# RF Test Data for Bluetooth(BDR+EDR) (Conducted Measurements)

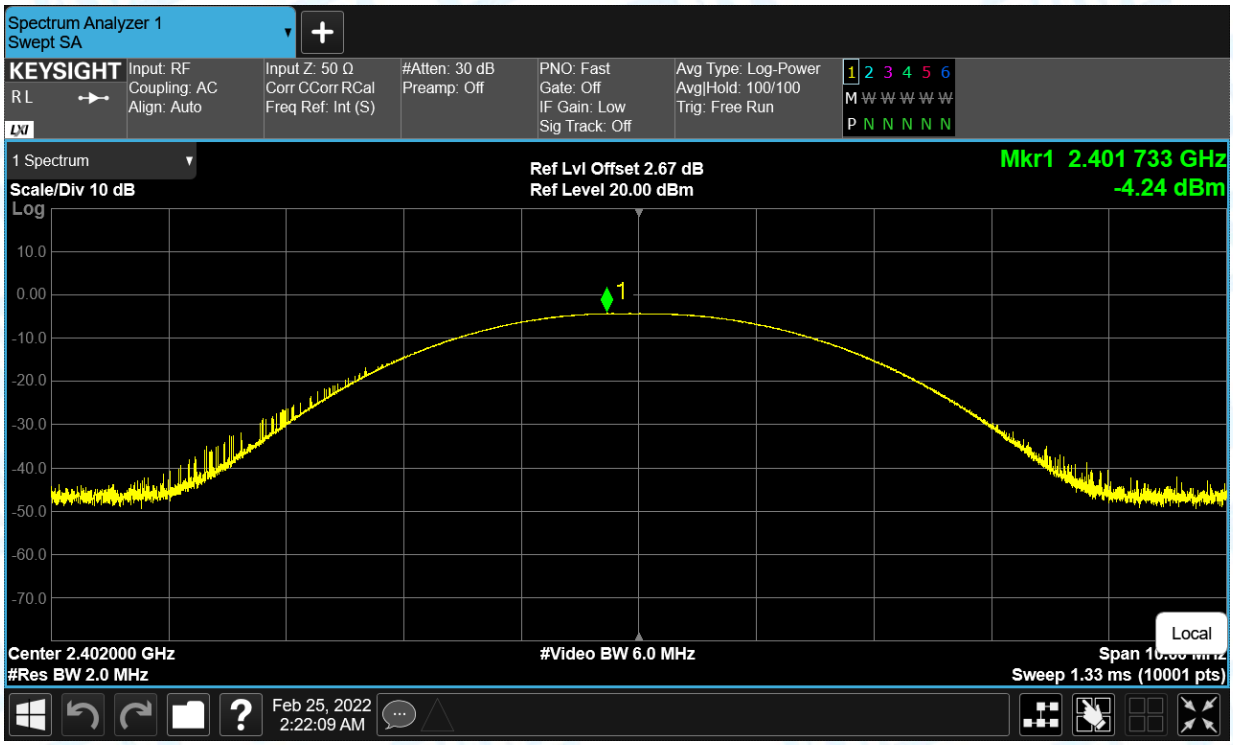
| General Description of EUT | |
|---|---|
| **Product Name:** | Bluetooth Speaker |
| **Test Model:** | Asyoren A3 |
| **Sample ID:** | RW-C-202202-0031-1-2# |
| **Environmental Conditions** | |
| **Temperature:** | 24℃ |
| **Relative Humidity:** | 50% |
| **Test Voltage:** | DC7.4V |
| **Test Engineer:** | Hejingchang |
| Note: For a more detailed features description, please refer to the report TBR-C-202202-0031-1. | |

# 1. Maximum Conducted Output Power

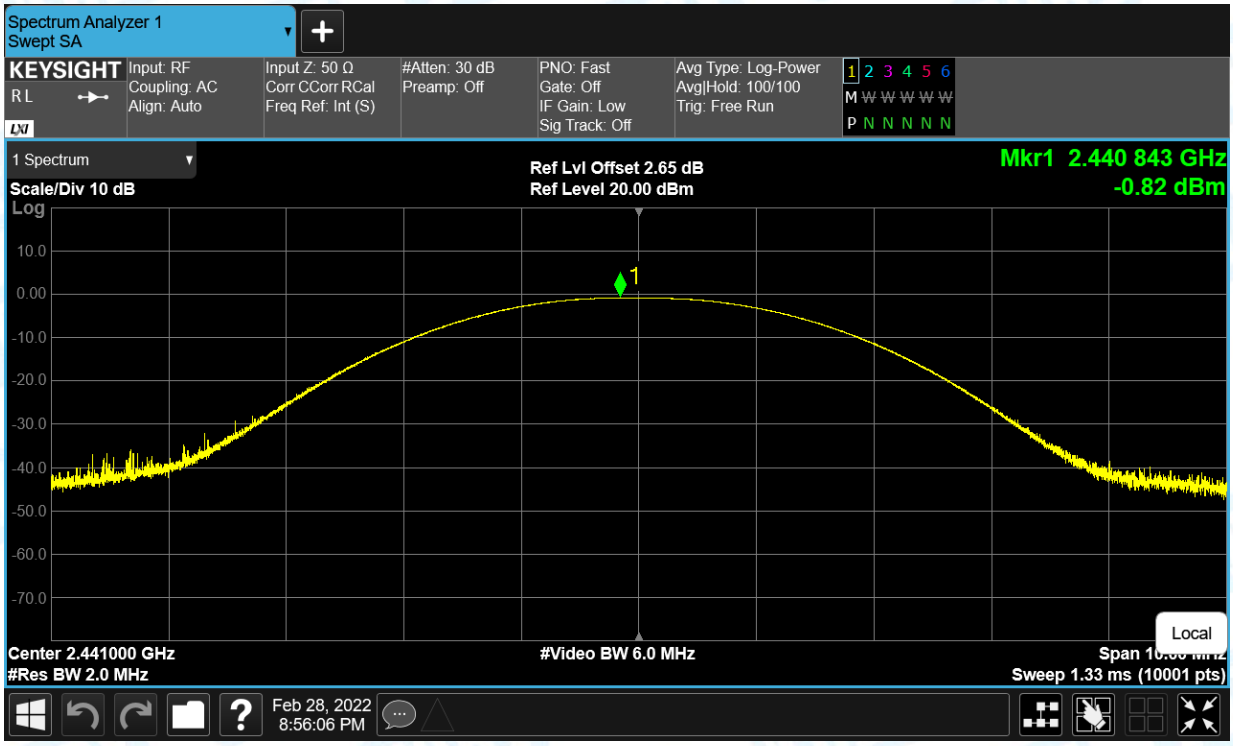
| Condition | Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2402 | -4.235 | 21 | Pass |
| NVNT | 1-DH1 | 2441 | -0.817 | 21 | Pass |
| NVNT | 1-DH1 | 2480 | -2.602 | 21 | Pass |
| NVNT | 2-DH1 | 2402 | -2.282 | 21 | Pass |
| NVNT | 2-DH1 | 2441 | -6.646 | 21 | Pass |
| NVNT | 2-DH1 | 2480 | 0.022 | 21 | Pass |
| NVNT | 3-DH1 | 2402 | -1.868 | 21 | Pass |
| NVNT | 3-DH1 | 2441 | -2.899 | 21 | Pass |
| NVNT | 3-DH1 | 2480 | 0.36 | 21 | Pass |

Test Graphs

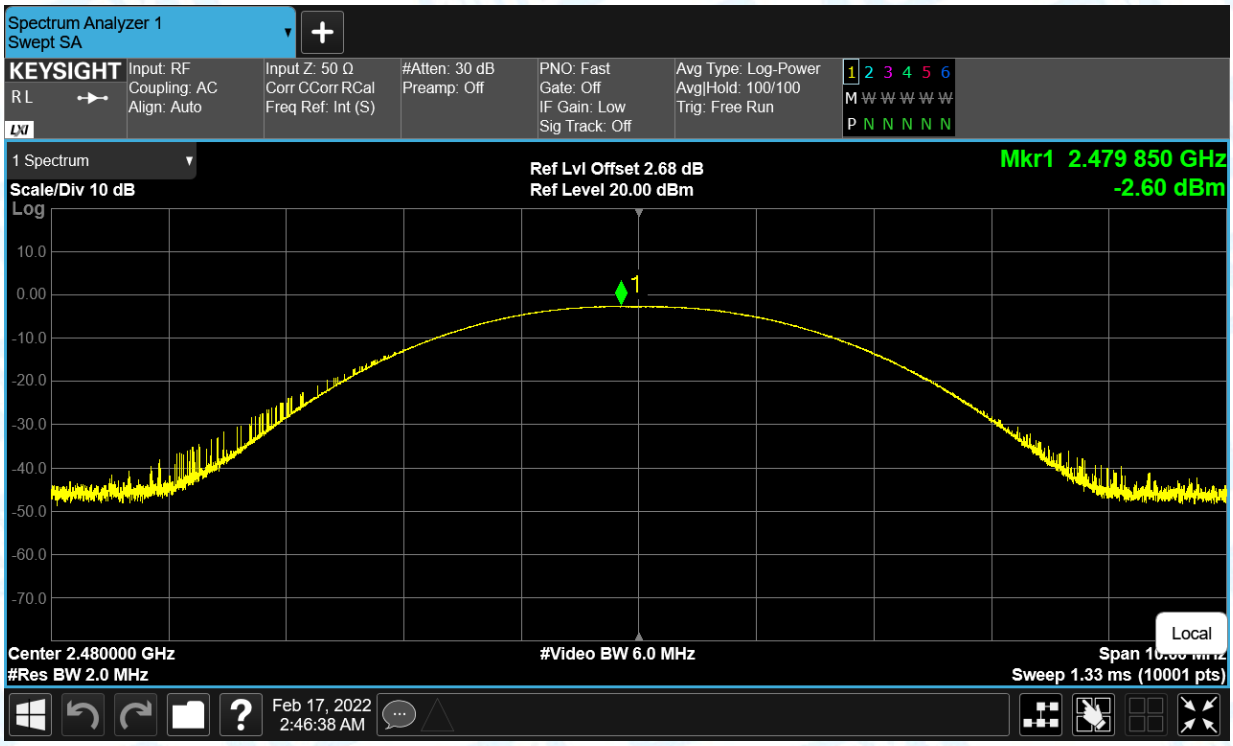
Power NVNT 1-DH1 2402MHz Ant1



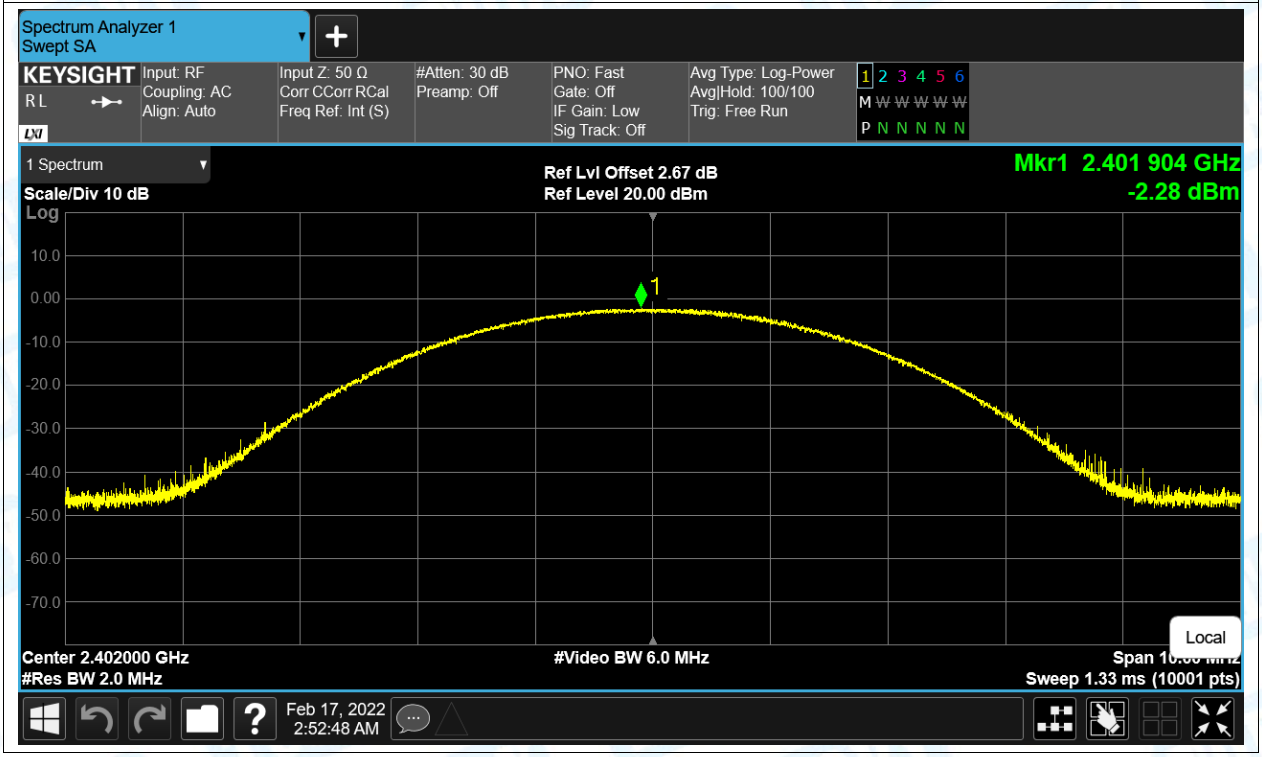

Power NVNT 1-DH1 2441MHz Ant1



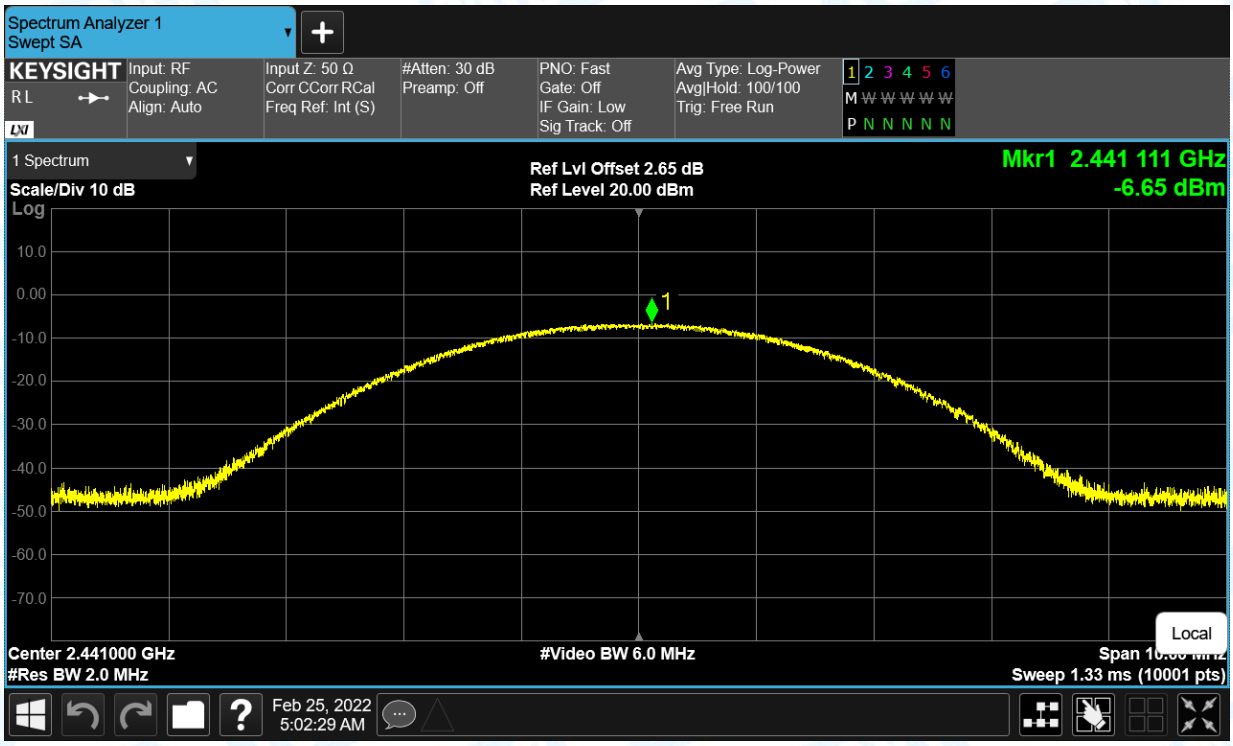
Power NVNT 1-DH1 2480MHz Ant1



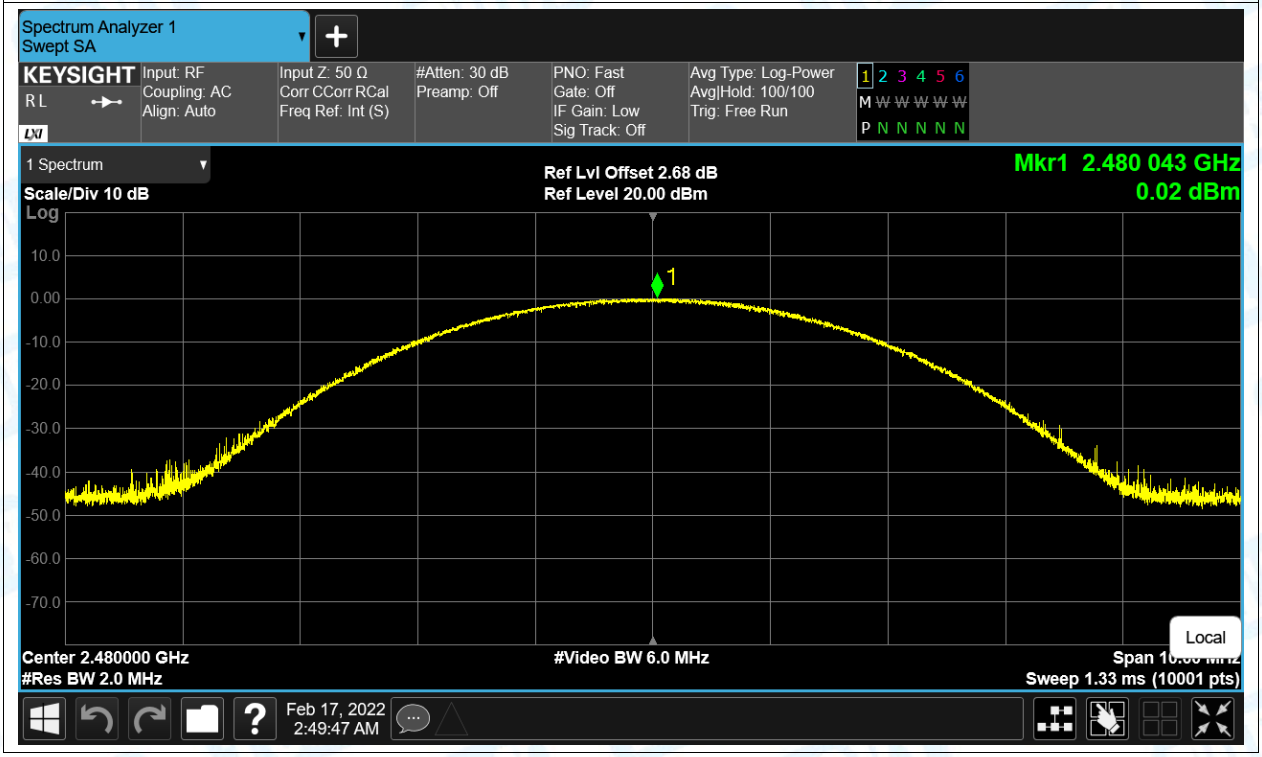

Power NVNT 2-DH1 2402MHz Ant1



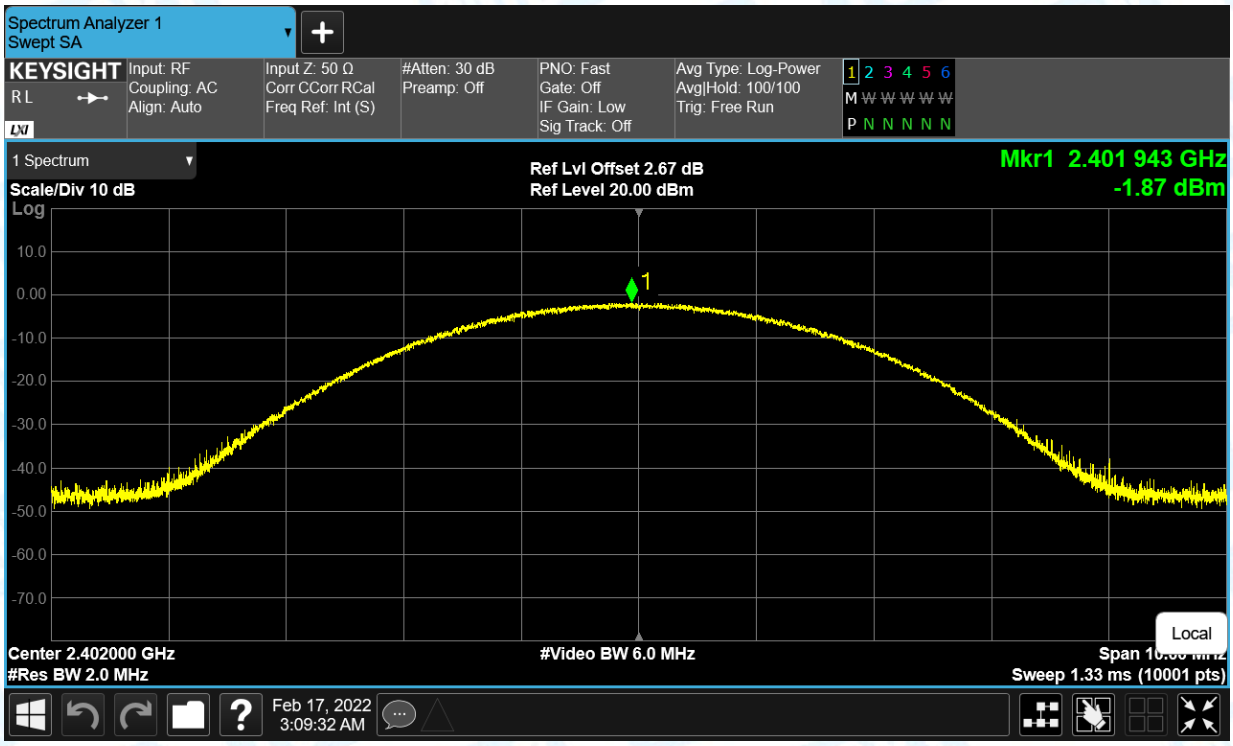
Power NVNT 2-DH1 2441MHz Ant1



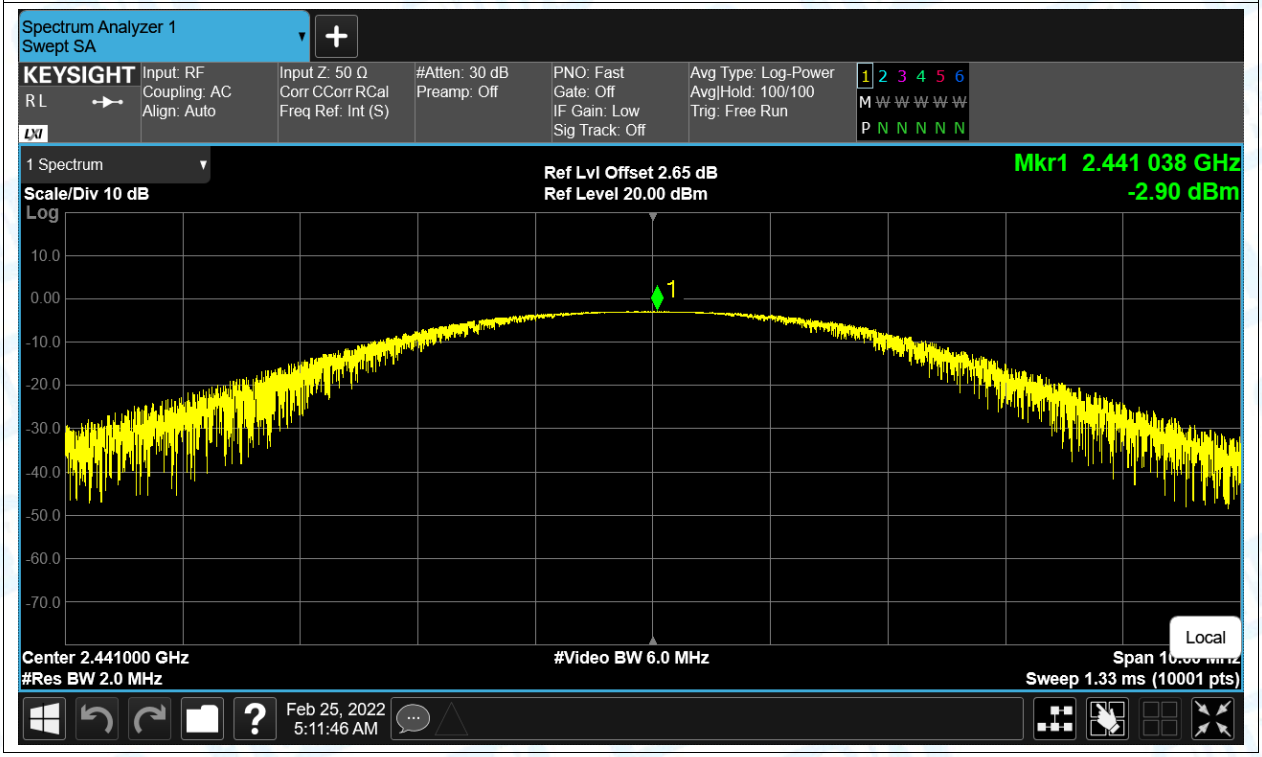

Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1




Power NVNT 3-DH1 2441MHz Ant1



Power NVNT 3-DH1 2480MHz Ant1

## 2. -20dB Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | -20 dB Bandwidth (MHz) | 2/3 *20dB BW (MHz) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2402 | Ant1 | 0.84 | 0.56 | Pass |
| NVNT | 1-DH1 | 2441 | Ant1 | 0.95 | 0.63 | Pass |
| NVNT | 1-DH1 | 2480 | Ant1 | 0.84 | 0.56 | Pass |
| NVNT | 2-DH1 | 2402 | Ant1 | 1.27 | 0.85 | Pass |
| NVNT | 2-DH1 | 2441 | Ant1 | 1.27 | 0.85 | Pass |
| NVNT | 2-DH1 | 2480 | Ant1 | 1.27 | 0.85 | Pass |
| NVNT | 3-DH1 | 2402 | Ant1 | 1.24 | 0.83 | Pass |
| NVNT | 3-DH1 | 2441 | Ant1 | 1.24 | 0.83 | Pass |
| NVNT | 3-DH1 | 2480 | Ant1 | 1.24 | 0.83 | Pass |

