FCC TEST REPORT
FCC ID:2BA2A-HKONE

Report Number.....:	ZKT-230417L2730-01
Date of Test..... :	Apr. 13, 2023 -- Apr. 18, 2023
Date of issue.....:	Apr. 18, 2023
Total number of pages.....:	72
Test Result .....:	PASS
Testing Laboratory.....:	Shenzhen ZKT Technology Co., Ltd.
Address ..... :	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name .....:	Shenzhen Tengxiang Technology Co., LTD
Address ..... :	Room 302, Workshop No. 1, Juyin Technology Industrial Zone, Jihua Street, Longgang District, Shenzhen
Manufacturer's name .....:	Shenzhen Tengxiang Technology Co., LTD
Address ..... :	Room 302, Workshop No. 1, Juyin Technology Industrial Zone, Jihua Street, Longgang District, Shenzhen
Test specification:	
Standard.....:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Test procedure..... :	ANSI C63.10:2013 KDB558074 D0115.247 Meas Guidance v 05r02
Non-standard test method .....:	N/A
Test Report Form No.....:	TRF-EL-112_V0
Test Report Form(s) Originator.....:	ZKT Testing
Master TRF .....:	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
This report shall not be reproduced except in full, without the written approval of ZKT, this document may be altered or revised by ZKT, personal only, and shall be noted in the revision of the document.

Product name..... :	Smartwatch
Trademark .....:	N/A

Model/Type reference..... :	HK One、HK Two、HK Three、HK Four、HK Five、HK Six、HK Seven HK Eight、HK Nine、HK Ten、HK Eleven、HK Twelve、HK Thirteen、HK Fourteen、HK Fifteen、HK Sixteen、HK Seventeen、HK Eighteen、HK Nineteen、HK Twenty
Ratings..... :	DC 5V/1A from adapter;Battery:DC3.7V

Testing procedure and testing location:

Testing Laboratory.....:	Shenzhen ZKT Technology Co., Ltd.
Address.....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature)..... :	Alen He
Reviewer (name + signature).....:	Joe Liu
Approved (name + signature)..... :	Lake Xie

Table of Contents

Page

1. VERSION 6
2. TEST SUMMARY 7
2.1 TEST FACILITY 7
2.2 MEASUREMENT UNCERTAINTY 8
3. GENERAL INFORMATION 9
3.1 GENERAL DESCRIPTION OF EUT 9
3.2 Test Setup Configuration 10
3.3 Support Equipment 10
3.4 Test Mode 11
3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS 12
4. EMC EMISSION TEST 13
4.1 Conducted emissions 13
4.1.1 POWER LINE CONDUCTED EMISSION Limits 13
4.1.2 TEST PROCEDURE 13
4.1.3 DEVIATION FROM TEST STANDARD 13
4.1.4 TEST SETUP 14
4.1.5 EUT OPERATING CONDITIONS 14
4.1.6 Test Result 15
4.2 Radiated emissions 17
4.2.1 Radiated Emission Limits 17
4.2.2 TEST PROCEDURE 17
4.2.3 DEVIATION FROM TEST STANDARD 18
4.2.4 TEST SETUP 18
4.2.5 EUT OPERATING CONDITIONS 19
4.2.6 TEST RESULTS 20
5. RADIATED BAND EMISSION MEASUREMENT 24
5.1 Test Requirement: 24
5.2 TEST PROCEDURE 24
5.3 DEVIATION FROM TEST STANDARD 25
5.4 TEST SETUP 25
5.5 EUT OPERATING CONDITIONS 25
5.6 TEST RESULT 26
6. CONDUCTED BAND EDGE AND SPURIOUS EMISSION 27
6.1 Limit 27
6.2 Test Setup 27
6.3 Test procedure 27
6.4 DEVIATION FROM STANDARD 27
6.5 Test Result 27
7.1 Test Setup 28
7.2 Limit 28
7.3 Test procedure 28
7.4 DEVIATION FROM STANDARD 28

7.5 Test Result 28
8. MAXIMUM PEAK OUTPUT POWER 29
8.1 Block Diagram Of Test Setup 29
8.2 Limit 29
8.3 Test procedure 29
8.4 DEVIATION FROM STANDARD 29
8.5 Test Result 29
9. HOPPING CHANNEL SEPARATION 30
9.1 Test Setup 30
9.2 Test procedure 30
9.3 DEVIATION FROM STANDARD 30
9.4 Test Result 30
10.NUMBER OF HOPPING FREQUENCY 31
10.1 Test Setup 31
10.2 Test procedure 31
10.3 DEVIATION FROM STANDARD 31
10.4 Test Result 31
11. DWELL TIME 32
11.1 Test Setup 32
11.2 Test procedure 32
11.3 DEVIATION FROM STANDARD 32
11.4 Test Result 32
12. ANTENNA REQUIREMENT 33
13.Appendix1 34
13.1 -20DB BANDWIDTH 34
13.2. PEAK OUTPUT POWER 39
13.3. SPURIOUS EMISSIONS 44
13.4. BANDEDGE 53
13.5. CARRIER FREQUENCIES SEPARATION (HOPPING) 65
13.6. NUMBER OF HOPPING CHANNEL (HOPPING) 67
13.7. DWELL TIME (HOPPING) 69
14. TEST SETUP PHOTO 72
15. EUT CONSTRUCTIONAL DETAILS 72

1. VERSION

Report No.	Version	Description	Approved
ZKT-230417L2730-01	Rev.01	Initial issue of report	Apr. 18, 2023

2. TEST SUMMARY

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Result	Remark
15.203/15.247 (c)	Antenna Requirement	PASS	
15.207	AC Power Line Conducted Emission	PASS	
15.247 (b)(1)	Conducted Peak Output Power	PASS	
15.247 (a)(1)	20dB Occupied Bandwidth	PASS	
15.247 (a)(1)	Carrier Frequencies Separation	PASS	
15.247 (a)(1)(iii)	Hopping Channel Number	PASS	
15.247 (a)(1)(iii)	Dwell Time	PASS	
15.205/15.209	Radiated Emission	PASS	
15.247(d)	Band Edge	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power conducted	±0.16dB
3	Spurious emissions conducted	±0.21dB
4	All emissions radiated(<1G)	±4.68dB
5	All emissions radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Smartwatch
Model No.:	HK One
Serial No.:	HK Two、HK Three、HK Four、HK Five、HK Six、HK Seven HK Eight、HK Nine、HK Ten、HK Eleven、HK Twelve、HK Thirteen、 HK Fourteen、HK Fifteen、HK Sixteen、HK Seventeen、HK Eighteen、 HK Nineteen、HK Twenty
Model difference:	The product has many models, only the model name is different, and the other parts such as the circuit principle, pcb and electrical structure are the same.
Hardware Version:	V1.0
Software Version:	V1.0
Sample(s) Status:	Engineer sample
Channel numbers:	79
Channel separation:	2402MHz~2480MHz
Modulation technology:	GFSK, π/4DQPSK, 8DPSK
Antenna Type:	Internal antenna
Antenna gain:	2.7dBi
Power supply:	DC 5V/1A from adapter;Battery:DC3.7V

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 below:

Test channel	Frequency
The lowest channel	2402MHz
The middle channel	2441MHz
The Highest channel	2480MHz

3.2 Test Setup Configuration

Conducted Emission

adapter — EUT

Radiated Emission

Adapter — EUT

Conducted Spurious

EUT

3.3 Support Equipment

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	AC Adapter	PISEN	TS-C051	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
1	/	/	/	/

Note:
(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

3.4 Test Mode

TEST Mode	TEST Mode DESCRIPTION
Transmitting mode	Keep the EUT in continuously transmitting mode with modulation. (hopping and non hopping mode all have been tested, non hopping mode is worse case for RE)
Remark: Full battery is used during all test except ac conducted emission, DH1,DH3, DH5 all have been tested, during the test, GFSK, Pi/4QPSK, 8-DPSK modulation were all pre-scanned Only the GFSK, of the worst mode would be recorded in this report.	

3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	Oct. 18, 2022	Oct. 17, 2023
2	Spectrum Analyzer (1GHz-40GHz)	R&S	FSQ	100363	Oct. 17, 2022	Oct. 16, 2023
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Oct. 18, 2022	Oct. 17, 2023
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	N/A	Oct. 17, 2022	Oct. 16, 2023
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	Oct. 17, 2022	Oct. 16, 2023
6	Loop Antenna	TESEQ	HLA6121	58357	Oct. 17, 2022	Oct. 16, 2023
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	060747	Oct. 17, 2022	Oct. 16, 2023
8	Amplifier (1GHz-26.5GHz)	Agilent	8449B	3008A00315	Oct. 18, 2022	Oct. 17, 2023
9	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Oct. 18, 2022	Oct. 17, 2023
10	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Oct. 18, 2022	Oct. 17, 2023
11	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Oct. 18, 2022	Oct. 17, 2023
12	ESG Signal Generator	Agilent	E4421B	N/A	Oct. 18, 2022	Oct. 17, 2023
13	Signal Generator	Agilent	N5182A	N/A	Oct. 22, 2022	Oct. 21, 2023
14	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	Oct. 17, 2022	Oct. 16, 2023
15	MWRF Power Meter Test system	MW	MW100-RPCB	N/A	Oct. 22, 2022	Oct. 21, 2023
16	D.C. Power Supply	LongWei	TPR-6405D	N/A	\	\
17	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\
18	RF Software	MW	MTS8310	V2.0.0.0	\	\
19	Turntable	MF	MF-7802BS	N/A	\	\
20	Antenna tower	MF	MF-7802BS	N/A	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Oct. 22, 2022	Oct. 21, 2023
2	LISN	CYBERTEK	EM5040A	E1850400149	Oct. 22, 2022	Oct. 21, 2023
3	Test Cable	N/A	C01	N/A	Oct. 18, 2022	Oct. 17, 2023
4	Test Cable	N/A	C02	N/A	Oct. 18, 2022	Oct. 17, 2023
5	EMI Test Receiver	R&S	ESCI3	101393	Oct. 17, 2022	Oct. 16, 2023
6	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\

4. EMC EMISSION TEST

4.1 Conducted emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

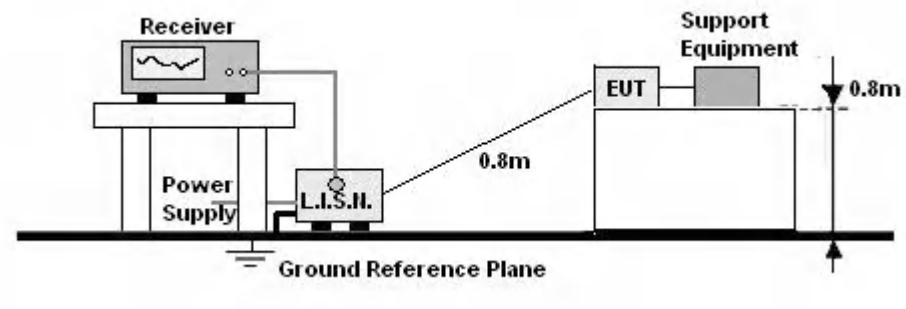
4.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP

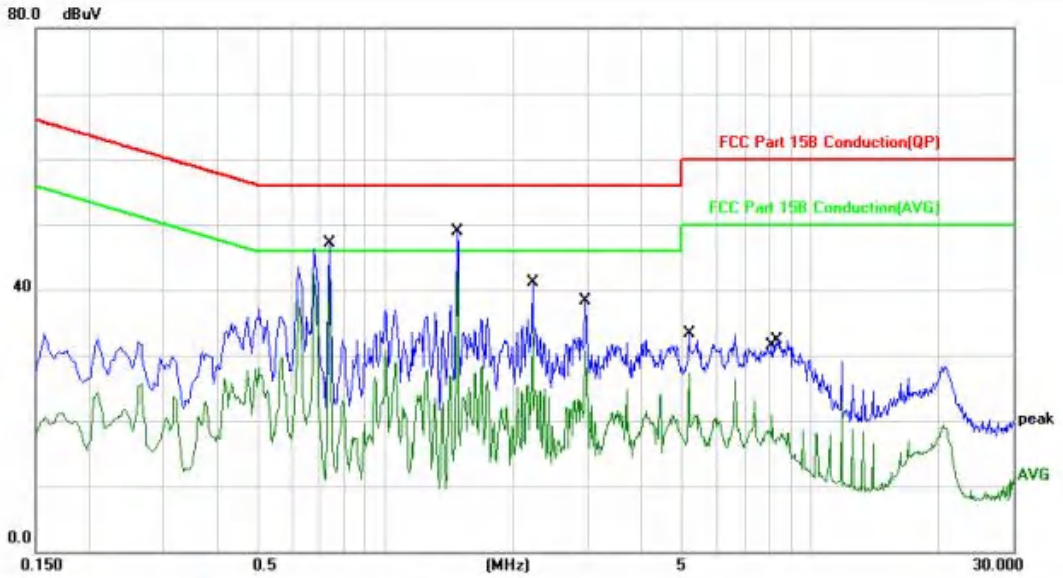


4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.1.6 Test Result

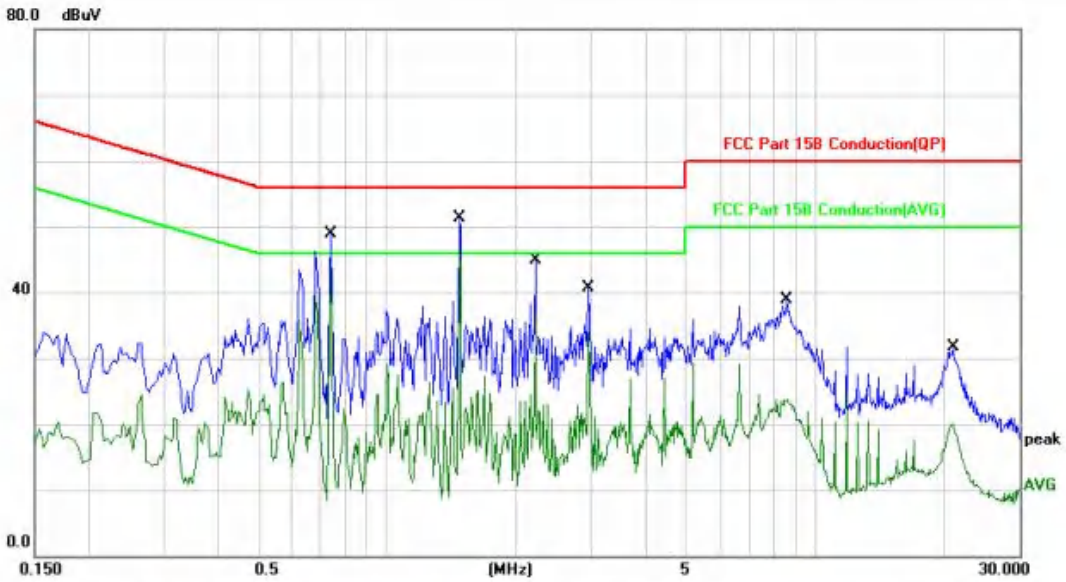
Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode	GFSK-lowest channel



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.7380	36.90	10.21	47.11	56.00	-8.89	QP	
2		0.7380	31.21	10.21	41.42	46.00	-4.58	AVG	
3		1.4780	38.75	10.10	48.85	56.00	-7.15	QP	
4	*	1.4780	32.92	10.10	43.02	46.00	-2.98	AVG	
5		2.2180	31.03	10.02	41.05	56.00	-14.95	QP	
6		2.2180	23.59	10.02	33.61	46.00	-12.39	AVG	
7		2.9539	28.38	9.88	38.26	56.00	-17.74	QP	
8		2.9539	20.77	9.88	30.65	46.00	-15.35	AVG	
9		5.1700	23.38	9.96	33.34	60.00	-26.66	QP	
10		5.1700	17.36	9.96	27.32	50.00	-22.68	AVG	
11		8.1300	11.01	9.95	20.96	50.00	-29.04	AVG	
12		8.3500	22.26	9.95	32.21	60.00	-27.79	QP	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode	GFSK-lowest channel



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.7420	38.73	10.21	48.94	56.00	-7.06	QP	
2		0.7420	33.87	10.21	44.08	46.00	-1.92	AVG	
3		1.4780	41.12	10.10	51.22	56.00	-4.78	QP	
4	*	1.4780	35.55	10.10	45.65	46.00	-0.35	AVG	
5		2.2180	34.85	10.02	44.87	56.00	-11.13	QP	
6		2.2180	26.51	10.02	36.53	46.00	-9.47	AVG	
7		2.9580	30.77	9.88	40.65	56.00	-15.35	QP	
8		2.9580	24.12	9.88	34.00	46.00	-12.00	AVG	
9		8.5820	28.92	9.94	38.86	60.00	-21.14	QP	
10		8.5820	13.86	9.94	23.80	50.00	-26.20	AVG	
11		20.8220	10.26	9.78	20.04	50.00	-29.96	AVG	
12		20.9900	21.88	9.78	31.66	60.00	-28.34	QP	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

4.2 Radiated emissions

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

4.2.1 Radiated Emission Limits

Frequencies (MHz)	Field Strength (micorvolts/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

LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height 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.

d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

Note:

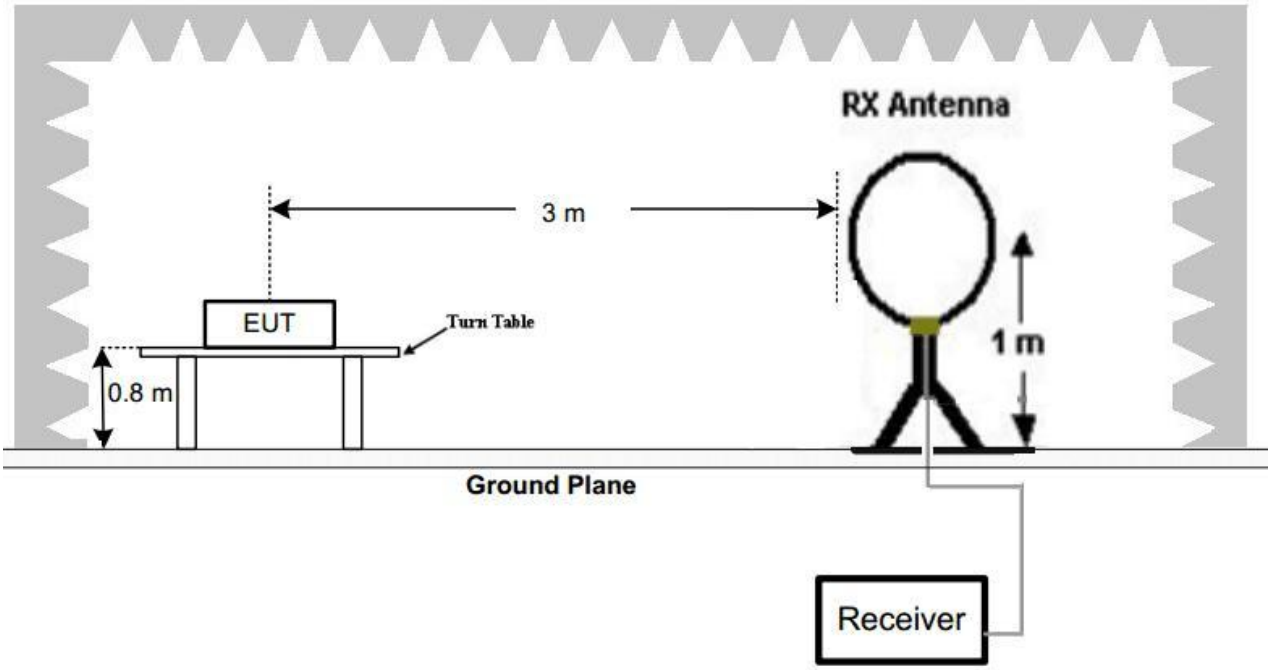
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

