




Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth Soundbar with Wireless Subwoofer

Test Model: EHS-2050

Environmental Conditions

| | |
|--------------------|--|
| Temperature: | 23.8 ° C |
| Relative Humidity: | 52.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | <i>Nick Peng</i> Nick Peng |
| Supervised by: |  Ling Zhu |





A.1 -20dB Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | -20 dB Bandwidth (MHz) | Limit -20 dB Bandwidth (MHz) | Verdict |
|-----------|-------|-----------------|---------|------------------------|------------------------------|---------|
| NVNT | 1-DH5 | 2402 | Ant0 | 0.9 | N/A | Pass |
| NVNT | 1-DH5 | 2441 | Ant0 | 0.907 | N/A | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | 0.897 | N/A | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | 1.284 | N/A | Pass |
| NVNT | 2-DH5 | 2441 | Ant0 | 1.284 | N/A | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | 1.269 | N/A | Pass |



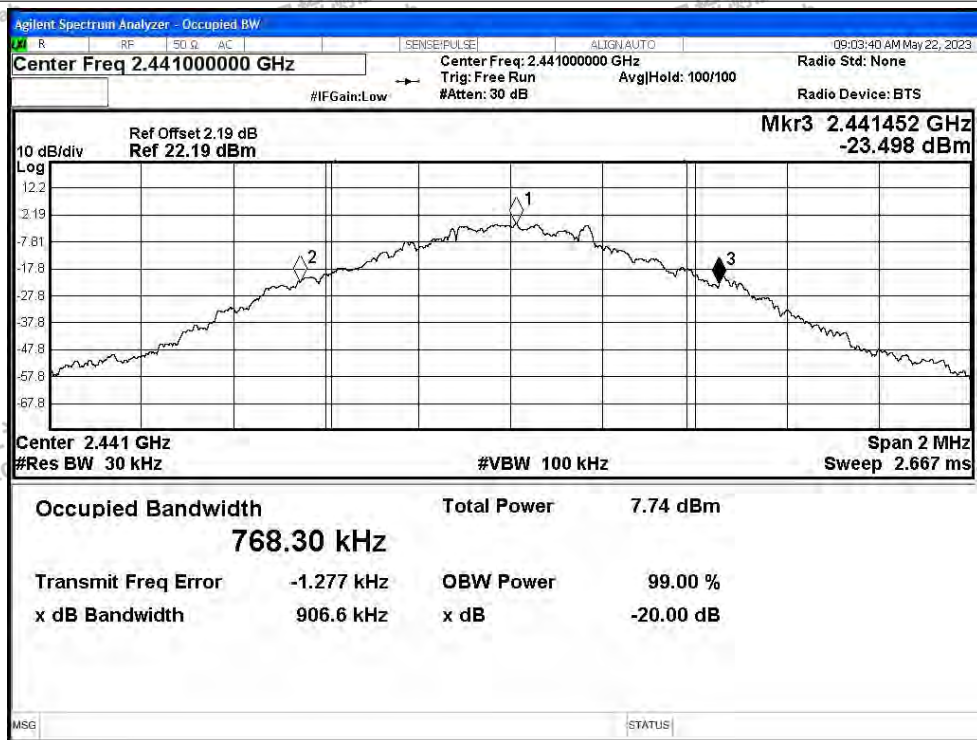


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant0

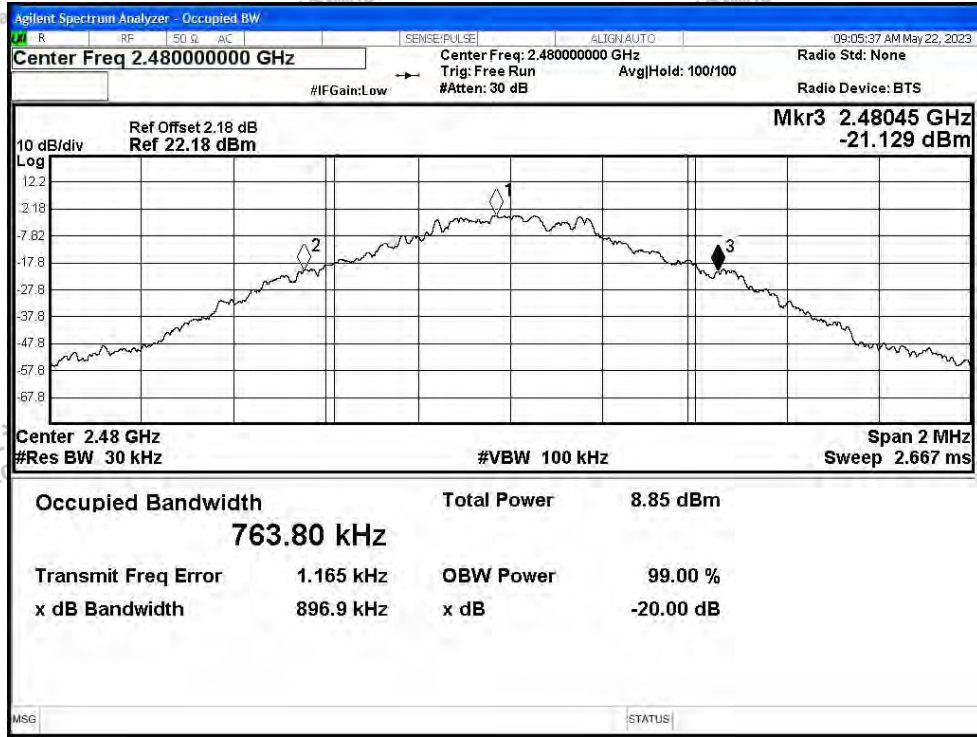


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant0

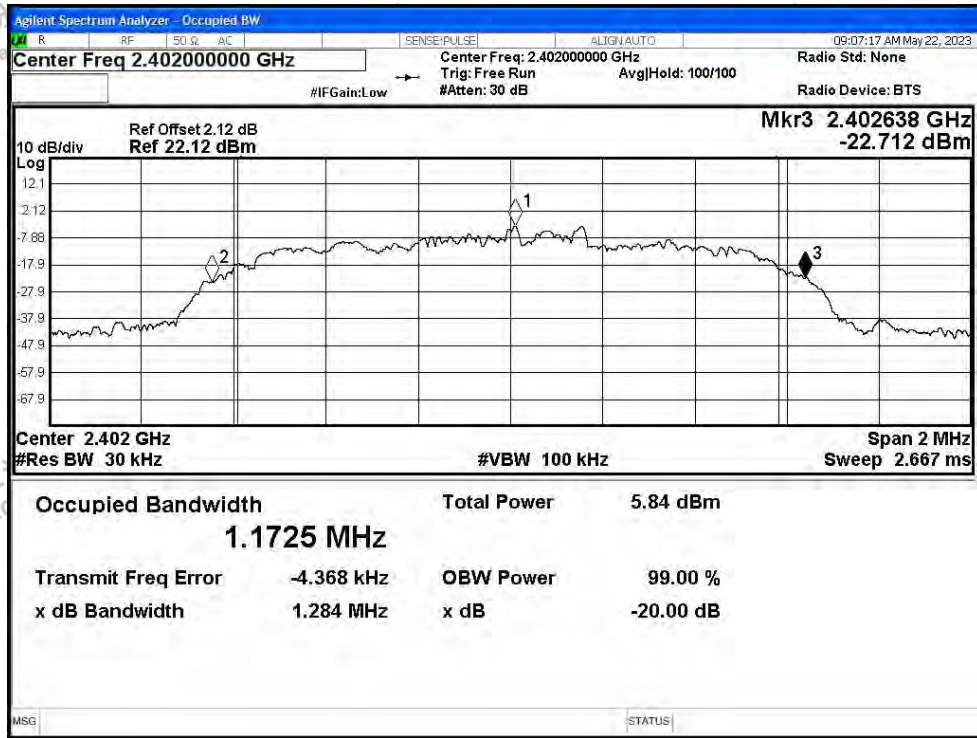




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant0

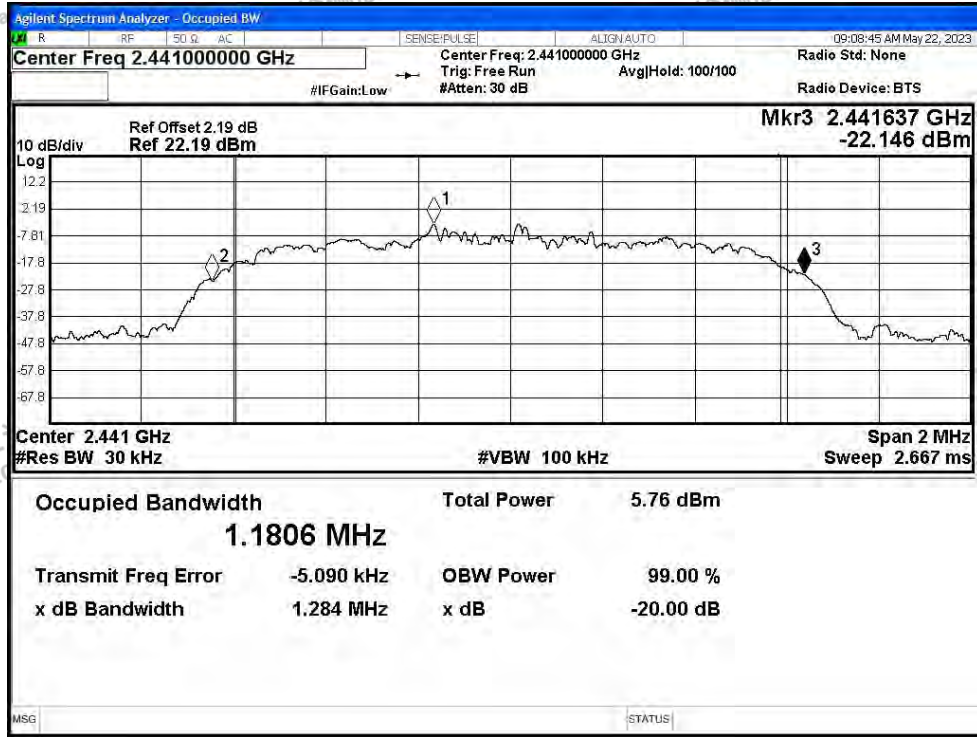


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant0

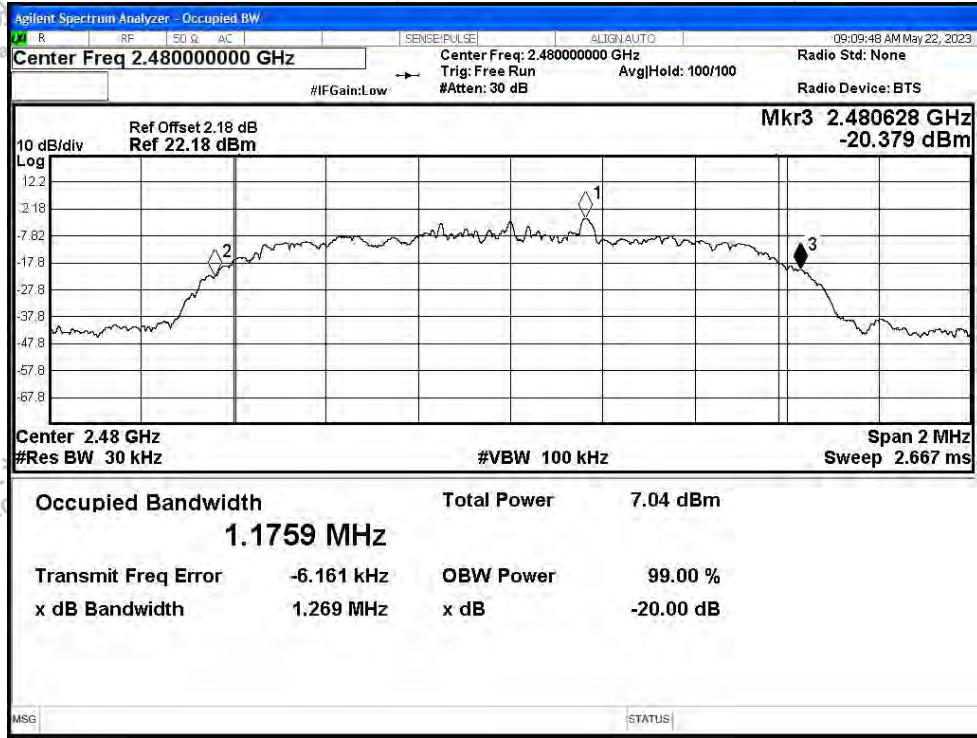




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant0



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant0





A.2 Maximum Conducted Output Power

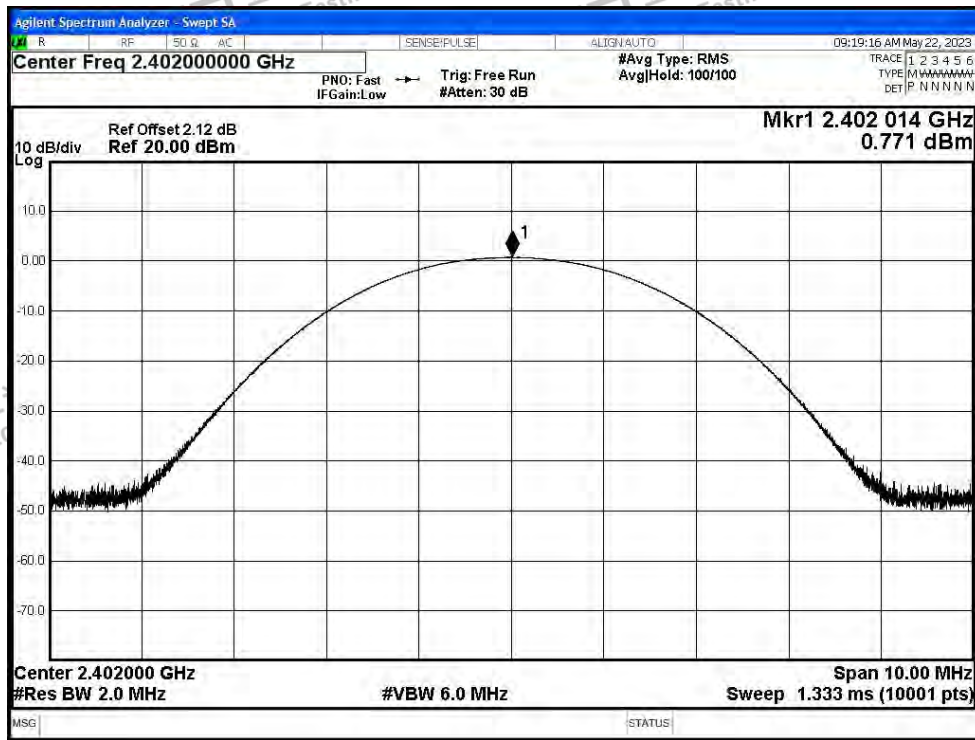
| Condition | Mode | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|-------|-----------------|---------|-------------------|-------------|---------|
| NVNT | 1-DH5 | 2402 | Ant0 | 0.77 | 21 | Pass |
| NVNT | 1-DH5 | 2441 | Ant0 | 1.84 | 21 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | 2.87 | 21 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | 0.95 | 21 | Pass |
| NVNT | 2-DH5 | 2441 | Ant0 | 1.16 | 21 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | 2.37 | 21 | Pass |