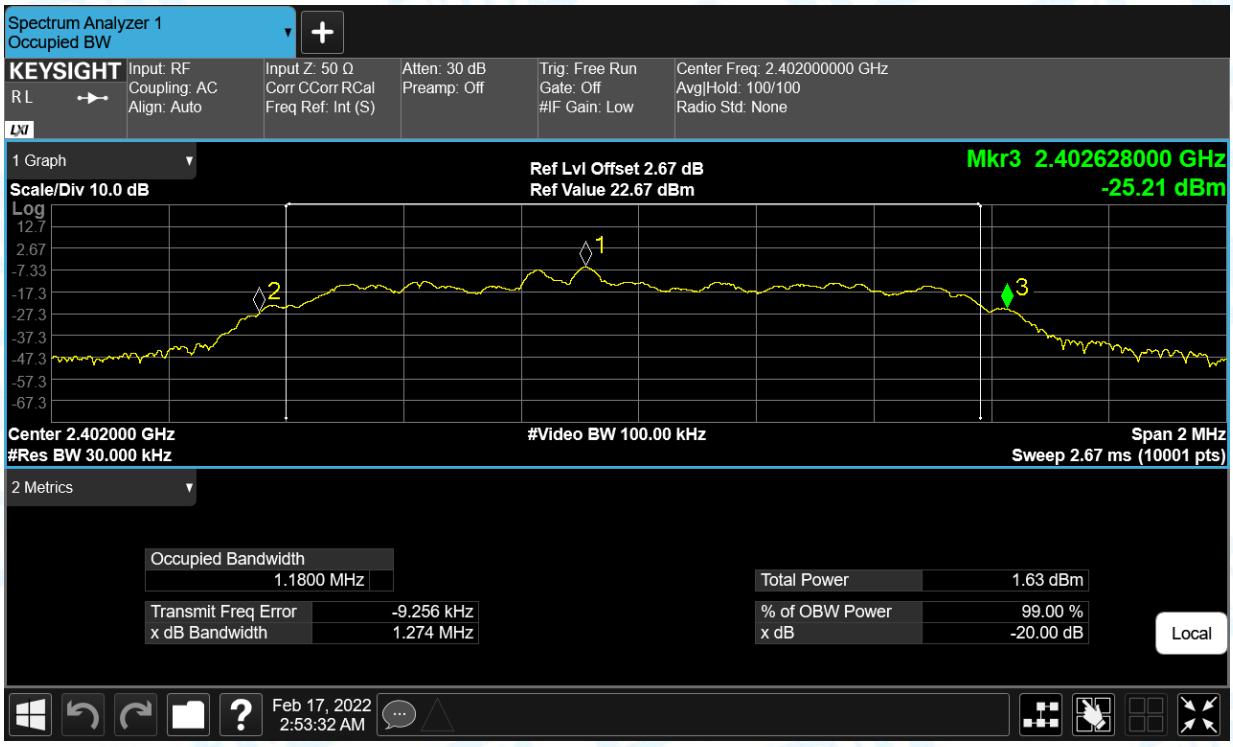
Test Graphs

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

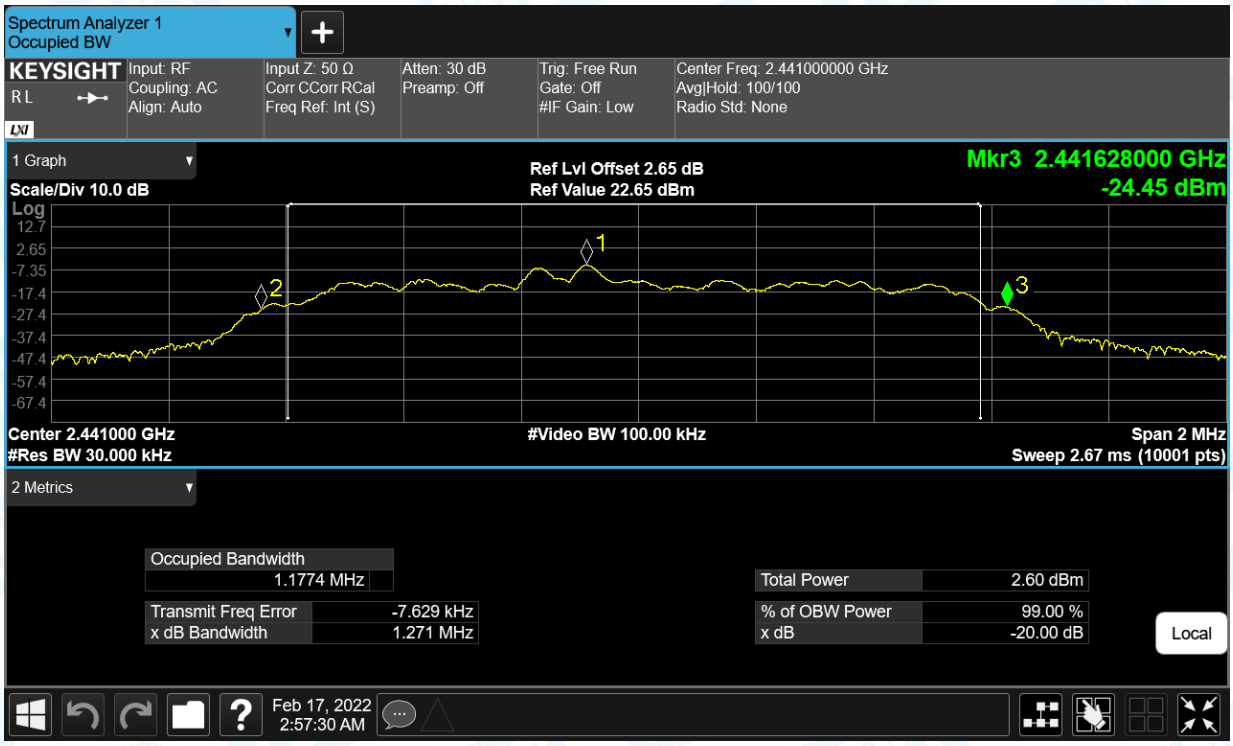
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

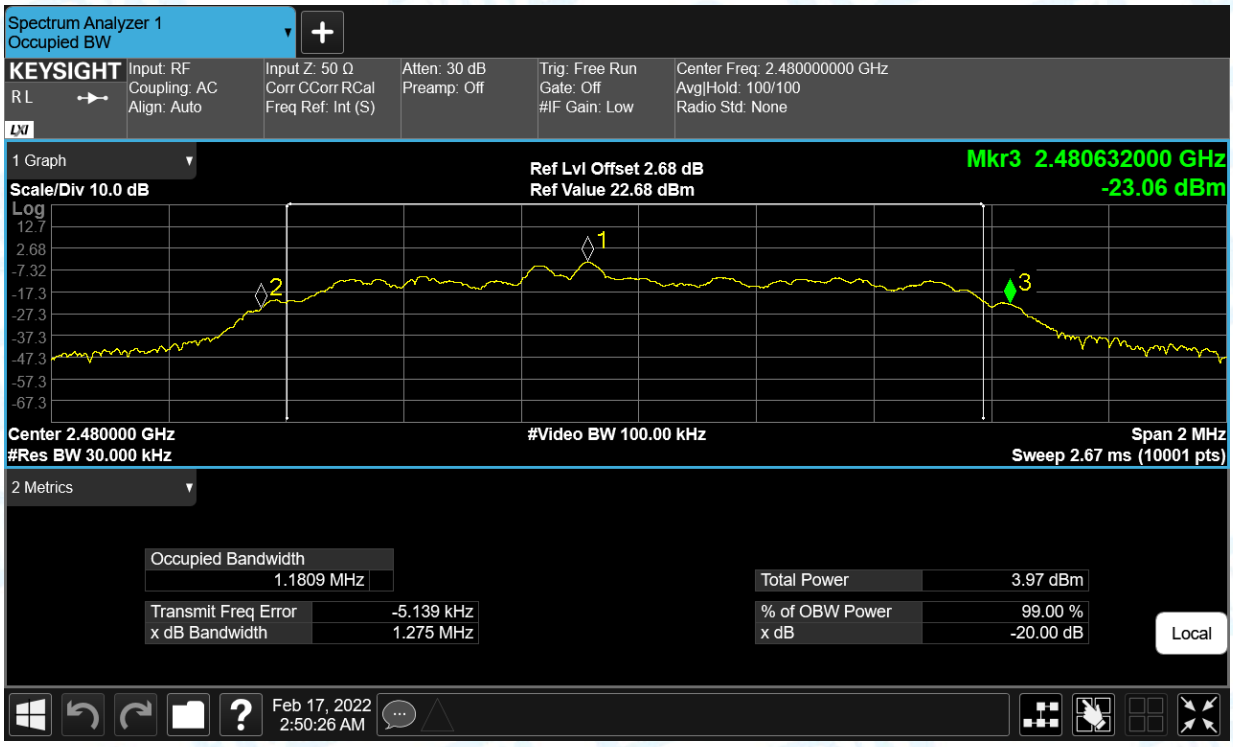
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



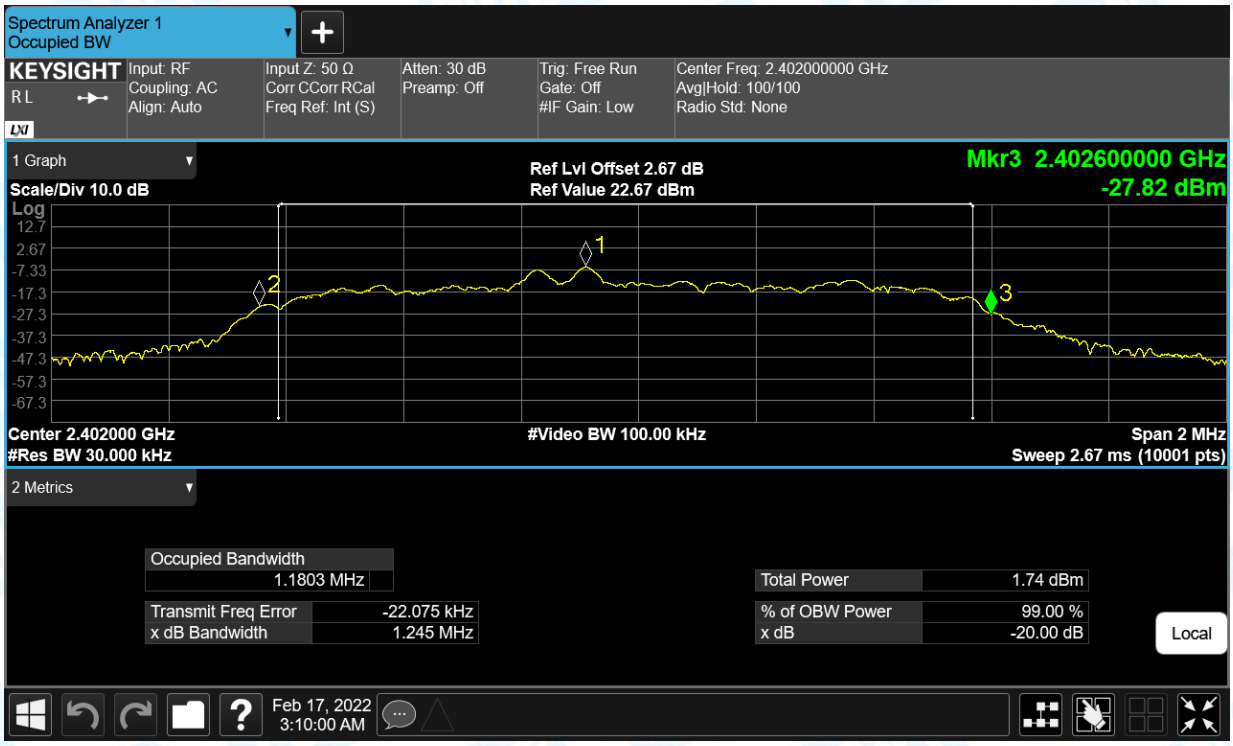
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



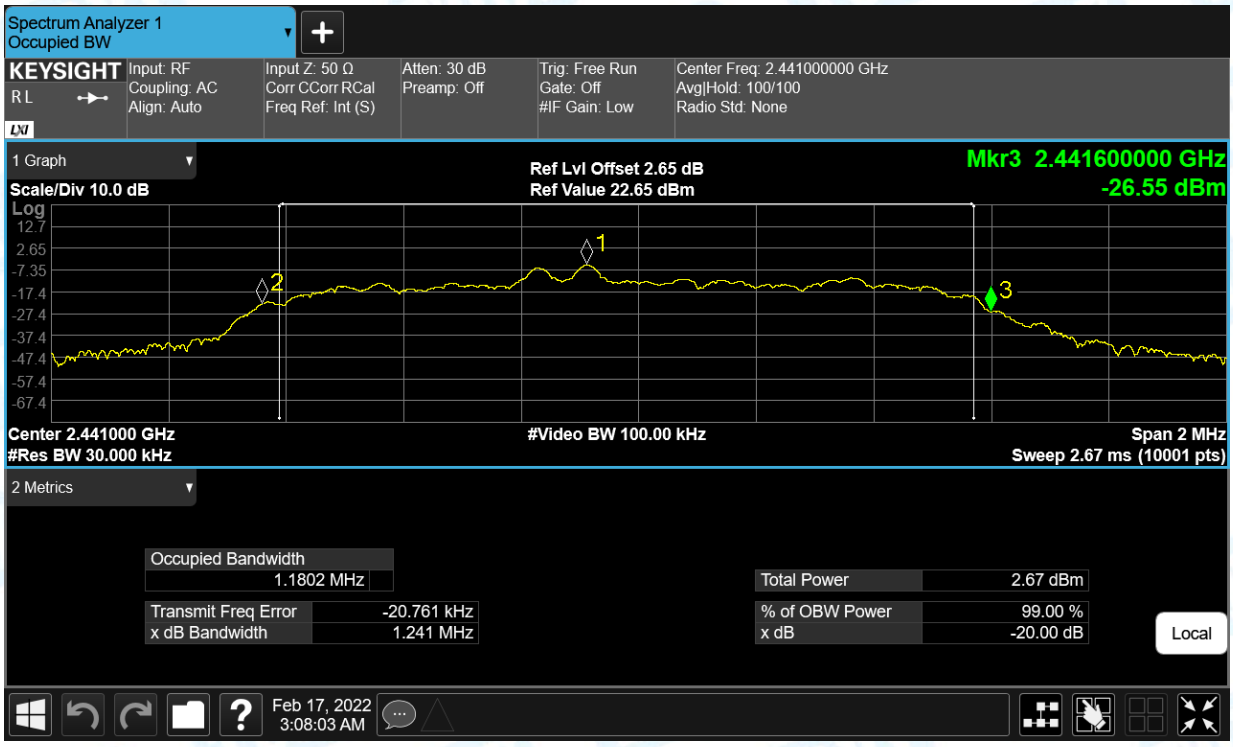

-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



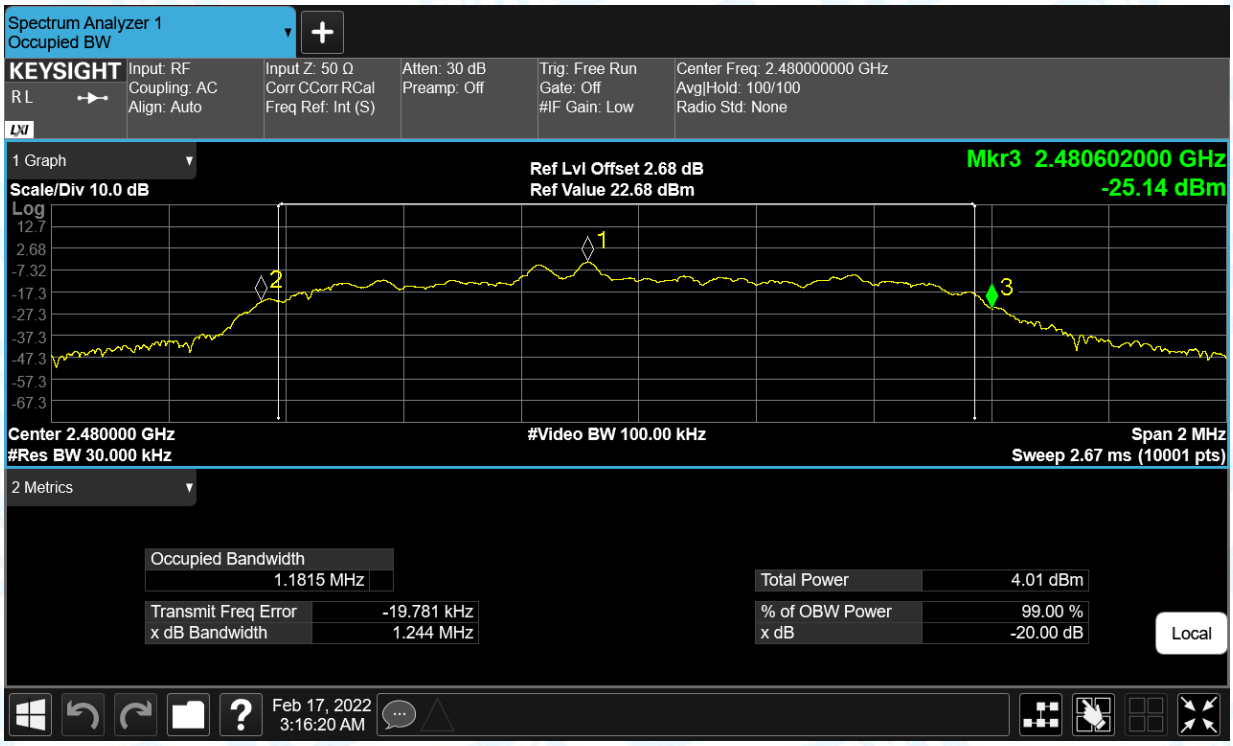
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1




-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1

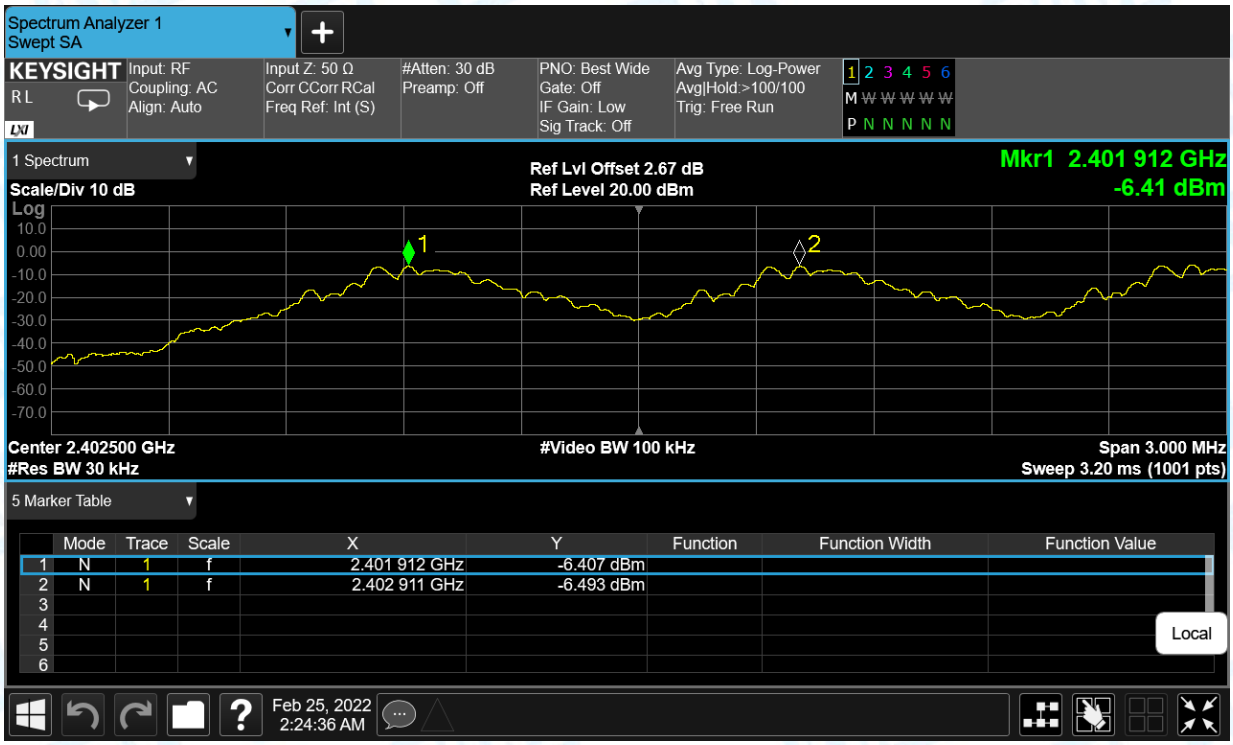


# 3. Carrier Frequencies Separation

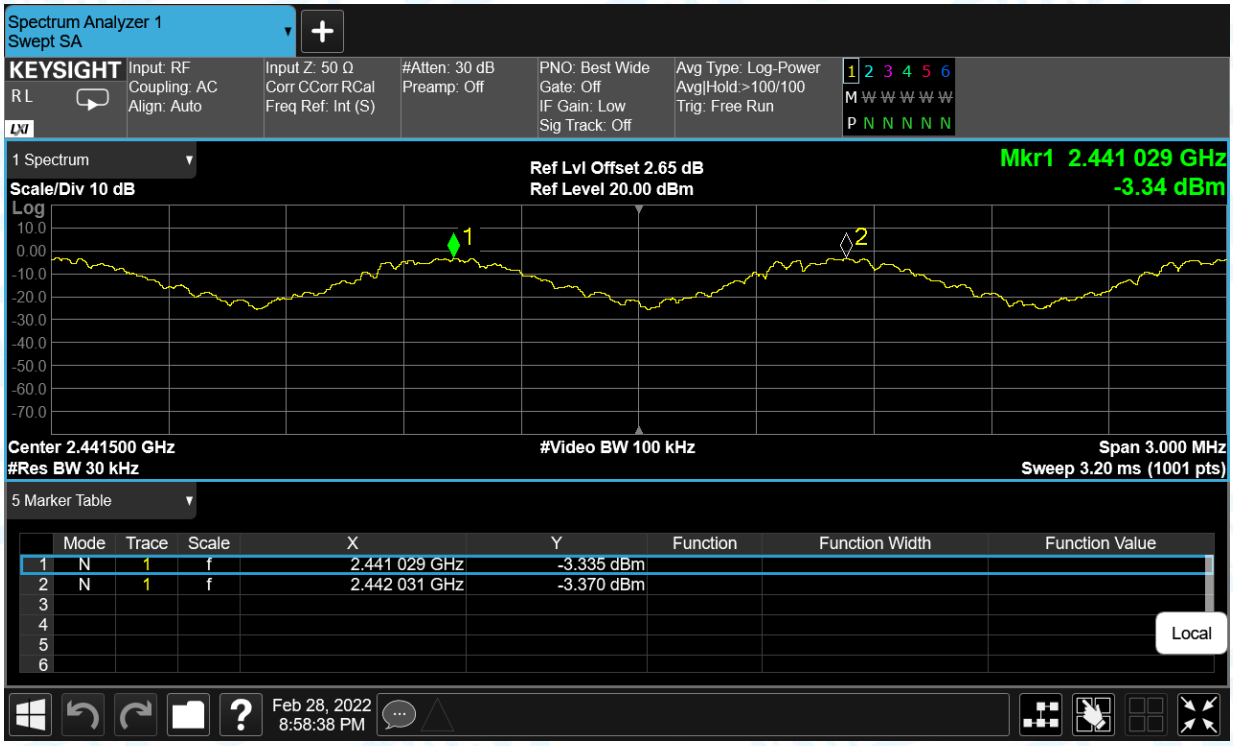
| Condition | Mode | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2401.912 | 2402.911 | 0.999 | 0.56 | Pass |
| NVNT | 1-DH1 | 2441.029 | 2442.031 | 1.002 | 0.63 | Pass |
| NVNT | 1-DH1 | 2478.915 | 2479.914 | 0.999 | 0.56 | Pass |
| NVNT | 2-DH1 | 2402.005 | 2403.013 | 1.008 | 0.85 | Pass |
| NVNT | 2-DH1 | 2441.179 | 2442.01 | 0.831 | 0.85 | Pass |
| NVNT | 2-DH1 | 2478.849 | 2479.971 | 1.122 | 0.85 | Pass |
| NVNT | 3-DH1 | 2402.011 | 2402.839 | 0.828 | 0.83 | Pass |
| NVNT | 3-DH1 | 2440.843 | 2441.989 | 1.146 | 0.83 | Pass |
| NVNT | 3-DH1 | 2479.008 | 2480.037 | 1.029 | 0.83 | Pass |