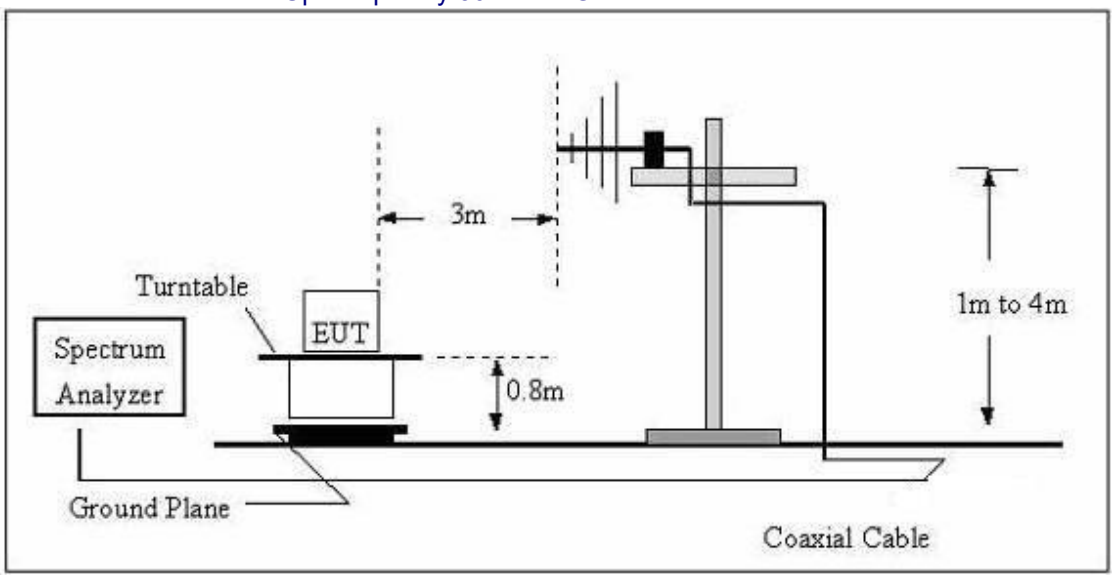
No deviation

4.2.4 TEST SETUP

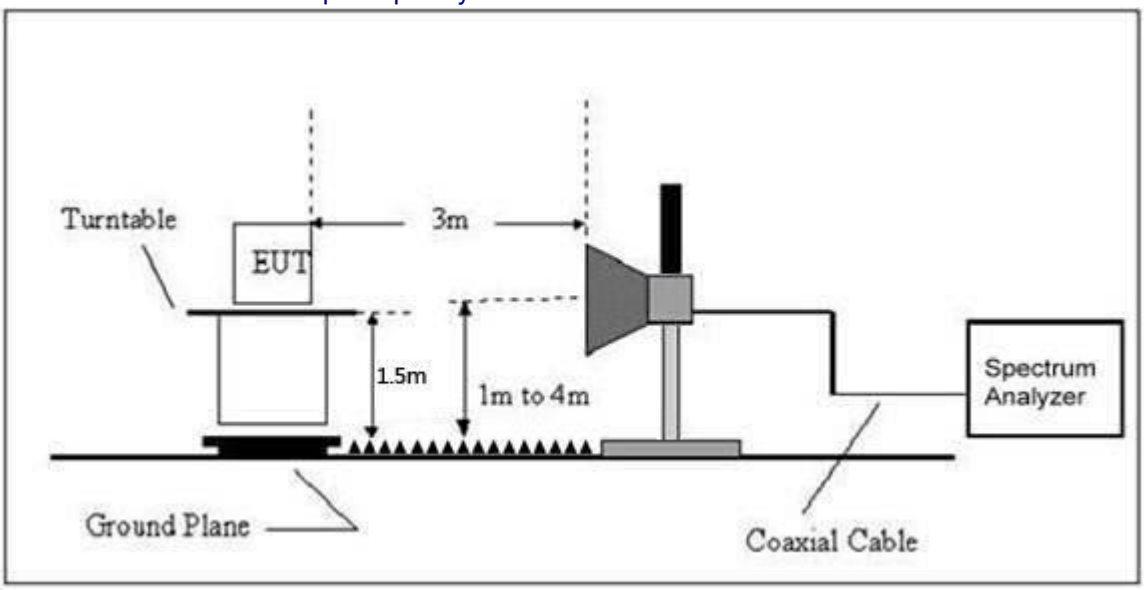
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

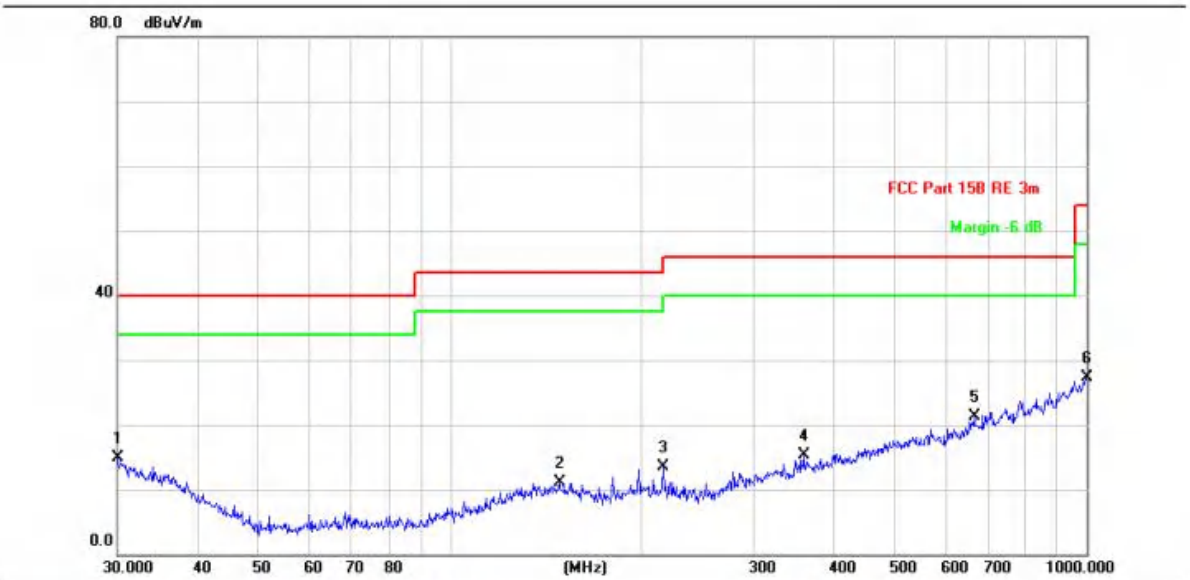
4.2.6 TEST RESULTS

Between 9KHz – 30MHz

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) & RSS-Gen 6.13, the test result no need to reported.

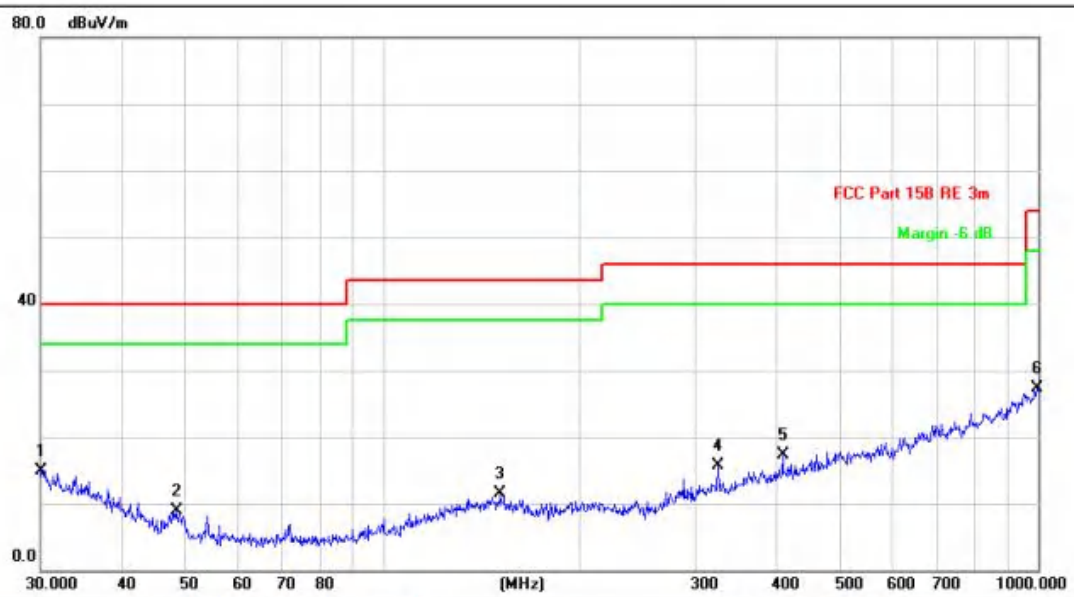
Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode	GFSK-lowest channel



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		30.0000	19.42	-4.60	14.82	40.00	-25.18	QP	100	57	
2		148.4410	20.80	-9.60	11.20	43.50	-32.30	QP	100	34	
3		216.0240	23.73	-10.24	13.49	46.00	-32.51	QP	100	179	
4		359.1860	21.91	-6.67	15.24	46.00	-30.76	QP	100	257	
5	*	665.8035	21.89	-0.51	21.38	46.00	-24.62	QP	100	34	
6		1000.0000	21.11	6.26	27.37	54.00	-26.63	QP	100	49	

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode	GFSK-lowest channel



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1	*	30.1054	19.57	-4.65	14.92	40.00	-25.08	QP	100	300	
2		48.3318	23.44	-14.63	8.81	40.00	-31.19	QP	100	147	
3		151.0666	21.13	-9.58	11.55	43.50	-31.95	QP	100	274	
4		324.4561	23.23	-7.49	15.74	46.00	-30.26	QP	100	168	
5		407.5145	22.94	-5.54	17.40	46.00	-28.60	QP	100	38	
6		996.4996	21.22	6.16	27.38	54.00	-26.62	QP	100	68	

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.
3.The test data shows only the worst case

1GHz~25GHz

GFSK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2402MHz									
V	4804	56.73	30.55	5.77	24.66	56.61	74.00	-17.39	Pk
V	4804	40.21	30.55	5.77	24.66	40.09	54.00	-13.91	AV
V	7206	53.52	30.33	6.32	24.55	54.06	74.00	-19.94	Pk
V	7206	40.74	30.33	6.32	24.55	41.28	54.00	-12.72	AV
V	9608	51.96	30.85	7.45	24.69	53.25	74.00	-20.75	Pk
V	9608	36.50	30.85	7.45	24.69	37.79	54.00	-16.21	AV
H	4804	55.63	30.55	5.77	24.66	55.51	74.00	-18.49	Pk
H	4804	39.27	30.55	5.77	24.66	39.15	54.00	-14.85	AV
H	7206	54.01	30.33	6.32	24.55	54.55	74.00	-19.45	Pk
H	7206	39.17	30.33	6.32	24.55	39.71	54.00	-14.29	AV
H	9608	50.62	30.85	7.45	24.69	51.91	74.00	-22.09	Pk
H	9608	37.72	30.85	7.45	24.69	39.01	54.00	-14.99	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:2441MHz									
V	4882	54.26	30.55	5.77	24.66	54.14	74.00	-19.86	Pk
V	4882	40.92	30.55	5.77	24.66	40.80	54.00	-13.20	AV
V	7323	54.59	30.33	6.32	24.55	55.13	74.00	-18.87	Pk
V	7323	41.25	30.33	6.32	24.55	41.79	54.00	-12.21	AV
V	9764	50.31	30.85	7.45	24.69	51.60	74.00	-22.40	Pk
V	9764	38.30	30.85	7.45	24.69	39.59	54.00	-14.41	AV
H	4882	53.76	30.55	5.77	24.66	53.64	74.00	-20.36	Pk
H	4882	40.66	30.55	5.77	24.66	40.54	54.00	-13.46	AV
H	7323	54.20	30.33	6.32	24.55	54.74	74.00	-19.26	Pk
H	7323	40.25	30.33	6.32	24.55	40.79	54.00	-13.21	AV
H	9764	50.91	30.85	7.45	24.69	52.20	74.00	-21.80	Pk
H	9764	37.42	30.85	7.45	24.69	38.71	54.00	-15.29	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2480MHz									
V	4960	54.39	30.55	5.77	24.66	54.27	74.00	-19.73	Pk
V	4960	40.15	30.55	5.77	24.66	40.03	54.00	-13.97	AV
V	7440	54.46	30.33	6.32	24.55	55.00	74.00	-19.00	Pk
V	7440	40.49	30.33	6.32	24.55	41.03	54.00	-12.97	AV
V	9920	51.26	30.85	7.45	24.69	52.55	74.00	-21.45	Pk
V	9920	36.59	30.85	7.45	24.69	37.88	54.00	-16.12	AV
H	4960	56.68	30.55	5.77	24.66	56.56	74.00	-17.44	Pk
H	4960	41.99	30.55	5.77	24.66	41.87	54.00	-12.13	AV
H	7440	54.29	30.33	6.32	24.55	54.83	74.00	-19.17	Pk
H	7440	40.86	30.33	6.32	24.55	41.40	54.00	-12.60	AV
H	9920	52.09	30.85	7.45	24.69	53.38	74.00	-20.62	Pk
H	9920	38.77	30.85	7.45	24.69	40.06	54.00	-13.94	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
4. During the test, pre-scan the GFSK, Pi/4QPSK, 8-DPSK modulation, and found the GFSK modulation which it is worse case.

5. RADIATED BAND EMISSION MEASUREMENT

5.1 Test Requirement:

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
Above 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

5.2 TEST PROCEDURE

Above 1GHz test procedure as below:

a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height 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.
d. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
g. Test the EUT in the lowest channel,the Highest channel

Note:

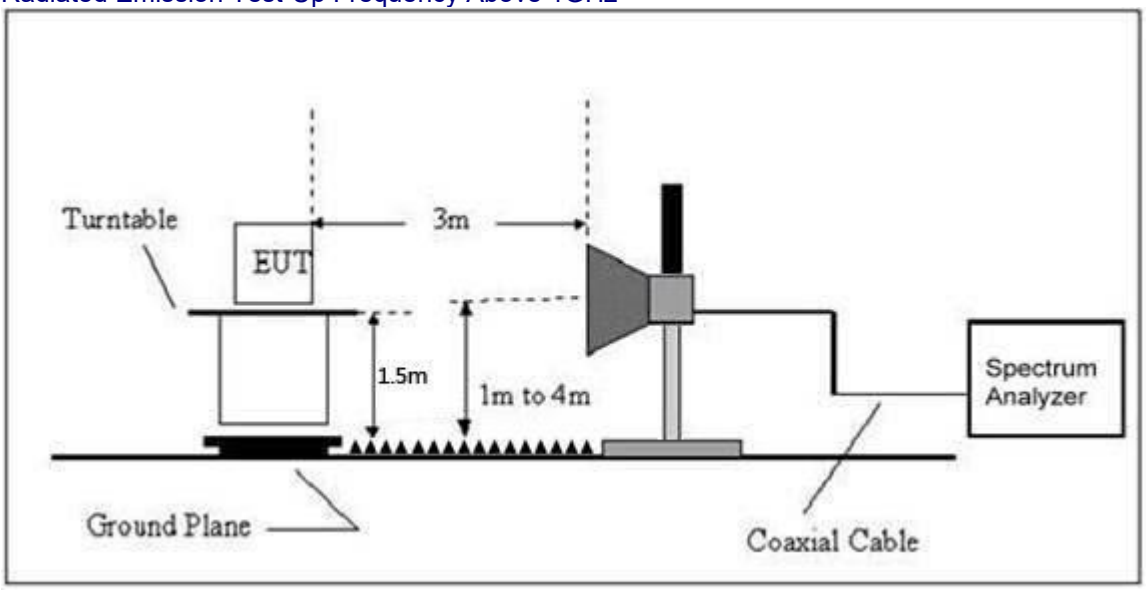
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

5.3 DEVIATION FROM TEST STANDARD

No deviation

5.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



5.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULT

	Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Margin	Detector Type	Result
GFSK	Low Channel: 2402MHz										
	H	2390.00	55.77	30.22	4.85	23.98	54.38	74	-19.62	PK	PASS
	H	2390.00	36.30	30.22	4.85	23.98	34.91	54	-19.09	AV	PASS
	H	2400.00	54.62	30.22	4.85	23.98	53.23	74	-20.77	PK	PASS
	H	2400.00	39.40	30.22	4.85	23.98	38.01	54	-15.99	AV	PASS
	V	2390.00	51.17	30.22	4.85	23.98	49.78	74	-24.22	PK	PASS
	V	2390.00	39.81	30.22	4.85	23.98	38.42	54	-15.58	AV	PASS
	V	2400.00	52.59	30.22	4.85	23.98	51.20	74	-22.80	PK	PASS
	V	2400.00	37.64	30.22	4.85	23.98	36.25	54	-17.75	AV	PASS
	High Channel: 2480MHz										
	H	2483.50	50.02	30.22	4.85	23.98	48.63	74	-25.37	PK	PASS
	H	2485.50	35.82	30.22	4.85	23.98	34.43	54	-19.57	AV	PASS
	H	2500.00	53.11	30.22	4.85	23.98	51.72	74	-22.28	PK	PASS
	H	2500.00	35.92	30.22	4.85	23.98	34.53	54	-19.47	AV	PASS
	V	2483.50	52.05	30.22	4.85	23.98	50.66	74	-23.34	PK	PASS
	V	2485.50	39.31	30.22	4.85	23.98	37.92	54	-16.08	AV	PASS
	V	2500.00	58.19	30.22	4.85	23.98	56.80	74	-17.20	PK	PASS
	V	2500.00	37.46	30.22	4.85	23.98	36.07	54	-17.93	AV	PASS

Remark:1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
Remark:2. During the test, pre-scan the GFSK, Pi/4QPSK, 8-DPSK modulation, and found the GFSK modulation which it is worse case.

6. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D0115.247 Meas Guidancev05r02

6.1 Limit

Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

6.2 Test Setup

6.3 Test procedure

Using the following spectrum analyzer setting:
A) Set the RBW = 100KHz.
B) Set the VBW = 300KHz.
C) Sweep time = auto couple.
D) Detector function = peak.
E) Trace mode = max hold.
F) Allow trace to fully stabilize.

6.4 DEVIATION FROM STANDARD

No deviation.

6.5 Test Result

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

7. 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013

7.1 Test Setup

7.2 Limit

N/A

7.3 Test procedure

1. Set RBW = 30 kHz.

2. Set the video bandwidth (VBW) ≥ 3 x RBW.

3. Detector = Peak.

4. Trace mode = max hold.

5. Sweep = auto couple.

6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.4 DEVIATION FROM STANDARD

No deviation.

