



## Appendix A

### RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth Soundbar

Test Model: EHS-2002

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.1° C   |
| Relative Humidity: | 52.3%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | 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            | Ant1    | 0.839                  | N/A                          | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | 0.847                  | N/A                          | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | 0.843                  | N/A                          | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | 1.315                  | N/A                          | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | 1.284                  | N/A                          | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | 1.279                  | N/A                          | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | 1.278                  | N/A                          | Pass    |
| NVNT      | 3-DH5 | 2441            | Ant1    | 1.277                  | N/A                          | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | 1.299                  | N/A                          | Pass    |





Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

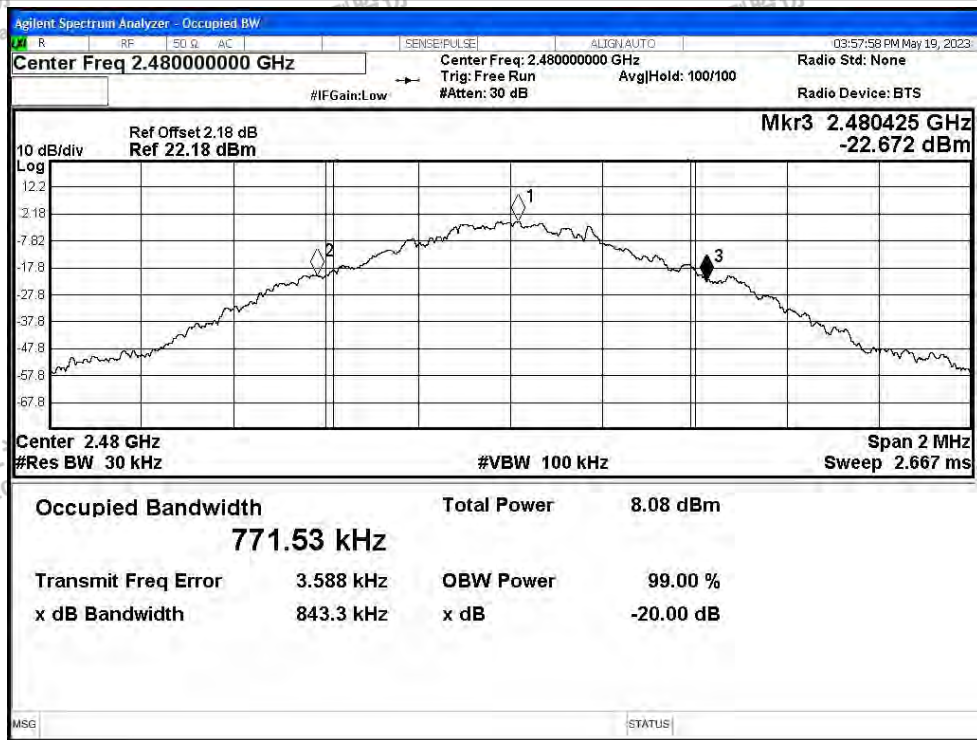


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

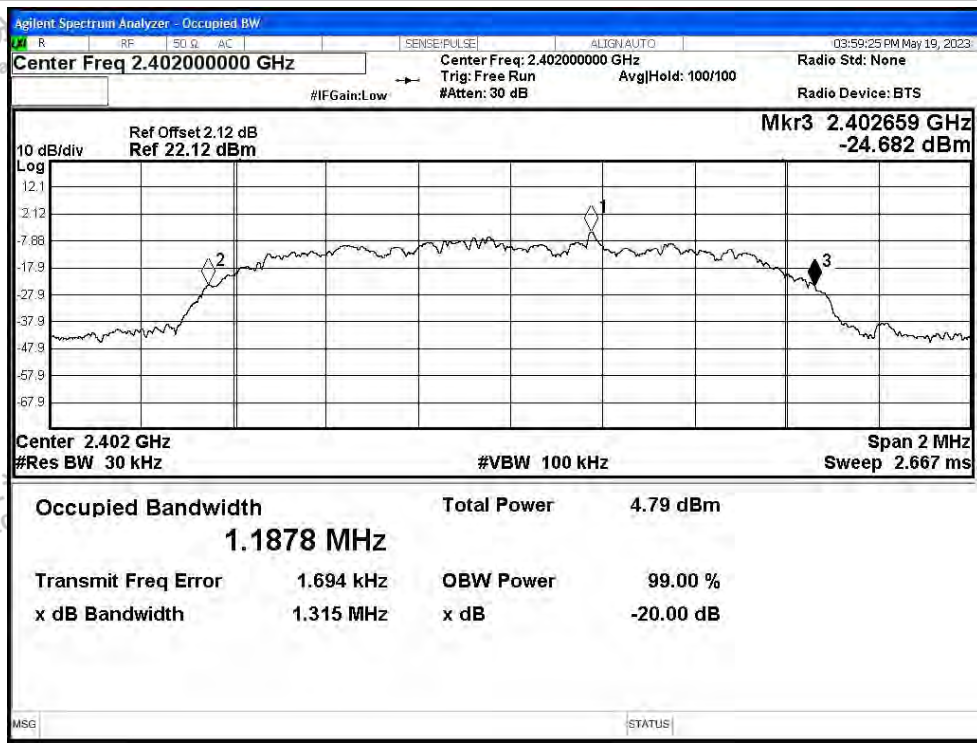




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

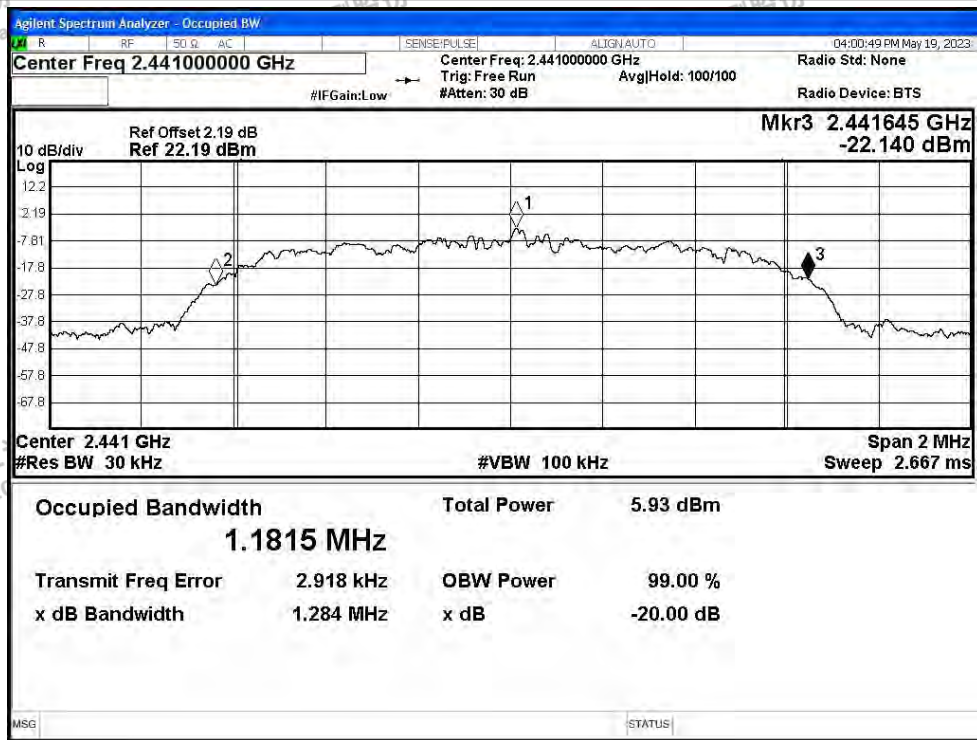


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

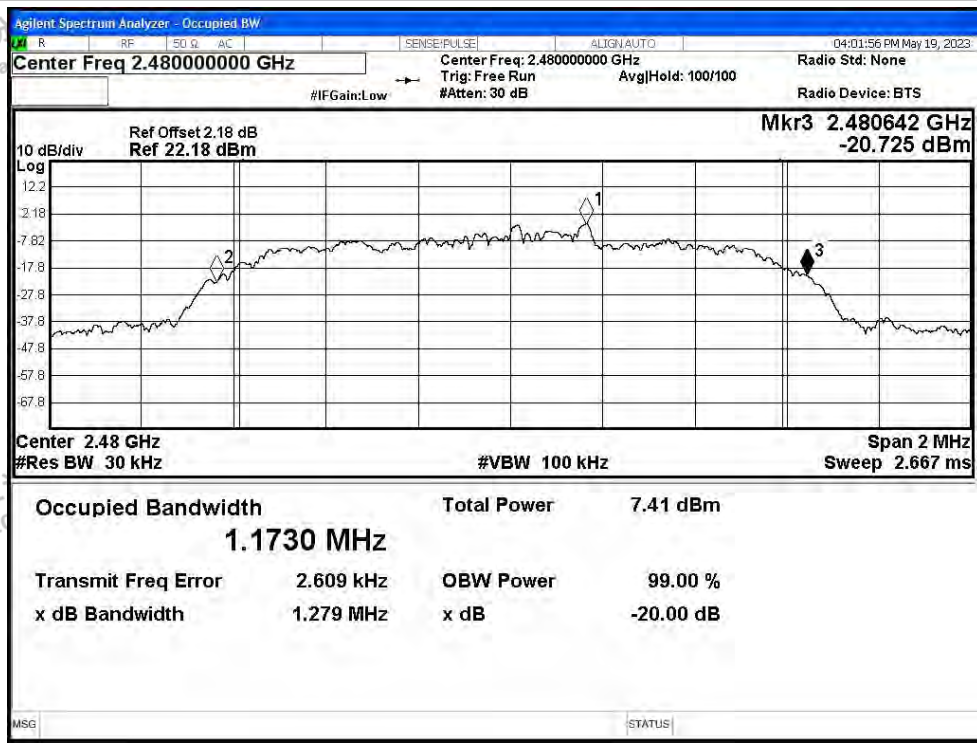




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

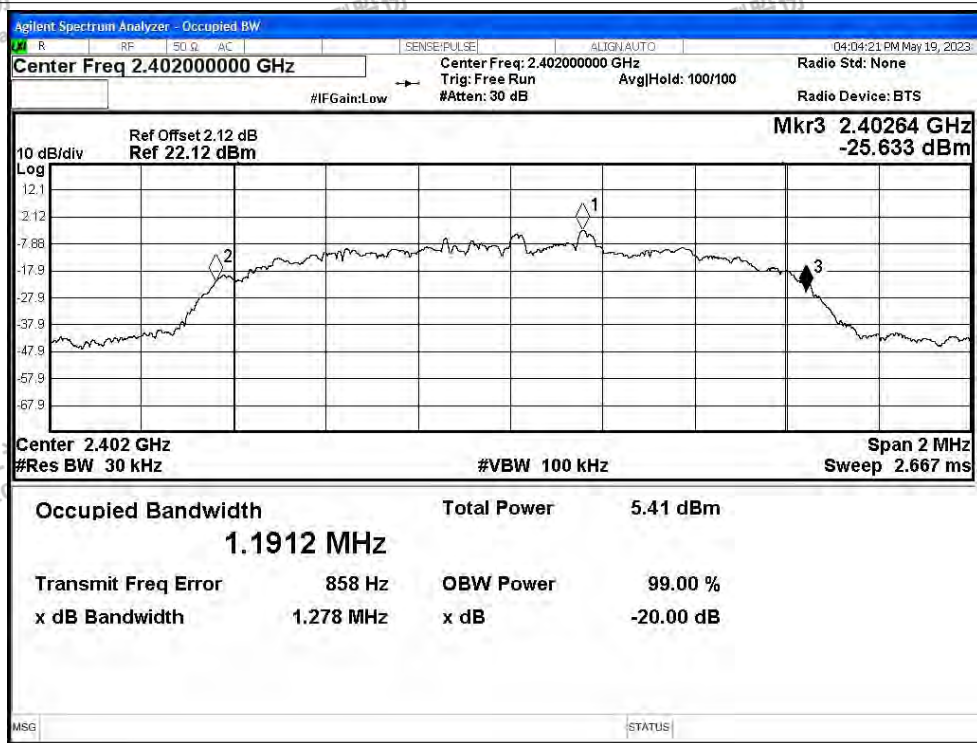


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

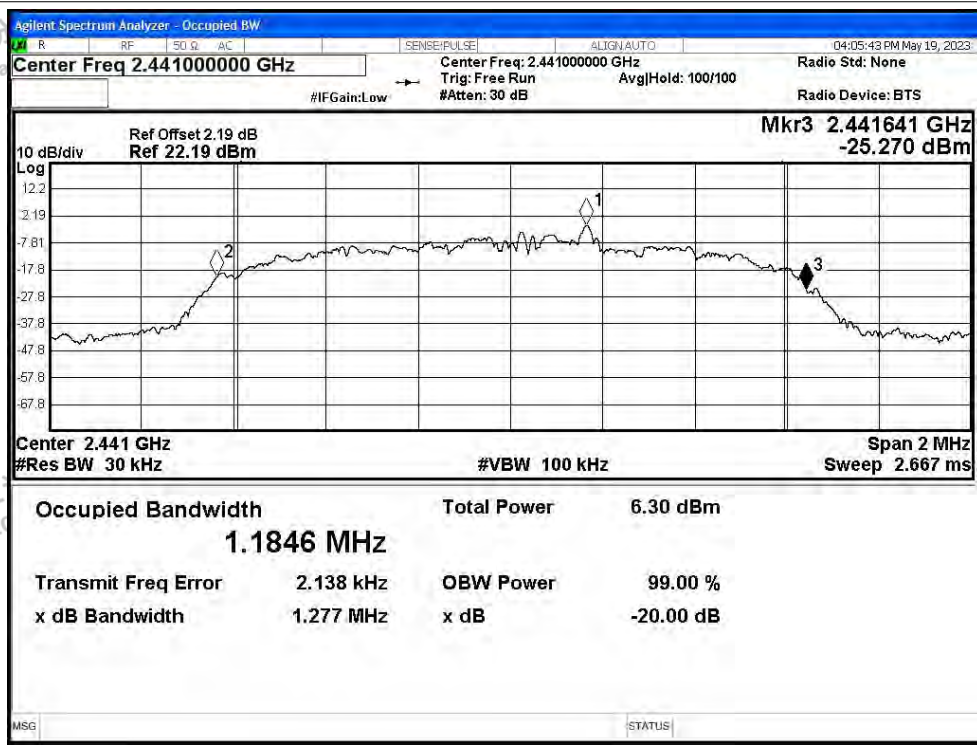




-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1

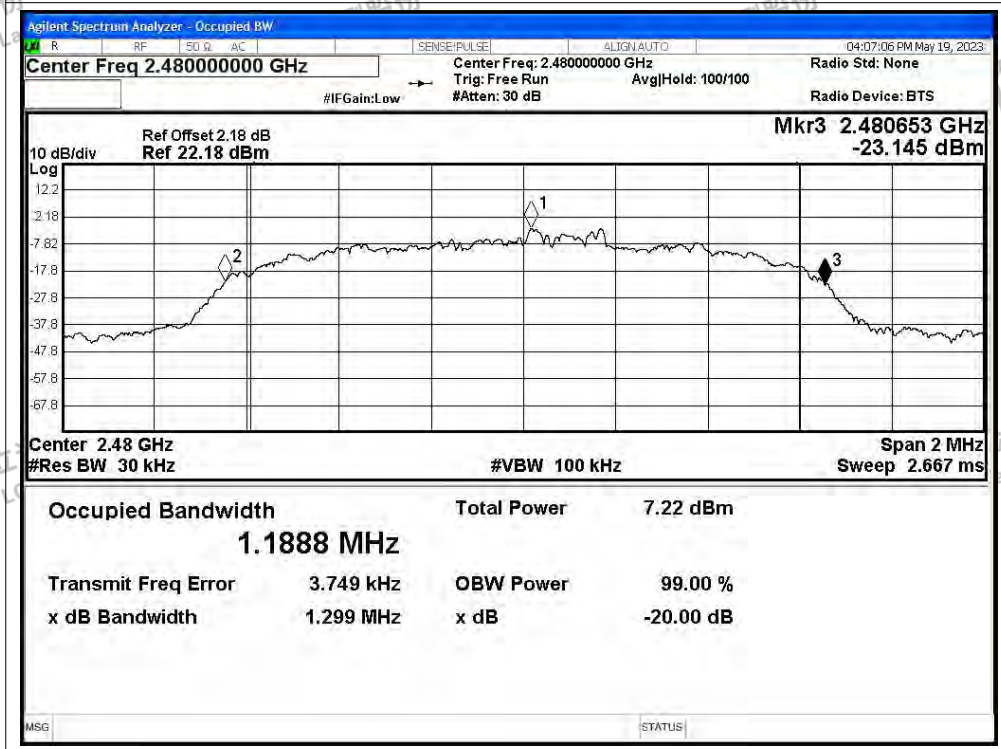


-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1





-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1





## A.2 Maximum Conducted Output Power

| Condition | Mode  | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|-------|-----------------|---------|-------------------|-------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | 0.53              | 21          | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | 1.34              | 21          | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | 2.37              | 21          | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | 0.56              | 21          | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | 1.44              | 21          | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | 2.39              | 21          | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | 0.52              | 21          | Pass    |
| NVNT      | 3-DH5 | 2441            | Ant1    | 1.4               | 21          | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | 2.35              | 21          | Pass    |

