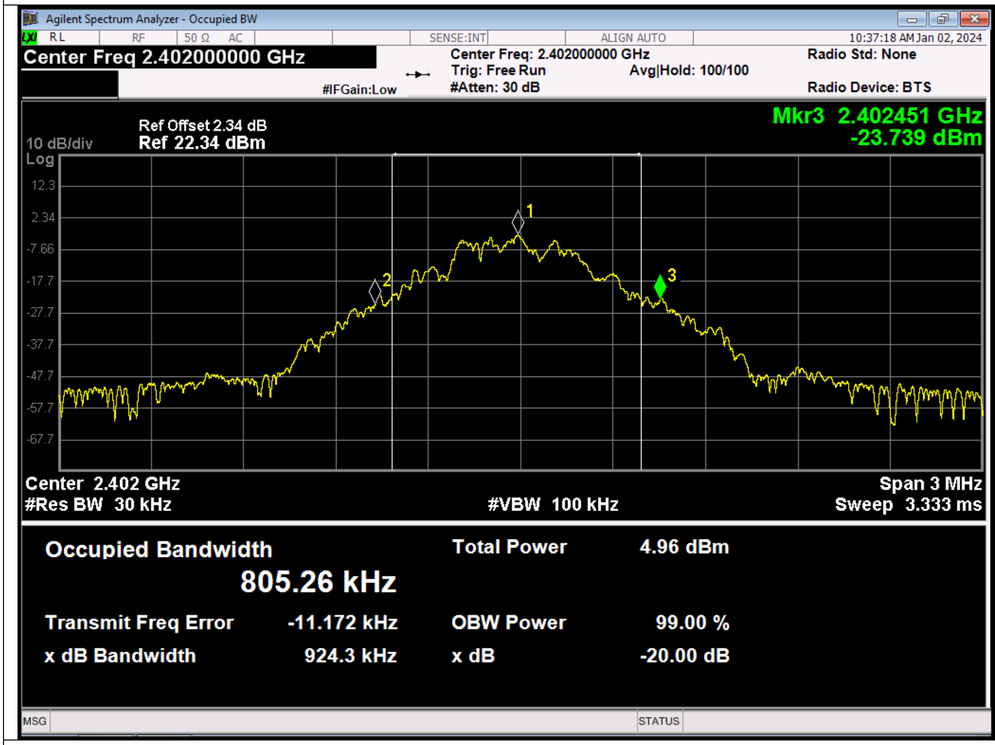
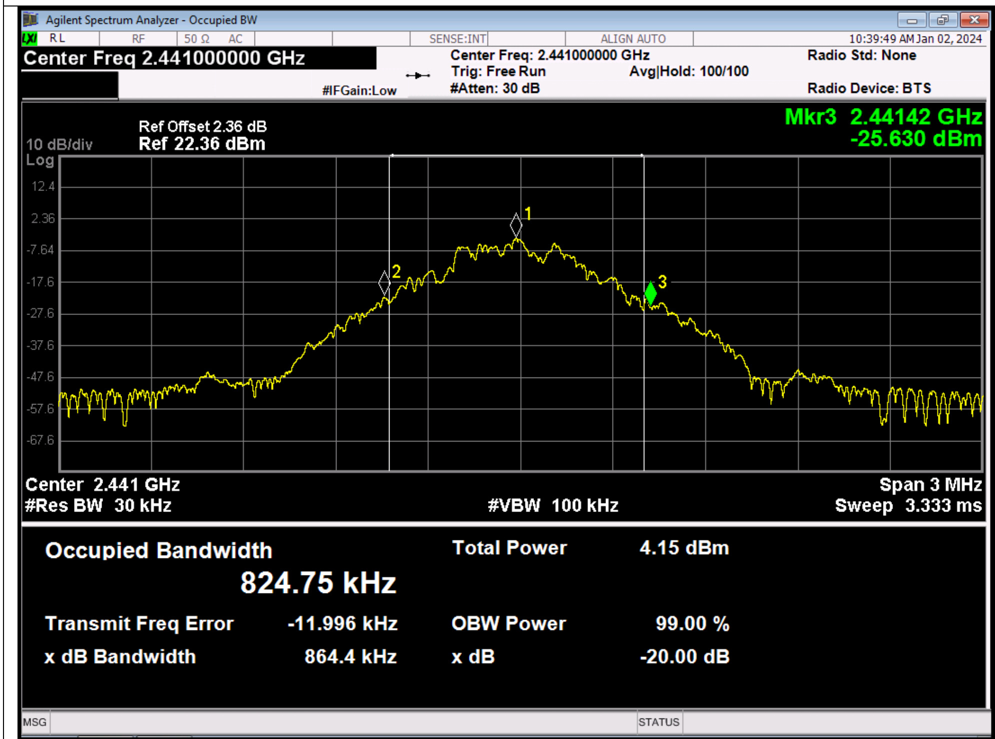
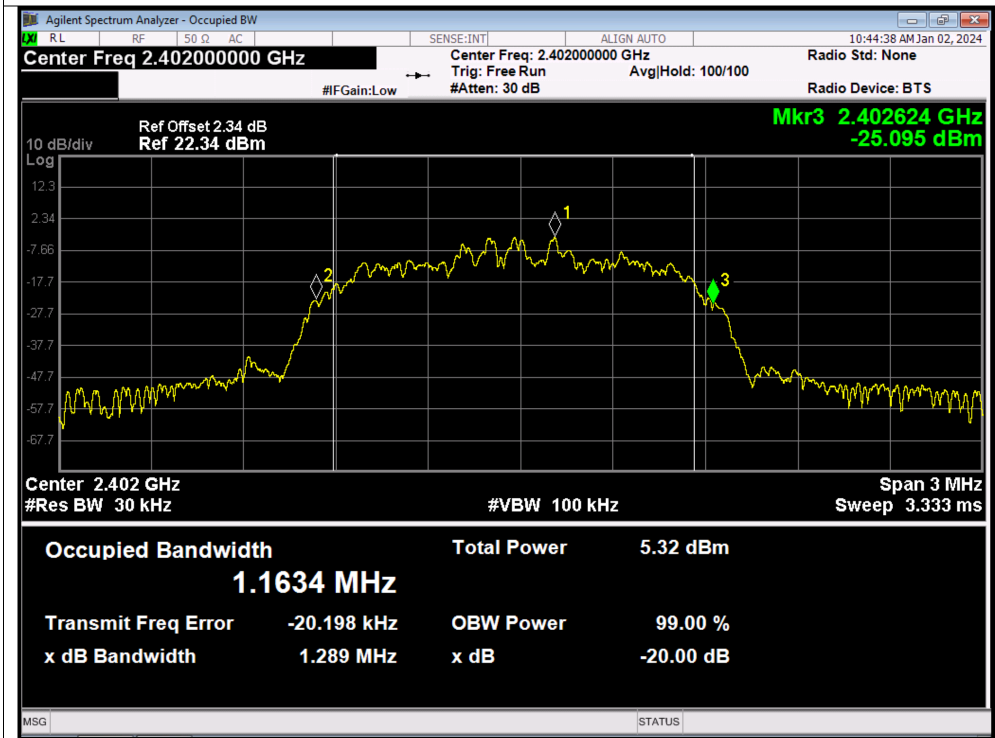
Chip BT8916A:

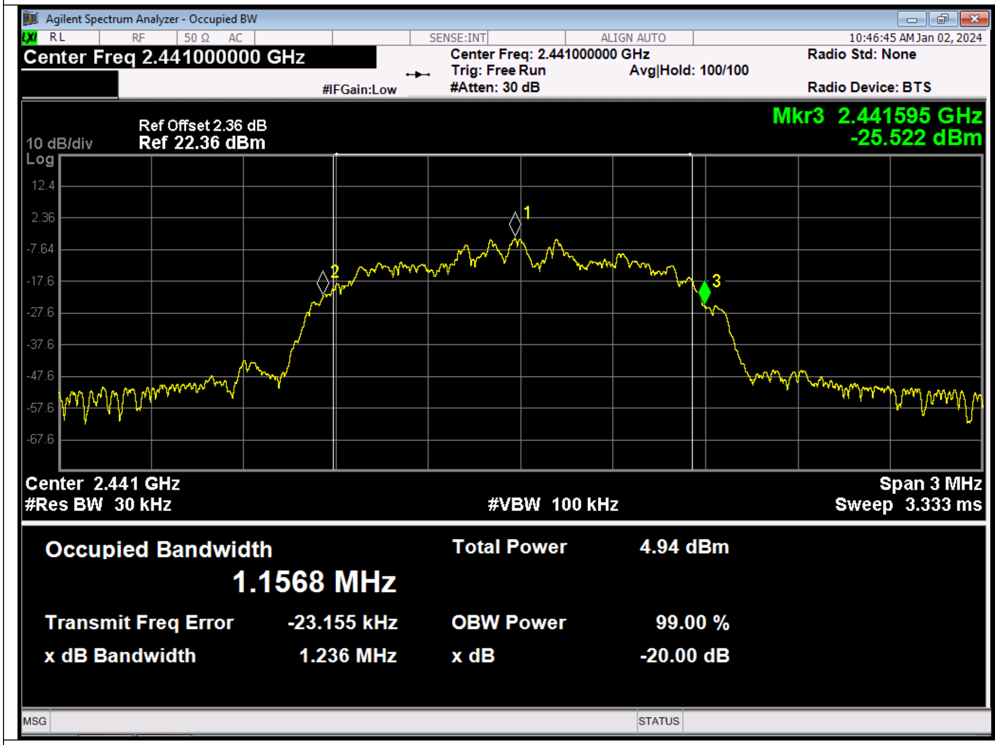
Test Graphs
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1


-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

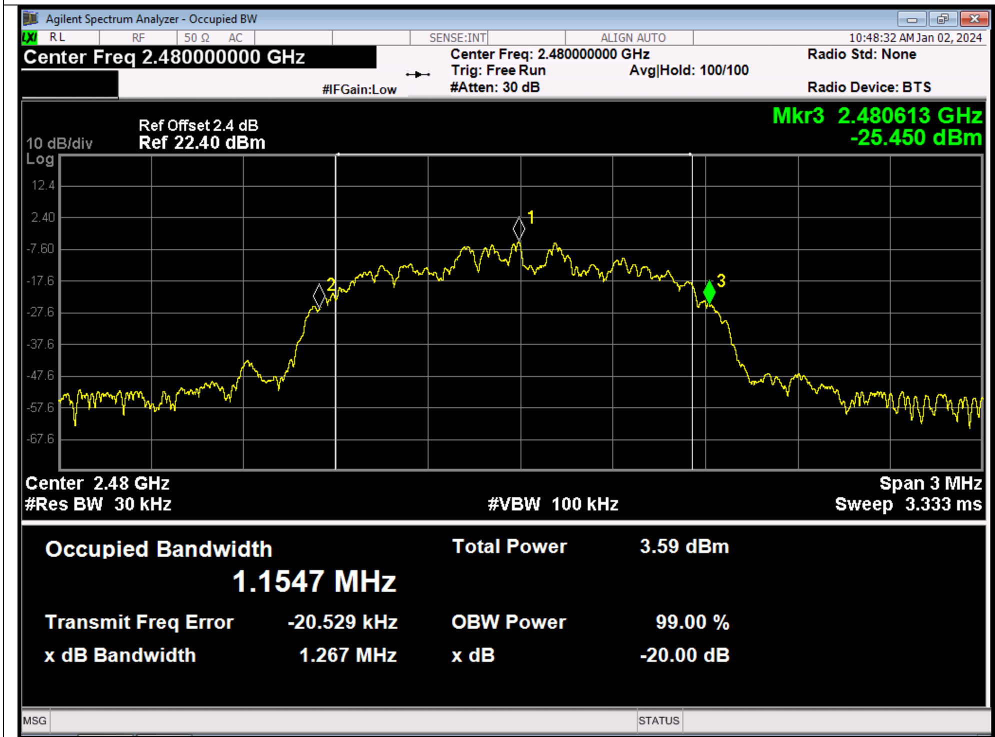
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1

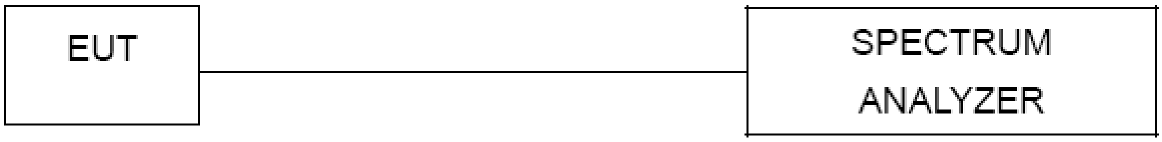


-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



11. Maximum Peak Output Power

11.1 Block Diagram Of Test Setup



11.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	**Test Item**	**Limit**	**Frequency Range (MHz)**	**Result**
15.247(b)(1)	Peak Output Power	0.125 watt or 21dBm	2400-2483.5	PASS

11.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 2MHz. VBW = 6MHz. Sweep = auto; Detector Function = Peak.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

11.4 Test Result

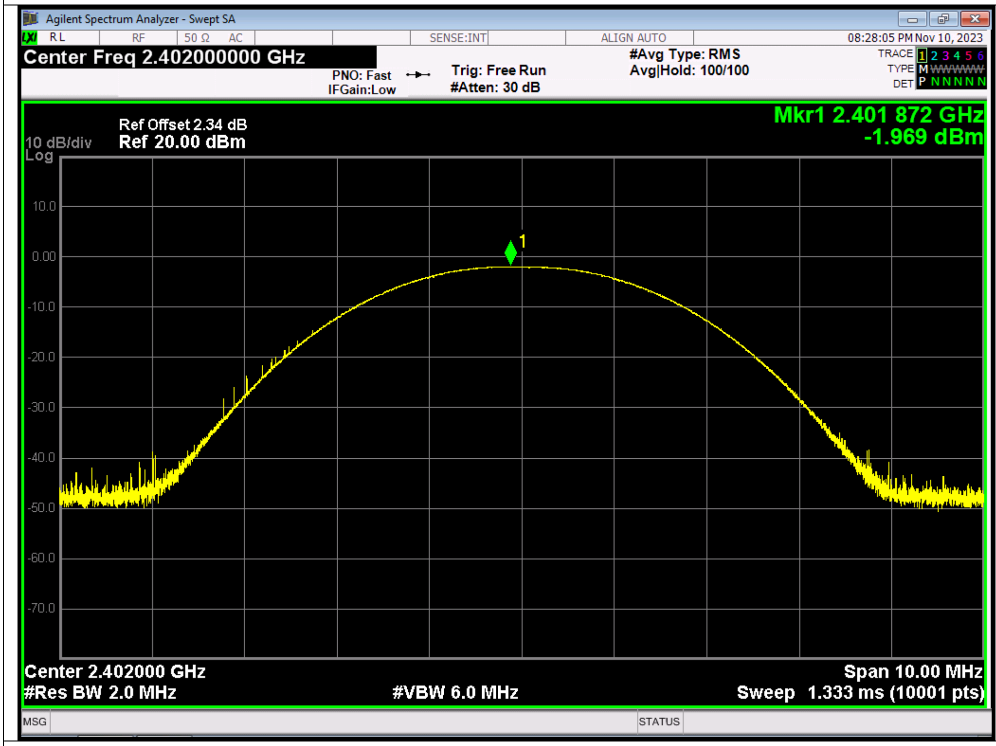
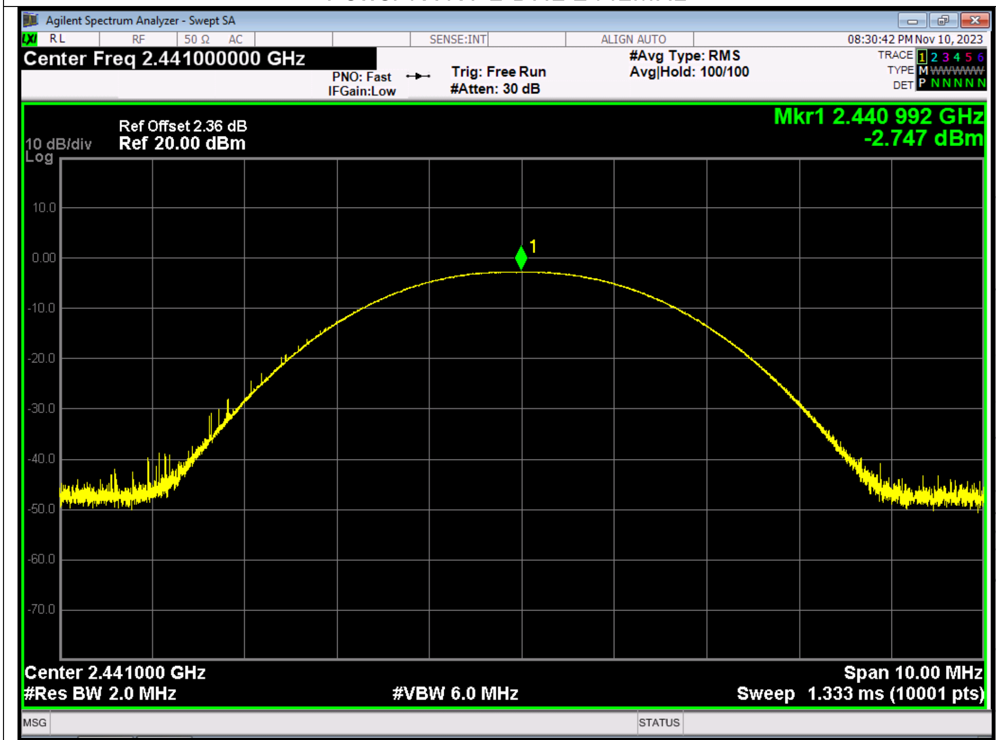
Chip AB5303B:

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	-1.97	21	Pass
NVNT	1-DH1	2441	-2.75	21	Pass
NVNT	1-DH1	2480	-4.17	21	Pass
NVNT	2-DH1	2402	0.22	21	Pass
NVNT	2-DH1	2441	-0.57	21	Pass
NVNT	2-DH1	2480	-1.98	21	Pass
NVNT	3-DH1	2402	0.86	21	Pass
NVNT	3-DH1	2441	-0.05	21	Pass
NVNT	3-DH1	2480	-1.42	21	Pass

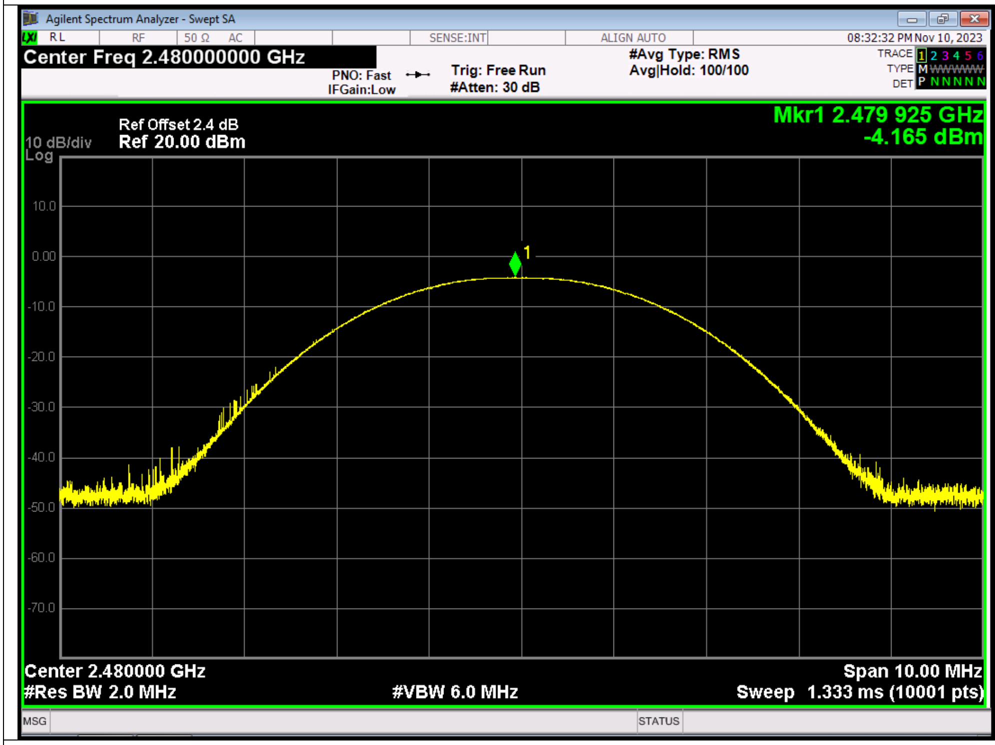
Chip BT8916A:

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	-1.39	21	Pass
NVNT	1-DH1	2441	-2.02	21	Pass
NVNT	1-DH1	2480	-3.4	21	Pass
NVNT	2-DH1	2402	0.69	21	Pass
NVNT	2-DH1	2441	0.08	21	Pass
NVNT	2-DH1	2480	-1.21	21	Pass

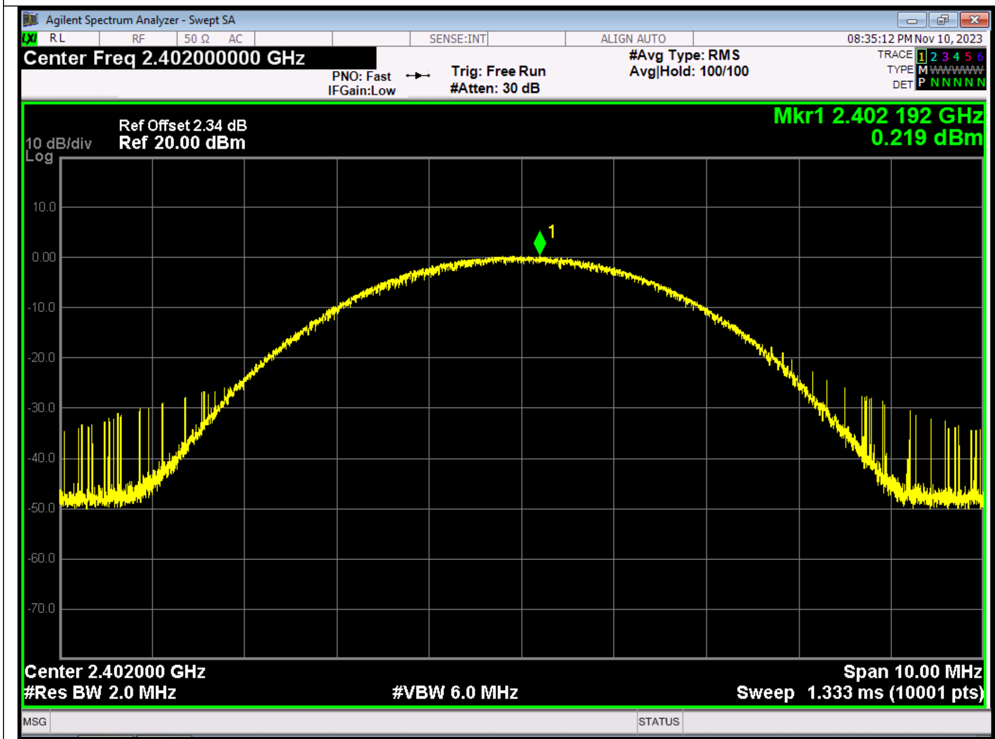
Chip AB5303B:

Test Graphs
Power NVNT 1-DH1 2402MHz

Power NVNT 1-DH1 2441MHz


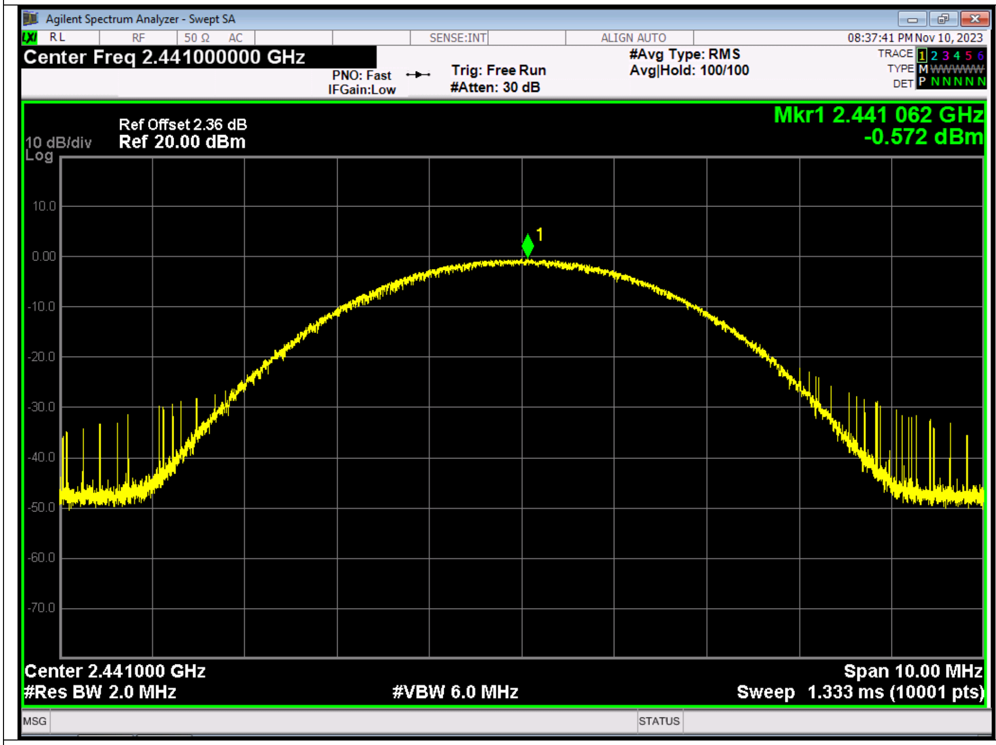
Power NVNT 1-DH1 2480MHz



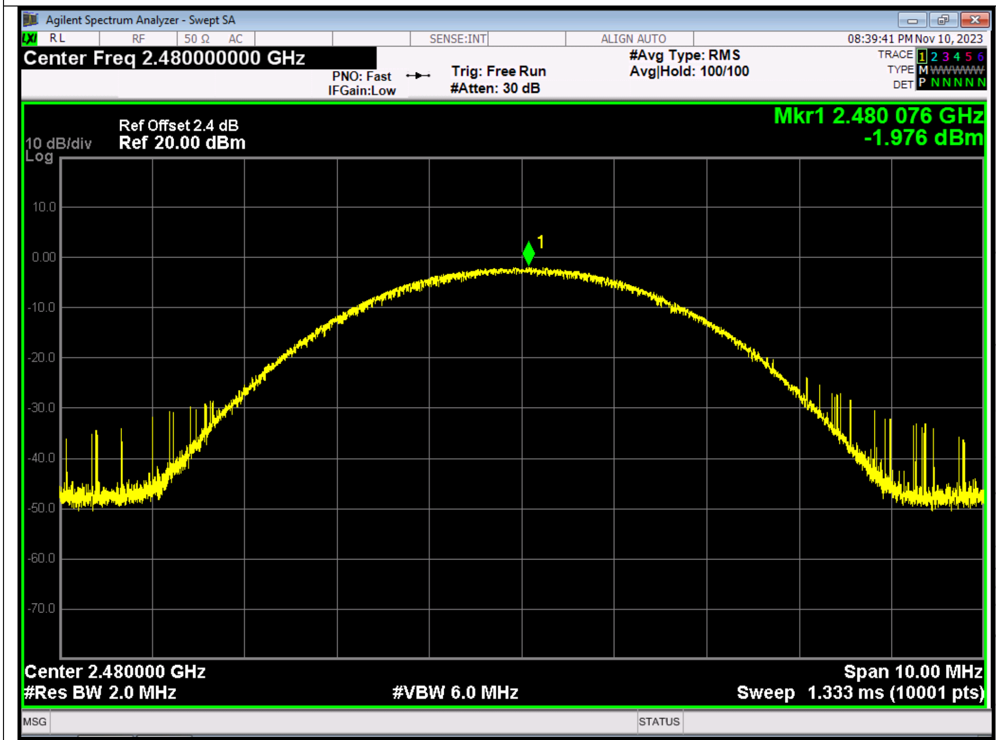
Power NVNT 2-DH1 2402MHz



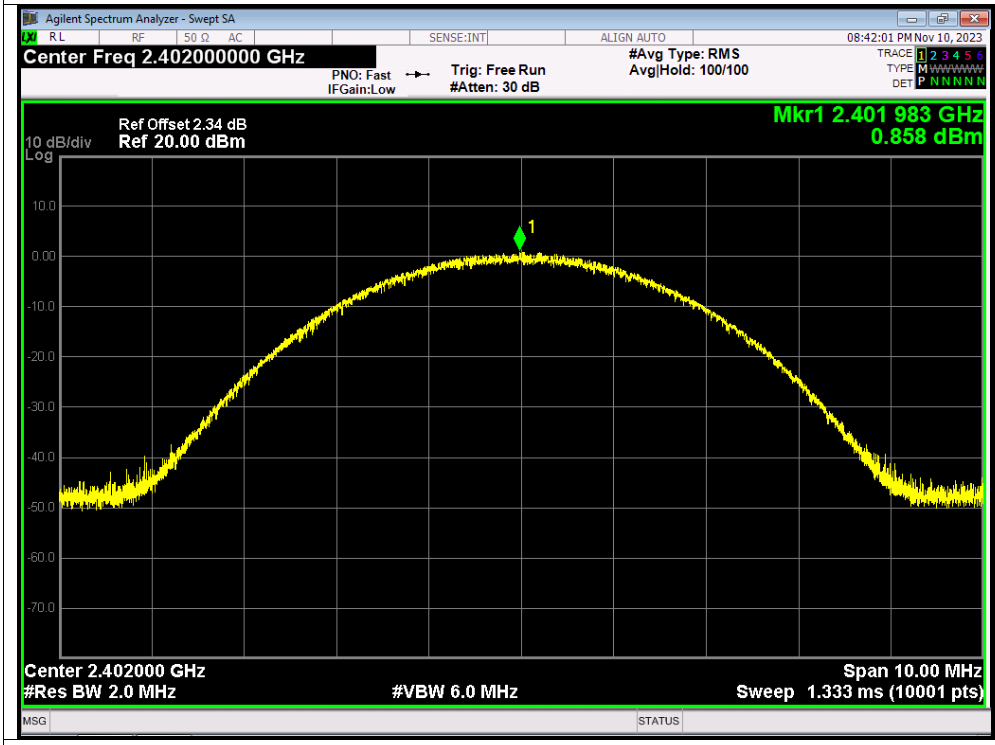
Power NVNT 2-DH1 2441MHz



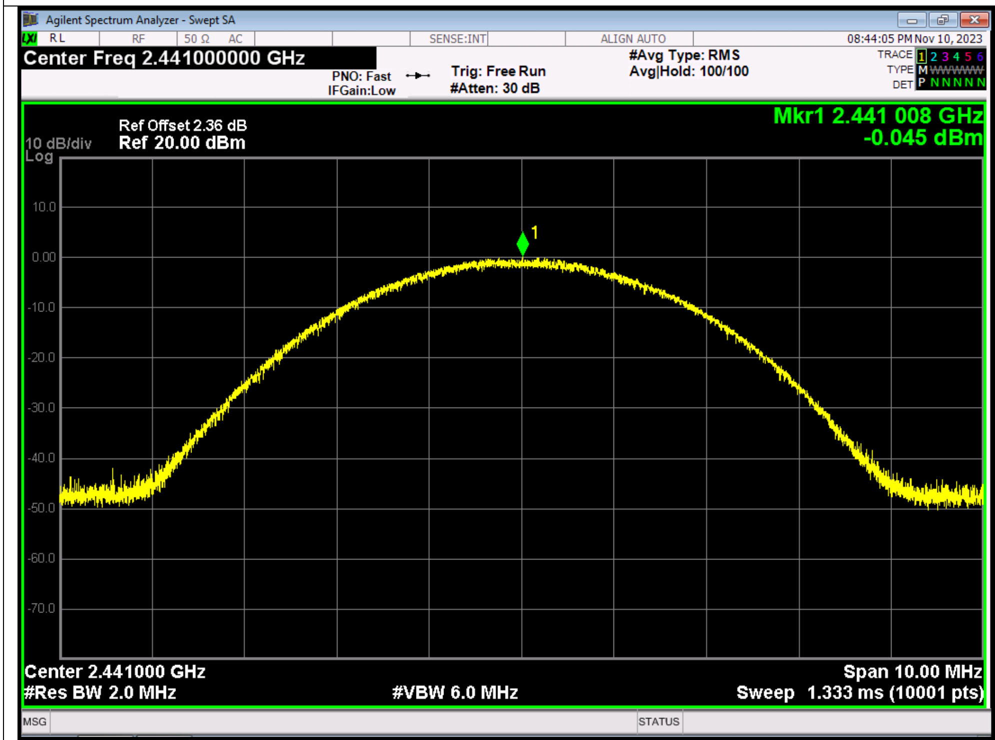
Power NVNT 2-DH1 2480MHz



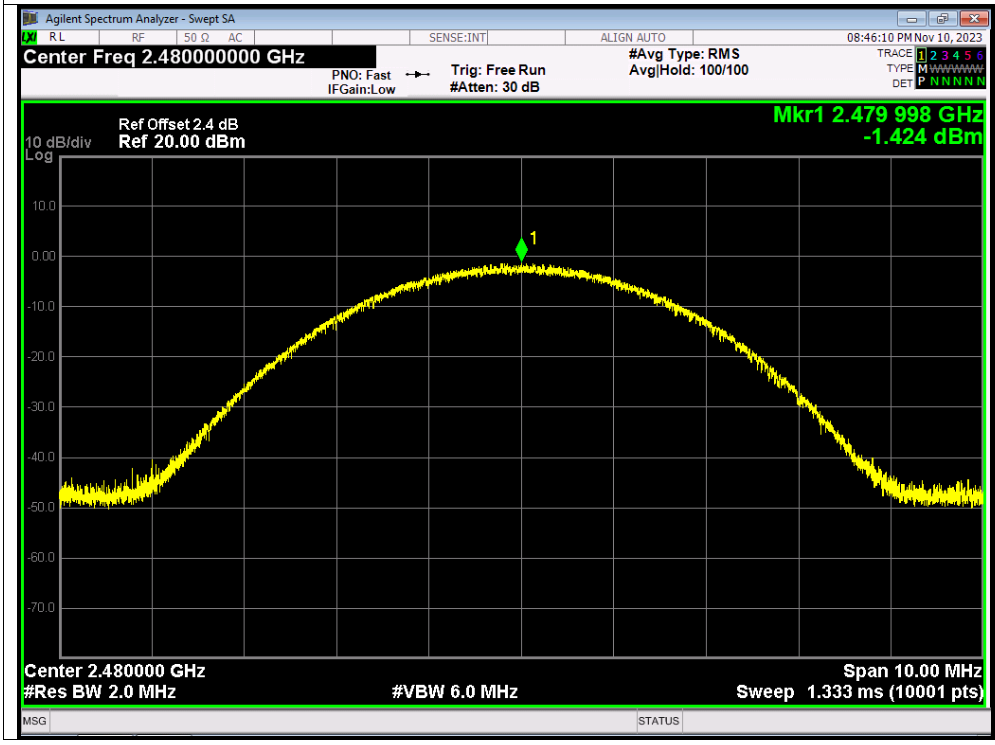
Power NVNT 3-DH1 2402MHz



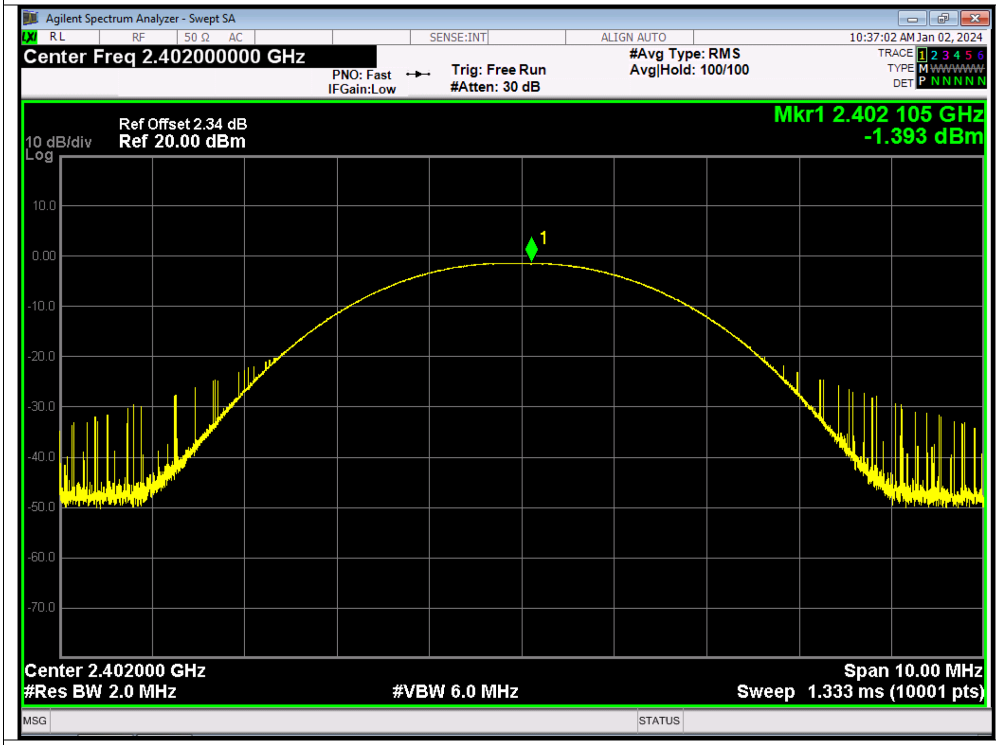
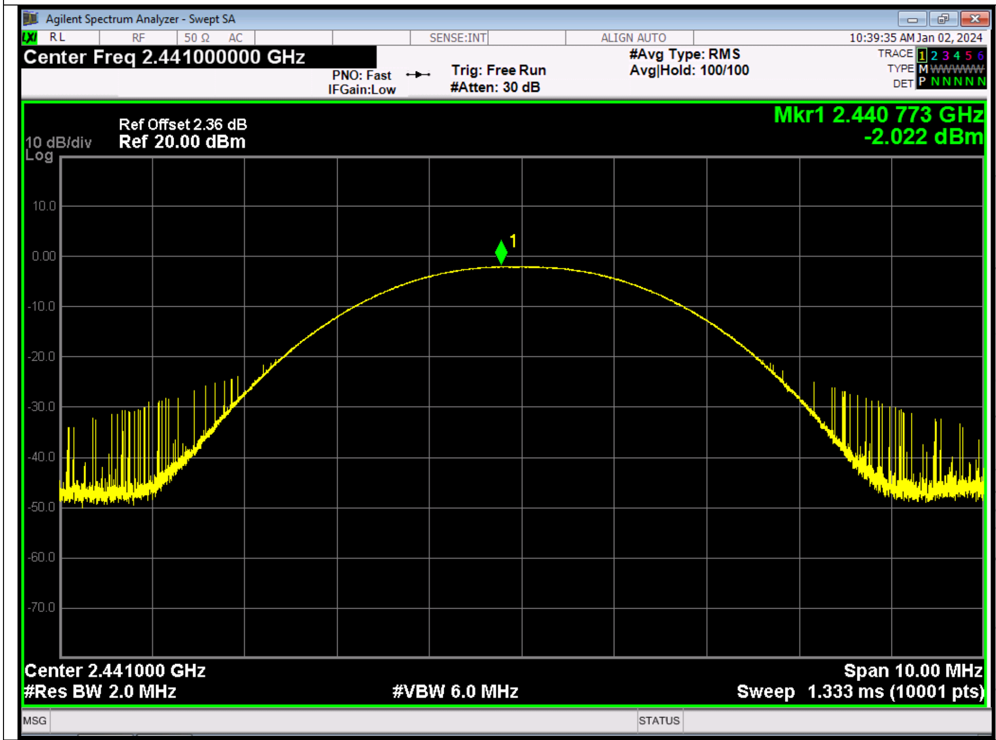
Power NVNT 3-DH1 2441MHz



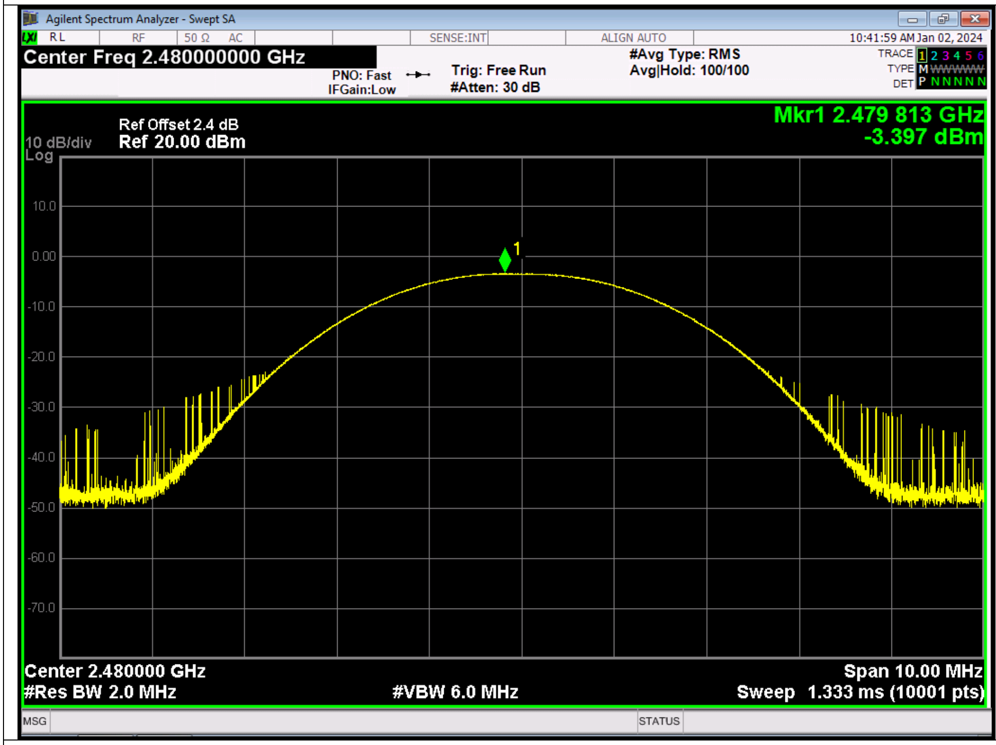
Power NVNT 3-DH1 2480MHz



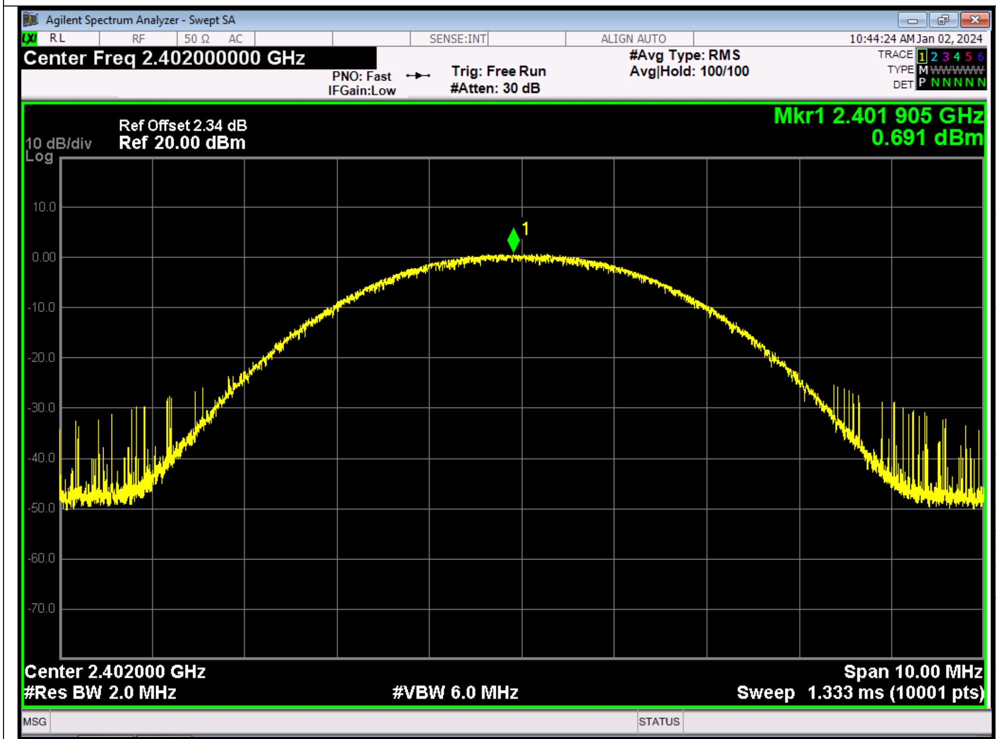
Chip BT8916A:

Test Graphs
Power NVNT 1-DH1 2402MHz Ant1

Power NVNT 1-DH1 2441MHz Ant1


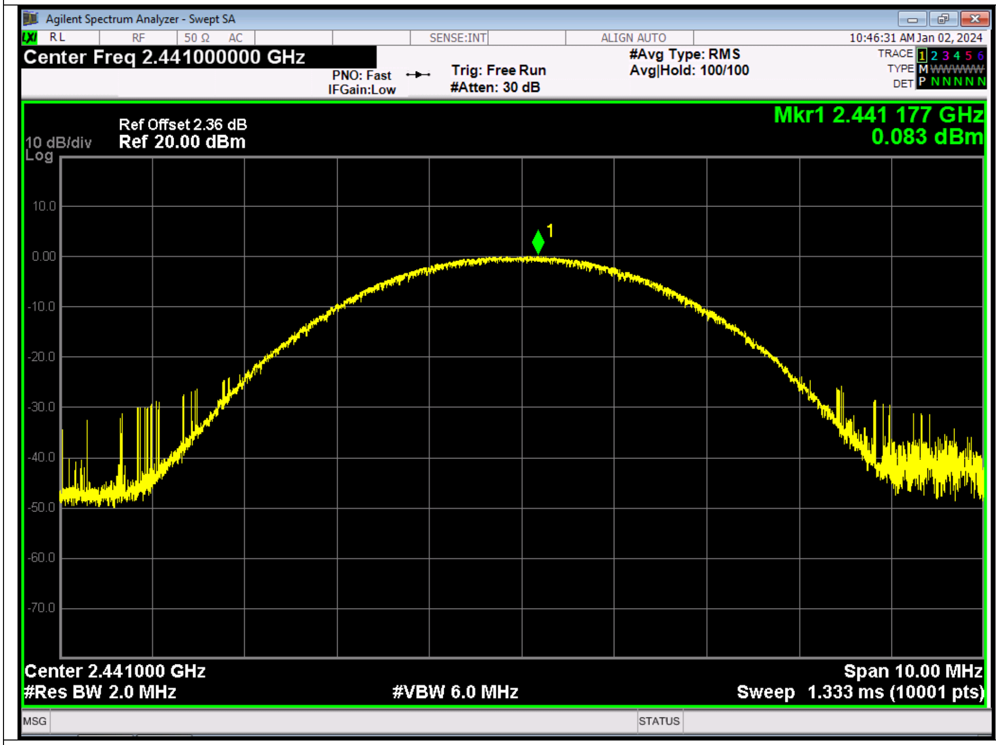
Power NVNT 1-DH1 2480MHz Ant1



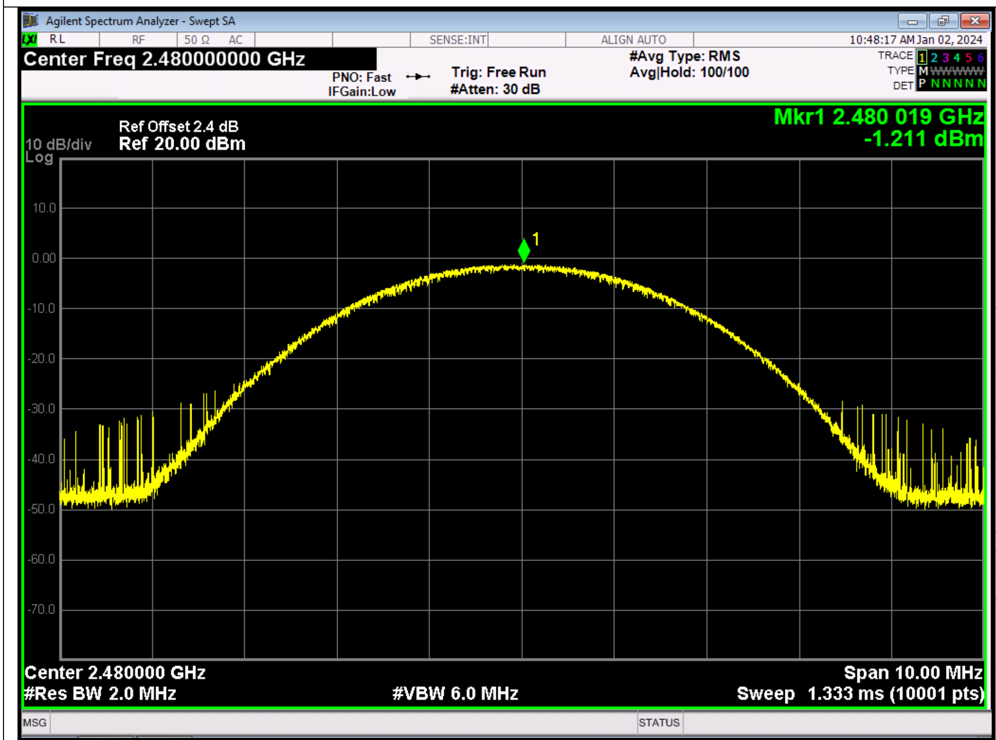
Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1

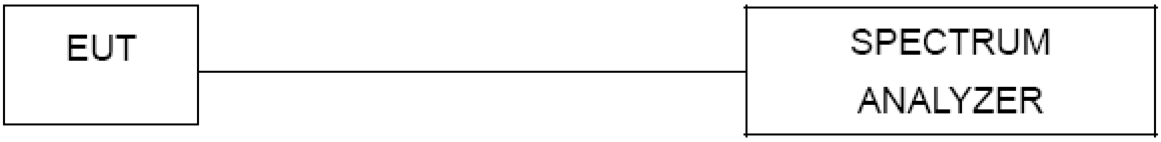


Power NVNT 2-DH1 2480MHz Ant1



12. Hopping Channel Separation

12.1 Block Diagram Of Test Setup



12.2 Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 0.125W.

12.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 30kHz. VBW = 100kHz , Span = 2.0MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

12.4 Test Result

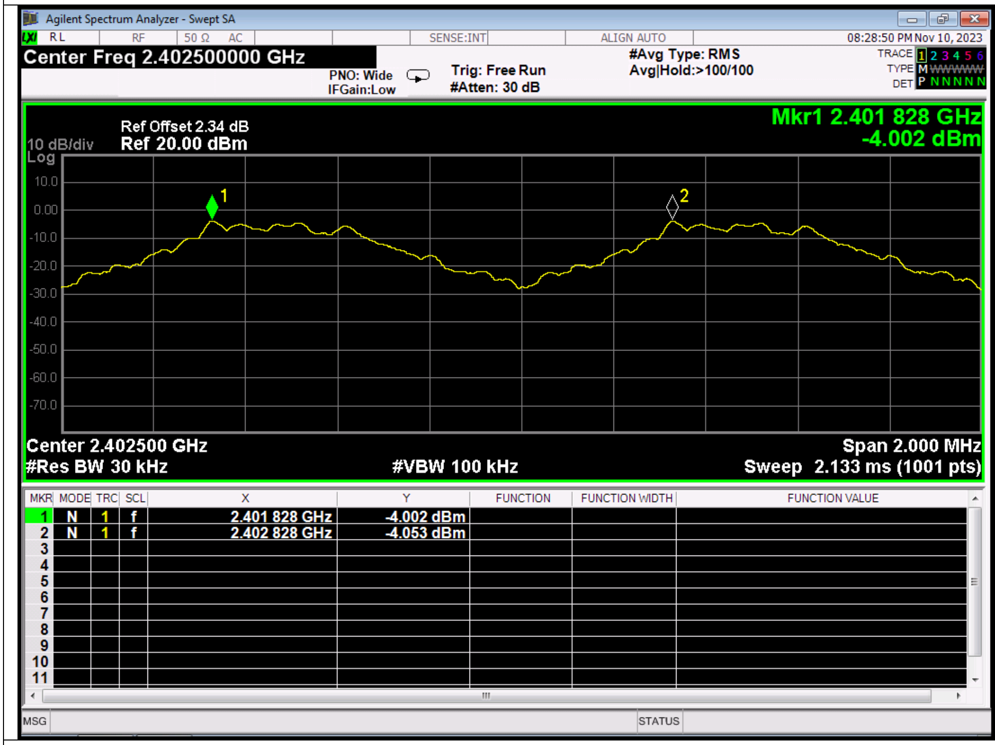
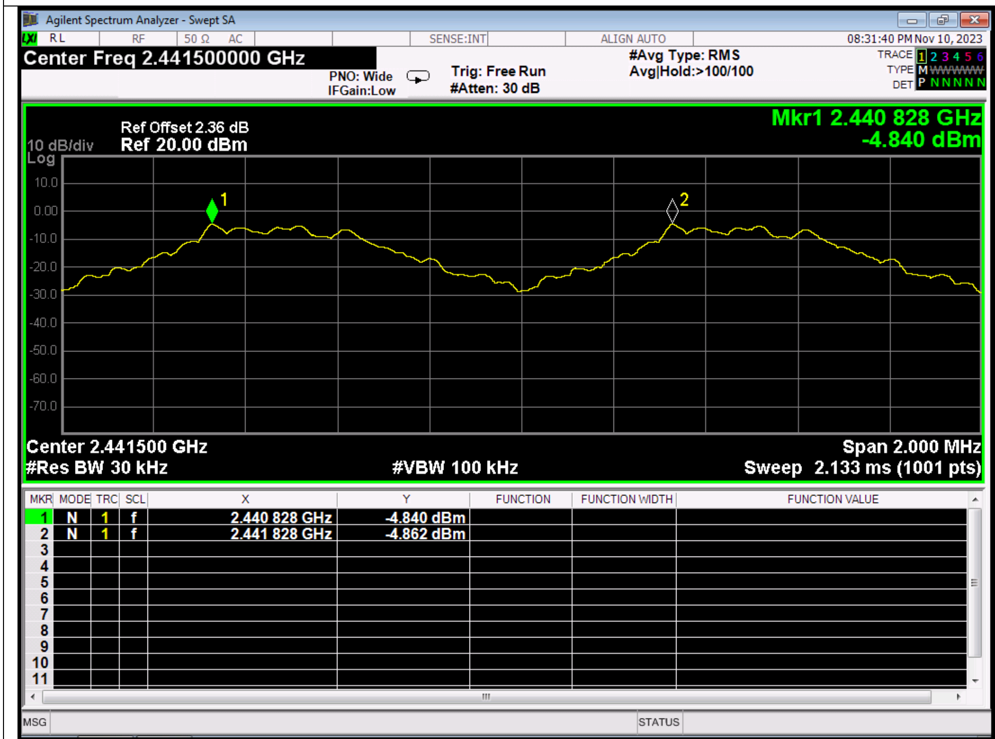
Chip AB5303B:

Modulation	Test Channel	Separation (MHz)	Limit(MHz)	Result
GFSK	Low	1.000	0.568	PASS
GFSK	Middle	1.000	0.587	PASS
GFSK	High	0.998	0.592	PASS
π/4 DQPSK	Low	1.000	0.841	PASS
π/4 DQPSK	Middle	1.000	0.835	PASS
π/4 DQPSK	High	1.002	0.851	PASS
8DPSK	Low	0.998	0.834	PASS
8DPSK	Middle	1.000	0.835	PASS
8DPSK	High	1.000	0.825	PASS

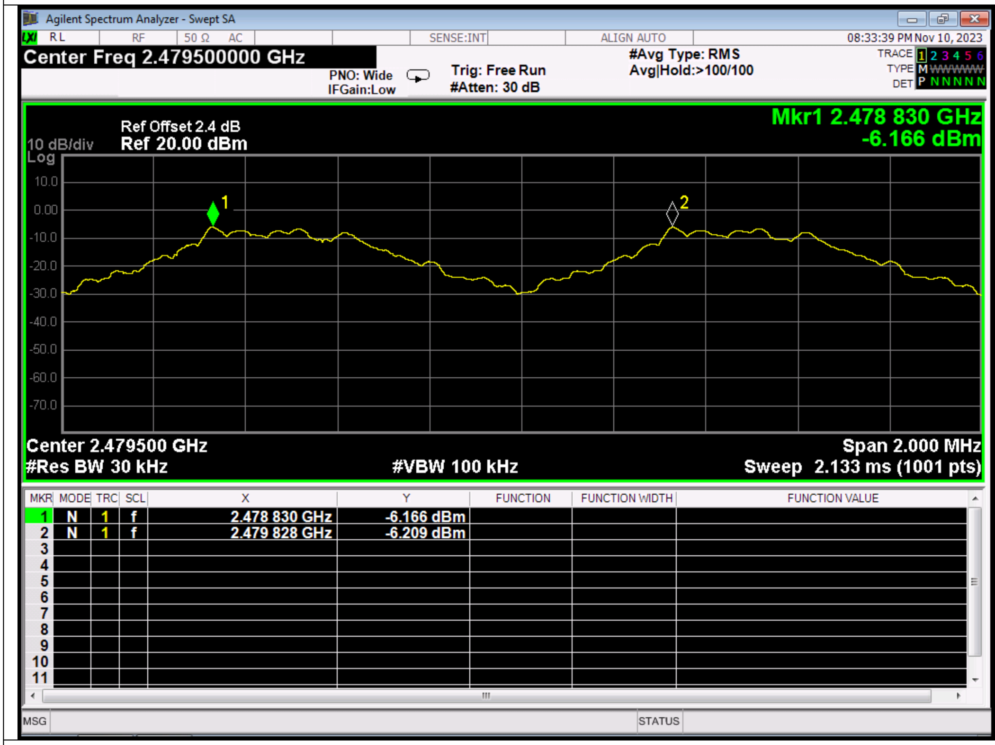
Chip BT8916A:

Modulation	Test Channel	Separation (MHz)	Limit(MHz)	Result
GFSK	Low	1.000	0.616	PASS
GFSK	Middle	1.000	0.576	PASS
GFSK	High	1.000	0.585	PASS
π/4 DQPSK	Low	1.004	0.859	PASS
π/4 DQPSK	Middle	0.998	0.824	PASS
π/4 DQPSK	High	1.004	0.845	PASS

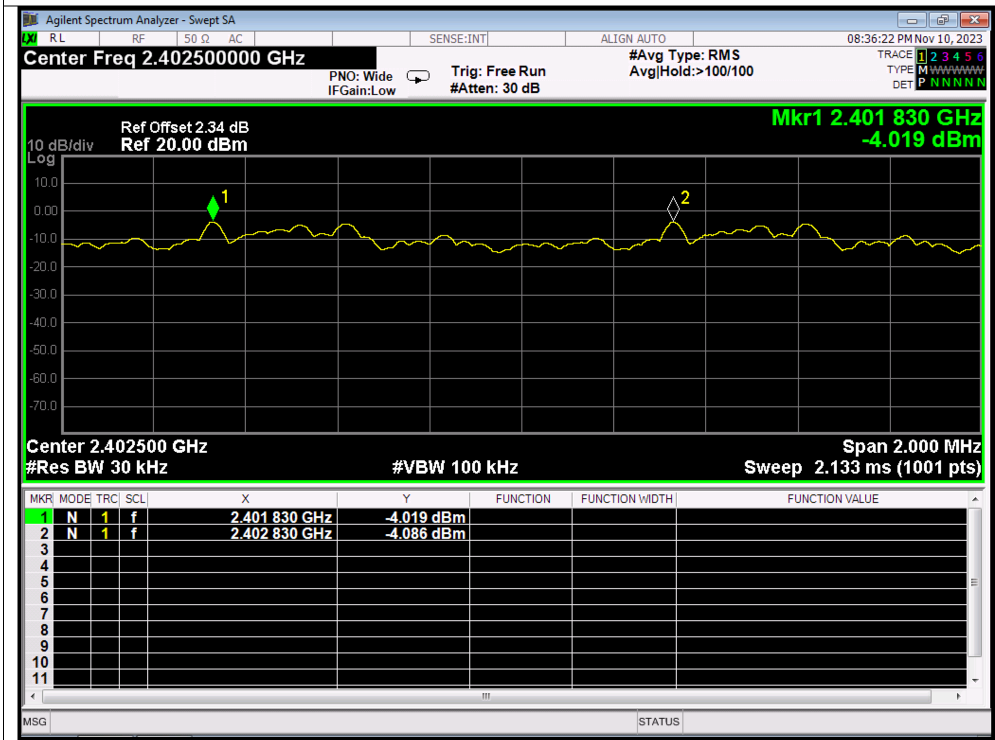
Chip AB5303B:

Test Graphs
CFS NVNT 1-DH1 2402MHz

CFS NVNT 1-DH1 2441MHz


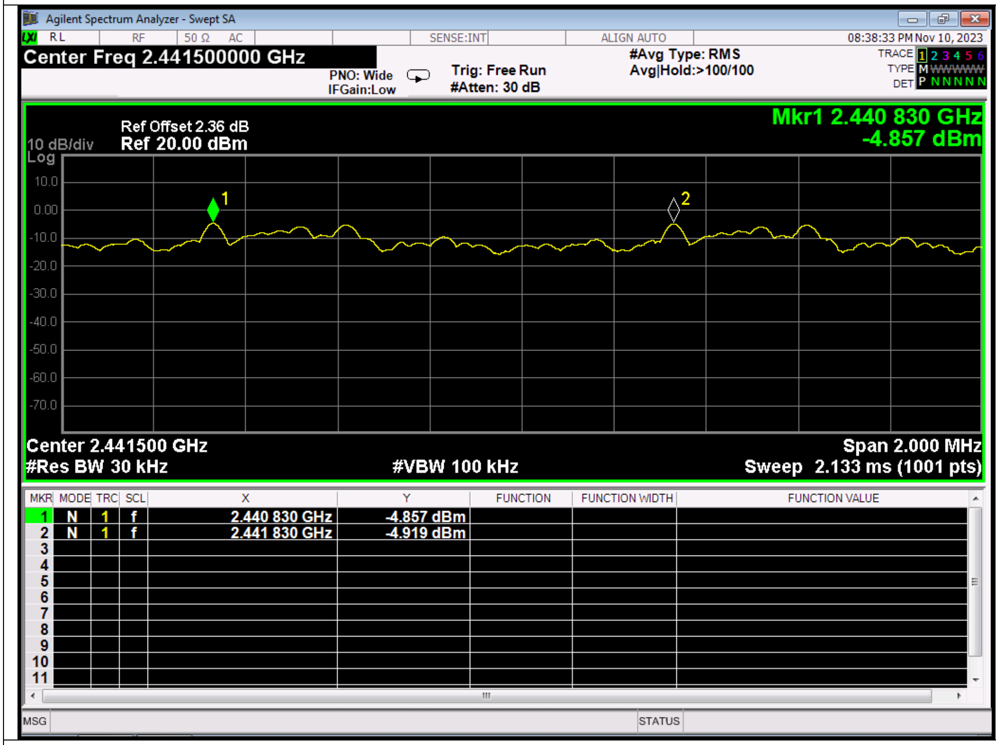
CFS NVNT 1-DH1 2480MHz



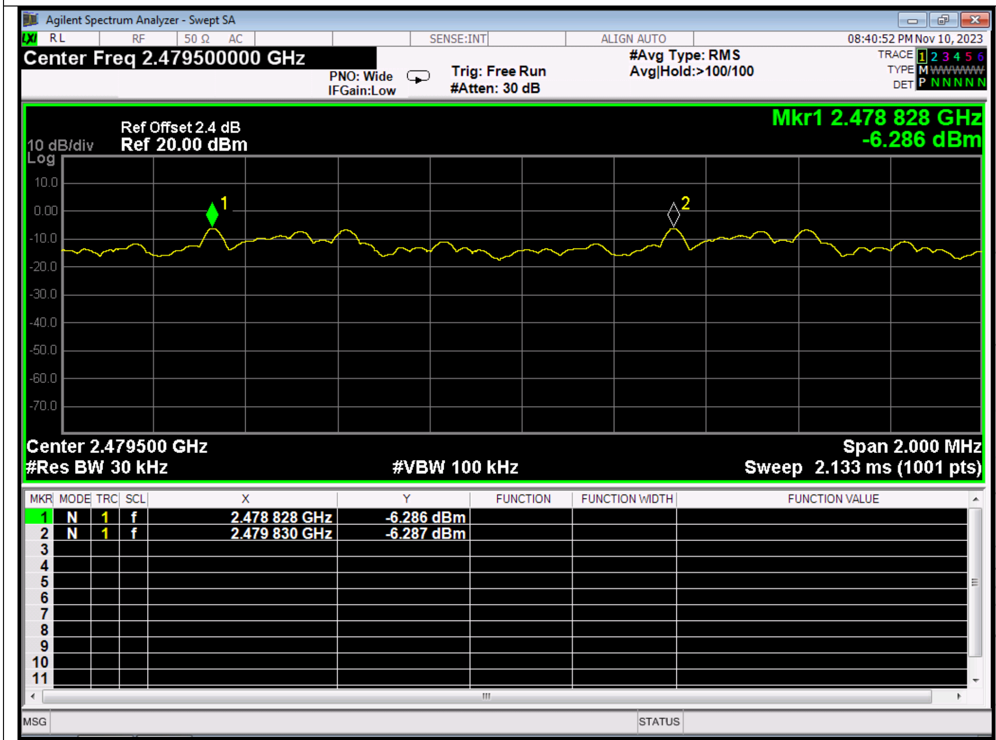
CFS NVNT 2-DH1 2402MHz



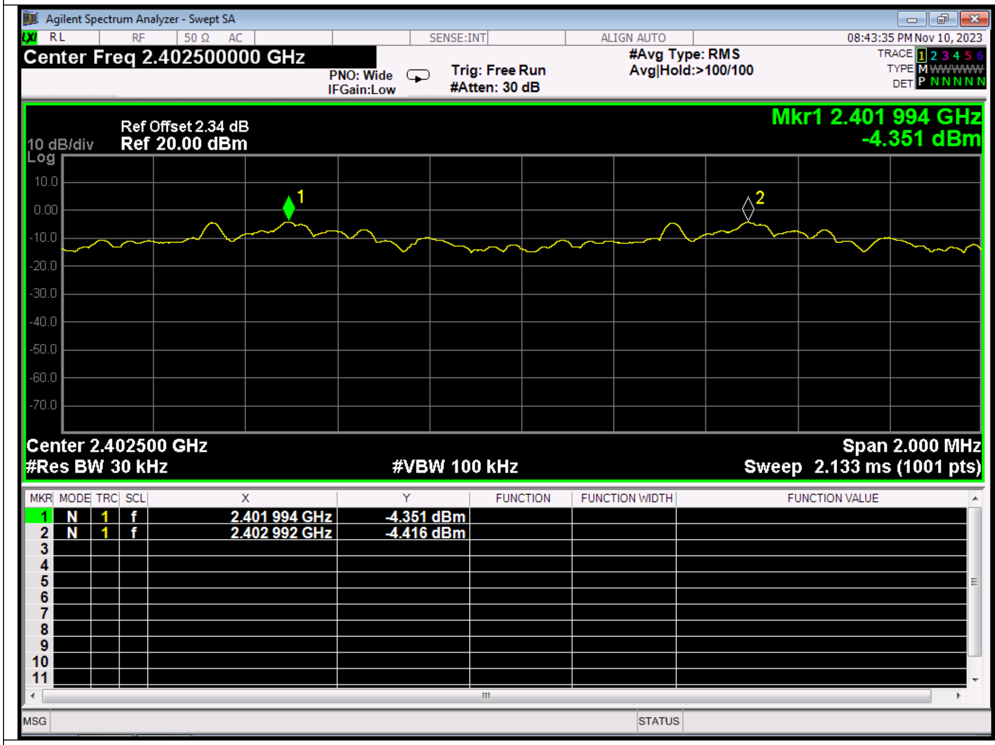
CFS NVNT 2-DH1 2441MHz



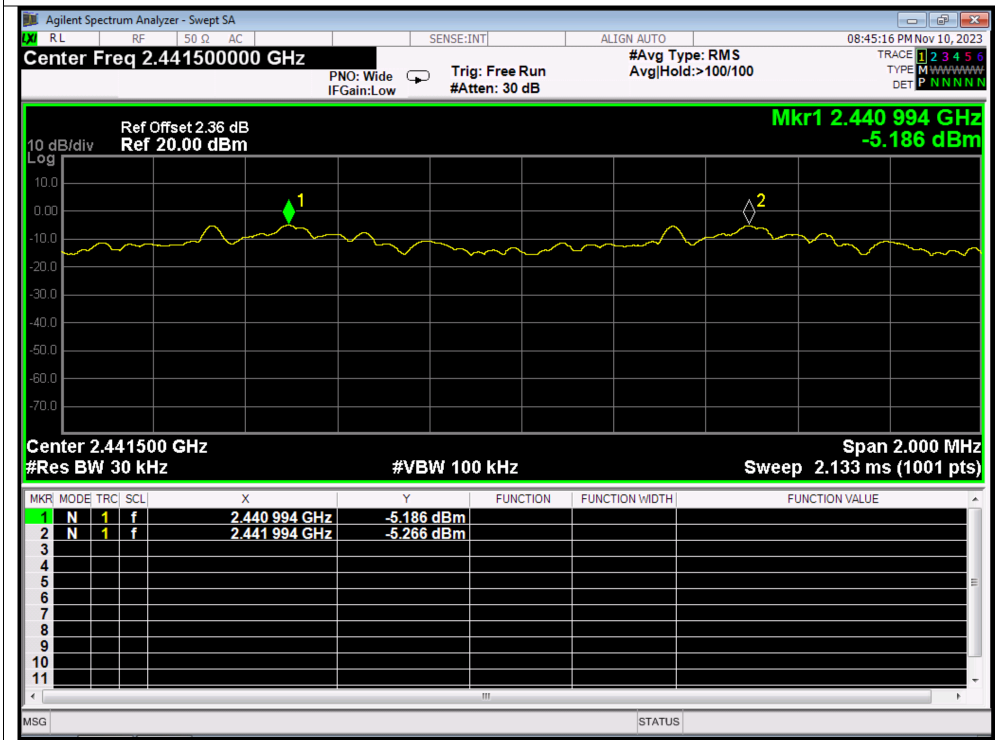
CFS NVNT 2-DH1 2480MHz



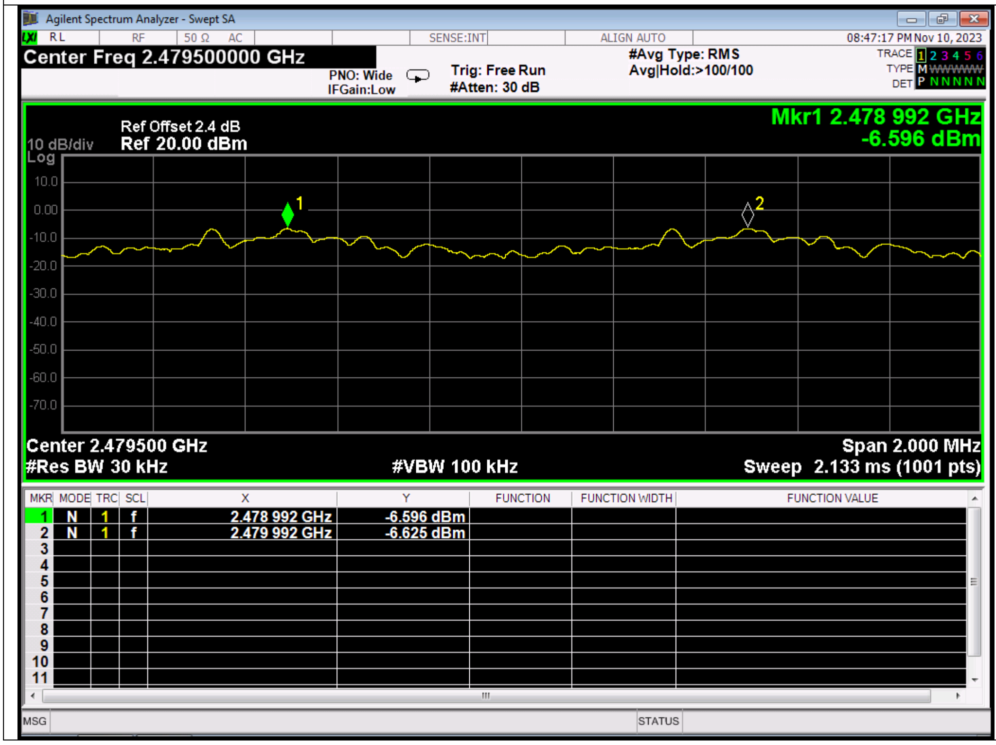
CFS NVNT 3-DH1 2402MHz



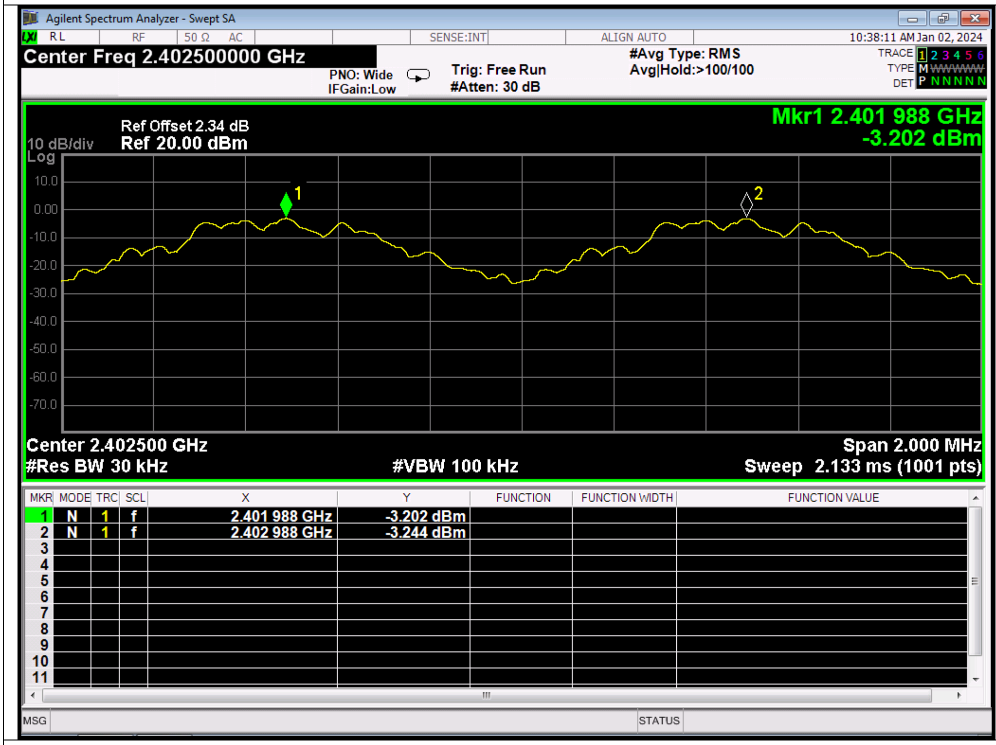
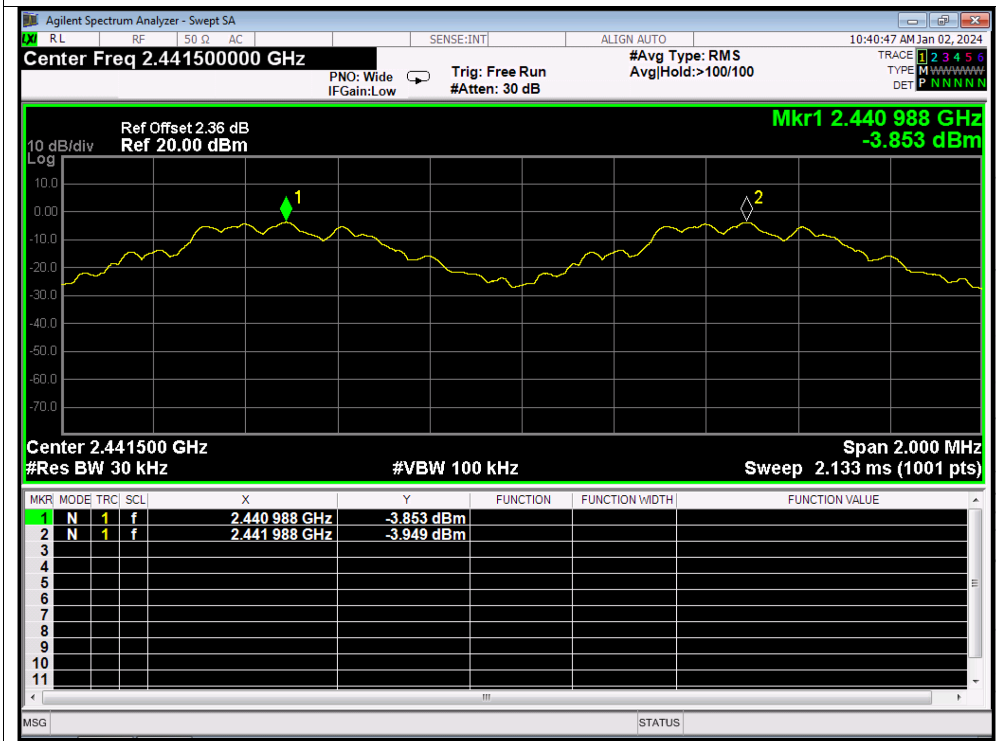
CFS NVNT 3-DH1 2441MHz



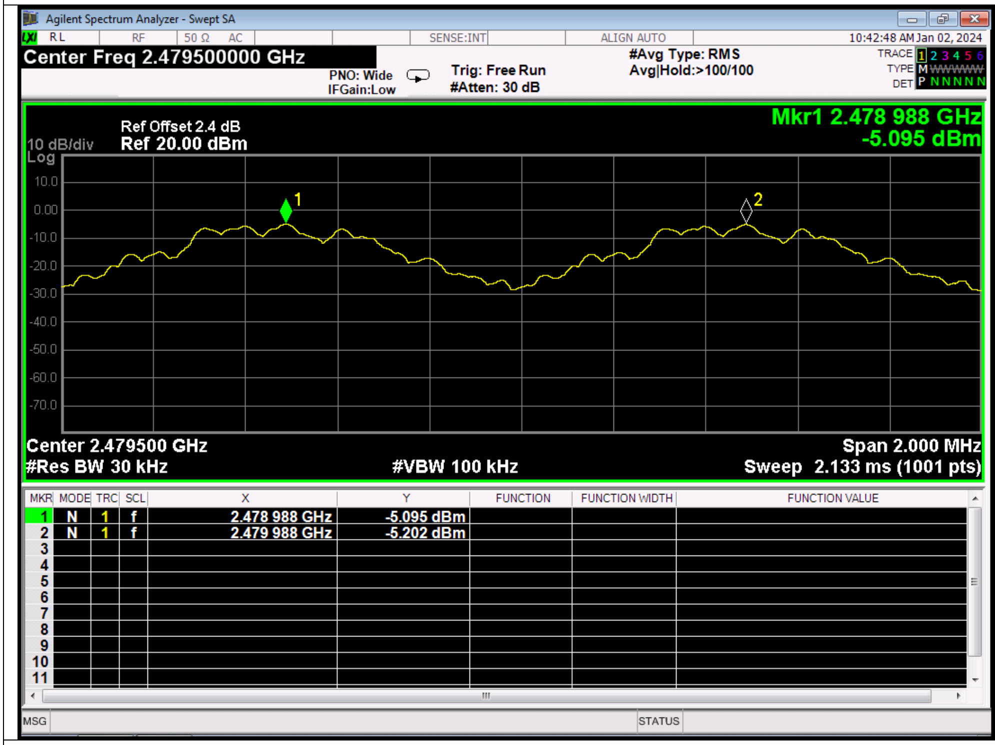
CFS NVNT 3-DH1 2480MHz



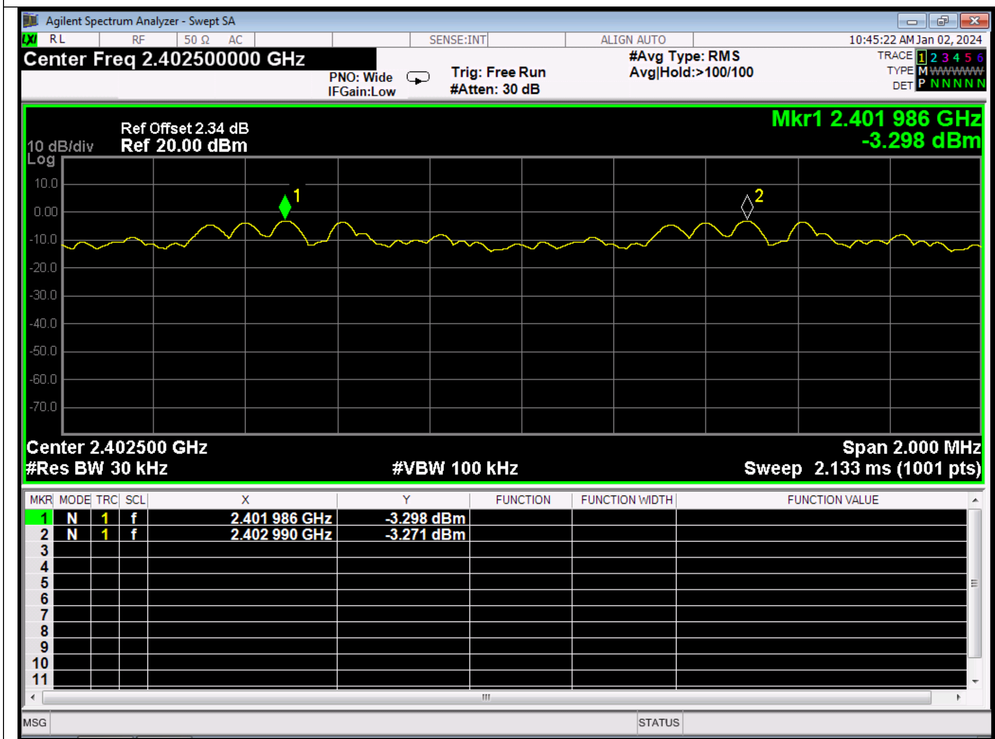
Chip BT8916A:

Test Graphs
CFS NVNT 1-DH1 2402MHz Ant1

CFS NVNT 1-DH1 2441MHz Ant1


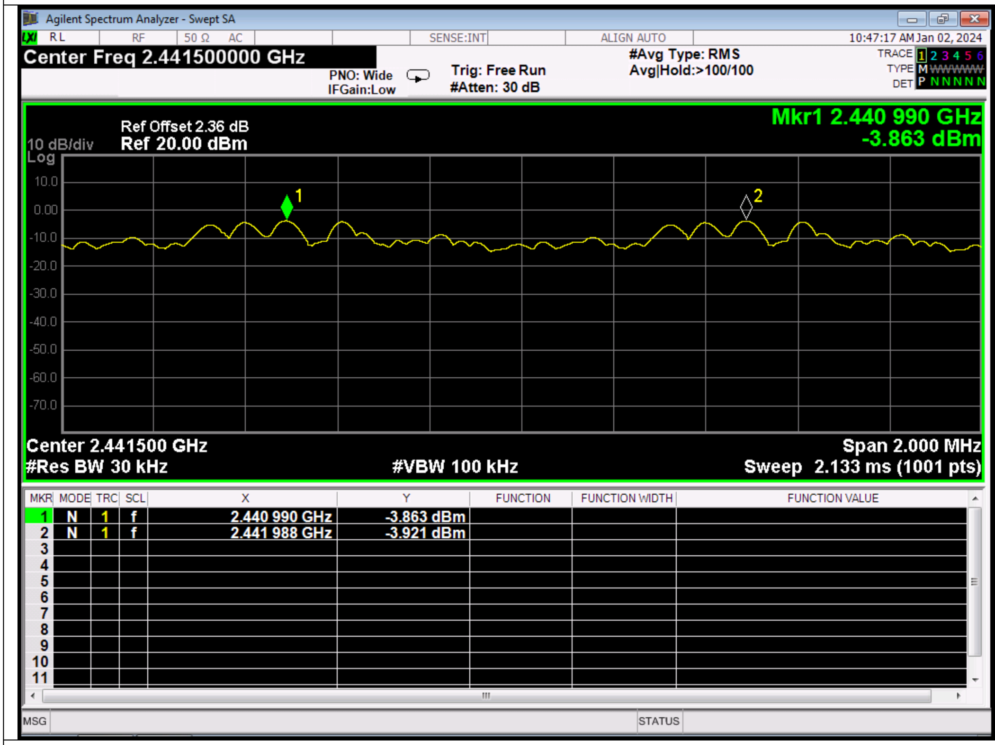
CFS NVNT 1-DH1 2480MHz Ant1



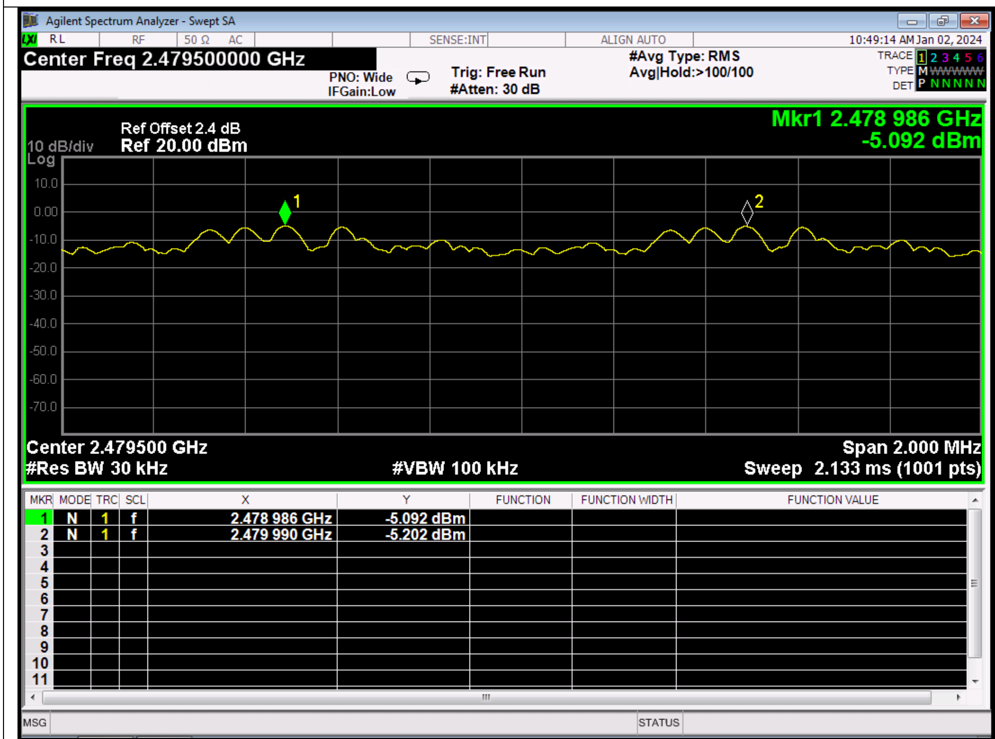
CFS NVNT 2-DH1 2402MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1

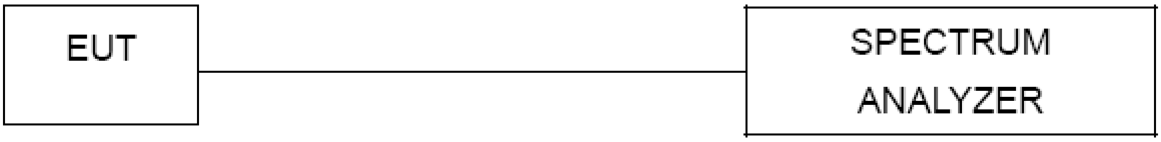


CFS NVNT 2-DH1 2480MHz Ant1



13. Number Of Hopping Frequency

13.1 Block Diagram Of Test Setup



13.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

13.3 Test procedure

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

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

3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.

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

13.4 Test Result

Chip AB5303B:

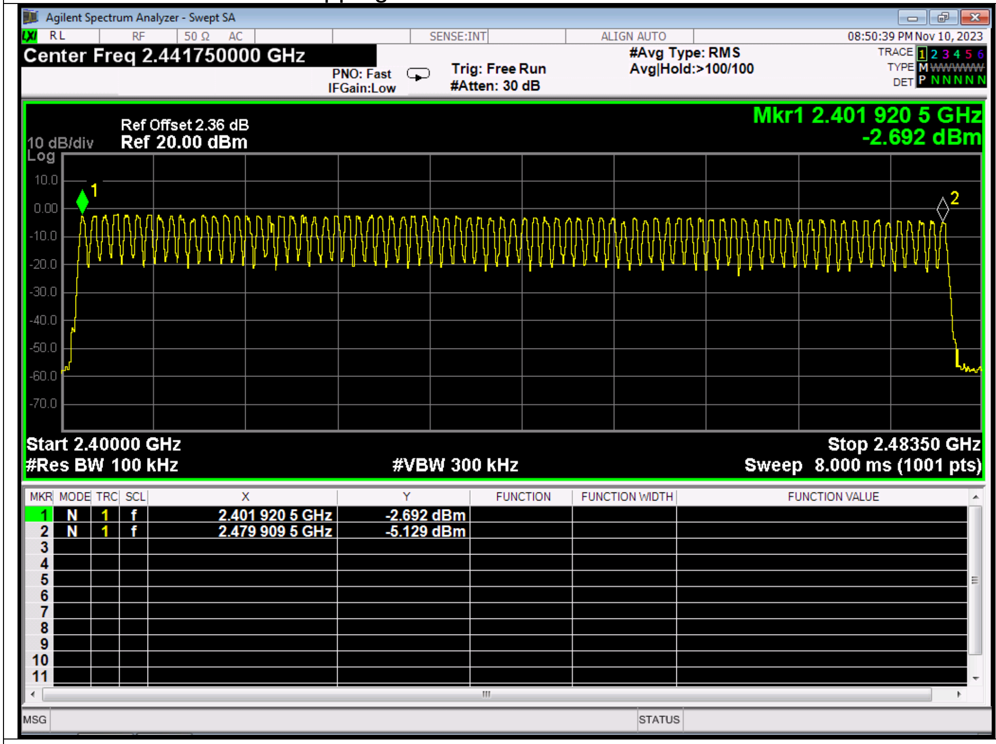
Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH1	79	15	Pass
NVNT	2-DH1	79	15	Pass
NVNT	3-DH1	79	15	Pass

Chip BT8916A:

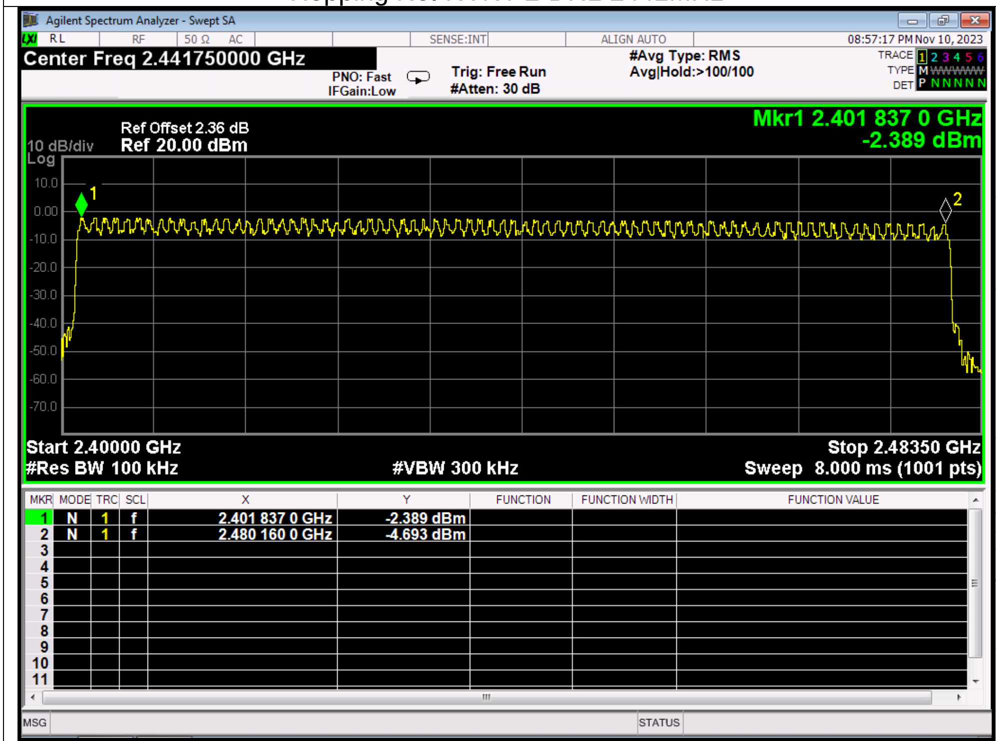
Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH1	79	15	Pass
NVNT	2-DH1	79	15	Pass

Chip AB5303B:

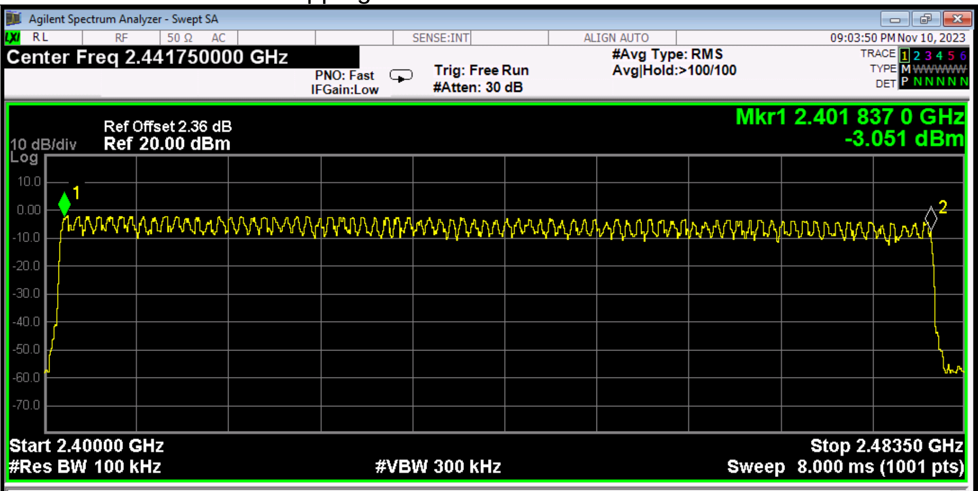
Test Graphs
Hopping No. NVNT 1-DH1 2441MHz



Hopping No. NVNT 2-DH1 2441MHz



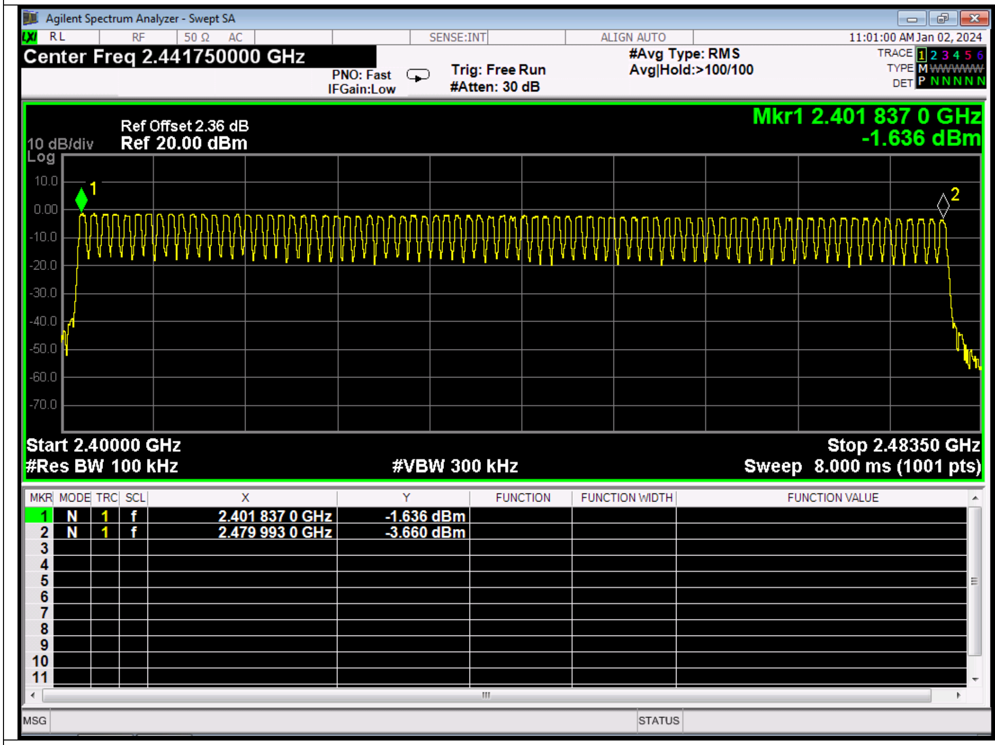
Hopping No. NVNT 3-DH1 2441MHz



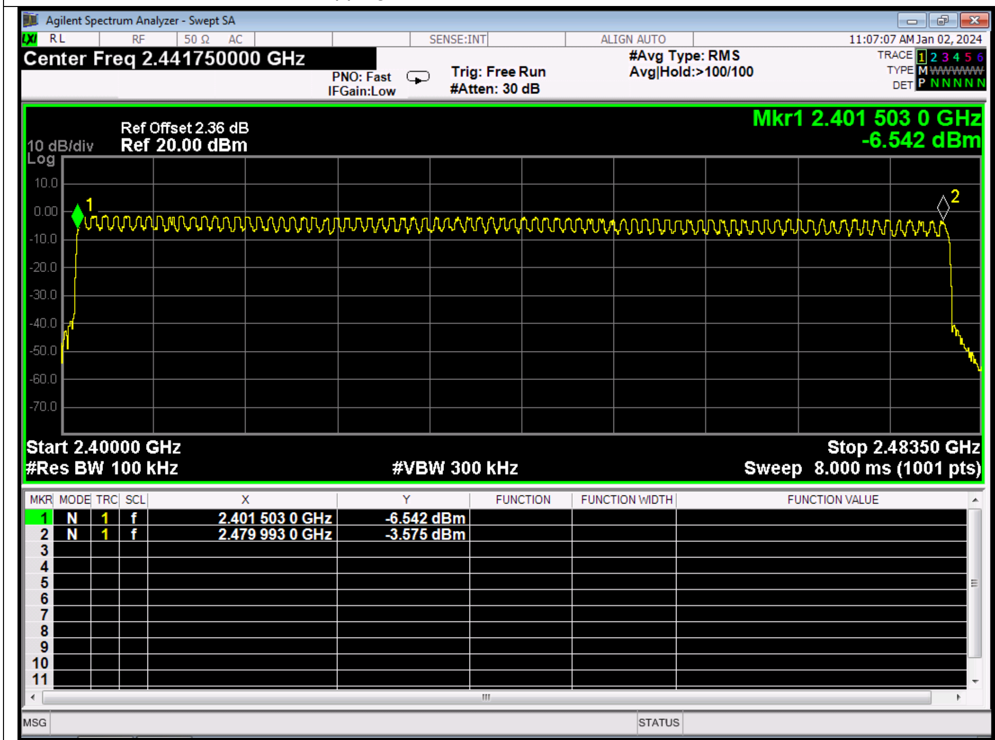
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.401 837 0 GHz	-3.051 dBm			
2	N	1	f	2.480 410 5 GHz	-7.853 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Chip BT8916A:

Test Graphs
Hopping No. NVNT 1-DH1 2441MHz Ant1

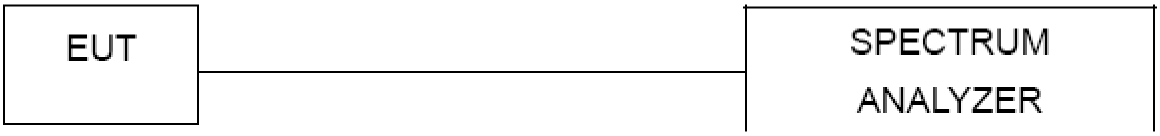


Hopping No. NVNT 2-DH1 2441MHz Ant1



14. Dwell Time

14.1 Block Diagram Of Test Setup



14.2 Limit

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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

14.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set spectrum analyzer span = 0. Centred on a hopping channel;
3. Set RBW = 1MHz and VBW = 3MHz.Sweep = as necessary to capture the entire dwell time per hopping channel. Set the EUT for DH5, DH3 and DH1 packet transmitting.
4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g.. data rate. modulation format. etc.). repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

14.4 Test Result

Chip AB5303B:

Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
1-DH1	2441	0.389	122.924	316	31600	400	Pass
1-DH3	2441	1.643	269.452	164	31600	400	Pass
1-DH5	2441	2.892	292.092	101	31600	400	Pass
2-DH1	2441	0.394	125.686	319	31600	400	Pass
2-DH3	2441	1.646	253.484	154	31600	400	Pass
2-DH5	2441	2.897	283.906	98	31600	400	Pass
3-DH1	2441	0.395	125.61	318	31600	400	Pass
3-DH3	2441	1.649	278.681	169	31600	400	Pass
3-DH5	2441	2.896	350.416	121	31600	400	Pass

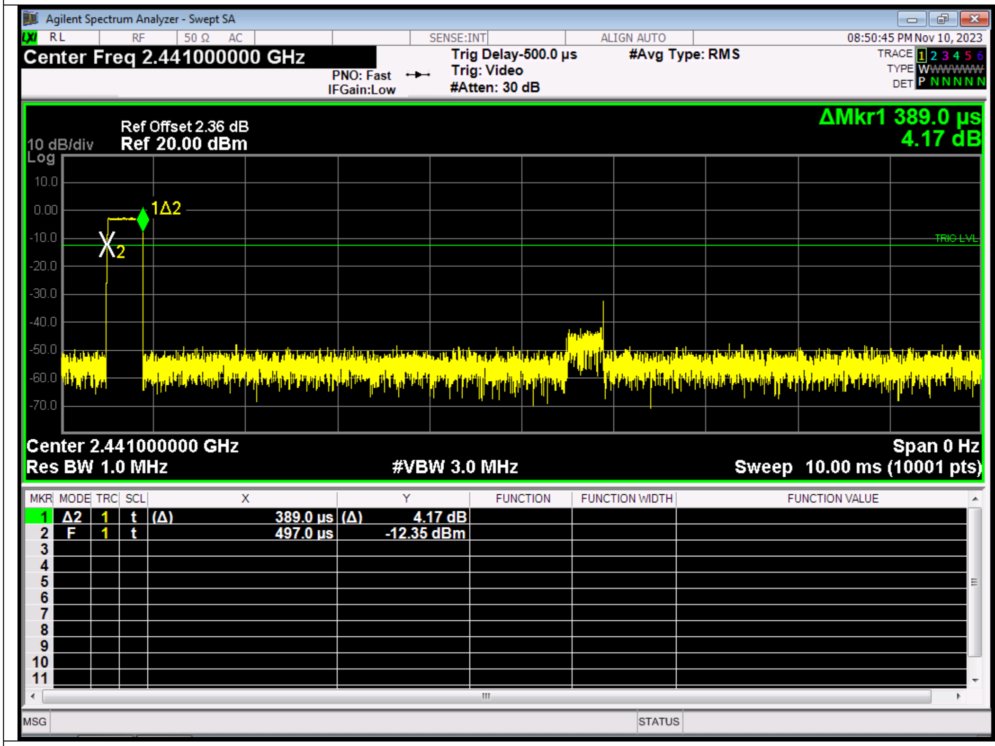
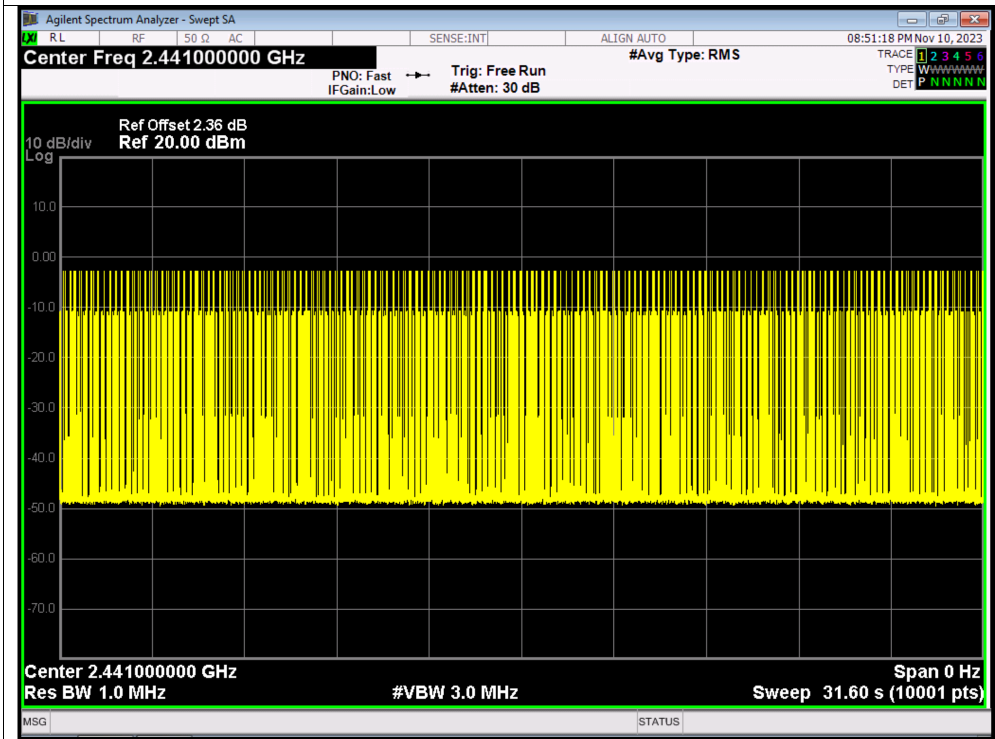
Note: Total Dwell Time (ms) = Pulse Time (ms)*Burst Count

Chip BT8916A:

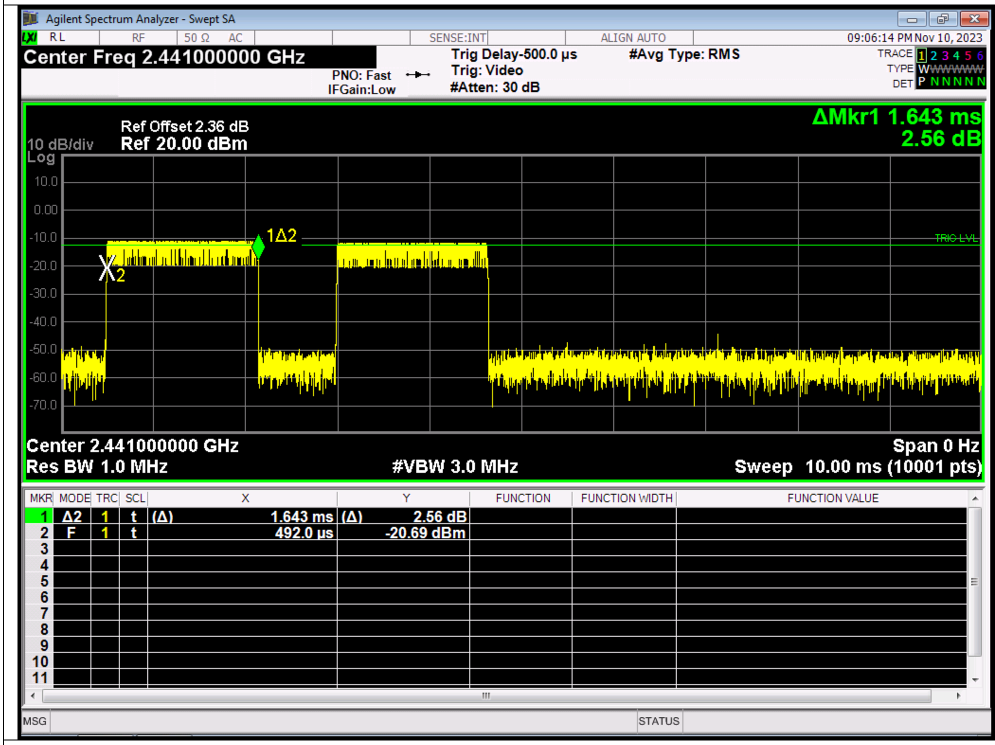
Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
1-DH1	2441	0.401	127.117	317	31600	400	Pass
1-DH3	2441	1.655	264.8	160	31600	400	Pass
1-DH5	2441	2.905	310.835	107	31600	400	Pass
2-DH1	2441	0.411	131.52	320	31600	400	Pass
2-DH3	2441	1.662	275.892	166	31600	400	Pass
2-DH5	2441	2.910	311.37	107	31600	400	Pass

Note: Total Dwell Time (ms) = Pulse Time (ms)*Burst Count

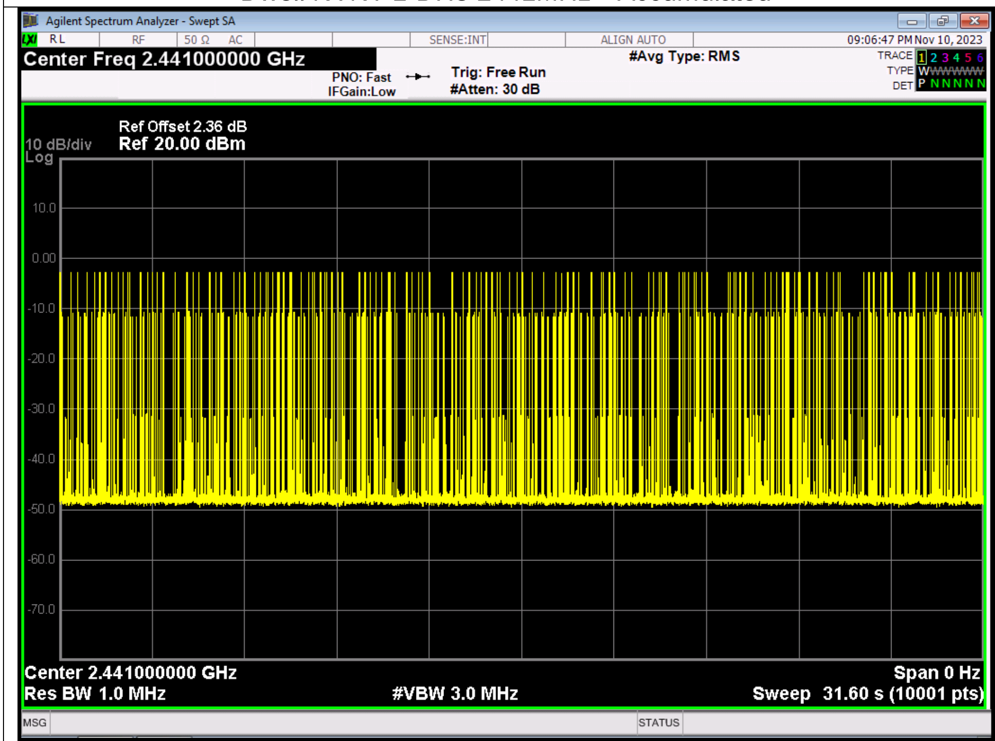
Chip AB5303B:

Test Graphs
Dwell NVNT 1-DH1 2441MHz One Burst

Dwell NVNT 1-DH1 2441MHz Accumulated


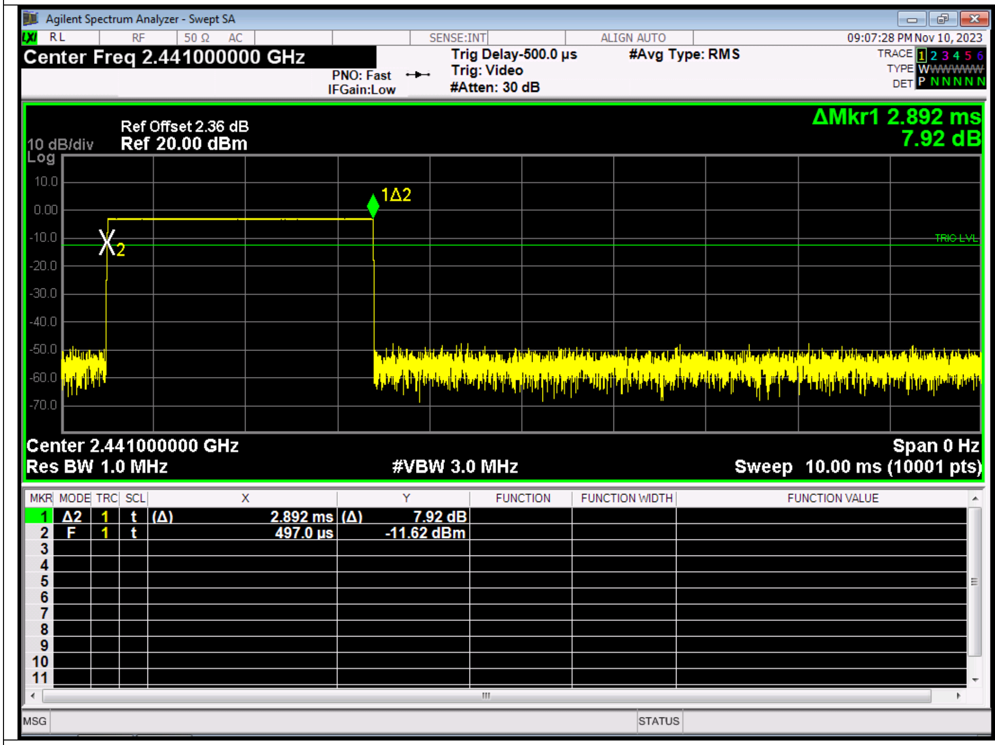
Dwell NVNT 1-DH3 2441MHz One Burst



Dwell NVNT 1-DH3 2441MHz Accumulated



Dwell NVNT 1-DH5 2441MHz One Burst



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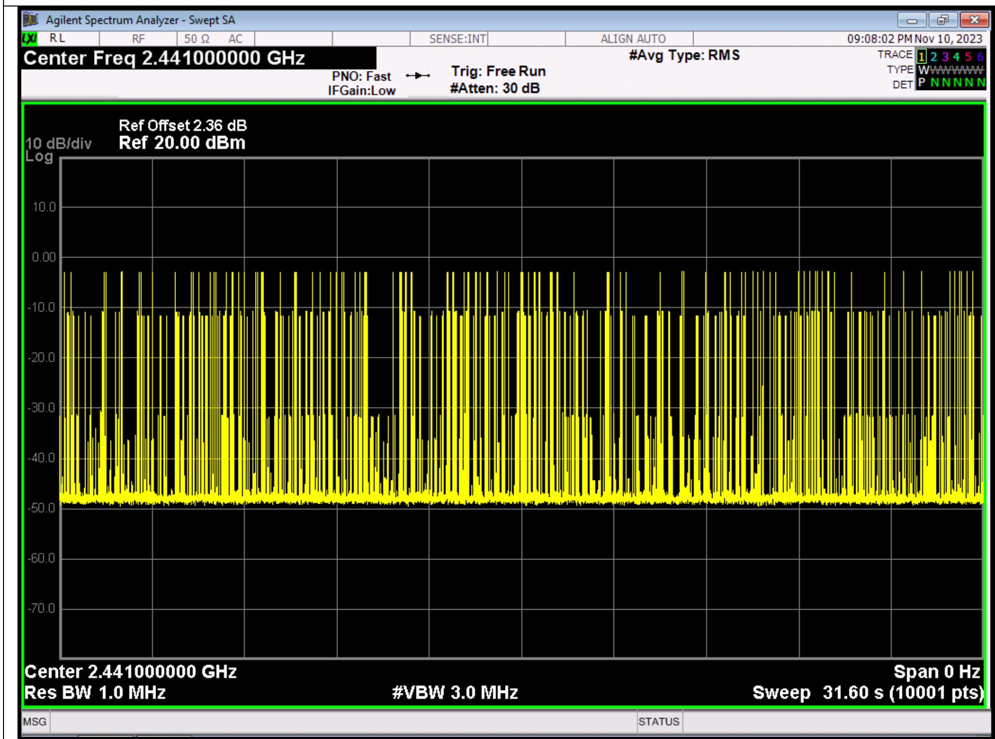
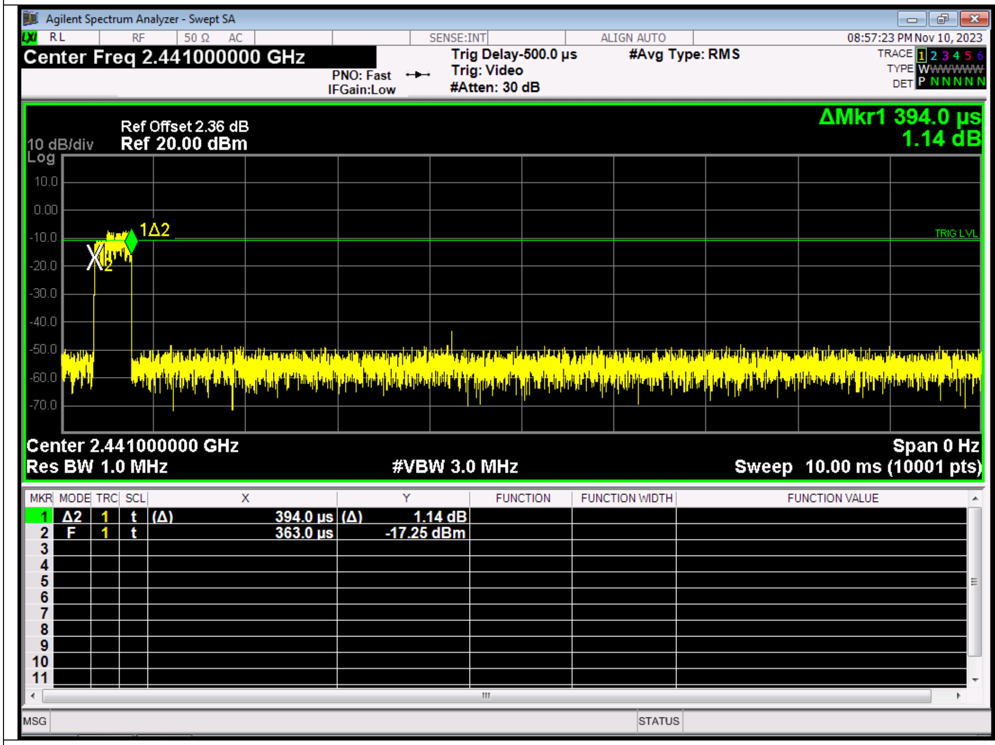


Dwell NVNT 2-DH1 2441MHz One Burst



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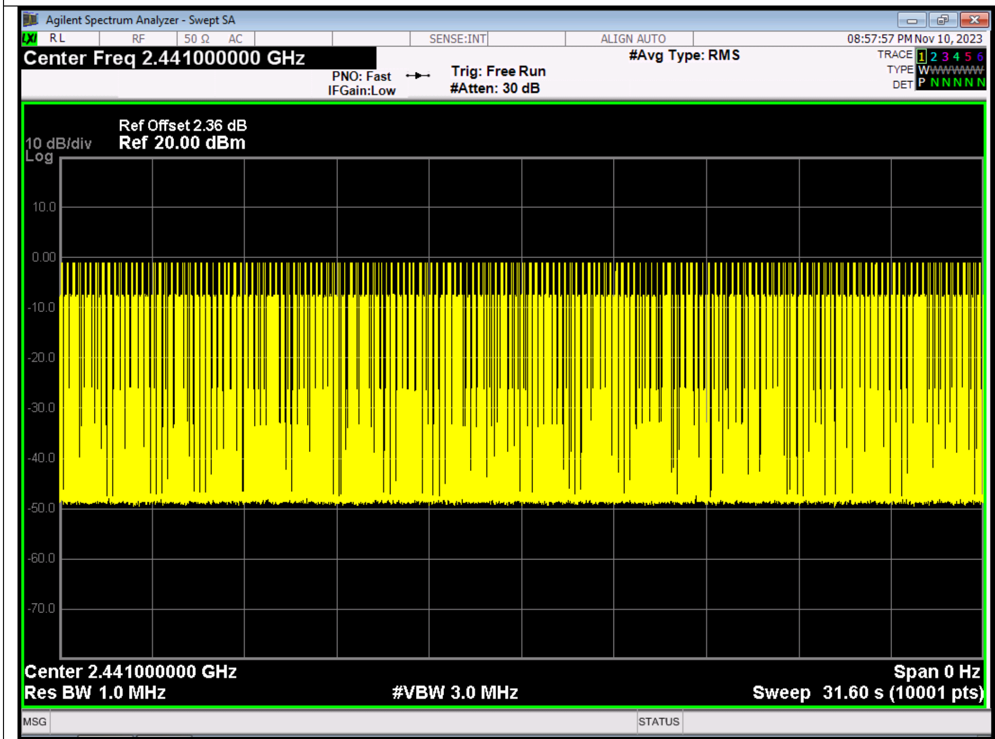

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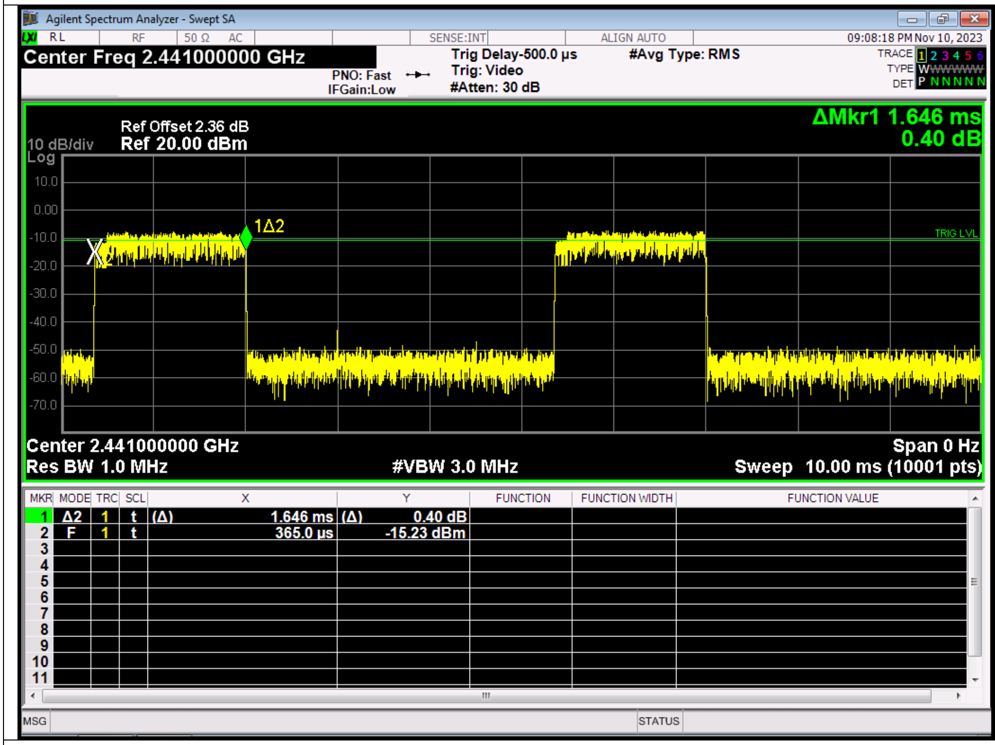

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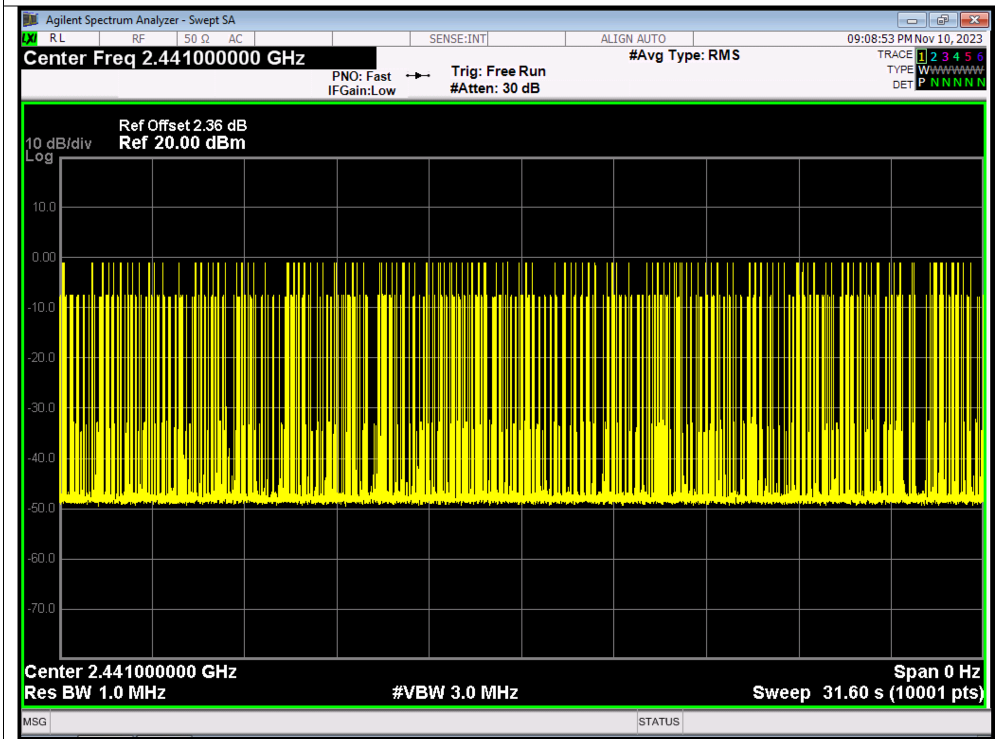
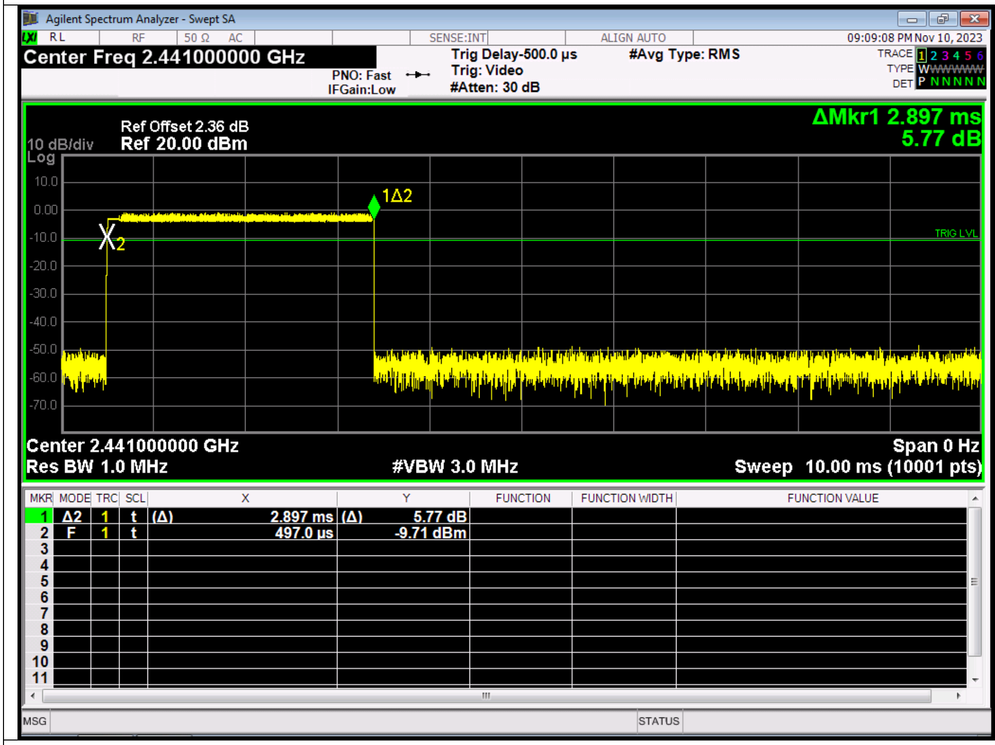
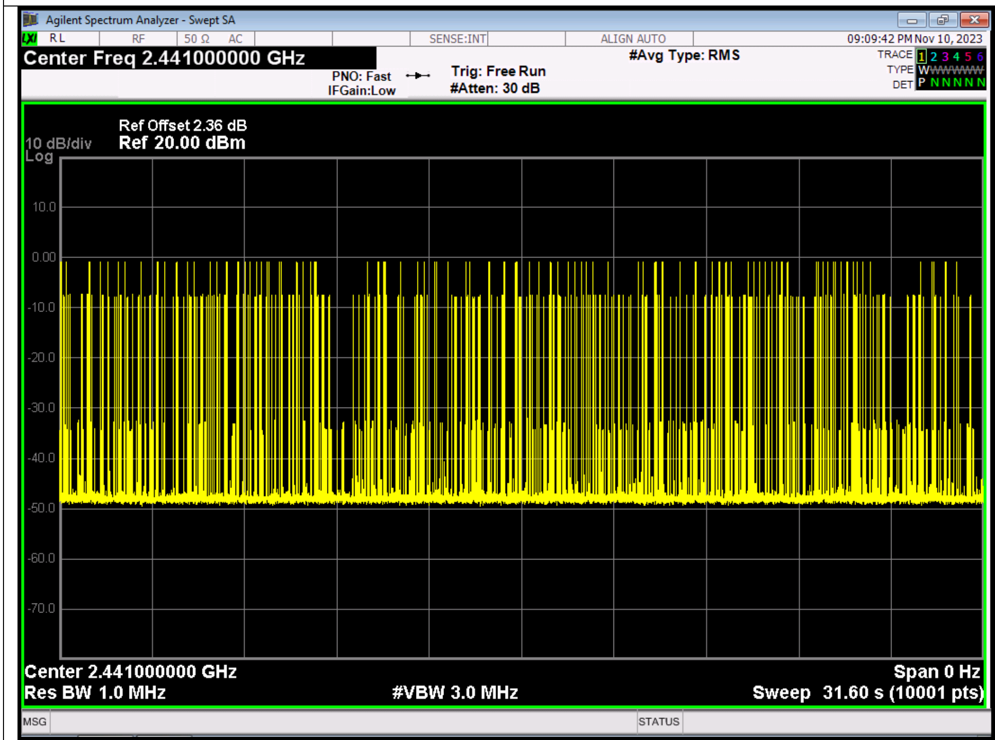


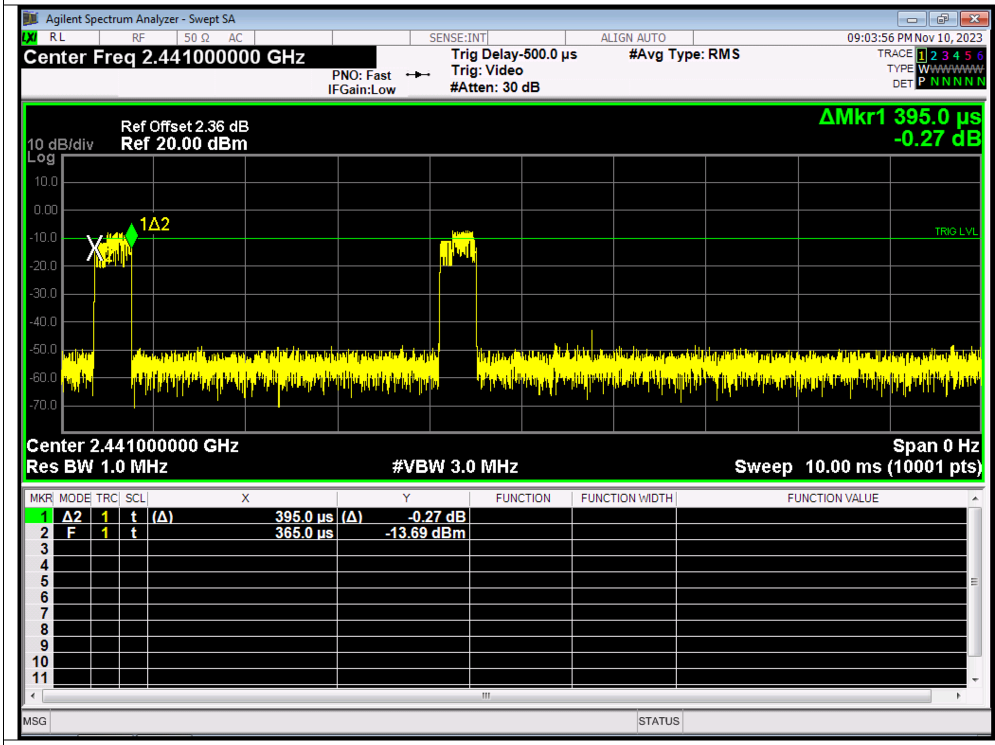
Dwell NVNT 2-DH5 2441MHz One Burst



Dwell NVNT 2-DH5 2441MHz Accumulated



Dwell NVNT 3-DH1 2441MHz One Burst



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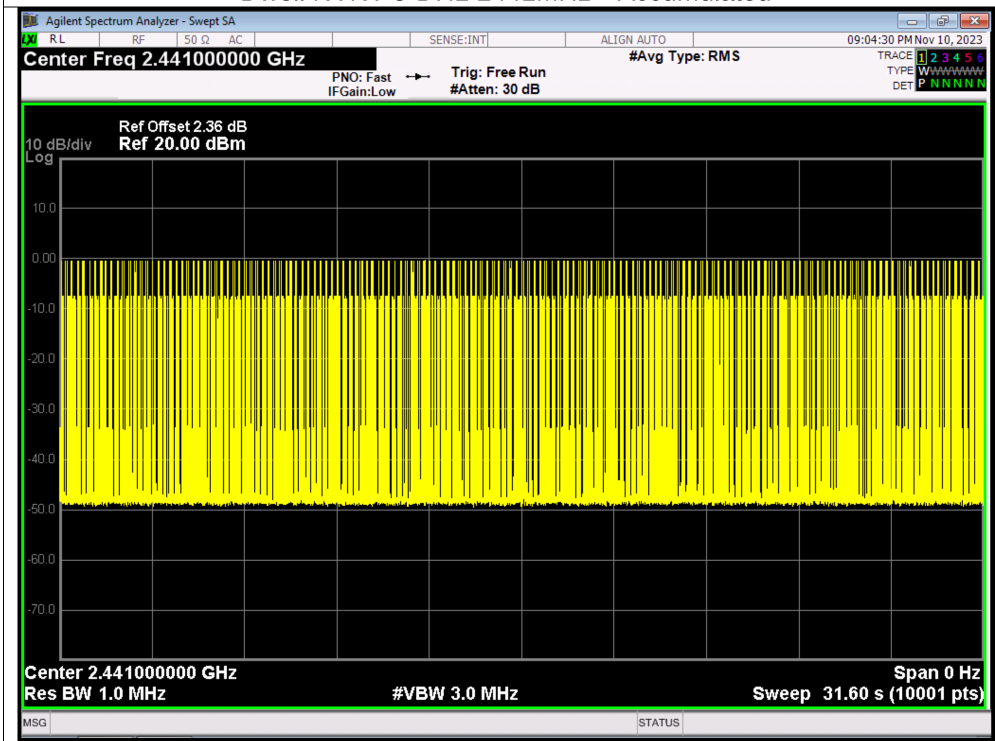
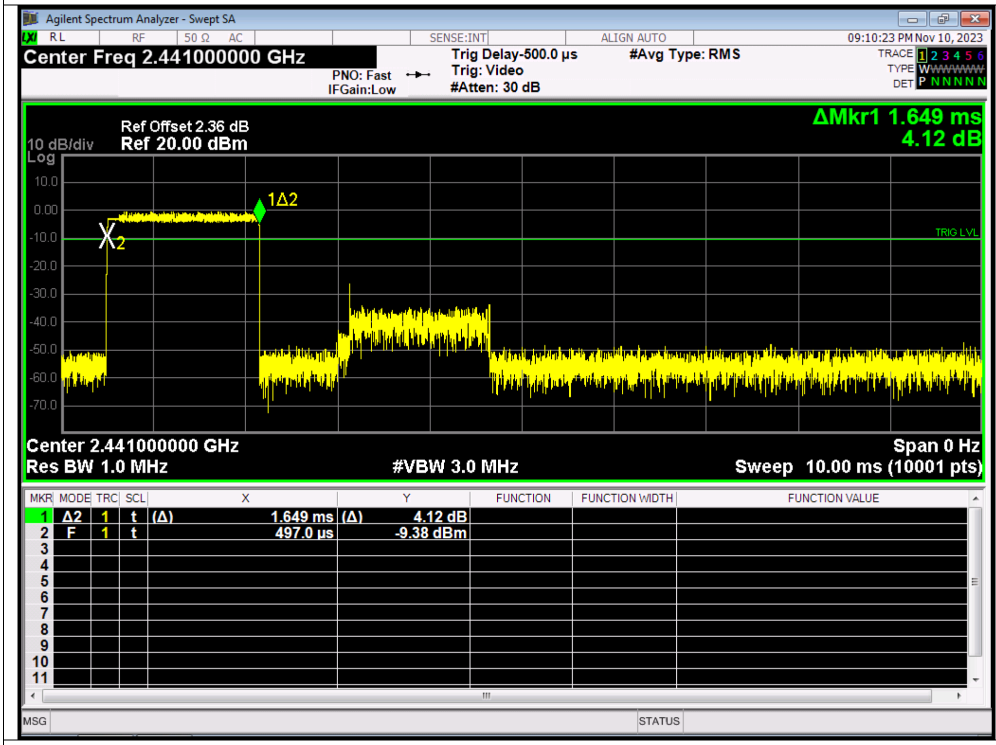


Dwell NVNT 3-DH3 2441MHz One Burst



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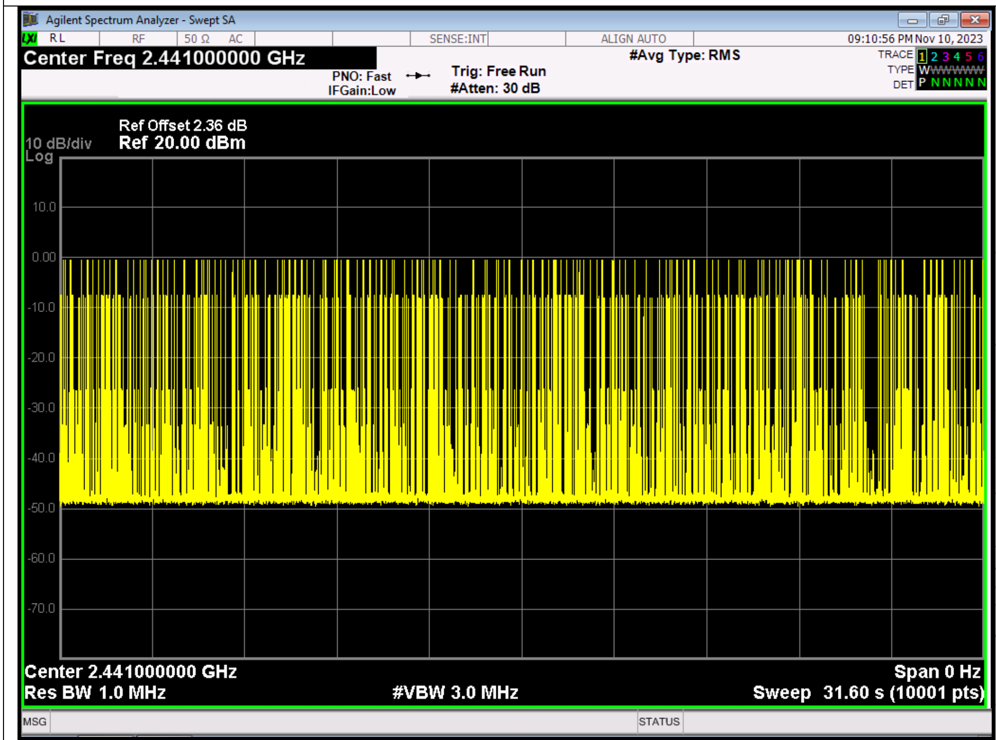
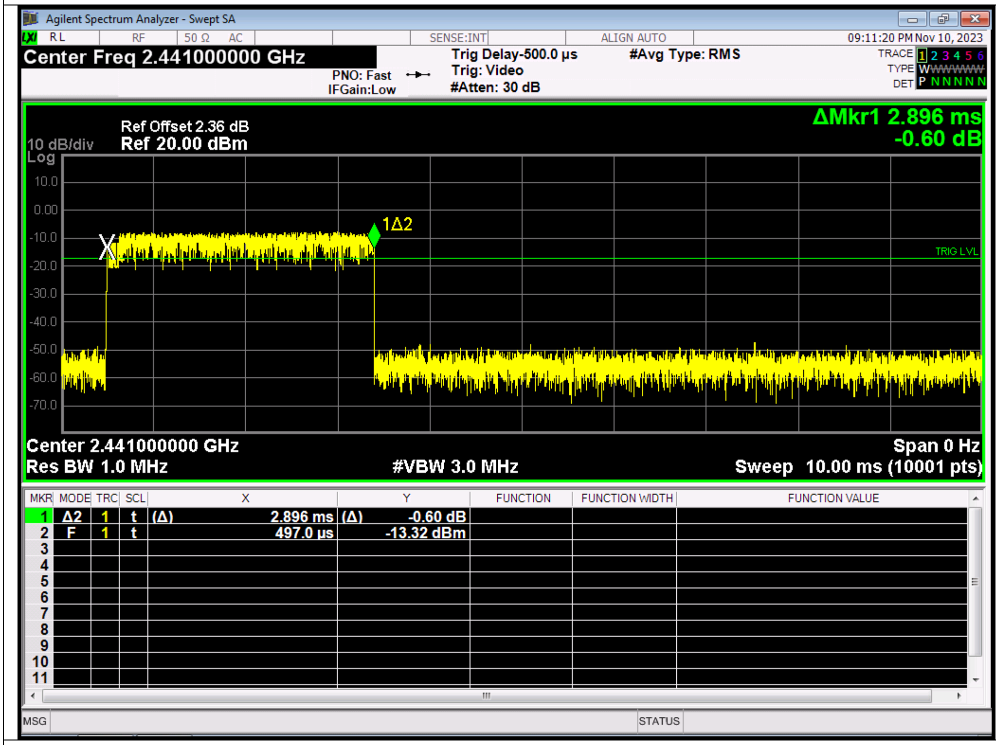
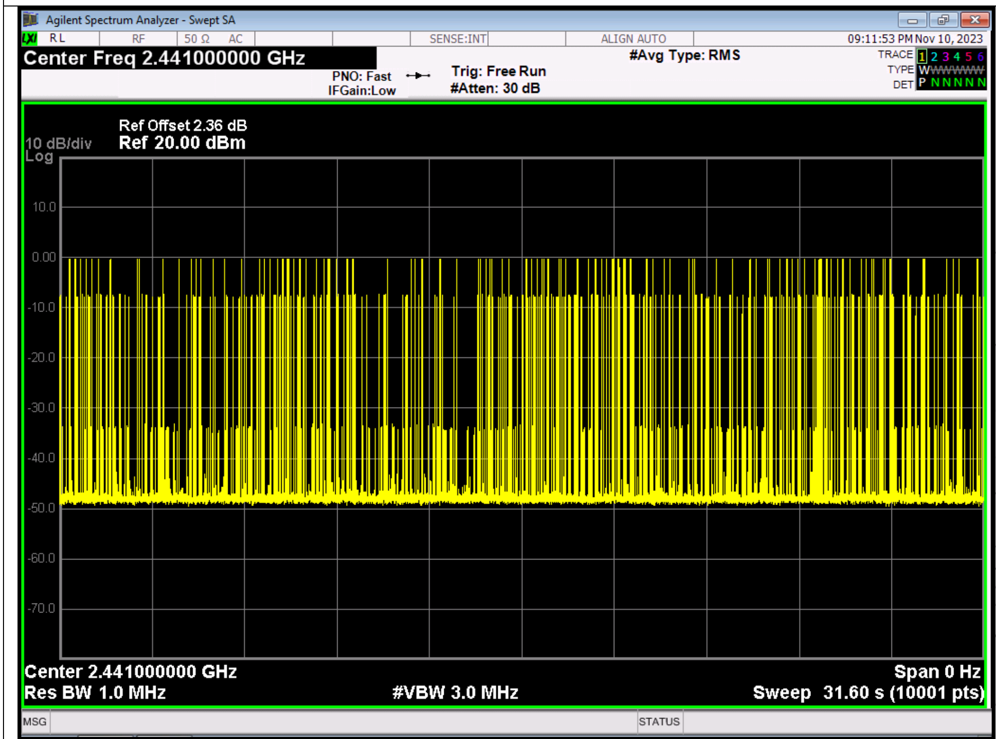


Dwell NVNT 3-DH5 2441MHz One Burst

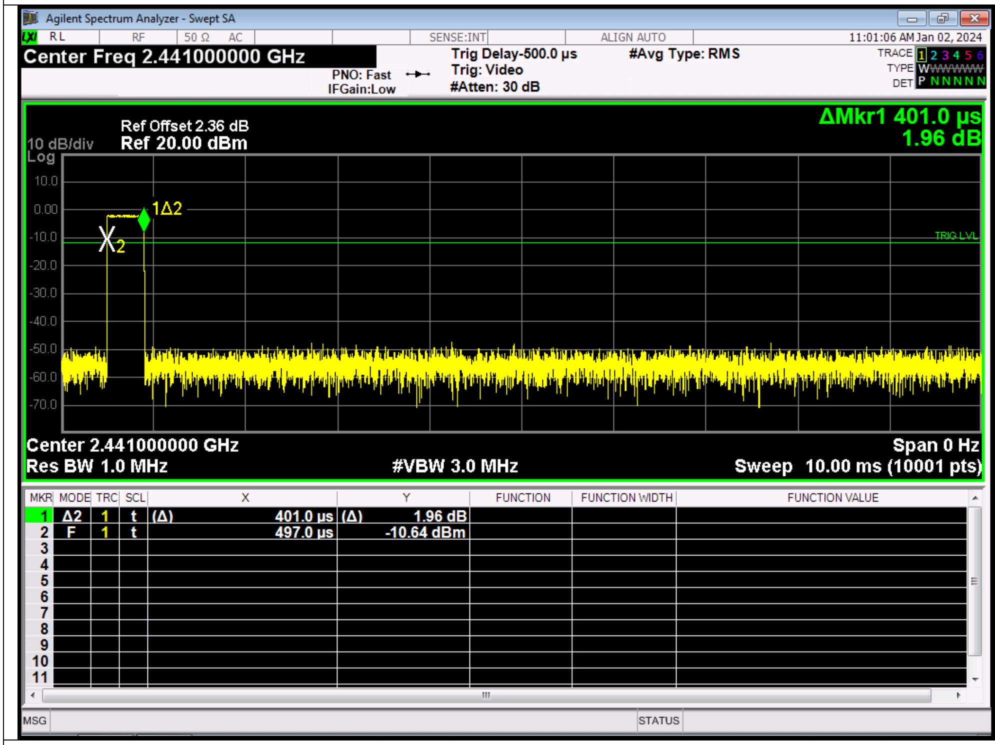


Dwell NVNT 3-DH5 2441MHz Accumulated

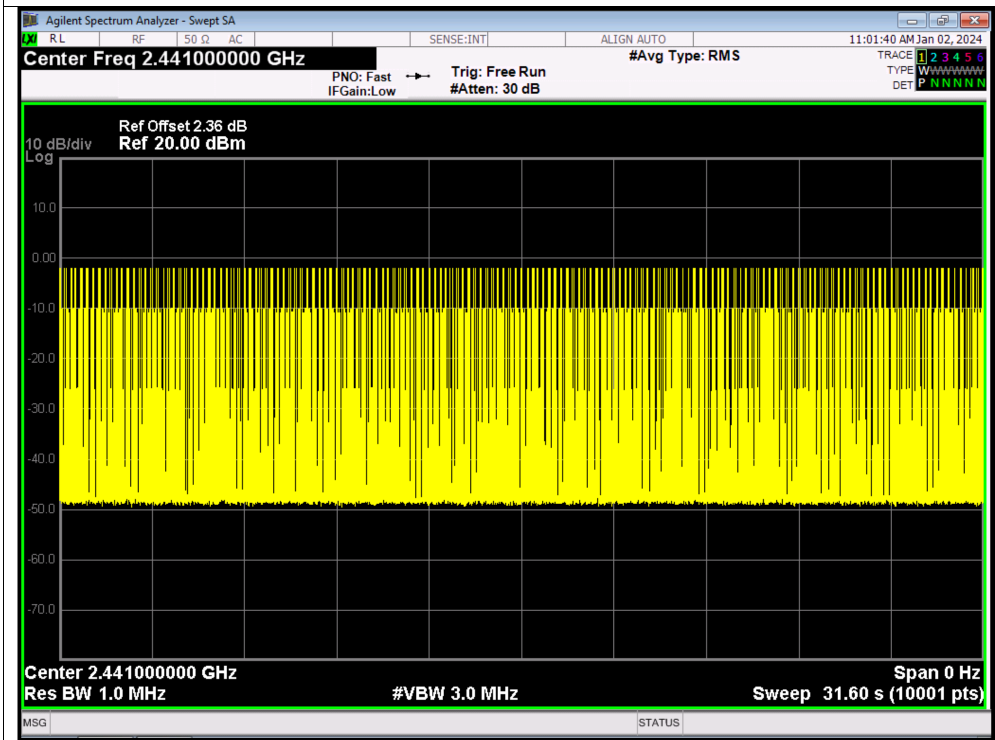


Chip BT8916A:

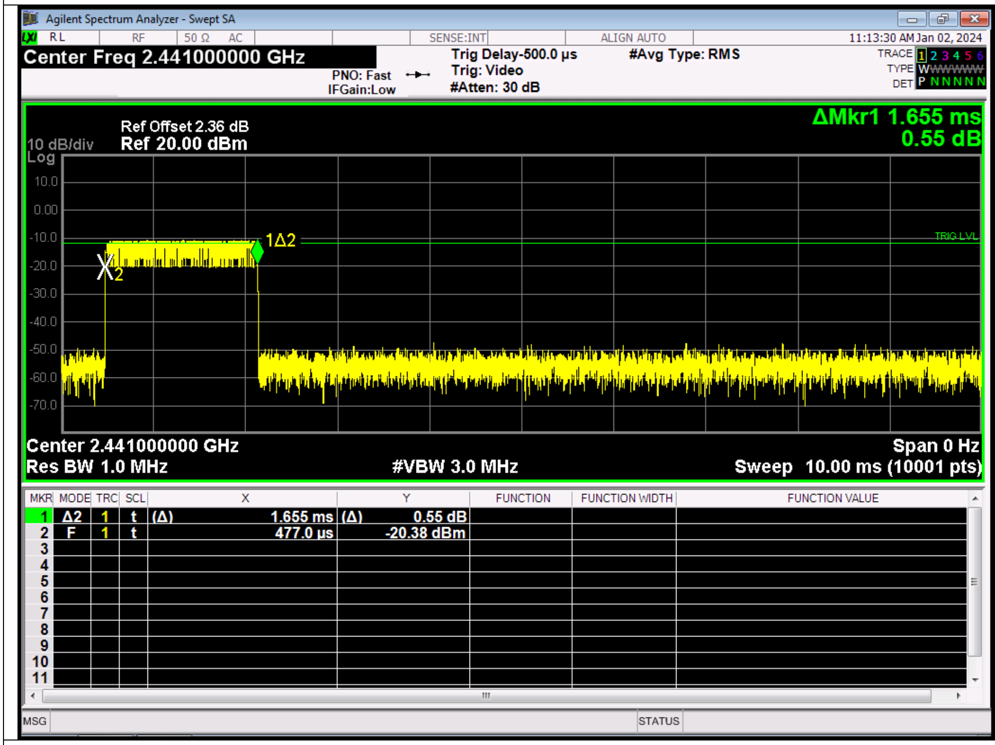
Test Graphs
Dwell NVNT 1-DH1 2441MHz Ant1 One Burst



Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



Dwell NVNT 1-DH3 2441MHz Ant1 One Burst



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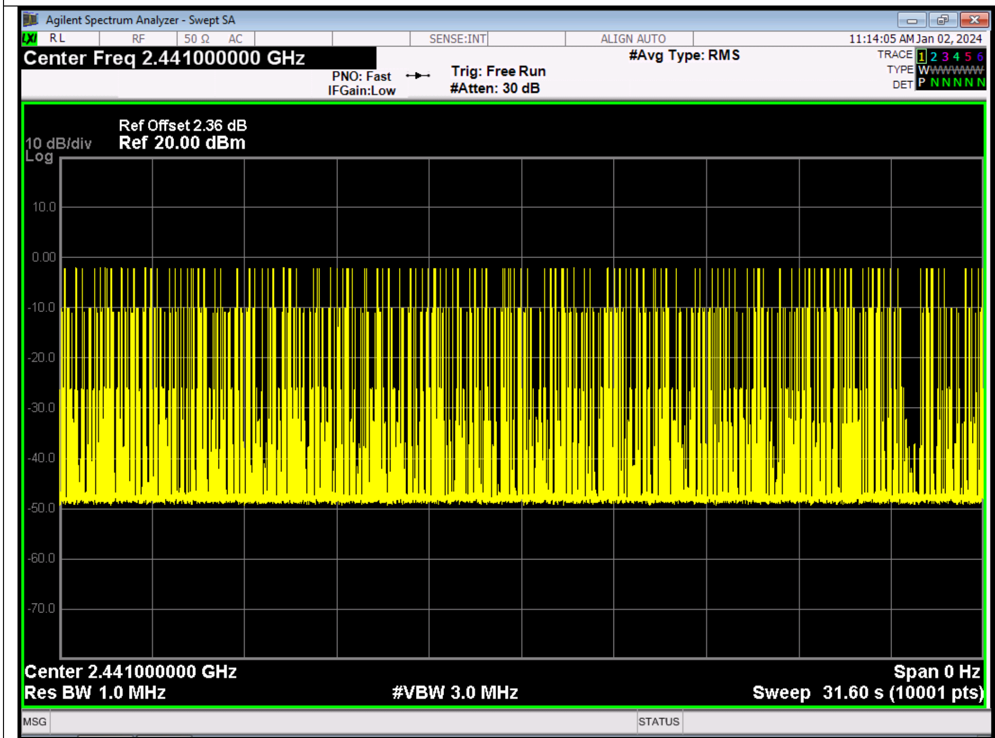
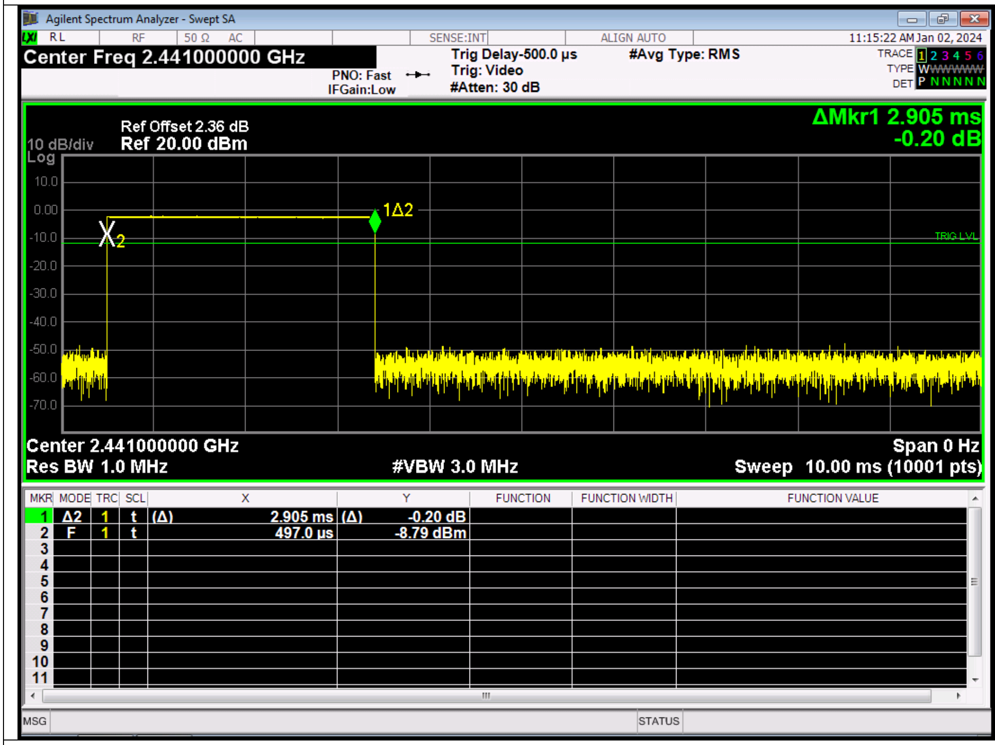


Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



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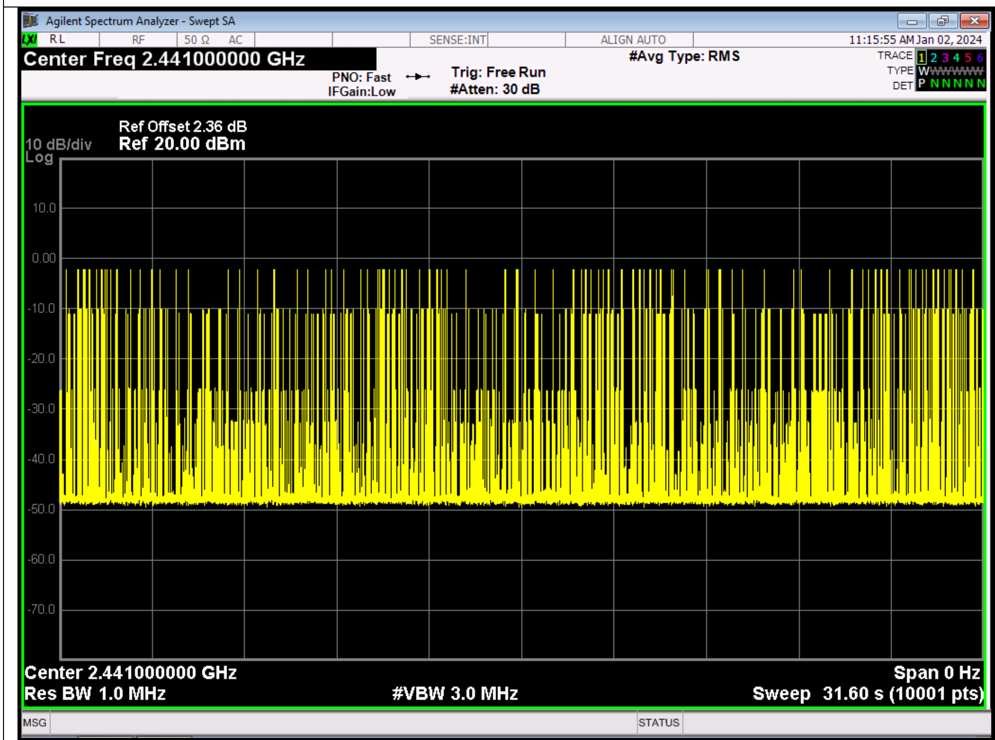

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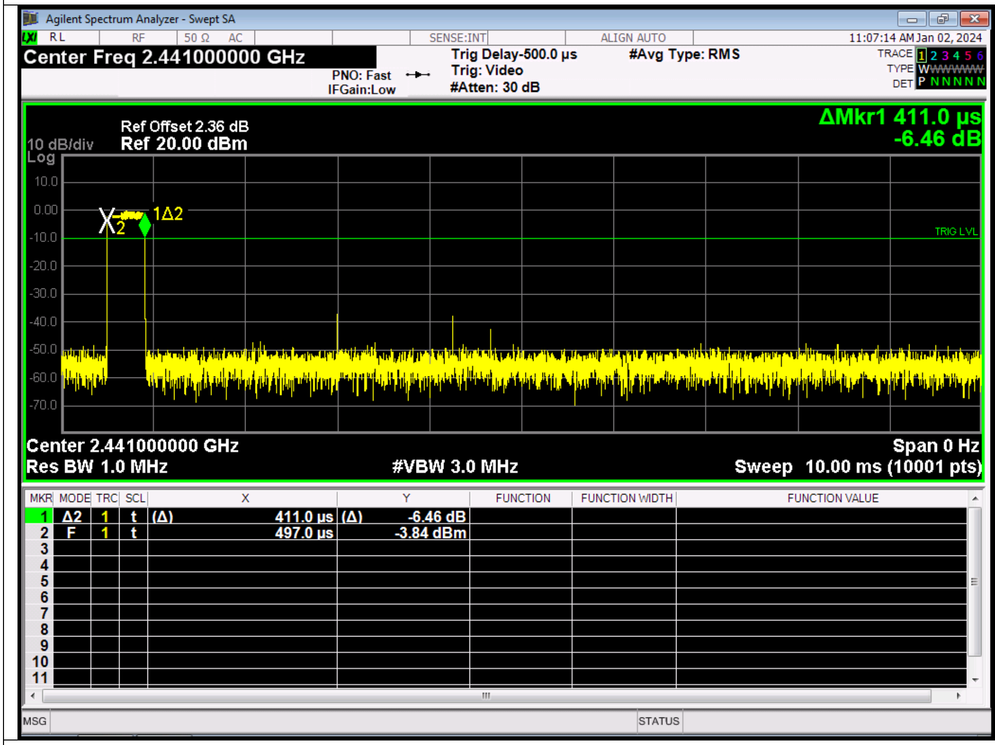
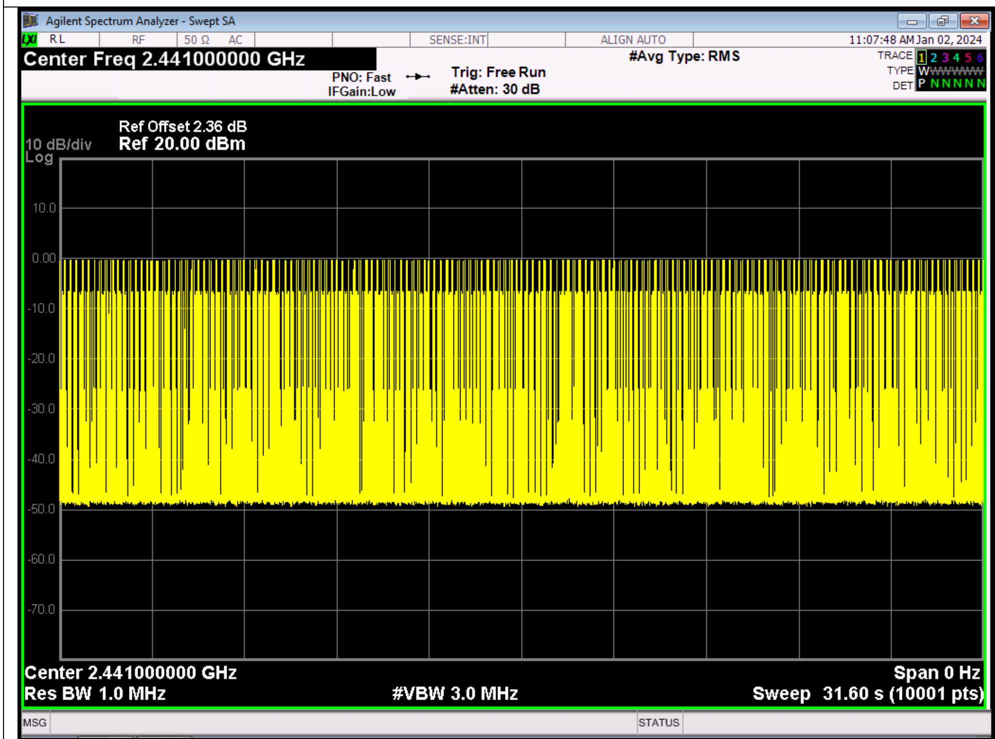
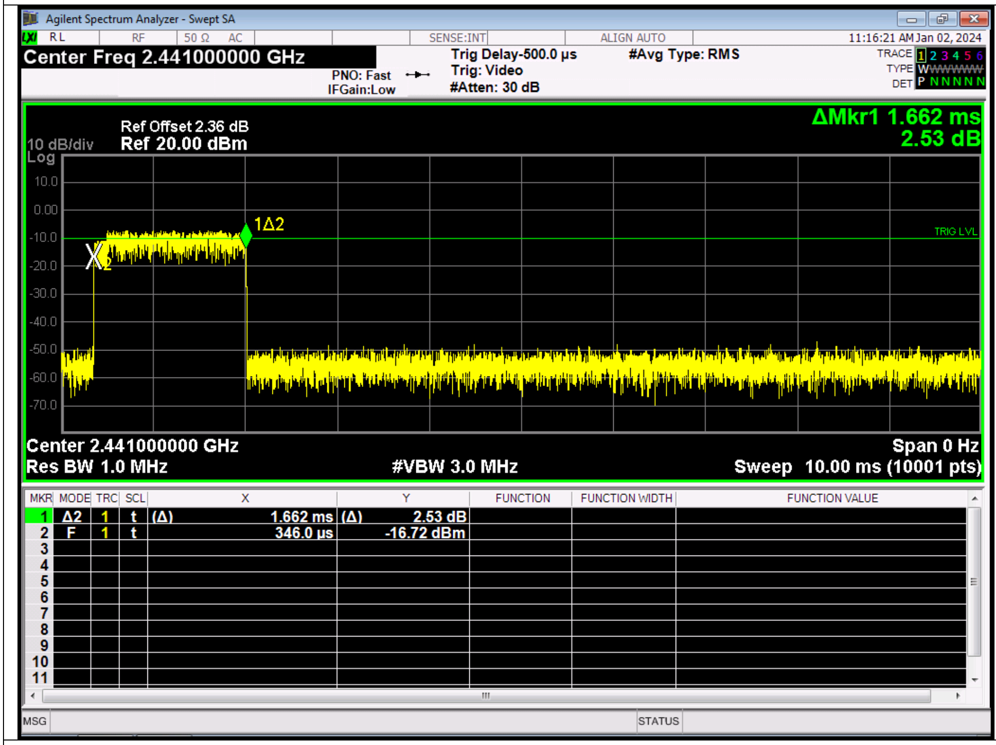


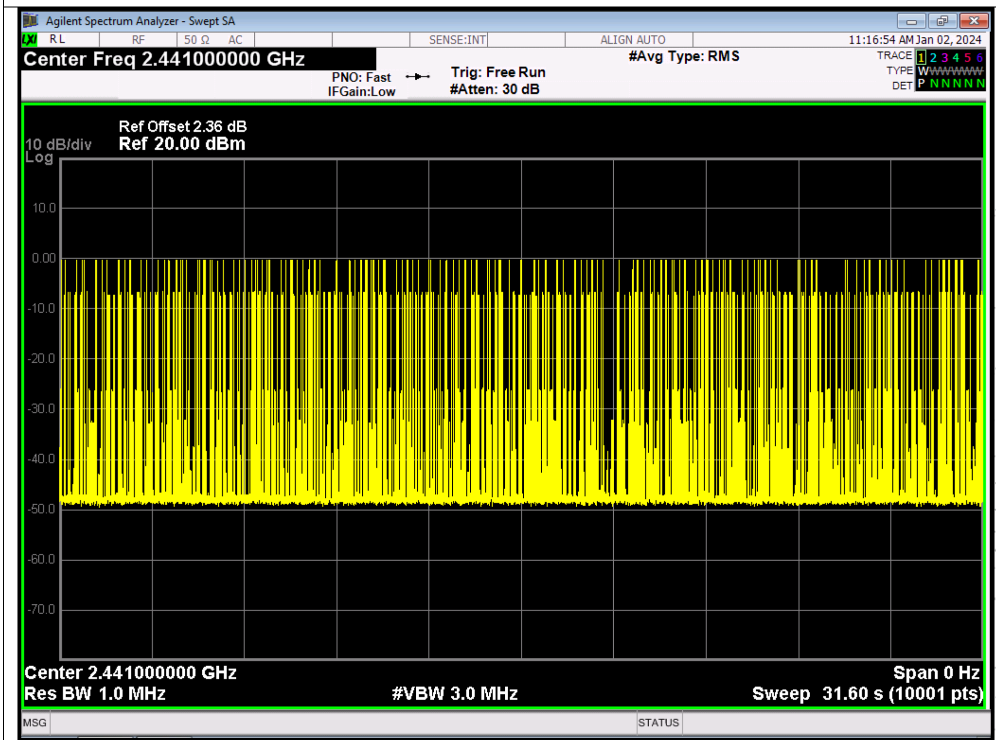
Dwell NVNT 2-DH1 2441MHz Ant1 Accumulated



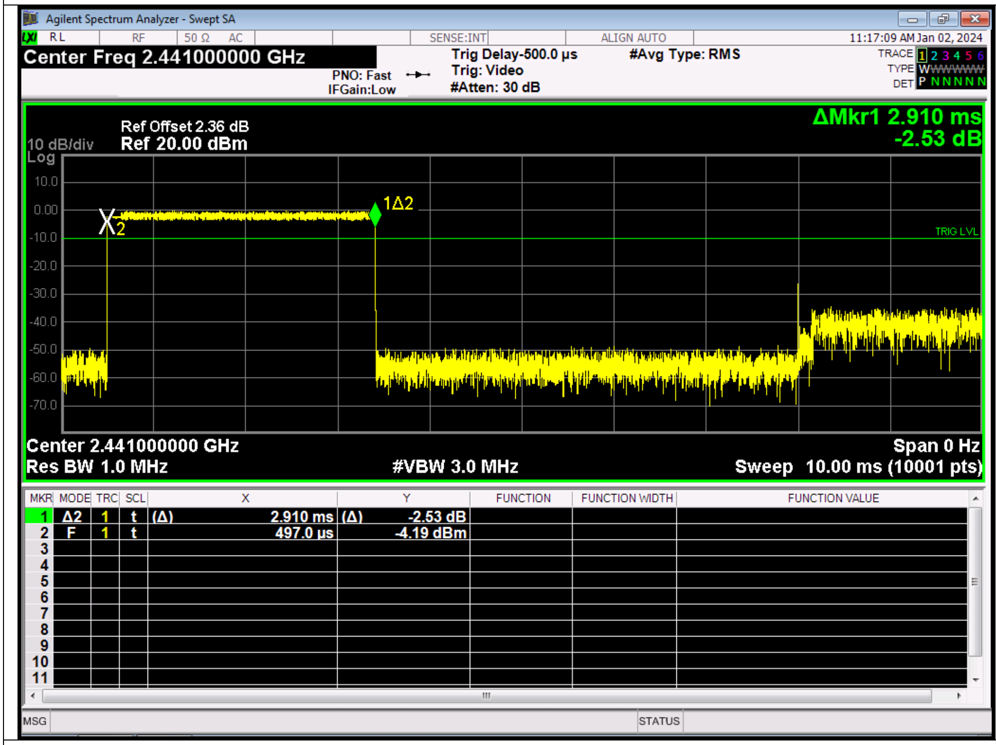
Dwell NVNT 2-DH3 2441MHz Ant1 One Burst



Dwell NVNT 2-DH3 2441MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2441MHz Ant1 One Burst



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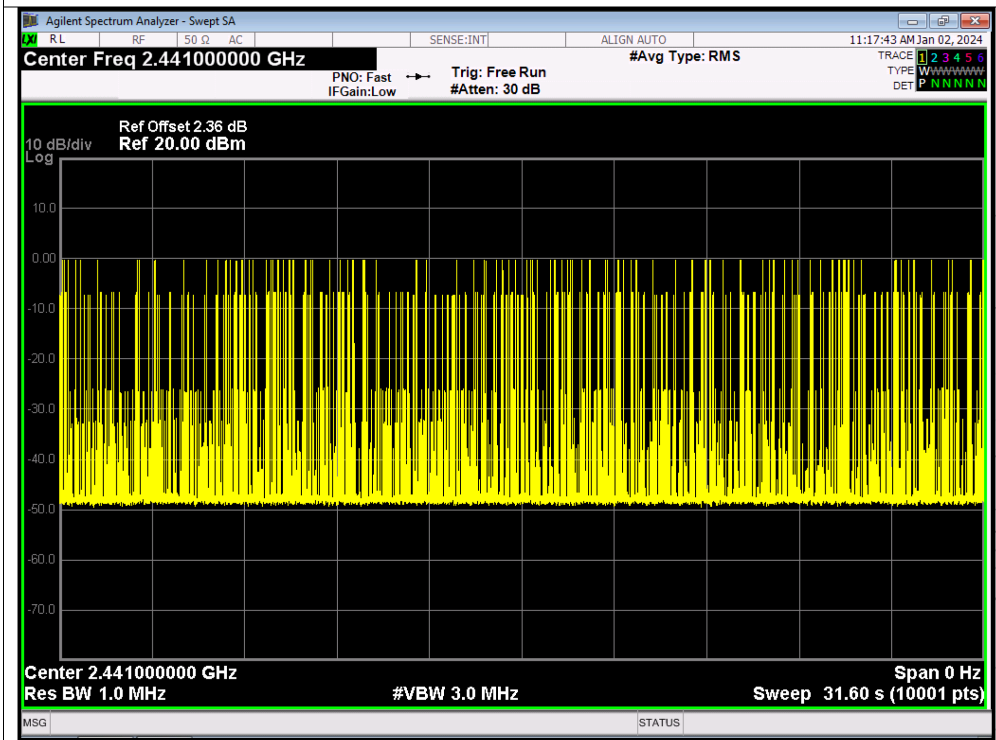


15. Antenna Requirement

15.1 Limit

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

15.2 Test Result

The EUT antenna is PCB antenna, fulfill the requirement of this section.

16. EUT Photographs

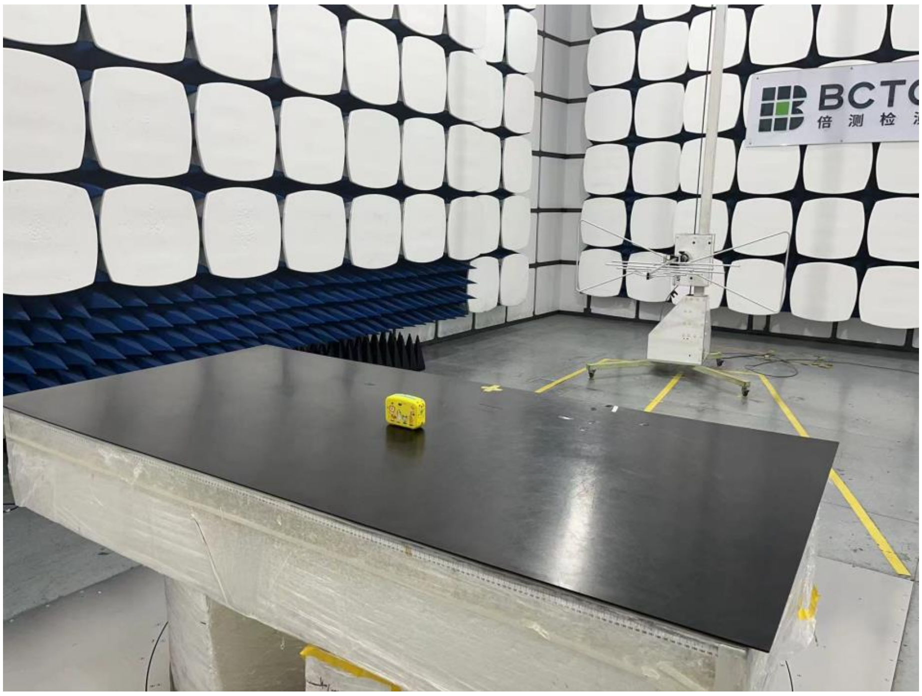
EUT Photo

NOTE: Appendix-Photographs Of EUT Constructional Details

17. EUT Test Setup Photographs

Conducted emissions

Radiated Measurement Photos



STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

5. The test process and test result is only related to the Unit Under Test.

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

7. The quality system of our laboratory is in accordance with ISO/IEC17025.

8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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P.C.: 518103

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Website: http://www.chnbctc.com

E-Mail: bctc@bctc-lab.com.cn

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