

ISED CABid: ES1909  
 Lab. Company Number: 4621A

Test Report No:  
 78120RRF.002A1

## Test Report

### USA FCC Part 15.247, 15.209

### CANADA RSS-247, RSS-Gen

(*) Identification of item tested	Wireless hearing instrument
(*) Trademark	GN Hearing
(*) Model and /or type reference	LHI12
Other identification of the product	FCC ID: X26LHI12 IC: 6941C-LHI12
(*) Features	Bluetooth LE, Proximity HW version: PCBA,LHI12,V1,C6.0 SW version: Dooku3
Applicant	GN Hearing A/S Lautrupbjerg 7, 2750 Ballerup, Denmark
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)	Antonio Jurado Industrial & Automotive EMC Lab. Manager
Date of issue	2024-07-19
Report template No	FDT08_24 (* ) "Data provided by the client"

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## Acronyms

Acronym ID	Acronym Description
BW	Bandwidth
Detector	Detector used
Ebw	Emission Bandwidth
Equipment	Equipment Type
Freq	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 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.

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## General conditions

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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.
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## Uncertainty

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

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

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

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

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

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

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

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

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

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

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

## Data provided by the client

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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 model LHI12 is a ITC Hearing instrument, capable of sound amplification. Also supports wireless connectivity to mobile phones and GN accessories.

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

## Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	78120B_15.1	Hearing aid in box Conducted	NX9ITE-DW-UP	2476105050	2024-04-17	Element Under Test
S/02	78120B_1.1	Hearing aid	NX9ITE-DW-UP	2476105048	2024-04-17	Element Under Test

Notes referenced to samples during the project:

Id	Type
S/01	Conducted tests.
S/02	Radiated tests.

## Test sample description

Ports.....:	Port name and description		Cable			
			Specified max length [m]	Attached during test	Shielded	Coupled to patient <sup>(3)</sup>
	-		-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supplementary information to the ports.....:	-					
Rated power supply .....	Voltage and Frequency		Reference poles			
			L1	L2	L3	N
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	DC: 1.45V Zinc Air battery, type 312				
Rated Power.....:	1.0 A					
Clock frequencies.....:	2.48 GHz (BLE). Internal logic operates at 32MHz.					
Other parameters .....	-					
Software version.....:	Dooku3					
Hardware version .....	PCBA,LHI12,V1,C6.0					
Dimensions in cm (W x H x D) ...:	-					
Mounting position .....	<input type="checkbox"/>	Table top equipment				
	<input type="checkbox"/>	Wall/Ceiling mounted equipment				
	<input type="checkbox"/>	Floor standing equipment				
	<input type="checkbox"/>	Hand-held equipment				
	<input checked="" type="checkbox"/>	Other: Body worn				
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		
	-		-	-		

<sup>(3)</sup> Only for Medical Equipment

## Identification of the client

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

## Testing period and place

<b>Test Location</b>	DEKRA Testing and Certification S.A.U.
<b>Date (start)</b>	2024-04-25
<b>Date (finish)</b>	2024-05-02

## Document history

Report number	Date	Description
78120RRF.002	2024-06-24	First release.
78120RRF.002A1	2024-07-19	First modification. A better description of the frequency range selected is added in page: 67.  This report cancels and replaces the previous 78120RRF.002.

## Environmental conditions

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

<b>Temperature</b>	Min. = 15 °C Max. = 35 °C
<b>Relative humidity</b>	Min. = 20 % Max. = 75 %

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

<b>Temperature</b>	Min. = 15 °C Max. = 35 °C
<b>Relative humidity</b>	Min. = 20 % Max. = 75 %

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

<b>Temperature</b>	Min. = 15 °C Max. = 35 °C
<b>Relative humidity</b>	Min. = 20 % Max. = 75 %

## Remarks and comments

The tests have been performed by the technical personnel: Alvaro Borrego Robles, Jia Hao Luo Chen, Ruben Mora Fernandez and Victoria Olmedo Villalba.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
10304	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2026-02-19
05862	EMI TEST RECEIVER 9kHz-7GHz	ESR7	ROHDE AND SCHWARZ	2025-02-15
07040	EXTENSION FOR OPEN SWITCH UNIT UP TO 40GHz	OSP-B157Wx	Rohde&Schwarz	2025-04-19
07763	HORN ANTENNA 1-18GHz	BBHA 9120D	SCHWARZBECK MESS-ELEKTRONIK	2026-01-16
09968	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2026-09-22
07769	PREAMPLIFIER 30dB 500MHz-18GHz	BBV 9718 C	SCHWARZBECK	2025-03-13
07039	Rohde&Schwarz	OSP-B157W8	ROHDE & SCHWARZ	2025-05-25
08130	SEMIANECHOIC ABSORBER LINED CHAMBER	P29419	ALBATROSS	N/A
08134	SHIELDED ROOM	P29419	ALBATROSS PROJECTS GMBH	N/A
08661	SHIELDED ROOM	-	SIEPEL	N/A
07794	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2025-04-21
08835	SIGNAL AND SPECTRUM ANALYZER 2Hz-50GHz	FSW50	ROHDE AND SCHWARZ	2025-02-08
04848	EMC/RF MEASUREMENT SOFTWARE	EMC32	ROHDE AND SCHWARZ	N/A
07549	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-24
07552	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-24
07550	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-24
07798	EMC/RF MEASUREMENT SOFTWARE	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 5.0 (2M, 1M), Proximity:

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

## Appendix A: Test results

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## TEST CONDITIONS

(\*): Data provided by the client.

### POWER SUPPLY (\*):

Vnominal: 1.3 Vdc  
Type of Power Supply: Battery.

### ANTENNA (\*):

Type of Antenna: Integral.  
Maximum Declared Antenna Gain: -5.2 dBi

### TEST FREQUENCIES (\*):

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

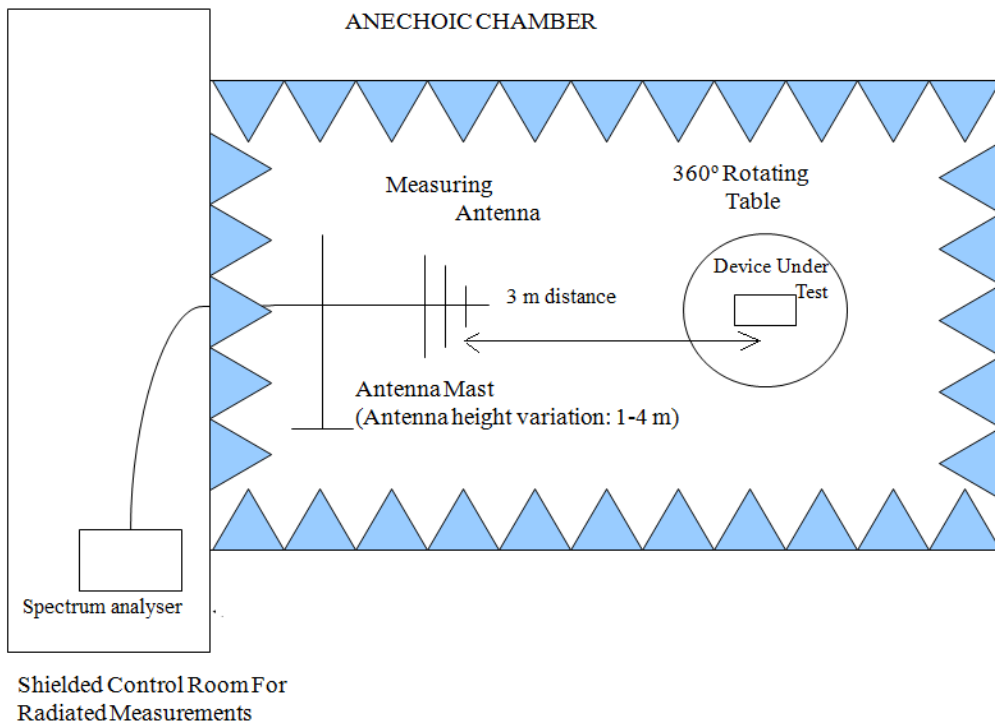
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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.

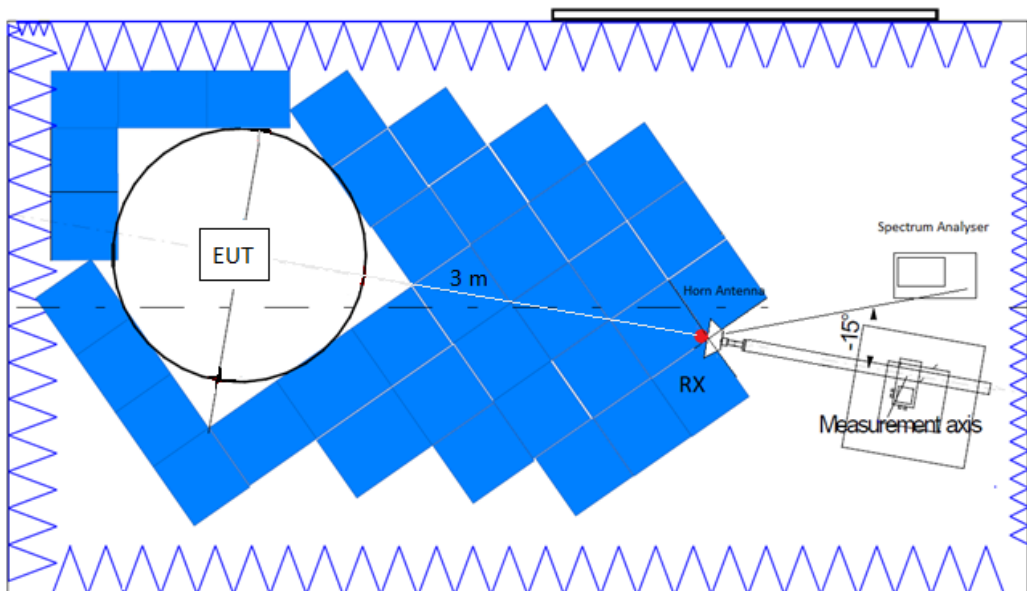
Measurements were made in both horizontal and vertical planes of polarization.

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.

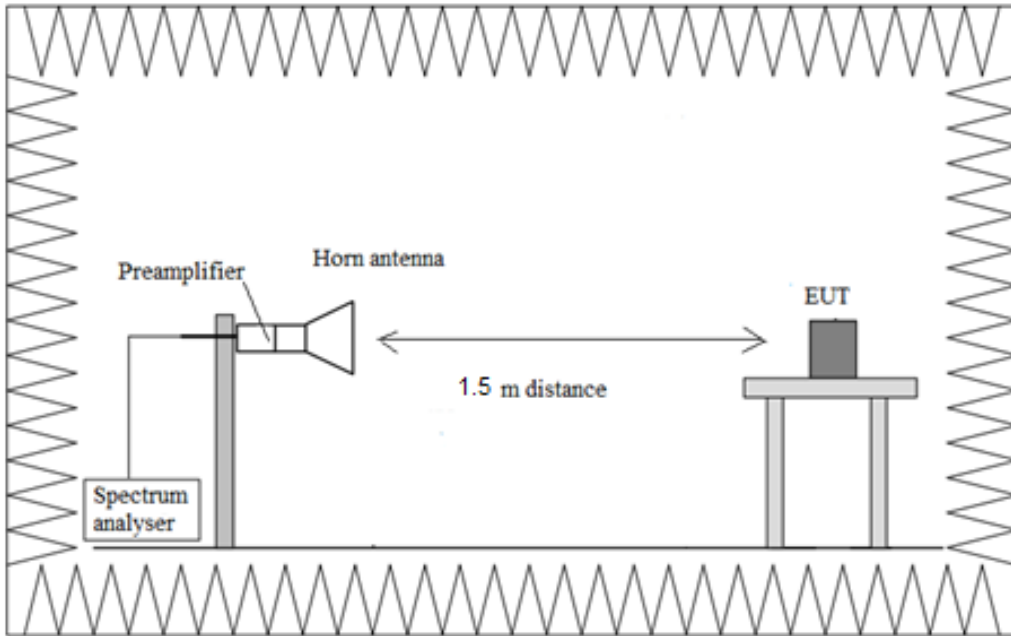
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup  $f > 17$  GHz:



## TEST CASES DETAILS

### 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 5.0 (GFSK 1 Mbit/s)

Mode: SISO

#### Results

BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
1	2402.00000	1	0.733
	2426.00000		0.792
	2480.00000		0.713

#### Verdict

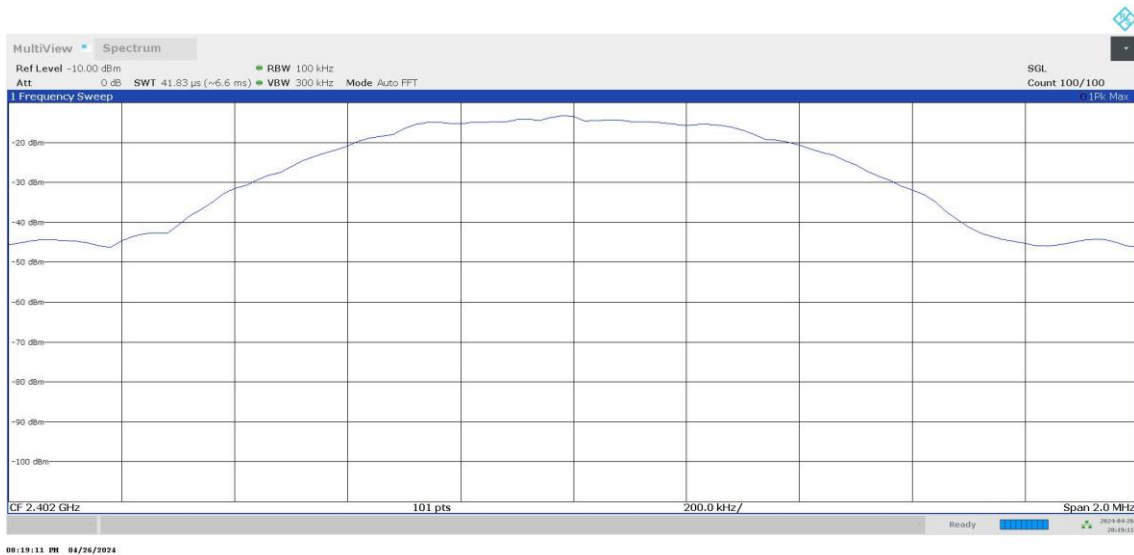
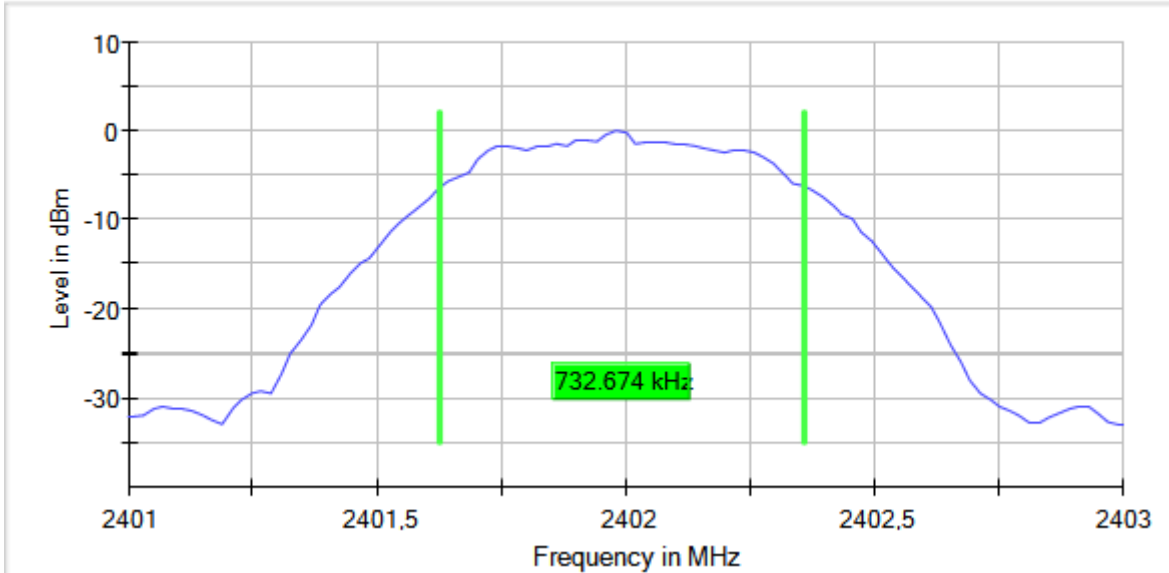
Pass

**Attachments**

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

**Images:**

6 dB Bandwidth

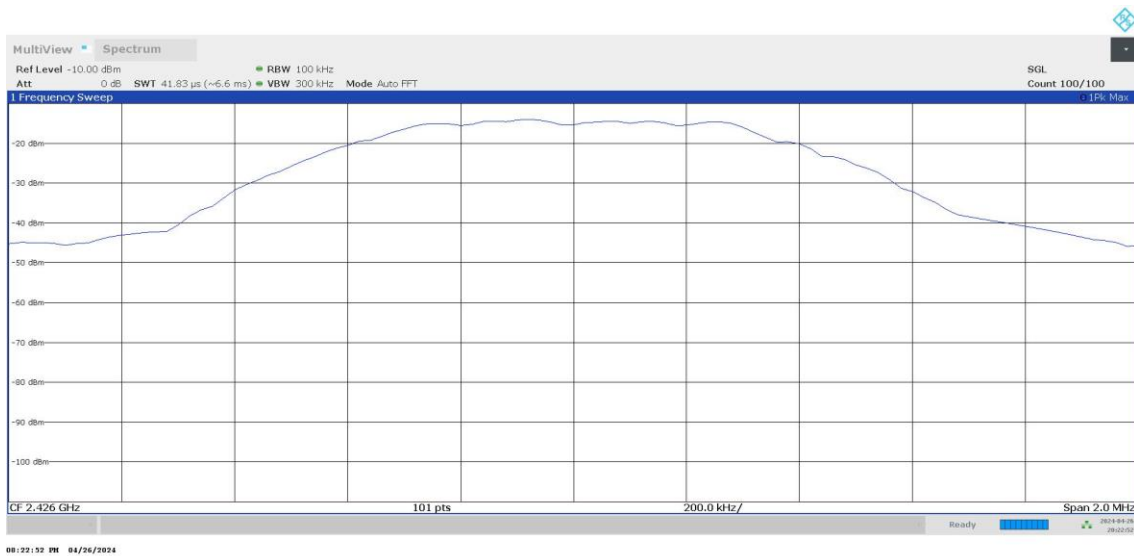
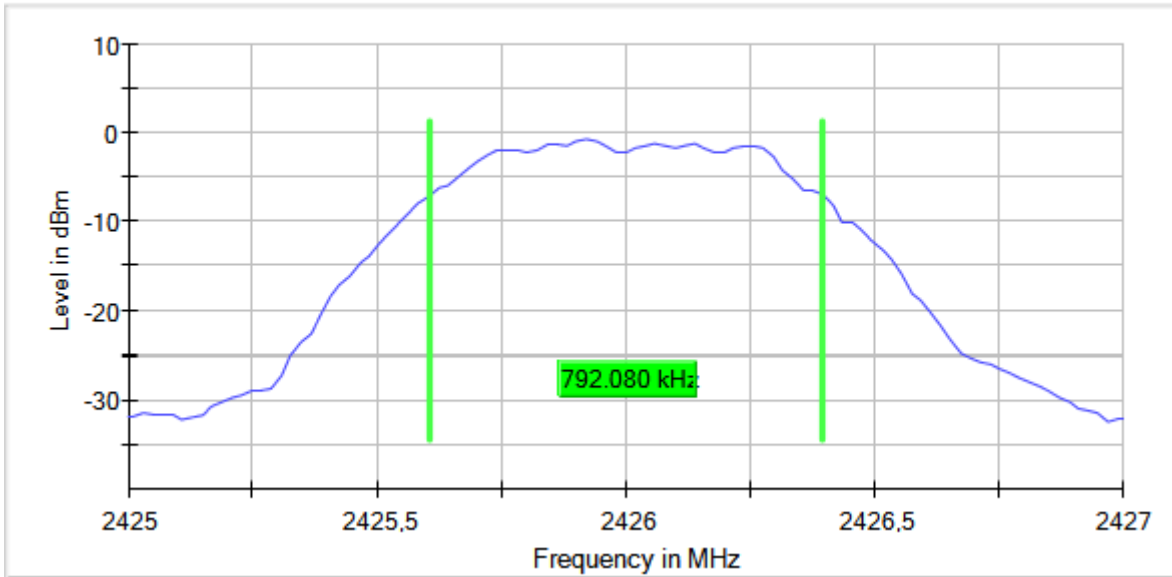




Bandwidth MHz = 1                      Modulation = BTLE 5.0 (GFSK 1 Mbit/s)  
Frequency MHz = 2426.00000      MIMO Mode = SISO  
Active Port = 1

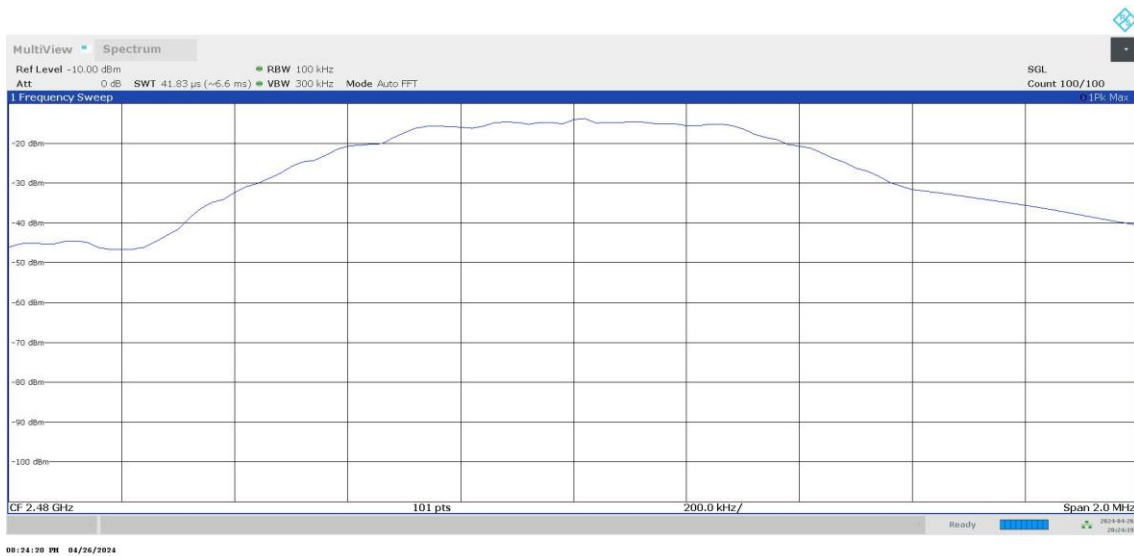
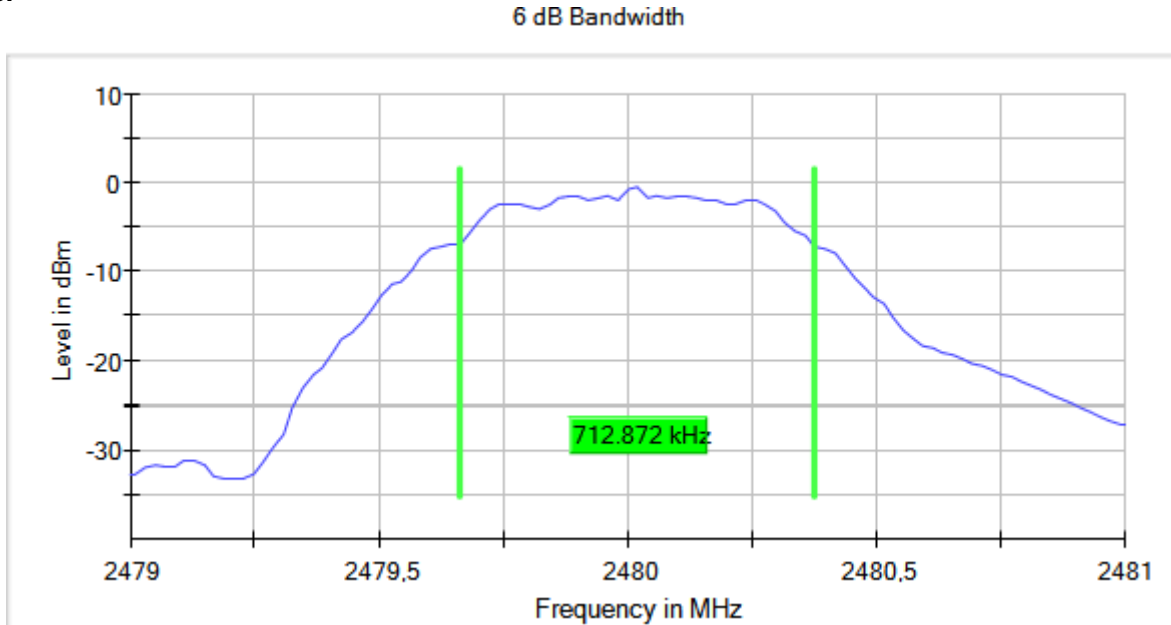
Images:

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:



Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Mode: SISO

**Results**

BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
2	2404.00000	1	1.228
	2440.00000		1.149
	2478.00000		1.149

**Verdict**

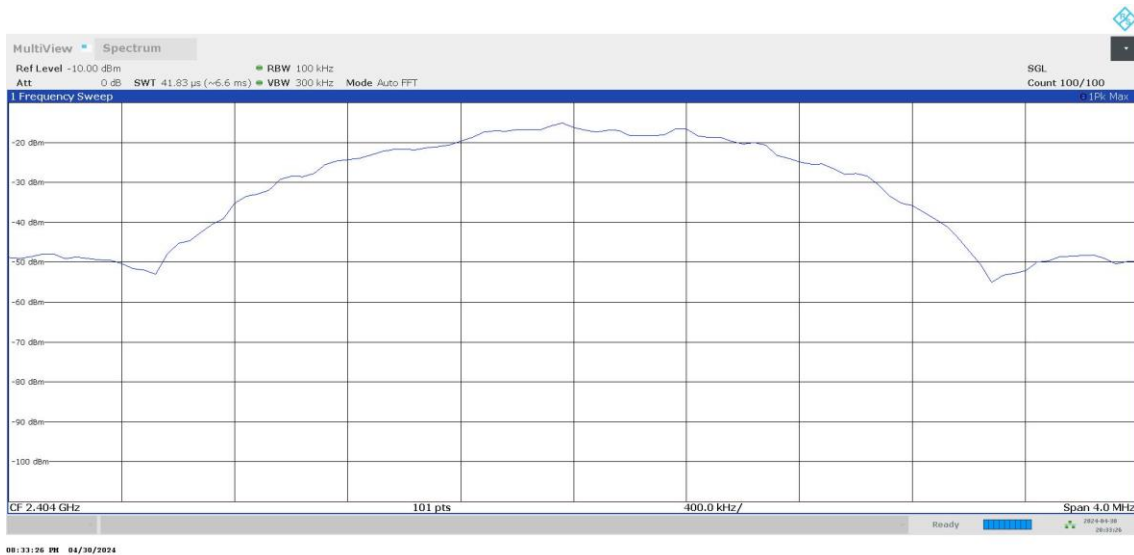
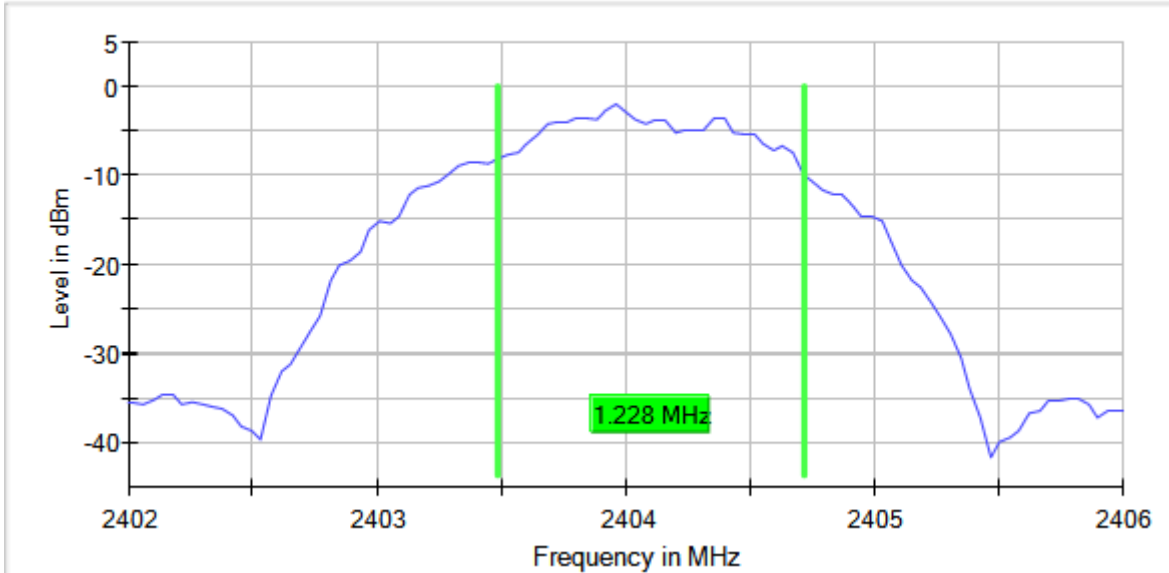
Pass

**Attachments**

Bandwidth MHz = 2                      Modulation = BTLE 5.0 (GFSK 2 Mbit/s)  
Frequency MHz = 2404.00000      MIMO Mode = SISO  
Active Port = 1

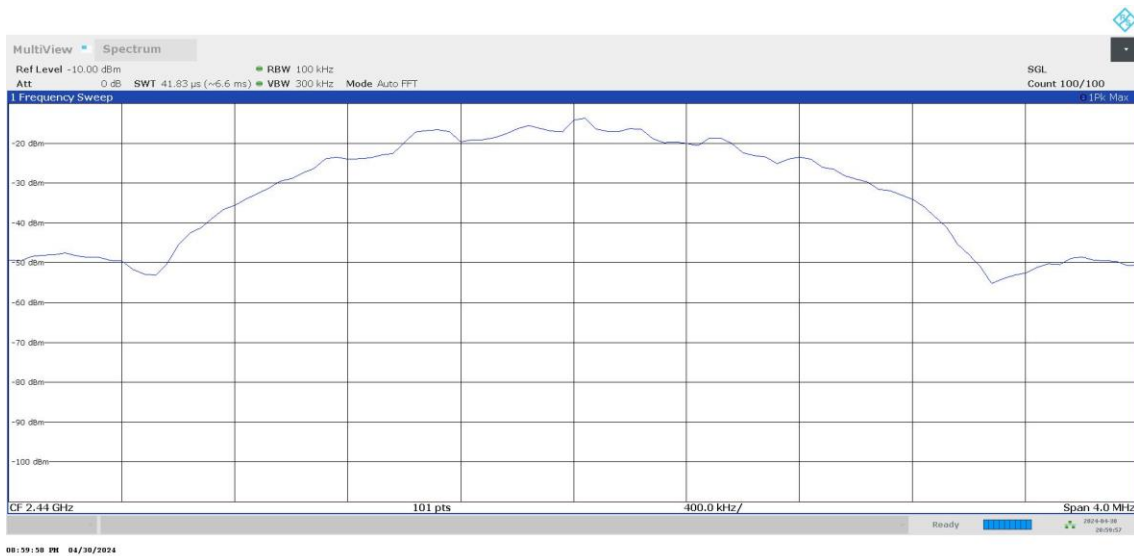
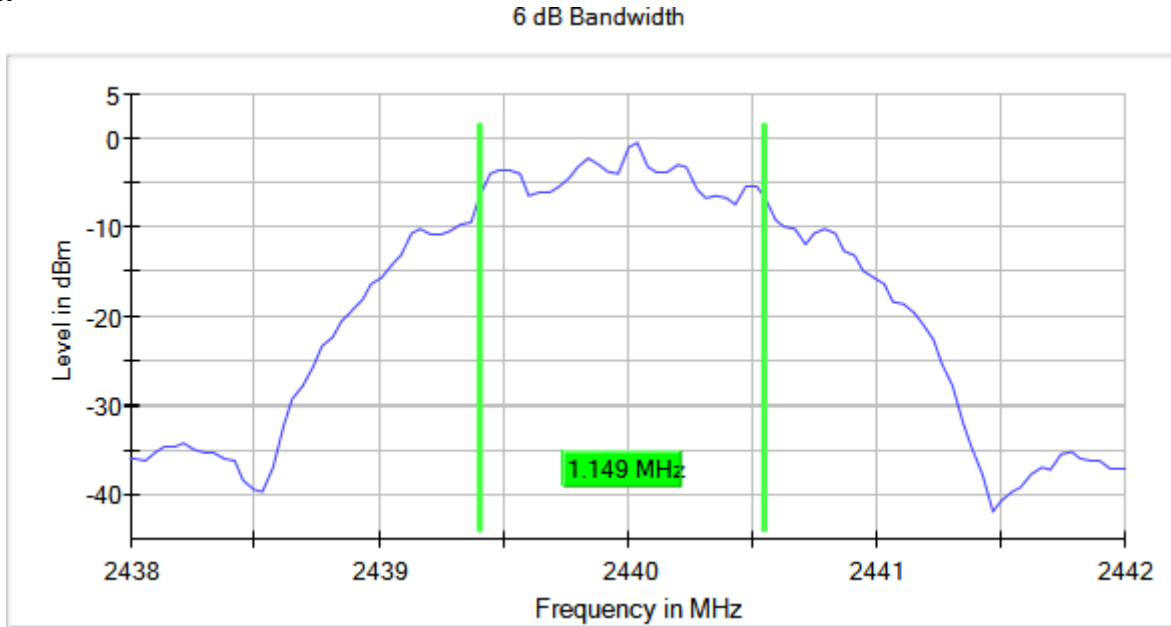
**Images:**

