CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 ISSUE 3

TEST REPORT

For

Wireless Earbuds

MODEL NUMBER: RVTWSBLK, RVTWSWHT, RVTWSCLR

REPORT NUMBER: E04A24010897F00201

ISSUE DATE: Jan. 30, 2024

FCC ID: 2AU7D-RVTWS

IC: 28661-RVTWS

Prepared for

PYS High-Tech Co., LTD

1F to 12F, Block 9, Lianhua Industrial Zone, Longhua Shenzhen,Guangdong CHINA Shenzhen, 518109 China

Prepared by

Guangdong Global Testing Technology Co., Ltd.

Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	Jan. 30, 2024	Initial Issue	

Summary of Test Results

Test Item	Clause	Limit/Requirement	Result
Antenna Requirement	N/A	FCC Part 15.203/15.247 (c) RSS-GEN Clause 6.8	Compliance
AC Power Line Conducted Emission	ANSI C63.10-2013 Clause 6.2	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
Conducted Output Power	ANSI C63.10-2013 Clause 7.8.5	FCC Part 15.247 (b)(1) RSS-247 Clause 5.4 (d)	Pass
20 dB Bandwidth and 99% Occupied Bandwidth	ANSI C63.10-2013 Clause 6.9.2	FCC Part 15.247 (a)(1) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
Carrier Hopping Channel Separation	ANSI C63.10-2013 Clause 7.8.2	FCC Part 15.247 (a)(1) RSS-247 Clause 5.2 (b)	Pass
Number of Hopping Frequency	ANSI C63.10-2013 Clause 7.8.3	FCC Part 15.247 (b)(1) RSS-247 Clause 5.5	Pass
Time of Occupancy (Dwell Time)	ANSI C63.10-2013 Clause 7.8.4	FCC Part 15.247 (a)(1) RSS-247 Clause 5.1	Pass
Conducted Bandedge and Spurious Emission	ANSI C63.10-2013 Clause 6.10.4 & Clause 7.8.8	FCC Part 15.247(d) RSS-247 Clause 5.5	Pass
Radiated Band edge and Spurious Emission	ANSI C63.10-2013 Clause 6.3 & 6.5 & 6.6	FCC Part 15.205/15.209 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
Duty Cycle	ANSI C63.10-2013, Clause 11.6	None; for reporting purposes only.	Pass

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C, ISED RSS-247 ISSUE 3 > when <Accuracy Method> decision rule is applied.

CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	PYS High-Tech Co., LTD
Address:	1F to 12F, Block 9, Lianhua Industrial Zone, Longhua Shenzhen,Guangdong CHINA Shenzhen, 518109 China

Manufacturer Information

Company Name:	PYS High-Tech Co., LTD
Address:	1F to 12F, Block 9, Lianhua Industrial Zone, Longhua Shenzhen,Guangdong CHINA Shenzhen, 518109 China

EUT Information

Product Description:	Wireless Earbuds
Model:	RVTWSBLK
Series Model:	RVTWSWHT, RVTWSCLR
Brand:	N/A
Sample Received Date:	Jan. 19, 2024
Sample Status:	Normal
Sample ID:	A24010897 001
Date of Tested:	Jan. 19, 2024 to Jan. 30, 2024

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C **ISED RSS-247 ISSUE 3 (DSS)**	**Pass**

Prepared By:

Win Huang

Project Engineer

Checked By:

Alan He

Laboratory Leader

Approved By:

Shawn Wen

Laboratory Manager

2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C, ISED RSS-247 ISSUE 3

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 6947.01)** Guangdong Global Testing Technology Co., Ltd. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1343)** Guangdong Global Testing Technology Co., Ltd. has been recognized to perform compliance testing on equipment subject to Supplier's Declaration of Conformity (SDoC) and Certification rules **ISED (Company No.: 30714)** Guangdong Global Testing Technology Co., Ltd. has been registered and fully described in a report filed with ISED. The Company Number is 30714 and the test lab Conformity Assessment Body Identifier (CABID) is CN0148.

Note: All tests measurement facilities use to collect the measurement data are located at Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Items	k	Uncertainty
DTS Bandwidth	1.96	±9.2 PPM
20dB Emission Bandwidth	1.96	±9.2 PPM
Carrier Frequency Separation	1.96	±9.2 PPM
Time of Occupancy	1.96	±0.57%
Conducted Output Power	1.96	±1.5 dB
Power Spectral Density Level	1.96	±1.9 dB
Conducted Spurious Emission	1.96	9 kHz-30 MHz: ± 0.95 dB 30 MHz-1 GHz: ± 1.5 dB 1GHz-12.75GHz: ± 1.8 dB 12.75 GHz-26.5 GHz: ± 2.1dB
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.		

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports (AMN)	150 kHz ~ 30 MHz	2	3.37
Radiated emissions	9 kHz ~ 30 MHz	2	4.16
Radiated emissions	30 MHz ~ 1 GHz	2	3.79
Radiated emissions	1 GHz ~ 18 GHz	2	5.62
Radiated emissions	18 GHz ~ 40 GHz	2	5.54
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name		Wireless Earbuds
Model		RVTWSBLK
Series Model		RVTWSWHT, RVTWSCLR
Model Difference		Note: Describe the exterior casing and color differences.
Hardware Version		V.1
Software Version		V1.0
Ratings		DC 5V
Power Supply	DC	5V
	Battery	Charging Box: DC 3.7V, 320mAh Headphones: DC 3.7V, 50mAh

Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	Bluetooth V5.3
Bluetooth Mode:	Bluetooth BR + EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, π/4-DQPSK, 8DPSK
Number of Channels:	79
Channel Separation:	1 MHz
Maximum Peak Power:	4.29 dBm
Antenna Type:	FPC Antenna
Antenna Gain:	-1.69 dBi
Normal Test Voltage:	3.7 Vdc
EUT Test software:	FCC_assist_1.0.2.2

5.2. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2422	40	2442	60	2462
01	2403	21	2423	41	2443	61	2463
02	2404	22	2424	42	2444	62	2464
03	2405	23	2425	43	2445	63	2465
04	2406	24	2426	44	2446	64	2466
05	2407	25	2427	45	2447	65	2467
06	2408	26	2428	46	2448	66	2468
07	2409	27	2429	47	2449	67	2469
08	2410	28	2430	48	2450	68	2470
09	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475

14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461	/	/

5.3. MAXIMUM AVERAGE EIRP

Test Mode	Frequency (MHz)	Channel Number	Maximum Peak Output Power (dBm)	Maximum EIRP (dBm)
GFSK	2402 ~ 2480	0-78[79]	3.33	1.64
π/4-DQPSK	2402 ~ 2480	0-78[79]	4.20	2.51
8DPSK	2402 ~ 2480	0-78[79]	4.29	2.60

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	CH 0(Low Channel), CH 39(MID Channel), CH 78(High Channel)	2402 MHz, 2441 MHz, 2480 MHz
π/4-DQPSK	CH 0(Low Channel), CH 39(MID Channel), CH 78(High Channel)	2402 MHz, 2441 MHz, 2480 MHz
8DPSK	CH 0(Low Channel), CH 39(MID Channel), CH 78(High Channel)	2402 MHz, 2441 MHz, 2480 MHz

Note: The hop is hopping mode.

PACKET TYPE CONFIGURATION

Test Mode	Packet Type	Setting (Packet Length)
GFSK	DH1	27
	DH3	183
	DH5	339
π/4-DQPSK	2-DH1	54
	2-DH3	367
	2-DH5	679
8DPSK	3-DH1	83
	3-DH3	552
	3-DH5	1021

5.5. THE WORSE CASE POWER SETTING PARAMETER

WORST-CASE CONFIGURATIONS

Bluetooth Mode	Modulation Technology	Modulation Type	Data Rate (Mbps)
BR	FHSS	GFSK	1Mbit/s
EDR	FHSS	π/4-DQPSK	2Mbit/s
EDR	FHSS	8DPSK	3Mbit/s

Note: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software		FCC_assist_1.0.2.2		
Modulation Type	Transmit Antenna Number	Test Software setting value		
		CH 00	CH 39	CH 78
GFSK	1	10	10	10
π/4-DQPSK	1	10	10	10
8DPSK	1	10	10	10

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2402-2480	FPC	-1.69

Test Mode	Transmit and Receive Mode	Description
GFSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
π/4-DQPSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
8DPSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
Note:		

5.7. SUPPORT UNITS FOR SYSTEM TEST

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
E-1	Adapter	Xiaomi	MDY-11-EX	N/A	GTG Support
E-2	PC	Lenovo	B4650-D002	M90601U3	GTG Support

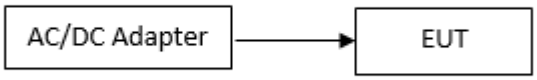
The following cables were used to form a representative test configuration during the tests.

Item	Type of cable	Shielded Type	Ferrite Core	Length
C-1	USB cable	Shielded	without ferrite	1.0 m

5.8. SETUP DIAGRAM

Radiated emissions:

AC Power Line Conducted Emission:



6. MEASURING EQUIPMENT AND SOFTWARE USED

Test Equipment of Conducted RF					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Spectrum Analyzer	Rohde & Schwarz	FSV40	102257	2023/09/18	2024/09/17
Spectrum Analyzer	KEYSIGHT	N9020A	MY51285127	2023/09/18	2024/09/17
EXG Analog Signal Generator	KEYSIGHT	N5173B	MY61253075	2023/09/18	2024/09/17
Vector Signal Generator	Rohde & Schwarz	SMM100A	101899	2023/09/18	2024/09/17
RF Control box	MWRF-test	MW100-RFCB	MW220926GTG	2023/09/18	2024/09/17
Wideband Radio Communication Tester	Rohde & Schwarz	CMW270	102792	2023/09/18	2024/09/17
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	103235	2023/09/18	2024/09/17
temperature humidity chamber	Espec	SH-241	SH-241-2014	2023/09/18	2024/09/17
RF Test Software	MWRF-test	MTS8310E (Ver. V2/0)	N/A	N/A	N/A

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
3m Semi-anechoic Chamber	ETS	9m*6m*6m	Q2146	2022/08/30	2025/08/29
EMI Test Receiver	Rohde & Schwarz	ESCI3	101409	2023/09/18	2024/09/17
Spectrum Analyzer	KEYSIGHT	N9020A	MY51283932	2023/09/18	2024/09/17
Pre-Amplifier	HzEMC	HPA-9K0130	HYPA21001	2023/09/18	2024/09/17
Biconilog Antenna	Schwarzbeck	VULB 9168	01315	2022/10/10	2025/10/09
Biconilog Antenna	ETS	3142E	00243646	2022/03/23	2025/03/22
Loop Antenna	ETS	6502	243668	2022/03/30	2025/03/29
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE)	N/A	N/A	N/A

Test Equipment of Radiated emissions above 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
3m Semi-anechoic Chamber	ETS	9m*6m*6m	Q2149	2022/08/30	2025/08/29
Spectrum Analyzer	Rohde & Schwarz	FSV40	101413	2023/09/18	2024/09/17
Spectrum Analyzer	KEYSIGHT	N9020A	MY51283932	2023/09/18	2024/09/17
Pre-Amplifier	A-INFO	HPA-1G1850	HYPA21003	2023/09/18	2024/09/17
Horn antenna	A-INFO	3117	246069	2022/03/11	2025/03/10
Pre-Amplifier	ZKJC	HPA-184057	HYPA21004	2023/09/18	2024/09/17

Horn antenna	ZKJC	3116C	246265	2022/03/29	2025/03/28
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE+)	N/A	N/A	N/A

Test Equipment of Conducted emissions					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Shielded Room	CHENG YU	8m*5m*4m	N/A	2022/10/29	2025/10/28
EMI Test Receiver	Rohde & Schwarz	ESR3	102647	2023/09/18	2024/09/17
LISN/AMN	Rohde & Schwarz	ENV216	102843	2023/09/18	2024/09/17
NNLK 8129 RC	Schwarzbeck	NNLK 8129 RC	5046	2023/09/18	2024/09/17
Test Software	Farad	EZ-EMC (Ver. EMC-con-3A1 1+)	N/A	N/A	N/A

7. ANTENNA PORT TEST RESULTS

7.1. CONDUCTED OUTPUT POWER

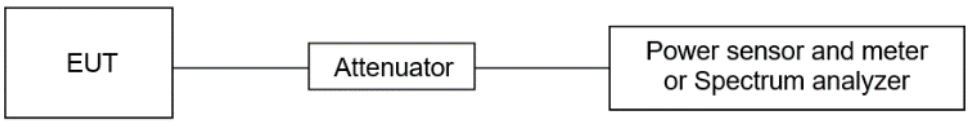
LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Conduct Output Power	1 watt or 30 dBm	2400-2483.5

TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).
Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.2℃	Relative Humidity	49%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section "Test Data" - Appendix A

7.2. 20 DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247 (a) (1) RSS-247 Clause 5.1 (a)	20 dB Bandwidth	None; for reporting purposes only.	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	None; for reporting purposes only.	2400-2483.5

TEST PROCEDURE

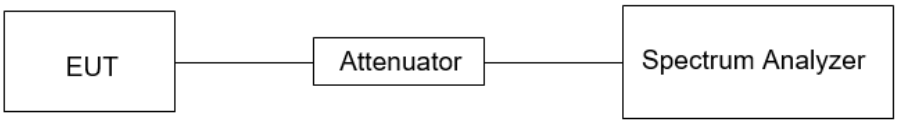
Refer to ANSI C63.10-2013 clause 6.9.2.

Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 20 dB Bandwidth: 1 % to 5 % of the 20 dB bandwidth For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
VBW	For 20 dB Bandwidth: approximately 3×RBW For 99 % Occupied Bandwidth: ≥ 3×RBW
Span	Approximately 2 to 3 times the 20dB bandwidth
Trace	Max hold
Sweep	Auto couple

a) Use the occupied bandwidth function of the instrument, allow the trace to stabilize and report the measured 99 % occupied bandwidth and 20 dB Bandwidth.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.2℃	Relative Humidity	49%
Atmosphere Pressure	101kPa		

TEST RESULTS

Please refer to section "Test Data" - Appendix A

8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz-1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz		
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands[Note 1]		
MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST PROCEDURE

Below 30 MHz

The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

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

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz

The setting of the spectrum analyser

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

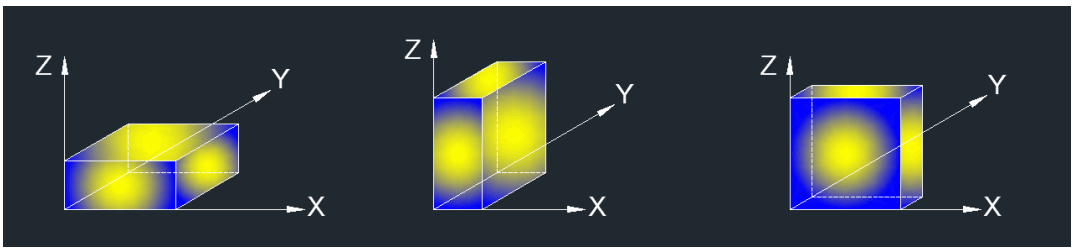
3. The EUT was placed on a turntable with 1.5 m above ground.

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

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

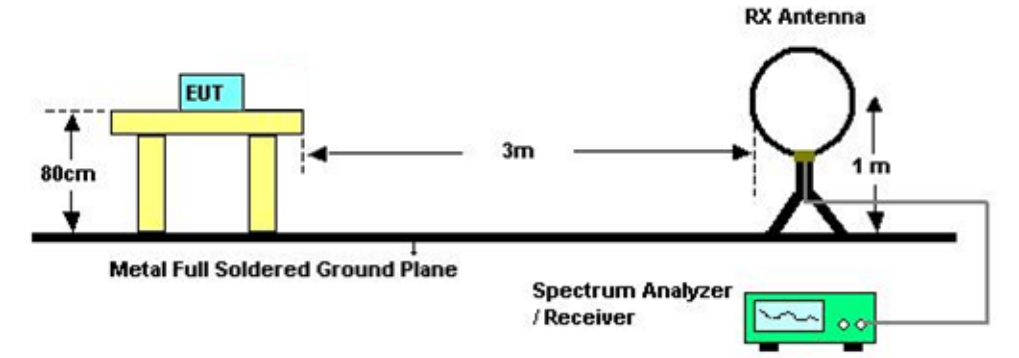
X axis, Y axis, Z axis positions:

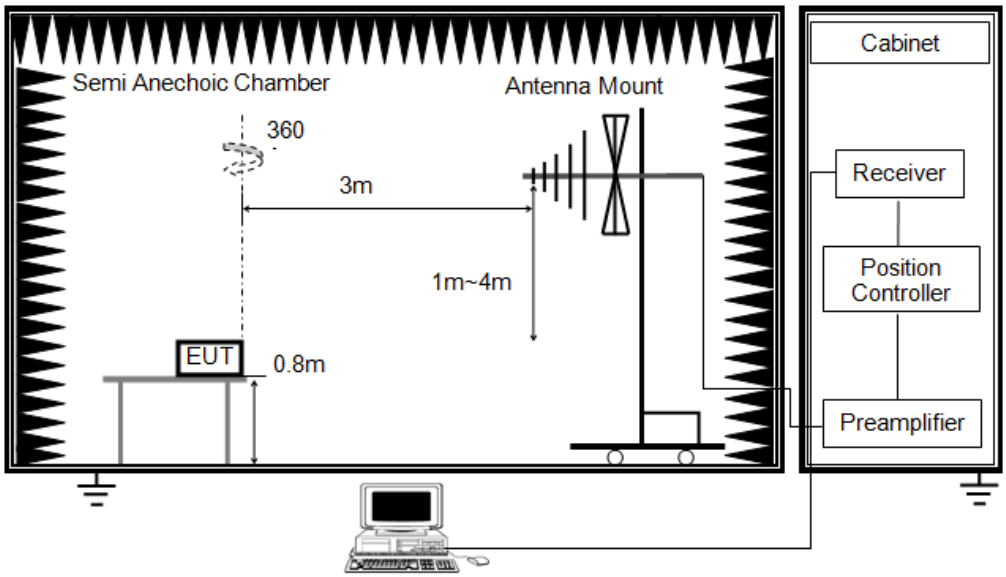


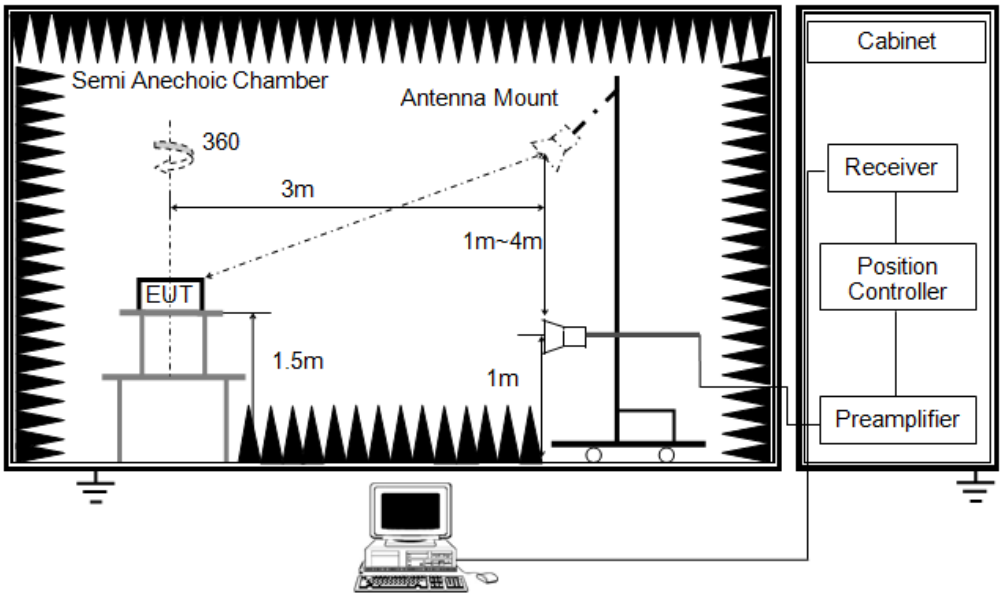
Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