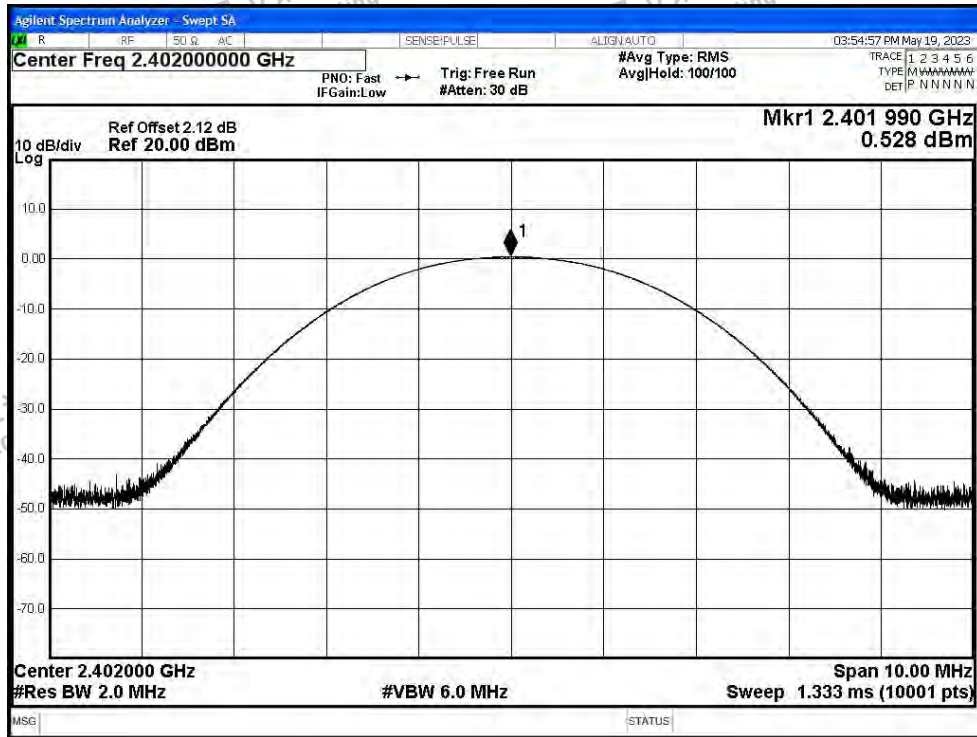




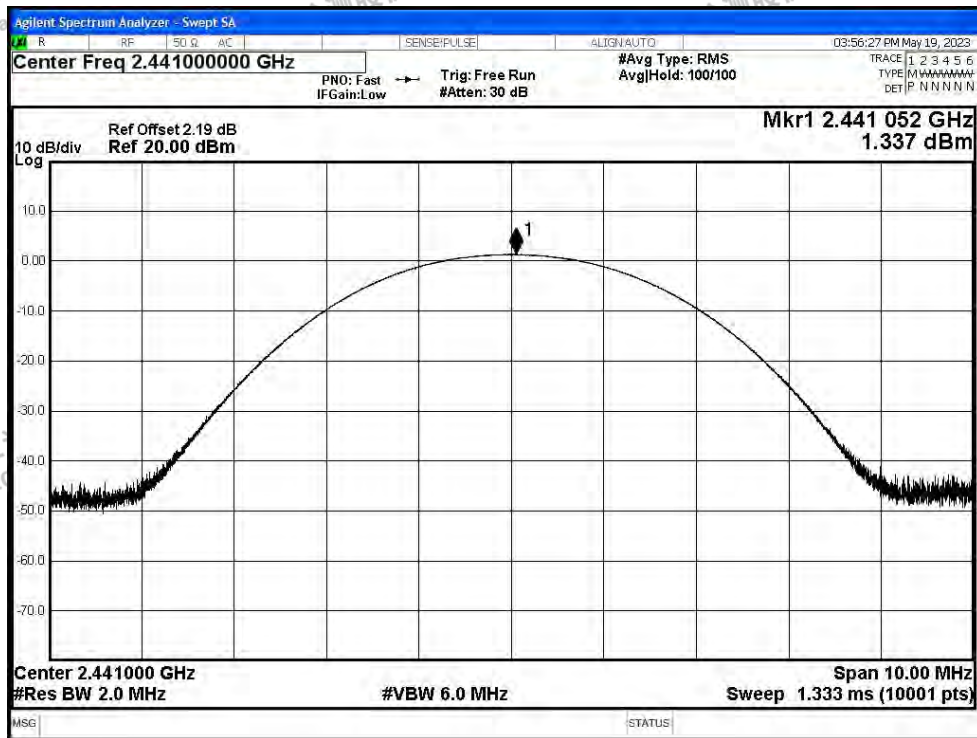


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

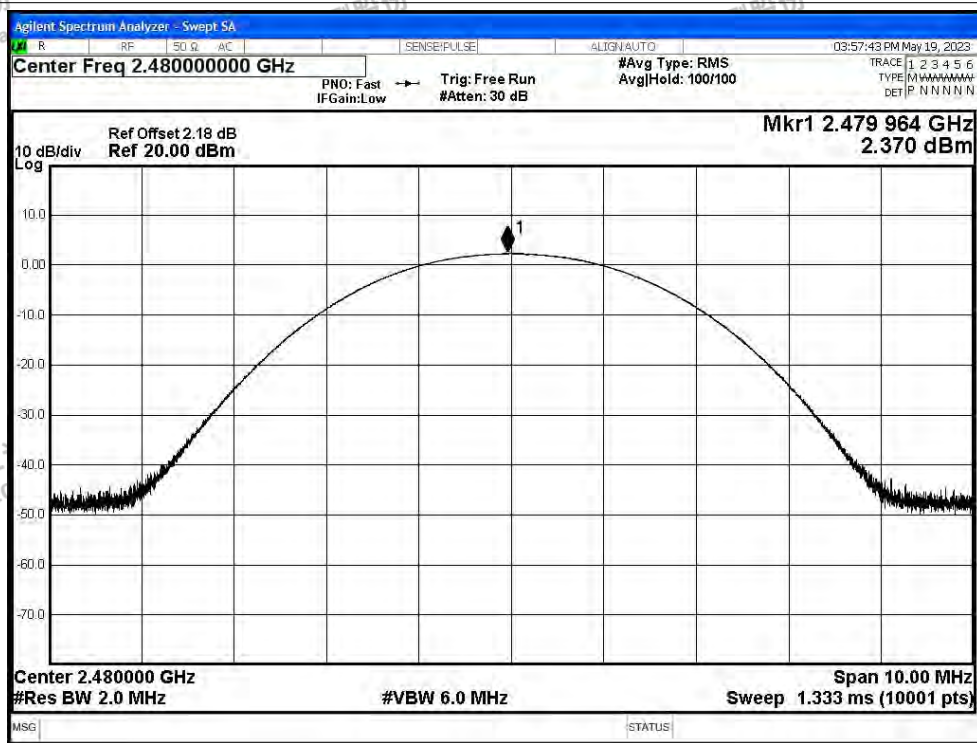


Power NVNT 1-DH5 2441MHz Ant1

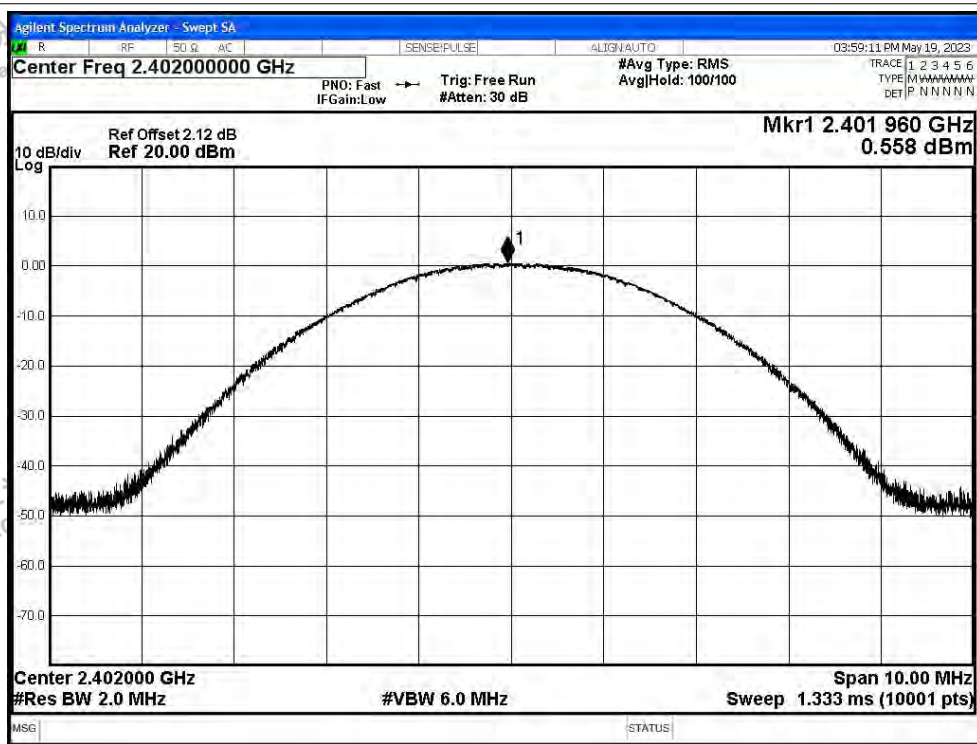




Power NVNT 1-DH5 2480MHz Ant1

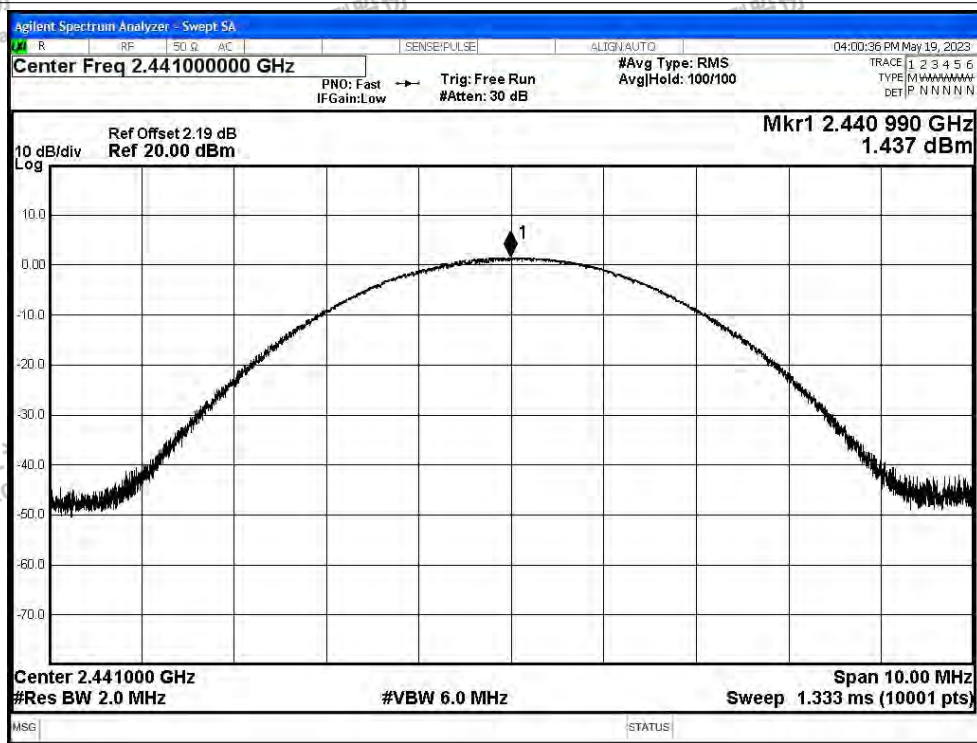


Power NVNT 2-DH5 2402MHz Ant1

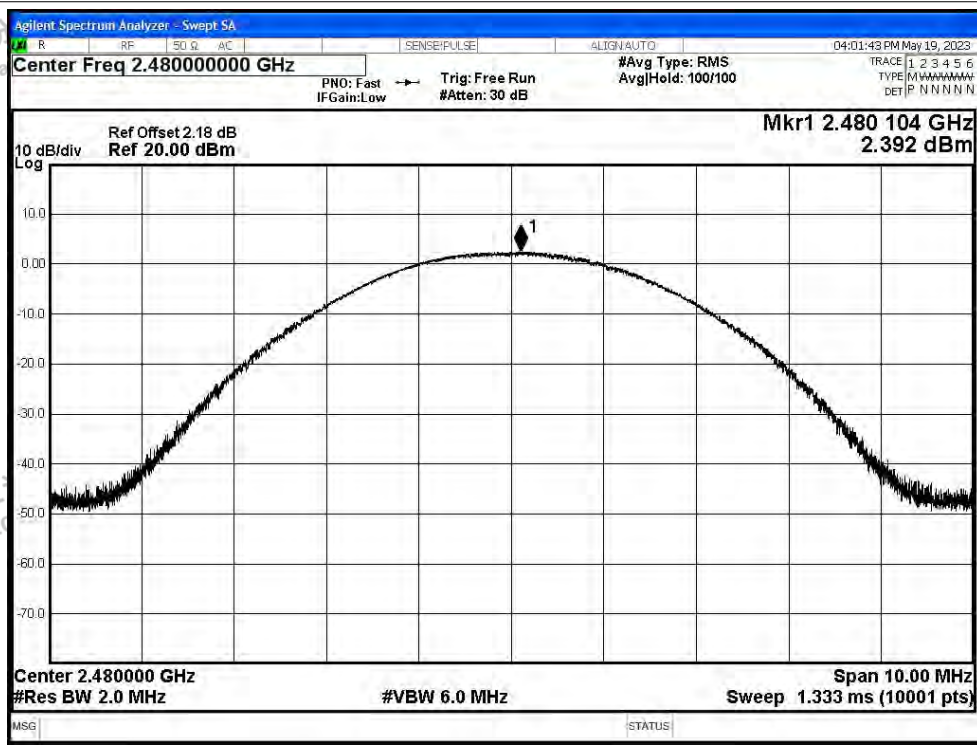




Power NVNT 2-DH5 2441MHz Ant1

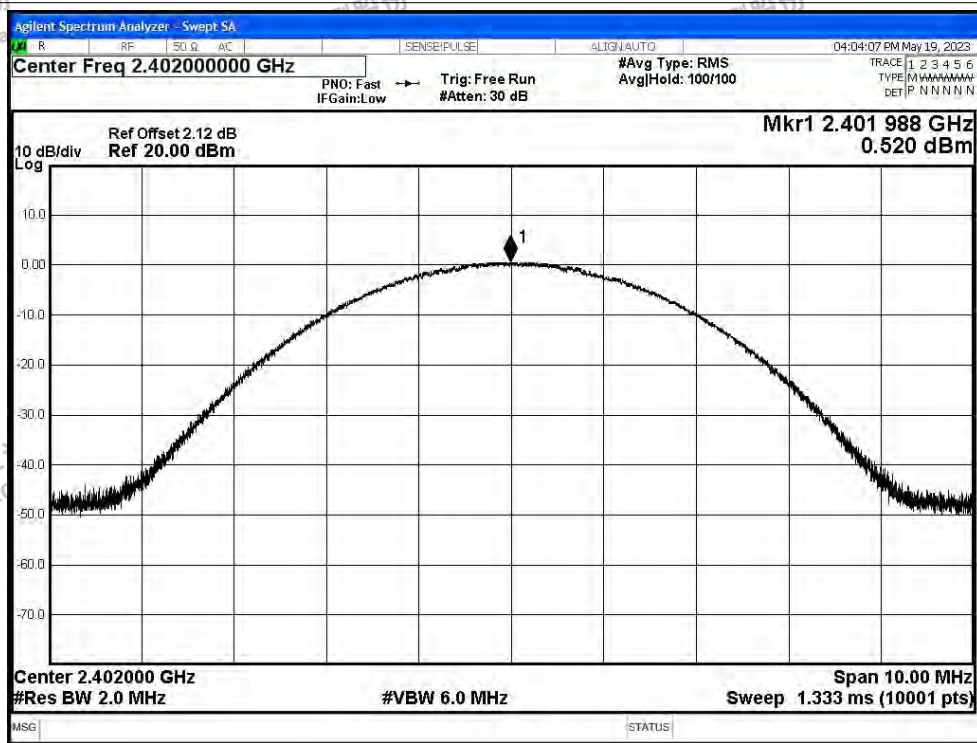


Power NVNT 2-DH5 2480MHz Ant1

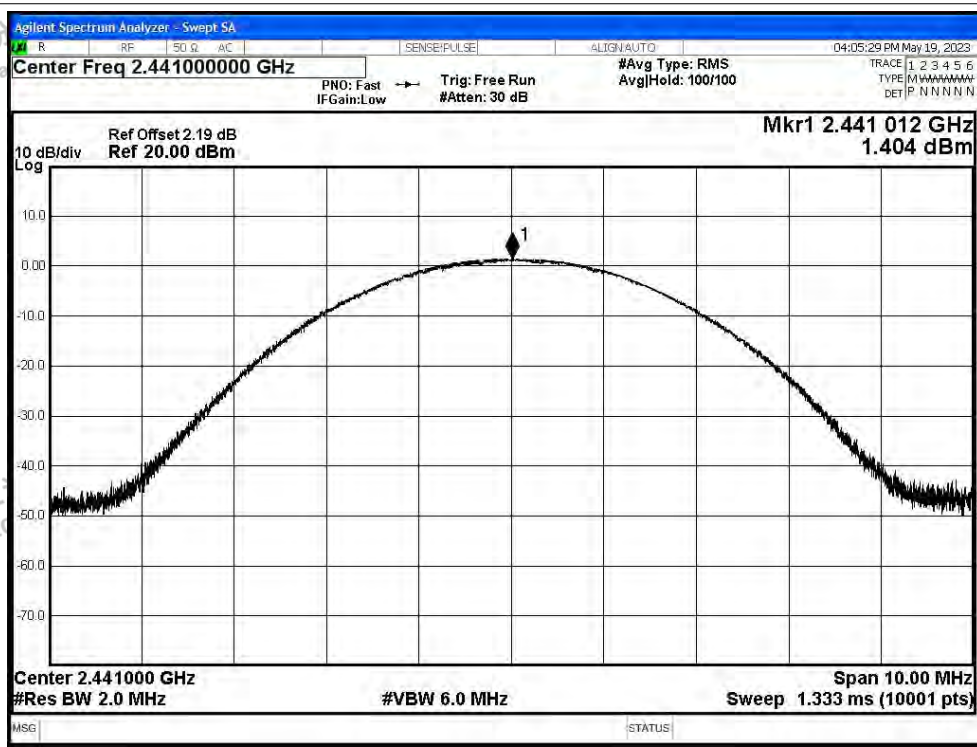


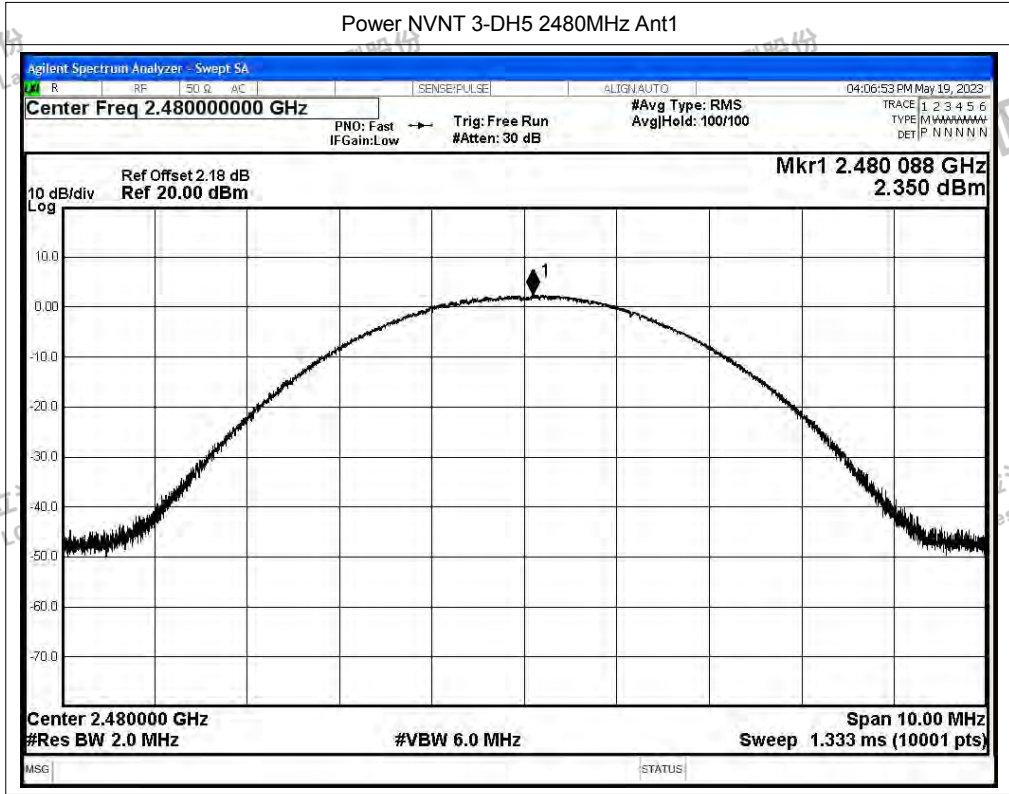


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1







### A.3 Carrier Frequencies Separation

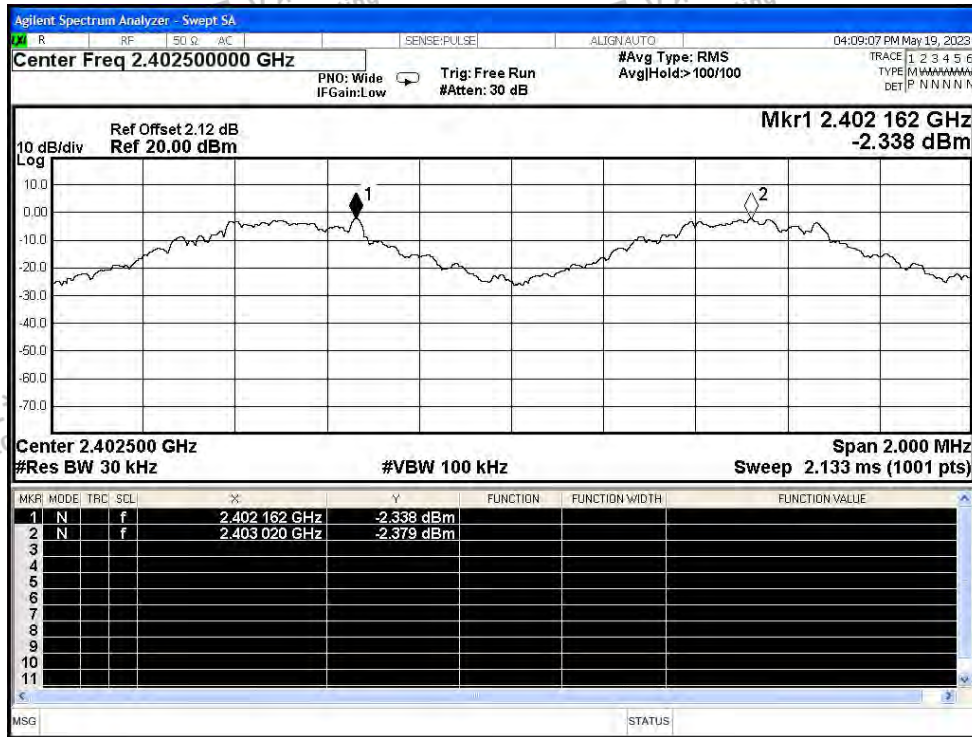
| Condition | Mode  | Antenna | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|-----------|-------|---------|---------------------|---------------------|-----------|-------------|---------|
| NVNT      | 1-DH5 | Ant1    | 2402.162            | 2403.02             | 0.858     | 0.565       | Pass    |
| NVNT      | 2-DH5 | Ant1    | 2402.016            | 2403.018            | 1.002     | 0.877       | Pass    |
| NVNT      | 3-DH5 | Ant1    | 2402.17             | 2403.172            | 1.002     | 0.866       | Pass    |



