



TEST REPORT

Report No. SST240909001EF01

Applicant: GUANGDONG MARXON ELECTRONICS CO., LTD.

Address of Applicant: No.25, Industrial Street, Zhaoqing High-Tech Zone, Zhaoqing, Guangdong, China 526238

Product Name: POWERSPORT AMPLIFIED SOUNDBAR

Trade Mark: MARXON

Standard(s): FCC CFR Title 47 Part 15 Subpart E Section 15.247

FCC ID: 2BK5C-S2341

Test Report Form No: SST-RD-7.5-02-E01(A/0)

Date of sample receipt: 2024/9/10

Date of Test: 2024/9/10 - 2024/10/15

Date of report issued: 2024/10/16

*The equipment complies with the requirements according to the standard(s) or Specification above, it is applicable only to the tested sample identified in the report.

Prepared by:

Bo Li

Reviewed by:

Tiger Chen

Approved by:

Seven Zhan



*The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Version	Description	Date of Issue
V1.0	Original	2024/10/16



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3 Test Summary

Test items	Basics standards	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)(iii)	Pass
Dwell Time	15.247 (a)(1)(iii)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

Notes:

1: NA =Not Applicable

2: Determining compliance based on the results of the compliance measurement, not taking into account measurement uncertainty. If necessary, the applicant shall inform test lab in advance

3: Additions, Deviations and Exclusions from Standards: None.

4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Item	Uncertainty ($\pm$) (k=2, 95%)	
Output Power, Conducted	0.54	
Power Spectral Density, Conducted	1.28	
Spurious Emissions, Conducted	1.28	
Radiated Emissions(<1GHz)	9kHz~30MHz	2.6
	30MHz~1GHz	5.08
Radiated Emissions(>1GHz)	1GHz~6GHz	4.02
	6GHz~18GHz	4.62
	18GHz~40GHz	4.7
Occupied Bandwidth	1.14	
Conducted Emissions—AC mains	9kHz~150KHz	1.76
	150kHz~30MHz	2.52
Conducted Emissions—Telecom	2.64	

5 General Information

5.1 Client Information

Applicant: GUANGDONG MARXON ELECTRONICS CO., LTD.
Address of applicant: No.25, Industrial Street, Zhaoqing High-Tech Zone, Zhaoqing, Guangdong, China 526238
Manufacturer: Same as Applicant
Address of Manufacturer: Same as Applicant
Factory: Same as Applicant
Address of Factory: Same as Applicant

5.2 General Description of EUT

Product Name:	POWERSPORT AMPLIFIED SOUNDBAR
Model No.:	MS2608
Test Model:	MS2608
Test sample(s) ID:	24090900102
Sample(s) Status:	Continuously transmitter
S/N:	/
Hardware Version:	/
Software Version:	/
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK, Pi/4DQPSK, 8DPSK
Antenna gain:	Refer to section 5.7 for details
Power supply:	DC 12V

5.3 Test mode(s)

Mode 1:	continuously transmitting
Mode 2:	
Mode 3:	

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
3	2404MHz	23	2424MHz	43	2444MHz	63	2464MHz
4	2405MHz	24	2425MHz	44	2445MHz	64	2465MHz
5	2406MHz	25	2426MHz	45	2446MHz	65	2466MHz
6	2407MHz	26	2427MHz	46	2447MHz	66	2467MHz
7	2408MHz	27	2428MHz	47	2448MHz	67	2468MHz
8	2409MHz	28	2429MHz	48	2449MHz	68	2469MHz
9	2410MHz	29	2430MHz	49	2450MHz	69	2470MHz
10	2411MHz	30	2431MHz	50	2451MHz	70	2471MHz
11	2412MHz	31	2432MHz	51	2452MHz	71	2472MHz
12	2413MHz	32	2433MHz	52	2453MHz	72	2473MHz
13	2414MHz	33	2434MHz	53	2454MHz	73	2474MHz
14	2415MHz	34	2435MHz	54	2455MHz	74	2475MHz
15	2416MHz	35	2436MHz	55	2456MHz	75	2476MHz
16	2417MHz	36	2437MHz	56	2457MHz	76	2477MHz
17	2418MHz	37	2438MHz	57	2458MHz	77	2478MHz
18	2419MHz	38	2439MHz	58	2459MHz	78	2479MHz
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see above marked

5.4 Test Facility

The test facility is recognized, certified, or accredited by these organizations:	FCC Accredited Lab Test Firm Registration Number: 638130 Designation Number: CN1359
	IC Registration Lab CAB Identifier No. CN0154
	A2LA Accreditation Lab Certificate No.:7057.01

Test Performed at:	Name GuangDong Set Sail Testing Co., Ltd.
	Address 101, No.19, Tianxin Hudie 1st Road, Huangjiang Town, Dongguan, Guangdong, China

5.5 Description of Support Units

Device Type	Brand	Model	Series No.	Note
Notebook PC	HP	ZHAN 66P	---	---
Battery	GS	6-QW-45(370)-L	---	---

5.6 Additional Instructions

Test Software	FCC_Test_Tools_V2.25
Power level setup	Default

5.7 Antenna Information

Ant	Manufacturer	Model	Antenna Type	Antenna Gain (dBi)	Note
1	Shenzhen Yusheng Communication Equipment Co., Ltd	S-2341	FPC	1.93	BT

All above information provided by the applicant which is fully responsible for those information.

5.8 Others

The laboratory responsible for all the information provided in the report, except those information provided by the applicant. The applicant shall fully responsible for the information they provided. The report would be invalid without a stamp of test laboratory and the signatures of compiler and approver. The laboratory has not been responsible for the sampling stage; the test report merely corresponds to the test sample received. Any objection to the test report shall submitted to the test laboratory within 15 days from the date of receipt of the report. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

6 Technical Requirement and Measurement Data

6.1 Generally requirement

15.203 requirement:

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.

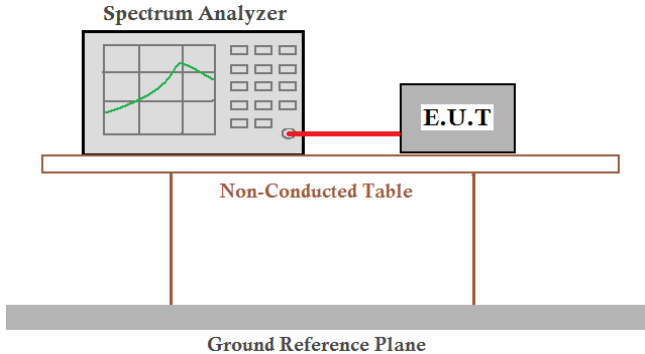
15.247(c) (1)(i) requirement:

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.

EUT Antenna:

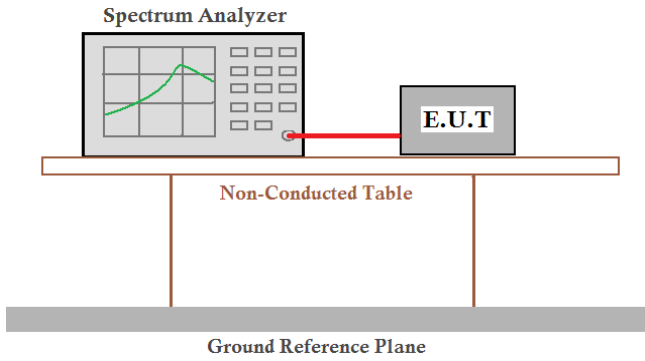
Reference to the appendix II for details

6.2 Conducted Peak Output Power

Limit
20.97dBm
Block diagram of Test Setup
 The diagram shows a Spectrum Analyzer and an E.U.T. (Equipment Under Test) connected by a red cable. They are placed on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.
Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

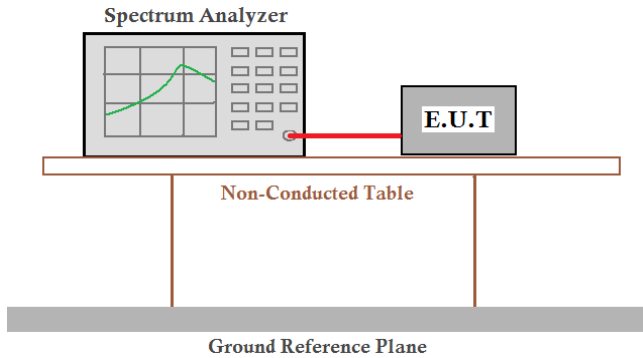
Measurement Data: The detailed test data see Annex B

6.3 20dB Emission Bandwidth

Limit
Report only
Block diagram of Test Setup
 The diagram shows a Spectrum Analyzer and an E.U.T. (Equipment Under Test) connected by a red cable. They are positioned on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.
Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

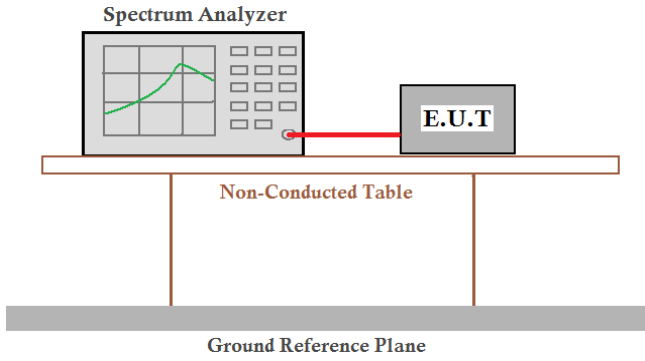
Measurement Data: The detailed test data see Annex B

6.4 Carrier Frequency Separation

Limit
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.
Block diagram of Test Setup
 The diagram shows a Spectrum Analyzer and an E.U.T. (Equipment Under Test) connected by a red cable. They are both placed on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.
Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

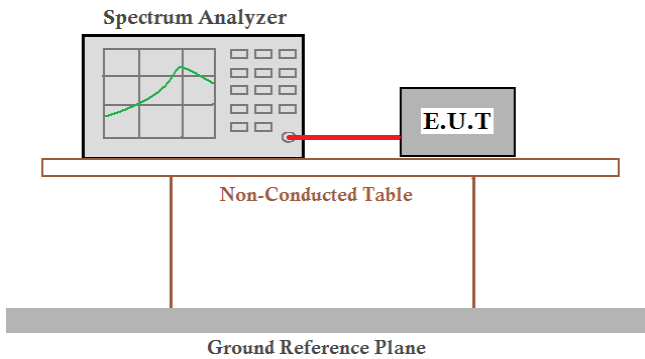
Measurement Data: The detailed test data see Annex B

6.5 Hopping Channel Numbers

Limit
At least 15 channels
Block diagram of Test Setup
 The diagram shows a Spectrum Analyzer and an E.U.T. (Equipment Under Test) connected by a red cable. They are both placed on a table labeled 'Non-Conducted Table'. This table is supported by two vertical legs and sits on a 'Ground Reference Plane'.
Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

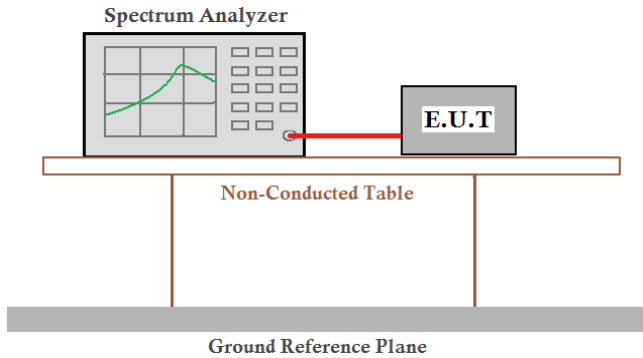
Measurement Data: The detailed test data see Annex B

6.6 Dwell Time

Limit
0.4s
Block diagram of Test Setup
 The diagram shows a Spectrum Analyzer and an E.U.T. connected by a red cable. They are positioned on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.
Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

Measurement Data: The detailed test data see Annex B

6.7 Conducted Emission

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.
Block diagram of Test Setup
 The diagram shows a Spectrum Analyzer and an E.U.T (Equipment Under Test) connected by a red cable. They are both placed on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.
Test Instrument
Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

Measurement Data: The detailed test data see Annex B

6.8 Radiated Spurious Emission

Limit

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
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 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

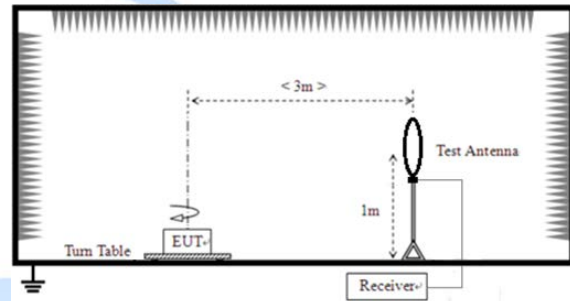
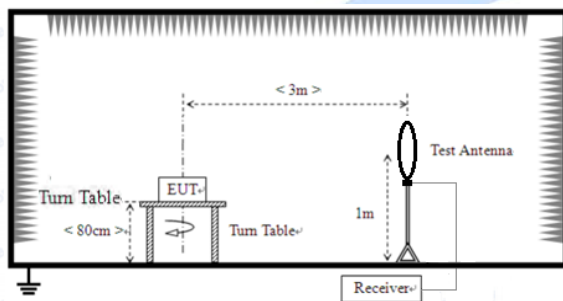
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

Block diagram of Test Setup

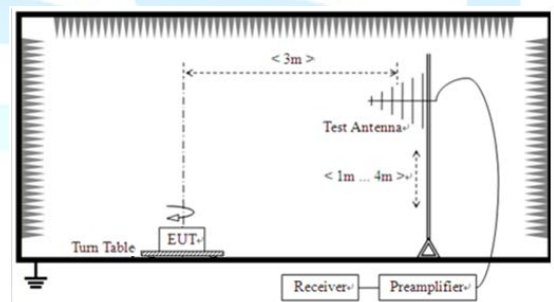
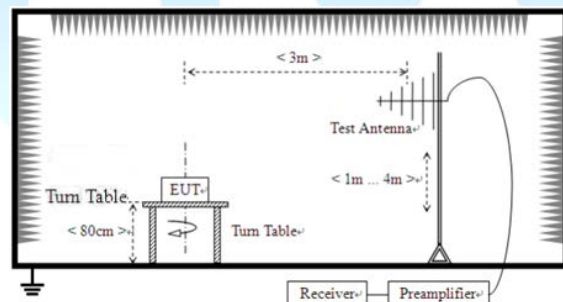
☒ For table-top equipment

☐ For floor standing equipment

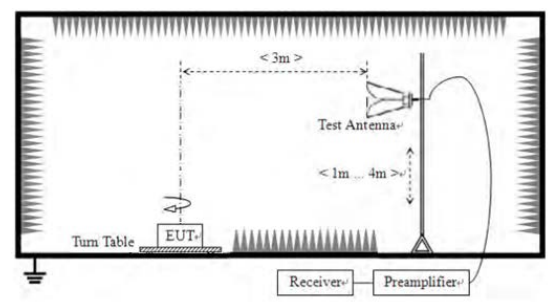
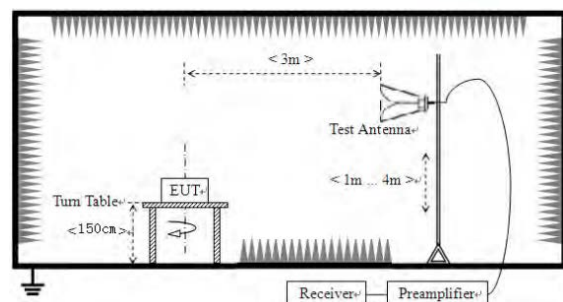
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

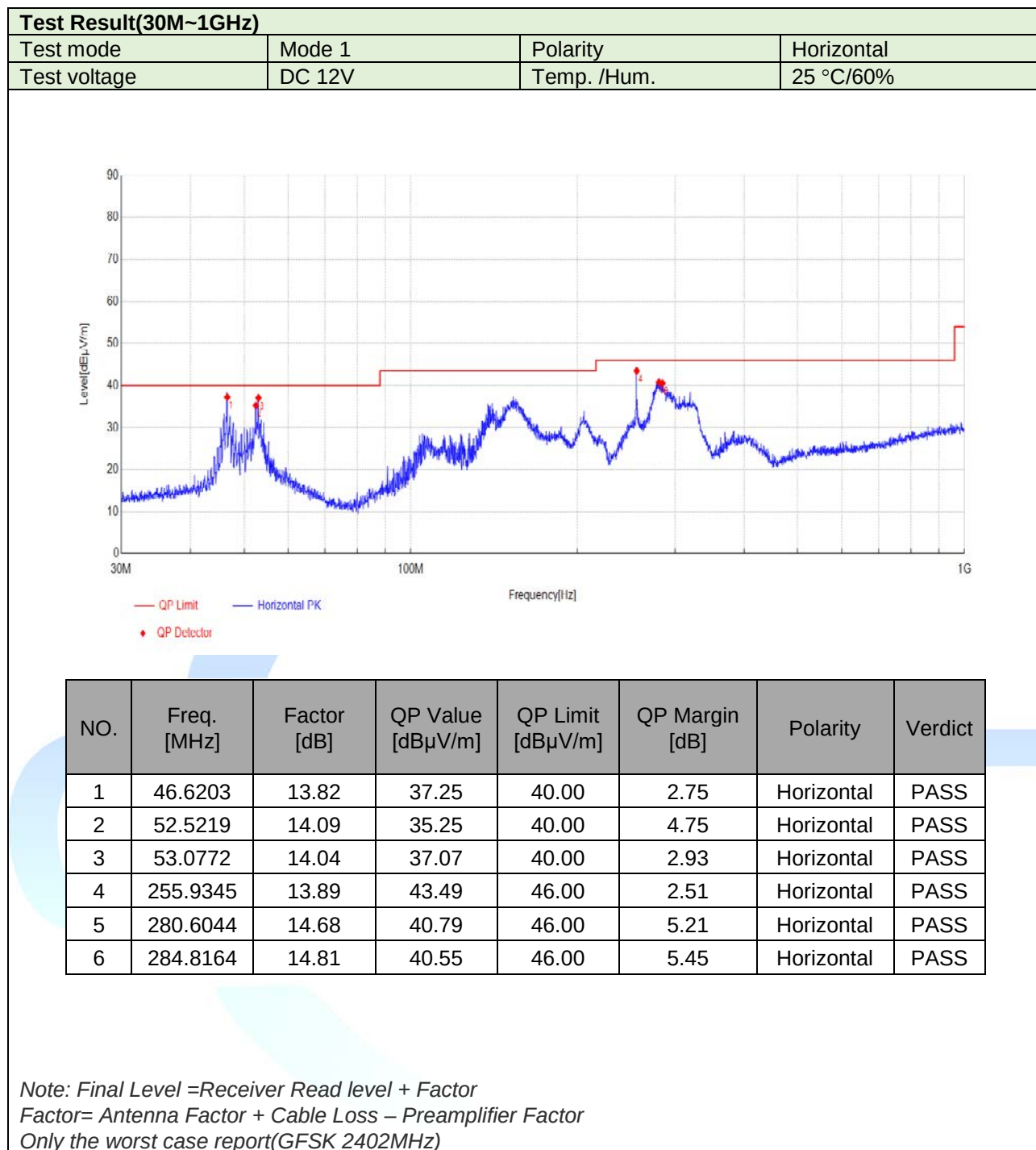


Test Instrument

Refer to Annex A for details
Test Procedures
Test applies to C63.10
Verdict
Pass

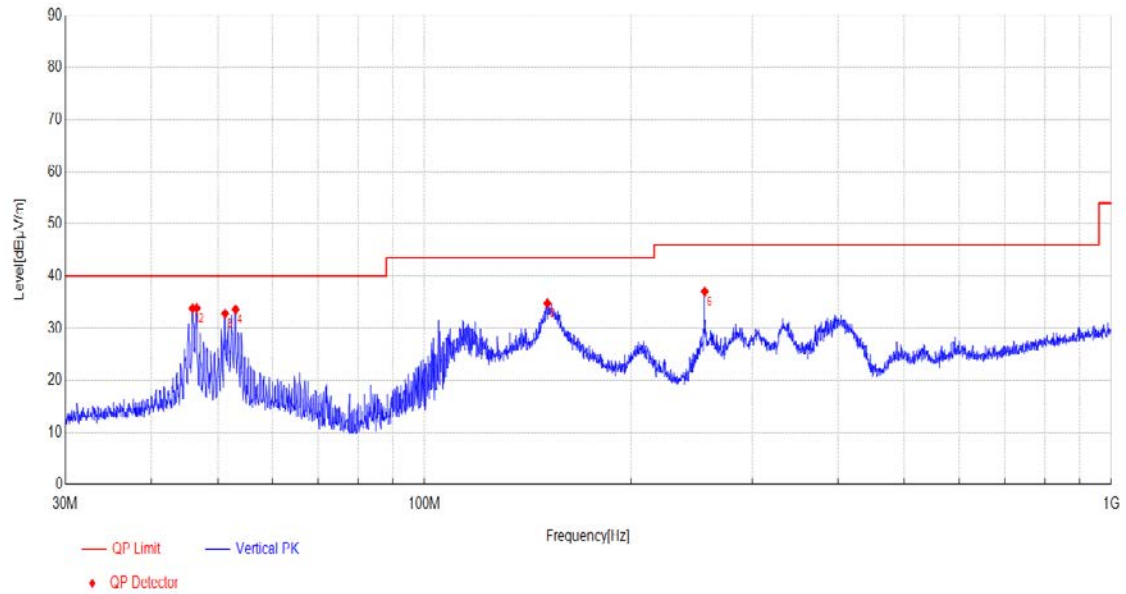
Note: The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.





Test Result(30M~1GHz)

Test mode	Mode 1	Polarity	Vertical
Test voltage	DC 12V	Temp. /Hum.	25 °C/60%

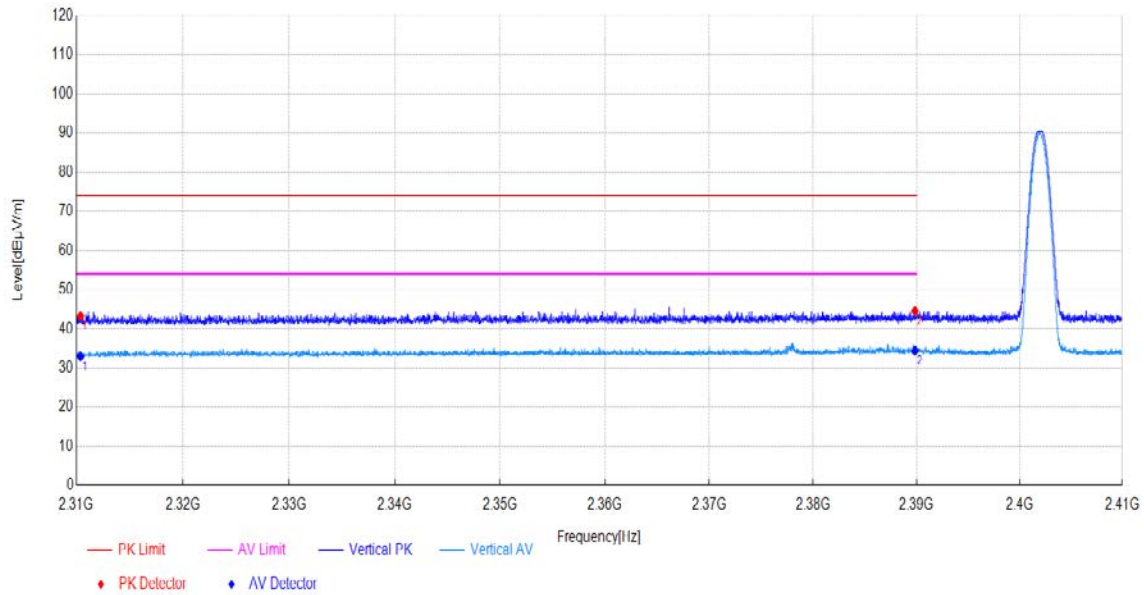


NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity	Verdict
1	45.9712	13.75	33.80	40.00	6.20	Vertical	PASS
2	46.5795	13.82	33.84	40.00	6.16	Vertical	PASS
3	51.2487	14.18	32.79	40.00	7.21	Vertical	PASS
4	53.0772	14.04	33.57	40.00	6.43	Vertical	PASS
5	151.0055	9.07	34.79	43.50	8.71	Vertical	PASS
6	255.9345	13.89	37.05	46.00	8.95	Vertical	PASS

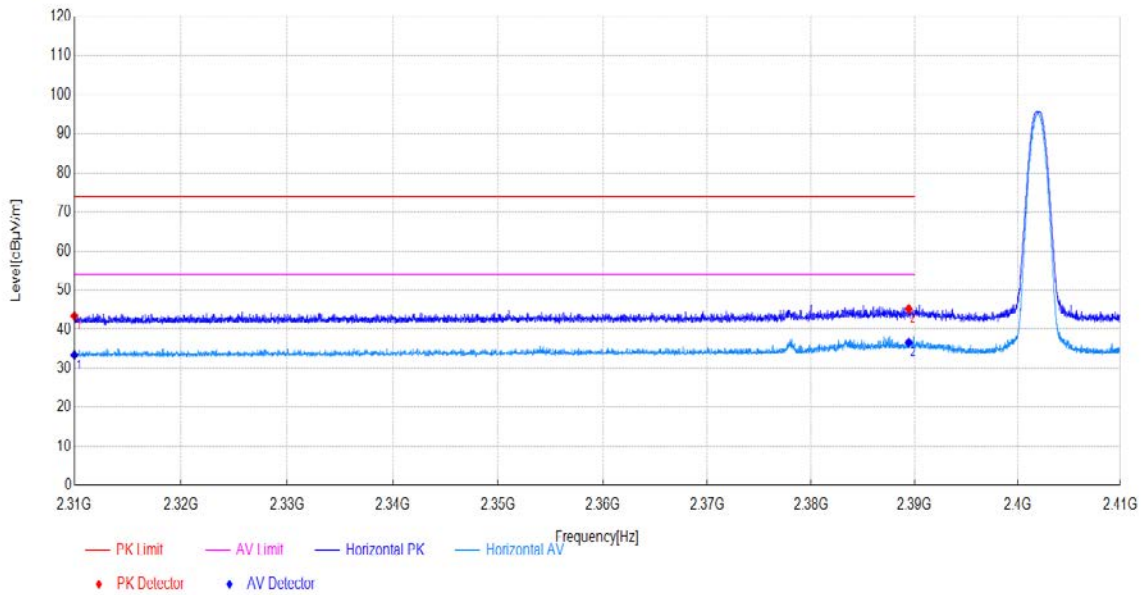
Note: Final Level =Receiver Read level + Factor
Factor= Antenna Factor + Cable Loss – Preamplifier Factor
Only the worst case report(GFSK 2402MHz)

Test Result(Emissions in Non-restricted band)

Test mode	Mode 1	Temp. /Hum.	25 °C/60%
Test voltage	DC 12V	Test channel	Lowest



NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	2310.38	-19.64	43.26	74.00	30.74	32.93	54.00	21.07	Vertical
2	2389.84	-19.68	44.54	74.00	29.46	34.34	54.00	19.66	Vertical



NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	2310	-19.64	43.37	74.00	30.63	33.42	54.00	20.58	Horizontal
2	2389.44	-19.69	45.19	74.00	28.81	36.59	54.00	17.41	Horizontal

Note: Final Level = Receiver Read level + Factor

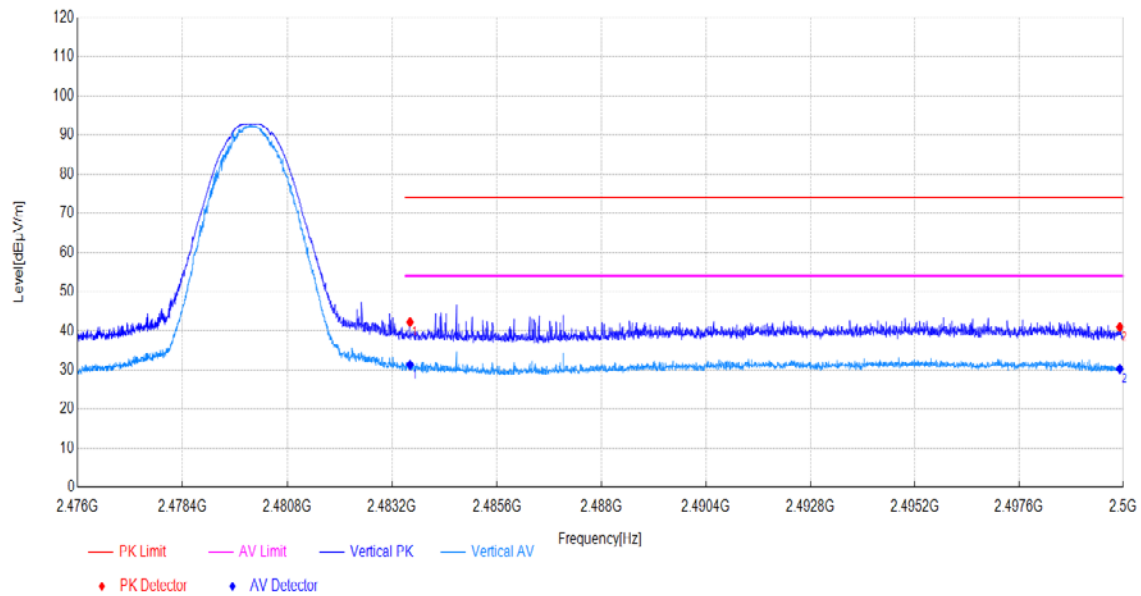
Factor = Antenna Factor + Cable Loss – Preamplifier Factor

The emission levels of other frequencies are very lower than the limit and not show in test report.