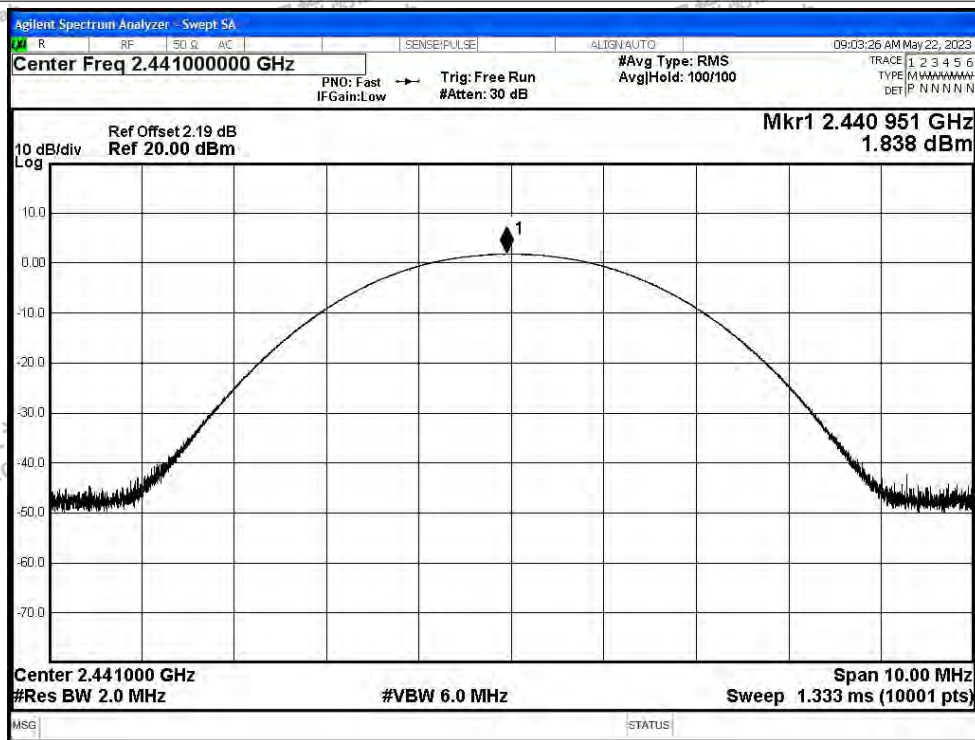


Test Graphs

Power NVNT 1-DH5 2402MHz Ant0

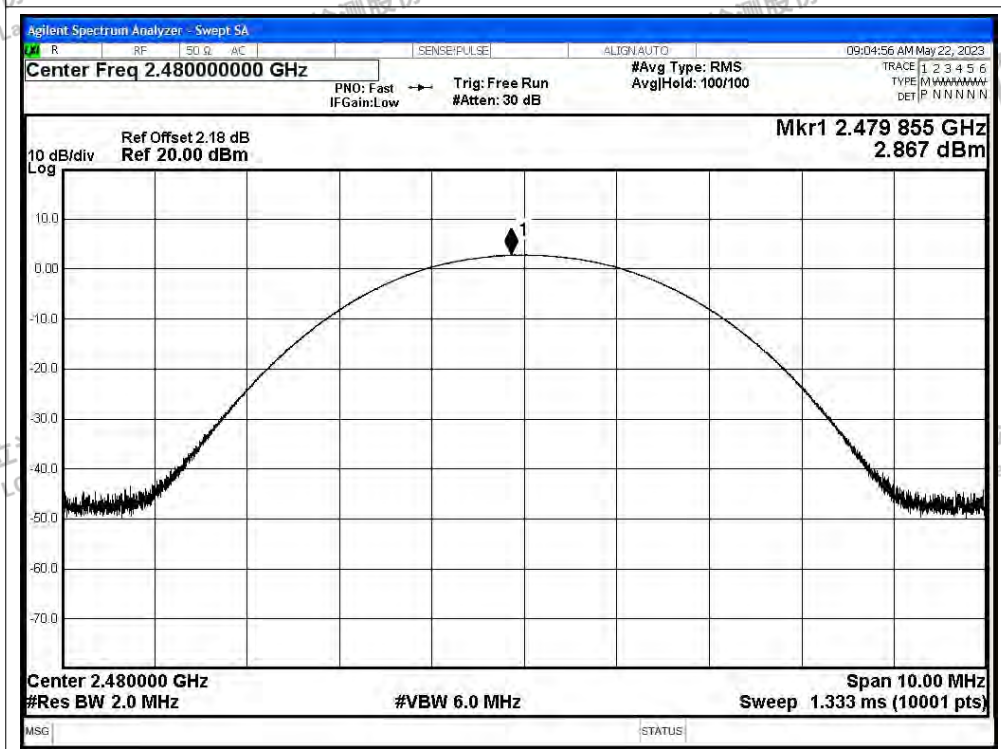


Power NVNT 1-DH5 2441MHz Ant0

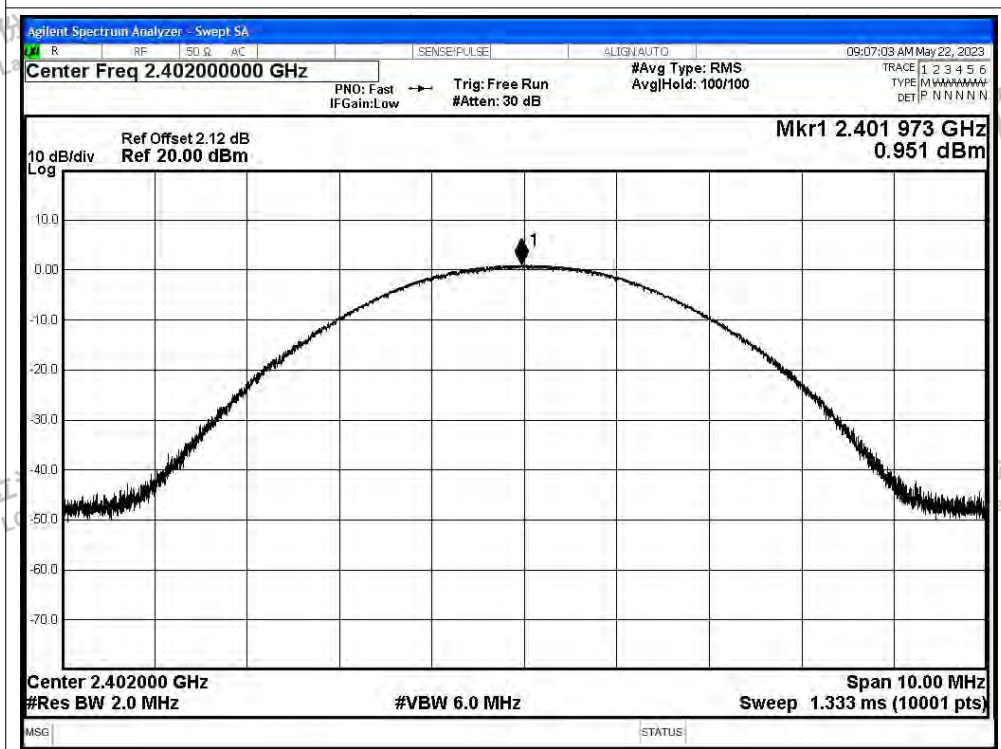




Power NVNT 1-DH5 2480MHz Ant0

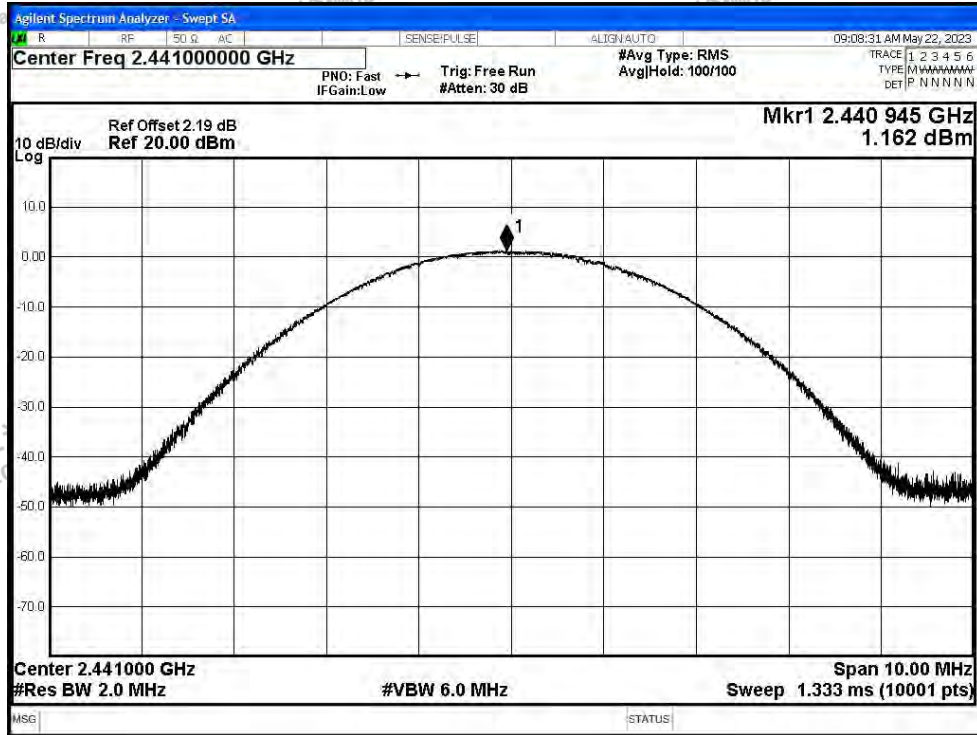


Power NVNT 2-DH5 2402MHz Ant0

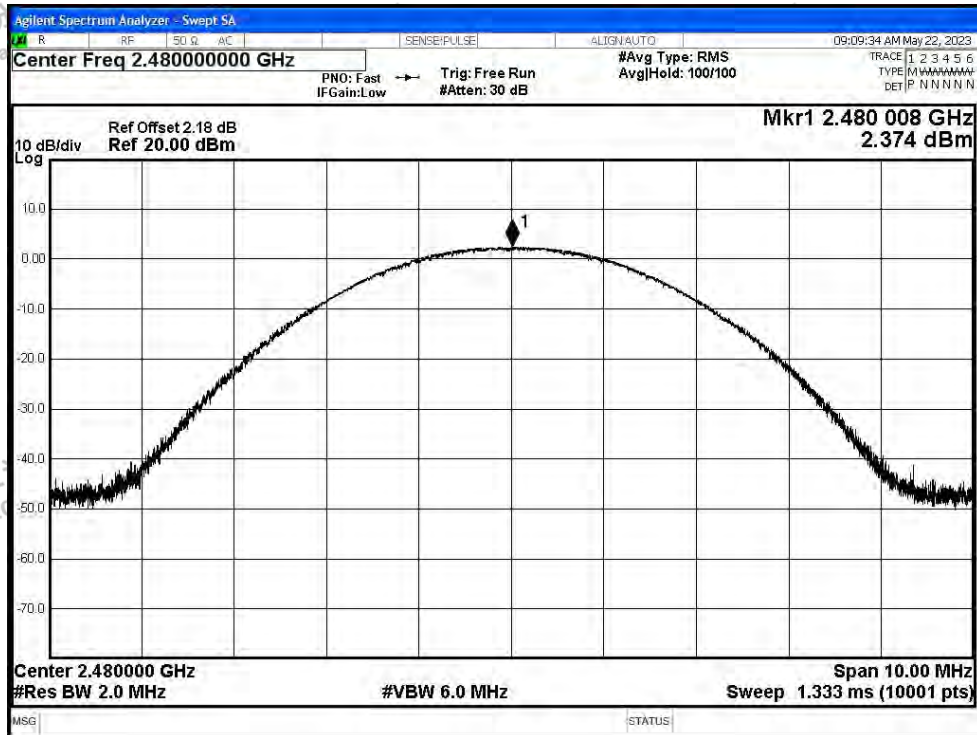




Power NVNT 2-DH5 2441MHz Ant0



Power NVNT 2-DH5 2480MHz Ant0





A.3 Carrier Frequencies Separation

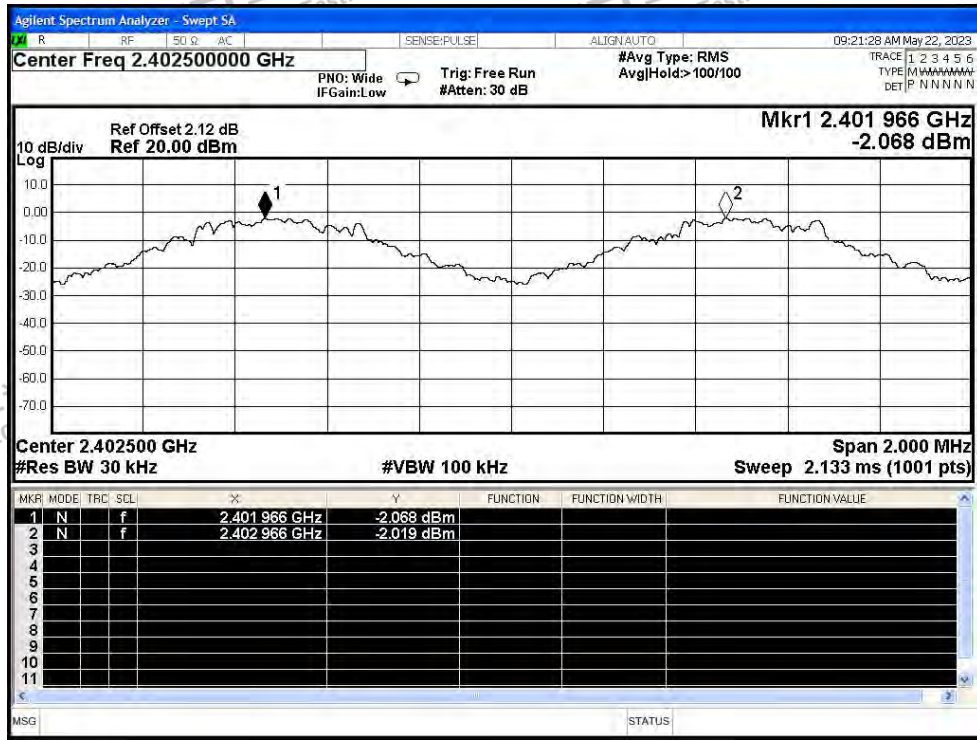
| Condition | Mode | Antenna | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|-----------|-------|---------|---------------------|---------------------|-----------|-------------|---------|
| NVNT | 1-DH5 | Ant0 | 2401.966 | 2402.966 | 1 | 0.605 | Pass |
| NVNT | 2-DH5 | Ant0 | 2402.022 | 2403.016 | 0.994 | 0.856 | Pass |



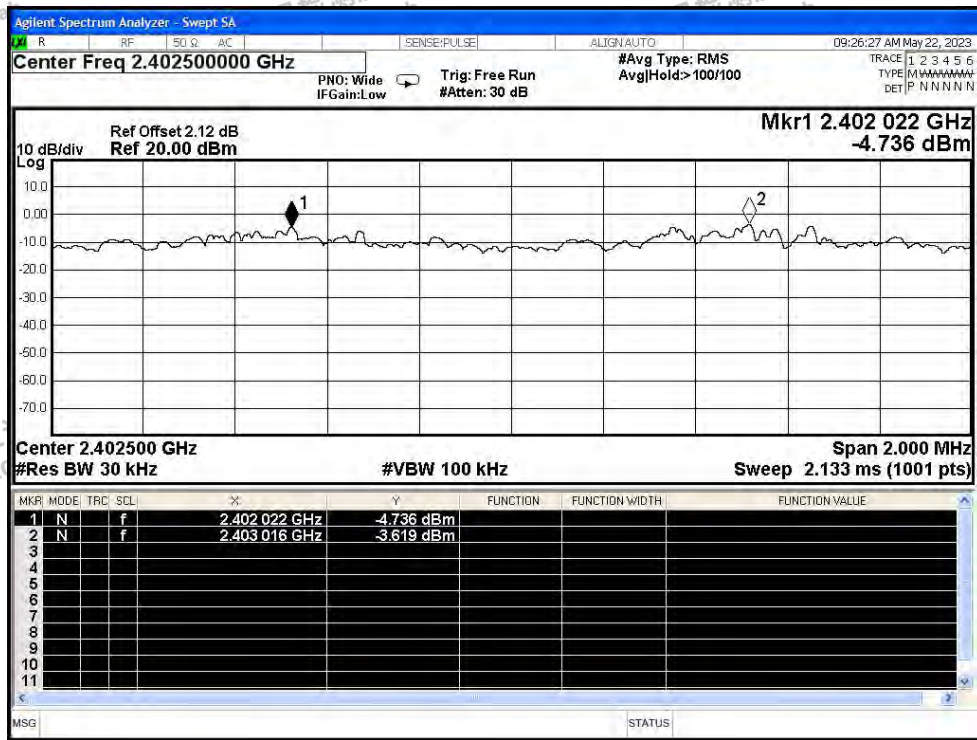


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant0



CFS NVNT 2-DH5 2402MHz Ant0





A.4 Dwell Time

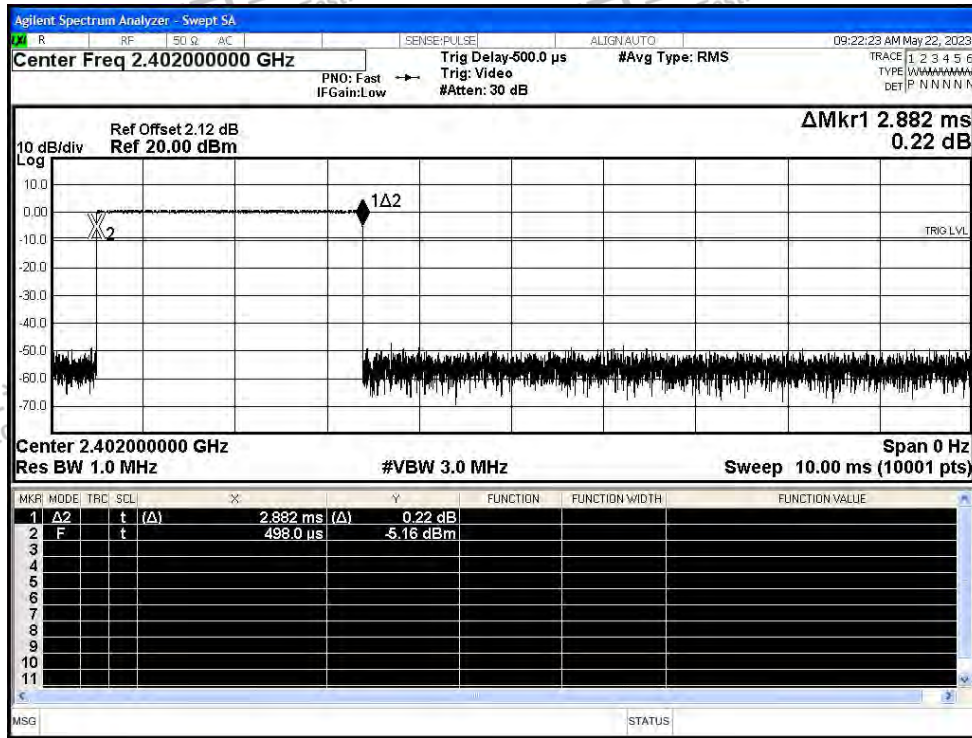
| Condition | Mode | Frequency (MHz) | Antenna | Pulse Time (ms) | Total Dwell Time (ms) | Burst Count | Period Time (ms) | Limit (ms) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-----------------------|-------------|------------------|------------|---------|
| NVNT | 1-DH5 | 2402 | Ant0 | 2.882 | 279.554 | 97 | 31600 | 400 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | 2.885 | 285.615 | 99 | 31600 | 400 | Pass |



