

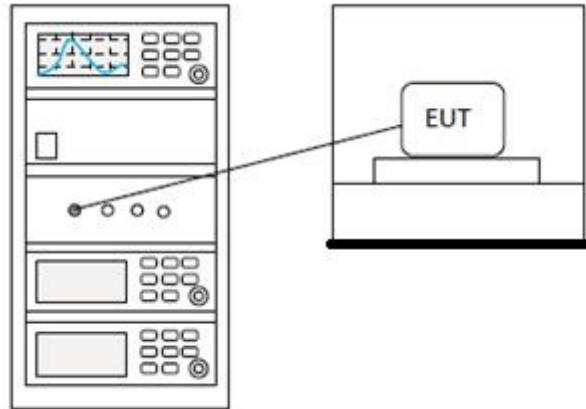
## 20 CONDUCTED BAND EDGES MEASUREMENT

<b>Test Standard</b>	47 CFR Part 15, Subpart C 15.247
<b>Test Method</b>	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2
<b>Test Mode (Pre-Scan)</b>	TX
<b>Test Mode (Final Test)</b>	TX
<b>Tester</b>	Aiden
<b>Temperature</b>	27°C
<b>Humidity</b>	58%

### 20.1 LIMITS

<b>Limit:</b>	<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).</p>
---------------	---

## 20.2 BLOCK DIAGRAM OF TEST SETUP



## 20.3 TEST DATA

**Pass: Please Refer To Appendix: Appendix1 For Details**

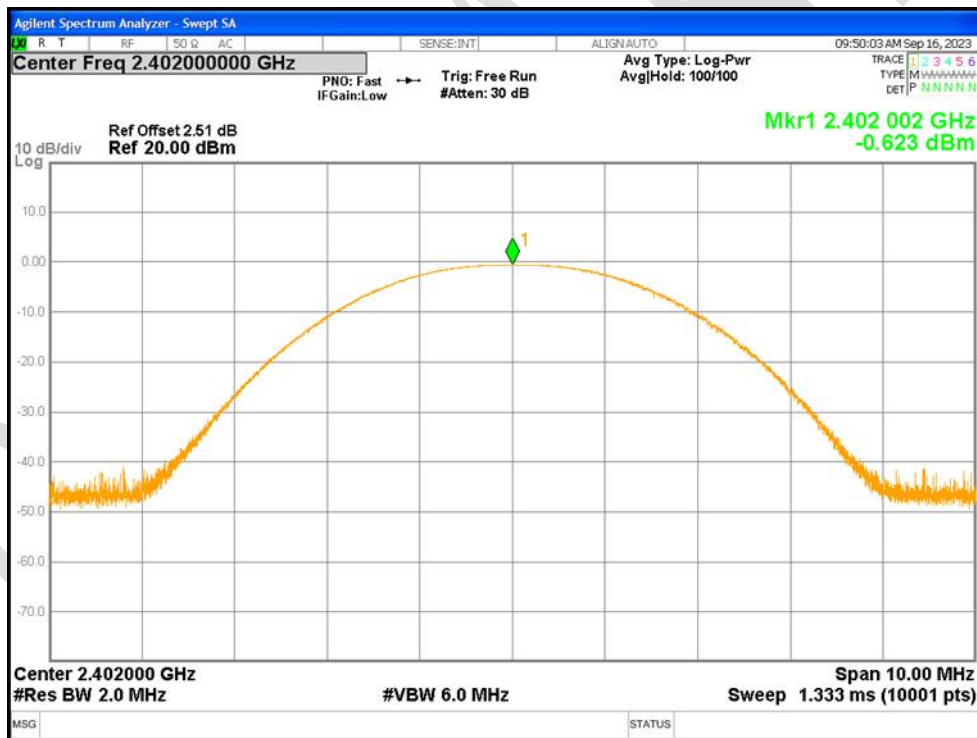
## 21 APPENDIX

### Appendix1

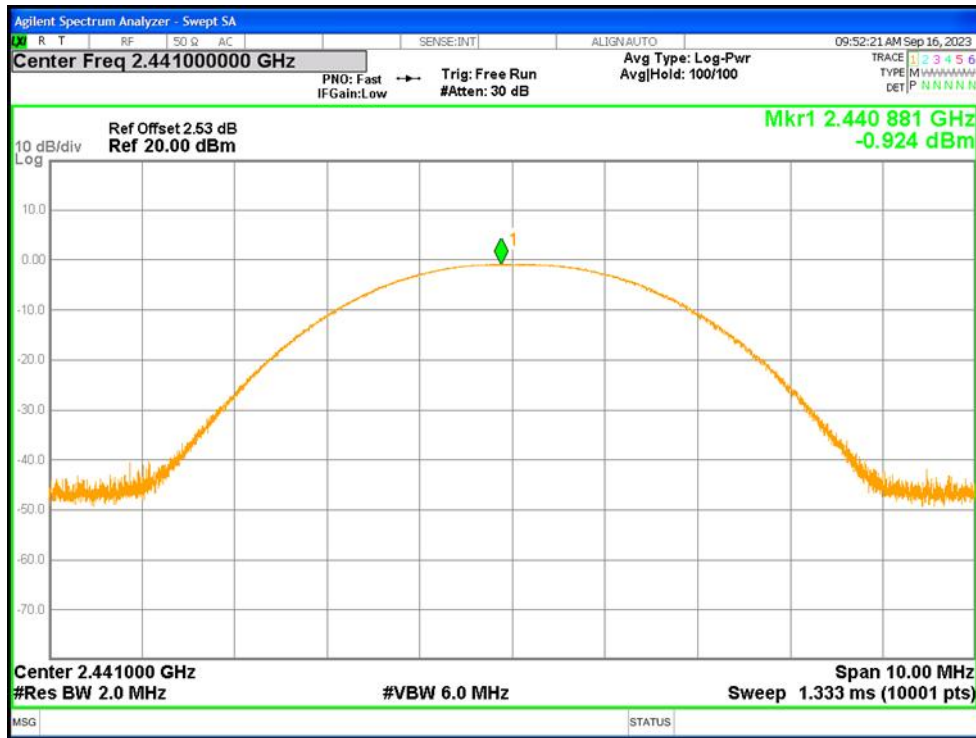
#### 21.1 MAXIMUM CONDUCTED OUTPUT POWER

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	-0.623	21	Pass
NVNT	1-DH1	2441	Ant1	-0.924	21	Pass
NVNT	1-DH1	2480	Ant1	-0.601	21	Pass
NVNT	2-DH1	2402	Ant1	0.123	21	Pass
NVNT	2-DH1	2441	Ant1	-0.238	21	Pass
NVNT	2-DH1	2480	Ant1	0.09	21	Pass

