

RF Test Data for Bluetooth LE (Conducted Measurements)

| General Description of EUT | |
|---|-------------------------|
| Product Name: | Smart ring |
| Test Model: | R99 |
| Sample ID: | HC-C-202410-0063-01-02# |
| Environmental Conditions | |
| Temperature: | 25°C |
| Relative Humidity: | 55% |
| Test Voltage: | DC 3.7V |
| Test Engineer: | Rick Chen |
| Note: For a more detailed features description, please refer to the report TBR-C-202410-0063-4 The report only show the worst case data. | |

Contents

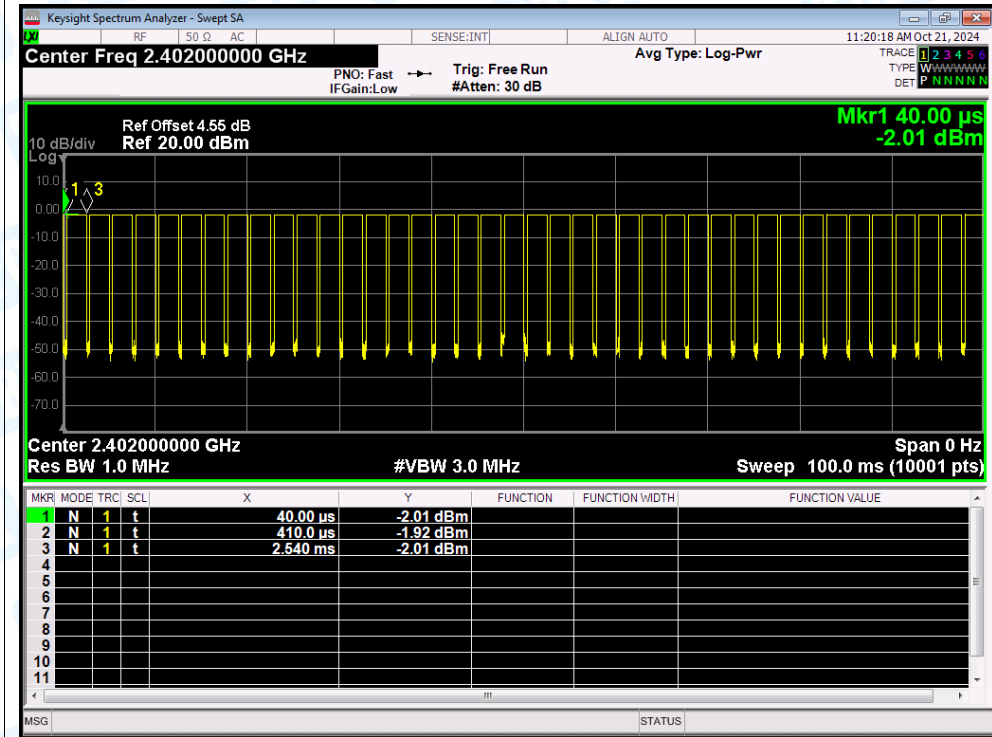
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1. Duty Cycle

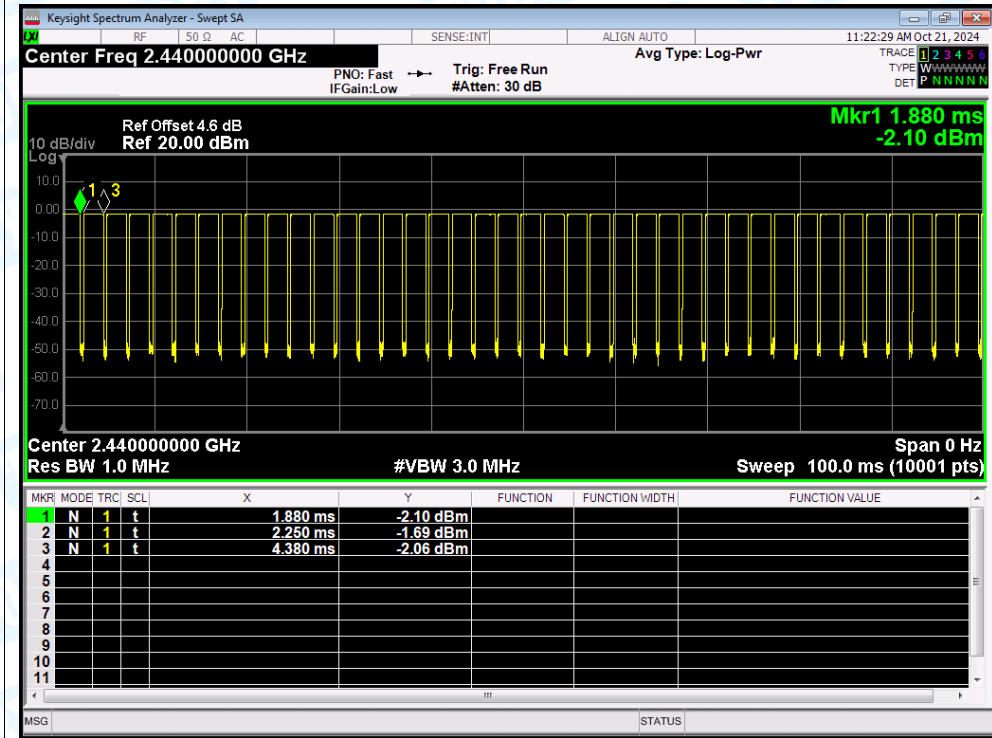
| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|-----------|-----------------|---------|----------------|------------------------|-----------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | 85.2 | 0.7 | 0.47 |
| NVNT | BLE 1Mbps | 2440 | Ant1 | 85.2 | 0.7 | 0.47 |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 85.6 | 0.68 | 0.47 |

