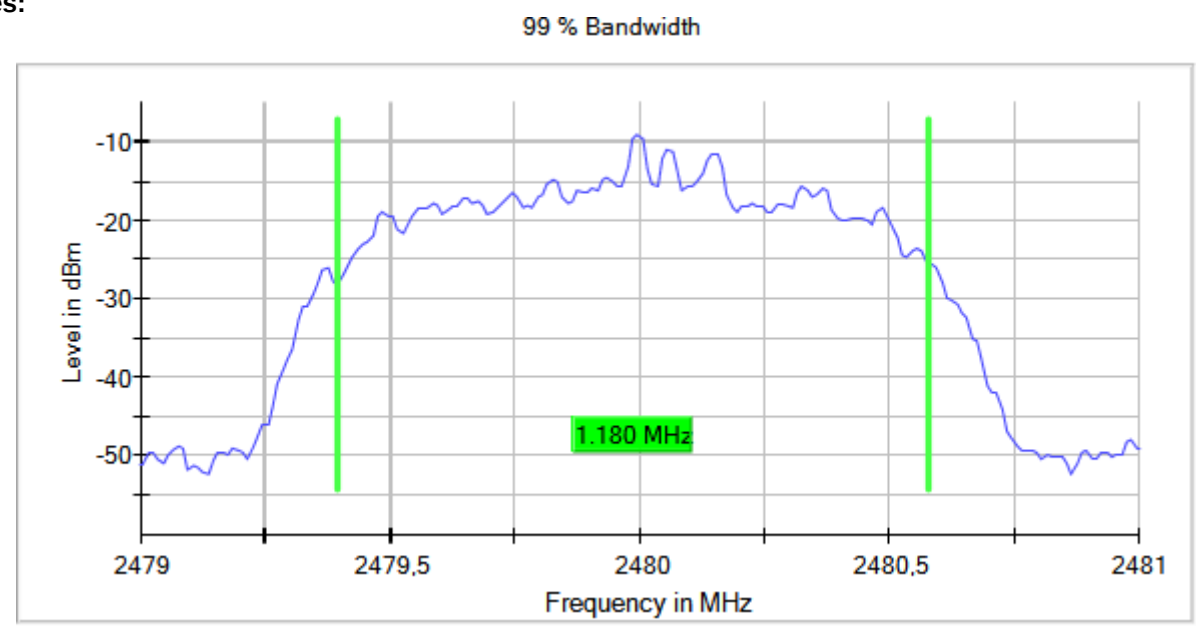
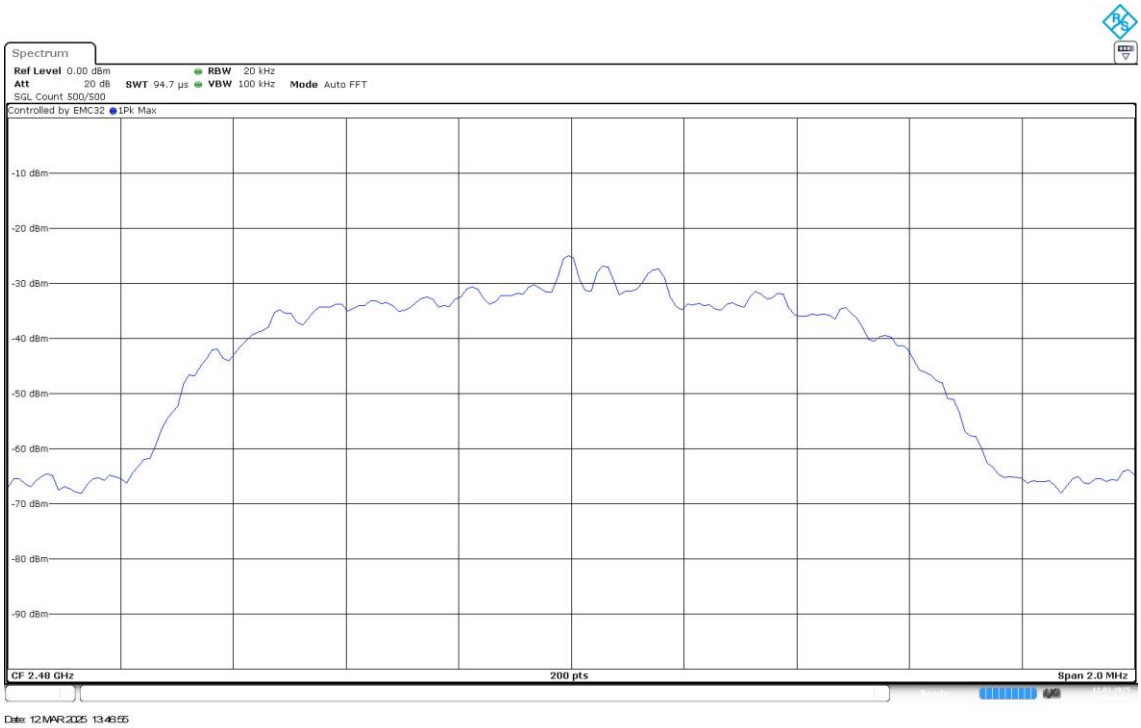
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (8DPSK 3-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:





RSS-247 5.1 (b) / FCC 15.247 (a) (1) 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.

Results

Modulation: BT (GFSK 1-DH5)

Equipment	BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	0.910
		2441.00000		0.910
		2480.00000		0.910

Verdict

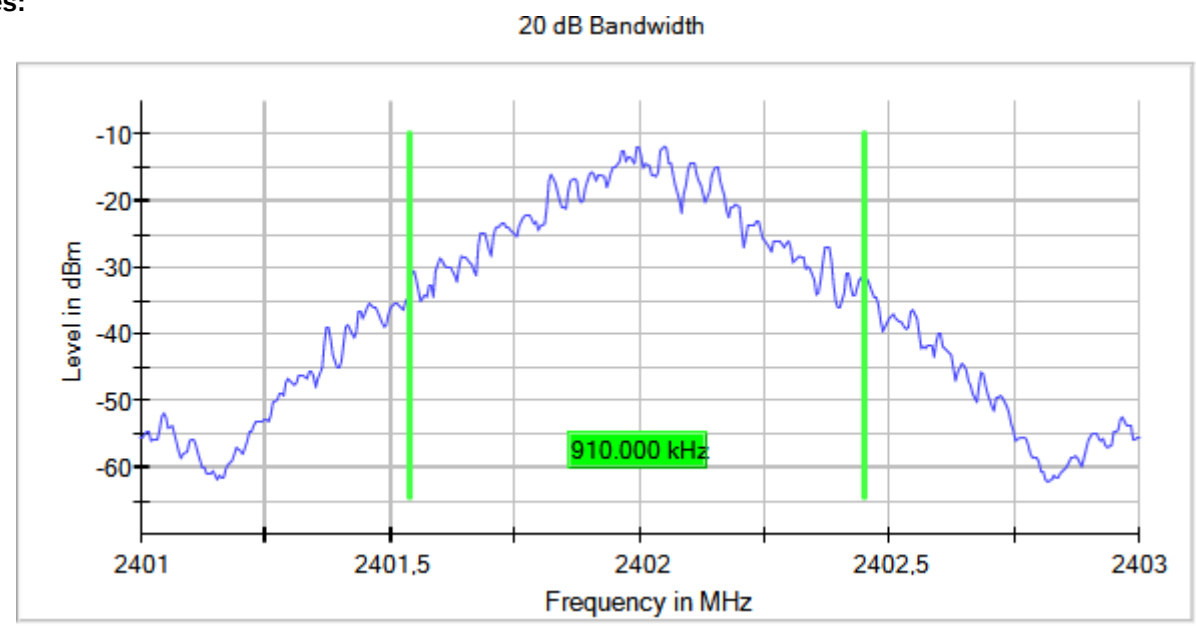
Pass

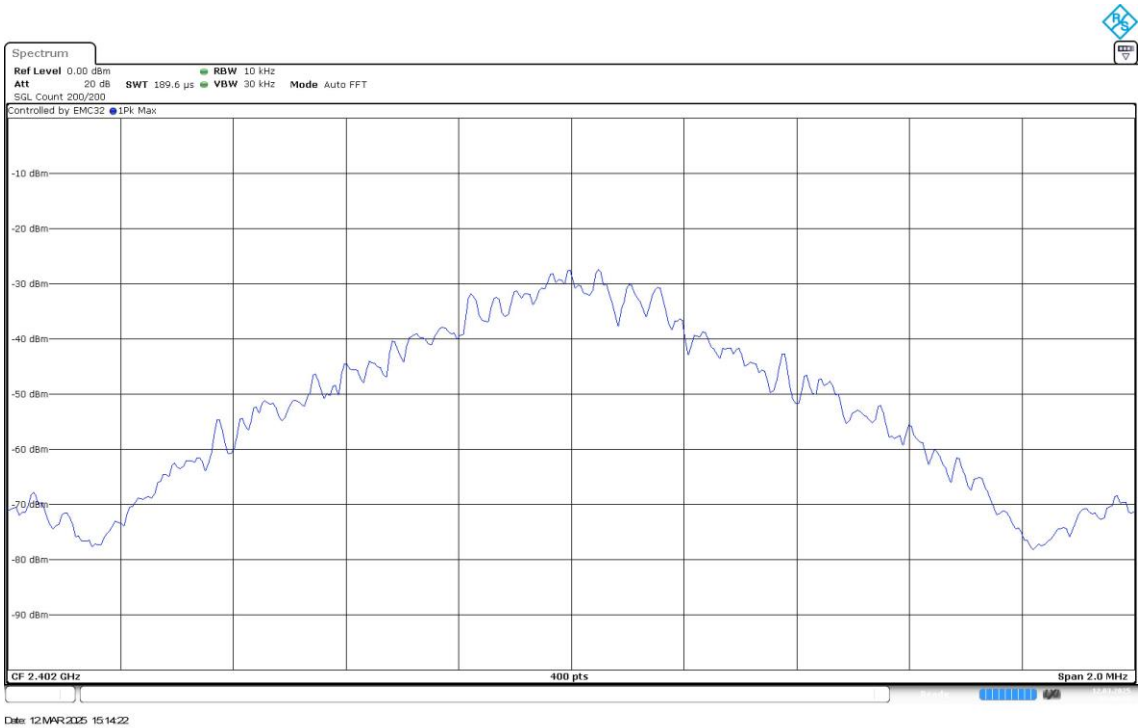
Attachments

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

Bandwidth MHz = 1
Frequency MHz = 2402.00000
Active Port = 1

Images:

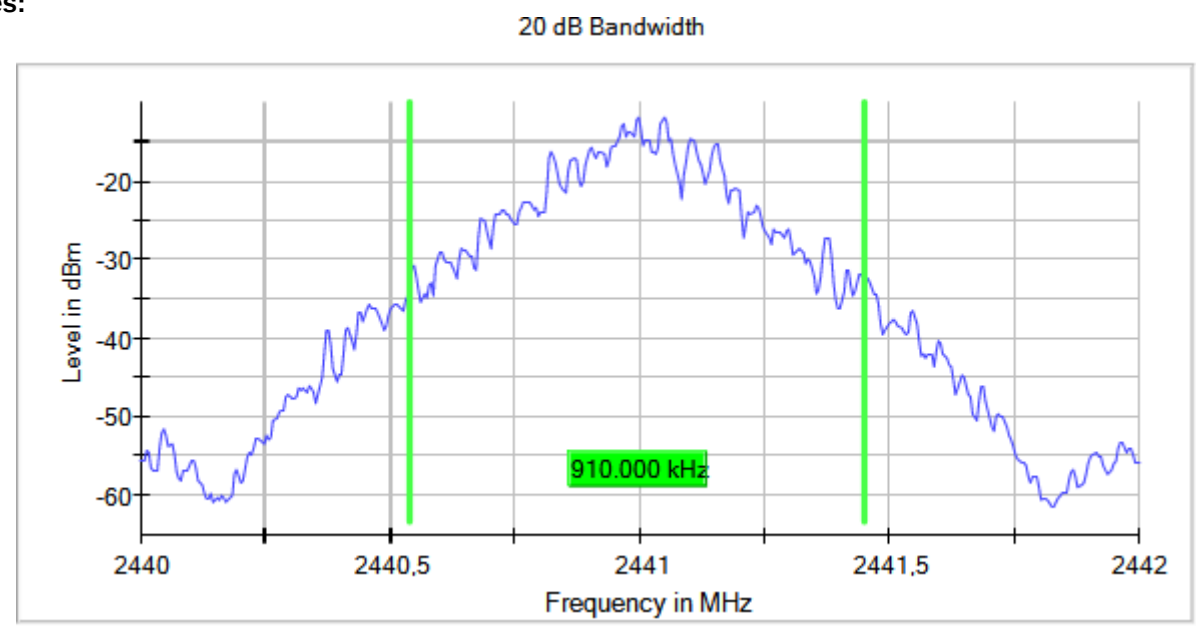


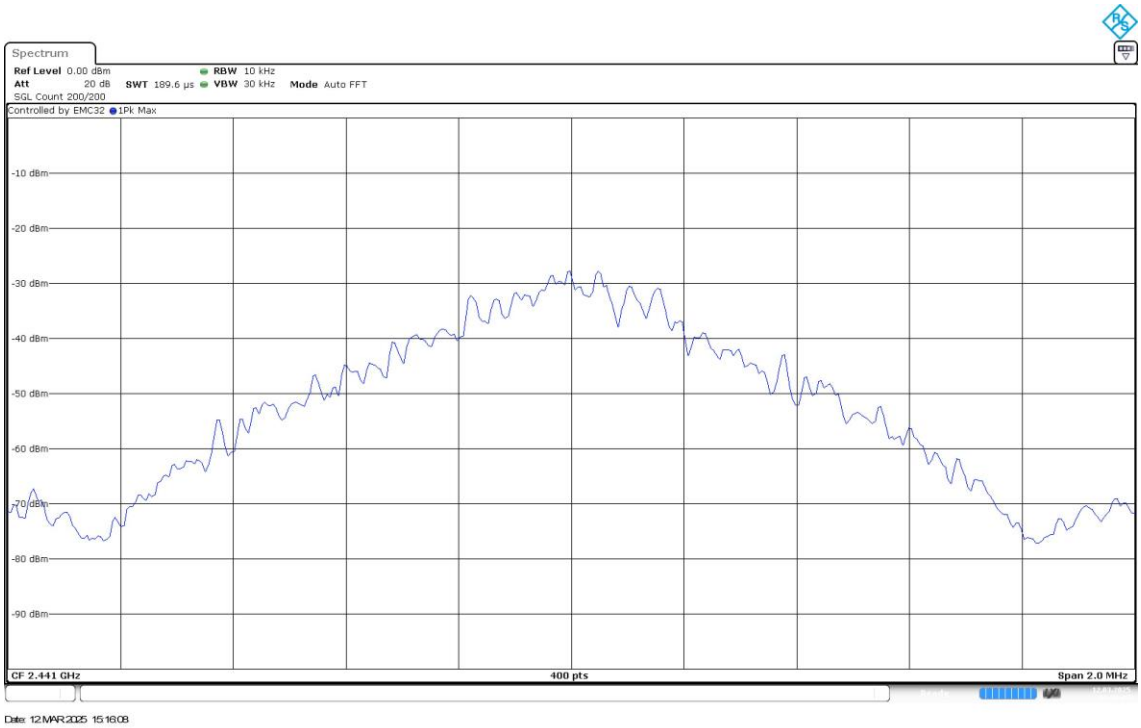


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (GFSK 1-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2441.00000
Active Port = 1

Images:

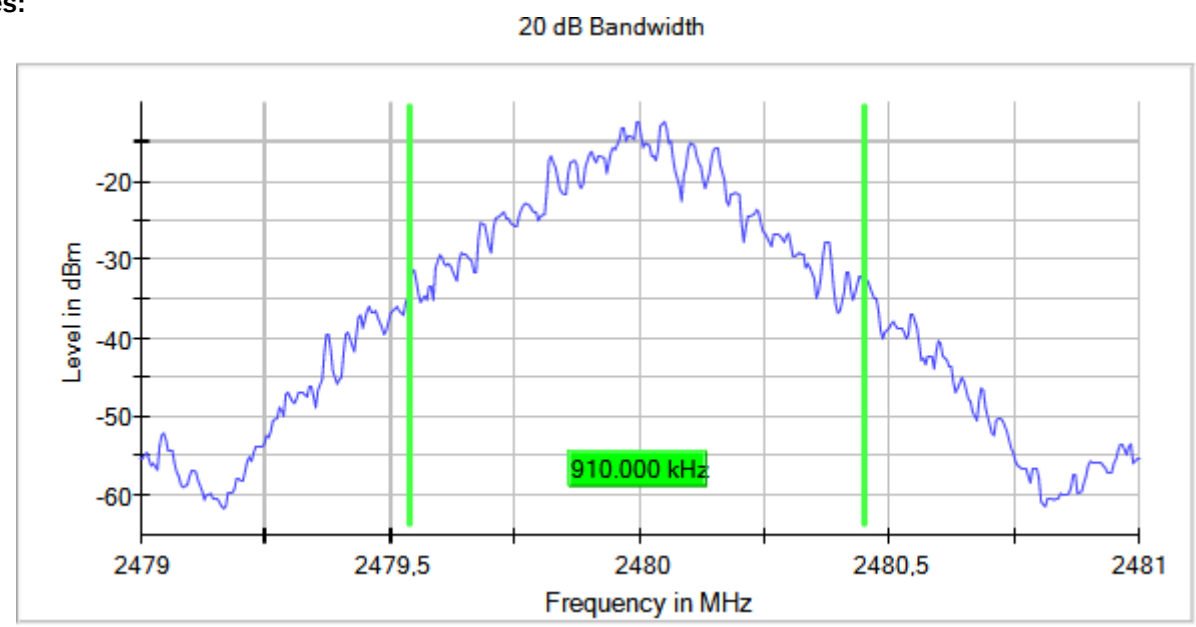


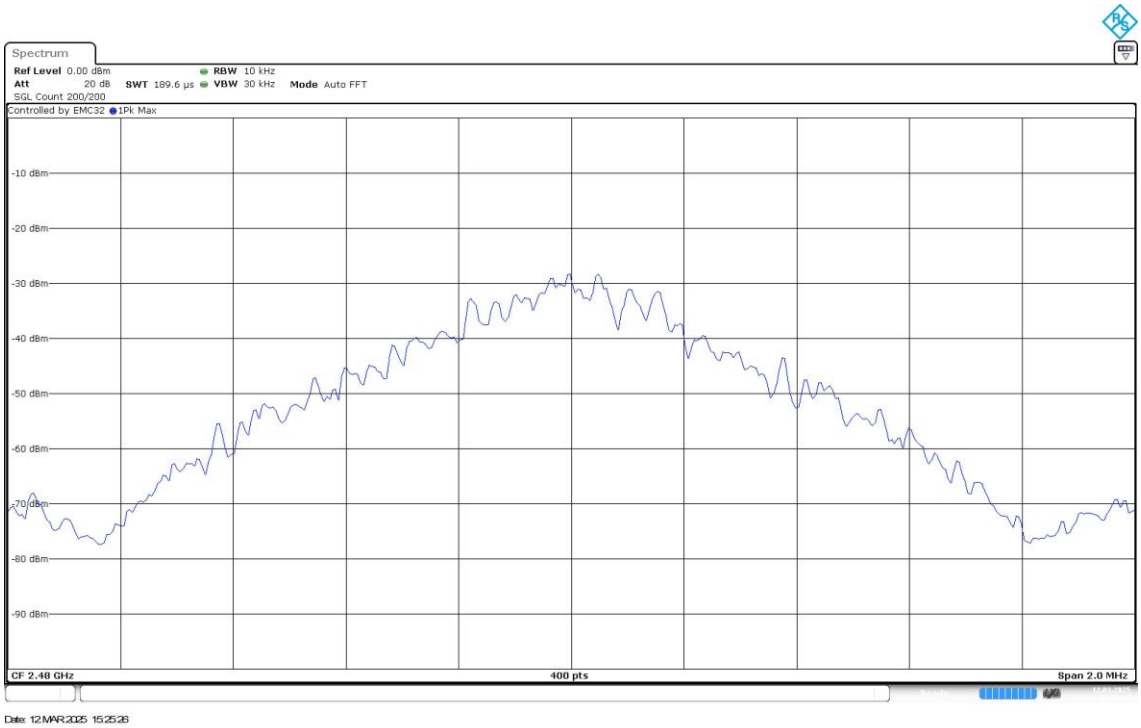


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (GFSK 1-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:





Results

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

Equipment	BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.265
		2441.00000		1.265
		2480.00000		1.265

Verdict

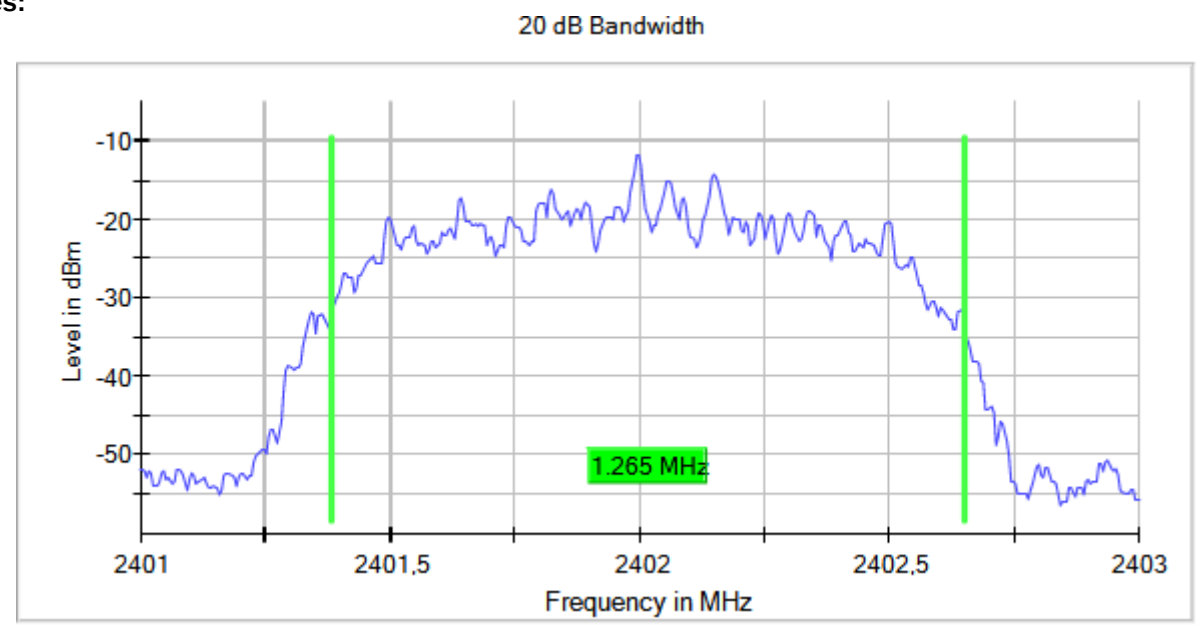
Pass

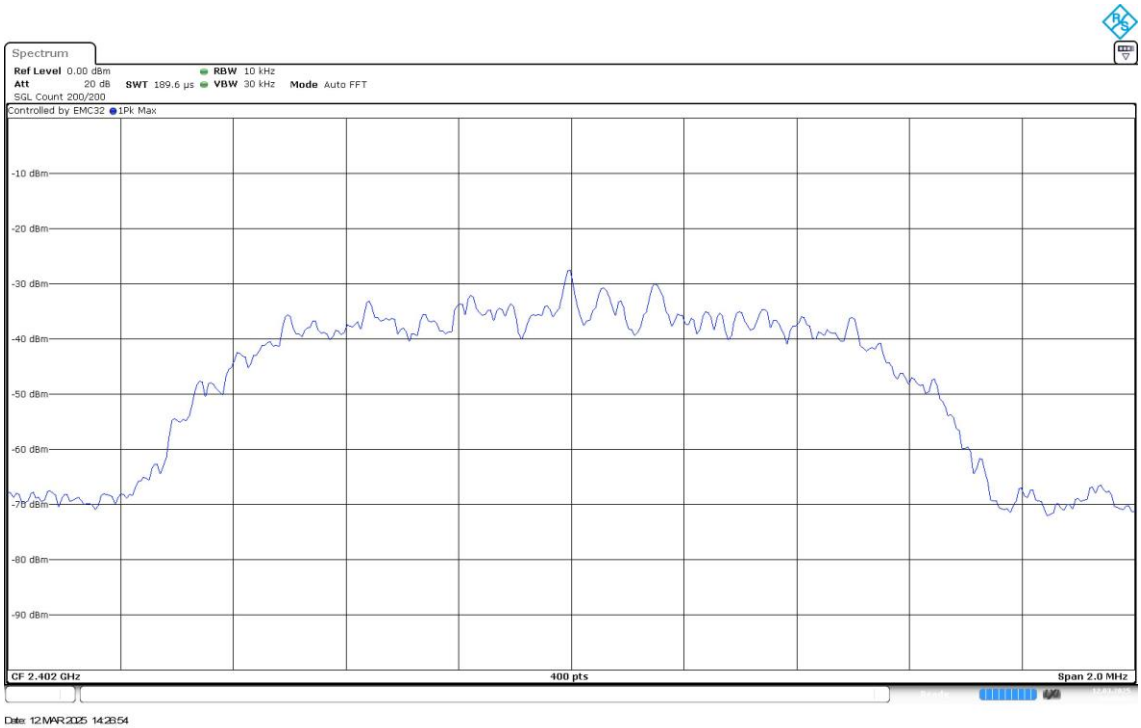
Attachments

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

Bandwidth MHz = 1
Frequency MHz = 2402.00000
Active Port = 1

Images:

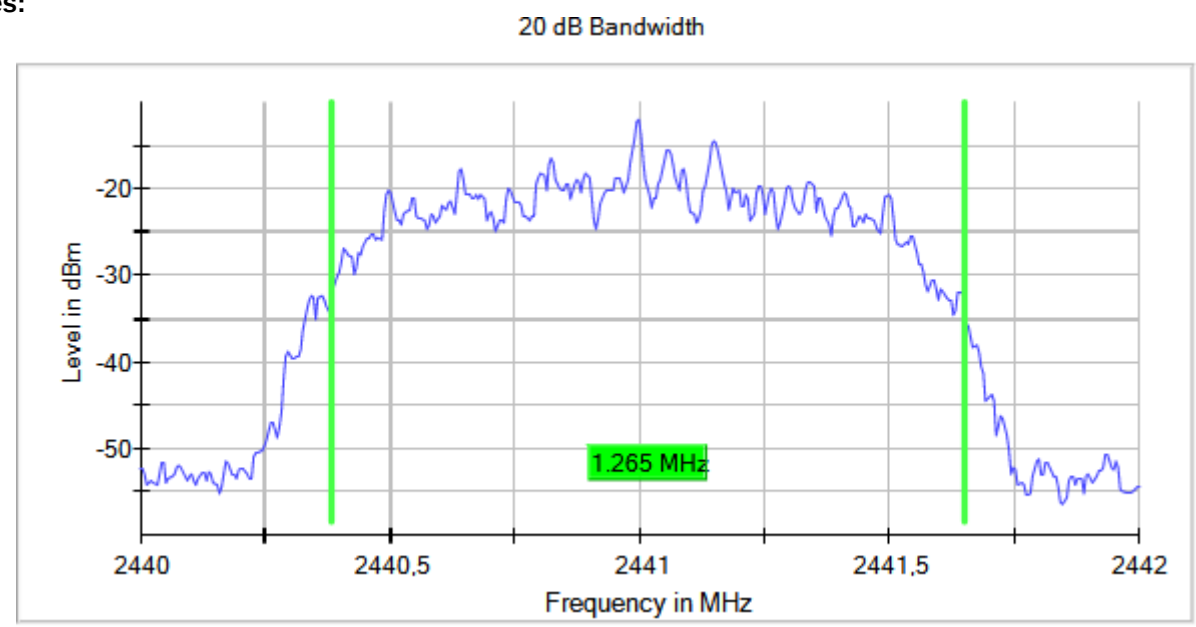


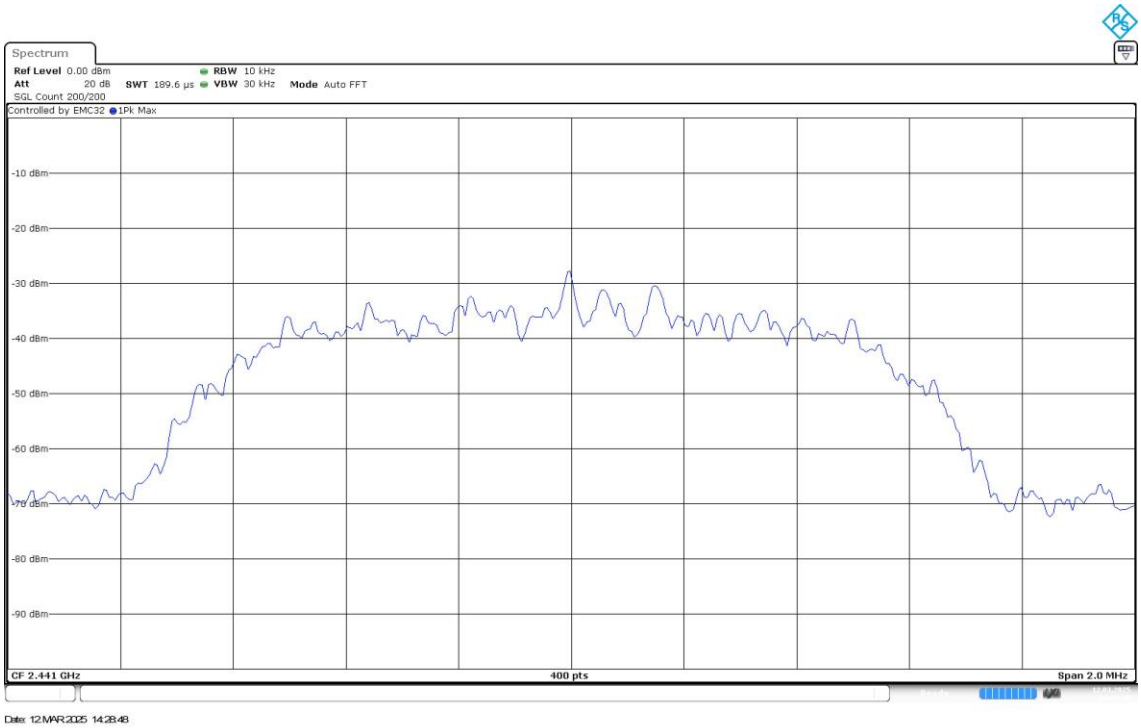


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (Pi/4 DQPSK 2-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2441.00000
Active Port = 1

Images:

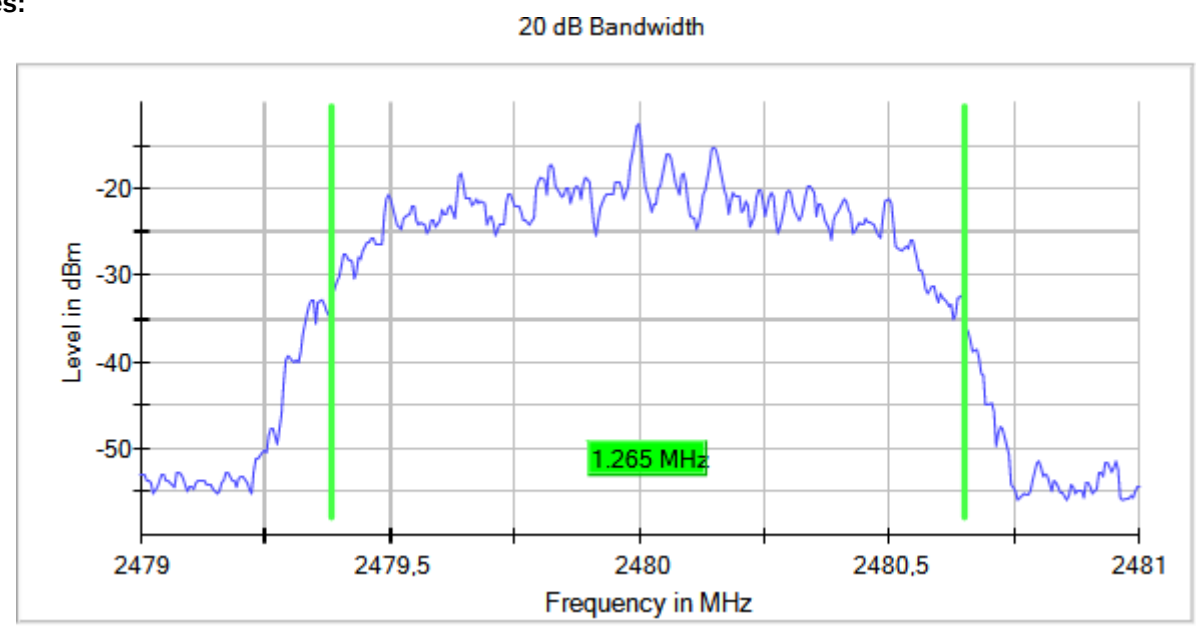


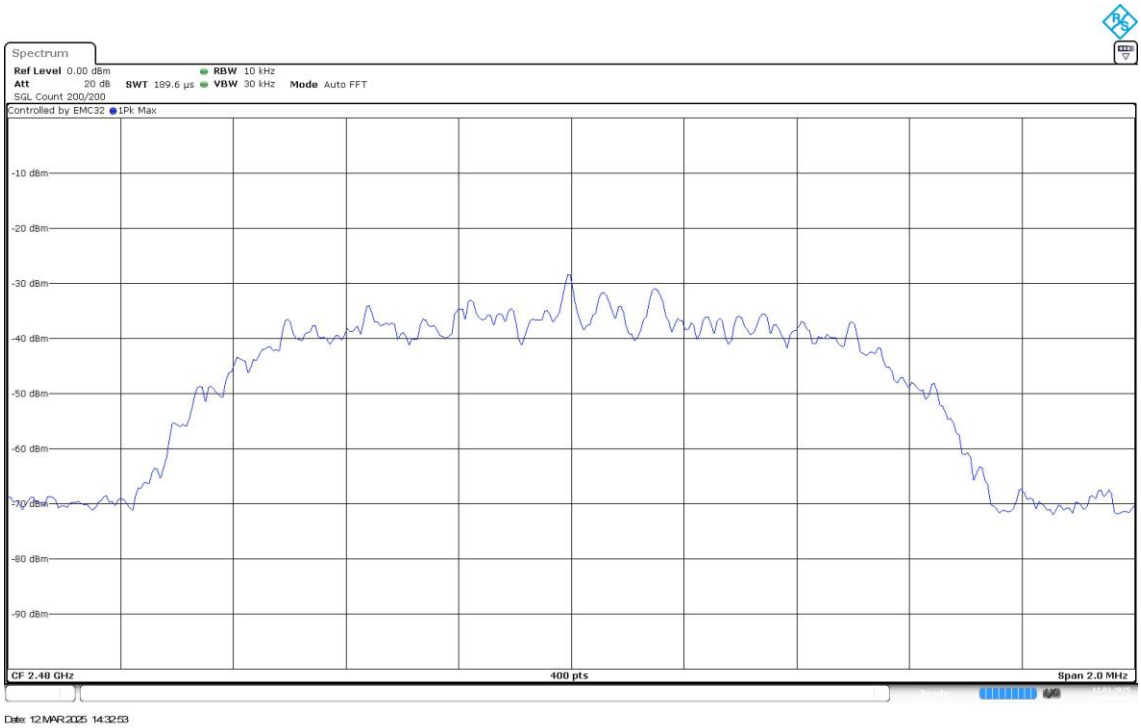


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (Pi/4 DQPSK 2-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:





Results

Modulation: BT (8DPSK 3-DH5)

Equipment	BW (MHz)	Freq (MHz)	Port	Ebw (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	1.265
		2441.00000		1.265
		2480.00000		1.265