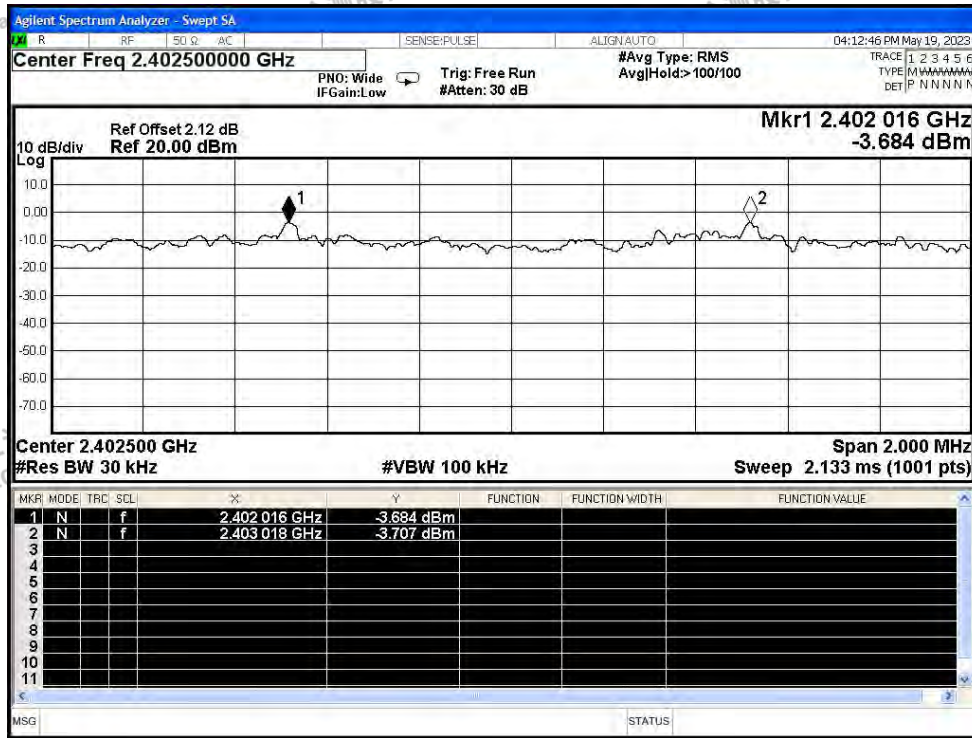


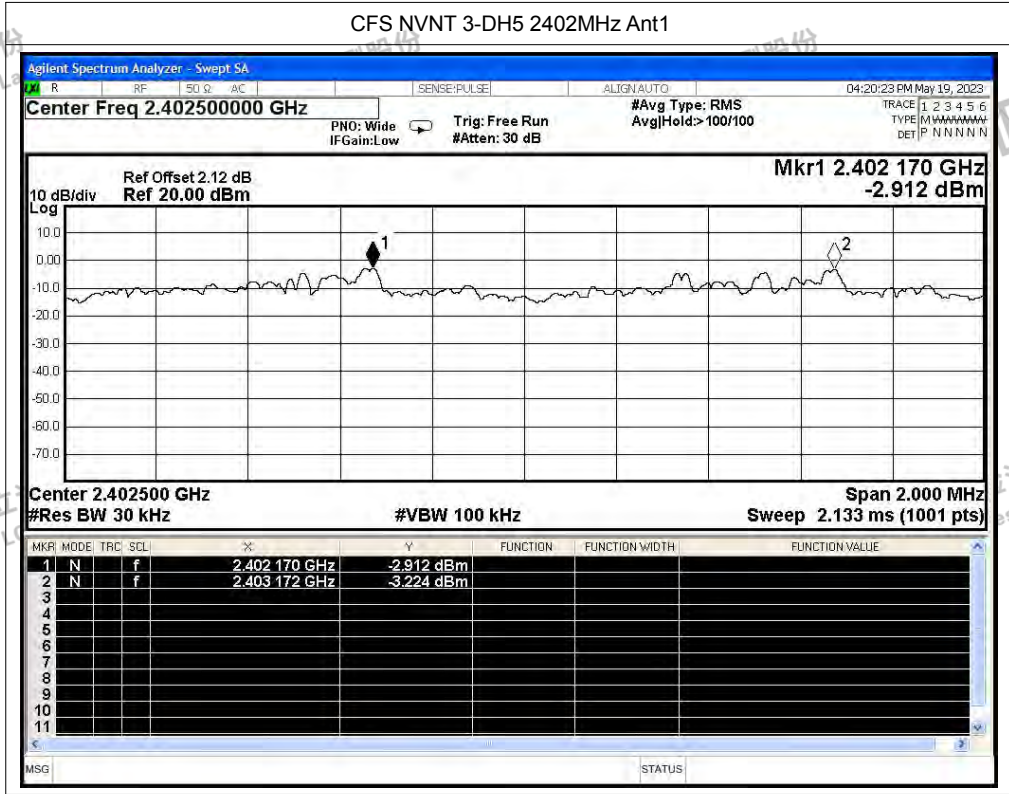
Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1









### A.4 Dwell Time

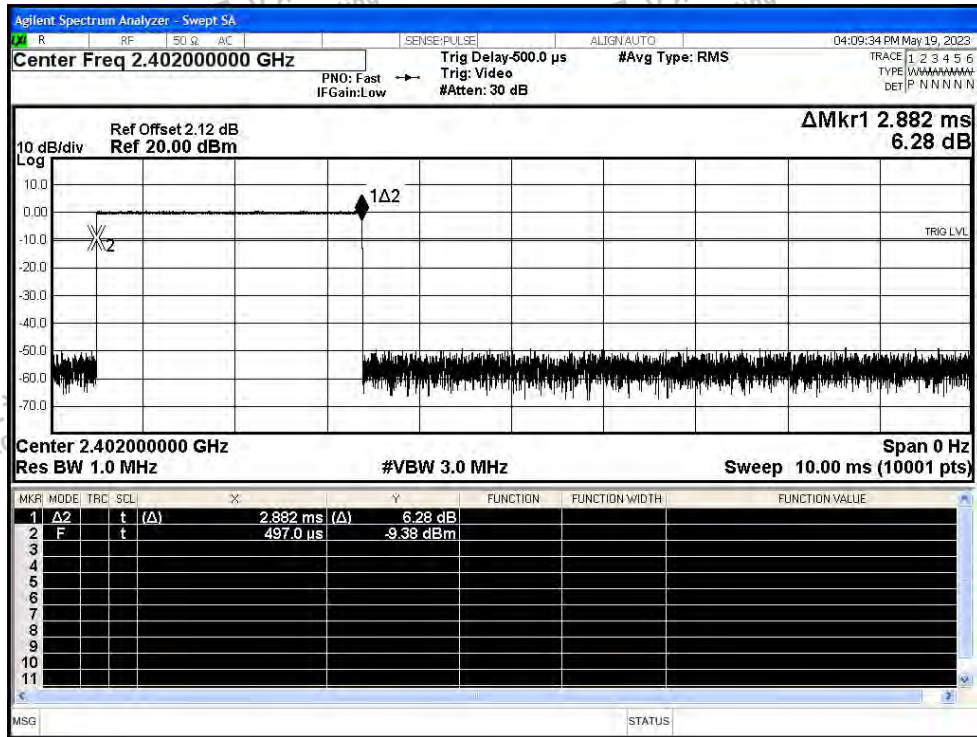
| Condition | Mode  | Frequency (MHz) | Antenna | Pulse Time (ms) | Total Dwell Time (ms) | Burst Count | Period Time (ms) | Limit (ms) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-----------------------|-------------|------------------|------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | 2.882           | 253.616               | 88          | 31600            | 400        | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | 2.881           | 293.862               | 102         | 31600            | 400        | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | 2.887           | 308.909               | 107         | 31600            | 400        | Pass    |



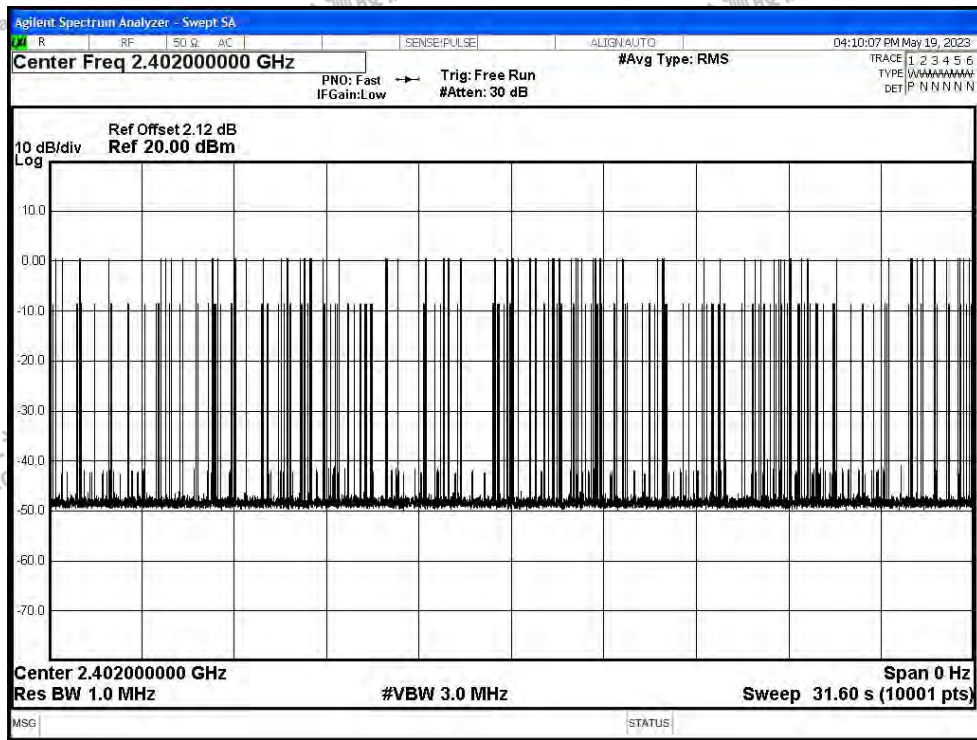


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

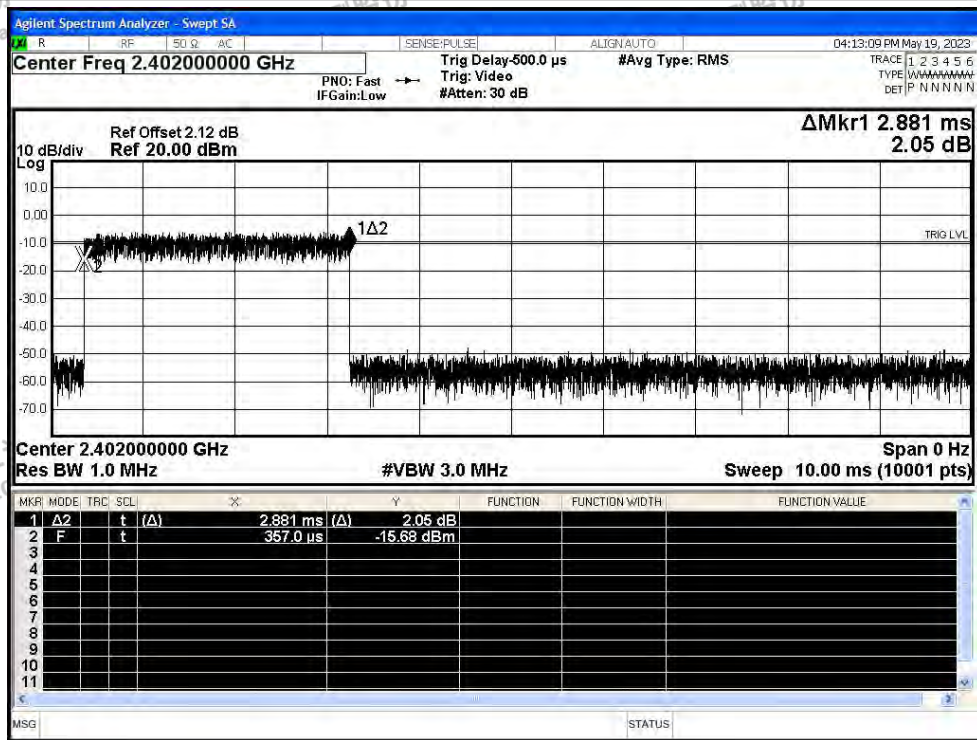


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

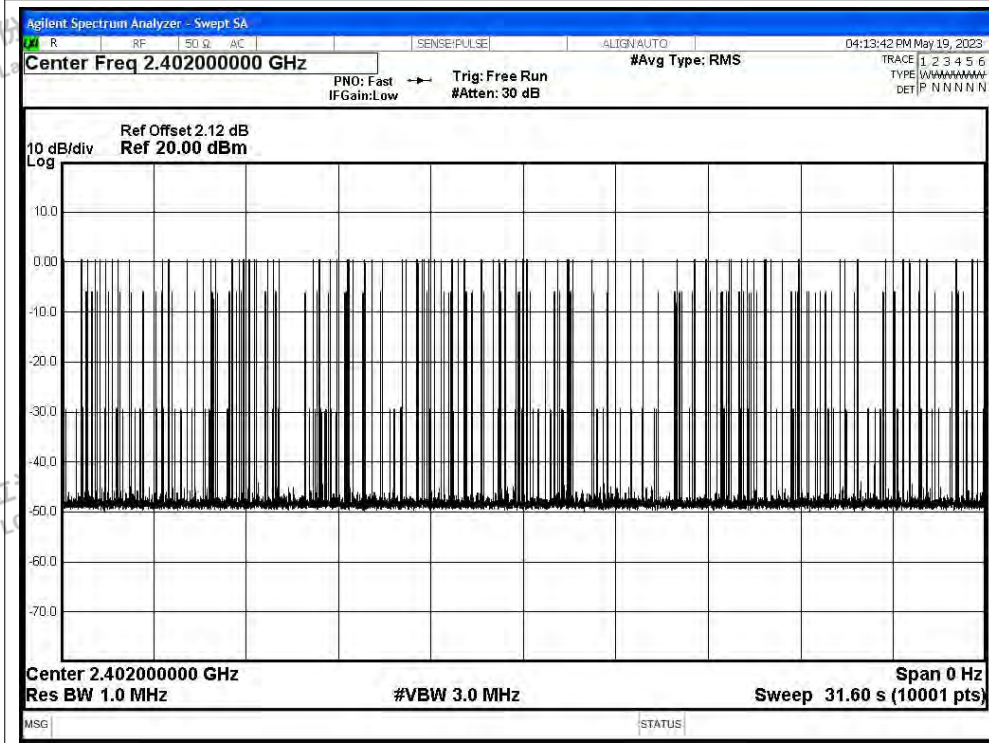




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

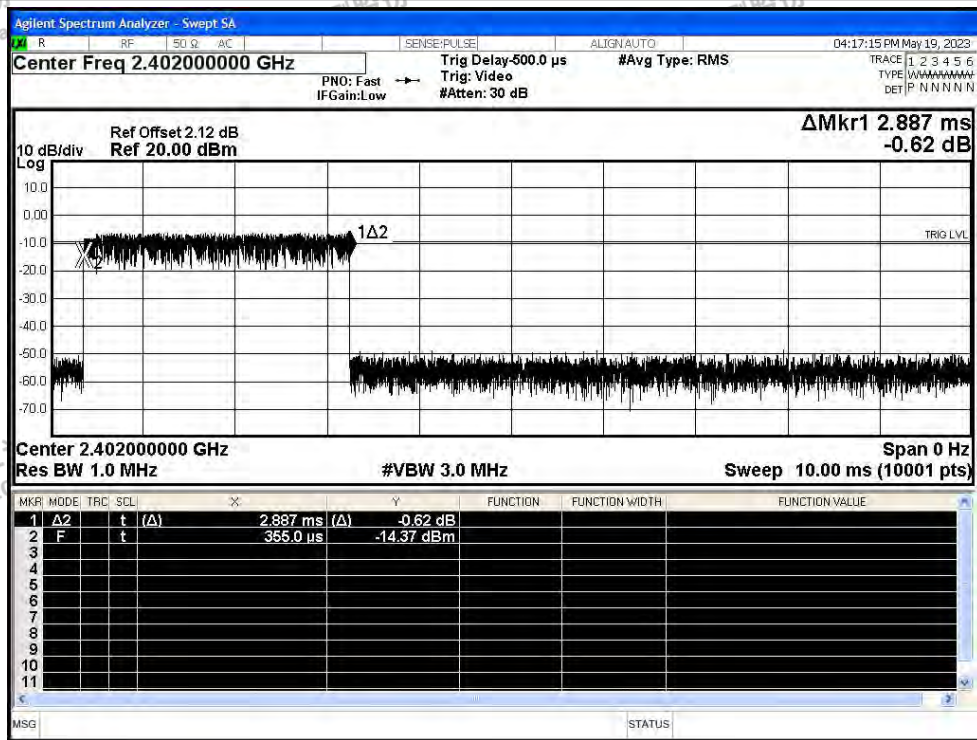


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

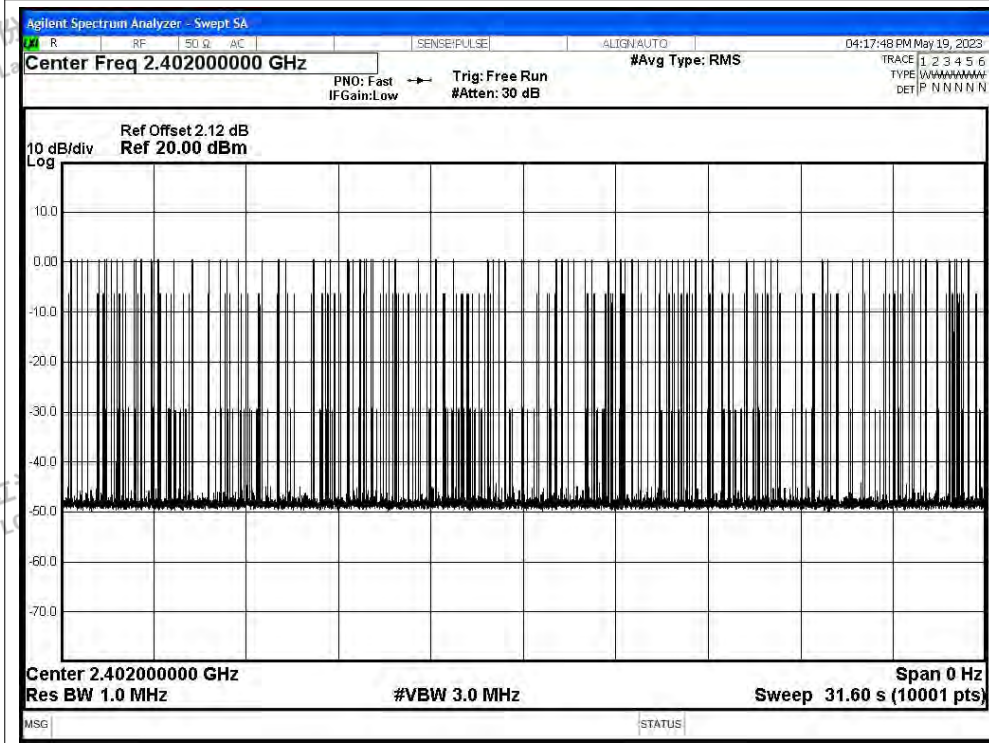




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated





### A.5 Number of Hopping Channel

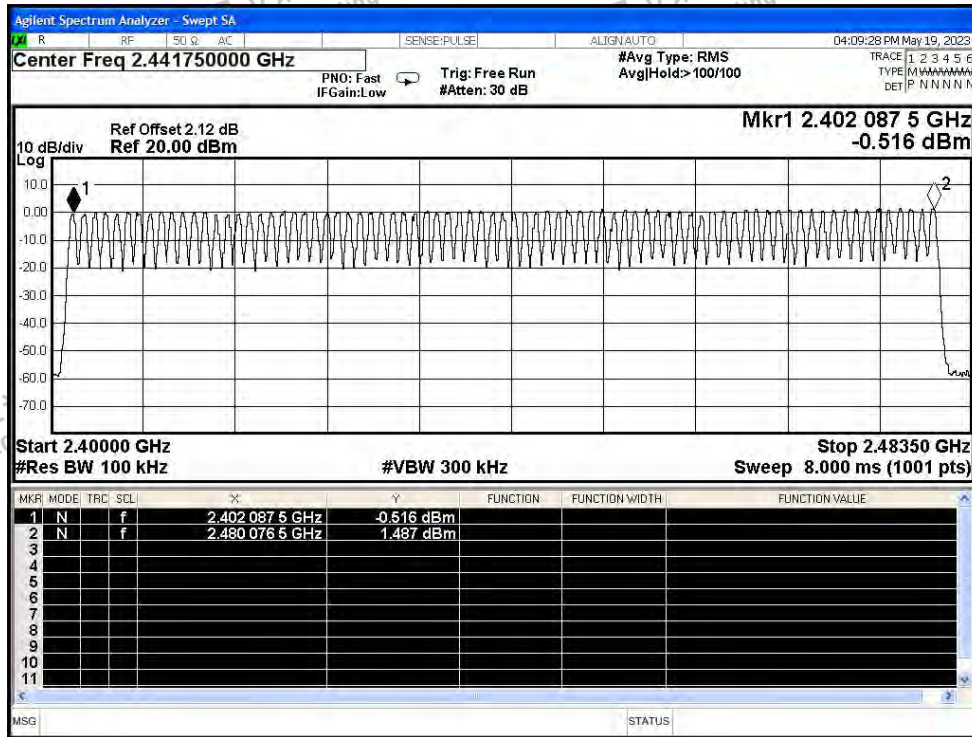
| Condition | Mode  | Antenna | Hopping Number | Limit | Verdict |
|-----------|-------|---------|----------------|-------|---------|
| NVNT      | 1-DH5 | Ant1    | 79             | 15    | Pass    |
| NVNT      | 2-DH5 | Ant1    | 79             | 15    | Pass    |
| NVNT      | 3-DH5 | Ant1    | 79             | 15    | Pass    |



