

ISED CABid: ES1909

Lab. Company Number: 4621A

Test Report No:

75163RRF.004A1

Test Report

USA FCC Part 15.247, 15.209

CANADA RSS-247, RSS-Gen

(*) Identification of item tested	Infotainment Head Unit
(*) Trademark	Marelli
(*) Model and /or type reference	HUAIDP20BY
Other identification of the product	HUAIDP20BY HW version: PRS2.1 SW version: PI26.50
(*) Features	Bluetooth, WLAN 5GHz Channel #149
Applicant	Marelli Europe S.p.A. Viale A. Borletti 61/63 – 20011 Corbetta (MI) - ITALY
Test method requested, standard	USA FCC Part 15.247 (10-1-21 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.209 (10-1-21 Edition): Radiated emission limits; general requirements. CANADA RSS-247 Issue 3 (February 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 José Jurado Industrial & Automotive EMC Lab. Manager
Date of issue	2024-04-05
Report template No	FDT08_24 (*) "Data provided by the client"

INDEX	2
ACRONYMS	3
COMPETENCES AND GUARANTEES	3
GENERAL CONDITIONS	4
UNCERTAINTY	4
DATA PROVIDED BY THE CLIENT	4
USAGE OF SAMPLES	4
TEST SAMPLE DESCRIPTION	6
IDENTIFICATION OF THE CLIENT	8
TESTING PERIOD AND PLACE	8
DOCUMENT HISTORY	8
ENVIRONMENTAL CONDITIONS	8
REMARKS AND COMMENTS	9
TESTING VERDICTS	10
SUMMARY	11
APPENDIX A: TEST RESULTS. BLUETOOTH EDR	12

Acronyms

Acronym ID	Acronym Description
Avg COT	Average Channel Occupancy Time
BW	Bandwidth
Detector	Detector used
Ebw	Emission Bandwidth
Equipment	Equipment Type
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
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.

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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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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
- Accumulated Dwell Time: Measurement uncertainty $\leq \pm 0,16$ %
- Minimum Frequency Occupation Time: Measurement uncertainty $\leq \pm 0,53$ %
- Hopping Frequency Separation: Measurement uncertainty $\leq \pm 1,74$ %
- Occupied Channel Bandwidth: Measurement uncertainty $\leq \pm 1,24$ %
- 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 an Infotainment Head Unit with Bluetooth and WiFi.

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		75163_10.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_11.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_12.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_13.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_14.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_16.1	Infotainment Unit	HUAIDP20BY	190S3B0PM47D	2023-09-25	Element Under Test
		75163_3.1	Harness	--	--	2023-09-25	Element Under Test
		75163_5.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_6.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_8.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_9.1	Cable FAKRA	--	--	2023-09-25	Element Under Test
		75163_1.1	Module	--	--	2023-09-25	Auxiliary Element
		75163_4.1	AIDA CANBOX	--	--	2023-09-25	Auxiliary Element
S/02		75163_19.1	Infoteinment module CONDUCTED	IVI-R2 HIGH ETH100M ROW	190S3B0T047D	2023-10-04	Element Under Test
		75163_17.1	Canbox	AIDA	--	2023-10-04	Auxiliary Element
		75163_23.1	Harness	--	--	2023-10-04	Auxiliary Element
		75163_24.1	USB- FAKRA cable	--	--	2023-10-04	Auxiliary Element

Notes referenced to samples during the project:

Id		Type
S/01		Radiated
S/02		Conducted

Test sample description

Ports..... :	Port name and description	Cable					
		Specified max length [m]	Attached during test	Shielded	Coupled to patient ⁽³⁾		
	MB connector (black)	>3	[X]	[]	[]		
	SB connector (blue)	>3	[X]	[]	[]		
	shielded cables	>3	[X]	[X]	[]		
			[]	[]	[]		
			[]	[]	[]		
			[]	[]	[]		
Supplementary information to the ports..... :							
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[]	AC:	[]	[]	[]	[]	[]
	[]	AC:	[]	[]	[]	[]	[]
	[X]	DC: MB and SB: 9.5 – 16Vdc; Nominal voltage: 12 Vdc					
	[X]	DC: shielded cables: 13.5Vdc nominal voltage					
Rated Power							
Clock frequencies.....							
Other parameters							
Software version	PI26.50						
Hardware version	PRS2.1						
Dimensions in cm (W x H x D)	220 x 160 x 52 mm						
Mounting position	[]	Table top equipment					
	[]	Wall/Ceiling mounted equipment					
	[]	Floor standing equipment					
	[]	Hand-held equipment					
	[X]	Other: HUAIDP20BY is installed in vehicle dashboard (automotive environment)					

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
			
			
			
			
Accessories (not part of the test item):	Description	Type	Manufacturer
			
			
			
			
			
			
Documents as provided by the applicant.....:	Description	File name	Issue date
			
			
			
			

⁽³⁾ Only for Medical Equipment

Identification of the client

Marelli Europe S.p.A.
Viale A. Borletti 61/63 – 20011 Corbetta (MI) - ITALY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2023-09-28
Date (finish)	2024-01-08

Document history

Report number	Date	Description
75163RRF.004	2024-01-29	First release.
75163RRF.004A1	2024-04-05	First modification. Some typos in the “e.i.r.p.” values are corrected on page 71. A clarification is included for justifying the selected channels/modes for the [RSE] Emission limitations radiated test on pages 101, 115 and 129. Some typos in the main page, apartment “Test method requested, standard” are corrected. The standard “CANADA RSS-247 Issue 2 (February 2017)” is corrected to “CANADA RSS-247 Issue 3 (February 2023)”. This report cancels and replaces the previous 75163RRF.004.

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: Jia Hao Luo Chen, Rubén Mora Fernández and Victoria Olmedo Villalba.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
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
06495	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2024-03-19
09968	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2026-09-22
07862	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-3G	BONN ELEKTRONIK	2024-03-14
07769	PREAMPLIFIER 30dB 500MHz-18GHz	BBV 9718 C	SCHWARZBECK	2024-02-15
07039	Rohde&Schwarz	OSP-B157W8	ROHDE & SCHWARZ	2025-05-25
08130	SEMIANECHOIC ABSORBER LINED CHAMBER	P29419	ALBATROSS	--
08134	SHIELDED ROOM	P29419	ALBATROSS PROJECTS GMBH	--
08661	SHIELDED ROOM	-	SIEPEL	--
06668	SIGNAL AND SPECTRUM ANALYZER 10Hz-40GHz	FSV40	ROHDE AND SCHWARZ	2024-12-14
08835	SIGNAL AND SPECTRUM ANALYZER 2Hz-50GHz	FSW50	ROHDE AND SCHWARZ	2025-02-08
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	--
07549	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02
07550	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02

Control No.	Equipment	Model	Manufacturer	Next Calibration
07552	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2024-05-02
07798	WMS32	WMS32	ROHDE AND SCHWARZ	--

Testing verdicts

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

Summary

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	P	--
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d)	Time of Occupancy (Dwell Time)	P	--
FCC 15.247 (b) / RSS-247 5.4. (b)	Maximum peak output power and	P	--
FCC 15.247 (a) (1) (iii) / RSS-247 5.1 (d)]	Number of hopping channels	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			

Appendix A: Test results. Bluetooth EDR

TEST CONDITIONS	14
TEST CASES DETAILS	17
<i>99dBw Occupied Channel Bandwidth 99%</i>	17
<i>RSS-247 5.1 (b) / FCC 15.247 (a) (1) [20dBW] 20 dB Bandwidth</i>	29
<i>RSS-247 5.1 (b) / FCC 15.247 (a) (1) [CFS] Carrier Frequency Separation</i>	41
<i>RSS-247 5.1 (d) / FCC 15.247 (a) (1) (iii) [DwT] Time of Occupancy (Dwell Time)</i>	47
<i>RSS-247 5.1 (d) / FCC 15.247 (a) (1) (iii) [NHC] Number of hopping channels</i>	59
<i>RSS-247 5.4 (b) / FCC 15.247 (b) (1) [Pkcp] Maximum Peak Conducted output power</i>	63
<i>RSS-247 5.5 / FCC 15.247 (d) [Bndedge] Band-edge emissions compliance (Transmitter)</i>	75
<i>RSS-247 5.5 / FCC 15.247 (d) [RSE] Emission limitations radiated (Transmitter)</i>	100

TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal: 12Vdc
Type of Power Supply: External power supply (DC)

ANTENNA (*):

Type of Antenna: Integral
Maximum Declared Antenna Gain: 0dBi

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).

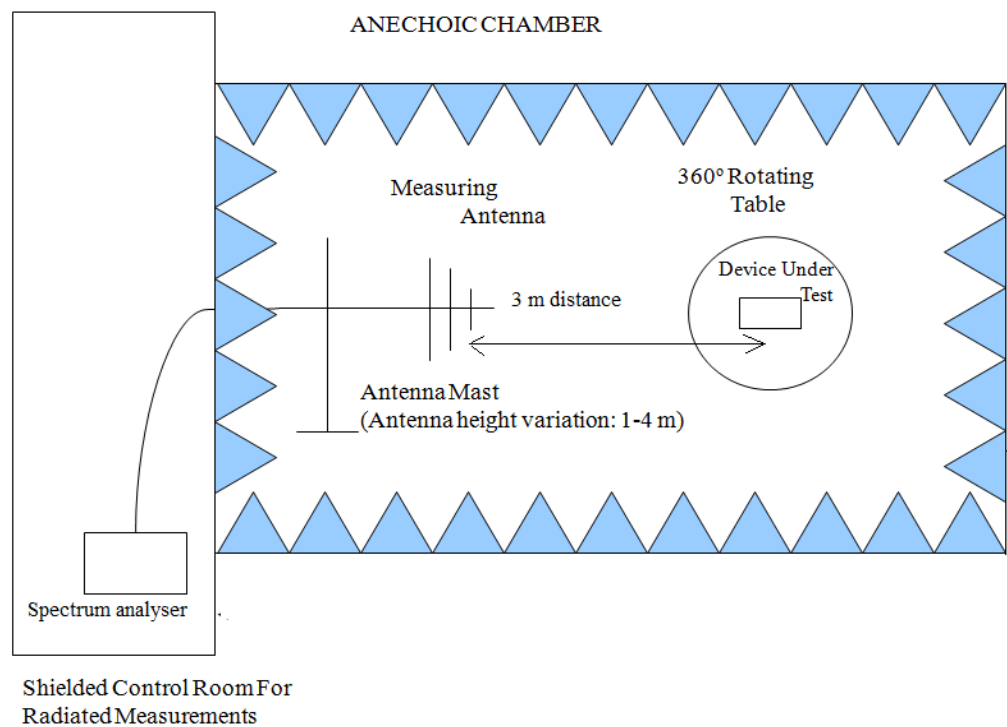
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

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.

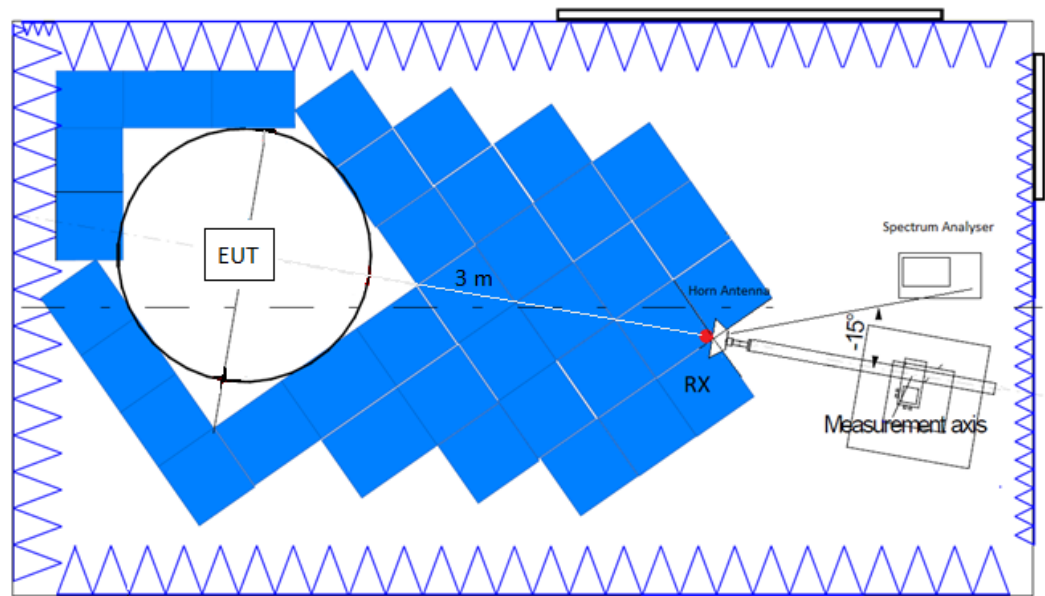
Measurements were made in both horizontal and vertical planes of polarization.

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.

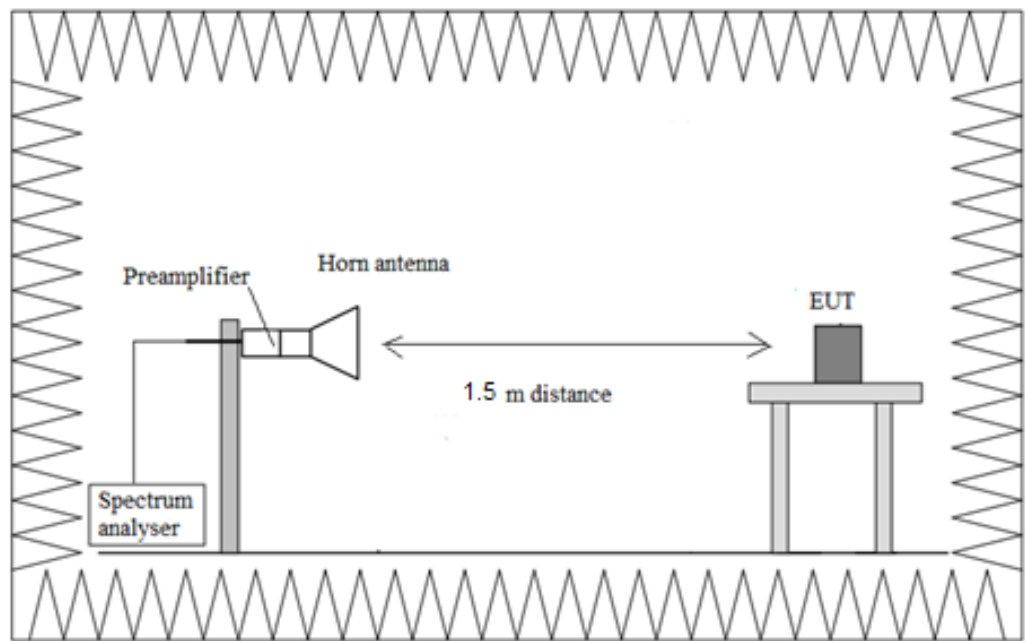
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup $f > 17\text{ GHz}$:



TEST CASES DETAILS

99dBw Occupied Channel Bandwidth 99%

Modulation: BT (GFSK 1-DH5)

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	0.860
		2441.00000		0.865
		2480.00000		0.860

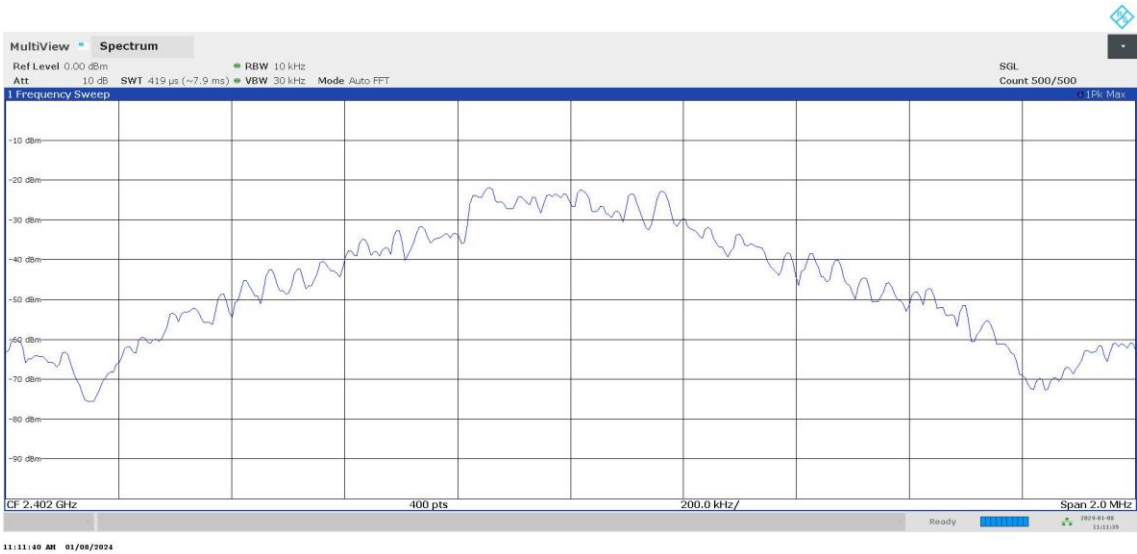
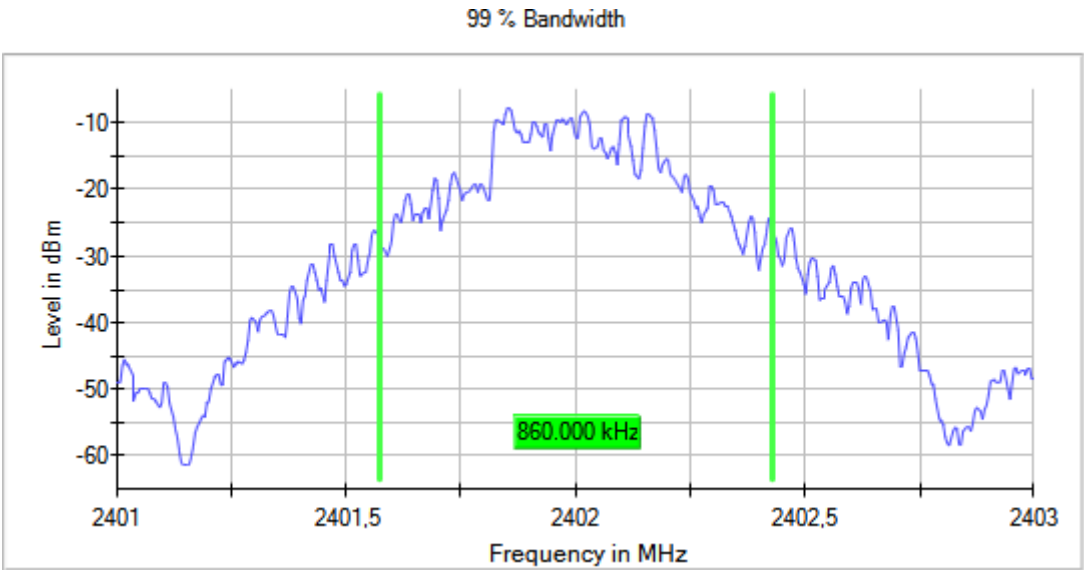
Verdict

Pass

Attachments

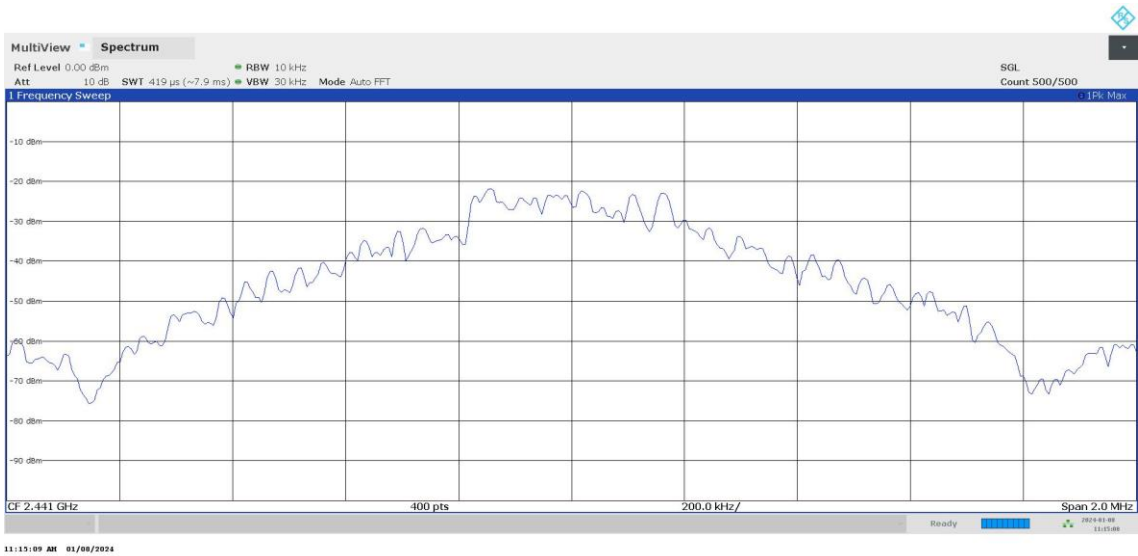
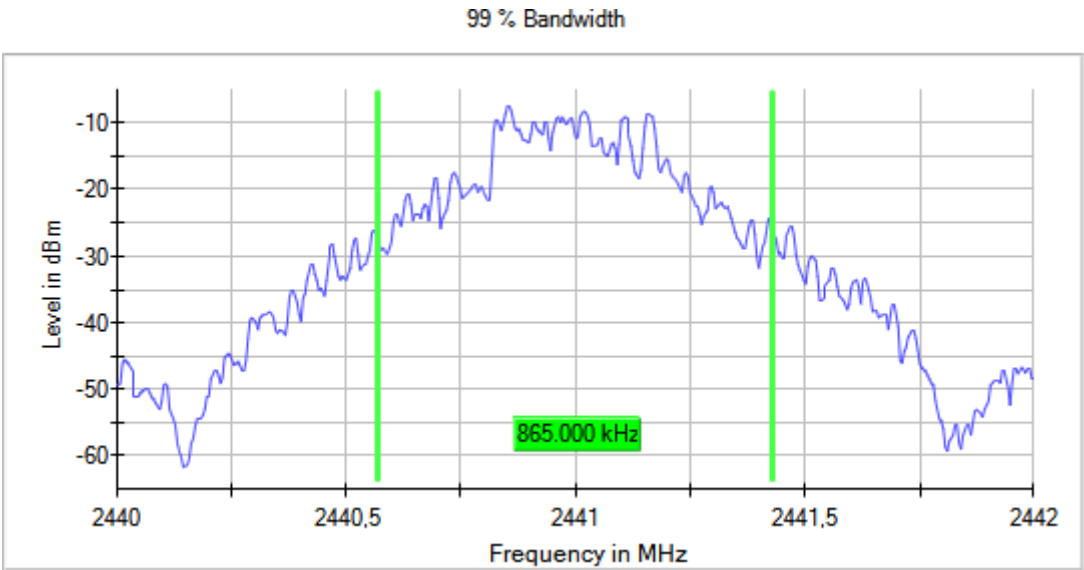
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2402.00000