Verdict

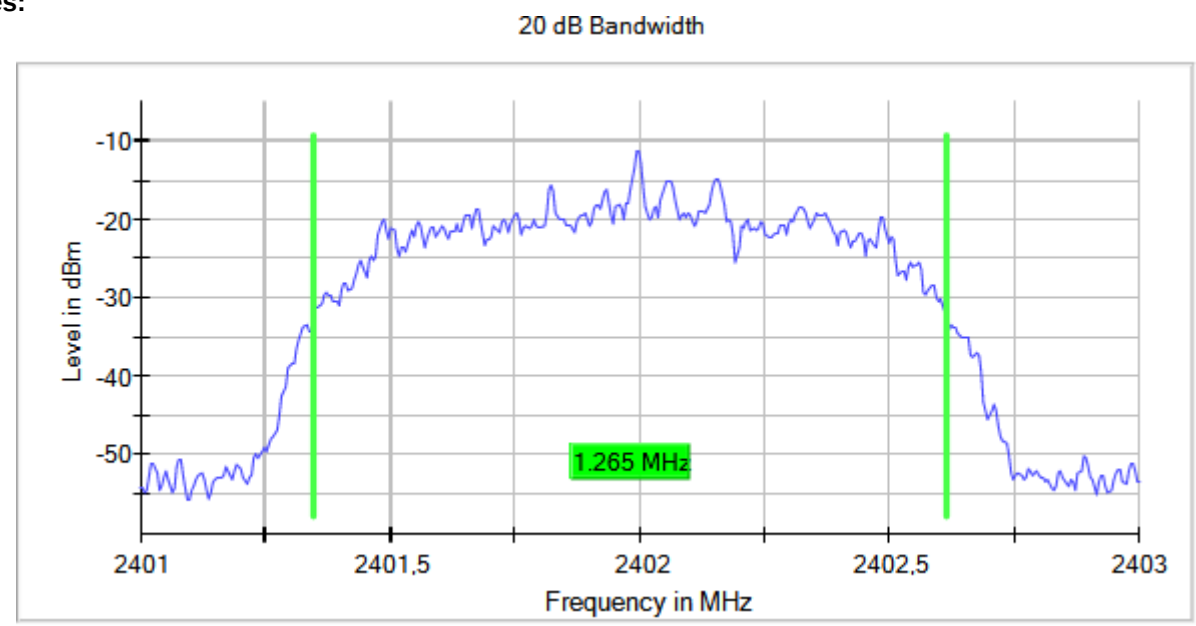
Pass

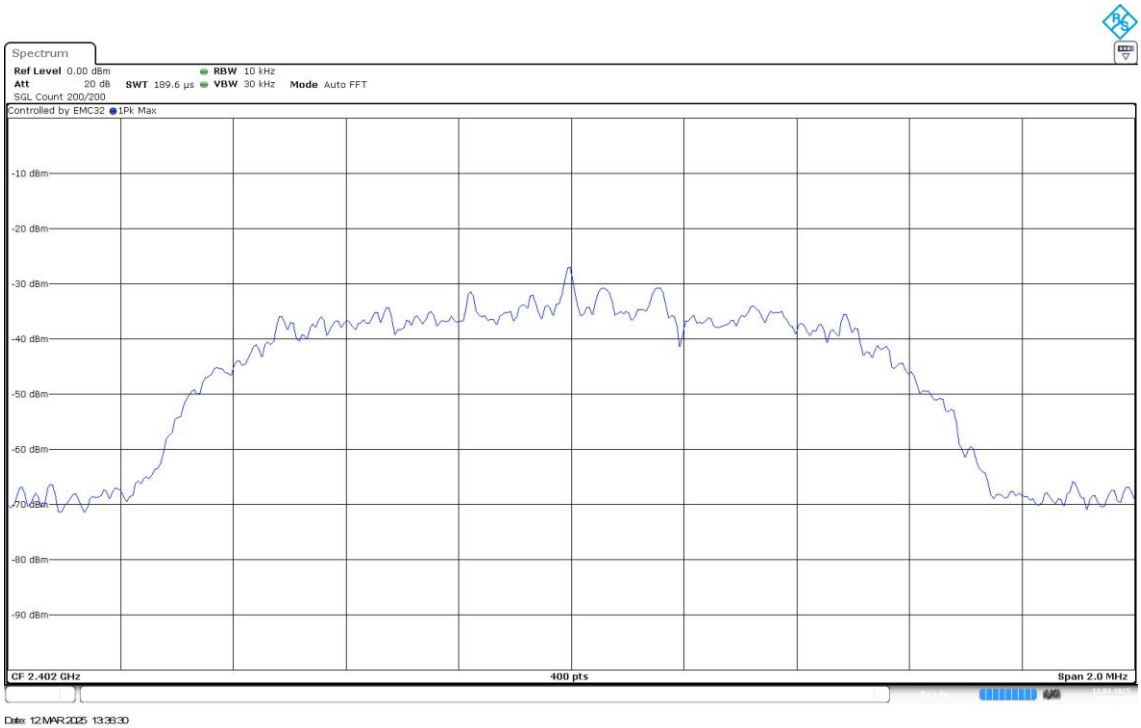
Attachments

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

Bandwidth MHz = 1
Frequency MHz = 2402.00000
Active Port = 1

Images:

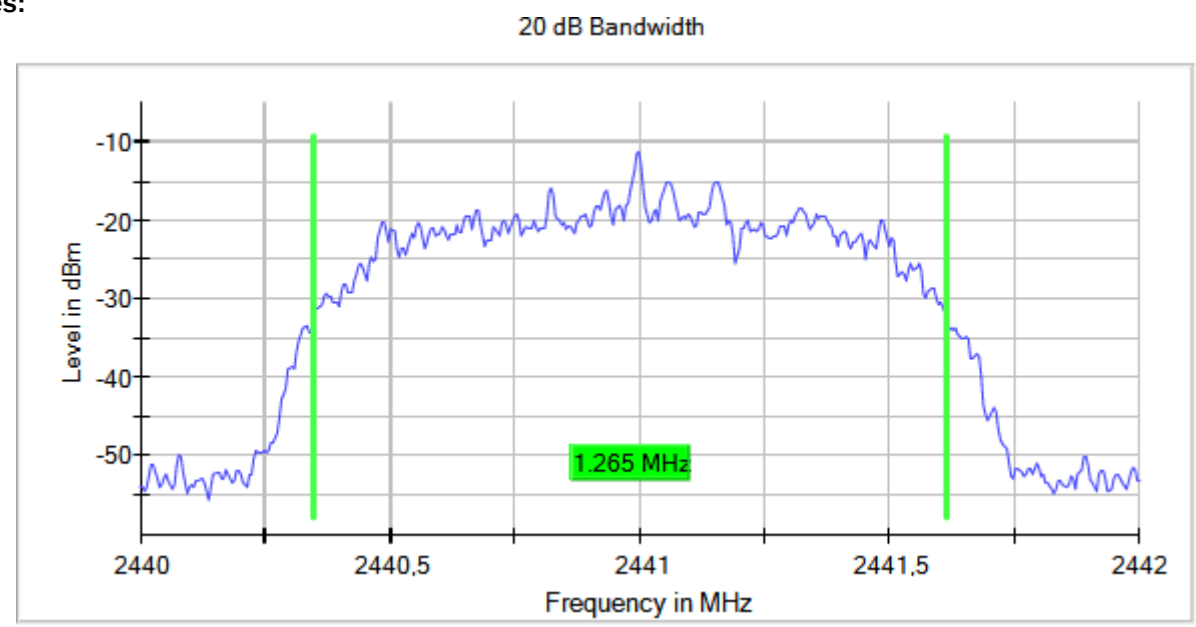


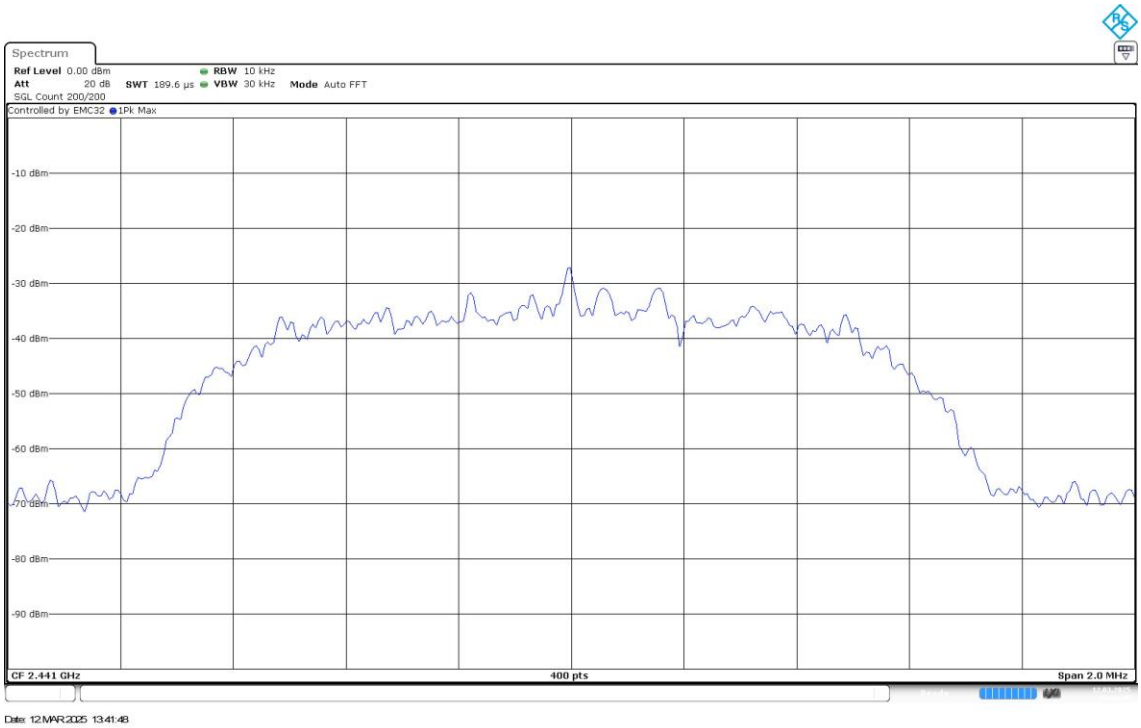


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (8DPSK 3-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2441.00000
Active Port = 1

Images:

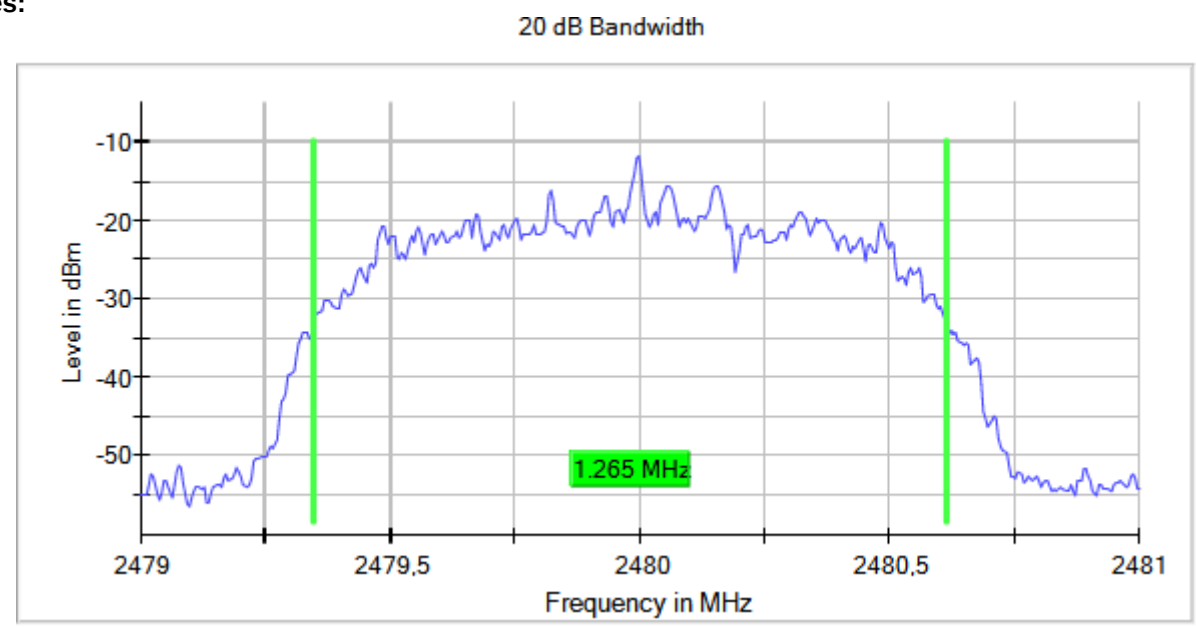


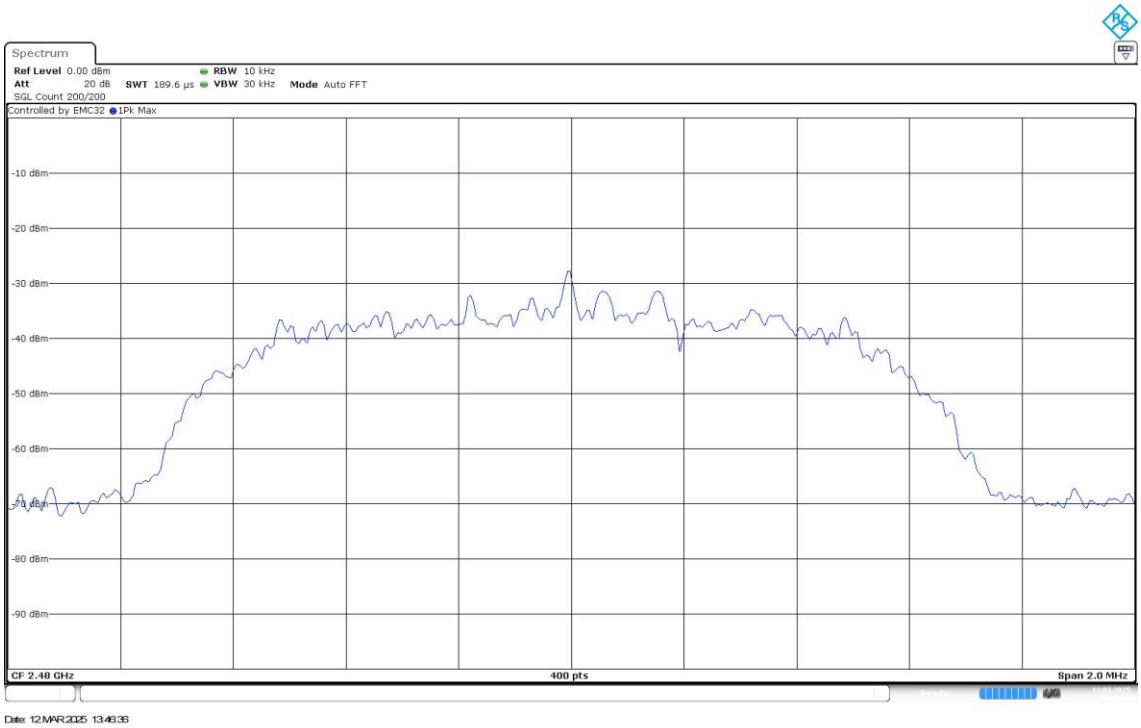


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (8DPSK 3-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:





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

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.

Results

Modulation: BT (GFSK 1-DH5)

Equipment	BW (MHz)	Port	Freq Sep (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	0.98

Verdict

Pass

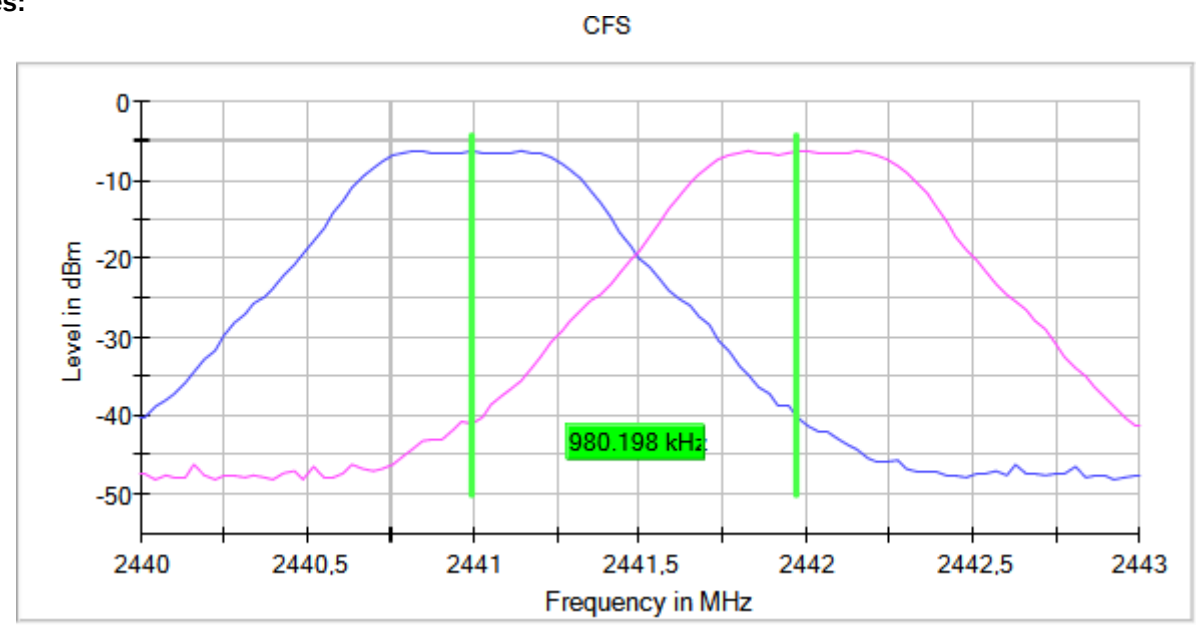
Attachments

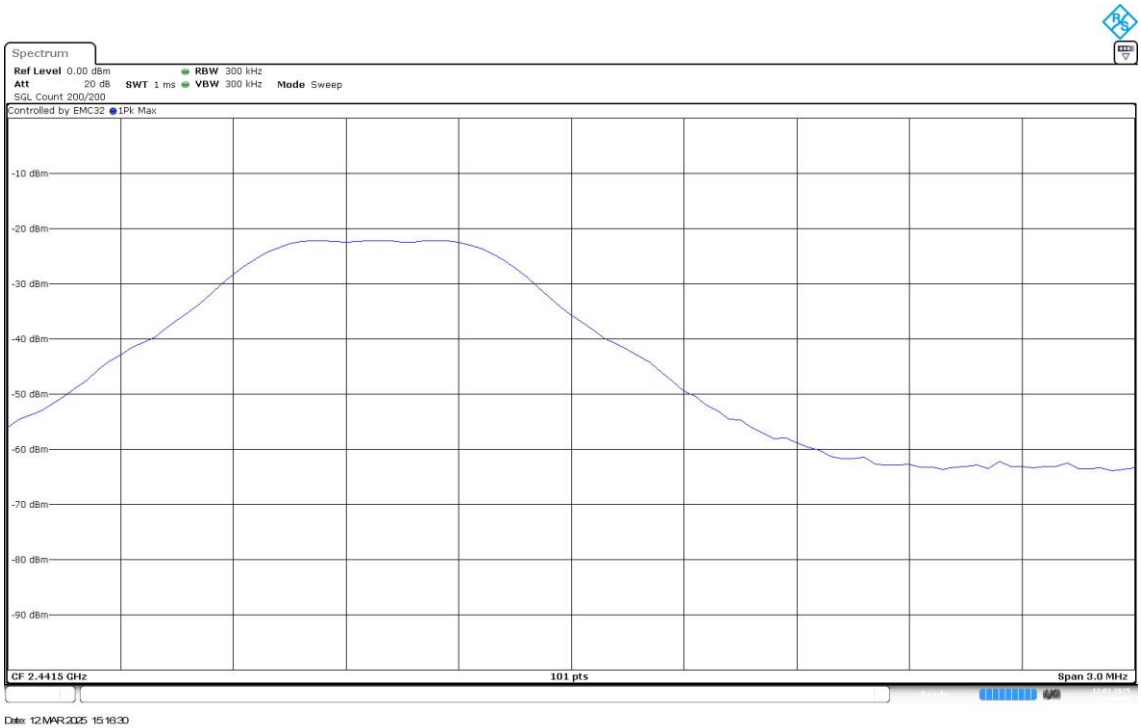
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

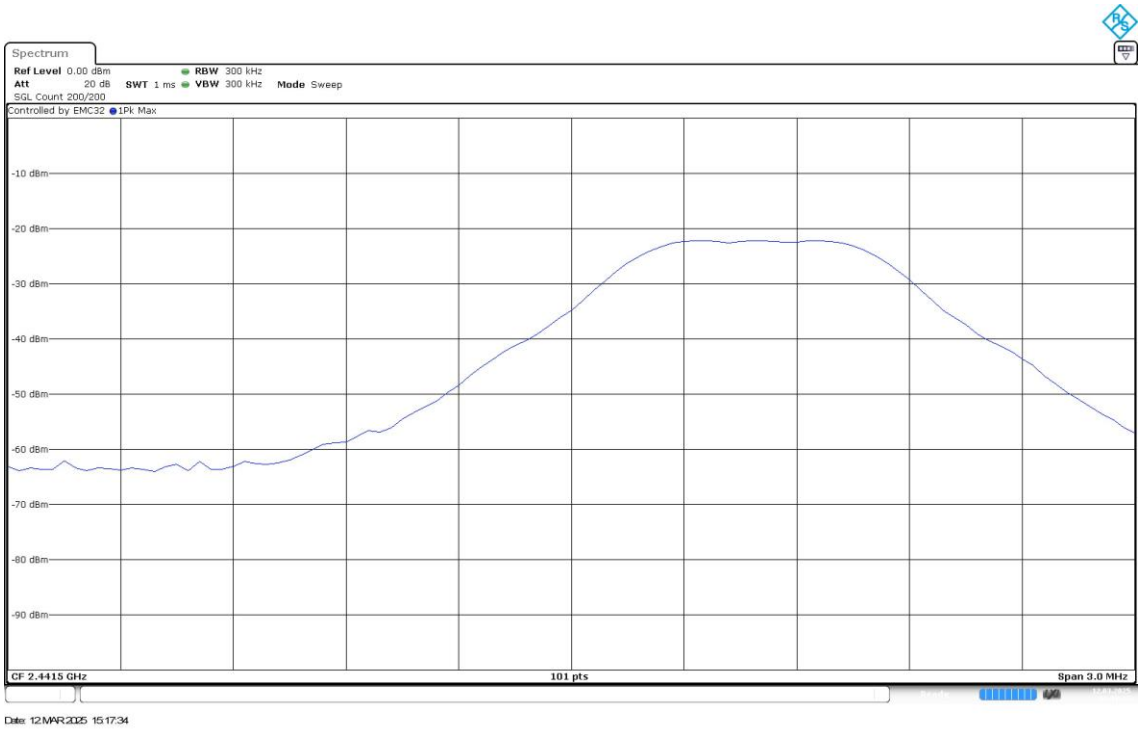
Modulation = BT (GFSK 1-DH5) MIMO Mode = SISO

Active Port = 1

Images:






Spectrum
Ref Level 0.00 dBm
Att 20 dB
SWT 1 ms
RBW 300 kHz
VBW 300 kHz
Mode Sweep
SGL Count 200/200
Controlled by EMC32
1Pk Max
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
CF 2.4415 GHz
101 pts
Span 3.0 MHz
Date: 12.MAR.2025 15:17:34

Results

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

Equipment	BW (MHz)	Port	Freq Sep (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	0.98

Verdict

Pass

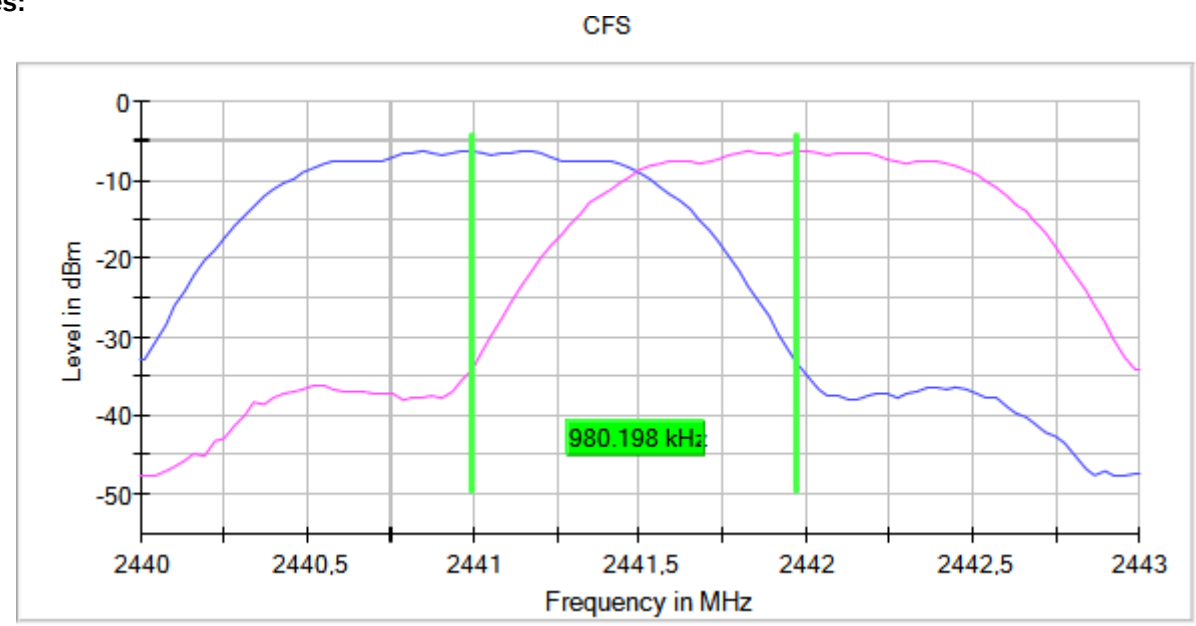
Attachments

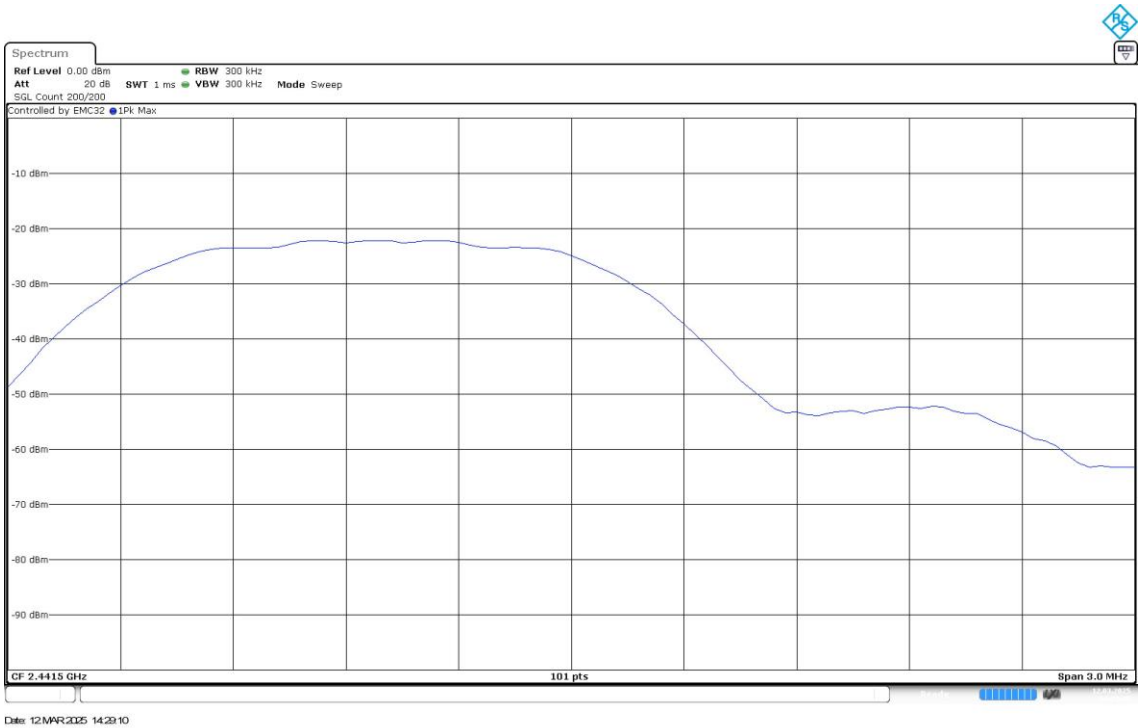
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

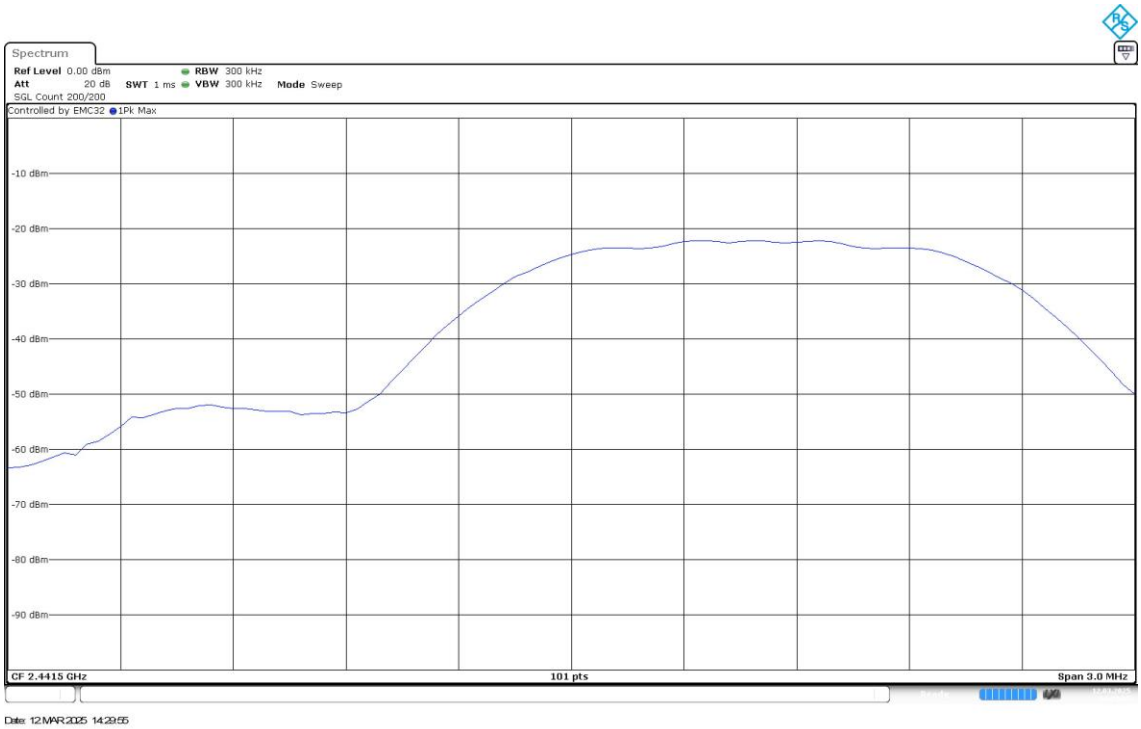
Modulation = BT (Pi/4 DQPSK 2-DH5) MIMO Mode = SISO

Active Port = 1

Images:






Spectrum
Ref Level 0.00 dBm
Att 20 dB
SWT 1 ms
RBW 300 kHz
VBW 300 kHz
Mode Sweep
SGL Count 200/200
Controlled by EMC32
1Pk Max
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
CF 2.4415 GHz
101 pts
Span 3.0 MHz
Date: 12.MAR.2025 14:29:55

Results

Modulation: BT (8DPSK 3-DH5)

Equipment	BW (MHz)	Port	Freq Sep (MHz)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	0.98

Verdict

Pass

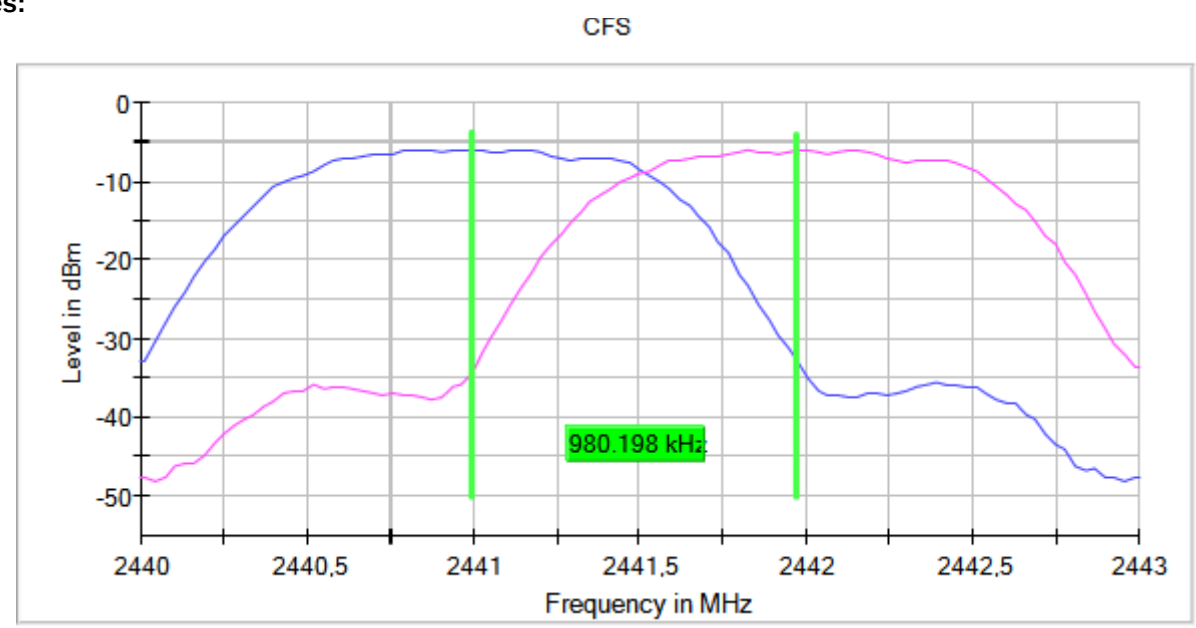
Attachments

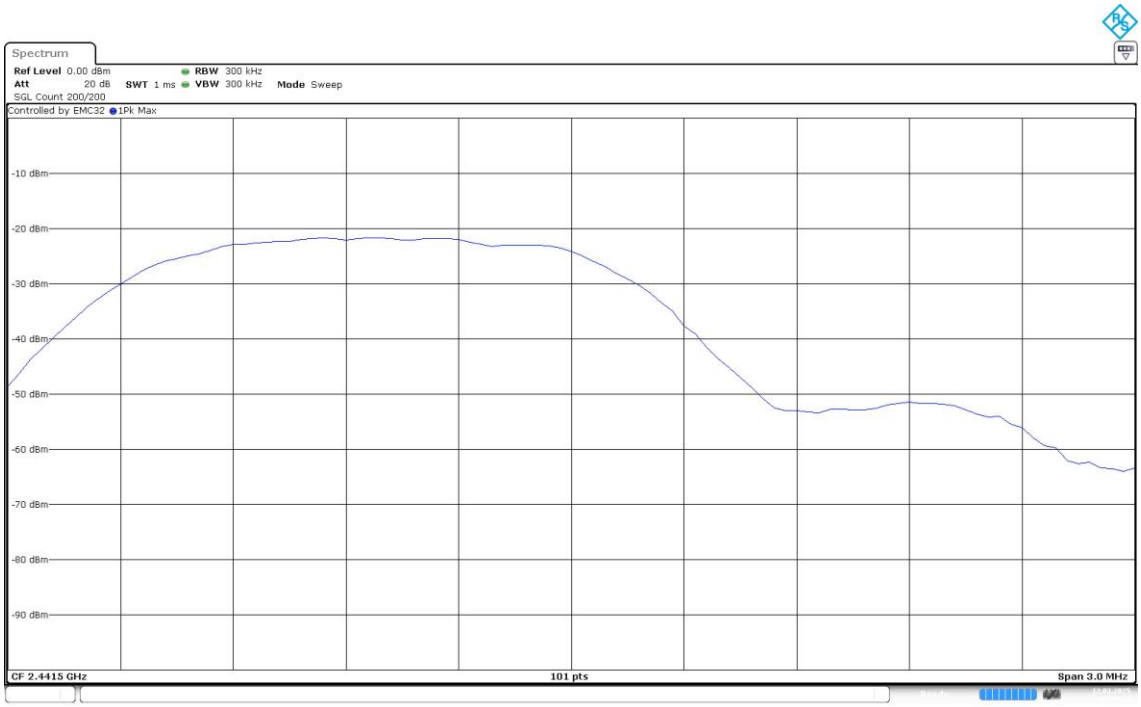
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (8DPSK 3-DH5) MIMO Mode = SISO

Active Port = 1

Images:





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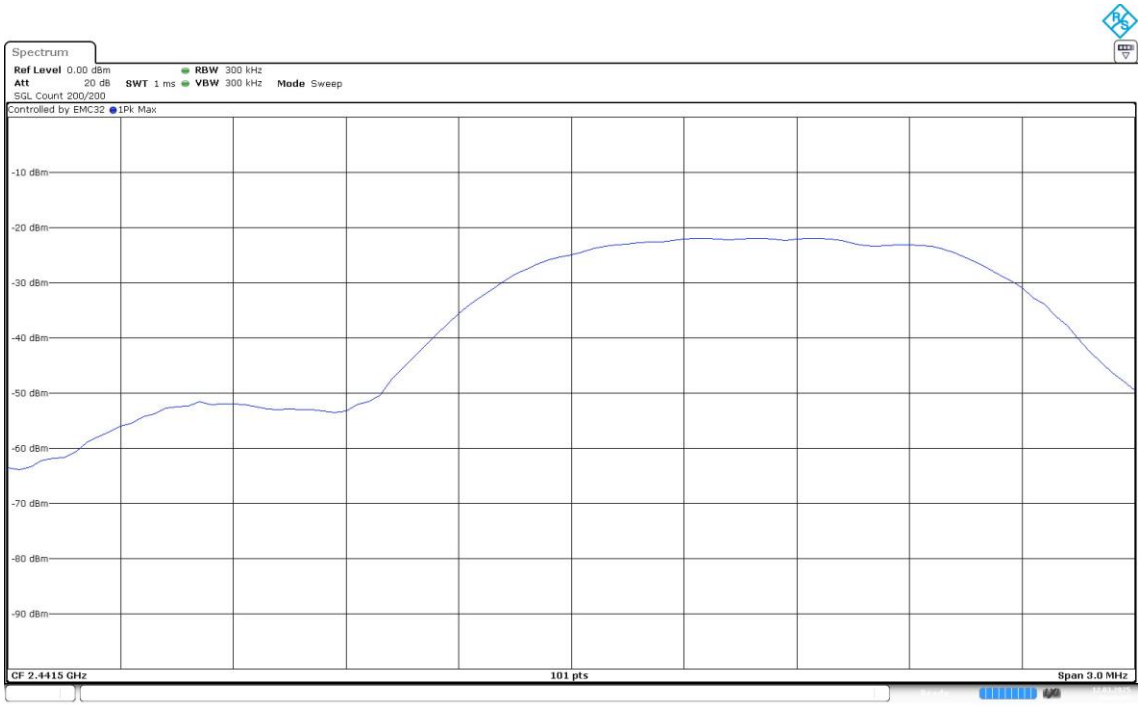


Date: 12.MAR.2025 13:43:43

RSS-247 5.1 (d) / FCC 15.247 (a) (1) (iii) 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.

