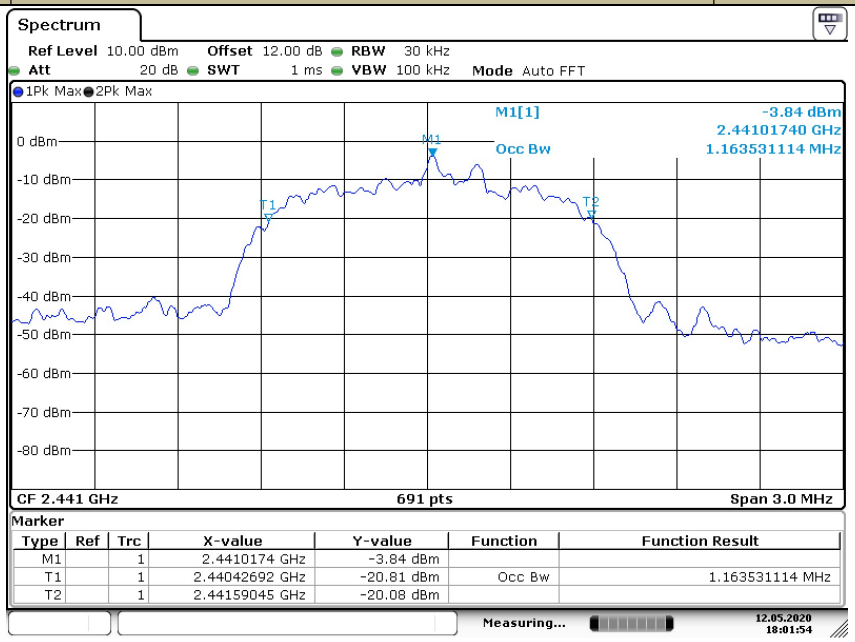
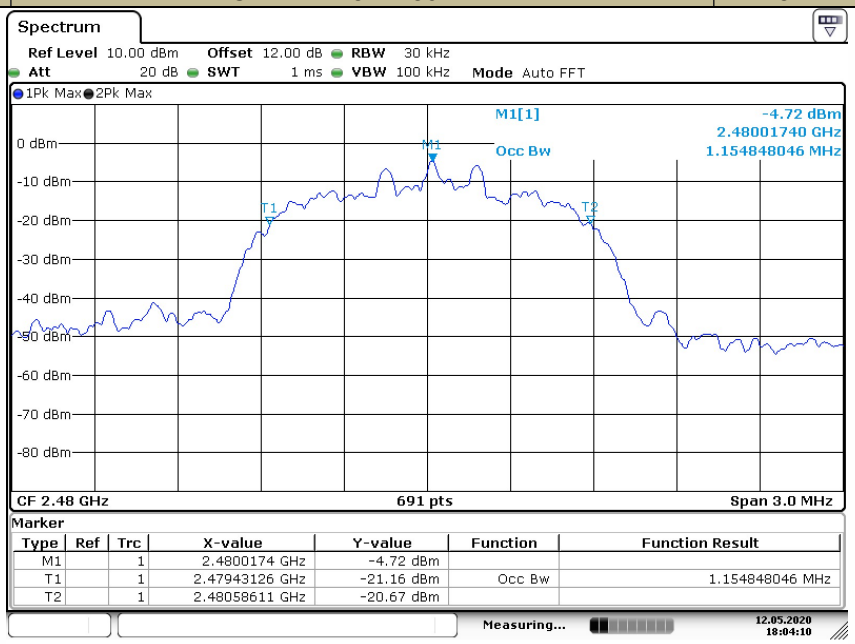
Test Model	99% Bandwidth	
	Channel 39: 2441MHz	8DPSK Modulation



Date: 12.MAY.2020 18:01:54

Test Model	99% Bandwidth	
	Channel 78: 2480MHz	8DPSK Modulation



Date: 12.MAY.2020 18:04:10

9.2 CARRIER FREQUENCY SEPARATION

9.2.1 Applicable Standard

According to FCC Part 15.247(a)(1), RSS-247 Clause 5.1(b), 558074 D01 15.247 Meas Guidance V05r02

