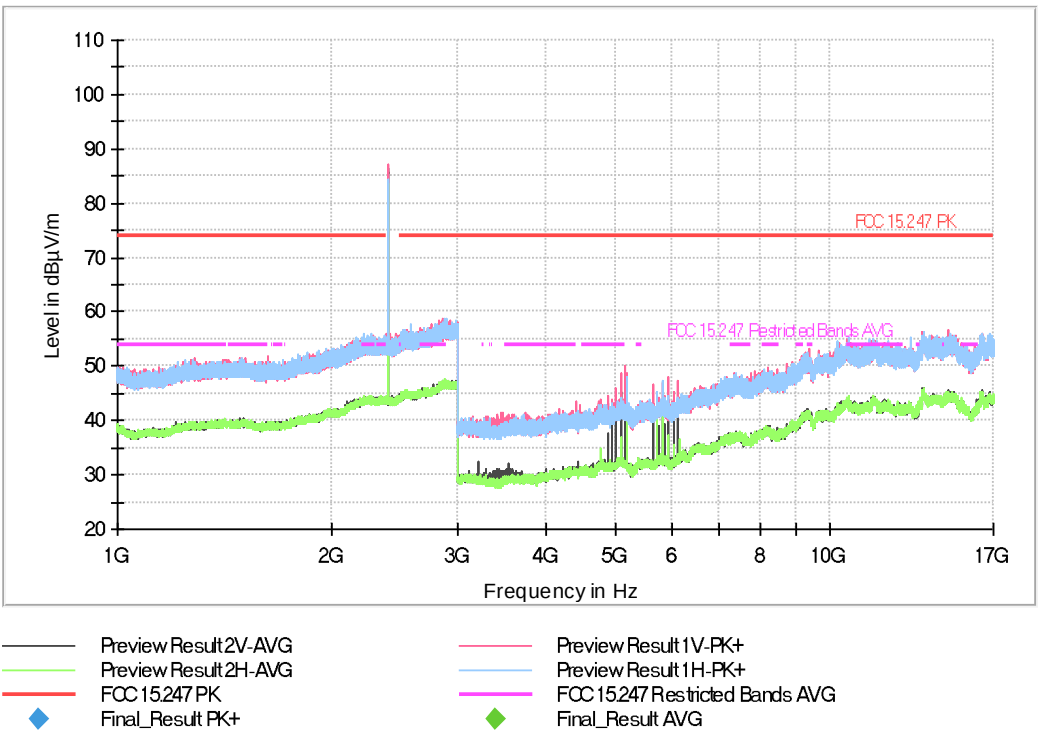
Pass

Attachments

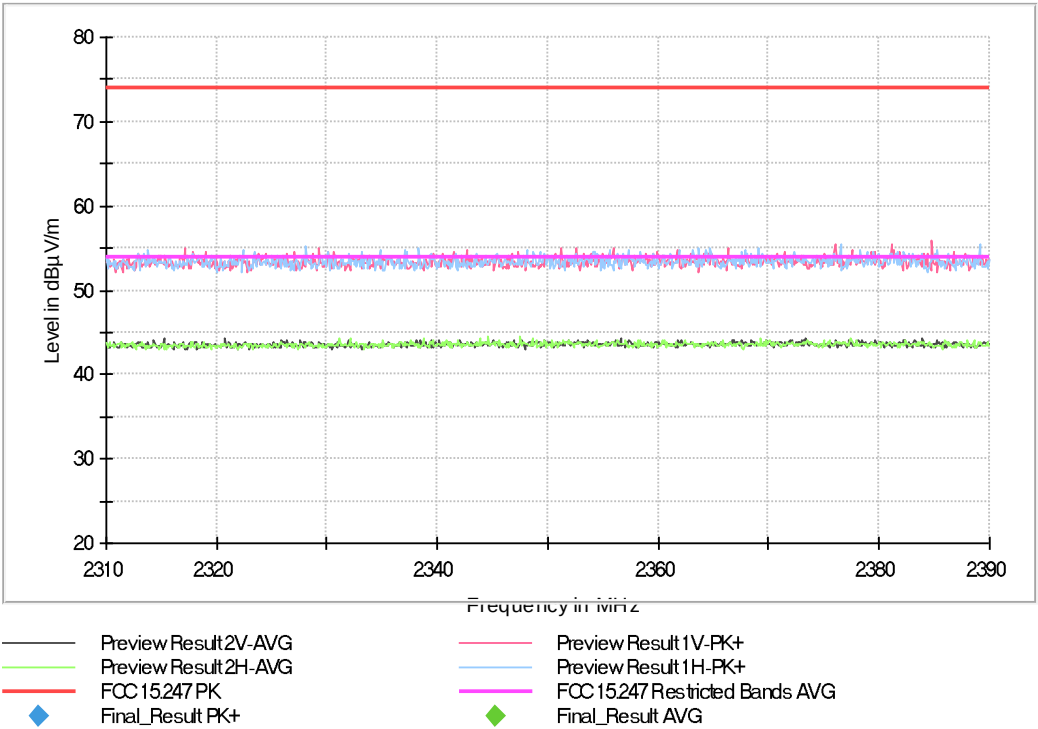
Frequency Range GHz = [1, 17] Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:

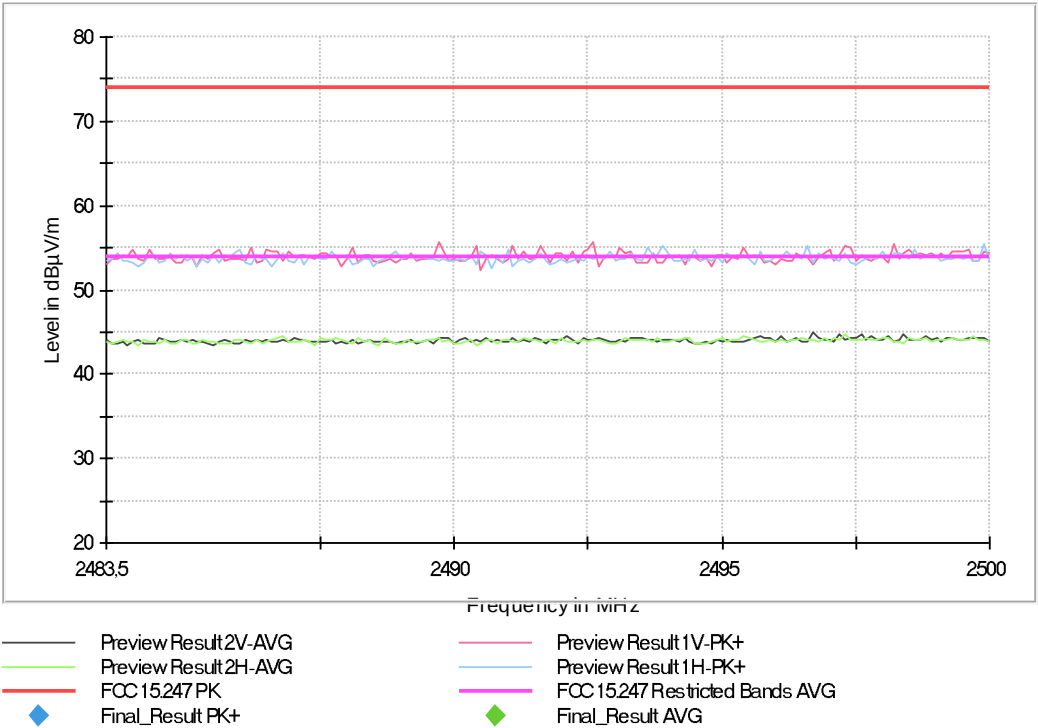
Full Spectrum



Full Spectrum



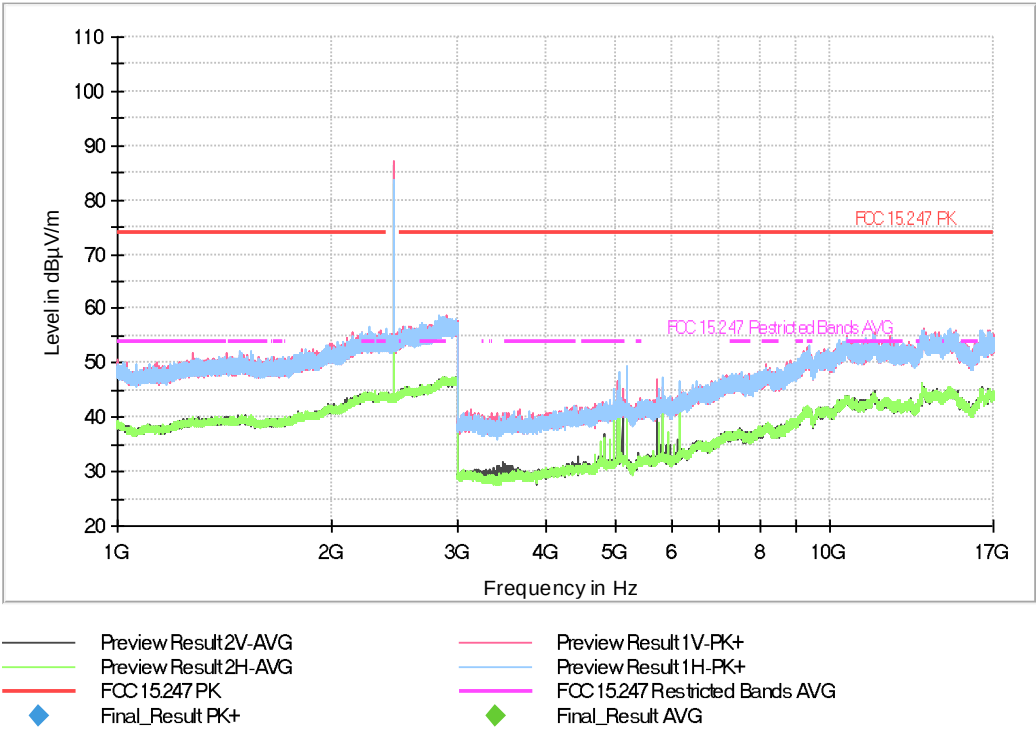
Full Spectrum



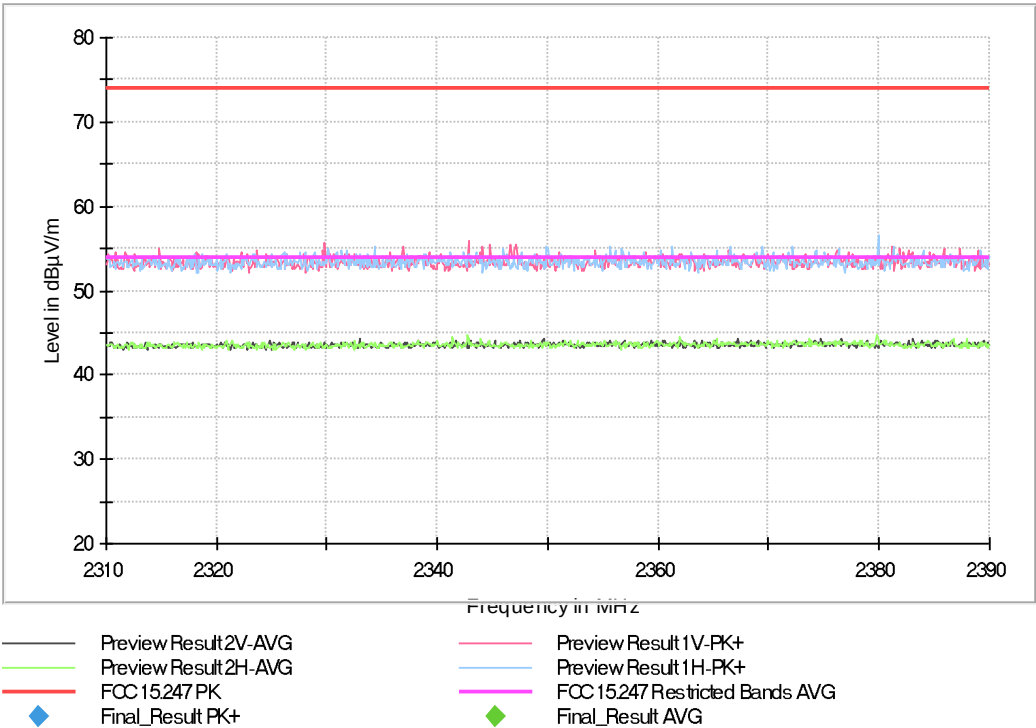
Frequency Range GHz = [1, 17] Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:

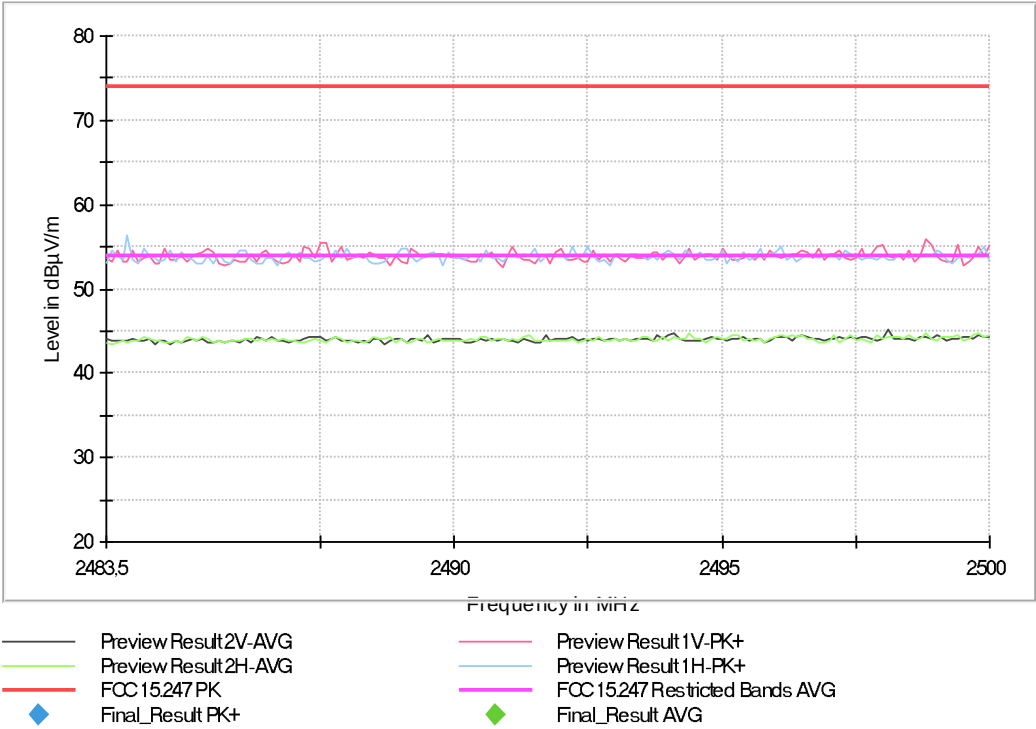
Full Spectrum



Full Spectrum



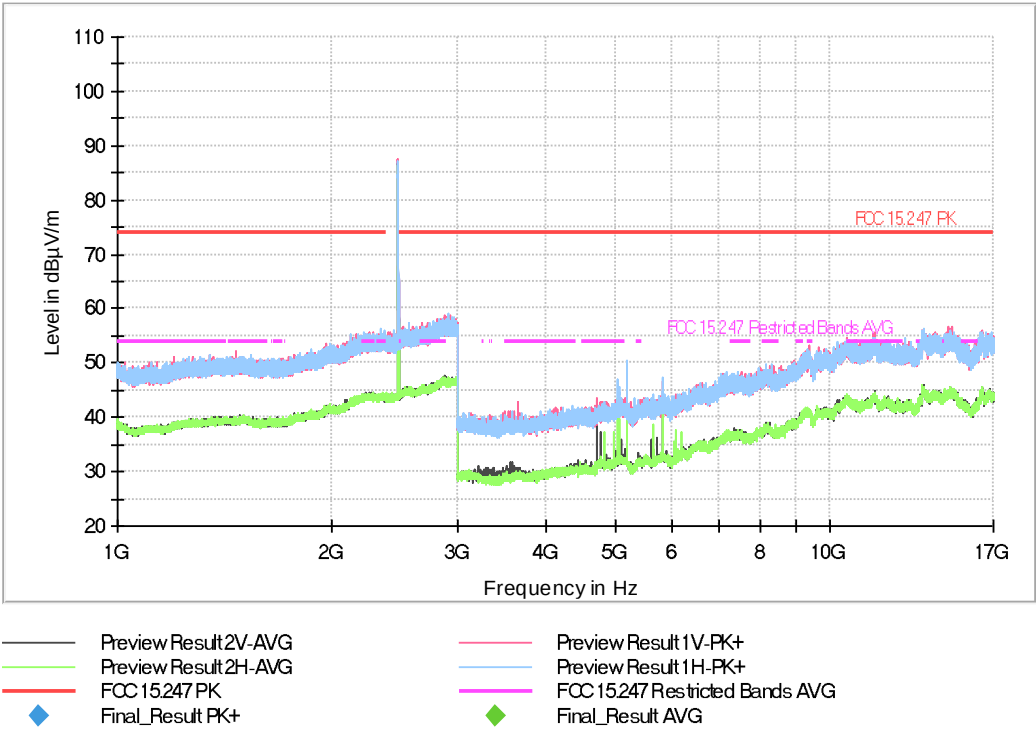
Full Spectrum



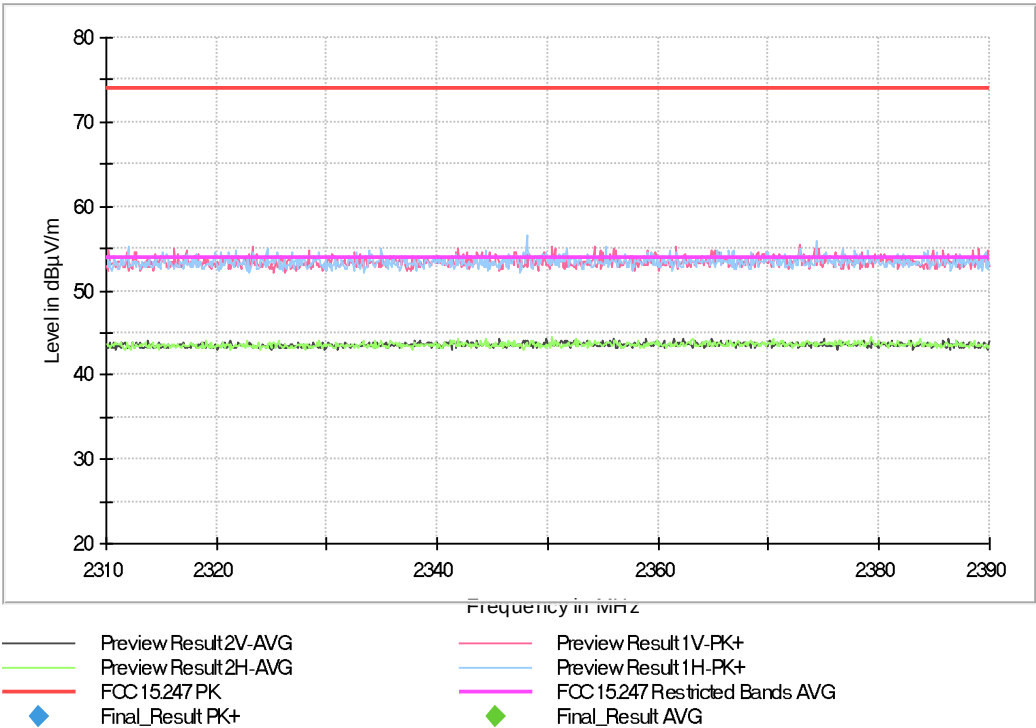
Frequency Range GHz = [1, 17] Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:

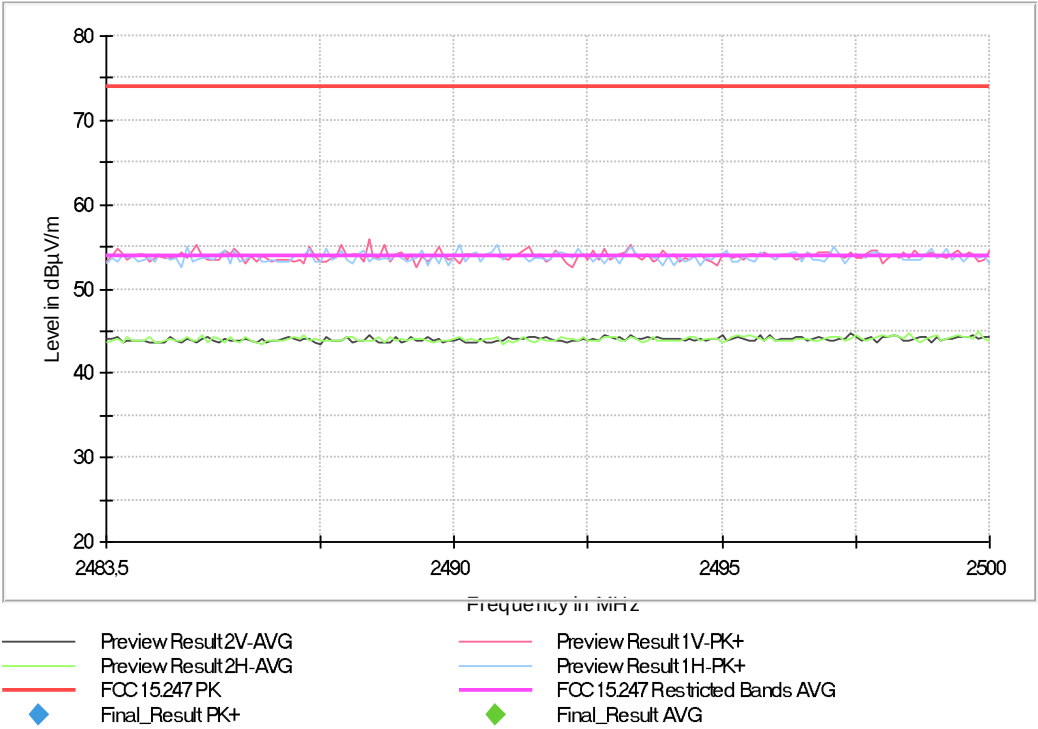
Full Spectrum



Full Spectrum



Full Spectrum



Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

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

Verdict

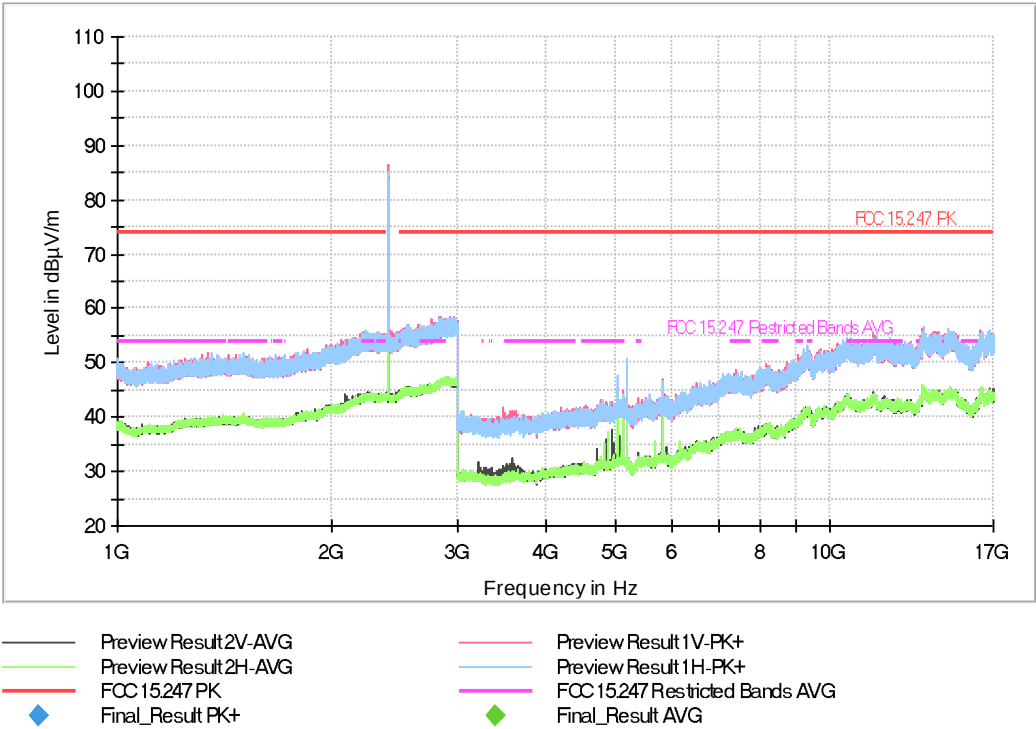
Pass

Attachments

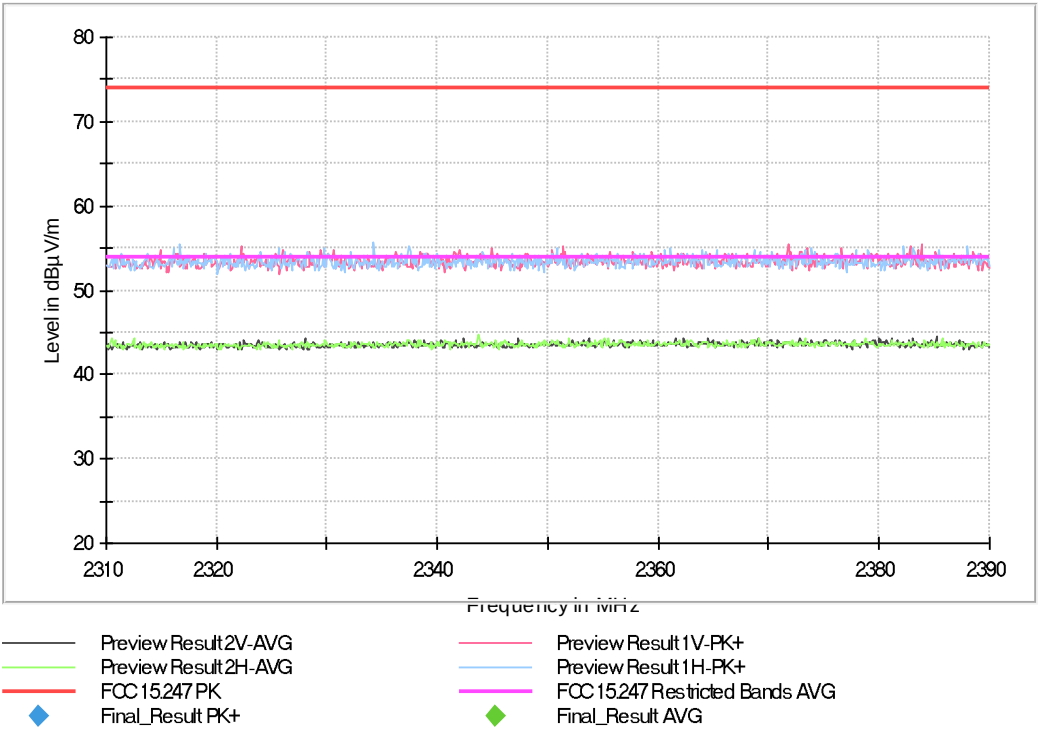
Frequency Range GHz = [1, 17] Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:

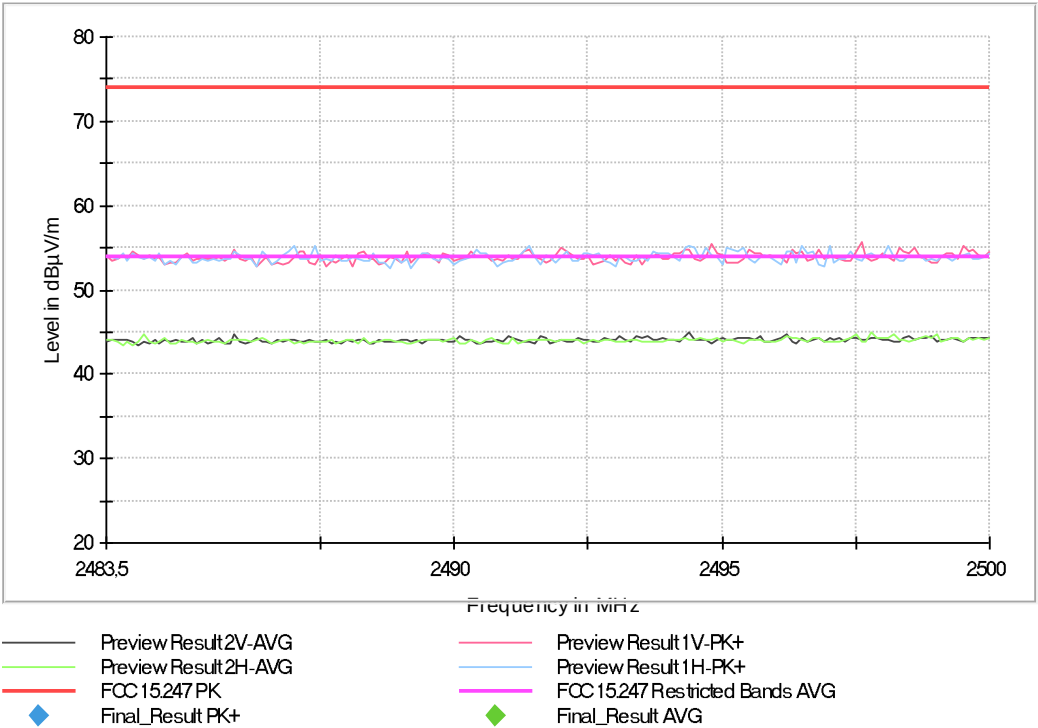
Full Spectrum



Full Spectrum



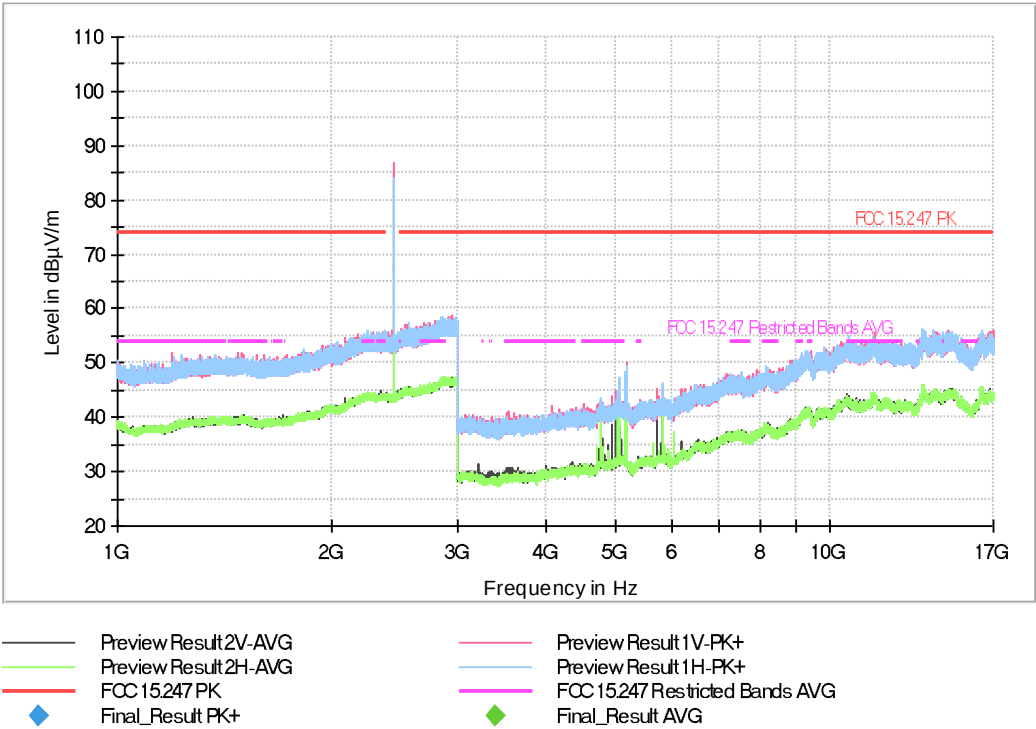
Full Spectrum



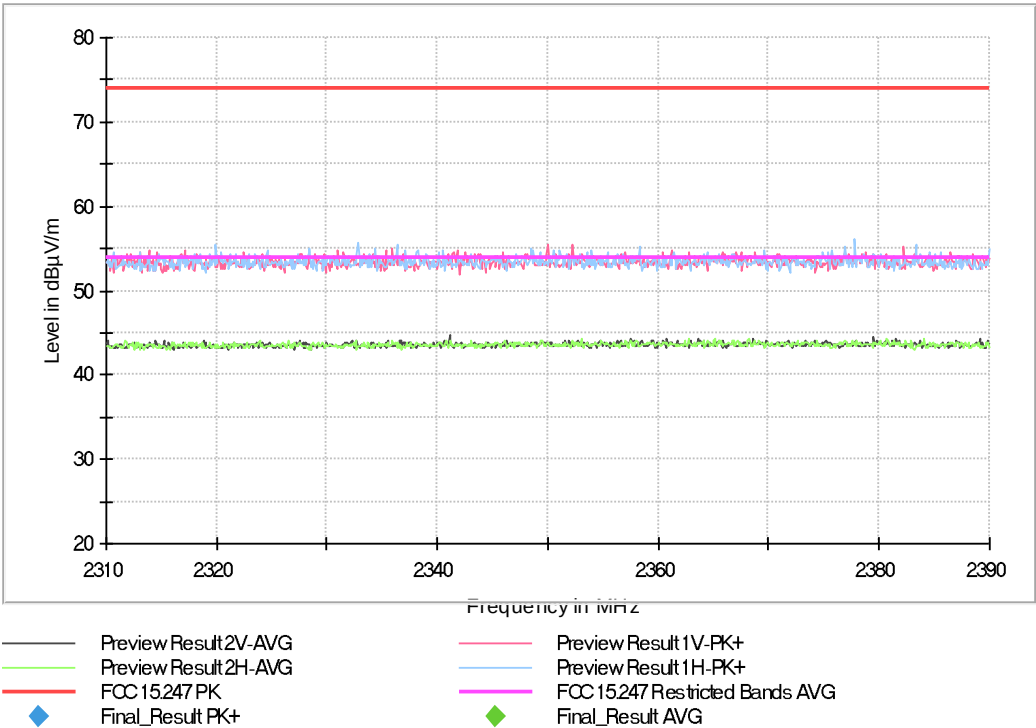
Frequency Range GHz = [1, 17] Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2440.00000
MIMO Mode = SISO Active Port = 1

