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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E231134-0A	2023.05.22	Initial Issue	All



1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	HANMI MICRONICS INC.
Address	72, Samdo-ro 48beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea.
Contact Person	Jin Chul Kim
Telephone No.	82-10-4023-7851
Fax No.	-
E-mail	jckim@micronics.co.kr

1.2 Manufacturer Information

Manufacturer	HANMI MICRONICS INC.
Address	72, Samdo-ro 48beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea.

1.3 Test Laboratory Information

Laboratory	ICR Co., Ltd.
Address	112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Telephone No.	+82-2-6351-9002
Fax No.	+82-2-6351-9007
RRA No.	KR0165
KOLAS No.	KT652



2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	Wireless Keyboard
Brand Name	-
Model Name	CaluX
Additional Model Name	-
FCC ID	2A3QW-CALUX
Hardware Version	1.0
Software Version	1.0
Power Supply	DC 3.7 V

2.2 Additional Information

Equipment Class	DSS - Direct Sequence Spread spectrum	
Device Type	Stand-alone	
Operating Frequency	FHSS	2 402 MHz ~ 2 479 MHz
	Bluetooth BDR	2 402 MHz ~ 2 480 MHz
RF Output Power	FHSS	6.30 dBm
	Bluetooth BDR	-6.29 dBm
Number of Channel	FHSS	78
	Bluetooth BDR	79
Modulation Type	GFSK	
Antenna Type	PCB Antenna	
Antenna Gain	1.58 dBi	
Antenna Operating Mode	Single Antenna Equipment with only one antenna	
Hopping mode	pseudorandom	

2.3 Mode of operation during the test

- The EUT is continuous transmission mode during the test with set at Low Channel, Middle Channel, and High Channel. To get a maximum radiated emission levels from the EUT, the EUT was moved throughout the XY, YZ, XZ planes.

2.4 Modifications of EUT

- None



3. Test Summary

3.1 Test standards and results

FCC Part 15 Subpart C			
Clause	Test items	Applied	Results
§15.247 (a)(1)(i)	20 dB Bandwidth & 99 % Bandwidth	☒	PASS
§15.247 (a)(1)	Carrier Frequency Separation	☒	PASS
§15.247 (a)(1) (iii)	Number of Hopping Frequencies	☒	PASS
§15.247 (a)(1) (iii)	Time of Occupancy (Dwell Time)	☒	PASS
§15.247 (a)(1)	Maximum Conducted Output Power	☒	PASS
§15.247 (d)	Conducted Spurious Emission & Band edge (Non-Restricted band)	☒	PASS
§15.209 §15.205	Radiated Spurious Emission(Restricted band)	☒	PASS
§15.207	Power Line Conducted Emission	☒	PASS

3.2 Purpose of the test

- To determine whether the equipment under test fulfills the requirements of the standards stated in FCC Part 15 Subpart C Section 15.247.

3.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013.

Radiated testing was performed at a distance of 3 m from EUT to the antenna.

3.4 Configuration of Test System

3.4.1 Radiated emission test

Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions. Final radiated emission tests were conducted at 3 m Semi Anechoic Chamber.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

3.4.2 AC power line conducted emission test

The EUT was connected to LISN. All supporting equipment were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions

3.5 Antenna requirement

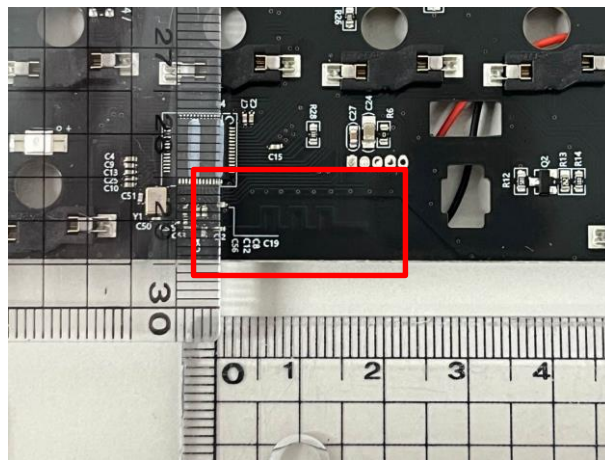
According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi.

Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



3.5.1 Result: Pass

The transmitter has a **PCB Antenna**. The directional gain of the antenna is **1.58 dBi**



4. 20 dB Bandwidth & 99 % Bandwidth

4.1 Measurement method

Standard : ANSI 63.10 (6.9.2)

4.2 Limit

Standard : §15.247 (a)(1)(i)

4.3 Test data

Operating mode : Transmit mode

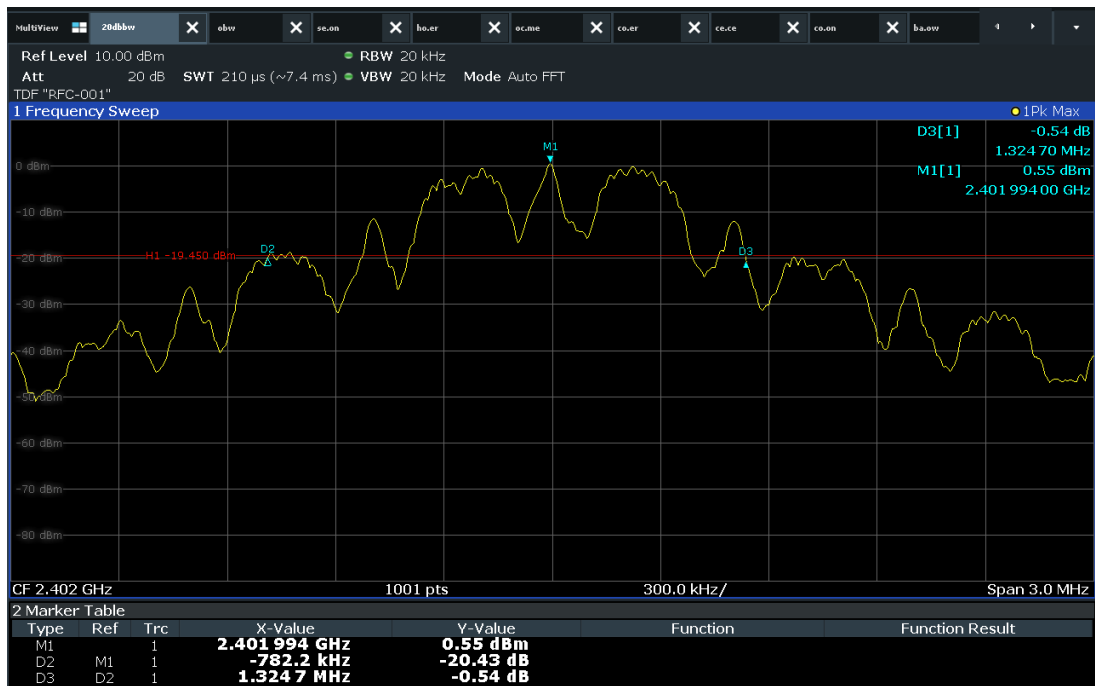
Test Result : Pass

4.3.1 Measured Results

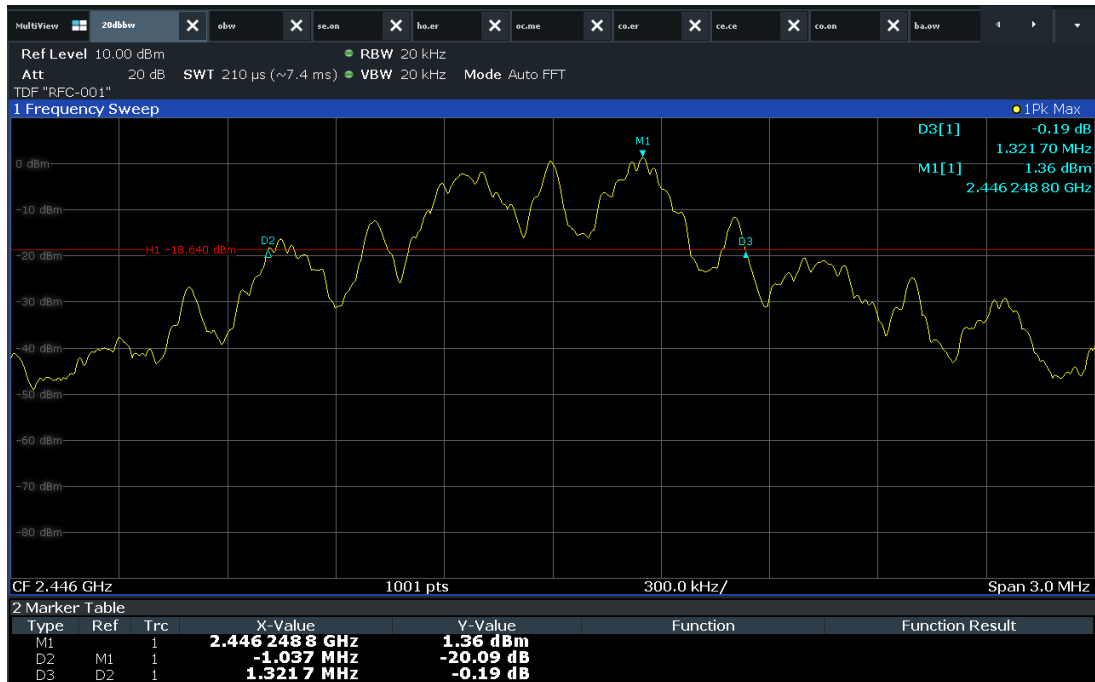
Modulation Type	Channel (Frequency)	20 dB Bandwidth (kHz)	99 % Occupied Bandwidth (kHz)
FHSS	2 402 MHz	1 324.70	1 386.49
	2 446 MHz	1 321.70	1 399.32
	2 479 MHz	1 300.70	1 405.34
DH5	0 (2 402 MHz)	939.10	903.11
	39 (2 441 MHz)	943.10	900.07
	78 (2 480 MHz)	943.10	905.39



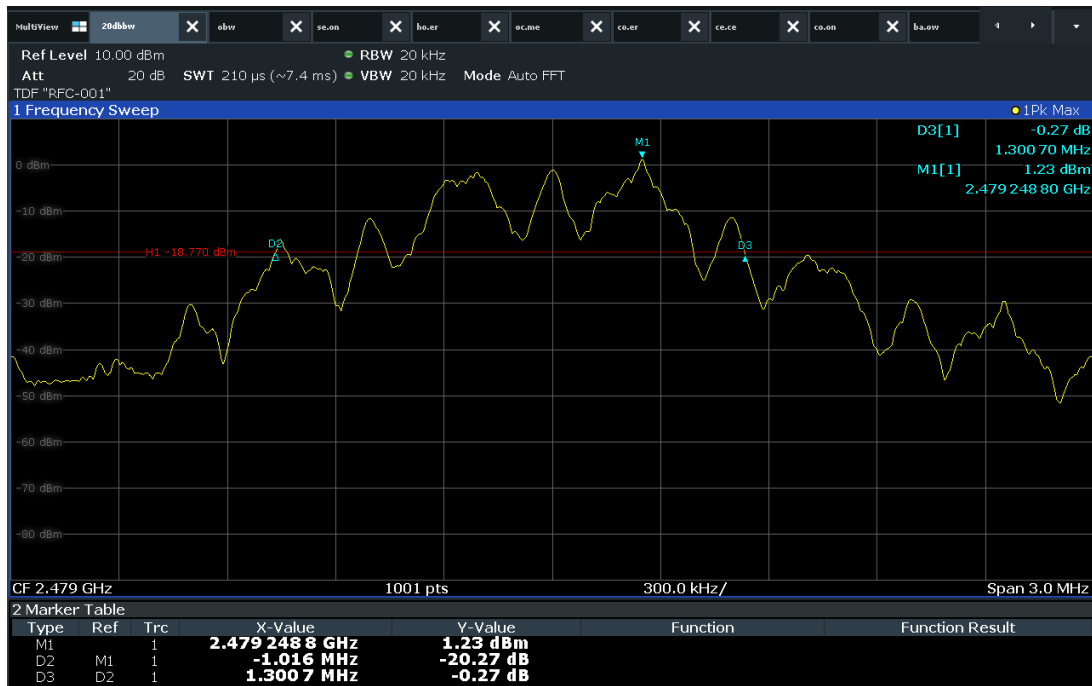
4.3.2 Measured Graph (20 dB Bandwidth) for FHSS



Low CH

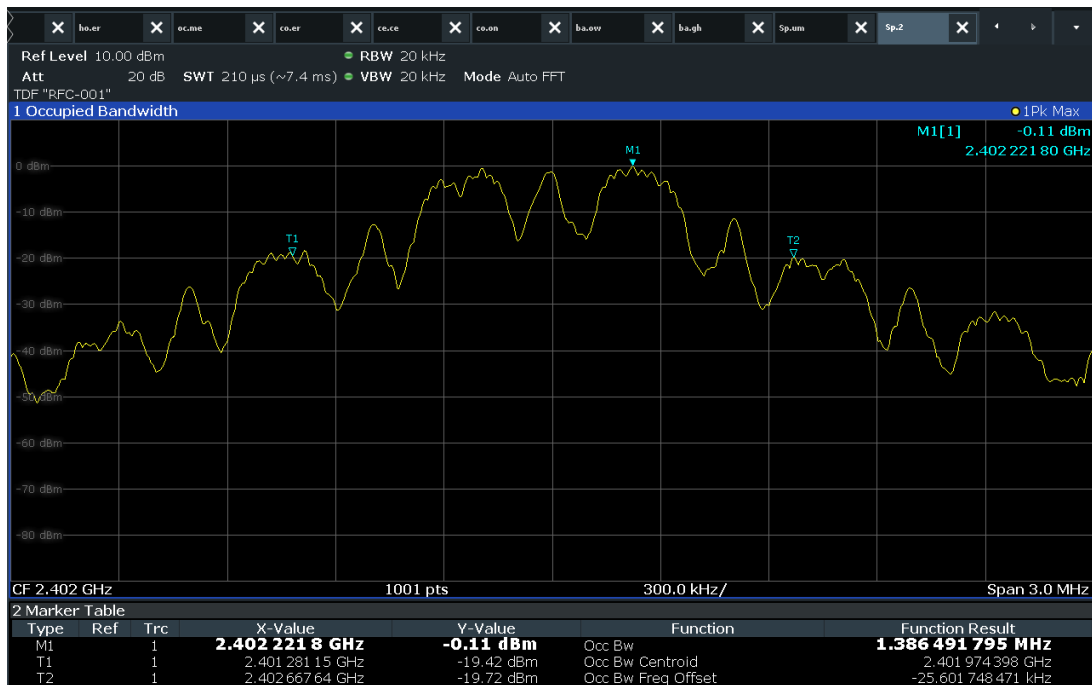


Mid CH



High CH

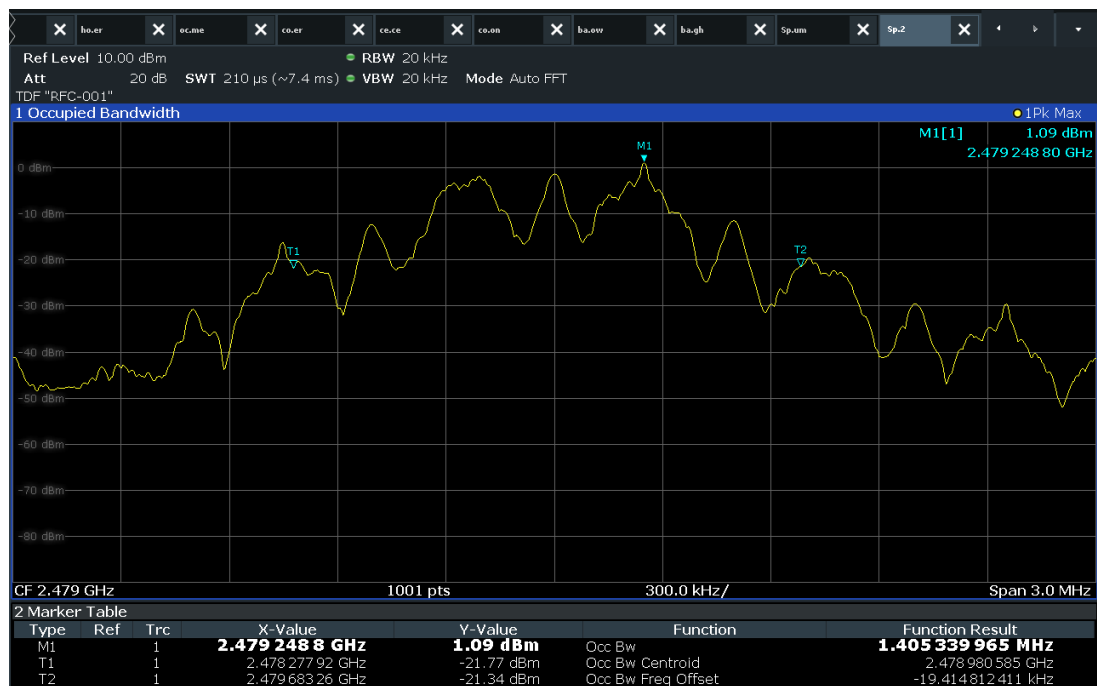
4.3.3 Measured Graph (99 % Bandwidth) for FHSS



Low CH



Mid CH



High CH



High CH

4.3.5 Measured Graph (99 % Bandwidth) for DH5



Low CH



Mid CH



High CH



5. Carrier Frequency Separation

5.1 Measurement method

Standard : ANSI 63.10 (7.8.2)

5.2 Limit

Standard : 15.247 (a)(1)