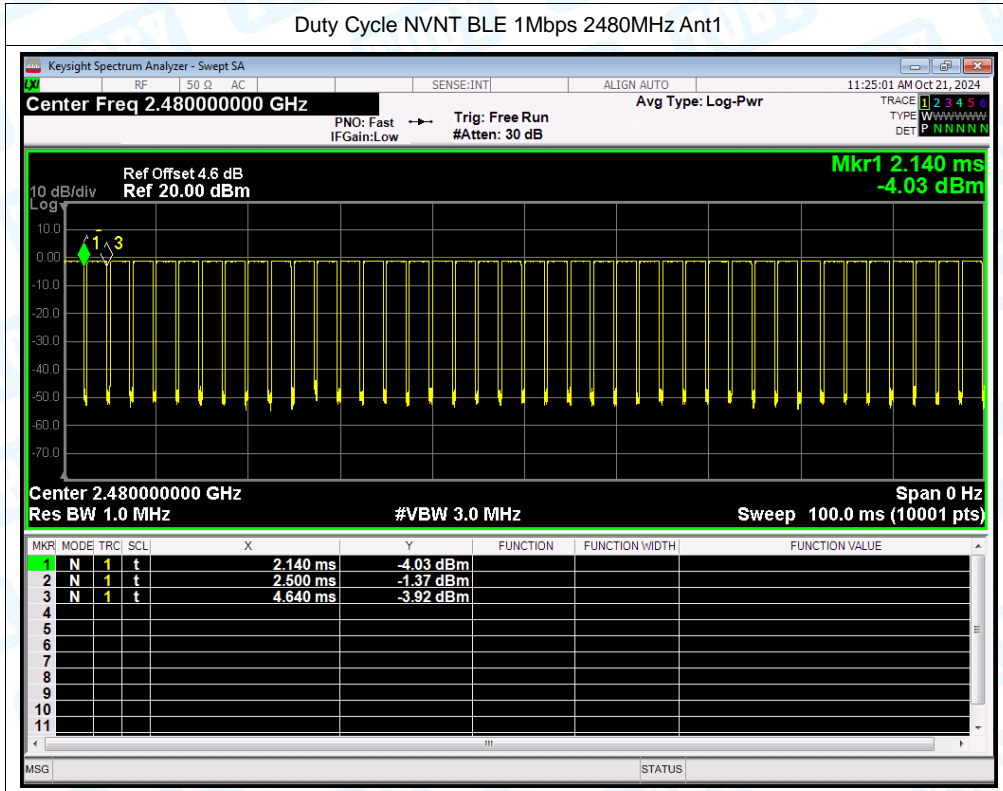
Test Graphs

Duty Cycle NVNT BLE 1Mbps 2402MHz Ant1



Duty Cycle NVNT BLE 1Mbps 2440MHz Ant1



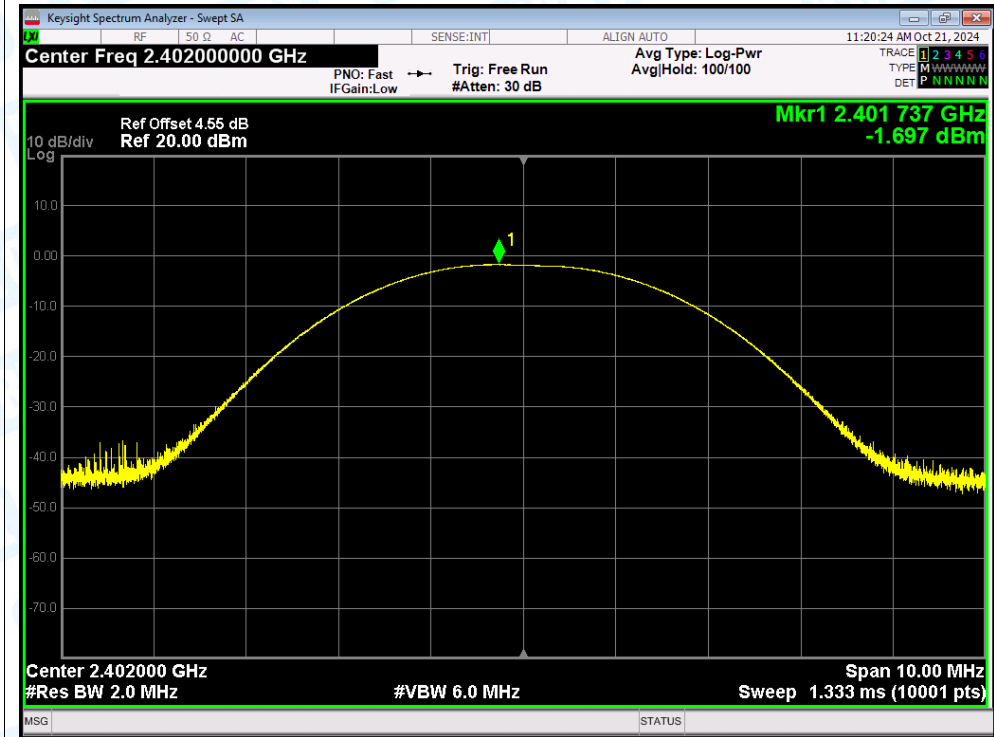


2. Maximum Conducted Output Power

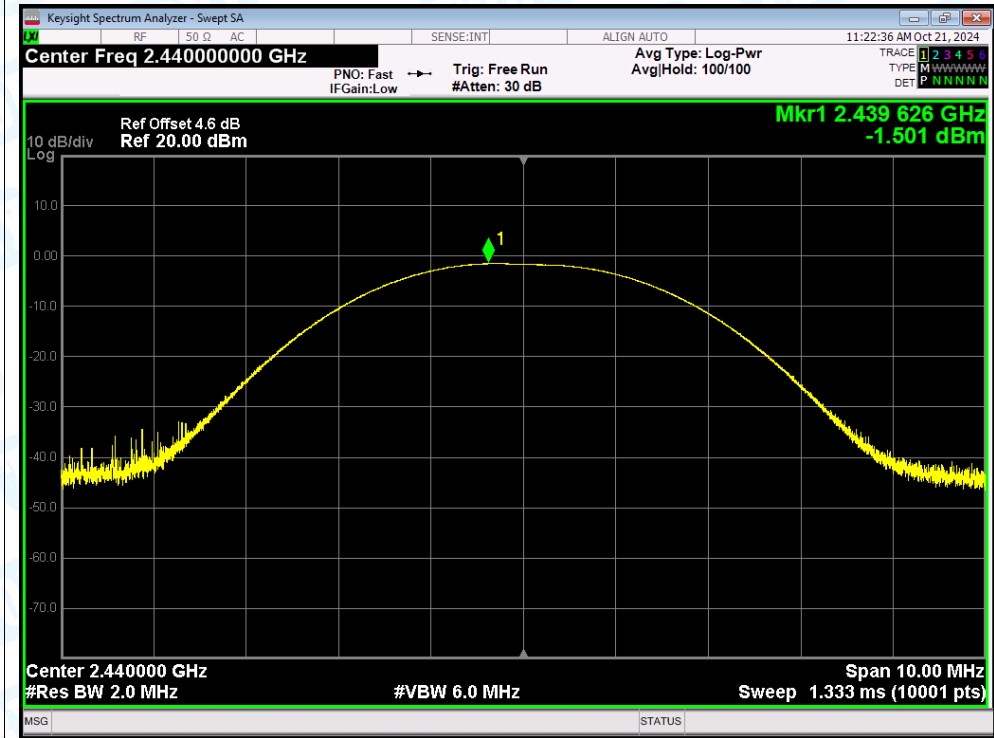
| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|-----------|-----------------|---------|-----------------------|-------------|---------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | -1.697 | 30 | Pass |
| NVNT | BLE 1Mbps | 2440 | Ant1 | -1.501 | 30 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | -1.184 | 30 | Pass |