Images:

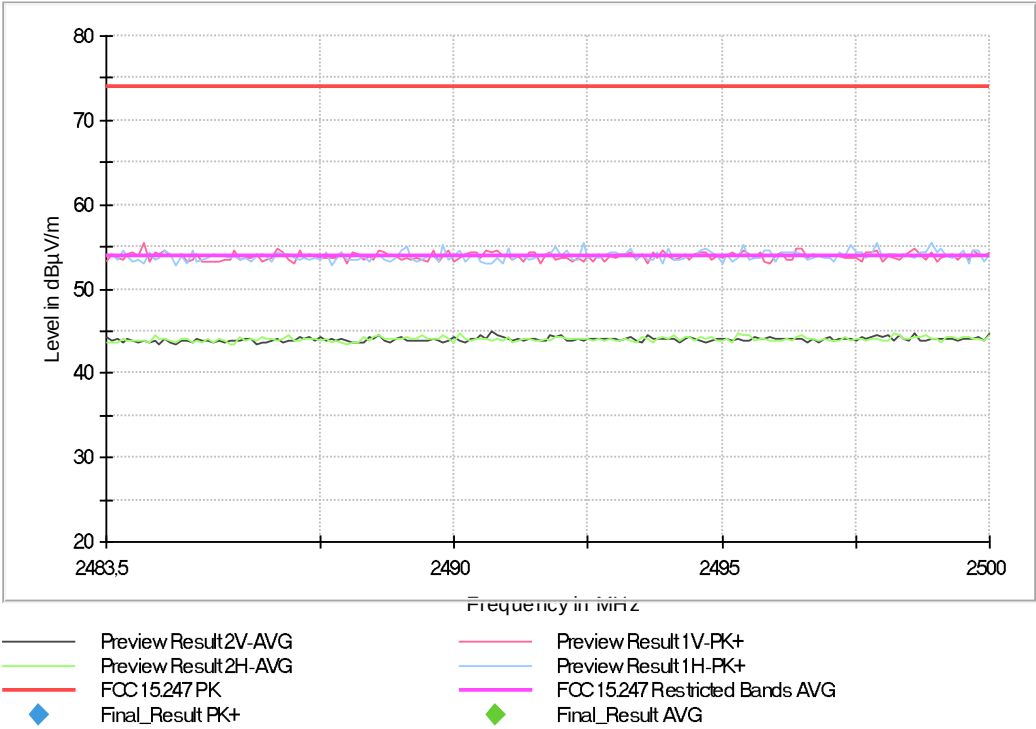
Full Spectrum



Full Spectrum

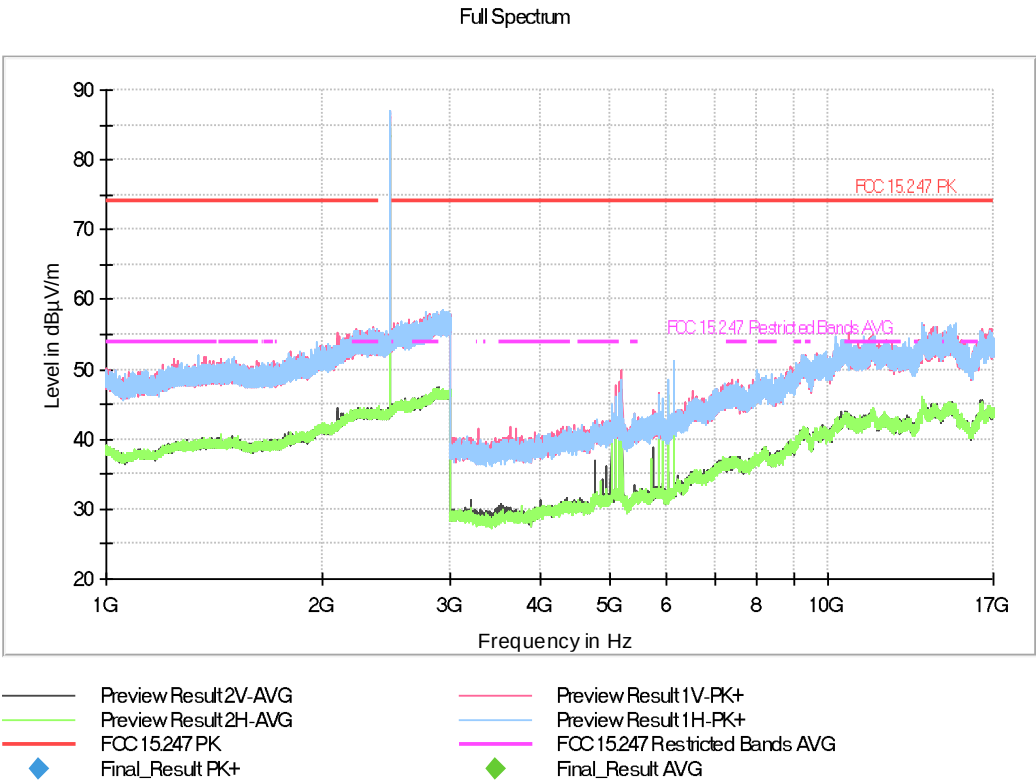
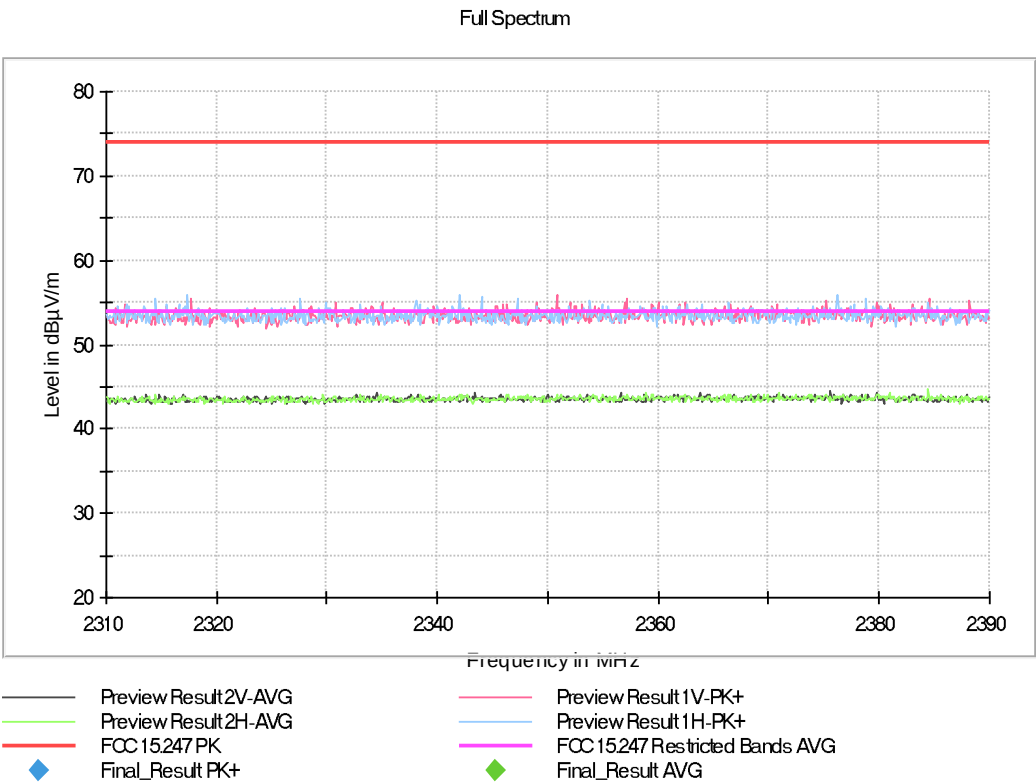


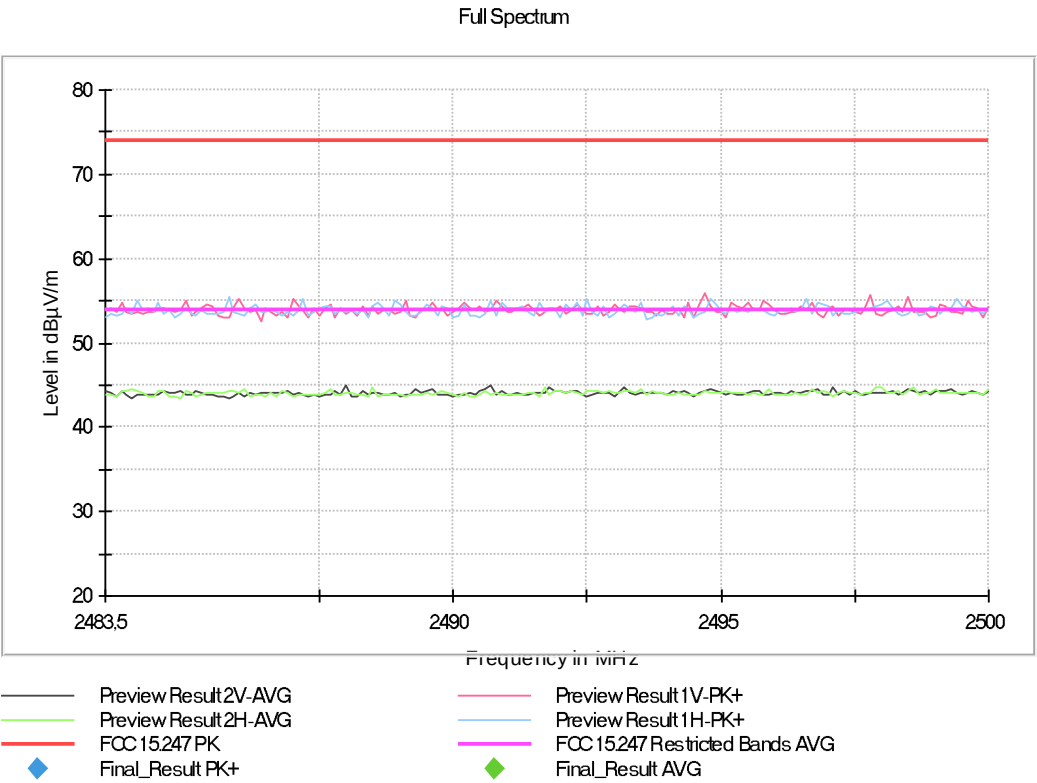
Full Spectrum



Frequency Range GHz = [1, 17] Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.0 (GFSK 2 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:





Tables:
Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
1 GHz - 2,39 GHz	400 kHz	PK+	1 MHz	0,01 s	0 dB
2,39 GHz - 2,484 GHz	40 kHz	PK+	100 kHz	0,01 s	0 dB
2,484 GHz - 3 GHz	400 kHz	PK+	1 MHz	0,01 s	0 dB
3 GHz - 17 GHz	400 kHz	PK+	1 MHz	0,01 s	0 dB

Frequency range 17GHz - 26GHz

Modulation: The spurious frequencies detected do not depend on either the modulation or the operating channel.

