

# RF Test Data for Bluetooth (Conducted Measurements)

| General Description of EUT                                                                                                                   |                           |
|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Product Name:                                                                                                                                | AIBOT2 AI humanoid robot  |
| Test Model:                                                                                                                                  | R12E                      |
| Sample ID:                                                                                                                                   | HC-C-202404-0185-01-01-2# |
| Environmental Conditions                                                                                                                     |                           |
| Temperature:                                                                                                                                 | 23.8℃                     |
| Relative Humidity:                                                                                                                           | 48%                       |
| Test Voltage:                                                                                                                                | DC 7.2V                   |
| Test Engineer:                                                                                                                               | ZKN ZHOU                  |
| Note: For a more detailed features description, please refer to the report TBR-C-202404-0185-31<br>The report only show the worst case data. |                           |



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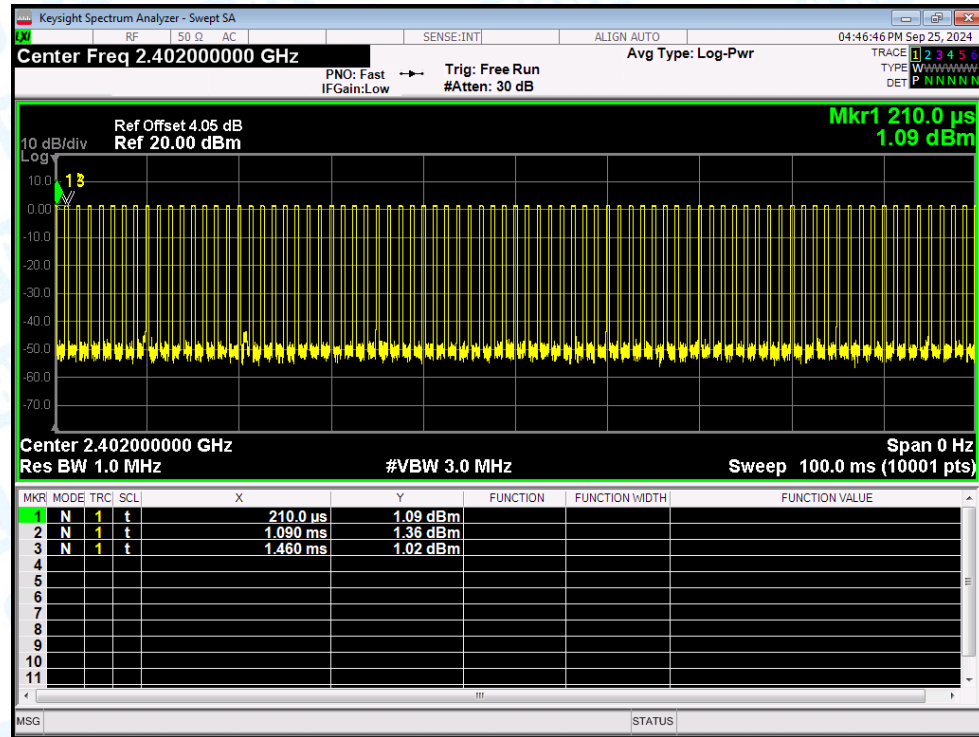


1. Duty Cycle

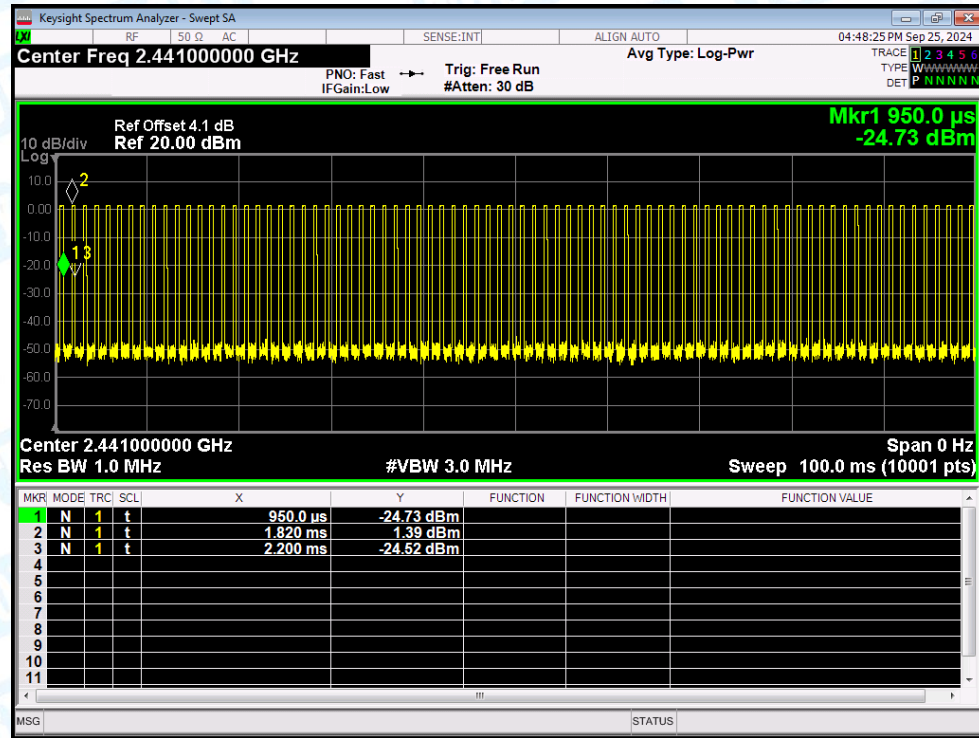
| Condition | Mode  | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|-------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 29.6           | 5.29                   | 2.7       |
| NVNT      | 1-DH1 | 2441            | Ant1    | 30.4           | 5.17                   | 2.63      |
| NVNT      | 1-DH1 | 2480            | Ant1    | 30.4           | 5.17                   | 2.63      |
| NVNT      | 2-DH1 | 2402            | Ant1    | 30.4           | 5.17                   | 2.63      |
| NVNT      | 2-DH1 | 2441            | Ant1    | 30.4           | 5.17                   | 2.63      |
| NVNT      | 2-DH1 | 2480            | Ant1    | 30.4           | 5.17                   | 2.63      |
| NVNT      | 3-DH1 | 2402            | Ant1    | 31.2           | 5.06                   | 2.56      |
| NVNT      | 3-DH1 | 2441            | Ant1    | 31.2           | 5.06                   | 2.56      |
| NVNT      | 3-DH1 | 2480            | Ant1    | 31.2           | 5.06                   | 2.56      |