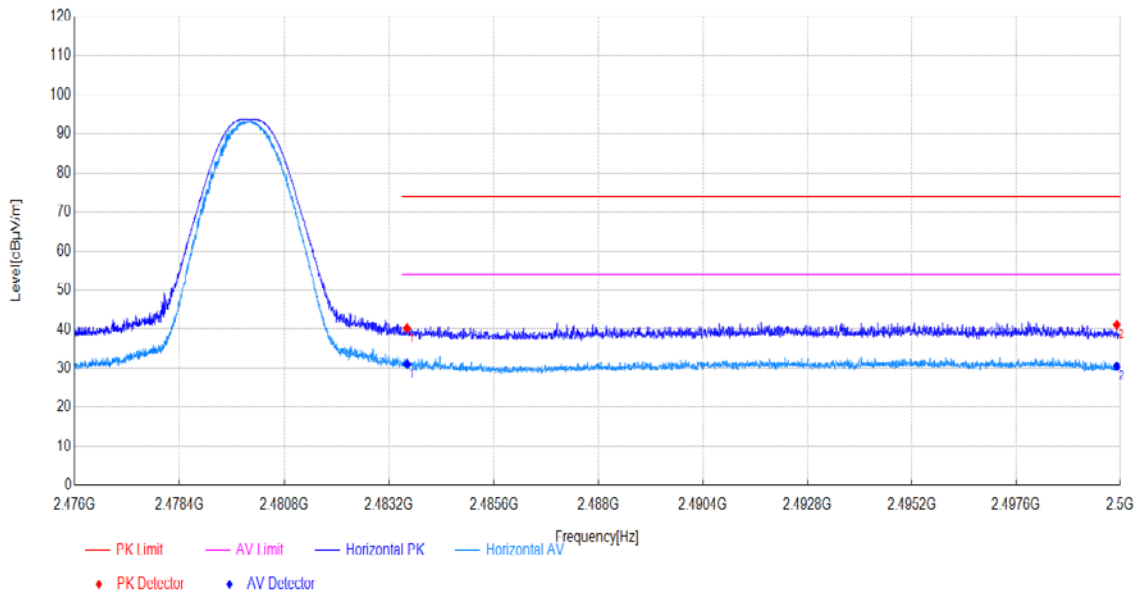
Only the worst case report(GFSK)

Test Result(Emissions in Non-restricted band)

Test mode	Mode 1	Temp. /Hum.	25 °C/60%
Test voltage	DC 12V	Test channel	Highest

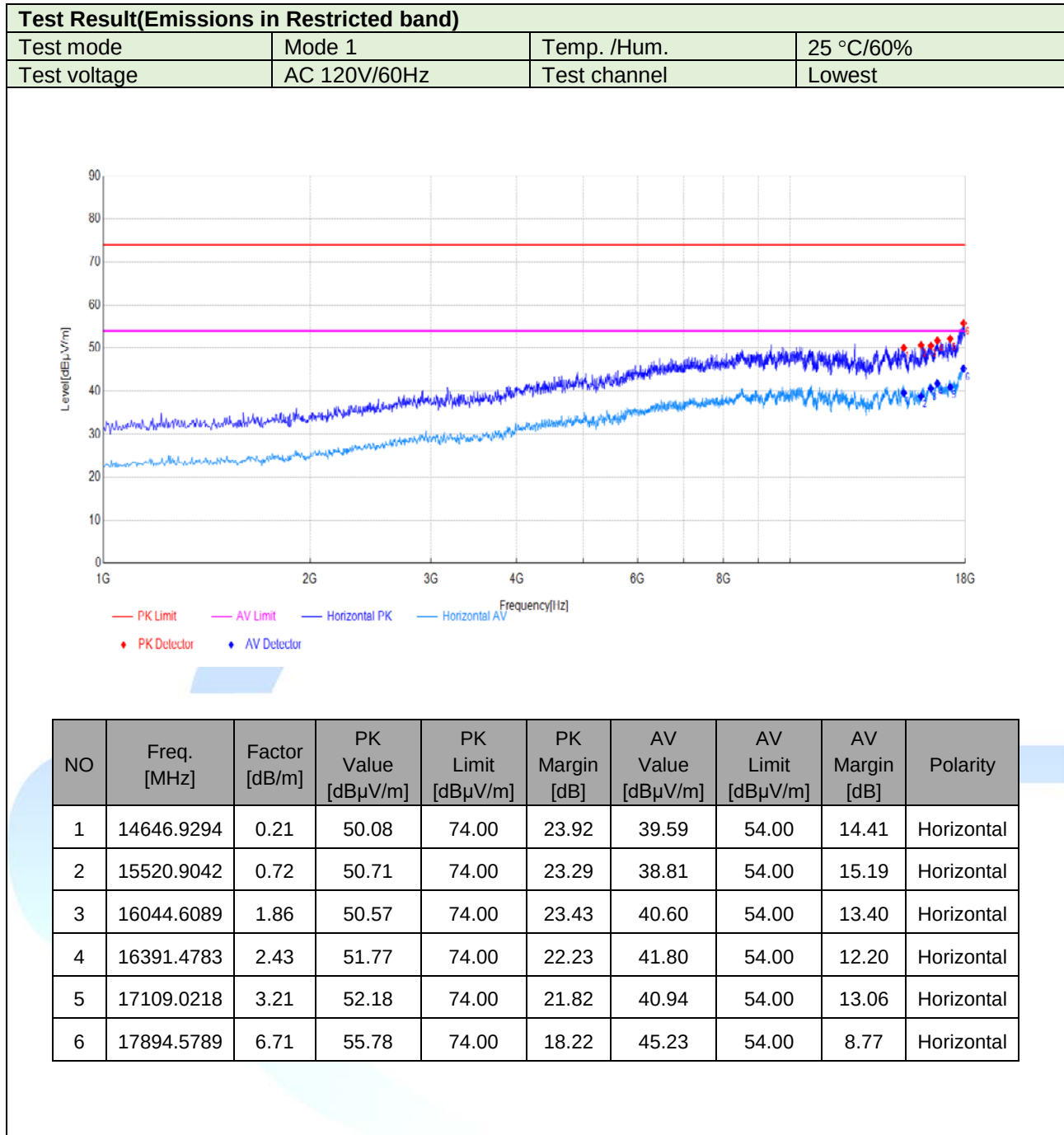


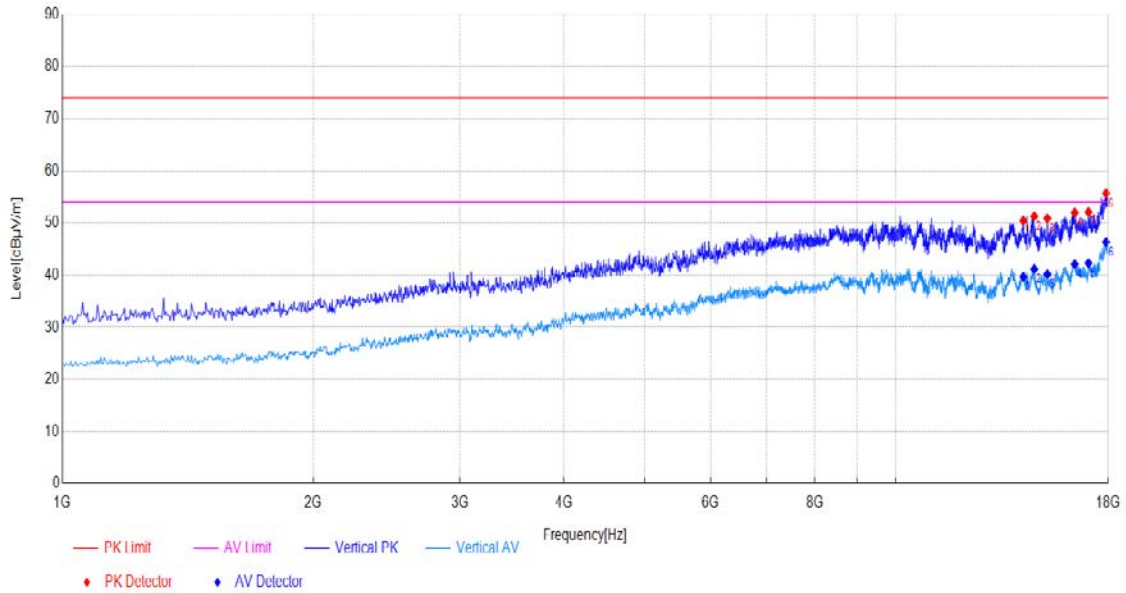
NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	2483.508	-19.73	42.21	74.00	31.79	31.33	54.00	22.67	Vertical
2	2499.922	-19.75	40.97	74.00	33.03	30.26	54.00	23.74	Vertical



NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	2483.508	-19.73	40.23	74.00	33.77	31.16	54.00	22.84	Horizontal
2	2499.922	-19.75	41.13	74.00	32.87	30.54	54.00	23.46	Horizontal

Note: Final Level = Receiver Read level + Factor
Factor= Antenna Factor + Cable Loss – Preamplifier Factor
The emission levels of other frequencies are very lower than the limit and not show in test report.
Only the worst case report(GFSK)





NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	14235.4471	0.17	50.48	74.00	23.52	39.66	54.00	14.34	Vertical
2	14670.7341	0.21	51.30	74.00	22.70	41.16	54.00	12.84	Vertical
3	15211.4423	0.37	50.87	74.00	23.13	40.16	54.00	13.84	Vertical
4	16408.4817	2.46	52.01	74.00	21.99	42.09	54.00	11.91	Vertical
5	17044.4089	2.99	52.11	74.00	21.89	42.28	54.00	11.72	Vertical
6	17894.5789	6.71	55.68	74.00	18.32	46.34	54.00	7.66	Vertical

Note: Final Level = Receiver Read level + Factor

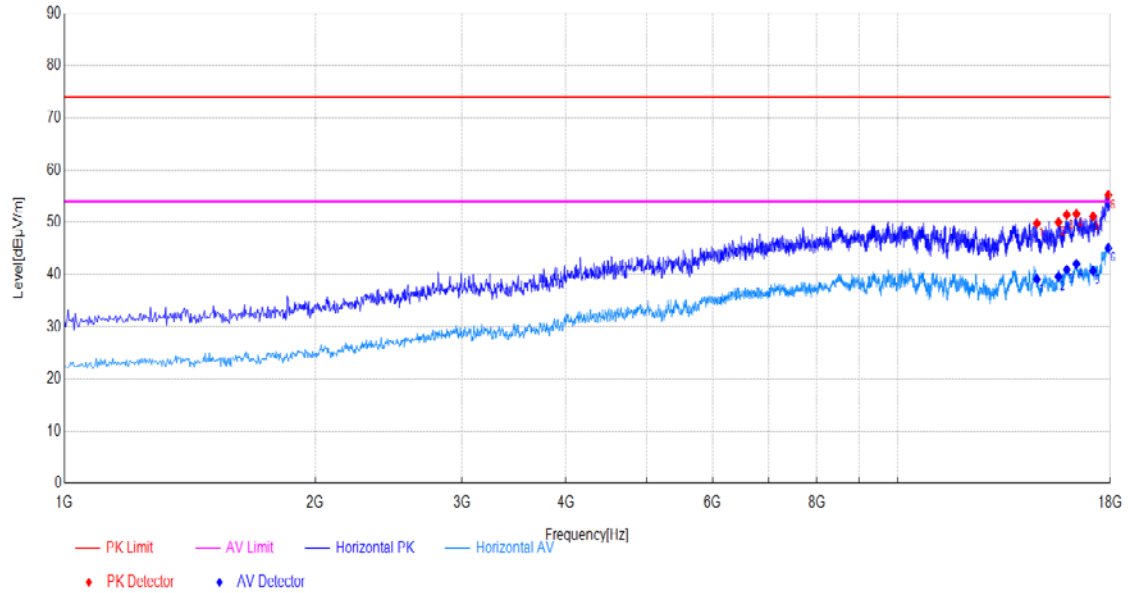
Factor = Antenna Factor + Cable Loss – Preamplifier Factor

The emission levels of the frequencies above 18GHz are very lower than the limit and not show in test report.

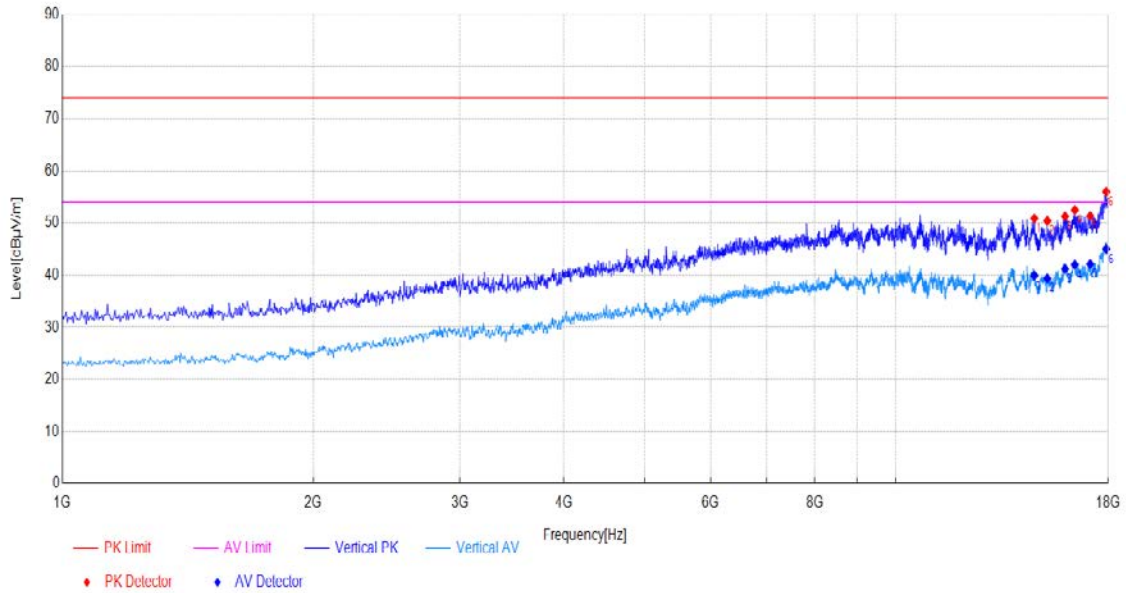
Only the worst case report(GFSK)

Test Result(Emissions in Restricted band)

Test mode	Mode 1	Temp. /Hum.	25 °C/60%
Test voltage	AC 120V/60Hz	Test channel	Middle



NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	14697.9396	0.20	49.82	74.00	24.18	39.13	54.00	14.87	Horizontal
2	15602.5205	0.90	50.05	74.00	23.95	39.63	54.00	14.37	Horizontal
3	15962.9926	1.71	51.47	74.00	22.53	40.95	54.00	13.05	Horizontal
4	16394.879	2.44	51.62	74.00	22.38	42.05	54.00	11.95	Horizontal
5	17163.4327	3.40	51.15	74.00	22.85	40.72	54.00	13.28	Horizontal
6	17908.1816	6.78	55.25	74.00	18.75	45.08	54.00	8.92	Horizontal



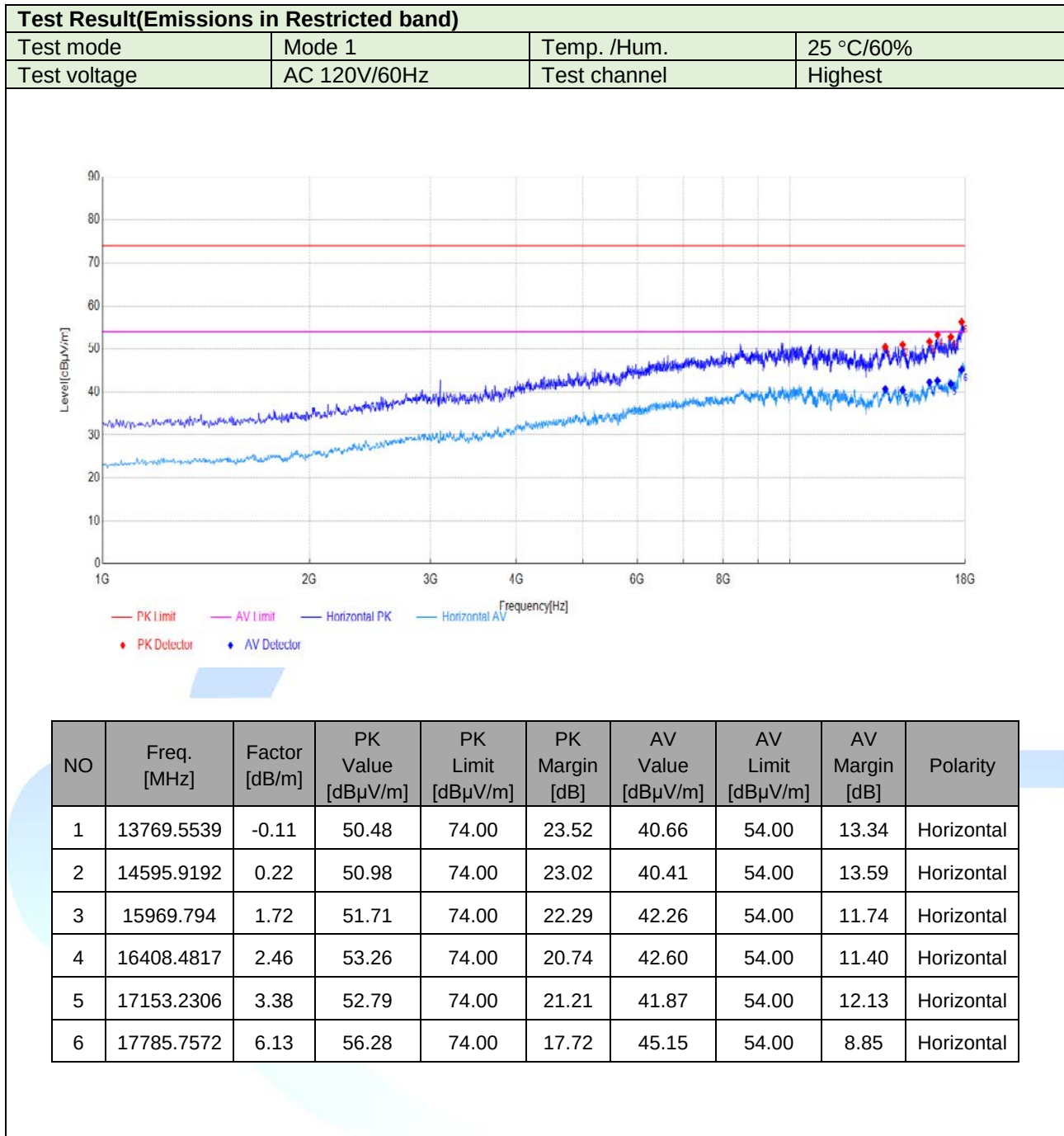
NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	14674.1348	0.20	50.85	74.00	23.15	39.92	54.00	14.08	Vertical
2	15211.4423	0.37	50.42	74.00	23.58	39.36	54.00	14.64	Vertical
3	15976.5953	1.74	51.29	74.00	22.71	41.20	54.00	12.80	Vertical
4	16411.8824	2.47	52.49	74.00	21.51	41.99	54.00	12.01	Vertical
5	17122.6245	3.26	51.36	74.00	22.64	42.11	54.00	11.89	Vertical
6	17901.3803	6.75	55.98	74.00	18.02	45.00	54.00	9.00	Vertical

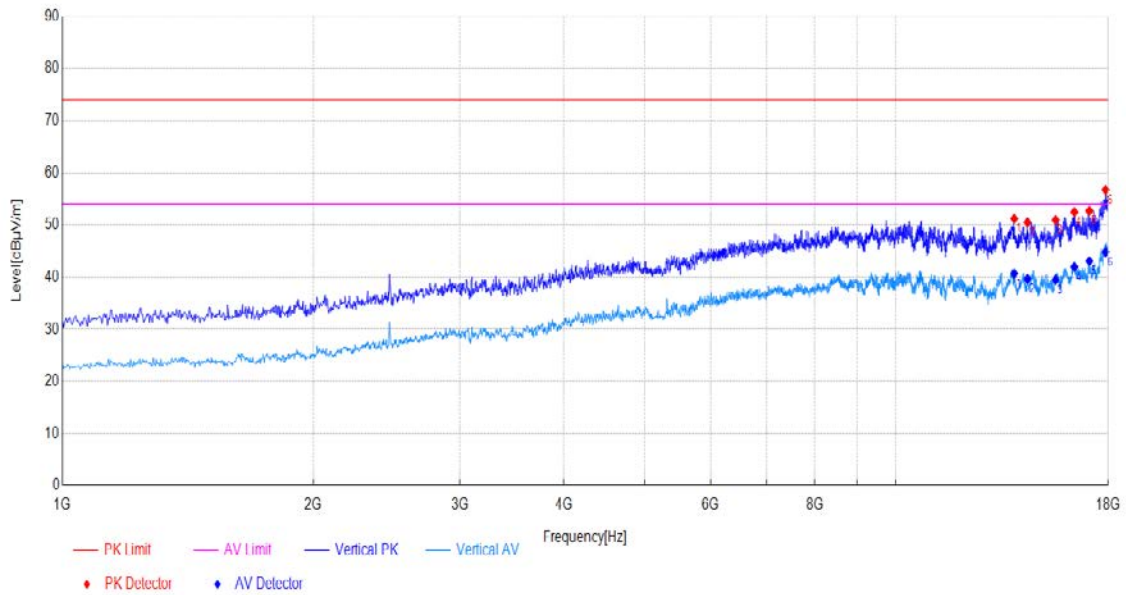
Note: Final Level = Receiver Read level + Factor

Factor = Antenna Factor + Cable Loss – Preamplifier Factor

The emission levels of the frequencies above 18GHz are very lower than the limit and not show in test report.

Only the worst case report(GFSK)





NO	Freq. [MHz]	Factor [dB/m]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	13881.7764	0.00	51.21	74.00	22.79	40.67	54.00	13.33	Vertical
2	14398.6797	0.21	50.52	74.00	23.48	39.64	54.00	14.36	Vertical
3	15561.7123	0.81	50.95	74.00	23.05	39.49	54.00	14.51	Vertical
4	16391.4783	2.43	52.48	74.00	21.52	41.95	54.00	12.05	Vertical
5	17085.217	3.13	52.71	74.00	21.29	43.06	54.00	10.94	Vertical
6	17867.3735	6.56	56.72	74.00	17.28	44.82	54.00	9.18	Vertical

Note: Final Level = Receiver Read level + Factor

Factor = Antenna Factor + Cable Loss – Preamplifier Factor

The emission levels of the frequencies above 18GHz are very lower than the limit and not show in test report.

Only the worst case report(GFSK)

7 Test Setup Photo

Reference to the **appendix I** for details.

8 EUT Constructional Details

Reference to the **appendix II** for details.



Annex A --Test Instruments list

Radiated Emission:						
Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
SST-E-SAC001	3m Semi- Anechoic Chamber	BOST	966	/	3 years	2023.01.07
SST-E-SCC001	Control Room	BOST	333	/	3 years	2023.01.07
SST-E-SAC002	Breiband TRILOG Messantenne	Schwarzbeck	VULB 9162	00556	1 year	2024.04.20
SST-E-SAC004	Broad-band Horn Antenna	Schwarzbeck	BBHA 9120 D	02783	1 year	2024.04.16
SST-E-SCC003	EMI Test Receiver	R&S	ESU 8	100372	1 year	2024.04.16
SST-E-SCC004	Amplifier	Schwarzbeck	BBV 9744	00327	1 year	2024.04.16
SST-E-SCC015	Amplifier (1-18GHz)	TSTPASS	LNA10180G45	TSAM2303003	1 year	2024.04.16
SST-E-SCC016	Amplifier (40G)	RFsystem	TRLA-180400G45B	23060801	1 year	2024.04.16
SST-E-SAC006	Broadband Horn Antenna (40G)	Schwarzbeck	BBHA9170	01306	1 year	2024.04.17
SST-E-RSC010	Spectrum analyzer	R&S	FSV40-N	/	1 year	2024.04.16
SST-E-SAC007	Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60B 044	1 year	2024.04.17
SST-E-SAC005	5W 6dB attenuator	/	DC-6GHz	/	Internal calibration	/
SST-E-EMC006	Thermohygrometer	KTJ	TA218A	879030	1 year	2024.04.18
/	EMI Test Software	Tonscend	TS+	/	/	/

RF conducted						
Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
SST-E-RSC001	Shielding Room	BOST	543	/	3 year	2023.01.07
SST-E-RSC007	Spectrum analyzer	keysight	N9020A	MY51280659	1 year	2024.04.16
SST-E-RSC008	Analog signal source	Agilent	N5181A	MY48180054	1 year	2024.04.16
SST-E-RSC009	Vector signal source	keysight	N5172B	MY57281610	1 year	2024.04.16
SST-E-EMC007	Thermohygrometer	KTJ	TA218A	879032	1 year	2024.04.18
SST-E-RSC010	Spectrum analyzer	R&S	FSV40-N	/	1 year	2024.04.16
SST-E-RSC015-1	Power meter 1	TST	TST V2	/	1 year	2024.04.16
/	Test Software	TST PASS	TST PASS	V2.0	/	/

Annex B --Test Result

1. Bandwidth

1.1 Test Result

1.1.1 OBW

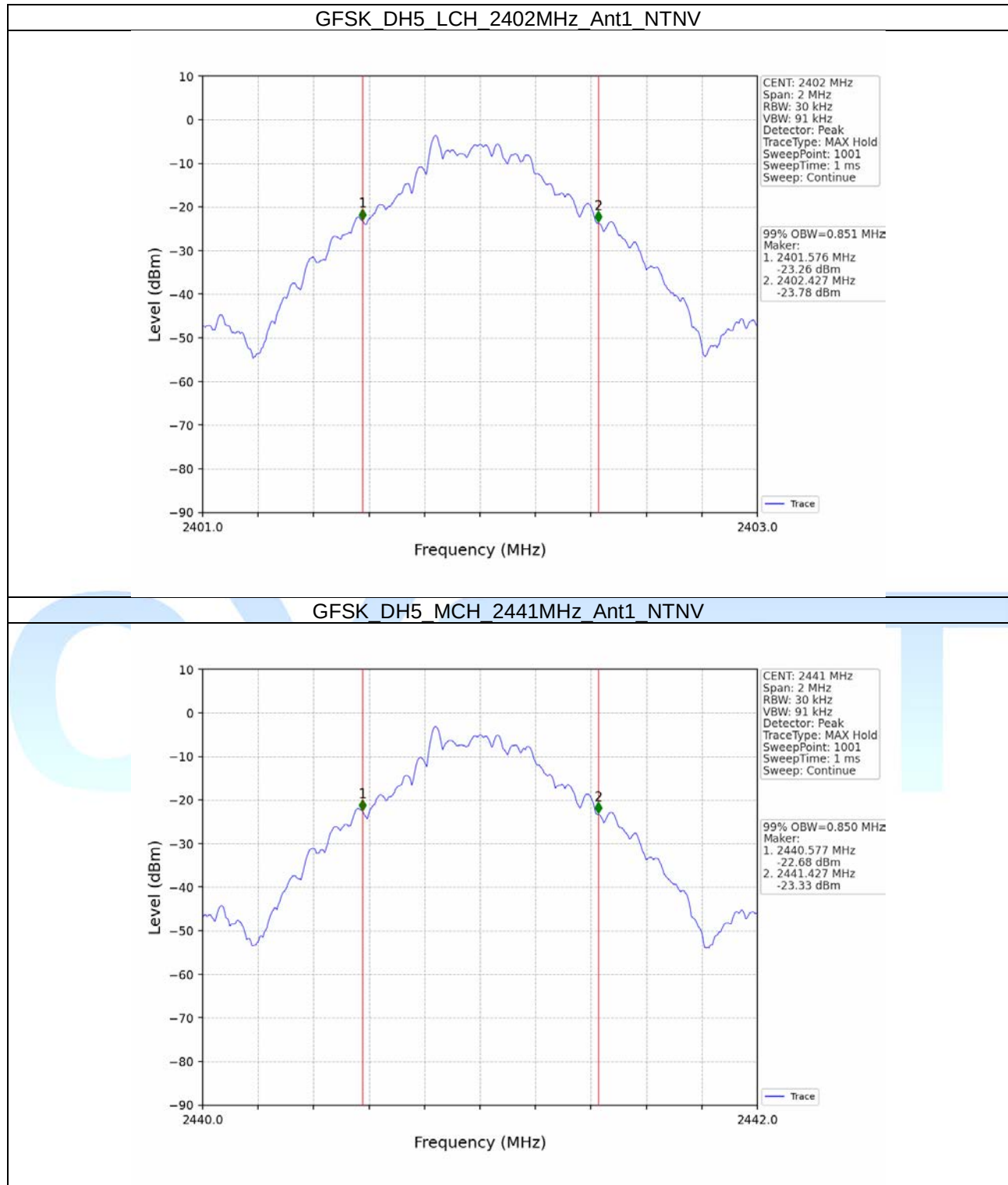
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	99% Occupied Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.851	/	Pass
		2441	DH5	1	0.850	/	Pass
		2480	DH5	1	0.851	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.151	/	Pass
		2441	2DH5	1	1.152	/	Pass
		2480	2DH5	1	1.151	/	Pass
8DPSK	SISO	2402	3DH5	1	1.142	/	Pass
		2441	3DH5	1	1.142	/	Pass
		2480	3DH5	1	1.140	/	Pass