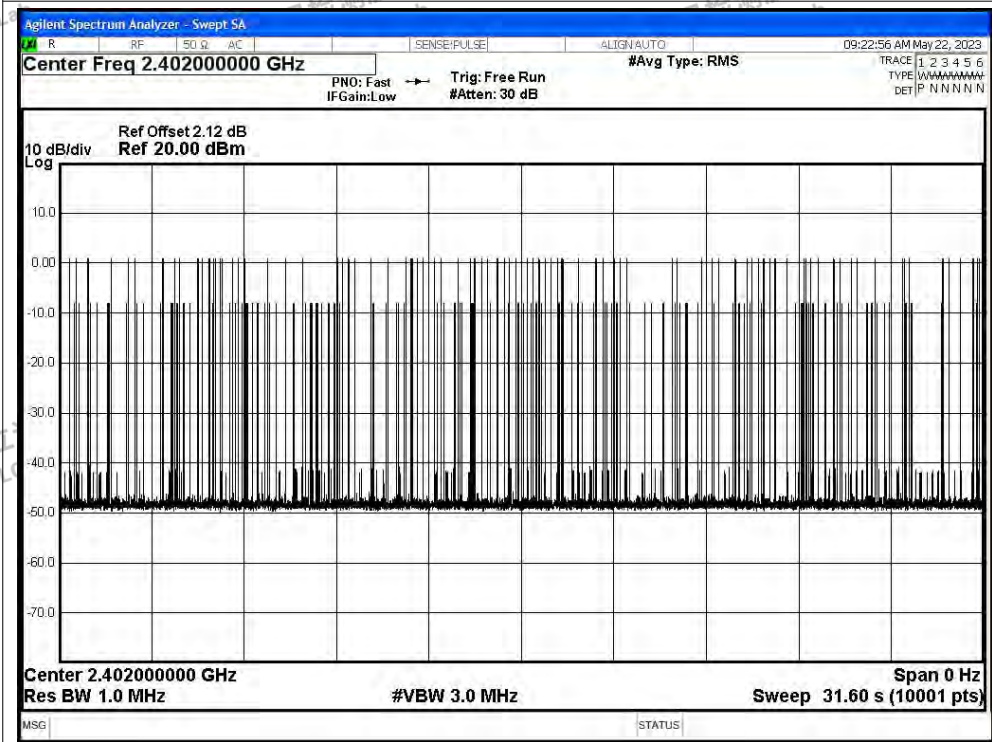


Test Graphs

Dwell NVNT-1-DH5 2402MHz Ant0 One Burst

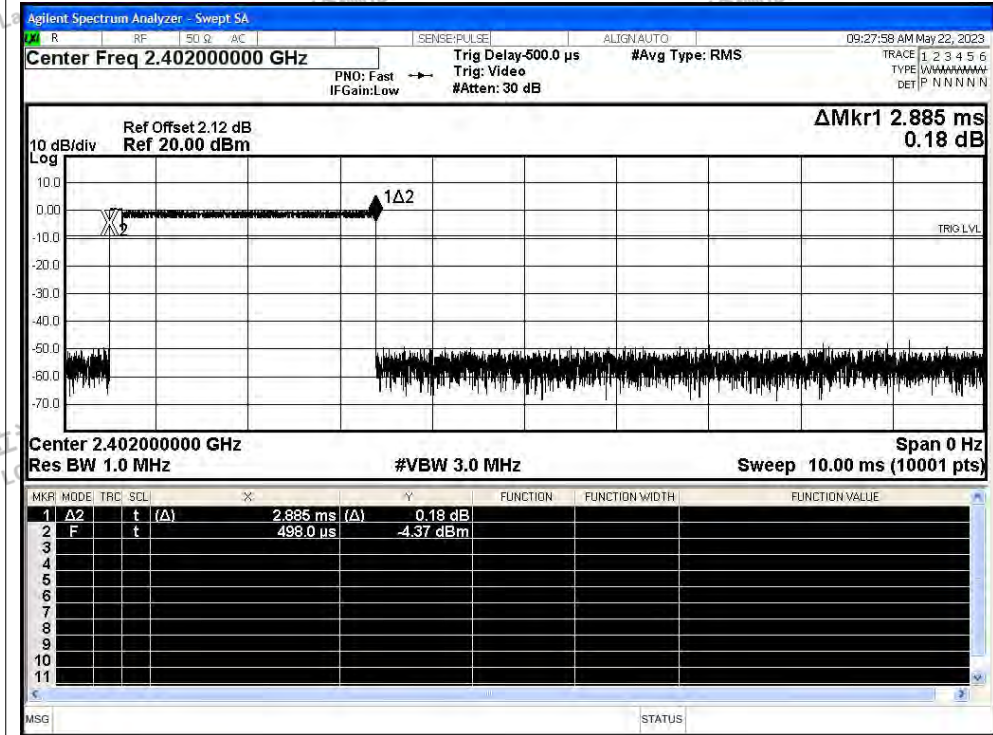


Dwell NVNT 1-DH5 2402MHz Ant0 Accumulated

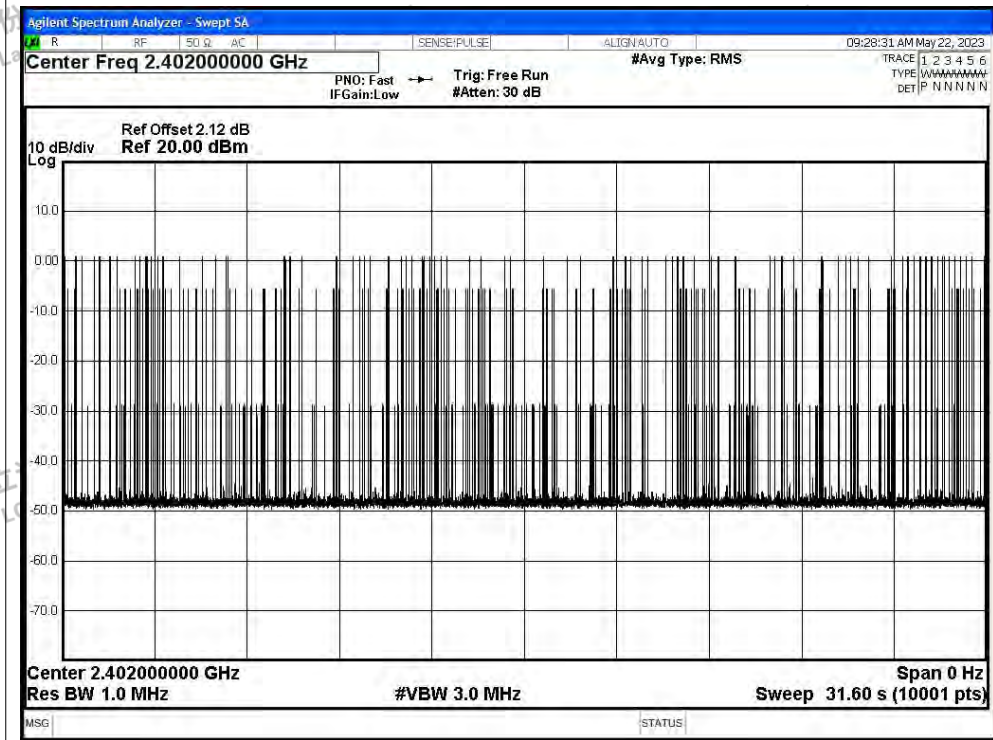




Dwell NVNT 2-DH5 2402MHz Ant0 One Burst



Dwell NVNT 2-DH5 2402MHz Ant0 Accumulated





A.5 Number of Hopping Channel

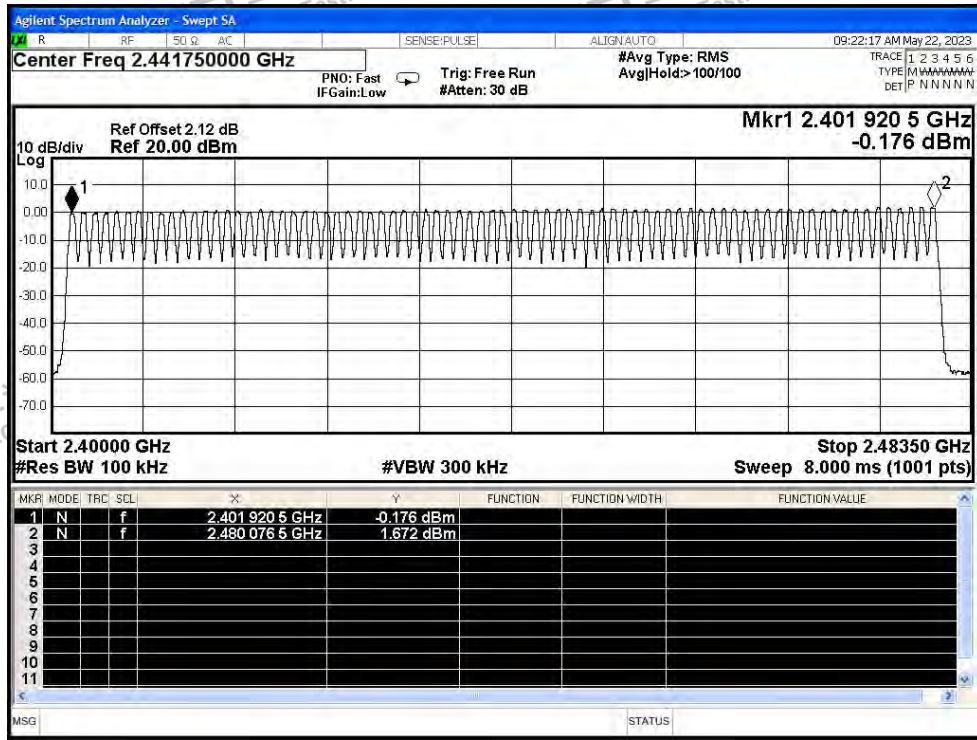
| Condition | Mode | Antenna | Hopping Number | Limit | Verdict |
|-----------|-------|---------|----------------|-------|---------|
| NVNT | 1-DH5 | Ant0 | 79 | 15 | Pass |
| NVNT | 2-DH5 | Ant0 | 79 | 15 | Pass |



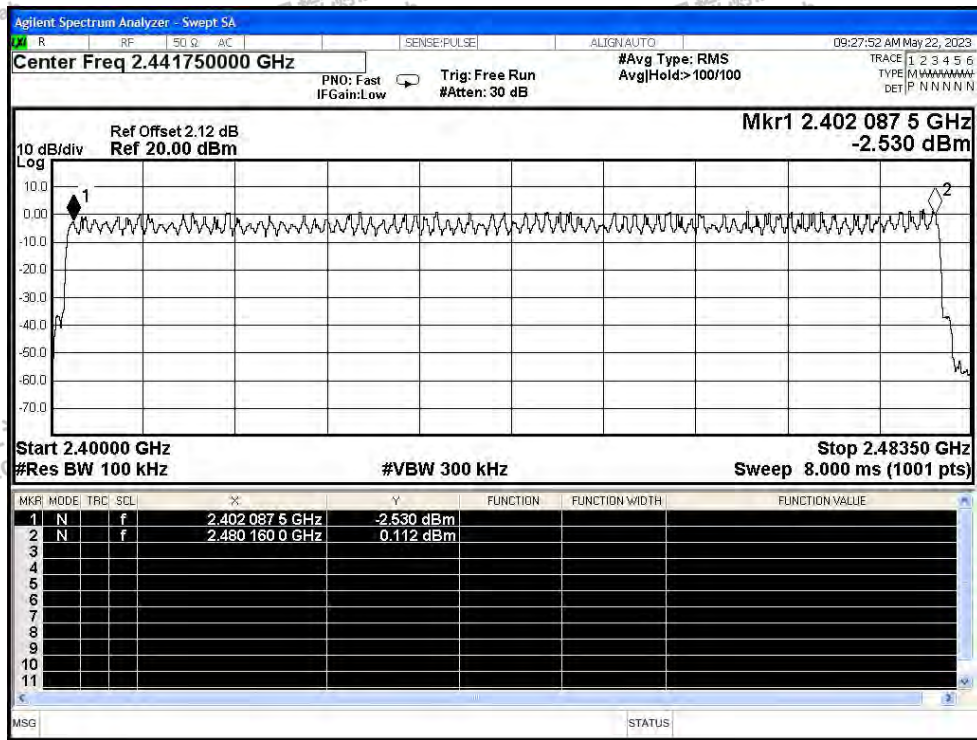


Test Graphs

Hopping No: NVNT 1-DH5 2402MHz Ant0



Hopping No: NVNT 2-DH5 2402MHz Ant0





A.6 Band Edge

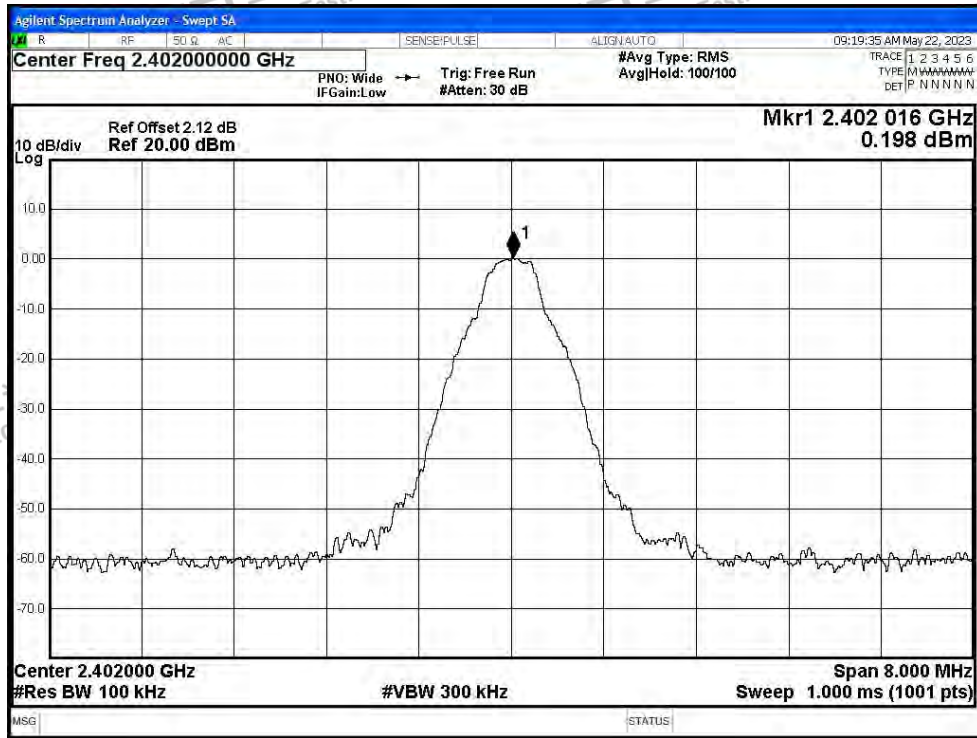
| Condition | Mode | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT | 1-DH5 | 2402 | Ant0 | No-Hopping | -57.13 | -20 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | No-Hopping | -59.19 | -20 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | No-Hopping | -52.01 | -20 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | No-Hopping | -58.73 | -20 | Pass |