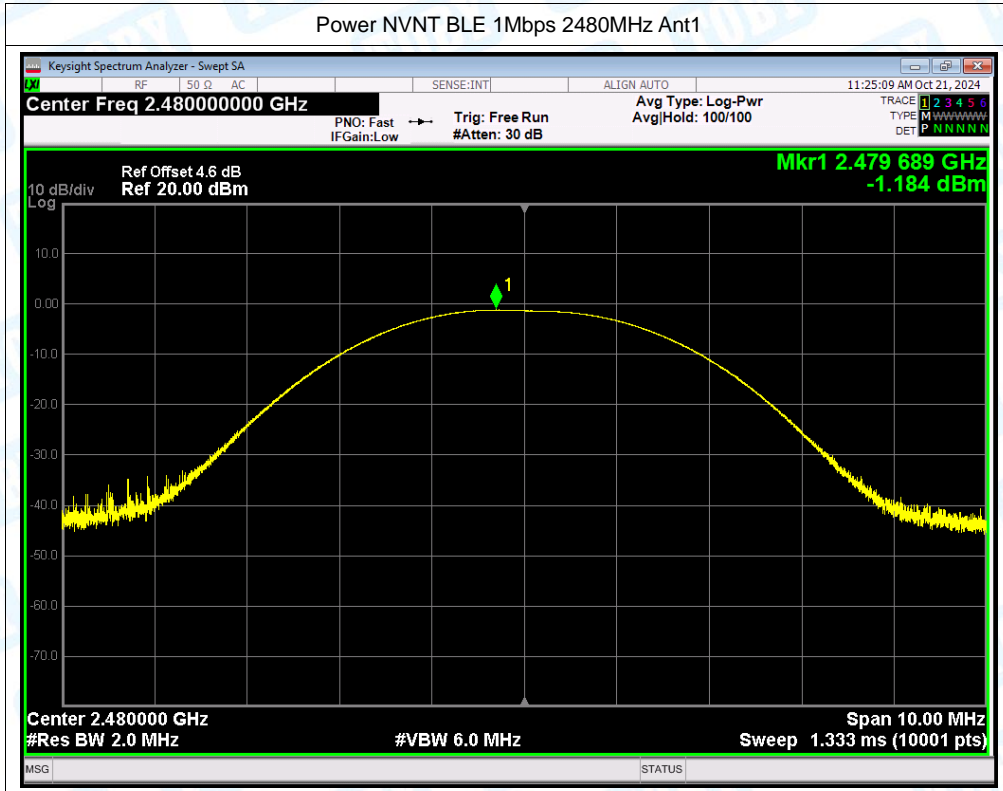
Test Graphs

Power NVNT BLE 1Mbps 2402MHz Ant1



Power NVNT BLE 1Mbps 2440MHz Ant1



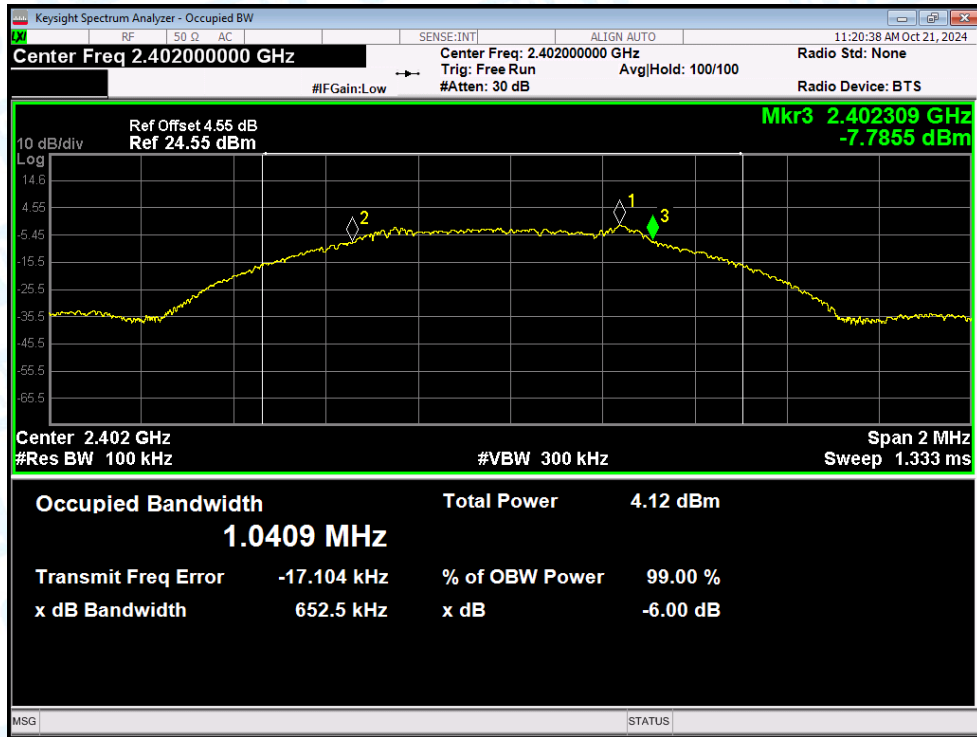


3.-6dB Bandwidth

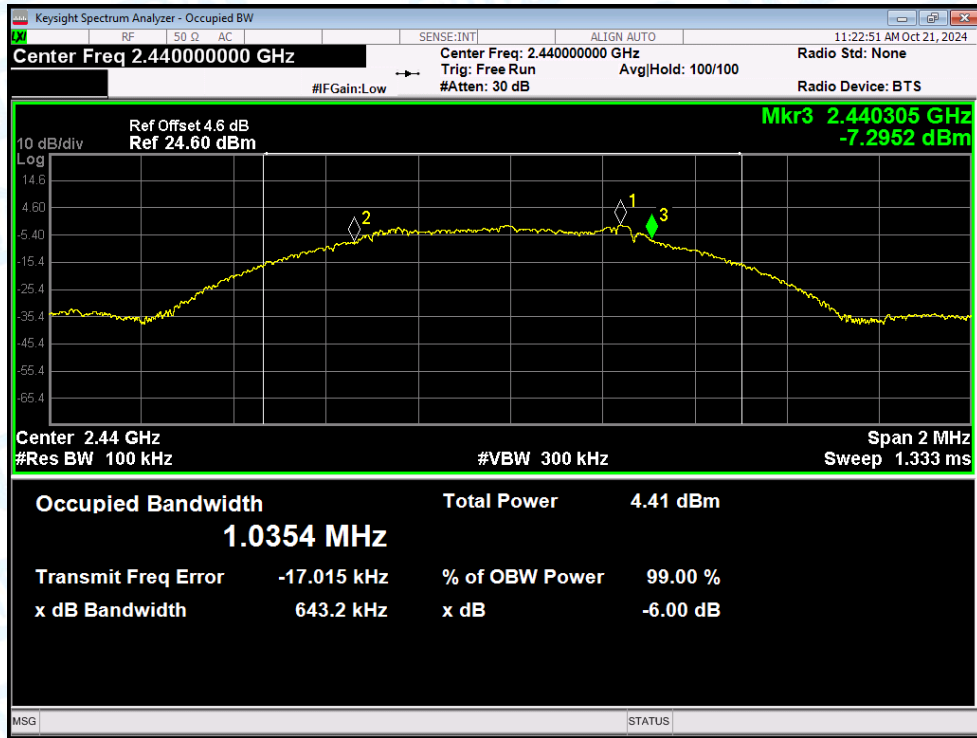
| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|-----------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | 0.65 | 0.5 | Pass |
| NVNT | BLE 1Mbps | 2440 | Ant1 | 0.64 | 0.5 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 0.67 | 0.5 | Pass |

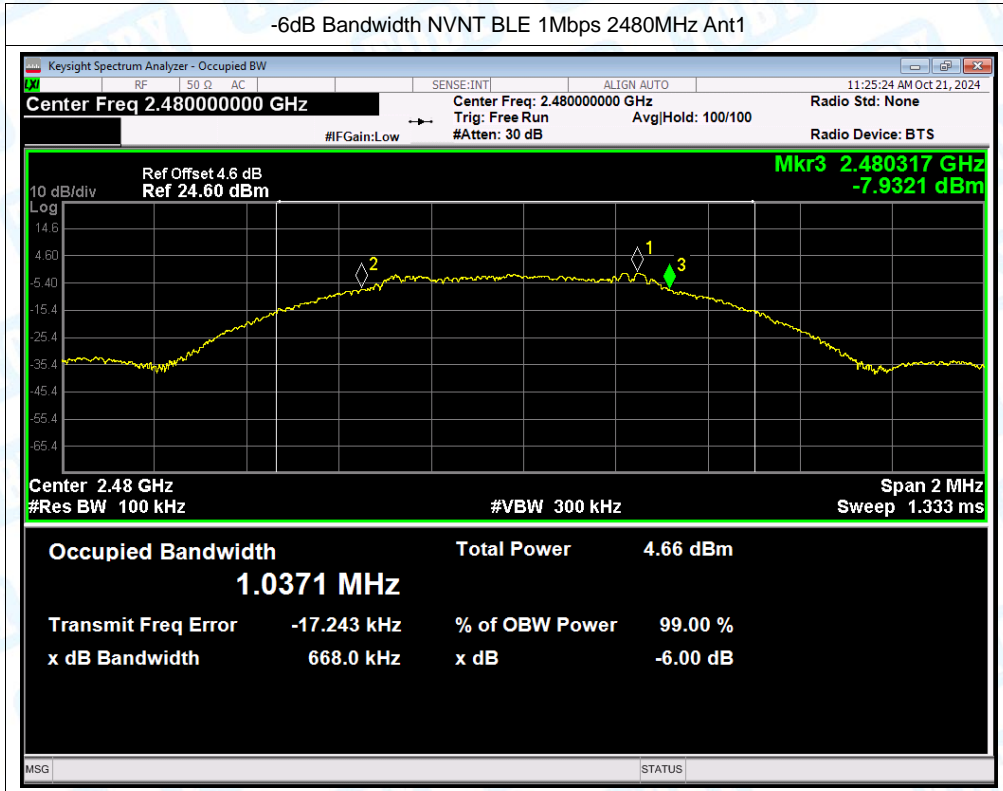
Test Graphs

-6dB Bandwidth NVNT BLE 1Mbps 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1Mbps 2440MHz Ant1



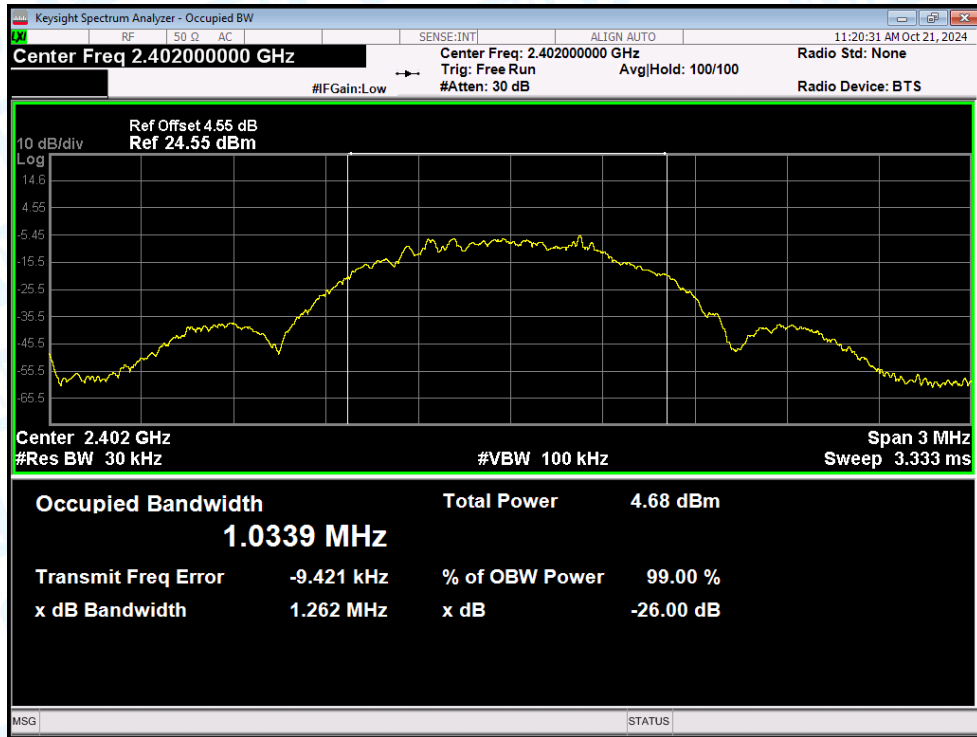


4.Occupied Channel Bandwidth

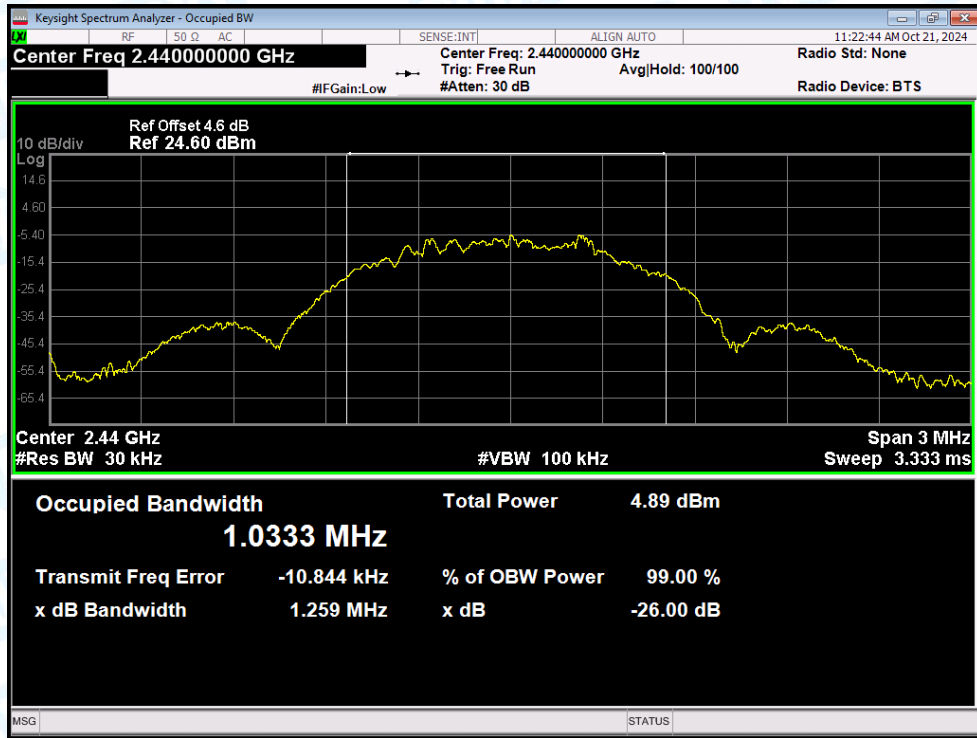
| Condition | Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|-----------|-----------------|---------|---------------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | 1.034 |
| NVNT | BLE 1Mbps | 2440 | Ant1 | 1.033 |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 1.036 |