Test Graphs

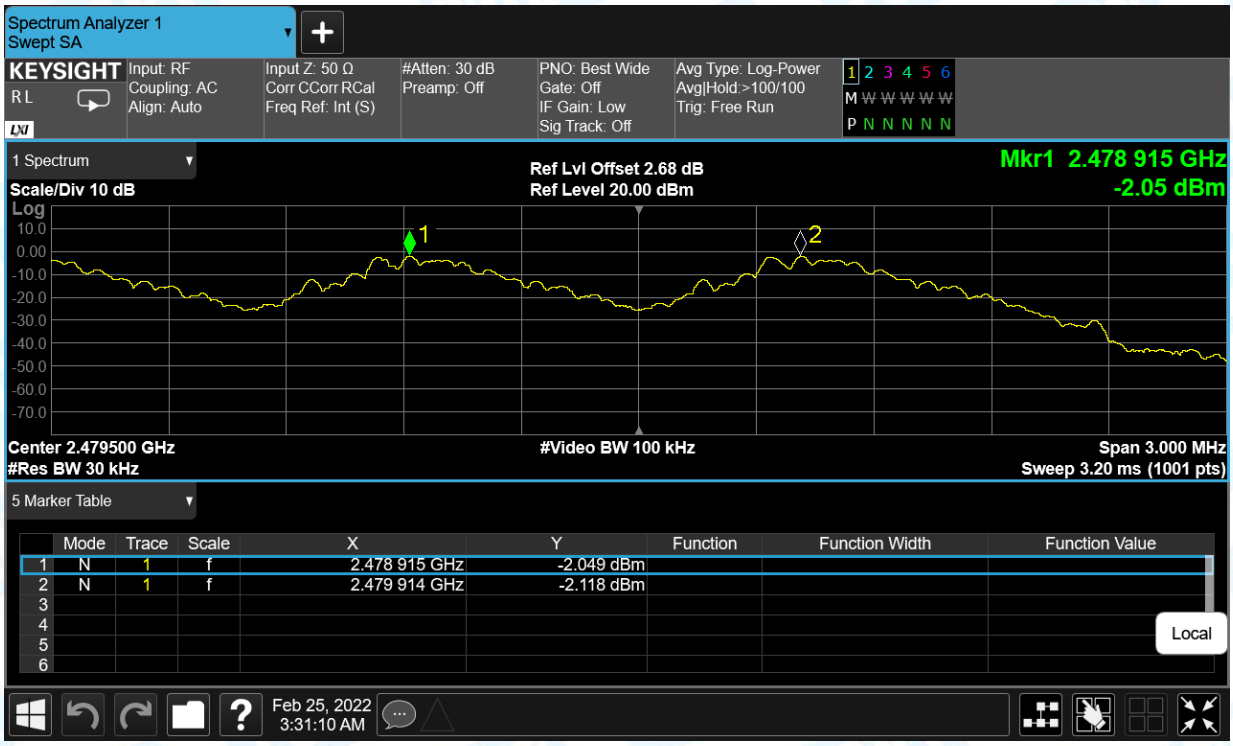
CFS NVNT 1-DH1 2402MHz Ant1



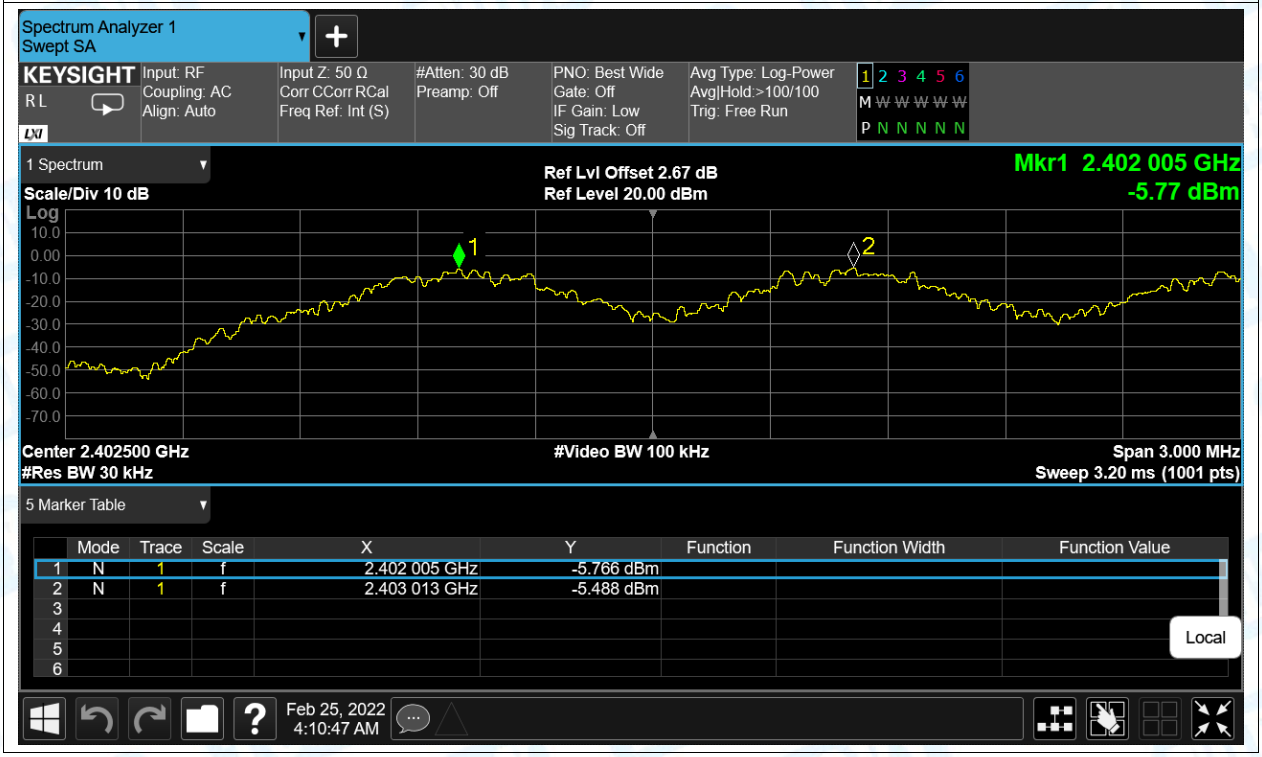

CFS NVNT 1-DH1 2441MHz Ant1



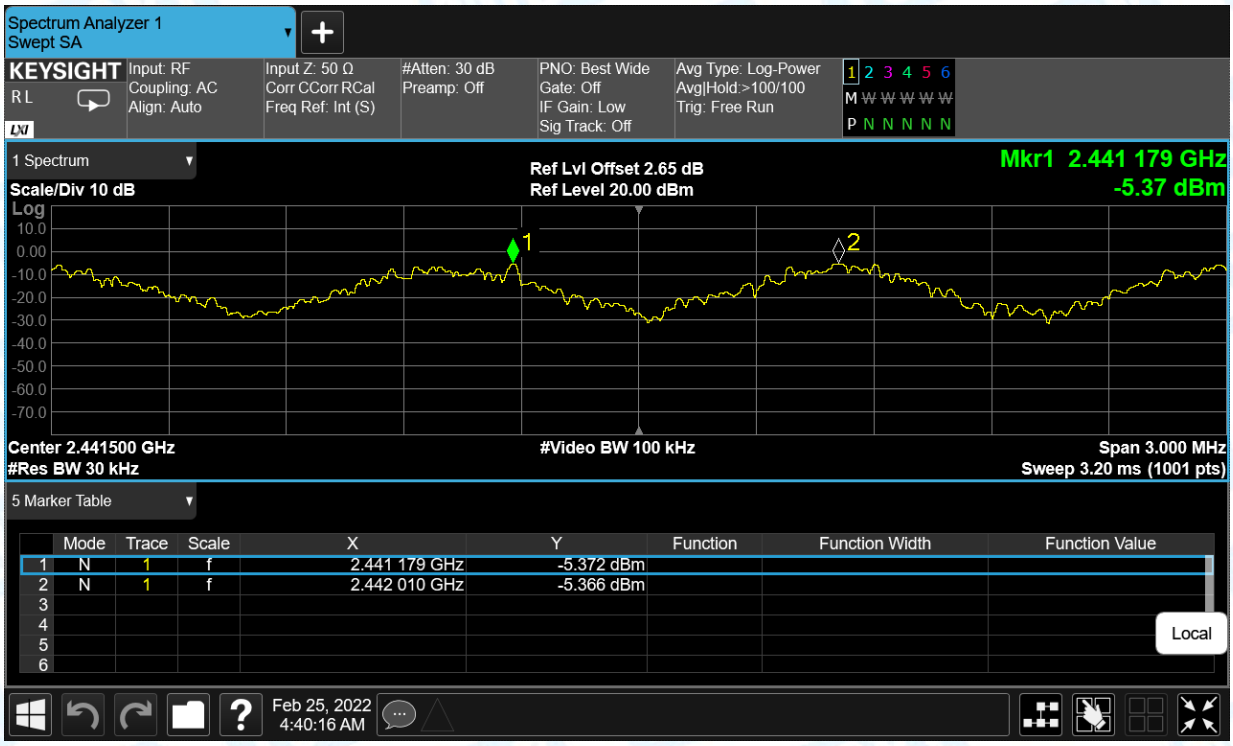
CFS NVNT 1-DH1 2480MHz Ant1



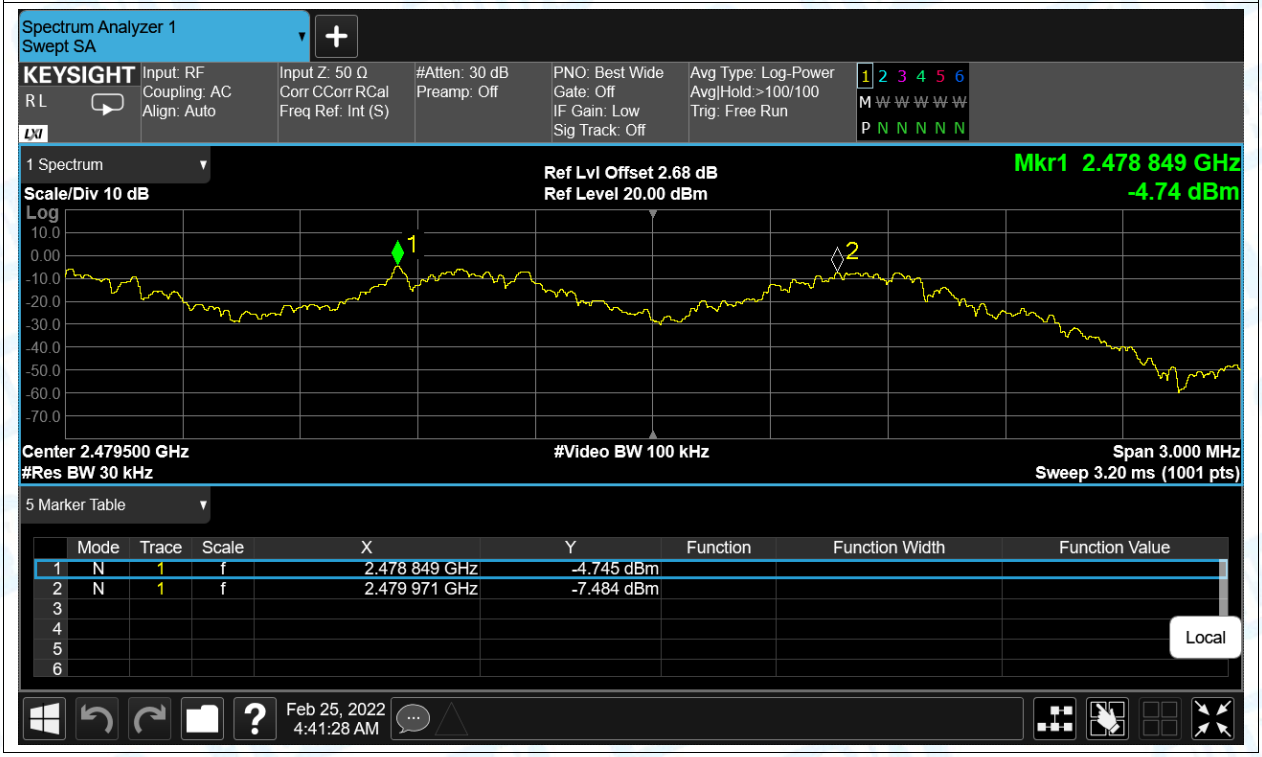

CFS NVNT 2-DH1 2402MHz Ant1



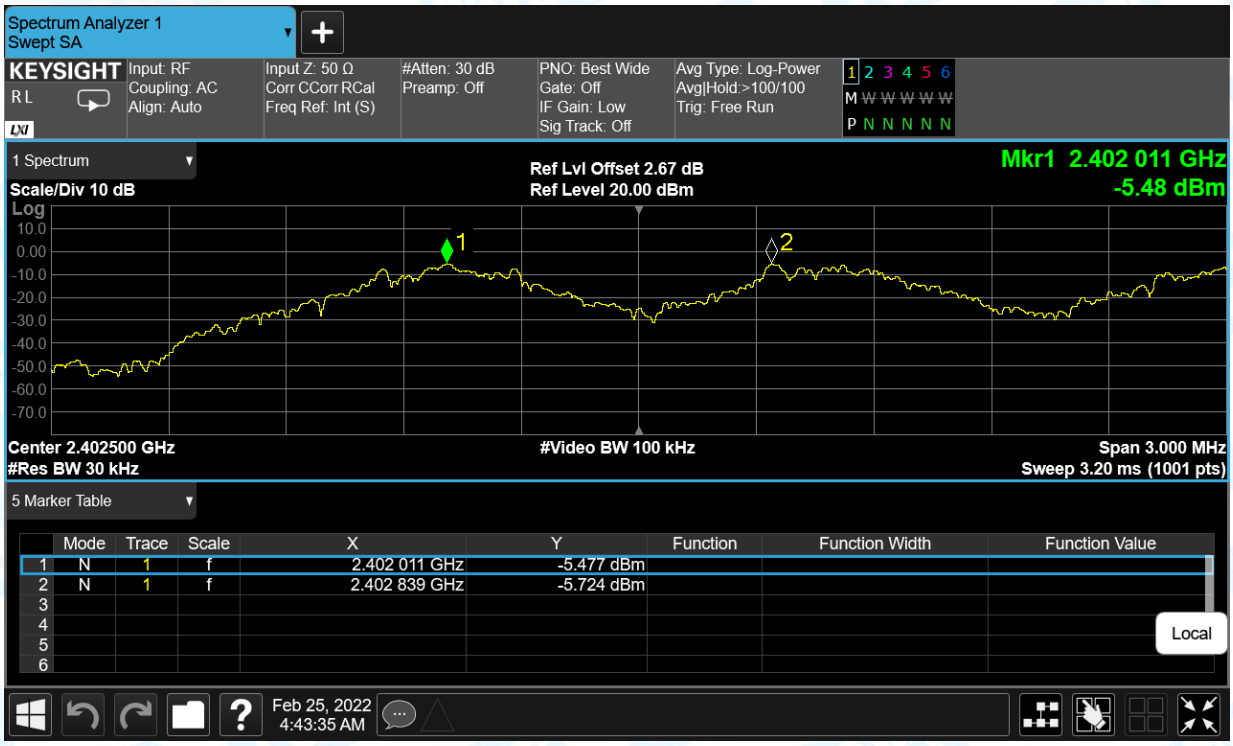
CFS NVNT 2-DH1 2441MHz Ant1



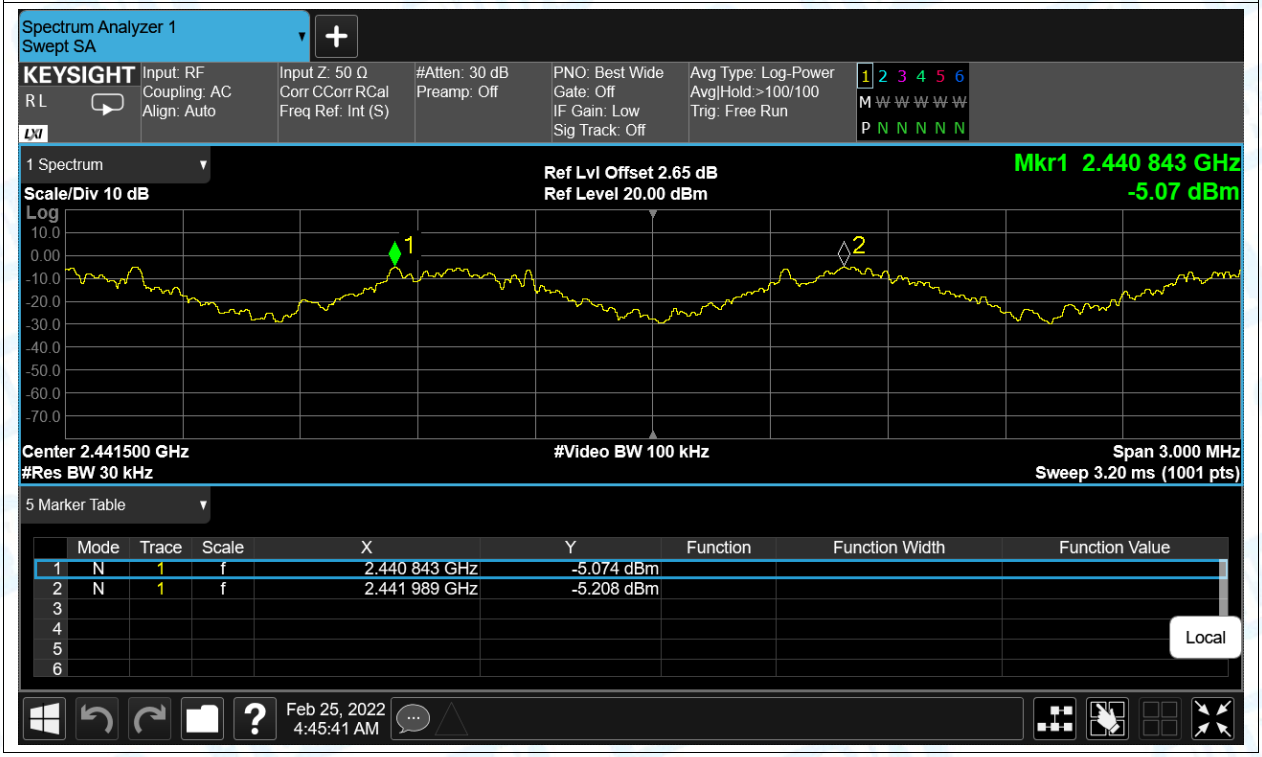

CFS NVNT 2-DH1 2480MHz Ant1



CFS NVNT 3-DH1 2402MHz Ant1




CFS NVNT 3-DH1 2441MHz Ant1



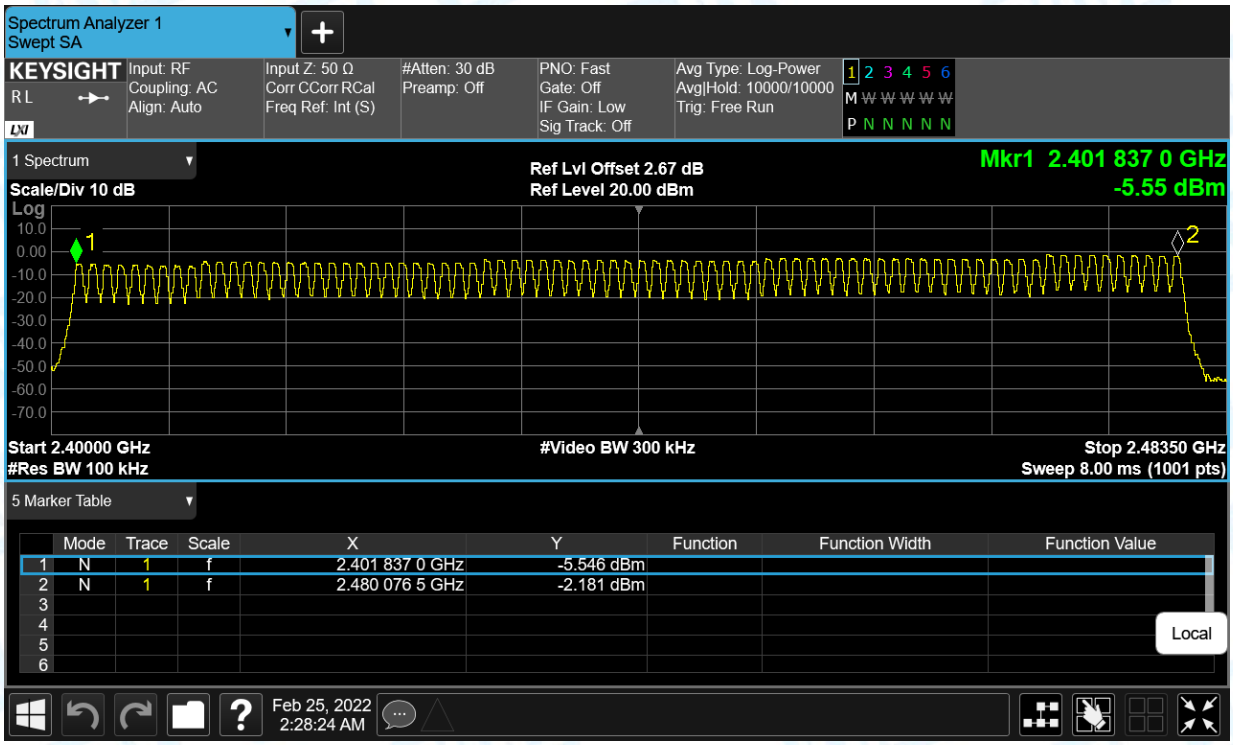
CFS NVNT 3-DH1 2480MHz Ant1

# 4. Number of Hopping Channel

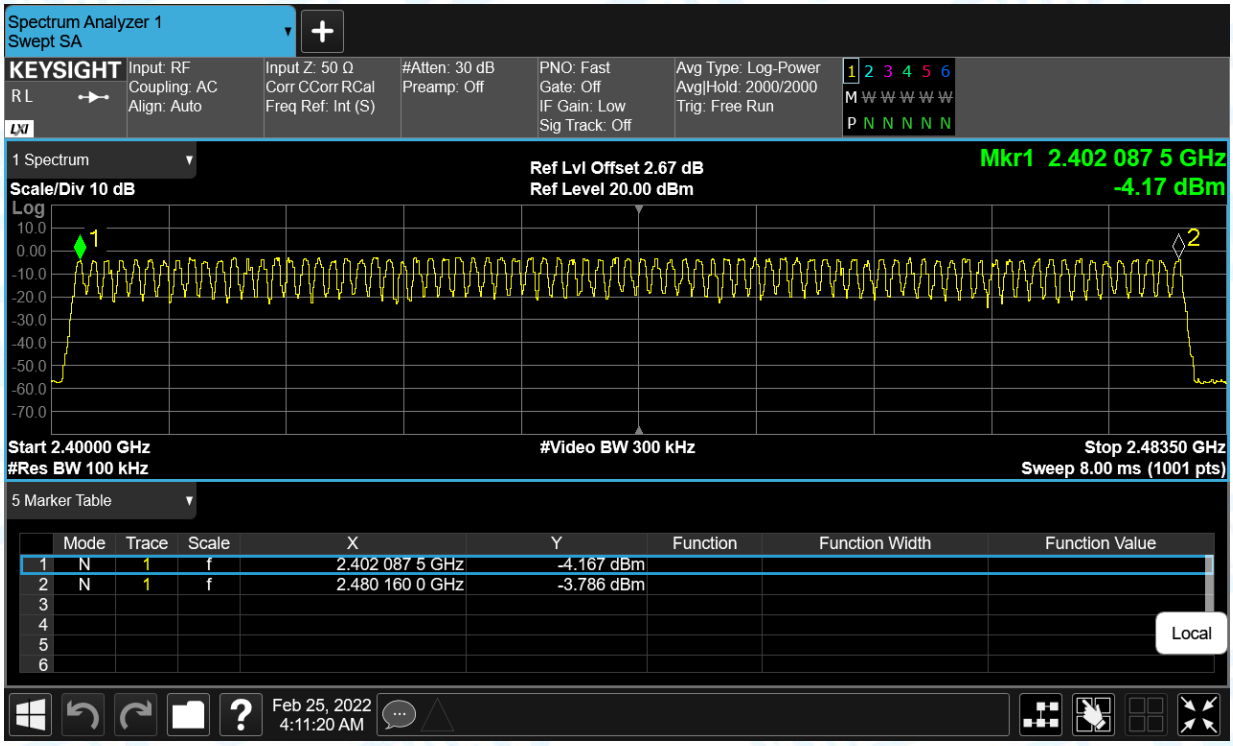
| Condition | Mode | Hopping Number | Limit | Verdict |
|---|---|---|---|---|
| NVNT | 1-DH1 | 79 | 15 | Pass |
| NVNT | 2-DH1 | 79 | 15 | Pass |
| NVNT | 3-DH1 | 79 | 15 | Pass |