TEST SETUP







TEST ENVIRONMENT

Temperature	24.1℃	Relative Humidity	53%
Atmosphere Pressure	101kPa		

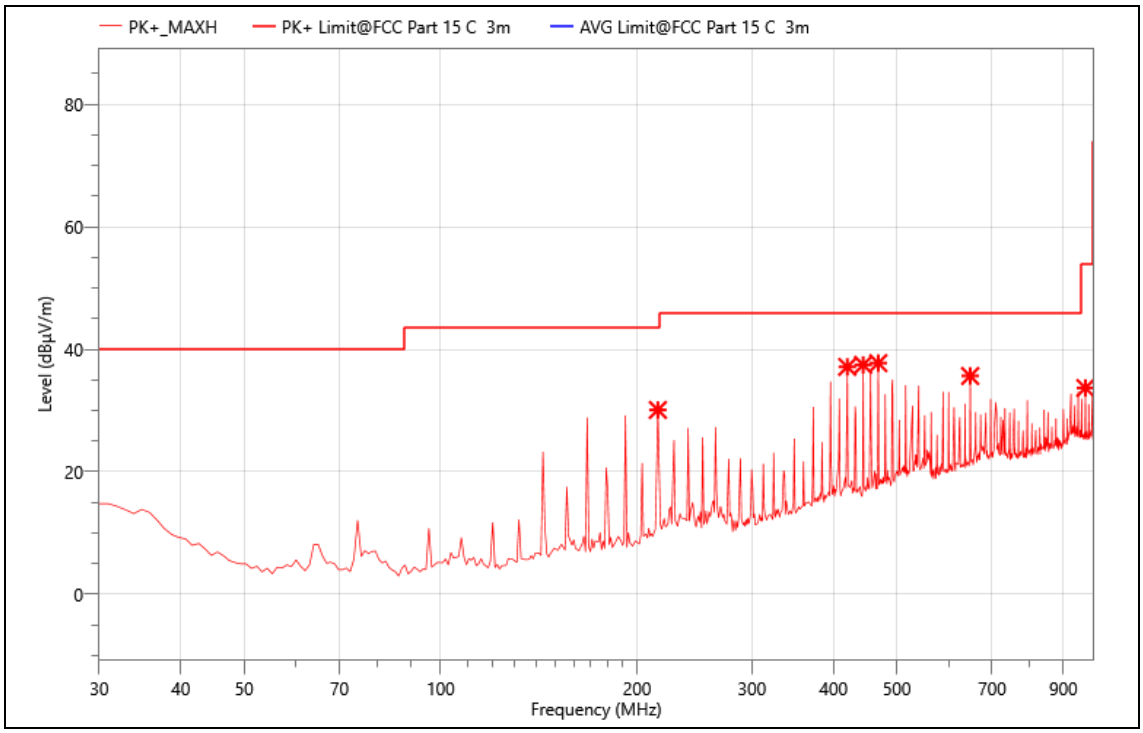
TEST RESULTS

8.1. RADIATED BAND EDGE AND SPURIOUS EMISSION

- Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)

The worst result as bellow:

Mode:	3DH5 2402
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

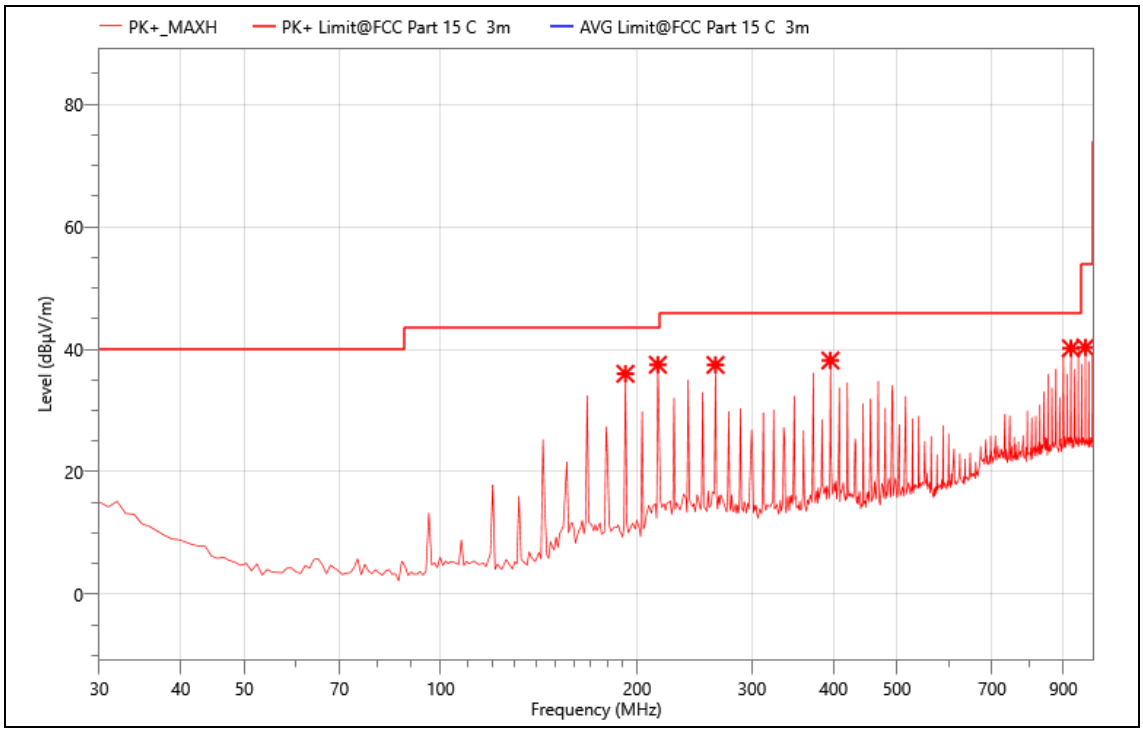


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	215.270	51.09	-21	30.09	43.50	13.41	PK+	V
2	419.940	51.01	-13.89	37.12	46.00	8.88	PK+	V
3	444.190	51.55	-14.09	37.46	46.00	8.54	PK+	V
4	468.440	51.18	-13.44	37.74	46.00	8.26	PK+	V
5	647.890	44.14	-8.5	35.64	46.00	10.36	PK+	V
6	972.840	37.39	-3.71	33.68	53.90	20.22	PK+	V

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2402
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	191.990	58.57	-22.57	36.00	43.50	7.50	PK+	H
2	215.270	58.47	-21	37.47	43.50	6.03	PK+	H
3	263.770	55.76	-18.32	37.44	46.00	8.56	PK+	H
4	395.690	52.31	-14.14	38.17	46.00	7.83	PK+	H
5	924.340	43.44	-3.27	40.17	46.00	5.83	PK+	H
6	972.840	44.01	-3.71	40.30	53.90	13.60	PK+	H

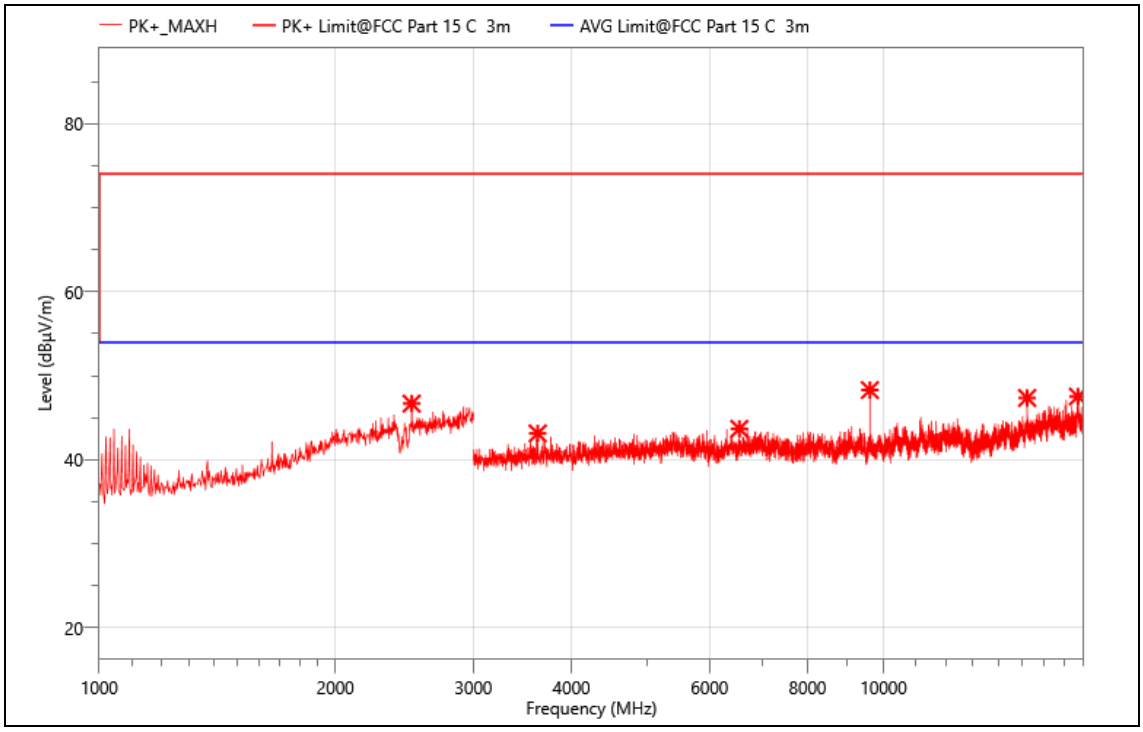
Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Note:

1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

- Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)
  The worst result as bellow:

Mode:	3DH5 2402
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

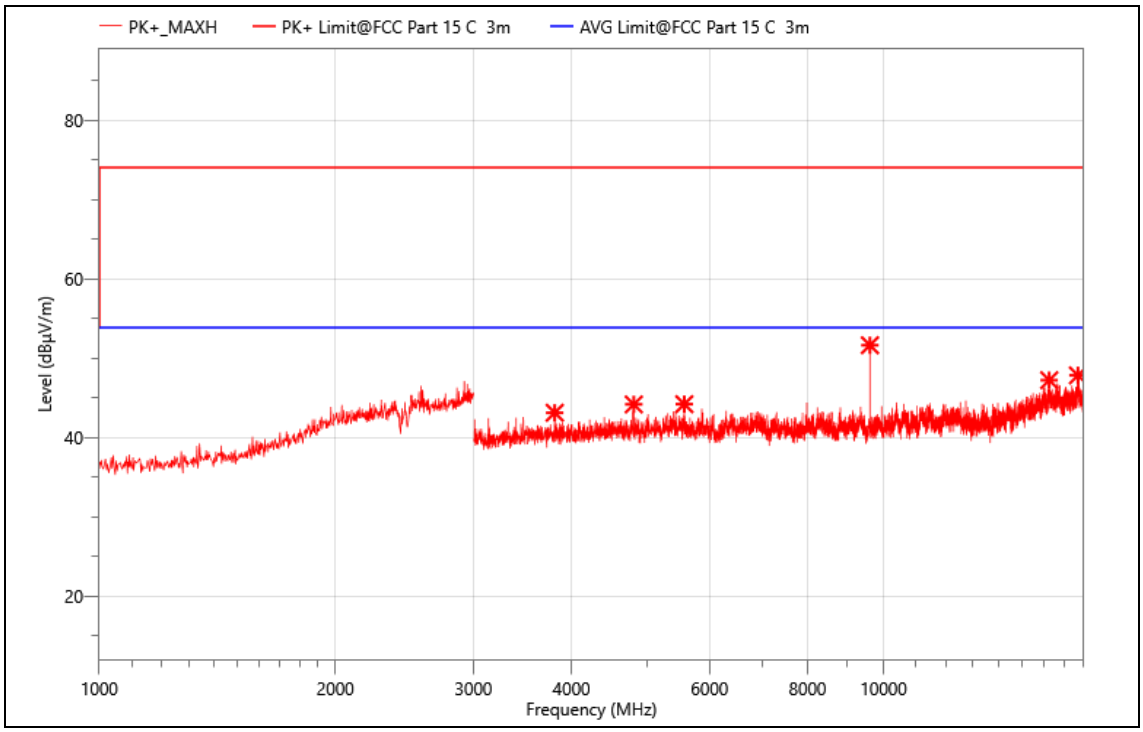


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2502.000	55.10	-8.41	46.69	74.00	27.31	PK+	H
2	3622.500	56.59	-13.45	43.14	74.00	30.86	PK+	H
3	6549.000	51.82	-8.13	43.69	74.00	30.31	PK+	H
4	9607.500	55.36	-7.06	48.30	74.00	25.70	PK+	H
5	15243.000	50.16	-2.8	47.36	74.00	26.64	PK+	H
6	17694.000	47.32	0.21	47.53	74.00	26.47	PK+	H

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2402
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

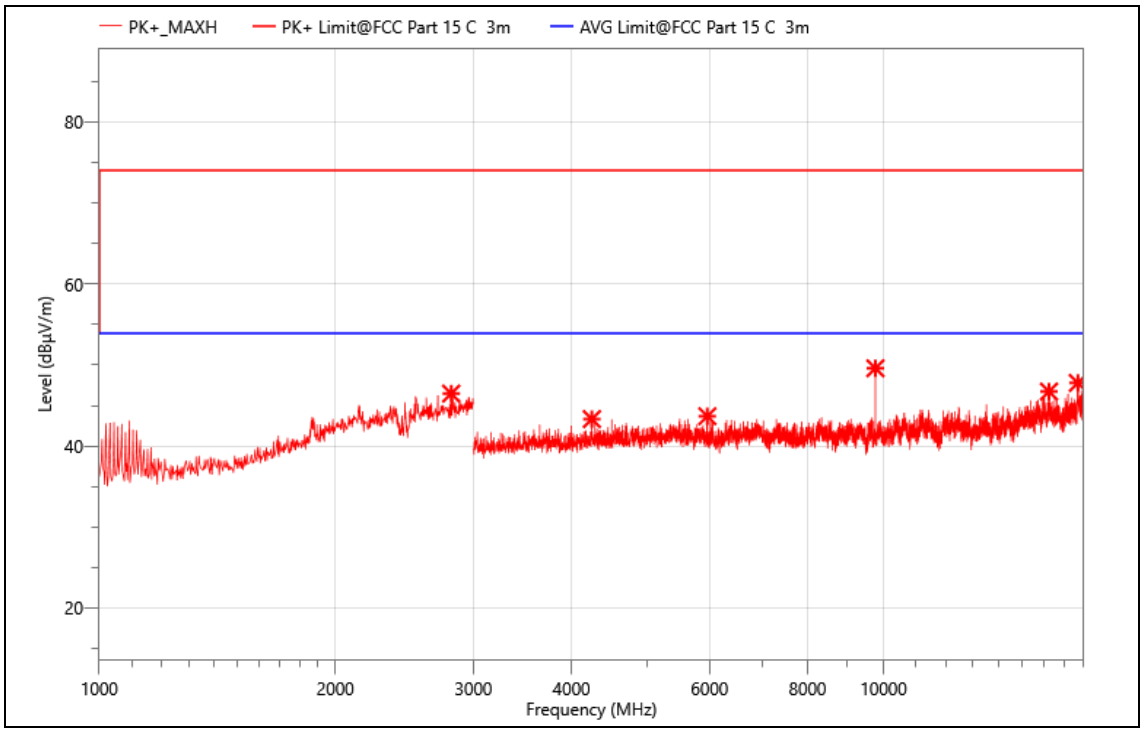


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	3808.500	56.73	-13.58	43.15	74.00	30.85	PK+	V
2	4803.000	55.54	-11.34	44.20	74.00	29.80	PK+	V
3	5571.000	53.51	-9.28	44.23	74.00	29.77	PK+	V
4	9607.500	58.73	-7.06	51.67	74.00	22.33	PK+	V
5	16264.500	48.23	-0.97	47.26	74.00	26.74	PK+	V
6	17694.000	47.65	0.21	47.86	74.00	26.14	PK+	V

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2441
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

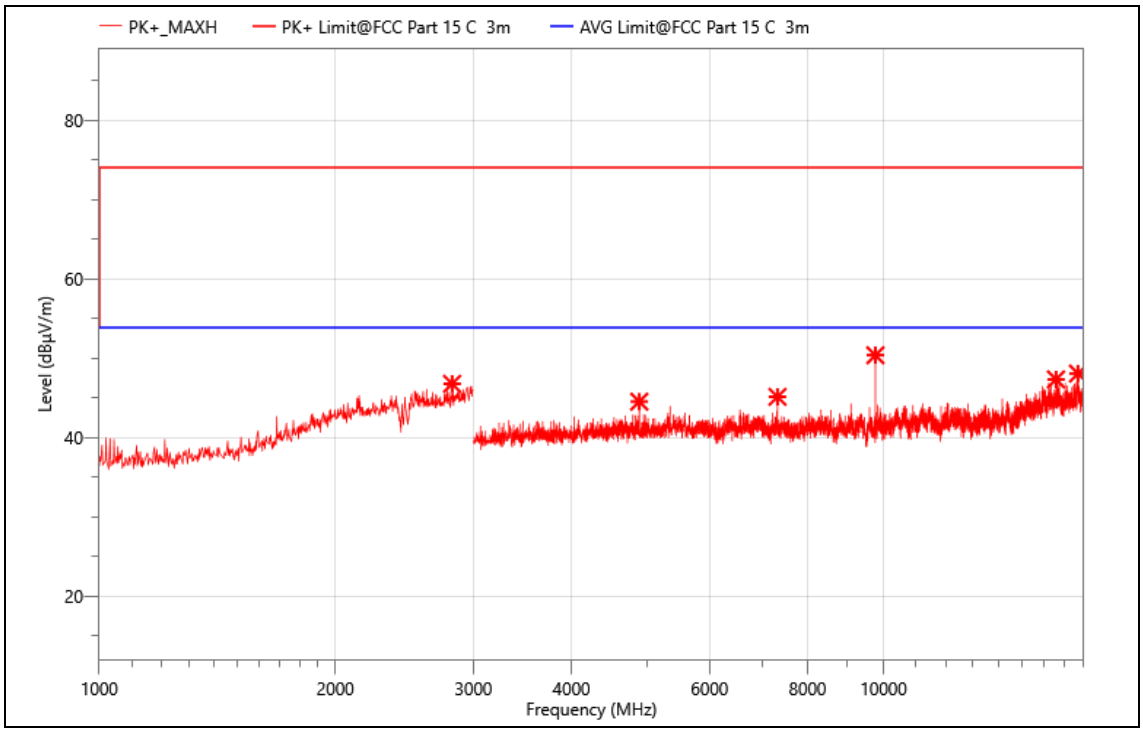


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2810.000	54.76	-8.28	46.48	74.00	27.52	PK+	H
2	4246.500	55.83	-12.5	43.33	74.00	30.67	PK+	H
3	5961.000	52.33	-8.65	43.68	74.00	30.32	PK+	H
4	9763.500	56.57	-6.97	49.60	74.00	24.40	PK+	H
5	16252.500	47.37	-0.64	46.73	74.00	27.27	PK+	H
6	17691.000	47.56	0.23	47.79	74.00	26.21	PK+	H