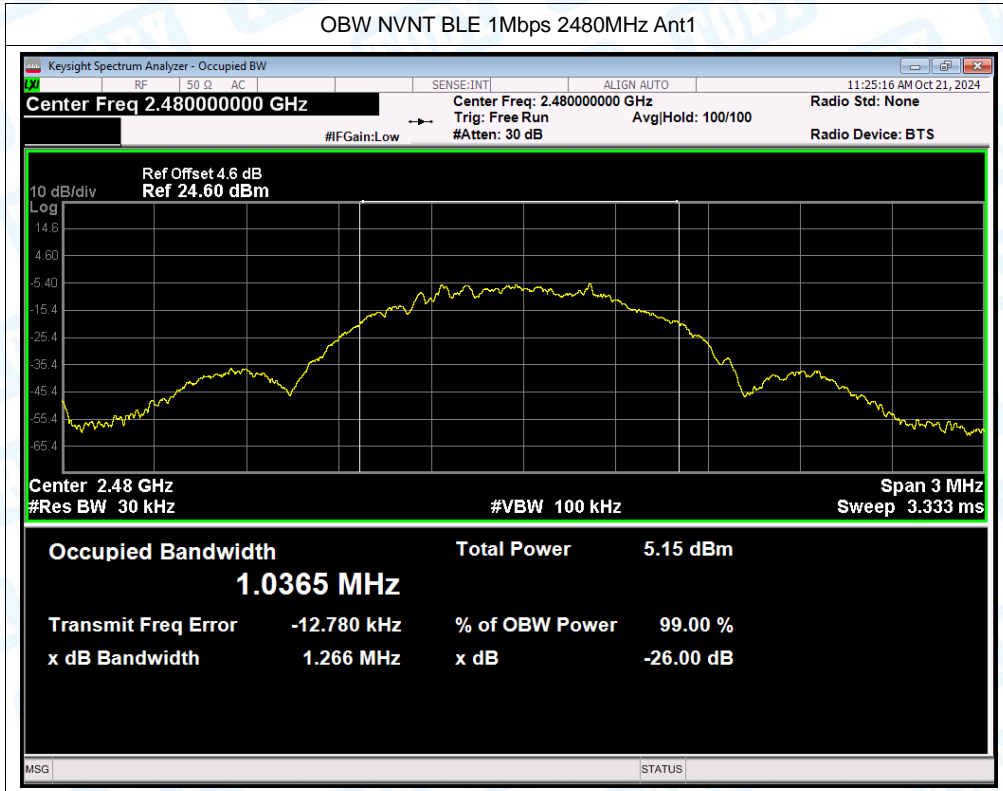
Test Graphs

OBW NVNT BLE 1Mbps 2402MHz Ant1



OBW NVNT BLE 1Mbps 2440MHz Ant1



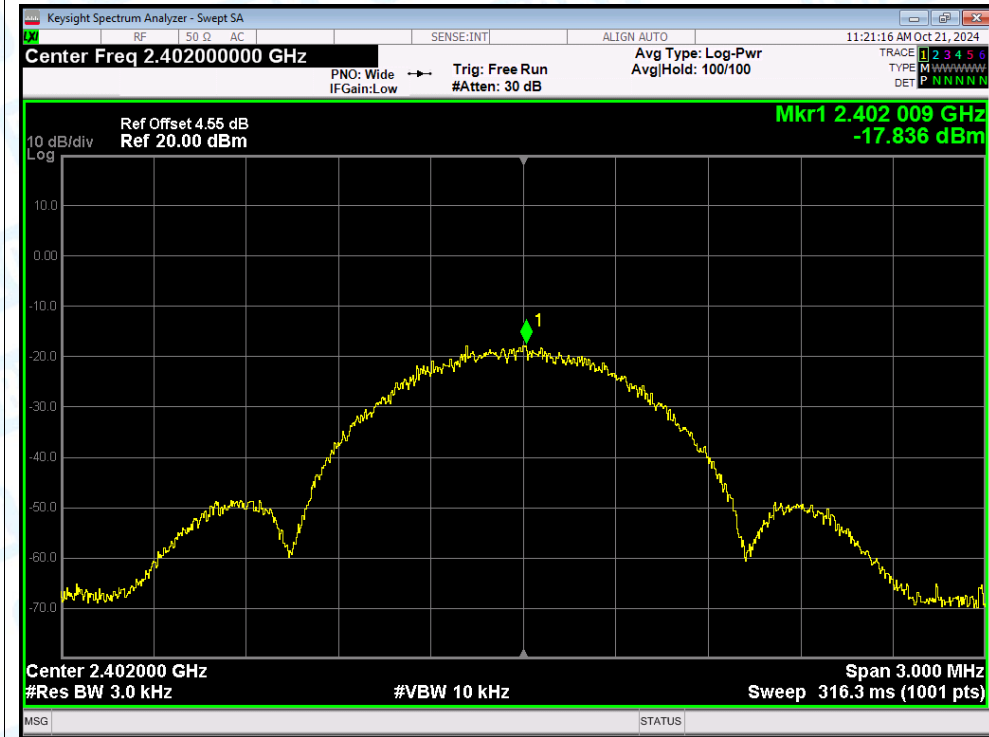


5. Maximum Power Spectral Density Level

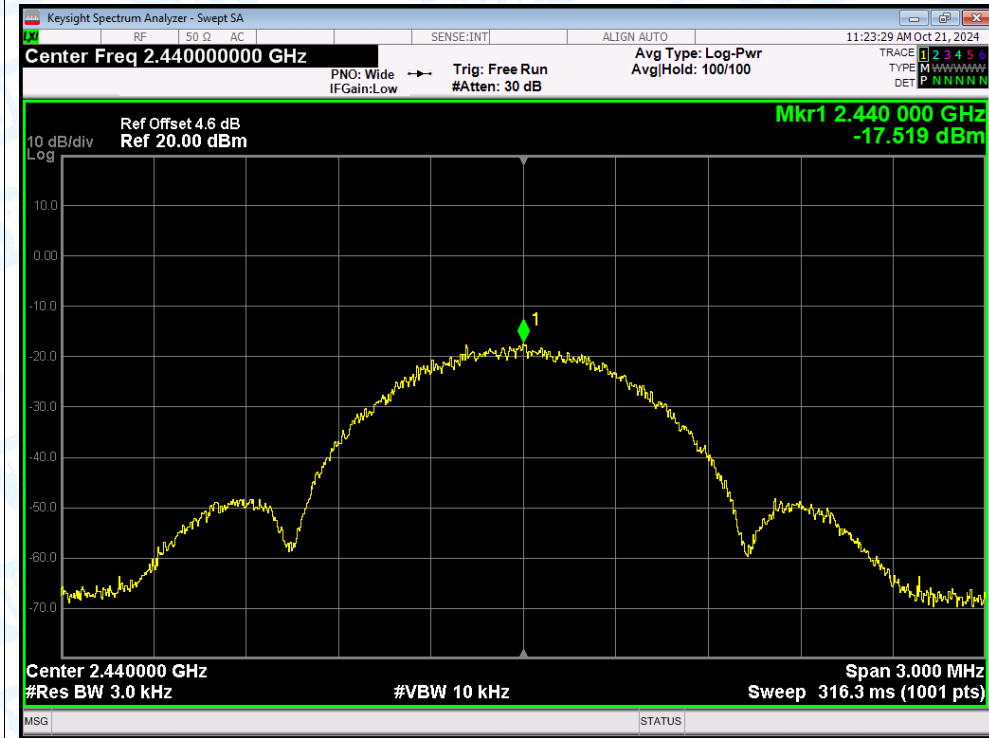
| Condition | Mode | Frequency (MHz) | Antenna | Max PSD (dBm) | Limit (dBm) | Verdict |
|-----------|-----------|-----------------|---------|---------------|-------------|---------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | -17.836 | 8 | Pass |
| NVNT | BLE 1Mbps | 2440 | Ant1 | -17.519 | 8 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | -17.287 | 8 | Pass |