Test Graphs

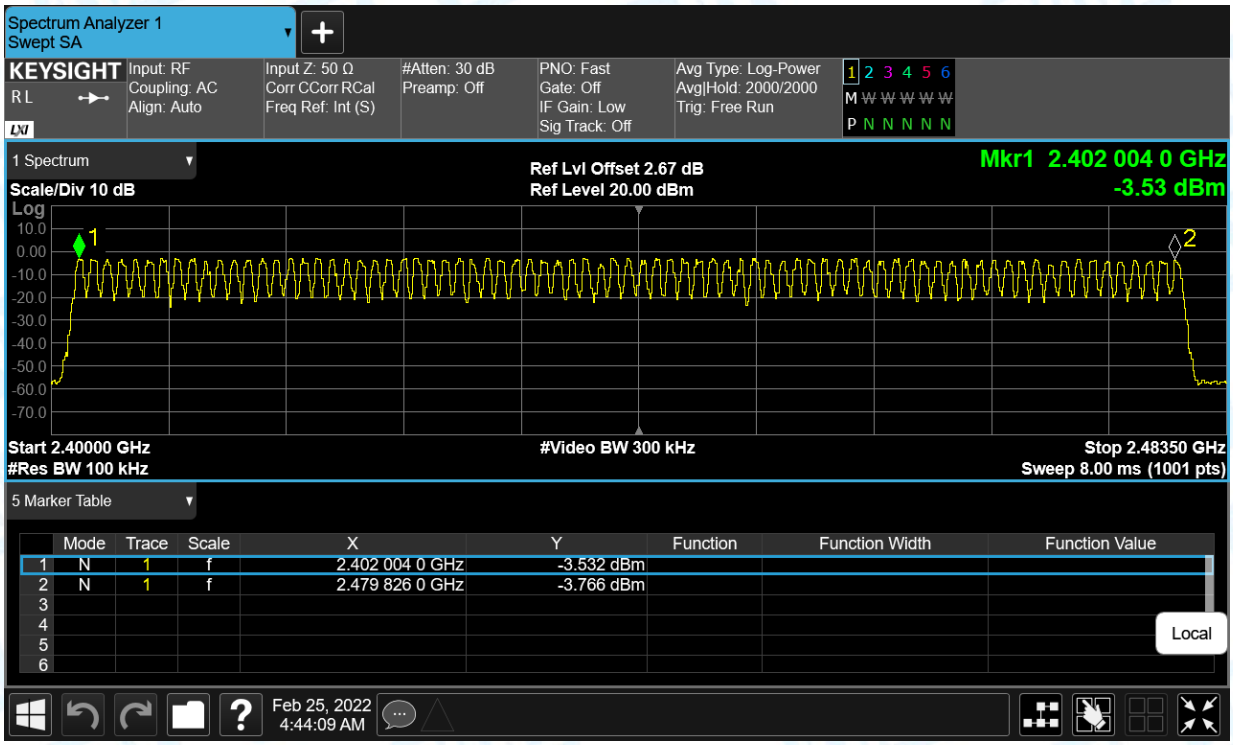
Hopping No. NVNT 1-DH1




Hopping No. NVNT 2-DH1



Hopping No. NVNT 3-DH1

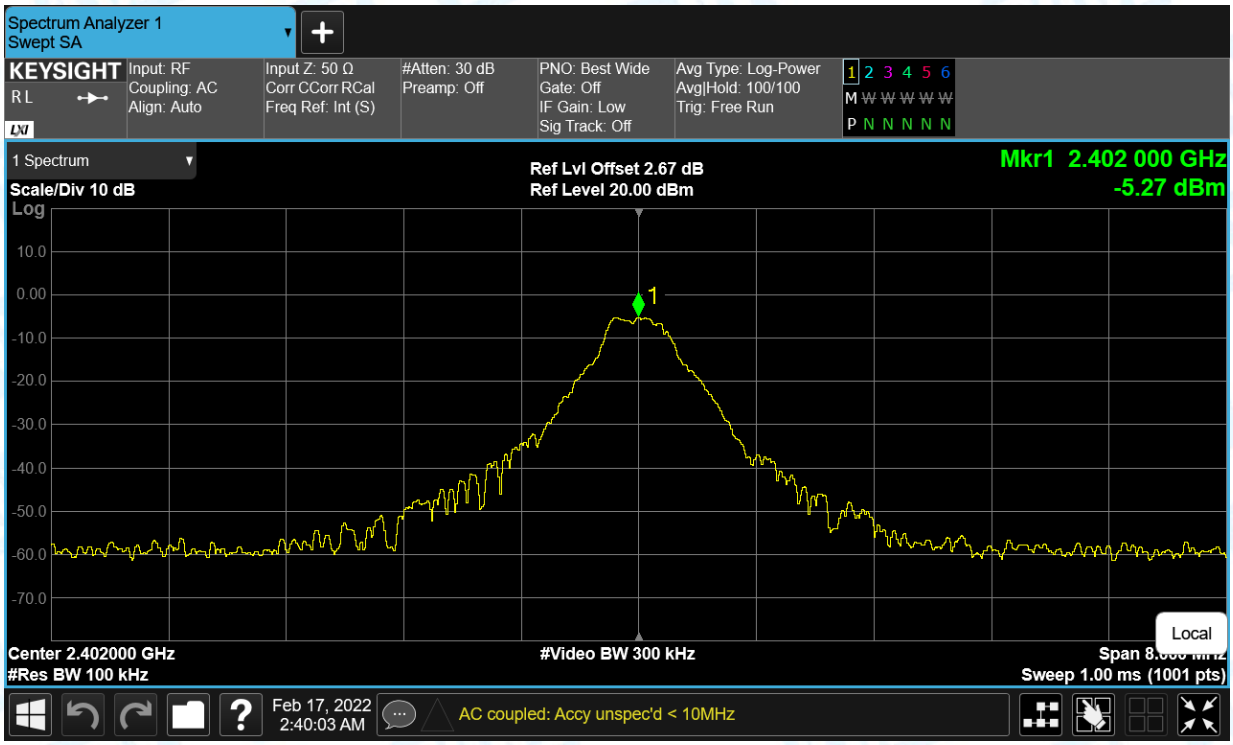


# 5. Band Edge

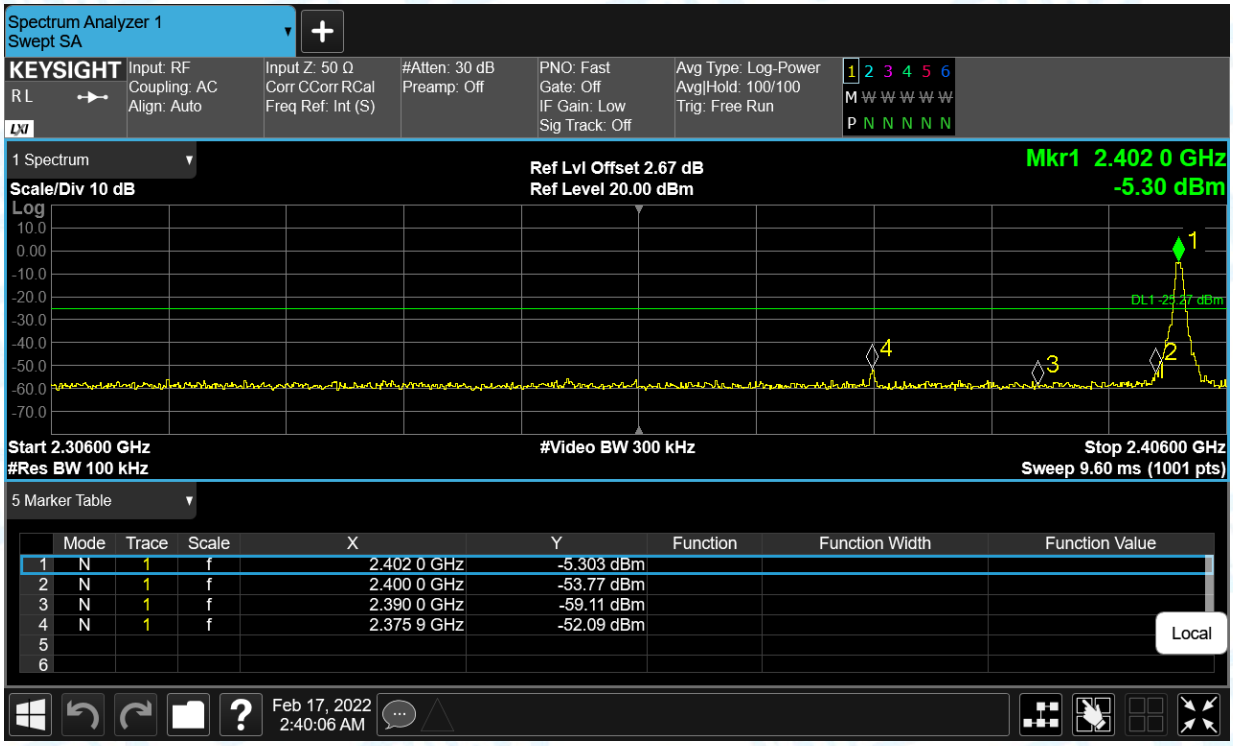
| Condition | Mode | Frequency (MHz) | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2402 | No-Hopping | -46.82 | -20 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | -51.63 | -20 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | -48.1 | -20 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | -52.86 | -20 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | -49.21 | -20 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | -53.12 | -20 | Pass |

Test Graphs

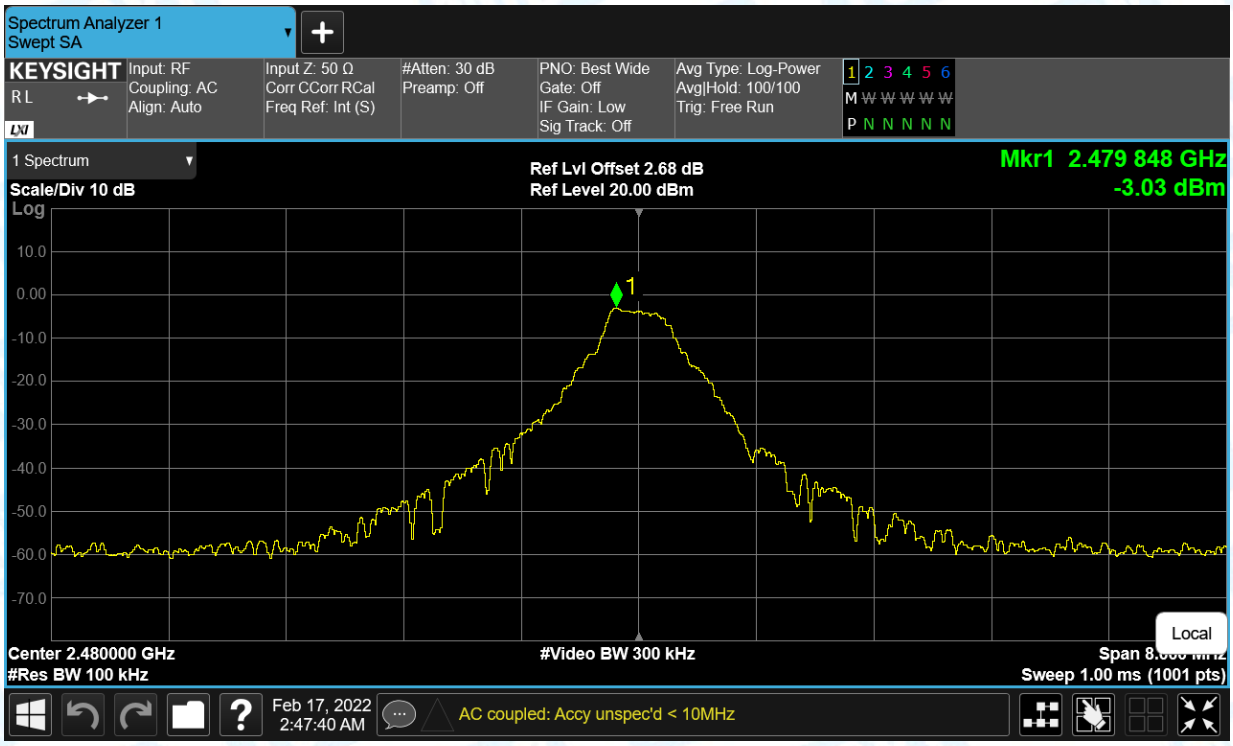
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



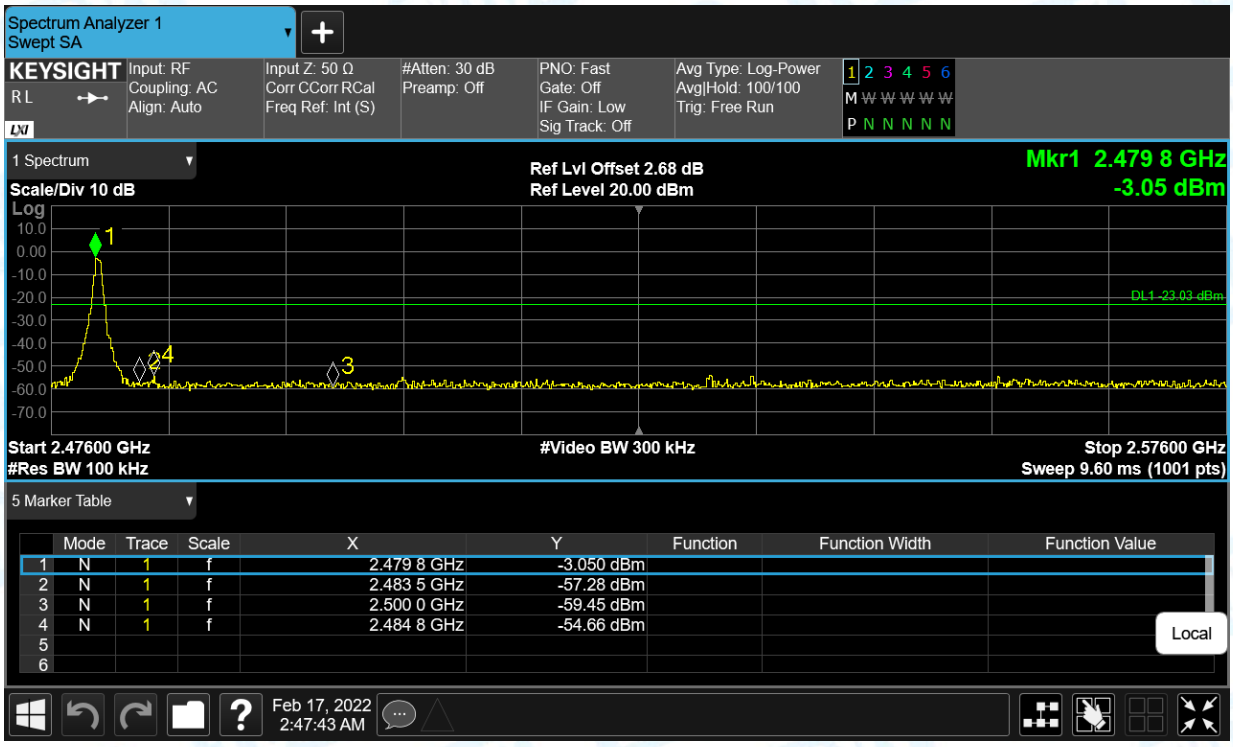

Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



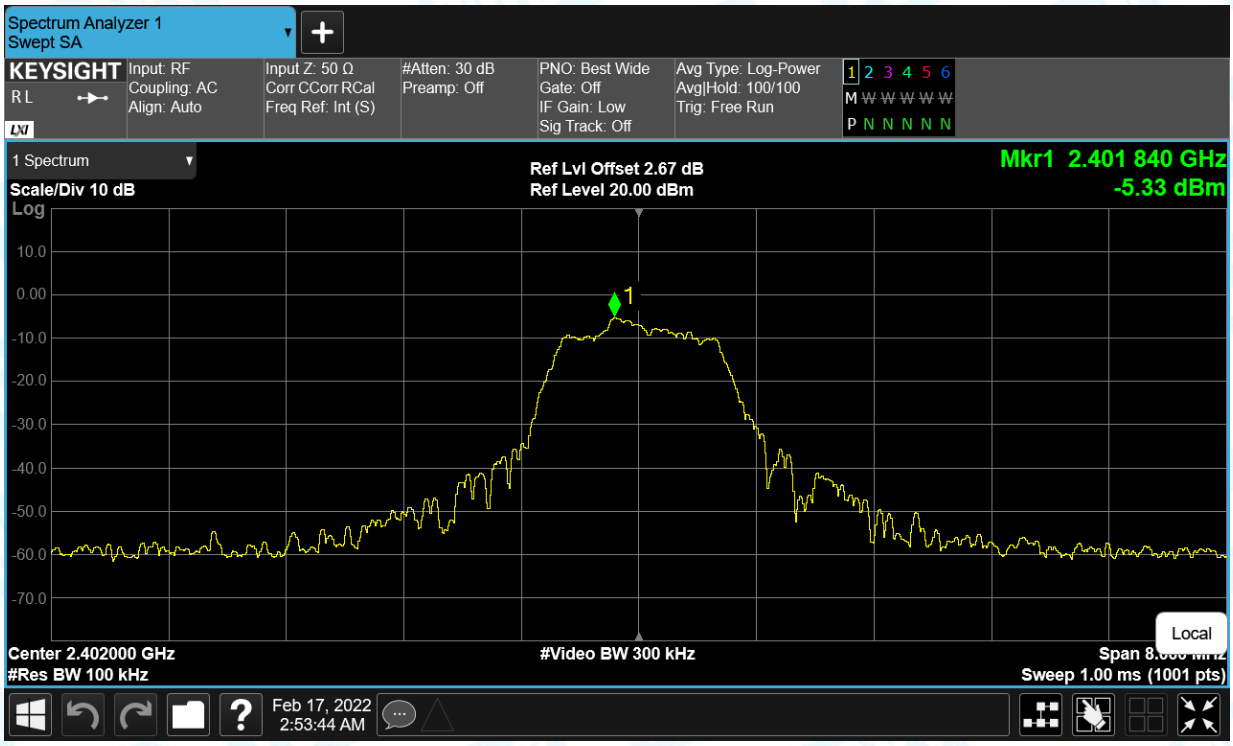
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



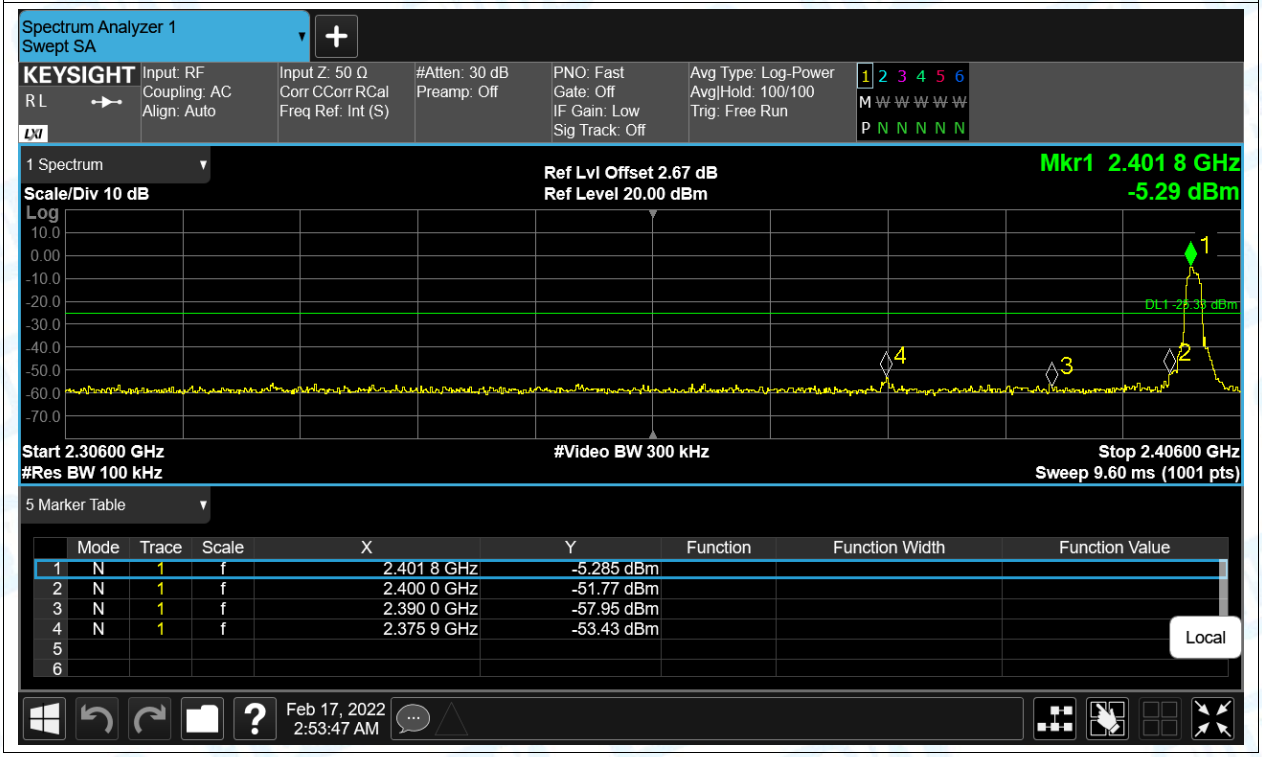

Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



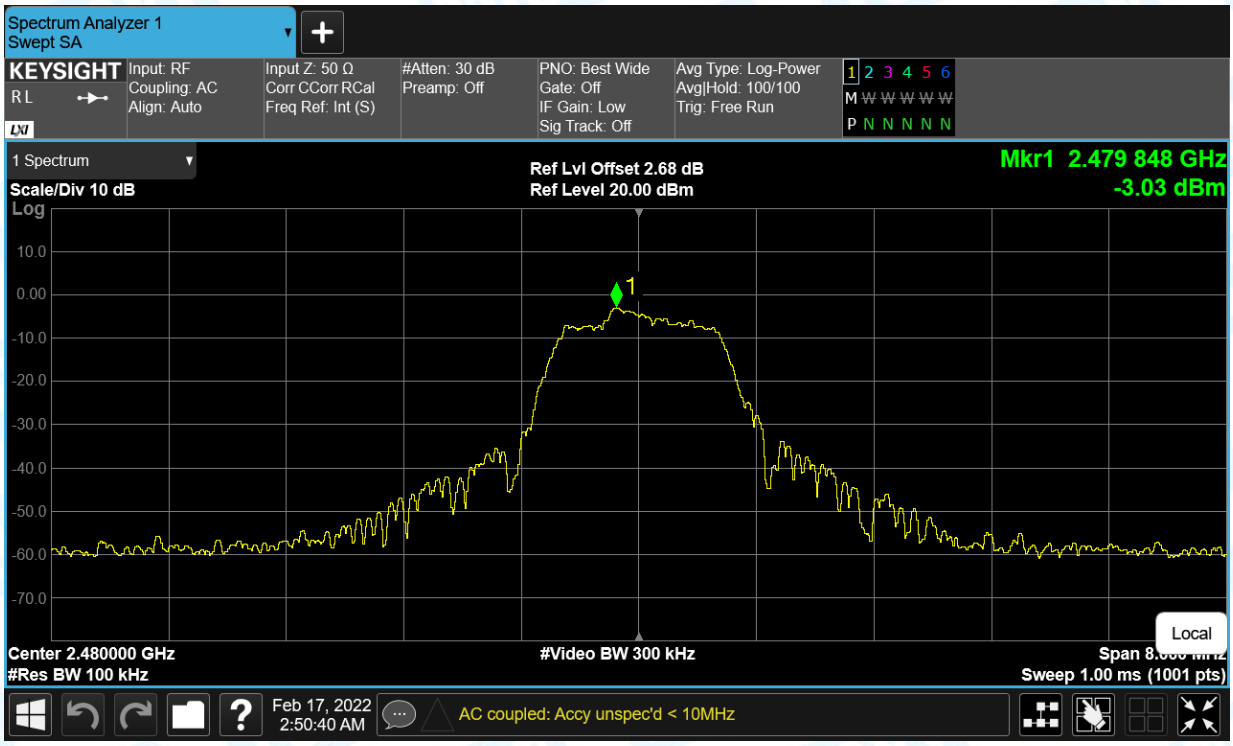
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



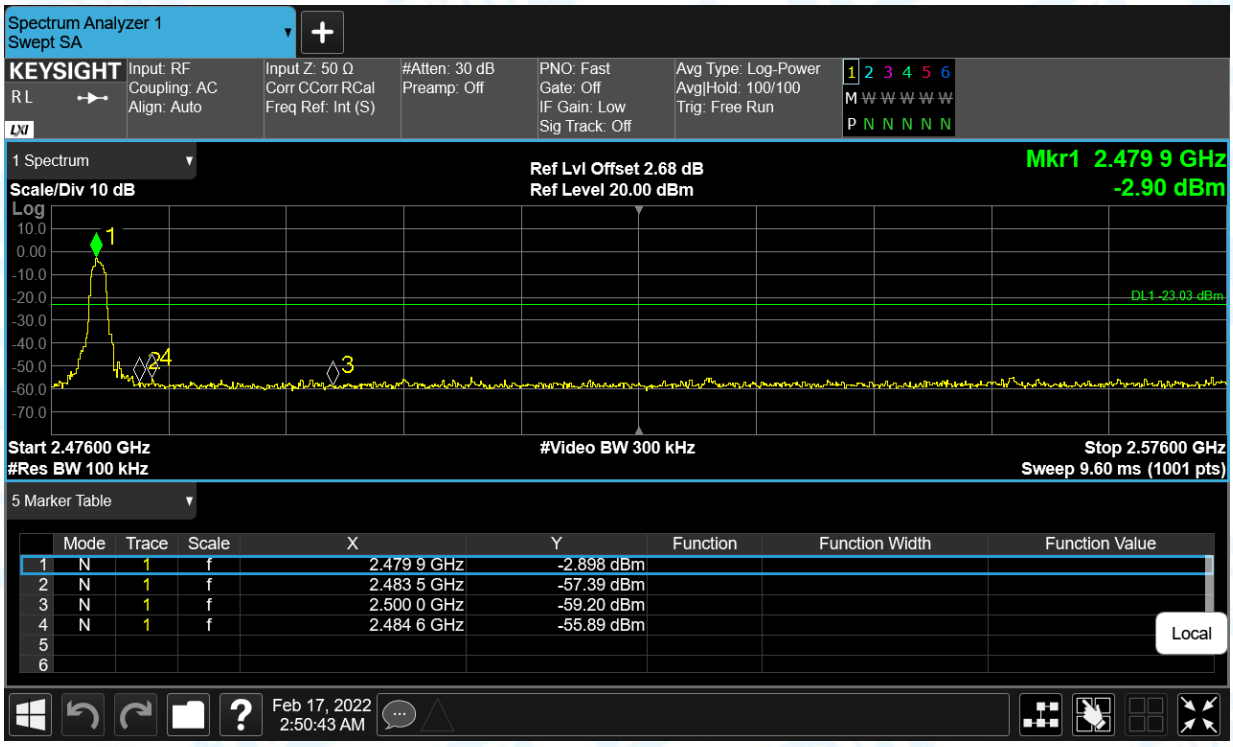

Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



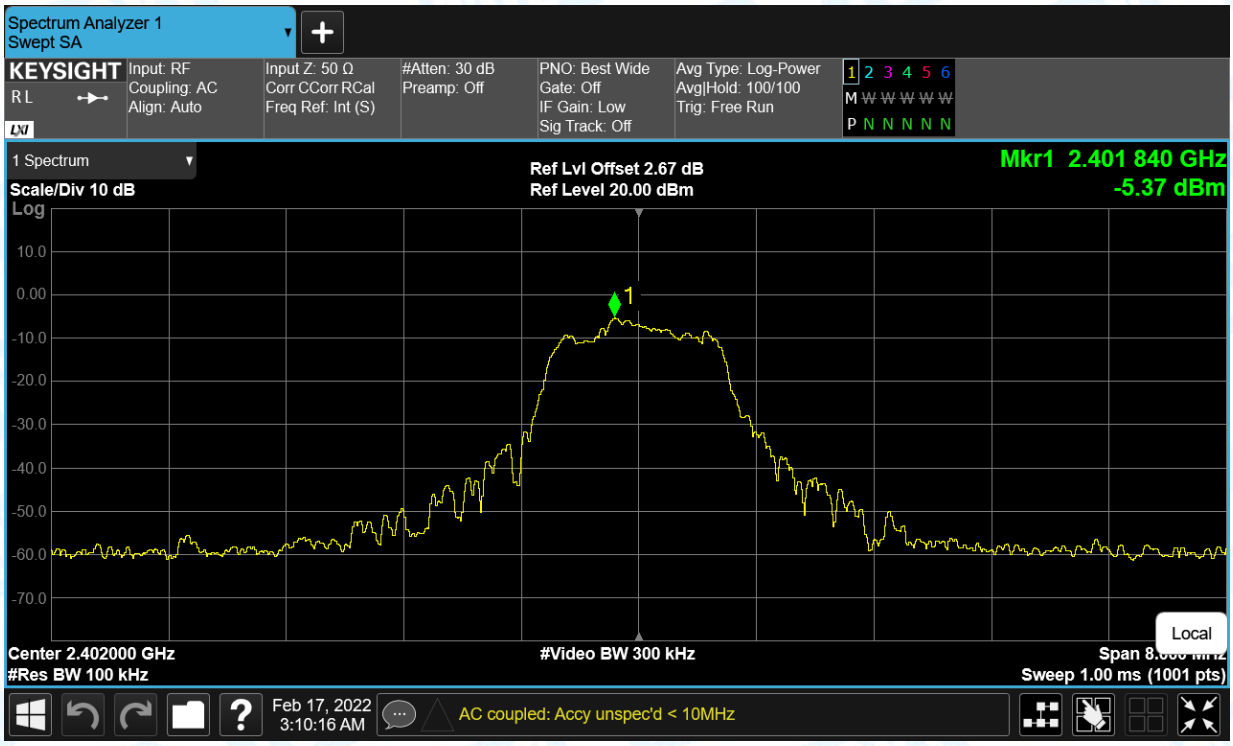
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