5.3 Test data

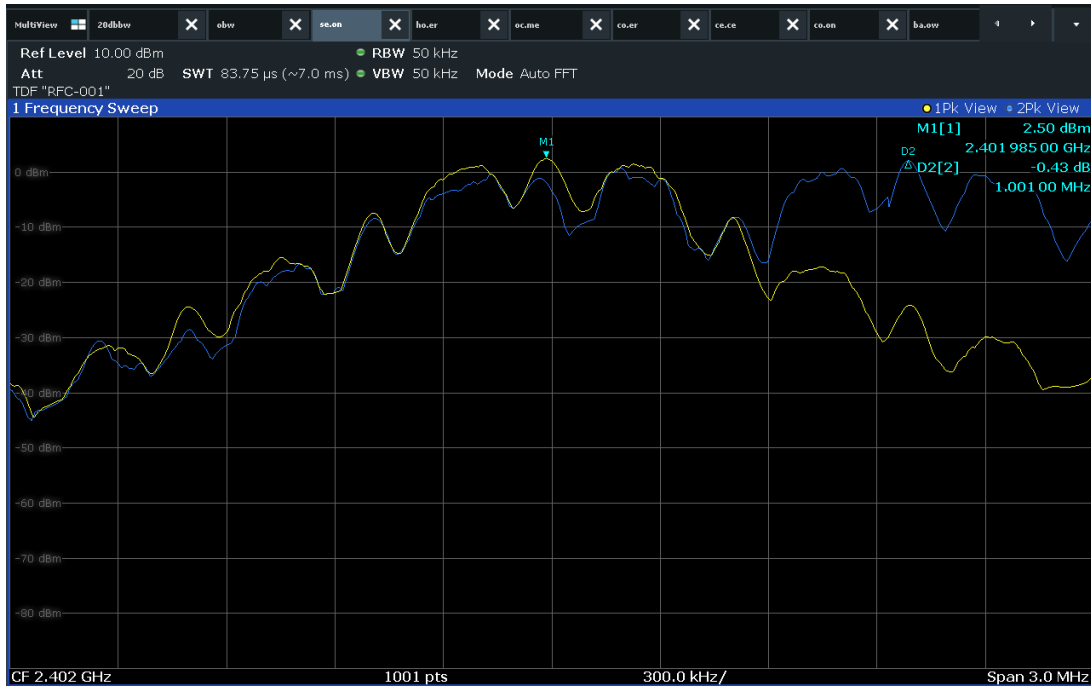
Operating mode : Transmit mode

Test Result : Pass

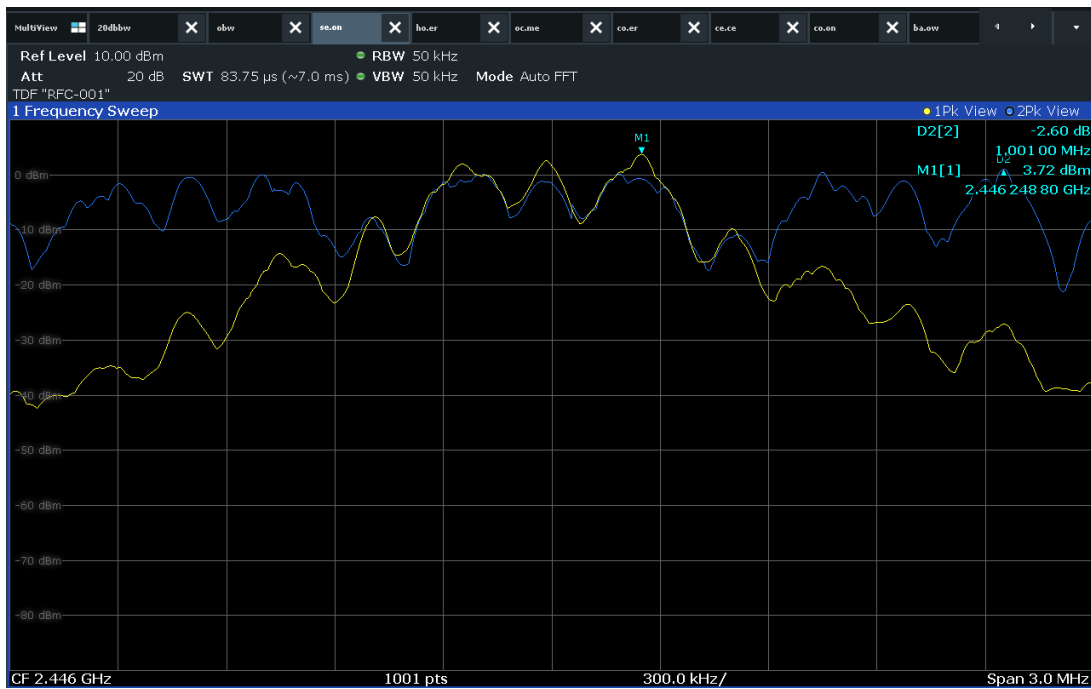
5.3.1 Measured Results

Modulation type	Channel (Frequency)	Separation (kHz)	Limit (kHz)	
FHSS	2 402 MHz	1 001.00	883.13	25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater
	2 446 MHz	1 001.00	881.13	
	2 479 MHz	1 007.00	867.13	
DH5	0 (2 402 MHz)	998.00	626.07	
	39 (2 441 MHz)	998.00	628.73	
	78 (2 480 MHz)	1 001.00	628.73	

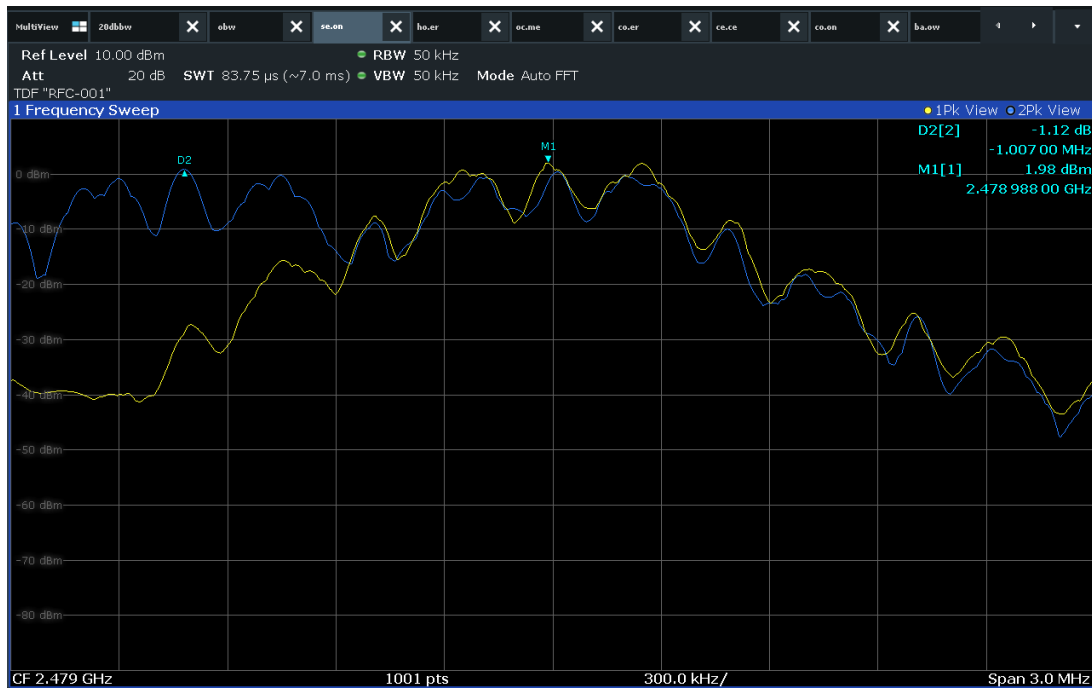
5.3.2 Measured Graph for FHSS



Low CH

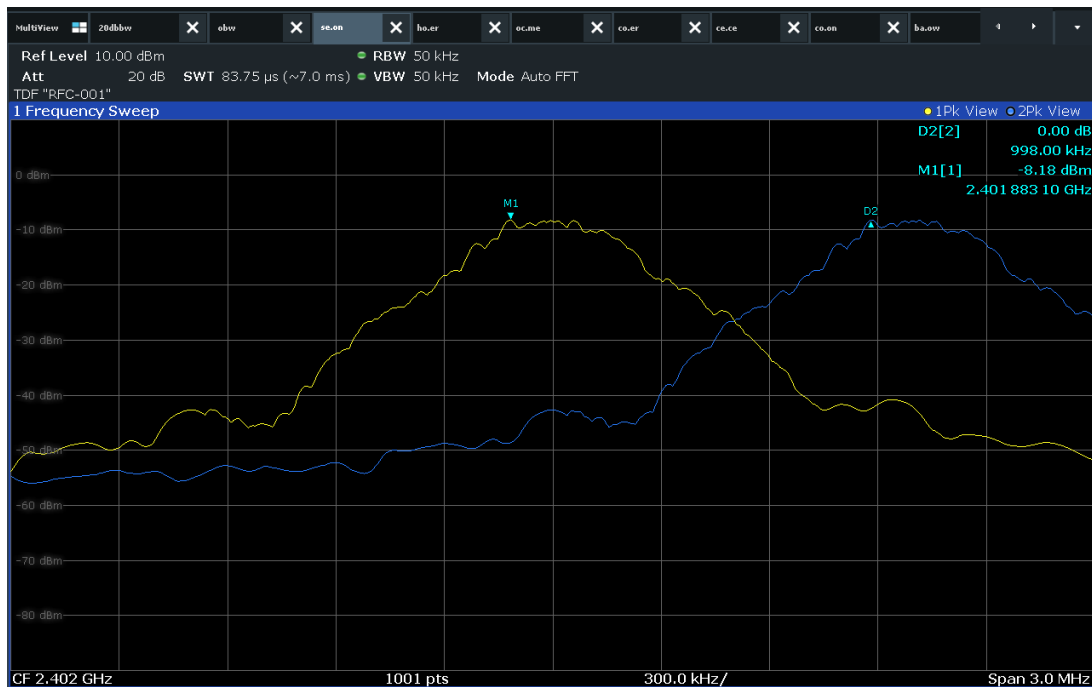


Mid CH

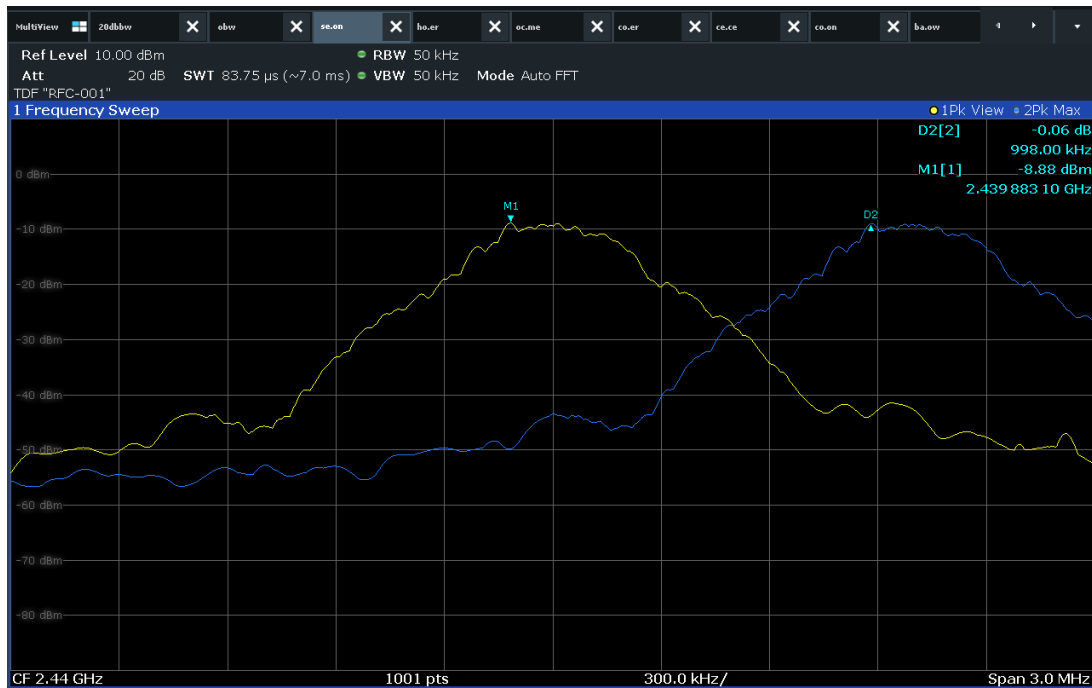


High CH

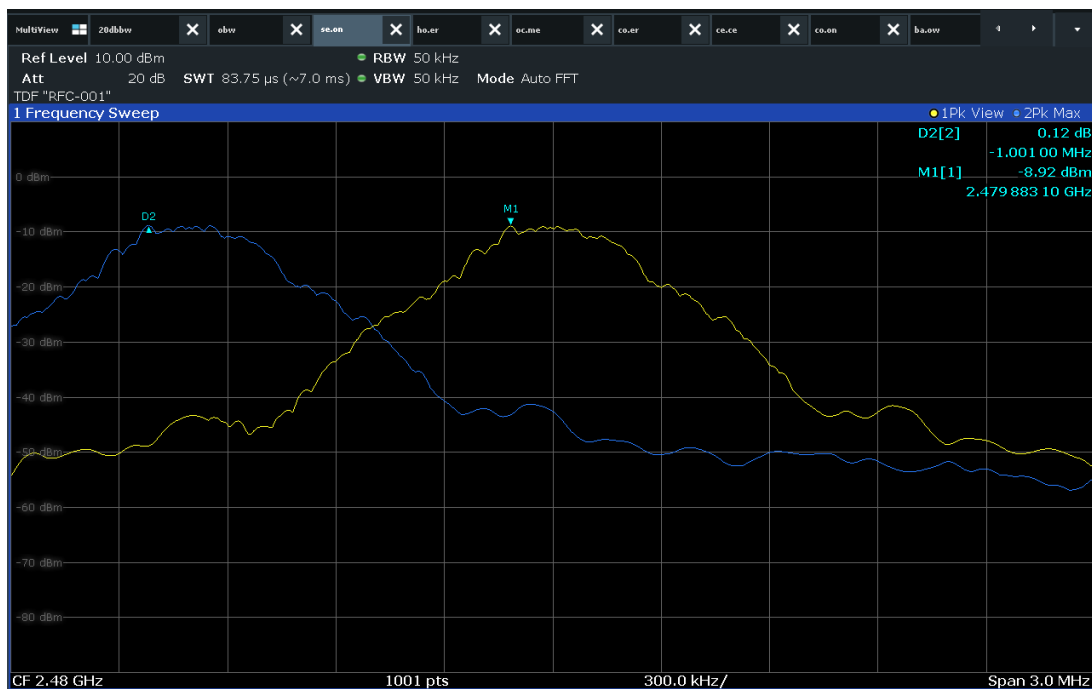
5.3.3 Measured Graph for DH5



Low CH



Mid CH



High CH



6. Number of Hopping Frequency

6.1 Measurement method

Standard : ANSI 63.10 (7.8.3)

6.2 Limit

Standard : 15.247 (a)(1)(iii)

6.3 Test data

Operating mode : Hopping mode

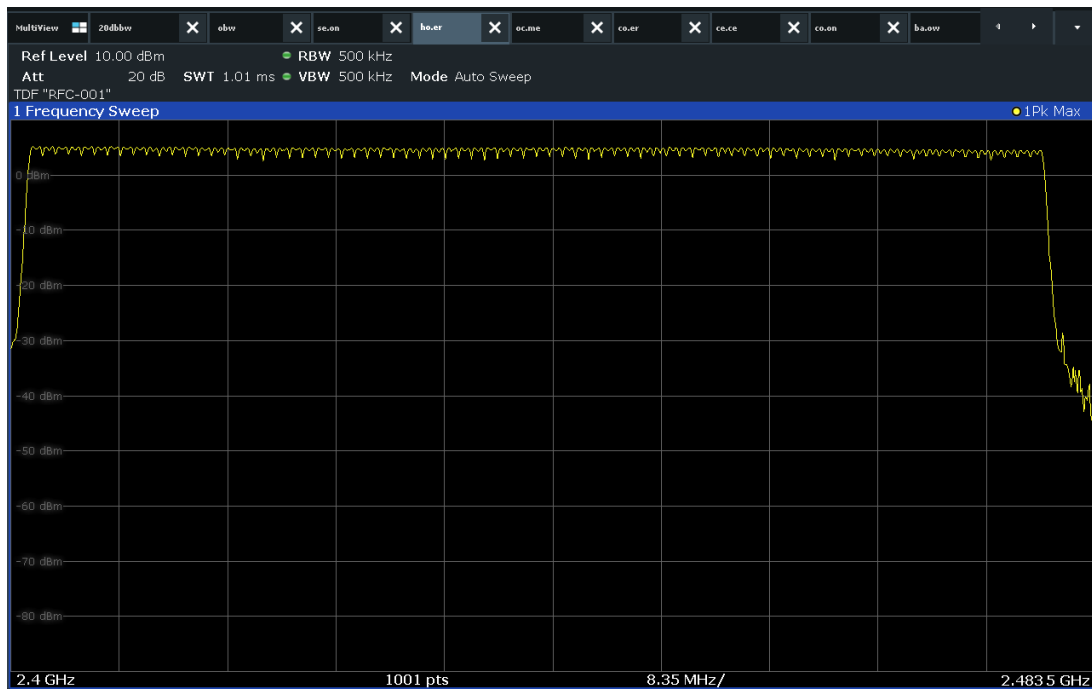
Test Result : Pass

6.3.1 Measured Results

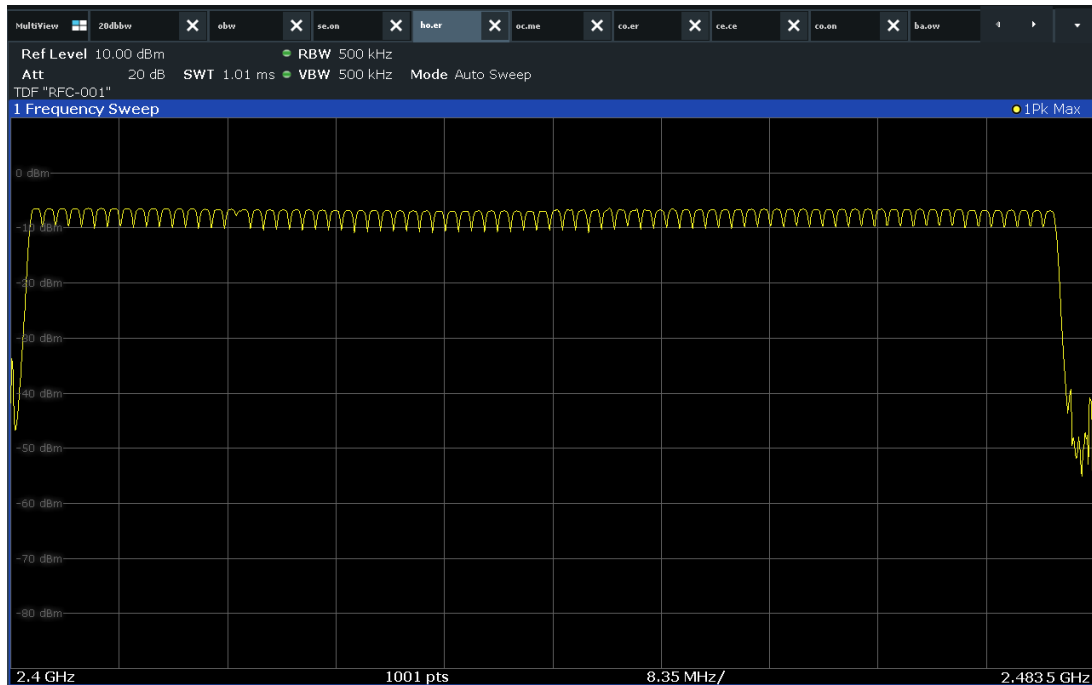
Modulation type	Hopping Channel Number	Limit
FHSS	78	> 15
DH5	79	



6.3.2 Measured Graph



FHSS



DH5



7. Time of Occupancy (Dwell Time)

7.1 Measurement method

Standard : ANSI 63.10 (7.8.4)

7.2 Limit

Standard : §15.247 (a)(1)(iii)

7.3 Test data

Test Result : Pass

7.3.1 Measured Results

Operating Mode	Mode	Hops Over Occupancy Time (hops/s)	On Time (ms)	Occupancy Time (s)	Limit (s)
Hopping	FHSS	24	0.771	0.019	0.4

※ Hops Over Occupancy Time (hops/s) = $((6 / 0.1) / 78) \times (0.4 \times 78)$

※ Occupancy Time (s) = Hops Over Occupancy Time (hops/s) x On Time (ms)

