FCC - TEST REPORT

Report Number	:	**709502402457-00D**	Date of Issue:	July 1, 2024

Model	:	Refer to page 4
Product Type	:	Acoustic Thermal Imager
Applicant	:	FOTRIC INC.
Address	:	No. 14, Lane 2500, Xiupu Road, Pudong, 201201 Shanghai, PEOPLE'S REPUBLIC OF CHINA
Manufacturer	:	FOTRIC INC.
Address	:	No. 14, Lane 2500, Xiupu Road, Pudong, 201201 Shanghai, PEOPLE'S REPUBLIC OF CHINA
Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	69

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2 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
709502402457-00D	First Issue	07/01/2024

3 Details about the Test Laboratory

Details about the Test Laboratory
Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
No.16 Lane, 1951 Du Hui Road,
Shanghai 201108,
P.R. China

Telephone: +86 21 6141 0123

Fax: +86 21 6140 8600

FCC Registration No.: 820234

FCC Designation Number: CN1183

ISED CAB identifier: CN0101

IC Registration No.: 31668

4 Description of the Equipment Under Test

Product: Acoustic Thermal Imager

Model no.:

Fotric P0MiX	Fotric 360MiX	Fotric 350MiX	Fotric 860MiX
Fotric P1MiX	Fotric 361MiX	Fotric 351MiX	Fotric 861MiX
Fotric P2MiX	Fotric 362MiX	Fotric 352MiX	Fotric 862MiX
Fotric P3MiX	Fotric 363MiX	Fotric 353MiX	Fotric 863MiX
Fotric P4MiX	Fotric 364MiX	Fotric 354MiX	Fotric 864MiX
Fotric P5MiX	Fotric 365MiX	Fotric 355MiX	Fotric 865MiX
Fotric P6MiX	Fotric 366MiX	Fotric 356MiX	Fotric 866MiX
Fotric P7MiX	Fotric 367MiX	Fotric 357MiX	Fotric 867MiX
Fotric P8MiX	Fotric 368MiX	Fotric 358MiX	Fotric 868MiX
Fotric P9MiX	Fotric 369MiX	Fotric 359MiX	Fotric 869MiX
Fotric P10MiX	Fotric 3610MiX	Fotric 3510MiX	Fotric 8610MiX

FCC ID: 2AZTCJGACF

Options and accessories: NA

Rating: DC 3.6V for Acoustic Thermal Imager
AC 100-240V, 50/60Hz for adapter

RF Transmission Frequency: For Bluetooth:2402~2480MHz
For 2.4G Wi-Fi:802.11b/g/n-HT20: 2412~2462 MHz
802.11n-HT40: 2422~2452 MHz
For 5G Wi-Fi:5180~5240 MHz (U-NII-1)
5260~5320 MHz (U-NII-2A)
5500~5720 MHz (U-NII-2C)
5745~5825 MHz (U-NII-3)

No. of Operated Channel: 79 channels for Bluetooth EDR

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

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40 channels for Bluetooth 4.2 BLE

Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

2.4GHz WIFI: 11 for 802.11b/802.11g/802.11(H20);
7 for 802.11n(HT40)

802.11b/g/n(HT20)					802.11n(HT40)		
Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)	Ch	Fre(MHz)
1	2412	7	2442	3	2422	8	2447MHz
2	2417	8	2447	4	2427	9	2452MHz
3	2422	9	2452	5	2432		
4	2427	10	2457	6	2437		
5	2432	11	2462	7	2442		
6	2437						

5180~5240 MHz (U-NII-1):

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

5260~5320 MHz (U-NII-2A)

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency （MHz）	Channel	Frequency （MHz）
52	5260	60	5300
56	5280	64	5320

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency （MHz）	Channel	Frequency （MHz）
54	5270	62	5310

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency （MHz）	Channel	Frequency （MHz）
58	5290		

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5500~5720 MHz (U-NII-2C)

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency(MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600	144	5720

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency(MHz)
102	5510	126	5630
110	5550	134	5670
118	5590	142	5710

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency(MHz)
106	5530	138	5690
122	5610		

5745~5825 MHz (U-NII-3): Channel 149 – 165

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5755

Modulation: Bluetooth EDR FHSS: GFSK, π/4 DQPSK, 8DPSK
Bluetooth 4.2+BLE DHSS: GFSK
For Wi-Fi: Direct Sequence Spread Spectrum (DSSS) for 802.11b
Orthogonal Frequency Division Multiplexing (OFDM) for 802.11a/b/g/n/ac

Hardware Version: V6.0.0

Software Version: V6.0.1

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Data speed:	1. Bluetooth EDR FHSS: 1Mbps, 2Mbps, 3Mbps 2. Bluetooth 4.2+BLE DHSS: 1Mbps 3. Wi-Fi: 11b 1 ~ 11Mbps, 11g/a 6 ~ 54Mbps, 11n HT20 6.5 ~ 72.2Mbps, 11n HT 40 13.5 ~ 150Mbps, 11ac VHT40 13.5 ~ 200Mbps, 11ac VHT80 29.3 ~ 433.3Mbps
Antenna Type:	PIFA Antenna
Antenna Gain:	1.79dBi for 2.4GHz; 7.19dBi for 5GHz
Description of the EUT:	The Equipment Under Test (EUT) is an Acoustic Thermal Imager with Bluetooth and Wi-Fi Module. The EUT support Bluetooth EDR, BLE function, Wi-Fi 2.4GHz and Wi-Fi 5GHz. According to the client's declaration, all the models have the same schematic and hardware circuit, except pixel, lens size differences. Detail model list refer to page 4 and Fotric 860MiX is chosen to perform all the tests and listed the worst data in this report. Only 2.4GHz Bluetooth EDR RF testing results were included in this report.
Test sample no.:	SHA-801877-1 (RF Conducted); SHA-801877-2 (RF Radiated)

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.

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5 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2023 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10-2020.

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6 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition		Pages	Test Site	Test Result		
				Pass	Fail	N/A
§15.207	Conducted emission AC power port	15-19	Site 1	☒	☐	☐
§15.247 (b) (1)	Conducted peak output power	20-24	Site 1	☒	☐	☐
§15.247(a)(1)	20dB bandwidth	25-29	Site 1	☒	☐	☐
§15.247(a)(1)	Carrier frequency separation	29-32	Site 1	☒	☐	☐
§15.247(a)(1)(iii)	Number of hopping frequencies	33-34	Site 1	☒	☐	☐
§15.247(a)(1)(iii)	Dwell Time - Average Time of Occupancy	35-38	Site 1	☒	☐	☐
§15.247(a)(2)	6dB bandwidth	---	---	☐	☐	☒
§15.247(e)	Power spectral density	---	---	☐	☐	☒
§15.247(e)	Spurious RF conducted emissions	39-45	Site 1	☒	☐	☐
§15.247(d)	Band edge	46-58	Site 1	☒	☐	☐
§15.247(d) & §15.209 & §15.205	Spurious radiated emissions for transmitter	59-65	Site 1	☒	☐	☐
§15.203	Antenna requirement	See note 1		☒	☐	☐

Remark 1: N/A – Not Applicable.
Note 1: The EUT uses a PIFA antenna, which gain is 1.79dBi for 2.4GHz. In accordance to §15.203, It is considered sufficiently to comply with the provisions of this section.

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7 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AZTCJGACF complies with Section 15.205,15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules.

This report in only for 2.4GHz Bluetooth+EDR.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: April 1, 2024

Testing Start Date: April 16, 2024

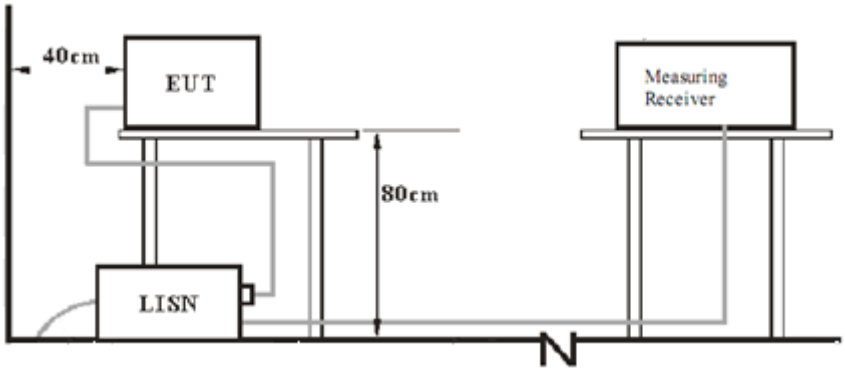
Testing End Date: June 28, 2024

-TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Reviewed by:	Prepared by:	Tested by:
Hui TONG	Jiaxi XU	Cheng Huali
Review Engineer	Project Engineer	Test Engineer

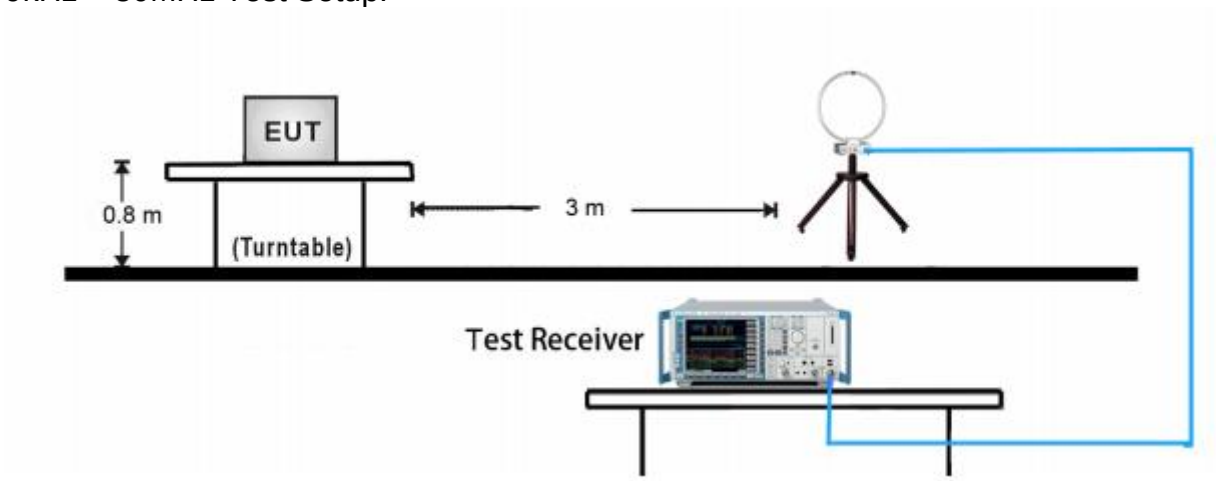
8 Test Setups

7.1 AC Power Line Conducted Emission test setups



7.2 Radiated test setups

9kHz ~ 30MHz Test Setup:



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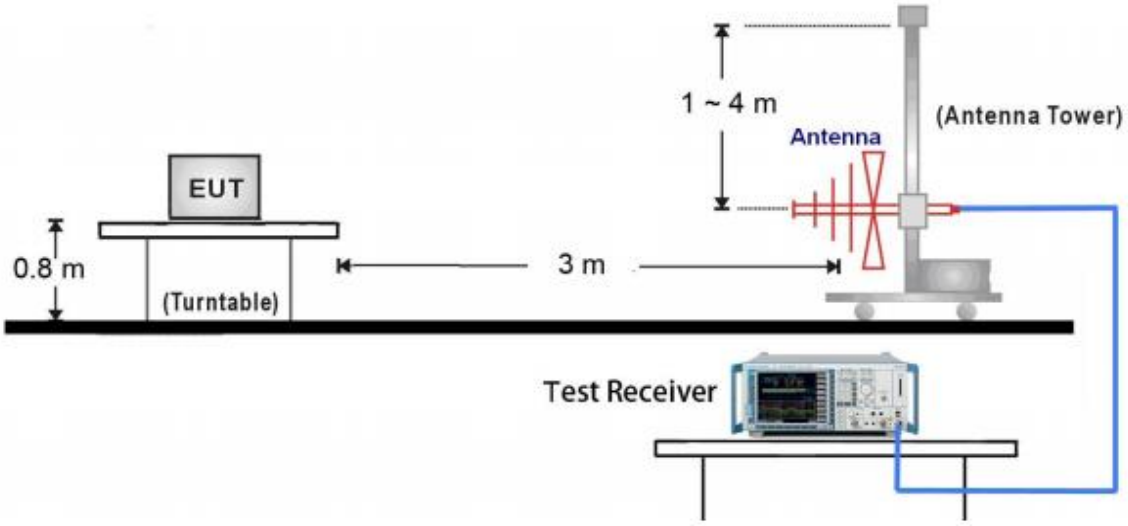
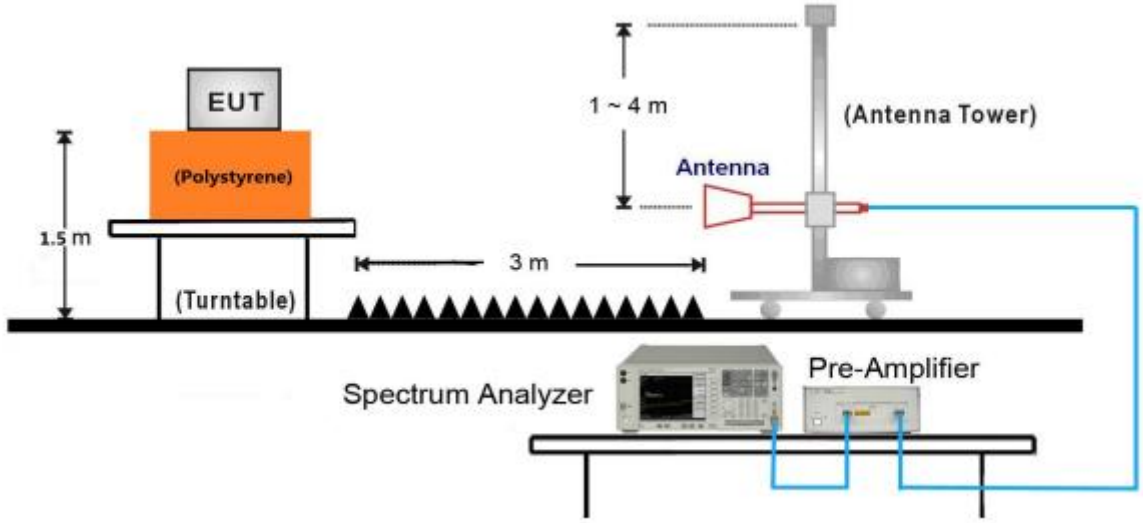
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:



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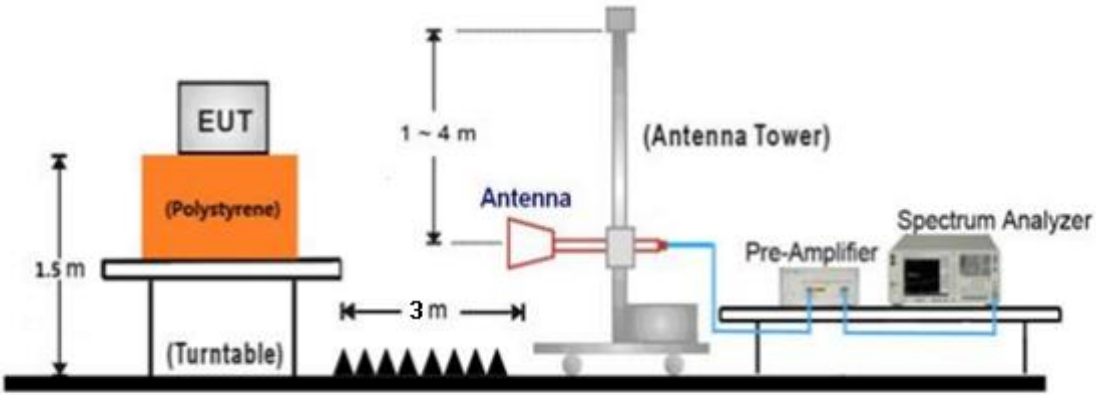
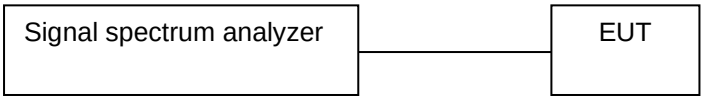
18GHz ~ 25GHz Test Setup:



7.3 Conducted RF test setups



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9 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenovo	E470	PF-OU5TS7 17/09

Test software: QRCT.exe, which used to control the EUT in continues transmitting mode

The system was configured to hopping mode and non-hopping mode.

Hopping mode: typical working mode (normal hopping status)

Mode	Tested Channel	Modulation	Index Value (Power level setting)
DH5	0	GFSK	9
	40	GFSK	9
	78	GFSK	9
2DH5	0	π/4-DQPSK	9
	40	π/4-DQPSK	9
	78	π/4-DQPSK	9
3DH5	0	8DPSK	9
	40	8DPSK	9
	78	8DPSK	9

The system was configured to hopping mode and non-hopping mode.

Hopping mode: typical working mode (normal hopping status)

Non-hopping mode: The system was configured to operate at a signal channel transmitting. The test software allows the configuration and operation at the worst-case duty and the highest transmit power

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10 Technical Requirement

10.1 Conducted Emission

Test Method

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. Both sides of AC line were checked for maximum conducted interference.
6. The frequency range from 150 kHz to 30 MHz was searched.
7. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

Limit

Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

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Conducted Emission

150k-30MHz Conducted Emission Test

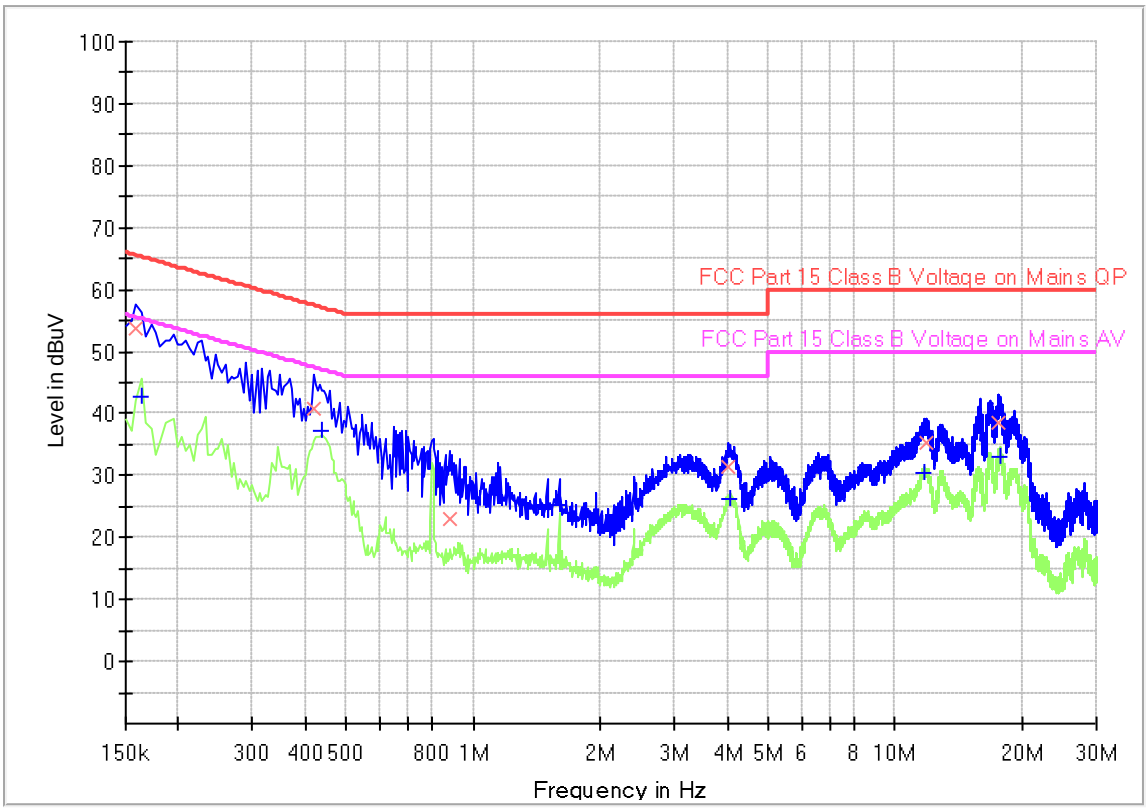
EUT Information

EUT Name:	Acoustic Thermal Imager
Model	Fotric 860MiX
Client:	FOTRIC INC
Op Cond	Power on, TX_2441 at 3DH5 mode, AC120V/60Hz
Operator:	Huali CHENG
Standard	FCC Part 15.207(a)
Comment:	Phase L
Sample No.:	SHA-801877-2

Scan Setup: Voltage with 2-Line-LISN pre [EMI conducted]

Hardware Setup:	Voltage with 2-Line-LISN
Receiver:	[ESR 3]
Level Unit:	dBuV

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	100 Hz	PK+	200 Hz	0.02 s	0 dB
150 kHz - 30 MHz	4.5 kHz	PK+; AVG	9 kHz	0.01 s	0 dB



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Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.159000	53.74	---	65.52	11.78	1000.0	9.000	L1	19.4
0.163500	---	42.82	55.28	12.46	1000.0	9.000	L1	19.4
0.420000	40.65	---	57.45	16.80	1000.0	9.000	L1	19.5
0.438000	---	37.20	47.10	9.90	1000.0	9.000	L1	19.5
0.879000	22.96	---	56.00	33.04	1000.0	9.000	L1	19.5
1.599000	---	25.22	46.00	20.78	1000.0	9.000	L1	19.5
4.038000	31.36	---	56.00	24.64	1000.0	9.000	L1	19.6
4.083000	---	26.39	46.00	19.61	1000.0	9.000	L1	19.6
11.764500	---	30.36	50.00	19.64	1000.0	9.000	L1	19.9
11.814000	35.31	---	60.00	24.69	1000.0	9.000	L1	19.9
17.628000	38.48	---	60.00	21.52	1000.0	9.000	L1	20.2
17.736000	---	33.05	50.00	16.95	1000.0	9.000	L1	20.2

Remark:

*Level=Reading Level + Correction Factor

**Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

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150k-30MHz Conducted Emission Test

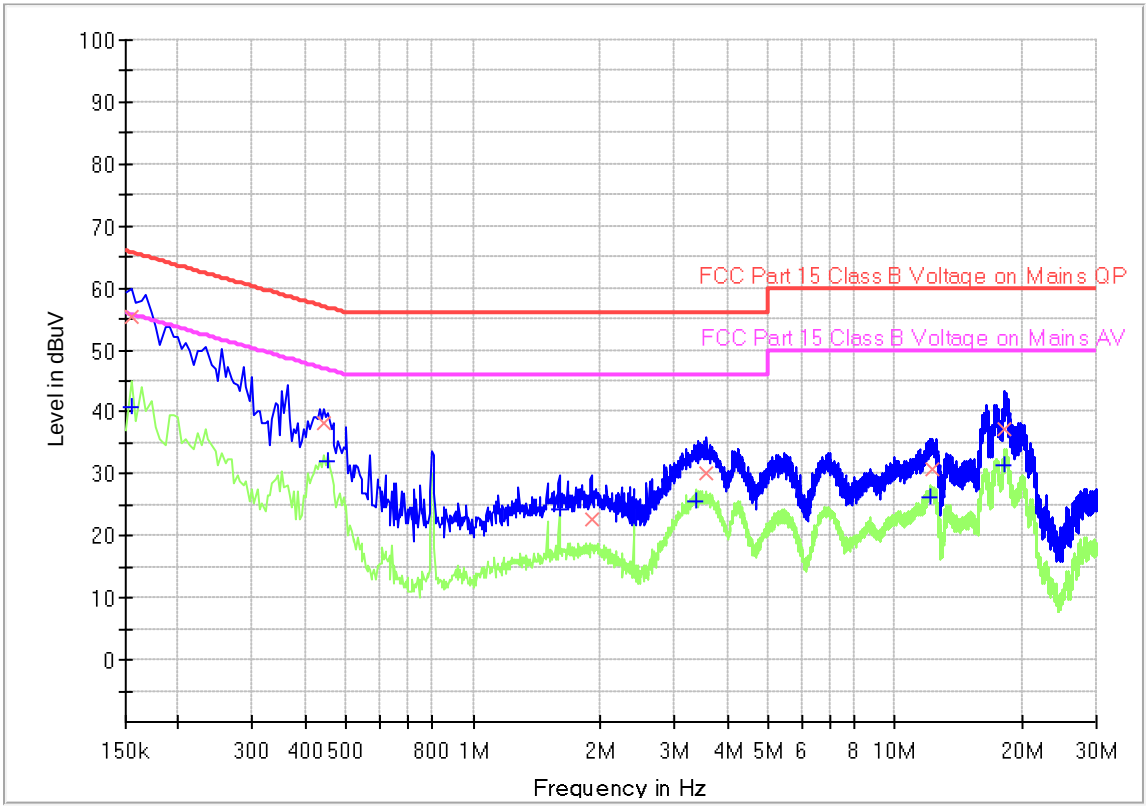
EUT Information

EUT Name:	Acoustic Thermal Imager
Model	Fotric 860MiX
Client:	FOTRIC INC
Op Cond	Power on, TX_2441 at 3DH5 mode, AC120V/60Hz
Operator:	Huali CHENG
Standard	FCC Part 15.207(a)
Comment:	Phase N
Sample No.:	SHA-801877-2

Scan Setup: Voltage with 2-Line-LISN pre [EMI conducted]

Hardware Setup:	Voltage with 2-Line-LISN
Receiver:	[ESR 3]
Level Unit:	dBuV

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
9 kHz - 150 kHz	100 Hz	PK+	200 Hz	0.02 s	0 dB
150 kHz - 30 MHz	4.5 kHz	PK+; AVG	9 kHz	0.01 s	0 dB



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Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.154500	---	40.64	55.75	15.11	1000.0	9.000	N	19.4
0.154500	55.28	---	65.75	10.47	1000.0	9.000	N	19.4
0.442500	38.16	---	57.01	18.85	1000.0	9.000	N	19.5
0.451500	---	32.09	46.85	14.76	1000.0	9.000	N	19.5
1.599000	---	24.39	46.00	21.61	1000.0	9.000	N	19.5
1.905000	22.60	---	56.00	33.40	1000.0	9.000	N	19.5
3.358500	---	25.59	46.00	20.41	1000.0	9.000	N	19.5
3.583500	30.06	---	56.00	25.94	1000.0	9.000	N	19.5
12.160500	---	26.18	50.00	23.82	1000.0	9.000	N	19.8
12.264000	30.85	---	60.00	29.15	1000.0	9.000	N	19.8
18.163500	---	31.56	50.00	18.44	1000.0	9.000	N	20.1
18.240000	37.22	---	60.00	22.78	1000.0	9.000	N	20.1

Remark:

*Level=Reading Level + Correction Factor

**Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

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10.2 Conducted Peak Output Power

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following test receiver settings:
   Span = approximately 5 times the 20dB bandwidth, centered on a hopping channel
   RBW > the 20dB bandwidth of the emission being measured, VBW≥RBW,
   Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power and record the results in the test report.
5. Repeat above procedures until all frequencies measured were complete.

Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

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Conducted Peak Output Power

Bluetooth Mode GFSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Limit dBm	Result
Low channel 2402MHz	6.6	30	Pass
Middle channel 2441MHz	7.95	30	Pass
High channel 2480MHz	6.8	30	Pass

Bluetooth Mode π/4-DQPSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Limit dBm	Result
Low channel 2402MHz	6.61	30	Pass
Middle channel 2441MHz	7.99	30	Pass
High channel 2480MHz	6.83	30	Pass

Bluetooth Mode 8DPSK modulation Test Result

Frequency MHz	Conducted Peak Output Power dBm	Limit dBm	Result
Low channel 2402MHz	6.93	30	Pass
Middle channel 2441MHz	8.25	30	Pass
High channel 2480MHz	6.96	30	Pass

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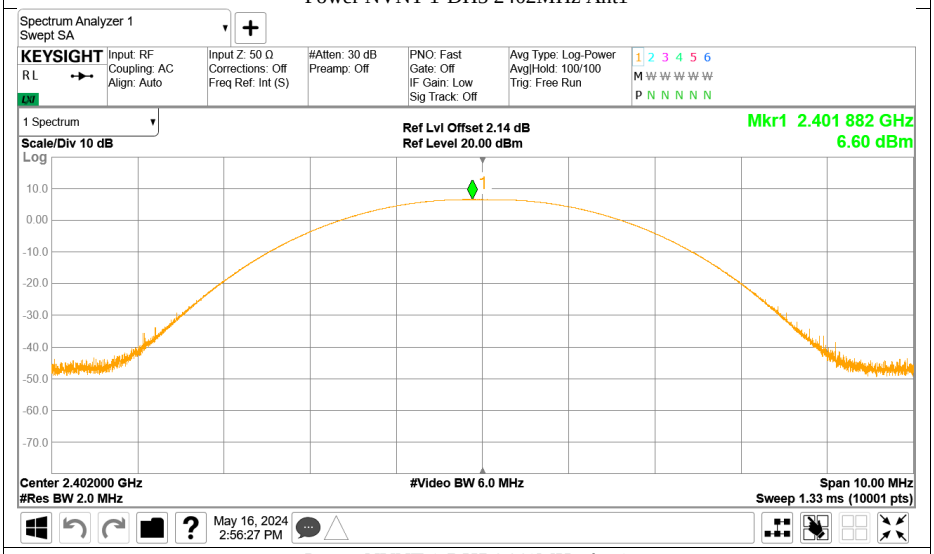
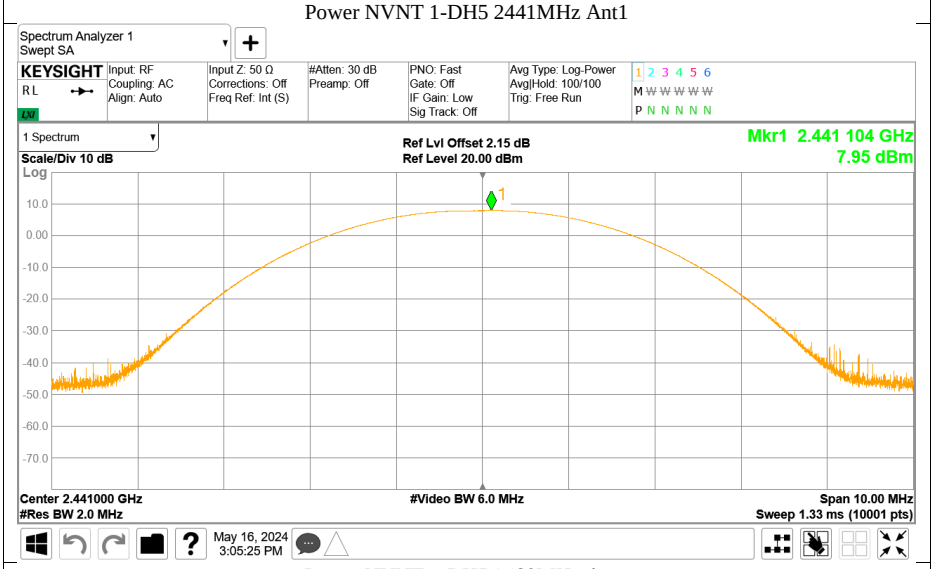
Test Graphs

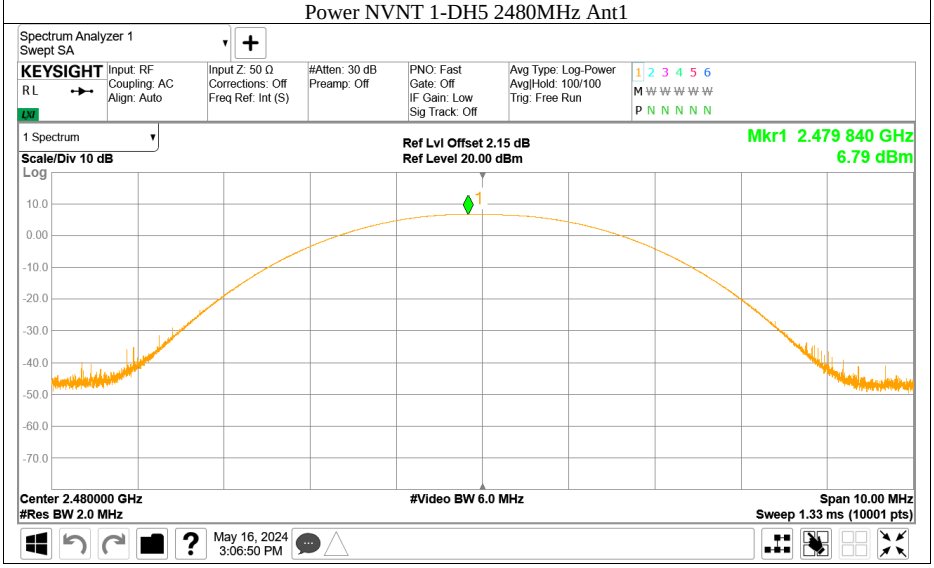
Power NVNT 1-DH5 2402MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 1-DH5 2480MHz Ant1



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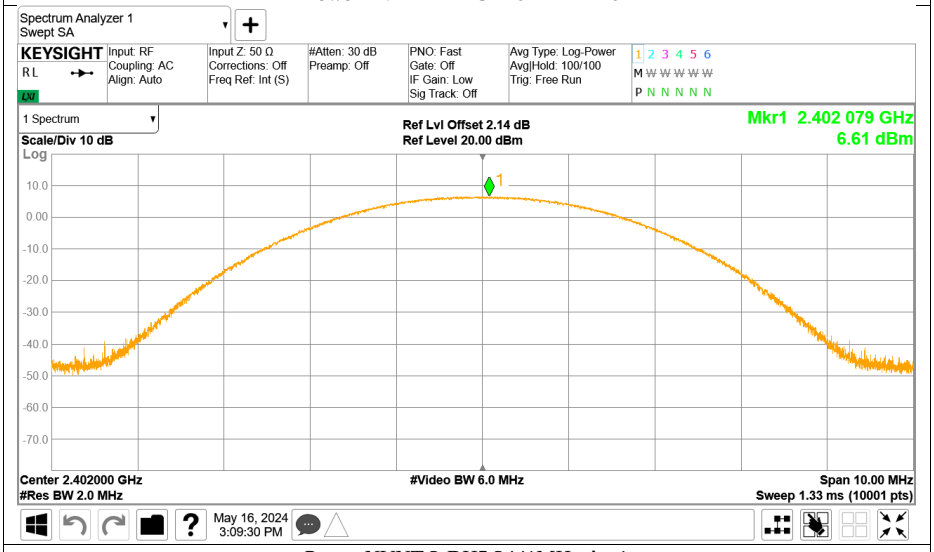
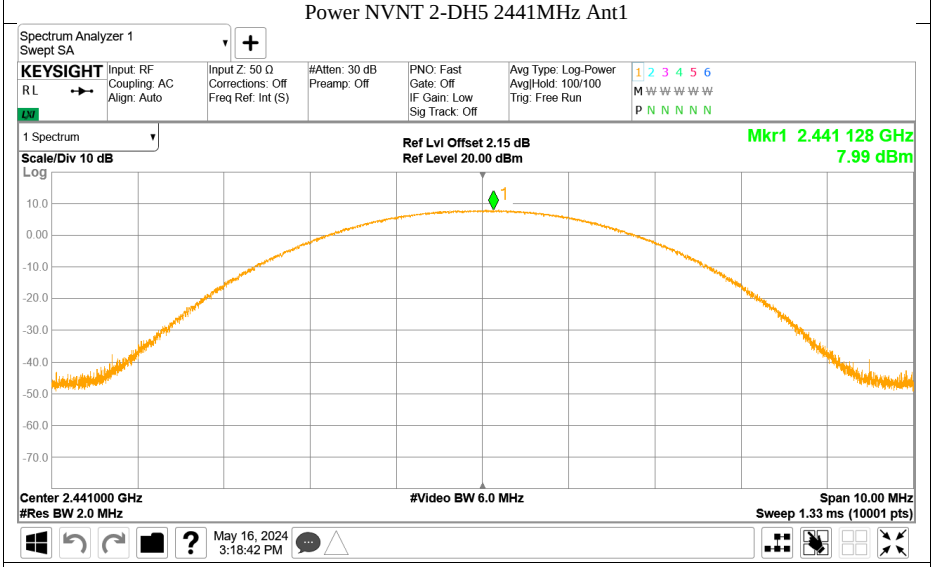
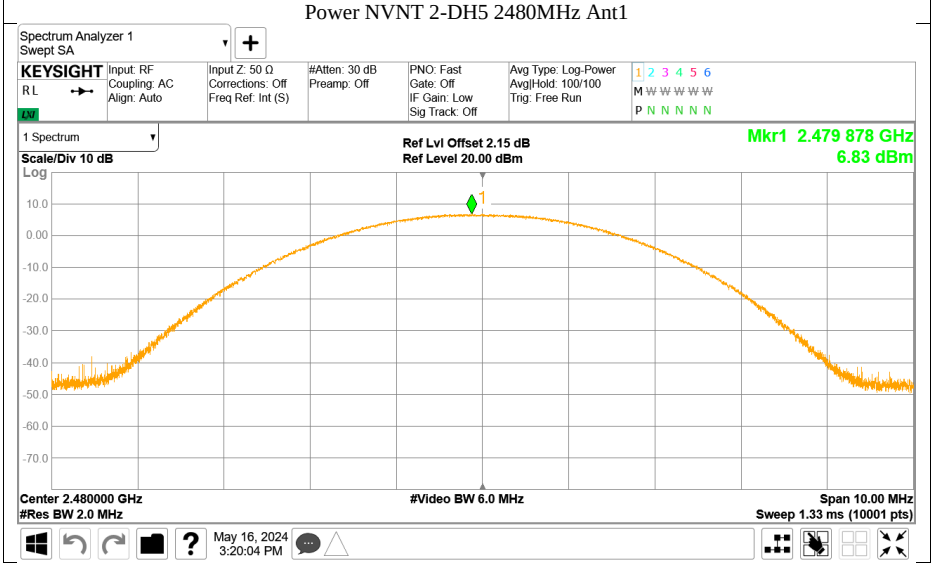
Power NVNT 2-DH5 2402MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1



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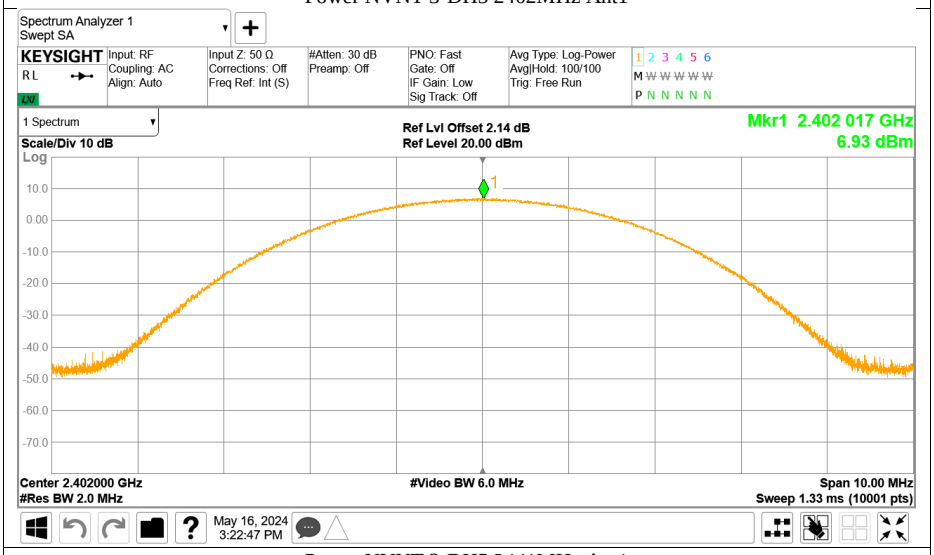
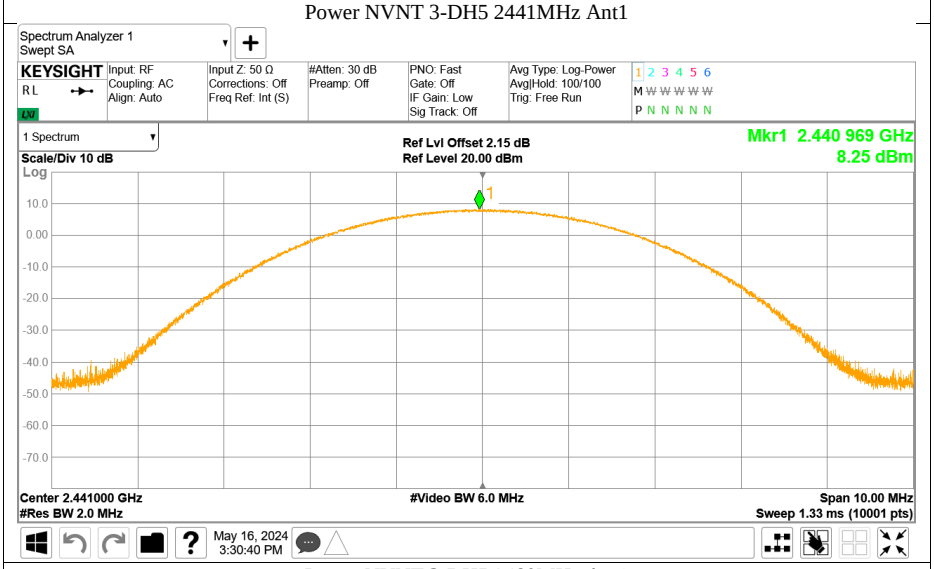
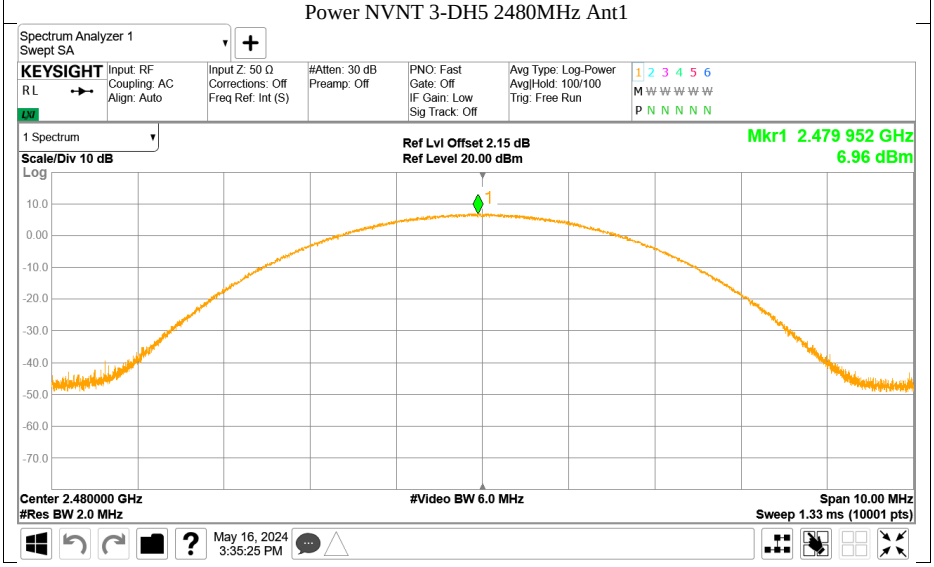
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1



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10.3 20 dB bandwidth

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following test receiver settings:
   Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
   RBW ≥ 1% to 5% of the 20 dB bandwidth/99% OBW, VBW≥3RBW,
   Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Measure the frequency difference of two frequencies that were attenuated 20 dB/99% OBW from the reference level. Record the frequency difference as the emission bandwidth. Record the results.
5. Repeat above procedures until all frequencies measured were complete.

Limit

Limit [MHz]
N/A

20 dB bandwidth

Bluetooth Mode GFSK Modulation test result

Frequency MHz	20 dB Bandwidth MHz	Result
2402	0.964	Pass
2441	0.958	Pass
2480	1.021	Pass

20 dB bandwidth

Bluetooth Mode π/4-DQPSK Modulation test result

Frequency MHz	20 dB Bandwidth MHz	Result
2402	1.330	Pass
2441	1.326	Pass
2480	1.303	Pass

20 dB bandwidth

Bluetooth Mode 8DPSK Modulation test result

Frequency MHz	20 dB Bandwidth MHz	Result
2402	1.294	Pass
2441	1.29	Pass
2480	1.278	Pass

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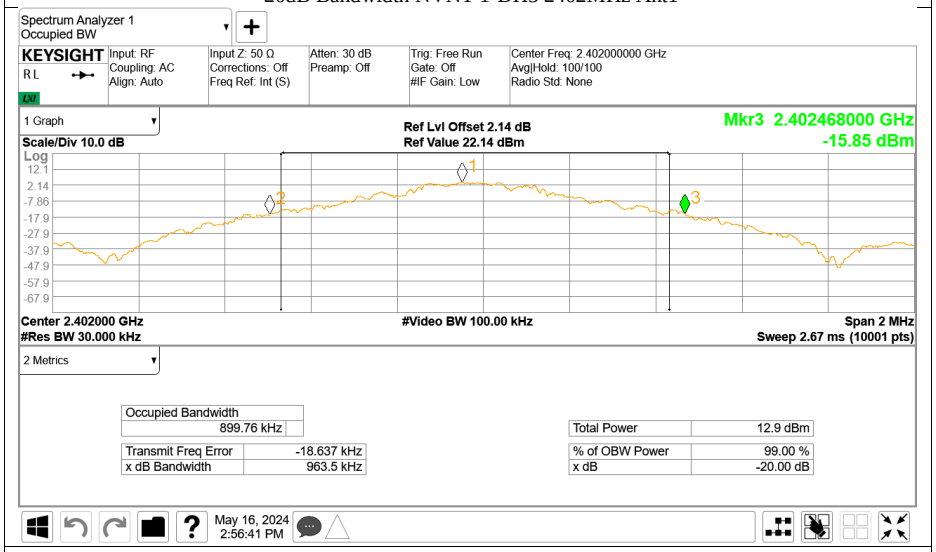
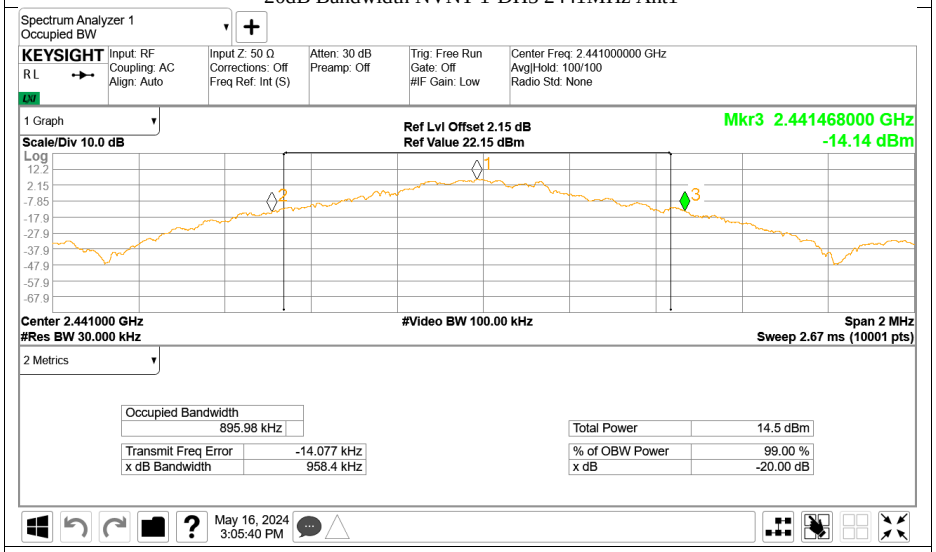
-20dB Bandwidth