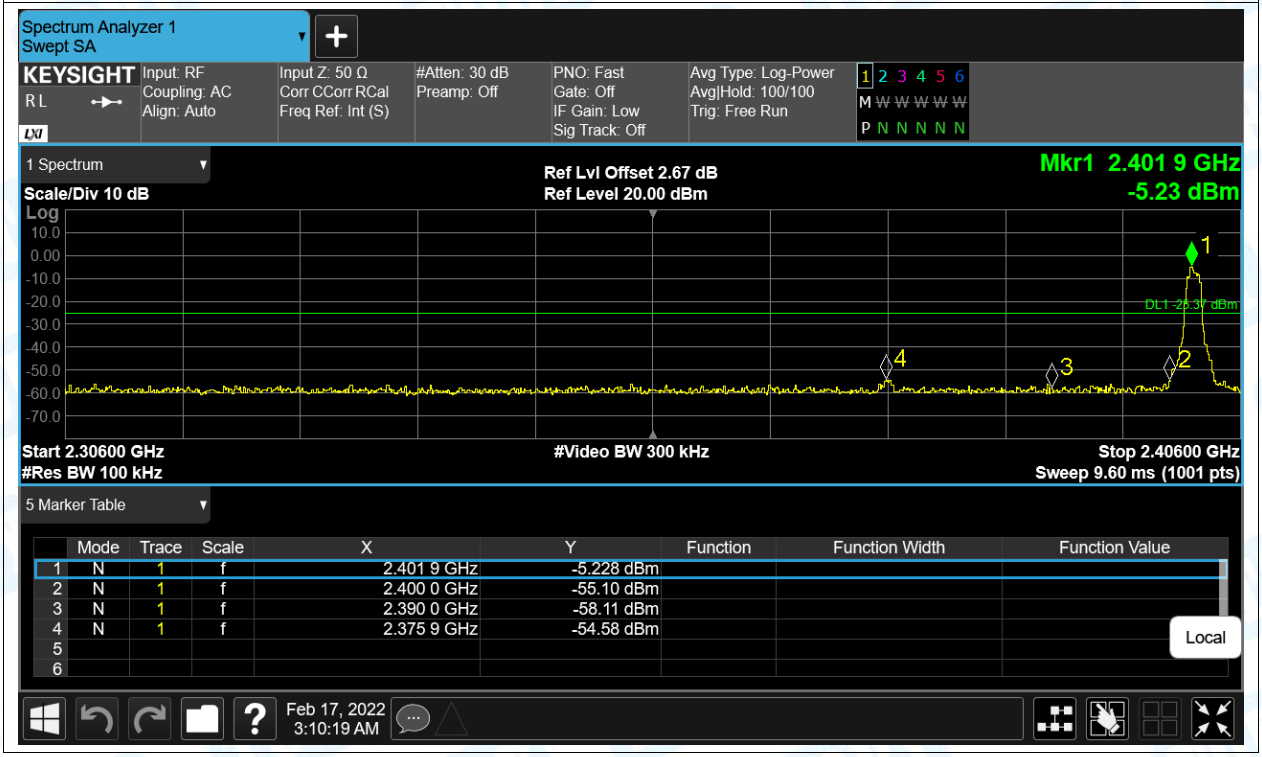

Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



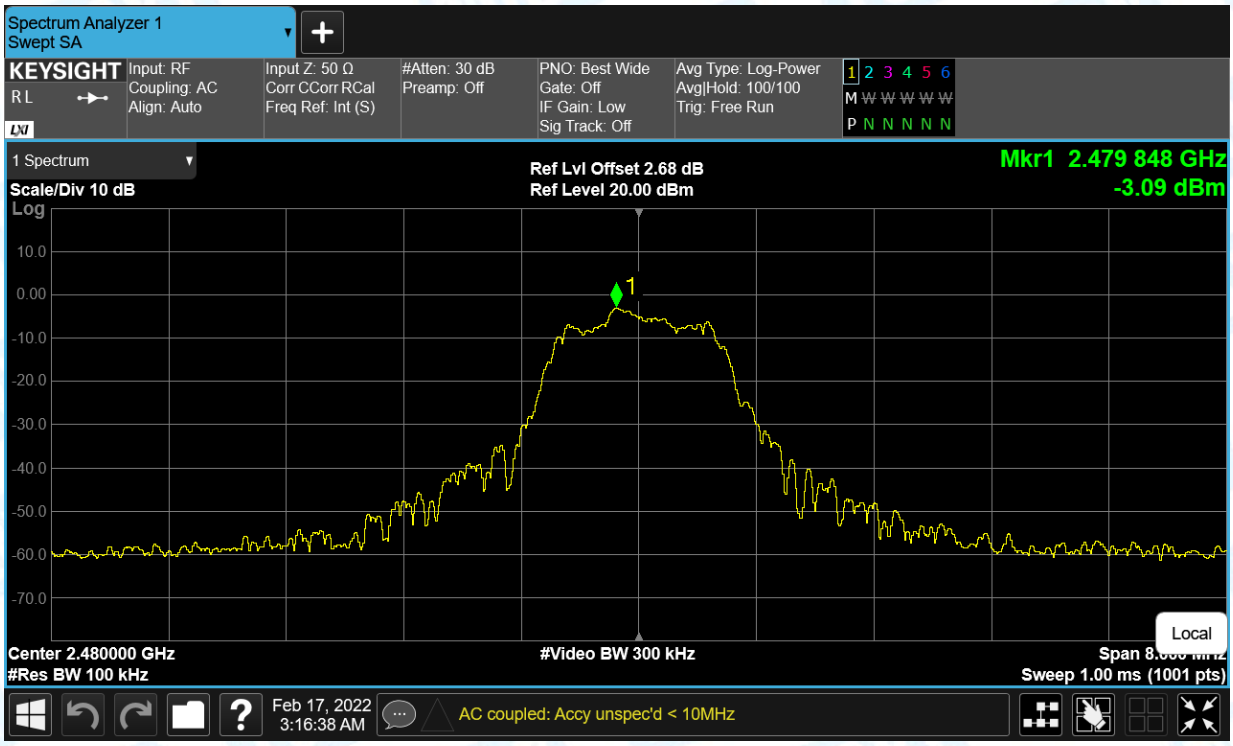
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref



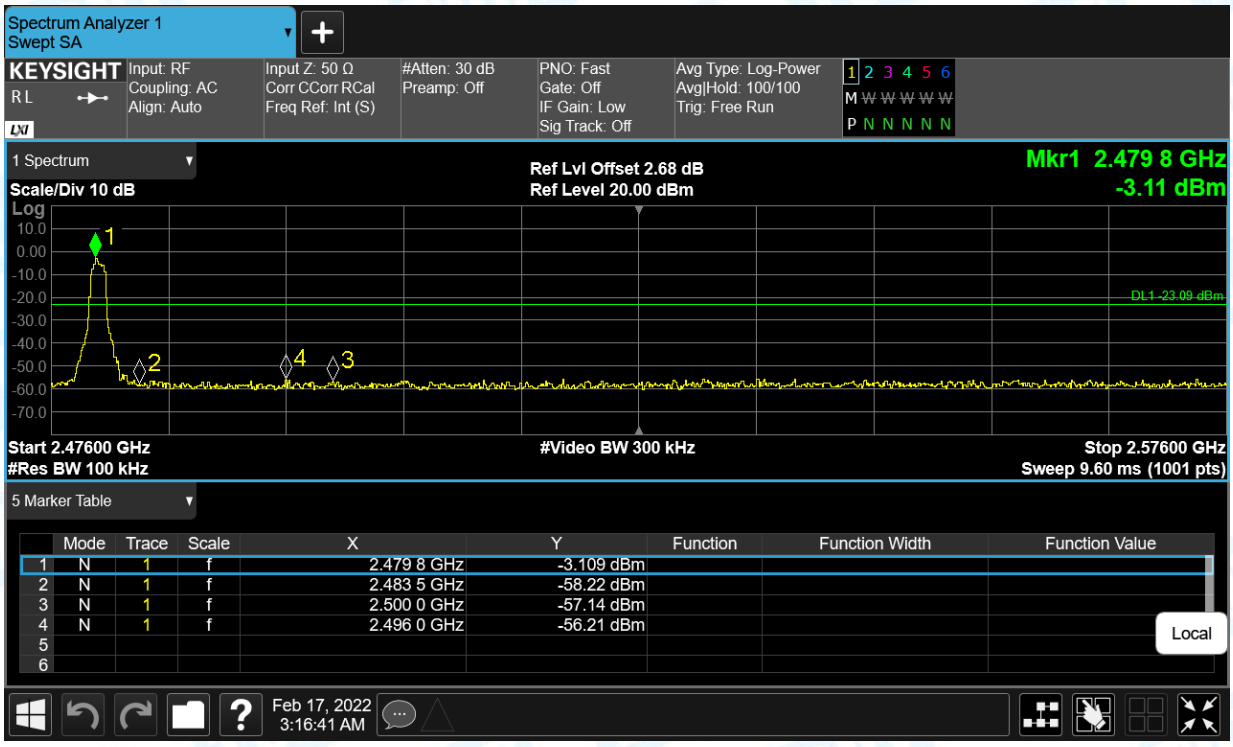

Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref




Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission

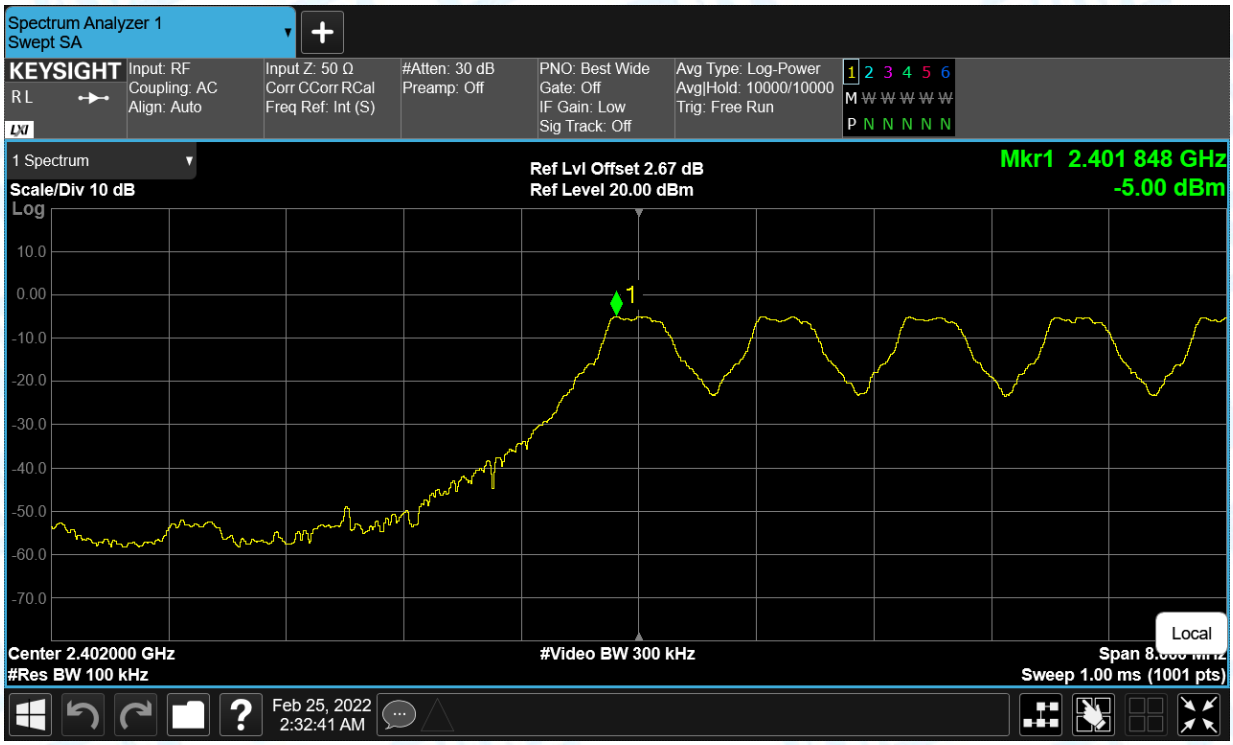


# 6. Band Edge(Hopping)

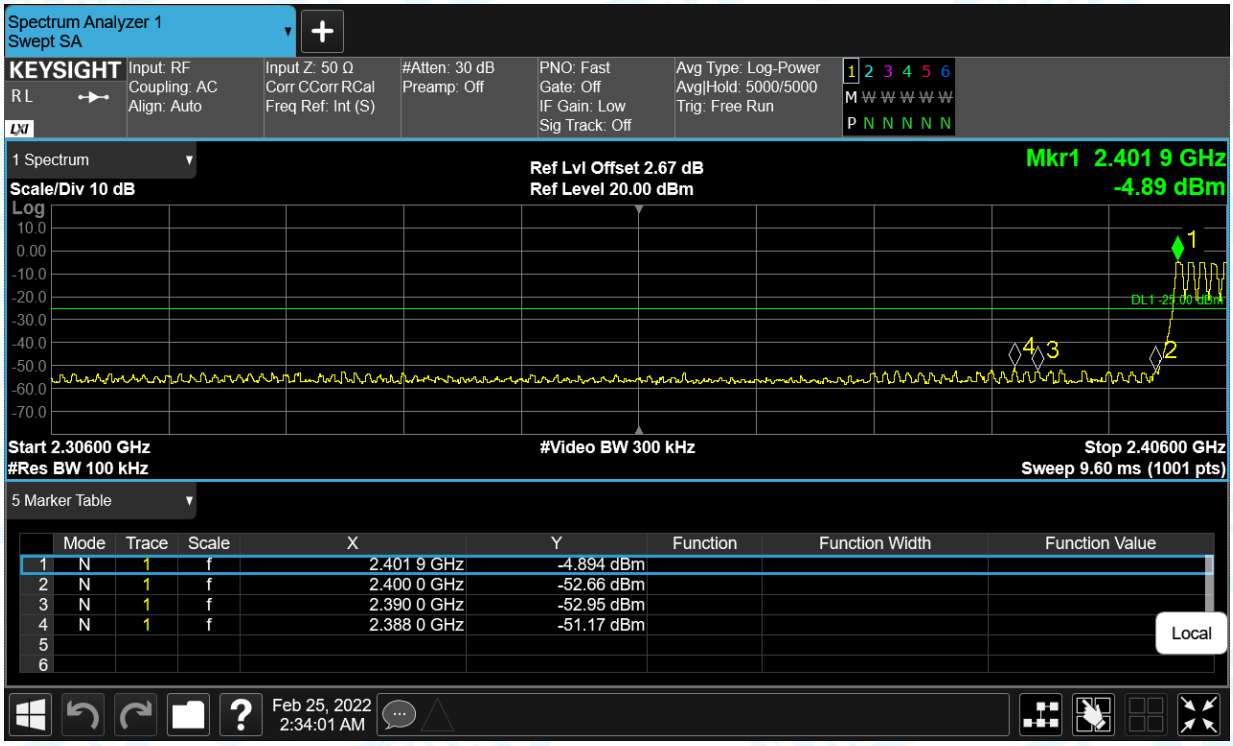
| Condition | Mode | Frequency (MHz) | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2402 | Hopping | -46.17 | -20 | Pass |
| NVNT | 1-DH1 | 2480 | Hopping | -51.74 | -20 | Pass |
| NVNT | 2-DH1 | 2402 | Hopping | -51.49 | -20 | Pass |
| NVNT | 2-DH1 | 2480 | Hopping | -51.16 | -20 | Pass |
| NVNT | 3-DH1 | 2402 | Hopping | -52.32 | -20 | Pass |
| NVNT | 3-DH1 | 2480 | Hopping | -51.73 | -20 | Pass |

Test Graphs

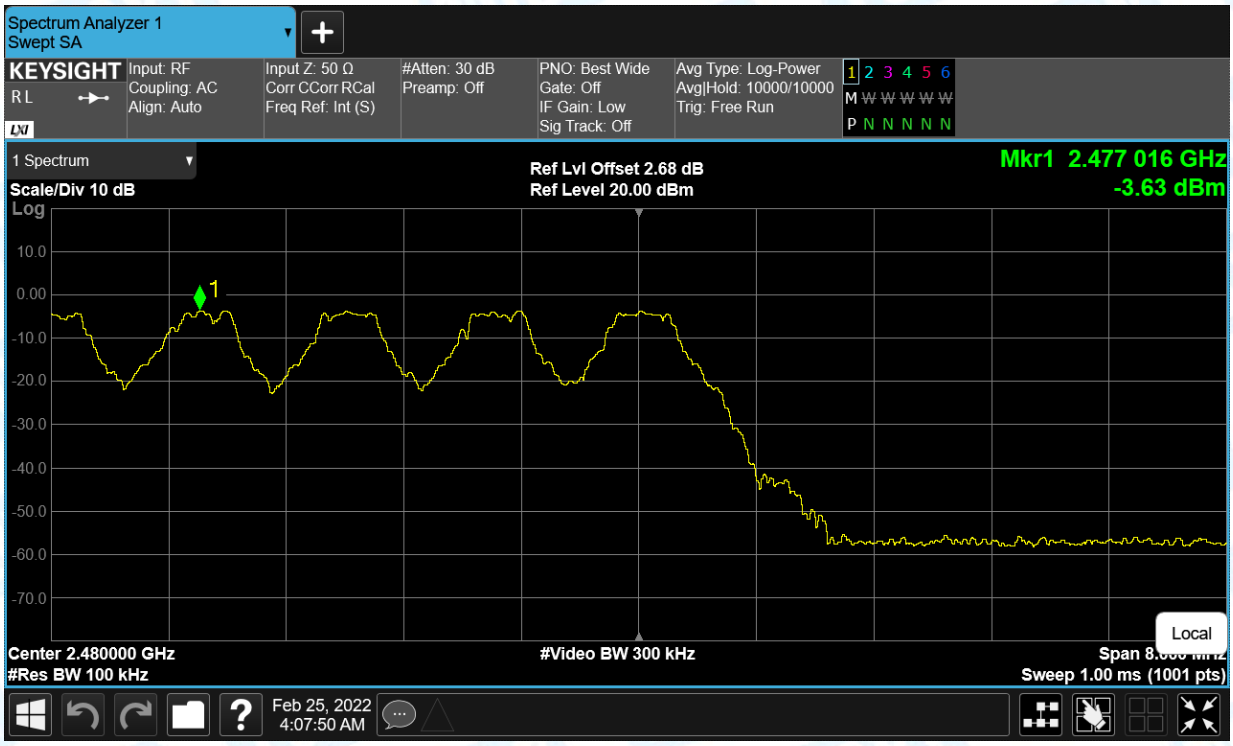
Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



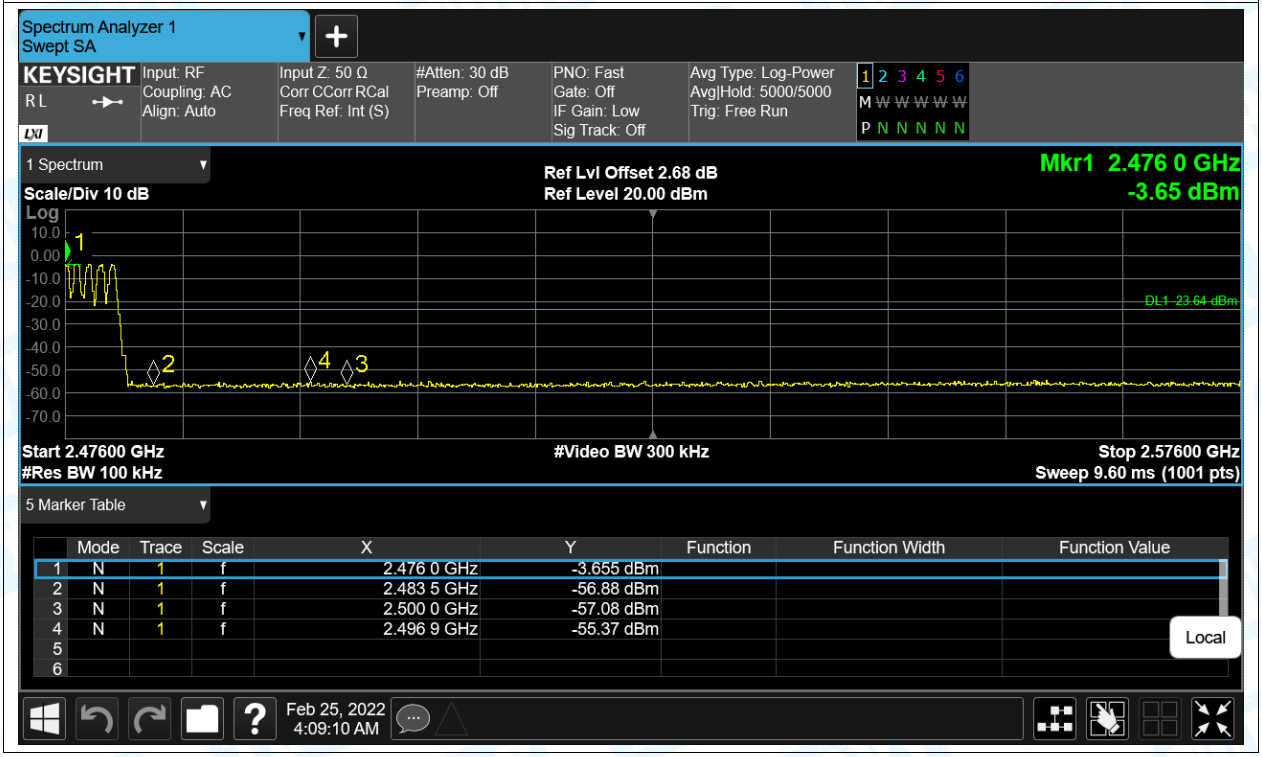

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



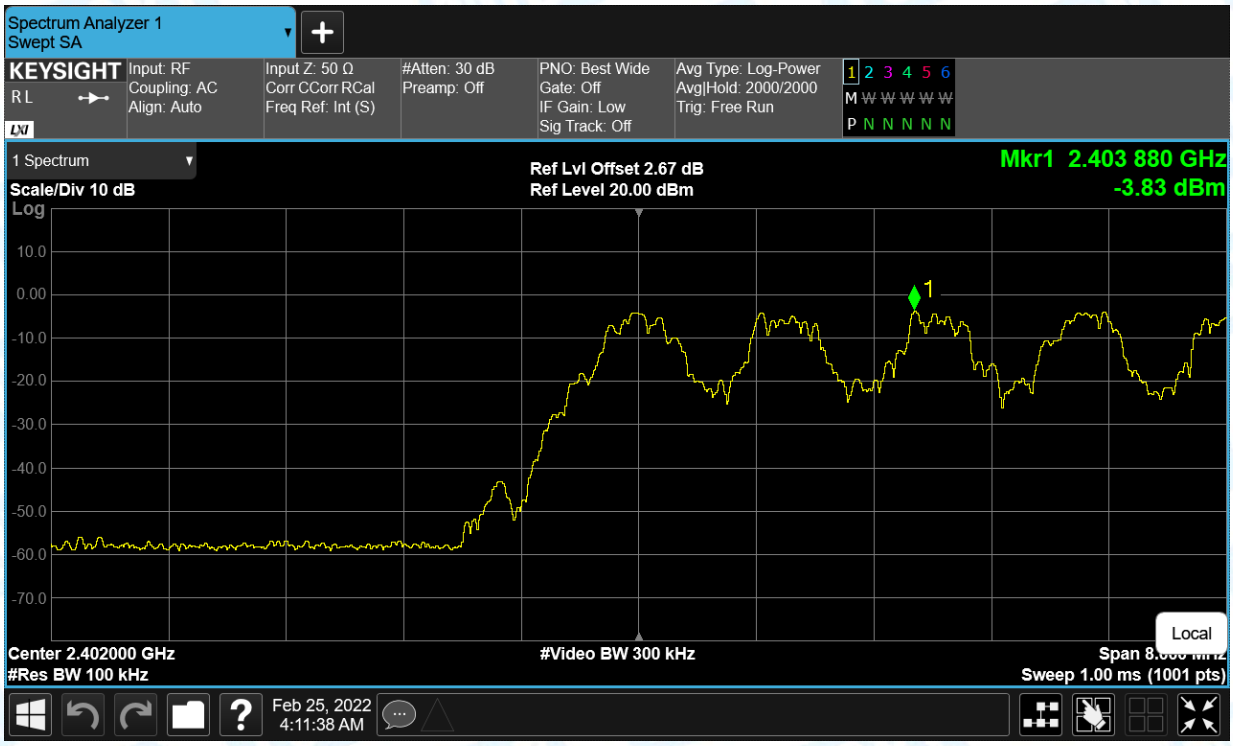
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