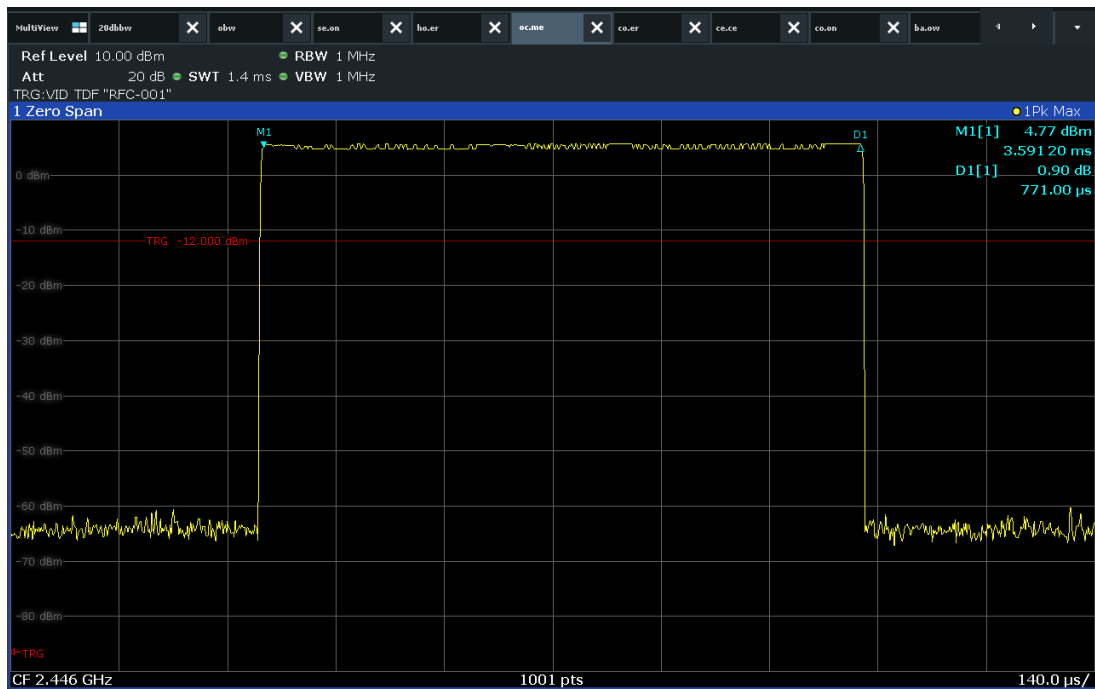
Operating Mode	Mode	Hopping Channel Number	Hops Over Occupancy Time (ms/hops)	Package Transfer Time (ms)	Occupancy Time (s)	Limit (s)
Hopping	DH5	79	106.67	1.899	0.2	0.4

※ Occupancy Time (s) = Hops Over Occupancy Time (hops) x Package Transfer Time (ms)

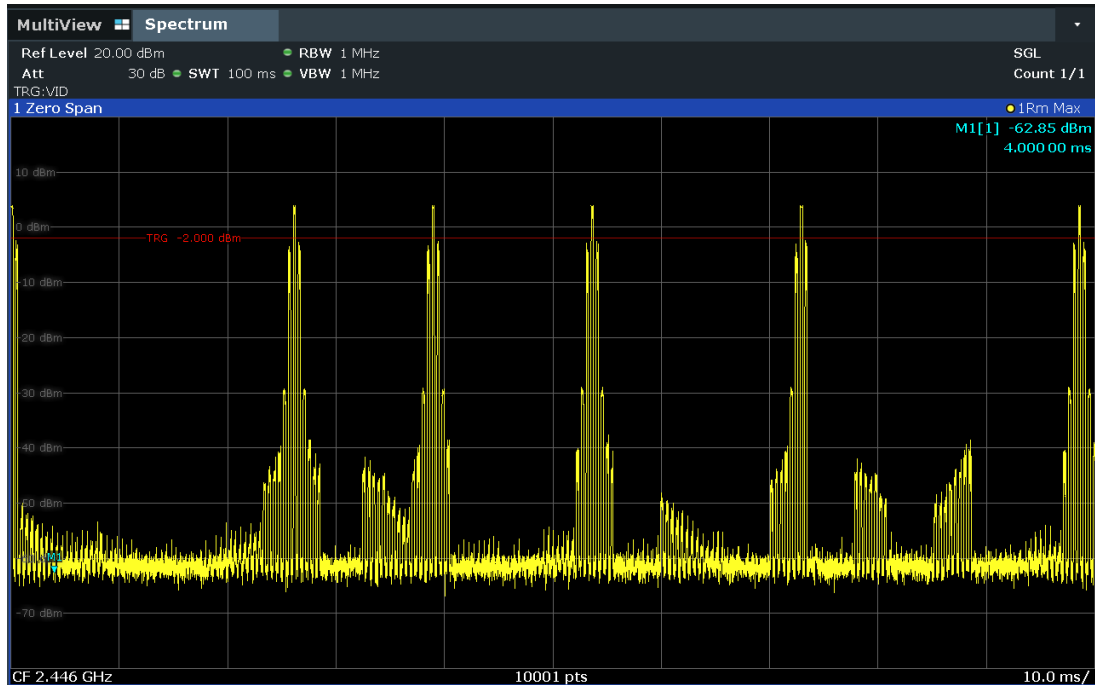
※ hopping rate is 1 600 hops/s with 6 slots in 79 hopping channels. With channel hopping rate $(1600 / 6 / 79)$ in Occupancy Time Limit (0.4×79) (s).

Hops Over Occupancy Time comes to $(1\ 600 / 6 / 79) \times (0.4 \times 79) = 106.67$ hops.

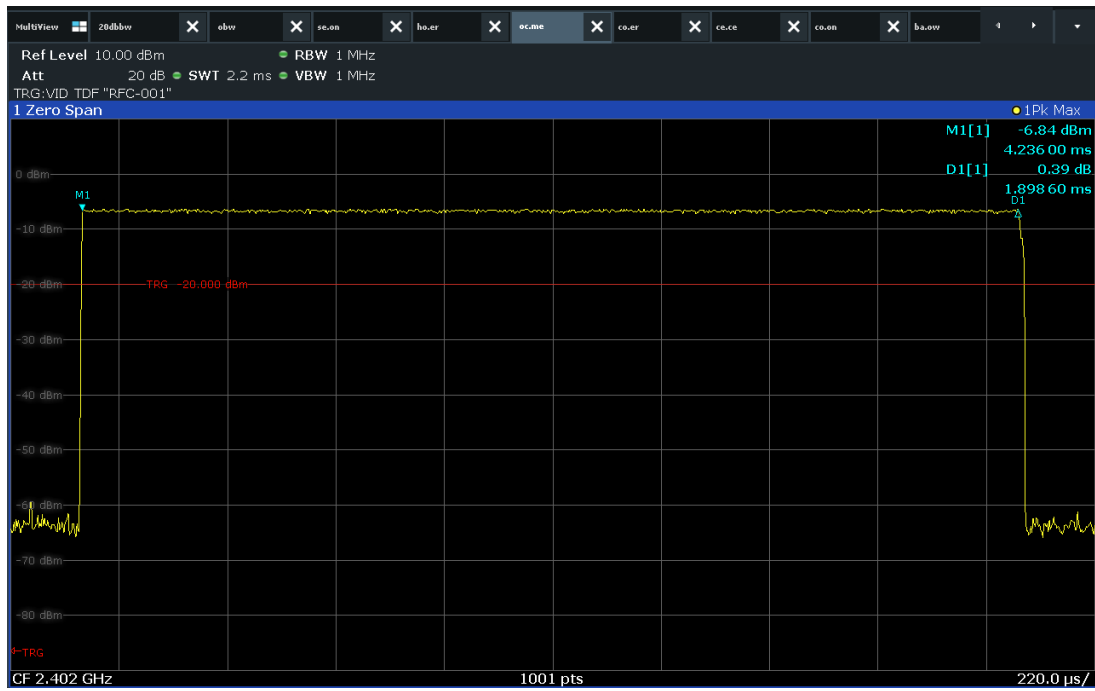
7.3.2 Measurement Graph



FHSS



FHSS - Hopping



DH5



8. Maximum Conducted Output Power

8.1 Measurement method

Standard : ANSI 63.10 (7.8.5)

8.2 Limit

Standard : §15.247 (a)(1)

8.3 Test data

Operating mode : Transmit mode

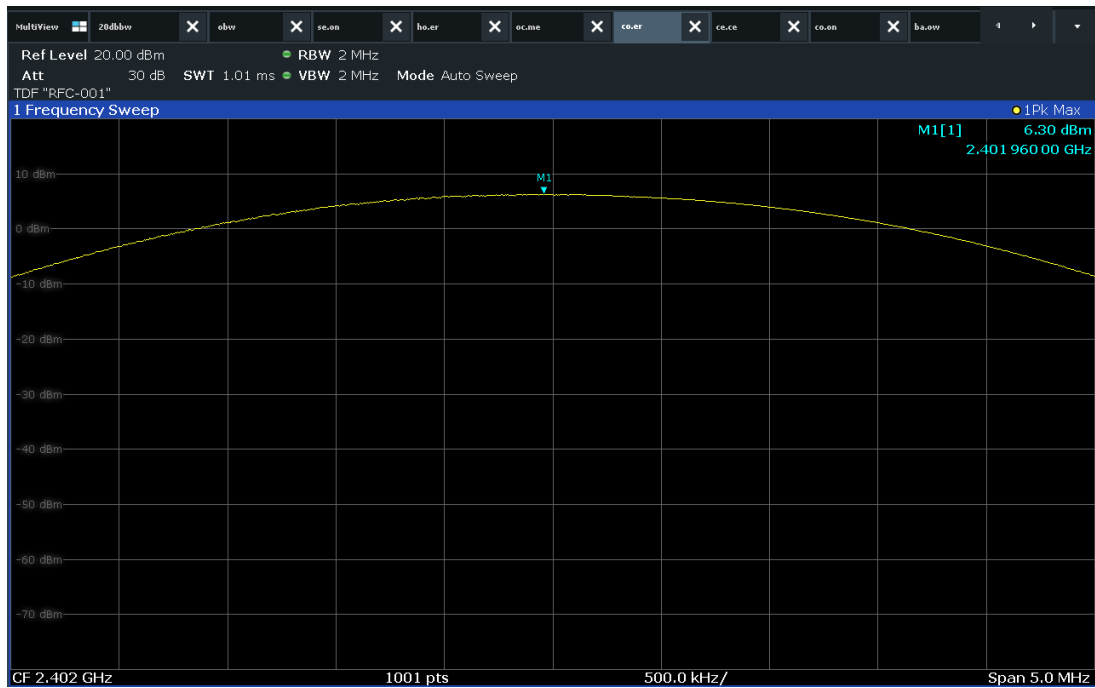
Test Result : Pass

8.3.1 Measured Results

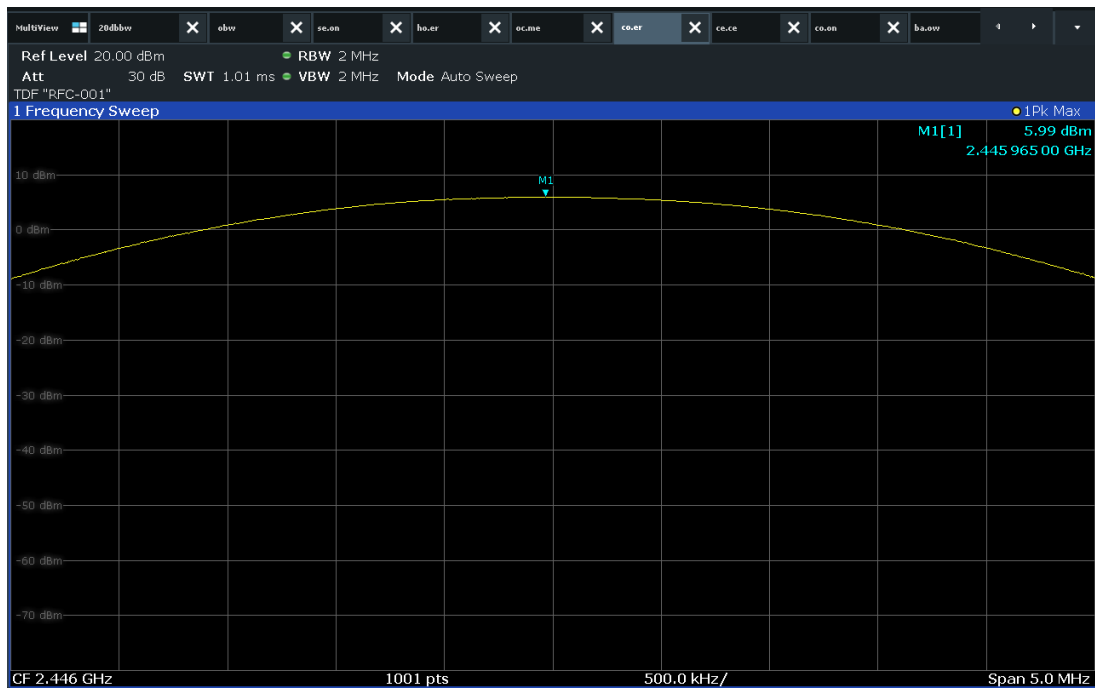
Modulation Type	Channel (Frequency)	Highest signal level (dBm)	Limit (dBm)
FHSS	2 402 MHz	6.30	30 (1 Watt)
	2 446 MHz	5.99	
	2 479 MHz	5.44	
DH5	0 (2 402 MHz)	-6.29	
	39 (2 441 MHz)	-6.47	
	78 (2 480 MHz)	-6.71	