Results

Modulation: BT (GFSK 1-DH5)

Equipment	BW (MHz)	Port	Freq (MHz)	NHp	Avg COT (ms)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	2402.00000	122	355.60
			2441.00000	106	309.37
			2480.00000	108	315.14

Verdict

Pass

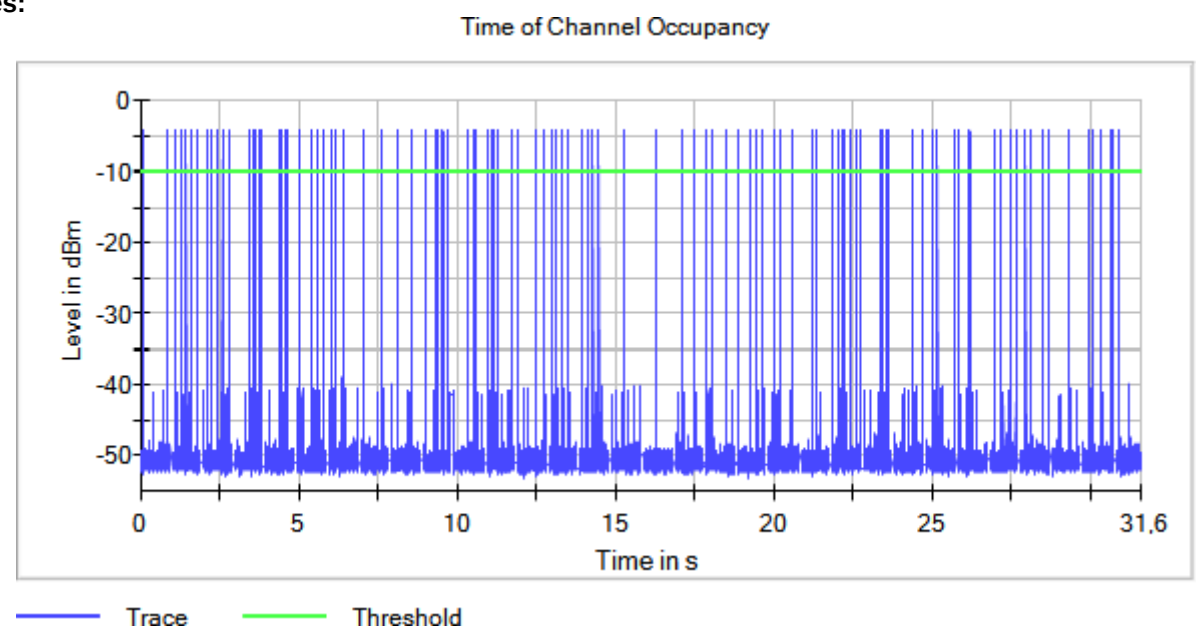
Attachments

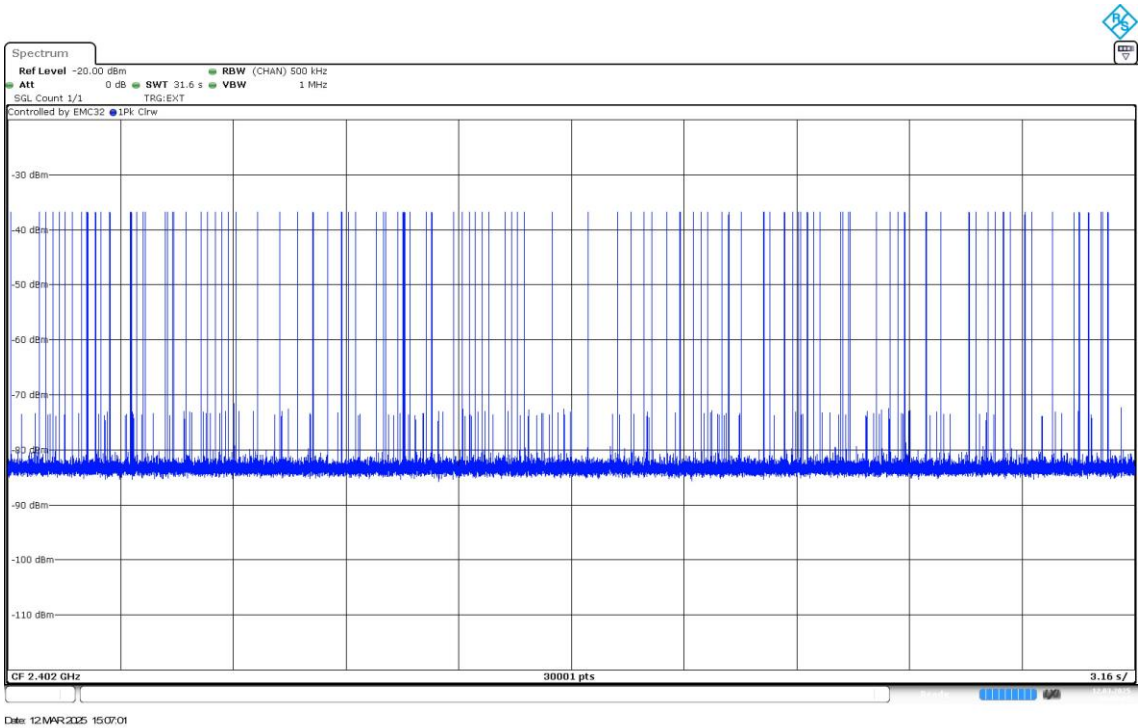
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (GFSK 1-DH5) MIMO Mode = SISO

Active Port = 1

Images:



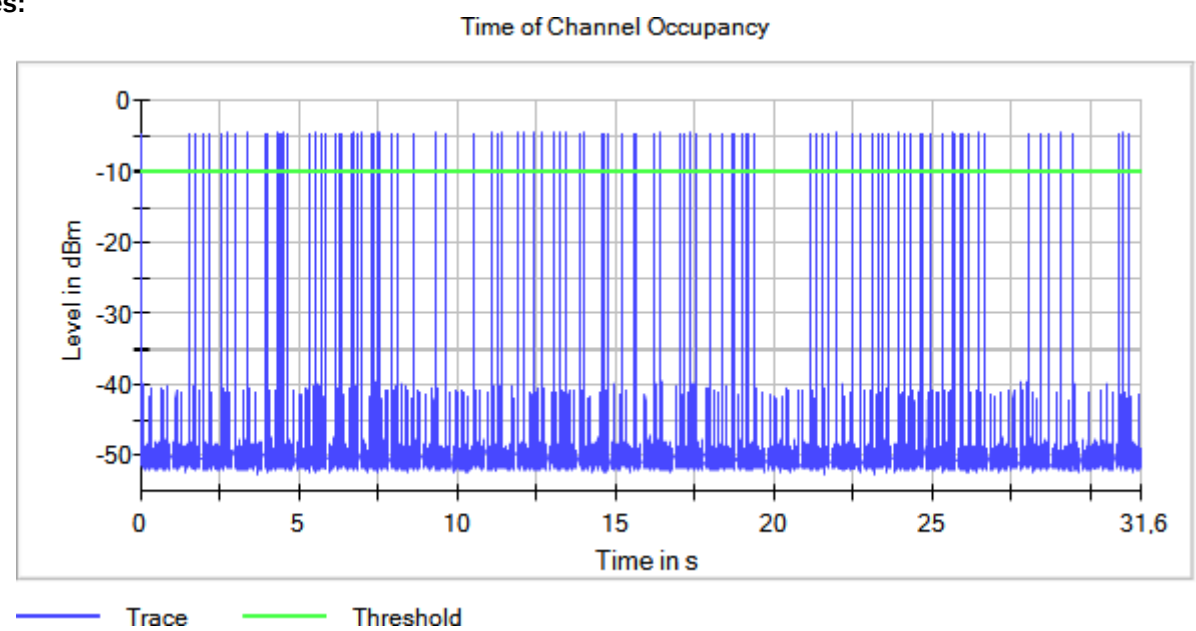


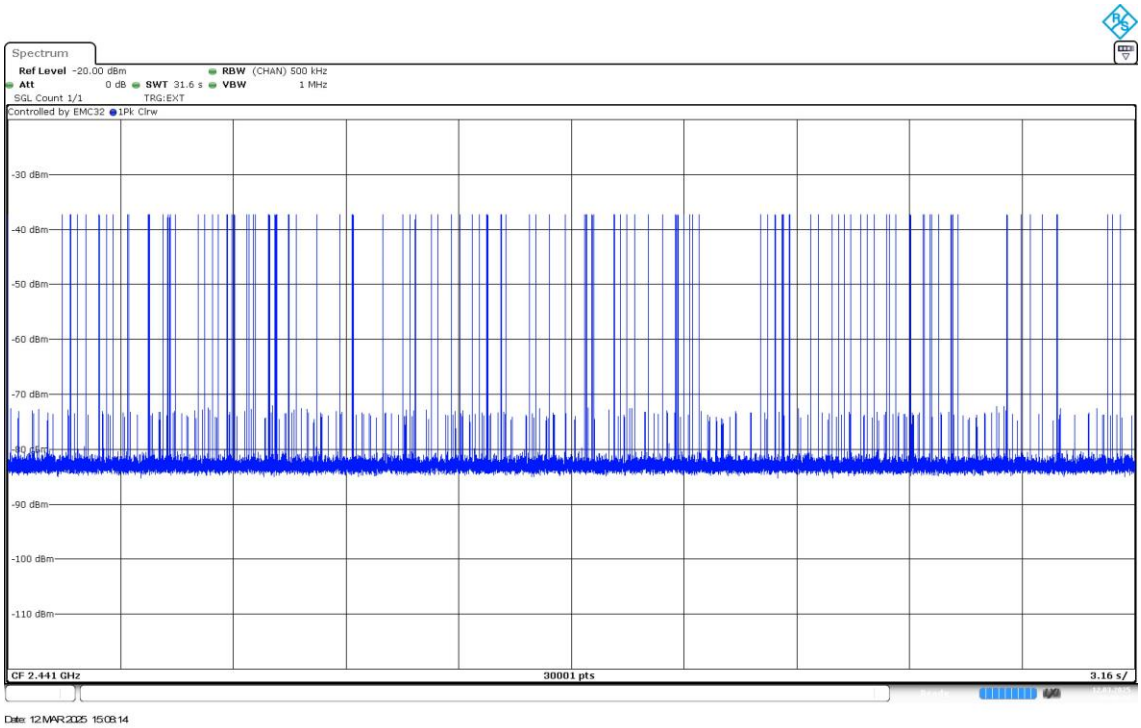
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (GFSK 1-DH5) MIMO Mode = SISO

Active Port = 1

Images:



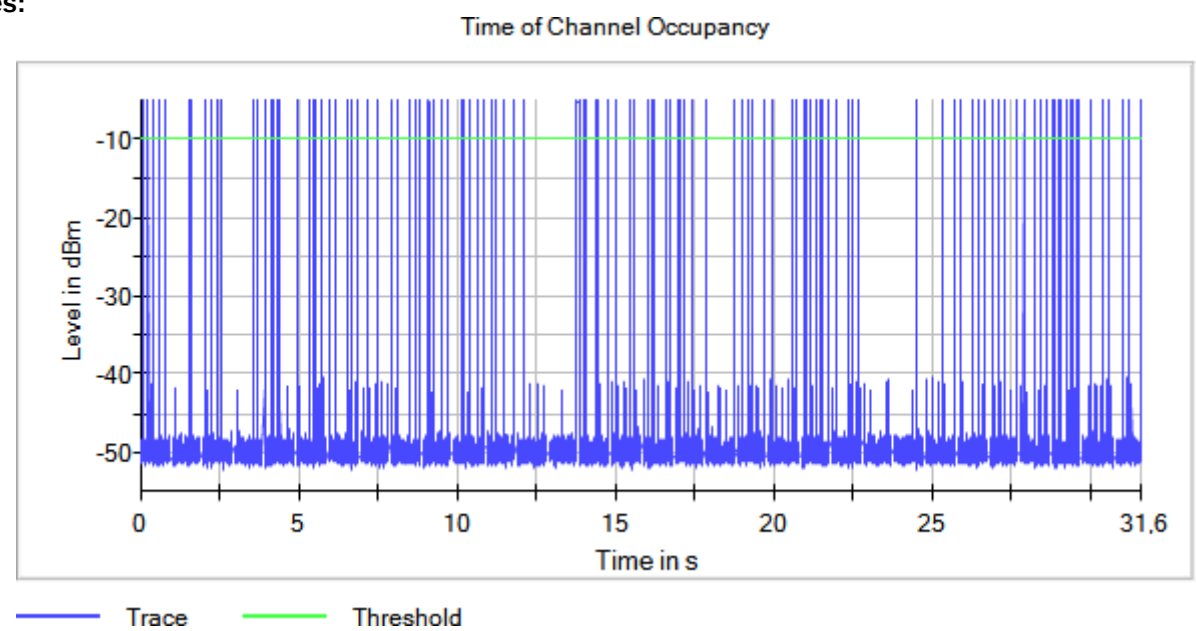


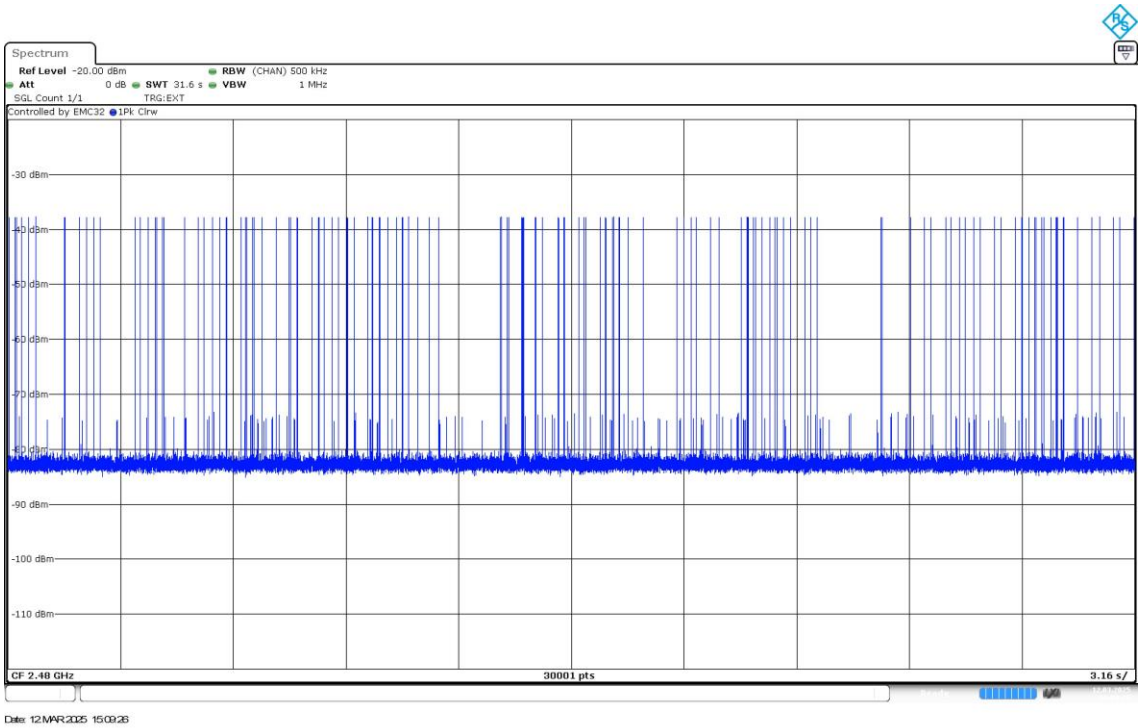
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (GFSK 1-DH5) MIMO Mode = SISO

Active Port = 1

Images:





Results

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

Equipment	BW (MHz)	Port	Freq (MHz)	NHp	Avg COT (ms)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	2402.00000	101	186.97
			2441.00000	107	186.67
			2480.00000	107	178.46

Verdict

Pass

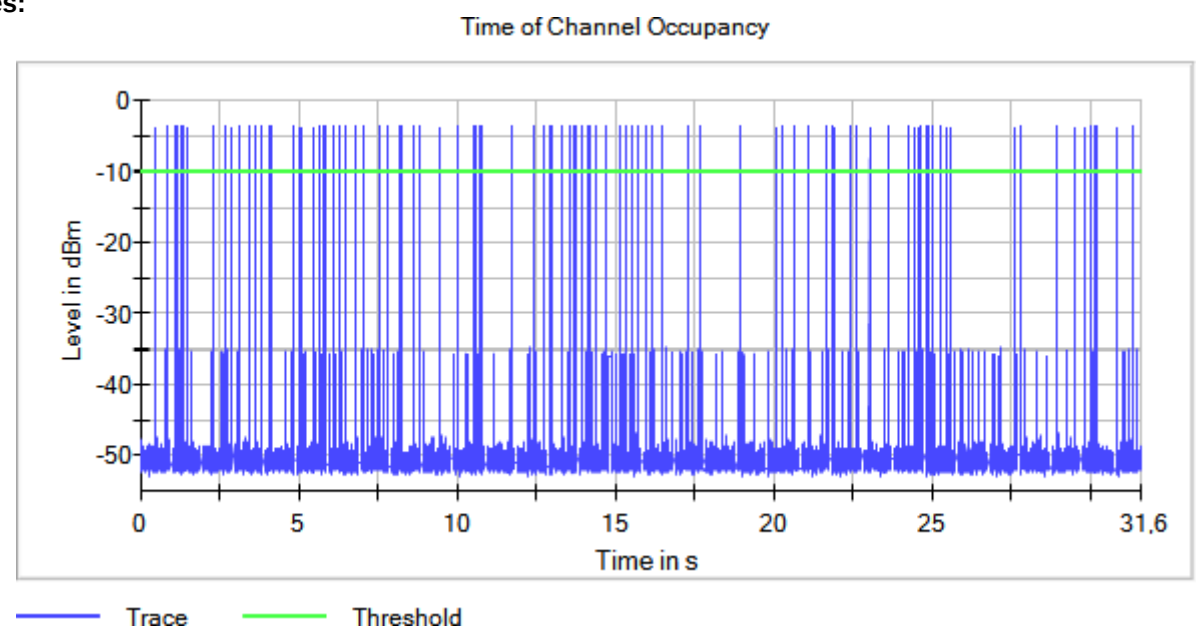
Attachments

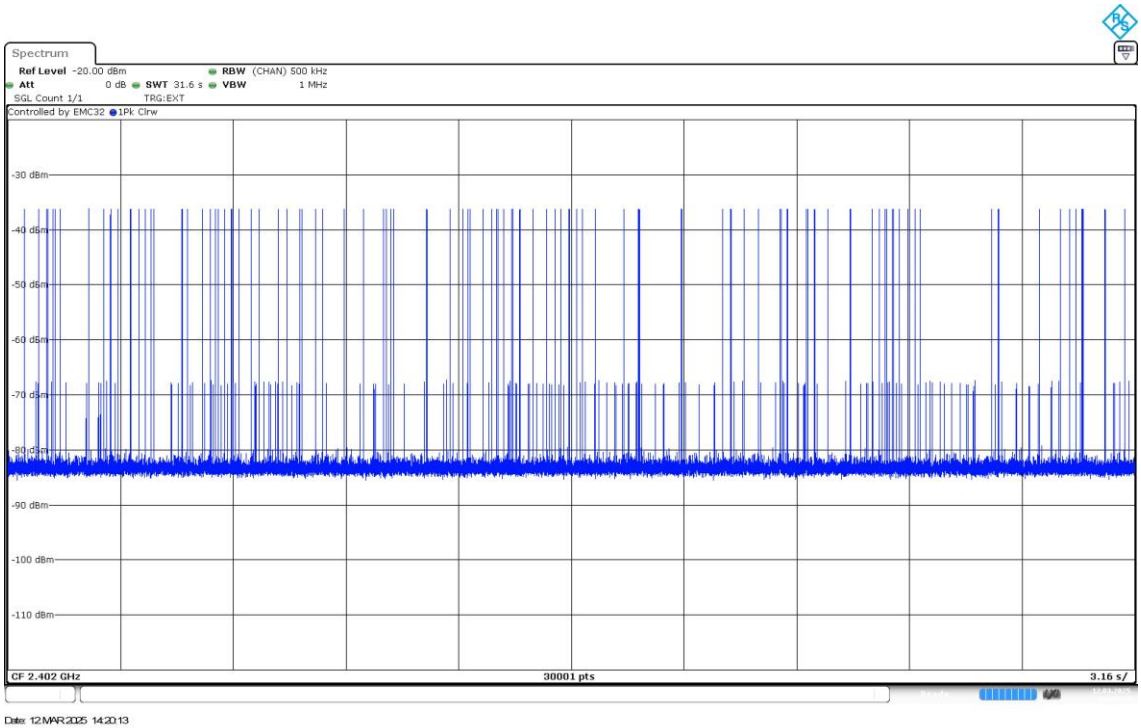
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

Active Port = 1

Images:



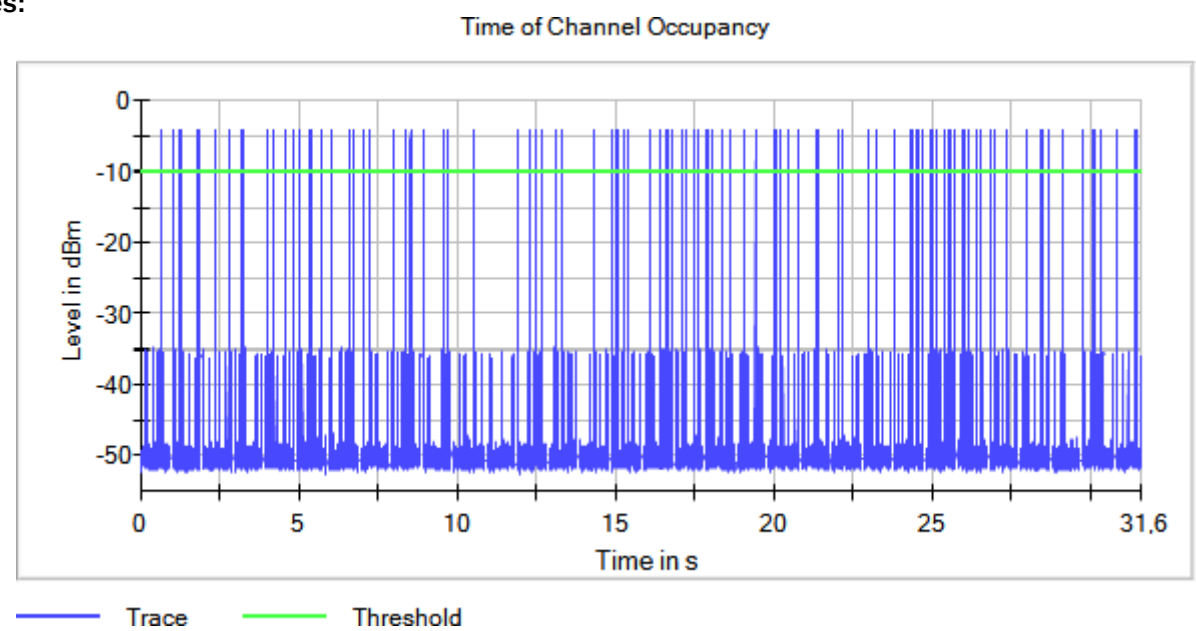


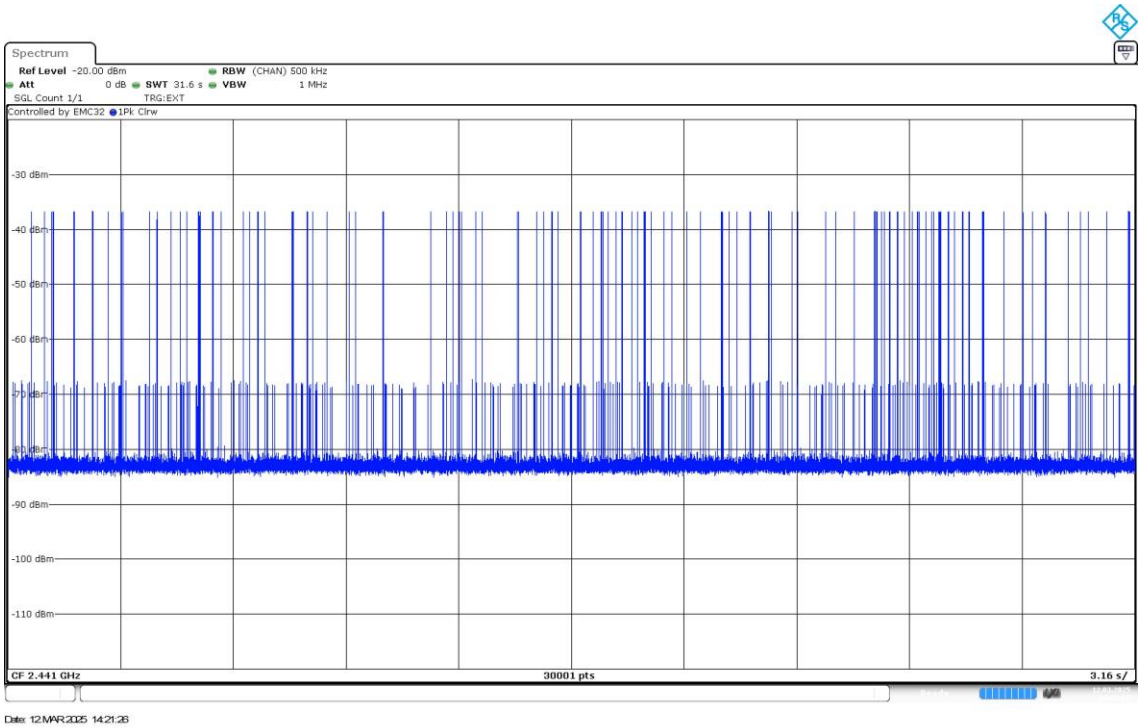
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

Active Port = 1

Images:



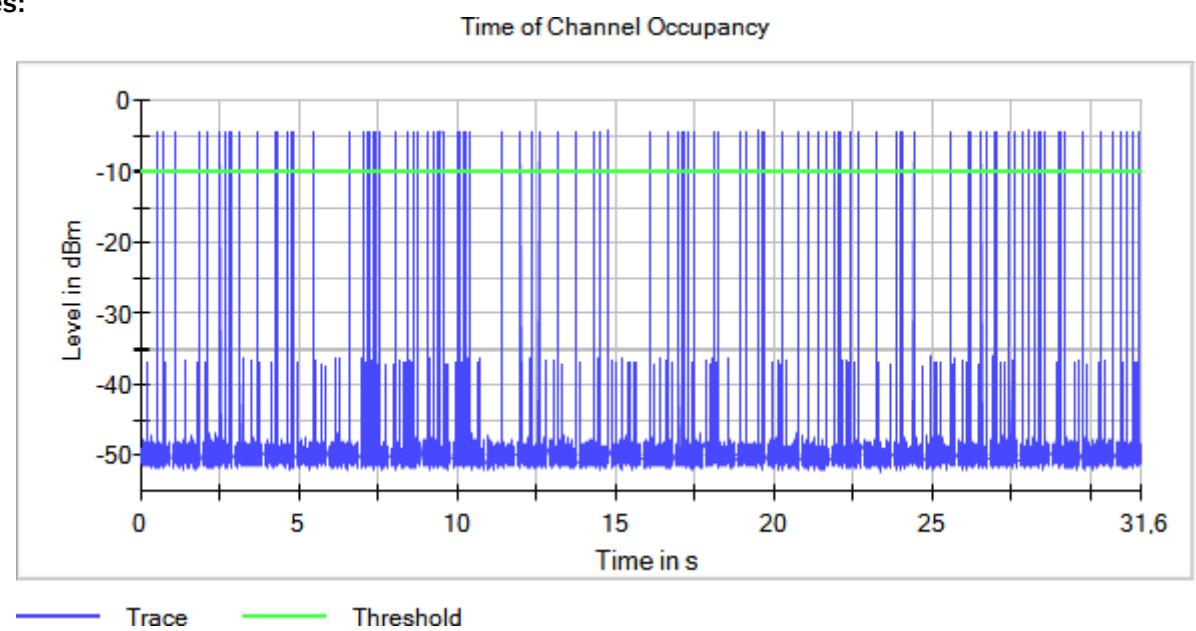


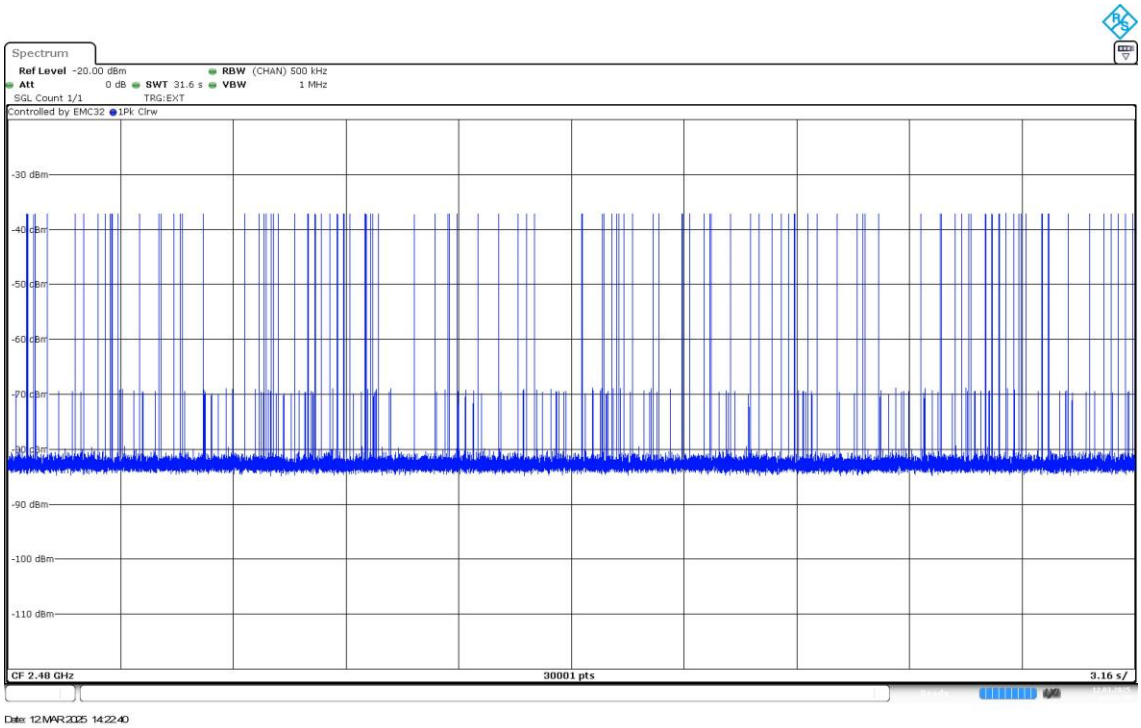
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

Active Port = 1

Images:





Results

Modulation: BT (8DPSK 3-DH5)

Equipment	BW (MHz)	Port	Freq (MHz)	NHp	Avg COT (ms)
Frequency Hopping Spread Spectrum systems (DSS)	1	1	2402.00000	104	213.53
			2441.00000	97	197.70
			2480.00000	96	201.08

Verdict

Pass

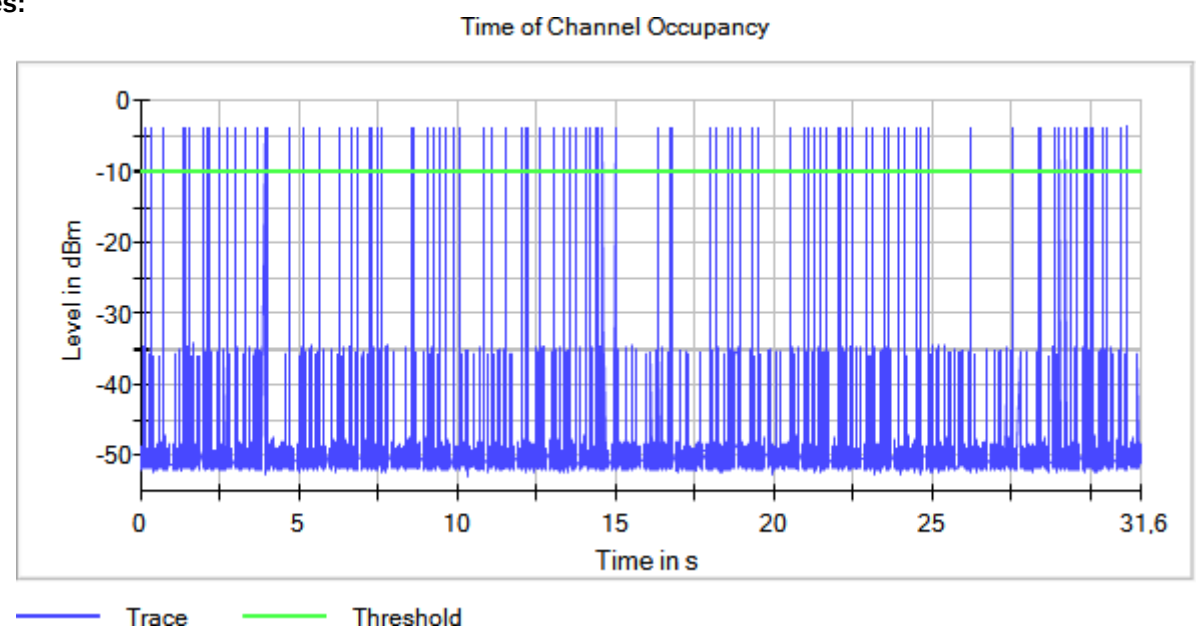
Attachments

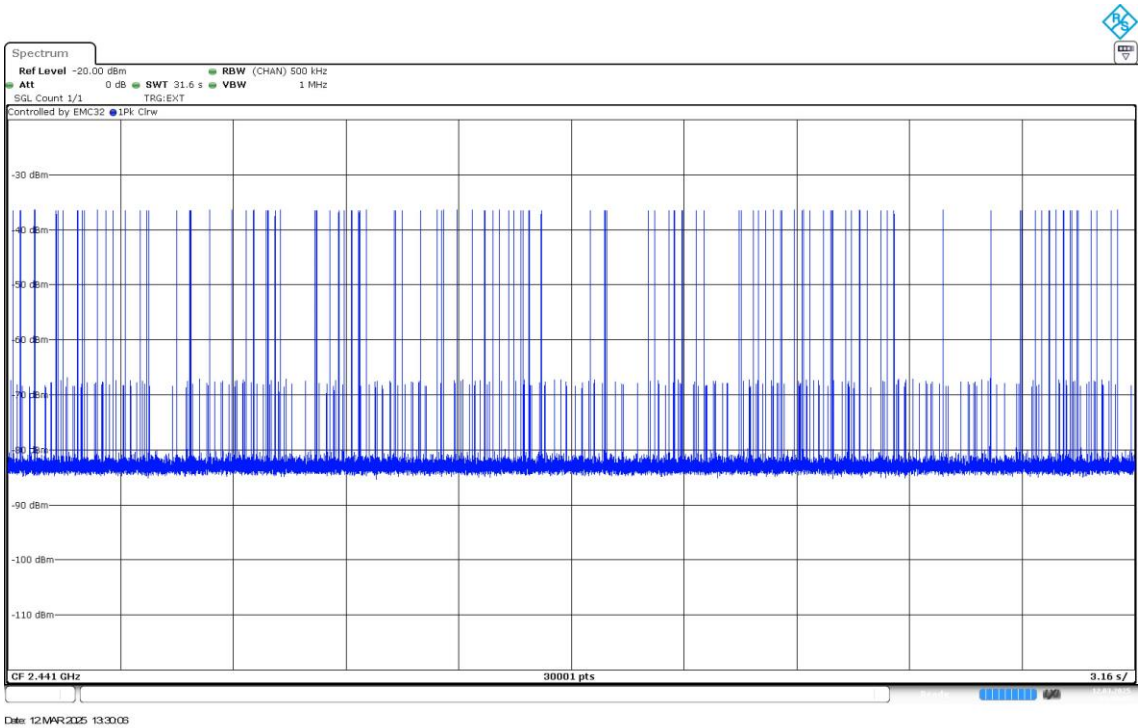
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (8DPSK 3-DH5) MIMO Mode = SISO

Active Port = 1

Images:



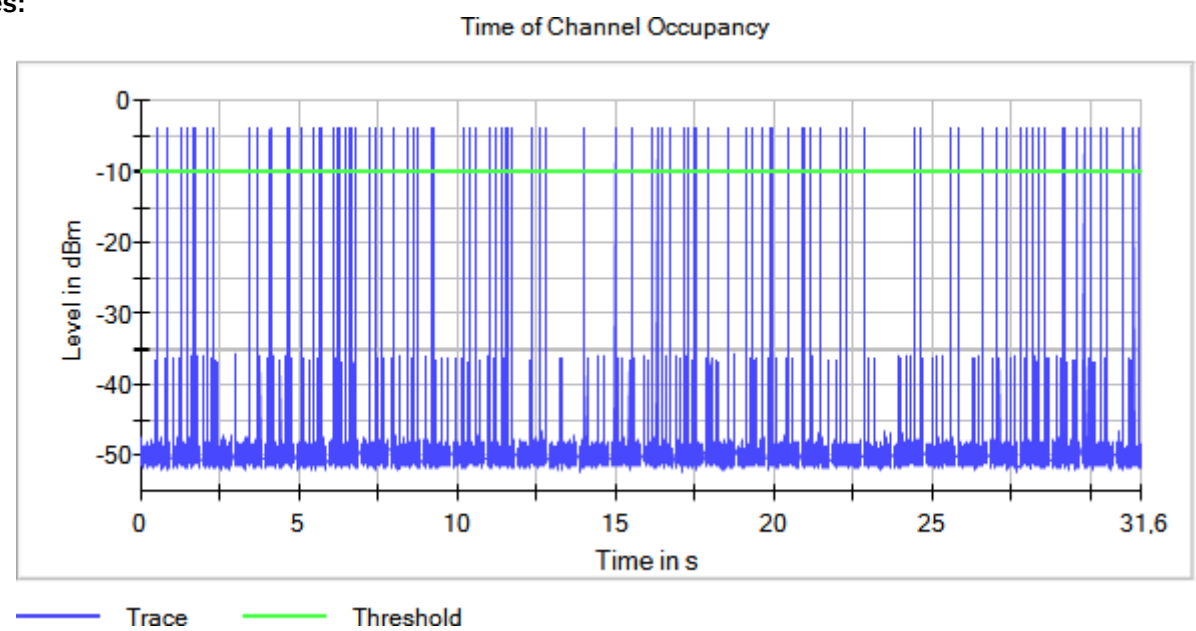


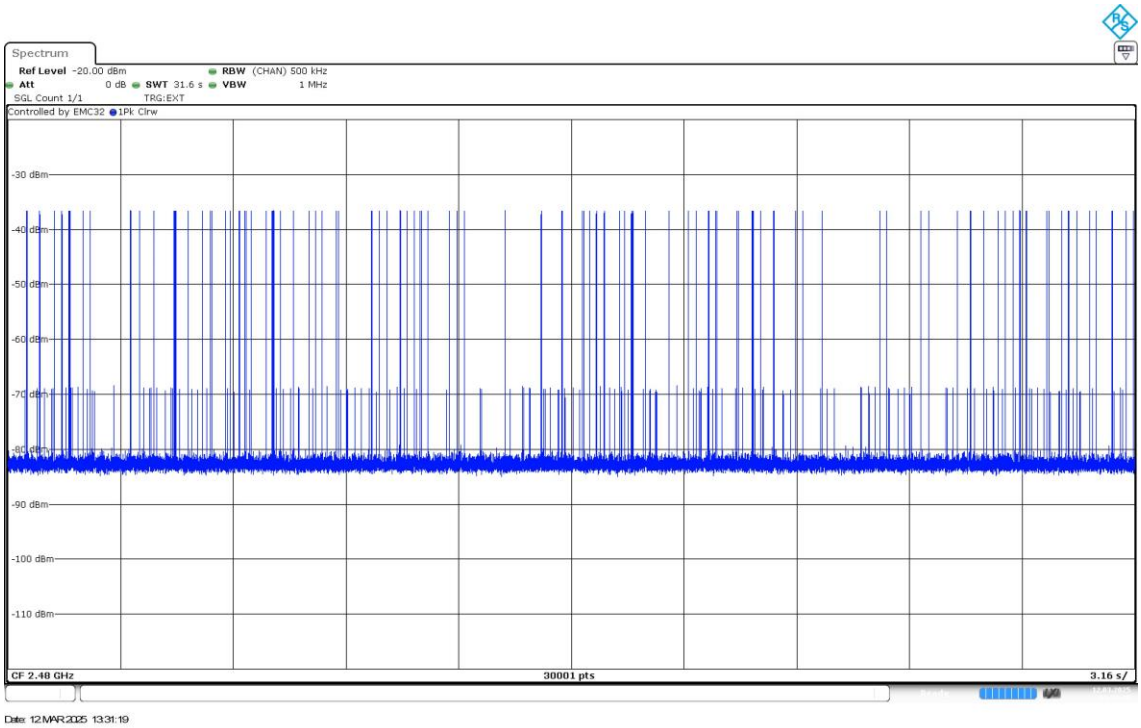
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (8DPSK 3-DH5) MIMO Mode = SISO