7.5 Test Result

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

8. Maximum Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(1)
Test Method:	ANSI C63.10:2013
Limit:	21

8.1 Block Diagram Of Test Setup

8.2 Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

8.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 3MHz. VBW = 8MHz. Sweep = auto; Detector Function = Peak.

3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

8.4 DEVIATION FROM STANDARD

No deviation.

8.5 Test Result

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

9. Hopping Channel Separation

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=100KHz, VBW=300KHz, detector=Peak
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)

9.1 Test Setup

9.2 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port

to the spectrum.

2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz , Span = 3.0MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

9.3 DEVIATION FROM STANDARD

No deviation.

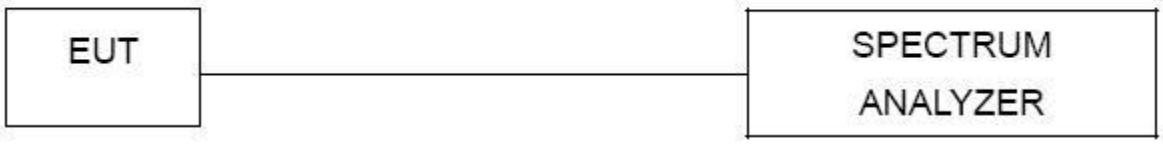
9.4 Test Result

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

10.NUMBER OF HOPPING FREQUENCY

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=100kHz, VBW=300kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak
Limit:	15 channels

10.1 Test Setup



10.2 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. 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.

4. Set the spectrum analyzer: Start Frequency = 2.4GHz, Stop Frequency = 2.4835GHz. Sweep=auto;

10.3 DEVIATION FROM STANDARD

No deviation.

10.4 Test Result

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

11. DWELL TIME

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=1MHz, VBW=3MHz, Span=0Hz, Detector=Peak
Limit:	0.4 Second

11.1 Test Setup

11.2 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set spectrum analyzer span = 0Hz;

3. Set RBW = 1MHz and VBW = 1MHz.Sweep = as necessary to capture the entire dwell time per hopping channel. Set the EUT for DH5, DH3 and DH1 packet transmitting.

4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g.. data rate. modulation format. etc.). repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

11.3 DEVIATION FROM STANDARD

No deviation.

11.4 Test Result

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

12. Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

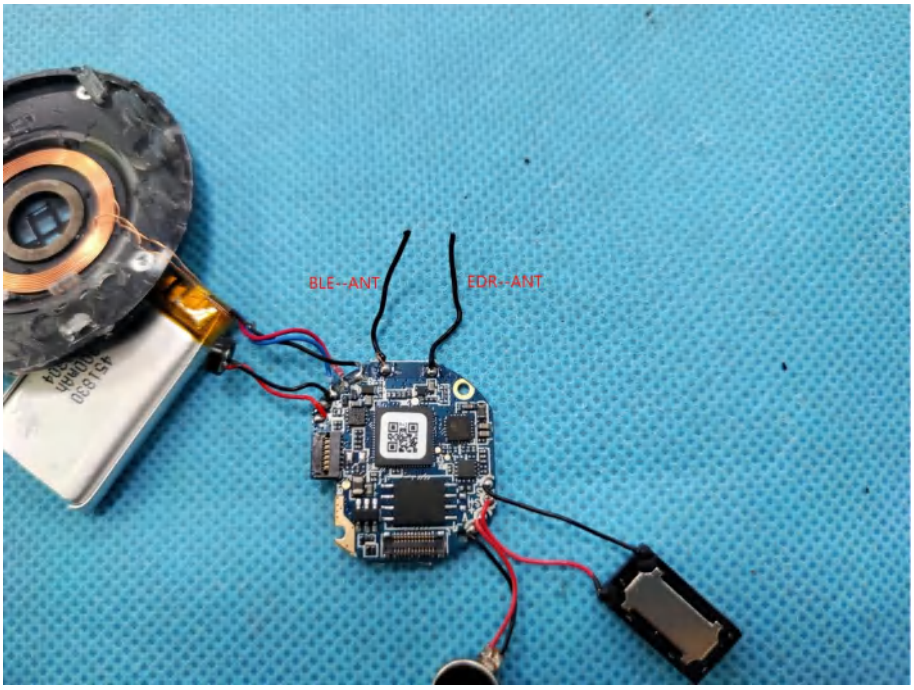
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

EUT Antenna:

The antenna is Internal antenna, the best case gain of the antennas are 2.7dBi, reference to the below photo for details ANT for BT

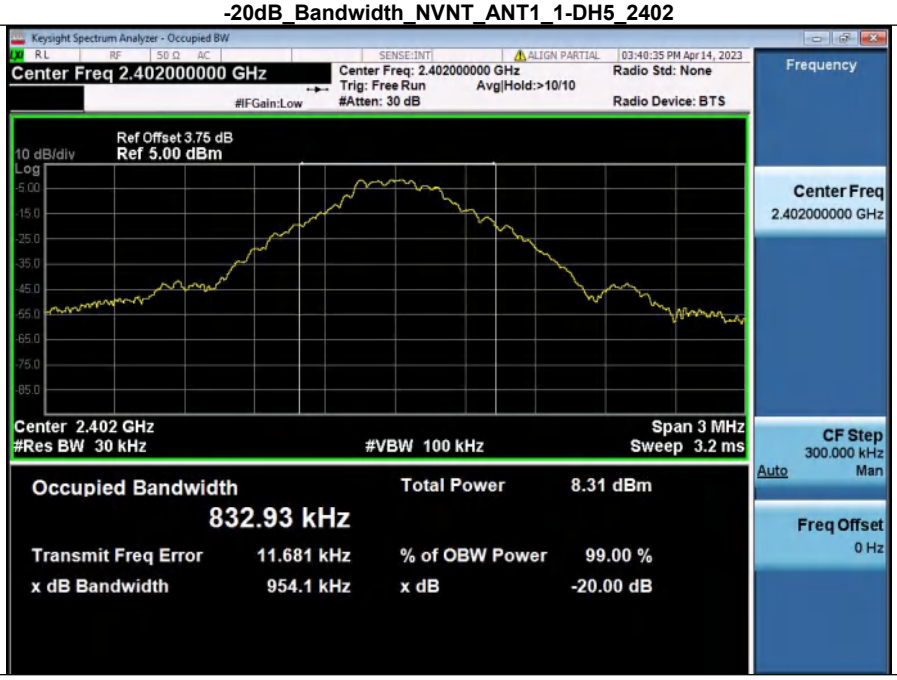


13.Appendix1

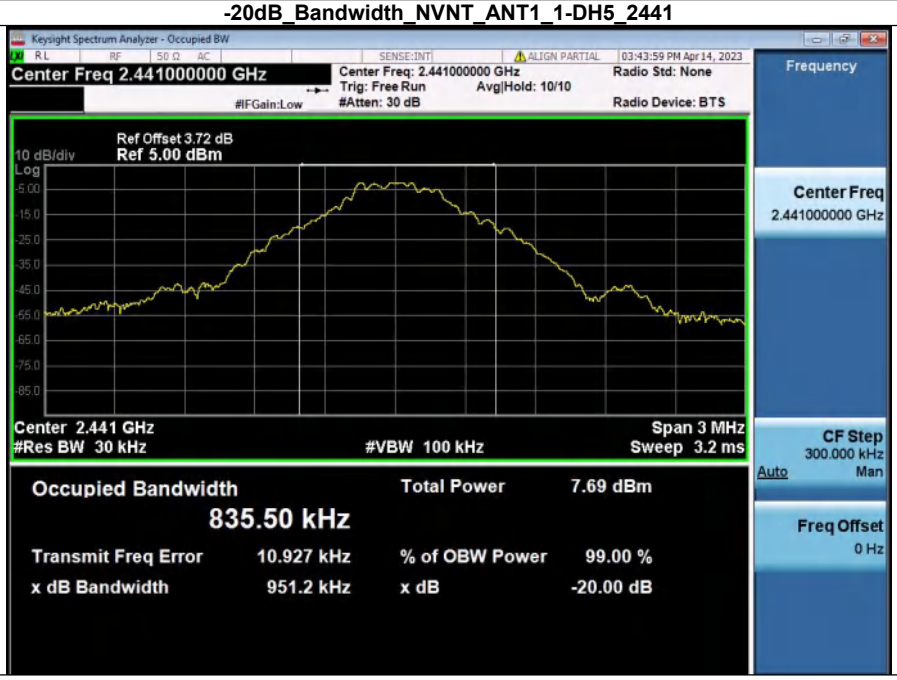
13.1 -20DB BANDWIDTH

Condition	Antenna	Modulation	Frequency (MHz)	-20dB BW(MHz)	if larger than CFS
NVNT	ANT1	1-DH5	2402.00	0.954	Yes
NVNT	ANT1	1-DH5	2441.00	0.951	Yes
NVNT	ANT1	1-DH5	2480.00	0.950	Yes
NVNT	ANT1	2-DH5	2402.00	1.272	Yes
NVNT	ANT1	2-DH5	2441.00	1.272	Yes
NVNT	ANT1	2-DH5	2480.00	1.272	Yes
NVNT	ANT1	3-DH5	2402.00	1.281	Yes
NVNT	ANT1	3-DH5	2441.00	1.278	Yes
NVNT	ANT1	3-DH5	2480.00	1.283	Yes

-20dB_Bandwidth_NVNT_ANT1_1-DH5_2402



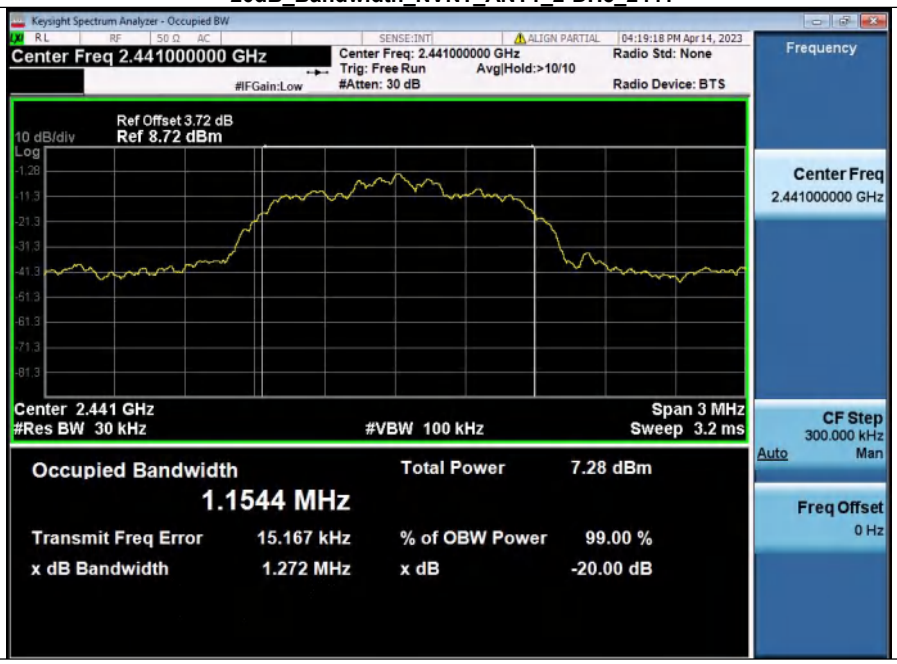
-20dB_Bandwidth_NVNT_ANT1_1-DH5_2441



-20dB_Bandwidth_NVNT_ANT1_1-DH5_2480

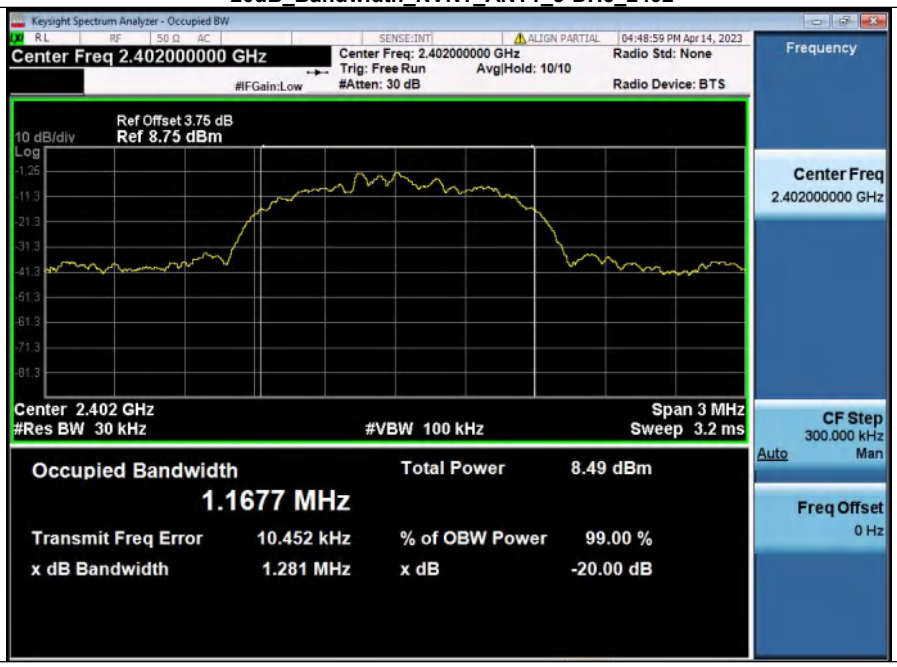
-20dB_Bandwidth_NVNT_ANT1_2-DH5_2402

-20dB_Bandwidth_NVNT_ANT1_2-DH5_2441

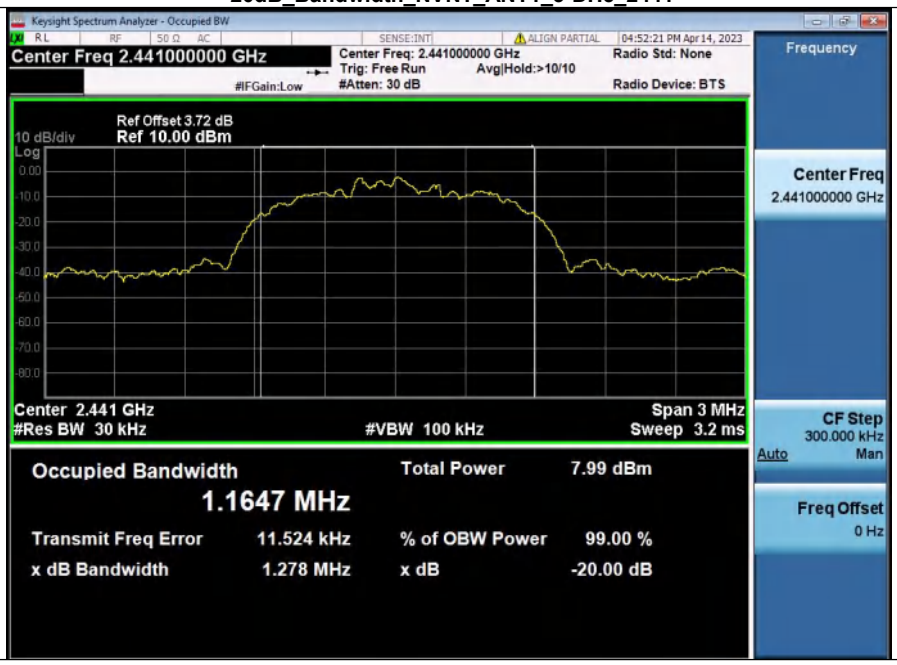


-20dB_Bandwidth_NVNT_ANT1_2-DH5_2480

-20dB_Bandwidth_NVNT_ANT1_3-DH5_2402



-20dB_Bandwidth_NVNT_ANT1_3-DH5_2441

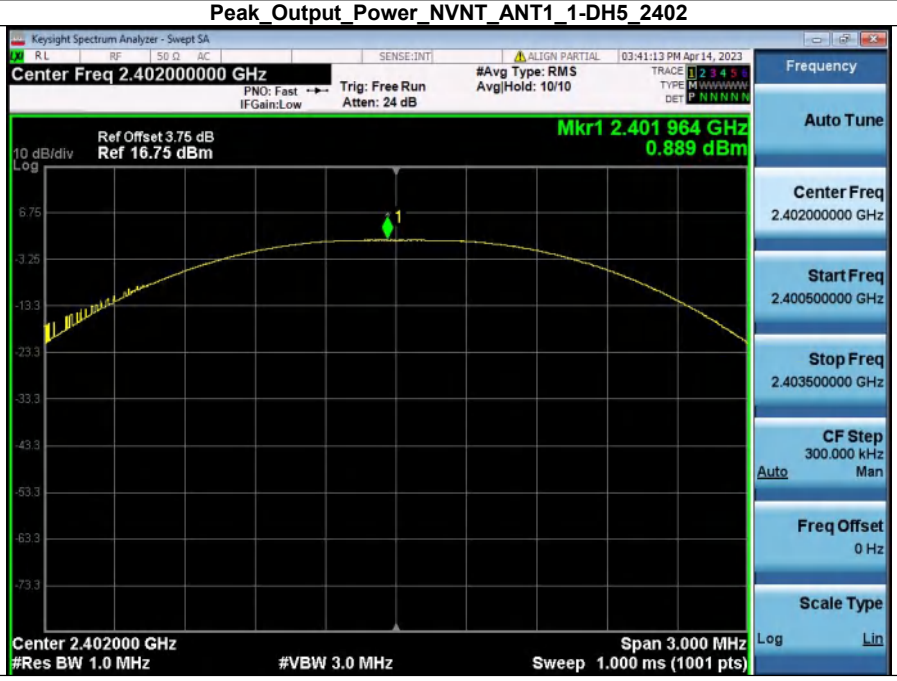


-20dB_Bandwidth_NVNT_ANT1_3-DH5_2480

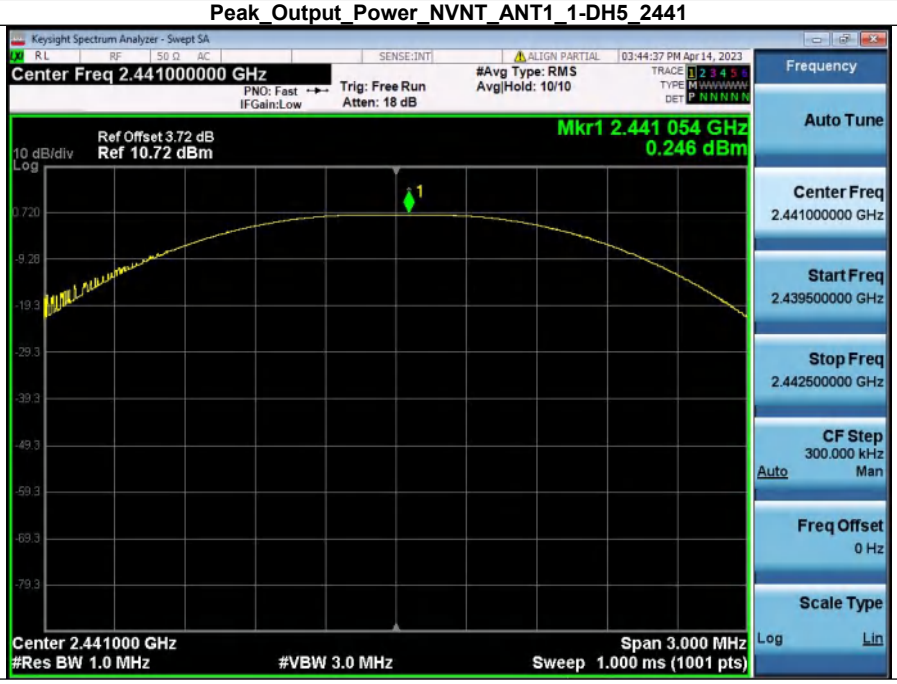
13.2. PEAK OUTPUT POWER

Condition	Antenna	Modulation	Frequency (MHz)	Max. Conducted Power(dBm)	Max. Conducted Power(mW)	Limit(mW)	Result
NVNT	ANT1	1-DH5	2402.00	0.89	1.23	125	Pass
NVNT	ANT1	1-DH5	2441.00	0.25	1.06	125	Pass
NVNT	ANT1	1-DH5	2480.00	-0.39	0.91	125	Pass
NVNT	ANT1	2-DH5	2402.00	2.06	1.61	125	Pass
NVNT	ANT1	2-DH5	2441.00	1.50	1.41	125	Pass
NVNT	ANT1	2-DH5	2480.00	0.62	1.15	125	Pass
NVNT	ANT1	3-DH5	2402.00	2.92	1.96	125	Pass
NVNT	ANT1	3-DH5	2441.00	2.33	1.71	125	Pass
NVNT	ANT1	3-DH5	2480.00	1.53	1.42	125	Pass