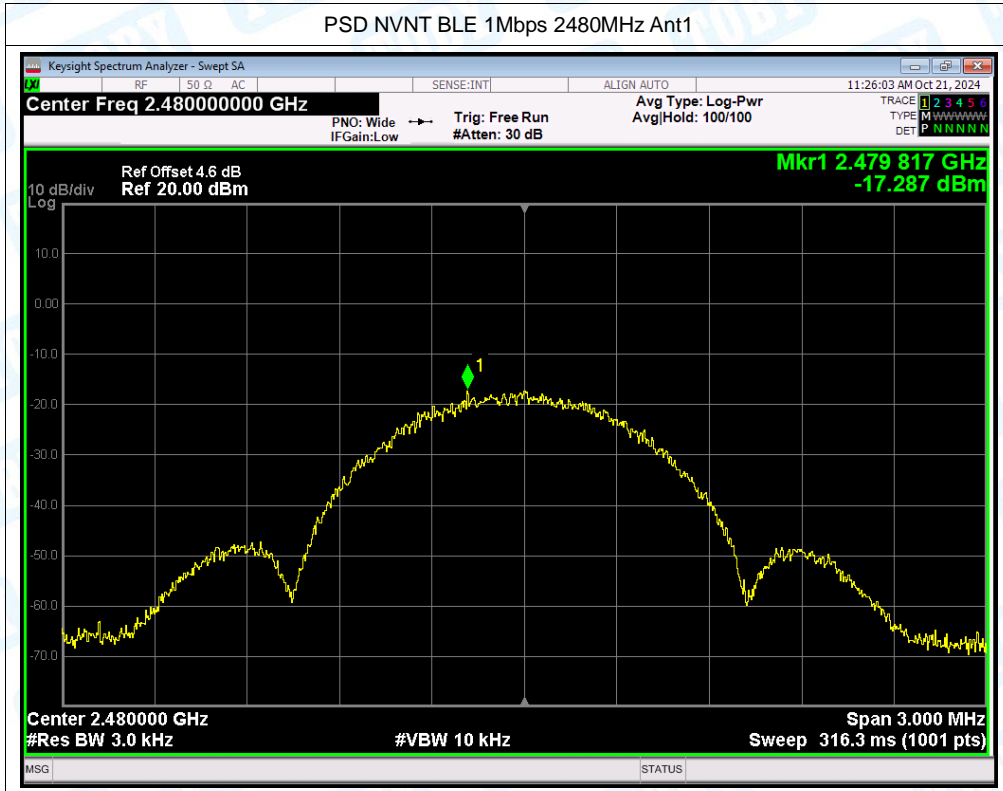
Test Graphs

PSD NVNT BLE 1Mbps 2402MHz Ant1



PSD NVNT BLE 1Mbps 2440MHz Ant1



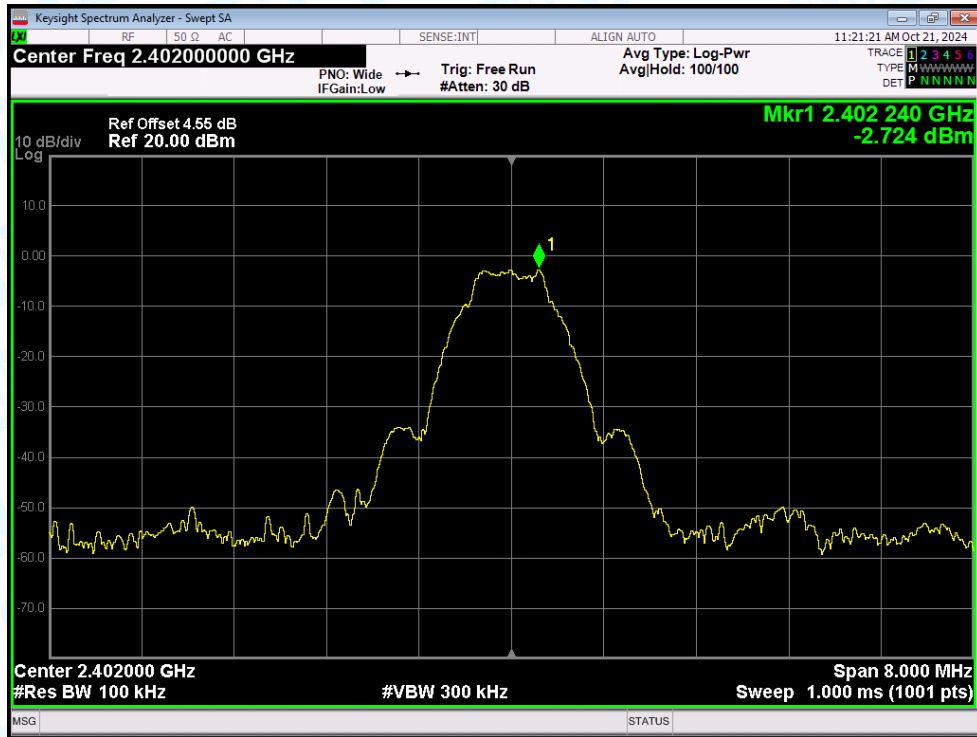


6.Band Edge

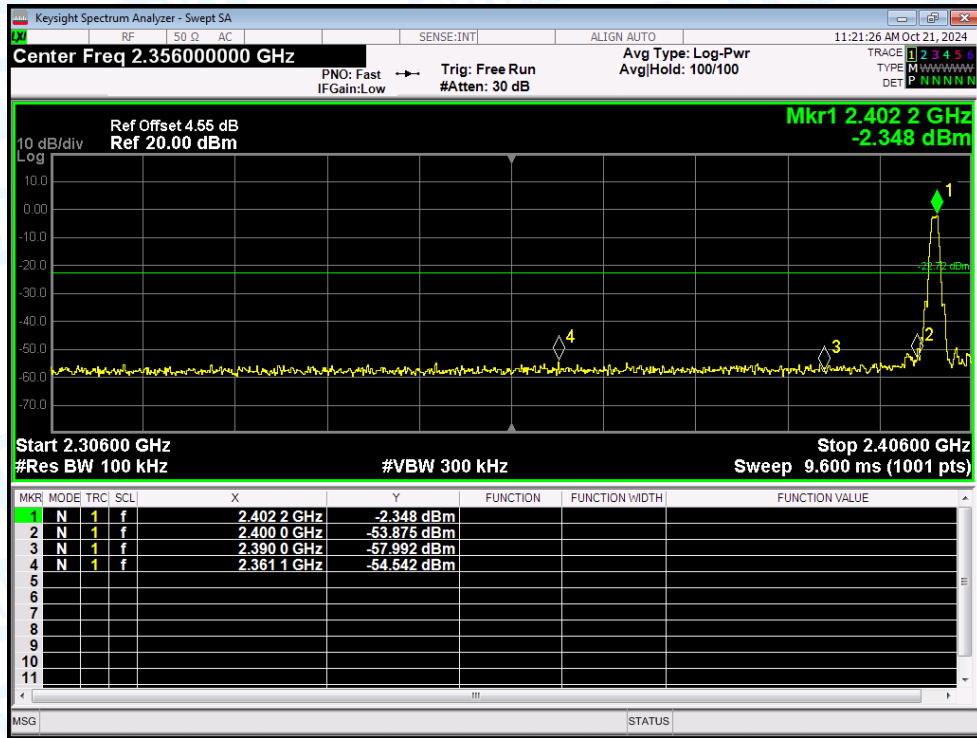
| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-----------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | -51.82 | -20 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | -48.61 | -20 | Pass |

Test Graphs

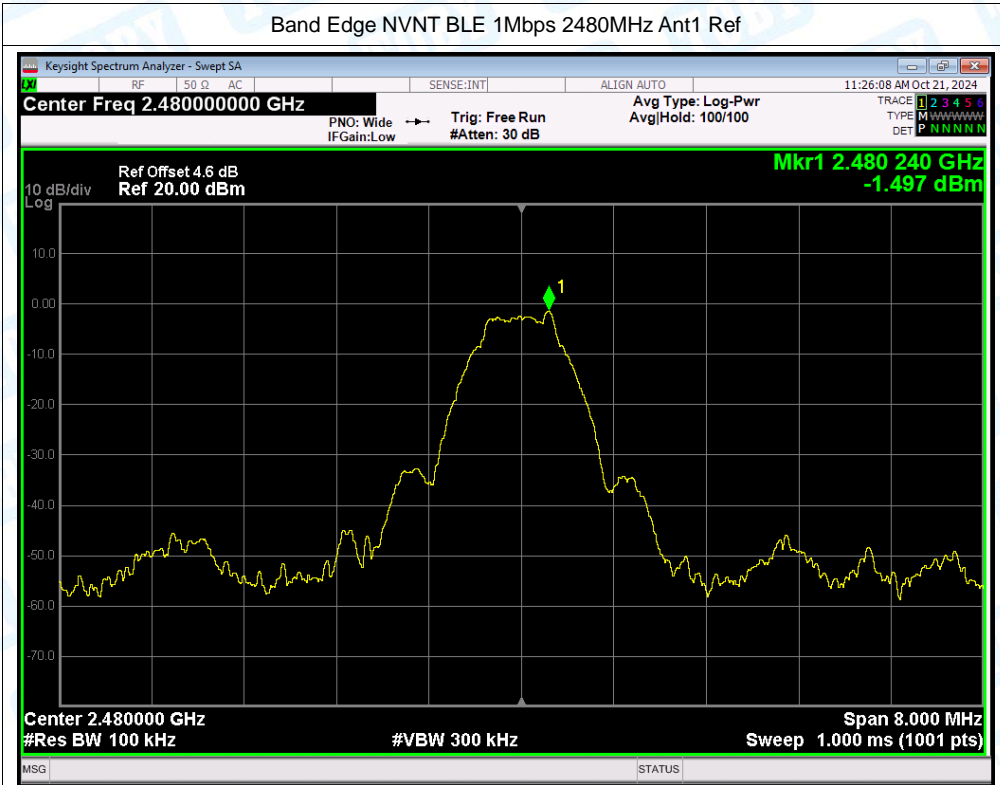
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Ref