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2441
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

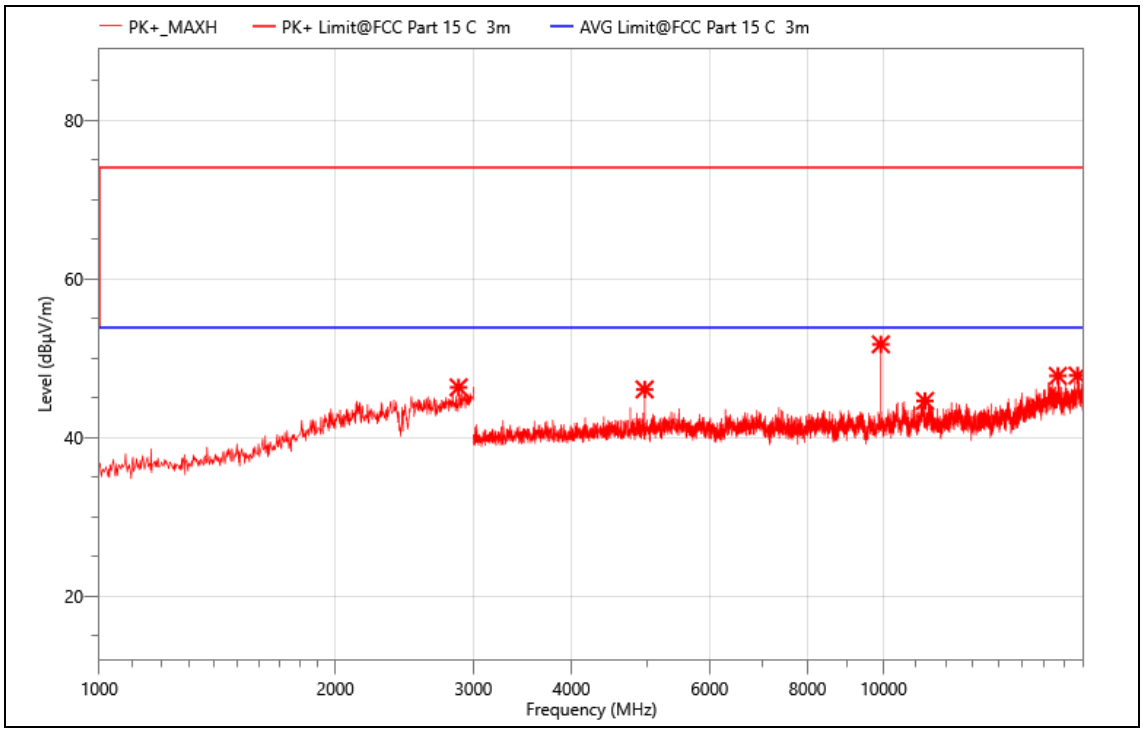


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2818.000	54.87	-8.07	46.80	74.00	27.20	PK+	V
2	4881.000	55.68	-11.14	44.54	74.00	29.46	PK+	V
3	7323.000	53.10	-7.95	45.15	74.00	28.85	PK+	V
4	9763.500	57.37	-6.97	50.40	74.00	23.60	PK+	V
5	16591.500	48.98	-1.63	47.35	74.00	26.65	PK+	V
6	17700.000	47.91	0.18	48.09	74.00	25.91	PK+	V

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2480
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

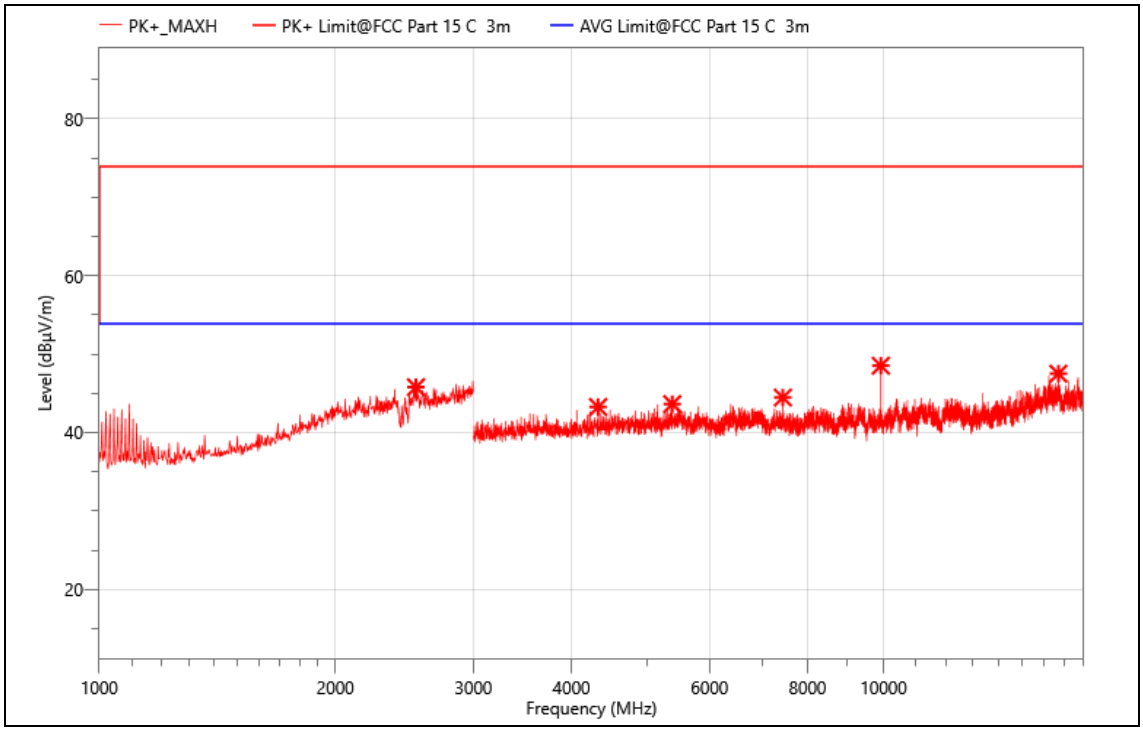


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2872.000	54.61	-8.26	46.35	74.00	27.65	PK+	V
2	4959.000	57.44	-11.35	46.09	74.00	27.91	PK+	V
3	9919.500	58.12	-6.35	51.77	74.00	22.23	PK+	V
4	11295.000	48.89	-4.26	44.63	74.00	29.37	PK+	V
5	16684.500	48.28	-0.49	47.79	74.00	26.21	PK+	V
6	17674.500	47.51	0.32	47.83	74.00	26.17	PK+	V

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2480
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2534.000	54.34	-8.56	45.78	74.00	28.22	PK+	H
2	4326.000	55.58	-12.32	43.26	74.00	30.74	PK+	H
3	5377.500	52.76	-9.13	43.63	74.00	30.37	PK+	H
4	7440.000	52.42	-7.96	44.46	74.00	29.54	PK+	H
5	9919.500	54.87	-6.35	48.52	74.00	25.48	PK+	H
6	16707.000	48.20	-0.7	47.50	74.00	26.50	PK+	H

No others harmonics emissions are higher than 20 dB below the limits of RSS-247.

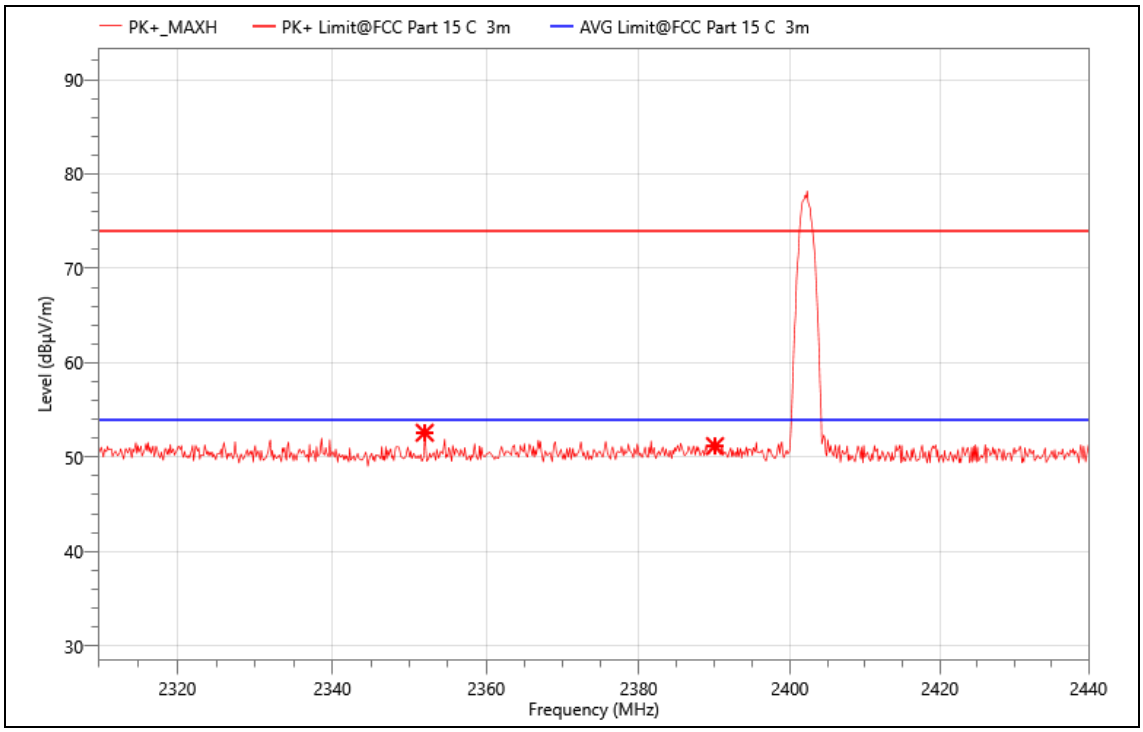
Note:

1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

- Band Edge

The worst result as bellow:

Mode:	3DH5 2402
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

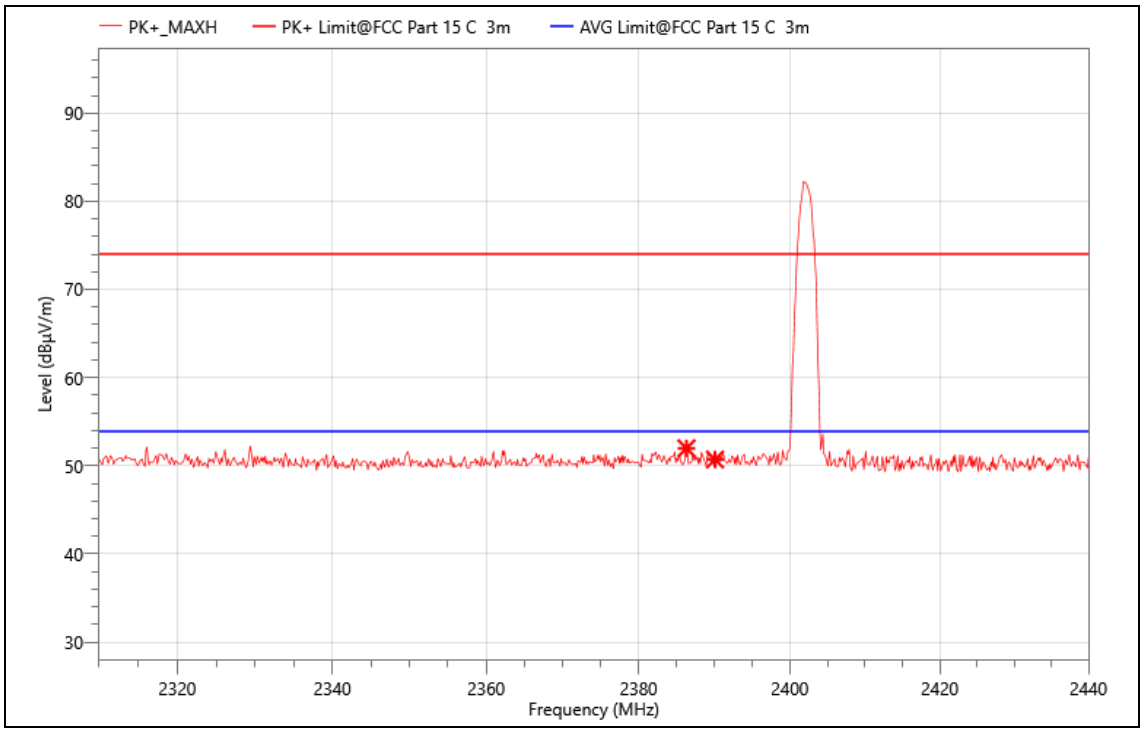


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2351.990	26.95	25.63	52.58	74.00	21.42	PK+	V
2	2390.080	25.21	25.96	51.17	74.00	22.83	PK+	V

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2402
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

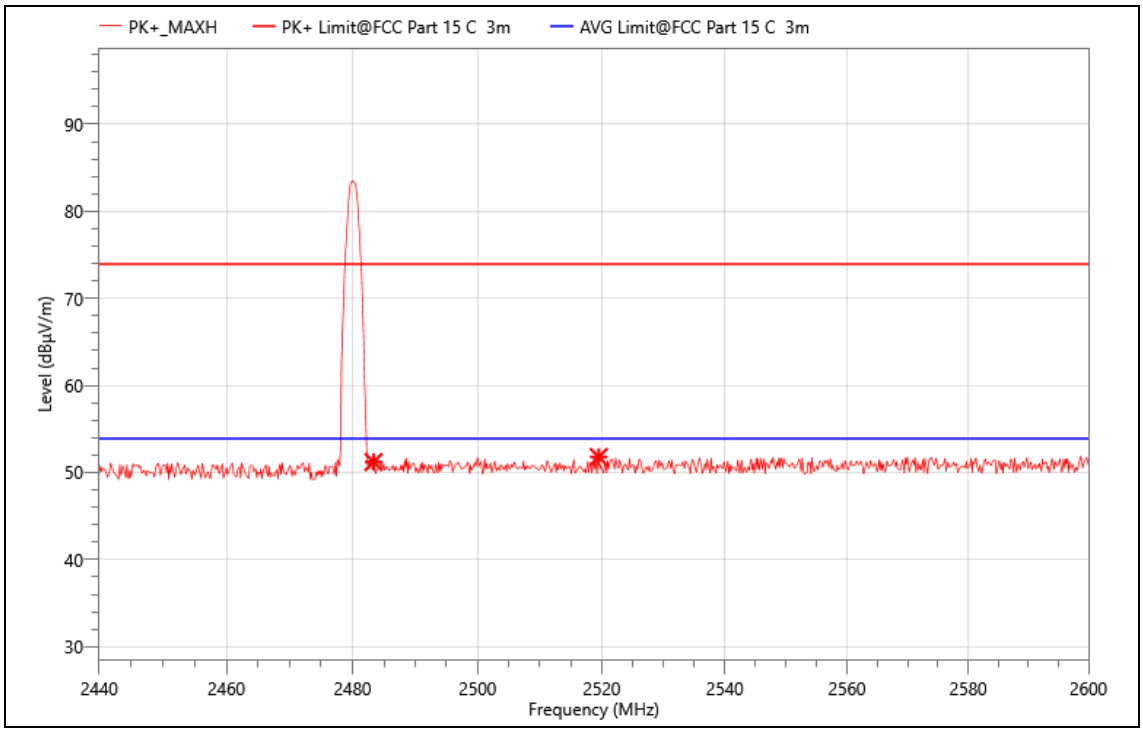


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2386.310	26.04	25.94	51.98	74.00	22.02	PK+	H
2	2390.080	24.75	25.96	50.71	74.00	23.29	PK+	H

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2480
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa

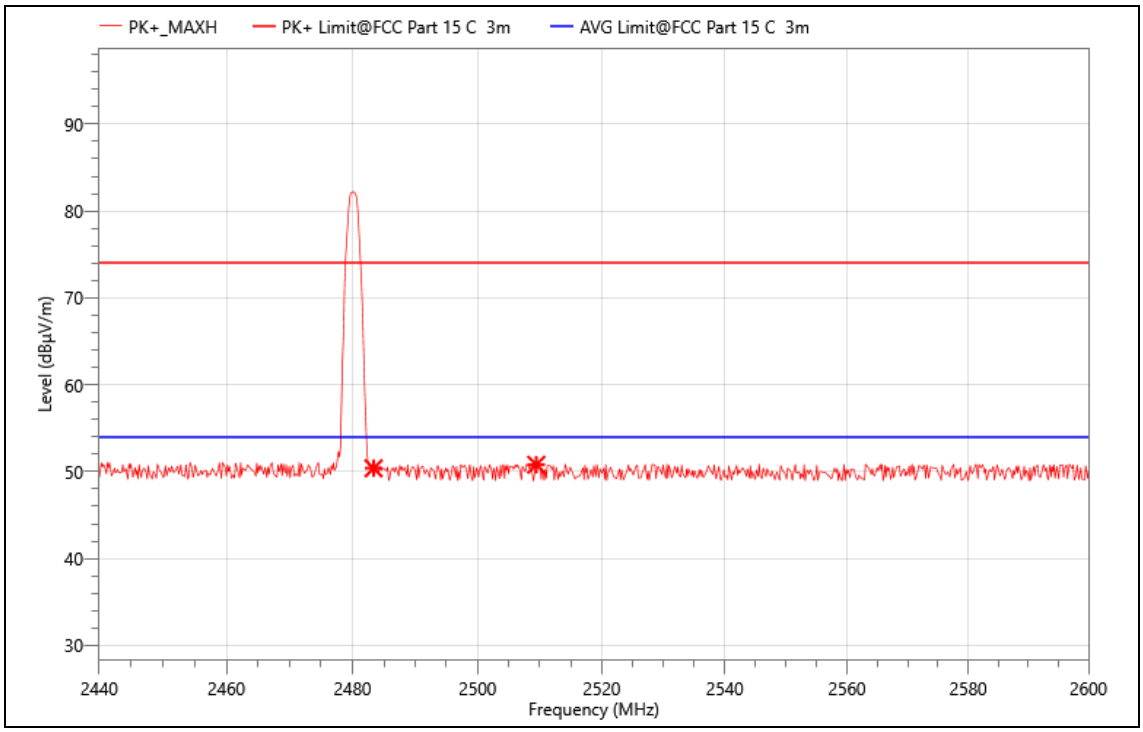


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2483.360	25.50	25.71	51.21	74.00	22.79	PK+	H
2	2519.520	25.92	25.87	51.79	74.00	22.21	PK+	H