9.2.2 Conformance Limit

Frequency hopping systems operating in the 2400-2483.5MHz band shall have hoppingchannel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth ofthe hopping channel, whichever is greater.
In case of an output power less than 125mW,the frequency hopping system may have channels separated by a minimum of 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

9.2.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.2.4 Test Procedure

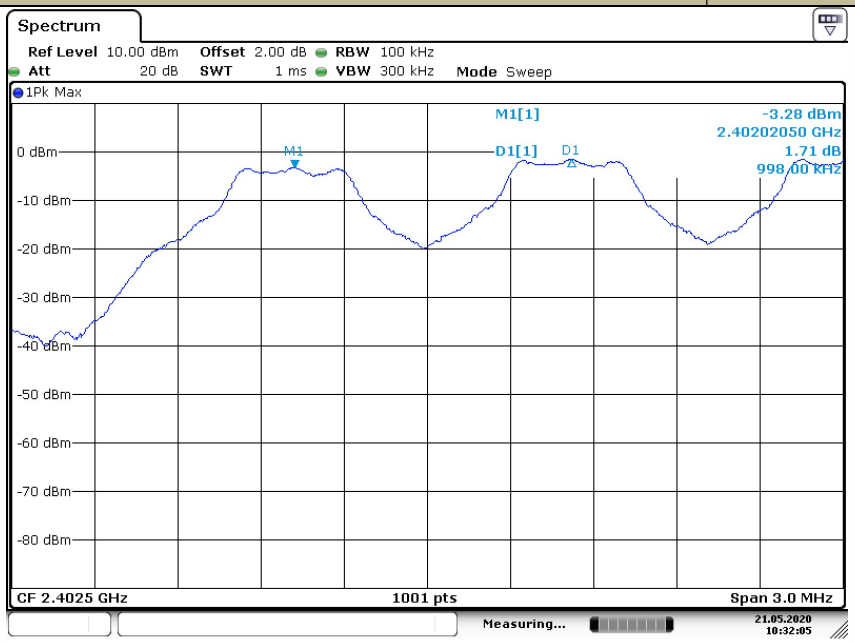
■ According to FCC Part15.247(a)(1) and RSS-247 Clause 5.1(b)
The EUT must have its hopping function enabled. Use the following spectrum analyzersettings:
Set the RBW =100kHz. Set VBW =300kHz.
Set the span = wide enough to capture the peaks of two adjacent channels
Set Sweep time = auto couple.
Set Detector = peak. Set Trace mode = max hold.
Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