1.1.2 20dB BW

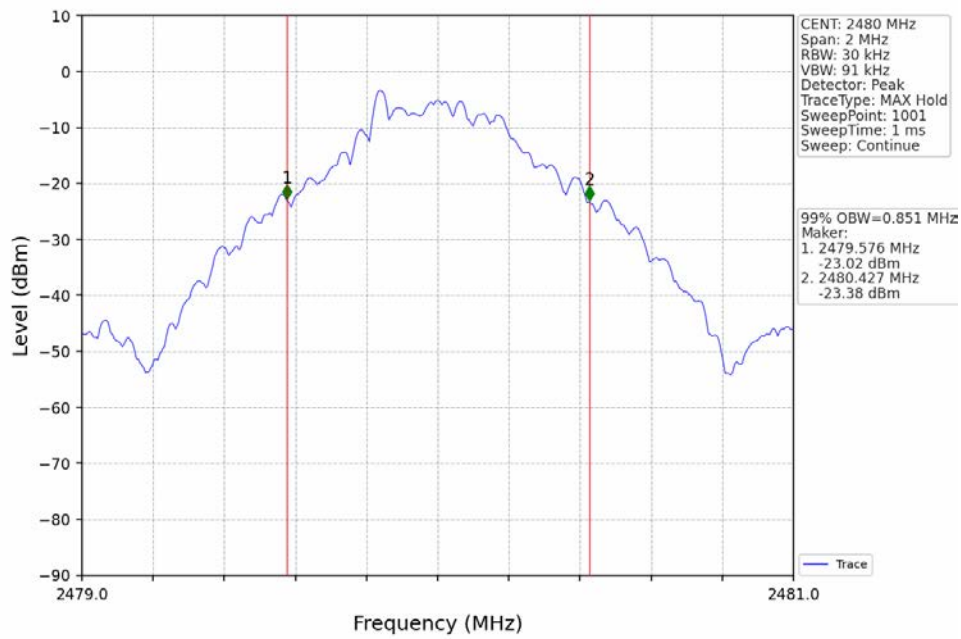
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	20dB Bandwidth (MHz)		Verdict
					Result	Limit	
GFSK	SISO	2402	DH5	1	0.935	/	Pass
		2441	DH5	1	0.946	/	Pass
		2480	DH5	1	0.940	/	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	1.284	/	Pass
		2441	2DH5	1	1.284	/	Pass
		2480	2DH5	1	1.283	/	Pass
8DPSK	SISO	2402	3DH5	1	1.228	/	Pass
		2441	3DH5	1	1.226	/	Pass
		2480	3DH5	1	1.227	/	Pass

1.2 Test Graph

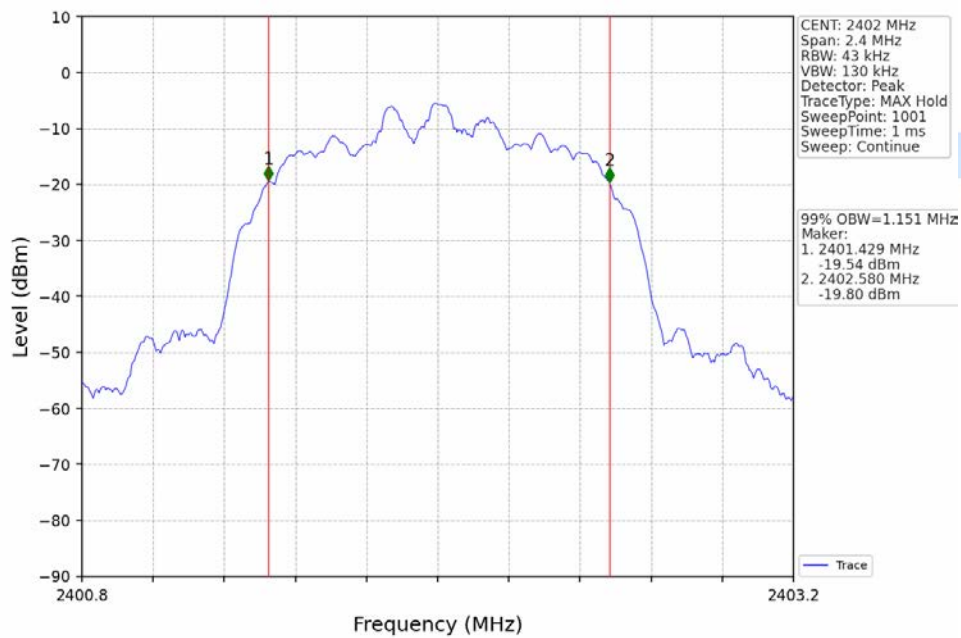
1.2.1 OBW



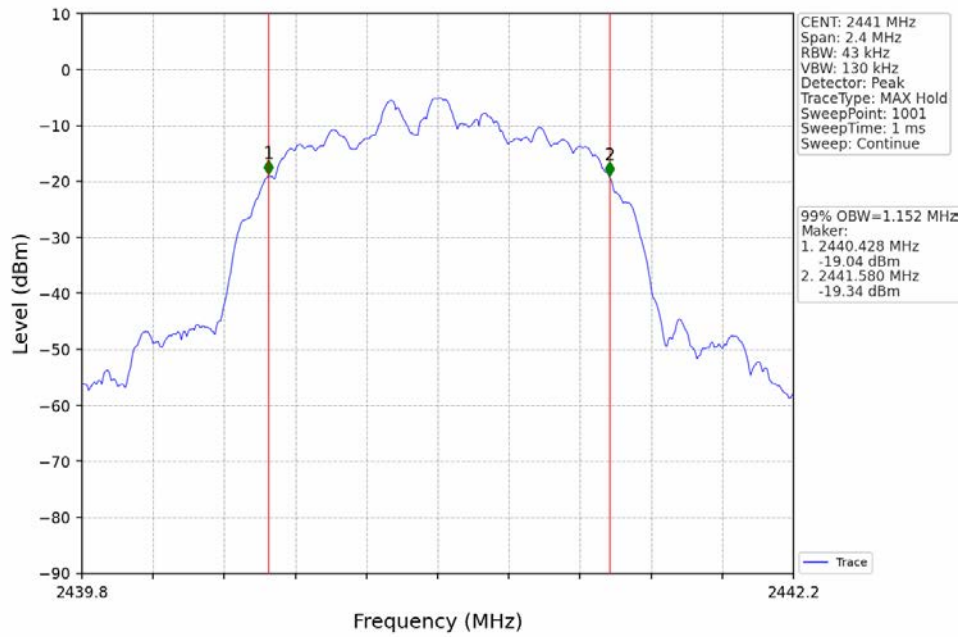
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



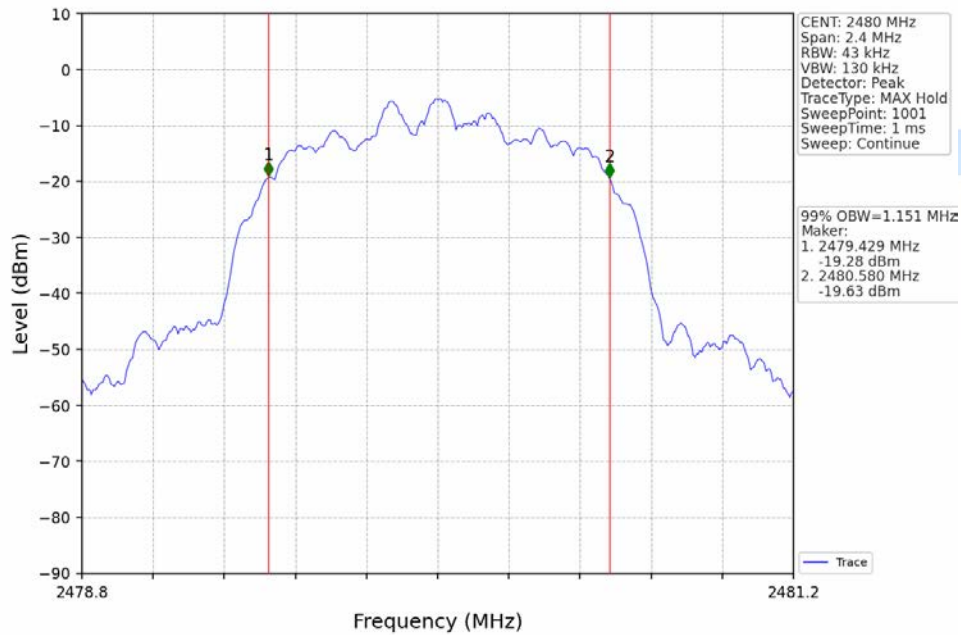
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



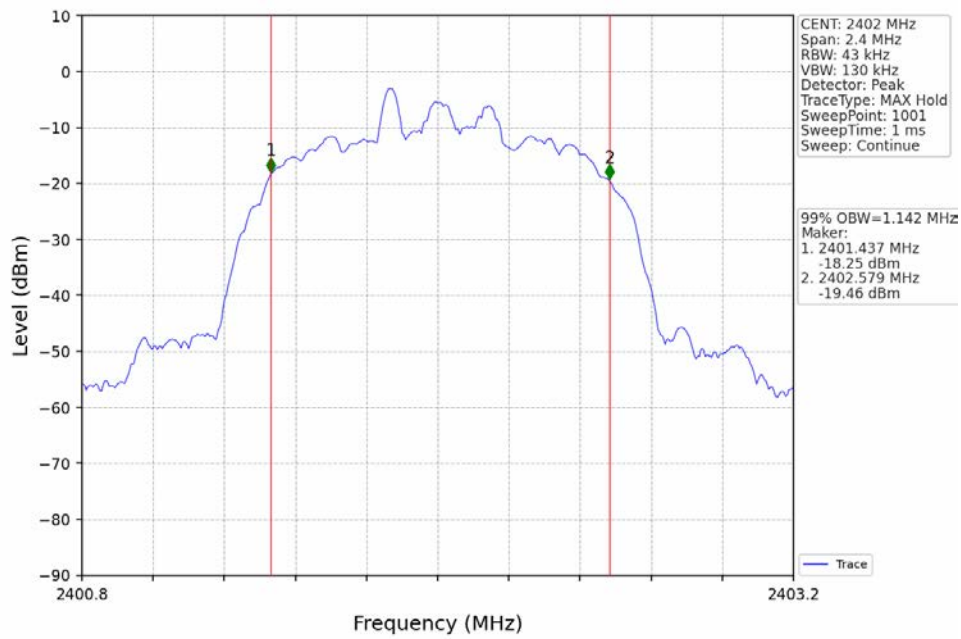
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



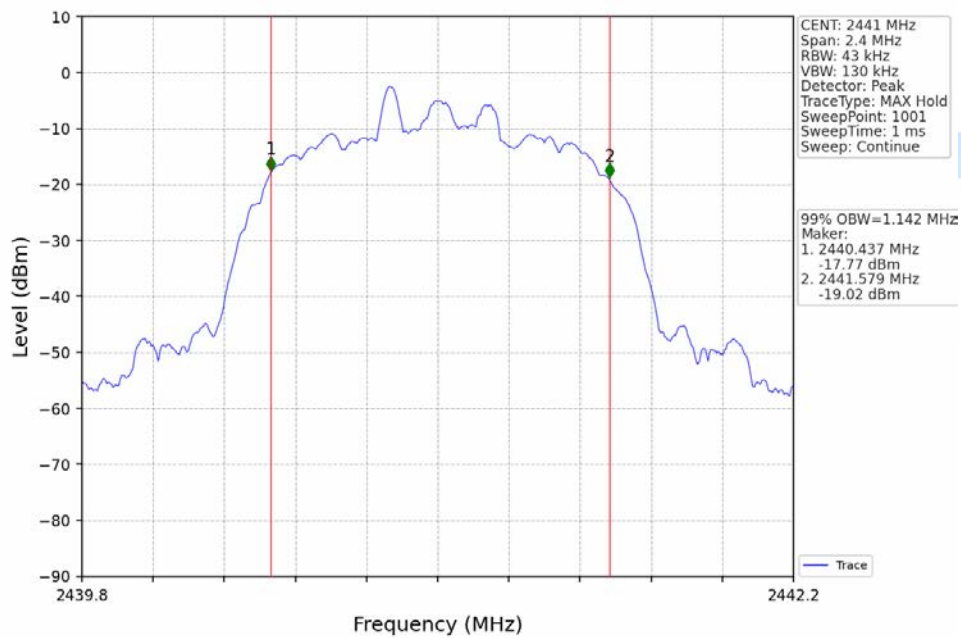
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

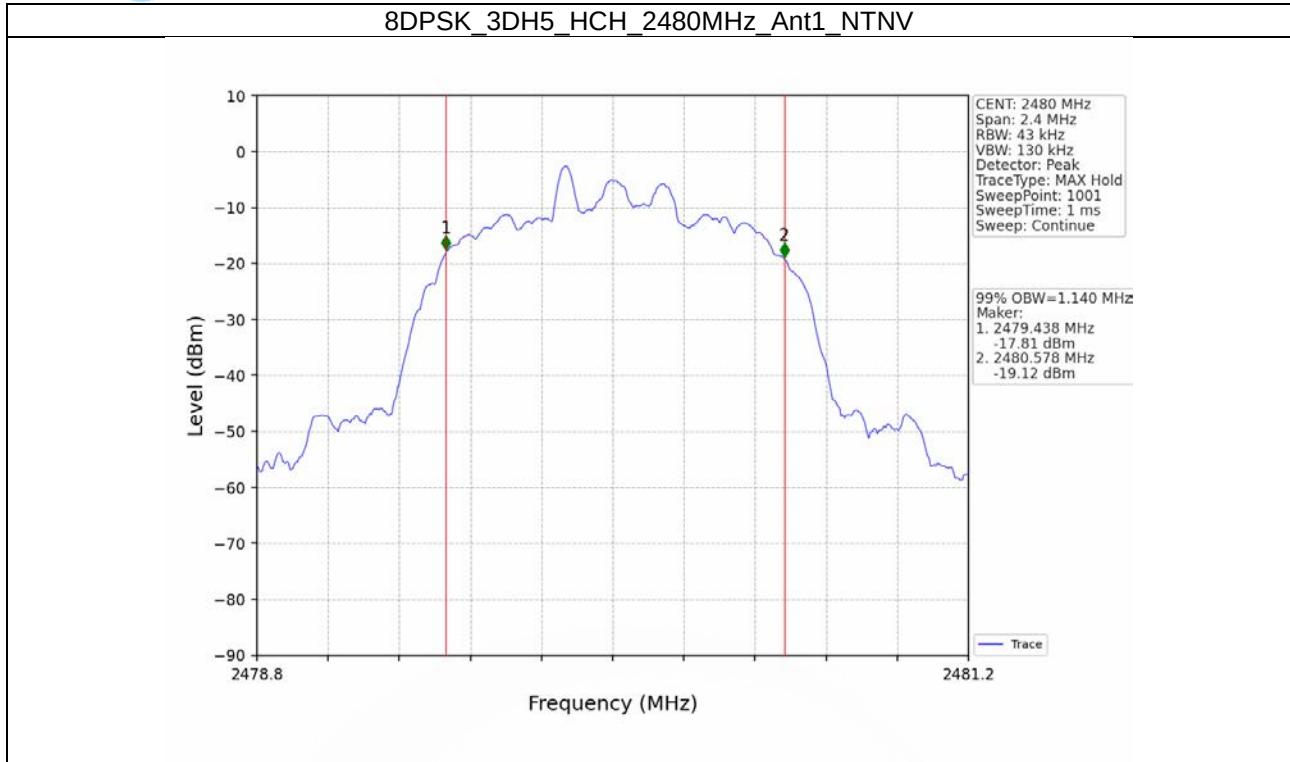


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV

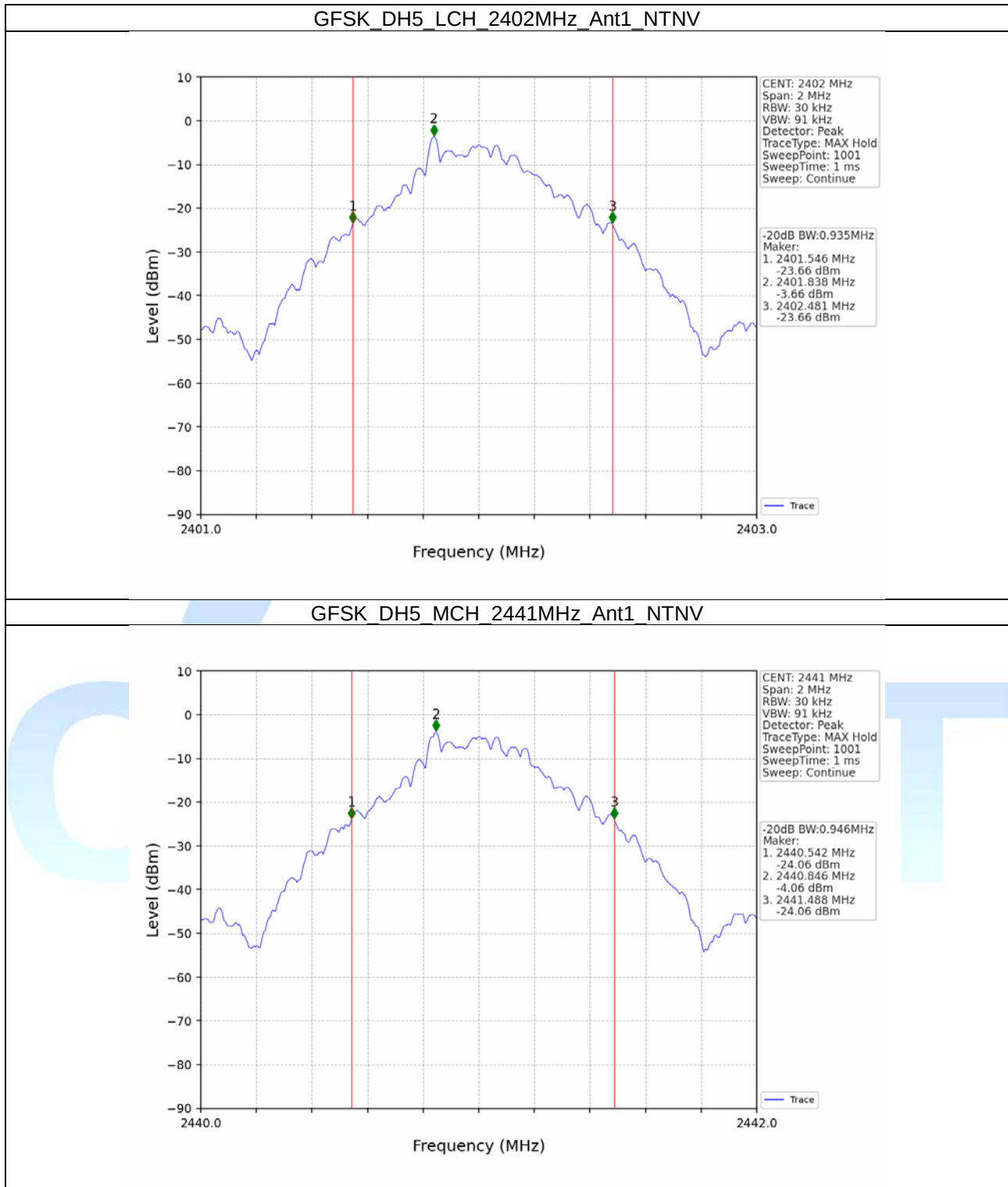


8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV

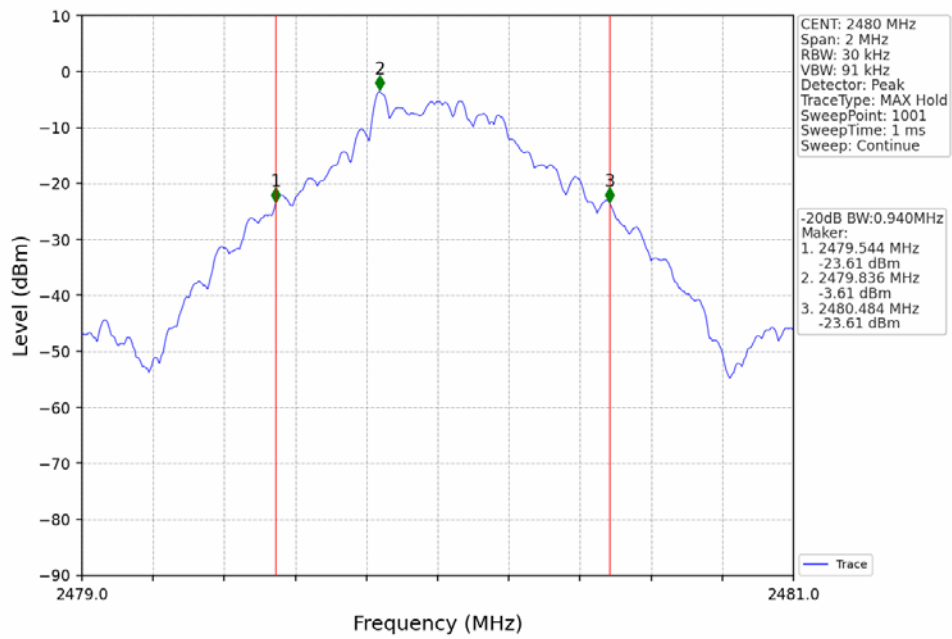




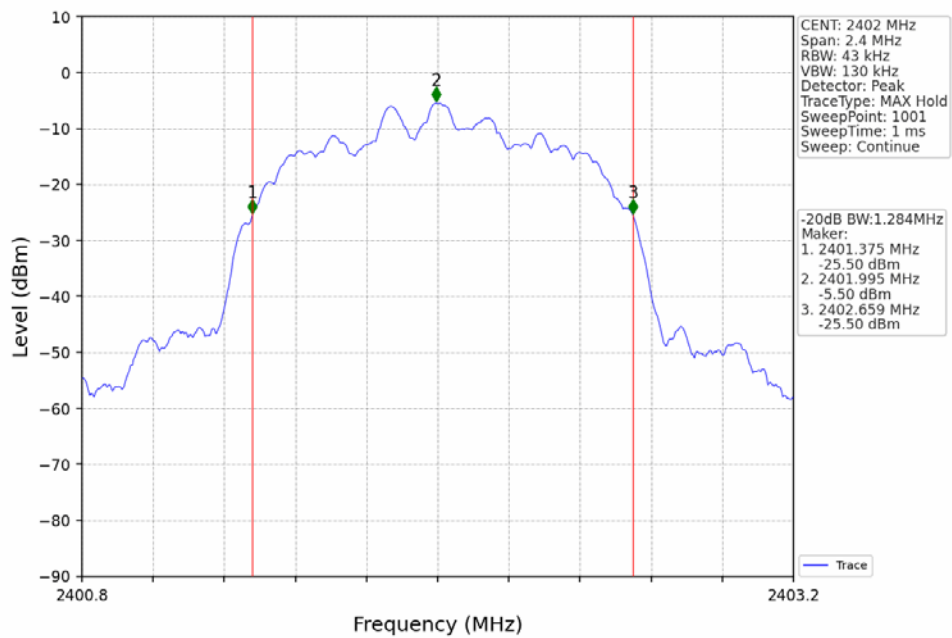
1.2.2 20dB BW



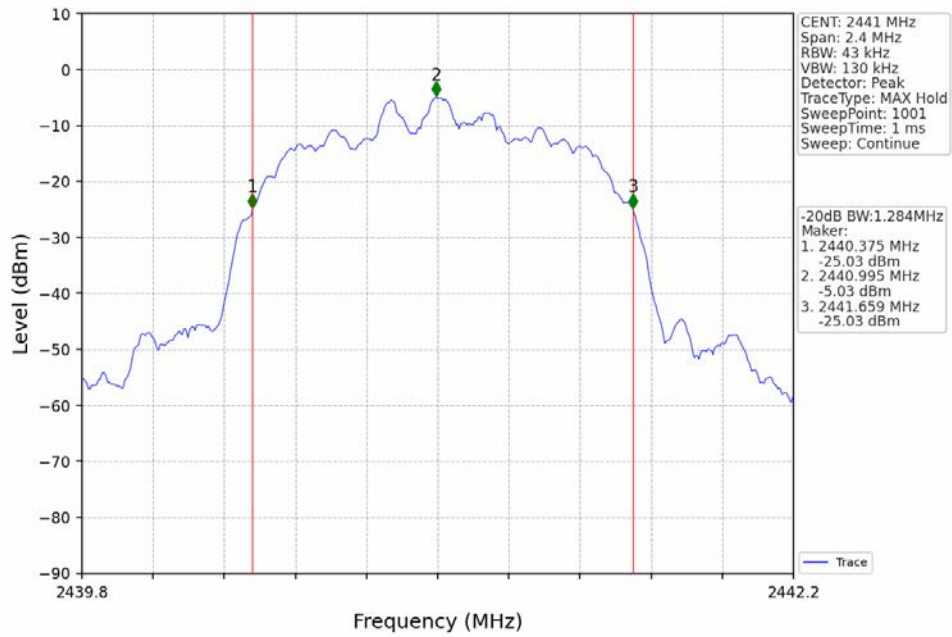
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



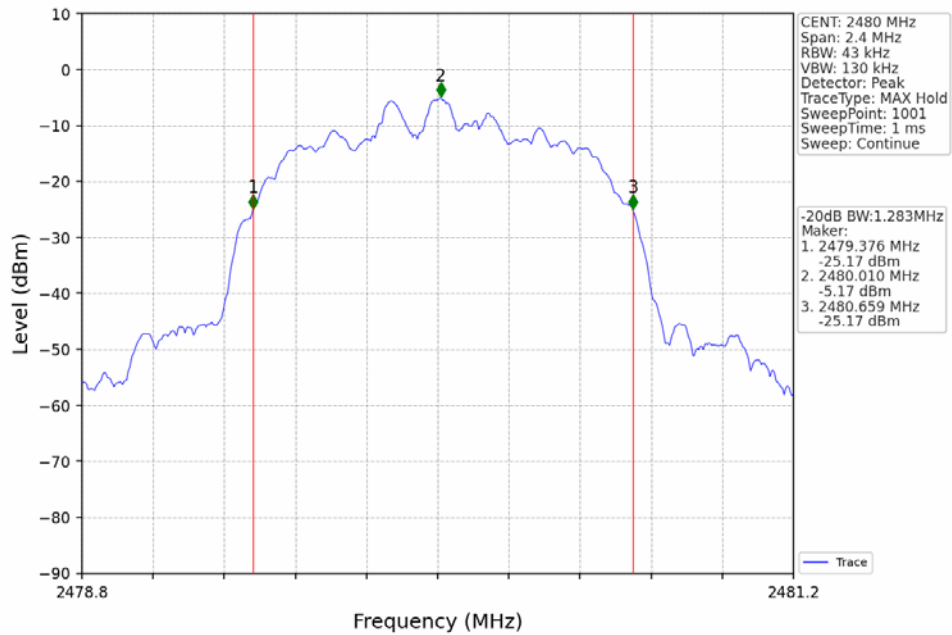
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