### Test Graphs

#### Duty Cycle NVNT 1-DH1 2402MHz Ant1

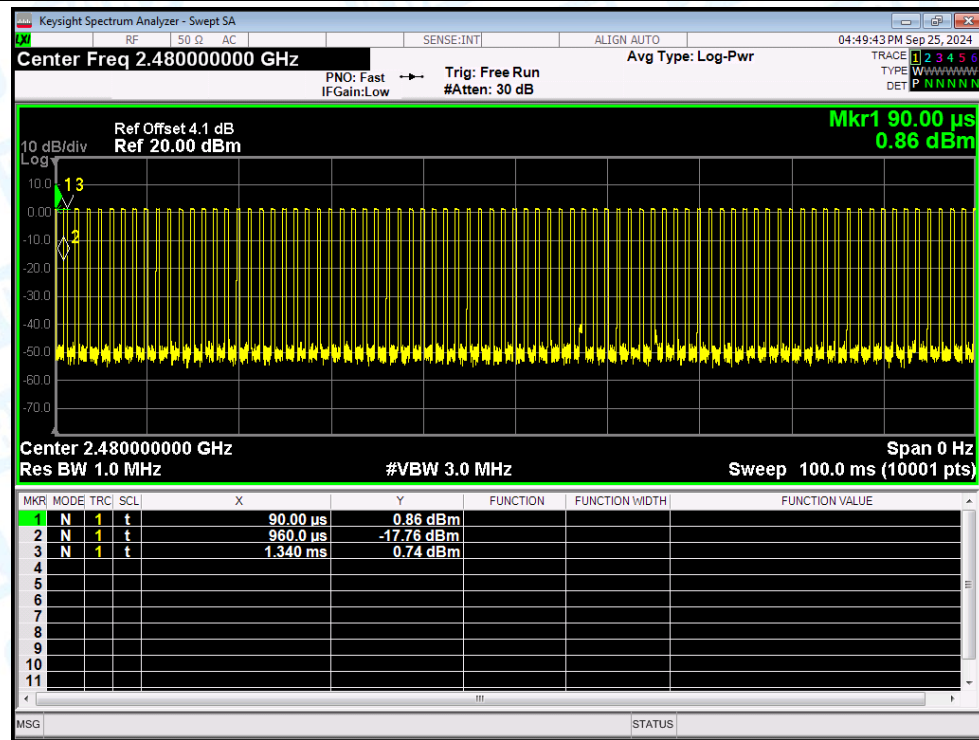


#### Duty Cycle NVNT 1-DH1 2441MHz Ant1

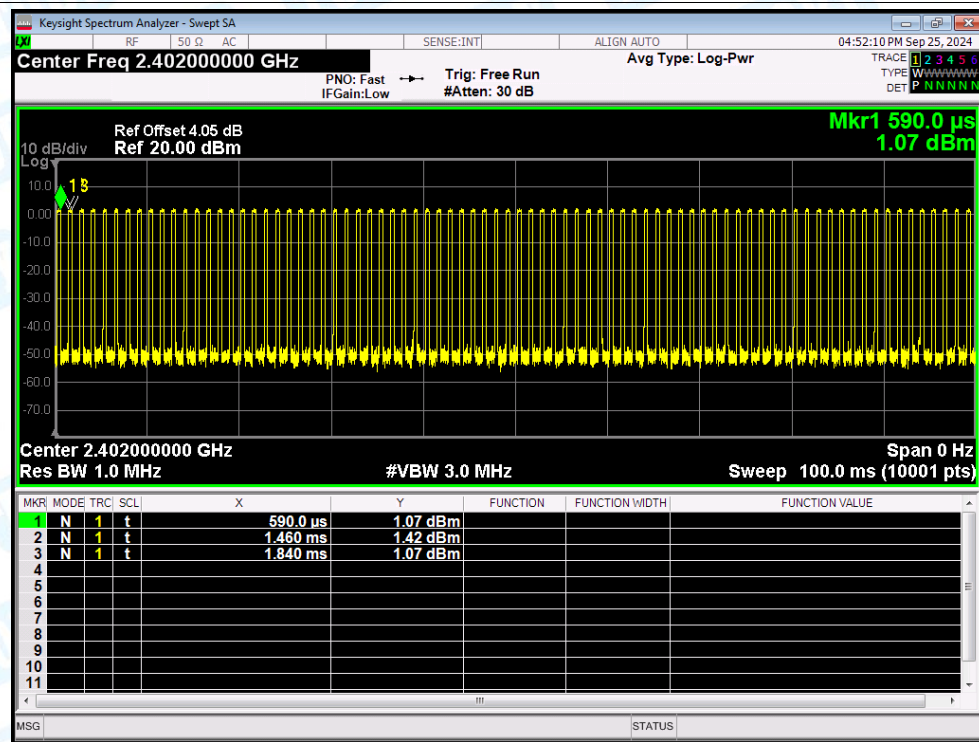




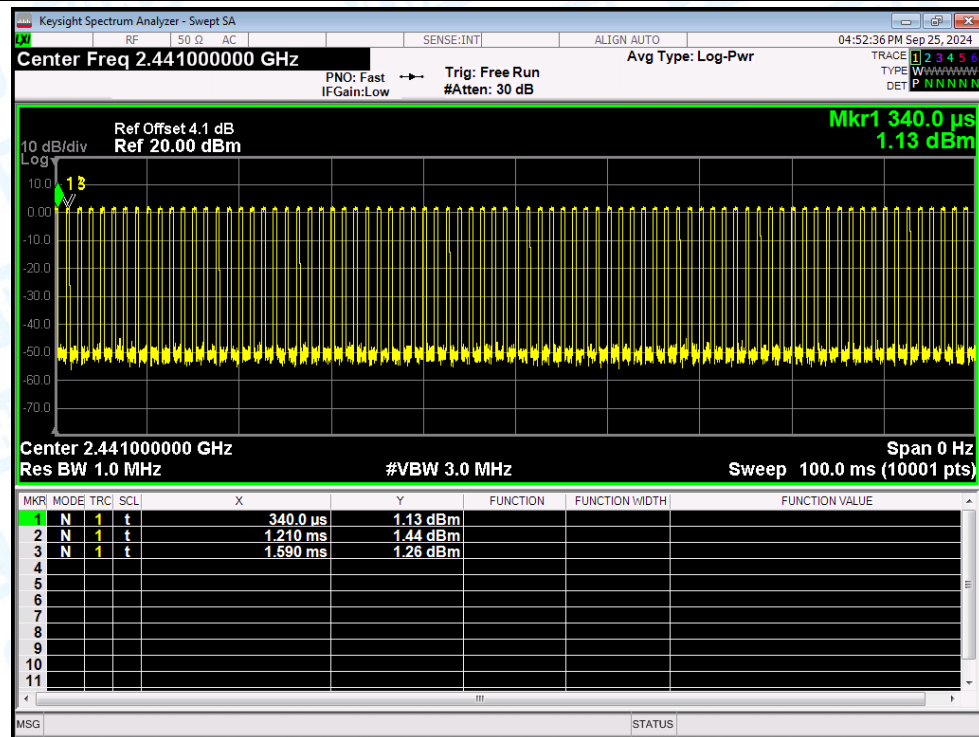
### Duty Cycle NVNT 1-DH1 2480MHz Ant1



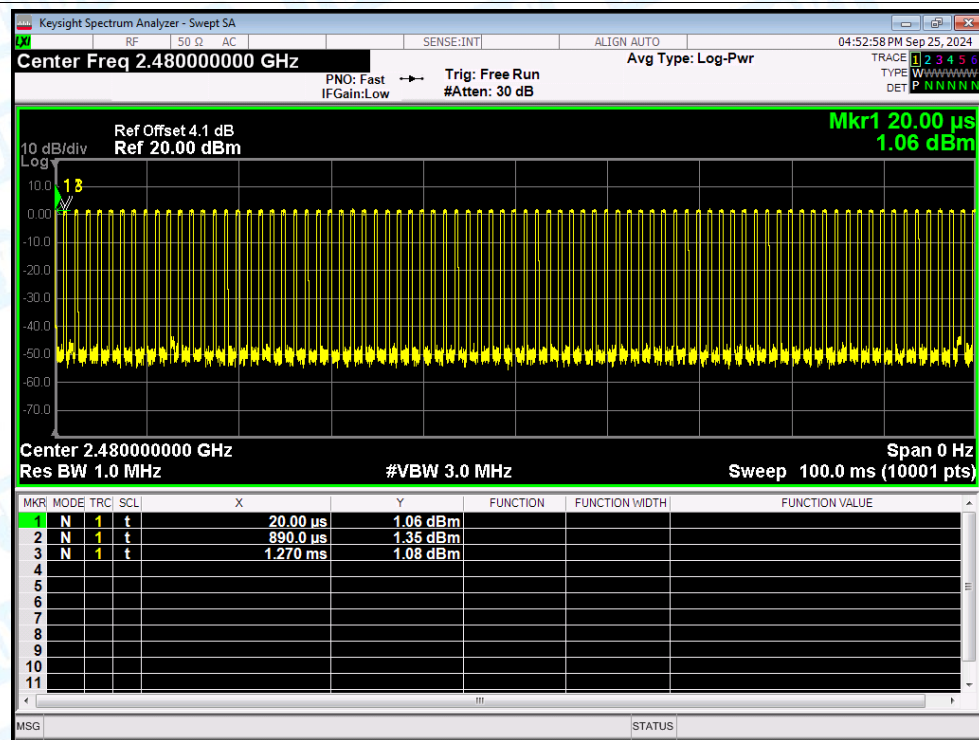
### Duty Cycle NVNT 2-DH1 2402MHz Ant1



### Duty Cycle NVNT 2-DH1 2441MHz Ant1

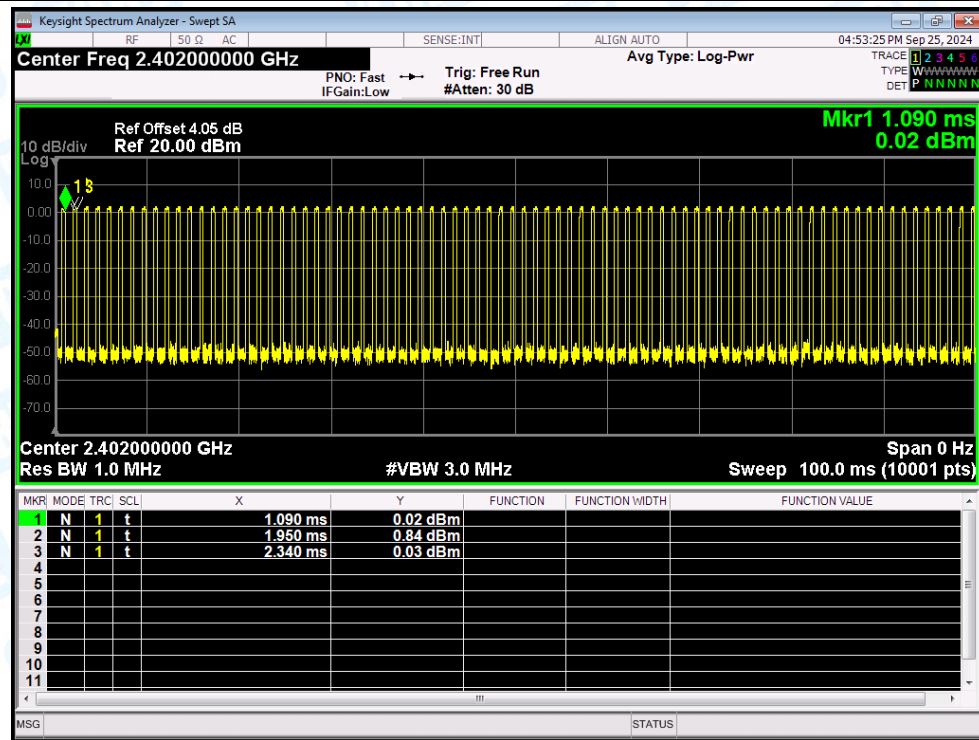


### Duty Cycle NVNT 2-DH1 2480MHz Ant1

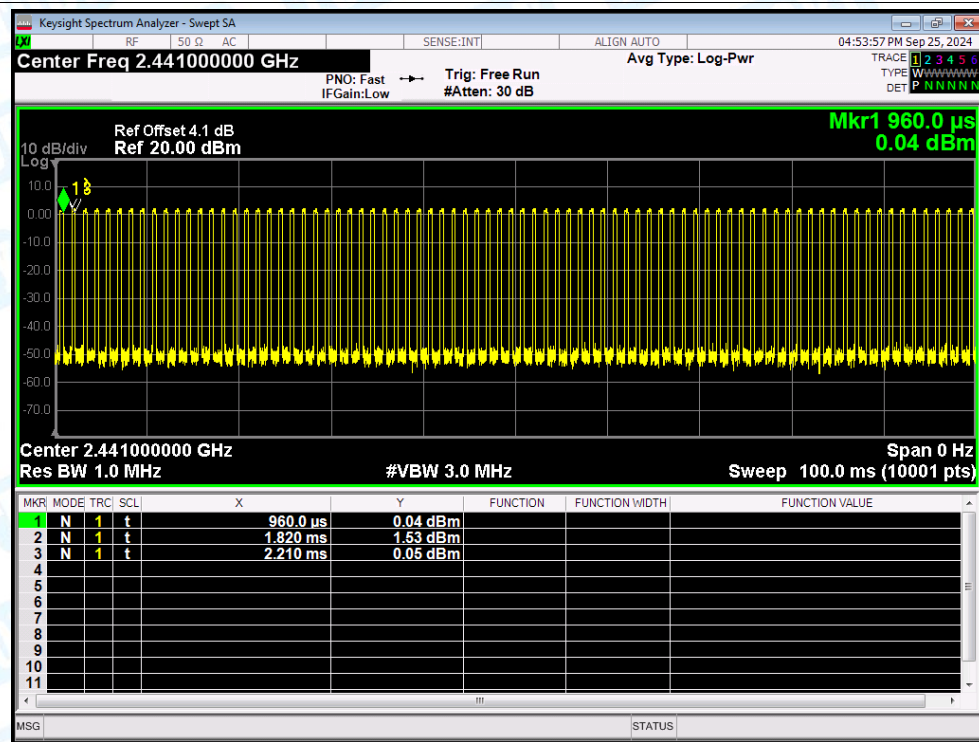


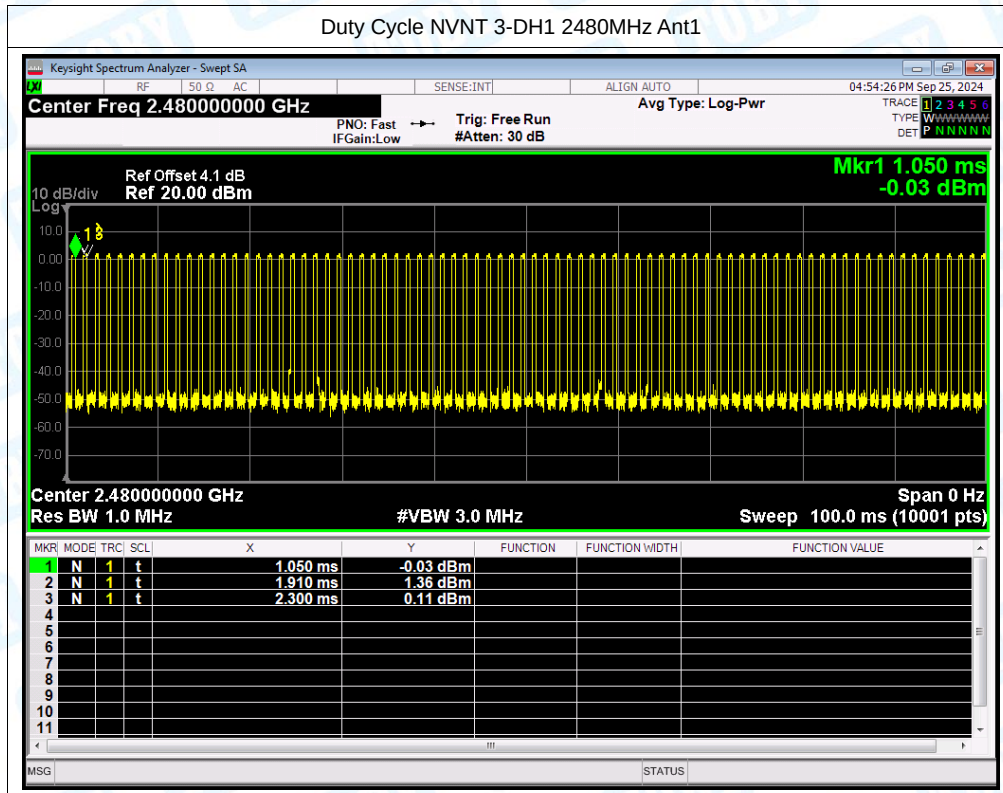


