



## Appendix A

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

Product Name: PORTABLE VIDEO PROJECTOR

Test Model: PJ505W-THD

#### Environmental Conditions

|                    |            |
|--------------------|------------|
| Temperature:       | 23.5°C     |
| Relative Humidity: | 52.3%      |
| ATM Pressure:      | 100.0 kPa  |
| Test Engineer:     | Paddi Chen |
| Supervised by:     | Nick Peng  |



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## A.1 -20dB Bandwidth

| Condition | Mode  | Frequency (MHz) | Antenna | -20 dB Bandwidth (MHz) | Limit -20 dB Bandwidth (MHz) | Verdict |
|-----------|-------|-----------------|---------|------------------------|------------------------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | 0.964                  | N/A                          | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | 0.949                  | N/A                          | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | 0.961                  | N/A                          | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | 1.283                  | N/A                          | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | 1.288                  | N/A                          | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | 1.285                  | N/A                          | Pass    |

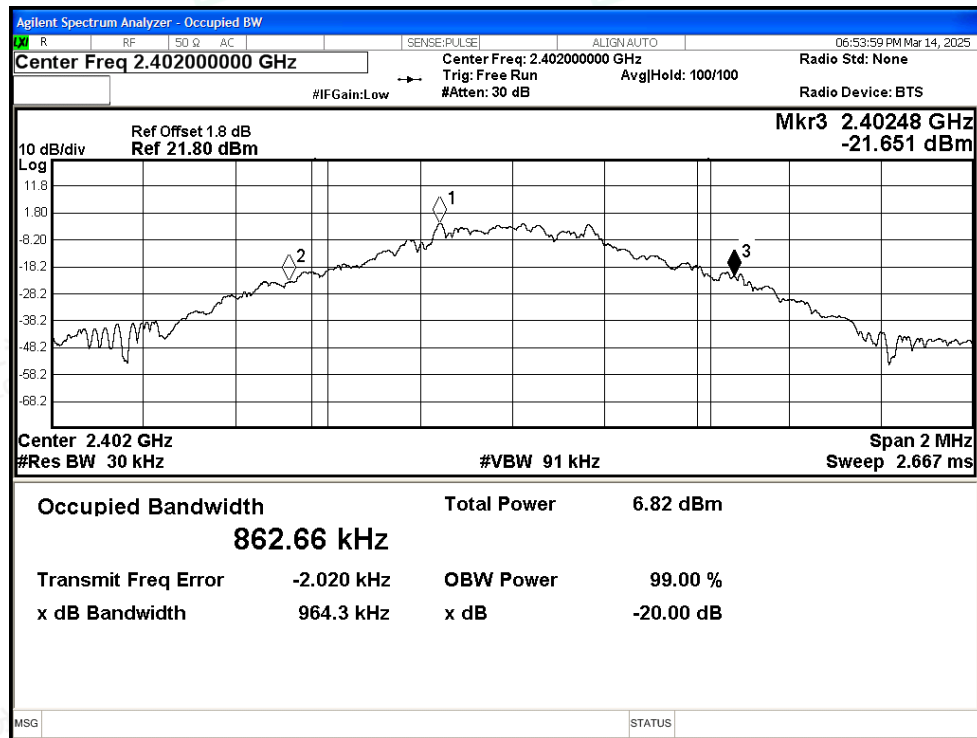


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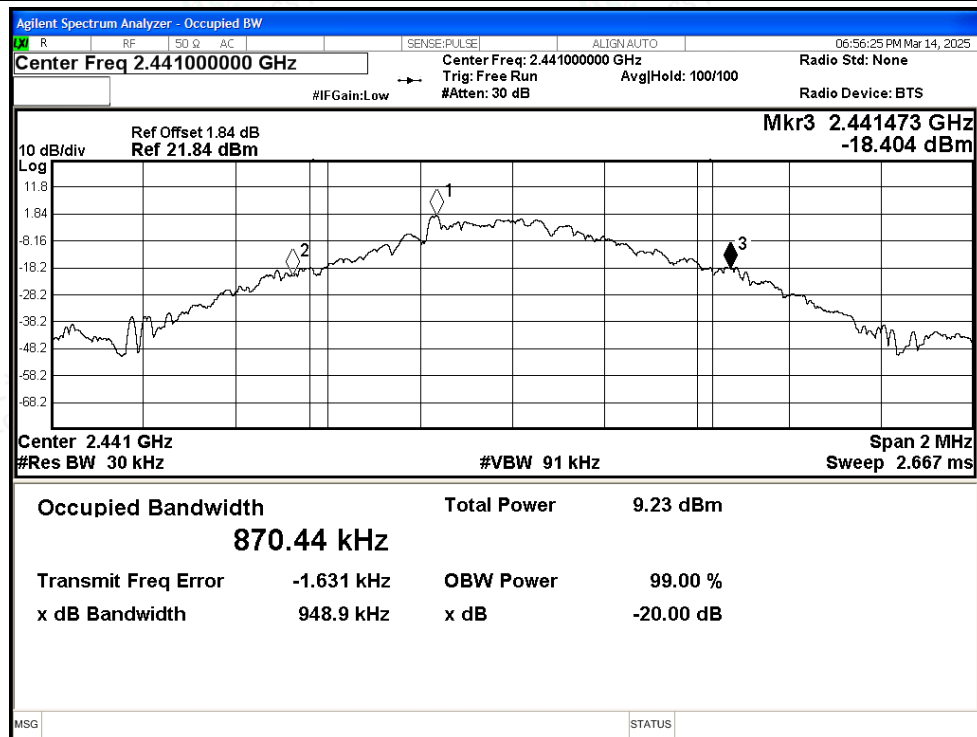


## Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

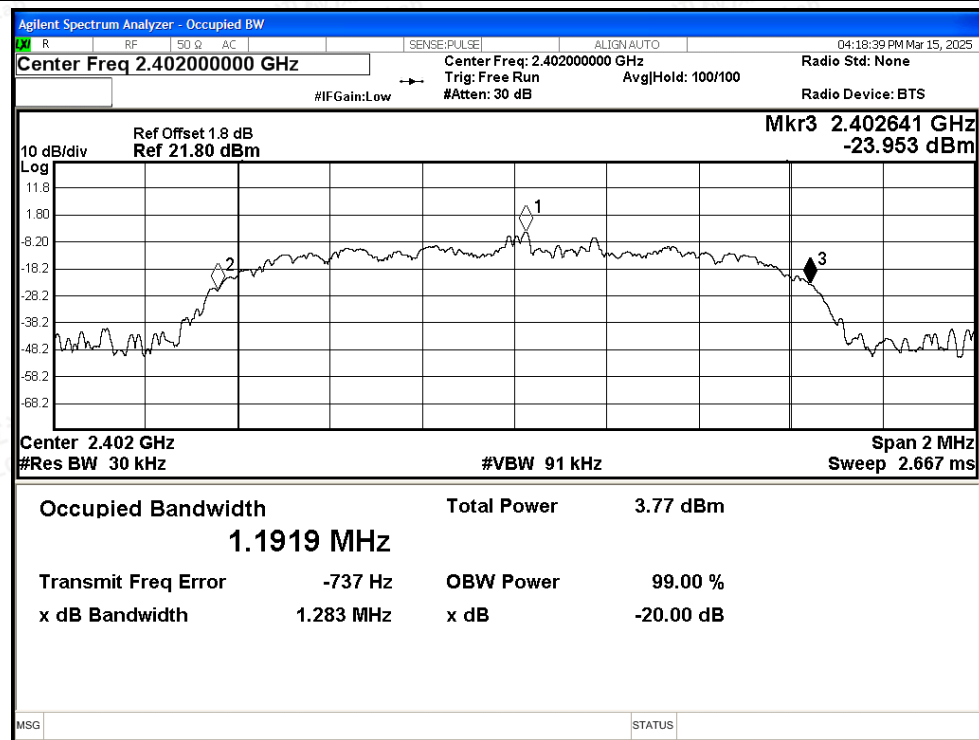




## -20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

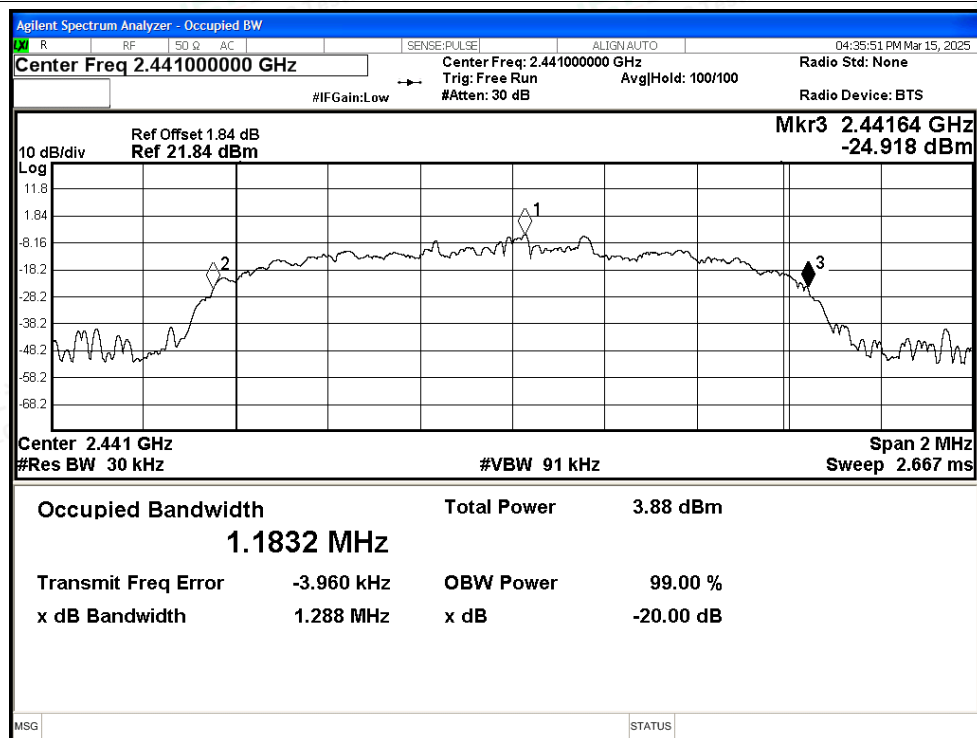


## -20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

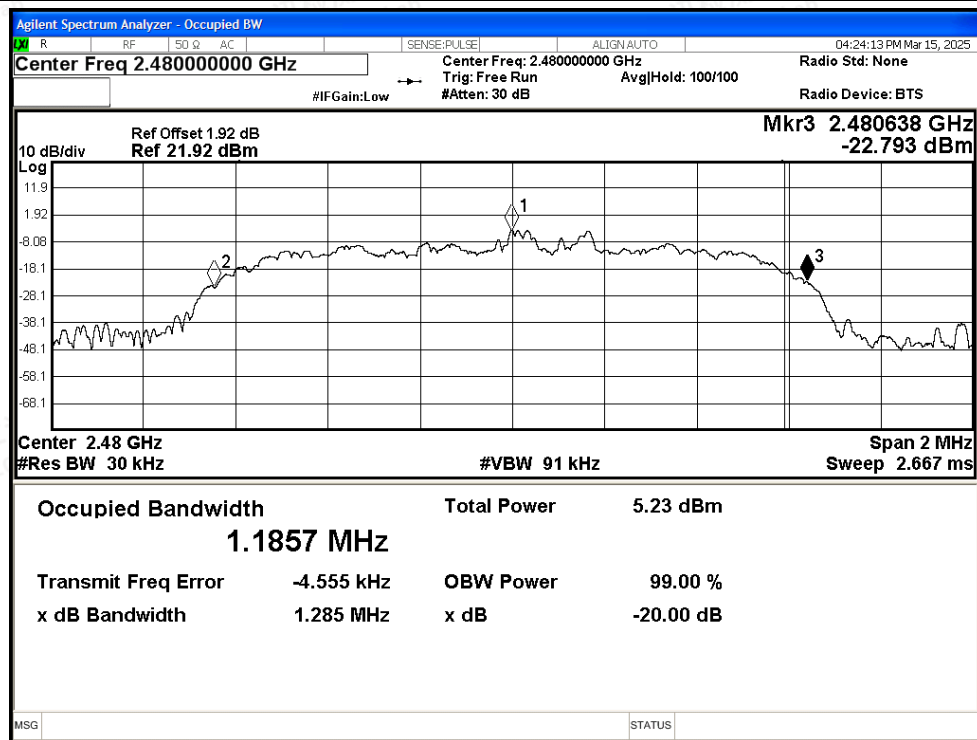




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1





## A.2 Maximum Peak Conducted Output Power

| Condition | Mode  | Frequency<br>(MHz) | Antenna | Conducted Power<br>(dBm) | Duty Factor<br>(dB) | Total Power<br>(dBm) | Limit<br>(dBm) | Verdict |
|-----------|-------|--------------------|---------|--------------------------|---------------------|----------------------|----------------|---------|
| NVNT      | 1-DH5 | 2402               | Ant1    | 0.39                     | 0                   | 0.39                 | 21             | Pass    |
| NVNT      | 1-DH5 | 2441               | Ant1    | 2.89                     | 0                   | <b>2.89</b>          | 21             | Pass    |
| NVNT      | 1-DH5 | 2480               | Ant1    | 1.56                     | 0                   | 1.56                 | 21             | Pass    |
| NVNT      | 2-DH5 | 2402               | Ant1    | -0.31                    | 0                   | -0.31                | 21             | Pass    |
| NVNT      | 2-DH5 | 2441               | Ant1    | -0.62                    | 0                   | -0.62                | 21             | Pass    |
| NVNT      | 2-DH5 | 2480               | Ant1    | 0.82                     | 0                   | 0.82                 | 21             | Pass    |

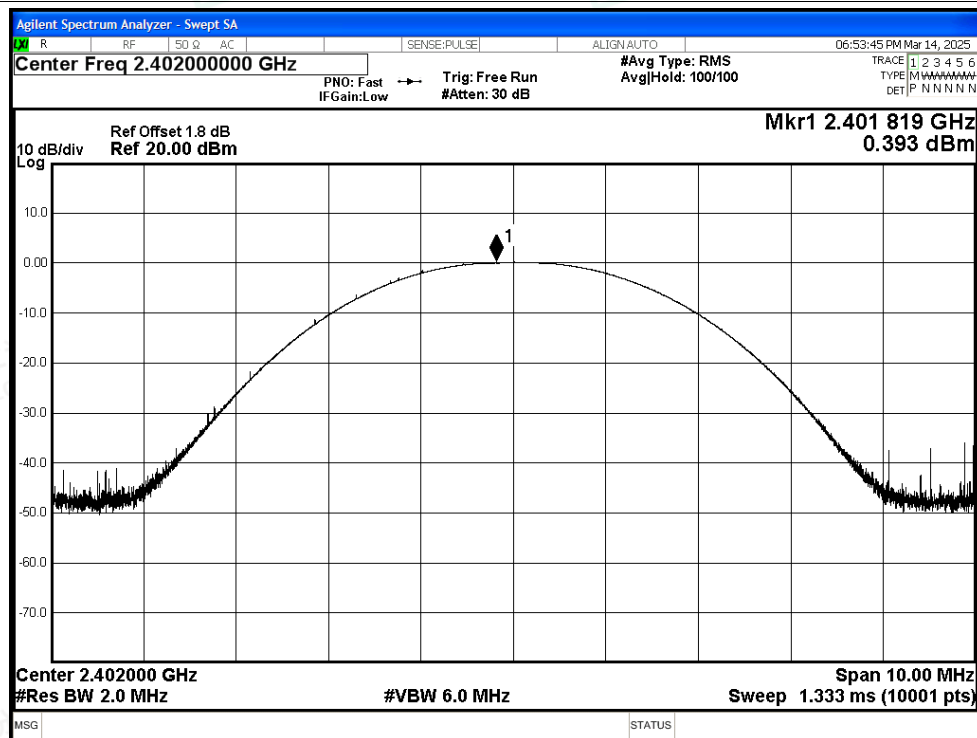


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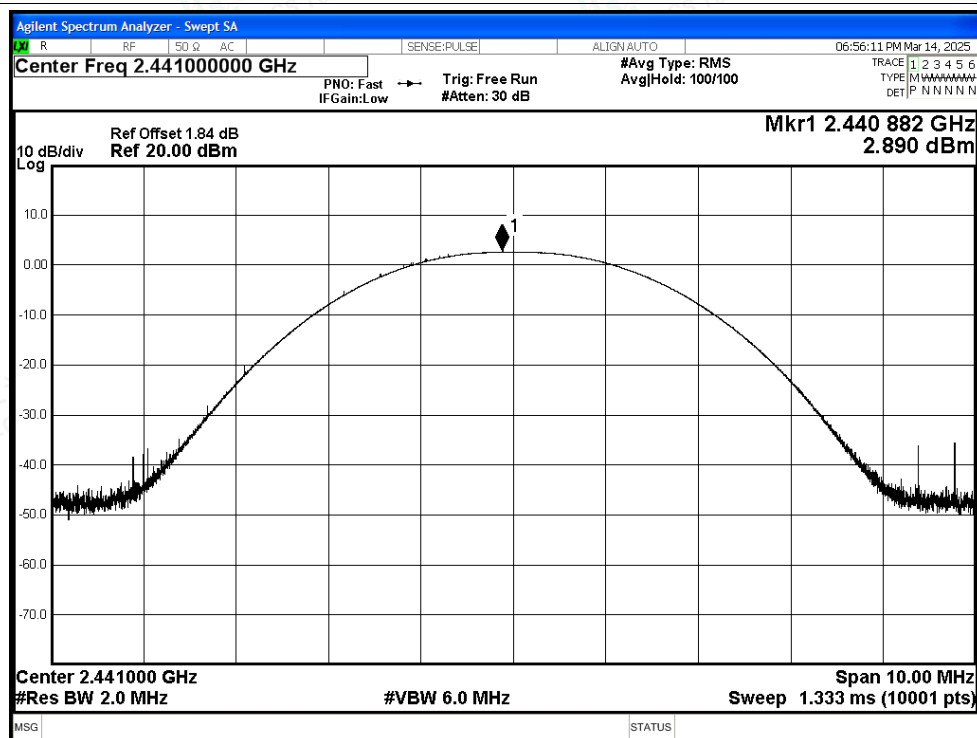


## Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

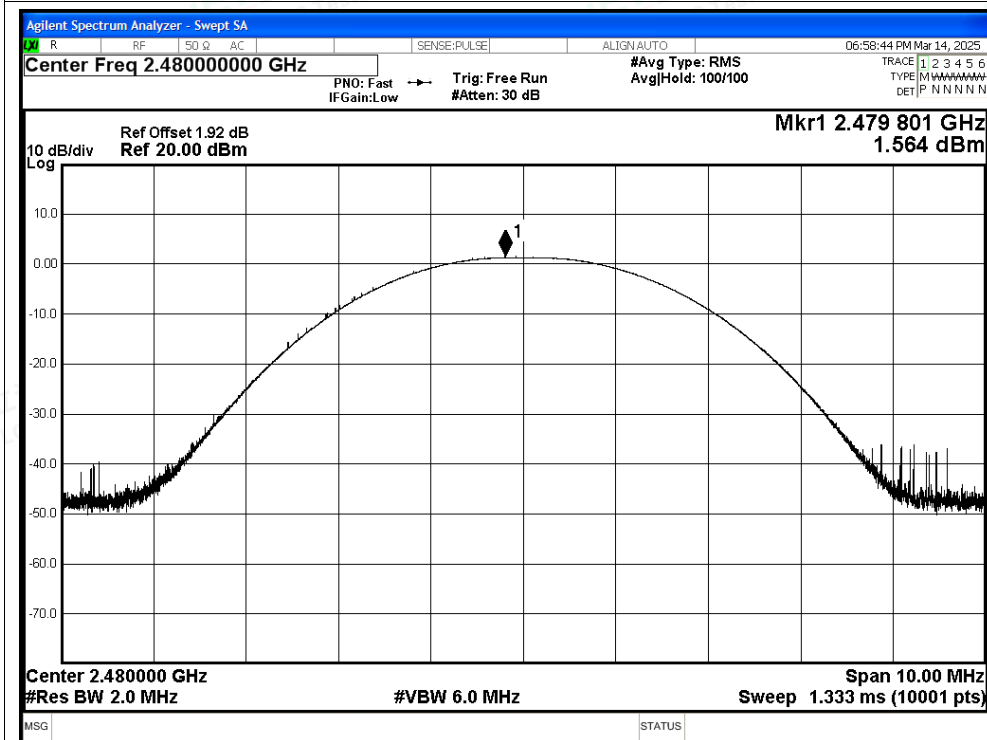


Power NVNT 1-DH5 2441MHz Ant1

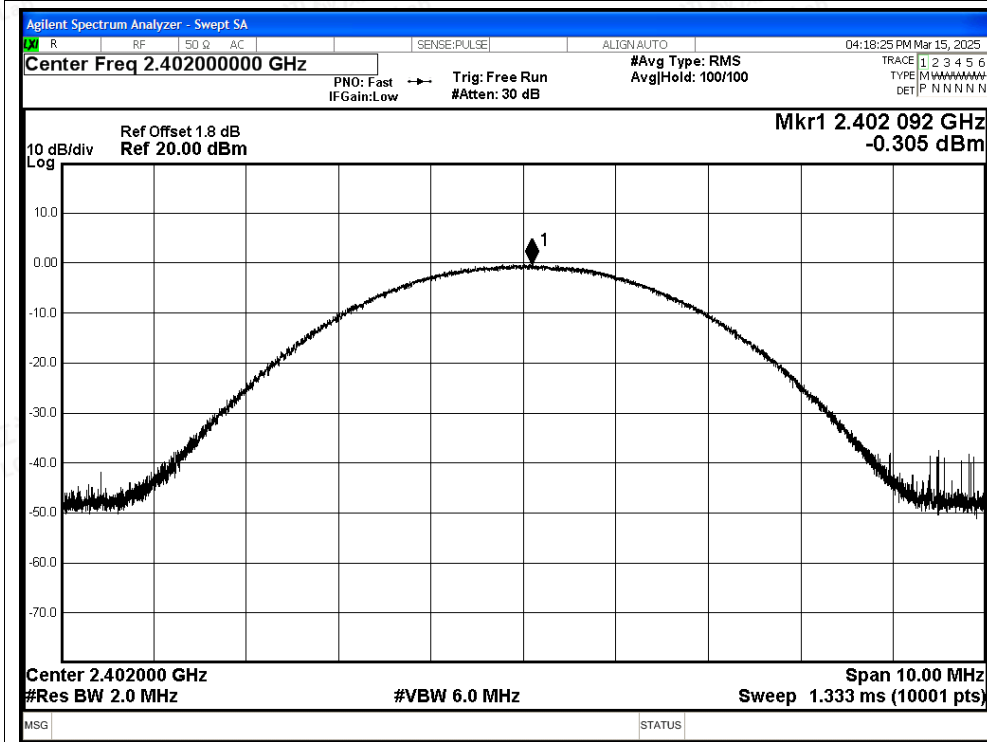




Power NVNT 1-DH5 2480MHz Ant1

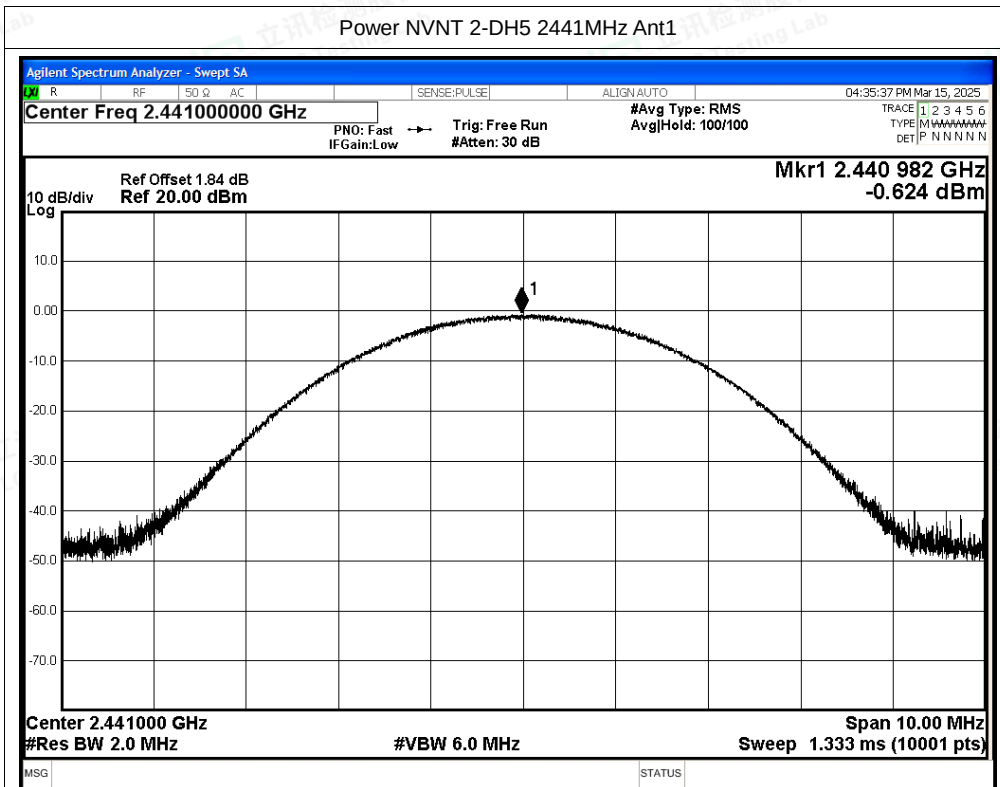


Power NVNT 2-DH5 2402MHz Ant1

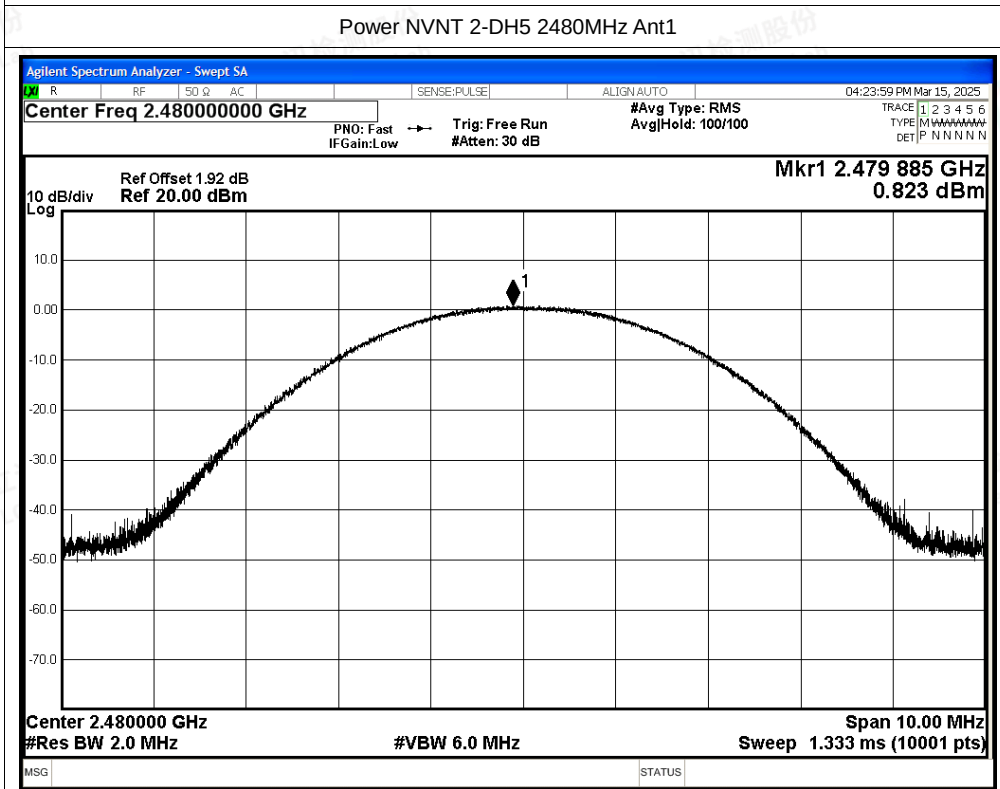




Power NVNT 2-DH5 2441MHz Ant1



Power NVNT 2-DH5 2480MHz Ant1





### A.3 Carrier Frequencies Separation

| Condition | Mode  | Antenna | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|-----------|-------|---------|---------------------|---------------------|-----------|-------------|---------|
| NVNT      | 1-DH5 | Ant1    | 2402.01             | 2403.02             | 1.01      | 0.025       | Pass    |
| NVNT      | 2-DH5 | Ant1    | 2402.018            | 2403.002            | 0.984     | 0.855       | Pass    |

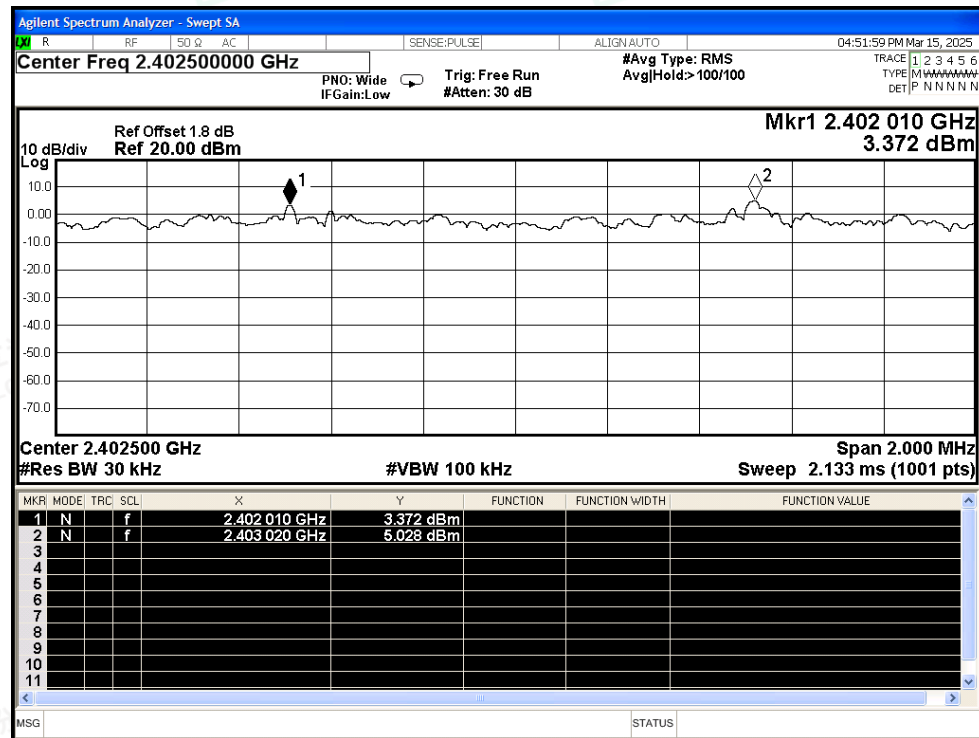


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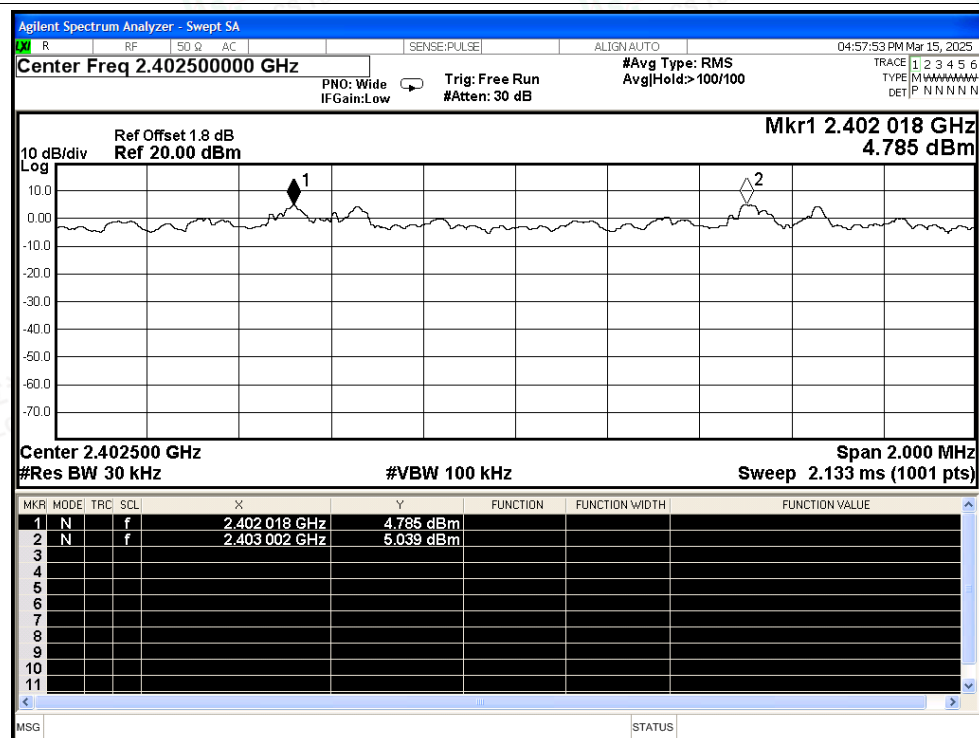


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1





## A.4 Dwell Time

| Condition | Mode  | Frequency<br>(MHz) | Antenna | Pulse Time<br>(ms) | Total Dwell Time<br>(ms) | Burst<br>Count | Period Time<br>(ms) | Limit<br>(ms) | Verdict |
|-----------|-------|--------------------|---------|--------------------|--------------------------|----------------|---------------------|---------------|---------|
| NVNT      | 1-DH5 | 2402               | Ant1    | 2.898              | 286.902                  | 99             | 31600               | 400           | Pass    |
| NVNT      | 2-DH5 | 2402               | Ant1    | 2.898              | 289.8                    | 100            | 31600               | 400           | Pass    |