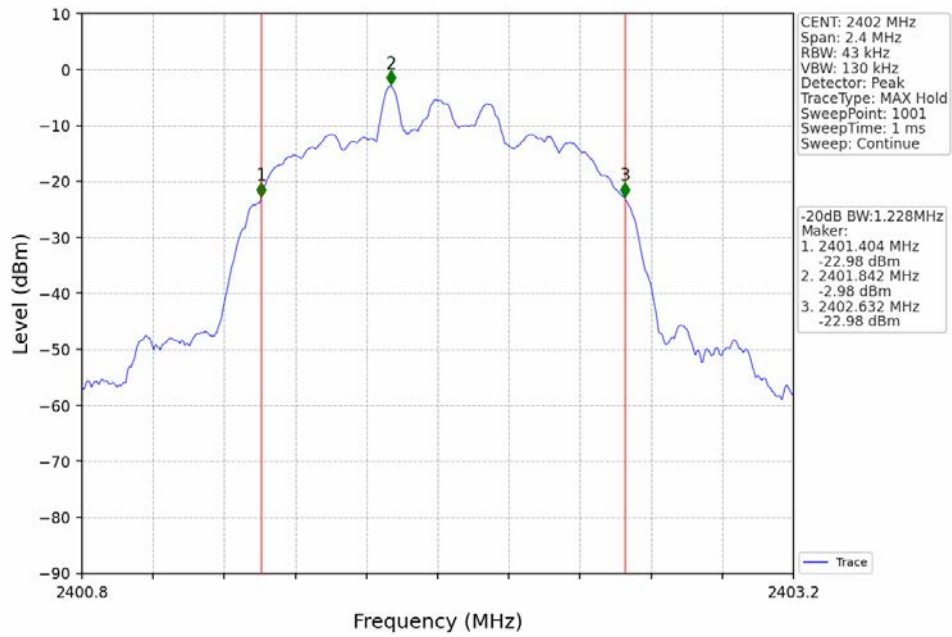
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



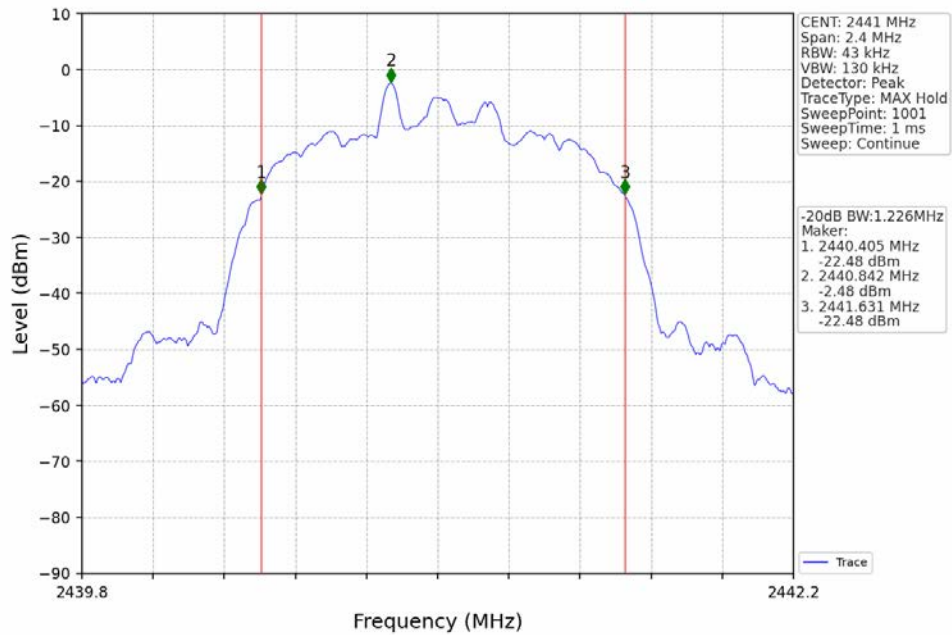
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

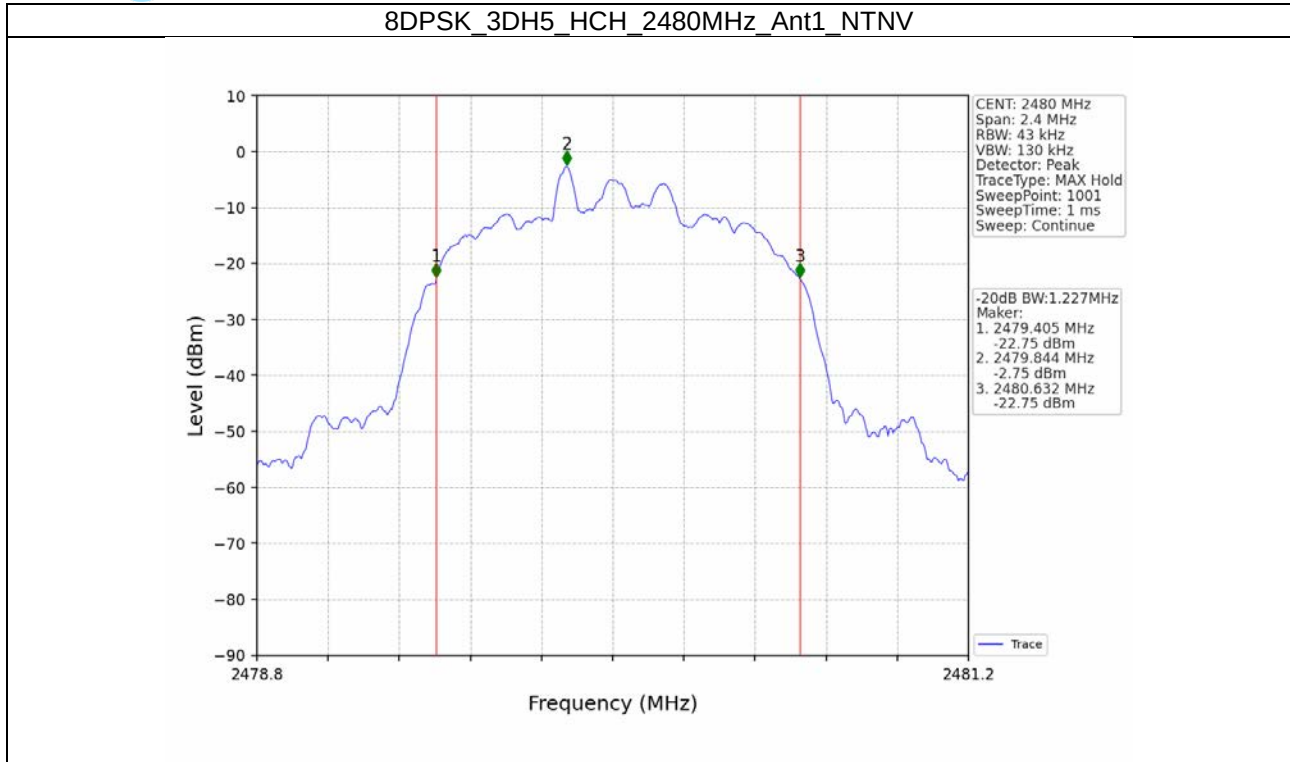


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





2. Maximum Conducted Output Power

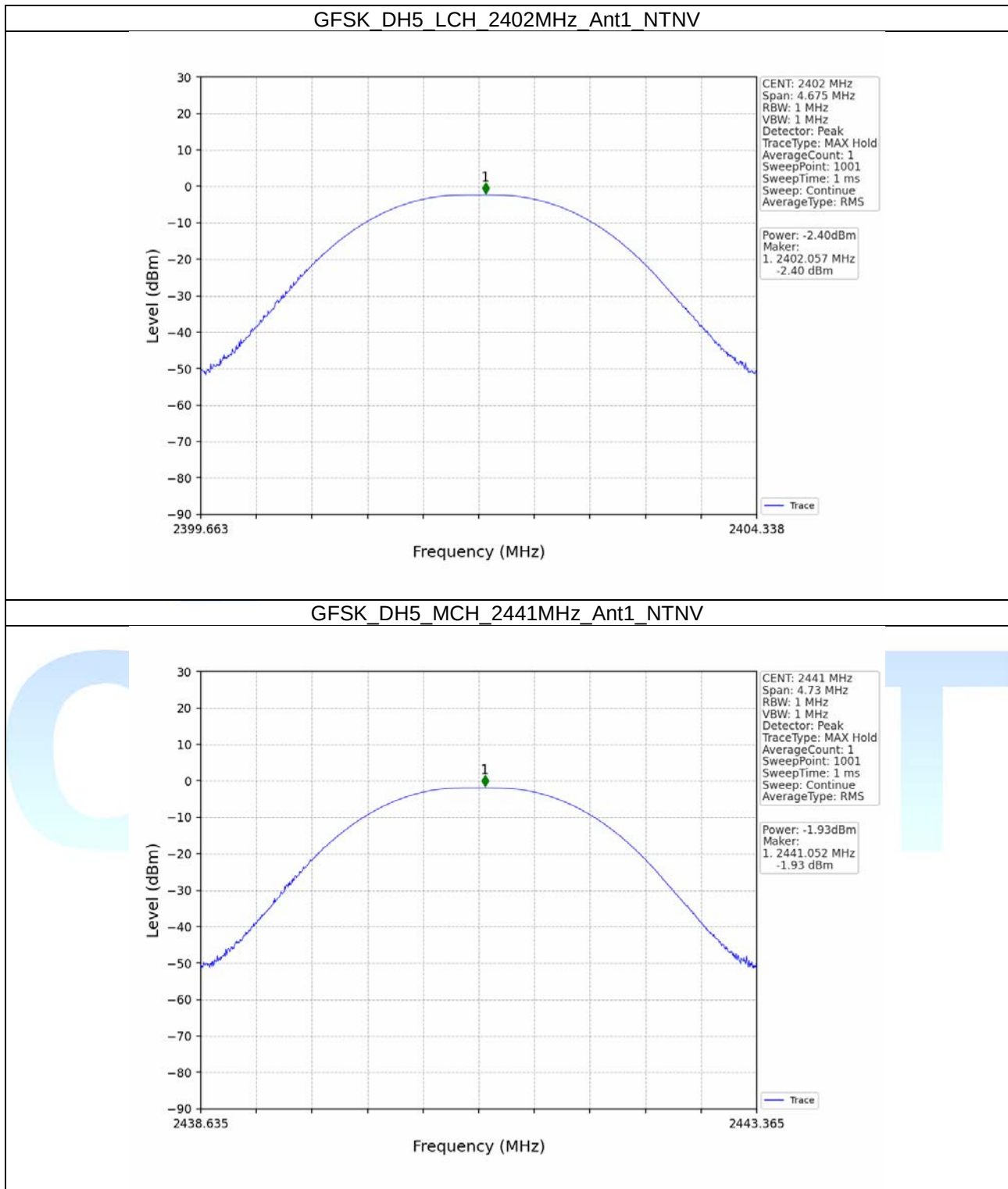
2.1 Test Result

2.1.1 Power

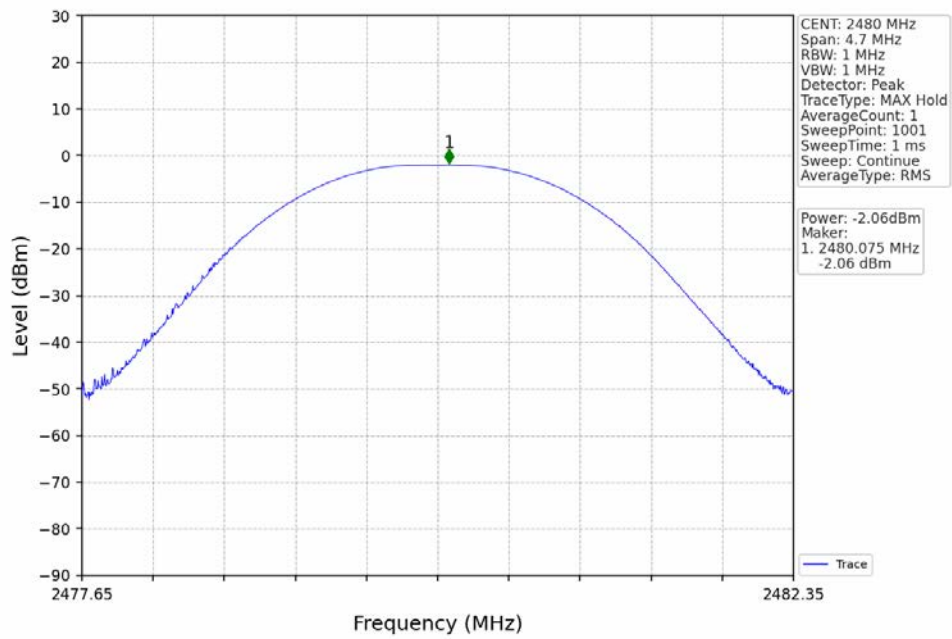
Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT1	Limit	
GFSK	SISO	2402	DH5	-2.40	<=20.97	Pass
		2441	DH5	-1.93	<=20.97	Pass
		2480	DH5	-2.06	<=20.97	Pass
Pi/4DQPSK	SISO	2402	2DH5	-2.37	<=20.97	Pass
		2441	2DH5	-1.89	<=20.97	Pass
		2480	2DH5	-2.01	<=20.97	Pass
8DPSK	SISO	2402	3DH5	-2.11	<=20.97	Pass
		2441	3DH5	-1.56	<=20.97	Pass
		2480	3DH5	-1.77	<=20.97	Pass
Note1: Antenna Gain: Ant1: 1.93dBi;						

2.2 Test Graph

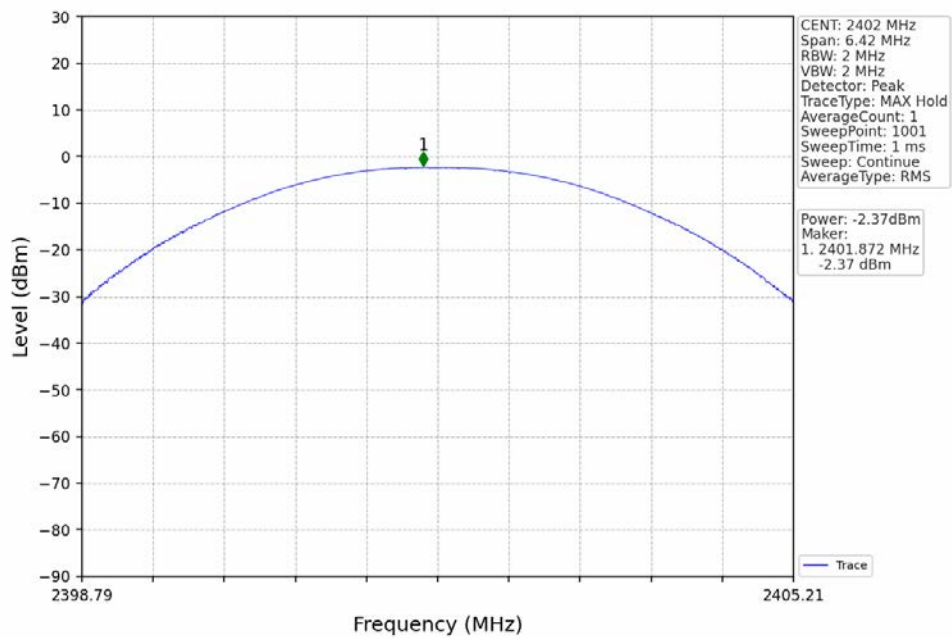
2.2.1 Power



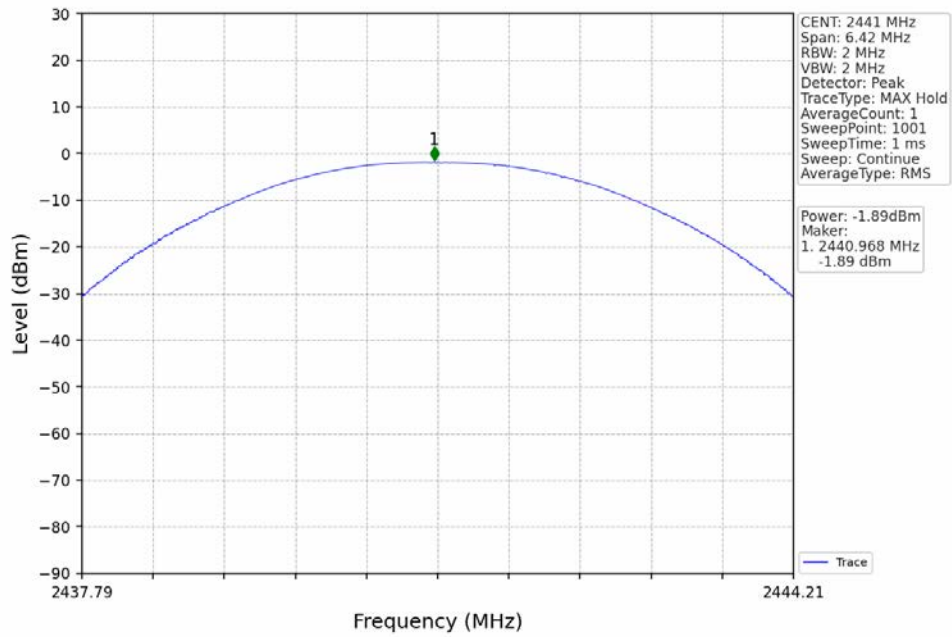
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



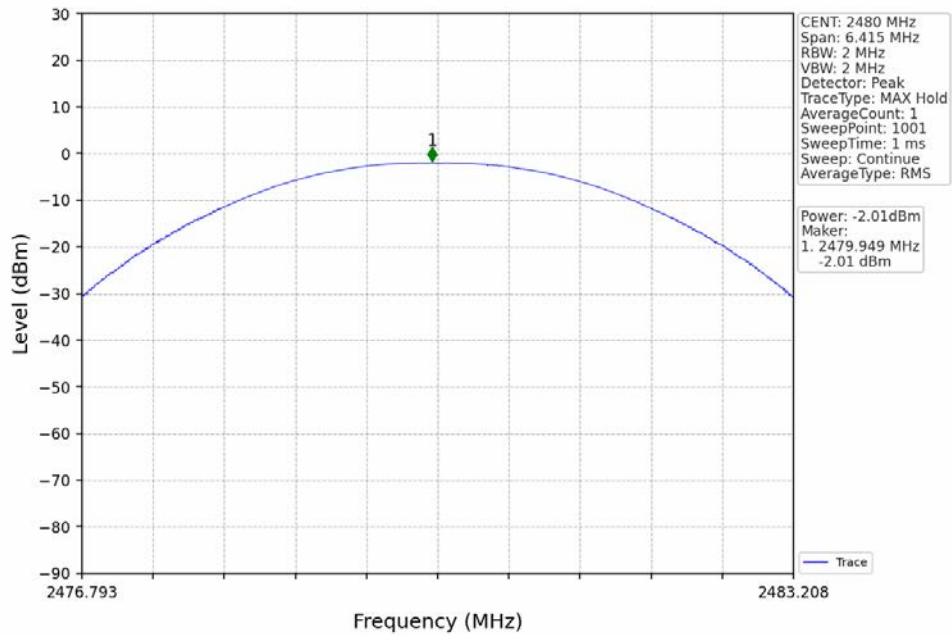
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



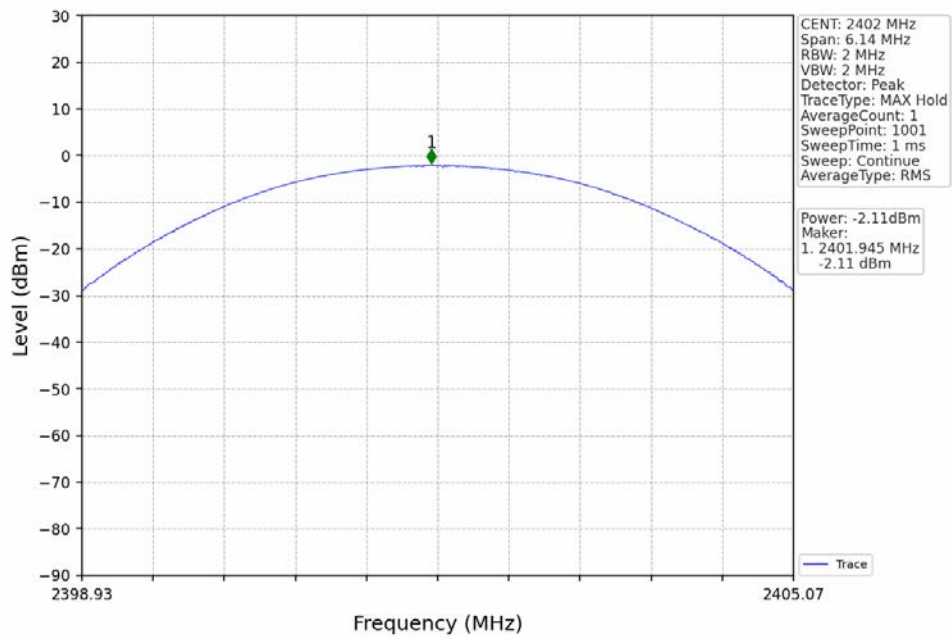
Pi/4DQPSK_2DH5_MCH_2441MHz_Ant1_NTNV



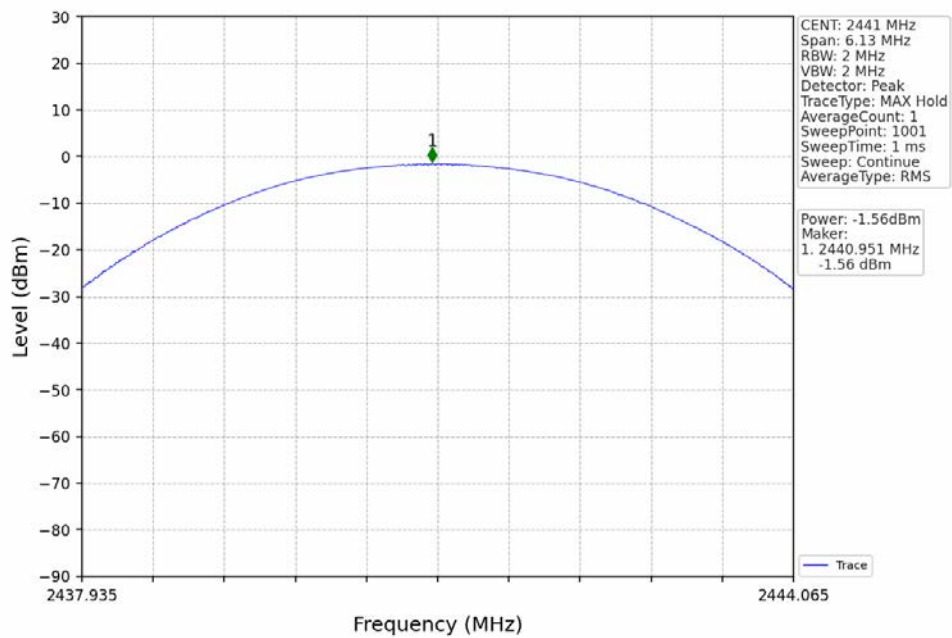
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV

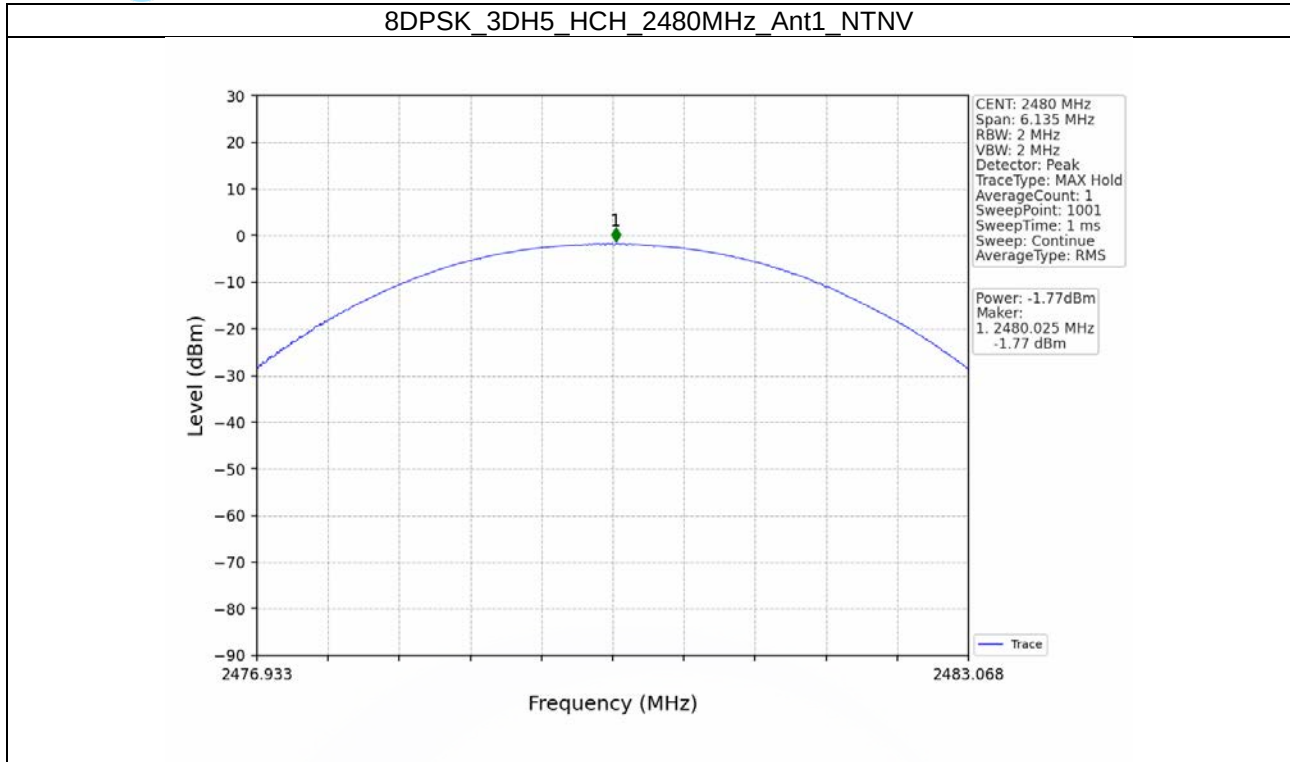


8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



8DPSK_3DH5_MCH_2441MHz_Ant1_NTNV





3. Carrier Frequency Separation

3.1 Test Result

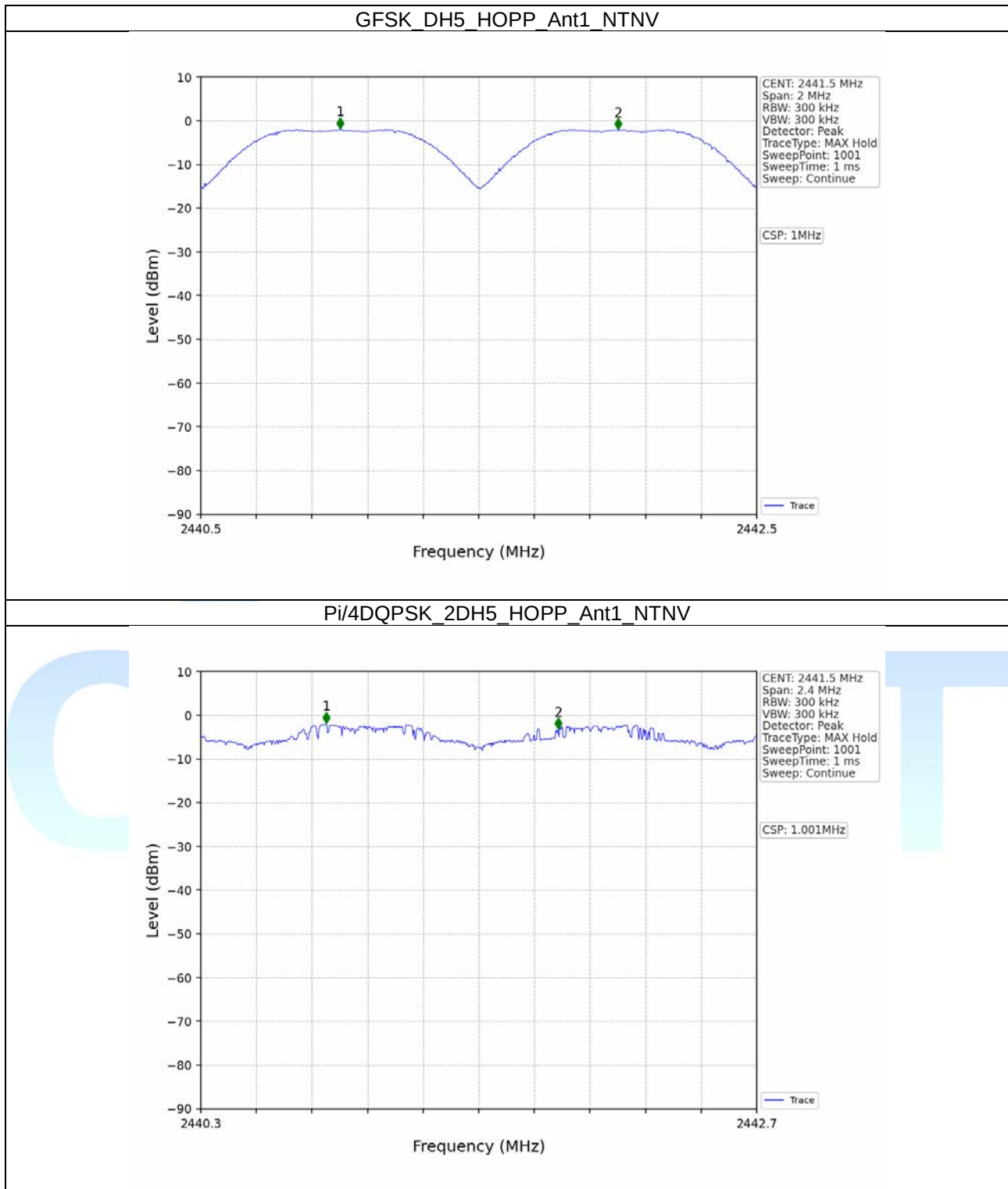
3.1.1 Ant1

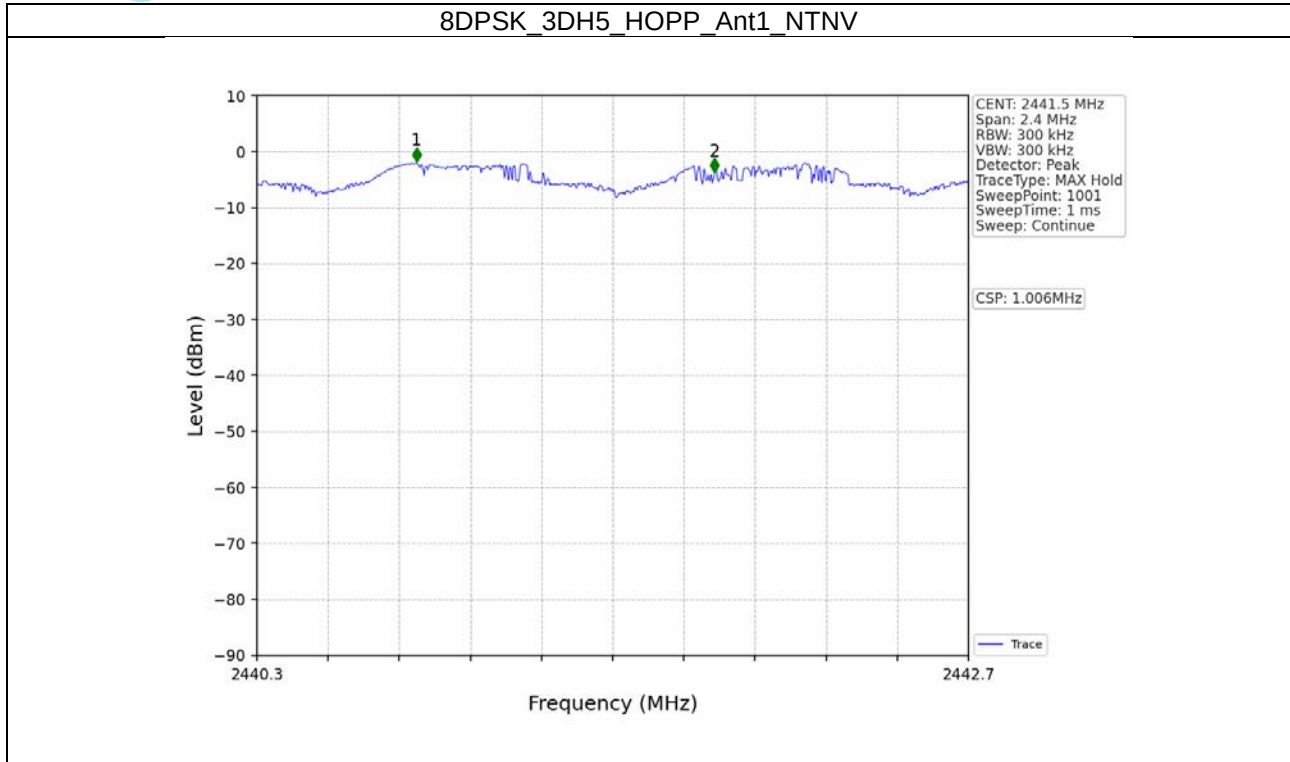
Ant1							
Mode	TX Type	Frequency (MHz)	Packet Type	Channel Separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	SISO	HOPP	DH5	1.000	0.946	≥ 0.631	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	1.001	1.284	≥ 0.856	Pass
8DPSK	SISO	HOPP	3DH5	1.006	1.228	≥ 0.819	Pass



3.2 Test Graph

3.2.1 Ant1





4. Number of Hopping Frequencies

4.1 Test Result

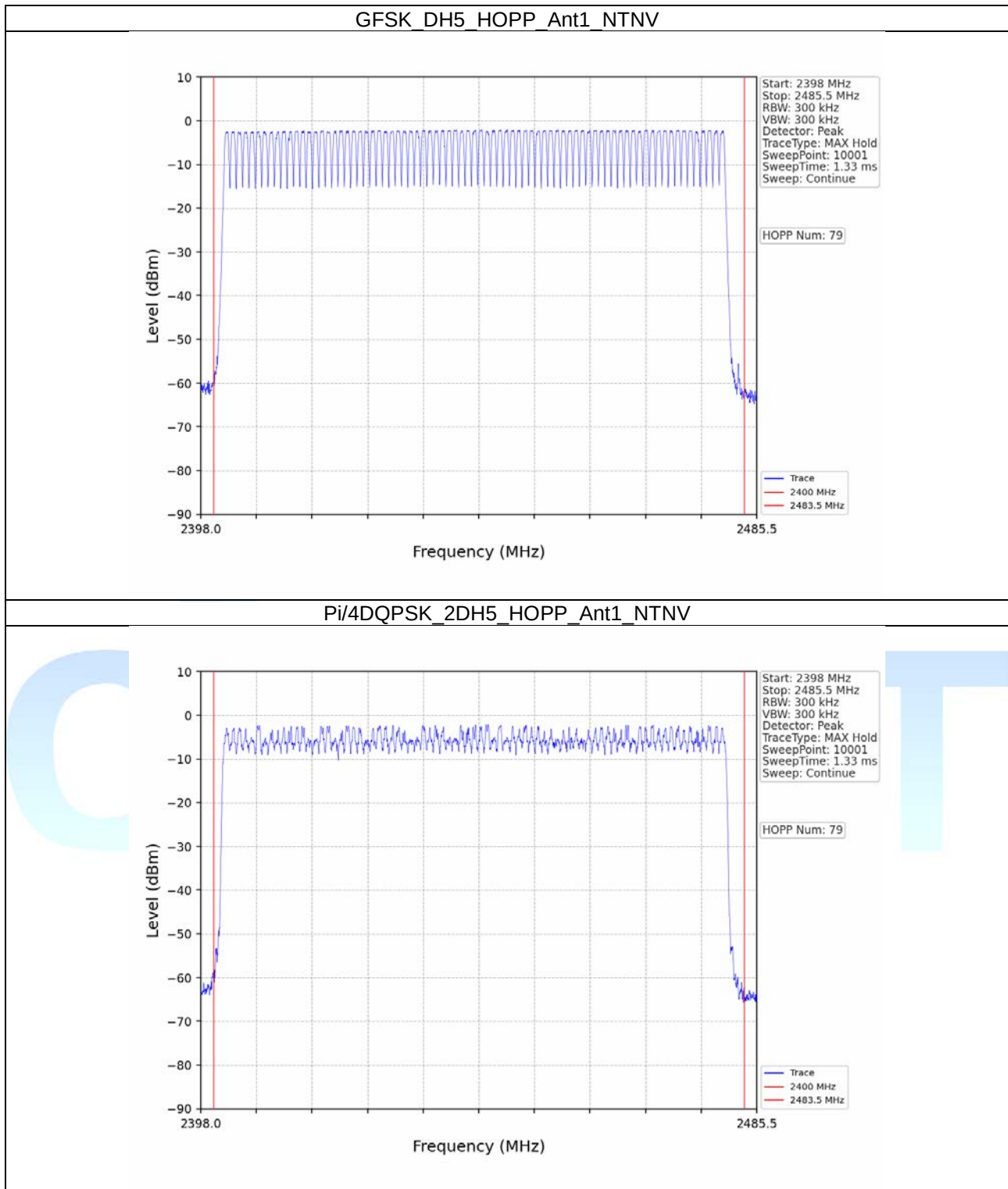
4.1.1 HoppNum

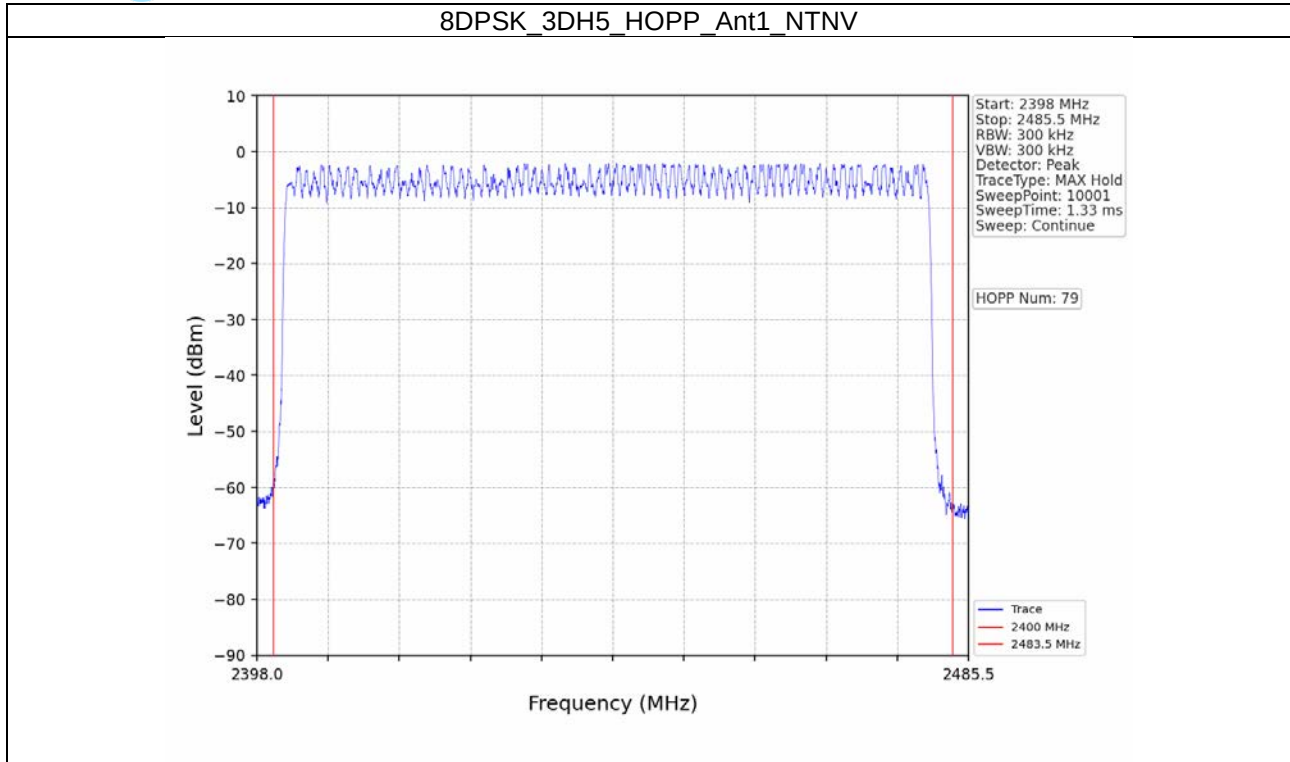
Mode	TX Type	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
				ANT1	Limit	
GFSK	SISO	HOPP	DH5	79	≥ 15	Pass
Pi/4DQPSK	SISO	HOPP	2DH5	79	≥ 15	Pass
8DPSK	SISO	HOPP	3DH5	79	≥ 15	Pass



4.2 Test Graph

4.2.1 HoppNum





5. Time of Occupancy (Dwell Time)

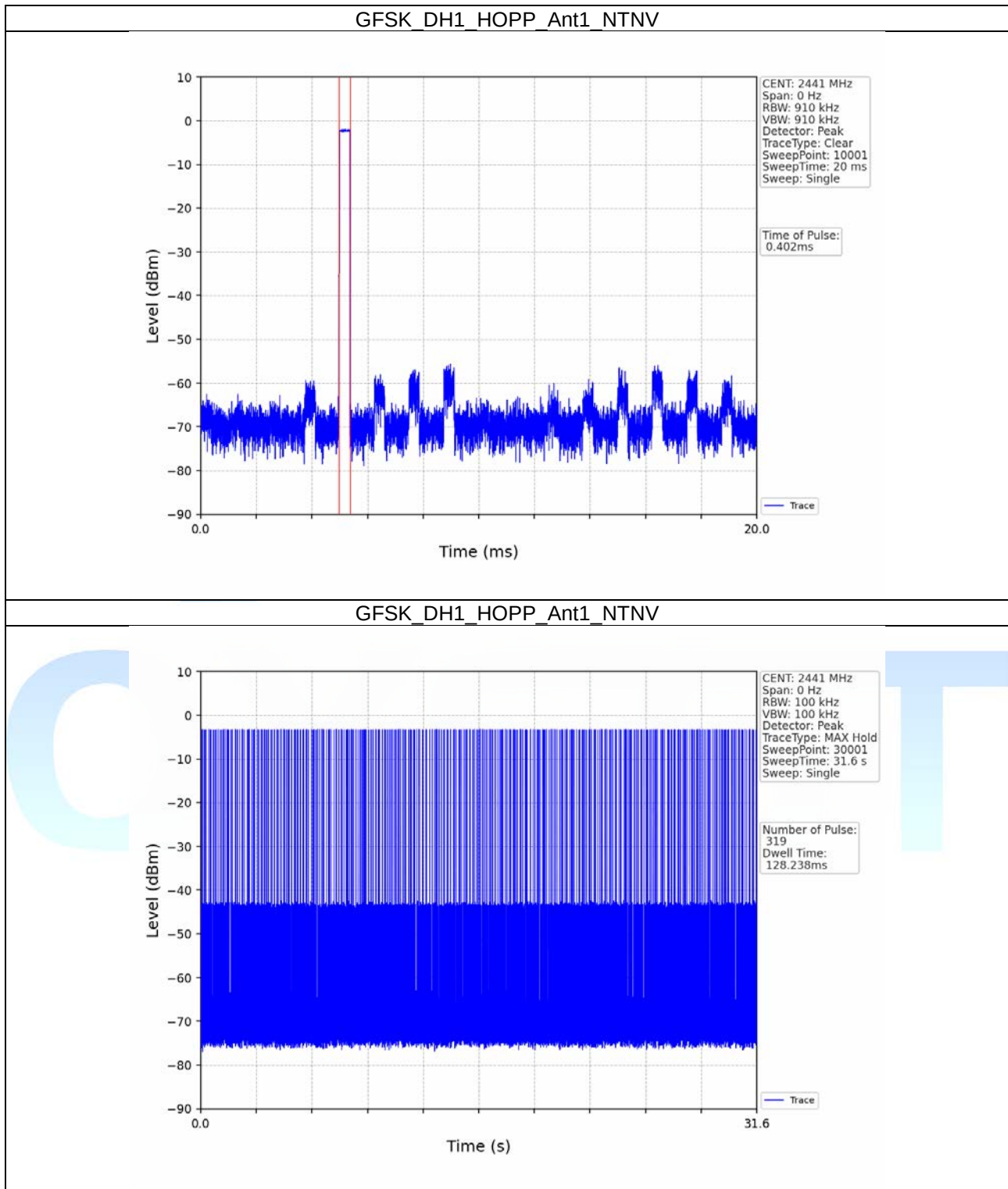
5.1 Test Result

5.1.1 Ant1

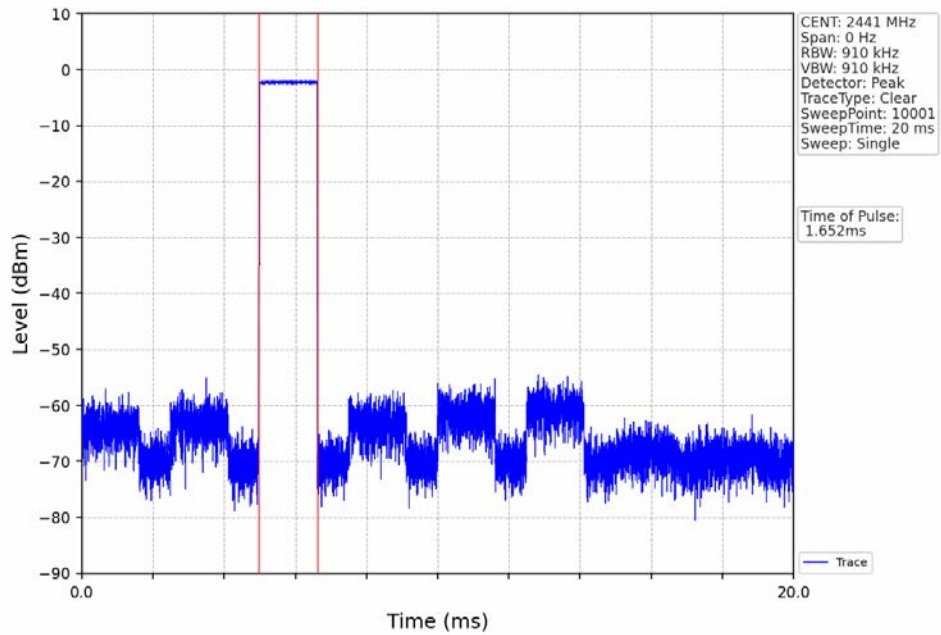
Ant1									
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	Num of Pulse in Observation Period	Dwell Time (ms)	Limit (ms)	Verdict
GFSK	SISO	HOPP	DH1	0.402	31.600	319	128.238	<=400	Pass
			DH3	1.652	31.600	160	264.320	<=400	Pass
			DH5	2.898	31.600	107	310.086	<=400	Pass
Pi/4DQPSK	SISO	HOPP	2DH1	0.410	31.600	320	131.200	<=400	Pass
			2DH3	1.664	31.600	158	262.912	<=400	Pass
			2DH5	2.910	31.600	107	311.370	<=400	Pass
8DPSK	SISO	HOPP	3DH1	0.410	31.600	319	130.790	<=400	Pass
			3DH3	1.660	31.600	160	265.600	<=400	Pass
			3DH5	2.912	31.600	106	308.672	<=400	Pass