### Duty Cycle NVNT 3-DH1 2402MHz Ant1



### Duty Cycle NVNT 3-DH1 2441MHz Ant1





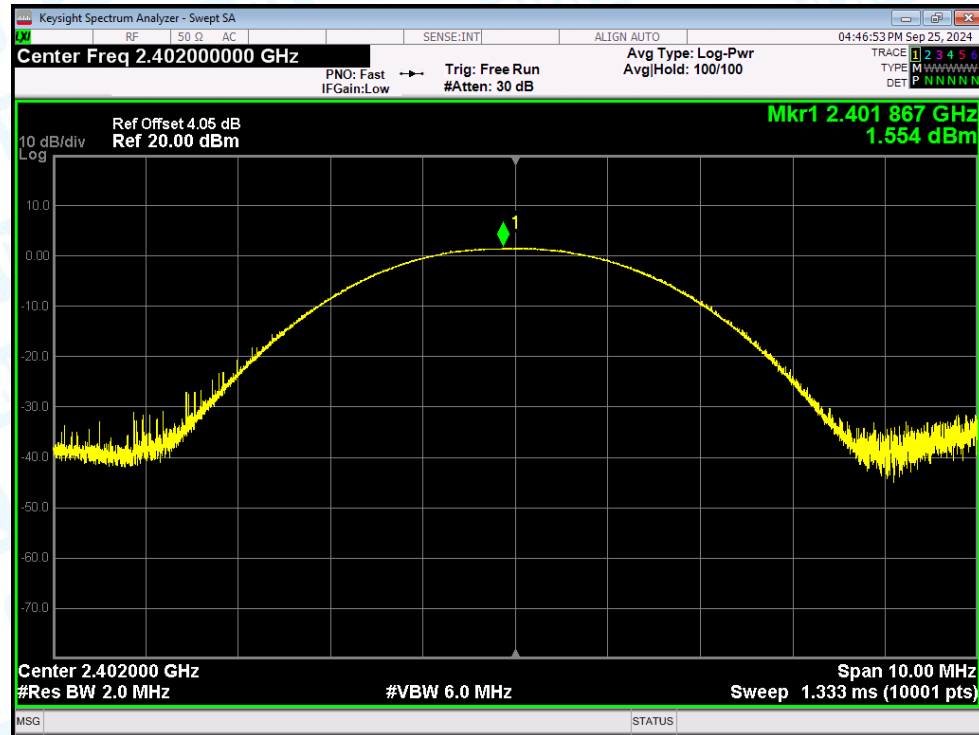


## 2. Maximum Conducted Peak Output Power

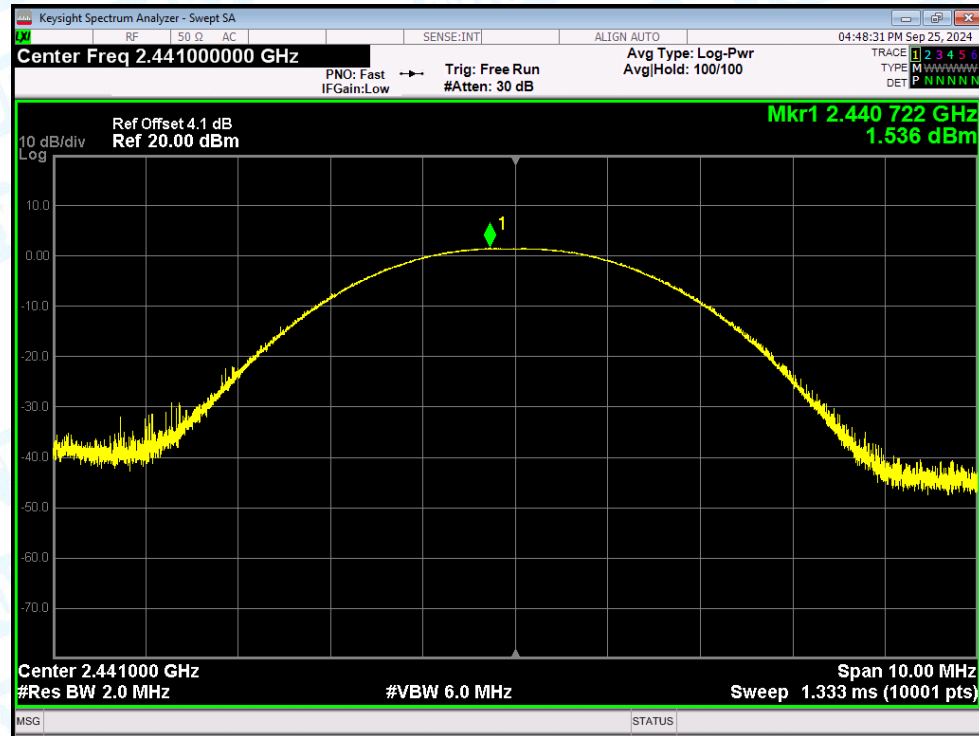
| Condition | Mode  | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|-------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 1.554                 | 21          | Pass    |
| NVNT      | 1-DH1 | 2441            | Ant1    | 1.536                 | 21          | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | 1.432                 | 21          | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | 2.367                 | 21          | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | 2.342                 | 21          | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | 2.243                 | 21          | Pass    |
| NVNT      | 3-DH1 | 2402            | Ant1    | 2.517                 | 21          | Pass    |
| NVNT      | 3-DH1 | 2441            | Ant1    | 2.556                 | 21          | Pass    |
| NVNT      | 3-DH1 | 2480            | Ant1    | 2.517                 | 21          | Pass    |