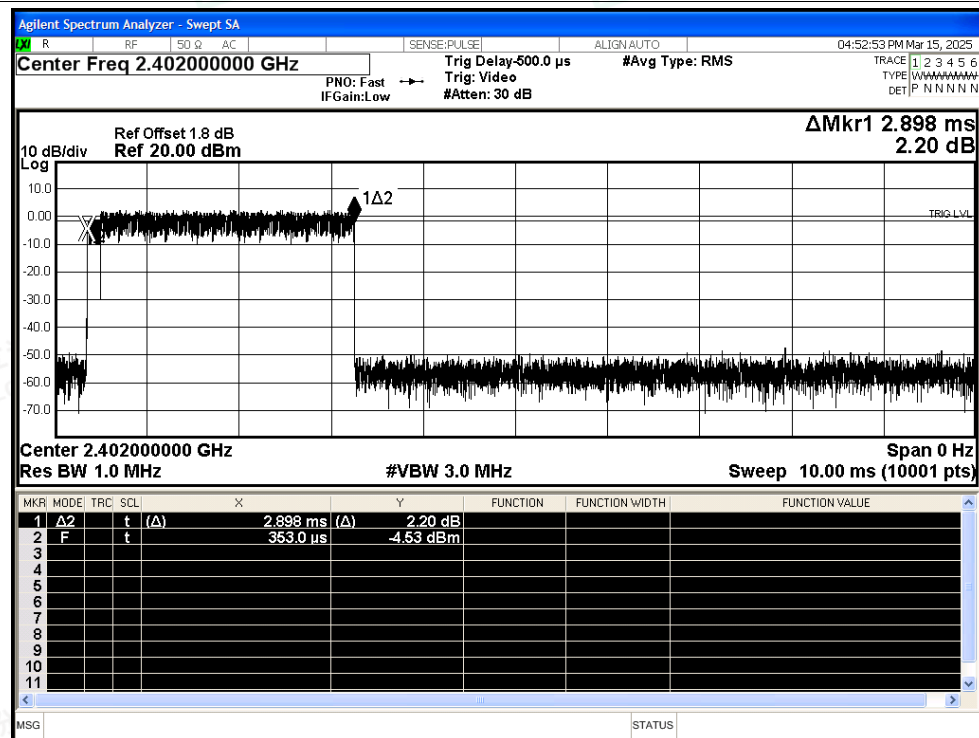


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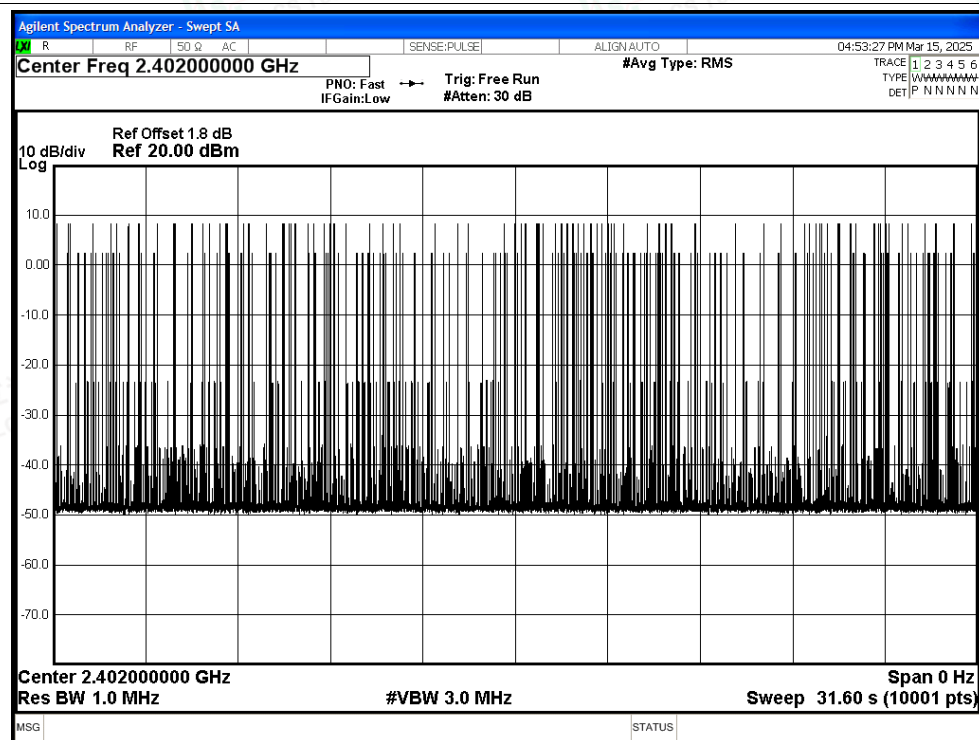


## Test Graphs

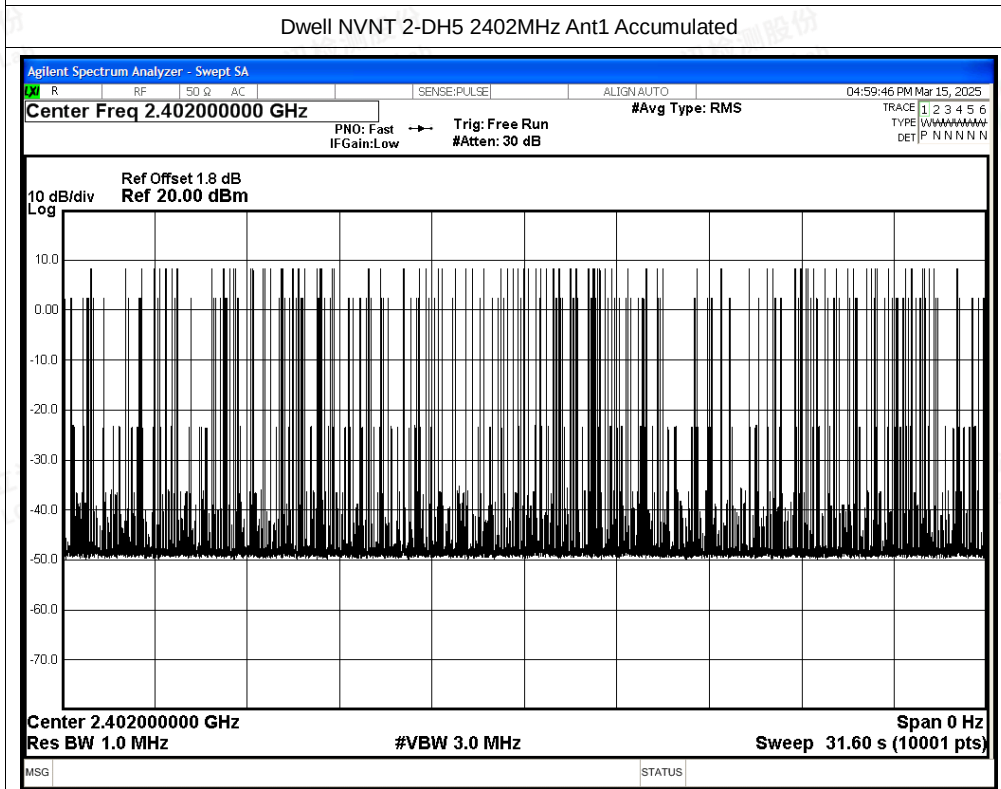
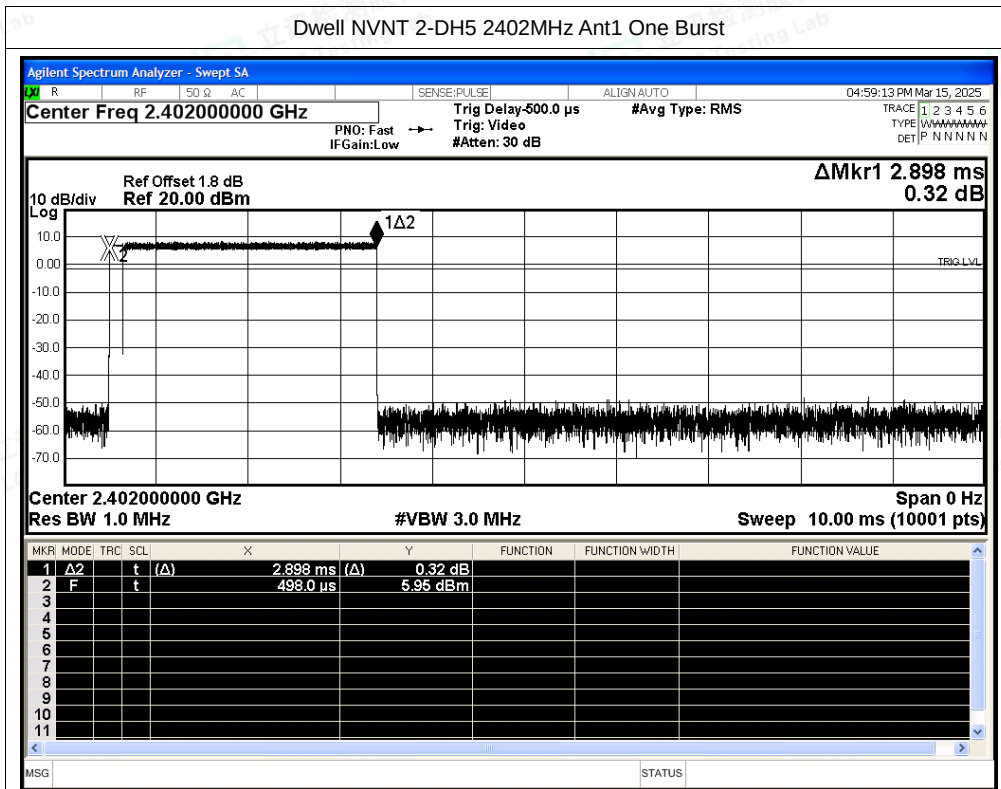
## Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



## Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



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## 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    |

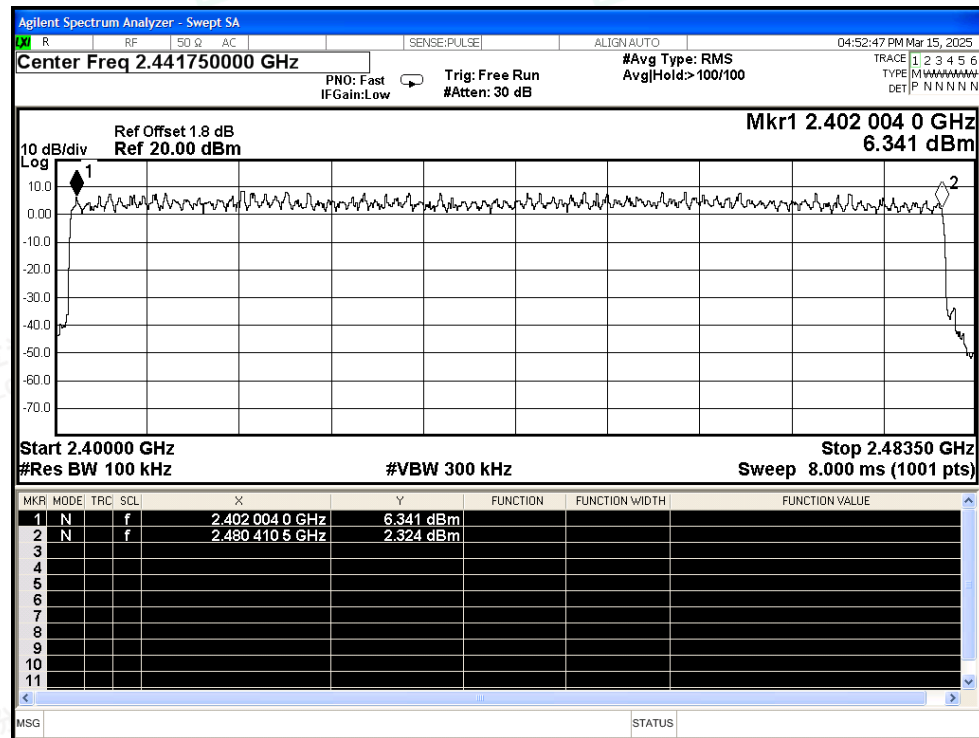


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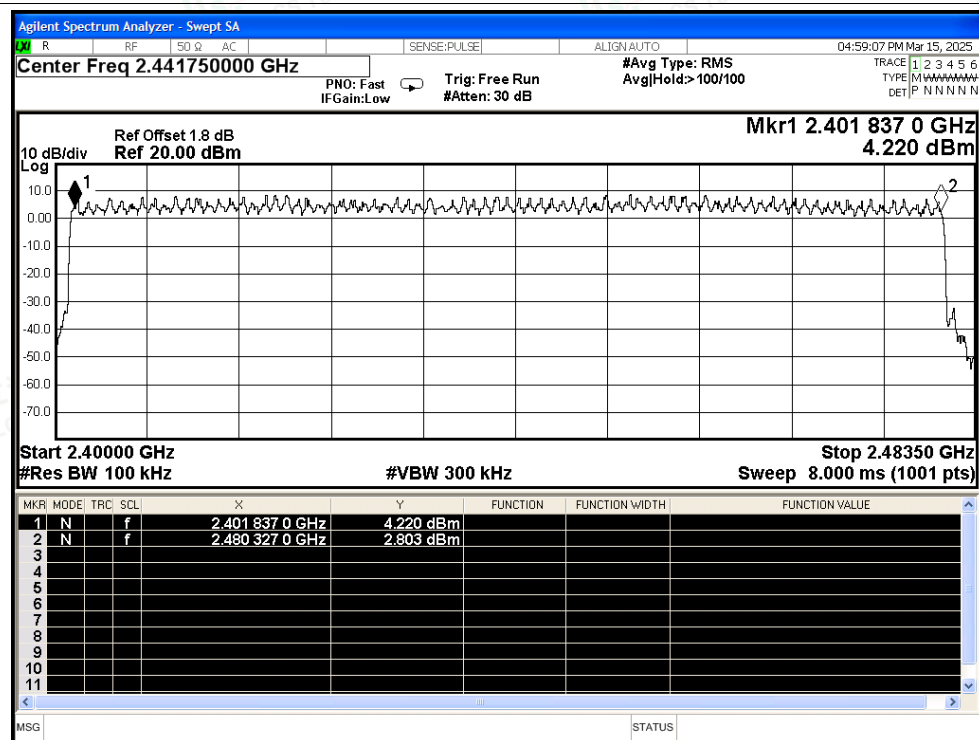


## Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



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## A.6 Band Edge

| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | -56.27          | -20         | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | -58.6           | -20         | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | -49.89          | -20         | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | -53.81          | -20         | Pass    |