5.2 Test Graph

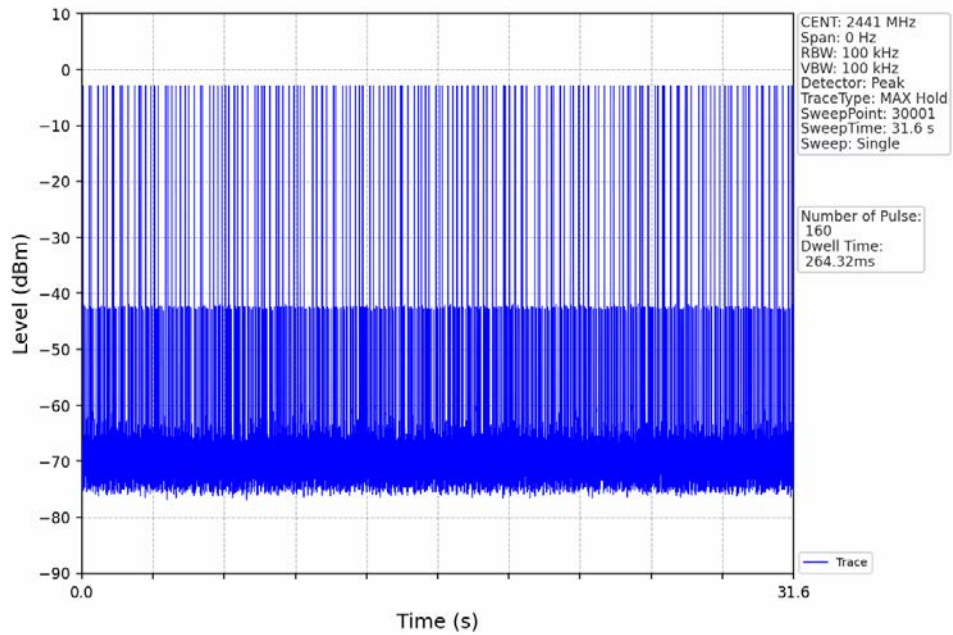
5.2.1 Ant1



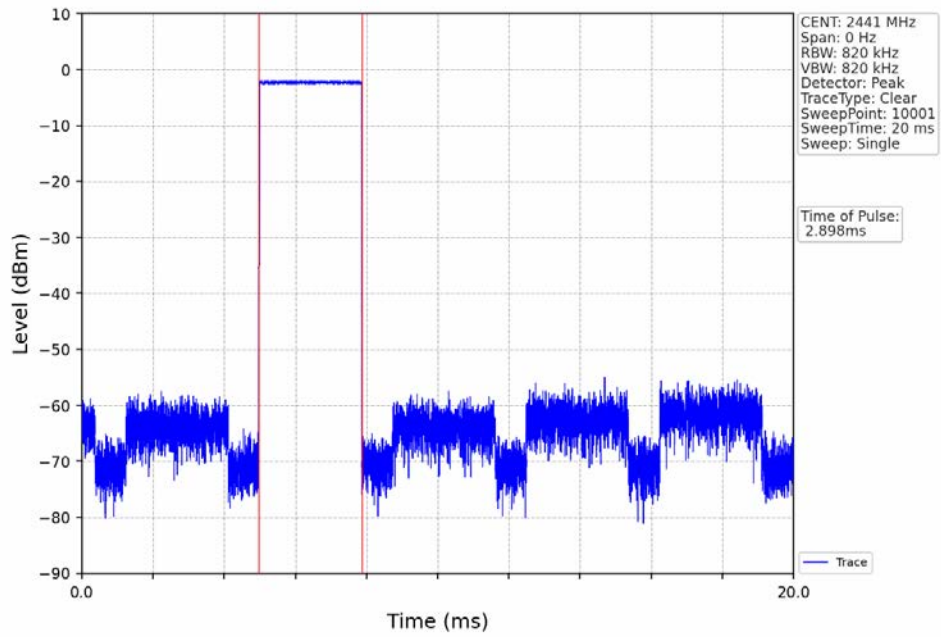
GFSK_DH3_HOPP_Ant1_NTNV



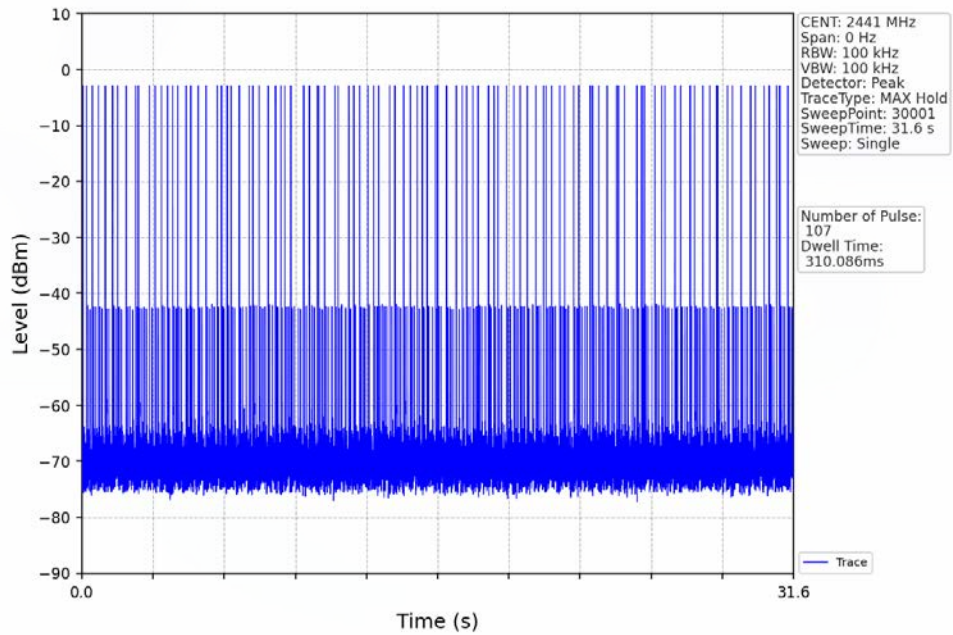
GFSK_DH3_HOPP_Ant1_NTNV



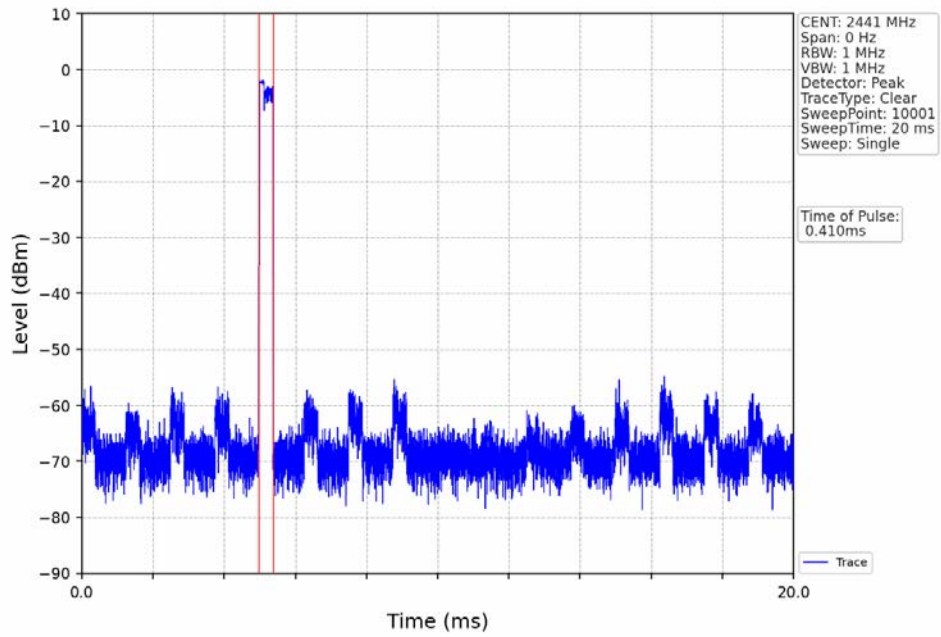
GFSK_DH5_HOPP_Ant1_NTNV



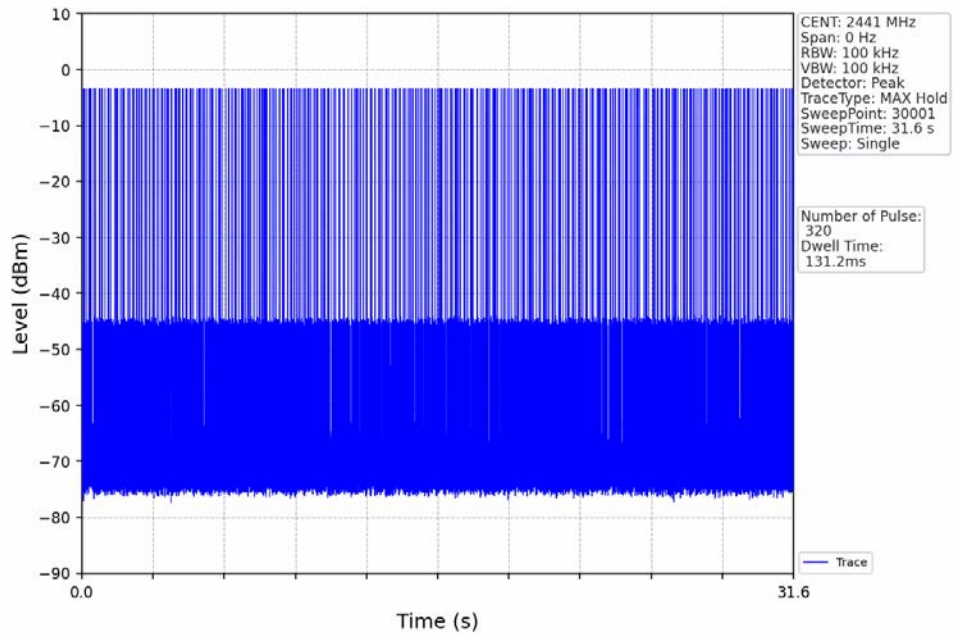
GFSK_DH5_HOPP_Ant1_NTNV



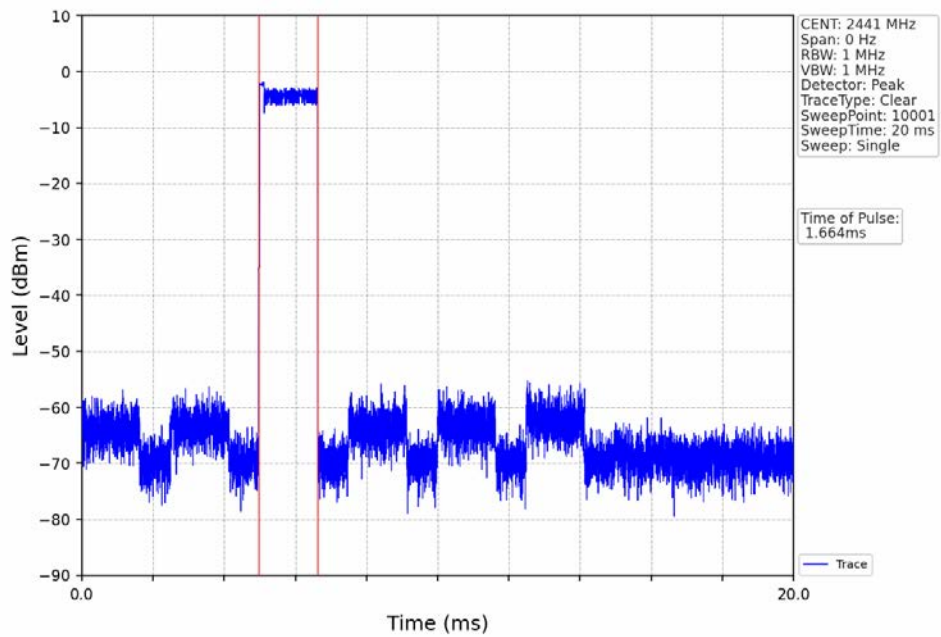
Pi/4DQPSK_2DH1_HOPP_Ant1_NTNV



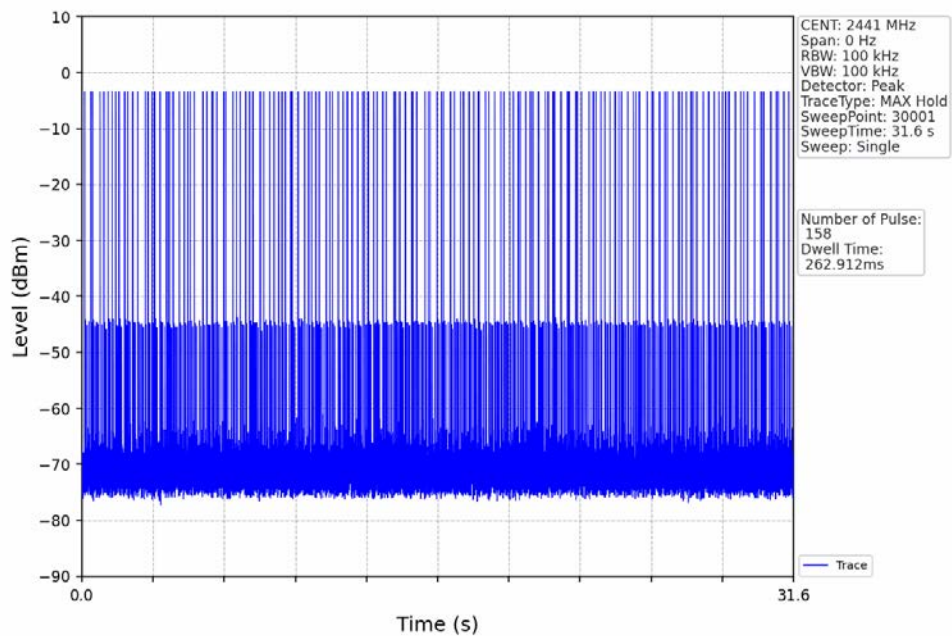
Pi/4DQPSK_2DH1_HOPP_Ant1_NTNV



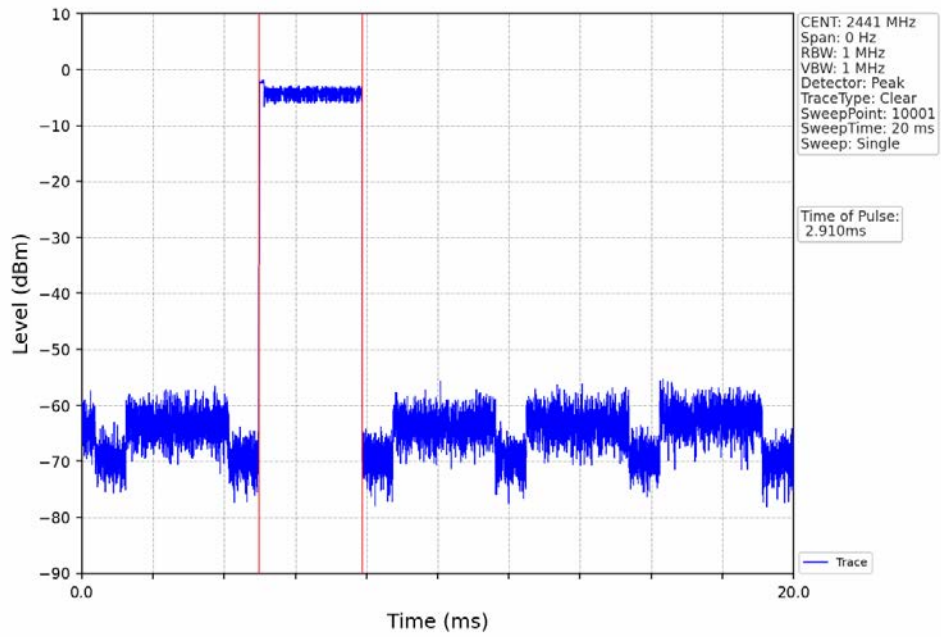
Pi/4DQPSK_2DH3_HOPP_Ant1_NTNV



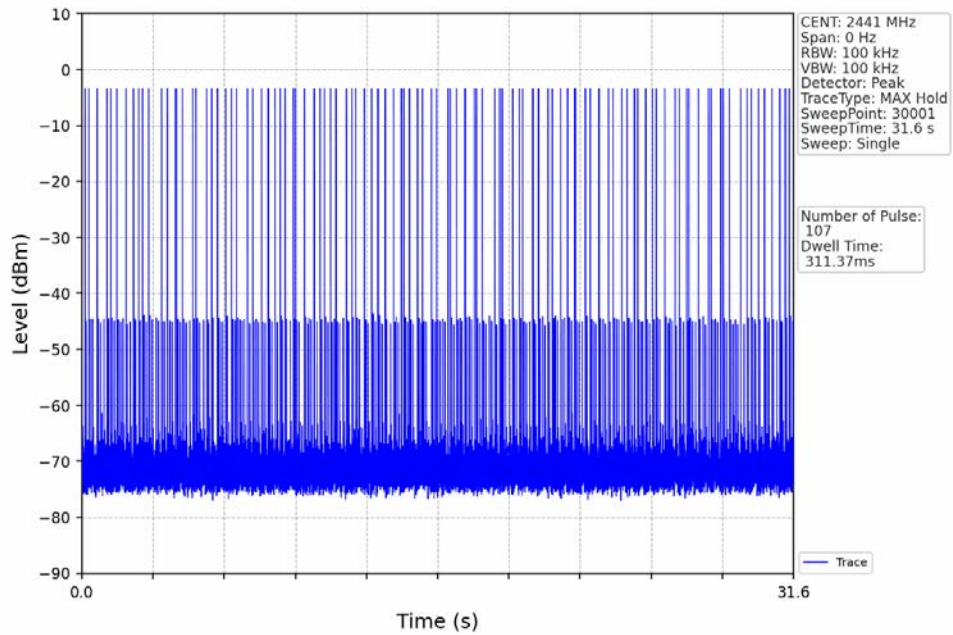
Pi/4DQPSK_2DH3_HOPP_Ant1_NTNV



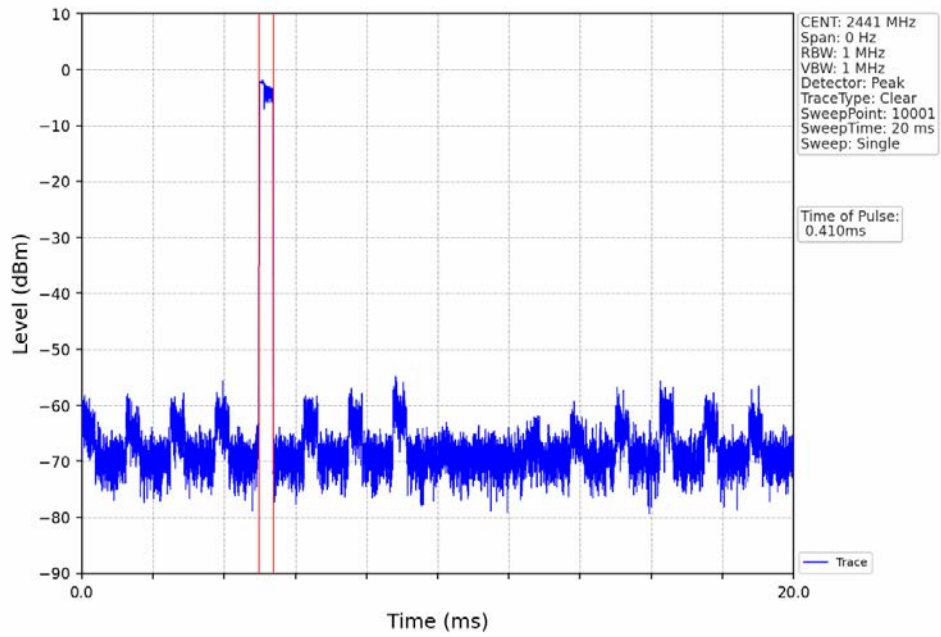
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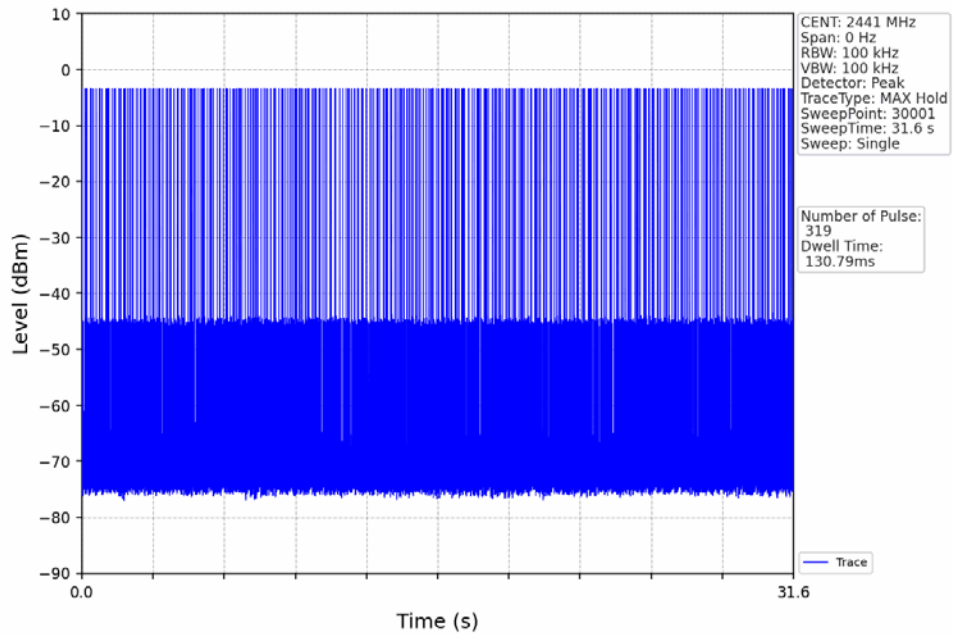
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



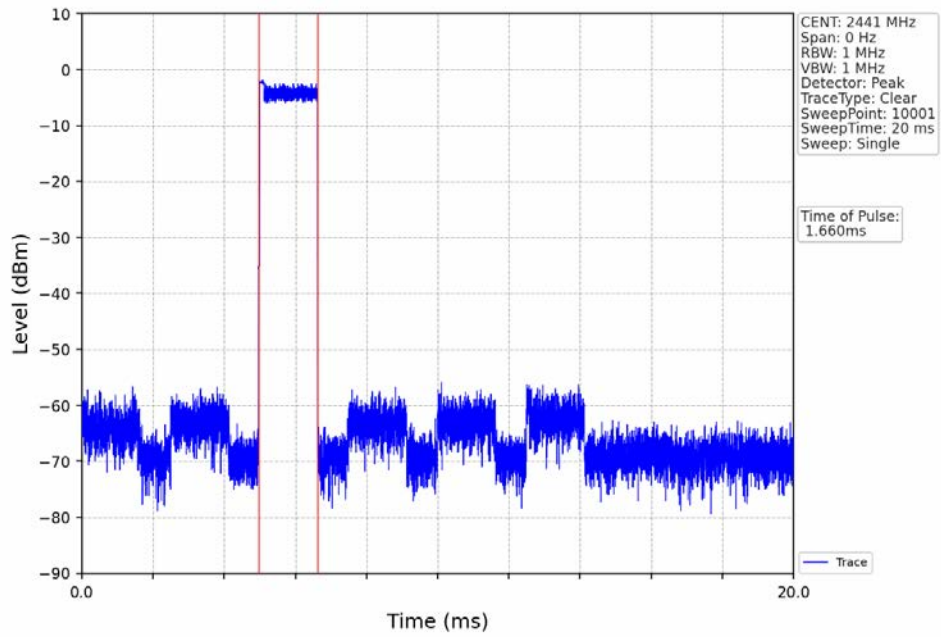
8DPSK_3DH1_HOPP_Ant1_NTNV



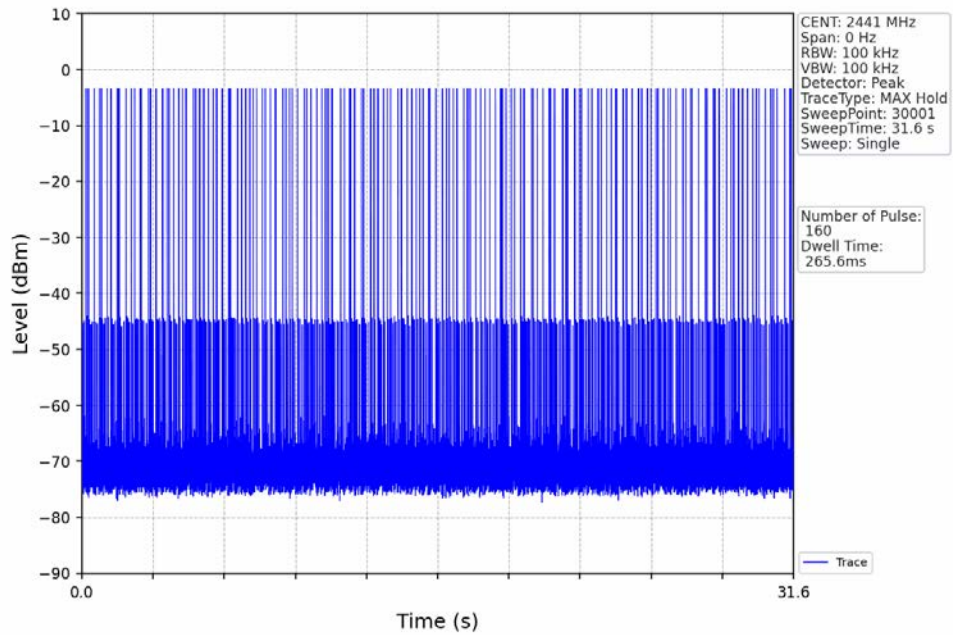
8DPSK_3DH1_HOPP_Ant1_NTNV



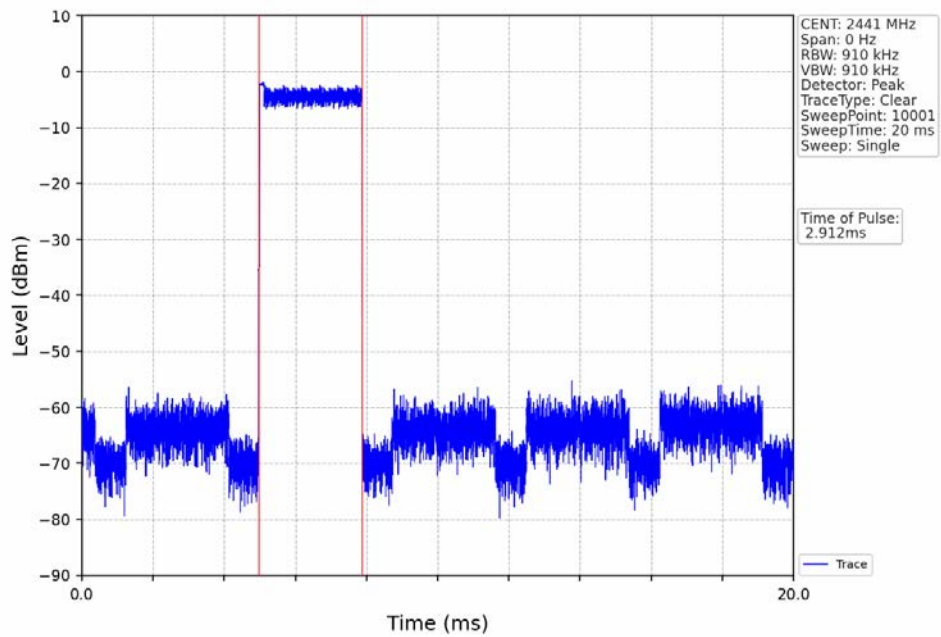
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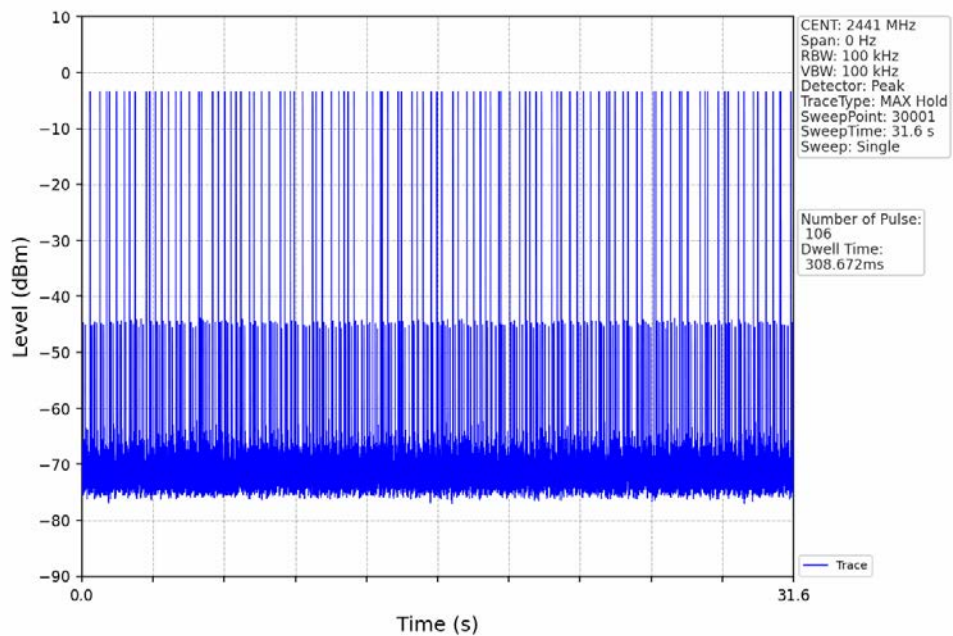
8DPSK_3DH3_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV



6. Unwanted Emissions In Non-restricted Frequency Bands

6.1 Test Result

6.1.1 Ref

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)
GFSK	SISO	2402	DH5	1	-2.79
		2441	DH5	1	-2.30
		2480	DH5	1	-2.42
		HOPP	DH5	1	-2.19
					-2.19
Pi/4DQPSK	SISO	2402	2DH5	1	-3.02
		2441	2DH5	1	-2.46
		2480	2DH5	1	-2.58
		HOPP	2DH5	1	-2.34
					-2.34
8DPSK	SISO	2402	3DH5	1	-2.77
		2441	3DH5	1	-2.28
		2480	3DH5	1	-2.40
		HOPP	3DH5	1	-2.18
					-2.18

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

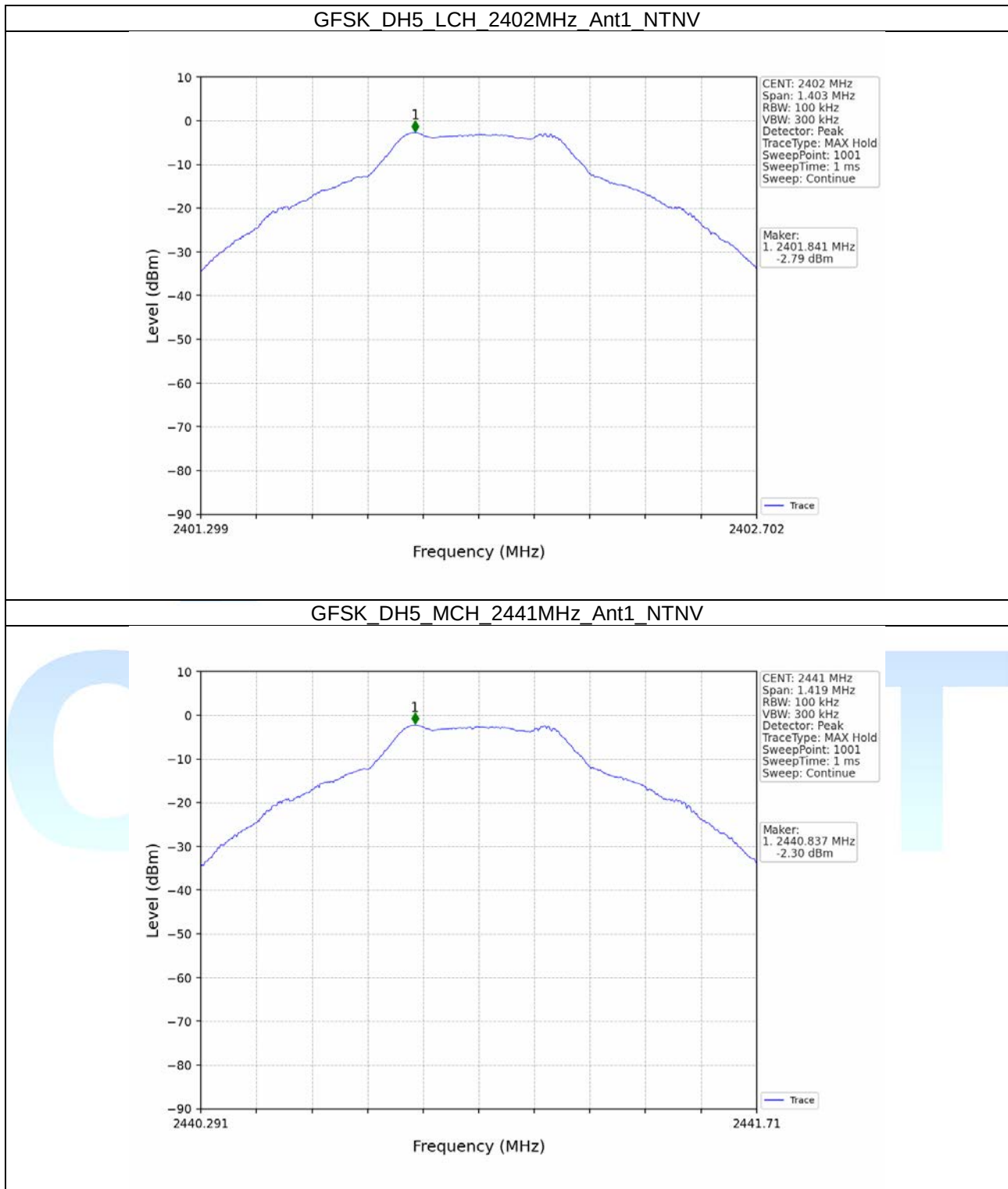
6.1.2 CSE

Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	-2.79	-22.79	Pass
		2441	DH5	1	-2.30	-22.30	Pass
		2480	DH5	1	-2.42	-22.42	Pass
		HOPP	DH5	1	-2.19	-22.19	Pass
					-2.19	-22.19	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	-3.02	-23.02	Pass
		2441	2DH5	1	-2.46	-22.46	Pass
		2480	2DH5	1	-2.58	-22.58	Pass
		HOPP	2DH5	1	-2.34	-22.34	Pass
					-2.34	-22.34	Pass
8DPSK	SISO	2402	3DH5	1	-2.77	-22.77	Pass
		2441	3DH5	1	-2.28	-22.28	Pass
		2480	3DH5	1	-2.40	-22.40	Pass
		HOPP	3DH5	1	-2.18	-22.18	Pass
					-2.18	-22.18	Pass

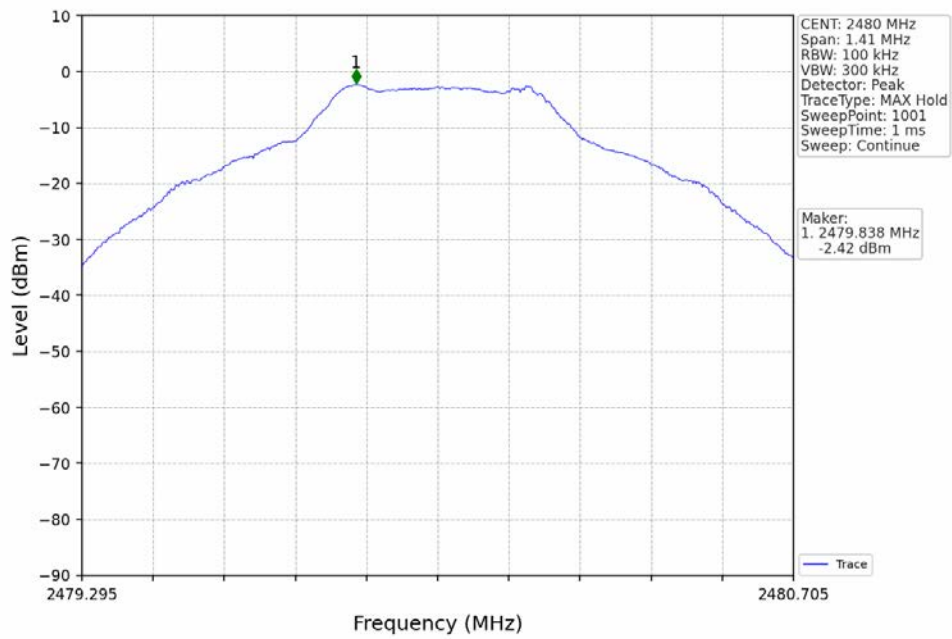
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