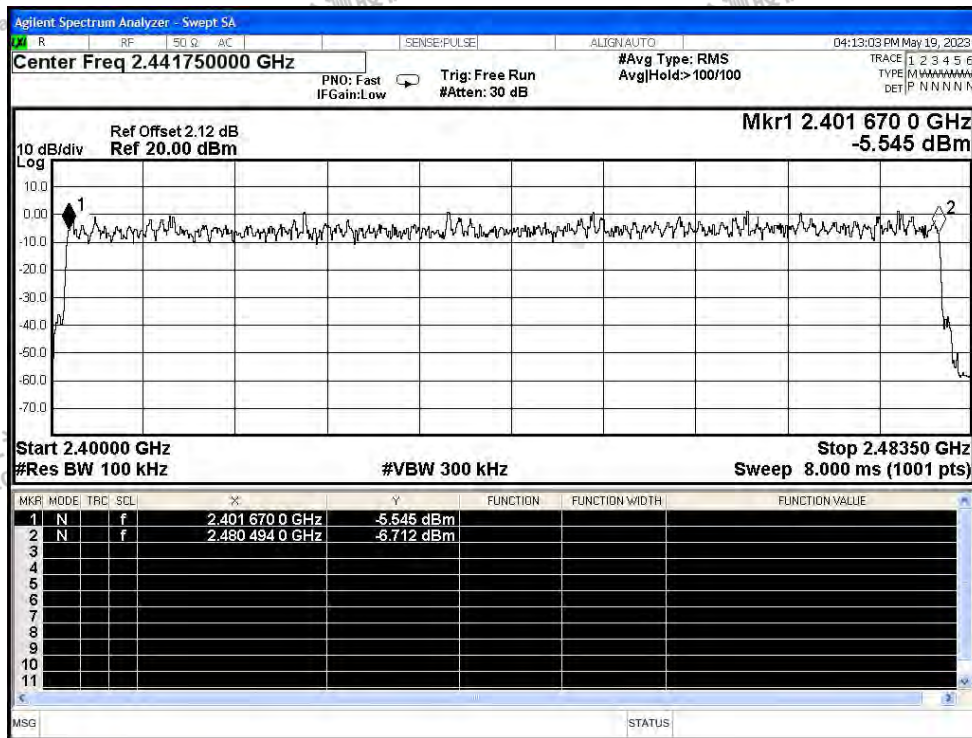


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1

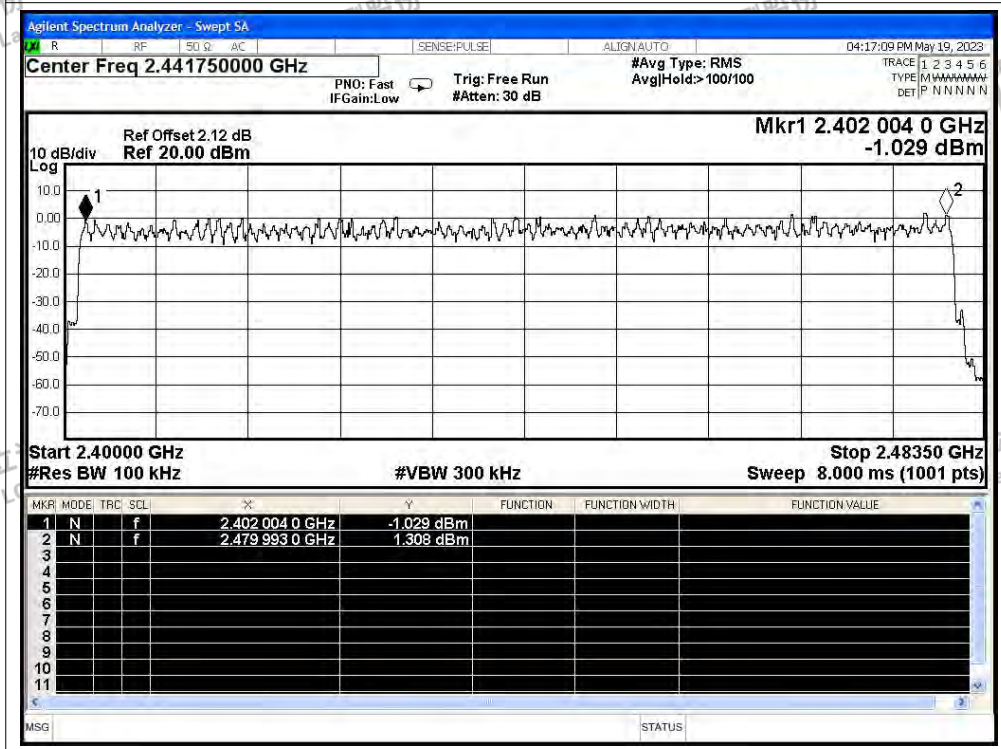


Hopping No. NVNT 2-DH5 2402MHz Ant1





Hopping No. NVNT 3-DH5 2402MHz Ant1





## A.6 Band Edge

| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | -55.94          | -20         | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | -58.14          | -20         | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | -51.57          | -20         | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | -56.81          | -20         | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | No-Hopping   | -50.67          | -20         | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | No-Hopping   | -58.55          | -20         | Pass    |