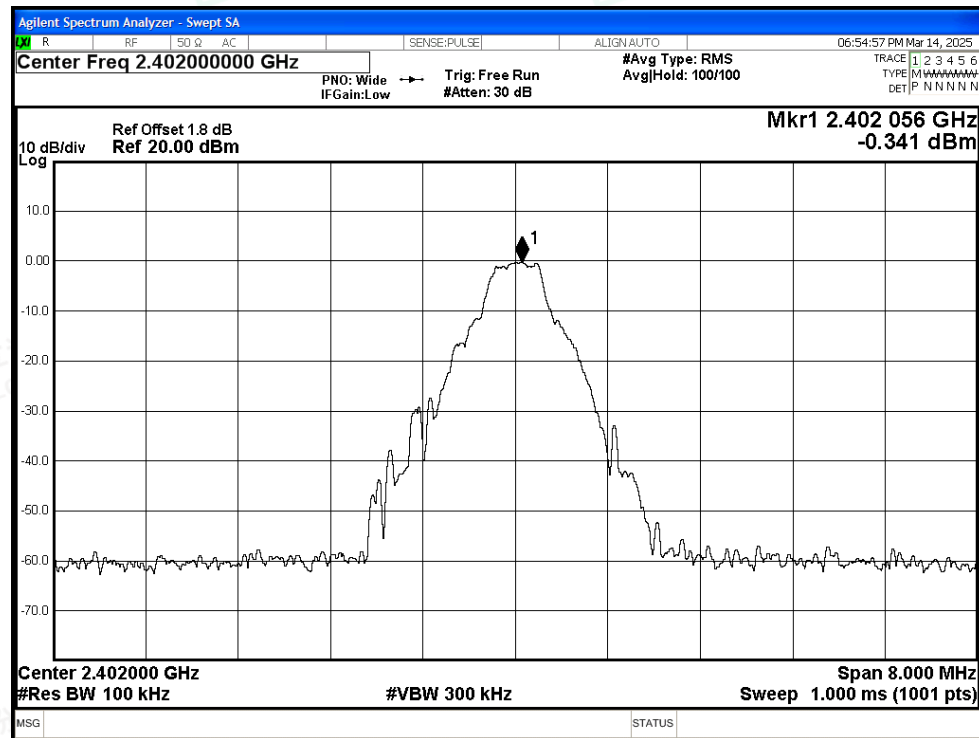


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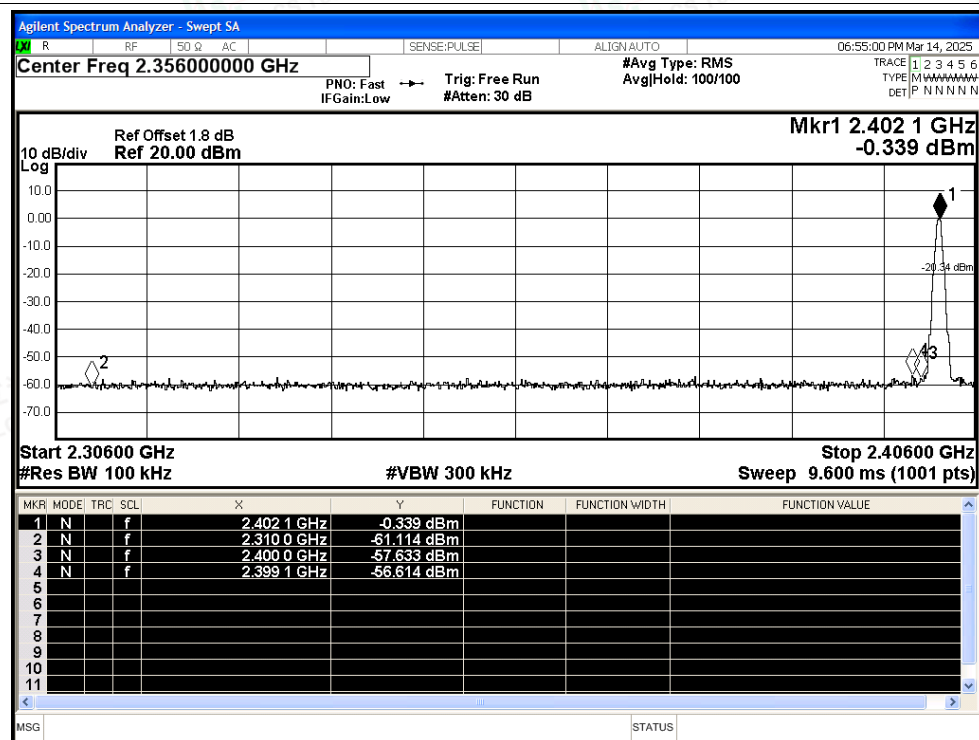


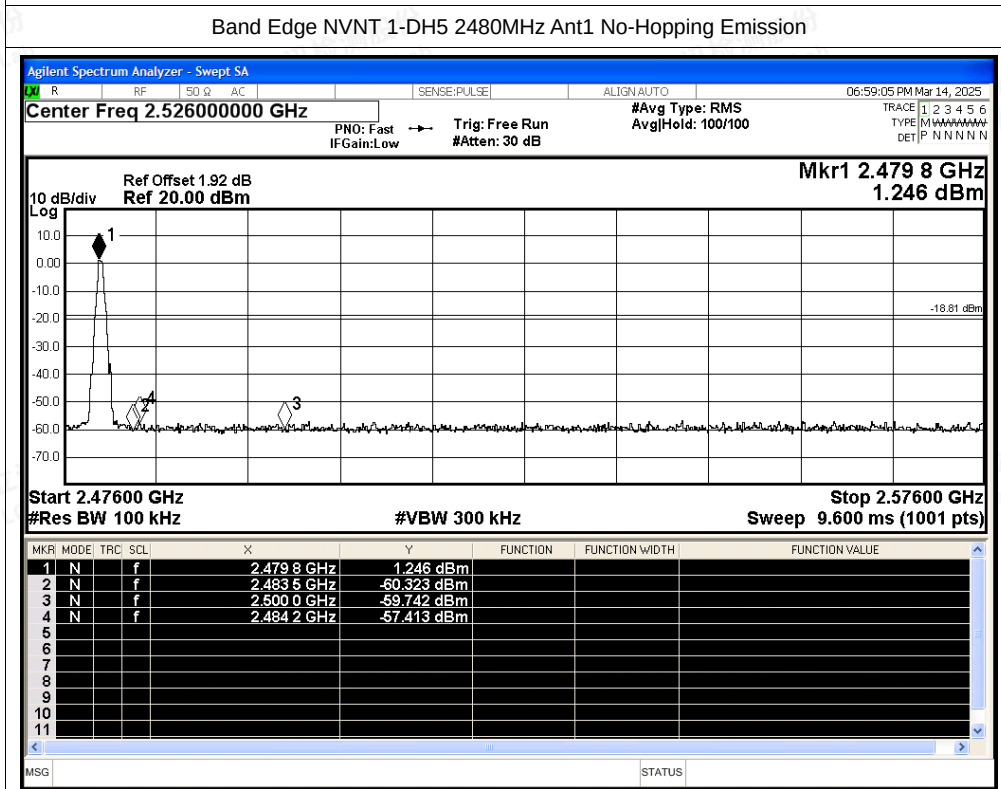
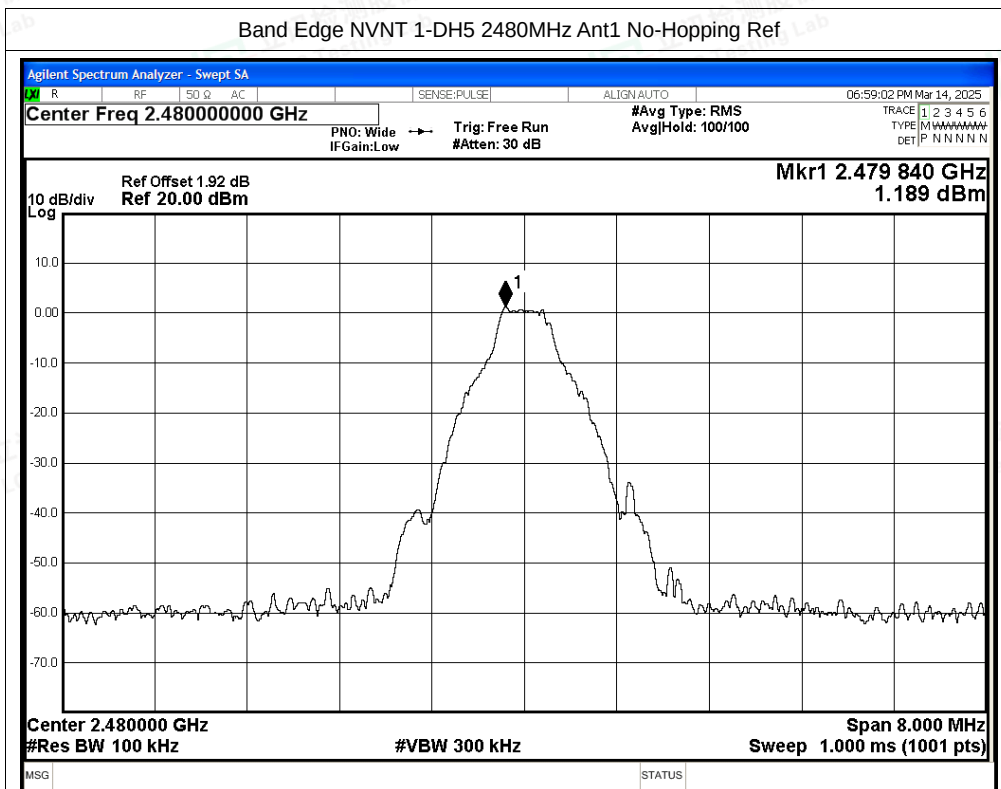
## Test Graphs

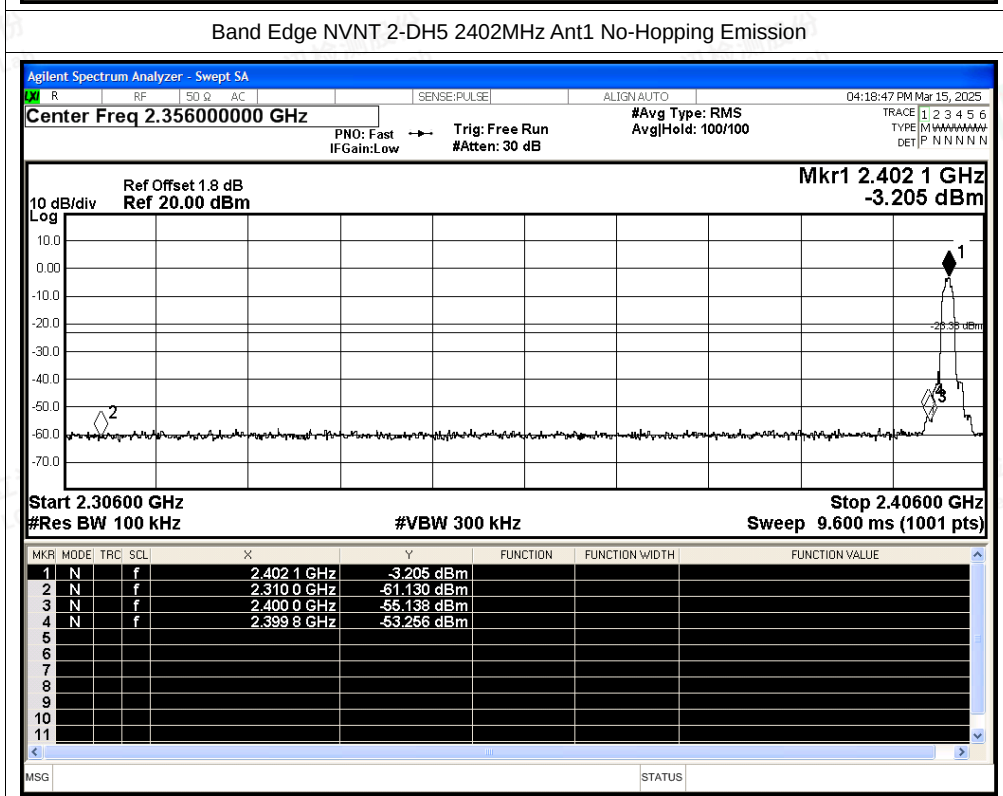
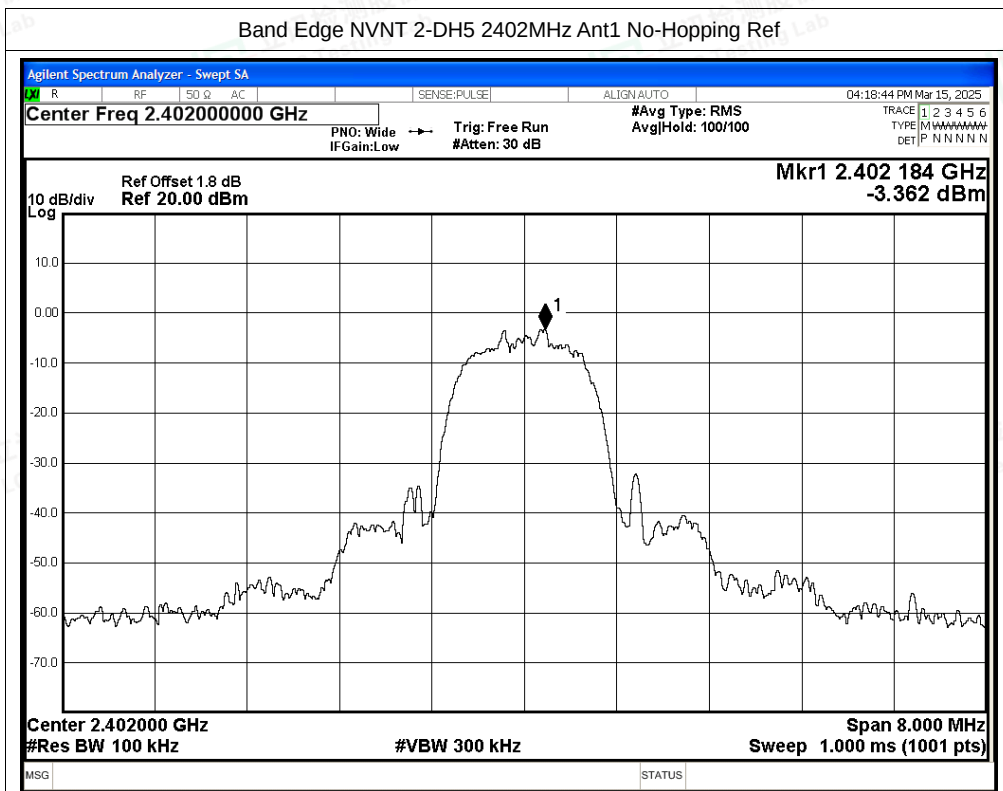
## Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref

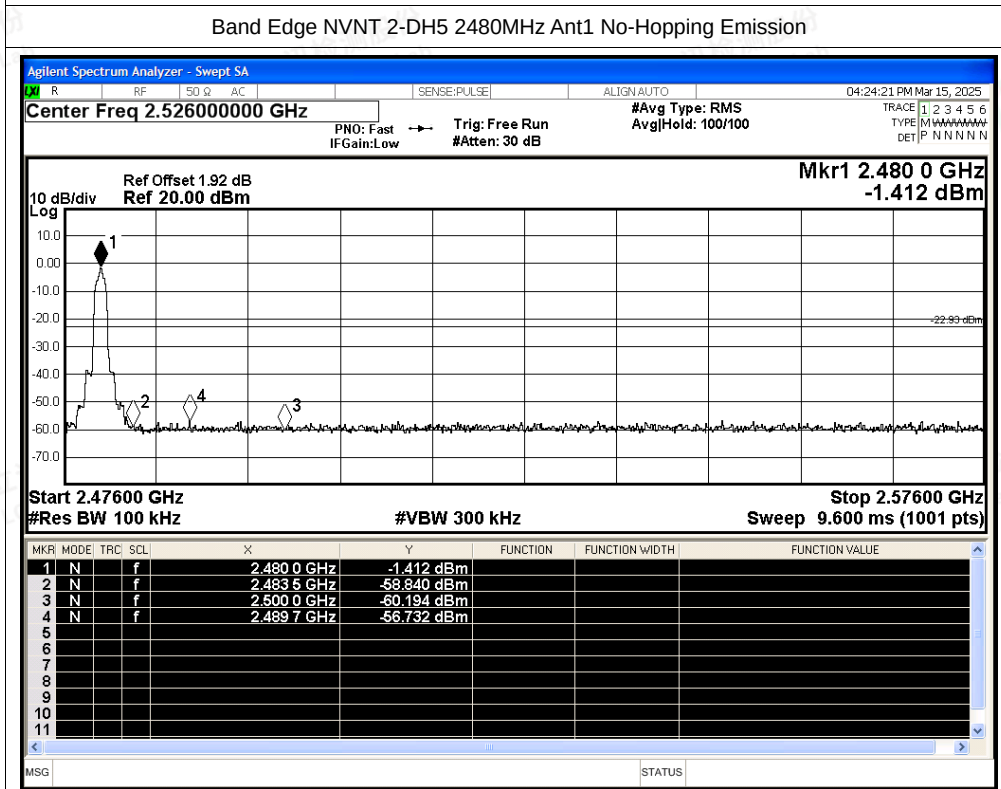
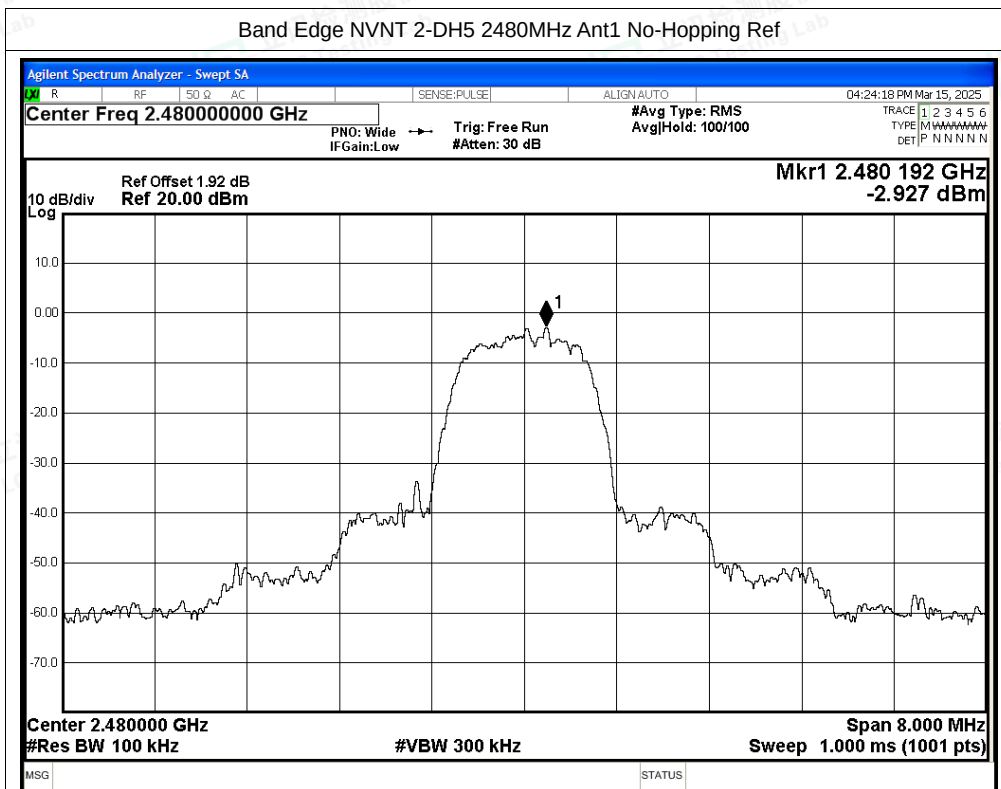


## Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission









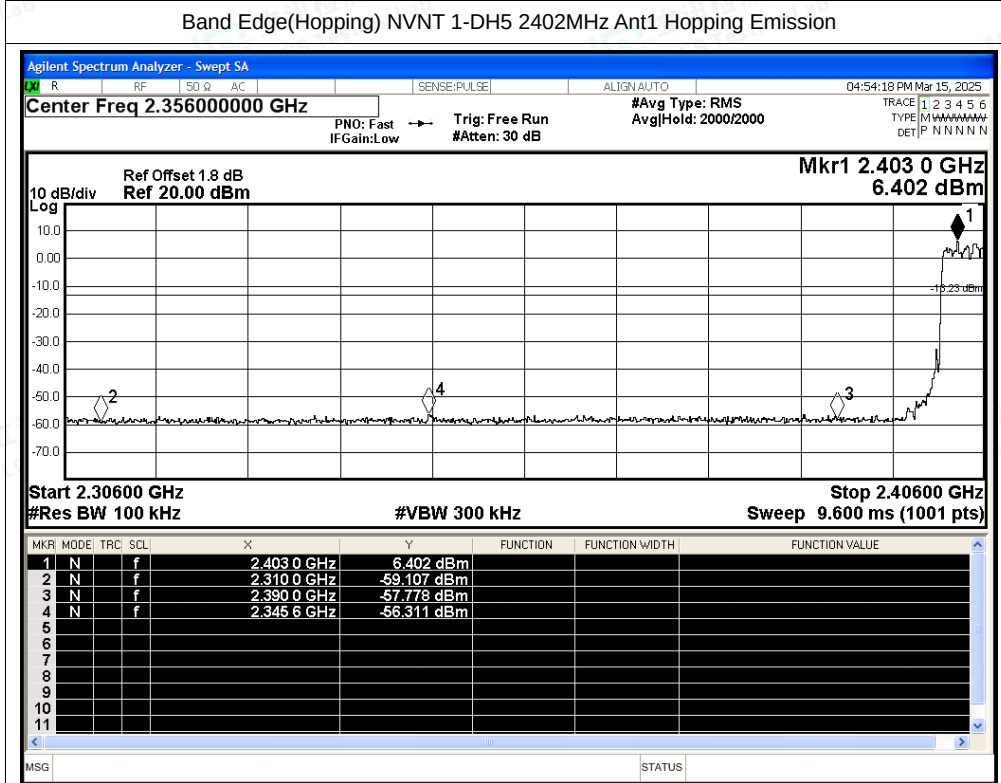
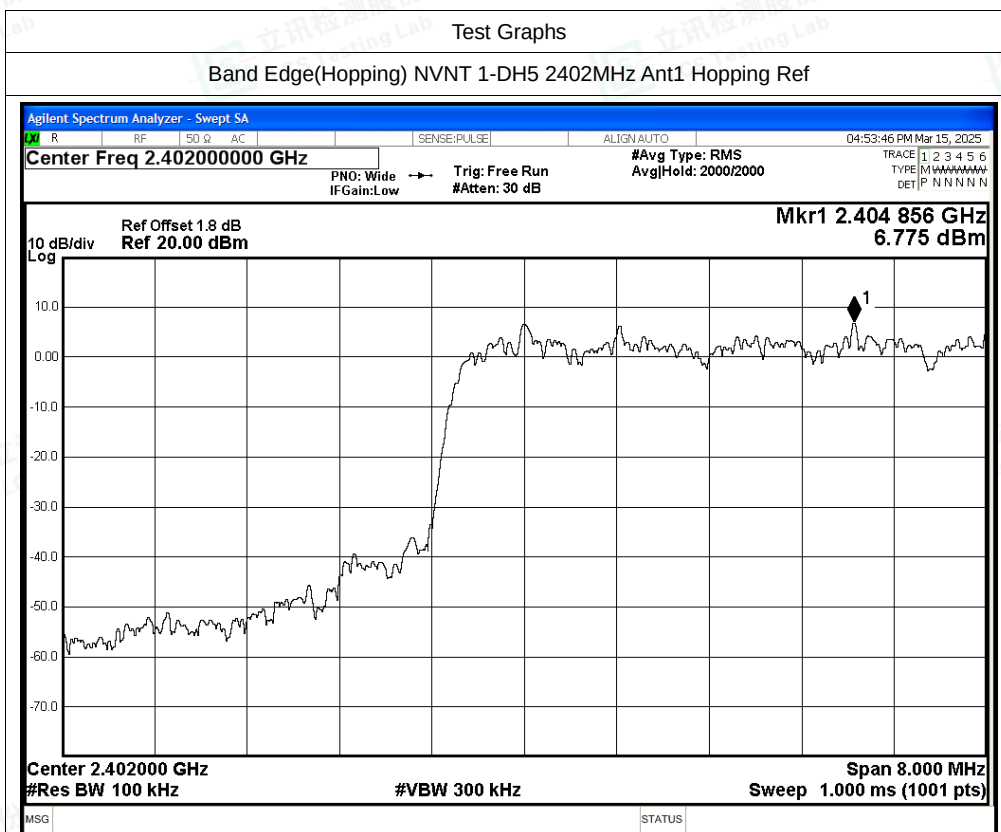


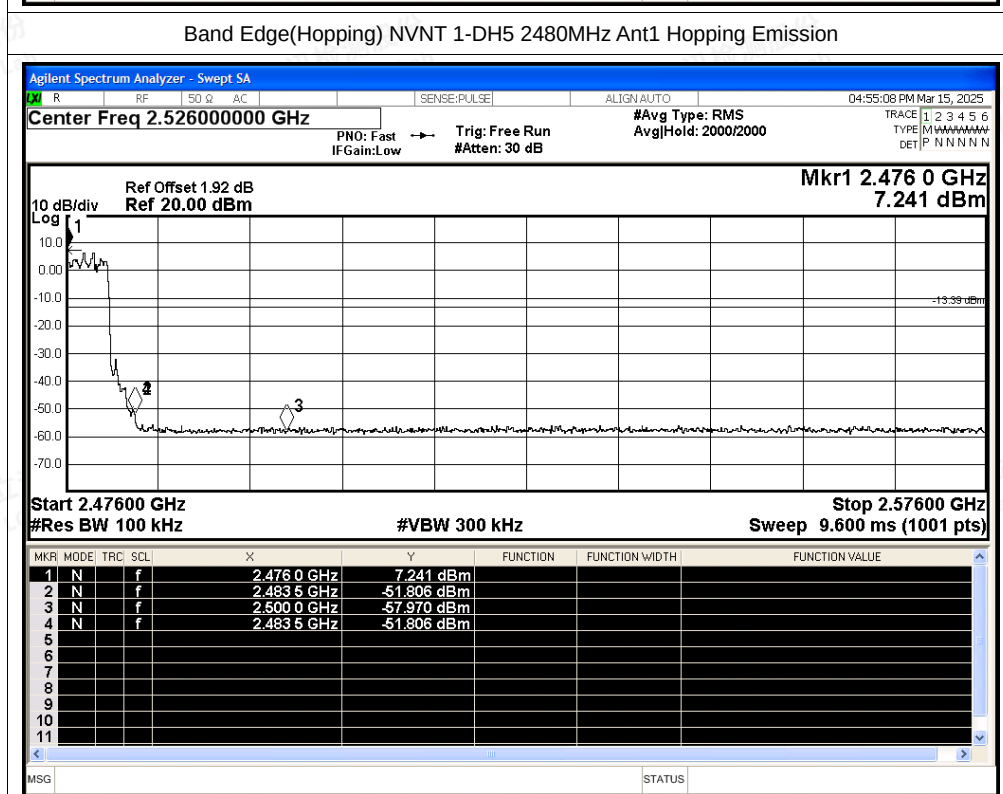
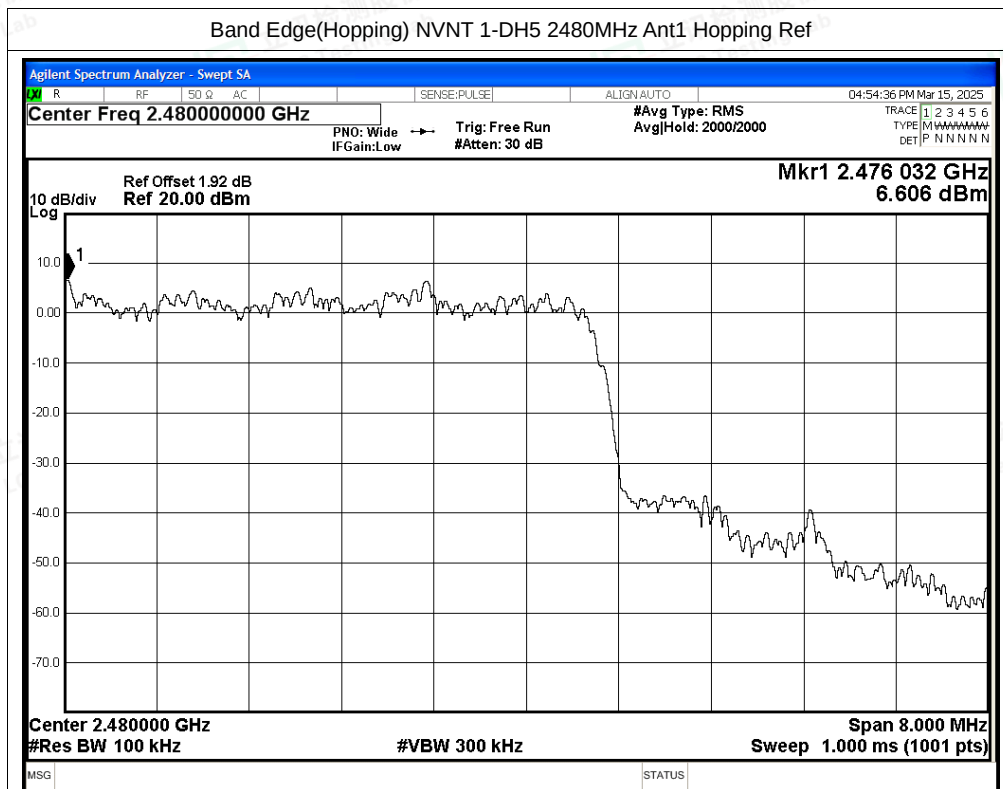
## (Hopping)

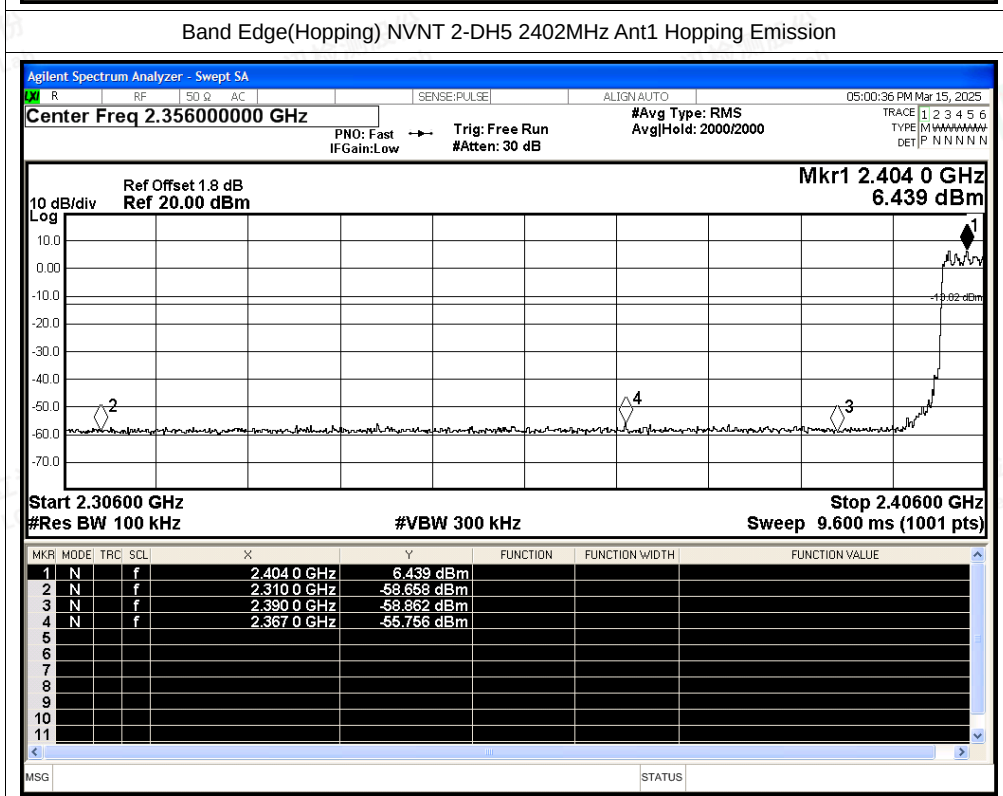
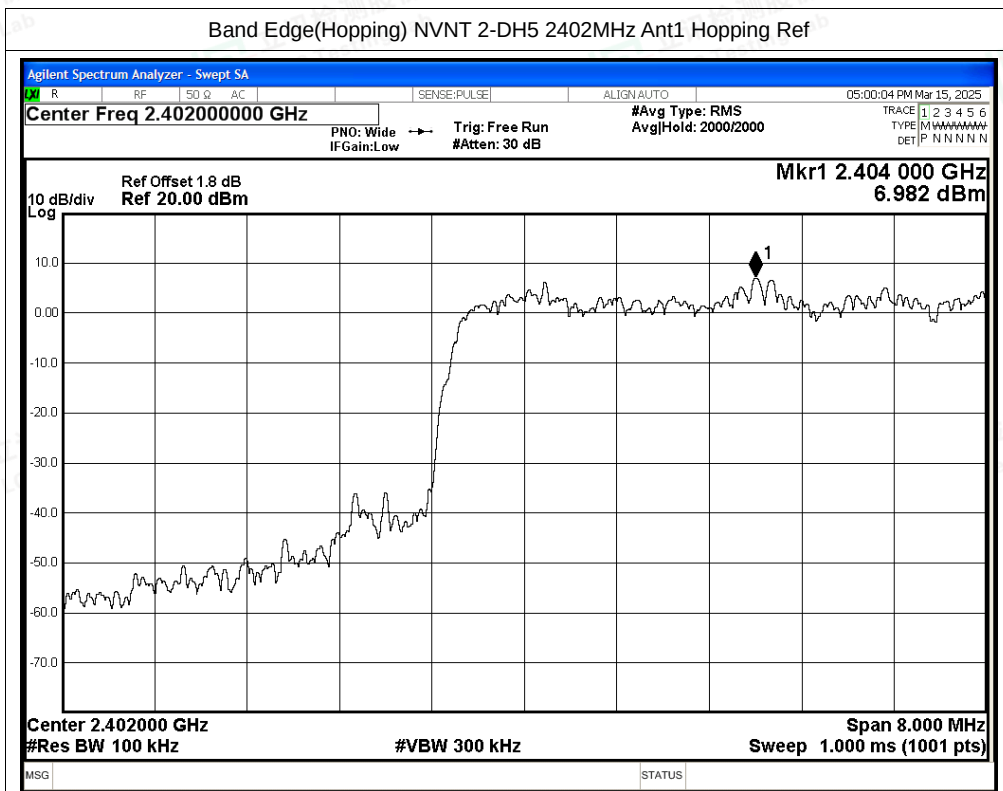
| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | Hopping      | -63.09          | -20         | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | Hopping      | -58.41          | -20         | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | Hopping      | -62.74          | -20         | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | Hopping      | -57.85          | -20         | Pass    |