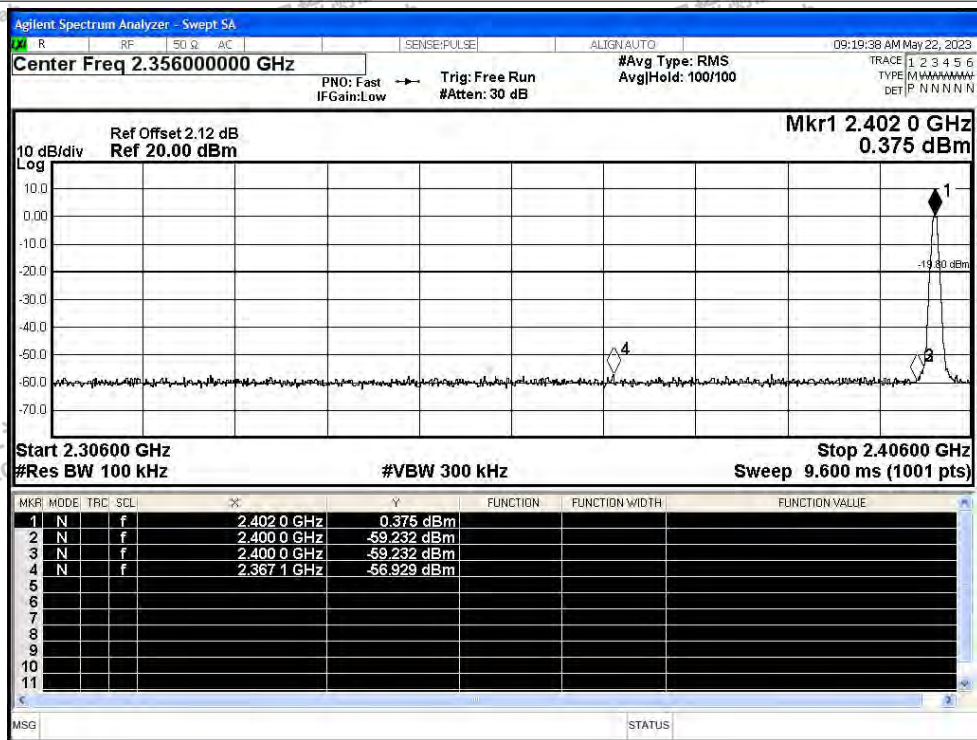


Test Graphs

Band Edge NVNT 1-DH5 2402MHz Ant0 No-Hopping Ref

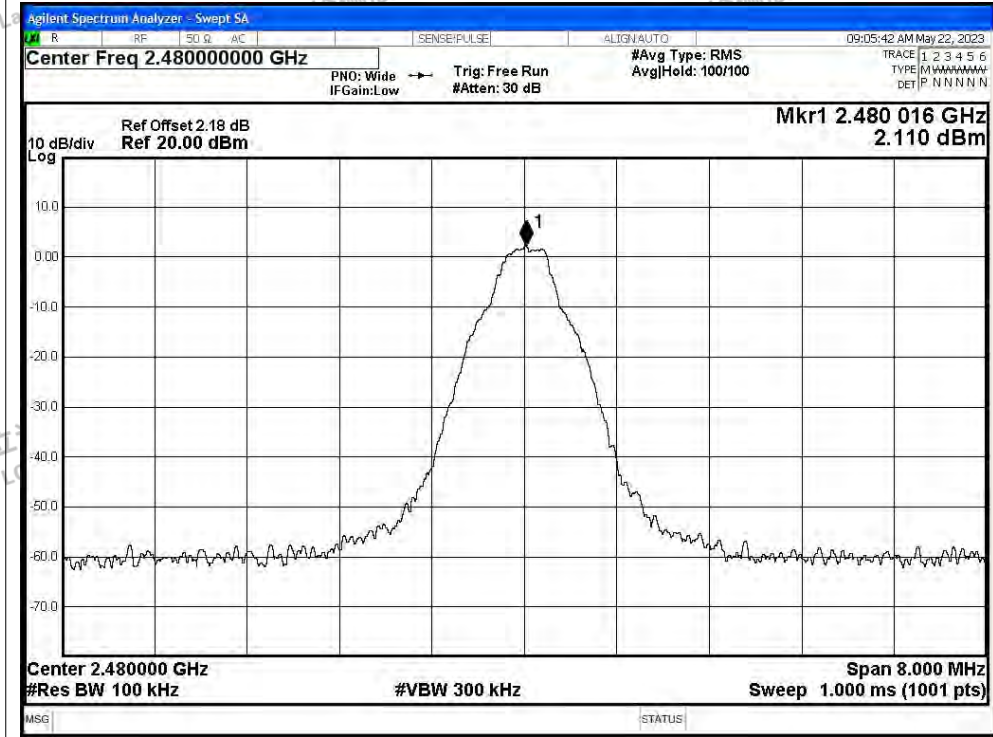


Band Edge NVNT 1-DH5 2402MHz Ant0 No-Hopping Emission

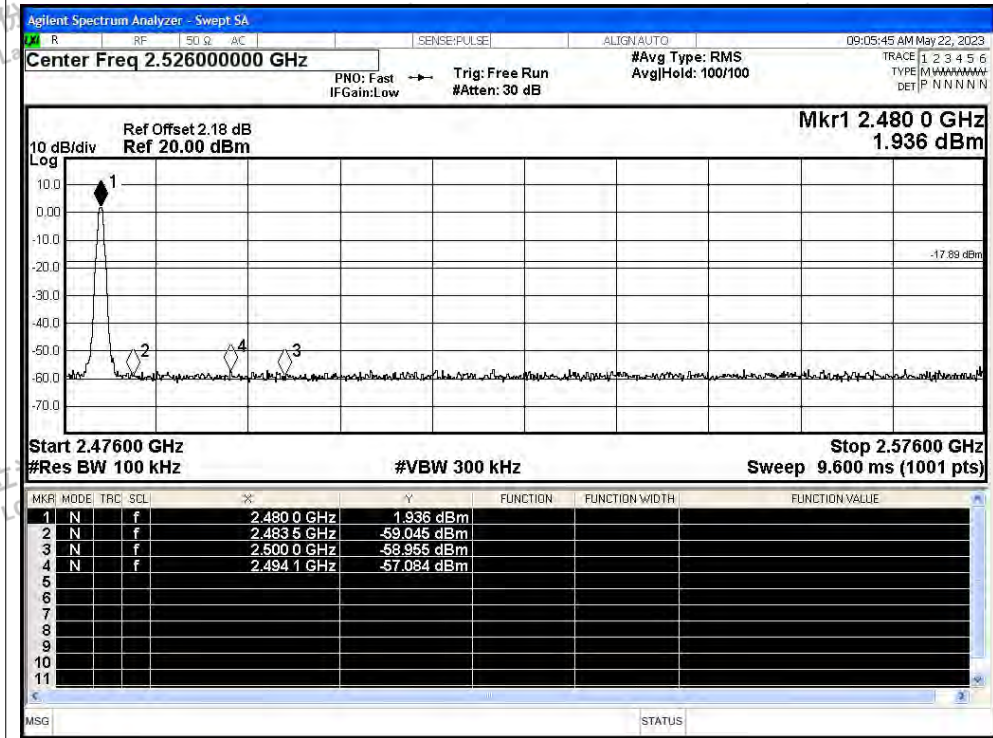




Band Edge NVNT 1-DH5 2480MHz Ant0 No-Hopping Ref

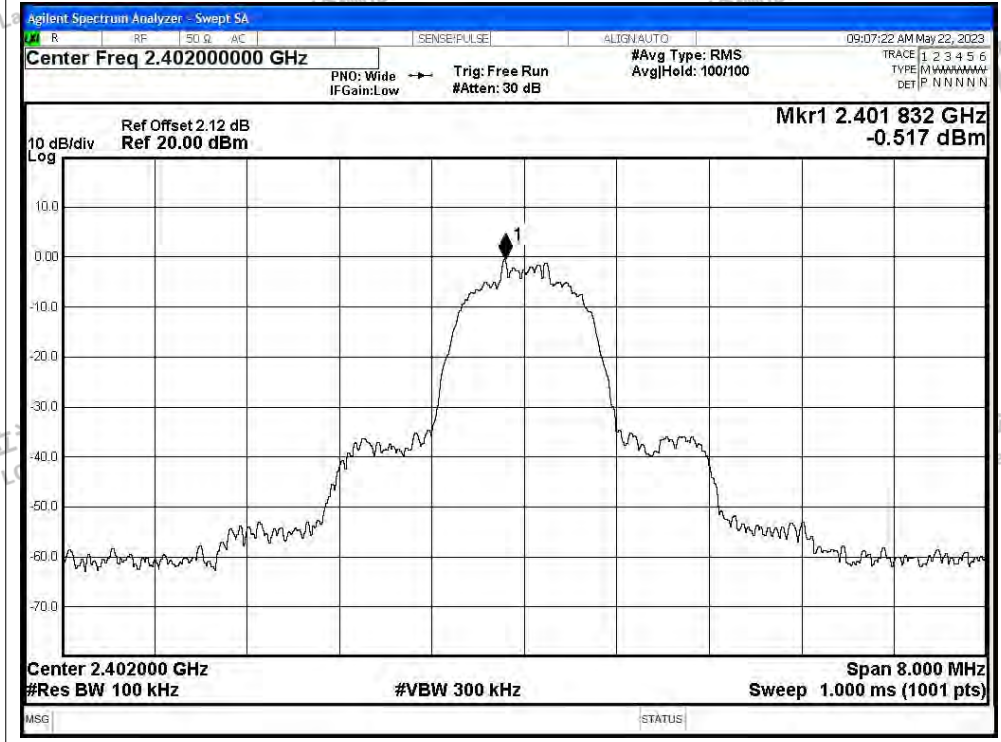


Band Edge NVNT 1-DH5 2480MHz Ant0 No-Hopping Emission

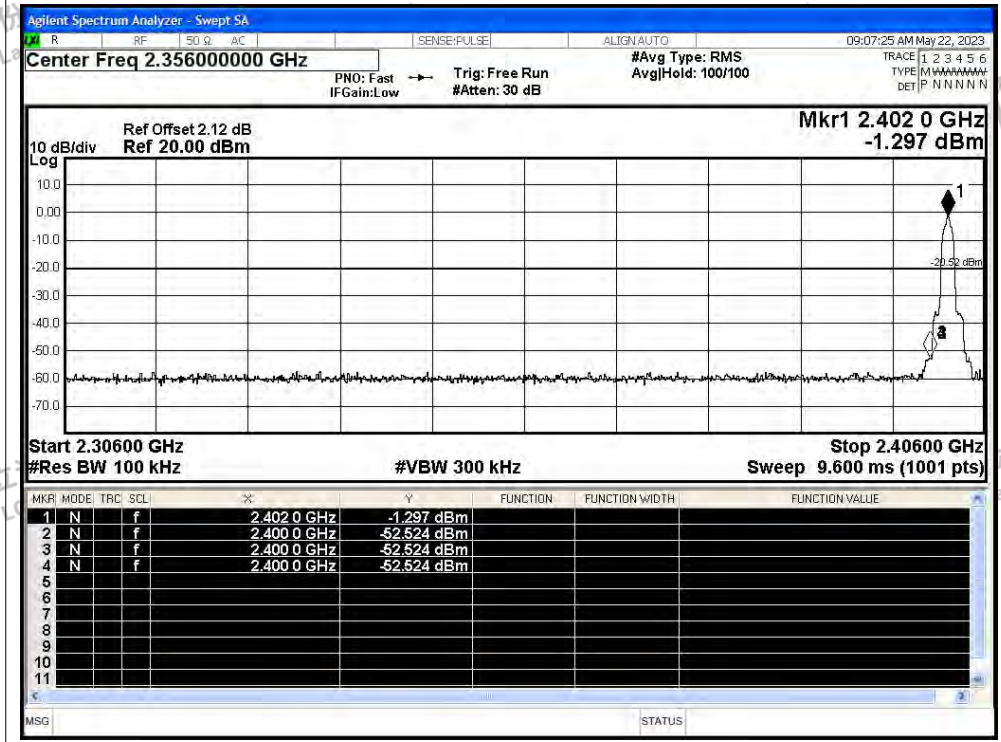




Band Edge NVNT 2-DH5 2402MHz Ant0 No-Hopping Ref

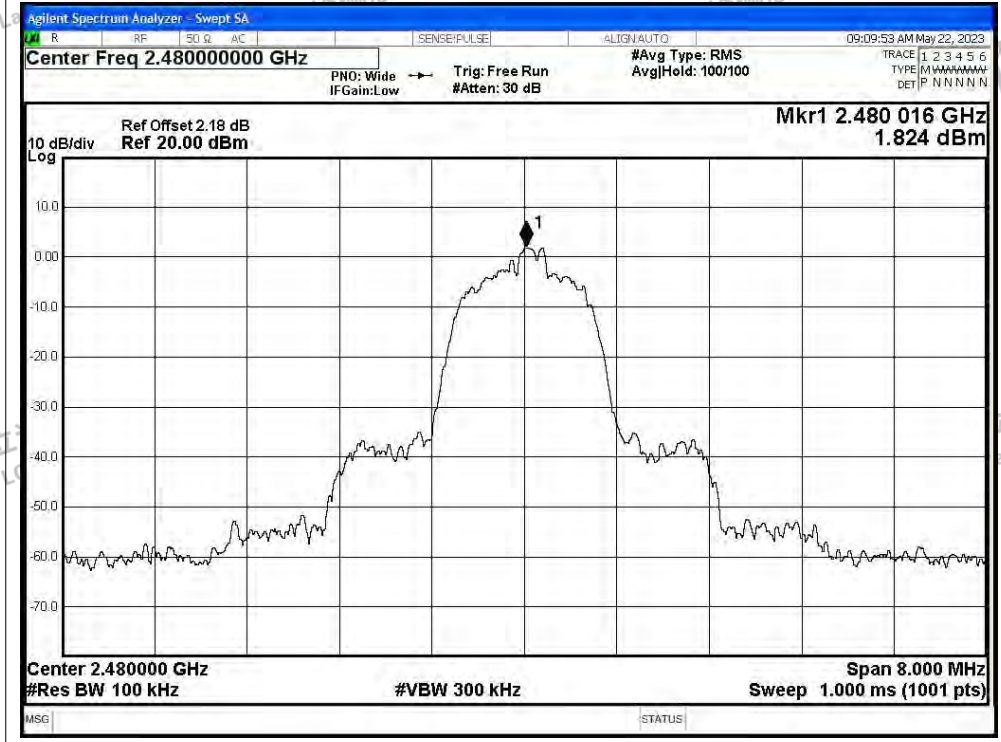


Band Edge NVNT 2-DH5 2402MHz Ant0 No-Hopping Emission

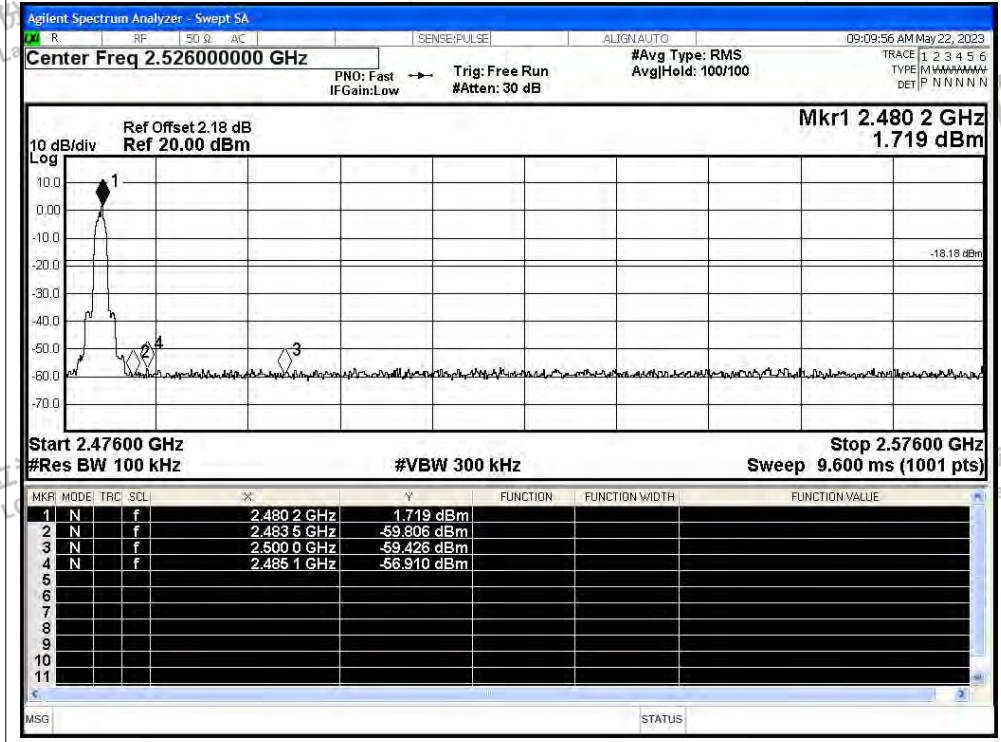




Band Edge NVNT 2-DH5 2480MHz Ant0 No-Hopping Ref



Band Edge NVNT 2-DH5 2480MHz Ant0 No-Hopping Emission





(Hopping)

