

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	FRA-WB01
Sample ID:	HC-C-202606-0467-01-01
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	52.1%
Test Voltage:	DC 3.87V
Test Engineer:	Kael Li
Note: For a more detailed features description, please refer to the report TBR-C-202606-0467-56 The report only show the worst case data.	

Contents

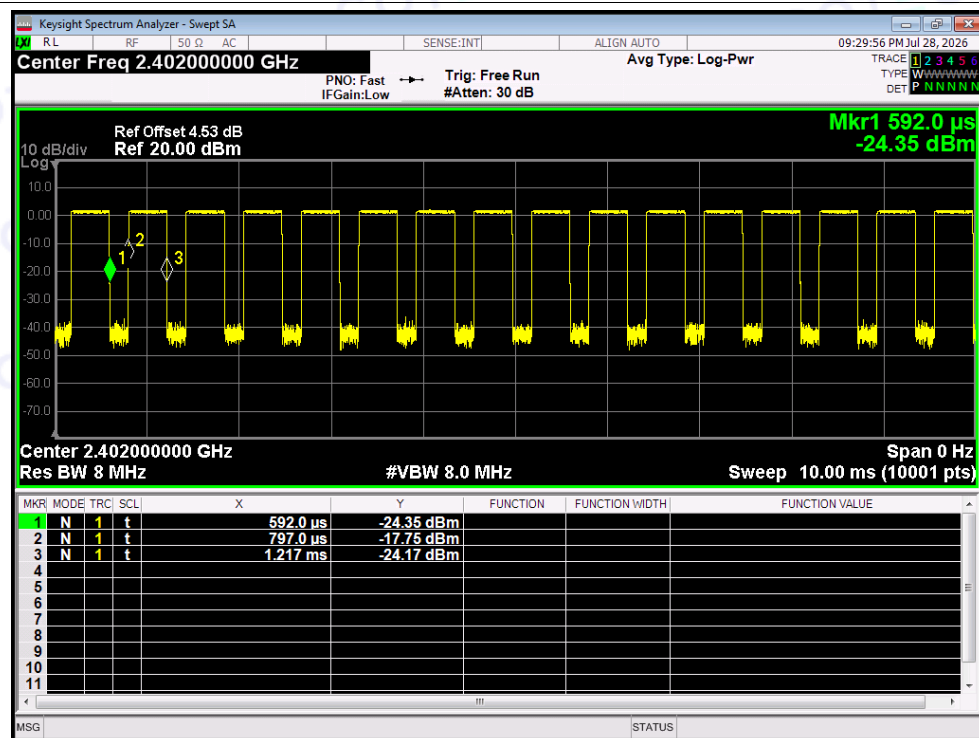
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1. Duty Cycle

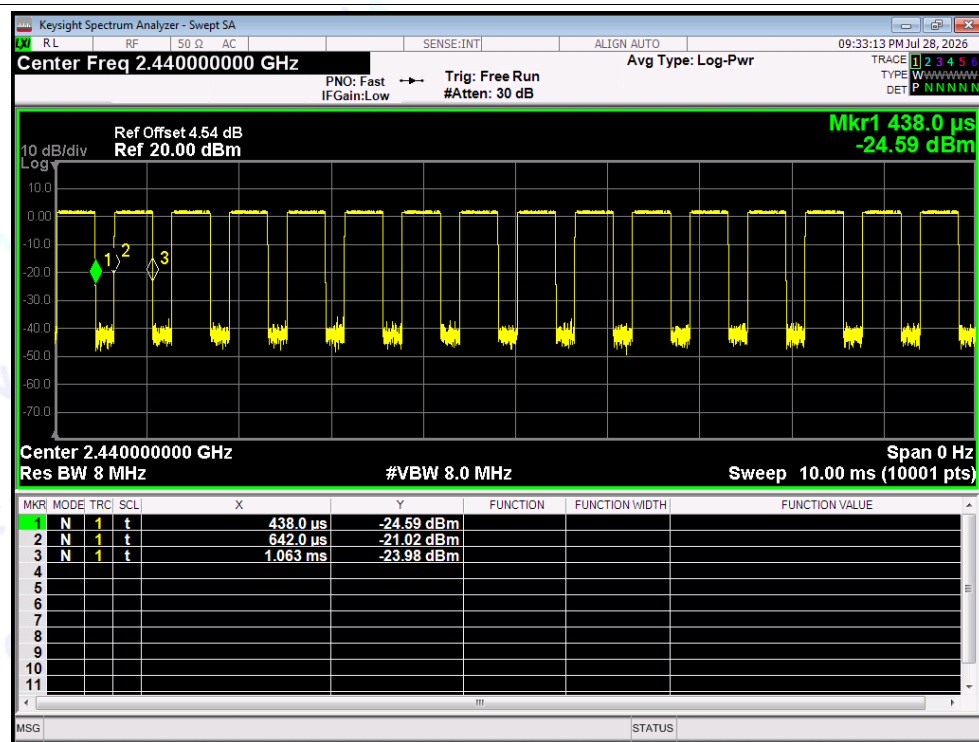
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1Mbps	2402	Ant1	67.2	1.73	2.38
NVNT	BLE 1Mbps	2440	Ant1	67.36	1.72	2.38
NVNT	BLE 1Mbps	2480	Ant1	67.2	1.73	2.38
NVNT	BLE 2Mbps	2402	Ant1	37.12	4.3	4.31
NVNT	BLE 2Mbps	2440	Ant1	37.12	4.3	4.31
NVNT	BLE 2Mbps	2480	Ant1	37.08	4.31	4.33

Test Graphs

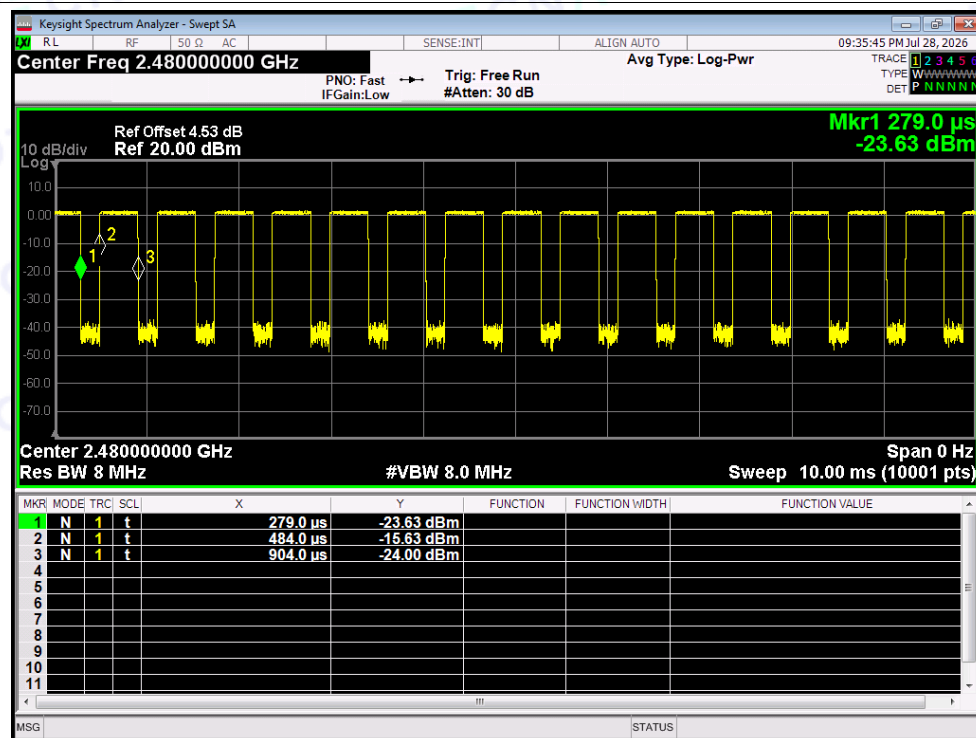
Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1



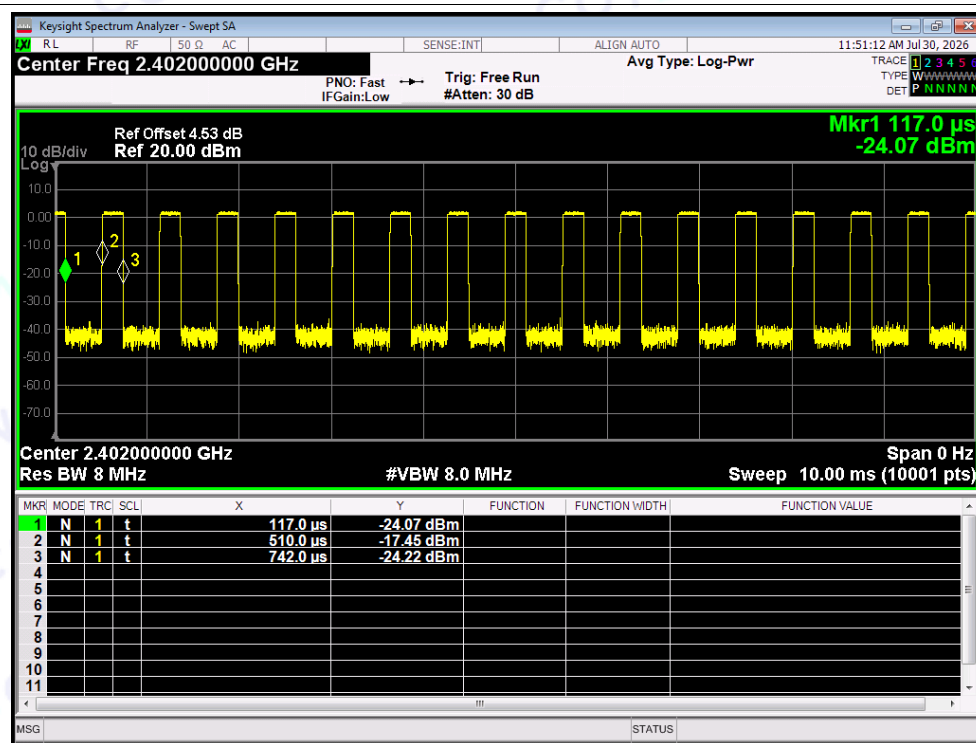
Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1



