ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT

OF

Makeup Light

Model No.: BWN-2530, BWN-1147, BWN-5844, BWN-3040, BWN-4050, BWN-5846, BWN-6252, BWN-40, BWN-10, BWN-20, BWN-30

Trademark: /

FCC ID: 2BA4WBWN-5846

Report No.: E01A23040744F00801

Issue Date: June 08, 2023

Prepared for

Jiangmen Boweini Lighting Technology Co., Ltd
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Prepared by

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VERIFICATION OF COMPLIANCE

Applicant:	Jiangmen Boweini Lighting Technology Co., Ltd No. 9, 5th Street, Huangwan New Village, Hetang Town, Pengjiang District, Jiangmen City, Guangdong Province
Manufacturer:	Jiangmen Boweini Lighting Technology Co., Ltd No. 9, 5th Street, Huangwan New Village, Hetang Town, Pengjiang District, Jiangmen City, Guangdong Province
Product Description:	Makeup Light
Trade Mark:	/
Model Number:	BWN-2530, BWN-1147, BWN-5844, BWN-3040, BWN-4050, BWN-5846, BWN-6252, BWN-40, BWN-10, BWN-20, BWN-30 (All models are the same except the model name, We choose model BWN-5846 to do all tests.)
Sample number:	A23040744 001

We hereby certify that:

The above equipment was tested by Dong Guan Anci Electronic Technology Co., Ltd.The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247(2021).

Date of Test : May 15, 2023 to May 17, 2023

Prepared by : Duke

Duke Liu/Editor

Reviewer & Authorized Signer : Tiger Xu

Tiger Xu/ Supervisor

Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Report	/	E01A23040744F00801

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1. GENERAL INFORMATION

1.1 Product Description

Characteristics	Description
Product Name	Makeup Light
Model number	BWN-2530, BWN-1147, BWN-5844, BWN-3040, BWN-4050, BWN-5846, BWN-6252, BWN-40, BWN-10, BWN-20, BWN-30
Input rating	100-240Vac 50/60Hz
Power Supply Information	Model: JRY024A1202000US Input: 100-240Vac 50/60Hz 0.6A Output: 12Vdc 2A
Kind of Device	Bluetooth Ver. 5.0
Modulation	GFSK, π/4-DQPSK
Operating Frequency Range	2402-2480MHz
Number of Channels	79
Transmit Power Max(PK)	4.18 dBm(0.00262W)
Antenna Type	PCB antenna
Antenna Gain	1.2 dBi
EUT Test software	FCCAssist 2.4.exe
Sample Received Date	May 12, 2023

1.2 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10-2013. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.3 Test Facility

Site Description

EMC Lab. : Accredited by FCC, May 30, 2019
Designation Number: CN1230
Test Firm Registration Number: 991798

Name of Firm : Dong Guan Anci Electronic Technology Co., Ltd.

Site Location : 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan, Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The Tx frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane. And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of EUT was fixed in a particular direction according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013.

2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

Table 2-1 Equipment Used in Tested System

Item	Equipment	Trademark	Model No.	FCC ID	Note
1.	Makeup Light	/	BWN-5846	2BA4WBWN-5846	***EUT***

Note:

(1) Unless otherwise denoted as EUT in『Remark』column , device(s) used in tested system is a support equipment.

3. Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207	AC Power Conducted Emission	Compliant
§15.247(d),§15.209, §15.205	Radiated Emission	Compliant
§15.247(a)(1)	Channel Separation test	Compliant
§15.247(a)(1)	20dB Bandwidth	Compliant
§15.247(a)(1)(iii)	Quantity of Hopping Channel	Compliant
§15.247(a)(1)(iii)	Time of Occupancy(Dwell Time)	Compliant
§15.247(b)	Max Peak output Power test	Compliant
§15.247(d)	Band edge test	Compliant
§15.203	Antenna Requirement	Compliant

4. Description of test modes

The EUT has been tested under its typical operating condition and fully-charged battery for EUT tested alone. Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting. Only the worst case data were reported.

The EUT has been associated with peripherals pursuant to ANSI C63.10-2013 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation (9 KHz to the 10th harmonics of the highest fundamental frequency or to 40 GHz, whichever is lower).

The EUT has been tested under TX operating condition.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting mode is programmed. EUT is connected by com port, and transimit the control instruction via test software(JL FCC Assist V2.4.exe). The test software power value is set to the maximum.

This EUT is a FHSS system, were conducted to determine the final configuration from all possible combinations. We use software control the EUT, Let EUT hopping on and transmit with highest power, all the modes GFSK, π/4-DQPSK have been tested. 79 Channels are provided by EUT. The 3 channels of lower, medium and higher were chosen for test.

Channel	Frequency(MHz)
1	2402
40	2441
79	2480

5. TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	±1x10^-5
Maximum Peak Output Power Test	±1.0dB
Conducted Emissions Test(150KHz-30MHz)	±2.0dB
Radiated Emission Test (30MHz-1000MHz)	±2.0dB
Radiated Emission Test (1GHz-18GHz)	±2.5dB
Radiated Emission Test (18GHz-25GHz)	±3.2dB
Power Density	±2.0dB
Occupied Bandwidth Test	±1.0dB
Band Edge Test	±3dB
All emission, radiated	±3dB
Antenna Port Emission	±3dB
Temperature	±0.5℃
Humidity	±3%

Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%

6. MEASURING EQUIPMENT AND SOFTWARE USED

Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101144	2023-11-10
LISN	ROHDE&SCHWARZ	ENV216	101413	2023-11-10
RF Cable	N/A	ZT06S-NJ-NJ-2.5M	19044022	2024-05-09
2# Shielded Room	chengyu	8m*4m*3m	N/A	2024-11-11
Test Software	Farad	EZ-EMC Ver:ANCI-8A1	N/A	N/A

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Spectrum Analyzer	Rohde & Schwarz	FSV40	US40240623	2022-10-29	2023-10-28
RF Test Software	MWRF-test	MTS 8310	N/A	N/A	N/A
Radio Frequency control box	MWRF-test	MW200-RFCB	MW220111ANCI	2023-05-10	2024-05-09
Radio Frequency control box	MWRF-test	MW200-RFCB 2#	/	2023-05-10	2024-05-09

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100302	2023/5/10	2024/5/9
Bilog Antenna	Schwarzbeck	VULB9163	VULB9163-1290	2022/12/12	2023/12/11
RF Cable	ZKJC	ZT06S-NJ-NJ-11M	19060398	2023/5/10	2024/5/9
RF Cable	ZKJC	ZT06S-NJ-NJ-0.5M	19060400	2023/5/10	2024/5/9
RF Cable	ZKJC	ZT06S-NJ-NJ-2.5M	19060404	2023/5/10	2024/5/9
EMI Test Receiver	ROHDE&SCHWARZ	ESPI7	100502	2022/10/8	2023/10/7
3m Semi-anechoic Chamber	Keysight	9m*6m*6m	N/A	2021/11/13	2024/11/12

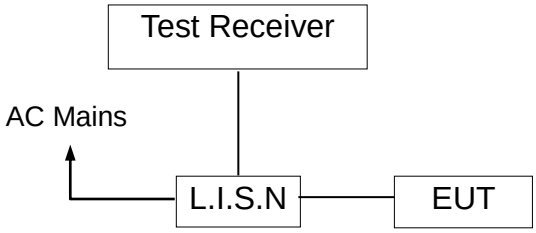
Test Equipment of Radiated emissions above 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Low noise Amplifiers	A-INFO	LA1018N4009	J1013130524001	2023/5/10	2024/5/9
Horn antenna	A-INFO	LB-10180-SF	J2031090612123	2023/5/10	2024/5/9
RF Cable	ZKJC	ZT26-NJ-NJ-11M	19060401	2023/5/10	2024/5/9
RF Cable	ZKJC	ZT26-NJ-NJ-2.5M	19060402	2023/5/10	2024/5/9
RF Cable	ZKJC	ZT26-NJ-NJ-0.5M	19060403	2023/5/10	2024/5/9
Spectrum Analyzer	Rohde & Schwarz	FSV40	US40240623	2022-10-29	2023-10-28
3m Semi-anechoic Chamber	Keysight	9m*6m*6m	N/A	2021/11/13	2024/11/12
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE)	N/A	N/A	N/A

7. Conducted Emissions Test

7.1 Measurement Procedure:

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

7.2 Test SET-UP (Block Diagram of Configuration)

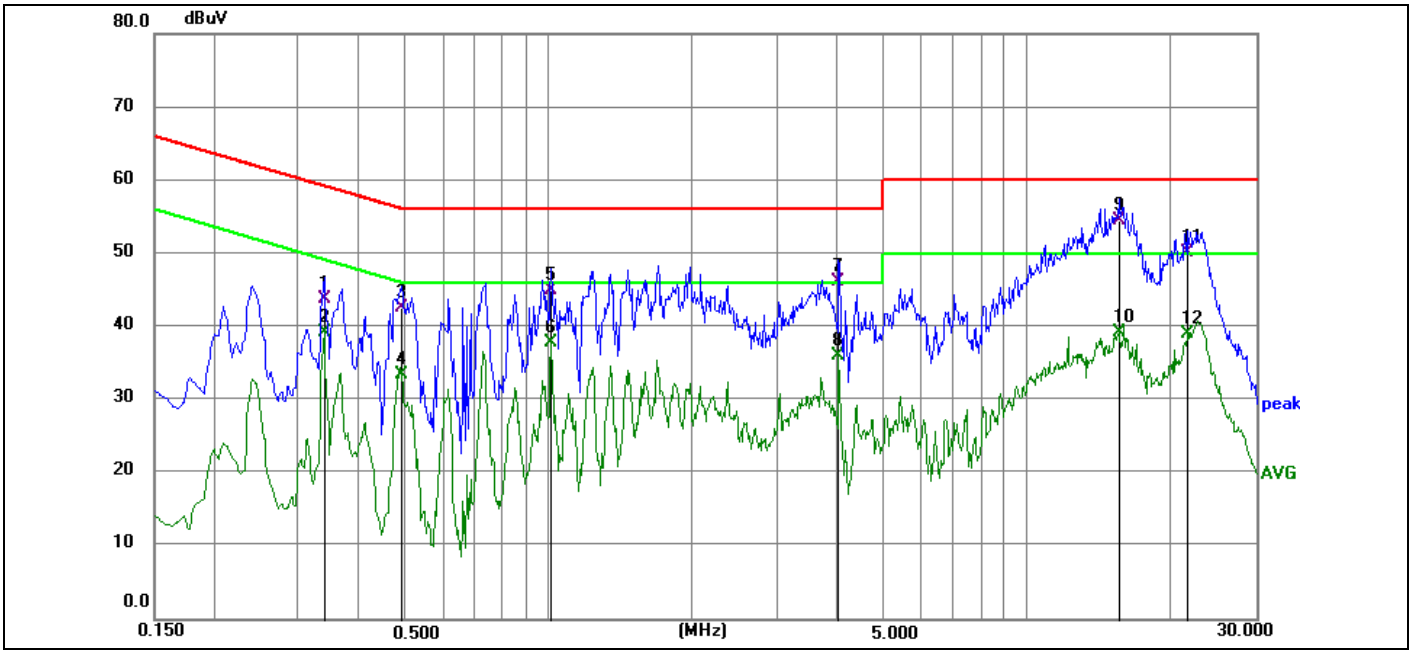


7.3 Measurement Result:

Operation Mode:	TX	Test Date :	May 15, 2023
Frequency Range:	0.15MHz~30MHz	Temperature :	23.5℃
Test Result:	PASS	Humidity :	52.6 %
Test By:	Sunshine		

All the modulation modes were tested the data of the worst mode (Pi/4-DQPSK TX 2402MHz) are recorded in the following pages and the others modulation methods do not exceed the limits.

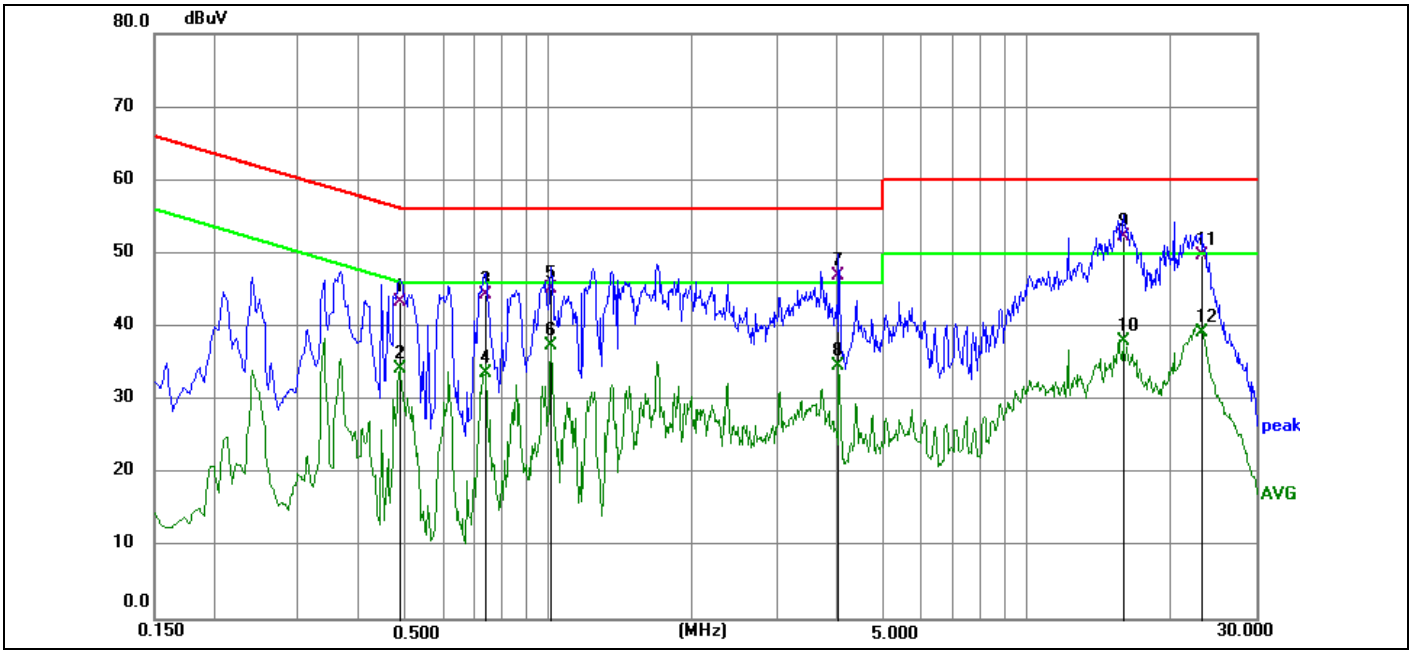
Please refer to the following data.



Site:	**843**	**Phase:L1**	**Temperature(C):23.5(C)**
Limit:	**FCC Part 15 C Conduction(QP)**		**Humidity(%):52.6%**
EUT:	**Makeup Light**	**Test Time:**	**2023-05-15**
M/N.:	**BWN-5846**	**Power Rating:**	**120Vac 60Hz**
Mode:	**TX2402**	**Test Engineer:**	**Sunshine**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Margin (dB)	Detector	Comment
1	0.3390	33.80	9.94	43.74	59.23	-15.49	QP	
2	0.3390	29.18	9.94	39.12	49.23	-10.11	AVG	
3	0.4920	32.68	9.84	42.52	56.13	-13.61	QP	
4	0.4920	23.55	9.84	33.39	46.13	-12.74	AVG	
5	1.0140	34.89	10.04	44.93	56.00	-11.07	QP	
6	1.0140	27.71	10.04	37.75	46.00	-8.25	AVG	
7	4.0470	35.87	10.22	46.09	56.00	-9.91	QP	
8	4.0470	25.81	10.22	36.03	46.00	-9.97	AVG	
9	15.5490	43.53	10.98	54.51	60.00	-5.49	QP	
10	15.5490	28.32	10.98	39.30	50.00	-10.70	AVG	
11	21.6870	39.03	11.11	50.14	60.00	-9.86	QP	
12	21.6870	27.98	11.11	39.09	50.00	-10.91	AVG	

*:Maximum data x:Over limit !:over margin



Site:	**843**	**Phase:N**	**Temperature(C):23.5(C)**
Limit:	**FCC Part 15 C Conduction(QP)**		**Humidity(%):52.6%**
EUT:	**Makeup Light**	**Test Time:**	**2023-05-15**
M/N.:	**BWN-5846**	**Power Rating:**	**120Vac 60Hz**
Mode:	**TX2402**	**Test Engineer:**	**Sunshine**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Margin (dB)	Detector	Comment
1	0.4875	33.43	9.97	43.40	56.21	-12.81	QP	
2	0.4875	24.18	9.97	34.15	46.21	-12.06	AVG	
3	0.7350	34.38	10.03	44.41	56.00	-11.59	QP	
4	0.7350	23.52	10.03	33.55	46.00	-12.45	AVG	
5	1.0140	35.02	10.11	45.13	56.00	-10.87	QP	
6	1.0140	27.40	10.11	37.51	46.00	-8.49	AVG	
7	4.0470	36.66	10.28	46.94	56.00	-9.06	QP	
8	4.0470	24.37	10.28	34.65	46.00	-11.35	AVG	
9	15.8730	41.29	11.02	52.31	60.00	-7.69	QP	
10	15.8730	26.99	11.02	38.01	50.00	-11.99	AVG	
11	23.0550	38.63	11.06	49.69	60.00	-10.31	QP	
12	23.0550	28.24	11.06	39.30	50.00	-10.70	AVG	

*:Maximum data x:Over limit !:over margin

8. Radiated Emission Test

8.1 Measurement Procedure

1. The testing follows the guidelines in Spurious Radiated Emissions of ANSI C63.10-2013.
2. Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane. And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane.
3. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (From 1m to 4m) and turntable (from 0 degree to 360 degree) 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 to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Final measurement (Above 1GHz): The frequency range will be divided into different sub ranges depending of the frequency range of the used horn antenna. The EMI Receiver set to peak and average mode and a resolution bandwidth of 1MHz. The measurement will be performed in horizontal and vertical polarization of the measuring antenna and while rotating the EUT in its vertical axis in the range of 0 degree to 360 degree in order to have the antenna inside the cone of radiation.
7. Test Procedure of measurement (For Above 1GHz):
   1) Monitor the frequency range at horizontal polarization and move the antenna over all sides of the EUT(if necessary move the EUT to another orthogonal axis).
   2) Change the antenna polarization and repeat 1) with vertical polarization.
   3) Make a hardcopy of the spectrum.
   4) Measure the frequency of the detected emissions with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.
   5) Change the analyser mode to Clear/ Write and found the cone of emission.
   6) Rotate and move the EUT, so that the measuring distance can be enlarged to 3m and the antenna will be still inside the cone of emission.
   7) Measure the level of the detected frequency with the correct resolution bandwidth, with the antenna polarization and azimuth and the peak and average detector, which causes the maximum emission.
   8) Repeat steps 1) to 7) for the next antenna spot if the EUT is larger than the antenna beamwidth.

Use the following spectrum analyzer settings:

When spectrum scanned from 30MHz to 1GHz setting resolution bandwidth 120KHz

and video bandwidth 300KHz:

EMI Test Receiver	Setting
Attenuation	Auto
RB	120KHz
VB	300KHz
Detector	QP
Trace	Max hold

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 3MHz:

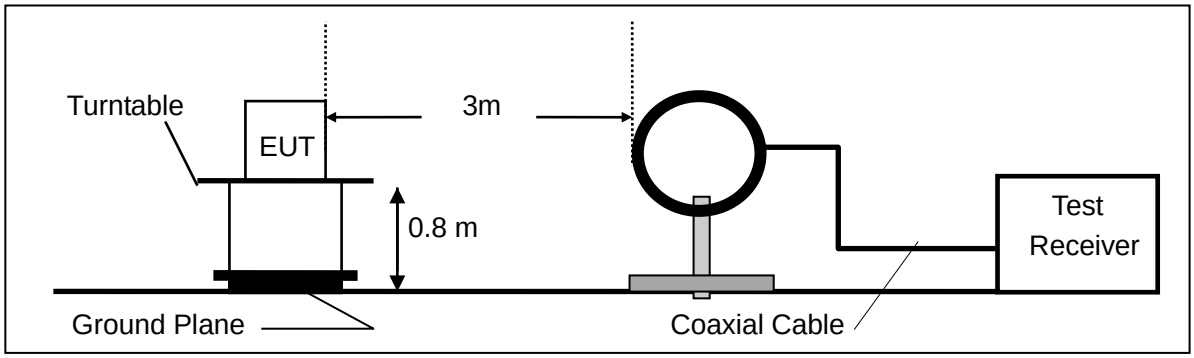
EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	3MHz
Detector	Peak
Trace	Max hold

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 10Hz:

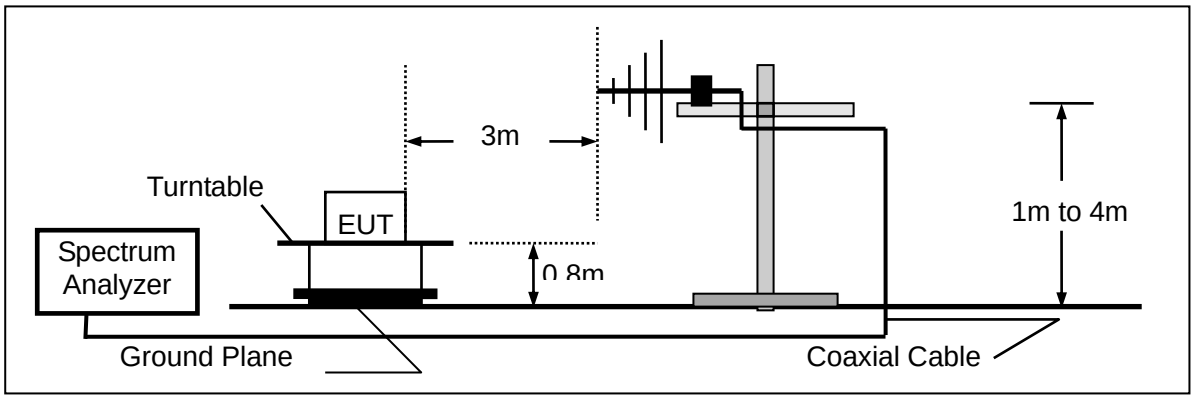
EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	10Hz
Detector	Average
Trace	Max hold

8.2 Test SET-UP (Block Diagram of Configuration)

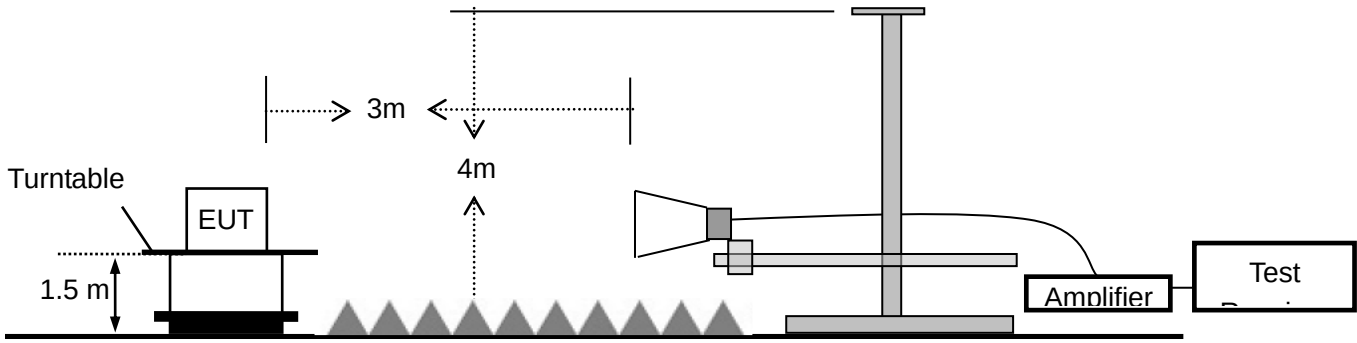
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



8.3 Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

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

15.205 Restricted bands of operation

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])

Remark : 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

8.4 Measurement Result

Operation Mode:	TX	Test Date :	May 15, 2023
Test By:	Sunshine	Temperature :	24.8℃
Test Result:	PASS	Humidity :	51.7%
Measured Distance:	3m		

Below 30MHz:

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	--

Note: The low frequency, which started from 9KHz-30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

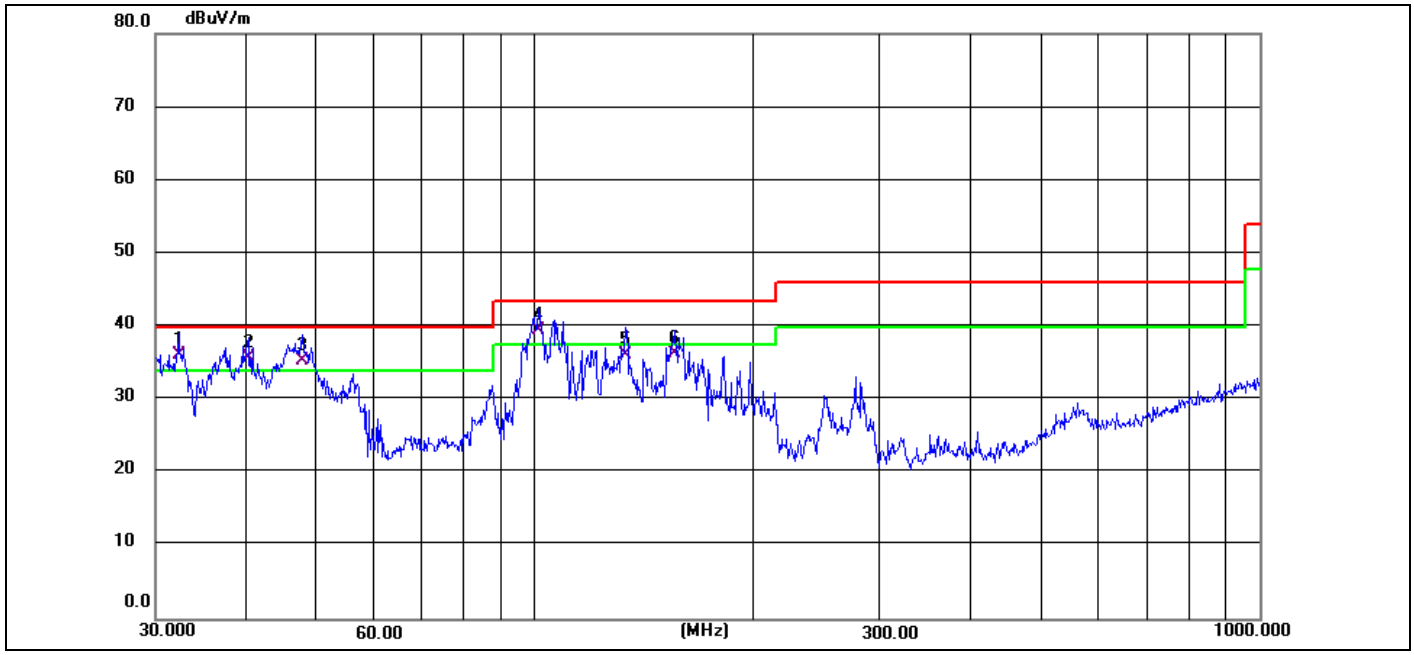
Below 1000MHz:

Pass.

All the modulation modes were tested the data of the worst mode ((Pi/4-DQPSK TX 2402MHz)) are recorded in the following pages and the others modulation methods do not exceed the limits.

Please refer to the following data.

Radiated Spurious Emission :



Site:	**LAB**	**Antenna::Vertical**	**Temperature(C):24.8(C)**
Limit:	**FCC Part 15 C 3m Radiation(QP)**		**Humidity(%):51.7%**
EUT:	**Makeup Light**	**Test Time:**	**2023/05/15**
M/N.:	**BWN-5846**	**Power Rating:**	**120Vac 60Hz**
Mode:	**TX2402**	**Test Engineer:**	**Sunshine**
Note:			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1 *	32.2925	48.98	-12.78	36.20	40.00	-3.80	QP			
2	40.2756	48.53	-12.73	35.80	40.00	-4.20	QP			
3	47.8260	48.10	-12.70	35.40	40.00	-4.60	QP			
4	101.2885	50.79	-11.19	39.60	43.50	-3.90	QP			
5	133.6188	47.52	-11.42	36.10	43.50	-7.40	QP			
6	155.9101	48.18	-11.78	36.40	43.50	-7.10	QP			

*:Maximum data x:Over limit !:over margin

Site:	**LAB**	**Antenna::Horizontal**	**Temperature(C):24.8(C)**
Limit:	**FCC Part 15C 3m Radiation(QP)**		**Humidity(%):51.7%**
EUT:	**Makeup Light**	**Test Time:**	**2023/05/15**
M/N.:	**BWN-5846**	**Power Rating:**	**120Vac 60Hz**
Mode:	**TX2402**	**Test Engineer:**	**Sunshine**
Note:			

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	37.1550	44.26	-12.76	31.50	40.00	-8.50	QP			
2 *	49.8814	49.09	-12.69	36.40	40.00	-3.60	QP			
3	87.1116	47.56	-11.76	35.80	40.00	-4.20	QP			
4	103.4421	50.58	-11.18	39.40	43.50	-4.10	QP			
5	133.6188	48.82	-11.42	37.40	43.50	-6.10	QP			
6	181.9202	43.26	-11.86	31.40	43.50	-12.10	QP			

*:Maximum data x:Over limit !:over margin

Above 1000MHz~10th Harmonics:

Please refer to the following data.

Operation Mode: GFSK (CH1: 2402MHz) Test Date : May 16, 2023

Freq.	Ant. Pol.	Reading Level(dBuV/m)		Correct Factor	Emission Level(dBuV/m)		Limit 3m(dBuV/m		Over(dB)	
(MHz)	H/V	PK	AV	dB	PK	AV	PK	AV	PK	AV
4836	V	95.36	75.26	-32.3	63.06	42.96	74	54	-10.94	-11.04
8203	V	96.73	75.36	-37.2	59.53	38.16	74	54	-14.47	-15.84
1015	V	95.42	74.25	-39.8	55.62	34.45	74	54	-18.38	-19.55
1362	V	96.55	76.67	-40.5	56.05	36.17	74	54	-17.95	-17.83
1567	V	97.62	77.13	-41	56.62	36.13	74	54	-17.38	-17.87
1698	V	98.23	76.59	-41.1	57.13	35.49	74	54	-16.87	-18.51
4836	H	94.36	74.26	-31.6	62.76	42.66	74	54	-11.24	-11.34
8203	H	96.55	76.18	-35.5	61.05	40.68	74	54	-12.95	-13.32
1015	H	95.12	74.53	-38.3	56.82	36.23	74	54	-17.18	-17.77
1362	H	96.28	76.92	-39	57.28	37.92	74	54	-16.72	-16.08
1567	H	97.36	76.51	-42	55.36	34.51	74	54	-18.64	-19.49
1698	H	97.26	76.38	-41.4	55.86	34.98	74	54	-18.14	-19.02

Operation Mode: GFSK (CH40: 2441MHz) Test Date : May 16, 2023

Freq.	Ant. Pol.	Reading Level(dBuV/m)		Correct Factor	Emission Level(dBuV/m)		Limit 3m(dBuV/m		Over(dB)	
(MHz)	H/V	PK	AV	dB	PK	AV	PK	AV	PK	AV
4926	V	95.76	75.09	-32.3	63.46	42.79	74	54	-10.54	-11.21
8730	V	95.26	74.32	-37.2	58.06	37.12	74	54	-15.94	-16.88
9528	V	97.95	76.55	-39.8	58.15	36.75	74	54	-15.85	-17.25
1239	V	98.26	77.23	-40.5	57.76	36.73	74	54	-16.24	-17.27
1365	V	98.75	77.85	-41	57.75	36.85	74	54	-16.25	-17.15
1770	V	99.63	78.96	-41.1	58.53	37.86	74	54	-15.47	-16.14
4926	H	96.28	75.61	-31.6	64.68	44.01	74	54	-9.32	-9.99
8730	H	95.32	74.23	-35.5	59.82	38.73	74	54	-14.18	-15.27
9528	H	97.63	77.05	-38.3	59.33	38.75	74	54	-14.67	-15.25
1239	H	97.57	76.32	-39	58.57	37.32	74	54	-15.43	-16.68
1365	H	98.17	78.09	-42	56.17	36.09	74	54	-17.83	-17.91
1770	H	99.02	78.27	-41.4	57.62	36.87	74	54	-16.38	-17.13

Operation Mode: GFSK (CH79: 2480MHz) Test Date : May 16, 2023

Freq.	Ant. Pol.	Reading Level(dBuV/m)		Correct Factor	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	dB	PK	AV	PK	AV	PK	AV
4762	V	96.23	75.39	-32.3	63.93	43.09	74	54	-10.07	-10.91
7963	V	97.56	76.25	-37.2	60.36	39.05	74	54	-13.64	-14.95
1025	V	97.89	76.39	-39.8	58.09	36.59	74	54	-15.91	-17.41
1136	V	98.52	77.24	-40.5	58.02	36.74	74	54	-15.98	-17.26
1527	V	98.76	77.69	-41	57.76	36.69	74	54	-16.24	-17.31
1753	V	99.05	78.25	-41.1	57.95	37.15	74	54	-16.05	-16.85
4762	H	95.26	74.37	-31.6	63.66	42.77	74	54	-10.34	-11.23
7963	H	96.52	75.63	-35.5	61.02	40.13	74	54	-12.98	-13.87
1025	H	97.03	75.43	-38.3	58.73	37.13	74	54	-15.27	-16.87
1136	H	98.65	77.6	-39	59.65	38.6	74	54	-14.35	-15.4
1527	H	98.16	77.36	-42	56.16	35.36	74	54	-17.84	-18.64
1753	H	99.46	78.75	-41.4	58.06	37.35	74	54	-15.94	-16.65

Operation Mode: Pi/4-DQPSK (CH1: 2402MHz) Test Date : May 16, 2023

Freq.	Ant. Pol.	Reading Level(dBuV/m)		Correct Factor	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	dB	PK	AV	PK	AV	PK	AV
4925	V	97.62	76.25	-32.3	65.32	43.95	74	54	-8.68	-10.05
8312	V	97.62	76.64	-37.2	60.42	39.44	74	54	-13.58	-14.56
1067	V	98.01	77.35	-39.8	58.21	37.55	74	54	-15.79	-16.45
1295	V	98.52	78.01	-40.5	58.02	37.51	74	54	-15.98	-16.49
1533	V	99.01	78.65	-41	58.01	37.65	74	54	-15.99	-16.35
1726	V	99.76	78.38	-41.1	58.66	37.28	74	54	-15.34	-16.72
4925	H	95.32	74.63	-31.6	63.72	43.03	74	54	-10.28	-10.97
8312	H	97.23	76.92	-35.5	61.73	41.42	74	54	-12.27	-12.58
1067	H	96.71	75.37	-38.3	58.41	37.07	74	54	-15.59	-16.93
1295	H	97.26	76.6	-39	58.26	37.6	74	54	-15.74	-16.4
1533	H	98.13	77.67	-42	56.13	35.67	74	54	-17.87	-18.33
1726	H	98.67	77.35	-41.4	57.27	35.95	74	54	-16.73	-18.05

Operation Mode: Pi/4-DQPSK (CH40: 2441MHz) Test Date : May 16, 2023

Freq.	Ant. Pol.	Reading Level(dBuV/m)		Correct Factor	Emission Level(dBuV/m)		Limit 3m(dBuV/m		Over(dB)	
(MHz)	H/V	PK	AV	dB	PK	AV	PK	AV	PK	AV
4963	V	95.12	74.06	-32.3	62.82	41.76	74	54	-11.18	-12.24
7528	V	97.63	76.28	-37.2	60.43	39.08	74	54	-13.57	-14.92
1023	V	98.1	77.36	-39.8	58.3	37.56	74	54	-15.7	-16.44
1259	V	98.26	77.69	-40.5	57.76	37.19	74	54	-16.24	-16.81
1476	V	99.13	78.92	-41	58.13	37.92	74	54	-15.87	-16.08
1768	V	99.62	78.61	-41.1	58.52	37.51	74	54	-15.48	-16.49
4963	H	96.23	75.32	-31.6	64.63	43.72	74	54	-9.37	-10.28
7528	H	96.57	75.26	-35.5	61.07	39.76	74	54	-12.93	-14.24
1023	H	97.32	76.34	-38.3	59.02	38.04	74	54	-14.98	-15.96
1259	H	98.13	77.26	-39	59.13	38.26	74	54	-14.87	-15.74
1476	H	97.95	77.09	-42	55.95	35.09	74	54	-18.05	-18.91
1768	H	98.29	77.51	-41.4	56.89	36.11	74	54	-17.11	-17.89

Operation Mode: Pi/4-DQPSK (CH79: 2480MHz) Test Date : May 16, 2023

Freq.	Ant. Pol.	Reading Level(dBuV/m)		Correct Factor	Emission Level(dBuV/m)		Limit 3m(dBuV/m		Over(dB)	
(MHz)	H/V	PK	AV	dB	PK	AV	PK	AV	PK	AV
4821	V	96.15	75.37	-32.3	63.85	43.07	74	54	-10.15	-10.93
7624	V	97.23	76.24	-37.2	60.03	39.04	74	54	-13.97	-14.96
1036	V	98.16	77.32	-39.8	58.36	37.52	74	54	-15.64	-16.48
1175	V	98.53	76.83	-40.5	58.03	36.33	74	54	-15.97	-17.67
1496	V	97.86	76.51	-41	56.86	35.51	74	54	-17.14	-18.49
1792	V	98.79	76.92	-41.1	57.69	35.82	74	54	-16.31	-18.18
4821	H	95.33	74.13	-31.6	63.73	42.53	74	54	-10.27	-11.47
7624	H	97.13	75.28	-35.5	61.63	39.78	74	54	-12.37	-14.22
1036	H	98.72	78.06	-38.3	60.42	39.76	74	54	-13.58	-14.24
1175	H	99.62	78.64	-39	60.62	39.64	74	54	-13.38	-14.36
1496	H	98.81	77.32	-42	56.81	35.32	74	54	-17.19	-18.68
1792	H	99.26	78.39	-41.4	57.86	36.99	74	54	-16.14	-17.01

Other harmonics emissions are lower than 20dB below the allowable limit.

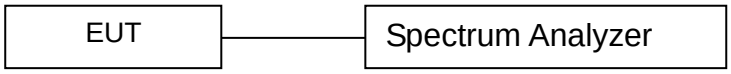
Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+ Probe Factor +Cable Loss.
(3) The average measurement was not performed when the peak measured data under the limit of average detection.
(4) Measuring frequencies from 1GHz to 25GHz.

9. Channel Separation test

9.1 Measurement Procedure

The EUT was operating in hopping mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

9.2 Test SET-UP (Block Diagram of Configuration)



9.3 Measurement Results:

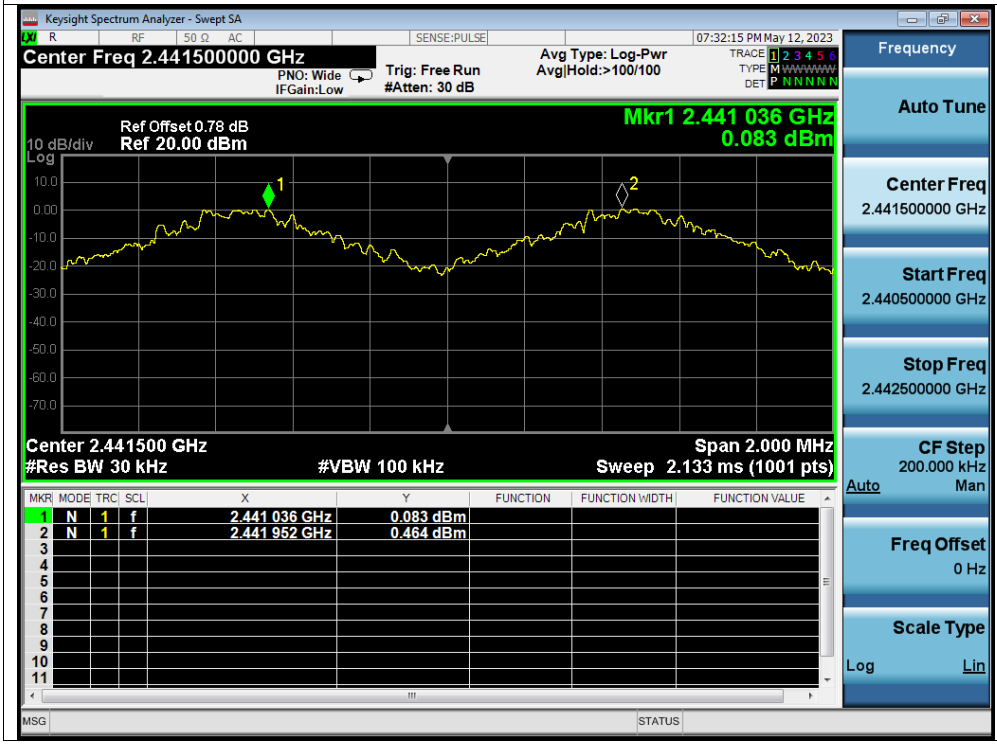
Refer to attached data chart.

Spectrum Detector:	PK	Test Date :	May 16, 2023
Test By:	Sunshine	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Modulation:	GFSK		

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.986	2402.988	1.002	0.633	Pass
NVNT	1-DH5	Ant1	2441.036	2441.952	0.916	0.636	Pass
NVNT	1-DH5	Ant1	2478.94	2479.97	1.03	0.625	Pass
NVNT	2-DH5	Ant1	2401.974	2402.968	0.994	0.871	Pass
NVNT	2-DH5	Ant1	2440.806	2441.806	1	0.896	Pass
NVNT	2-DH5	Ant1	2478.964	2480.142	1.178	0.876	Pass

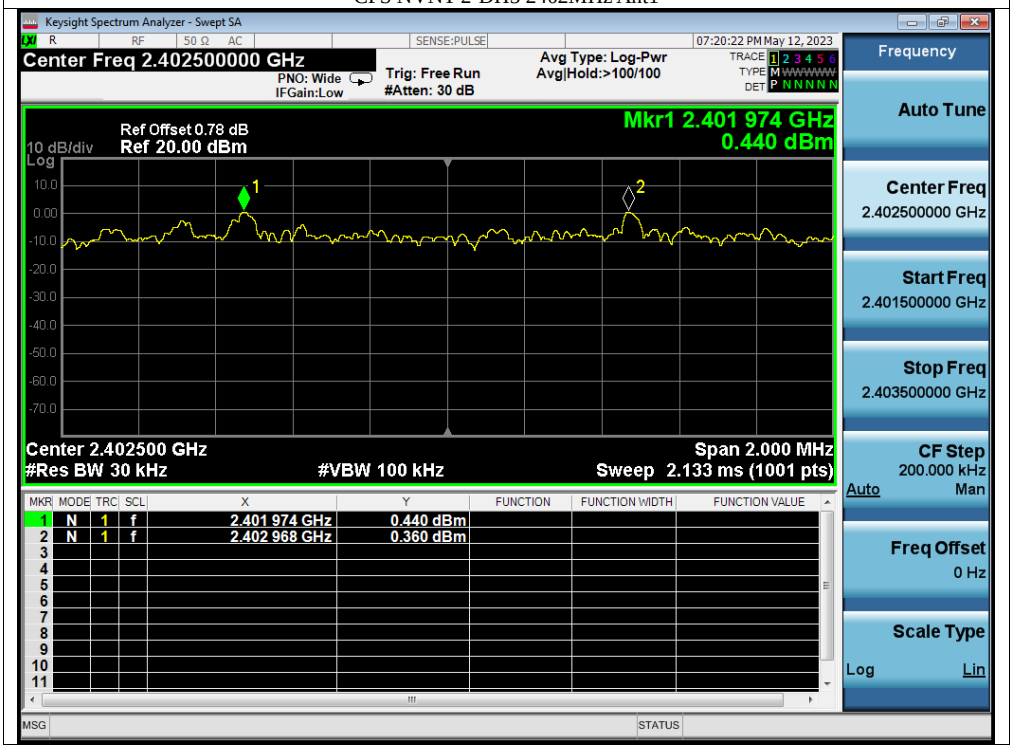
Test Graphs
CFS NVNT 1-DH5 2402MHz Ant1

CFS NVNT 1-DH5 2441MHz Ant1

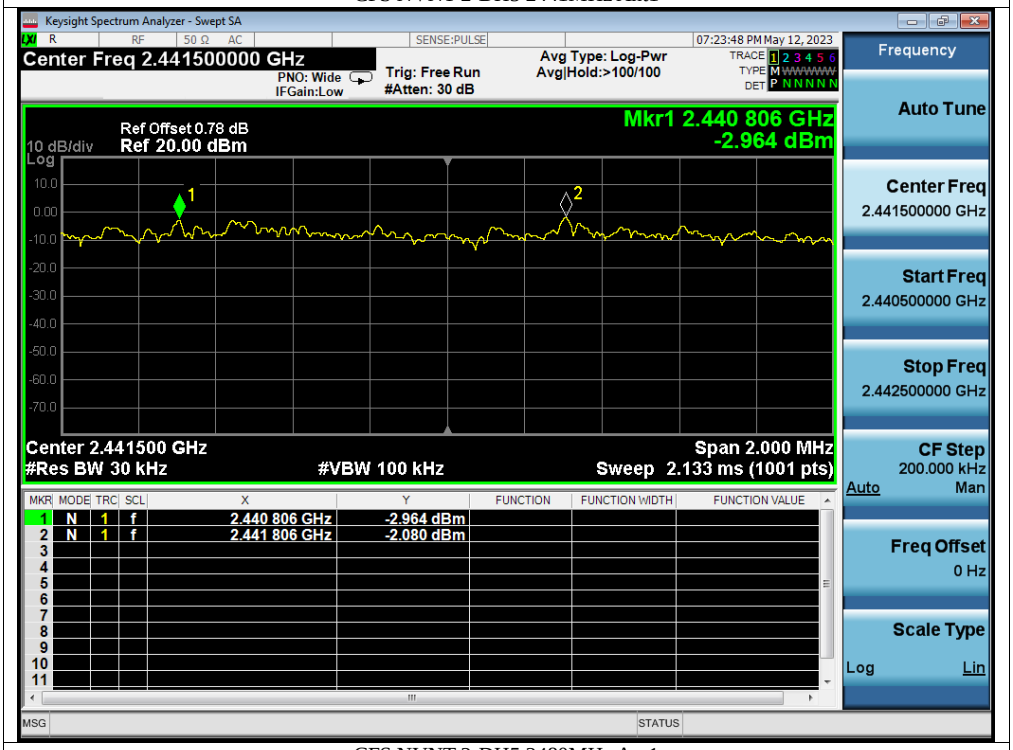


CFS NVNT 1-DH5 2480MHz Ant1

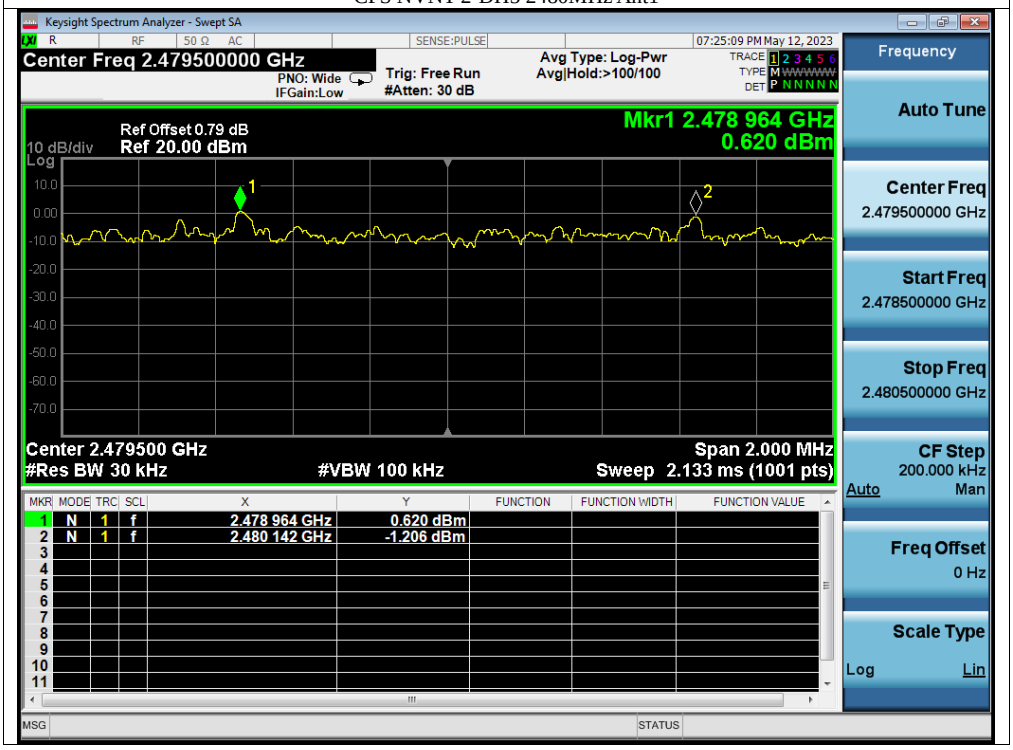
CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2441MHz Ant1



CFS NVNT 2-DH5 2480MHz Ant1

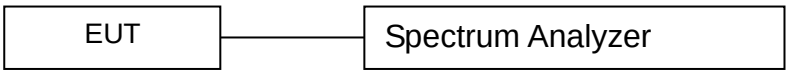


10. 20dB Bandwidth test

10.1 Measurement Procedure

The EUT was operating in hopping mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

10.2 Test SET-UP (Block Diagram of Configuration)



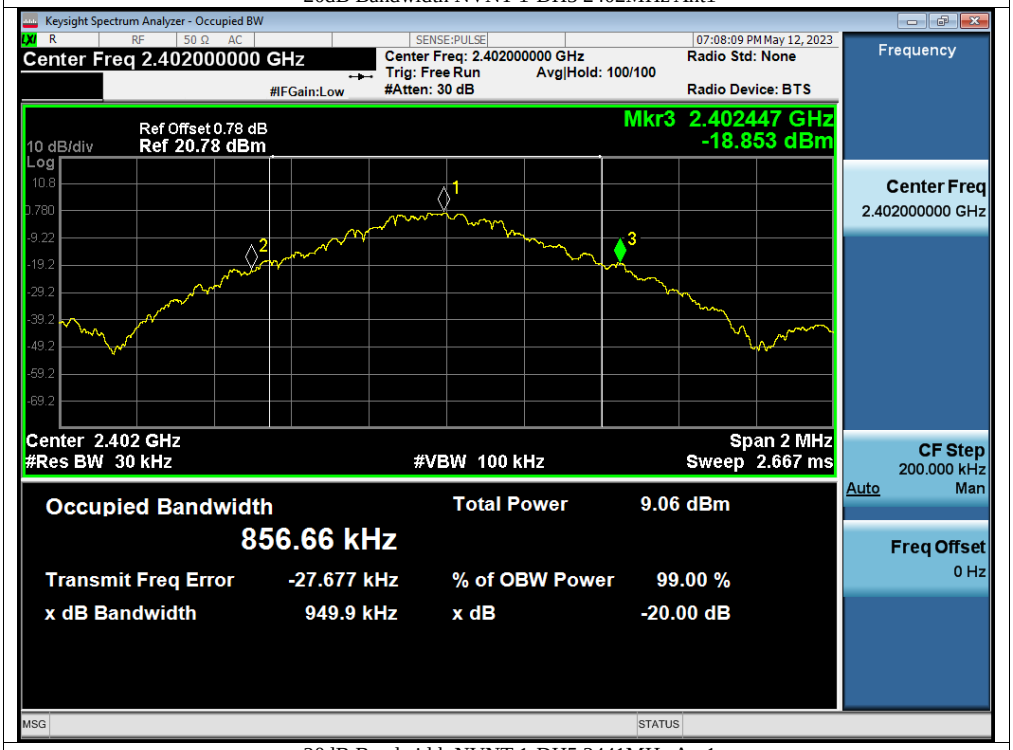
10.3 Measurement Results:

Refer to attached data chart.

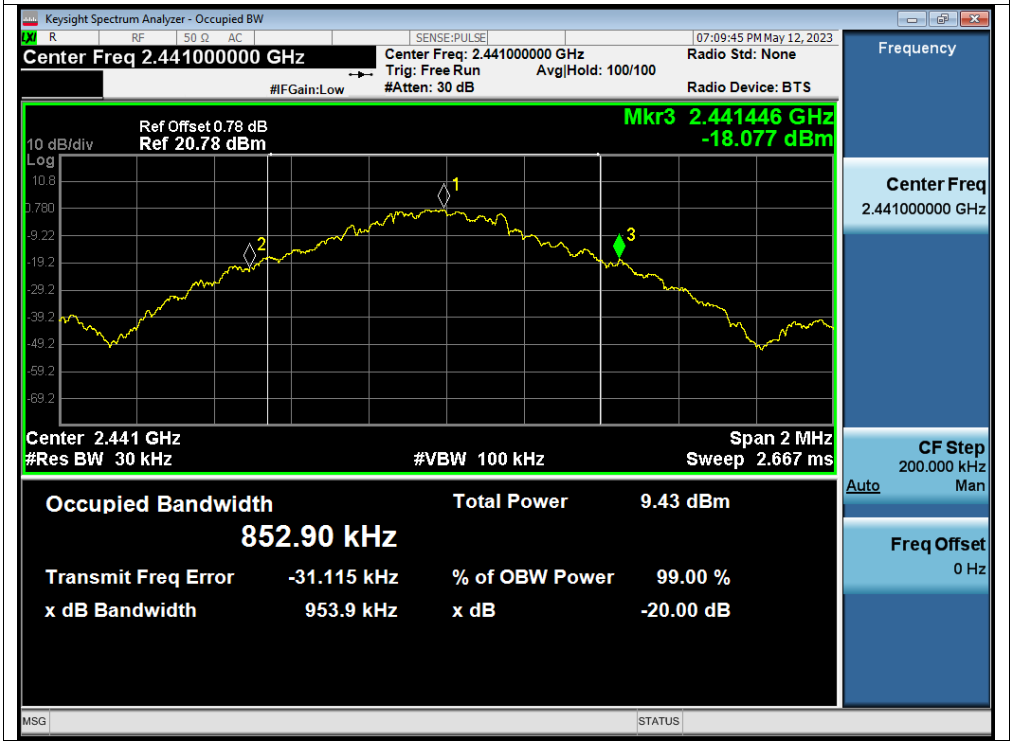
Spectrum Detector:	PK	Test Date :	May 16, 2023
Test By:	Sunshine	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Modulation:	GFSK		

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.95	0	Pass
NVNT	1-DH5	2441	Ant1	0.954	0	Pass
NVNT	1-DH5	2480	Ant1	0.938	0	Pass
NVNT	2-DH5	2402	Ant1	1.307	0	Pass
NVNT	2-DH5	2441	Ant1	1.344	0	Pass
NVNT	2-DH5	2480	Ant1	1.314	0	Pass

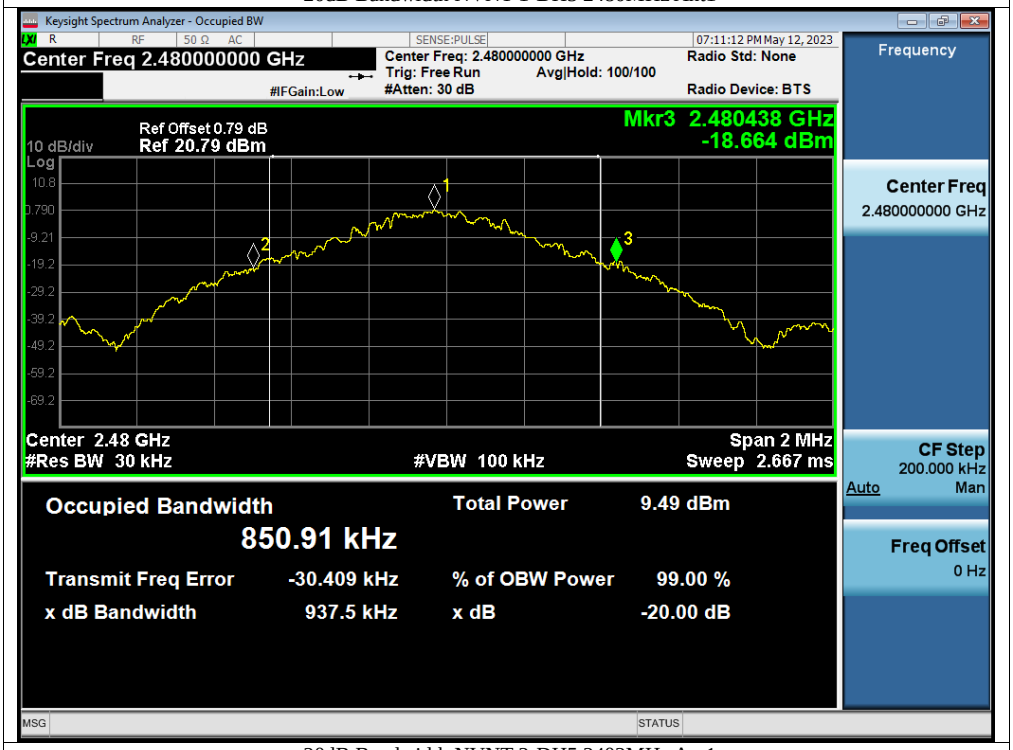
Test Graphs
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



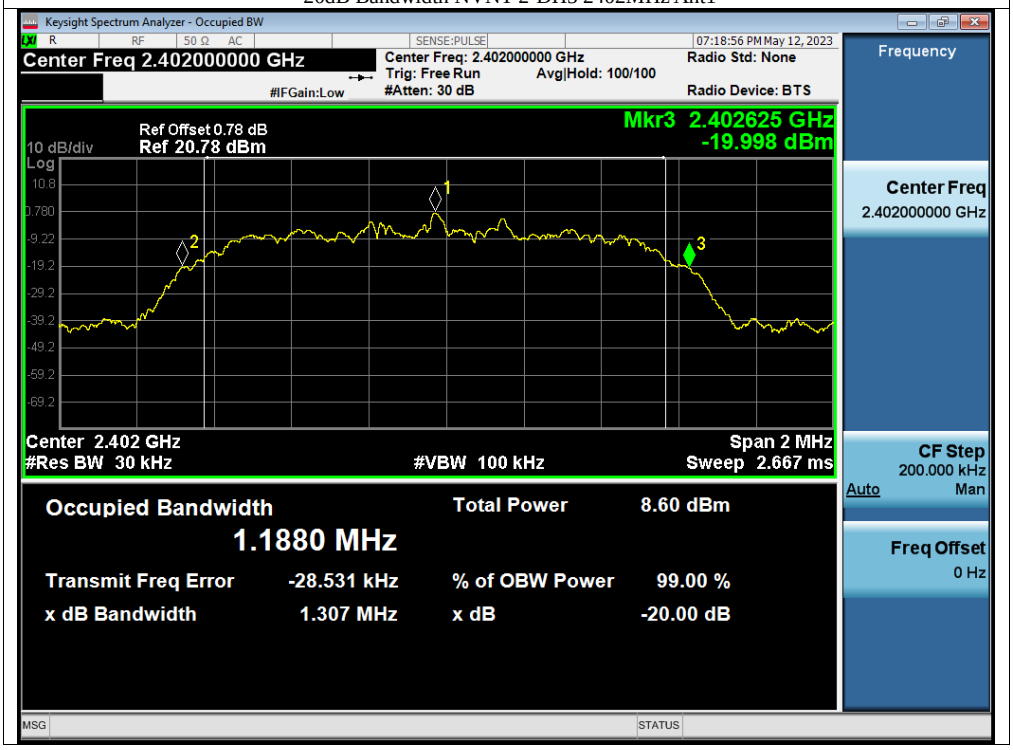
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



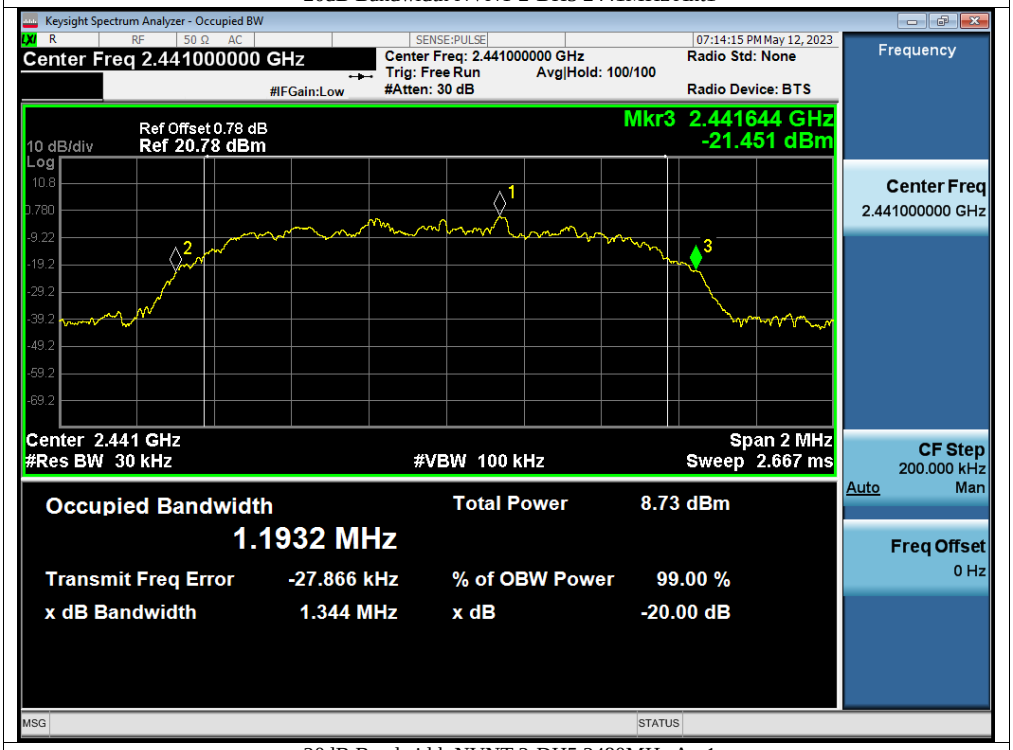
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



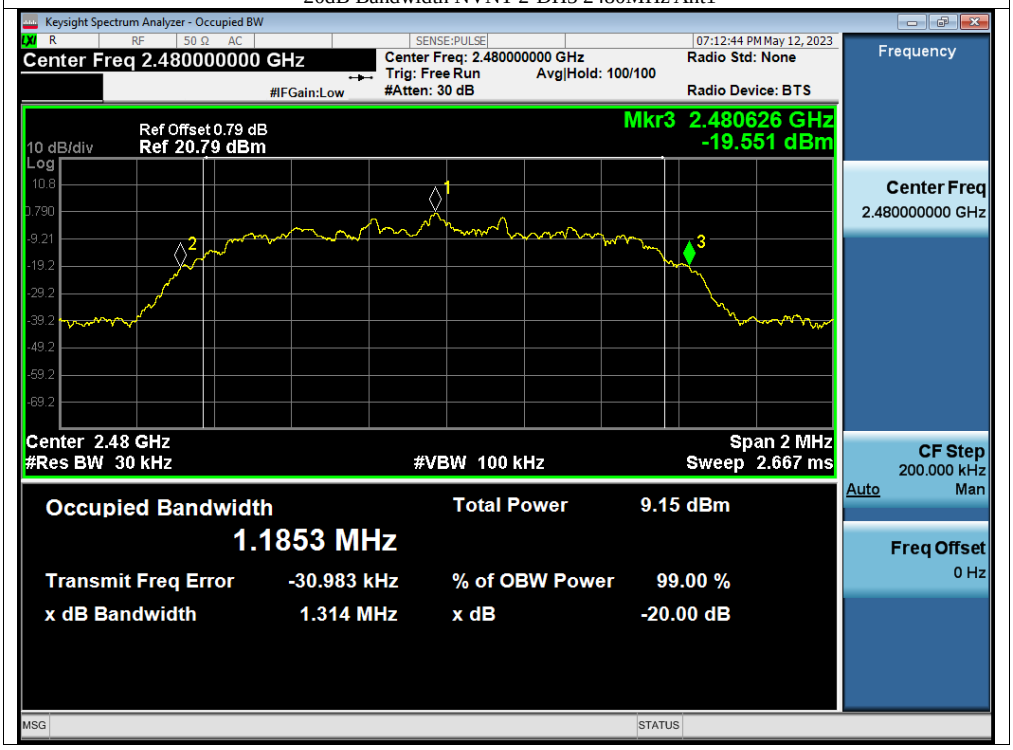
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

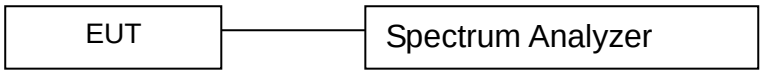


11. Quantity of Hopping Channel Test

11.1 Measurement Procedure

The EUT was operating in hopping mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

11.2 Test SET-UP (Block Diagram of Configuration)

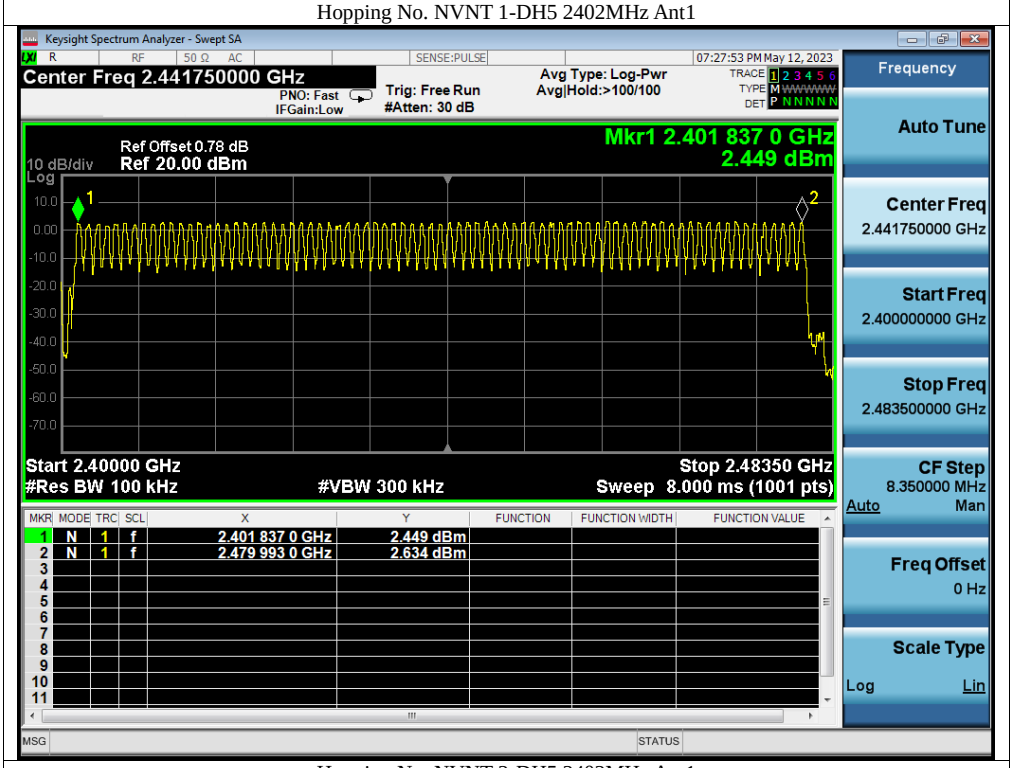


11.3 Measurement Results:

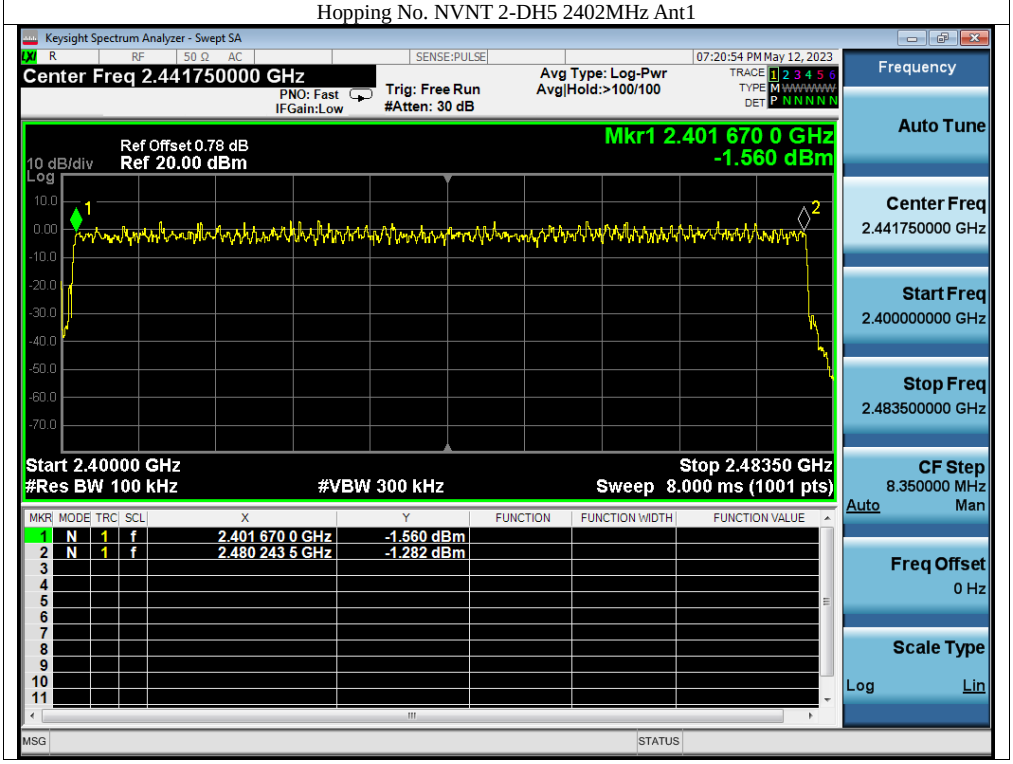
Refer to attached data chart.

Worst Test Mode	GFSK	Test Date :	May 16, 2023
Test By:	Sunshine	Temperature :	24 ℃
Test Result:	PASS	Humidity :	53 %

Test Graphs
Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



12. Time of Occupancy (Dwell Time) test

12.1 Test Description

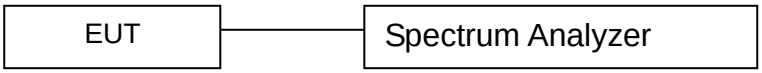
The Equipment Under Test (EUT) was set up to perform the dwell time measurements. The EUT was connected to the spectrum analyzer via a short coax cable. The dwell time is calculated by:

Dwell time = time slot length * hop rate / number of hopping channels * 31.6s

with:
- hop rate = 1600 * 1/s for DH1 packets = 1600 s^{-1}
- hop rate = 1600/3 * 1/s for DH3 packets = 533.33 s^{-1}
- number of hopping channels = 79
- 31.6 s = 0.4 seconds multiplied by the number of hopping channels = 0.4 s * 79

The highest value of the dwell time is reported.

12.2 Test SET-UP (Block Diagram of Configuration)



12.3 Test Requirements / Limits

FCC Part 15, Subpart C, §15.247 (a) (1) (iii)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Since the Bluetooth technology uses 79 channels this period is calculated to be 31.6seconds. Refer to attached data chart.

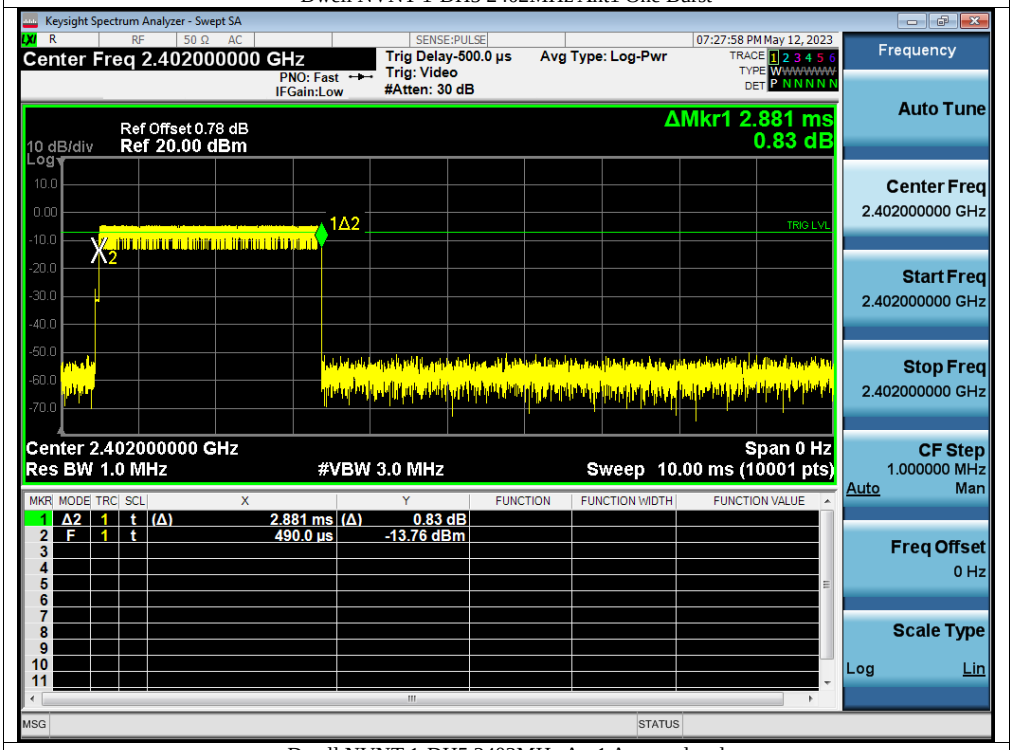
Modulation:	GFSK	Test Date :	May 16, 2023
Test By:	Sunshine	Temperature :	24 ℃
Test Result:	PASS	Humidity :	53 %

12.4 Test result

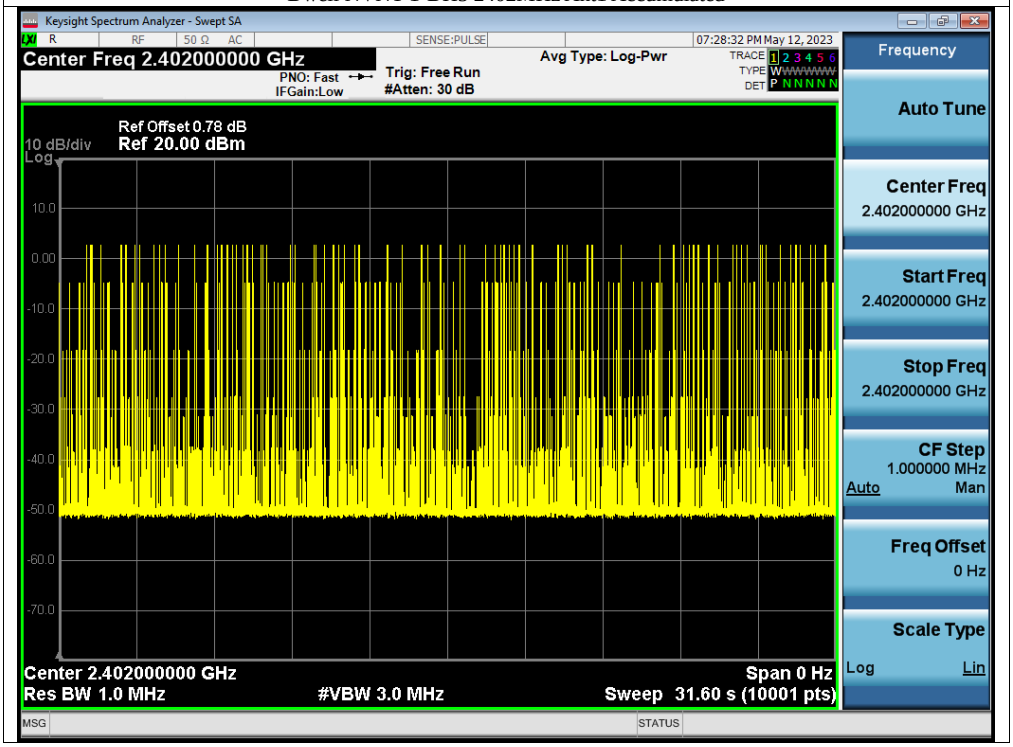
Remark: The results of worst cased was recorded.

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.881	262.171	91	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.879	316.69	110	31600	400	Pass
NVNT	1-DH5	2480	Ant1	2.88	345.6	120	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.886	314.574	109	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.885	323.12	112	31600	400	Pass
NVNT	2-DH5	2480	Ant1	2.886	297.258	103	31600	400	Pass

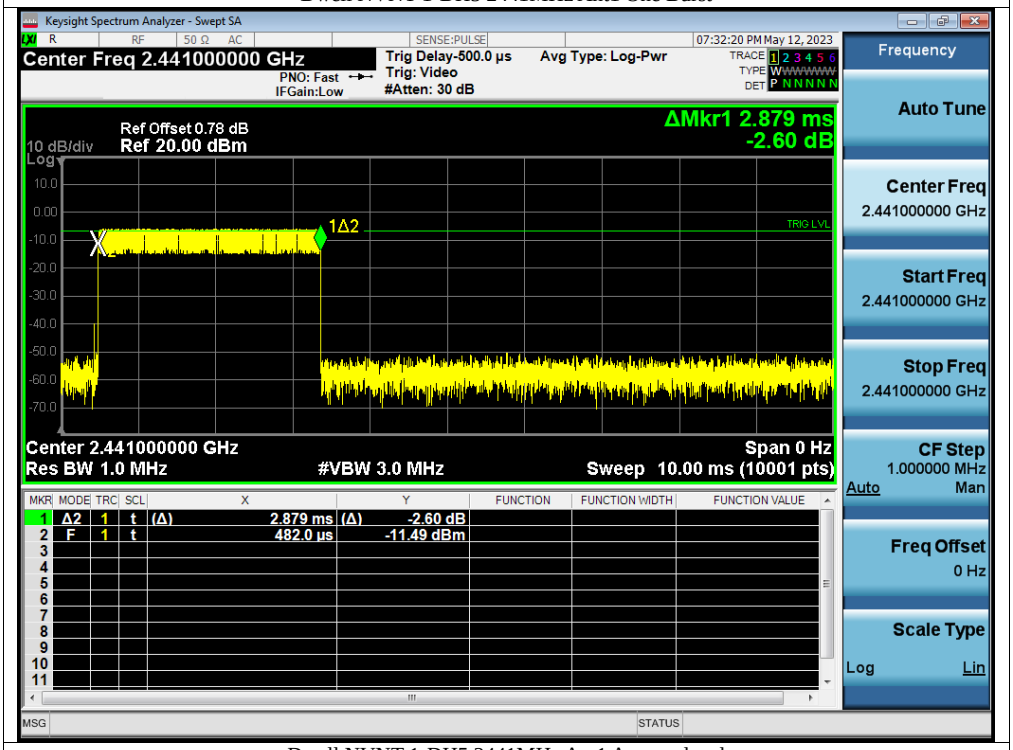
Test Graphs
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



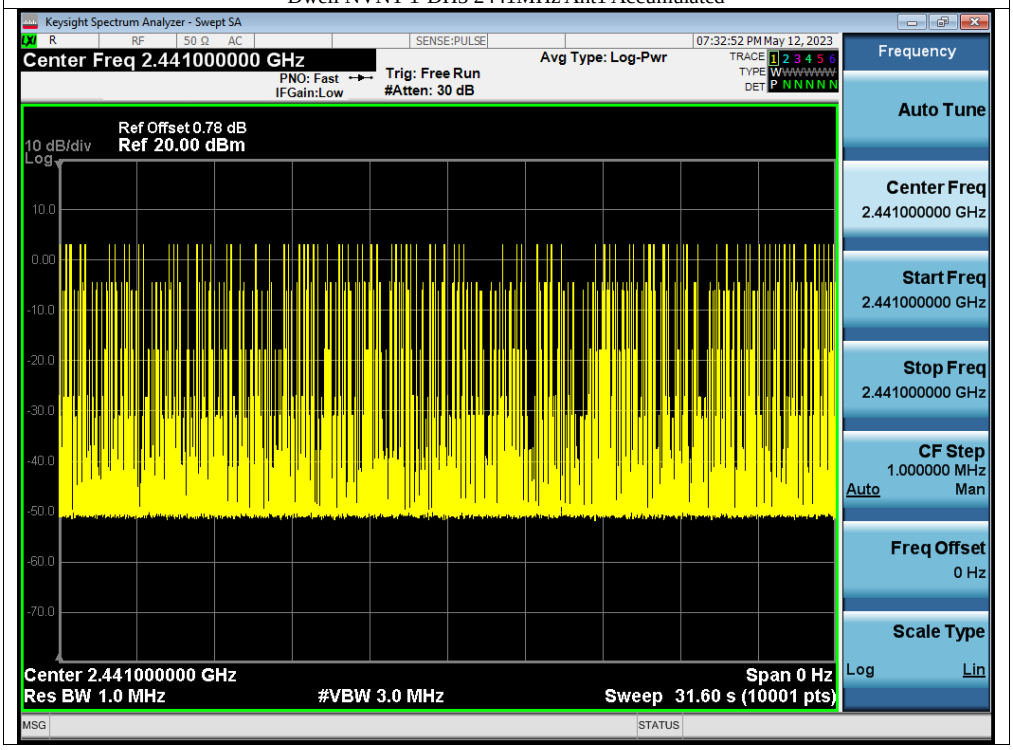
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



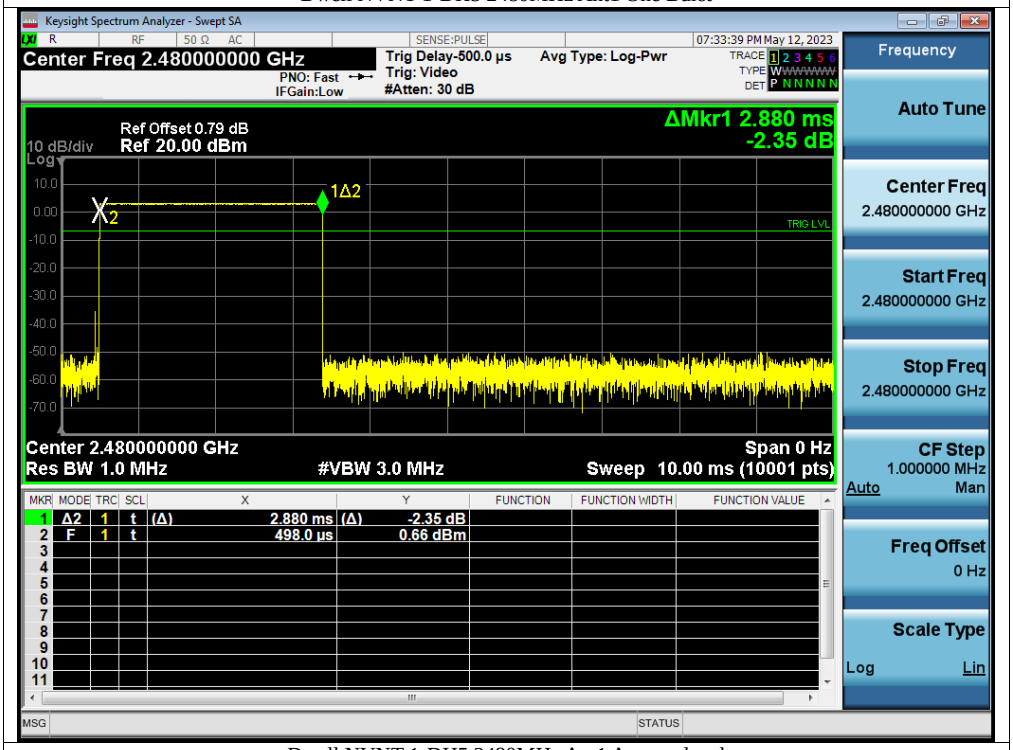
Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



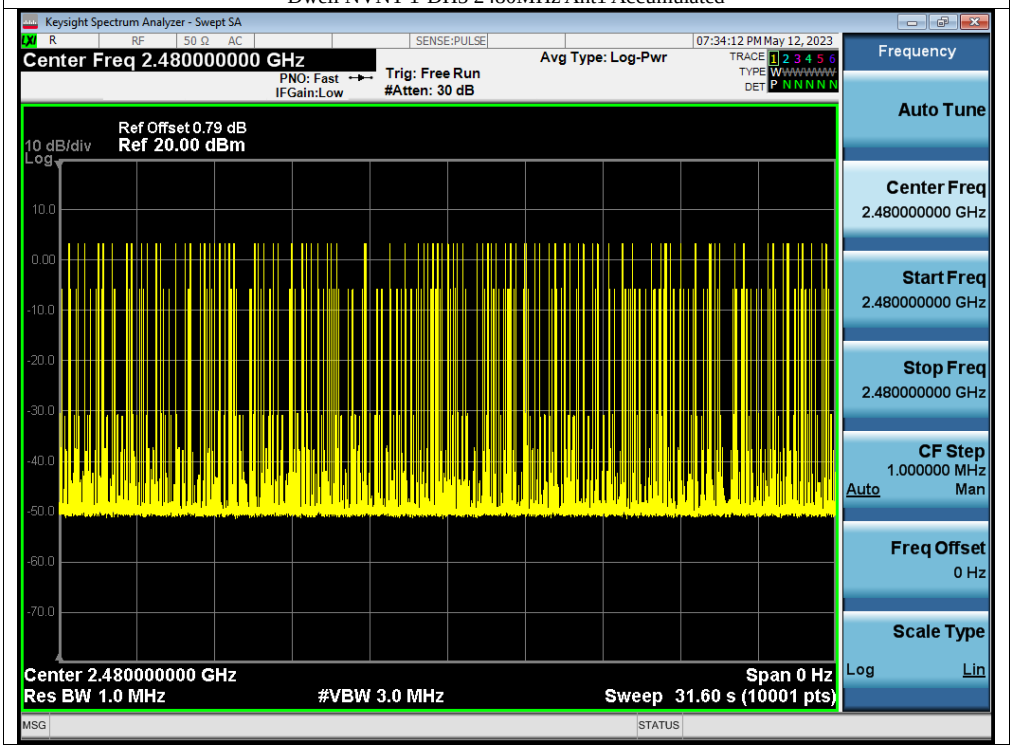
Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated



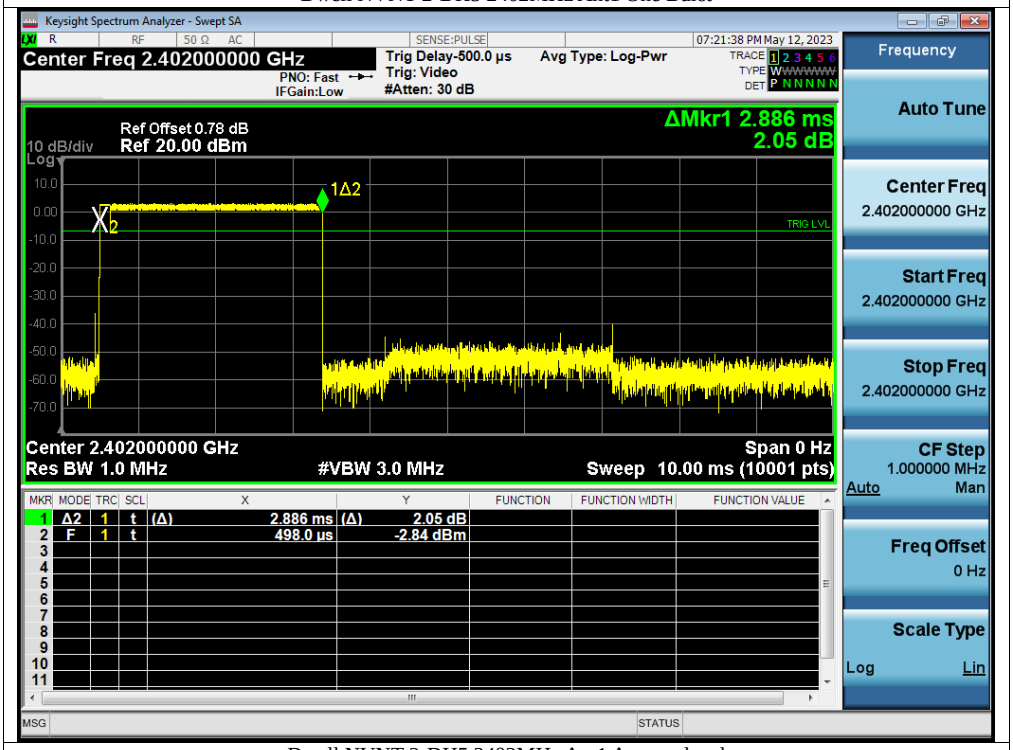
Dwell NVNT 1-DH5 2480MHz Ant1 One Burst



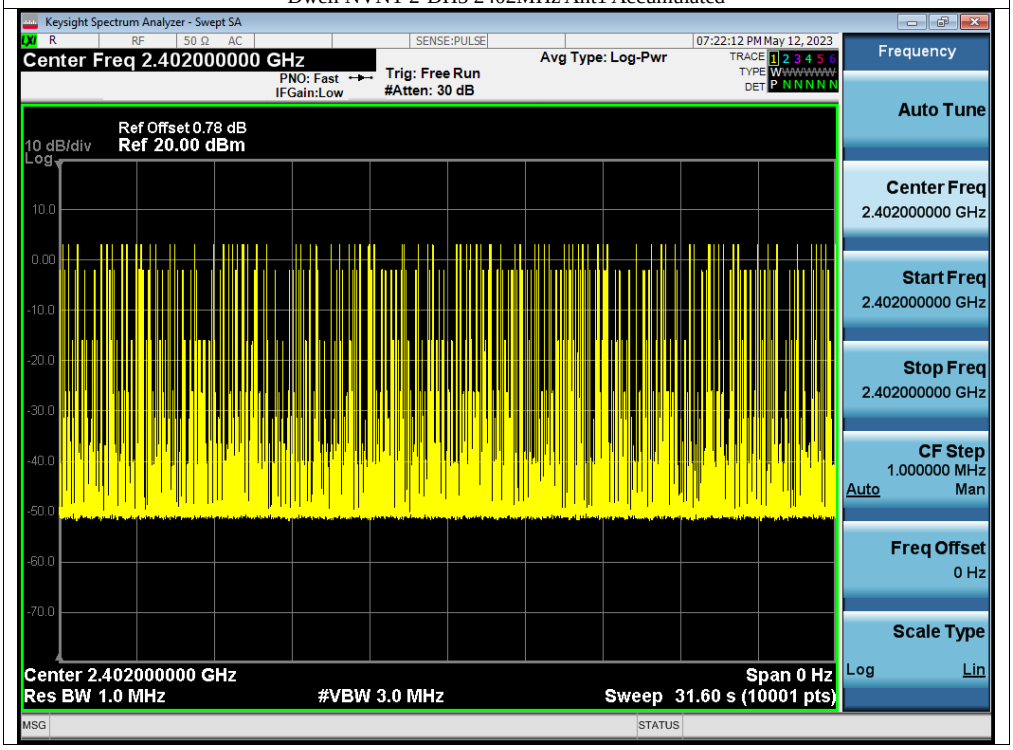
Dwell NVNT 1-DH5 2480MHz Ant1 Accumulated



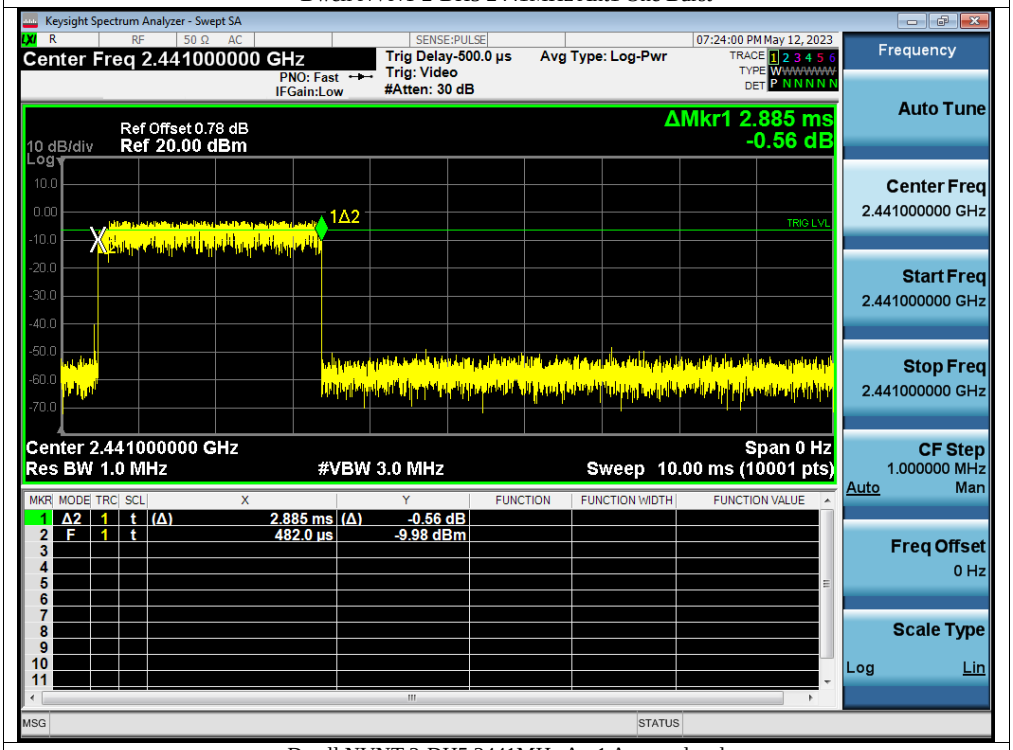
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



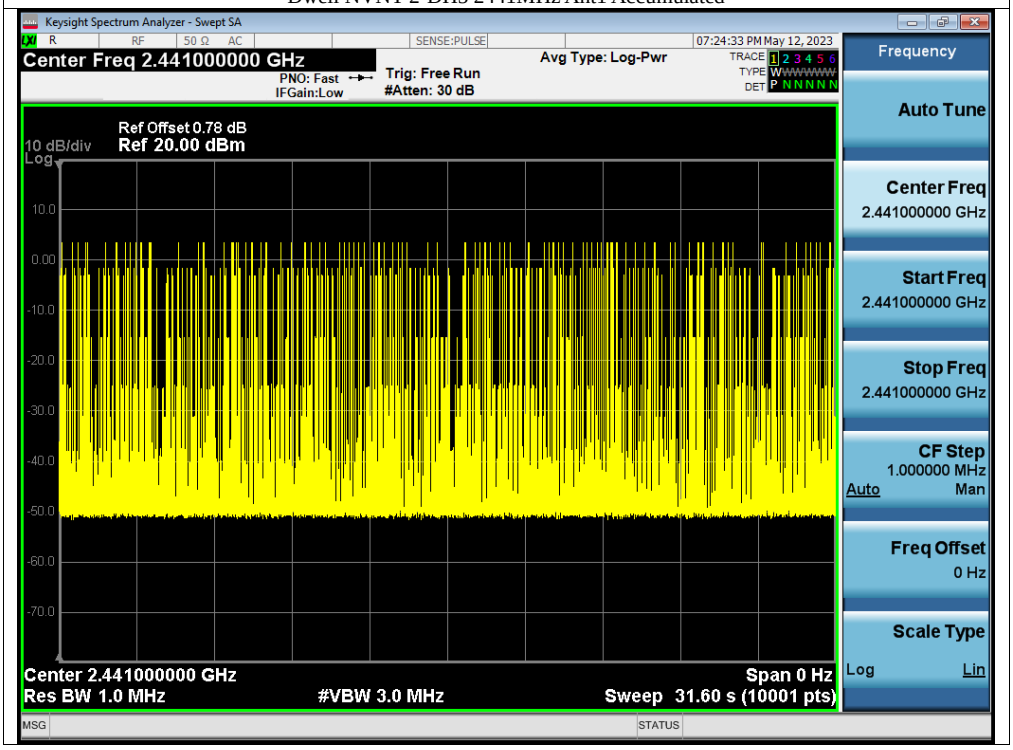
Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



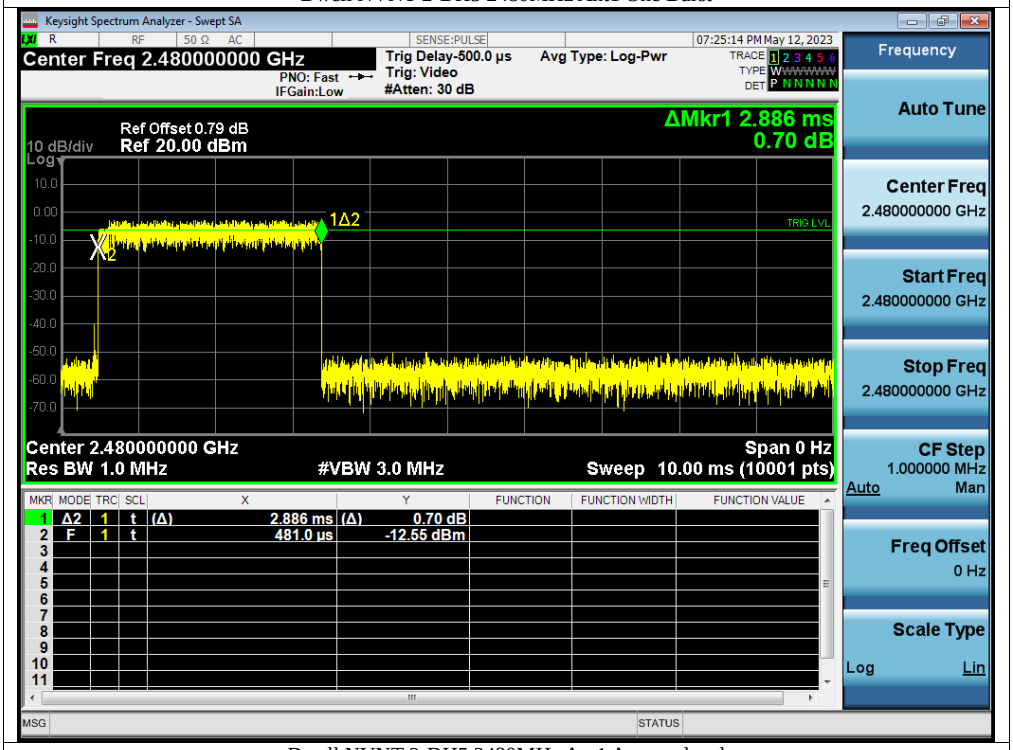
Dwell NVNT 2-DH5 2441MHz Ant1 One Burst



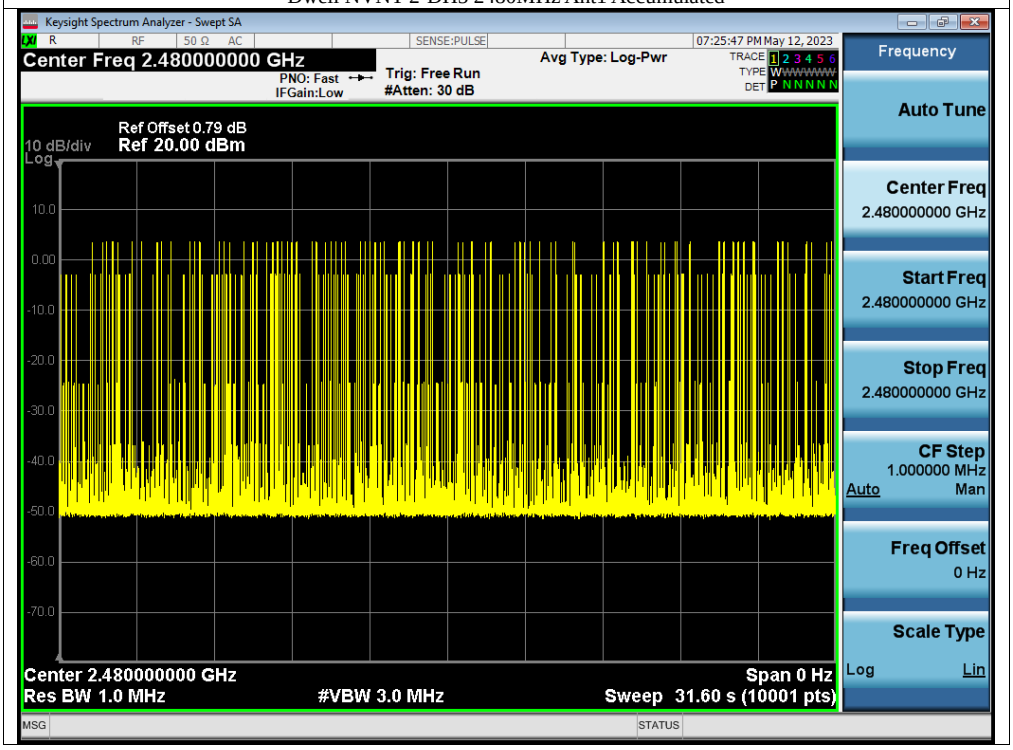
Dwell NVNT 2-DH5 2441MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2480MHz Ant1 One Burst



Dwell NVNT 2-DH5 2480MHz Ant1 Accumulated



13. MAXIMUM PEAK OUTPUT POWER TEST

13.1 Measurement Procedure

a. Check the calibration of the measuring instrument(SA) using either an internal calibrator or a known signal from an external generator.

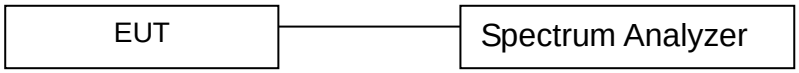
b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

c. The center frequency of the spectrum analyzer is set to the fundamental frequency and using proper RBW and VBW setting.

d. Measure the captured power within the band and recording the plot.

e. Repeat above procedures until all frequencies required were complete.

13.2 Test SET-UP (Block Diagram of Configuration)



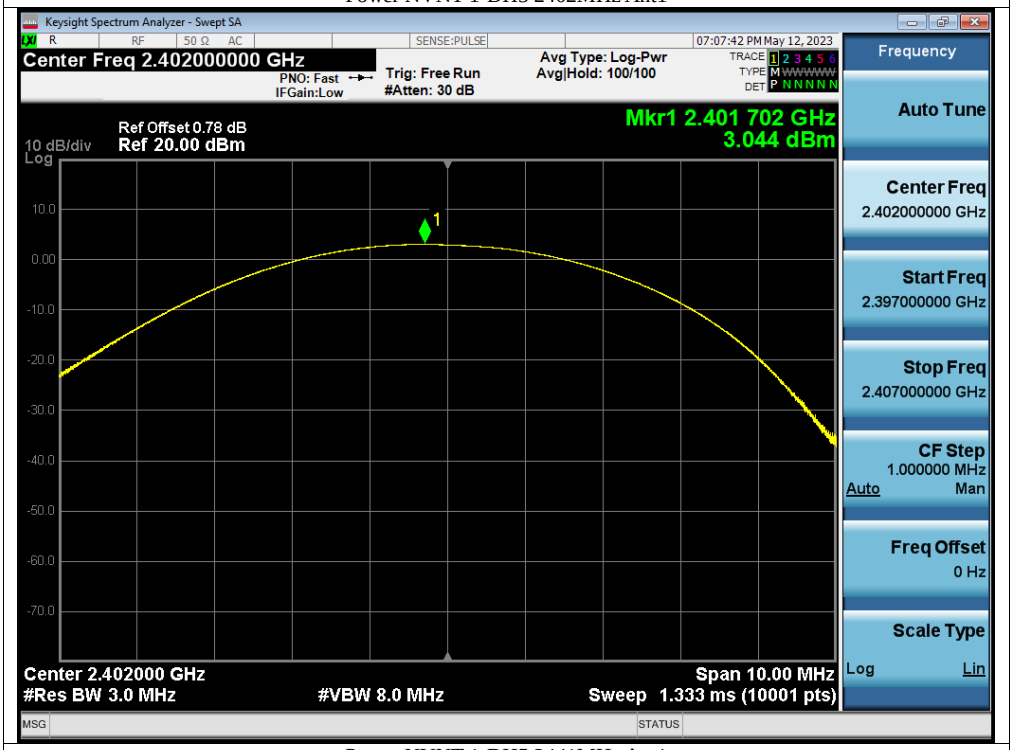
13.3Measurement Results:

Refer to attached data chart.

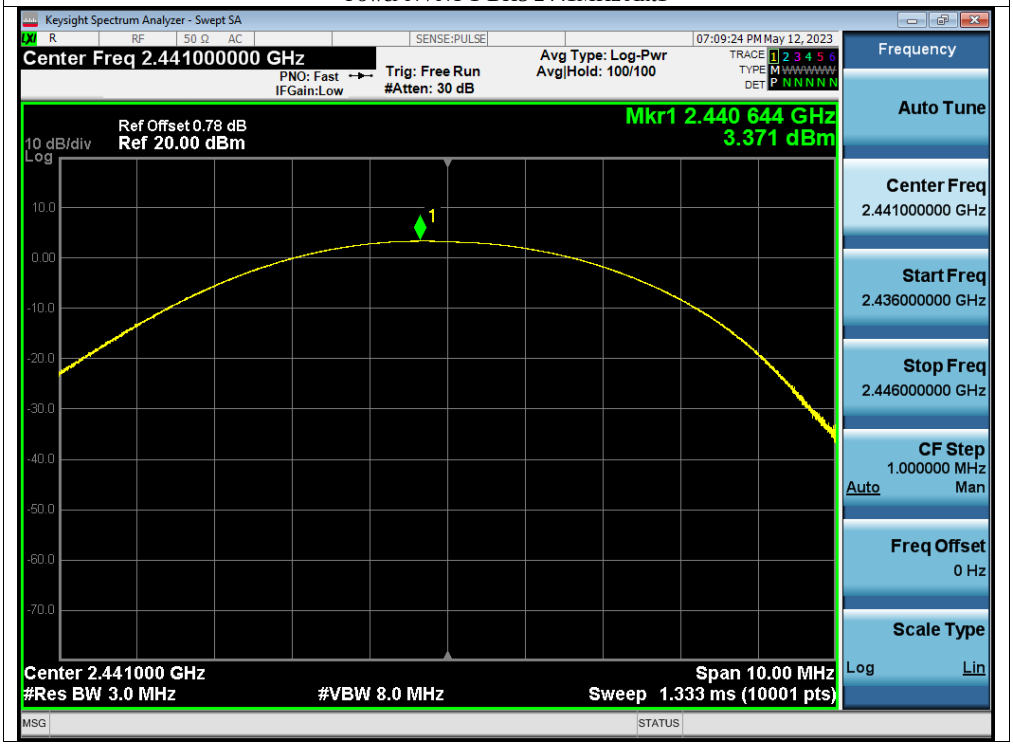
Spectrum Detector:	PK	Test Date :	May 16, 2023
Test By:	Sunshine	Temperature :	24 ℃
Test Result:	PASS	Humidity :	53 %

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	3.04	0	3.04	21	Pass
NVNT	1-DH5	2441	Ant1	3.37	0	3.37	21	Pass
NVNT	1-DH5	2480	Ant1	3.55	0	3.55	21	Pass
NVNT	2-DH5	2402	Ant1	3.77	0	3.77	21	Pass
NVNT	2-DH5	2441	Ant1	4.08	0	4.08	21	Pass
NVNT	2-DH5	2480	Ant1	4.18	0	4.18	21	Pass

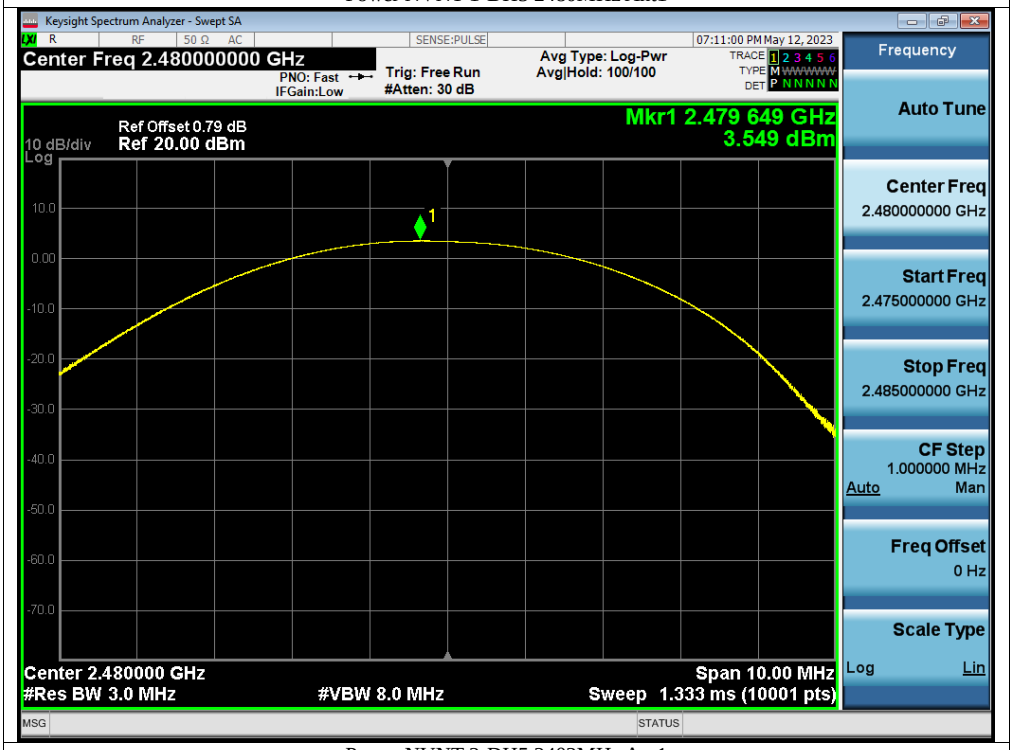
Test Graphs
Power NVNT 1-DH5 2402MHz Ant1



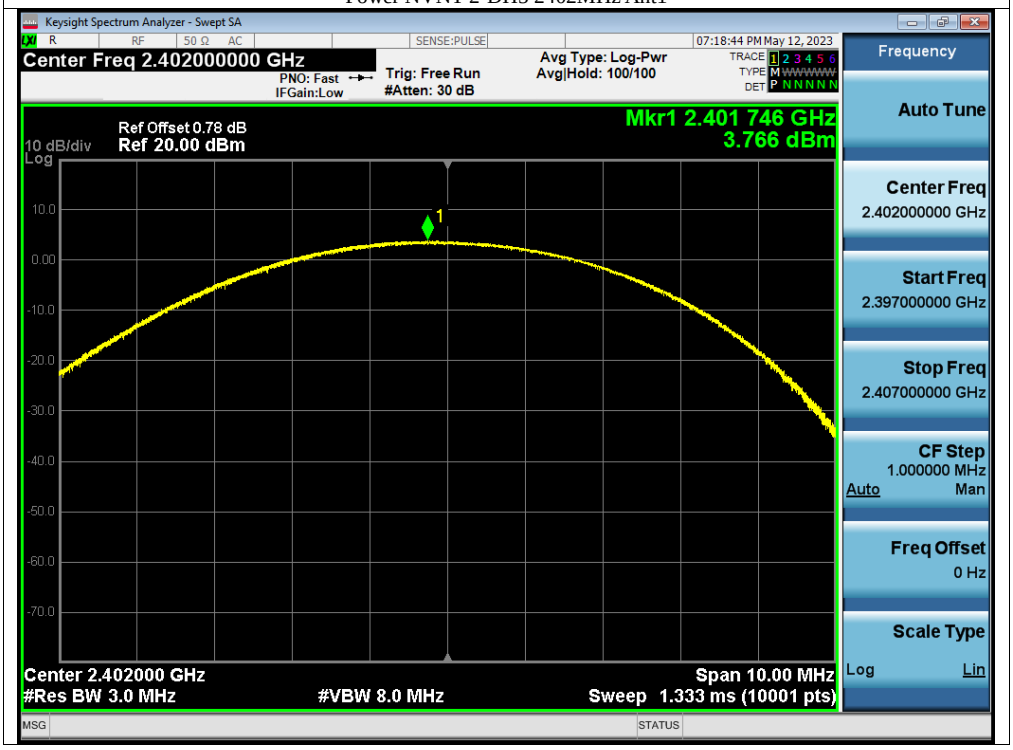
Power NVNT 1-DH5 2441MHz Ant1



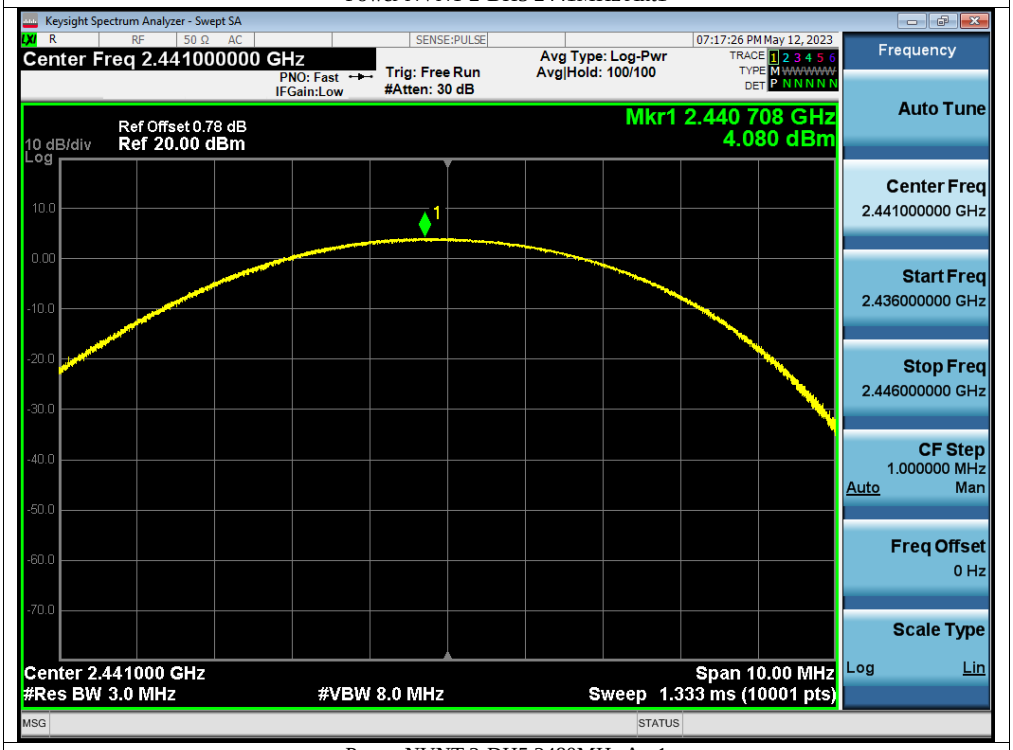
Power NVNT 1-DH5 2480MHz Ant1



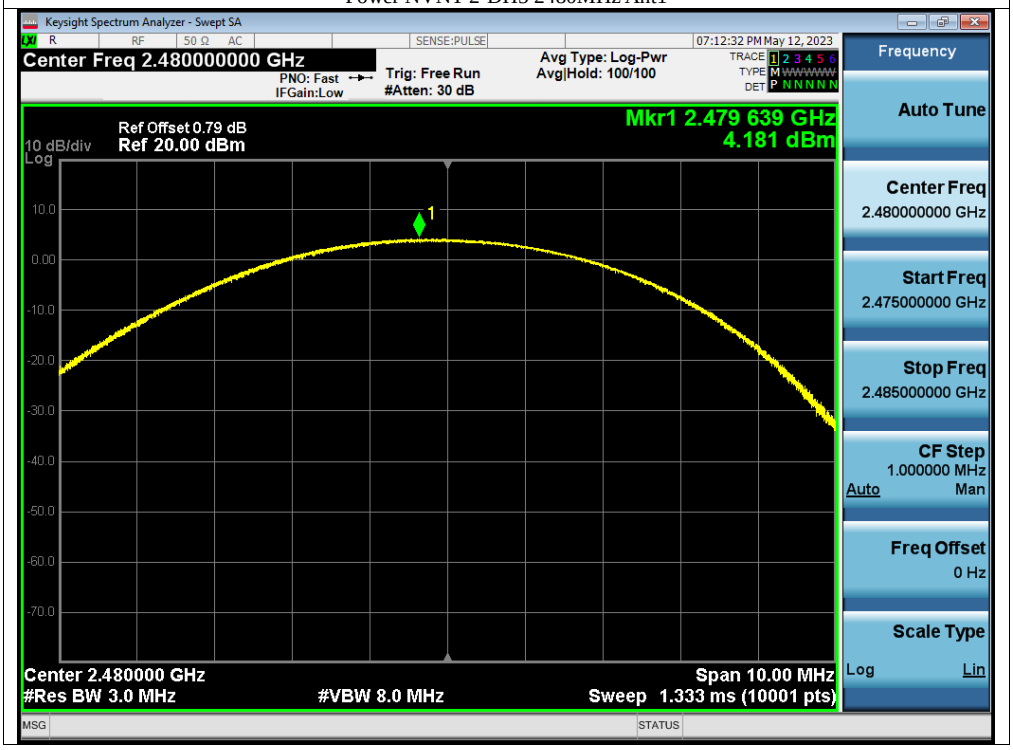
Power NVNT 2-DH5 2402MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1



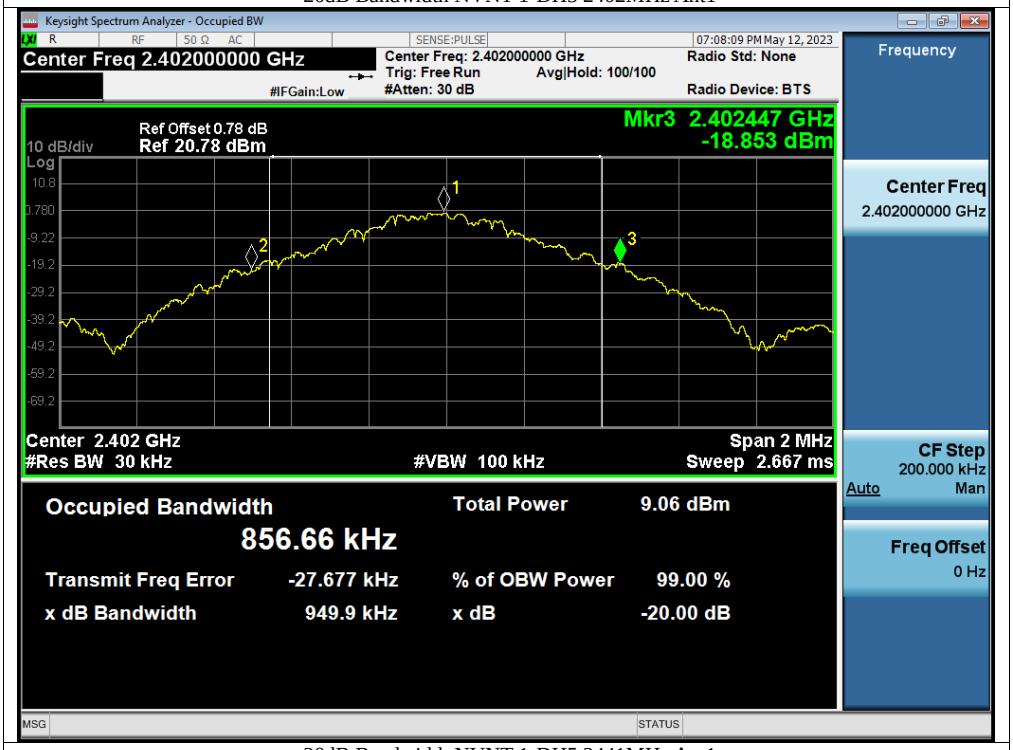
Power NVNT 2-DH5 2480MHz Ant1



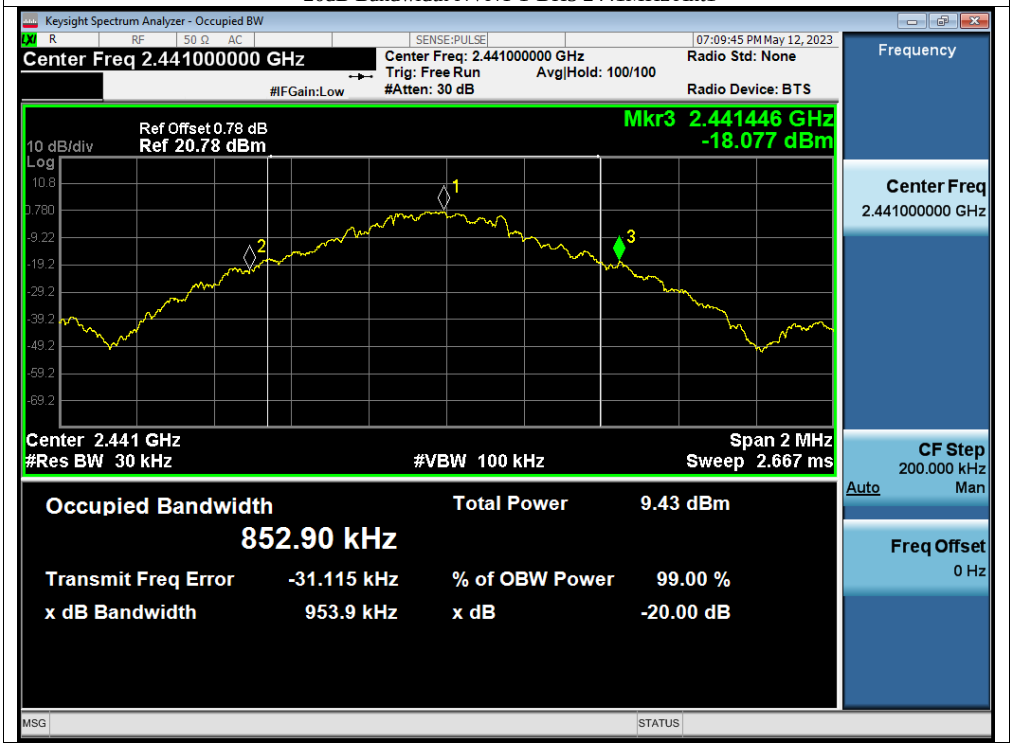
-20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.95	0	Pass
NVNT	1-DH5	2441	Ant1	0.954	0	Pass
NVNT	1-DH5	2480	Ant1	0.938	0	Pass
NVNT	2-DH5	2402	Ant1	1.307	0	Pass
NVNT	2-DH5	2441	Ant1	1.344	0	Pass
NVNT	2-DH5	2480	Ant1	1.314	0	Pass

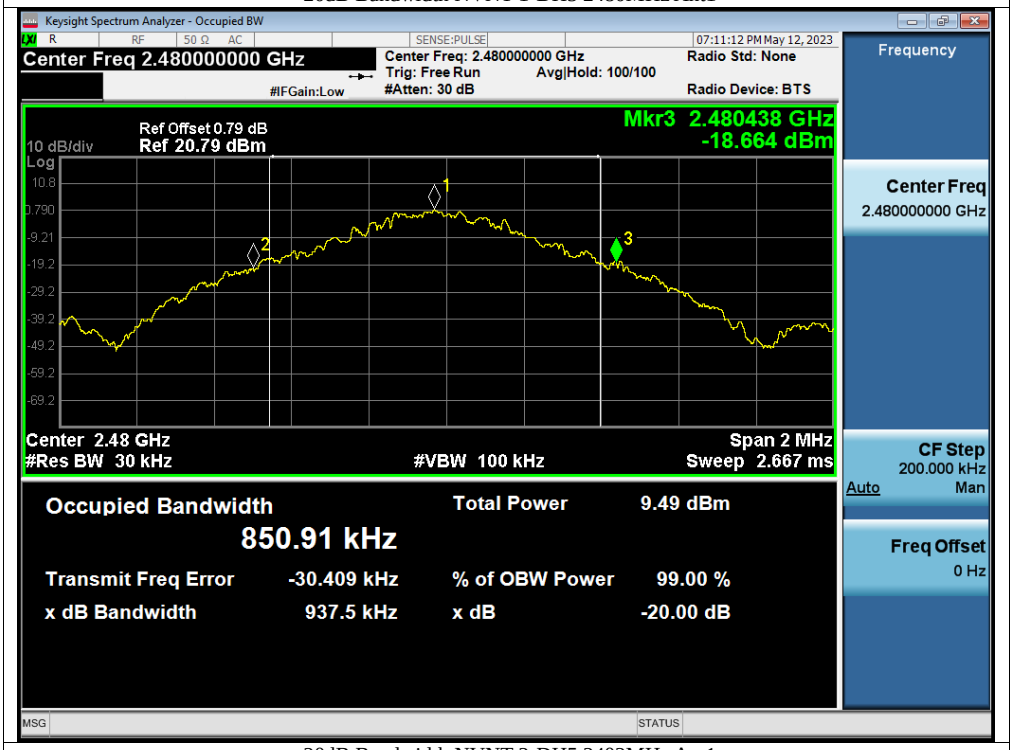
Test Graphs
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



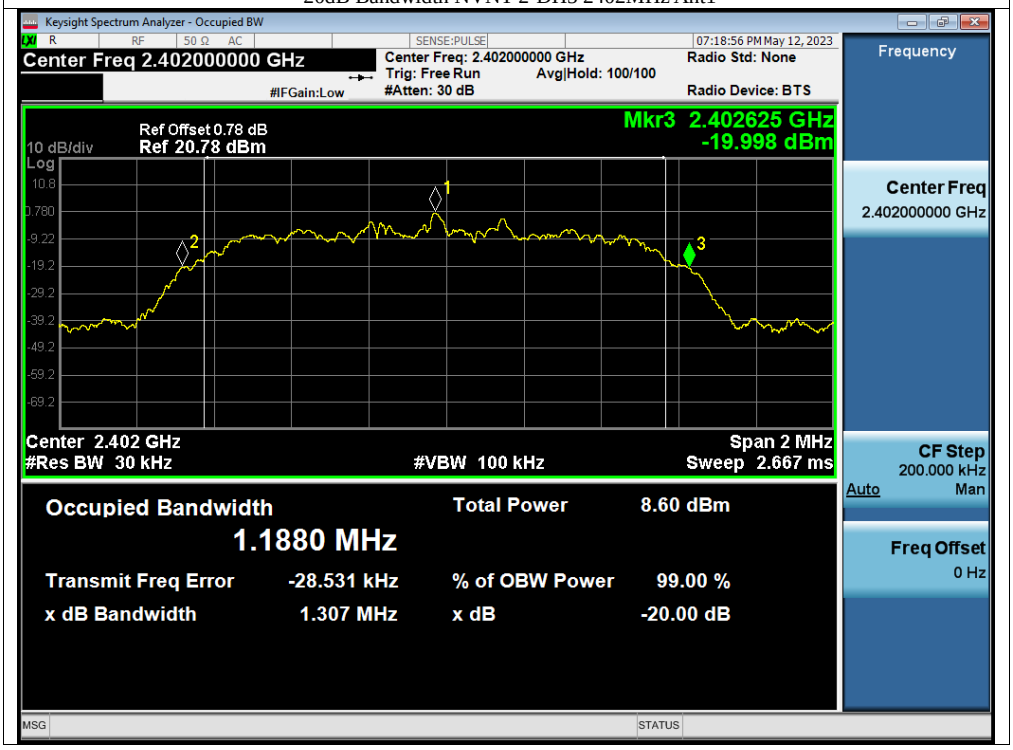
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



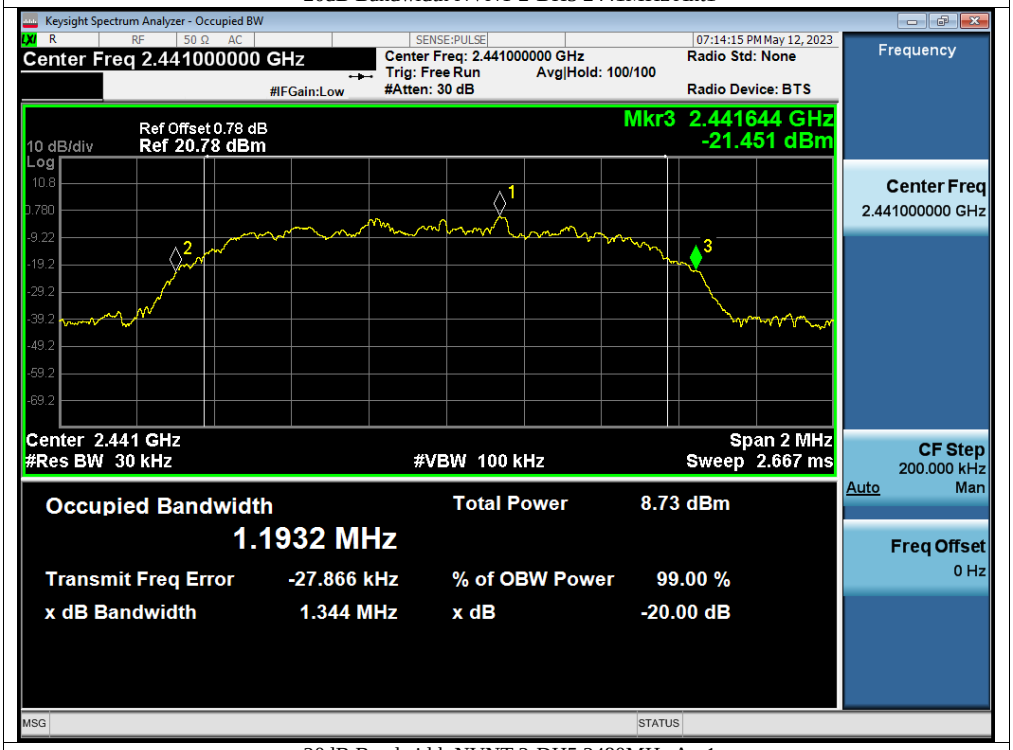
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



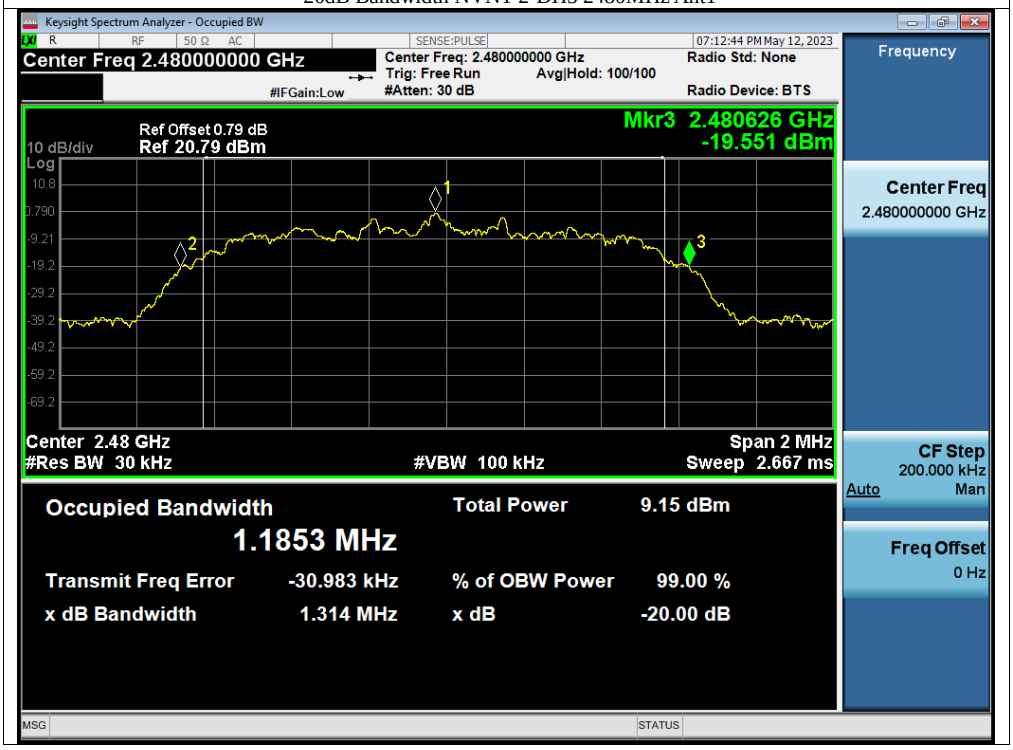
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



14. Band EDGE test

14.1 Measurement Procedure

For Conducted Test

1. The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100KHz. The video bandwidth is set to 300KHz.
2. The spectrum from 30MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

EMI Test Receiver	Setting
Attenuation	Auto
RBW	100KHz
VBW	300KHz
Detector	Peak
Trace	Max hold

For Radiated emission Test

The EUT was placed on a styrofoam table which is 1.5m above ground plane.

The measurement procedure at the ban edges was simplified by performing the measurement in just one plot. Both, the in-band-emission and the unwanted emission were be encompassed by the span. After trace stabilization, the maximum peak was be determined by a peak detector and the value was marked by an appropriate limit line. The second limit line, which is 20dB below the first, marks the limit for the emissions in the unrestricted band. A maximum-peak-detector marks the highest emission in the unrestricted band next to the band edge.

The measurements were performed at the lower end of the 2.4GHz band.

Use the following spectrum analyzer settings:

For Restricted Band, When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 3MHz:

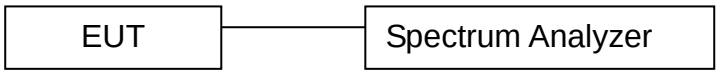
EMI Test Receiver	Setting
Attenuation	Auto
RBW	1MHz
VBW	3MHz
Detector	Peak
Trace	Max hold

For Non-Restricted Band, When spectrum scanned above 1GHz setting resolution bandwidth 100KHz, video bandwidth 300KHz:

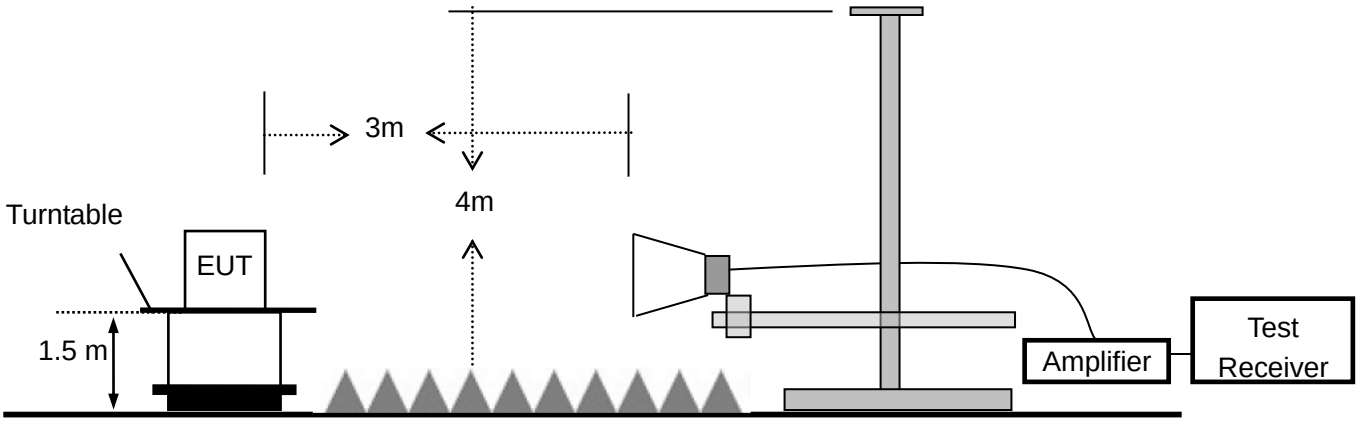
EMI Test Receiver	Setting
Attenuation	Auto
RBW	100KHz
VBW	300KHz
Detector	Peak
Trace	Max hold

14.2 Test SET-UP (Block Diagram of Configuration)

For Conducted Test



For Radiated emission Test



14.3 Measurement Results:

Refer to attached data chart.

Spectrum Detector:	PK	Test Date :	May 16, 2023
Test By:	Sunshine	Temperature :	24 ℃
Test Result:	PASS	Humidity :	53 %

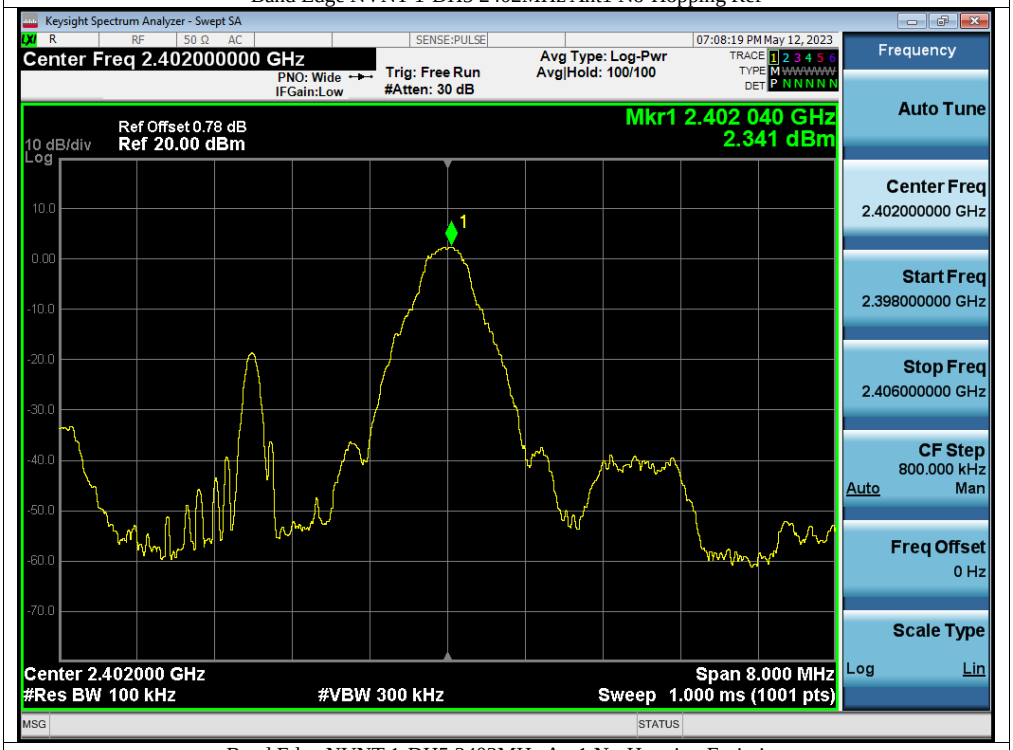
1. Conducted Test

For NO-Hopping Mode:

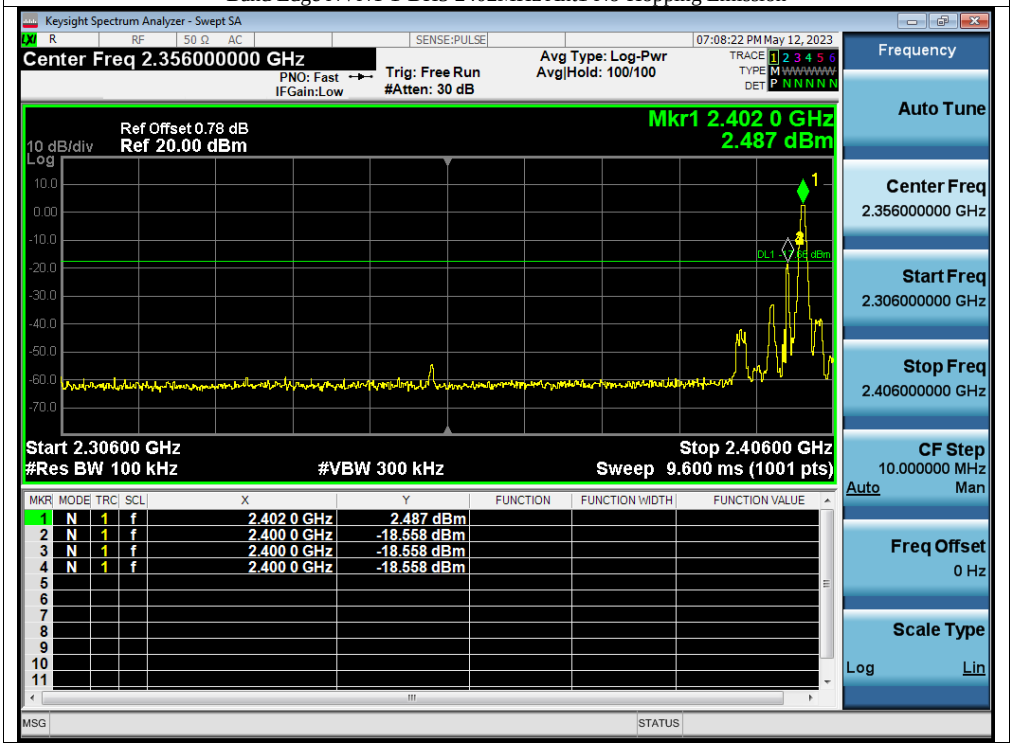
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-20.89	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-49.18	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-20.93	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-49.02	-20	Pass

Test Graphs

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

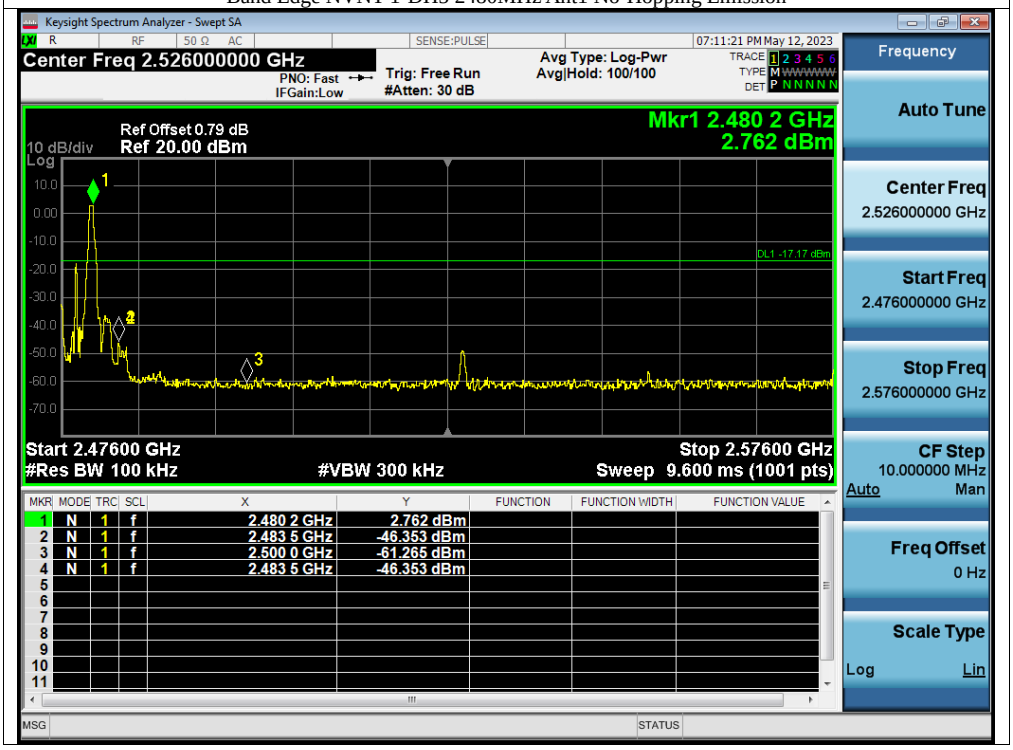


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



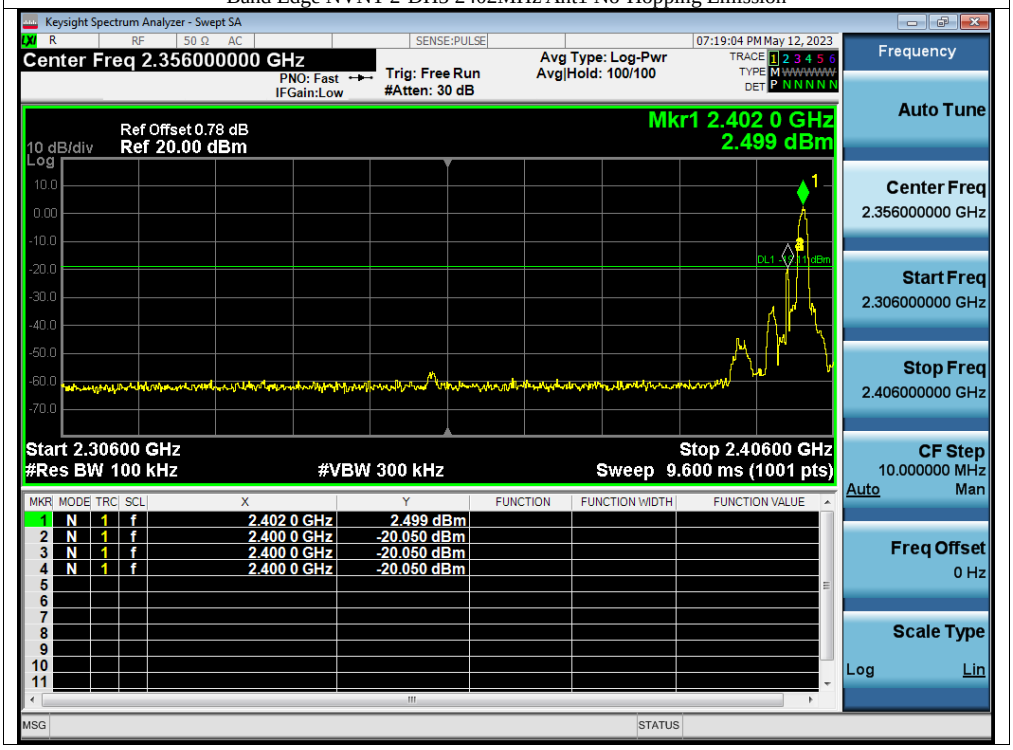
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

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



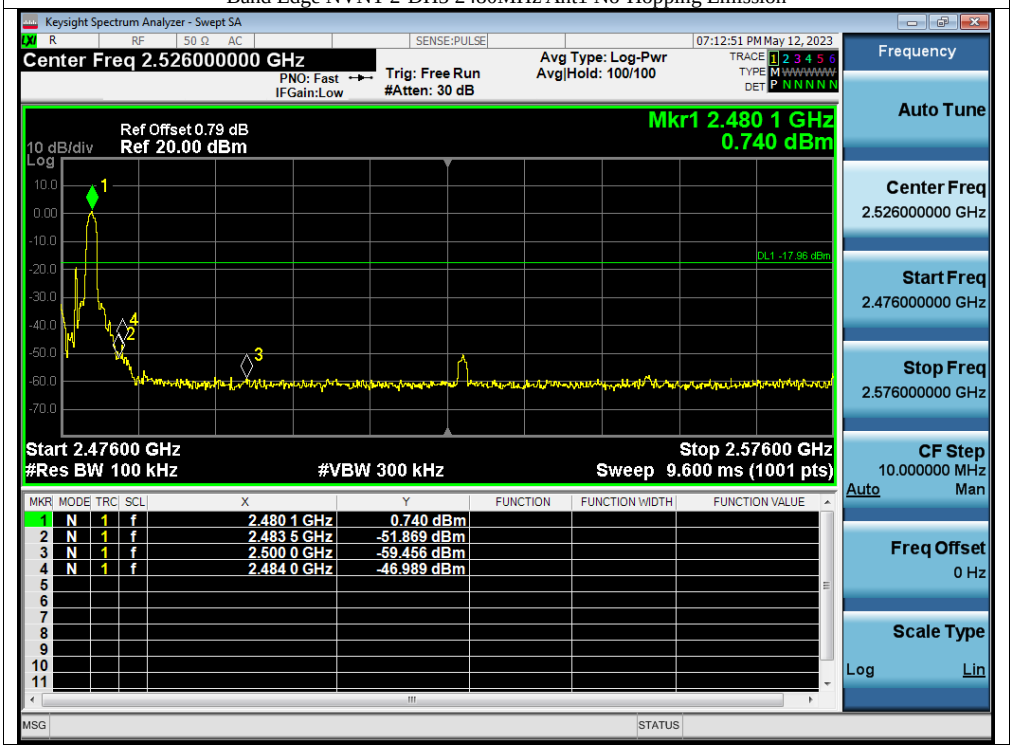
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

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



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

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

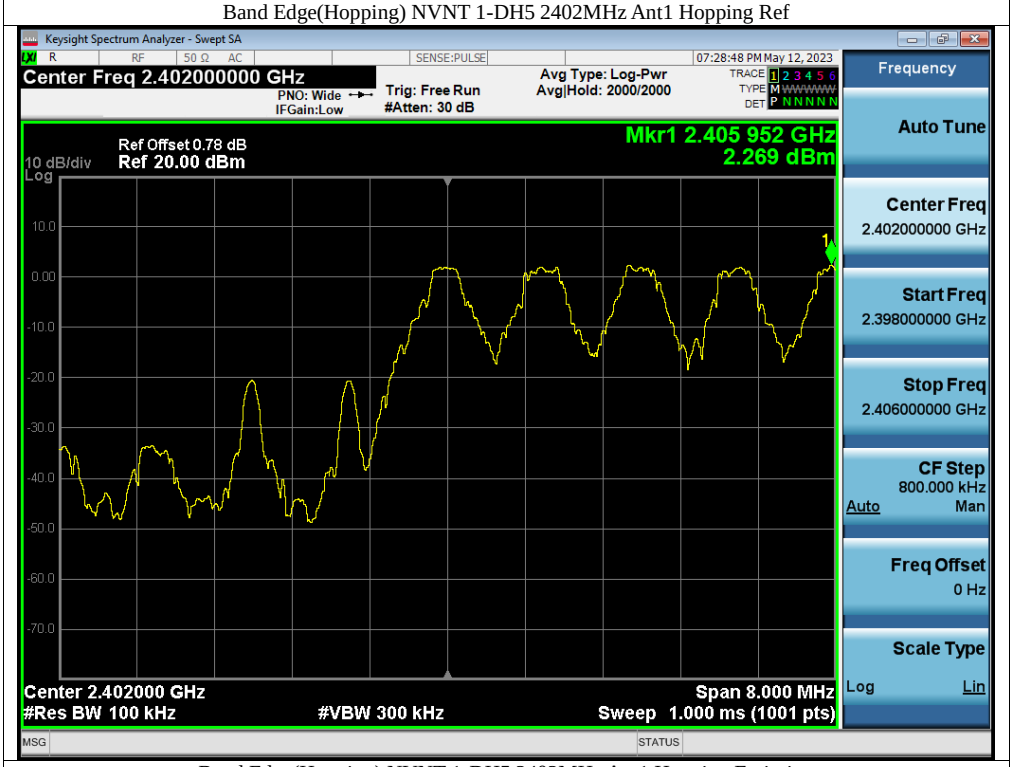


For Hopping Mode:

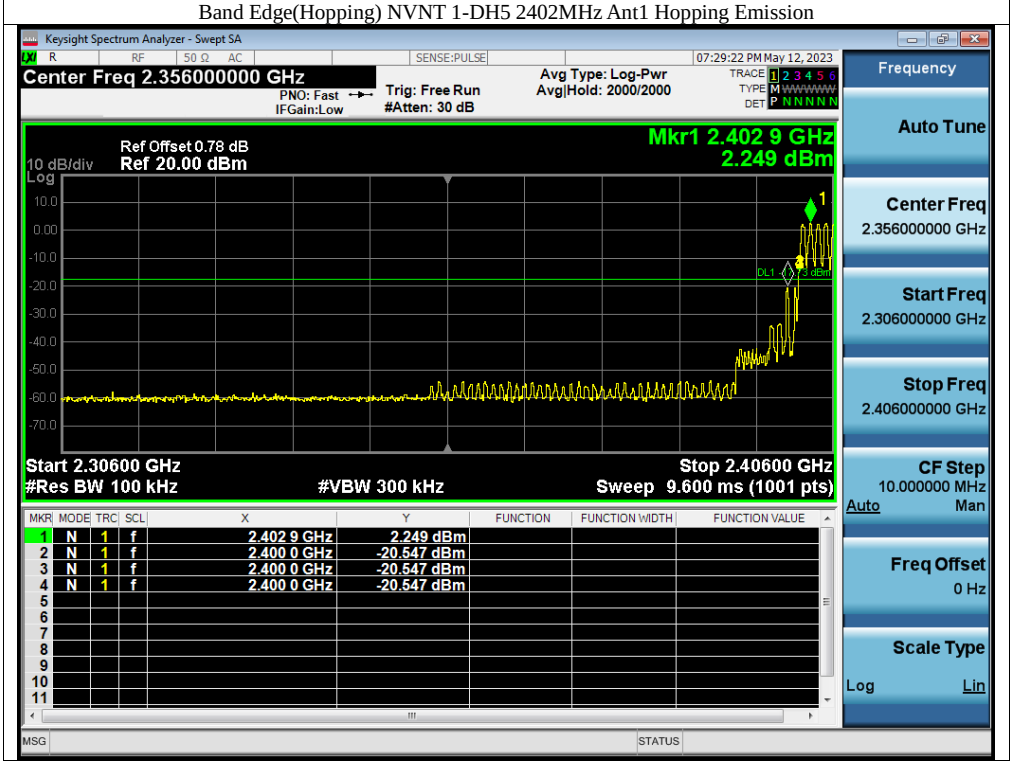
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-22.81	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-50.86	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-21.06	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-51.27	-20	Pass

Test Graphs

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

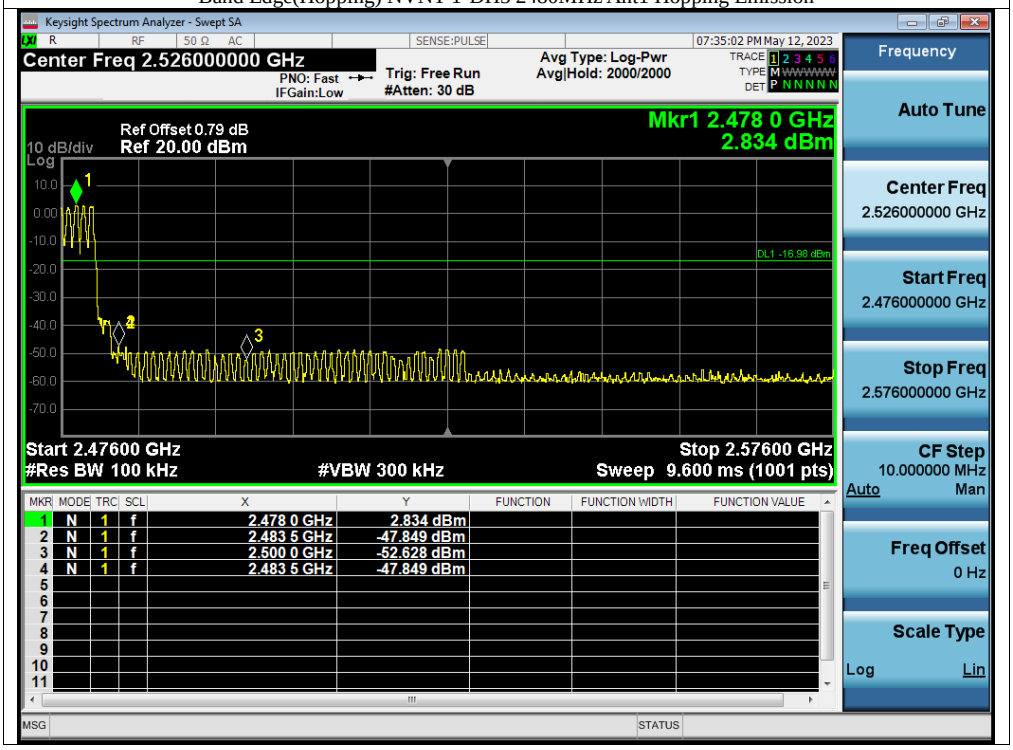


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

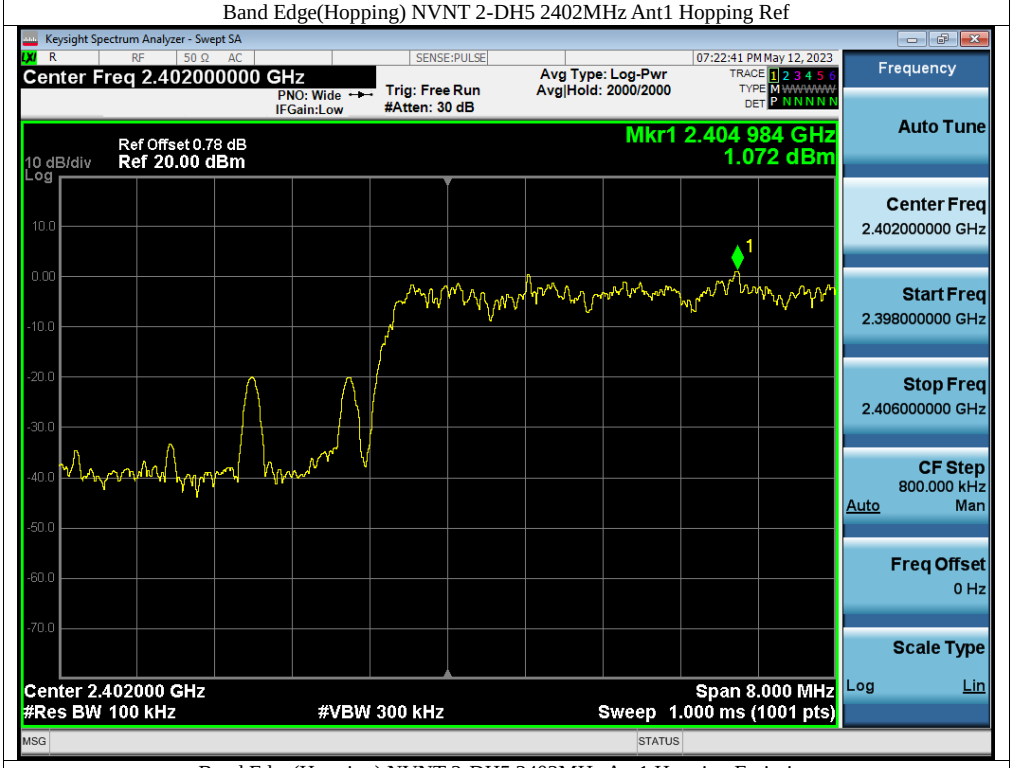


Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref

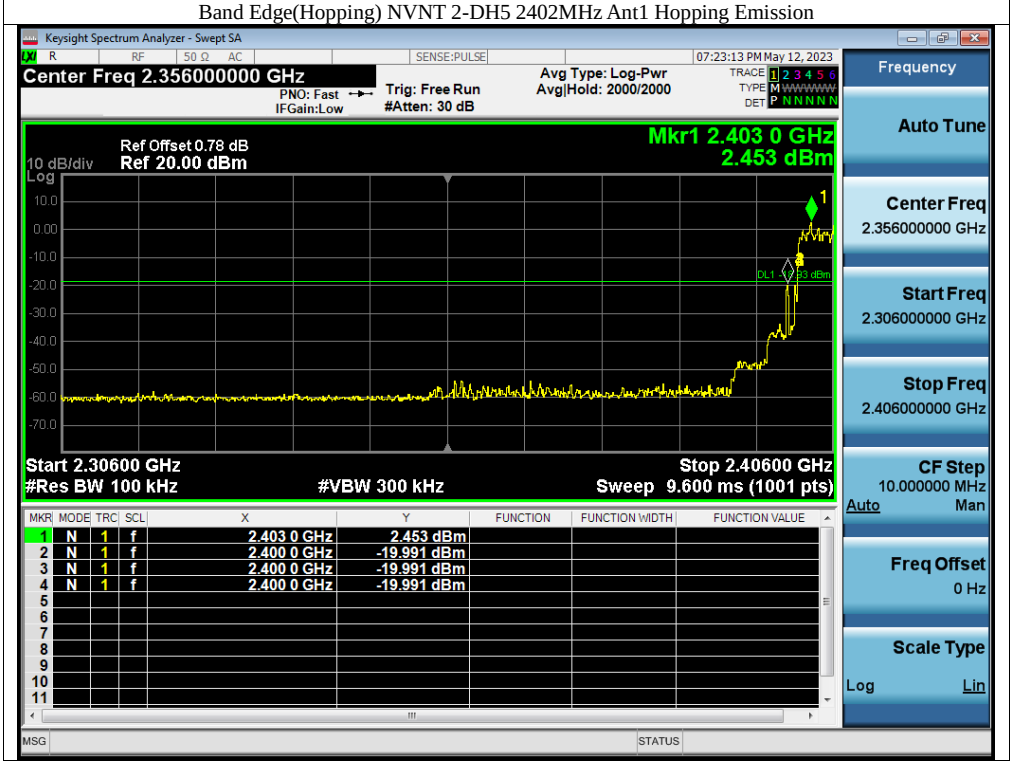
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



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

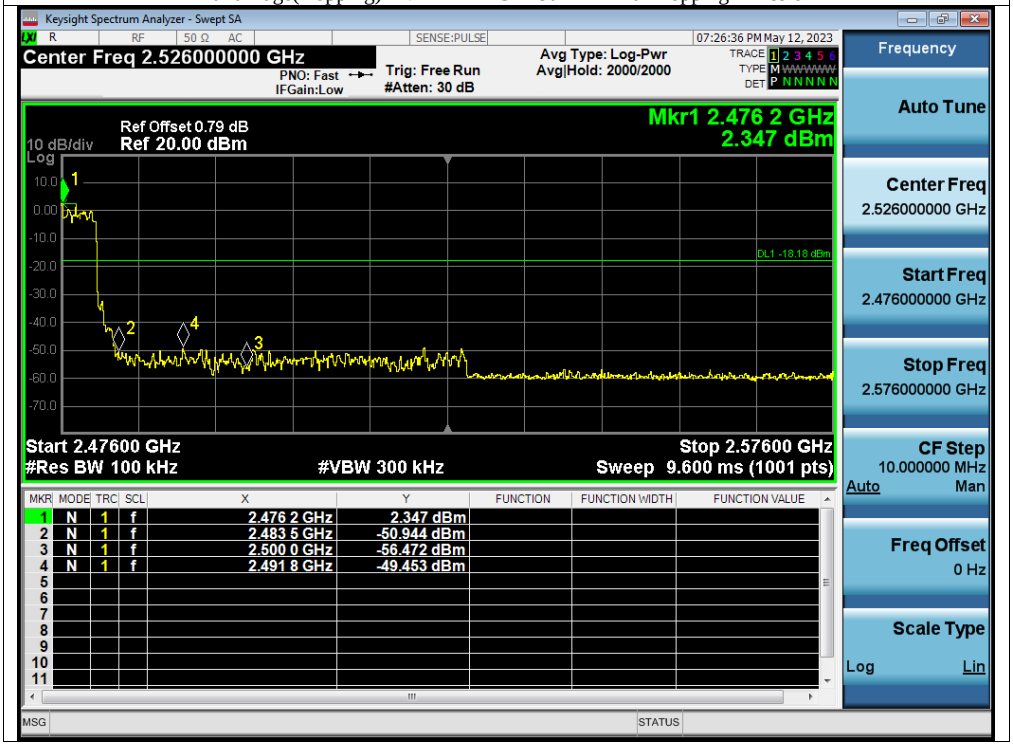


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

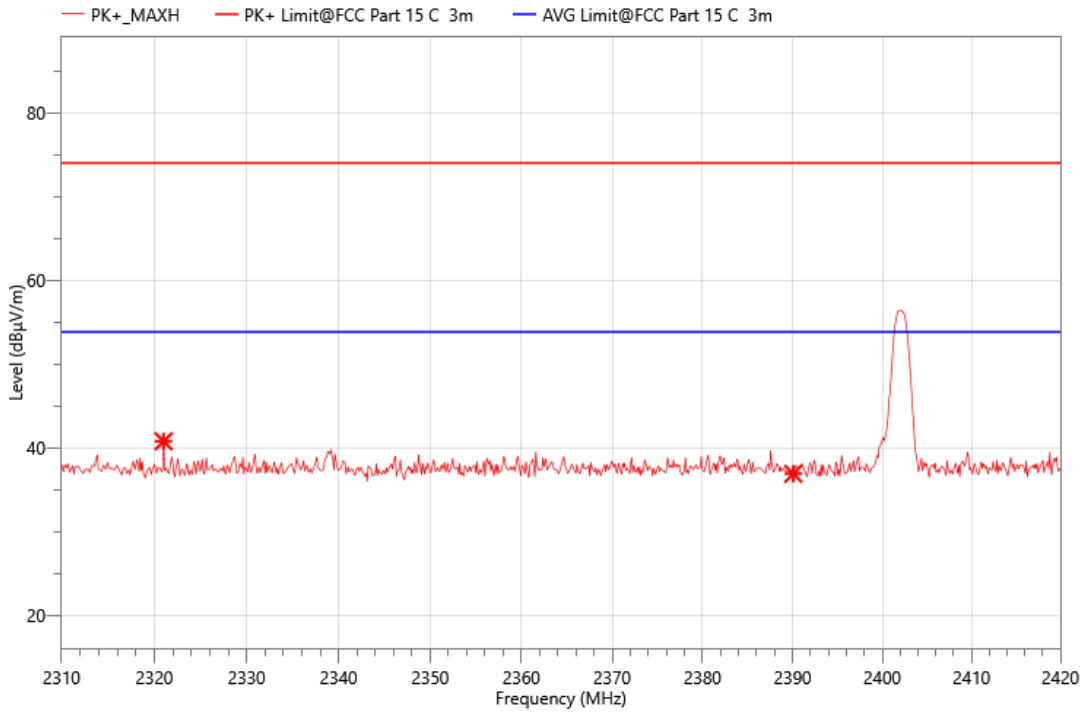


Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref

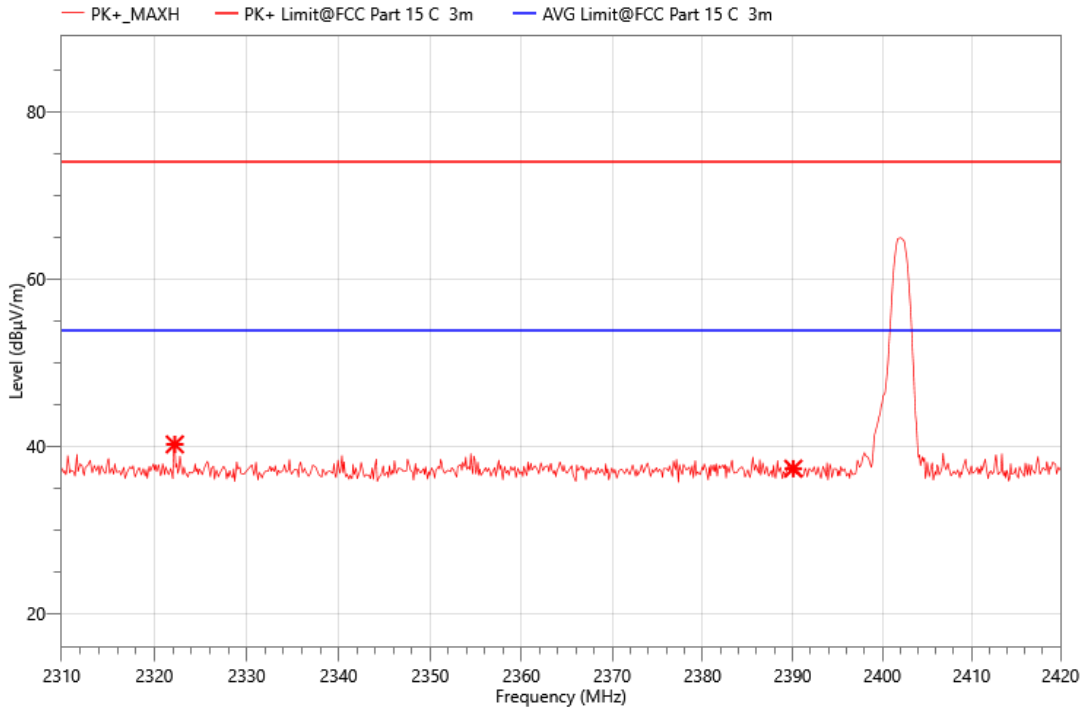
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



2. Radiated Test
Mode:2402

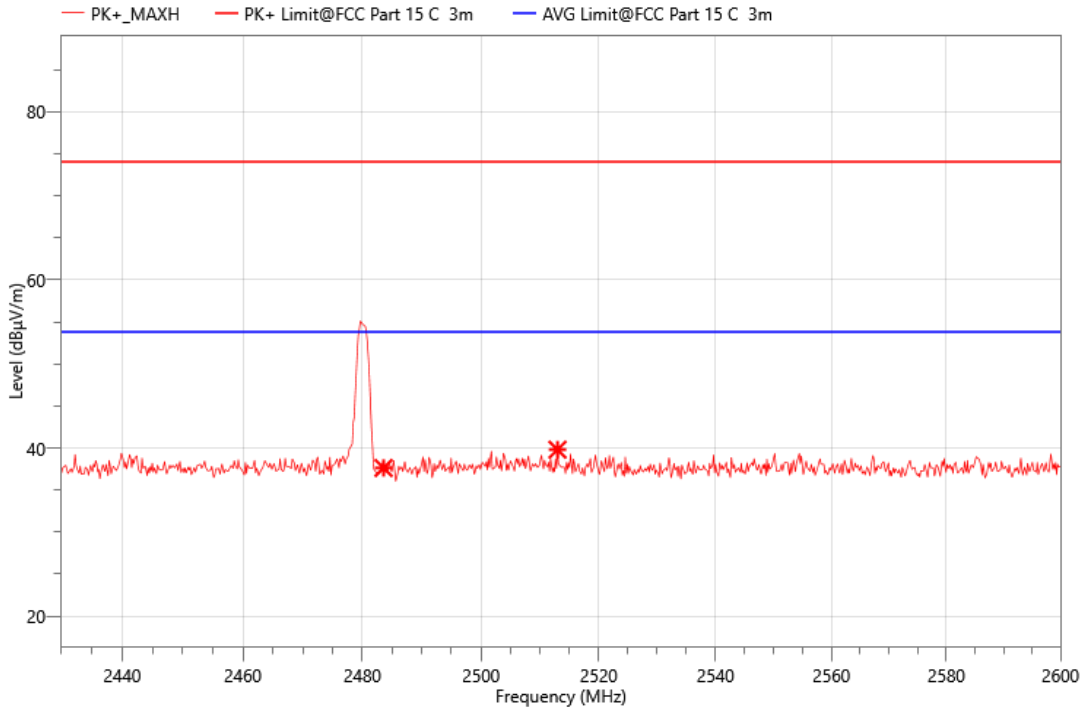


Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Height (cm)	Pol.	Azimuth (deg)	Corr. (dB)
2321	58.89	40.77	74.00	33.23	PK+	149.9	V	360.1	-18.12
2390.08	54.88	36.89	74.00	37.11	PK+	149.9	V	360.1	-17.99

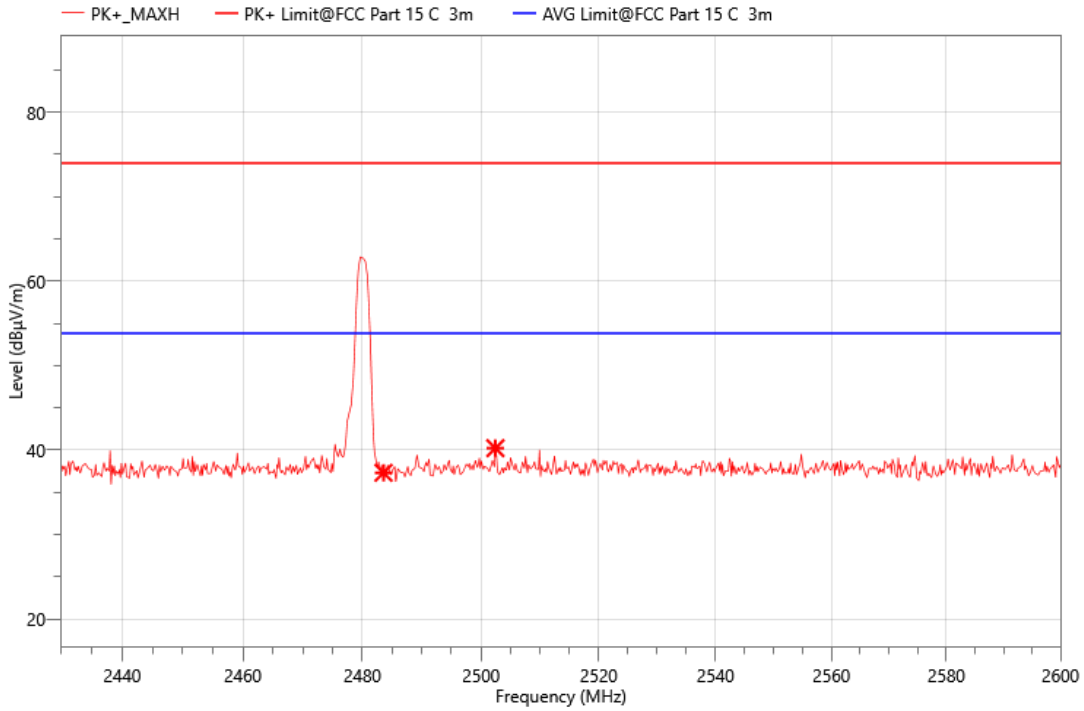


Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Height (cm)	Pol.	Azimuth (deg)	Corr. (dB)
2322.21	58.33	40.21	74.00	33.79	PK+	149.9	H	360.1	-18.12
2390.08	55.3	37.31	74.00	36.69	PK+	149.9	H	360.1	-17.99

Mode:2402



Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Height (cm)	Pol.	Azimuth (deg)	Corr. (dB)
2483.55	55.34	37.63	74.00	36.37	PK+	149.9	V	360.1	-17.71
2512.96	57.46	39.81	74.00	34.19	PK+	149.9	V	360.1	-17.65



Freq. (MHz)	Reading (dBµV)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dBµV/m)	Det.	Height (cm)	Pol.	Azimuth (deg)	Corr. (dB)
2483.55	55.03	37.32	74.00	36.68	PK+	149.9	H	360.1	-17.71
2502.42	57.92	40.24	74.00	33.76	PK+	149.9	H	360.1	-17.68

15. Antenna Application

15.1 Antenna requirement

The EUT'S antenna is met the requirement of FCC part 15C section 15.203 and 15.247.

FCC part 15C section 15.247 requirements:
Systems operating in the 2402-2480MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

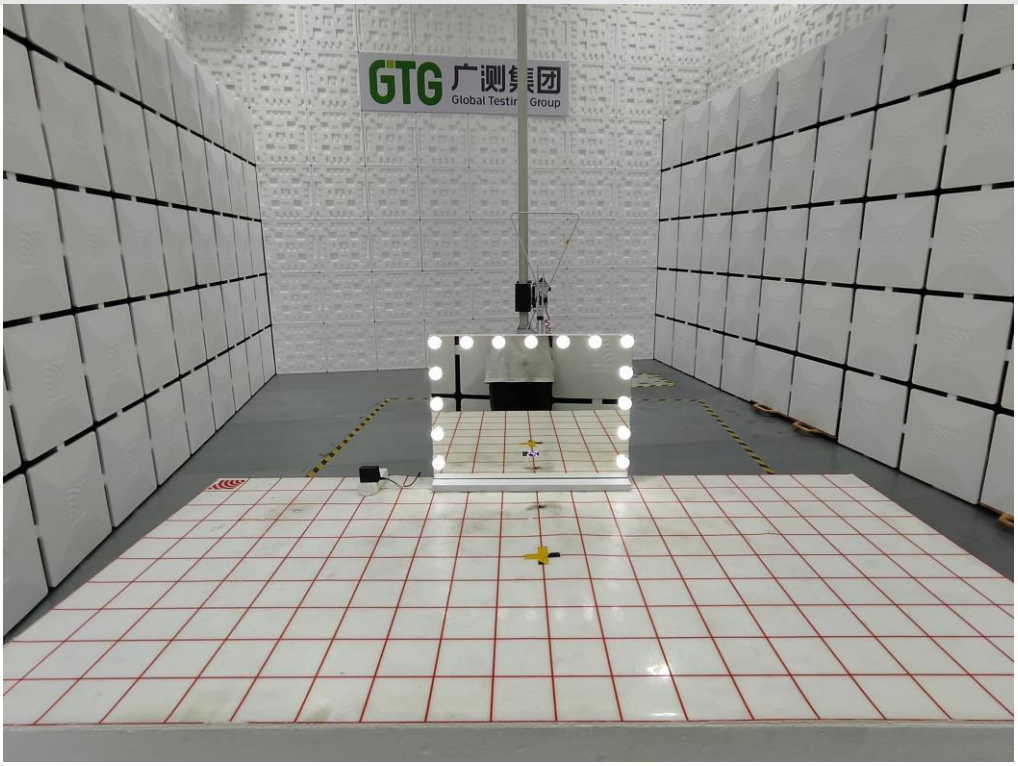
15.2 Result

The EUT's antenna, permanent attached antenna, used a PCB antenna and integrated on PCB, The antenna's gain is 1.2dBi and meets the requirement.

APPENDIX: PHOTOGRAPHS OF TEST CONFIGURATION

Conducted emissions

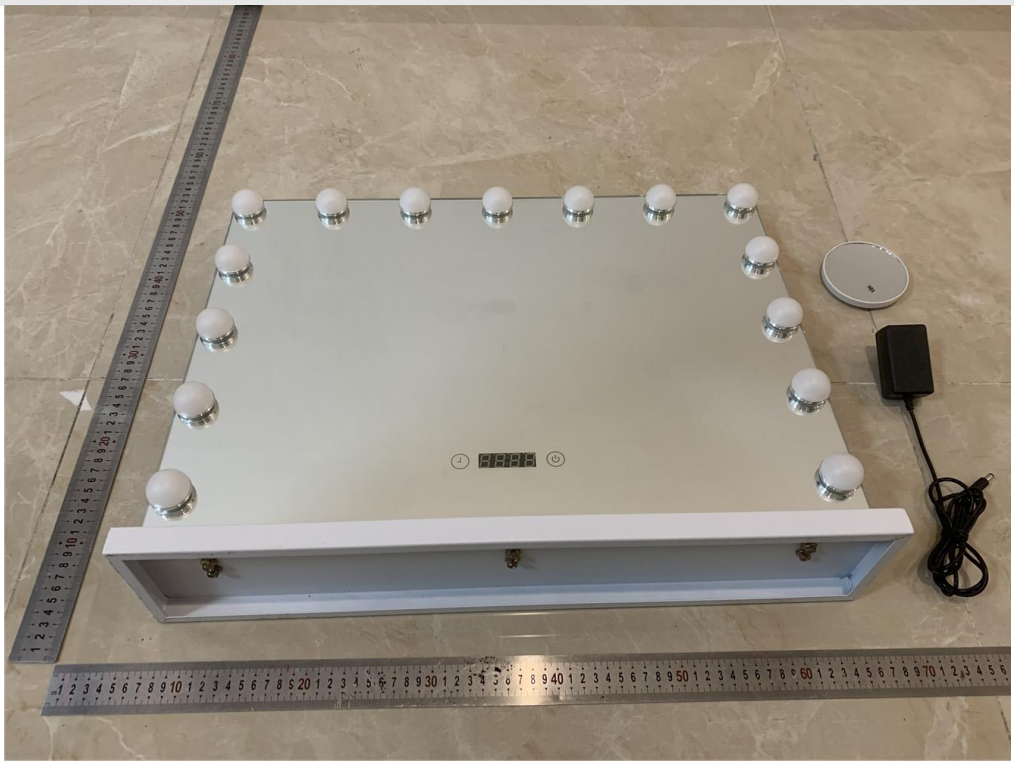
Radiated emissions below 1GHz

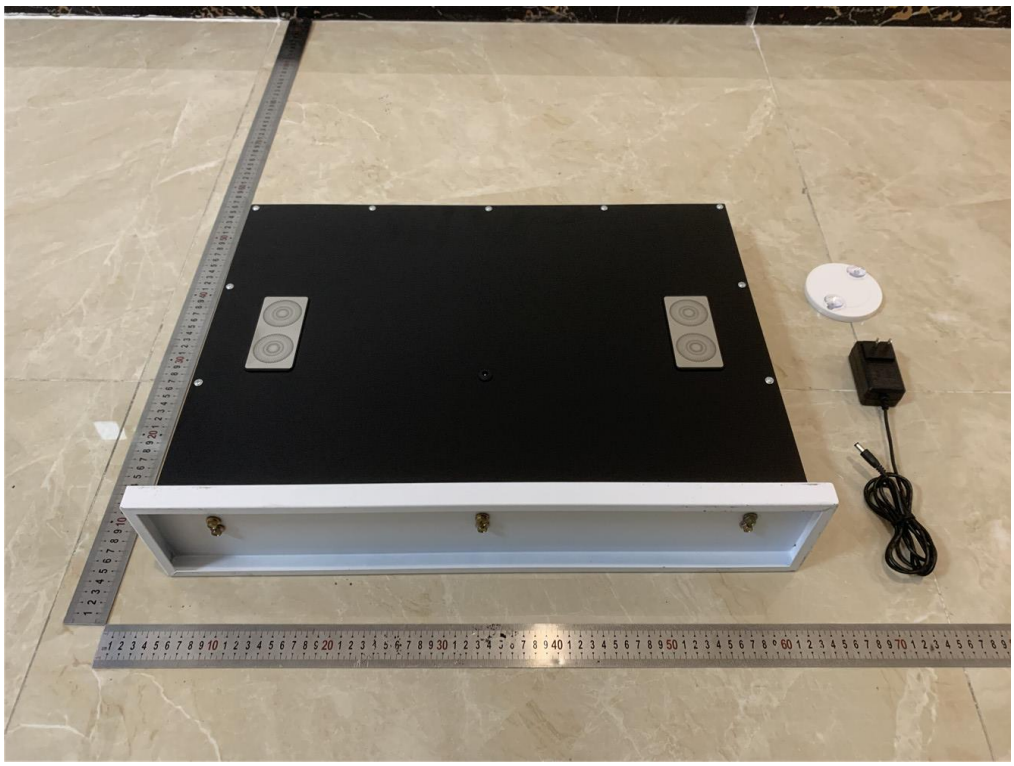


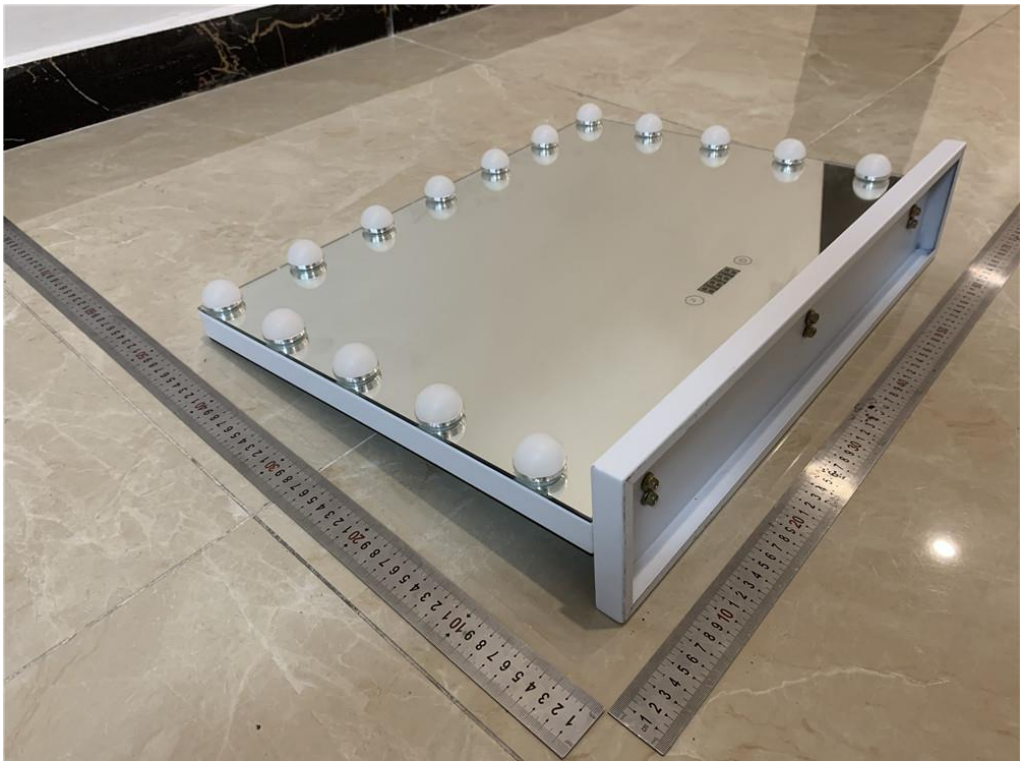
Radiated emissions above 1GHz

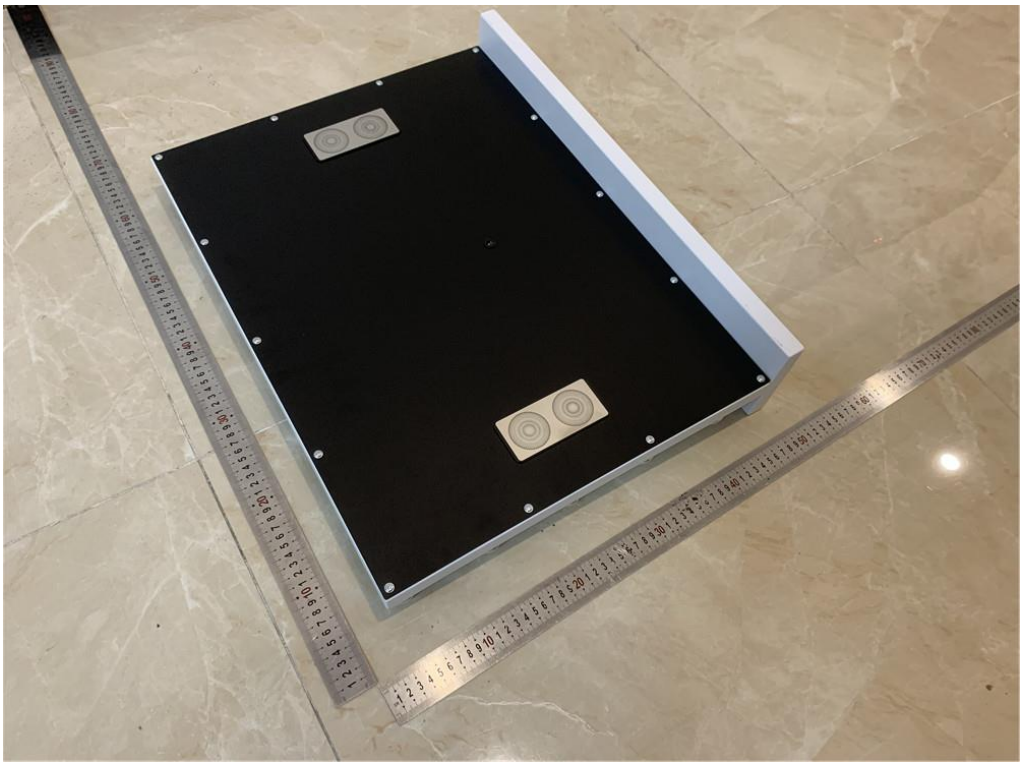
APPENDIX: PHOTOGRAPHS OF THE EUT

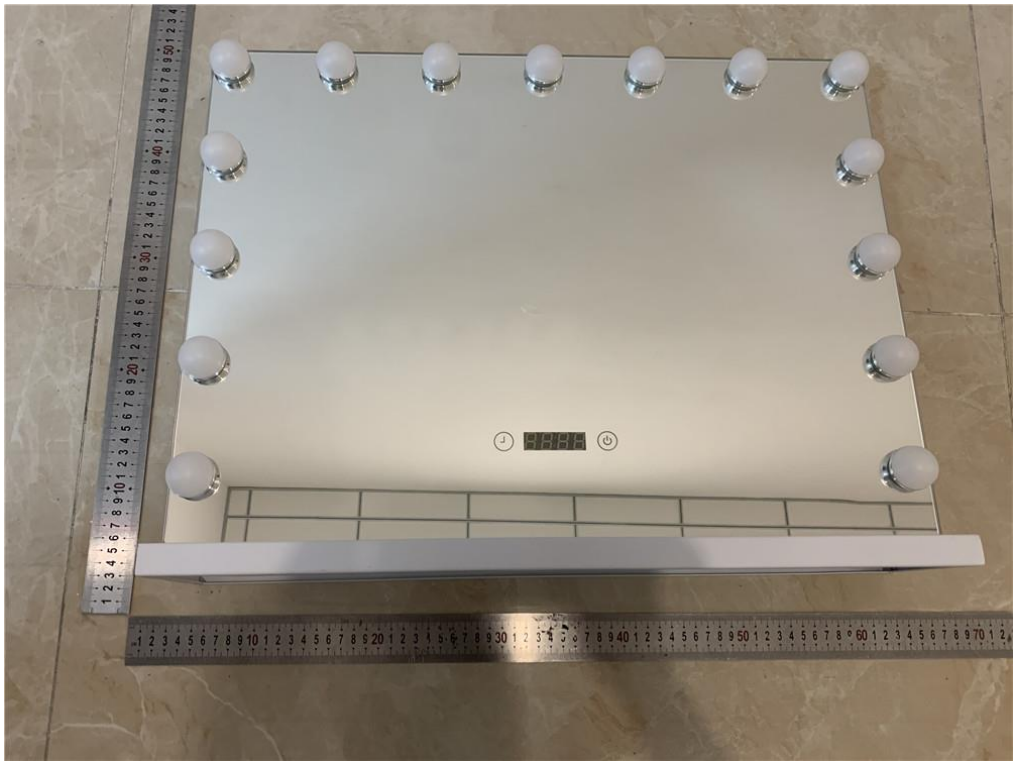
External

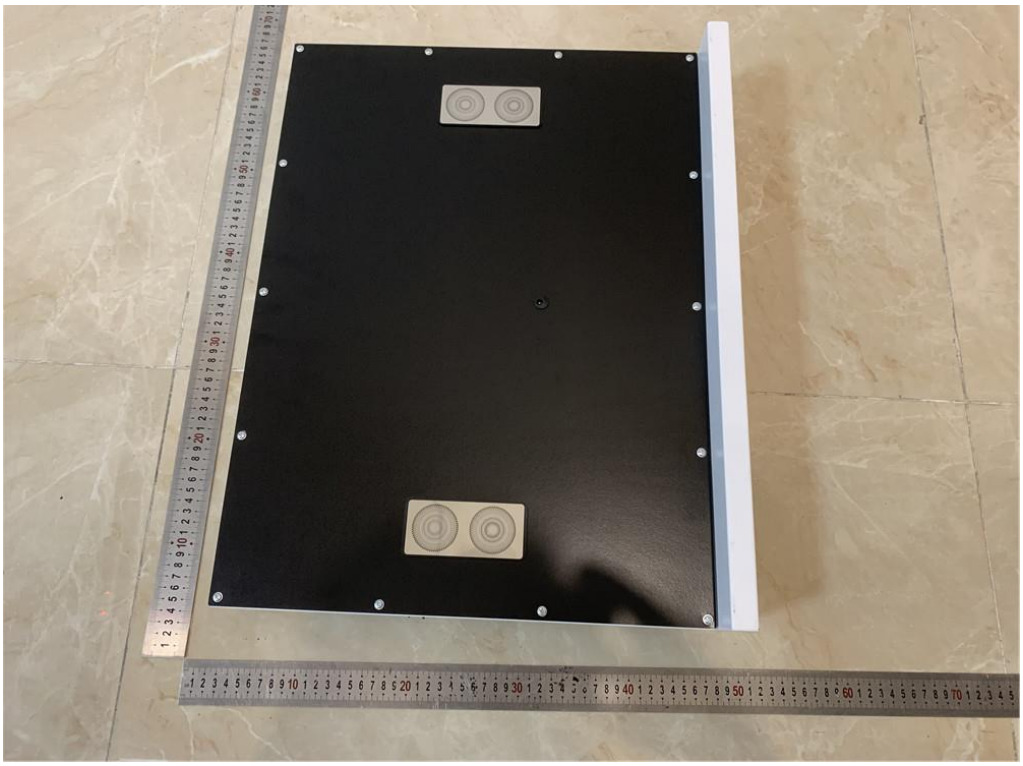




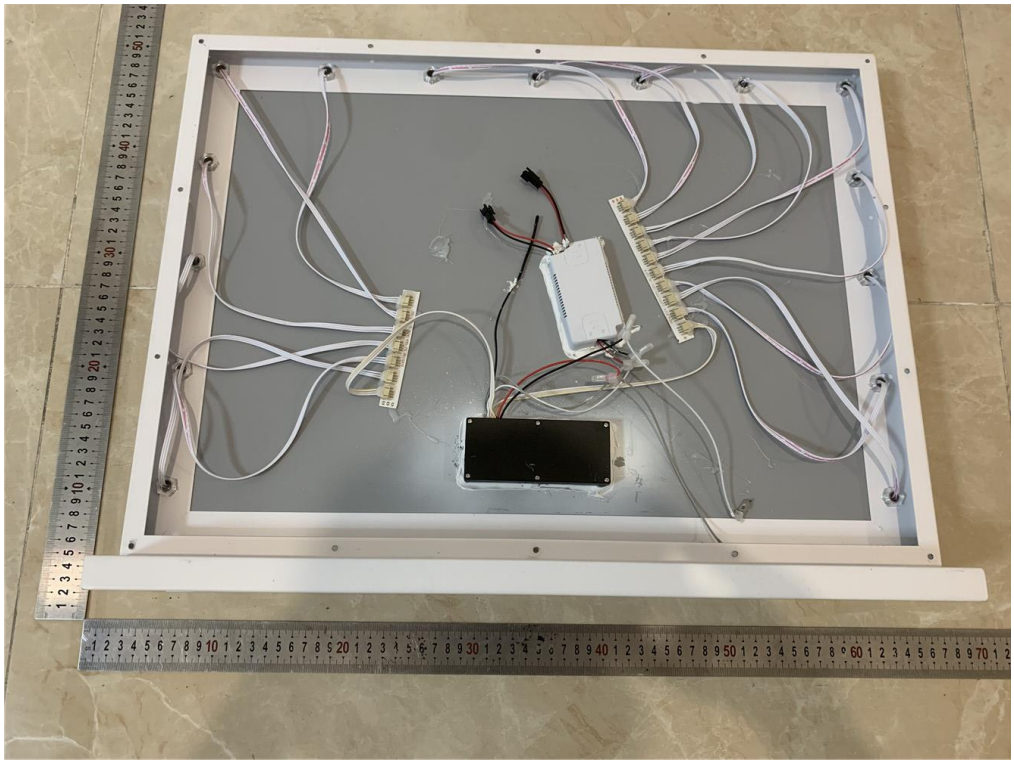


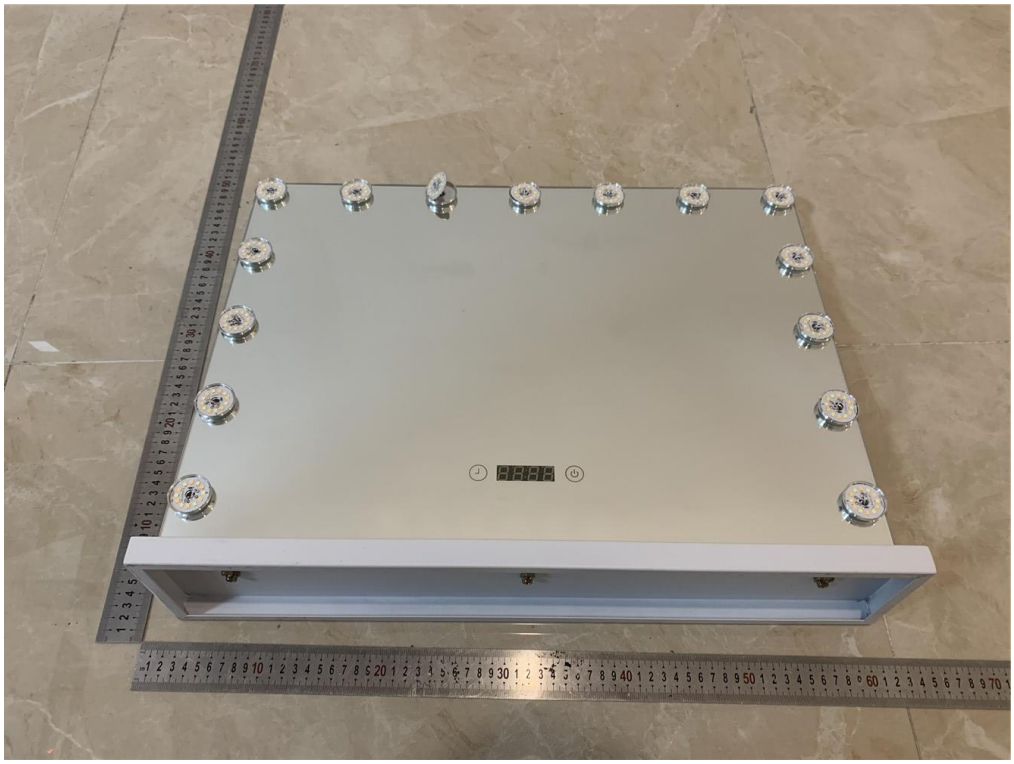


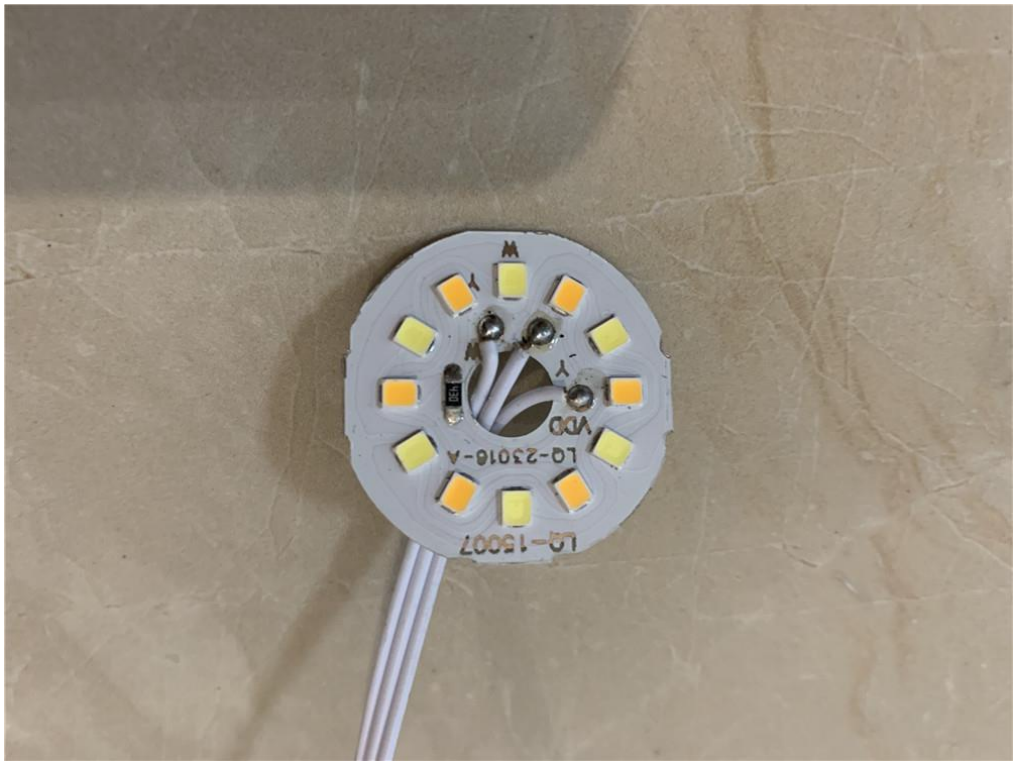


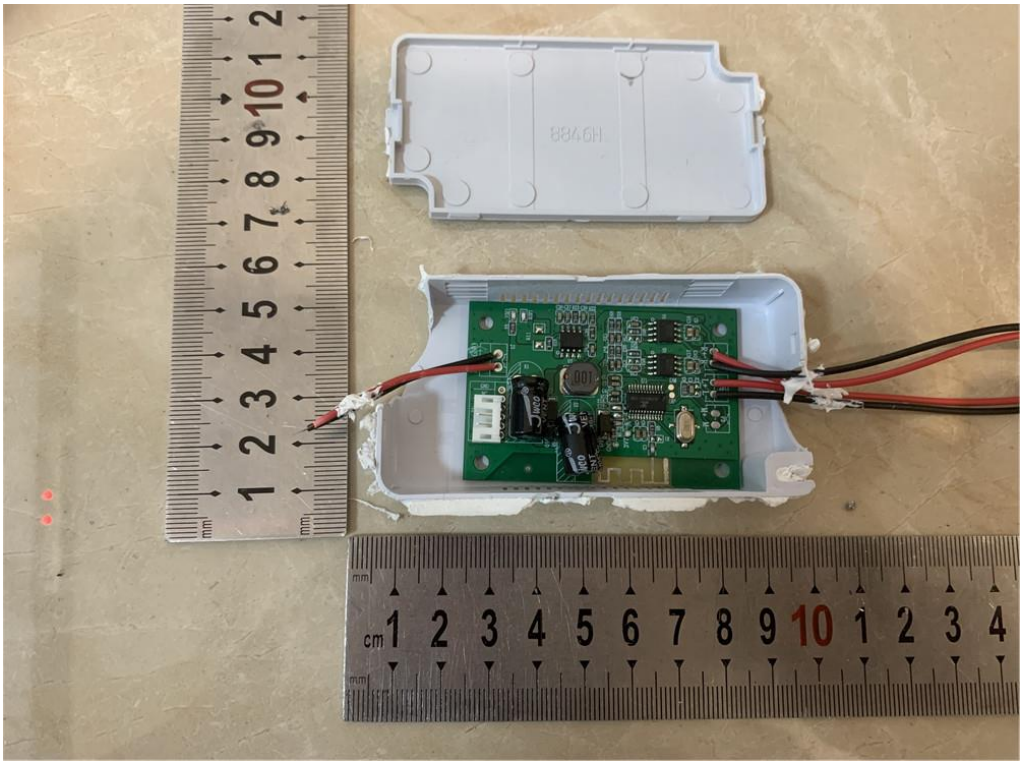


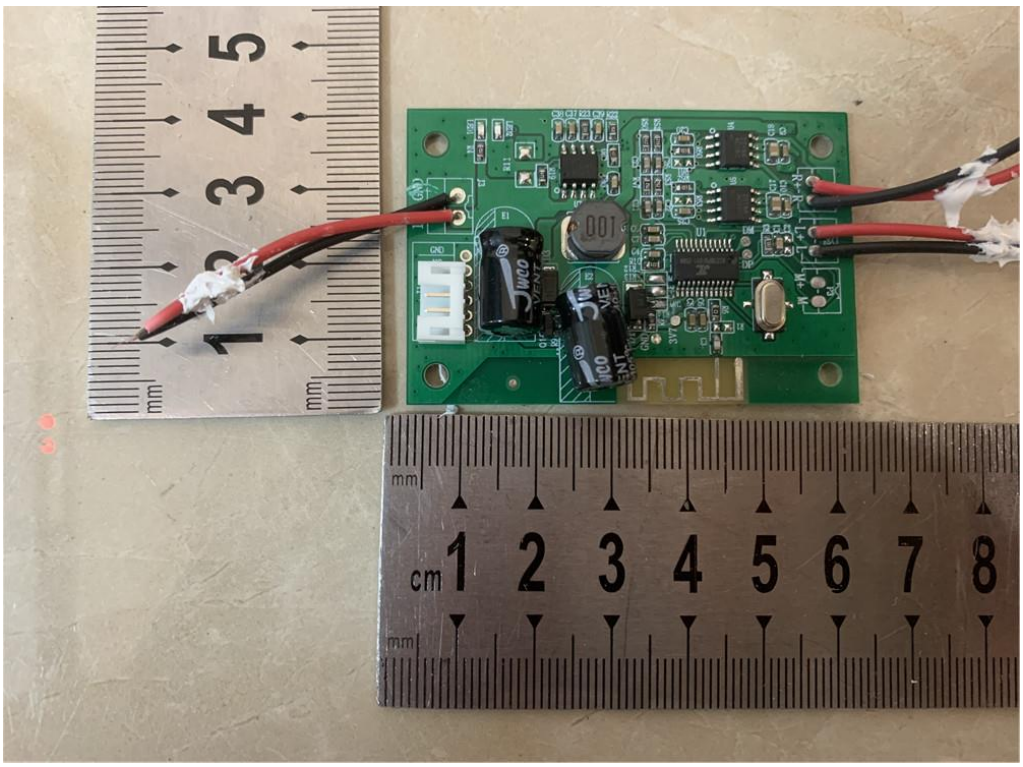
Internal

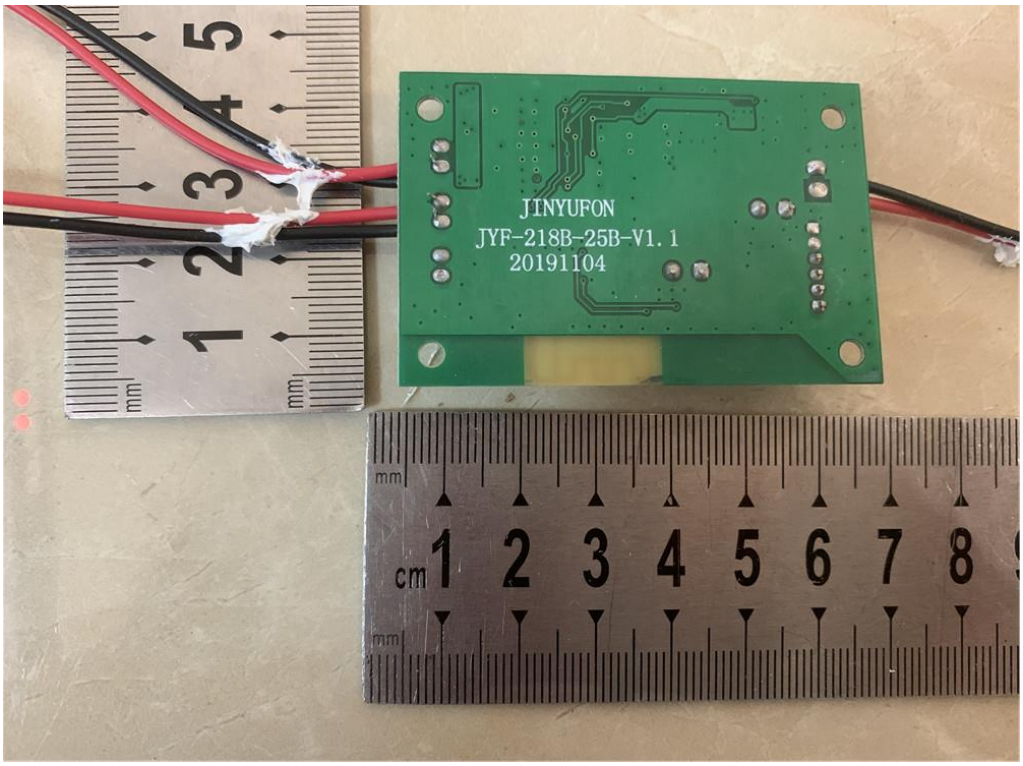


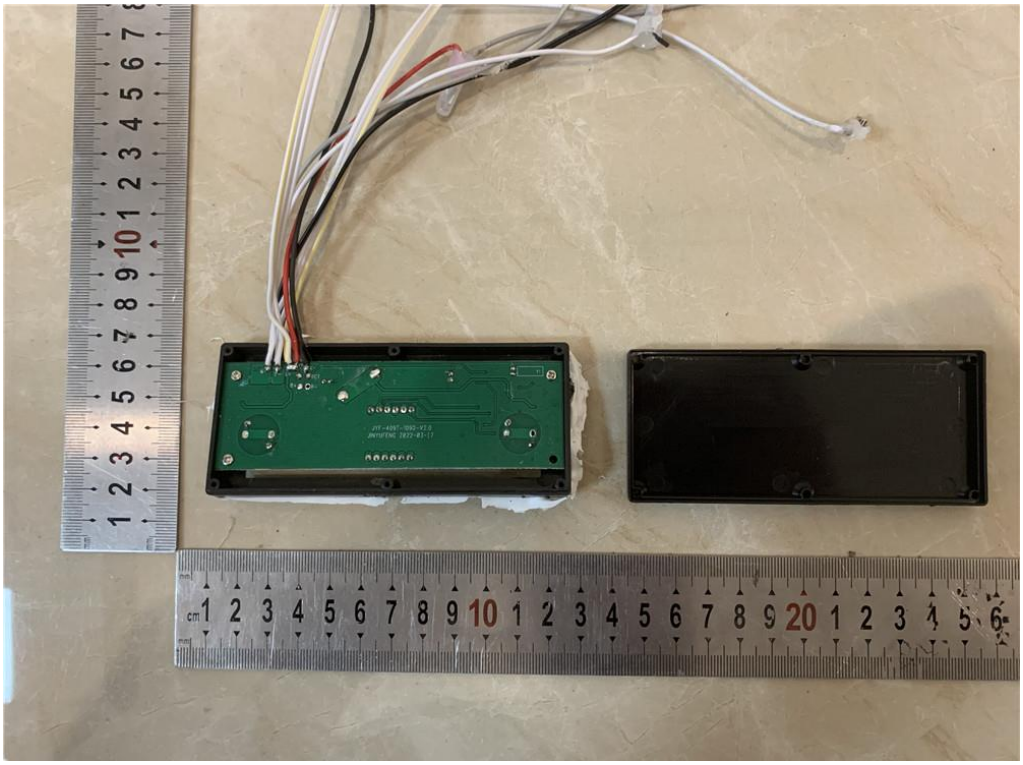


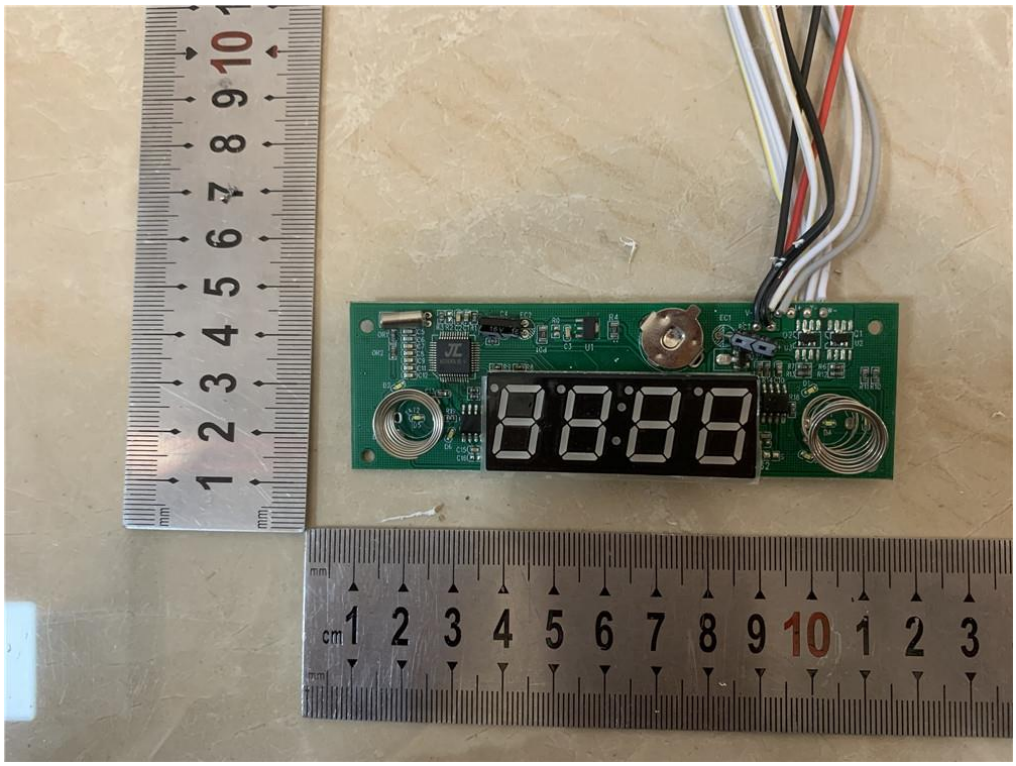

W
Y
VDD
LQ-23016-A
LQ-15007

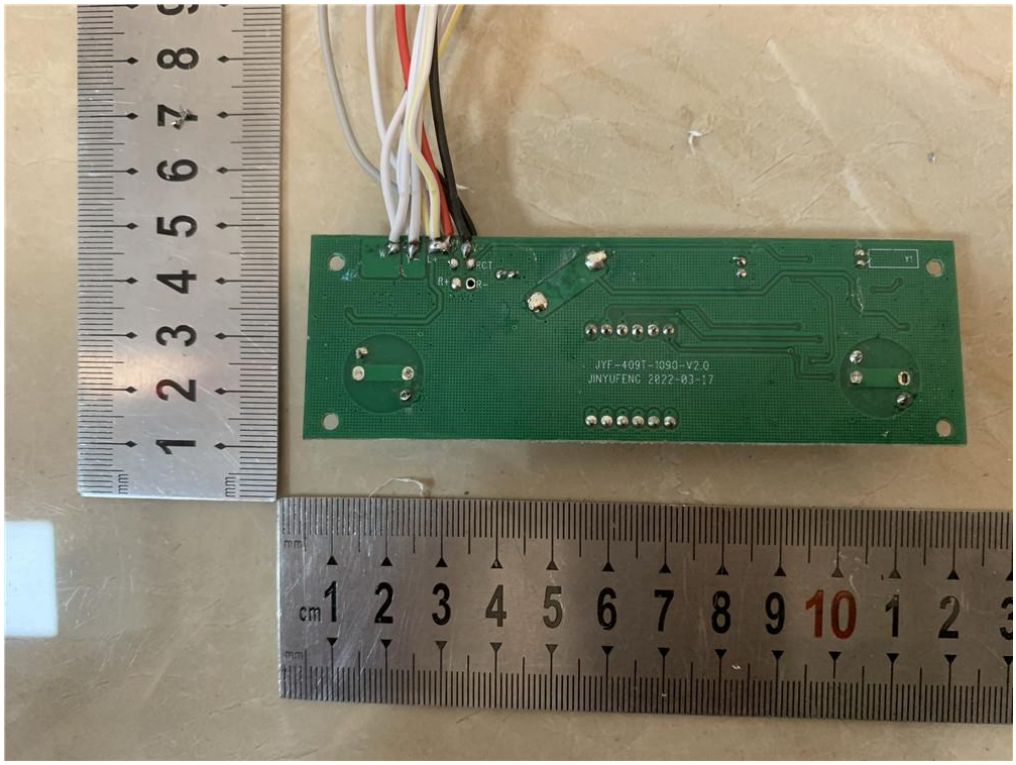

8846H




JINYUFON
JYF-218B-25B-V1.1
20191104







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