### Test Graphs

#### Power NVNT 1-DH1 2402MHz Ant1

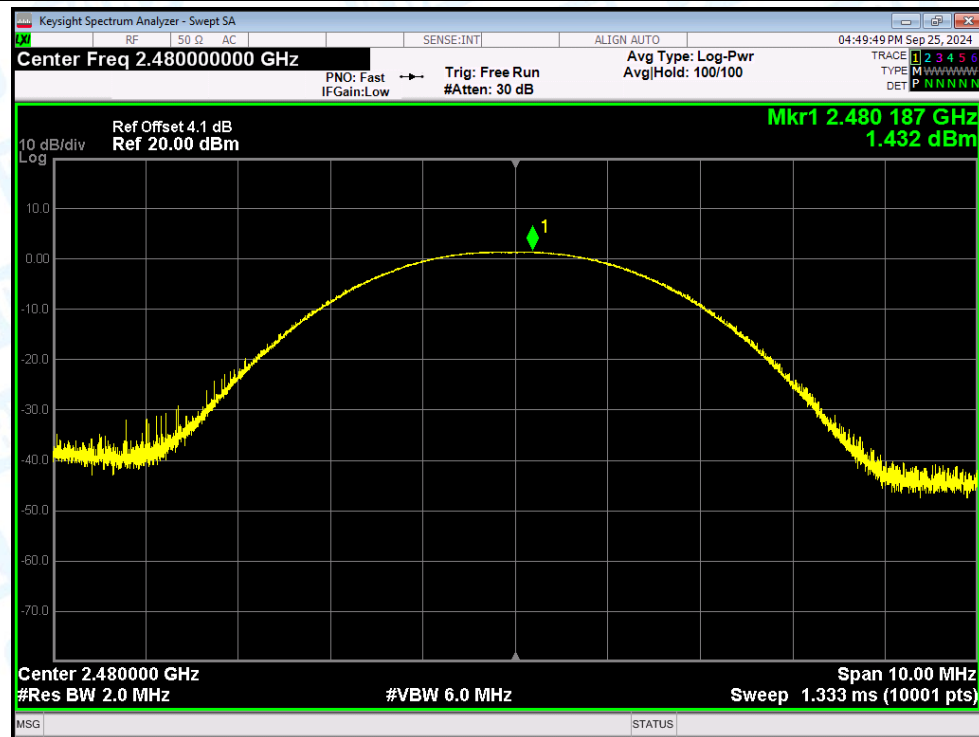


#### Power NVNT 1-DH1 2441MHz Ant1

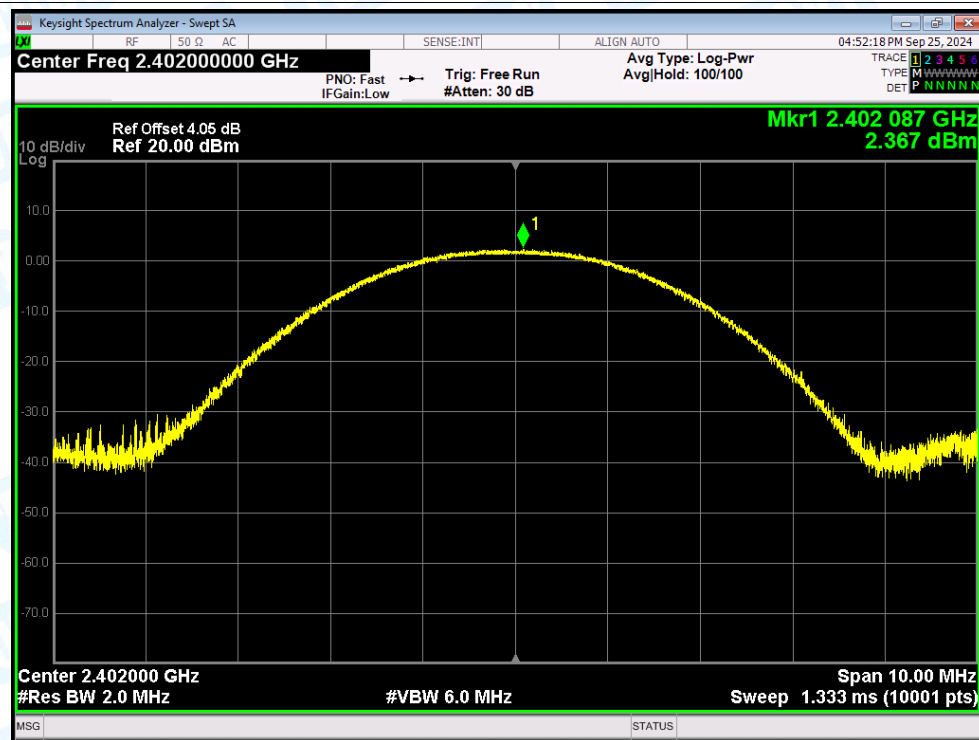




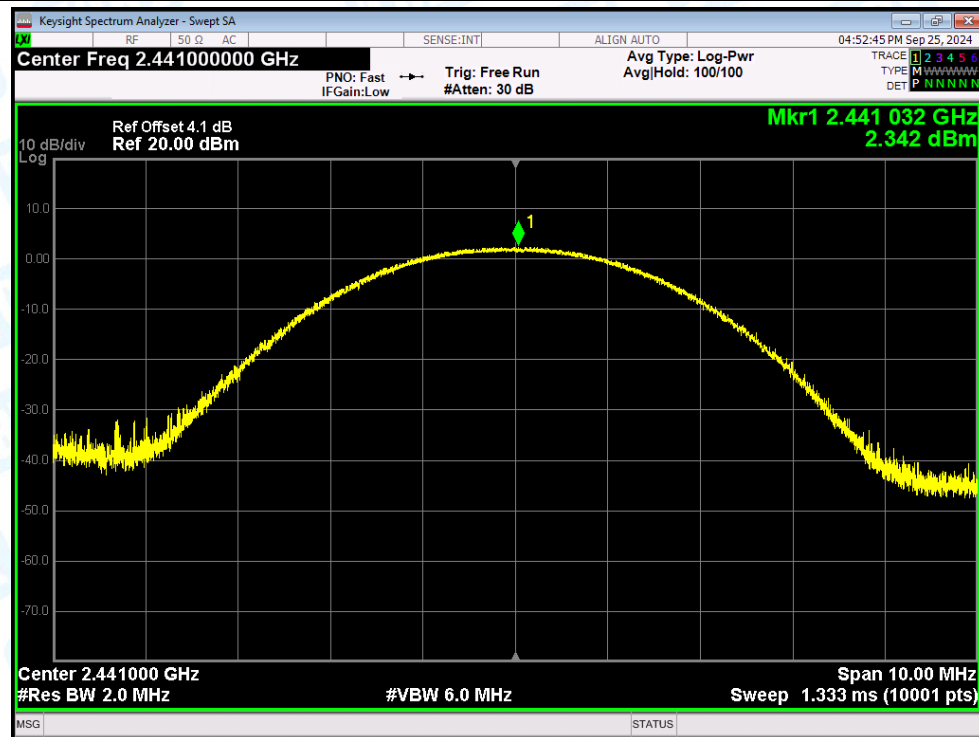
Power NVNT 1-DH1 2480MHz Ant1



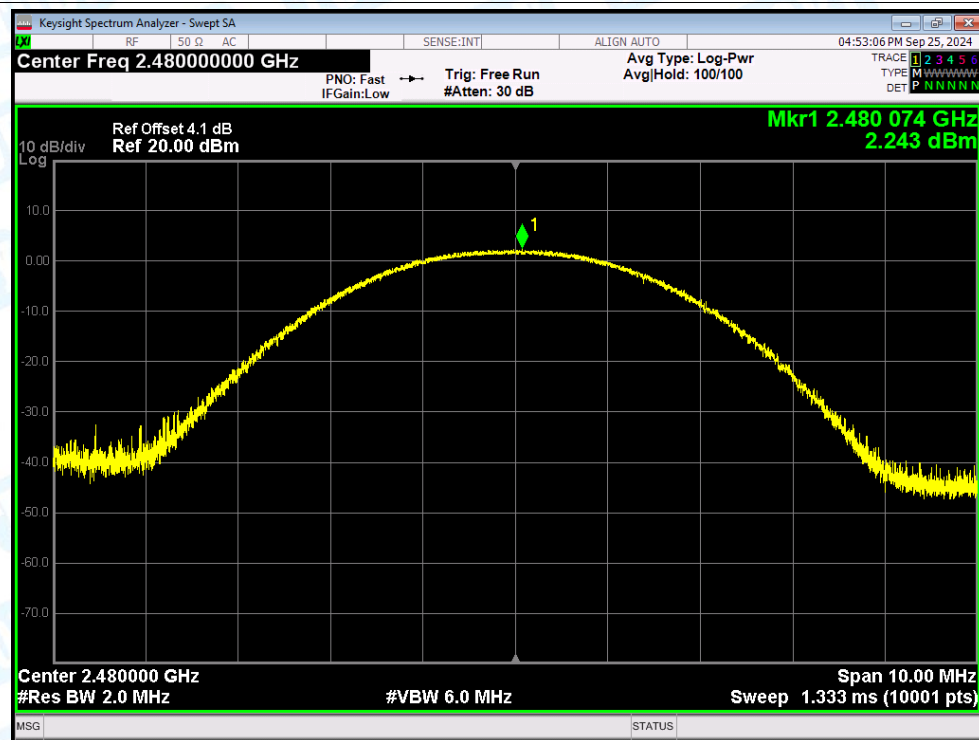
Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1

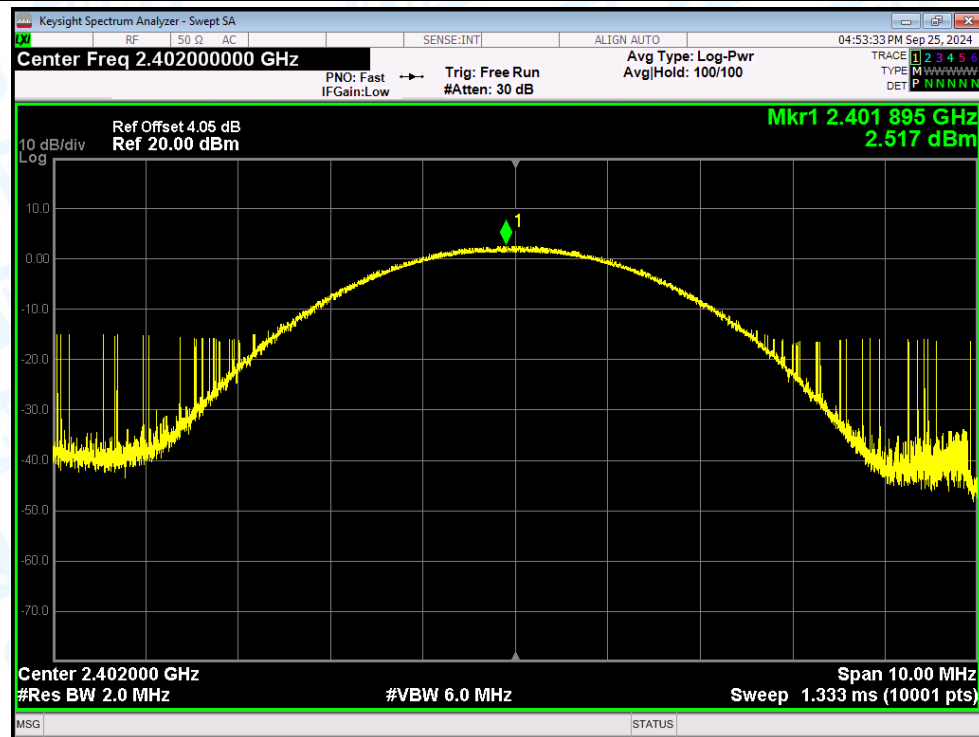


Power NVNT 2-DH1 2480MHz Ant1

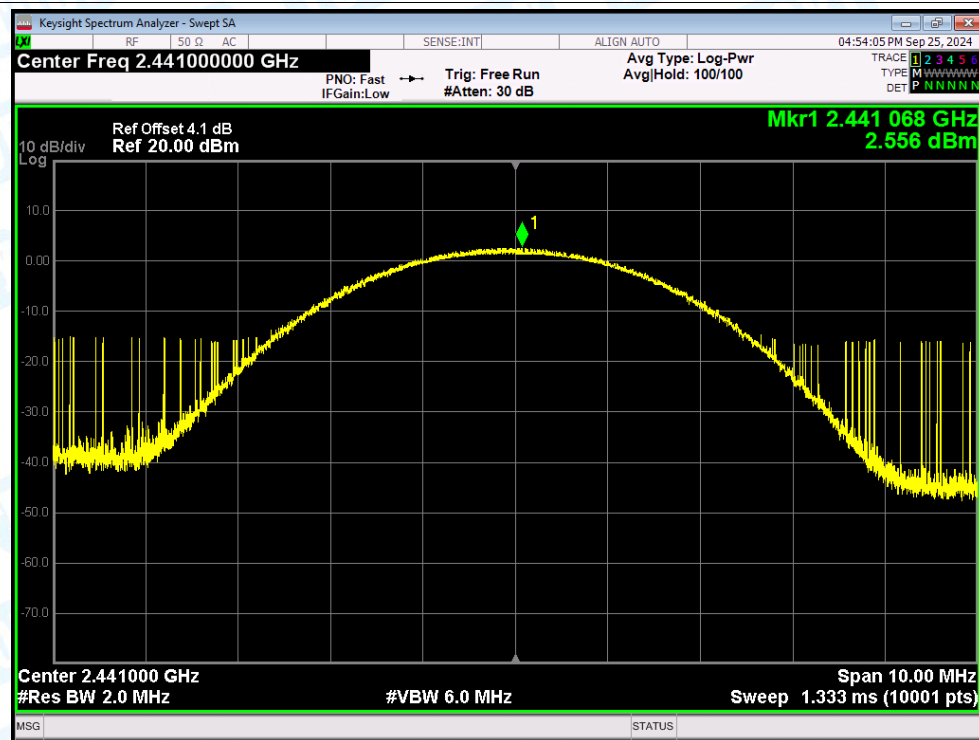


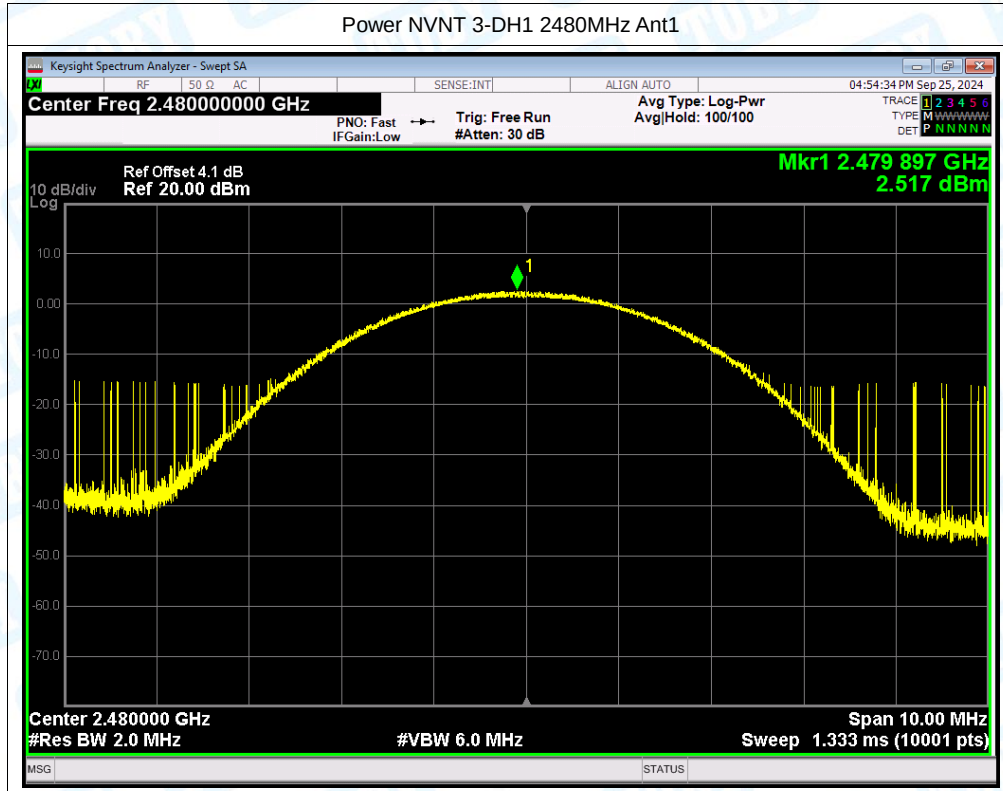


Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1





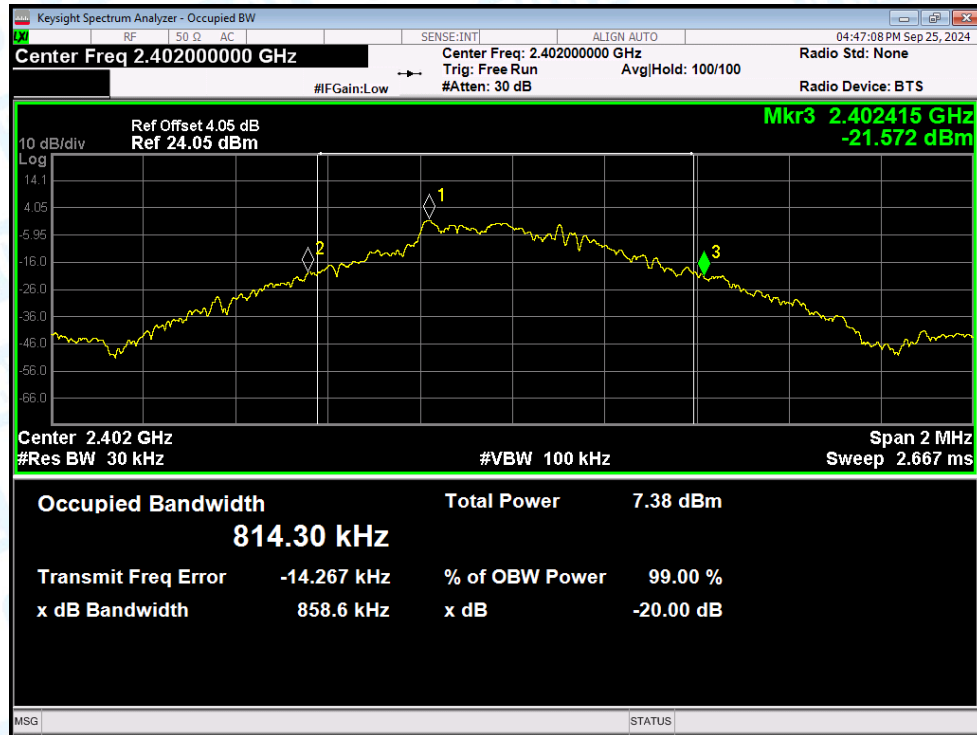


### 3. -20dB Bandwidth

| Condition | Mode  | Frequency (MHz) | Antenna | -20 dB Bandwidth (MHz) | Limit -20 dB Bandwidth (MHz) | Verdict |
|-----------|-------|-----------------|---------|------------------------|------------------------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 0.86                   | ----                         | Pass    |
| NVNT      | 1-DH1 | 2441            | Ant1    | 0.86                   | ----                         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | 0.85                   | ----                         