Test Graphs

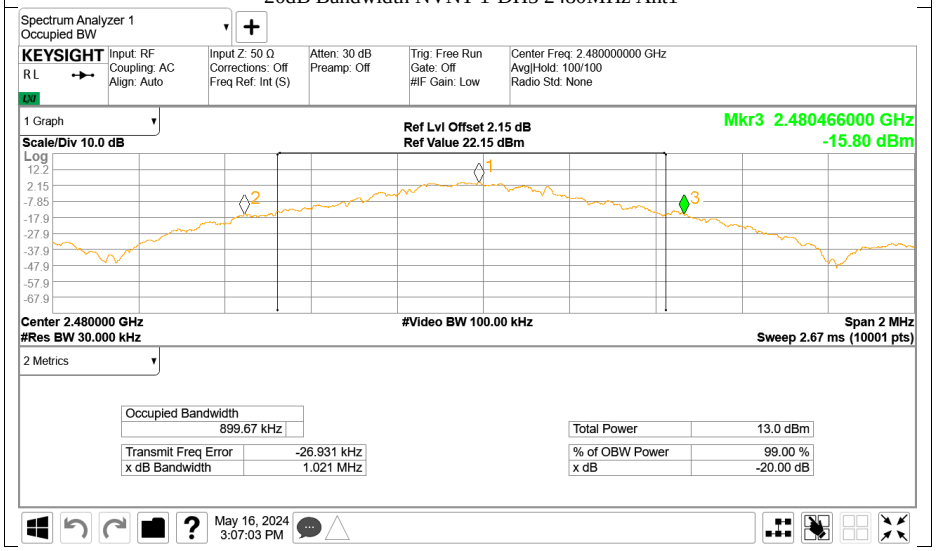
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



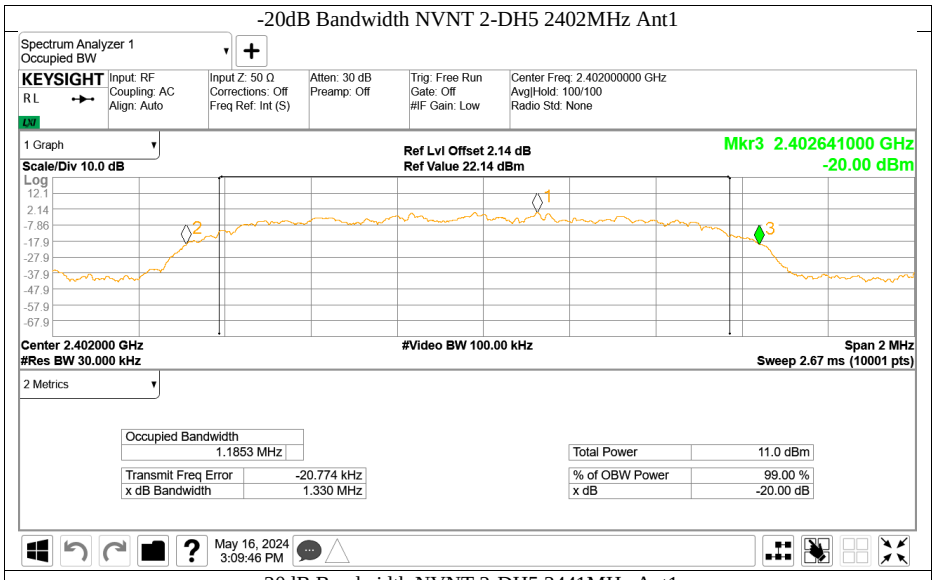
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



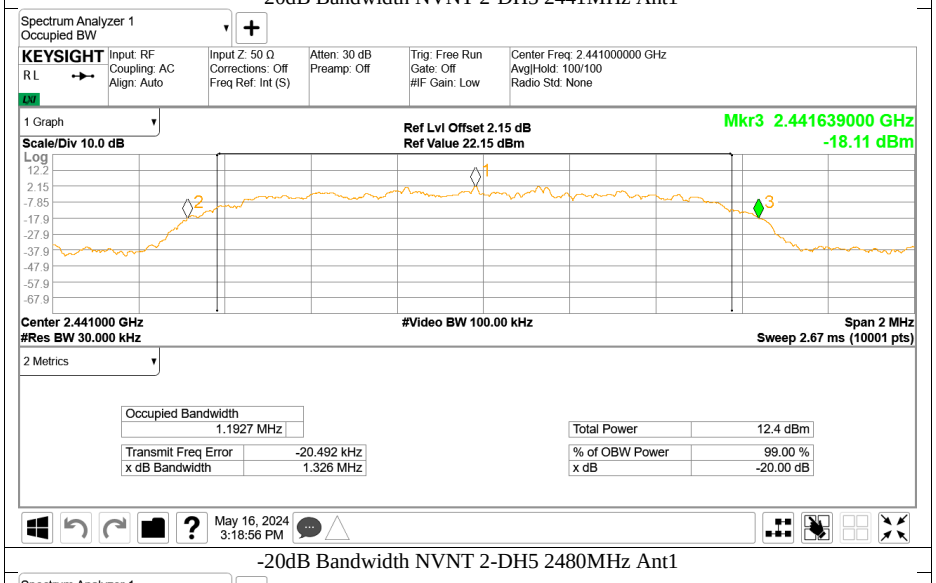
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



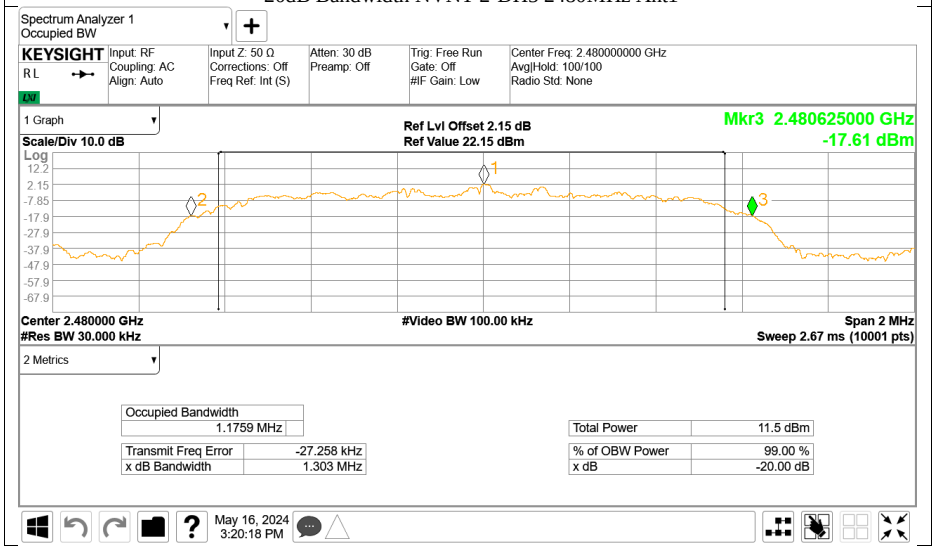
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



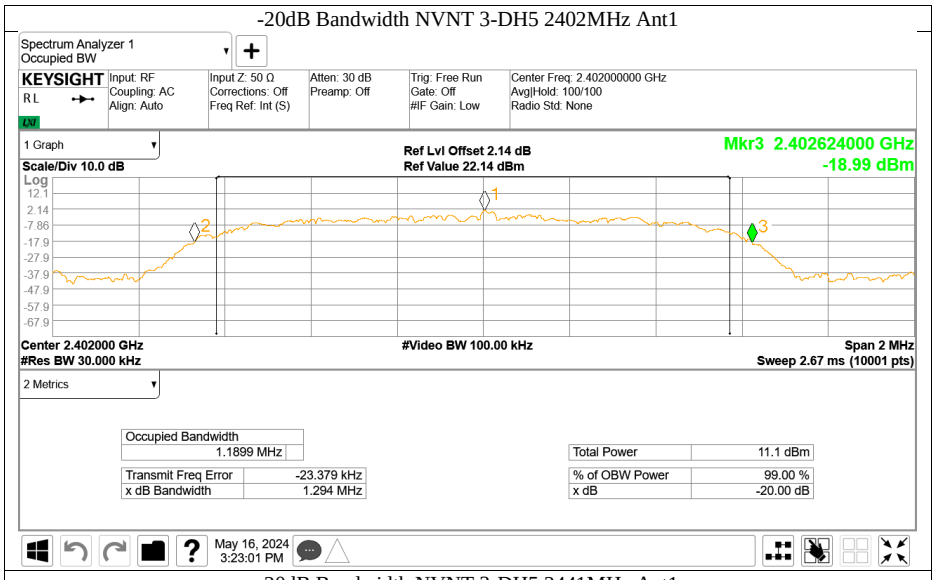
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



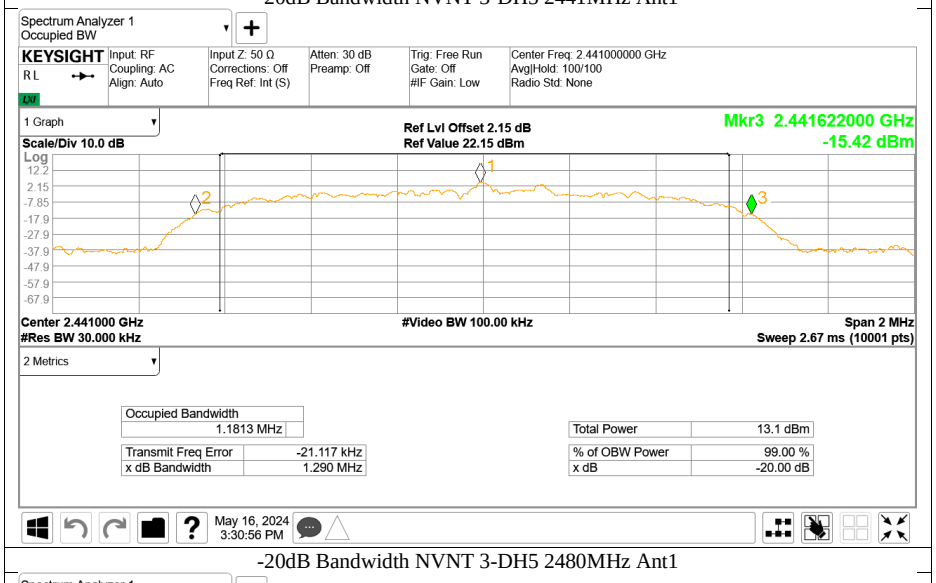
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



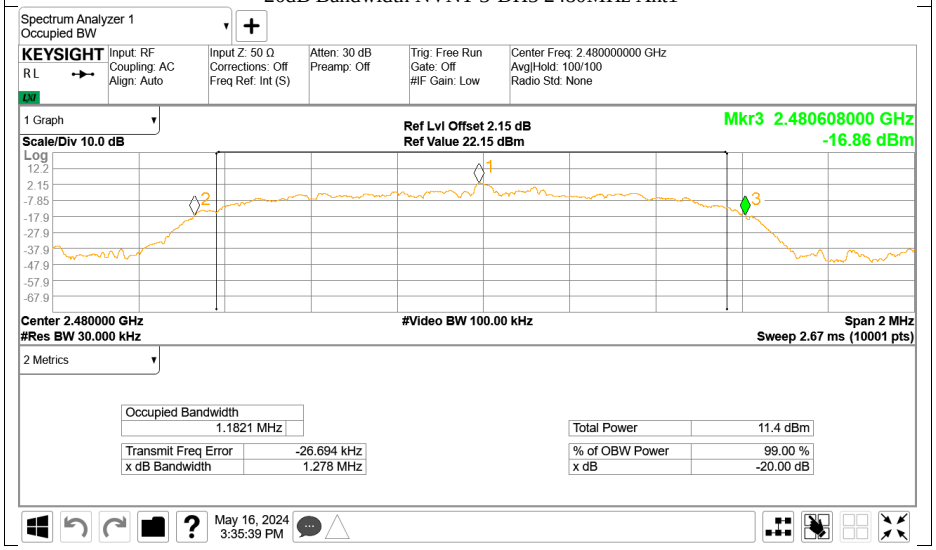
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1



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10.4 Carrier Frequency Separation

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit to hopping mode.
3. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peaks of two adjacent channels, RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel. VBW ≥RBW, Sweep = auto, Detector function = peak.
4. By using the Max-Hold function record the separation of two adjacent channels.
5. Measure the frequency difference of these two adjacent channels by spectrum analyzer marker function. Record the results.
6. Repeat above procedures until all frequencies measured were complete.

Limit

Limit kHz
⩾25KHz or 2/3 of the 20 dB bandwidth which is greater

Limit

Modulation	2/3 of 20 dB Bandwidth kHz
GFSK	643
π/4-DQPSK	887
8DPSK	863

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Carrier Frequency Separation

Test result: The measurement was performed with the typical configuration (normal hopping status), here GFSK, π/4-DQPSK and 8DPSK modulation mode (low channel) was used to show compliance.

GFSK Modulation test result

Modulation	Frequency MHz	Carrier Frequency Separation kHz	Result
GFSK	2402	998	Pass
π/4-DQPSK	2402	1000	Pass
8DPSK	2402	1008	Pass

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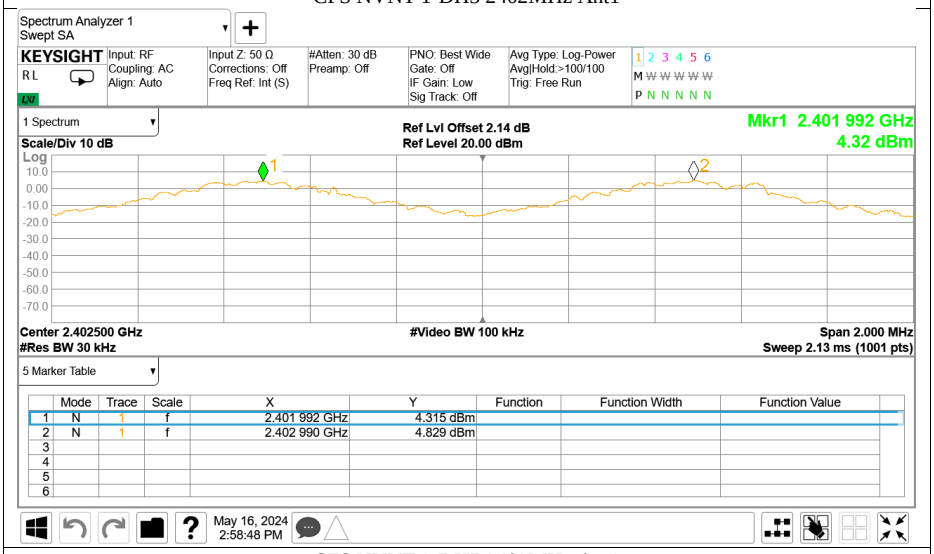
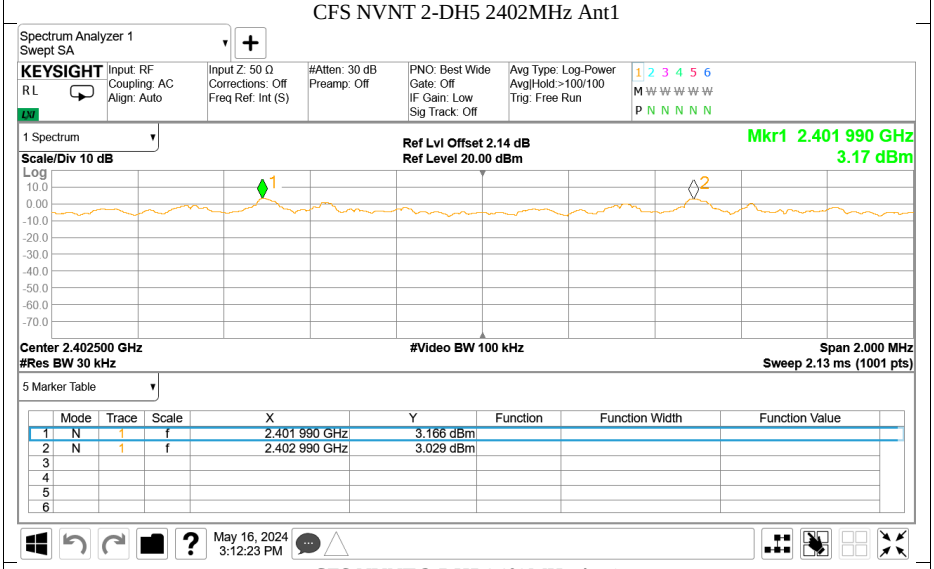
Test Graphs

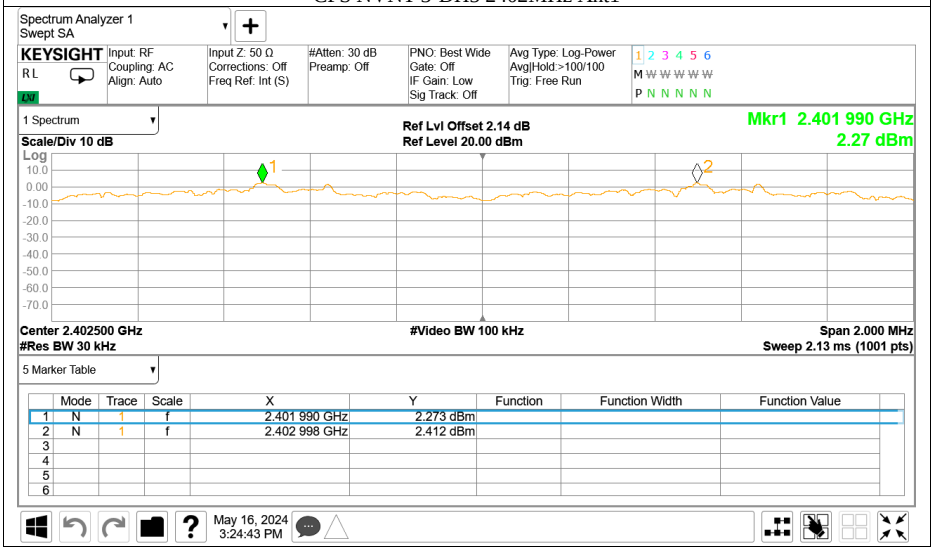
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1



10.5 Number of hopping frequencies

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit to hopping mode.
3. Use the following spectrum analyzer settings:
   Span = the frequency band of operation, RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller, VBW ≥RBW, Sweep = auto, Detector function = peak, Trace=Max hold.
4. Allow the trace to stabilize. It may prove necessary to break the span up to sections, in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

Limit

Limit number
⩾ 15

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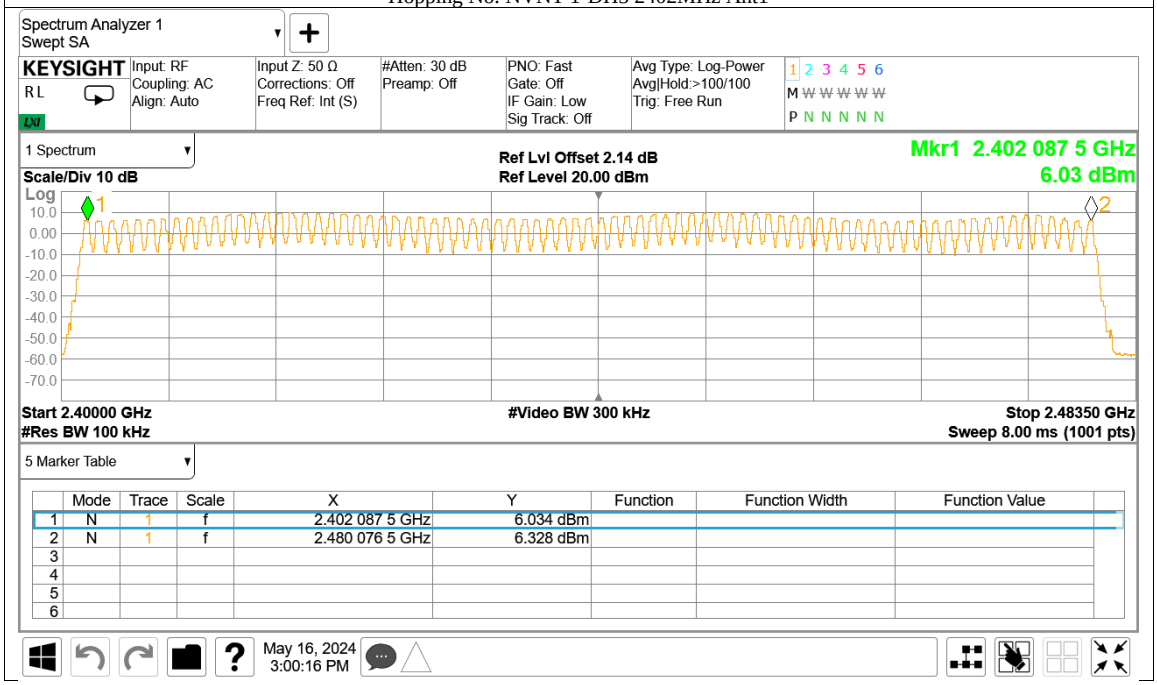
Number of hopping frequencies

Test result: The measurement was performed with the typical configuration (normal hopping status), and the total hopping channels is constant for the all modulation mode according with the Bluetooth Core Specification. Here GFSK modulation mode was used to show compliance.

Number of hopping frequencies	Result
79	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



10.6 Dwell Time

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit to hopping mode.
3. Span: Zero span, centered on a hopping channel.
4. RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel.
5. Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.
6. Detector function: Peak.
7. Trace: Max hold. Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time.

Limit

The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

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Dwell Time

Dwell time

The maximum dwell time shall be 0,4 s.
According to the Bluetooth Core Specification, the worse result (DH5 mode) was reported to show compliance.

The Dwell Time = Burst Width * Total Hops. The detailed calculations are showed as follows:
The duration for dwell time calculation: 0.4 [s] * hopping number = 0.4 [s] * 79 [ch] = 31.6 [s*ch];

The burst width, which is directly measured, refers to the duration on one channel hop.