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

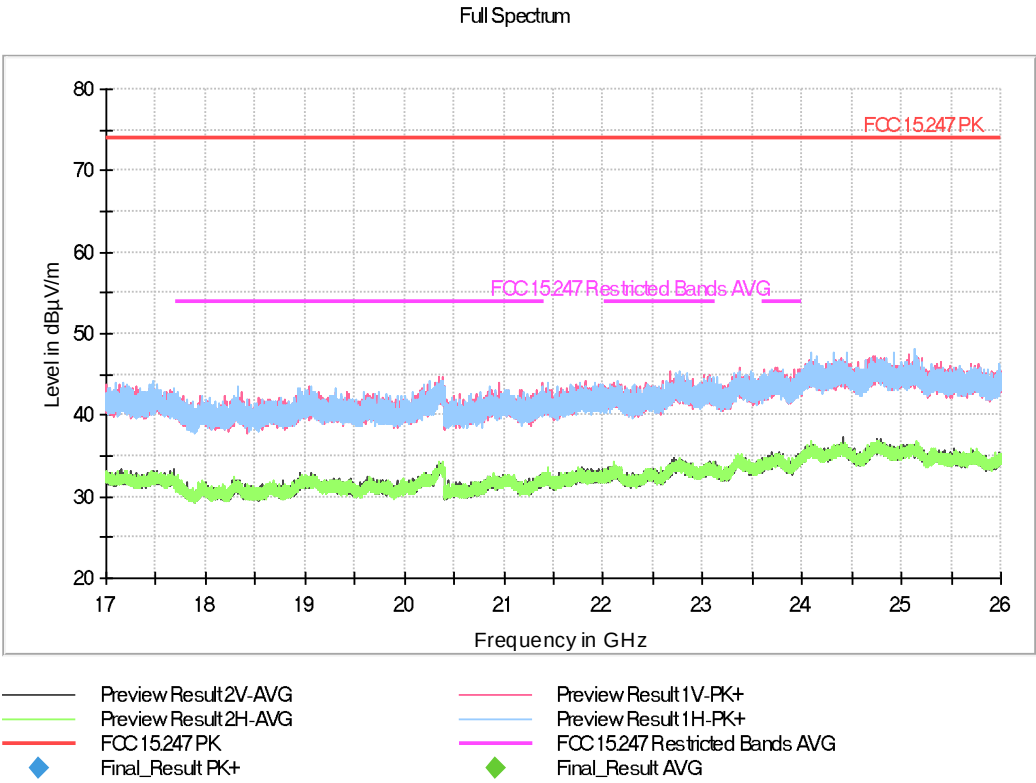
Verdict

Pass

Attachments

Frequency Range GHz = [17, 26] Equipment Type = Digital Transmission System (DTS)
Modulation = BTLE 5.0 (GFSK 1 Mbit/s) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
17 GHz - 26 GHz	400 kHz	PK+	1 MHz	0,01 s	0 dB

Appendix B: Test results. Bluetooth EDR

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TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal: 12 Vdc
Type of Power Supply: Battery

ANTENNA (*):

Technology	Antenna Gain	Type
BTEDR:	+0.1 dBi	External

TEST FREQUENCIES (*):

Modulation	Data rates	Low Channel	Middle Channel	High Channel
BTEDR GFSK	1-DH5	2402 MHz	2441 MHz	2480 MHz
BTEDR PI/4 DQPSK	2-DH5	2402 MHz	2441 MHz	2480 MHz
BTEDR 8DPSK	3-DH5	2402 MHz	2441 MHz	2480 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).

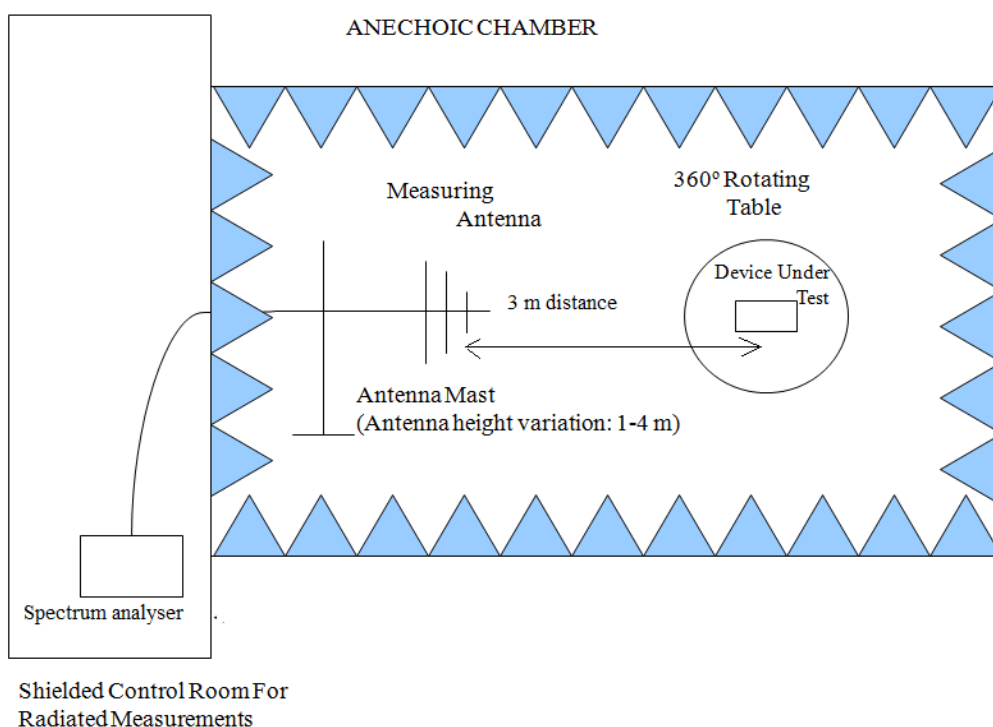
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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

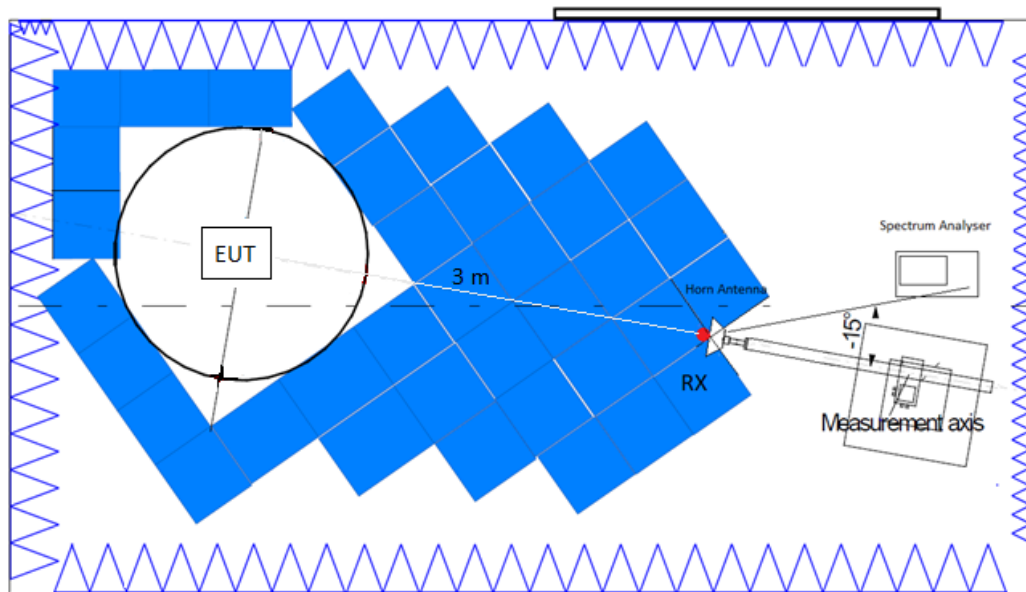
Measurements were made in both horizontal and vertical planes of polarization.

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

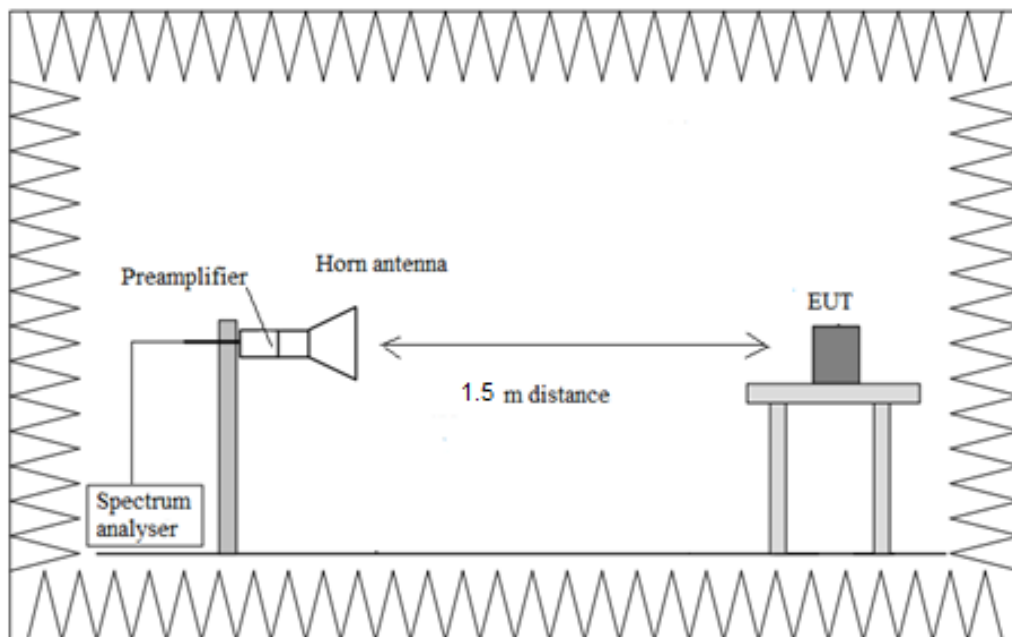
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup $f > 17$ GHz:



TEST CASES DETAILS

FCC 47 CFR Part 15.247 / RSS-247 Occupied Channel Bandwidth 99%

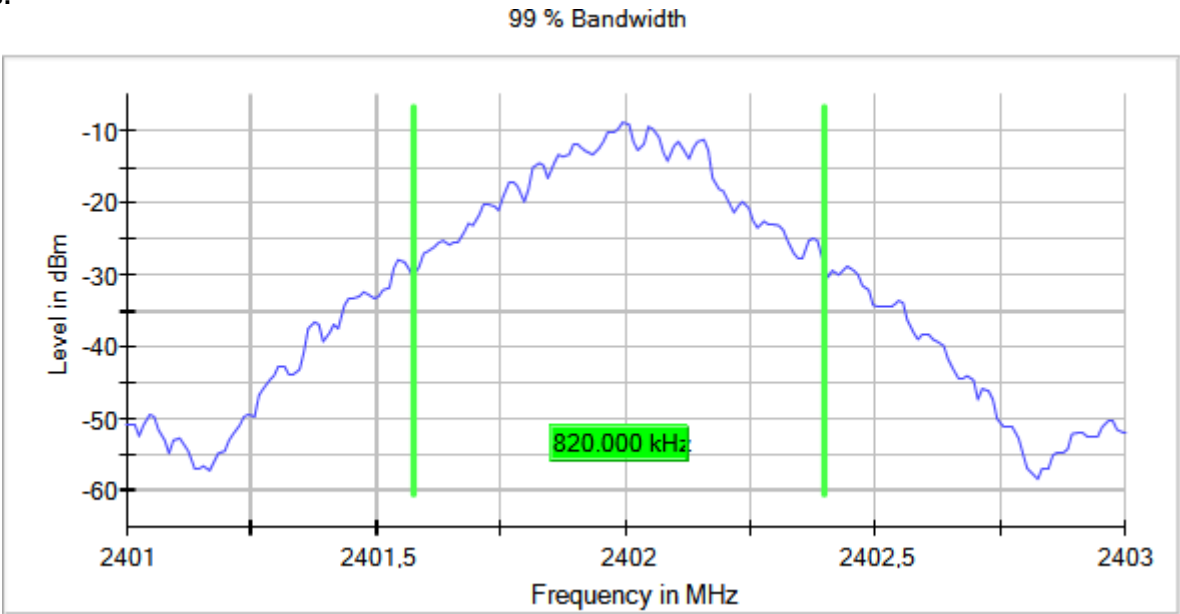
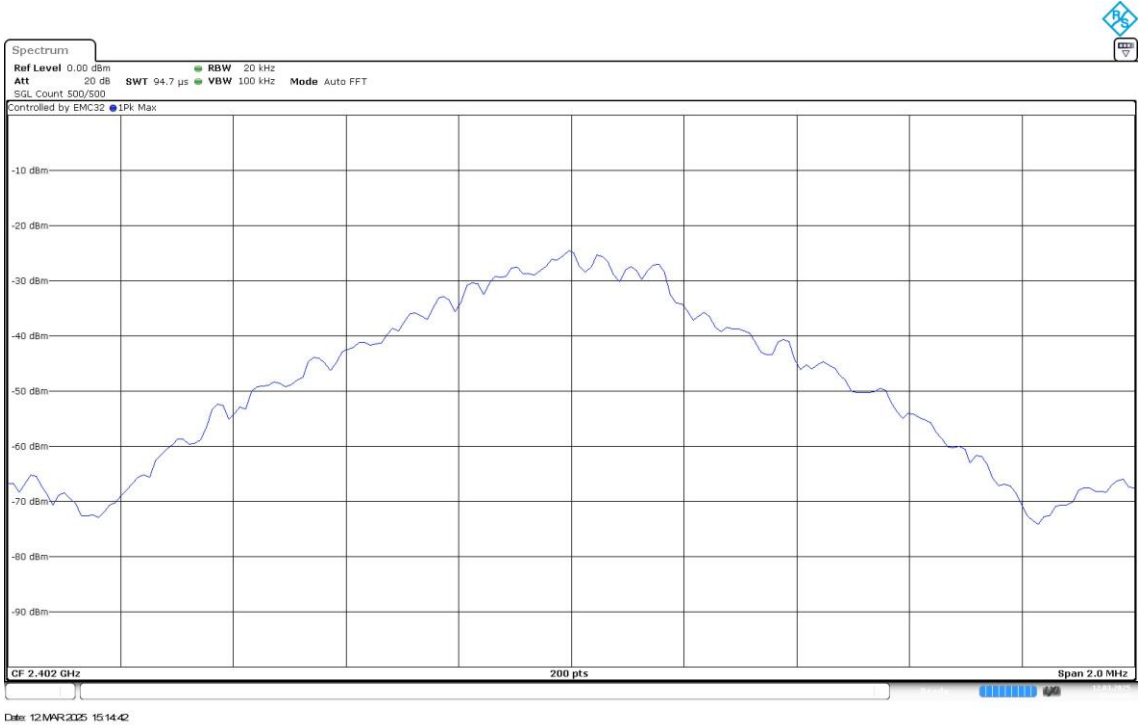
Modulation: BT (GFSK 1-DH5)

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	0.820
		2441.00000		0.830
		2480.00000		0.830

Attachments

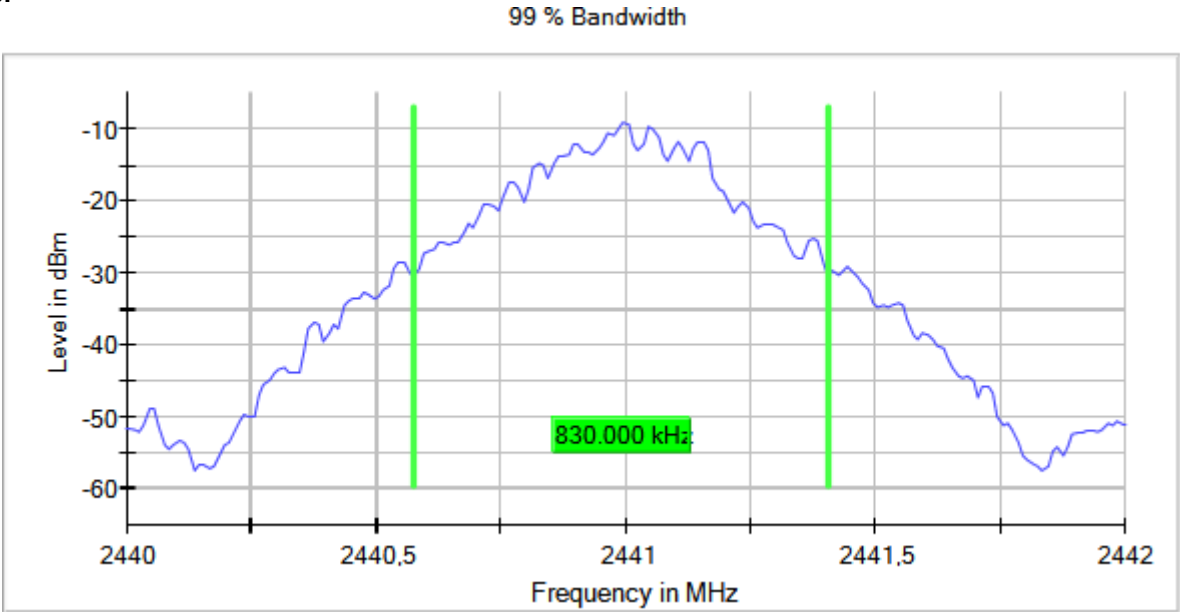
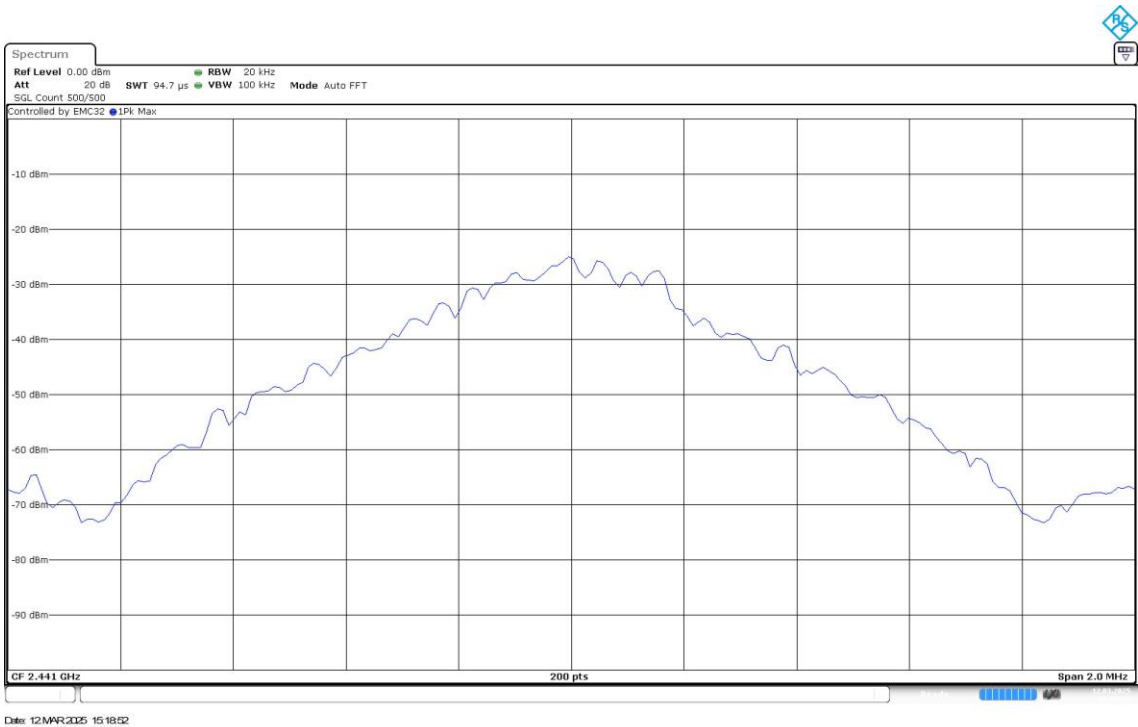
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