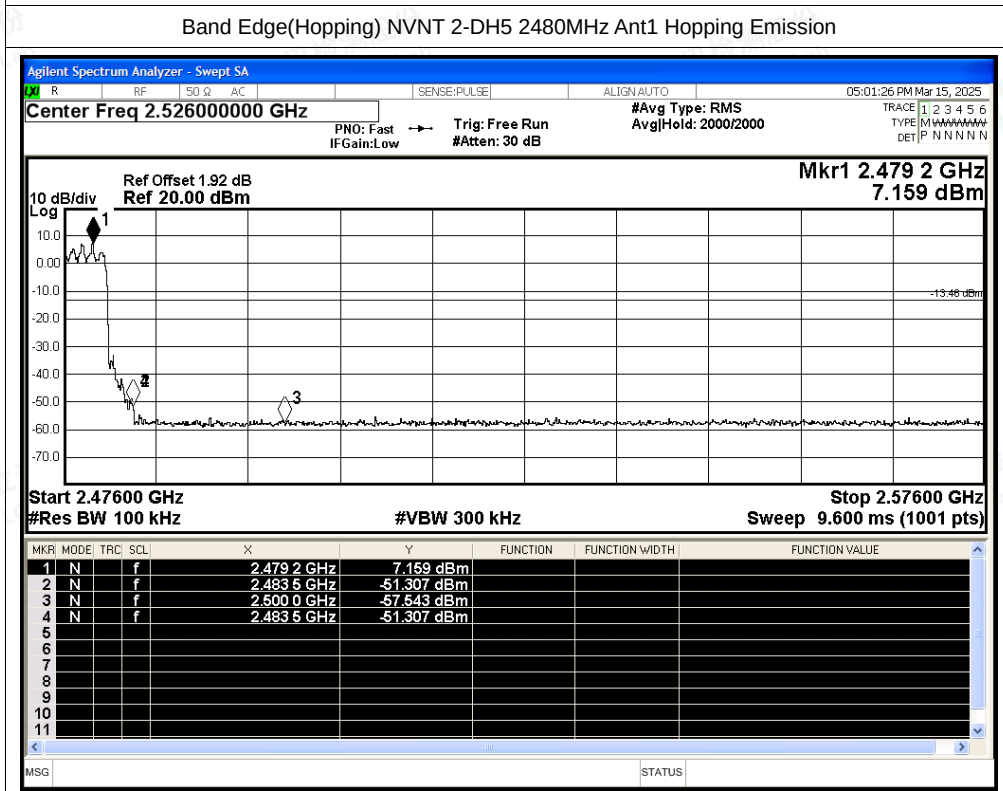
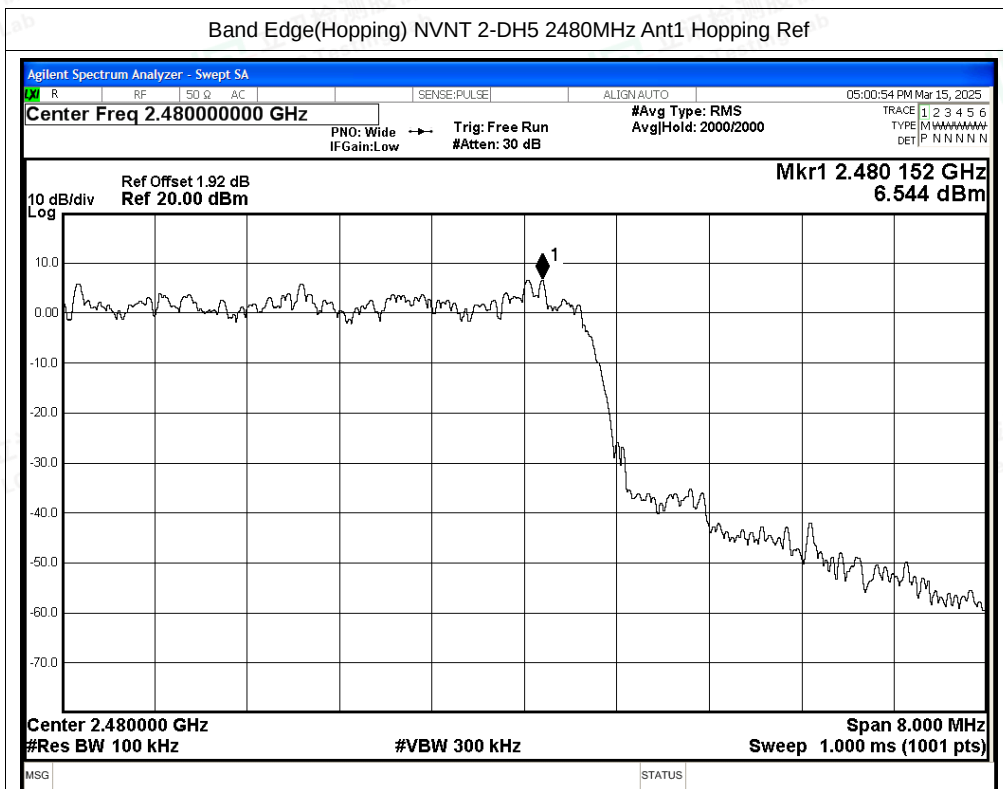


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## A.7 Conducted RF Spurious Emission

| Condition | Mode  | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | -55             | -20         | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | -58.02          | -20         | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | -56.46          | -20         | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | -52.39          | -20         | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | -52.26          | -20         | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | -52.7           | -20         | Pass    |

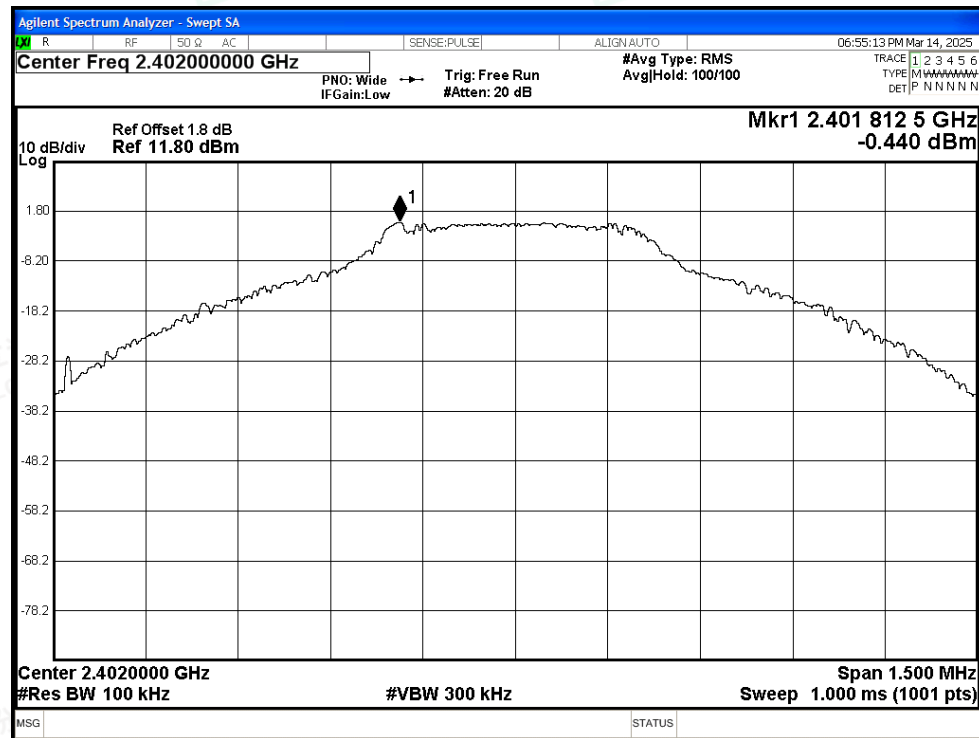


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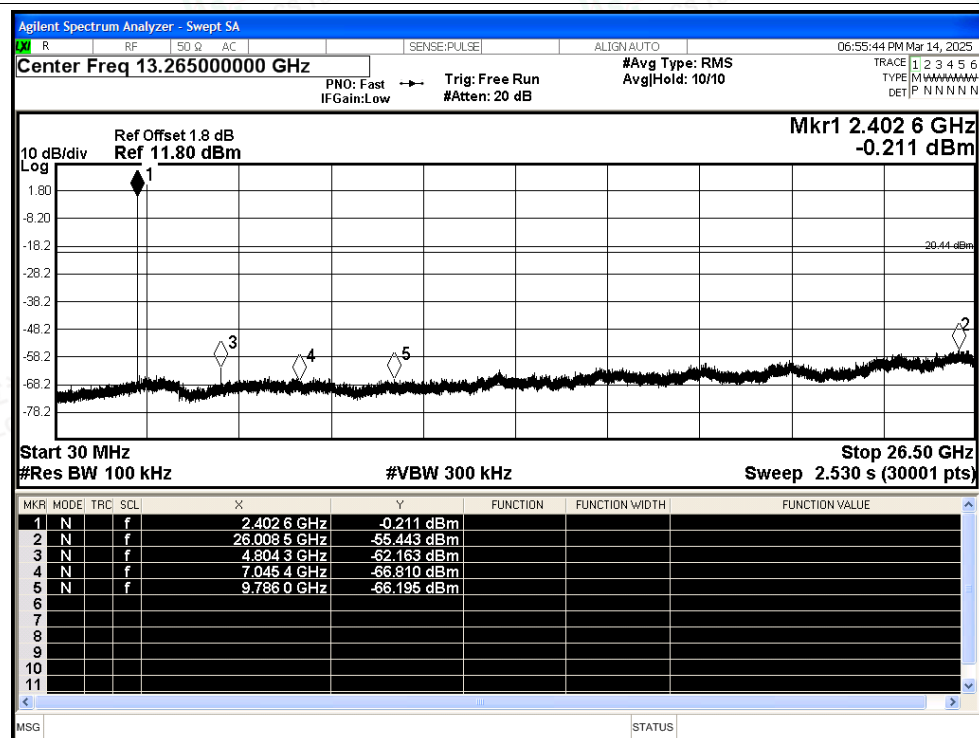