6 dB Bandwidth



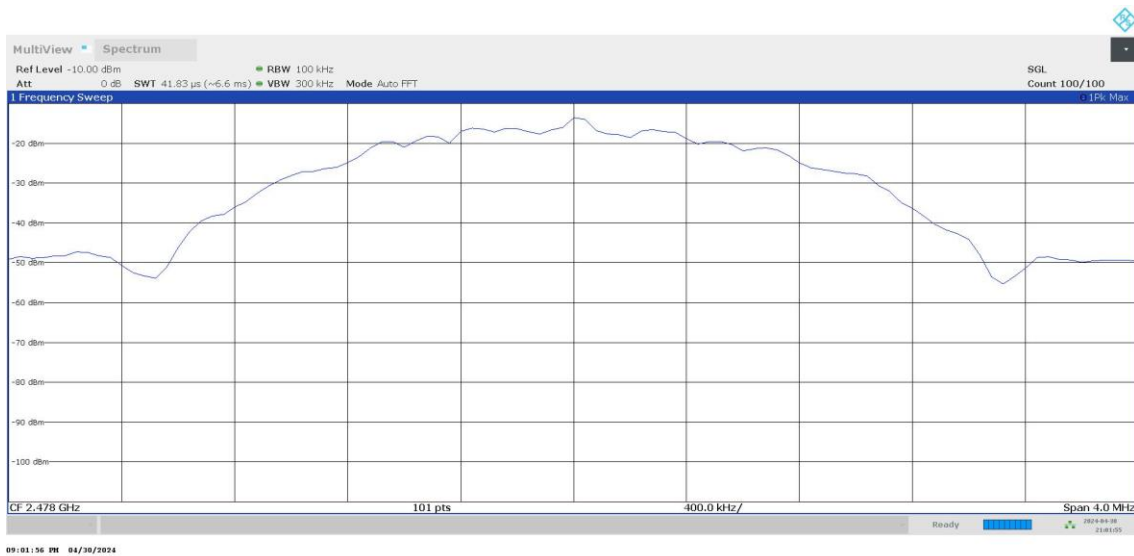
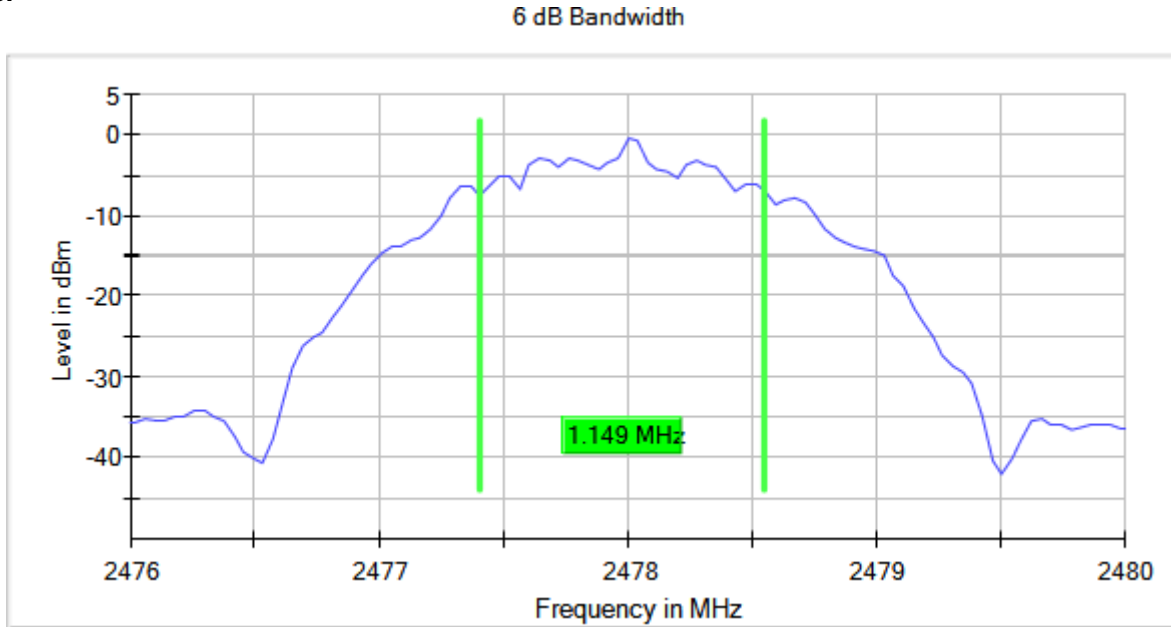
Bandwidth MHz = 2                      Modulation = BTLE 5.0 (GFSK 2 Mbit/s)  
Frequency MHz = 2440.00000      MIMO Mode = SISO  
Active Port = 1

Images:



Bandwidth MHz = 2                      Modulation = BTLE 5.0 (GFSK 2 Mbit/s)  
Frequency MHz = 2478.00000      MIMO Mode = SISO  
Active Port = 1

Images:



Modulation: Proximity

Mode: SISO

**Results**

BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
2	2402.00000	1	0.950
	2440.00000		0.713
	2480.00000		0.673

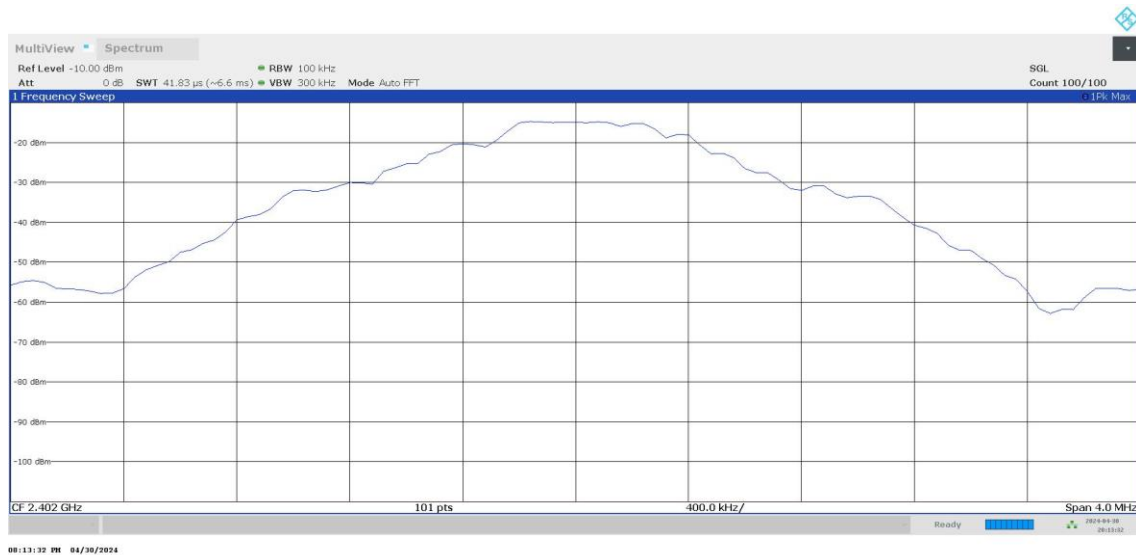
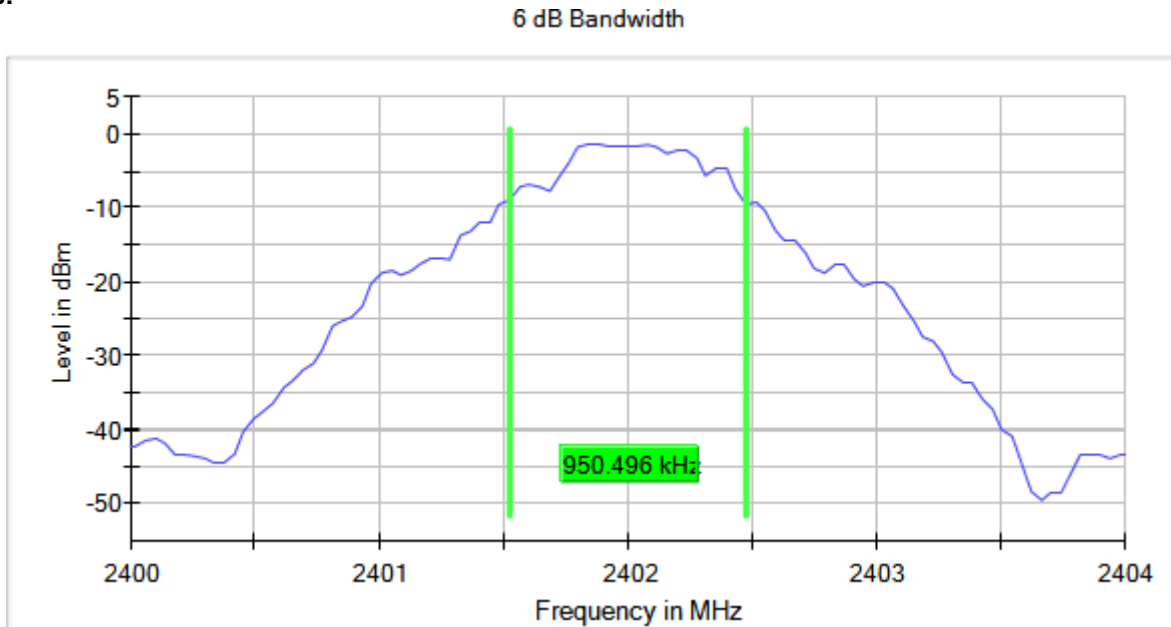
**Verdict**

Pass

### Attachments

Bandwidth MHz = 2                      Modulation = Proximity  
Frequency MHz = 2402.00000      MIMO Mode = SISO  
Active Port = 1

### Images:

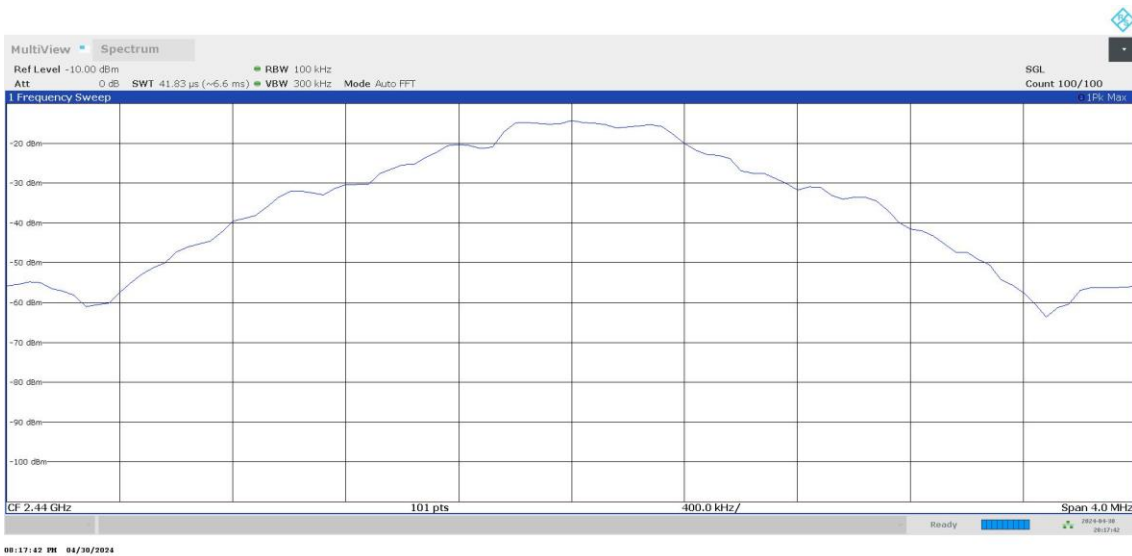
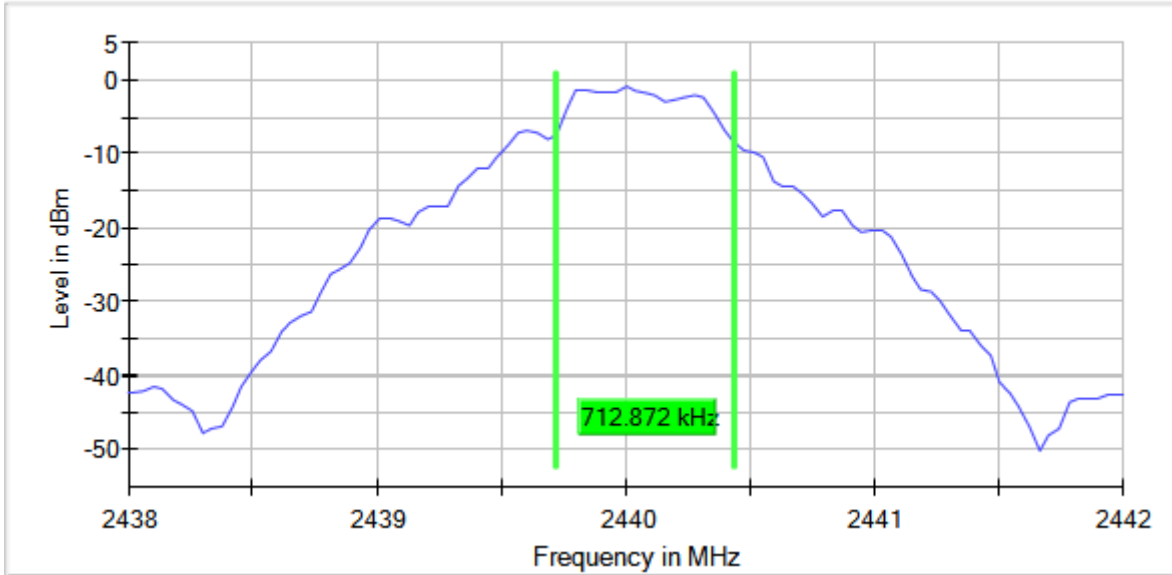




Bandwidth MHz = 2                      Modulation = Proximity  
Frequency MHz = 2440.00000      MIMO Mode = SISO  
Active Port = 1

Images:

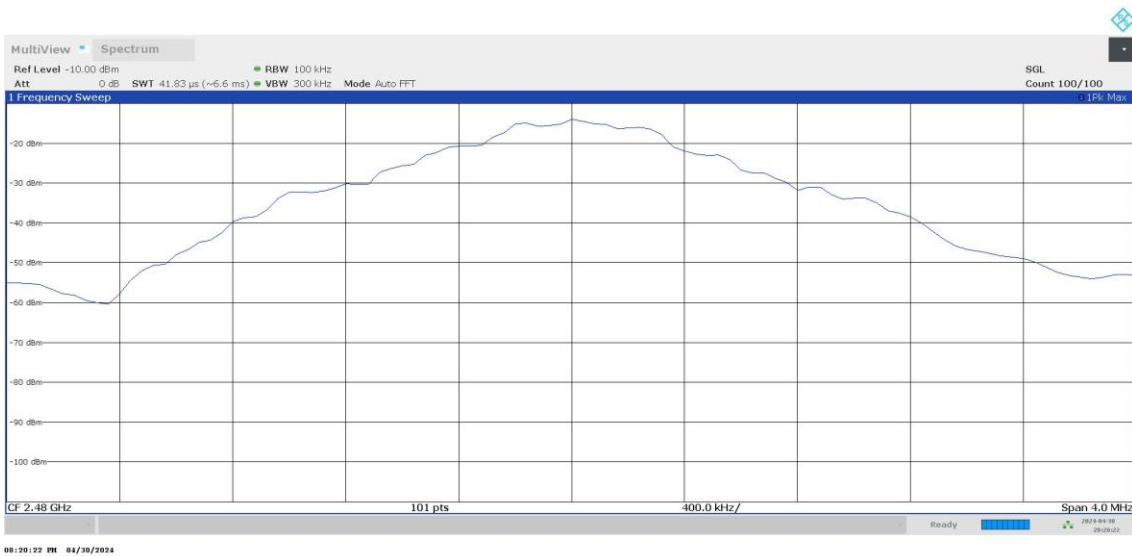
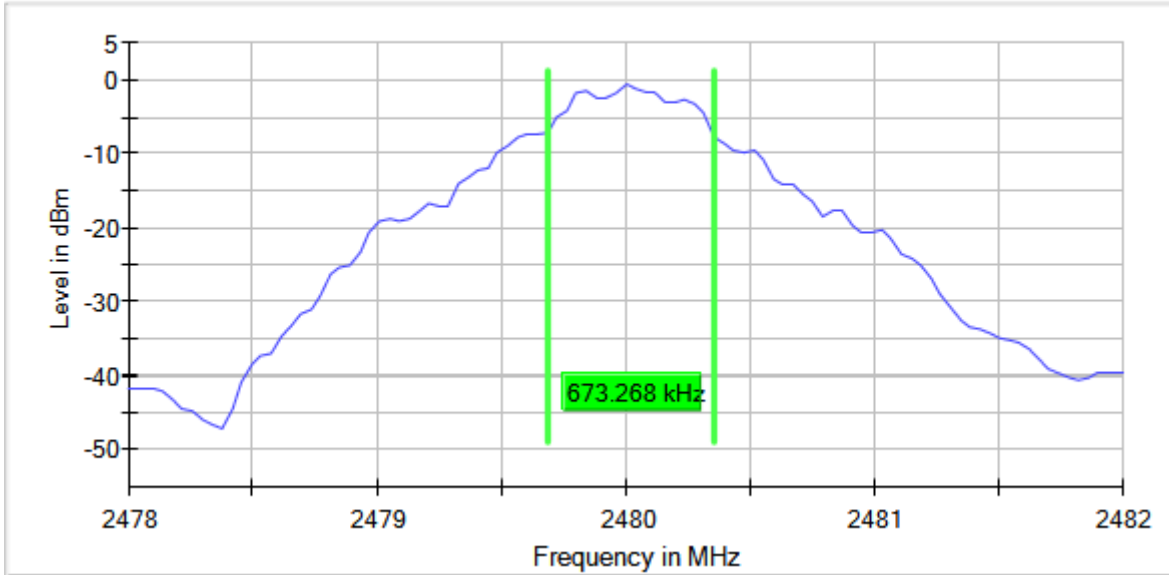
6 dB Bandwidth



Bandwidth MHz = 2                      Modulation = Proximity  
Frequency MHz = 2480.00000      MIMO Mode = SISO  
Active Port = 1

Images:

6 dB Bandwidth



## 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 5.0 (GFSK 1 Mbit/s)

Mode: SISO

### Results

Equipment	BW (MHz)	Freq (MHz)	Port	PSD (dBm)
Digital Transmission System (DTS)	1	2402.00000	1	-8.26
		2426.00000		-8.85
		2480.00000		-8.52

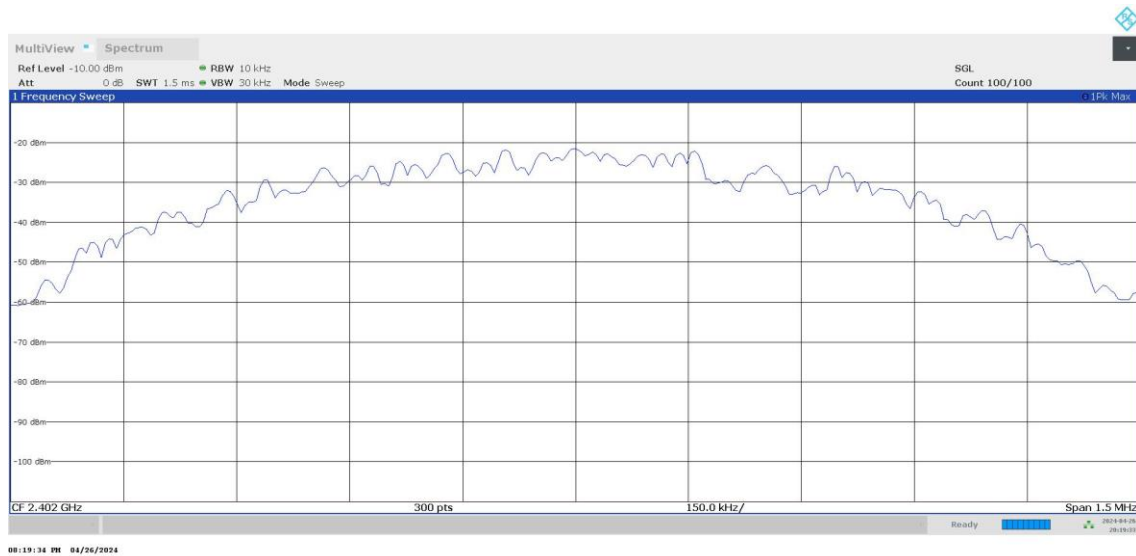
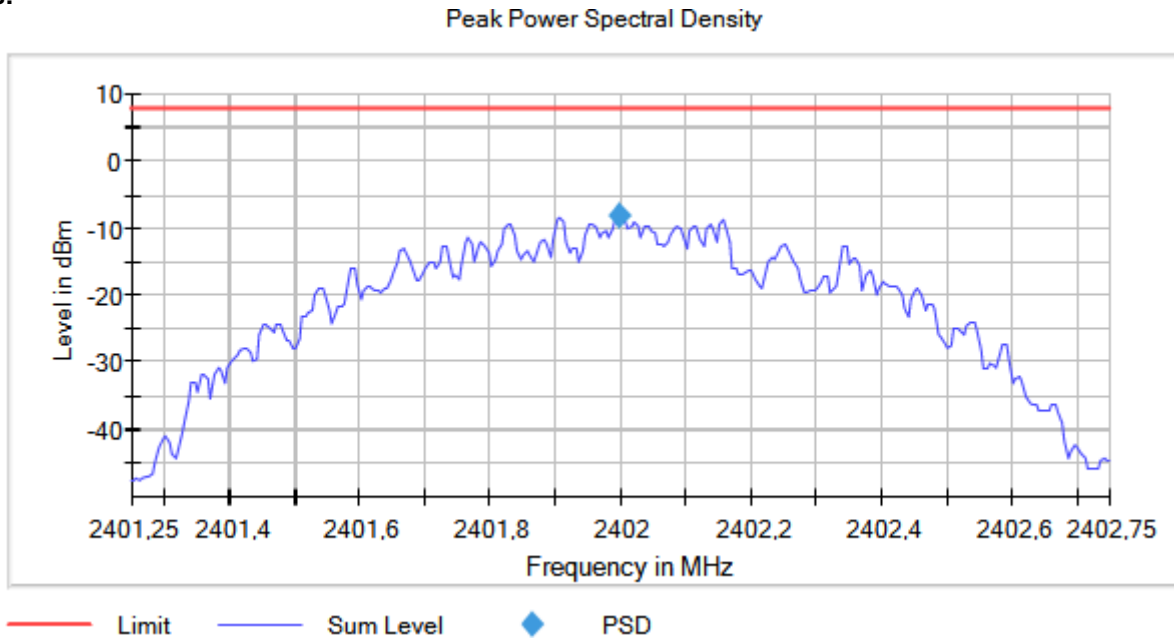
### Verdict

Pass

### Attachments

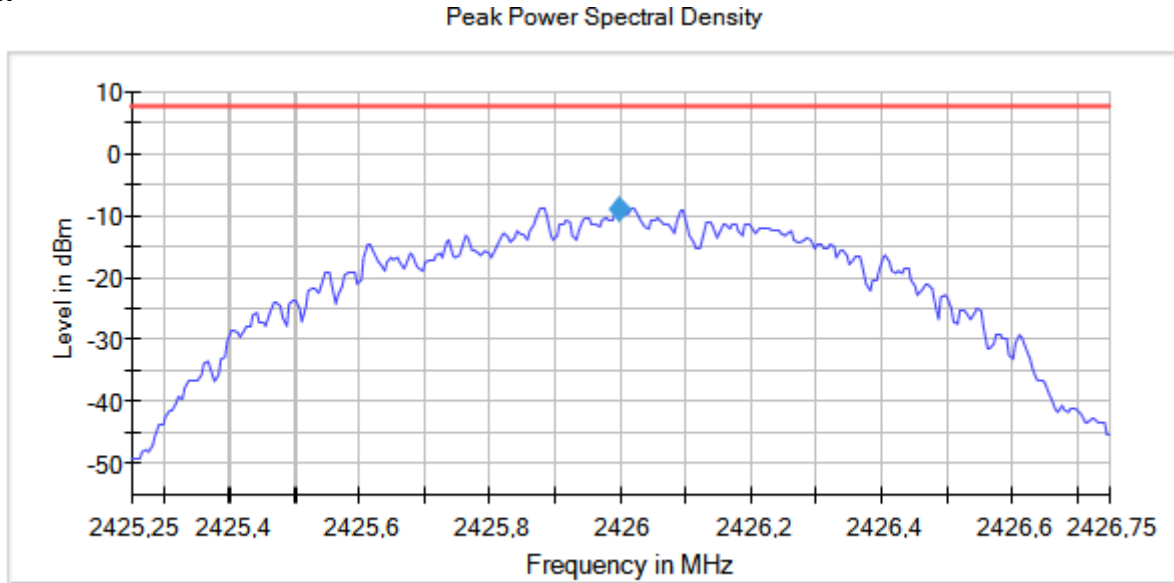
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 1  
Modulation = BTLE 5.0 (GFSK 1 Mbit/s)                      Frequency MHz = 2402.00000  
MIMO Mode = SISO    Active Port = 1

### Images:

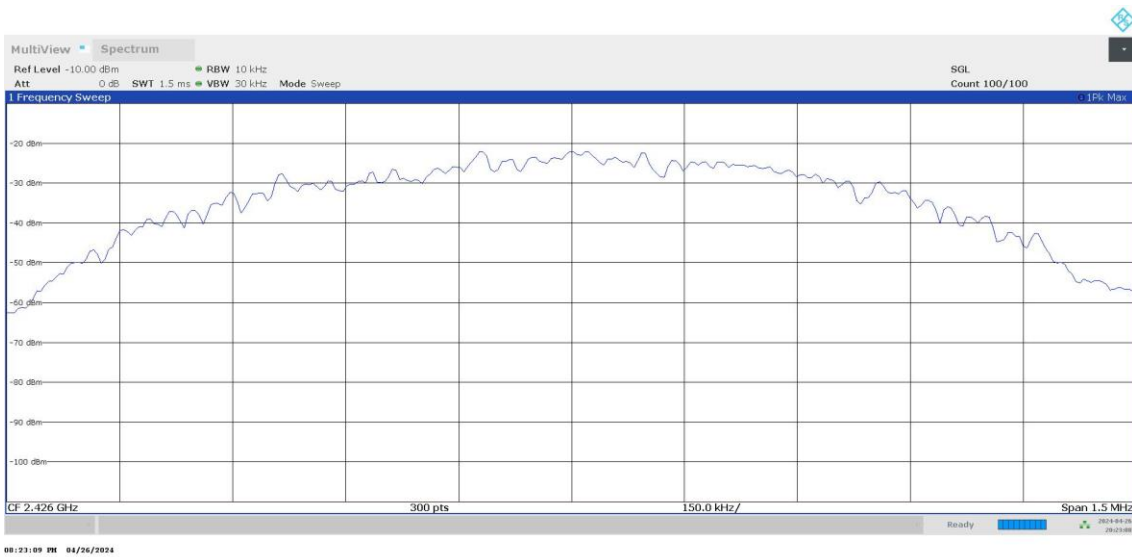


Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 1  
Modulation = BTLE 5.0 (GFSK 1 Mbit/s)                      Frequency MHz = 2426.00000  
MIMO Mode = SISO    Active Port = 1

Images:

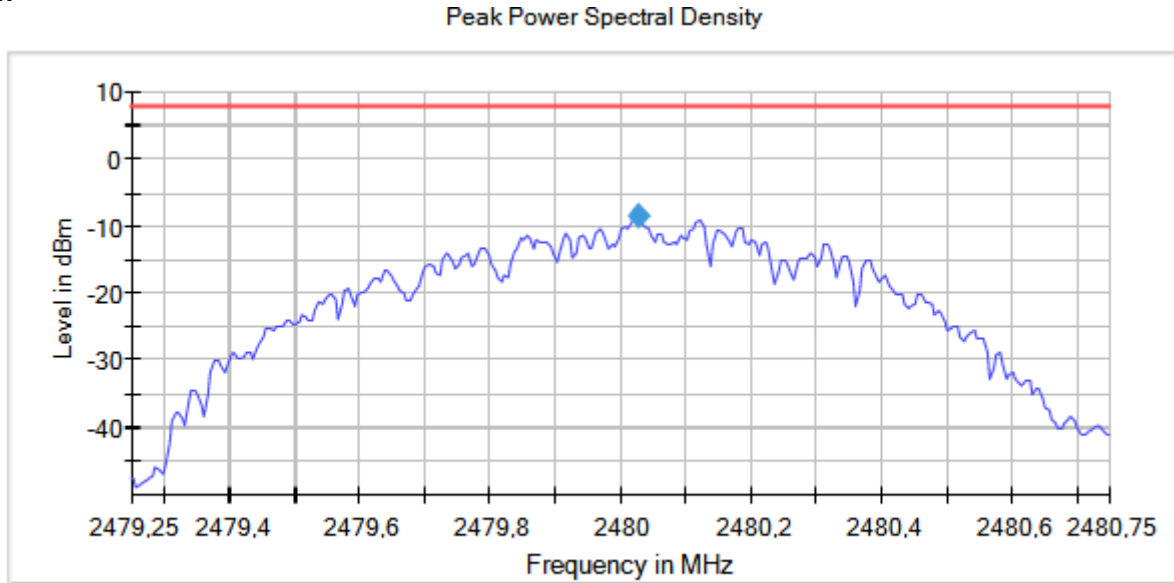


— Limit    — Sum Level    ◆ PSD

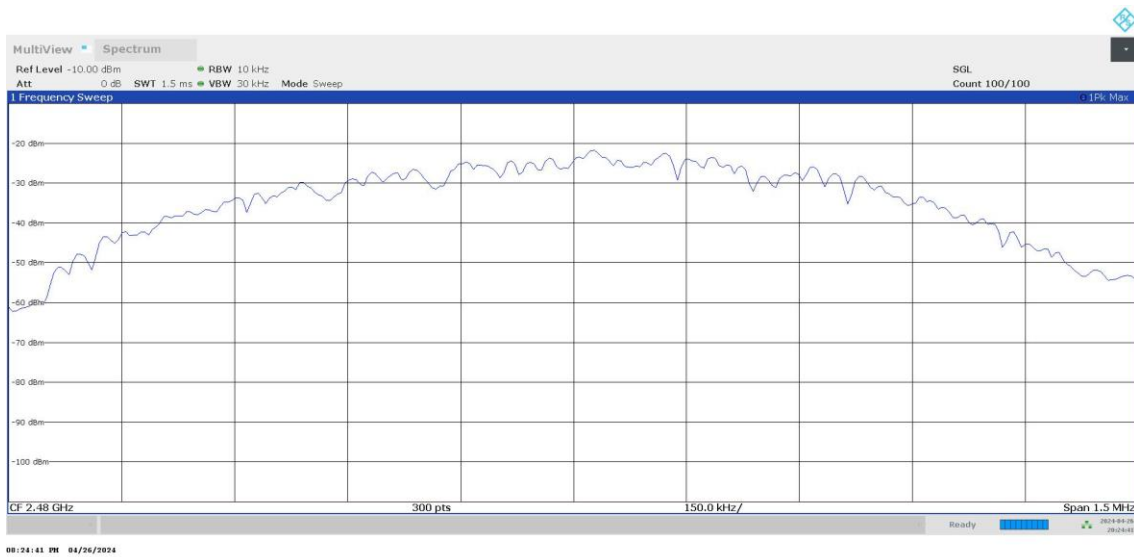


Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 1  
Modulation = BTLE 5.0 (GFSK 1 Mbit/s)                      Frequency MHz = 2480.00000  
MIMO Mode = SISO    Active Port = 1

Images:



— Limit    — Sum Level    ◆ PSD



Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	PSD (dBm)
Digital Transmission System (DTS)	2	2404.00000	1	-9.10
		2440.00000		-9.51
		2478.00000		-9.83