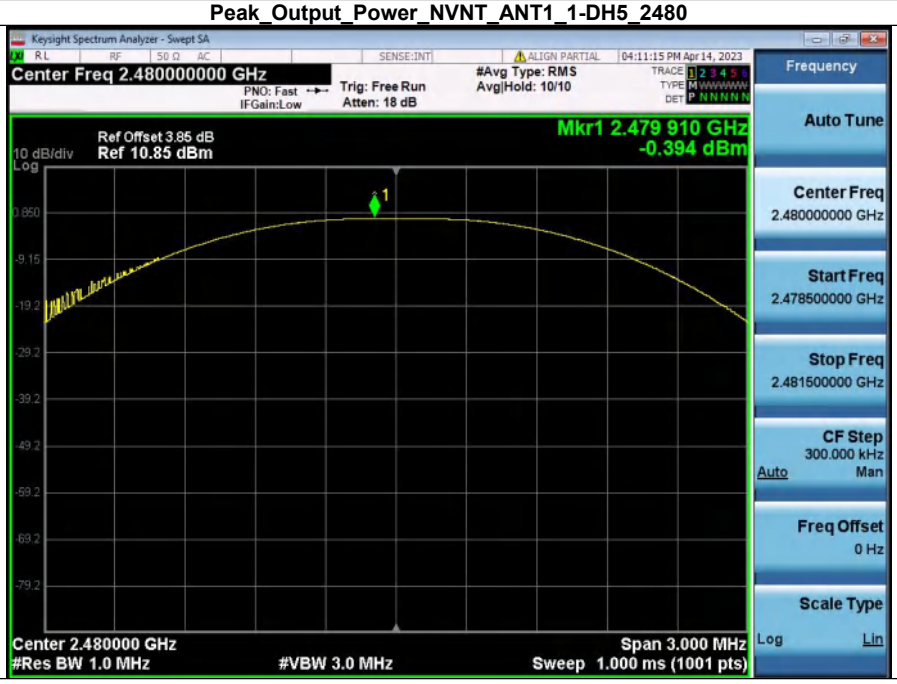
Peak_Output_Power_NVNT_ANT1_1-DH5_2402



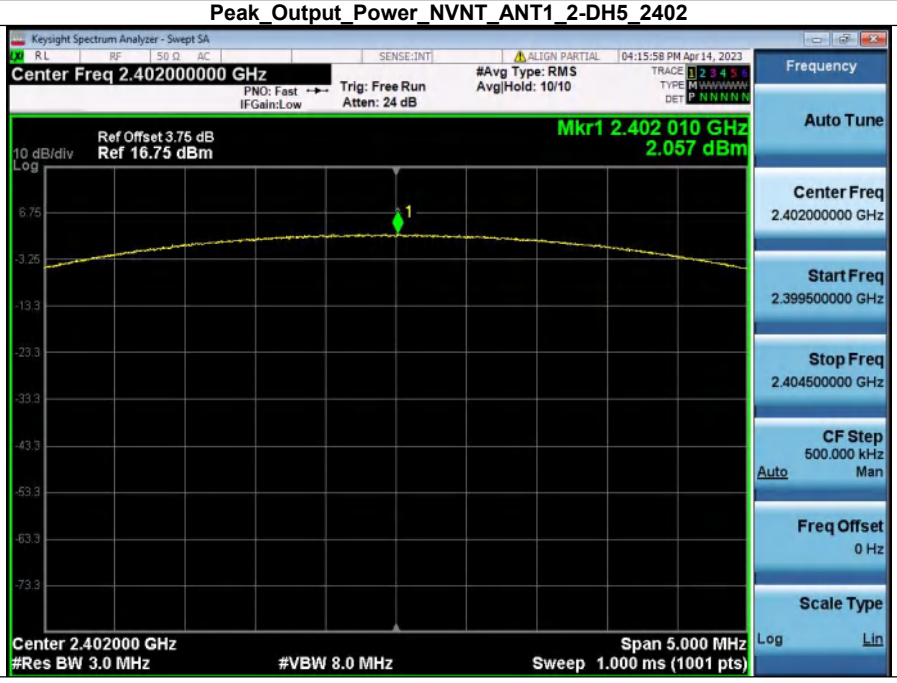
Peak_Output_Power_NVNT_ANT1_1-DH5_2441



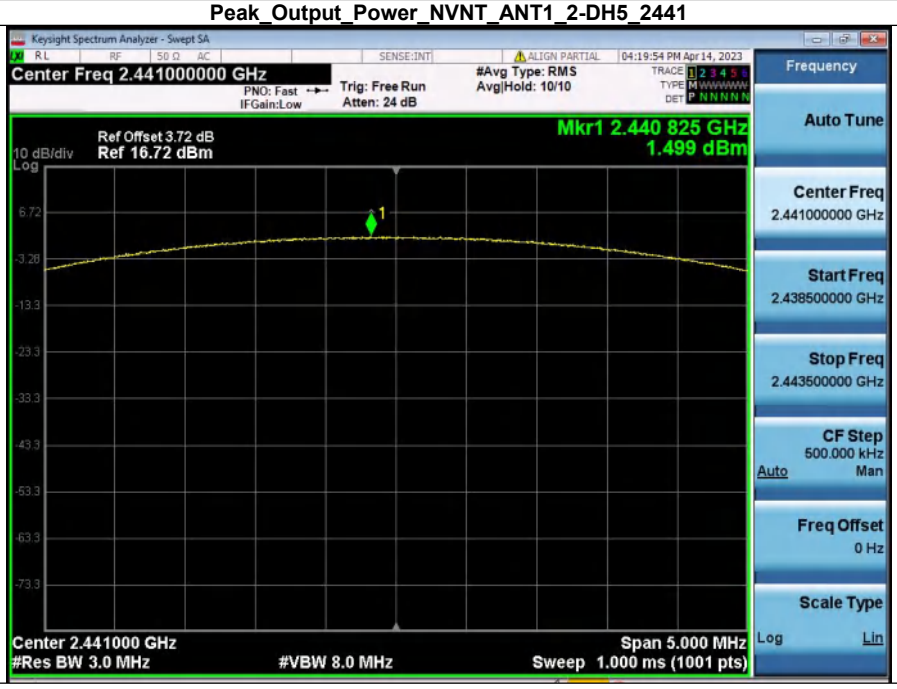
Peak_Output_Power_NVNT_ANT1_1-DH5_2480



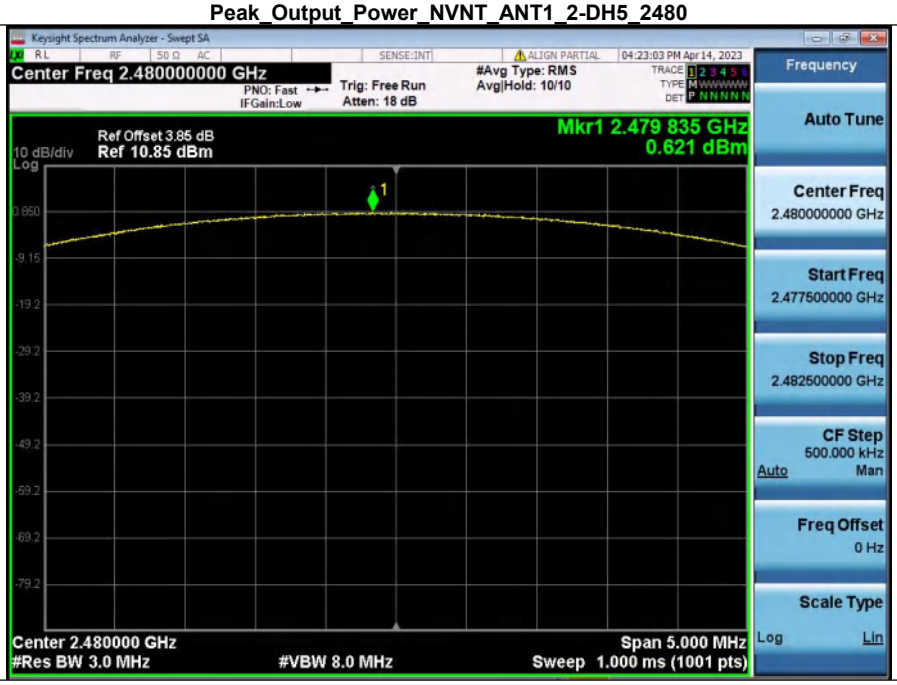
Peak_Output_Power_NVNT_ANT1_2-DH5_2402



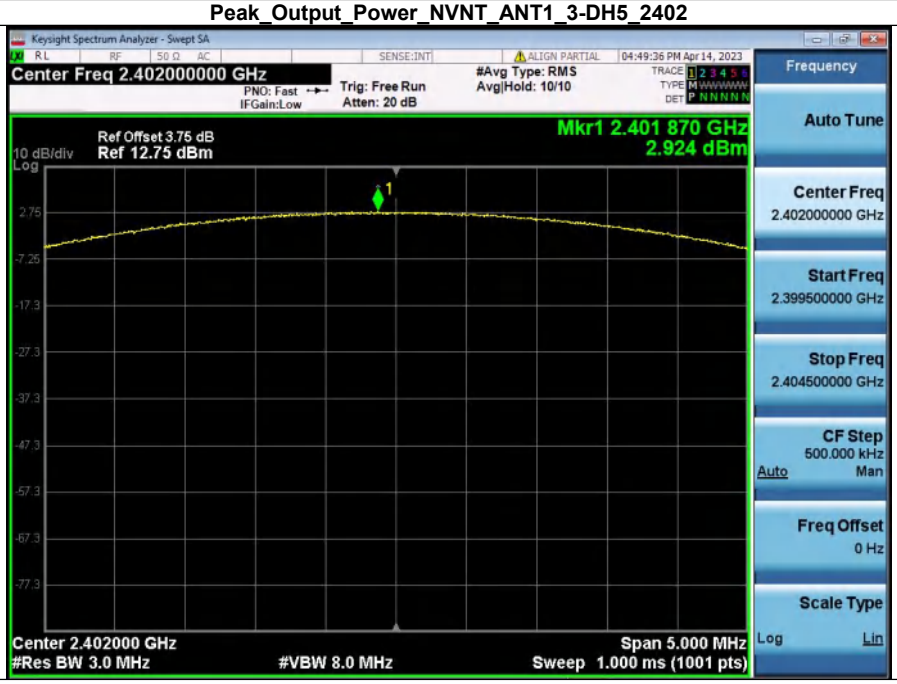
Peak_Output_Power_NVNT_ANT1_2-DH5_2441



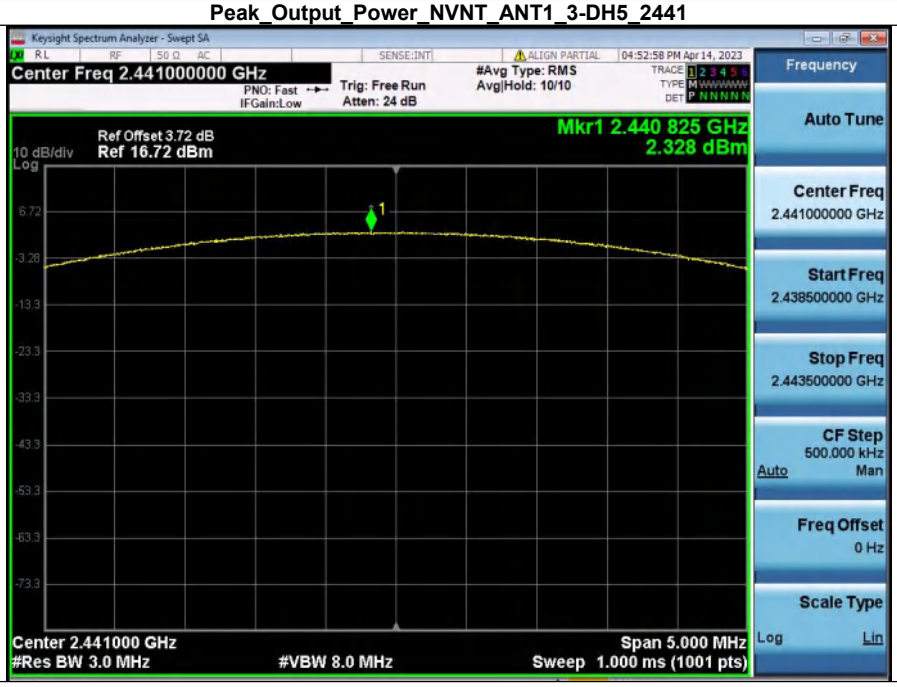
Peak_Output_Power_NVNT_ANT1_2-DH5_2480



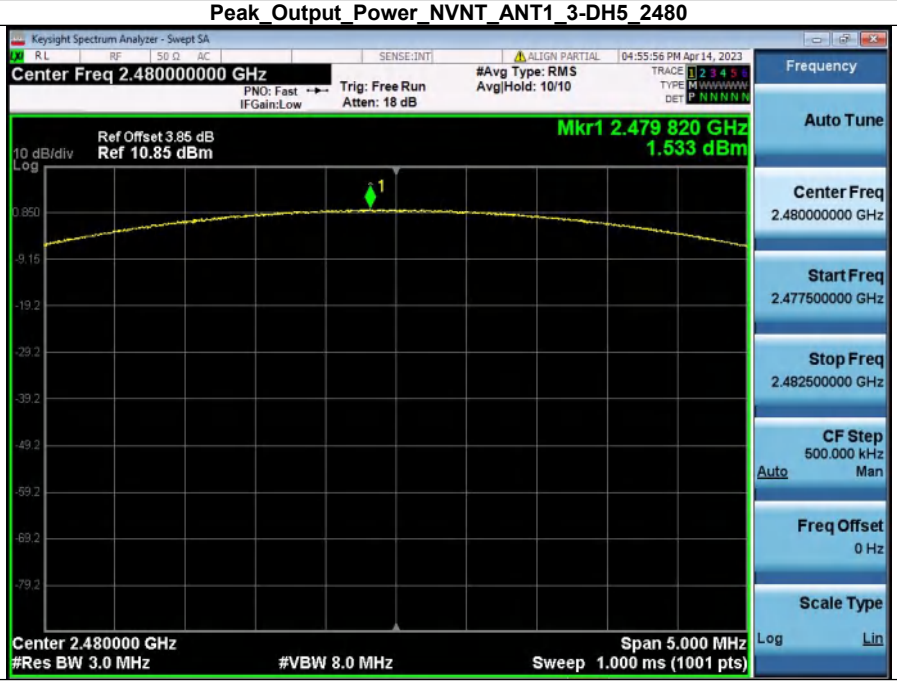
Peak_Output_Power_NVNT_ANT1_3-DH5_2402



Peak_Output_Power_NVNT_ANT1_3-DH5_2441



Peak_Output_Power_NVNT_ANT1_3-DH5_2480

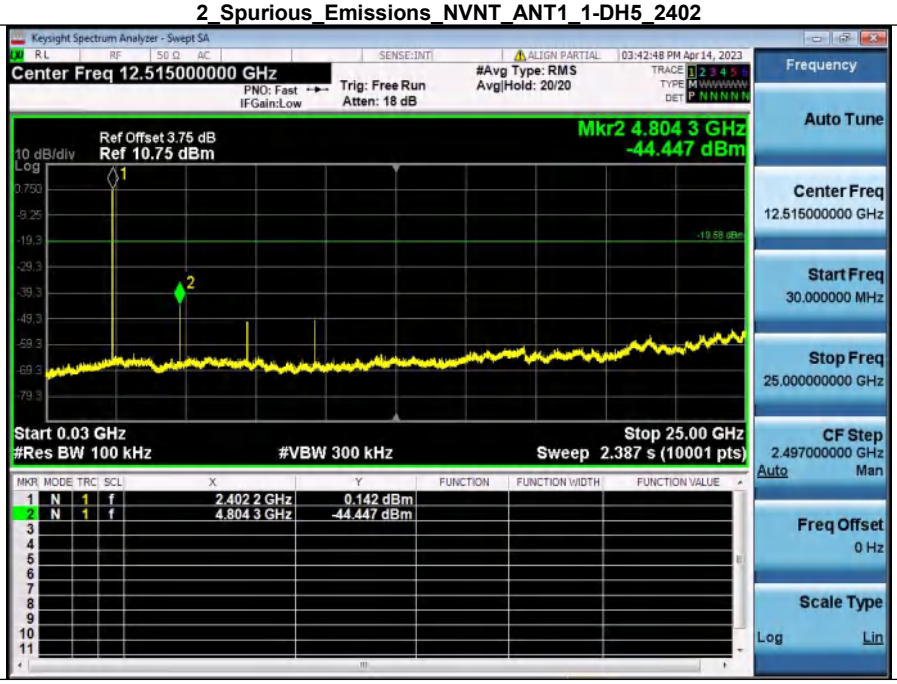


13.3. SPURIOUS EMISSIONS

Condition	Antenna	Modulation	TX Mode	Spurious MAX.Value(dBm)	Limit	Result
NVNT	ANT1	1-DH5	2402.00	-44.45	-19.58	Pass
NVNT	ANT1	1-DH5	2441.00	-43.37	-20.15	Pass
NVNT	ANT1	1-DH5	2480.00	-41.89	-20.69	Pass
NVNT	ANT1	2-DH5	2402.00	-47.85	-19.71	Pass
NVNT	ANT1	2-DH5	2441.00	-48.24	-20.31	Pass
NVNT	ANT1	2-DH5	2480.00	-44.16	-20.95	Pass
NVNT	ANT1	3-DH5	2402.00	-46.78	-19.32	Pass
NVNT	ANT1	3-DH5	2441.00	-46.80	-19.93	Pass
NVNT	ANT1	3-DH5	2480.00	-46.14	-20.69	Pass