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

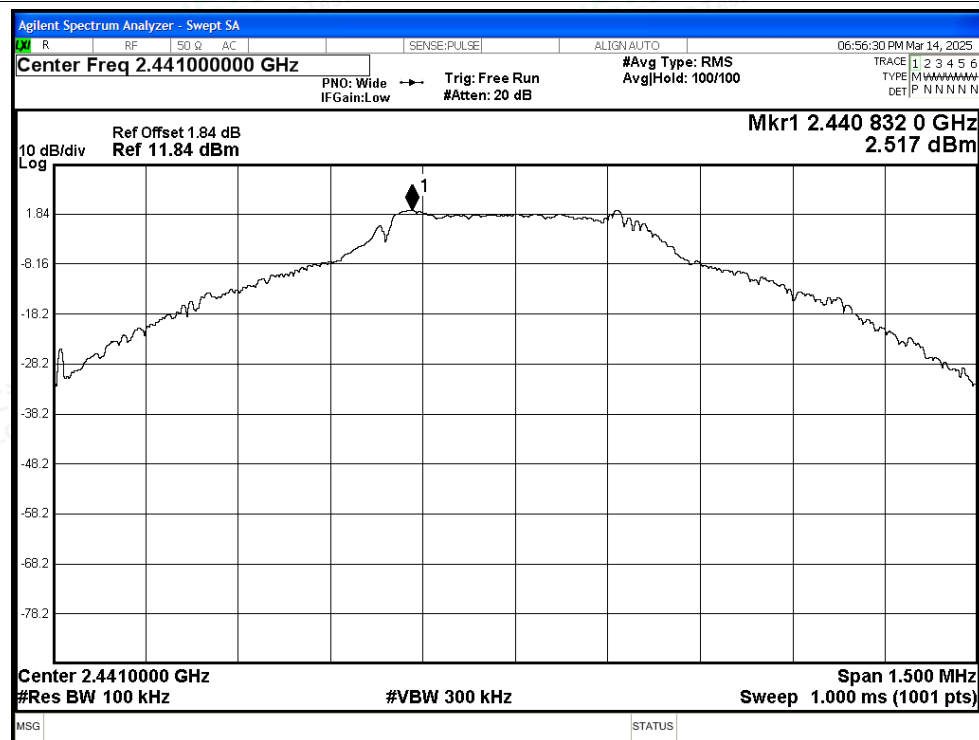


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

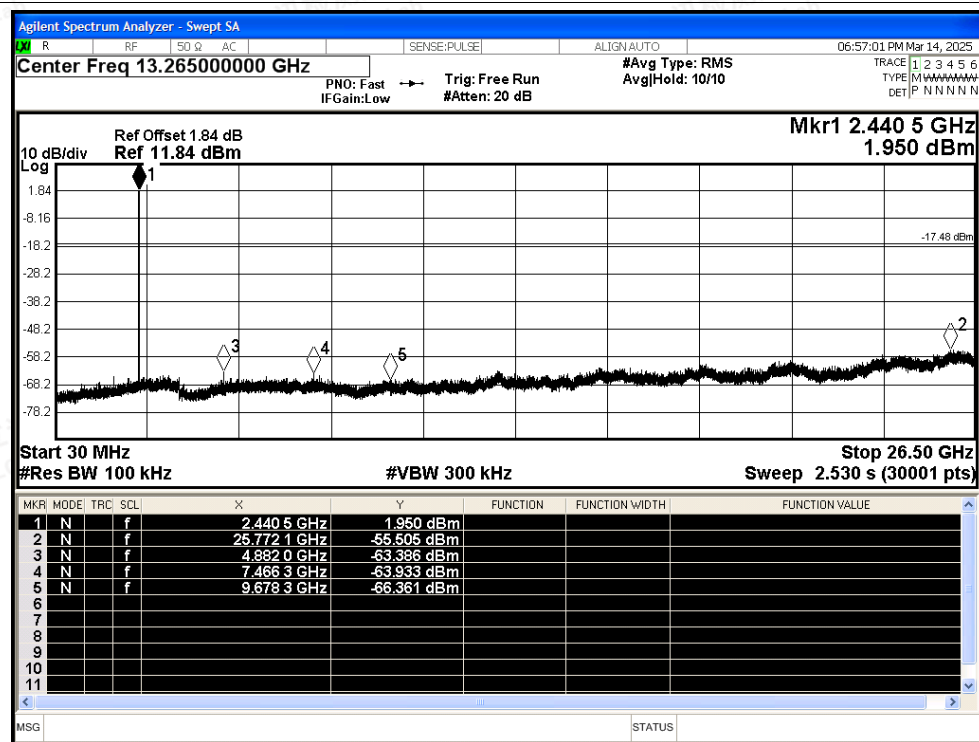




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

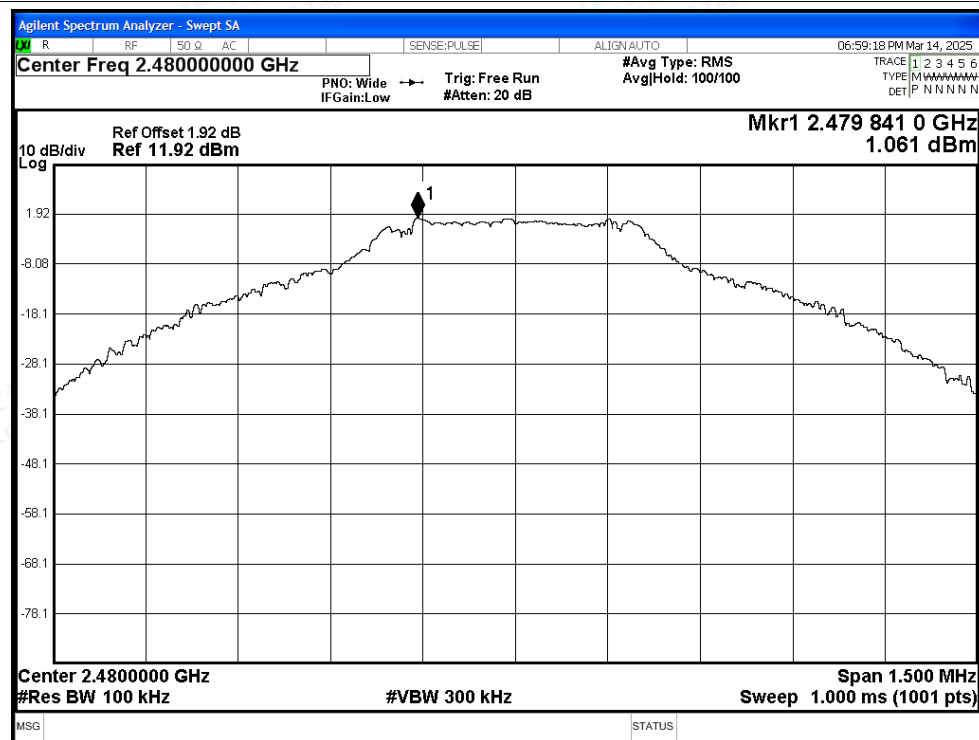


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

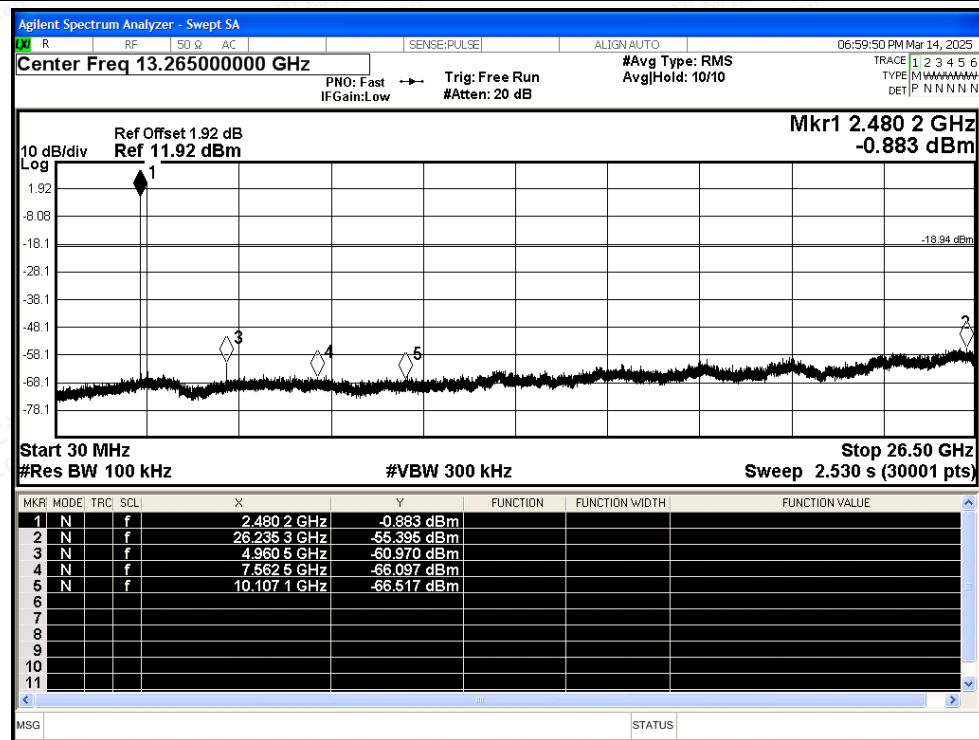




## Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

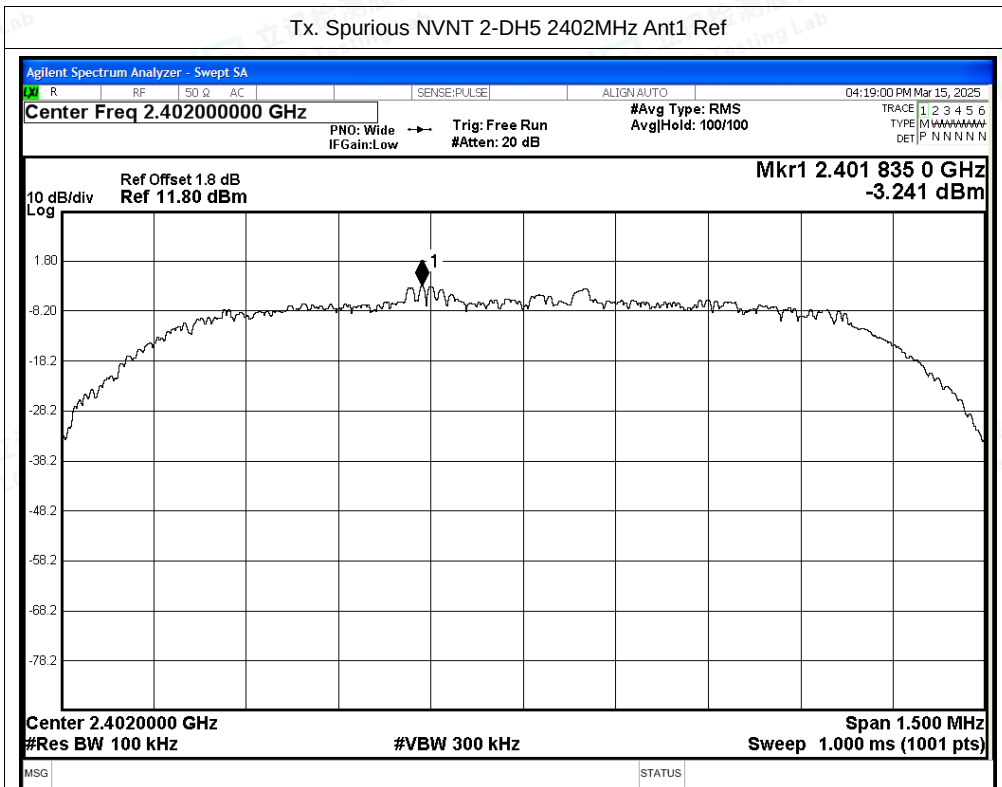


## Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

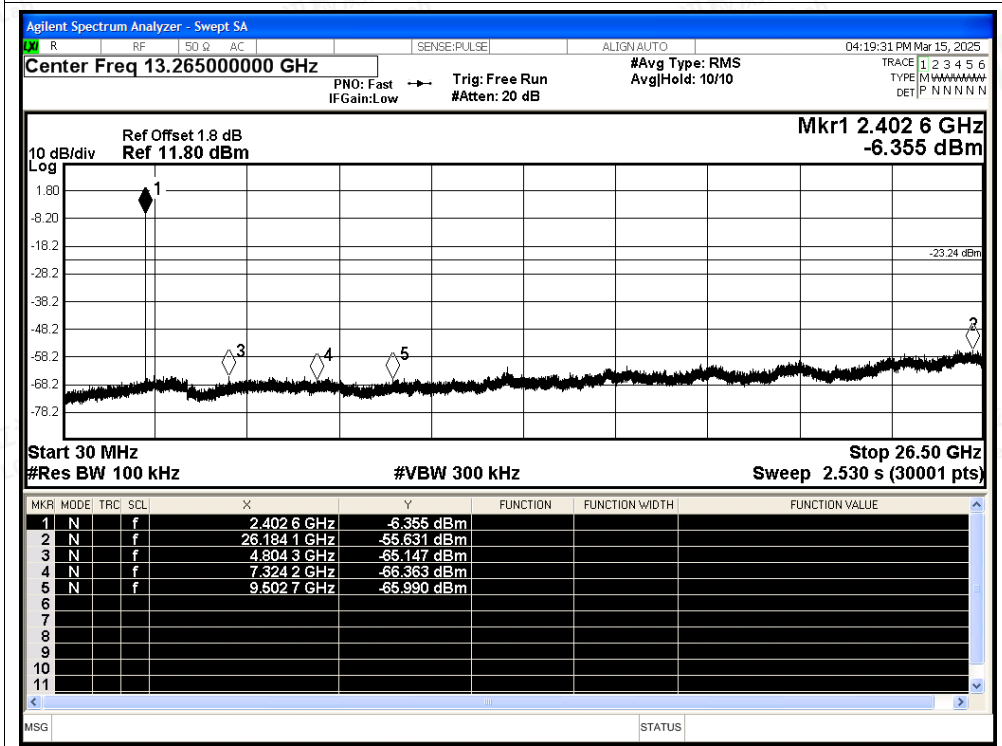




## Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



## Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

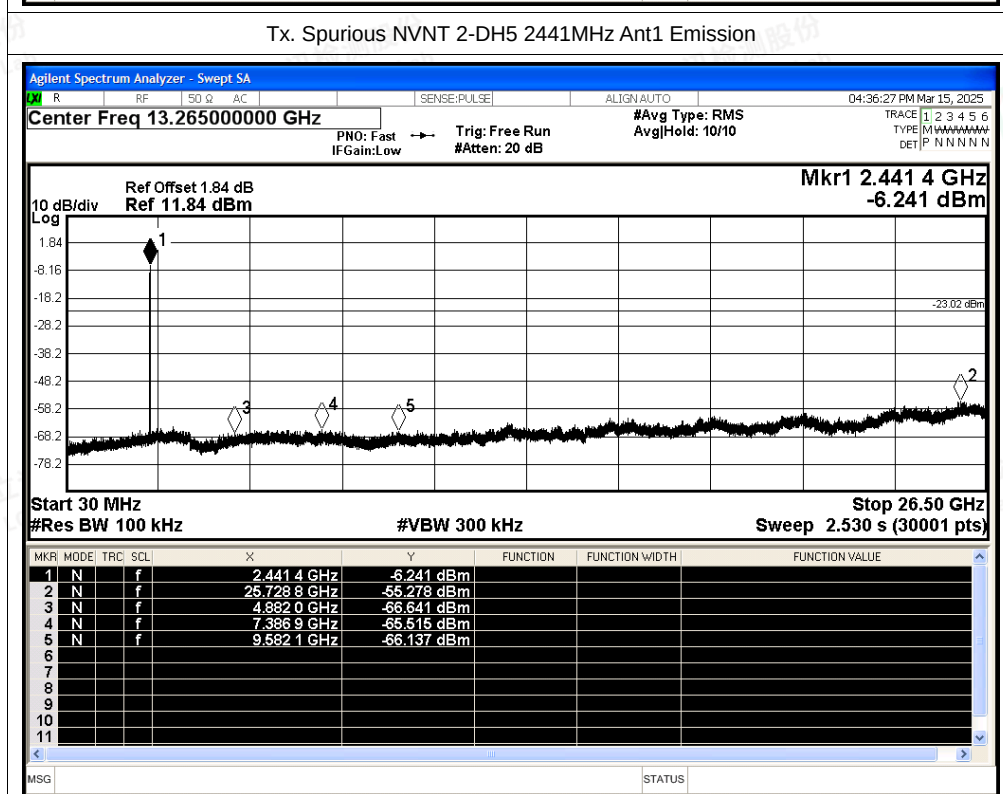
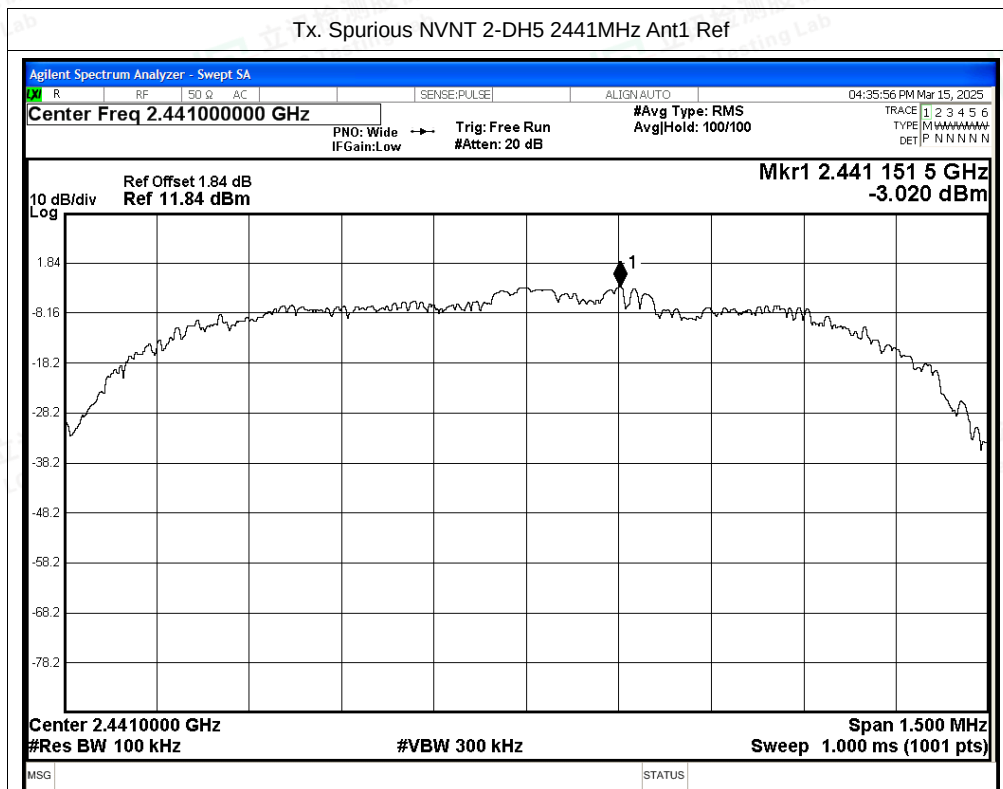


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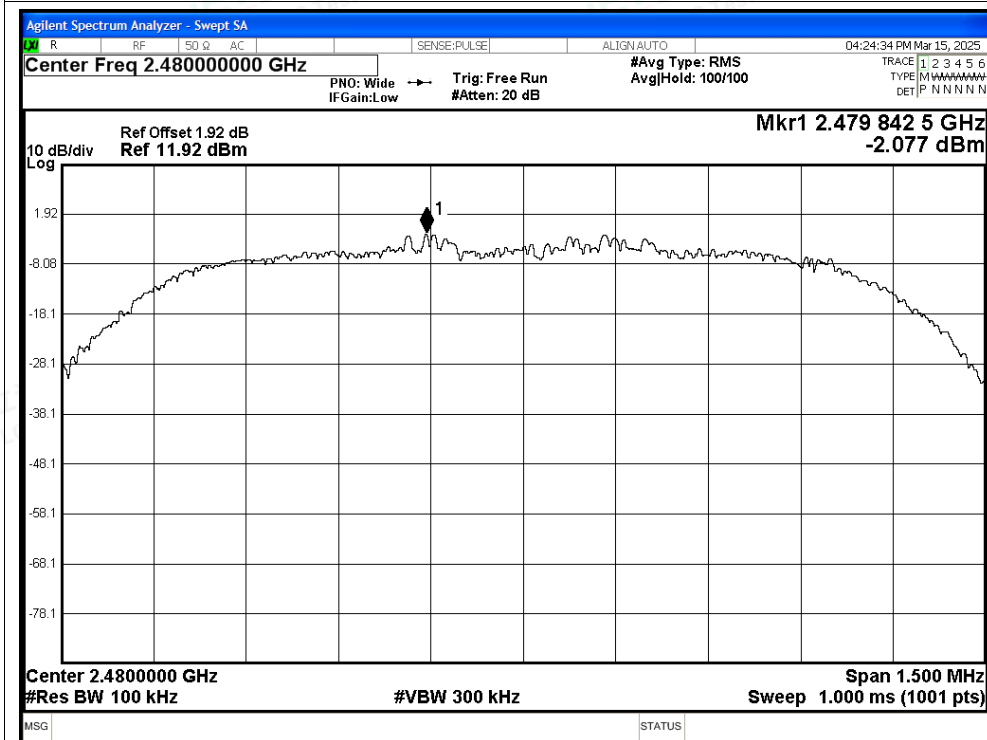
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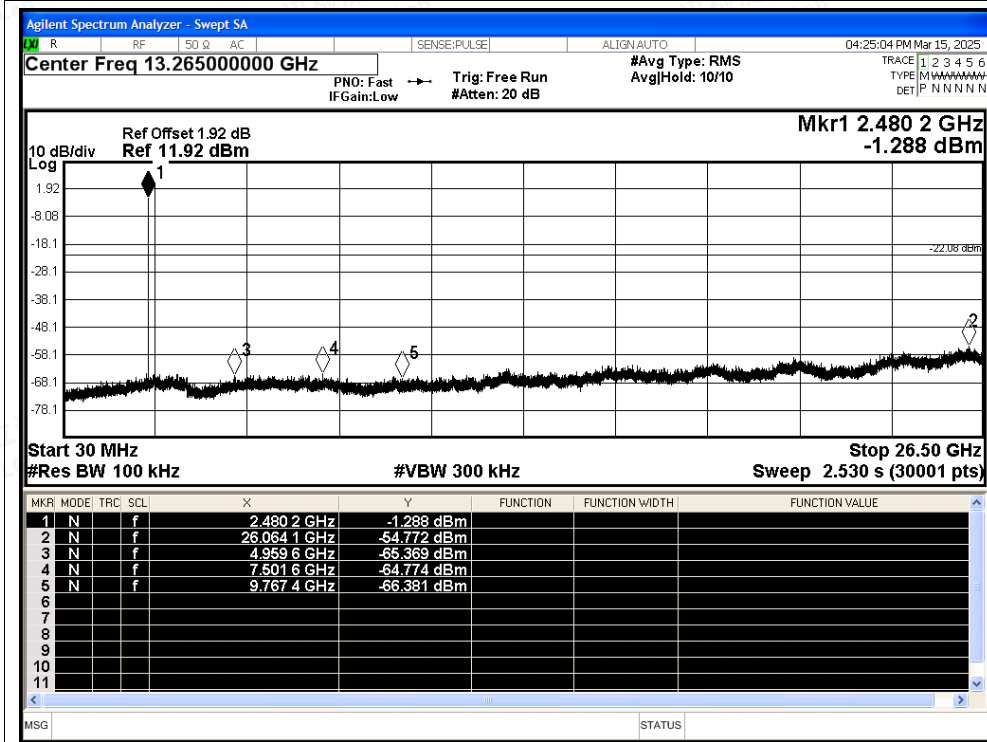




## Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



## Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission





## A.8 Duty Cycle

| Condition | Mode  | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|-------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | 1-DH5 | 2402            | Ant1    | 77.6           | 1.1                    | 0.34      |
| NVNT      | 1-DH5 | 2441            | Ant1    | 77.63          | 1.1                    | 0.34      |
| NVNT      | 1-DH5 | 2480            | Ant1    | 77.6           | 1.1                    | 0.34      |
| NVNT      | 2-DH5 | 2402            | Ant1    | 77.28          | 1.12                   | 0.35      |
| NVNT      | 2-DH5 | 2441            | Ant1    | 77.28          | 1.12                   | 0.35      |
| NVNT      | 2-DH5 | 2480            | Ant1    | 77.28          | 1.12                   | 0.35      |