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Mode:	3DH5 2480
Power:	DC 5V
TE:	Vier
Date	2024/01/23
T/A/P	24.1℃/53%/101Kpa



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2483.360	24.68	25.71	50.39	74.00	23.61	PK+	V
2	2509.440	24.98	25.82	50.80	74.00	23.20	PK+	V

Note：[Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

Note:

1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

9. ANTENNA REQUIREMENT

REQUIREMENT

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-Gen Issue 5 6.8
The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device’s antenna shall be stated, based on a measurement or on data from the antenna’s manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device’s ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

DESCRIPTION

Compliance

10. AC POWER LINE CONDUCTED EMISSION

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

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

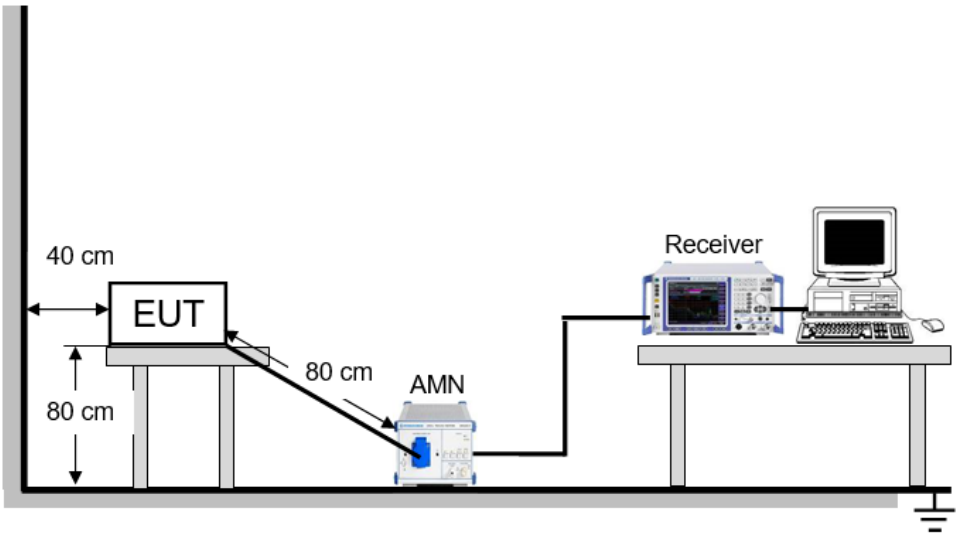
TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver is used to test the emissions from the AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

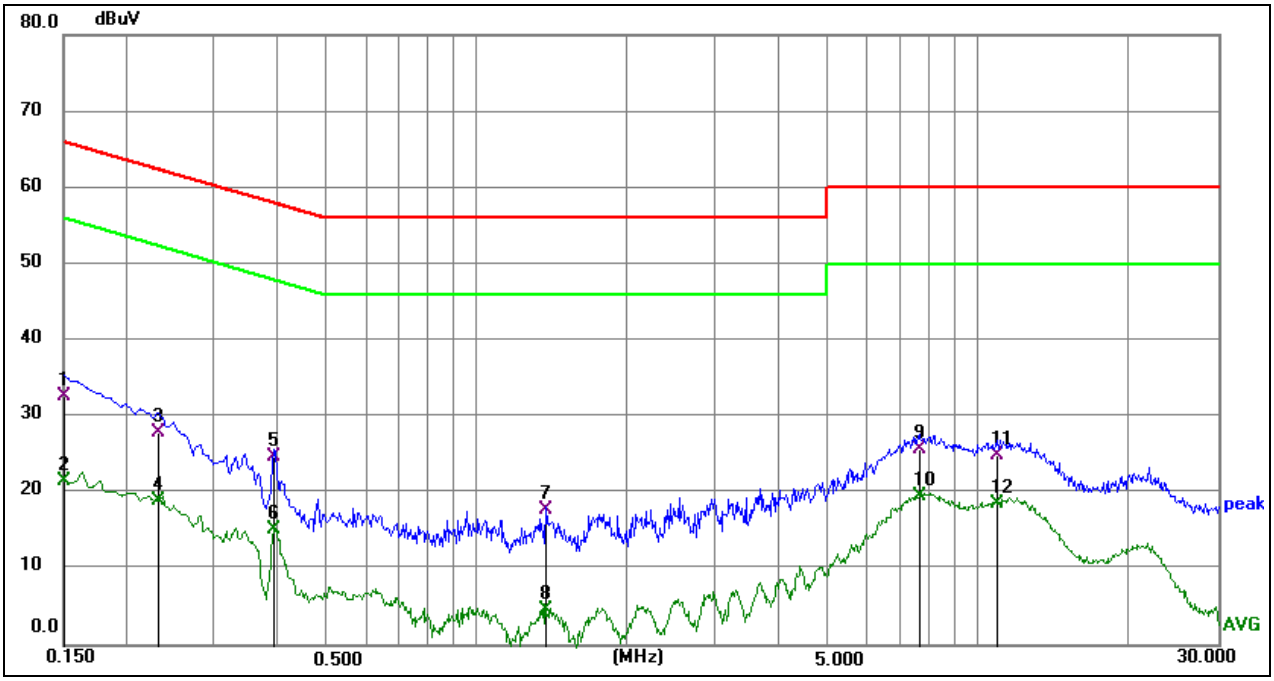
TEST SETUP



TEST ENVIRONMENT

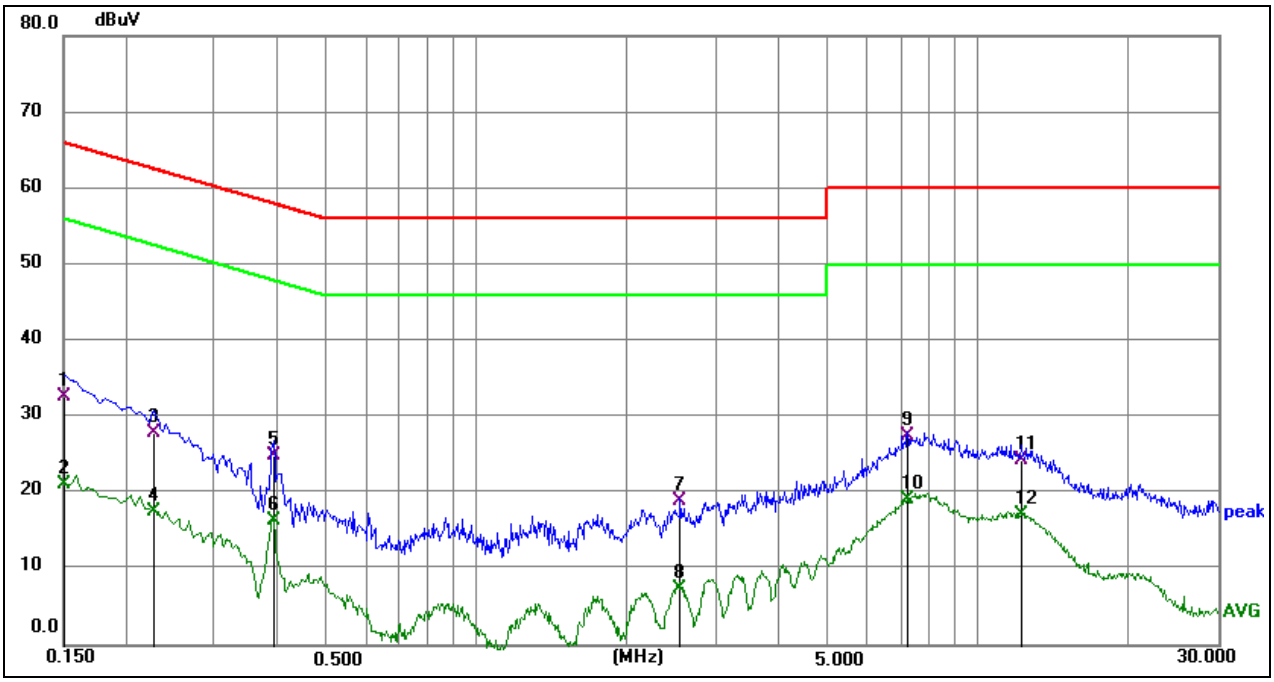
Temperature	21.3℃	Relative Humidity	52%
Atmosphere Pressure	100kPa		

TEST RESULTS



Phase: L1	Mode: 3DH5 2402MHz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	22.76	9.90	32.66	66.00	-33.34	QP
2	0.1500	11.72	9.90	21.62	56.00	-34.38	AVG
3	0.2310	18.08	9.86	27.94	62.41	-34.47	QP
4	0.2310	9.09	9.86	18.95	52.41	-33.46	AVG
5	0.3930	14.87	9.84	24.71	58.00	-33.29	QP
6	0.3930	5.43	9.84	15.27	48.00	-32.73	AVG
7	1.3740	7.50	10.19	17.69	56.00	-38.31	QP
8	1.3740	-5.56	10.19	4.63	46.00	-41.37	AVG
9	7.6200	15.03	10.66	25.69	60.00	-34.31	QP
10	7.6200	8.89	10.66	19.55	50.00	-30.45	AVG
11	10.9050	13.96	11.00	24.96	60.00	-35.04	QP
12	10.9050	7.65	11.00	18.65	50.00	-31.35	AVG



Phase: N	Mode: 3DH5 2402MHz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	22.64	10.00	32.64	66.00	-33.36	QP
2	0.1500	11.07	10.00	21.07	56.00	-34.93	AVG
3	0.2265	17.94	9.92	27.86	62.58	-34.72	QP
4	0.2265	7.73	9.92	17.65	52.58	-34.93	AVG
5	0.3930	14.90	9.94	24.84	58.00	-33.16	QP
6	0.3930	6.43	9.94	16.37	48.00	-31.63	AVG
7	2.5485	8.71	10.21	18.92	56.00	-37.08	QP
8	2.5485	-2.73	10.21	7.48	46.00	-38.52	AVG
9	7.2420	16.88	10.52	27.40	60.00	-32.60	QP
10	7.2420	8.65	10.52	19.17	50.00	-30.83	AVG
11	12.1830	13.31	10.98	24.29	60.00	-35.71	QP
12	12.1830	6.20	10.98	17.18	50.00	-32.82	AVG

Note: 1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

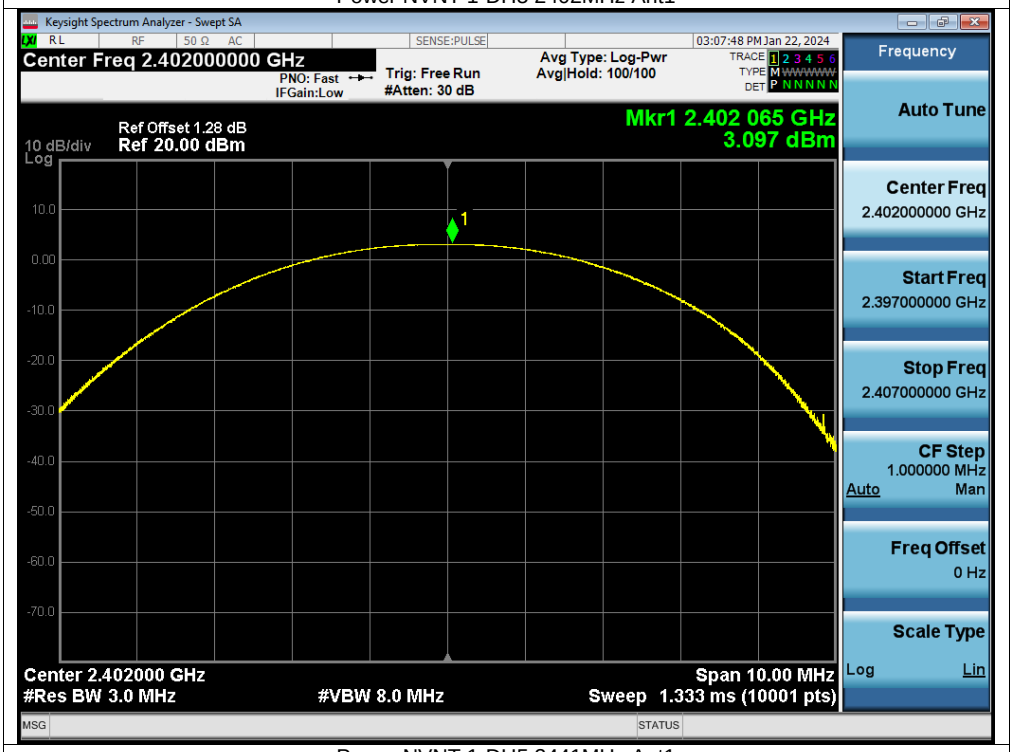
11. TEST DATA - Appendix A

Maximum Conducted Output Power

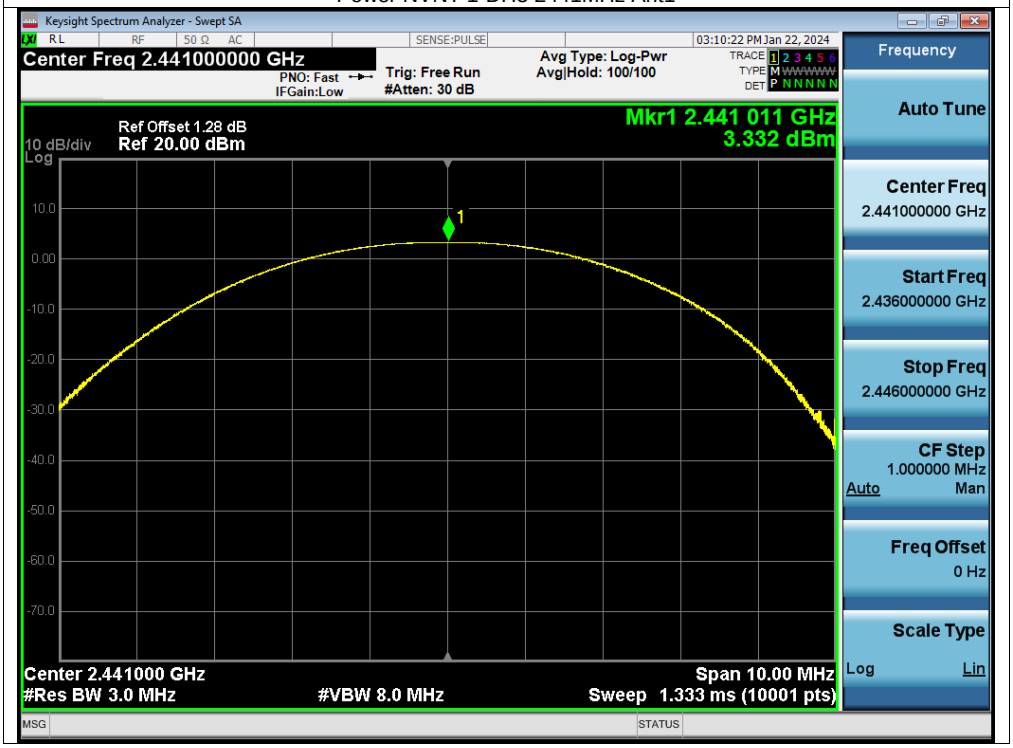
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	E.I.R.P (dBm	E.I.R.P Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	3.1	0	3.1	21	1.41	<=36.02	Pass
NVNT	1-DH5	2441	Ant1	3.33	0	3.33	21	1.64	<=36.02	Pass
NVNT	1-DH5	2480	Ant1	3.28	0	3.28	21	1.59	<=36.02	Pass
NVNT	2-DH5	2402	Ant1	3.99	0	3.99	21	2.30	<=36.02	Pass
NVNT	2-DH5	2441	Ant1	4.2	0	4.2	21	2.51	<=36.02	Pass
NVNT	2-DH5	2480	Ant1	4.08	0	4.08	21	2.39	<=36.02	Pass
NVNT	3-DH5	2402	Ant1	4.01	0	4.01	21	2.32	<=36.02	Pass
NVNT	3-DH5	2441	Ant1	4.28	0	4.28	21	2.59	<=36.02	Pass
NVNT	3-DH5	2480	Ant1	4.29	0	4.29	21	2.60	<=36.02	Pass

Note1: Antenna Gain: -1.69 dBi;
Note2: E.I.R.P = Measured Power + Antenna Gain

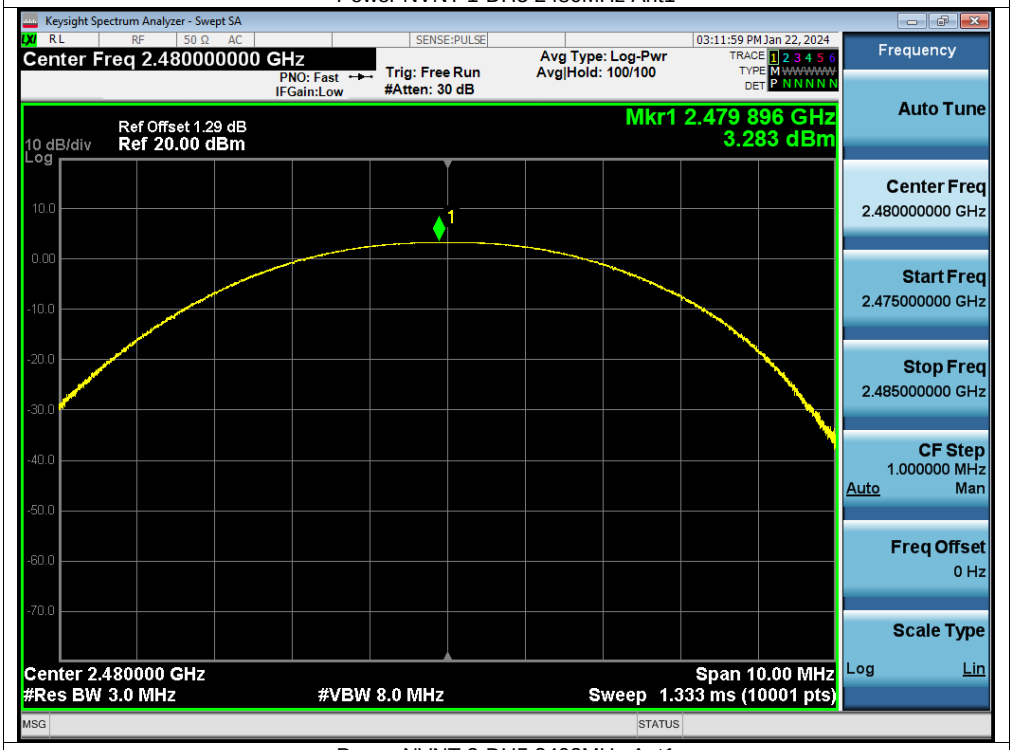
Test Graphs
Power NVNT 1-DH5 2402MHz Ant1