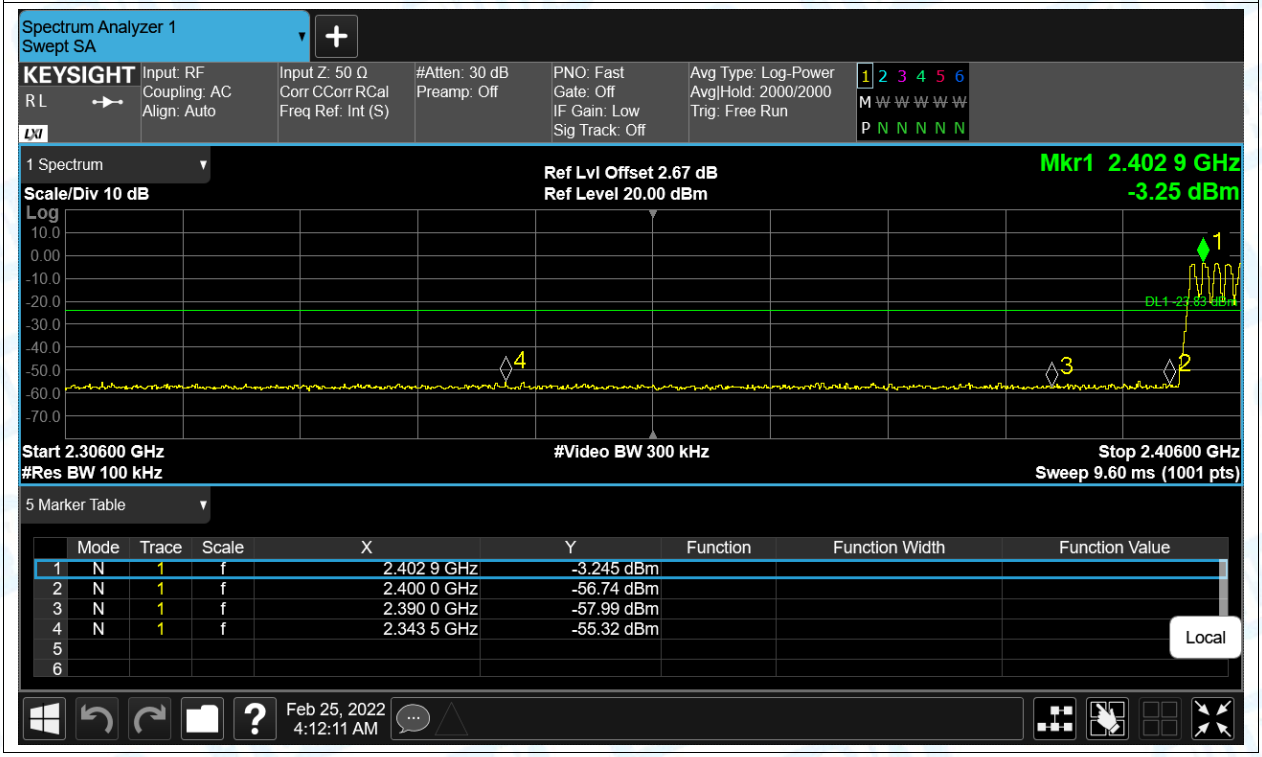

Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



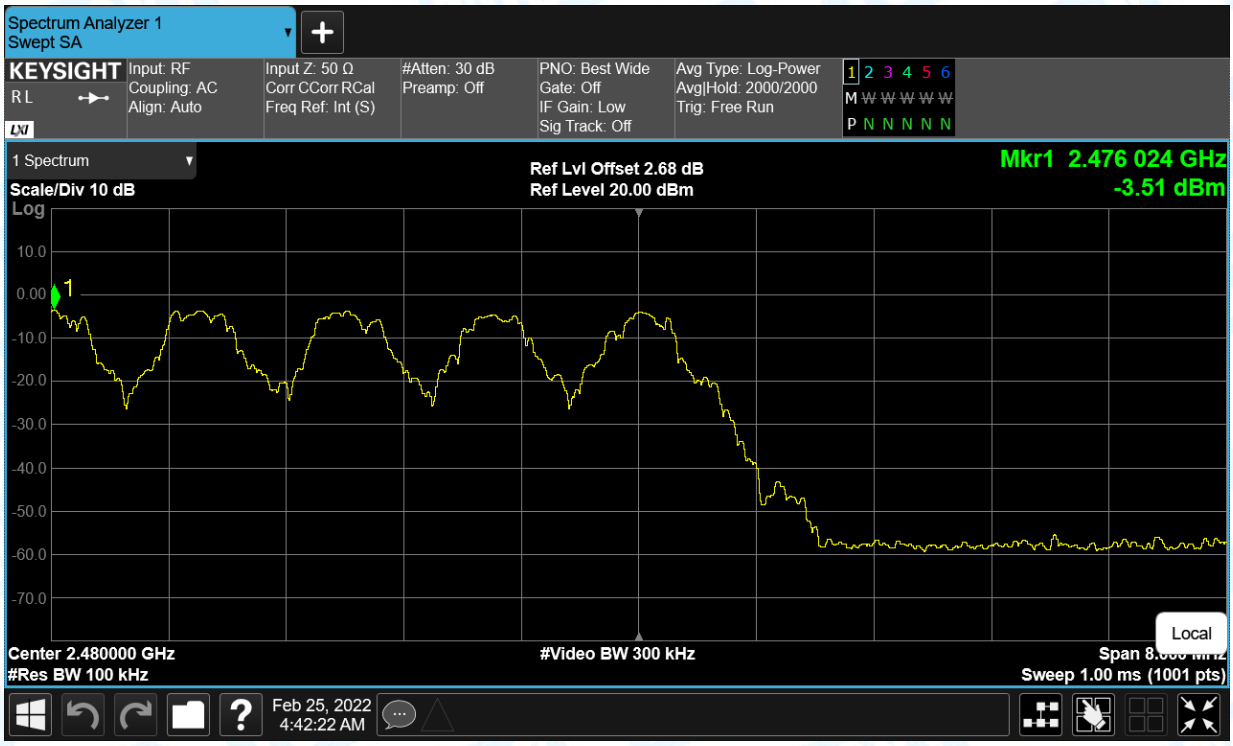
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



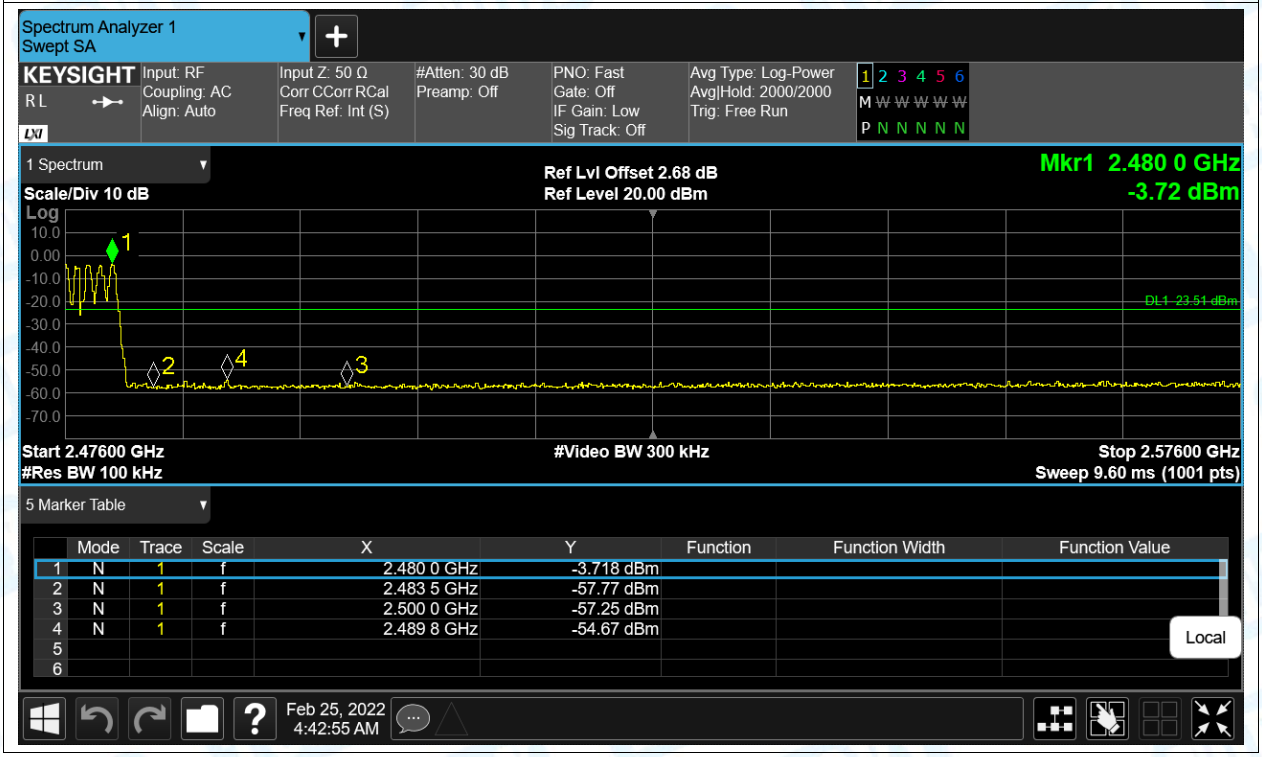

Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



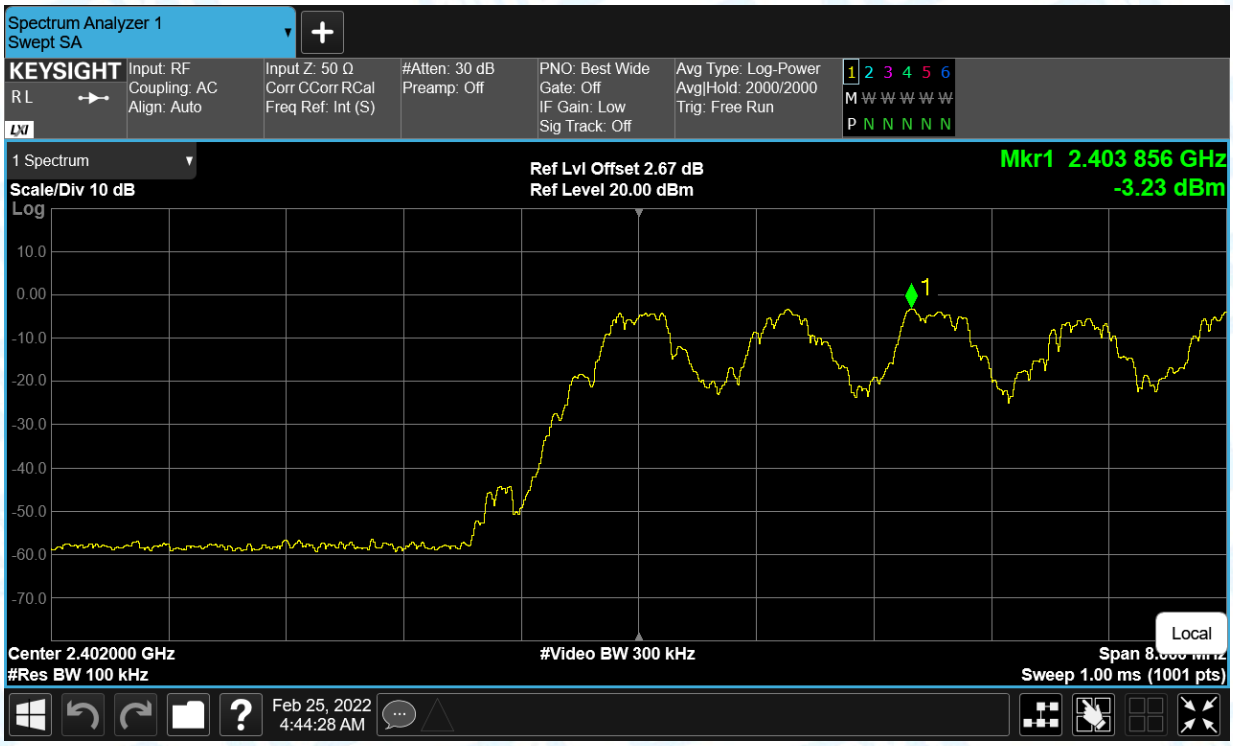
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



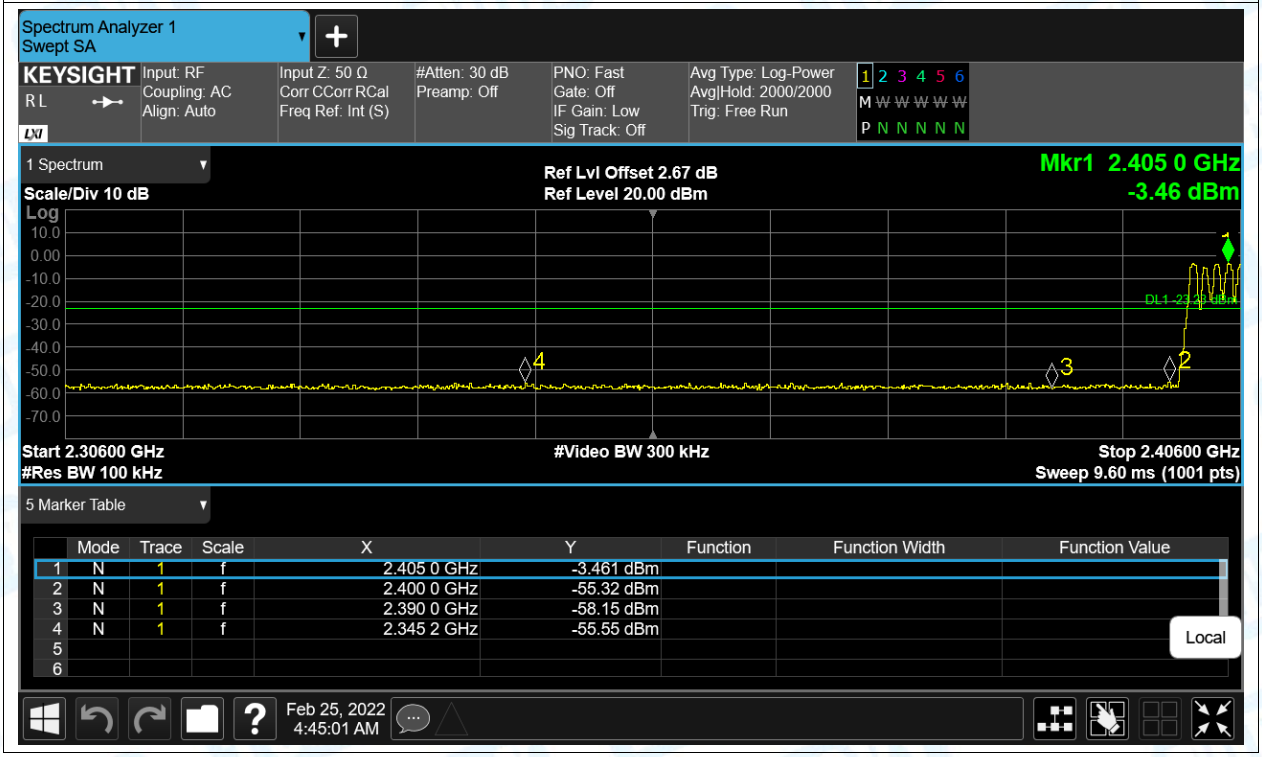

Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



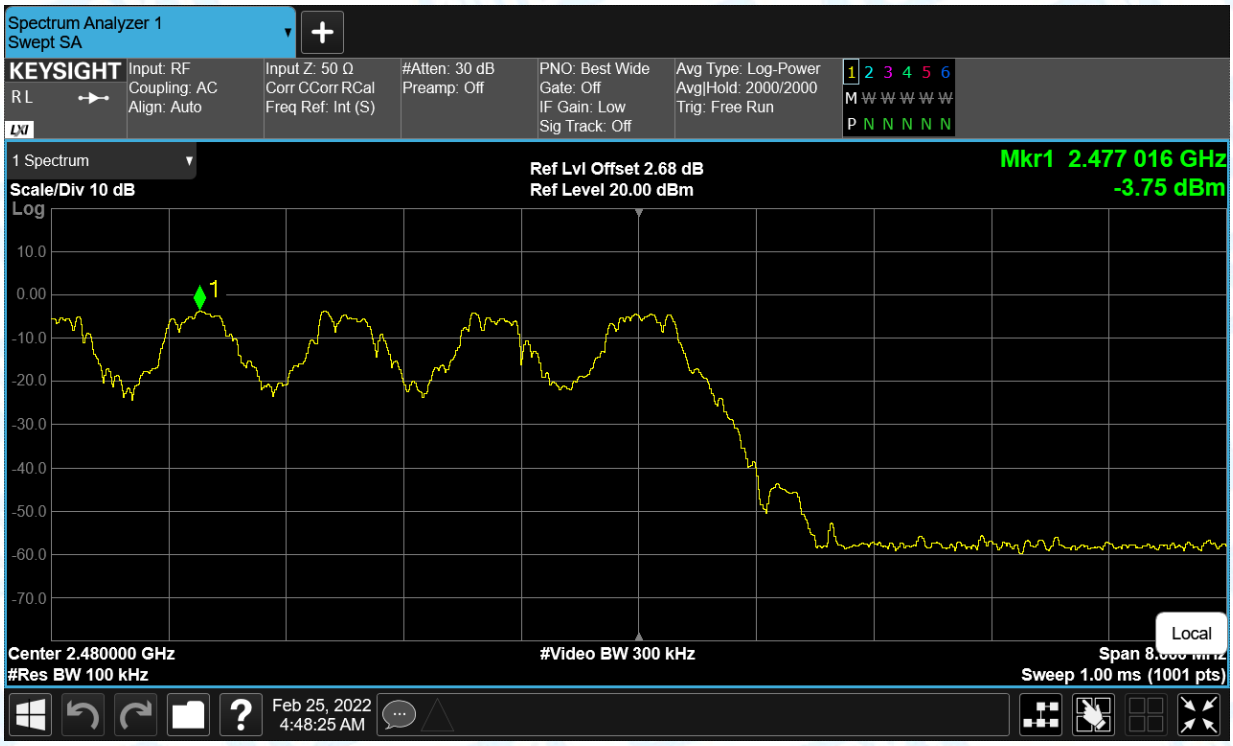
Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



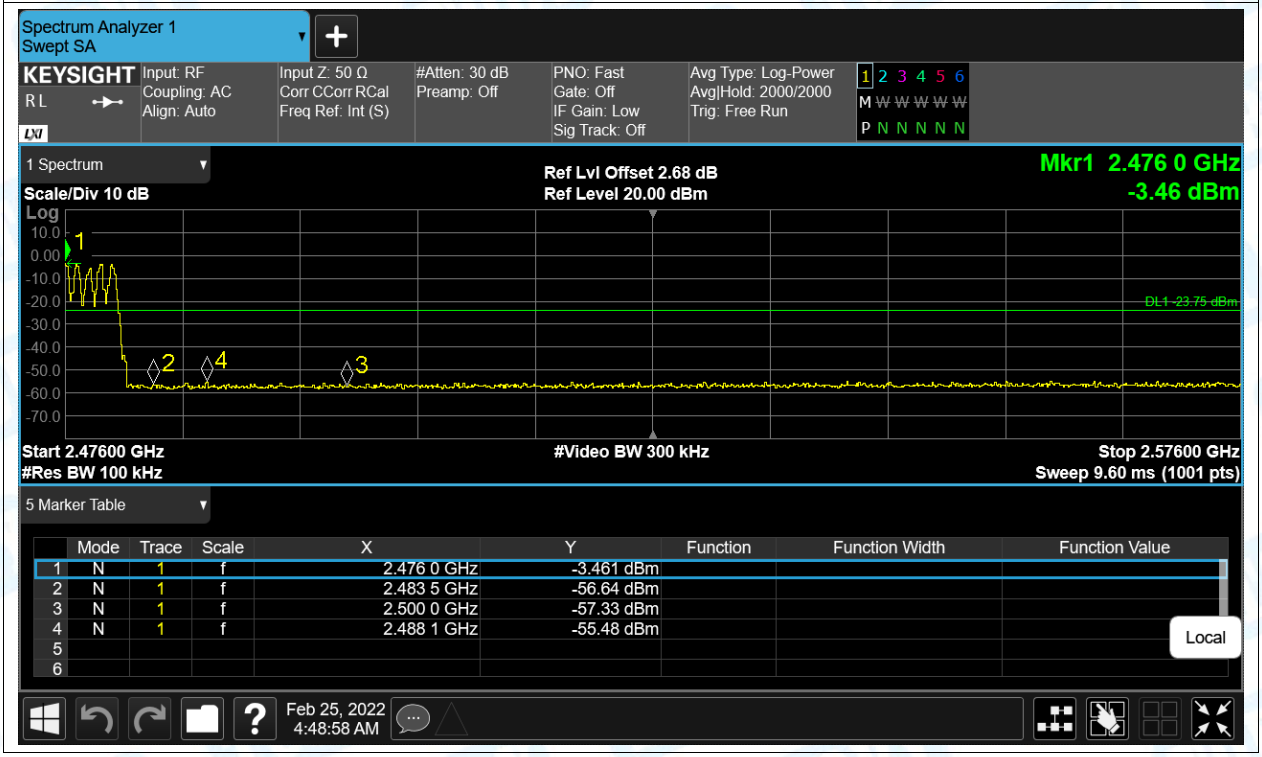

Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref




Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission

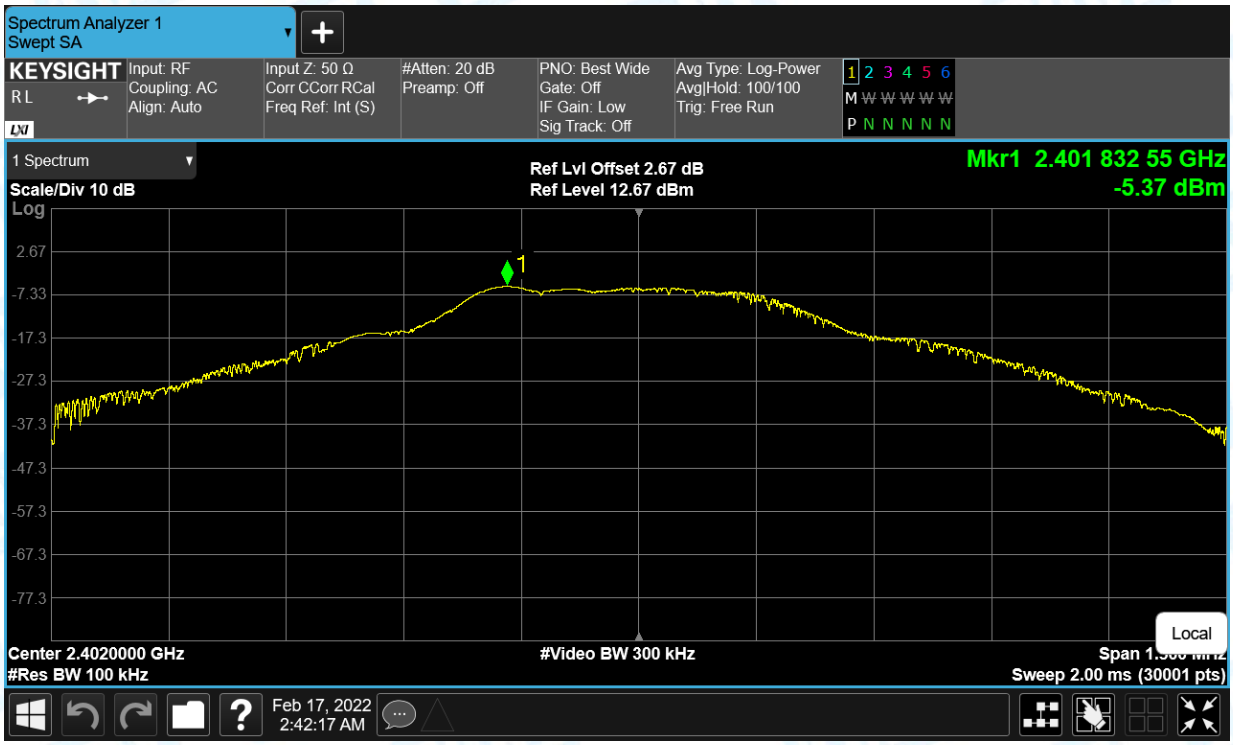


# 7. Conducted RF Spurious Emission

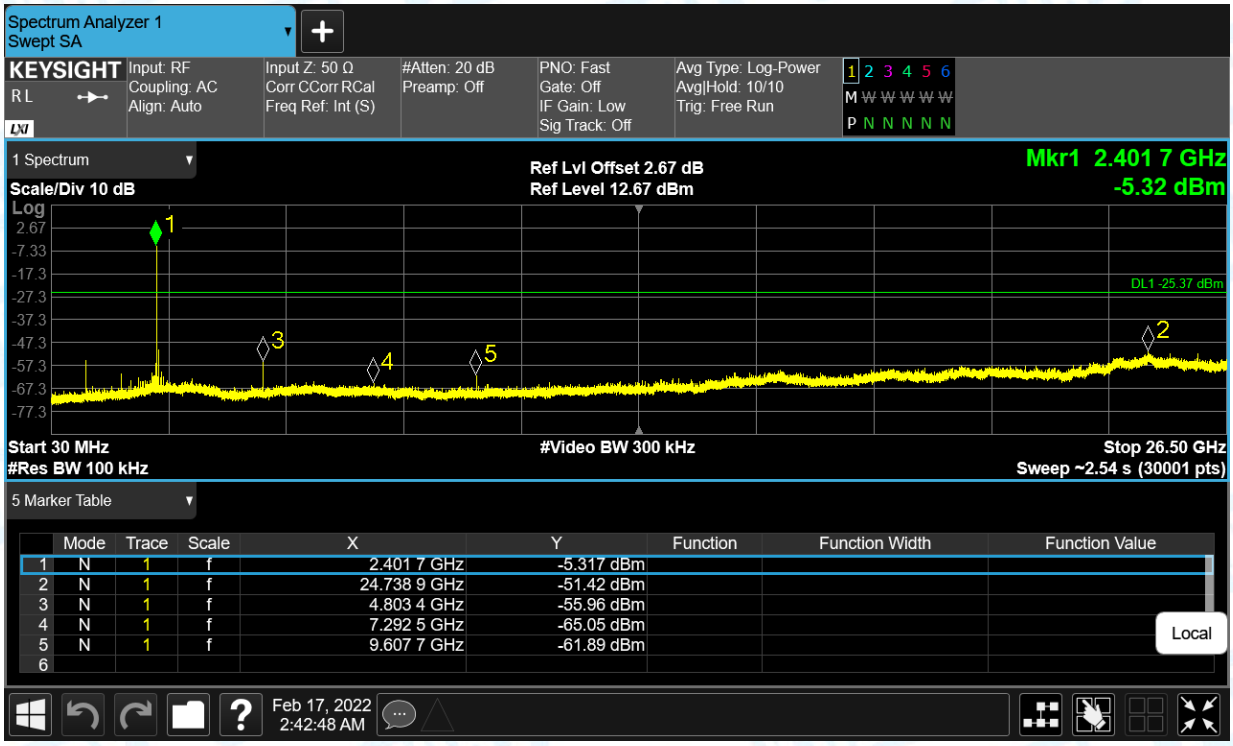
| Condition | Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2402 | -46.05 | -20 | Pass |
| NVNT | 1-DH1 | 2441 | -45.77 | -20 | Pass |
| NVNT | 1-DH1 | 2480 | -46.6 | -20 | Pass |
| NVNT | 2-DH1 | 2402 | -32.72 | -20 | Pass |
| NVNT | 2-DH1 | 2441 | -45.24 | -20 | Pass |
| NVNT | 2-DH1 | 2480 | -46.67 | -20 | Pass |
| NVNT | 3-DH1 | 2402 | -45.9 | -20 | Pass |
| NVNT | 3-DH1 | 2441 | -46.27 | -20 | Pass |
| NVNT | 3-DH1 | 2480 | -46.88 | -20 | Pass |