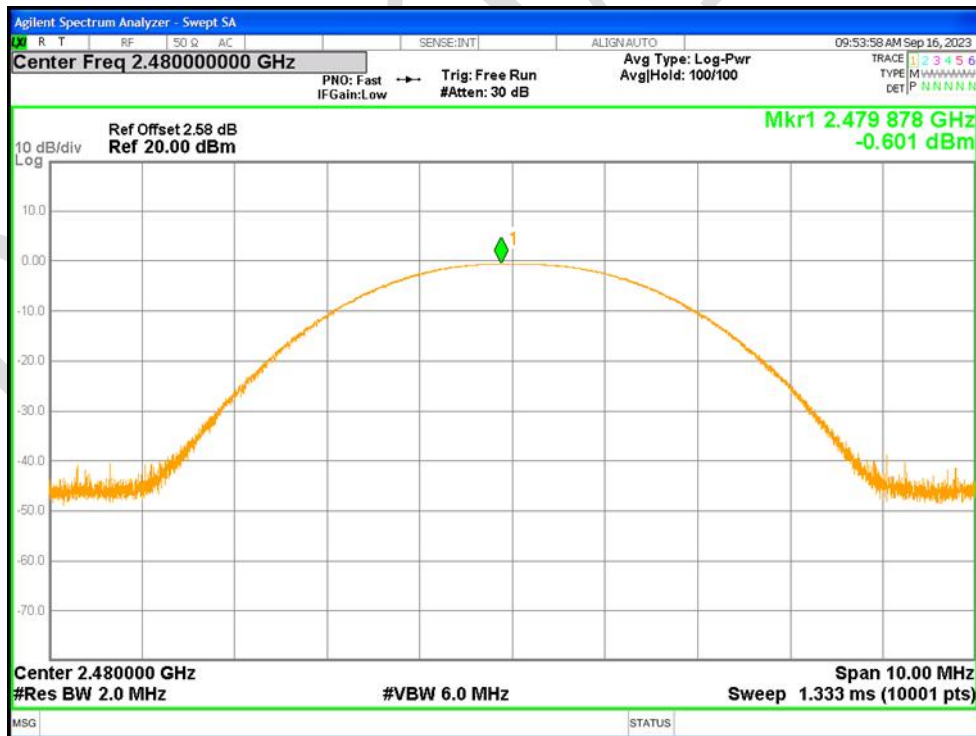
Power NVNT 1-DH1 2402MHz Ant1



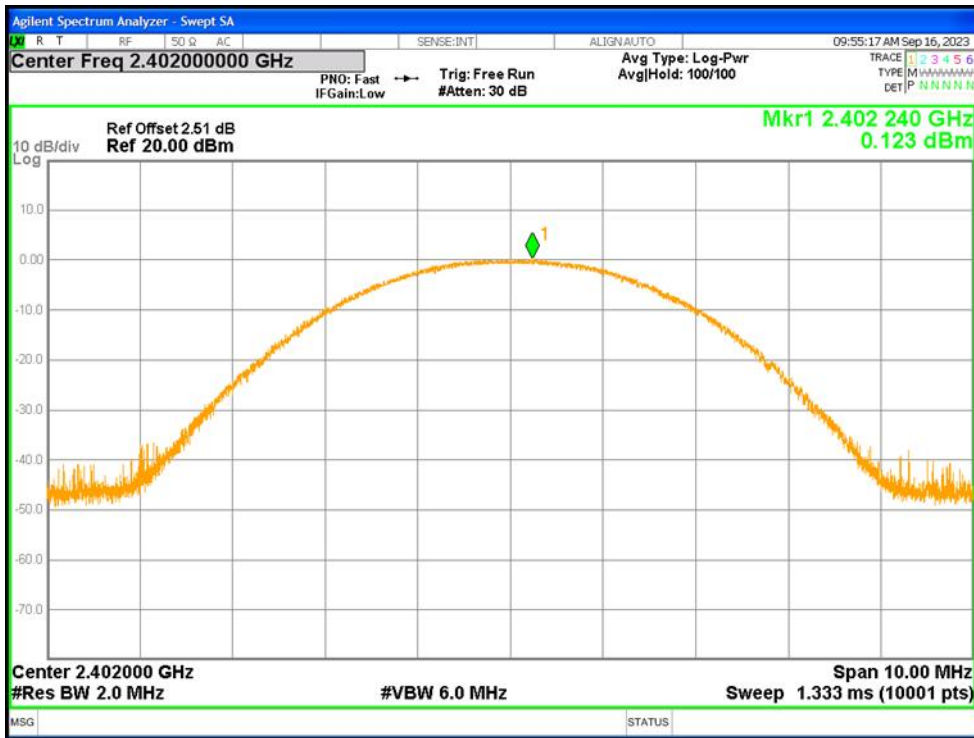
Power NVNT 1-DH1 2441MHz Ant1



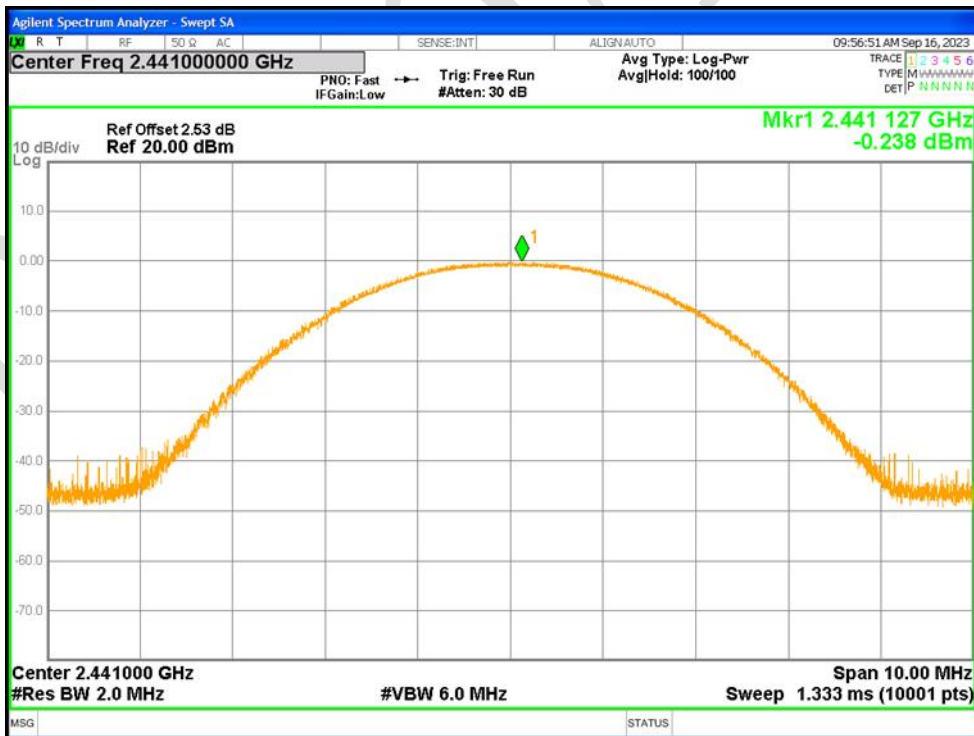
Power NVNT 1-DH1 2480MHz Ant1



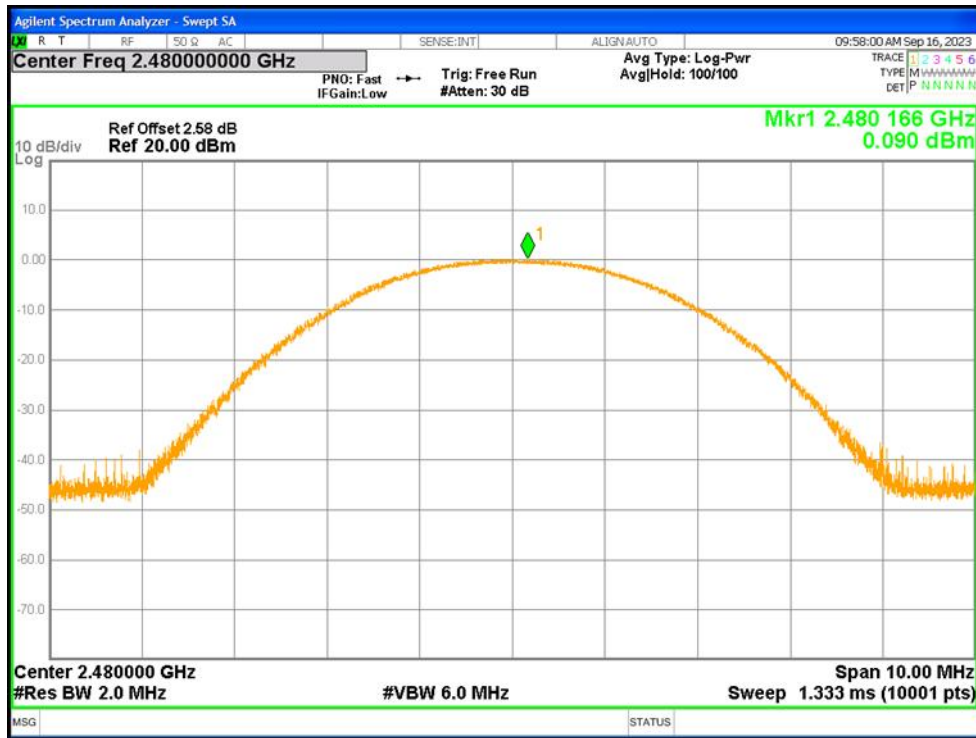
Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



Power NVNT 2-DH1 2480MHz Ant1



### 21.2 -20DB BANDWIDTH

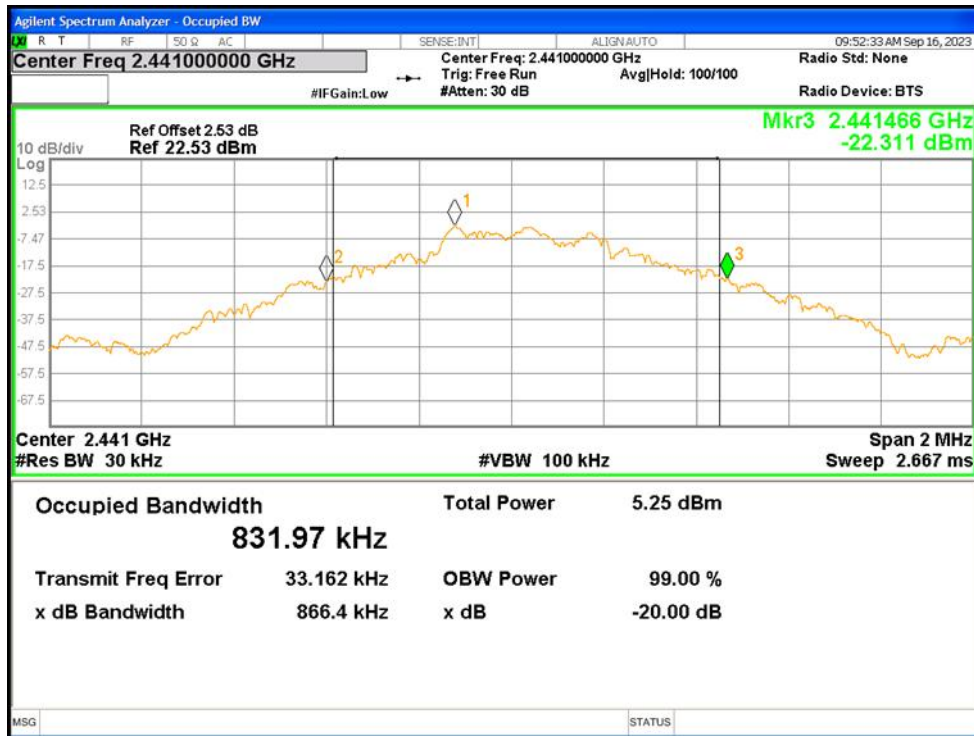
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.8576	0	Pass
NVNT	1-DH1	2441	Ant1	0.8664	0	Pass
NVNT	1-DH1	2480	Ant1	0.9304	0	Pass
NVNT	2-DH1	2402	Ant1	1.235	0	Pass
NVNT	2-DH1	2441	Ant1	1.243	0	Pass
NVNT	2-DH1	2480	Ant1	1.265	0	Pass

