# Appendix C

## RF Test Data for 2.4GWIFI (Conducted Measurement)

**Product Name: Thermostat**

**Test Model: MT-5-A-WIFI-H**

**Environmental Conditions**

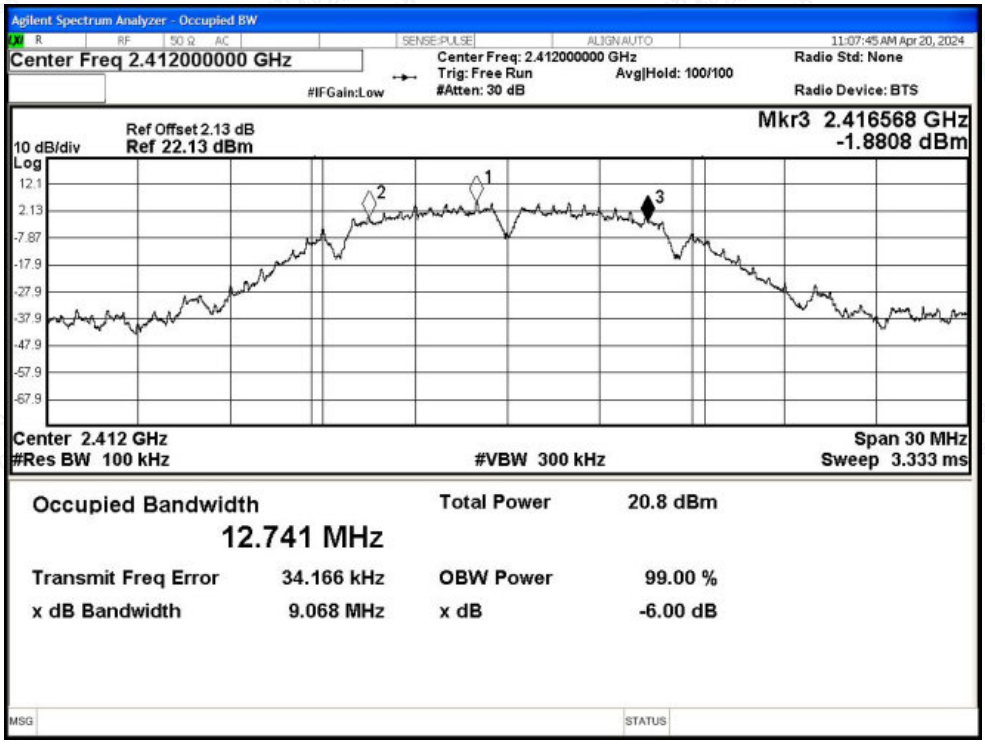
| | |
|---|---|
| Temperature: | 23.8 ° C |
| Relative Humidity: | 52.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Eason Zhou |
| Supervised by: | Nick Peng |

# C.1 -6dB Bandwidth

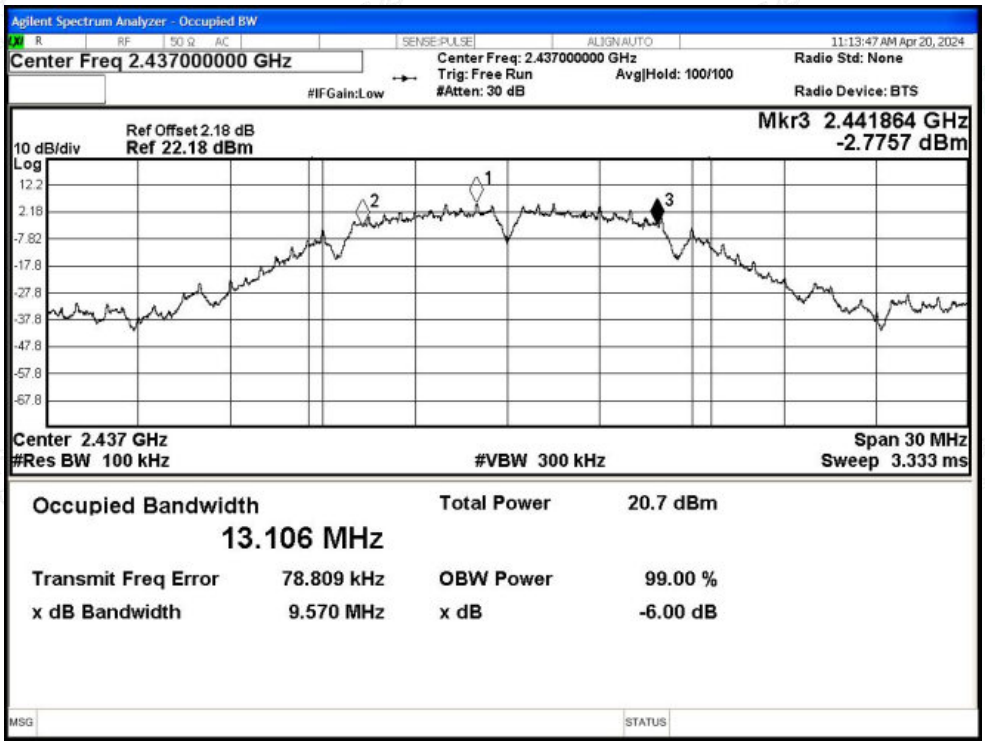
| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | b | 2412 | Ant1 | 9.068 | >=0.5 | Pass |
| NVNT | b | 2437 | Ant1 | 9.57 | >=0.5 | Pass |
| NVNT | b | 2462 | Ant1 | 9.588 | >=0.5 | Pass |
| NVNT | g | 2412 | Ant1 | 14.934 | >=0.5 | Pass |
| NVNT | g | 2437 | Ant1 | 14.97 | >=0.5 | Pass |
| NVNT | g | 2462 | Ant1 | 15.472 | >=0.5 | Pass |
| NVNT | n20 | 2412 | Ant1 | 16.785 | >=0.5 | Pass |
| NVNT | n20 | 2437 | Ant1 | 16.279 | >=0.5 | Pass |
| NVNT | n20 | 2462 | Ant1 | 16.399 | >=0.5 | Pass |
| NVNT | n40 | 2422 | Ant1 | 35.017 | >=0.5 | Pass |
| NVNT | n40 | 2437 | Ant1 | 36.032 | >=0.5 | Pass |
| NVNT | n40 | 2452 | Ant1 | 35.894 | >=0.5 | Pass |