Images:



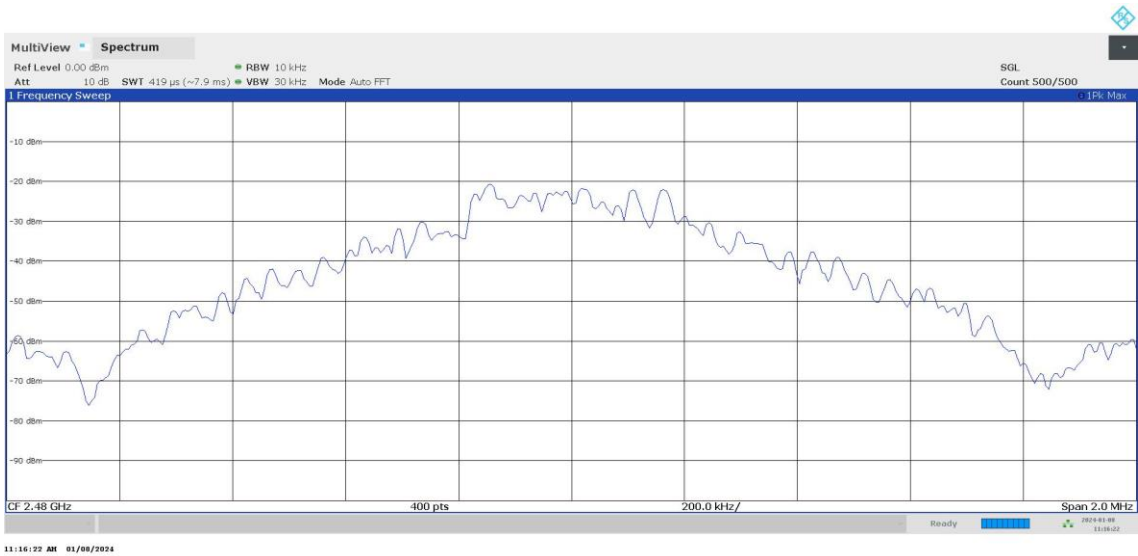
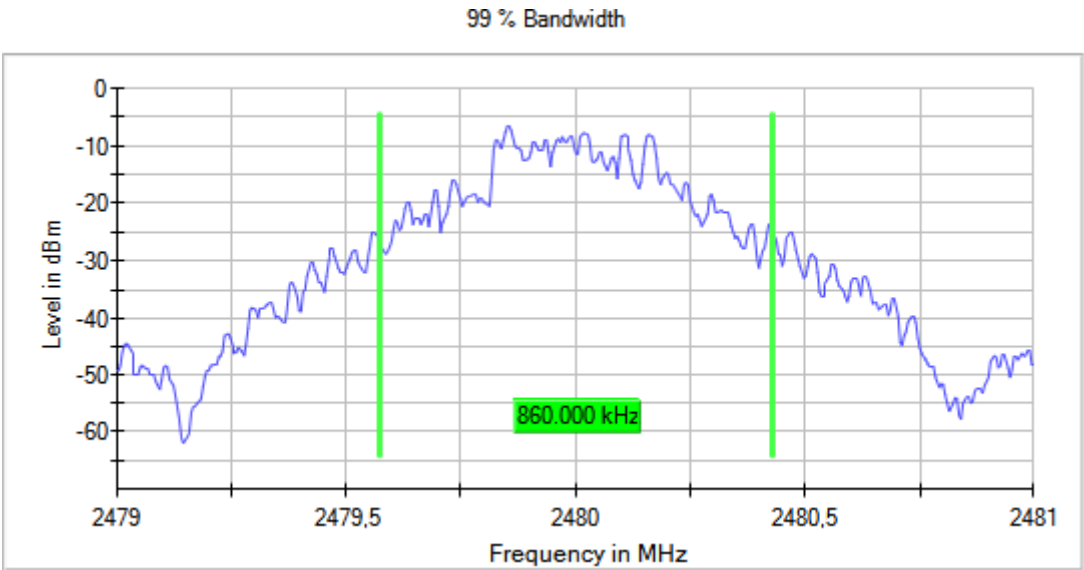
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (GFSK 1-DH5) Frequency MHz = 2480.00000

Images:



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

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.140
		2441.00000		1.140
		2480.00000		1.135

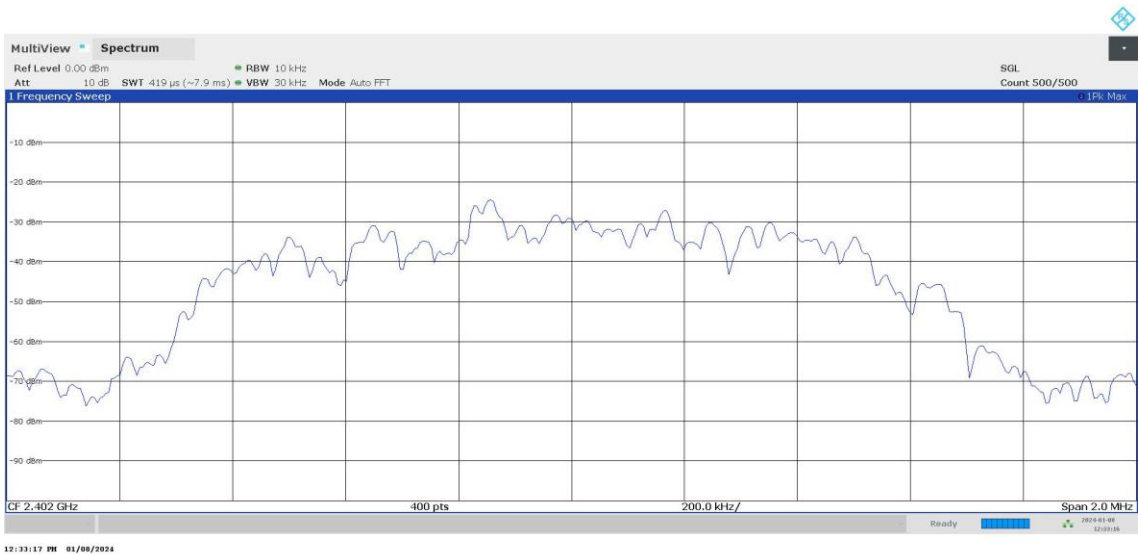
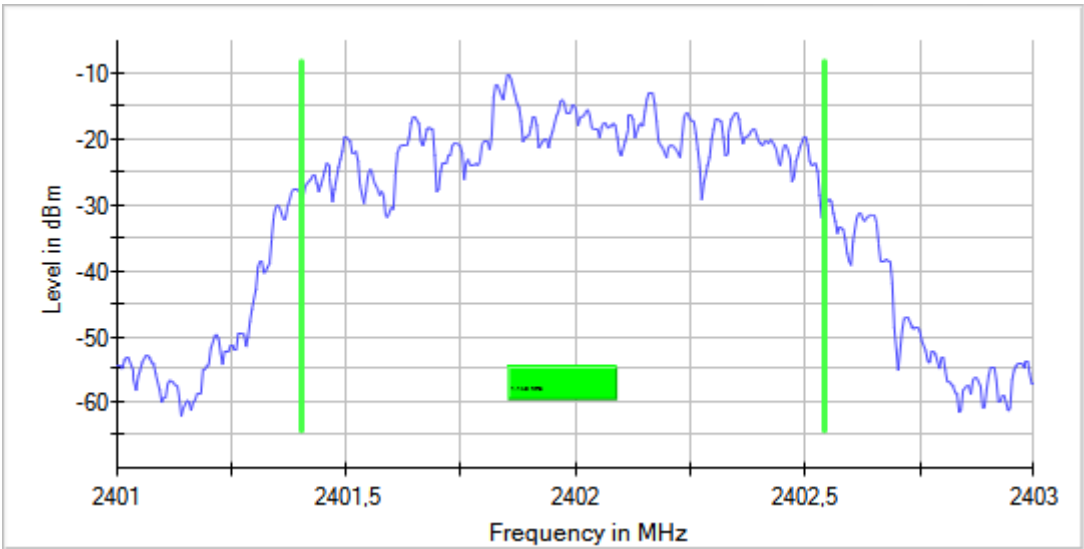
Verdict

Pass

Attachments

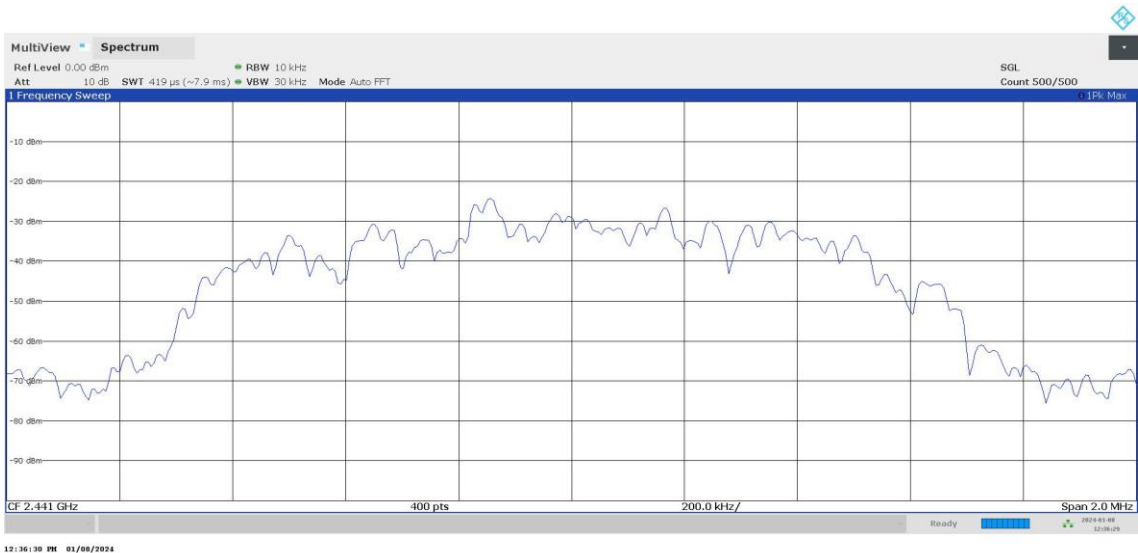
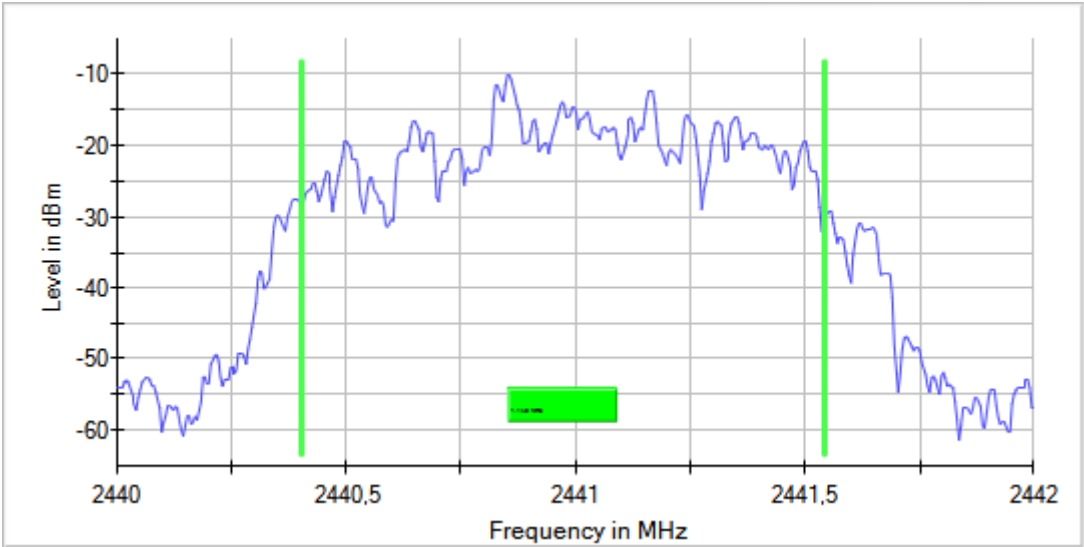
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Images:



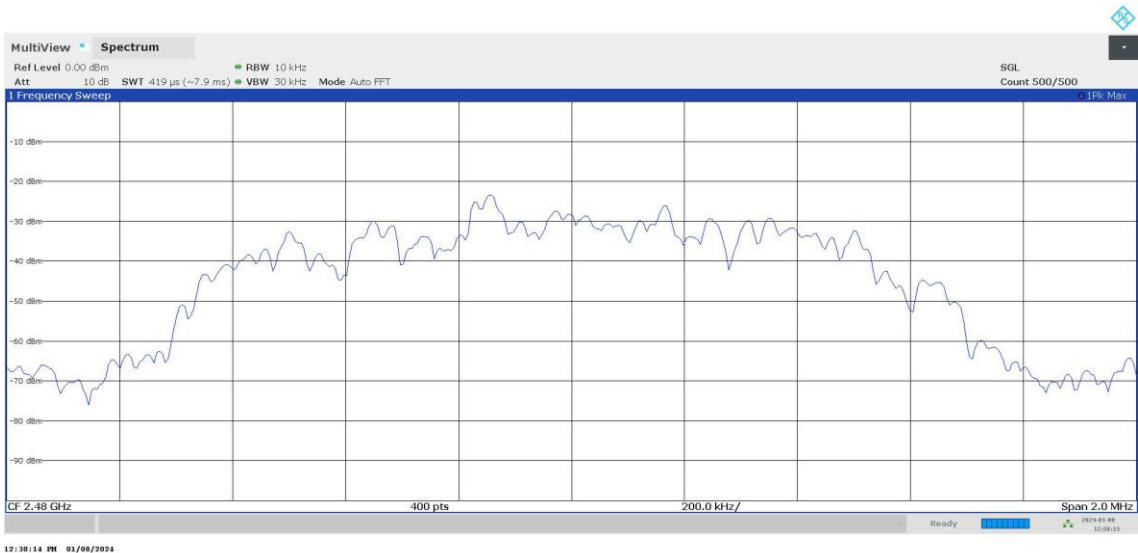
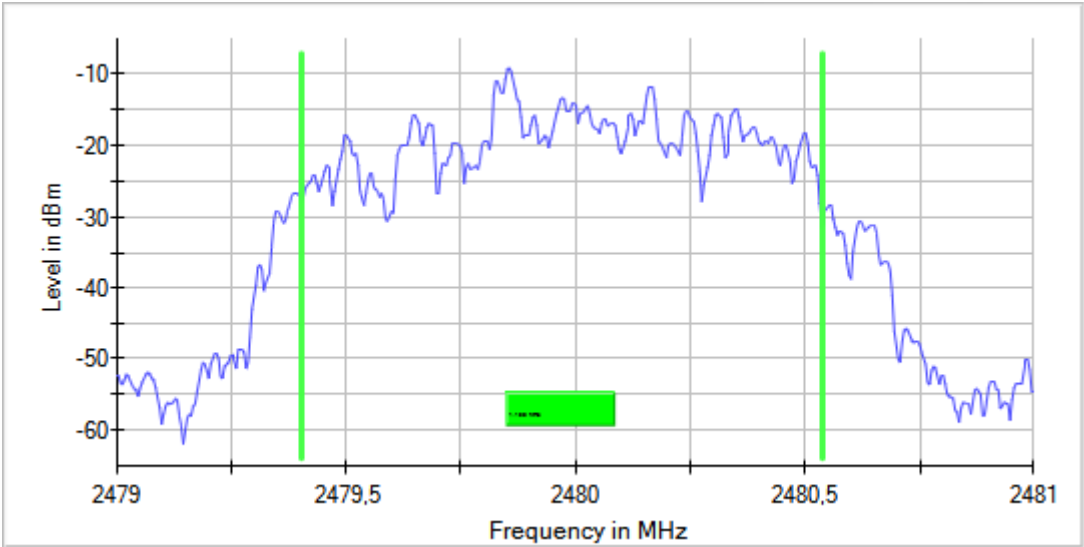
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2480.00000

Images:



Modulation: BT (8DPSK 3-DH5)

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.125
		2441.00000		1.130
		2480.00000		1.130

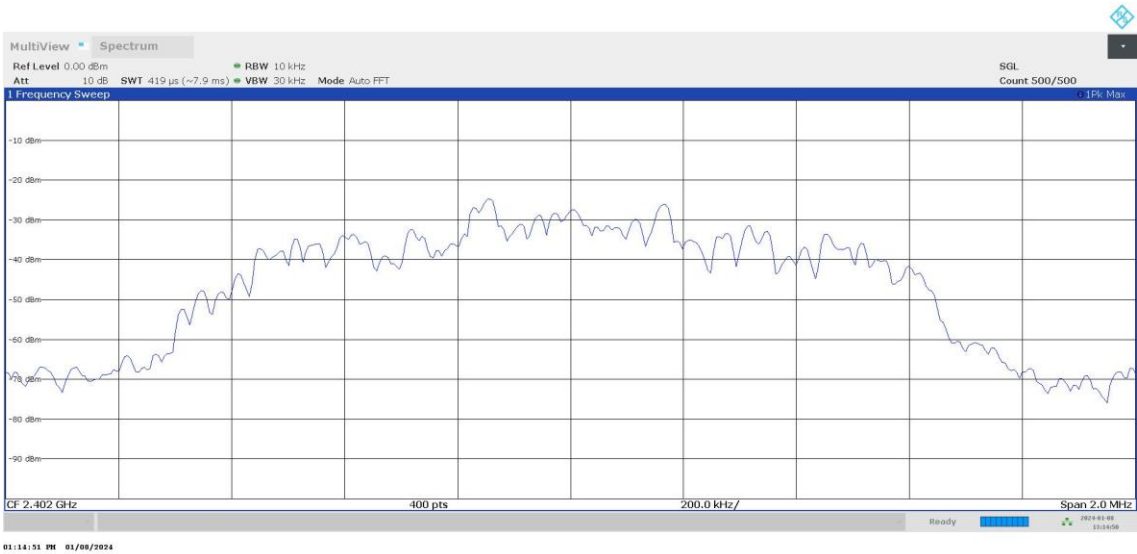
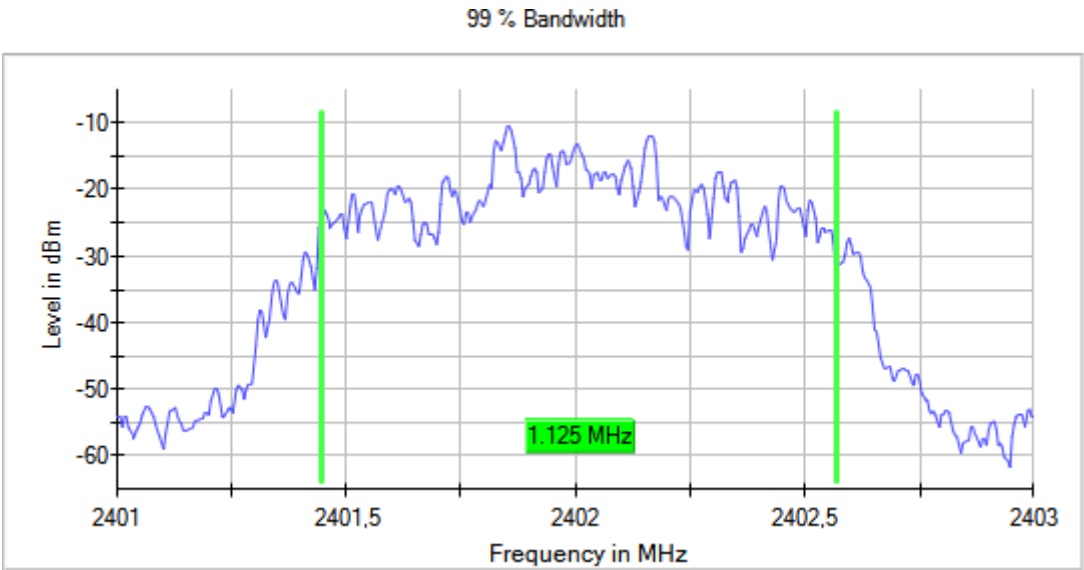
Verdict

Pass

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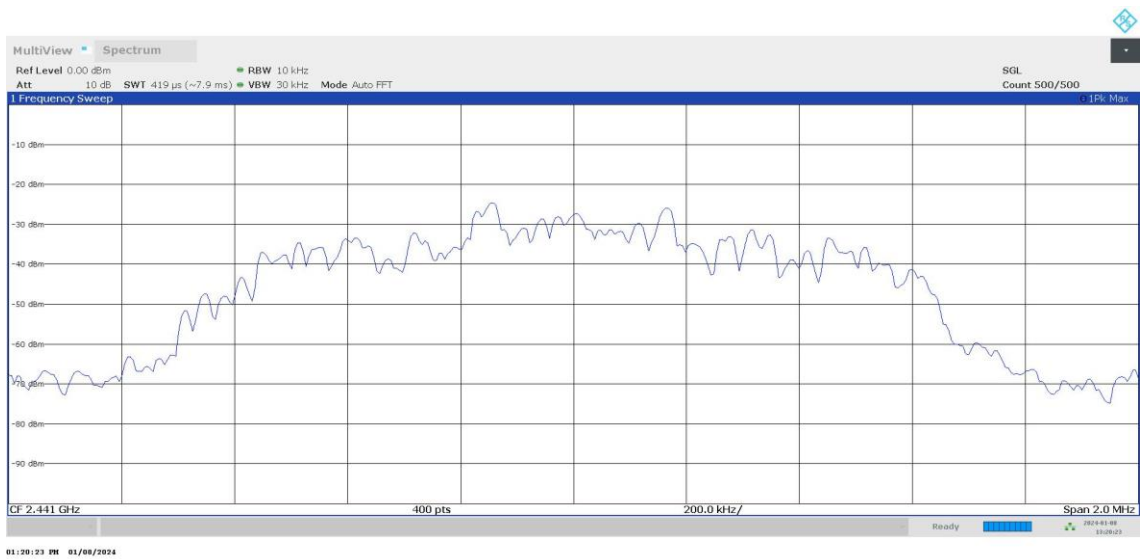
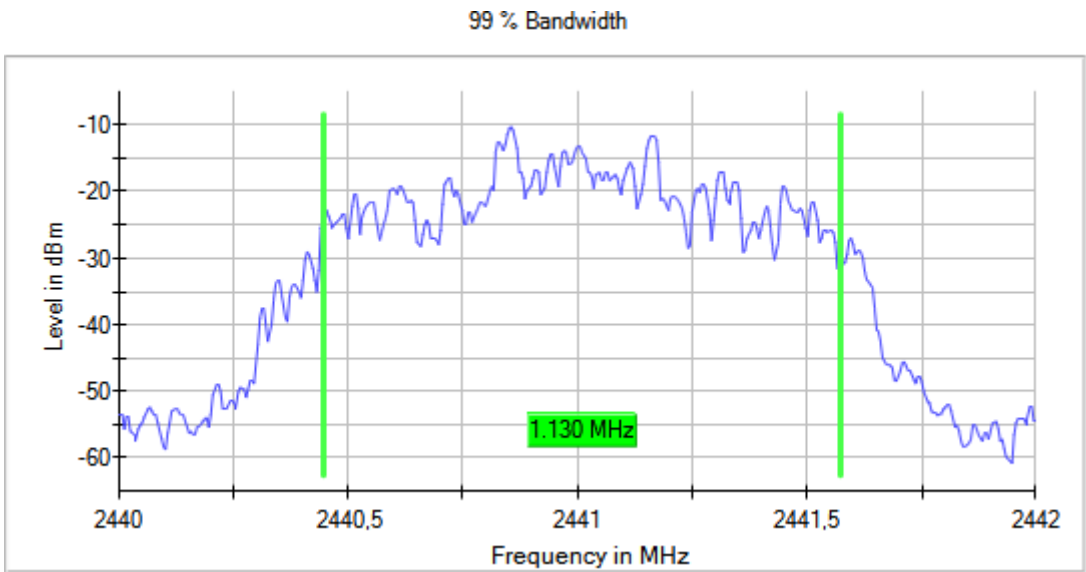
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2402.00000