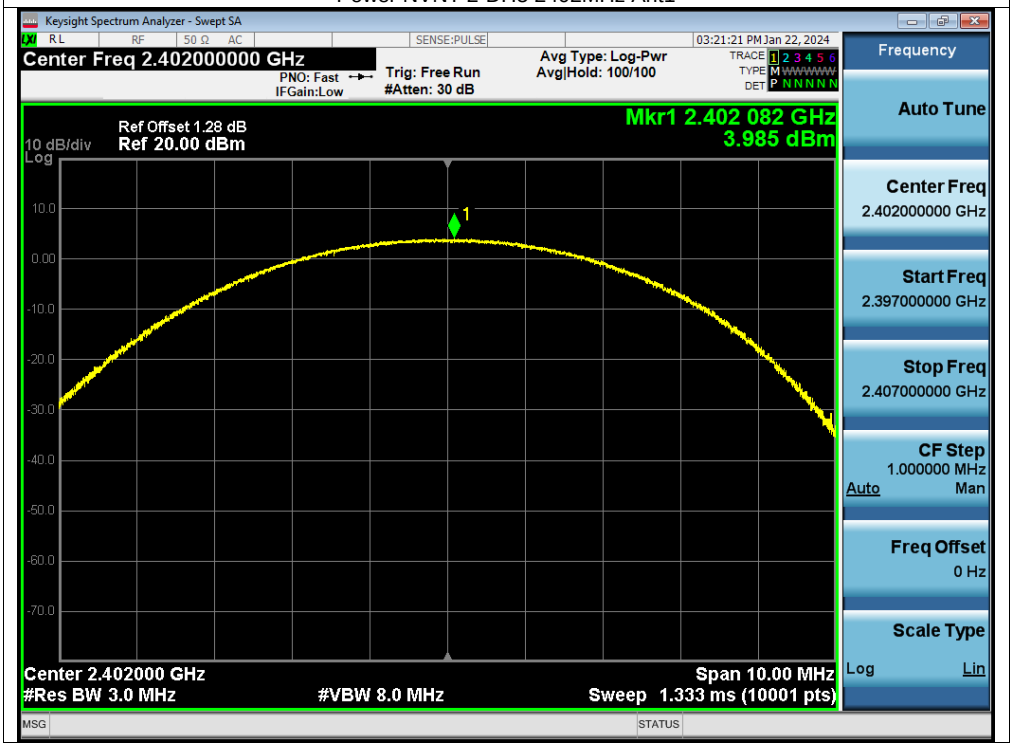
Power NVNT 1-DH5 2441MHz Ant1



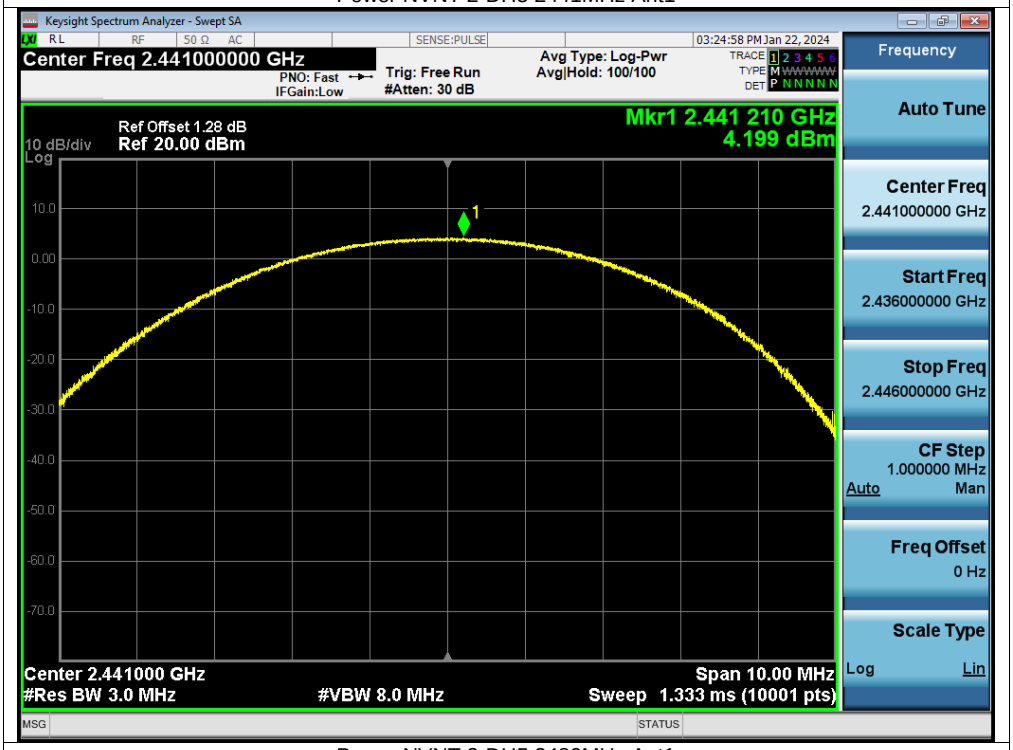
Power NVNT 1-DH5 2480MHz Ant1



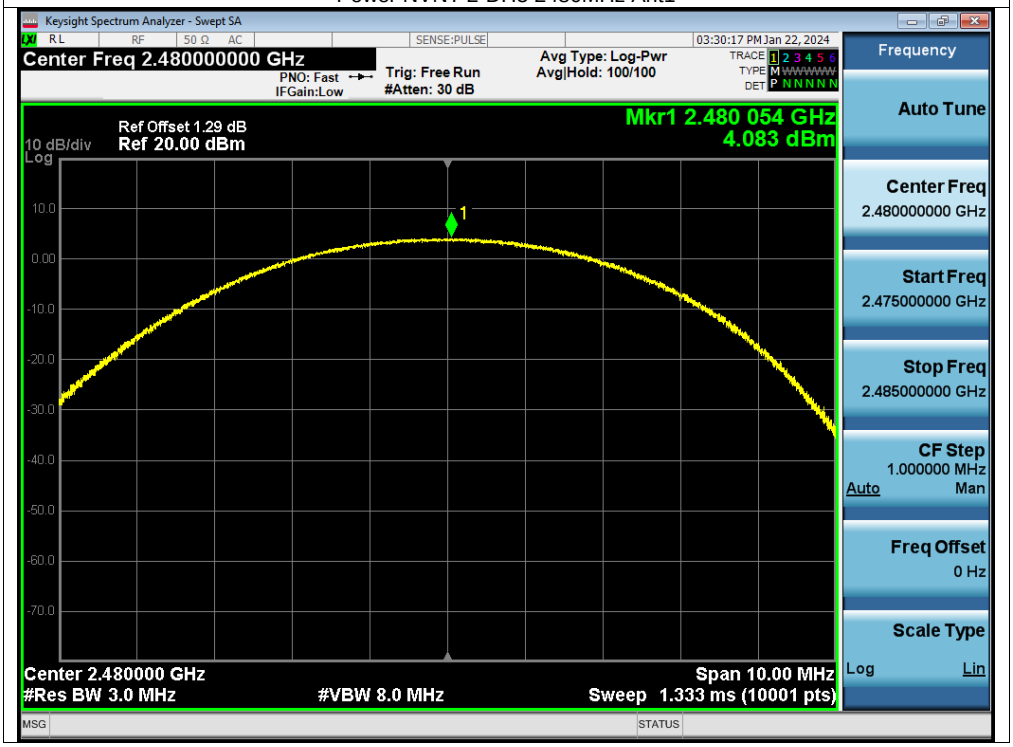
Power NVNT 2-DH5 2402MHz Ant1



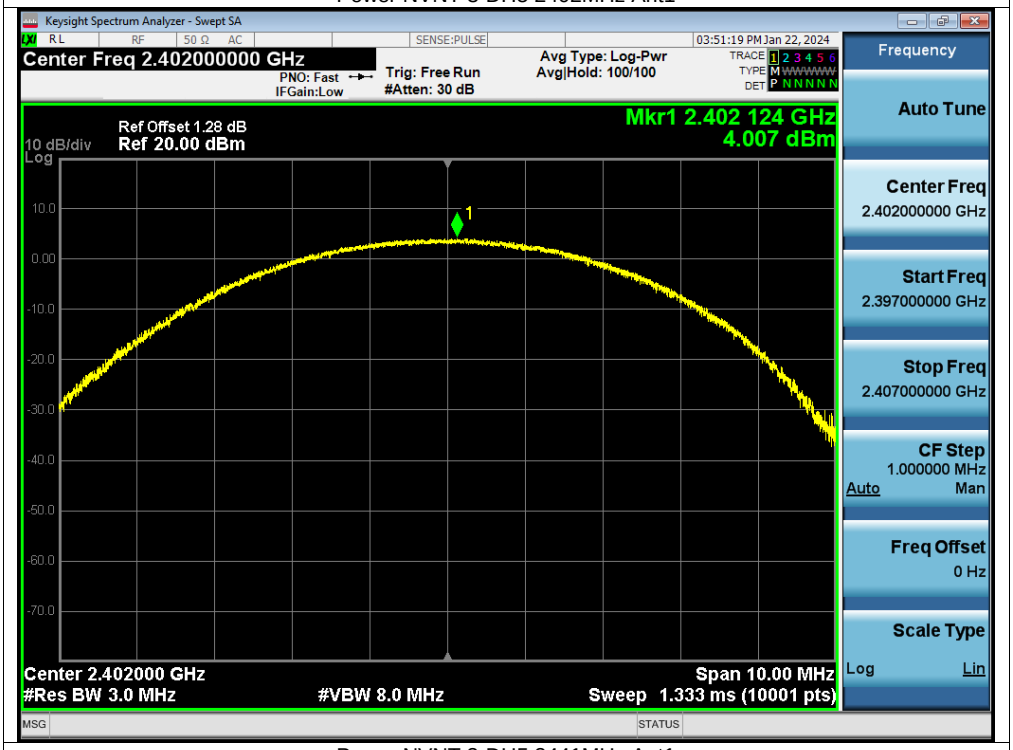
Power NVNT 2-DH5 2441MHz Ant1



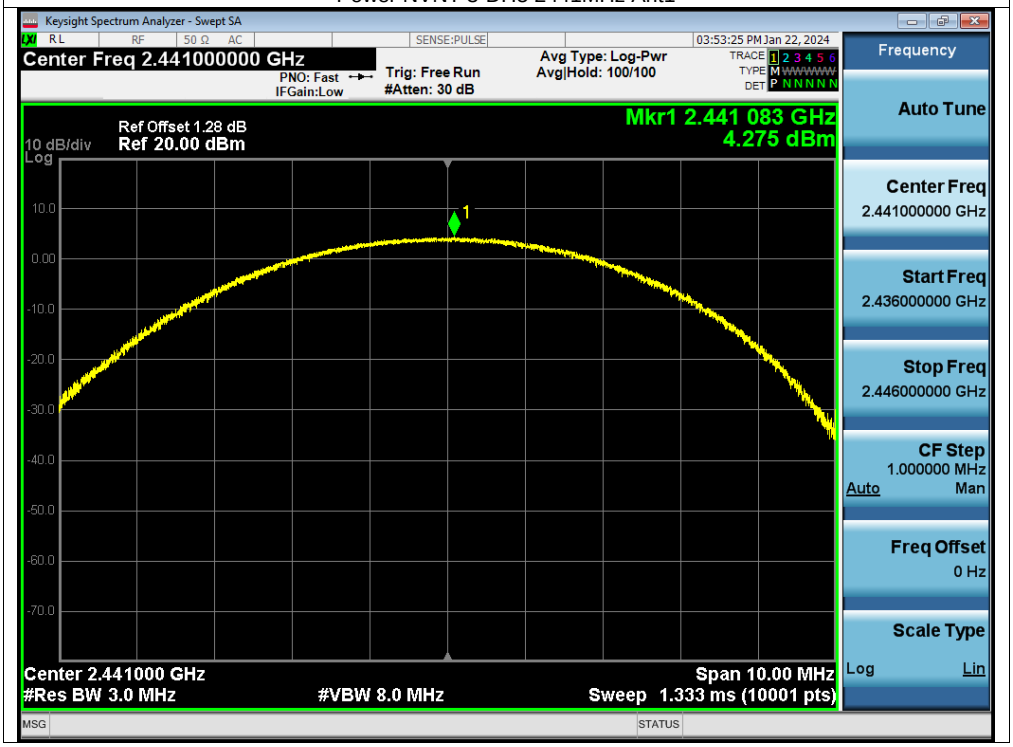
Power NVNT 2-DH5 2480MHz Ant1



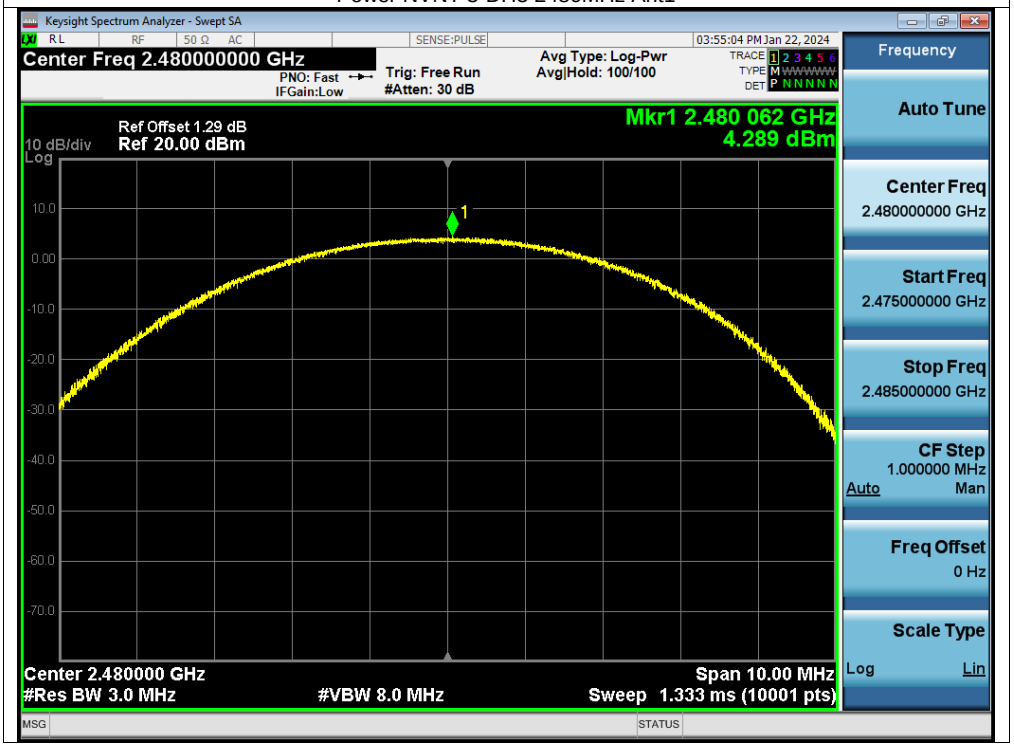
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1



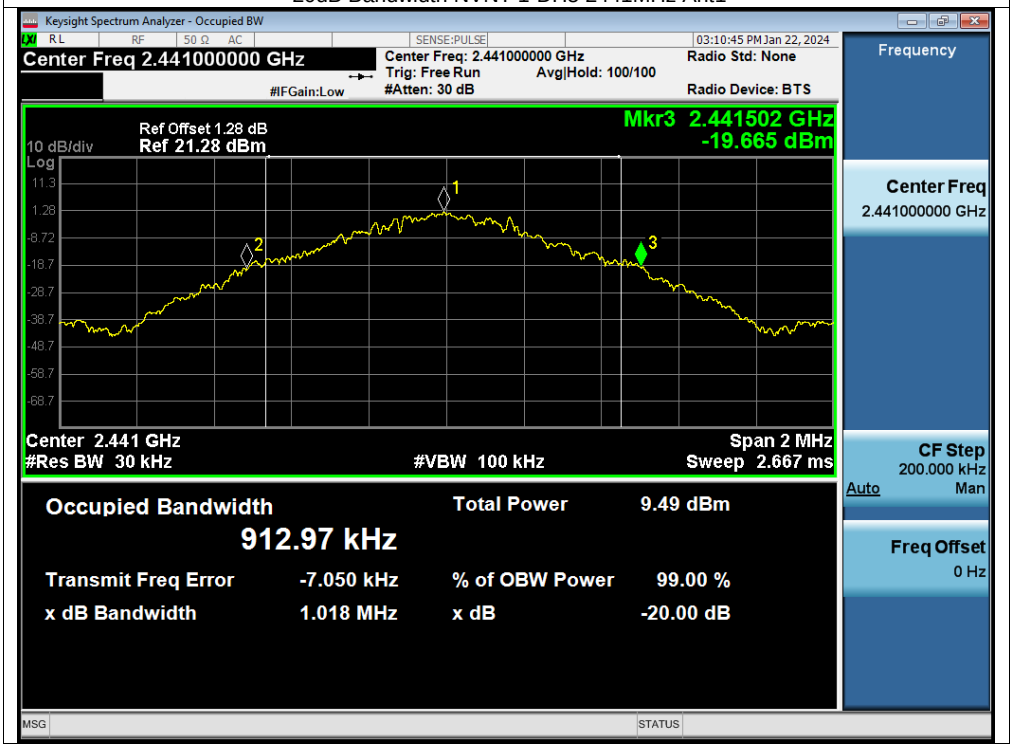
-20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1	N/A	N/A
NVNT	1-DH5	2441	Ant1	1.02	N/A	N/A
NVNT	1-DH5	2480	Ant1	1.03	N/A	N/A
NVNT	2-DH5	2402	Ant1	1.29	N/A	N/A
NVNT	2-DH5	2441	Ant1	1.3	N/A	N/A
NVNT	2-DH5	2480	Ant1	1.31	N/A	N/A
NVNT	3-DH5	2402	Ant1	1.26	N/A	N/A
NVNT	3-DH5	2441	Ant1	1.27	N/A	N/A
NVNT	3-DH5	2480	Ant1	1.3	N/A	N/A