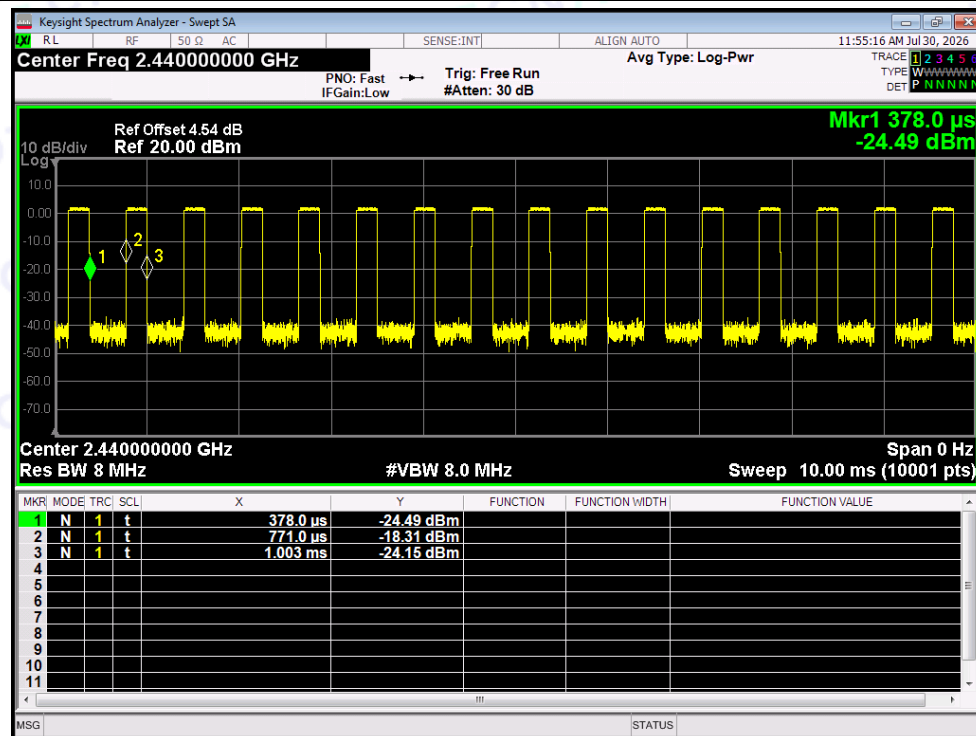
Duty Cycle NVNT BLE 1Mbps 2480MHz Ant1



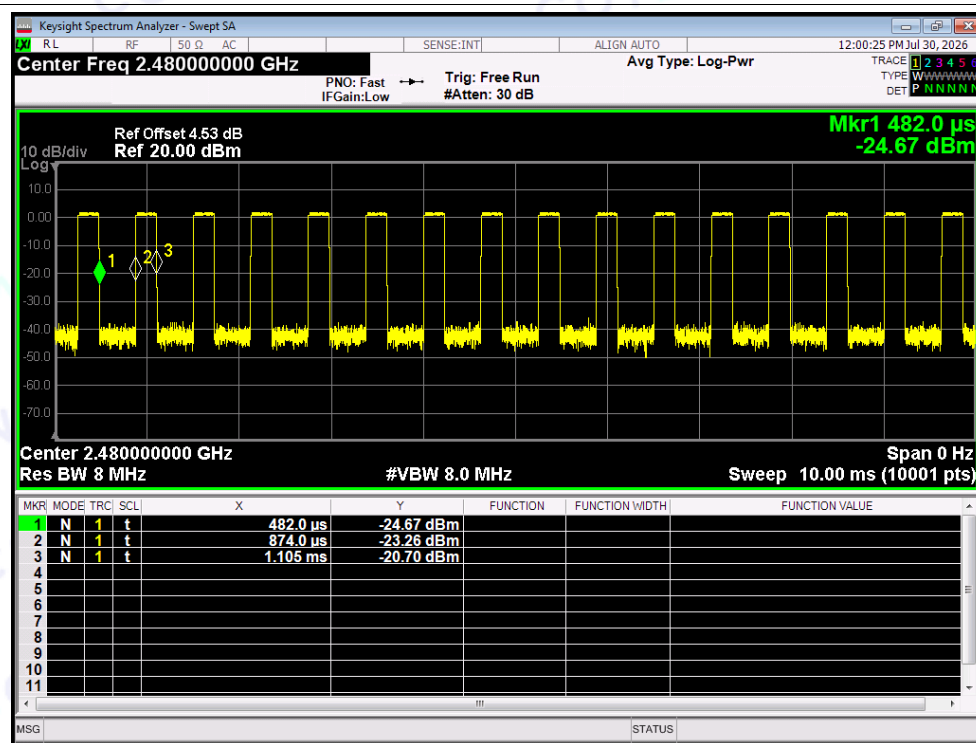
Duty Cycle NVNT BLE 2Mbps 2402MHz Ant1



Duty Cycle NVNT BLE 2Mbps 2440MHz Ant1



Duty Cycle NVNT BLE 2Mbps 2480MHz Ant1

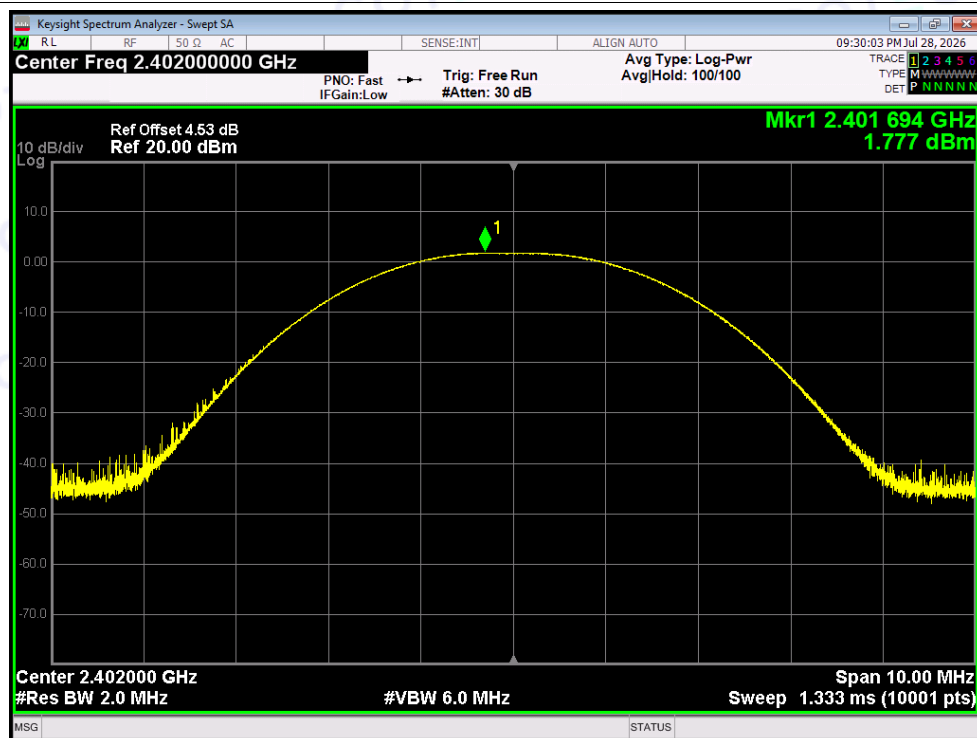


2. Maximum Conducted Output Power

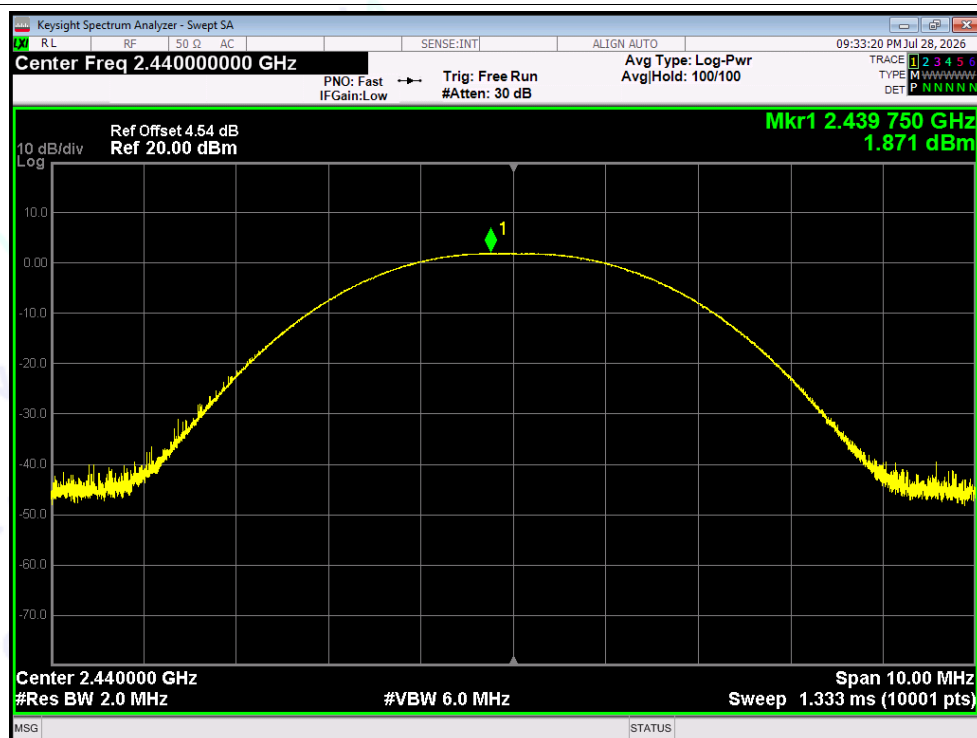
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Gain(dBi)	EIRP Power (dBm)	EIRP Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	1.777	30	-3.57	-1.793	36	Pass
NVNT	BLE 1Mbps	2440	Ant1	1.871	30	-3.57	-1.699	36	Pass
NVNT	BLE 1Mbps	2480	Ant1	1.479	30	-3.57	-2.091	36	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.721	30	-3.57	-1.849	36	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.81	30	-3.57	-1.76	36	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.498	30	-3.57	-2.072	36	Pass

Test Graphs

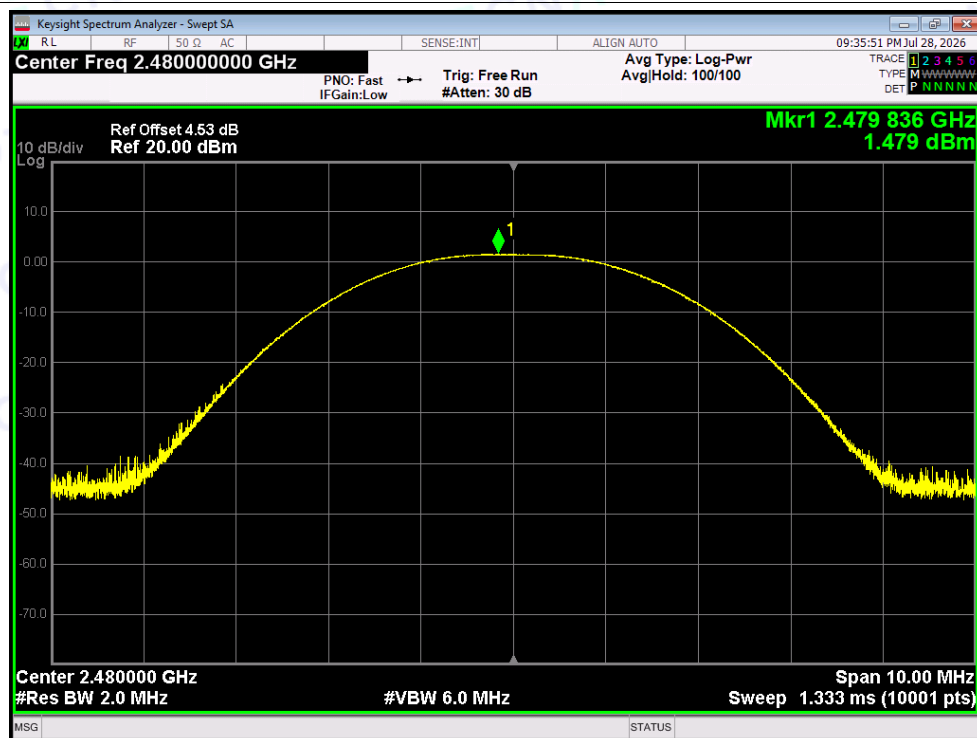
Power NVNT BLE 1Mbps 2402MHz Ant1



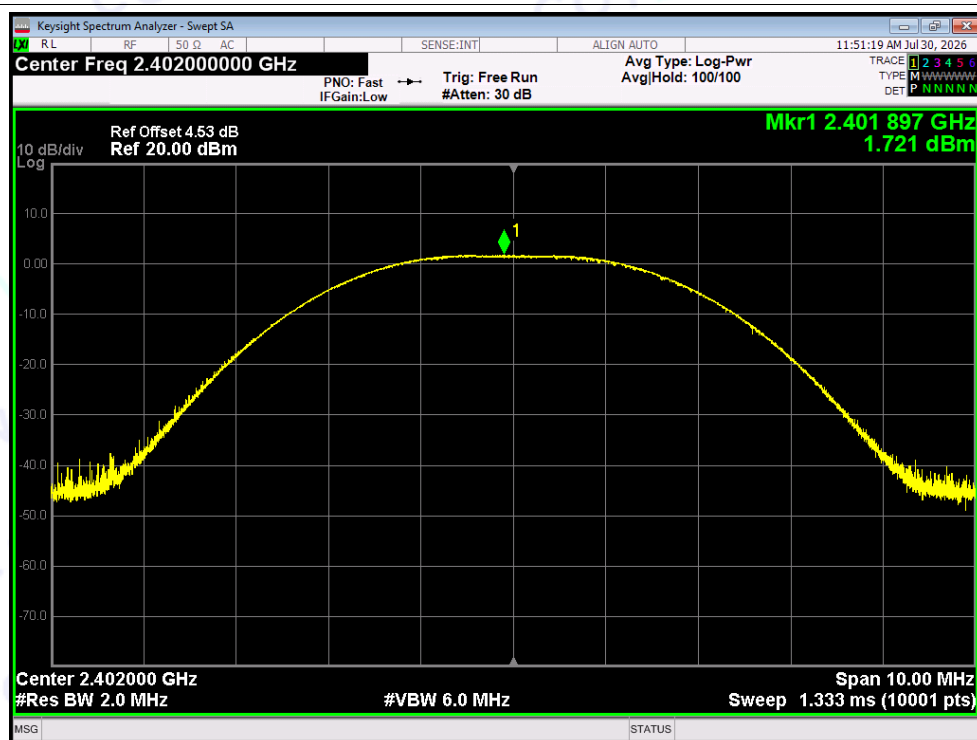
Power NVNT BLE 1Mbps 2440MHz Ant1



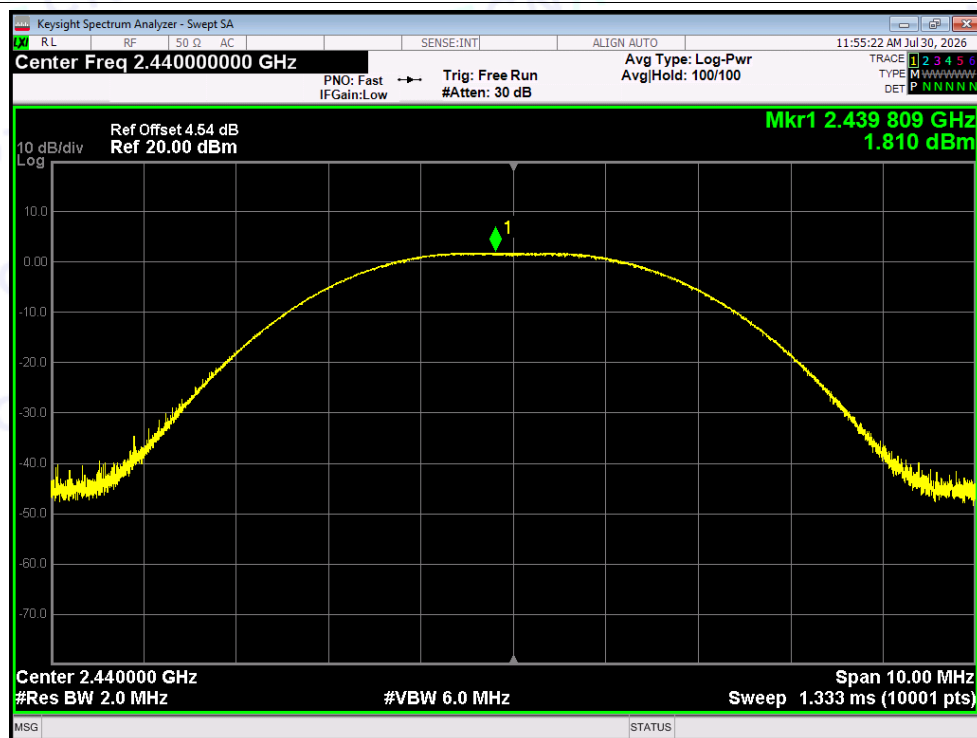
Power NVNT BLE 1Mbps 2480MHz Ant1



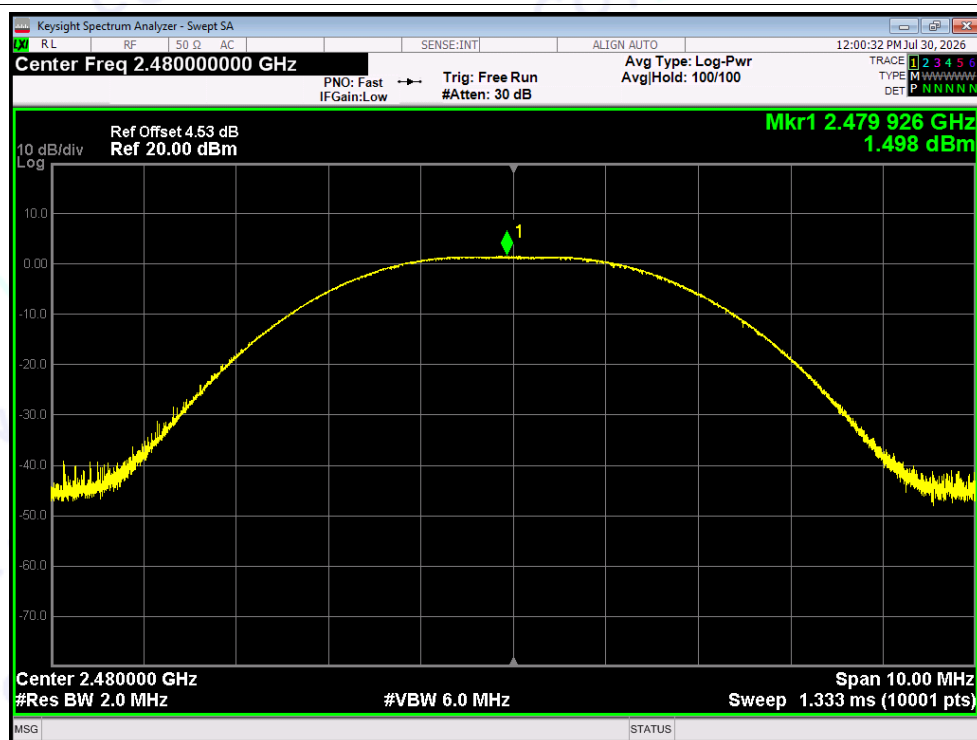
Power NVNT BLE 2Mbps 2402MHz Ant1



Power NVNT BLE 2Mbps 2440MHz Ant1



Power NVNT BLE 2Mbps 2480MHz Ant1

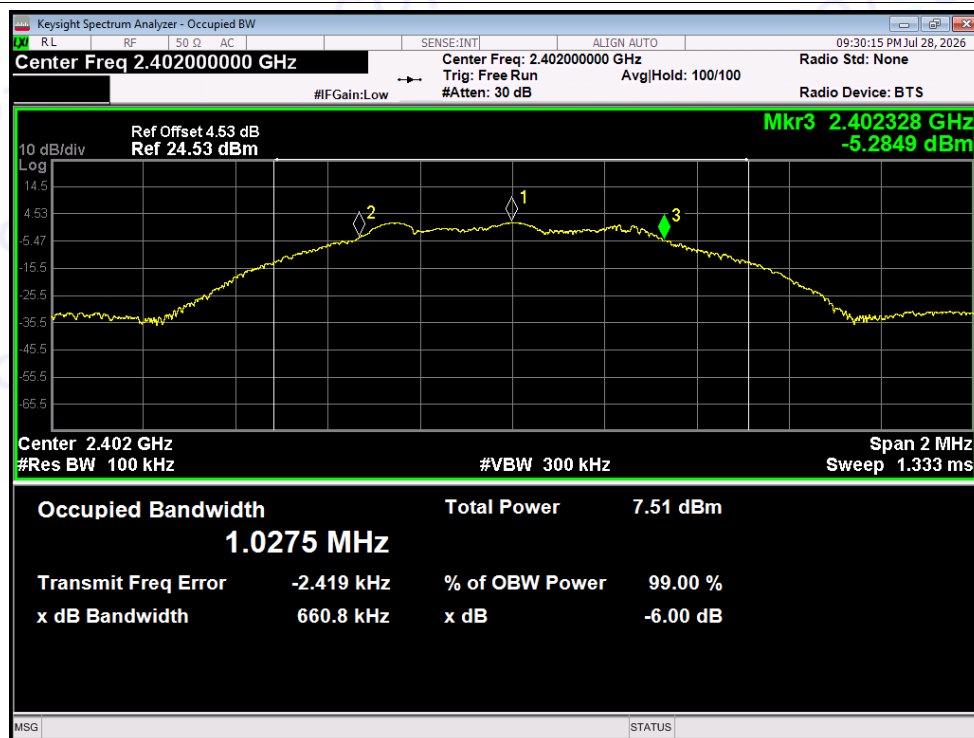


3. -6dB Bandwidth

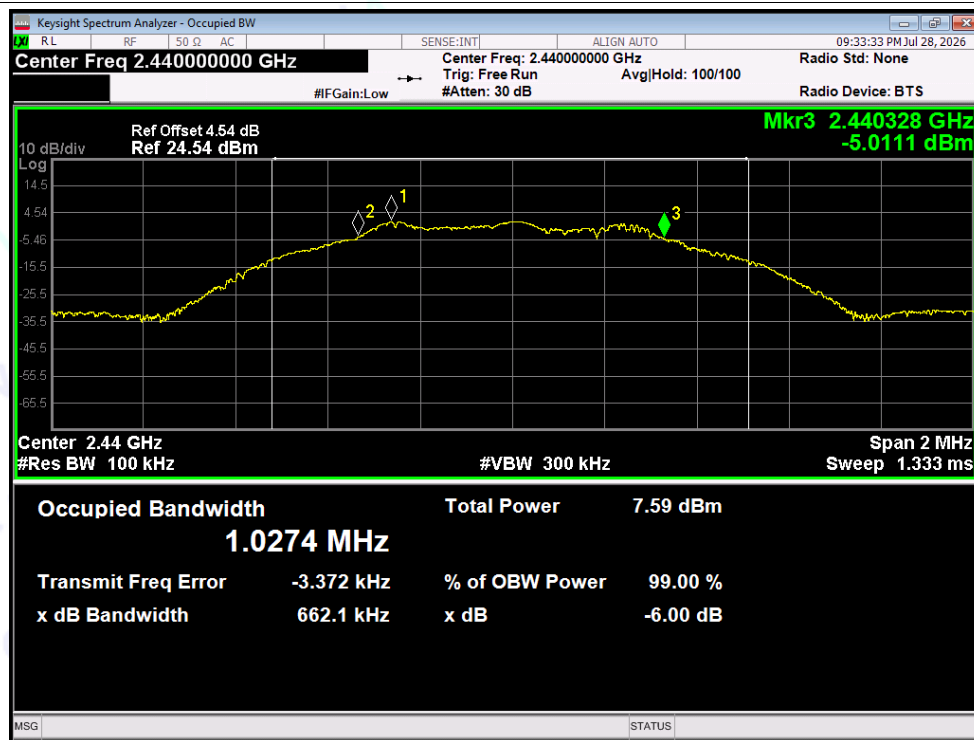
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.66	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.66	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.66	0.5	Pass
NVNT	BLE 2Mbps	2402	Ant1	1.15	0.5	Pass
NVNT	BLE 2Mbps	2440	Ant1	1.11	0.5	Pass
NVNT	BLE 2Mbps	2480	Ant1	1.1	0.5	Pass

Test Graphs

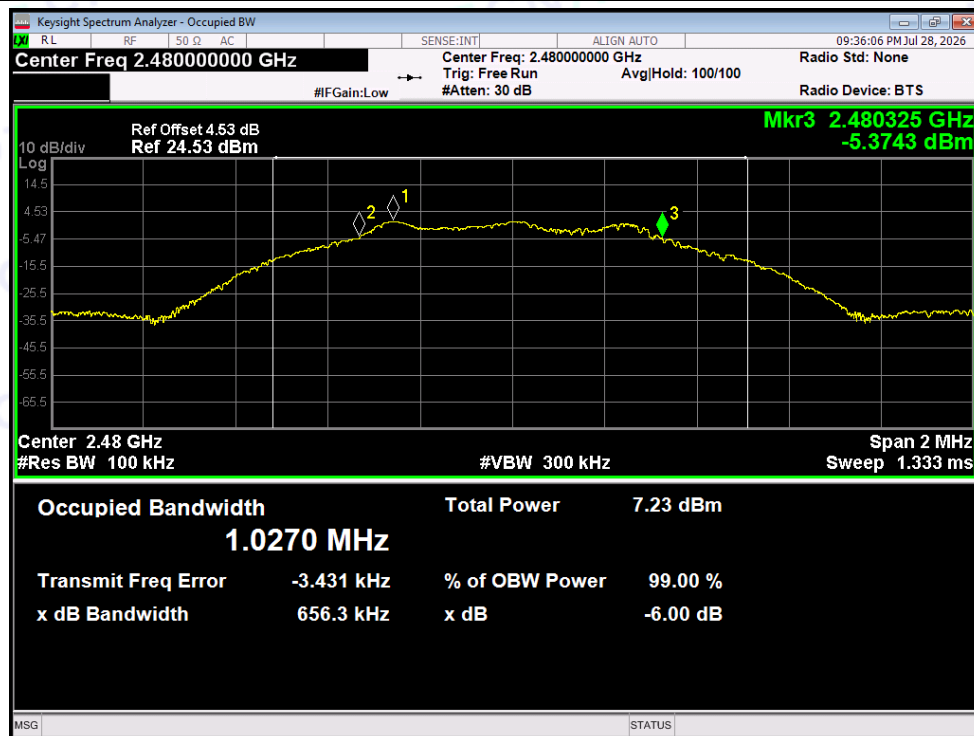
-6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1



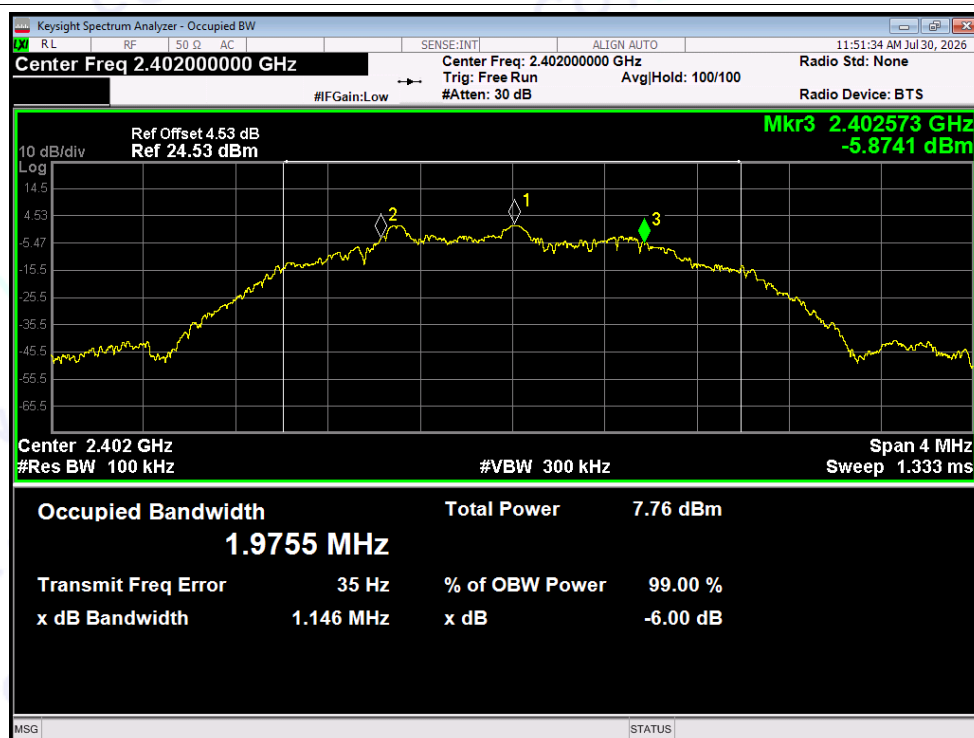
-6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1



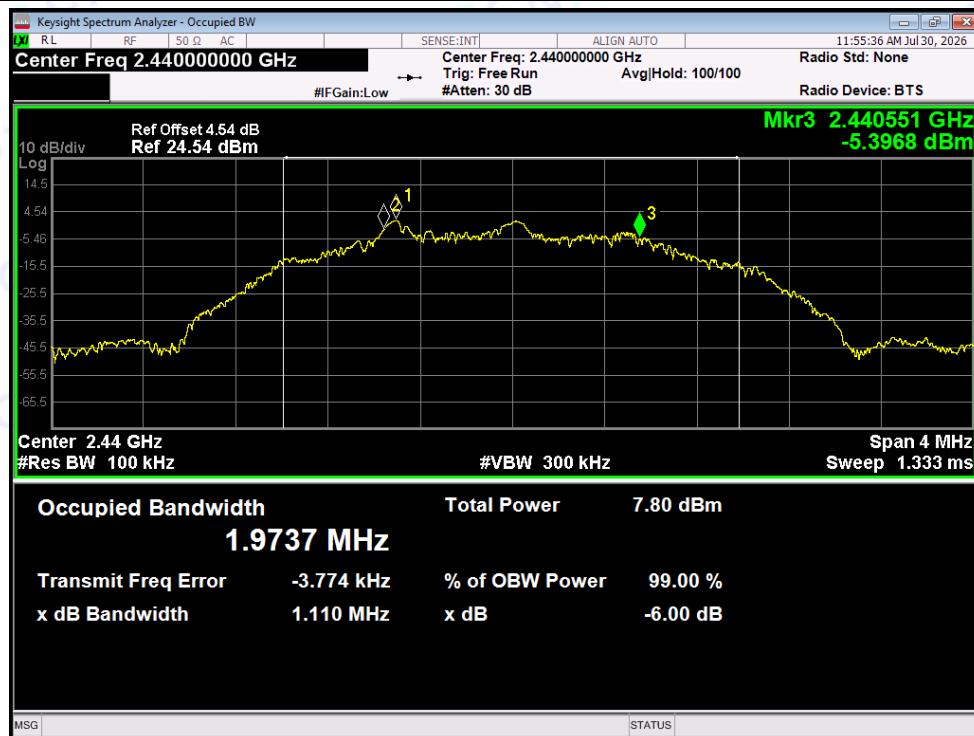
-6dB Bandwidth NVNT BLE 1Mbps 2480MHz Ant1



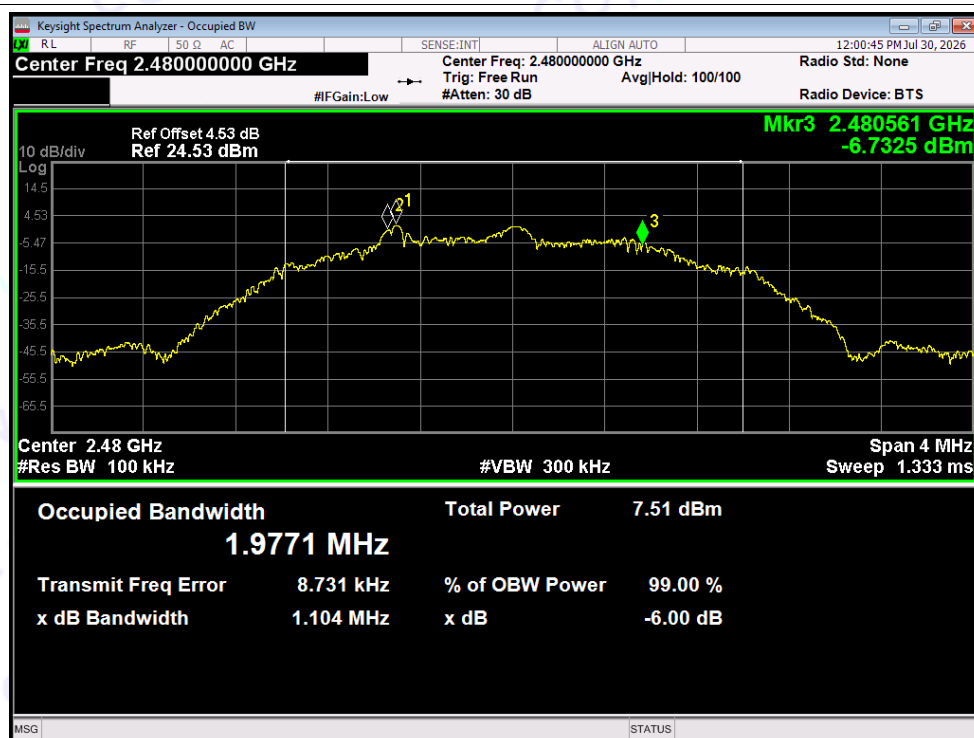
-6dB Bandwidth NVNT BLE 2Mbps 2402MHz Ant1



-6dB Bandwidth NVNT BLE 2Mbps 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2Mbps 2480MHz Ant1

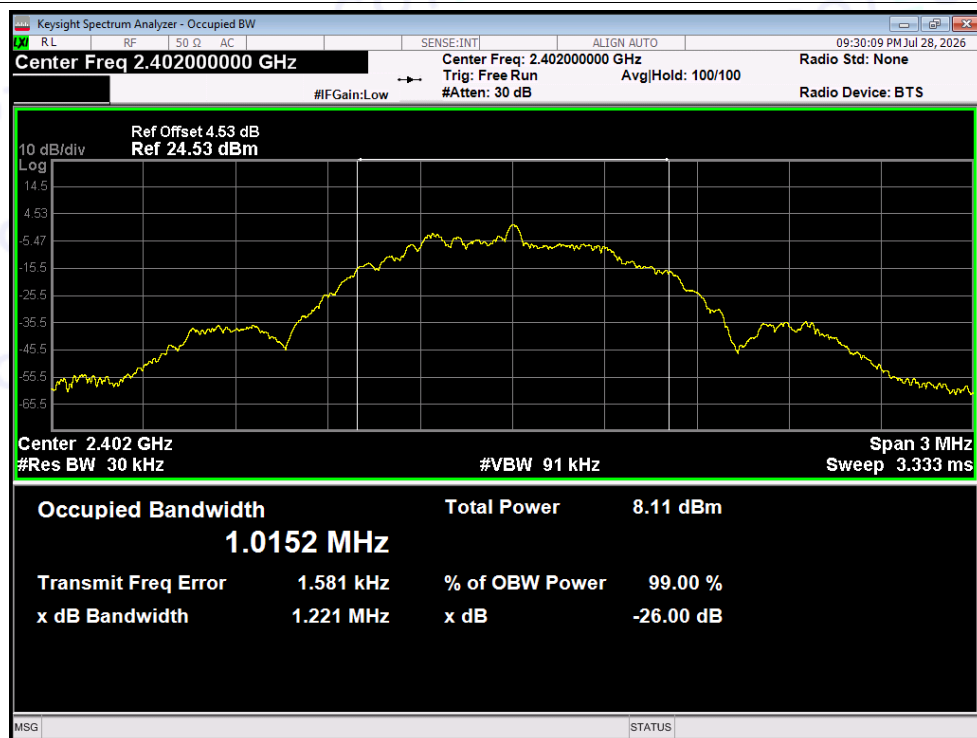


4. Occupied Channel Bandwidth

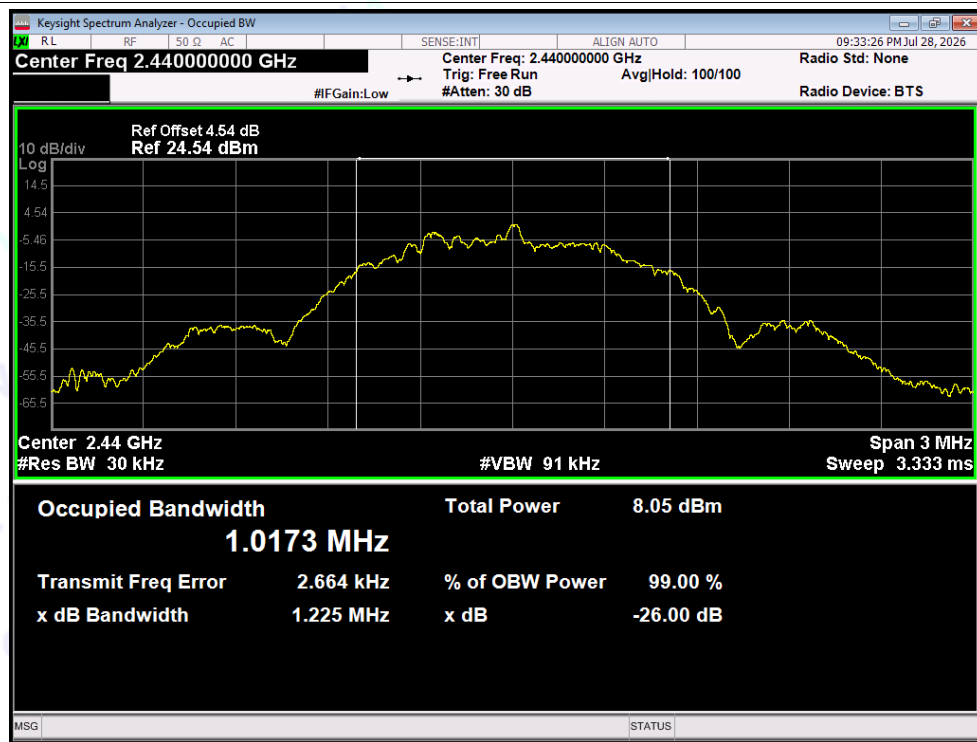
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.015
NVNT	BLE 1Mbps	2440	Ant1	1.017
NVNT	BLE 1Mbps	2480	Ant1	1.018
NVNT	BLE 2Mbps	2402	Ant1	1.973
NVNT	BLE 2Mbps	2440	Ant1	1.971
NVNT	BLE 2Mbps	2480	Ant1	1.981

Test Graphs

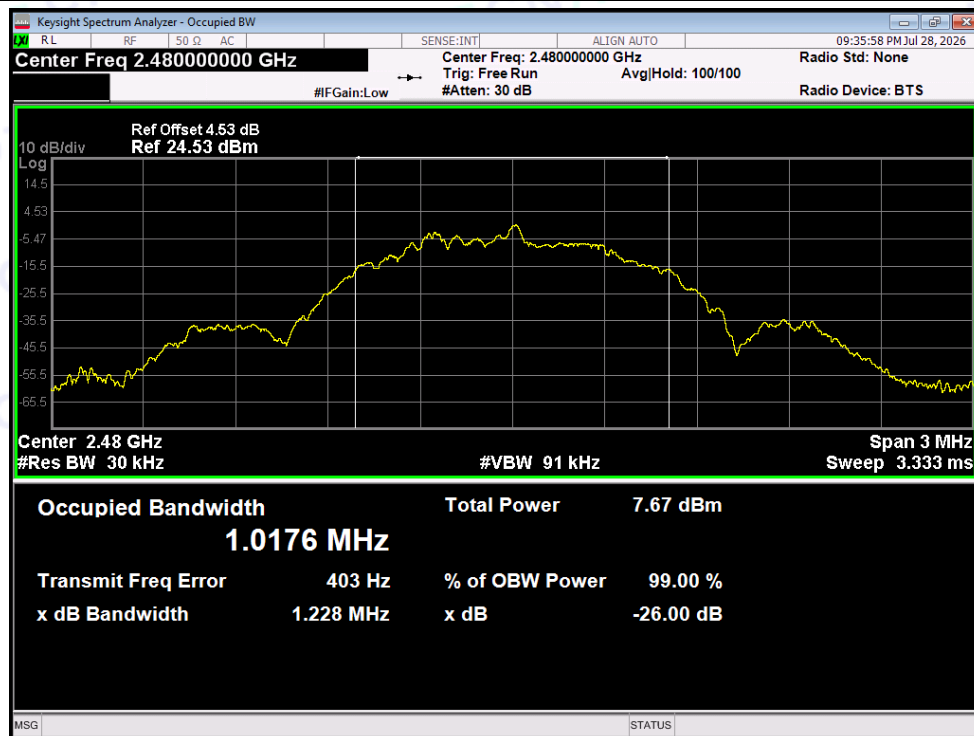
OBW NVNT BLE 1Mbps 2402MHz Ant1



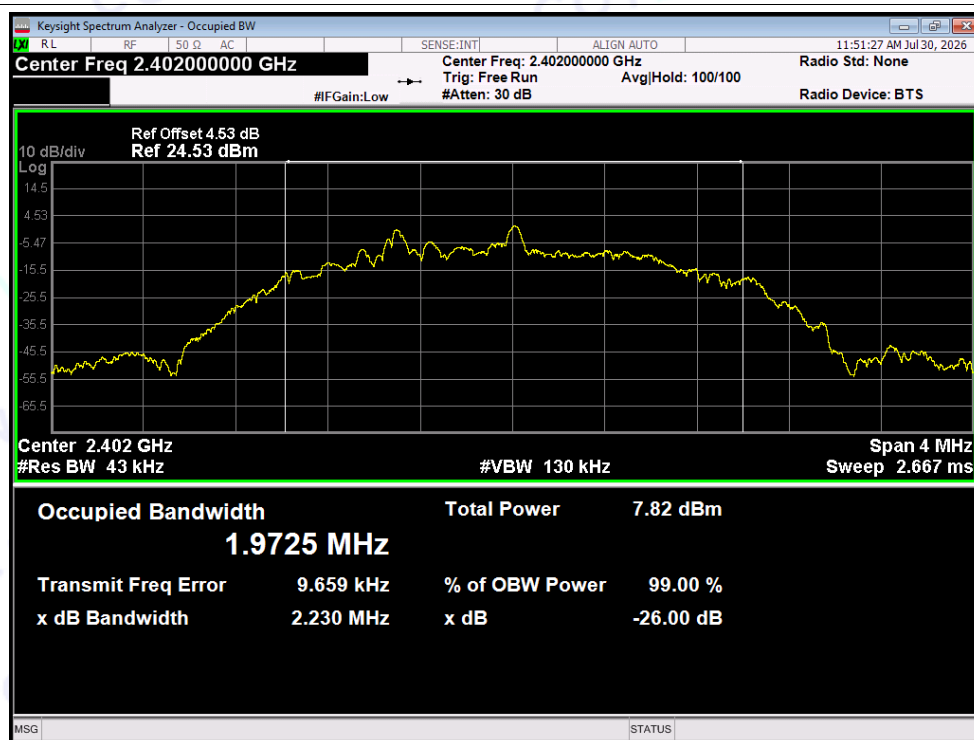
OBW NVNT BLE 1Mbps 2440MHz Ant1



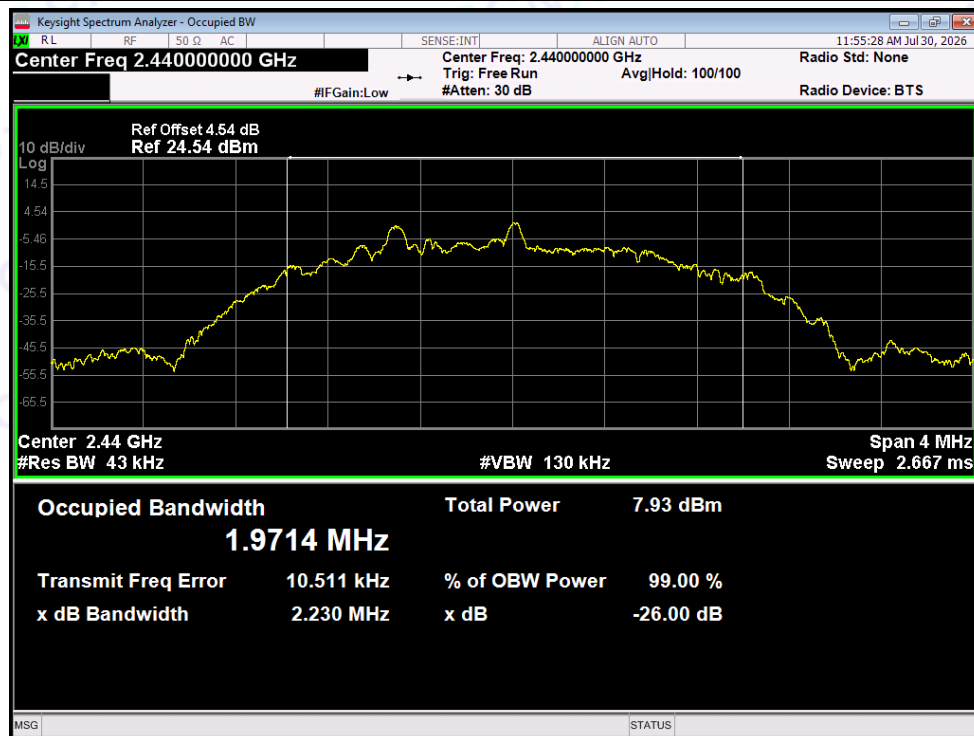
OBW NVNT BLE 1Mbps 2480MHz Ant1



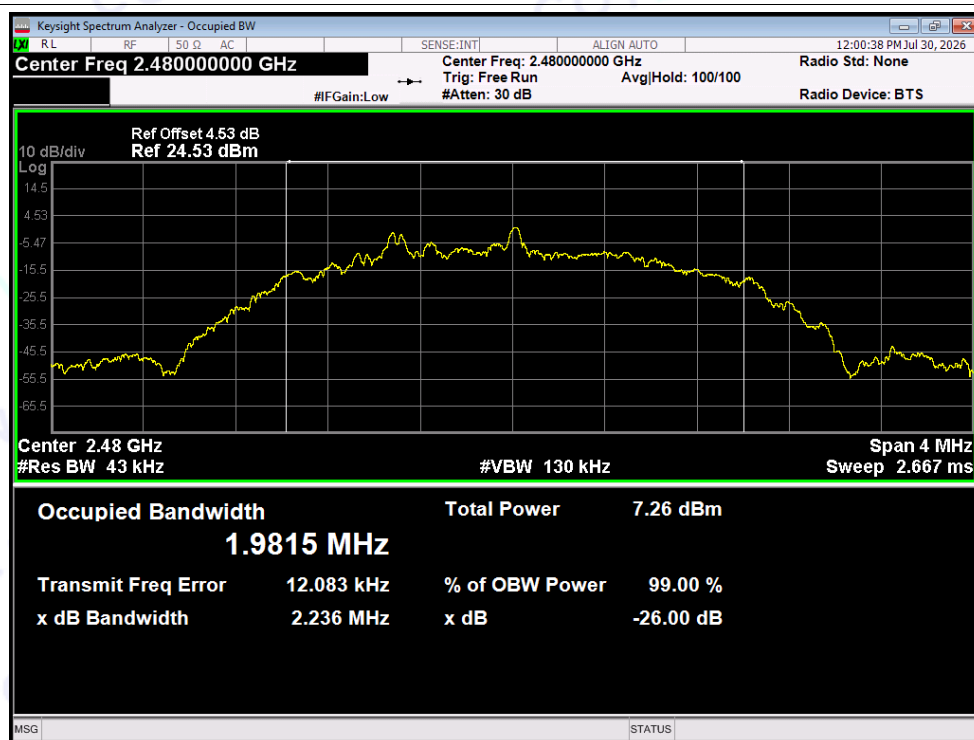
OBW NVNT BLE 2Mbps 2402MHz Ant1



OBW NVNT BLE 2Mbps 2440MHz Ant1



OBW NVNT BLE 2Mbps 2480MHz Ant1

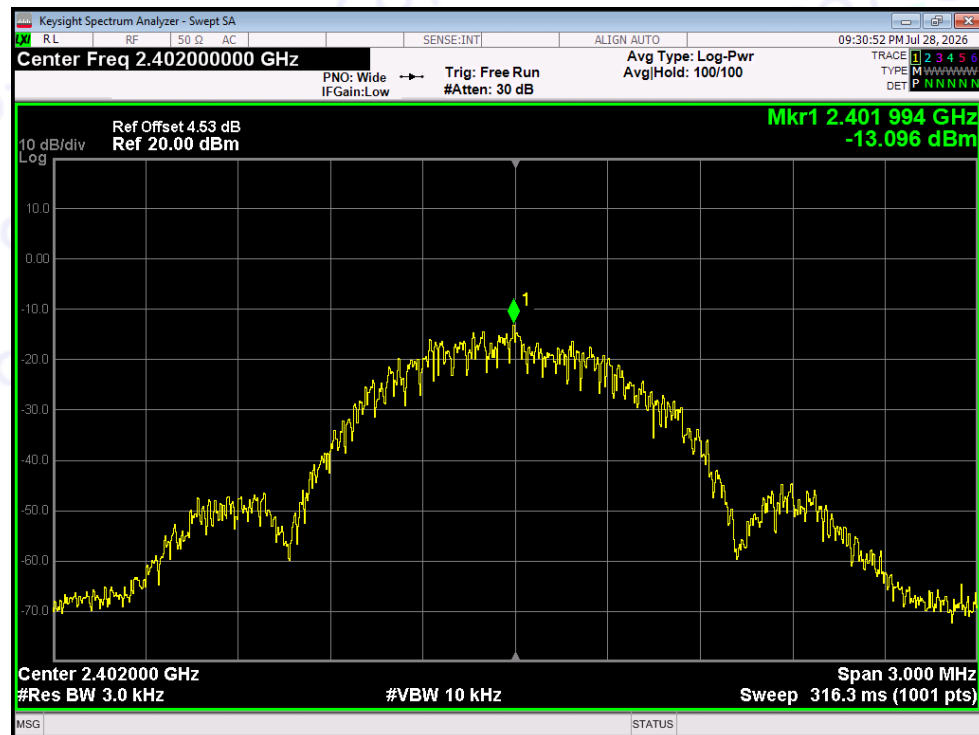


5. Maximum Power Spectral Density Level

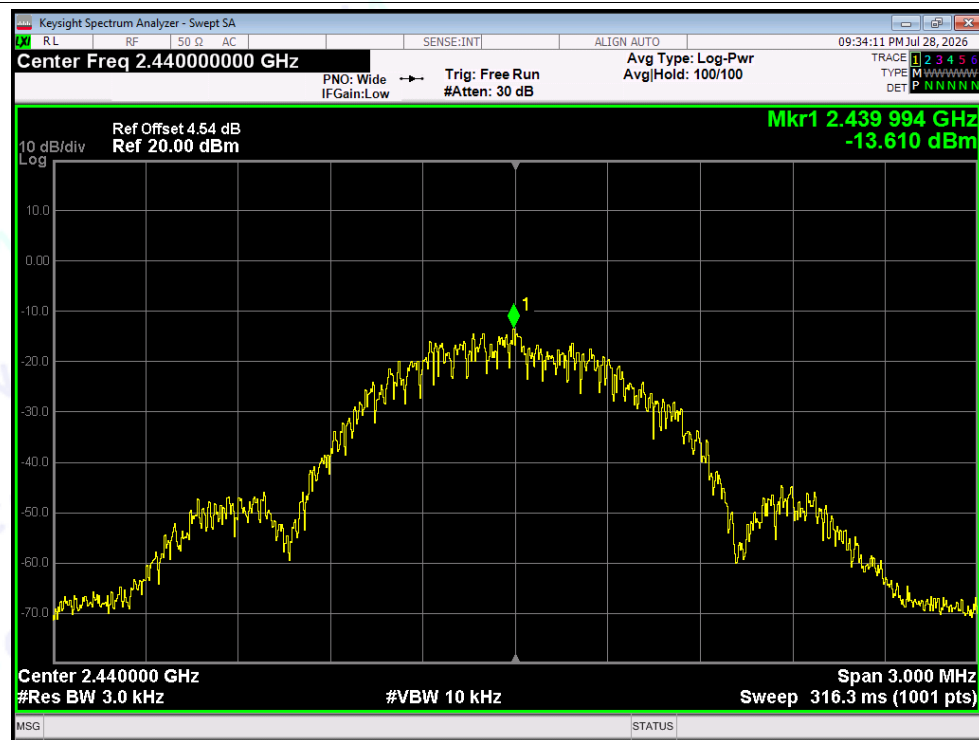
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3KHz)	Limit (dBm/3KHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-13.096	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-13.61	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-13.971	8	Pass
NVNT	BLE 2Mbps	2402	Ant1	-15.617	8	Pass
NVNT	BLE 2Mbps	2440	Ant1	-15.383	8	Pass
NVNT	BLE 2Mbps	2480	Ant1	-15.711	8	Pass

Test Graphs

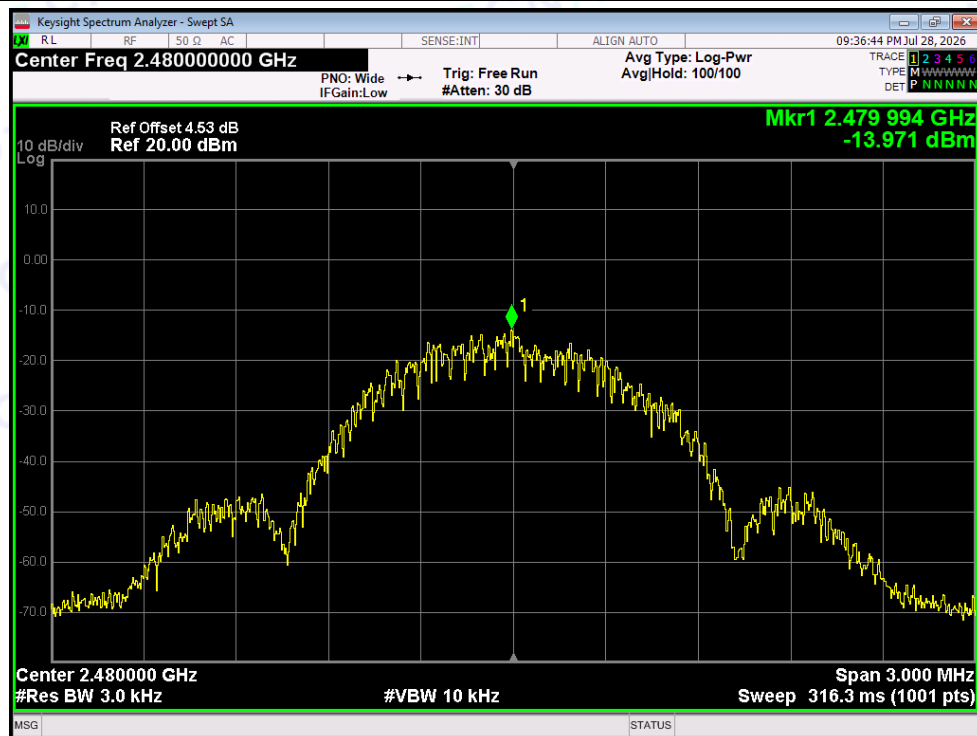
PSD NVNT BLE 1Mbps 2402MHz Ant1



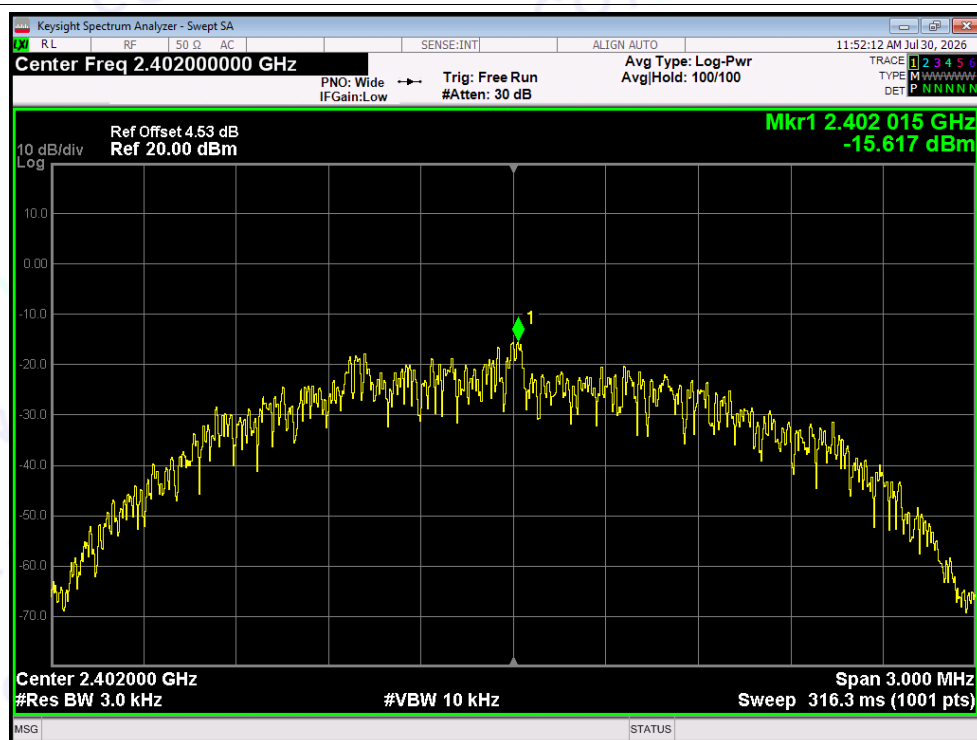
PSD NVNT BLE 1Mbps 2440MHz Ant1



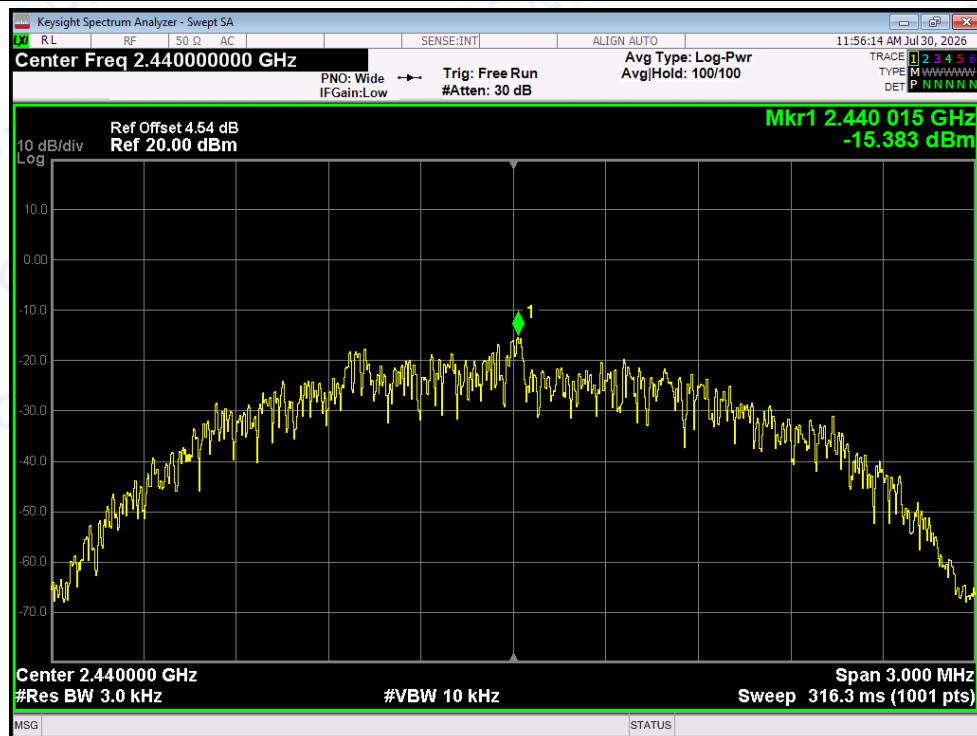
PSD NVNT BLE 1Mbps 2480MHz Ant1



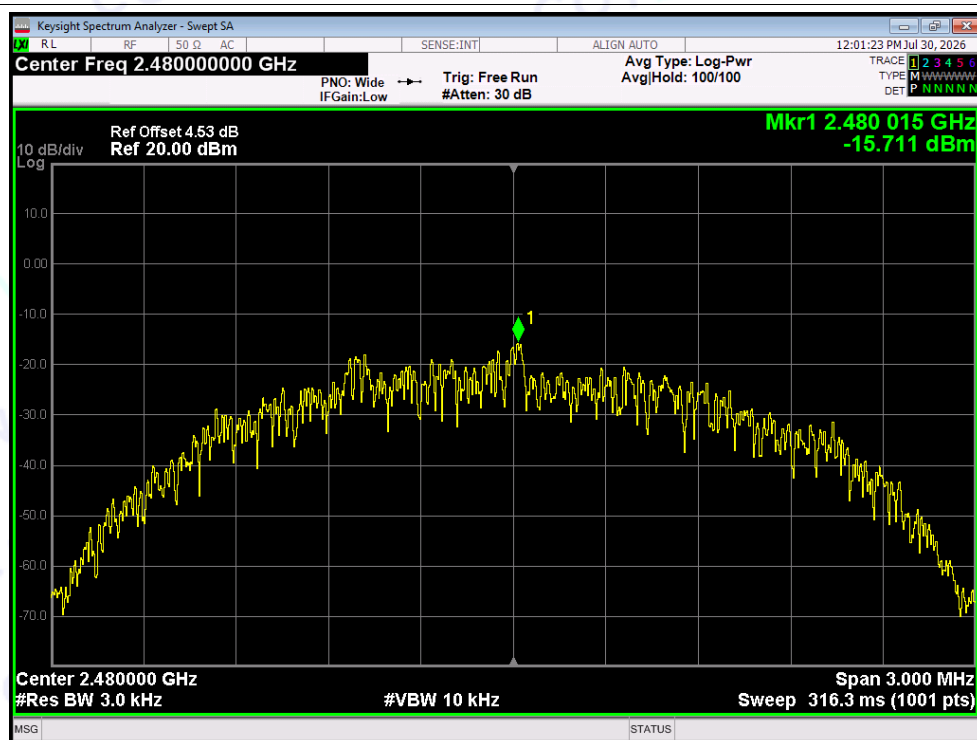
PSD NVNT BLE 2Mbps 2402MHz Ant1



PSD NVNT BLE 2Mbps 2440MHz Ant1



PSD NVNT BLE 2Mbps 2480MHz Ant1

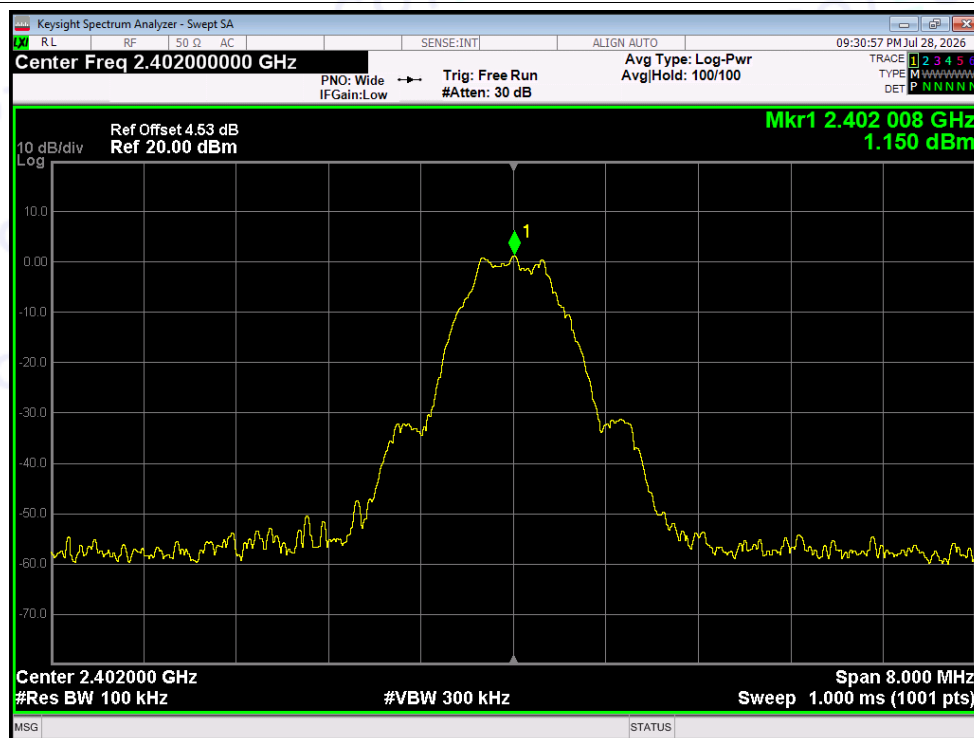


6. Band Edge

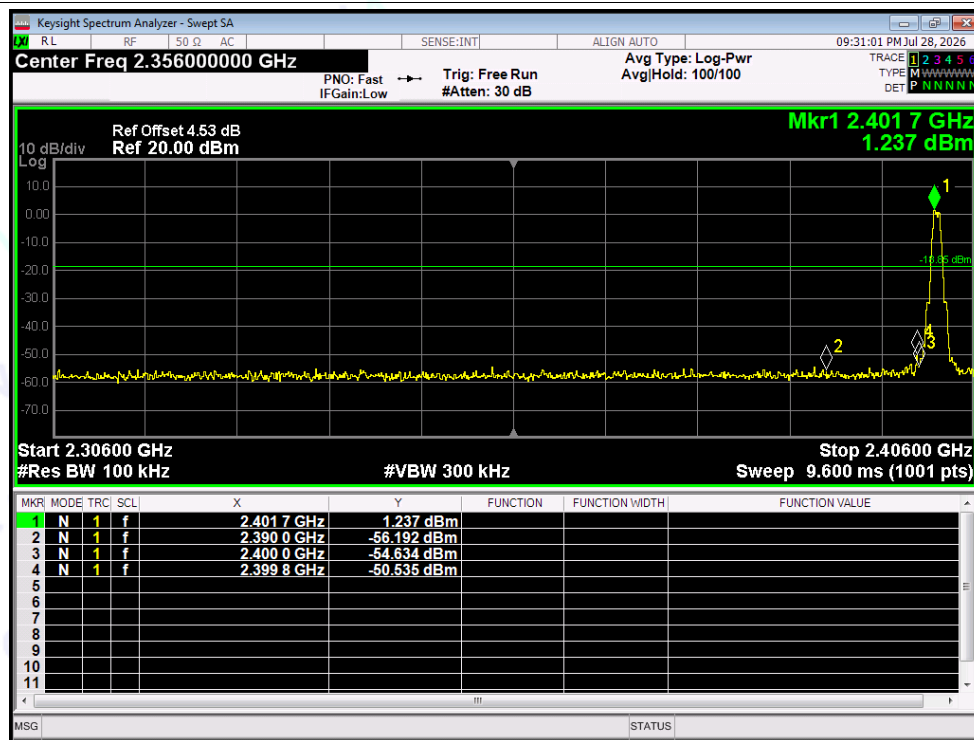
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-51.68	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-55.65	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-46.57	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-55	-20	Pass

Test Graphs

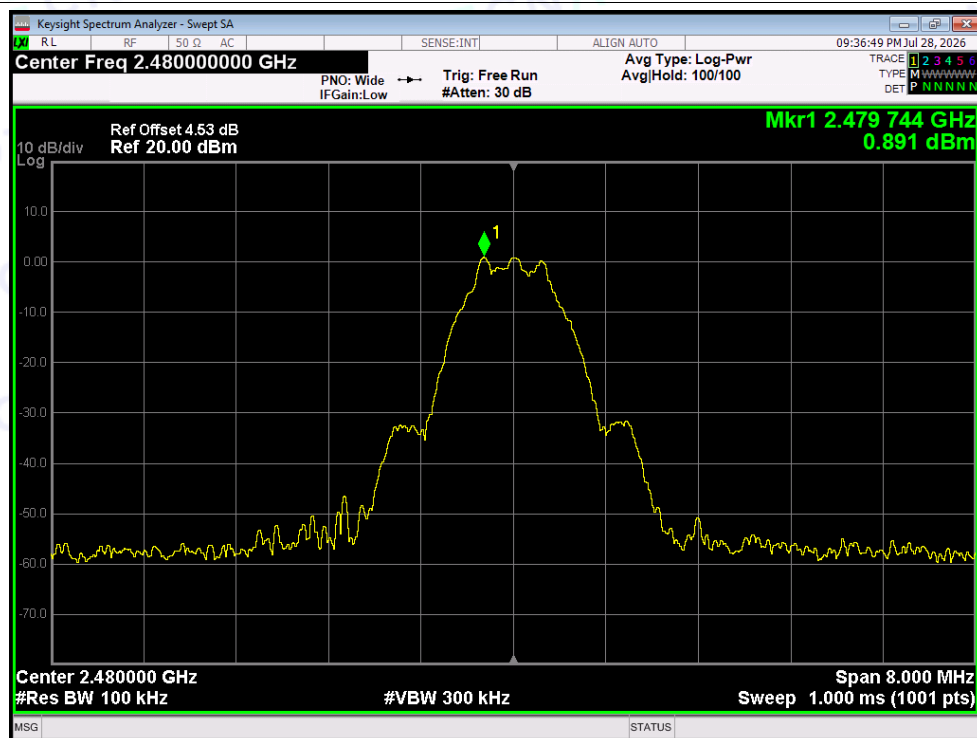
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref



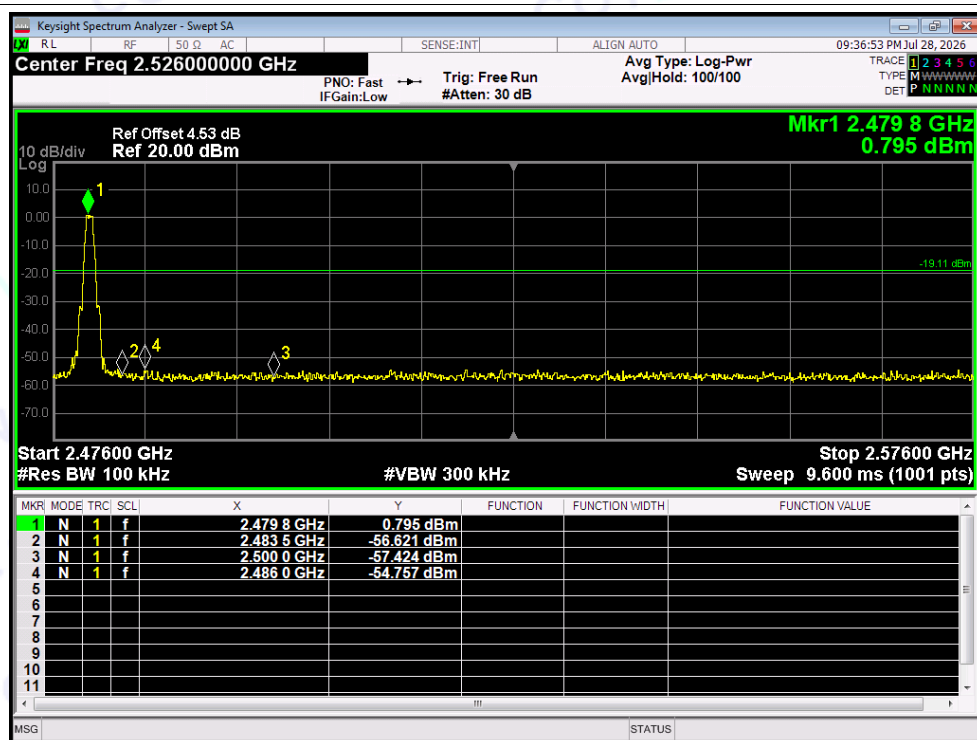
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission



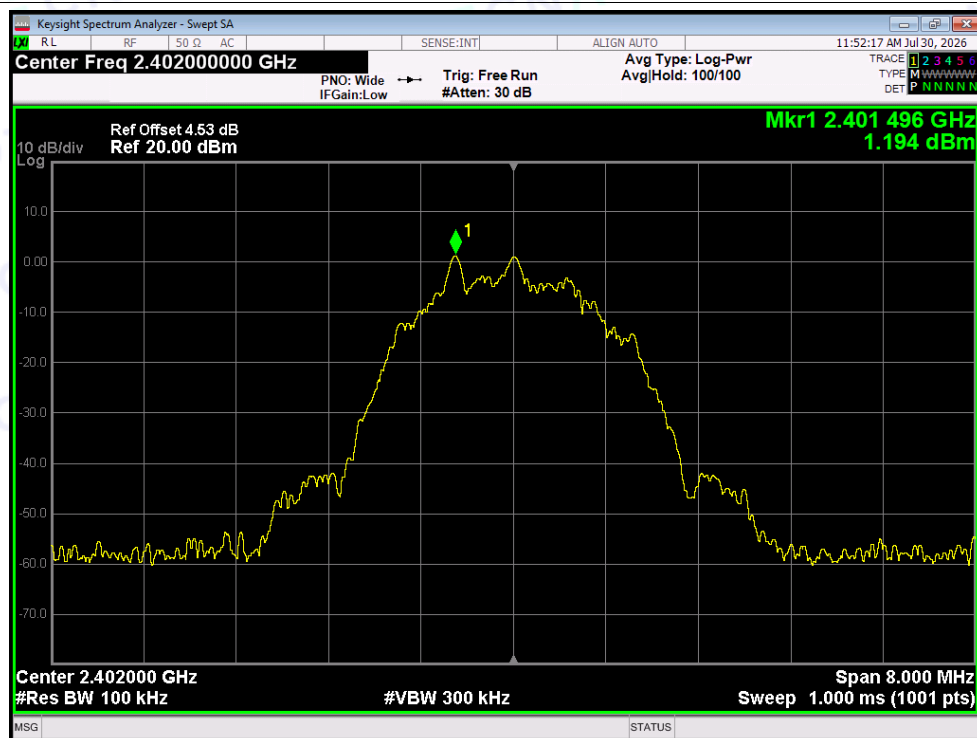
Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Ref



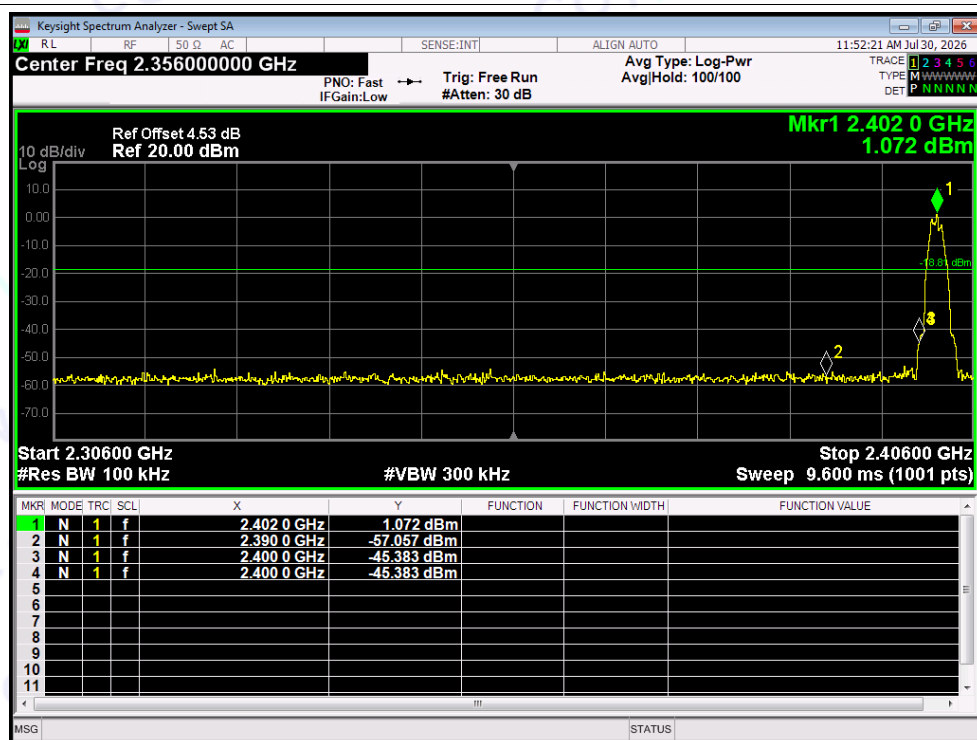
Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Emission



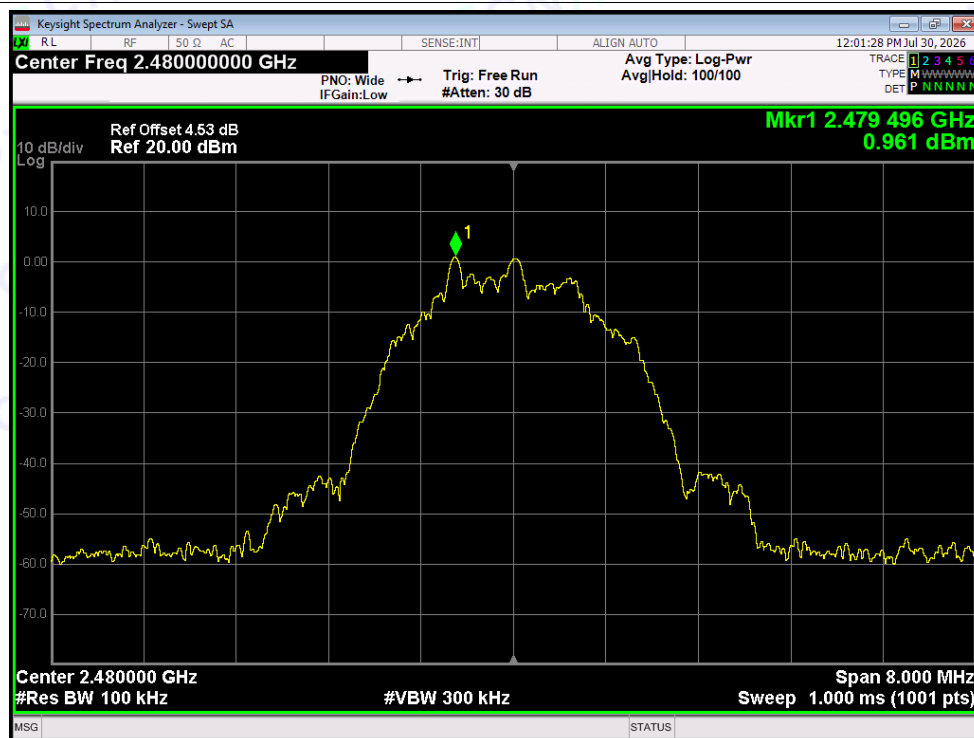
Band Edge NVNT BLE 2Mbps 2402MHz Ant1 Ref



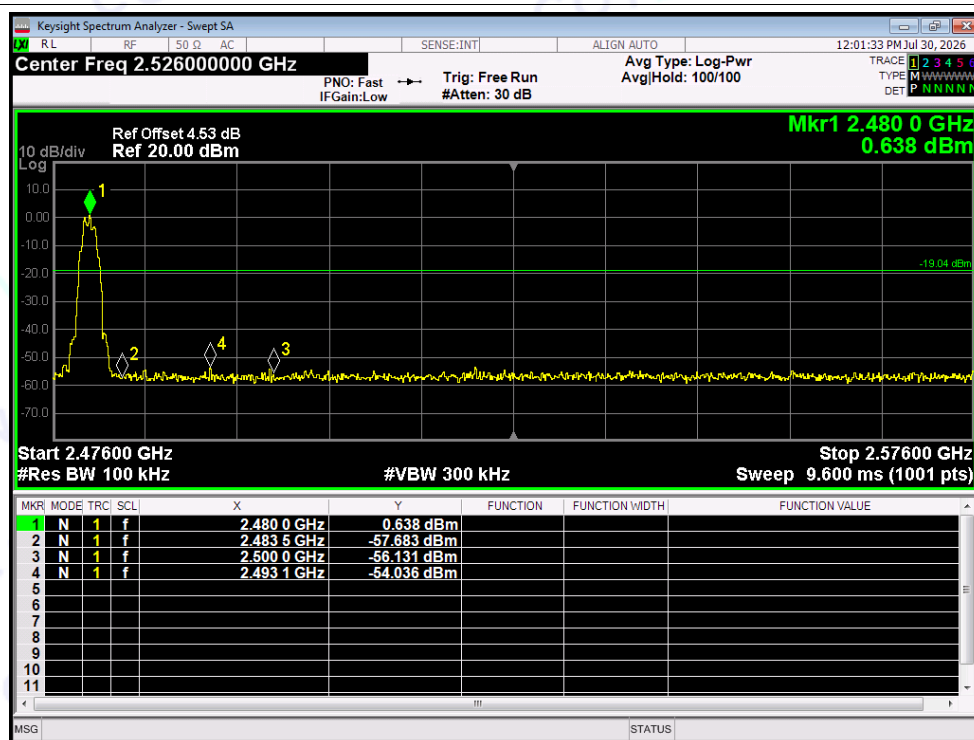
Band Edge NVNT BLE 2Mbps 2402MHz Ant1 Emission



Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Ref



Band Edge NVNT BLE 2Mbps 2480MHz Ant1 Emission

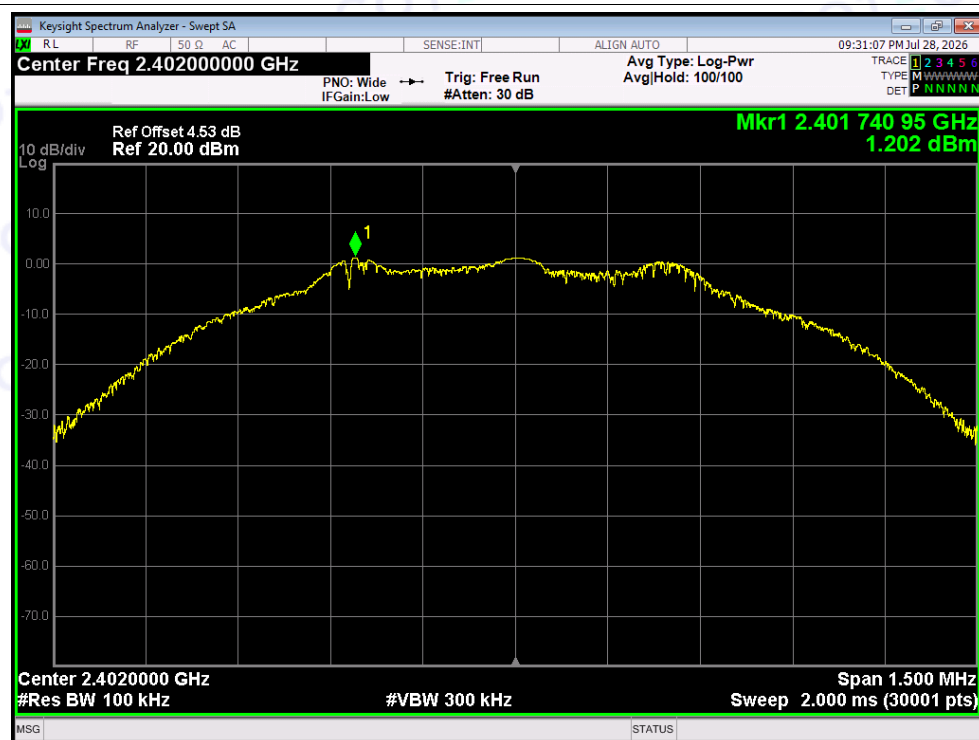


7. Conducted RF Spurious Emission

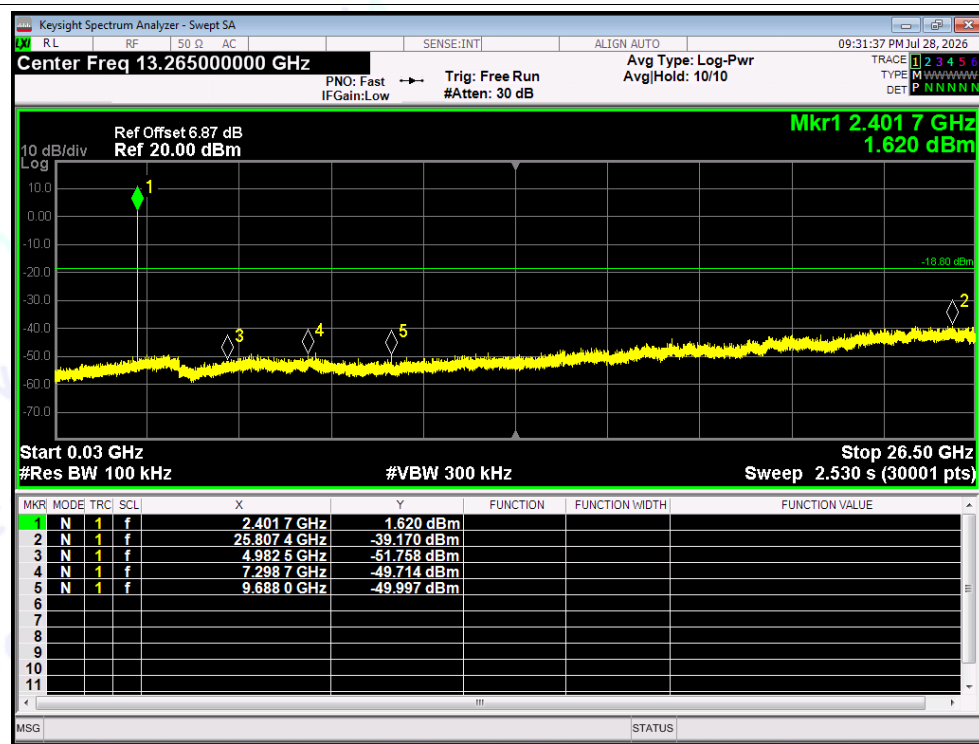
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-40.37	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-40.24	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-39.57	-20	Pass
NVNT	BLE 2Mbps	2402	Ant1	-40.09	-20	Pass
NVNT	BLE 2Mbps	2440	Ant1	-40.07	-20	Pass
NVNT	BLE 2Mbps	2480	Ant1	-38.16	-20	Pass

Test Graphs

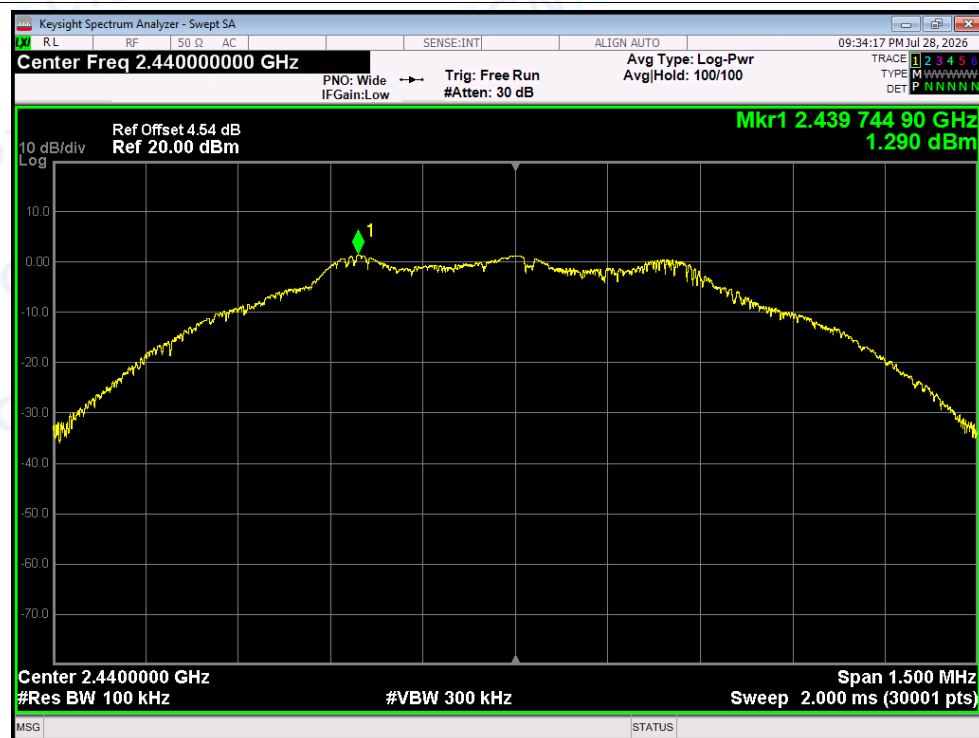
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref



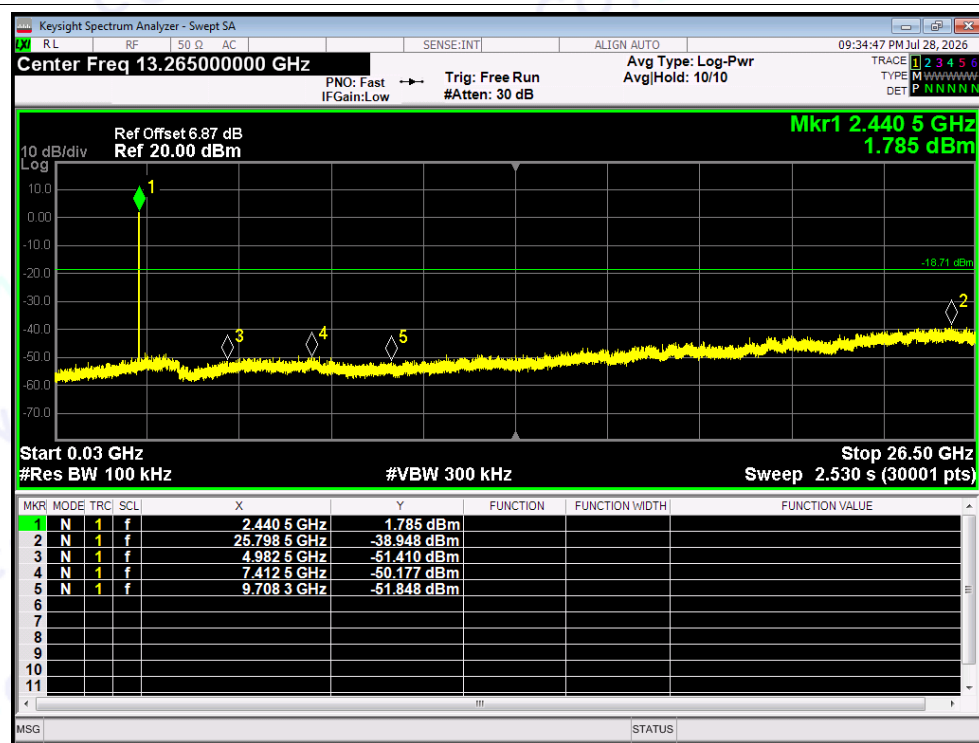
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission



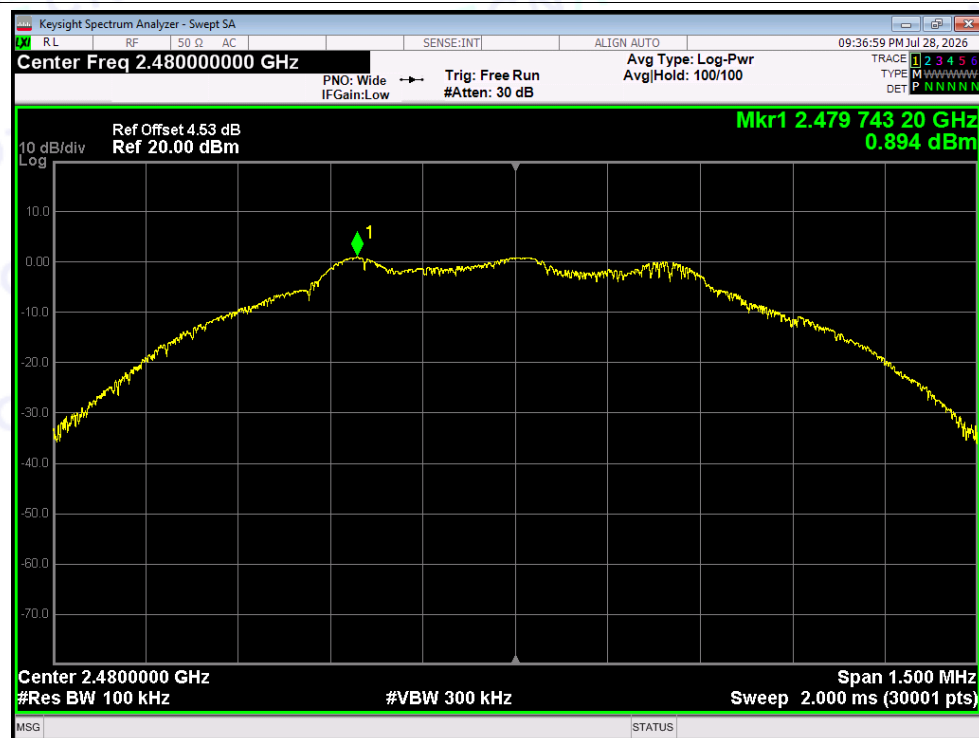
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Ref



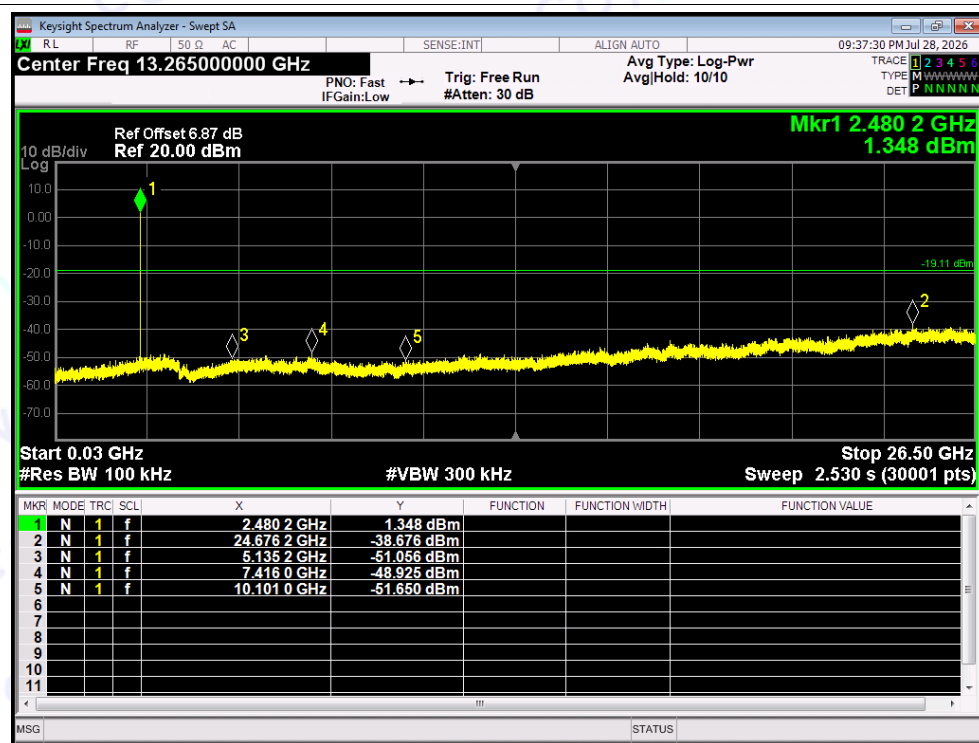
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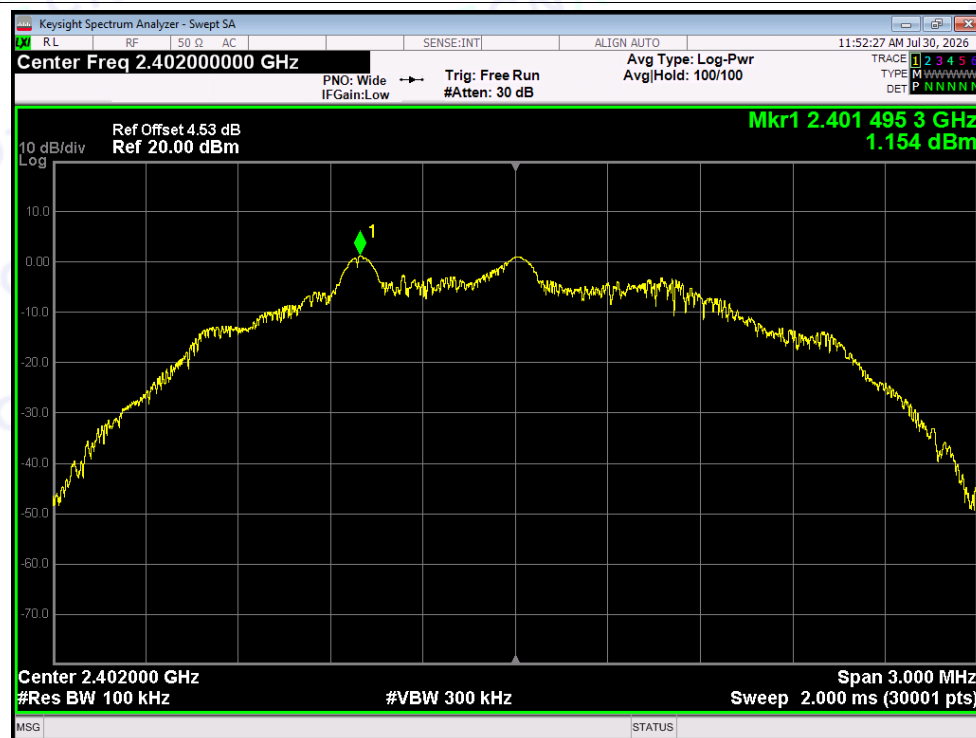
Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Ref



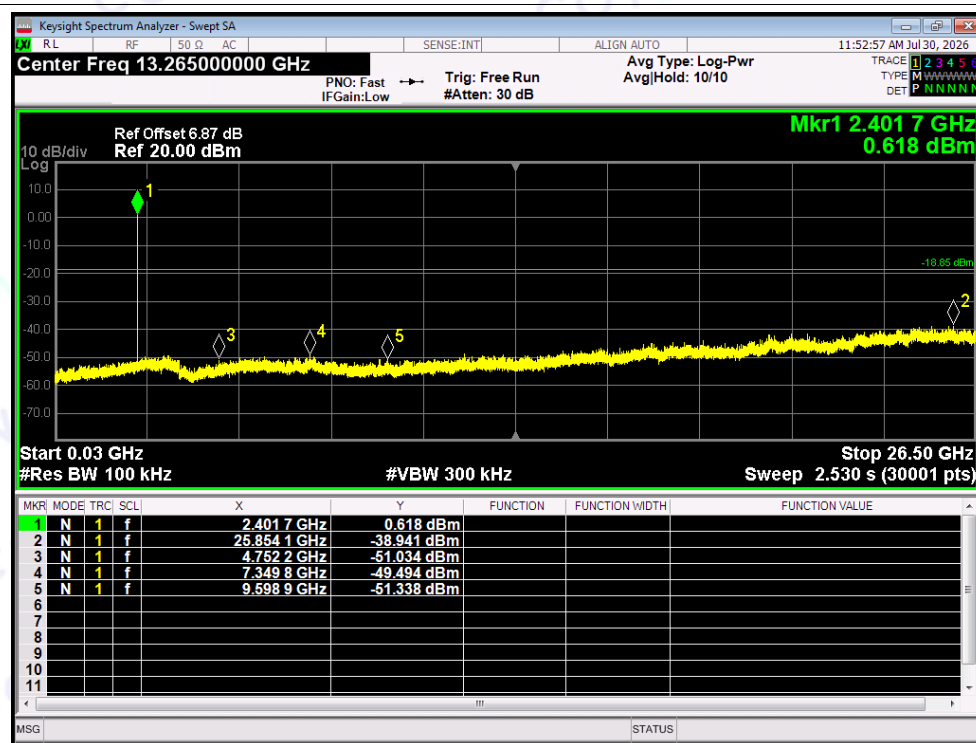
Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Emission



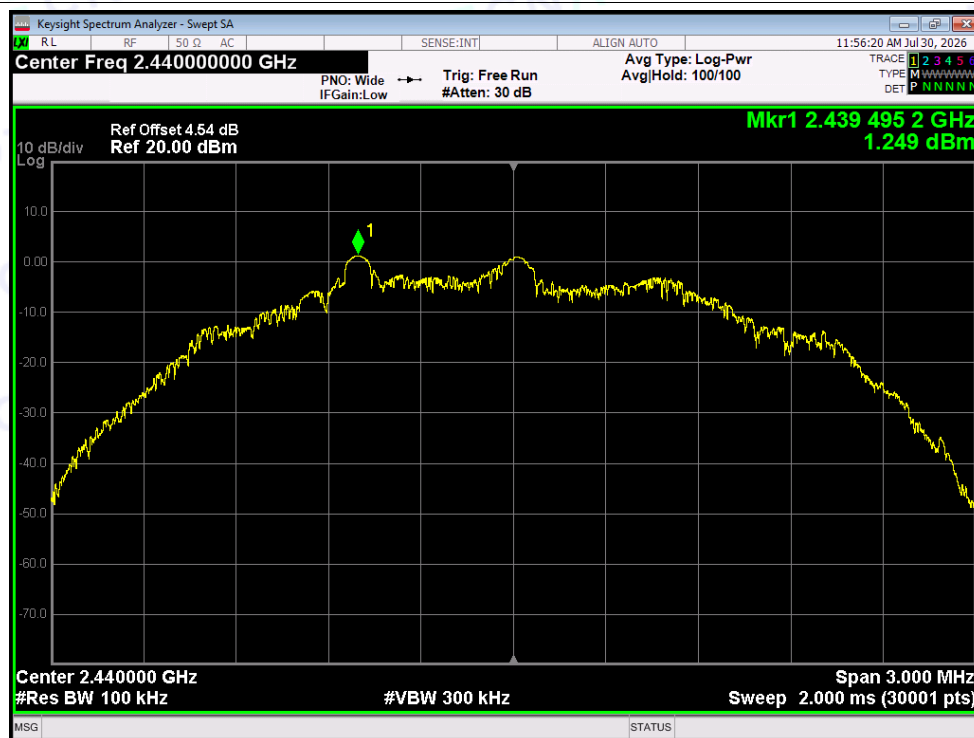
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Ref



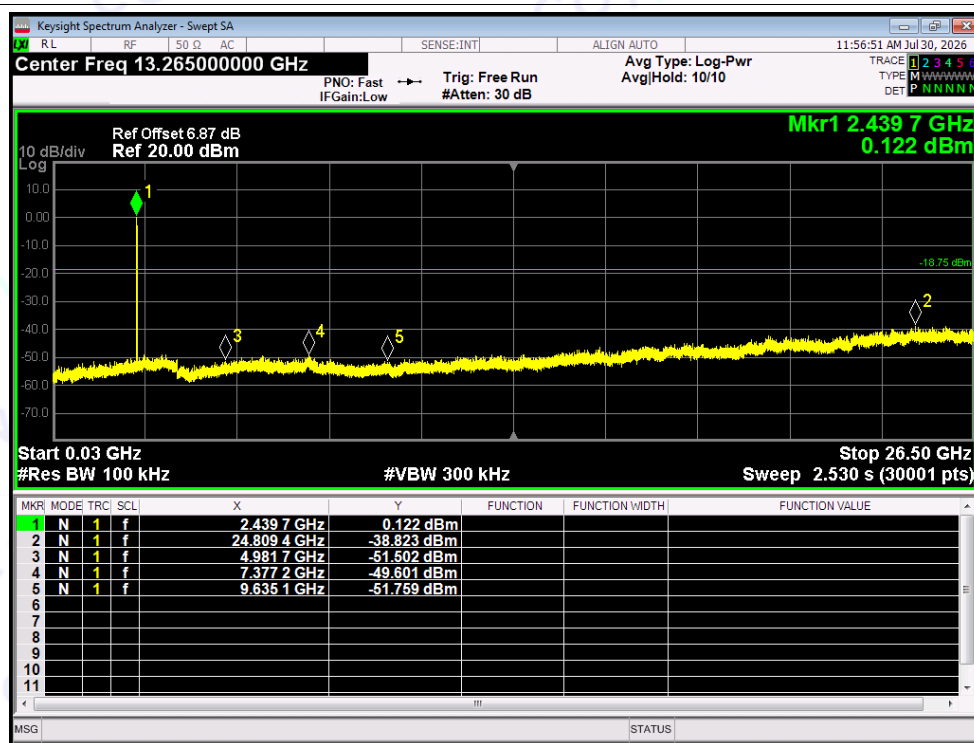
Tx. Spurious NVNT BLE 2Mbps 2402MHz Ant1 Emission



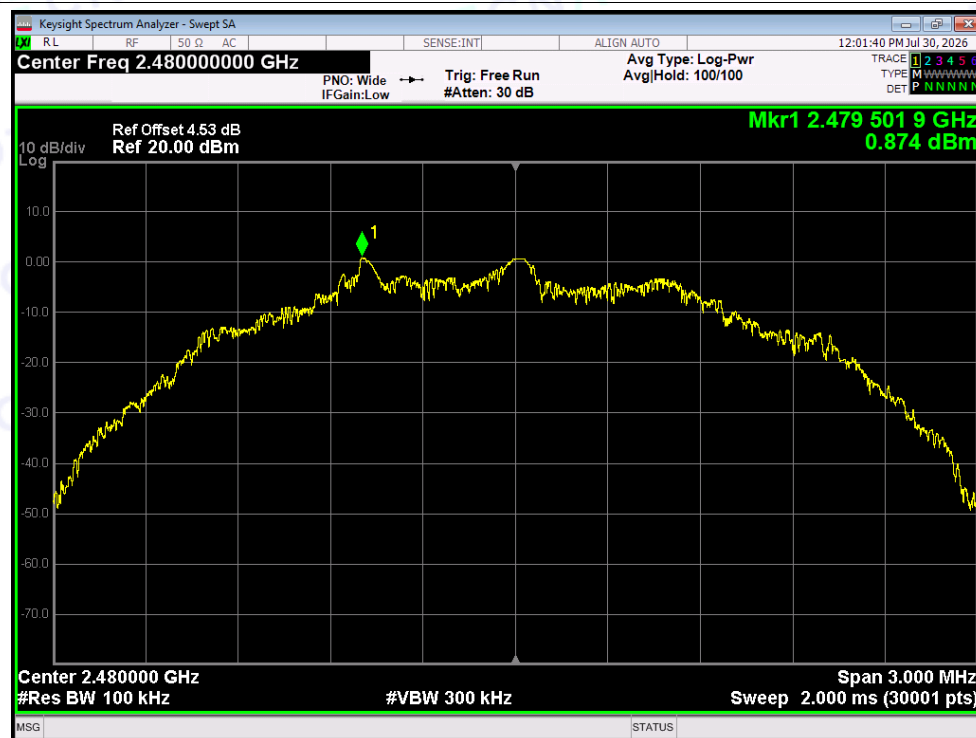
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Ref



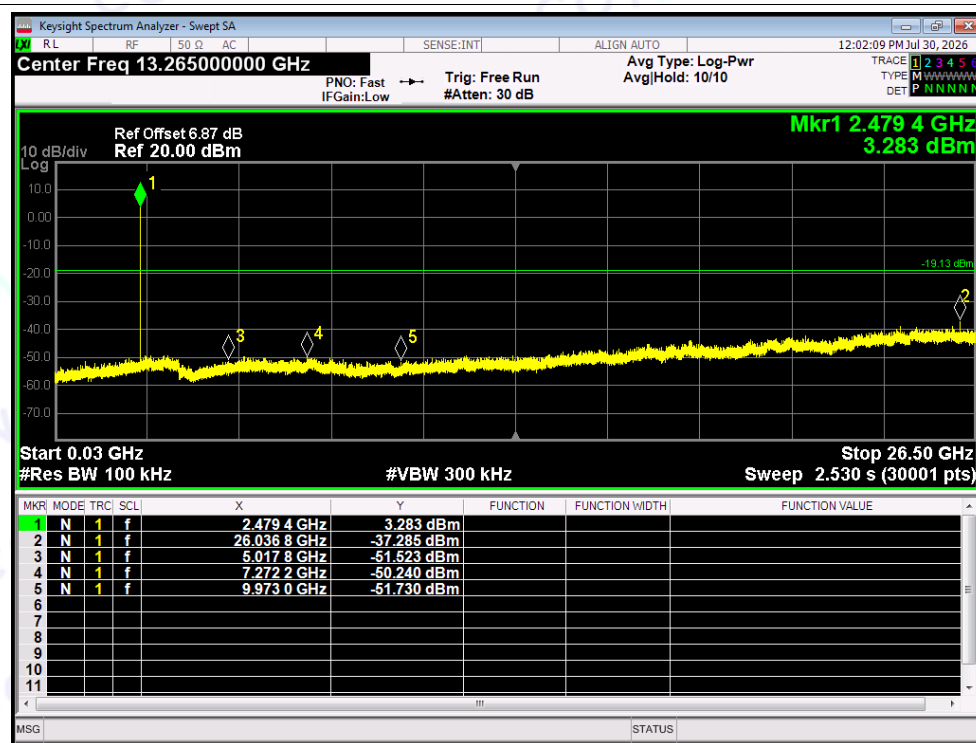
Tx. Spurious NVNT BLE 2Mbps 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2Mbps 2480MHz Ant1 Emission



--- END OF REPORT ---