Test Result

Modulation	Mode	Reading (ms)	Total Hops	Test Result (ms)	Limit (ms)	Result
GFSK	DH5	2.885	98	282.73	< 400	Pass
π/4-DQPSK	2DH5	2.887	116	334.892	< 400	Pass
8-DPSK	3DH5	2.889	102	294.678	< 400	Pass

GFSK Modulation

Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

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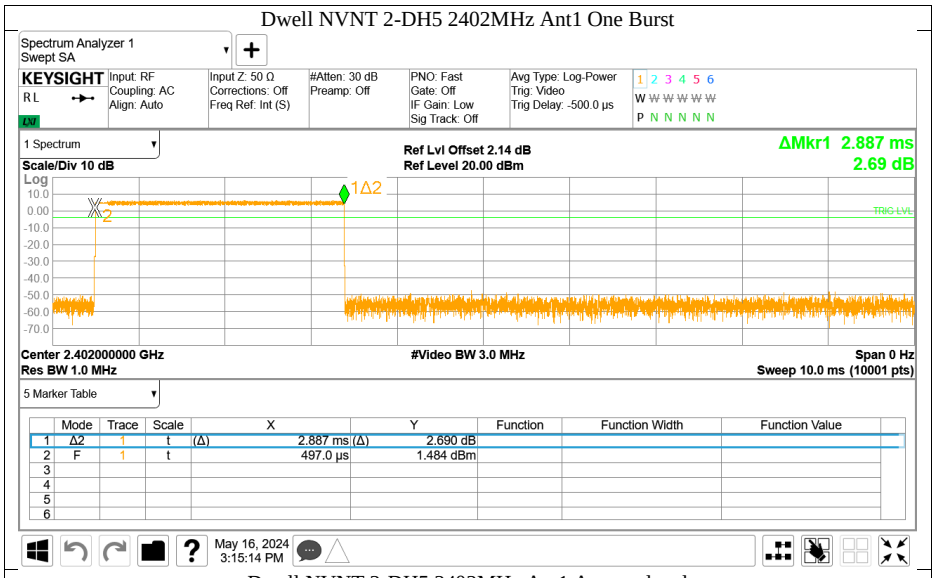
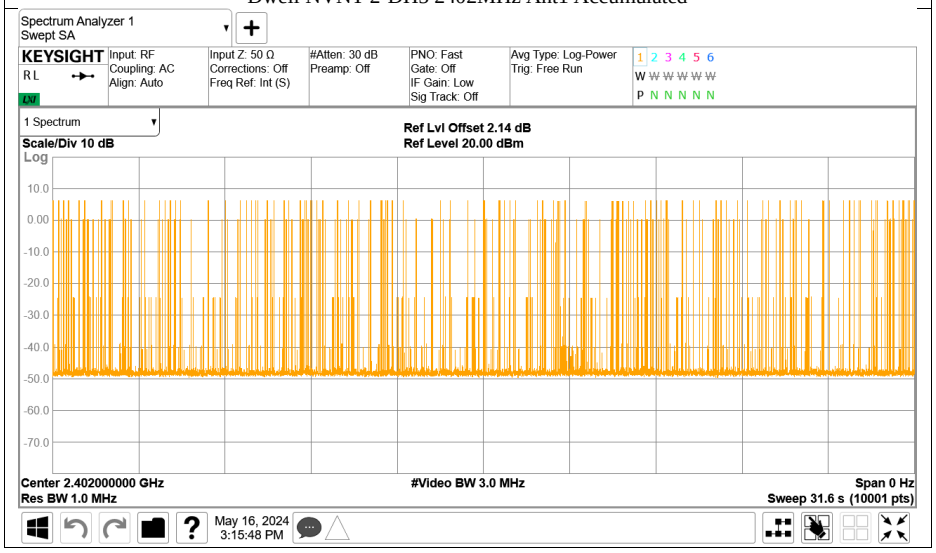
π/4-DQPSK Modulation

Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

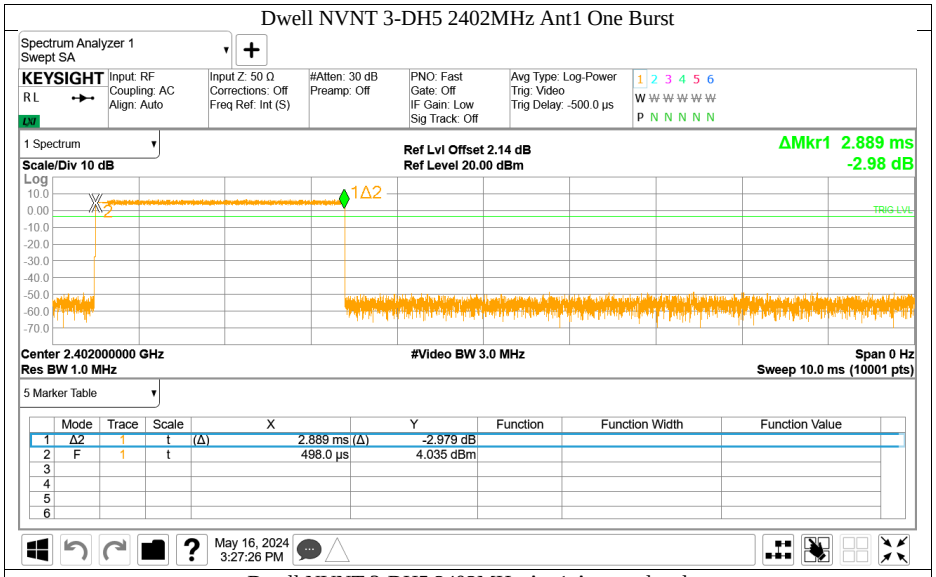


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

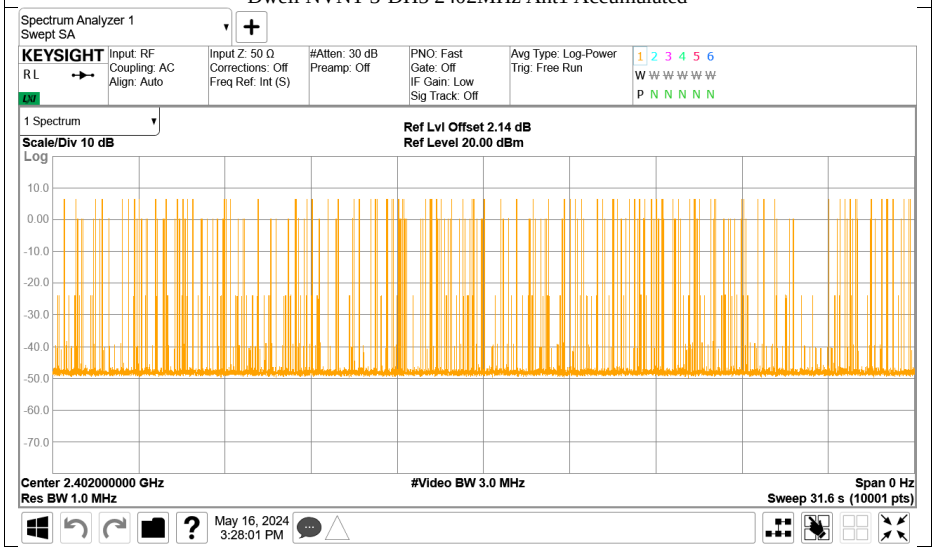


8-DPSK Modulation

Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated



10.7 Spurious RF conducted emissions

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector, Sweep = auto, Span = wide enough to capture the peak level of the in-band emission and all spurious emissions, Trace = max hold. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.
4. Measure and record the results in the test report.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency

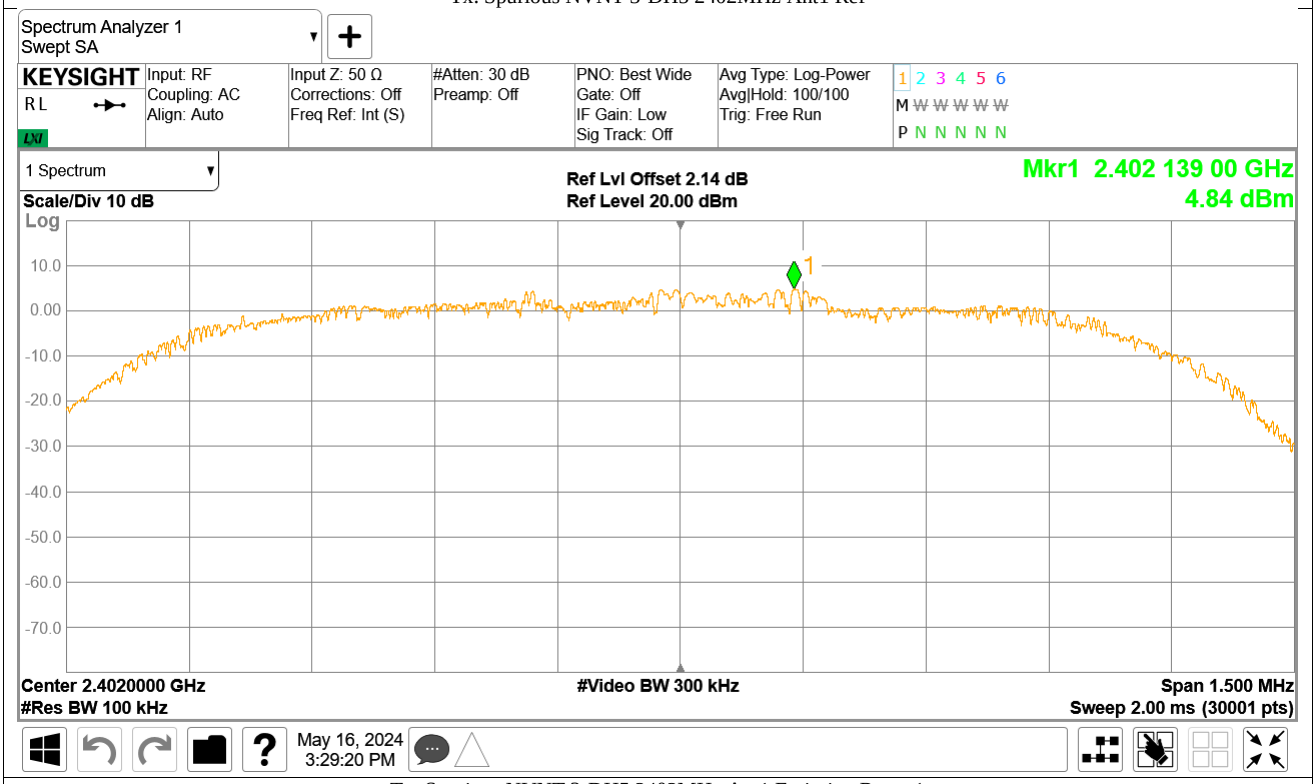
Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

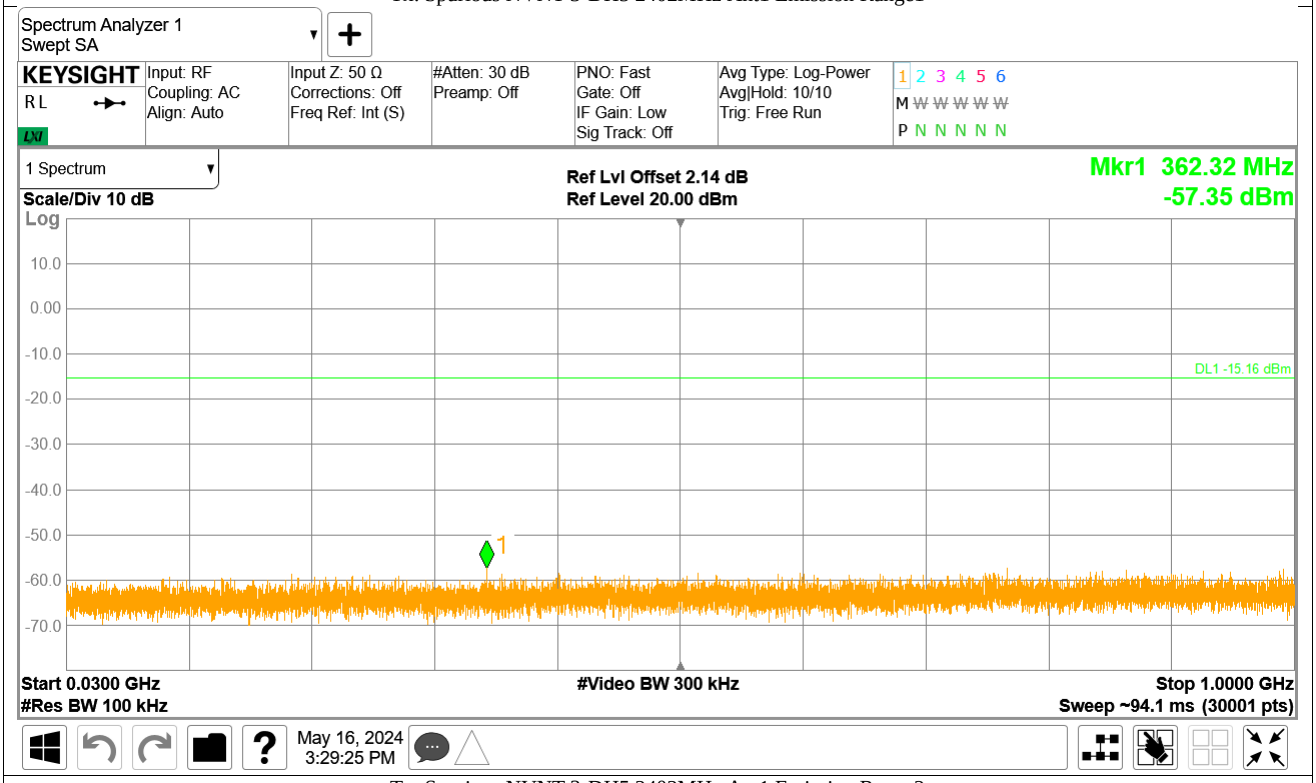
Spurious RF conducted emissions

Only the worst case (which is subject to the maximum EIRP, 8-DPSK mode) test result is listed in the report.

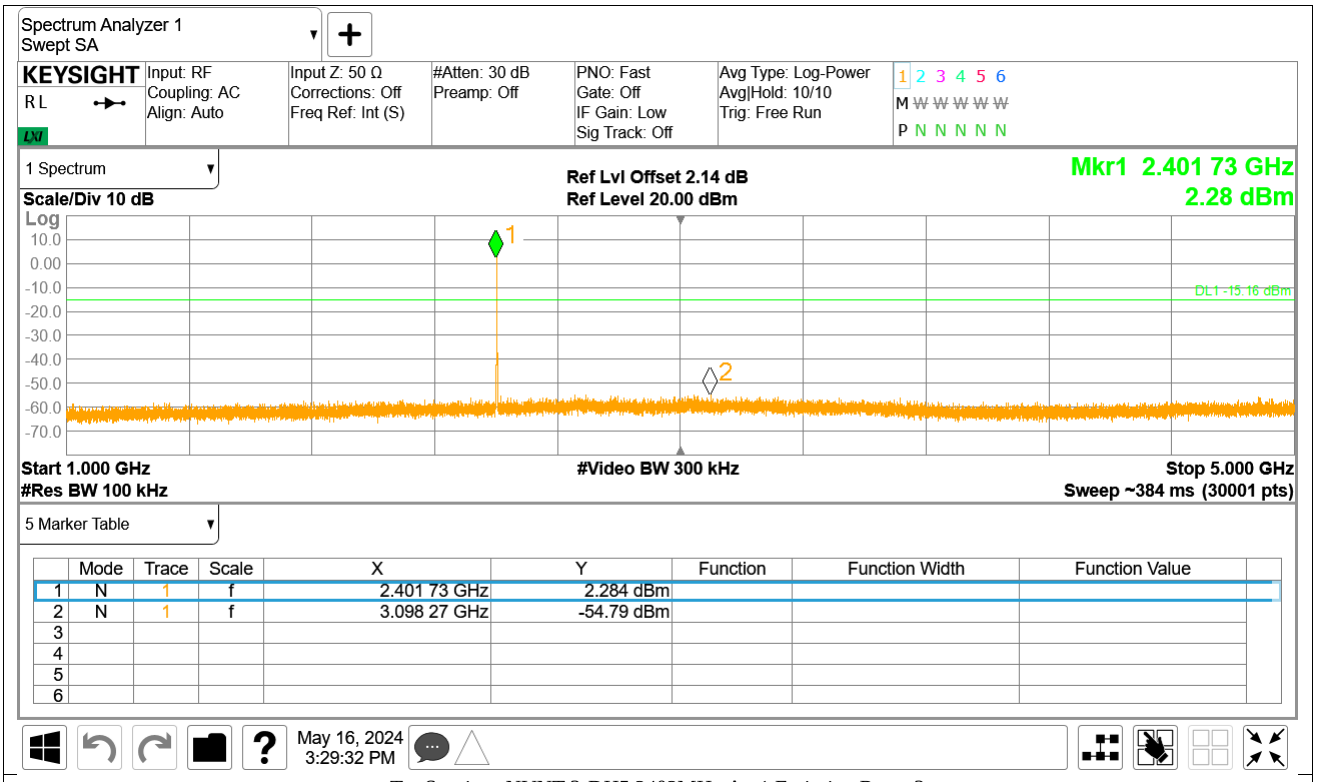
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



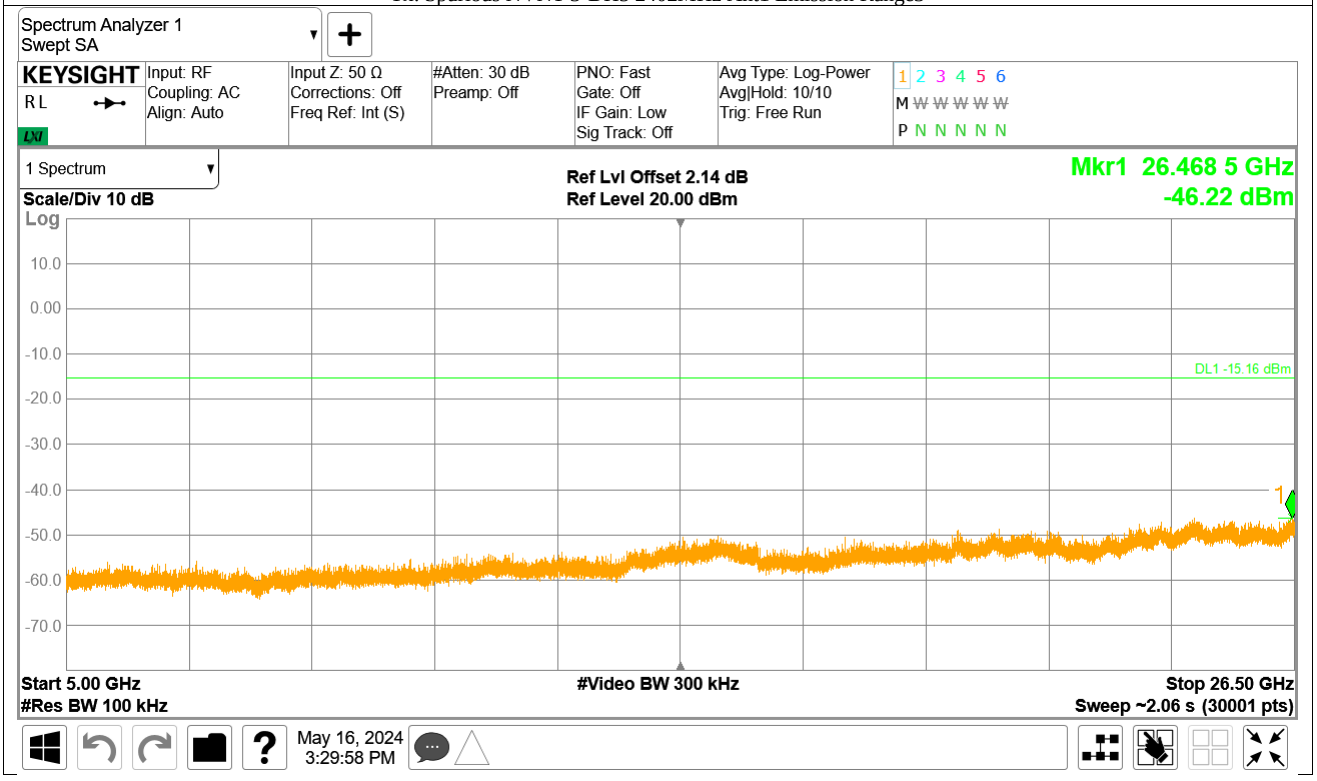
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission Range1



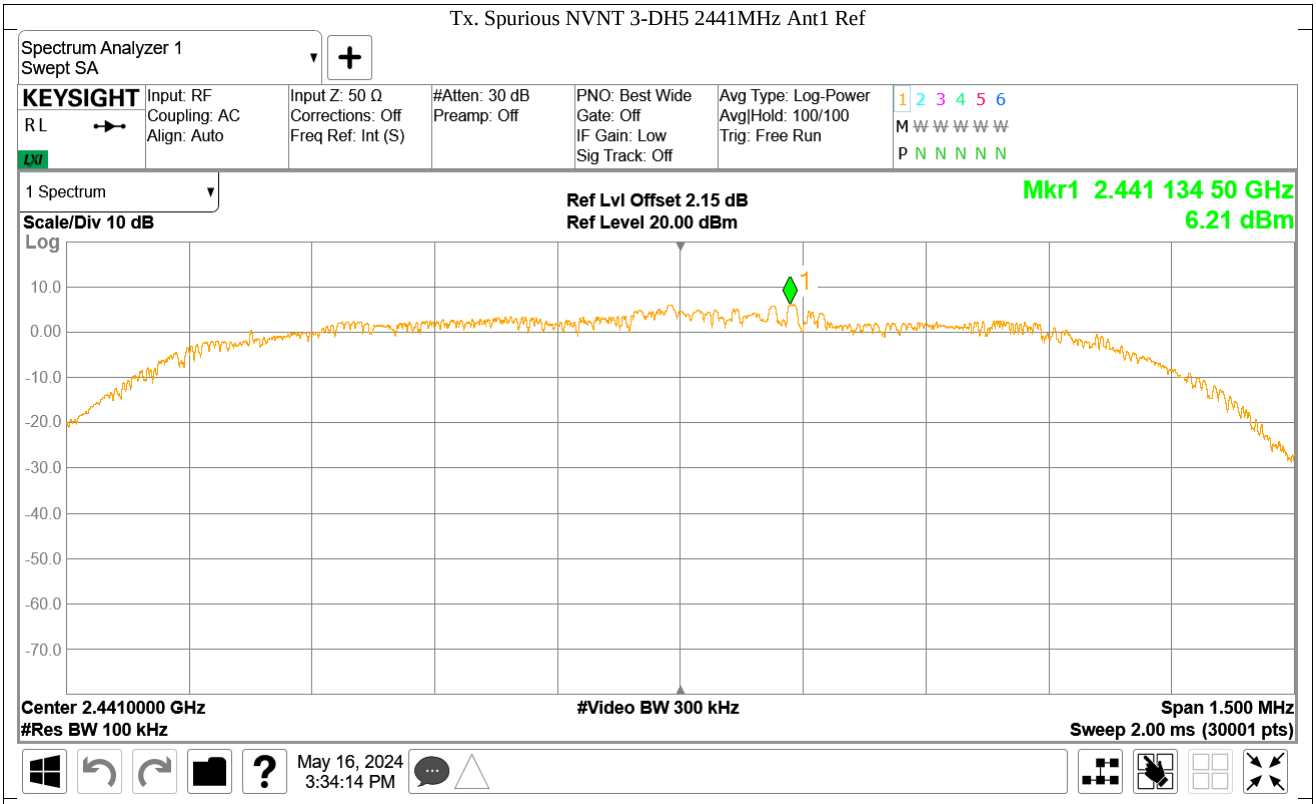
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission Range2