Test Results

Temperature:	26℃	Test Date:	May 21, 2020
Humidity:	47 %	Test By:	XW

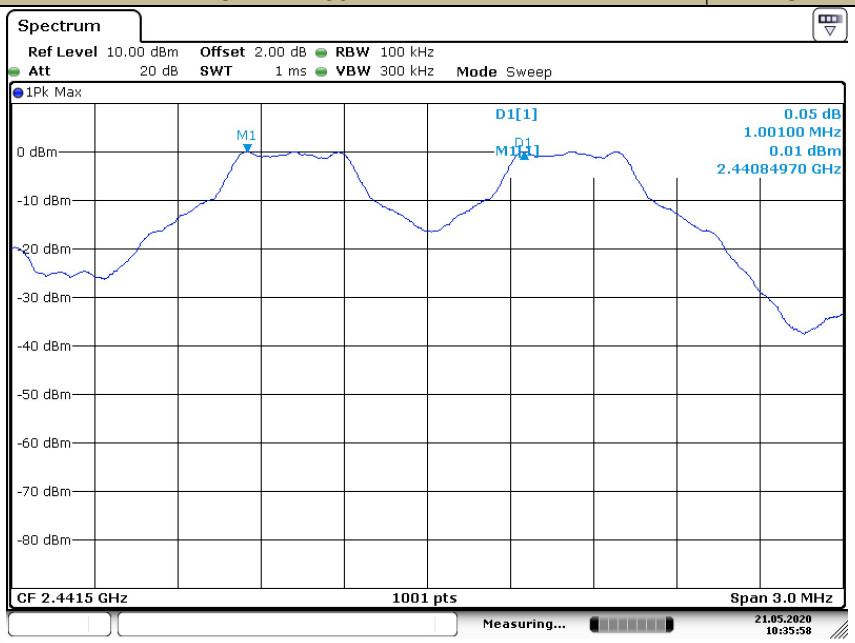
Modulation Mode	Channel Number	Channel Frequency (MHz)	Measurement Bandwidth (kHz)	Limit (kHz)	Verdict
GFSK	0	2402	998.00	>564.40	PASS
	39	2441	1001.00	>593.33	PASS
	78	2480	1004.00	>549.93	PASS
pi/4-DQPSK	0	2402	1007.00	>813.33	PASS
	39	2441	1004.00	>781.47	PASS
	78	2480	1007.00	>839.33	PASS
8DPSK	0	2402	1001.00	>827.80	PASS
	39	2441	1004.00	>836.47	PASS
	78	2480	1004.00	>836.47	PASS
Note: Limit = 20dB bandwidth * 2/3, if it is greater than 25kHz and the output power is less than 125mW (21dBm).					