Test Graphs

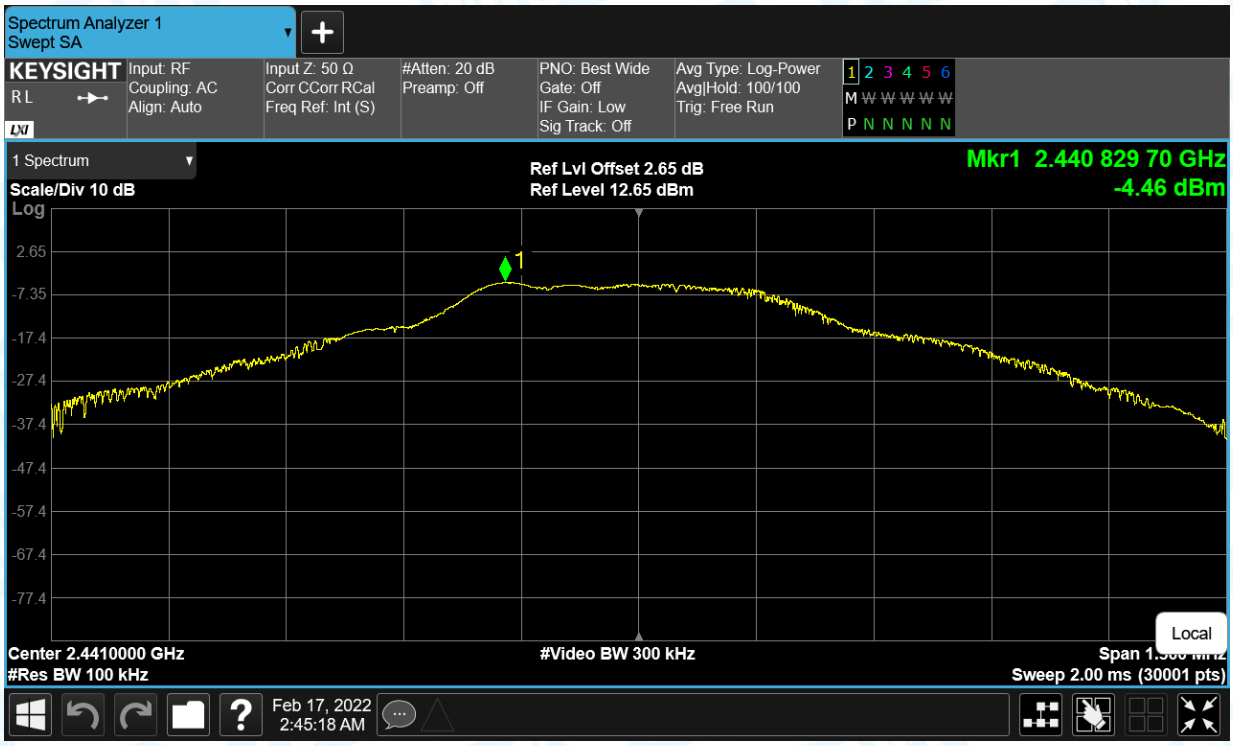
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



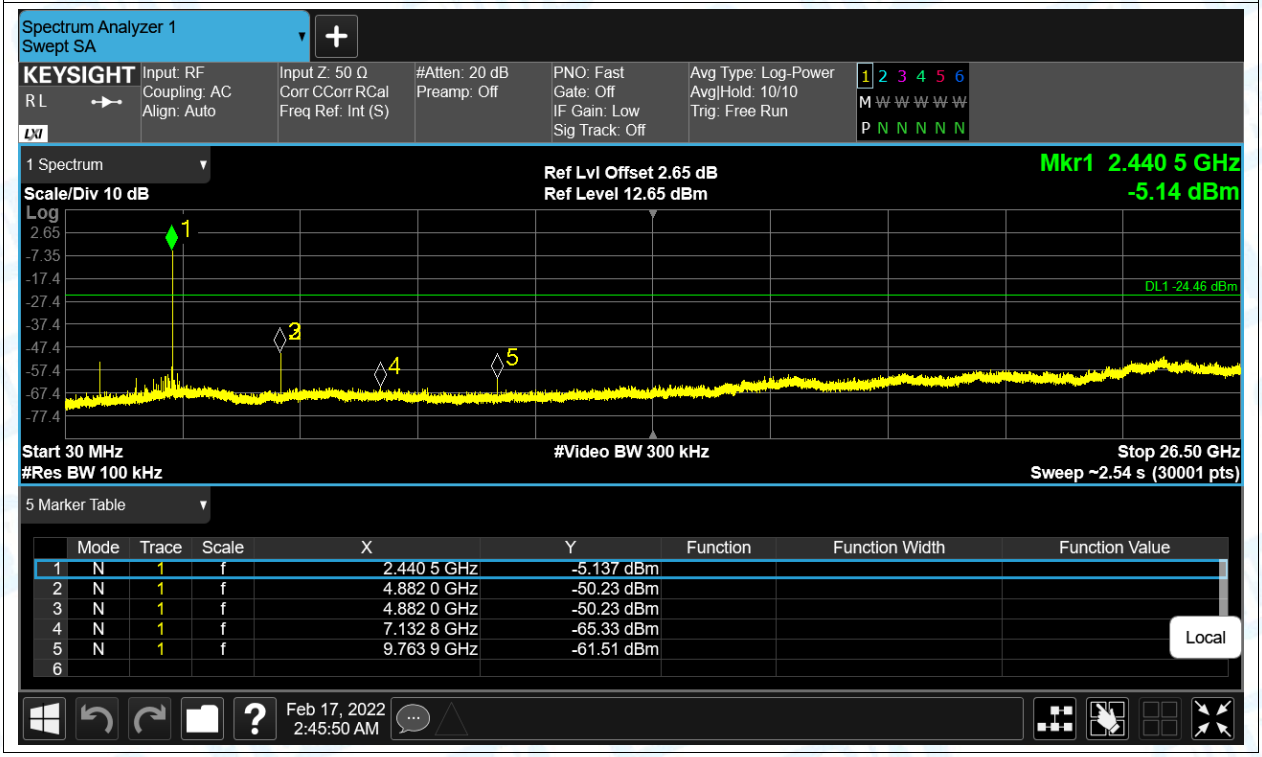

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



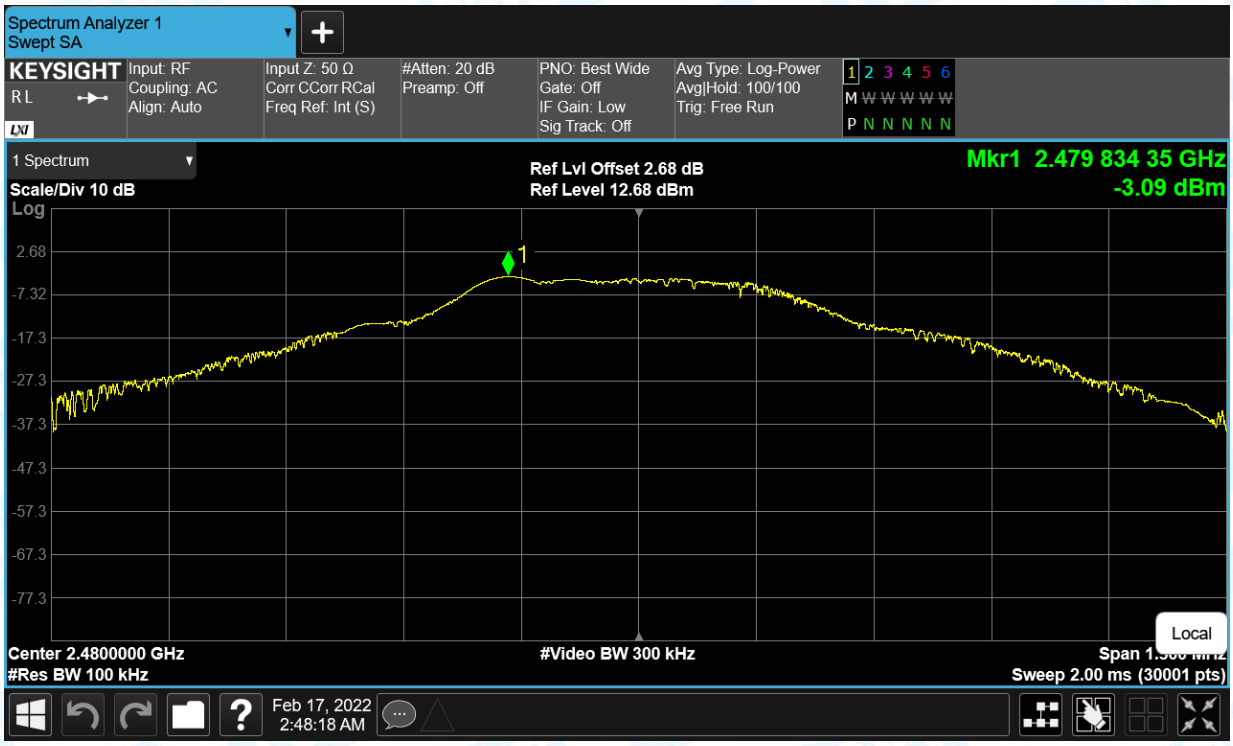
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



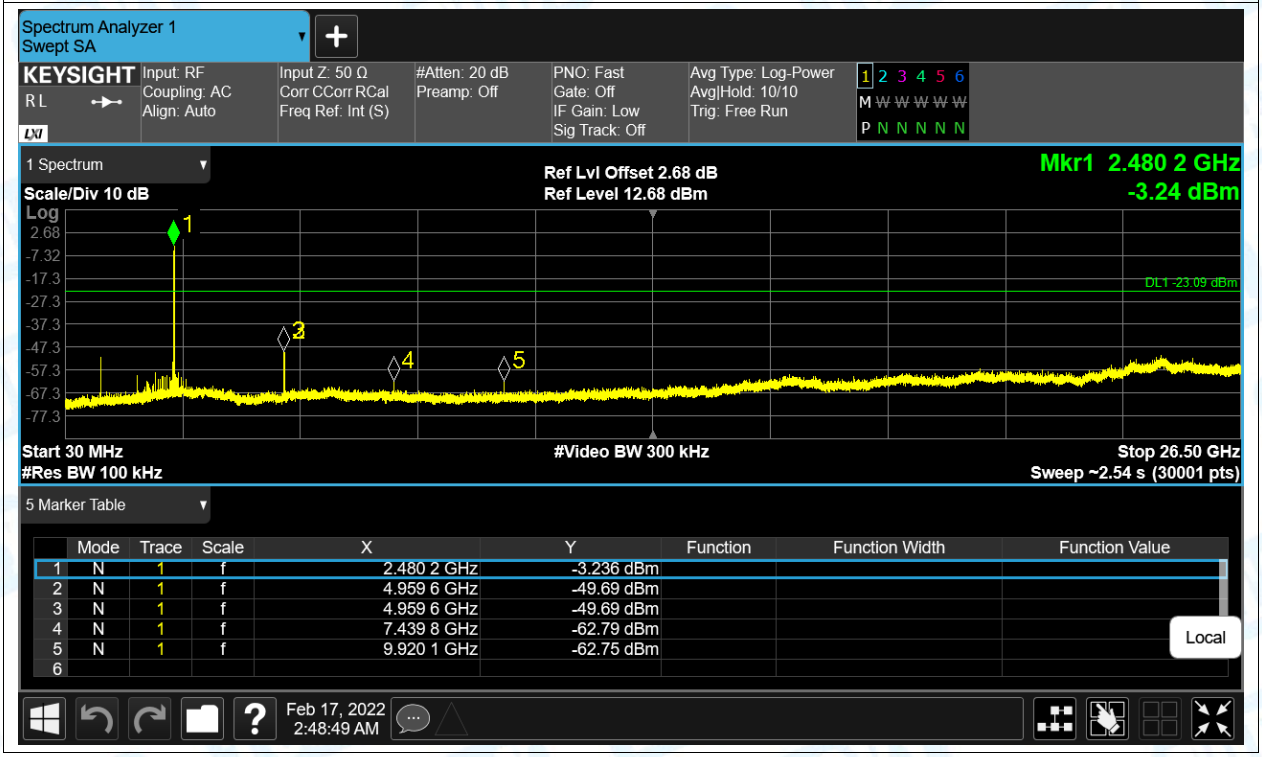

Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



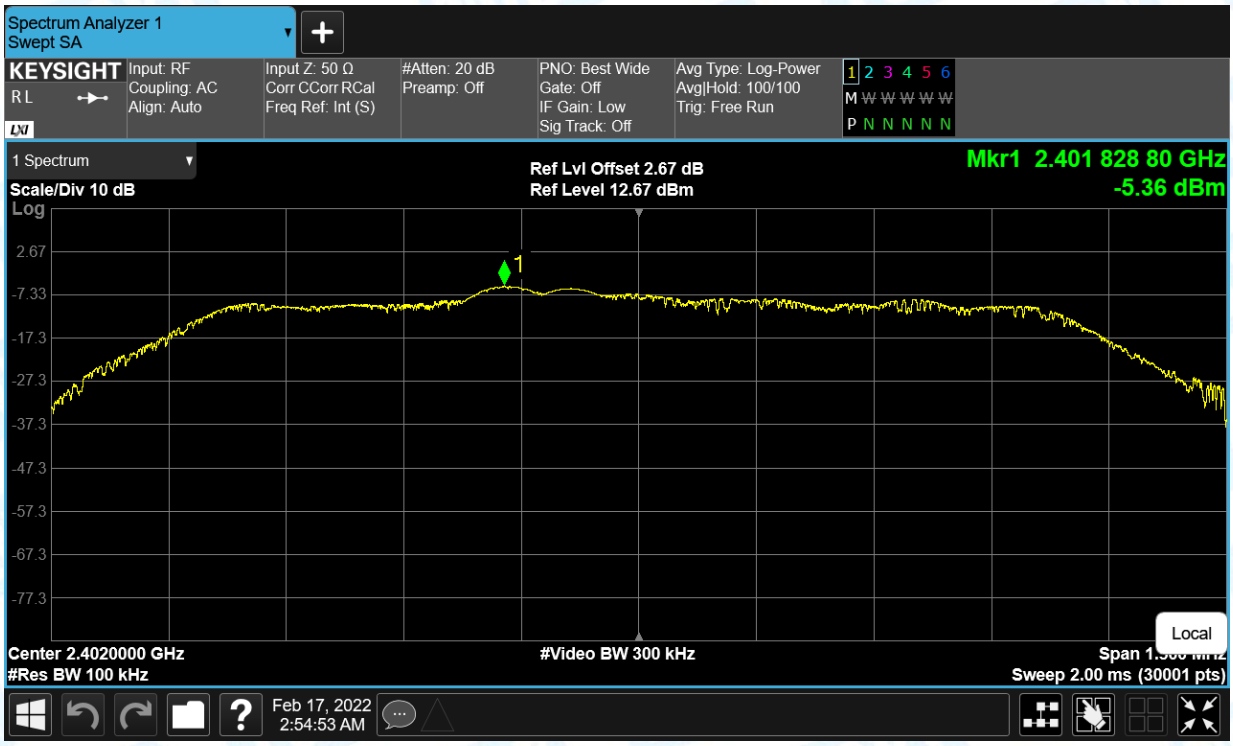
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



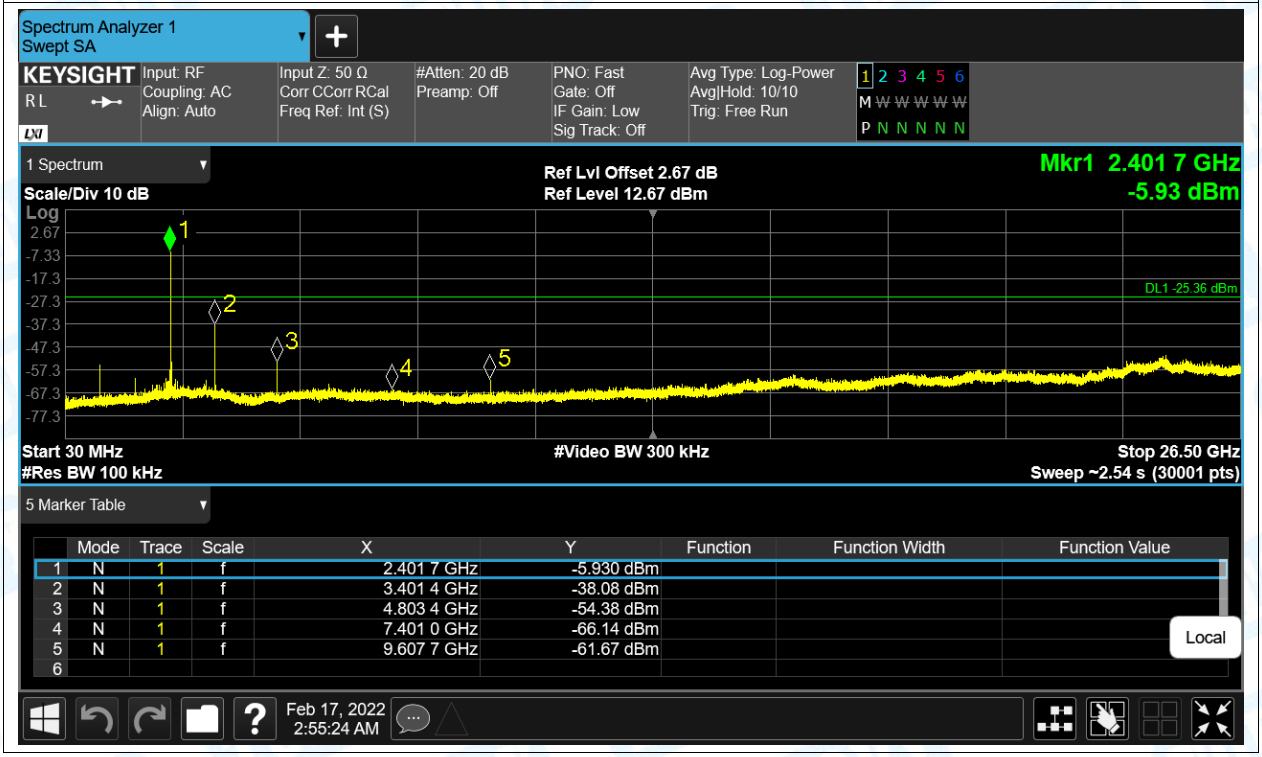

Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



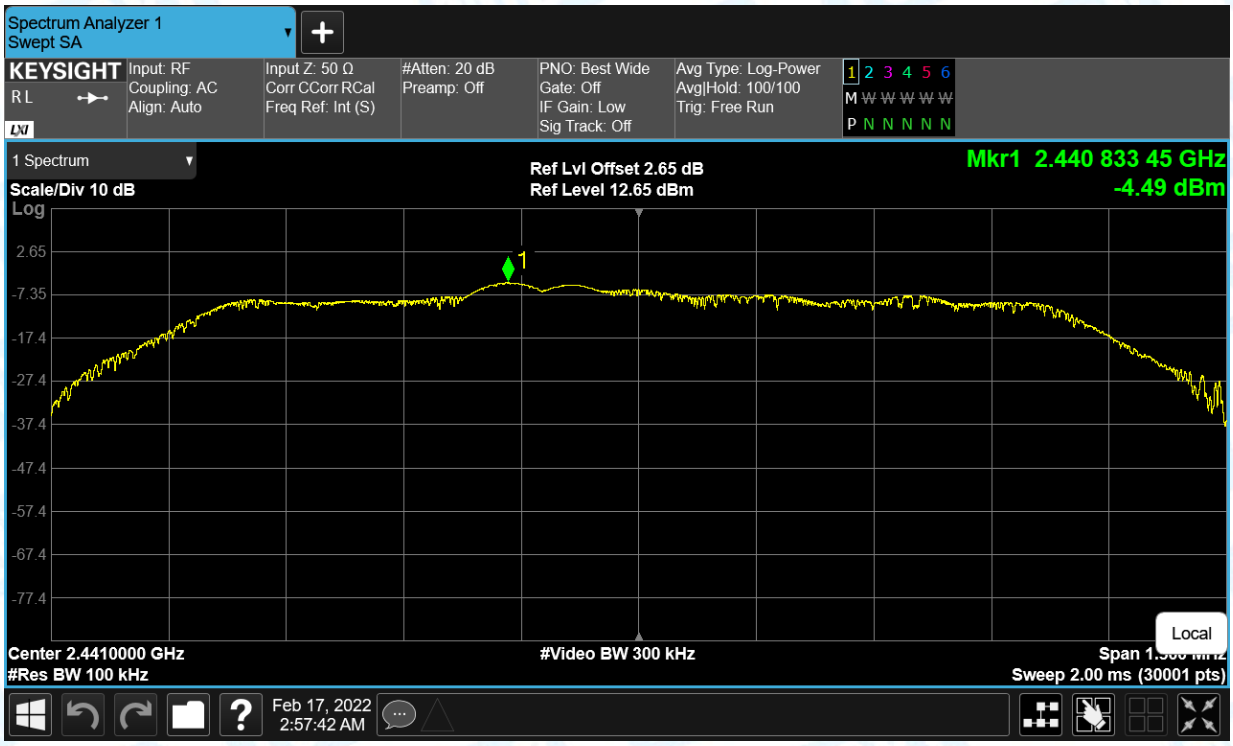
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



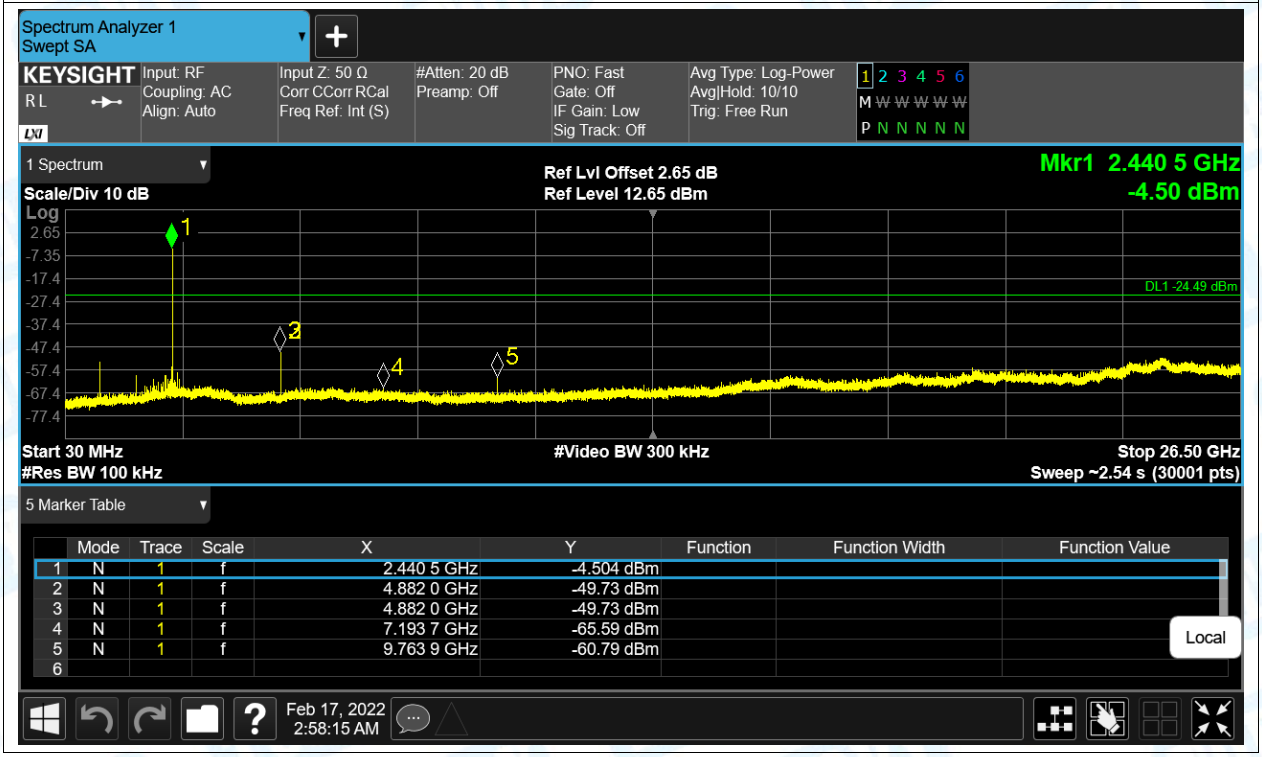

Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



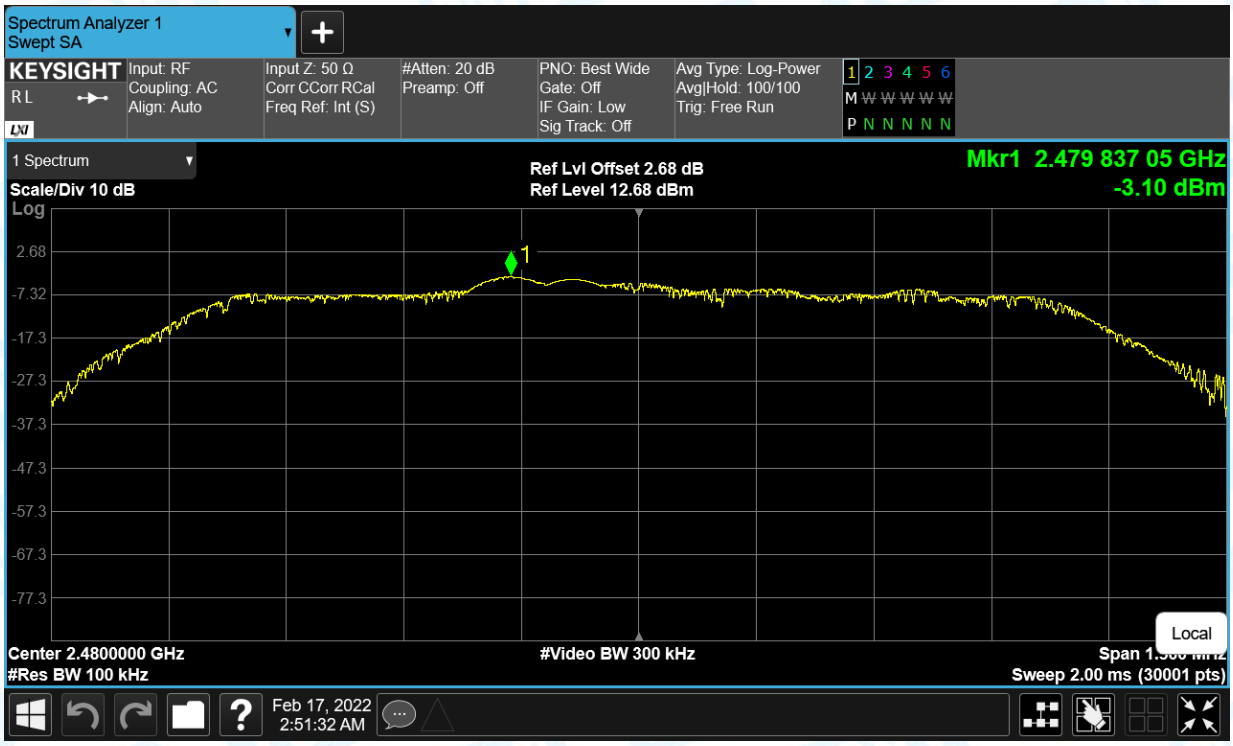
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