Active Port = 1

Images:



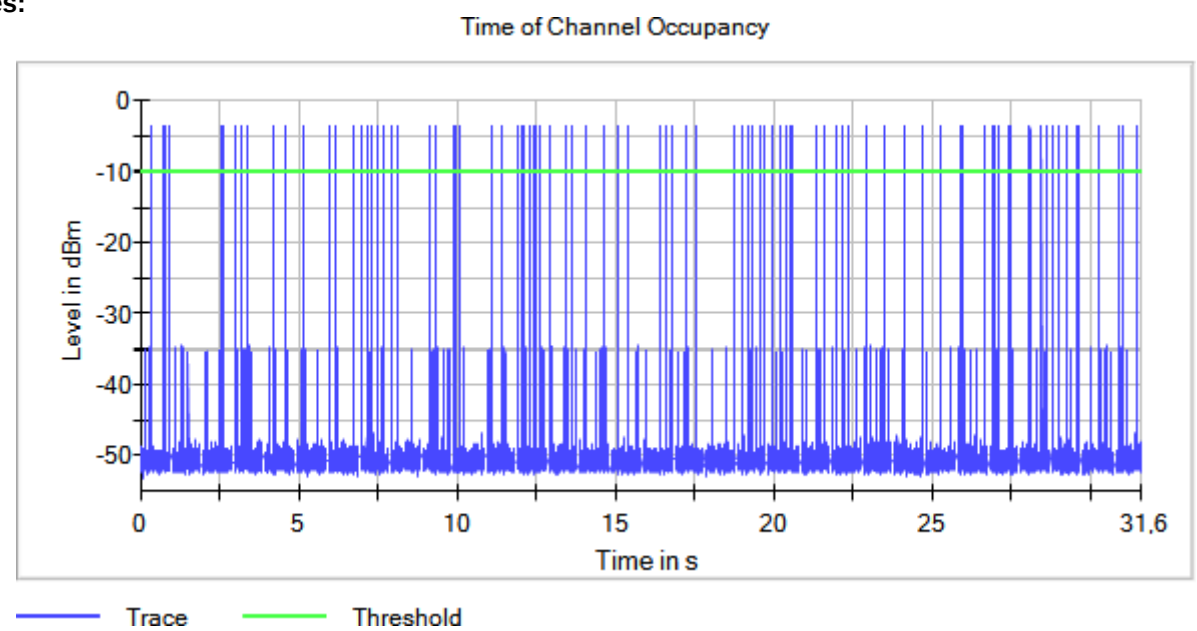


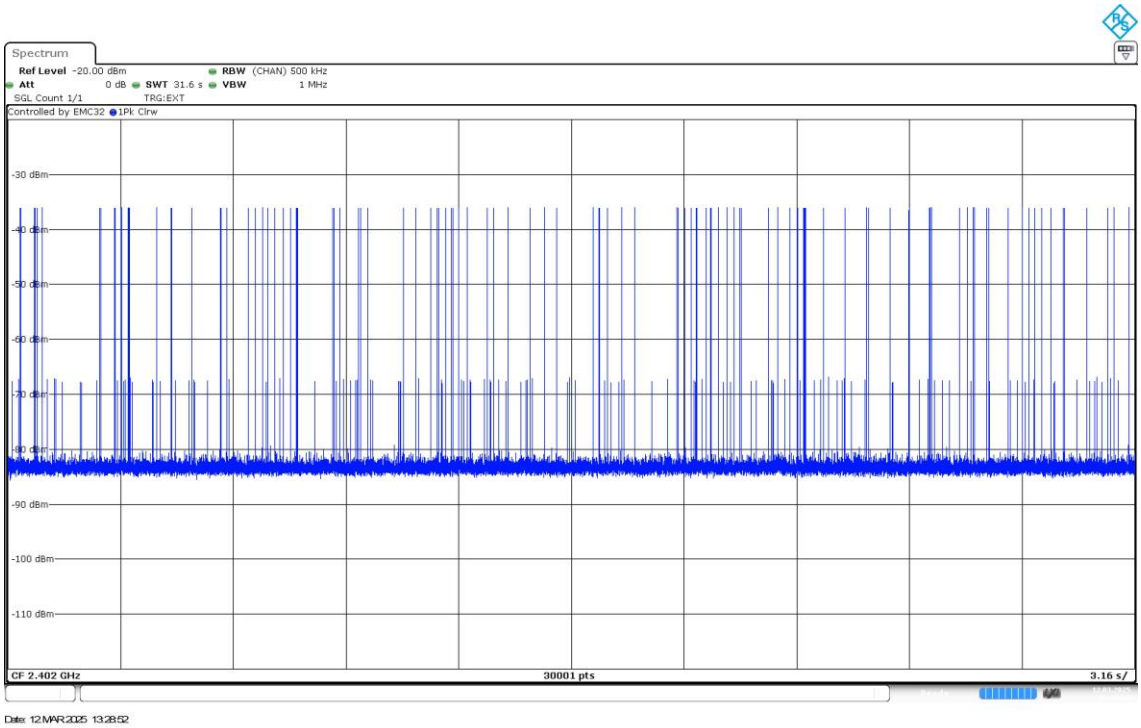
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (8DPSK 3-DH5) MIMO Mode = SISO

Active Port = 1

Images:





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

Limits

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

Results

Modulation: BT (GFSK 1-DH5)

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

Verdict

Pass

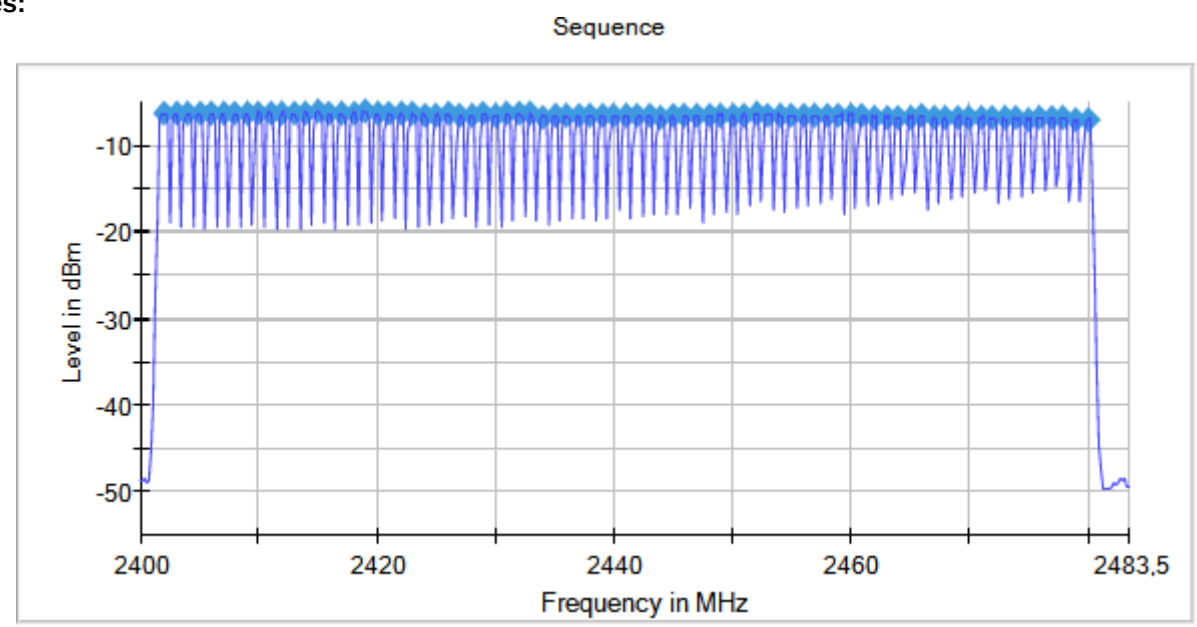
Attachments

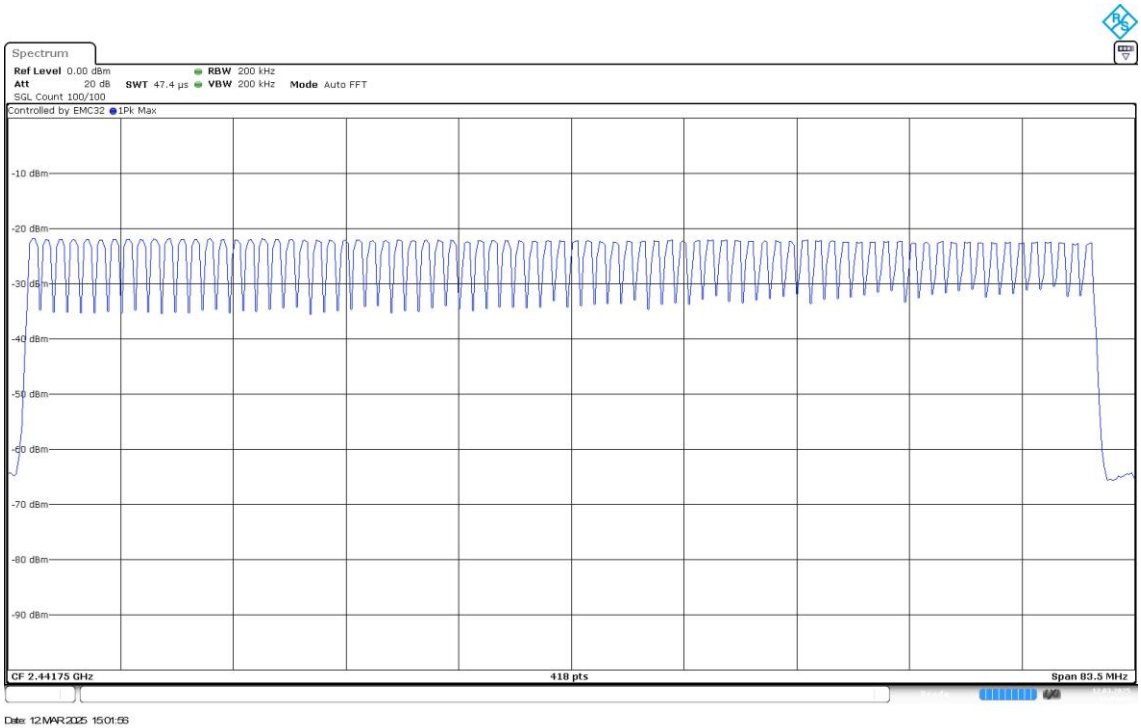
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (GFSK 1-DH5) MIMO Mode = SISO

Active Port = 1

Images:





Results

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

Equipment	BW (MHz)	Port	NHC
Frequency Hopping Spread Spectrum systems (DSS)	1	1	78

Verdict

Pass

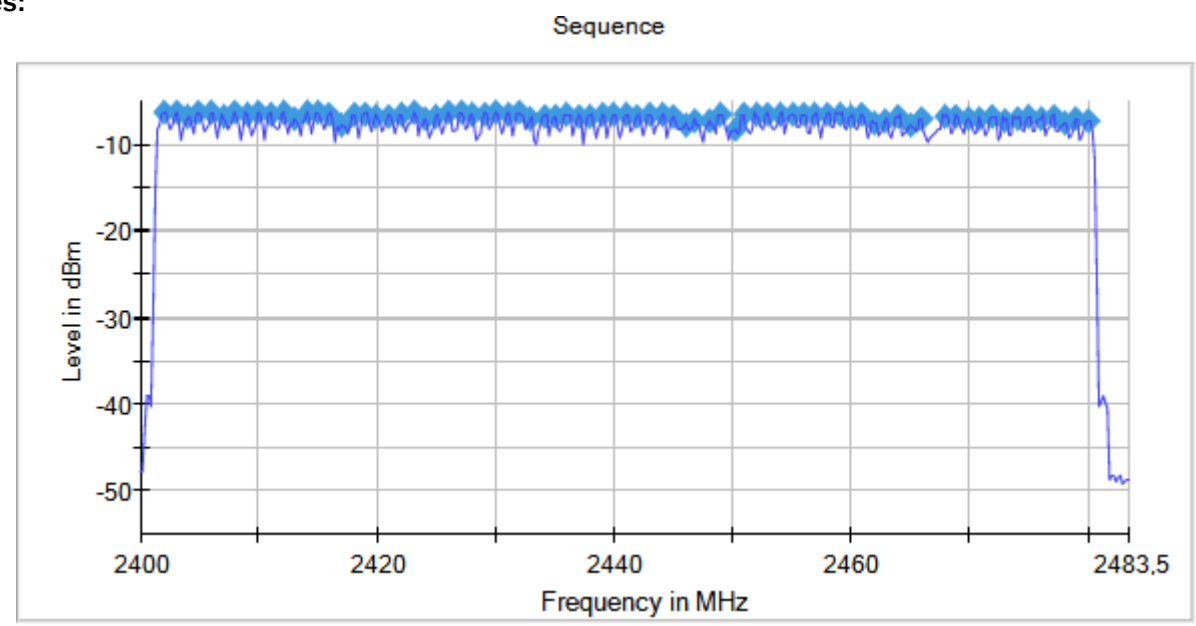
Attachments

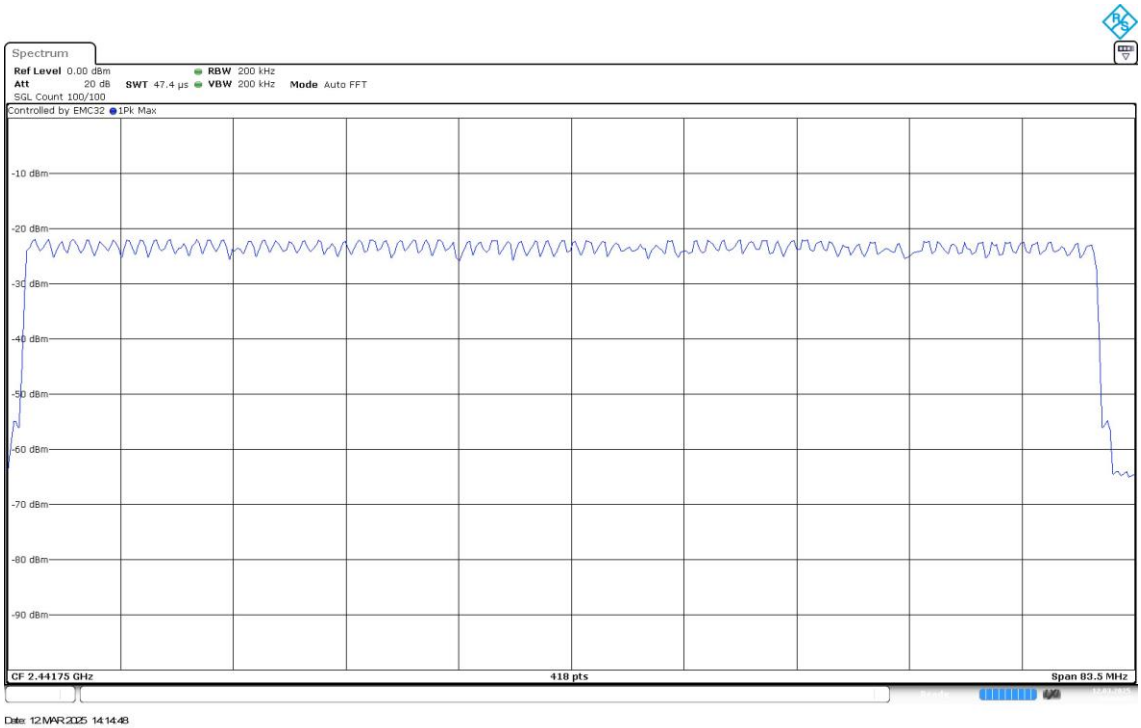
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

Active Port = 1

Images:





Results

Modulation: BT (8DPSK 3-DH5)

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

Verdict

Pass

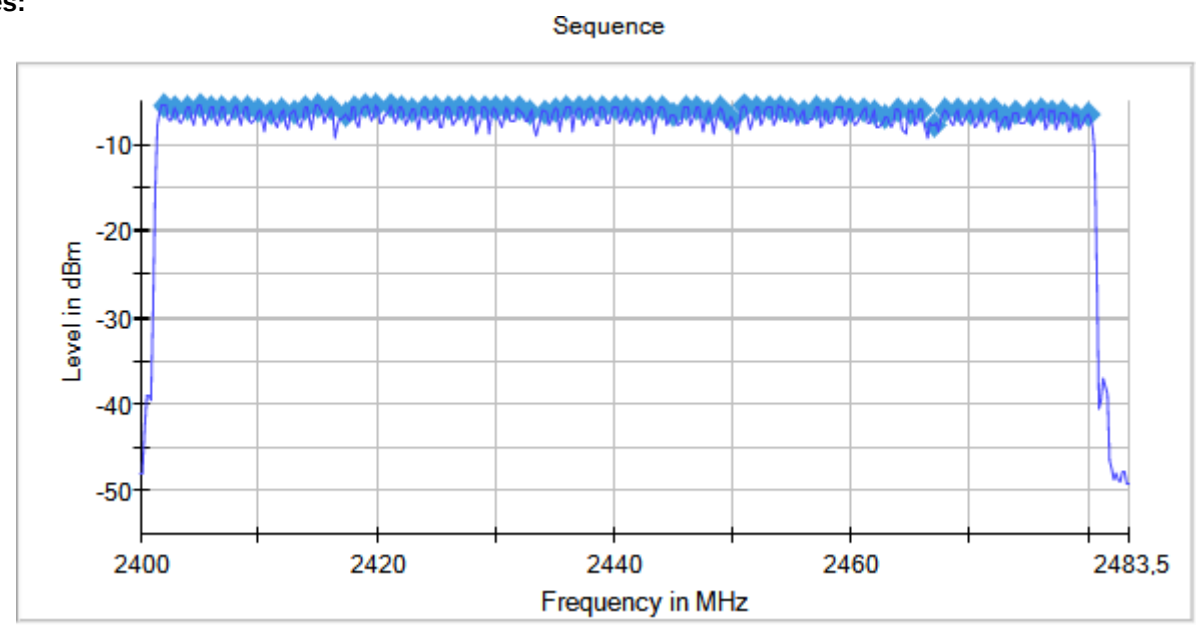
Attachments

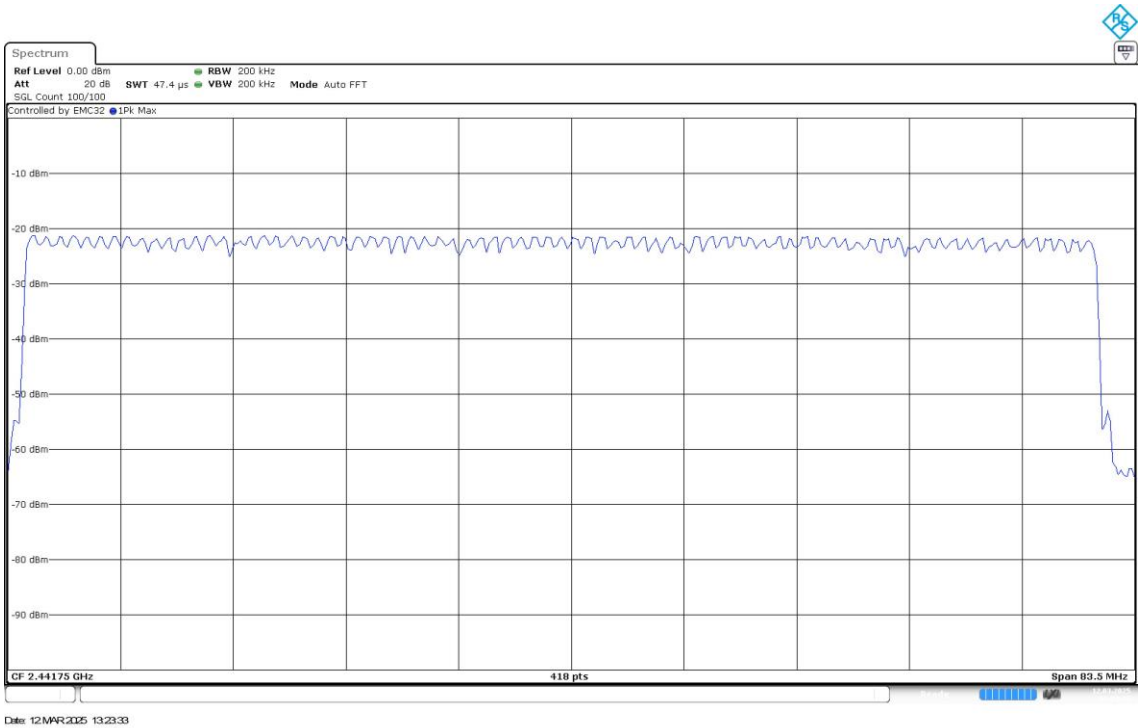
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

Modulation = BT (8DPSK 3-DH5) MIMO Mode = SISO

Active Port = 1

Images:





RSS-247 5.4 (b) / FCC 15.247 (b) (1) 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).

Results

Modulation: BT (GFSK 1-DH5)

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Max EIRP Power (dBm)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	-5.88	-5.78
		2441.00000		-6.20	-6.10
		2480.00000		-6.59	-6.49

Verdict

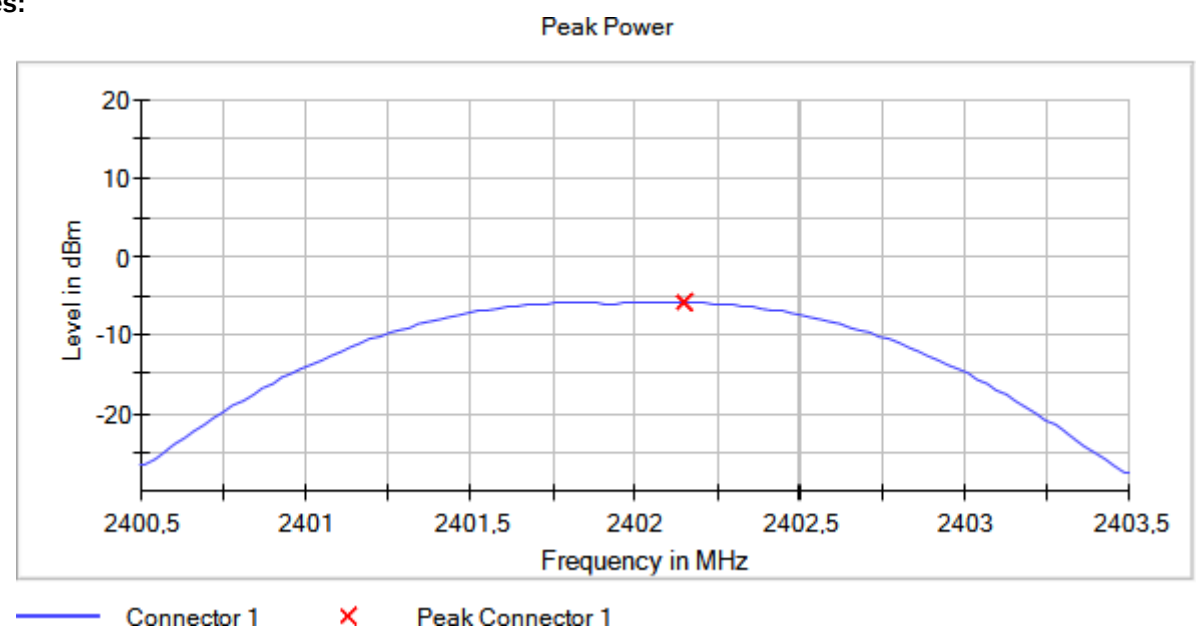
Pass

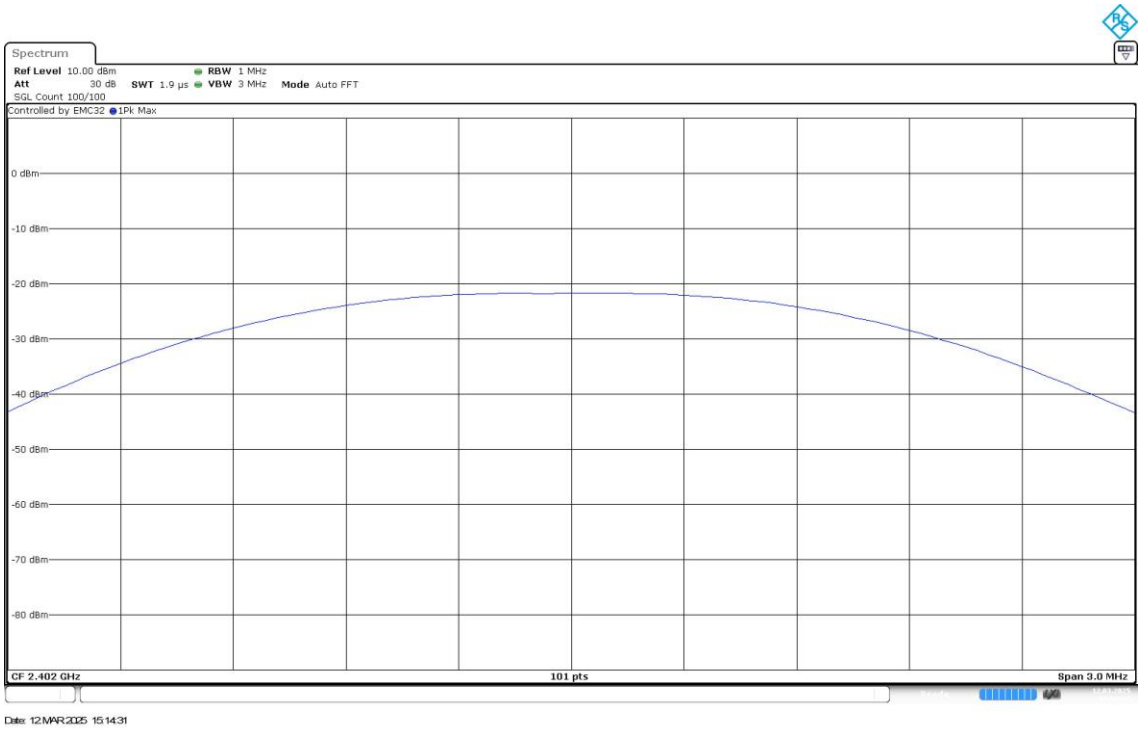
Attachments

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

Bandwidth MHz = 1
Frequency MHz = 2402.00000
Active Port = 1

Images:



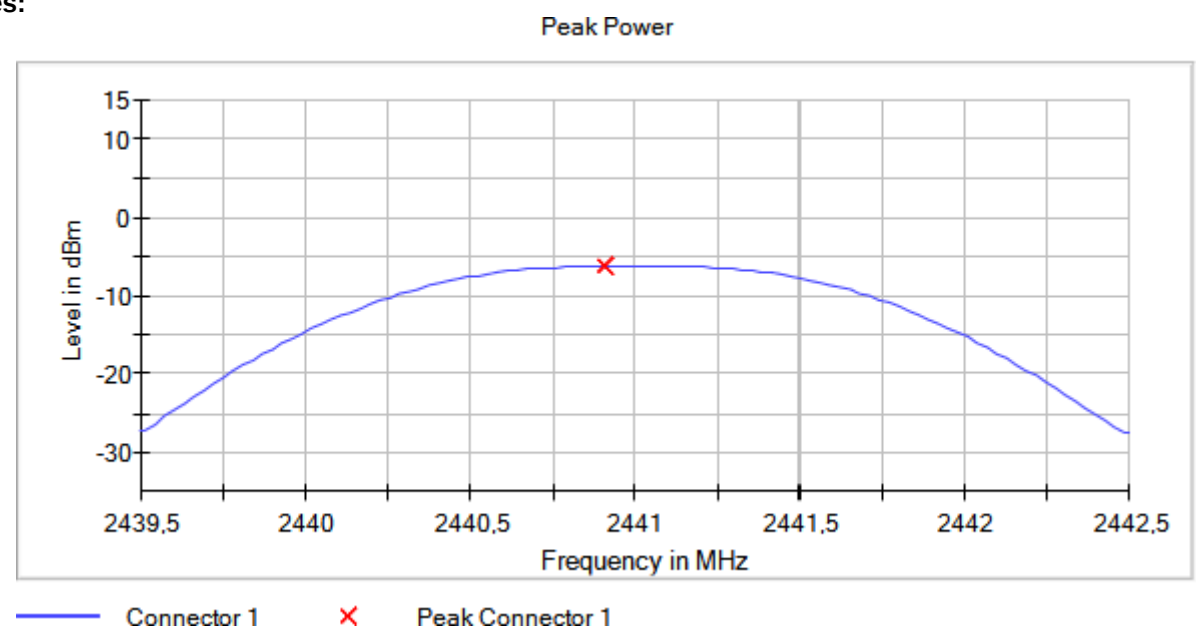


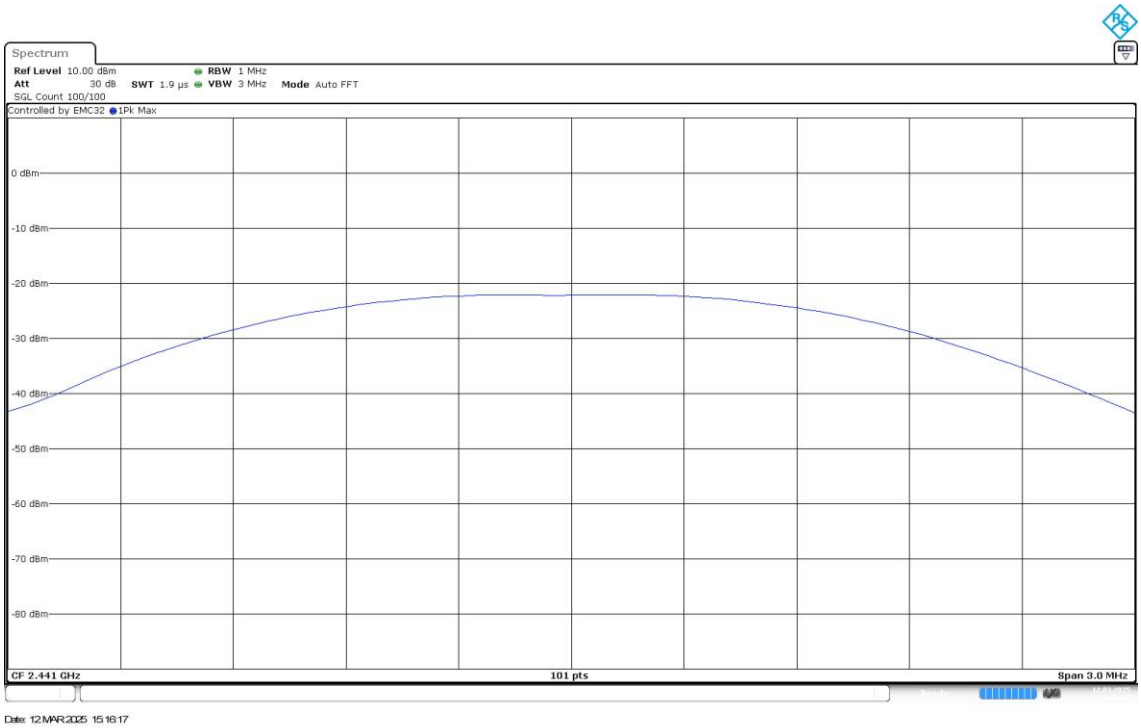
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:

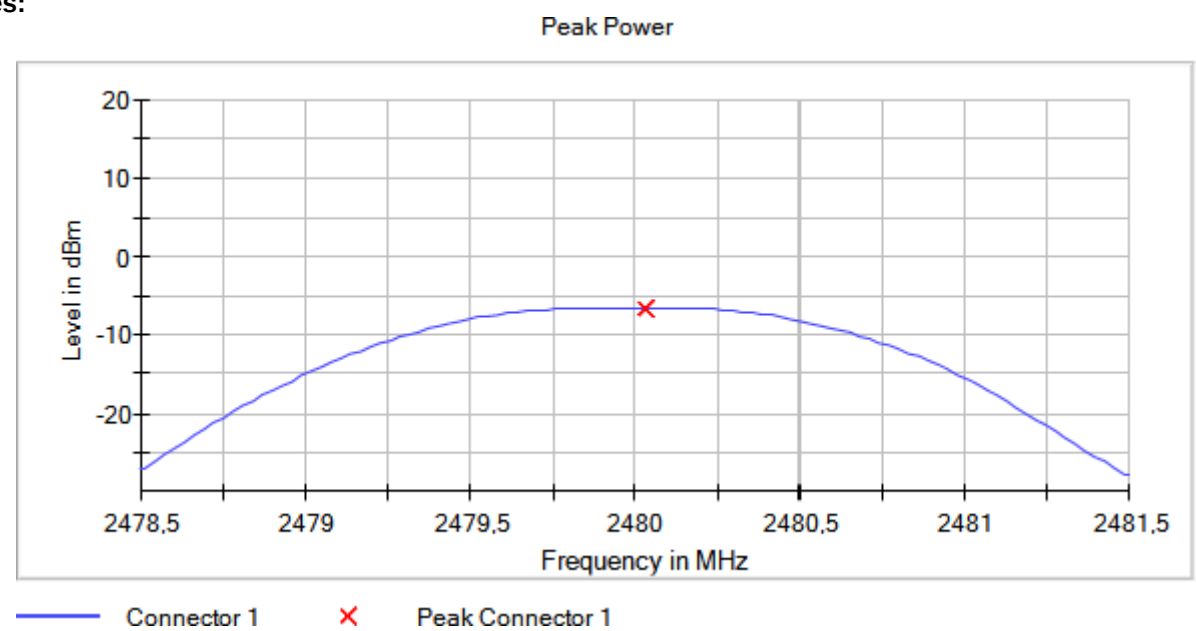


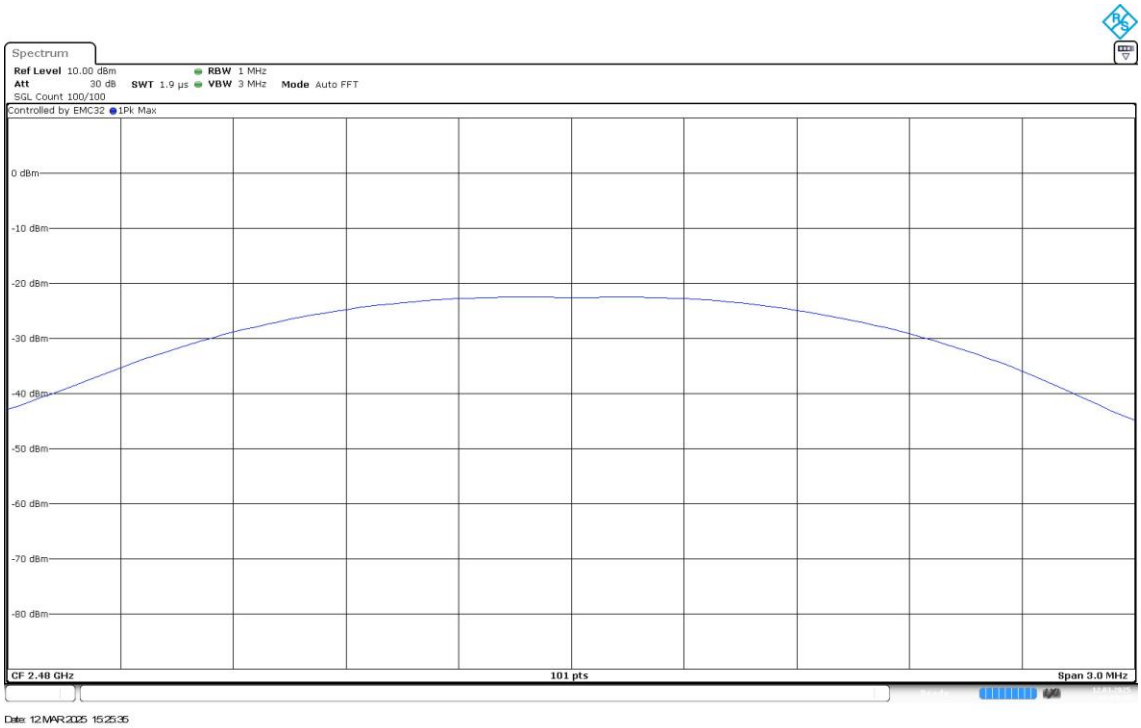


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (GFSK 1-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:





Results

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

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Max EIRP Power (dBm)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	-4.73	-4.63
		2441.00000		-5.13	-5.03
		2480.00000		-5.64	-5.54