Test Model	Carrier Frequency Separation	
	Channel 0: 2402MHz	GFSK Modulation



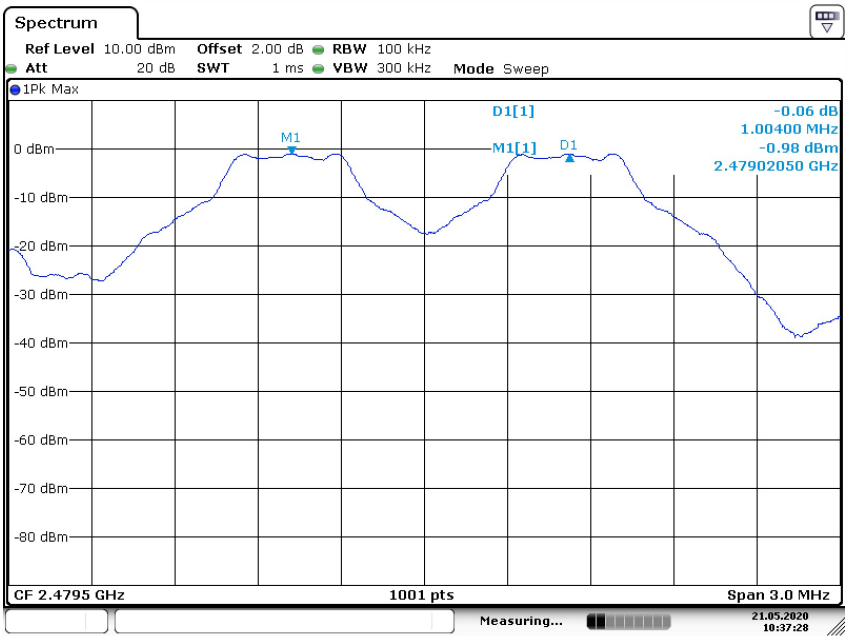
Date: 21.MAY.2020 10:32:06

Test Model	Carrier Frequency Separation	
	Channel 39: 2441MHz	GFSK Modulation



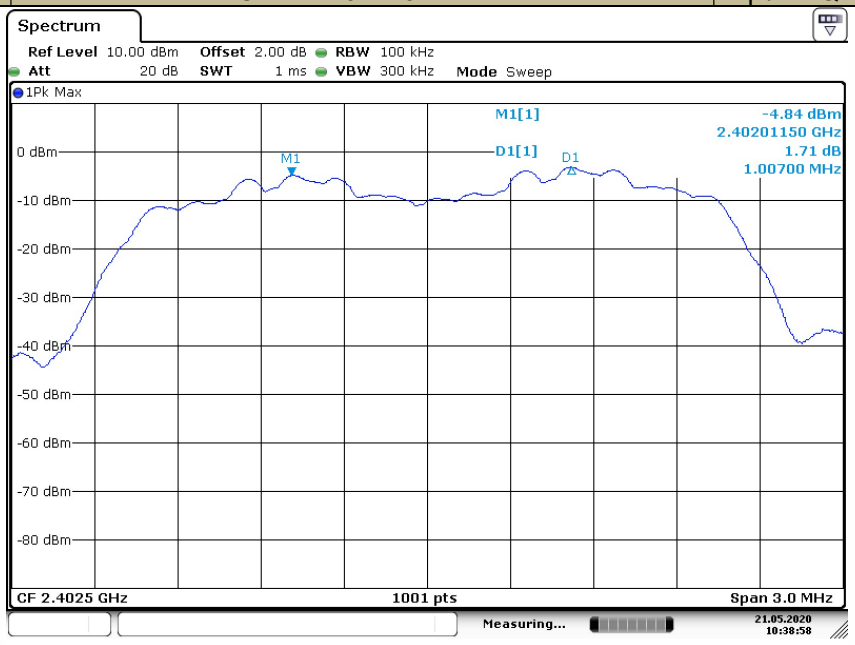
Date: 21.MAY.2020 10:35:58

Test Model	Carrier Frequency Separation	
	Channel 78: 2480MHz	GFSK Modulation



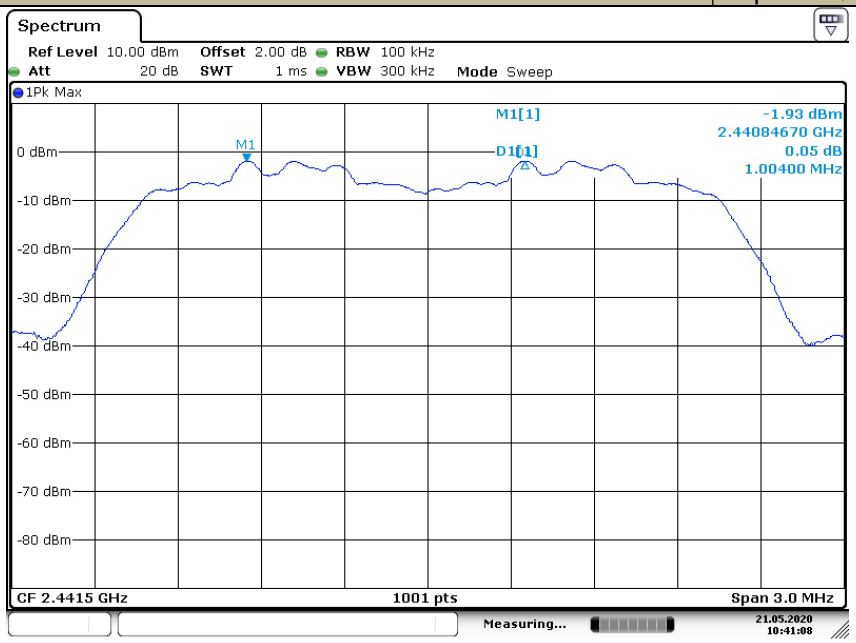
Date: 21.MAY.2020 10:37:28

Test Model	Carrier Frequency Separation	
	Channel 0: 2402MHz	pi/4-DQPSK Modulation