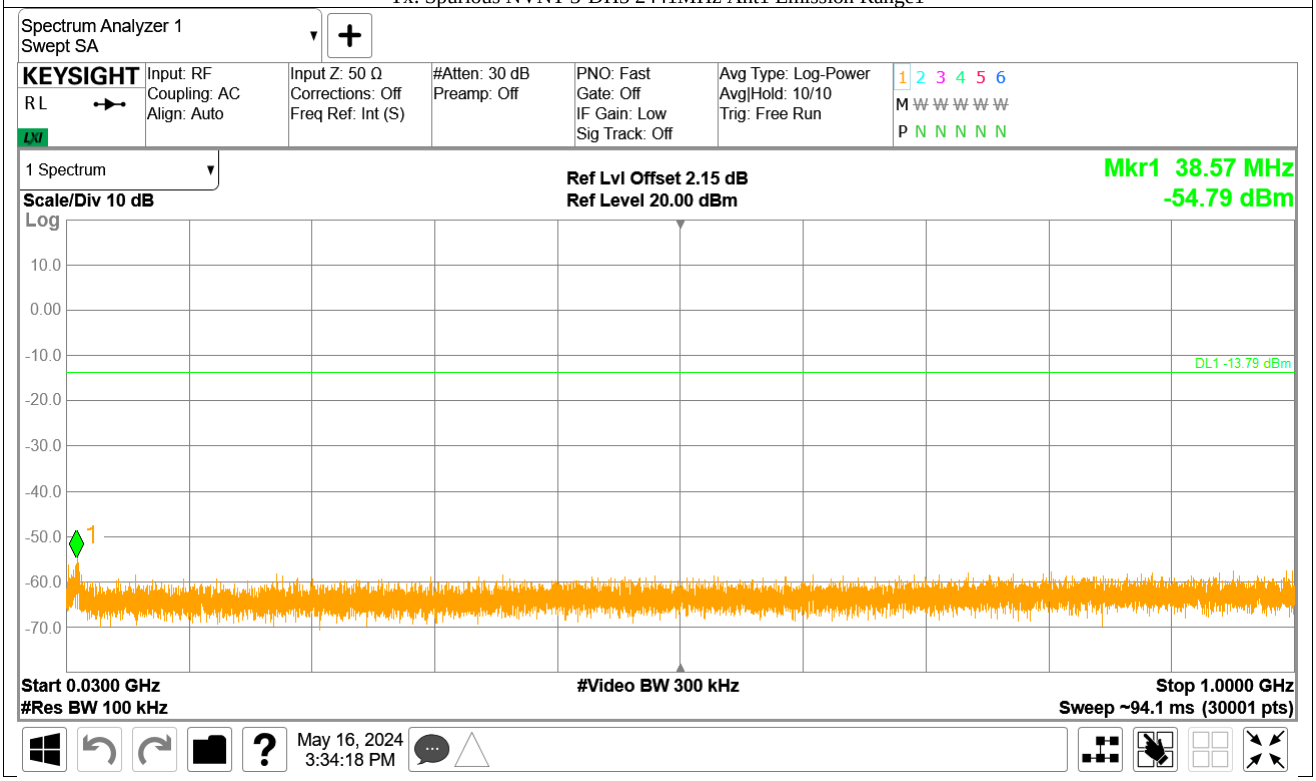
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission Range3



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission Range1



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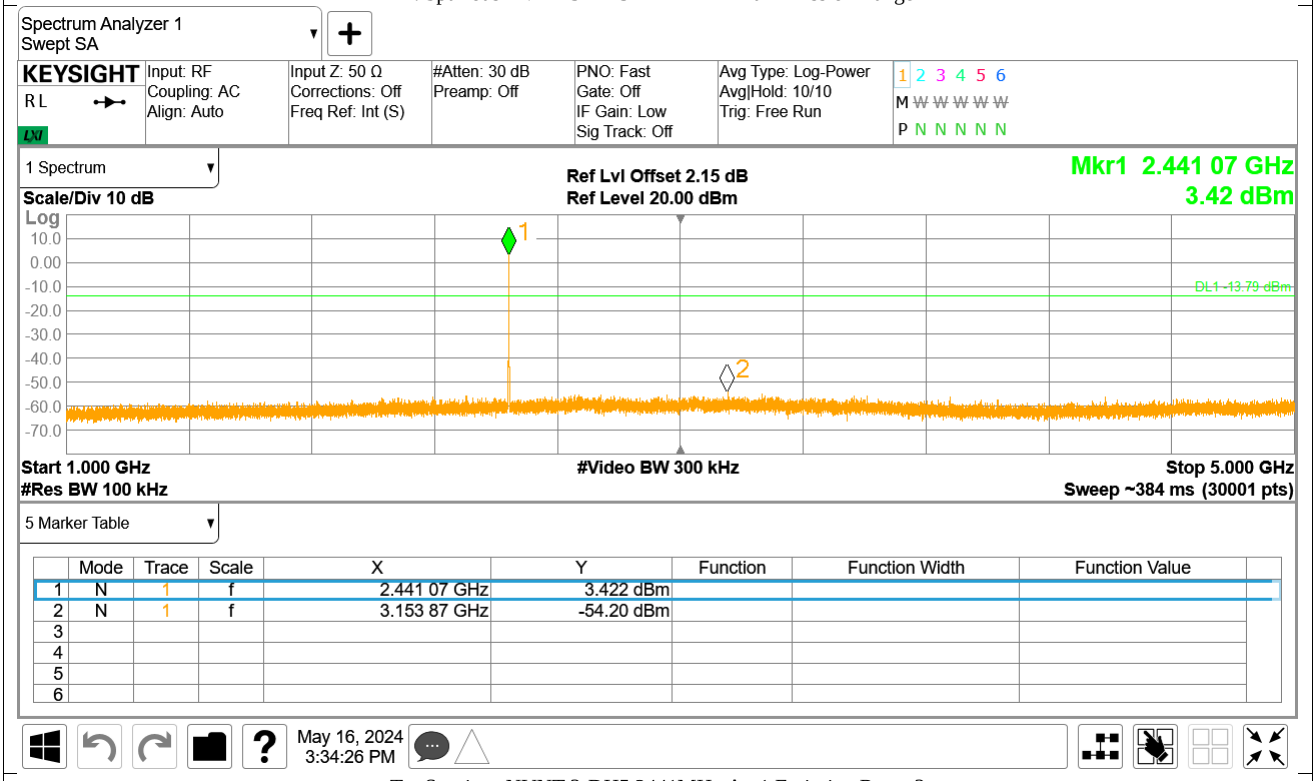
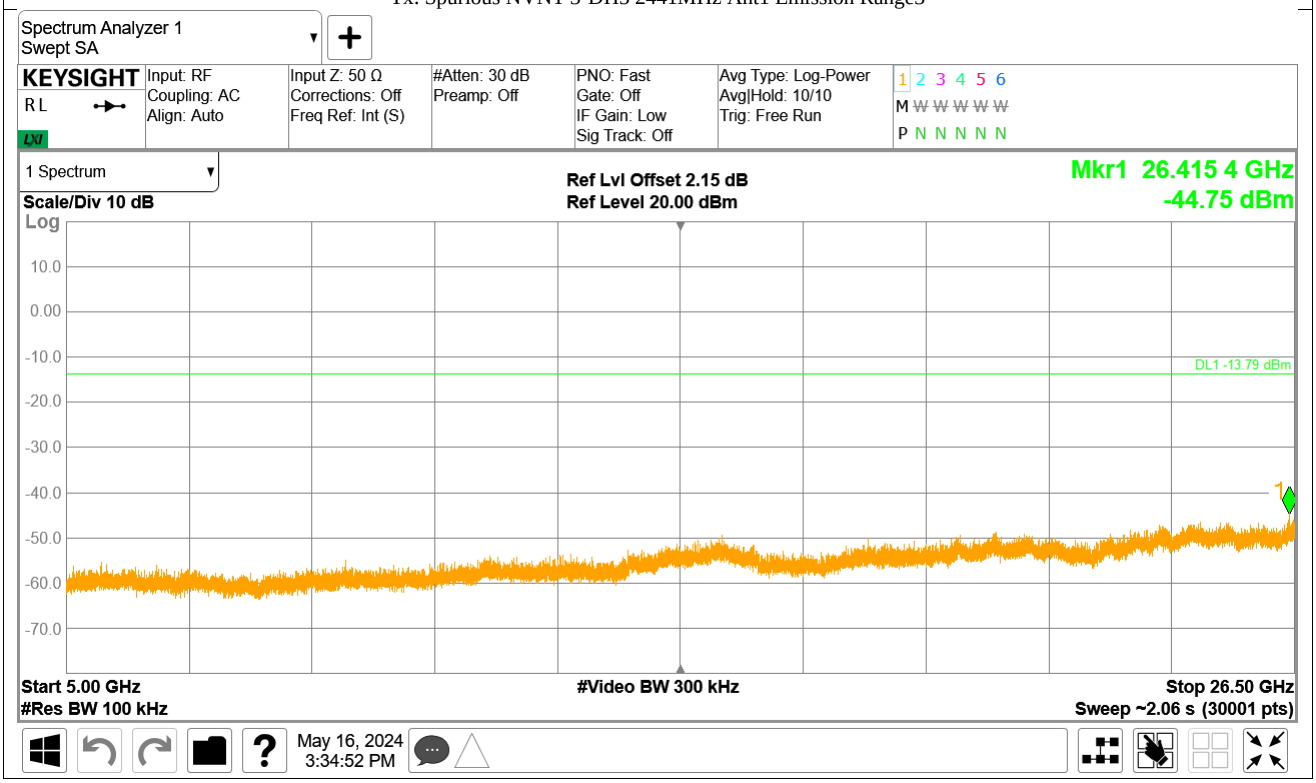
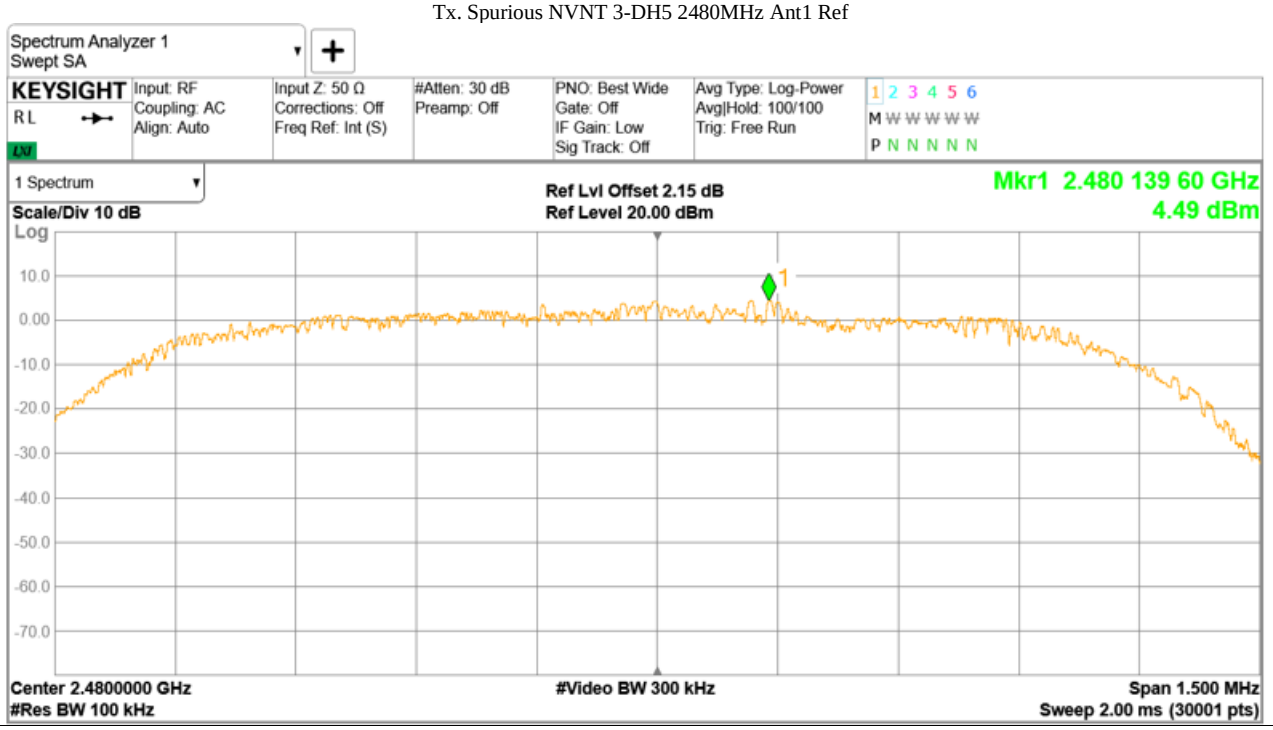
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission Range2



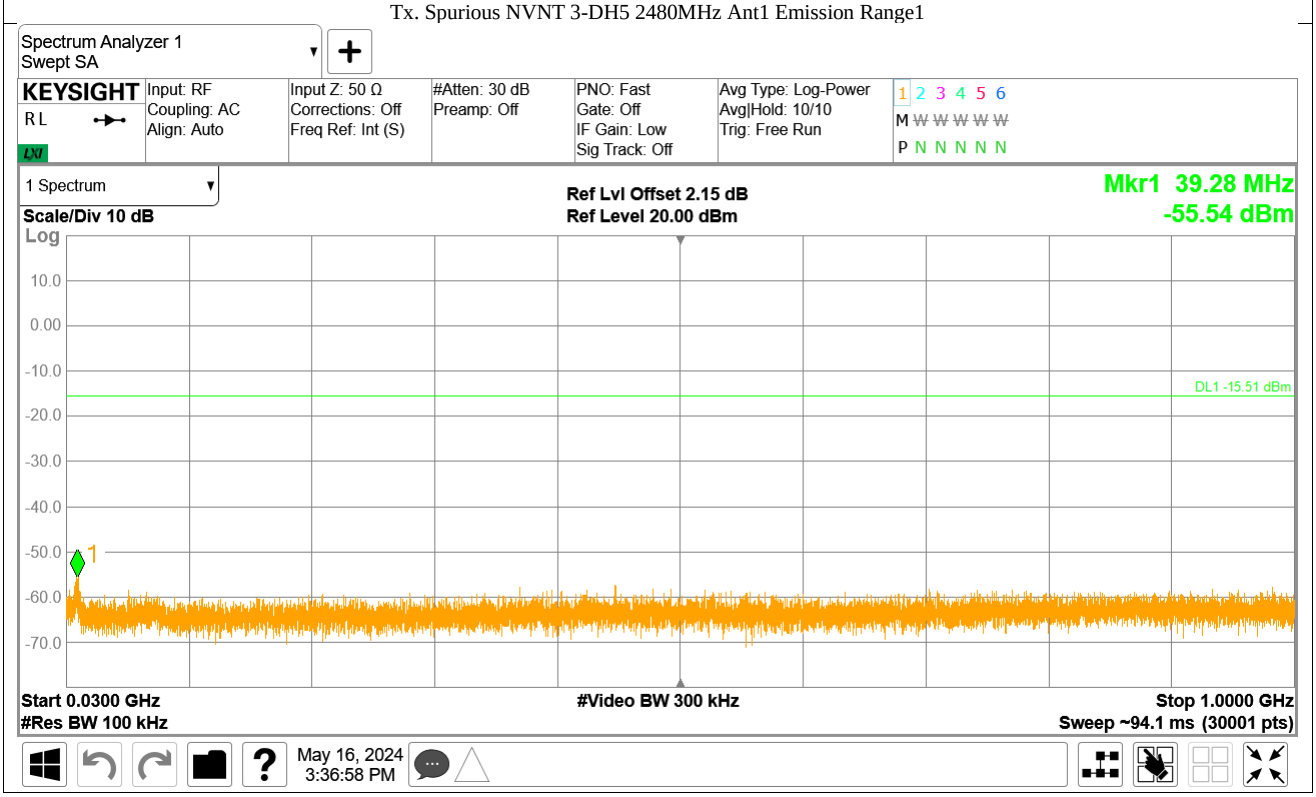
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission Range3



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission Range1



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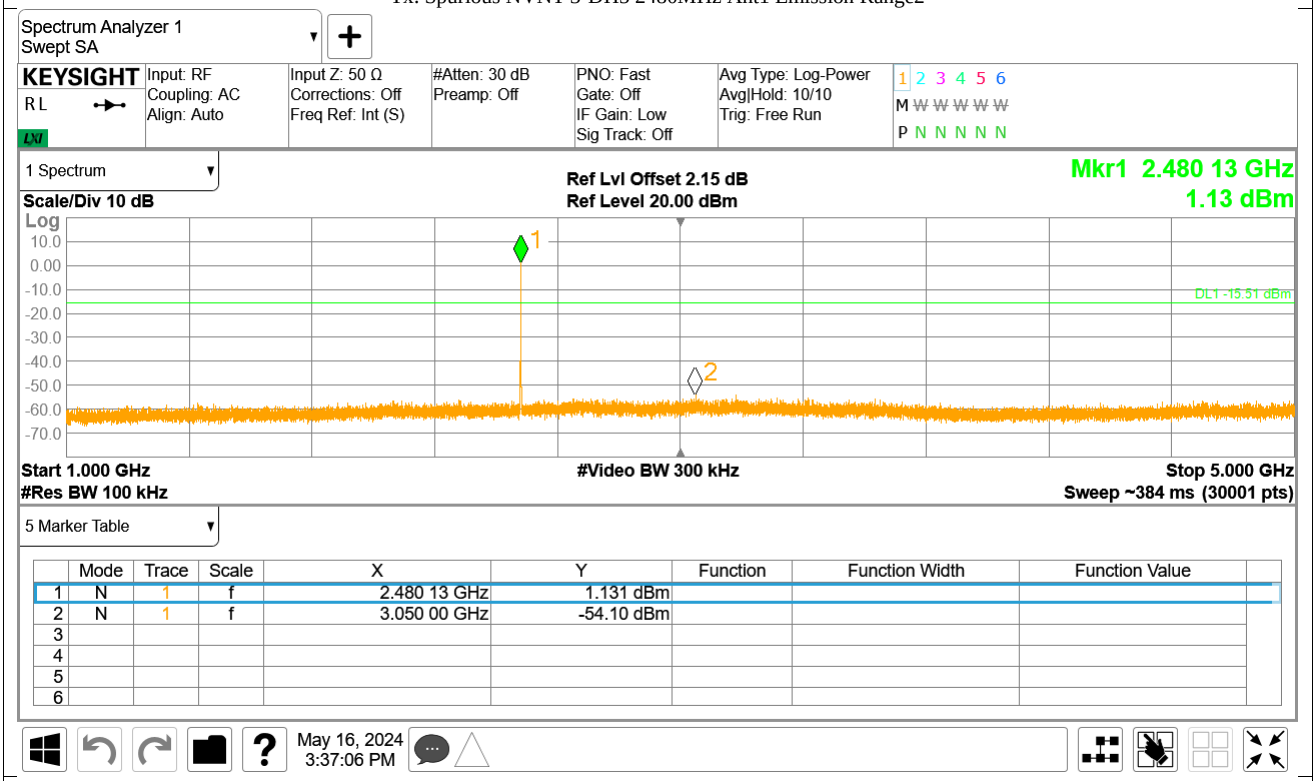
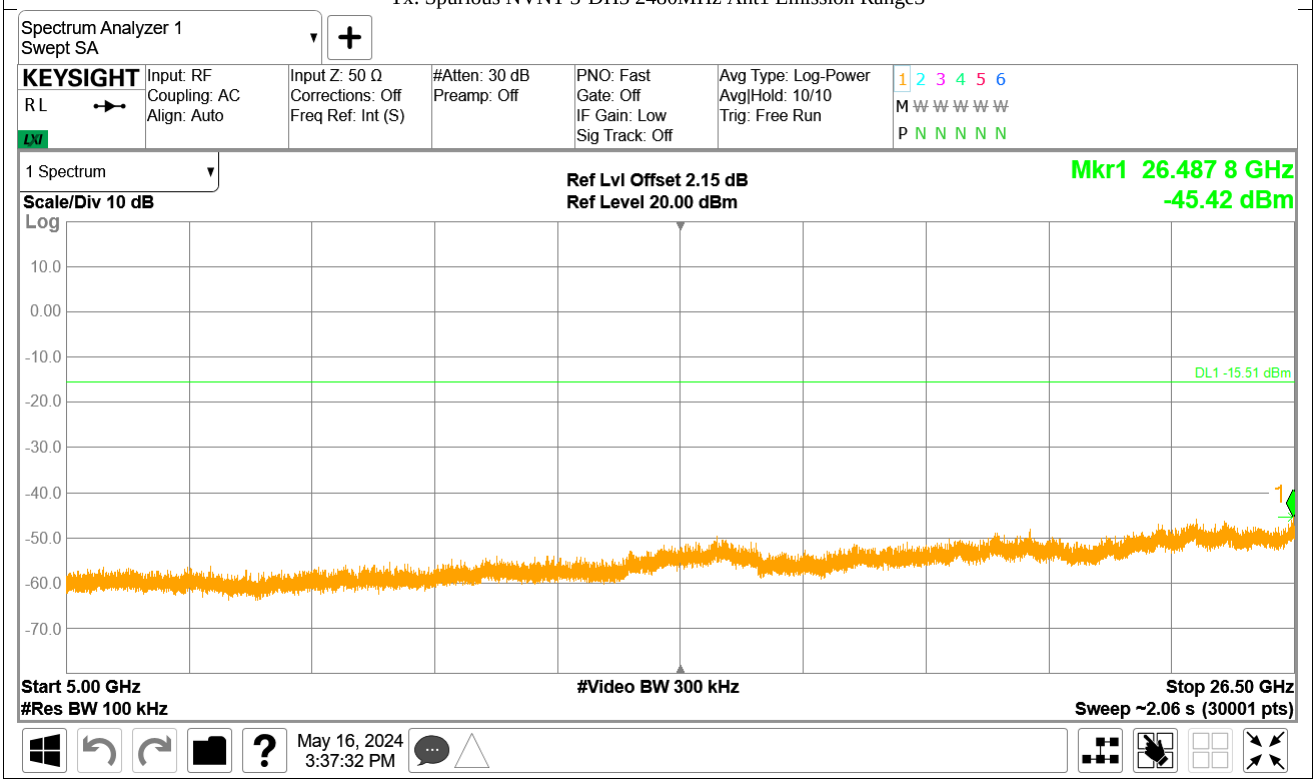
Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission Range2



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission Range3



10.8 Band edge testing

Test Method

1. The RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously. Set the EUT to the lowest frequency channel.
3. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector, Trace: Max hold, Sweep time: Coupled, Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation. Allow the trace to stabilize.
4. Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission.
5. Set the EUT to the highest frequency channel and repeat step 2) to 4)
6. Enable the EUT hopping mode, repeat the test.