Verdict

Pass

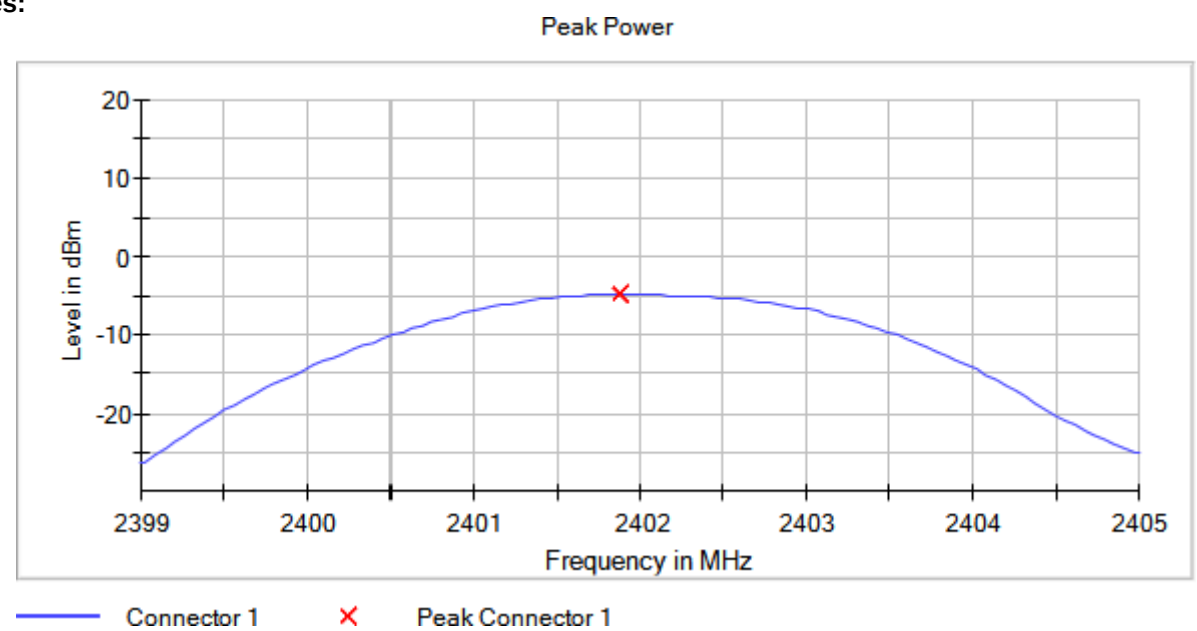
Attachments

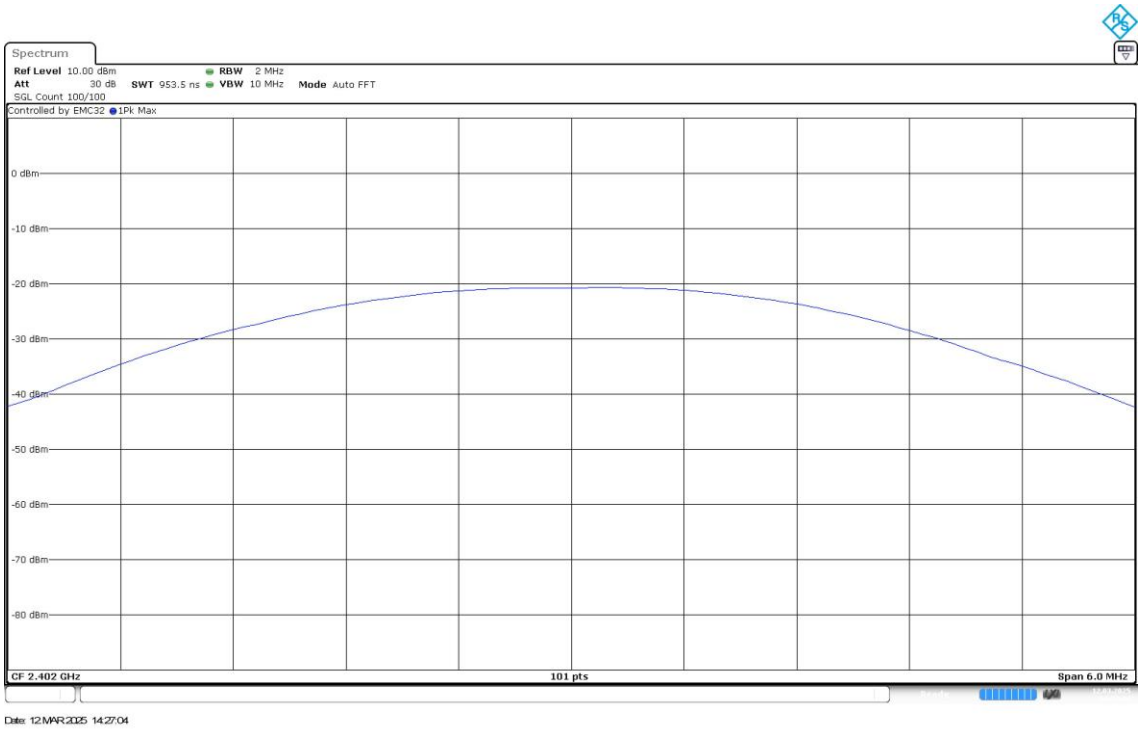
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:

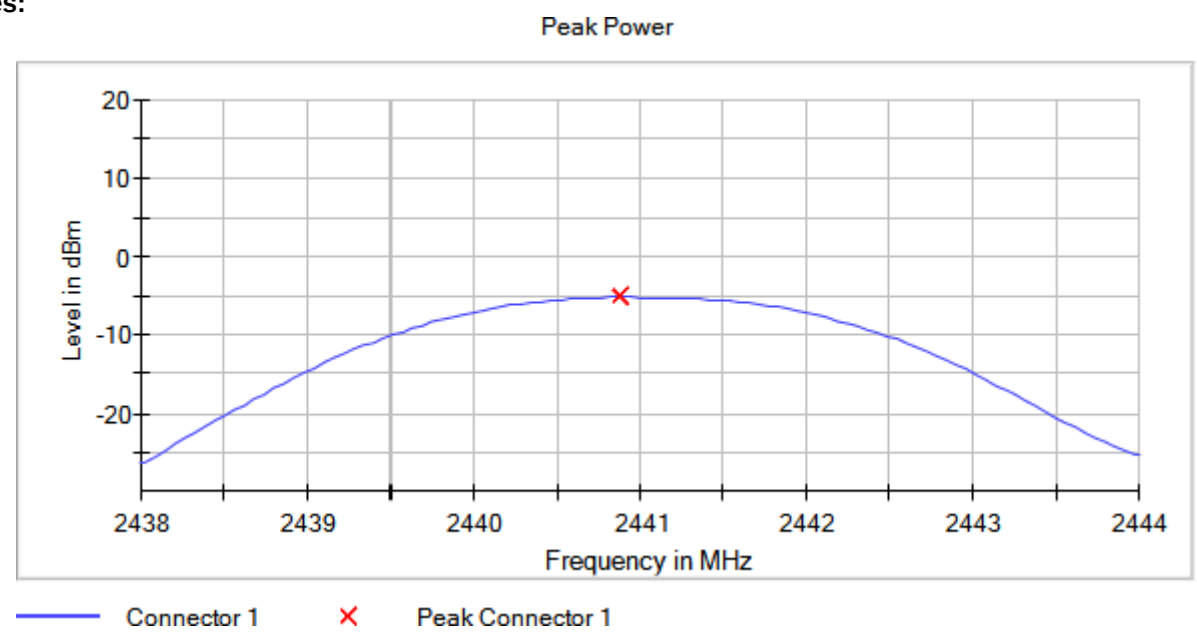


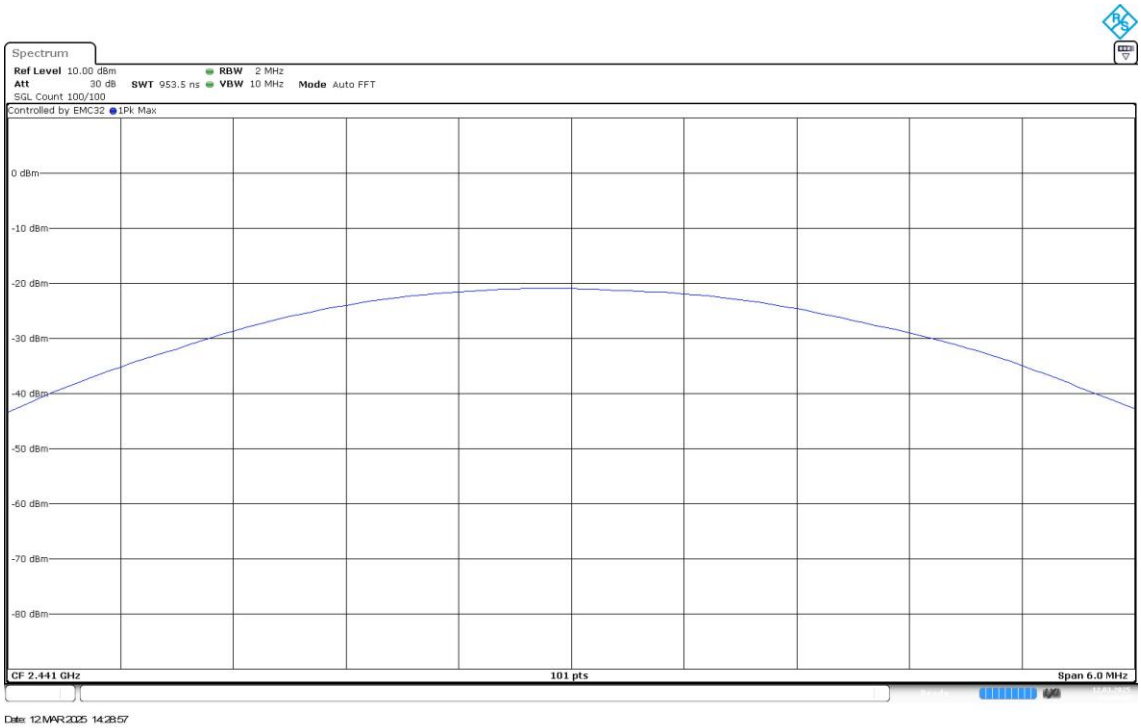


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (Pi/4 DQPSK 2-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2441.00000
Active Port = 1

Images:

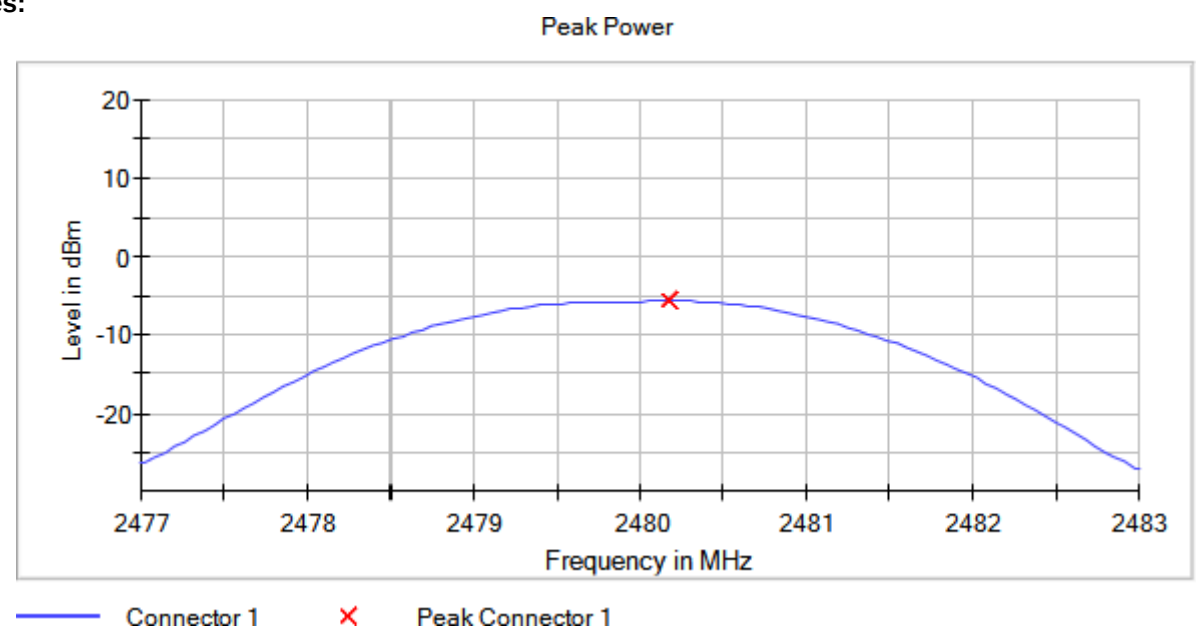


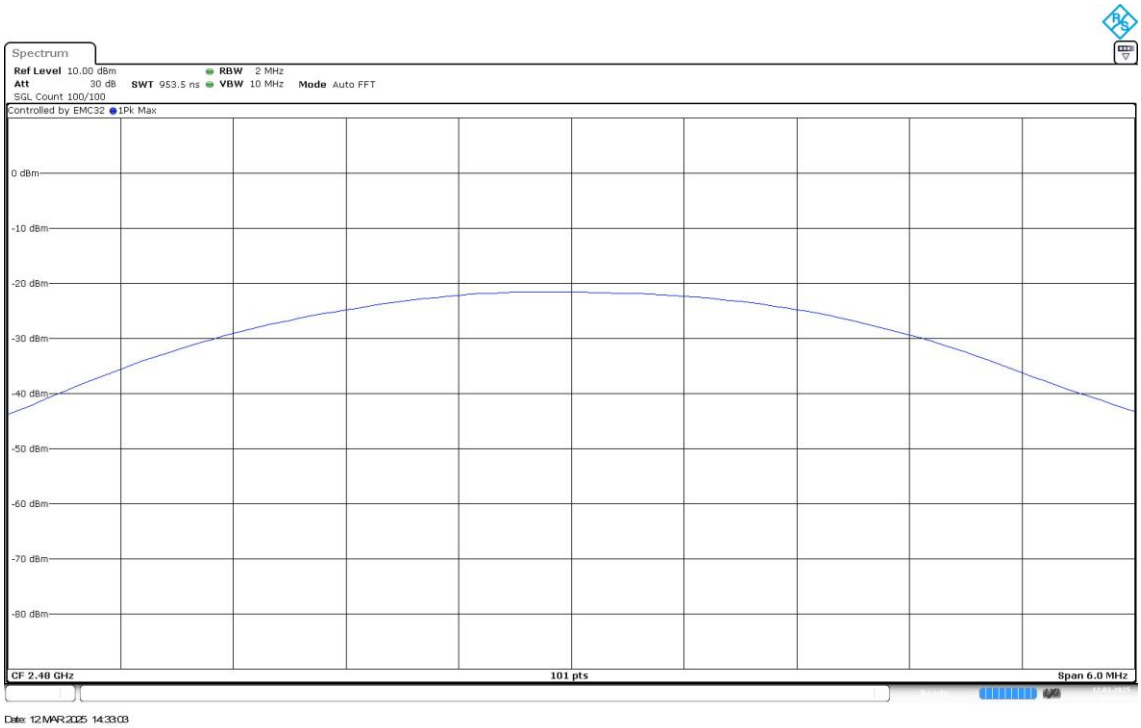


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (Pi/4 DQPSK 2-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:





Results

Modulation: BT (8DPSK 3-DH5)

Equipment	BW (MHz)	Freq (MHz)	Port	Peak Power (dBm)	Max EIRP Power (dBm)
Frequency Hopping Spread Spectrum systems (DSS)	1	2402.00000	1	-4.11	-4.01
		2441.00000		-4.48	-4.38
		2480.00000		-4.77	-4.67

Verdict

Pass

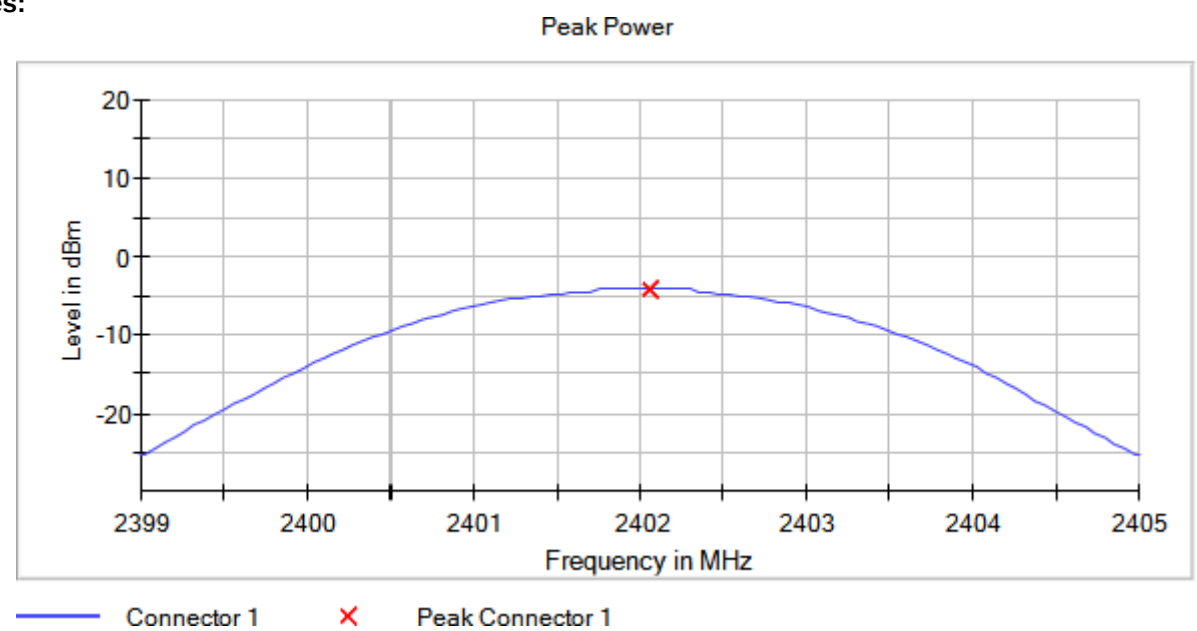
Attachments

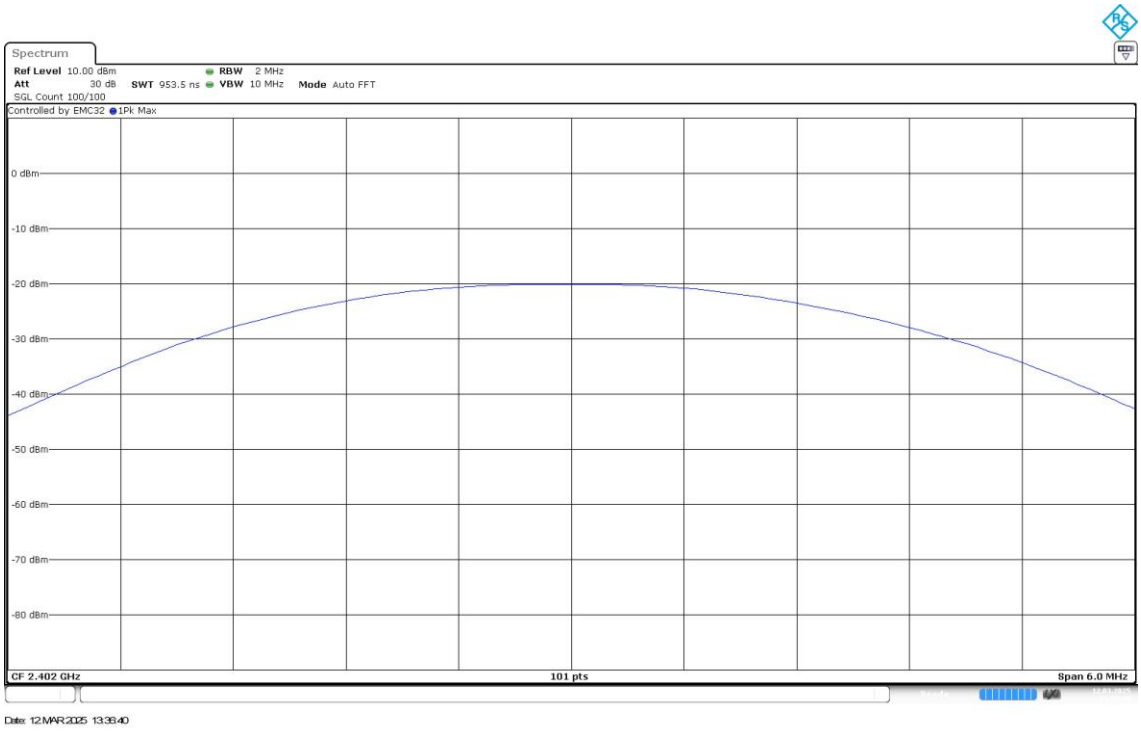
Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:

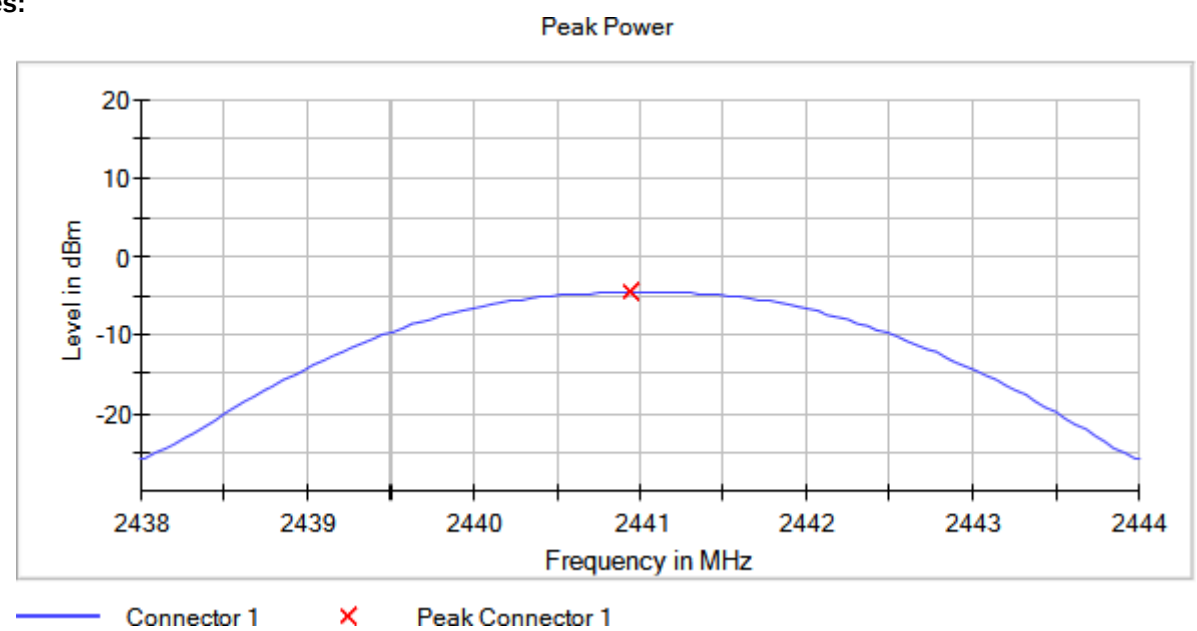


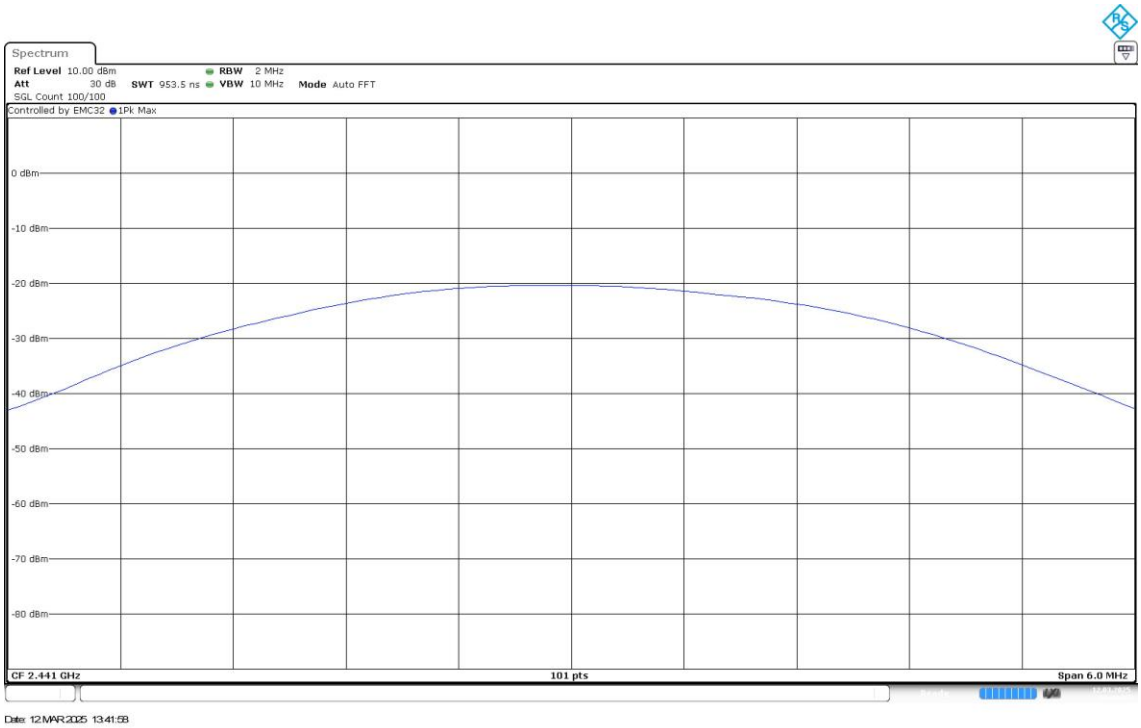


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (8DPSK 3-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2441.00000
Active Port = 1

Images:

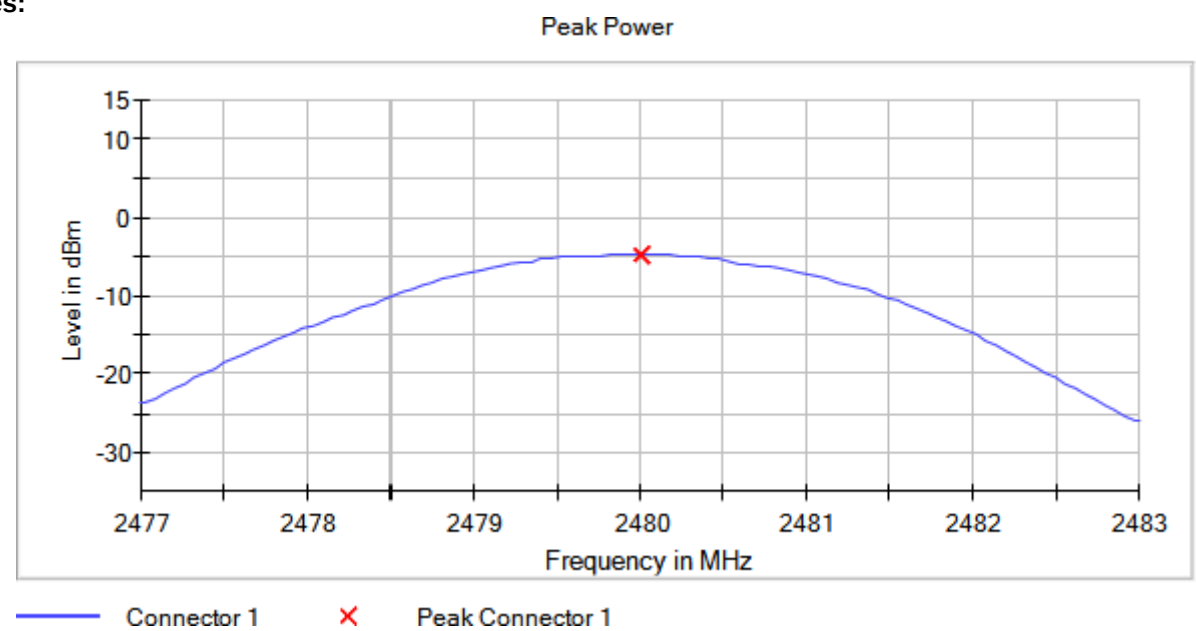


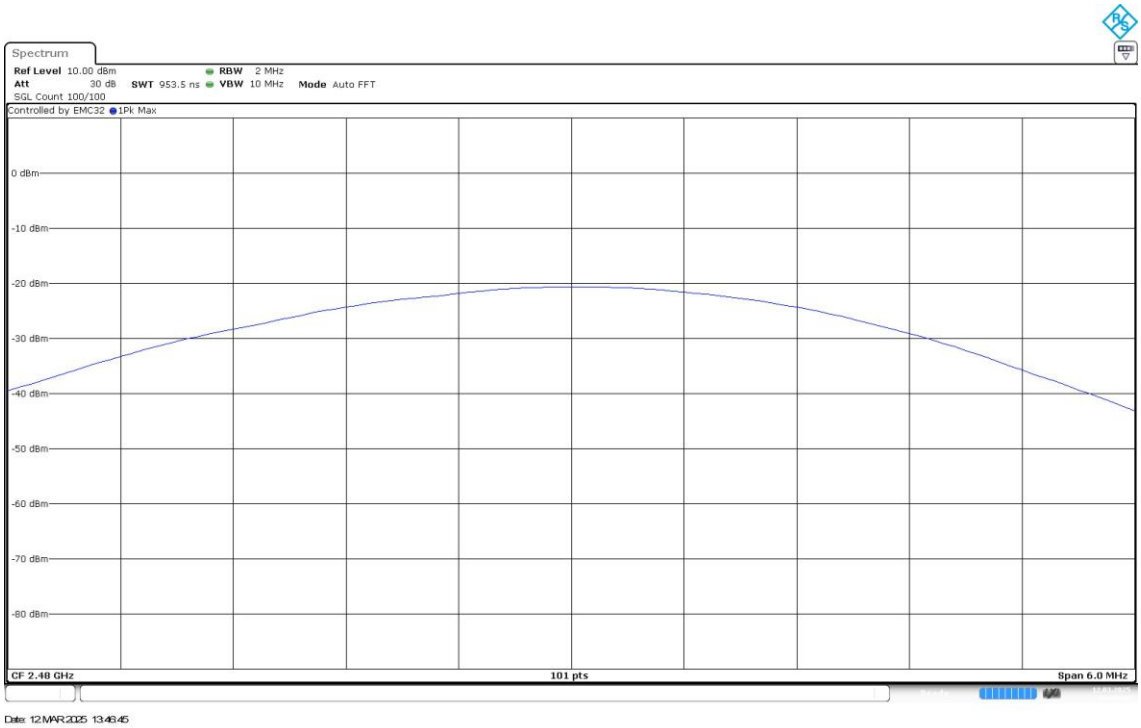


Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (8DPSK 3-DH5)
MIMO Mode = SISO

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:





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

Limits

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

Results

Modulation: BT (GFSK 1-DH5)

Verdict

Pass

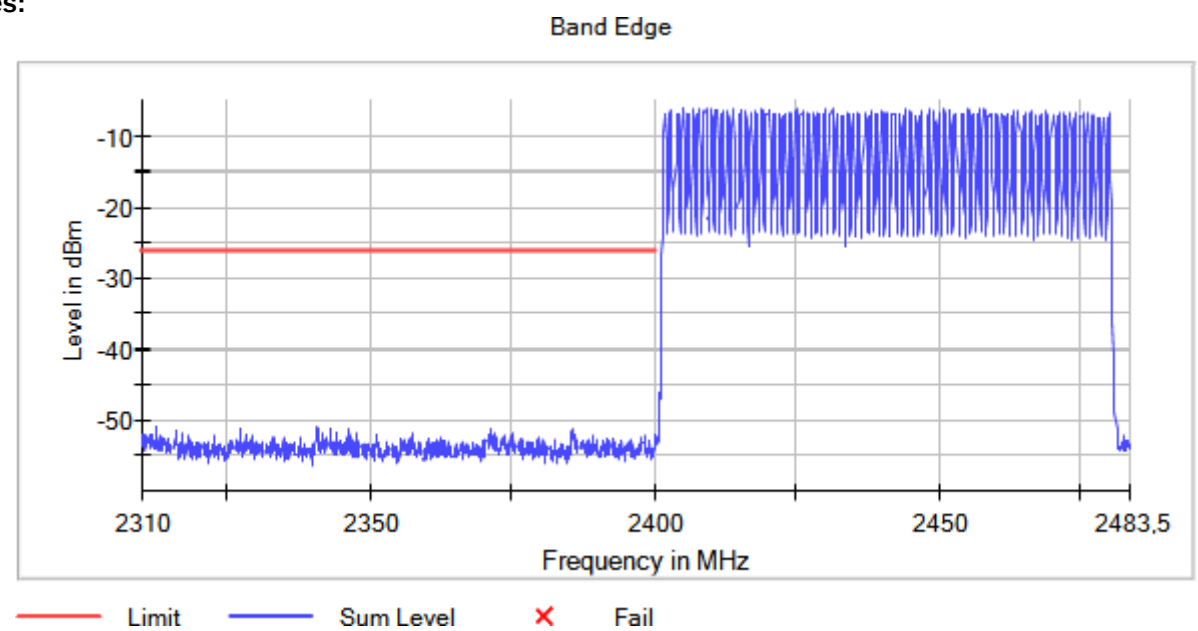
Attachments

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

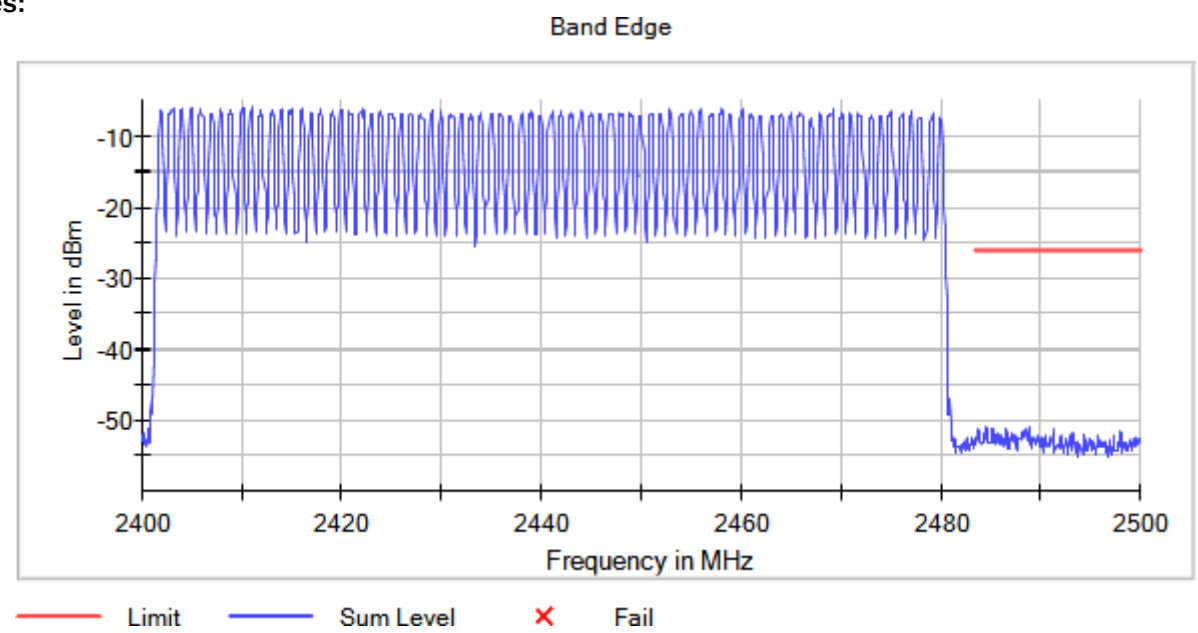
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	117 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.32 dB	0.50 dB

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

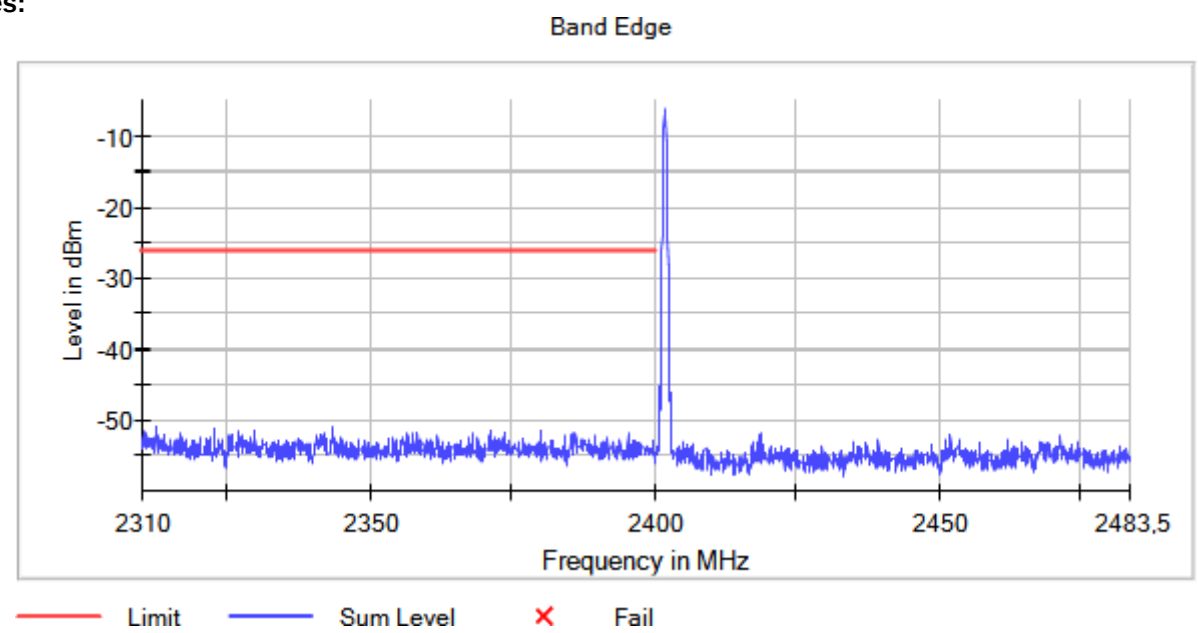
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	117 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.32 dB	0.50 dB