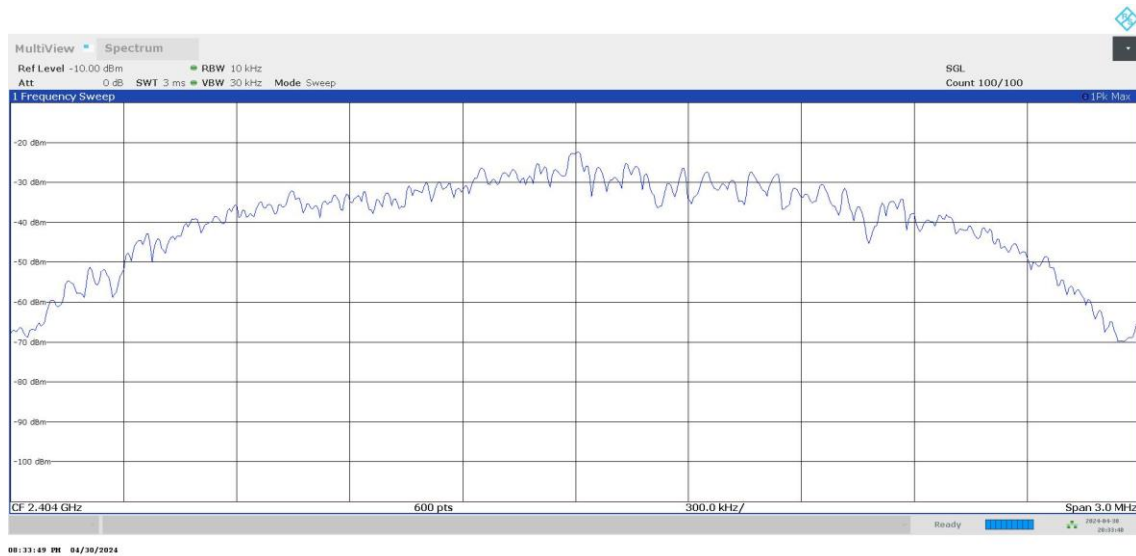
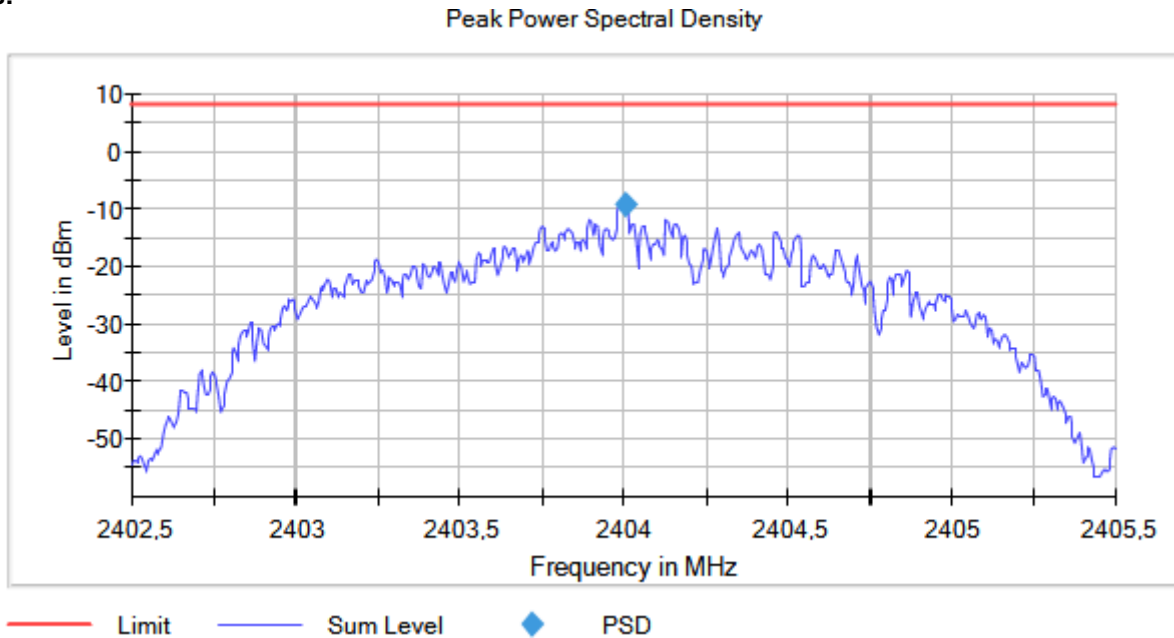
**Verdict**

Pass

### Attachments

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2404.00000  
MIMO Mode = SISO    Active Port = 1

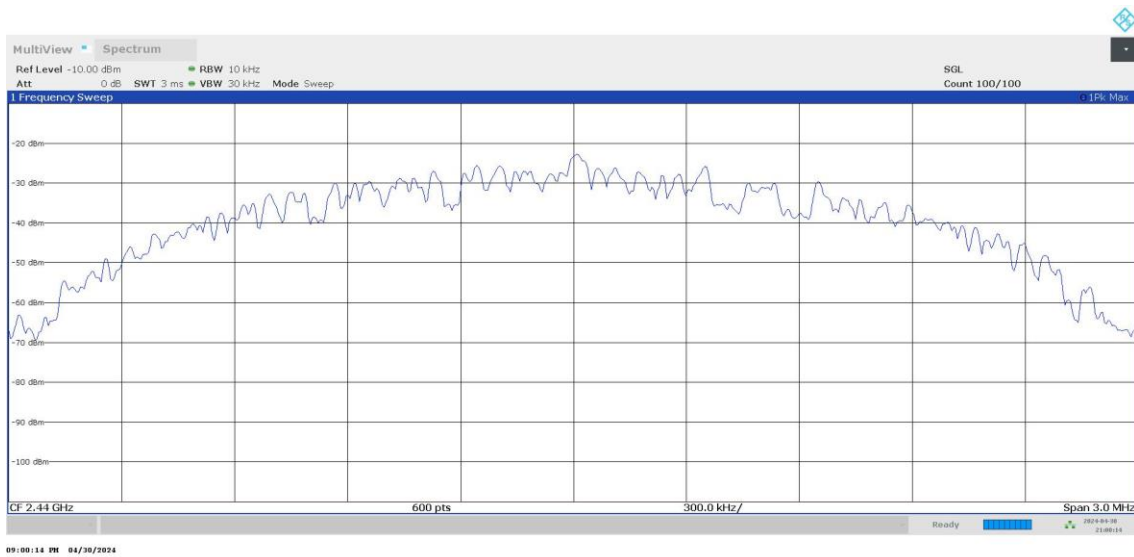
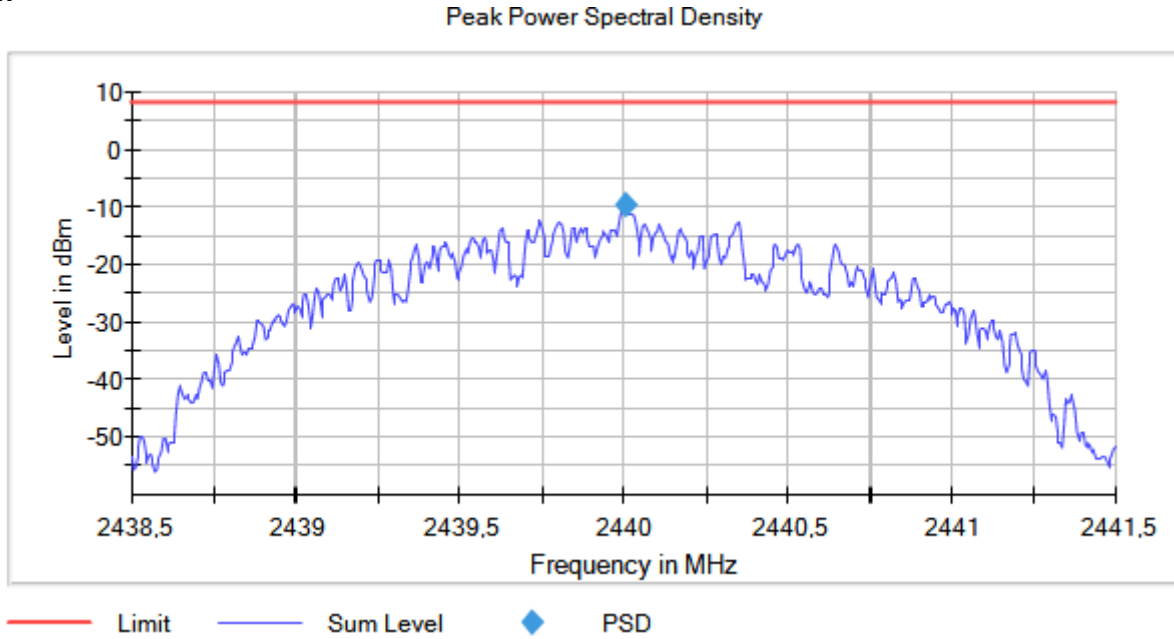
### Images:





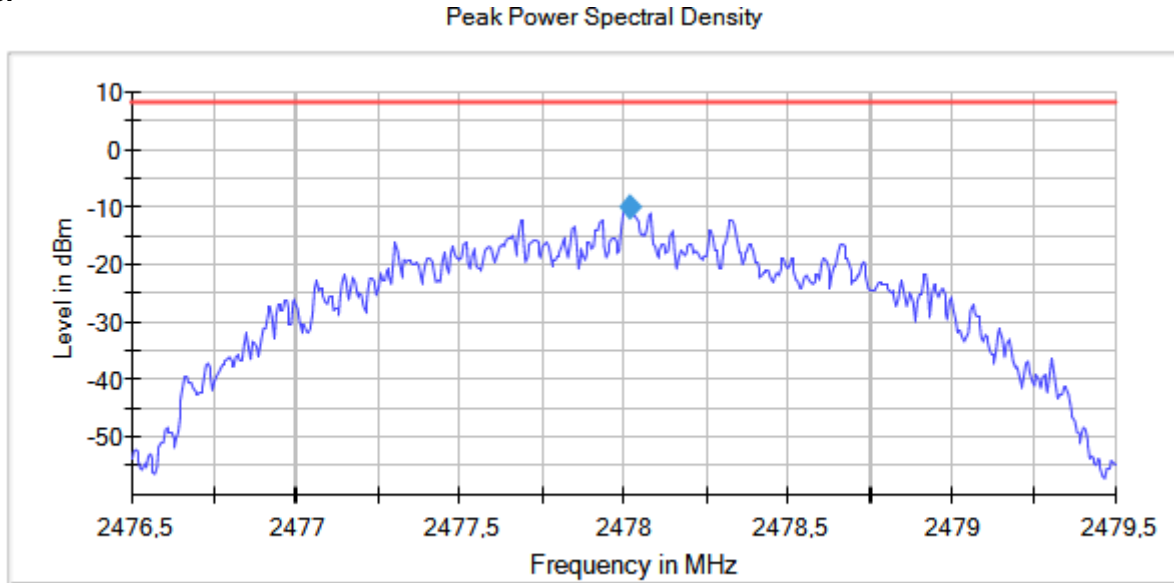
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2440.00000  
 MIMO Mode = SISO    Active Port = 1

Images:

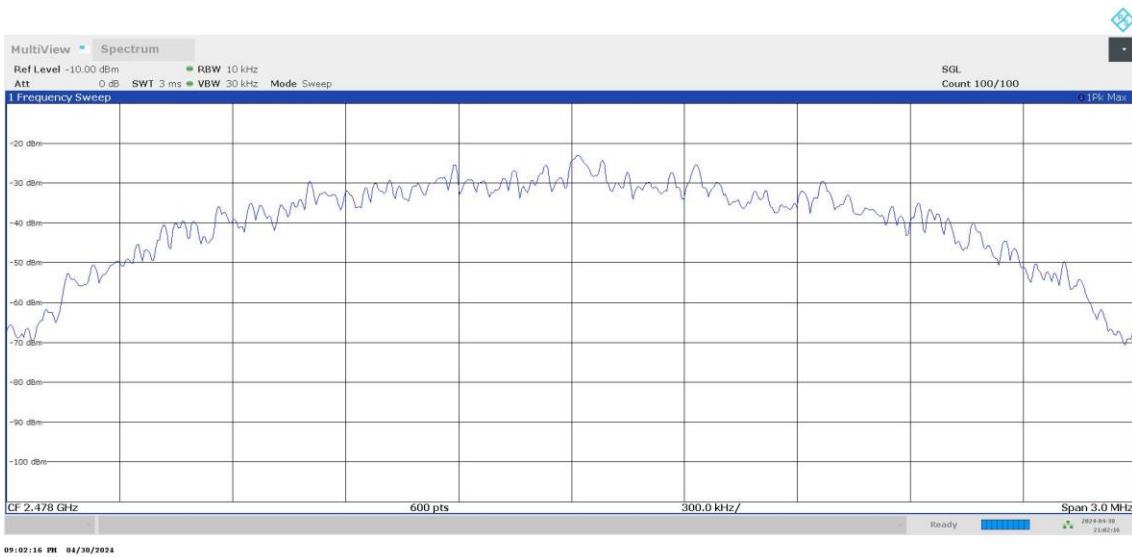


Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2478.00000  
MIMO Mode = SISO    Active Port = 1

Images:



— Limit    — Sum Level    ◆ PSD



Modulation: Proximity

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	PSD (dBm)
Digital Transmission System (DTS)	2	2402.00000	1	-8.37
		2440.00000		-8.76
		2480.00000		-8.73

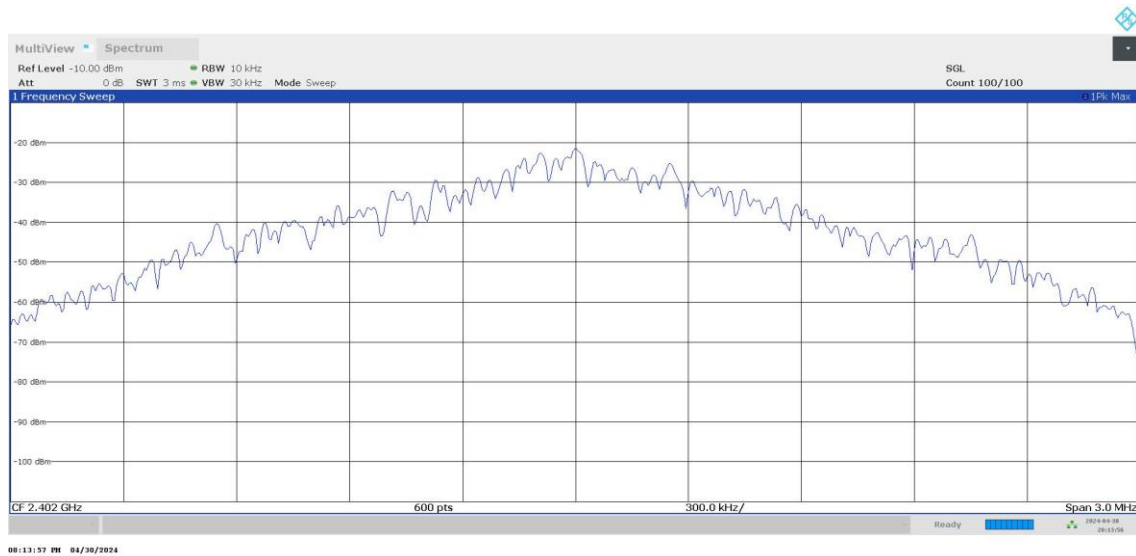
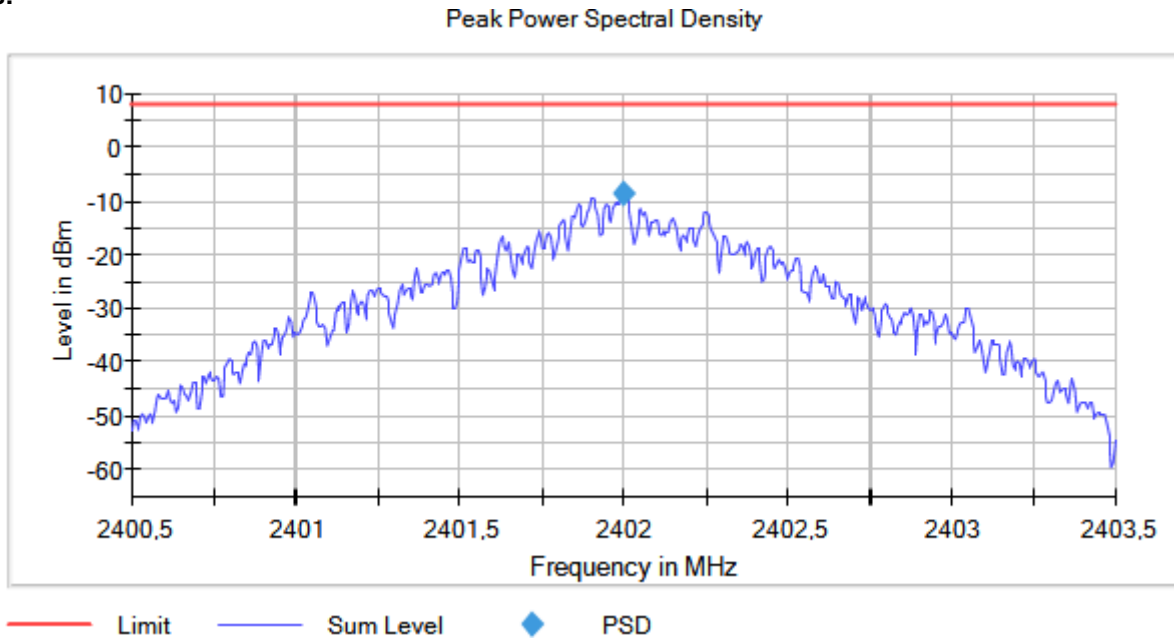
**Verdict**

Pass

**Attachments**

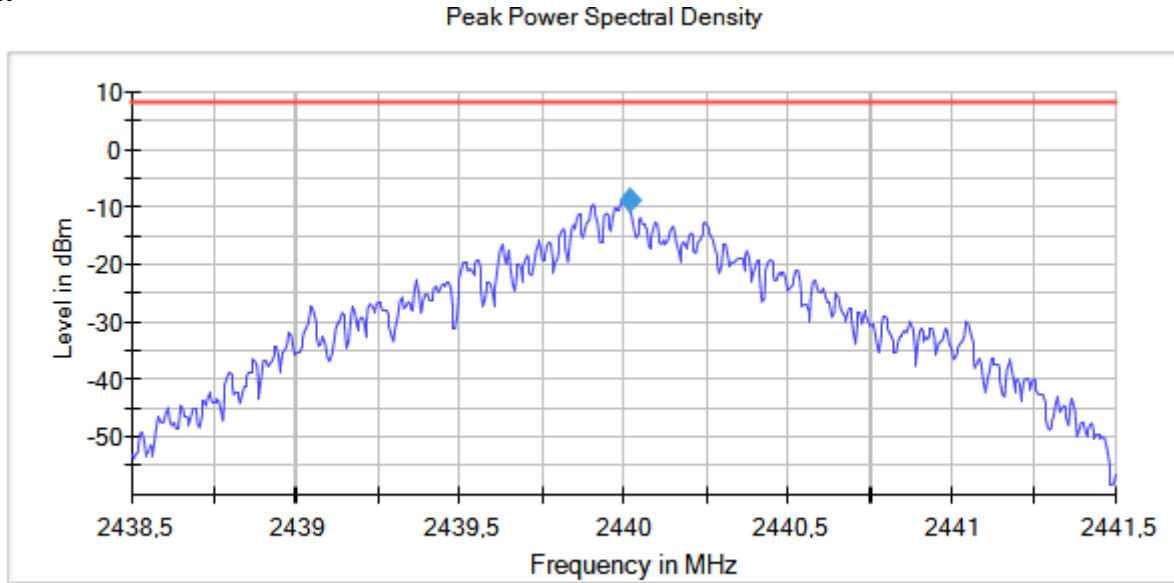
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
 Modulation = Proximity    Frequency MHz = 2402.00000  
 MIMO Mode = SISO    Active Port = 1

**Images:**

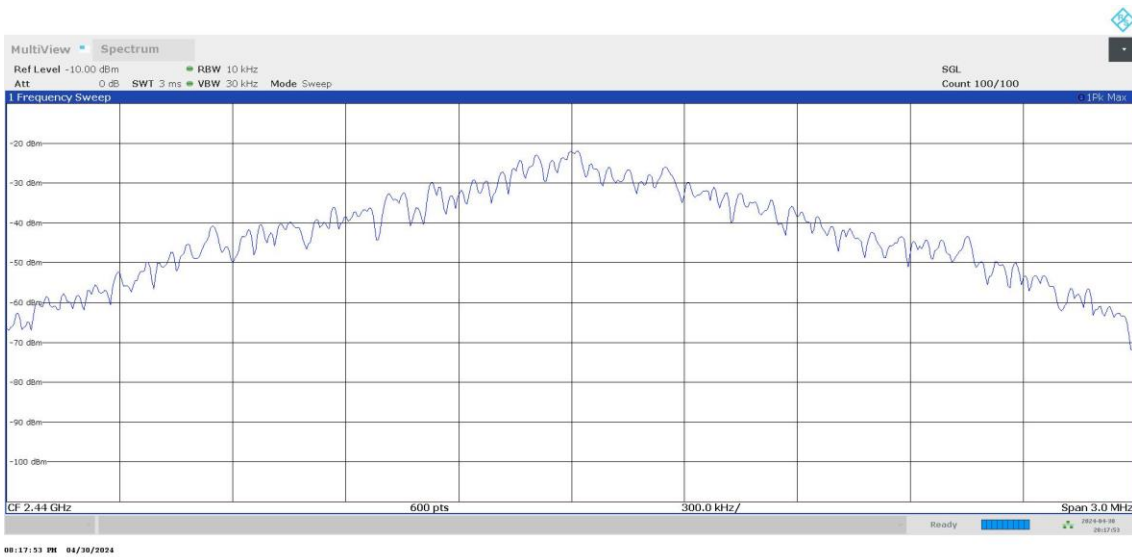


Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2  
Modulation = Proximity Frequency MHz = 2440.00000  
MIMO Mode = SISO Active Port = 1

Images:

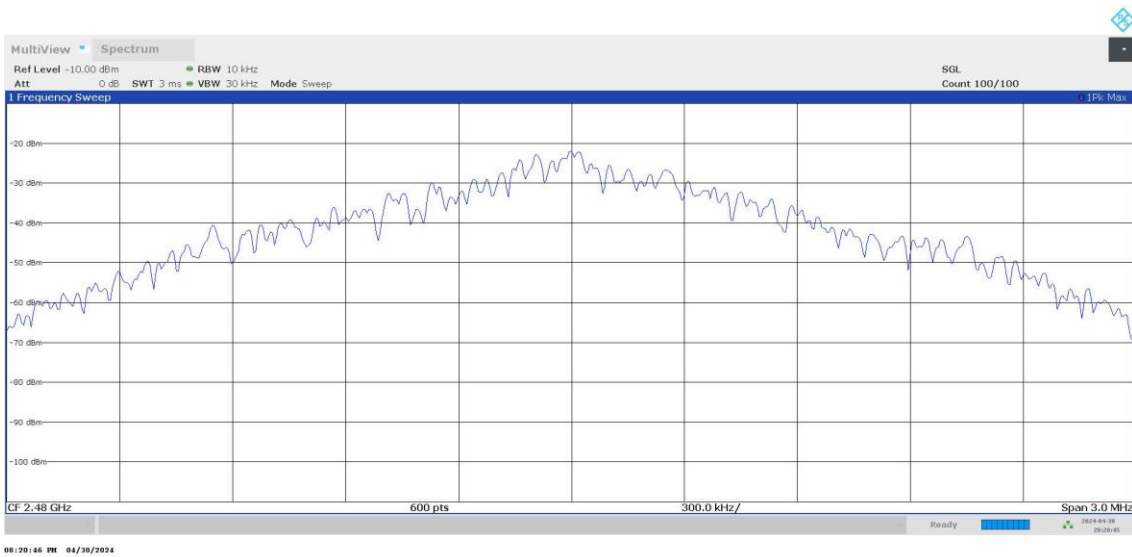
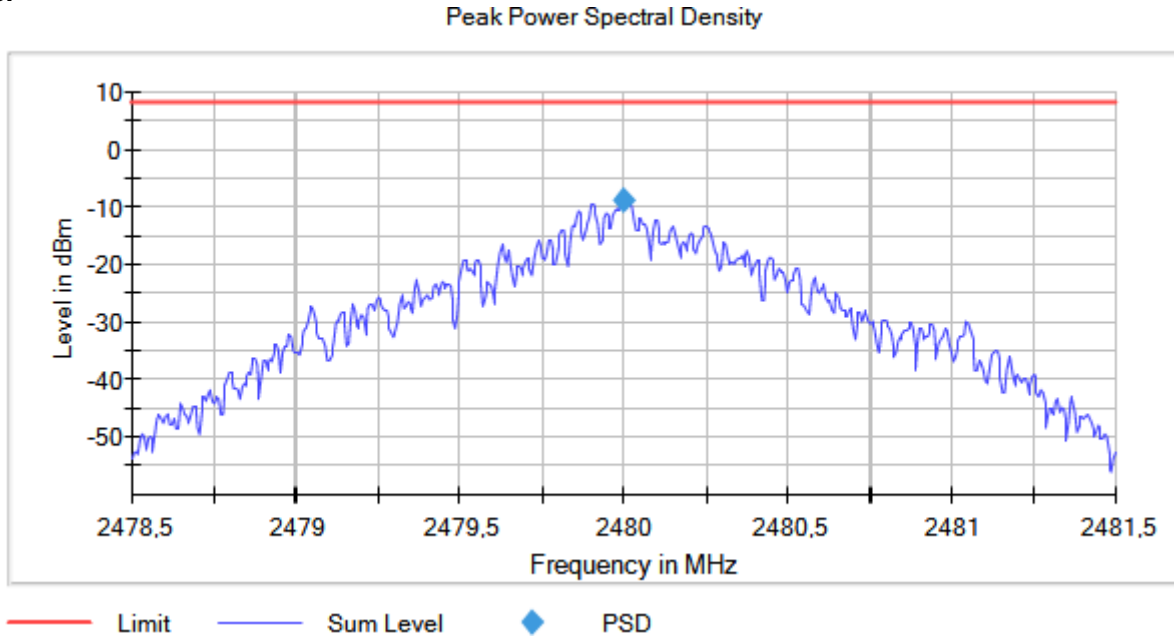


— Limit    — Sum Level    ◆ PSD



Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = Proximity    Frequency MHz = 2480.00000  
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  $\geq$  DTS bandwidth" of ANSI C.63.10-2013.

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Mode: SISO

### Results

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)
Digital Transmission System (DTS)	1	2402.00000	1	0.5240
		2426.00000		0.7780
		2480.00000		0.4570

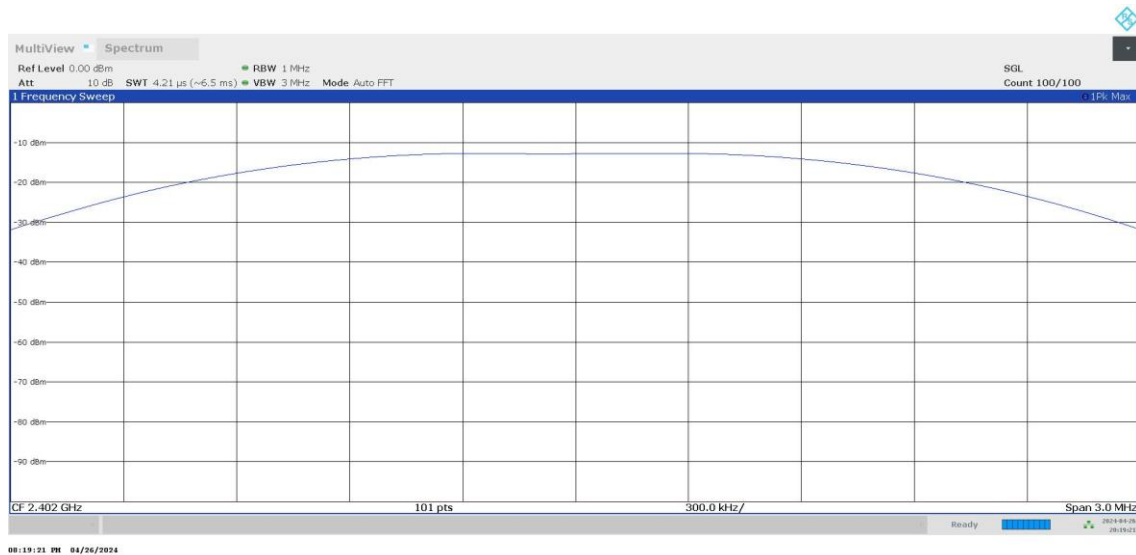
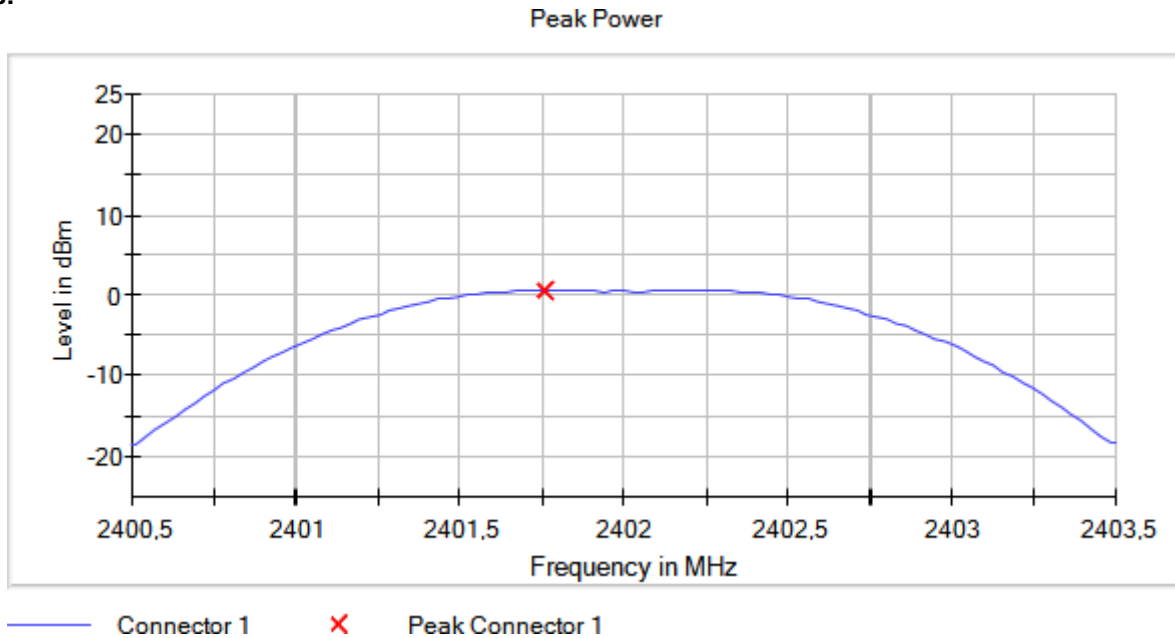
### Verdict

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

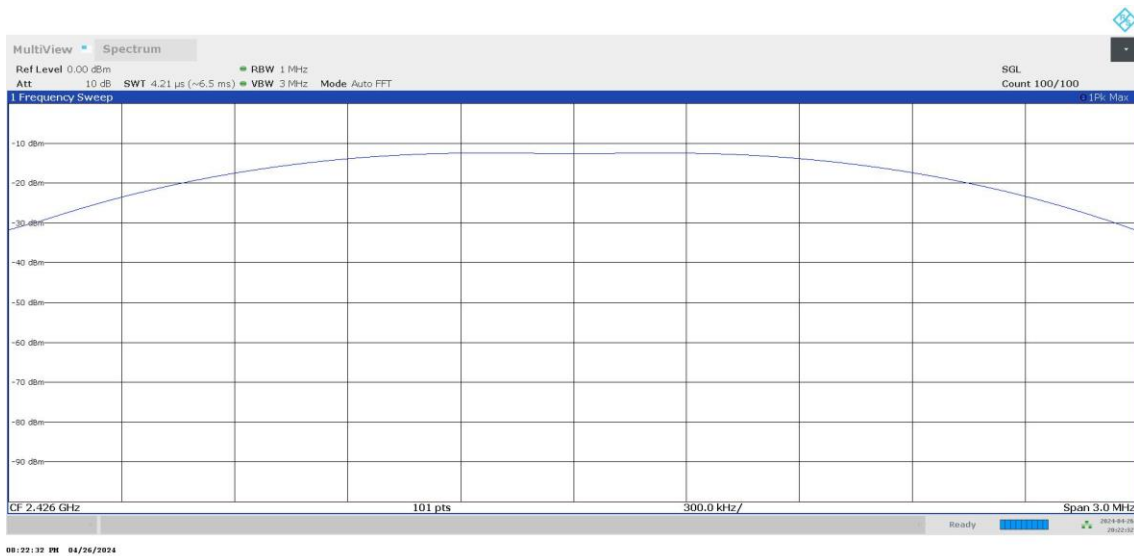
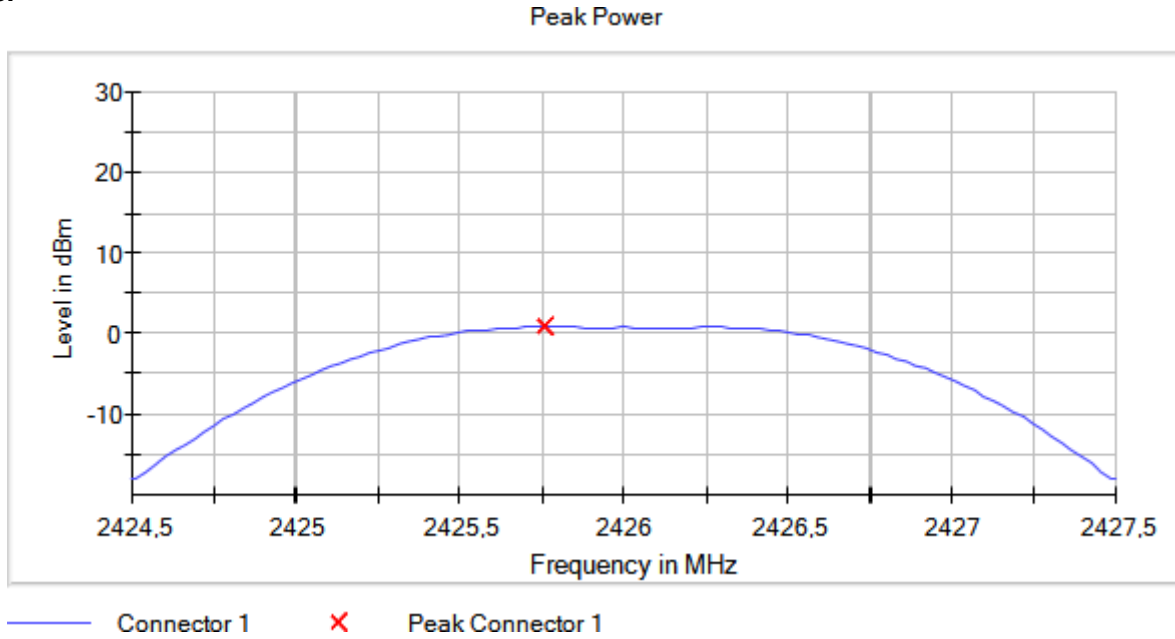
**Images:**