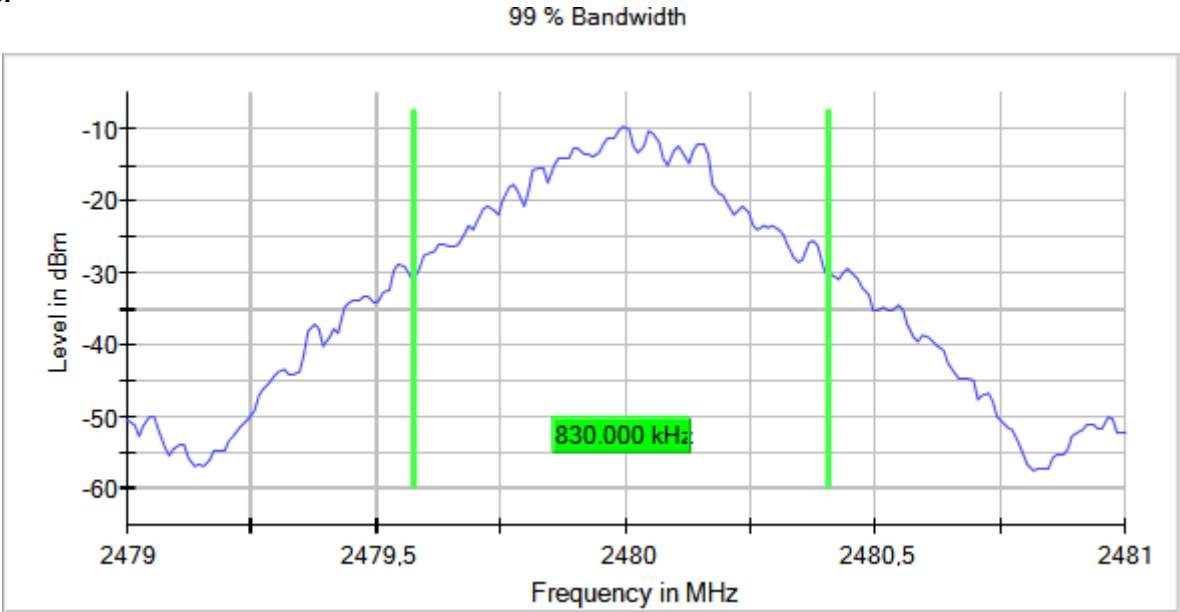
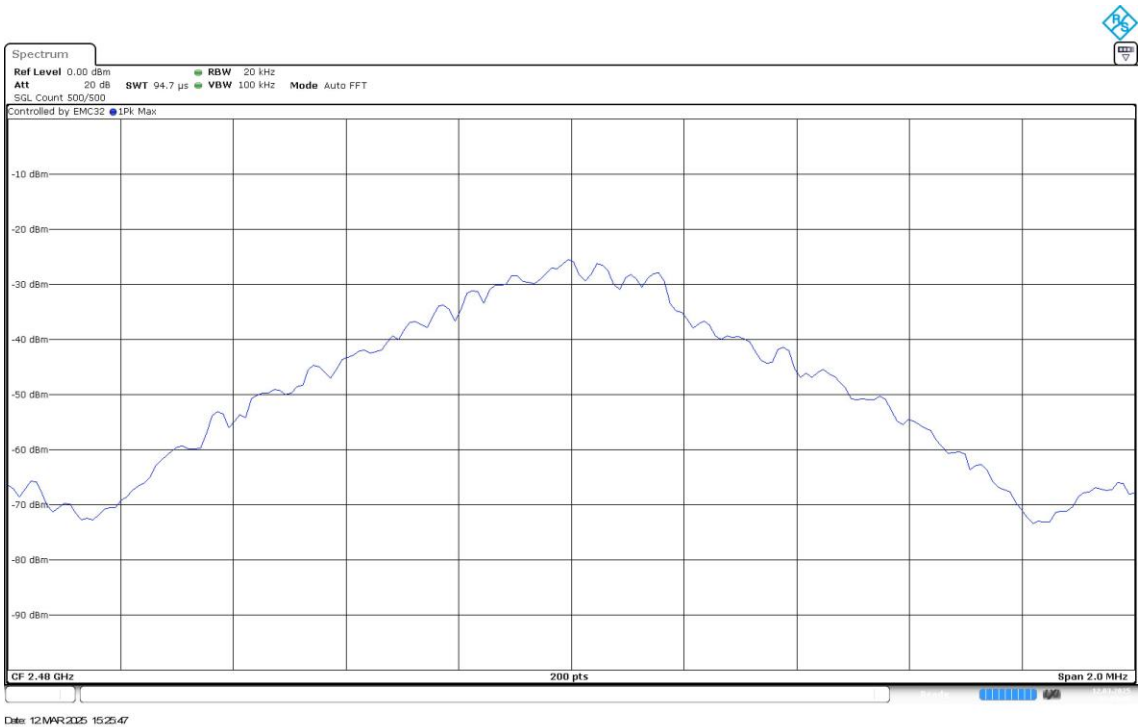
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2441.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



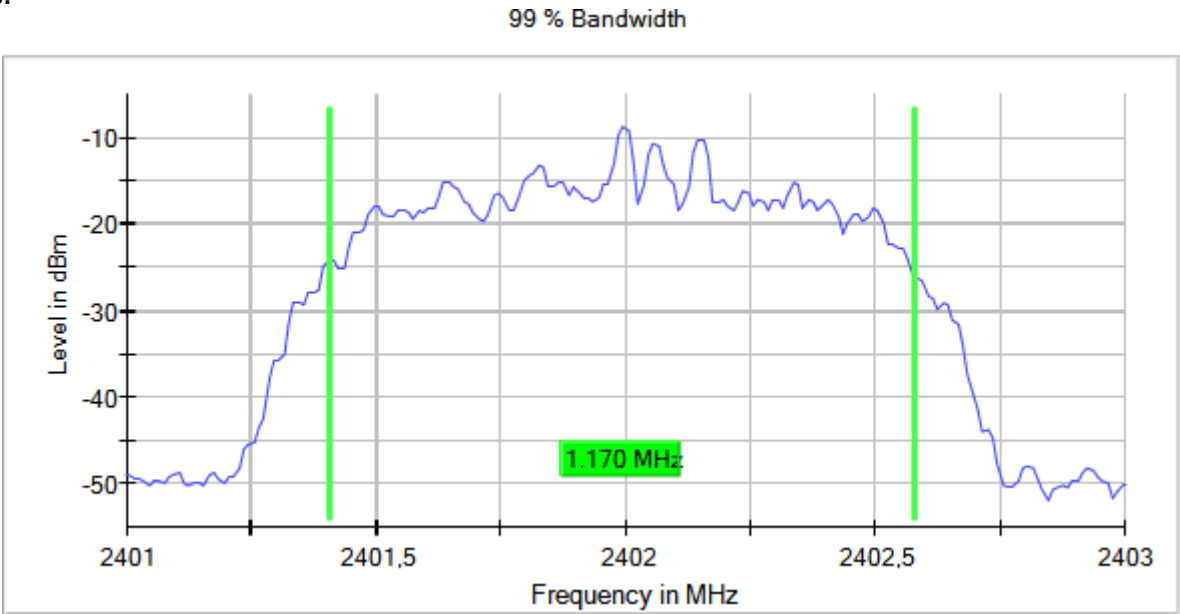
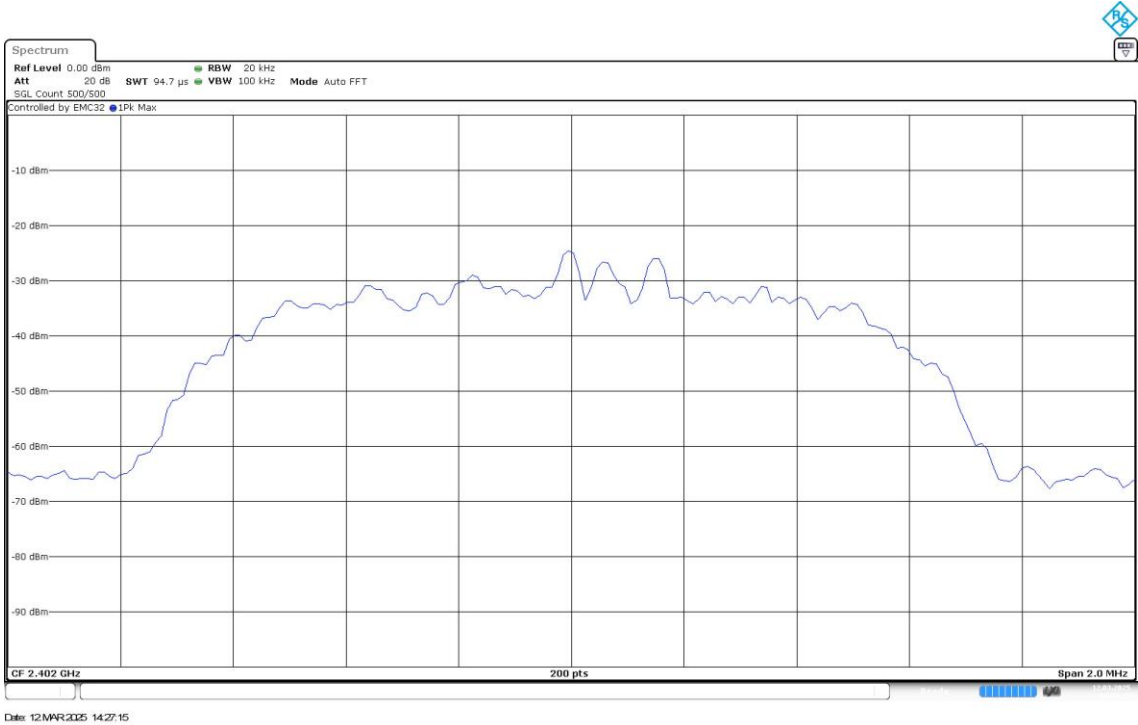
Modulation: BT (Pi/4 DQPSK 2-DH5)

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.170
		2441.00000		1.170
		2480.00000		1.170

Attachments

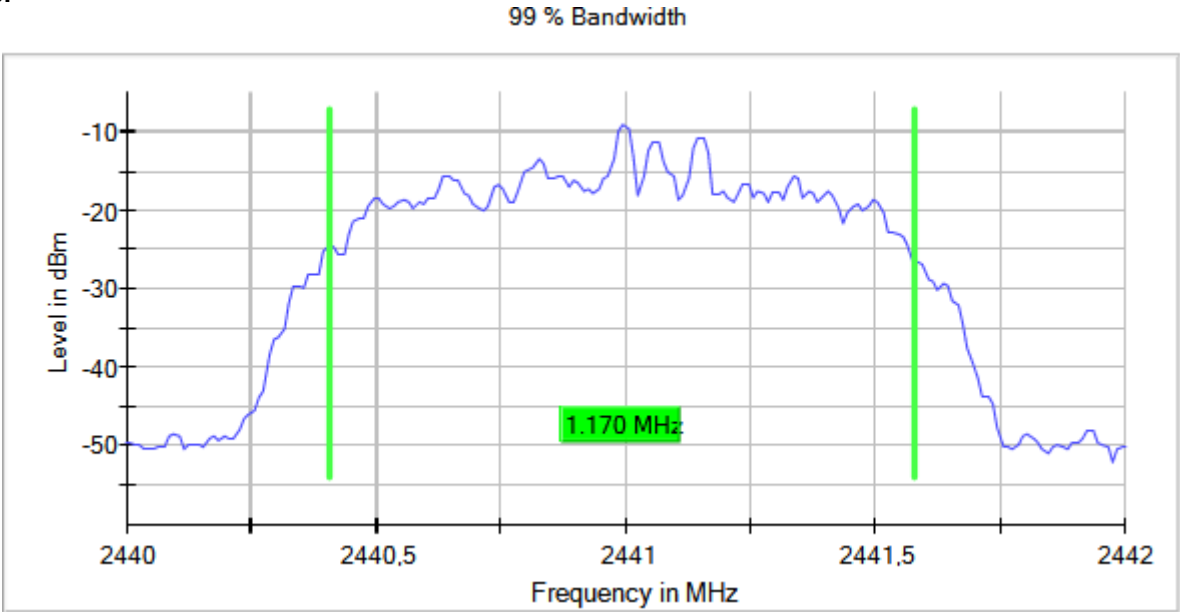
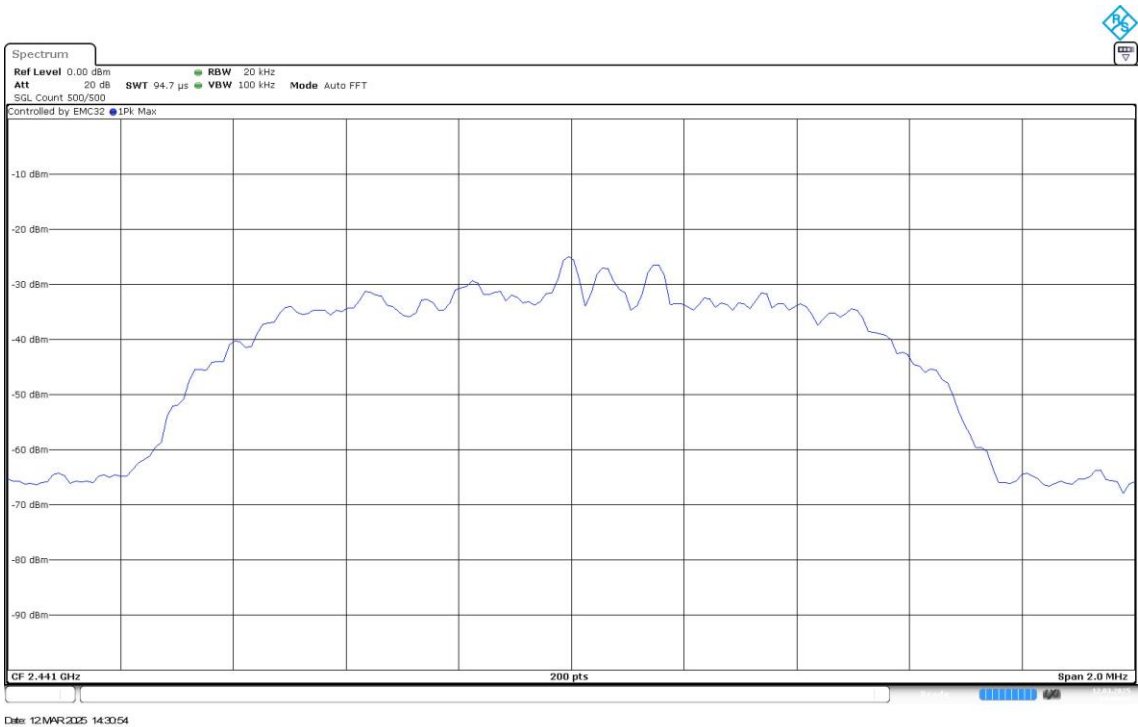
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