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

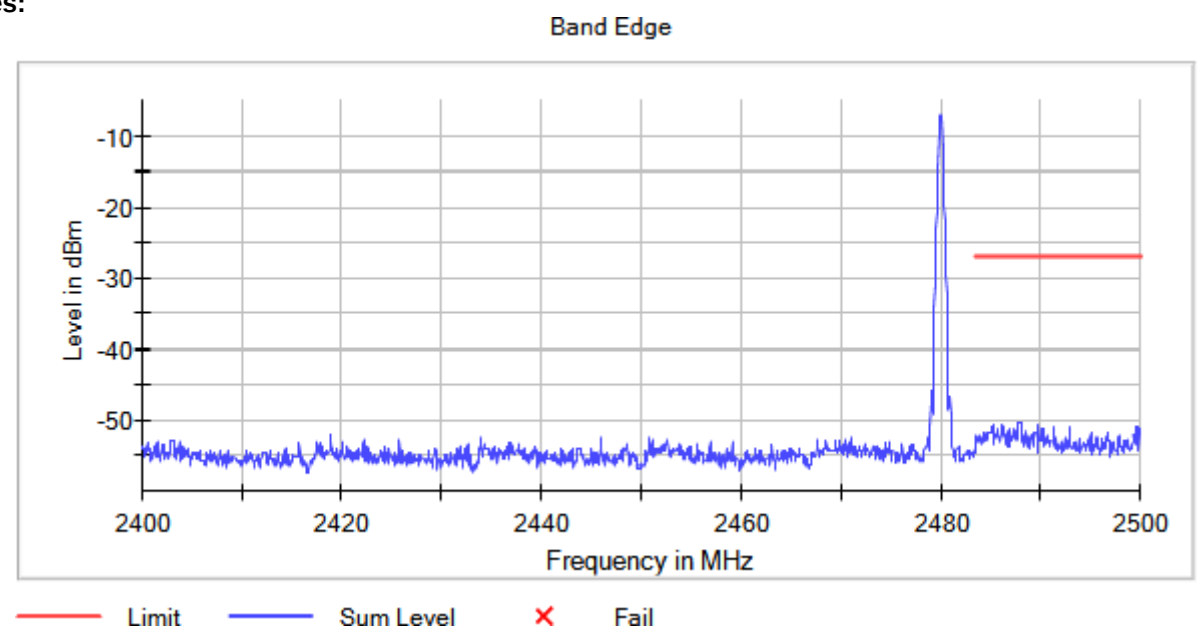
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	117 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.32 dB	0.50 dB

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	117 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.32 dB	0.50 dB

Results

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

Verdict

Pass

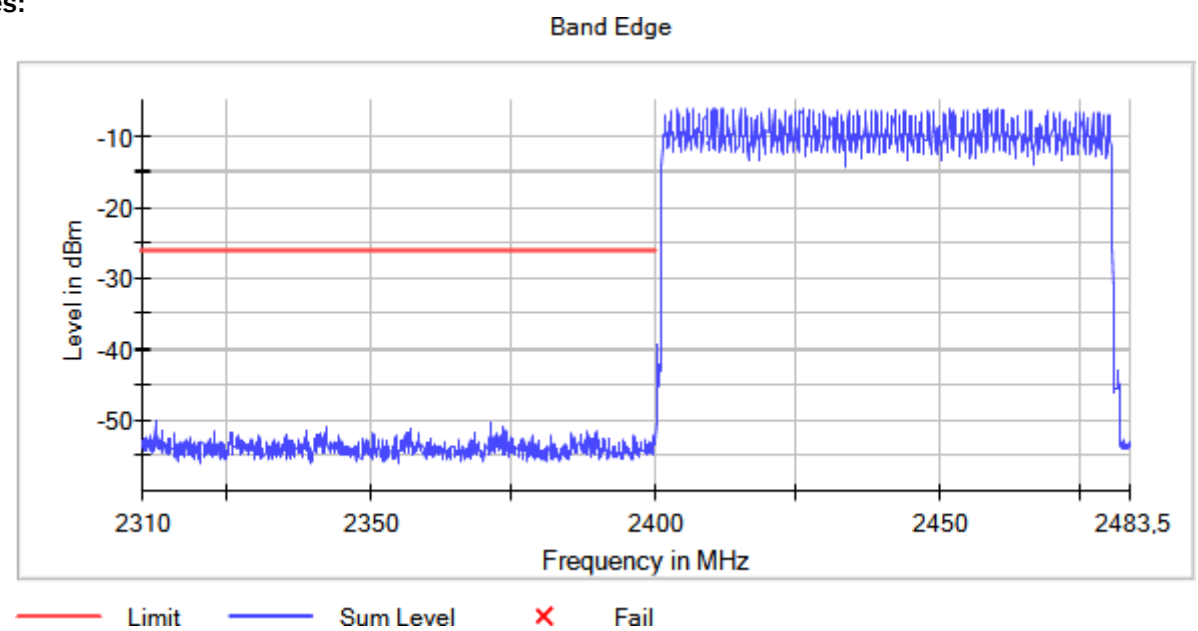
Attachments

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

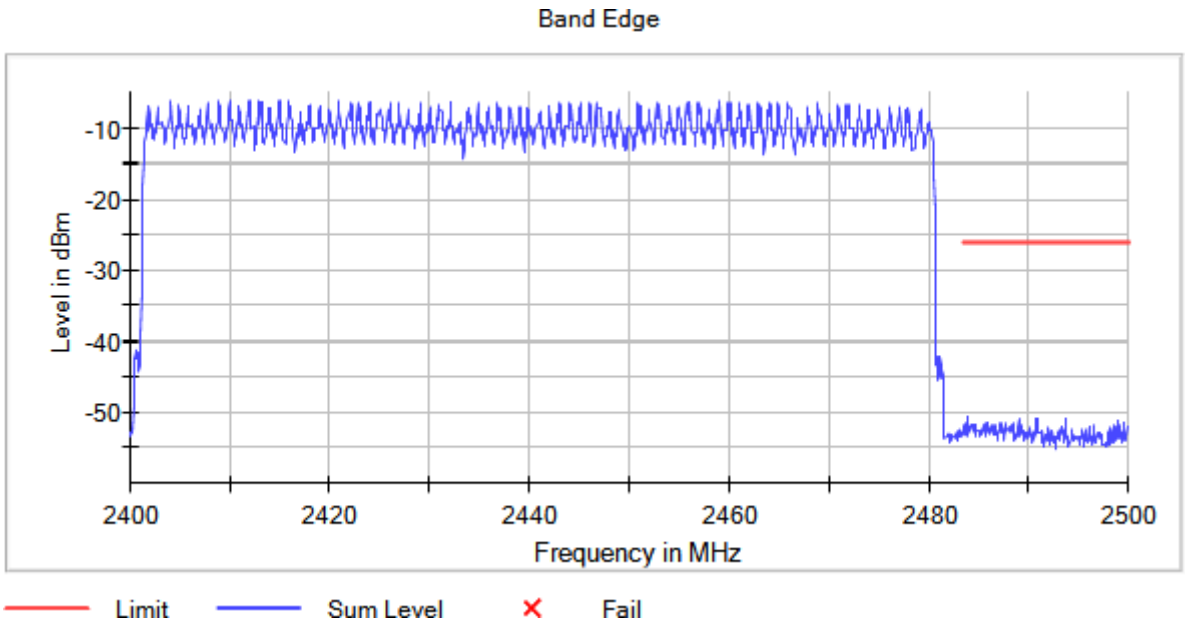
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	137 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.15 dB	0.50 dB

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

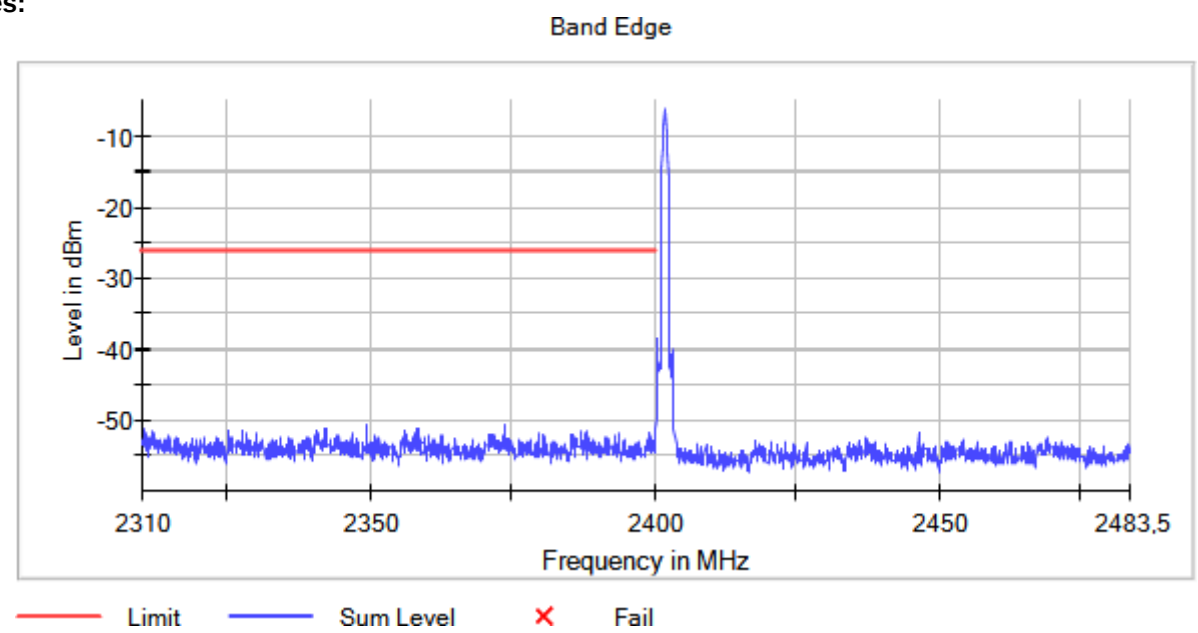
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	137 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.15 dB	0.50 dB

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

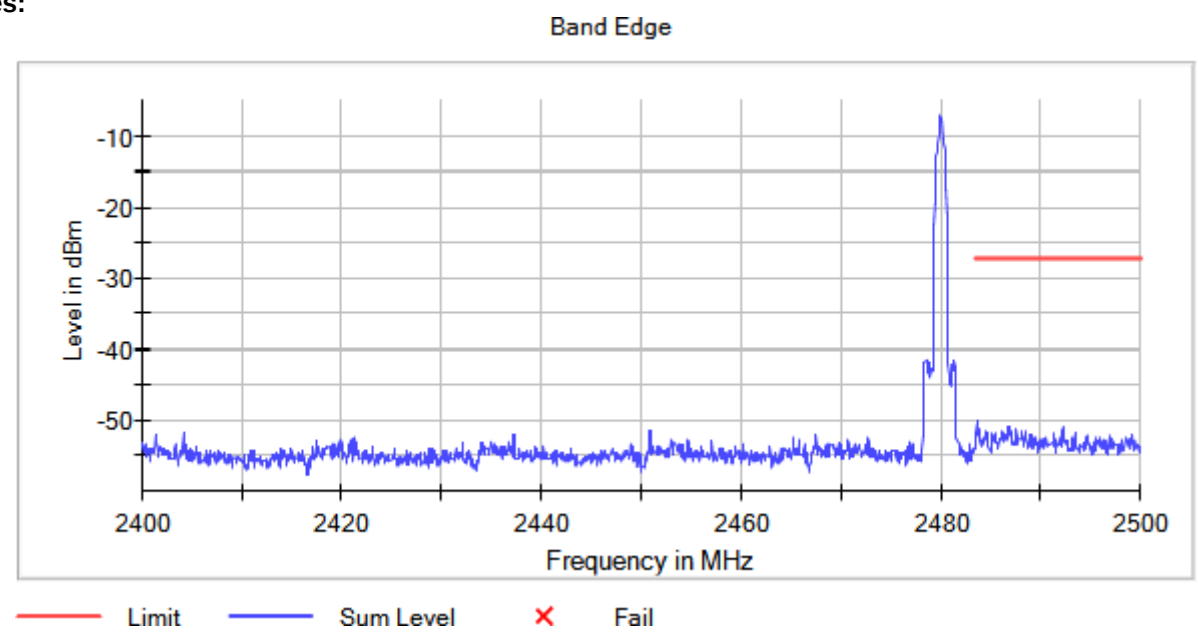
Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	137 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.15 dB	0.50 dB

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

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:



Tables:
Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	137 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.15 dB	0.50 dB

Results

Modulation: BT (8DPSK 3-DH5)

Verdict

Pass

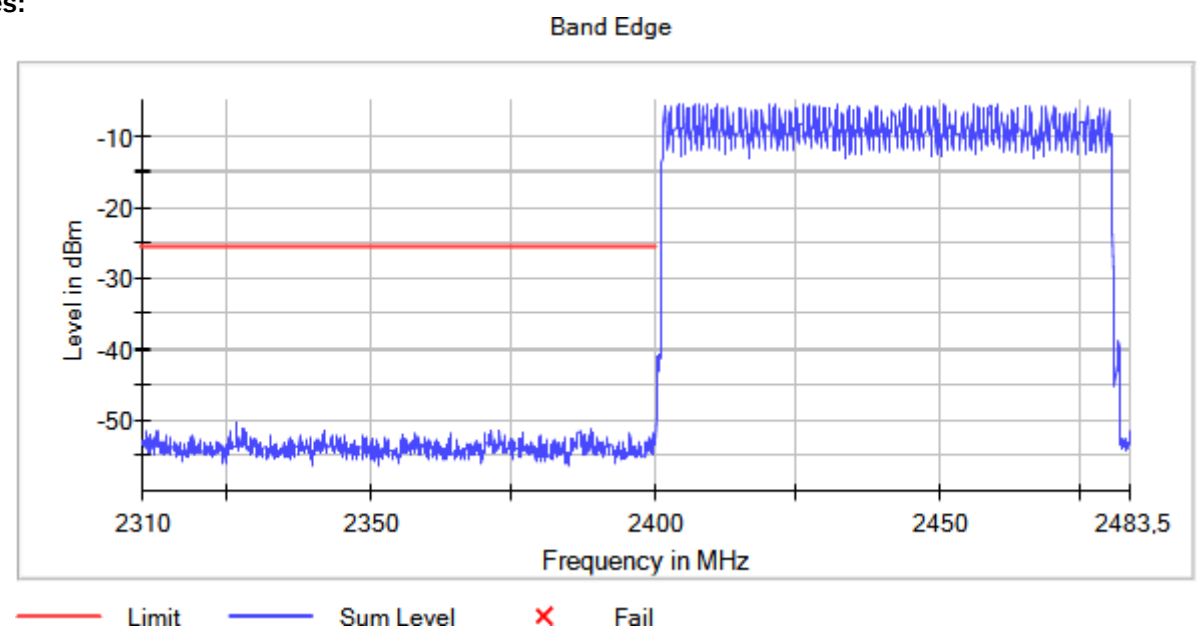
Attachments

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

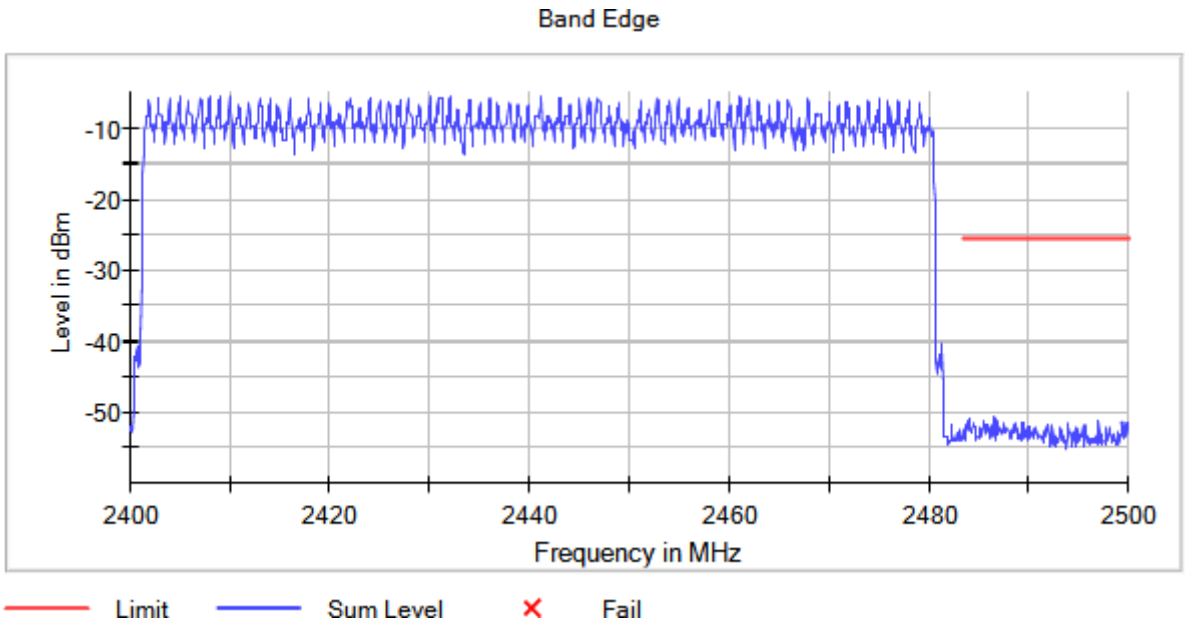
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	148 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

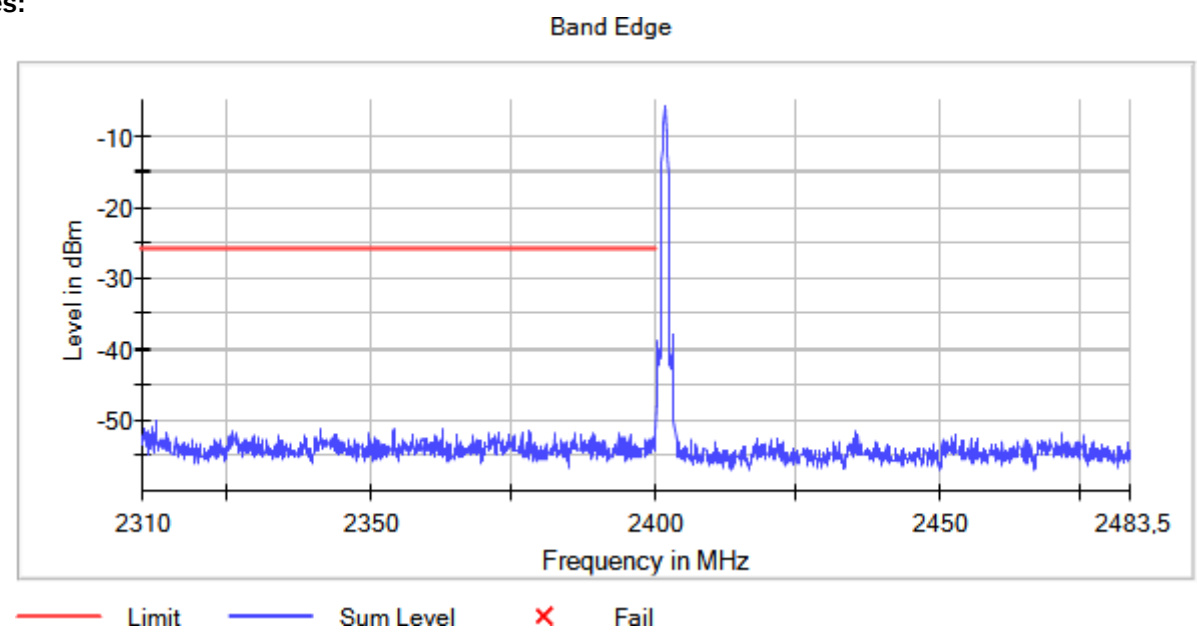
Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	148 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS) Bandwidth MHz = 1

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

MIMO Mode = SISO Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

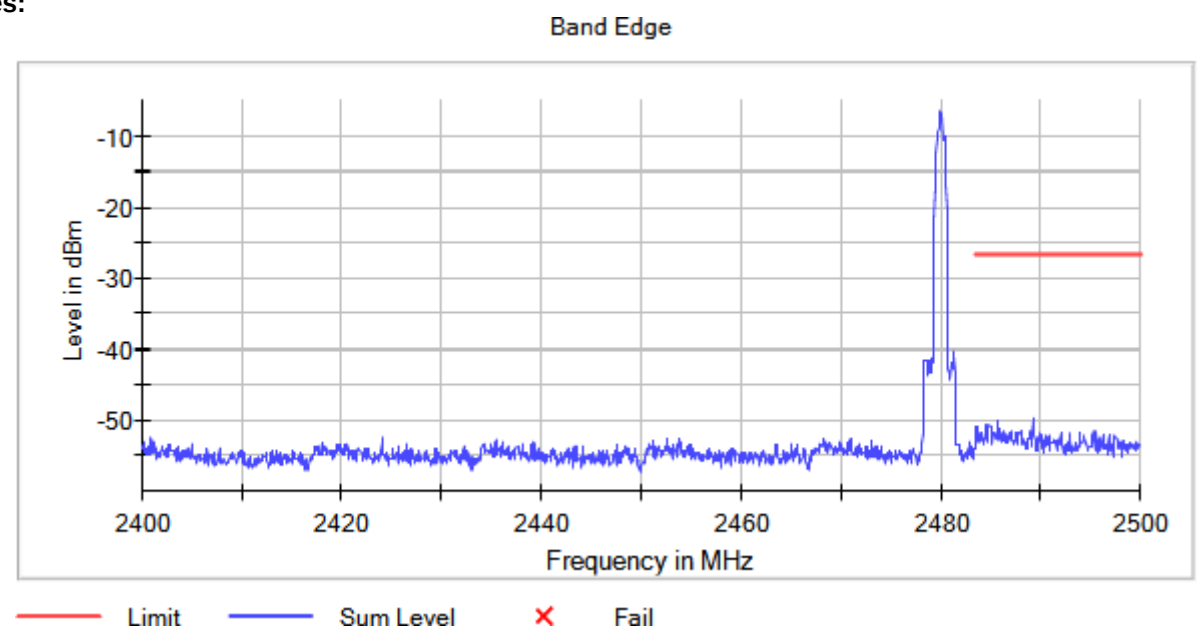
Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	148 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

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

Bandwidth MHz = 1
Frequency MHz = 2480.00000
Active Port = 1

Images:



Tables:
Spectrum Analyzer Parameters 1

Setting	Instrument Value	Target Value
Start Frequency	2.31000 GHz	2.31000 GHz
Stop Frequency	2.40000 GHz	2.40000 GHz
Span	90.000 MHz	90.000 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1800	~ 1800
Sweeptime	113.672 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Spectrum Analyzer Parameters 2

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	1670	~ 1670
Sweeptime	94.727 µs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	148 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

RSS-247 5.5 / FCC 15.247 (d) Emission limitations radiated (Transmitter)

Limits

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)/RSS-Gen):

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RSS-247: Attenuation below the general field strength limits specified in RSS-Gen is not required.

Frequency range tested for Radiated emissions:

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

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

Results

Frequency range 30MHz - 1GHz

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

Freq Rng (GHz)	Equipment	Freq (MHz)	Port	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[0.03, 1]	Frequency Hopping Spread Spectrum systems (DSS)	2402.00000	1	46.975	24.12	V	PK
				46.975	22.49	V	QP
				78.549	21.28	V	QP
				78.549	23.49	V	PK
				546.622	27.57	H	PK
				546.622	20.79	H	QP
				702.162	25.32	V	QP
				702.162	30.83	V	PK

Verdict

Pass

Attachments

Frequency Range GHz = [0.03, 1]

Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)

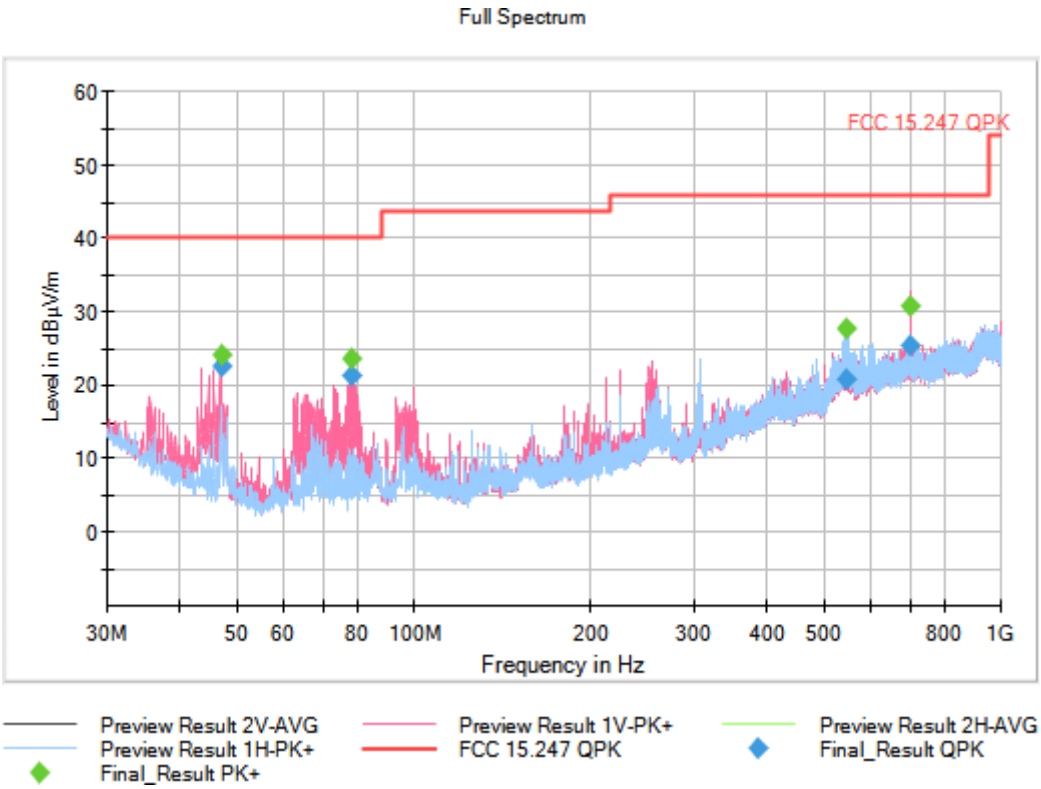
Modulation = The spurious frequencies detected do not depend on the modulation

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

MIMO Mode = SISO

Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

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

Frequency range 1GHz - 17GHz

Modulation: BT (GFSK 1-DH5)

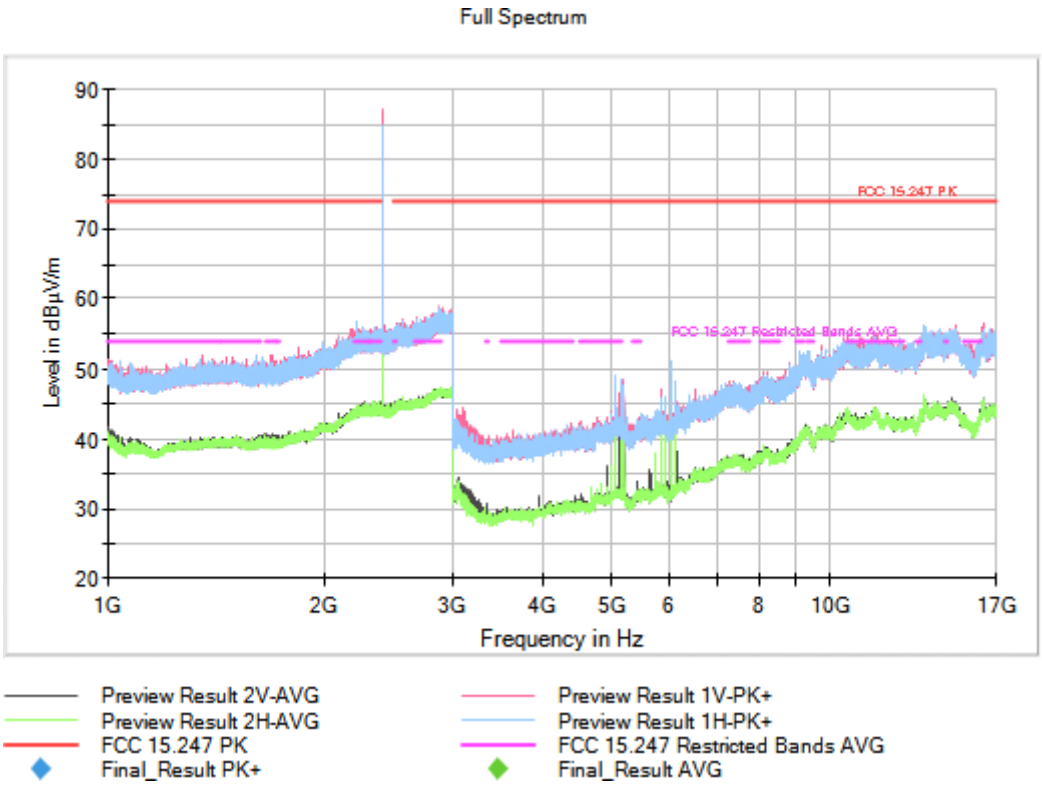
No spurious frequencies detected at less than 20 dB below the limit.

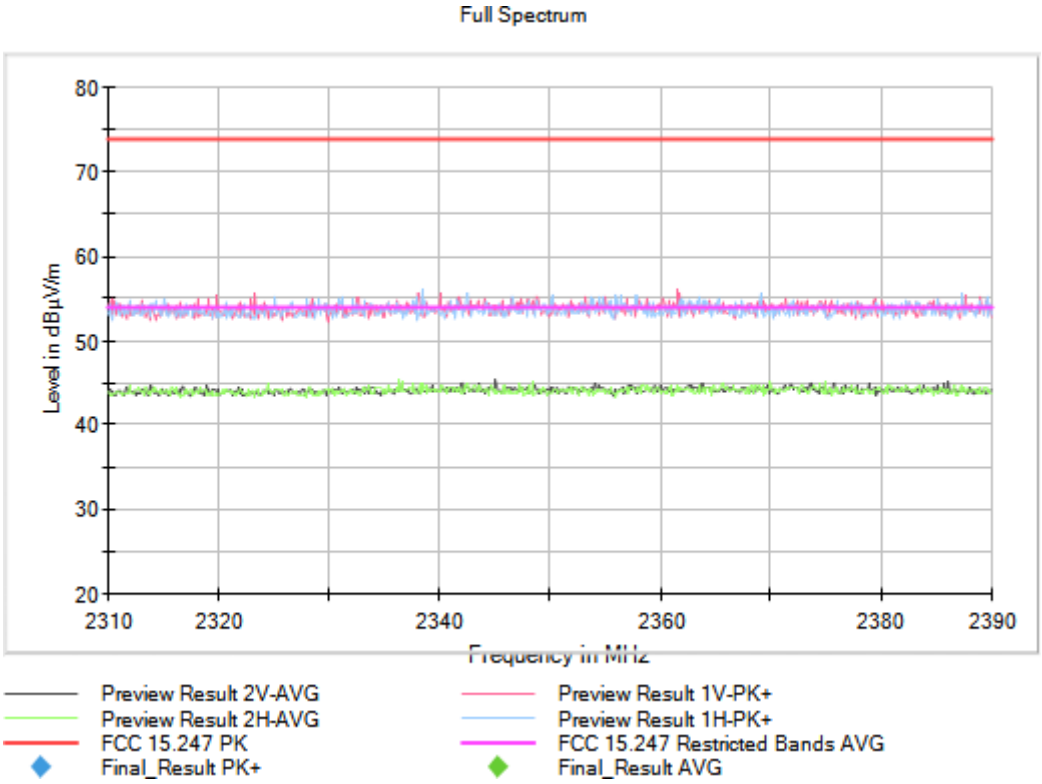
Verdict

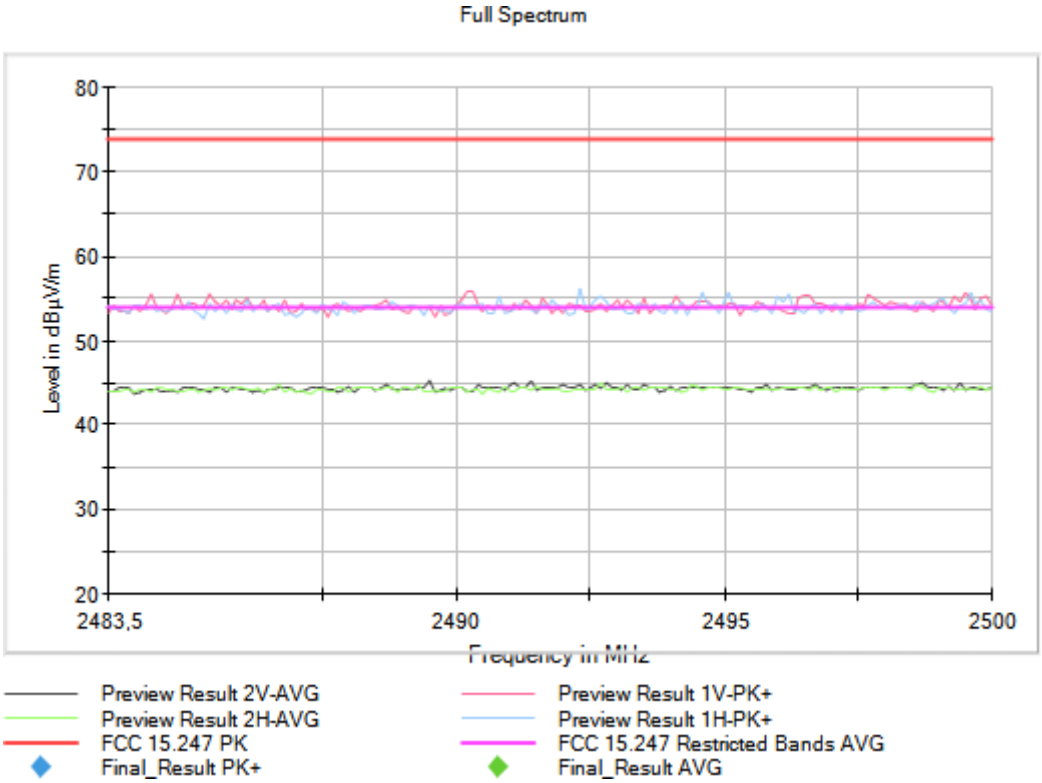
Pass

Frequency Range GHz = [1, 17]	Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (GFSK 1-DH5)	Frequency MHz = 2402.00000
MIMO Mode = SISO	Active Port = 1

Images:




Full Spectrum
Level in dBµV/m
80
70
60
50
40
30
20
2310
2320
2340
2360
2380
2390
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

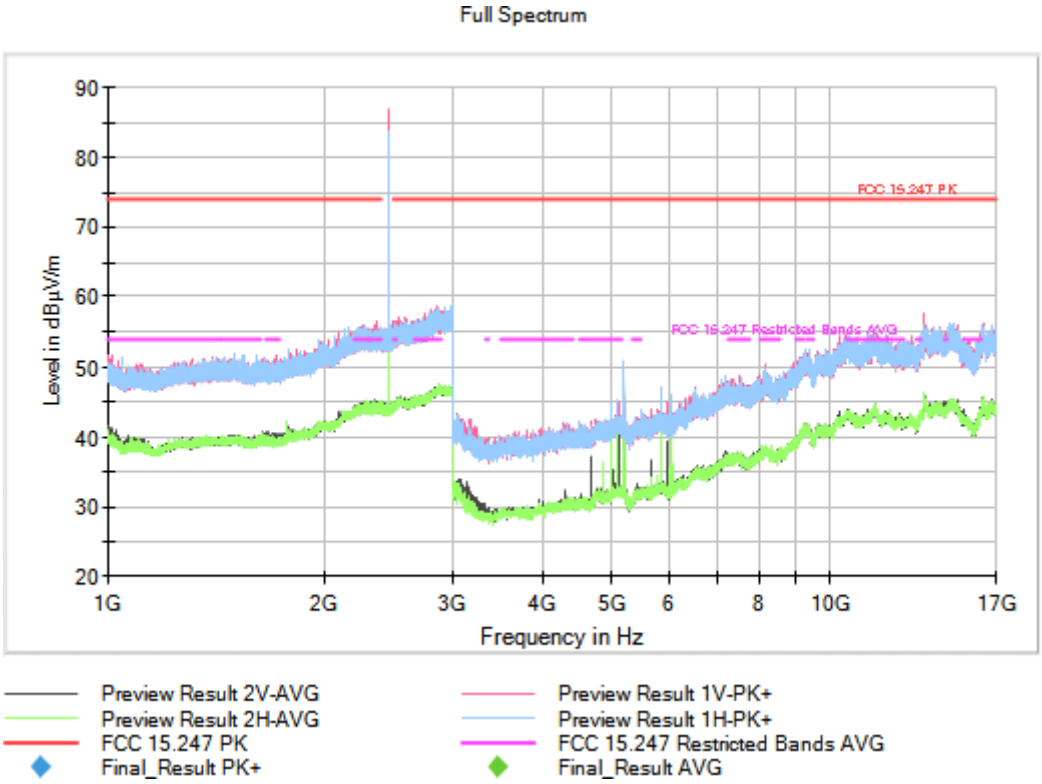

Full Spectrum
Level in dBµV/m
80
70
60
50
40
30
20
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

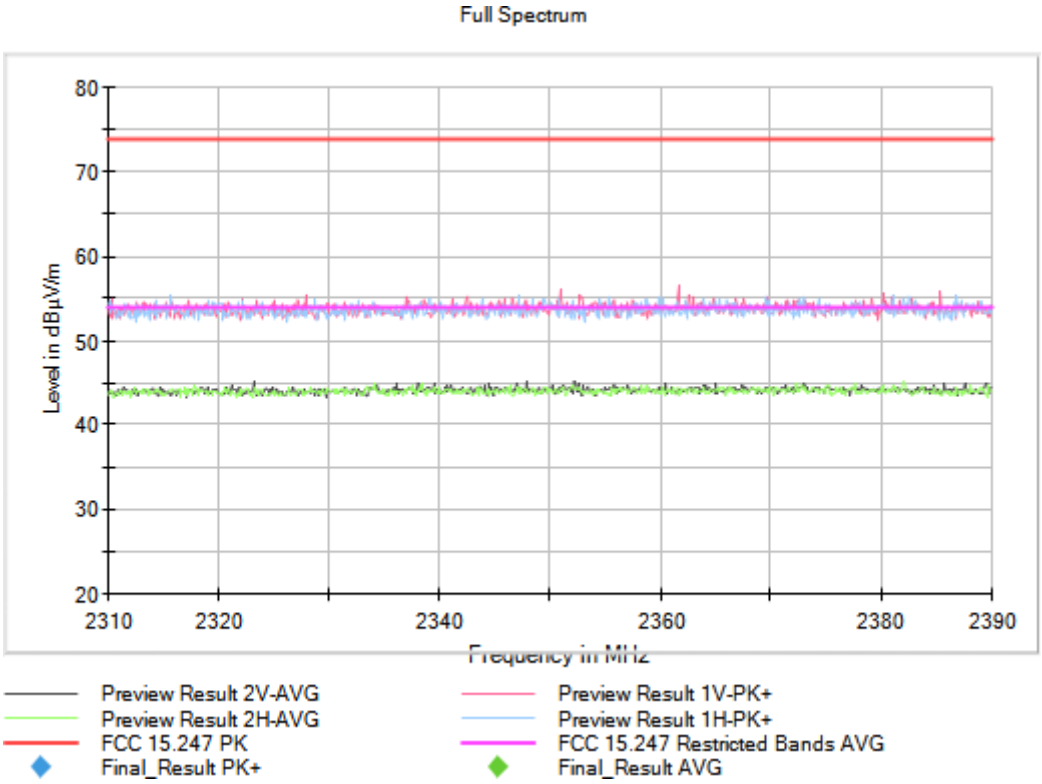
Frequency Range GHz = [1, 17] Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)