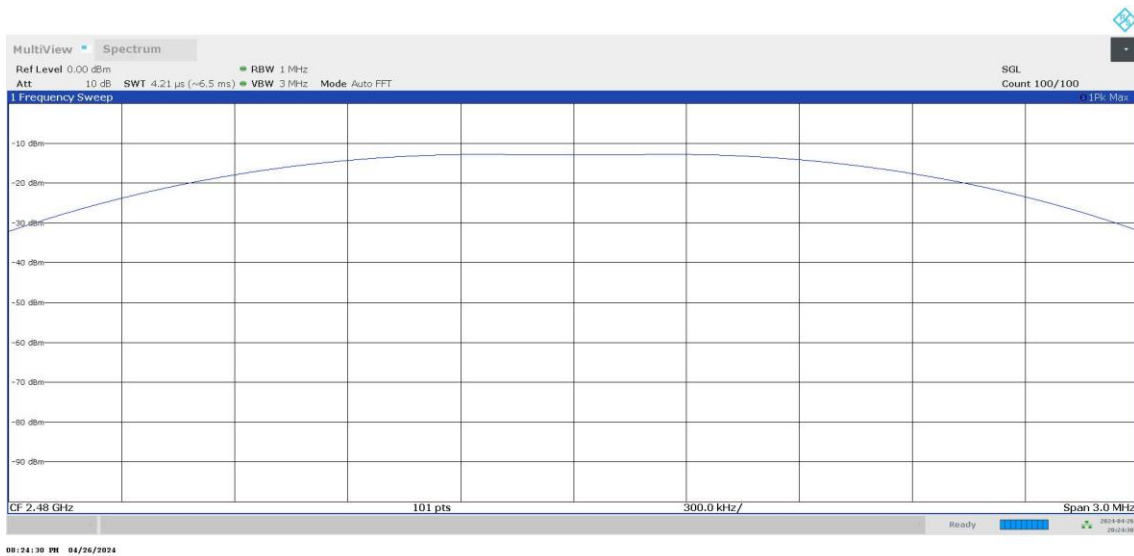
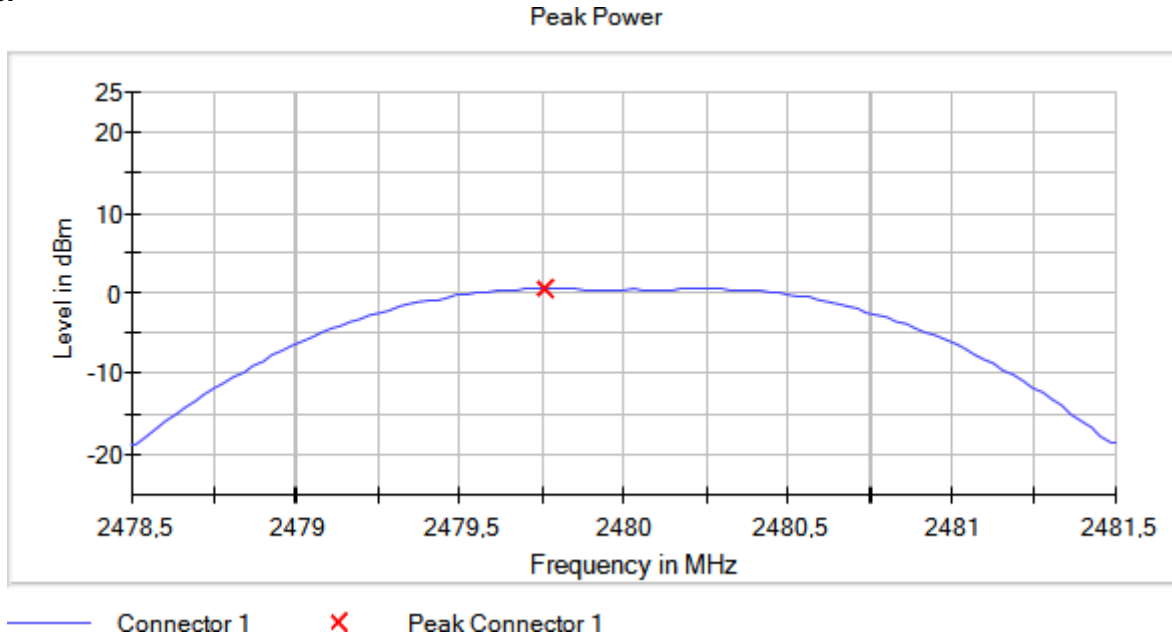
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 1  
Modulation = BTLE 5.0 (GFSK 1 Mbit/s)                      Frequency MHz = 2426.00000  
MIMO Mode = SISO    Active Port = 1

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)

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)
Digital Transmission System (DTS)	2	2404.00000	1	0.5720
		2440.00000		0.3520
		2478.00000		0.2640

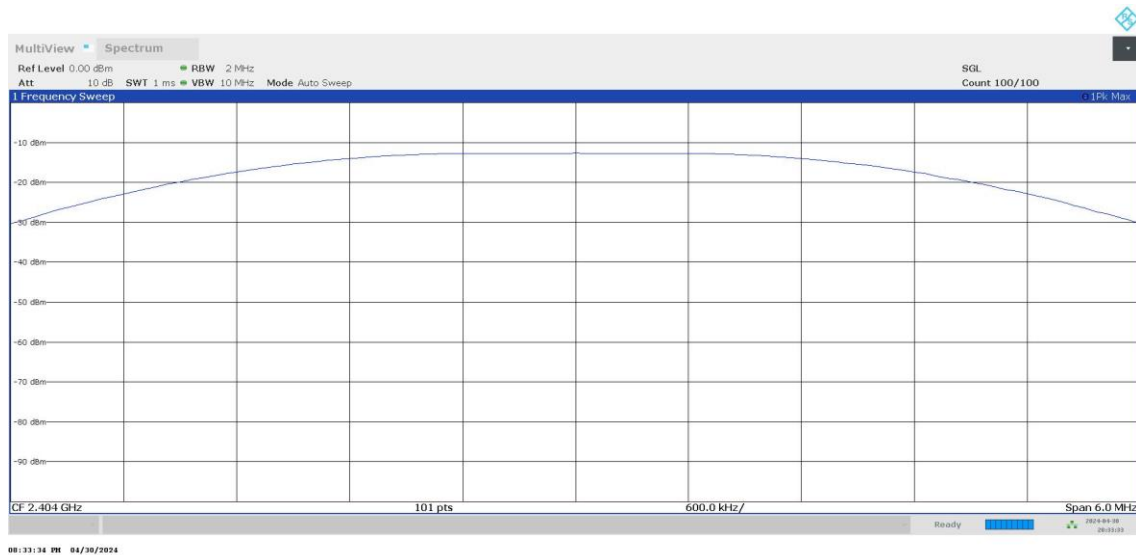
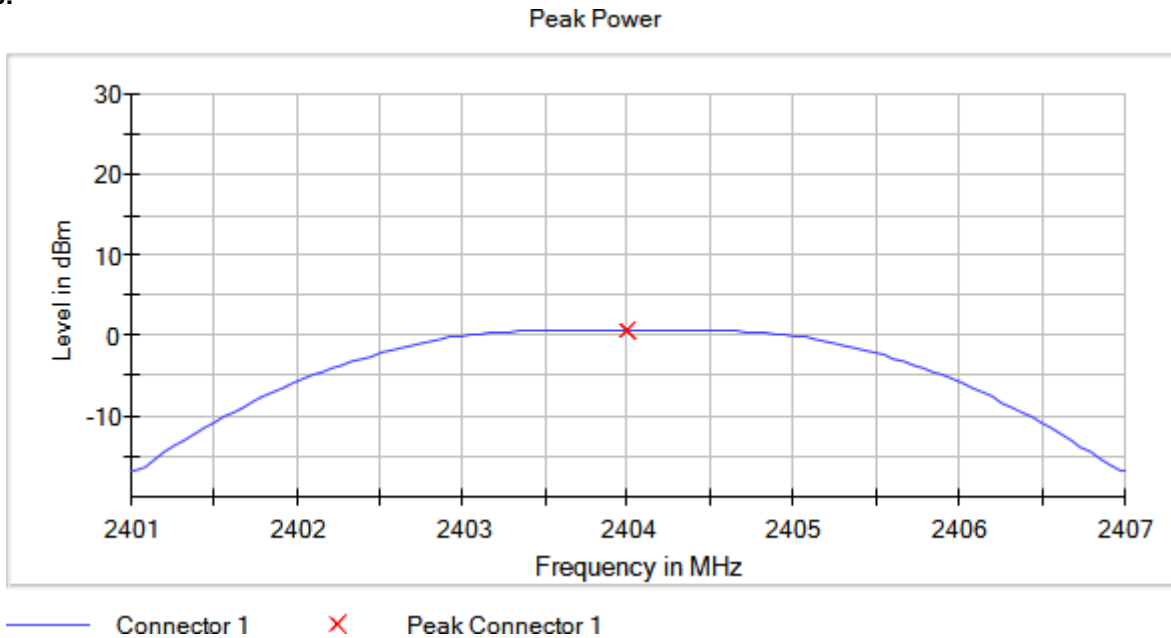
**Verdict**

Pass

**Attachments**

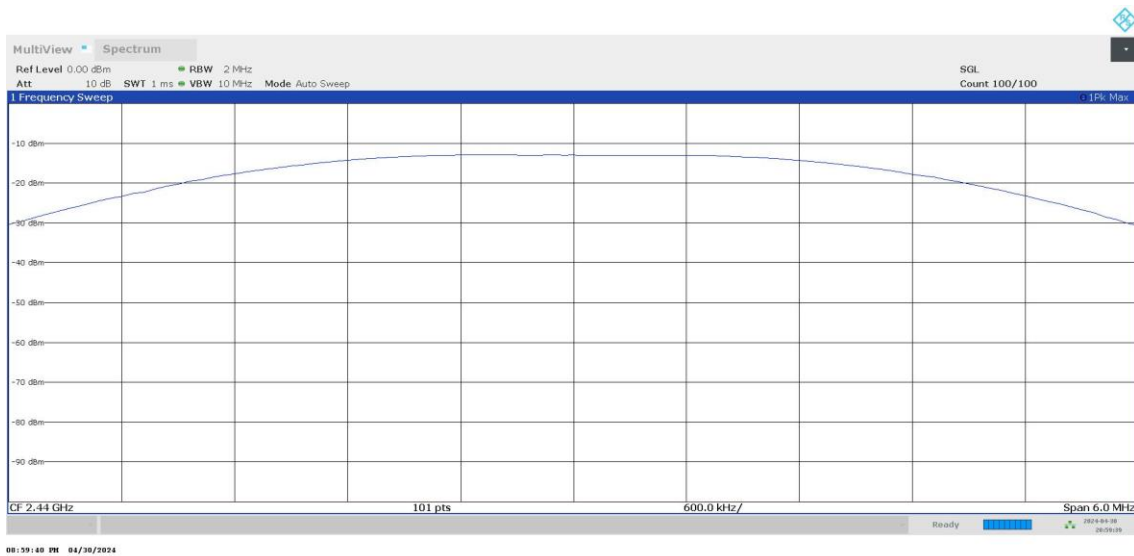
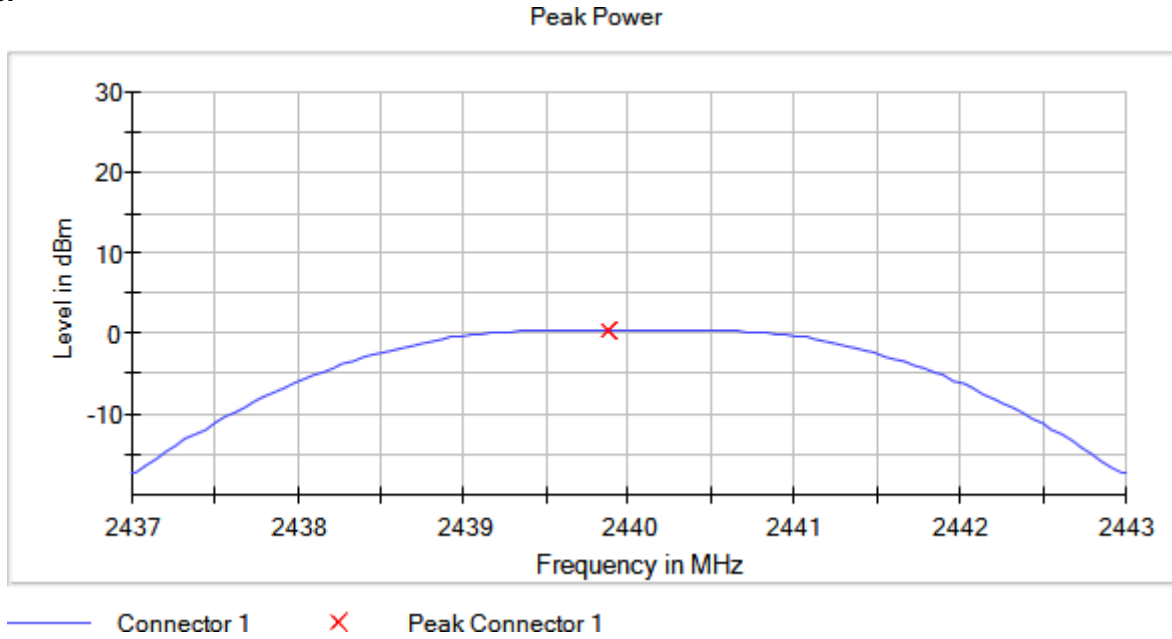
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2404.00000  
MIMO Mode = SISO    Active Port = 1

**Images:**



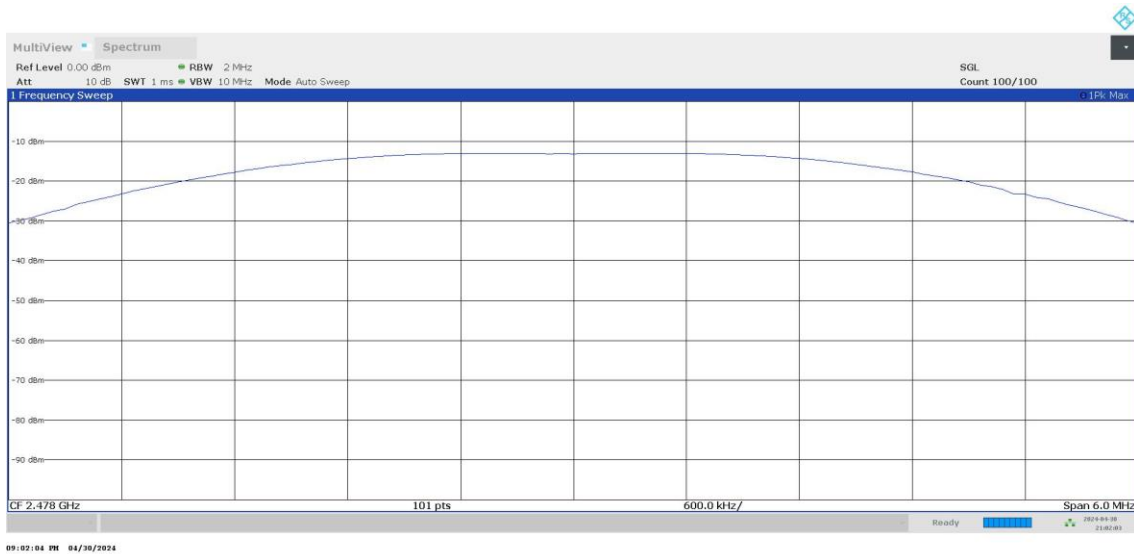
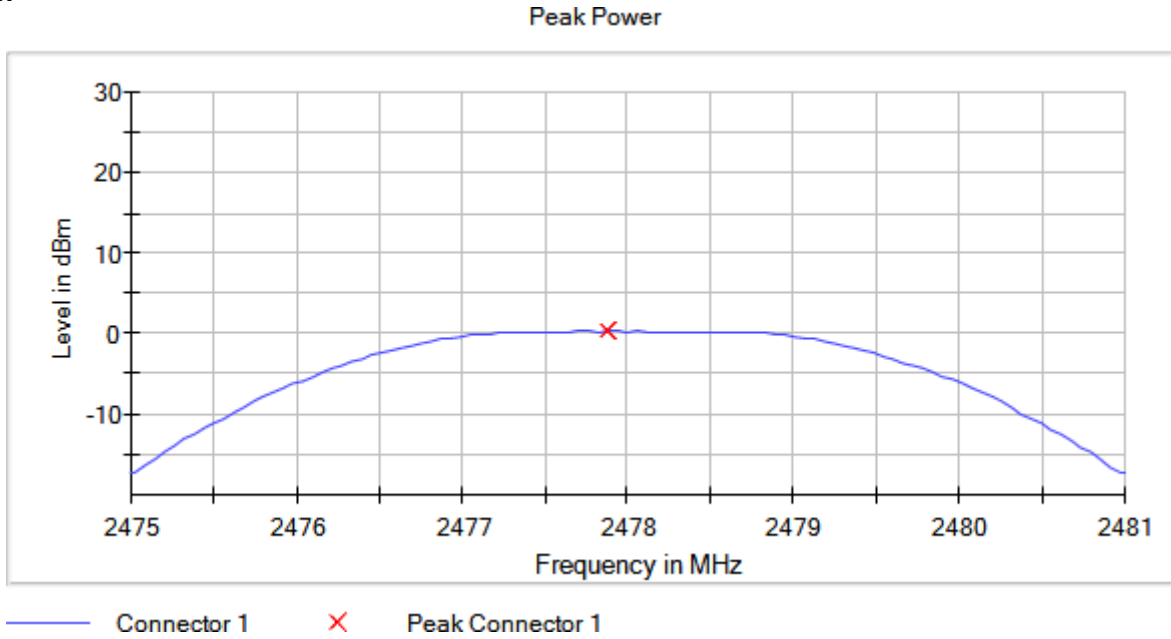
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2440.00000  
MIMO Mode = SISO    Active Port = 1

Images:



Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2478.00000  
MIMO Mode = SISO    Active Port = 1

Images:



Modulation: Proximity

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)
Digital Transmission System (DTS)	2	2402.00000	1	0.5000
		2440.00000		0.3630
		2480.00000		0.3180

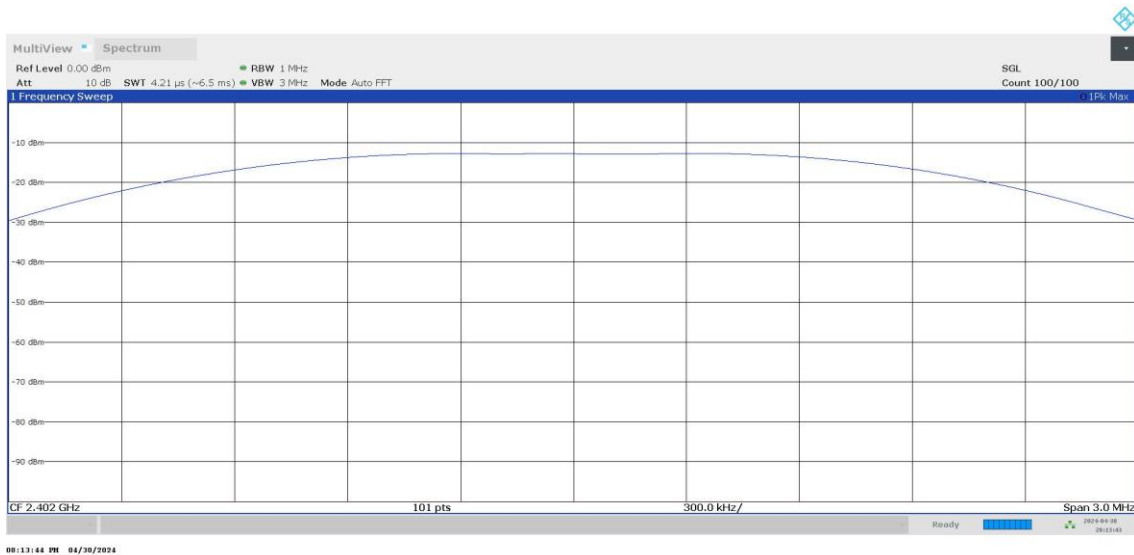
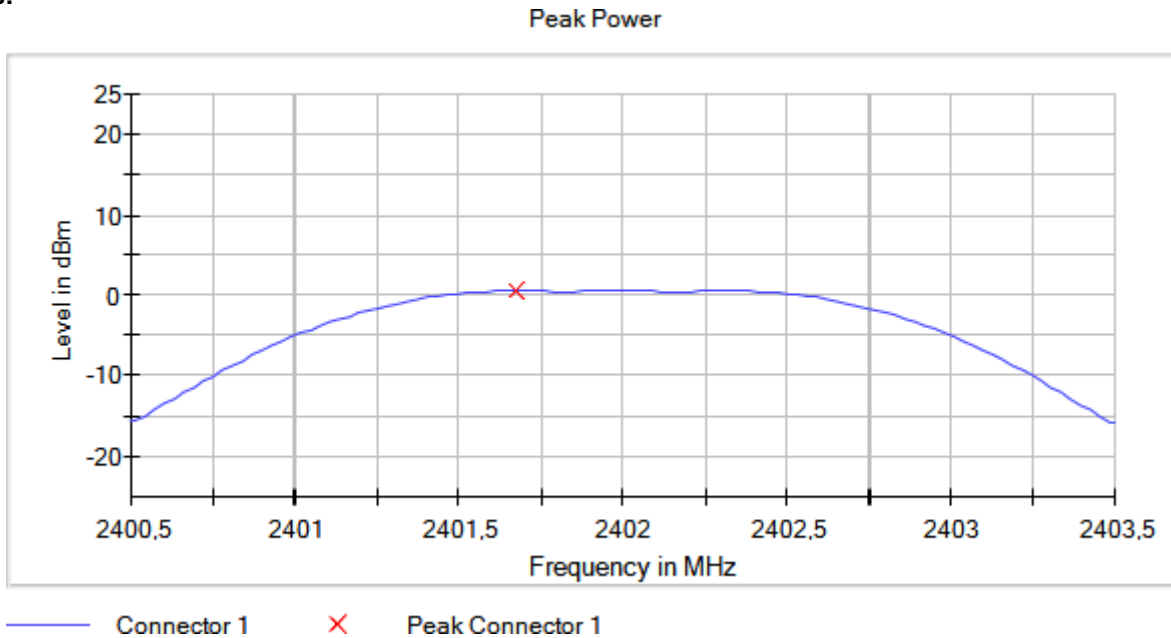
**Verdict**

Pass

**Attachments**

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
 Modulation = Proximity    Frequency MHz = 2402.00000  
 MIMO Mode = SISO    Active Port = 1

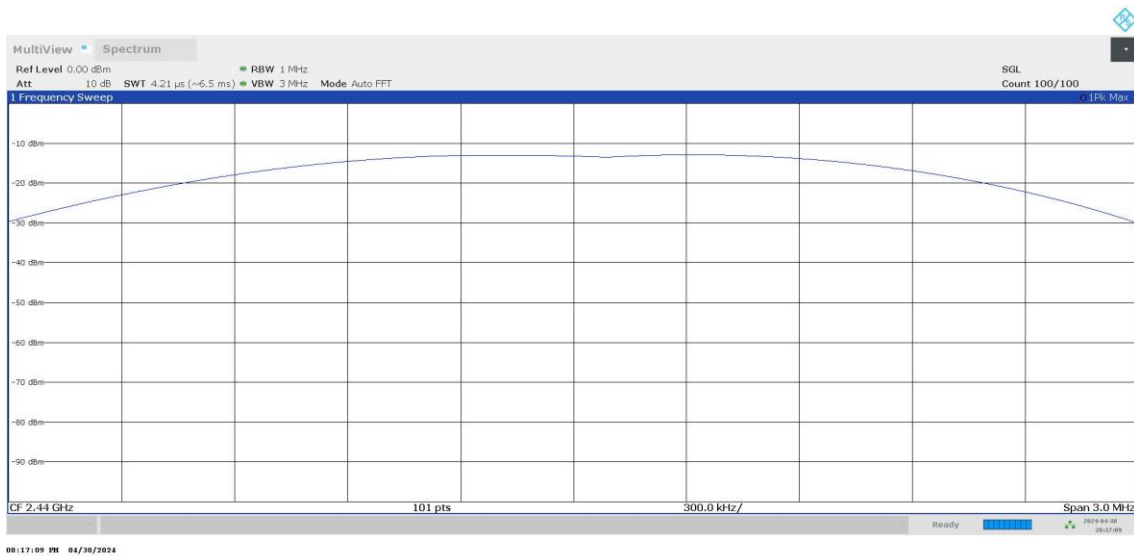
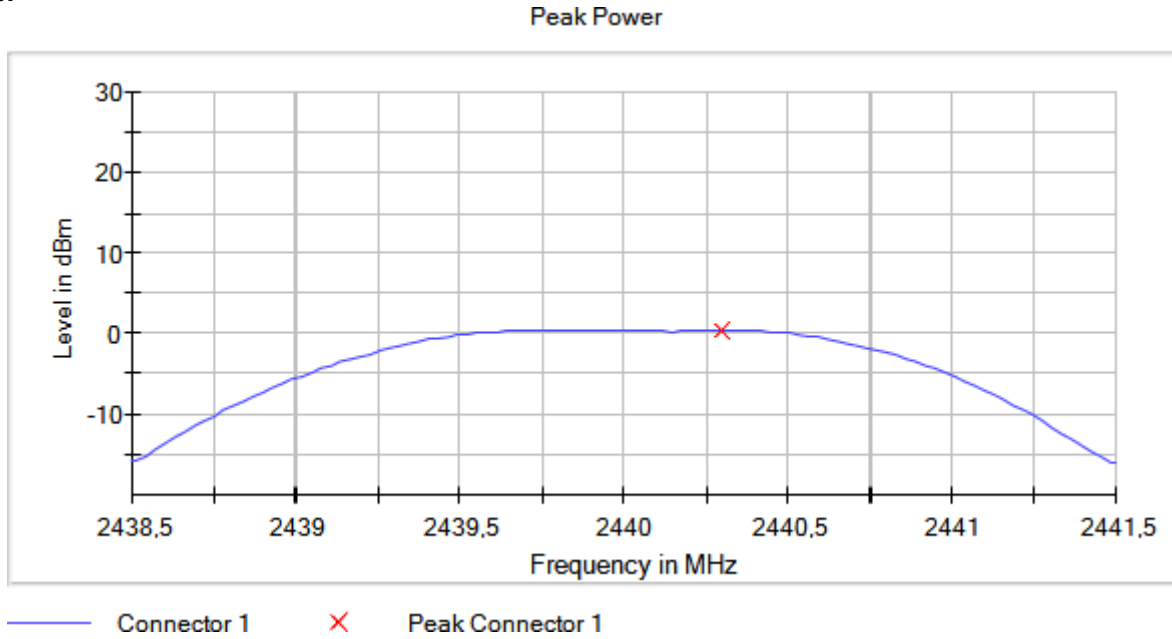
**Images:**





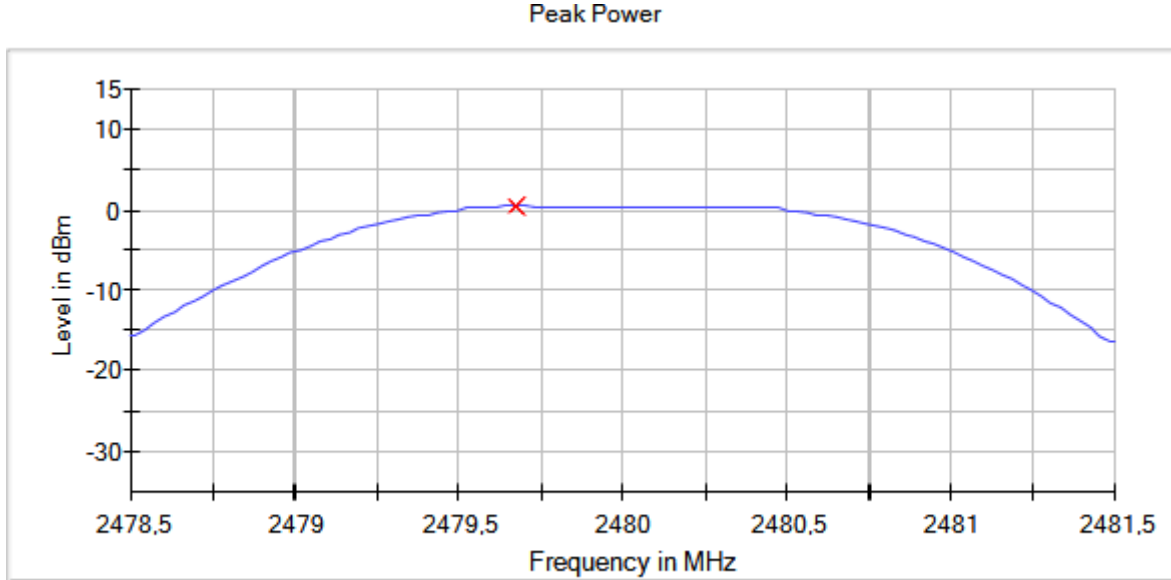
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = Proximity    Frequency MHz = 2440.00000  
MIMO Mode = SISO    Active Port = 1

Images:

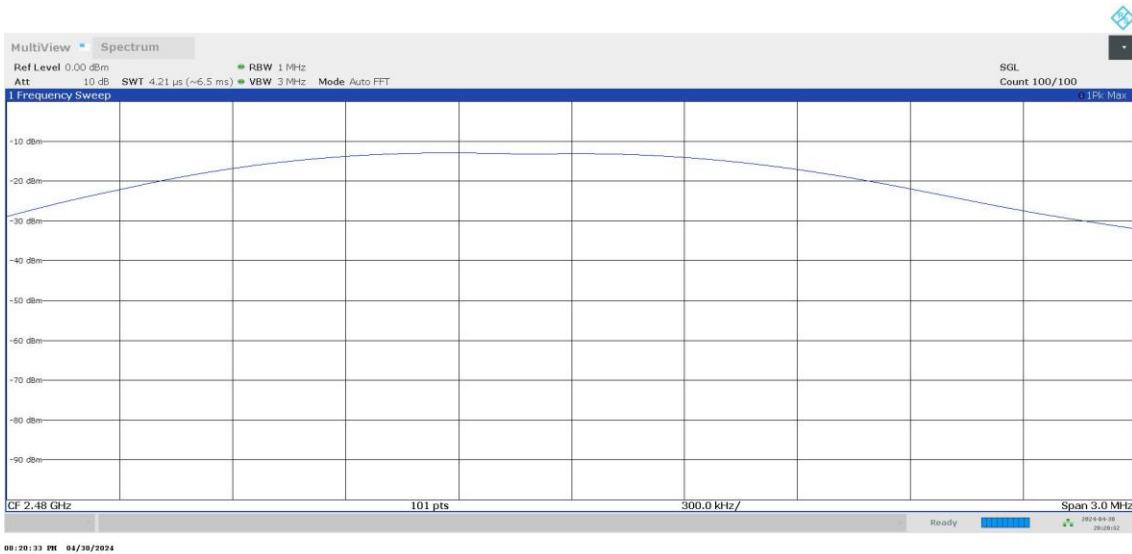


Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = Proximity    Frequency MHz = 2480.00000  
MIMO Mode = SISO    Active Port = 1

Images:



— Connector 1    X    Peak Connector 1



## 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 5.0 (GFSK 1 Mbit/s)

Mode: SISO

### Results

Equipment	BW (MHz)	Freq (MHz)	Port	Freq (MHz)	Lvl (dBm)
Digital Transmission System (DTS)	1	2402.00000	1	2399.425000	-51.1
Digital Transmission System (DTS)	1	2402.00000	1	2399.375000	-51.5
Digital Transmission System (DTS)	1	2402.00000	1	2399.475000	-51.7
Digital Transmission System (DTS)	1	2402.00000	1	2399.125000	-52.5
Digital Transmission System (DTS)	1	2402.00000	1	2399.075000	-52.6
Digital Transmission System (DTS)	1	2402.00000	1	2399.625000	-52.9
Digital Transmission System (DTS)	1	2402.00000	1	2399.675000	-53.0
Digital Transmission System (DTS)	1	2402.00000	1	2399.275000	-53.4
Digital Transmission System (DTS)	1	2402.00000	1	2398.375000	-53.5
Digital Transmission System (DTS)	1	2402.00000	1	2399.725000	-53.5
Digital Transmission System (DTS)	1	2402.00000	1	2399.175000	-53.6
Digital Transmission System (DTS)	1	2402.00000	1	2399.325000	-53.6
Digital Transmission System (DTS)	1	2402.00000	1	2398.425000	-53.7
Digital Transmission System (DTS)	1	2402.00000	1	2399.775000	-54.0
Digital Transmission System (DTS)	1	2402.00000	1	2399.225000	-54.0
Digital Transmission System (DTS)	1	2480.00000	1	2483.775000	-53.4
Digital Transmission System (DTS)	1	2480.00000	1	2483.925000	-53.4
Digital Transmission System (DTS)	1	2480.00000	1	2483.875000	-53.4
Digital Transmission System (DTS)	1	2480.00000	1	2483.725000	-53.6
Digital Transmission System (DTS)	1	2480.00000	1	2483.975000	-53.7
Digital Transmission System (DTS)	1	2480.00000	1	2484.125000	-53.7
Digital Transmission System (DTS)	1	2480.00000	1	2483.575000	-53.8
Digital Transmission System (DTS)	1	2480.00000	1	2484.025000	-53.9
Digital Transmission System (DTS)	1	2480.00000	1	2483.825000	-53.9
Digital Transmission System (DTS)	1	2480.00000	1	2484.275000	-54.0
Digital Transmission System (DTS)	1	2480.00000	1	2484.225000	-54.0
Digital Transmission System (DTS)	1	2480.00000	1	2484.475000	-54.1