Test Graphs

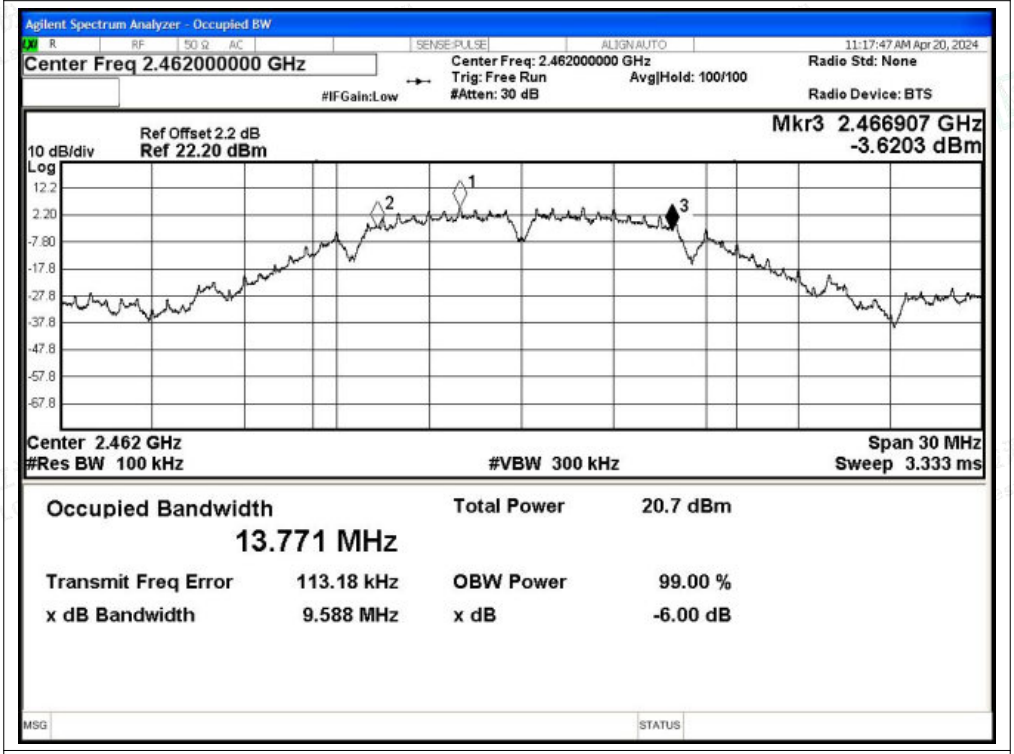
-6dB Bandwidth NVNT b 2412MHz Ant1



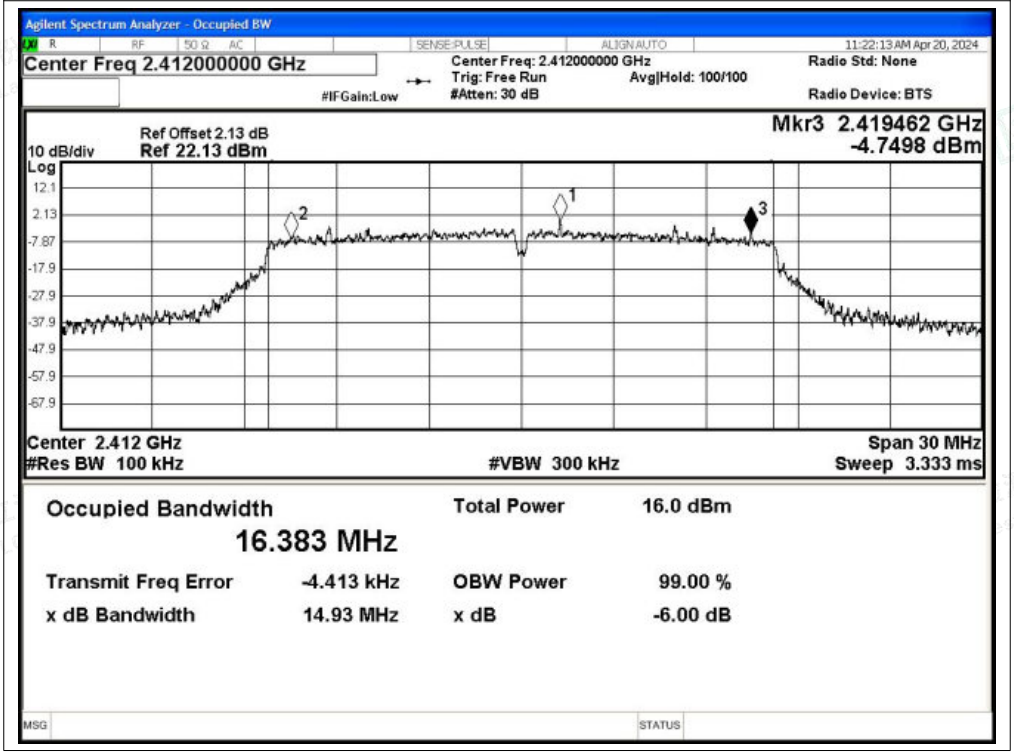

-6dB Bandwidth NVNT b 2437MHz Ant1



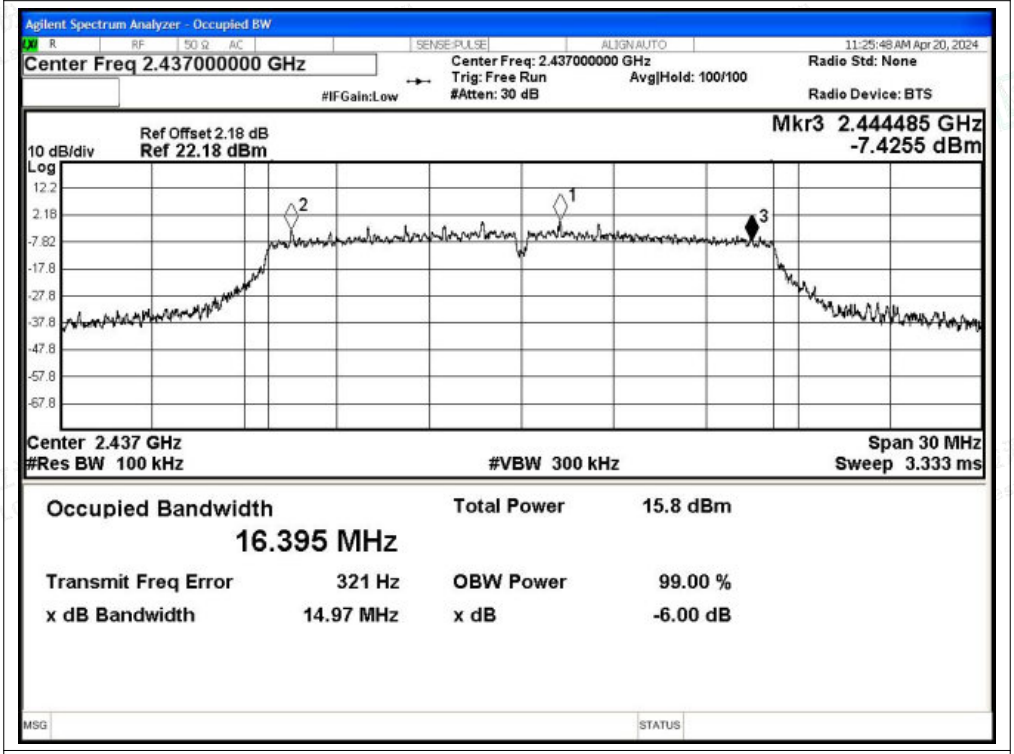
-6dB Bandwidth NVNT b 2462MHz Ant1



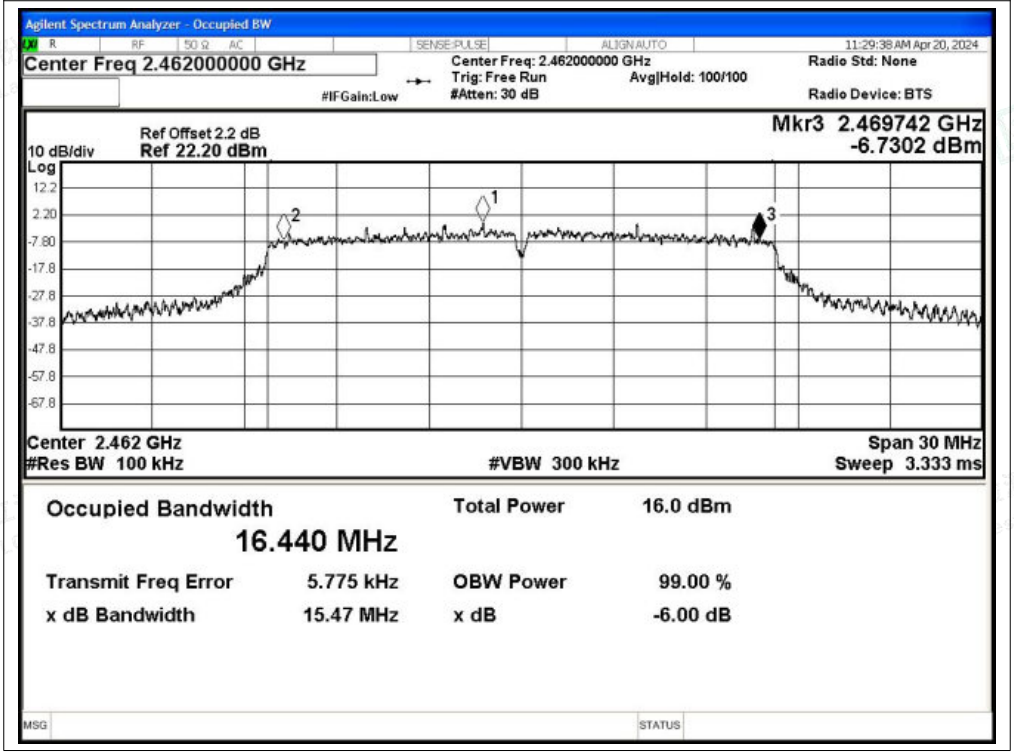

-6dB Bandwidth NVNT g 2412MHz Ant1



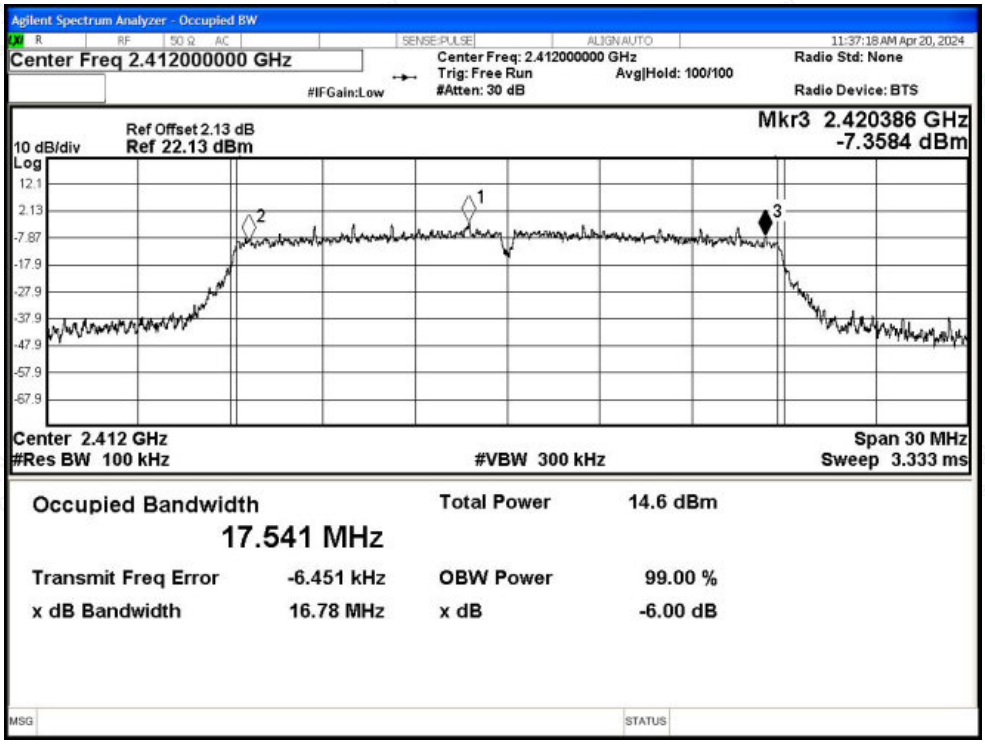
-6dB Bandwidth NVNT g 2437MHz Ant1



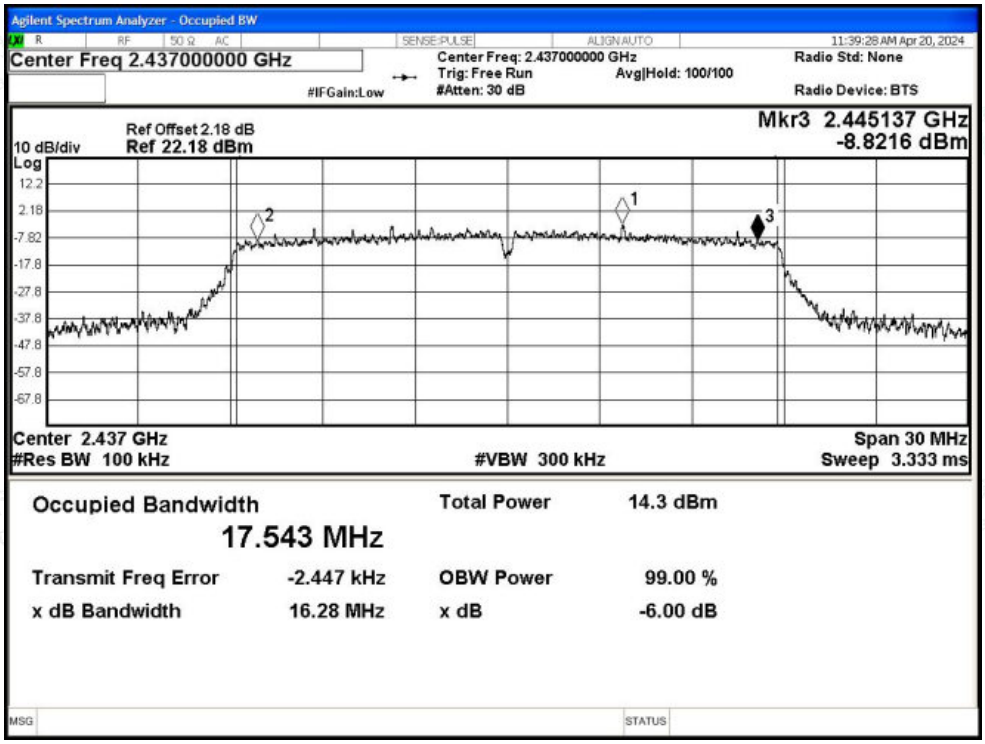

-6dB Bandwidth NVNT g 2462MHz Ant1



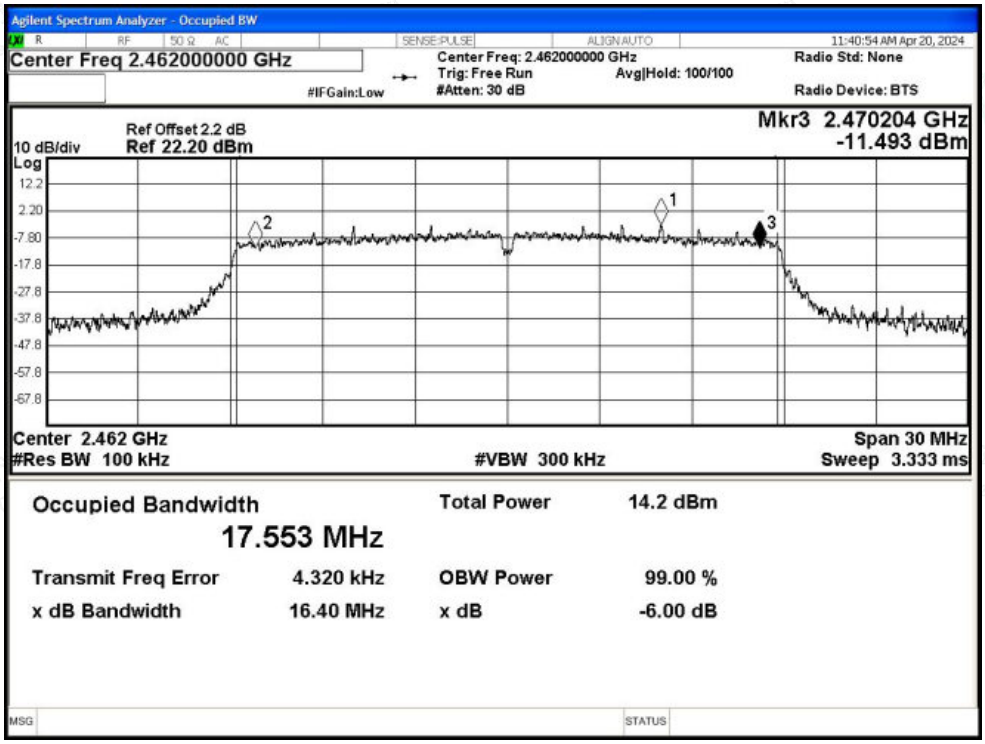
-6dB Bandwidth NVNT n20 2412MHz Ant1



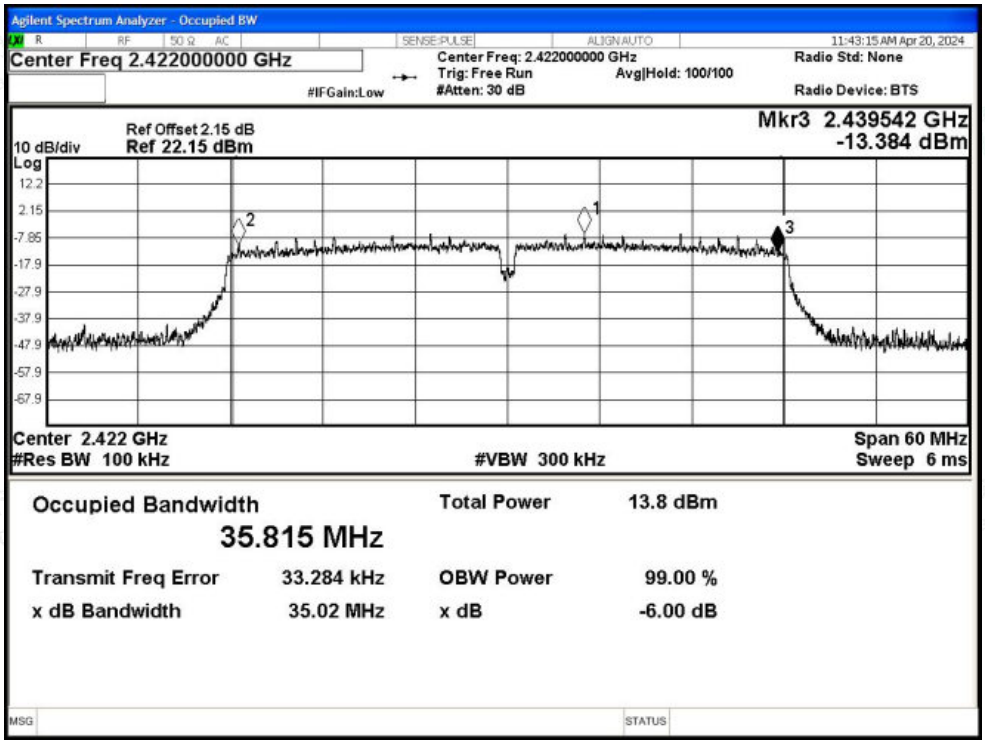

-6dB Bandwidth NVNT n20 2437MHz Ant1



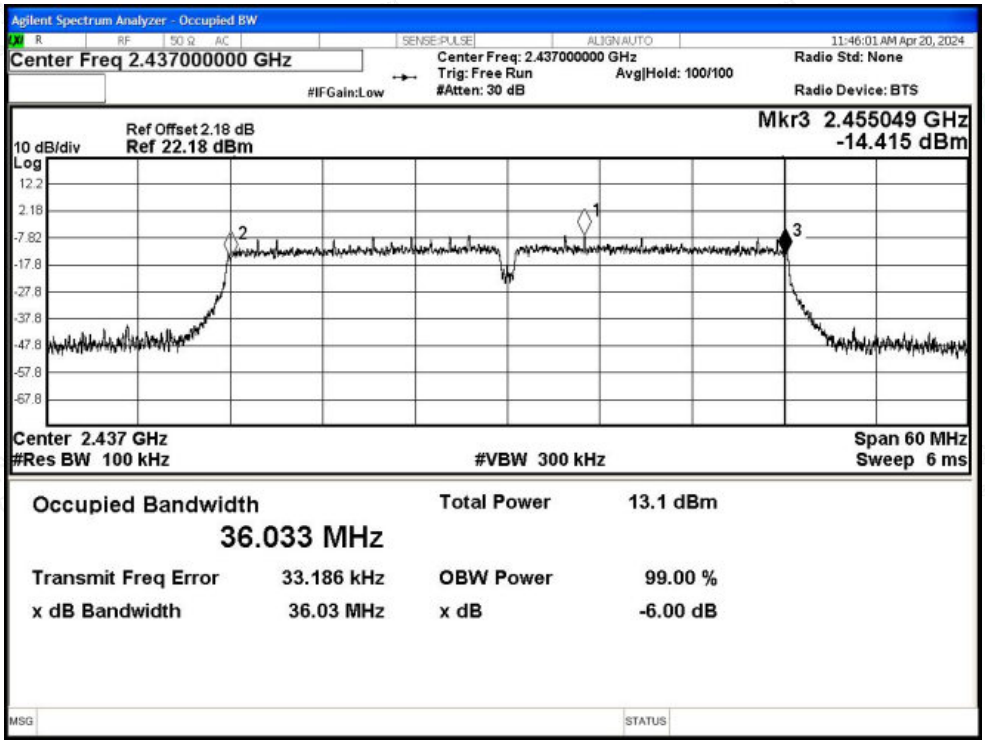
-6dB Bandwidth NVNT n20 2462MHz Ant1



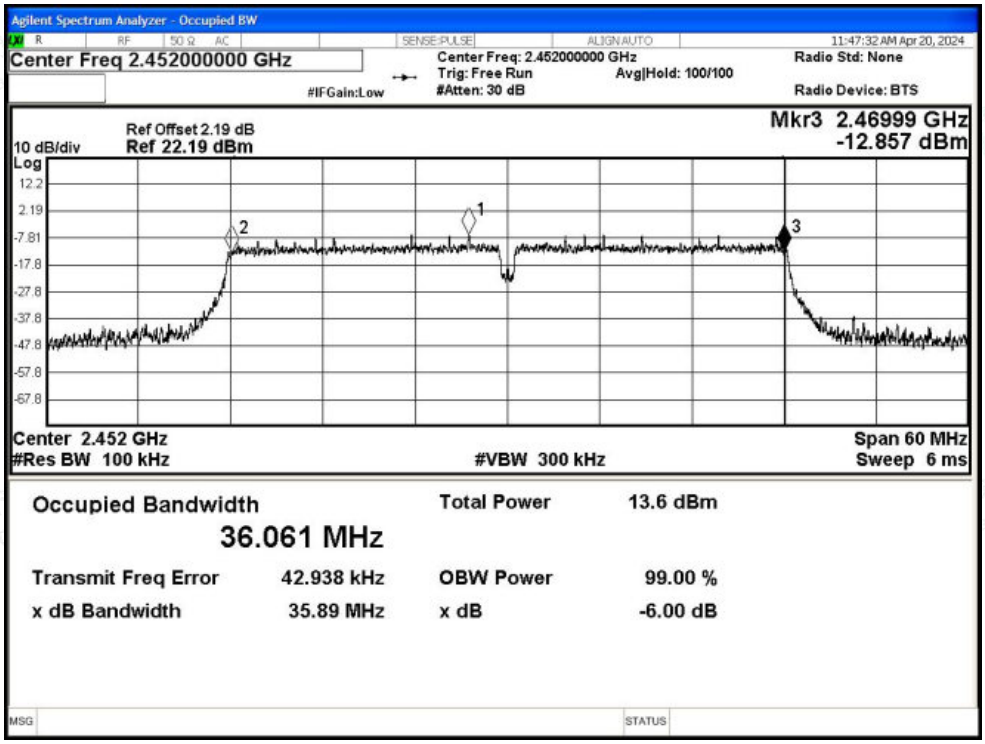

-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant1




-6dB Bandwidth NVNT n40 2452MHz Ant1



# C.2 Maximum Peak Conducted Output Power

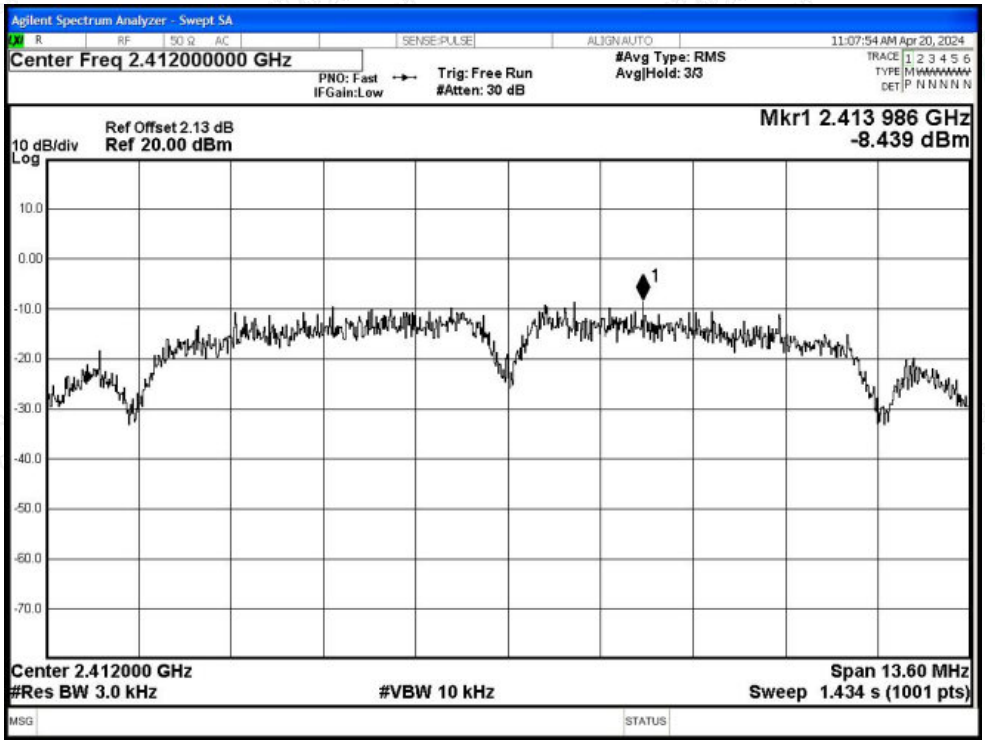
| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | b | 2412 | Ant1 | 15.56 | 30 | Pass |
| NVNT | b | 2437 | Ant1 | 15.48 | 30 | Pass |
| NVNT | b | 2462 | Ant1 | 15.58 | 30 | Pass |
| NVNT | g | 2412 | Ant1 | 14.69 | 30 | Pass |
| NVNT | g | 2437 | Ant1 | 14.41 | 30 | Pass |
| NVNT | g | 2462 | Ant1 | 14.69 | 30 | Pass |
| NVNT | n20 | 2412 | Ant1 | 13.36 | 30 | Pass |
| NVNT | n20 | 2437 | Ant1 | 13 | 30 | Pass |
| NVNT | n20 | 2462 | Ant1 | 12.96 | 30 | Pass |
| NVNT | n40 | 2422 | Ant1 | 12.53 | 30 | Pass |
| NVNT | n40 | 2437 | Ant1 | 11.64 | 30 | Pass |
| NVNT | n40 | 2452 | Ant1 | 12.19 | 30 | Pass |

# C.3 Maximum Power Spectral Density Level

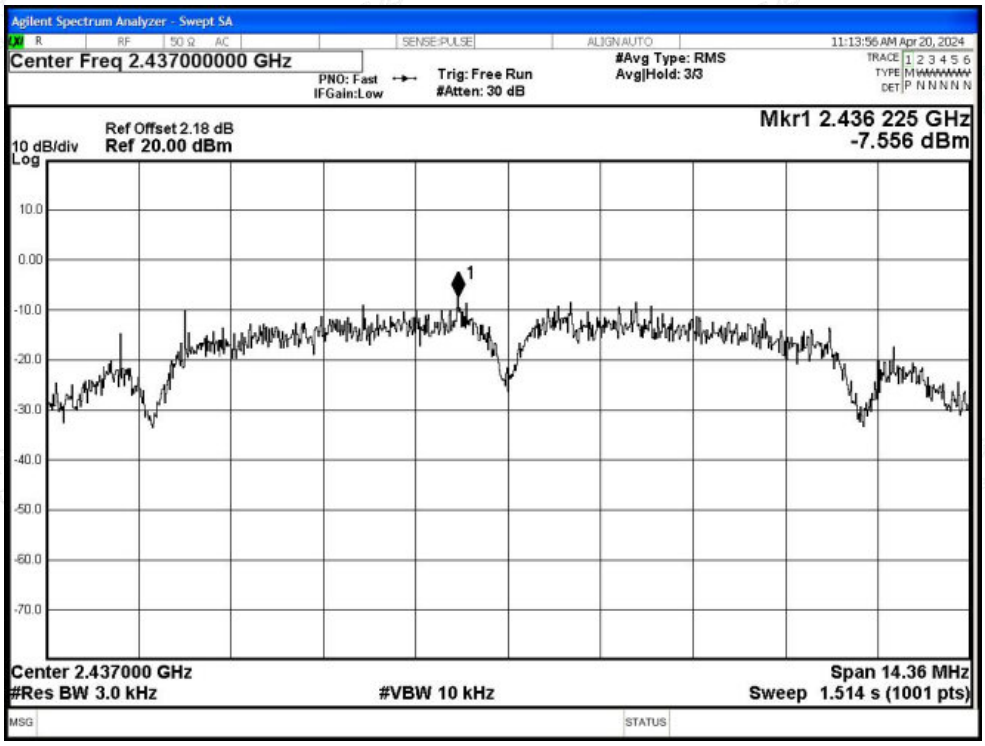
| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | b | 2412 | Ant1 | -8.44 | 8 | Pass |
| NVNT | b | 2437 | Ant1 | -7.56 | 8 | Pass |
| NVNT | b | 2462 | Ant1 | -8.45 | 8 | Pass |
| NVNT | g | 2412 | Ant1 | -15.11 | 8 | Pass |
| NVNT | g | 2437 | Ant1 | -15.32 | 8 | Pass |
| NVNT | g | 2462 | Ant1 | -14.71 | 8 | Pass |
| NVNT | n20 | 2412 | Ant1 | -15.93 | 8 | Pass |
| NVNT | n20 | 2437 | Ant1 | -15.74 | 8 | Pass |
| NVNT | n20 | 2462 | Ant1 | -16.48 | 8 | Pass |
| NVNT | n40 | 2422 | Ant1 | -20.29 | 8 | Pass |
| NVNT | n40 | 2437 | Ant1 | -21.02 | 8 | Pass |
| NVNT | n40 | 2452 | Ant1 | -20.29 | 8 | Pass |

Test Graphs

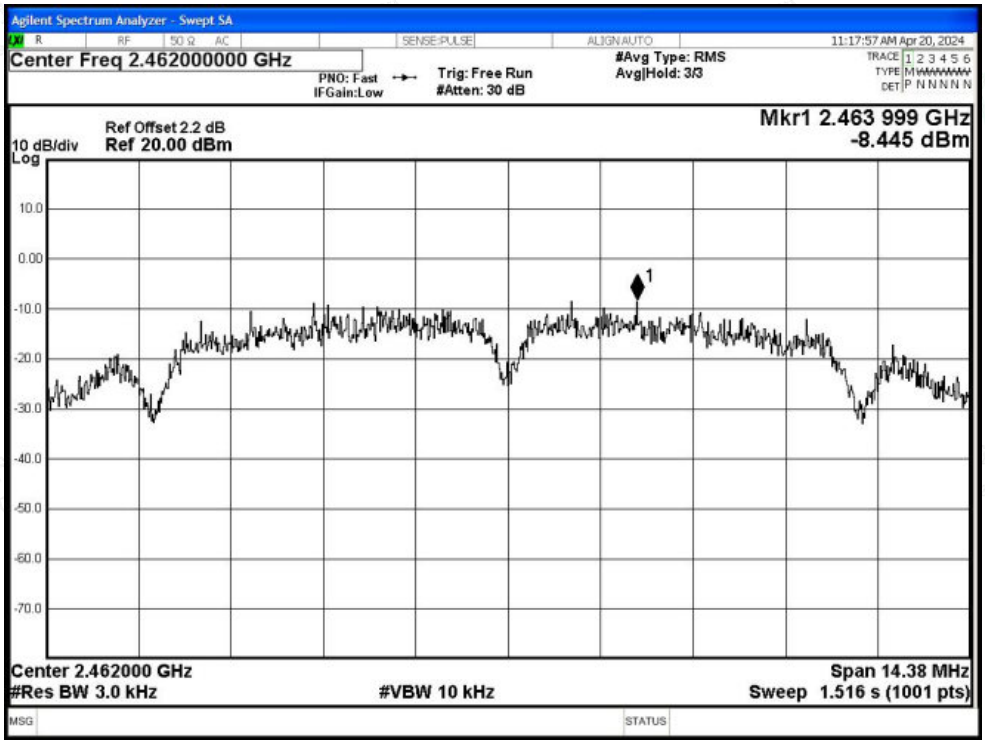
PSD NVNT b 2412MHz Ant1



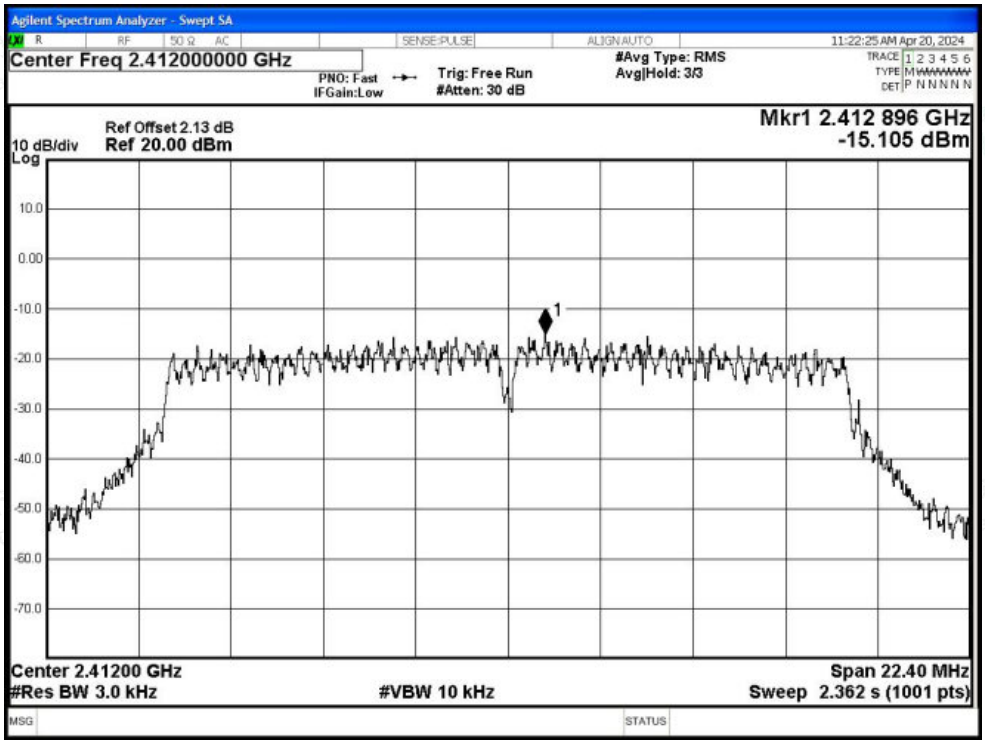

PSD NVNT b 2437MHz Ant1



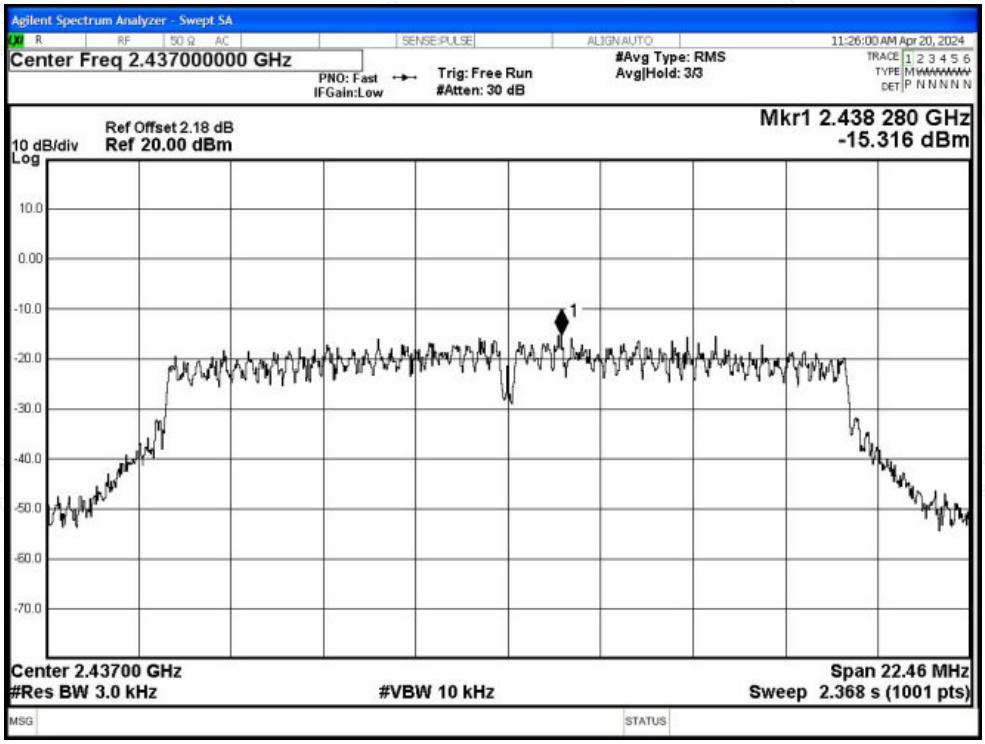
PSD NVNT b 2462MHz Ant1



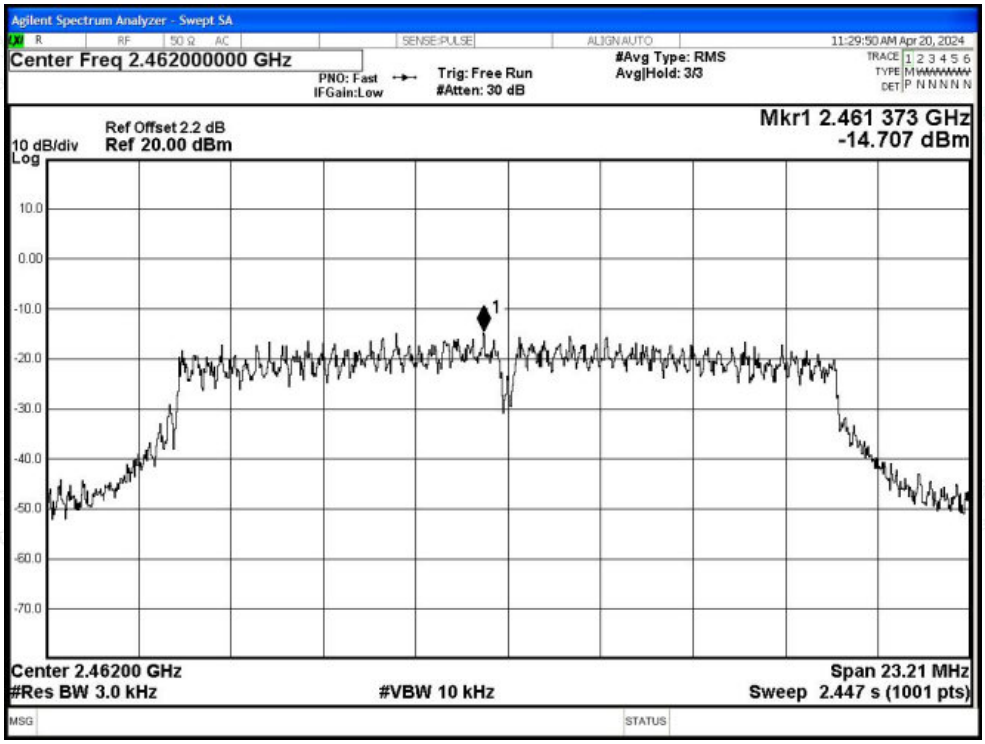

PSD NVNT g 2412MHz Ant1



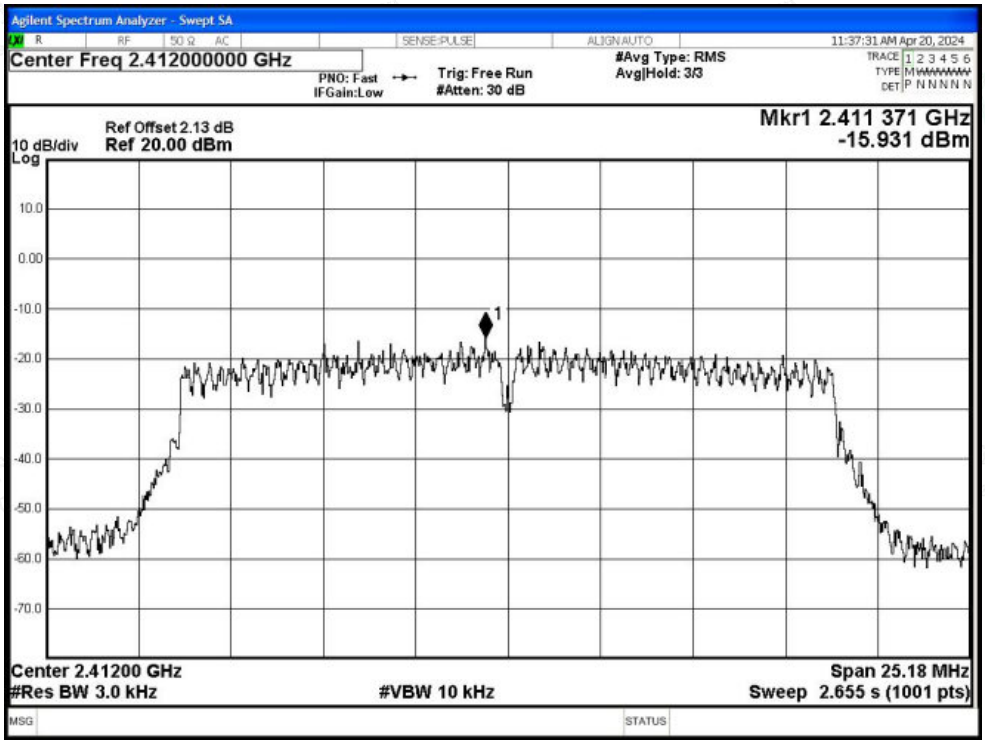
PSD NVNT g 2437MHz Ant1



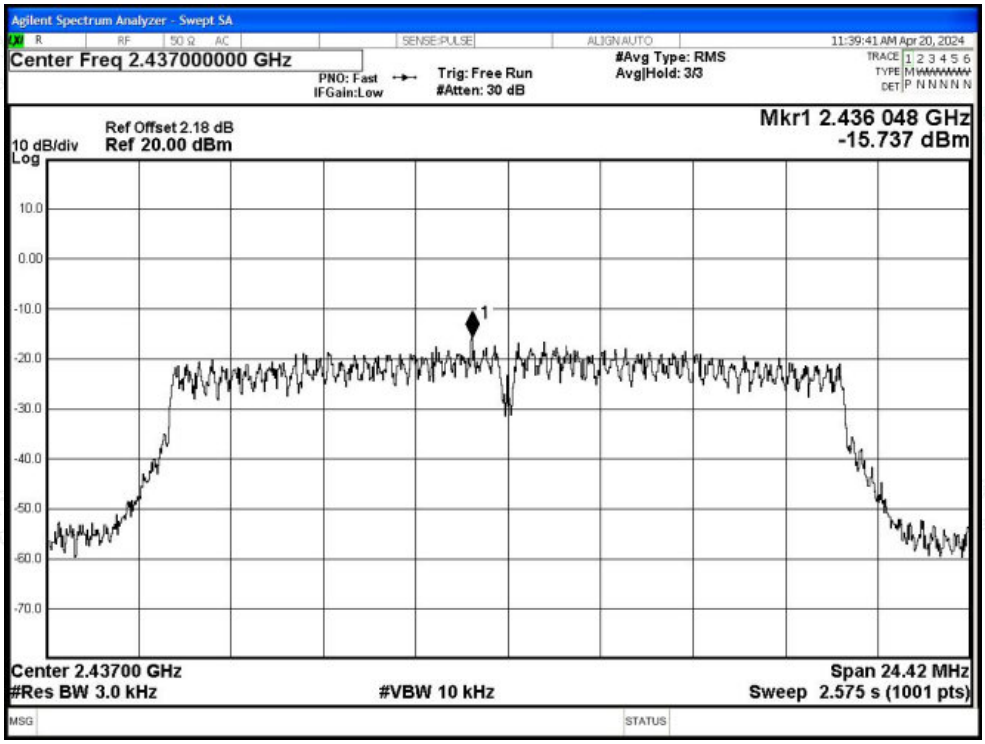

PSD NVNT g 2462MHz Ant1



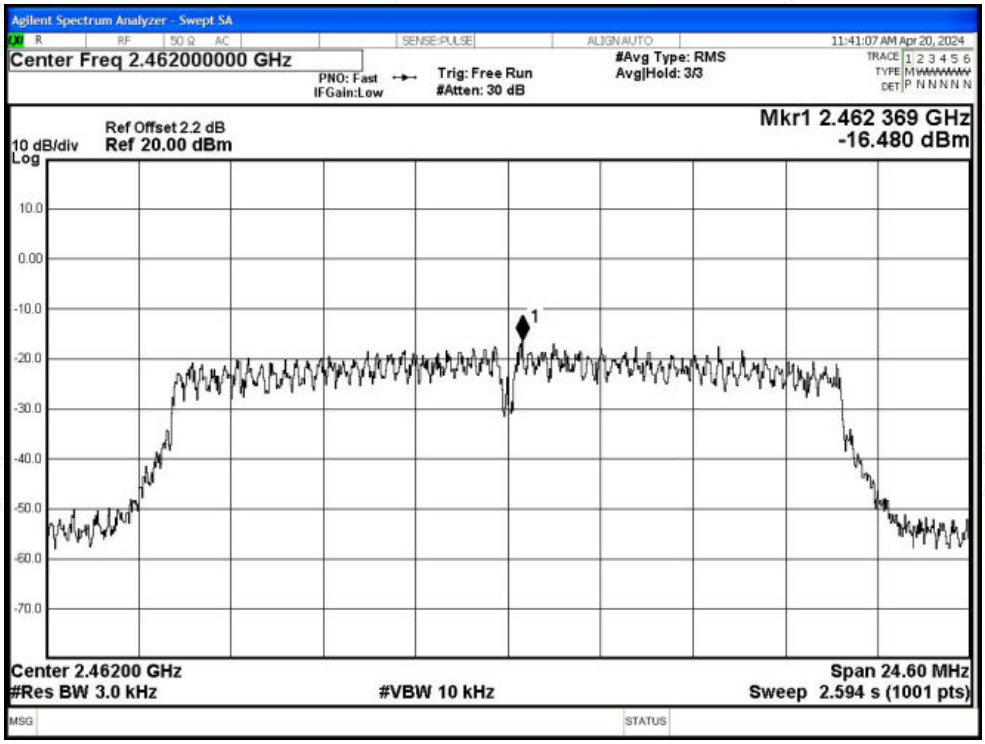
PSD NVNT n20 2412MHz Ant1



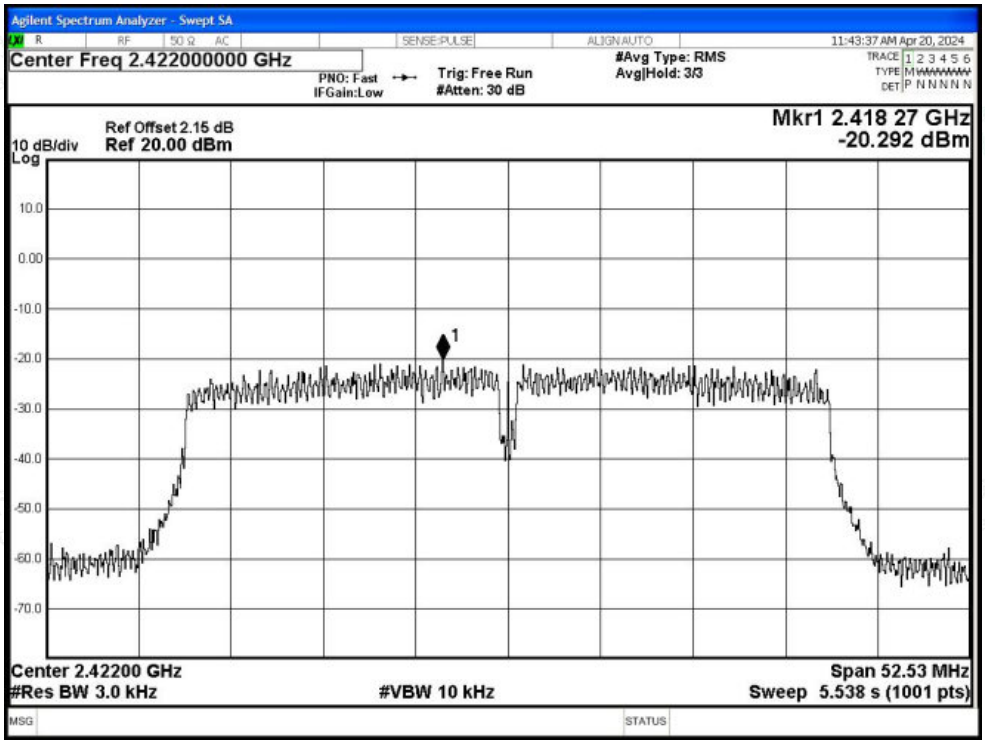

PSD NVNT n20 2437MHz Ant1



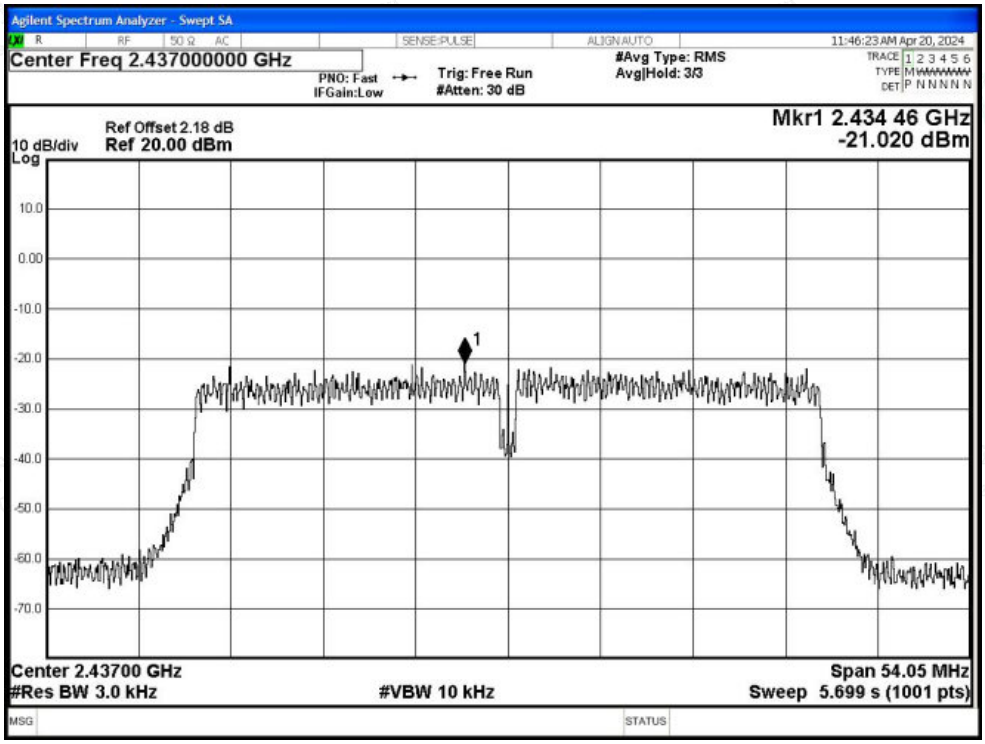
PSD NVNT n20 2462MHz Ant1



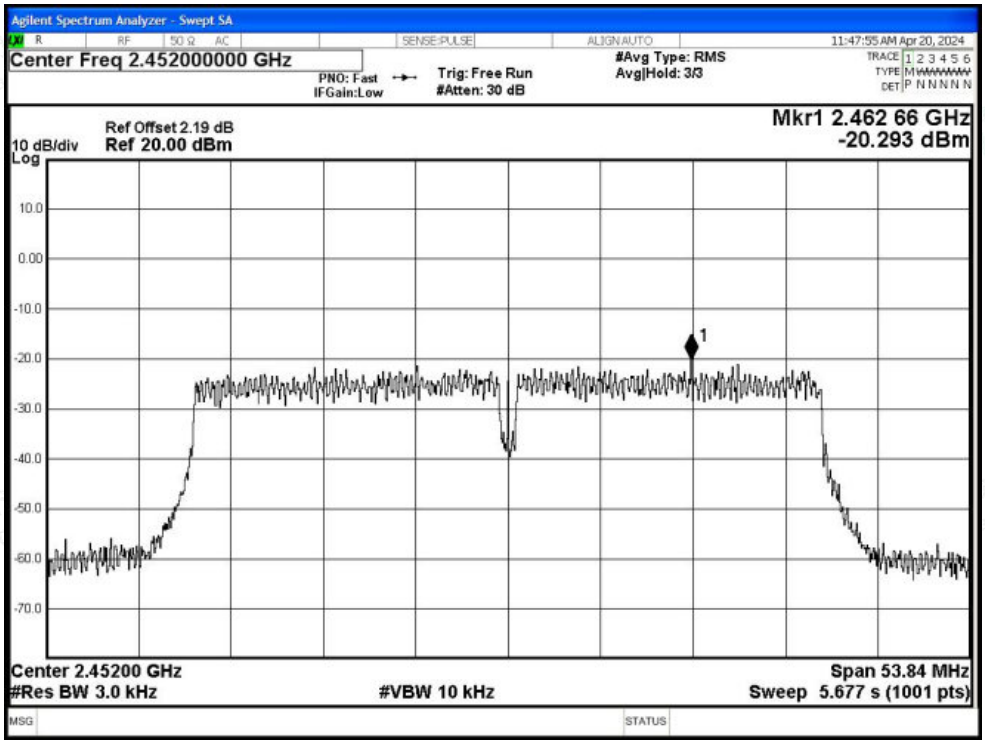

PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1




PSD NVNT n40 2452MHz Ant1

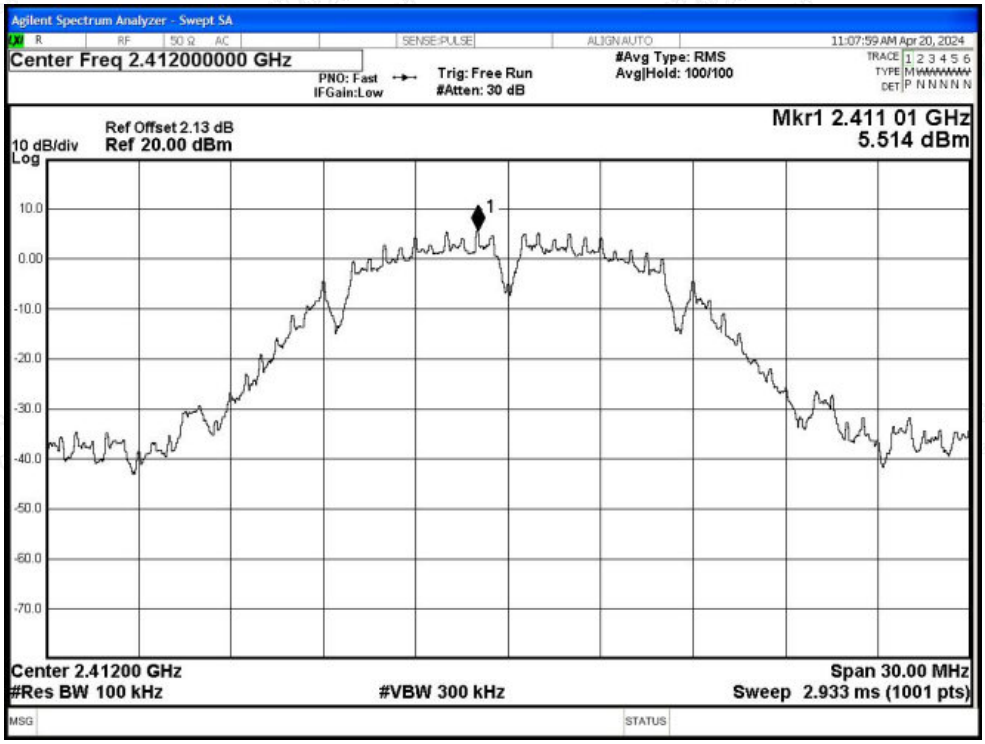


## C.4 Band Edge

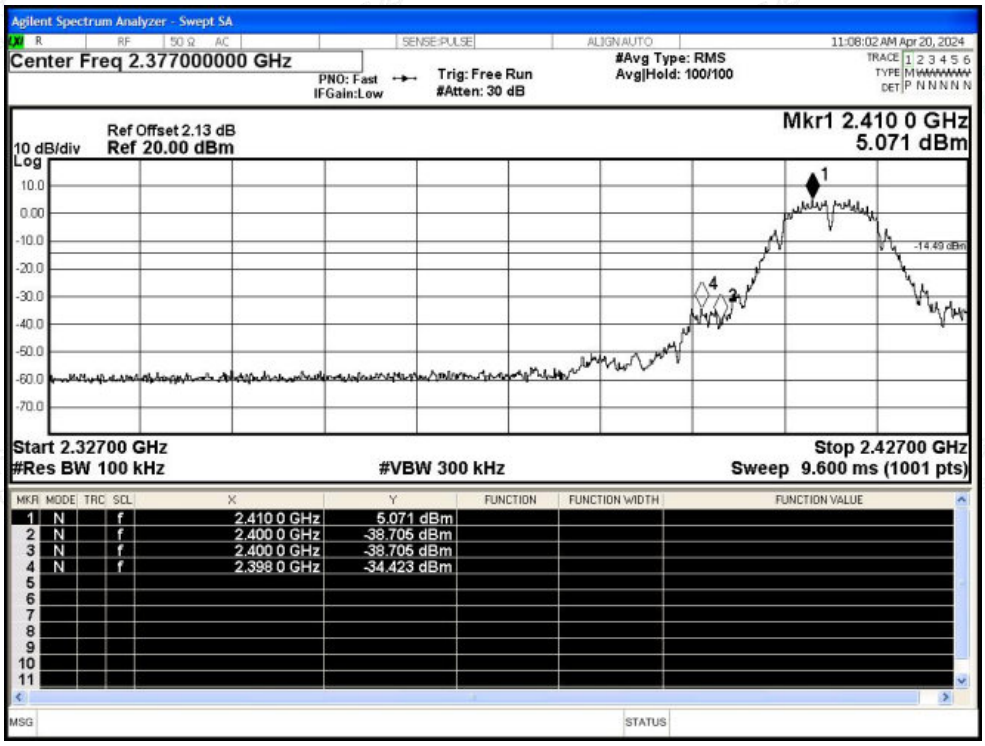
| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | b | 2412 | Ant1 | -39.94 | -20 | Pass |
| NVNT | b | 2462 | Ant1 | -48.09 | -20 | Pass |
| NVNT | g | 2412 | Ant1 | -33.6 | -20 | Pass |
| NVNT | g | 2462 | Ant1 | -43.41 | -20 | Pass |
| NVNT | n20 | 2412 | Ant1 | -34.2 | -20 | Pass |
| NVNT | n20 | 2462 | Ant1 | -46.06 | -20 | Pass |
| NVNT | n40 | 2422 | Ant1 | -34.19 | -20 | Pass |
| NVNT | n40 | 2452 | Ant1 | -34.12 | -20 | Pass |

Test Graphs

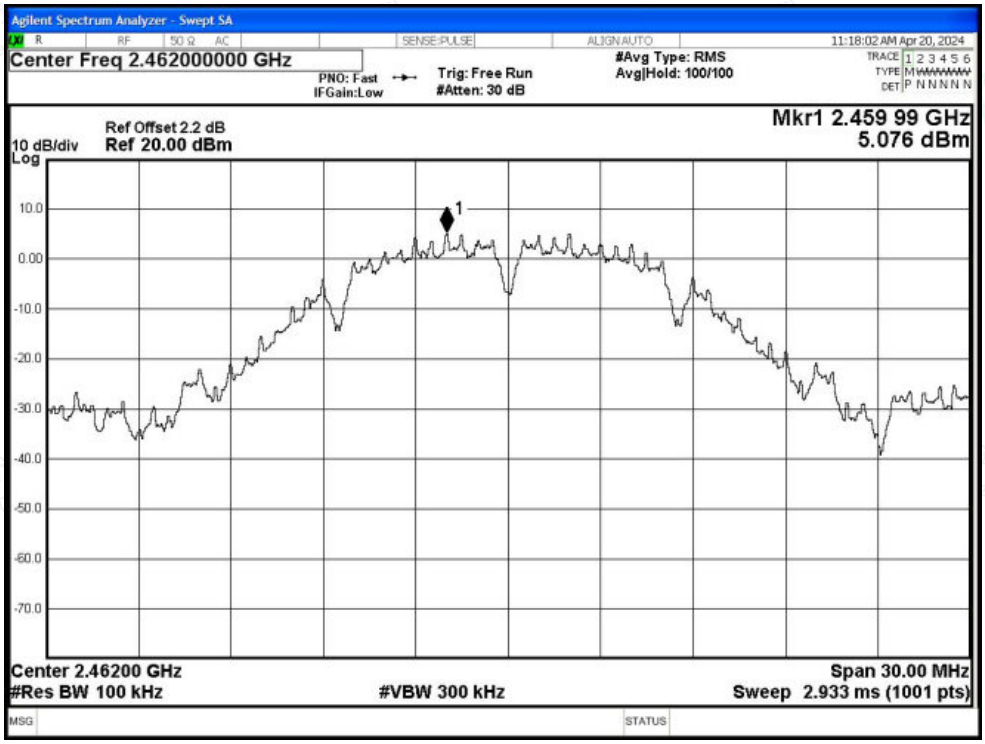
Band Edge NVNT b 2412MHz Ant1 Ref



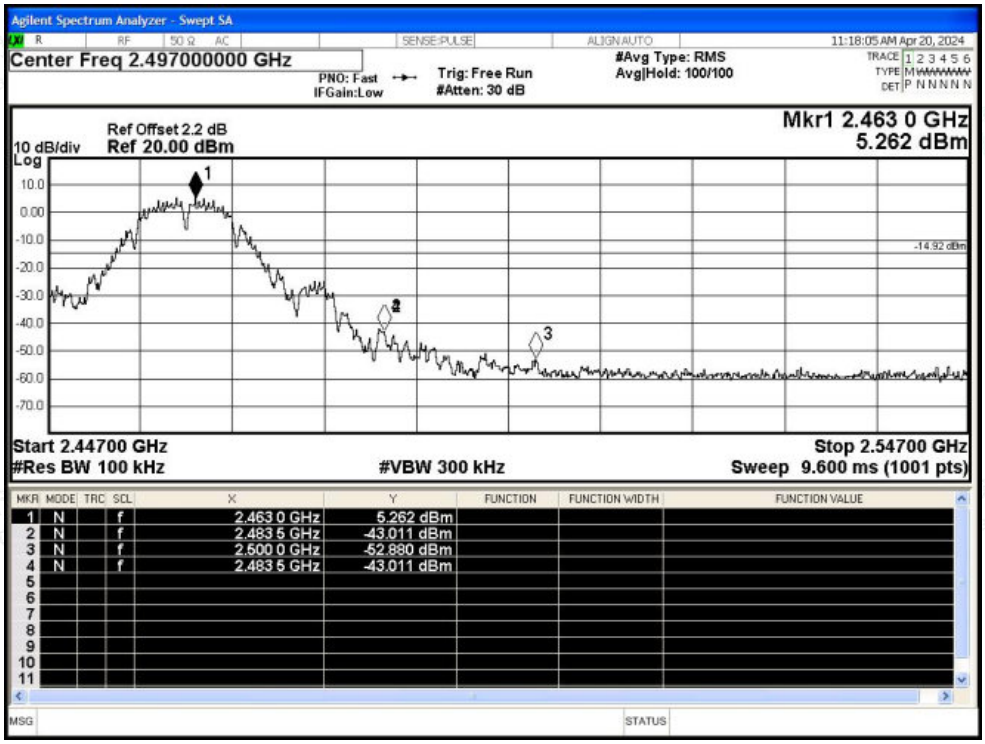

Band Edge NVNT b 2412MHz Ant1 Emission



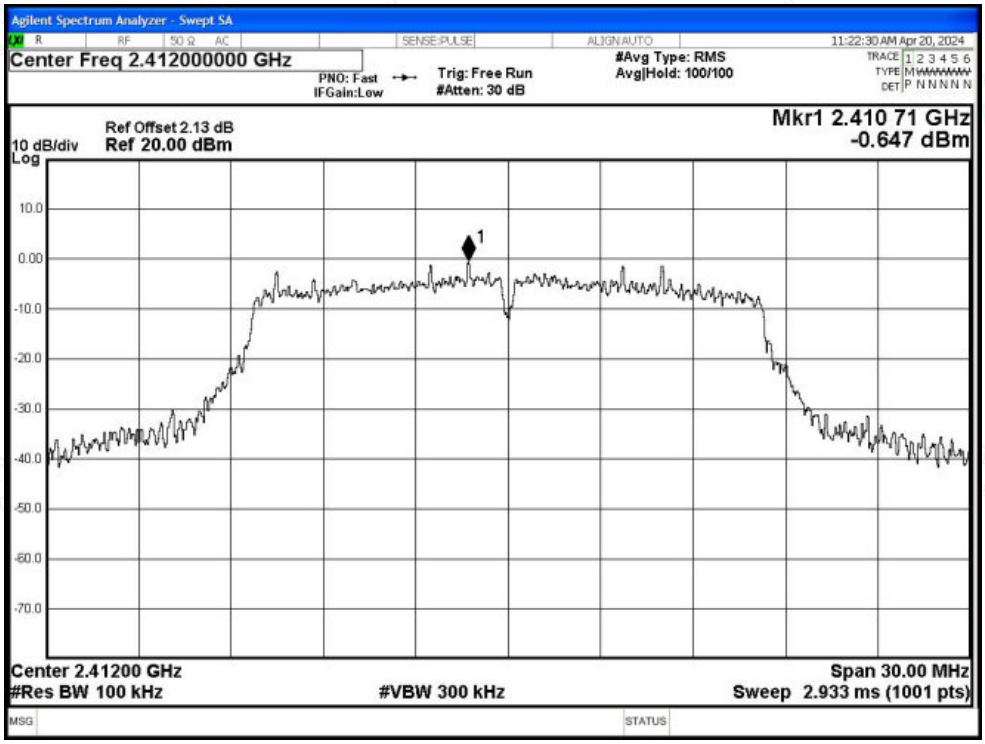
Band Edge NVNT b 2462MHz Ant1 Ref



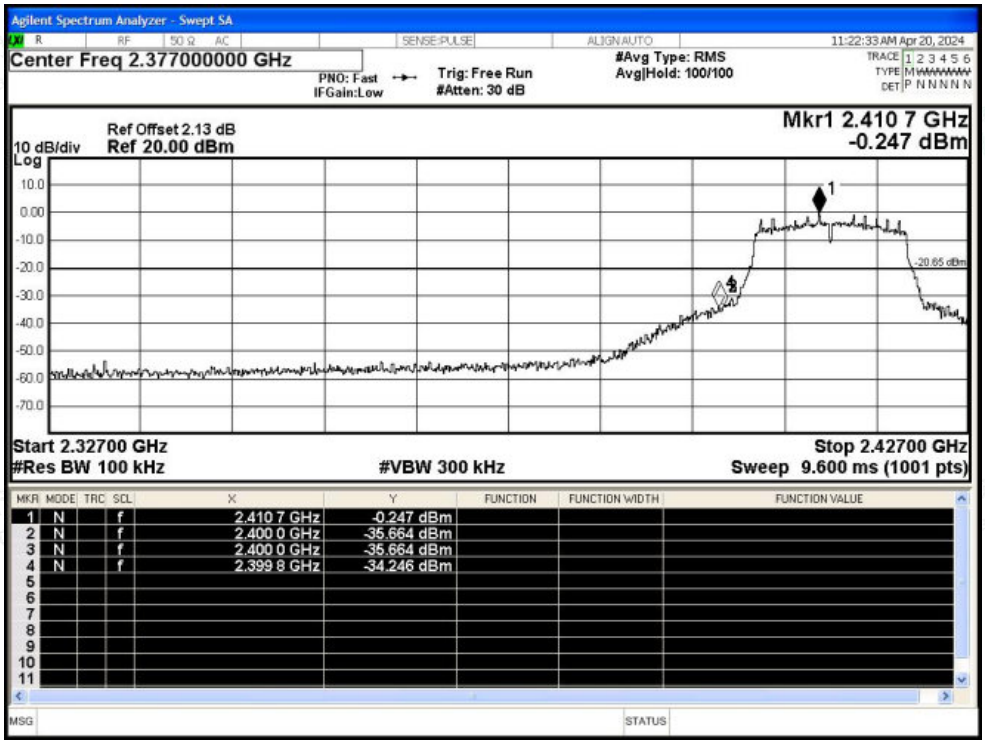

Band Edge NVNT b 2462MHz Ant1 Emission



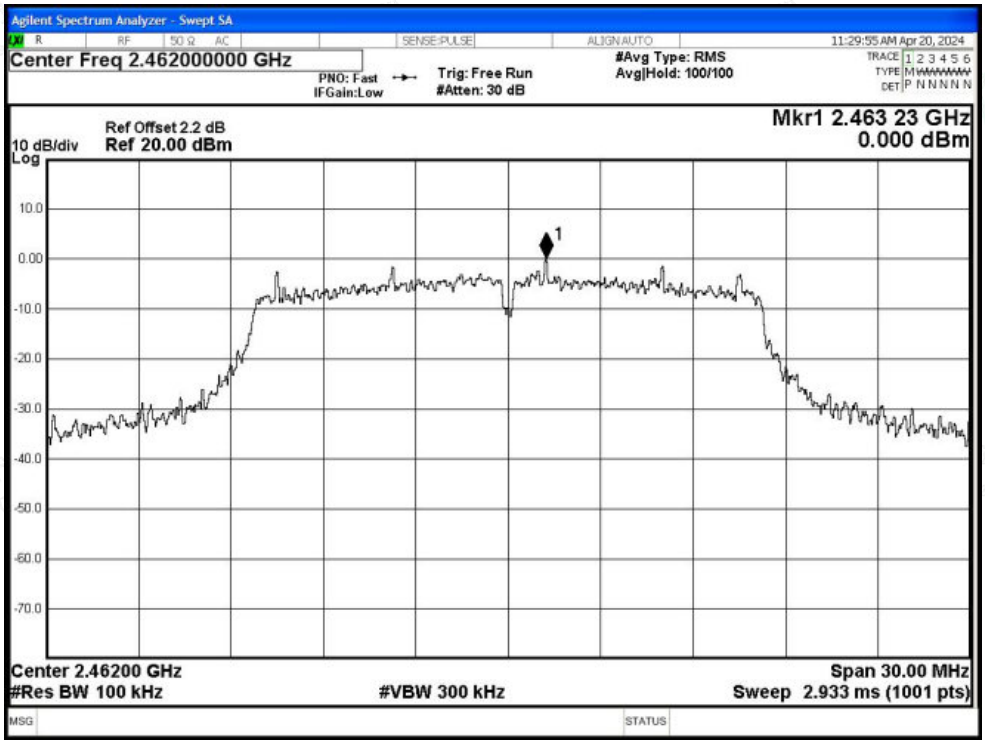
Band Edge NVNT g 2412MHz Ant1 Ref



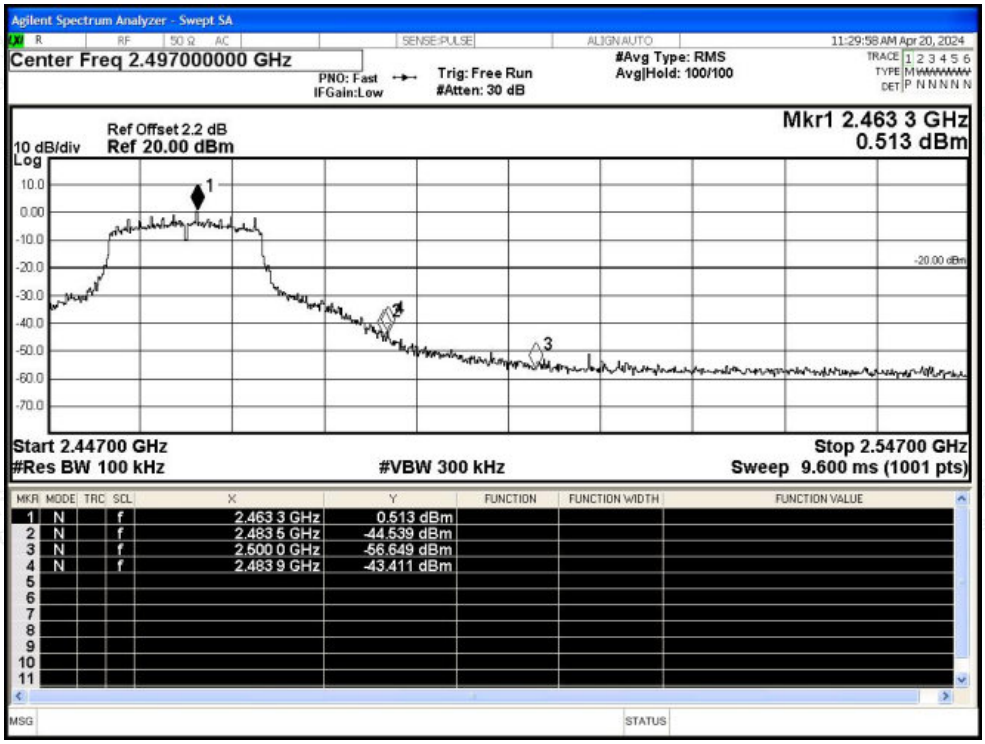

Band Edge NVNT g 2412MHz Ant1 Emission



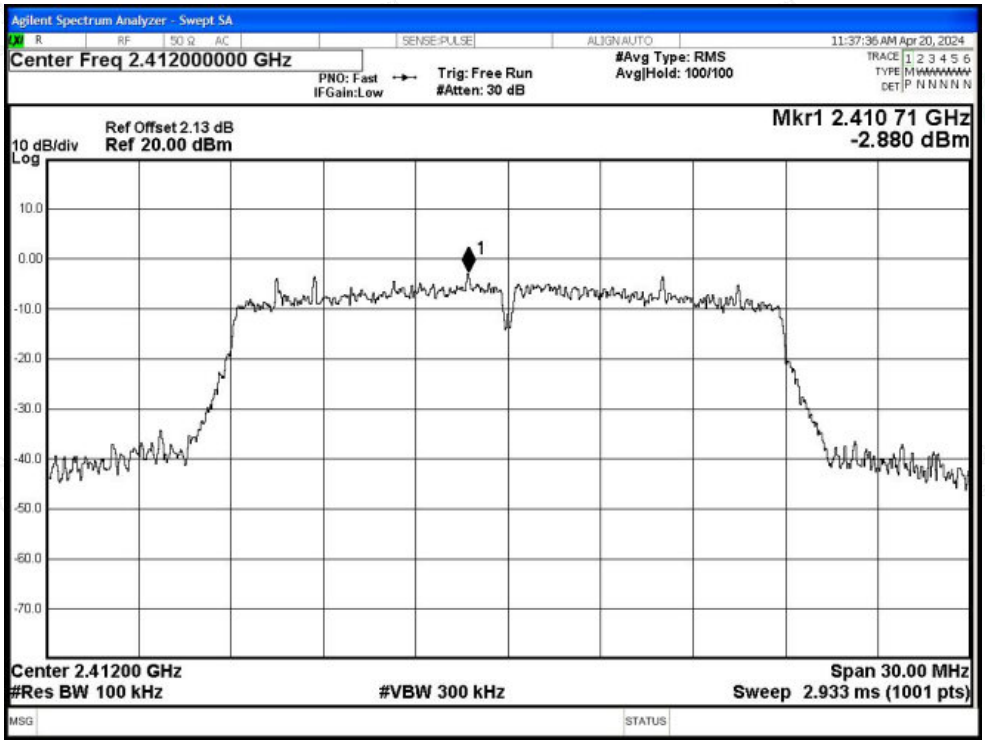
Band Edge NVNT g 2462MHz Ant1 Ref



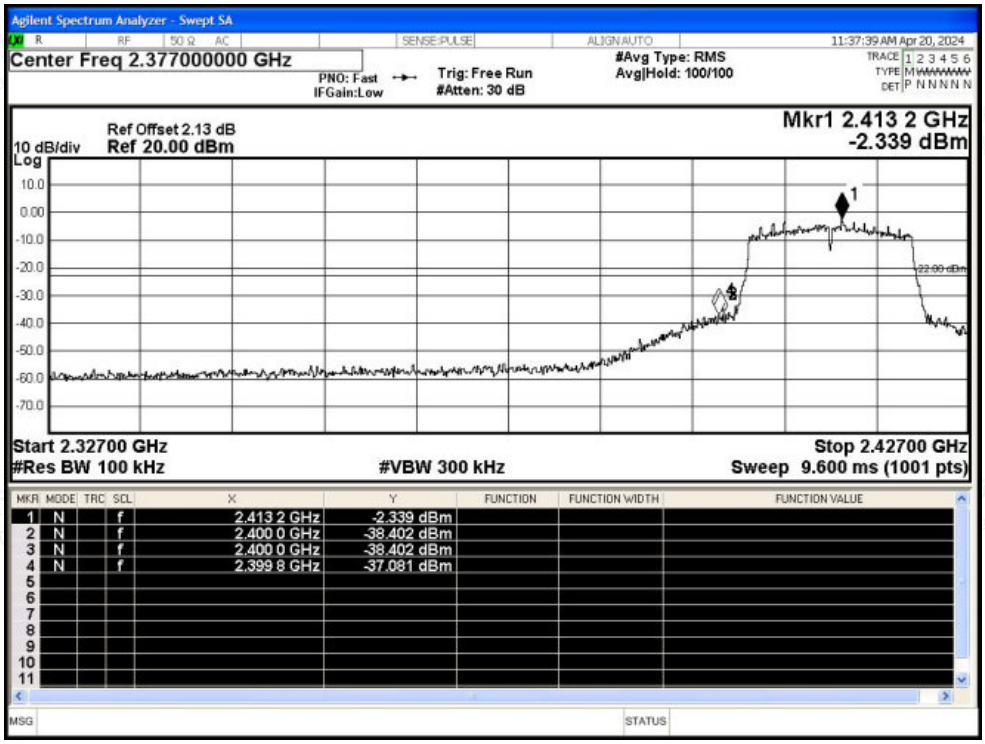

Band Edge NVNT g 2462MHz Ant1 Emission



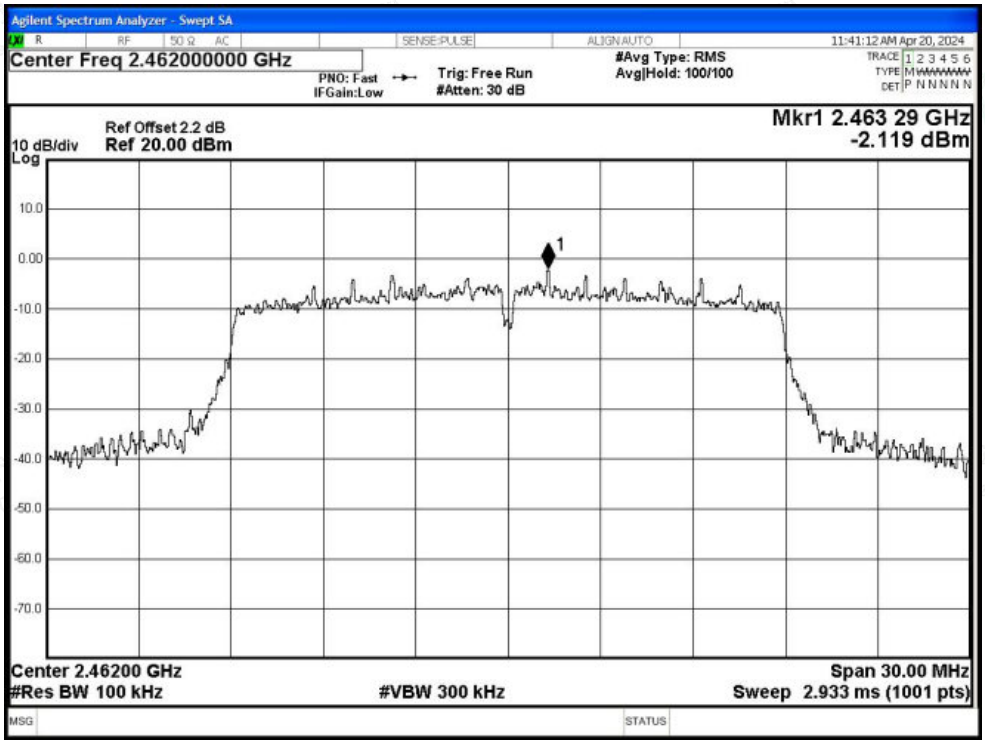
Band Edge NVNT n20 2412MHz Ant1 Ref



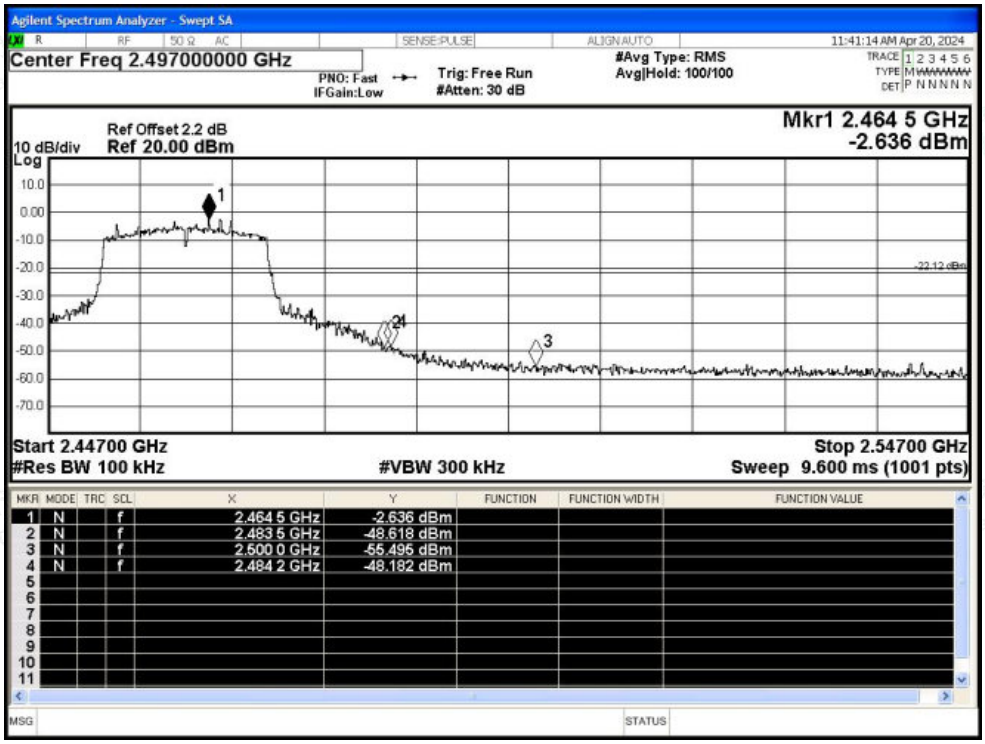

Band Edge NVNT n20 2412MHz Ant1 Emission



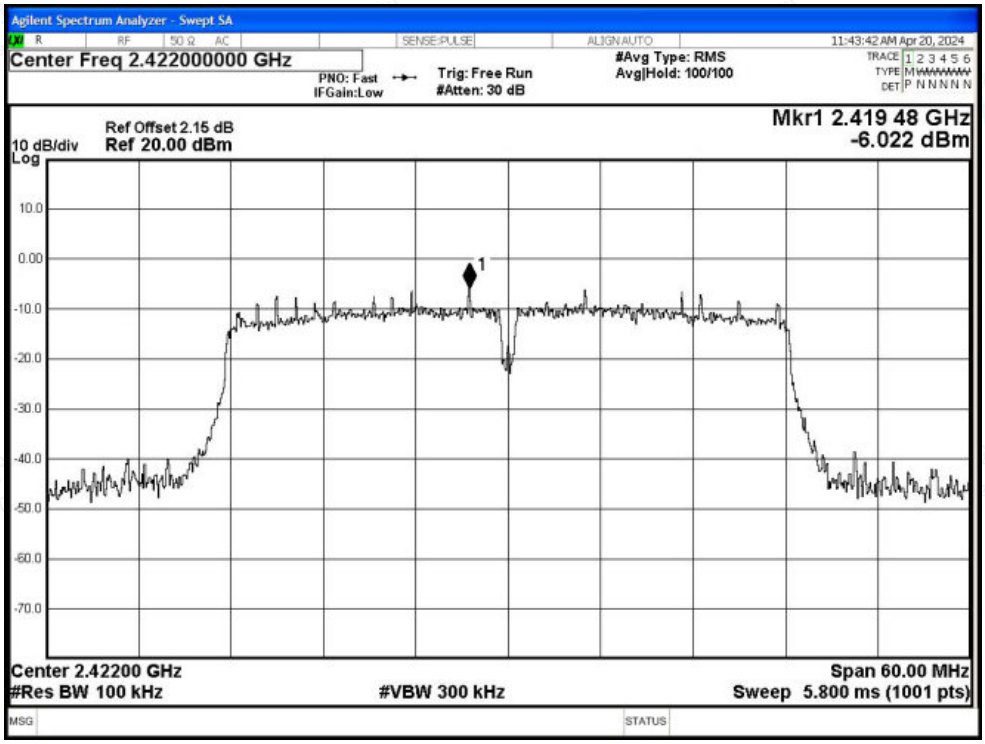
Band Edge NVNT n20 2462MHz Ant1 Ref



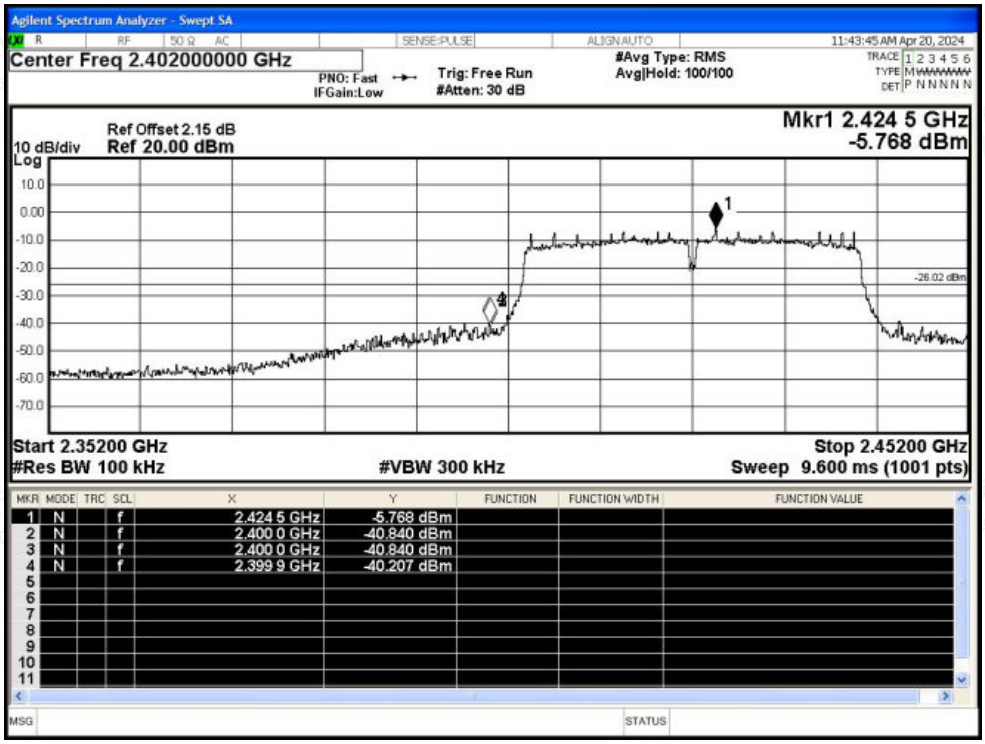

Band Edge NVNT n20 2462MHz Ant1 Emission



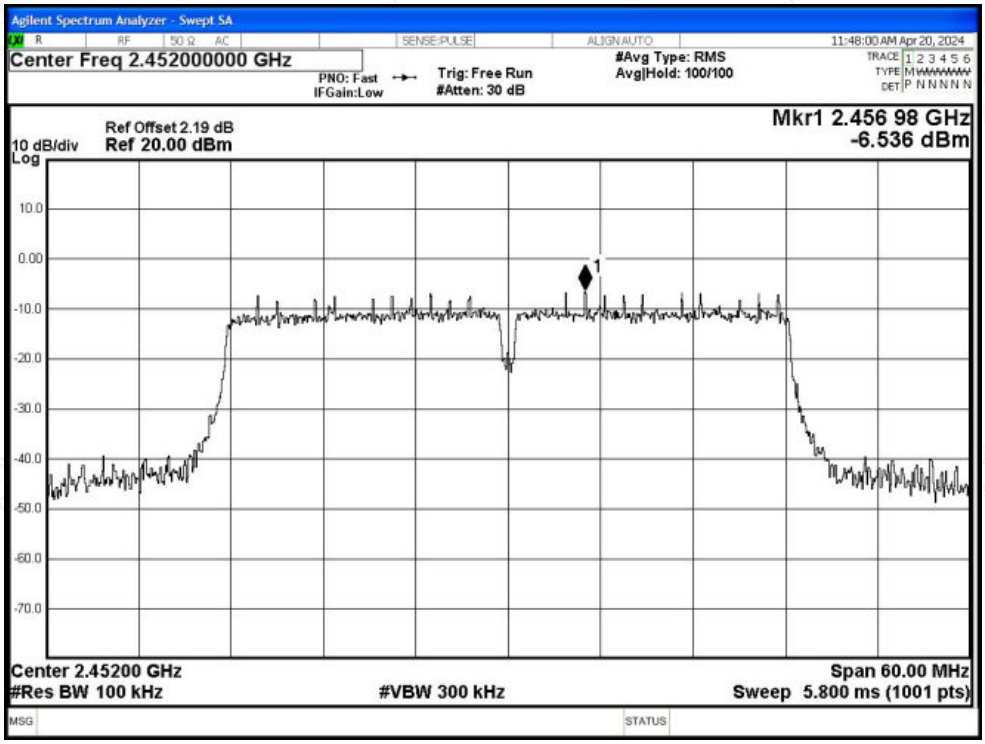
Band Edge NVNT n40 2422MHz Ant1 Ref



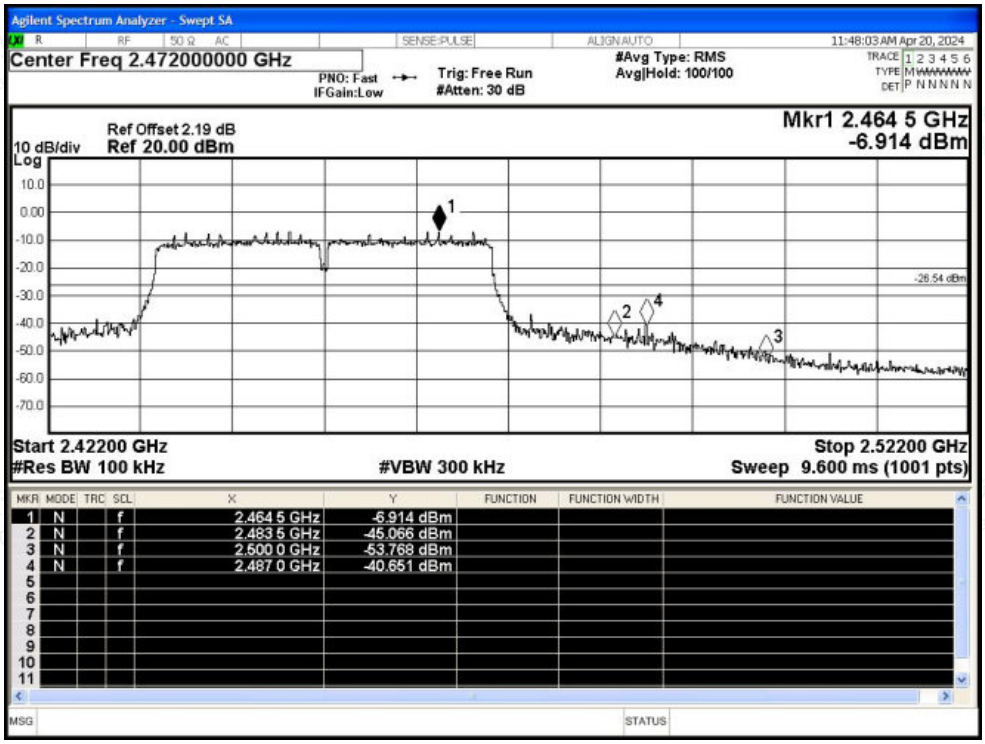

Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref




Band Edge NVNT n40 2452MHz Ant1 Emission

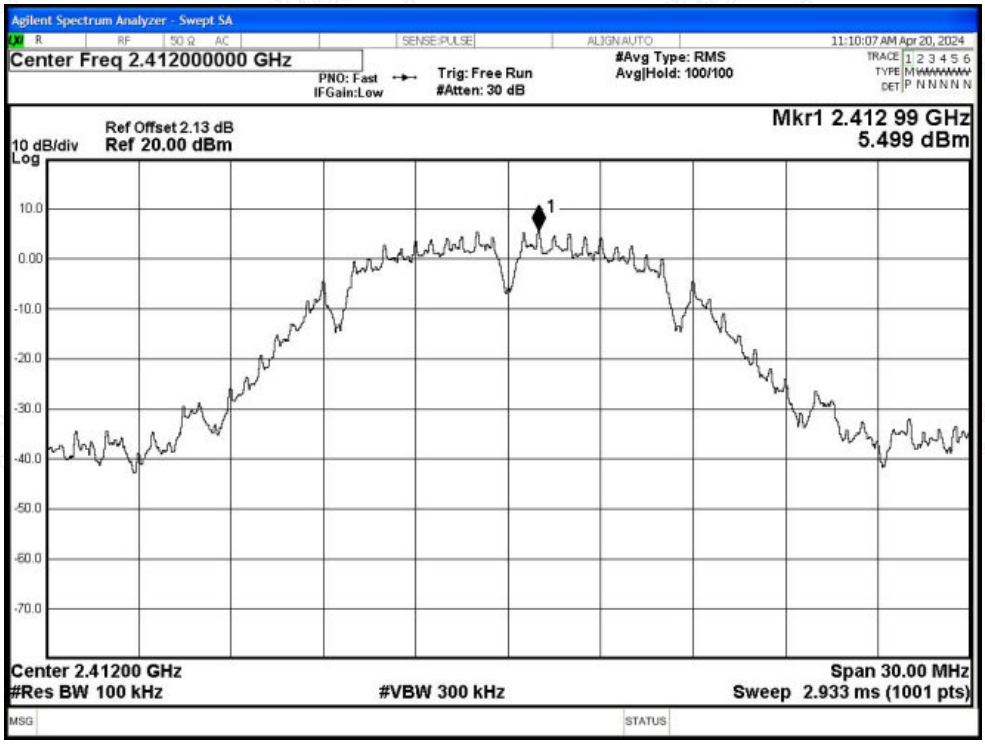


# C.5 Conducted RF Spurious Emission

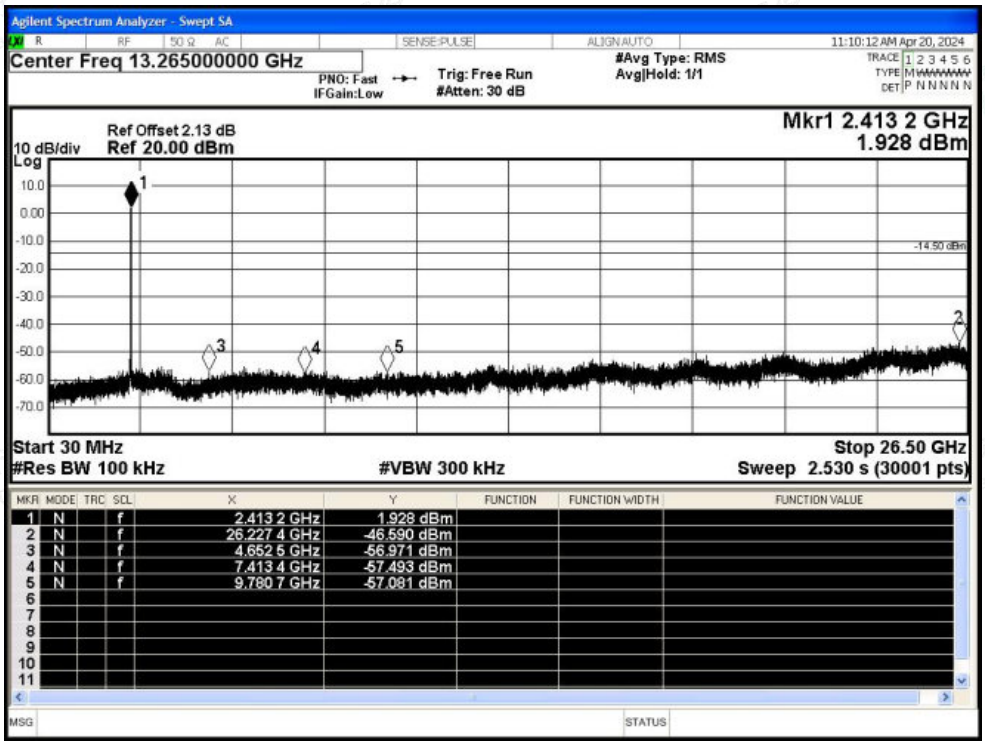
| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | b | 2412 | Ant1 | -52.09 | -20 | Pass |
| NVNT | b | 2437 | Ant1 | -52.18 | -20 | Pass |
| NVNT | b | 2462 | Ant1 | -52.13 | -20 | Pass |
| NVNT | g | 2412 | Ant1 | -46.1 | -20 | Pass |
| NVNT | g | 2437 | Ant1 | -45.69 | -20 | Pass |
| NVNT | g | 2462 | Ant1 | -46.36 | -20 | Pass |
| NVNT | n20 | 2412 | Ant1 | -45.09 | -20 | Pass |
| NVNT | n20 | 2437 | Ant1 | -44.23 | -20 | Pass |
| NVNT | n20 | 2462 | Ant1 | -43.88 | -20 | Pass |
| NVNT | n40 | 2422 | Ant1 | -39.98 | -20 | Pass |
| NVNT | n40 | 2437 | Ant1 | -39.72 | -20 | Pass |
| NVNT | n40 | 2452 | Ant1 | -40.13 | -20 | Pass |

Test Graphs

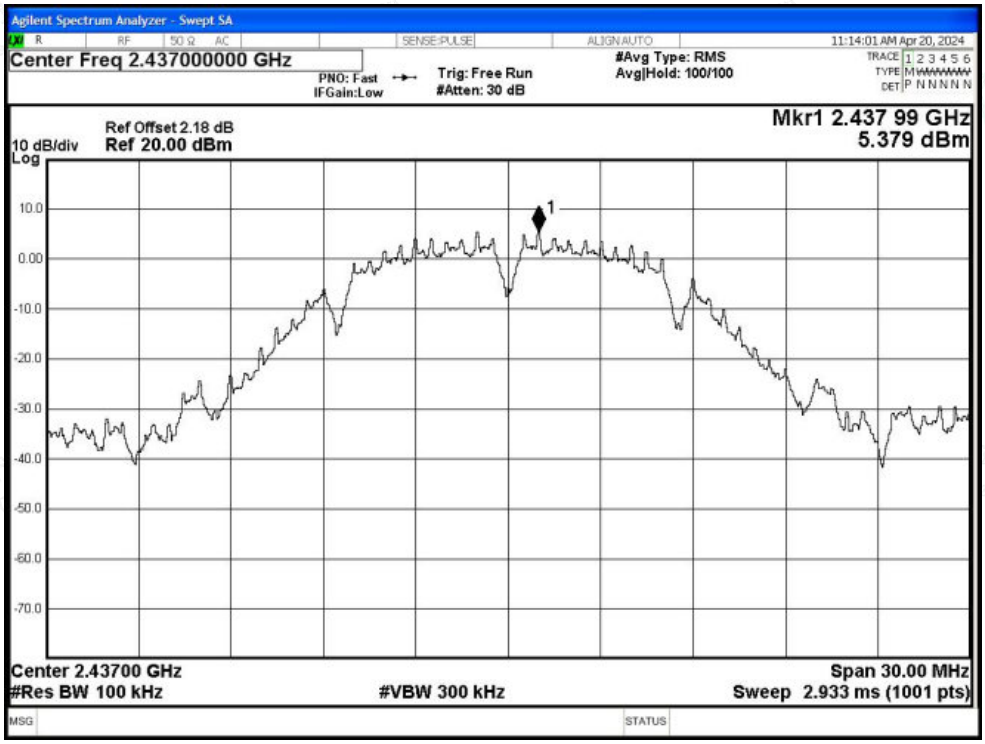
Tx. Spurious NVNT b 2412MHz Ant1 Ref



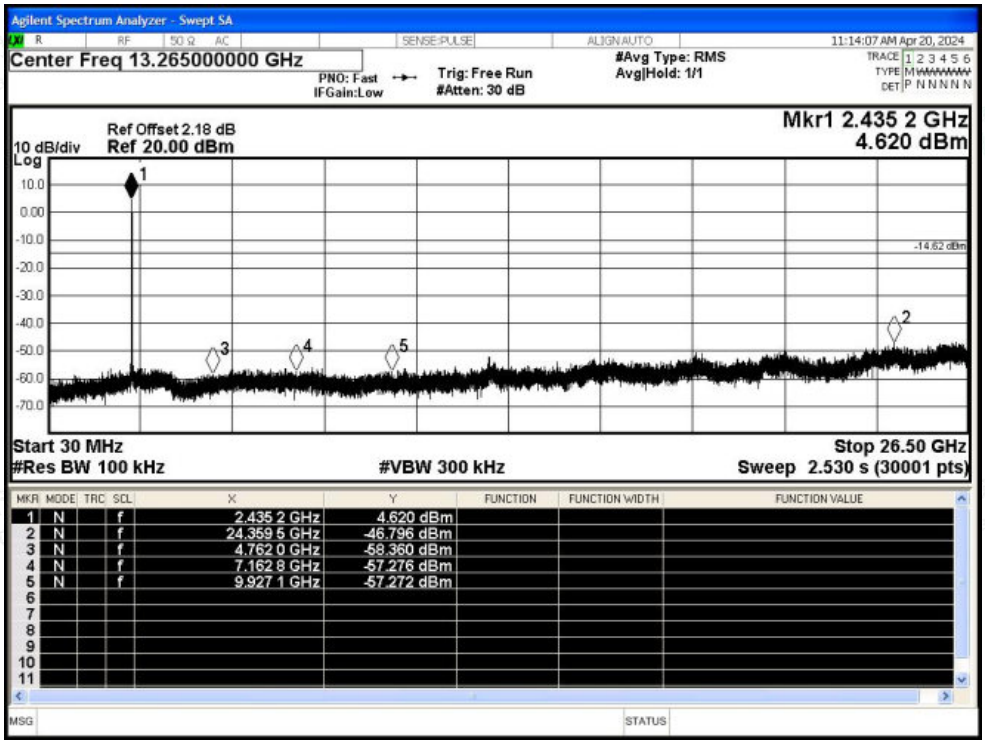

Tx. Spurious NVNT b 2412MHz Ant1 Emission



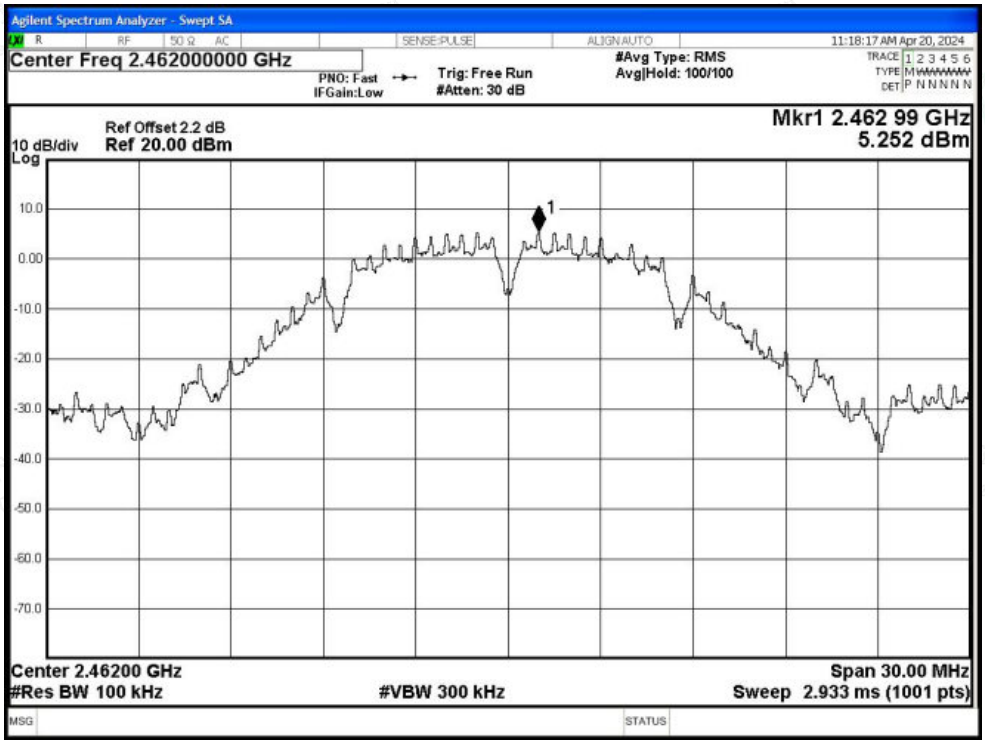
Tx. Spurious NVNT b 2437MHz Ant1 Ref



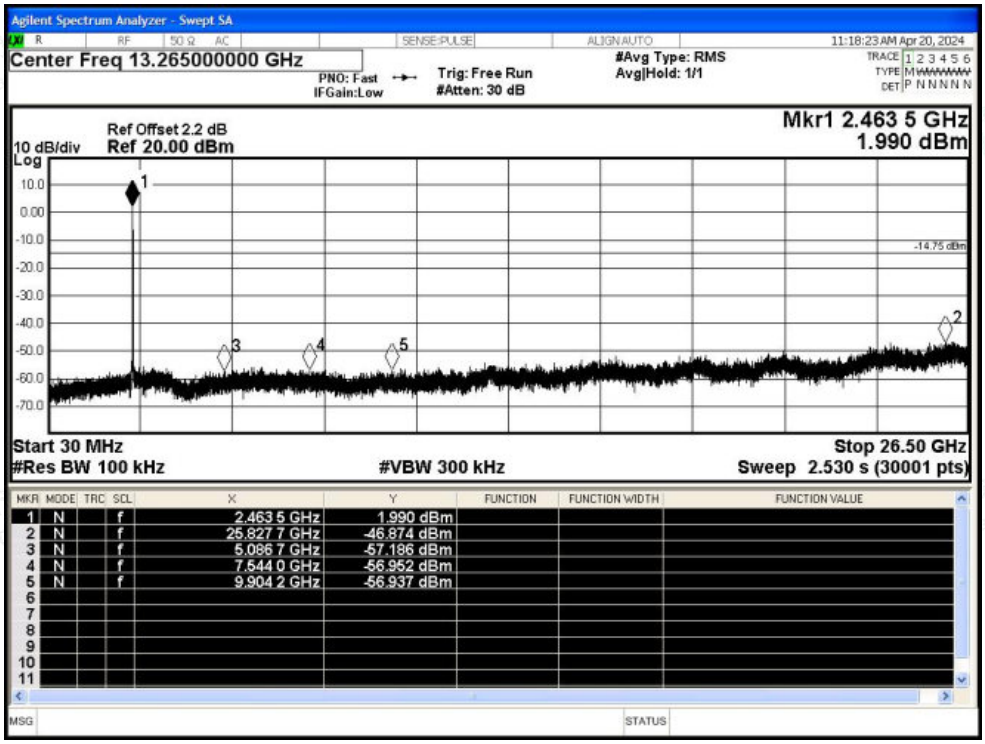

Tx. Spurious NVNT b 2437MHz Ant1 Emission



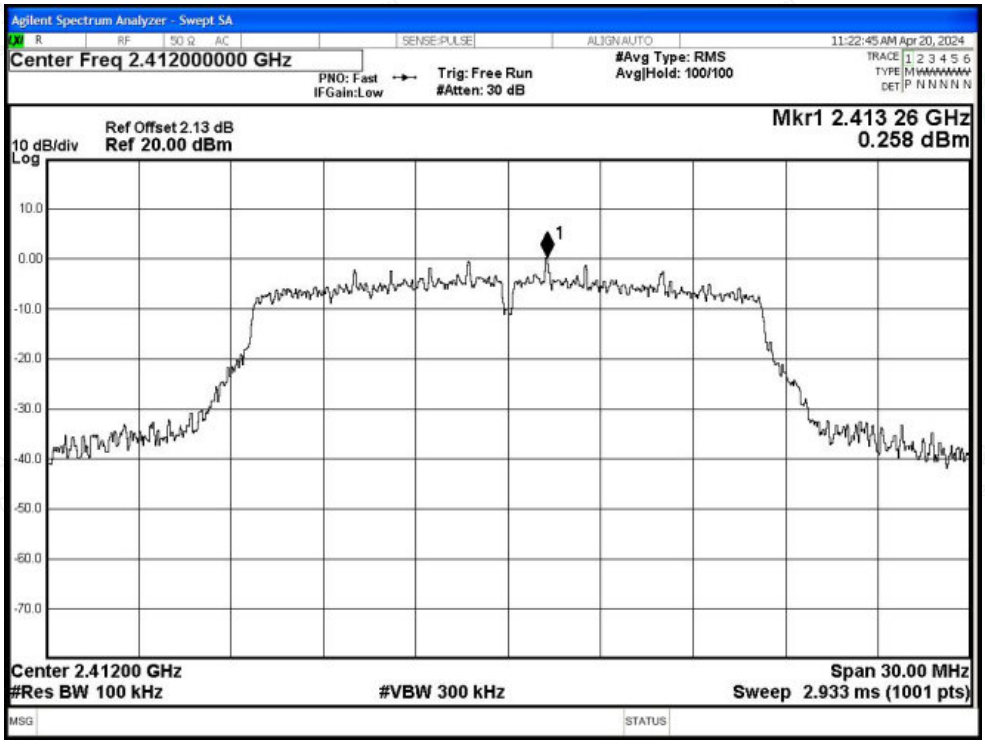
Tx. Spurious NVNT b 2462MHz Ant1 Ref

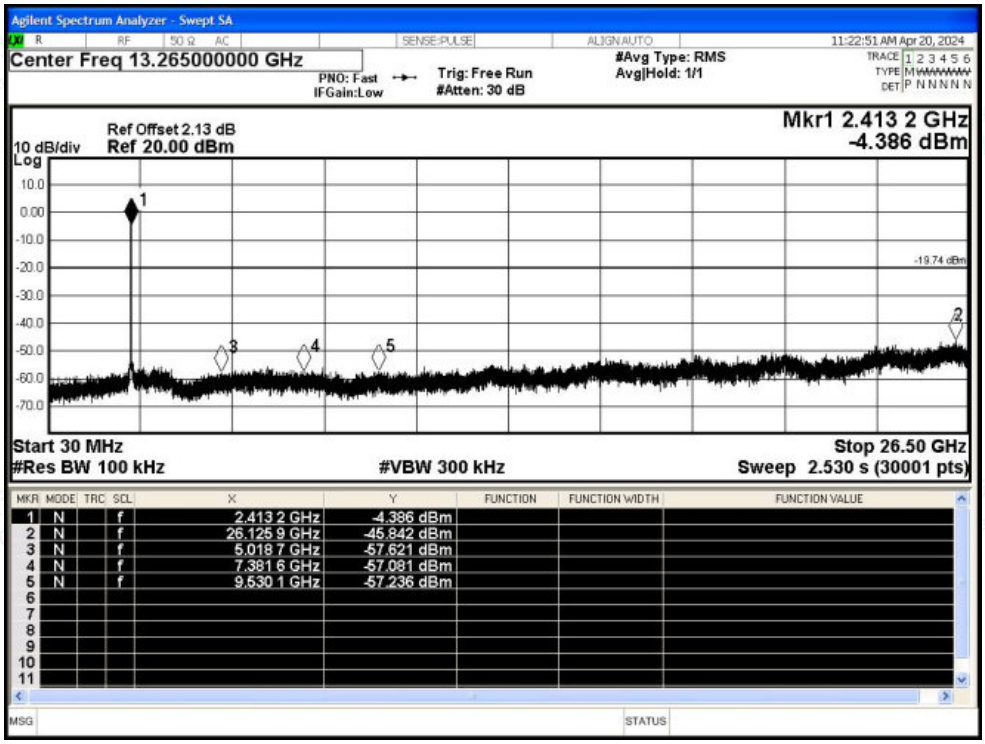



Tx. Spurious NVNT b 2462MHz Ant1 Emission



Tx. Spurious NVNT g 2412MHz Ant1 Ref




Tx. Spurious NVNT g 2412MHz Ant1 Emission