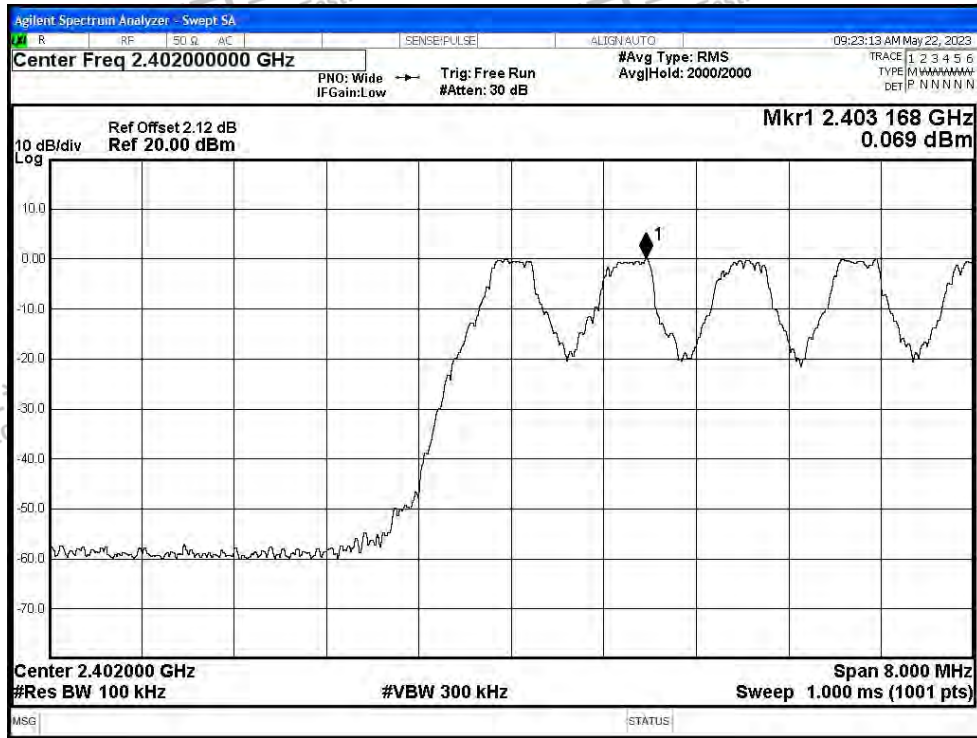
| Condition | Mode | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT | 1-DH5 | 2402 | Ant0 | Hopping | -55.59 | -20 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | Hopping | -58 | -20 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | Hopping | -55.75 | -20 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | Hopping | -57.26 | -20 | Pass |



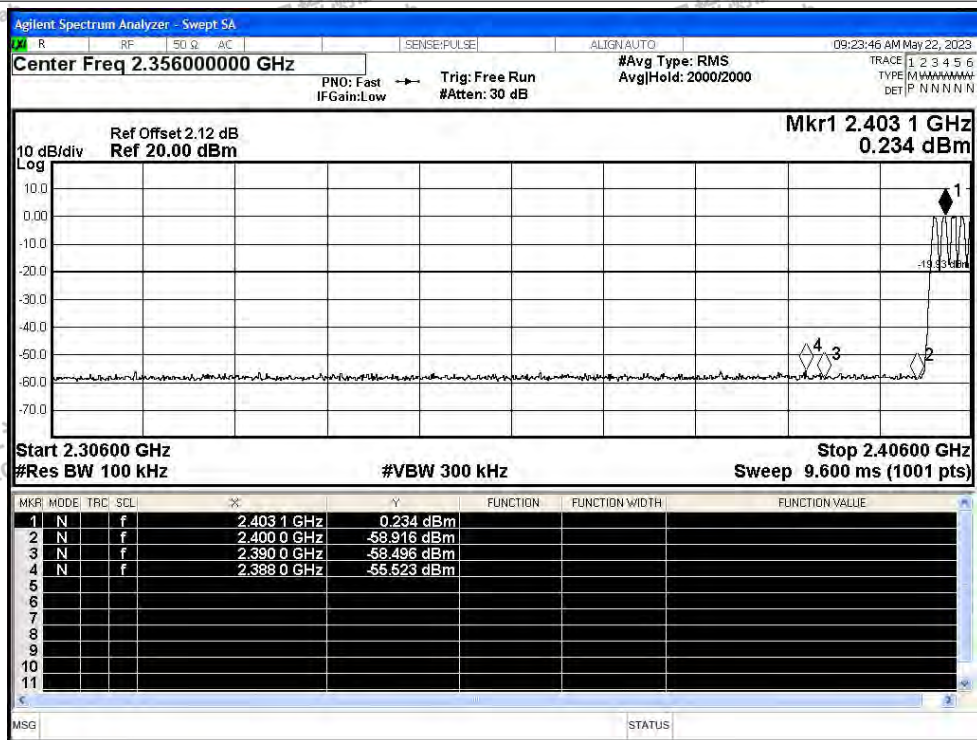


Test Graphs

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant0 Hopping Ref

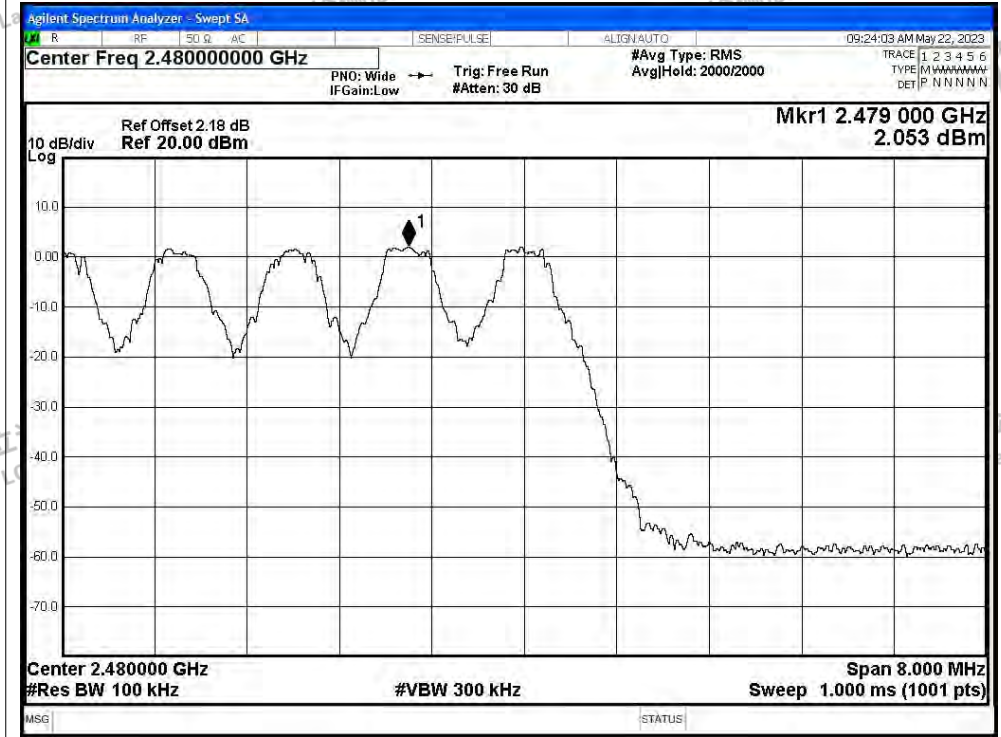


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant0 Hopping Emission

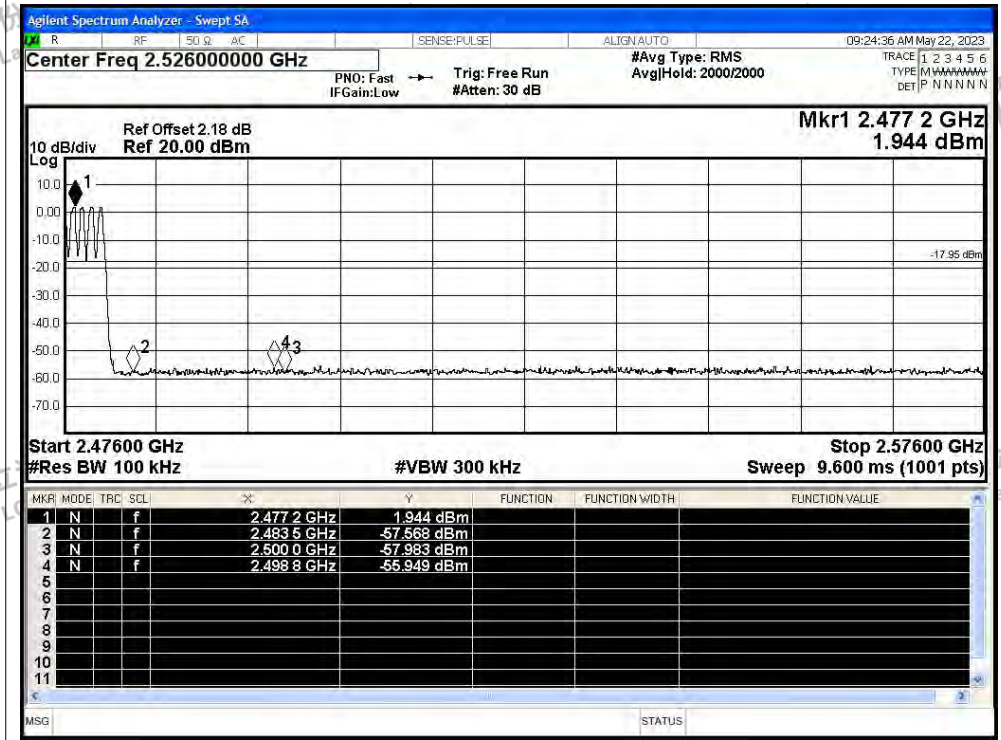




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant0 Hopping Ref



Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant0 Hopping Emission

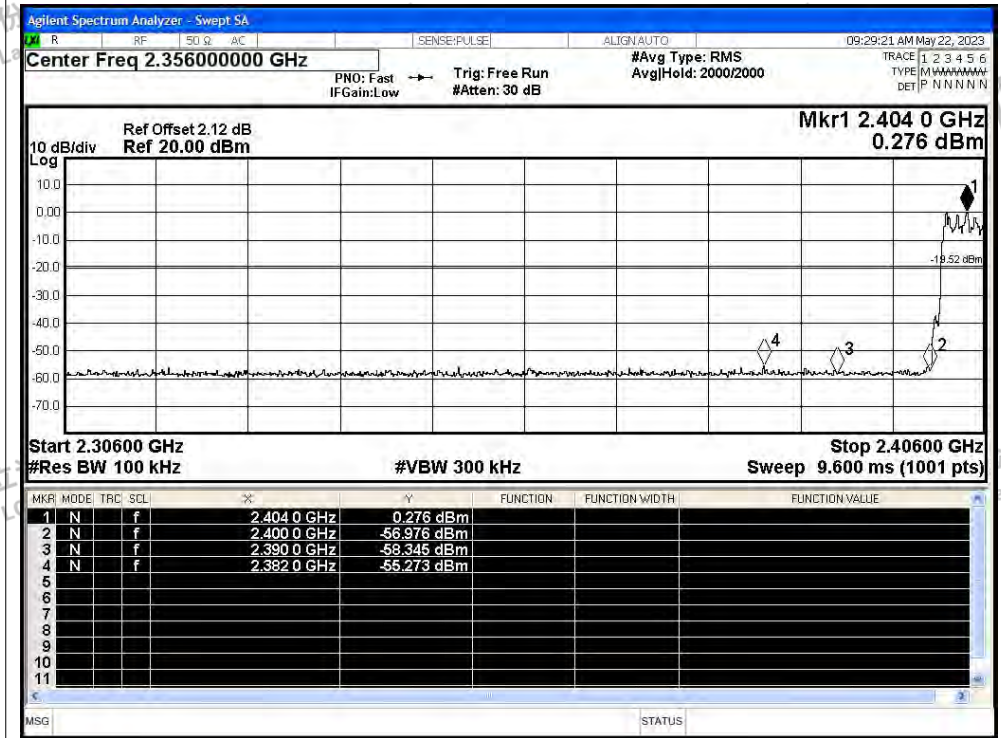




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant0 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant0 Hopping Emission

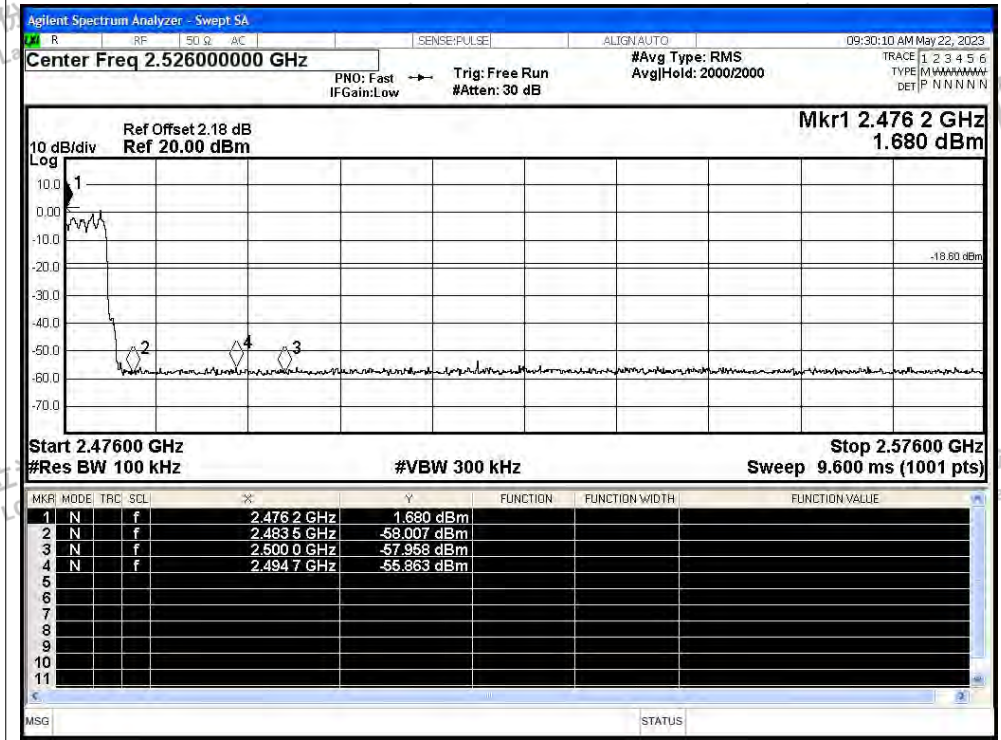




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant0 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant0 Hopping Emission