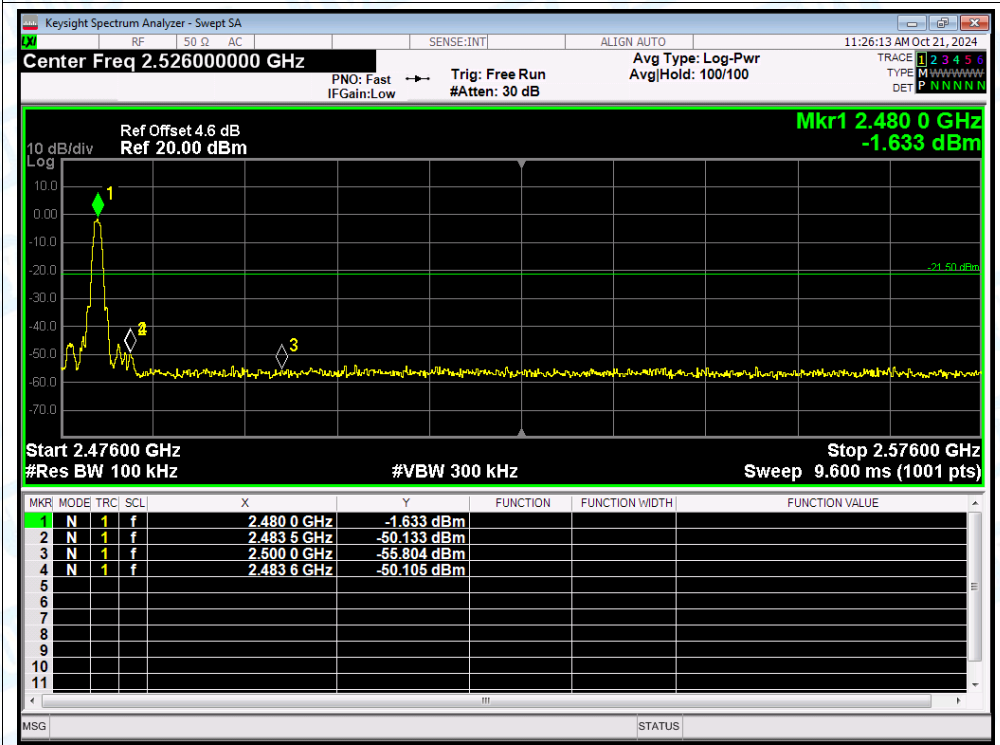
Band Edge NVNT BLE 1Mbps 2402MHz Ant1 Emission



Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Ref



Band Edge NVNT BLE 1Mbps 2480MHz Ant1 Emission

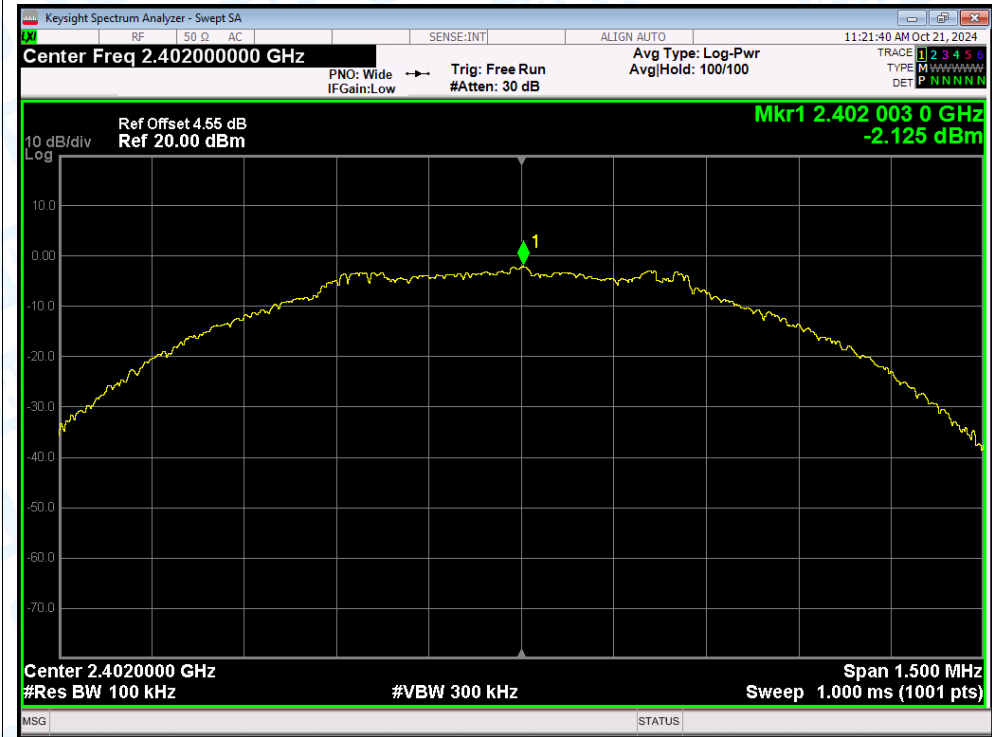


7. Conducted RF Spurious Emission

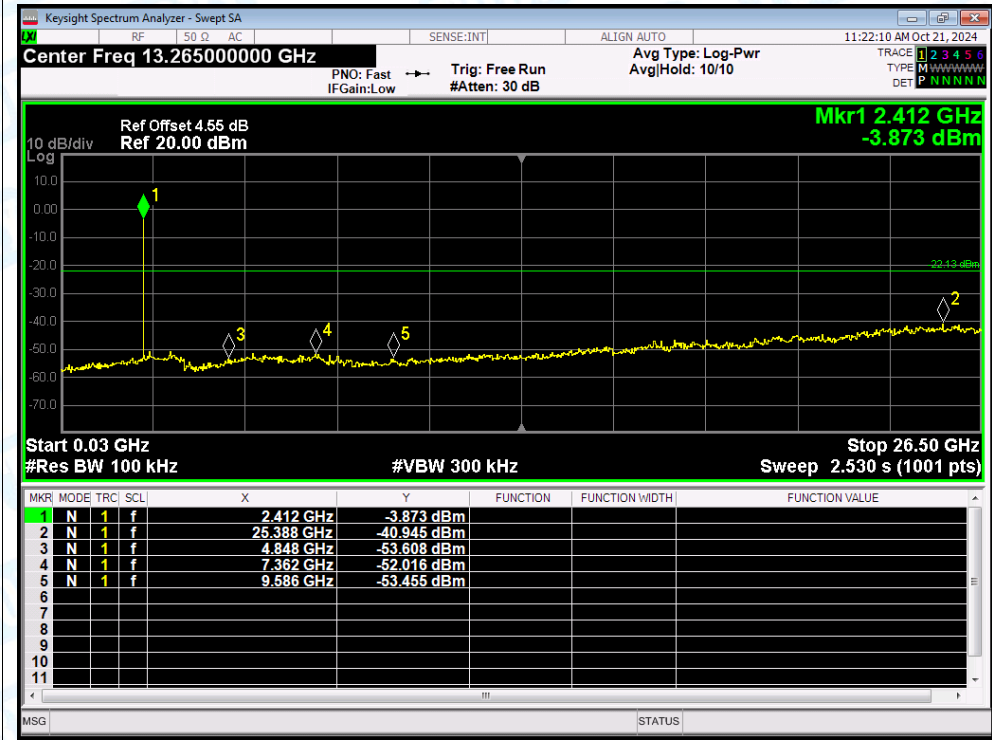
| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-----------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | -38.82 | -20 | Pass |
| NVNT | BLE 1Mbps | 2440 | Ant1 | -39.73 | -20 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | -39.68 | -20 | Pass |

Test Graphs

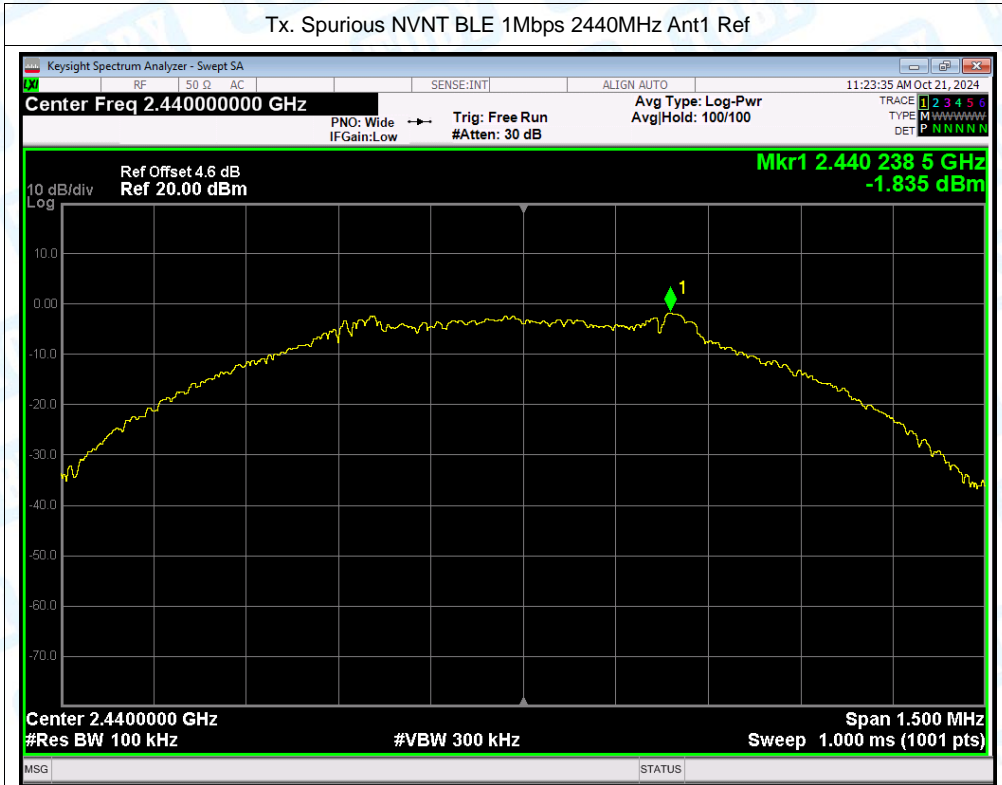
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Ref