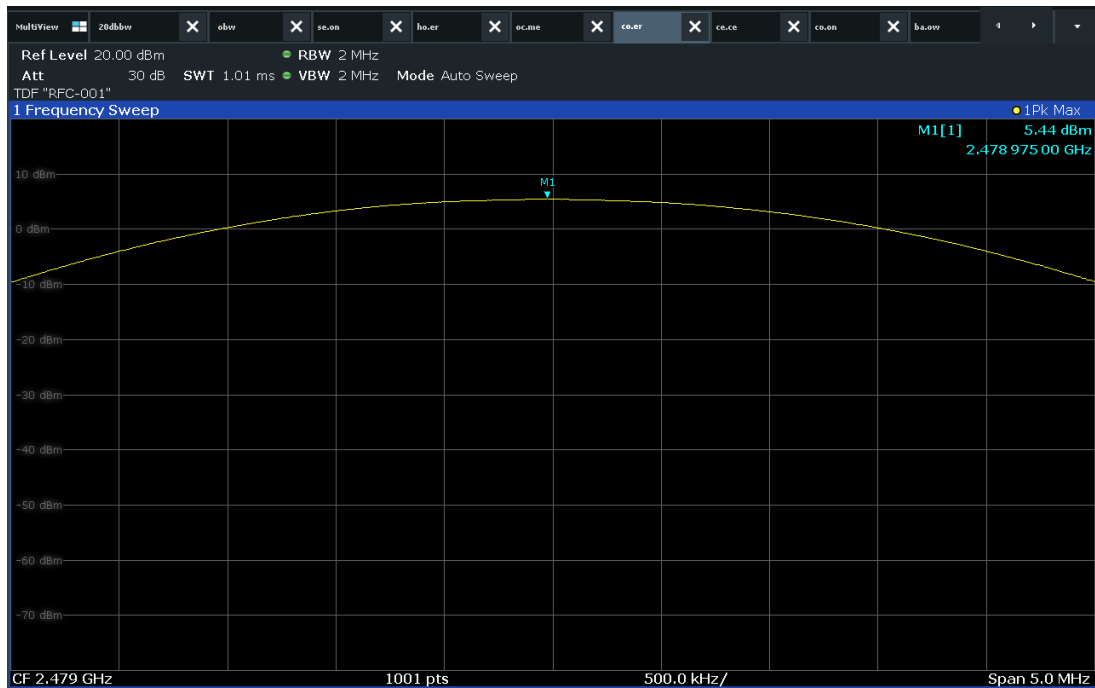
8.3.2 Measurement Graph for FHSS



Low CH

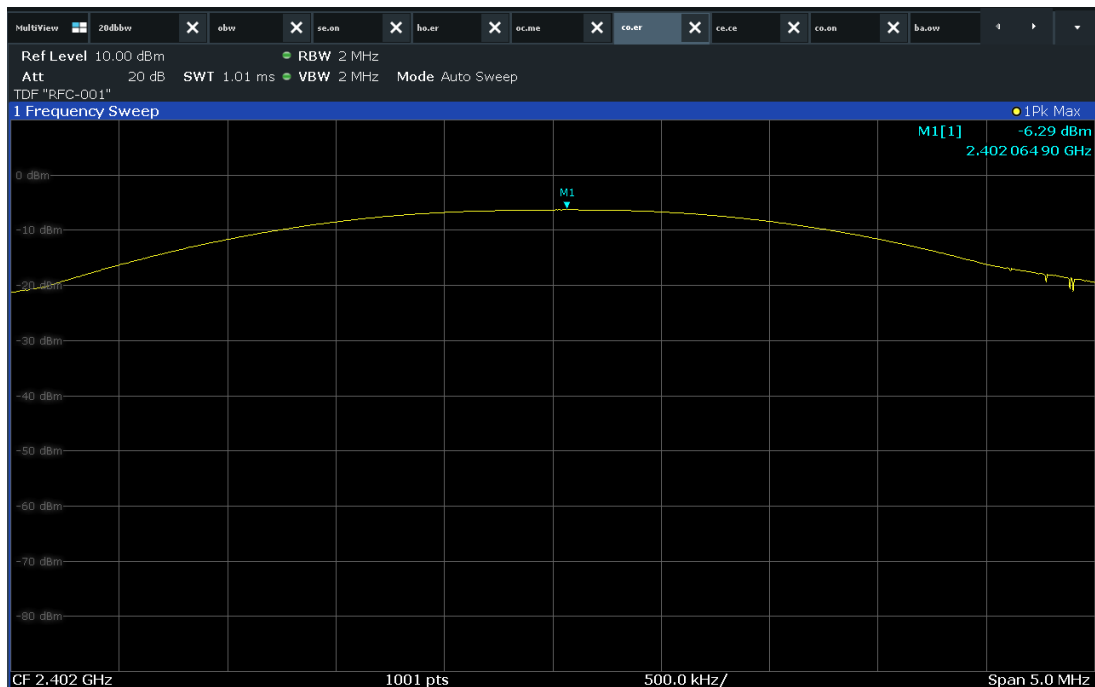


Mid CH

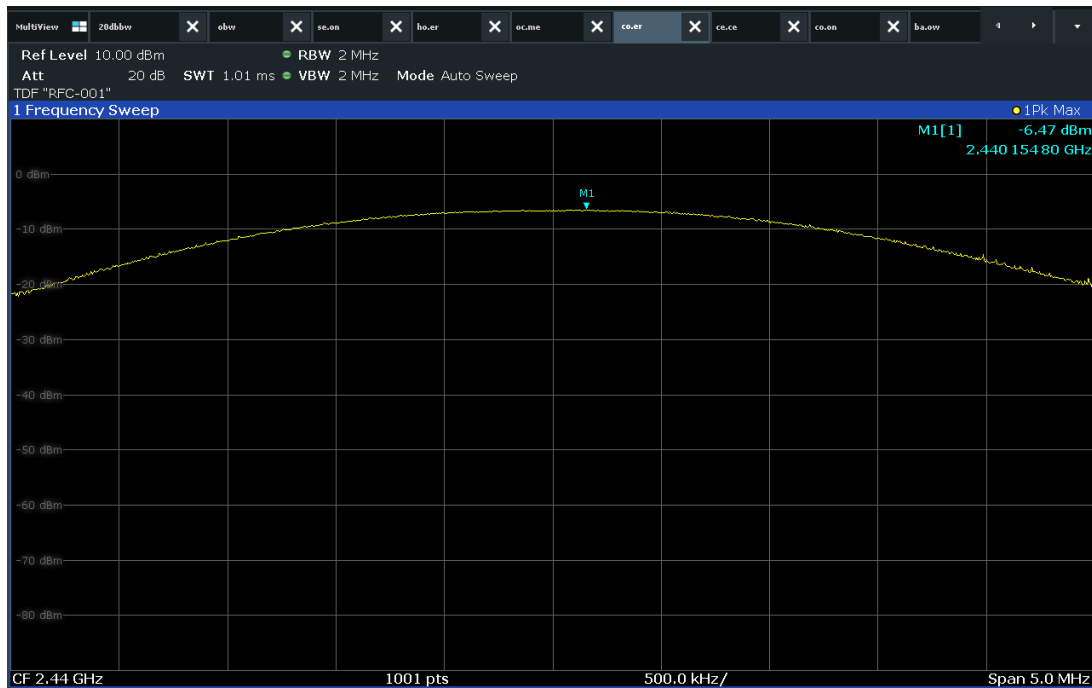


High CH

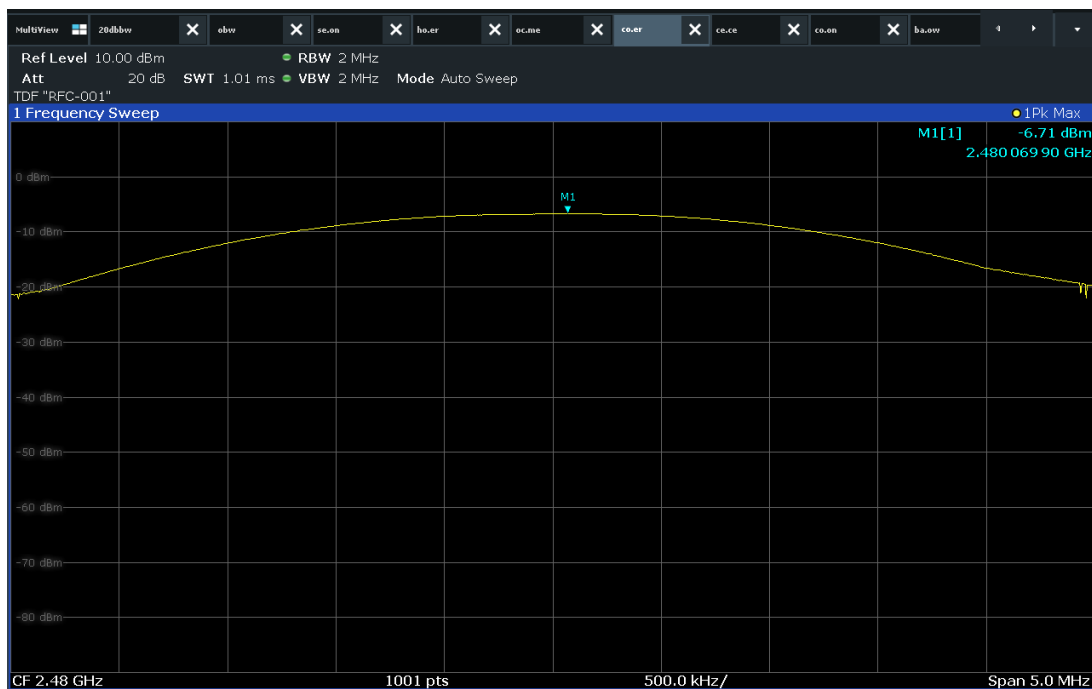
8.3.3 Measurement Graph for DH5



Low CH



Mid CH



High CH



9. Conducted Spurious Emission

9.1 Measurement method

Standard : ANSI 63.10 (7.8.8) / ANSI 63.10 6.10.4)

9.2 Limit

Standard : §15.247 (d)

9.3 Test data

Operating mode : Transmit mode

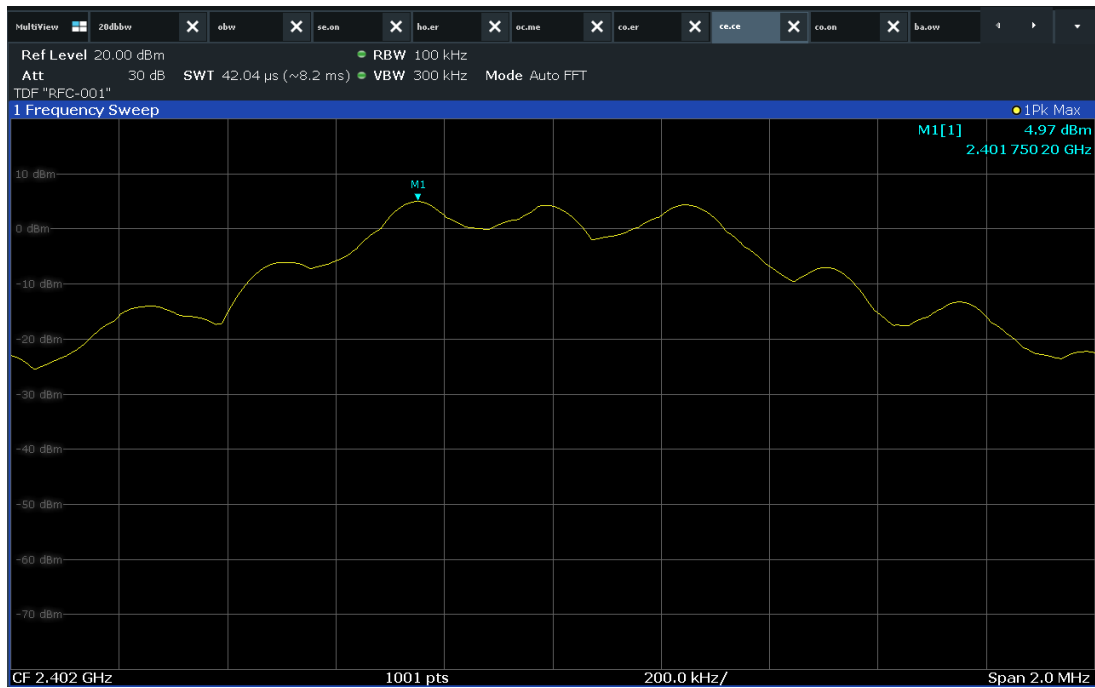
Test Result : Pass

9.3.1 Measured Results

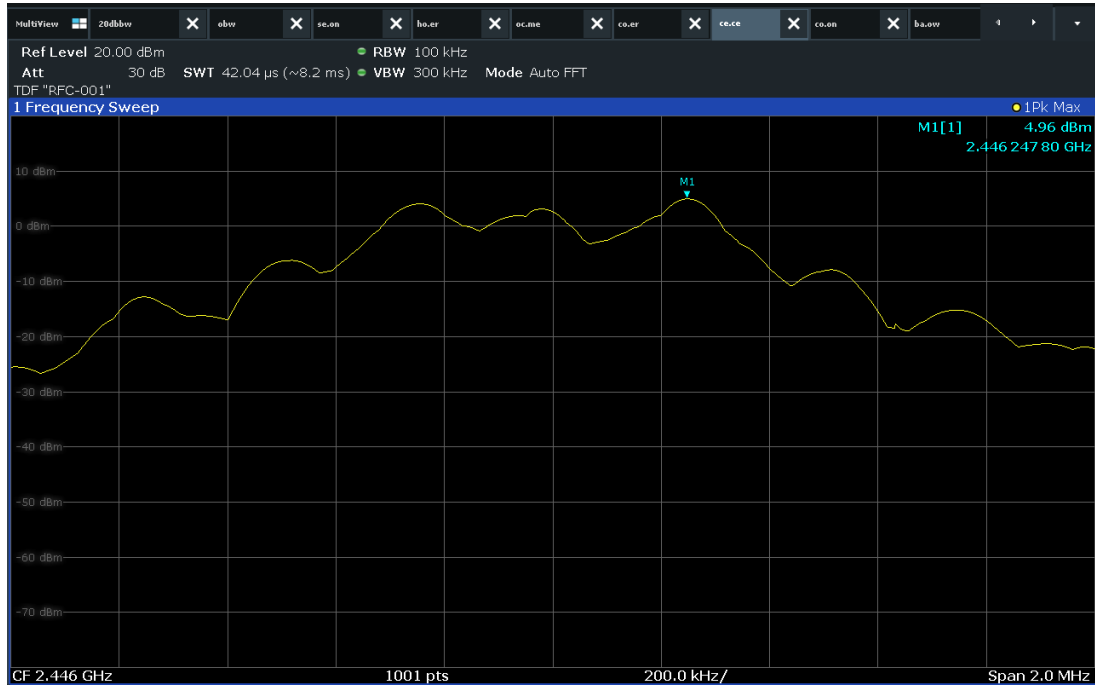
Modulation Type	Channel (Frequency)	Measurement band	Result
FHSS	2 402 MHz	Band Edge	Pass
		Band Edge (Hopping)	Pass
		30 MHz to 1 GHz	Pass
		1 GHz to 26 GHz	Pass
	2 446 MHz	30 MHz to 1 GHz	Pass
		1 GHz to 26 GHz	Pass
	2 479 MHz	Band Edge	Pass
		Band Edge (Hopping)	Pass
		30 MHz to 1 GHz	Pass
		1 GHz to 26 GHz	Pass
DH5	0 (2 402 MHz)	Band Edge	Pass
		Band Edge (Hopping)	Pass
		30 MHz to 1 GHz	Pass
		1 GHz to 26 GHz	Pass
	39 (2 441 MHz)	30 MHz to 1 GHz	Pass
		1 GHz to 26 GHz	Pass
	78 (2 480 MHz)	Band Edge	Pass
		Band Edge (Hopping)	Pass
		30 MHz to 1 GHz	Pass
		1 GHz to 26 GHz	Pass



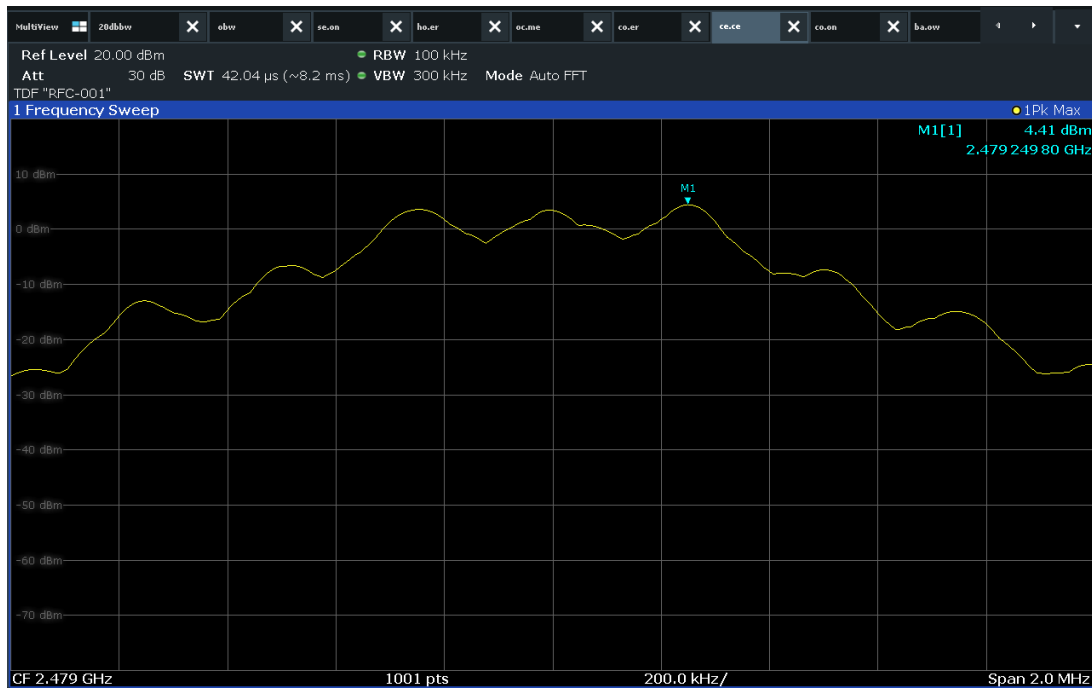
9.3.1.1 Signal level (dB m) for FHSS



Low CH

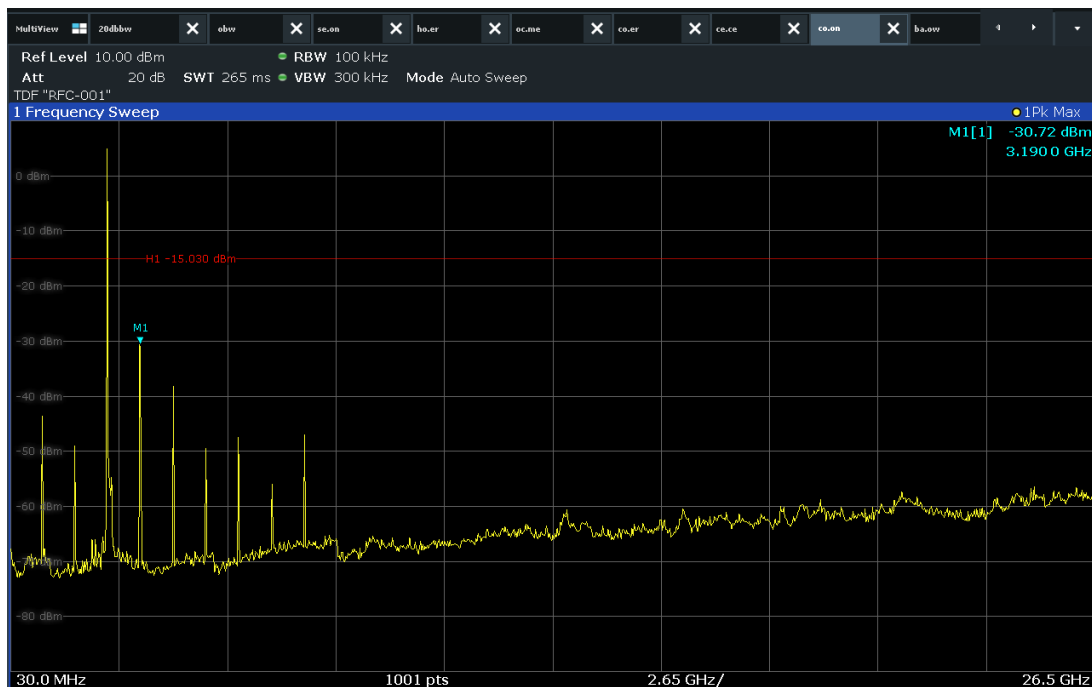


Mid CH

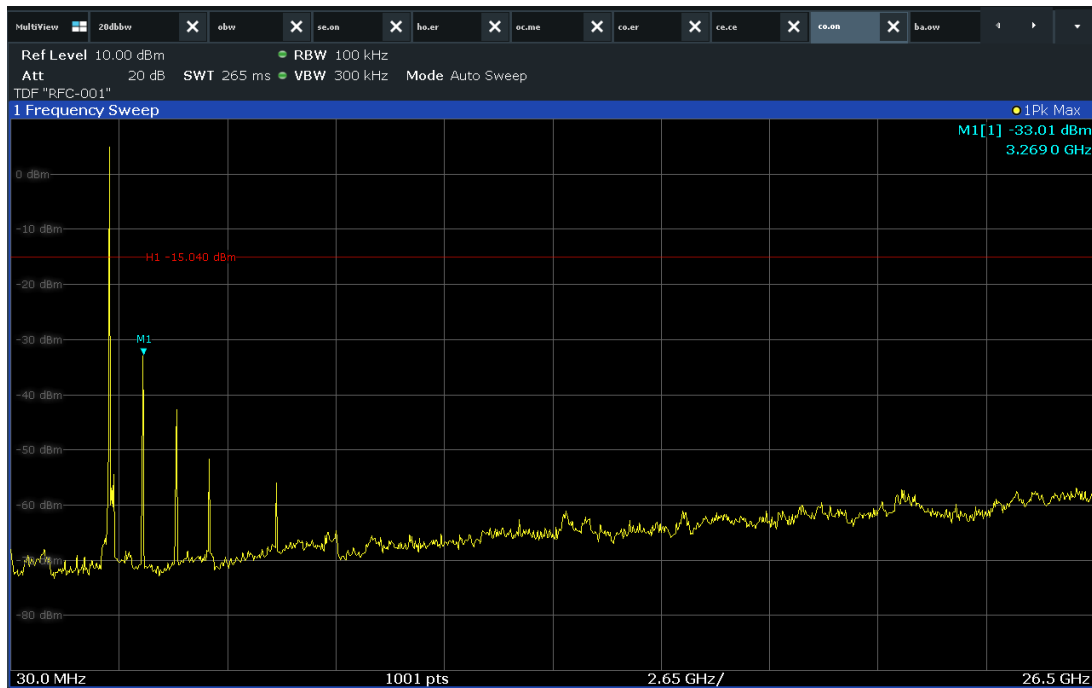


High CH

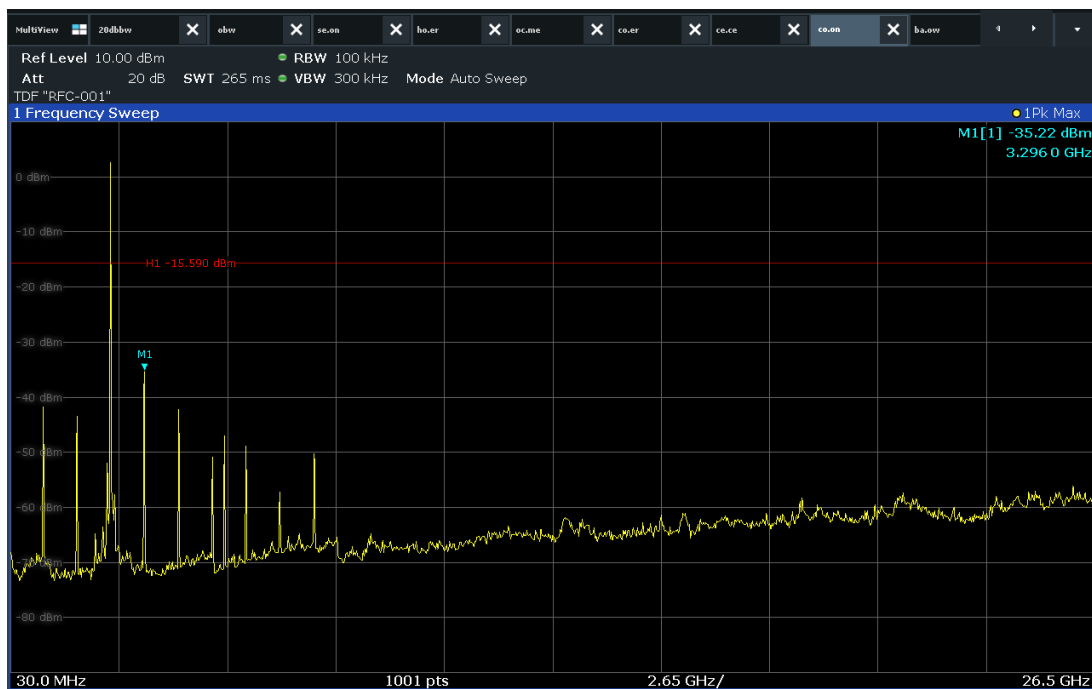
9.3.1.2 Unwanted Emissions In Non-Restricted Frequency Bands for FHSS