A.7 Conducted RF Spurious Emission

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-------------|---------|
| NVNT | 1-DH5 | 2402 | Ant0 | -55.3 | -20 | Pass |
| NVNT | 1-DH5 | 2441 | Ant0 | -56.88 | -20 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | -57.22 | -20 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | -55.74 | -20 | Pass |
| NVNT | 2-DH5 | 2441 | Ant0 | -55.15 | -20 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | -56.25 | -20 | Pass |



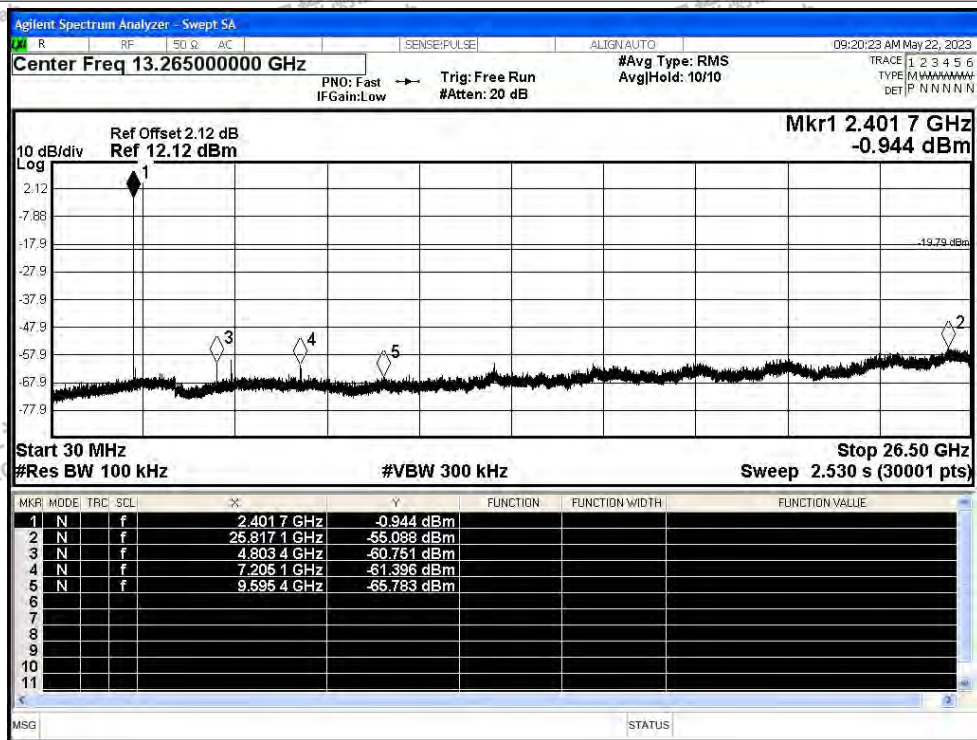


Test Graphs

Tx: Spurious NVNT 1-DH5 2402MHz Ant0 Ref

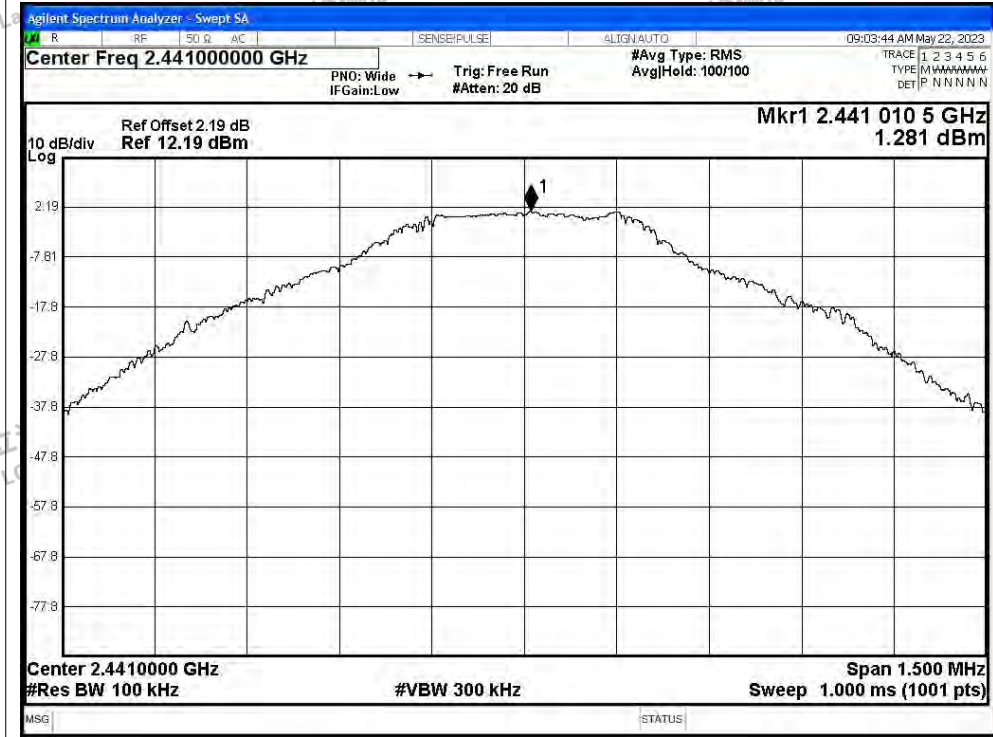


Tx: Spurious NVNT 1-DH5 2402MHz Ant0 Emission

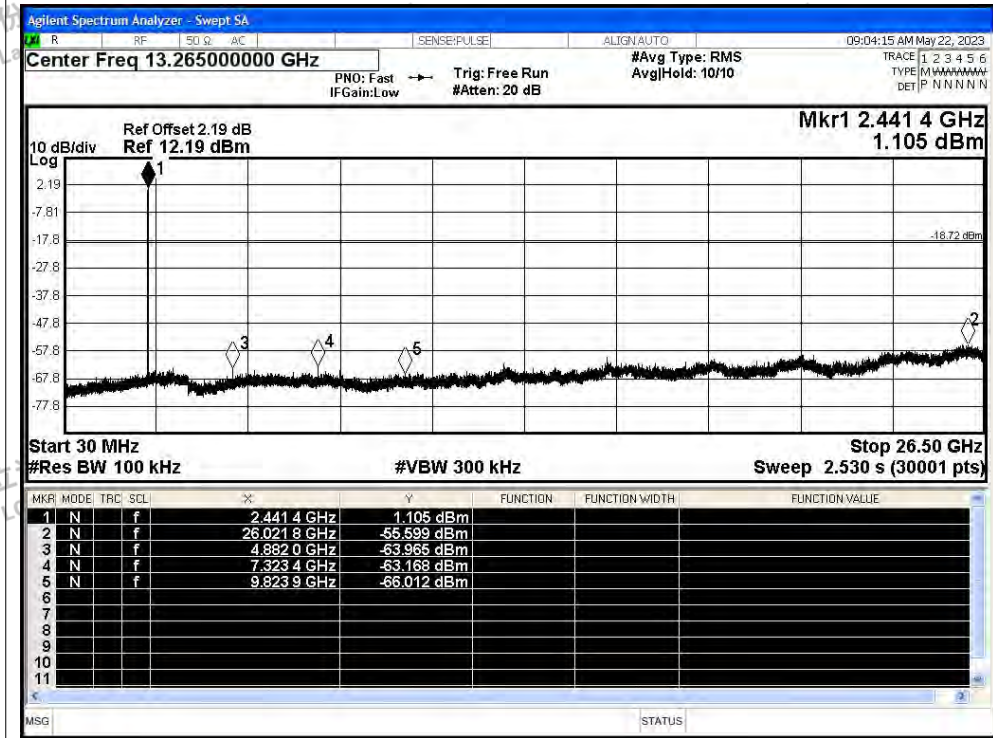




Tx. Spurious NVNT 1-DH5 2441MHz Ant0 Ref

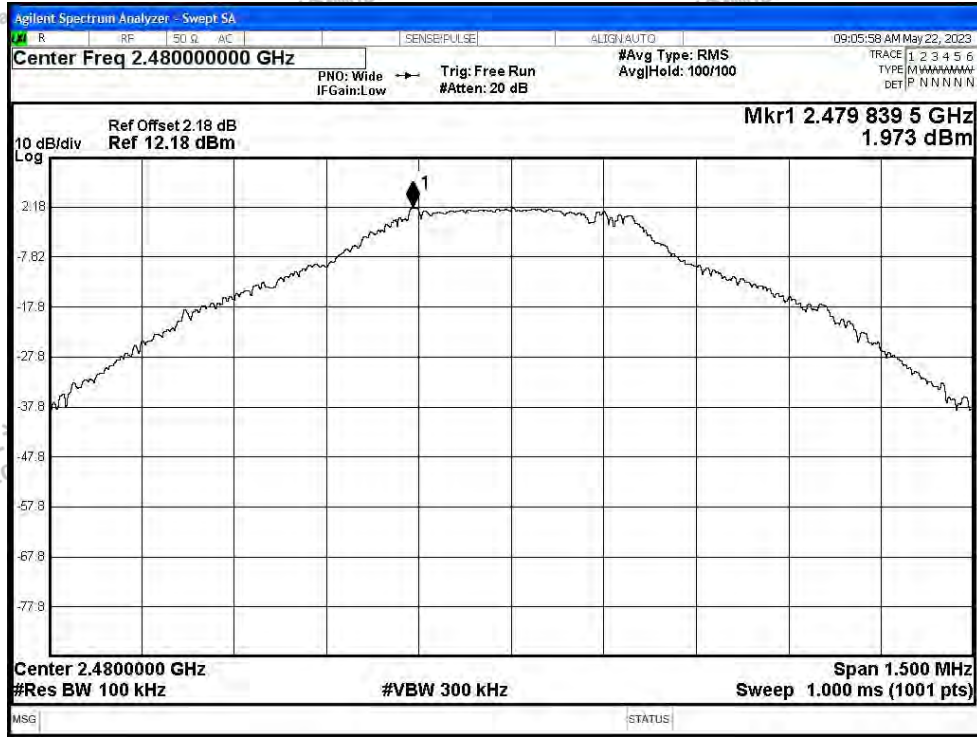


Tx. Spurious NVNT 1-DH5 2441MHz Ant0 Emission

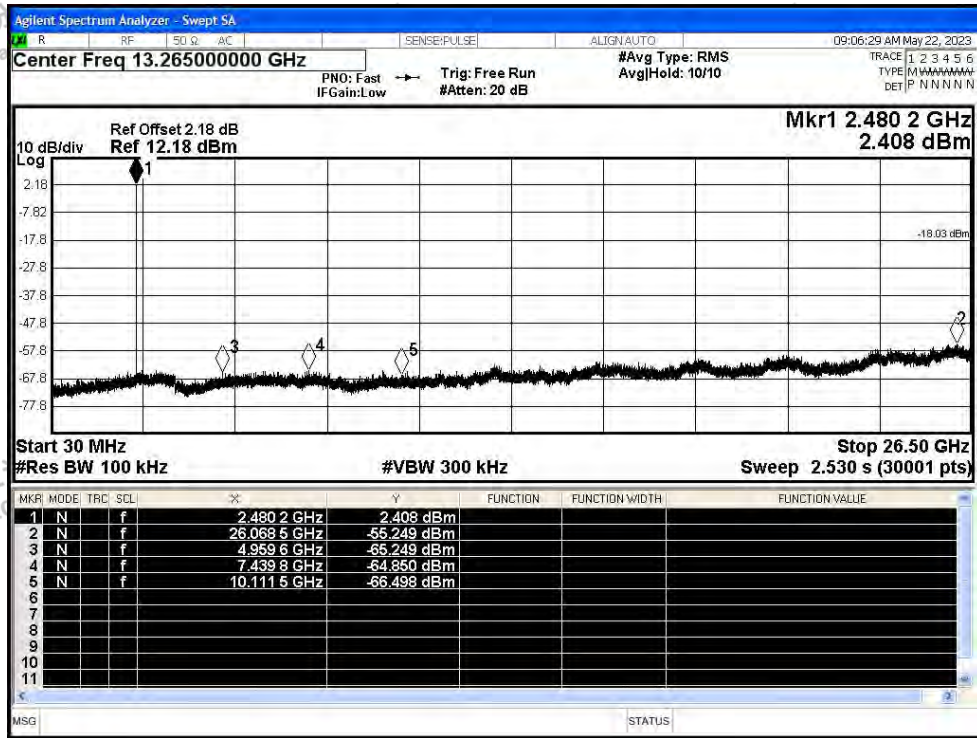




Tx. Spurious NVNT 1-DH5 2480MHz Ant0 Ref

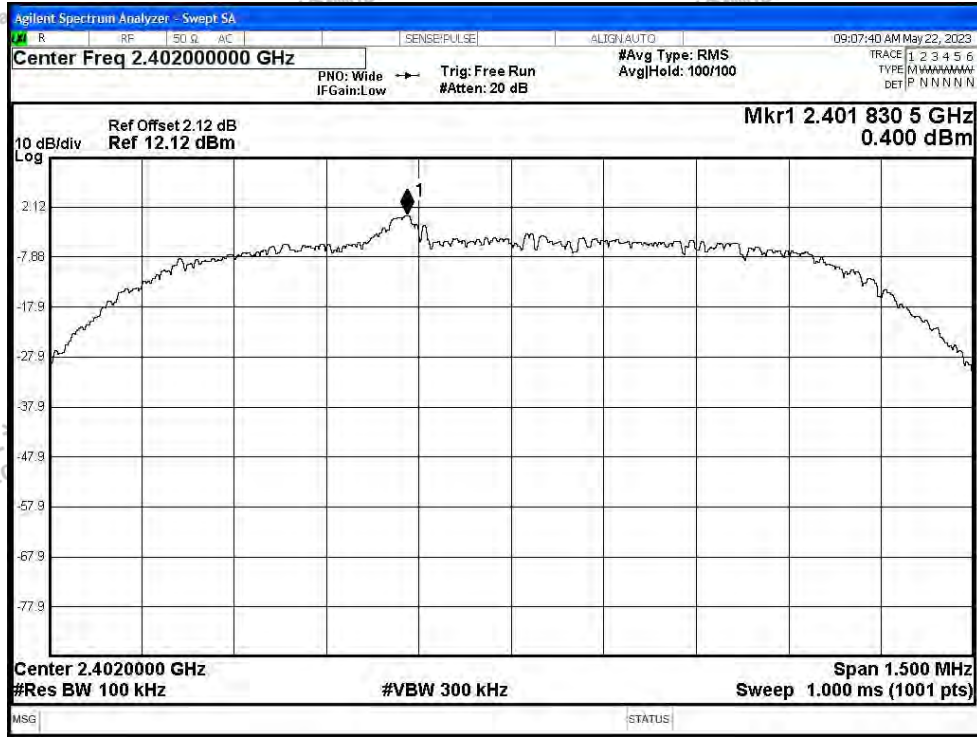


Tx. Spurious NVNT 1-DH5 2480MHz Ant0 Emission

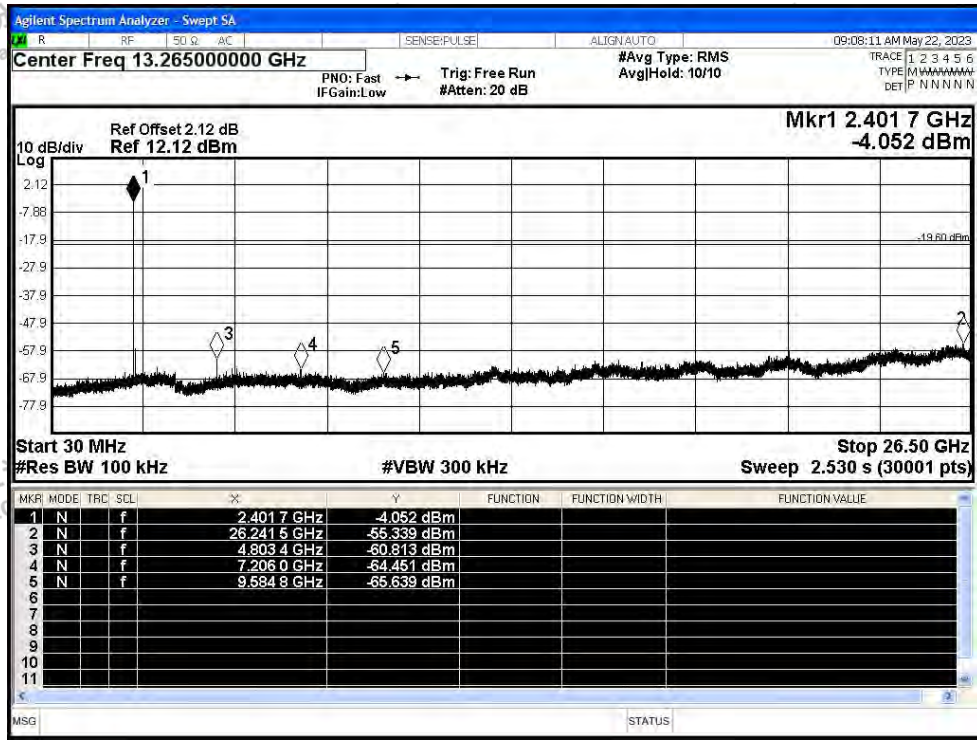




Tx. Spurious NVNT 2-DH5 2402MHz Ant0 Ref

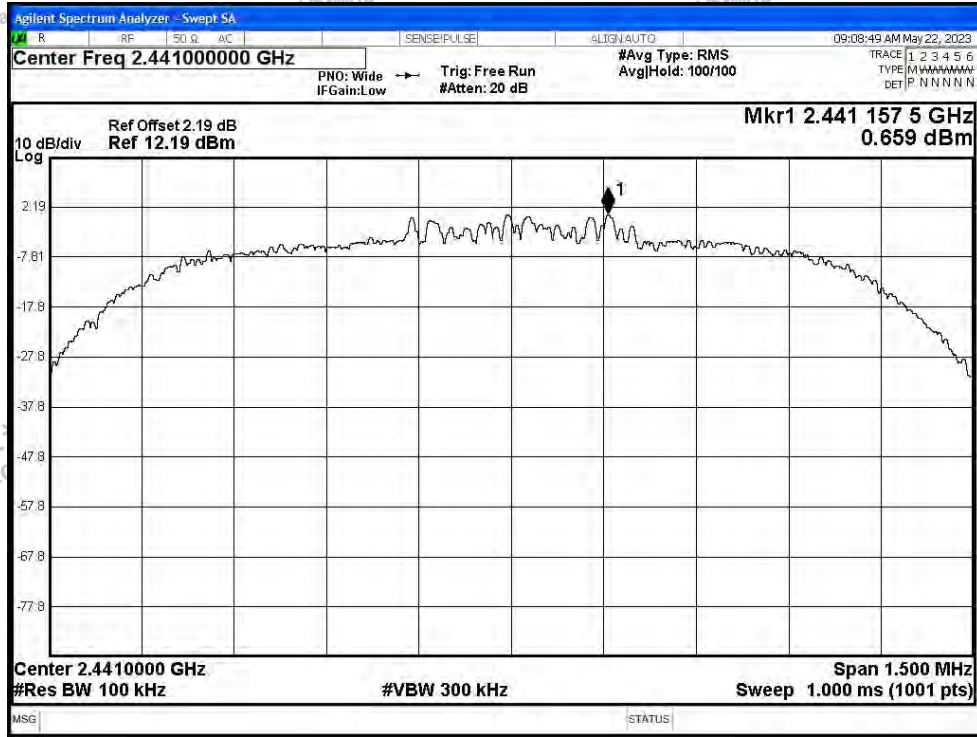


Tx. Spurious NVNT 2-DH5 2402MHz Ant0 Emission

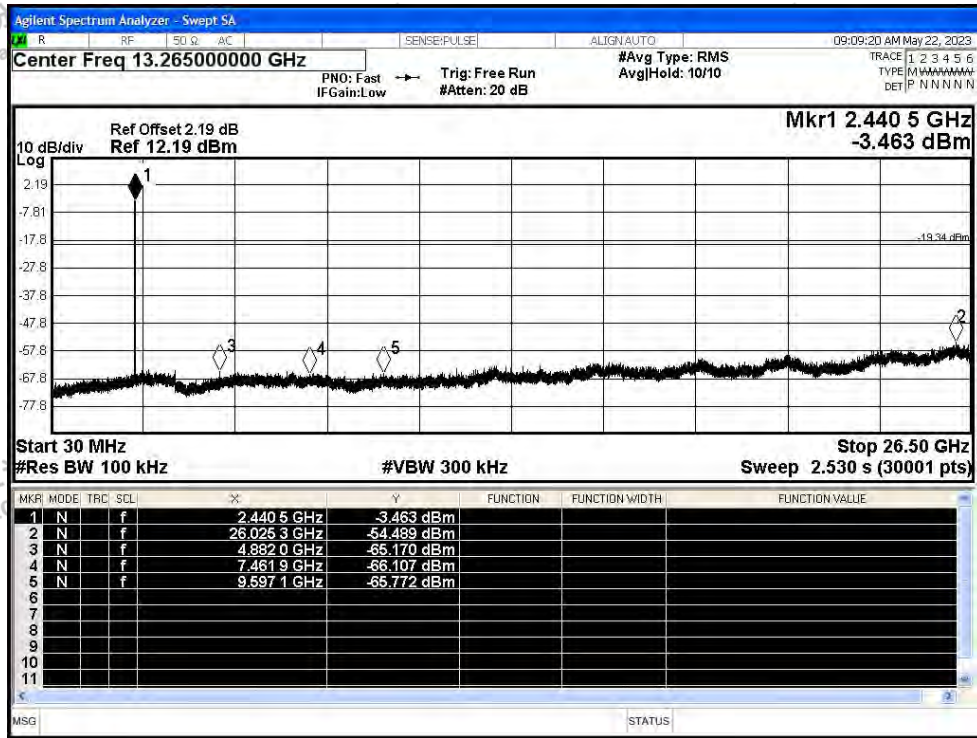




Tx. Spurious NVNT 2-DH5 2441MHz Ant0 Ref

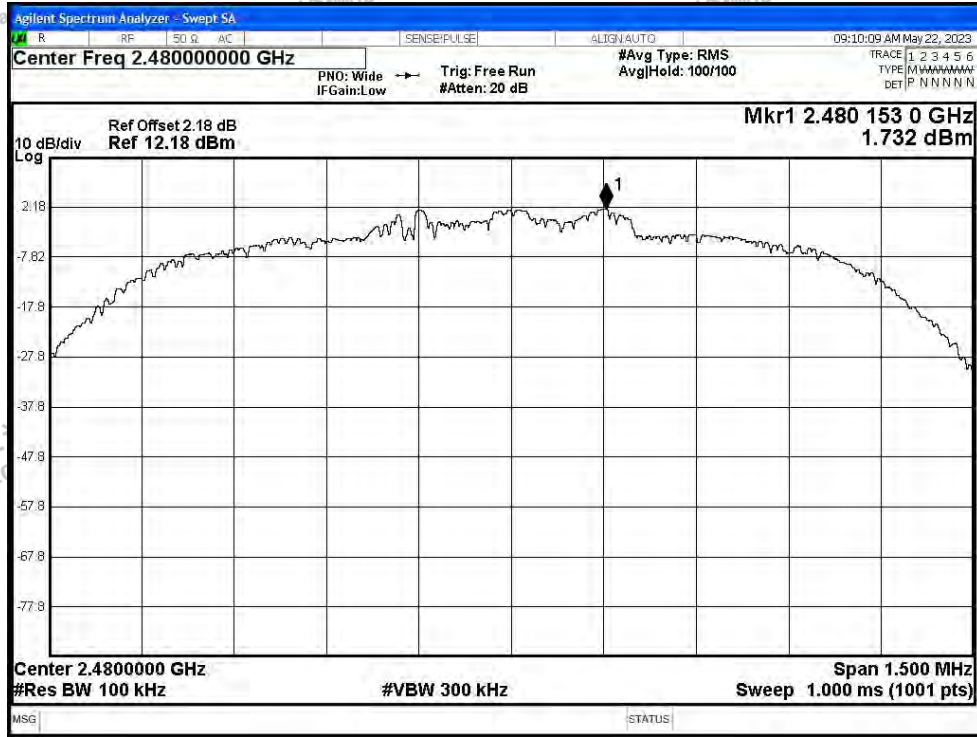


Tx. Spurious NVNT 2-DH5 2441MHz Ant0 Emission

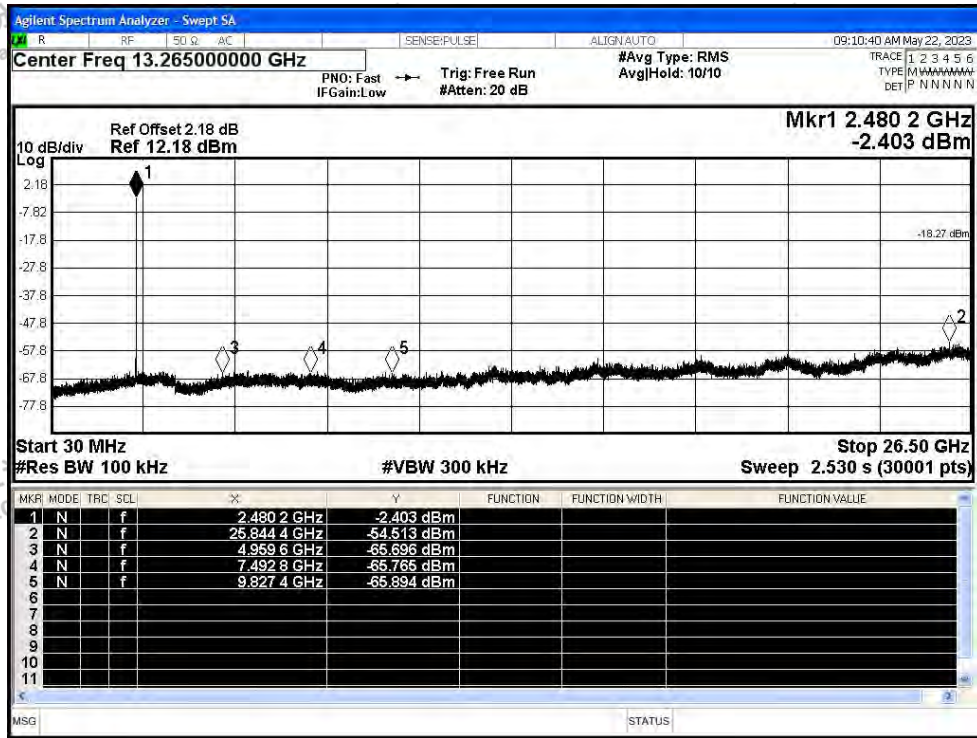




Tx. Spurious NVNT 2-DH5 2480MHz Ant0 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant0 Emission





A.8 Restrict Band

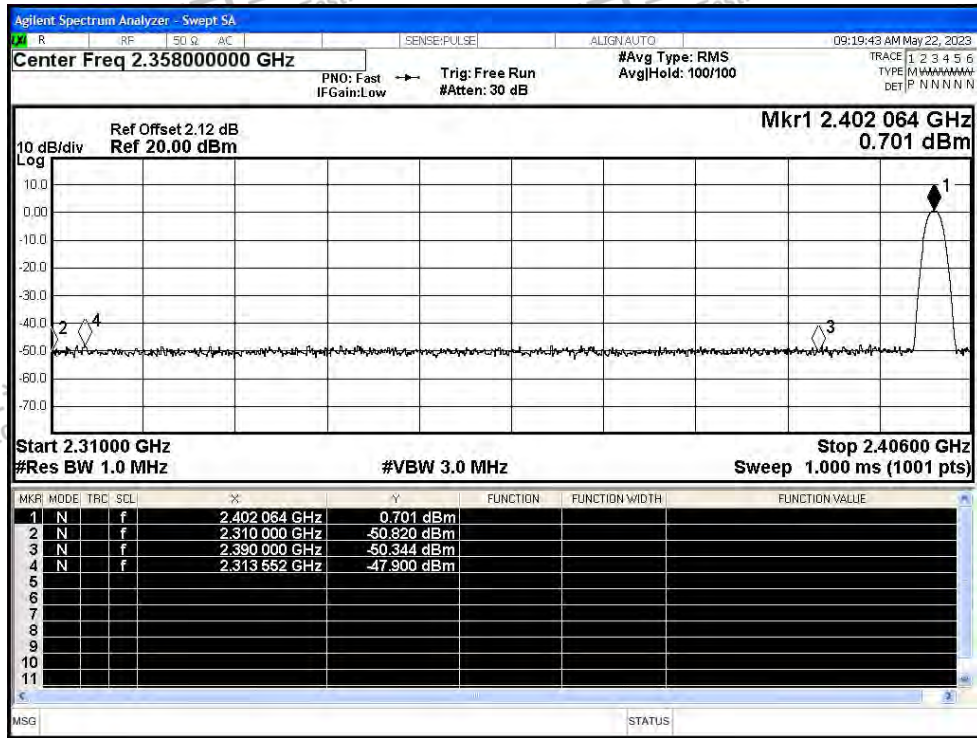
| Condition | Mode | Frequency (MHz) | Antenna | Hopping Mode | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBUV/m) | Detector | Limit (dBUV/m) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT | 1-DH5 | 2402 | Ant0 | No-Hopping | 2310 | -50.82 | 2 | 46.44 | Peak | 74 | Pass |
| NVNT | 1-DH5 | 2402 | Ant0 | No-Hopping | 2310 | -57.81 | 2 | 39.45 | Average | 54 | Pass |
| NVNT | 1-DH5 | 2402 | Ant0 | No-Hopping | 2313.552 | -47.9 | 2 | 49.36 | Peak | 74 | Pass |
| NVNT | 1-DH5 | 2402 | Ant0 | No-Hopping | 2386.512 | -57.31 | 2 | 39.95 | Average | 54 | Pass |