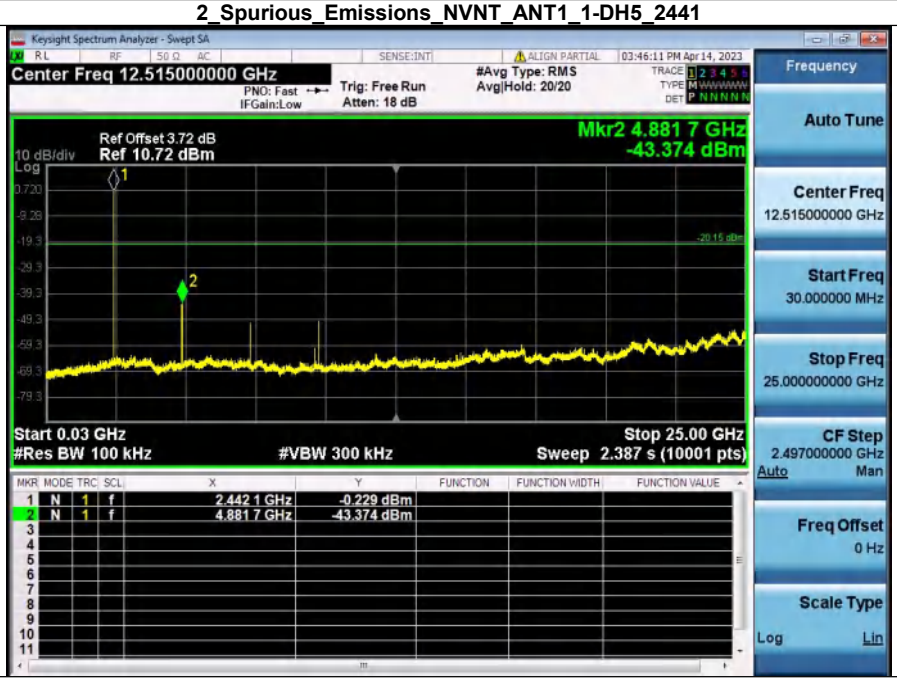
1_Reference_Level_NVNT_ANT1_1-DH5_2402

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2402



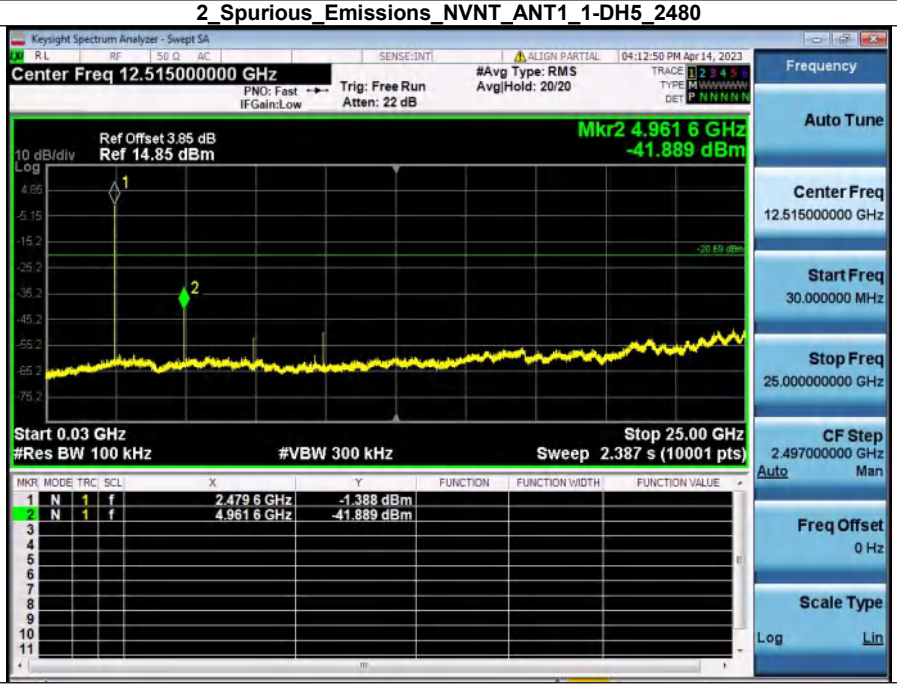
1_Reference_Level_NVNT_ANT1_1-DH5_2441

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2441



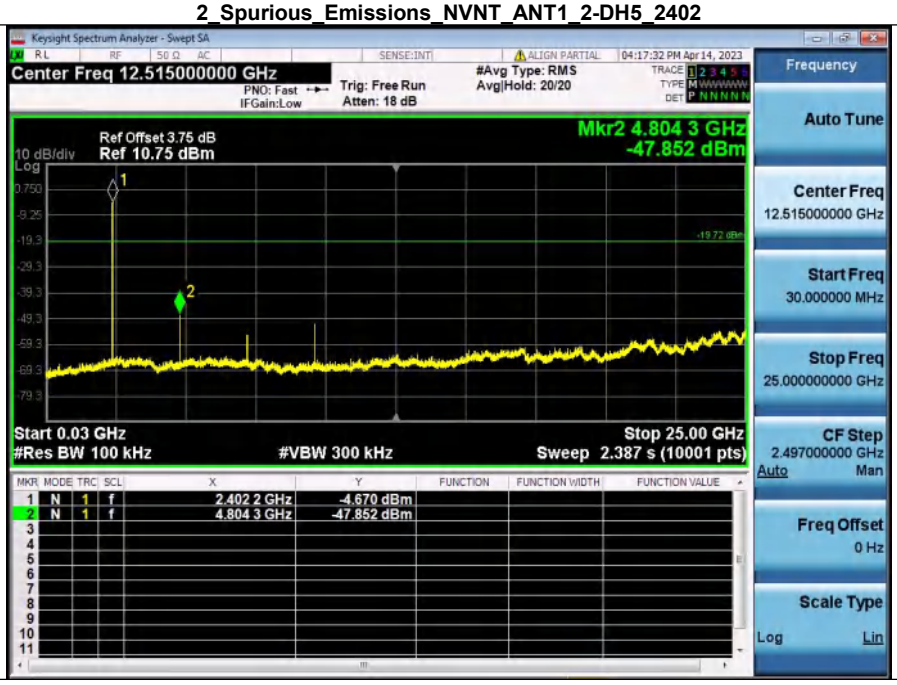
1_Reference_Level_NVNT_ANT1_1-DH5_2480

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2480



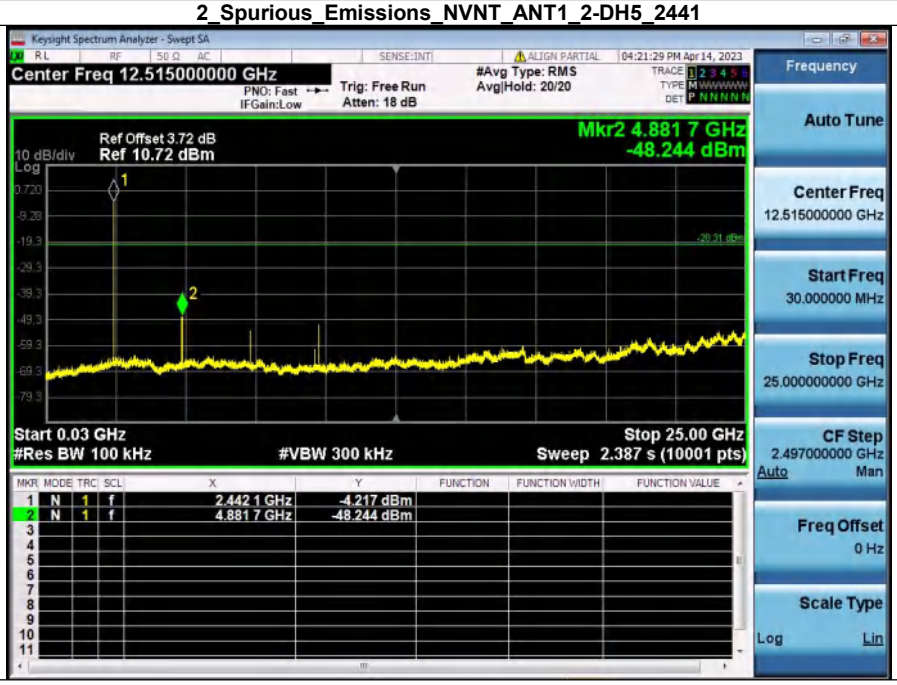
1_Reference_Level_NVNT_ANT1_2-DH5_2402

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2402



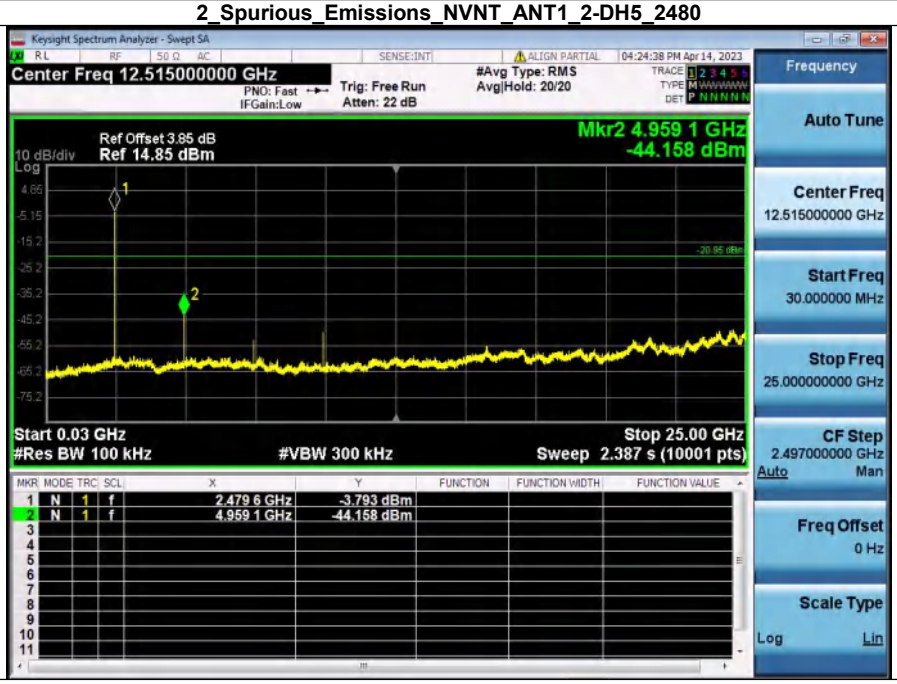
1_Reference_Level_NVNT_ANT1_2-DH5_2441

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2441



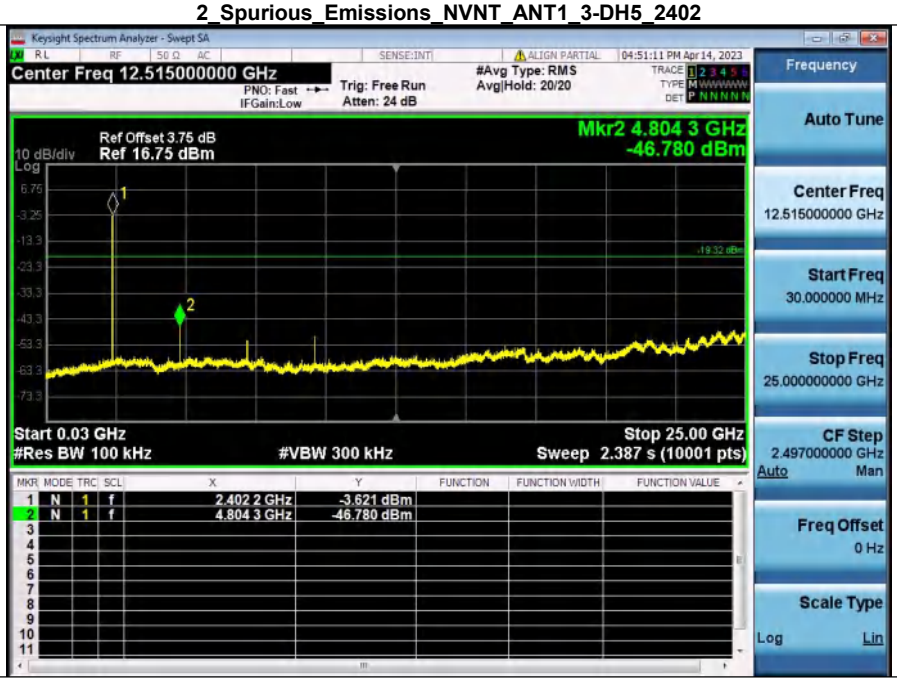
1_Reference_Level_NVNT_ANT1_2-DH5_2480

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2480



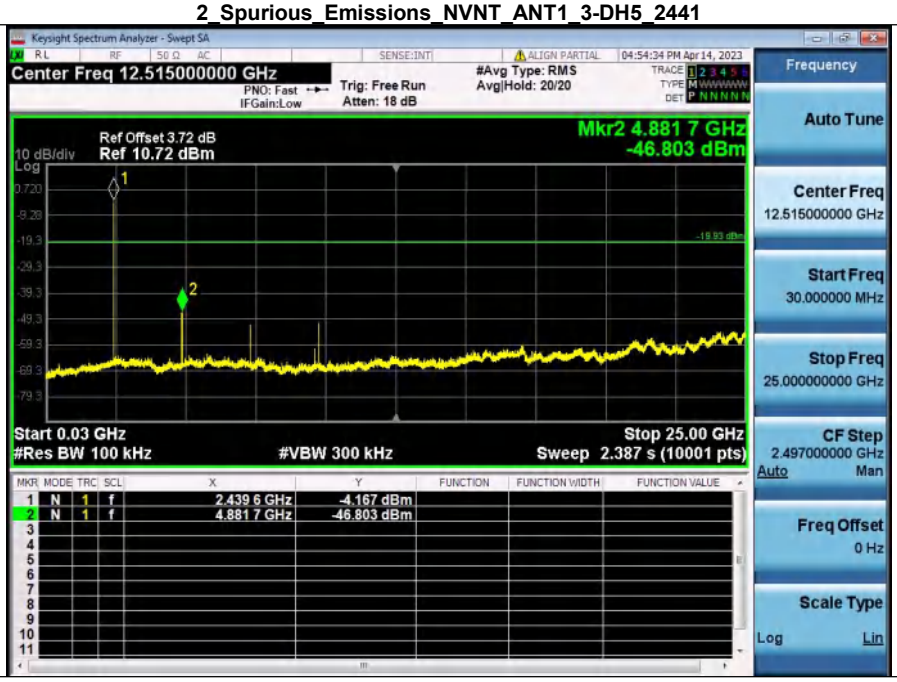
1_Reference_Level_NVNT_ANT1_3-DH5_2402

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2402



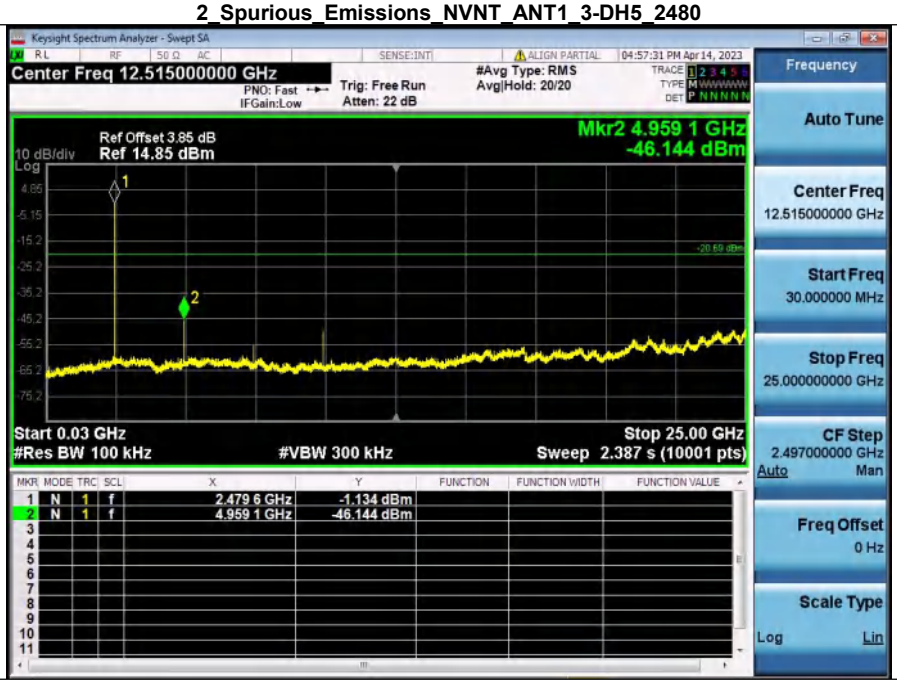
1_Reference_Level_NVNT_ANT1_3-DH5_2441

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2441



1_Reference_Level_NVNT_ANT1_3-DH5_2480

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2480

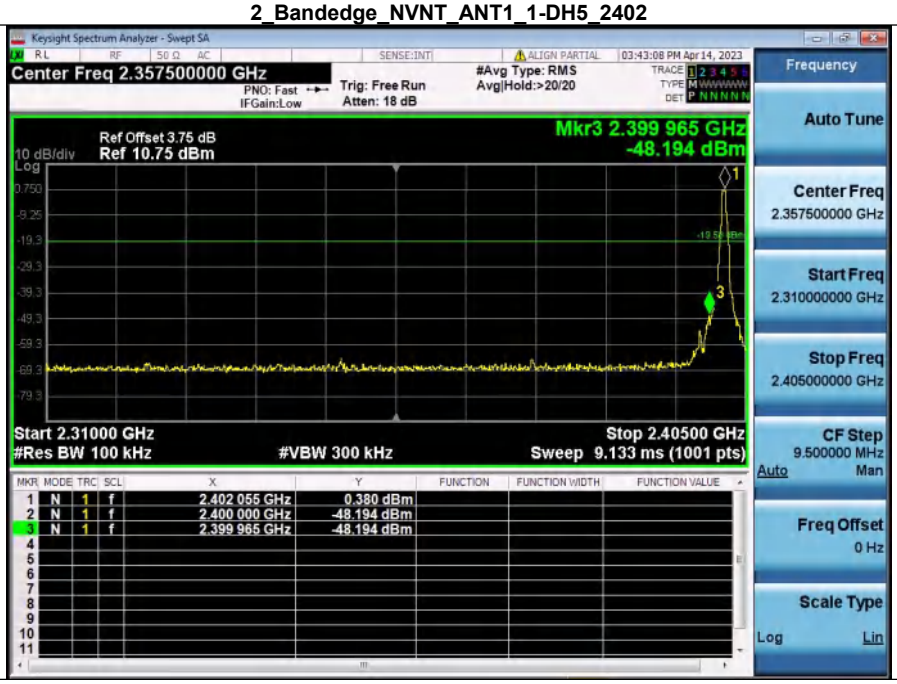


13.4. BANDEDGE

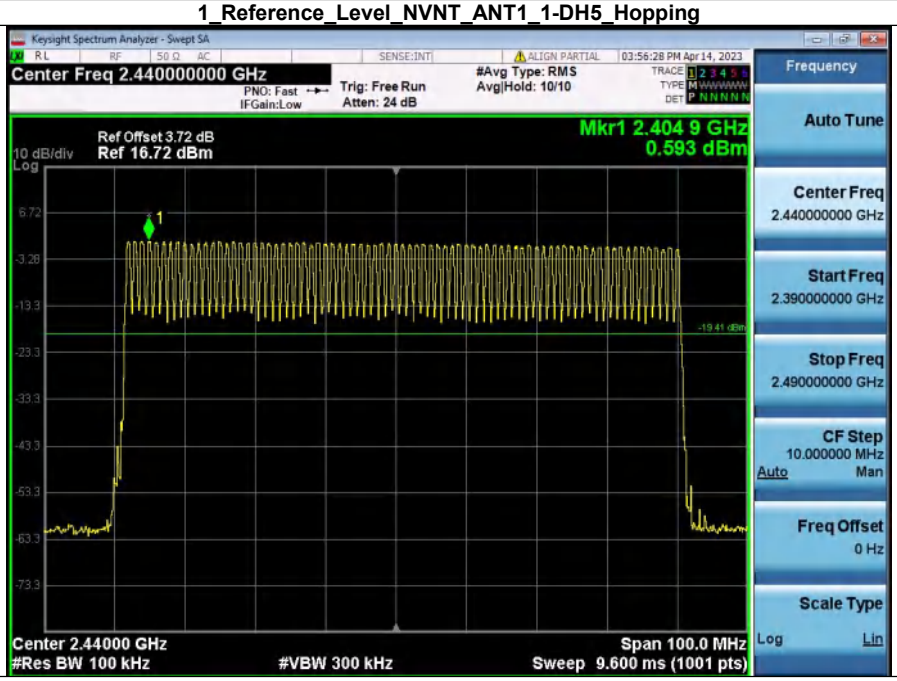
Condition	Antenna	Modulation	TX Mode	Bandedge MAX.Value	Limit	Result
NVNT	ANT1	1-DH5	2402.00	-48.19	-19.58	Pass
NVNT	ANT1	1-DH5	Hopping_LCH	-48.07	-19.41	Pass
NVNT	ANT1	1-DH5	2480.00	-61.58	-20.69	Pass
NVNT	ANT1	1-DH5	Hopping_HCH	-60.80	-19.48	Pass
NVNT	ANT1	2-DH5	2402.00	-49.83	-19.71	Pass
NVNT	ANT1	2-DH5	Hopping_LCH	-54.66	-19.79	Pass
NVNT	ANT1	2-DH5	2480.00	-59.55	-20.95	Pass
NVNT	ANT1	2-DH5	Hopping_HCH	-60.99	-19.51	Pass
NVNT	ANT1	3-DH5	2402.00	-51.08	-19.32	Pass
NVNT	ANT1	3-DH5	Hopping_LCH	-54.06	-19.42	Pass
NVNT	ANT1	3-DH5	2480.00	-60.63	-20.69	Pass
NVNT	ANT1	3-DH5	Hopping_HCH	-61.36	-19.57	Pass