Images:



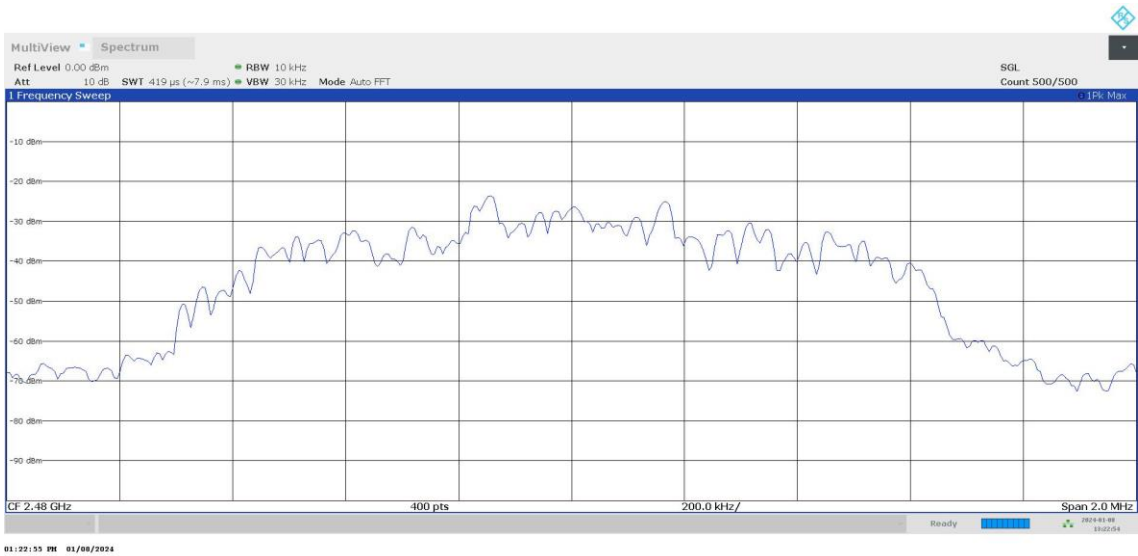
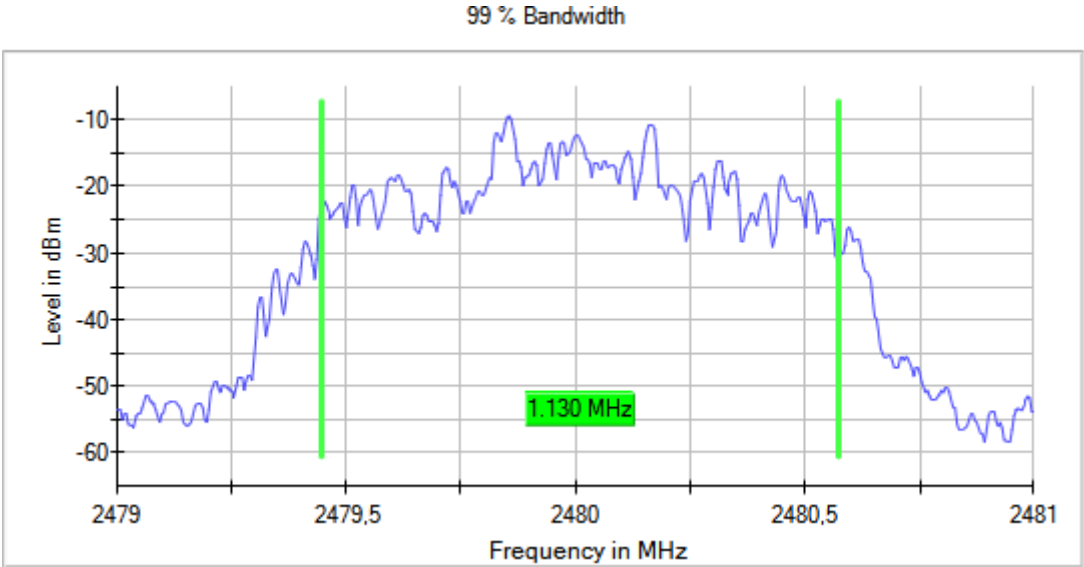
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2480.00000

Images:



RSS-247 5.1 (b) / FCC 15.247 (a) (1) [20dBW] 20 dB Bandwidth

Limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Modulation: BT (GFSK 1-DH5)

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	0.930
		2441.00000		0.970
		2480.00000		0.930

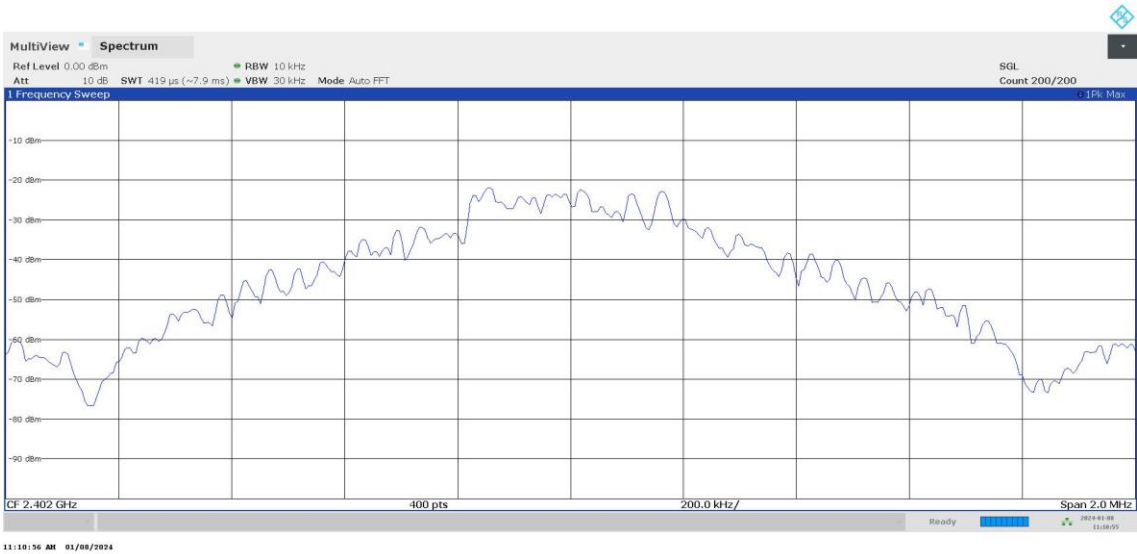
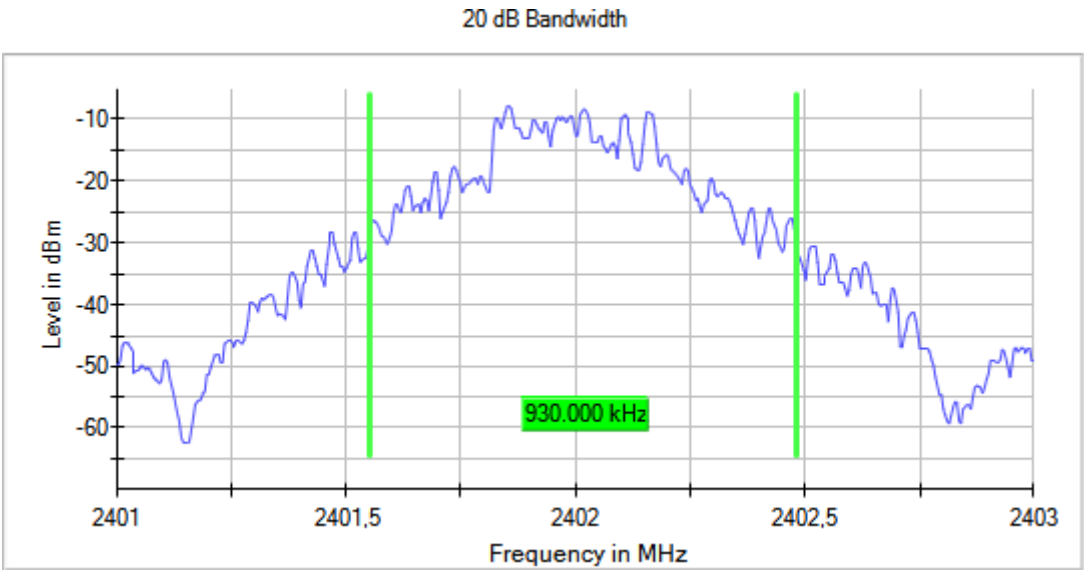
Verdict

Pass

Attachments

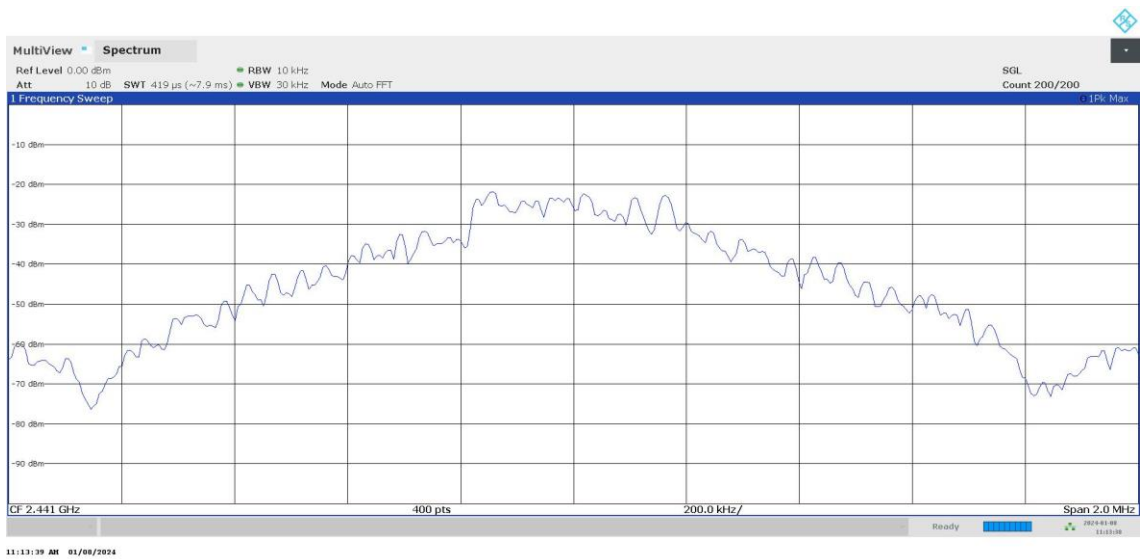
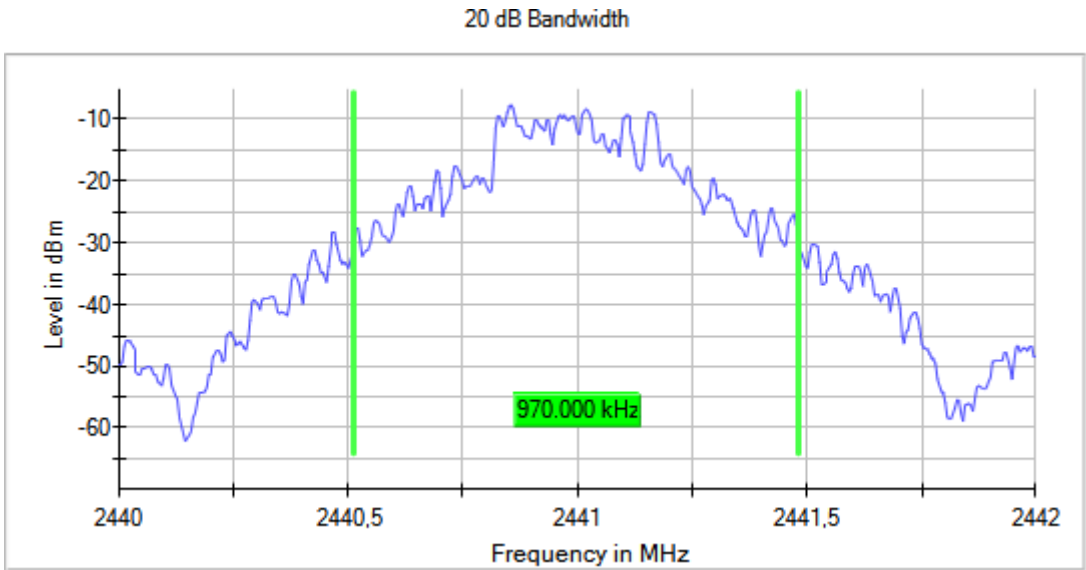
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2402.00000

Images:



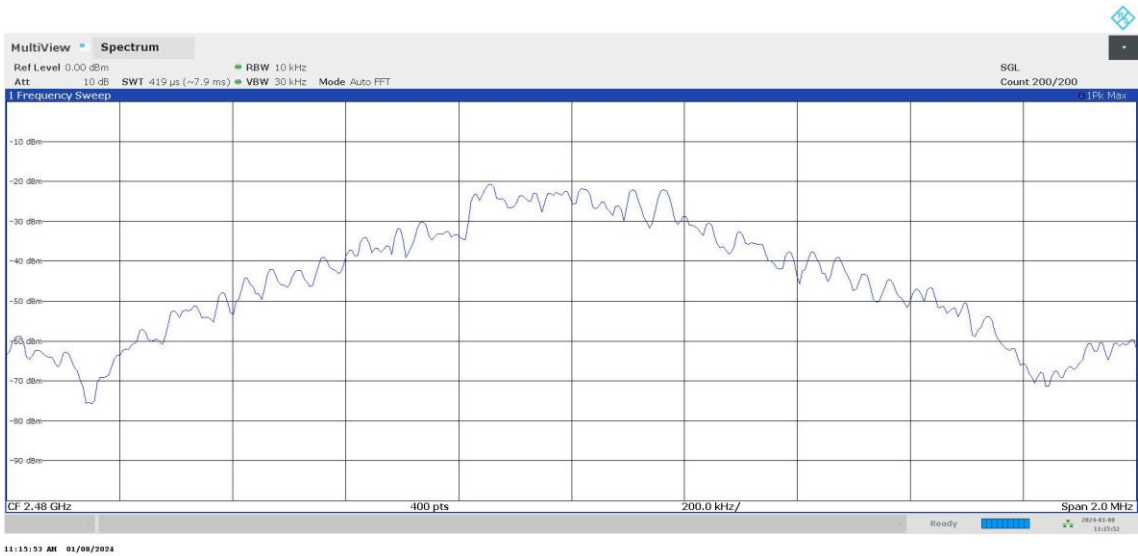
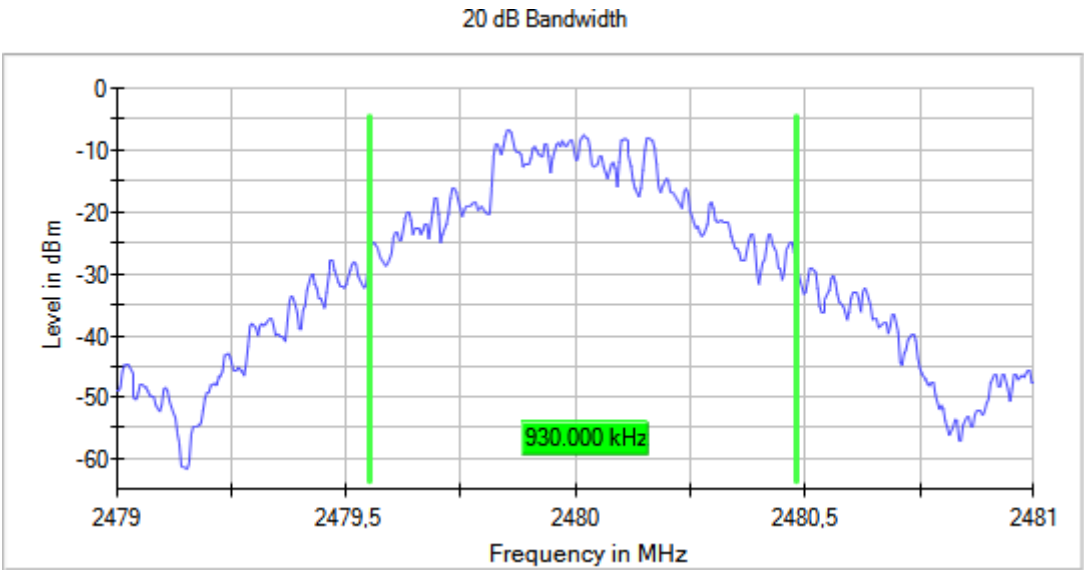
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (GFSK 1-DH5) Frequency MHz = 2480.00000

Images:



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

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.215
		2441.00000		1.220
		2480.00000		1.215

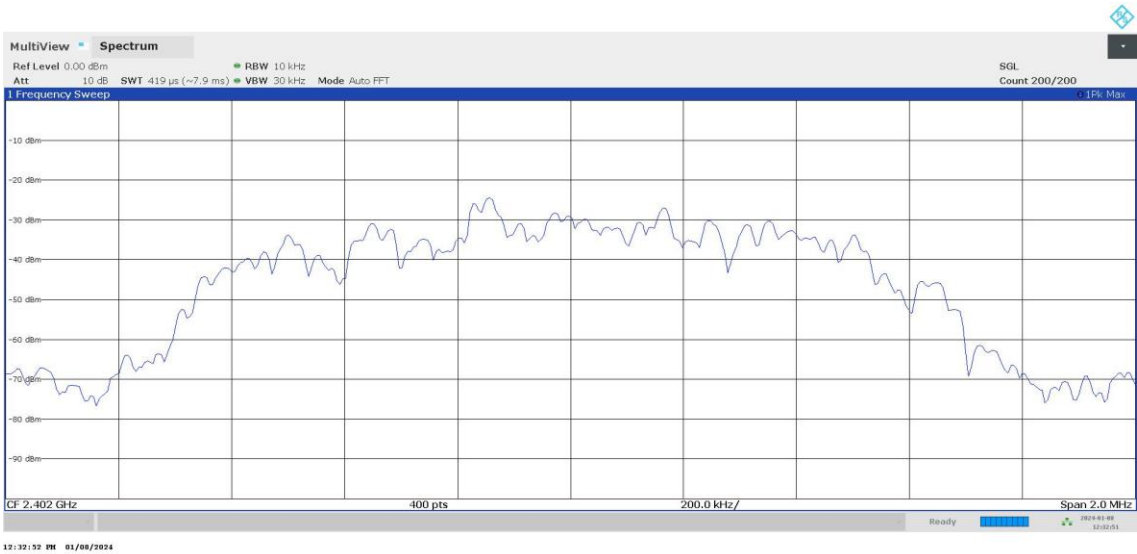
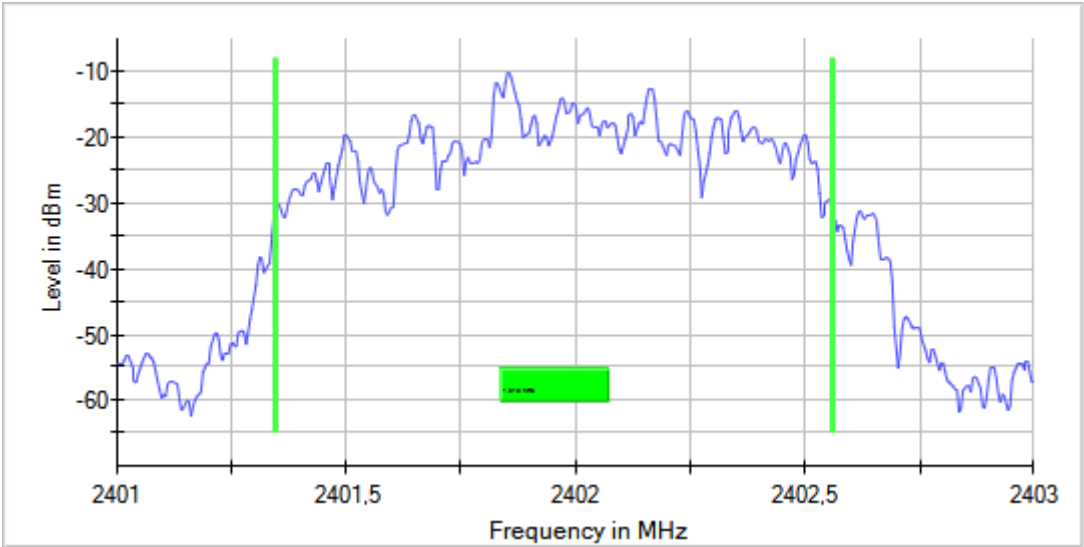
Verdict