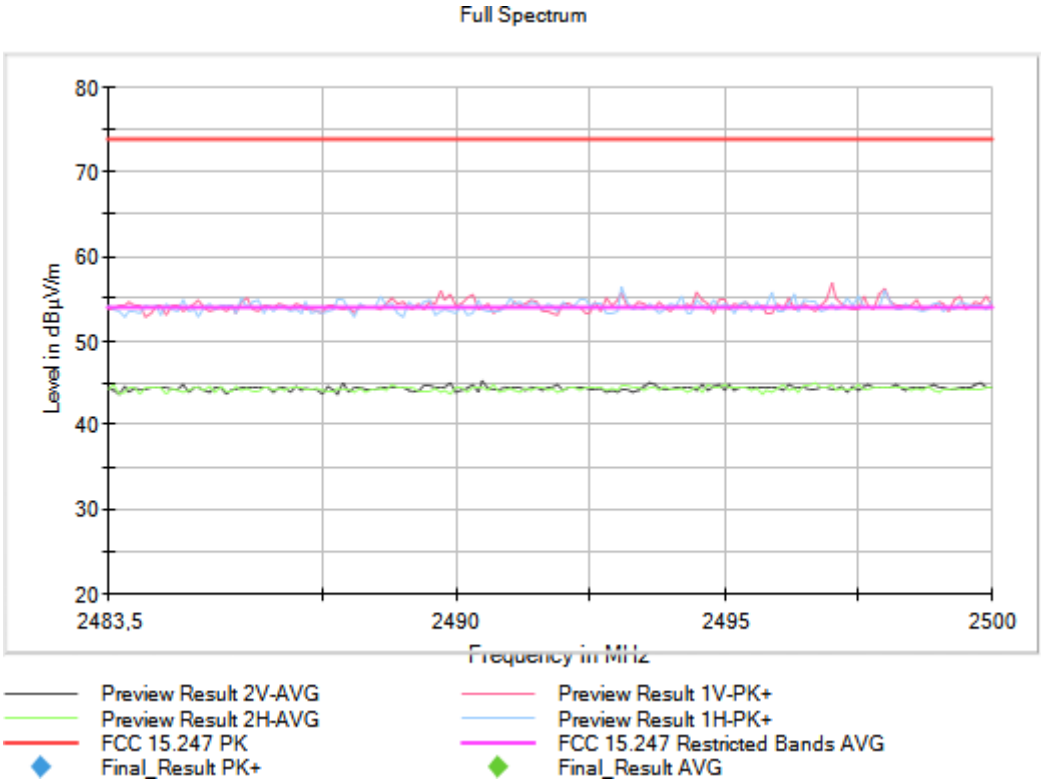
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2441.00000

MIMO Mode = SISO Active Port = 1

Images:





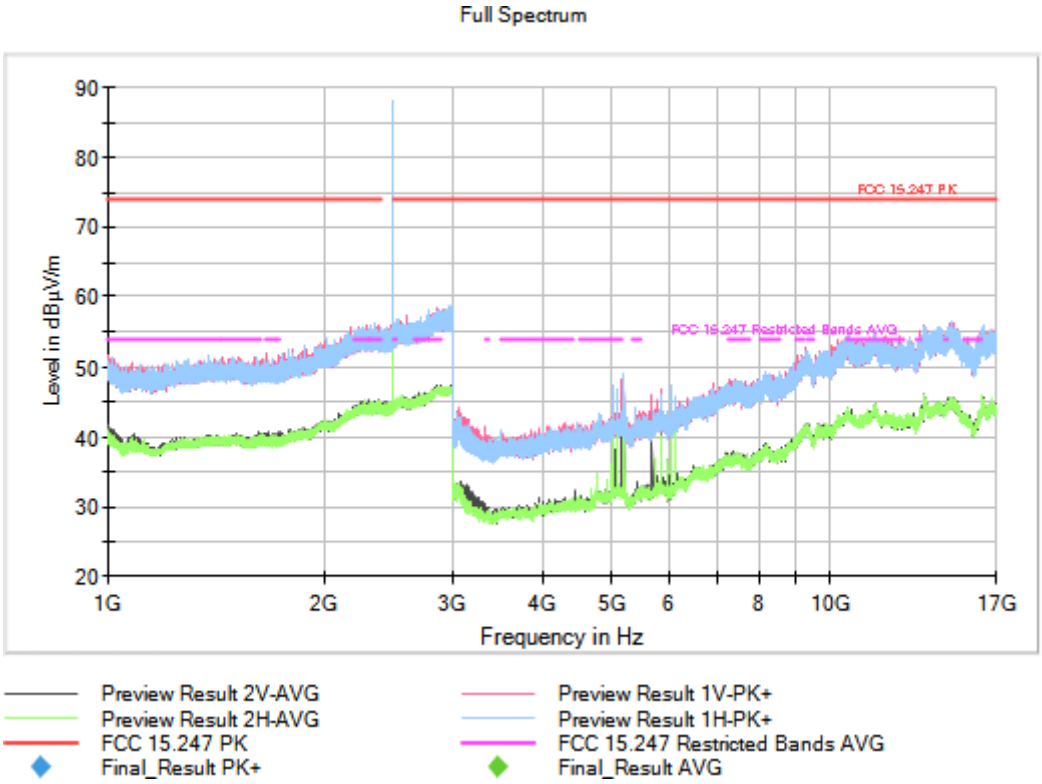

Full Spectrum
80
70
60
50
40
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

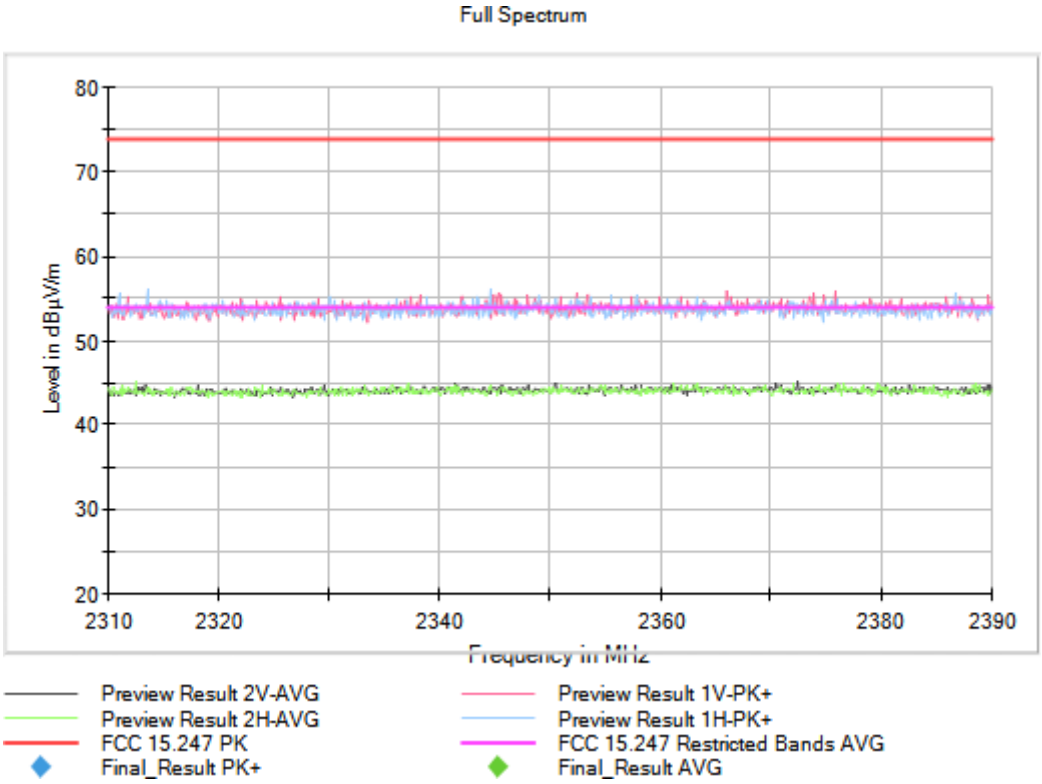
Frequency Range GHz = [1, 17] Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)

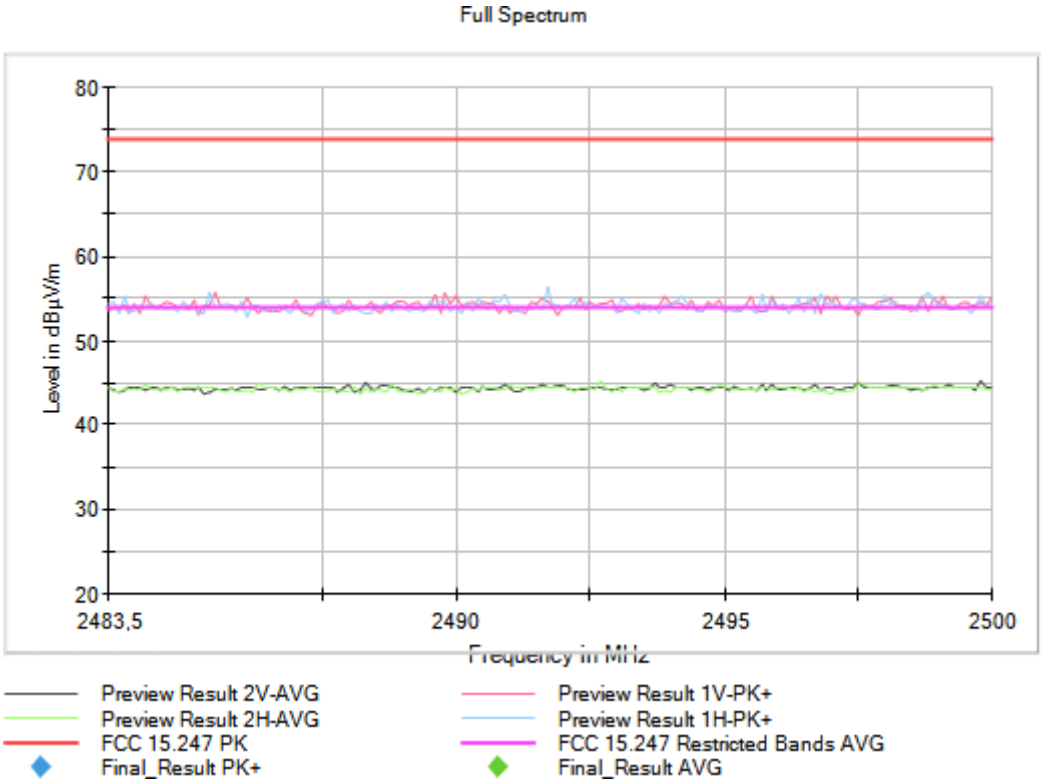
Modulation = BT (GFSK 1-DH5) Frequency MHz = 2480.00000

MIMO Mode = SISO Active Port = 1

Images:






Full Spectrum
80
70
60
50
40
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

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

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

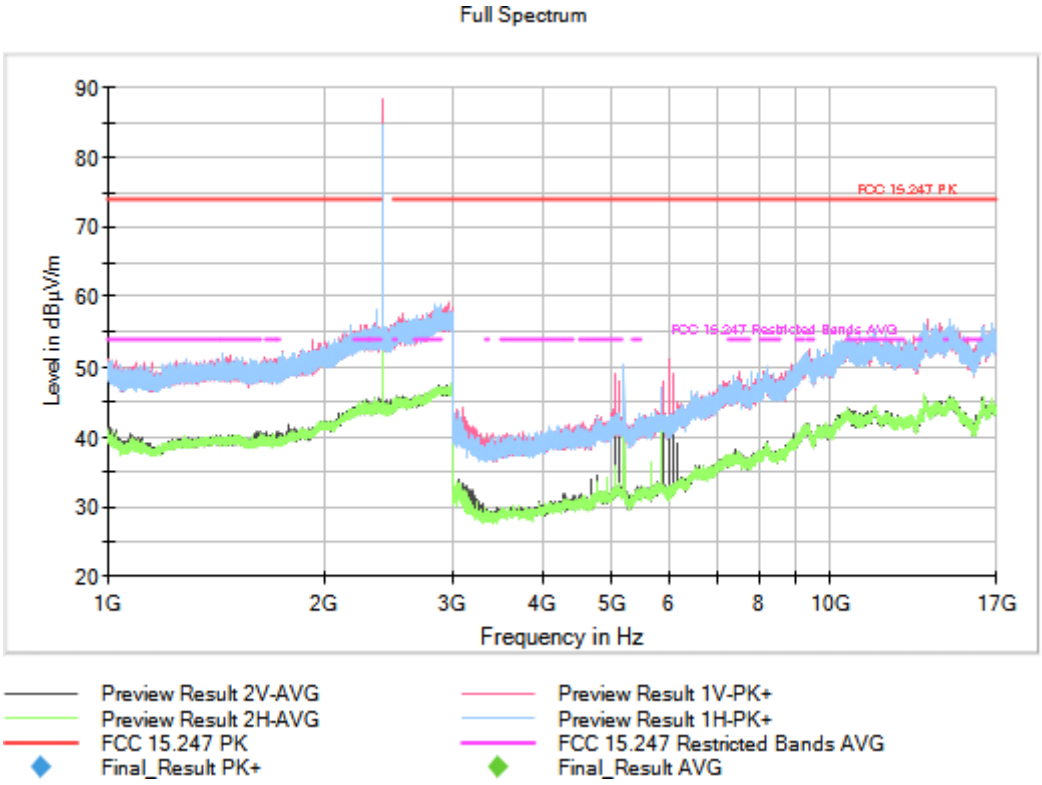
Verdict

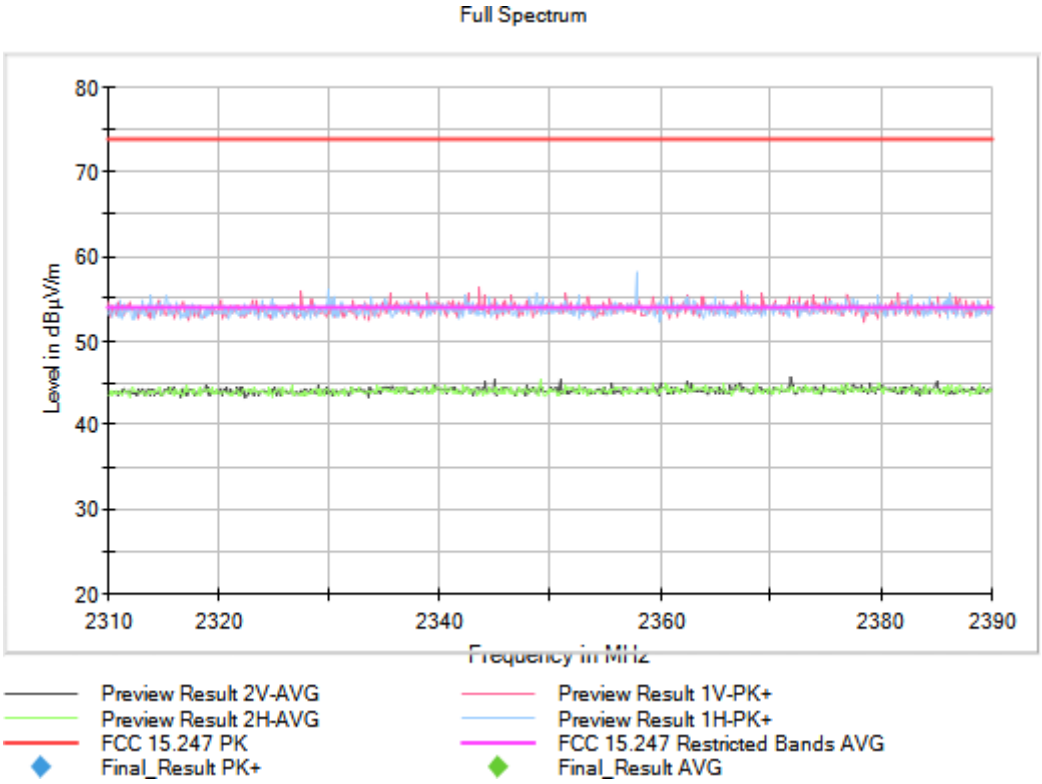
Pass

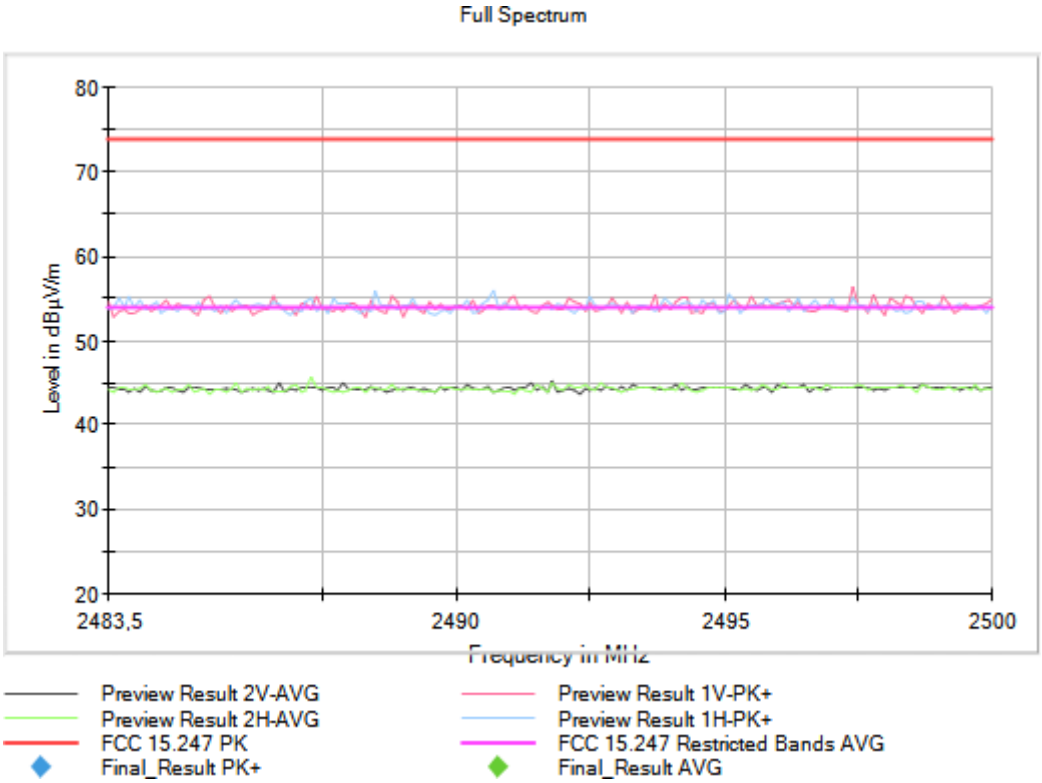
Attachments

Frequency Range GHz = [1, 17]	Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (Pi/4 DQPSK 2-DH5)	Frequency MHz = 2402.00000
MIMO Mode = SISO	Active Port = 1

Images:

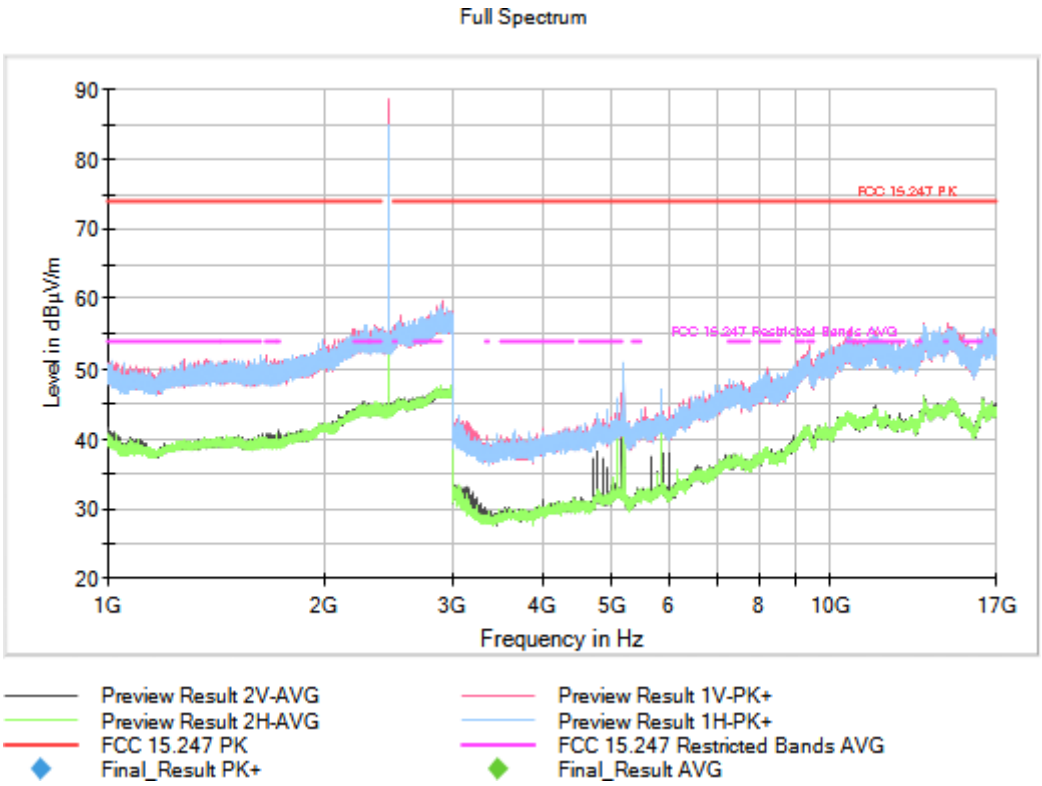


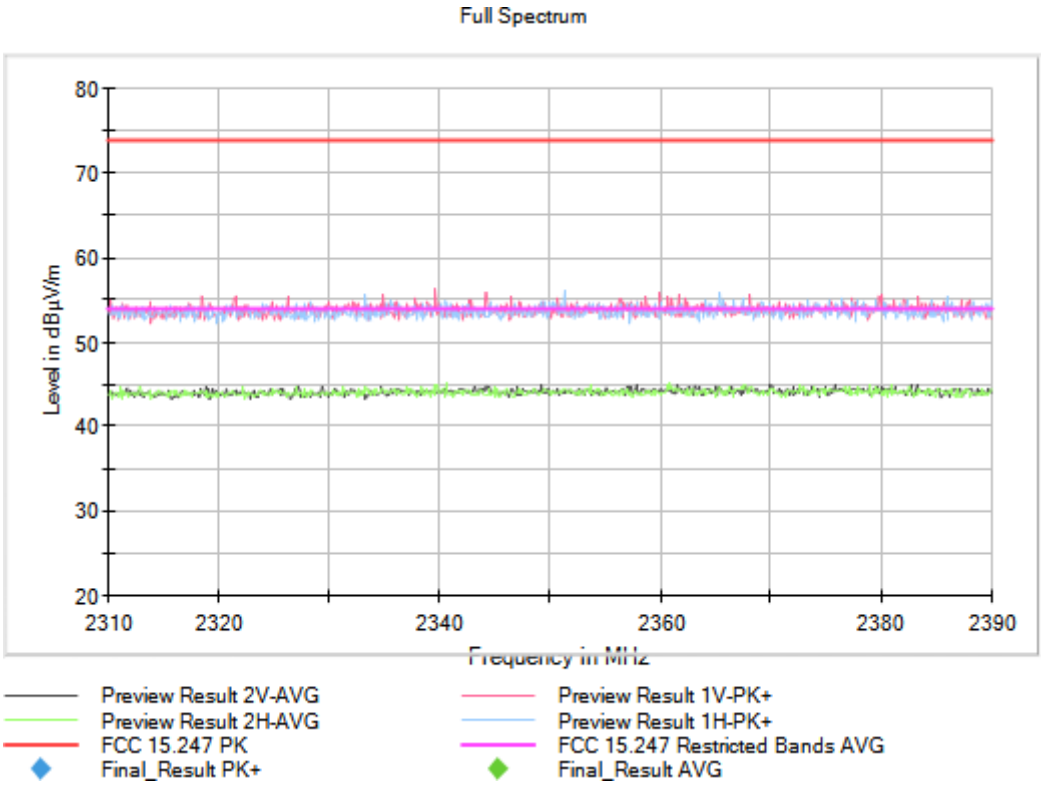

Full Spectrum
Level in dBµV/m
80
70
60
50
40
30
20
2310
2320
2340
2360
2380
2390
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

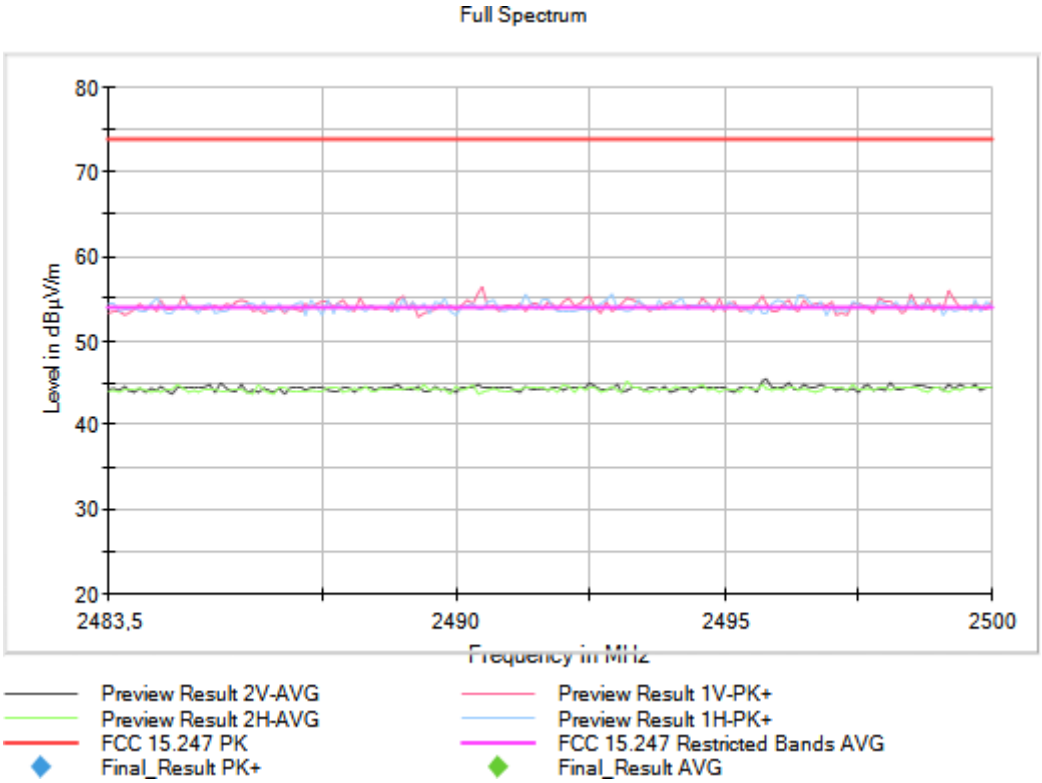

Full Spectrum
Level in dBµV/m
80
70
60
50
40
30
20
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

Frequency Range GHz = [1, 17]	Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (Pi/4 DQPSK 2-DH5)	Frequency MHz = 2441.00000
MIMO Mode = SISO	Active Port = 1

Images:






Full Spectrum
80
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30
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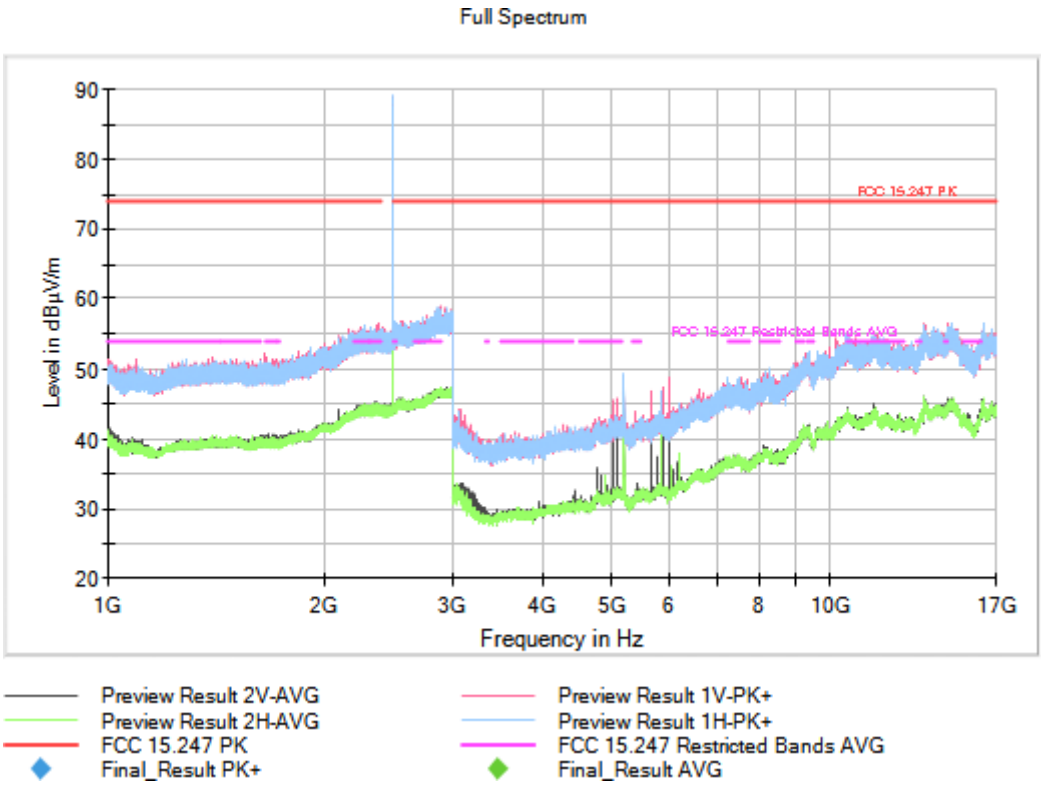
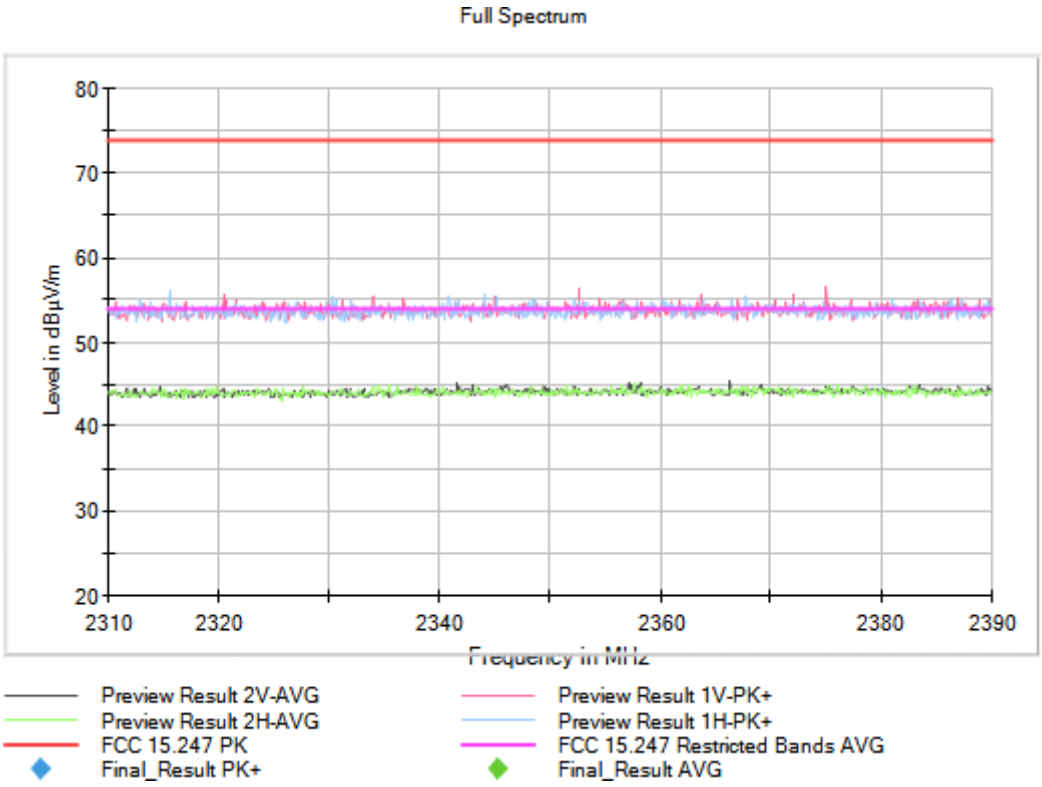
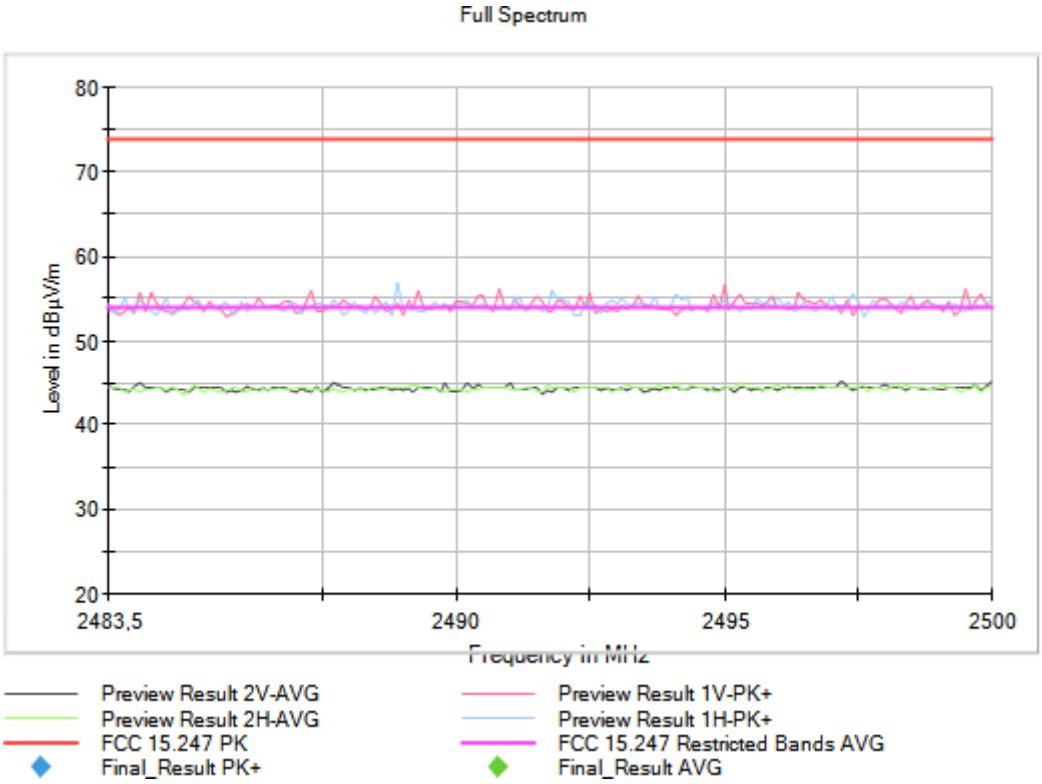
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

Frequency Range GHz = [1, 17]	Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (Pi/4 DQPSK 2-DH5)	Frequency MHz = 2480.00000
MIMO Mode = SISO	Active Port = 1

Images:






Full Spectrum
80
70
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30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

Results

Modulation: BT (8DPSK 3-DH5)

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

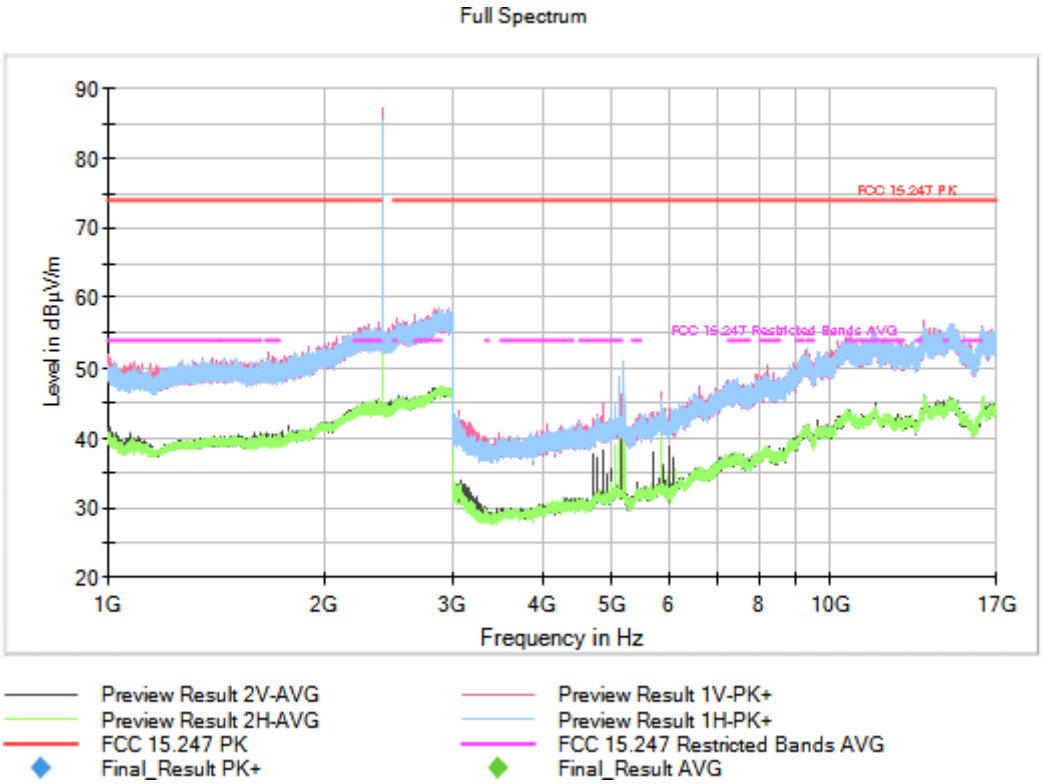
Verdict

Pass

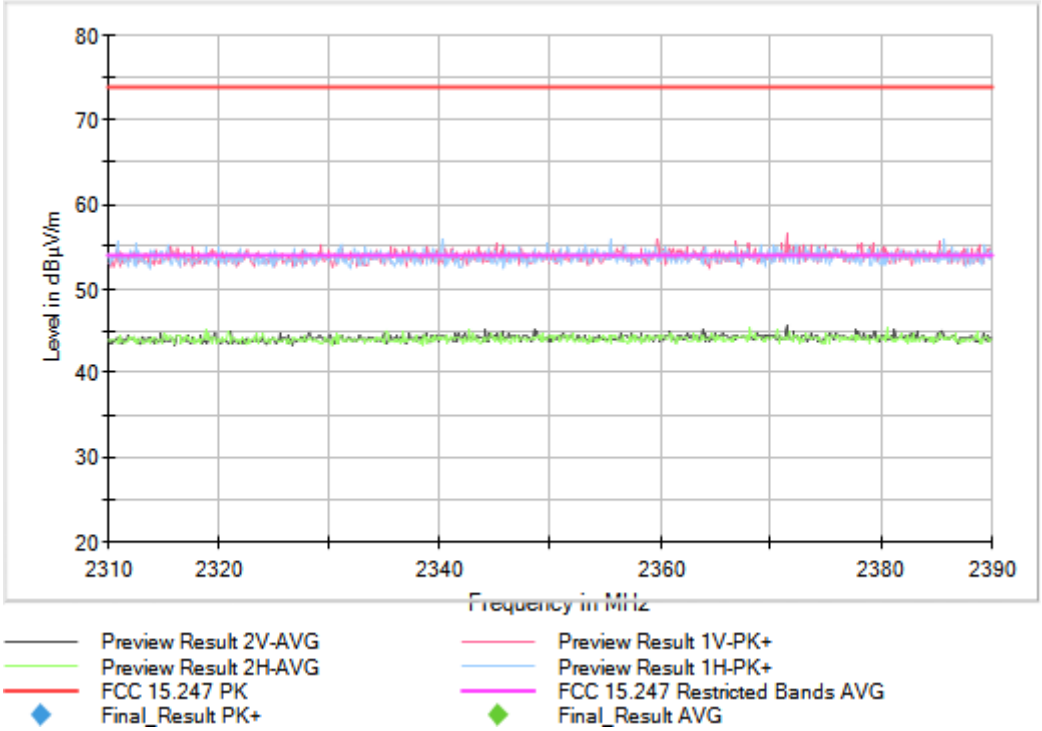
Attachments

Frequency Range GHz = [1, 17]	Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = BT (8DPSK 3-DH5)	Frequency MHz = 2402.00000
MIMO Mode = SISO	Active Port = 1