1_Reference_Level_NVNT_ANT1_1-DH5_2402

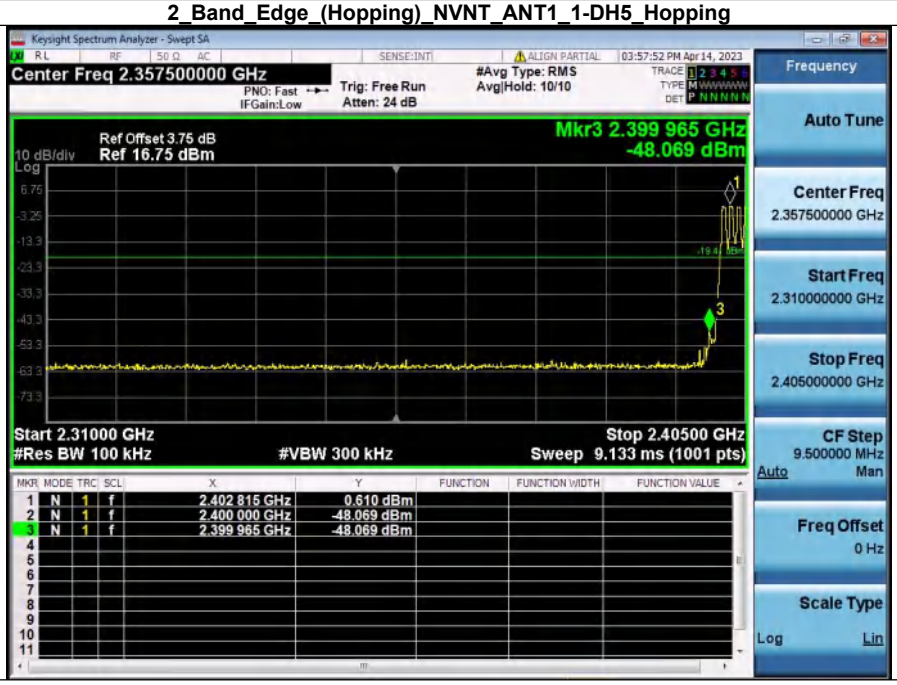
2_Bandedge_NVNT_ANT1_1-DH5_2402



1_Reference_Level_NVNT_ANT1_1-DH5_Hopping

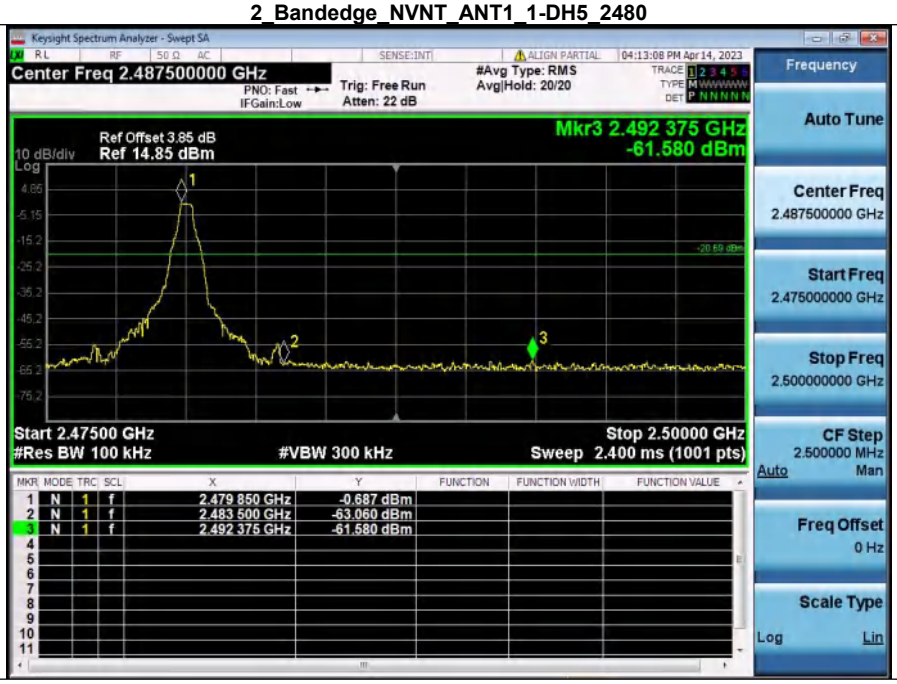


2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping

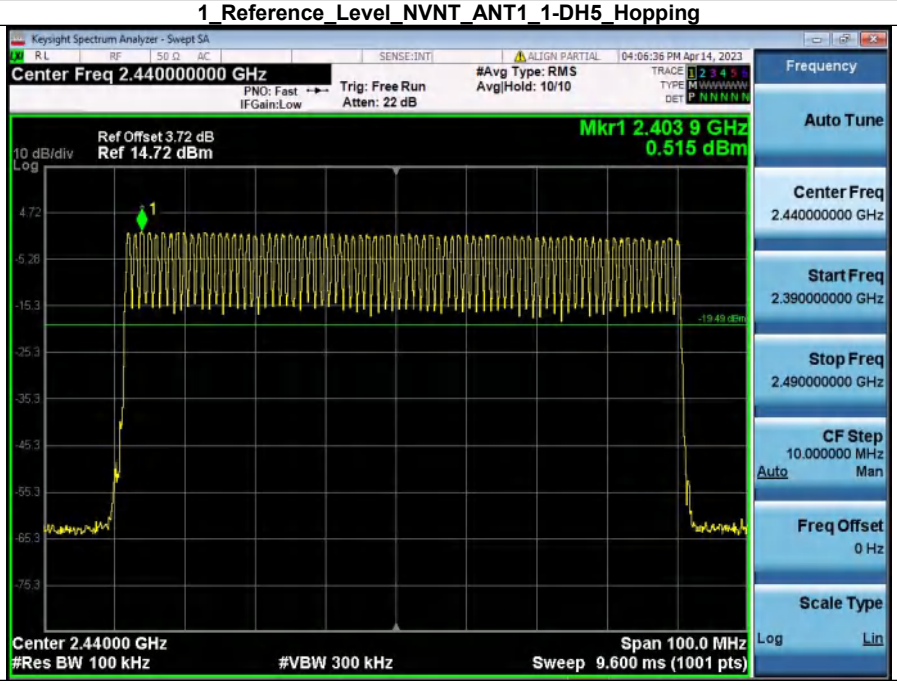


1_Reference_Level_NVNT_ANT1_1-DH5_2480

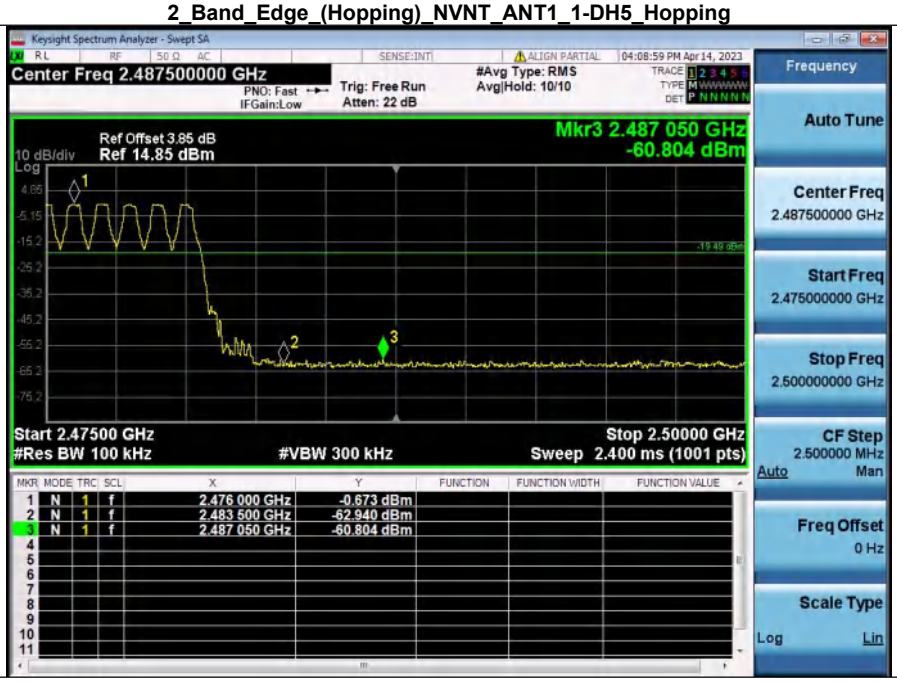
2_Bandedge_NVNT_ANT1_1-DH5_2480



1_Reference_Level_NVNT_ANT1_1-DH5_Hopping

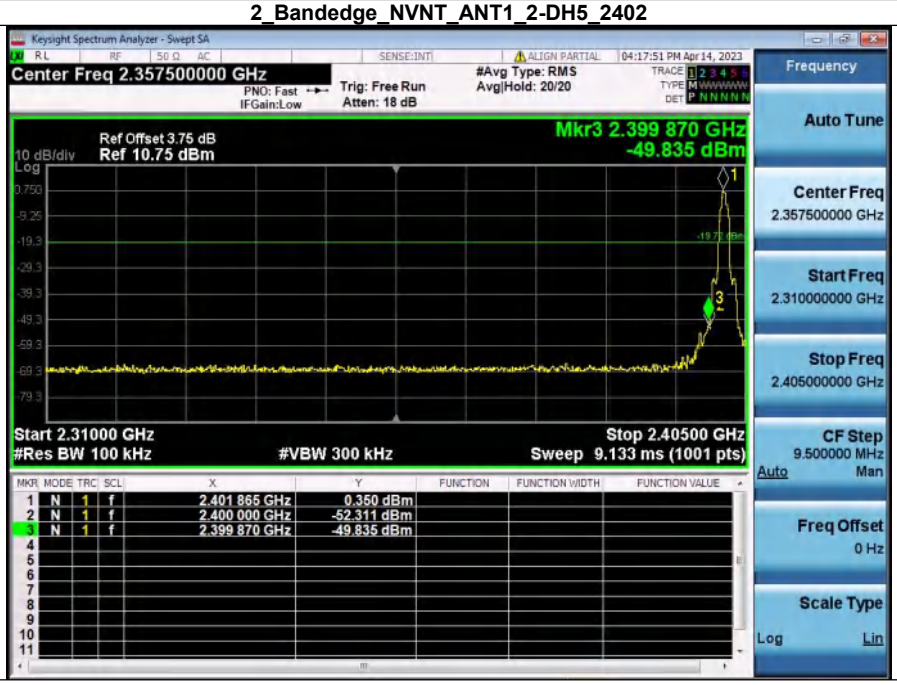


2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping

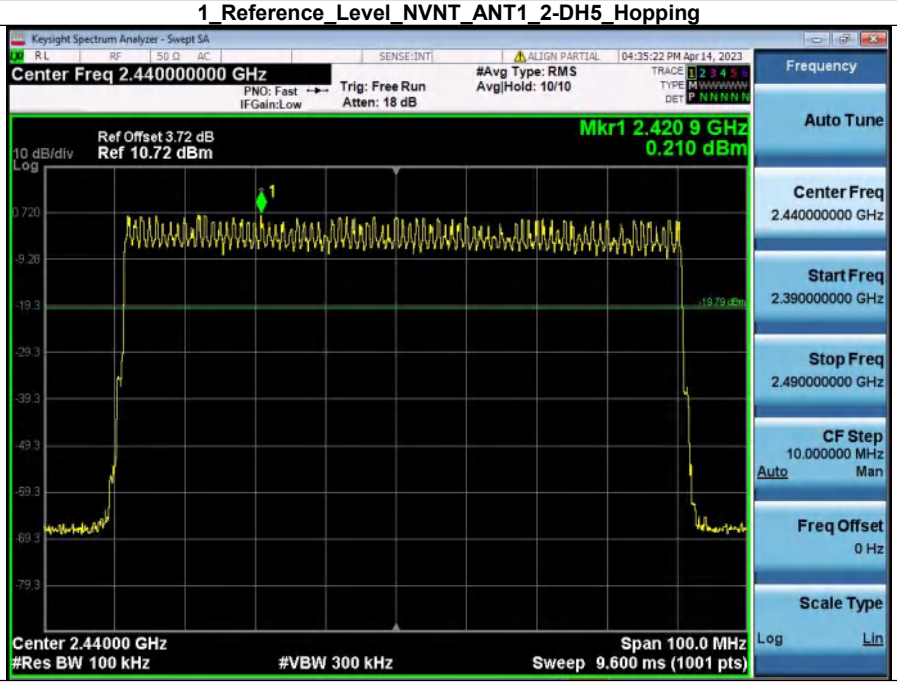


1_Reference_Level_NVNT_ANT1_2-DH5_2402

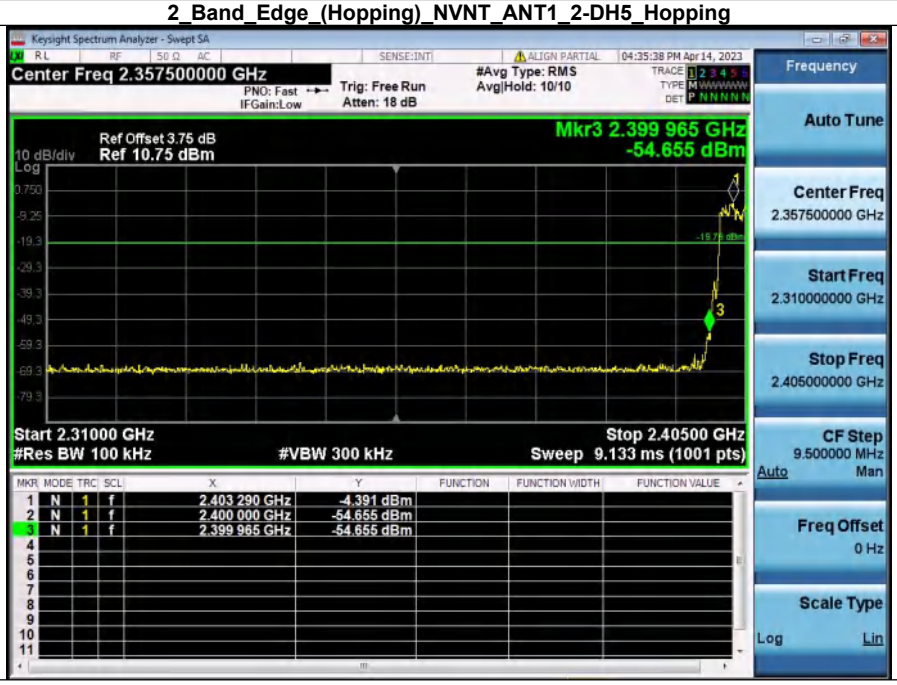
2_Bandedge_NVNT_ANT1_2-DH5_2402



1_Reference_Level_NVNT_ANT1_2-DH5_Hopping

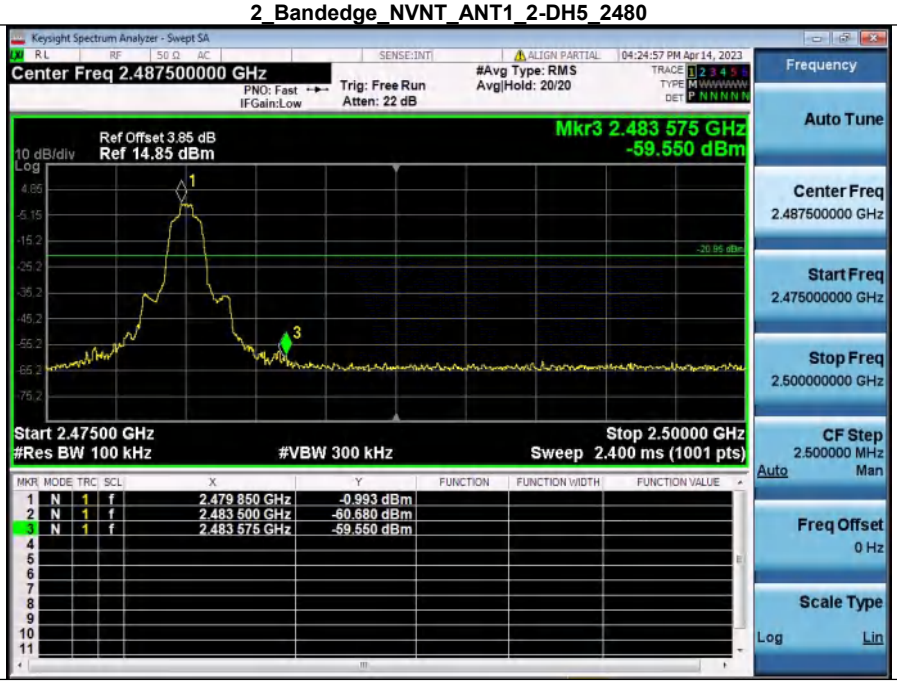


2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping

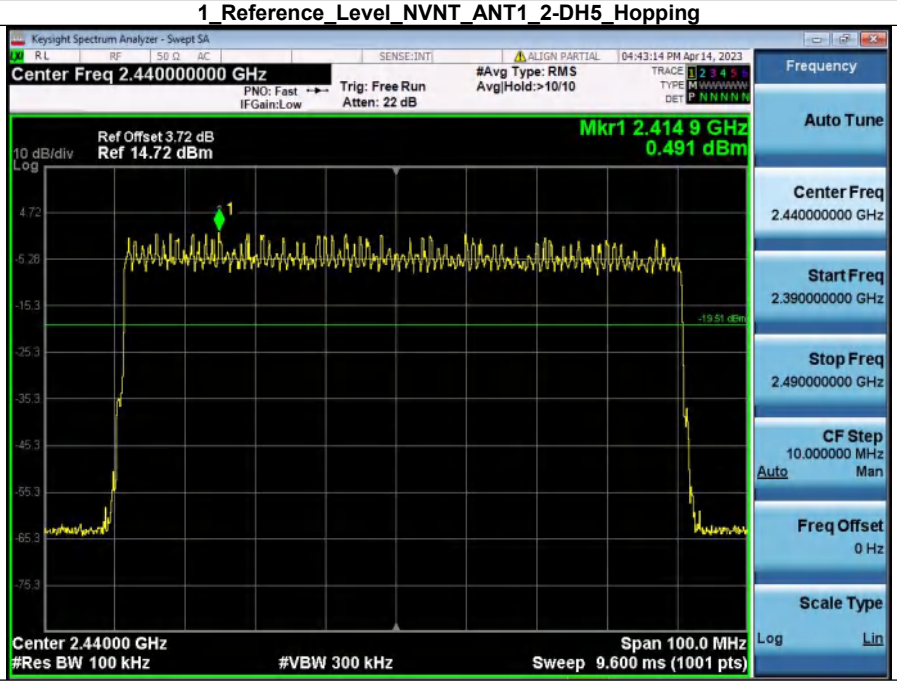


1_Reference_Level_NVNT_ANT1_2-DH5_2480

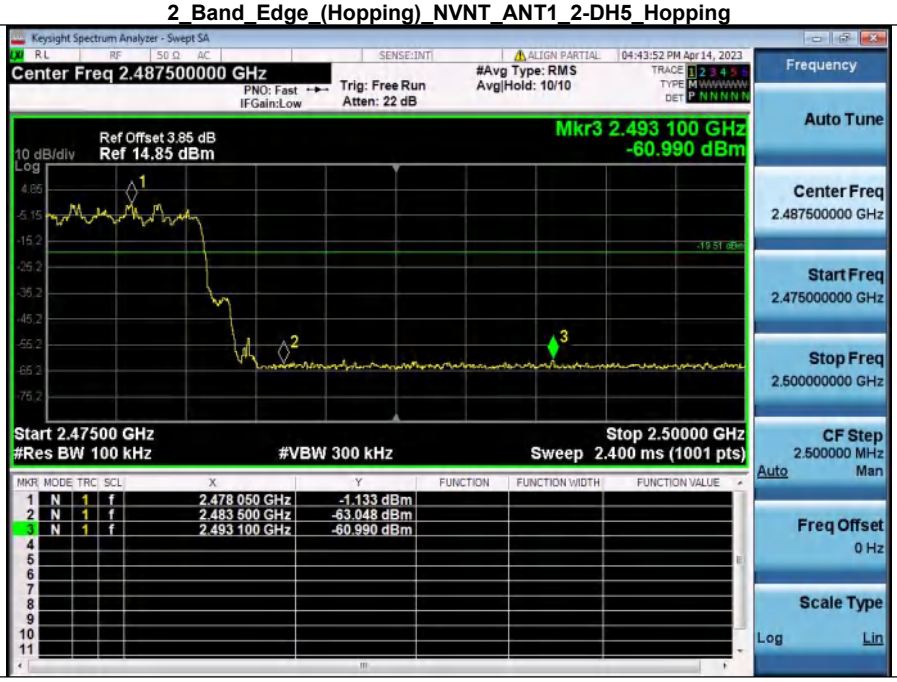
2_Bandedge_NVNT_ANT1_2-DH5_2480



1_Reference_Level_NVNT_ANT1_2-DH5_Hopping