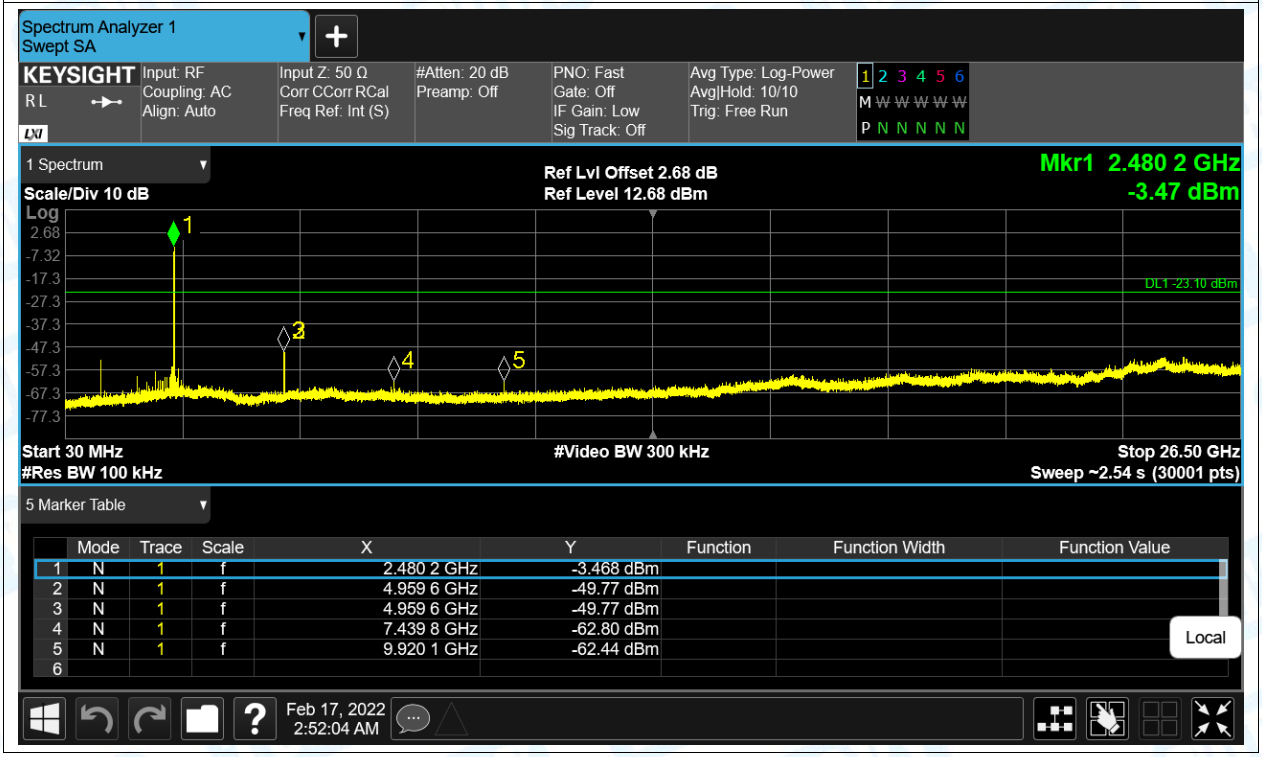

Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref

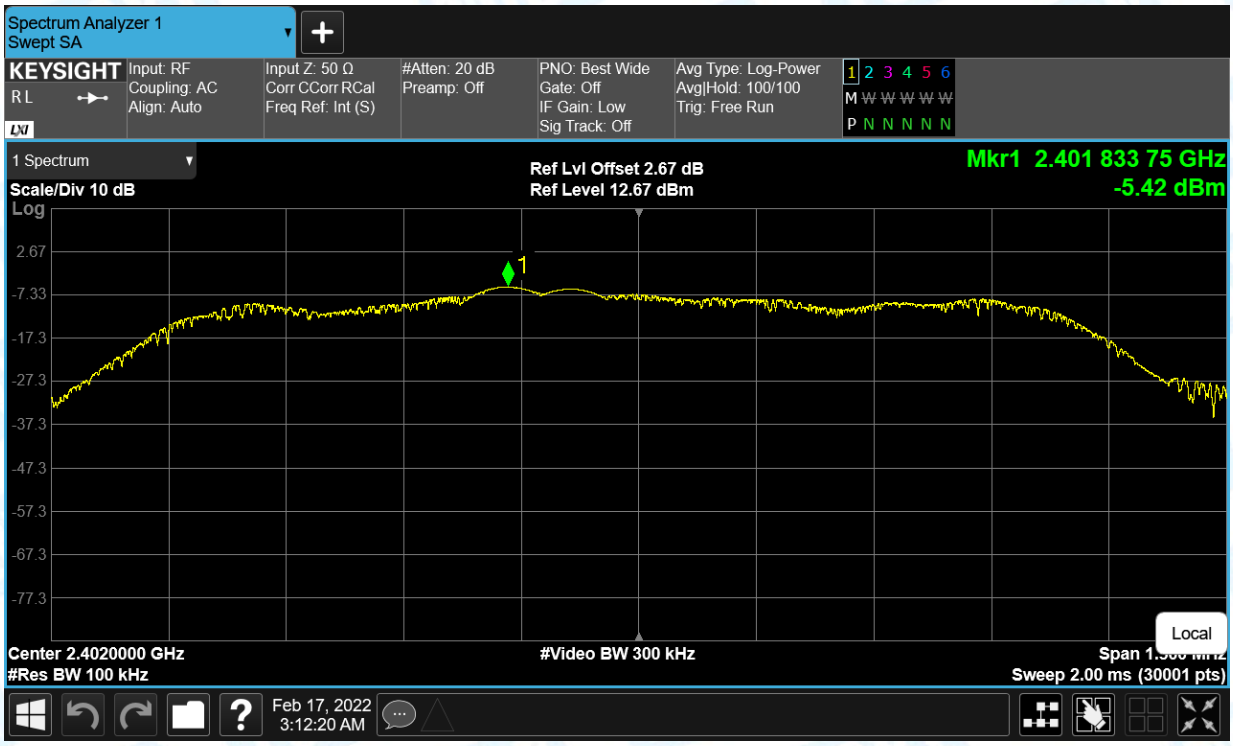



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

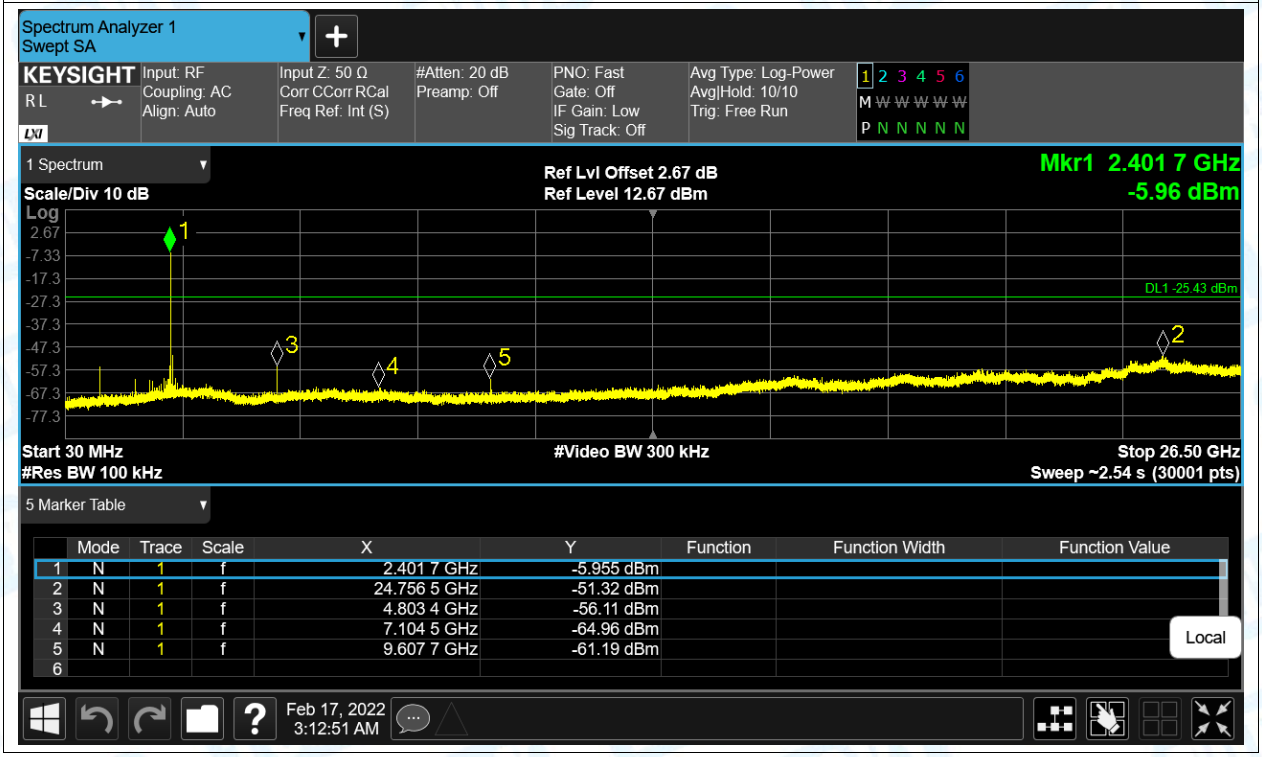



| | Mode | Trace | Scale | X | Y | Function | Function Width | Function Value |
|---|---|---|---|---|---|---|---|---|
| 1 | N | 1 | f | 2.480 2 GHz | -3.468 dBm | | | |
| 2 | N | 1 | f | 4.959 6 GHz | -49.77 dBm | | | |
| 3 | N | 1 | f | 4.959 6 GHz | -49.77 dBm | | | |
| 4 | N | 1 | f | 7.439 8 GHz | -62.80 dBm | | | |
| 5 | N | 1 | f | 9.920 1 GHz | -62.44 dBm | | | |
| 6 | | | | | | | | |

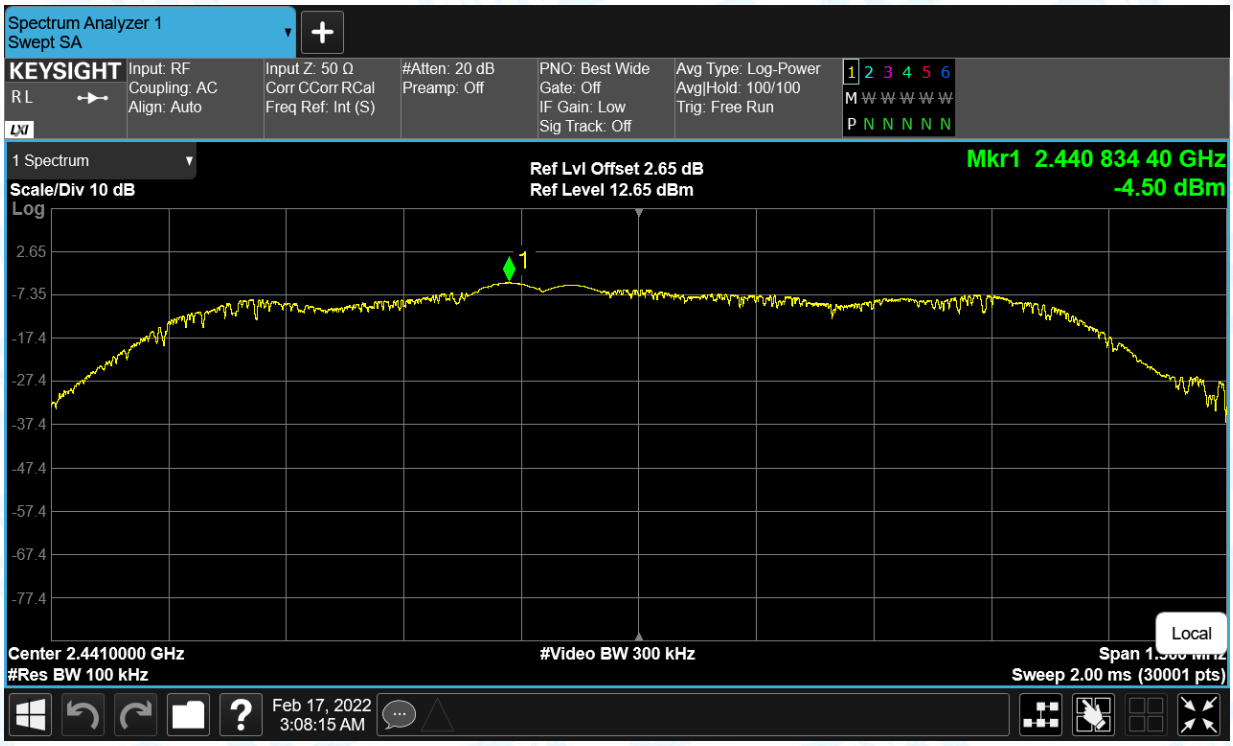
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



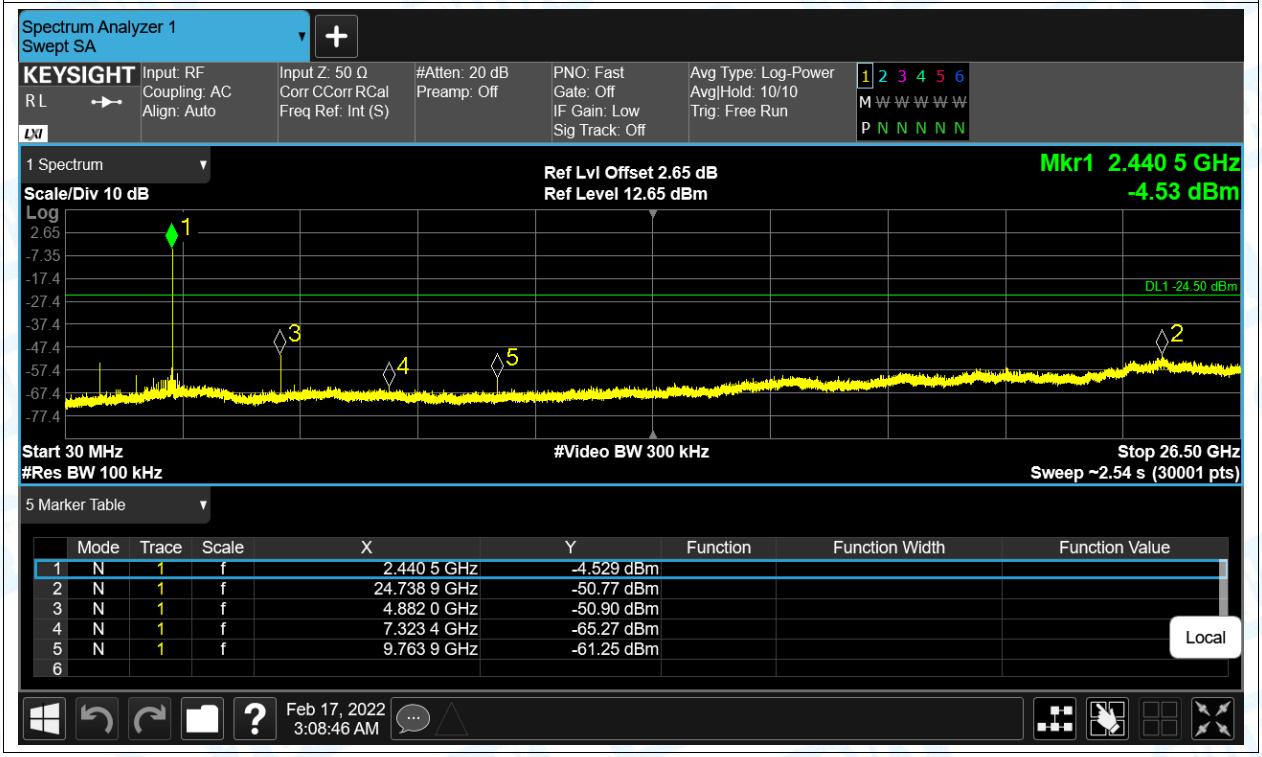

Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref

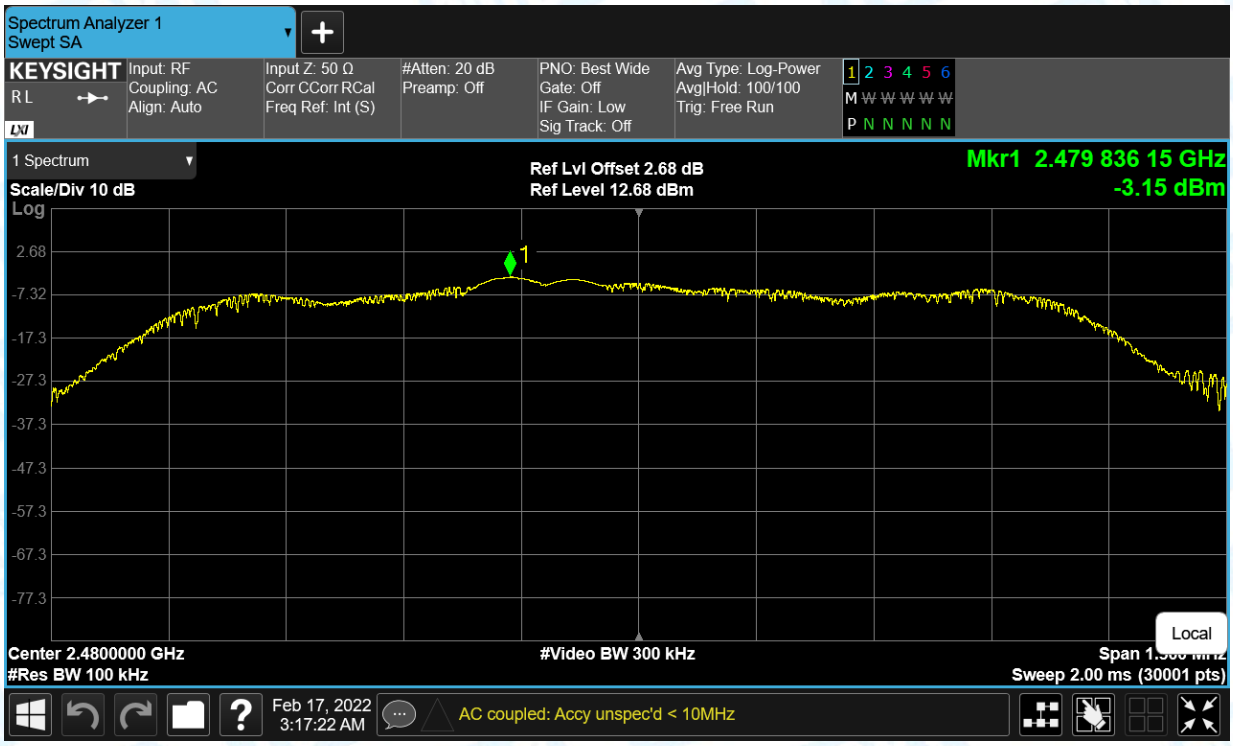



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission

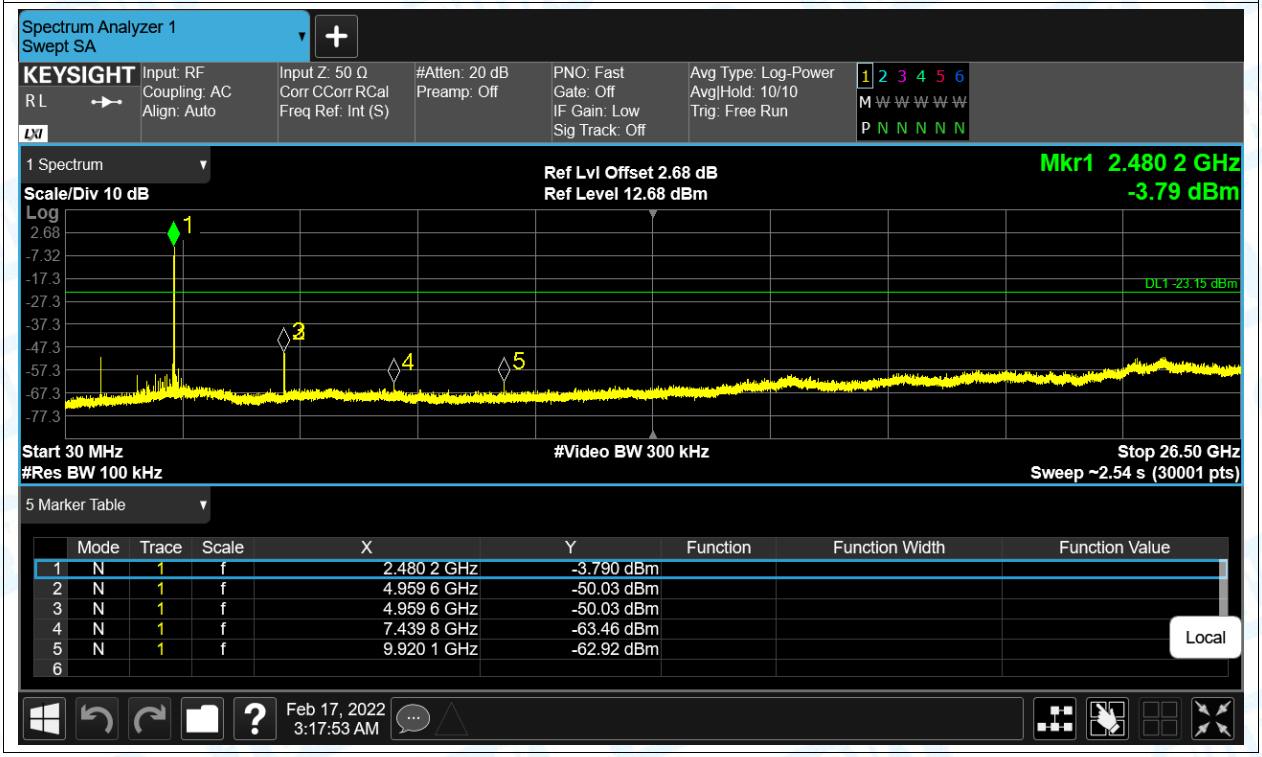



| | Mode | Trace | Scale | X | Y | Function | Function Width | Function Value |
|---|---|---|---|---|---|---|---|---|
| 1 | N | 1 | f | 2.440 5 GHz | -4.529 dBm | | | |
| 2 | N | 1 | f | 24.738 9 GHz | -50.77 dBm | | | |
| 3 | N | 1 | f | 4.882 0 GHz | -50.90 dBm | | | |
| 4 | N | 1 | f | 7.323 4 GHz | -65.27 dBm | | | |
| 5 | N | 1 | f | 9.763 9 GHz | -61.25 dBm | | | |
| 6 | | | | | | | | |

Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref




Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission



# 8. Restrict Band

| Condition | Mode | Frequency (MHz) | Hopping Mode | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| NVNT | 1-DH1 | 2402 | No-Hopping | 2310 | -49.41 | 2 | 47.85 | Peak | 74 | Pass |
| NVNT | 1-DH1 | 2402 | No-Hopping | 2310 | -57.14 | 2 | 40.12 | Average | 54 | Pass |
| NVNT | 1-DH1 | 2402 | No-Hopping | 2324.688 | -44.17 | 2 | 53.09 | Peak | 74 | Pass |
| NVNT | 1-DH1 | 2402 | No-Hopping | 2375.952 | -53.77 | 2 | 43.49 | Average | 54 | Pass |
| NVNT | 1-DH1 | 2402 | No-Hopping | 2390 | -47.97 | 2 | 49.29 | Peak | 74 | Pass |
| NVNT | 1-DH1 | 2402 | No-Hopping | 2390 | -57.15 | 2 | 40.11 | Average | 54 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | 2483.5 | -45.11 | 2 | 52.15 | Peak | 74 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | 2483.5 | -56.33 | 2 | 40.93 | Average | 54 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | 2497.624 | -44.21 | 2 | 53.05 | Peak | 74 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | 2484.832 | -55.74 | 2 | 41.52 | Average | 54 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | 2500 | -48.23 | 2 | 49.03 | Peak | 74 | Pass |
| NVNT | 1-DH1 | 2480 | No-Hopping | 2500 | -56.95 | 2 | 40.31 | Average | 54 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | 2310 | -48 | 2 | 49.26 | Peak | 74 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | 2310 | -57.14 | 2 | 40.12 | Average | 54 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | 2376.72 | -44.12 | 2 | 53.14 | Peak | 74 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | 2375.952 | -54.08 | 2 | 43.18 | Average | 54 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | 2390 | -48.63 | 2 | 48.63 | Peak | 74 | Pass |
| NVNT | 2-DH1 | 2402 | No-Hopping | 2390 | -56.95 | 2 | 40.31 | Average | 54 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | 2483.5 | -45.15 | 2 | 52.11 | Peak | 74 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | 2483.5 | -56.29 | 2 | 40.97 | Average | 54 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | 2484.448 | -42.32 | 2 | 54.94 | Peak | 74 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | 2484.664 | -55.72 | 2 | 41.54 | Average | 54 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | 2500 | -47.99 | 2 | 49.27 | Peak | 74 | Pass |
| NVNT | 2-DH1 | 2480 | No-Hopping | 2500 | -56.83 | 2 | 40.43 | Average | 54 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | 2310 | -47.58 | 2 | 49.68 | Peak | 74 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | 2310 | -57.19 | 2 | 40.07 | Average | 54 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | 2376.432 | -44.01 | 2 | 53.25 | Peak | 74 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | 2375.856 | -53.89 | 2 | 43.37 | Average | 54 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | 2390 | -47.63 | 2 | 49.63 | Peak | 74 | Pass |
| NVNT | 3-DH1 | 2402 | No-Hopping | 2390 | -57.13 | 2 | 40.13 | Average | 54 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | 2483.5 | -44.6 | 2 | 52.66 | Peak | 74 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | 2483.5 | -56.33 | 2 | 40.93 | Average | 54 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | 2484.904 | -43.85 | 2 | 53.41 | Peak | 74 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | 2484.64 | -55.77 | 2 | 41.49 | Average | 54 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | 2500 | -46.68 | 2 | 50.58 | Peak | 74 | Pass |
| NVNT | 3-DH1 | 2480 | No-Hopping | 2500 | -56.99 | 2 | 40.27 | Average | 54 | Pass |