Equipment	BW (MHz)	Freq (MHz)	Port	Freq (MHz)	Lvl (dBm)
Digital Transmission System (DTS)	1	2480.00000	1	2484.175000	-54.3
Digital Transmission System (DTS)	1	2480.00000	1	2484.325000	-54.4
Digital Transmission System (DTS)	1	2480.00000	1	2483.525000	-54.4

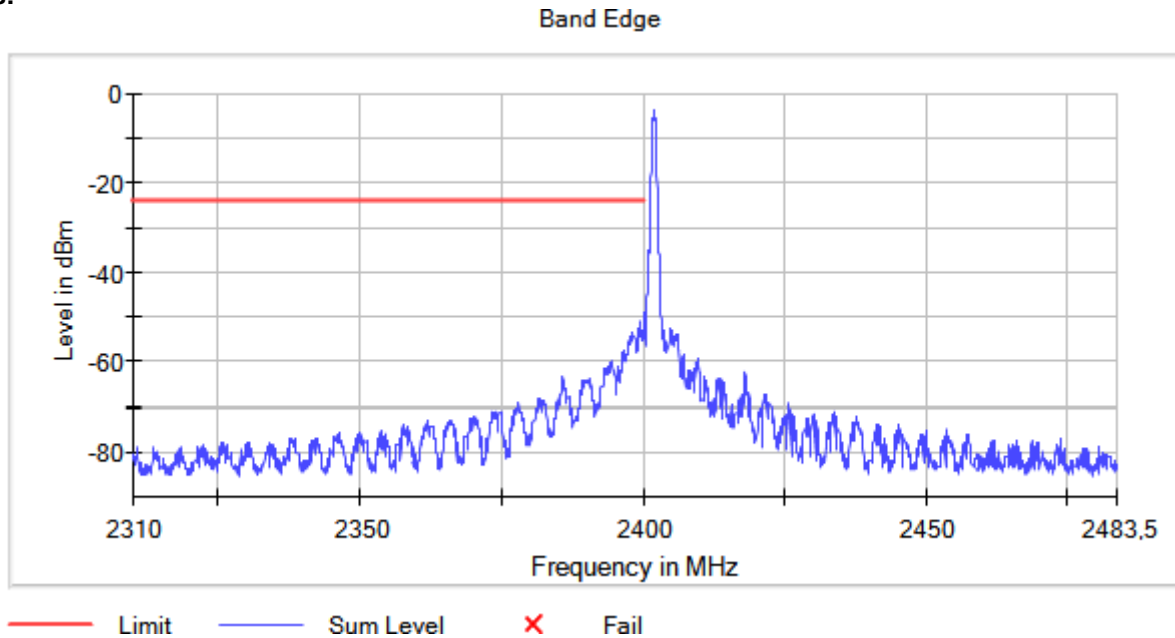
**Verdict**

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	1.800 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 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	26 / max. 150	max. 150
Stable	3 / 3	3

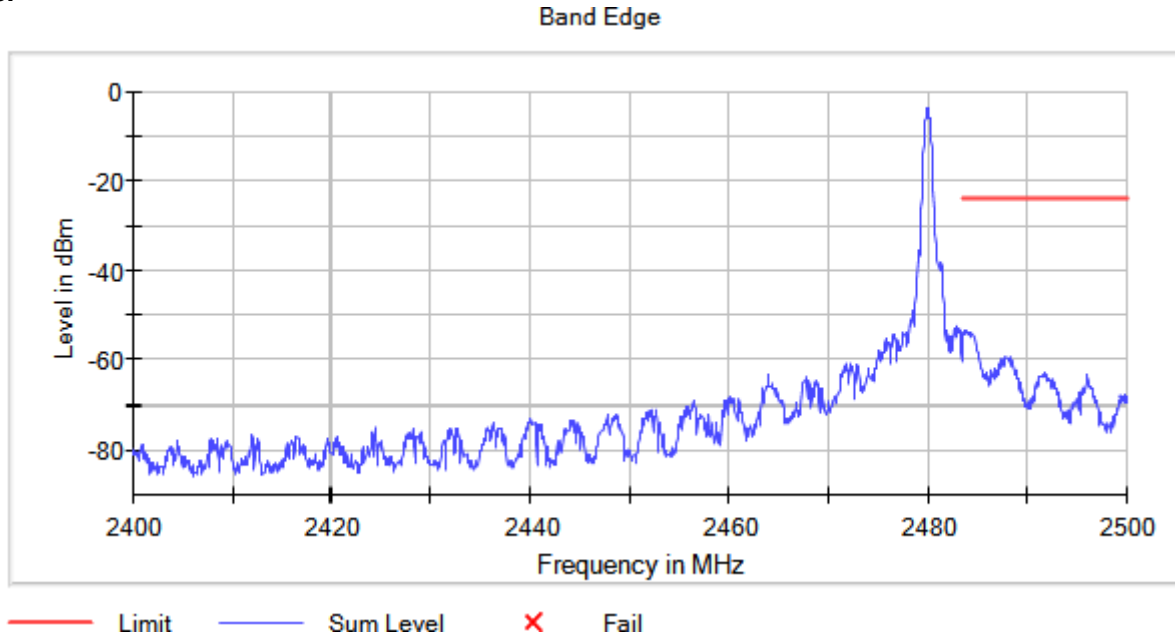
Setting	Instrument Value	Target Value
Max Stable Difference	0.00 dB	0.50 dB

## 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	0.000 dBm	0.000 dBm
Attenuation	10.000 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	0.01 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	2.31000 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	0.000 dBm	0.000 dBm
Attenuation	10.000 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	26 / 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	0.000 dBm	0.000 dBm
Attenuation	10.000 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	0.01 dB	0.50 dB



Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	Freq (MHz)	Lvl (dBm)
Digital Transmission System (DTS)	2	2404.00000	1	2399.925000	-53.7
Digital Transmission System (DTS)	2	2404.00000	1	2399.975000	-53.8
Digital Transmission System (DTS)	2	2404.00000	1	2399.875000	-54.3
Digital Transmission System (DTS)	2	2404.00000	1	2399.825000	-55.5
Digital Transmission System (DTS)	2	2404.00000	1	2399.775000	-55.6
Digital Transmission System (DTS)	2	2404.00000	1	2399.725000	-56.1
Digital Transmission System (DTS)	2	2404.00000	1	2399.675000	-56.6
Digital Transmission System (DTS)	2	2404.00000	1	2399.625000	-56.6
Digital Transmission System (DTS)	2	2404.00000	1	2399.575000	-57.1
Digital Transmission System (DTS)	2	2404.00000	1	2399.475000	-57.4
Digital Transmission System (DTS)	2	2404.00000	1	2399.025000	-57.4
Digital Transmission System (DTS)	2	2404.00000	1	2399.425000	-57.4
Digital Transmission System (DTS)	2	2404.00000	1	2399.525000	-57.6
Digital Transmission System (DTS)	2	2404.00000	1	2399.075000	-57.6
Digital Transmission System (DTS)	2	2404.00000	1	2398.875000	-57.7
Digital Transmission System (DTS)	2	2478.00000	1	2486.075000	-58.6
Digital Transmission System (DTS)	2	2478.00000	1	2486.025000	-58.6
Digital Transmission System (DTS)	2	2478.00000	1	2485.925000	-59.0
Digital Transmission System (DTS)	2	2478.00000	1	2485.875000	-59.1
Digital Transmission System (DTS)	2	2478.00000	1	2485.975000	-59.2
Digital Transmission System (DTS)	2	2478.00000	1	2486.125000	-59.4
Digital Transmission System (DTS)	2	2478.00000	1	2486.375000	-59.7
Digital Transmission System (DTS)	2	2478.00000	1	2486.175000	-59.7
Digital Transmission System (DTS)	2	2478.00000	1	2485.825000	-59.8
Digital Transmission System (DTS)	2	2478.00000	1	2485.775000	-59.9
Digital Transmission System (DTS)	2	2478.00000	1	2486.225000	-60.0
Digital Transmission System (DTS)	2	2478.00000	1	2485.575000	-60.0
Digital Transmission System (DTS)	2	2478.00000	1	2486.425000	-60.0
Digital Transmission System (DTS)	2	2478.00000	1	2486.475000	-60.1
Digital Transmission System (DTS)	2	2478.00000	1	2485.725000	-60.1

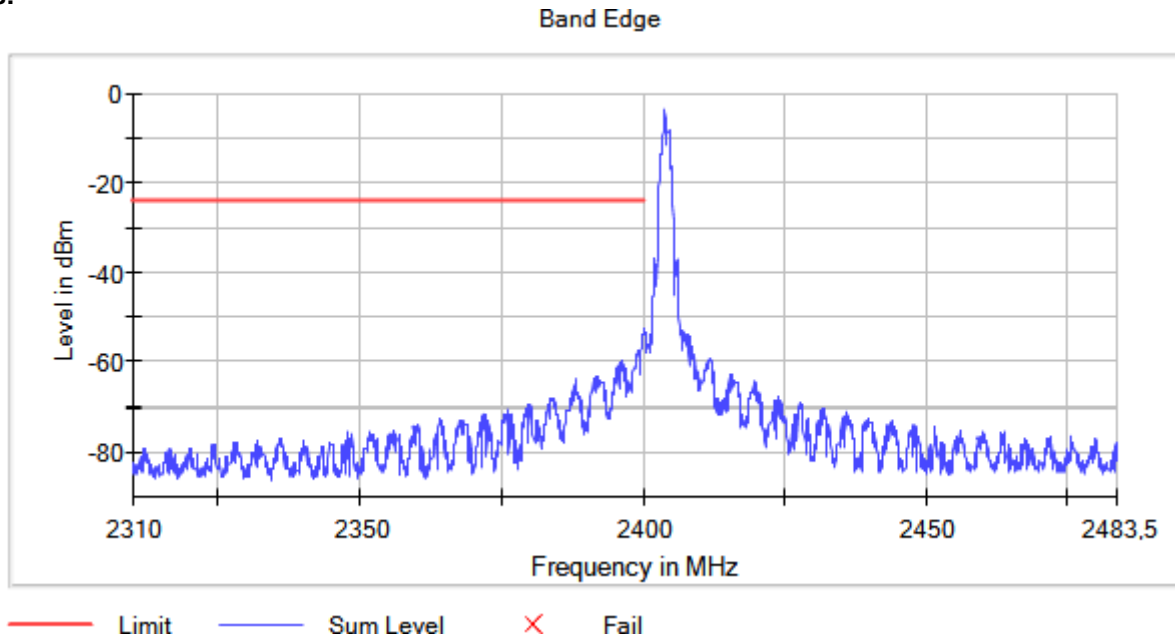
**Verdict**

Pass

**Attachments**

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2404.00000  
 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	1.800 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 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	14 / max. 150	max. 150
Stable	3 / 3	3

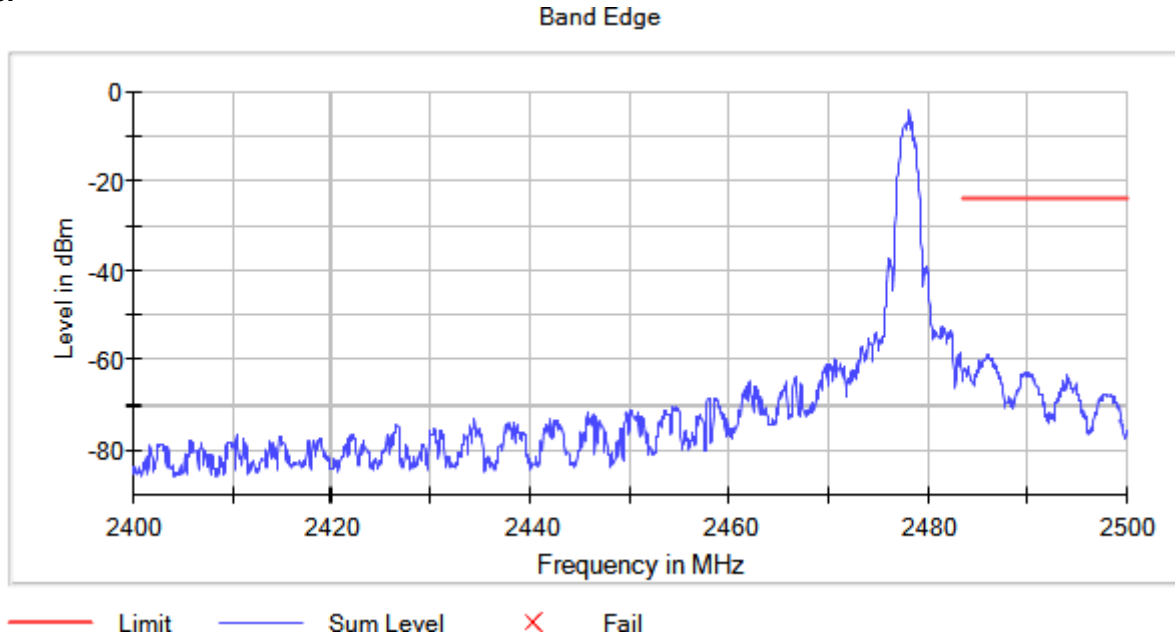
Setting	Instrument Value	Target Value
Max Stable Difference	0.00 dB	0.50 dB

## 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	0.000 dBm	0.000 dBm
Attenuation	10.000 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	15 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.20 dB	0.50 dB

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2478.00000  
 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	1.800 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 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	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	0.000 dBm	0.000 dBm
Attenuation	10.000 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	15 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.20 dB	0.50 dB

Modulation: Proximity

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	Freq (MHz)	Lvl (dBm)
Digital Transmission System (DTS)	2	2402.00000	1	2399.975000	-45.5
Digital Transmission System (DTS)	2	2402.00000	1	2399.925000	-46.7
Digital Transmission System (DTS)	2	2402.00000	1	2399.875000	-48.4
Digital Transmission System (DTS)	2	2402.00000	1	2399.825000	-51.5
Digital Transmission System (DTS)	2	2402.00000	1	2398.275000	-52.4
Digital Transmission System (DTS)	2	2402.00000	1	2398.325000	-52.6
Digital Transmission System (DTS)	2	2402.00000	1	2398.375000	-52.6
Digital Transmission System (DTS)	2	2402.00000	1	2399.775000	-52.9
Digital Transmission System (DTS)	2	2402.00000	1	2398.225000	-53.0
Digital Transmission System (DTS)	2	2402.00000	1	2398.425000	-53.0
Digital Transmission System (DTS)	2	2402.00000	1	2398.675000	-53.7
Digital Transmission System (DTS)	2	2402.00000	1	2398.025000	-53.8
Digital Transmission System (DTS)	2	2402.00000	1	2398.725000	-53.9
Digital Transmission System (DTS)	2	2402.00000	1	2397.975000	-53.9
Digital Transmission System (DTS)	2	2402.00000	1	2398.175000	-54.0
Digital Transmission System (DTS)	2	2480.00000	1	2483.675000	-52.1
Digital Transmission System (DTS)	2	2480.00000	1	2483.725000	-52.3
Digital Transmission System (DTS)	2	2480.00000	1	2483.825000	-52.4
Digital Transmission System (DTS)	2	2480.00000	1	2483.575000	-53.2
Digital Transmission System (DTS)	2	2480.00000	1	2483.625000	-53.2
Digital Transmission System (DTS)	2	2480.00000	1	2483.525000	-53.3
Digital Transmission System (DTS)	2	2480.00000	1	2484.225000	-53.4
Digital Transmission System (DTS)	2	2480.00000	1	2483.875000	-53.4
Digital Transmission System (DTS)	2	2480.00000	1	2484.525000	-53.5
Digital Transmission System (DTS)	2	2480.00000	1	2484.425000	-53.7
Digital Transmission System (DTS)	2	2480.00000	1	2484.475000	-53.7
Digital Transmission System (DTS)	2	2480.00000	1	2484.275000	-53.7
Digital Transmission System (DTS)	2	2480.00000	1	2484.375000	-53.8
Digital Transmission System (DTS)	2	2480.00000	1	2484.175000	-53.8
Digital Transmission System (DTS)	2	2480.00000	1	2483.975000	-53.9

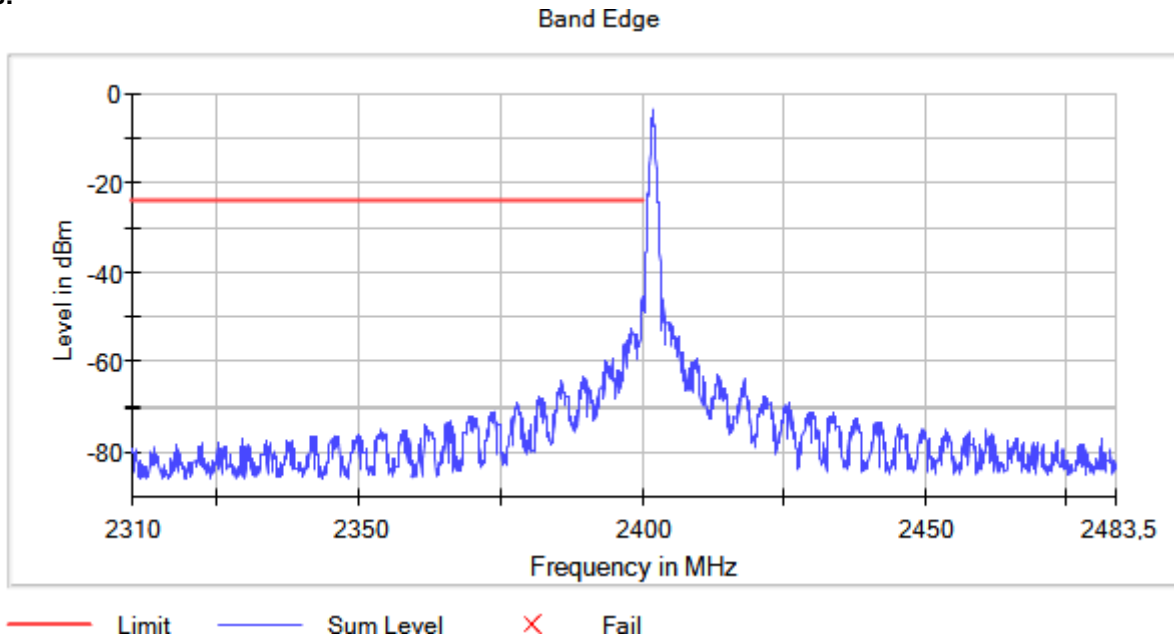
**Verdict**

Pass

**Attachments**

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
 Modulation = Proximity    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	1.800 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 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	14 / max. 150	max. 150
Stable	3 / 3	3

Setting	Instrument Value	Target Value
Max Stable Difference	0.00 dB	0.50 dB

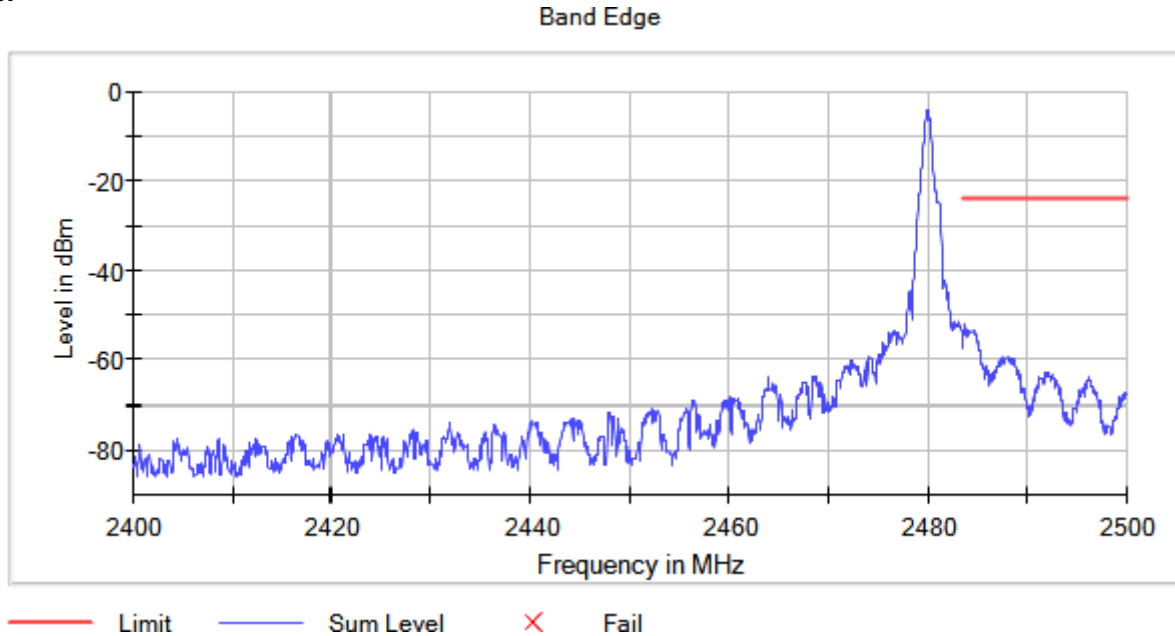
## Spectrum Analyzer Parameters 2

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	0.000 dBm	0.000 dBm
Attenuation	10.000 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	12 / 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 = Proximity    Frequency MHz = 2480.00000  
 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	1.800 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 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	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	0.000 dBm	0.000 dBm
Attenuation	10.000 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	12 / 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) [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.

### Frequency range tested for Radiated emissions:

Start frequency: no radiofrequency signal generated in the device found below 10<sup>th</sup> sub-armonic, no further investigation required.

Stop frequency: it has been performed the radiated spurious emissions until 10<sup>th</sup> armonic. After investigation in the frequency range 9kHz-30MHz, no relevant RF signals were detected, so this range was not reported. The selected frequency range for the full measurement was [30MHz-26GHz].

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Mode: SISO

### Results

Freq Rng (GHz)	Equipment	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	PoI	Detector
[3, 17]	Digital Transmission System (DTS)	2402.00000	1	4803.500	45.64	V	PK
		2426.00000		4851.500	43.72	V	PK
		2480.00000		4959.500	45.38	V	PK

### Verdict

Pass

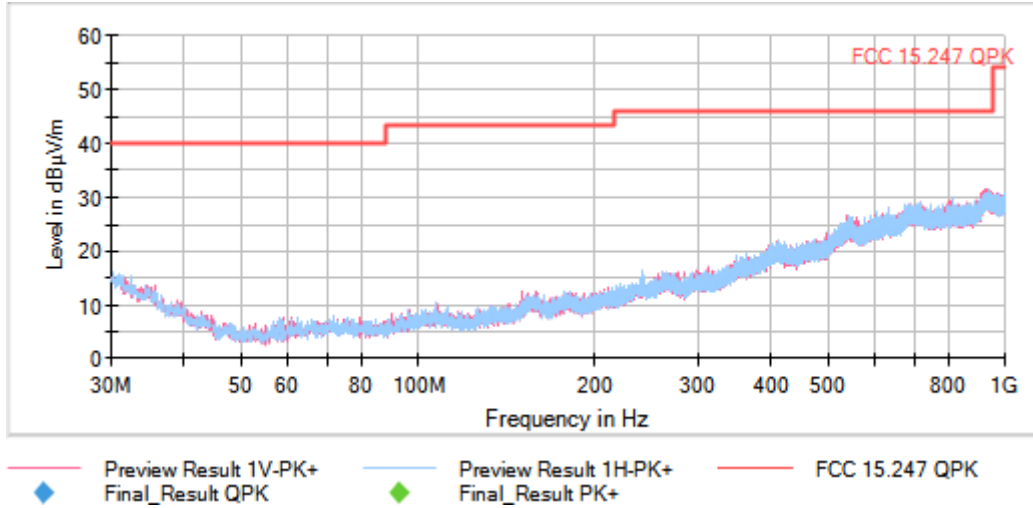
Approved by (name / position & signature)

Antonio Jurado  
 Industrial & Automotive  
 EMC Lab. Manager

**Attachments**

Frequency Range GHz = [0.03, 1]      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:**



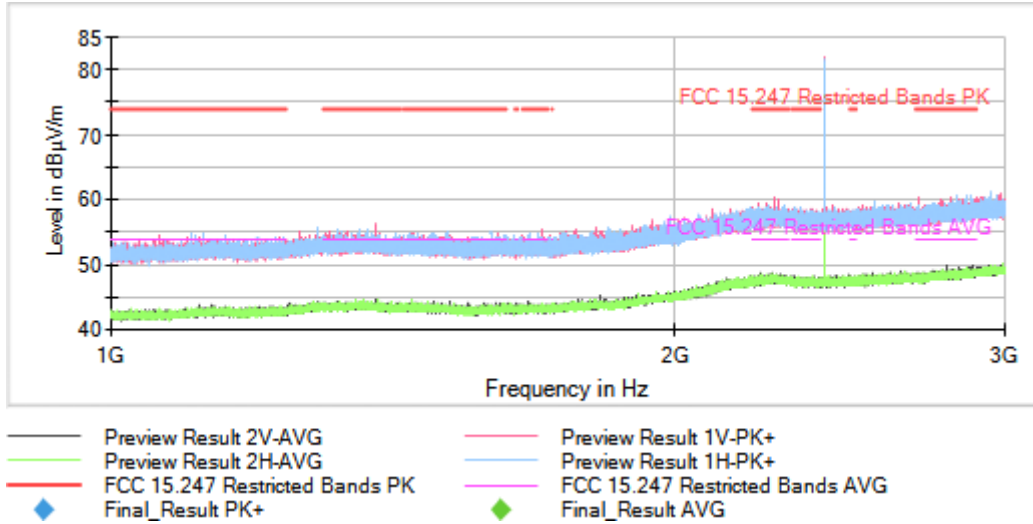
**Tables:**

Spectrum Analyzer Parameters

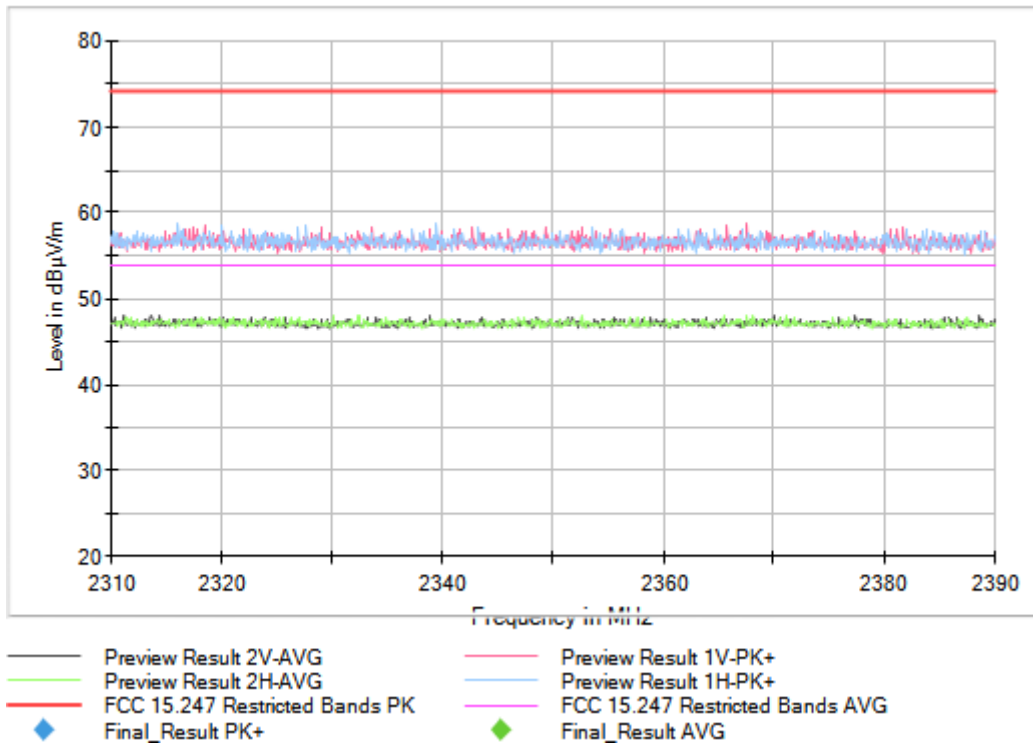
	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

Frequency Range GHz = [1, 3]      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)      Frequency MHz = 2402.00000  
 MIMO Mode = SISO      Active Port = 1

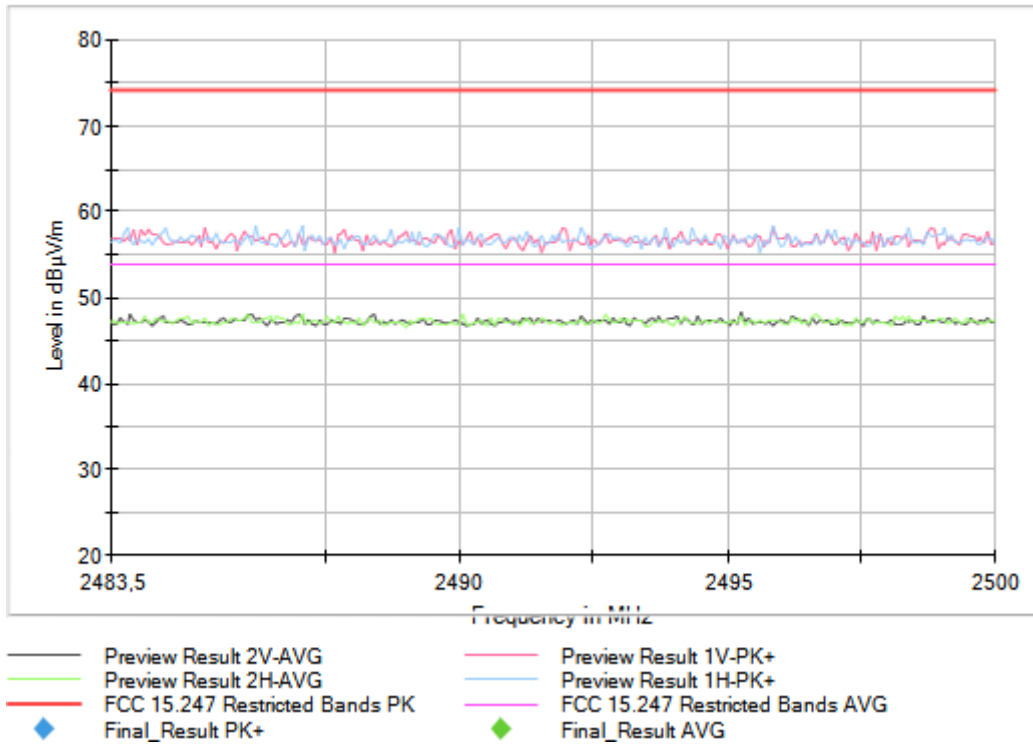
Images:



Full Spectrum



Full Spectrum



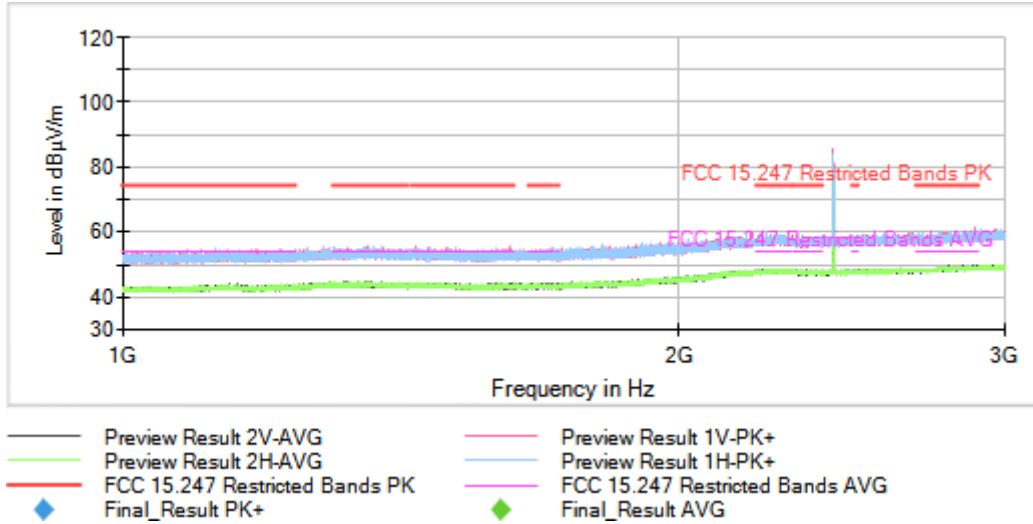
**Tables:**

Spectrum Analyzer Parameters

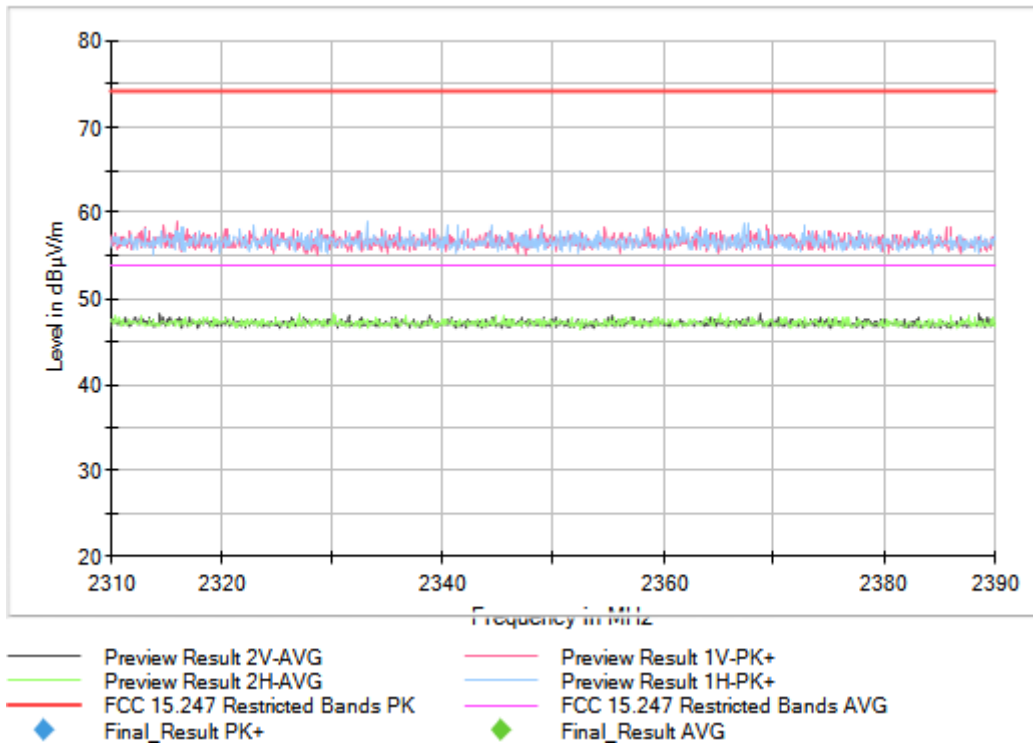
	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [1, 3]      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)      Frequency MHz = 2426.00000  
 MIMO Mode = SISO      Active Port = 1