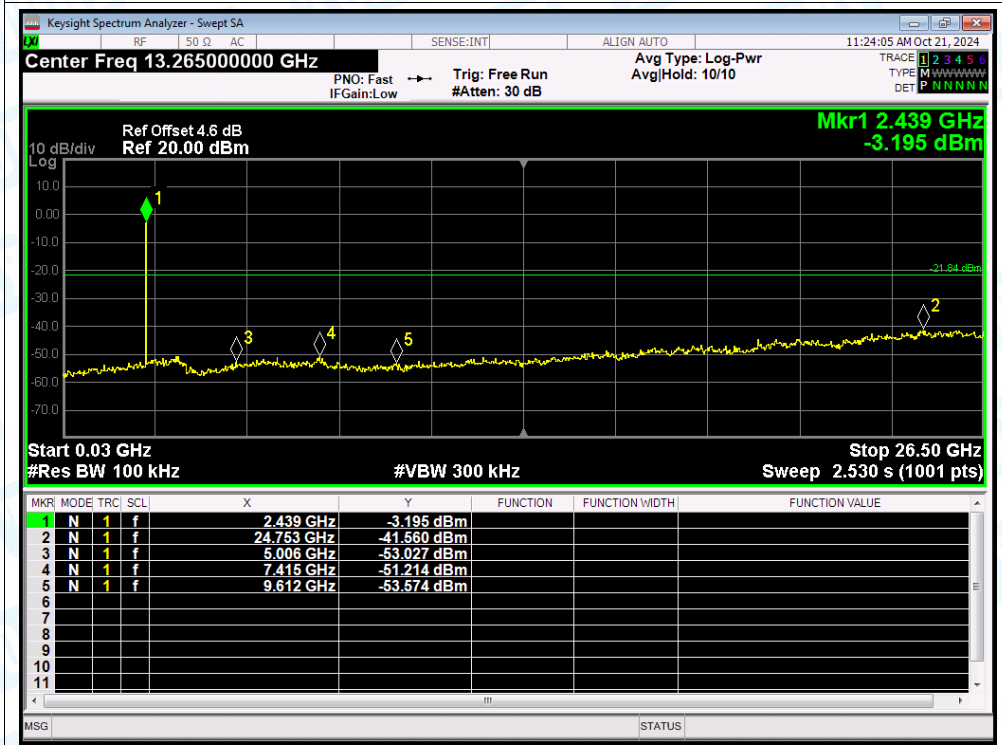
Tx. Spurious NVNT BLE 1Mbps 2402MHz Ant1 Emission



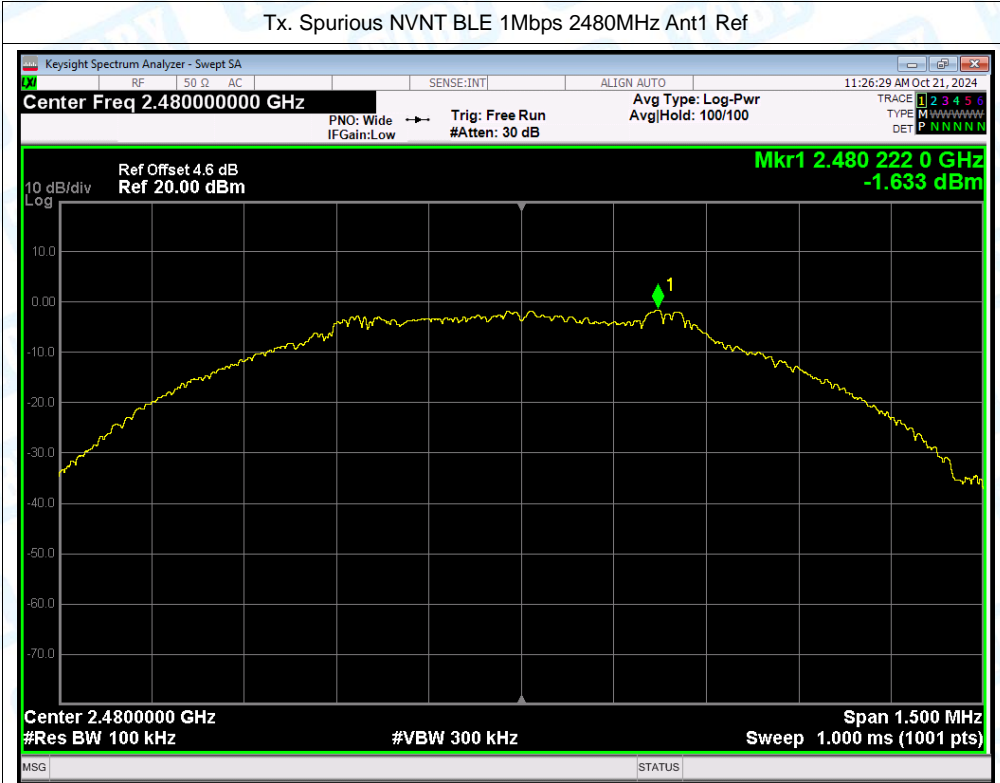
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Ref



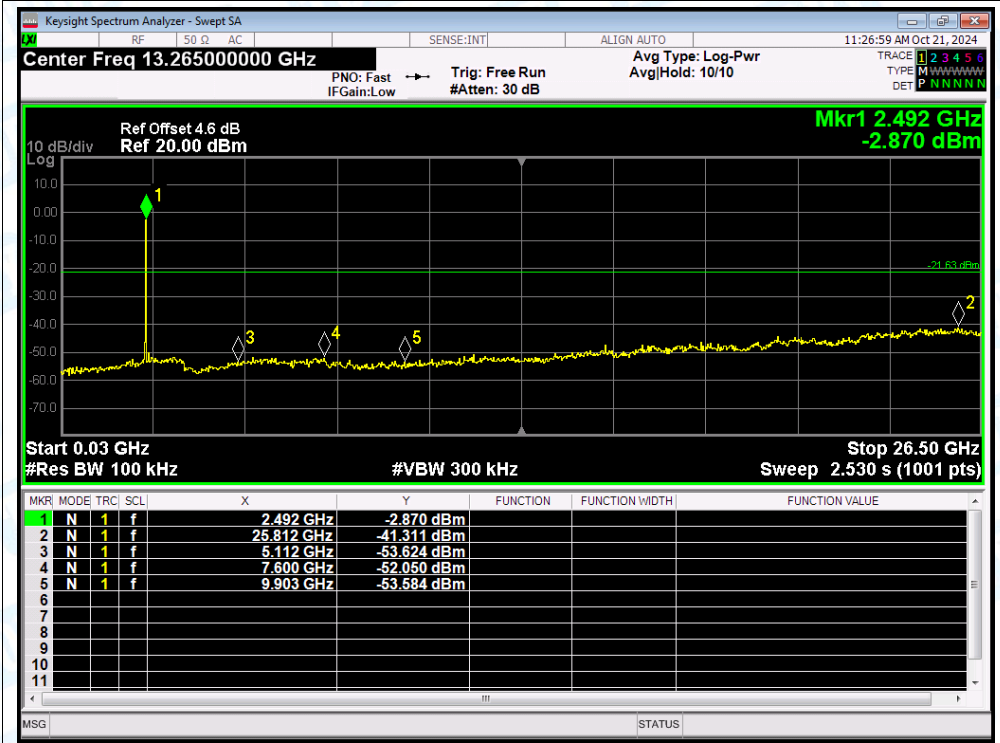
Tx. Spurious NVNT BLE 1Mbps 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1Mbps 2480MHz Ant1 Emission