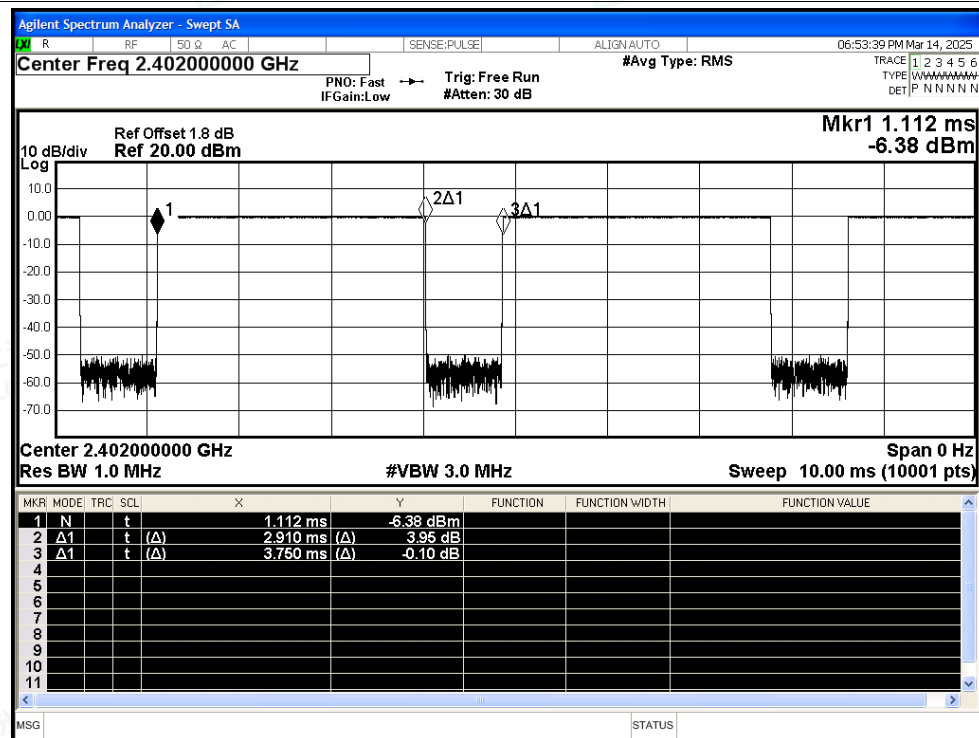


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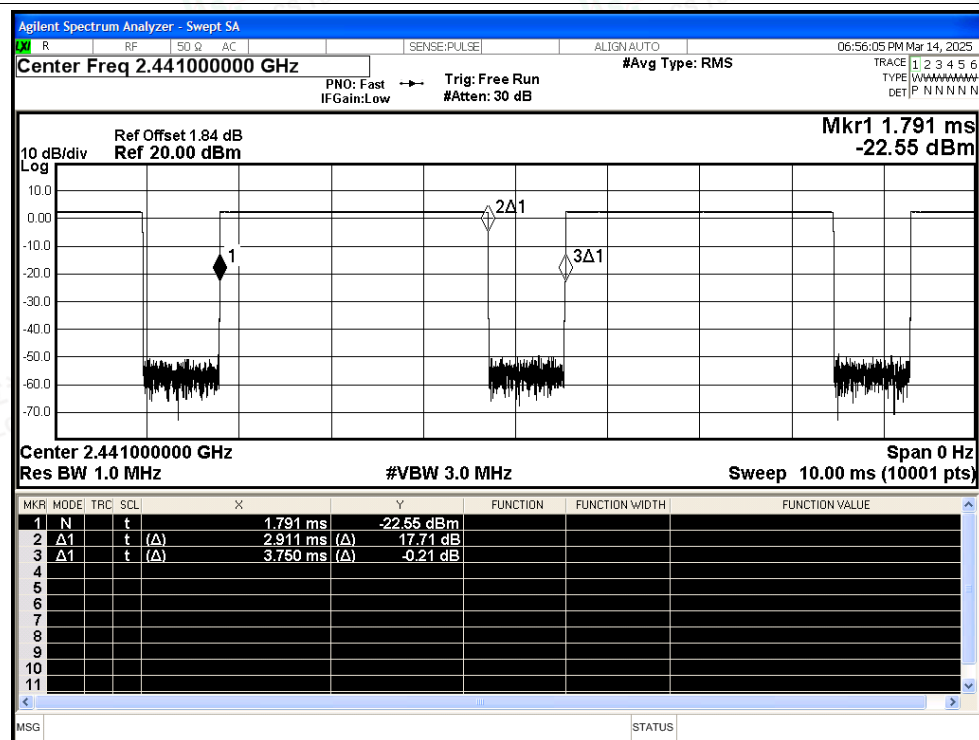


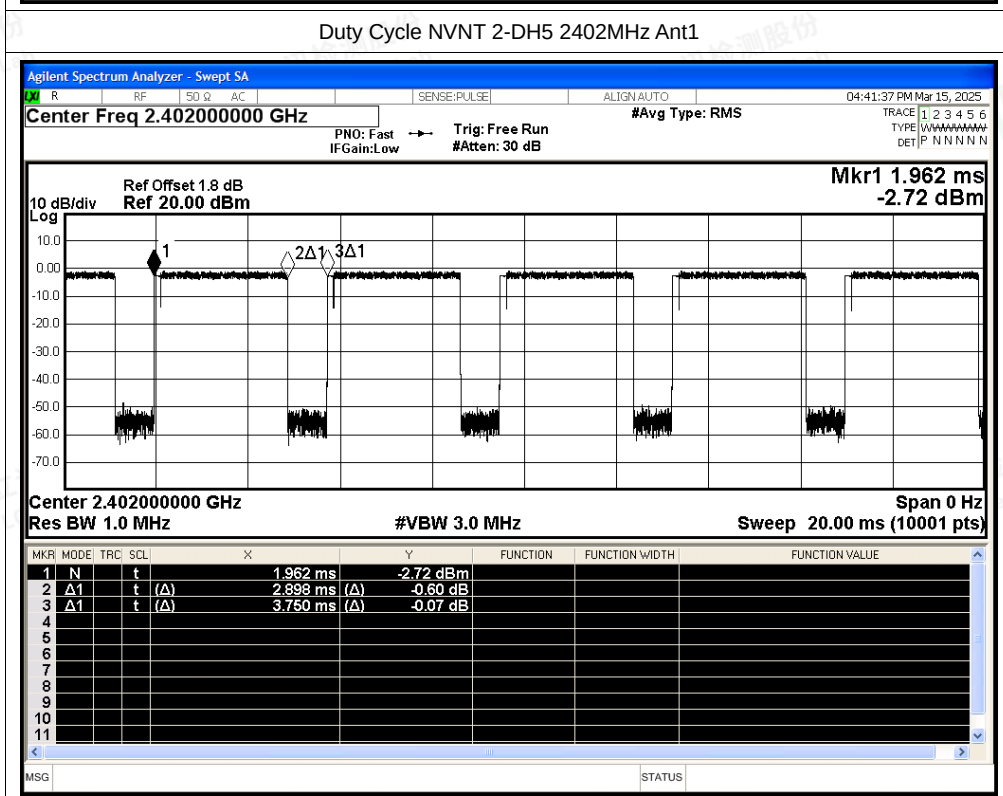
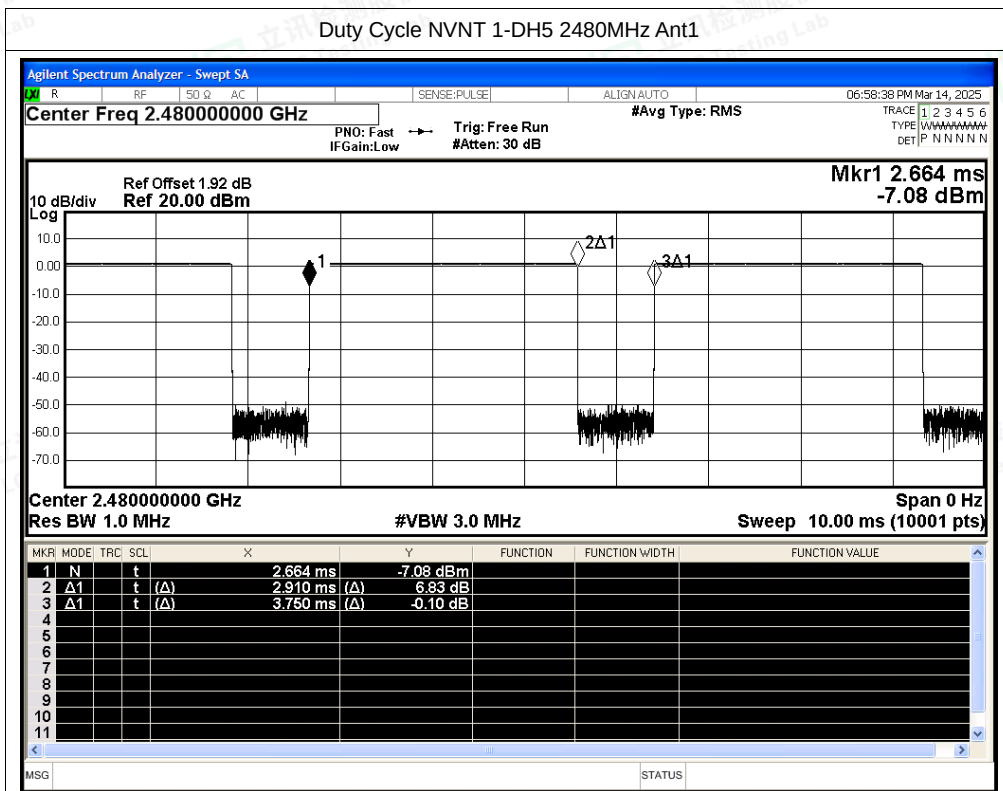
## Test Graphs

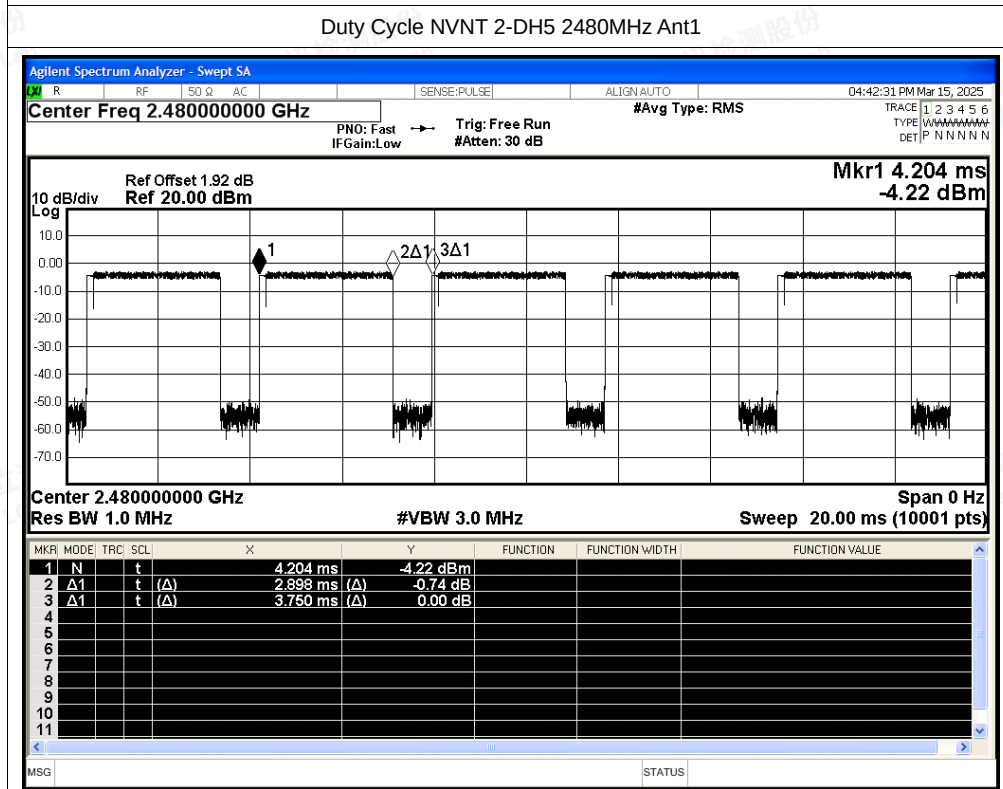
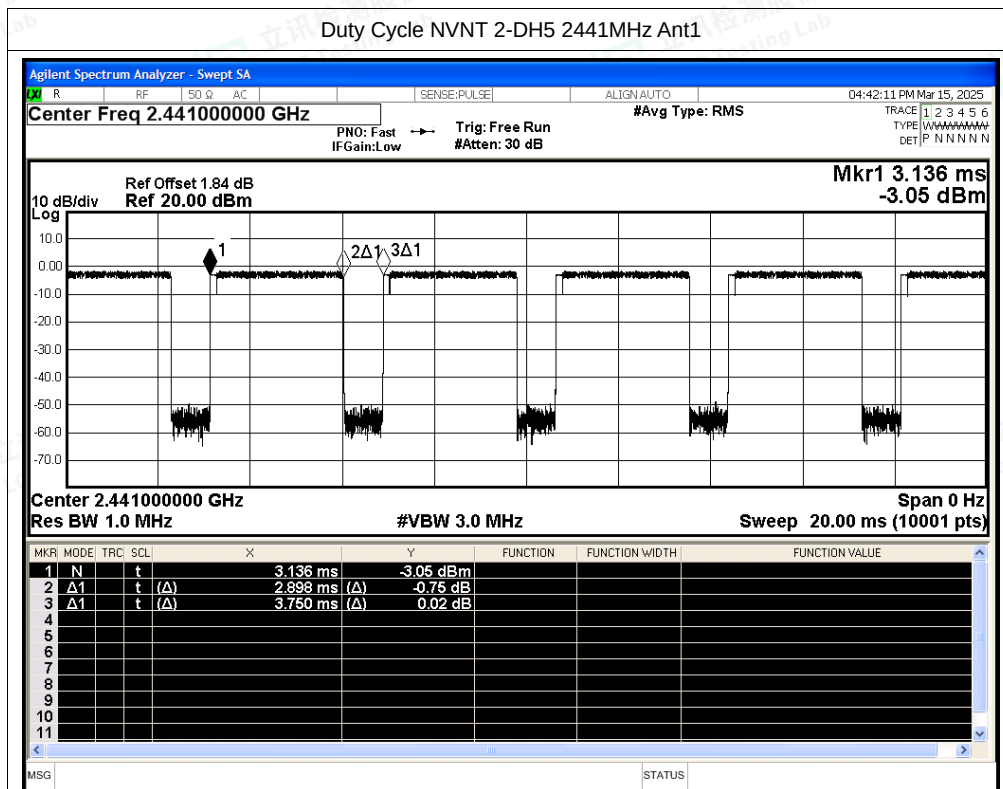
Duty Cycle NVNT 1-DH5 2402MHz Ant1



Duty Cycle NVNT 1-DH5 2441MHz Ant1









## A.9 Restrict Band

| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor (dB) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|------------|------------------|------------|----------|----------------|---------|
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -49.84      | 2          | -                | 47.42      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -58.84      | 2          | 1.1              | 39.52      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2384.304        | -47.41      | 2          | -                | 49.85      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2361.168        | -57.6       | 2          | 1.1              | 40.76      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -50.68      | 2          | -                | 46.58      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -58.43      | 2          | 1.1              | 39.93      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -49.34      | 2          | -                | 47.92      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -57.5       | 2          | 1.1              | 40.86      | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2484.016        | -43.14      | 2          | -                | 54.12      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2485.216        | -57.06      | 2          | 1.1              | 41.3       | Average  | 54             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -50.47      | 2          | -                | 46.79      | Peak     | 74             | Pass    |
| NVNT      | 1-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -58.63      | 2          | 1.1              | 39.73      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -51.83      | 2          | -                | 45.43      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2310            | -59.21      | 2          | 0.12             | 38.17      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2363.088        | -48.58      | 2          | -                | 48.68      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2383.152        | -58.01      | 2          | 0.12             | 39.37      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -49.87      | 2          | -                | 47.39      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2402            | Ant1    | No-Hopping   | 2390            | -58.9       | 2          | 0.12             | 38.48      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -46.92      | 2          | -                | 50.34      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2483.5          | -57.53      | 2          | 0.12             | 39.85      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2483.824        | -43.92      | 2          | -                | 53.34      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2483.536        | -57.04      | 2          | 0.12             | 40.34      | Average  | 54             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -48.9       | 2          | -                | 48.36      | Peak     | 74             | Pass    |
| NVNT      | 2-DH5 | 2480            | Ant1    | No-Hopping   | 2500            | -58.62      | 2          | 0.12             | 38.76      | Average  | 54             | Pass    |



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