Low CH

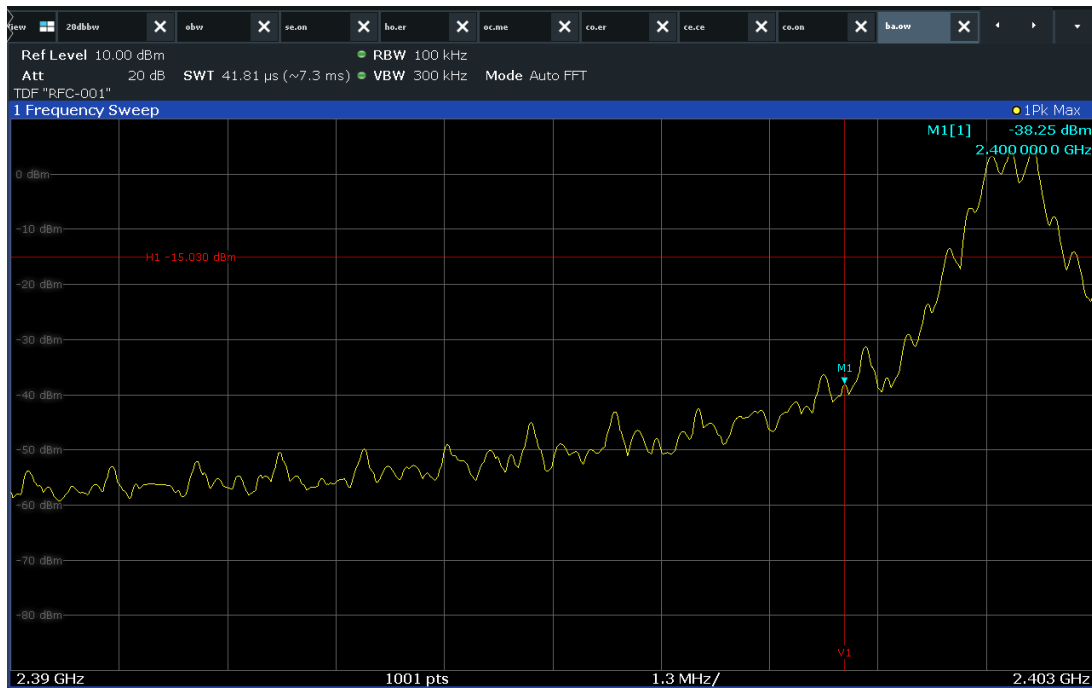


Mid CH

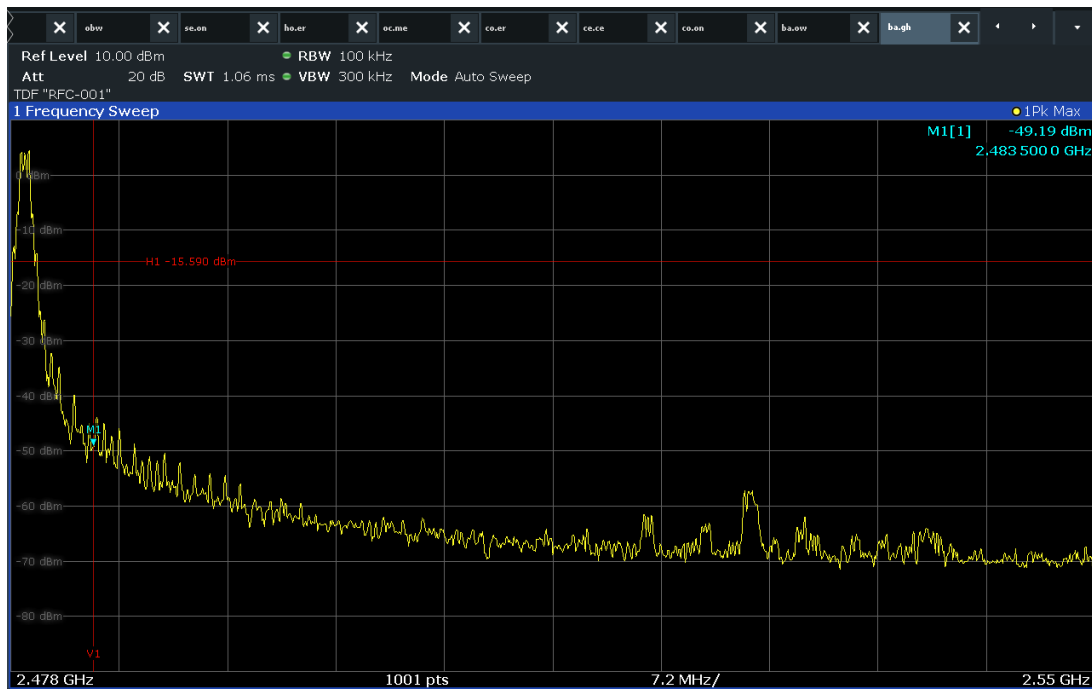


High CH

9.3.1.3 Band Edge (single channels) for FHSS



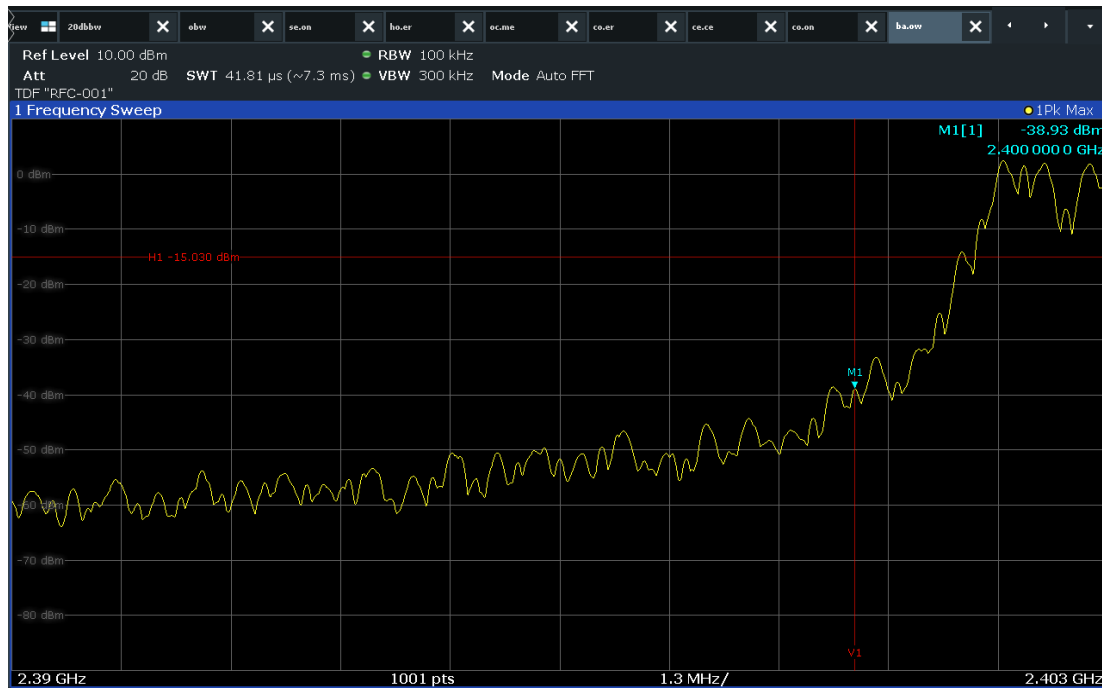
Low CH



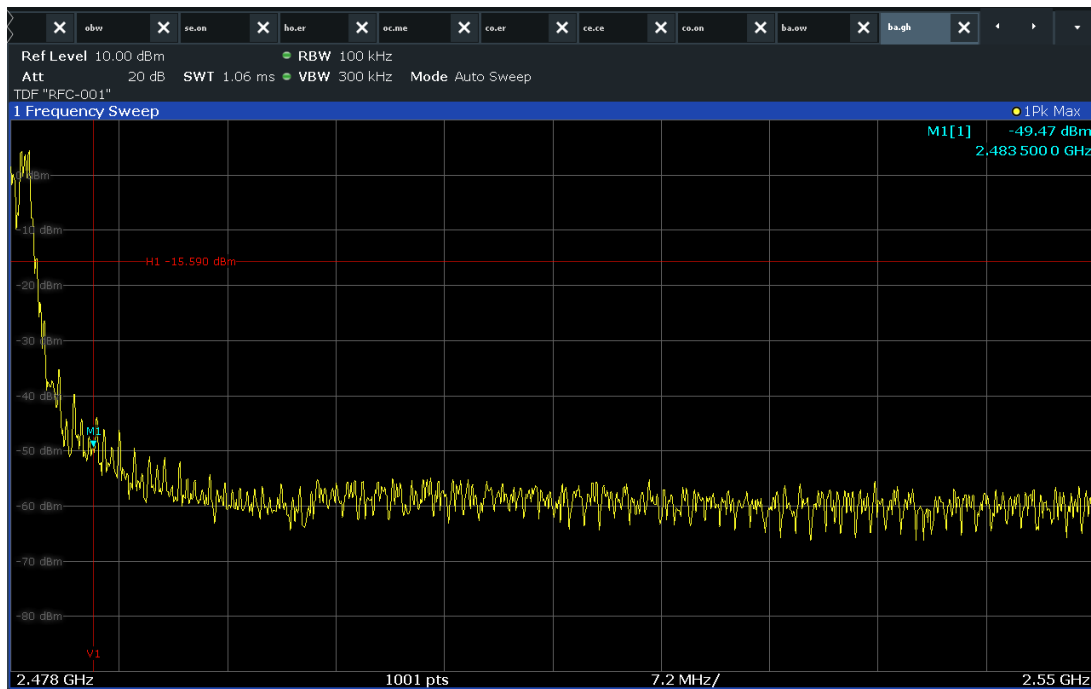
High CH



9.3.1.4 Band Edge (hopping) for FHSS



Low CH

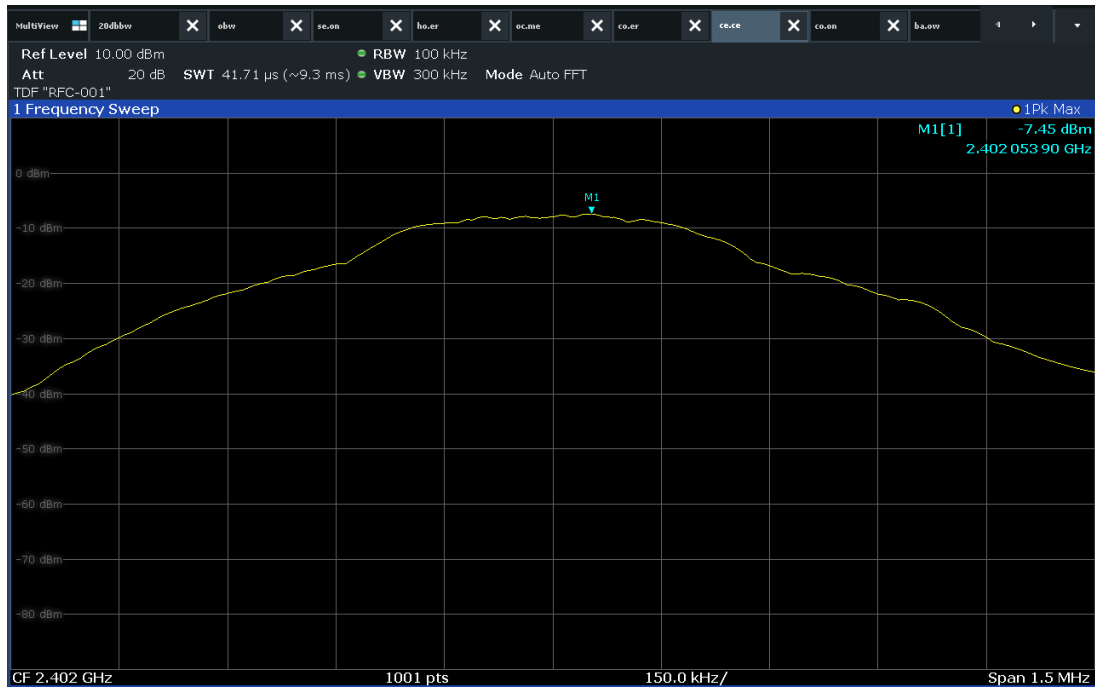


High CH

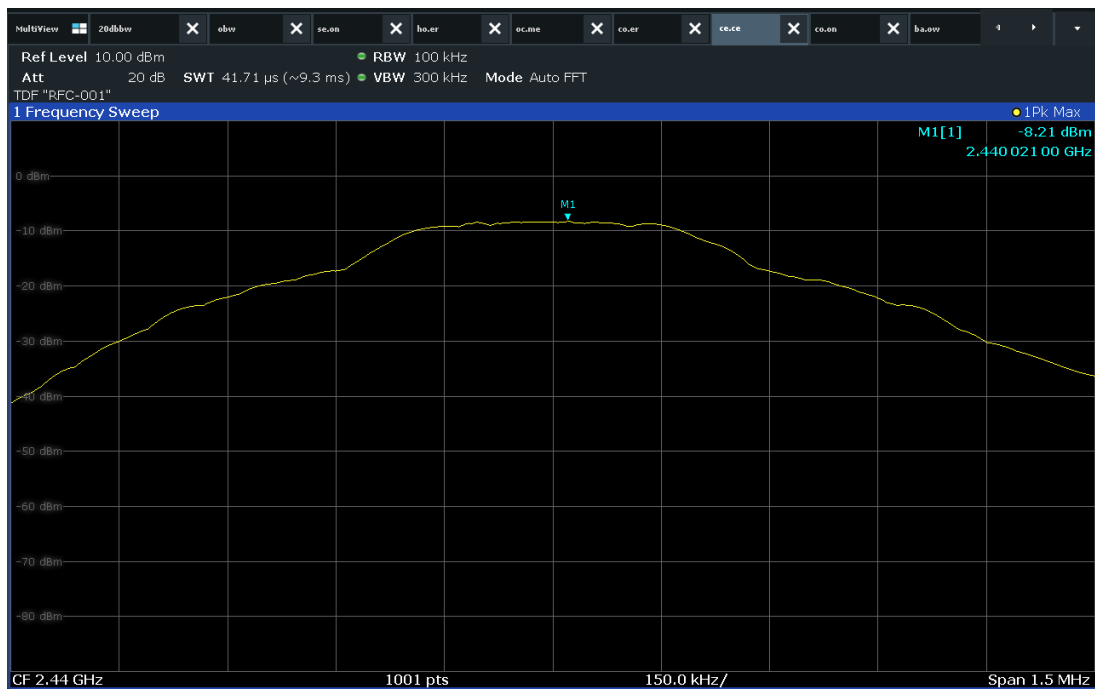


9.3.1.5 Signal level (dB m) for DH5

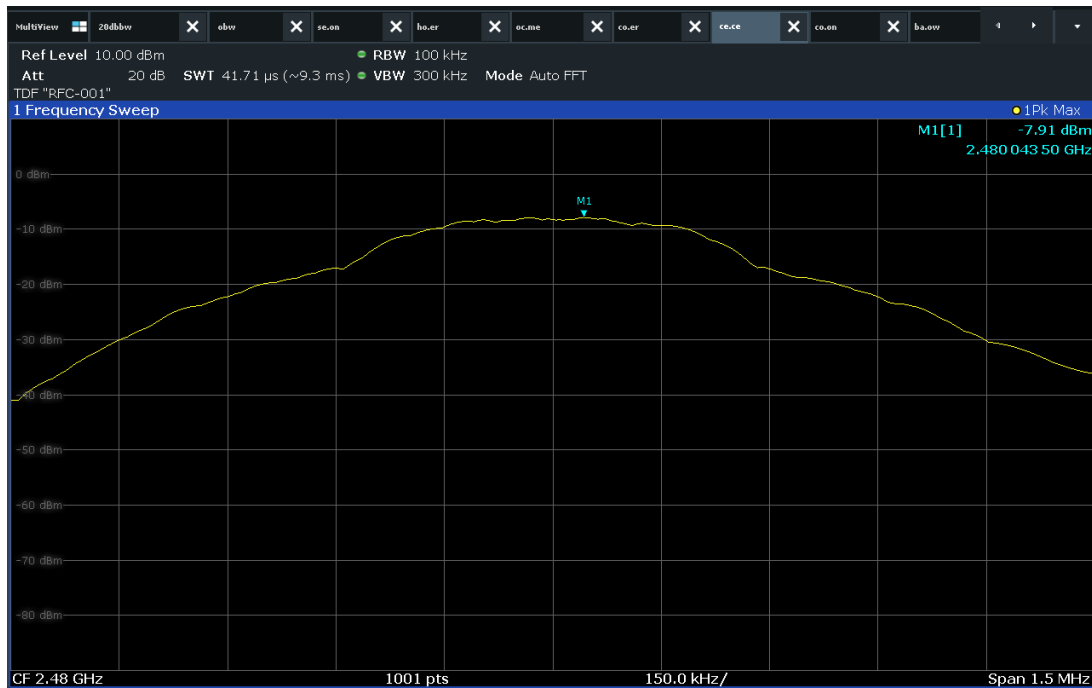
9



Low CH

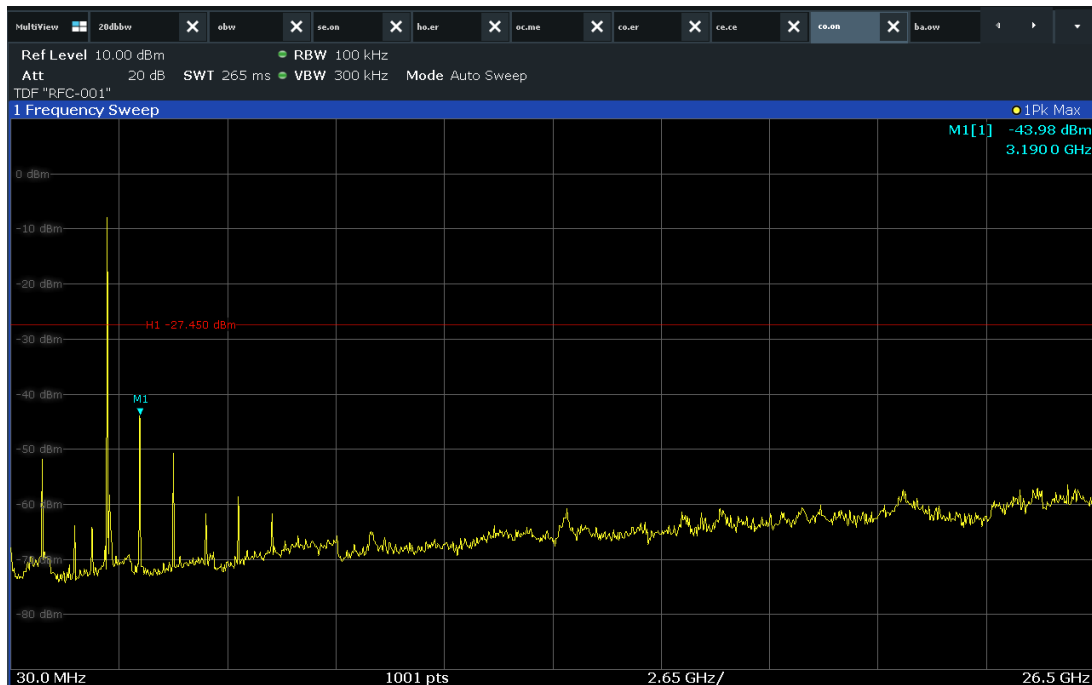


Mid CH

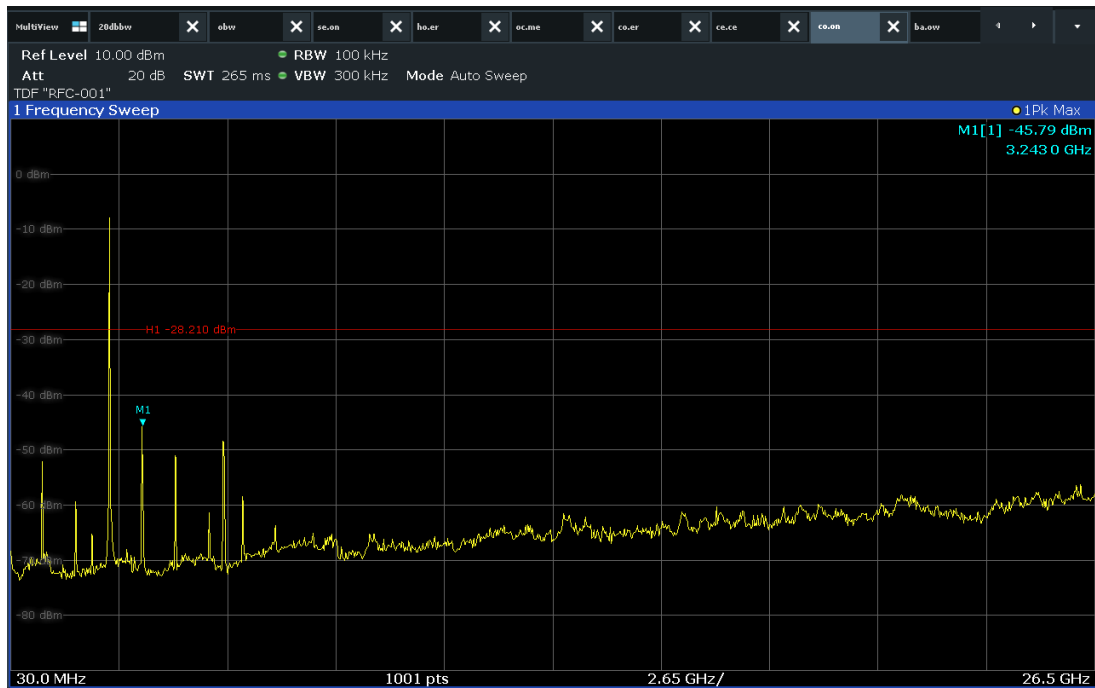


High CH

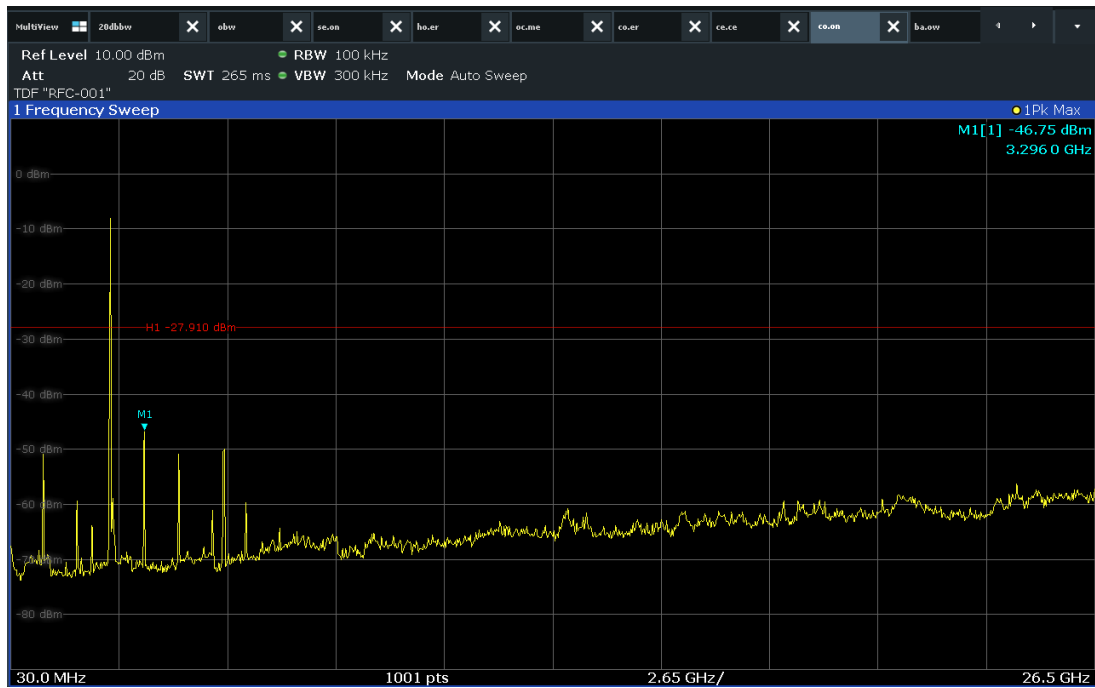
9.3.1.6 Unwanted Emissions In Non-Restricted Frequency Bands for DH5