Pass

Attachments

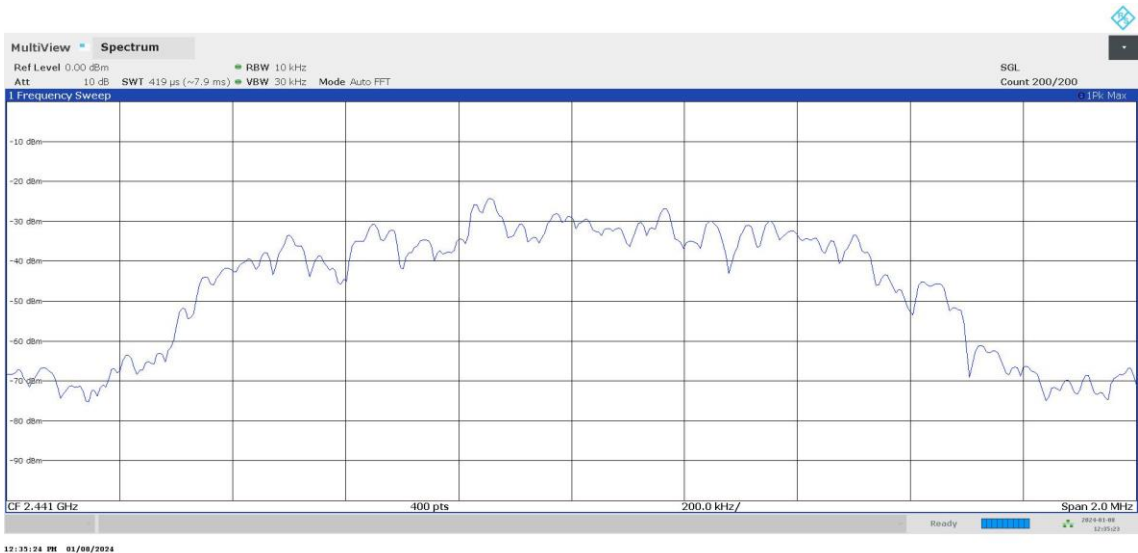
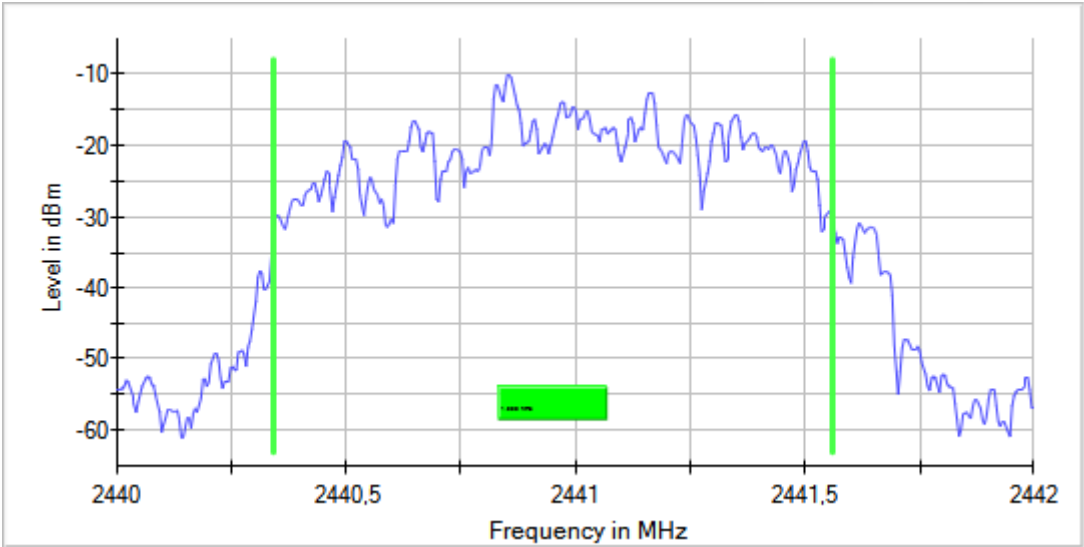
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2402.00000

Images:



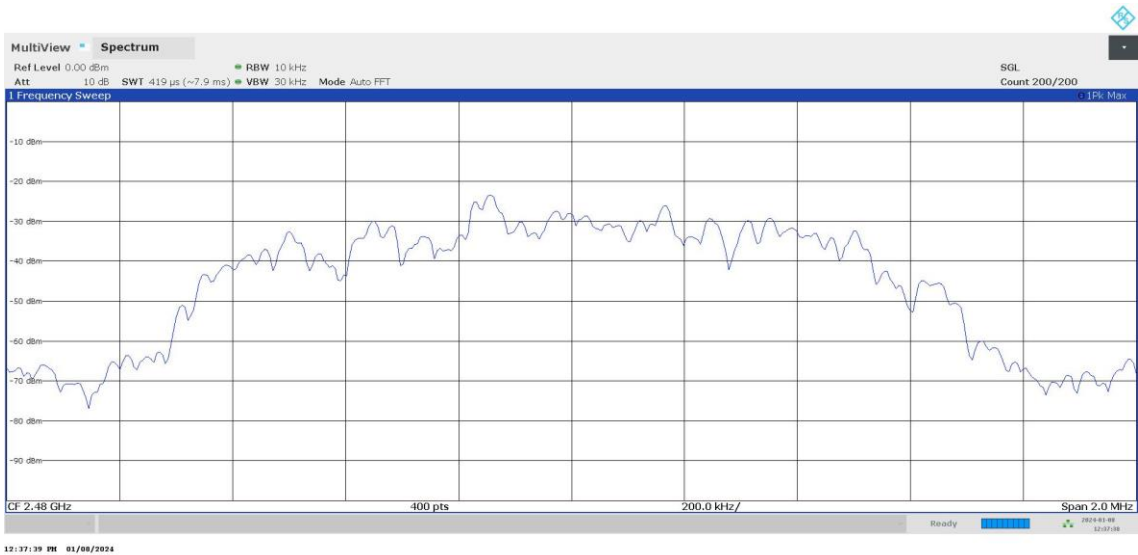
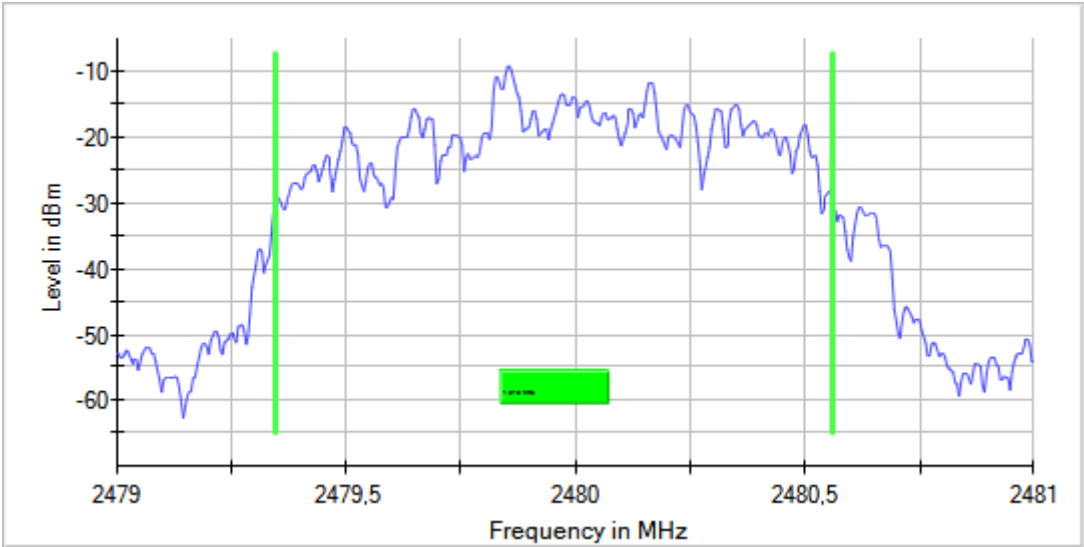
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2480.00000

Images:



Modulation: BT (8DPSK 3-DH5)

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.220
		2441.00000		1.220
		2480.00000		1.220

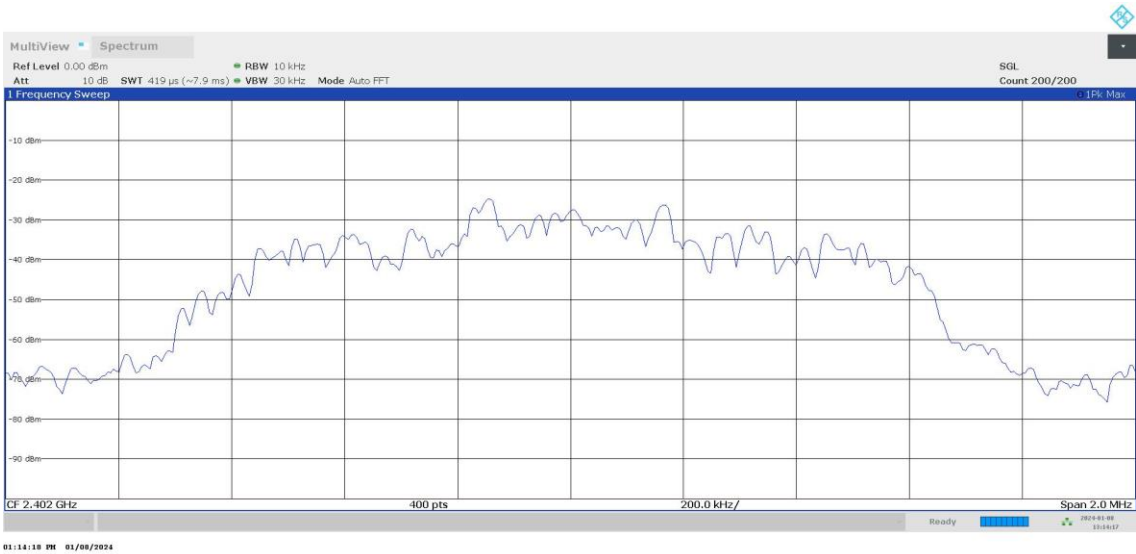
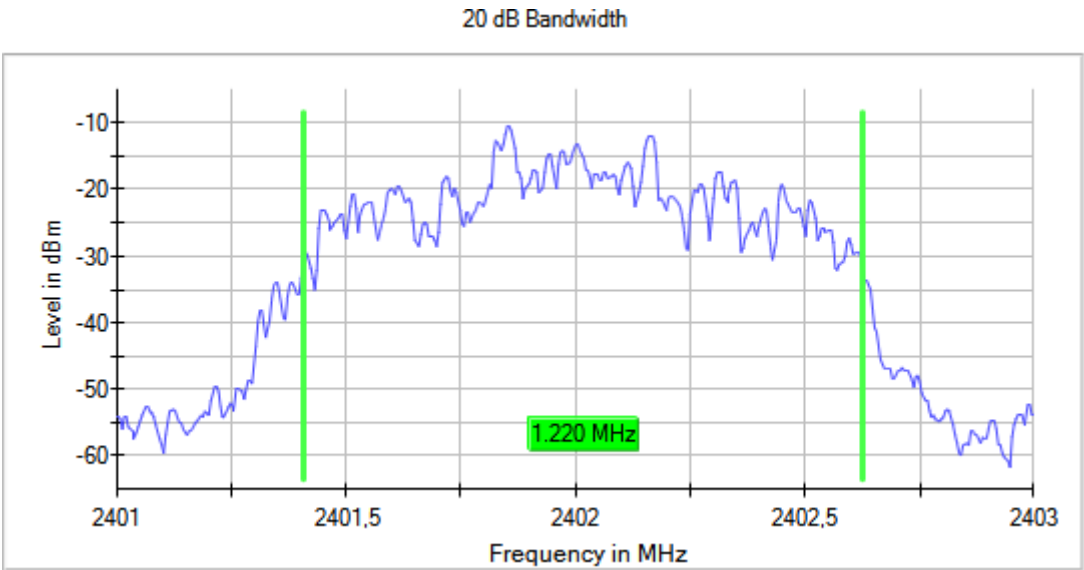
Verdict

Pass

Attachments

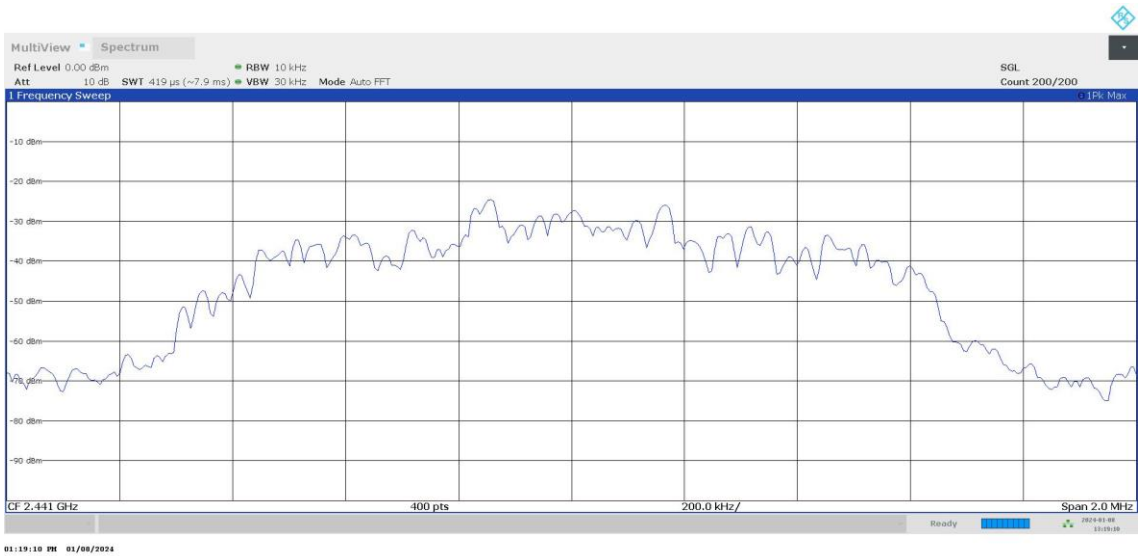
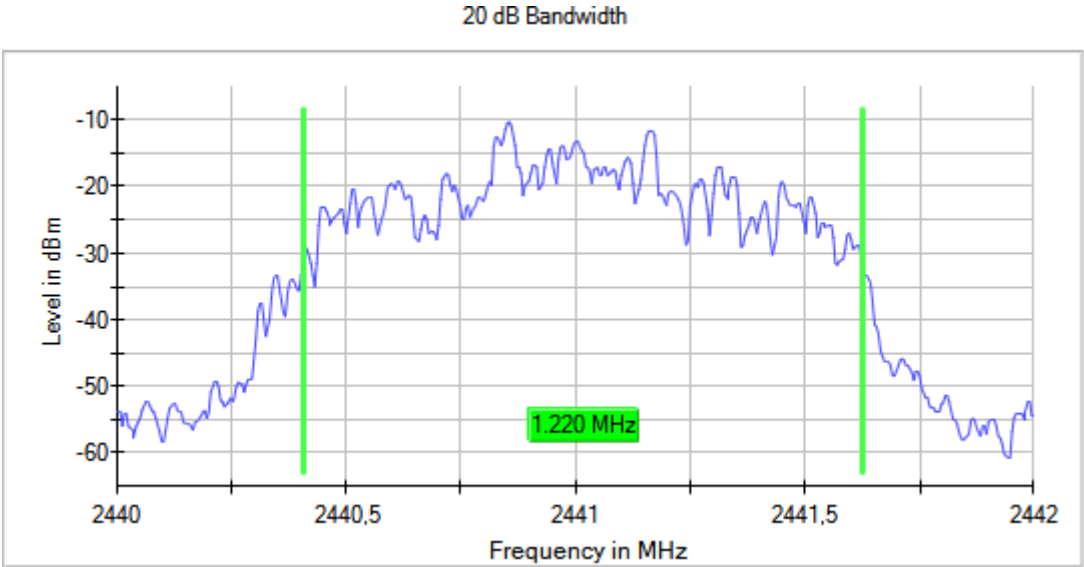
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2402.00000

Images:



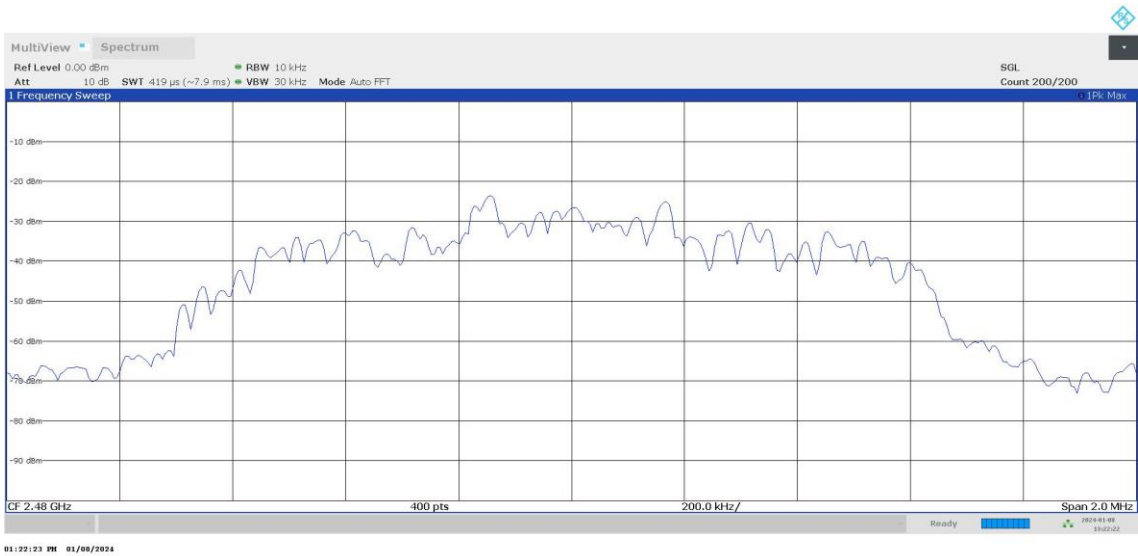
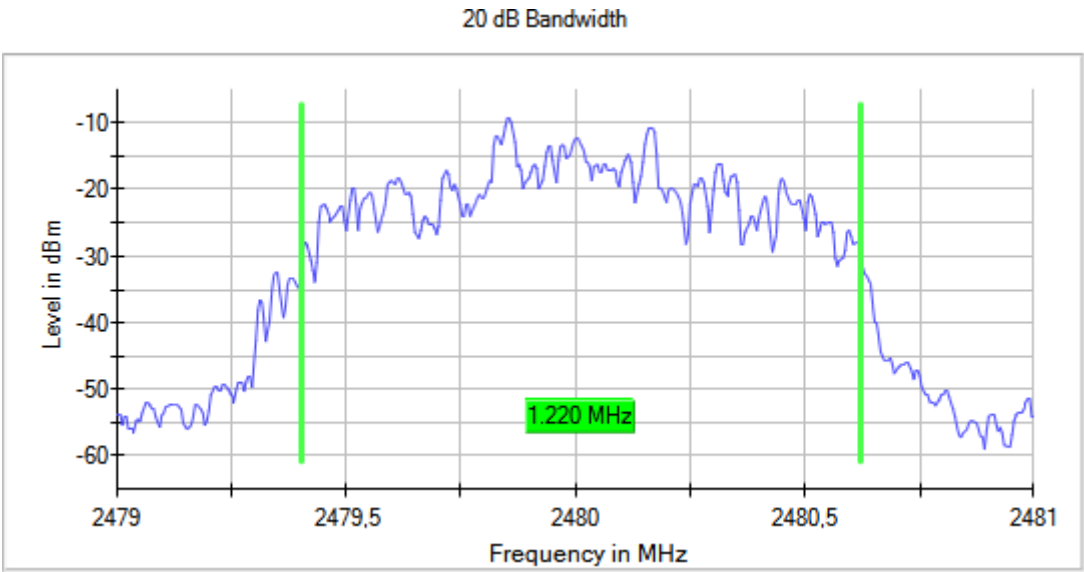
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2480.00000

Images:



RSS-247 5.1 (b) / FCC 15.247 (a) (1) [CFS] Carrier Frequency Separation

Modulation: BT (GFSK 1-DH5)

Results

Equipment	BW (MHz)	Port	Freq Sep (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	1.01