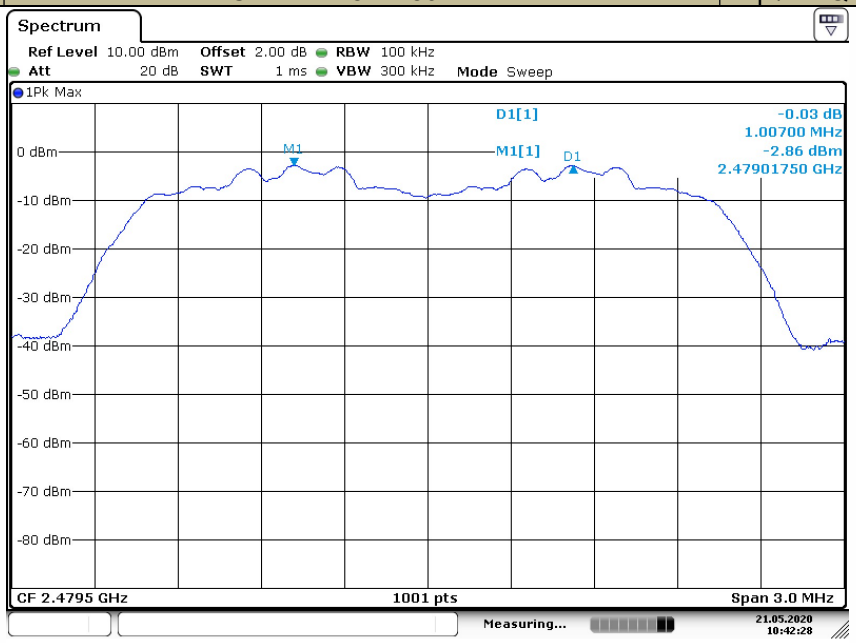
Date: 21.MAY.2020 10:38:58

Test Model	Carrier Frequency Separation	
	Channel 39: 2441MHz	pi/4-DQPSK Modulation



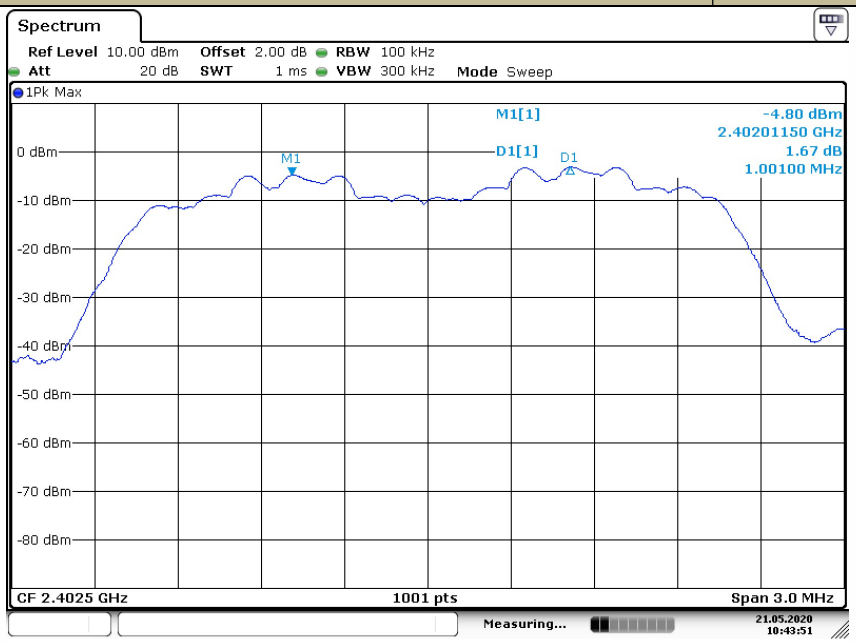
Date: 21.MAY.2020 10:41:07

Test Model	Carrier Frequency Separation	
	Channel 78: 2480MHz	pi/4-DQPSK Modulation