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

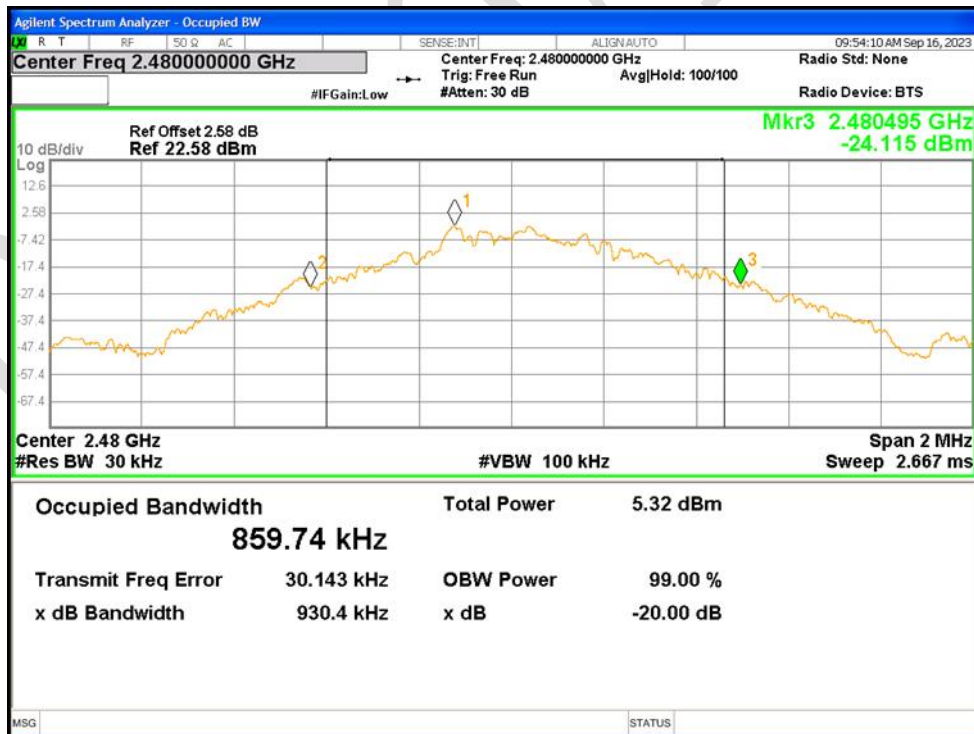




-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

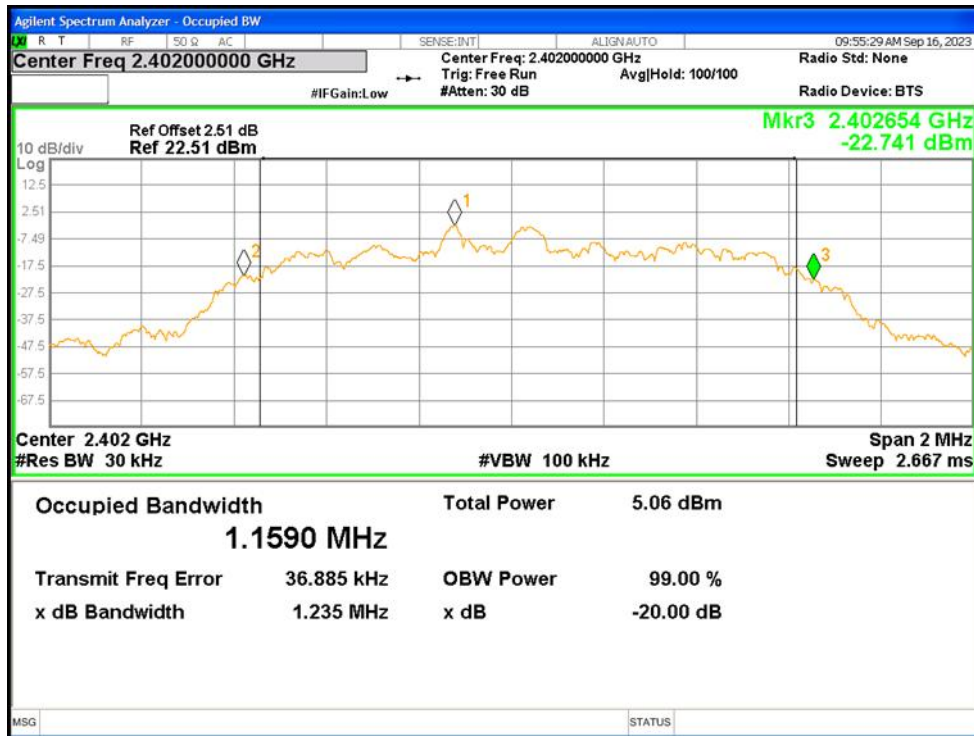


-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

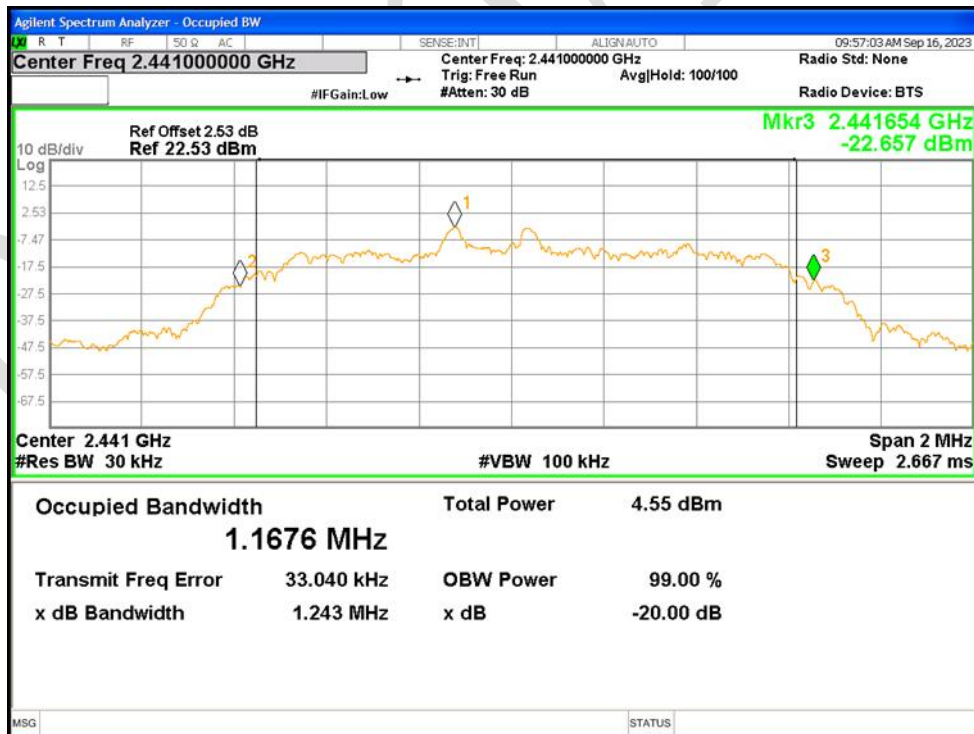




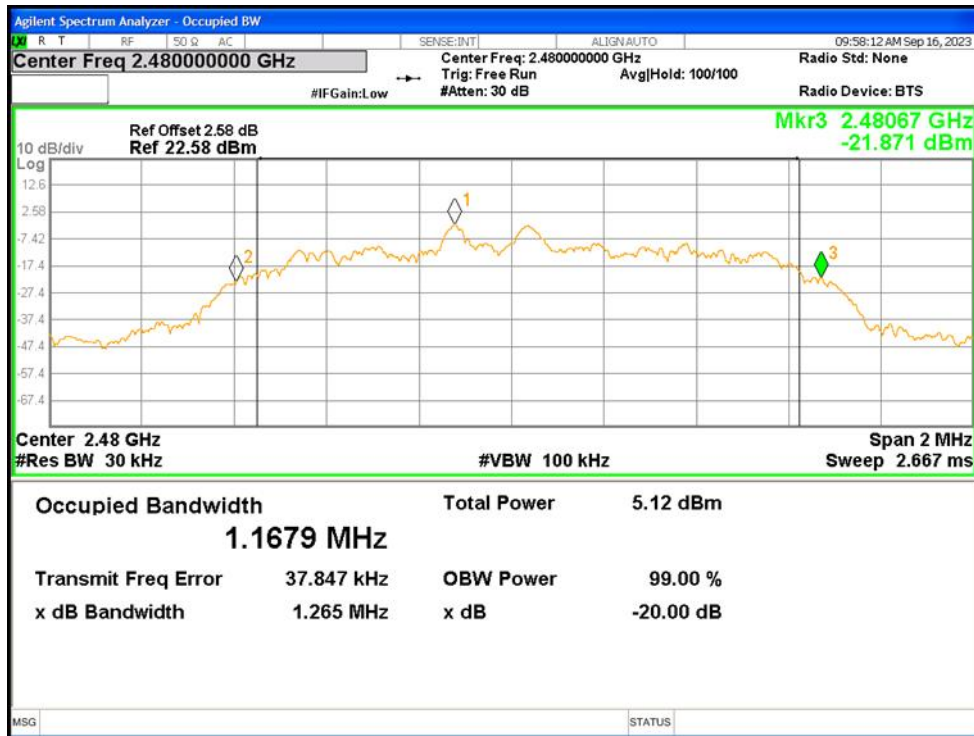
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



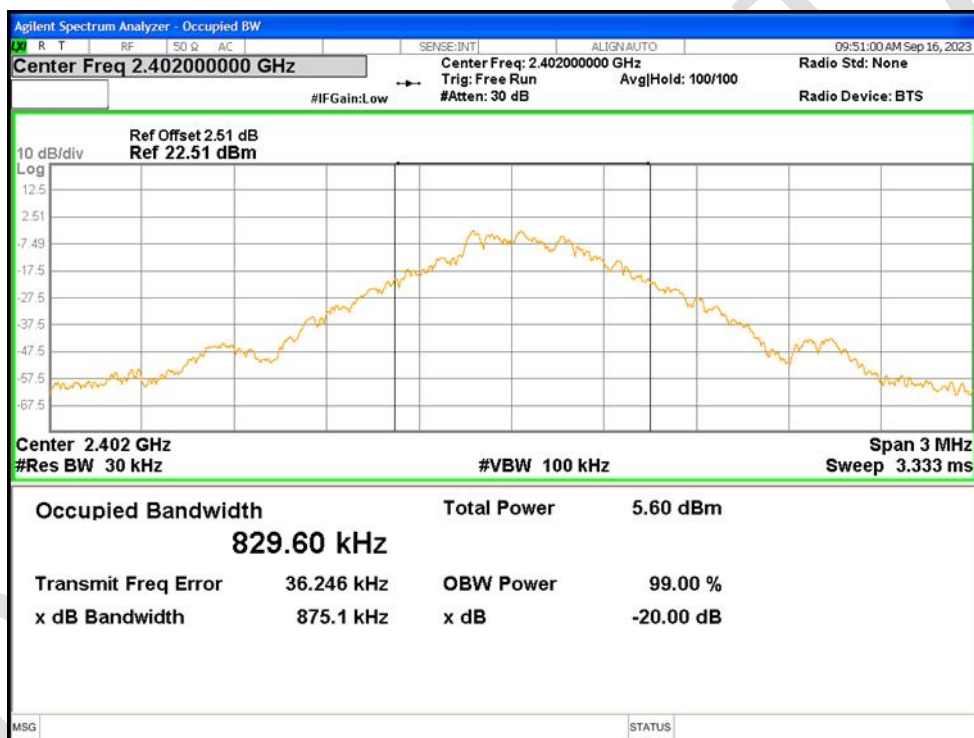
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



### 21.3 OCCUPIED CHANNEL BANDWIDTH

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.82960
NVNT	1-DH1	2441	Ant1	0.84183
NVNT	1-DH1	2480	Ant1	0.85740
NVNT	2-DH1	2402	Ant1	1.1426
NVNT	2-DH1	2441	Ant1	1.1734
NVNT	2-DH1	2480	Ant1	1.1717

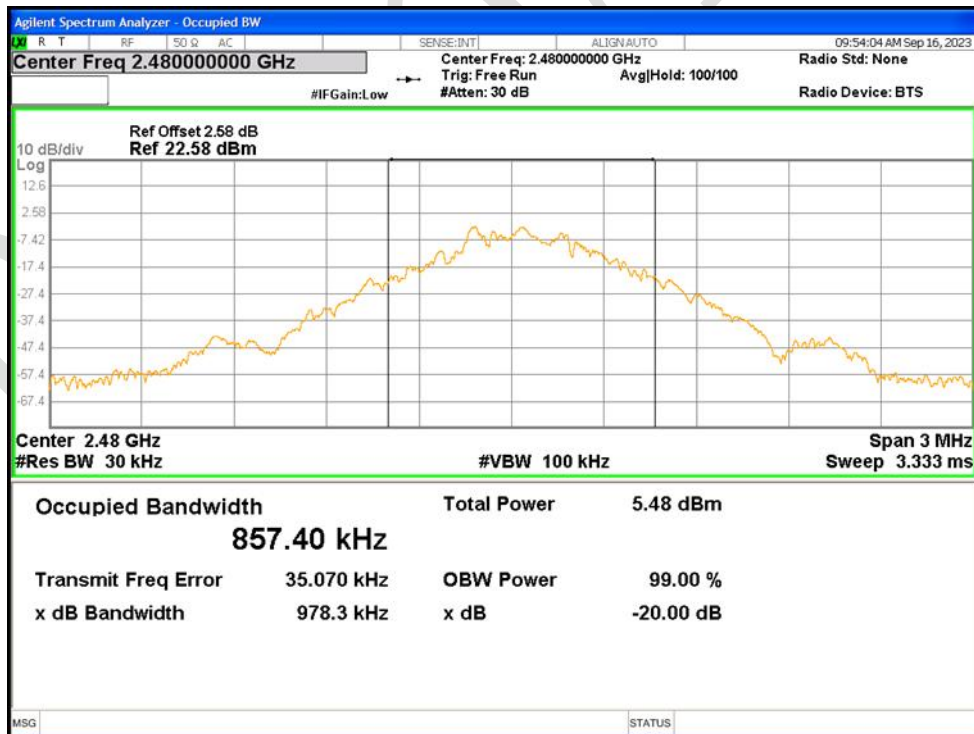
OBW NVNT 1-DH1 2402MHz Ant1



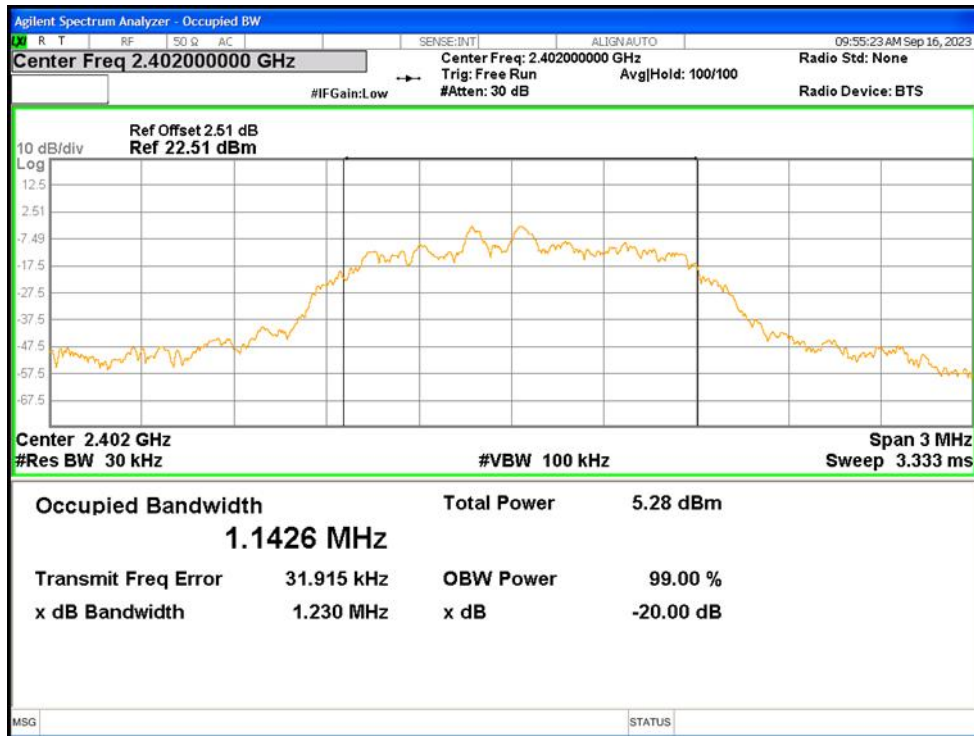
OBW NVNT 1-DH1 2441MHz Ant1



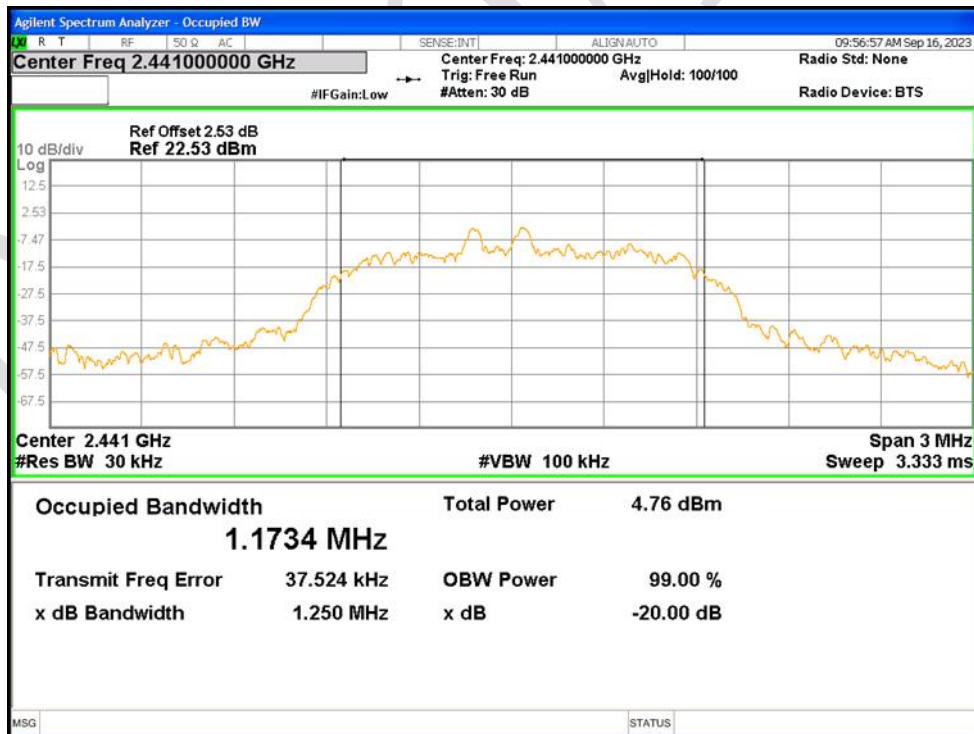
OBW NVNT 1-DH1 2480MHz Ant1



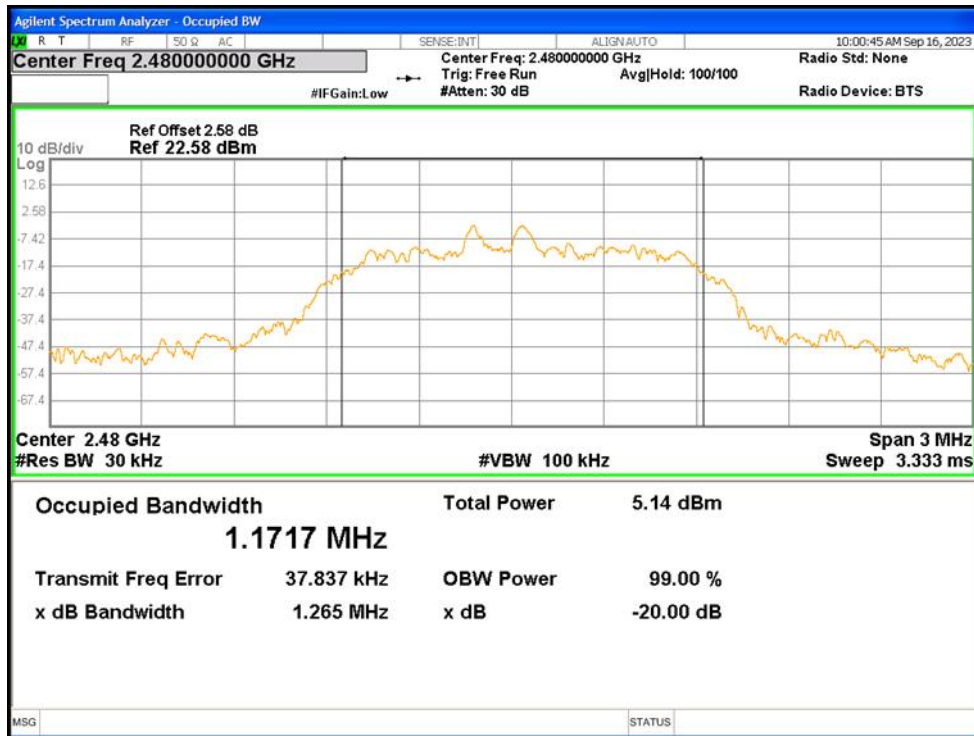
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1

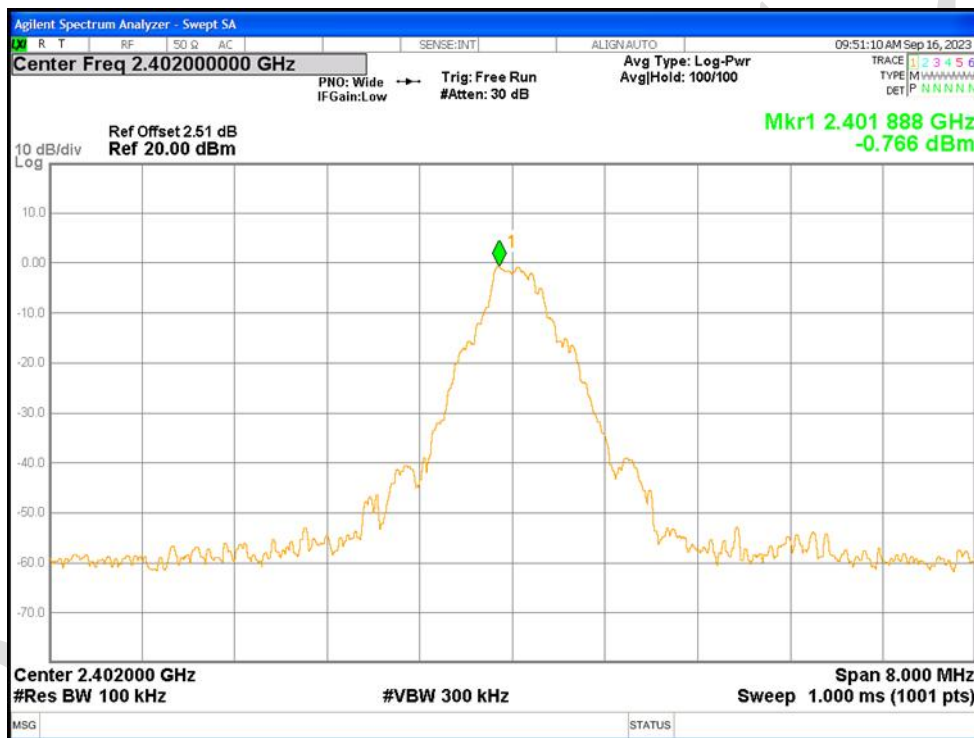




### 21.4 BAND EDGE

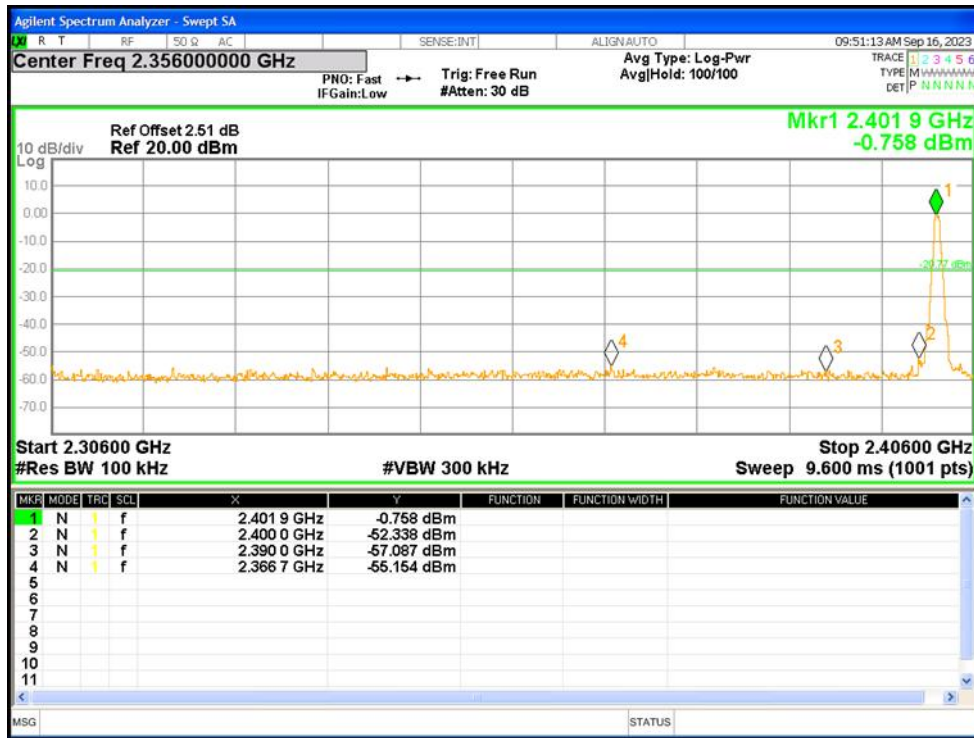
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-54.38	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-55.01	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-54.77	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-53.67	-20	Pass

Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref





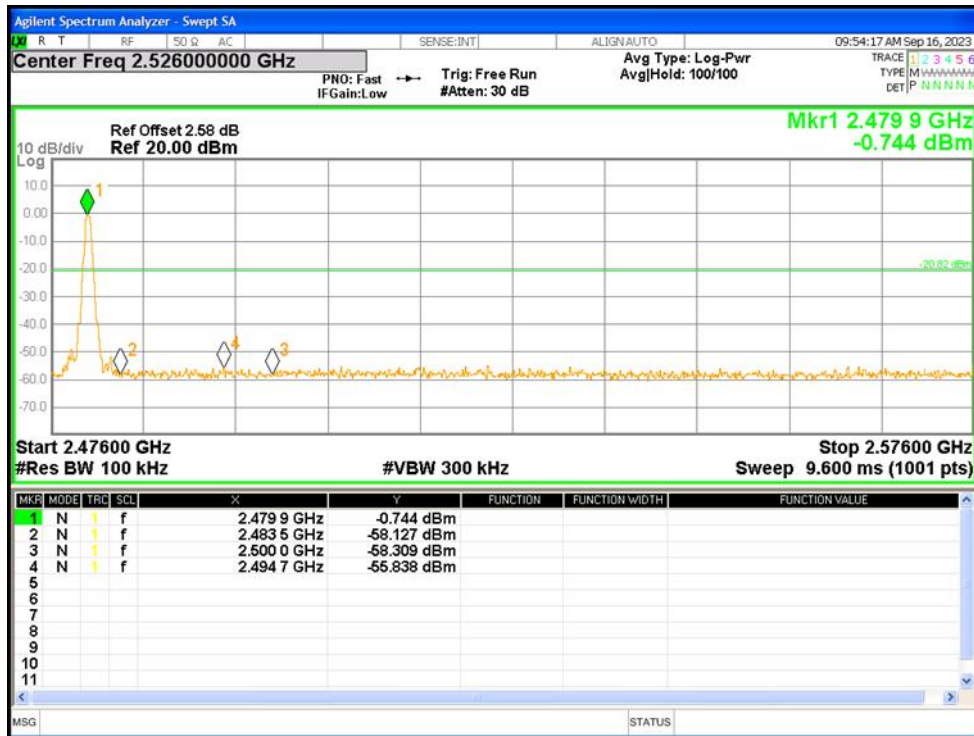
### Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



### Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



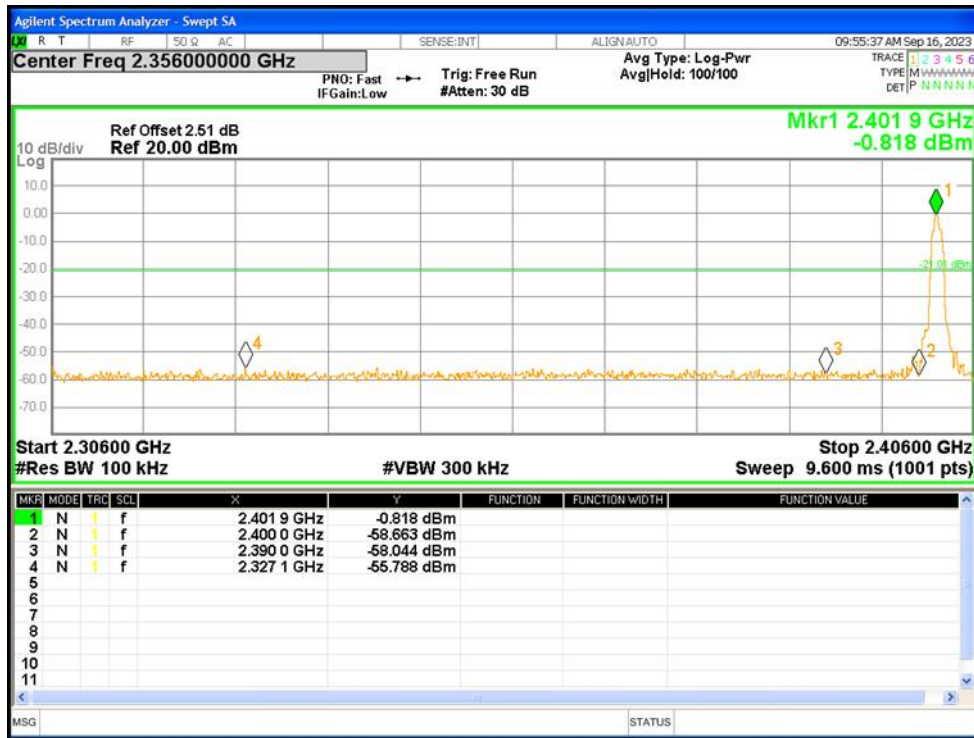
### Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



### Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



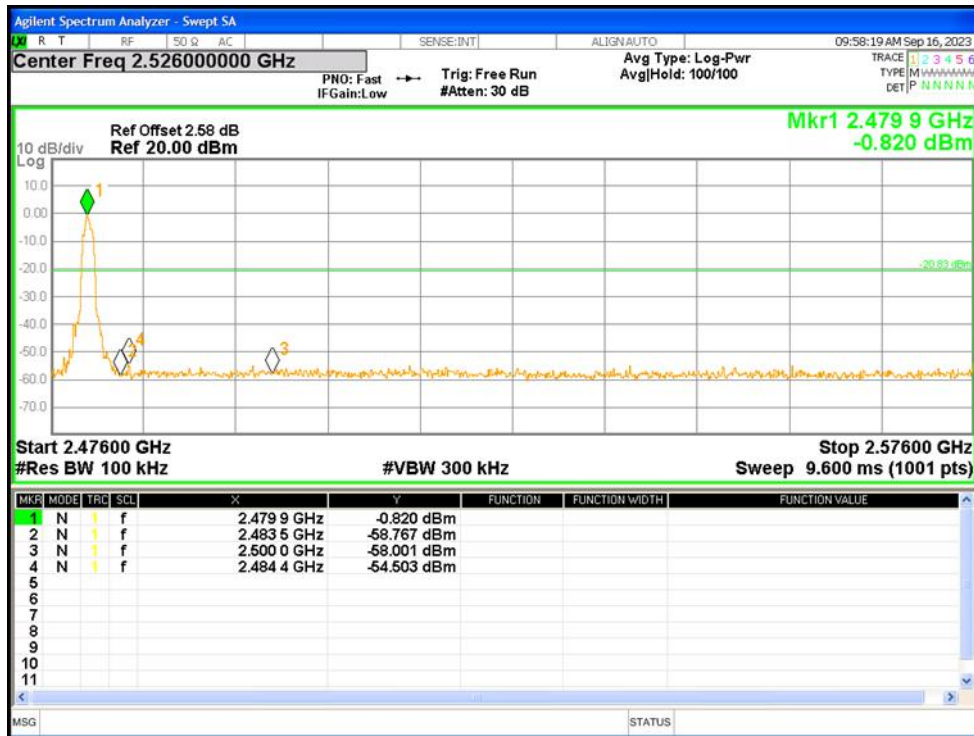
### Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



### Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



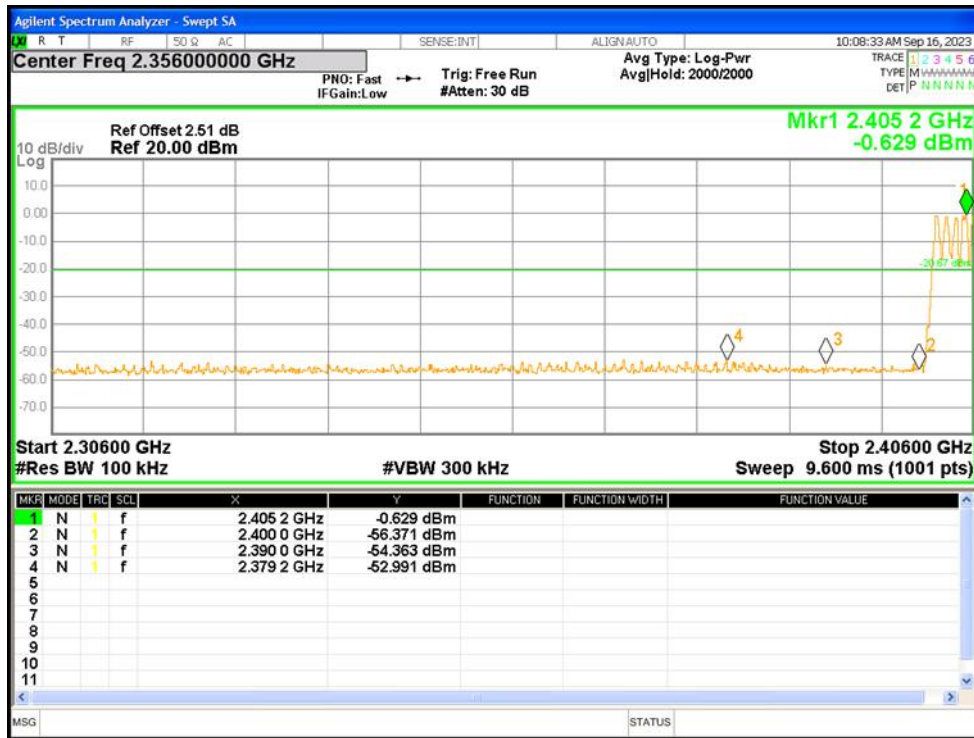
### 21.5 BAND EDGE(HOPPING)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-52.32	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-52.66	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-51.92	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-53.43	-20	Pass

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



### Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission

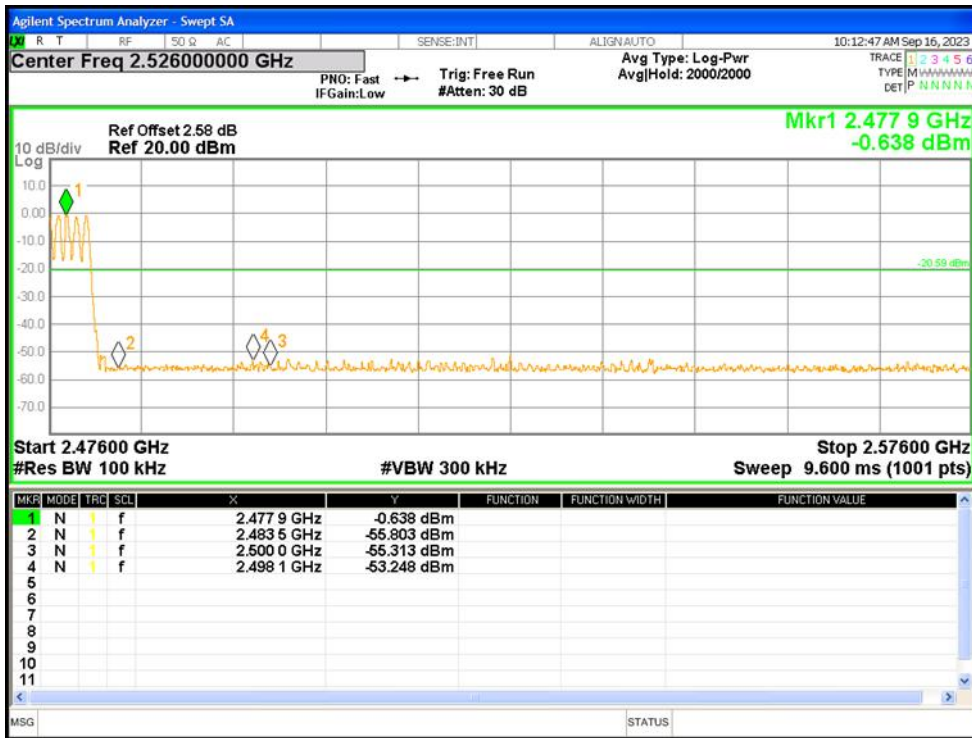


### Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref





### Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission

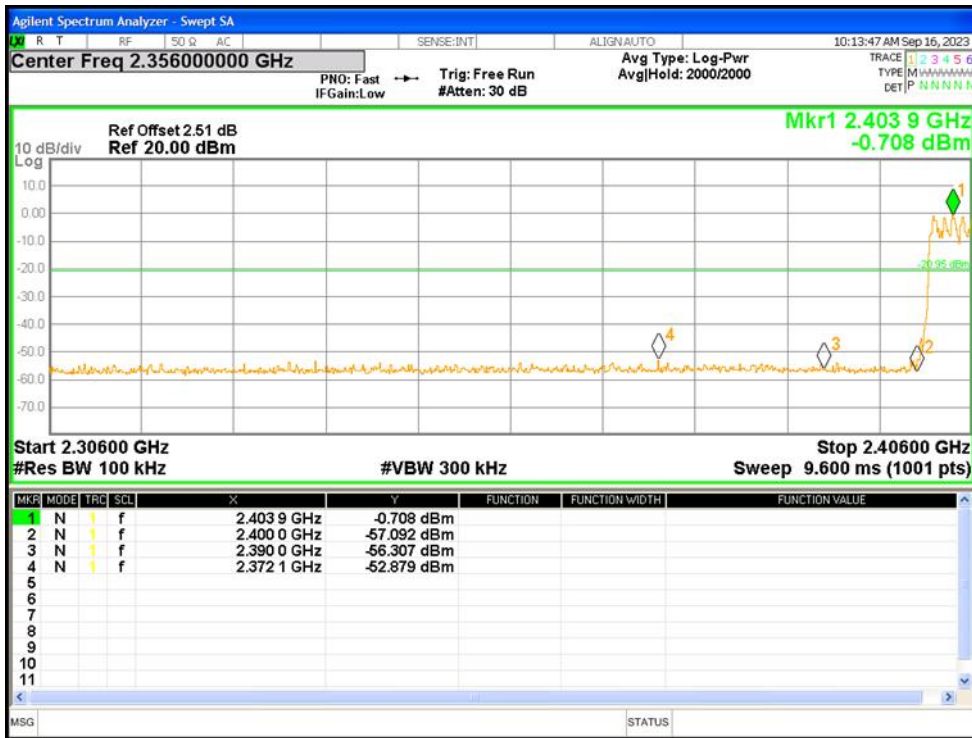


### Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref





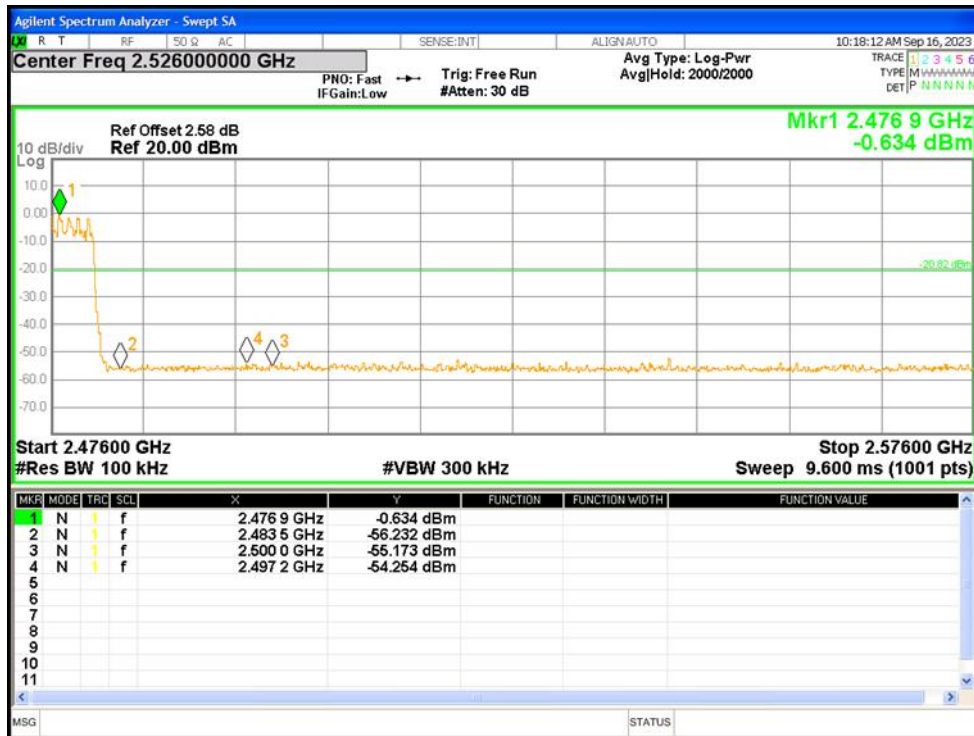
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



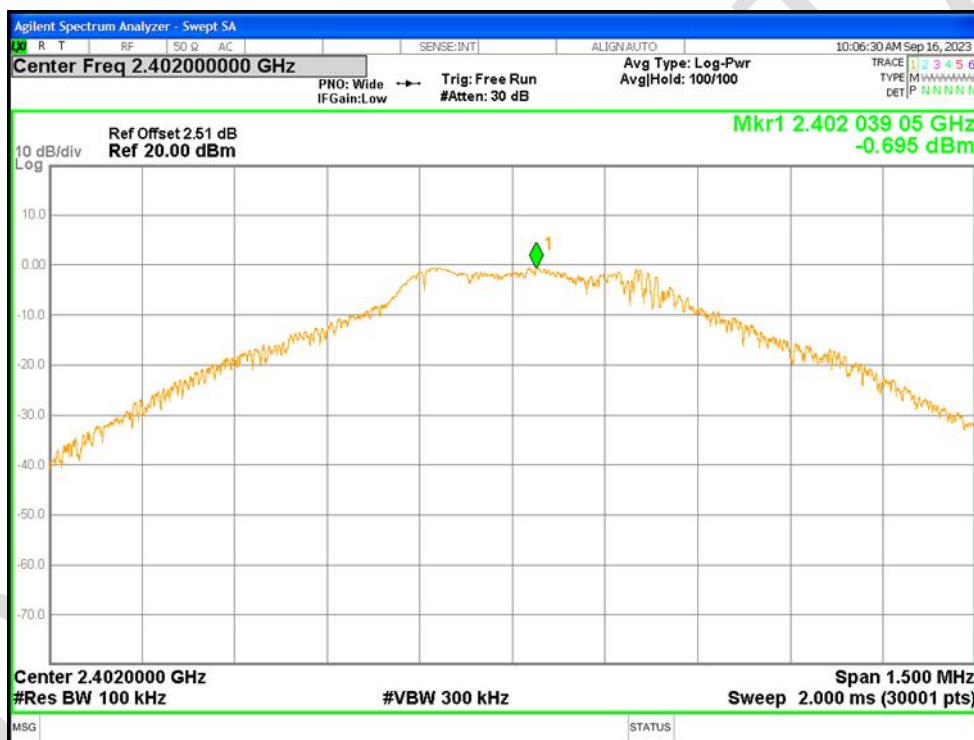
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



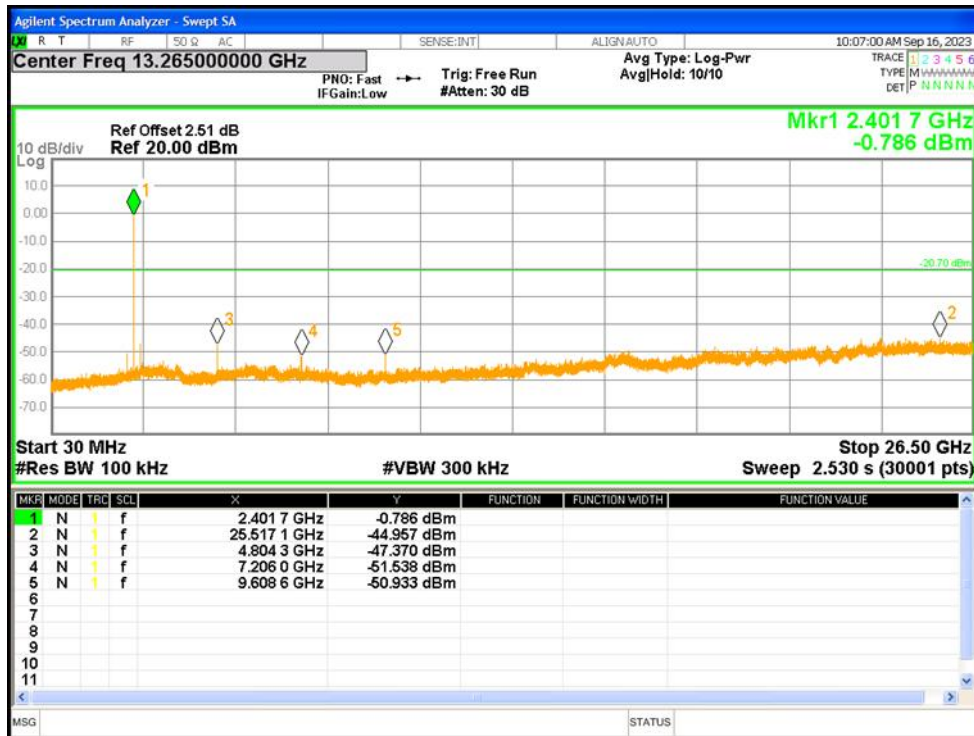
### 21.6 CONDUCTED RF SPURIOUS EMISSION

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-44.26	-20	Pass
NVNT	1-DH1	2441	Ant1	-44.47	-20	Pass
NVNT	1-DH1	2480	Ant1	-43.66	-20	Pass
NVNT	2-DH1	2402	Ant1	-44.89	-20	Pass
NVNT	2-DH1	2441	Ant1	-44.21	-20	Pass
NVNT	2-DH1	2480	Ant1	-44.73	-20	Pass

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



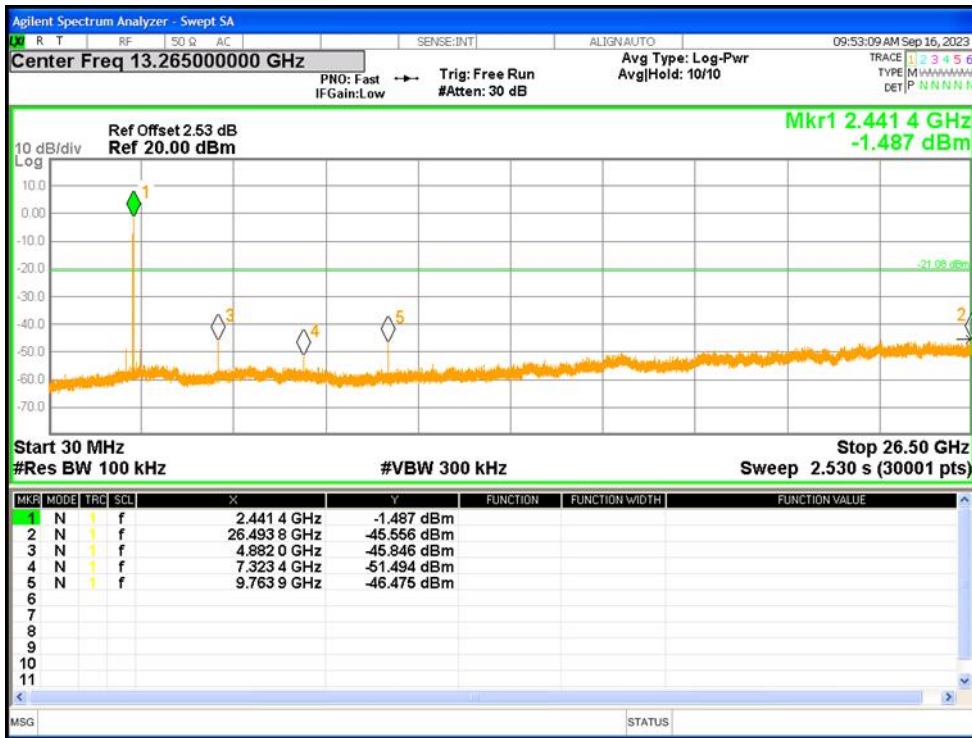
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



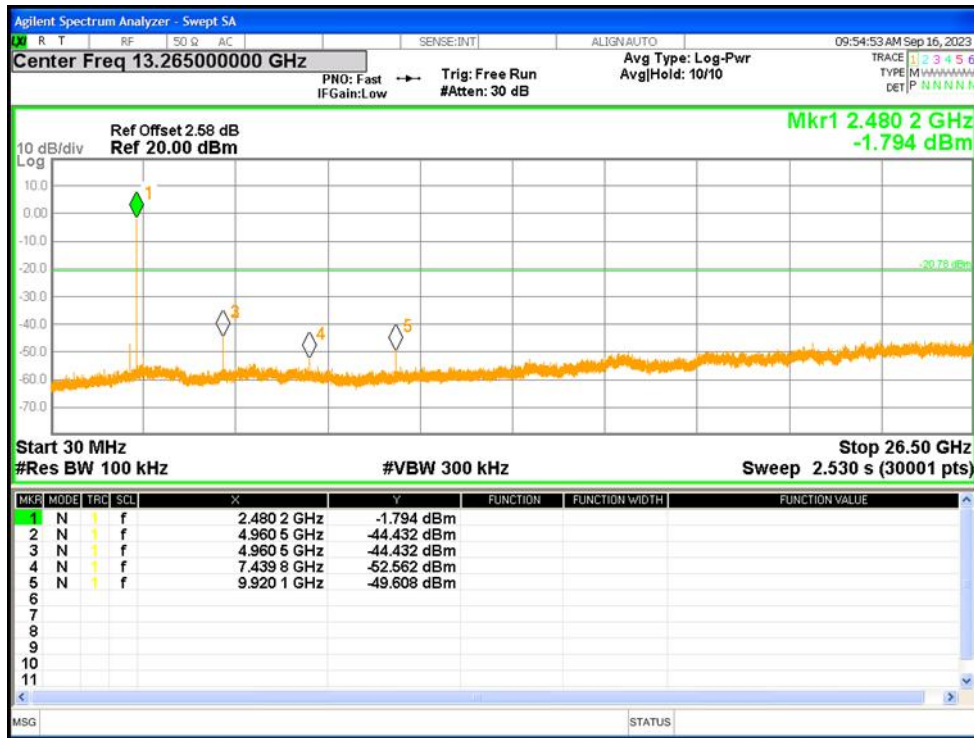
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

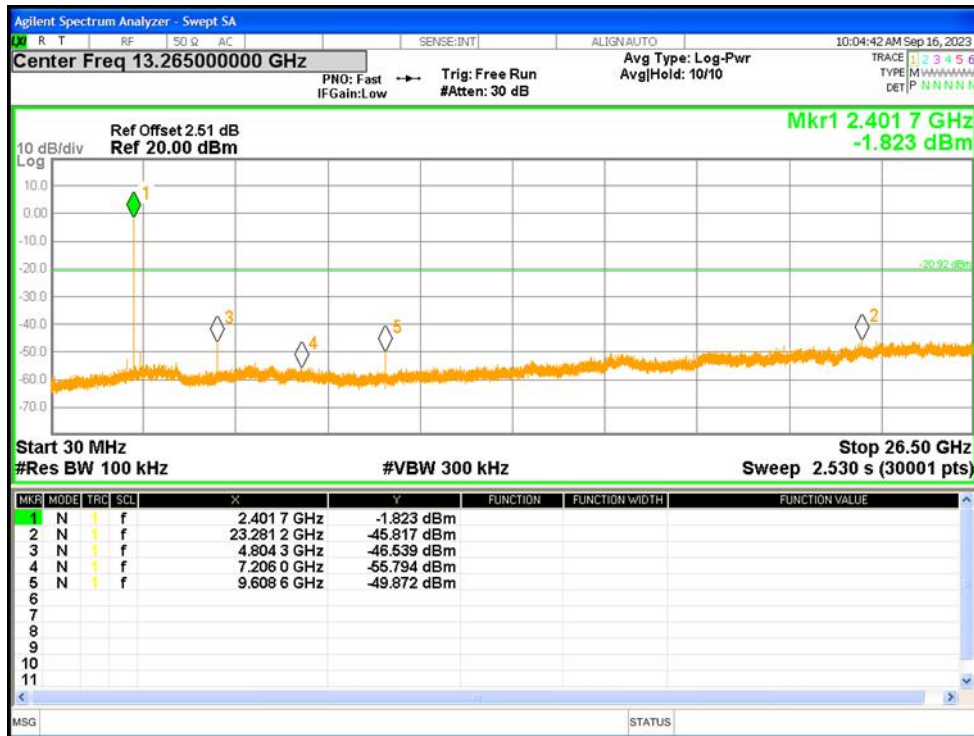


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref

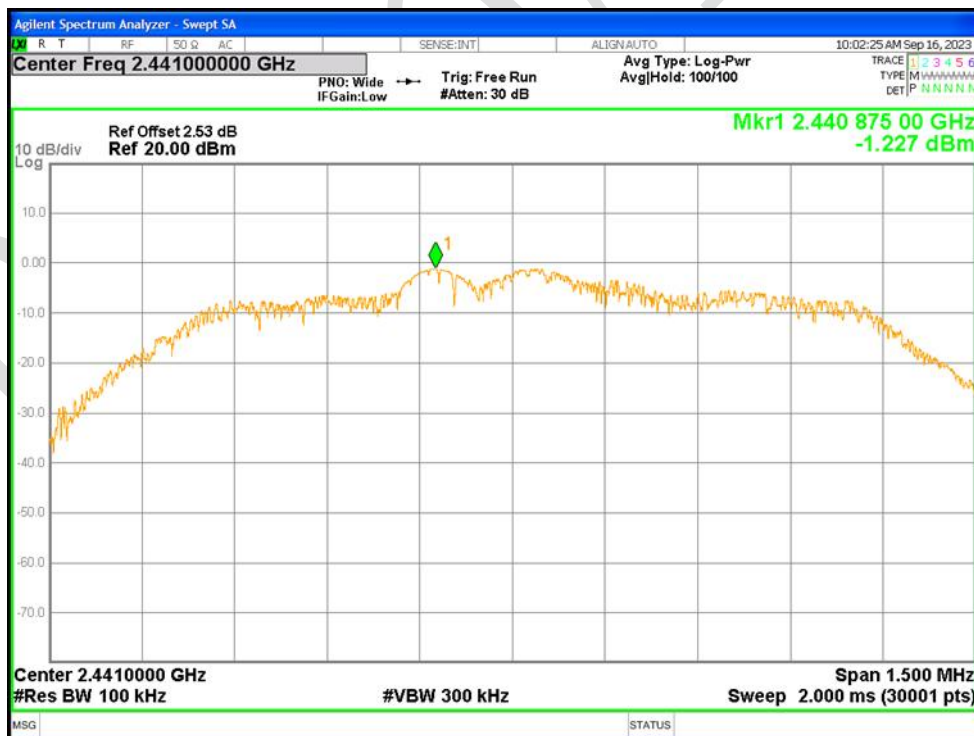




Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission

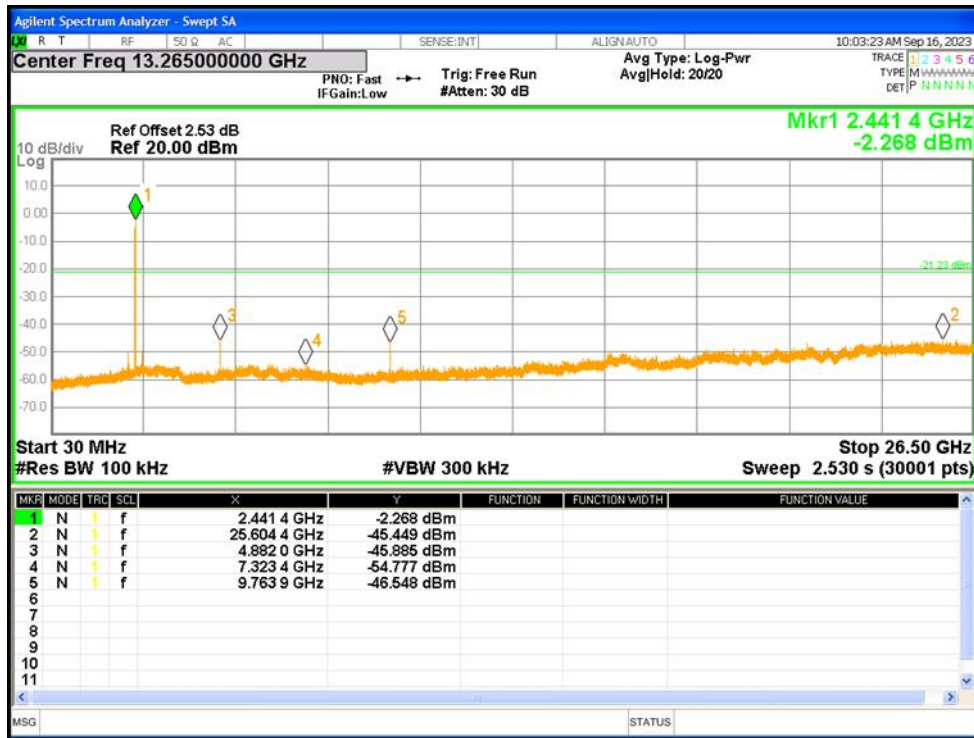


Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref





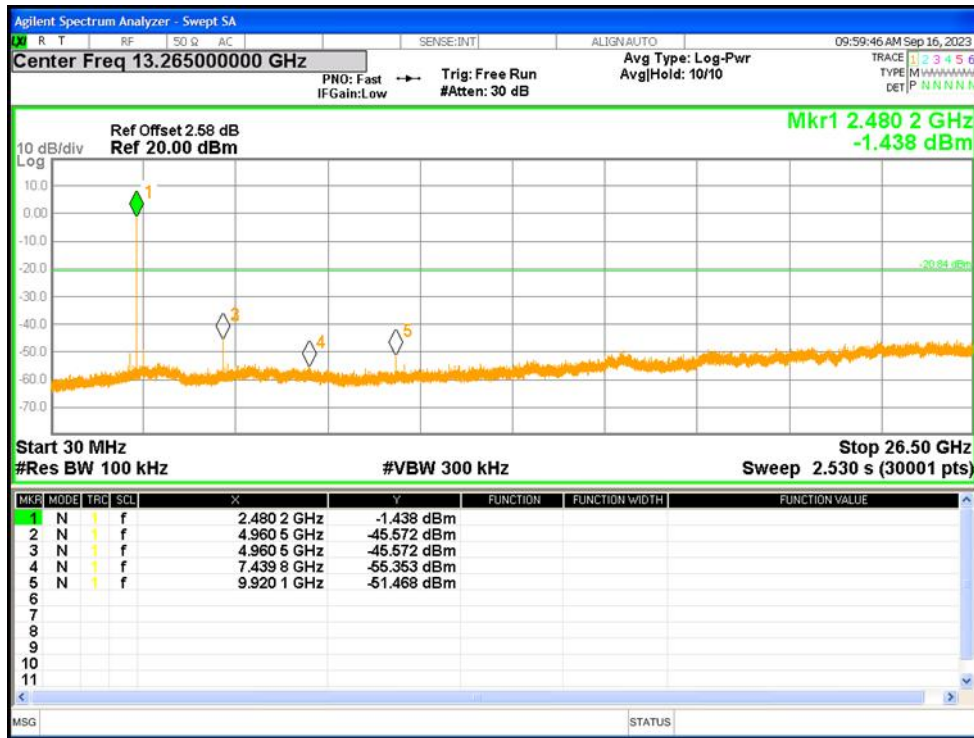
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



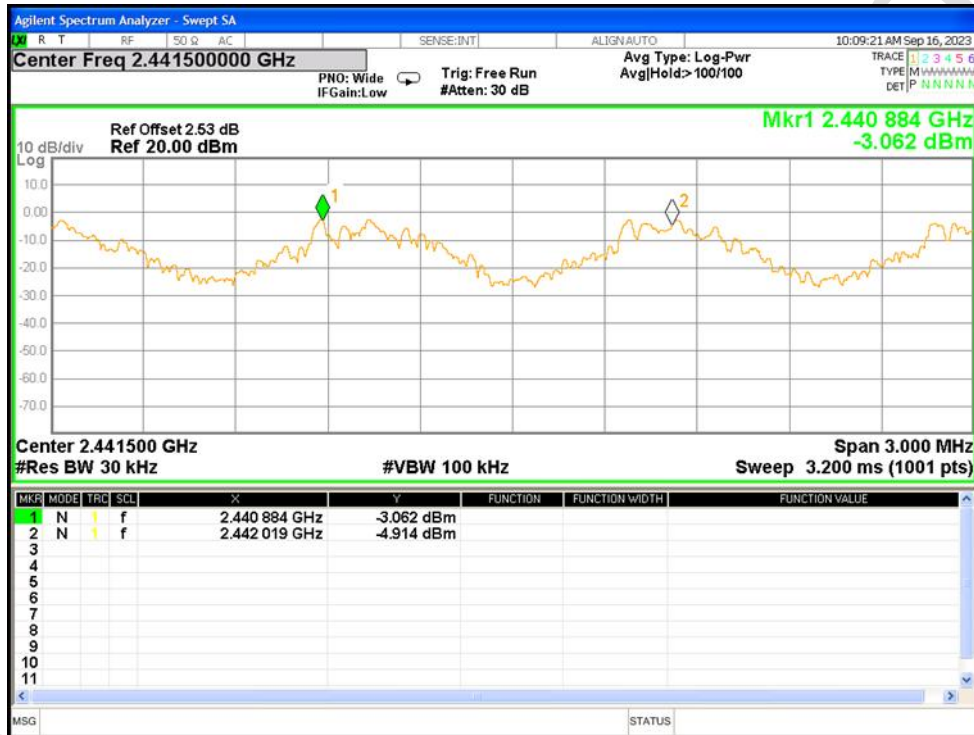
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



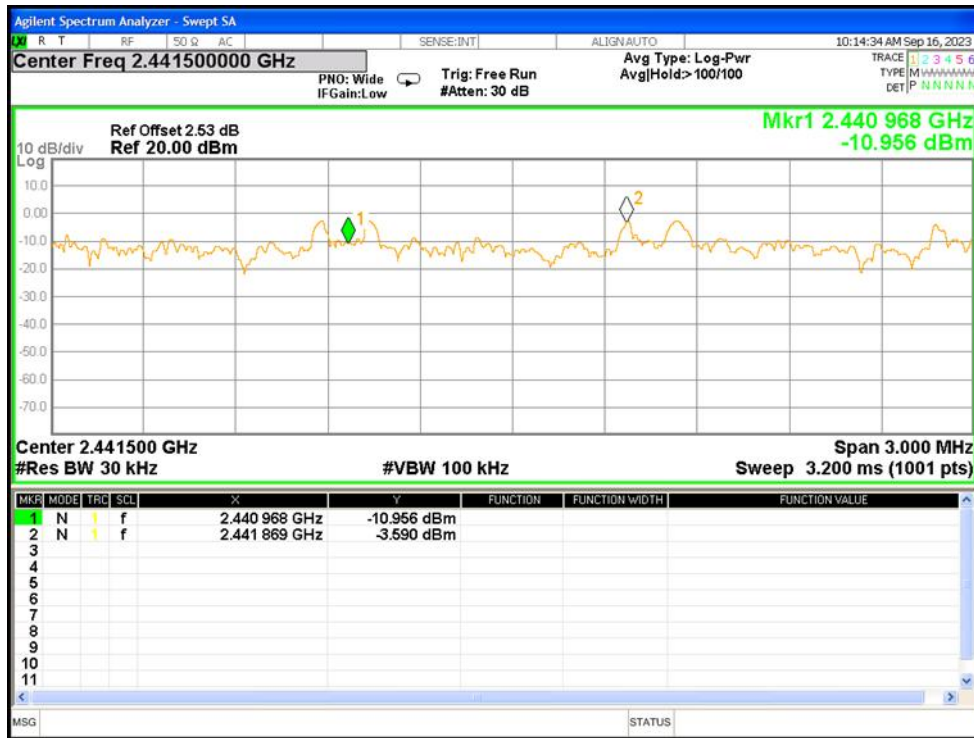
### 21.7 CARRIER FREQUENCIES SEPARATION

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.8835	2442.019	1.1355	0.866	Pass
NVNT	2-DH1	Ant1	2440.9675	2441.869	0.9015	0.829	Pass

CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



### 21.8 NUMBER OF HOPPING CHANNEL

Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



**21.9 DWELL TIME**

Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	121.028	316	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.639	265.518	162	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.886	343.434	119	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.393	124.974	318	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.644	248.244	151	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	289.2	100	31600	400	Pass

Dwell NVNT 1-DH1 2441MHz Ant1 One Burst





Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



Dwell NVNT 1-DH3 2441MHz Ant1 One Burst



Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated



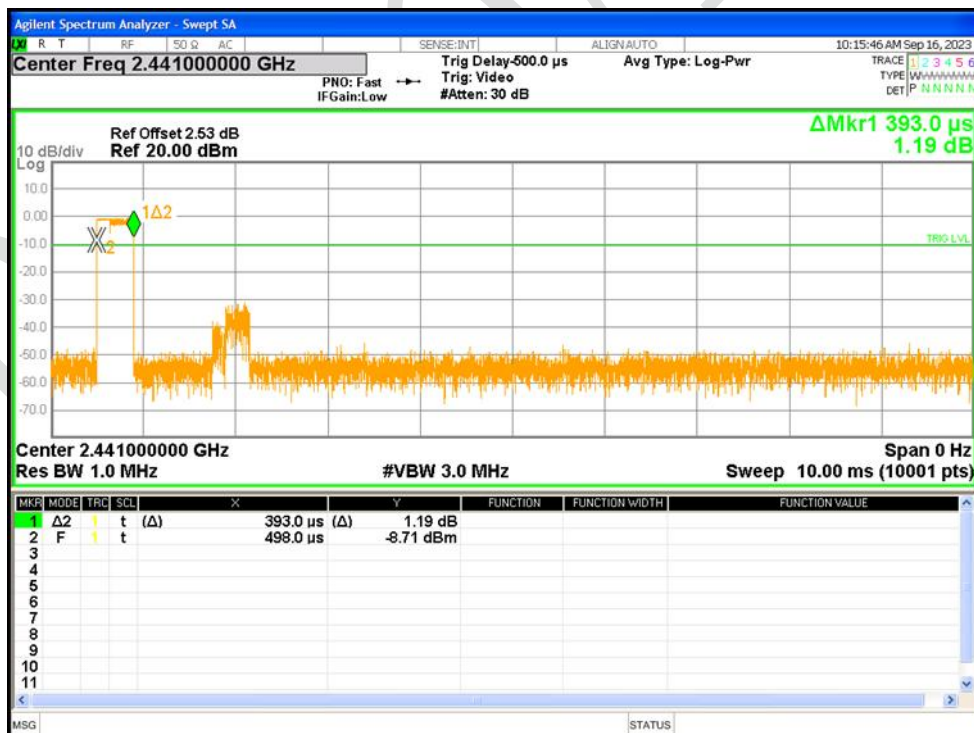
Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated



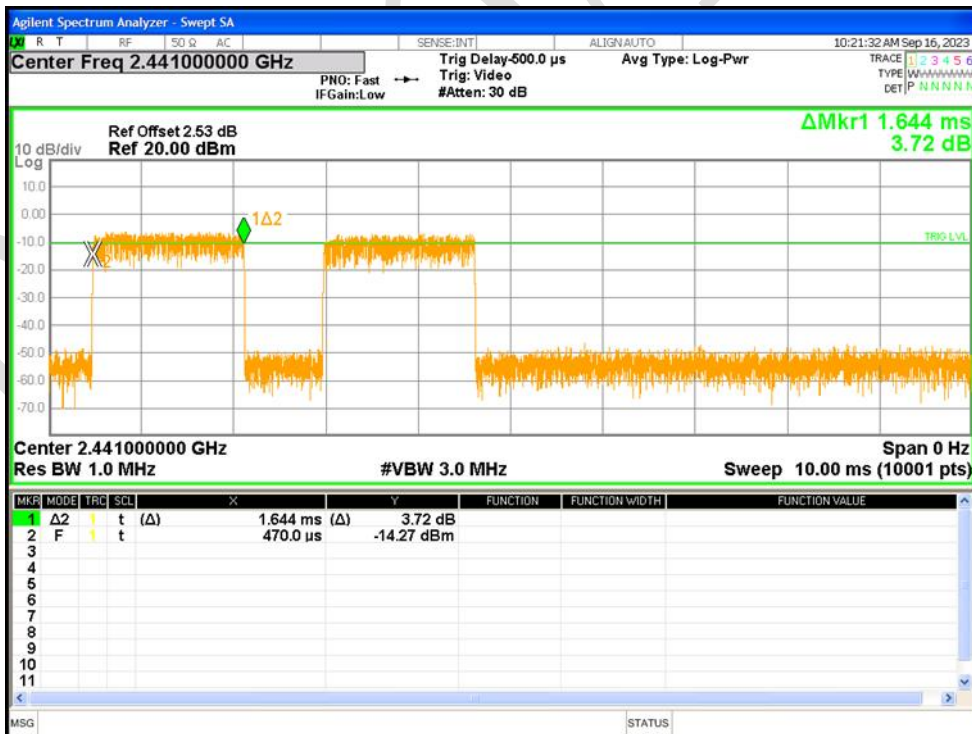
Dwell NVNT 2-DH1 2441MHz Ant1 One Burst



Dwell NVNT 2-DH1 2441MHz Ant1 Accumulated



Dwell NVNT 2-DH3 2441MHz Ant1 One Burst

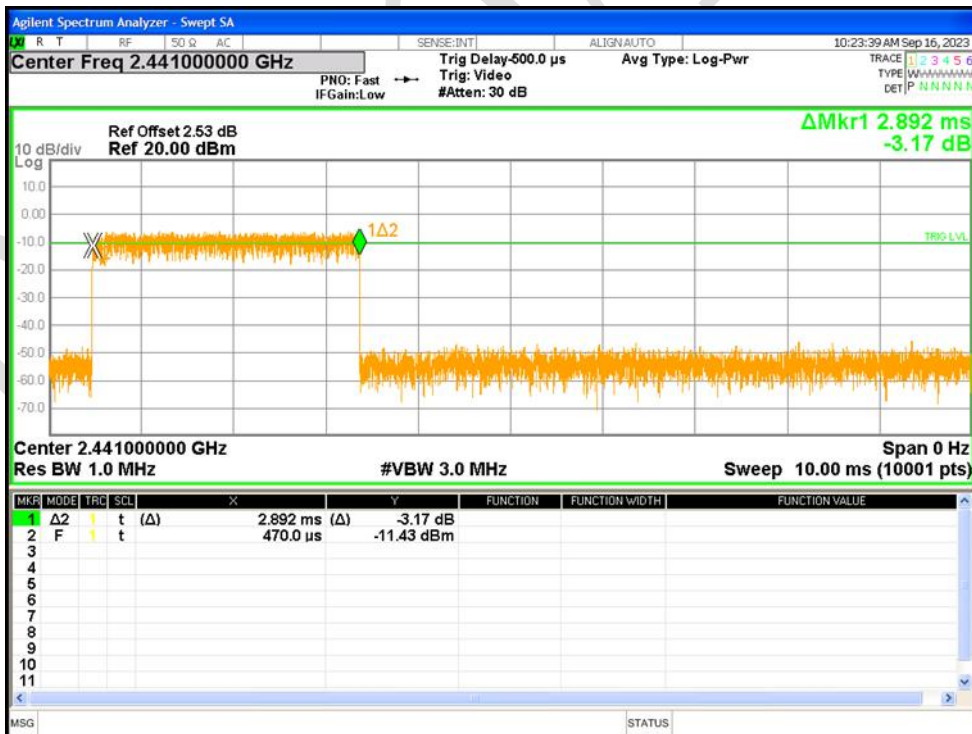




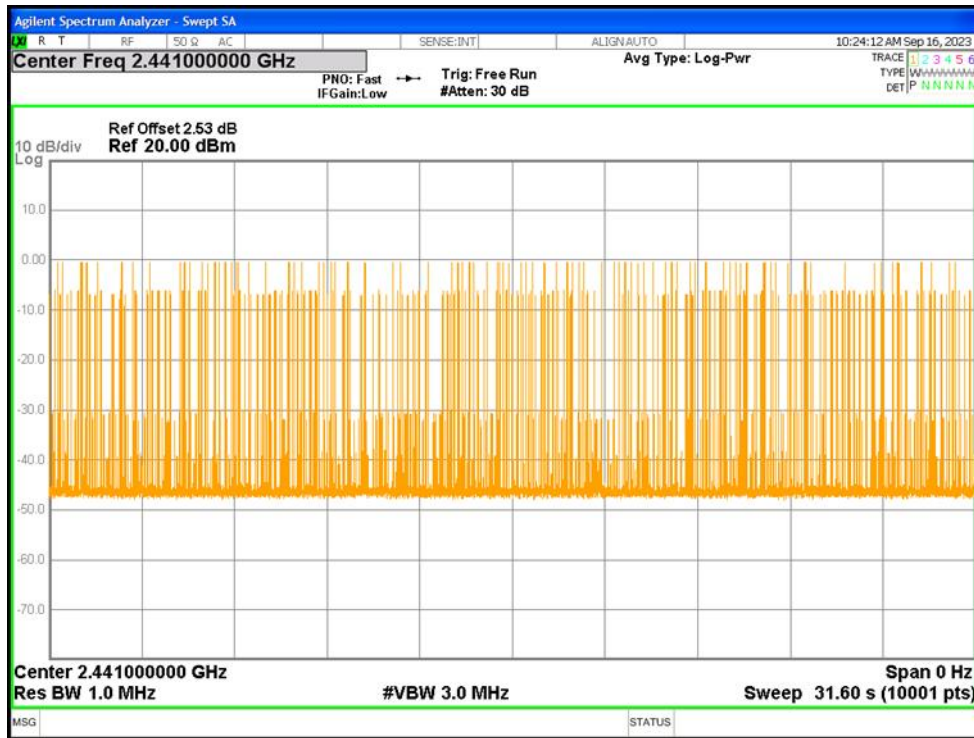
Dwell NVNT 2-DH3 2441MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2441MHz Ant1 One Burst



Dwell NVNT 2-DH5 2441MHz Ant1 Accumulated



## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

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





### Radiated Spurious Emissions



**APPENDIX B: PHOTOGRAPHS OF EUT**

Reference to the test report No. BLA-EMC-202309-A3701

**----END OF REPORT----**

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full.

BlueAsia