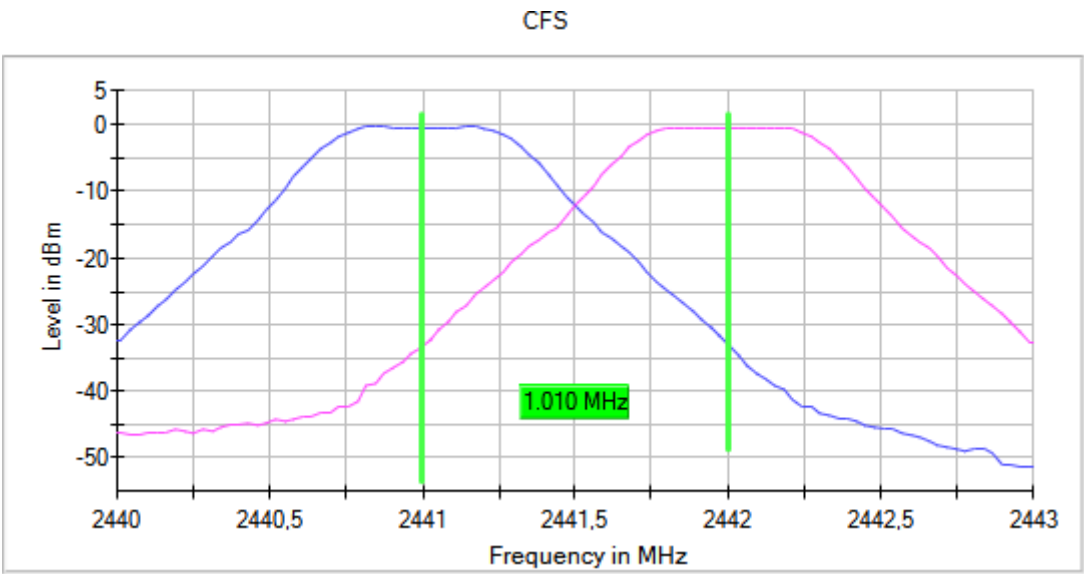
Verdict

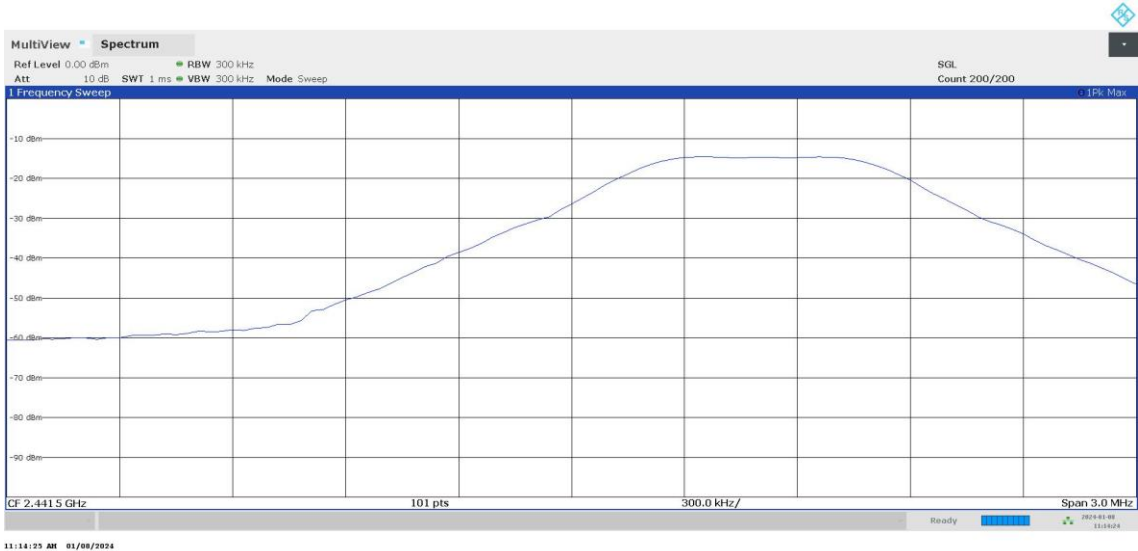
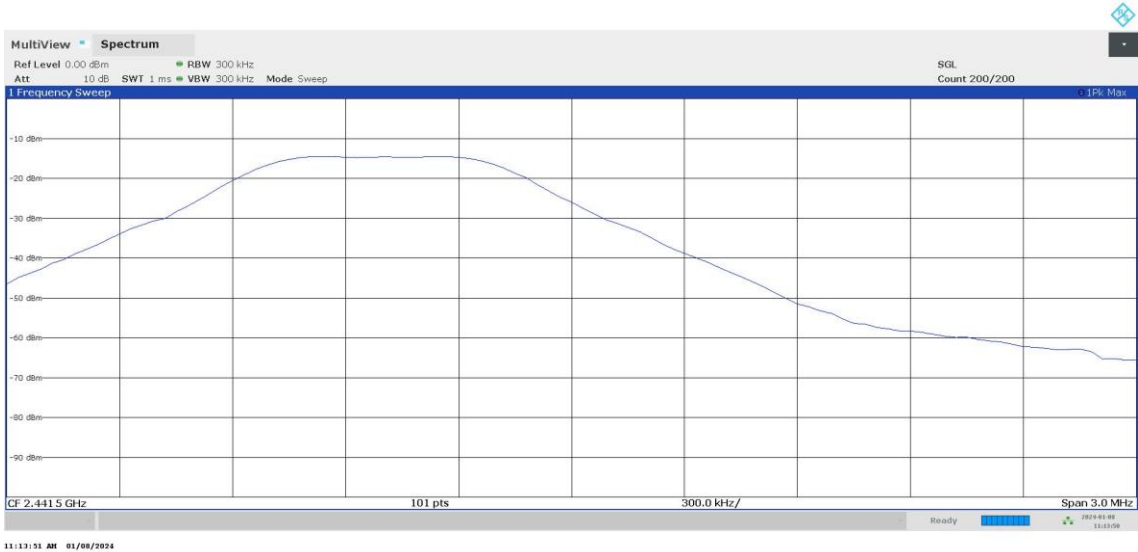
Pass

Attachments

Modulation = BT (GFSK 1-DH5)

Images:





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

Results

Equipment	BW (MHz)	Port	Freq Sep (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	1.01

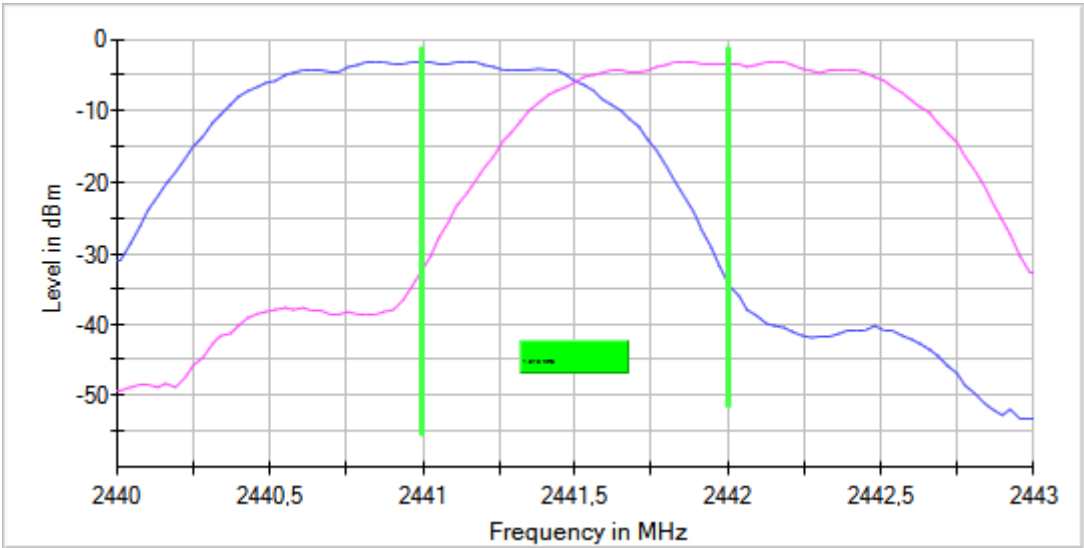
Verdict

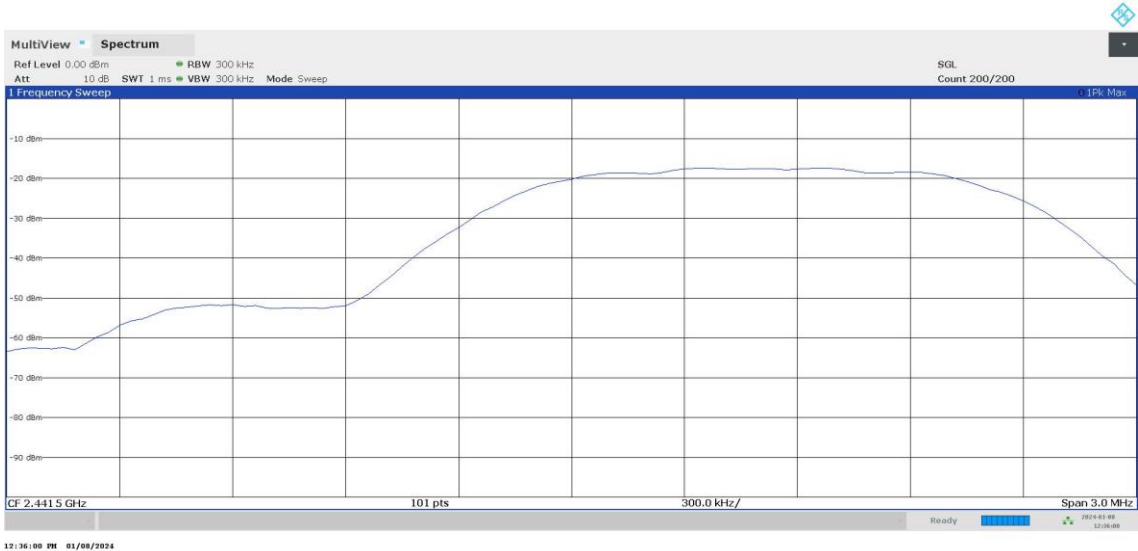
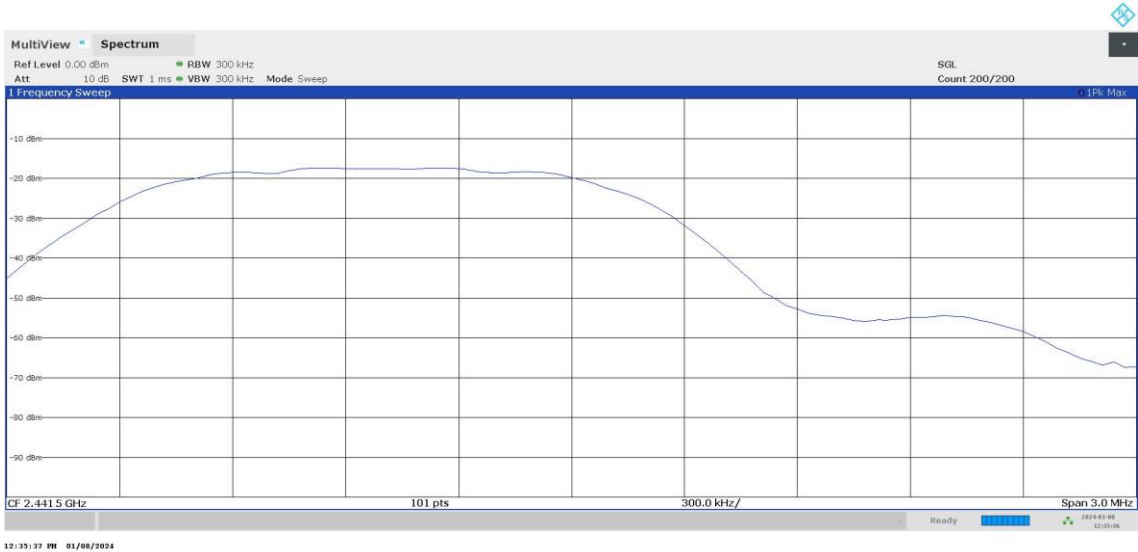
Pass

Attachments

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

Images:





Modulation: BT (8DPSK 3-DH5)

MIMO Mode: SISO

Results

Equipment	BW (MHz)	Port	Freq Sep (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	1.01

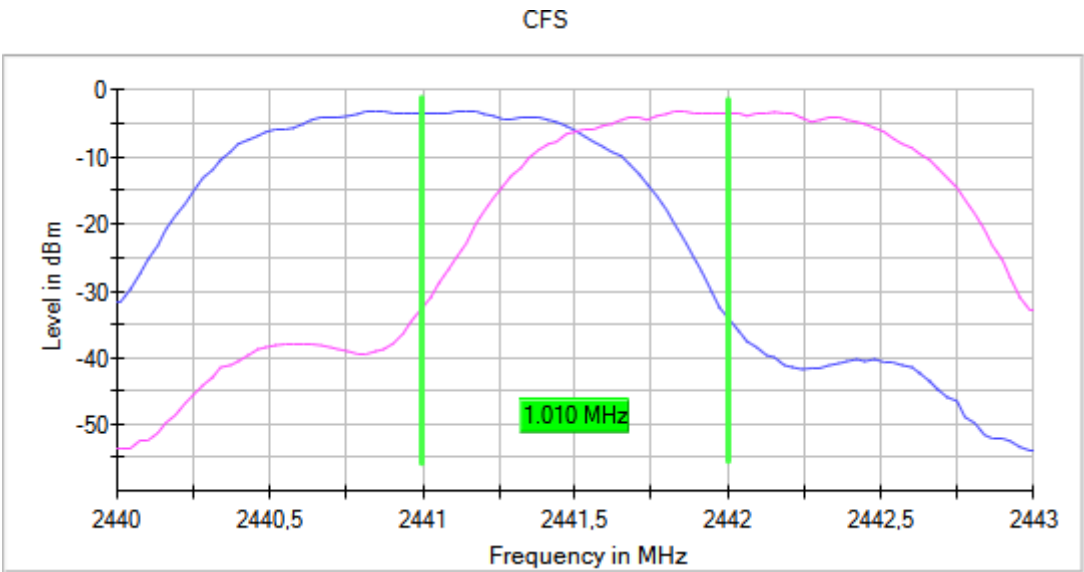
Verdict

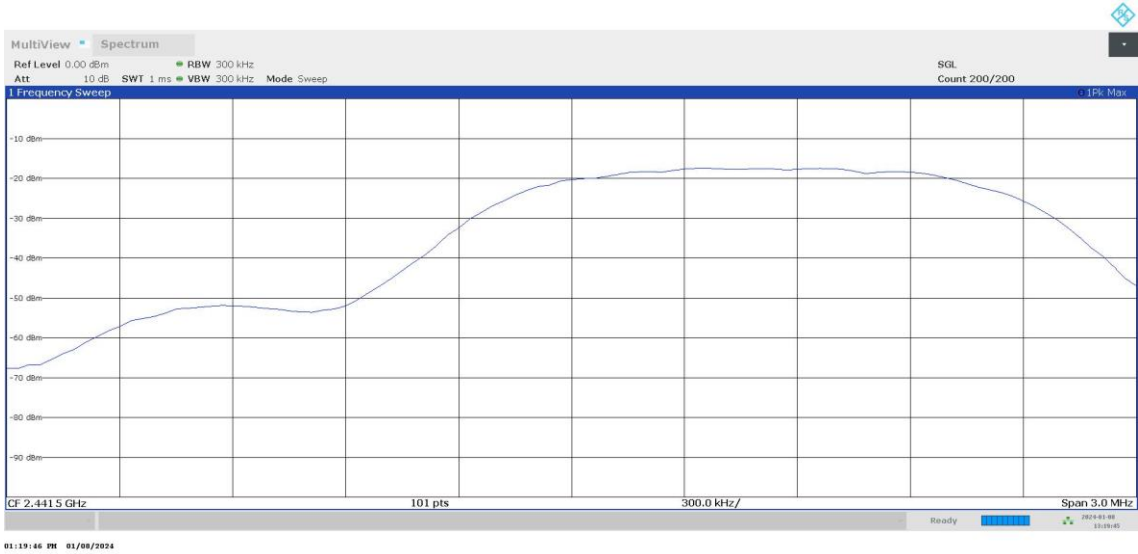
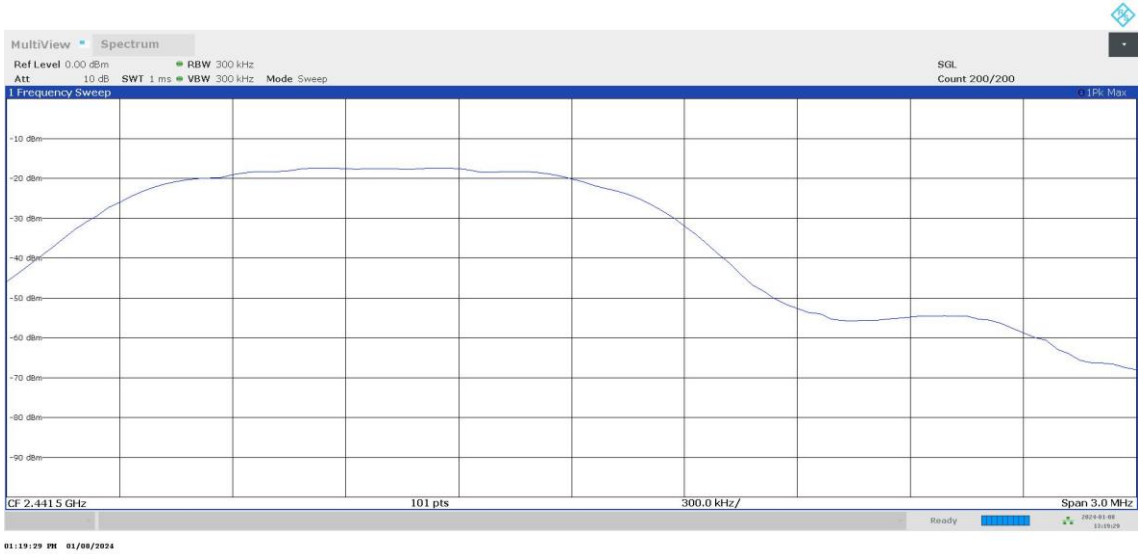
Pass

Attachments

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

Images:





RSS-247 5.1 (d) / FCC 15.247 (a) (1) (iii) [DwT] Time of Occupancy (Dwell Time)

Limits

The average time of occupancy on any channel shall not be greater than 0.4 seconds (400 ms) within a period of 0.4 seconds multiplied by the number of hopping channels employed = 0.4 x 79= 31.6 seconds.

Modulation: BT (GFSK 1-DH5)

Results

Equipment	BW (MHz)	Port	Freq (MHz)	NHp	Avg COT (ms)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	2402.00000	106	42.90
			2441.00000	110	44.50
			2480.00000	102	41.74

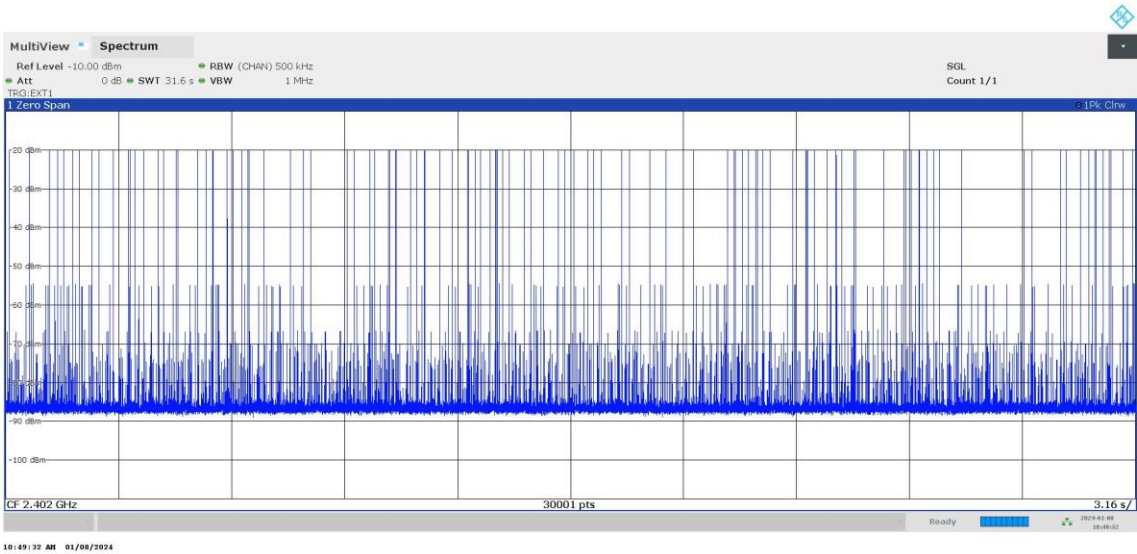
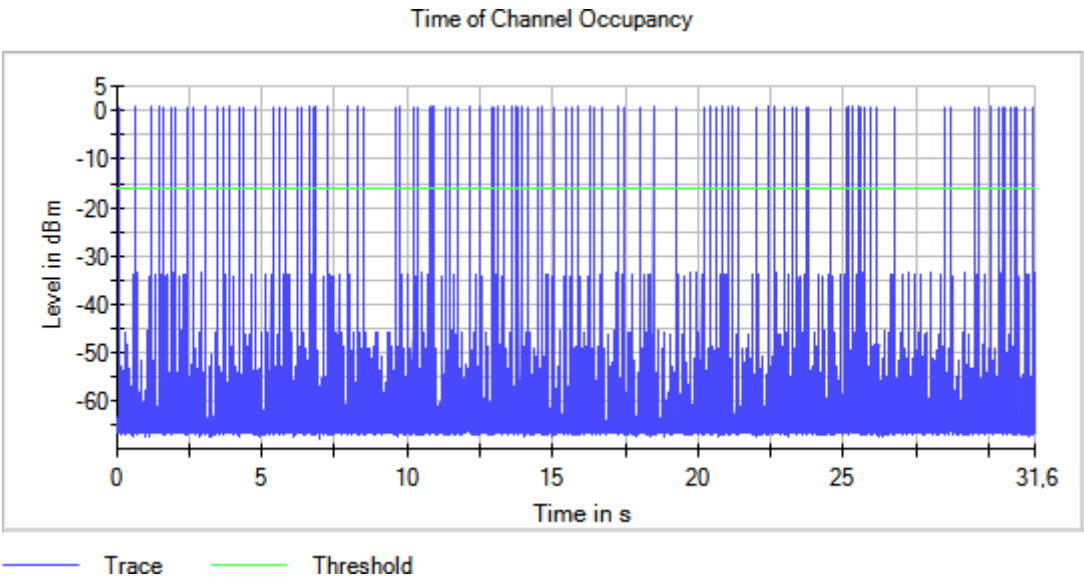
Verdict

Pass

Attachments

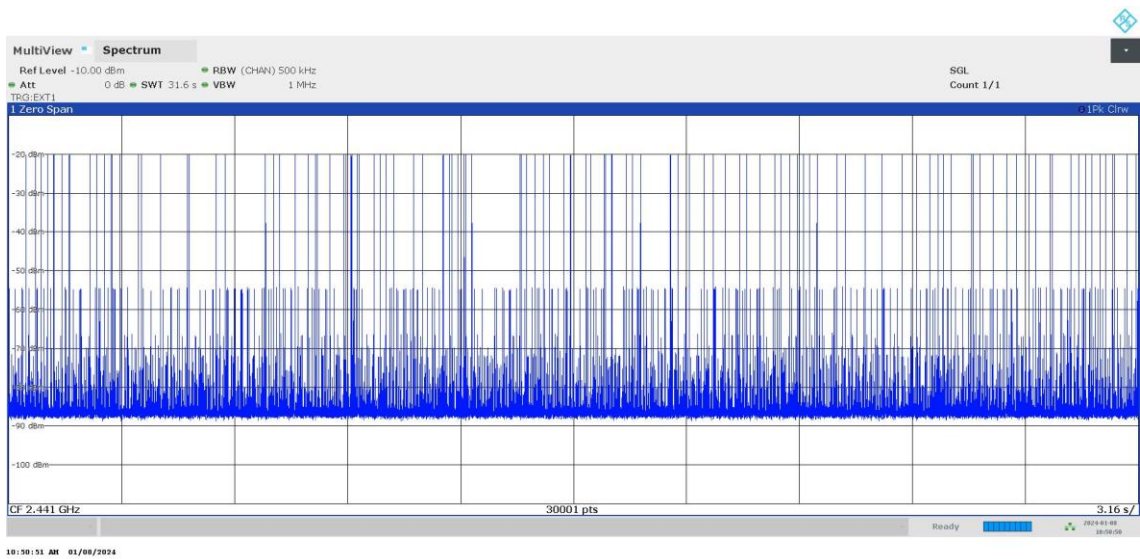
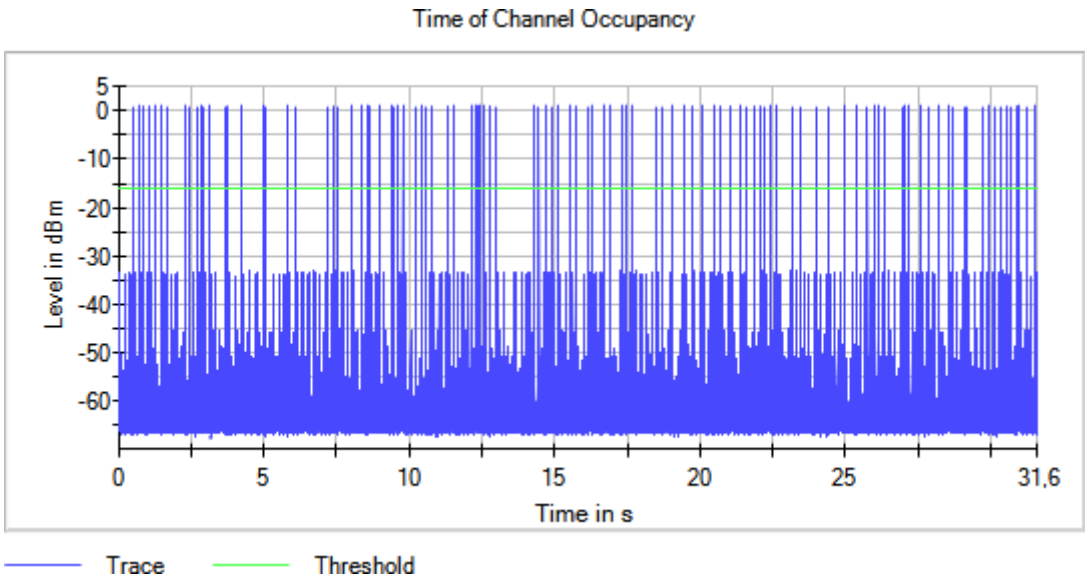
Modulation = BT (GFSK 1-DH5)