Limit:

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

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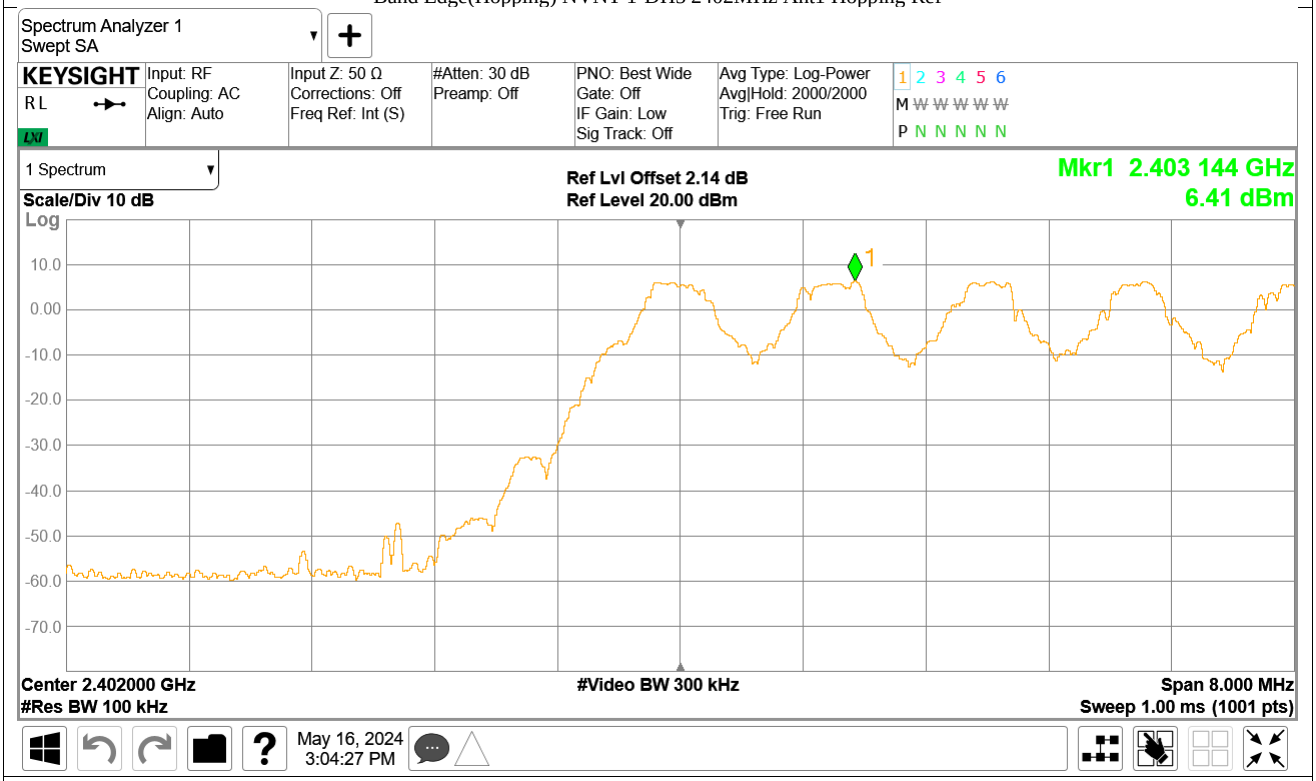
Band edge testing

GFSK Modulation Test Result:
Hopping on mode:

Test Graphs

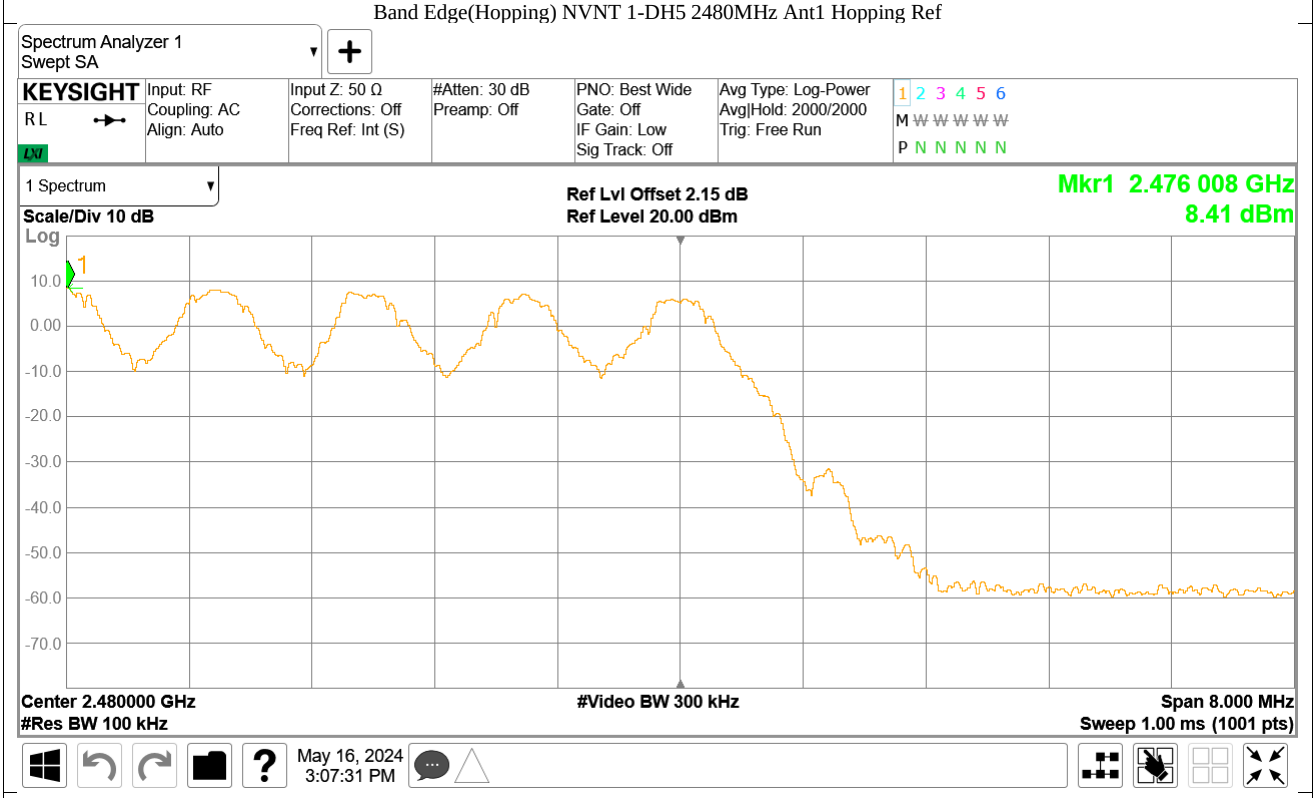
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



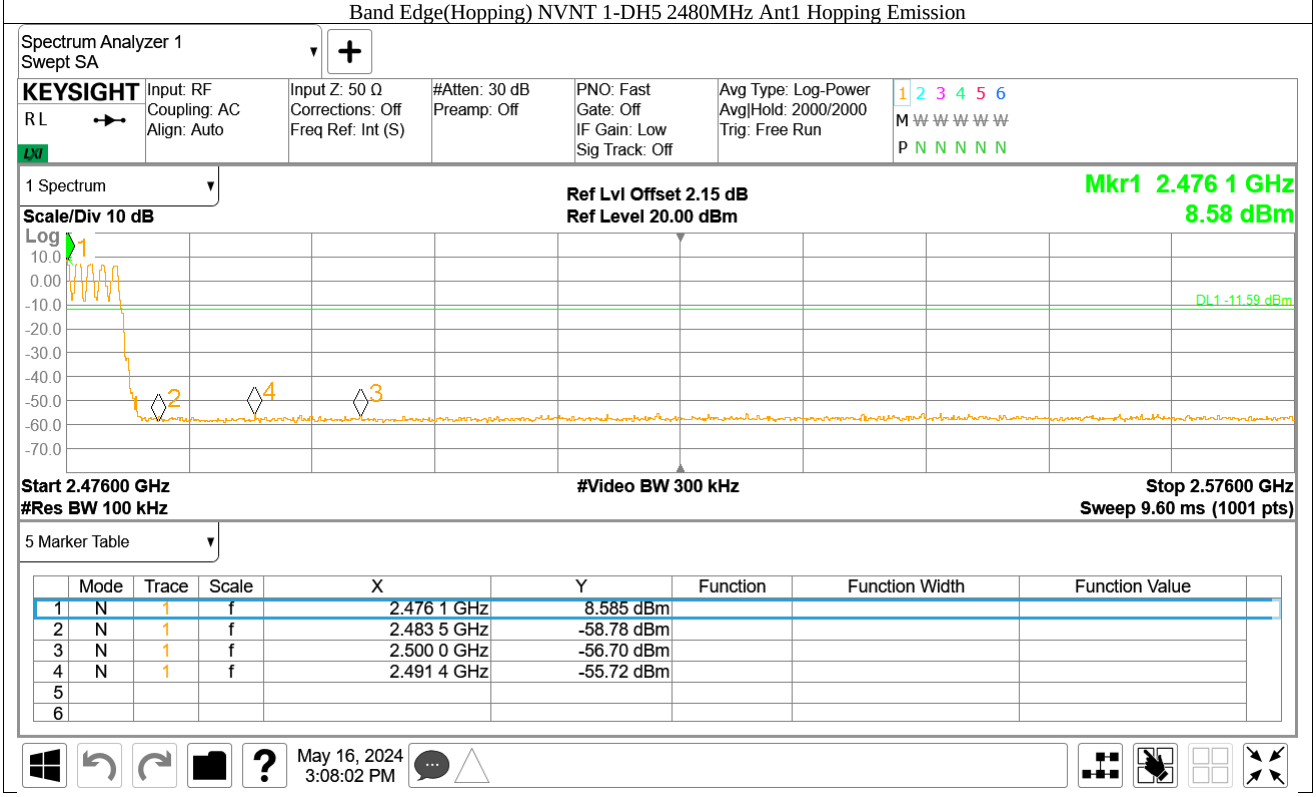
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.402 0 GHz	6.690 dBm			
2	N	1	f	2.400 0 GHz	-49.77 dBm			
3	N	1	f	2.390 0 GHz	-57.46 dBm			
4	N	1	f	2.337 0 GHz	-56.28 dBm			
5								
6								

Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref

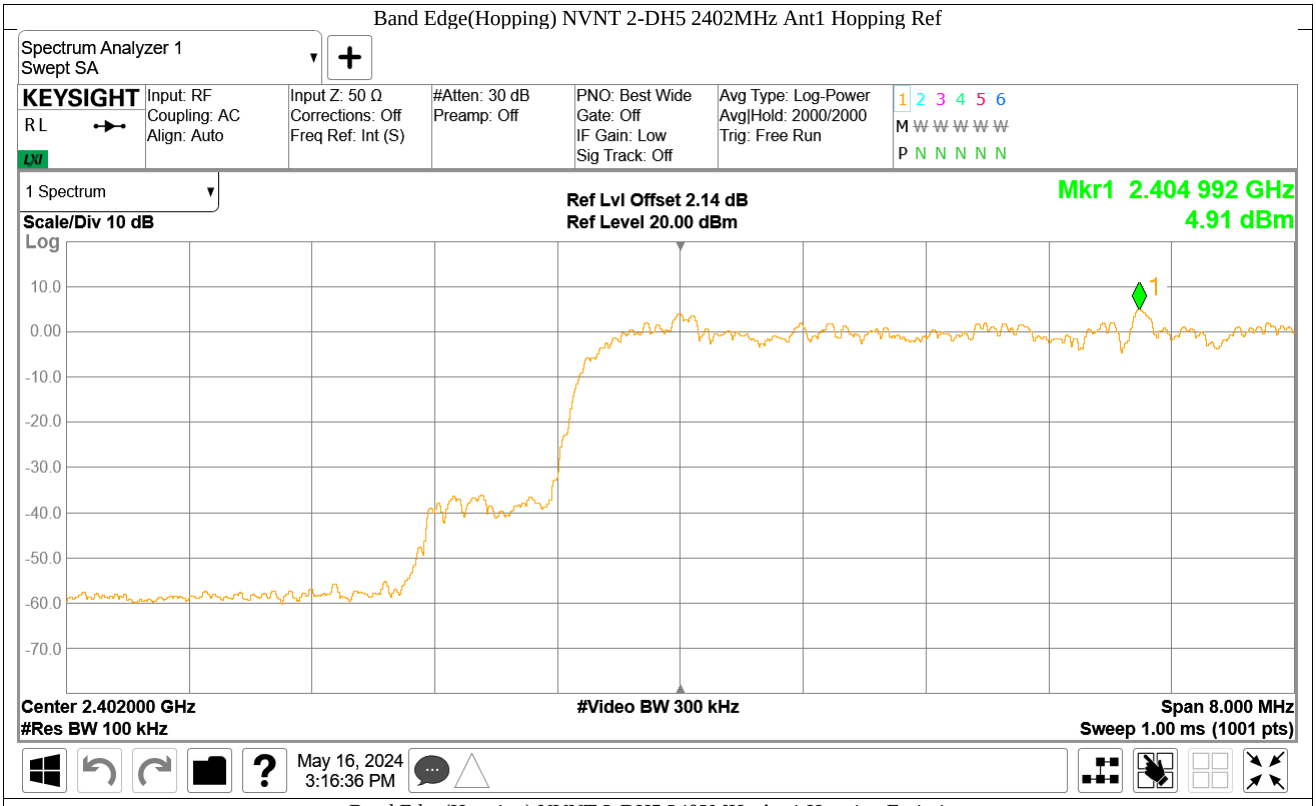


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



π/4-DQPSK Modulation Test Result:
Hopping on mode:

Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.402 9 GHz	3.605 dBm			
2	N	1	f	2.400 0 GHz	-57.42 dBm			
3	N	1	f	2.390 0 GHz	-58.28 dBm			
4	N	1	f	2.380 4 GHz	-55.85 dBm			
5								
6								

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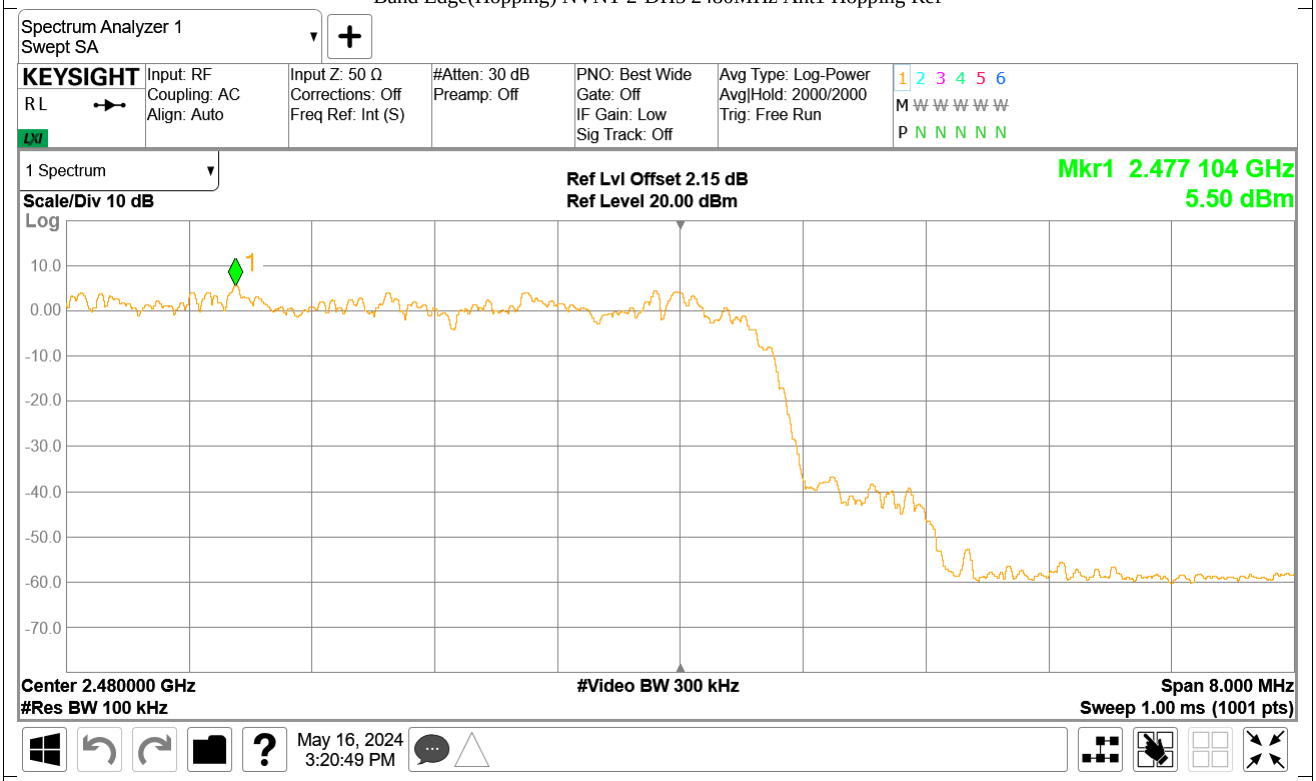
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission

5 Marker Table

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.476 8 GHz	4.470 dBm			
2	N	1	f	2.483 5 GHz	-58.75 dBm			
3	N	1	f	2.500 0 GHz	-57.60 dBm			
4	N	1	f	2.497 4 GHz	-56.22 dBm			
5								
6								

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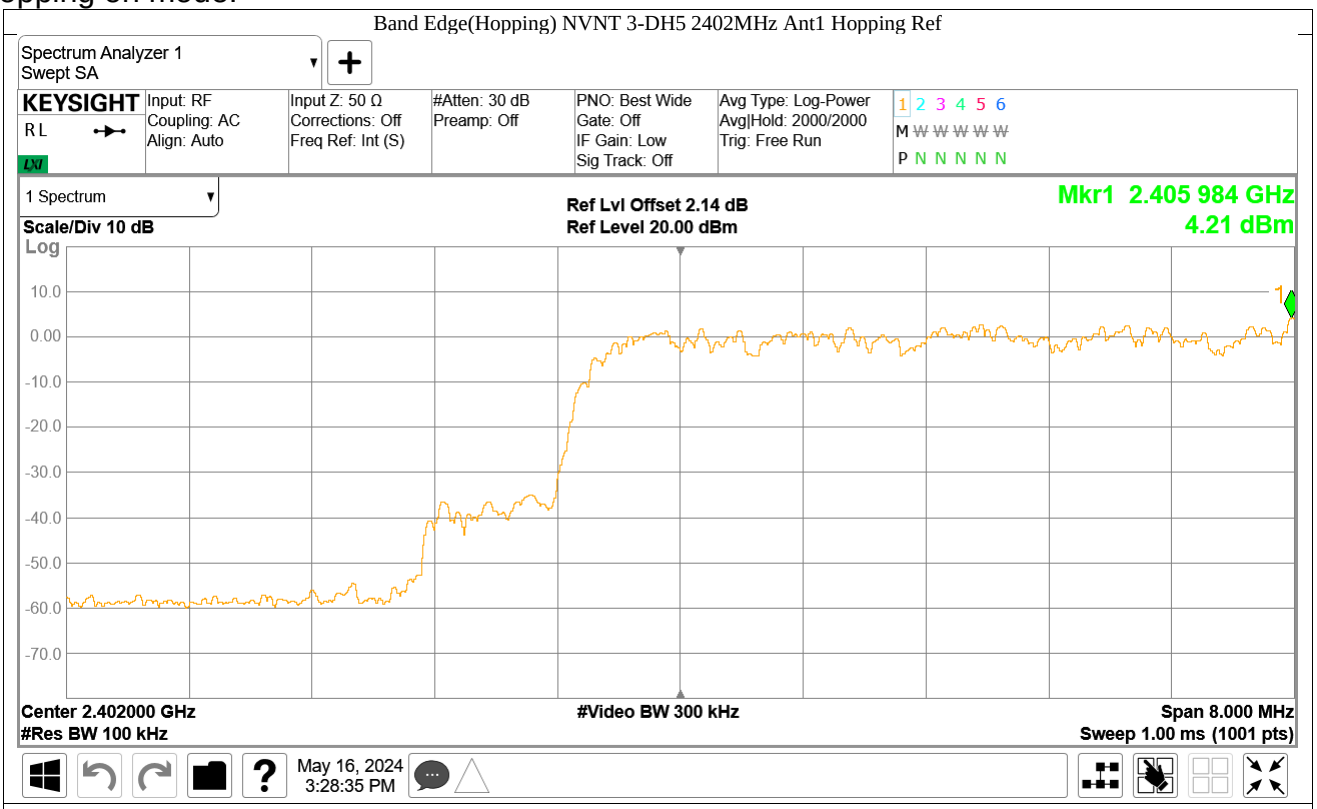
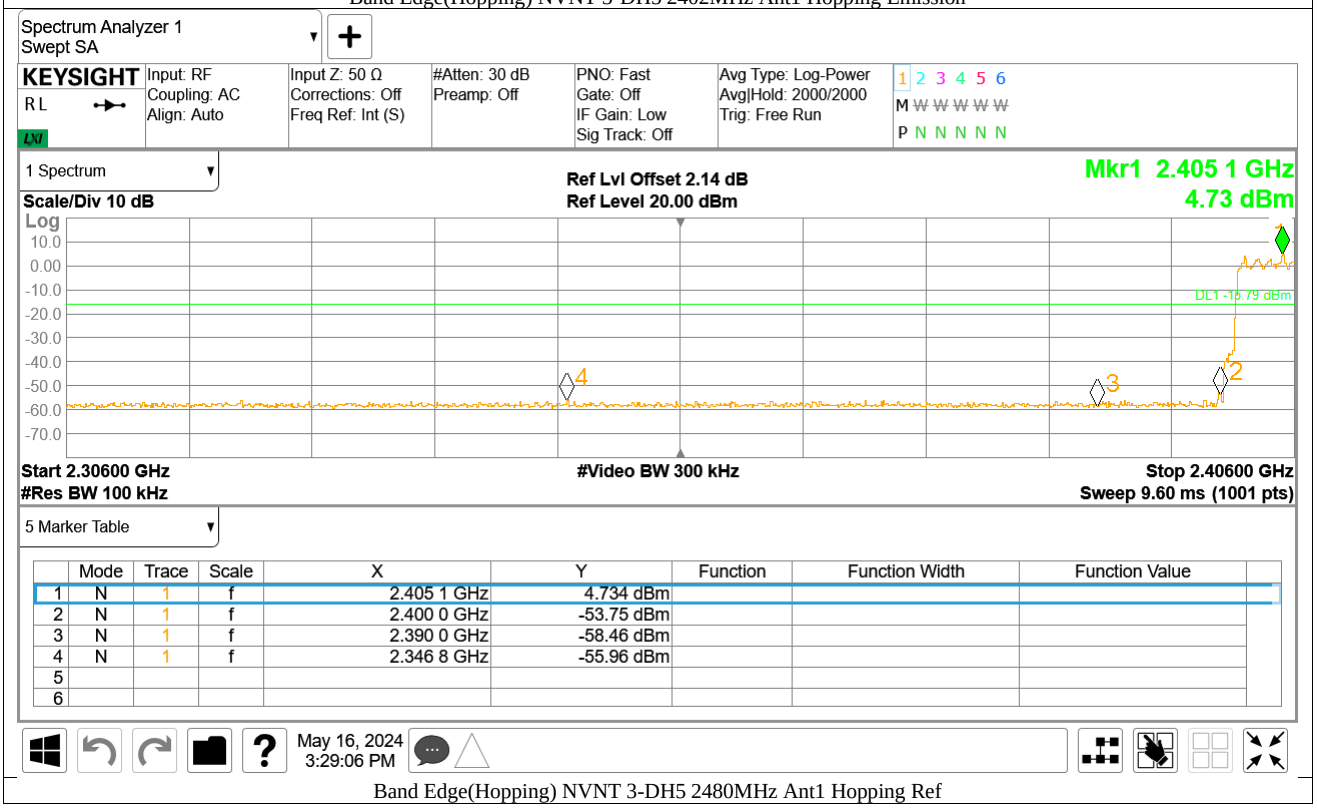
8-DPSK Modulation Test Result:

Hopping on mode:

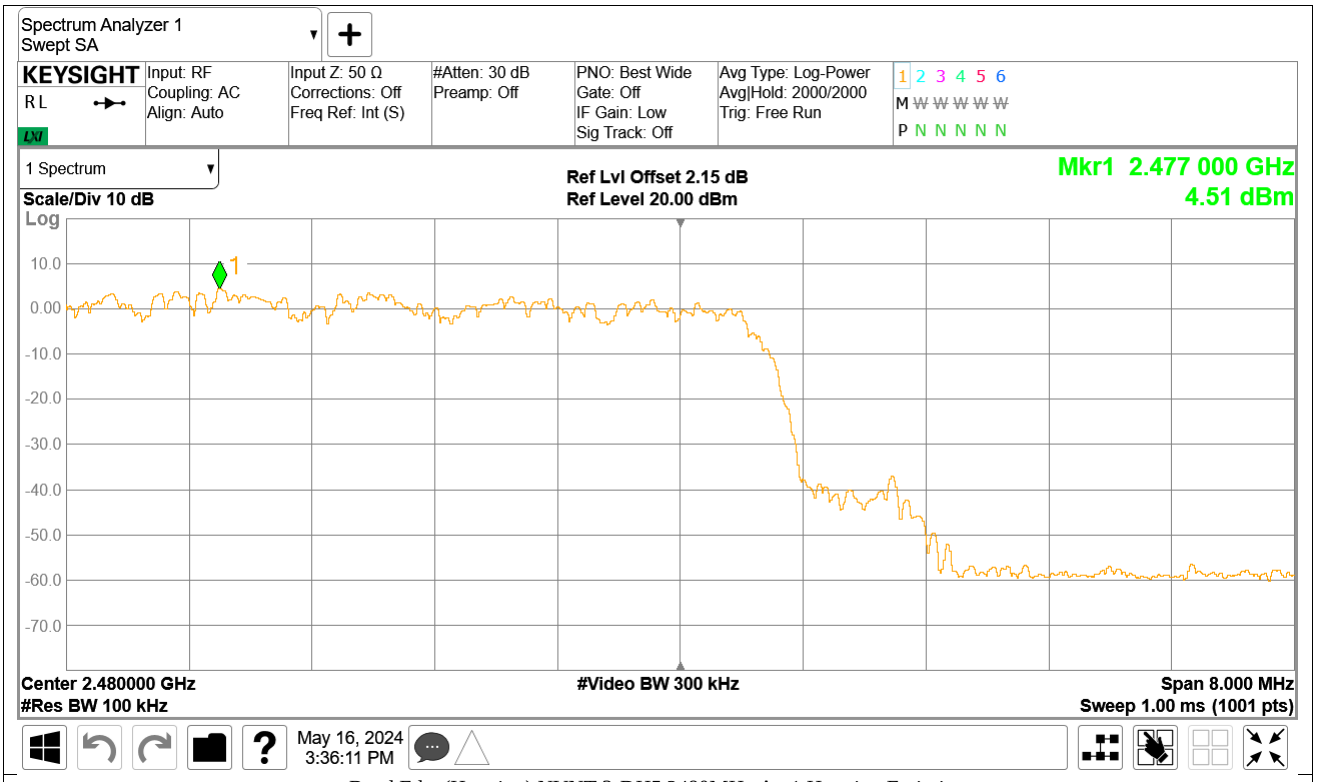
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



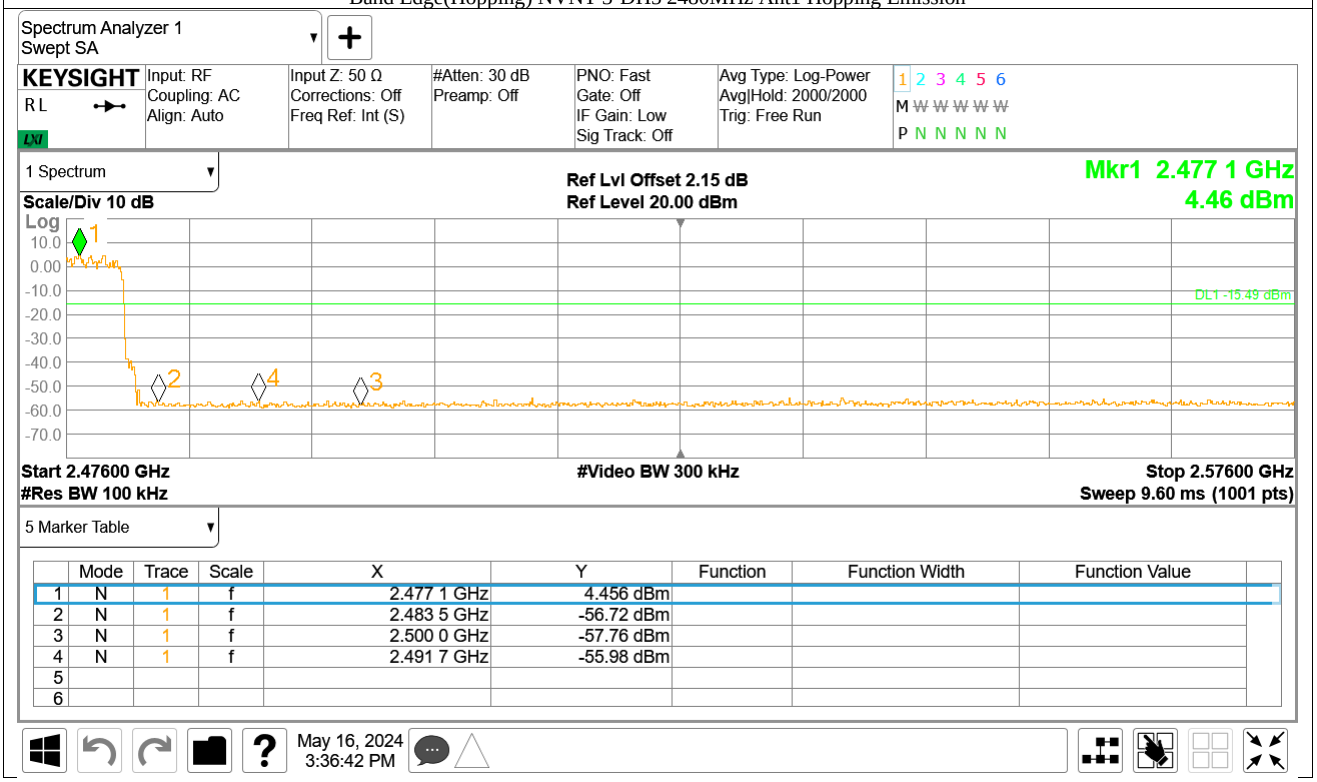
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

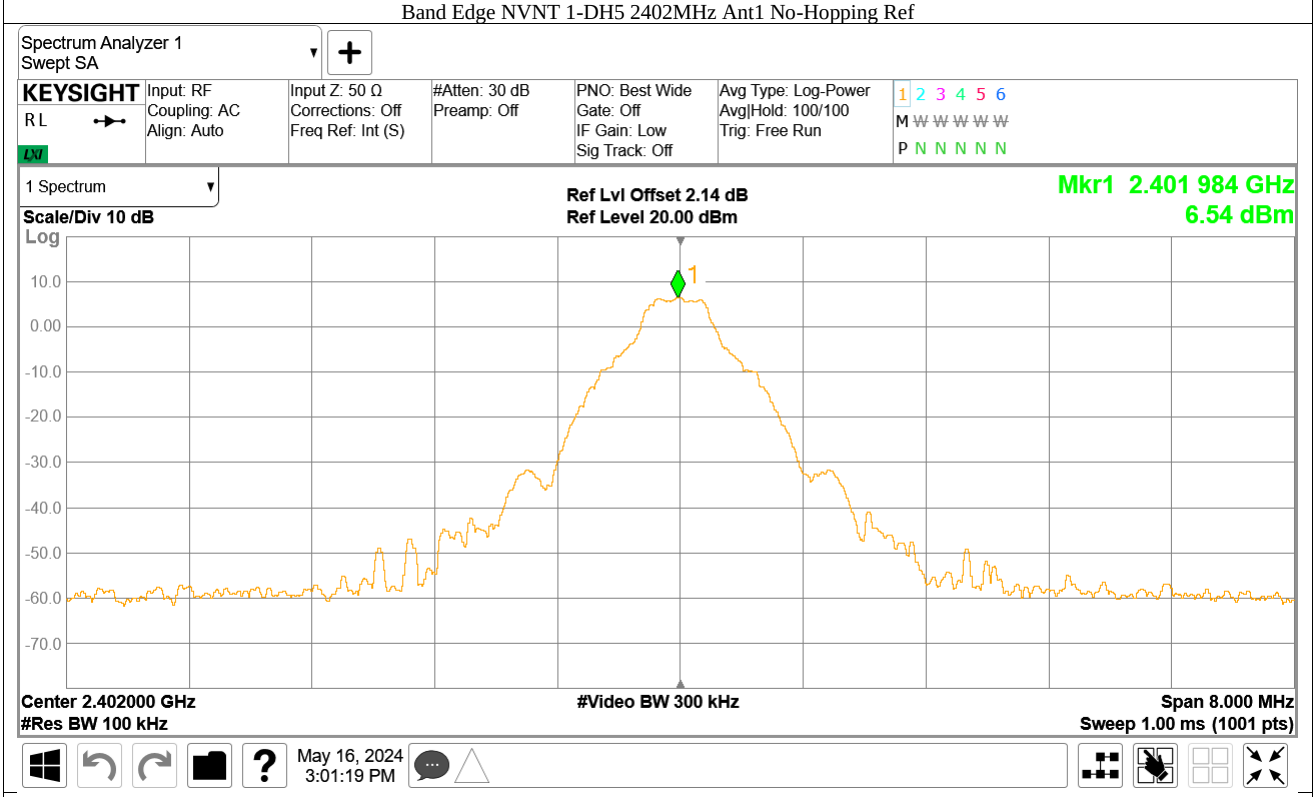


	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.477 1 GHz	4.456 dBm			
2	N	1	f	2.483 5 GHz	-56.72 dBm			
3	N	1	f	2.500 0 GHz	-57.76 dBm			
4	N	1	f	2.491 7 GHz	-55.98 dBm			
5								
6								

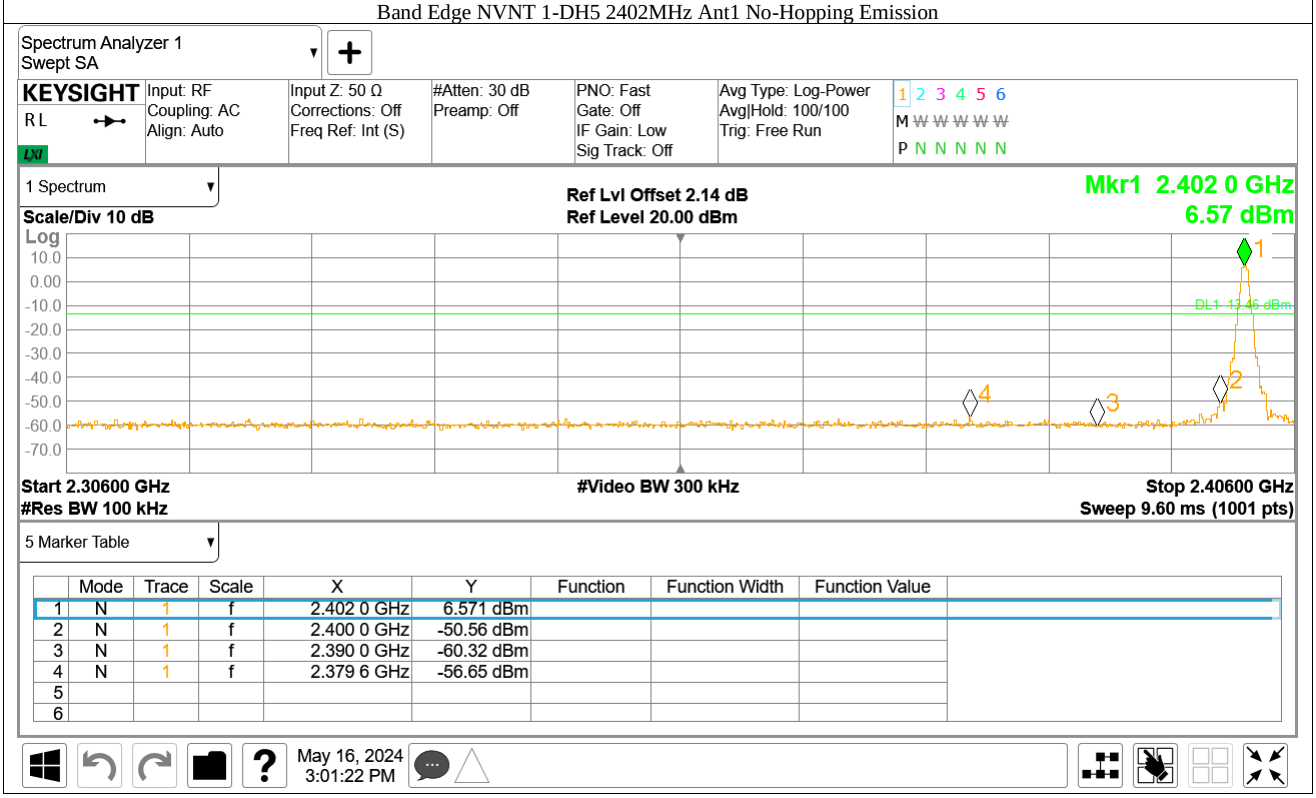
GFSK Modulation Test Result:
Hopping off mode:

Test Graphs

Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.402 0 GHz	6.571 dBm			
2	N	1	f	2.400 0 GHz	-50.56 dBm			
3	N	1	f	2.390 0 GHz	-60.32 dBm			
4	N	1	f	2.379 6 GHz	-56.65 dBm			
5								
6								

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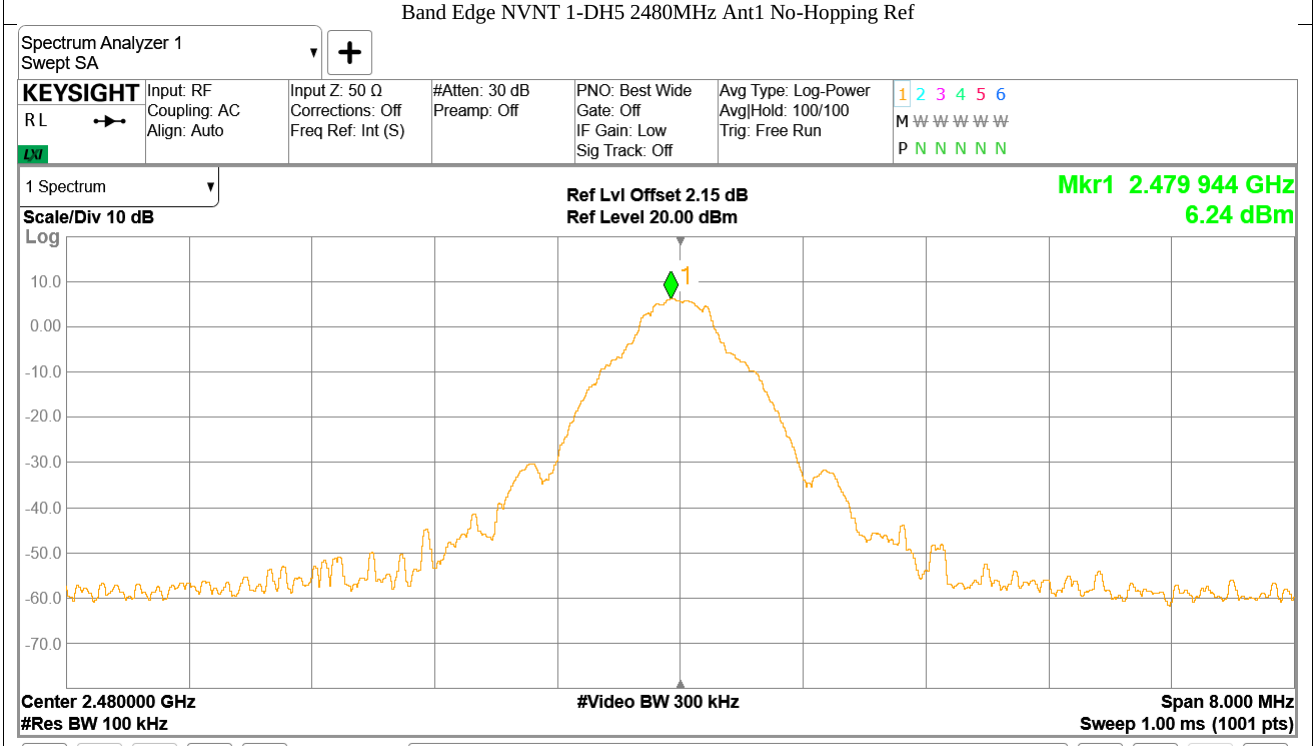
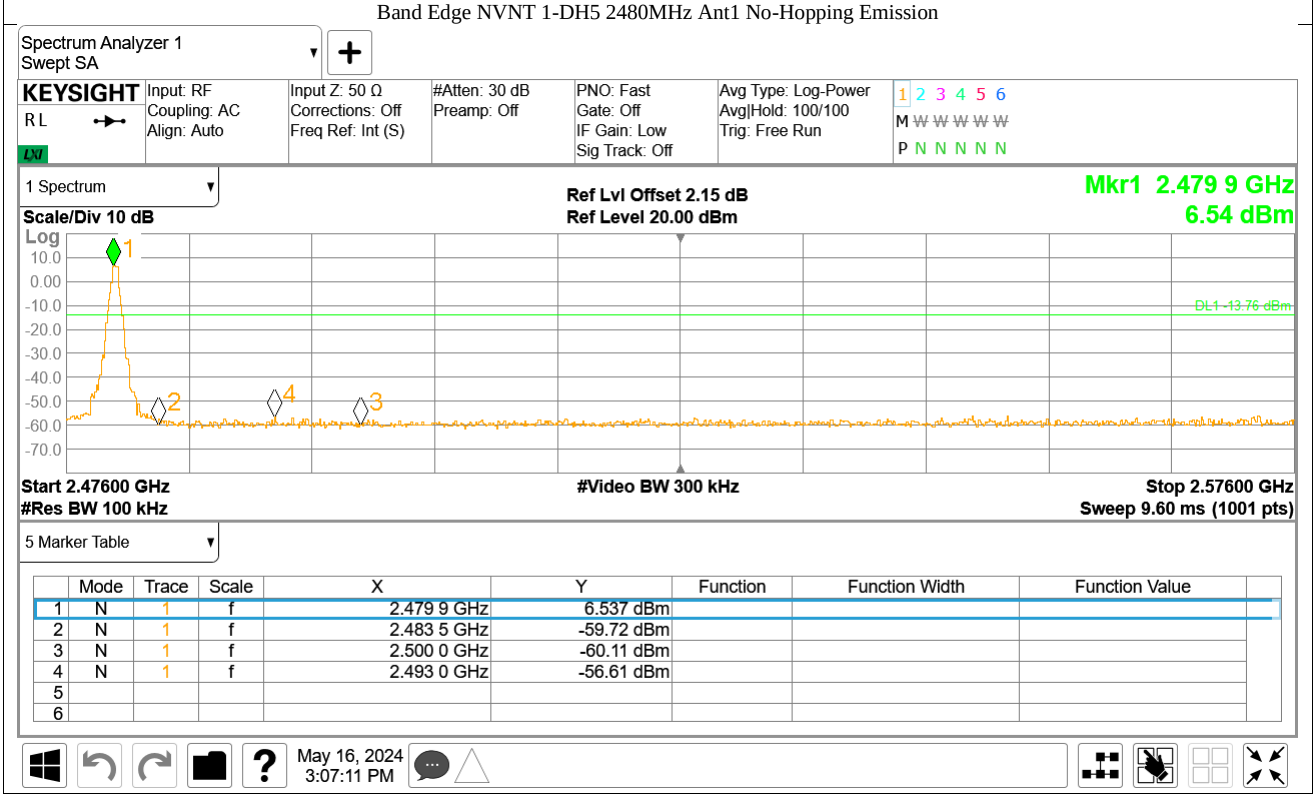
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.479 9 GHz	6.537 dBm			
2	N	1	f	2.483 5 GHz	-59.72 dBm			
3	N	1	f	2.500 0 GHz	-60.11 dBm			
4	N	1	f	2.493 0 GHz	-56.61 dBm			
5								
6								

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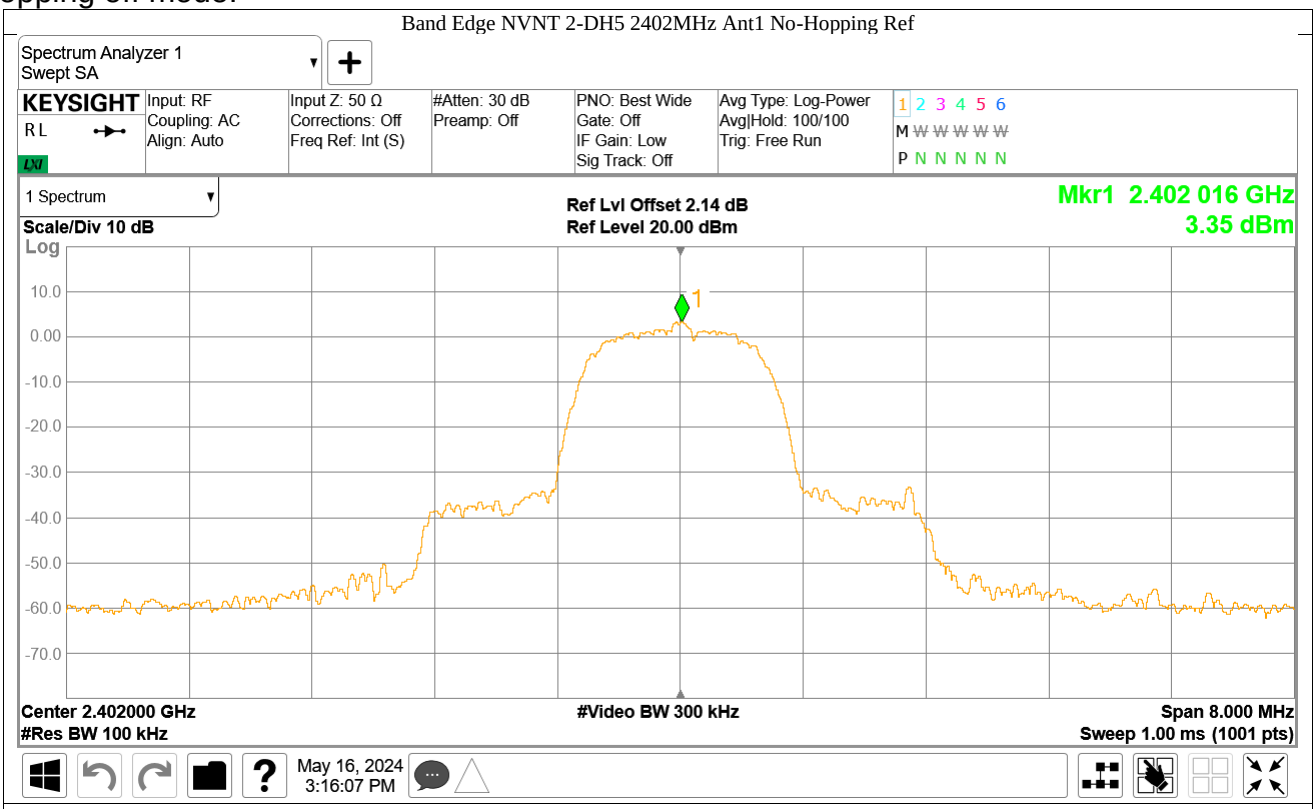
π/4-DQPSK Modulation Test Result:
Hopping off mode:

Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

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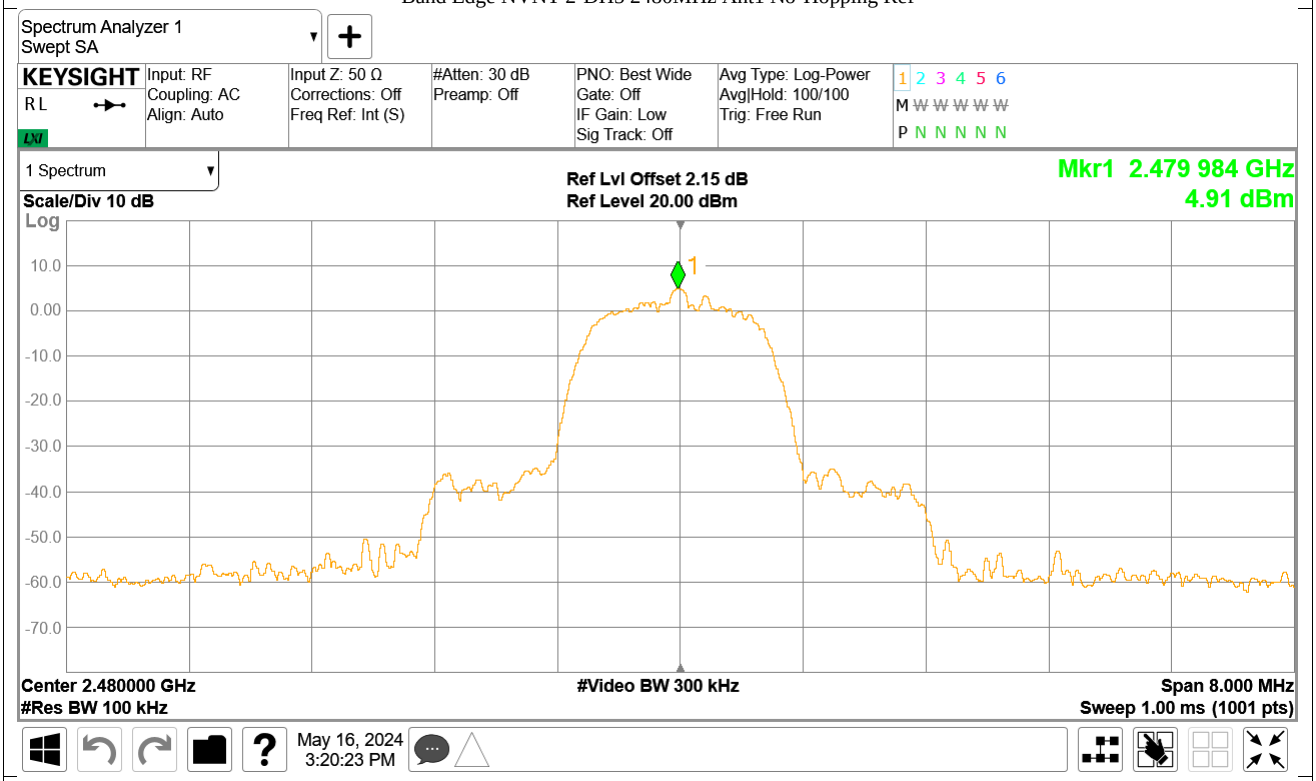
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.479 9 GHz	3.682 dBm			
2	N	1	f	2.483 5 GHz	-56.97 dBm			
3	N	1	f	2.500 0 GHz	-59.82 dBm			
4	N	1	f	2.483 6 GHz	-56.80 dBm			
5								
6								

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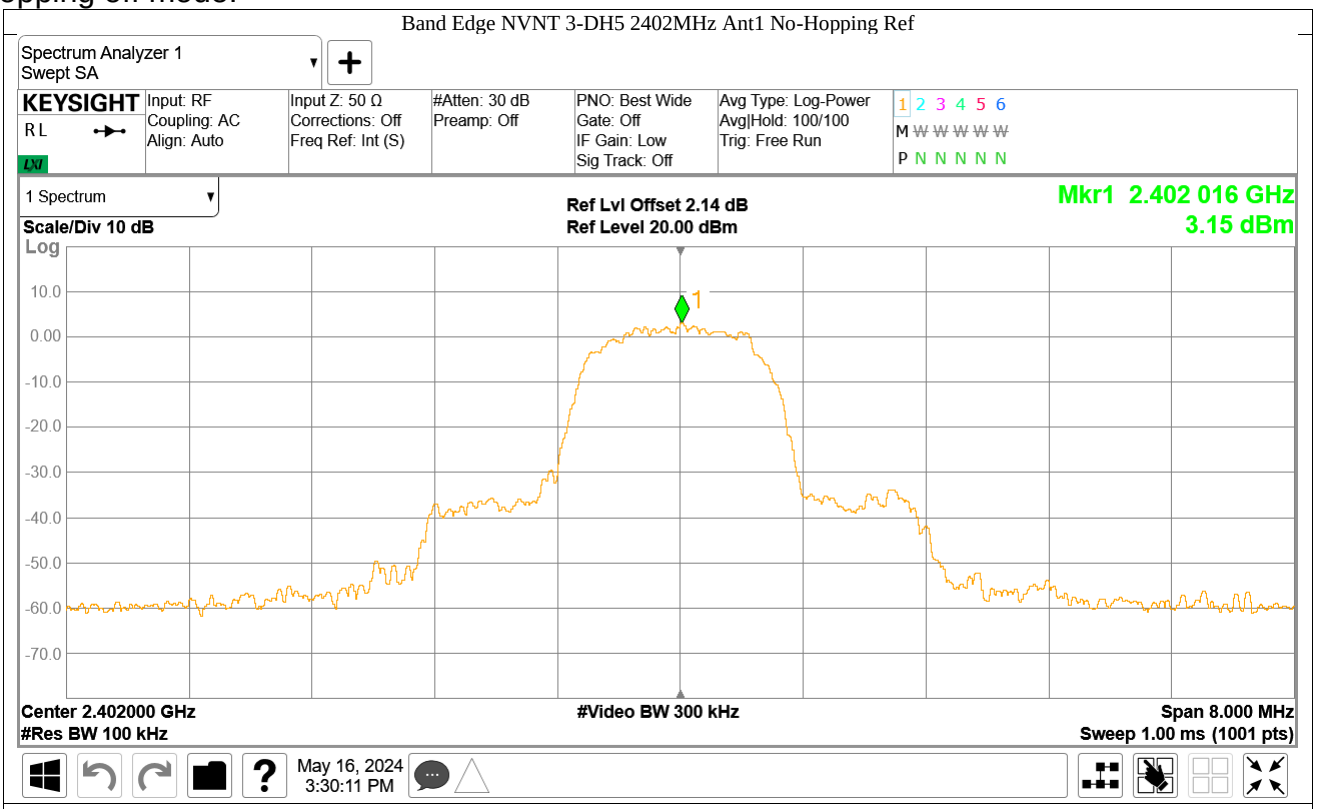
8-DPSK Modulation Test Result:
Hopping off mode:

Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.402 0 GHz	2.741 dBm			
2	N	1	f	2.400 0 GHz	-55.76 dBm			
3	N	1	f	2.390 0 GHz	-58.49 dBm			
4	N	1	f	2.338 0 GHz	-56.62 dBm			
5								
6								

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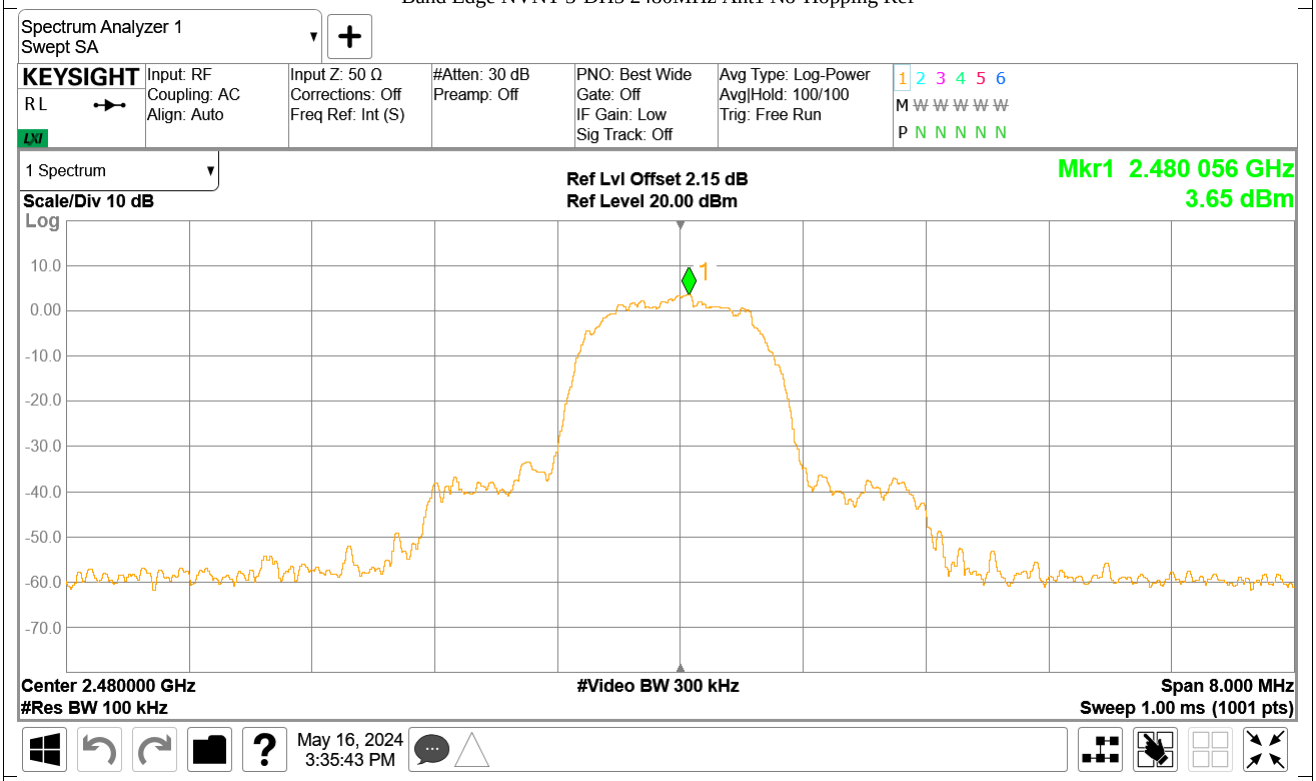
Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.480 0 GHz	2.638 dBm			
2	N	1	f	2.483 5 GHz	-59.39 dBm			
3	N	1	f	2.500 0 GHz	-59.23 dBm			
4	N	1	f	2.484 2 GHz	-57.78 dBm			
5								
6								

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10.9 Spurious radiated emissions for transmitter and receiver

Test Method

1. The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
4. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
5. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
6. Use the following test receiver settings According to C63.10:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz to 120KHz for f < 1 GHz; VBW≥ RBW; Sweep = auto; Detector function = QP; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥1 GHz for peak measurement.
   For average measurement:
   The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).
   The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
7. Repeat above procedures until all frequencies measured were complete.

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Spurious Radiated Emissions for Transmitter

Limit

The radio emission outside the operating frequency band 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. Radiated emissions which fall in the restricted bands, as defined in section15.205 & RSS-GEN 8.10, must comply with the radiated emission limits specified in section 15.209 & RSS-Gen 6.13.

Frequency MHz	Field Strength μV/m	Field Strength dBμV/m	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	AV	300
0.490-1.705	24000/F(kHz)	33.8-23.0	QP	30
1.705-30	30	29.5	QP	30
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

Note 1: Limit 3m(dBμV/m)=Limit 300m(dBμV/m)+40Log(300m/3m) (Below 30MHz)
Note 2: Limit 3m(dBμV/m)=Limit 30m(dBμV/m)+40Log(30m/3m) (Below 30MHz)

Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.
Data of measurement within frequency range 9kHz-30MHz is the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so test data does not present in this report.

The only worse case (which is subject to the maximum conducted power, 8-DPSK mode) test result is listed in the report.

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Above 1GHz Transmitting spurious emission test result as below:

Bluetooth Mode 8-DPSK Modulation 2402MHz, hopping off

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBμV/m		dBuV/m	
2351.72	42.96	Horizontal	74.0	PK	31.04	Pass
4803.21	40.96	Horizontal	74.0	PK	33.04	Pass
2352.24	44.01	Vertical	74.0	PK	29.99	Pass
4804.28	41.84	Vertical	74.0	PK	32.16	Pass

Bluetooth Mode 8-DPSK Modulation 2441MHz, hopping off

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBμV/m		dBuV/m	
4879.18	41.31	Horizontal	74.0	PK	32.69	Pass
4882.37	41.48	Vertical	74.0	PK	32.52	Pass

Bluetooth Mode 8-DPSK Modulation 2480MHz, hopping off

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBμV/m		dBuV/m	
2483.64	42.46	Horizontal	74.0	PK	31.54	Pass
4961.00	40.81	Horizontal	74.0	PK	33.19	Pass
2483.54	43.40	Vertical	74.0	PK	30.60	Pass
4959.34	42.01	Vertical	74.0	PK	31.99	Pass

Bluetooth Mode 8-DPSK Modulation 2402MHz, hopping on

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBμV/m		dBuV/m	
2351.58	43.07	Horizontal	74.0	PK	30.93	Pass
2351.68	43.92	Vertical	74.0	PK	30.08	Pass

Bluetooth Mode 8-DPSK Modulation 2480MHz, hopping on

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBμV/m		dBuV/m	
2483.55	42.70	Horizontal	74.0	PK	31.30	Pass
2483.54	44.14	Vertical	74.0	PK	29.86	Pass

Remark:

(1) Emission level= Original Receiver Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain
(3) Margin = limit – Corrected Reading

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The worst case of Radiated Emission below 1GHz: X axis transmitting TX at 2441MHz (3DH5)

30-1000MHz Radiated Emission

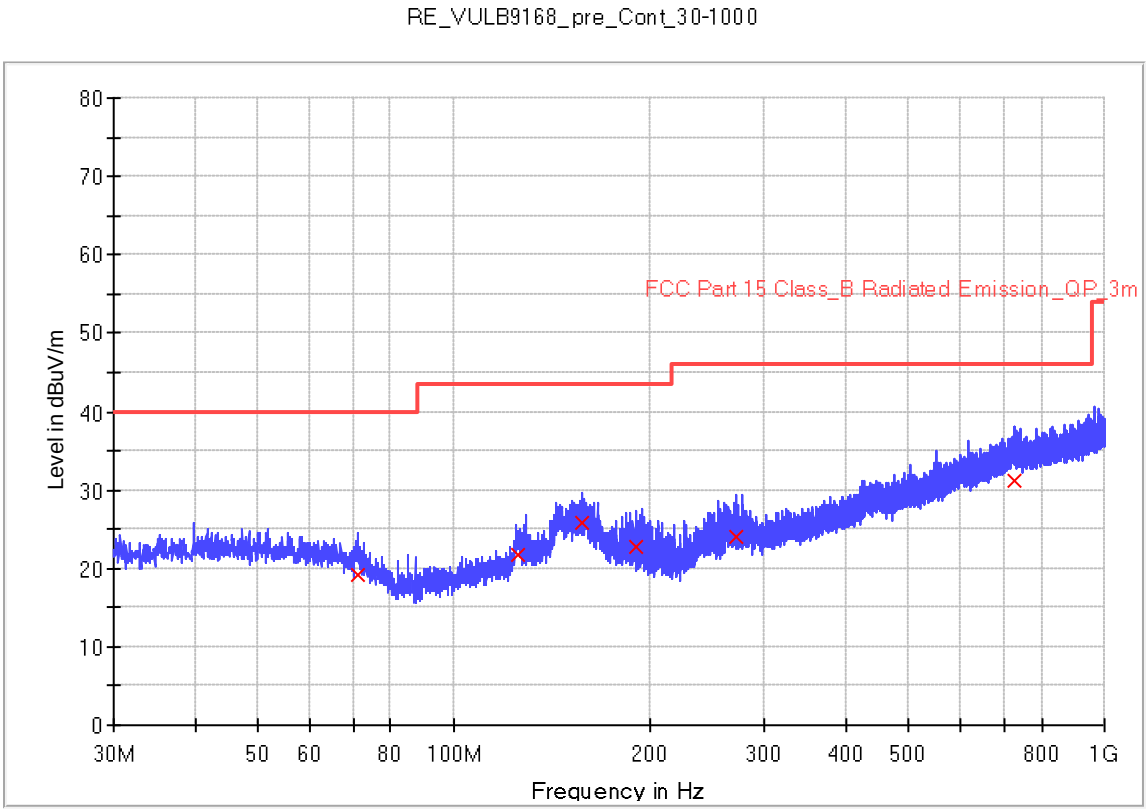
EUT Information

EUT Name:	Acoustic Thermal Imager
Model:	Fotric 860MiX
Client:	FOTRIC INC
Op Cond:	Power on, TX_2441 at 3DH5 mode, AC120V/60Hz
Operator:	Huali CHENG
Test Spec:	FCC Part 15.209(a)
Comment:	Horizontal
Sample No:	SHA-801877-2

Sweep Setup: RE_VULB9168_pre_Cont_30-1000 [EMI radiated]

Hardware Setup:	RE_VULB9168
Receiver:	[ESR 3]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48.5 kHz	PK+	120 kHz	0.2 s	20 dB



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Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)
71.280000	19.1	1000.0	120.000	201.0	H	118.0	18.3	20.9
125.720000	21.7	1000.0	120.000	198.0	H	125.0	18.6	21.8
157.160000	25.7	1000.0	120.000	189.0	H	69.0	20.9	17.8
190.040000	22.8	1000.0	120.000	165.0	H	98.0	18.5	20.7
272.440000	24.1	1000.0	120.000	175.0	H	325.0	20.5	21.9
725.280000	31.1	1000.0	120.000	165.0	H	106.0	31.2	14.9

(continuation of the "Limit and Margin" table from column 16 ...)

Frequency (MHz)	Limit - QPK (dBuV/m)	Comment
71.280000	40.0	
125.720000	43.5	
157.160000	43.5	
190.040000	43.5	
272.440000	46.0	
725.280000	46.0	

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)
Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report

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30-1000MHz Radiated Emission

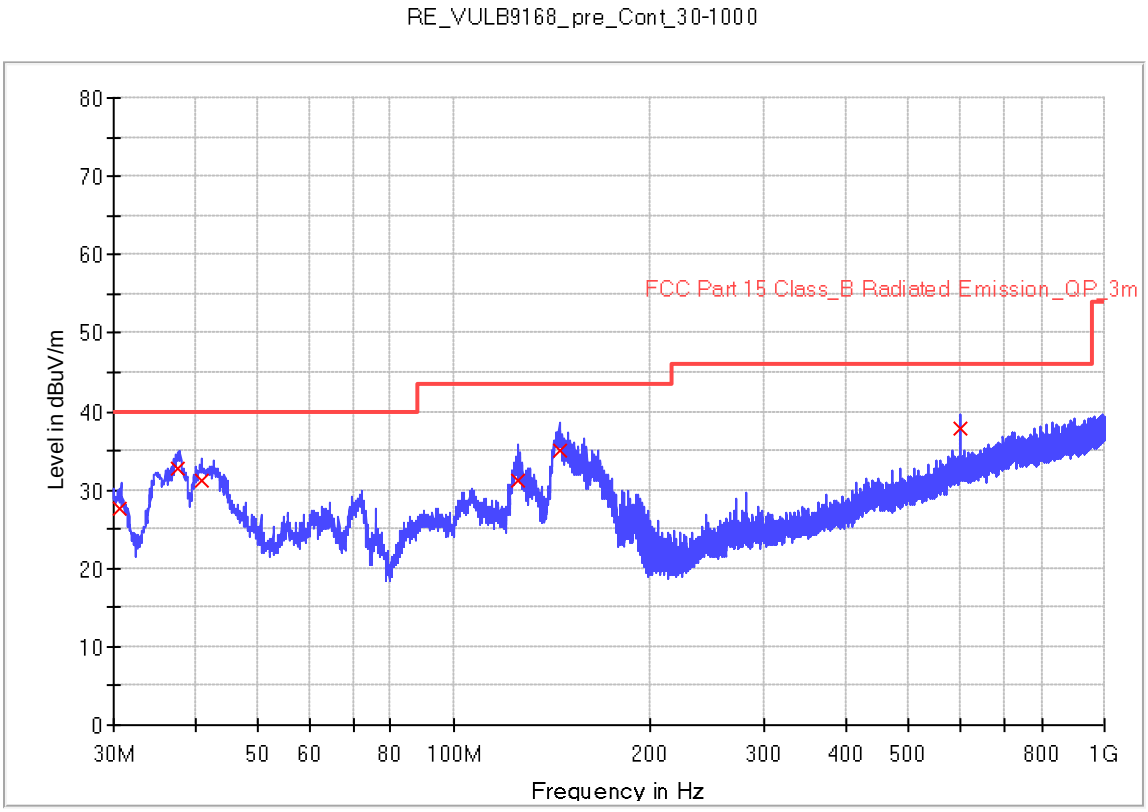
EUT Information

EUT Name:	Acoustic Thermal Imager
Model:	Fotric 860MiX
Client:	FOTRIC INC
Op Cond:	Power on, TX_2441 at 3DH5 mode, AC120V/60Hz
Operator:	Huali CHENG
Test Spec:	FCC Part 15.209(a)
Comment:	Vertical
Sample No:	SHA-801877-2

Sweep Setup: RE_VULB9168_pre_Cont_30-1000 [EMI radiated]

Hardware Setup:	RE_VULB9168
Receiver:	[ESR 3]
Level Unit:	dBuV/m

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	48.5 kHz	PK+	120 kHz	0.2 s	20 dB



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Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)
30.600000	27.6	1000.0	120.000	112.0	V	48.0	19.3	12.4
37.760000	32.6	1000.0	120.000	100.0	V	52.0	19.7	7.4
41.000000	31.1	1000.0	120.000	102.0	V	126.0	20.1	8.9
125.720000	31.2	1000.0	120.000	105.0	V	187.0	18.6	12.3
145.200000	35.1	1000.0	120.000	132.0	V	325.0	20.7	8.4
600.000000	37.8	1000.0	120.000	126.0	V	79.0	29.1	8.2

(continuation of the "Limit and Margin" table from column 16 ...)

Frequency (MHz)	Limit - QPK (dBuV/m)	Comment
30.600000	40.0	
37.760000	40.0	
41.000000	40.0	
125.720000	43.5	
145.200000	43.5	
600.000000	46.0	

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)
Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report

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11 Test Equipment List

List of Test Instruments
Test Site1

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
C	Signal spectrum analyzer	Agilent	N9020B	MY59050168	2024-2-19	2025-2-18
RE	EMI Test Receiver	Rohde & Schwarz	ESR3	101906	2023-8-1	2024-7-31
	Signal Analyzer	Rohde & Schwarz	FSV40	101091	2023-8-1	2024-7-31
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	961	2021-9-23	2024-9-22
	Horn Antenna	Rohde & Schwarz	HF907	102868	2021-4-14	2024-4-13
	Horn Antenna	Rohde & Schwarz	HF907	102393	2024-4-14	2027-4-13
	Pre-amplifier	Shenzhen HzEMC	HPA-081843	HYPA23026	2024-4-16	2025-4-15
	Loop antenna	Rohde & Schwarz	HFH2-Z2	100443	2023-6-26	2024-6-25
	Loop antenna	Rohde & Schwarz	HFH2-Z2	100443	2024-6-26	2025-6-25
	Double Ridged Horn Antenna	ETS-Lindgren	3116C	00246076	2023-7-7	2026-7-6
	3m Semi-anechoic chamber	TDK	9X6X6	----	2021-5-8	2024-5-7
	3m Semi-anechoic chamber	TDK	9X6X6	----	2024-5-8	2027-5-7
CE	EMI Test Receiver	Rohde & Schwarz	ESR3	101907	2023-8-1	2024-7-31
	LISN	Rohde & Schwarz	ENV216	101924	2023-8-1	2024-7-31

Measurement Software Information			
Test Item	Software	Manufacturer	Version
C	MTS 8310	MWRFtest	3.0.0.0
RE	EMC 32	Rohde & Schwarz	V10.50.40
CE	EMC 32	Rohde & Schwarz	V9.15.03

C - Conducted RF tests

- Conducted peak output power
- 20dB bandwidth
- Carrier frequency separation
- Number of hopping frequencies
- Dwell Time - Average Time of Occupancy
- Power spectral density
- Spurious RF conducted emissions
- Band edge

12 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Conducted Disturbance at Mains Terminals	150kHz to 30MHz, LISN, 3.16dB
Radiated Disturbance	9kHz to 30MHz, 3.52dB 30MHz to 1GHz, 5.03dB (Horizontal) 5.12dB (Vertical) 1GHz to 18GHz, 5.49dB 18GHz to 40GHz, 5.63dB
RF Conducted Measurement	Power related： 1.16dB Frequency related： 6.00×10^{-8}

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.

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13 Photographs of Test Set-ups

Refer to the < Test Setup photos >.

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14 Photographs of EUT

Refer to the < External Photos > & < Internal Photos >.

----------End of Test Report----------

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