Low CH



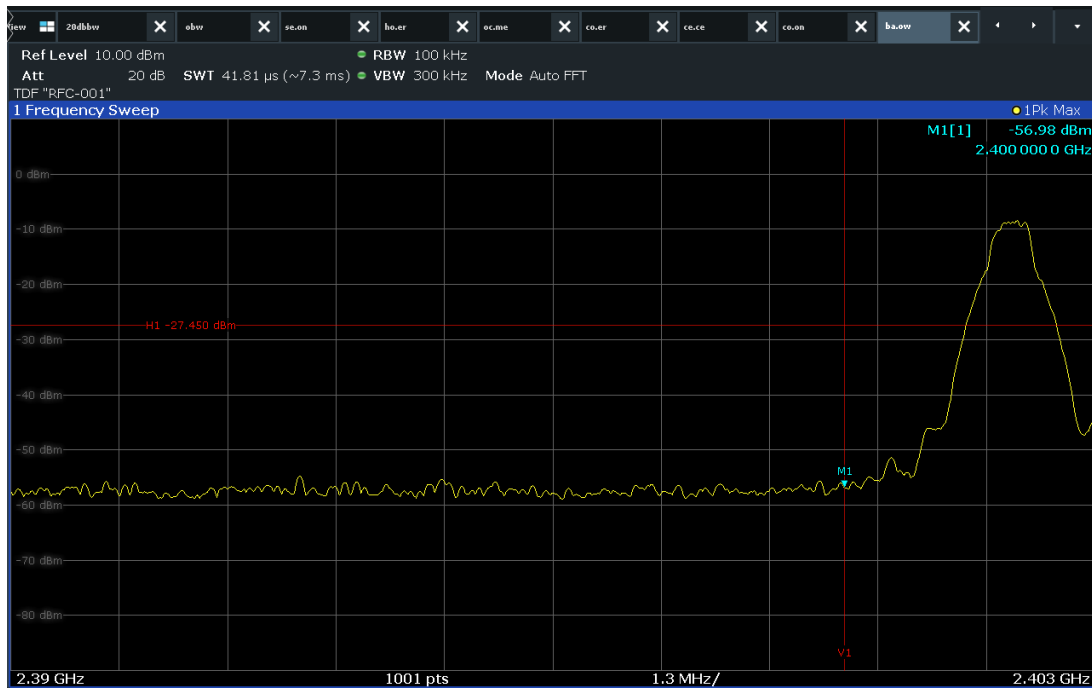
Mid CH



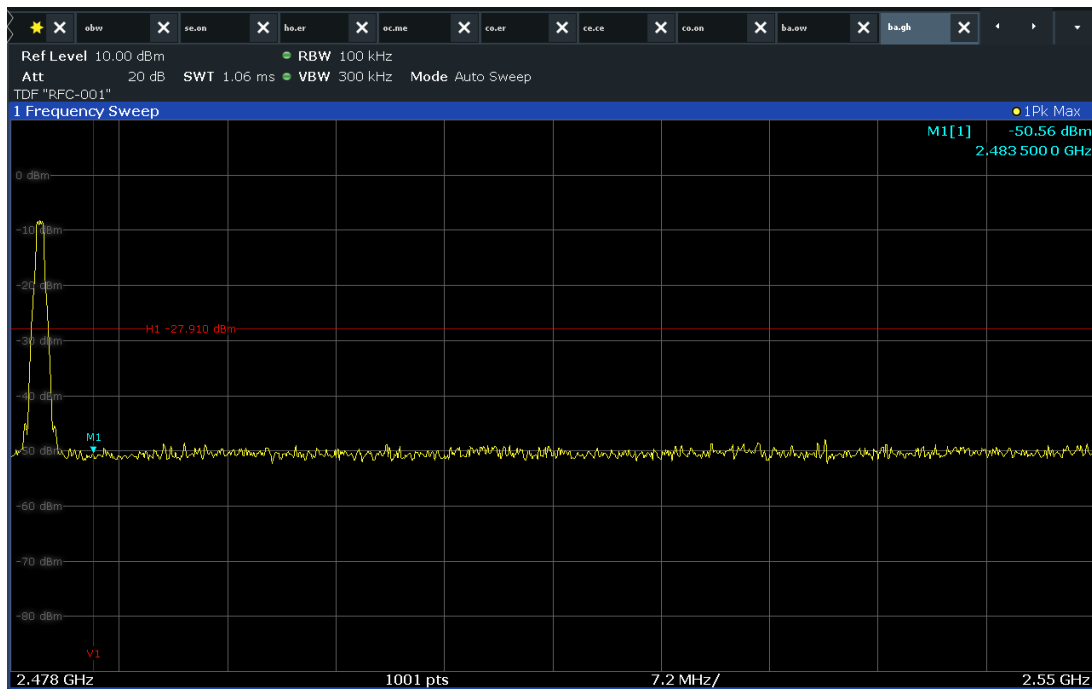
High CH



9.3.1.7 Band Edge (single channels) for DH5

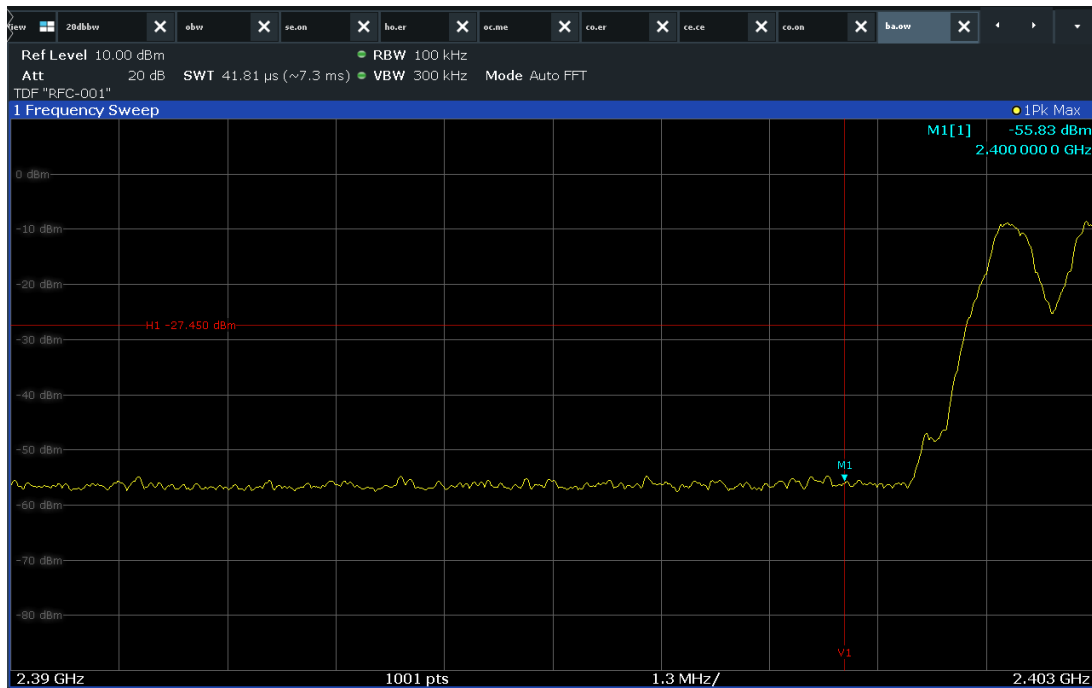


Low CH

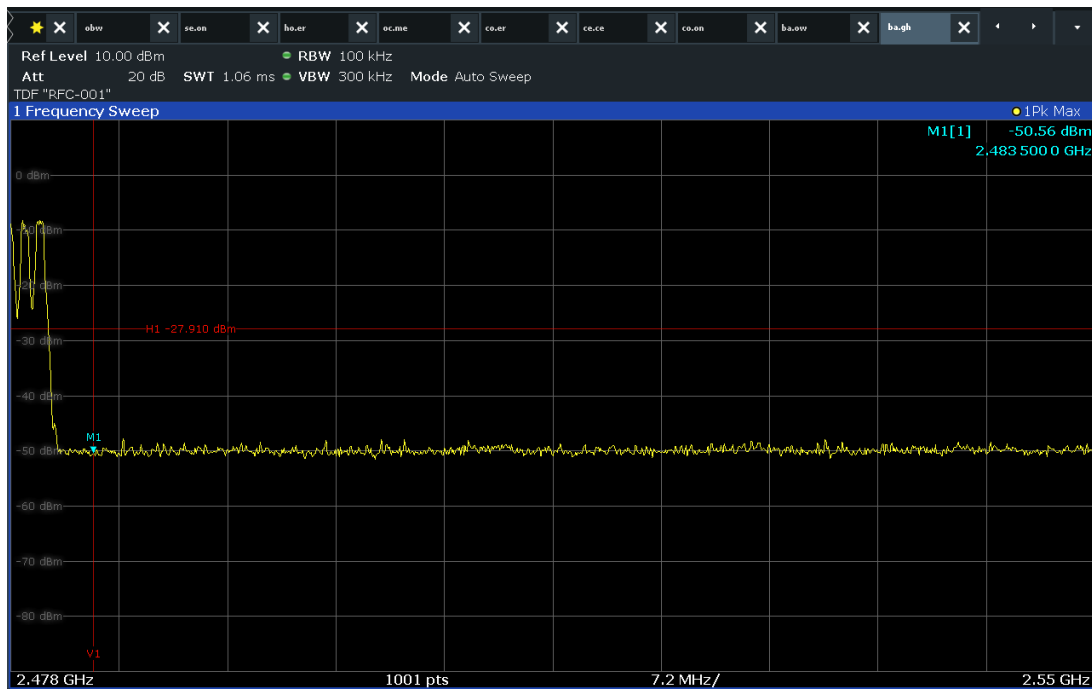


High CH

9.3.1.8 Band Edge (hopping) for DH5



Low CH



High CH

10. Radiated Spurious Emission

10.1 Measurement method

Standard : ANSI 63.10 (6.4/6.5/6.6)

10.2 Limit

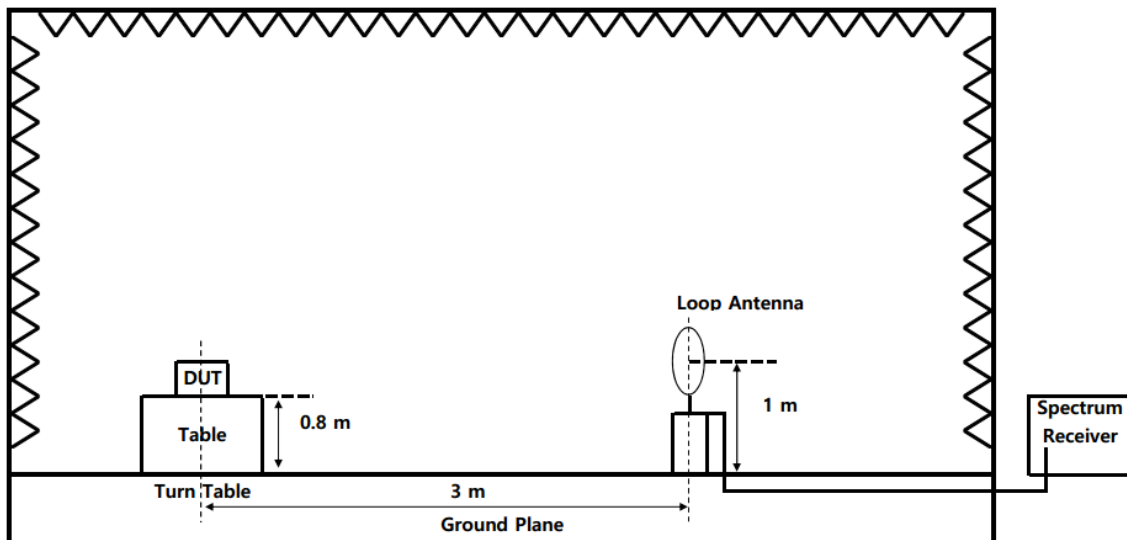
Standard : §15.205, §15.209

10.3 Test setup

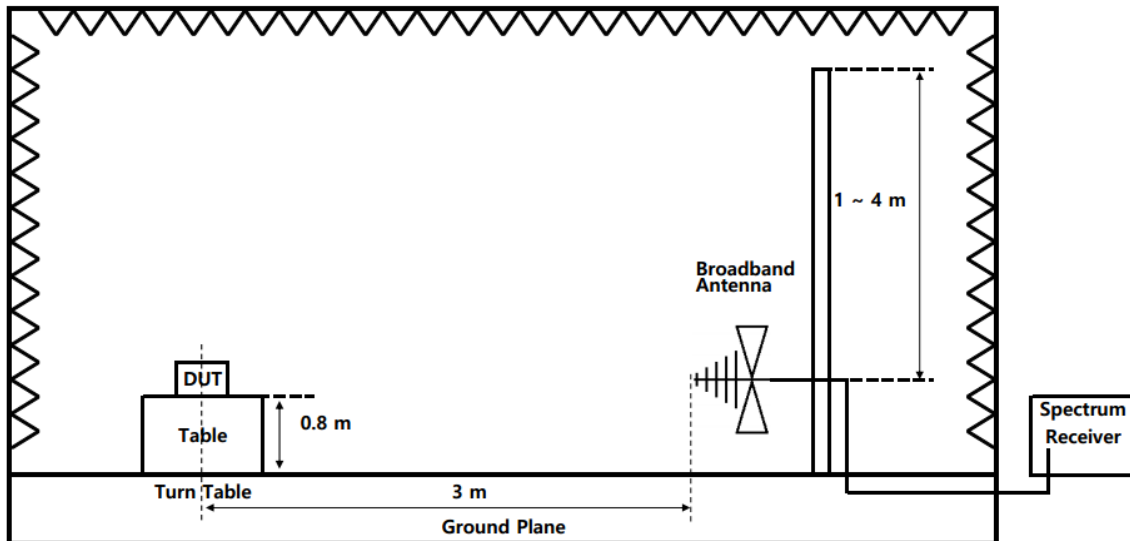
The radiated emissions measurements were performed on the 3 m, Semi-Anechoic Chamber. The EUT was placed on a non-conductive turntable above the ground plane.