Images:



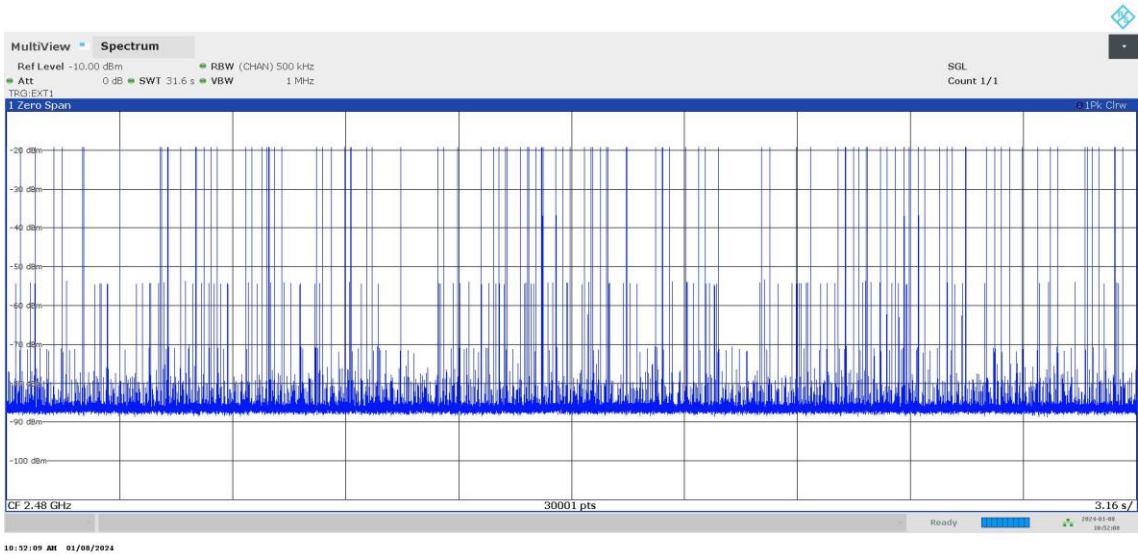
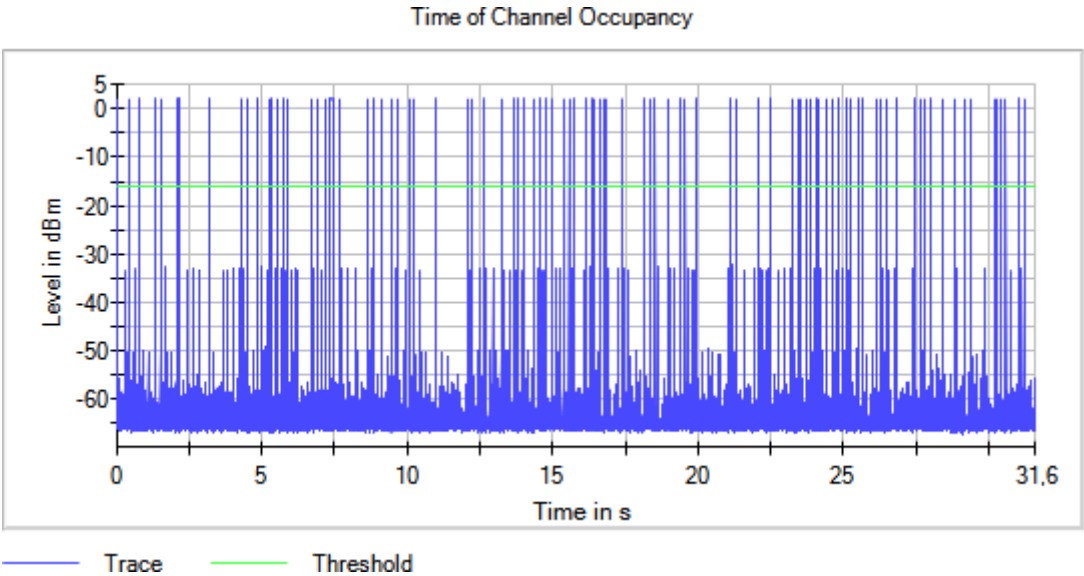
Modulation = BT (GFSK 1-DH5)

Images:



Modulation = BT (GFSK 1-DH5)

Images:



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

Results

Equipment	BW (MHz)	Port	Freq (MHz)	NHp	Avg COT (ms)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	2402.00000	95	27.39
			2441.00000	101	29.28
			2480.00000	103	29.76

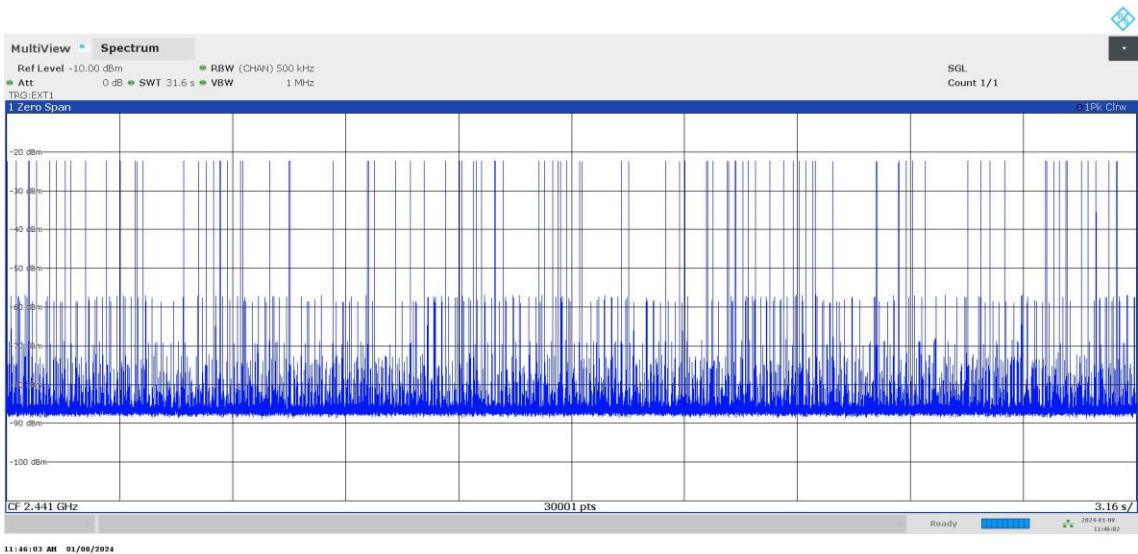
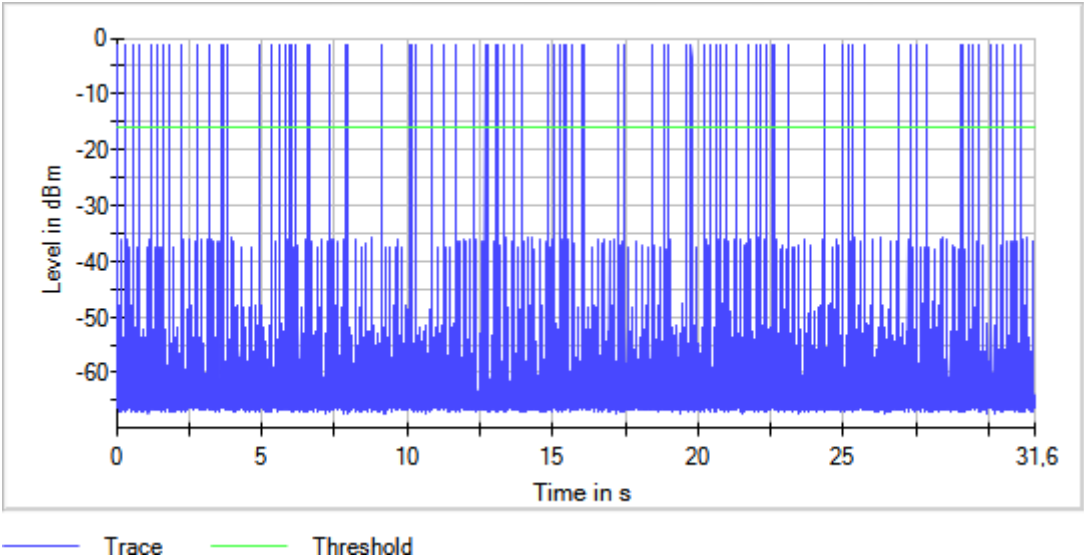
Verdict

Pass

Attachments

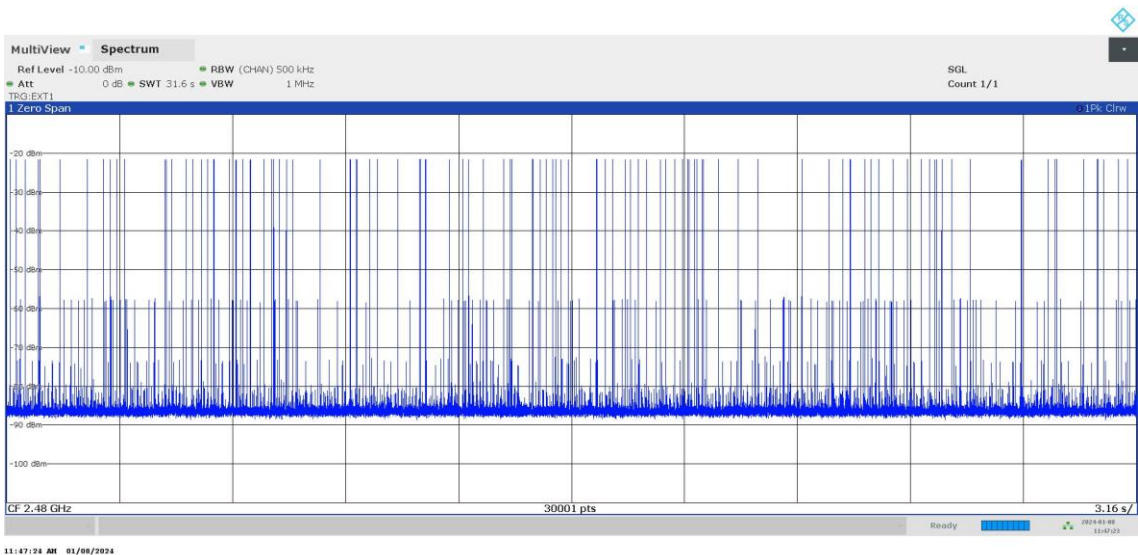
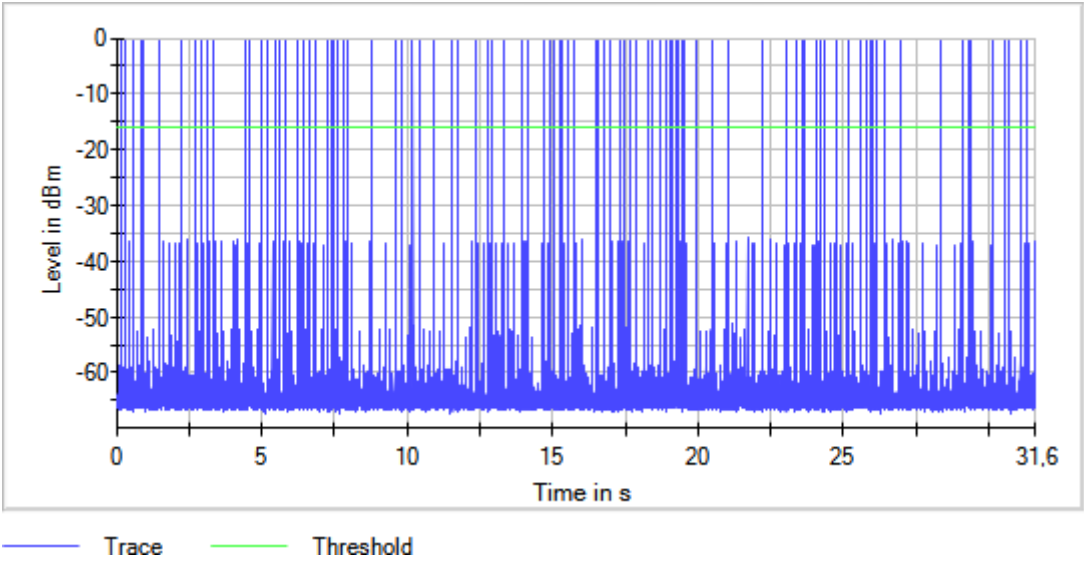
Modulation = BT (Pi/4 DQPSK 2-DH5)

Images:



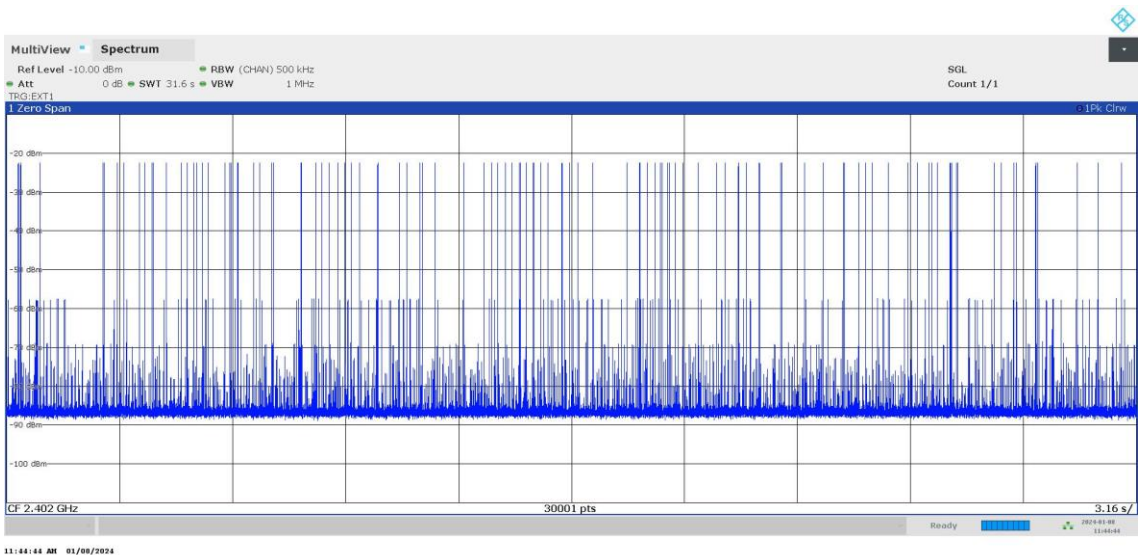
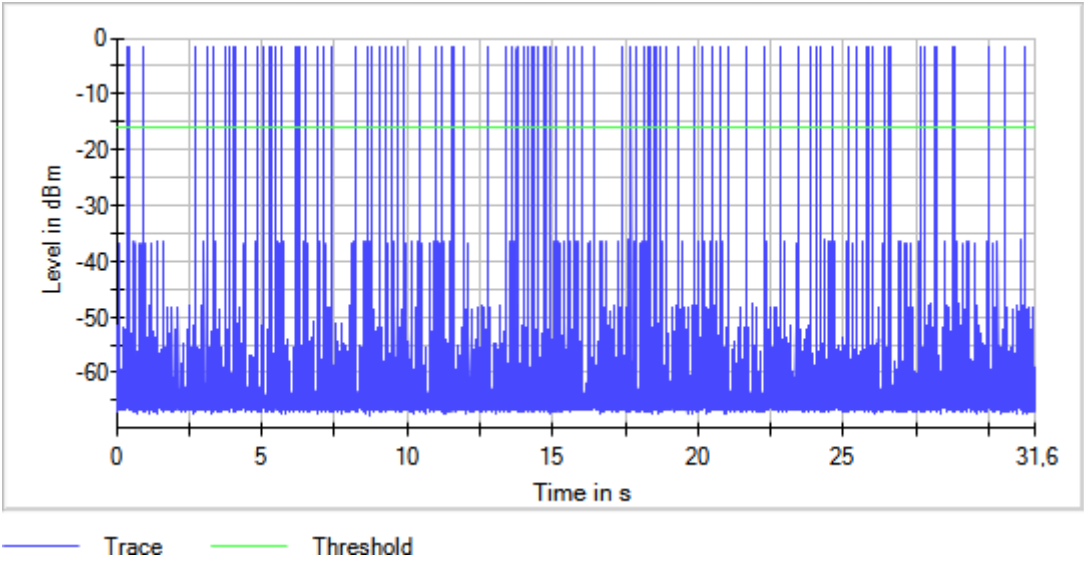
Modulation = BT (Pi/4 DQPSK 2-DH5)

Images:



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

Images:



Modulation: BT (8DPSK 3-DH5)

Results

Equipment	BW (MHz)	Port	Freq (MHz)	NHp	Avg COT (ms)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	2402.00000	108	27.16
			2441.00000	122	30.62
			2480.00000	104	26.15

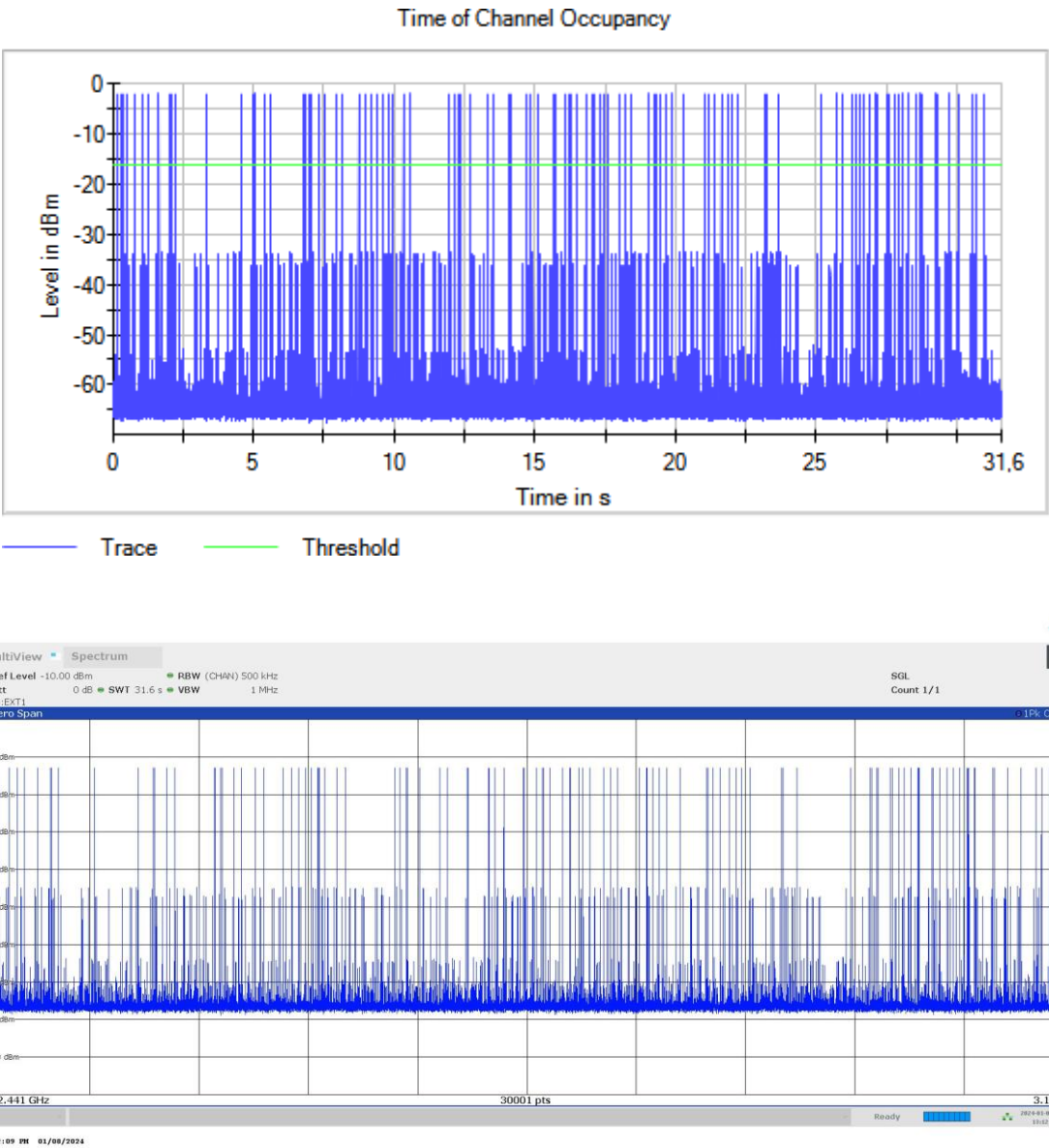
Verdict

Pass

Attachments

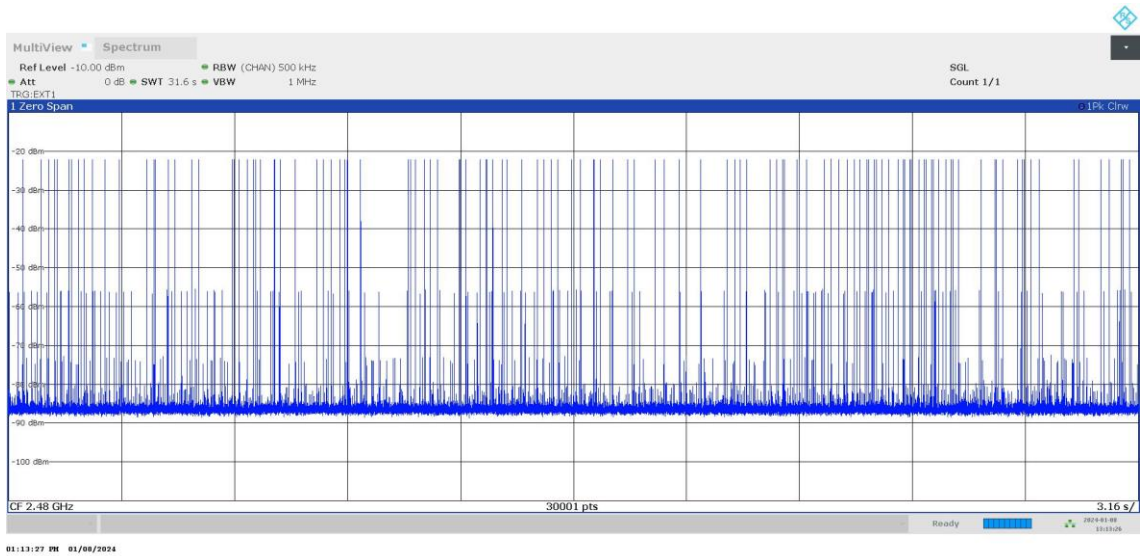
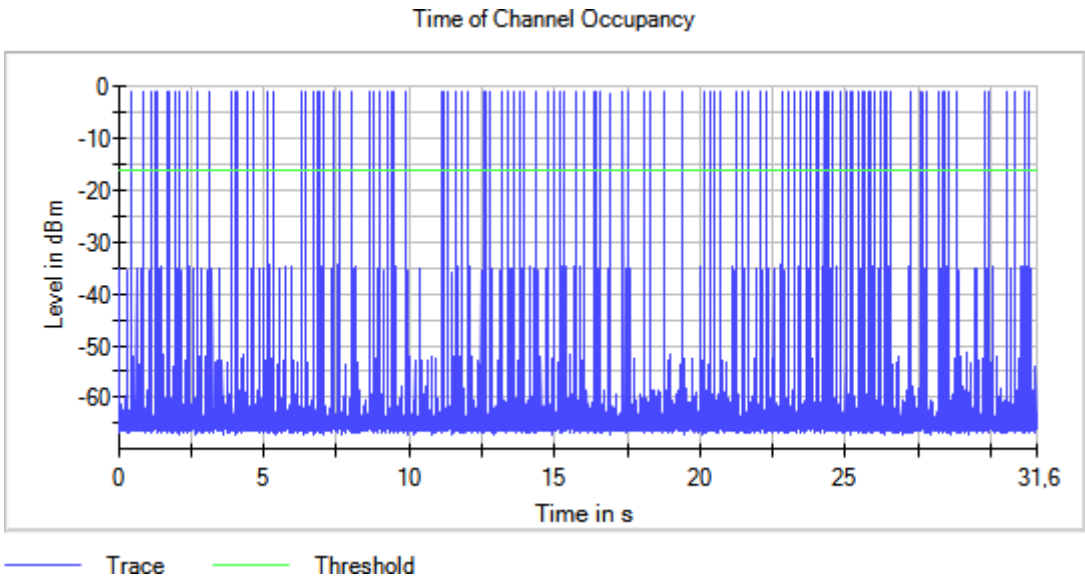
Modulation = BT (8DPSK 3-DH5)

