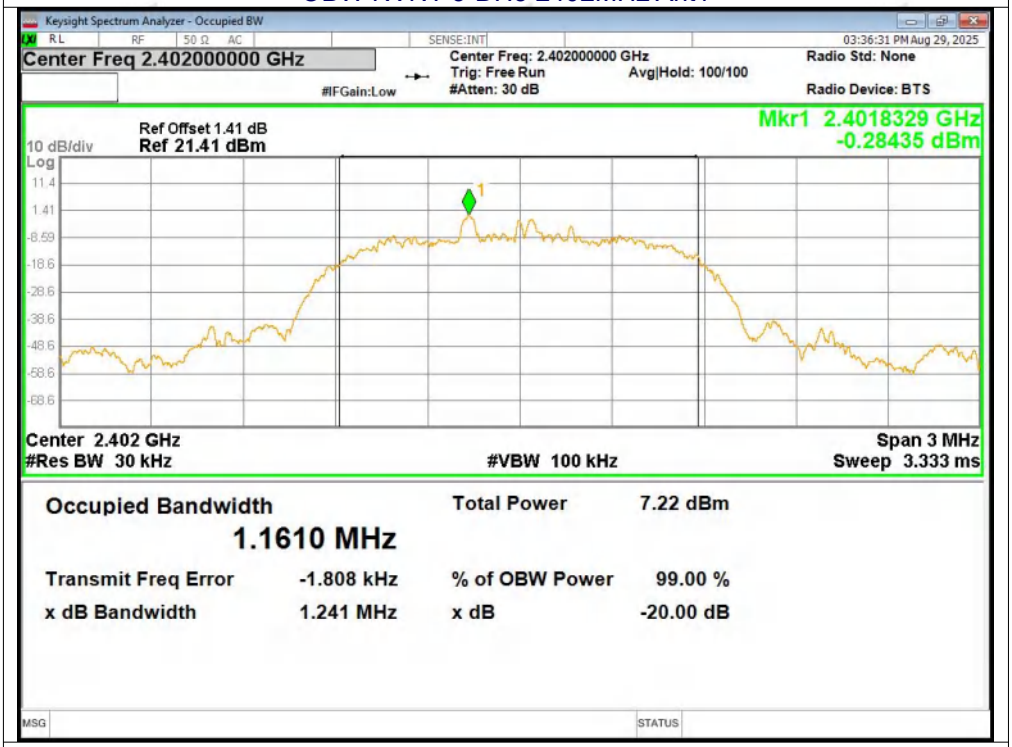
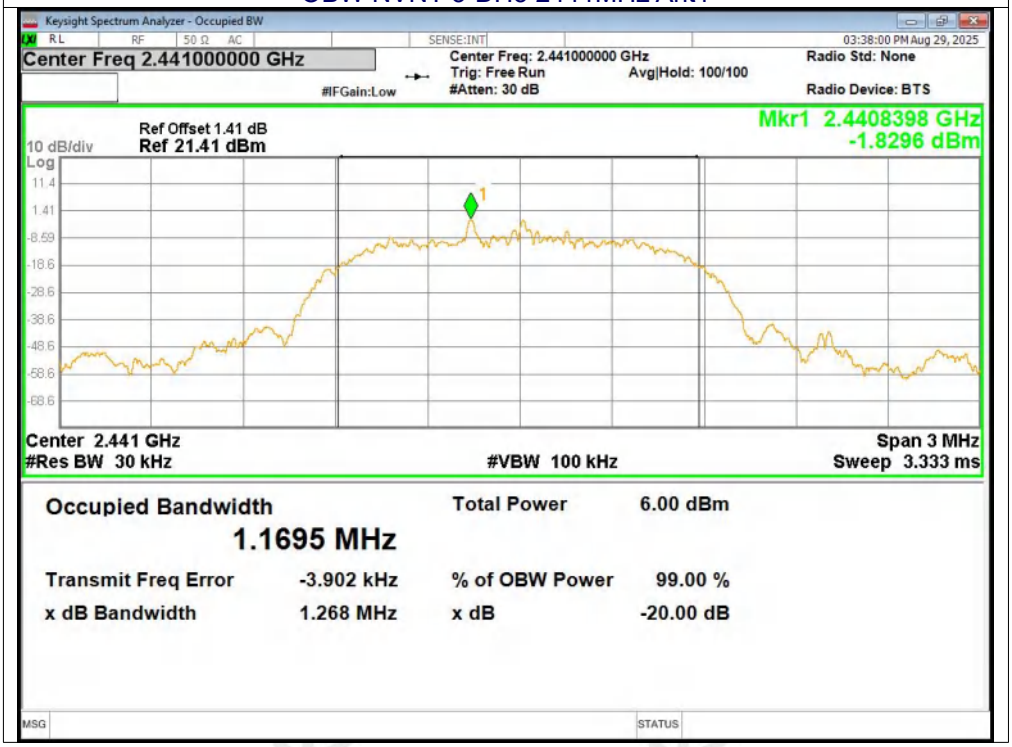
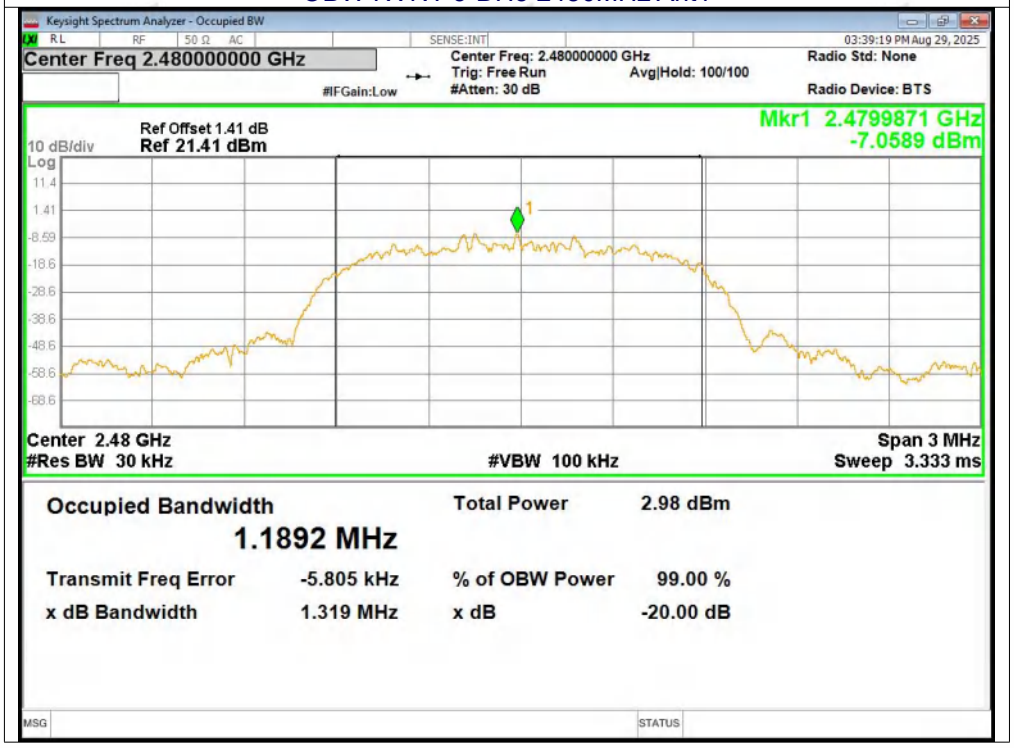
OBW NVNT 3-DH5 2402MHz Ant1



OBW NVNT 3-DH5 2441MHz Ant1



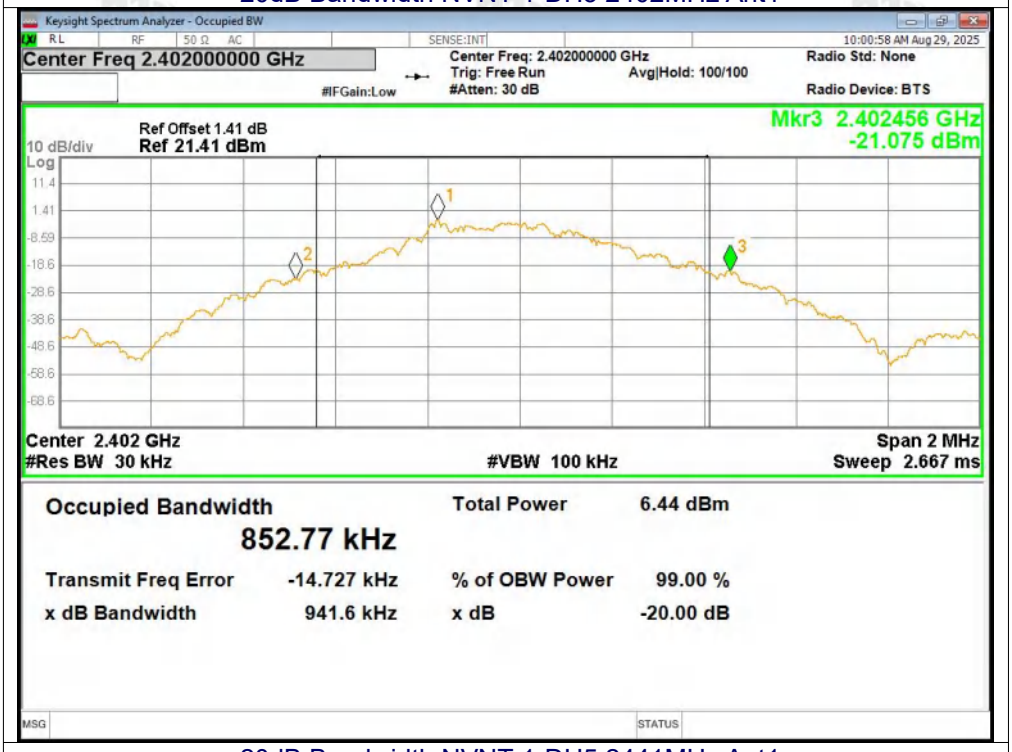
OBW NVNT 3-DH5 2480MHz Ant1



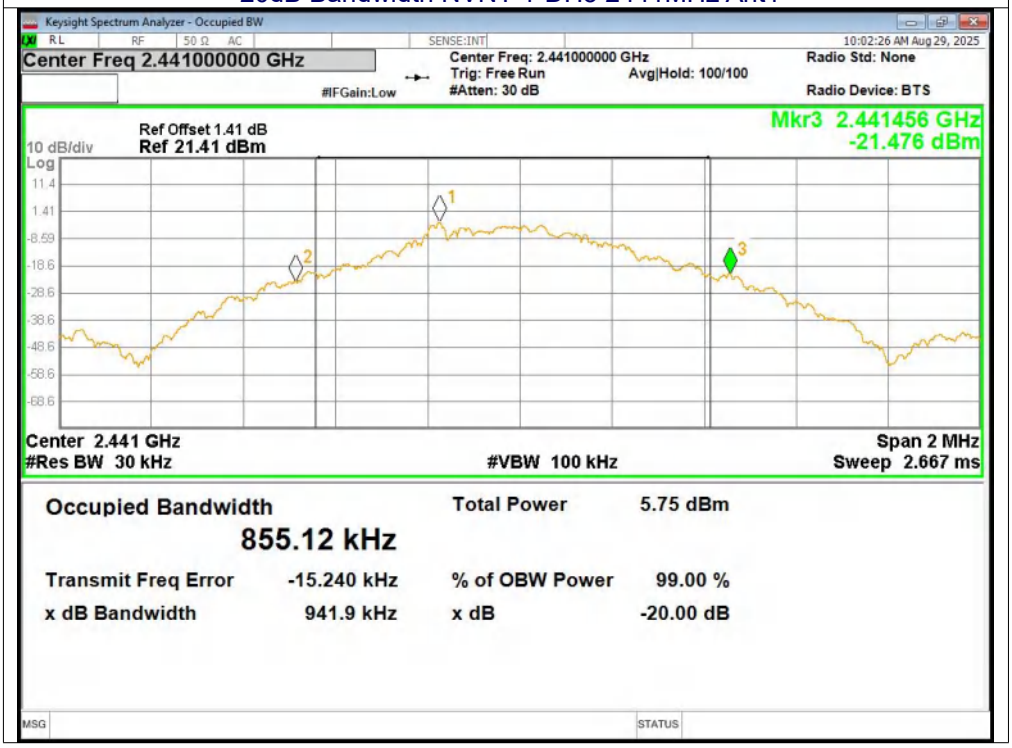
Right earphone				
Mode	Test channel	20dB Emission Bandwidth (MHz)	99%Bandwidth (MHz)	Result
GFSK	Lowest	0.942	0.852	Pass
	Middle	0.942	0.841	
	Highest	0.942	0.85	
π/4DQPSK	Lowest	1.24	1.179	Pass
	Middle	1.254	1.166	
	Highest	1.261	1.17	
8DPSK	Lowest	1.242	1.171	Pass
	Middle	1.243	1.166	
	Highest	1.23	1.17	

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

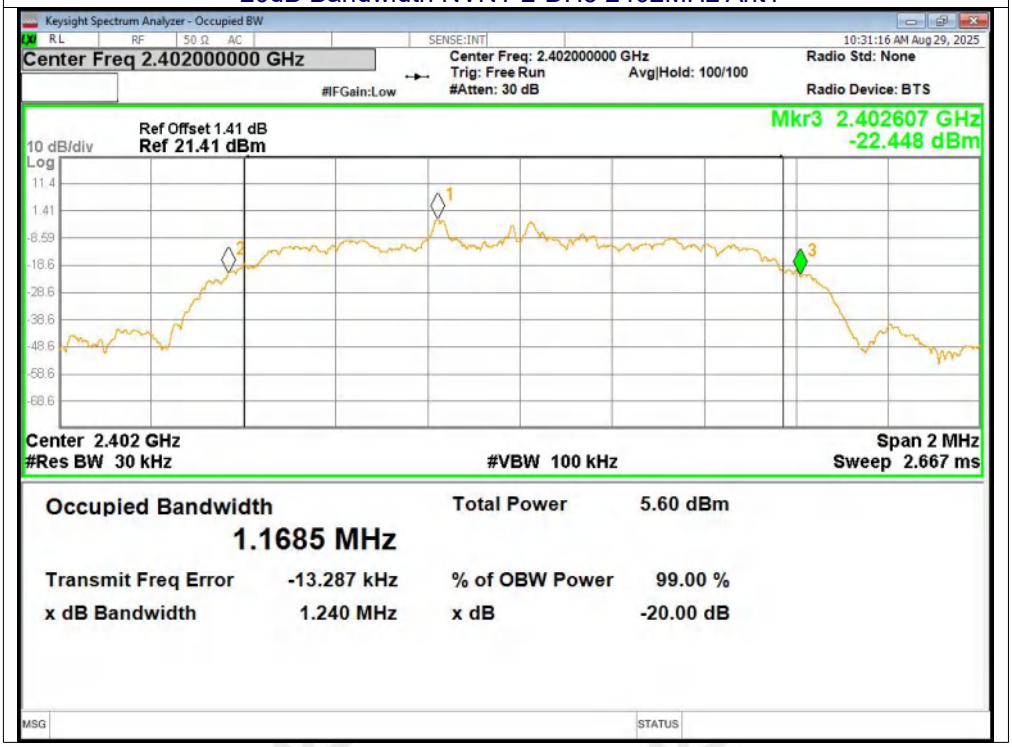


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

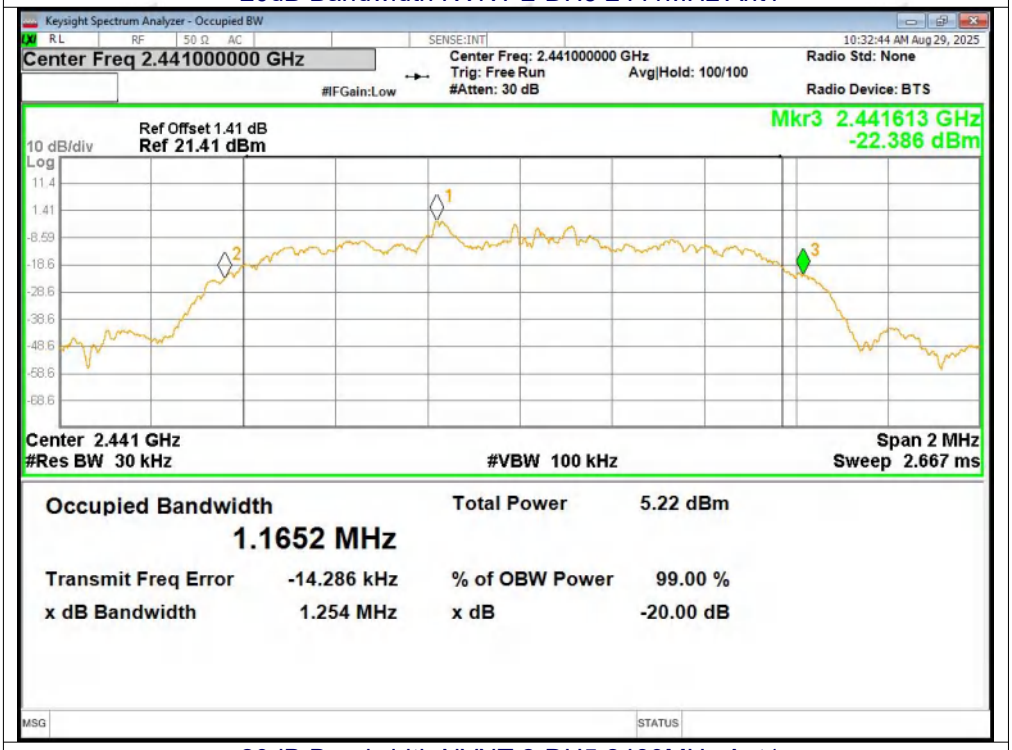


-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

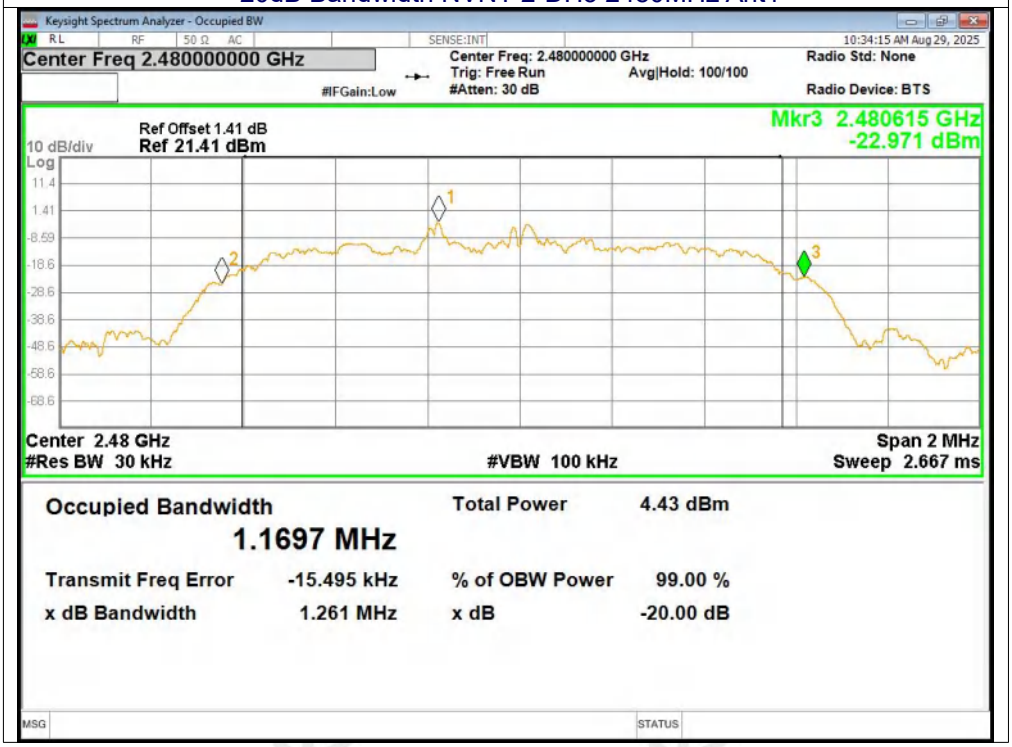
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



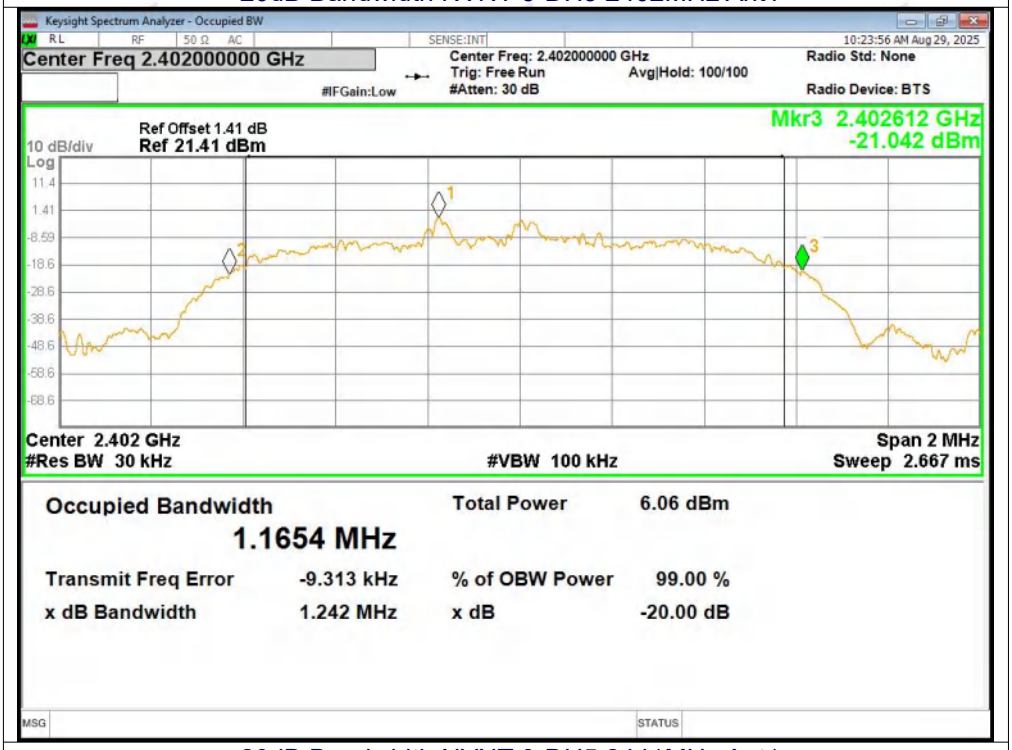
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



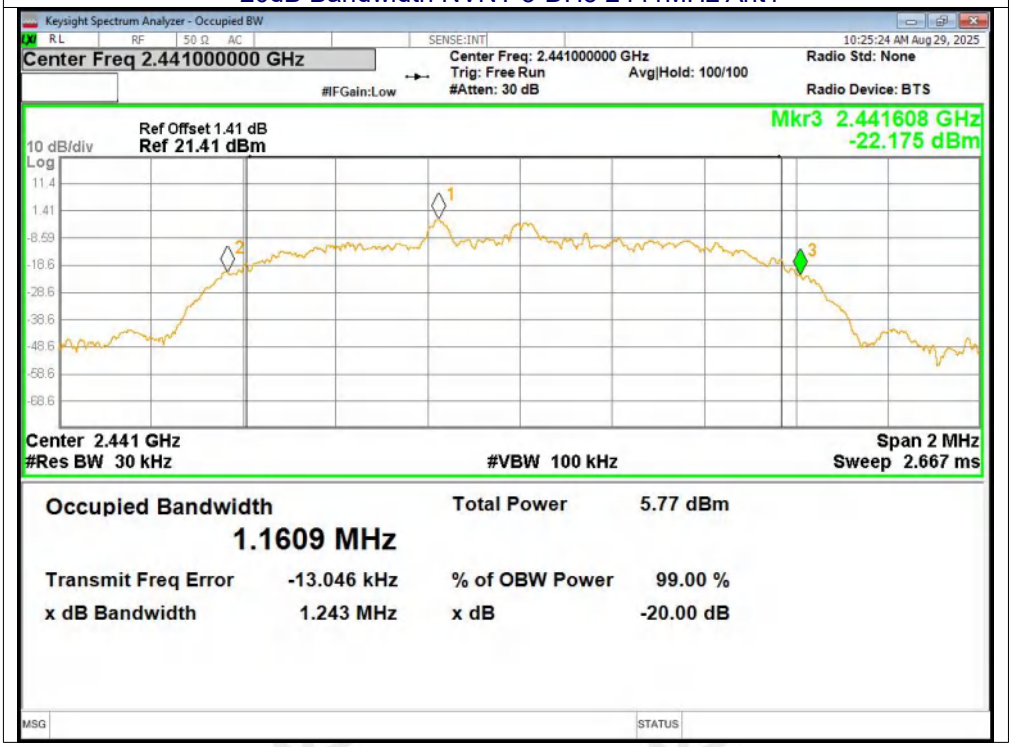
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



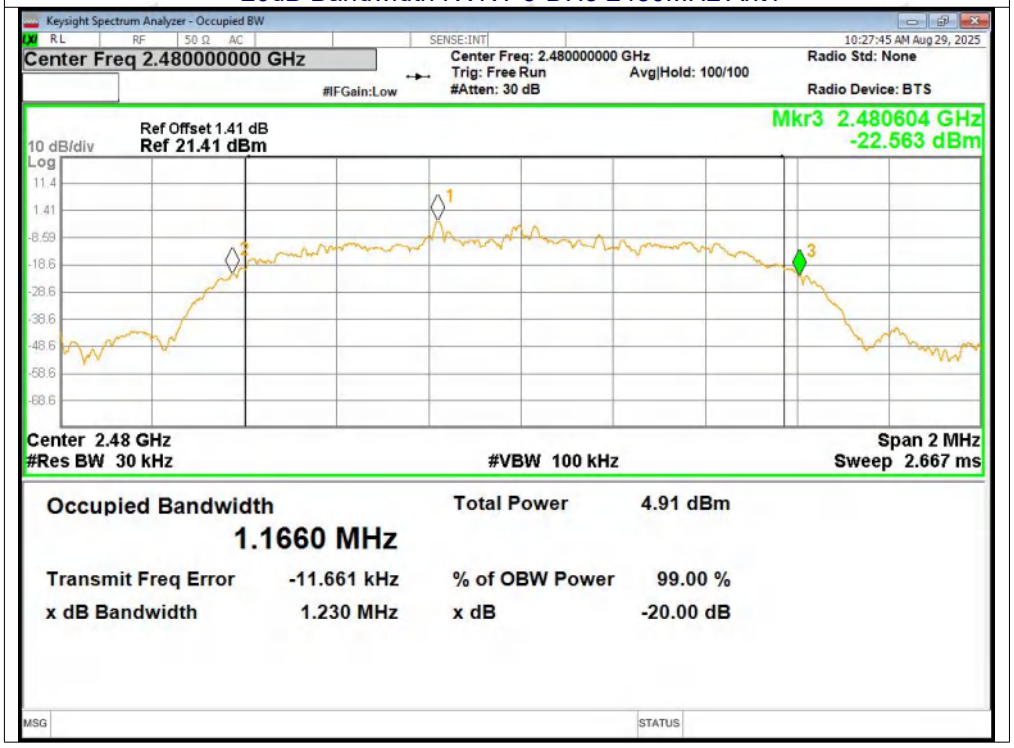
-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



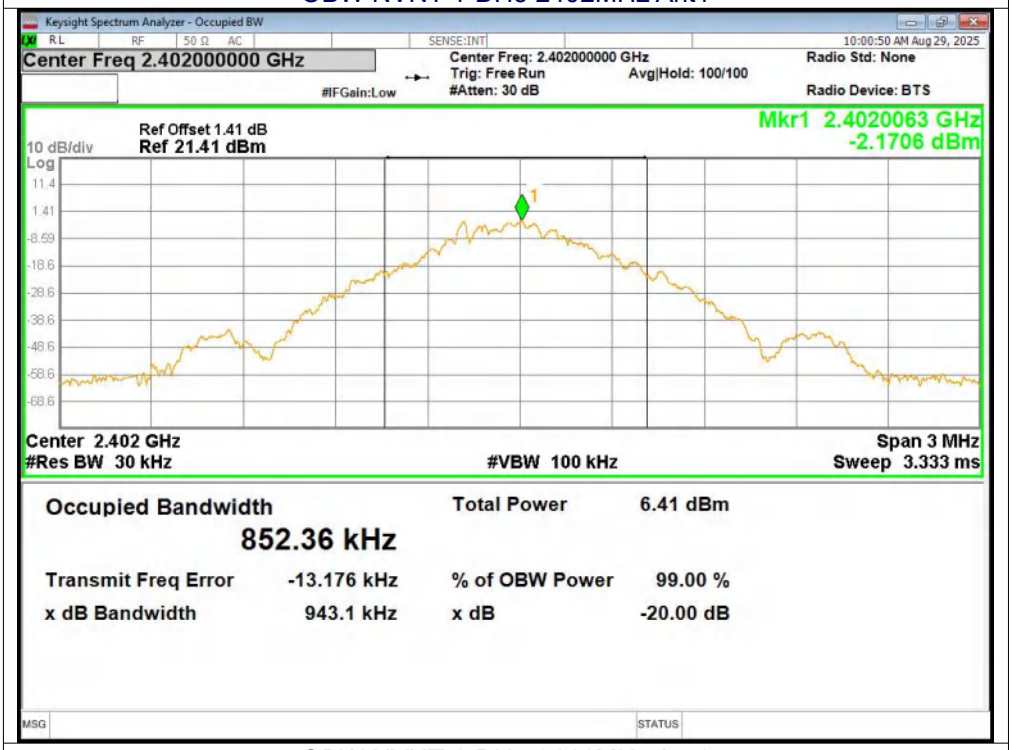
-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



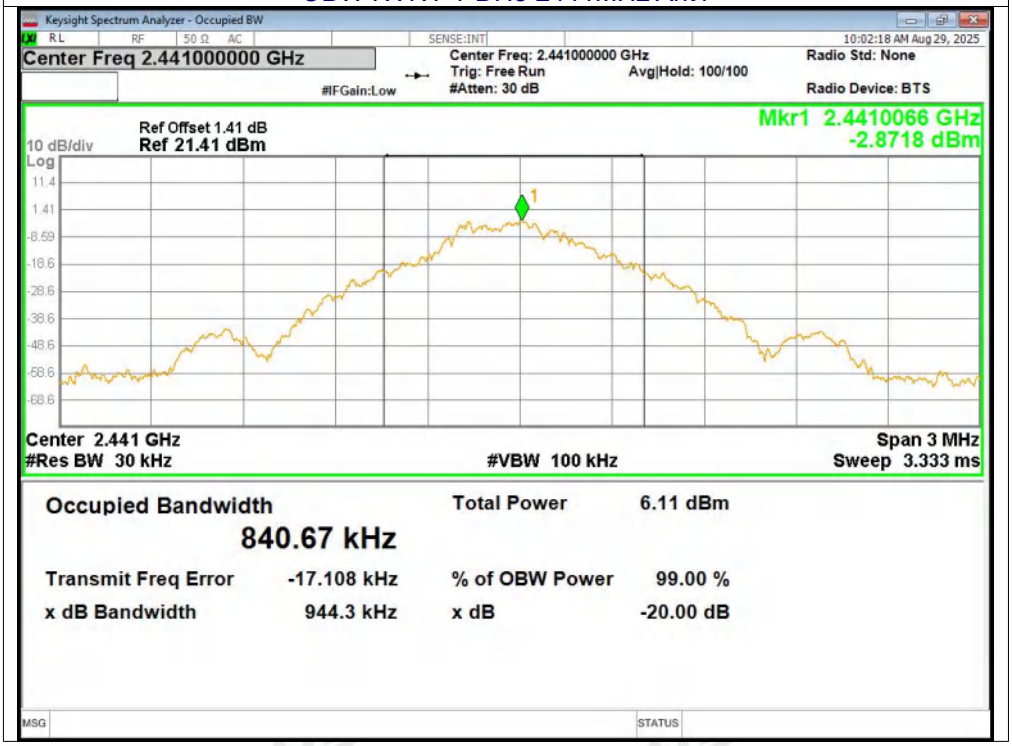
-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1



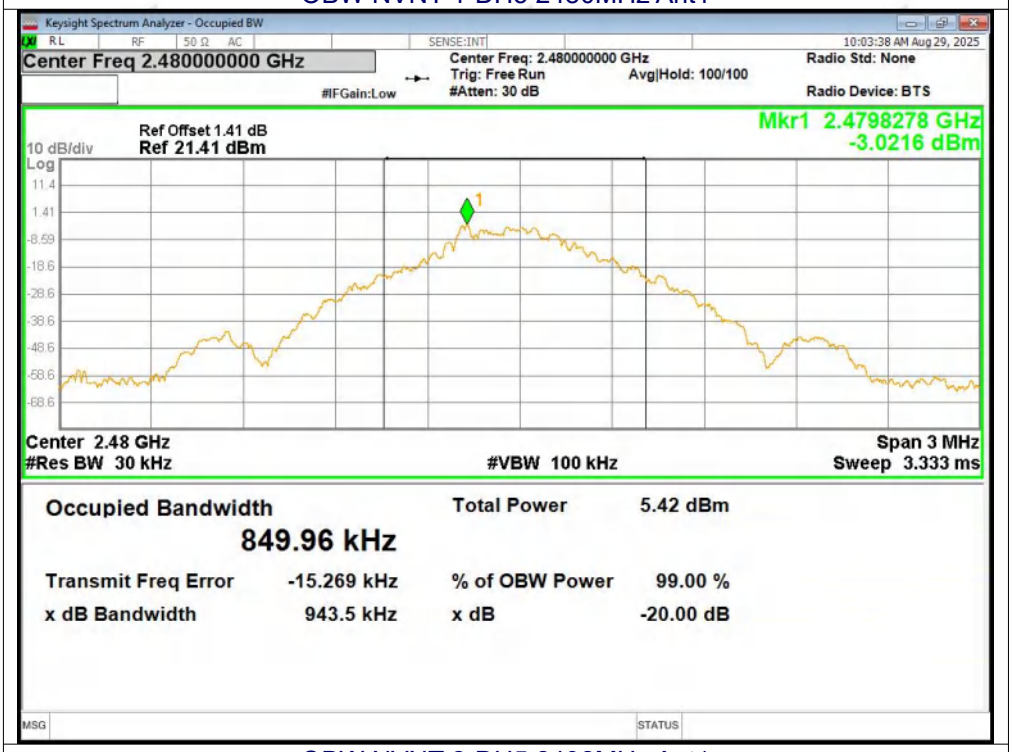
OBW NVNT 1-DH5 2402MHz Ant1



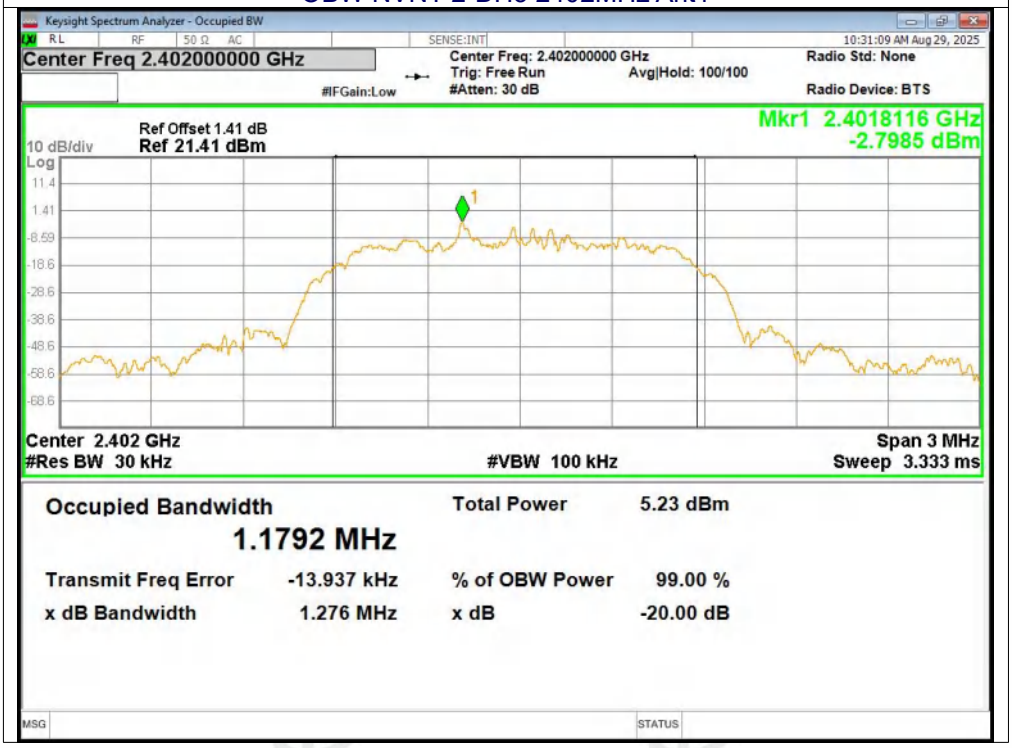
OBW NVNT 1-DH5 2441MHz Ant1



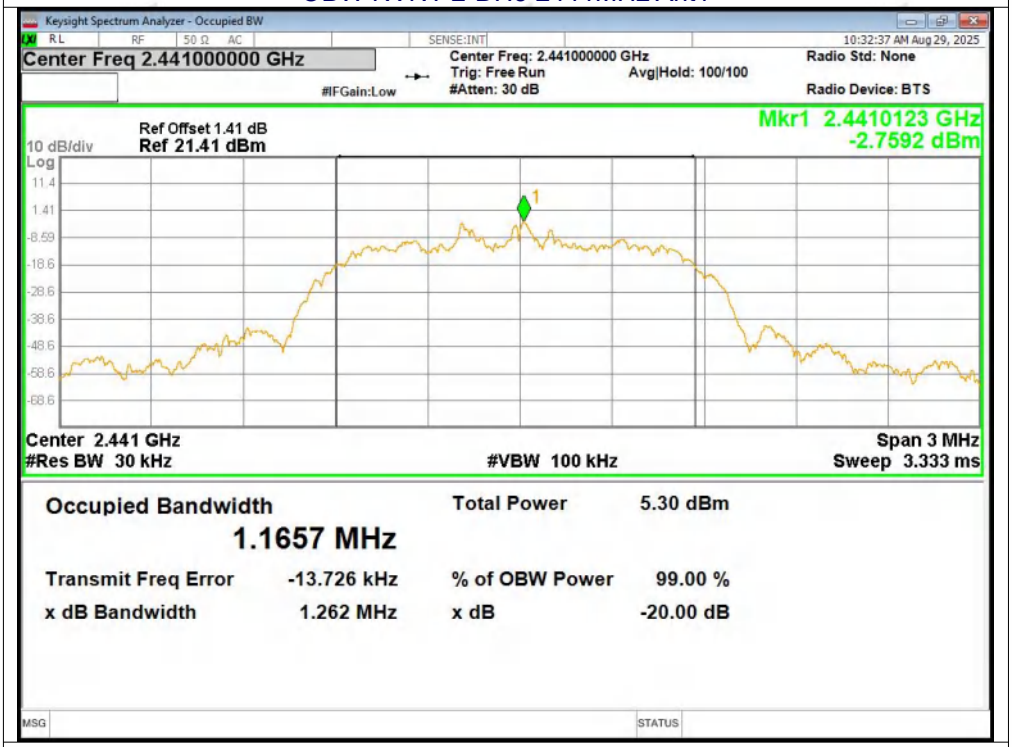
OBW NVNT 1-DH5 2480MHz Ant1



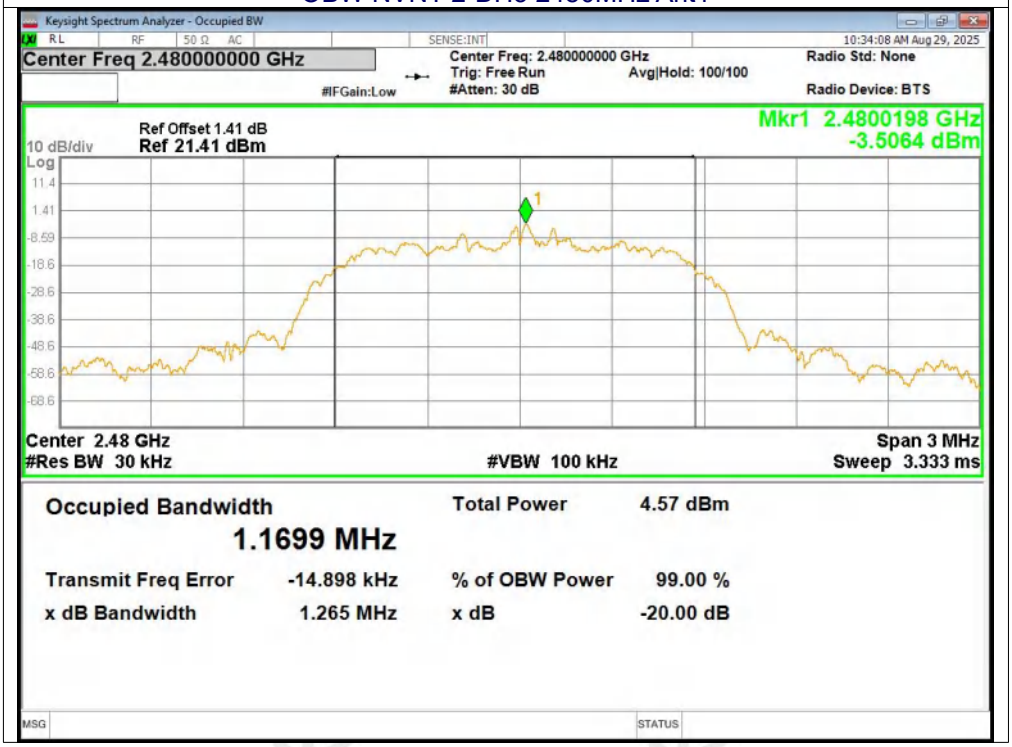
OBW NVNT 2-DH5 2402MHz Ant1



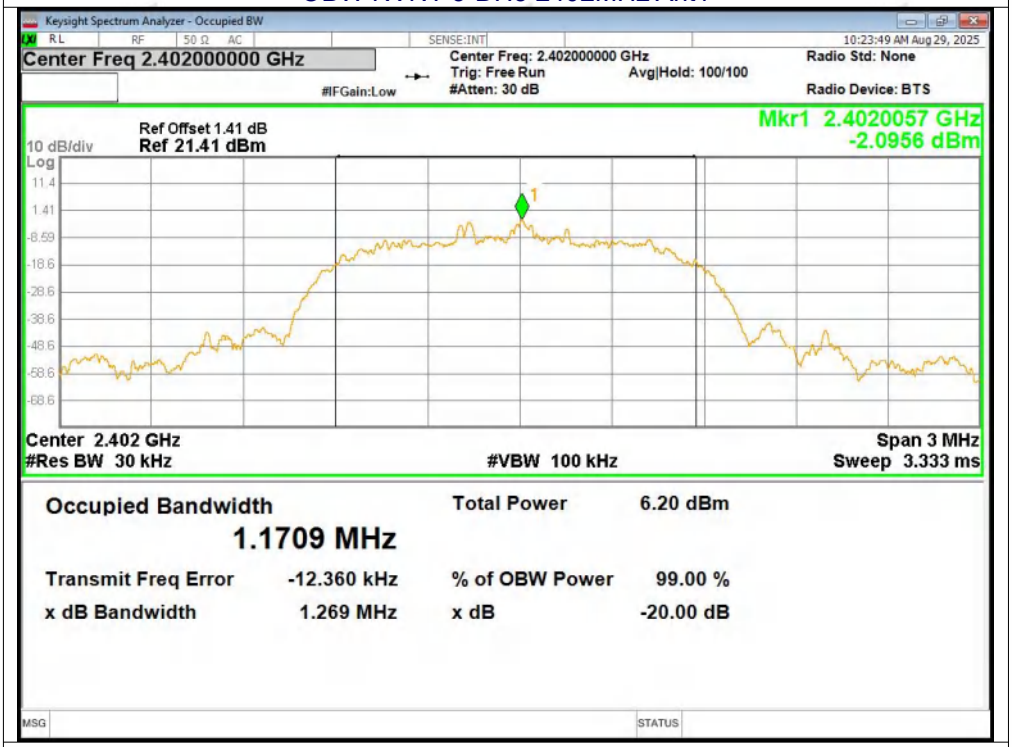
OBW NVNT 2-DH5 2441MHz Ant1



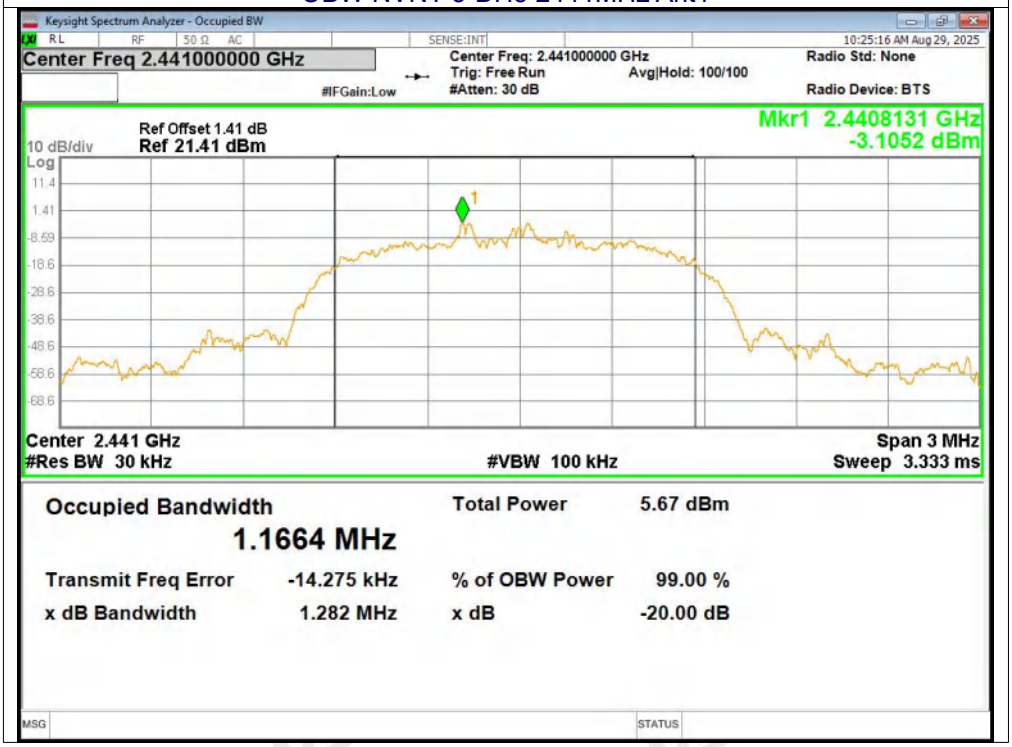
OBW NVNT 2-DH5 2480MHz Ant1



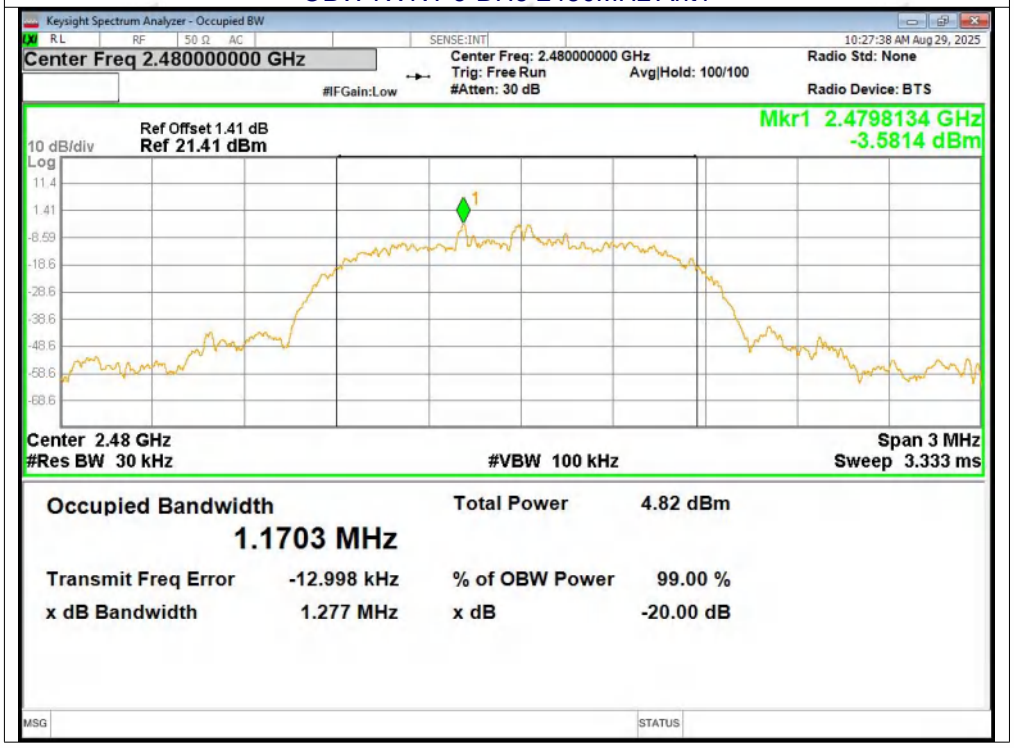
OBW NVNT 3-DH5 2402MHz Ant1



OBW NVNT 3-DH5 2441MHz Ant1



OBW NVNT 3-DH5 2480MHz Ant1



9. Maximum Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(1), RSS 247 5.4 (b)
Test Method:	ANSI C63.10:2013

9.1 Block Diagram Of Test Setup

9.2 Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels. The e.i.r.p. shall not exceed 4 W.

9.3 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.

9.4 DEVIATION FROM STANDARD

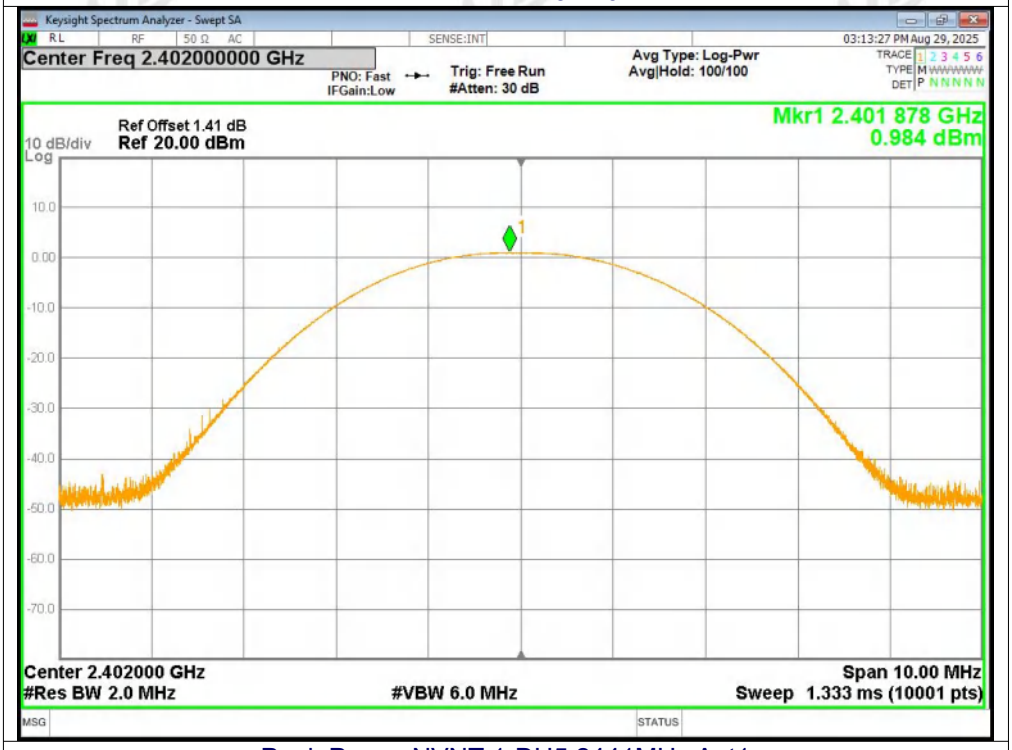
No deviation.

9.5 Test Result

Left earphone				
Mode	Test channel	Peak Output Power (dBm)	Peak Output Power Limit (dBm)	Result
GFSK	Lowest	0.98	21.00	Pass
	Middle	0.05		
	Highest	-2.35		
π/4DQPSK	Lowest	1.68	21.00	Pass
	Middle	0.82		
	Highest	-1.62		
8DPSK	Lowest	2.17	21.00	Pass
	Middle	1.21		
	Highest	-1.23		

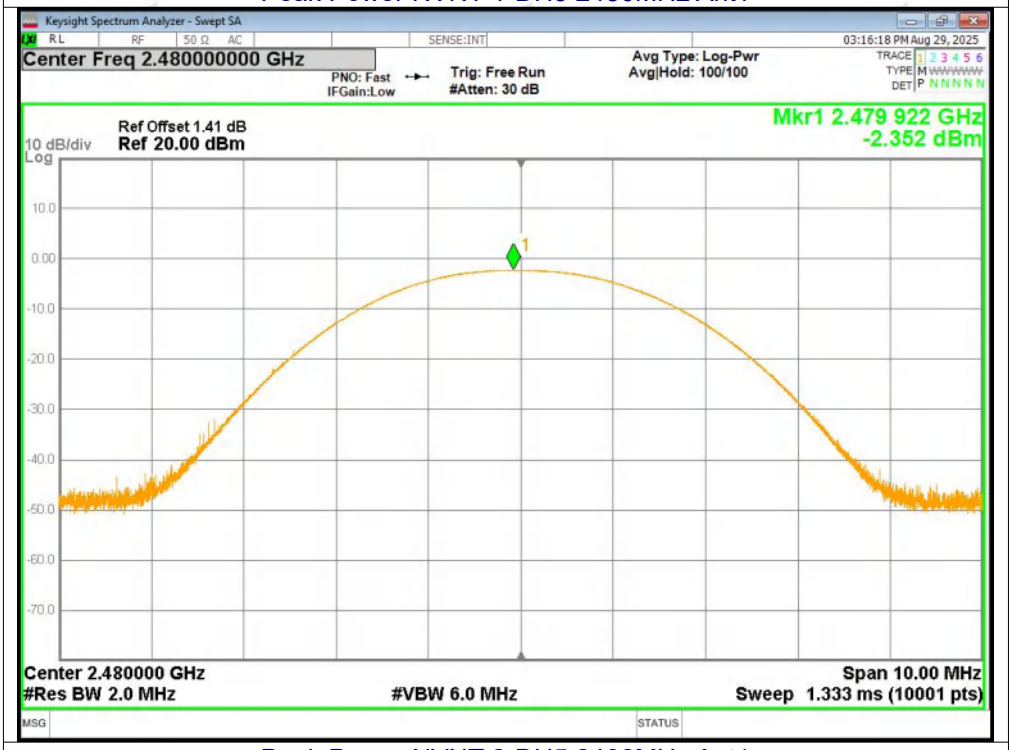
Test Graphs

Peak Power NVNT 1-DH5 2402MHz Ant1

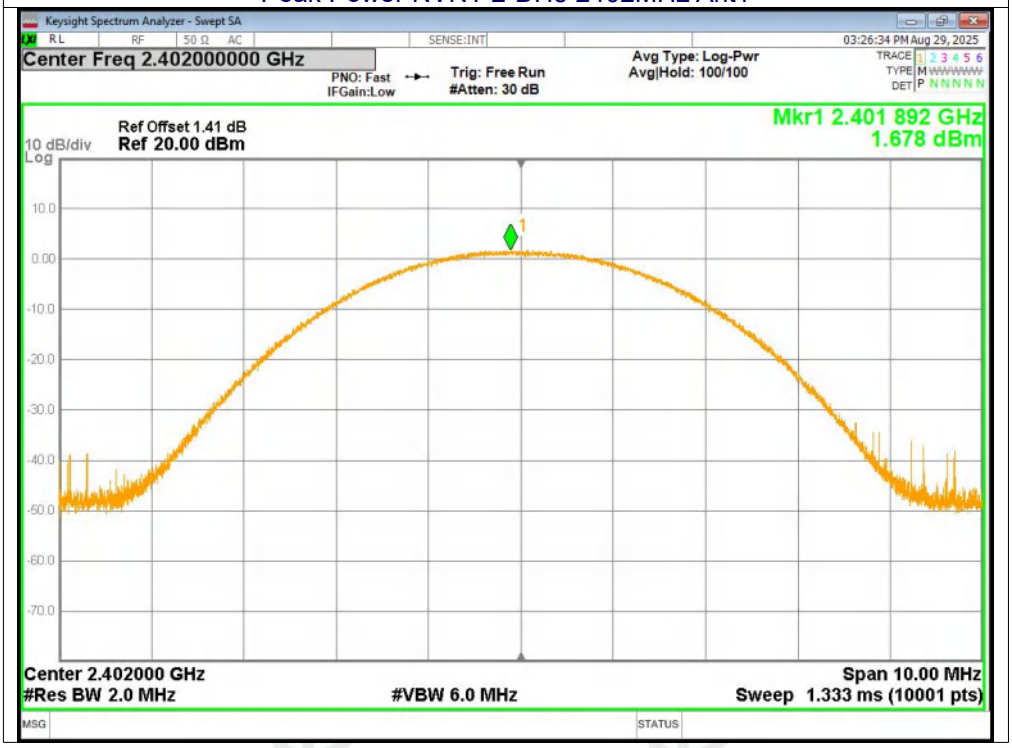


Peak Power NVNT 1-DH5 2441MHz Ant1

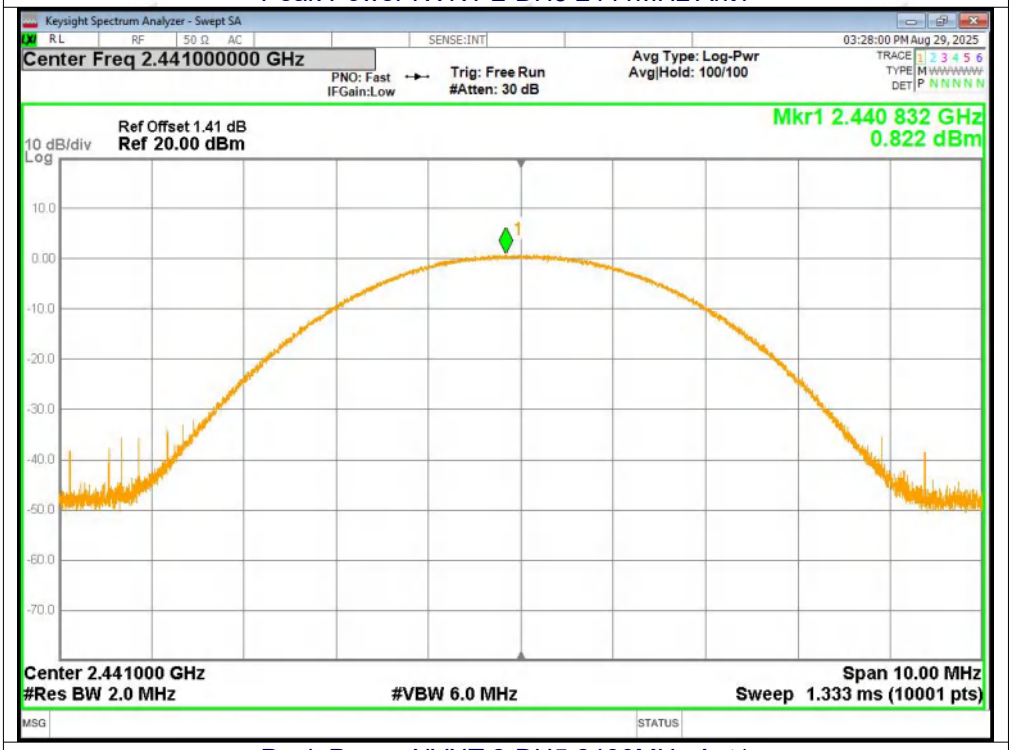
Peak Power NVNT 1-DH5 2480MHz Ant1



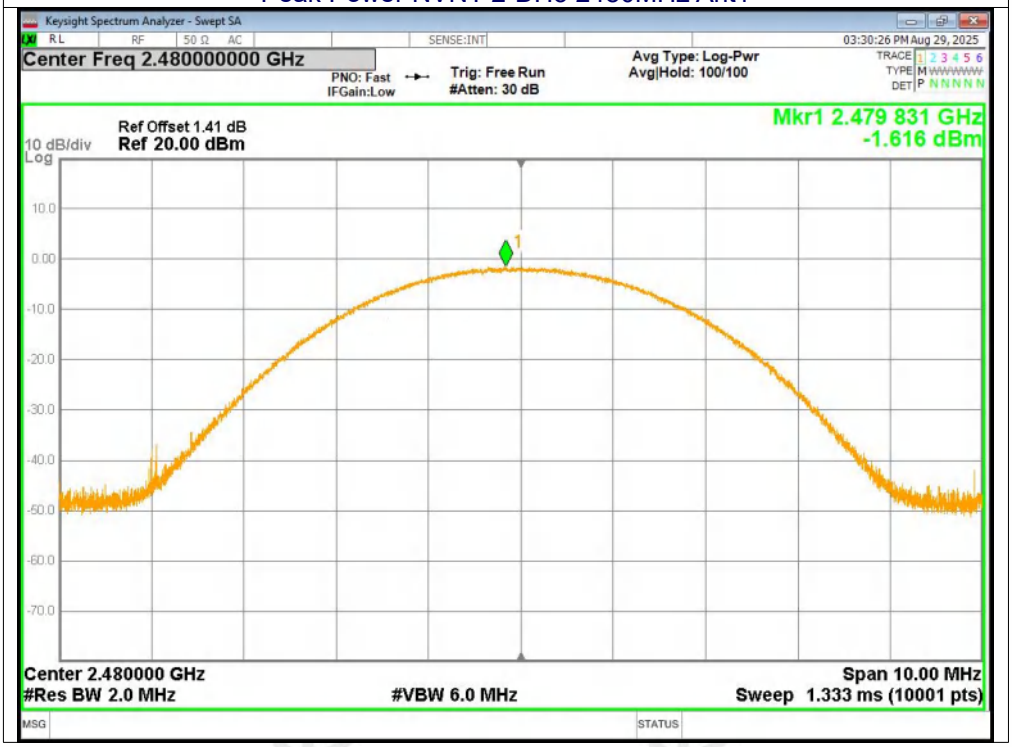
Peak Power NVNT 2-DH5 2402MHz Ant1



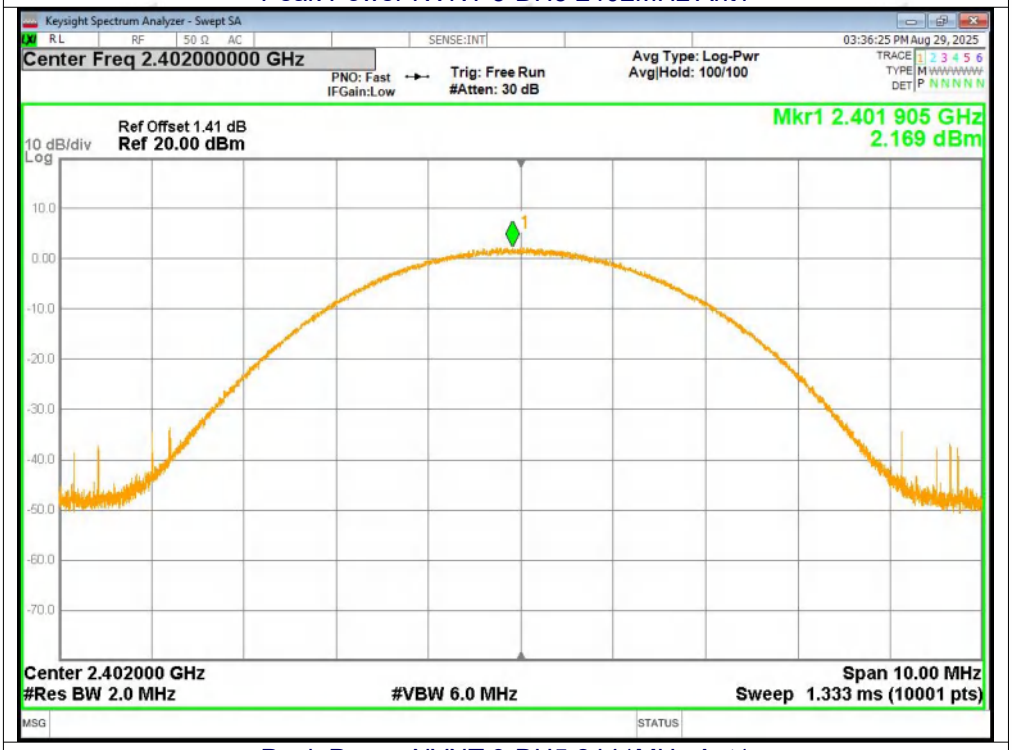
Peak Power NVNT 2-DH5 2441MHz Ant1



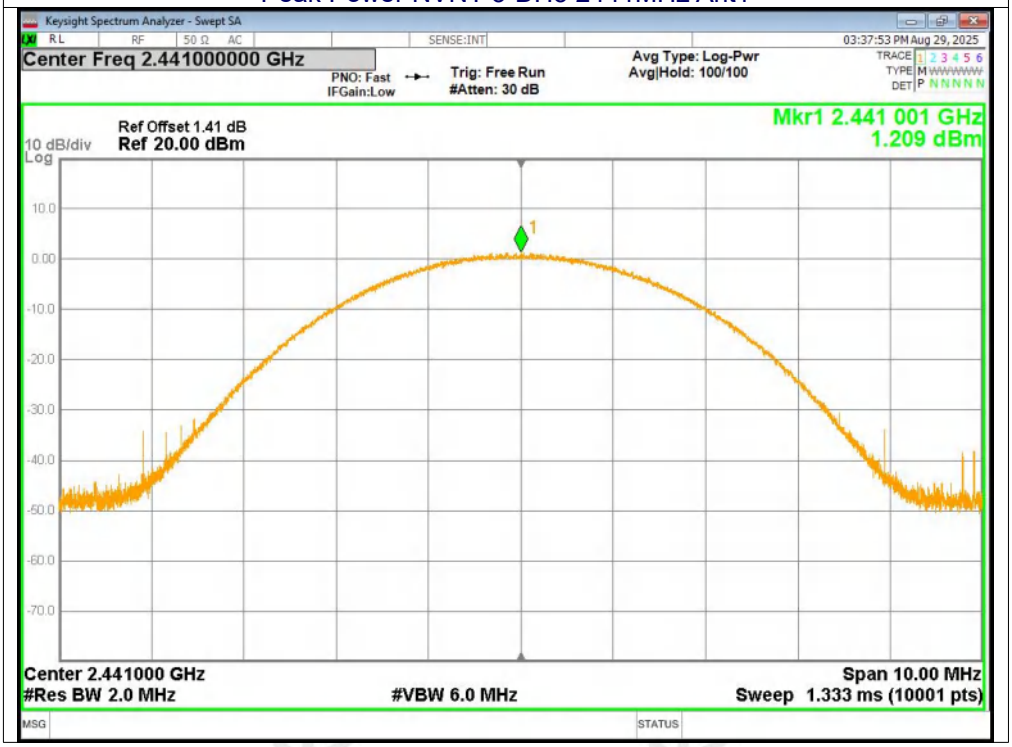
Peak Power NVNT 2-DH5 2480MHz Ant1



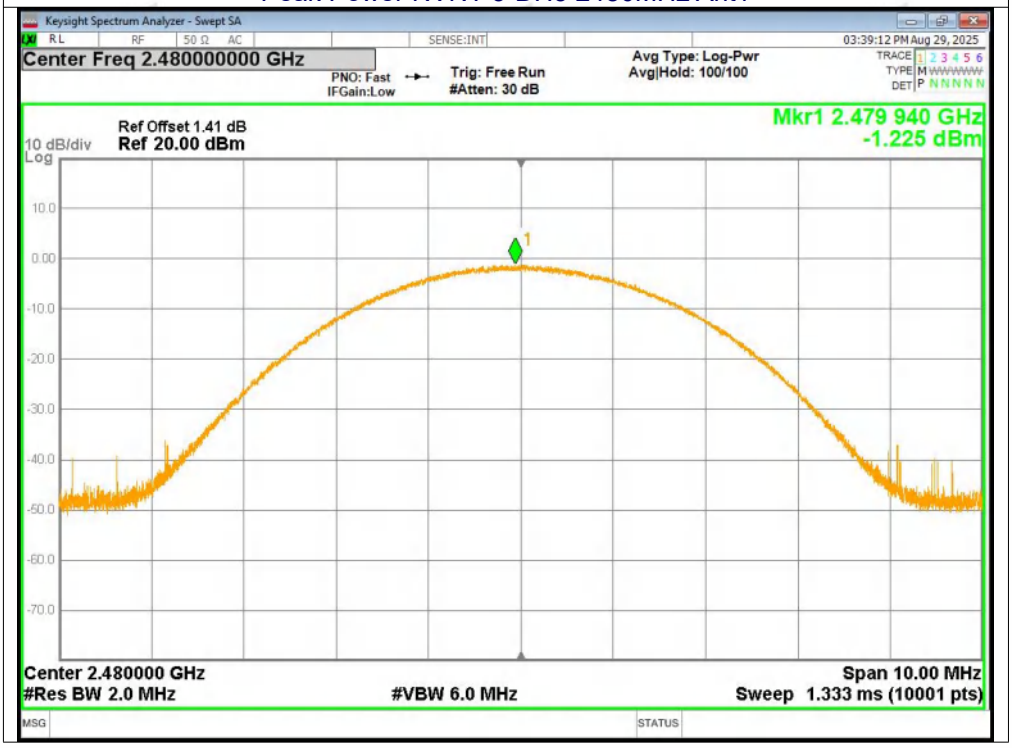
Peak Power NVNT 3-DH5 2402MHz Ant1



Peak Power NVNT 3-DH5 2441MHz Ant1



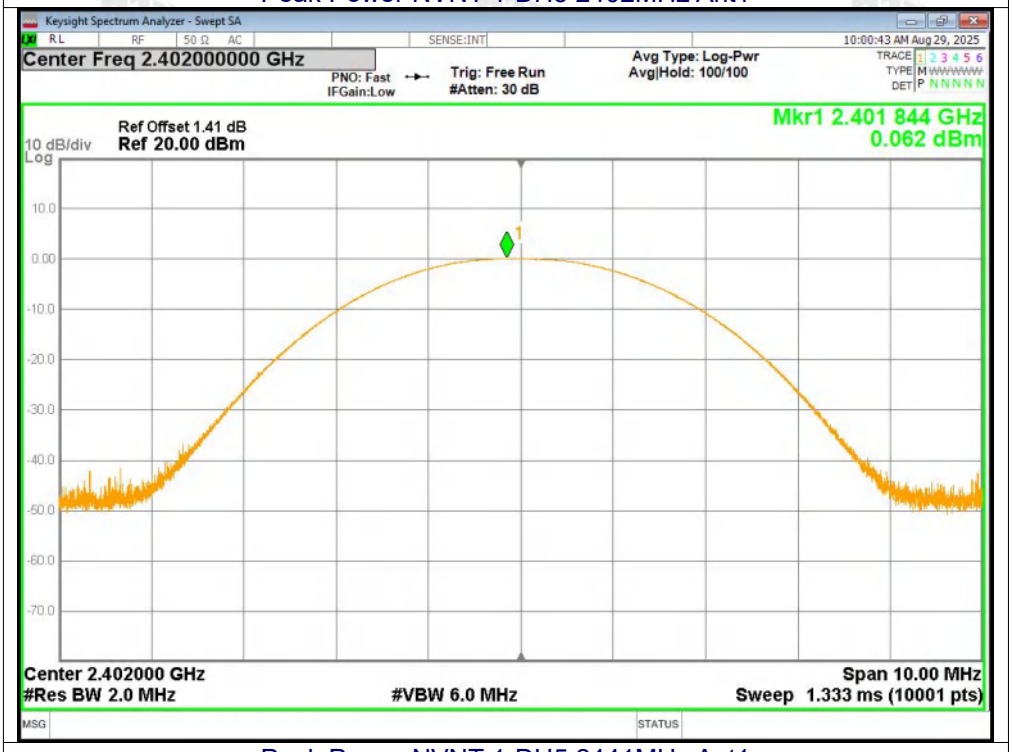
Peak Power NVNT 3-DH5 2480MHz Ant1



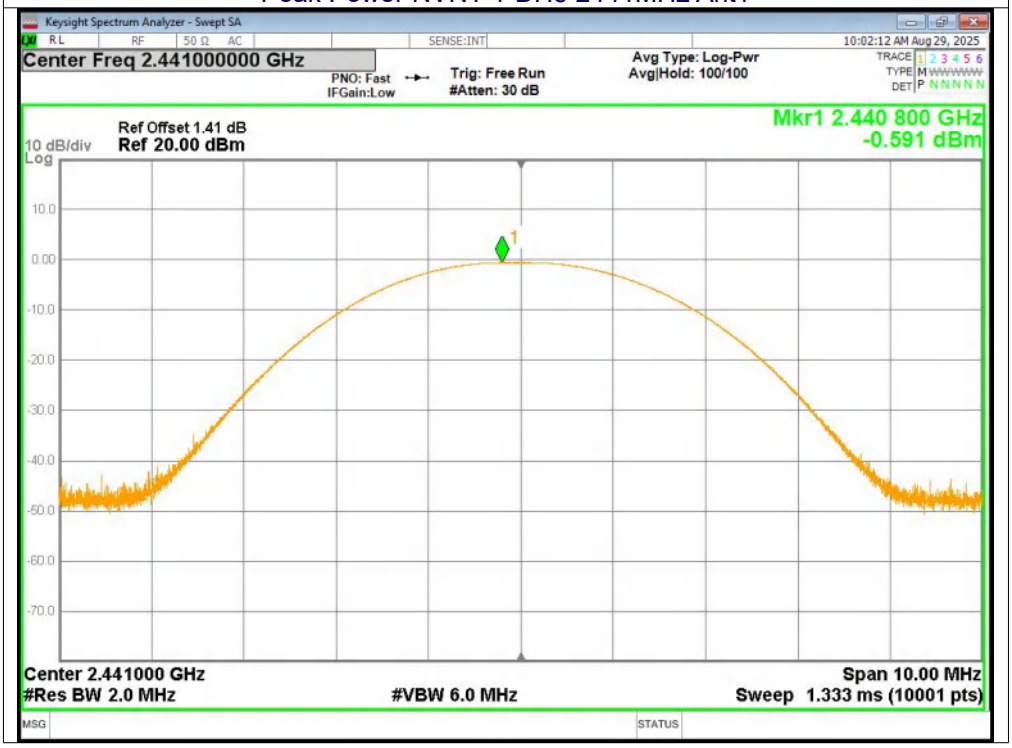
Right earphone				
Mode	Test channel	Peak Output Power (dBm)	Peak Output Power Limit (dBm)	Result
GFSK	Lowest	0.06	21.00	Pass
	Middle	-0.59		
	Highest	-1.1		
π/4DQPSK	Lowest	0.81	21.00	Pass
	Middle	0.25		
	Highest	-0.28		
8DPSK	Lowest	1.28	21.00	Pass
	Middle	0.67		
	Highest	0.04		

Test Graphs

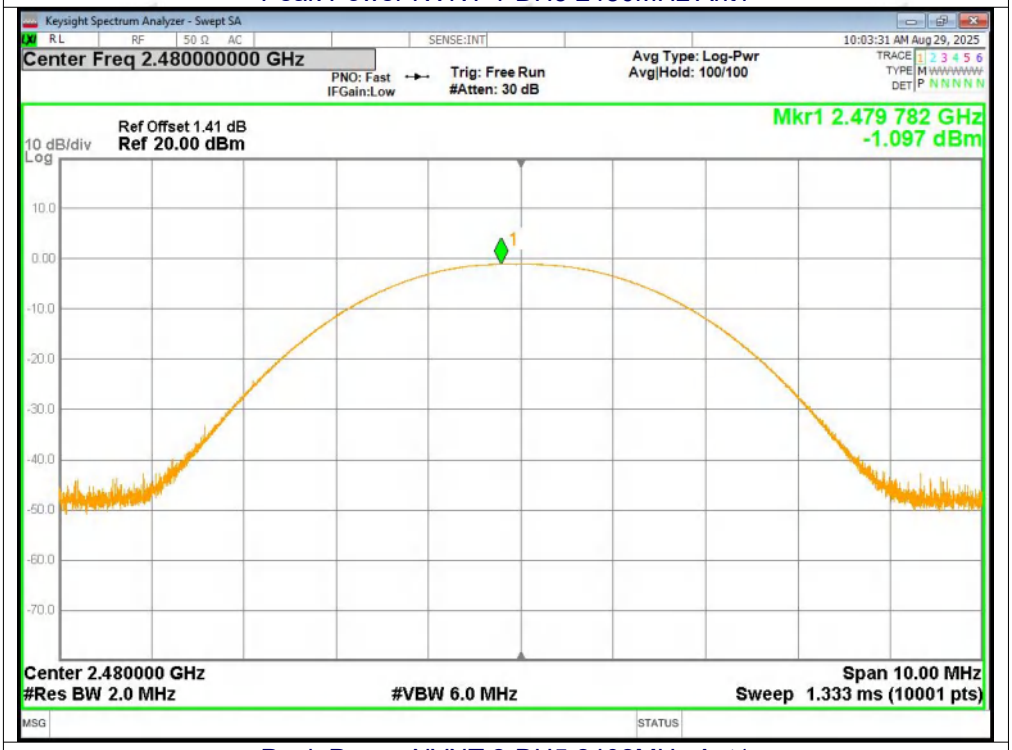
Peak Power NVNT 1-DH5 2402MHz Ant1



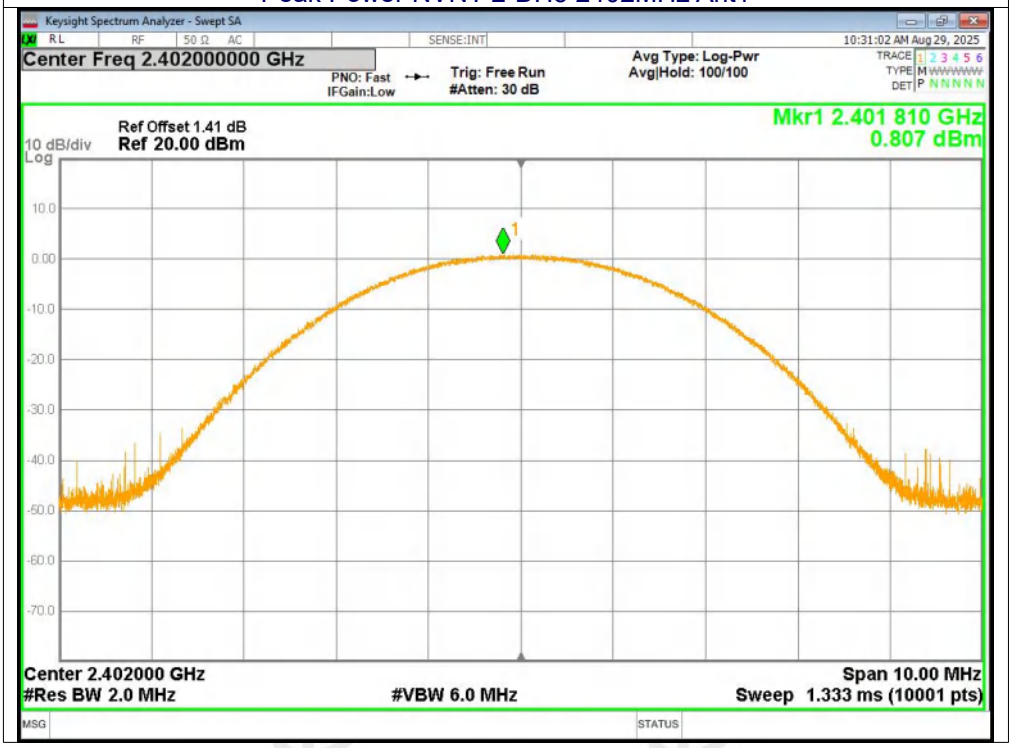
Peak Power NVNT 1-DH5 2441MHz Ant1



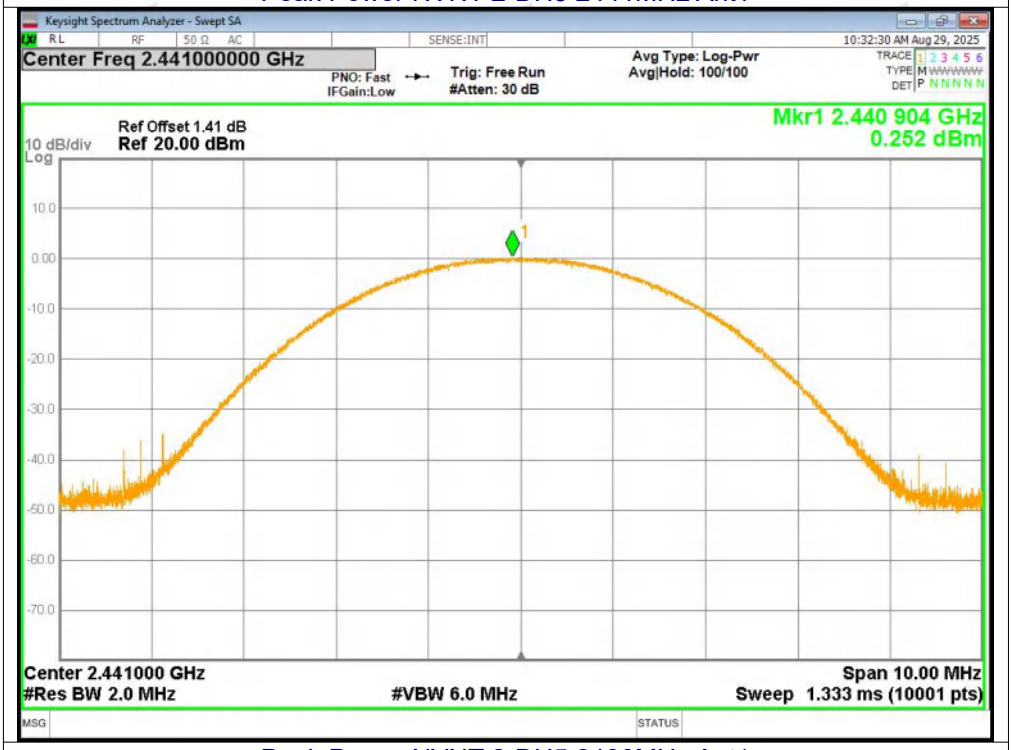
Peak Power NVNT 1-DH5 2480MHz Ant1



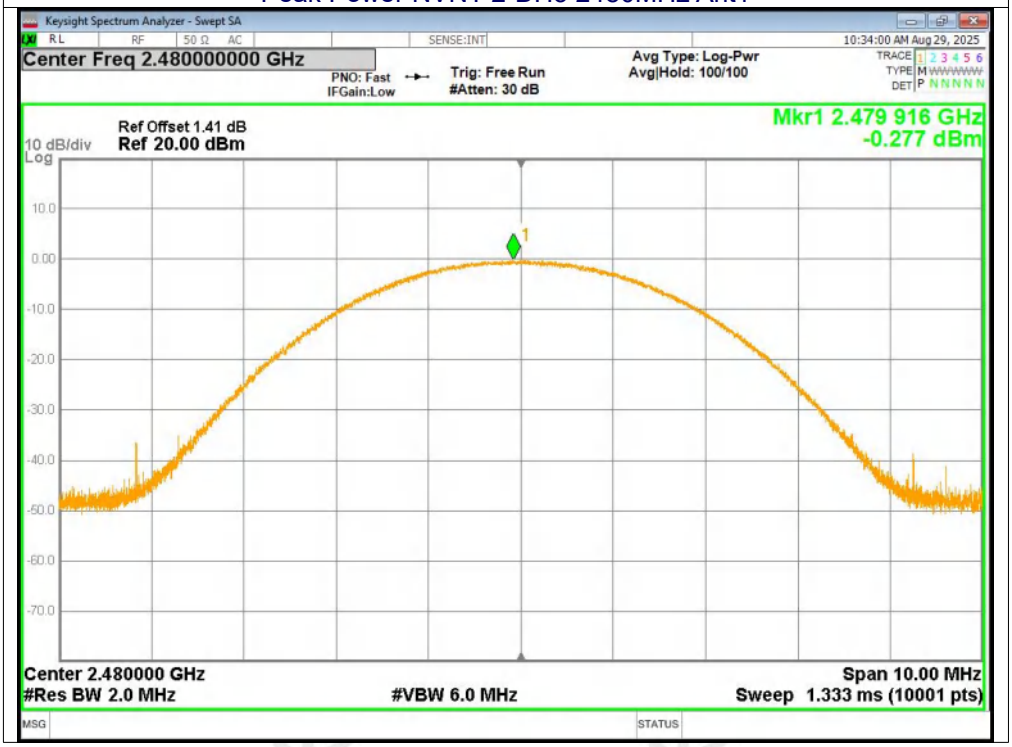
Peak Power NVNT 2-DH5 2402MHz Ant1



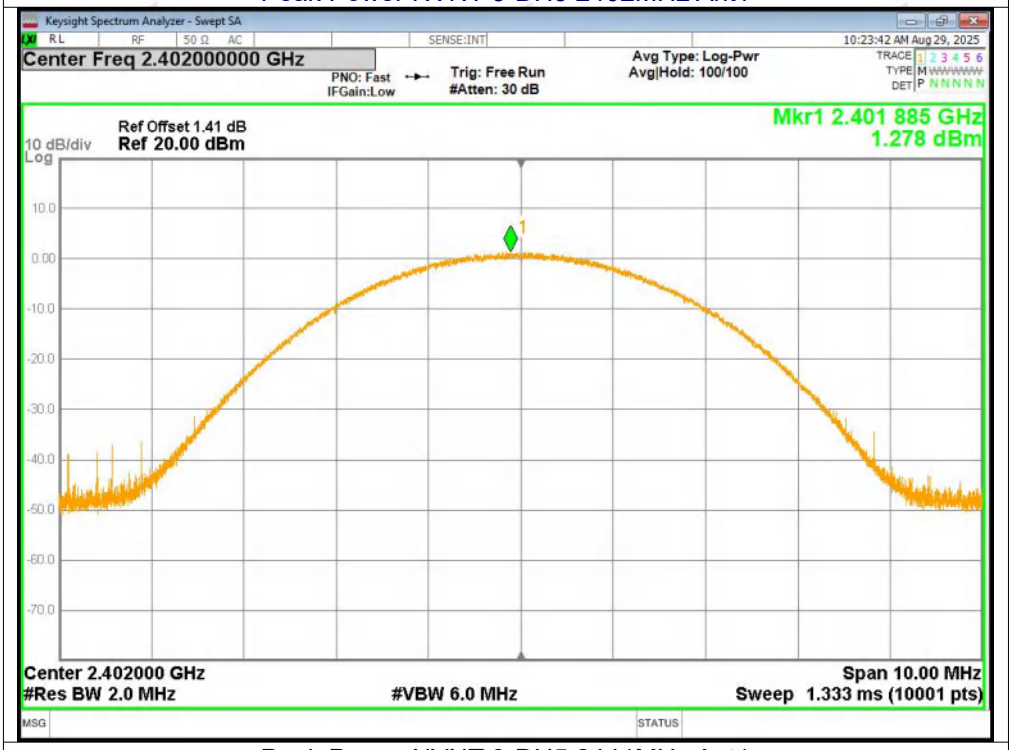
Peak Power NVNT 2-DH5 2441MHz Ant1



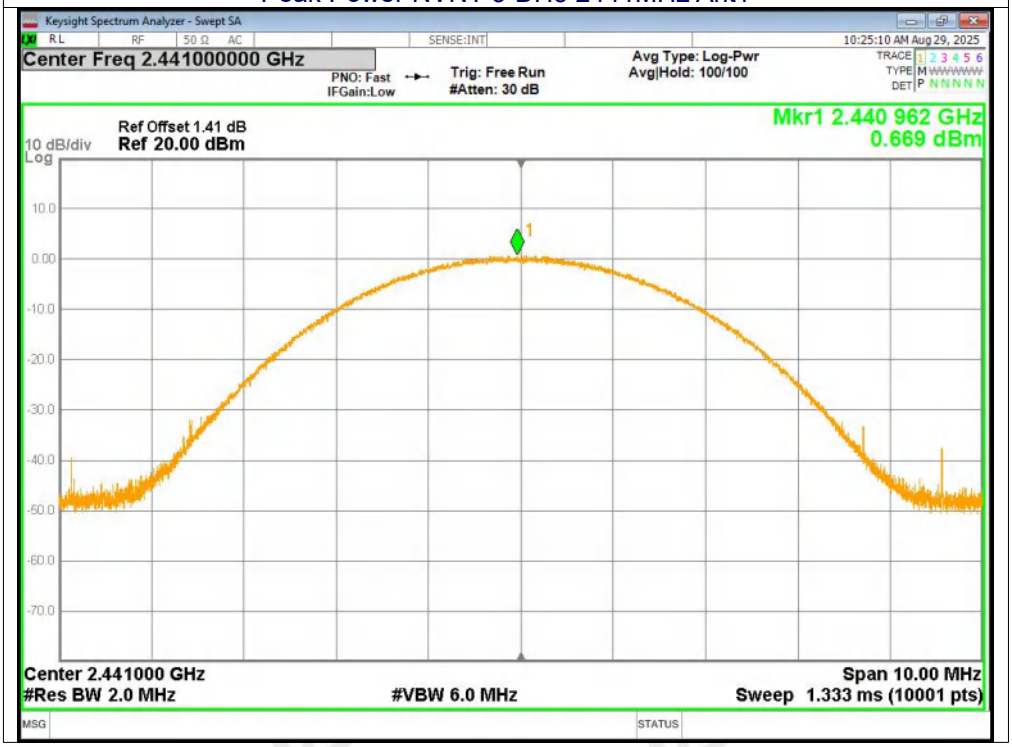
Peak Power NVNT 2-DH5 2480MHz Ant1



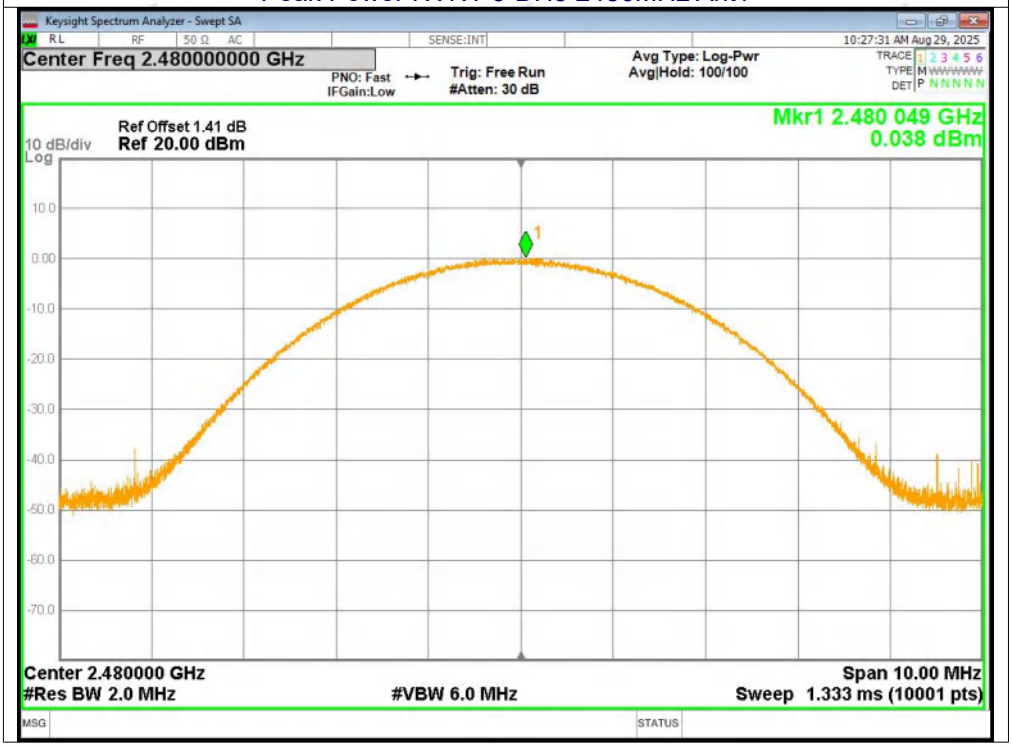
Peak Power NVNT 3-DH5 2402MHz Ant1



Peak Power NVNT 3-DH5 2441MHz Ant1



Peak Power NVNT 3-DH5 2480MHz Ant1



10. HOPPING CHANNEL SEPARATION

Test Requirement:	FCC Part15 C Section 15.247 (a)(1), RSS 247 5.1
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=30KHz, VBW=100KHz, detector=Peak
Limit:	GFSK, π/4-DQPSK & 8DSK: 0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)

10.1 Test Setup

10.2 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 = 300kHz. VBW = 300kHz , 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.

10.3 DEVIATION FROM STANDARD

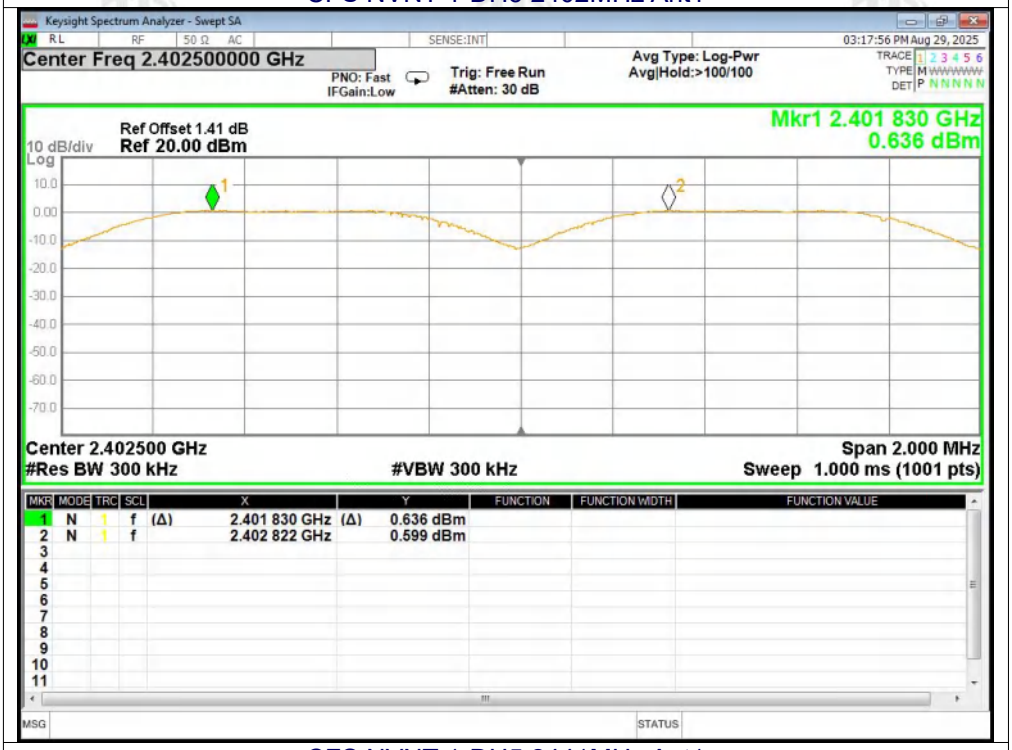
No deviation.

10.4 Test Result

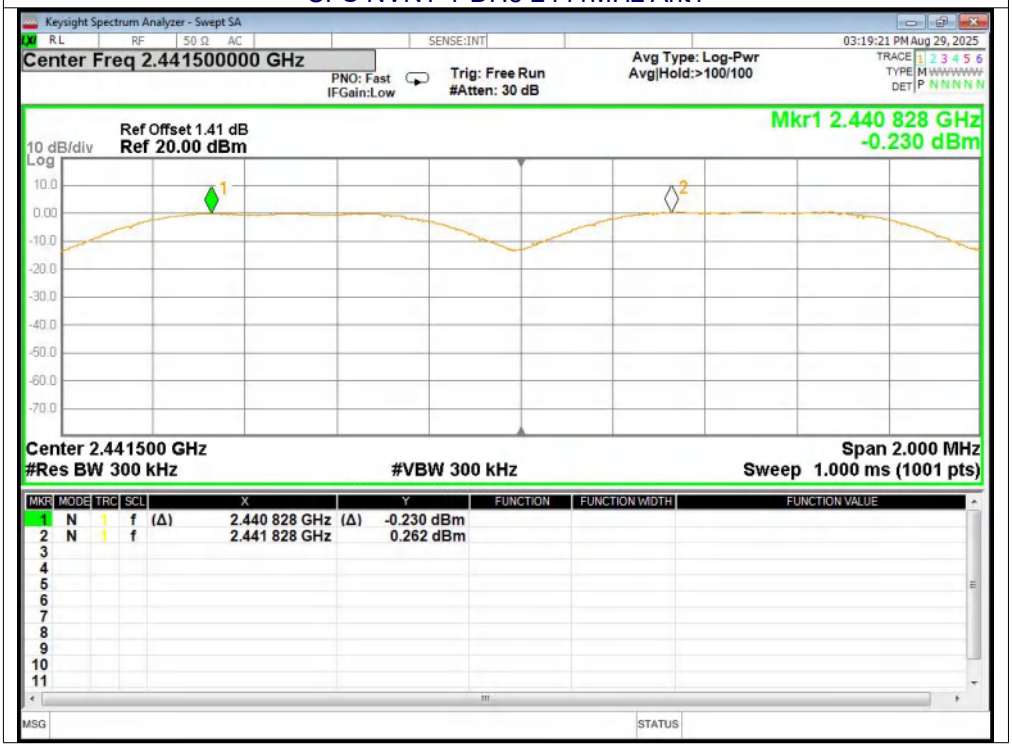
Left earphone							
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.83	2402.822	0.992	0.627	Pass
NVNT	1-DH5	Ant1	2440.828	2441.828	1	0.619	Pass
NVNT	1-DH5	Ant1	2478.828	2479.832	1.004	0.617	Pass
NVNT	2-DH5	Ant1	2401.9852	2403.007	1.0218	0.025	Pass
NVNT	2-DH5	Ant1	2440.863	2441.838	0.975	0.025	Pass
NVNT	2-DH5	Ant1	2479.0034	2479.8432	0.8398	0.025	Pass
NVNT	3-DH5	Ant1	2401.811	2403.1396	1.3286	0.025	Pass
NVNT	3-DH5	Ant1	2440.8292	2441.8198	0.9906	0.025	Pass
NVNT	3-DH5	Ant1	2478.8578	2479.8328	0.975	0.025	Pass

Test Graphs

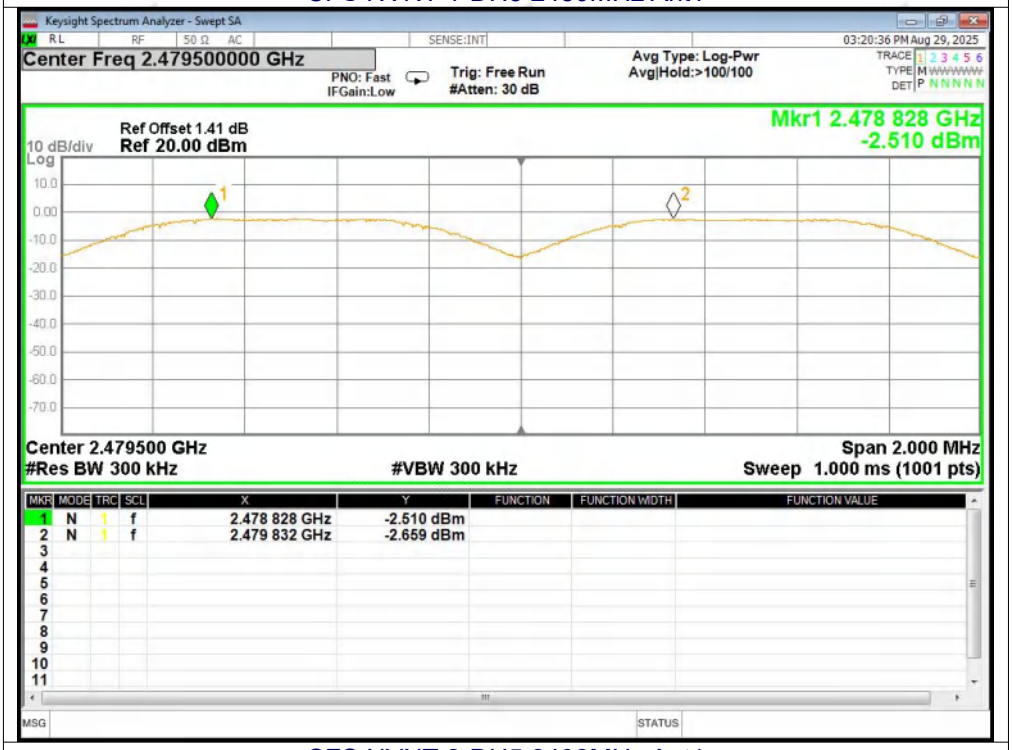
CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 1-DH5 2441MHz Ant1



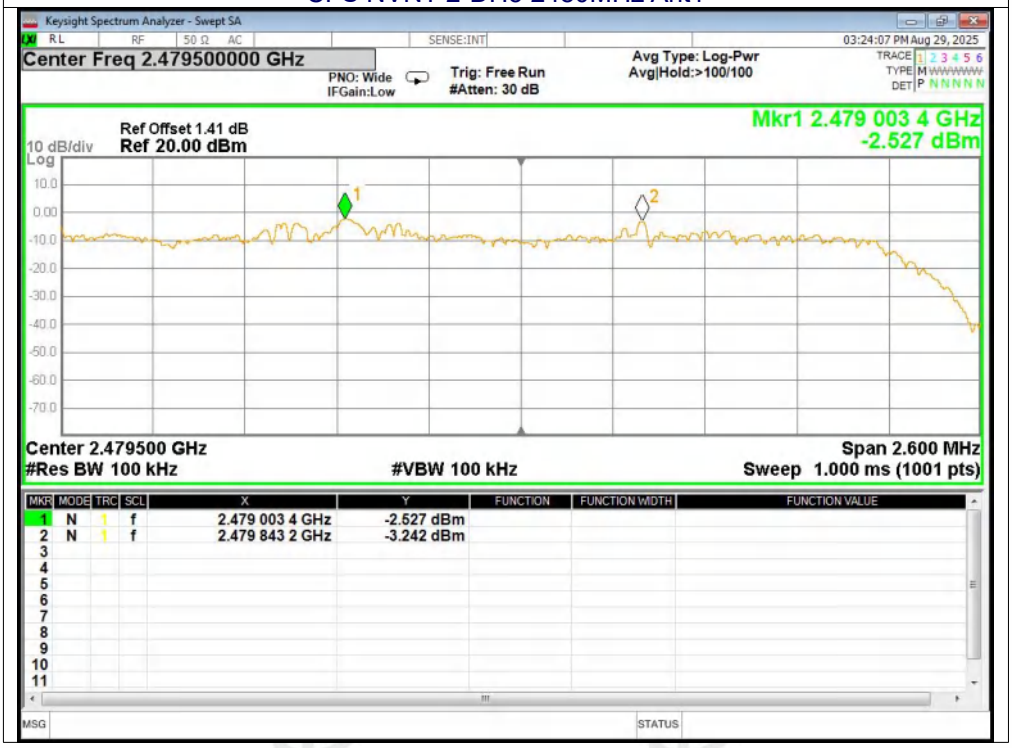
CFS NVNT 1-DH5 2480MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1

CFS NVNT 2-DH5 2441MHz Ant1

CFS NVNT 2-DH5 2480MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

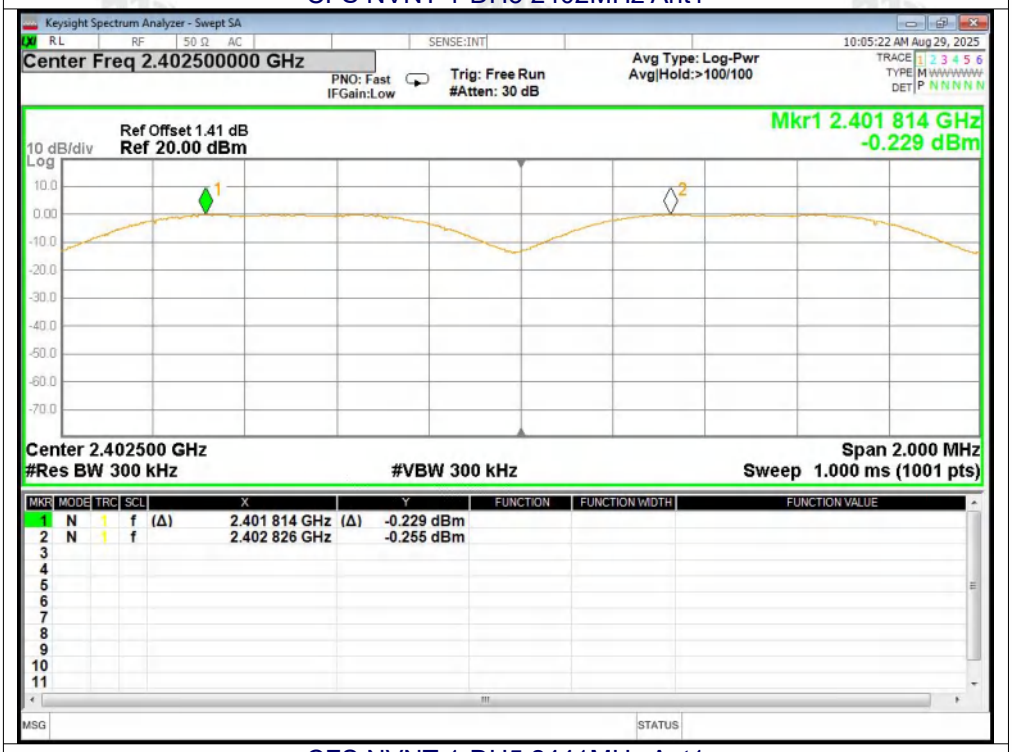
CFS NVNT 3-DH5 2441MHz Ant1

CFS NVNT 3-DH5 2480MHz Ant1

Right earphone							
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.814	2402.826	1.012	0.628	Pass
NVNT	1-DH5	Ant1	2440.978	2441.816	0.838	0.628	Pass
NVNT	1-DH5	Ant1	2478.828	2479.824	0.996	0.628	Pass
NVNT	2-DH5	Ant1	2401.8214	2402.9966	1.1752	0.025	Pass
NVNT	2-DH5	Ant1	2440.8188	2441.8198	1.001	0.025	Pass
NVNT	2-DH5	Ant1	2478.9722	2479.8406	0.8684	0.025	Pass
NVNT	3-DH5	Ant1	2401.8214	2403.0564	1.235	0.025	Pass
NVNT	3-DH5	Ant1	2440.967	2441.7964	0.8294	0.025	Pass
NVNT	3-DH5	Ant1	2478.9644	2479.8042	0.8398	0.025	Pass

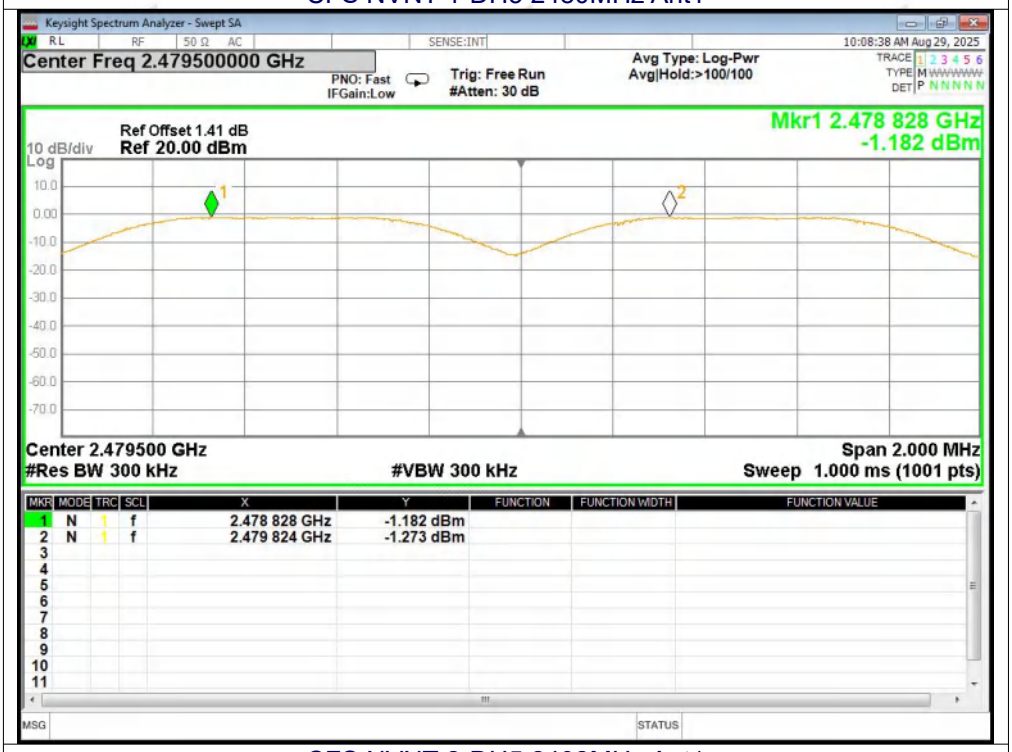
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1

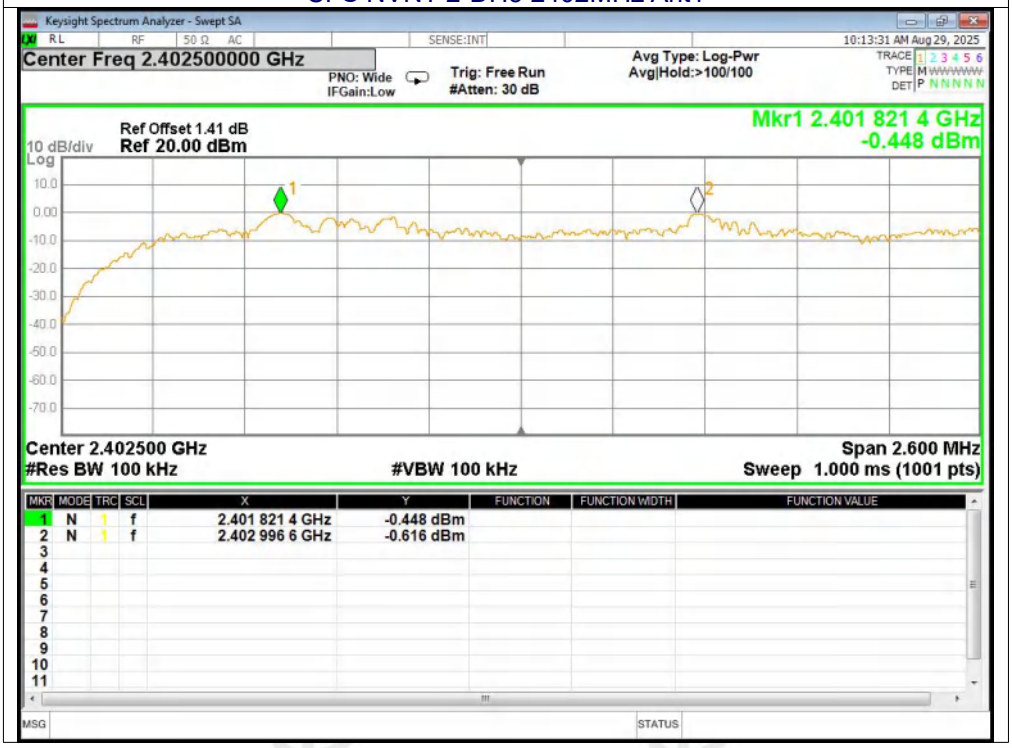


CFS NVNT 1-DH5 2441MHz Ant1

CFS NVNT 1-DH5 2480MHz Ant1

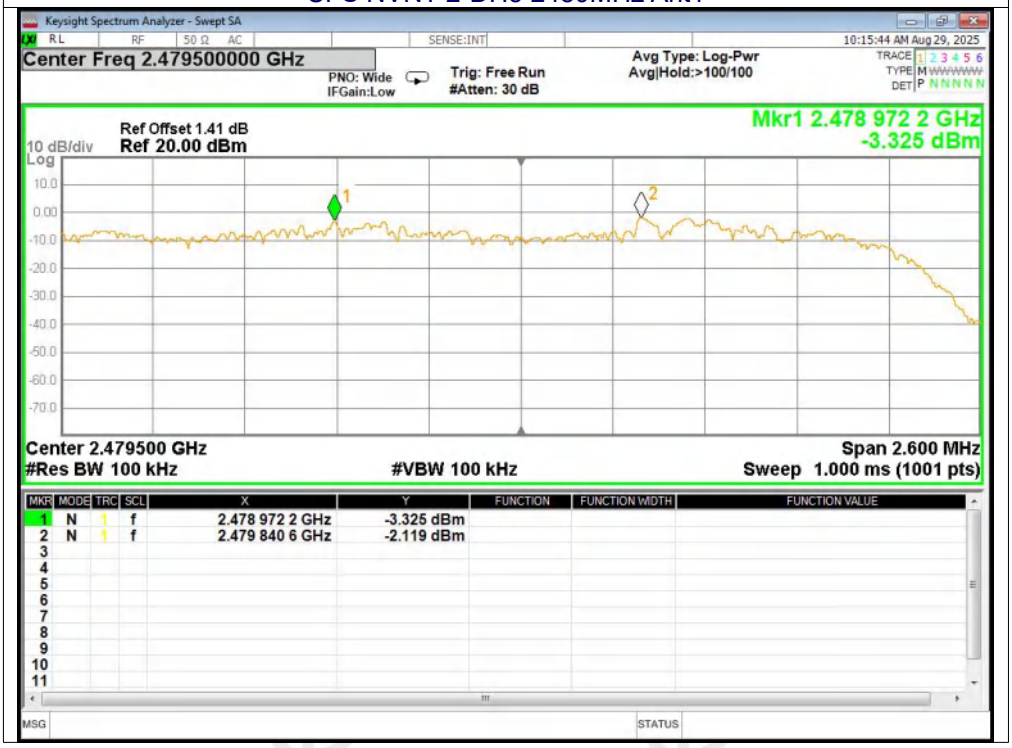


CFS NVNT 2-DH5 2402MHz Ant1



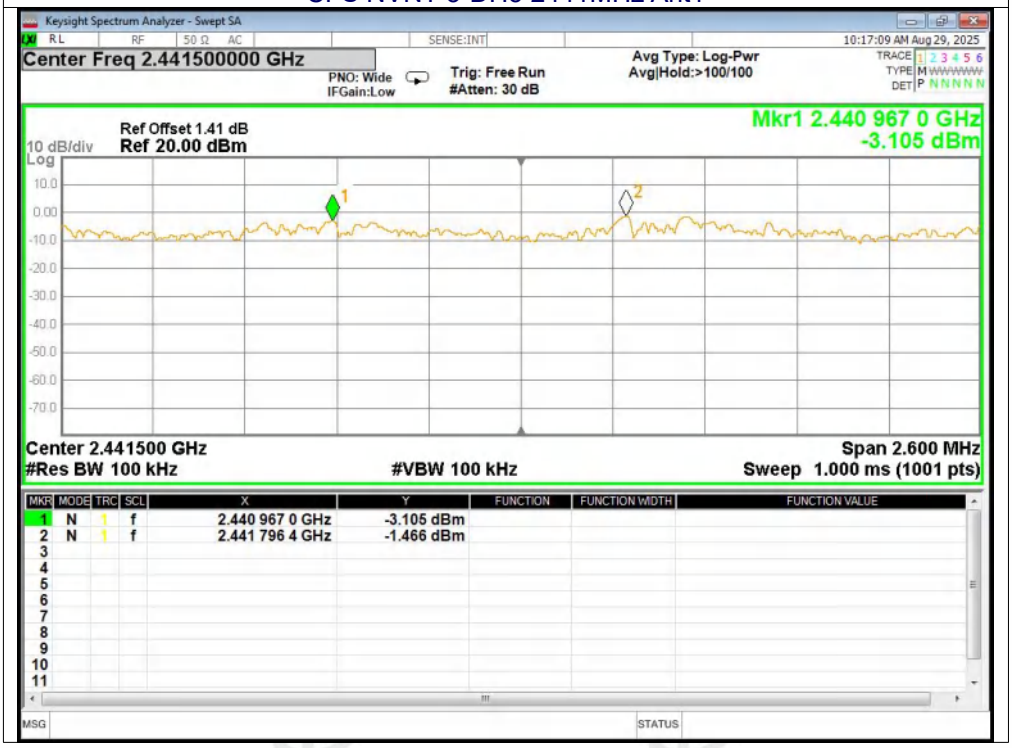
CFS NVNT 2-DH5 2441MHz Ant1

CFS NVNT 2-DH5 2480MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

CFS NVNT 3-DH5 2441MHz Ant1



CFS NVNT 3-DH5 2480MHz Ant1

11.NUMBER OF HOPPING FREQUENCY

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii), RSS-247 5.1
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=100kHz, VBW=300kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak
Limit:	15 channels

11.1 Test Setup

11.2 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;

11.3 DEVIATION FROM STANDARD

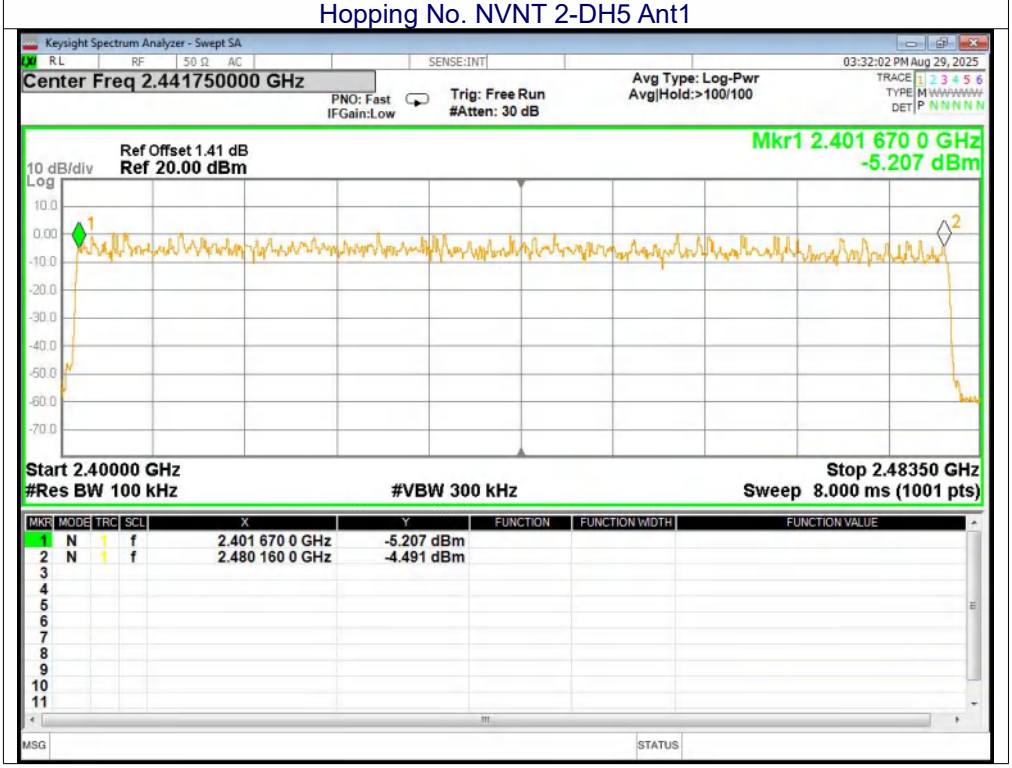
No deviation.

11.4 Test Result

Left earphone				
Mode	**Antenna**	**Hopping Number**	**Limit**	**Verdict**
1-DH5	Ant1	79	15	Pass
2-DH5	Ant1	79	15	Pass
3-DH5	Ant1	79	15	Pass

Test Graphs
Hopping No. NVNT 1-DH5 Ant1

Hopping No. NVNT 2-DH5 Ant1

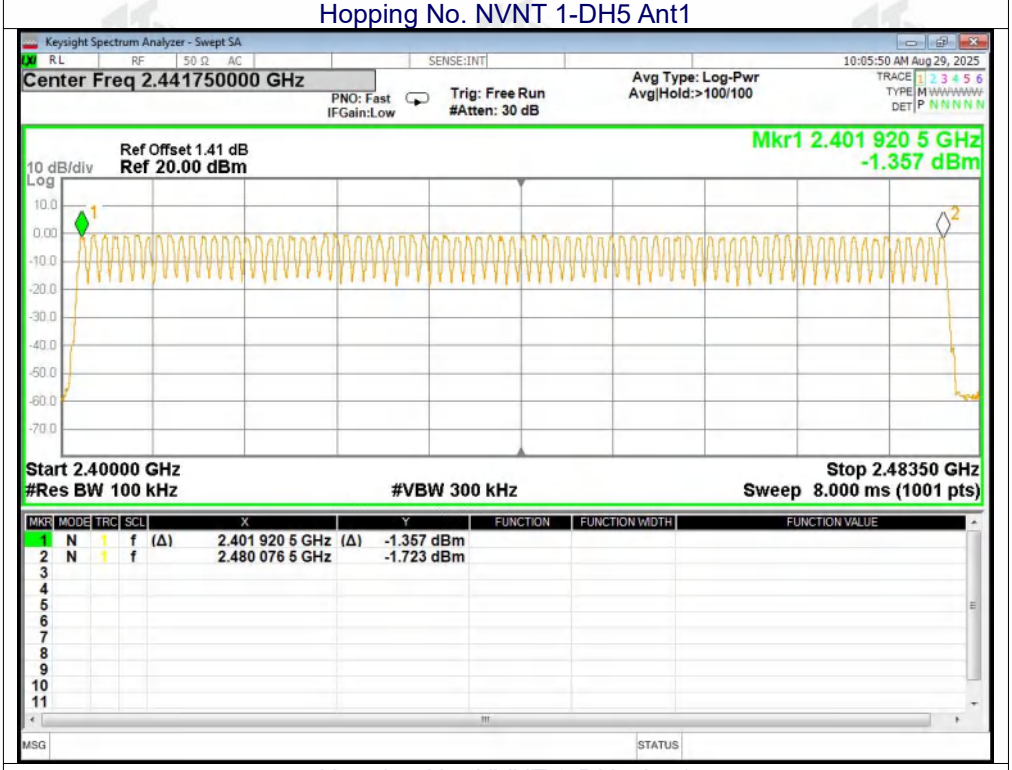


Hopping No. NVNT 3-DH5 Ant1

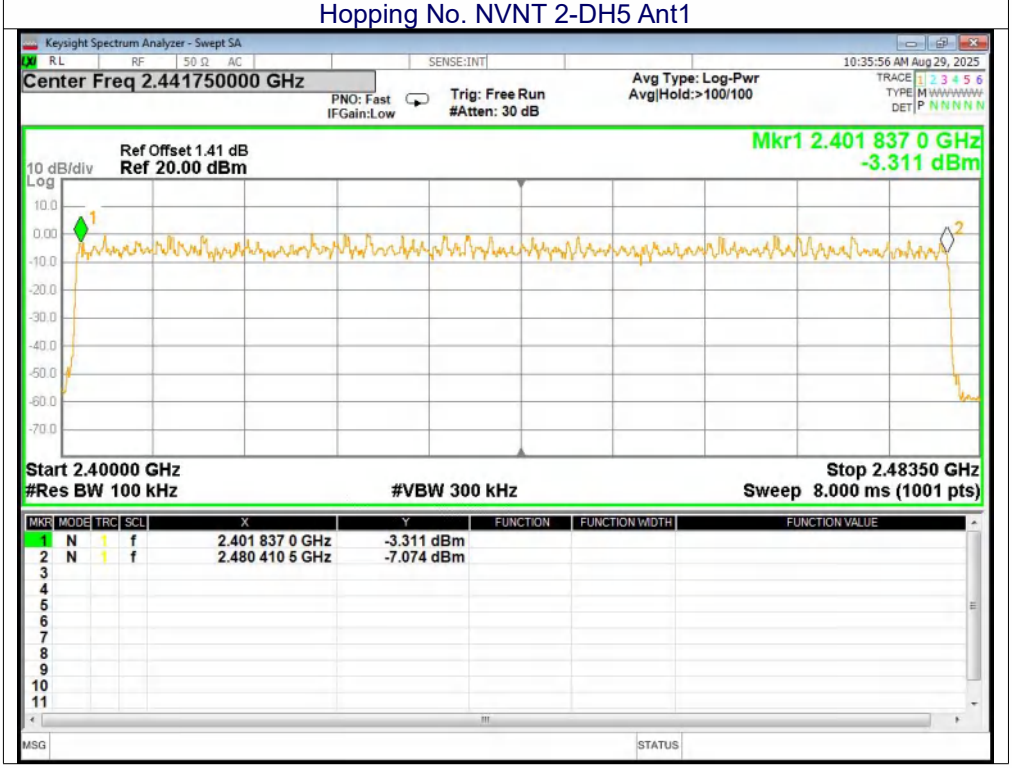
Right earphone				
Mode	**Antenna**	**Hopping Number**	**Limit**	**Verdict**
1-DH5	Ant1	79	15	Pass
2-DH5	Ant1	79	15	Pass
3-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 Ant1



Hopping No. NVNT 2-DH5 Ant1



Hopping No. NVNT 3-DH5 Ant1

12. DWELL TIME

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii), RSS-247 5.1
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=1MHz, VBW=3MHz, Span=0Hz, Detector=Peak
Limit:	0.4 Second

12.1 Test Setup

12.2 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 = 0Hz;

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, DH1, 2DH5, 2DH3, 2DH1, 3DH5, 3DH3 and 3DH1 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).

12.3 DEVIATION FROM STANDARD

No deviation.

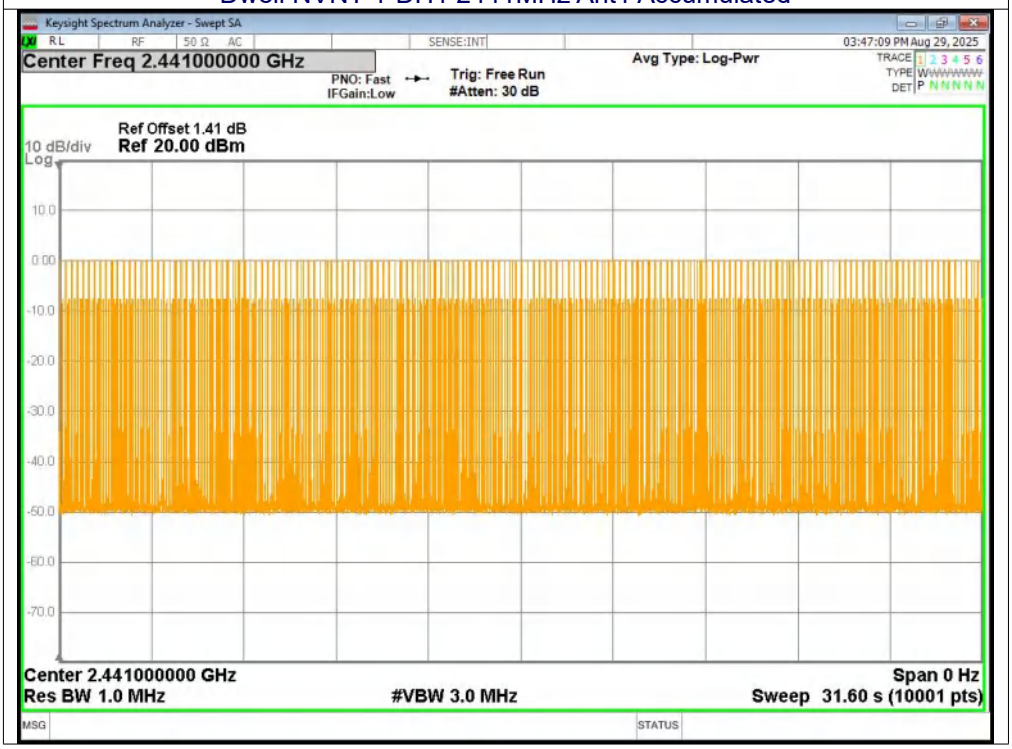
12.4 Test Result

Left earphone									
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	0.401	127.518	318	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.655	289.625	175	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.906	261.54	90	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.409	130.471	319	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.639	250.767	153	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.912	291.2	100	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.411	131.52	320	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.661	267.421	161	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.912	334.88	115	31600	400	Pass

Remarks:
The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s
Total Dwell time(ms) =Pulse Time(ms) * Burst Count.

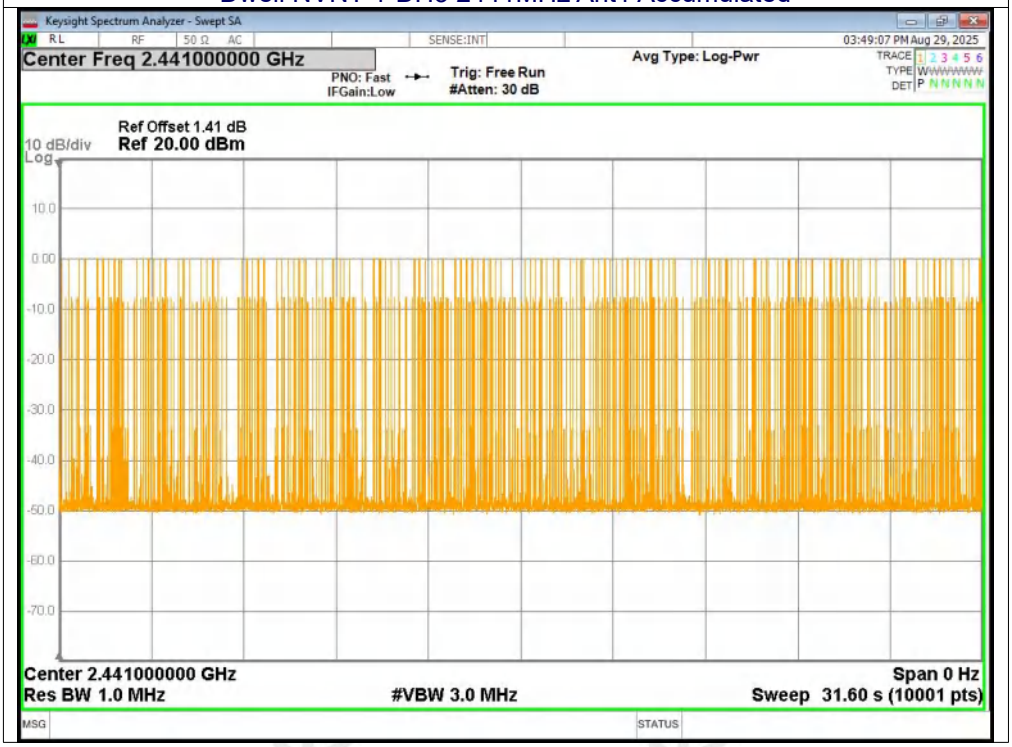
Test Graphs
Dwell NVNT 1-DH1 2441MHz Ant1 One Burst

Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



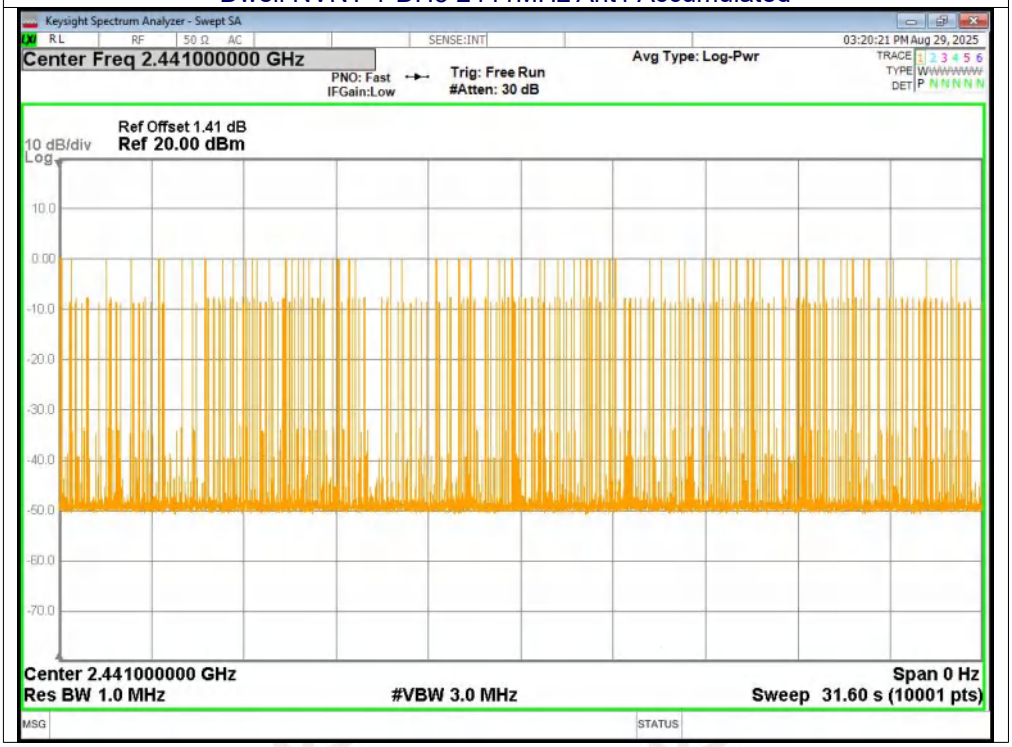
Dwell NVNT 1-DH3 2441MHz Ant1 One Burst

Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated



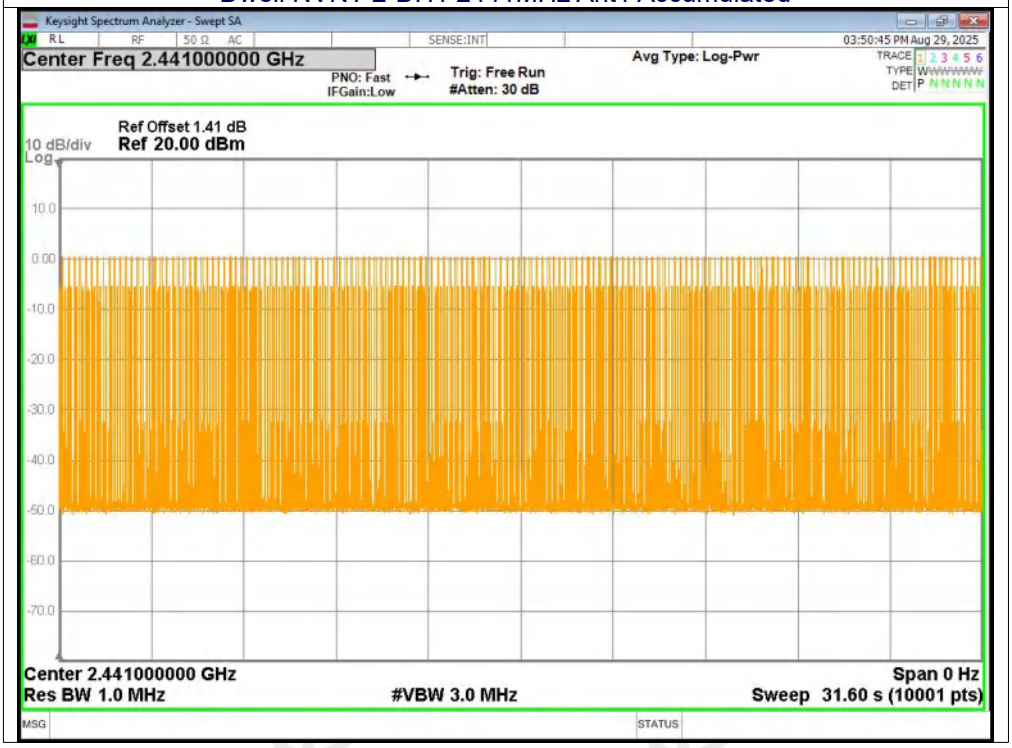
Dwell NVNT 1-DH5 2441MHz Ant1 One Burst

Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated



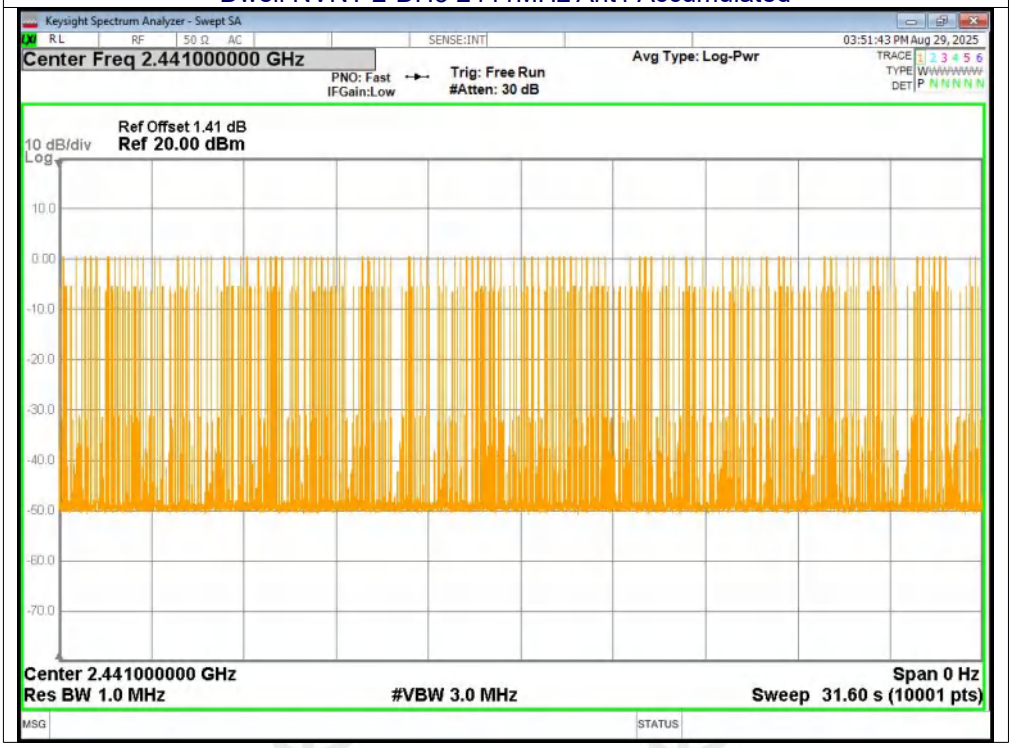
Dwell NVNT 2-DH1 2441MHz Ant1 One Burst

Dwell NVNT 2-DH1 2441MHz Ant1 Accumulated



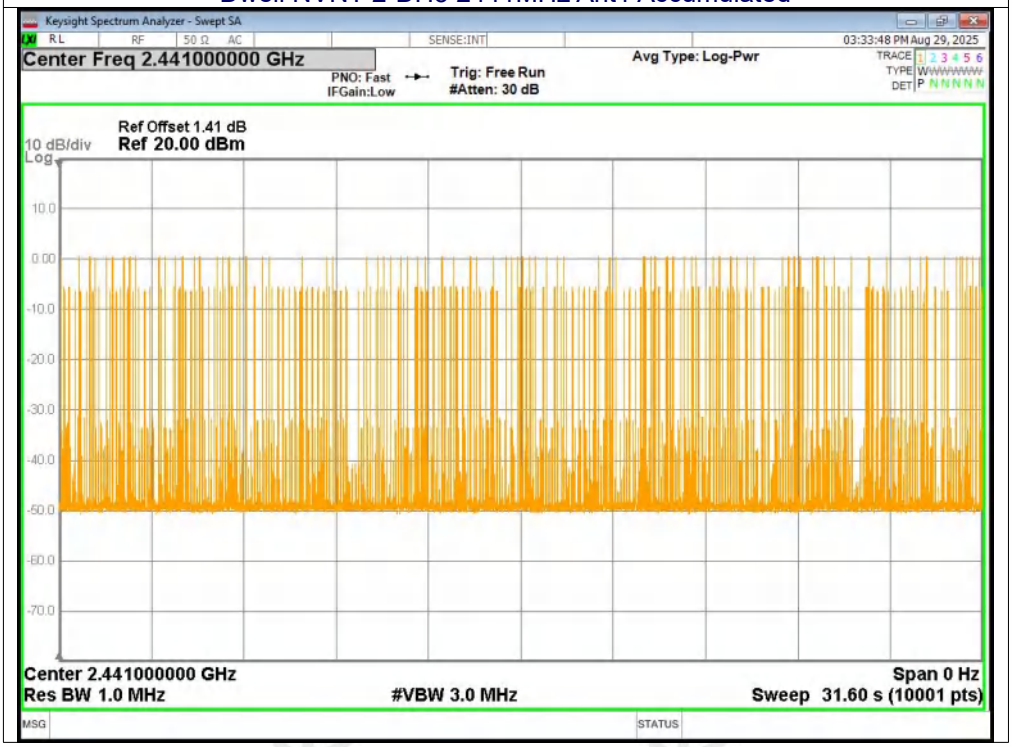
Dwell NVNT 2-DH3 2441MHz Ant1 One Burst

Dwell NVNT 2-DH3 2441MHz Ant1 Accumulated



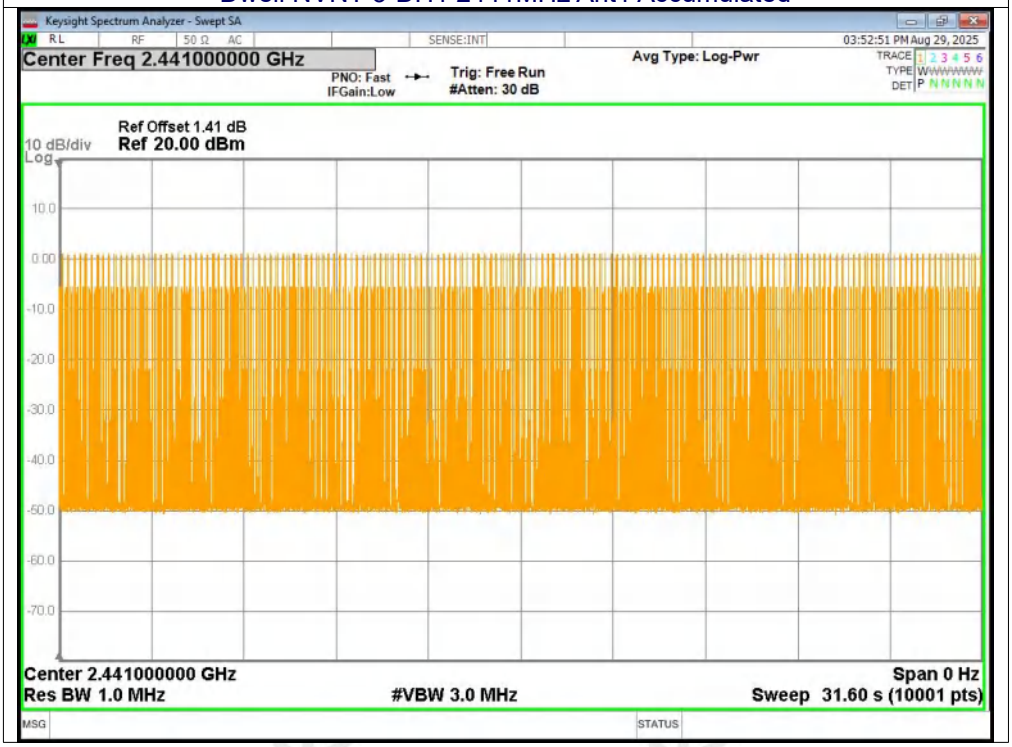
Dwell NVNT 2-DH5 2441MHz Ant1 One Burst

Dwell NVNT 2-DH5 2441MHz Ant1 Accumulated



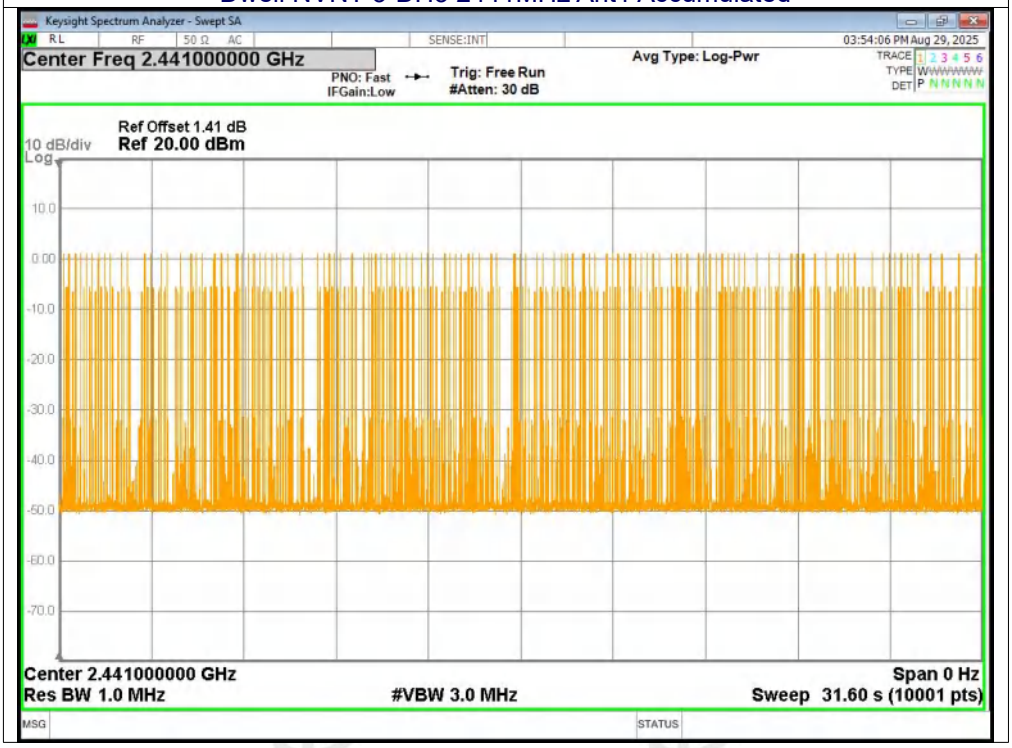
Dwell NVNT 3-DH1 2441MHz Ant1 One Burst

Dwell NVNT 3-DH1 2441MHz Ant1 Accumulated



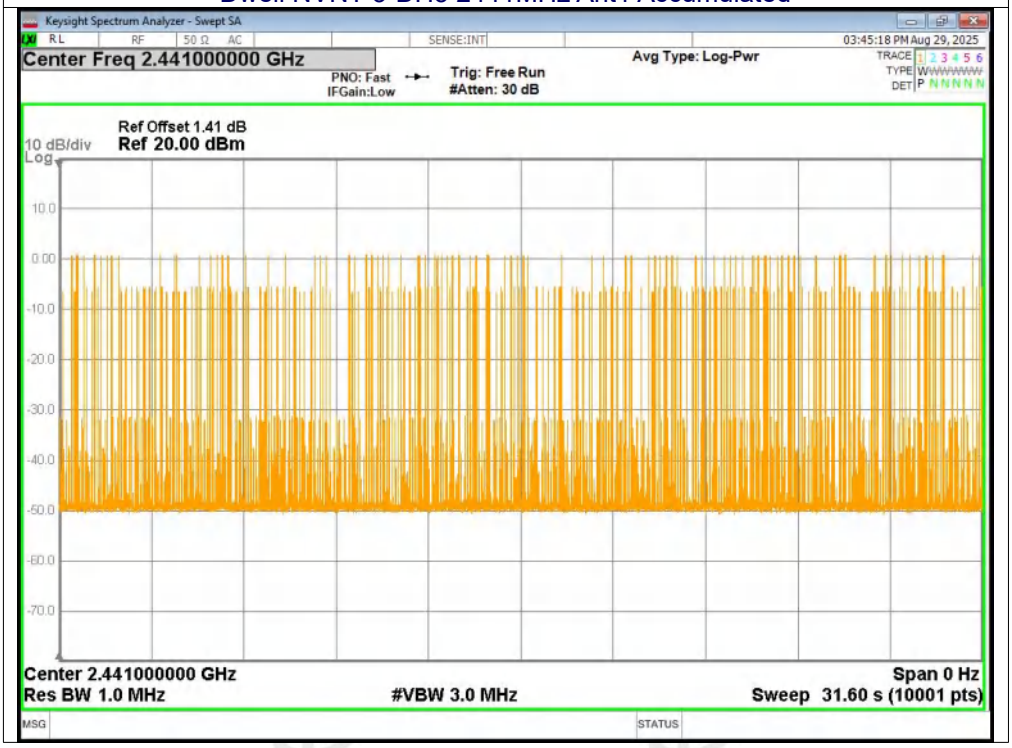
Dwell NVNT 3-DH3 2441MHz Ant1 One Burst

Dwell NVNT 3-DH3 2441MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2441MHz Ant1 One Burst

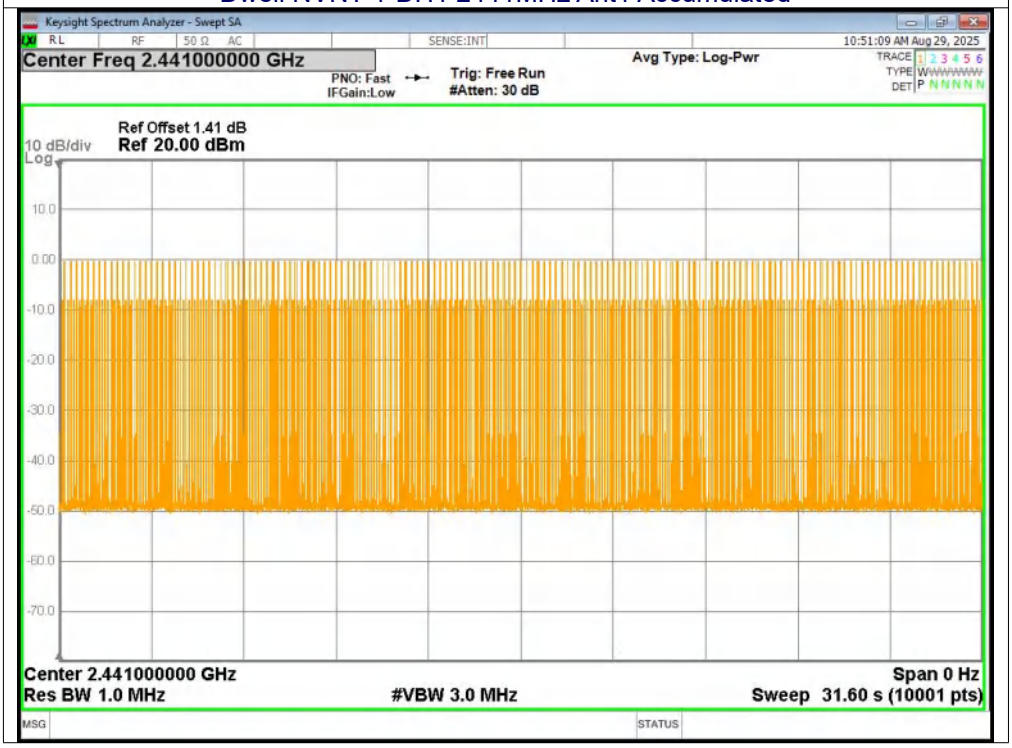
Dwell NVNT 3-DH5 2441MHz Ant1 Accumulated



Right earphone									
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	0.4	127.2	318	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.657	271.748	164	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.905	313.74	108	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.408	130.152	319	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.661	264.099	159	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.908	282.076	97	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.414	132.066	319	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.663	254.439	153	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.915	306.075	105	31600	400	Pass

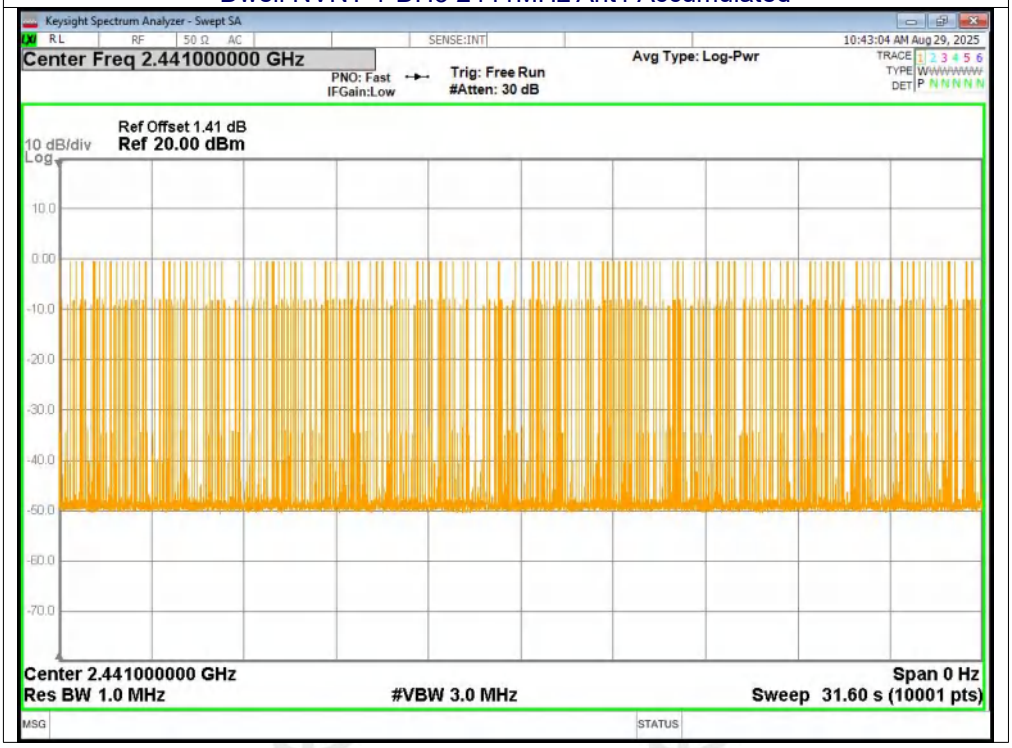
Test Graphs
Dwell NVNT 1-DH1 2441MHz Ant1 One Burst

Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



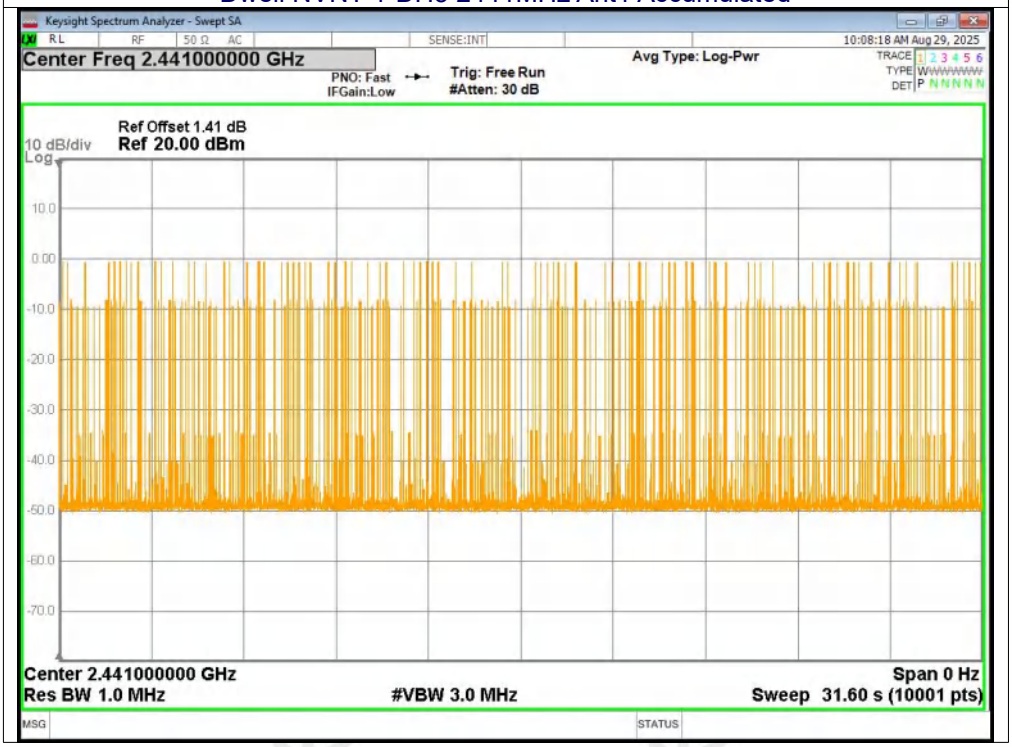
Dwell NVNT 1-DH3 2441MHz Ant1 One Burst

Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated



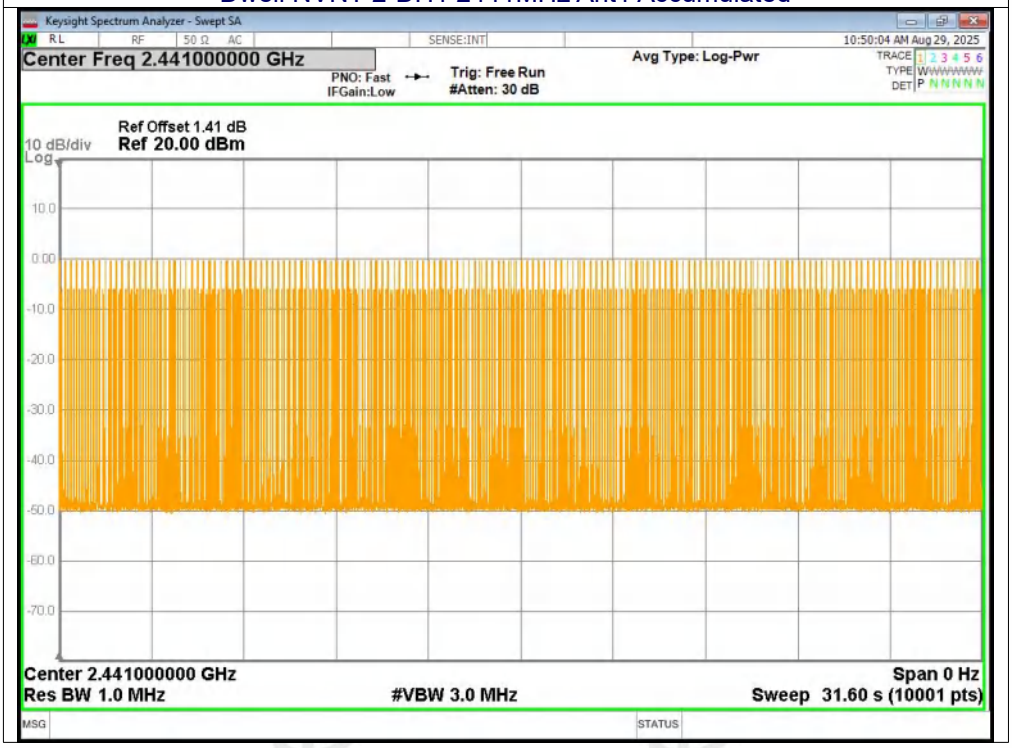
Dwell NVNT 1-DH5 2441MHz Ant1 One Burst

Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated



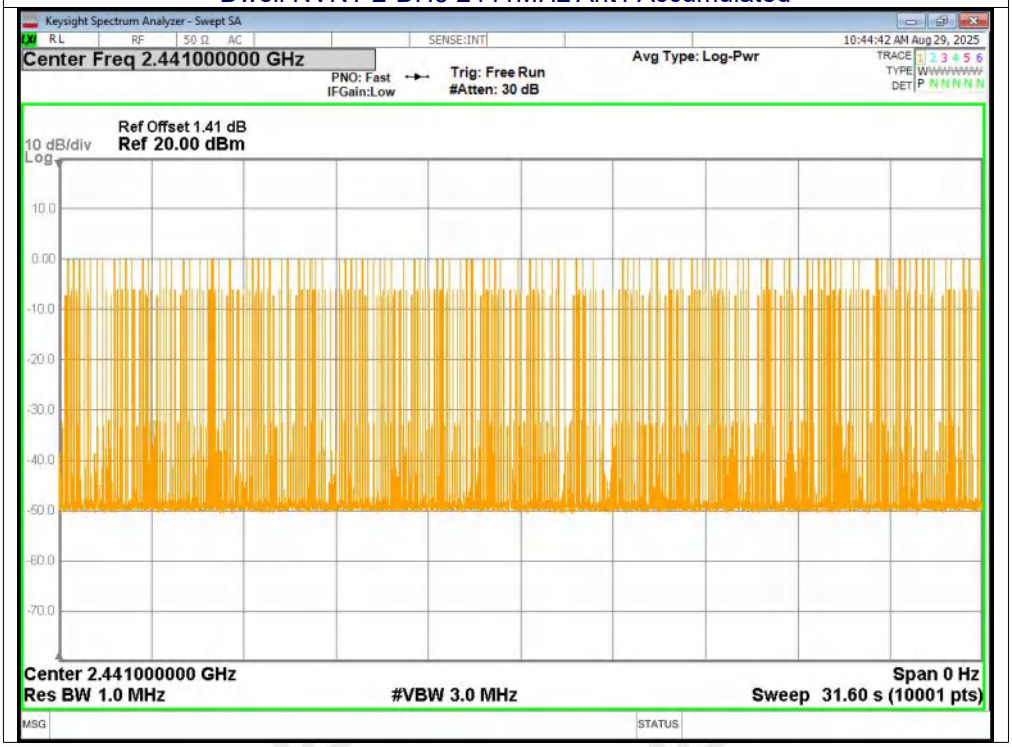
Dwell NVNT 2-DH1 2441MHz Ant1 One Burst

Dwell NVNT 2-DH1 2441MHz Ant1 Accumulated



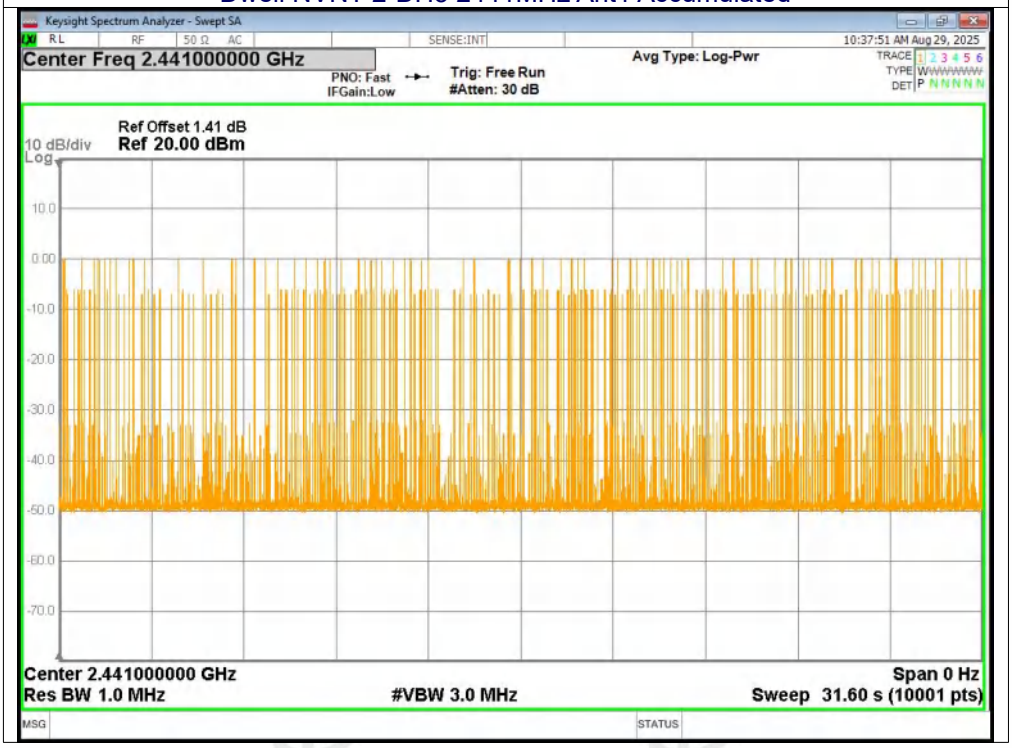
Dwell NVNT 2-DH3 2441MHz Ant1 One Burst

Dwell NVNT 2-DH3 2441MHz Ant1 Accumulated



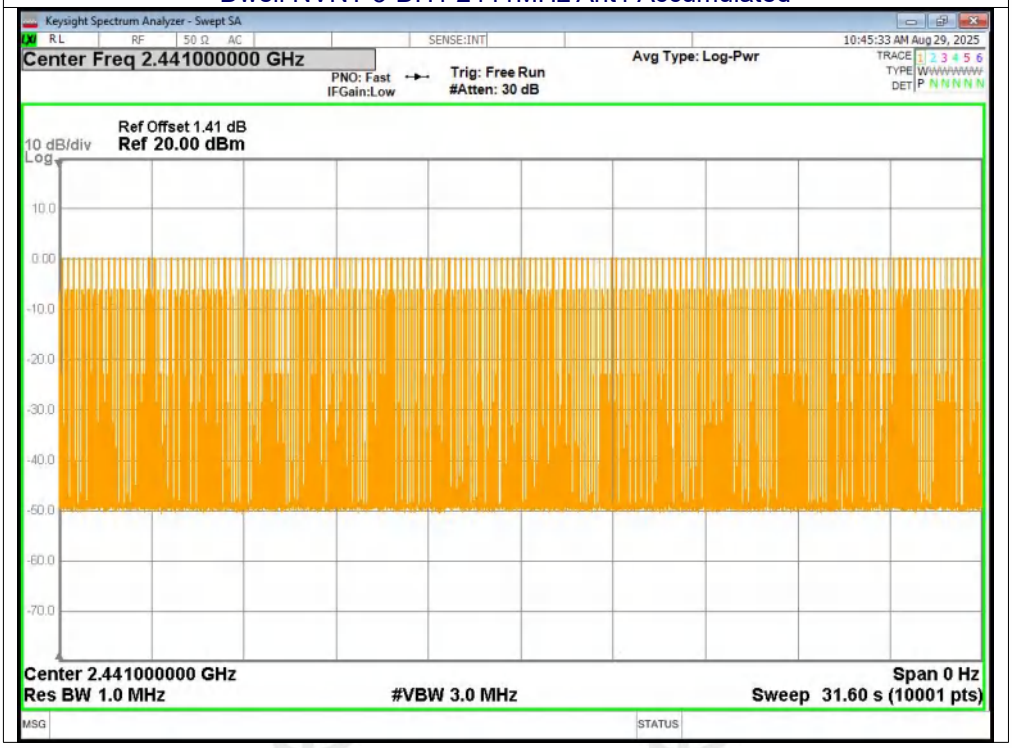
Dwell NVNT 2-DH5 2441MHz Ant1 One Burst

Dwell NVNT 2-DH5 2441MHz Ant1 Accumulated



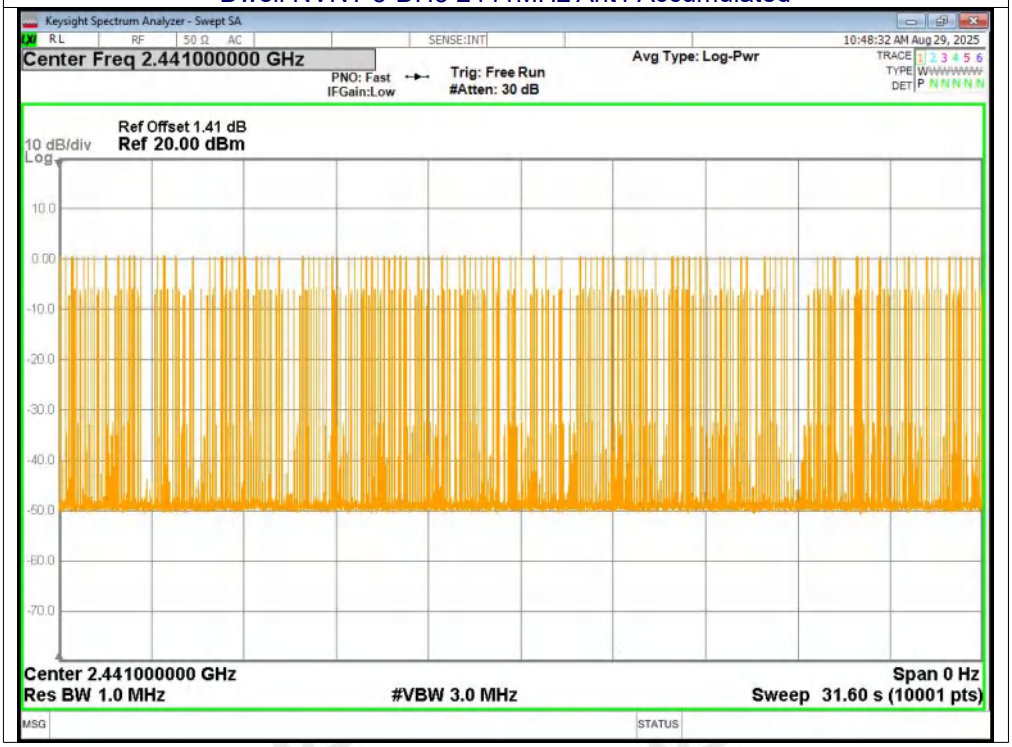
Dwell NVNT 3-DH1 2441MHz Ant1 One Burst

Dwell NVNT 3-DH1 2441MHz Ant1 Accumulated



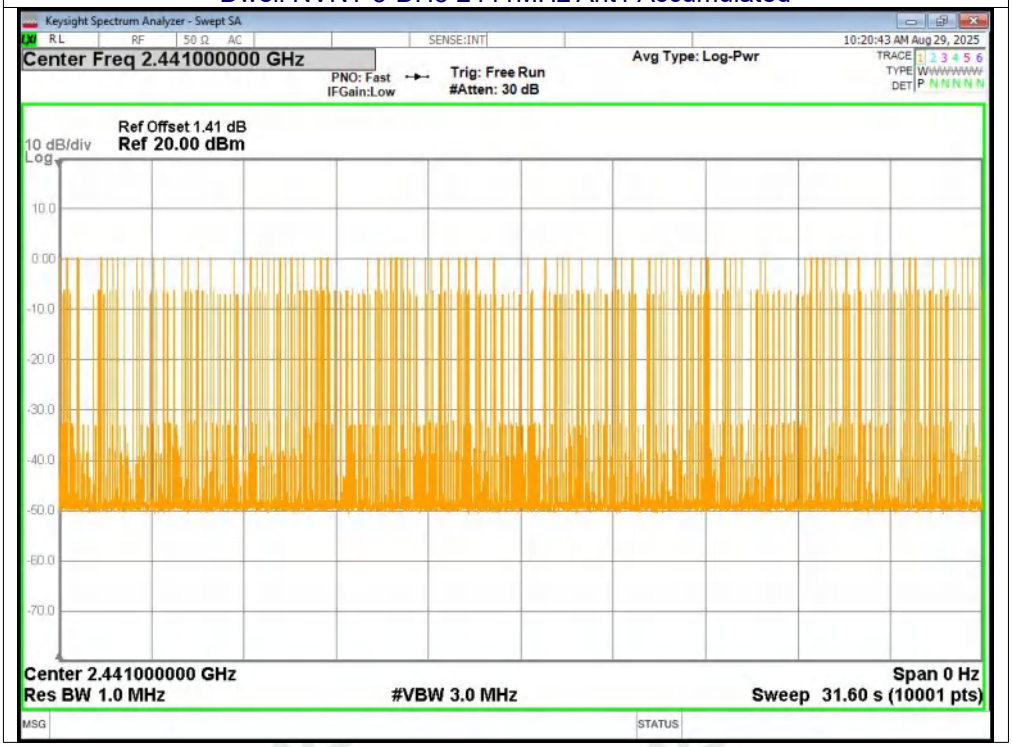
Dwell NVNT 3-DH3 2441MHz Ant1 One Burst

Dwell NVNT 3-DH3 2441MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2441MHz Ant1 One Burst

Dwell NVNT 3-DH5 2441MHz Ant1 Accumulated



13. Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(b)(4), RSS-Gen 6.8
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The applicant for equipment certification, as per RSP-100, must provide a list of all antenna types that may be used with the licence-exempt transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. Licence-exempt transmitters that have received equipment certification may operate with different types of antennas. However, it is not permissible to exceed the maximum equivalent isotropically radiated power (EIRP) limits specified in the applicable standard (RSS) for the licence-exempt apparatus. Testing shall be performed using the highest gain antenna of each combination of licence-exempt transmitter and antenna type, with the transmitter output power set at the maximum level.9 When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna manufacturer.	
EUT Antenna:	
The antenna is Internal antenna, the best case gain of the antennas is 1.73dBi, reference to the appendix II for details.	

14. Test Setup Photo

Reference to the appendix I for details.

15. EUT Constructional Details

Reference to the appendix II for details.

※※※※※ END OF REPORT ※※※※※