6.2 Test Graph

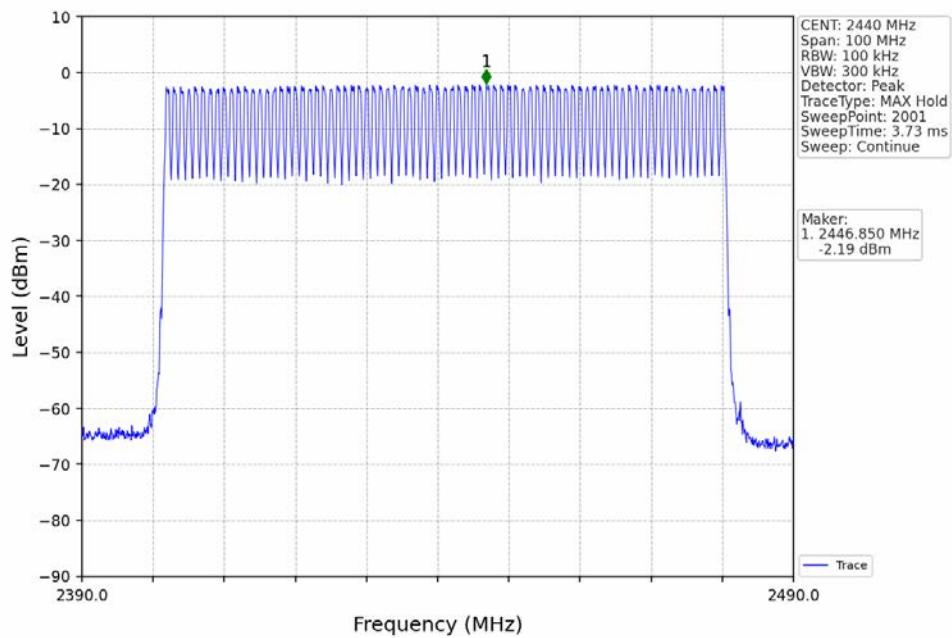
6.2.1 Ref



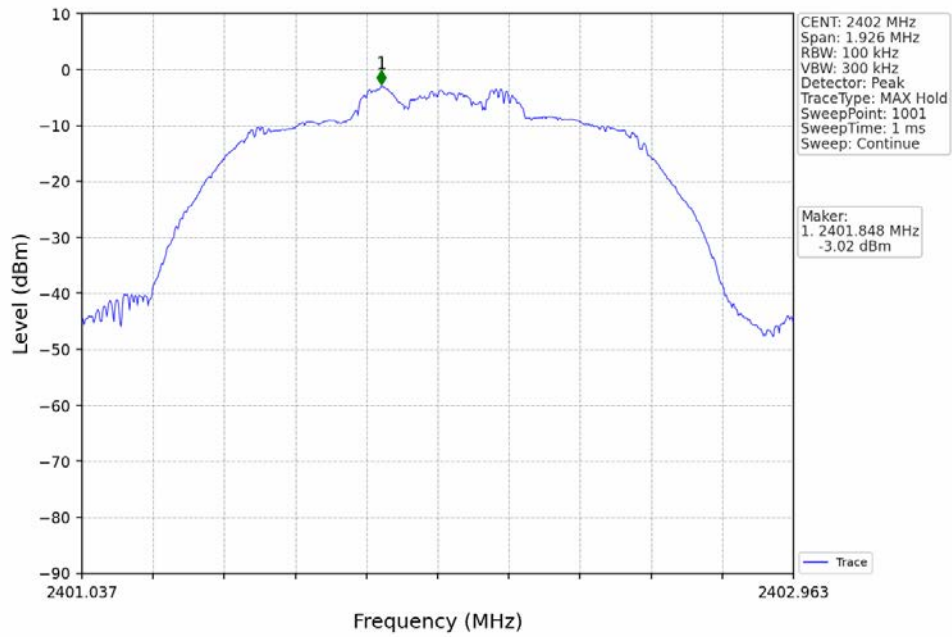
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



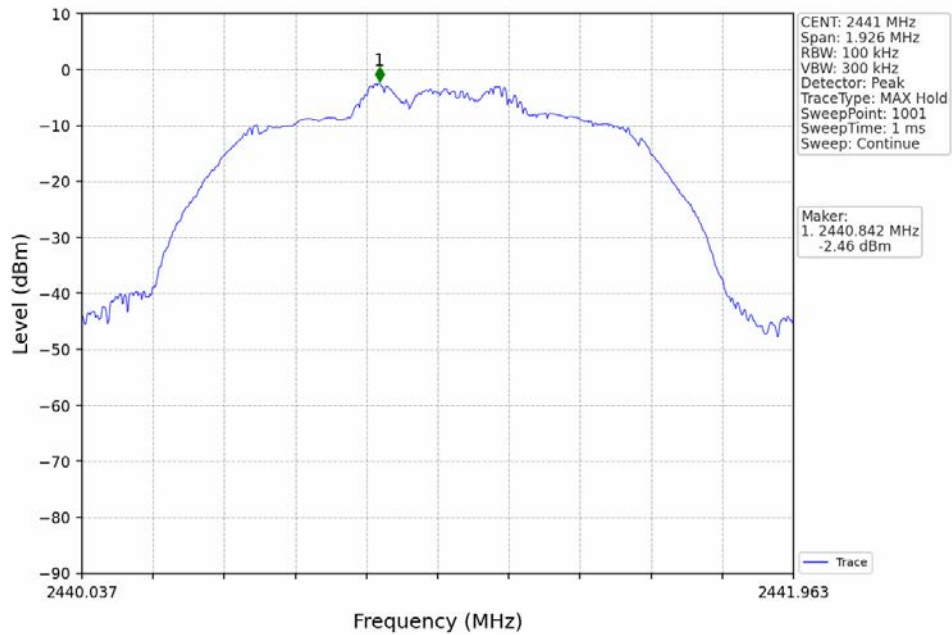
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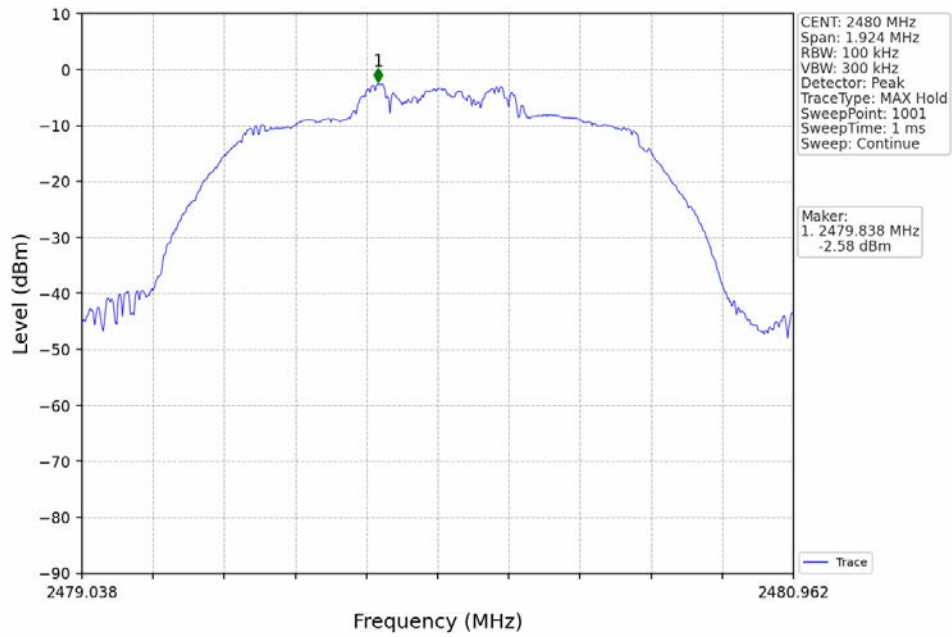
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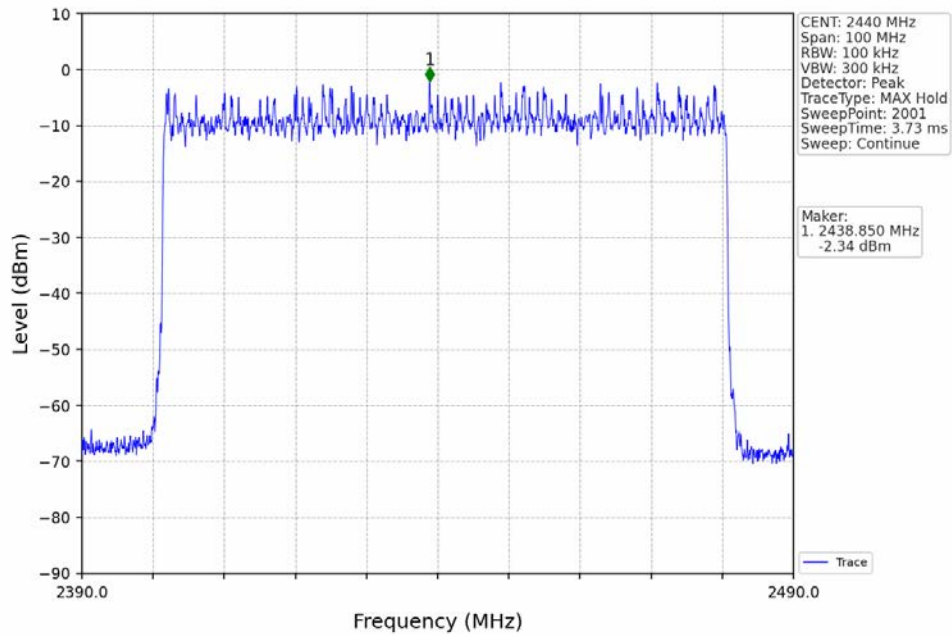
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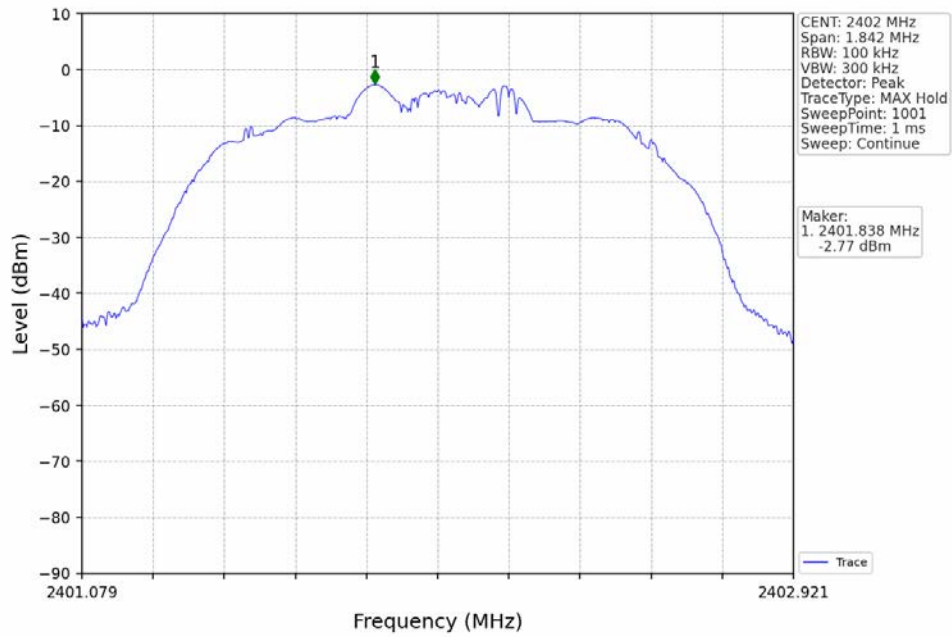
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



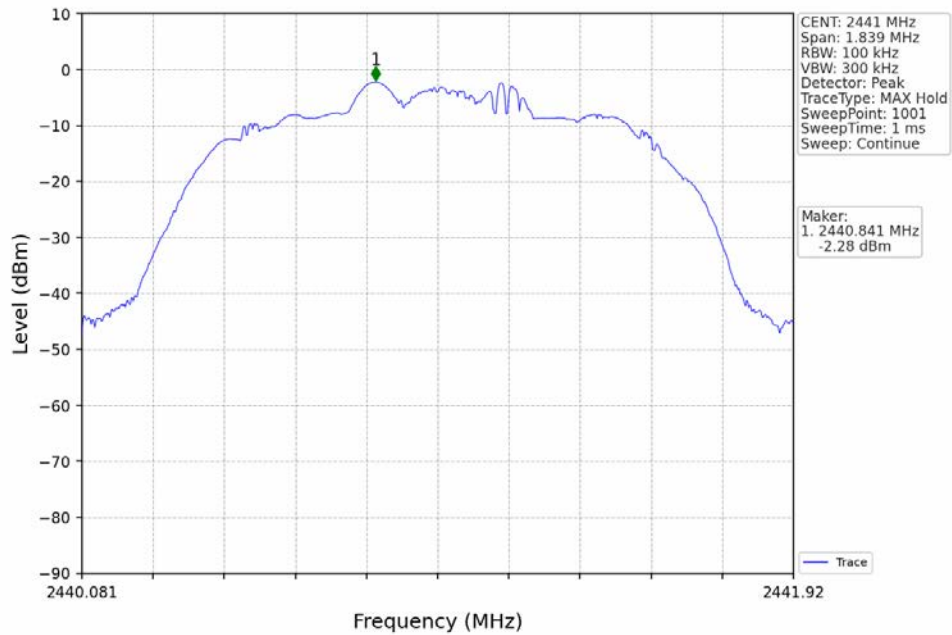
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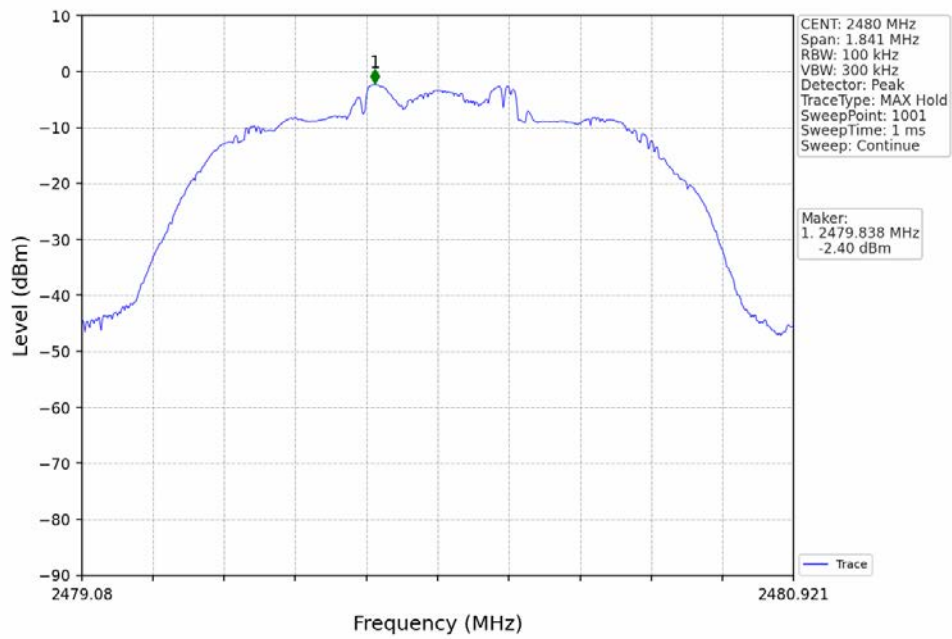
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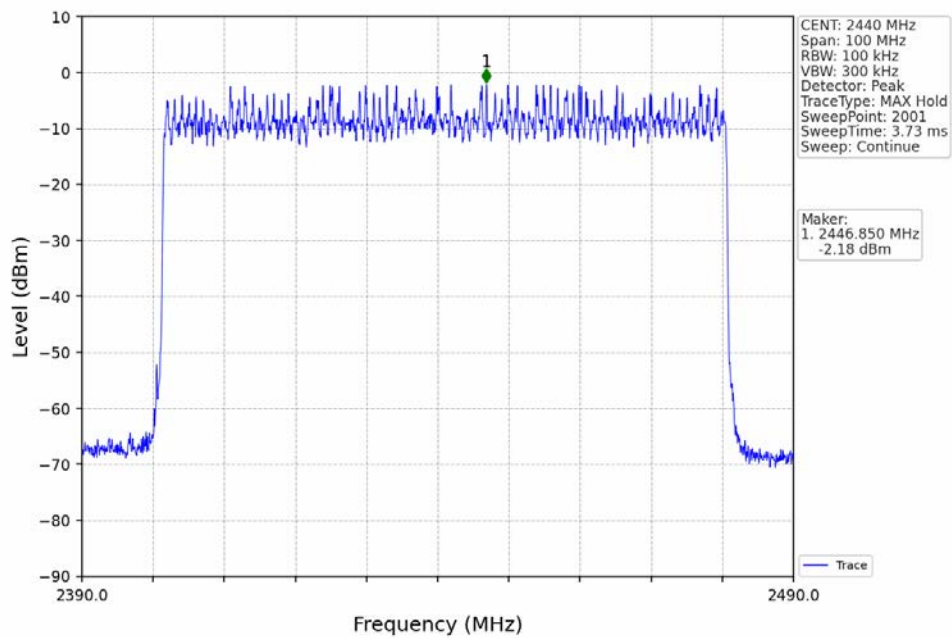
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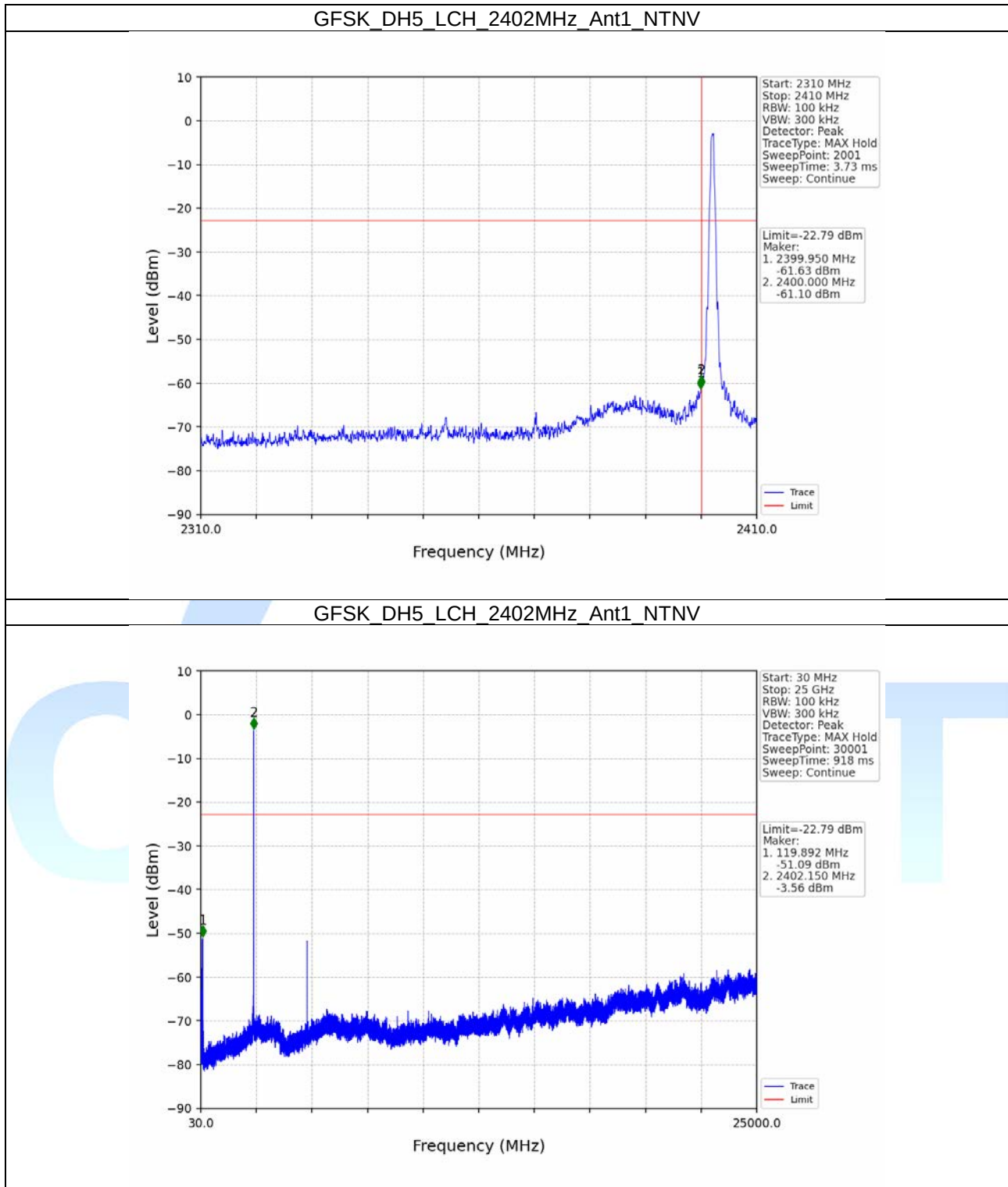
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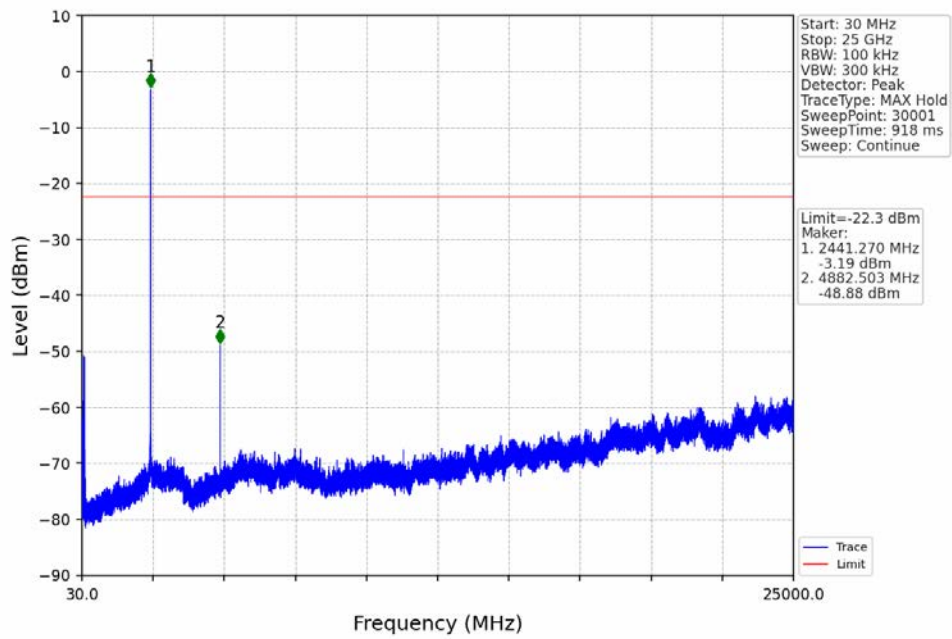
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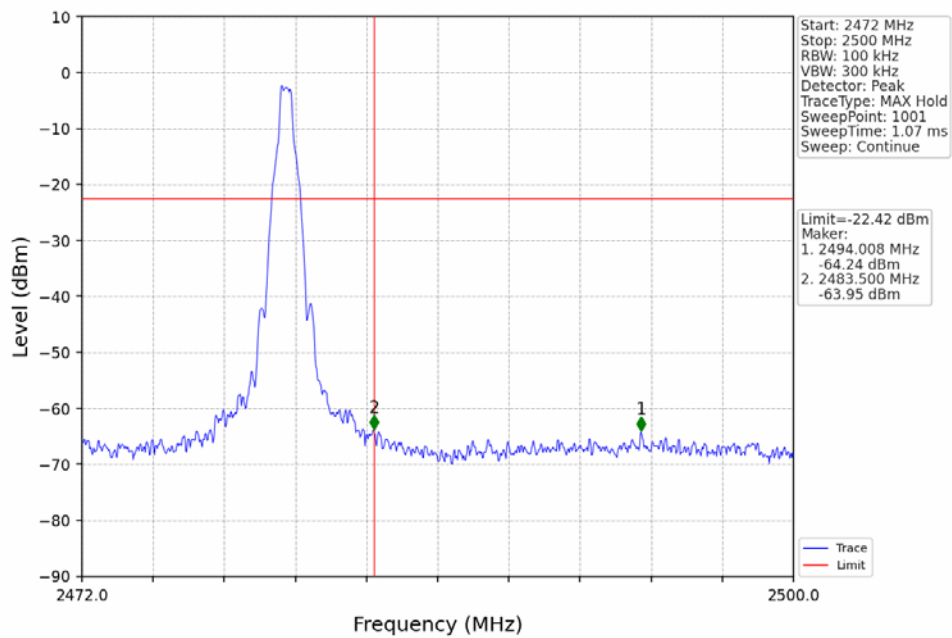
6.2.2 CSE