The frequency spectrum from 9 kHz to 26.5 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

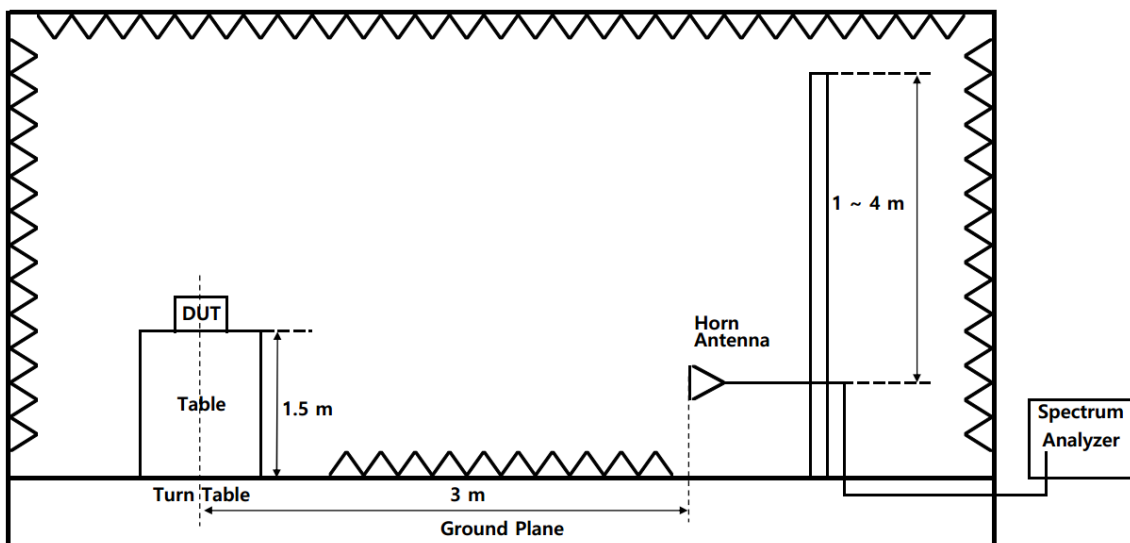
10.3.1 Below 30 MHz



10.3.2 30 MHz to 1 GHz



10.3.3 Above 1 GHz



**10.4 Test data**

Operating mode : Transmit mode

Test Result : Pass

10.4.1 Test data for Restricted band**10.4.1.1 Measure Results for FHSS**

Frequency	Reading	Detector	Ant. Pol.	Corr. Factor	Result	Limit	Margin
(MHz)	(dBμV)		(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low CH							
2 389.98	65.88	Peak	H	-10.10	55.78	73.98	18.20
	33.56	Average	H		23.46	53.98	30.52
High CH							
2 484.59	52.06	Peak	H	-9.70	42.36	73.98	31.62
	34.87	Average	H		25.17	53.98	28.81

10.4.1.2 Measure Results for DH5

Frequency	Reading	Detector	Ant. Pol.	Corr. Factor	Result	Limit	Margin
(MHz)	(dBμV)		(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low CH							
2 366.61	47.86	Peak	V	-10.20	37.66	73.98	36.32
	34.40	Average	V		24.20	53.98	29.78
High CH							
2 488.96	49.66	Peak	V	-9.70	39.96	73.98	34.02
	34.77	Average	V		25.07	53.98	28.91

※ Ant. Pol. : Antenna Polarization

※ Corr. Factor. : Antenna Factor + Cable Loss - Amplifier Gain

※ Result = Reading + Corr. Factor

※ Margin = Limit – Result



10.4.2 Test data for Spurious & Harmonic

10.4.2.1 Measurement Results for FHSS, DH5

below 30 MHz

Frequency	Reading	Detector	Ant. Pol.	Corr. Factor	Result	Limit	Margin
(MHz)	(dBμV)		(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low CH							
It was not found any emissions peaks found from the EUT.							
Mid CH							
It was not found any emissions peaks found from the EUT.							
High CH							
It was not found any emissions peaks found from the EUT.							

※ Ant. Pol. : Antenna Polarization

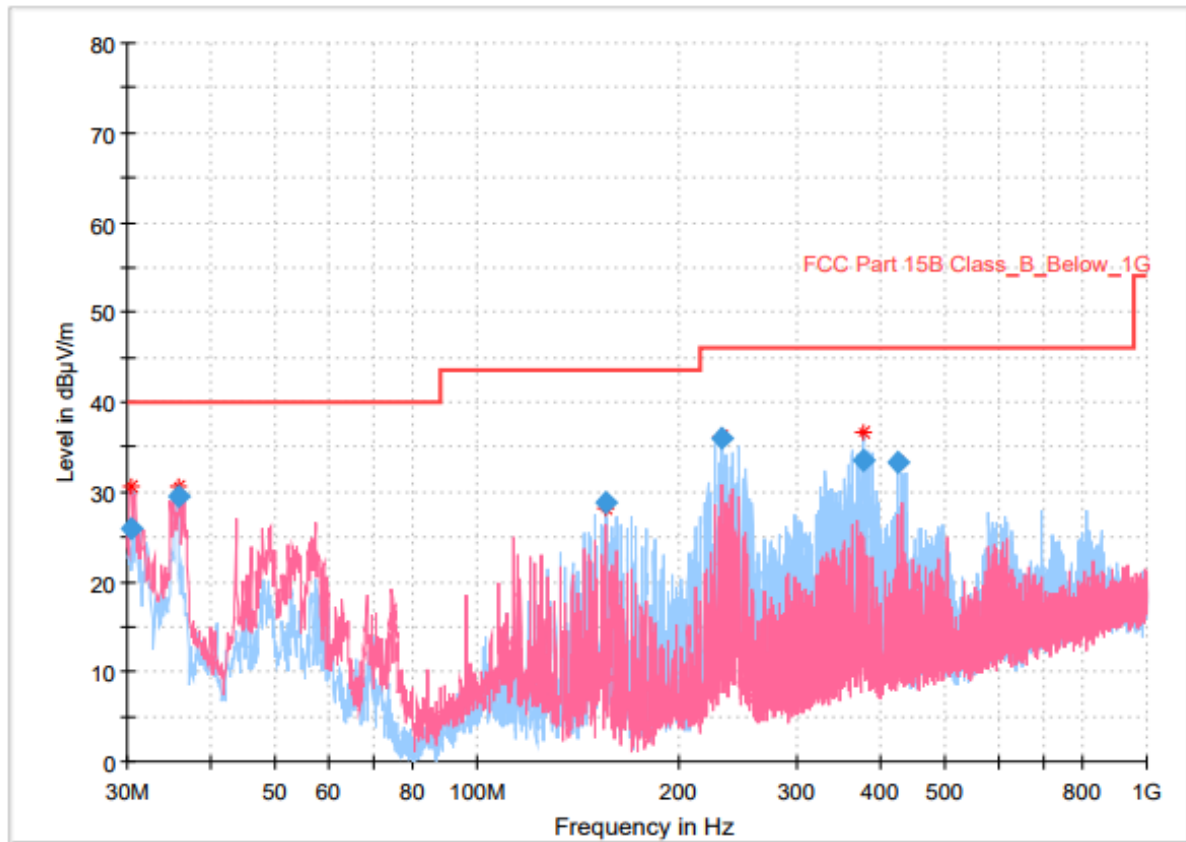
※ Corr. Factor. : Antenna Factor + Cable Loss - Amplifier Gain

※ Result = Reading + Corr. Factor

※ Margin = Limit – Result



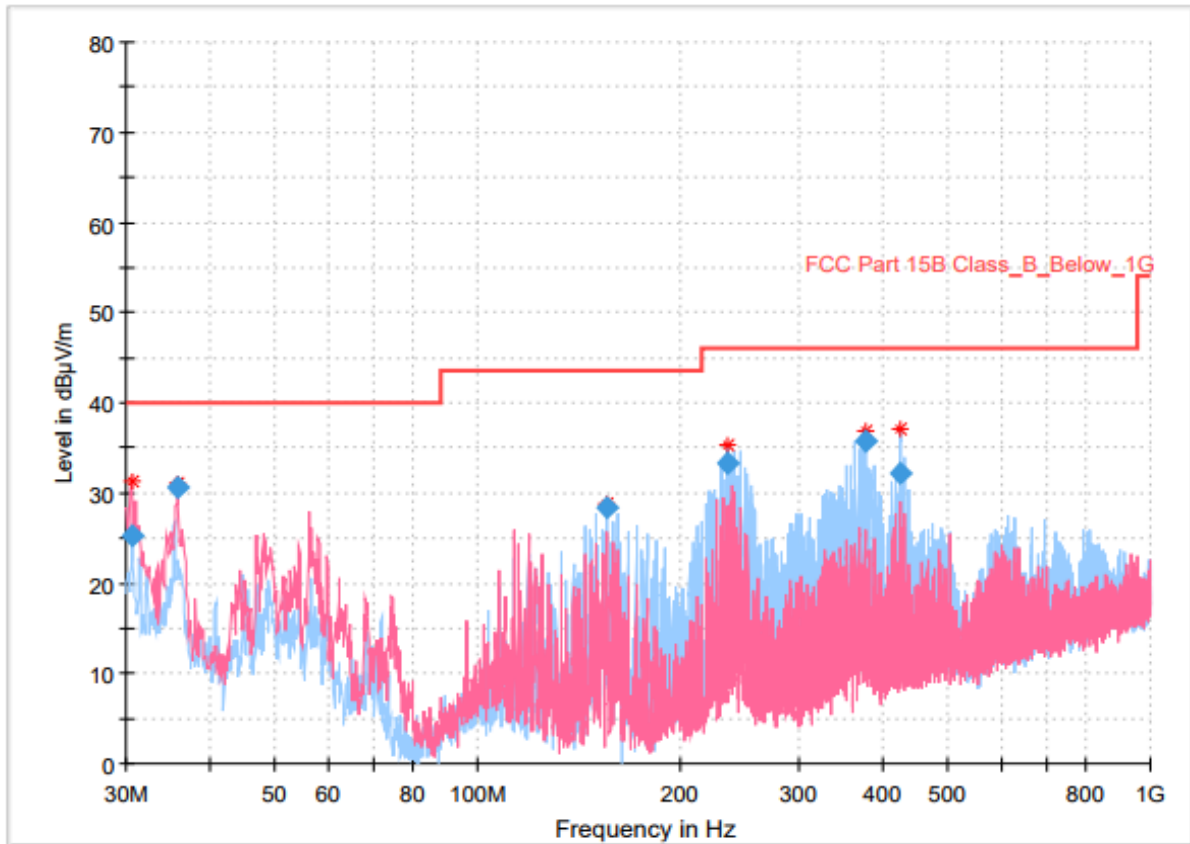
Measurement Results for below 1 GHz for FHSS



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.485000	26.00	40.00	14.00	1000.0	120.000	100.0	V	101.0	-26.7
35.917000	29.60	40.00	10.40	1000.0	120.000	100.0	V	33.0	-25.8
155.906000	28.78	43.50	14.72	1000.0	120.000	100.0	H	356.0	-28.0
232.439000	36.05	46.00	9.95	1000.0	120.000	100.0	H	184.0	-23.5
376.193000	33.60	46.00	12.40	1000.0	120.000	100.0	H	332.0	-19.2
424.984000	33.27	46.00	12.73	1000.0	120.000	100.0	H	291.0	-18.0

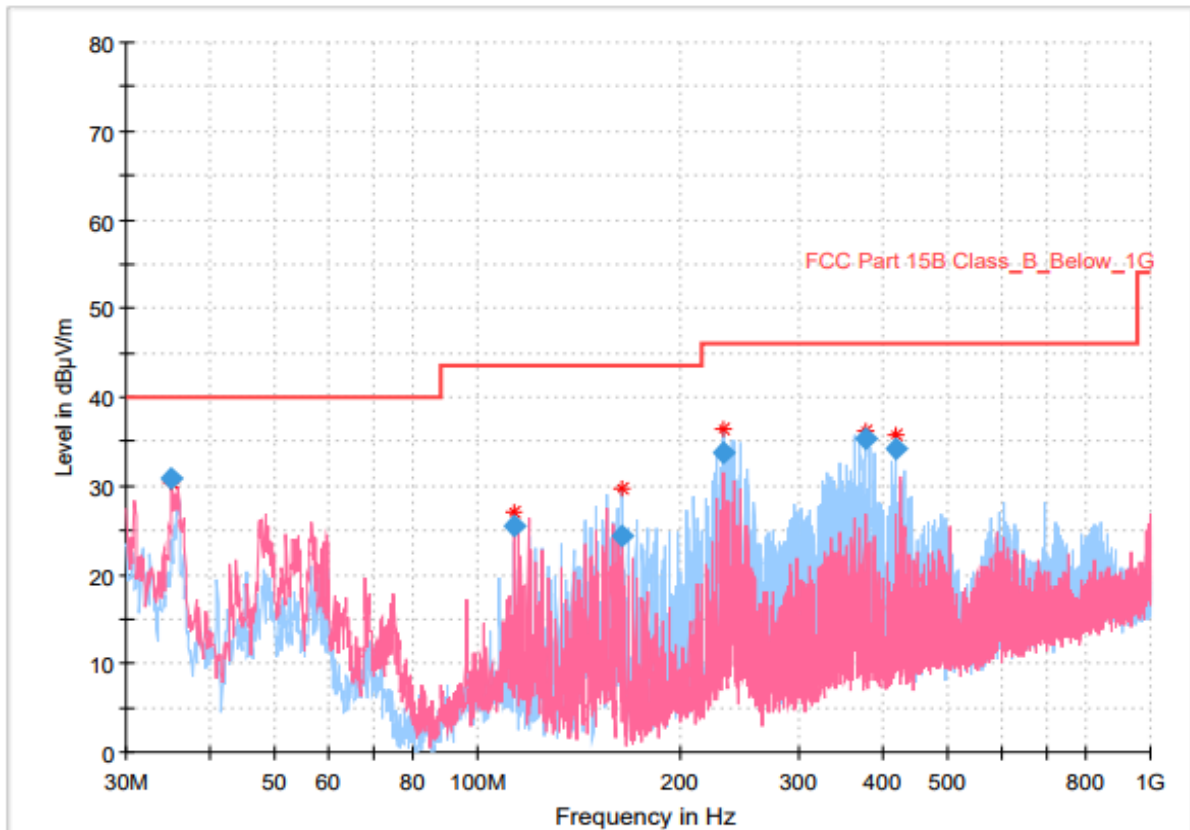
Low CH



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.582000	25.22	40.00	14.78	1000.0	120.000	100.0	V	286.0	-26.8
35.820000	30.66	40.00	9.34	1000.0	120.000	100.0	V	148.0	-25.8
155.809000	28.32	43.50	15.18	1000.0	120.000	100.0	H	2.0	-28.0
235.252000	33.36	46.00	12.64	1000.0	120.000	100.0	H	26.0	-23.3
376.290000	35.79	46.00	10.21	1000.0	120.000	100.0	H	0.0	-19.2
425.275000	32.11	46.00	13.89	1000.0	120.000	100.0	H	203.0	-18.0

Mid CH



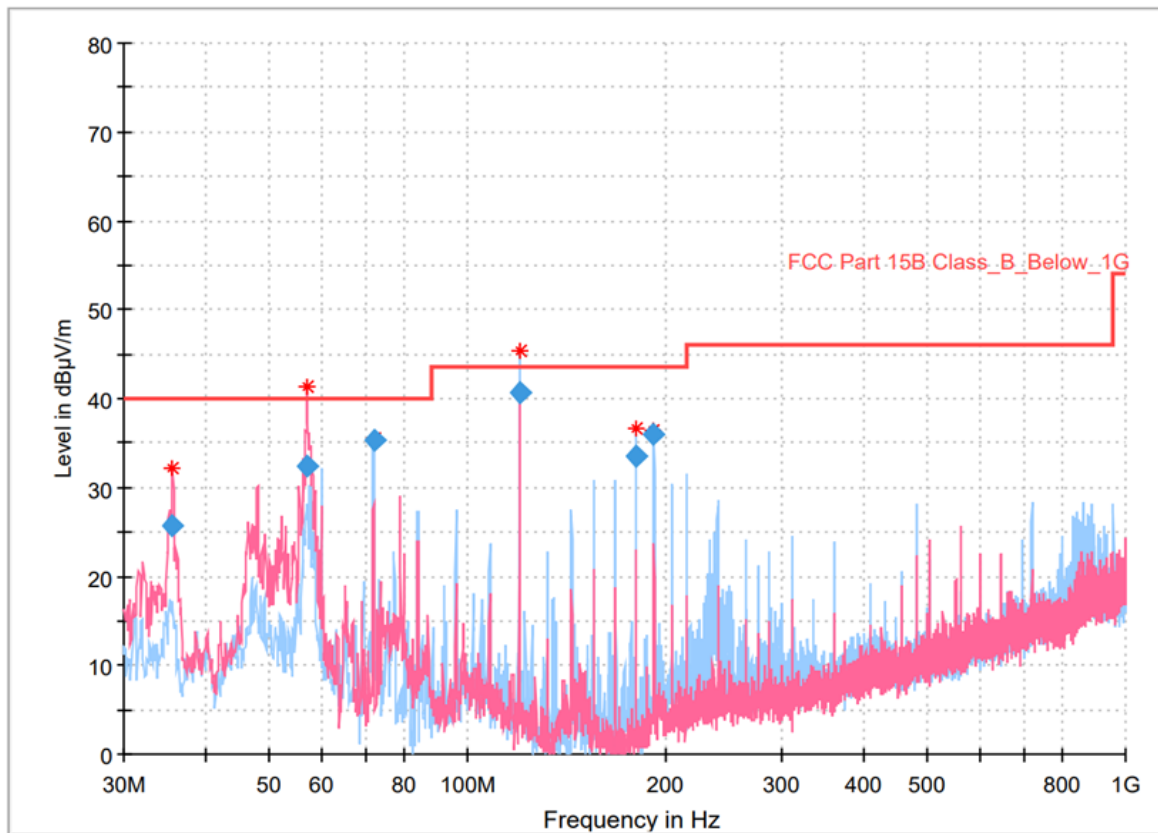
Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
35.141000	30.93	40.00	9.07	1000.0	120.000	100.0	V	193.0	-26.1
113.420000	25.46	43.50	18.04	1000.0	120.000	100.0	V	113.0	-25.6
164.345000	24.45	43.50	19.05	1000.0	120.000	100.0	H	126.0	-27.6
232.342000	33.74	46.00	12.26	1000.0	120.000	100.0	H	100.0	-23.5
376.387000	35.27	46.00	10.73	1000.0	120.000	100.0	H	0.0	-19.2
419.552000	34.22	46.00	11.78	1000.0	120.000	100.0	H	324.0	-18.1