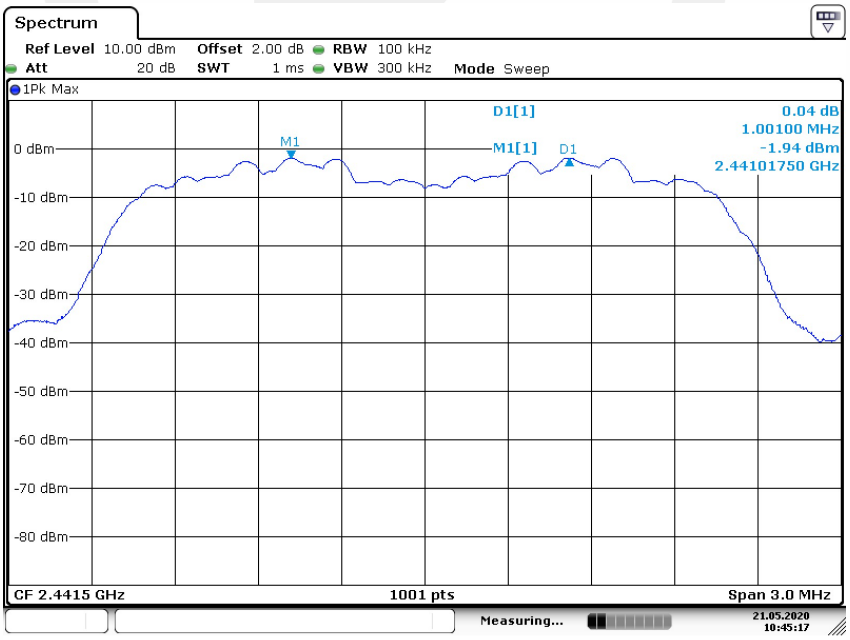
Date: 21.MAY.2020 10:42:28

Test Model	Carrier Frequency Separation	
	Channel 0: 2402MHz	8DPSK Modulation



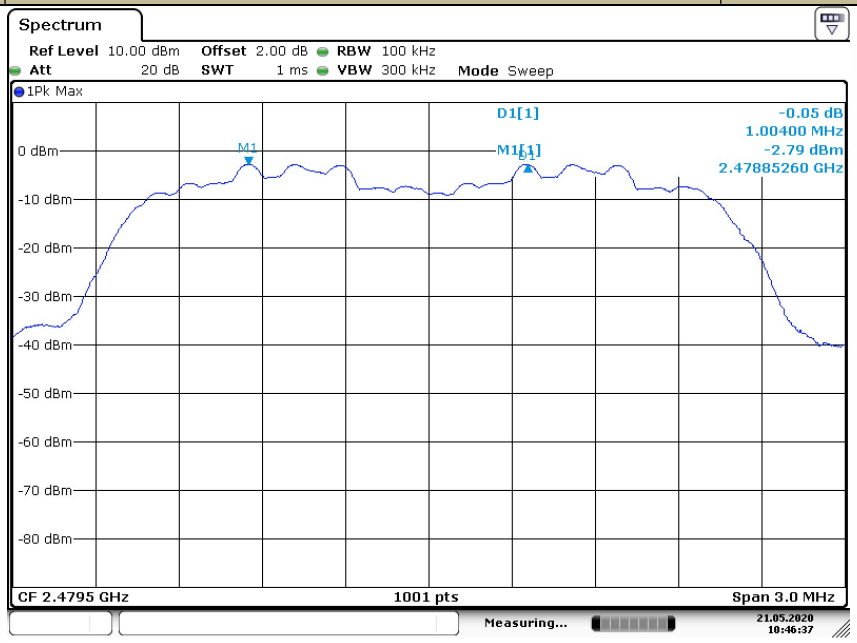
Date: 21.MAY.2020 10:43:52

Test Model	Carrier Frequency Separation	
	Channel 39: 2441MHz	8DPSK Modulation



Date: 21.MAY.2020 10:45:17

Test Model	Carrier Frequency Separation	
	Channel 78: 2480MHz	8DPSK Modulation



9.3 NUMBER OF HOPPING FREQUENCIES

9.3.1 Applicable Standard

According to FCC Part 15.247(a)(1) (iii), RSS-247 Clause 5.1(d), 558074 D01 15.247 Meas Guidance V05r02

9.3.2 Conformance Limit

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

9.3.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.3.4 Test Procedure

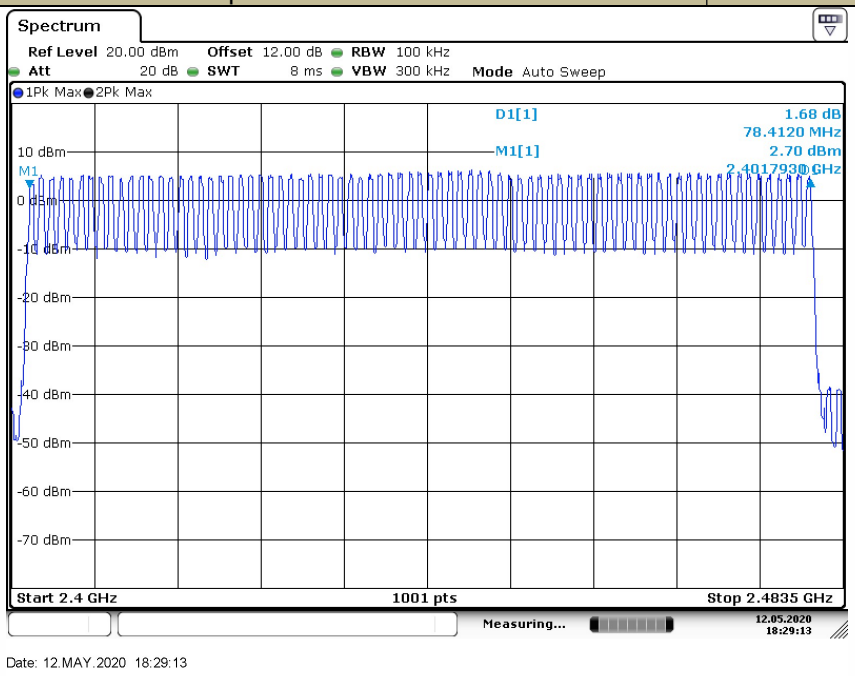
■ According to FCC Part15.247(a)(1)(iii) and RSS-247 Clause 5.1(d)
The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = the frequency band of operation
RBW = 100kHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize. It may prove necessary to break the span up to sections, inorder to clearly show all of the hopping frequencies.

Test Results

Temperature:	25℃	Test Date:	May 12, 2020
Humidity:	45 %	Test By:	XW

Hopping Channel Frequency Range	Quantity of Hopping Channel	Quantity of Hopping Channel limit
2402-2480 (GFSK)	79	＞15
Note: Both BR & EDR mode has same result .		

Test Model	Number Of Hopping Frequencies	
	Span:2400-2483.5MHz	GFSK



9.4 AVERAGE TIME OF OCCUPANCY (DWELL TIME)

9.4.1 Applicable Standard

According to FCC Part 15.247(a)(1)(iii), RSS-247 Clause 5.1(d), 558074 D01 15.247 Meas Guidance V05r02

9.4.2 Conformance Limit

For frequency hopping systems operating in the 2400-2483.5MHz band, the averagetime of occupancy on any channel shall not be greater than 0.4s within a period of 0.4smultiplied by the number of hopping channels employed.

9.4.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

9.4.4 Test Procedure

■ According to FCC Part15.247(a)(1)(iii) and RSS-247 Clause 5.1(d)
The EUT must have its hopping function enabled. Use the following spectrum analyzersettings:
Span = zero span, centered on a hopping channel
RBW = 1 MHz
VBW ≥ RBW
Sweep = as necessary to capture the entire dwell time per hopping channel
Detector function = peak
Trace = max hold
If possible, use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphsof this Section.