| NVNT | 1-DH5 | 2402 | Ant0 | No-Hopping | 2390 | -50.34 | 2 | 46.92 | Peak | 74 | Pass |
| NVNT | 1-DH5 | 2402 | Ant0 | No-Hopping | 2390 | -57.53 | 2 | 39.73 | Average | 54 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | No-Hopping | 2483.5 | -50.28 | 2 | 46.98 | Peak | 74 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | No-Hopping | 2483.5 | -55 | 2 | 42.26 | Average | 54 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | No-Hopping | 2484.736 | -47.13 | 2 | 50.13 | Peak | 74 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | No-Hopping | 2483.512 | -55 | 2 | 42.26 | Average | 54 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | No-Hopping | 2500 | -49.65 | 2 | 47.61 | Peak | 74 | Pass |
| NVNT | 1-DH5 | 2480 | Ant0 | No-Hopping | 2500 | -57.11 | 2 | 40.15 | Average | 54 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | No-Hopping | 2310 | -50.72 | 2 | 46.54 | Peak | 74 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | No-Hopping | 2310 | -57.91 | 2 | 39.35 | Average | 54 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | No-Hopping | 2350.608 | -47.73 | 2 | 49.53 | Peak | 74 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | No-Hopping | 2388.336 | -57.39 | 2 | 39.87 | Average | 54 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | No-Hopping | 2390 | -48.77 | 2 | 48.49 | Peak | 74 | Pass |
| NVNT | 2-DH5 | 2402 | Ant0 | No-Hopping | 2390 | -57.49 | 2 | 39.77 | Average | 54 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | No-Hopping | 2483.5 | -48.89 | 2 | 48.37 | Peak | 74 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | No-Hopping | 2483.5 | -54.44 | 2 | 42.82 | Average | 54 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | No-Hopping | 2492.032 | -46.34 | 2 | 50.92 | Peak | 74 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | No-Hopping | 2483.512 | -54.44 | 2 | 42.82 | Average | 54 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | No-Hopping | 2500 | -50.48 | 2 | 46.78 | Peak | 74 | Pass |
| NVNT | 2-DH5 | 2480 | Ant0 | No-Hopping | 2500 | -57.2 | 2 | 40.06 | Average | 54 | Pass |