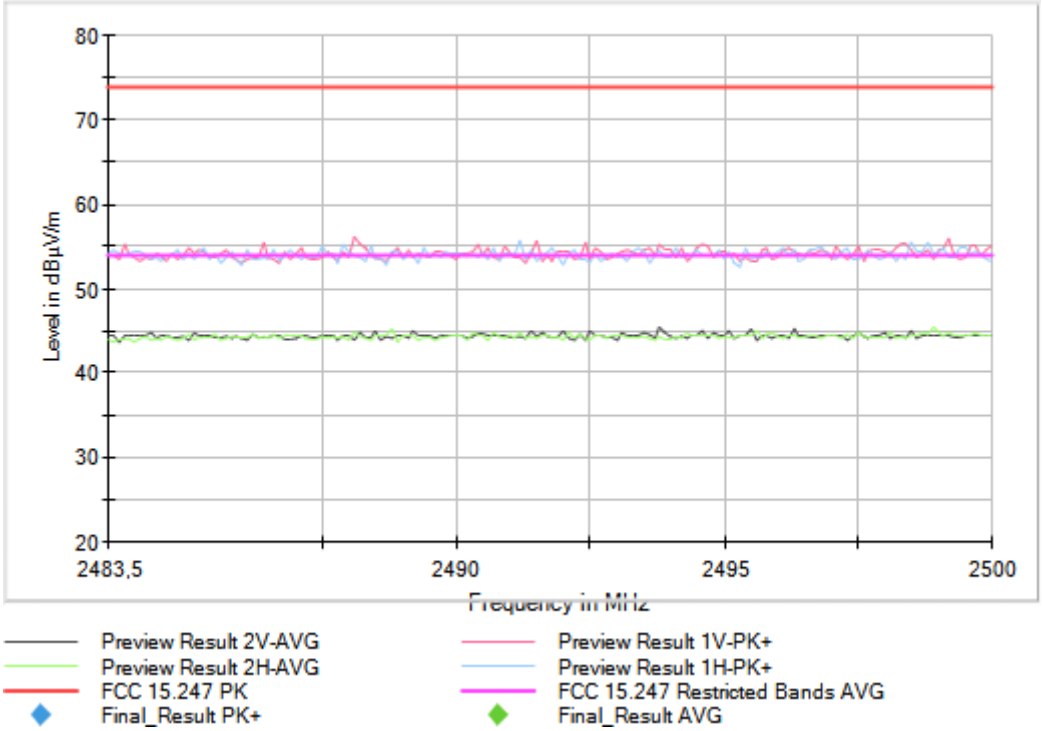
Images:



Full Spectrum



Full Spectrum

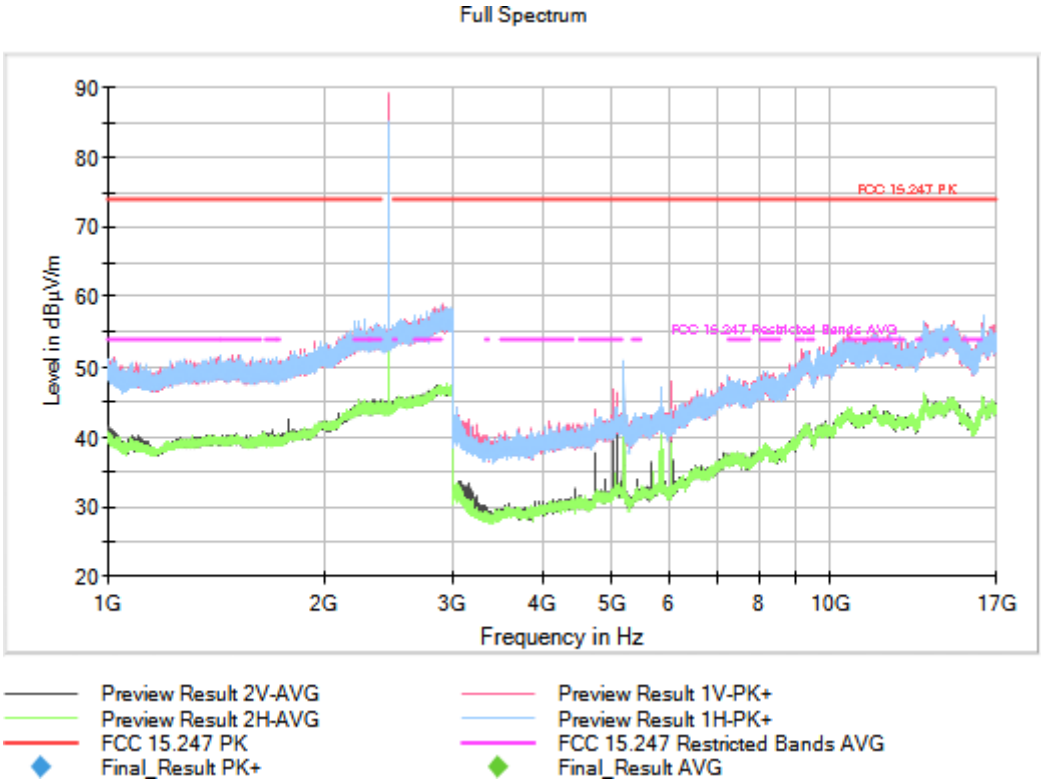


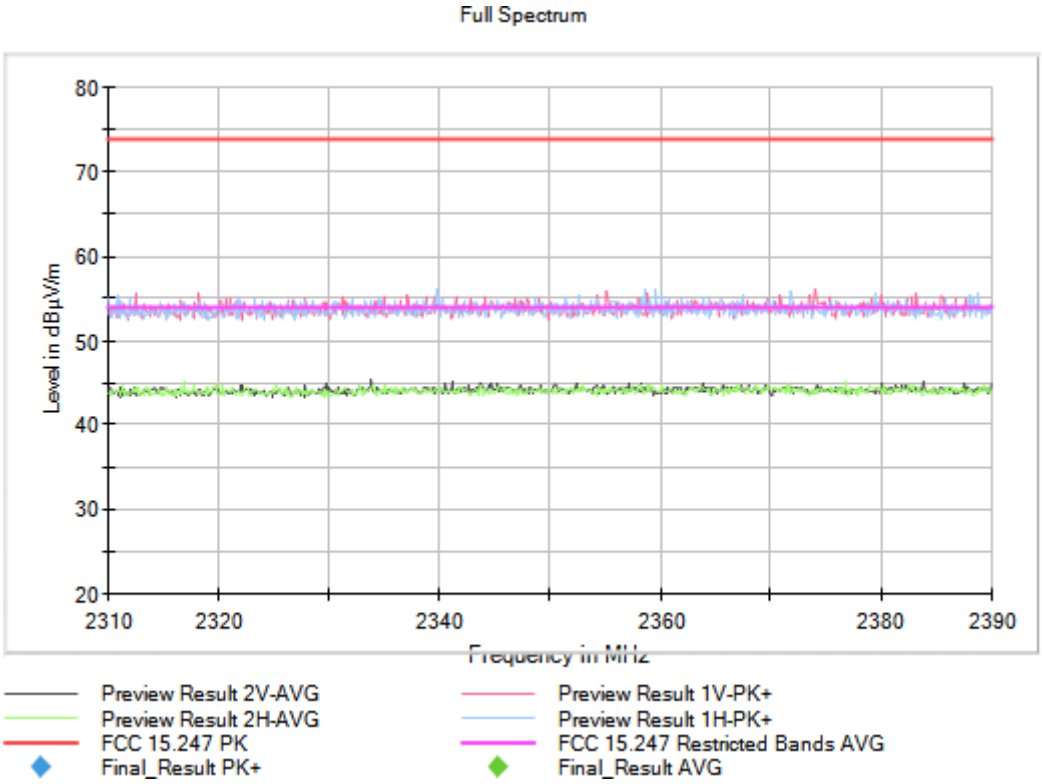
Frequency Range GHz = [1, 17] Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)

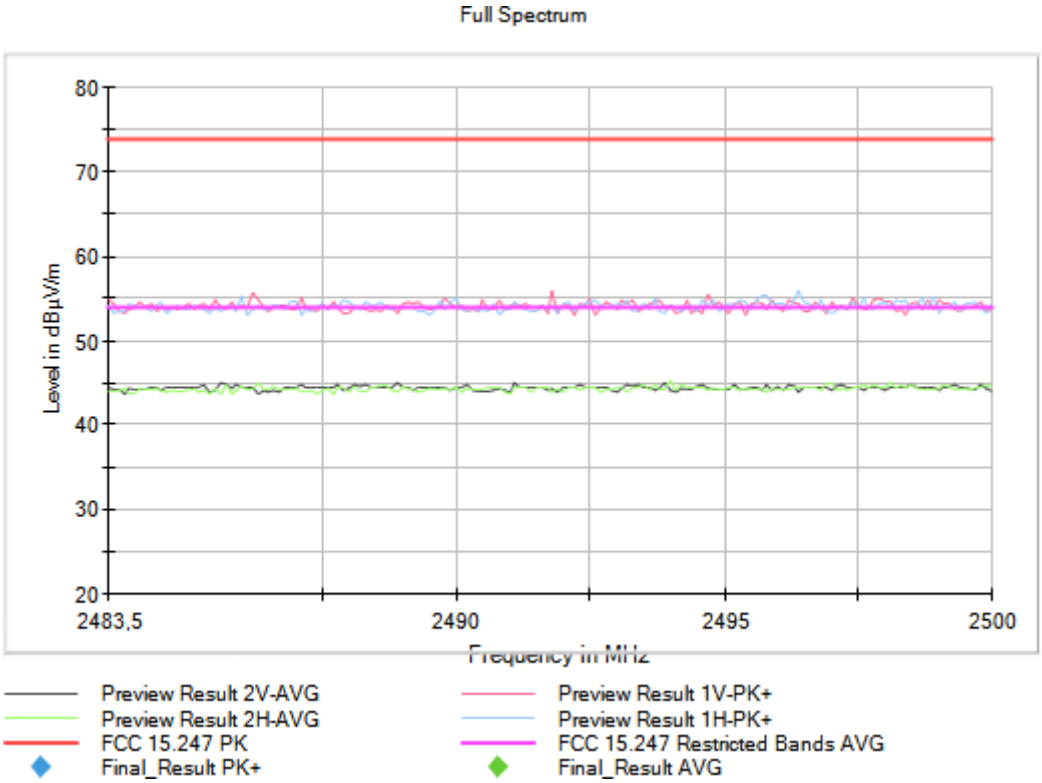
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2441.00000

MIMO Mode = SISO Active Port = 1

Images:





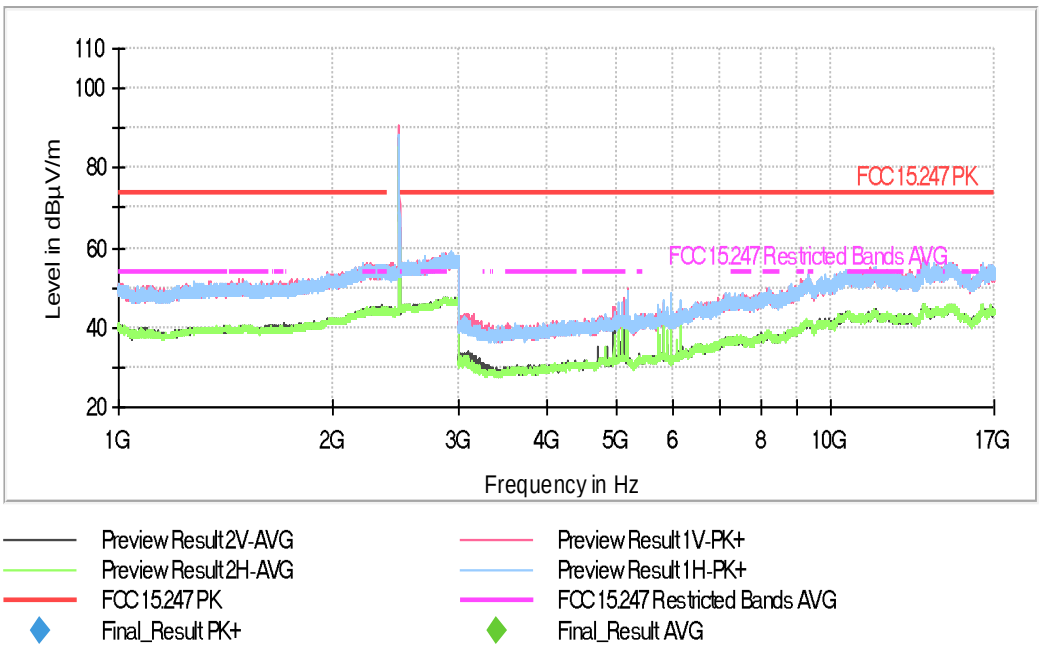

Full Spectrum
80
70
60
50
40
30
20
Level in dBµV/m
2483,5
2490
2495
2500
Frequency in MHz
Preview Result 2V-AVG
Preview Result 2H-AVG
FCC 15.247 PK
Final_Result PK+
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC 15.247 Restricted Bands AVG
Final_Result AVG

Frequency Range GHz = [1, 17] Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)

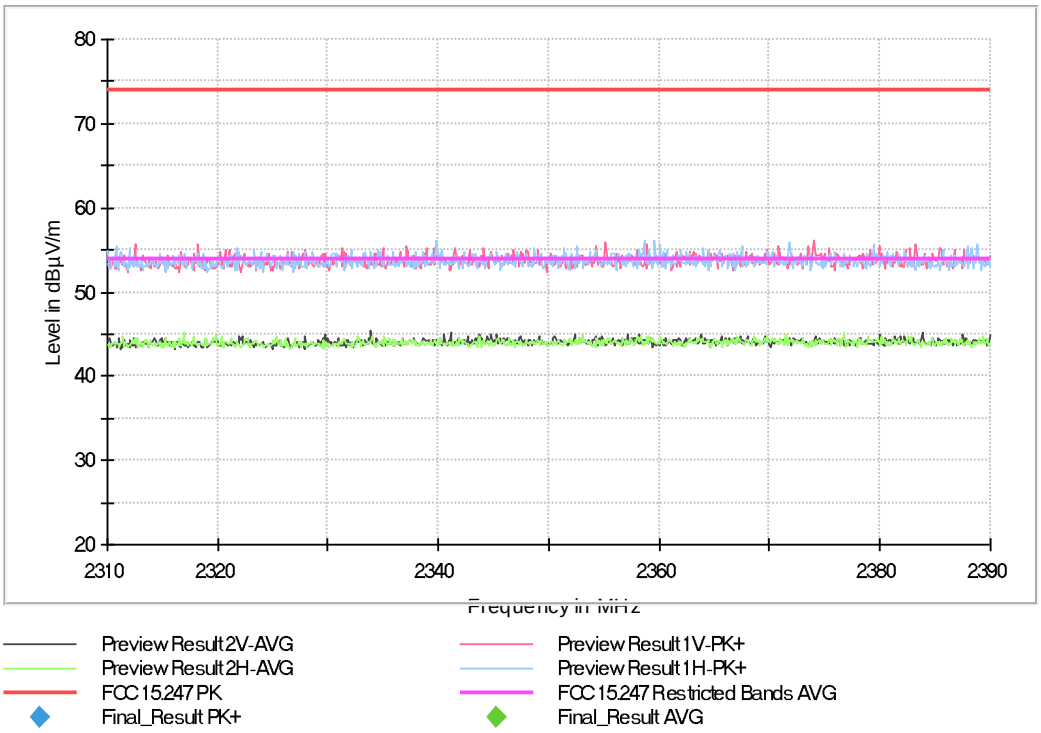
Modulation = BT (8DPSK 3-DH5) Frequency MHz = 2480.00000

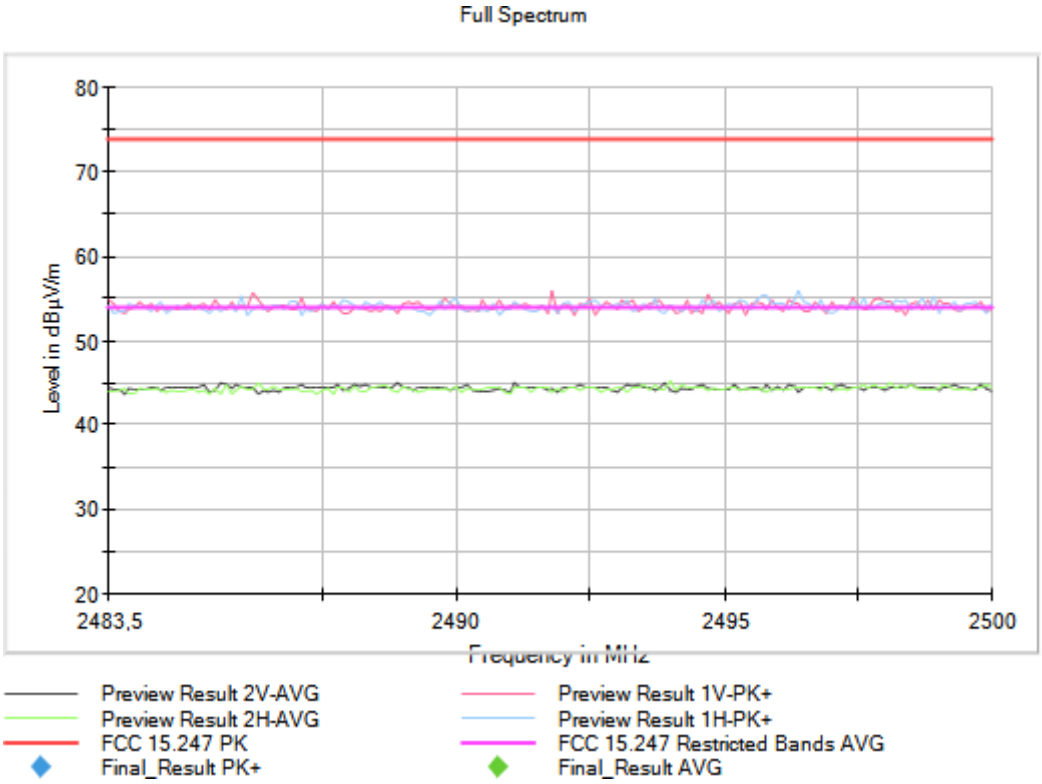
MIMO Mode = SISO Active Port = 1

Images:



Full Spectrum





Tables:

Spectrum Analyzer Parameters

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

Frequency range 17GHz - 26GHz

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

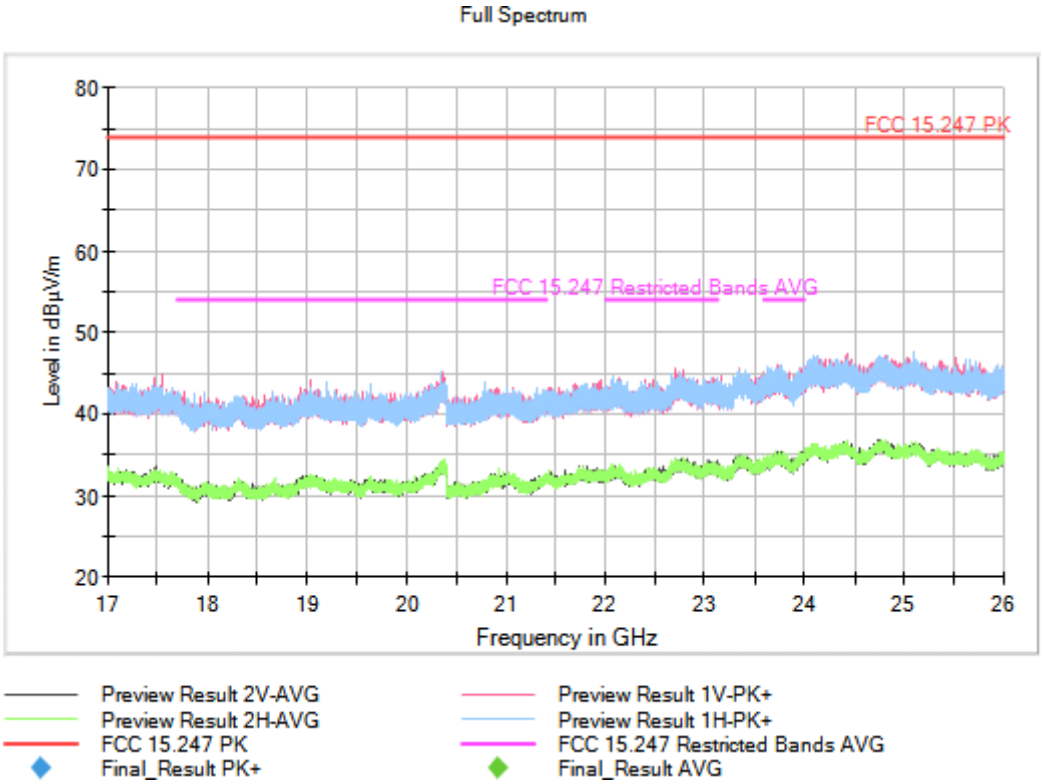
No spurious frequencies detected at less than 20 dB below the limit.

Verdict

Pass

Frequency Range GHz = [17, 26]	Equipment Type = Frequency Hopping Spread Spectrum systems (DSS)
Modulation = The spurious frequencies detected do not depend on the modulation.	Frequency MHz = The spurious frequencies detected do not depend on operating channel.
MIMO Mode = SISO	Active Port = 1

Images:



Tables:

Spectrum Analyzer Parameters

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

Appendix C: Test results. WLAN 2.4 GHz

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FCC 47 CFR PART 15.247 / RSS-247 197

Occupied Channel Bandwidth 99% *197*
RSS-247 5.2 (a) / FCC 15.247 (a) (2) 6 dB Bandwidth *224*
RSS-247 5.2 (b) / FCC 15.247 (e) Power spectral density *246*
RSS-247 5.4 (d) / FCC 15.247 (b) (3) Maximum Peak Conducted output power *278*
RSS-247 5.5 / FCC 15.247 (d) Band-edge emissions compliance (Transmitter) *280*
RSS-247 5.5 / FCC 15.247 (d) Emission limitations radiated (Transmitter) *321*

TEST CONDITIONS

(*): Data provided by the client.

POWER SUPPLY (*):

Vnominal:	12 Vdc
Type of Power Supply:	Battery

ANTENNA (*):

Technology	Antenna Gain	Type
WLAN 2G4:	+0.1 dBi	External

TEST FREQUENCIES (*):

Modulation	Data rates	Low Channel	Middle Channel	High Channel	Ch 12	Ch 13
802.11b:	1 Mbit/s	2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
802.11g:	6 Mbit/s	2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
802.11n:	HT20 MCS0 6.5 Mbit/s	2412 MHz	2437 MHz	2462 MHz	2467 MHz	2472 MHz
802.11ax20:	OFDM – SU Full-channel allocation	2412 MHz	2437 MHz *	2462 MHz	2467 MHz **	2472 MHz
802.11ax20:	OFDMA – RU Subcarrier allocation	2412 MHz	2437 MHz	2462 MHz	2467 MHz **	2472 MHz

** It is not possible to configure 2437 MHz channels for AX SU modulation.*
** It is not possible to configure 2467 MHz channels for AX modulations.*

The measured RU offset is indicated in the following table:

Offset ChLow:	0
Offset ChMid:	4
Offset ChHigh:	8

POWER ADJUSTMENT (*): 11 dBm.

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

CONDUCTED MEASUREMENTS:

The equipment under test was set up in a shielded room and it is connected to the TS8997 using a low loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.

RADIATED MEASUREMENTS:

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (Bilog antenna for the range between 30 MHz to 1000 MHz and 1 GHz-17 GHz Double ridge horn antenna) is situated at a distance of 3 m and at a distance of 1.5 m for the frequency range 17 GHz-26 GHz (17 GHz-40 GHz horn antenna).

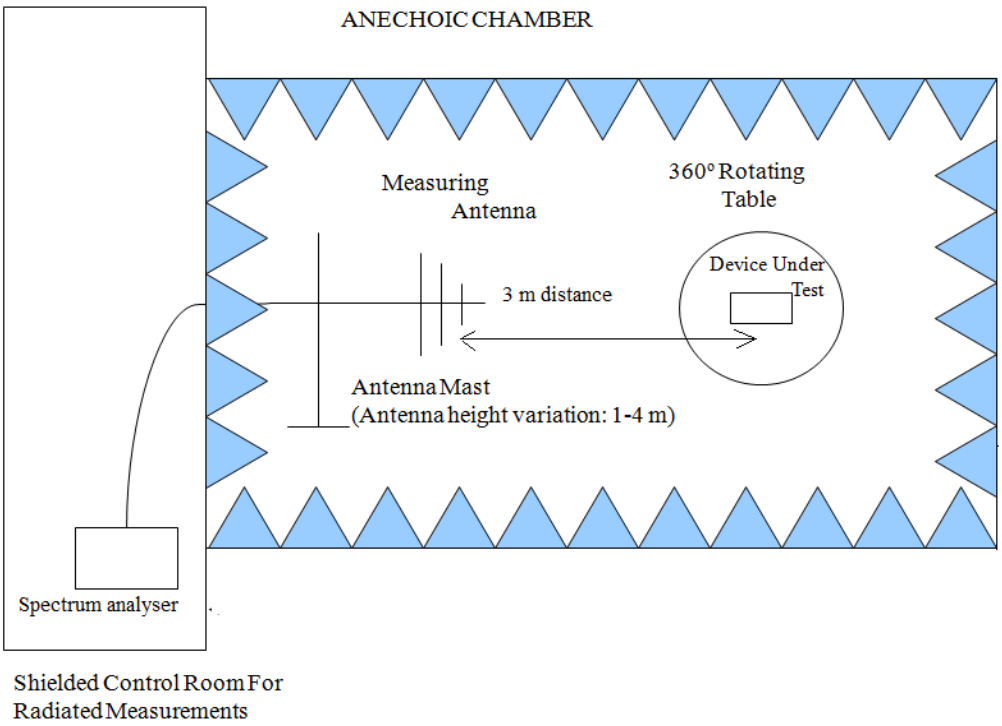
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height (Bilog antenna and Double ridge horn antenna) was varied from 1 to 4 meters to find the maximum radiated emission.

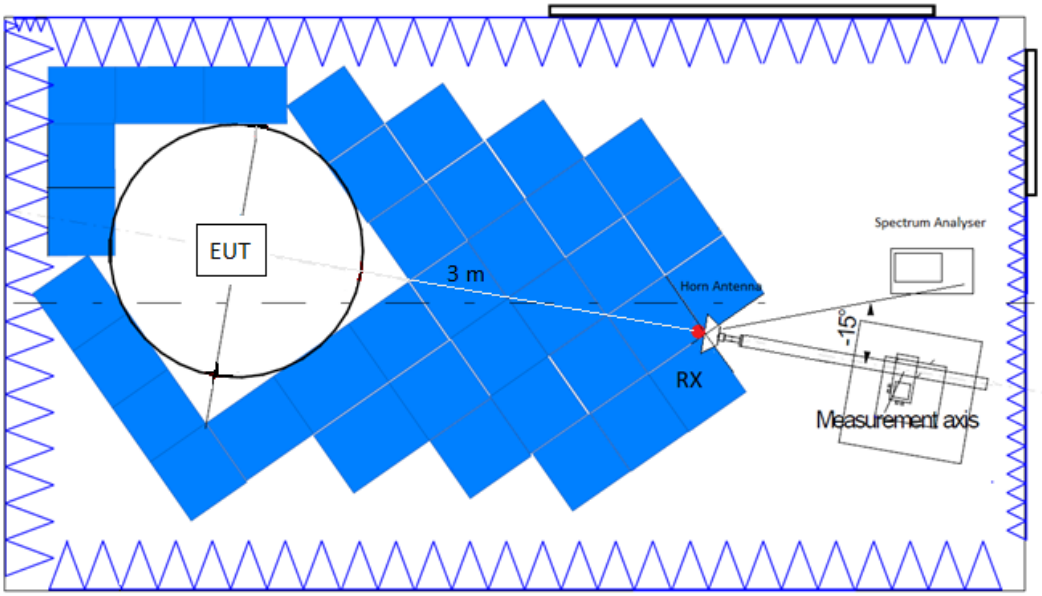
Measurements were made in both horizontal and vertical planes of polarization.

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

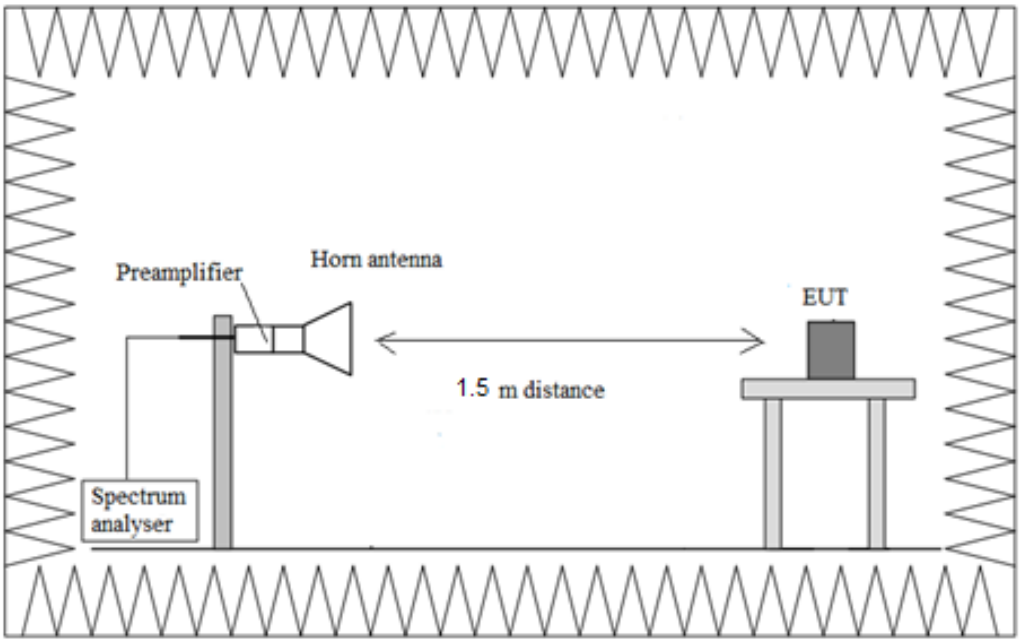
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup f > 17 GHz:



TEST CASES DETAILS

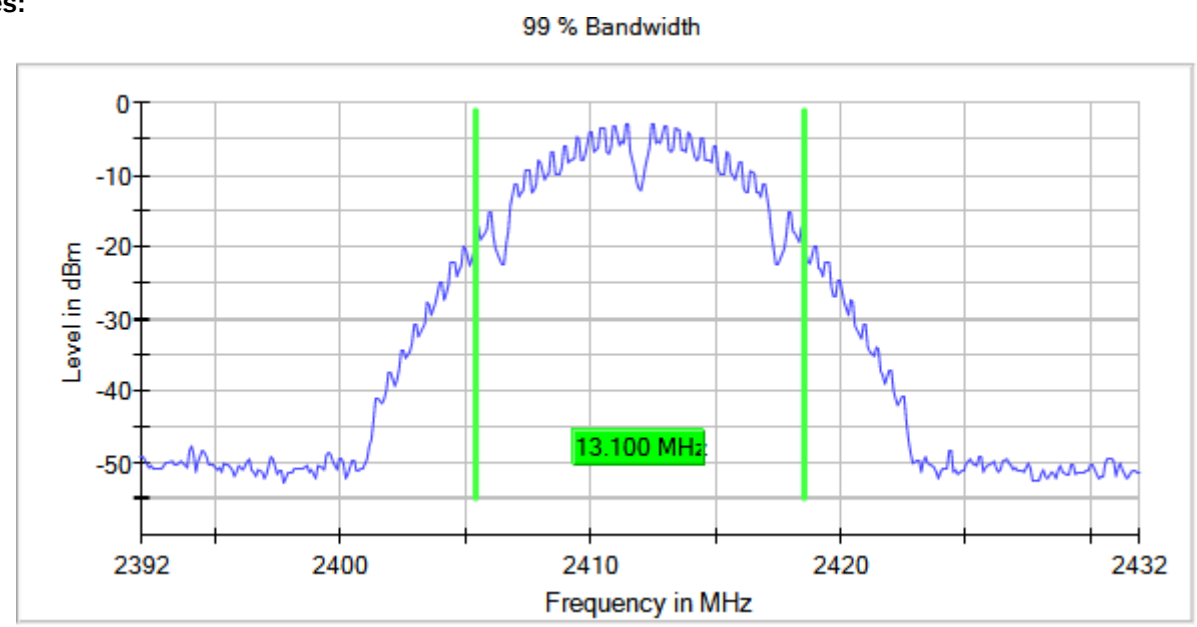
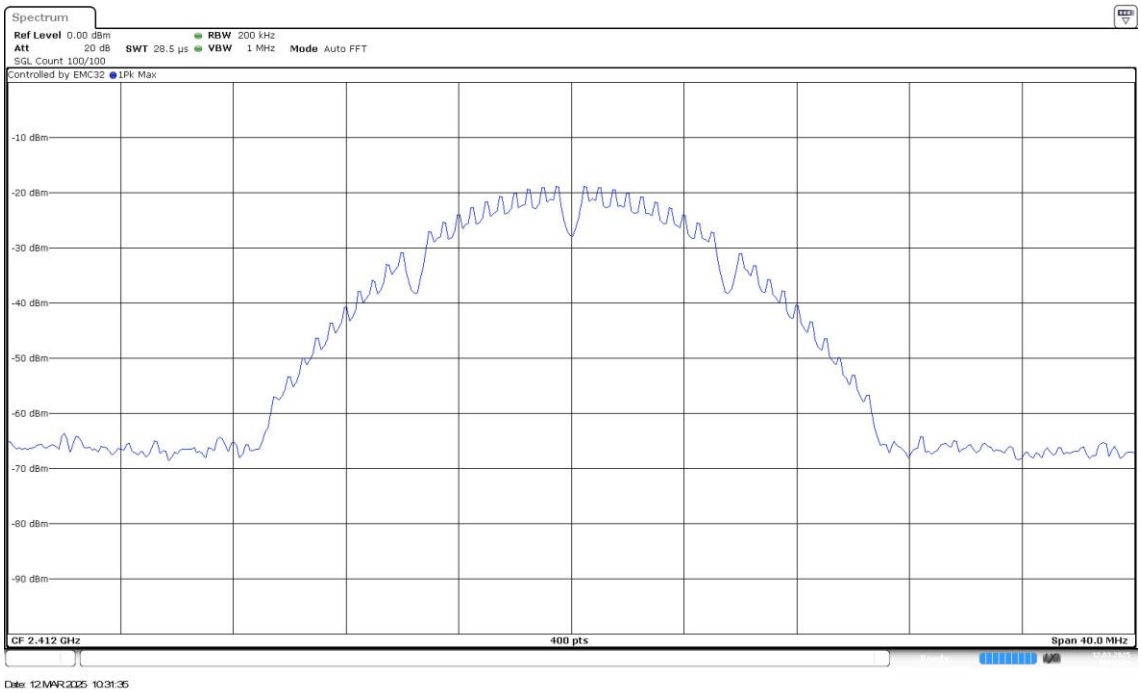
FCC 47 CFR Part 15.247 / RSS-247

Occupied Channel Bandwidth 99%

Modulation: 802.11b (DSSS 1 Mbit/s)

Equipment	BW (MHz)	Freq (MHz)	Port	Occ Ch BW (MHz)
Digital Transmission System (DTS)	20	2412.00000	1	13.100
		2437.00000		13.100
		2462.00000		13.100
		2467.00000		13.000
		2472.00000		13.000

Attachments

Equipment Type = Digital Transmission System (DTS)	Bandwidth MHz = 20
Modulation = 802.11b (DSSS 1 Mbit/s)	Frequency MHz = 2412.00000
MIMO Mode = SISO	Active Port = 1

Images: