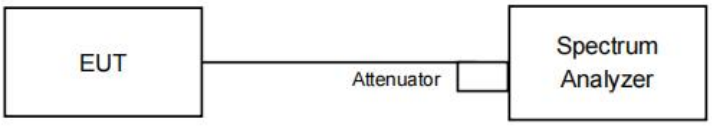
5.5 Carrier Frequencies Separation

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Test Setup:	 Remark: Offset=Cable loss+ attenuation factor.
Limit:	2/3 of the 20dB bandwidth
	Remark: the transmission power is less than 0.125W.
Exploratory Test Mode:	Hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

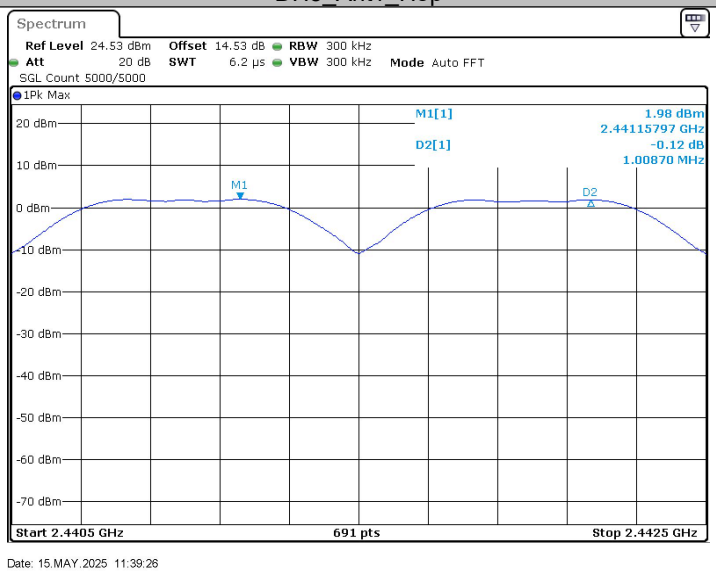
Measurement Data

TestMode	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Hop	1.009	≥0.633	PASS
2DH5	Hop	1.026	≥0.827	PASS
3DH5	Hop	1	≥0.800	PASS

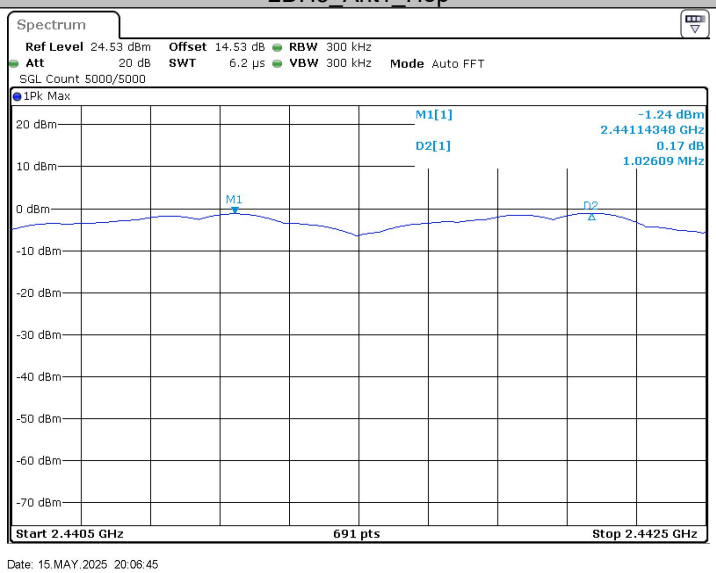
Mode	20dB bandwidth (MHz) (worse case)	Limit (MHz) (Carrier Frequencies Separation)
GFSK	0.95	≥0.633
π/4DQPSK	1.24	≥0.827
8DPSK	1.20	≥0.800

Test plot as follows:

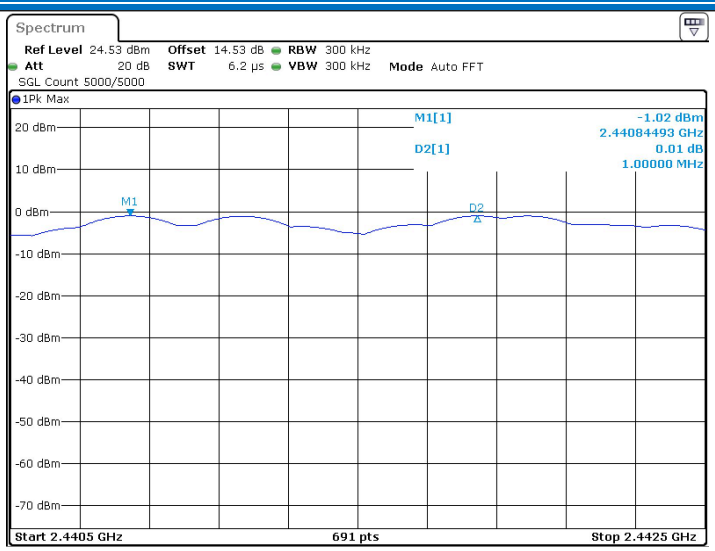
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



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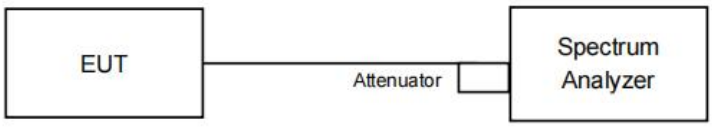
5.6 Hopping Channel Number

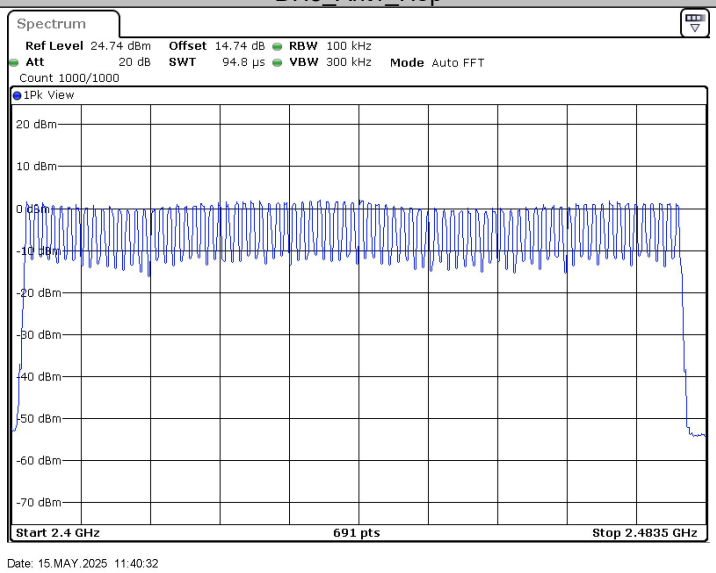
Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Test Setup:	 *Remark: Offset=Cable loss+ attenuation factor.*
Limit:	At least 15 channels
Exploratory Test Mode:	hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

Measurement Data

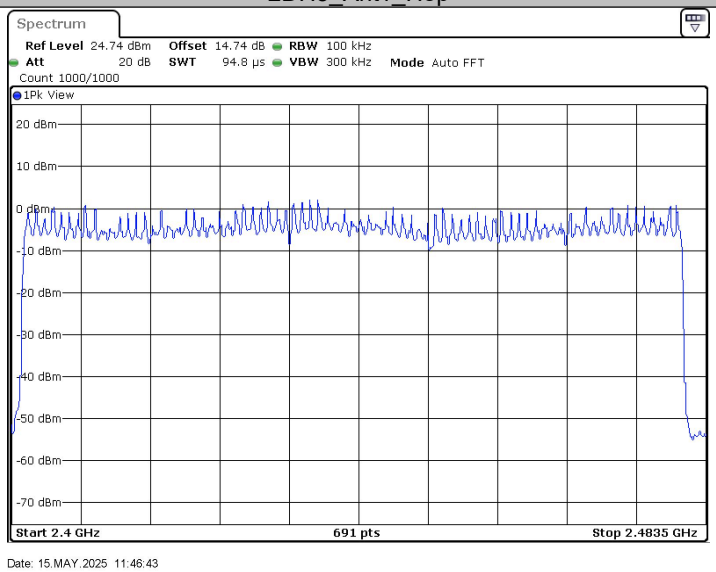
Mode	Hopping channel numbers	Limit
GFSK	79	≥15
π/4DQPSK	79	≥15
8DPSK	79	≥15

Test plot as follows:

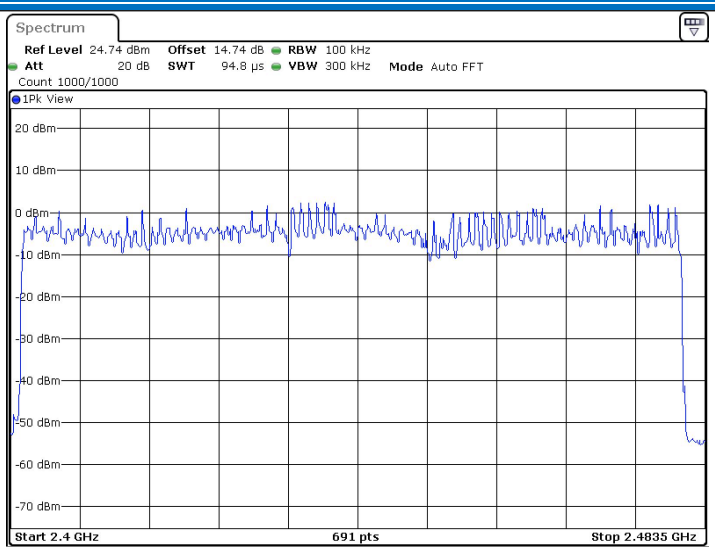
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



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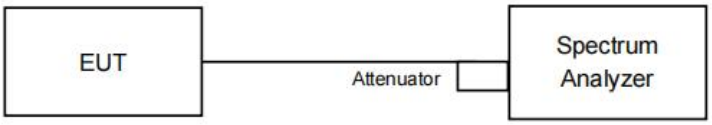
5.7 Dwell Time

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Test Setup:	 *Remark: Offset=Cable loss+ attenuation factor.*
Test Mode:	Hopping transmitting with all kind of modulation and all kind of data type.
Limit:	0.4 Second
Test Results:	Pass

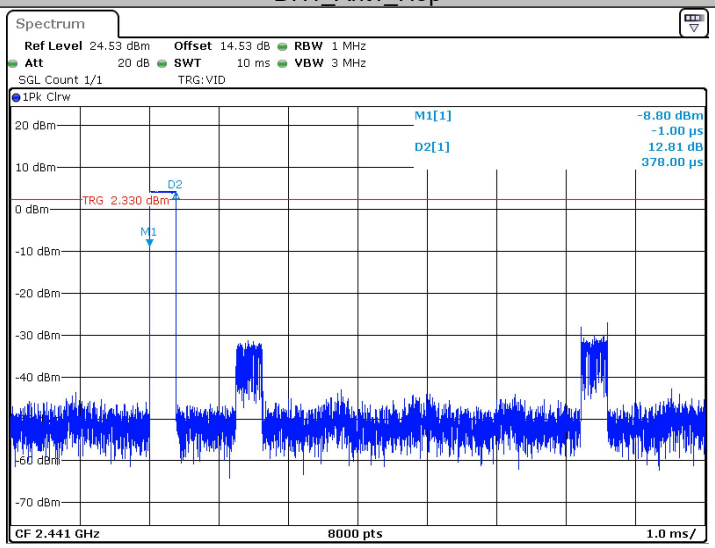
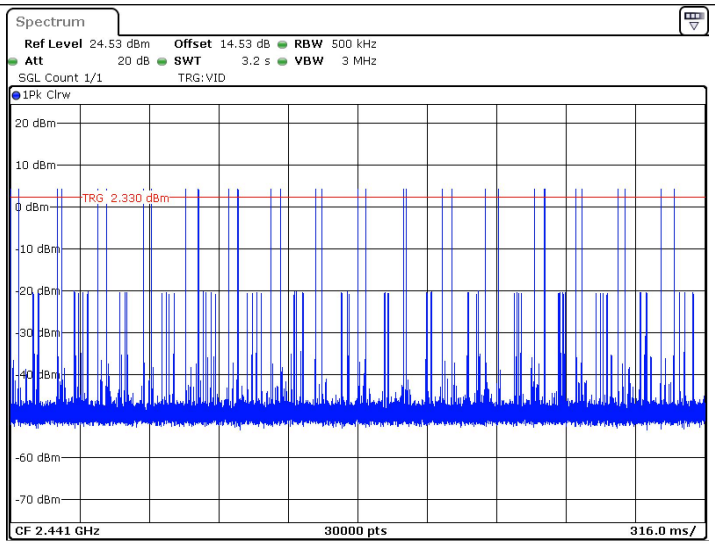
Measurement Data

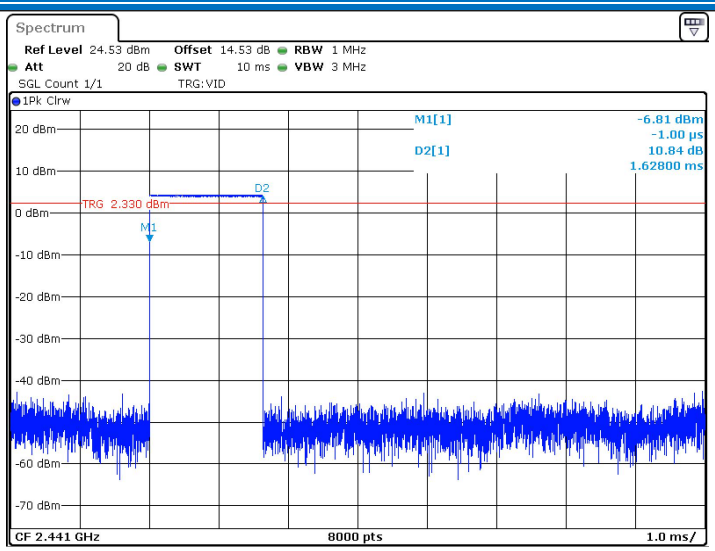
TestMode	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Hop	0.378	320	0.121	≤0.4	PASS
DH3	Hop	1.628	140	0.228	≤0.4	PASS
DH5	Hop	2.868	110	0.315	≤0.4	PASS
2DH1	Hop	0.388	320	0.124	≤0.4	PASS
2DH3	Hop	1.631	210	0.343	≤0.4	PASS
2DH5	Hop	2.873	60	0.172	≤0.4	PASS
3DH1	Hop	0.388	320	0.124	≤0.4	PASS
3DH3	Hop	1.630	180	0.293	≤0.4	PASS
3DH5	Hop	2.874	70	0.201	≤0.4	PASS

Remark:

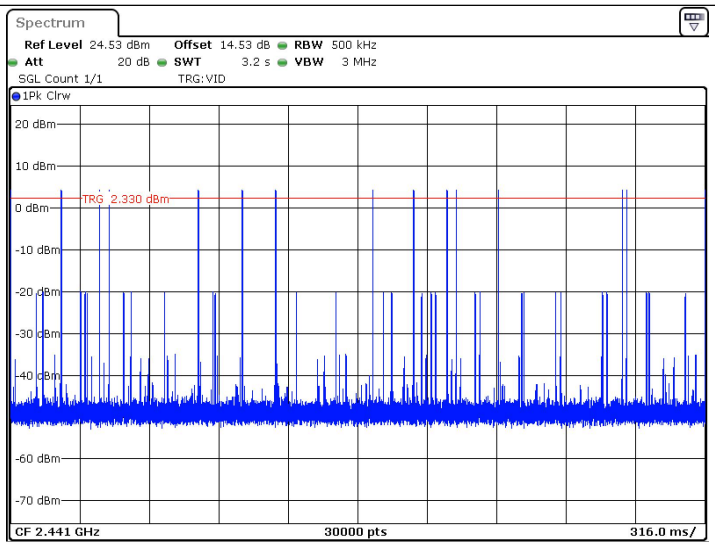
The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

Test plot as follows:

DH1_Ant1_Hop


DH3_Ant1_Hop

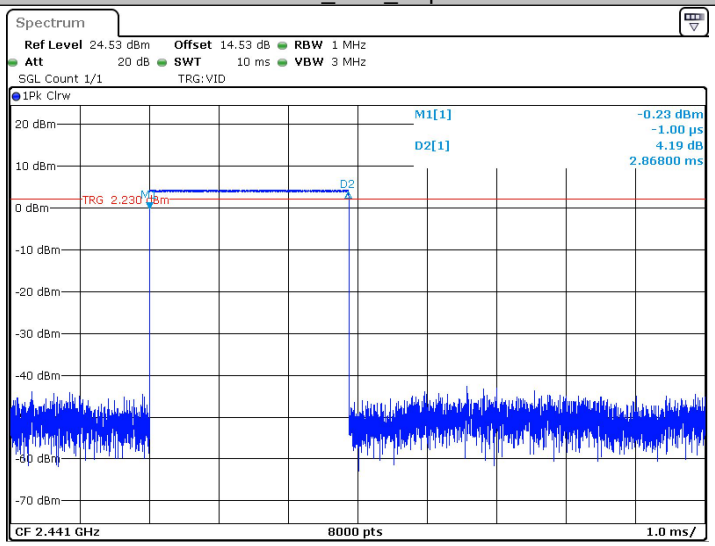


Date: 16.MAY.2025 20:28:55

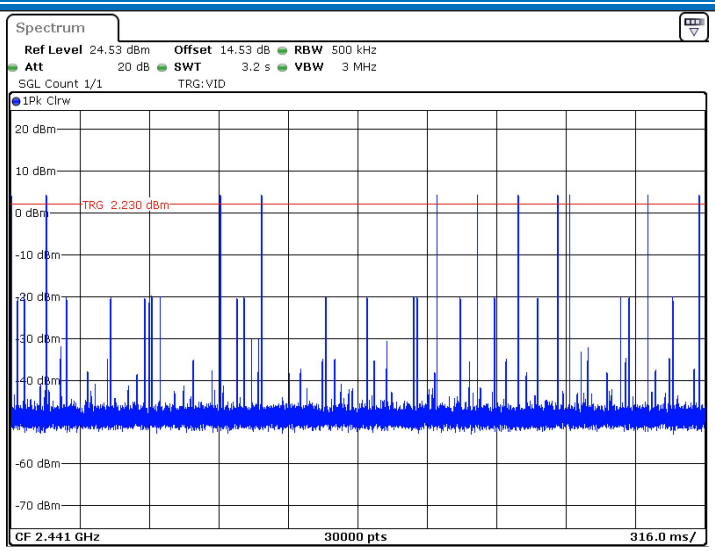


Date: 16.MAY.2025 20:29:00

DH5_Ant1_Hop

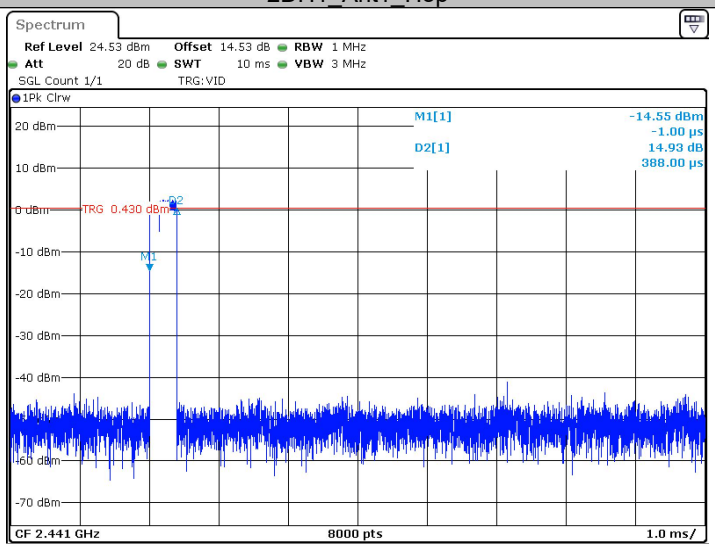


Date: 16.MAY.2025 20:28:00

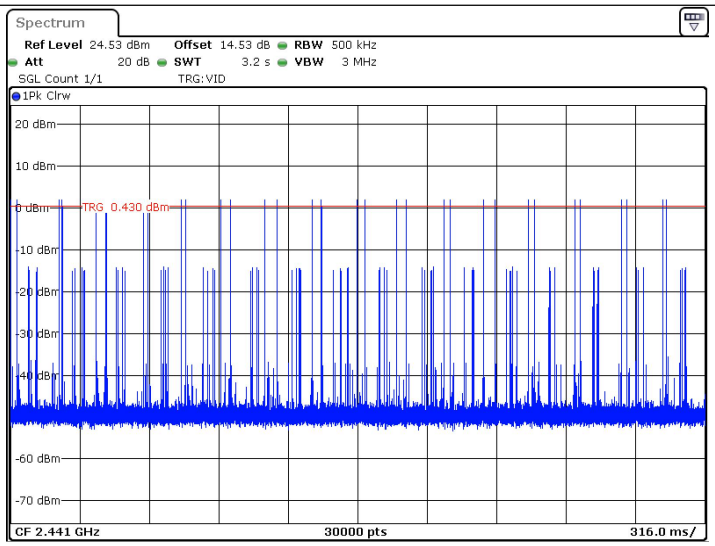


Date: 16.MAY.2025 20:28:05

2DH1_Ant1_Hop

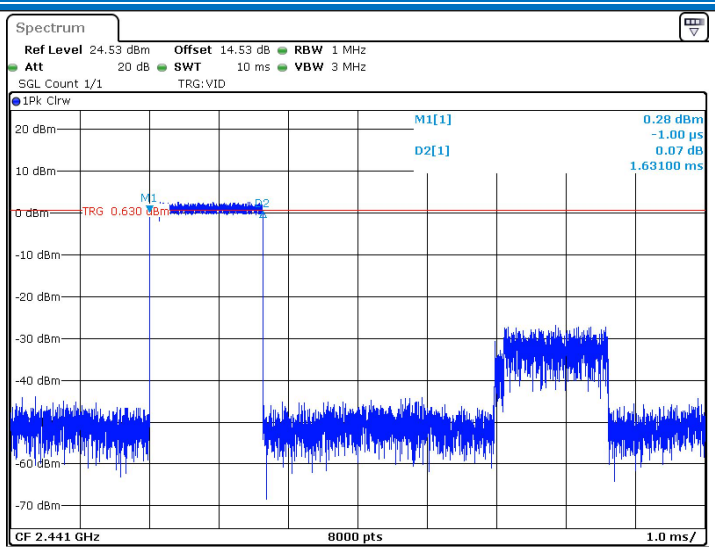


Date: 16.MAY.2025 20:30:03

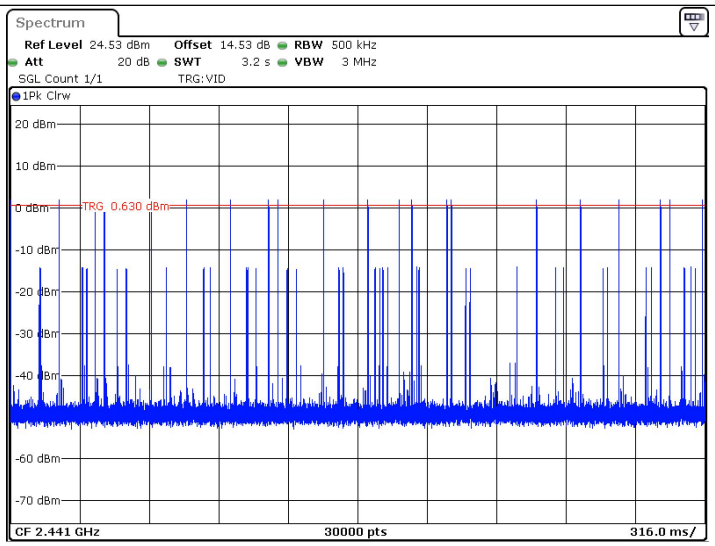


Date: 16.MAY.2025 20:30:08

2DH3_Ant1_Hop

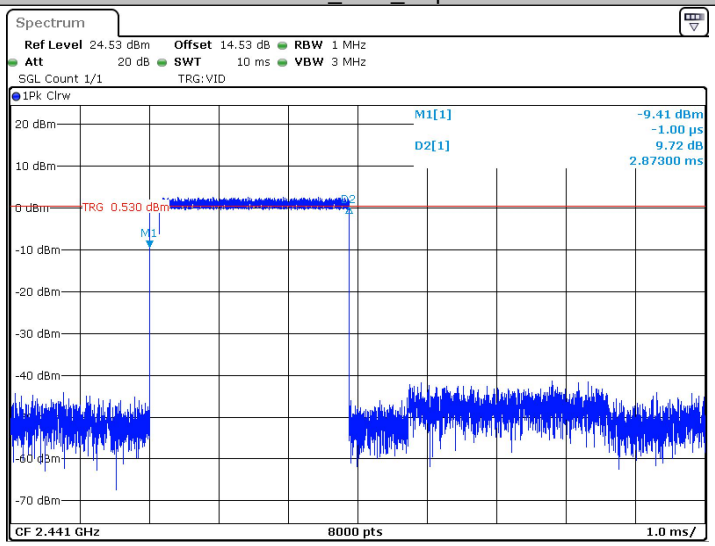


Date: 16.MAY.2025 20:30:33

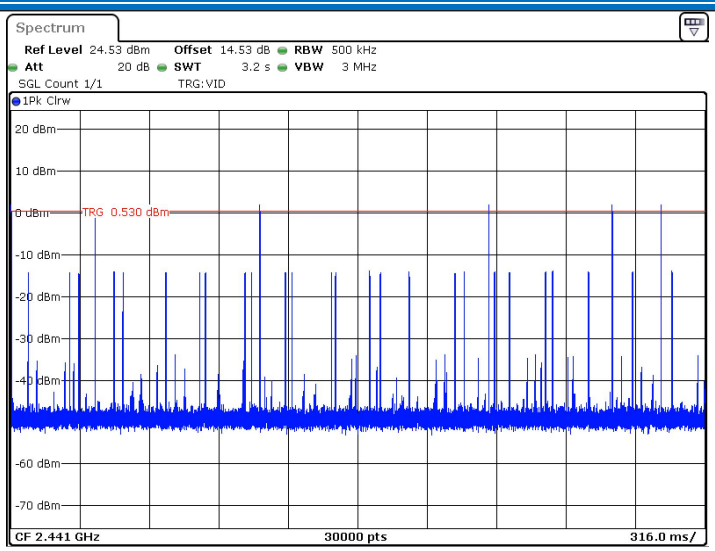


Date: 16.MAY.2025 20:30:38

2DH5_Ant1_Hop

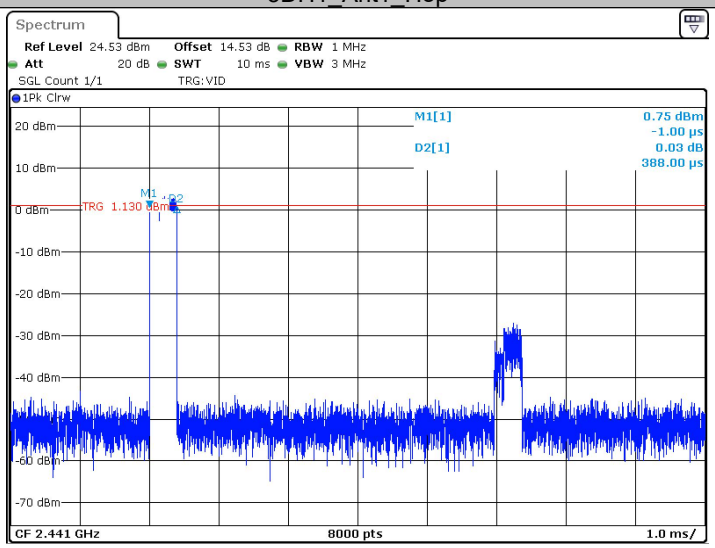


Date: 16.MAY.2025 20:29:35

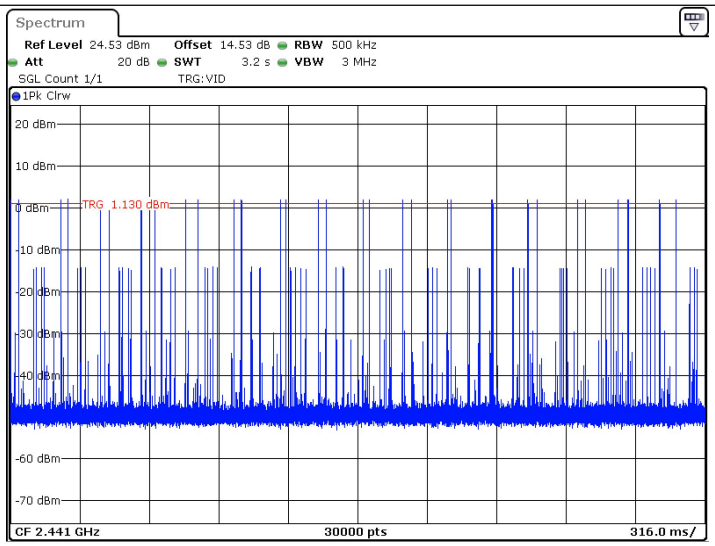


Date: 16.MAY.2025 20:29:40

3DH1_Ant1_Hop

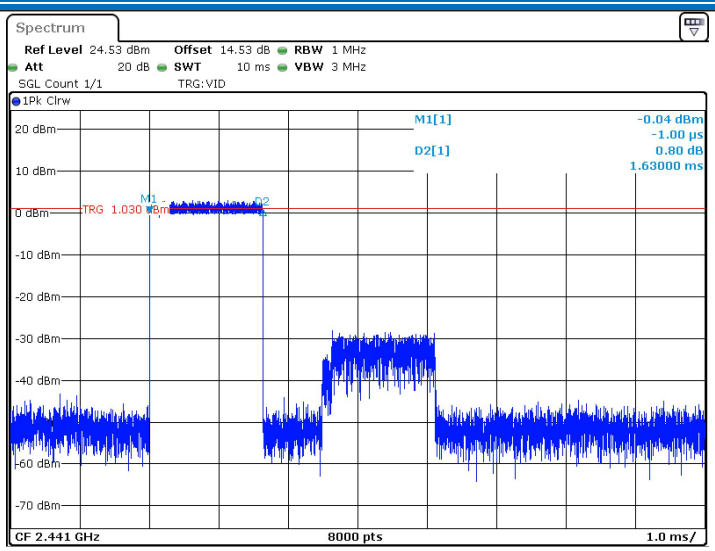


Date: 16.MAY.2025 20:31:33

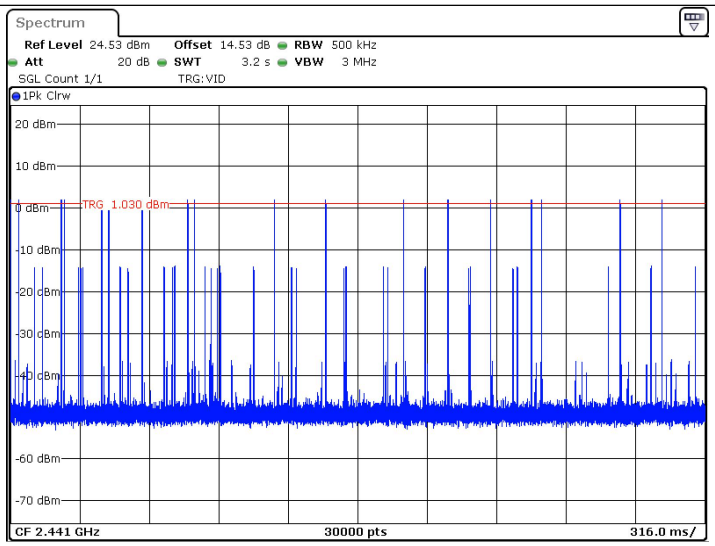


Date: 16.MAY.2025 20:31:39

3DH3_Ant1_Hop

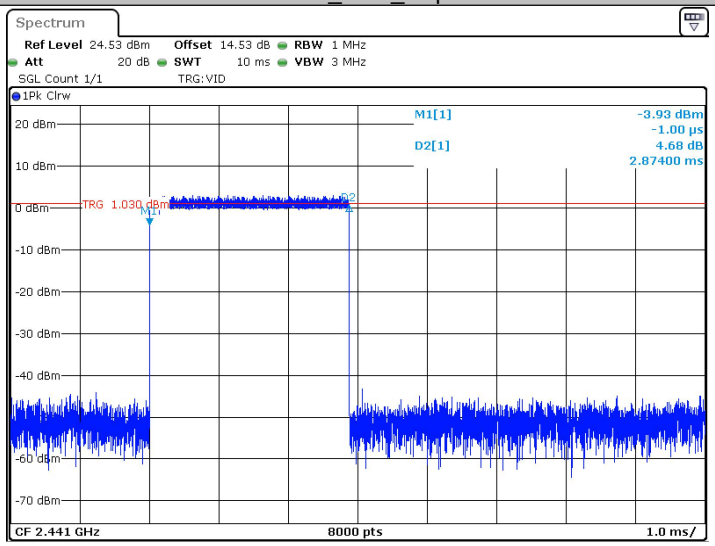


Date: 16.MAY.2025 20:32:02

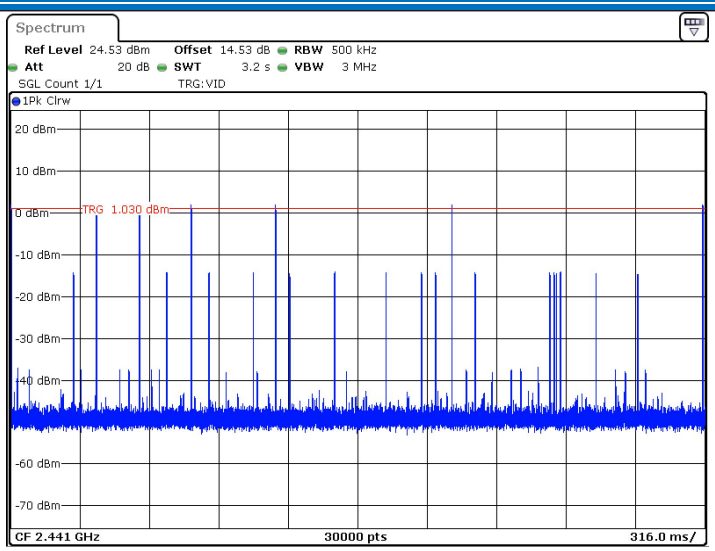


Date: 16.MAY.2025 20:32:07

3DH5_Ant1_Hop

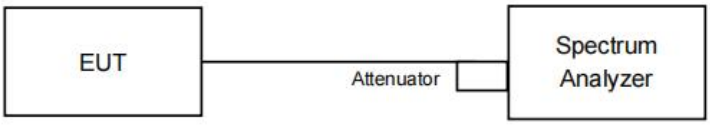


Date: 16.MAY.2025 20:34:22



Date: 16.MAY.2025 20:34:27

5.8 Band-edge for RF Conducted Emissions

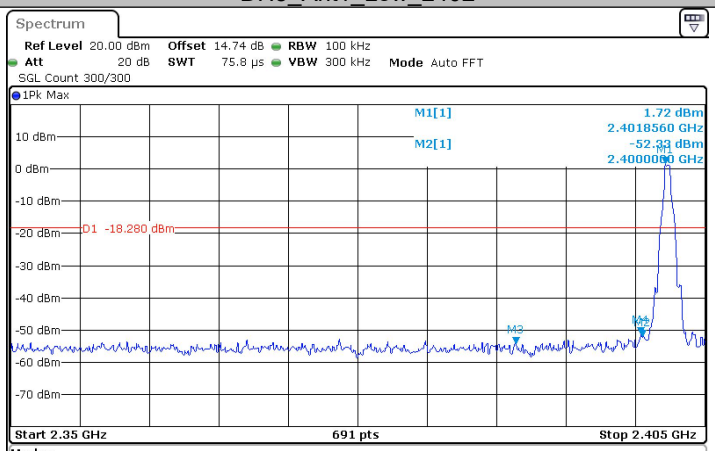
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
Test Setup:	 *Remark: Offset=cable loss+ attenuation factor.*
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is 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.
Exploratory Test Mode:	Hopping and Non-hopping transmitting with all kind of modulation and all kind of data type
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

Measurement Data

TestMode	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Low	2402	1.72	-51.13	≤-18.28	PASS
	High	2480	1.02	-50.14	≤-18.98	PASS
	Low	Hop_2402	1.08	-53.57	≤-18.92	PASS
	High	Hop_2480	0.67	-51.7	≤-19.33	PASS
2DH5	Low	2402	0.22	-52.4	≤-19.78	PASS
	High	2480	-0.03	-51.68	≤-20.03	PASS
	Low	Hop_2402	-2.33	-53.21	≤-22.33	PASS
	High	Hop_2480	-0.01	-50.14	≤-20.01	PASS
3DH5	Low	2402	1.76	-52.21	≤-18.24	PASS
	High	2480	1.02	-51.75	≤-18.98	PASS
	Low	Hop_2402	-3.03	-52.79	≤-23.03	PASS
	High	Hop_2480	-3.30	-51.05	≤-23.3	PASS

Test plot as follows:

DH5_Ant1_Low_2402



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.401856 GHz	1.72 dBm		
M2		1	2.4 GHz	-52.33 dBm		
M3		1	2.39 GHz	-54.15 dBm		
M4		1	2.3998986 GHz	-51.13 dBm		

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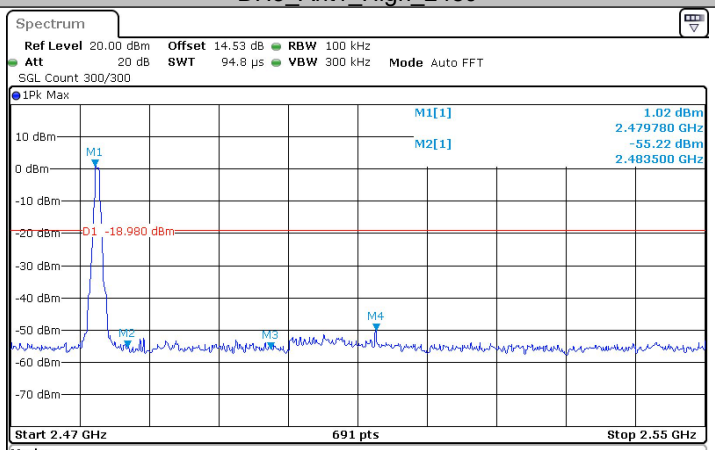
DH5_Ant1_High_2480



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47978 GHz	1.02 dBm		
M2		1	2.4835 GHz	-55.22 dBm		
M3		1	2.5 GHz	-55.86 dBm		
M4		1	2.512087 GHz	-50.14 dBm		

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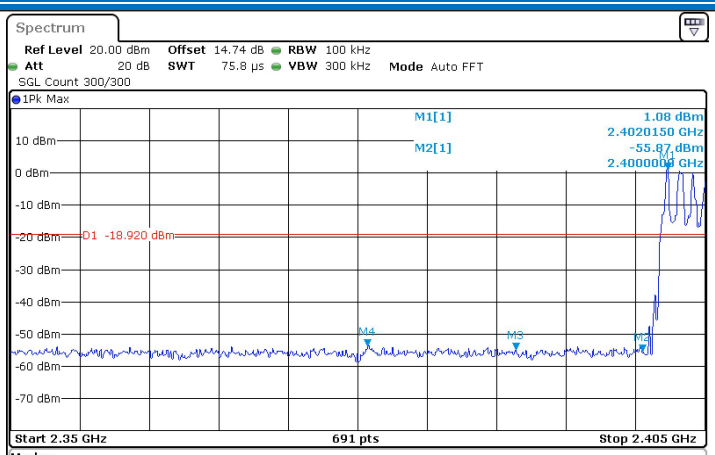
DH5_Ant1_Low_Hop_2402



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.402015 GHz	1.08 dBm		
M2		1	2.4 GHz	-55.87 dBm		
M3		1	2.39 GHz	-54.81 dBm		
M4		1	2.3782971 GHz	-53.57 dBm		

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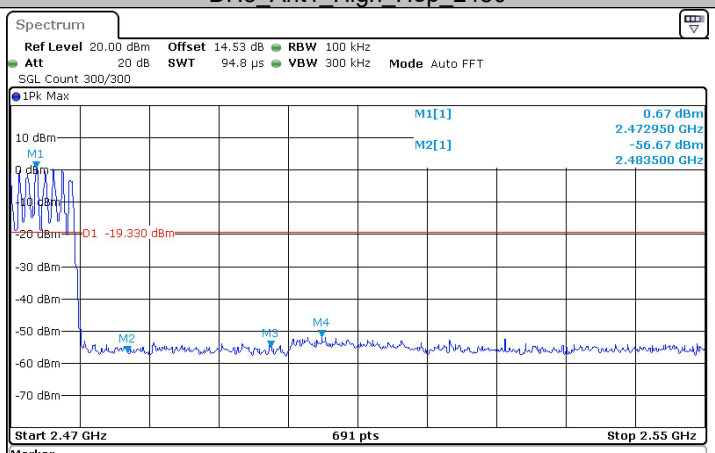
DH5_Ant1_High_Hop_2480



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47295 GHz	0.67 dBm		
M2		1	2.4835 GHz	-56.67 dBm		
M3		1	2.5 GHz	-55.06 dBm		
M4		1	2.505826 GHz	-51.70 dBm		

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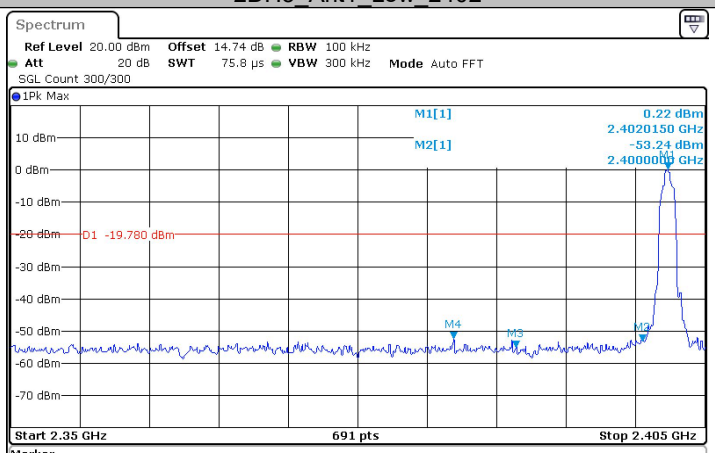
2DH5_Ant1_Low_2402



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.402015 GHz	0.22 dBm		
M2		1	2.4 GHz	-53.24 dBm		
M3		1	2.39 GHz	-55.17 dBm		
M4		1	2.3850725 GHz	-52.40 dBm		

Date: 15.MAY.2025 11:24:14

2DH5_Ant1_High_2480