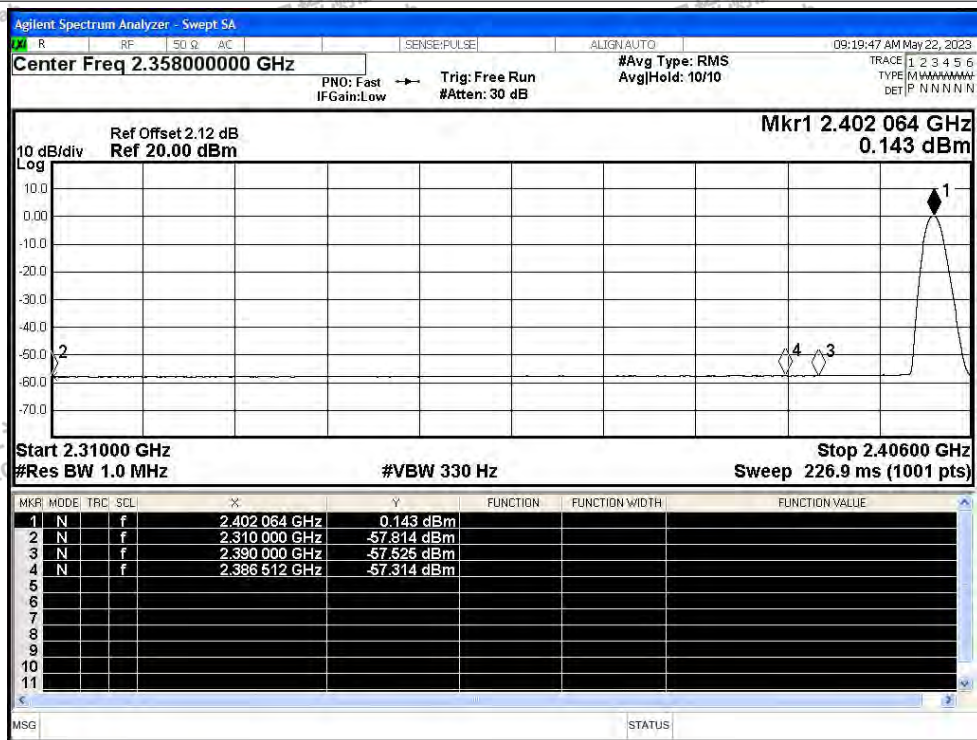


Test Graphs

Restrict Band NVNT 1-DH5 2402MHz Ant0 No-Hopping Peak

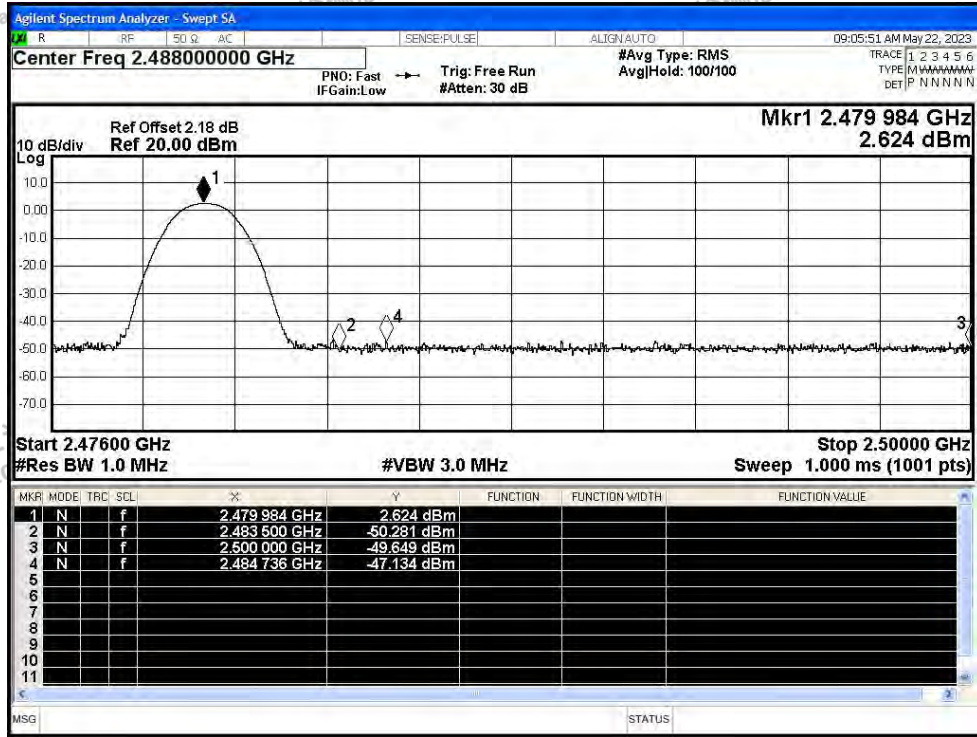


Restrict Band NVNT 1-DH5 2402MHz Ant0 No-Hopping Average

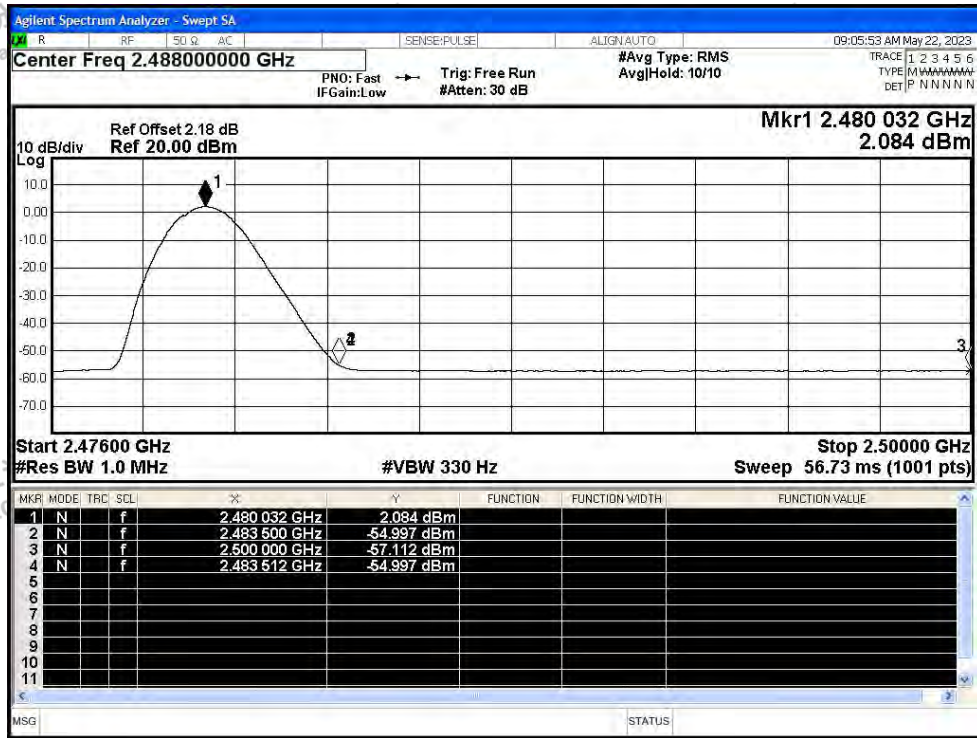




Restrict Band NVNT 1-DH5 2480MHz Ant0 No-Hopping Peak

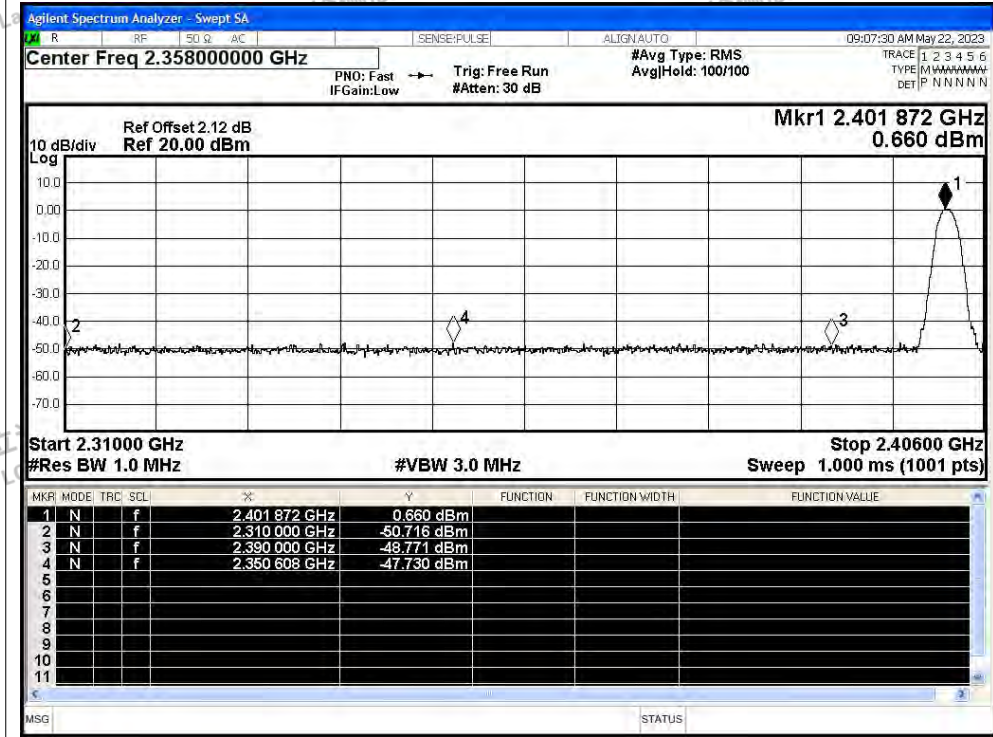


Restrict Band NVNT 1-DH5 2480MHz Ant0 No-Hopping Average

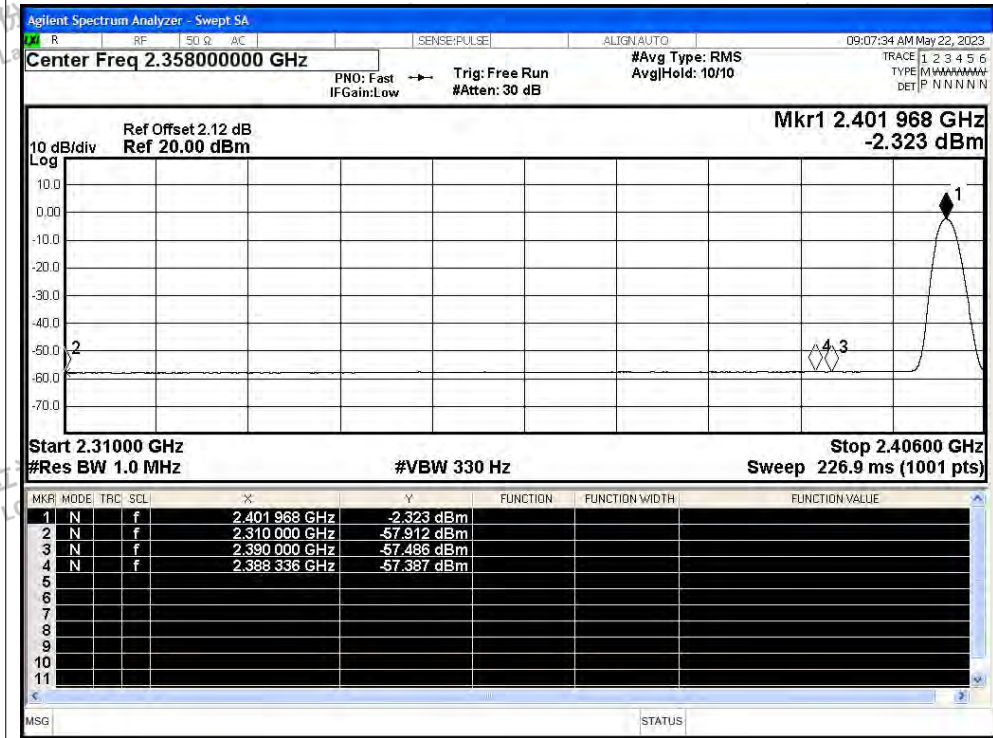


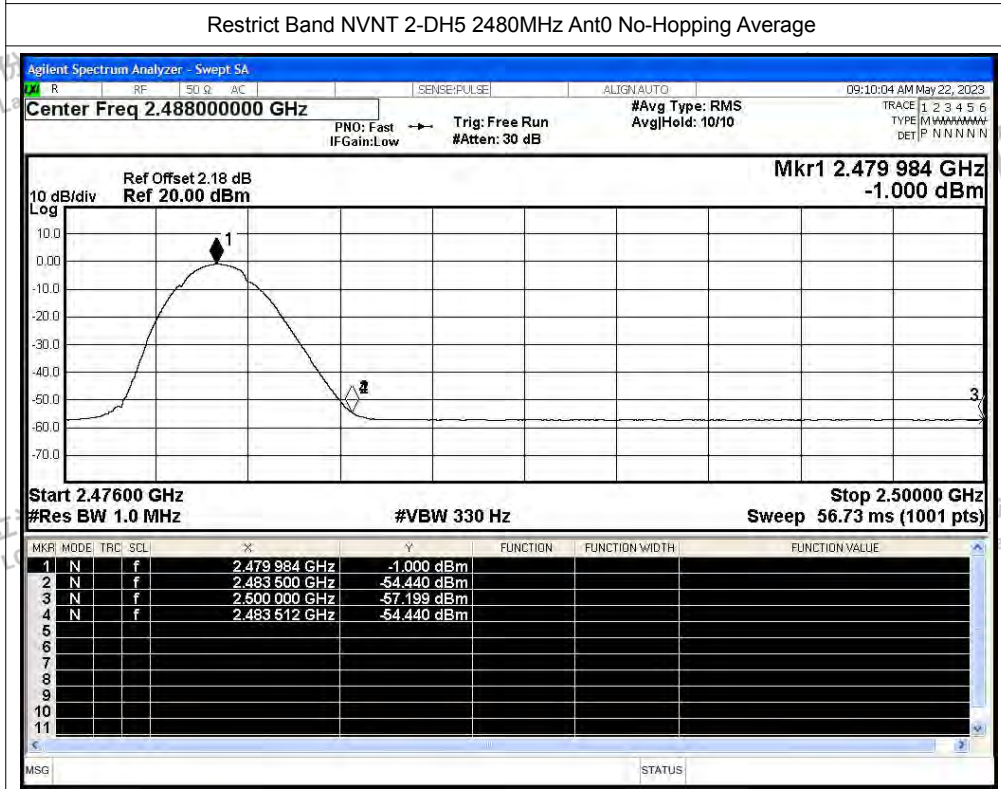
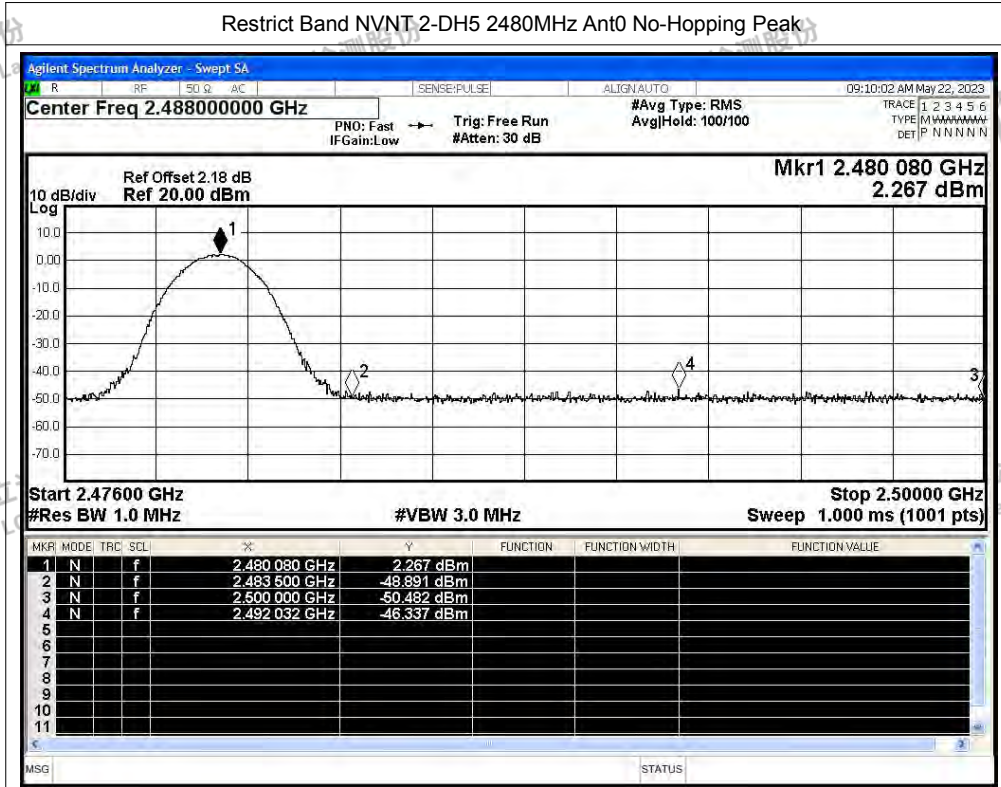


Restrict Band NVNT 2-DH5 2402MHz Ant0 No-Hopping Peak



Restrict Band NVNT 2-DH5 2402MHz Ant0 No-Hopping Average





Note :Antenna 0 is used to connect external devices