Images:



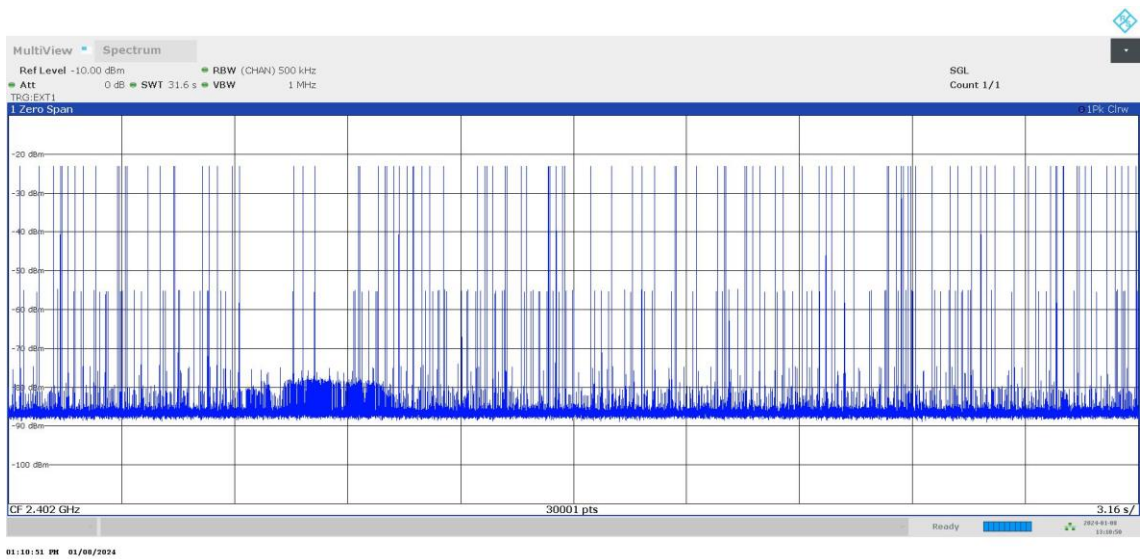
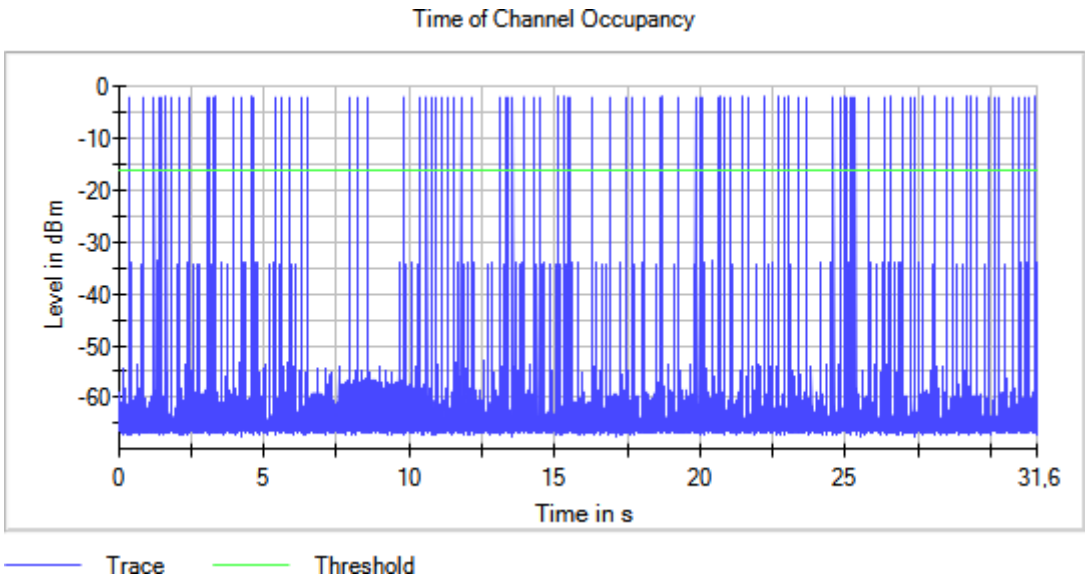
Modulation = BT (8DPSK 3-DH5)

Images:



Modulation = BT (8DPSK 3-DH5)

Images:



RSS-247 5.1 (d) / FCC 15.247 (a) (1) (iii) [NHC] Number of hopping channels

Limits

Frequency hopping system in the 2400-2483.5 MHz band shall use at least 15 channels.

Modulation: BT (GFSK 1-DH5)

Results

Equipment	BW (MHz)	Port	NHC
Frequency Hopping Spread Spectrum systems (DSS)	1	1	79

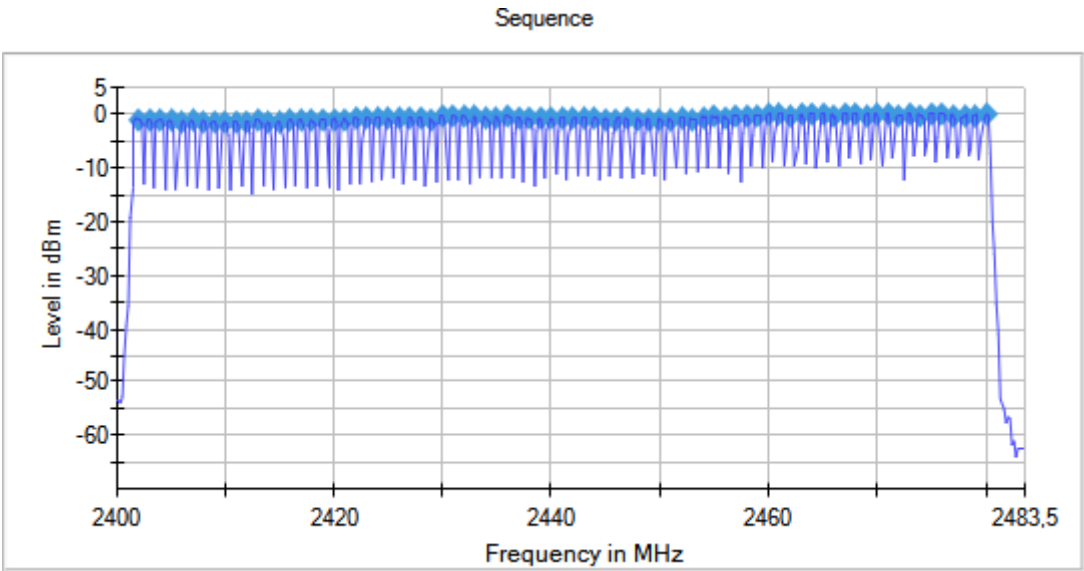
Verdict

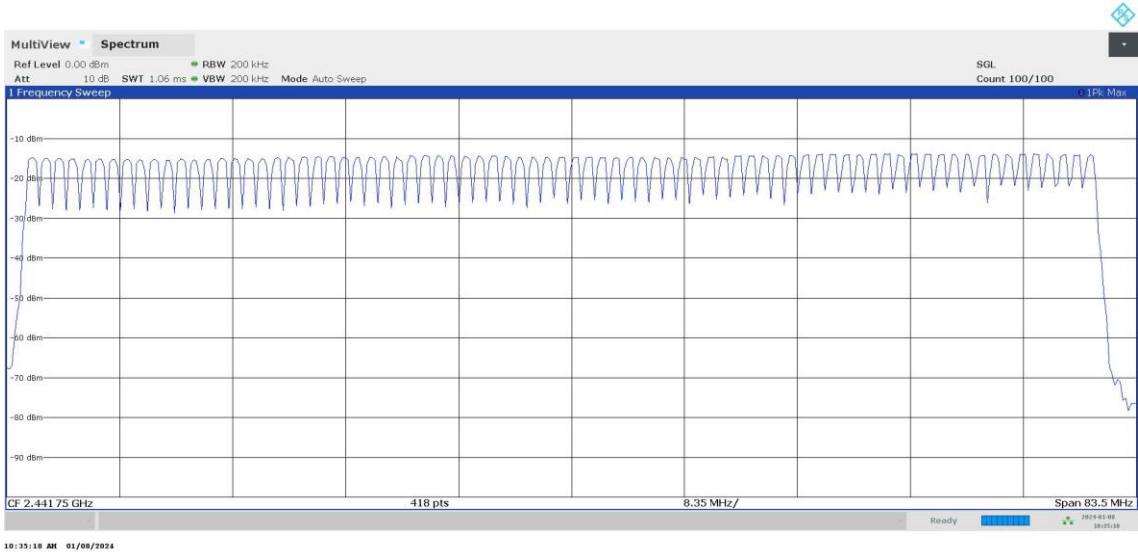
Pass

Attachments

Modulation = BT (GFSK 1-DH5)

Images:





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

Results

Equipment	BW (MHz)	Port	NHC
Frequency Hopping Spread Spectrum systems (DSS)	1	1	79

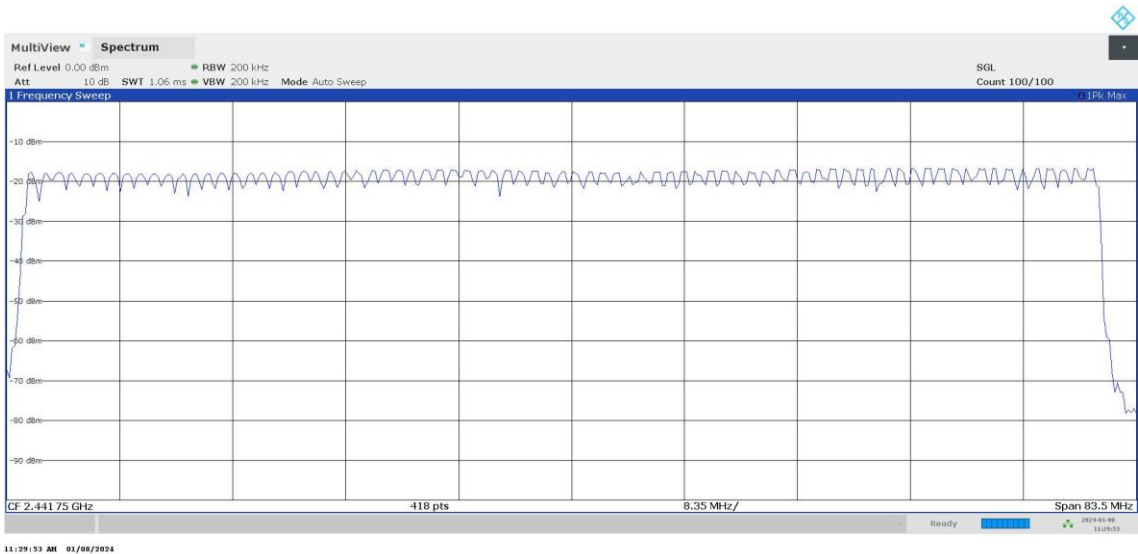
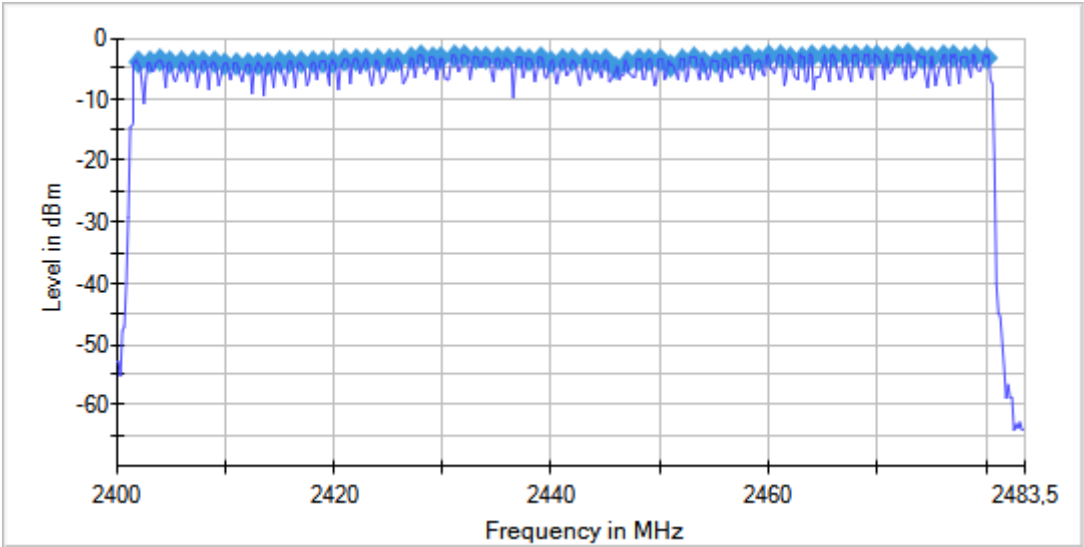
Verdict

Pass

Attachments

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

Images:



Modulation: BT (8DPSK 3-DH5)

Results

Equipment	BW (MHz)	Port	NHC
Frequency Hopping Spread Spectrum systems (DSS)	1	1	80

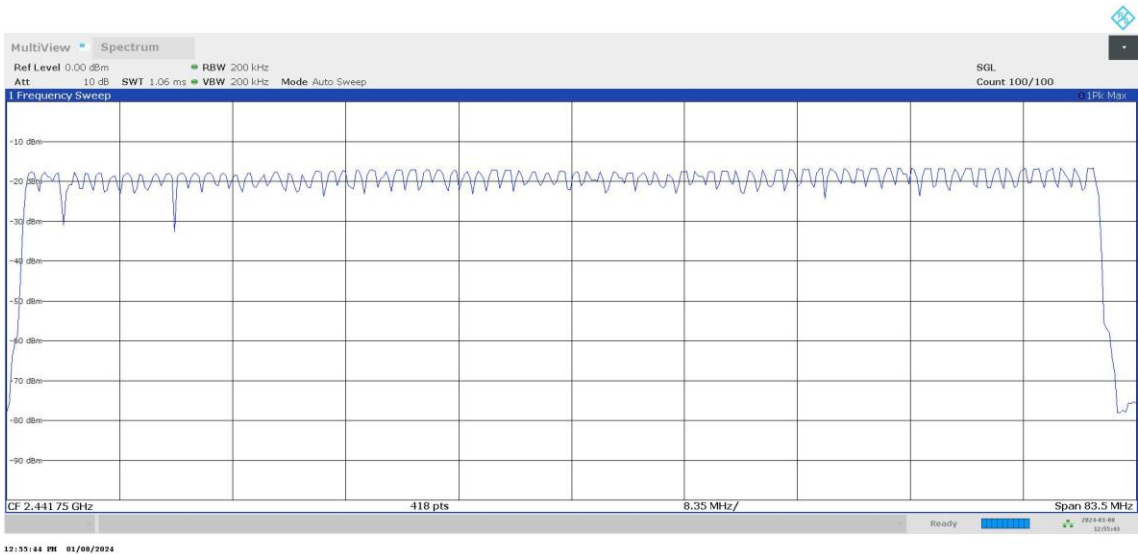
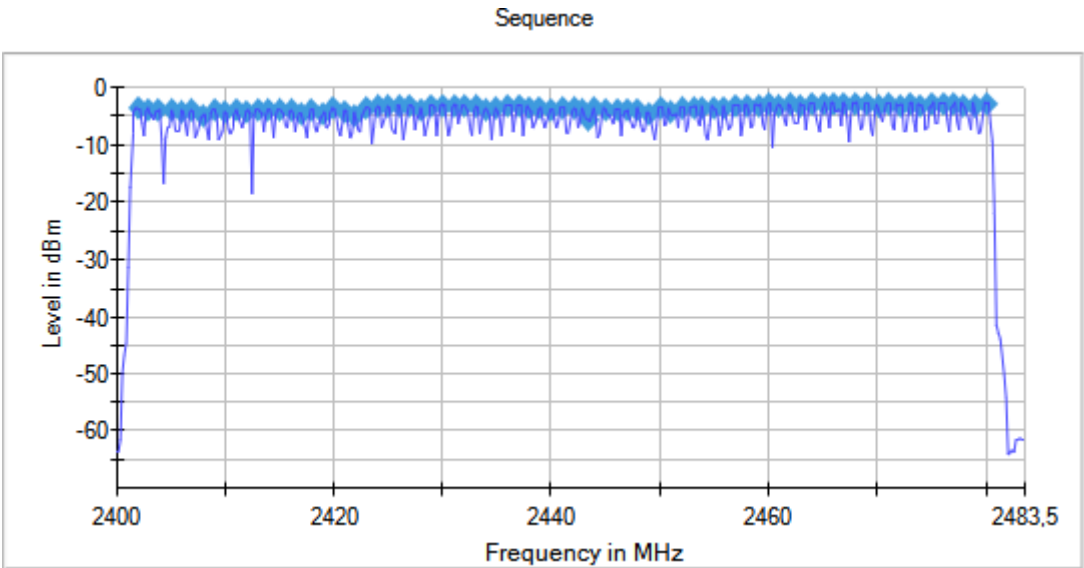
Verdict

Pass

Attachments

Modulation = BT (8DPSK 3-DH5)

Images:



RSS-247 5.4 (b) / FCC 15.247 (b) (1) [Pkcp] Maximum Peak Conducted output power

Limits

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1 watt (30 dBm). The e.i.r.p. shall not exceed 4 W (RSS-247).