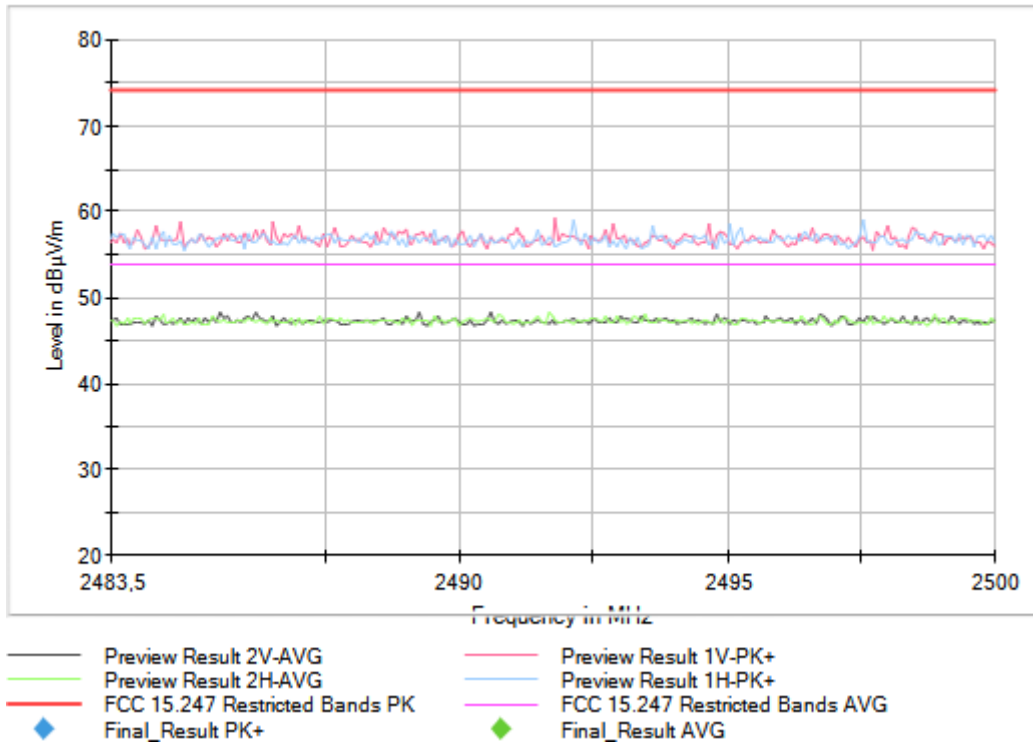
Images:



Full Spectrum



Full Spectrum



**Tables:**

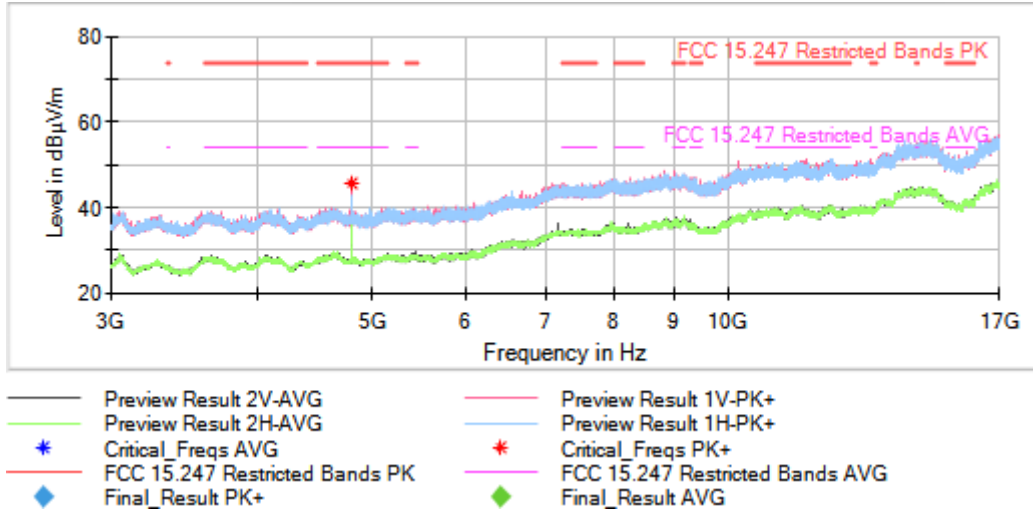
Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 5.0 (GFSK 1 Mbit/s)      Frequency MHz = 2402.00000  
 MIMO Mode = SISO                                      Active Port = 1

**Images:**



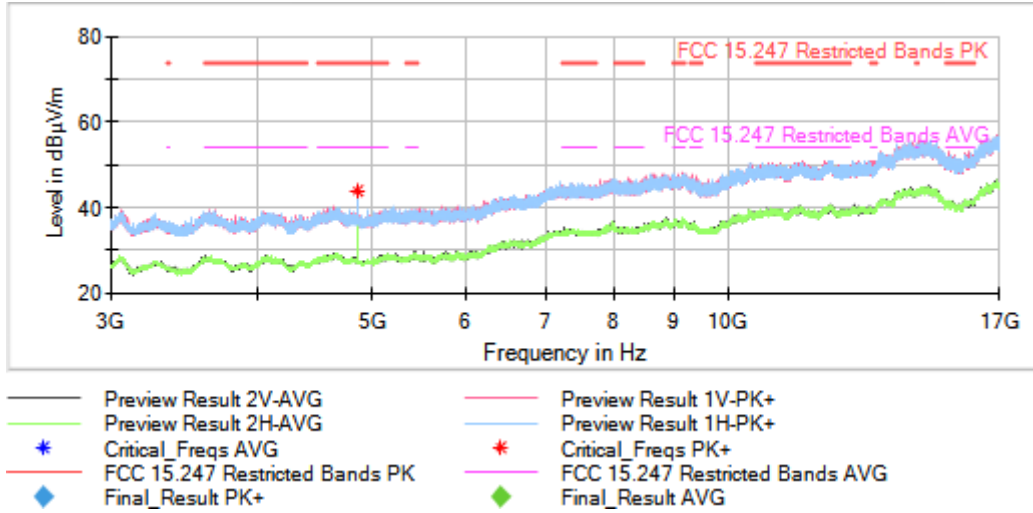
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 5.0 (GFSK 1 Mbit/s)      Frequency MHz = 2426.00000  
 MIMO Mode = SISO                                      Active Port = 1

**Images:**



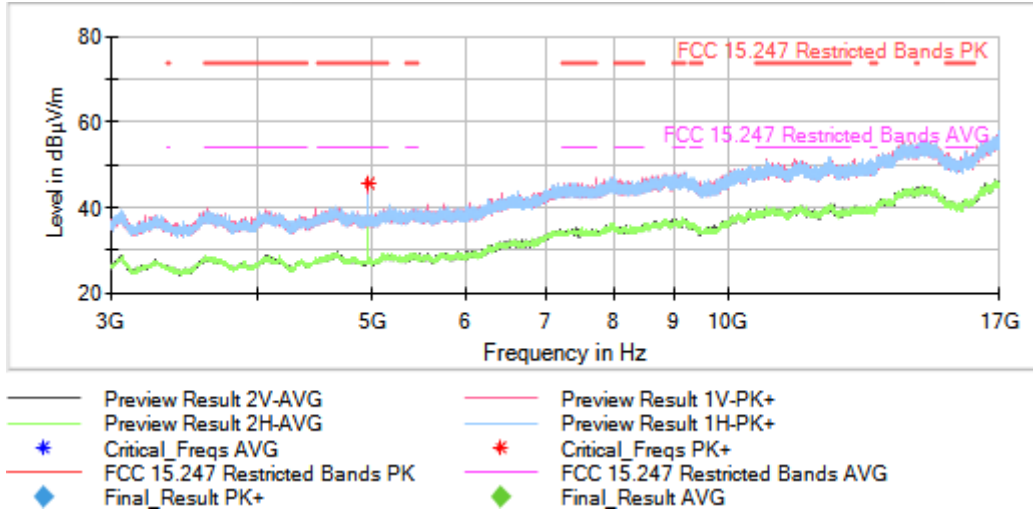
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 5.0 (GFSK 1 Mbit/s)      Frequency MHz = 2480.00000  
 MIMO Mode = SISO                                      Active Port = 1

**Images:**



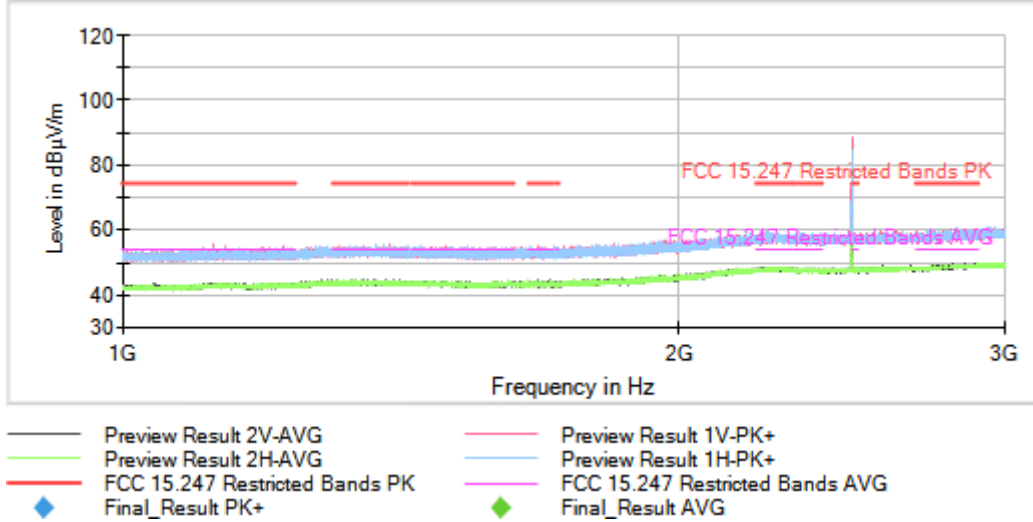
**Tables:**

Spectrum Analyzer Parameters

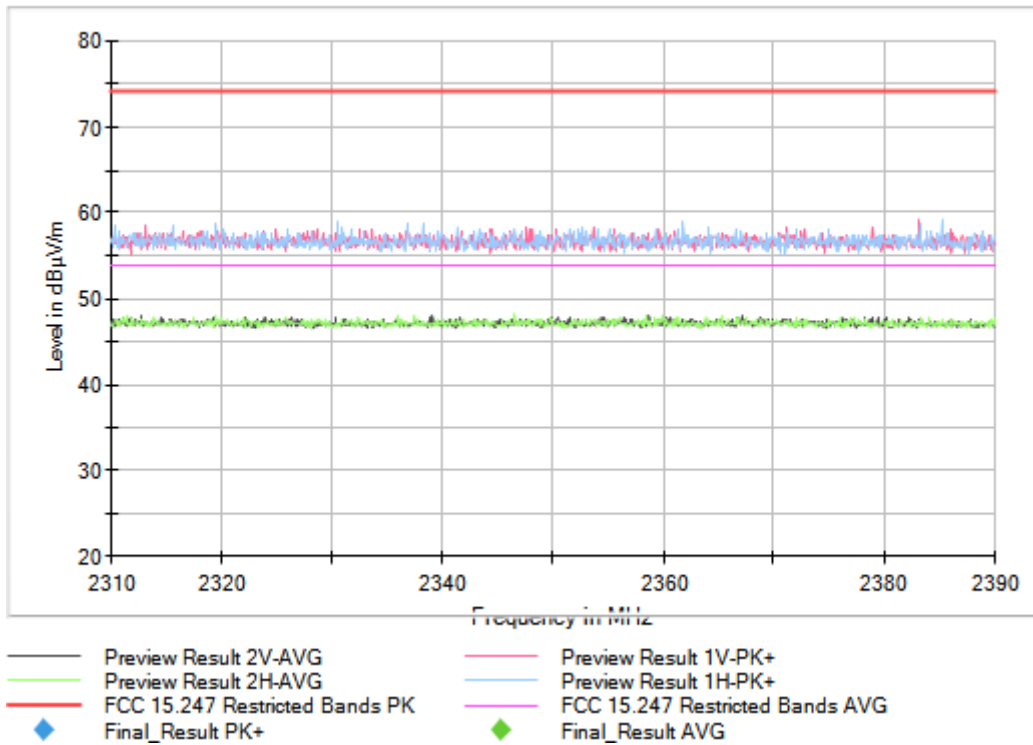
	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [1, 3]                      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 5.0 (GFSK 1 Mbit/s)      Frequency MHz = 2480.00000  
 MIMO Mode = SISO                                      Active Port = 1

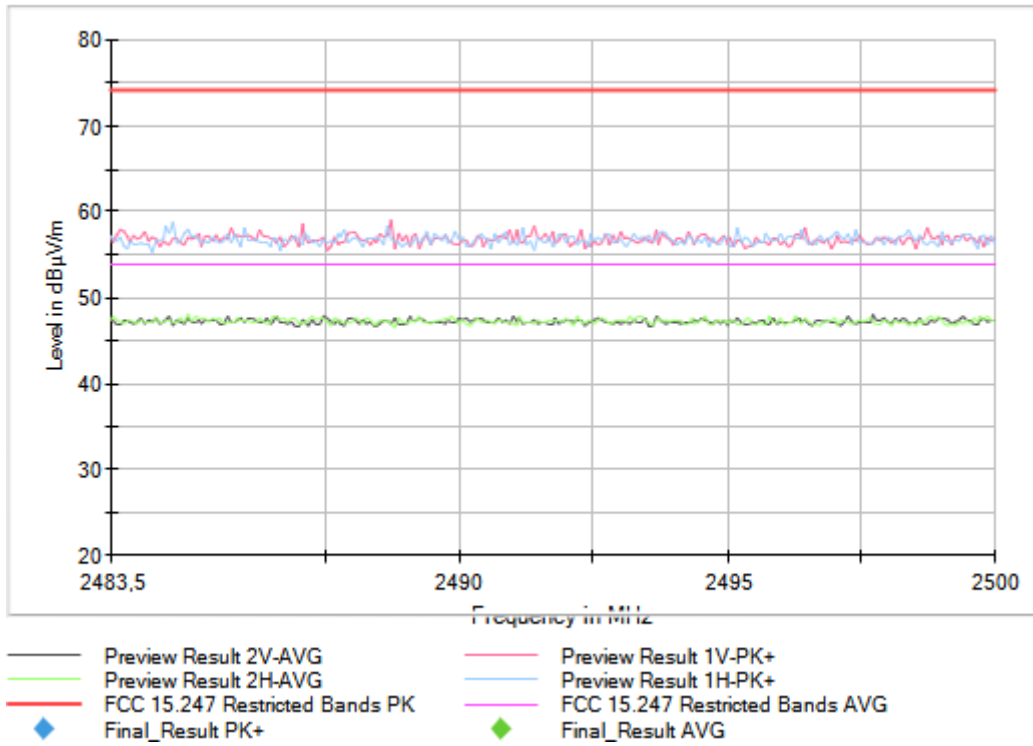
Images:



Full Spectrum



Full Spectrum



**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Mode: SISO

**Results**

Freq Rng (GHz)	Equipment	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[3, 17]	Digital Transmission System (DTS)	2404.00000	1	4807.500	46.67	V	PK
		2440.00000		4880.000	45.18	V	PK
		2478.00000		4955.000	43.01	V	PK

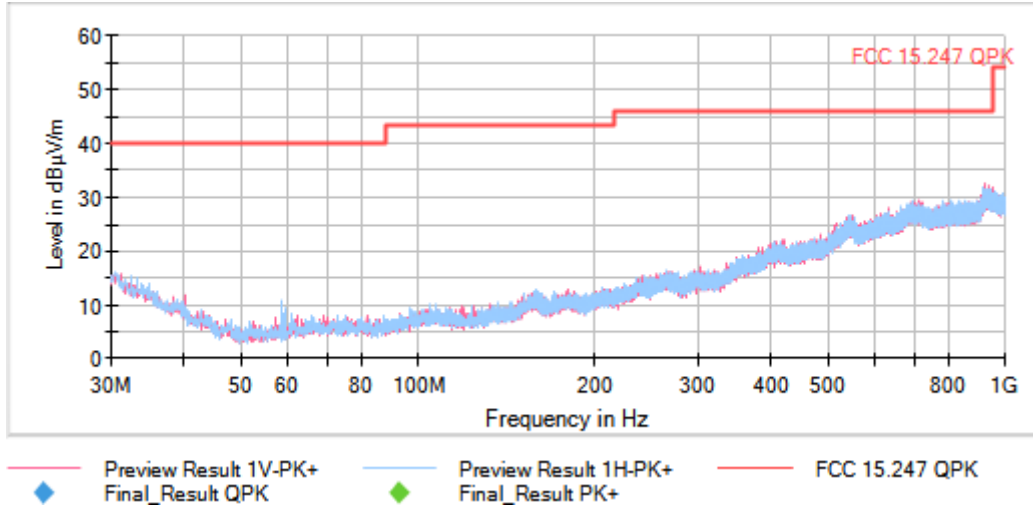
**Verdict**

Pass

**Attachments**

Frequency Range GHz = [0.03, 1]      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)      Frequency MHz = 2404.00000  
 MIMO Mode = SISO      Active Port = 1

**Images:**



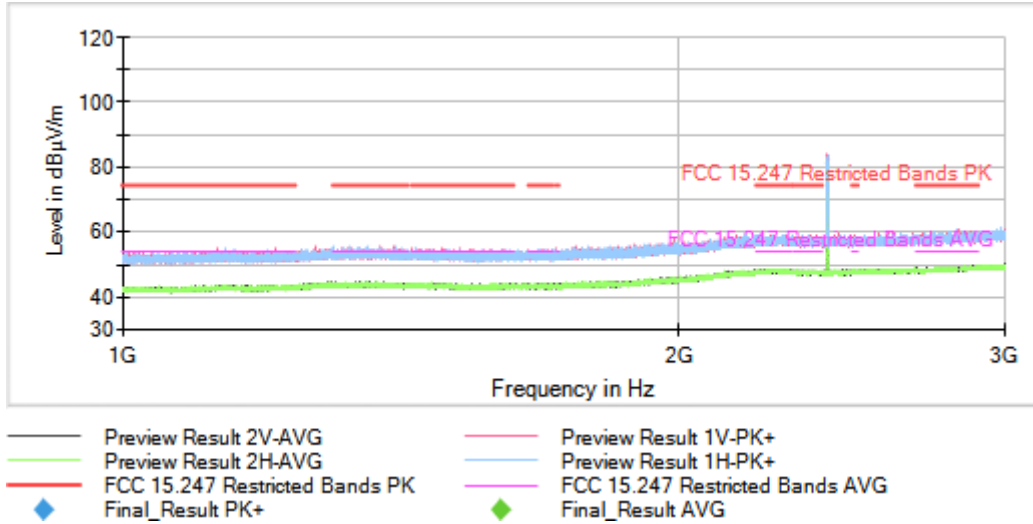
**Tables:**

Spectrum Analyzer Parameters

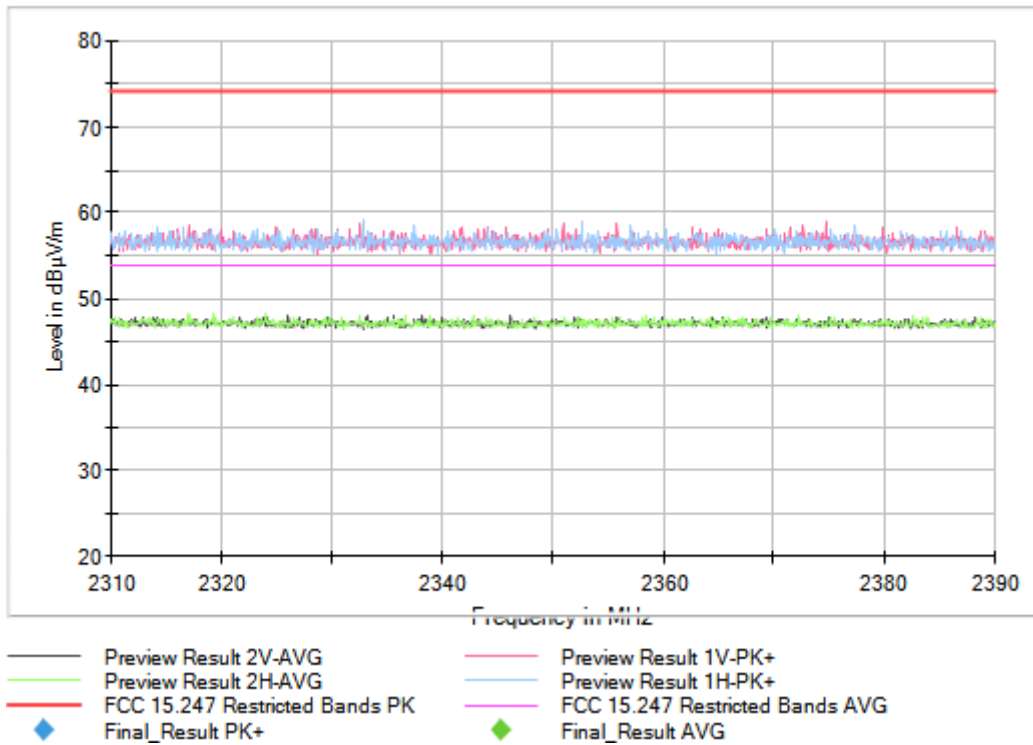
	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

Frequency Range GHz = [1, 3]      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)      Frequency MHz = 2404.00000  
 MIMO Mode = SISO      Active Port = 1

Images:

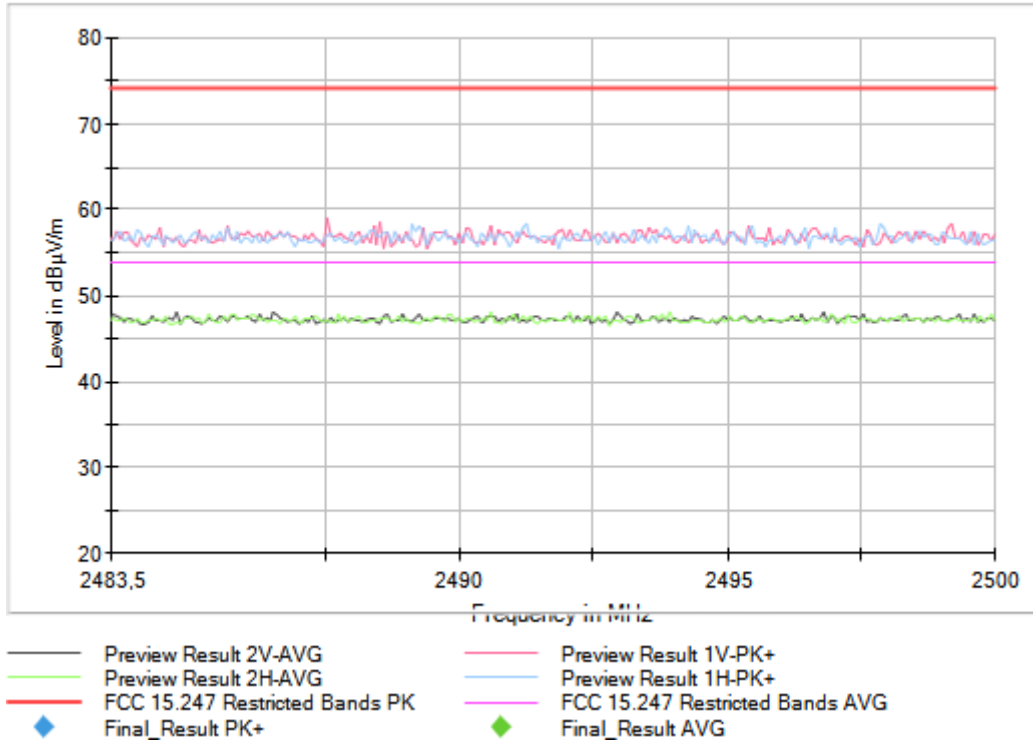


Full Spectrum





Full Spectrum



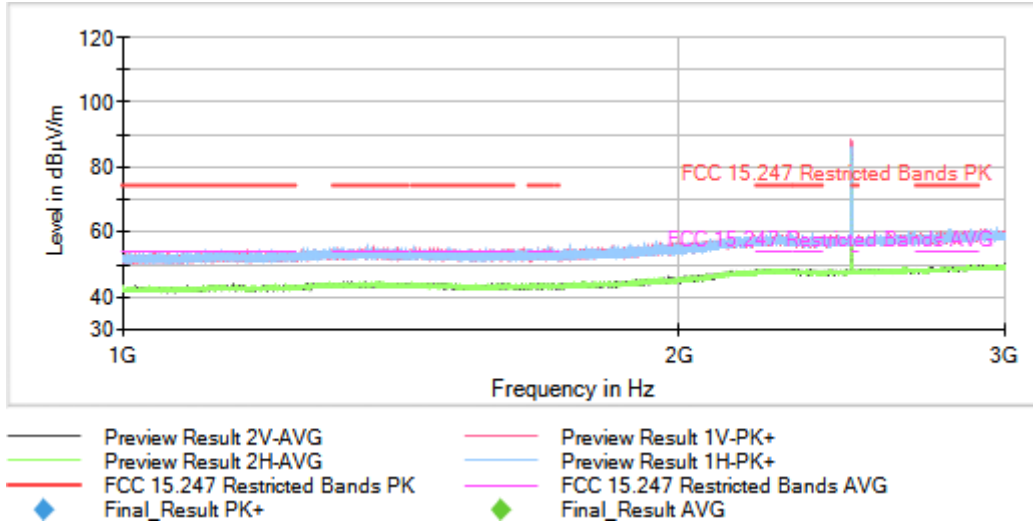
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 5.0 (GFSK 2 Mbit/s)      Frequency MHz = 2478.00000  
 MIMO Mode = SISO      Active Port = 1

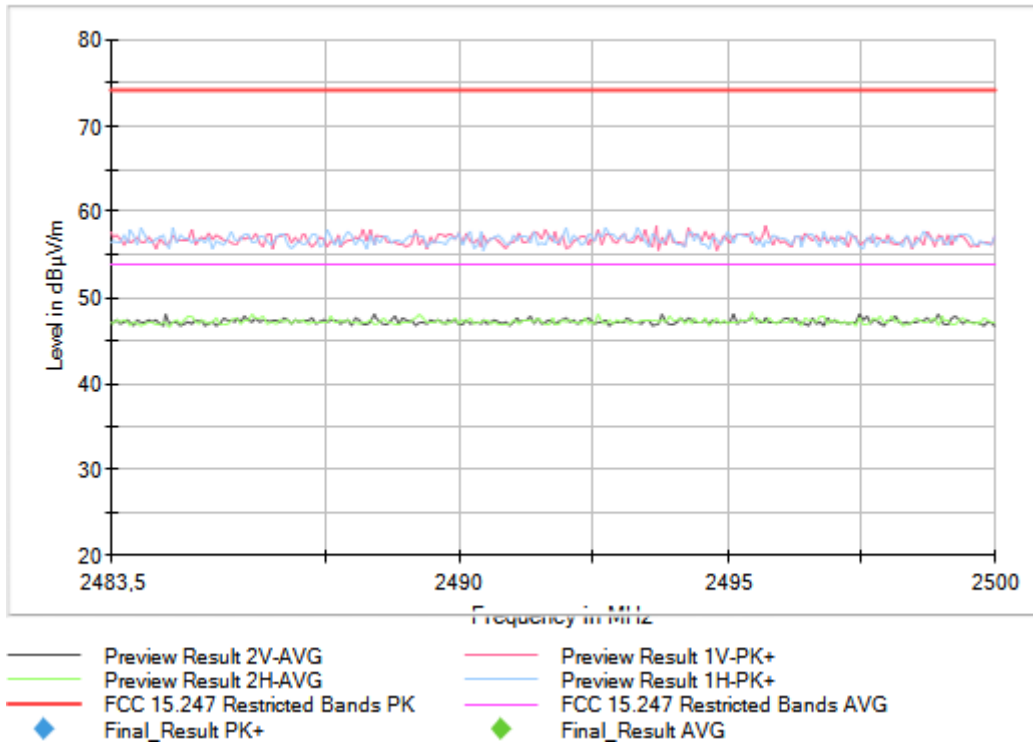
Images:



Full Spectrum



Full Spectrum



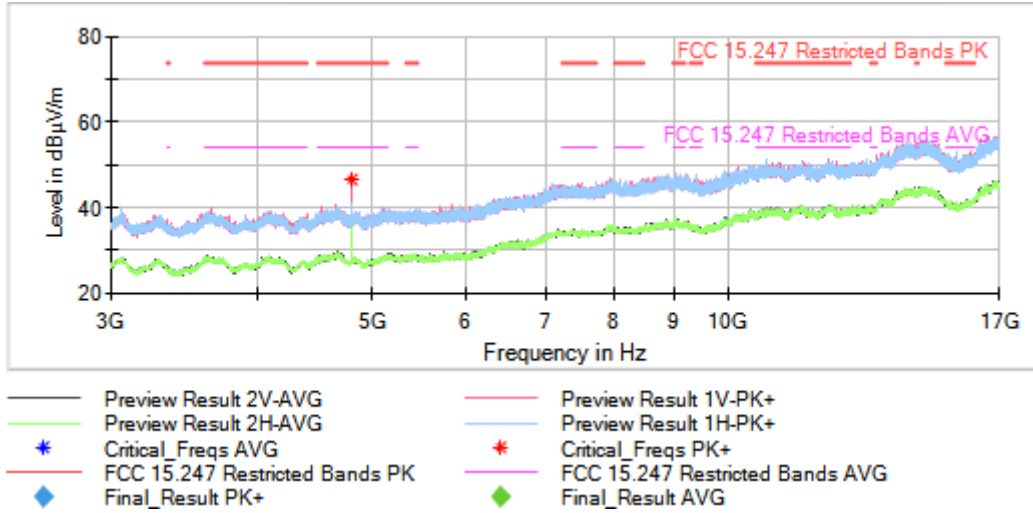
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 5.0 (GFSK 2 Mbit/s)      Frequency MHz = 2404.00000  
 MIMO Mode = SISO                                      Active Port = 1

**Images:**



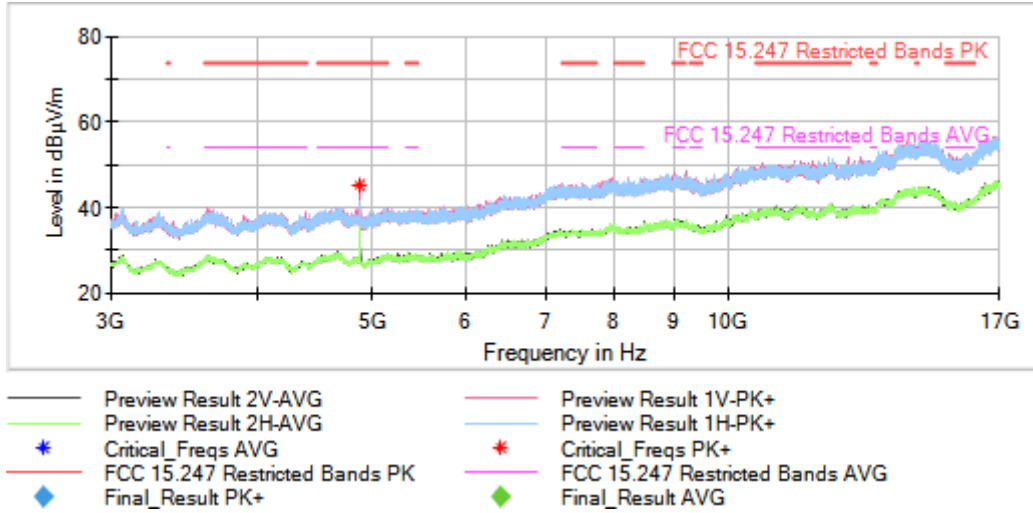
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 5.0 (GFSK 2 Mbit/s)      Frequency MHz = 2440.00000  
 MIMO Mode = SISO                                      Active Port = 1