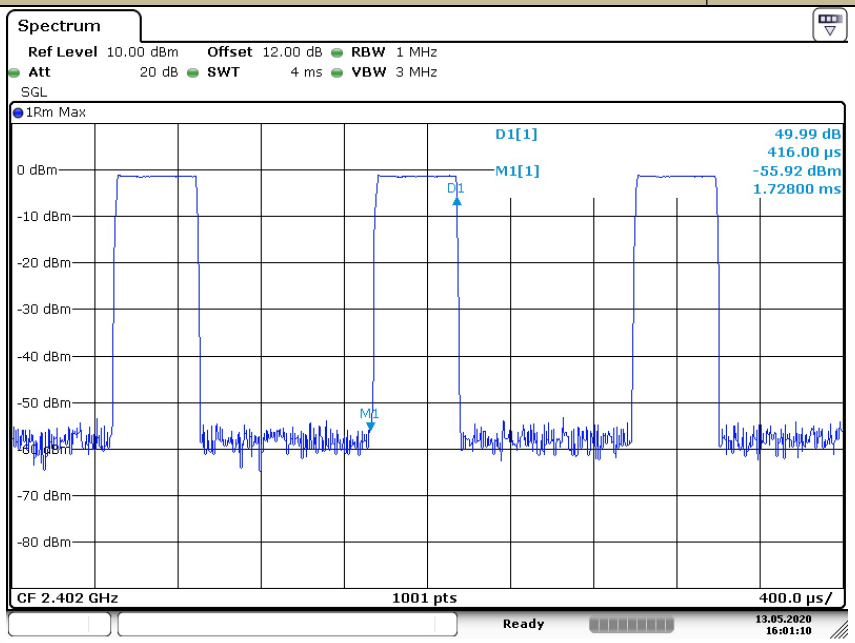
9.4.5 Test Results

Temperature:	25℃	Test Date:	May 12, 2020
Humidity:	45 %	Test By:	XW

Modulation Mode	Channel Number	Packet type	Pluse width (ms)	DwellTime (ms)	Limit (ms)	Verdict
GFSK	0	DH1	0.416	133.120	<400	PASS
	0	DH3	1.650	264.000	<400	PASS
	0	DH5	2.904	309.760	<400	PASS

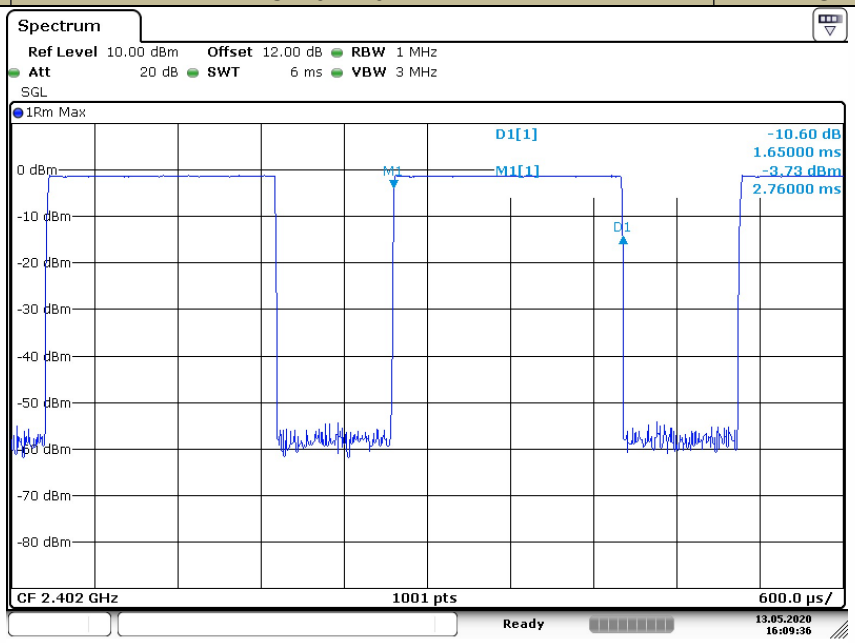
Note1: DwellTime(DH1)=PW*(1600/2/79)*31.6
DwellTime(DH3)=PW*(1600/4/79)*31.6
DwellTime(DH5)=PW*(1600/6/79)*31.6
Note2: Bluetooth (GFSK, pi/4-DQPSK, 8DPSK)mode have been tested, and the worst results has been recorded on the follow page.

Test Model	Average Time Of Occupancy (Dwell Time)	
	CH 0: 2402MHz	GFSK DH1



Date: 13.MAY.2020 16:01:10

Test Model	Average Time Of Occupancy (Dwell Time)	
	CH 0: 2402MHz	GFSK DH3



Date: 13.MAY.2020 16:09:36