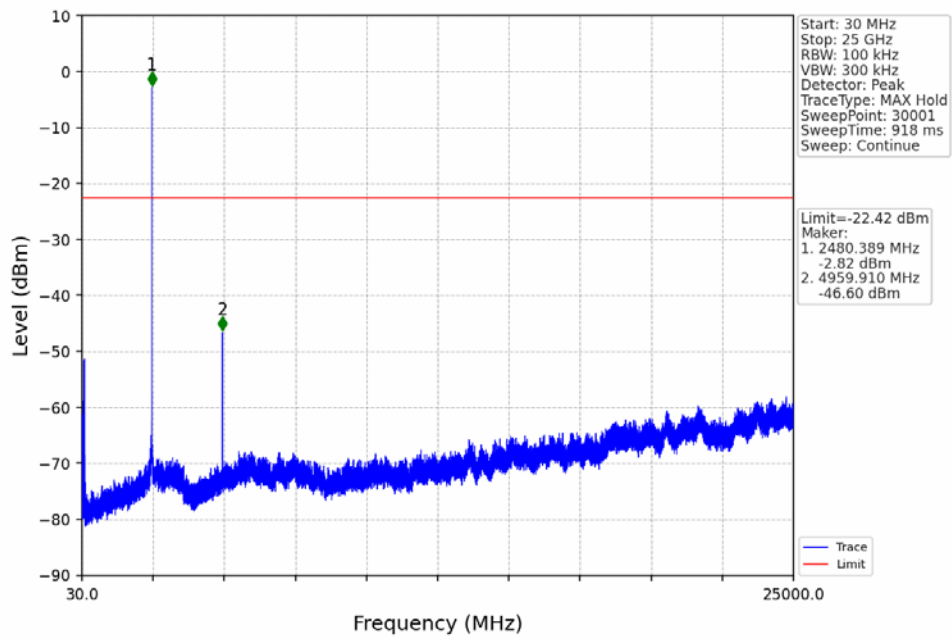
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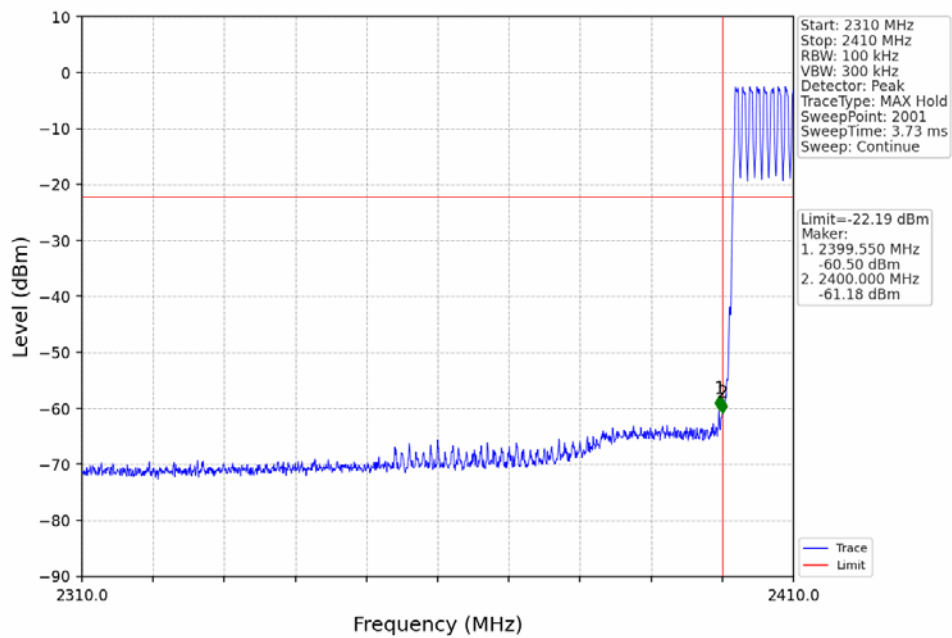
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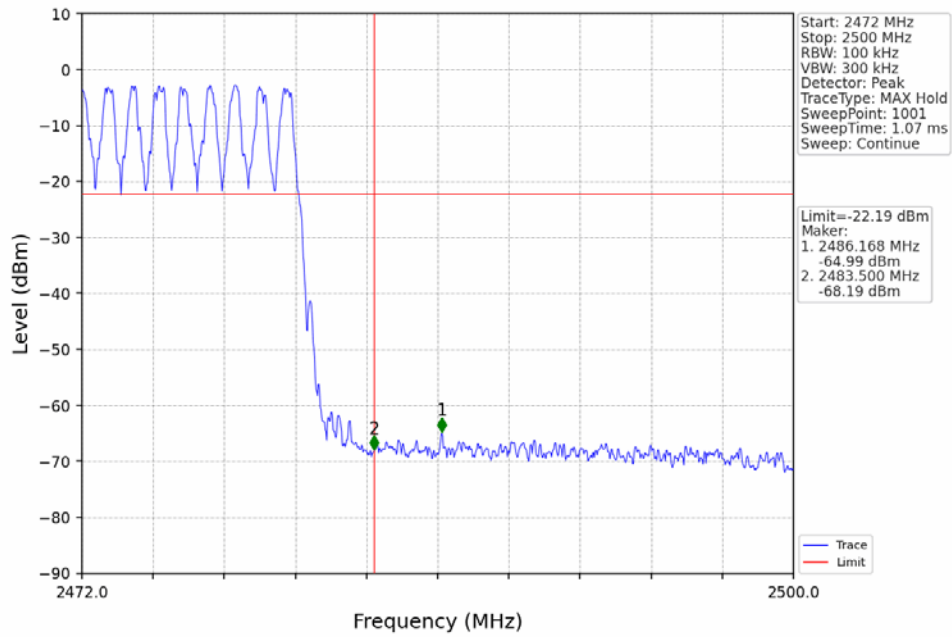
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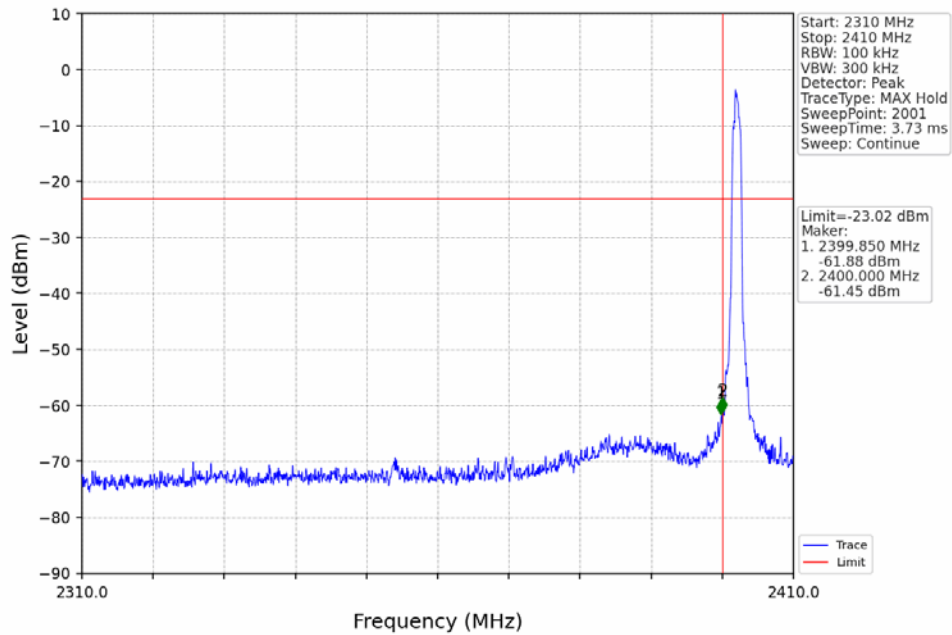
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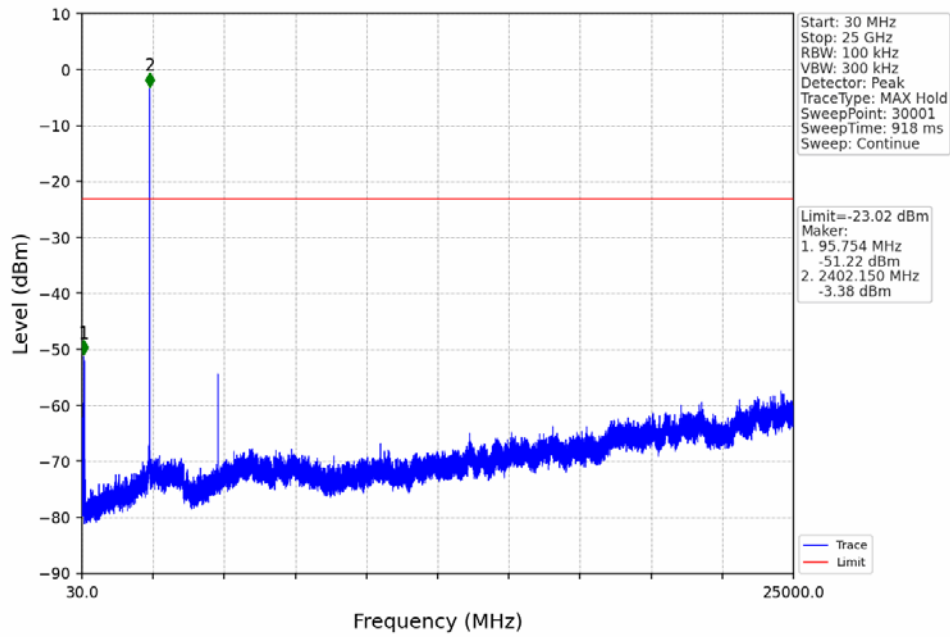
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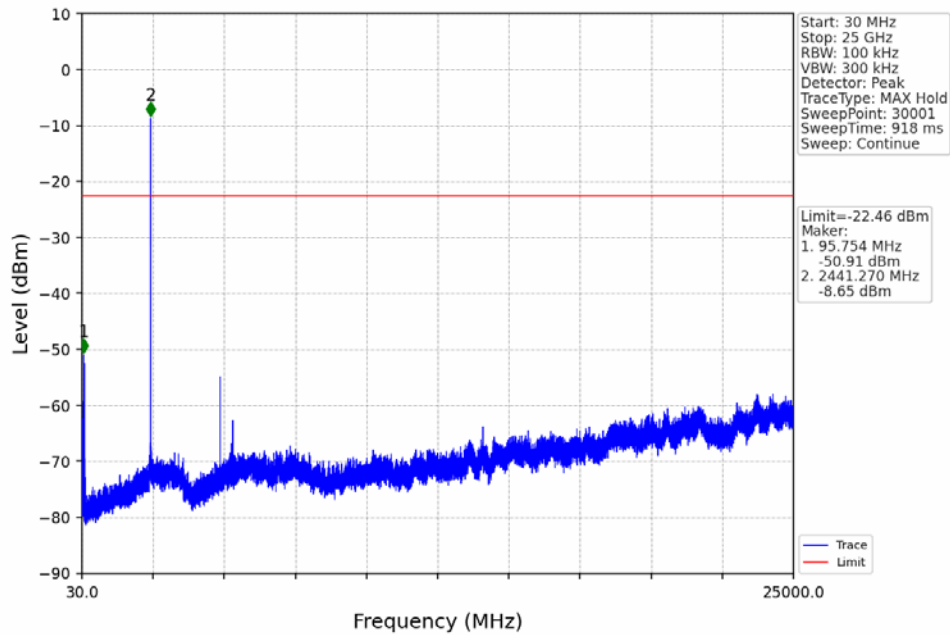
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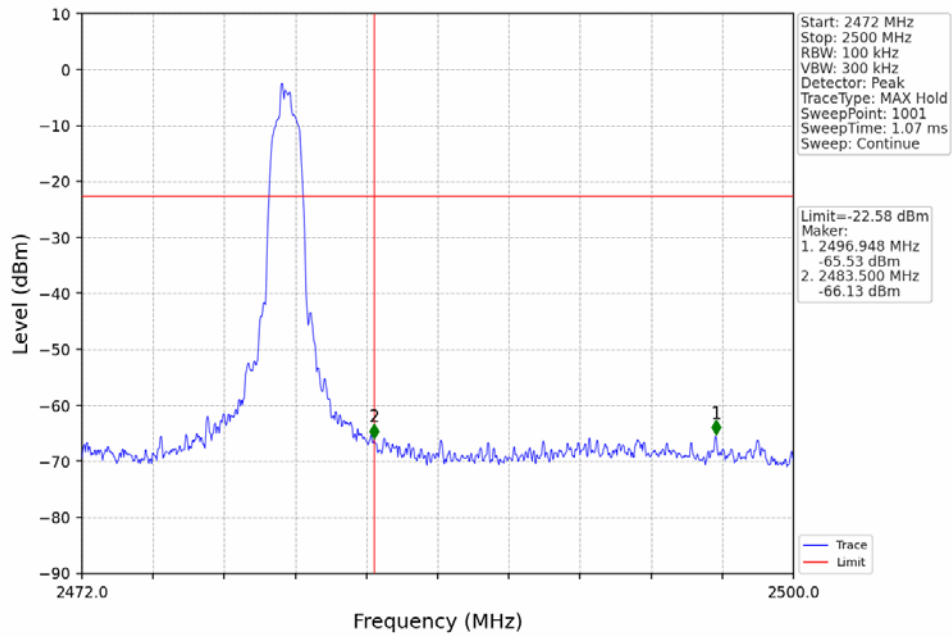
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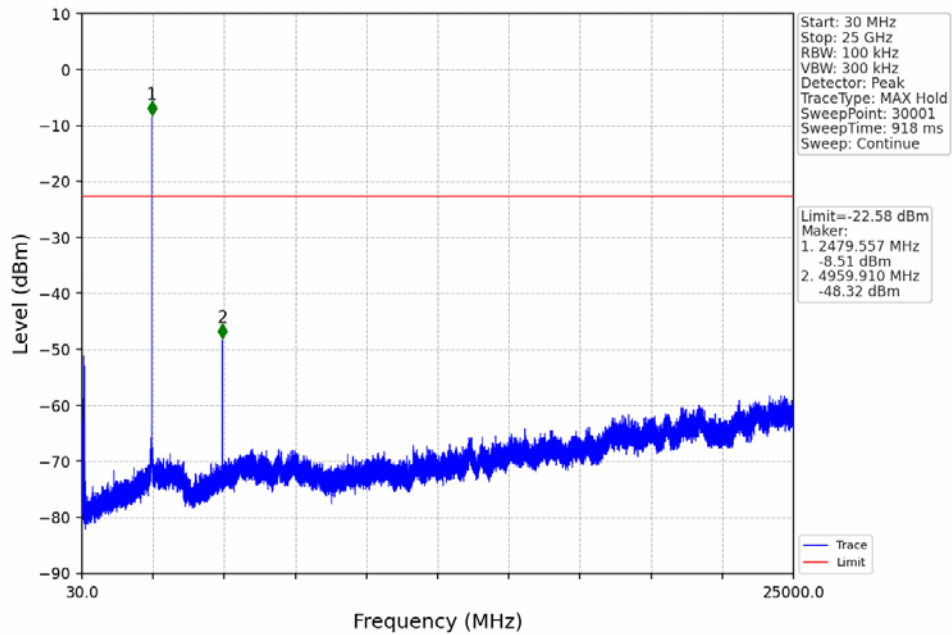
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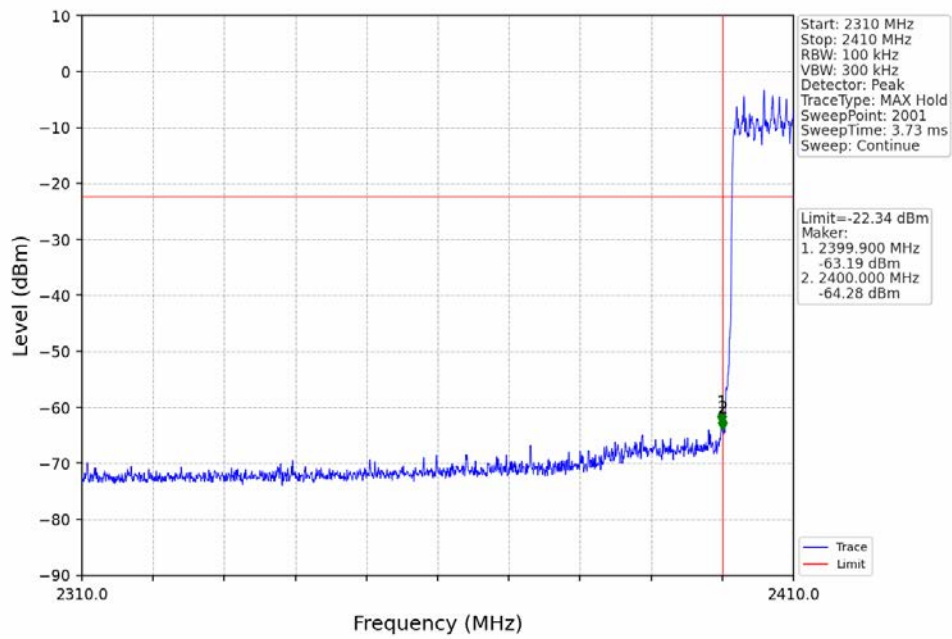
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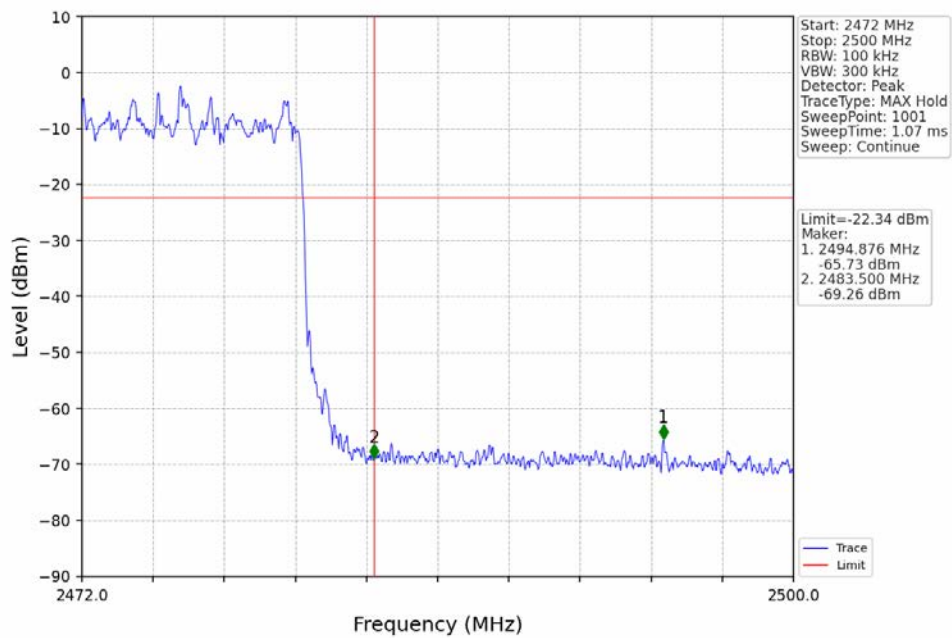
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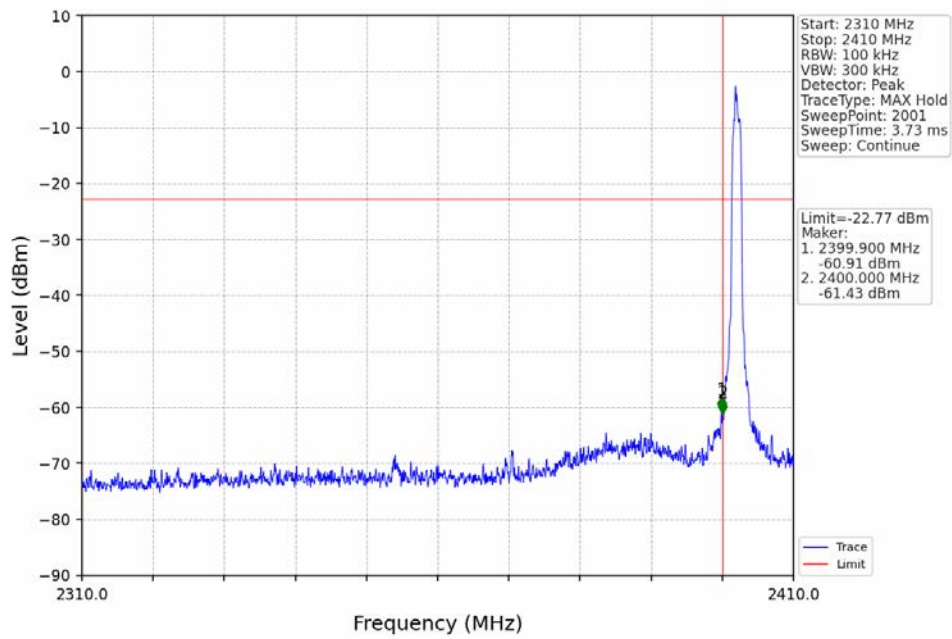
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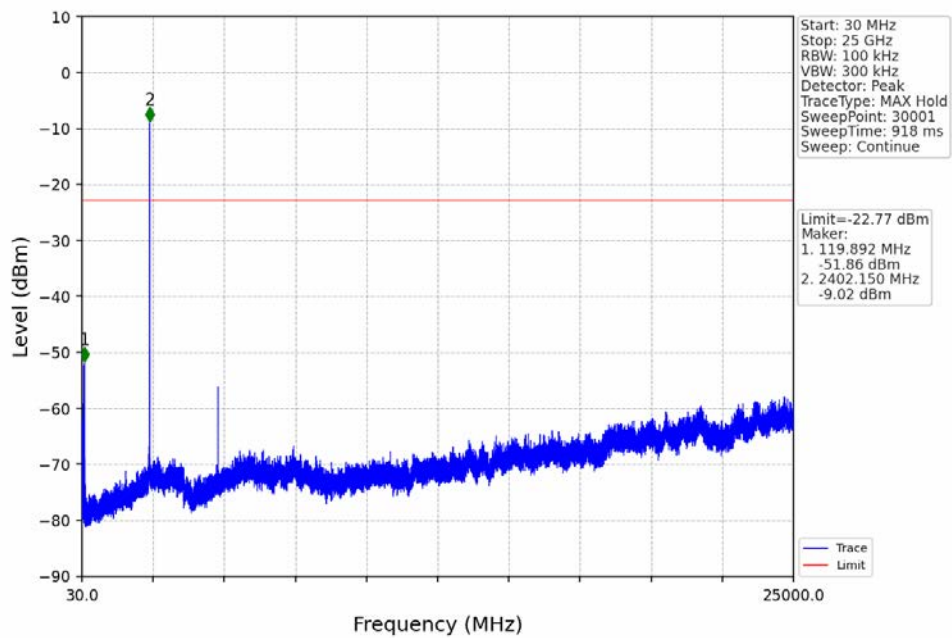
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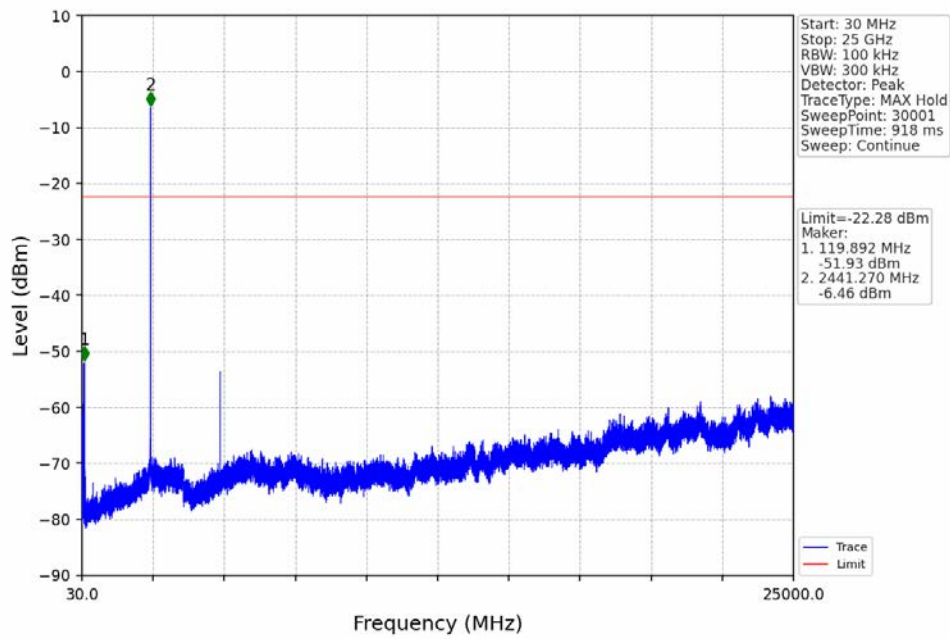
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



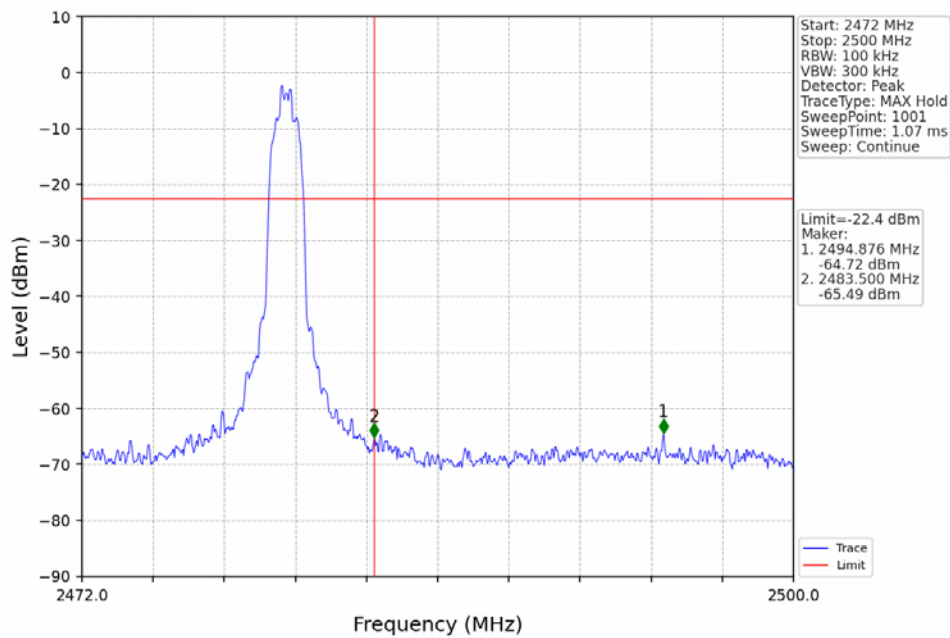
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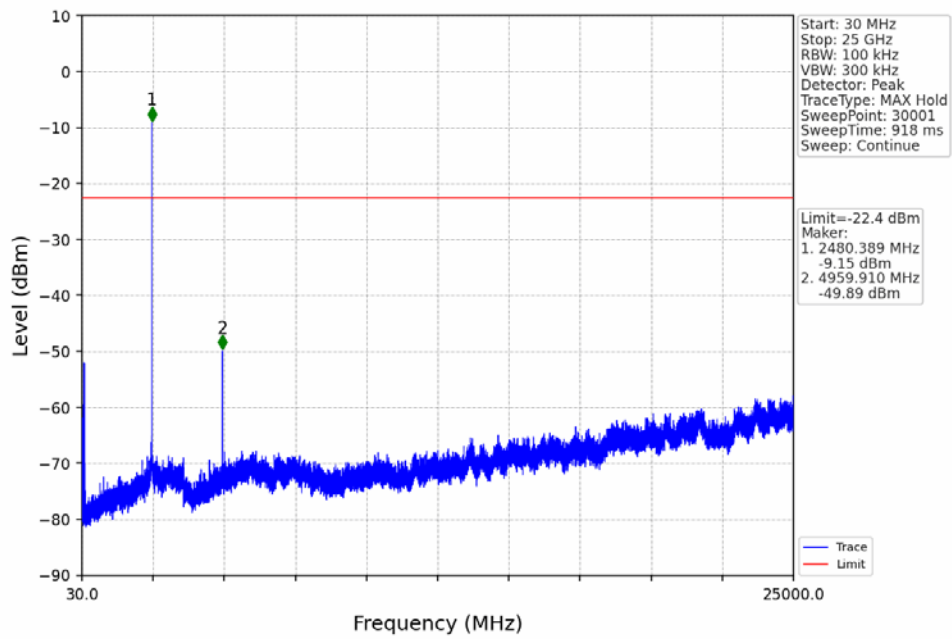
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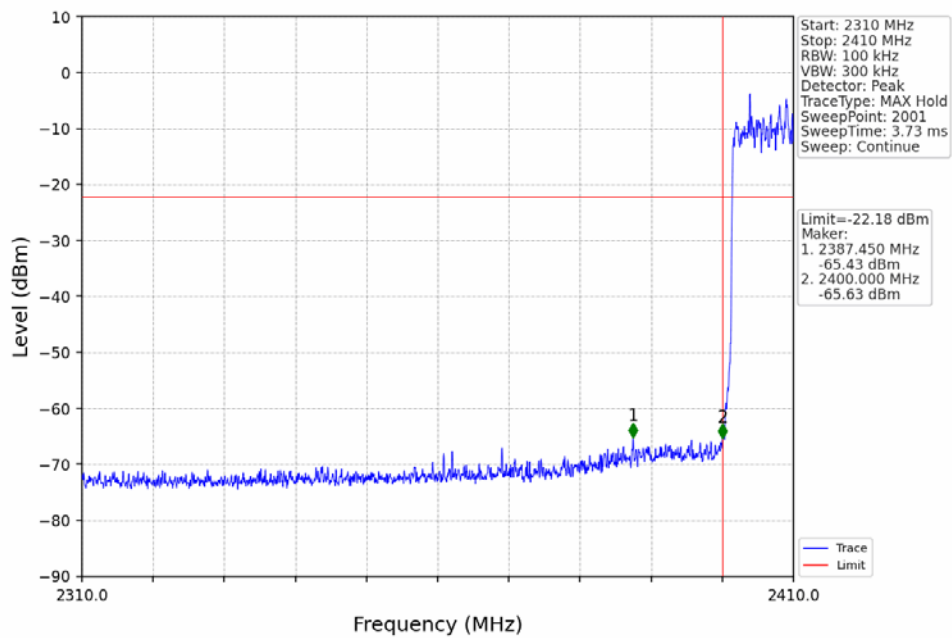
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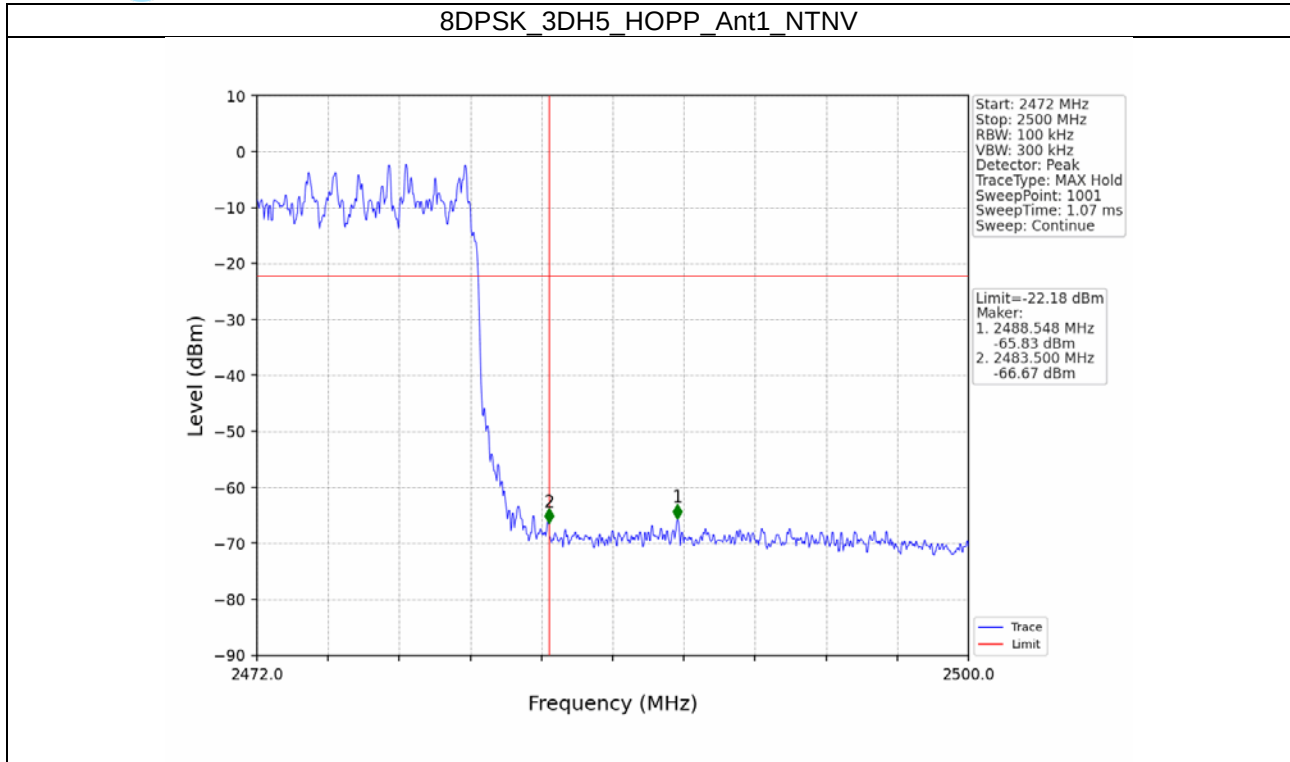


8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



8DPSK_3DH5_HOPP_Ant1_NTNV





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