Test Graphs

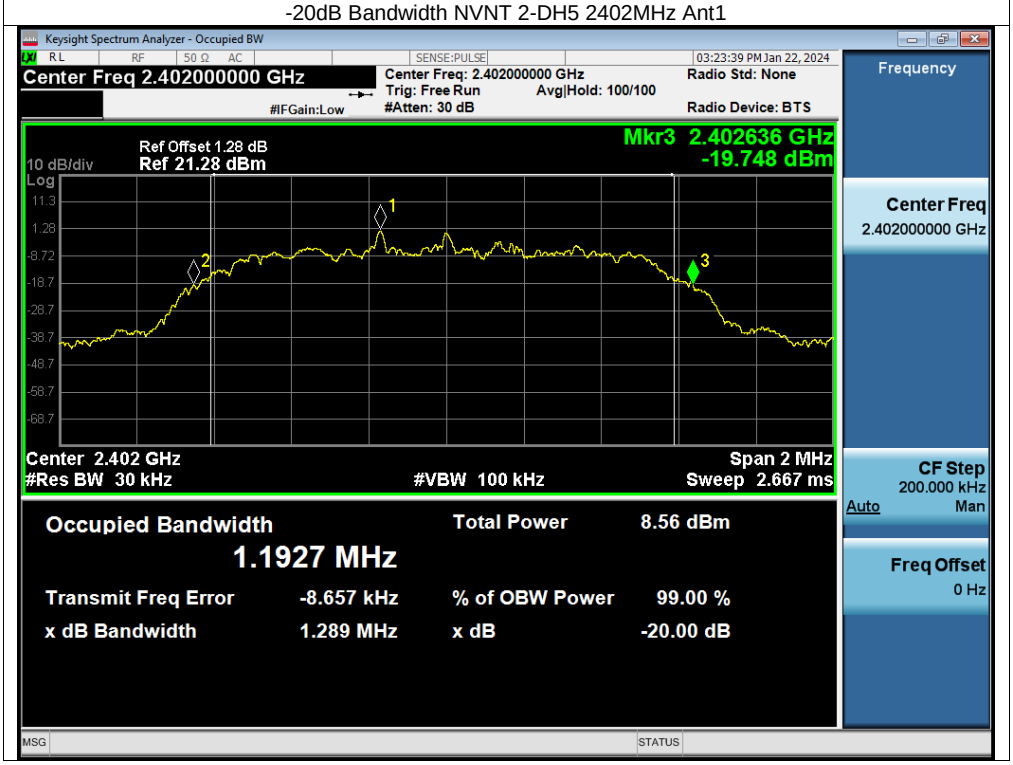
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

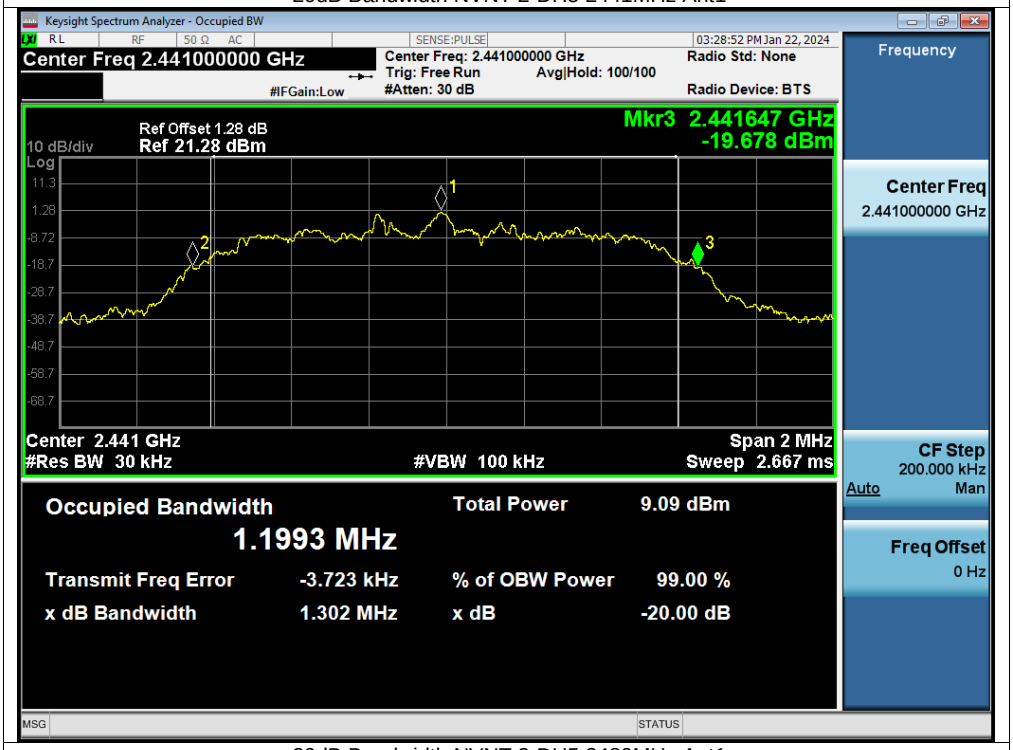


-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

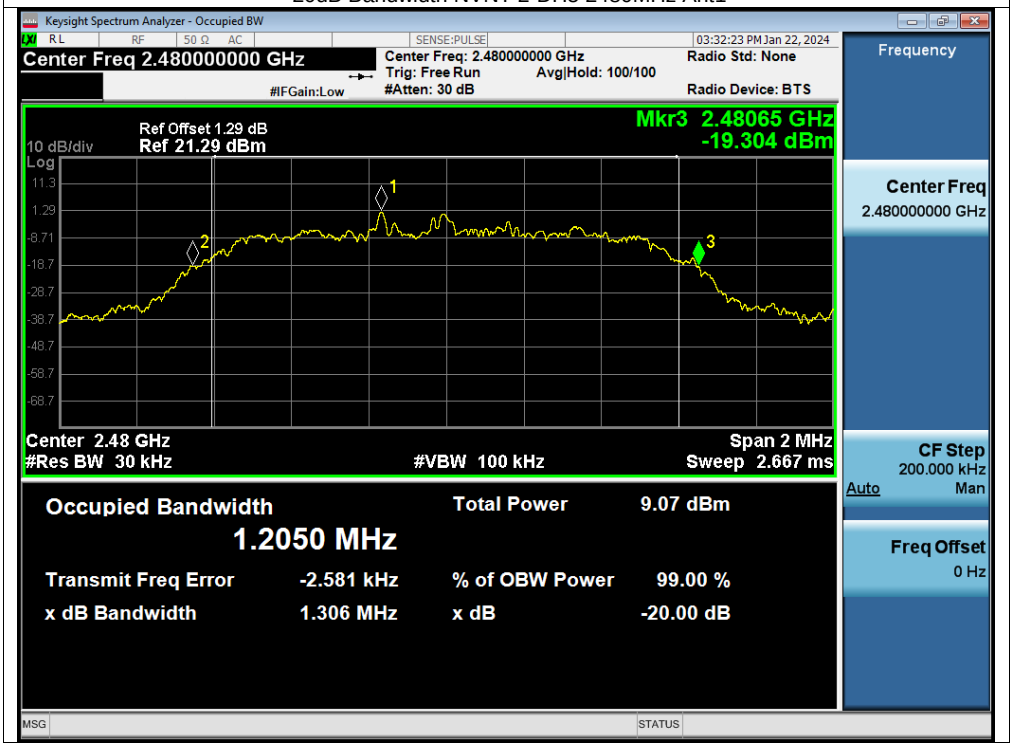
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



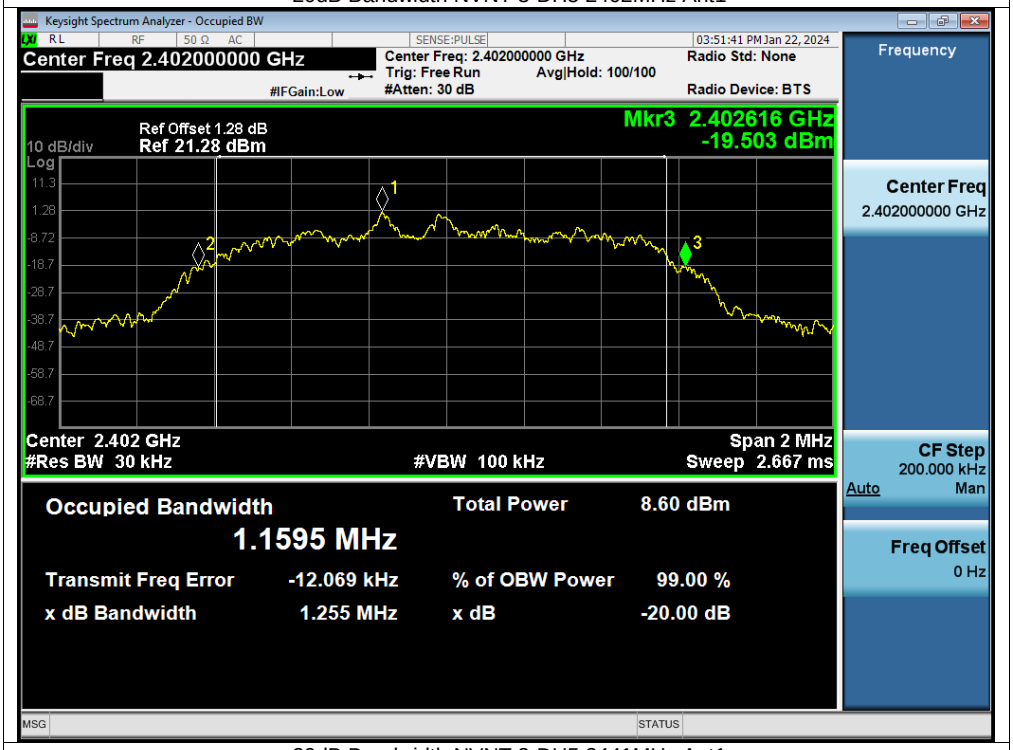
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



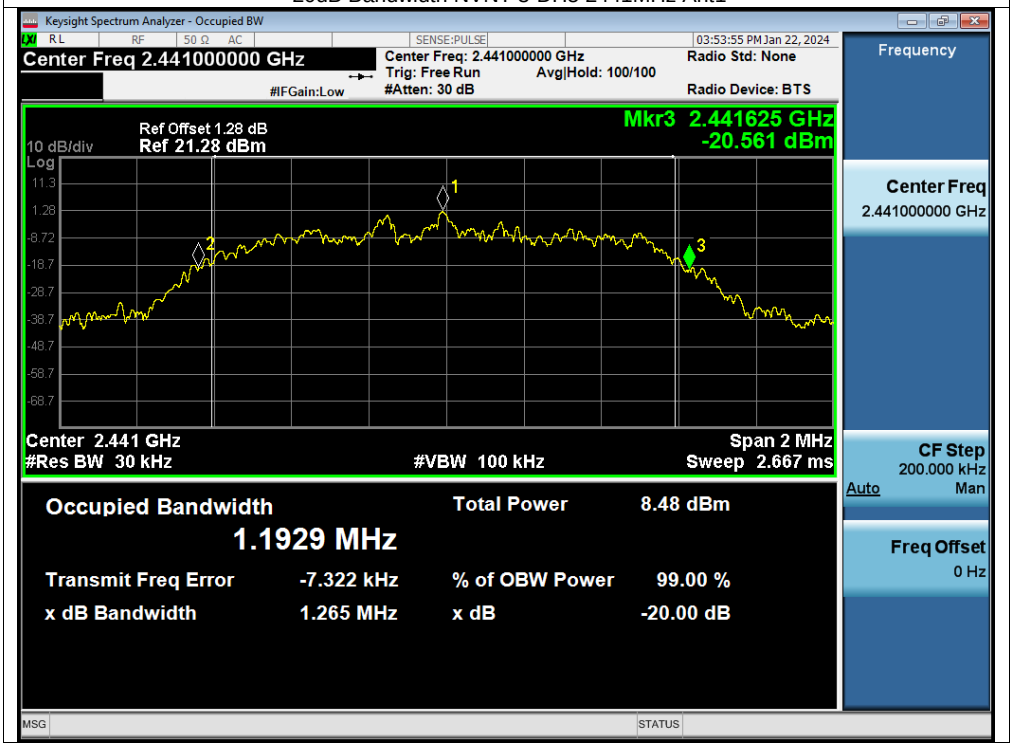
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



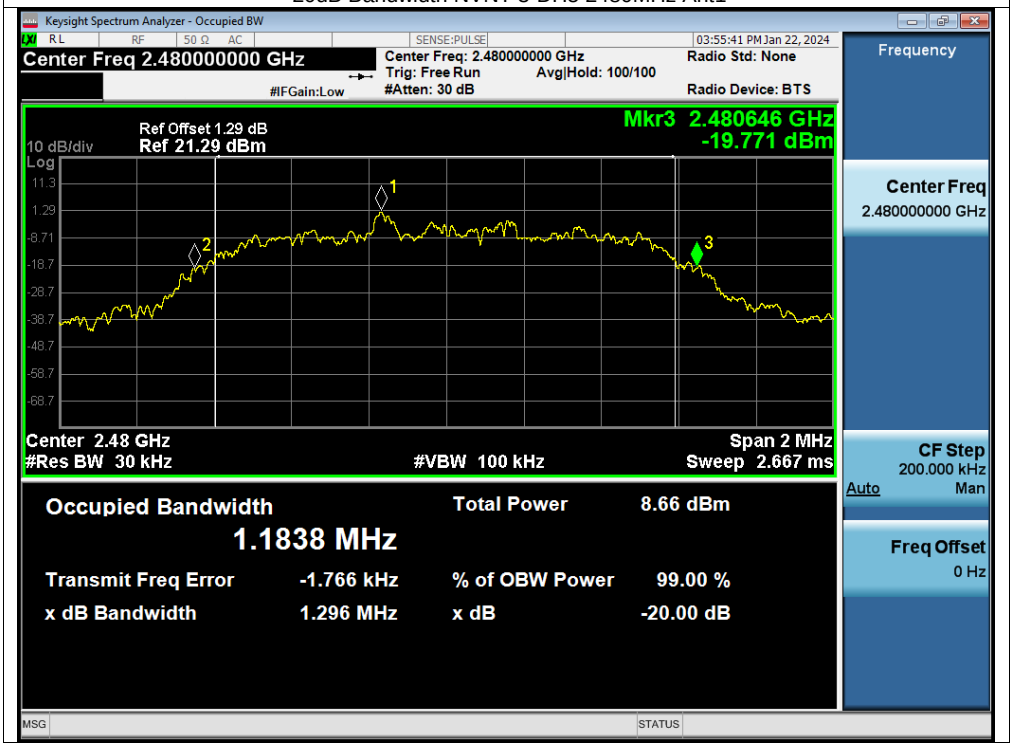
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1



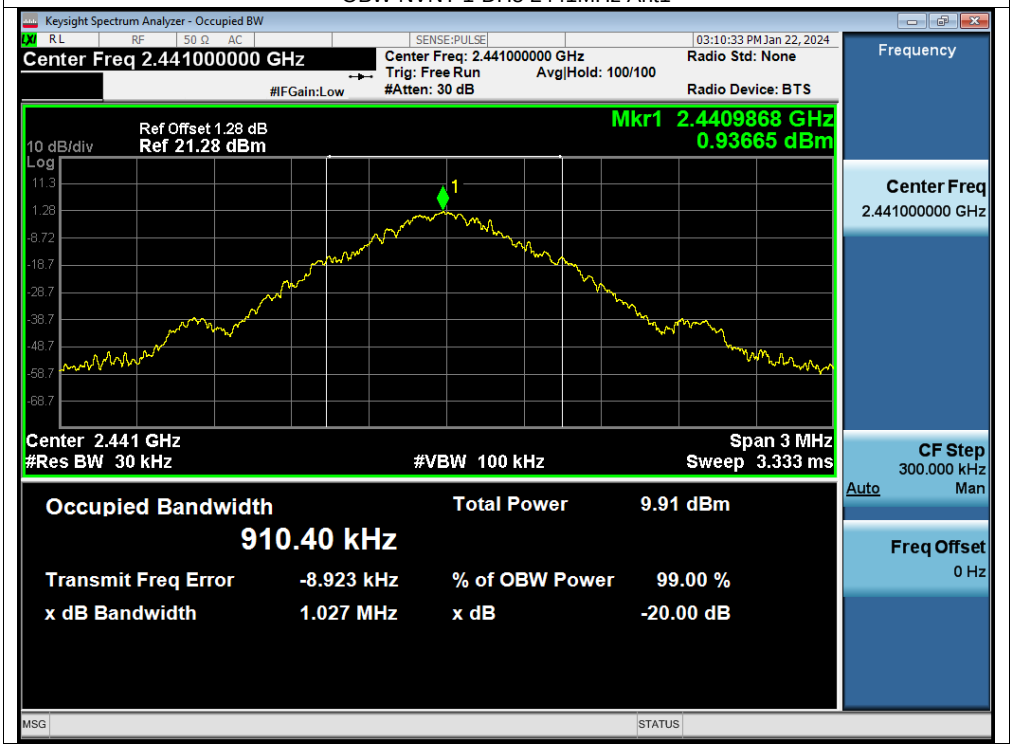
Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH5	2402	Ant1	0.884
NVNT	1-DH5	2441	Ant1	0.91
NVNT	1-DH5	2480	Ant1	0.918
NVNT	2-DH5	2402	Ant1	1.192
NVNT	2-DH5	2441	Ant1	1.197
NVNT	2-DH5	2480	Ant1	1.212
NVNT	3-DH5	2402	Ant1	1.226
NVNT	3-DH5	2441	Ant1	1.18
NVNT	3-DH5	2480	Ant1	1.193

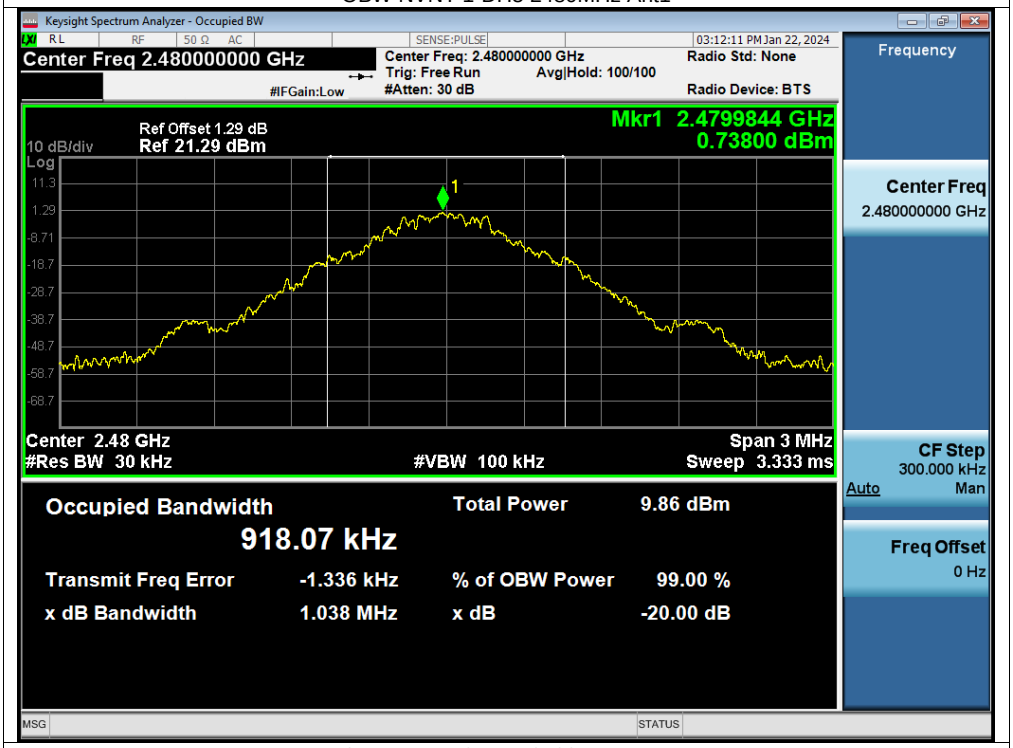
Test Graphs

OBW NVNT 1-DH5 2402MHz Ant1

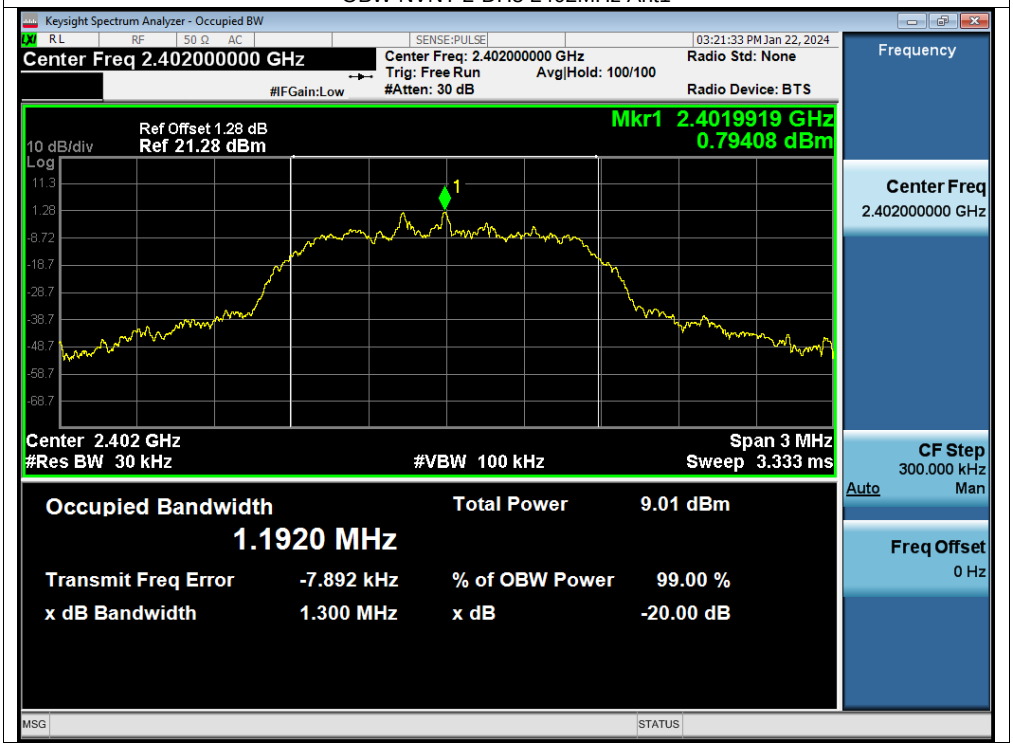
OBW NVNT 1-DH5 2441MHz Ant1



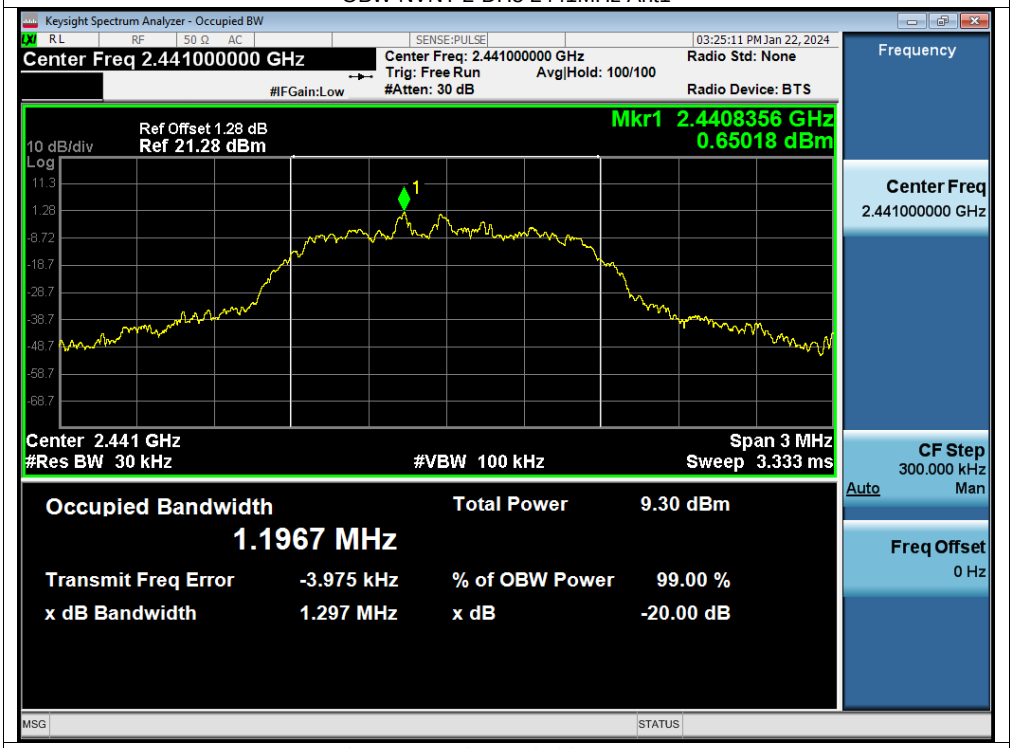
OBW NVNT 1-DH5 2480MHz Ant1



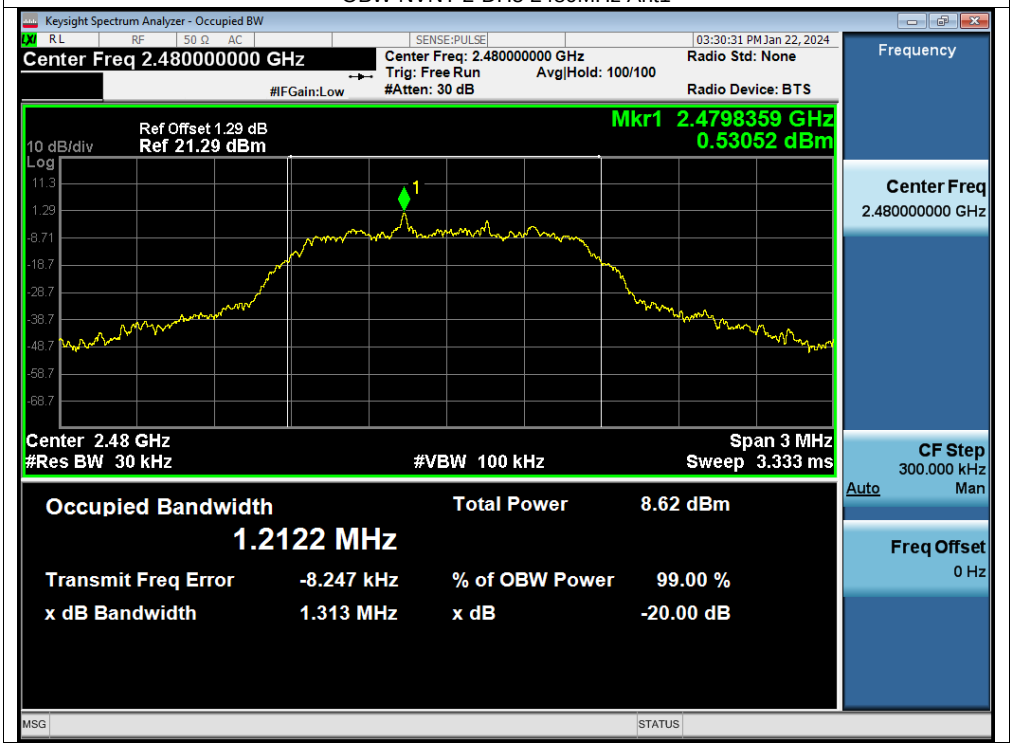
OBW NVNT 2-DH5 2402MHz Ant1



OBW NVNT 2-DH5 2441MHz Ant1

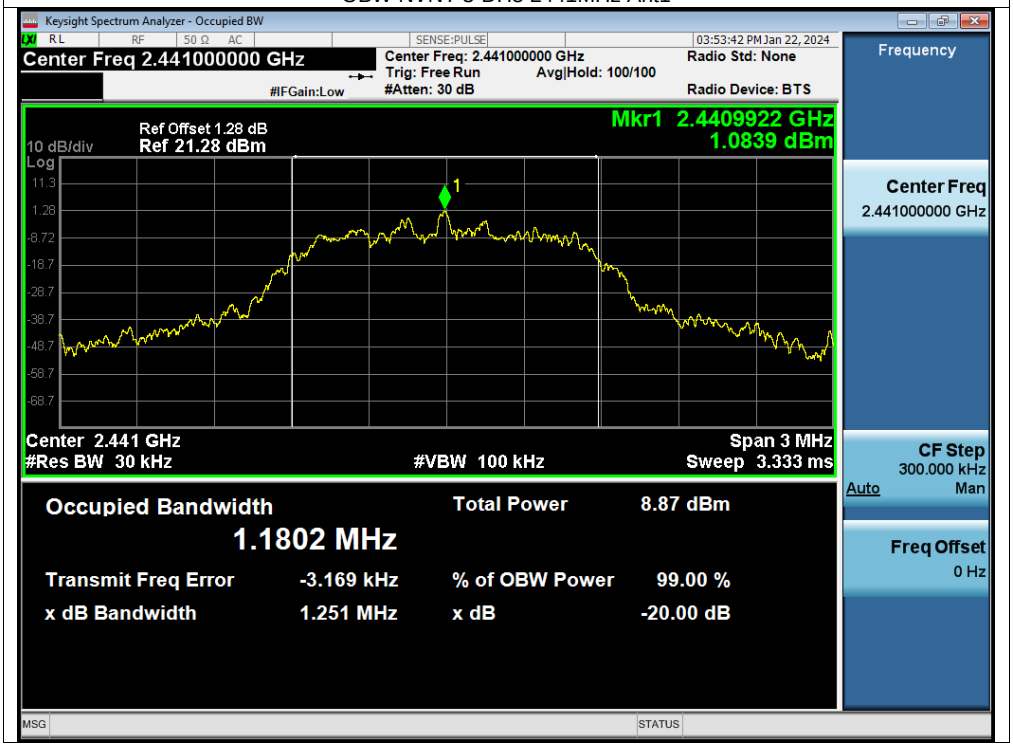


OBW NVNT 2-DH5 2480MHz Ant1



OBW NVNT 3-DH5 2402MHz Ant1

OBW NVNT 3-DH5 2441MHz Ant1



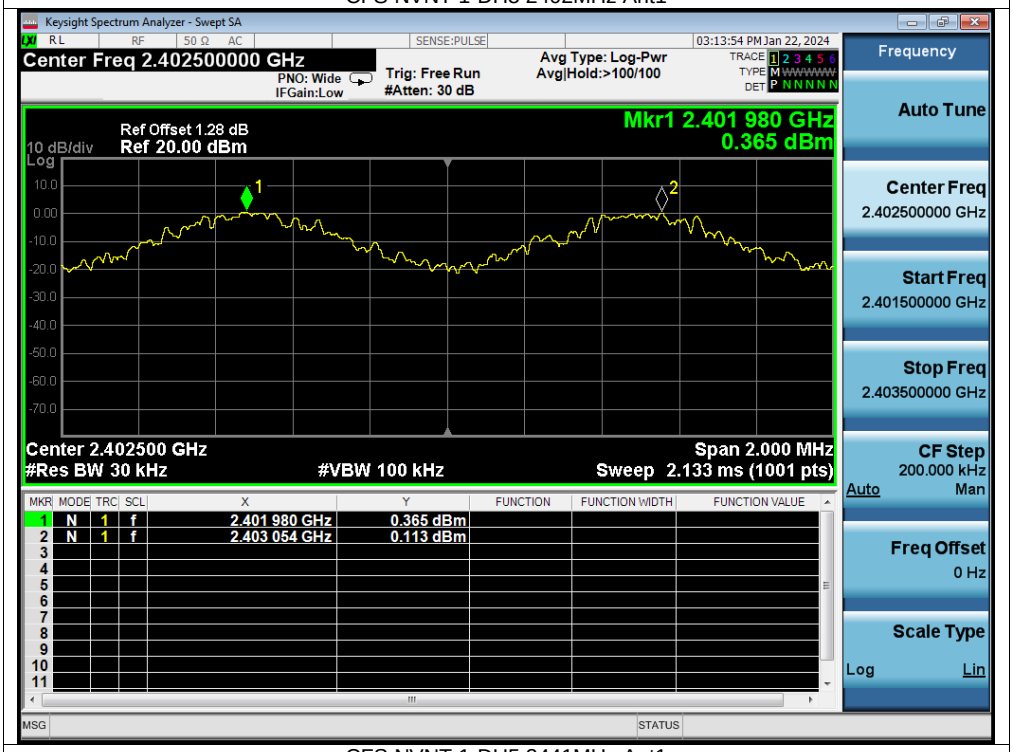
OBW NVNT 3-DH5 2480MHz Ant1

Carrier Frequencies Separation

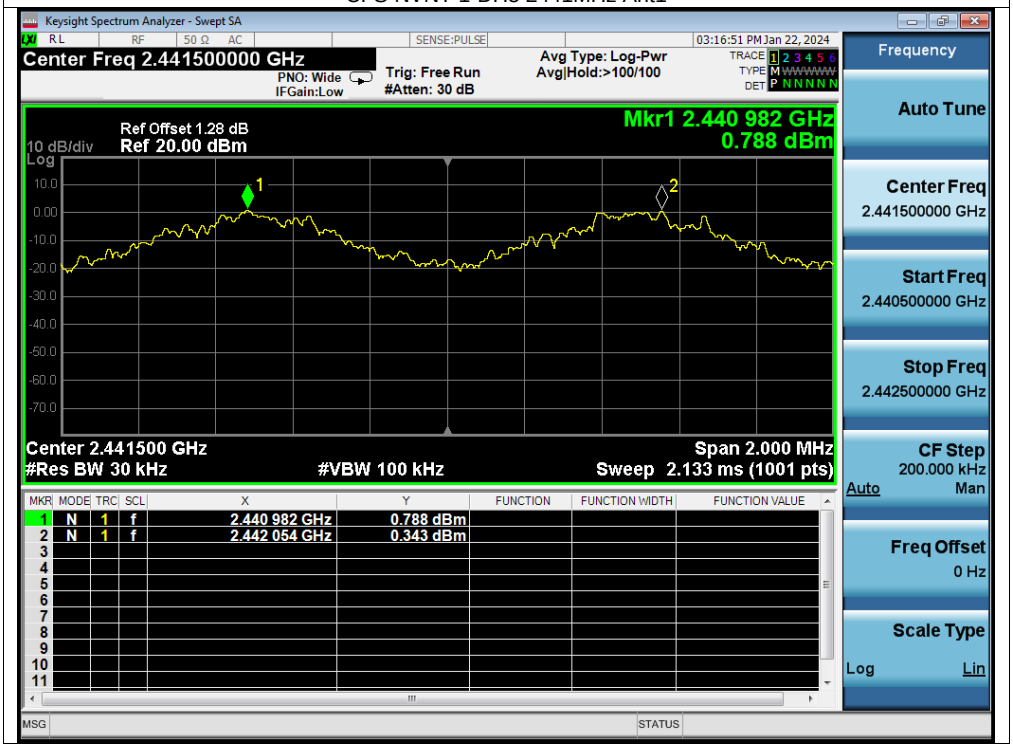
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.98	2403.054	1.074	0.667	Pass
NVNT	1-DH5	Ant1	2440.982	2442.054	1.072	0.68	Pass
NVNT	1-DH5	Ant1	2478.966	2479.97	1.004	0.687	Pass
NVNT	2-DH5	Ant1	2401.988	2403	1.012	0.86	Pass
NVNT	2-DH5	Ant1	2440.992	2441.99	0.998	0.867	Pass
NVNT	2-DH5	Ant1	2478.998	2479.988	0.99	0.873	Pass
NVNT	3-DH5	Ant1	2401.984	2402.994	1.01	0.84	Pass
NVNT	3-DH5	Ant1	2440.994	2441.992	0.998	0.847	Pass
NVNT	3-DH5	Ant1	2478.836	2479.828	0.992	0.867	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1

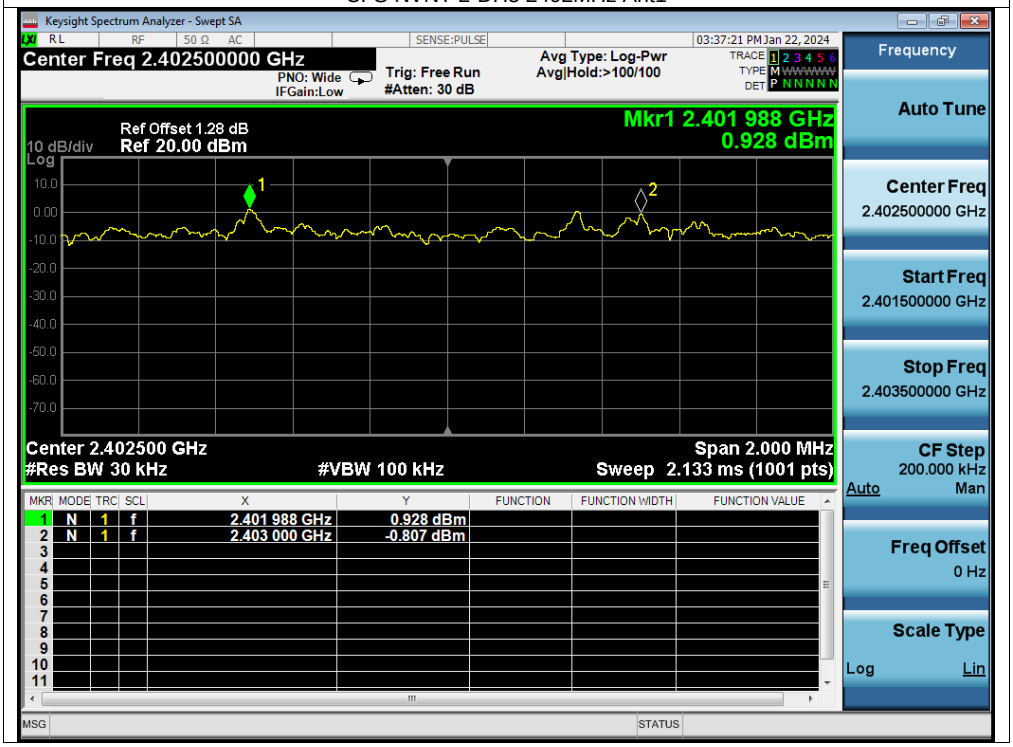


CFS NVNT 1-DH5 2441MHz Ant1

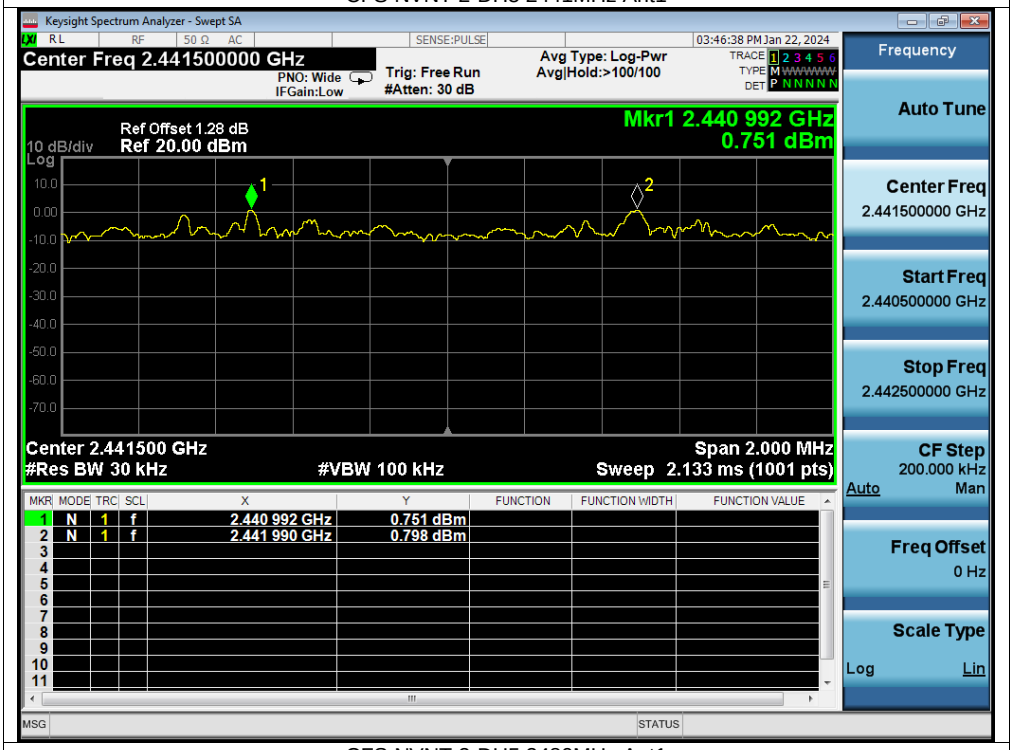


CFS NVNT 1-DH5 2480MHz Ant1

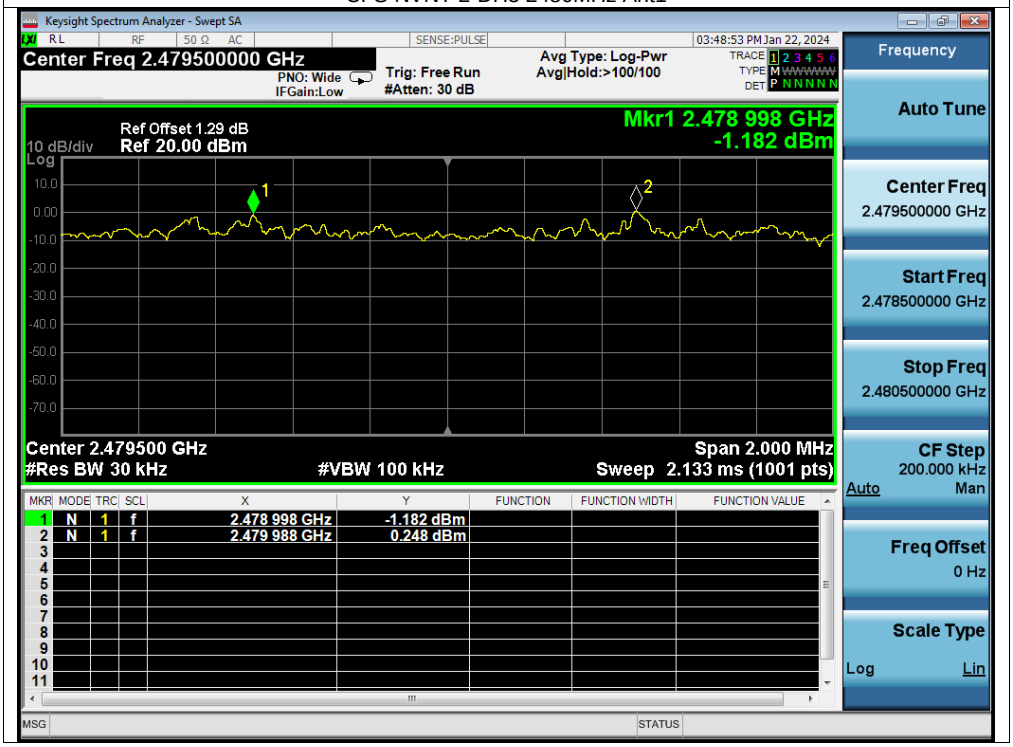
CFS NVNT 2-DH5 2402MHz Ant1



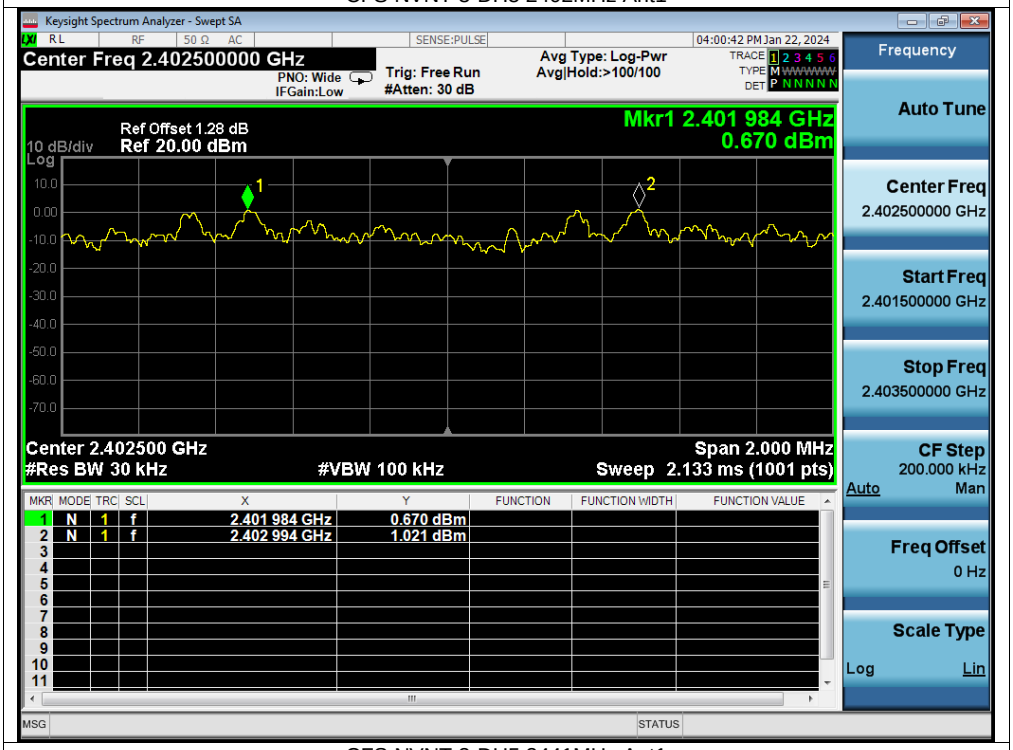
CFS NVNT 2-DH5 2441MHz Ant1



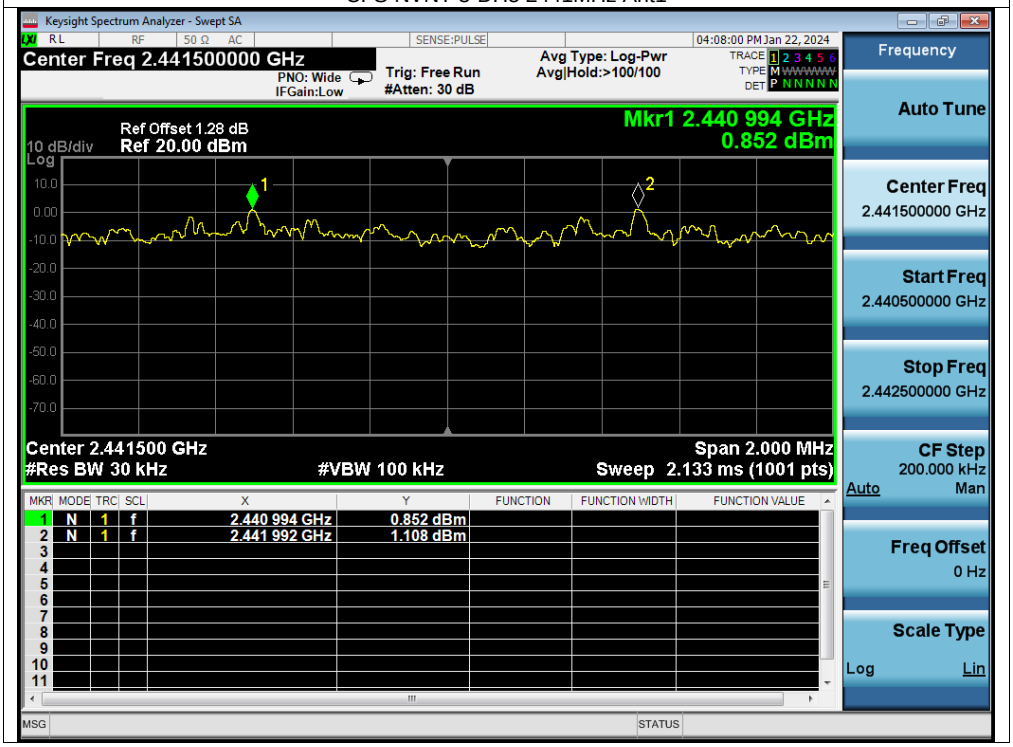
CFS NVNT 2-DH5 2480MHz Ant1



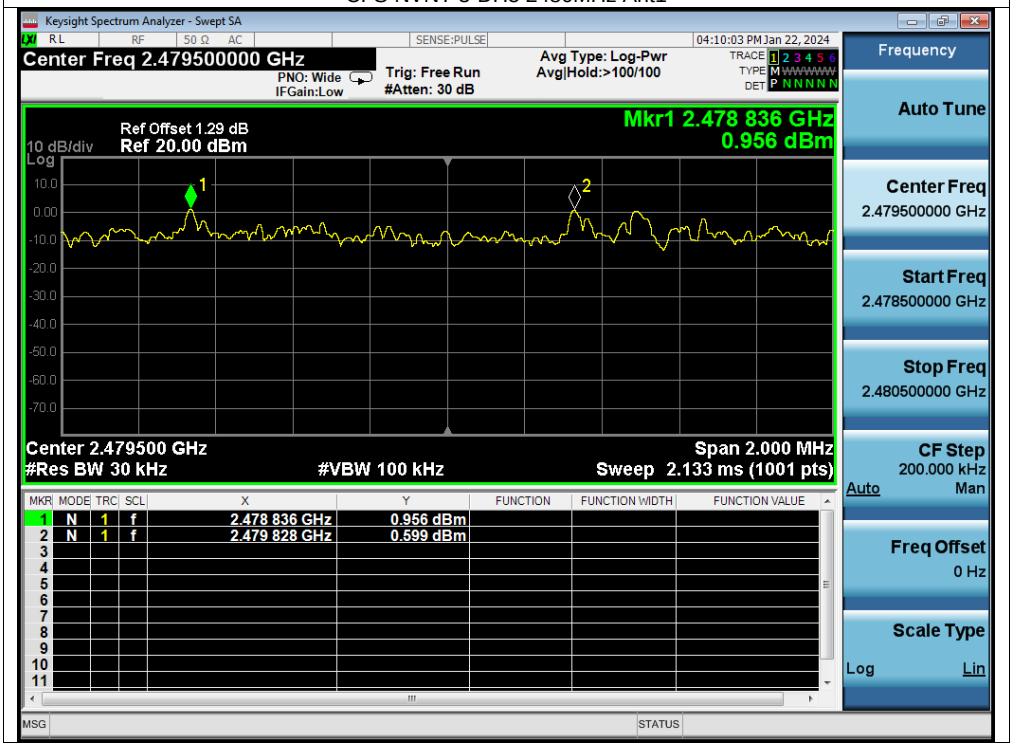
CFS NVNT 3-DH5 2402MHz Ant1



CFS NVNT 3-DH5 2441MHz Ant1



CFS NVNT 3-DH5 2480MHz Ant1

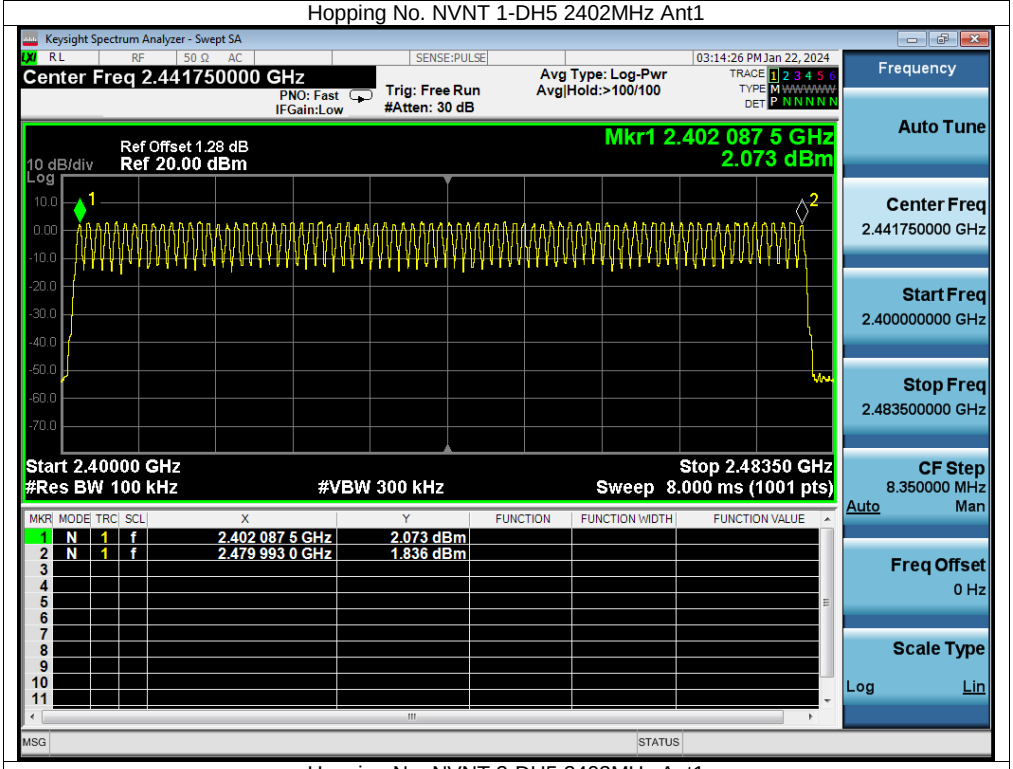


Number of Hopping Channel

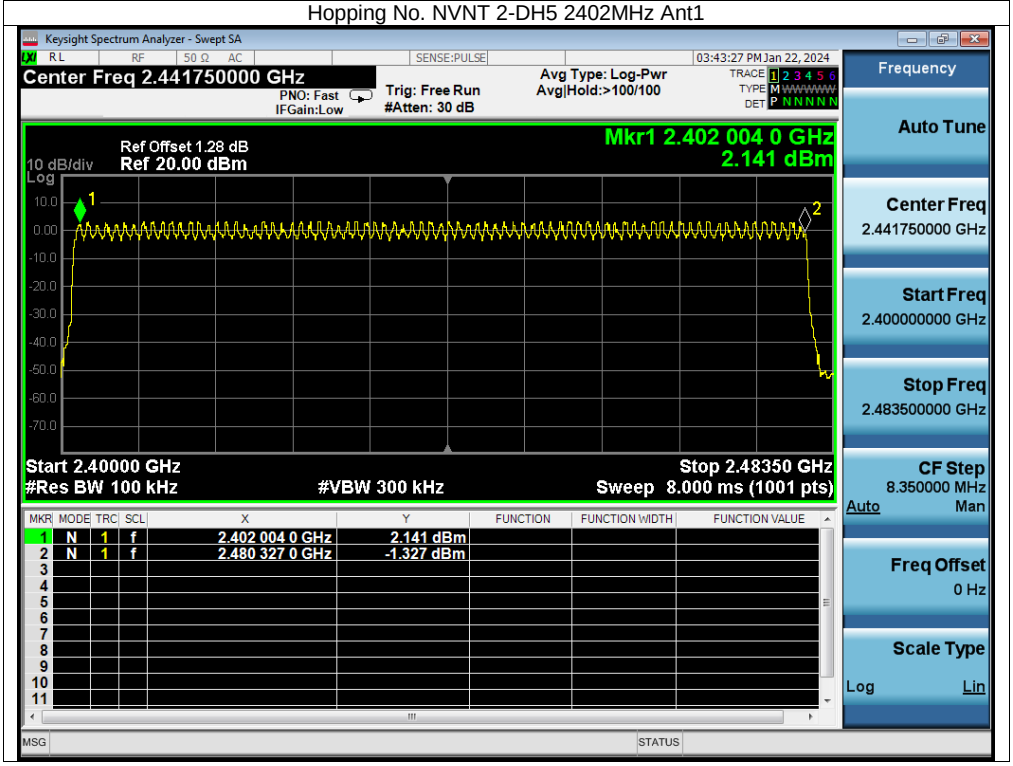
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Hopping No. NVNT 3-DH5 2402MHz Ant1