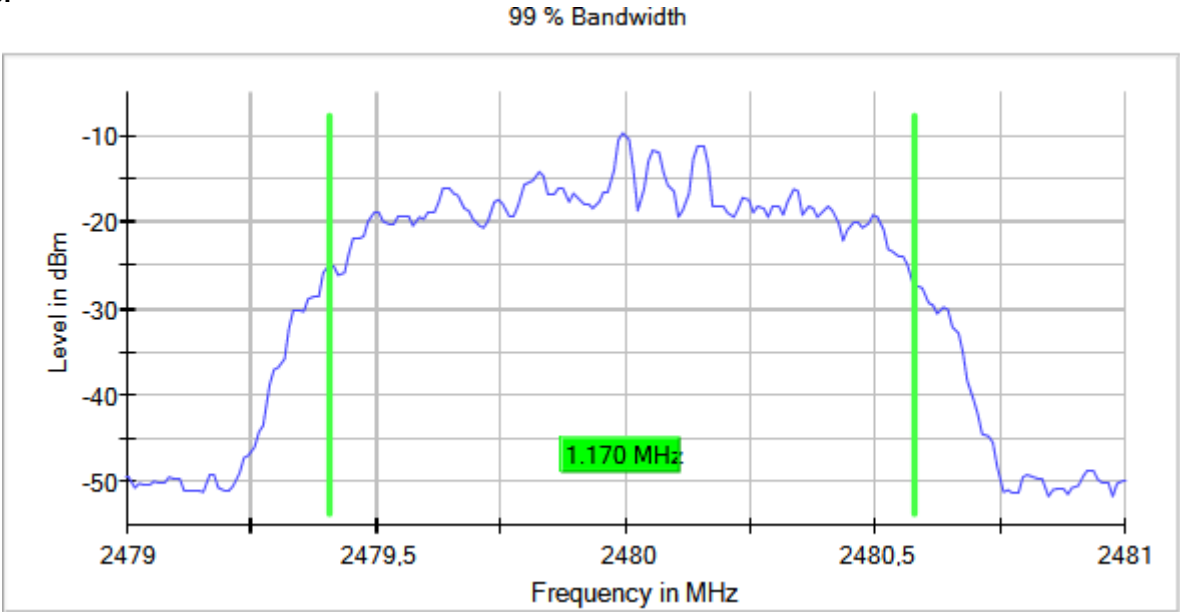
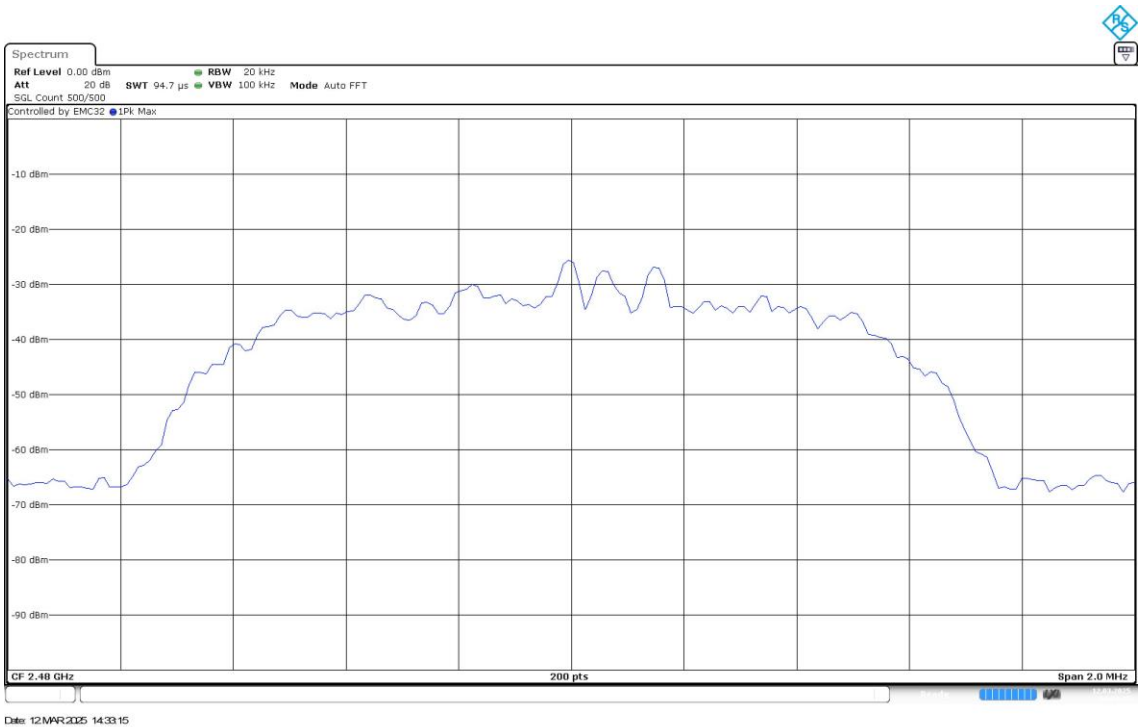
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2441.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2480.00000
MIMO Mode = SISO Active Port = 1

Images:



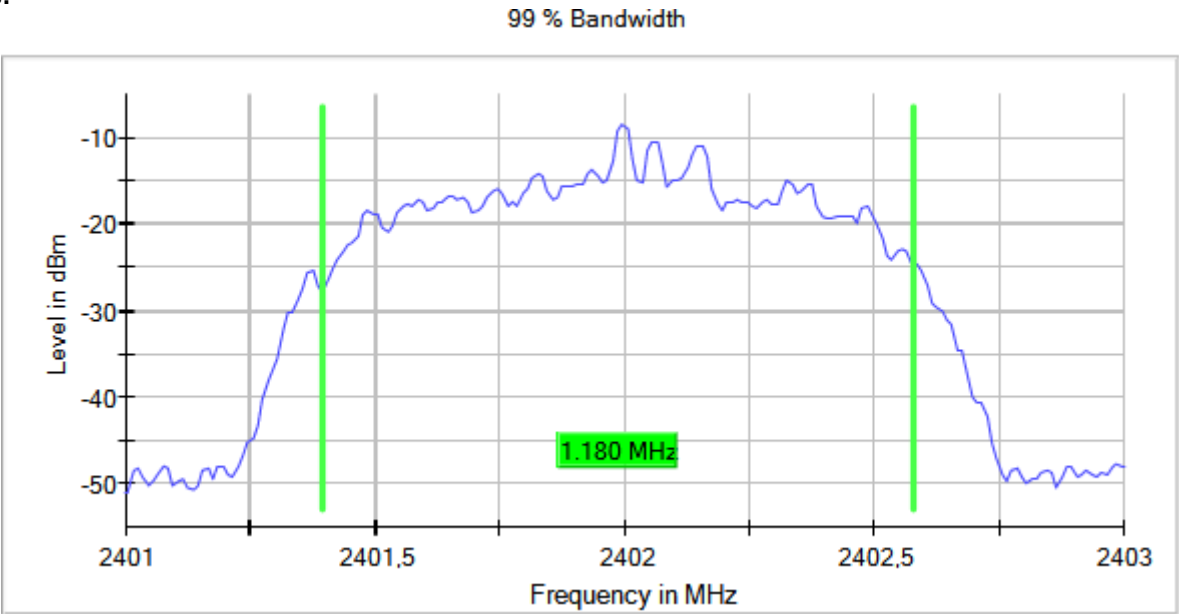
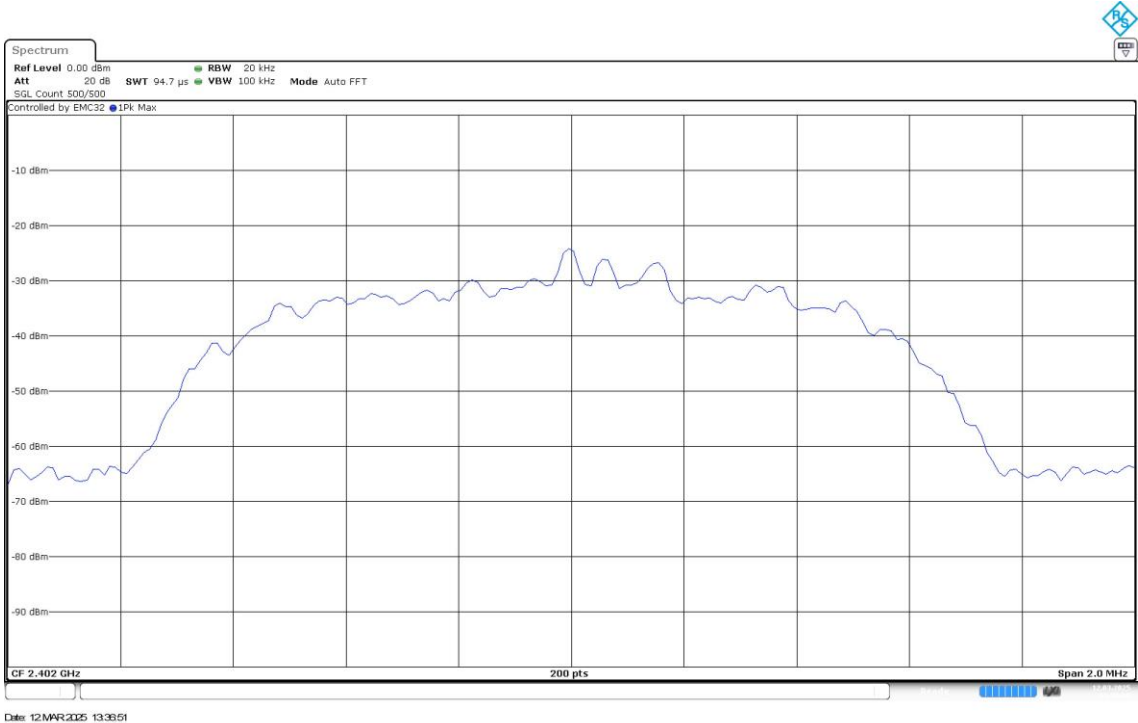
Modulation: BT (8DPSK 3-DH5)

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.180
		2441.00000		1.180
		2480.00000		1.180

Attachments

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2402.00000
MIMO Mode = SISO Active Port = 1

Images:



Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2441.00000
MIMO Mode = SISO Active Port = 1

Images:

