

RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	Illuminato Q4
Test Model:	Illuminato Q4
Sample ID:	RW-C-202209-0005-9-2#
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 11.1V
Test Engineer:	Liu Ji Ming
Note: For a more detailed features description, please refer to the report TBR-C-202209-0005-141	

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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	62.9	2.01	2.56
NVNT	BLE 1Mbps	2440	Ant1	62.9	2.01	2.56
NVNT	BLE 1Mbps	2480	Ant1	62.9	2.01	2.56

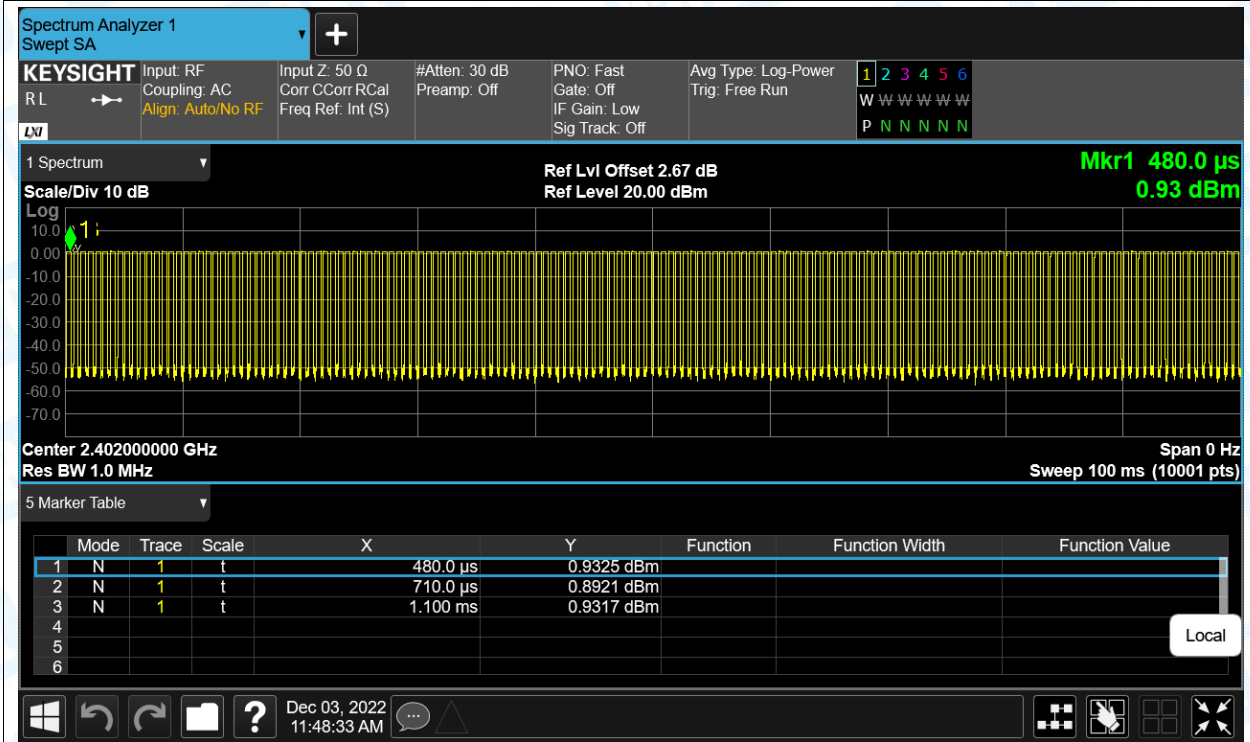
Note: $Duty\ Cycle(\%) = \frac{ON(ms)}{ON(ms)+OFF(ms)}$

$ON(ms) = Maker3 - Maker2$

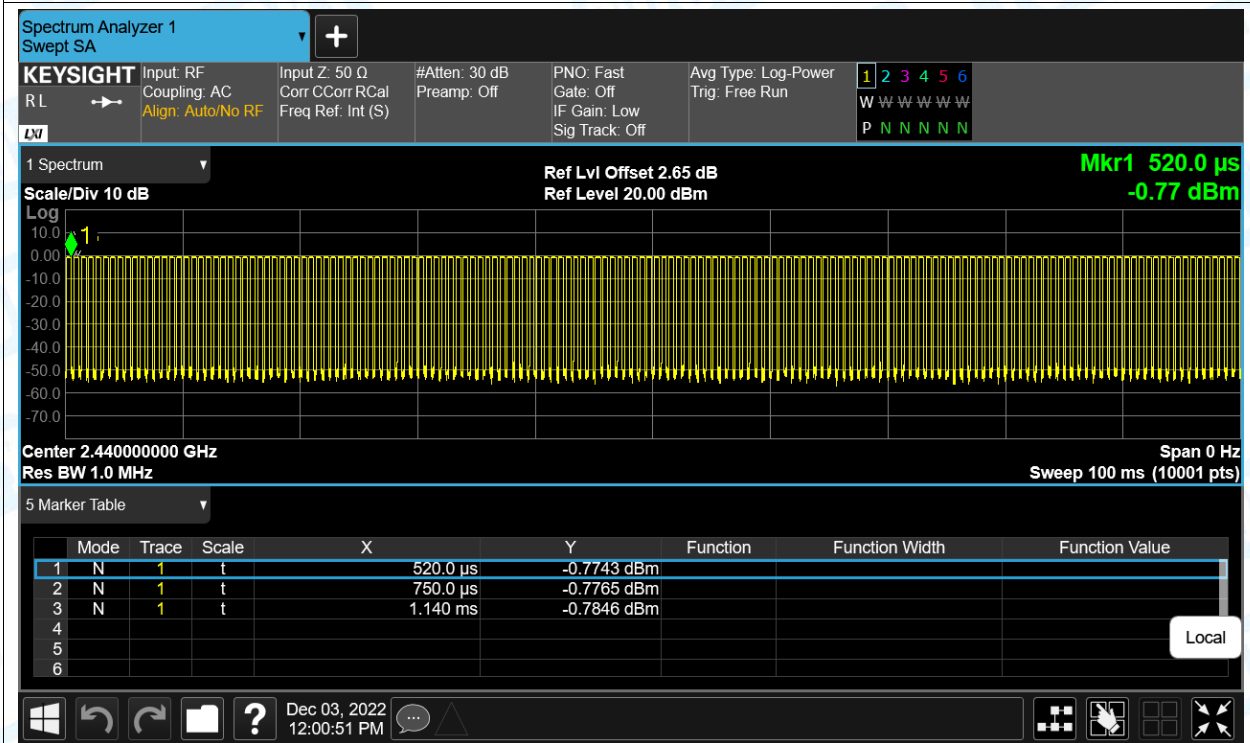
$(ON(ms)+OFF(ms)) = Maker3 - Maker1$

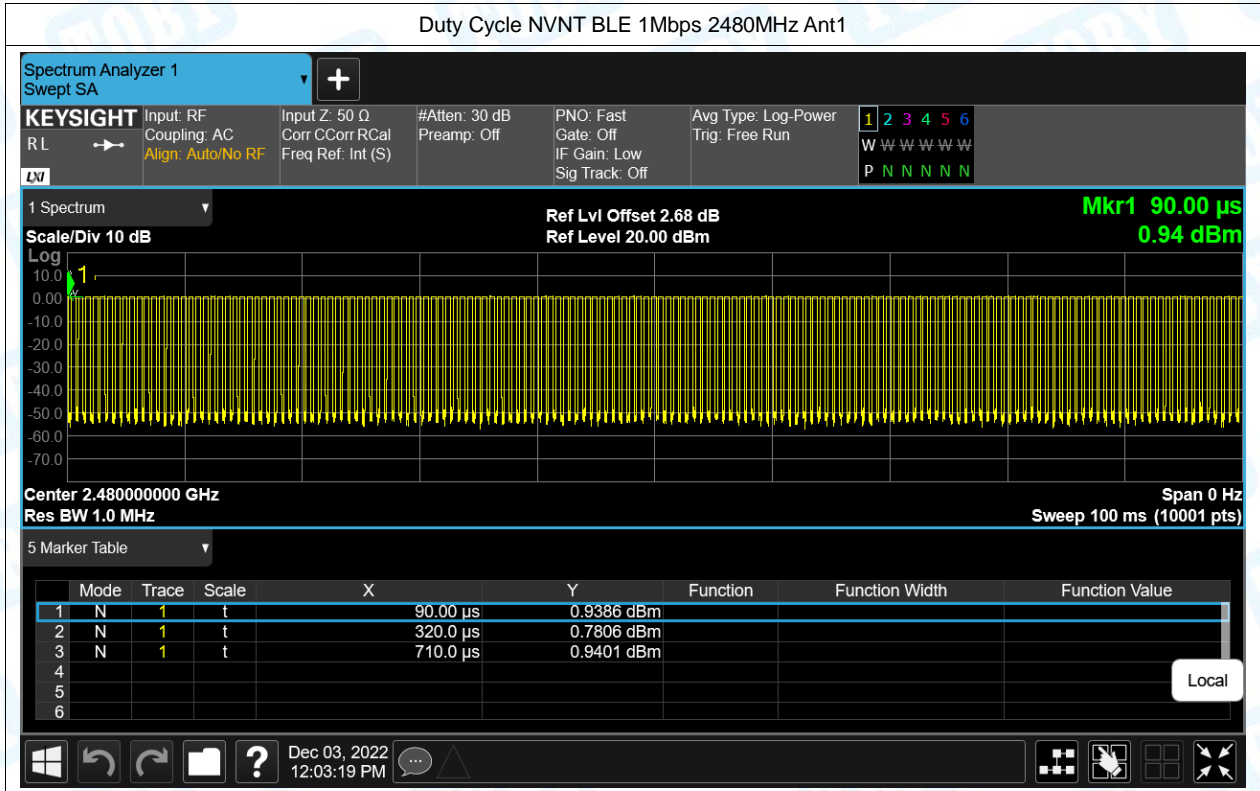
Test Graphs

Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1



Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1



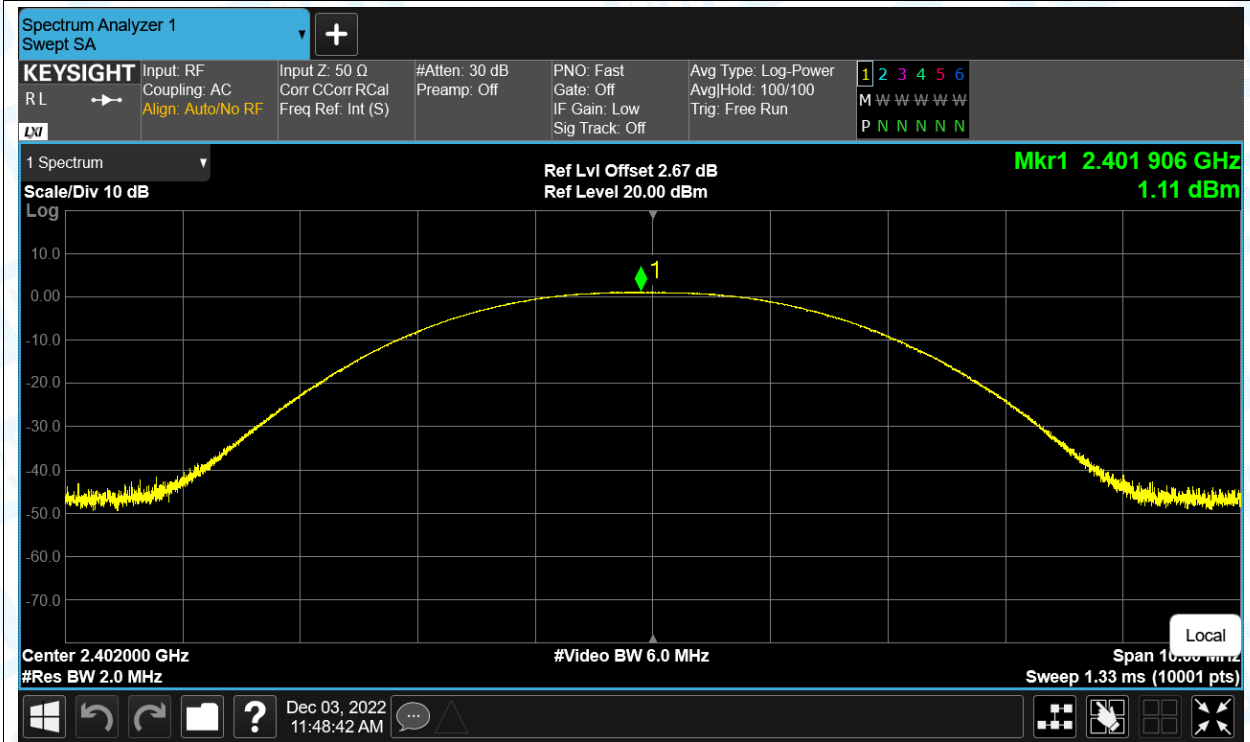


2. Maximum Conducted Output Power

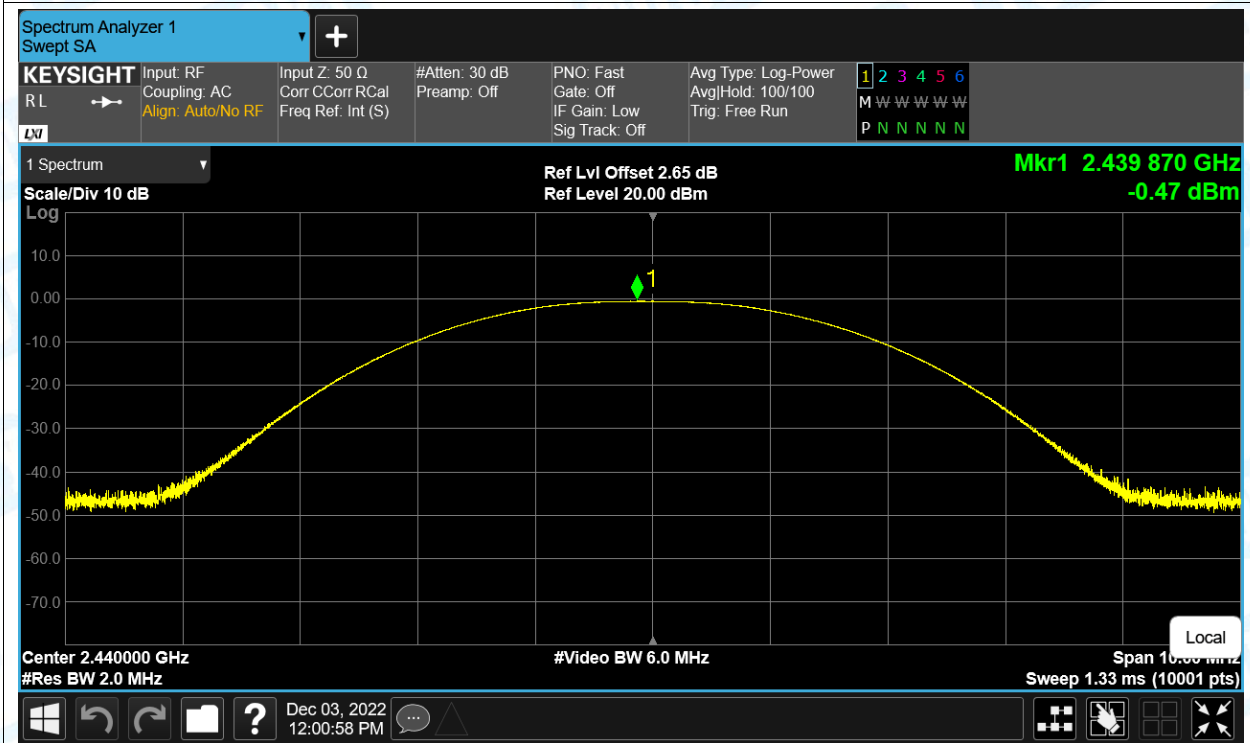
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	1.11	30	Pass
NVNT	BLE 1Mbps	2440	Ant1	-0.47	30	Pass
NVNT	BLE 1Mbps	2480	Ant1	1.08	30	Pass

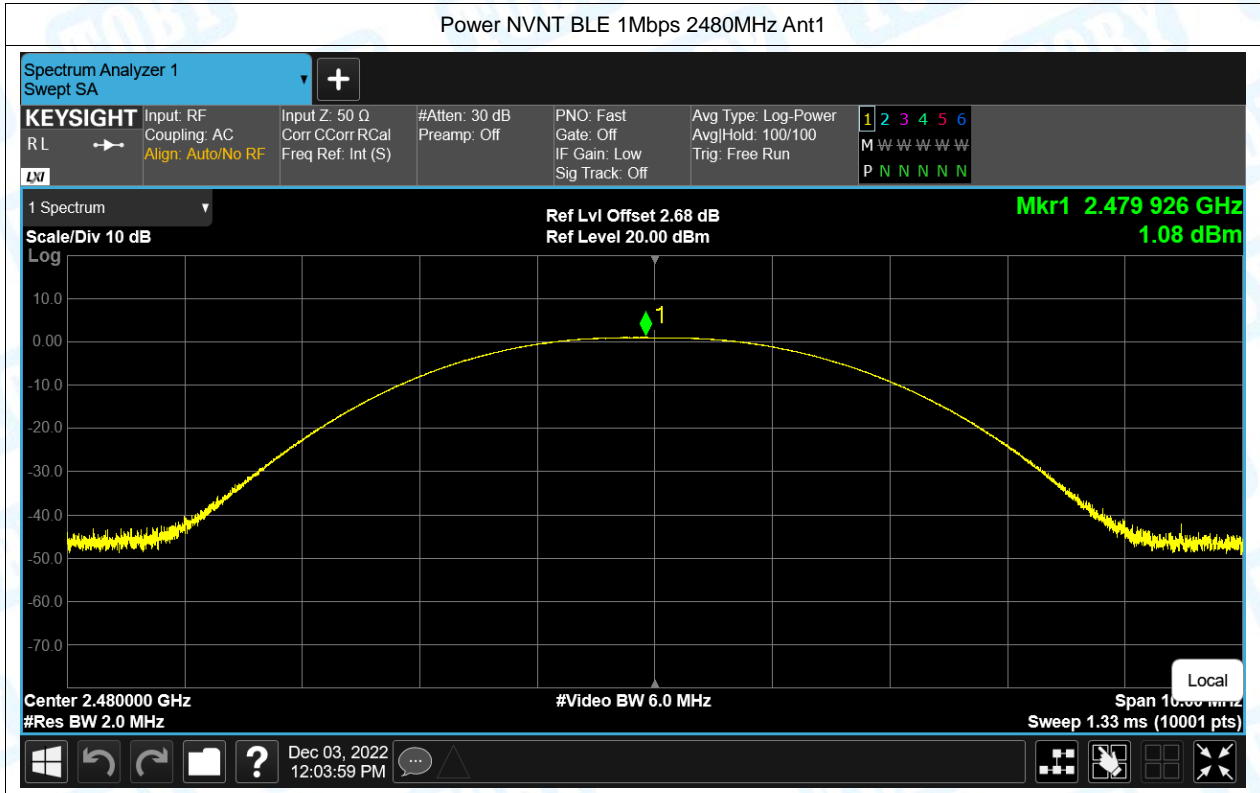
Test Graphs

Power NVNT BLE 1Mbps 2402MHz Ant1



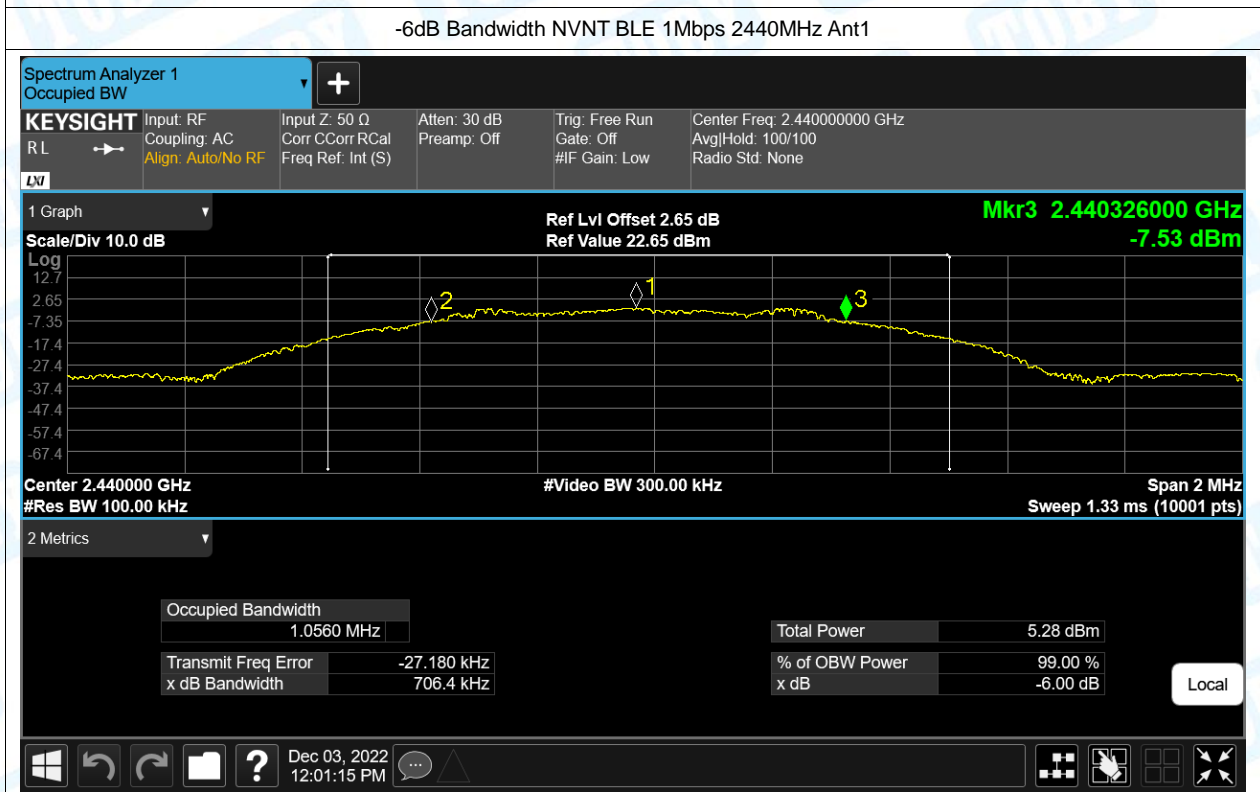
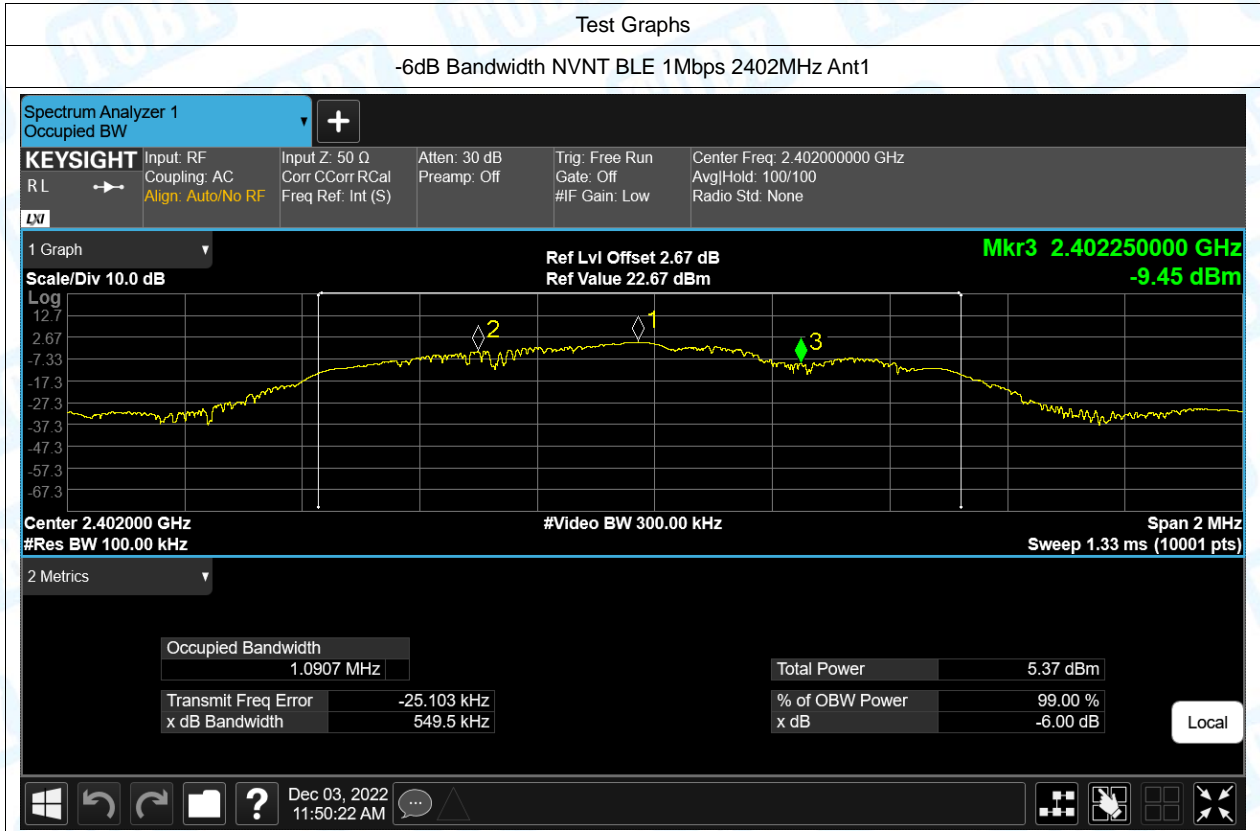
Power NVNT BLE 1Mbps 2440MHz Ant1

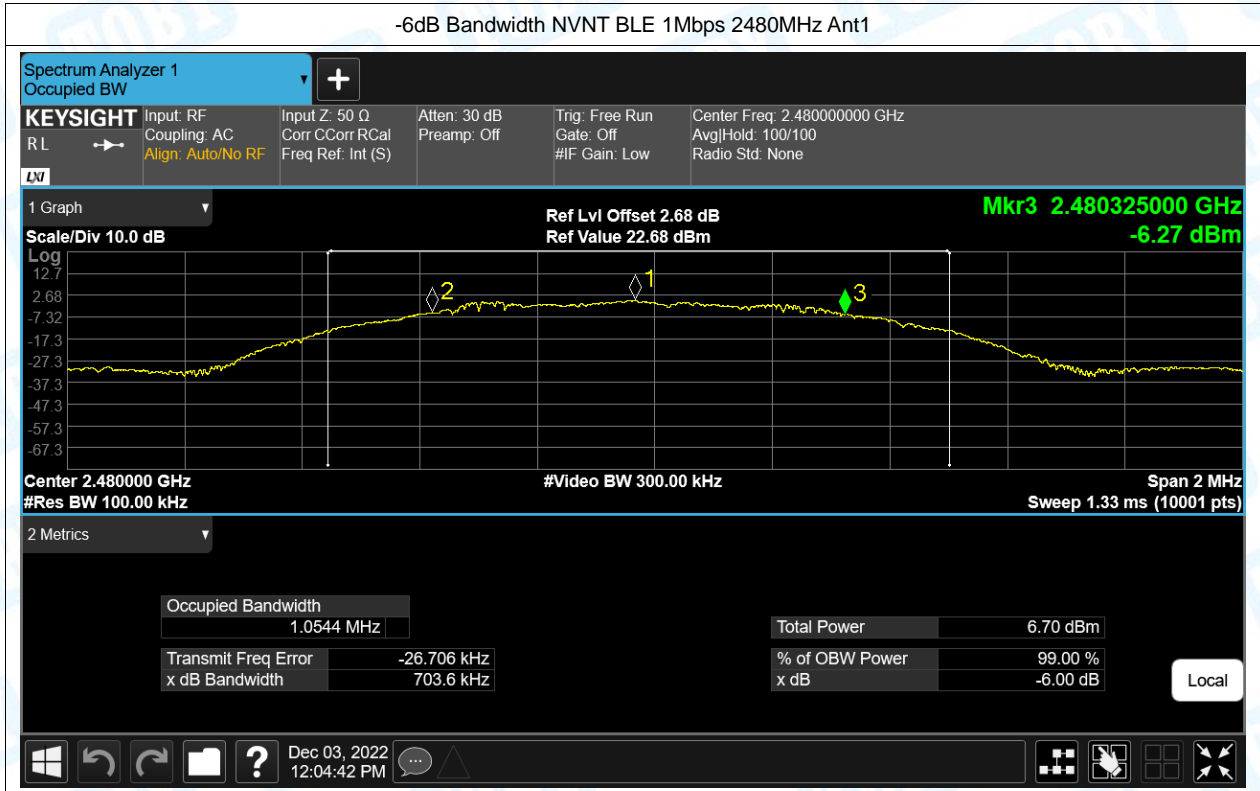




3. -6dB Bandwidth

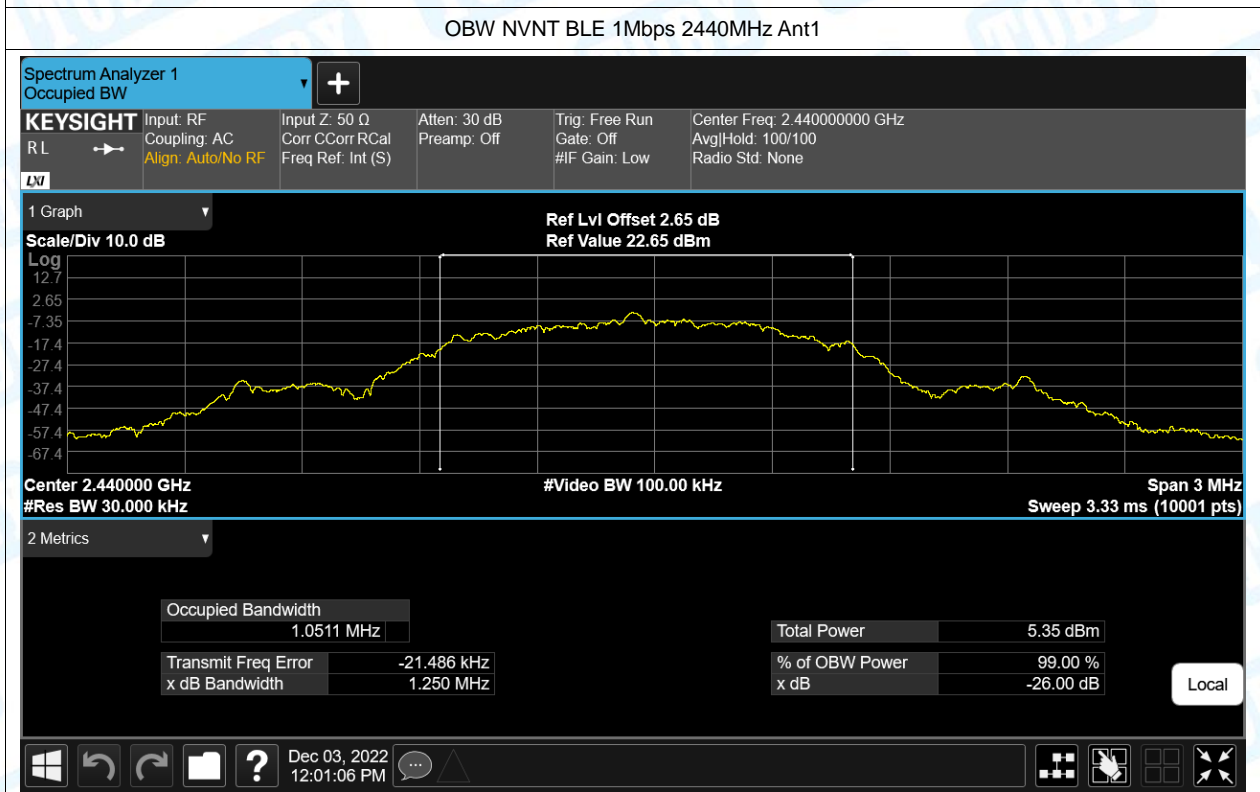
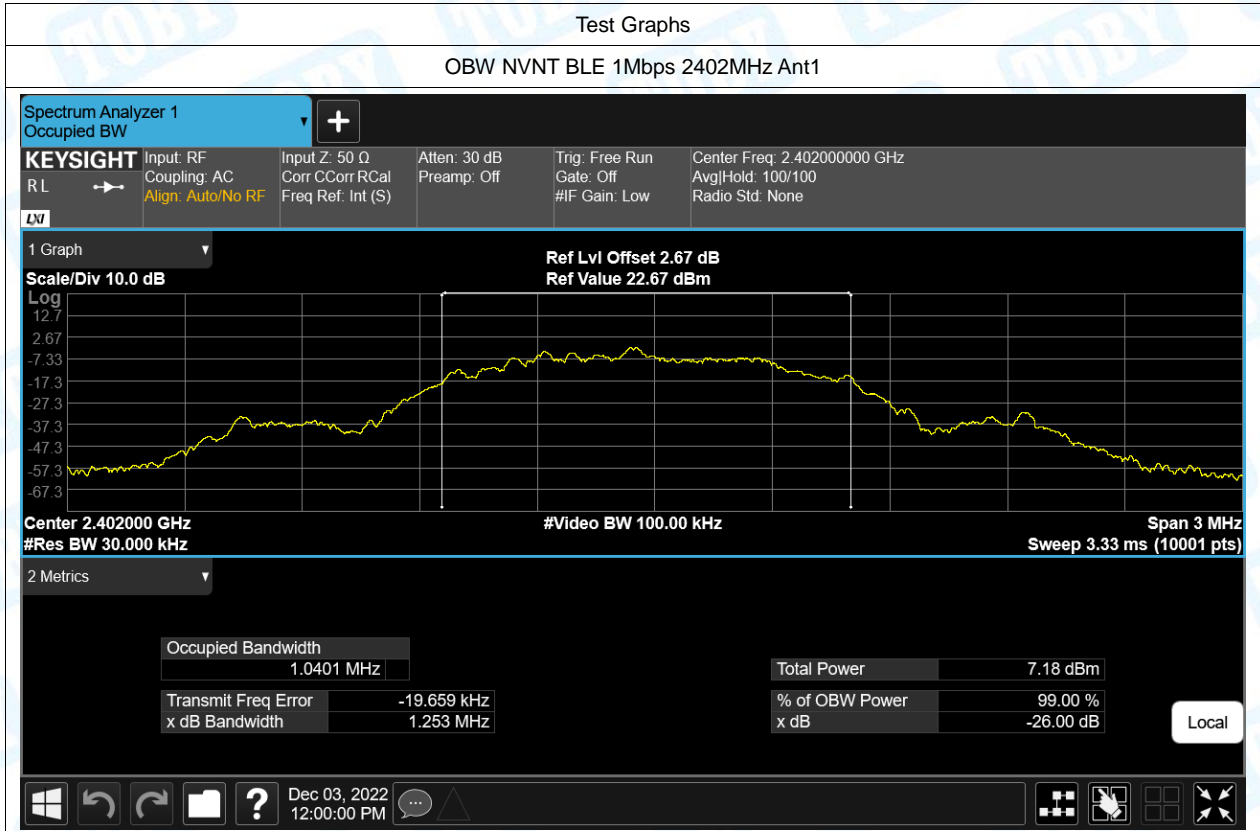
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	0.55	0.5	Pass
NVNT	BLE 1Mbps	2440	Ant1	0.71	0.5	Pass
NVNT	BLE 1Mbps	2480	Ant1	0.70	0.5	Pass

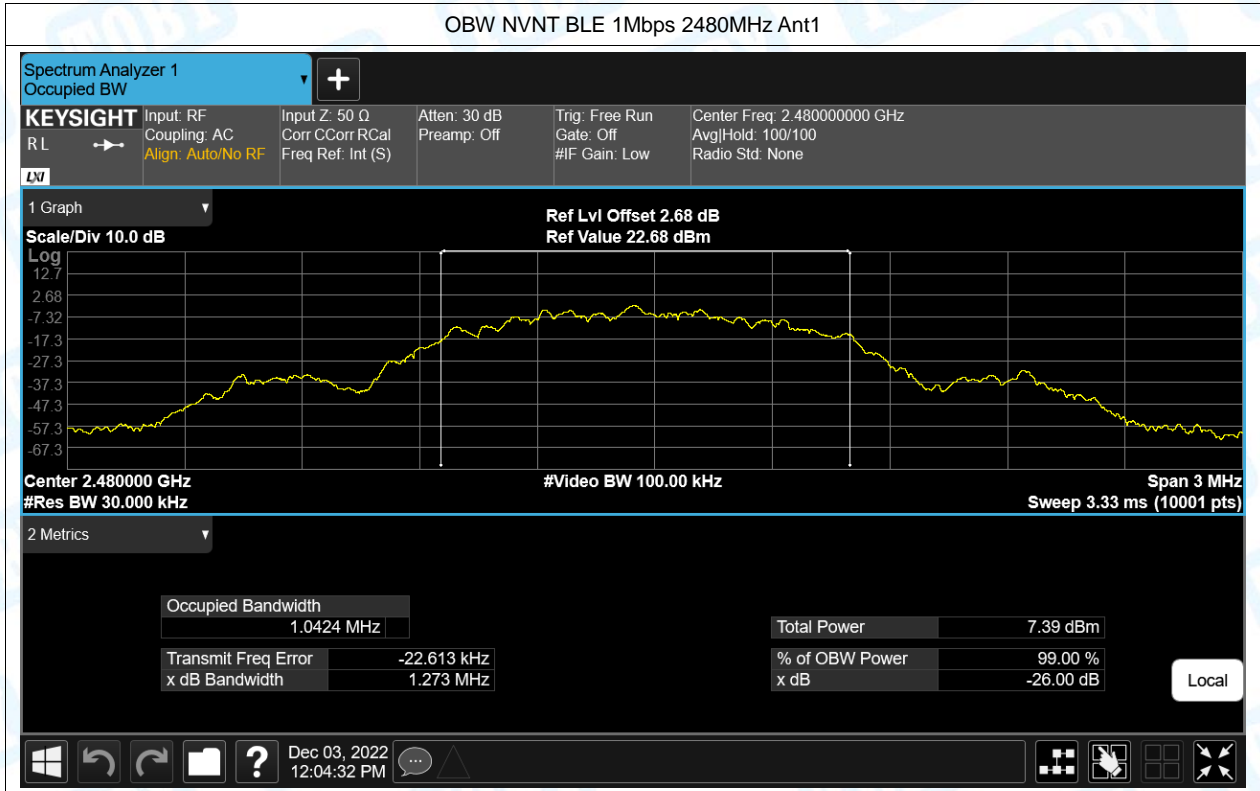




4. Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1Mbps	2402	Ant1	1.04
NVNT	BLE 1Mbps	2440	Ant1	1.051
NVNT	BLE 1Mbps	2480	Ant1	1.042





5. Maximum Power Spectral Density Level

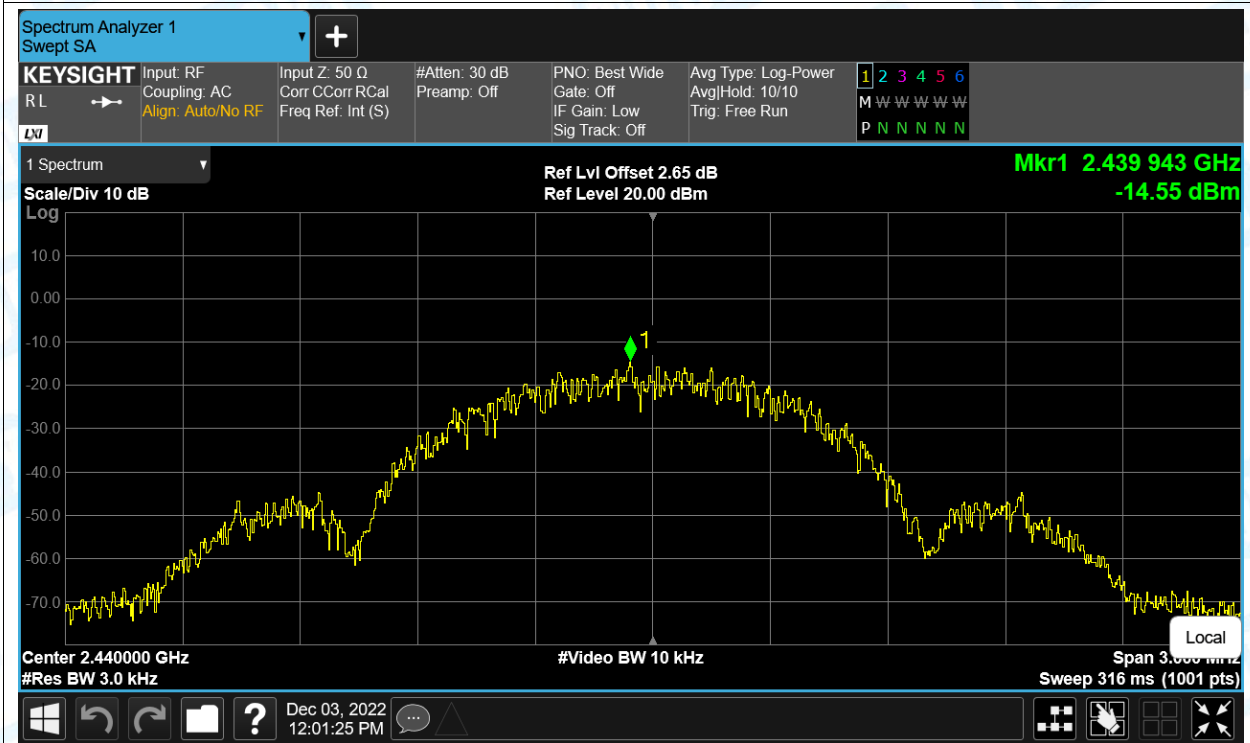
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-0.315	8	Pass
NVNT	BLE 1Mbps	2440	Ant1	-14.555	8	Pass
NVNT	BLE 1Mbps	2480	Ant1	-14.415	8	Pass

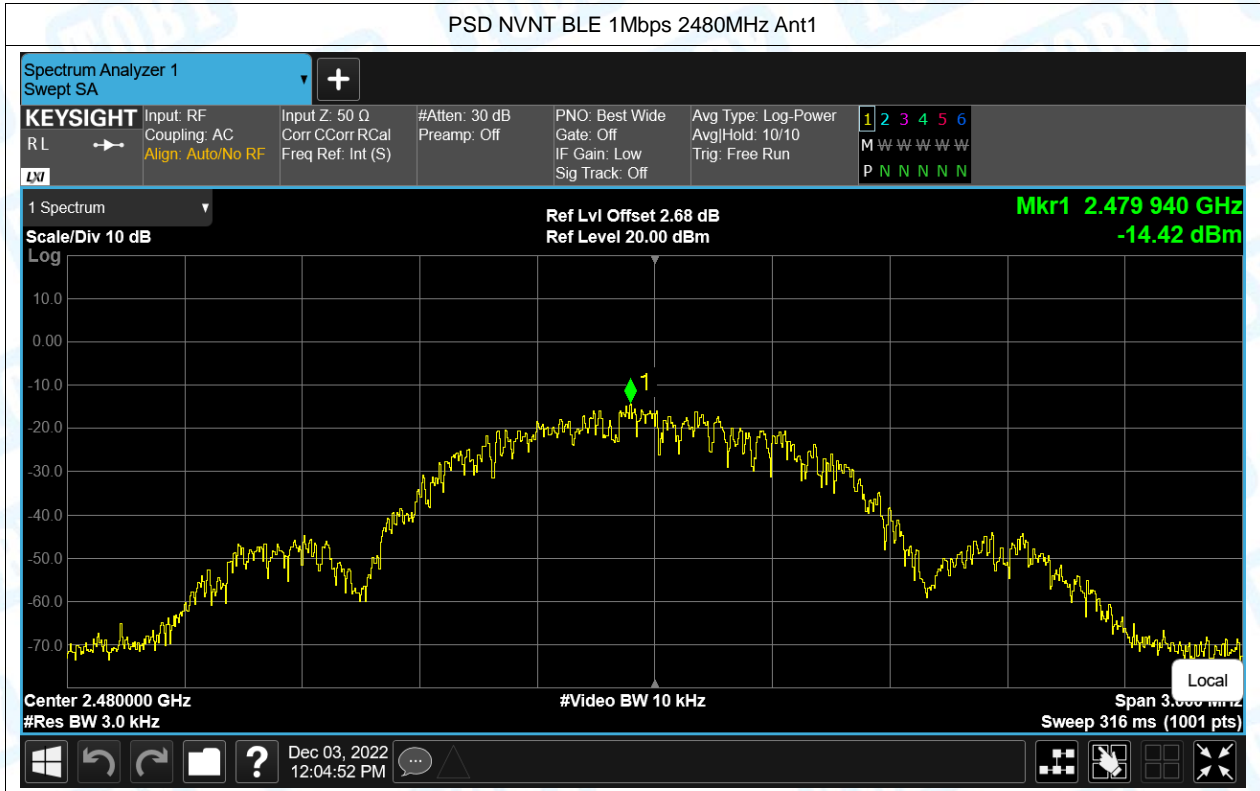
Test Graphs

PSD NVNT BLE 1Mbps 2402MHz Ant1



PSD NVNT BLE 1Mbps 2440MHz Ant1



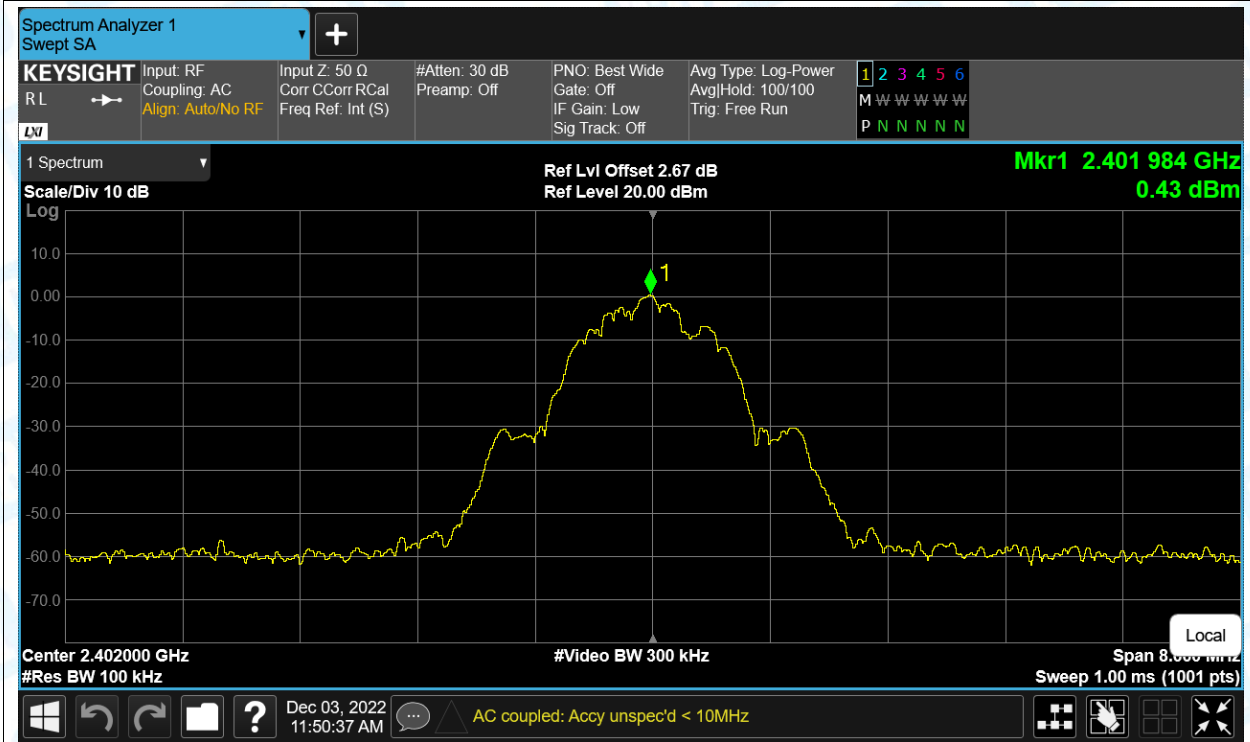


6. Band Edge

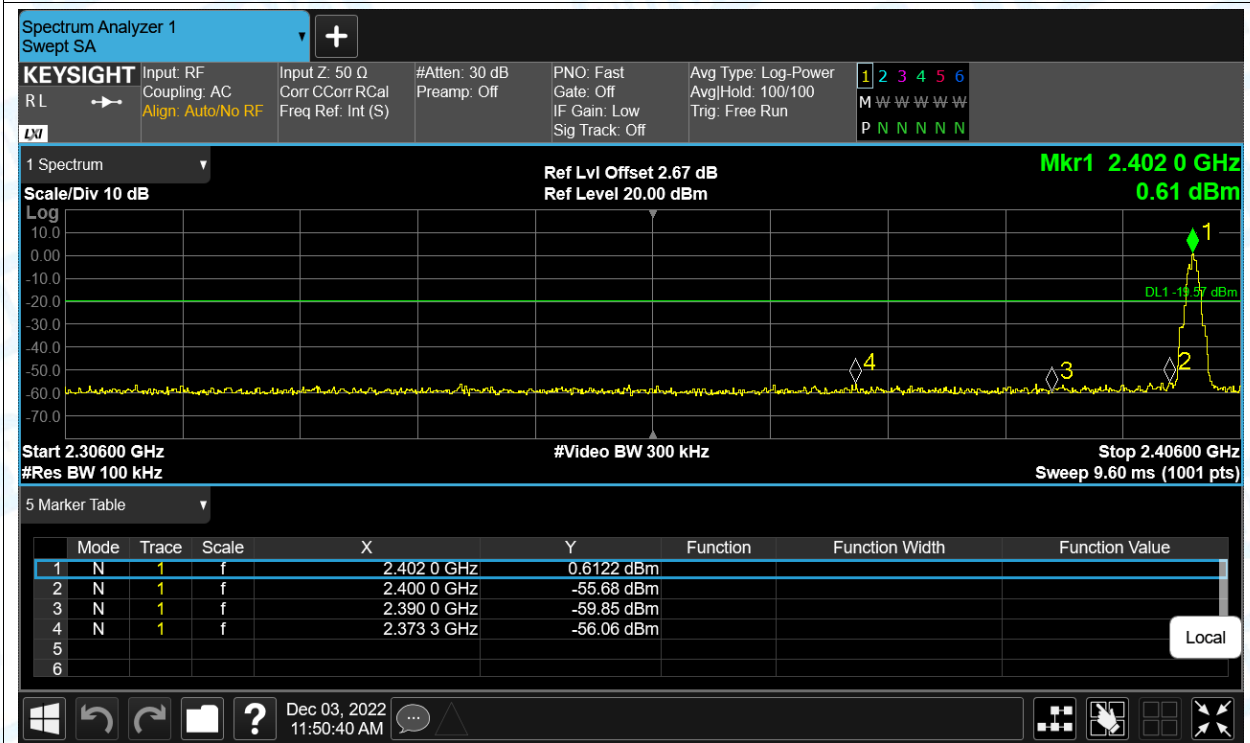
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-56.49	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-57.16	-20	Pass

Test Graphs

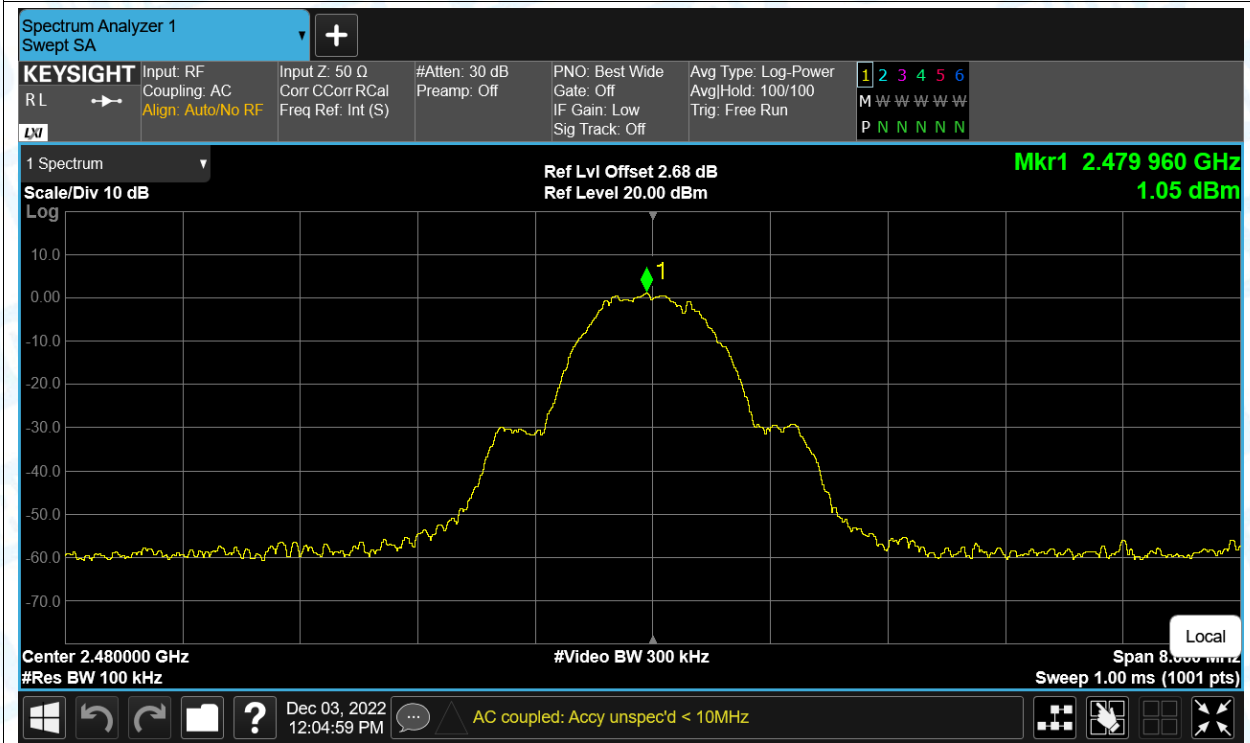
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref



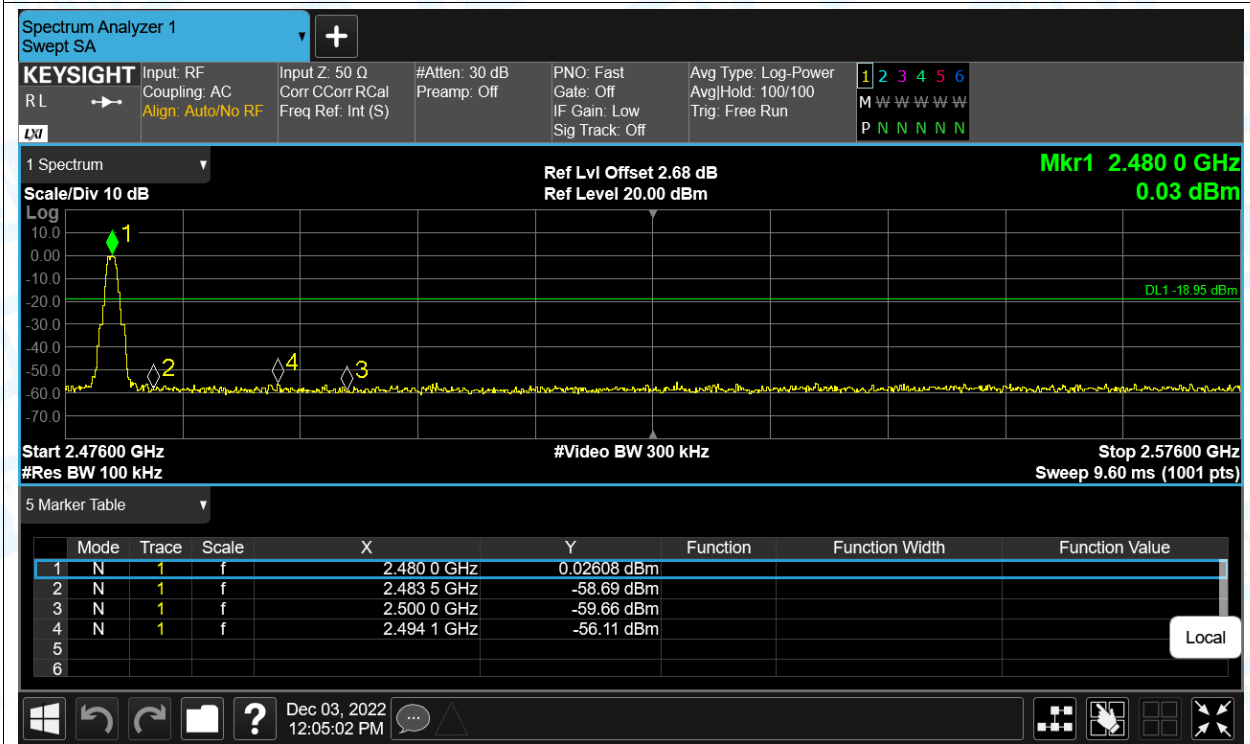
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission



Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Ref



Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Emission



7. Conducted RF Spurious Emission

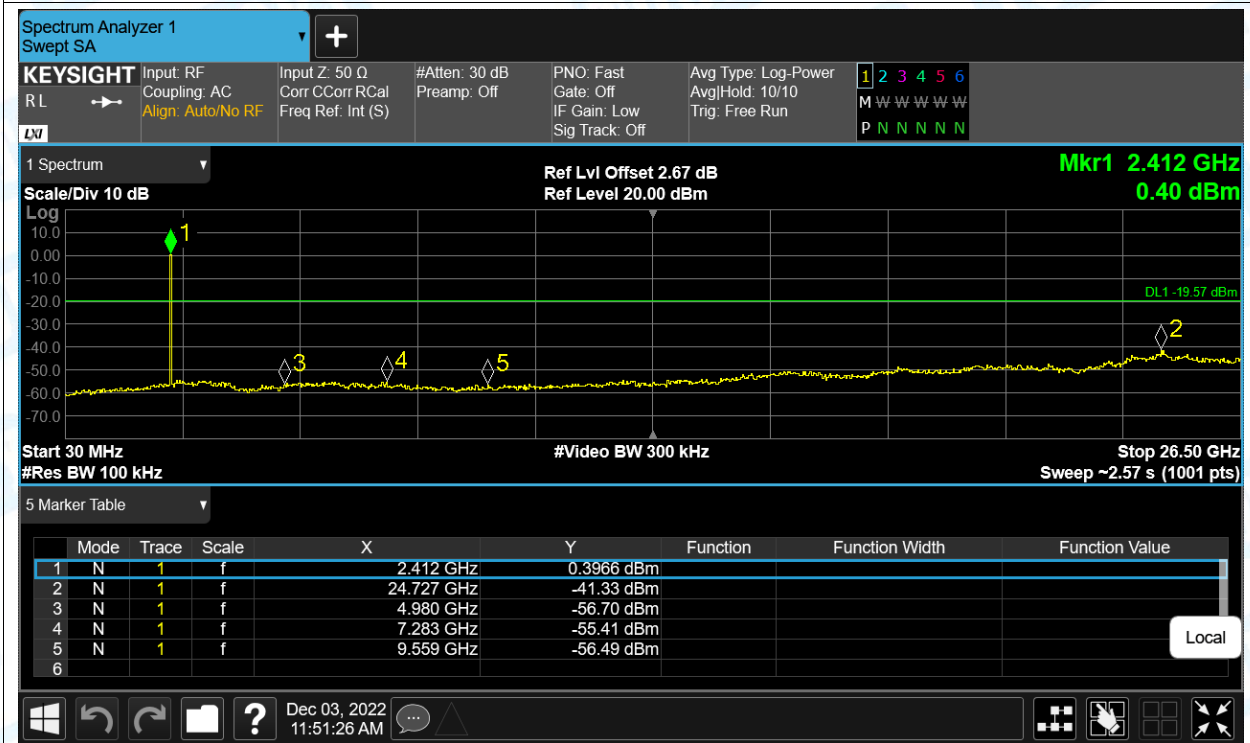
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	-41.76	-20	Pass
NVNT	BLE 1Mbps	2440	Ant1	-42.49	-20	Pass
NVNT	BLE 1Mbps	2480	Ant1	-42.52	-20	Pass

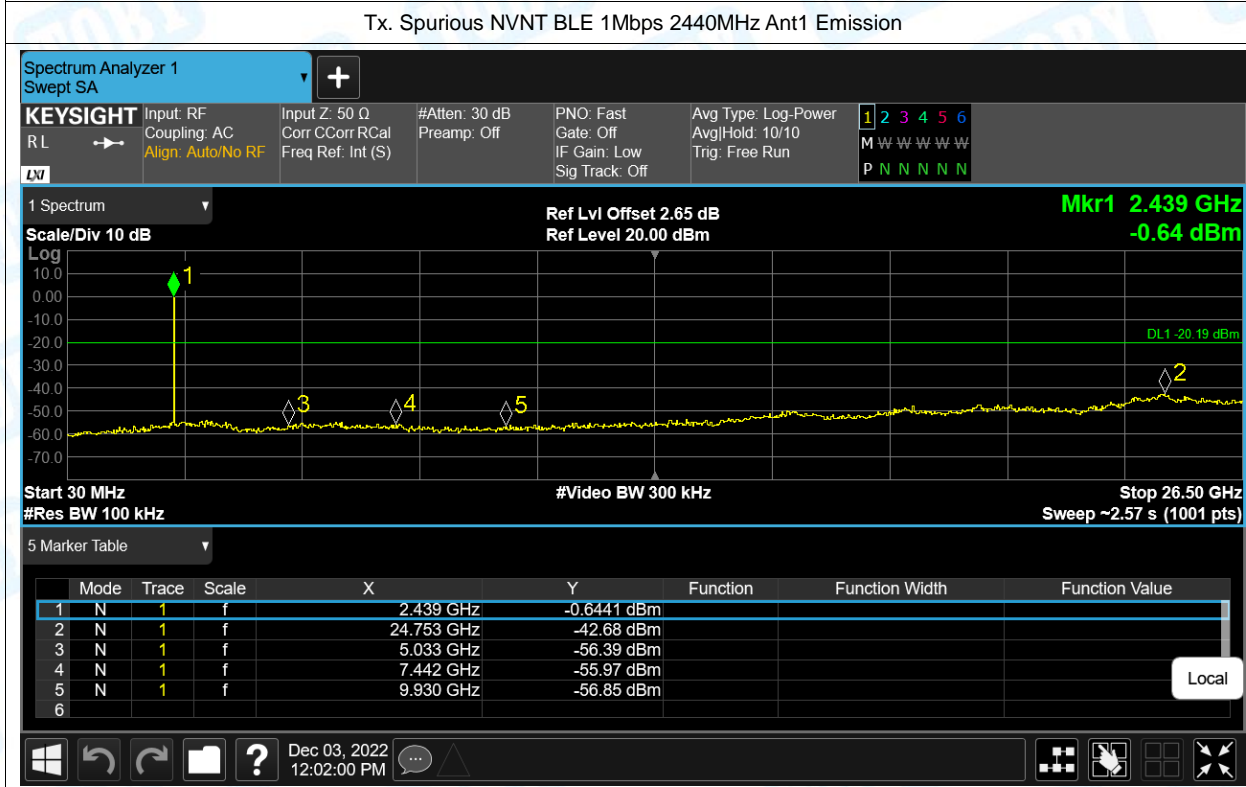
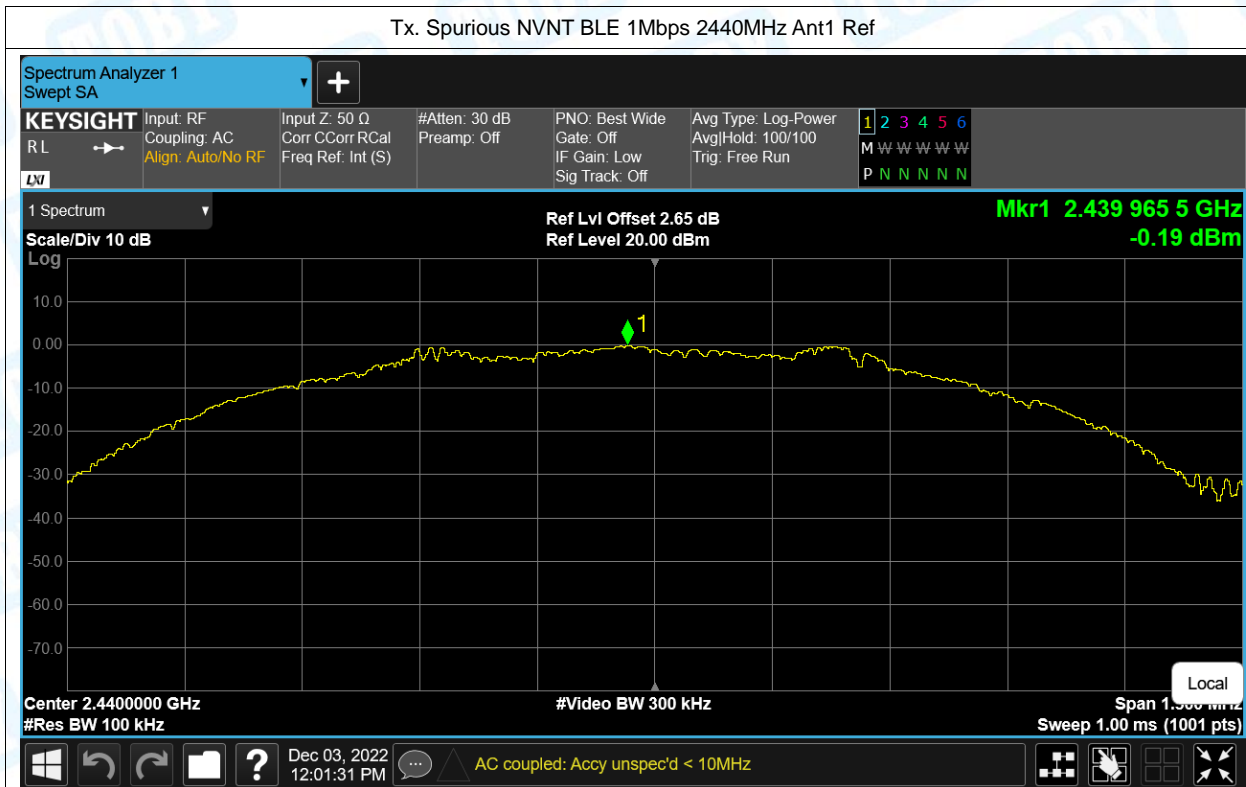
Test Graphs

Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref

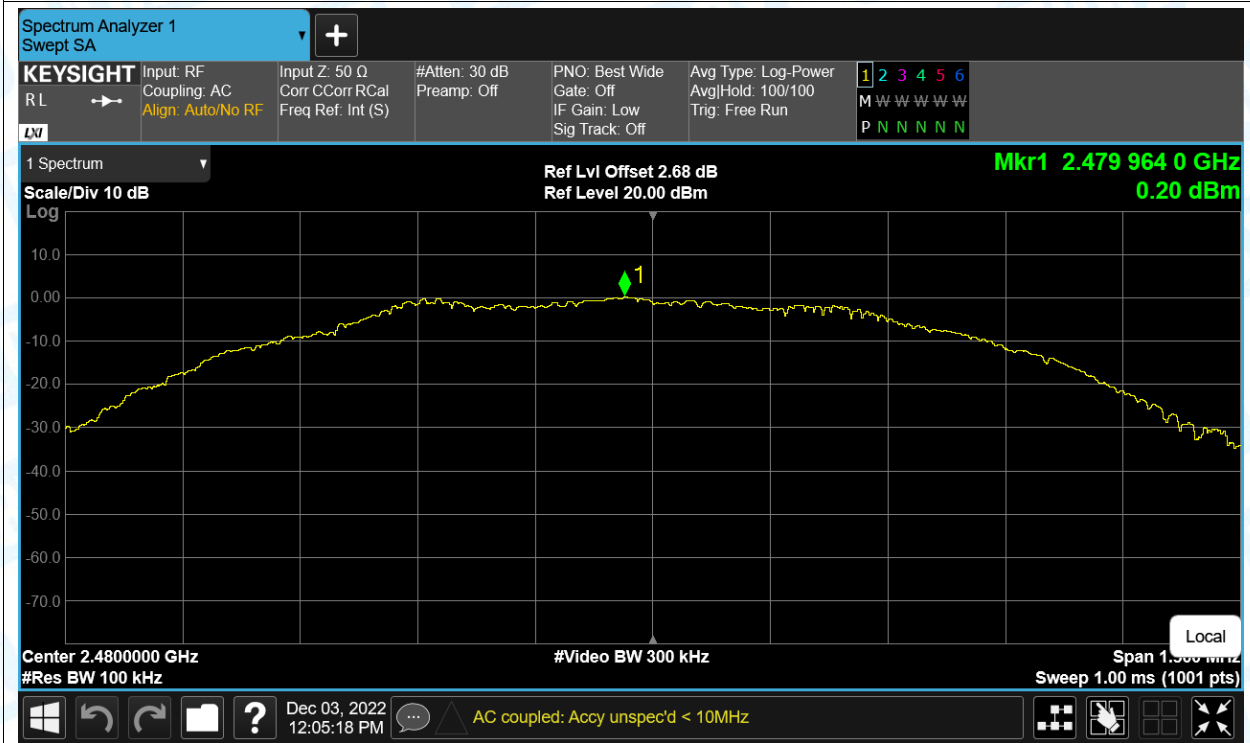


Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission

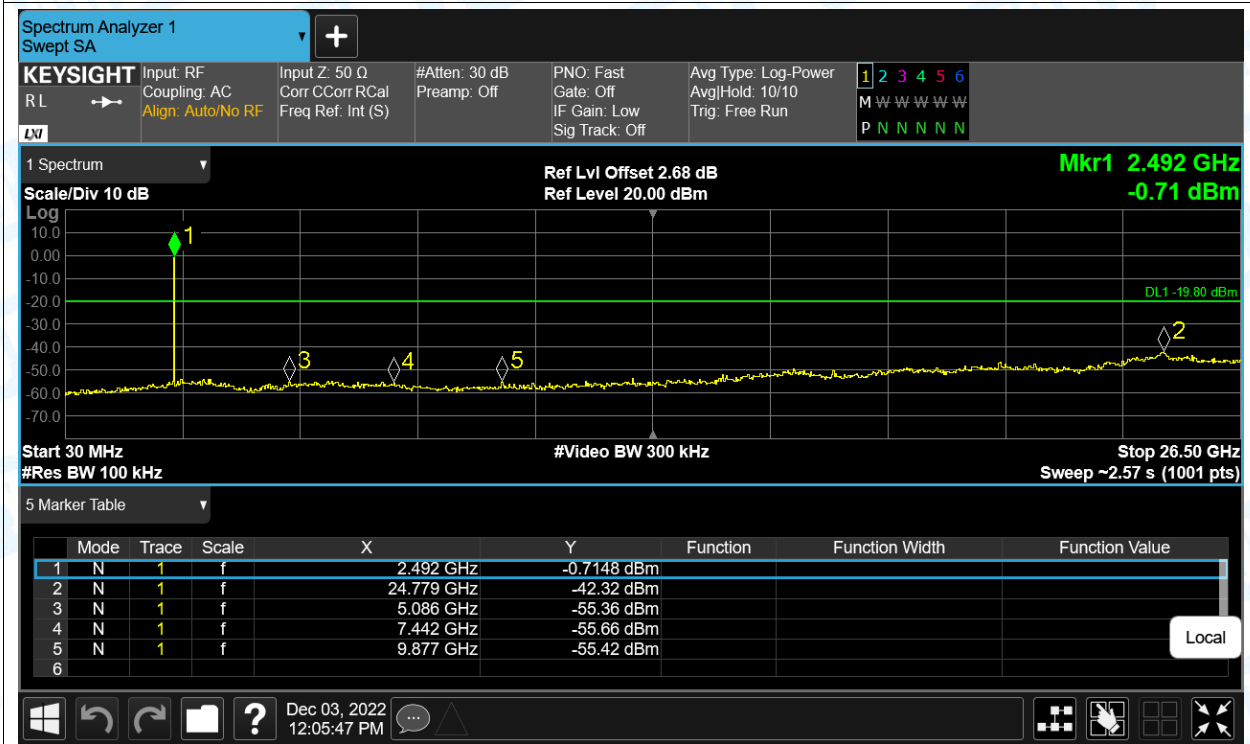




Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Emission

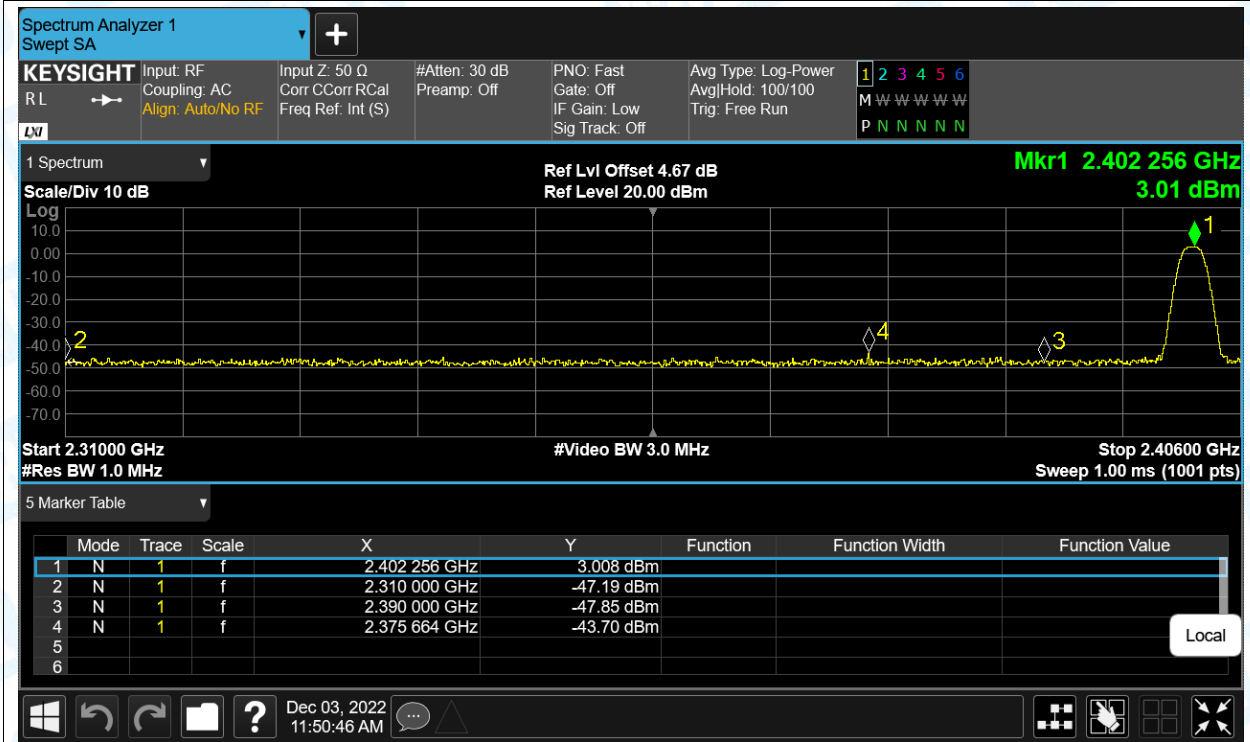


8. Restrict Band

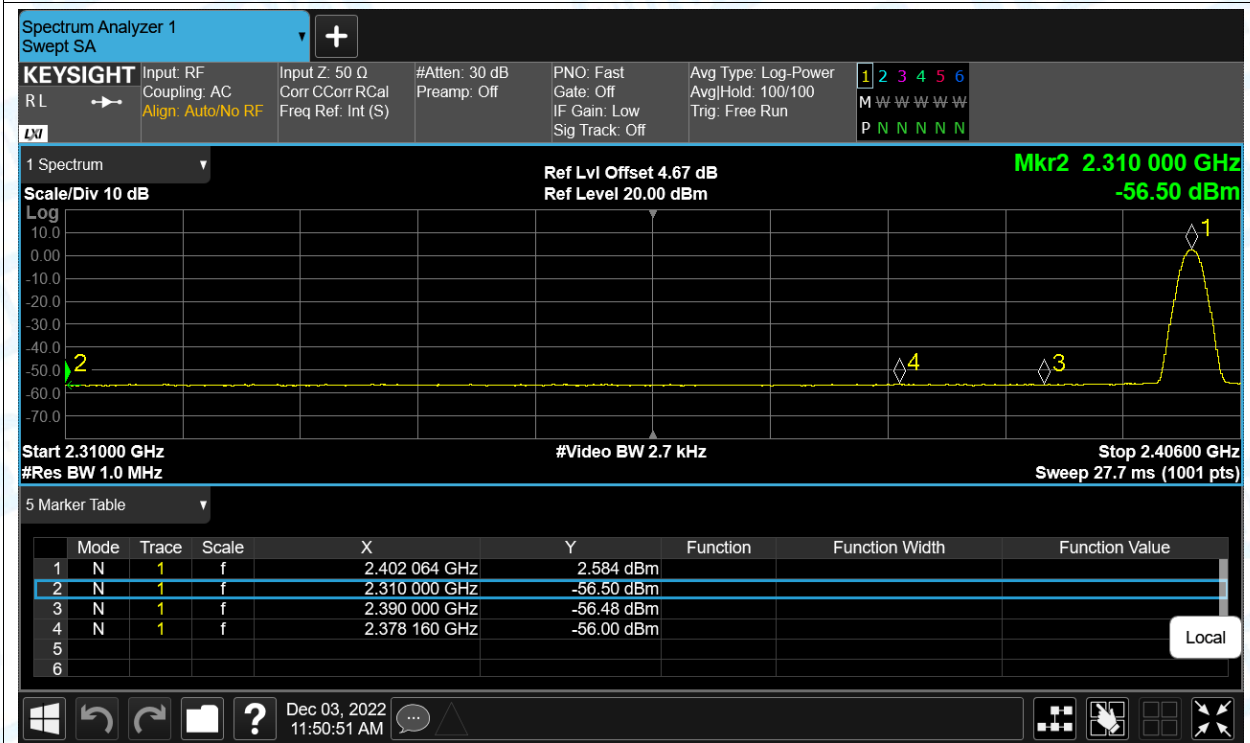
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1Mbps	2402	Ant1	2310	-47.19	2	50.07	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2310	-56.5	2	40.76	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2375.664	-43.7	2	53.56	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2378.16	-56	2	41.26	Average	54	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-47.56	2	49.7	Peak	74	Pass
NVNT	BLE 1Mbps	2402	Ant1	2390	-56.38	2	40.88	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-48.45	2	48.81	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.5	-55.49	2	41.77	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2491.84	-43.81	2	53.45	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2483.536	-55.48	2	41.78	Average	54	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-46.22	2	51.04	Peak	74	Pass
NVNT	BLE 1Mbps	2480	Ant1	2500	-56.27	2	40.99	Average	54	Pass

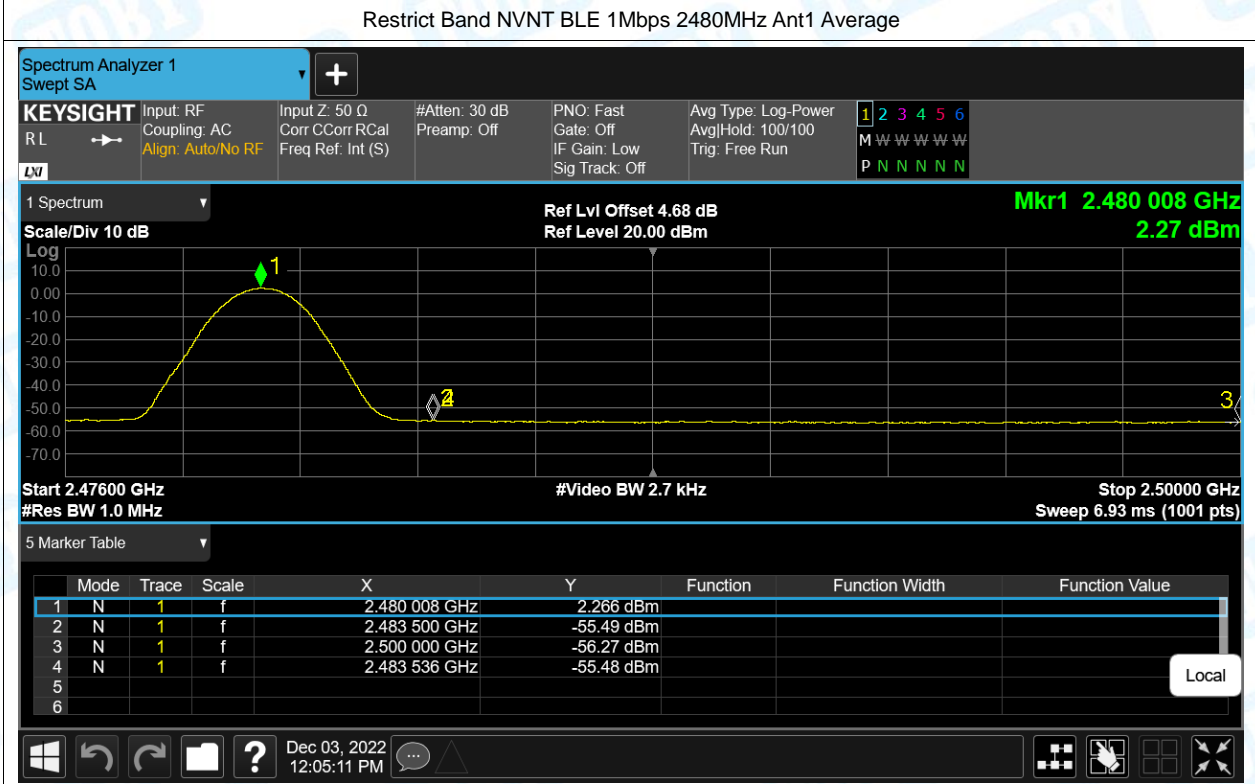
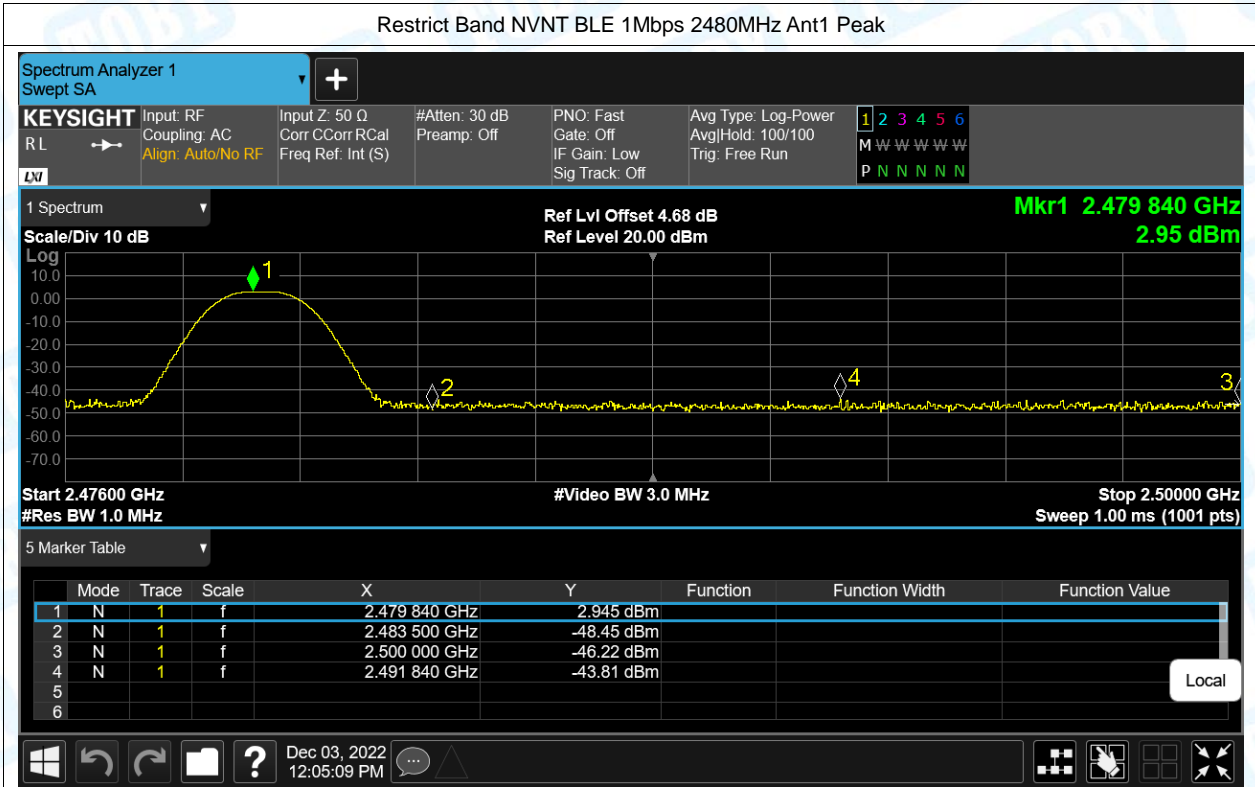
Test Graphs

Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average





-----END OF THE REPORT-----