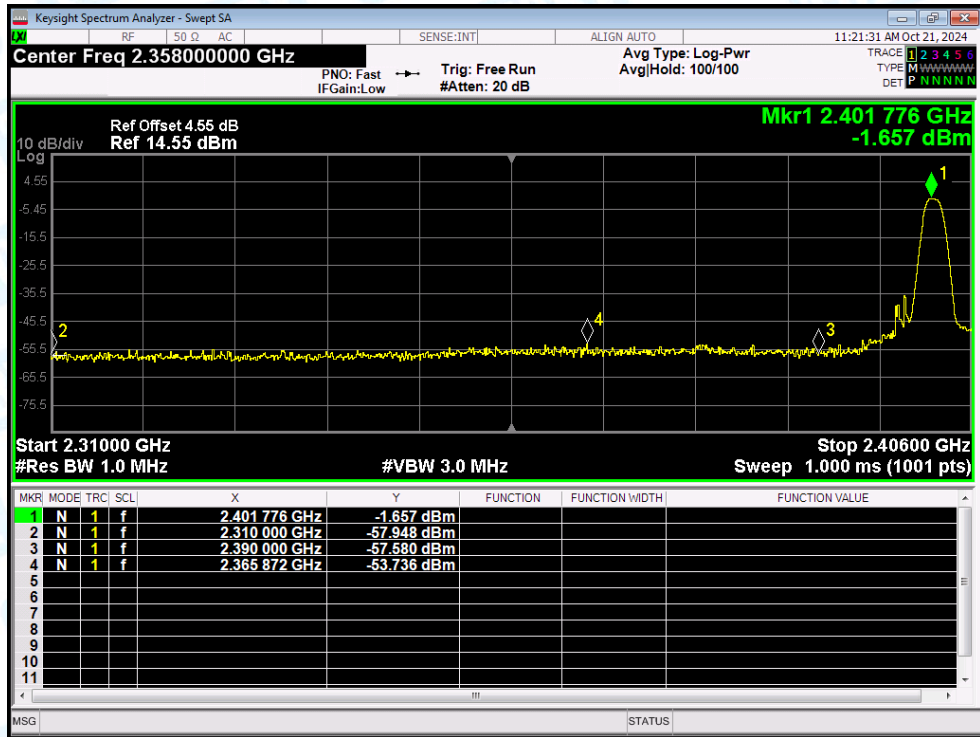


8.Restrict Band

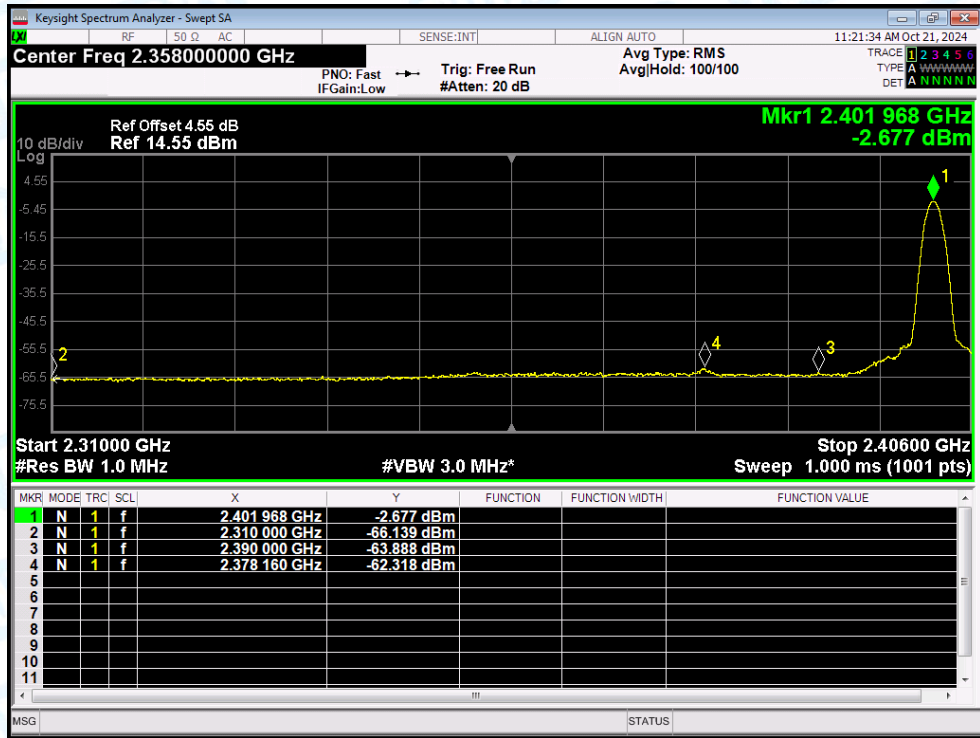
| Condition | Mode | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor (dB) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|--------------|-----------------|---------|-----------------|-------------|------------|------------------|------------|----------|----------------|---------|
| NVNT | BLE 1Mbps | 2402 | Ant1 | 2310 | -57.95 | 2.71 | - | 40.02 | Peak | 74 | Pass |
| NVNT | BLE 1Mbps | 2402 | Ant1 | 2310 | -66.14 | 2.71 | 0.7 | 32.53 | Average | 54 | Pass |
| NVNT | BLE 1Mbps | 2402 | Ant1 | 2365.872 | -53.74 | 2.71 | - | 44.23 | Peak | 74 | Pass |
| NVNT | BLE 1Mbps | 2402 | Ant1 | 2378.16 | -62.32 | 2.71 | 0.7 | 36.35 | Average | 54 | Pass |
| NVNT | BLE 1Mbps | 2402 | Ant1 | 2390 | -57.58 | 2.71 | - | 40.39 | Peak | 74 | Pass |
| NVNT | BLE 1Mbps | 2402 | Ant1 | 2390 | -63.89 | 2.71 | 0.7 | 34.78 | Average | 54 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 2483.5 | -45.75 | 2.71 | - | 52.22 | Peak | 74 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 2483.5 | -52.45 | 2.71 | 0.68 | 46.2 | Average | 54 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 2483.656 | -45.28 | 2.71 | - | 52.69 | Peak | 74 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 2483.728 | -51.87 | 2.71 | 0.68 | 46.78 | Average | 54 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 2500 | -56.22 | 2.71 | - | 41.75 | Peak | 74 | Pass |
| NVNT | BLE 1Mbps | 2480 | Ant1 | 2500 | -63.7 | 2.71 | 0.68 | 34.95 | Average | 54 | Pass |

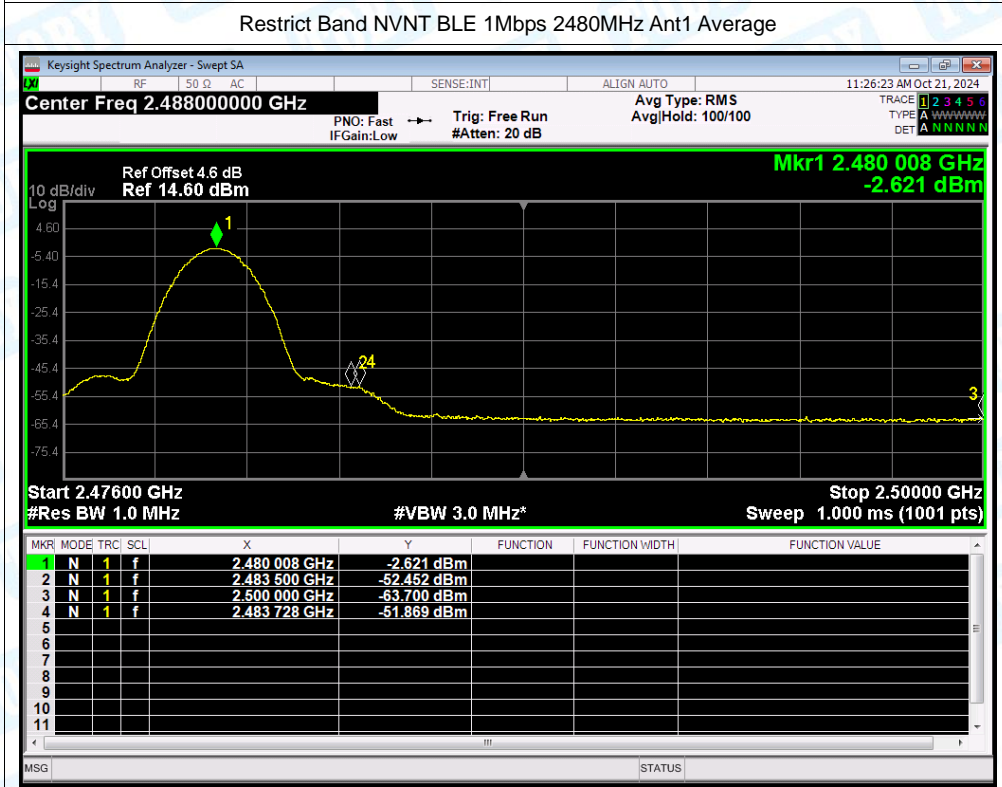
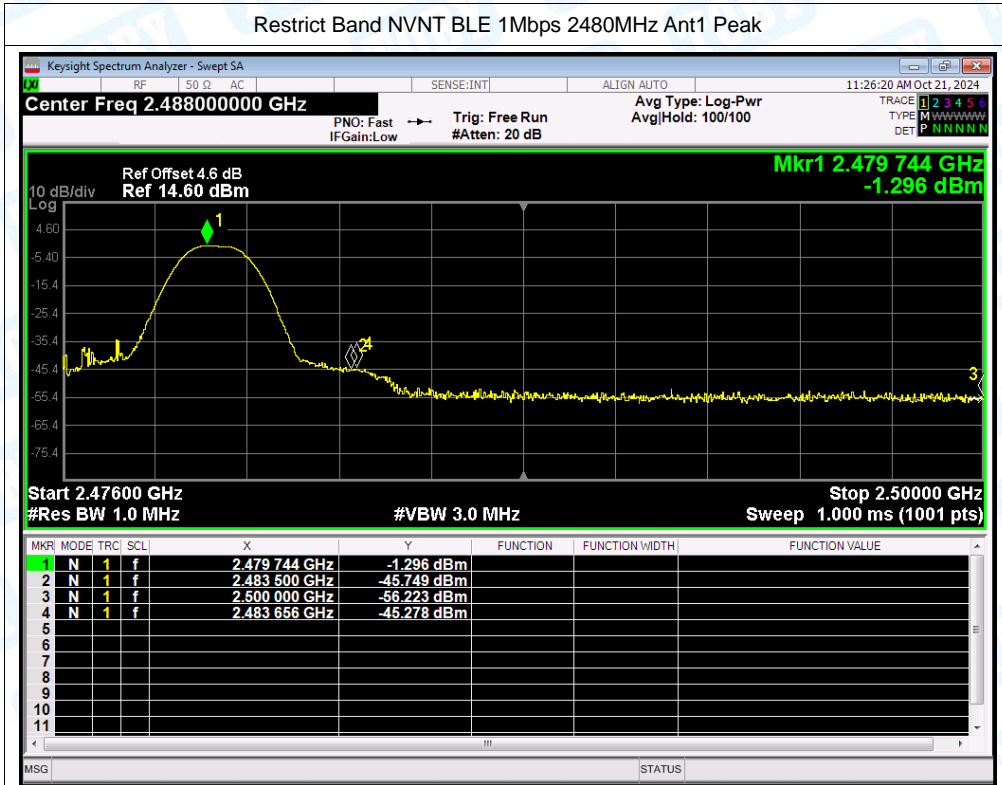
Test Graphs

Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Peak



Restrict Band NVNT BLE 1Mbps 2402MHz Ant1 Average





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