**Images:**



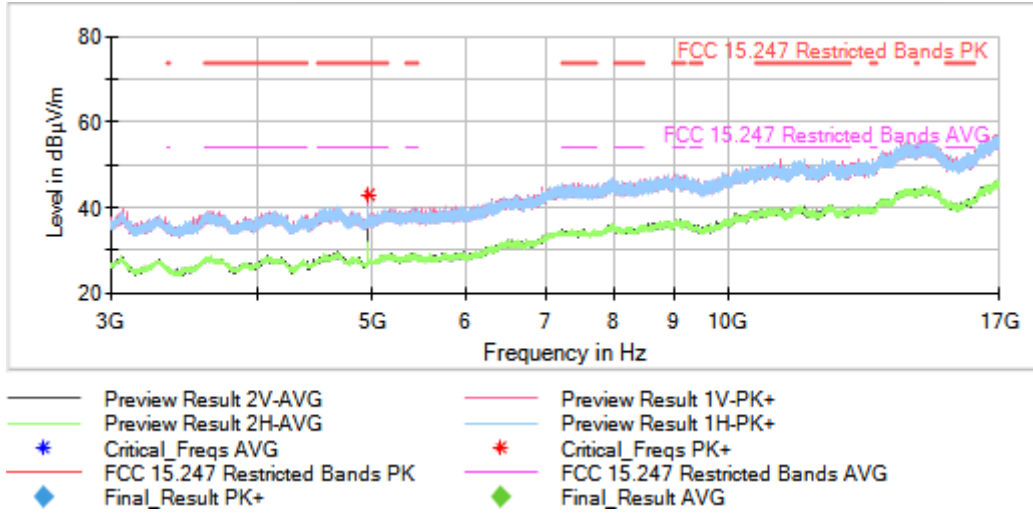
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 5.0 (GFSK 2 Mbit/s)      Frequency MHz = 2478.00000  
 MIMO Mode = SISO                                      Active Port = 1

**Images:**



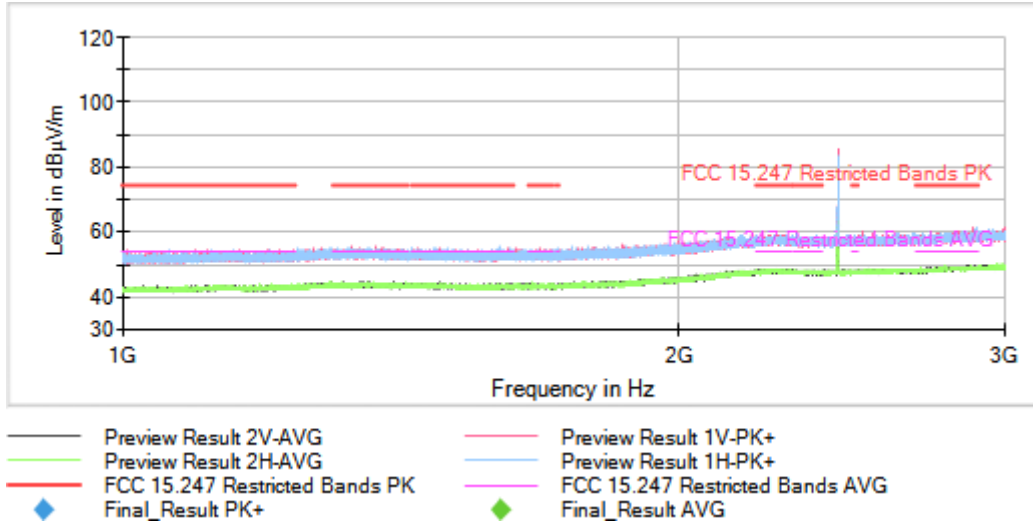
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [1, 3]      Equipment Type = Digital Transmission System (DTS)  
 Modulation = BTLE 5.0 (GFSK 2 Mbit/s)      Frequency MHz = 2440.00000  
 MIMO Mode = SISO      Active Port = 1

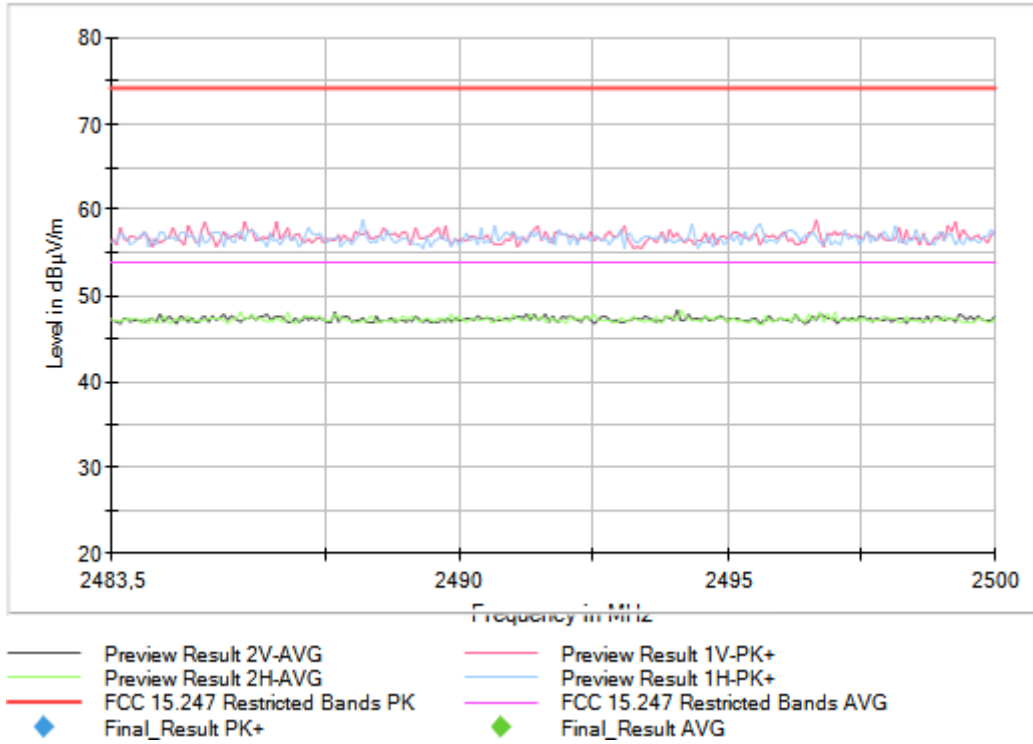
Images:



Full Spectrum



Full Spectrum



**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB



Modulation: Proximity

Mode: SISO

**Results**

Freq Rng (GHz)	Equipment	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[3, 17]	Digital Transmission System (DTS)	2402.00000	1	4803.000	44.98	H	PK
		2440.00000		4880.500	42.86	V	PK
		2480.00000		4959.500	42.70	V	PK

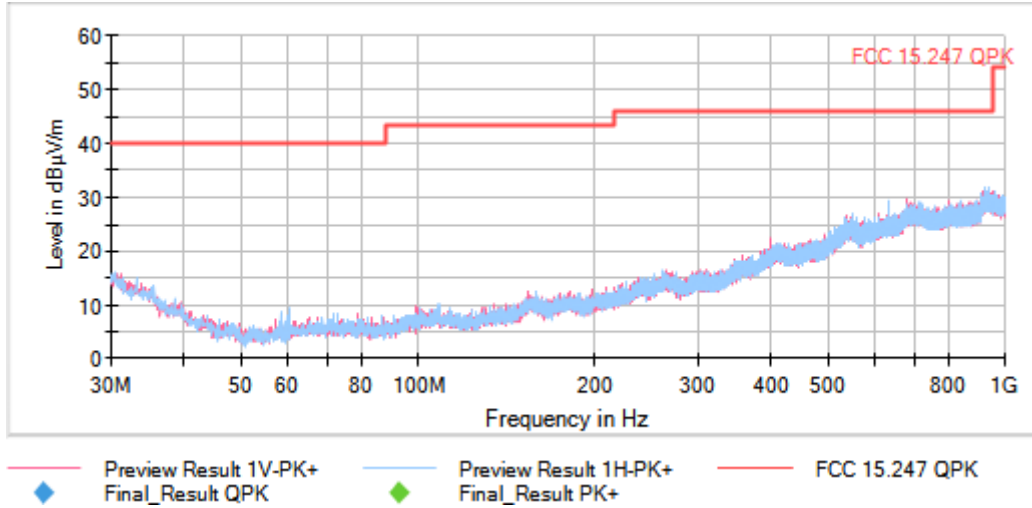
**Verdict**

Pass

**Attachments**

Frequency Range GHz = [0.03, 1]    Equipment Type = Digital Transmission System (DTS)  
 Modulation = Proximity                      Frequency MHz = 2480.00000  
 MIMO Mode = SISO                              Active Port = 1

**Images:**



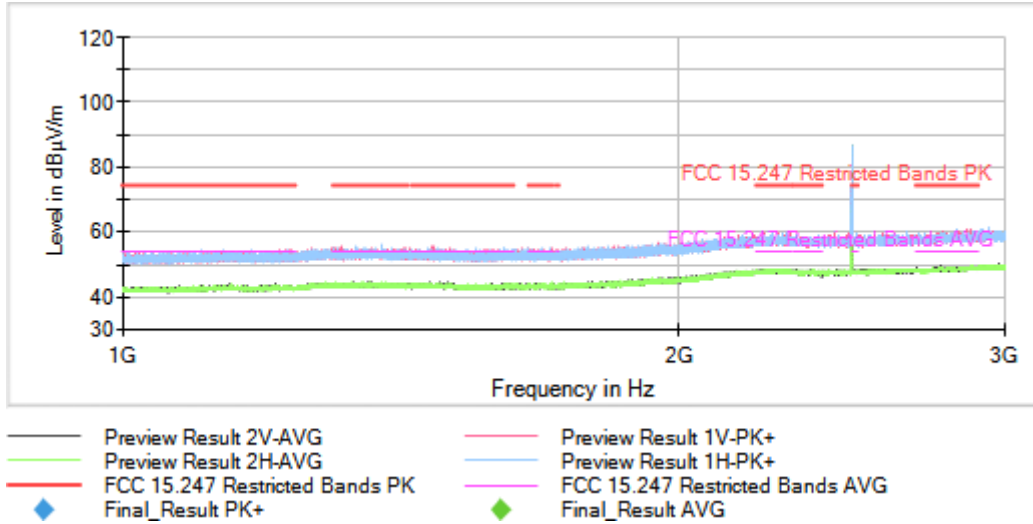
**Tables:**

Spectrum Analyzer Parameters

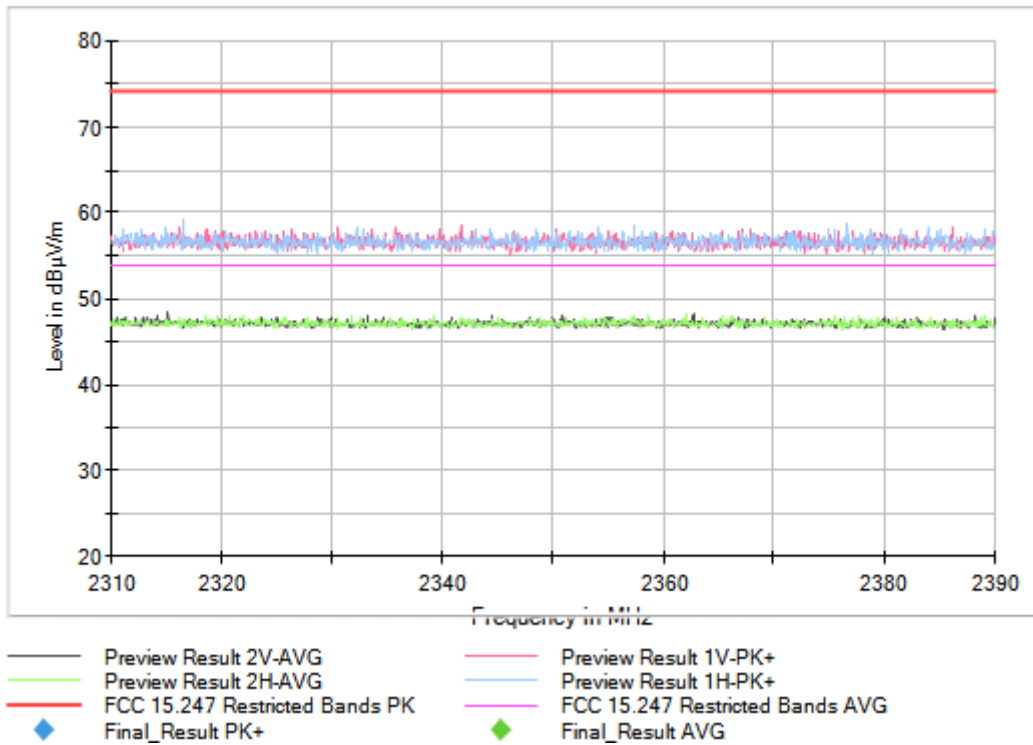
	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESR 7]					
	30 MHz - 1 GHz	48,5 kHz	PK+	100 kHz	1 s	20 dB

Frequency Range GHz = [1, 3]    Equipment Type = Digital Transmission System (DTS)  
 Modulation = Proximity            Frequency MHz = 2480.00000  
 MIMO Mode = SISO                  Active Port = 1

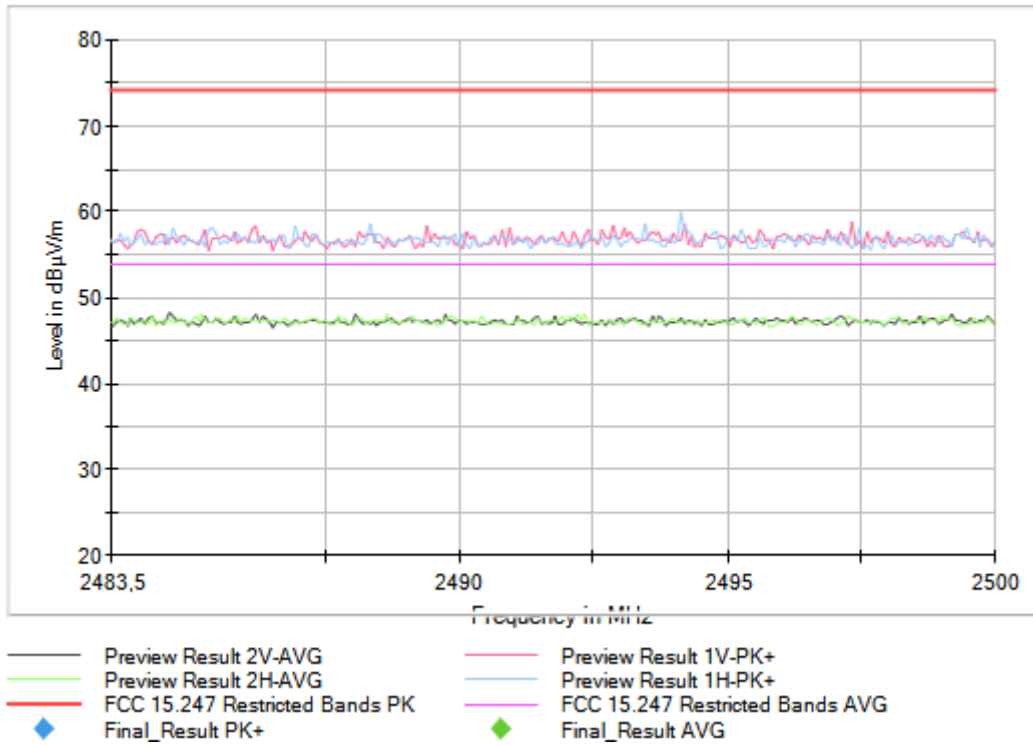
Images:



Full Spectrum



Full Spectrum



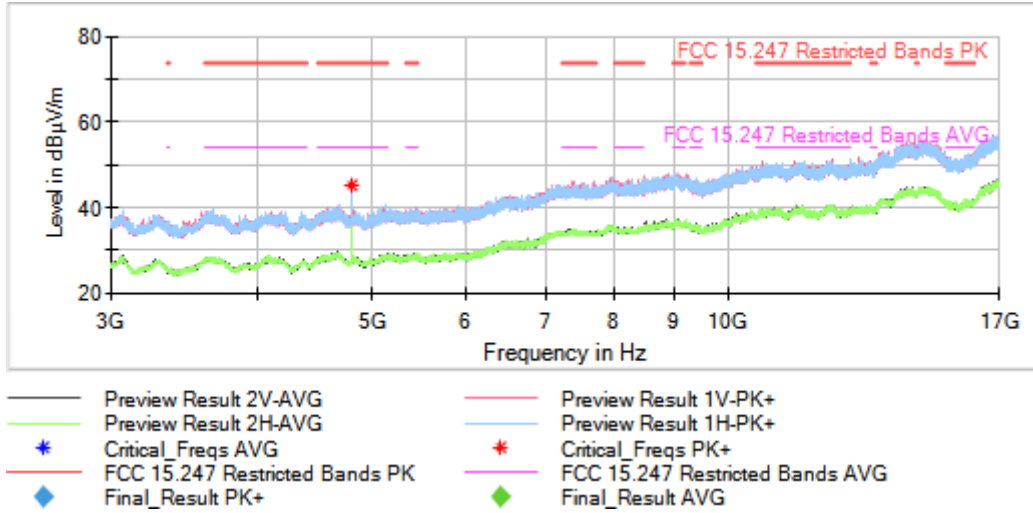
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 = Proximity                      Frequency MHz = 2402.00000  
 MIMO Mode = SISO                              Active Port = 1

**Images:**



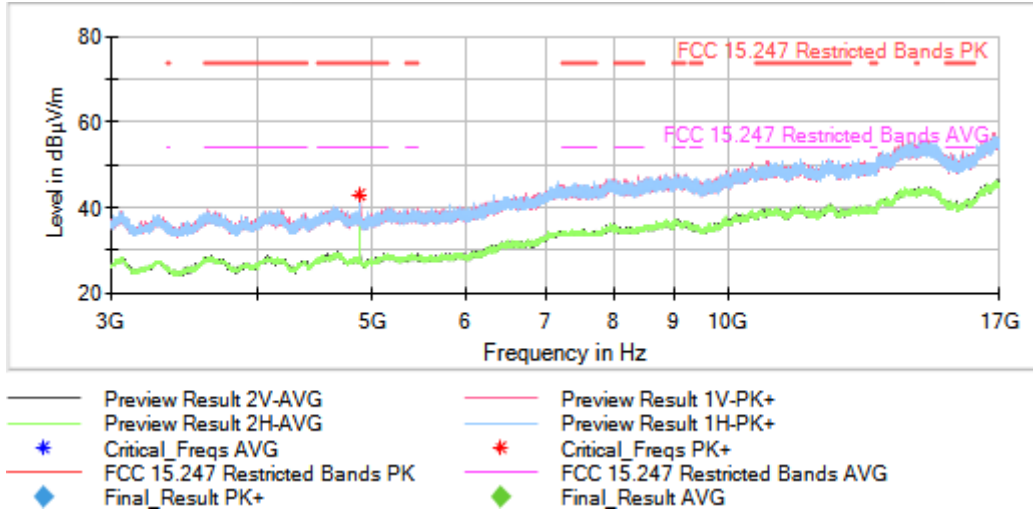
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 = Proximity              Frequency MHz = 2440.00000  
 MIMO Mode = SISO                      Active Port = 1

**Images:**



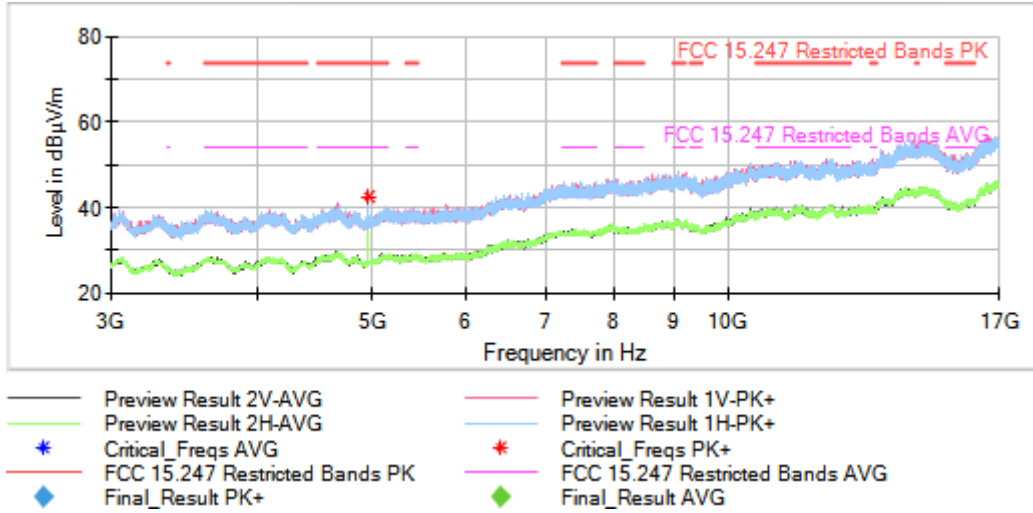
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	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 = Proximity                      Frequency MHz = 2480.00000  
 MIMO Mode = SISO                              Active Port = 1

**Images:**



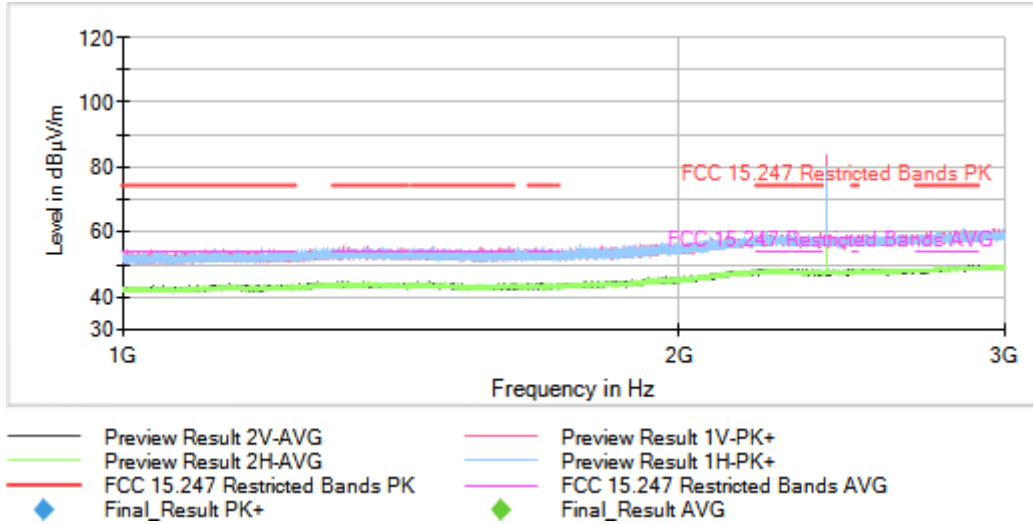
**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	3 GHz - 17 GHz	500 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [1, 3]    Equipment Type = Digital Transmission System (DTS)  
 Modulation = Proximity            Frequency MHz = 2402.00000  
 MIMO Mode = SISO                  Active Port = 1

Images:

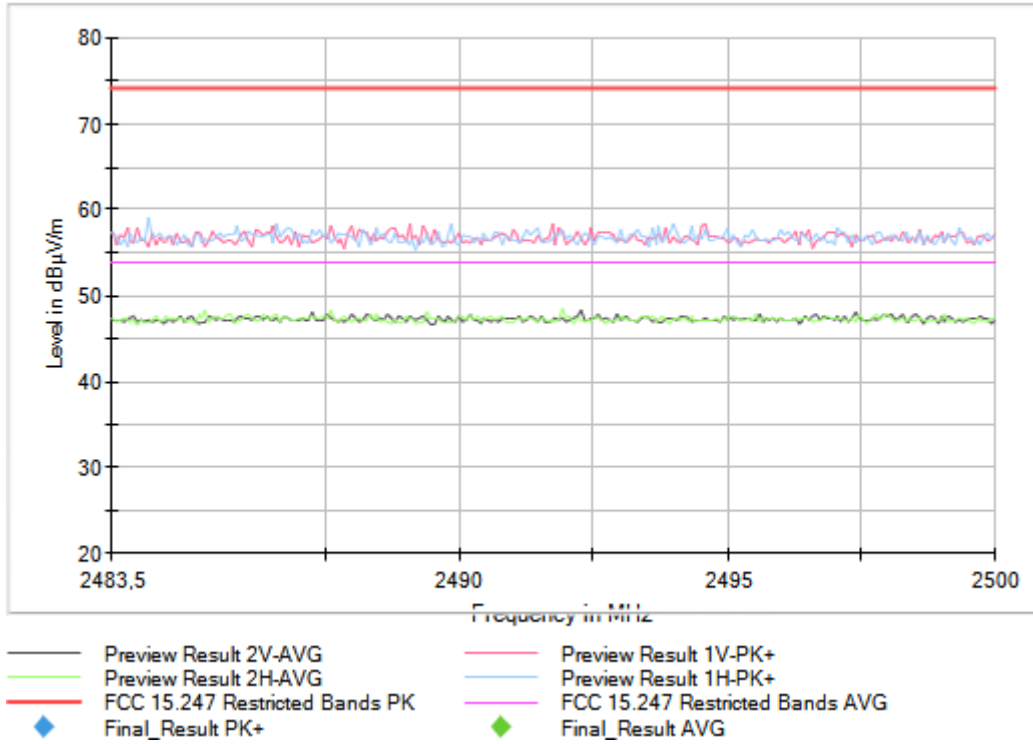


Full Spectrum





Full Spectrum



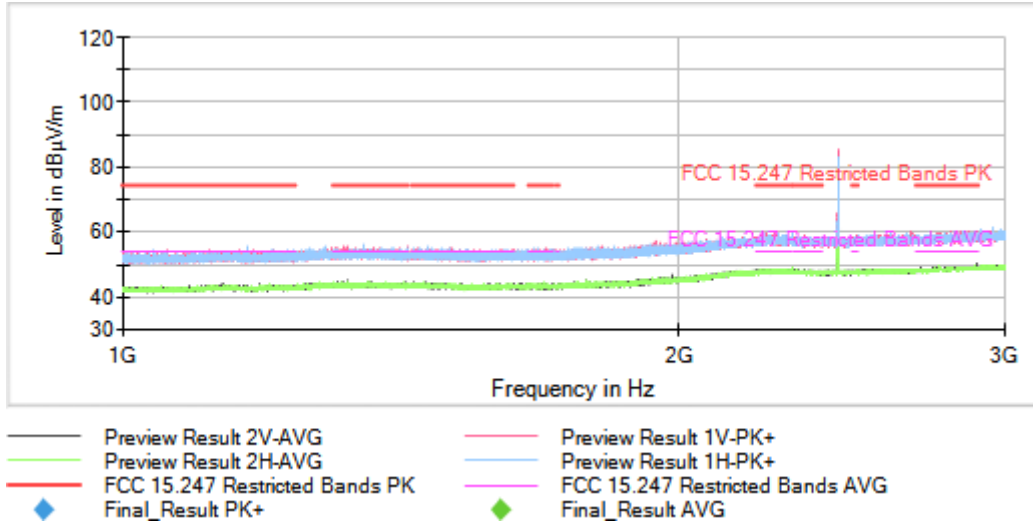
**Tables:**

Spectrum Analyzer Parameters

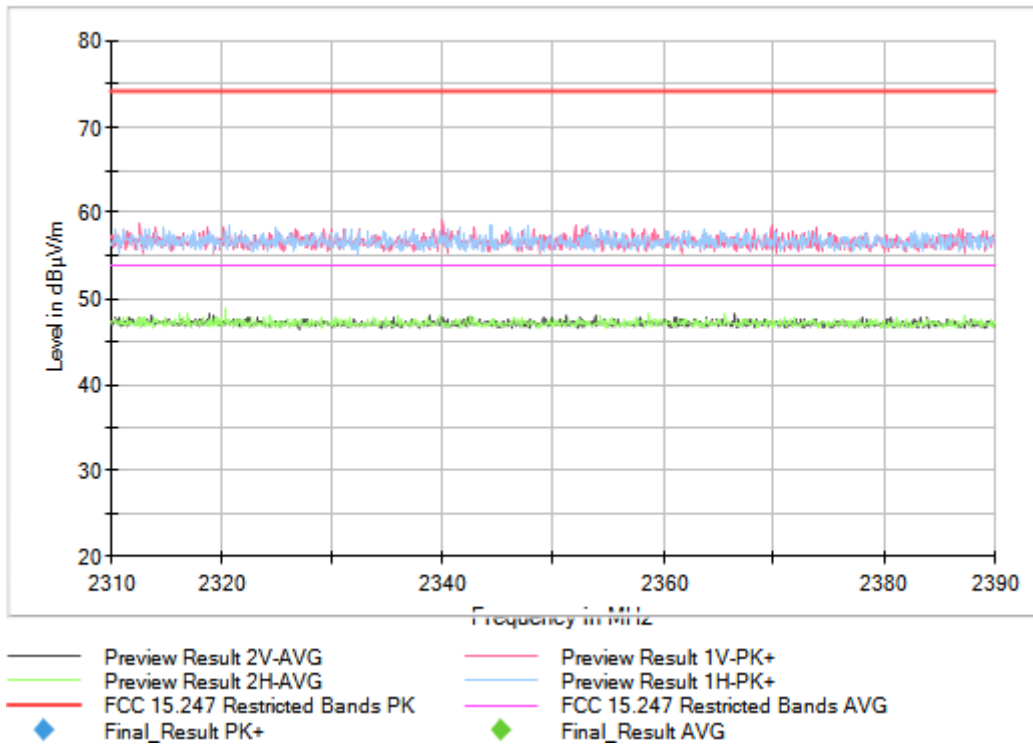
	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Frequency Range GHz = [1, 3]    Equipment Type = Digital Transmission System (DTS)  
 Modulation = Proximity            Frequency MHz = 2440.00000  
 MIMO Mode = SISO                 Active Port = 1

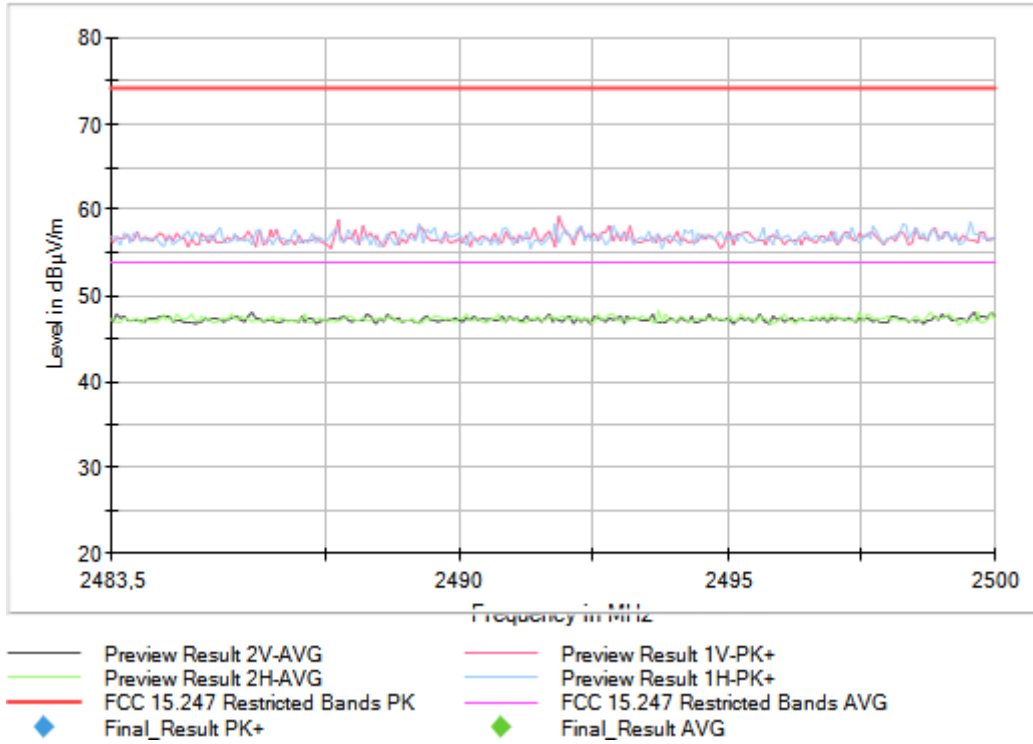
Images:



Full Spectrum



Full Spectrum



**Tables:**

Spectrum Analyzer Parameters

	Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
	Receiver: [ESW 44]					
	1 GHz - 3 GHz	66,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

## 99dBw Occupied Channel Bandwidth 99%

### Limits

99% Occupied Channel Bandwidth.

Modulation: BTLE 5.0 (GFSK 1 Mbit/s)

Mode: SISO

### Results

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Digital Transmission System (DTS)	1	2402.00000	1	1.040
		2426.00000		1.035
		2480.00000		1.040

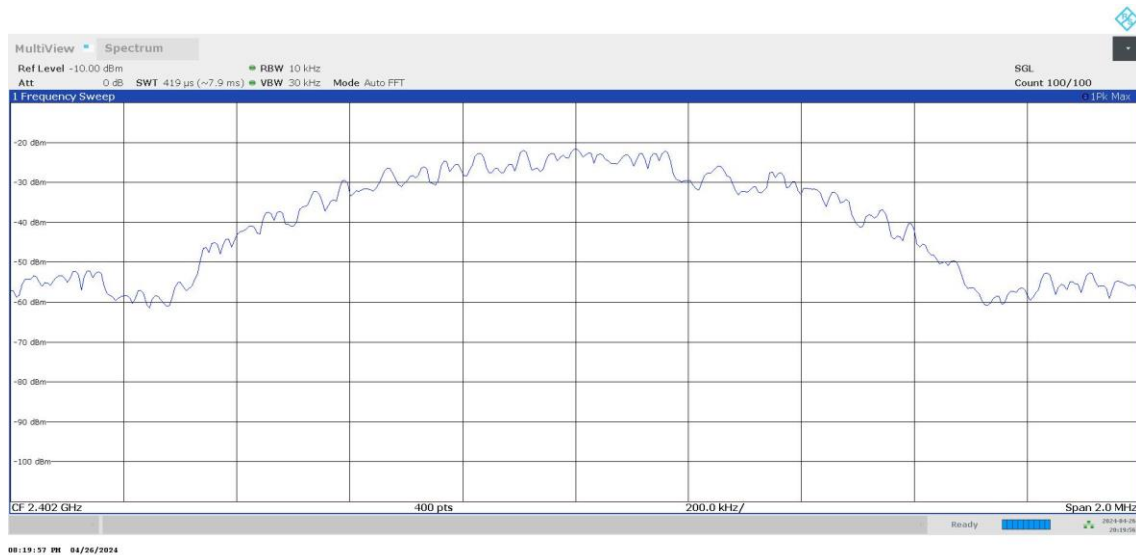
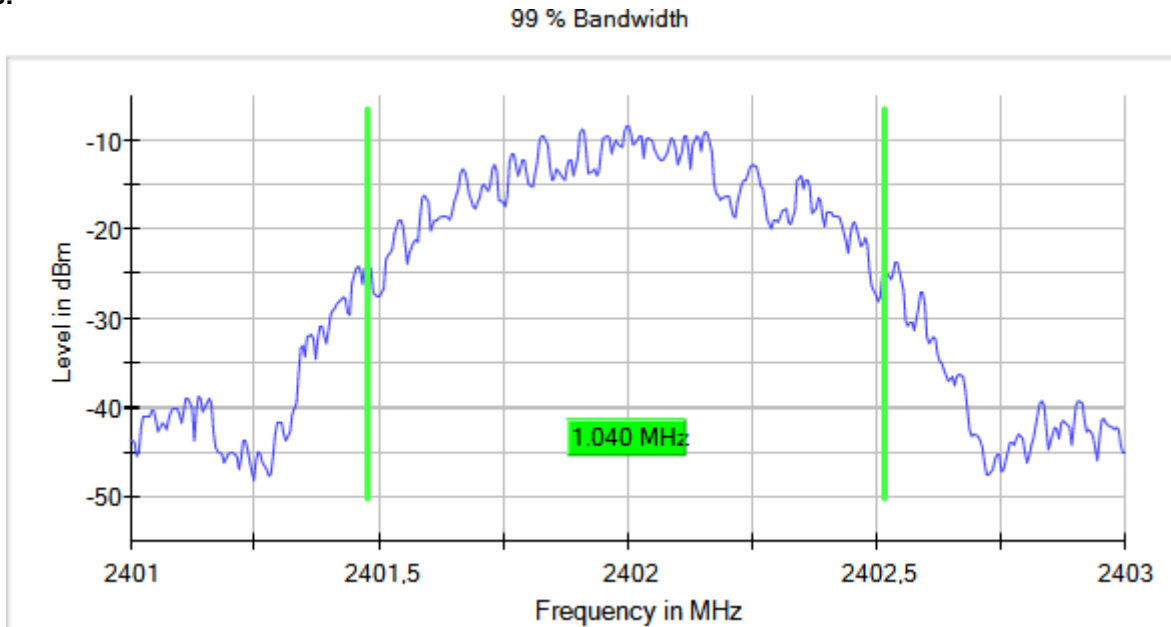
### Verdict

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

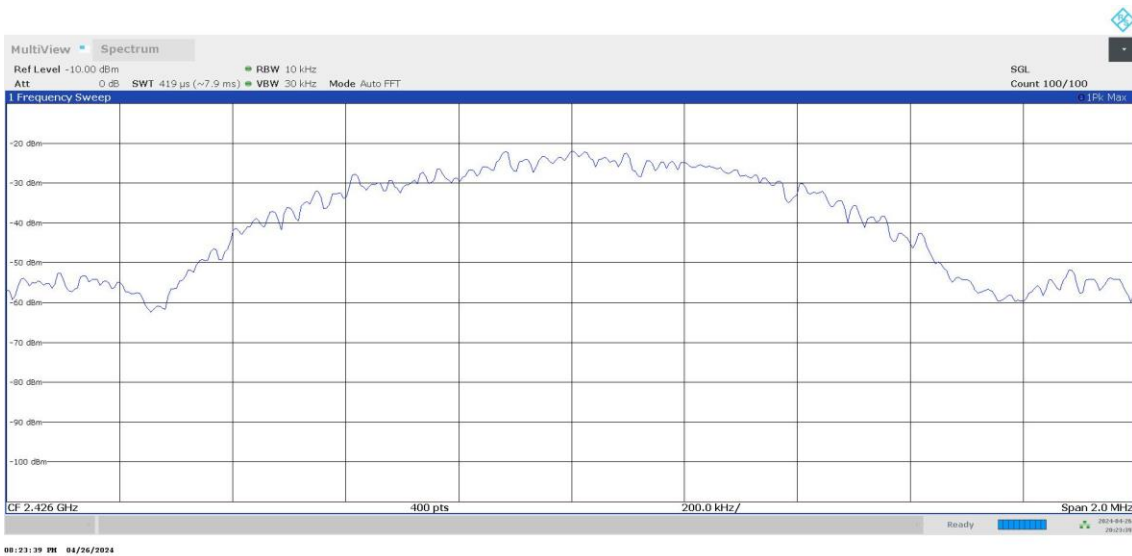
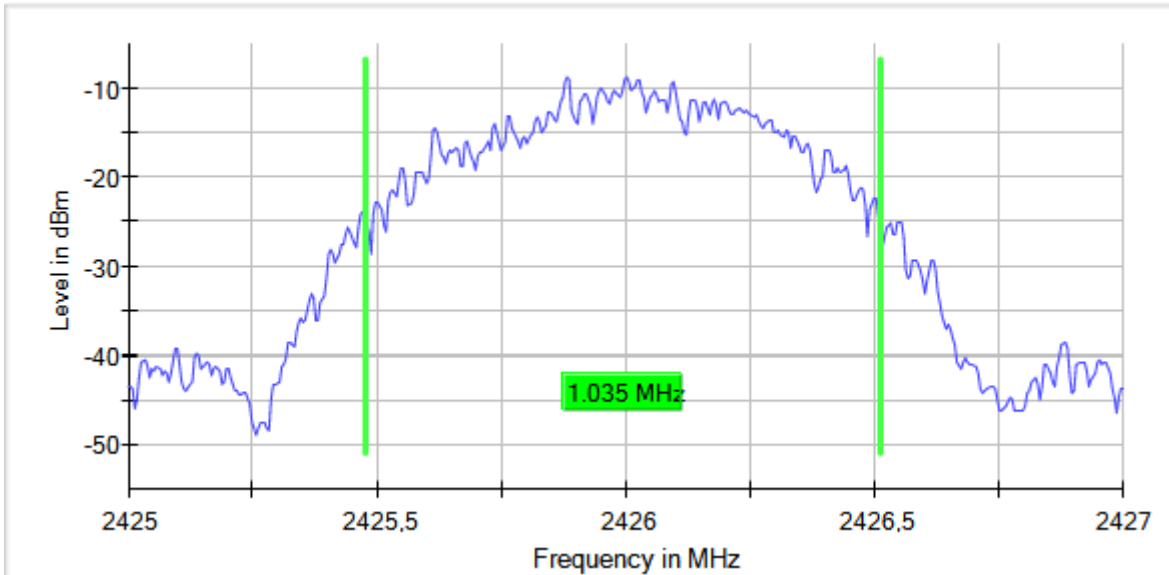
### Images:



Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 1  
Modulation = BTLE 5.0 (GFSK 1 Mbit/s)                      Frequency MHz = 2426.00000  
MIMO Mode = SISO    Active Port = 1

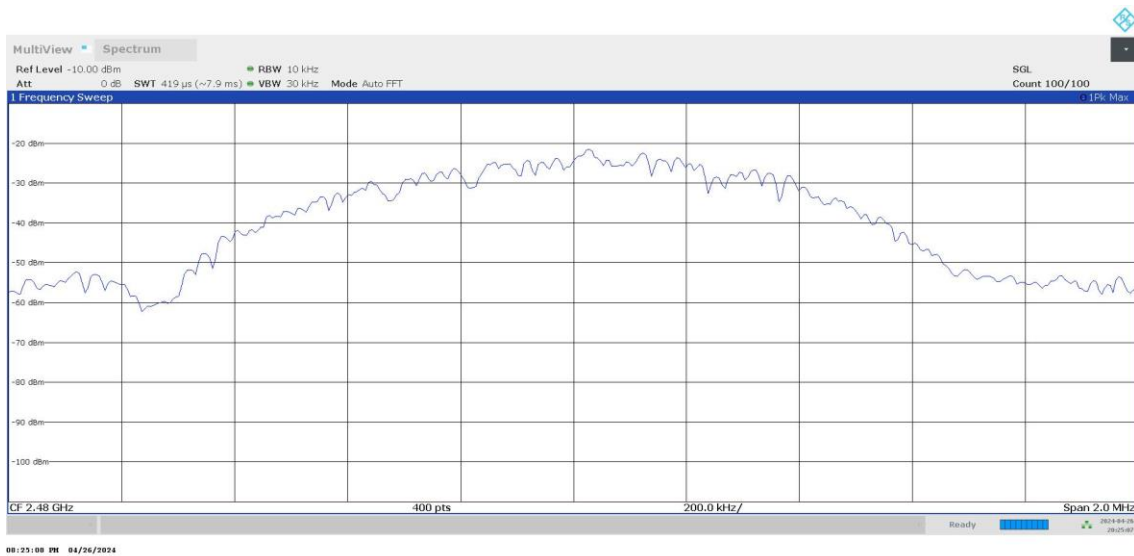
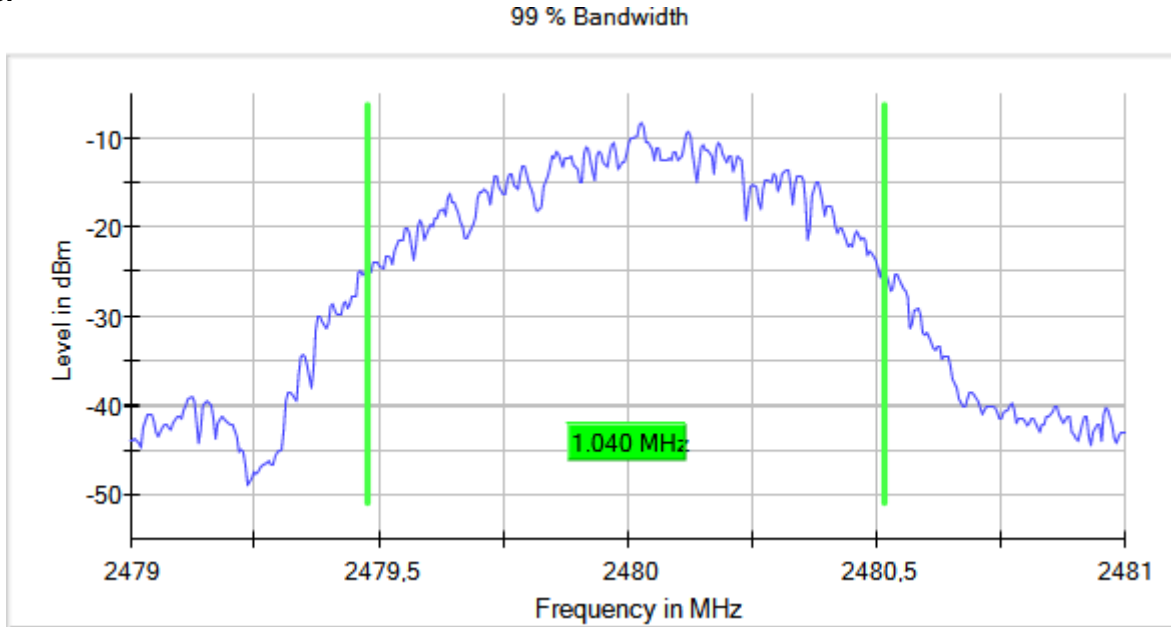
Images:

99 % Bandwidth



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

Images:



Modulation: BTLE 5.0 (GFSK 2 Mbit/s)

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Digital Transmission System (DTS)	2	2404.00000	1	2.030
		2440.00000		2.020
		2478.00000		2.030

**Verdict**

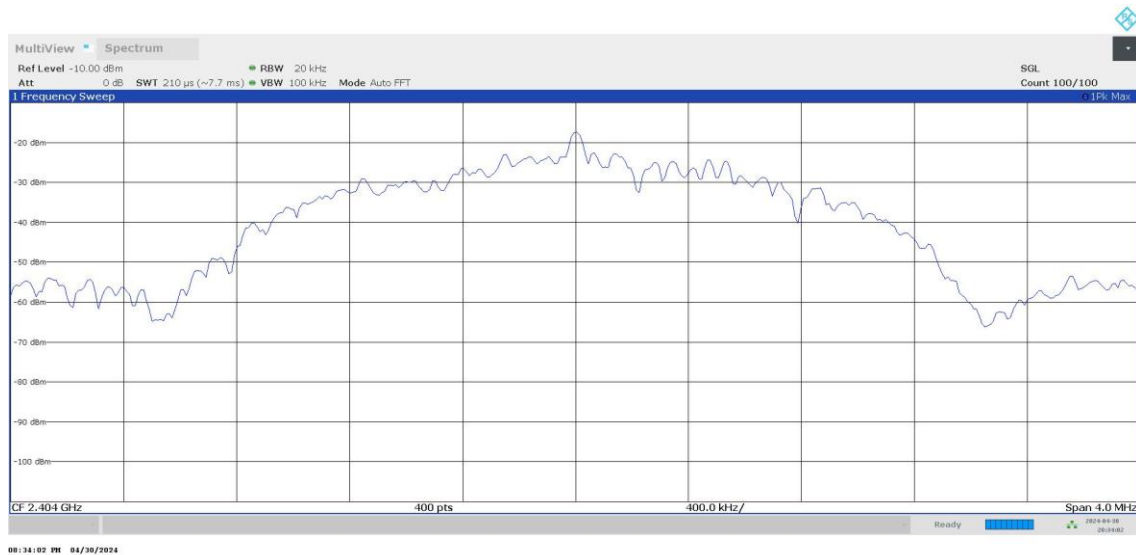
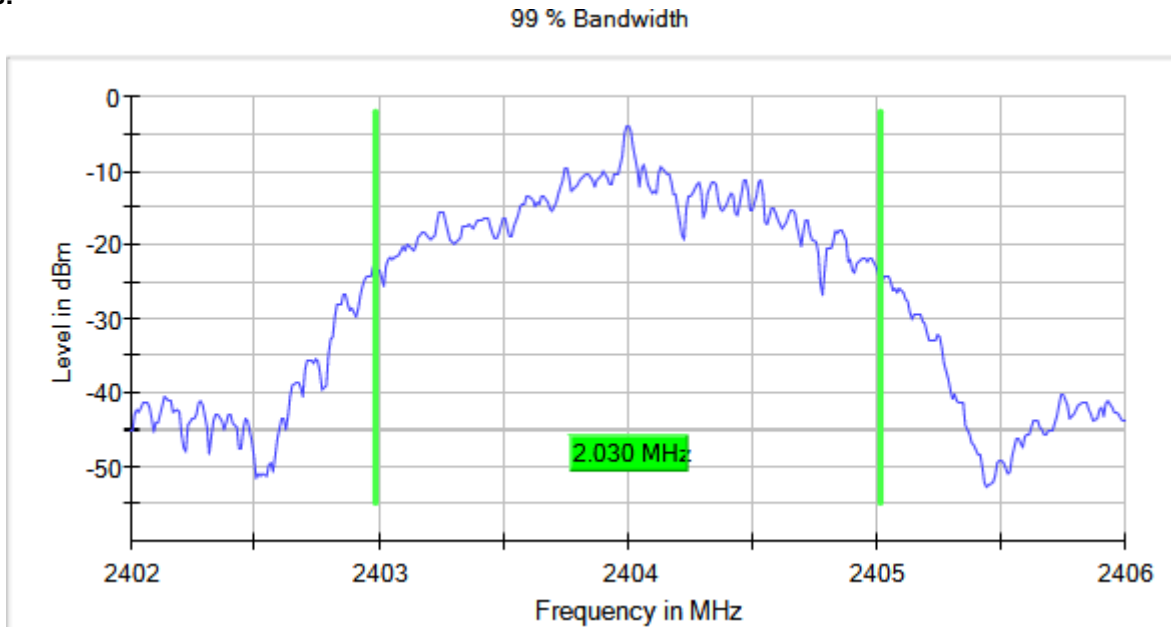
Pass



### Attachments

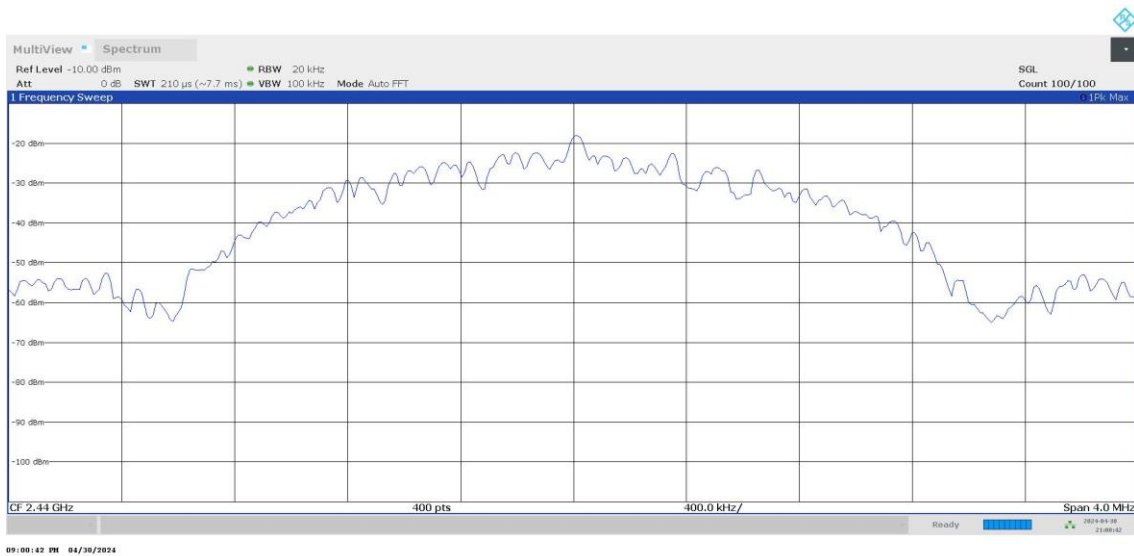
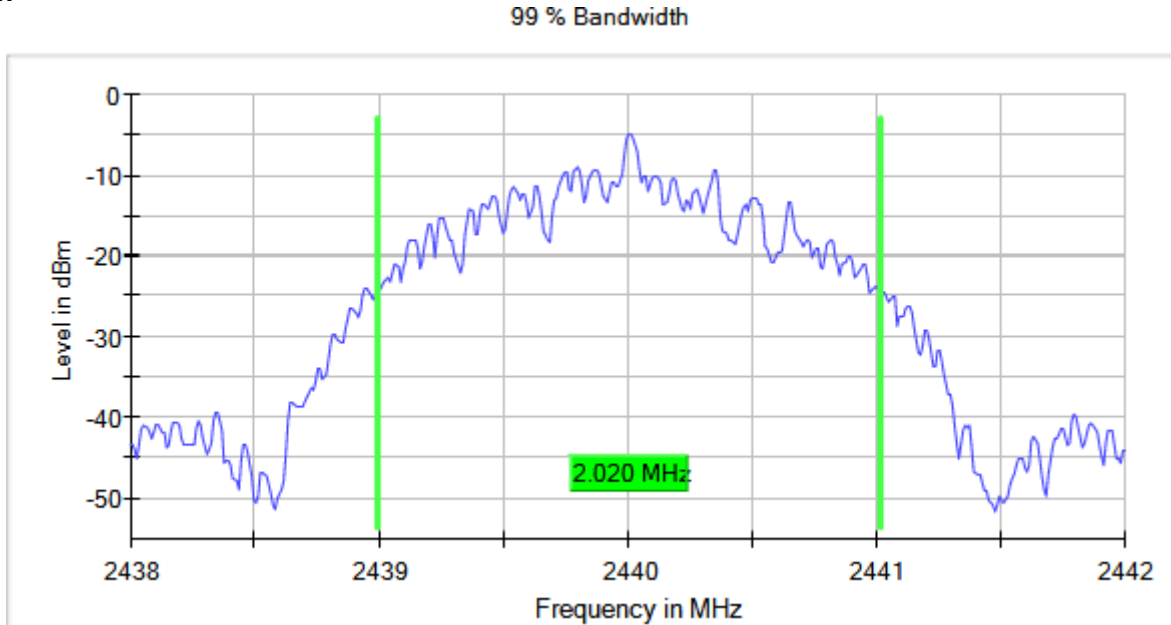
Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2404.00000  
MIMO Mode = SISO    Active Port = 1

### Images:



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

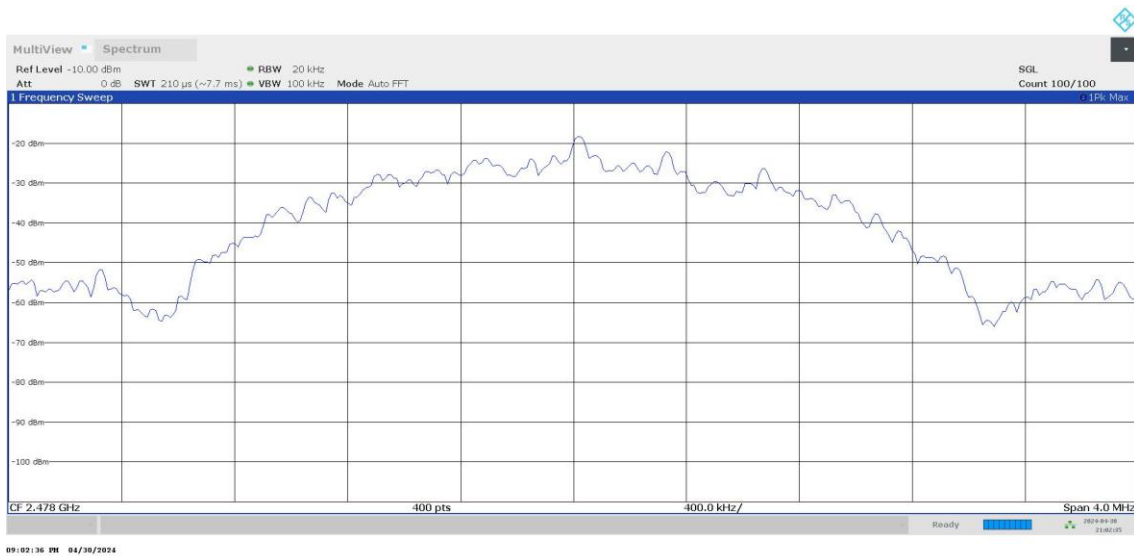
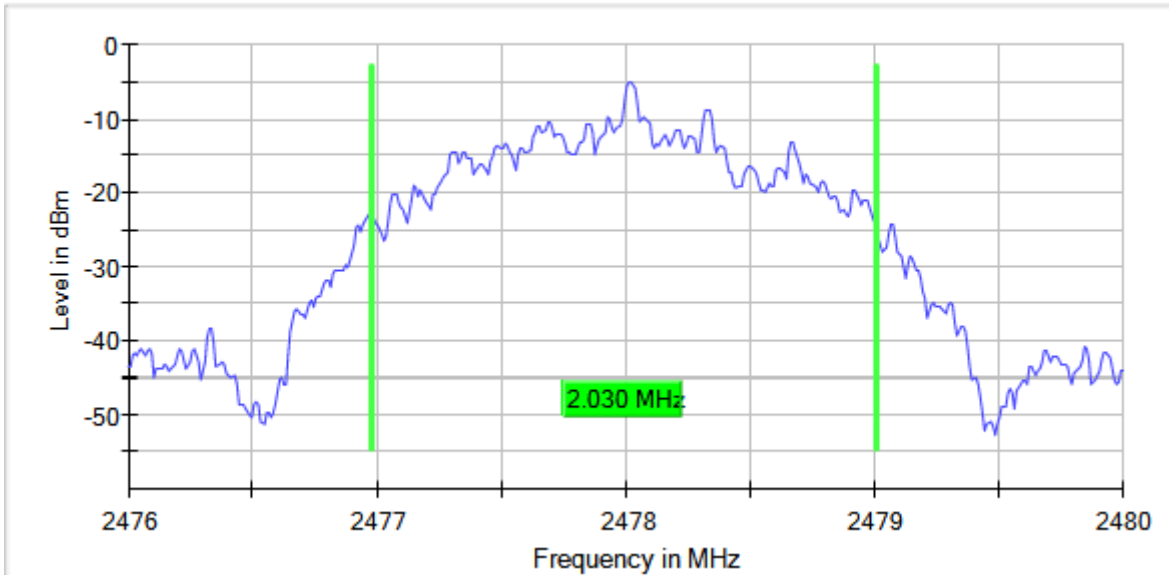
Images:



Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = BTLE 5.0 (GFSK 2 Mbit/s)                      Frequency MHz = 2478.00000  
MIMO Mode = SISO    Active Port = 1

Images:

99 % Bandwidth



Modulation: Proximity

Mode: SISO

**Results**

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Digital Transmission System (DTS)	2	2402.00000	1	1.690
		2440.00000		1.680
		2480.00000		1.710

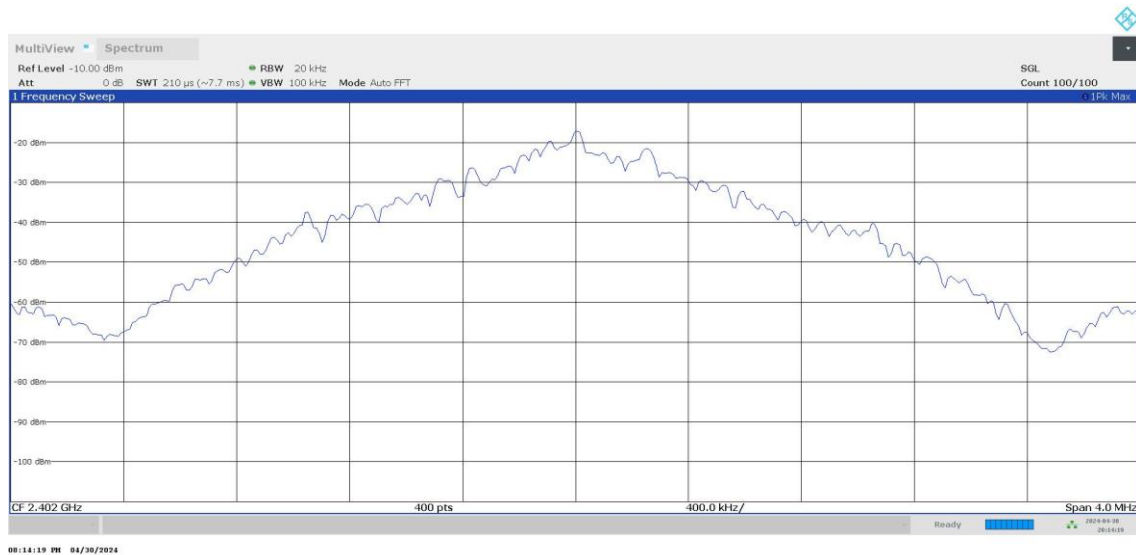
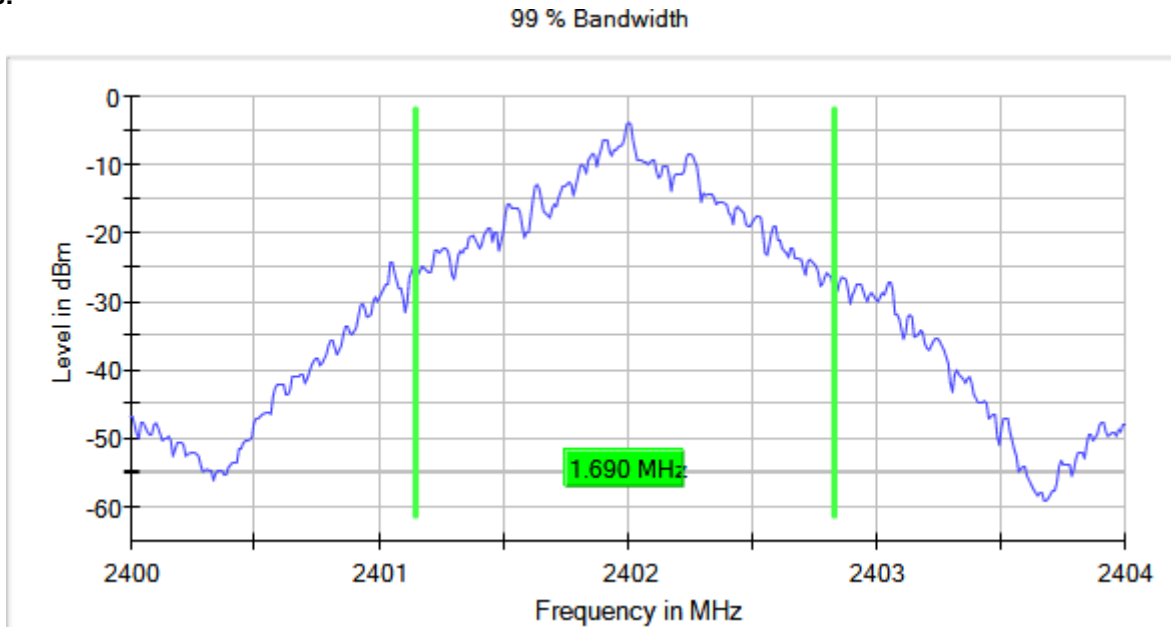
**Verdict**

Pass

### Attachments

Equipment Type = Digital Transmission System (DTS)    Bandwidth MHz = 2  
Modulation = Proximity    Frequency MHz = 2402.00000  
MIMO Mode = SISO    Active Port = 1

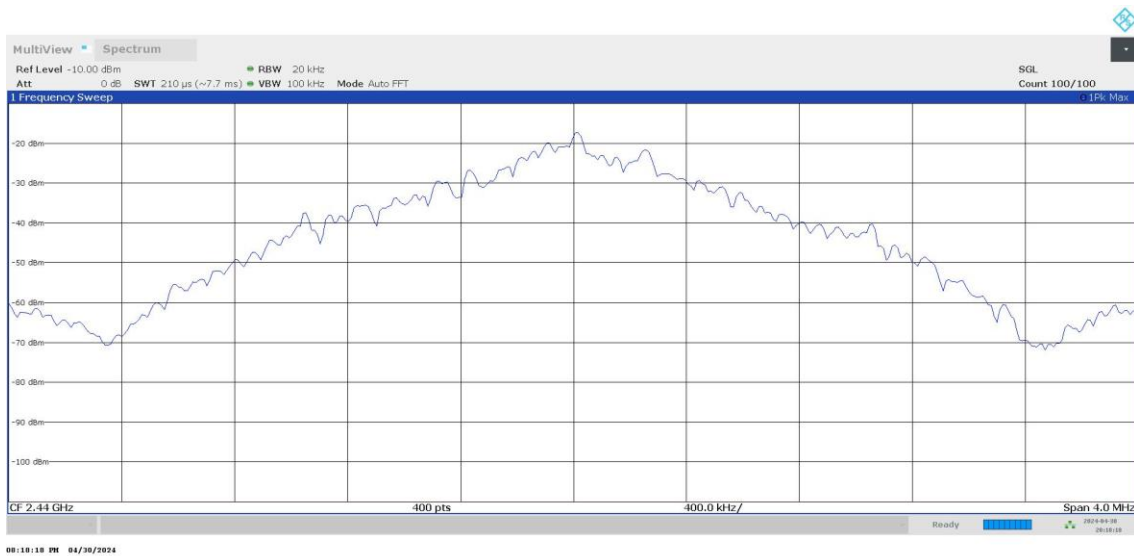
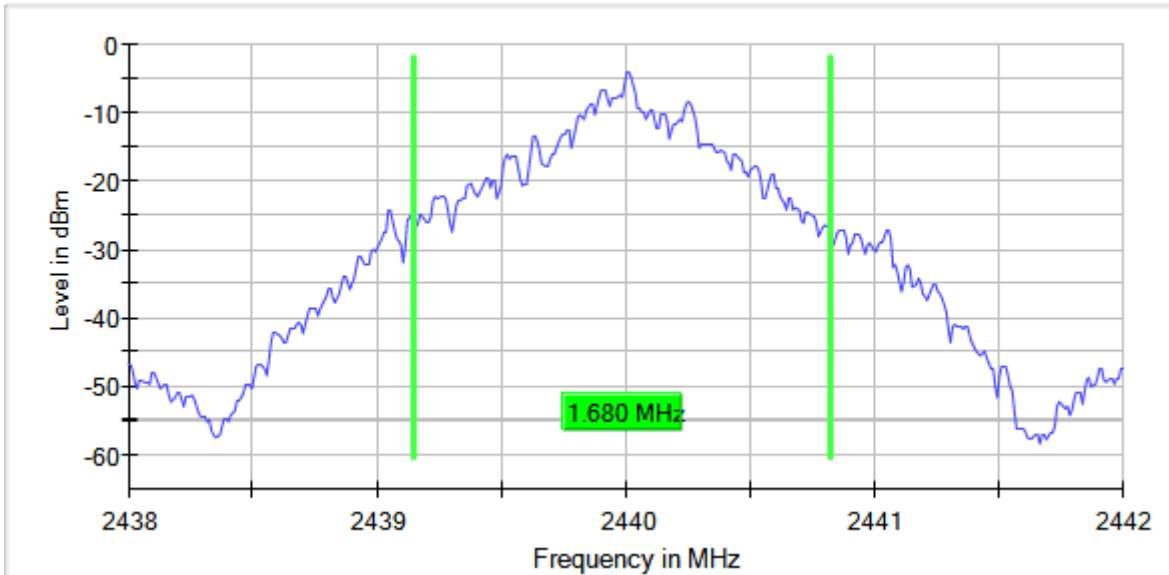
### Images:



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2  
Modulation = Proximity Frequency MHz = 2440.00000  
MIMO Mode = SISO Active Port = 1

Images:

99 % Bandwidth



Equipment Type = Digital Transmission System (DTS) Bandwidth MHz = 2  
Modulation = Proximity Frequency MHz = 2480.00000  
MIMO Mode = SISO Active Port = 1

Images:

