

[TestMode: TX Low channel]; [Polarity: Horizontal]

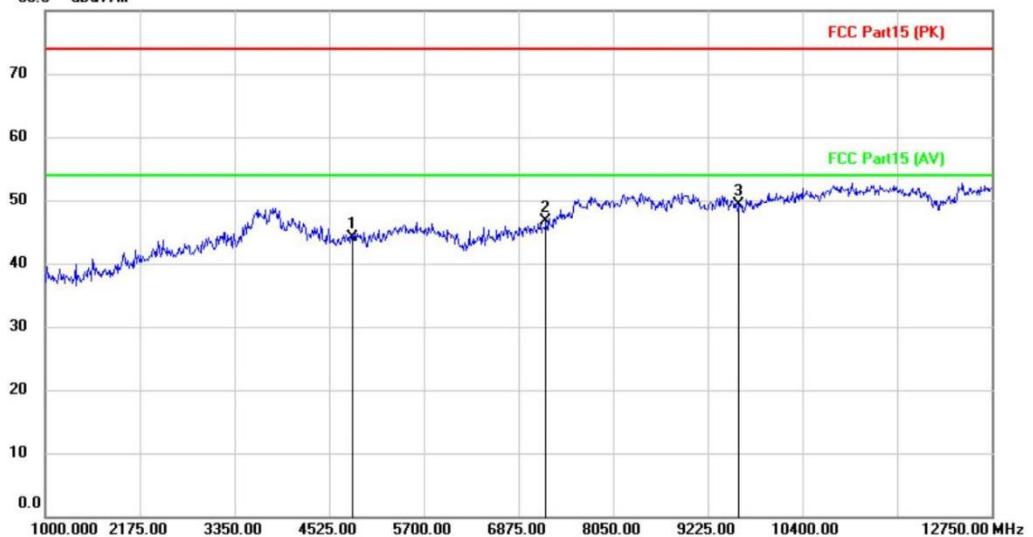
Radiated Emission Measurement

File :RE

Data :#4

Date: 2021/5/10 星期

Time: 上午 10:08:22



Site

Polarization: *Horizontal*

Temperature:

Limit: FCC Part15 (PK)

Power:

Humidity: %

FUT: Maxlite c-Max Controls

Distance: 3m

M/N: NN-RTPSW

Mode: TX-I

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table			
			Level	Factor	ment							
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4804.000	51.41	-7.27	44.14	74.00	-29.86	peak	150	162		
2		7206.000	51.16	-4.42	46.74	74.00	-27.26	peak	150	208		
3	*	9608.000	49.62	-0.29	49.33	74.00	-24.67	peak	150	312		

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

〈Reference Only

Test Result: Pass

[TestMode: TX Low channel]; [Polarity: Vertical]

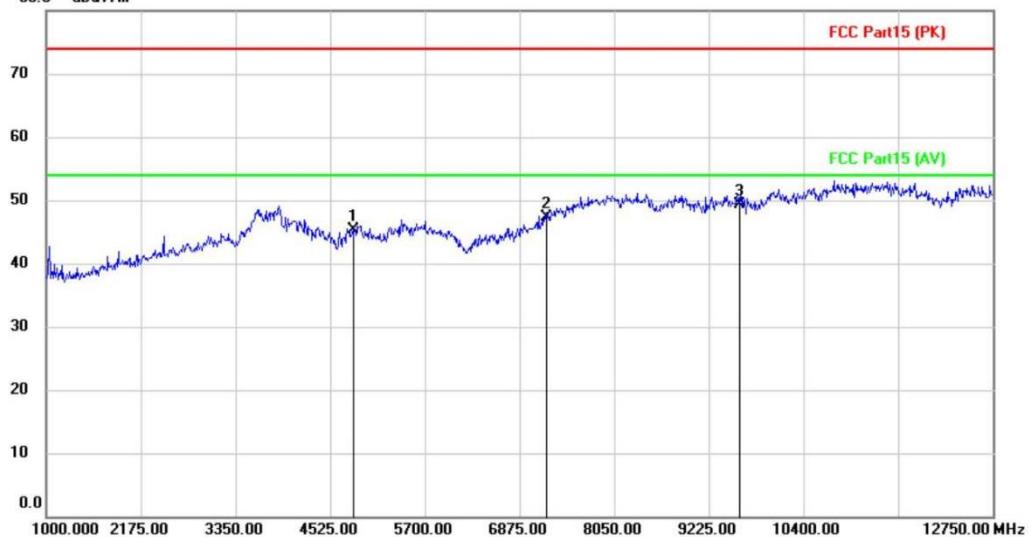
Radiated Emission Measurement

File :RE

Data :#3

Date: 2021/5/10 星期

Time: 上午 10:05:22



Site

Polarization: *Vertical*

Temperature:

Limit: FCC Part15 (PK)

Power:

Humidity: %

FUT: Maxlite c-Max Controls

Distance: 3m

M/N: NN-RTPSW

Mode: TX-I

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table			
			Level	Factor	ment							
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4804.000	52.56	-7.27	45.29	74.00	-28.71	peak	150	152		
2		7206.000	51.78	-4.42	47.36	74.00	-26.64	peak	150	199		
3	*	9608.000	49.65	-0.29	49.36	74.00	-24.64	peak	150	267		

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

〈Reference Only

Test Result: Pass

[TestMode: TX middle channel]; [Polarity: Horizontal]

Radiated Emission Measurement

File :RE

Data :#8

Date: 2021/5/10 星期

Time: 上午 10:21:55



Site

Polarization: *Horizontal*

Temperature:

Limit: FCC Part15 (PK)

Power:

Humidity: %

FUT: Maxlite c-Max Controls

Distance: 3m

M/N: NN-RTPSW

Mode: TX-M

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table			
			Level	Factor	ment							
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4882.000	52.34	-7.51	44.83	74.00	-29.17	peak	150	149		
2		7323.000	50.22	-3.35	46.87	74.00	-27.13	peak	150	208		
3	*	9764.000	49.10	0.56	49.66	74.00	-24.34	peak	150	316		

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

〈Reference Only

Test Result: Pass

[TestMode: TX middle channel]; [Polarity: Vertical]
Radiated Emission Measurement

Site
Polarization: Vertical
Temperature:
Limit: FCC Part15 (PK)
Power:
Humidity: %
EUT: MaxLite c-Max Controls
Distance: 3m
M/N: NN-RTPSW
Mode: TX-M
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		4882.000	53.07	-7.51	45.56	74.00	-28.44	peak	150	174
2		7323.000	50.76	-3.35	47.41	74.00	-26.59	peak	150	203
3	*	9764.000	49.30	0.56	49.86	74.00	-24.14	peak	150	332

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

(Reference Only)

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Horizontal]

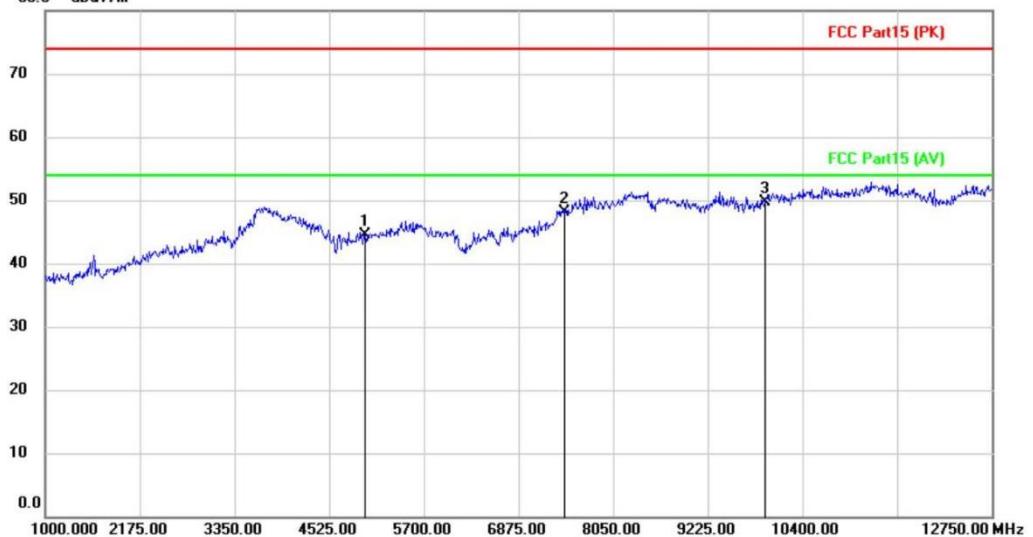
Radiated Emission Measurement

File :RE

Data :#9

Date: 2021/5/10 星期

Time: 上午 10:23:44



Site

Polarization: *Horizontal*

Temperature:

Limit: FCC Part15 (PK)

Power:

Humidity: %

FUT: Maxlite c-Max Controls

Distance: 3m

M/N: NN-RTPSW

Mode: TX-H

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table			
			Level	Factor	ment							
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4960.000	51.49	-6.99	44.50	74.00	-29.50	peak	150	166		
2		7440.000	50.52	-2.43	48.09	74.00	-25.91	peak	150	257		
3	*	9920.000	48.11	1.63	49.74	74.00	-24.26	peak	150	326		

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

〈Reference Only

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Vertical]

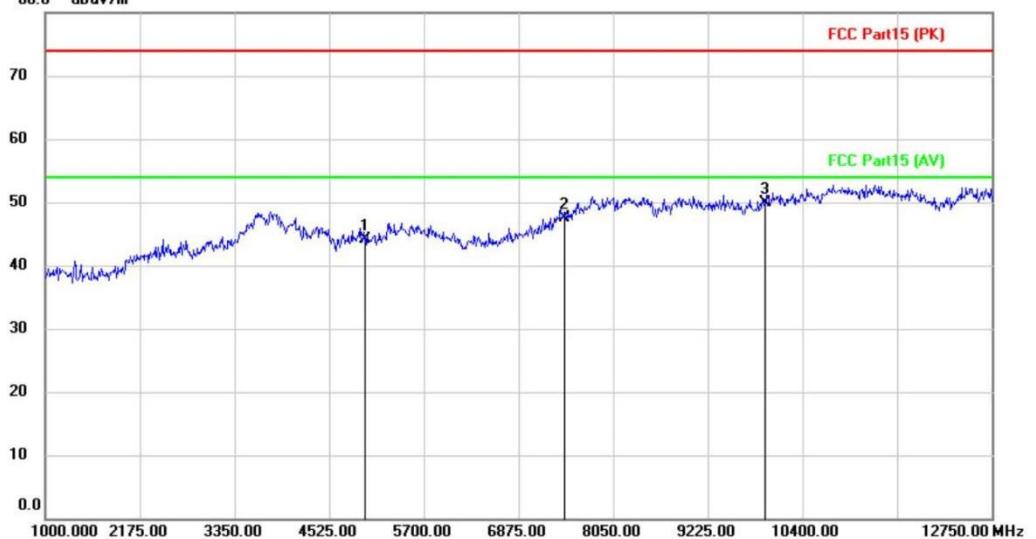
Radiated Emission Measurement

File :RE

Data :#10

Date: 2021/5/10 星期

Time: 上午 10:25:32



Site

Polarization: *Vertical*

Temperature:

Limit: FCC Part15 (PK)

Power:

Humidity: %

FUT: Maxlite c-Max Controls

Distance: 3m

M/N: NN-RTPSW

Mode: TX-H

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table			
			Level	Factor	ment							
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		4960.000	51.13	-6.99	44.14	74.00	-29.86	peak	150	168		
2		7440.000	50.02	-2.43	47.59	74.00	-26.41	peak	150	226		
3	*	9920.000	48.20	1.63	49.83	74.00	-24.17	peak	150	314		

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

〈Reference Only

Test Result: Pass

9 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

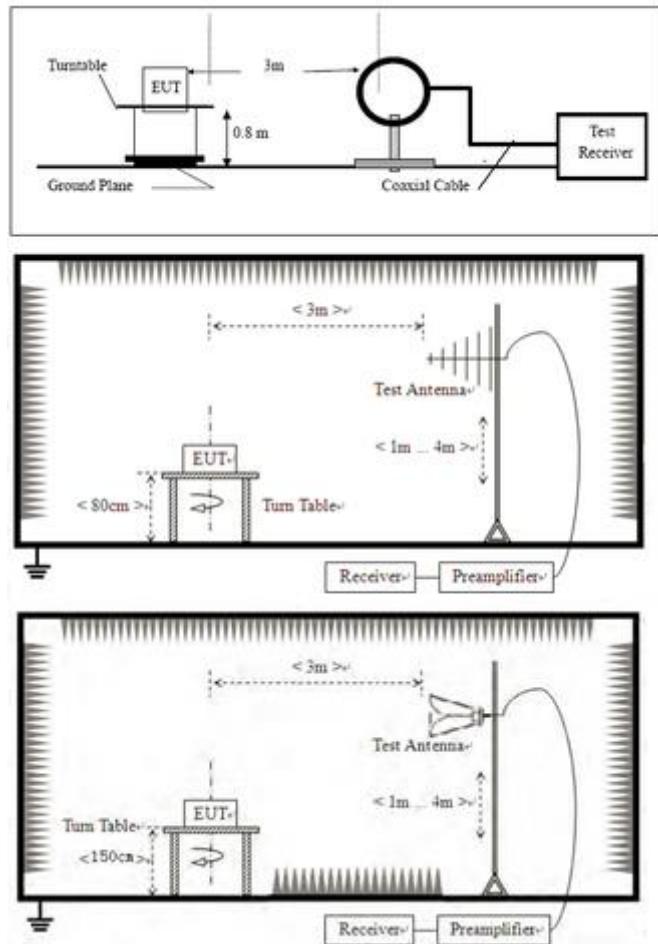
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX Low channel;TX high channel
Test Mode (Final Test)	TX Low channel;TX high channel
Tester	Eason
Temperature	25 °C
Humidity	52%

9.1 LIMITS

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

9.2 BLOCK DIAGRAM OF TEST SETUP



9.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

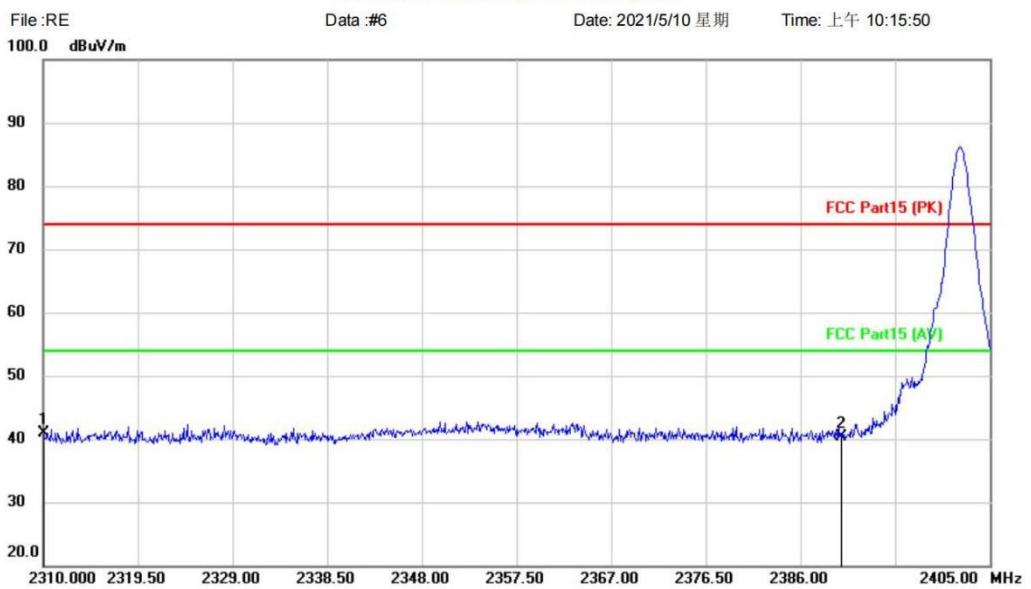
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

BlueAsia

9.4 TEST DATA

[TestMode: TX Low channel]; [Polarity: Horizontal]

Radiated Emission Measurement



Site

Polarization: **Horizontal**

Temperature:

Limit: FCC Part15 (PK)

Power:

Humidity: %

EUT: MaxLite c-Max Controls

Distance: 3m

M/N: NN-RTPSW

Mode: TX-L

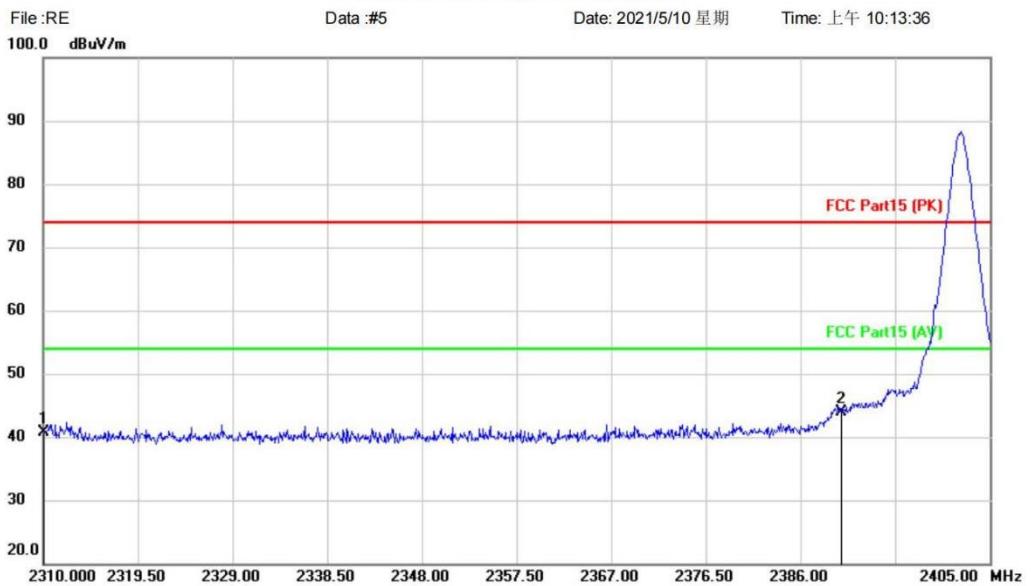
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table		
			Level	Factor	ment			Height	Degree		
			MHz	dBuV	dB	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2310.000	56.41	-15.49	40.92	74.00	-33.08	peak	150	204	
		2390.000	55.44	-15.18	40.26	74.00	-33.74	peak	150	312	

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

(Reference Only)

Test Result: Pass

[TestMode: TX Low channel]; [Polarity: Vertical]
Radiated Emission Measurement

Site
Polarization: Vertical
Temperature:
Limit: FCC Part15 (PK)
Power:
Humidity: %
EUT: MaxLite c-Max Controls
Distance: 3m
M/N: NN-RTPSW
Mode: TX-L
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	56.26	-15.49	40.77	74.00	-33.23	peak	150	189
2	*	2390.000	59.10	-15.18	43.92	74.00	-30.08	peak	150	297

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

(Reference Only)

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Horizontal]

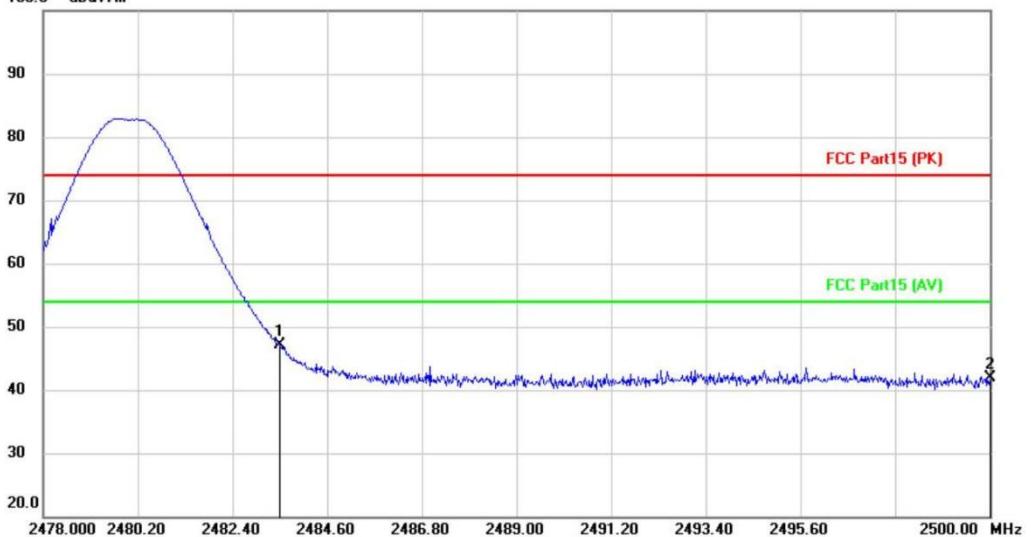
Radiated Emission Measurement

File :RE

Data :#12

Date: 2021/5/10 星期

Time: 上午 10:50:06



Site

Polarization: *Horizontal*

Temperature:

Limit: FCC Part15 (PK)

Power:

Humidity: %

EUT: MaxLite c-Max Controls

Distance: 3m

M/N: NN-RTPSW

Mode: TX-H

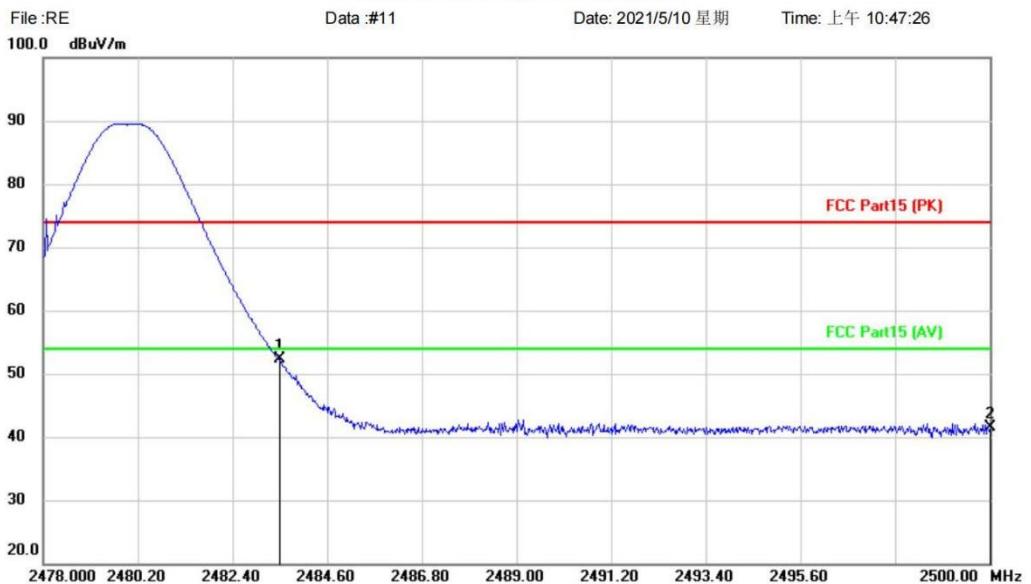
Note:

No. Mk.		Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	2483.500	59.32	-12.21	47.11	74.00	-26.89	peak	150	202
2		2500.000	54.27	-12.28	41.99	74.00	-32.01	peak	150	313

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

〈Reference Only

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Vertical]
Radiated Emission Measurement

Site
Polarization: Vertical
Temperature:
Limit: FCC Part15 (PK)
Power:
Humidity: %
EUT: MaxLite c-Max Controls
Distance: 3m
M/N: NN-RTPSW
Mode: TX-H
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
			Level	Factor	ment					
		MHz	dBuV	dB	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2483.500	64.44	-12.21	52.23	74.00	-21.77	peak	150	197
2		2500.000	53.86	-12.28	41.58	74.00	-32.42	peak	150	266

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

(Reference Only)

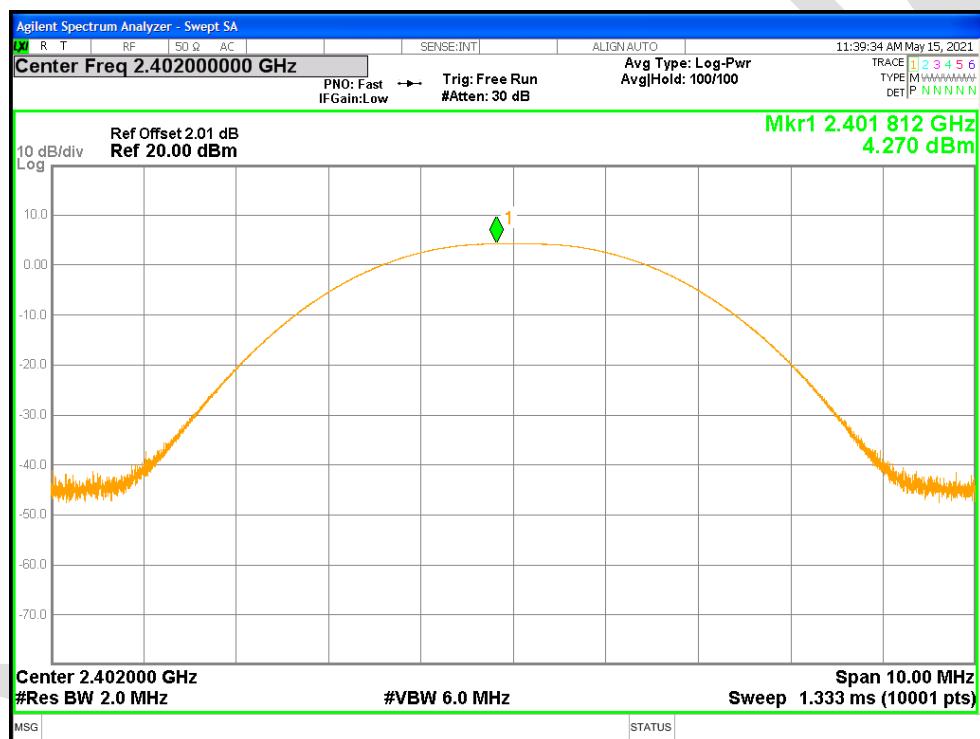
Test Result: Pass

10 APPENDIX

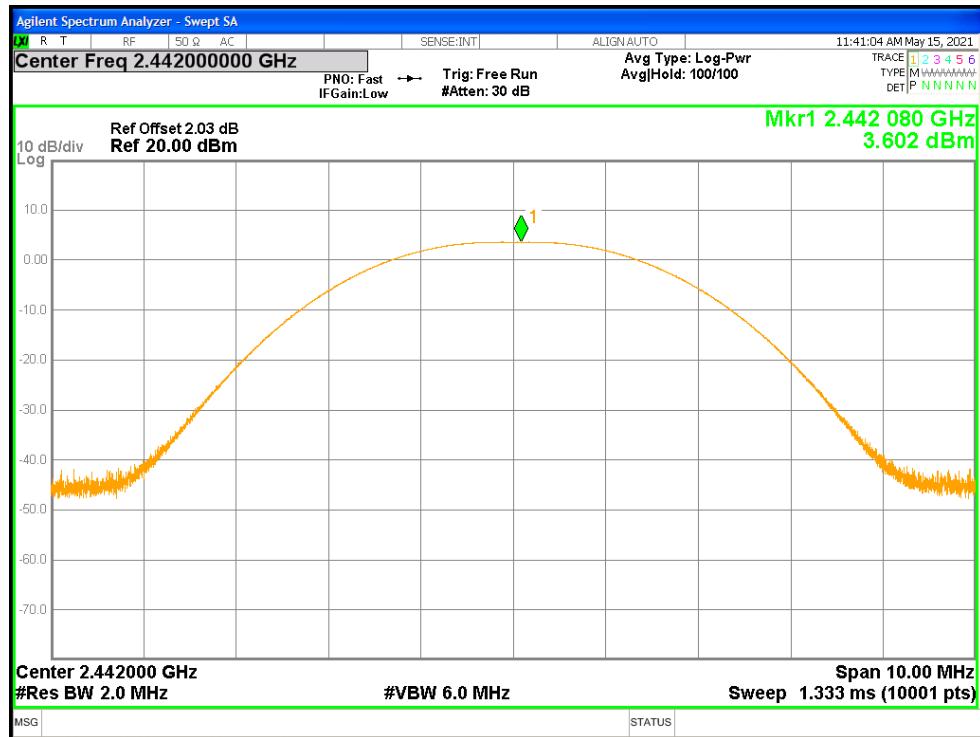
9.1 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	4.27	4.27	30	Pass
NVNT	BLE 1M	2442	Ant1	3.602	3.602	30	Pass
NVNT	BLE 1M	2480	Ant1	4.078	4.078	30	Pass

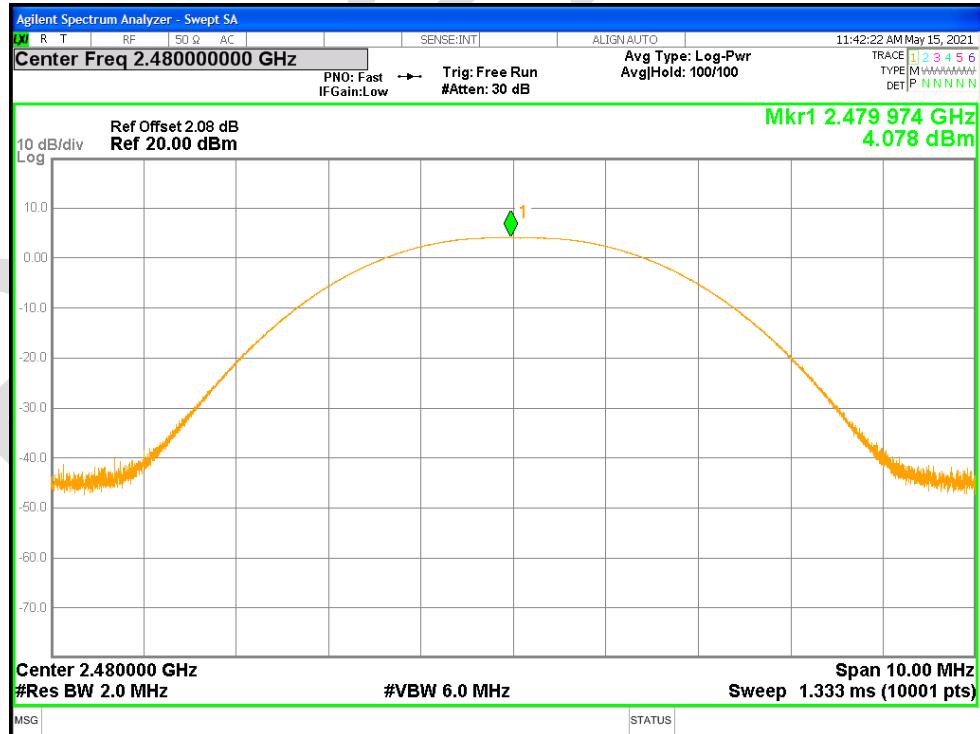
Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2442MHz Ant1



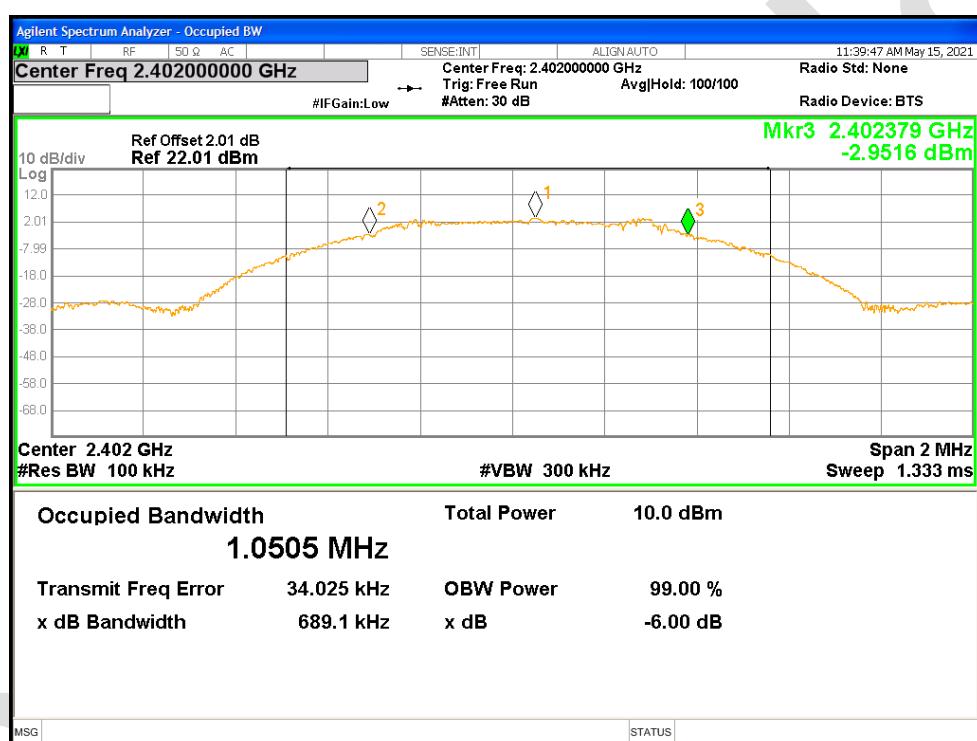
Power NVNT BLE 1M 2480MHz Ant1

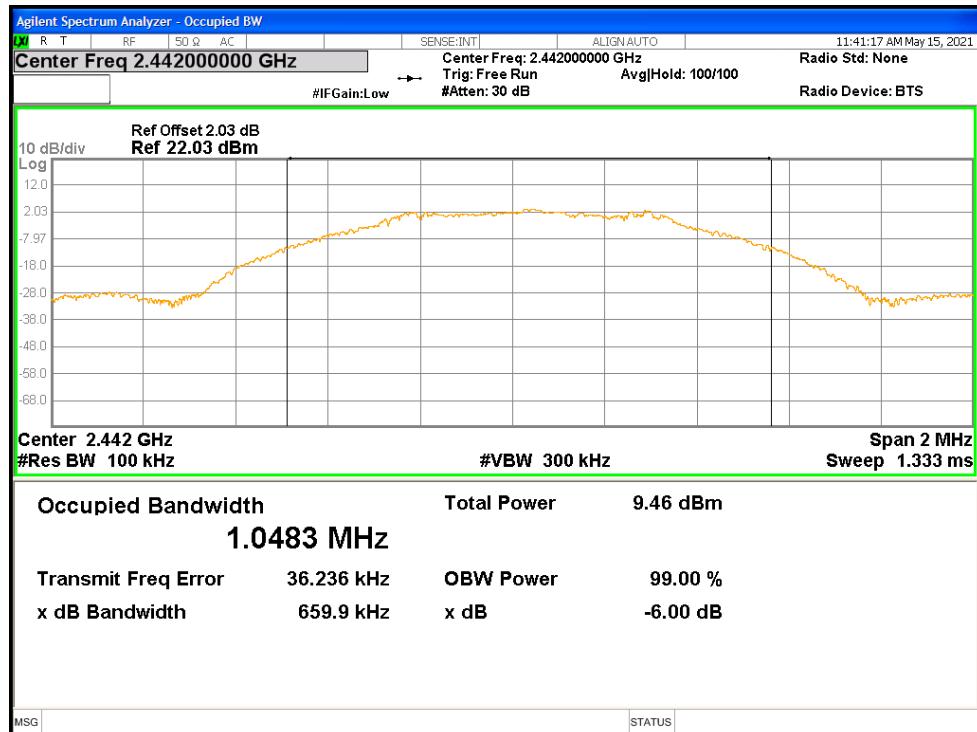
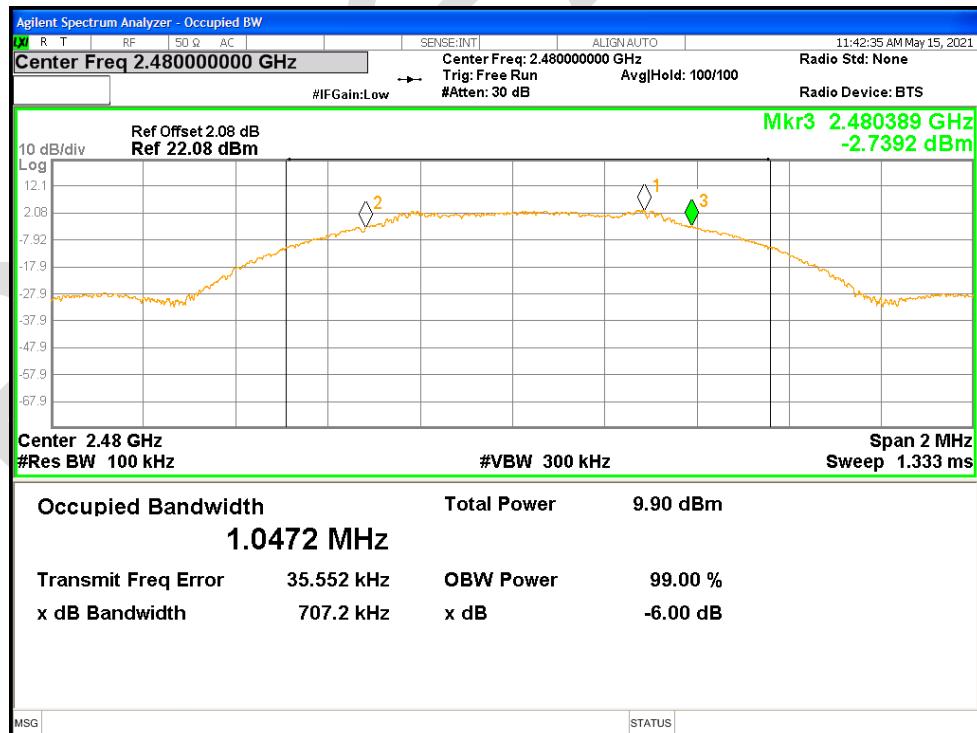


9.2 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.689	0.5	Pass
NVNT	BLE 1M	2442	Ant1	0.66	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.707	0.5	Pass

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1

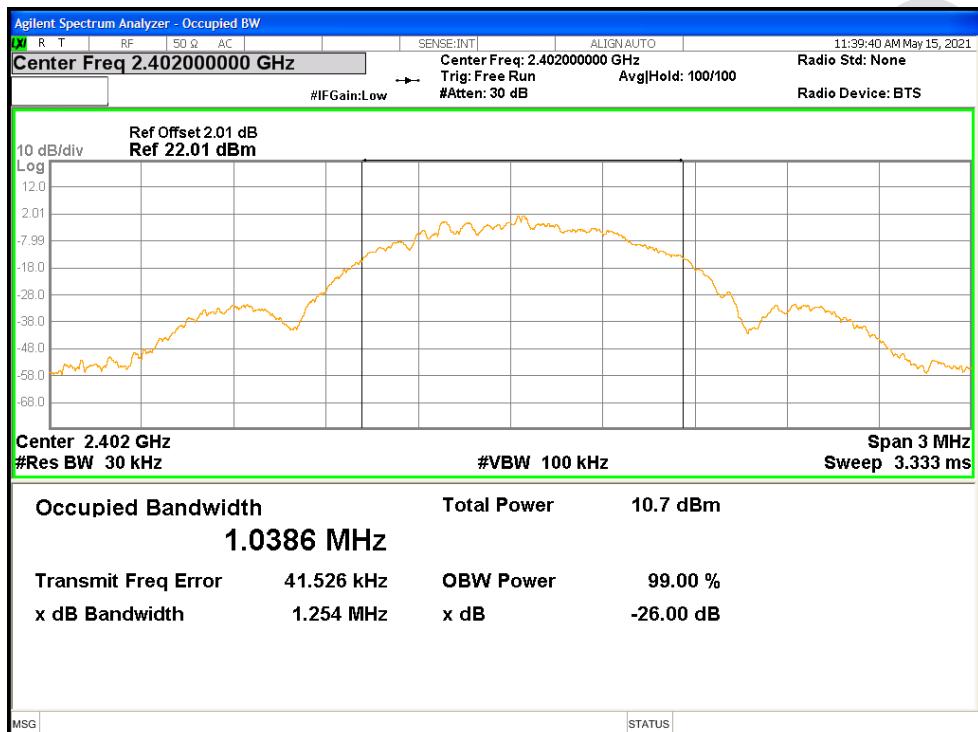


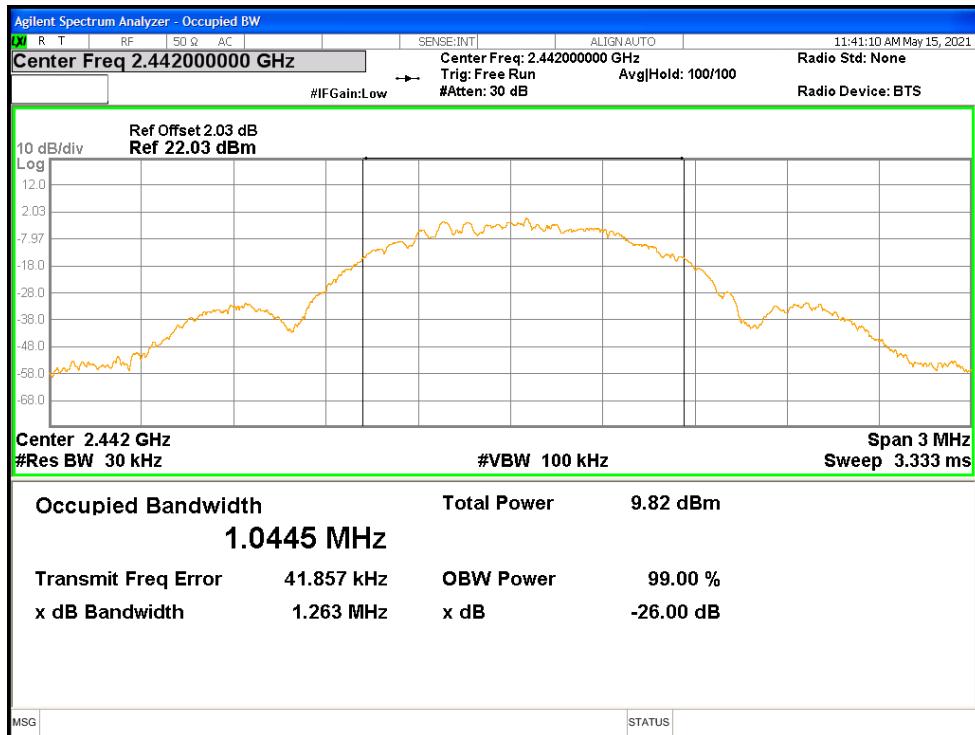
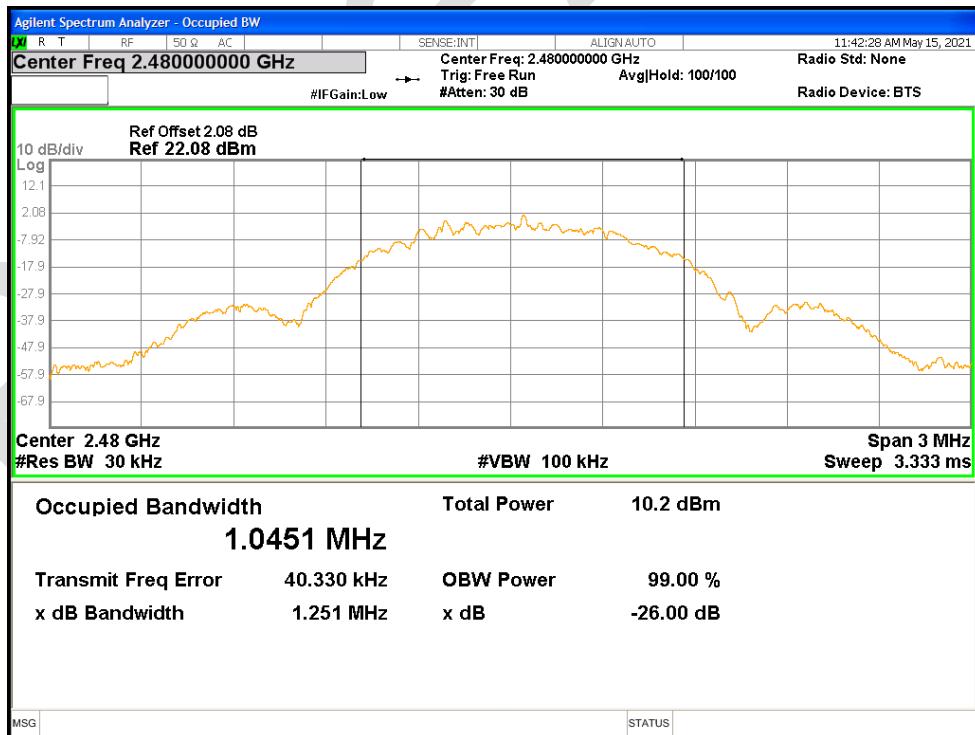
-6dB Bandwidth NVNT BLE 1M 2442MHz Ant1

-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1


9.3 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.038635667
NVNT	BLE 1M	2442	Ant1	1.044539618
NVNT	BLE 1M	2480	Ant1	1.045072781

OBW NVNT BLE 1M 2402MHz Ant1

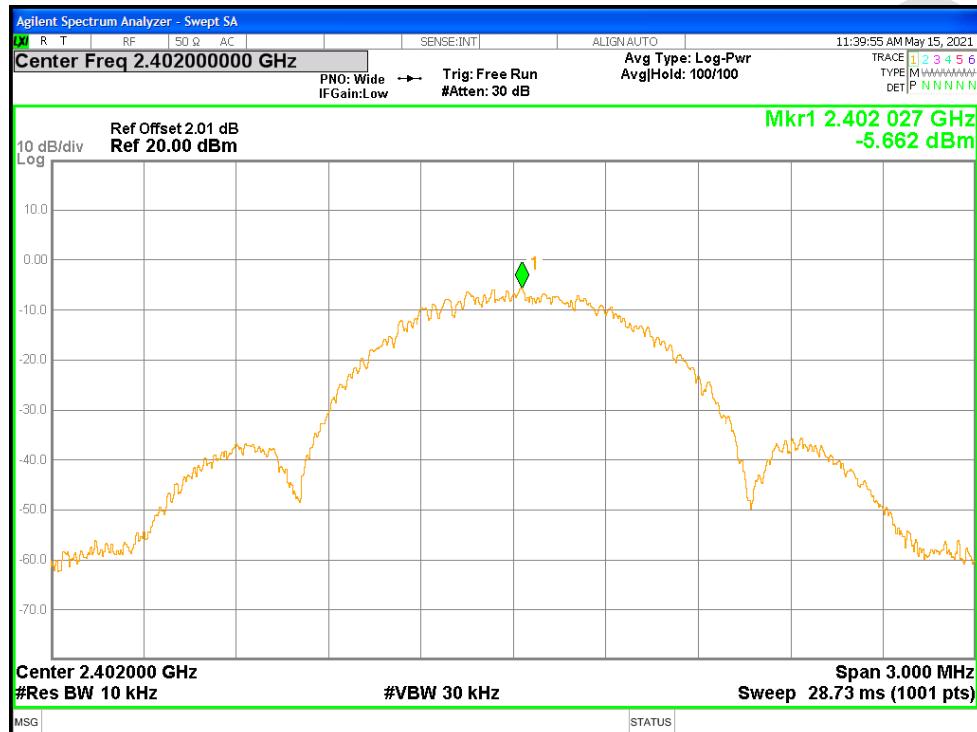


OBW NVNT BLE 1M 2442MHz Ant1

OBW NVNT BLE 1M 2480MHz Ant1


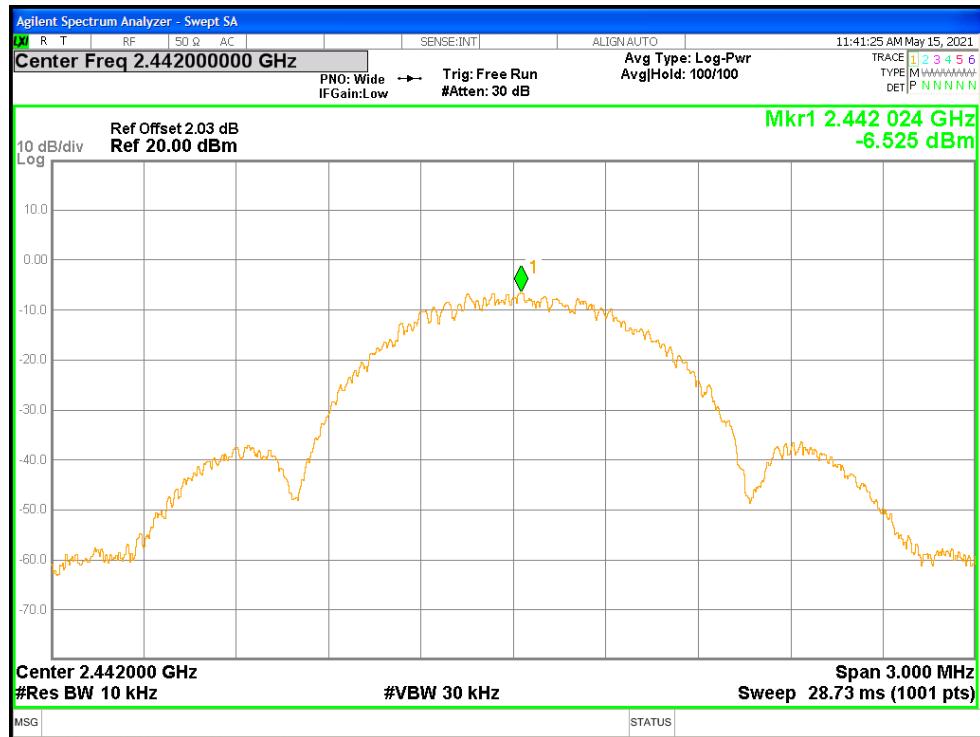
9.4 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-5.662	8	Pass
NVNT	BLE 1M	2442	Ant1	-6.525	8	Pass
NVNT	BLE 1M	2480	Ant1	-6.102	8	Pass

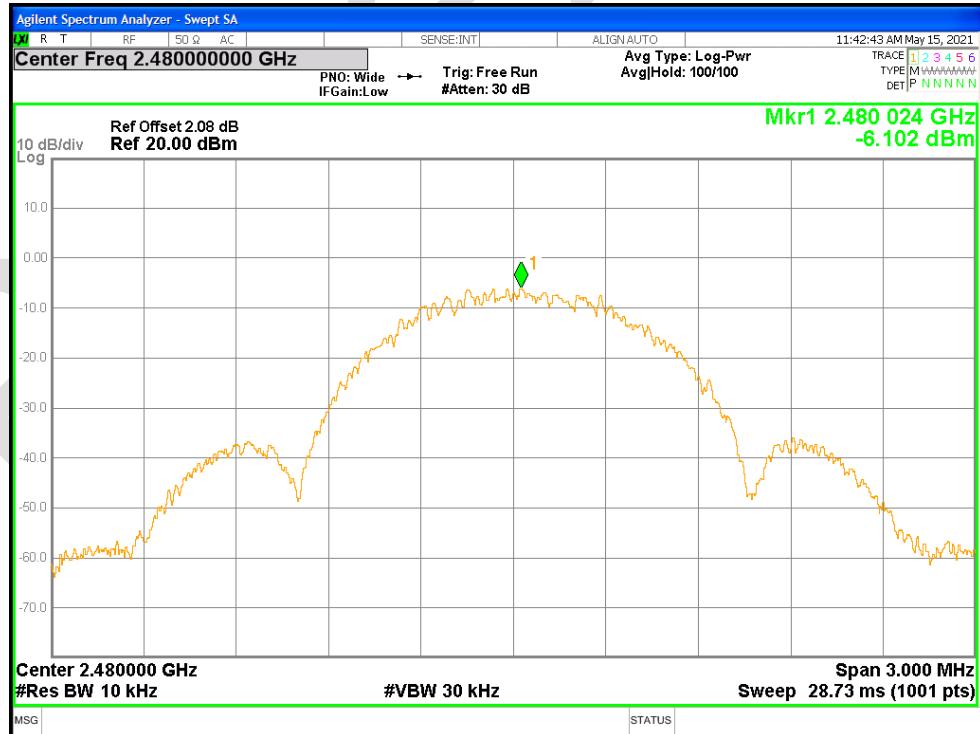
PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2442MHz Ant1



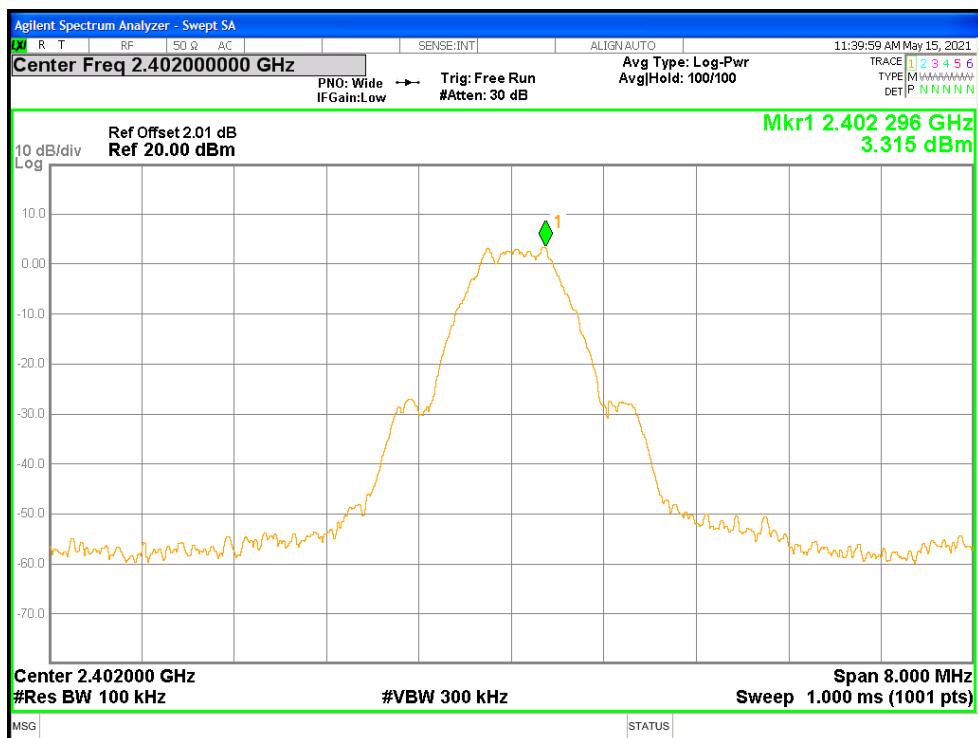
PSD NVNT BLE 1M 2480MHz Ant1



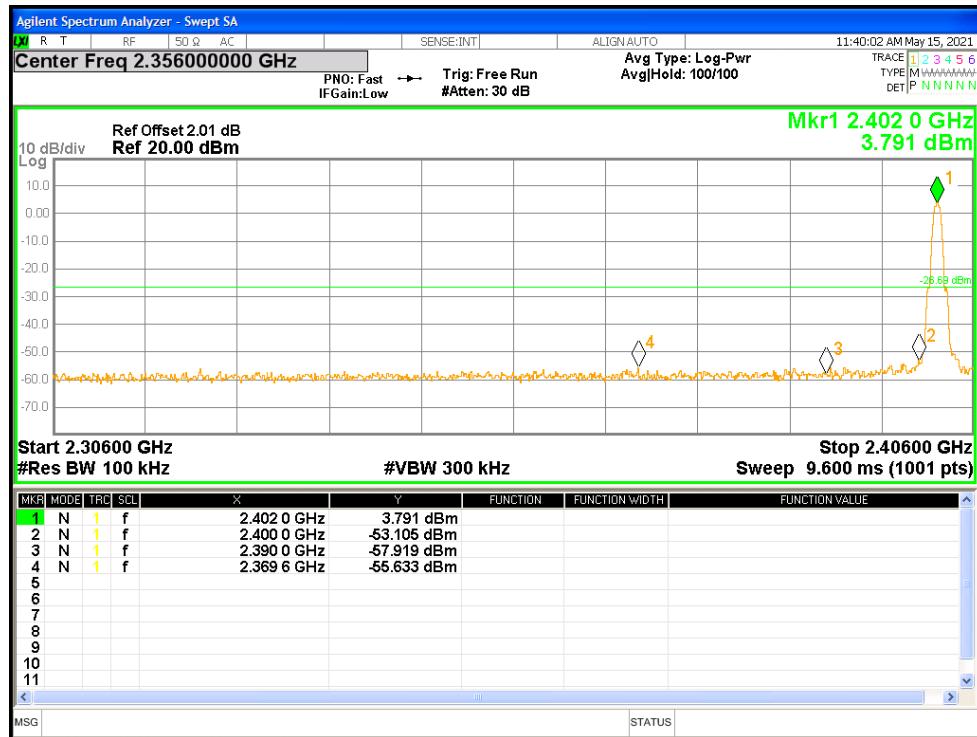
9.5 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-58.95	-30	Pass
NVNT	BLE 1M	2480	Ant1	-57.29	-30	Pass

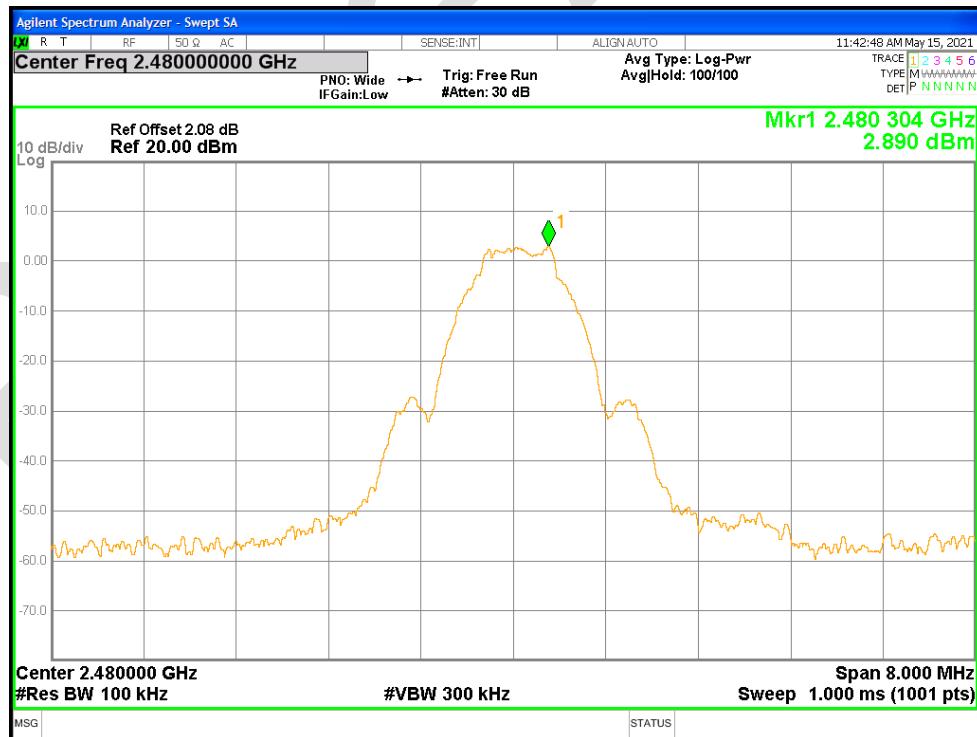
Band Edge NVNT BLE 1M 2402MHz Ant1 Ref



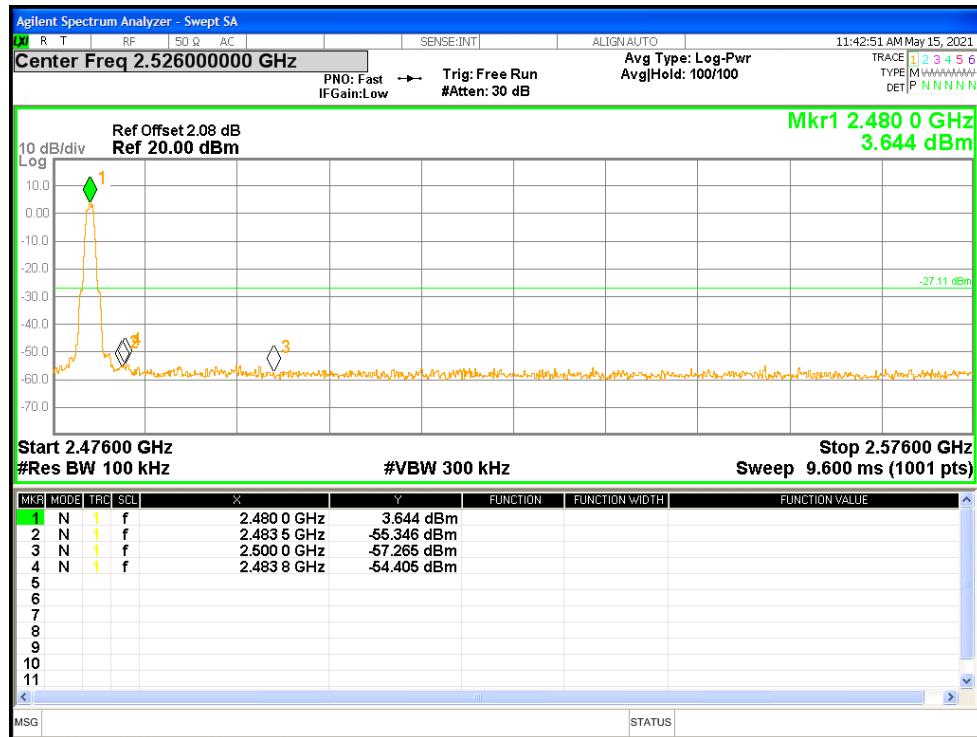
Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



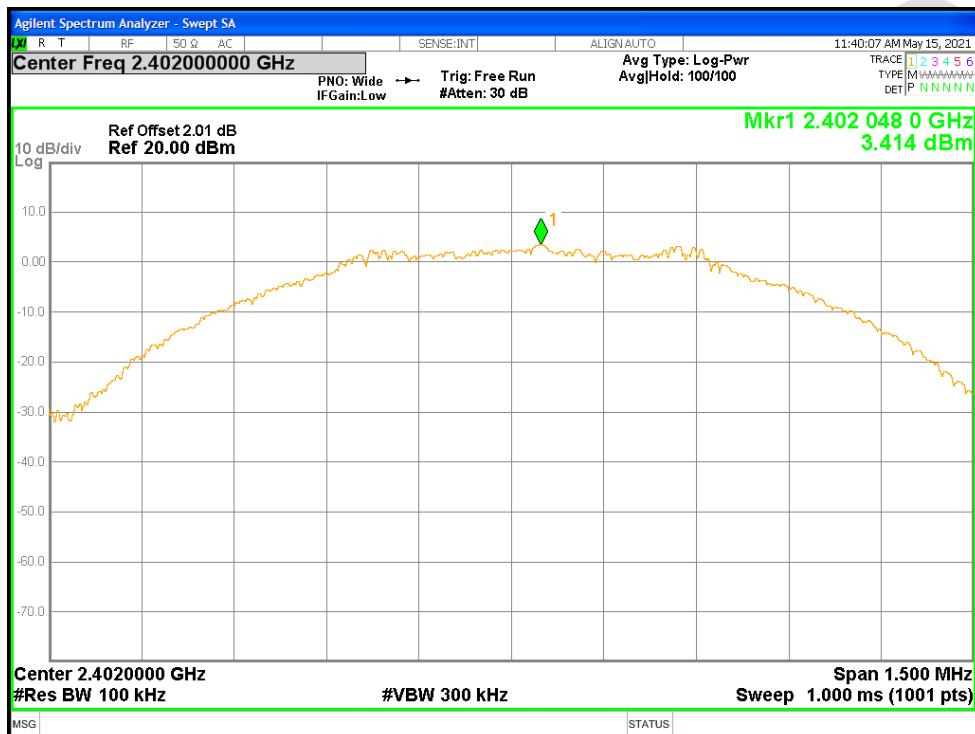
Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



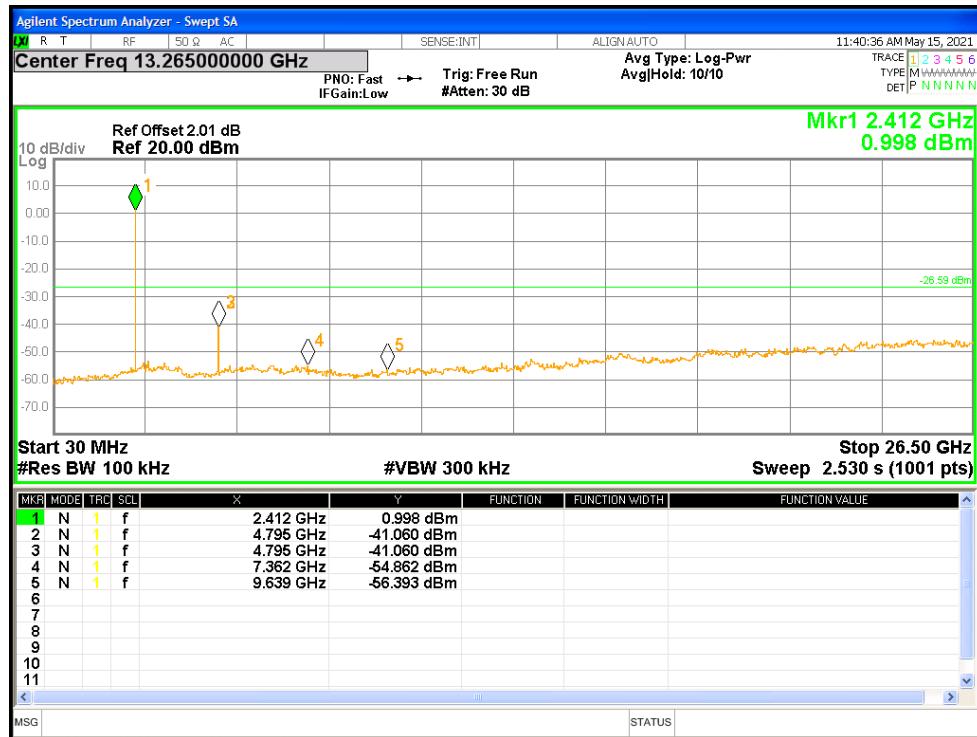
9.6 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-44.46	-30	Pass
NVNT	BLE 1M	2442	Ant1	-45.58	-30	Pass
NVNT	BLE 1M	2480	Ant1	-46.02	-30	Pass

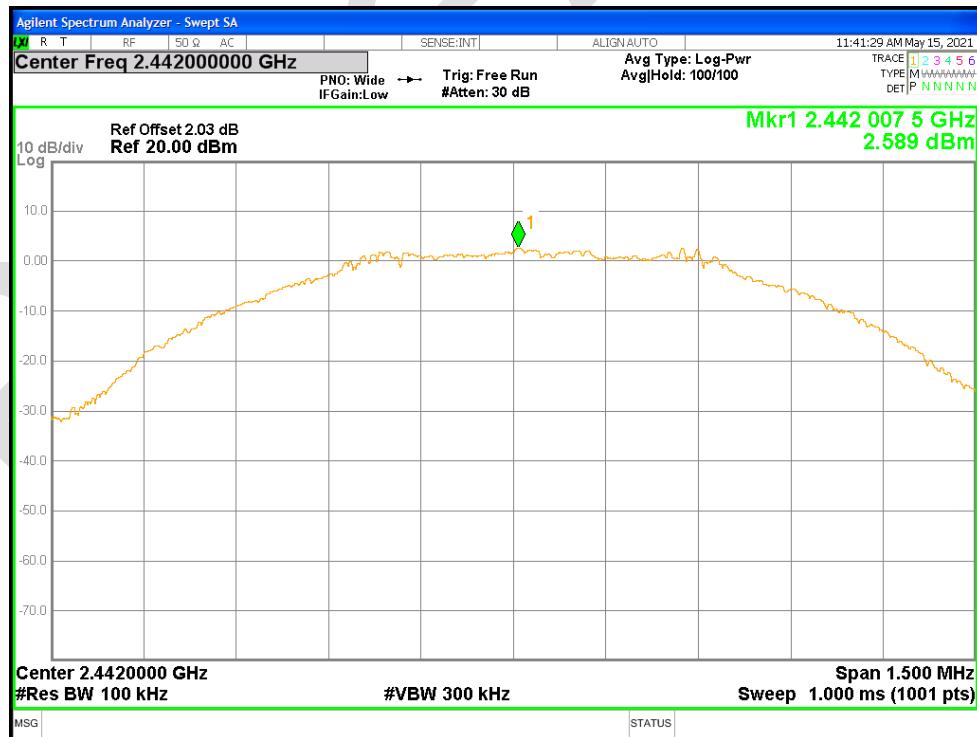
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



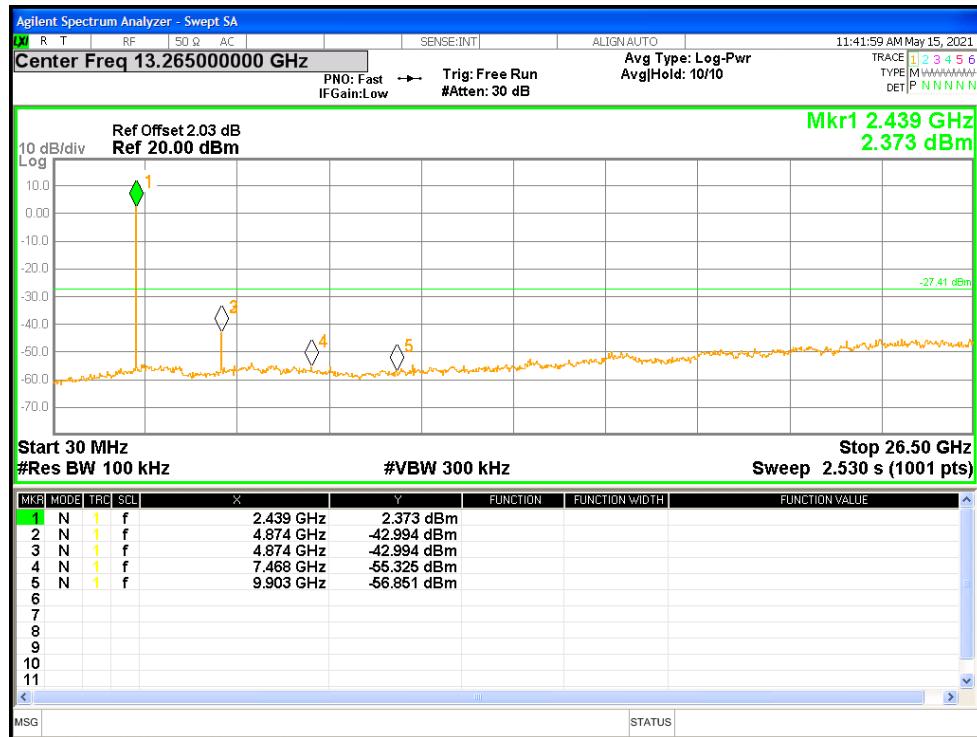
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



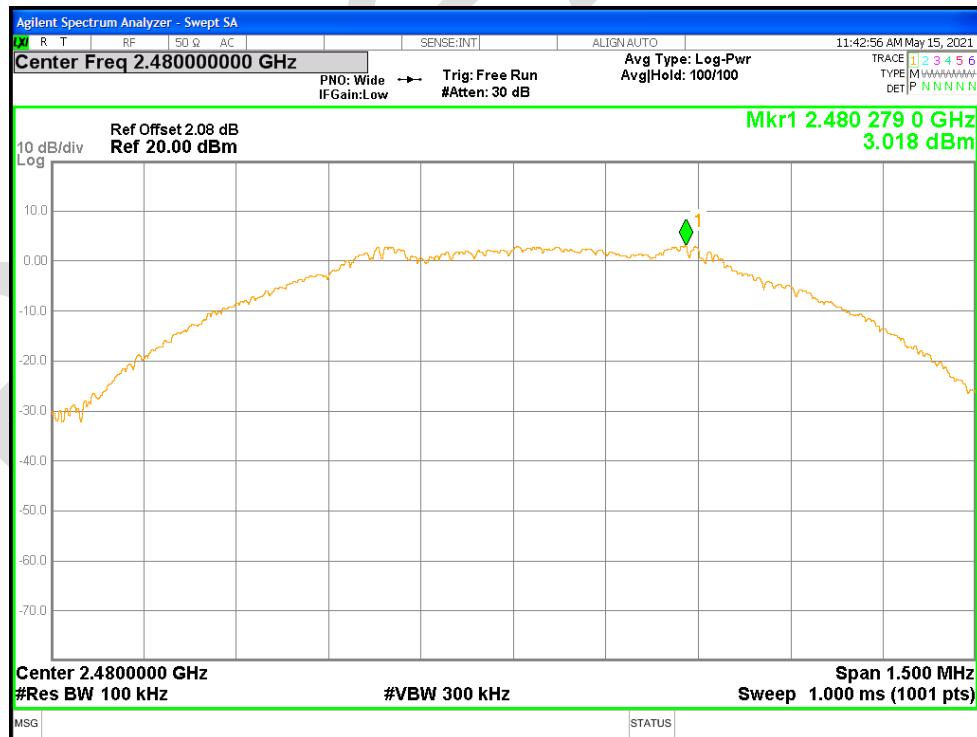
Tx. Spurious NVNT BLE 1M 2442MHz Ant1 Ref



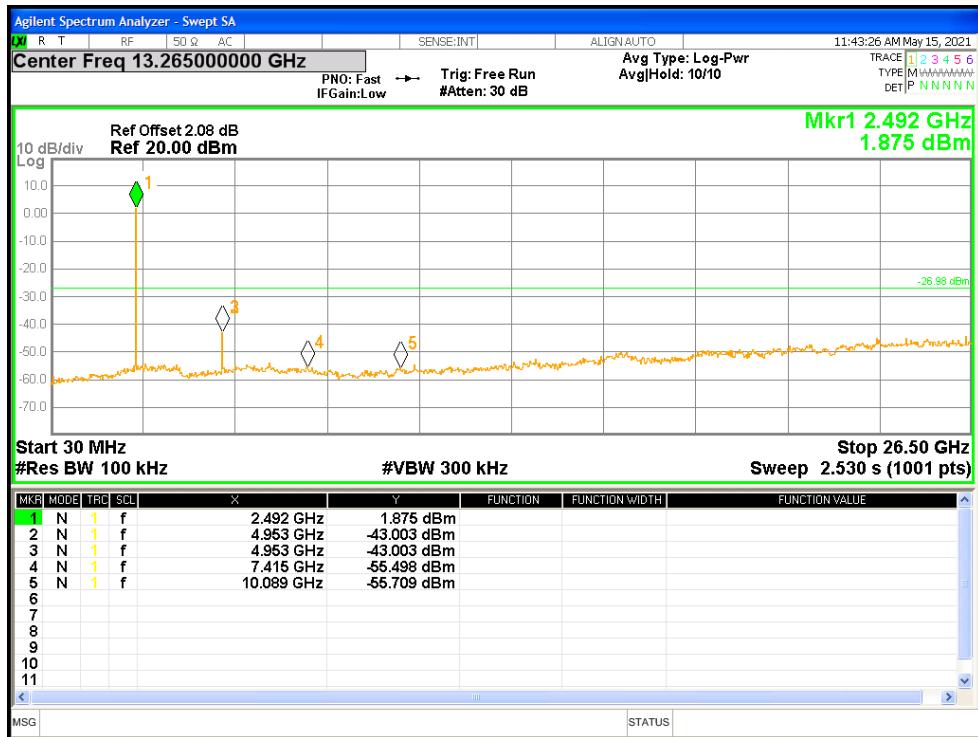
Tx. Spurious NVNT BLE 1M 2442MHz Ant1 Emission



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref

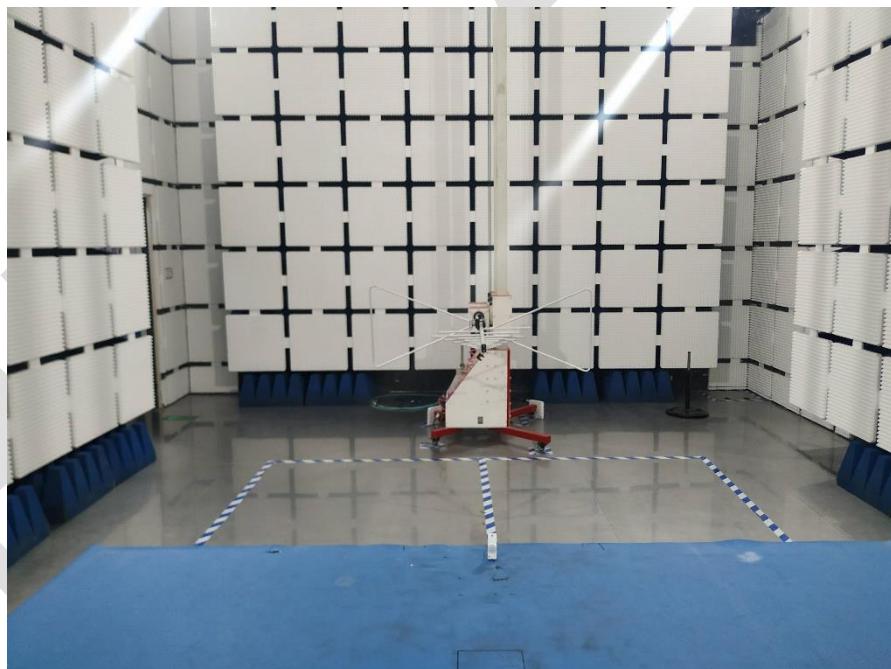


Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Radiated Spurious Emissions



Conducted Emissions at AC Power Line (150kHz-30MHz)