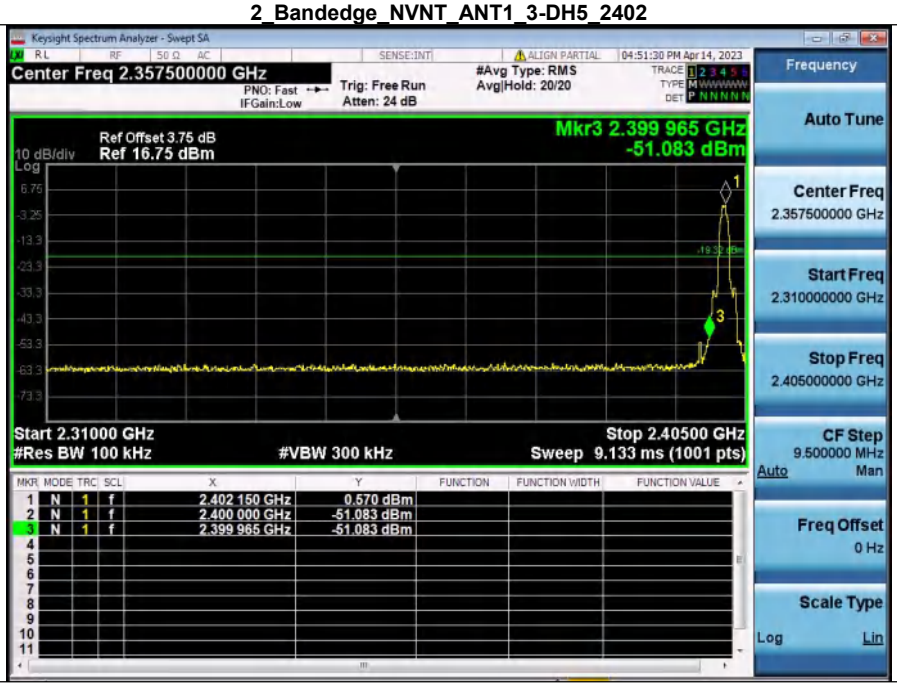


2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping

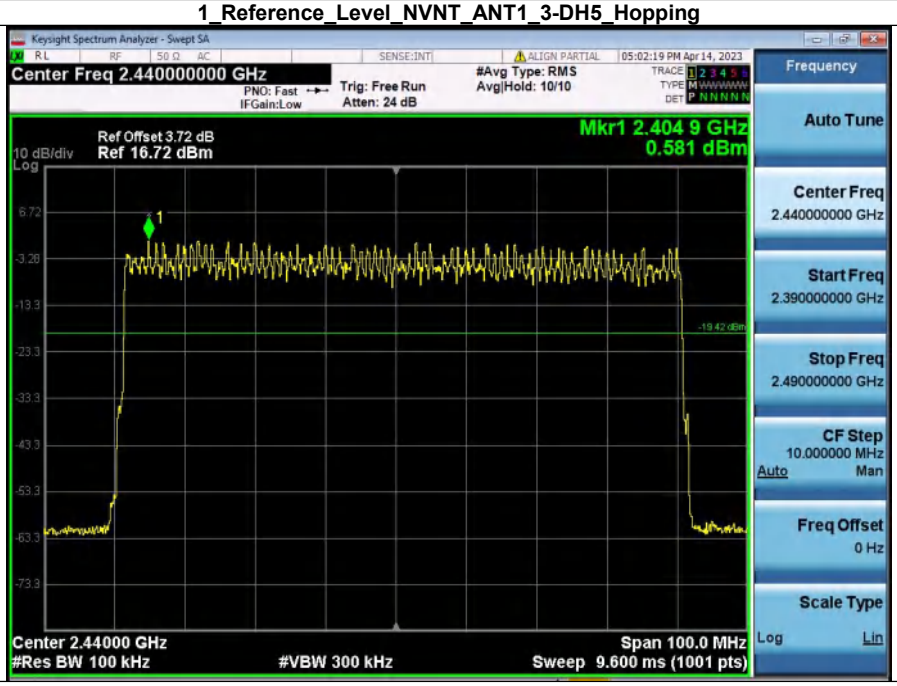


1_Reference_Level_NVNT_ANT1_3-DH5_2402

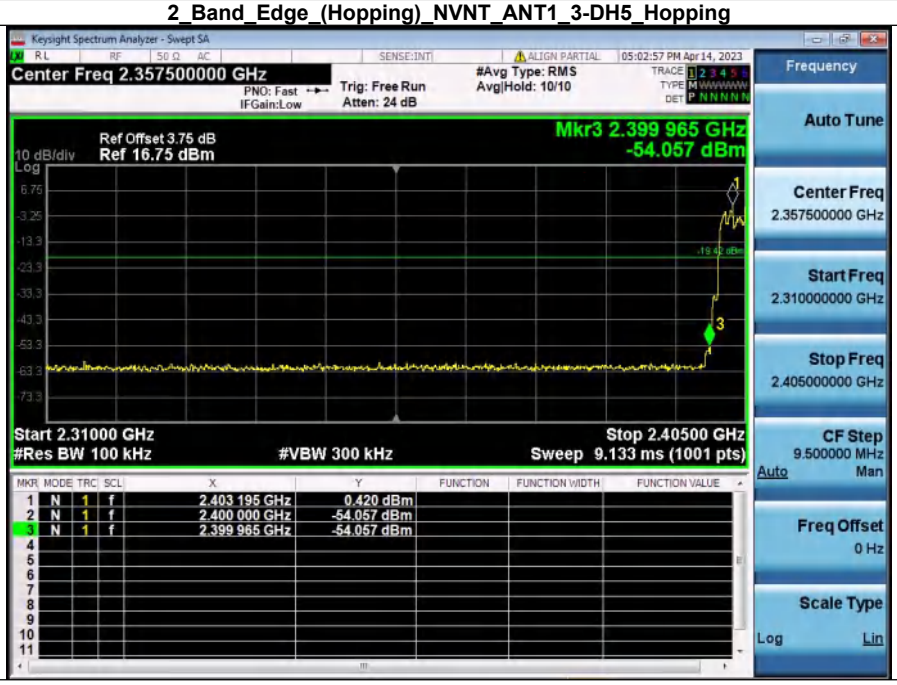
2_Bandedge_NVNT_ANT1_3-DH5_2402



1_Reference_Level_NVNT_ANT1_3-DH5_Hopping

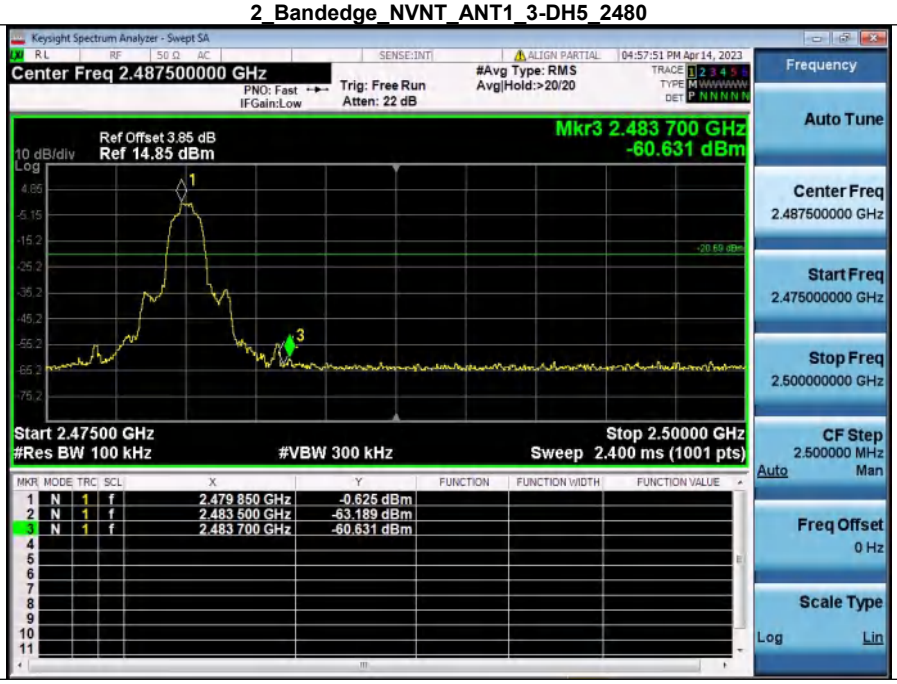


2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH5_Hopping

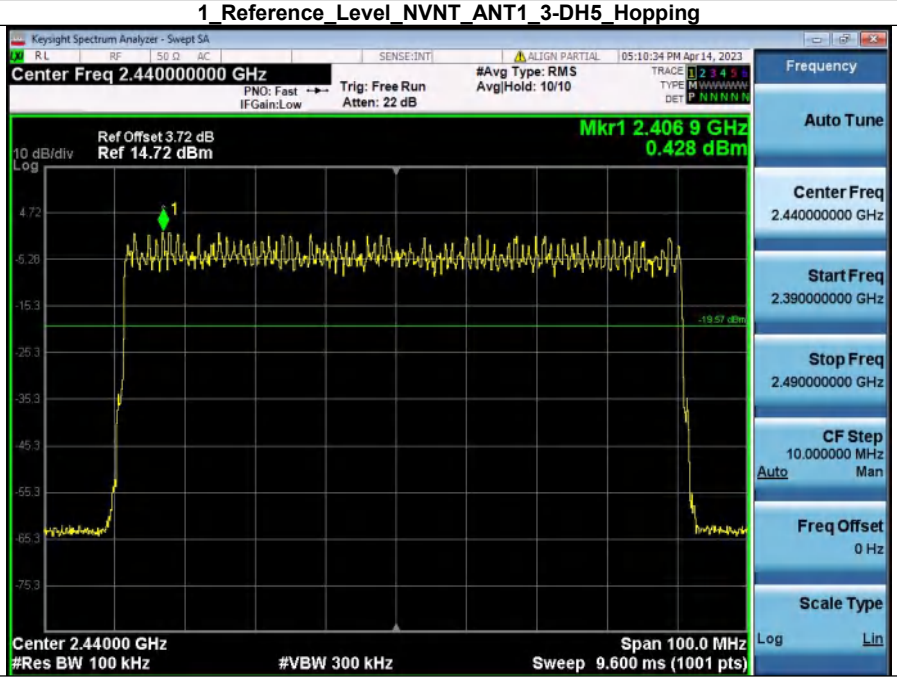


1_Reference_Level_NVNT_ANT1_3-DH5_2480

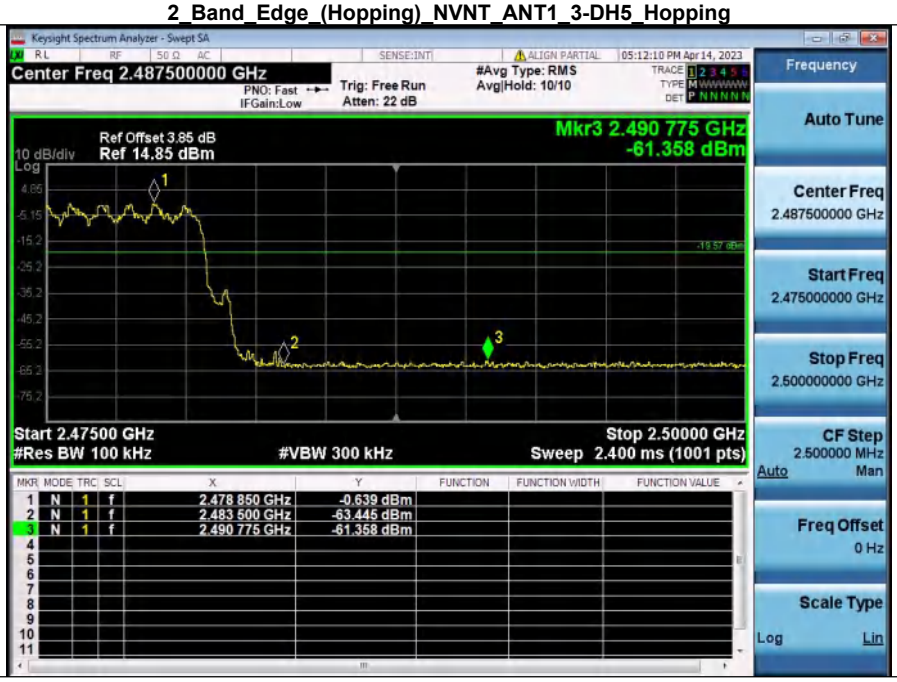
2_Bandedge_NVNT_ANT1_3-DH5_2480



1_Reference_Level_NVNT_ANT1_3-DH5_Hopping



2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH5_Hopping



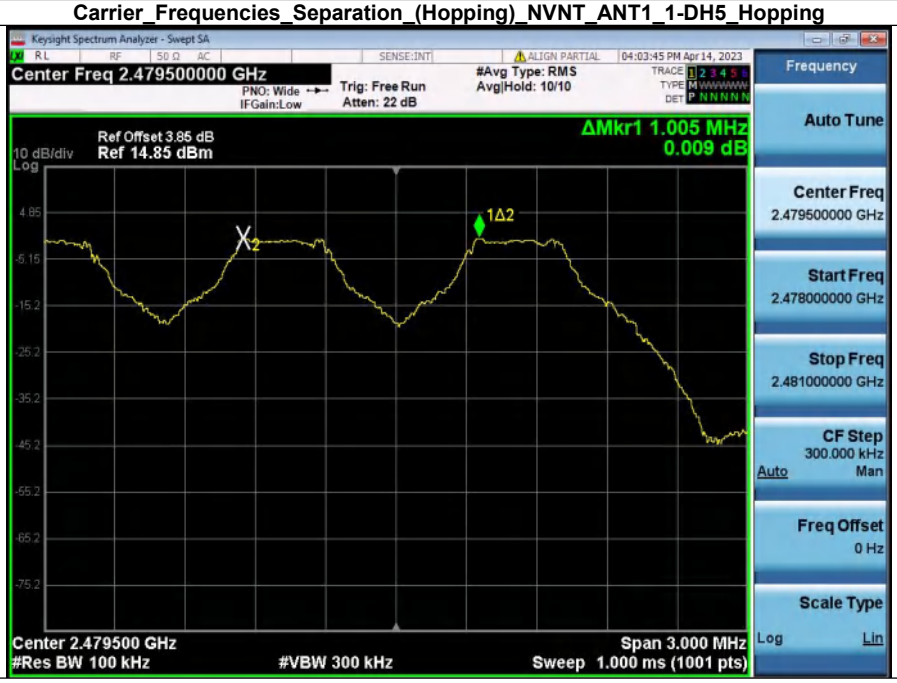
13.5. CARRIER FREQUENCIES SEPARATION (HOPPING)

Condition	Antenna	Modulation	Frequency(MHz)	Hopping NO.0 (MHz)	Hopping NO.1 (MHz)	Carrier Frequencies Separation(MHz)	Limit(MHz)	Result
NVNT	ANT1	1-DH5	2402.00	2401.846	2402.857	1.01	0.954	Pass
NVNT	ANT1	1-DH5	2441.00	2440.858	2441.857	1.00	0.951	Pass
NVNT	ANT1	1-DH5	2480.00	2478.849	2479.854	1.00	1.000	Pass

Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_1-DH5_Hopping

Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_1-DH5_Hopping

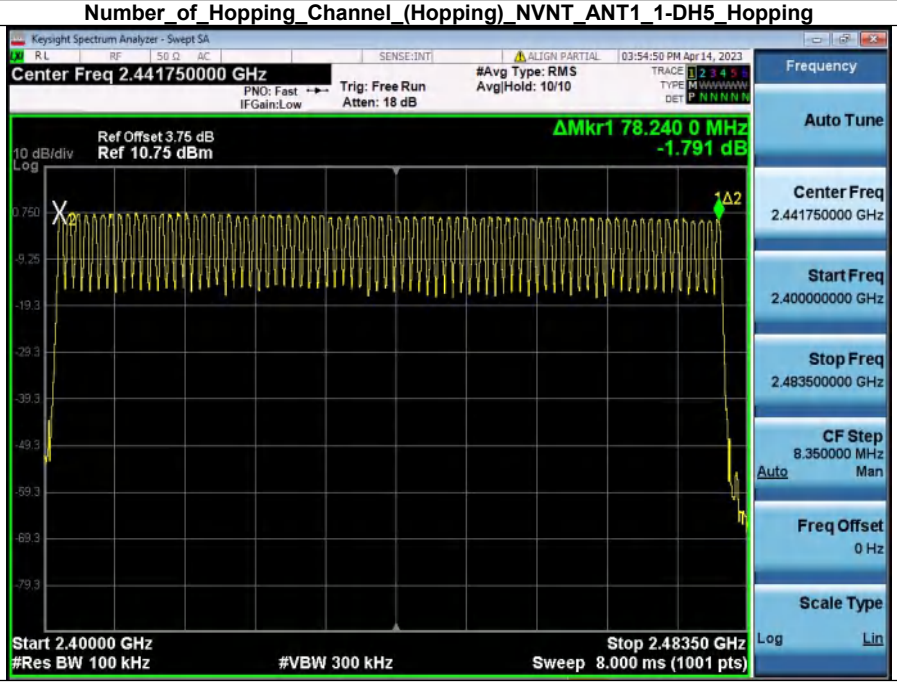
Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_1-DH5_Hopping



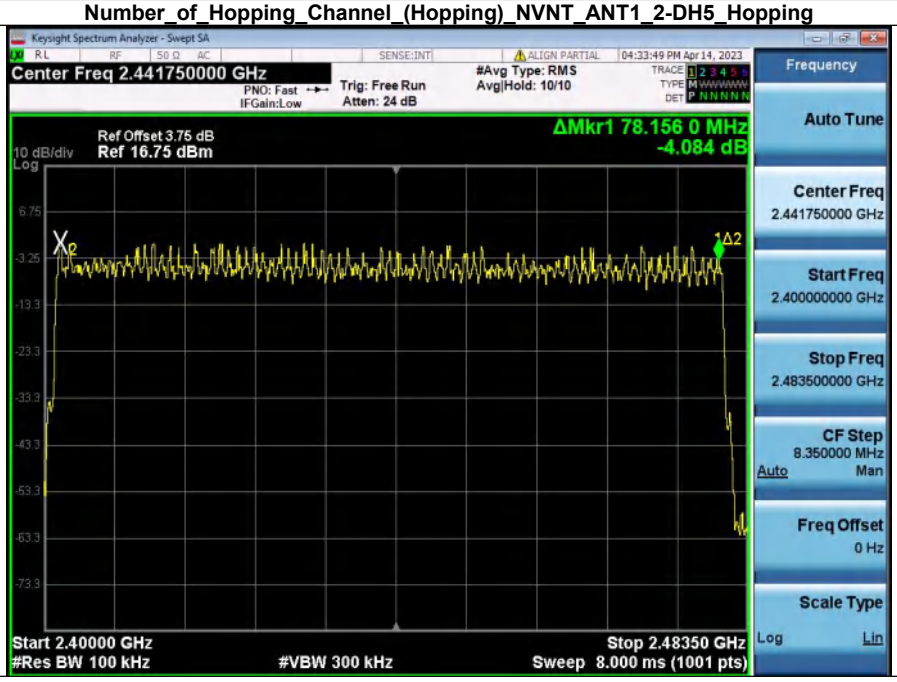
13.6. NUMBER OF HOPPING CHANNEL (HOPPING)

Condition	Antenna	Modulation	Hopping Num	Limit	Result
NVNT	ANT1	1-DH5	79	15	Pass
NVNT	ANT1	2-DH5	79	15	Pass
NVNT	ANT1	3-DH5	79	15	Pass

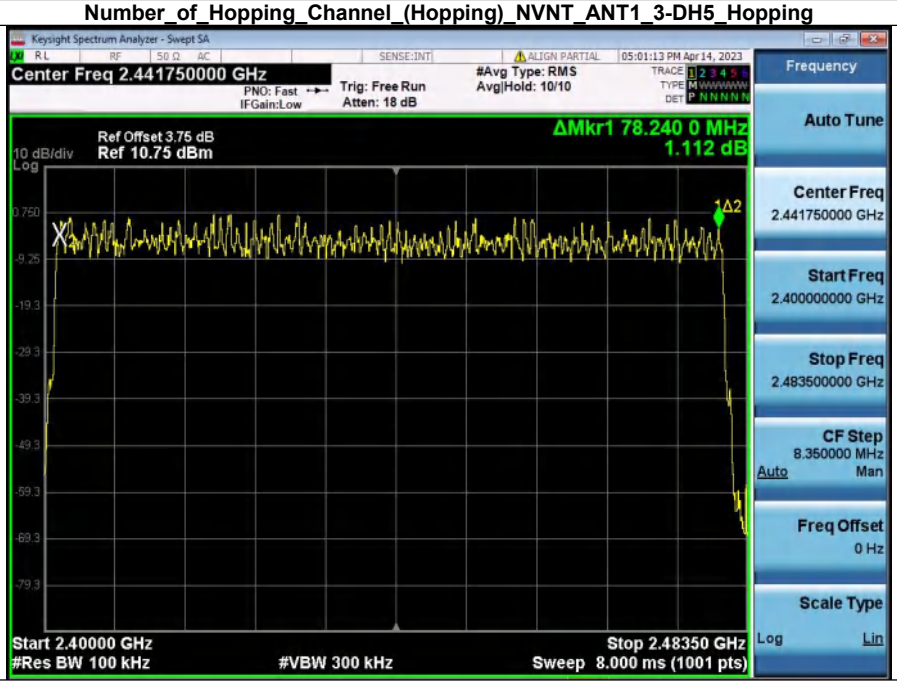
Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_1-DH5_Hopping



Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_2-DH5_Hopping



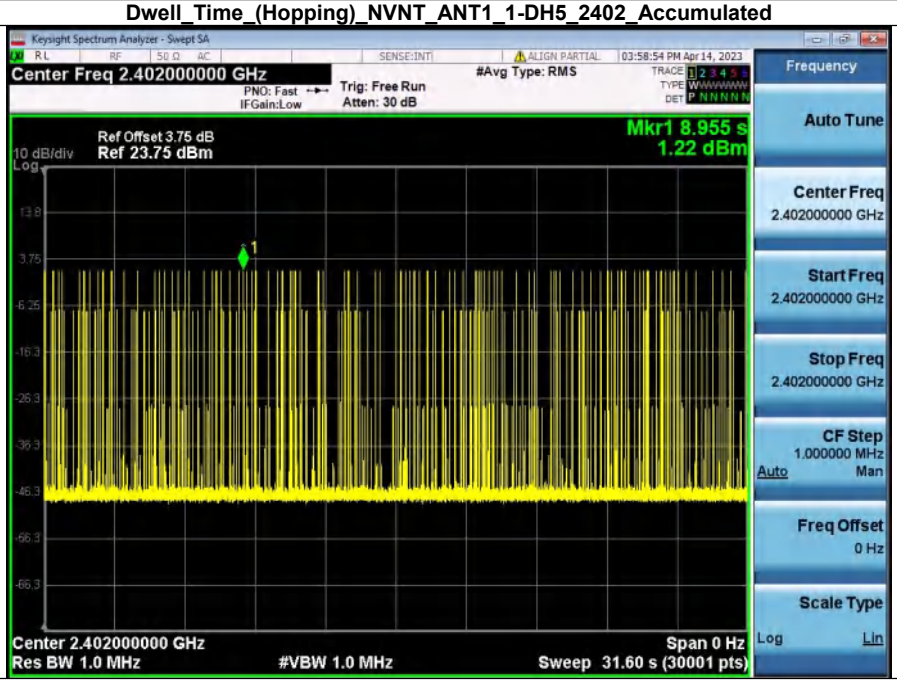
Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_3-DH5_Hopping



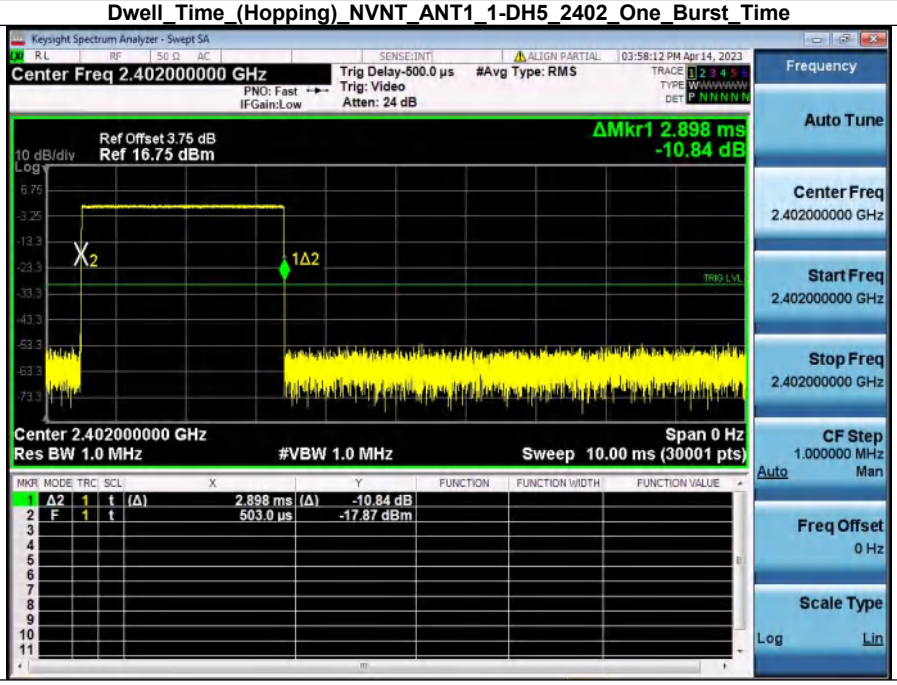
13.7. DWELL TIME (HOPPING)

Condition	Antenna	Packet Type	Pulse Time(ms)	Hops	Dwell Time(ms)	Limit(s)	Result
NVNT	ANT1	1-DH5	2.898	113.00	327.474	0.40	Pass
NVNT	ANT1	2-DH5	2.901	114.00	330.714	0.40	Pass
NVNT	ANT1	3-DH5	2.907	115.00	334.305	0.40	Pass

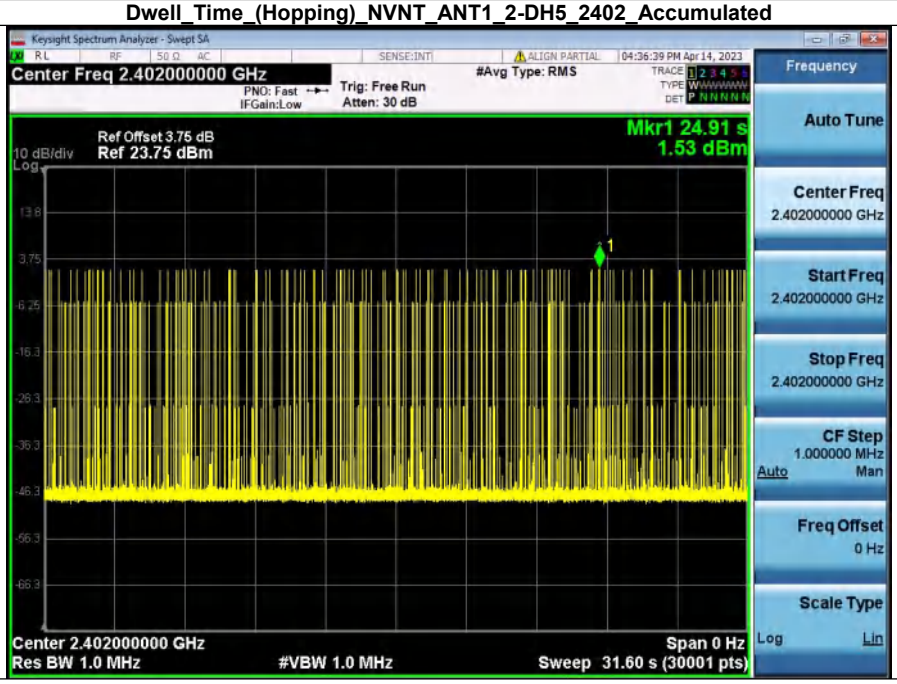
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2402_Accumulated



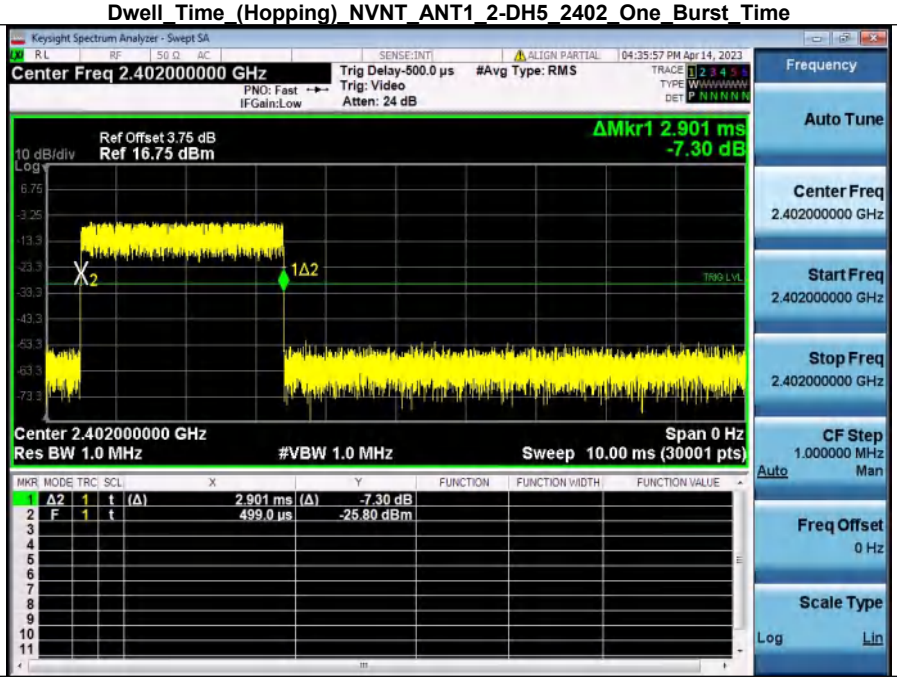
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2402_One_Burst_Time



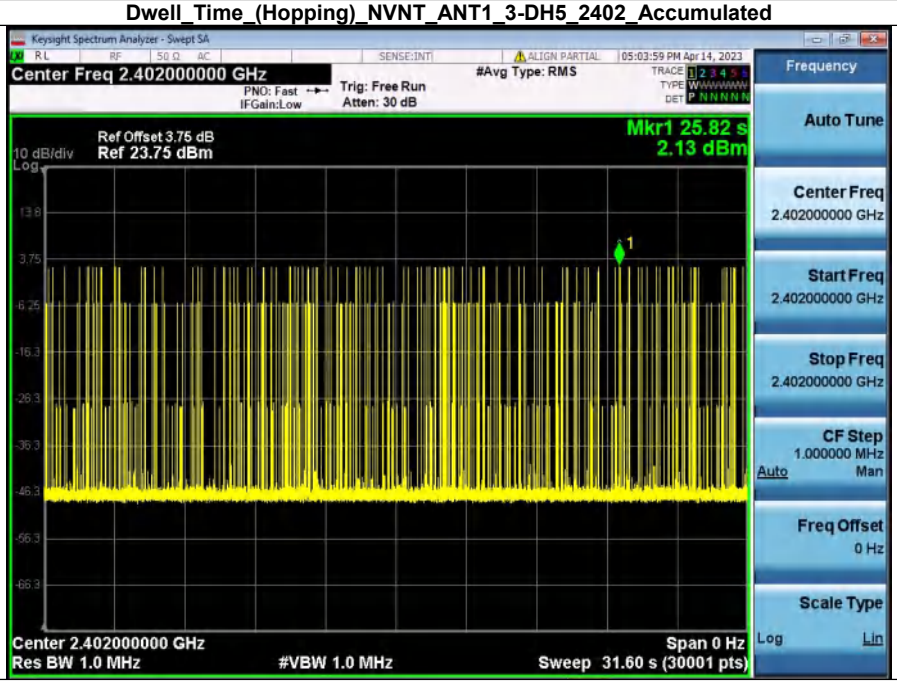
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2402_Accumulated



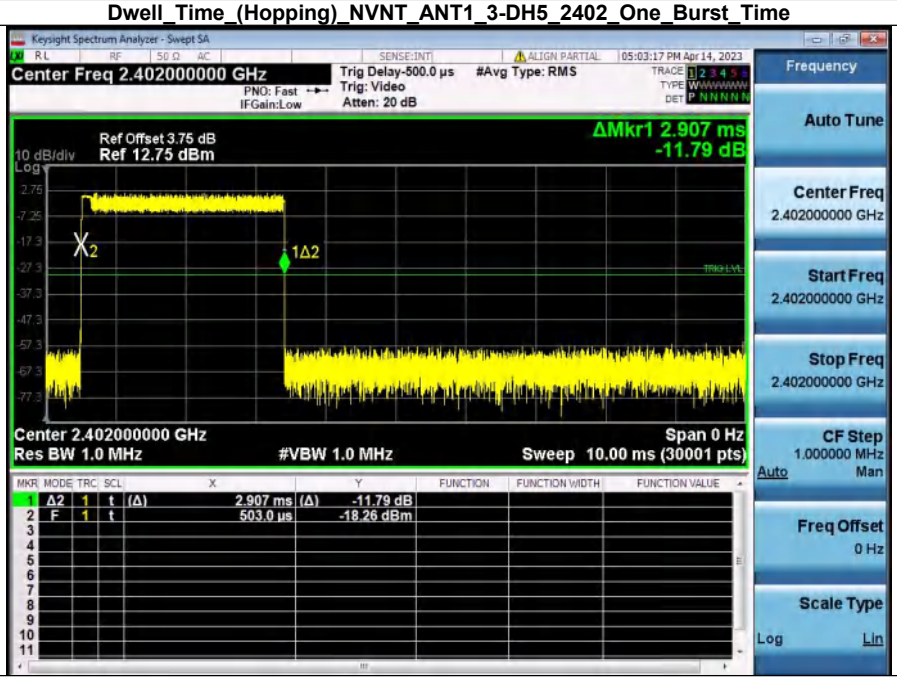
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2402_One_Burst_Time



Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2402_Accumulated



Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2402_One_Burst_Time



14. Test Setup Photo

Reference to the Setup Photos for details.

15. EUT Constructional Details

Please refer to external photos file and internal photos file

※※※※※ **END OF REPORT** ※※※※※