High CH



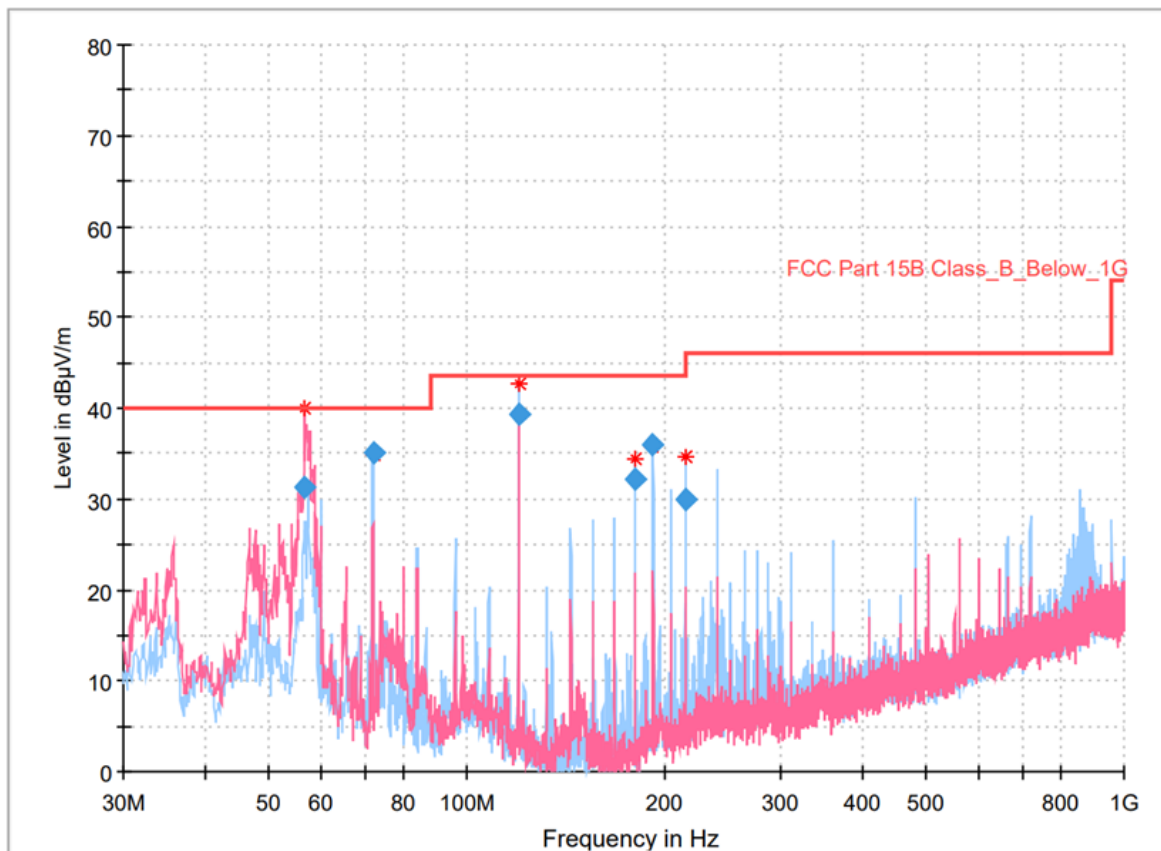
Measurement Results for below 1 GHz for DH5



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
35.529000	25.60	40.00	14.40	1000.0	120.000	100.0	V	88.0	-26.0
56.966000	32.38	40.00	7.62	1000.0	120.000	100.0	V	61.0	-23.7
72.001000	35.33	40.00	4.67	1000.0	120.000	100.0	H	342.0	-28.1
120.016000	40.60	43.50	2.90	1000.0	120.000	100.0	H	150.0	-26.6
179.962000	33.58	43.50	9.92	1000.0	120.000	100.0	H	0.0	-26.7
191.990000	35.95	43.50	7.55	1000.0	120.000	100.0	H	0.0	-25.3

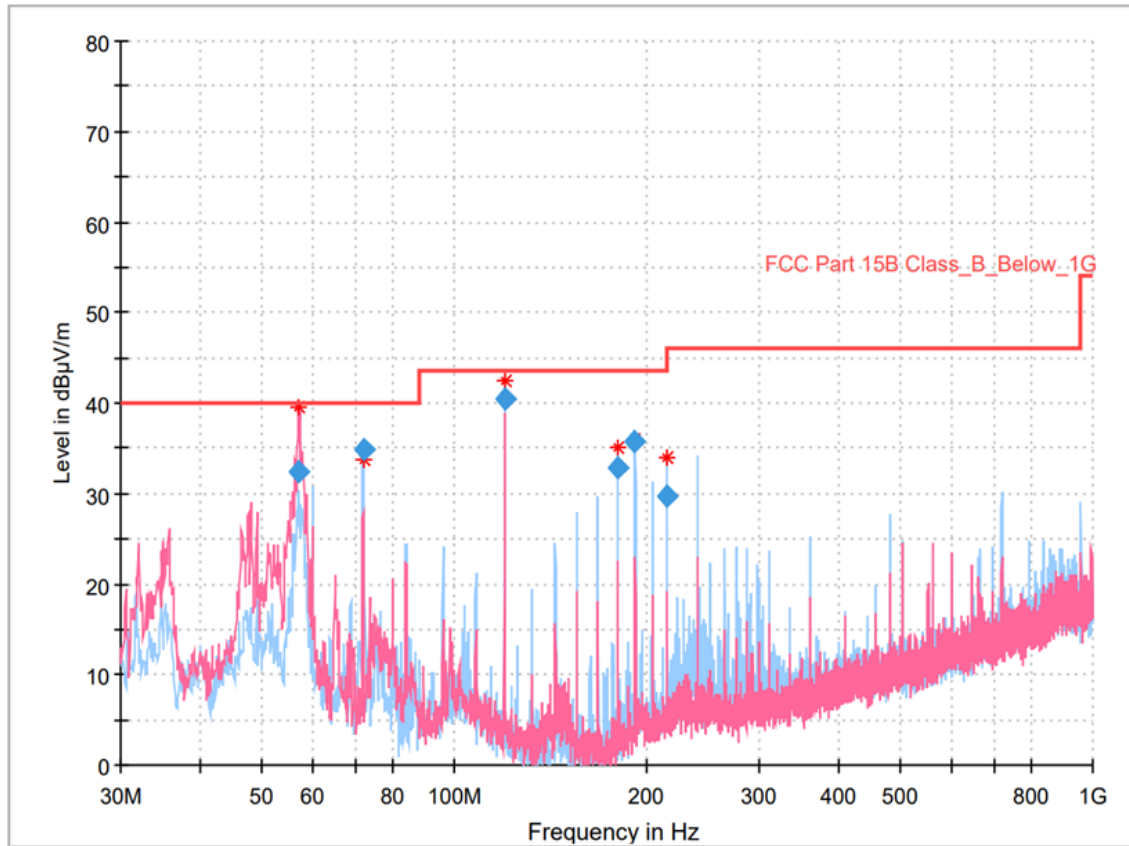
Low CH



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
56.675000	31.20	40.00	8.80	1000.0	120.000	100.0	V	113.0	-23.6
72.001000	35.12	40.00	4.88	1000.0	120.000	100.0	H	2.0	-28.1
120.016000	39.28	43.50	4.22	1000.0	120.000	100.0	H	0.0	-26.6
179.962000	32.17	43.50	11.33	1000.0	120.000	100.0	H	178.0	-26.7
191.990000	35.88	43.50	7.62	1000.0	120.000	100.0	H	0.0	-25.3
215.949000	30.01	43.50	13.49	1000.0	120.000	100.0	H	165.0	-24.8

Mid CH



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
56.966000	32.30	40.00	7.70	1000.0	120.000	100.0	V	335.0	-23.7
72.001000	34.91	40.00	5.09	1000.0	120.000	100.0	H	168.0	-28.1
120.016000	40.36	43.50	3.14	1000.0	120.000	100.0	H	168.0	-26.6
179.962000	32.85	43.50	10.65	1000.0	120.000	100.0	H	0.0	-26.7
191.990000	35.80	43.50	7.70	1000.0	120.000	100.0	H	0.0	-25.3
215.949000	29.76	43.50	13.74	1000.0	120.000	100.0	H	168.0	-24.8

High CH



Measurement Results for Above 1 GHz for FHSS

Frequency	Reading	Detector	Ant. Pol.	Corr. Factor	Result	Limit	Margin
(MHz)	(dBμV)		(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low CH							
3 201.50	44.15	Peak	V	-4.90	39.25	73.98	34.73
	30.34	Average	V		25.44	53.98	28.54
4 802.90	44.90	Peak	V	-1.00	43.90	73.98	30.08
	29.39	Average	V		28.39	53.98	25.59
5 603.60	42.08	Peak	V	-0.10	41.98	73.98	32.00
	27.97	Average	V		27.87	53.98	26.11
7 205.00	41.68	Peak	V	3.30	44.98	73.98	29.00
	26.92	Average	V		30.22	53.98	23.76
Mid CH							
4 077.00	53.52	Peak	V	-2.90	50.62	73.98	23.36
	39.26	Average	V		36.36	53.98	17.62
4 891.30	46.99	Peak	V	-1.00	45.99	73.98	27.99
	31.74	Average	V		30.74	53.98	23.24
5 707.30	47.61	Peak	V	0.00	47.61	73.98	26.37
	34.78	Average	V		34.78	53.98	19.20
7 337.60	41.23	Peak	V	3.00	44.23	73.98	29.75
	27.14	Average	V		30.14	53.98	23.84
High CH							
4 957.60	46.91	Peak	V	-1.00	45.91	73.98	28.07
	32.29	Average	V		31.29	53.98	22.69
5 783.80	46.69	Peak	V	0.60	47.29	73.98	26.69
	31.50	Average	V		32.10	53.98	21.88
7 436.20	44.43	Peak	V	2.80	47.23	73.98	26.75
	29.76	Average	V		32.56	53.98	21.42



Measurement Results for Above 1 GHz for DH5

Frequency	Reading	Detector	Ant. Pol.	Corr. Factor	Result	Limit	Margin
(MHz)	(dBμV)		(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low CH							
4 804.60	41.78	Peak	H	-1.00	40.78	73.98	33.20
	27.89	Average	H		26.89	53.98	27.09
7 206.70	39.39	Peak	H	3.30	42.69	73.98	31.29
	25.35	Average	H		28.65	53.98	25.33
Mid CH							
3 983.50	52.62	Peak	V	-3.40	49.22	73.98	24.76
	29.76	Average	V		26.36	53.98	27.62
4 882.80	41.67	Peak	H	-1.00	40.67	73.98	33.31
	28.08	Average	H		27.08	53.98	26.90
7 324.00	39.15	Peak	V	3.00	42.15	73.98	31.83
	25.34	Average	V		28.34	53.98	25.64
High CH							
4 959.30	41.82	Peak	V	-1.00	40.82	73.98	33.16
	28.61	Average	V		27.61	53.98	26.37
7 439.60	39.24	Peak	V	2.80	42.04	73.98	31.94
	27.00	Average	V		29.80	53.98	24.18

※ Ant. Pol. : Antenna Polarization

※ Corr. Factor. : Antenna Factor + Cable Loss - Amplifier Gain

※ Result = Reading + Corr. Factor

※ Margin = Limit – Result



11. Power Line Conducted Emission

11.1 Measurement method

Standard : §15.207

11.2 Limit

Standard : §15.207

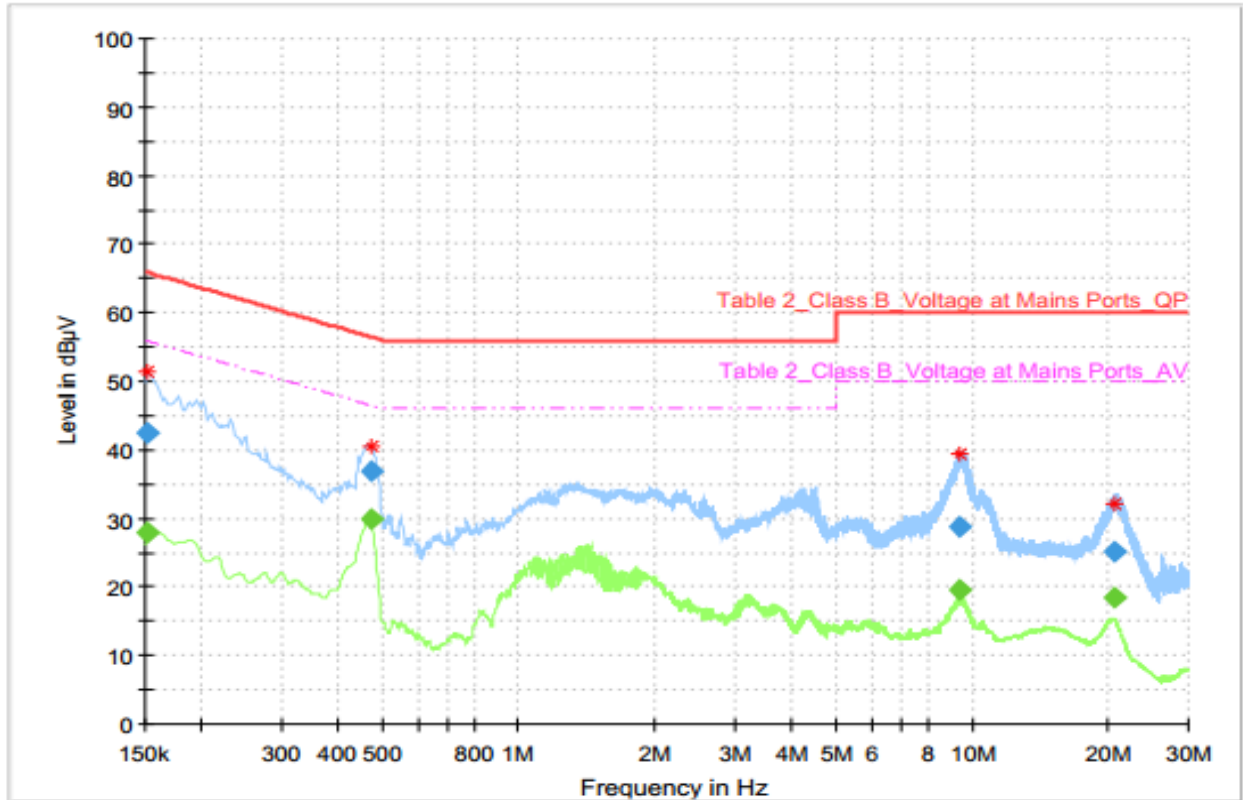
11.3 Test data

Operating mode : Transmit mode

Test Result : Pass

11.3.1 Measured Results & Graph

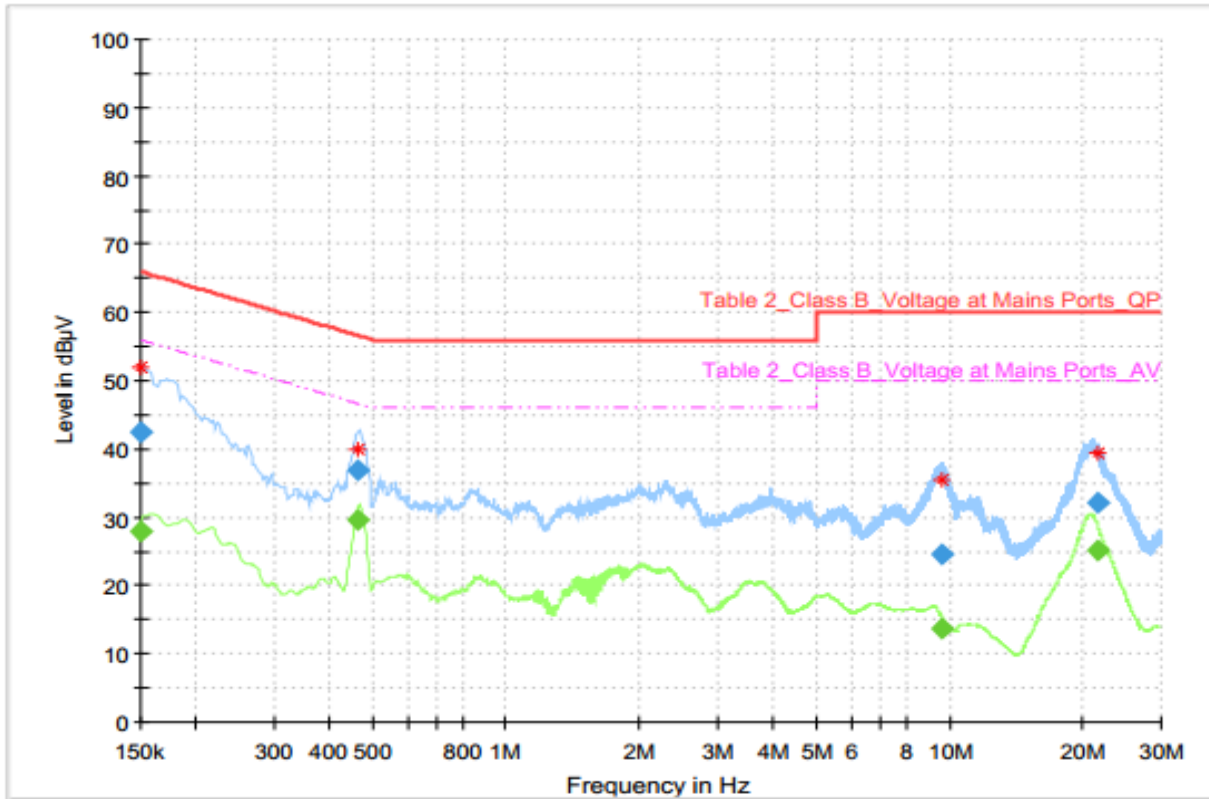
Live line



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.152250	---	27.90	55.88	27.98	5000.0	9.000	L1	9.8
0.152250	42.34	---	65.88	23.54	5000.0	9.000	L1	9.8
0.474000	---	29.96	46.44	16.48	5000.0	9.000	L1	9.9
0.474000	36.85	---	56.44	19.60	5000.0	9.000	L1	9.9
9.334500	---	19.43	50.00	30.57	5000.0	9.000	L1	9.9
9.334500	28.79	---	60.00	31.21	5000.0	9.000	L1	9.9
20.649750	---	18.49	50.00	31.51	5000.0	9.000	L1	10.0
20.649750	25.25	---	60.00	34.75	5000.0	9.000	L1	10.0

Neutral line



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	28.07	56.00	27.94	5000.0	9.000	N	9.7
0.150000	42.56	---	66.00	23.44	5000.0	9.000	N	9.7
0.462750	---	29.52	46.64	17.12	5000.0	9.000	N	9.9
0.462750	36.85	---	56.64	19.79	5000.0	9.000	N	9.9
9.654000	---	13.73	50.00	36.27	5000.0	9.000	N	9.8
9.654000	24.50	---	60.00	35.50	5000.0	9.000	N	9.8
21.446250	---	25.11	50.00	24.89	5000.0	9.000	N	10.0
21.446250	32.21	---	60.00	27.79	5000.0	9.000	N	10.0



12. Used equipment on test

	Description	Model Name	Manufacturer	Serial Number	Next Cal. (cycle)
☒	SIGNAL & SPECTRUM ANALYZER	FSW85	Rohde & Schwarz	101306	2024-03-02 (1Y)
☒	LOOP ANTENNA	HFH2-Z2	Rohde & Schwarz	100271	2025-03-08 (2Y)
☒	TRILOG BROADBAND ANTENNA	VULB9162	SCHWARZBECK	143	2024-12-14 (1Y)
☒	RF Pre Amplifier	SCU08	Rohde & Schwarz	100746	2024-04-03 (1Y)
☒	EMI Test Receiver	ESR7	Rohde & Schwarz	102034	2024-04-04 (1Y)
☒	Horn Antenna	HF907	Rohde & Schwarz	102556	2023-08-22 (3M)
☒	RF Pre Amplifier	SCU18	Rohde & Schwarz	102342	2024-04-03 (1Y)
☒	EMI Test Receiver	ESR26	Rohde & Schwarz	101462	2024-04-04 (1Y)
☒	HORN ANTENNA	LB-42-10-C-KF	A-INFOMW	J202024625	2024-03-07 (1Y)
☒	PREAMPLIFIER	AMF-4F-18265-35-8P-1	MITEQ	771846	2024-03-07 (1Y)
☒	LISN	ENV216	Rohde & Schwarz	102193	2024-04-03 (1Y)

※ All test equipment used is calibration on a regular basis.

End of Report