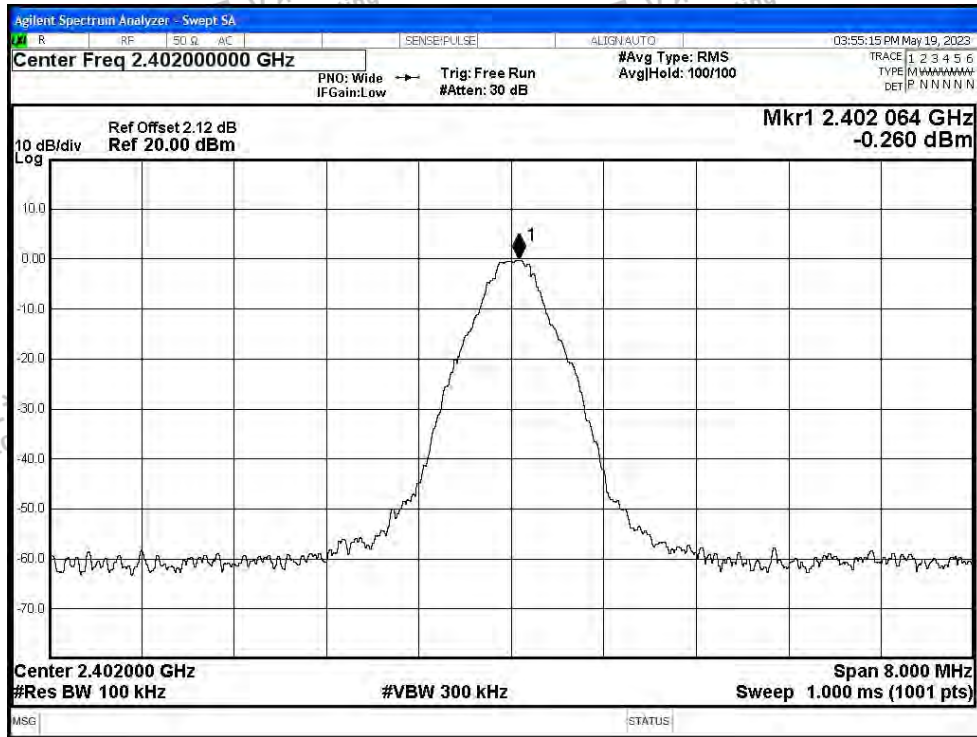




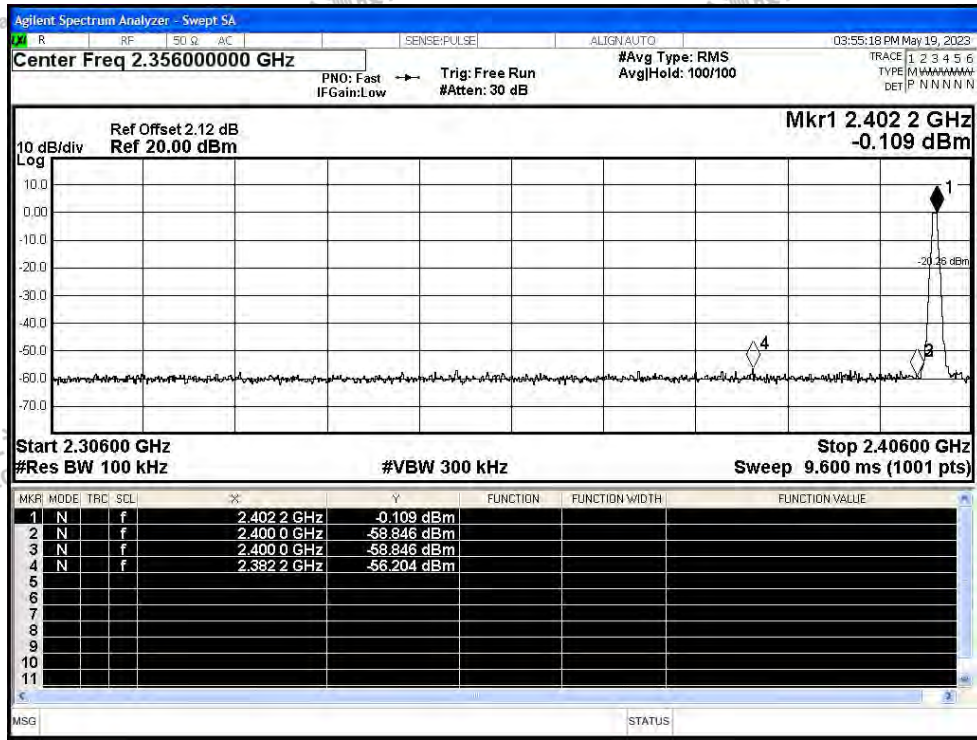


Test Graphs

Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref

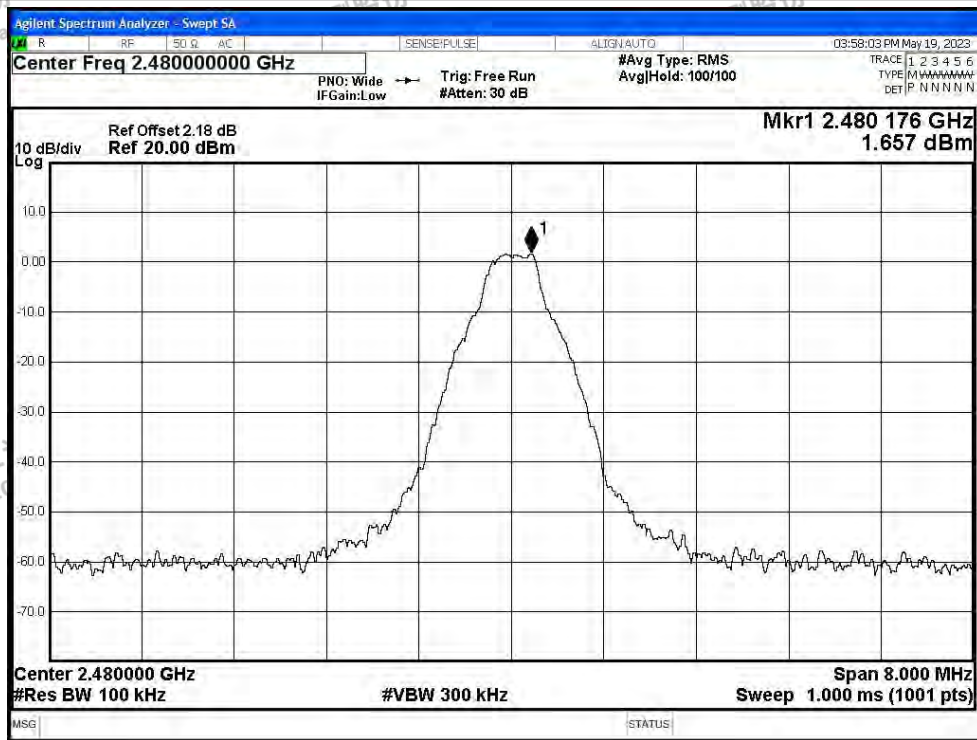


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

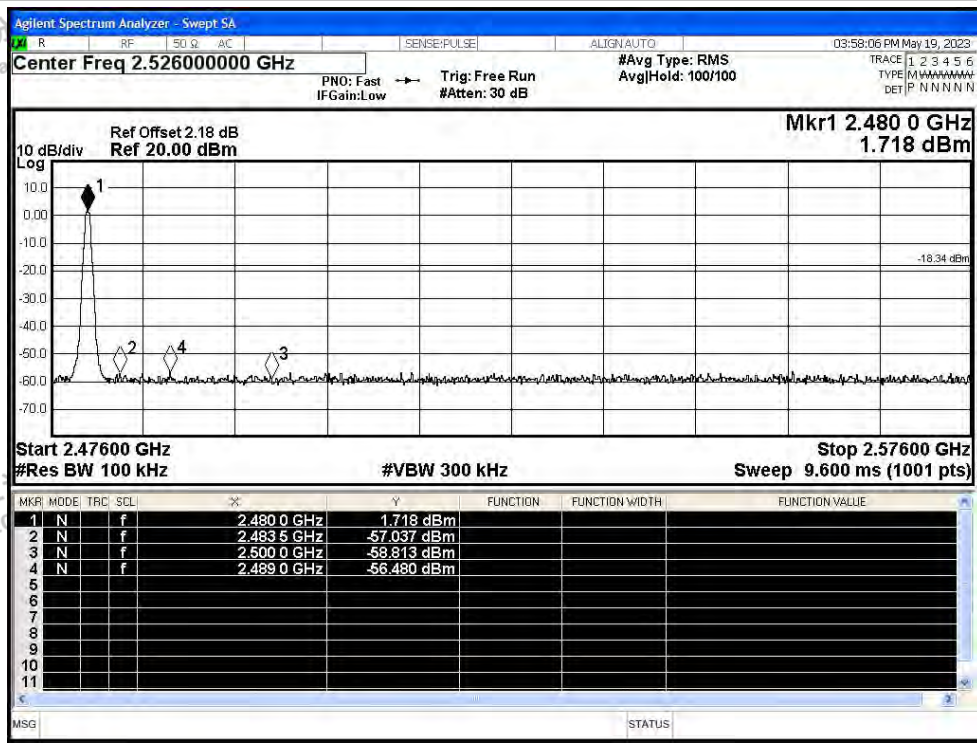




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

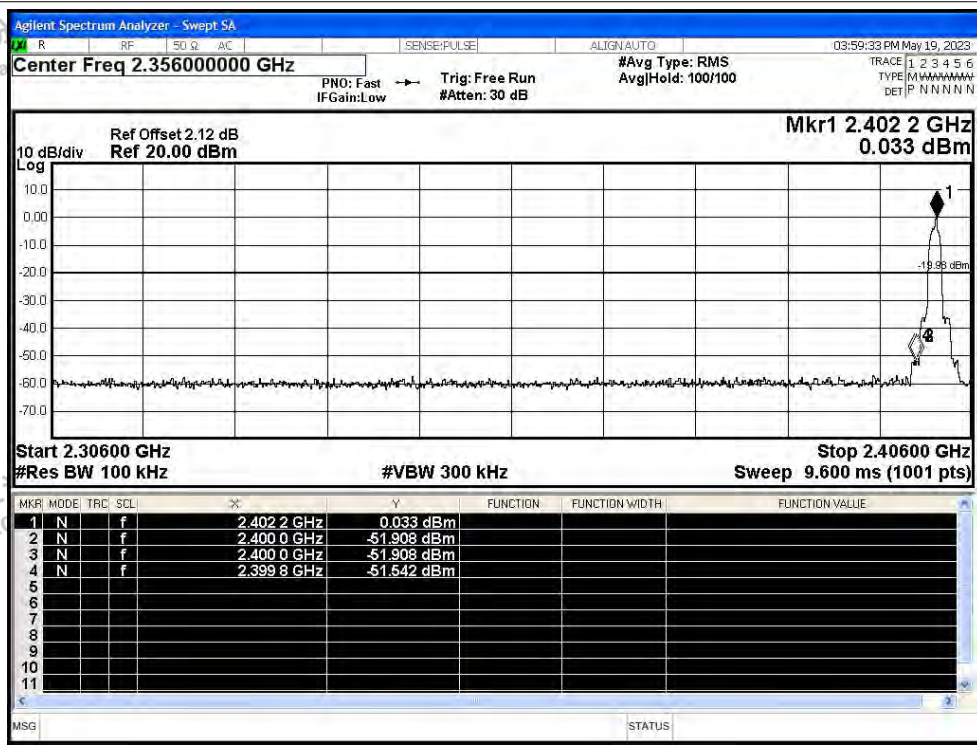




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

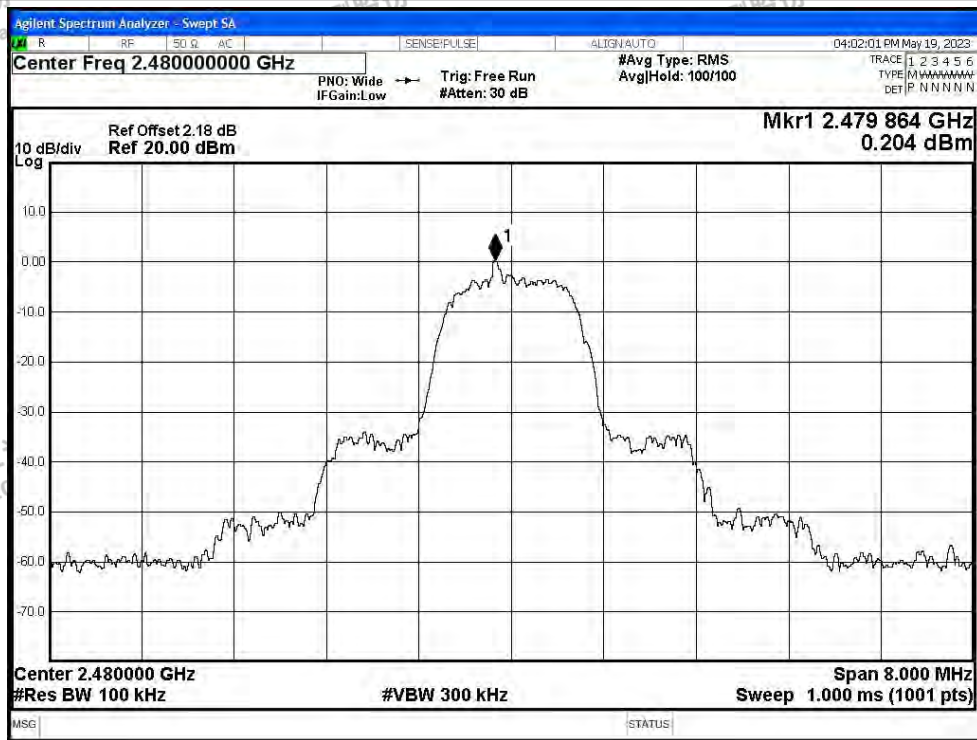


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

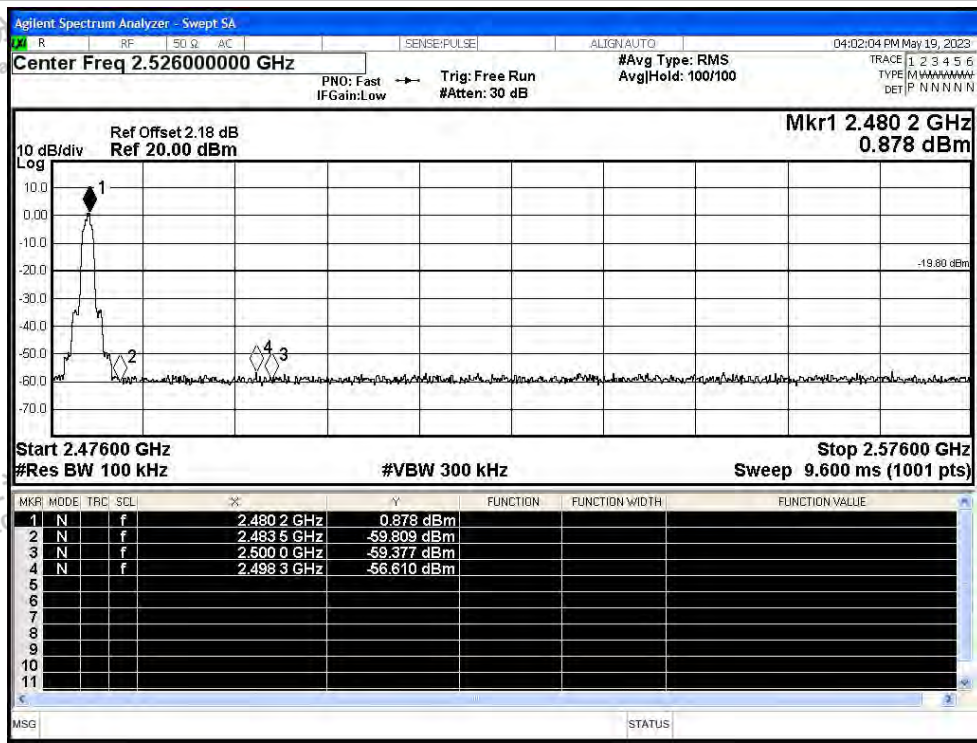




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

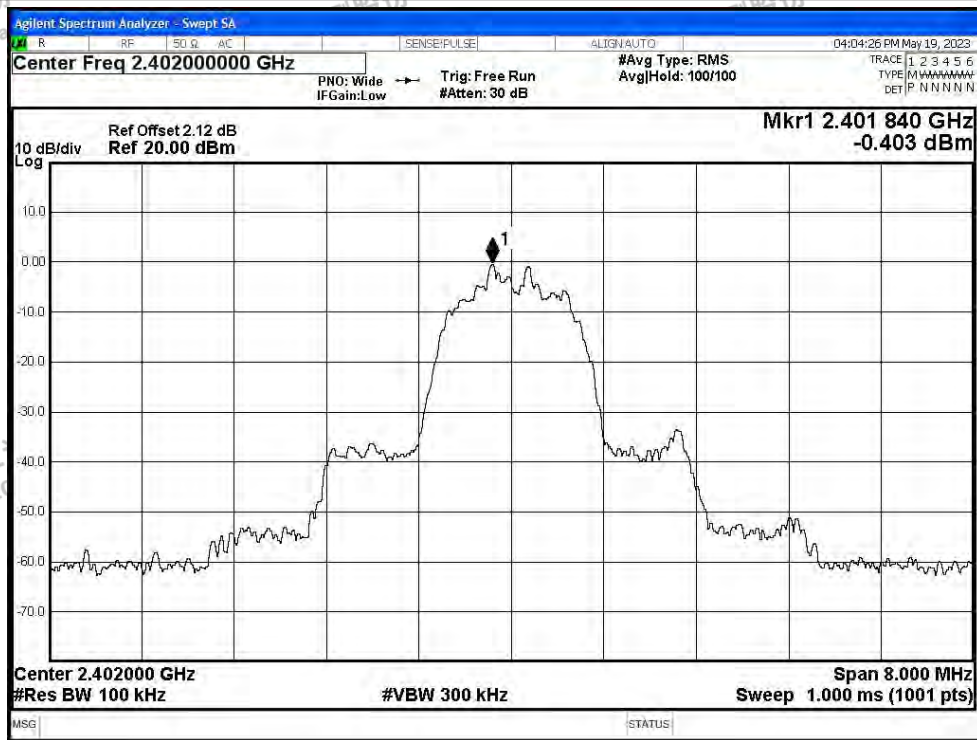


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

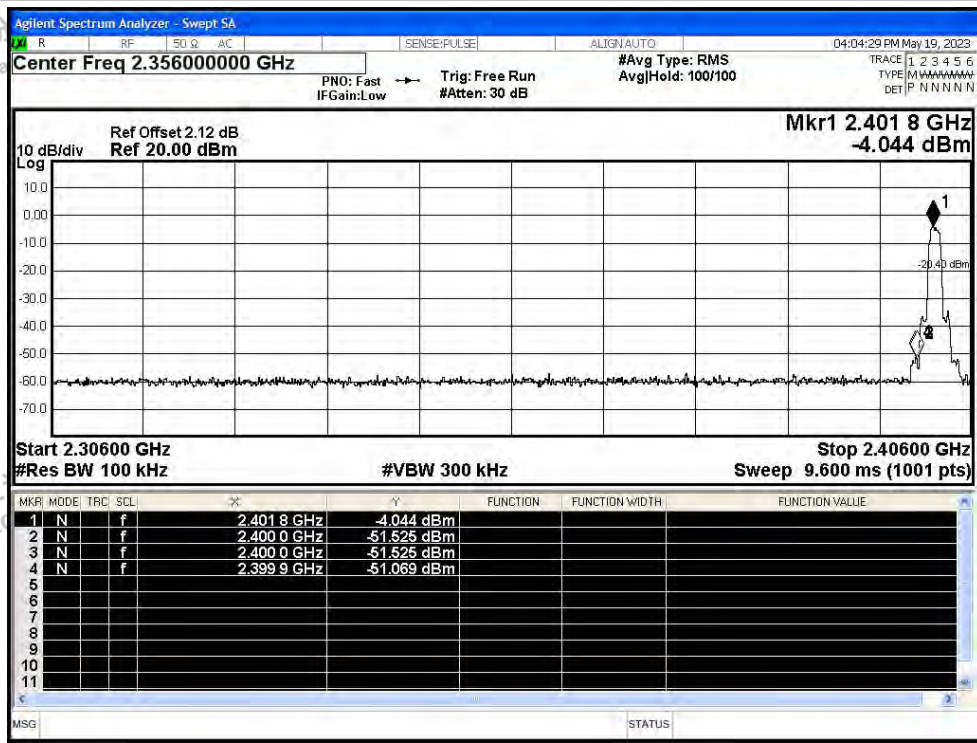




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

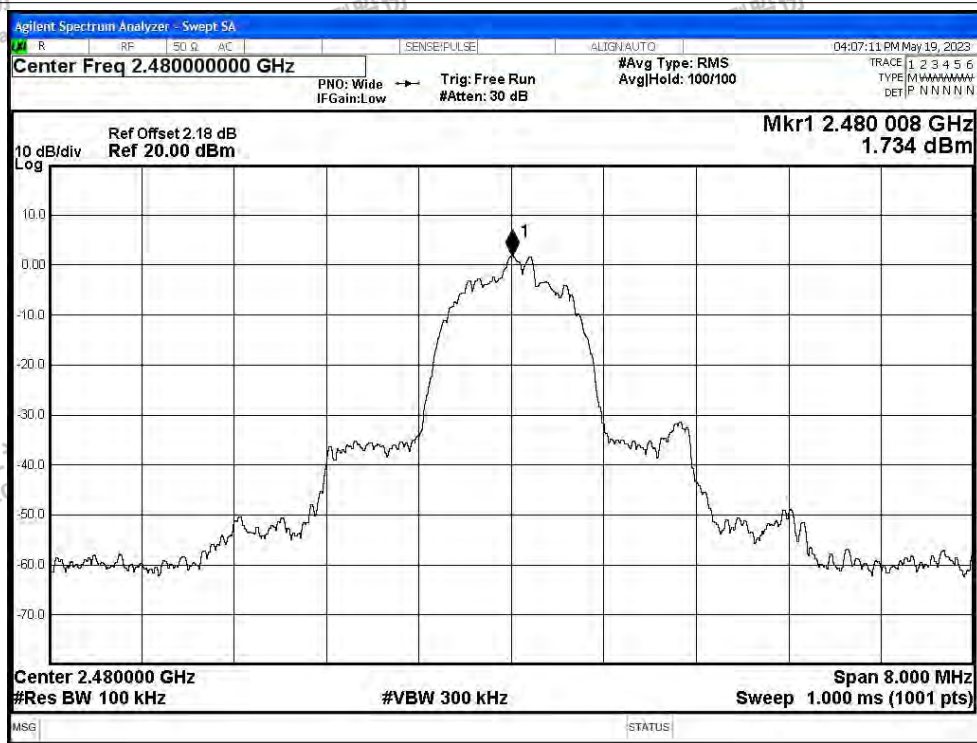


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

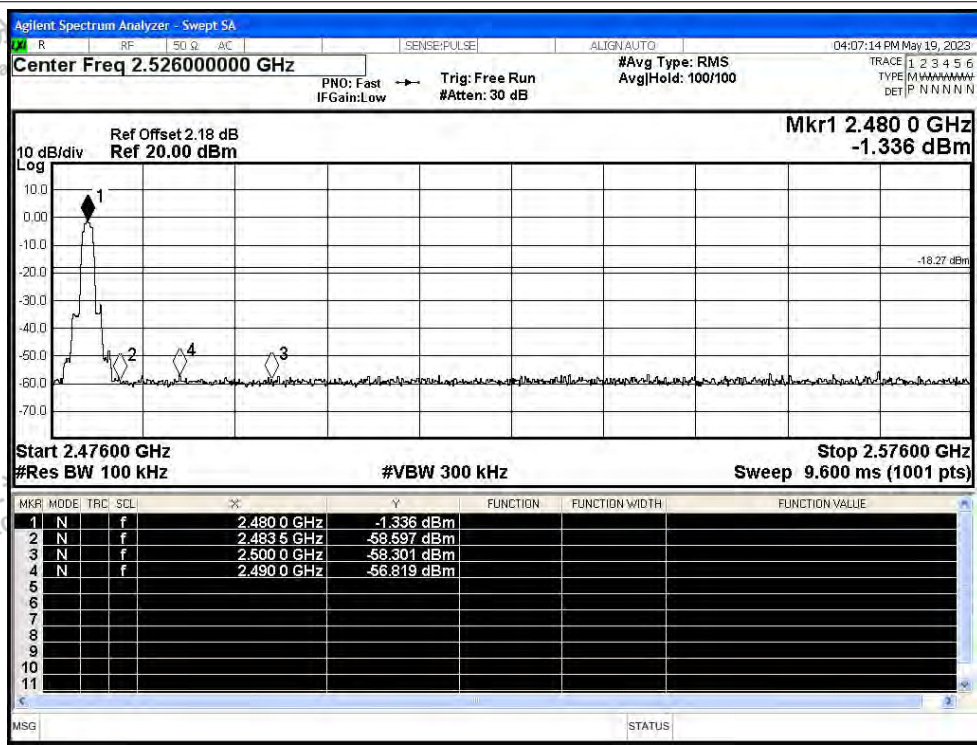




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission





### (Hopping)

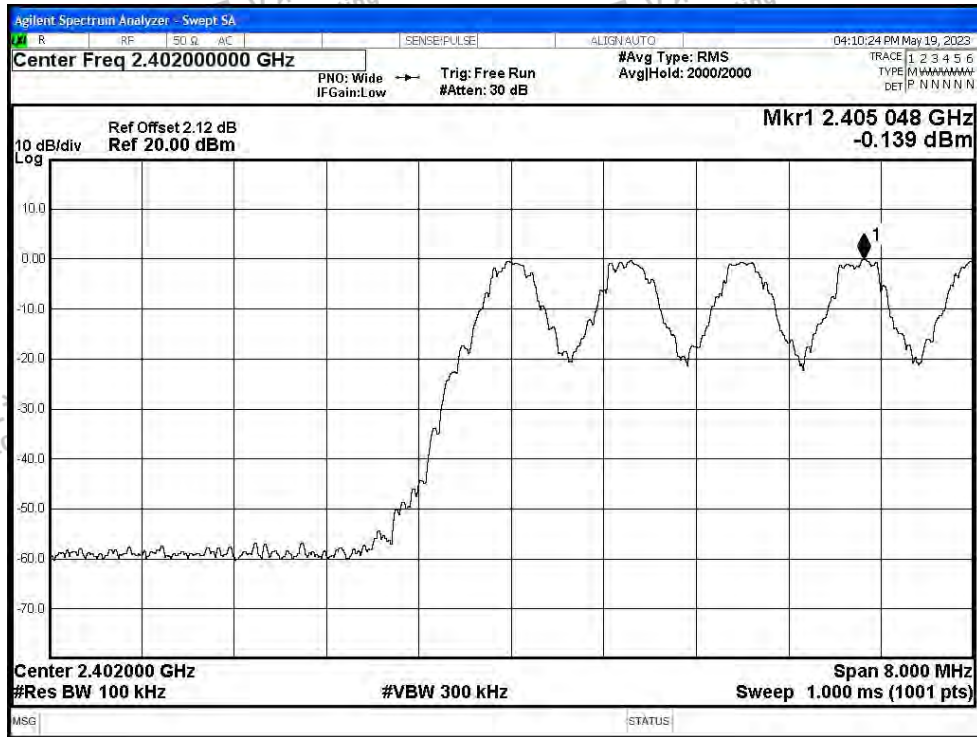
| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | Hopping      | -55.89          | -20         | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | Hopping      | -58.39          | -20         | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | Hopping      | -55.46          | -20         | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | Hopping      | -57             | -20         | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | Hopping      | -56.03          | -20         | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | Hopping      | -56.77          | -20         | Pass    |



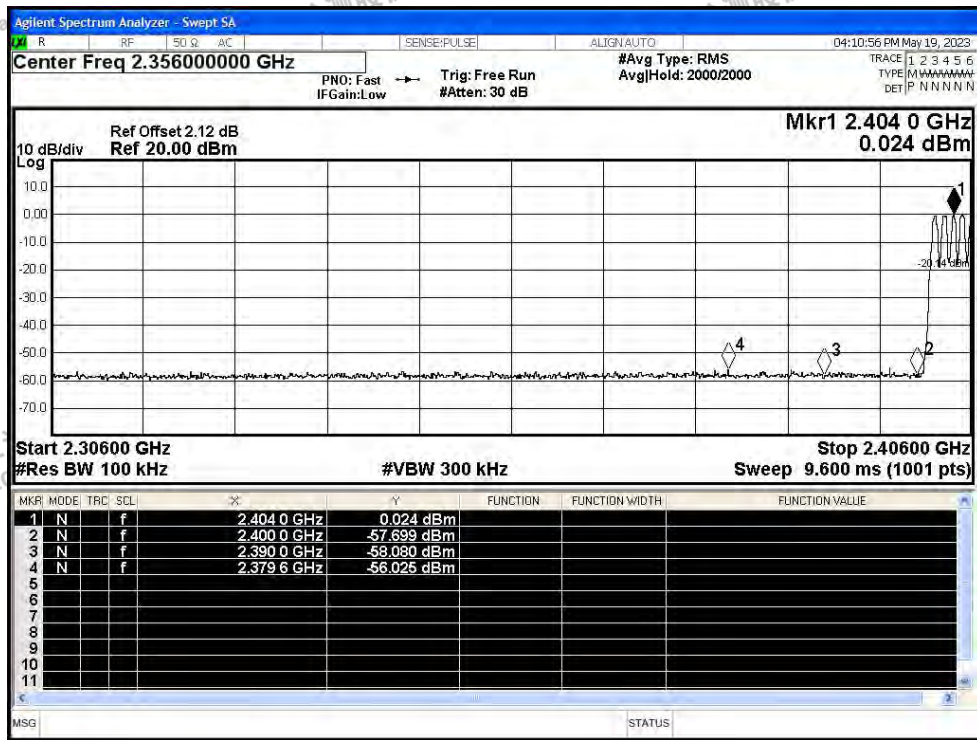


Test Graphs

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



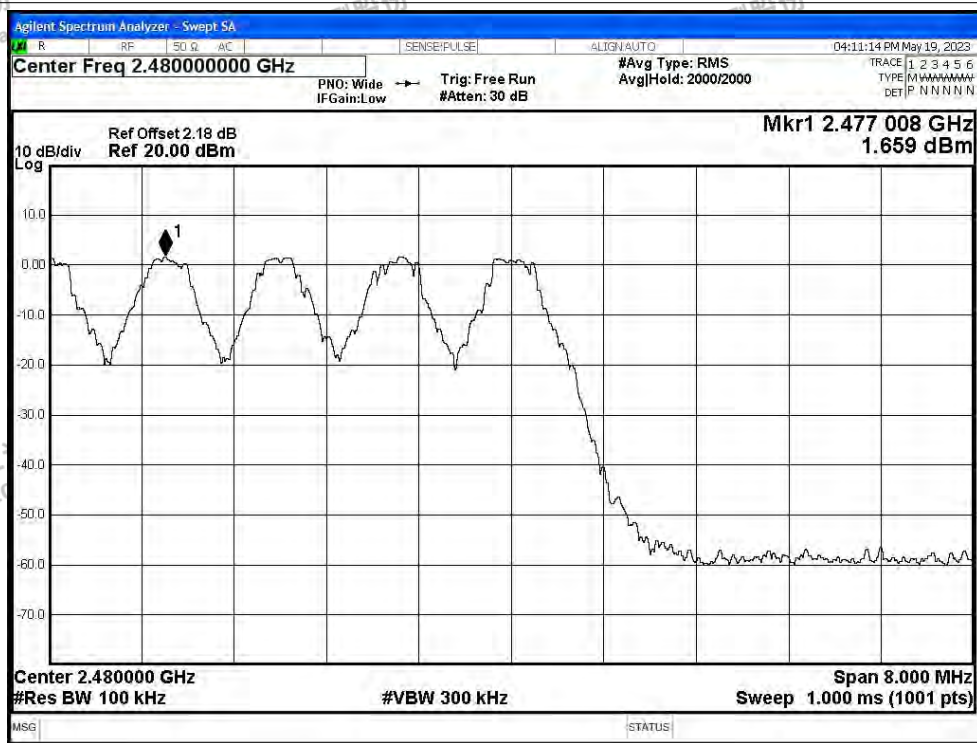
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



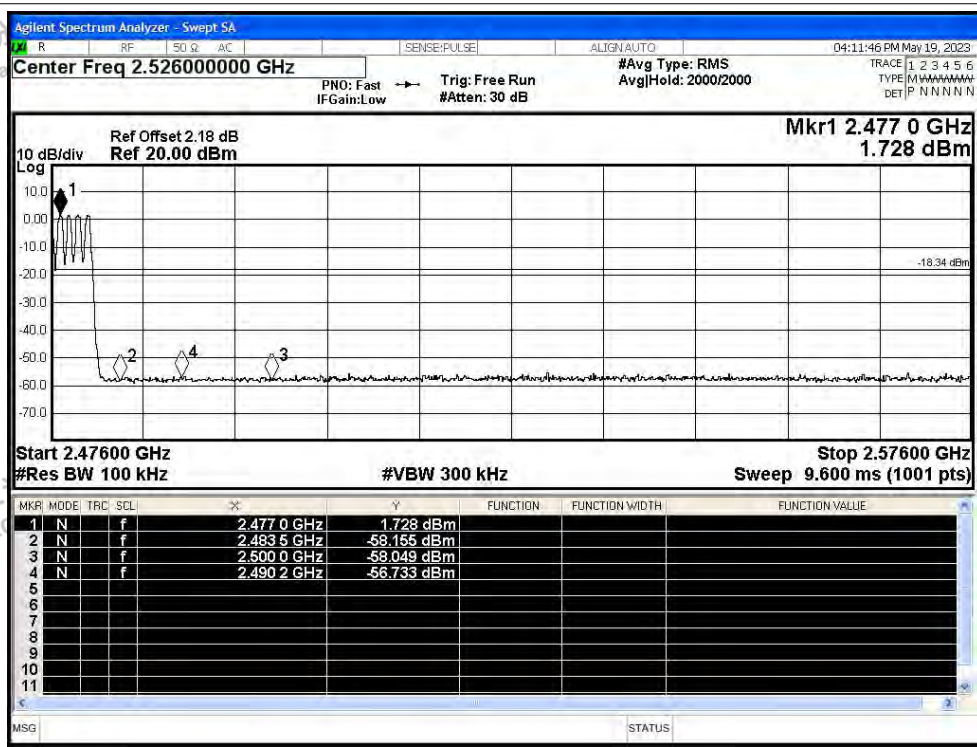




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission

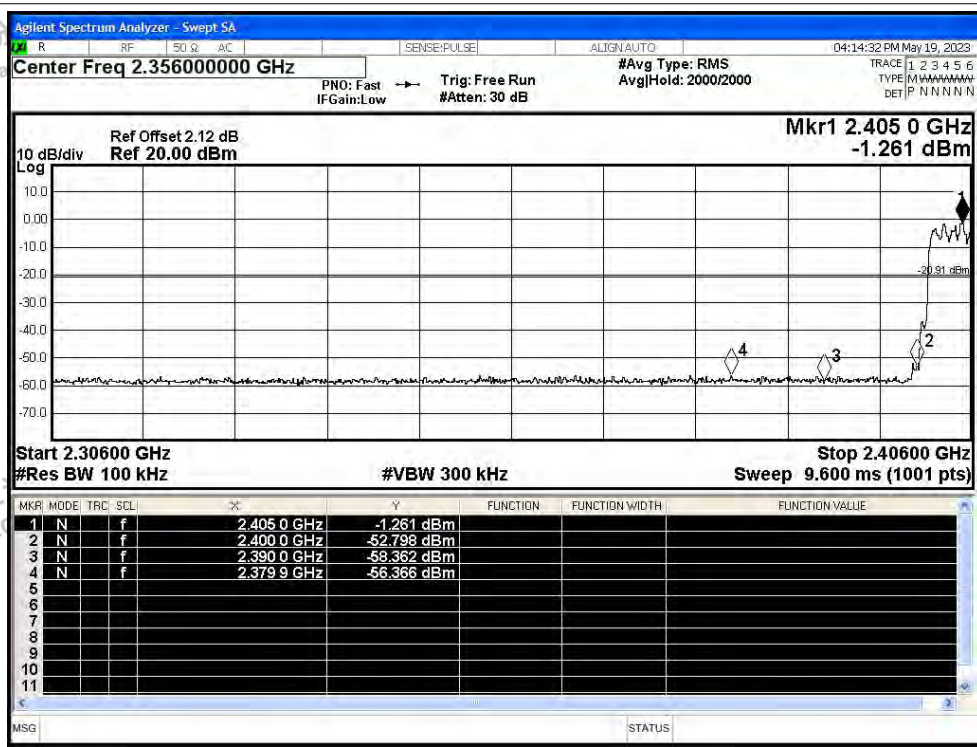




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

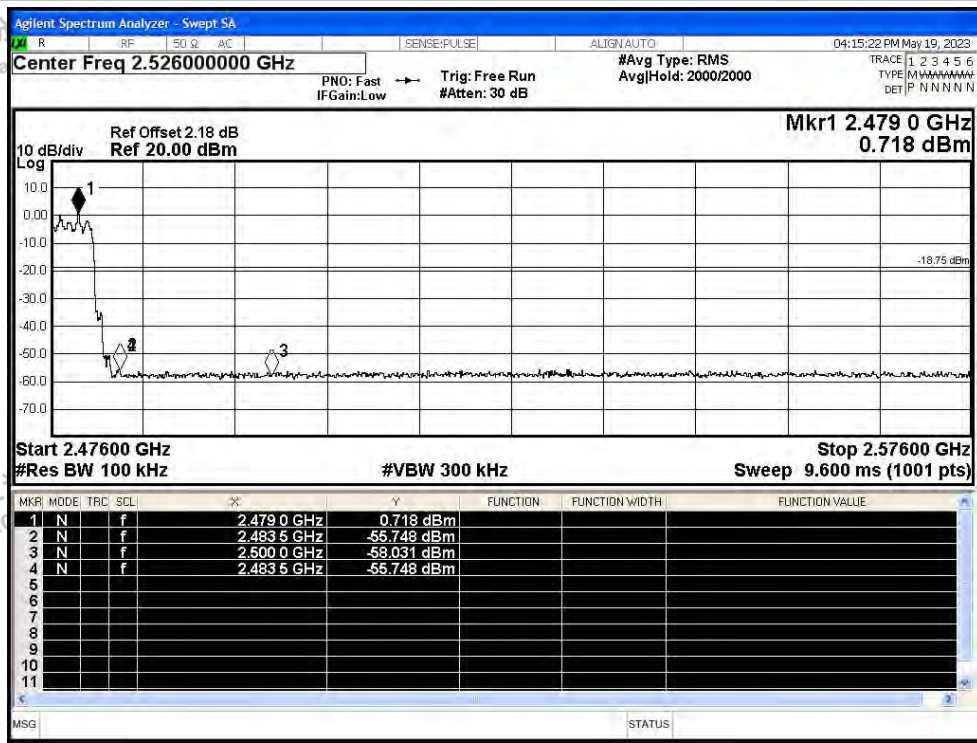




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission

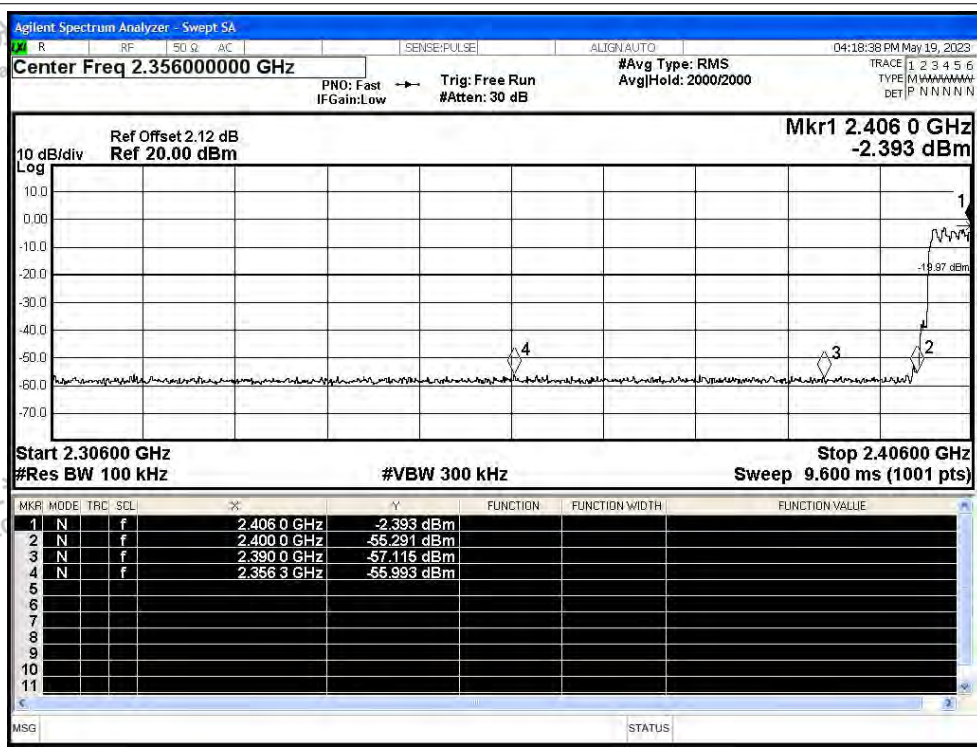




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission

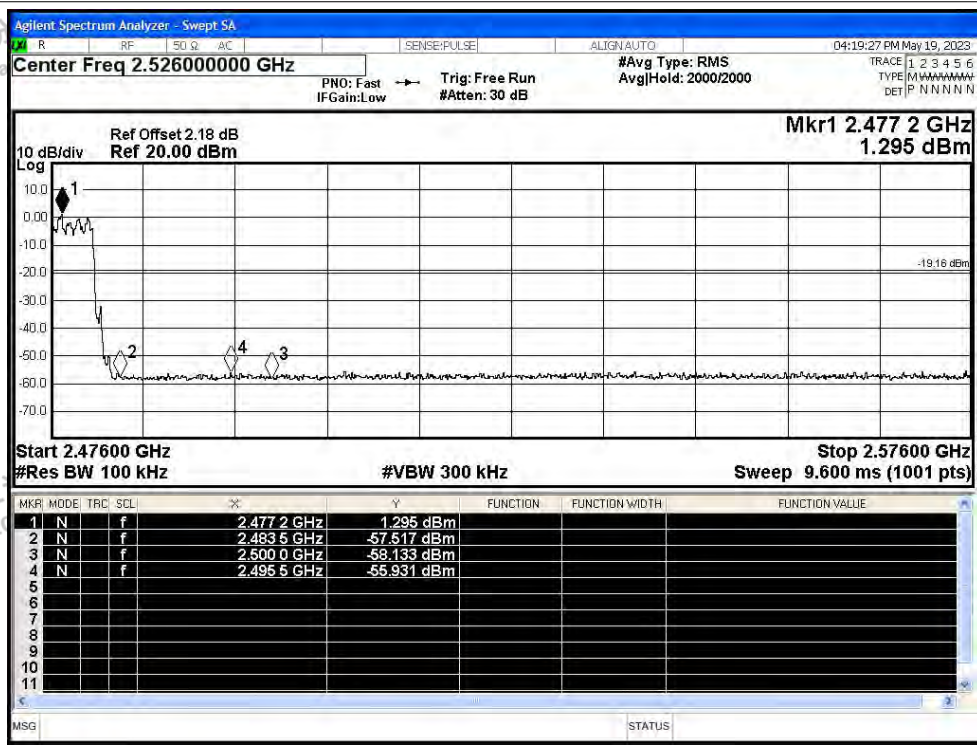




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission





### A.7 Conducted RF Spurious Emission

| Condition | Mode  | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | -55.18          | -20         | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | -55.72          | -20         | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | -57.31          | -20         | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | -55.75          | -20         | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | -56.49          | -20         | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | -55.76          | -20         | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | -56.08          | -20         | Pass    |
| NVNT      | 3-DH5 | 2441            | Ant1    | -56.49          | -20         | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | -56.86          | -20         | Pass    |



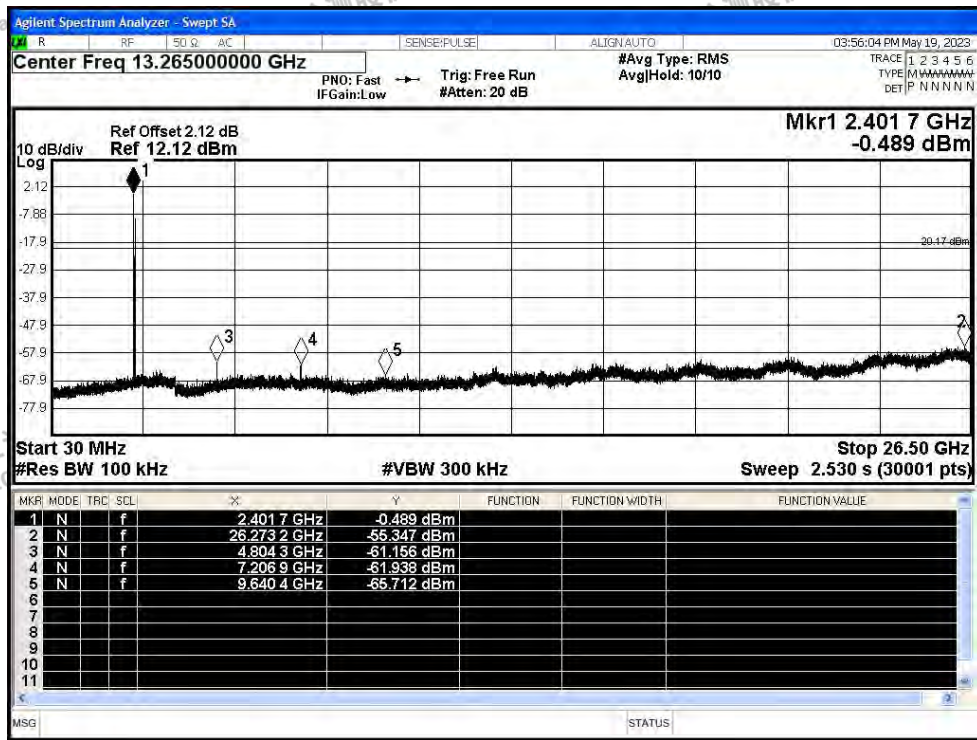


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

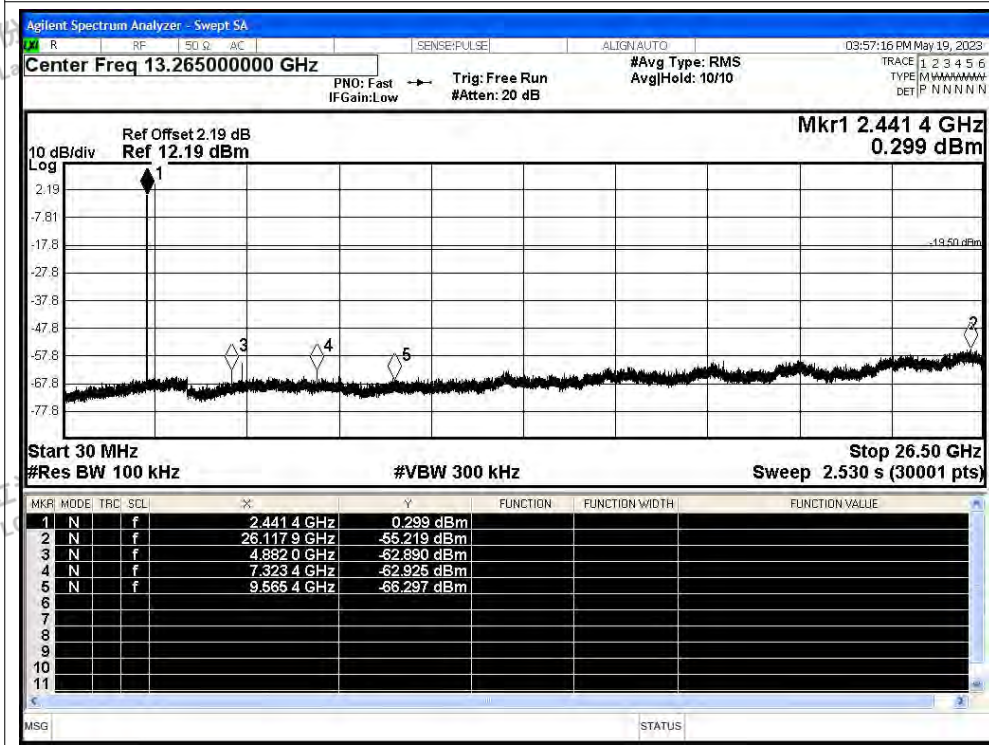




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



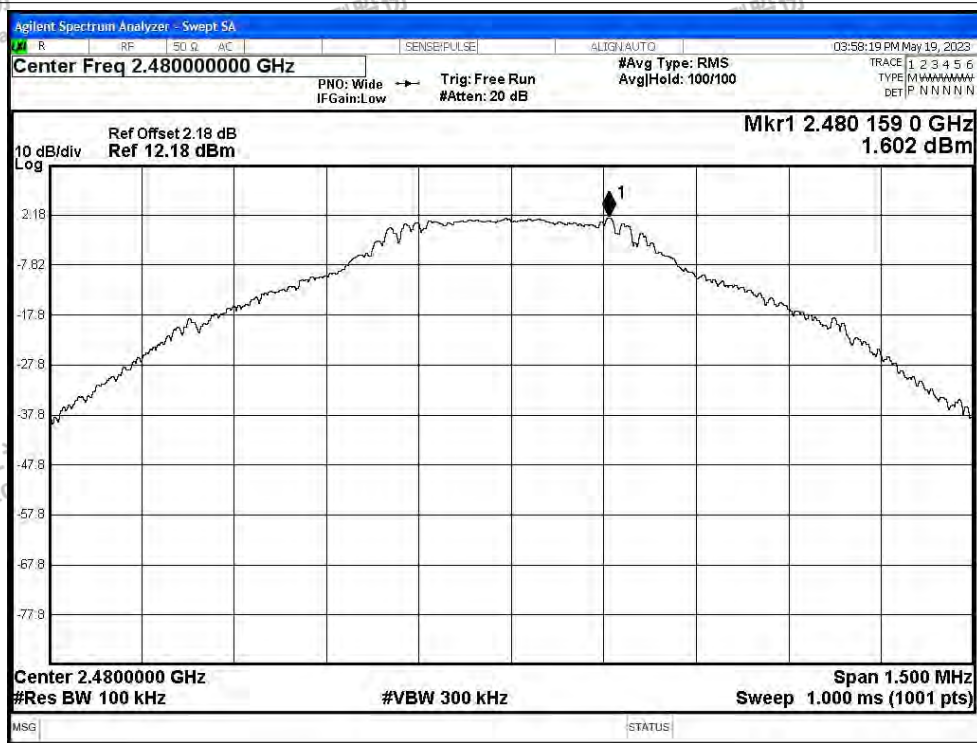
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



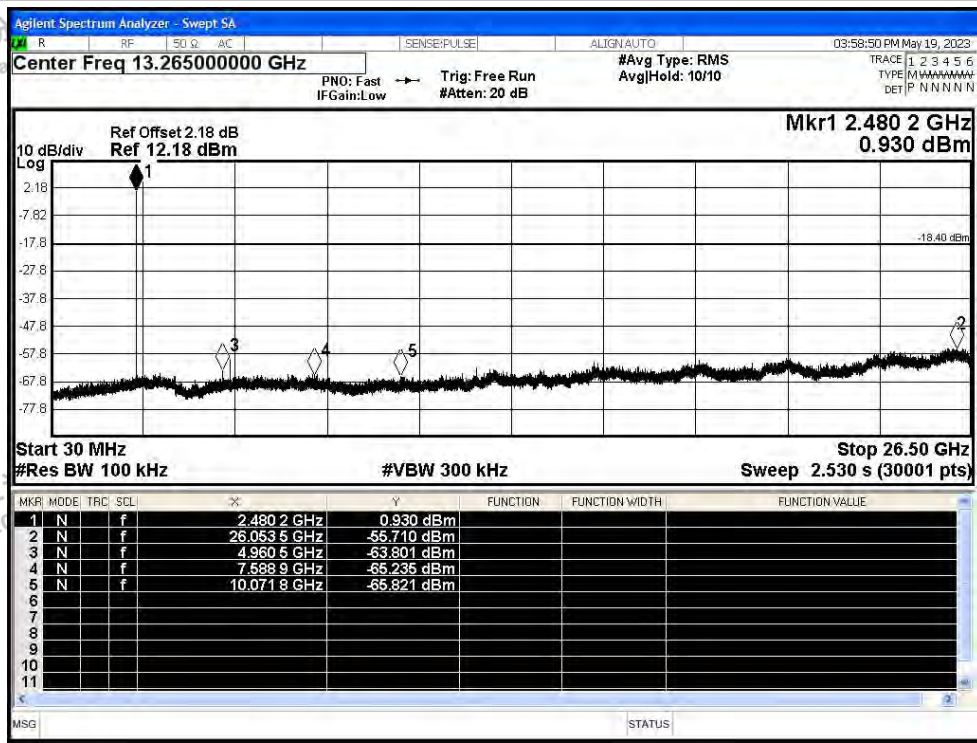




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

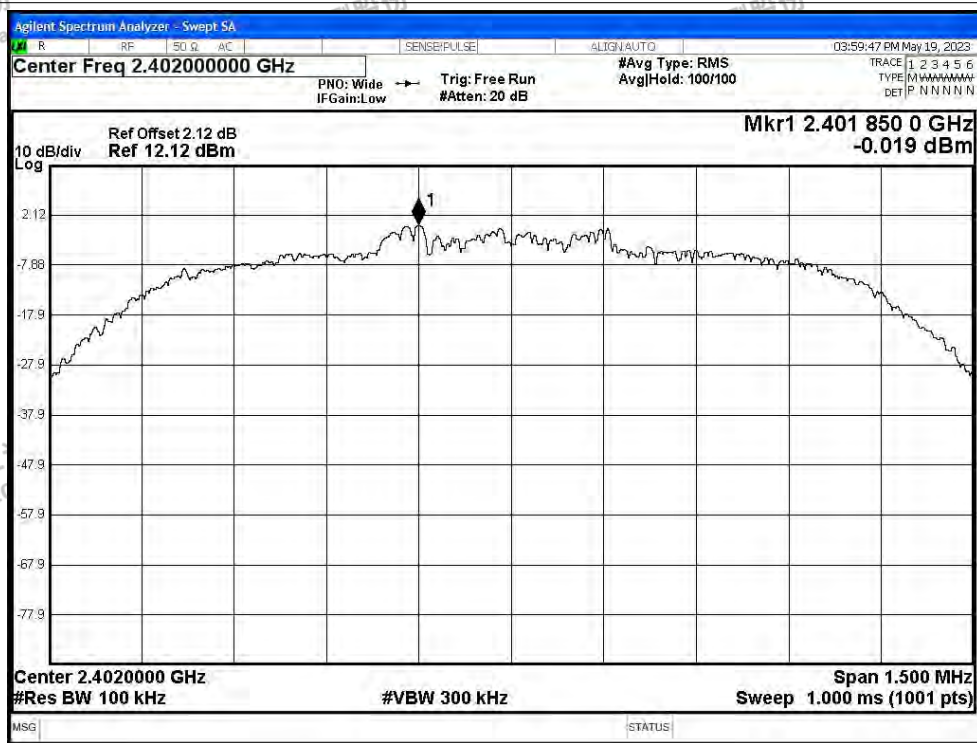


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

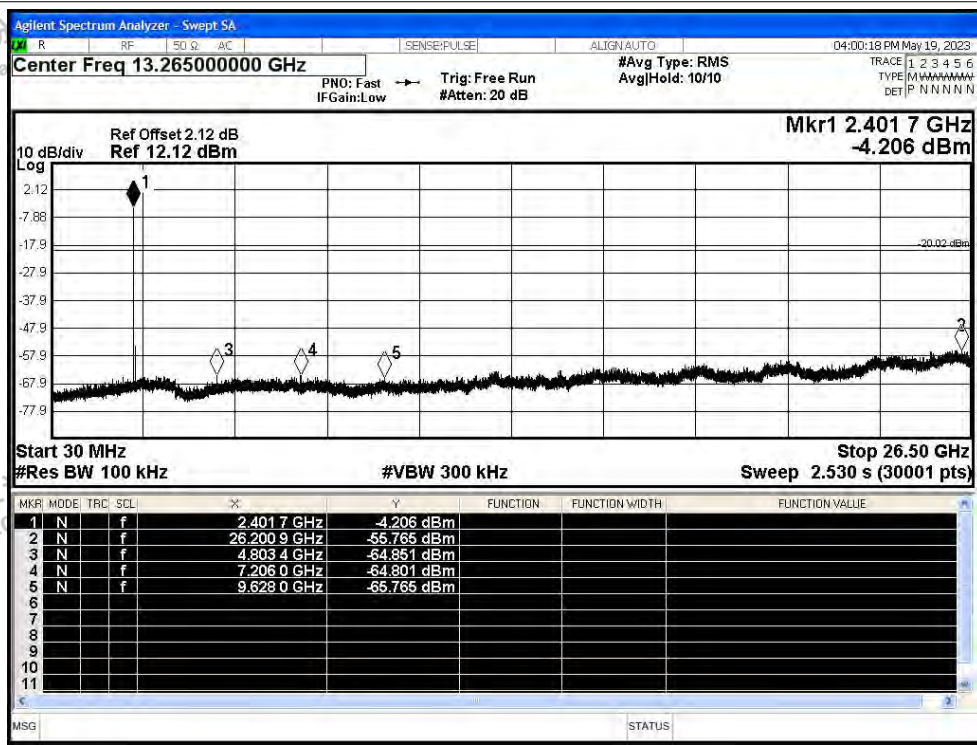




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

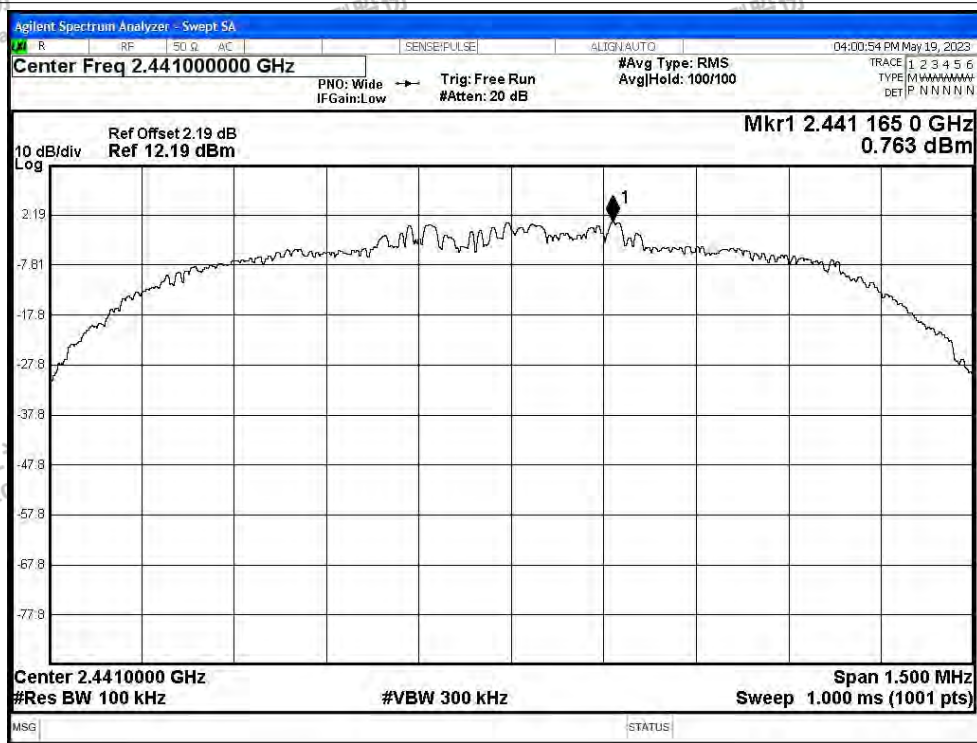


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

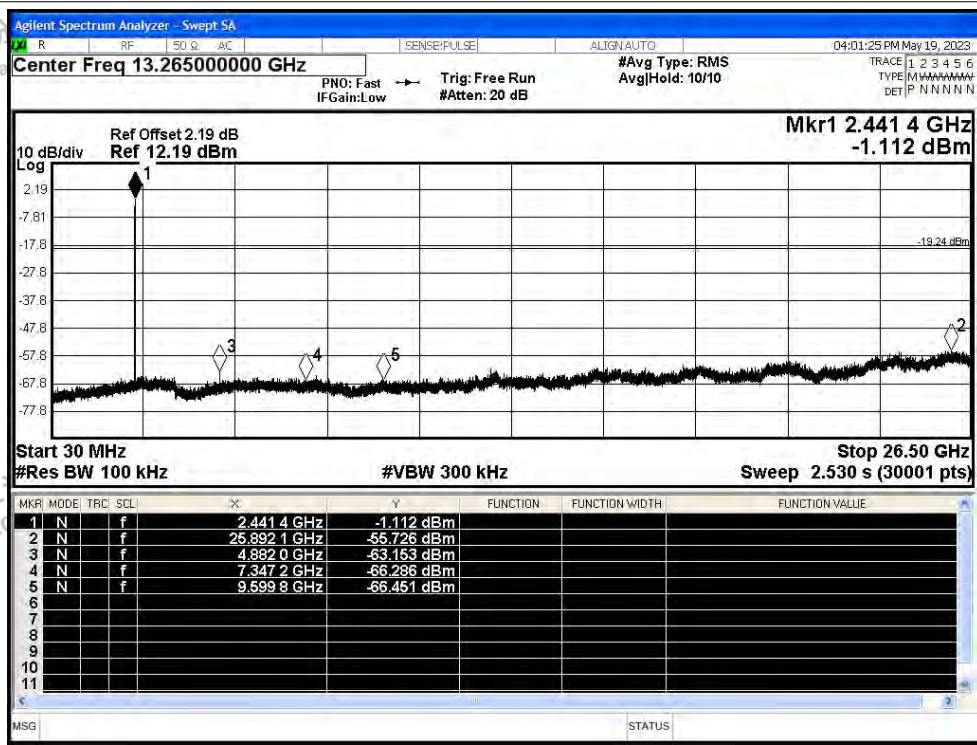




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

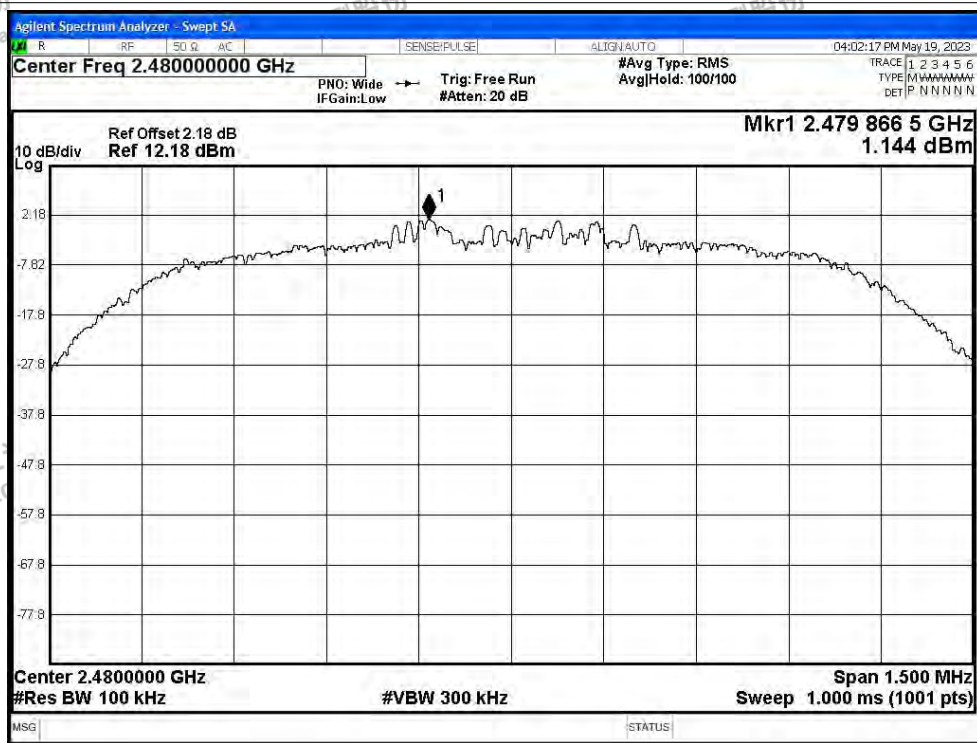


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

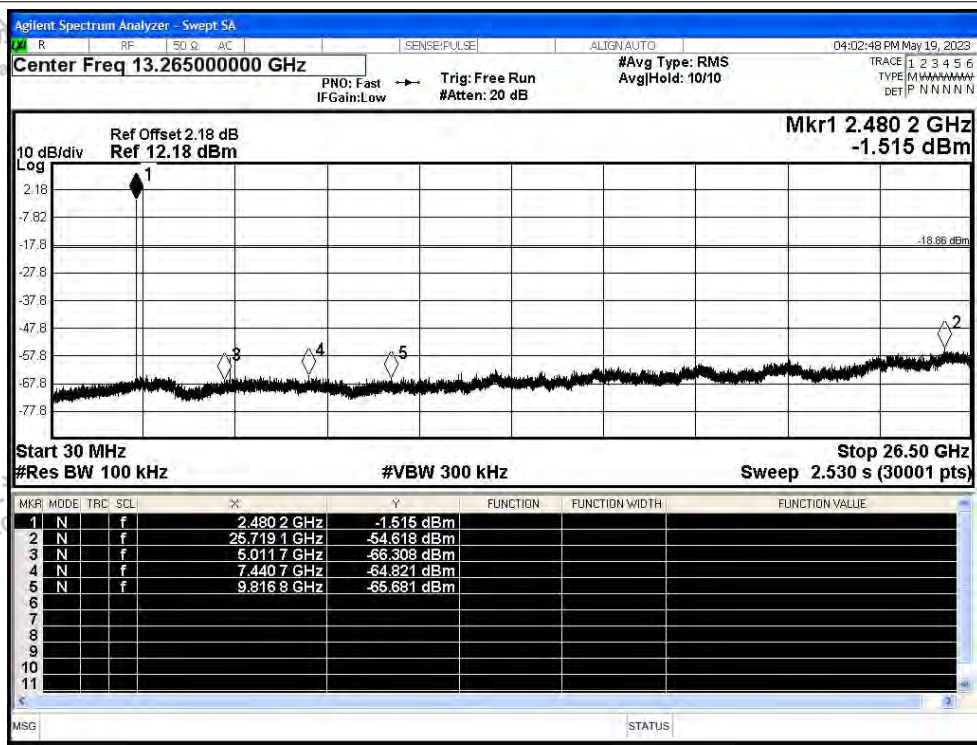




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref

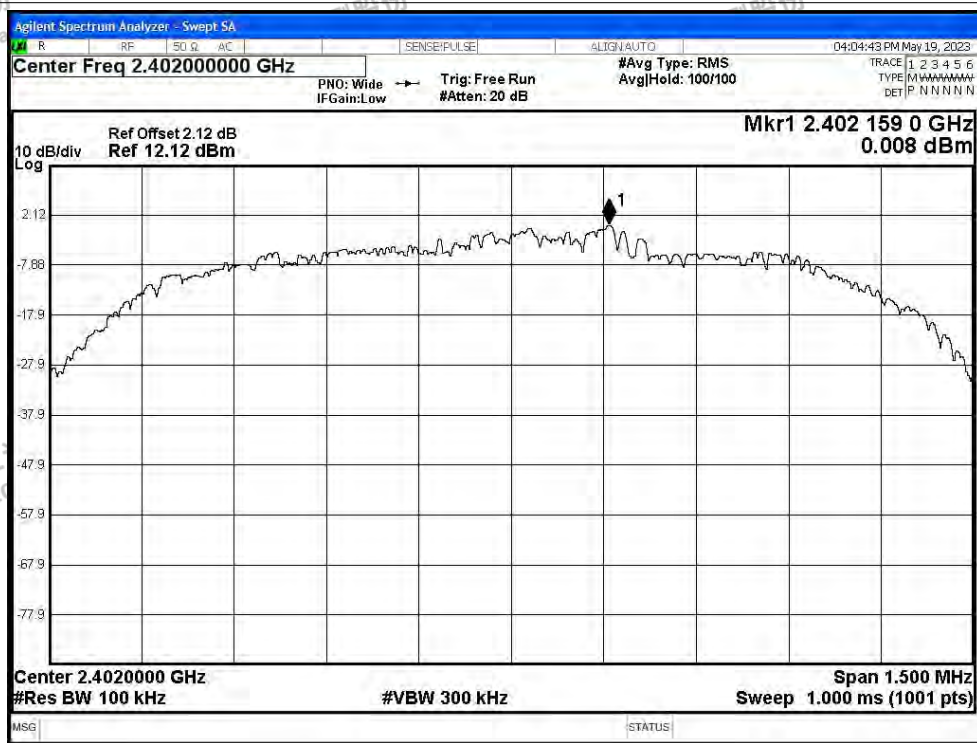


Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

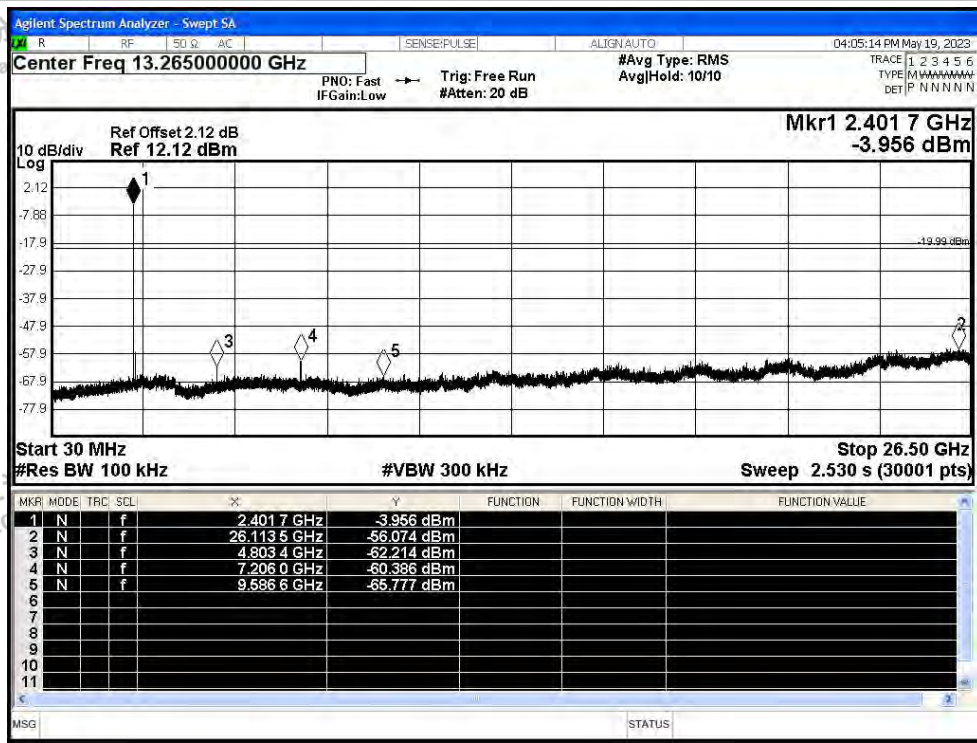




Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

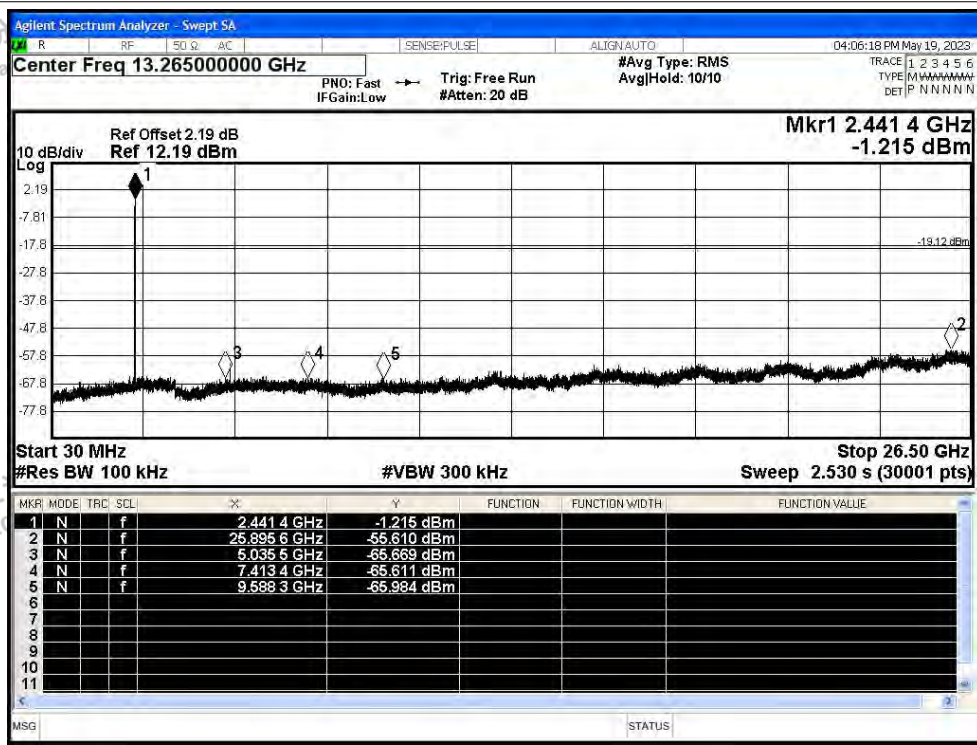




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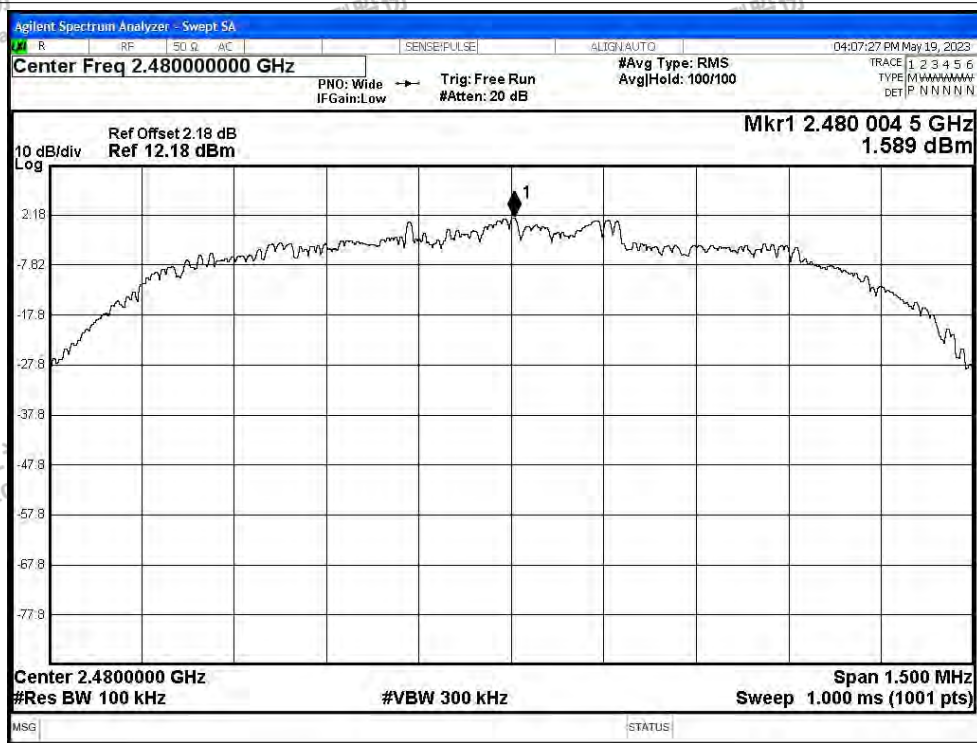


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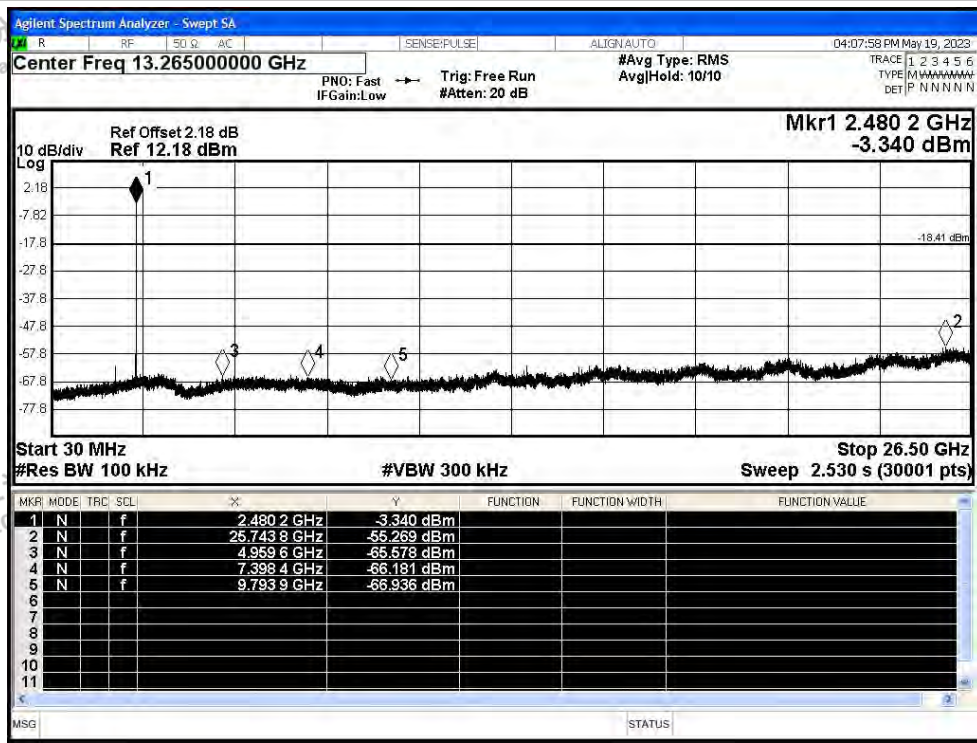




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 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            | Ant1    | No-Hopping   | 2310            | -51.54      | 2          | 45.72      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -57.99      | 2          | 39.27      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2358.672        | -47.27      | 2          | 49.99      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2386.512        | -57.44      | 2          | 39.82      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -50.66      | 2          | 46.6       | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -57.6       | 2          | 39.66      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -49.63      | 2          | 47.63      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -55.1       | 2          | 42.16      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2491.384        | -46.55      | 2          | 50.71      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2483.512        | -55.1       | 2          | 42.16      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -50.76      | 2          | 46.5       | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -57.18      | 2          | 40.08      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -50.5       | 2          | 46.76      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -57.83      | 2          | 39.43      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2379.12         | -46.6       | 2          | 50.66      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2388.336        | -57.42      | 2          | 39.84      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -50.8       | 2          | 46.46      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -57.56      | 2          | 39.7       | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -49.43      | 2          | 47.83      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -54.31      | 2          | 42.95      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2499.832        | -46.43      | 2          | 50.83      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2483.512        | -54.31      | 2          | 42.95      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -48.29      | 2          | 48.97      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -57.27      | 2          | 39.99      | Average  | 54             | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -48.72      | 2          | 48.54      | Peak     | 74             | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -57.97      | 2          | 39.29      | Average  | 54             | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | No-Hopping   | 2320.272        | -47.44      | 2          | 49.82      | Peak     | 74             | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | No-Hopping   | 2389.776        | -57.36      | 2          | 39.9       | Average  | 54             | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -49.97      | 2          | 47.29      | Peak     | 74             | Pass    |
| NVNT      | 3-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -57.55      | 2          | 39.71      | Average  | 54             | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -49.45      | 2          | 47.81      | Peak     | 74             | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -54.2       | 2          | 43.06      | Average  | 54             | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | No-Hopping   | 2493.184        | -47.4       | 2          | 49.86      | Peak     | 74             | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | No-Hopping   | 2483.512        | -54.2       | 2          | 43.06      | Average  | 54             | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -49.93      | 2          | 47.33      | Peak     | 74             | Pass    |
| NVNT      | 3-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -57.28      | 2          | 39.98      | Average  | 54             | Pass    |

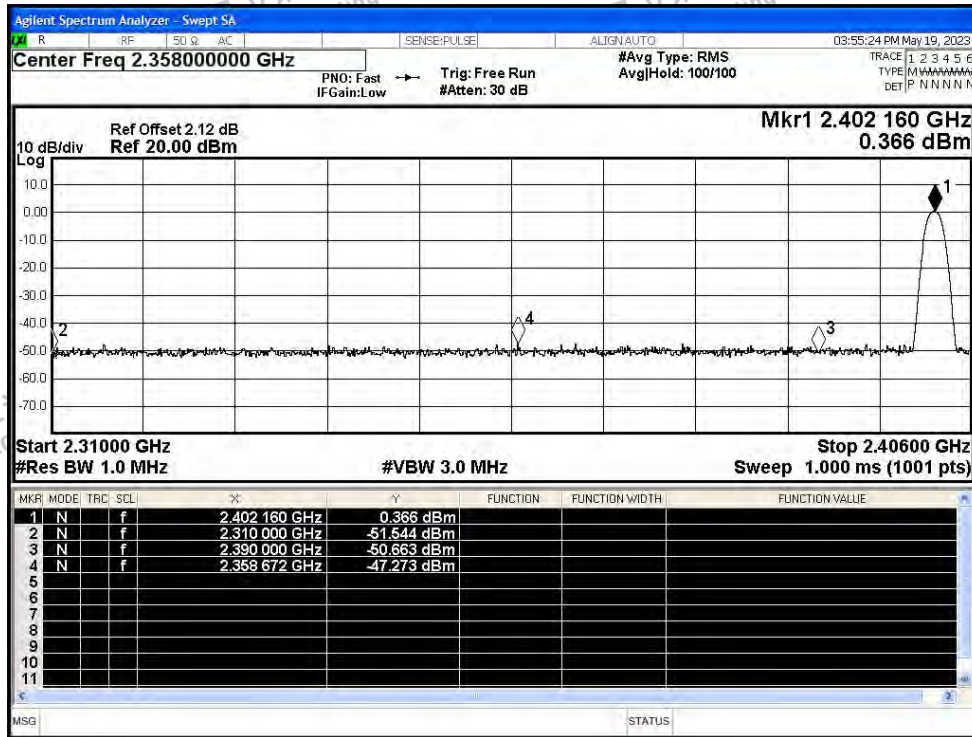




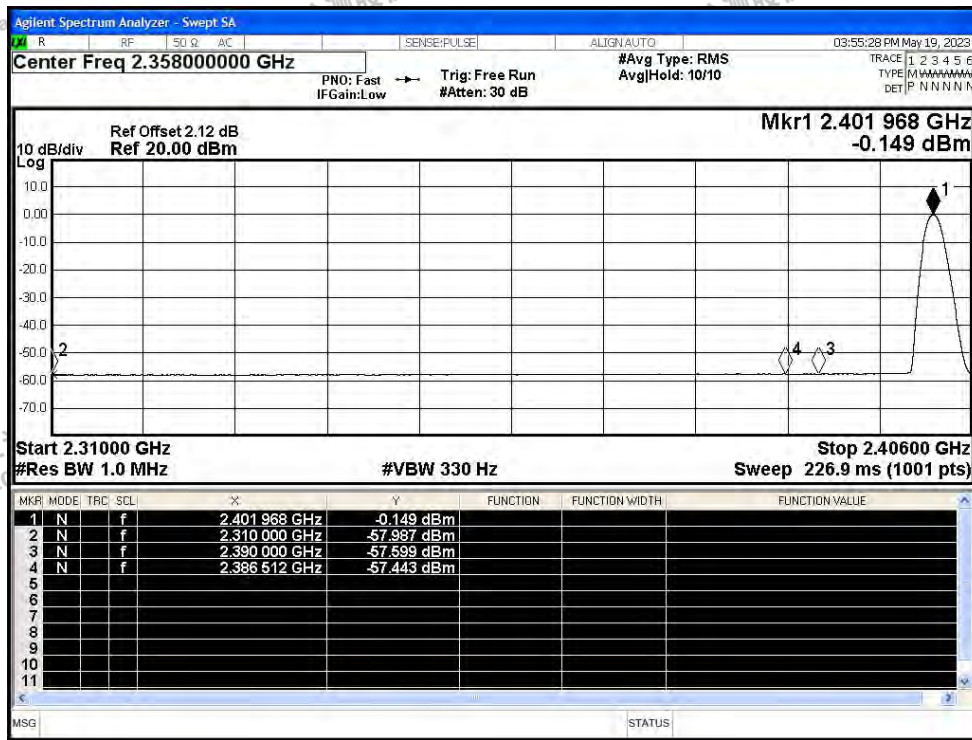


Test Graphs

Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak

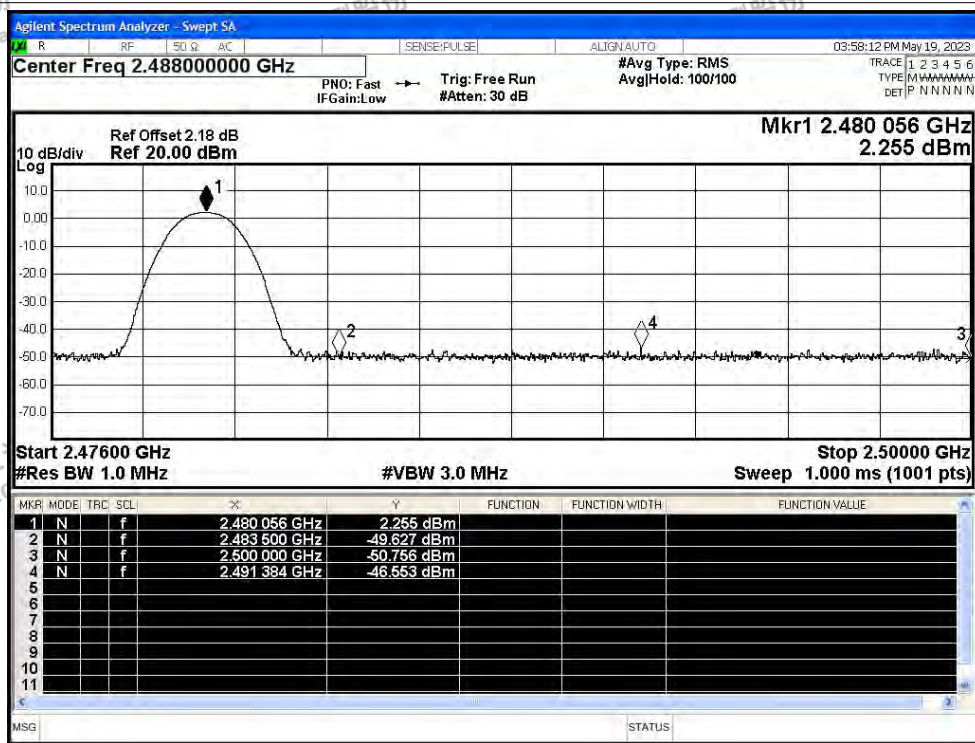


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

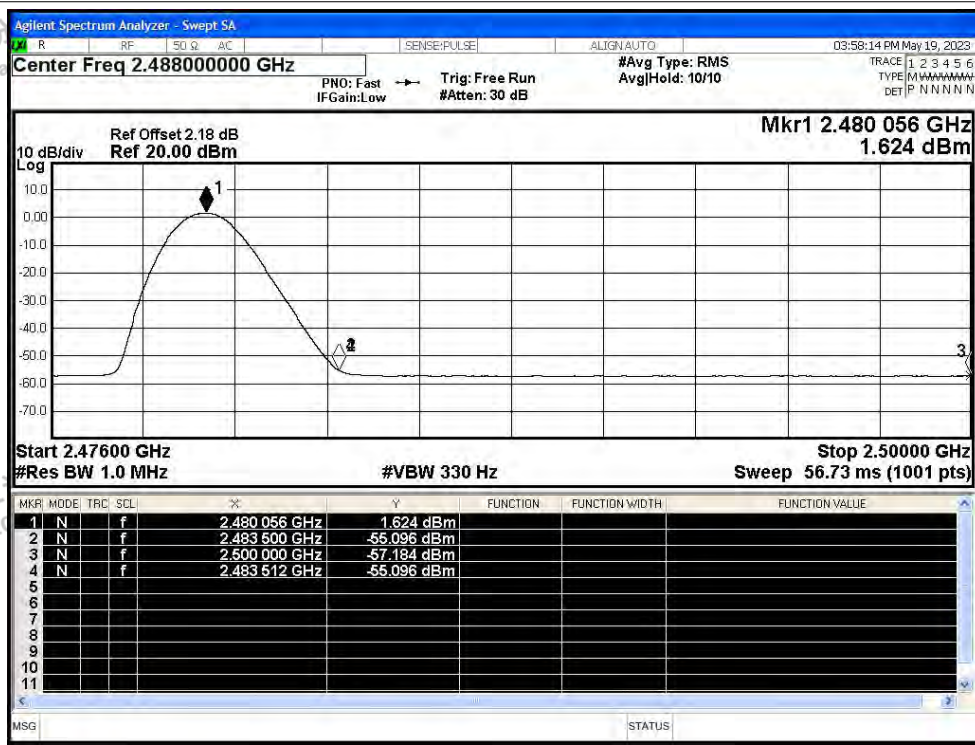




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

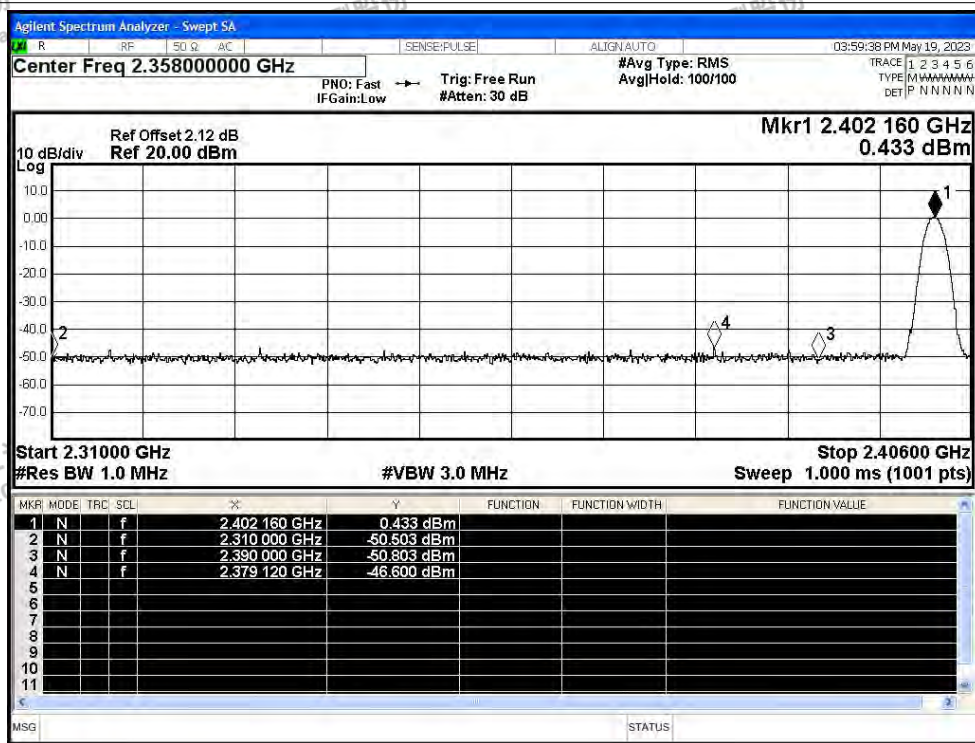


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

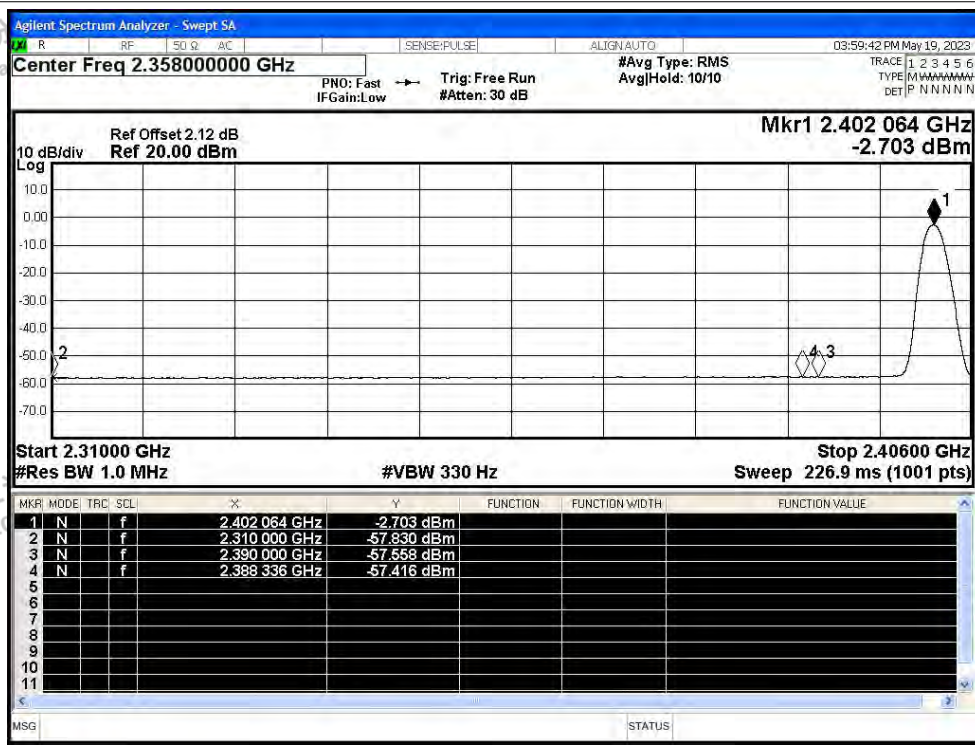




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

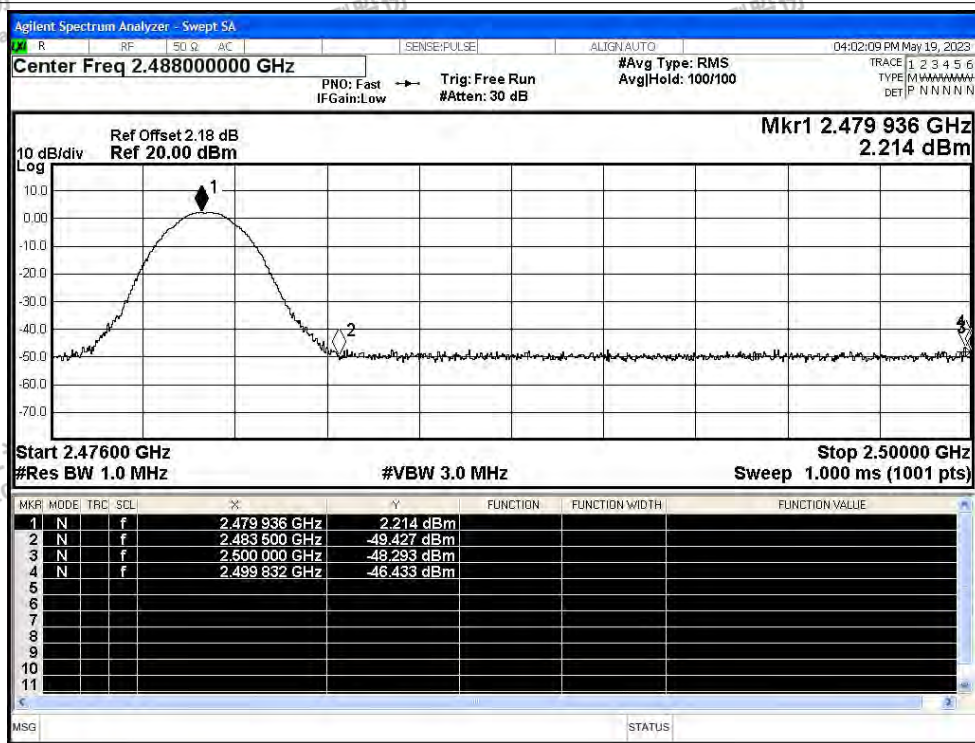


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average

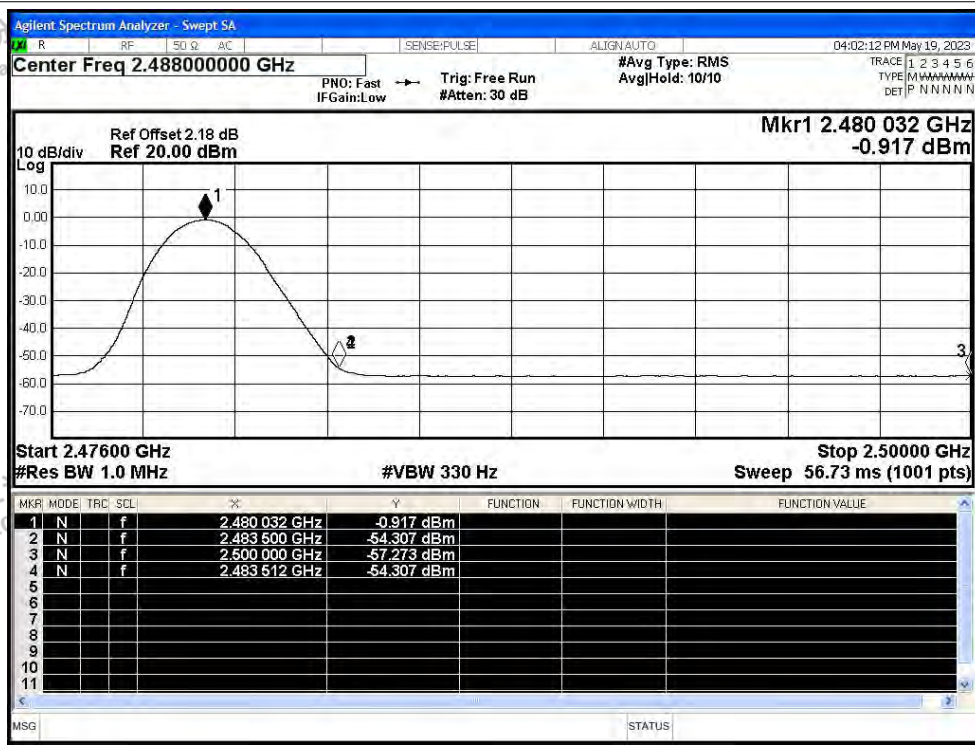




Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak

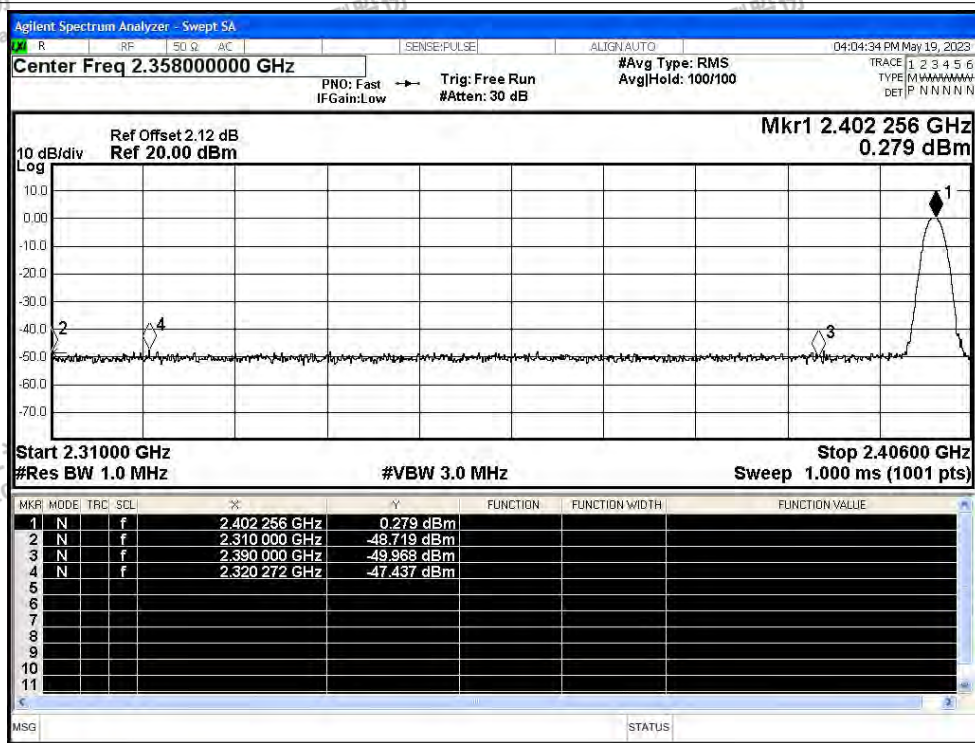


Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average

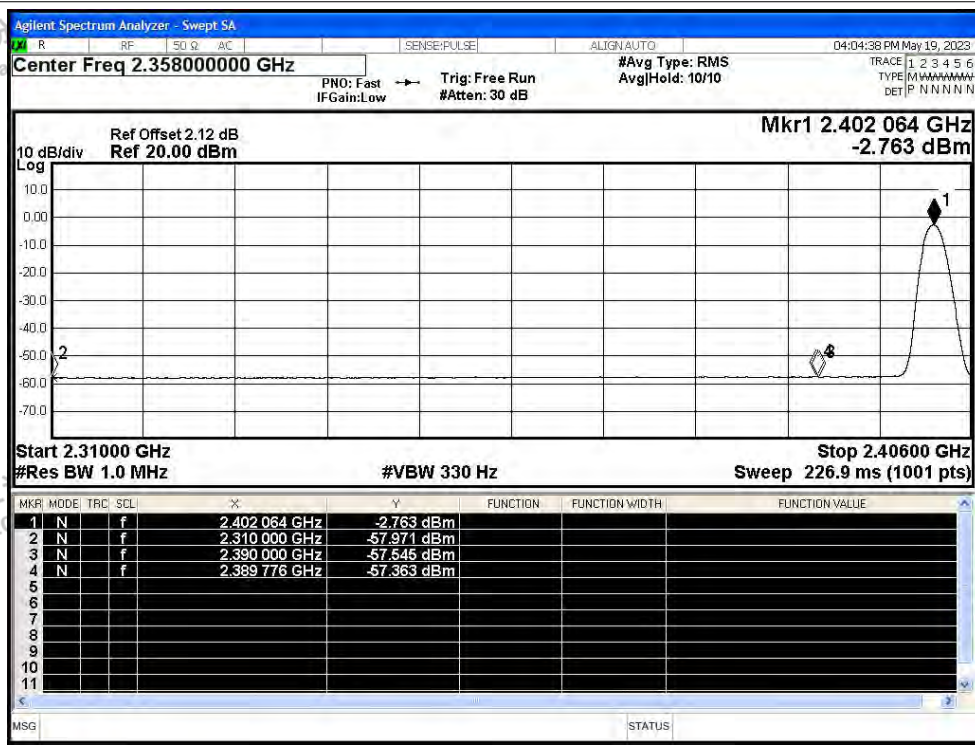




Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak

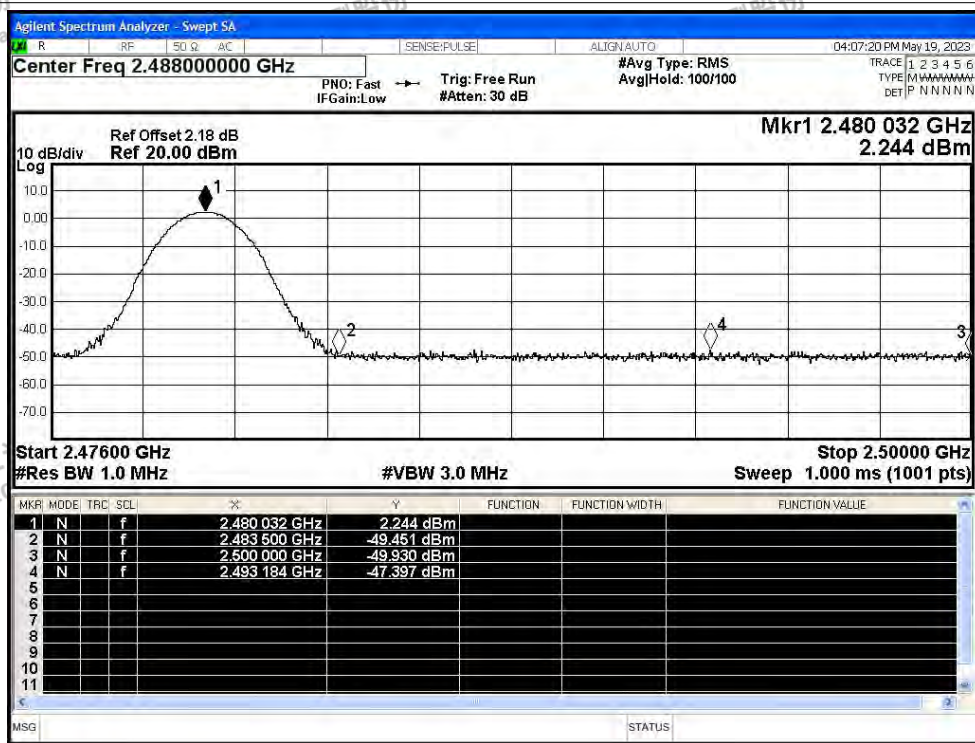


Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average





Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average