Modulation: BT (GFSK 1-DH5)

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Peak Power (dBm) e.i.r.p
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	-0.5110	-0.5110
		2441.00000		-0.4820	-0.4820
		2480.00000		0.3900	0.3900

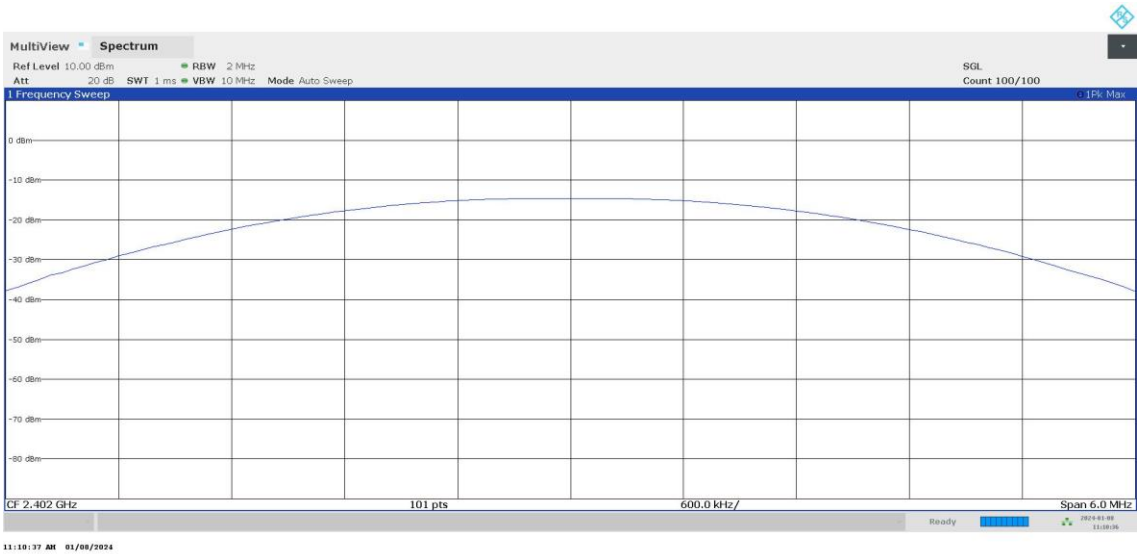
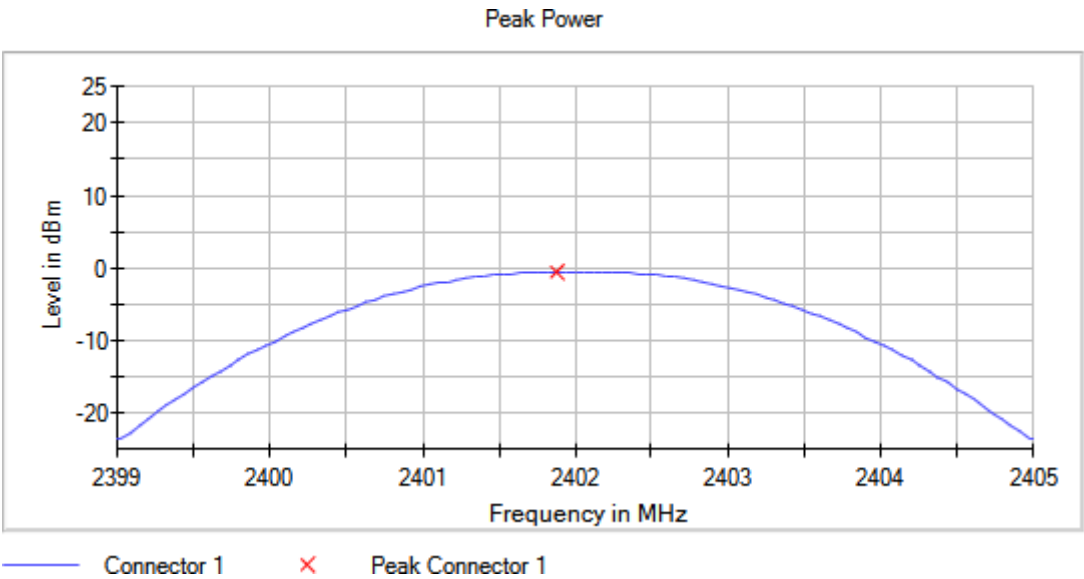
Verdict

Pass

Attachments

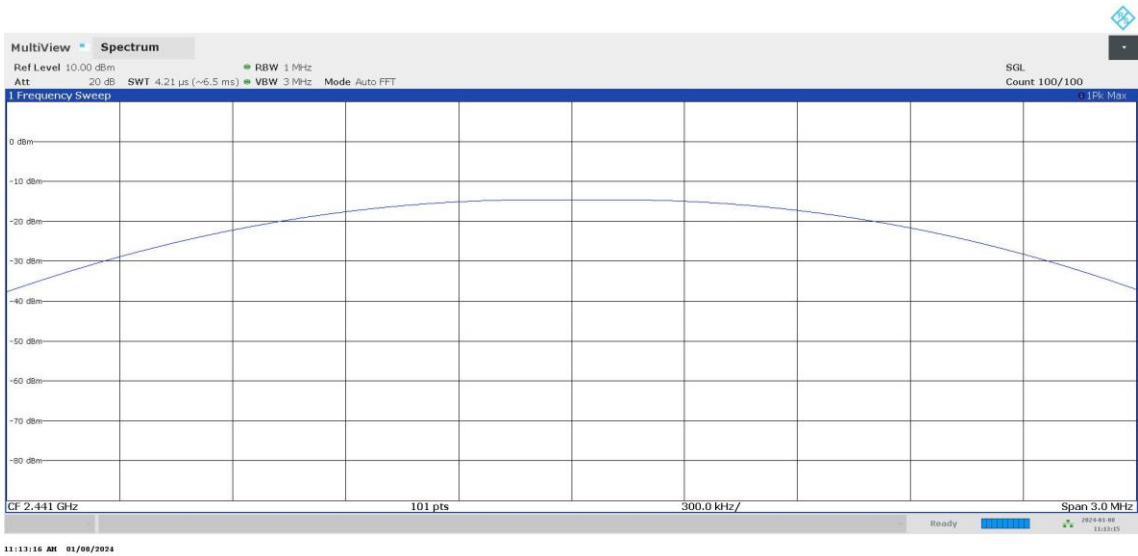
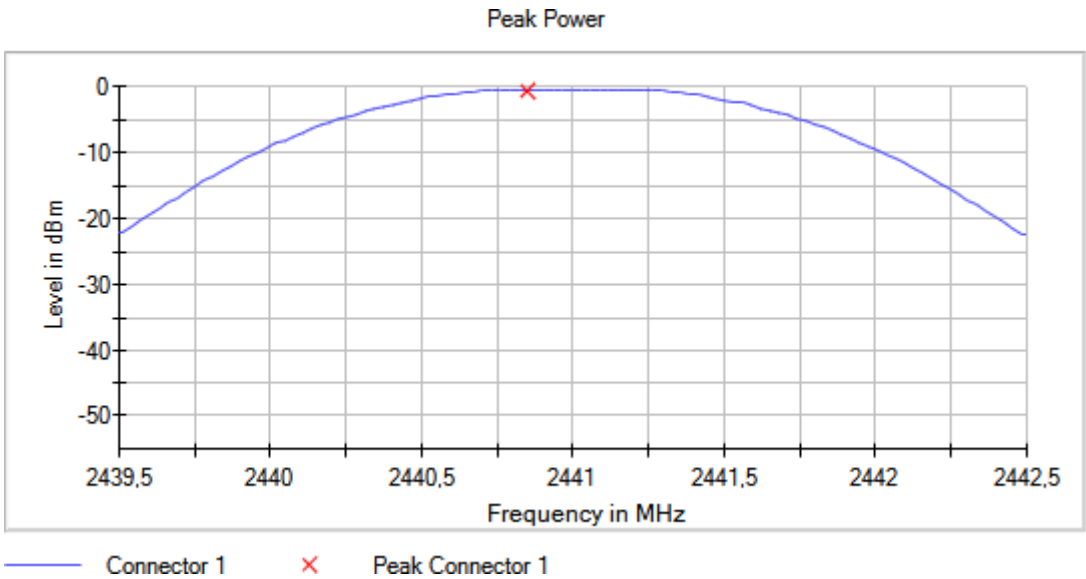
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2402.00000

Images:



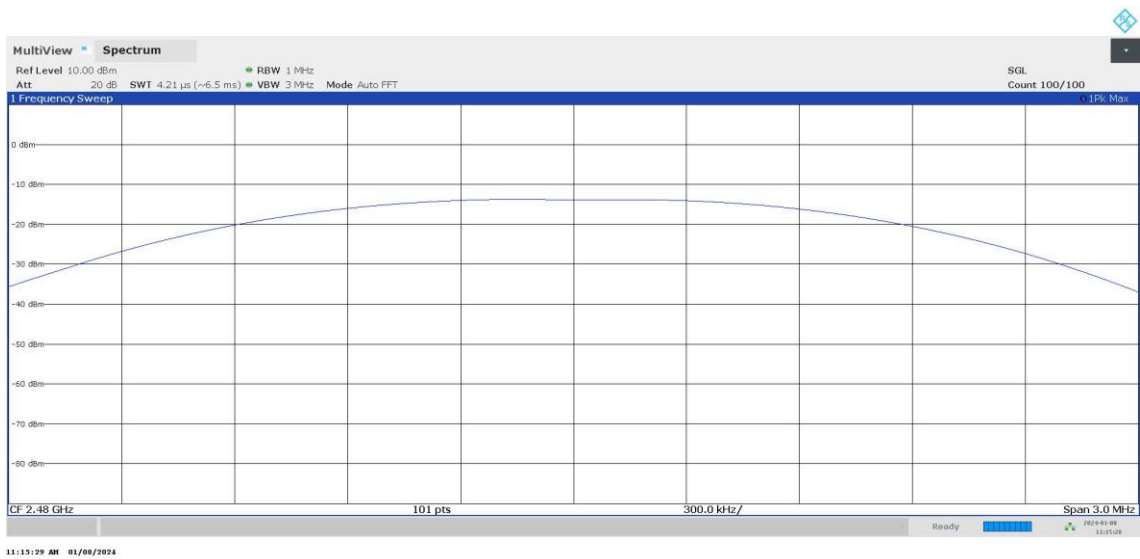
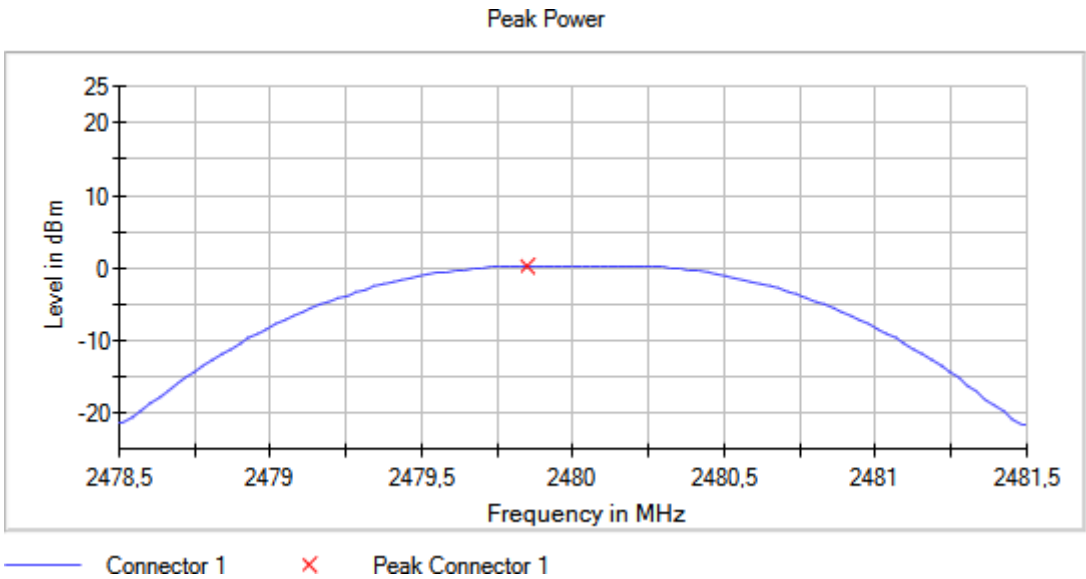
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (GFSK 1-DH5) Frequency MHz = 2480.00000

Images:



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

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Peak Power (dBm) e.i.r.p
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	-1.6290	-1.6290
		2441.00000		-1.4570	-1.4570
		2480.00000		-0.6160	-0.6160

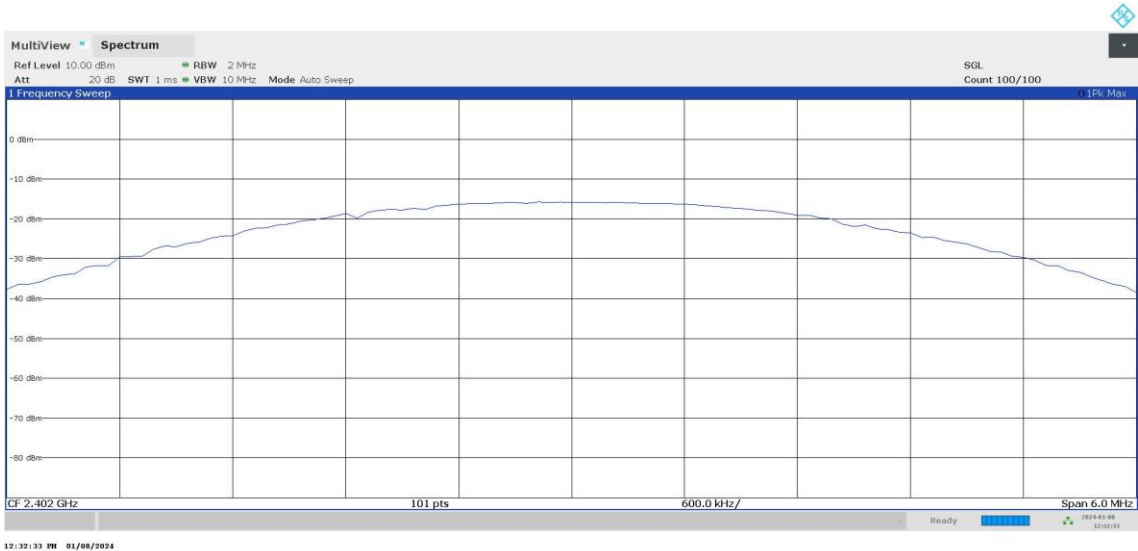
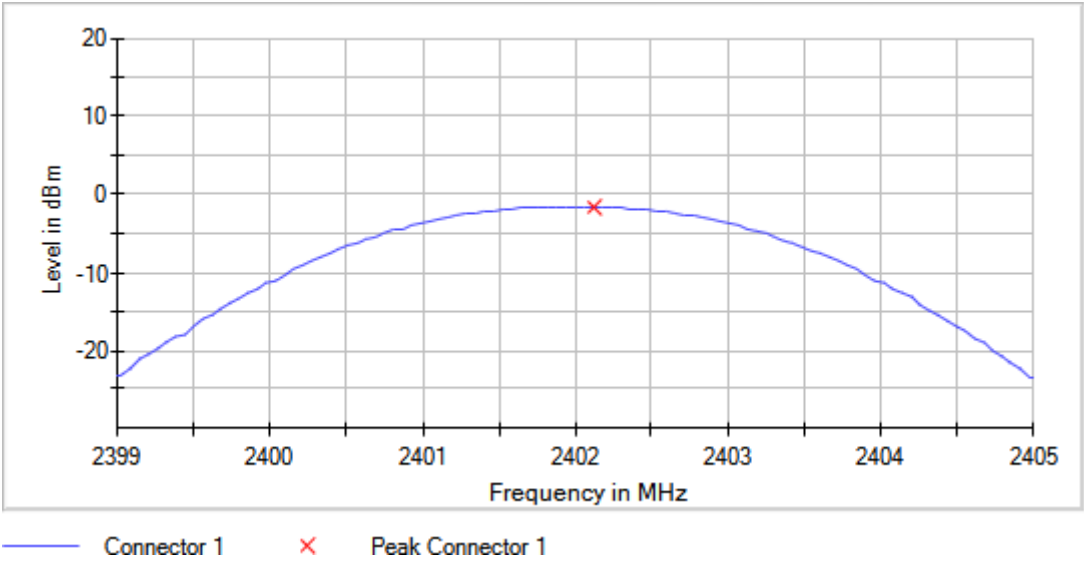
Verdict

Pass

Attachments

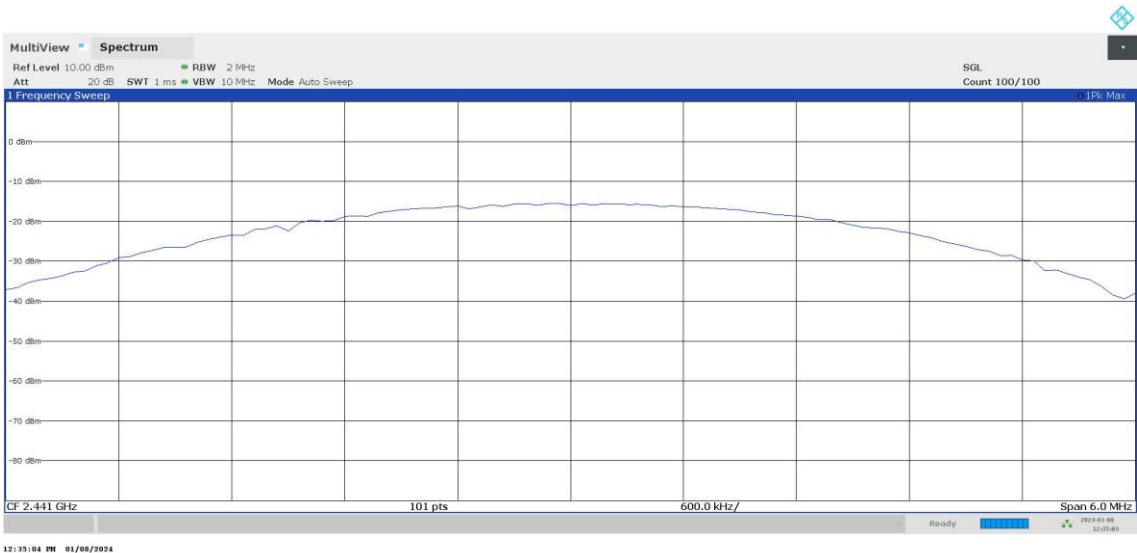
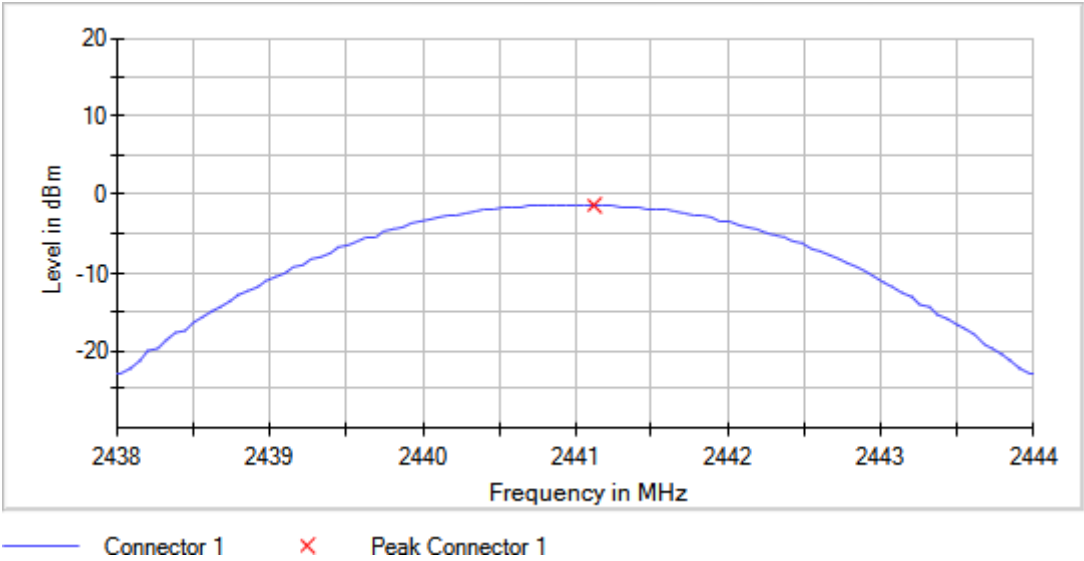
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2402.00000

Images:



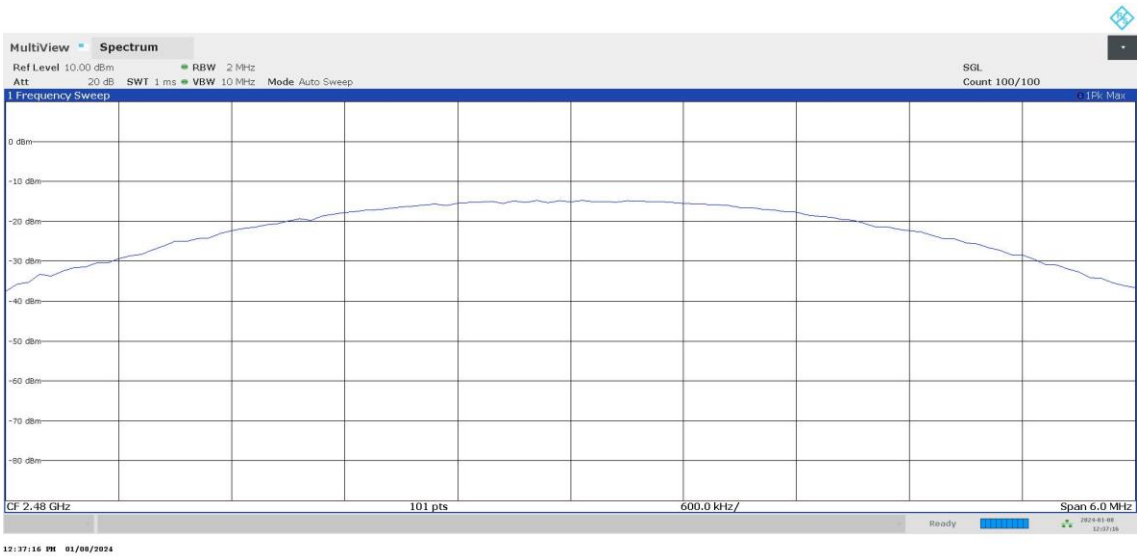
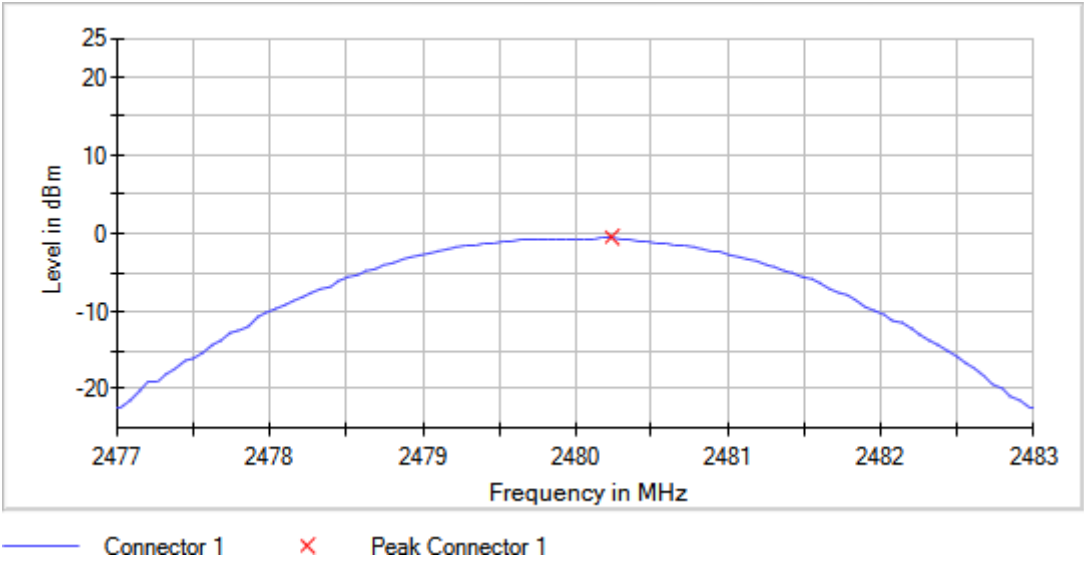
Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2441.00000

Images:



Modulation = BT (Pi/4 DQPSK 2-DH5) Frequency MHz = 2480.00000

Images:



Modulation: BT (8DPSK 3-DH5)

Results

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Peak Power (dBm) e.i.r.p
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	-1.2060	-1.2060
		2441.00000		-1.0530	-1.0530
		2480.00000		-0.2040	-0.2040

Verdict

Pass