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | 1.22                   | ----                         | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | 1.25                   | ----                         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | 1.26                   | ----                         | Pass    |
| NVNT      | 3-DH1 | 2402            | Ant1    | 1.25                   | ----                         | Pass    |
| NVNT      | 3-DH1 | 2441            | Ant1    | 1.21                   | ----                         | Pass    |
| NVNT      | 3-DH1 | 2480            | Ant1    | 1.21                   | ----                         | Pass    |

# Test Graphs

## -20dB Bandwidth NVNT 1-DH1 2402MHz Ant1

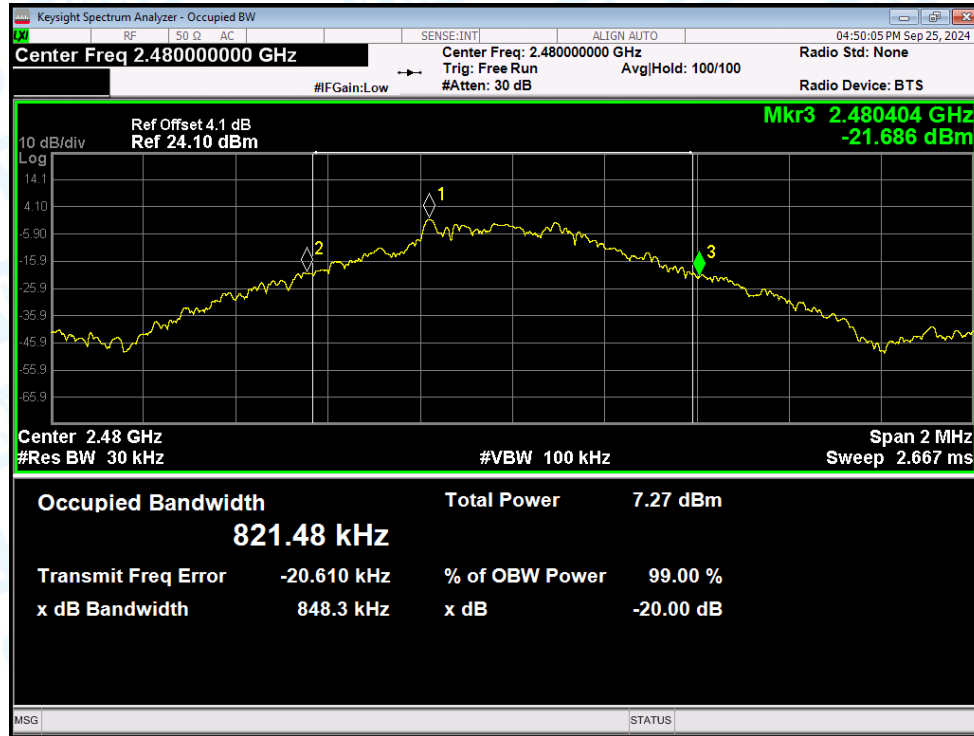


## -20dB Bandwidth NVNT 1-DH1 2441MHz Ant1

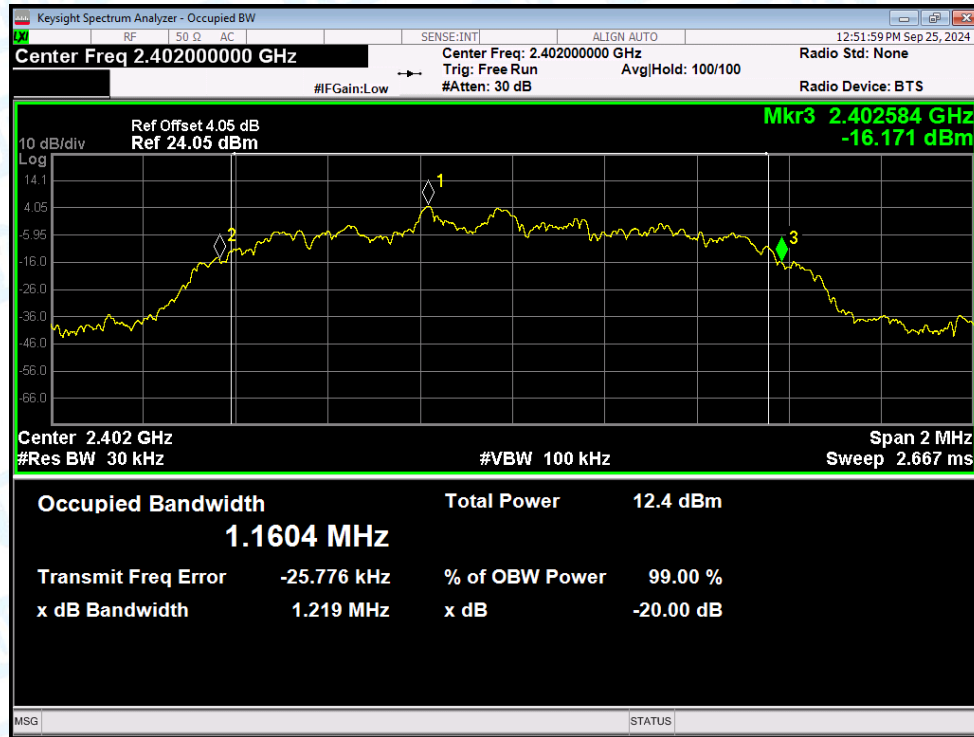




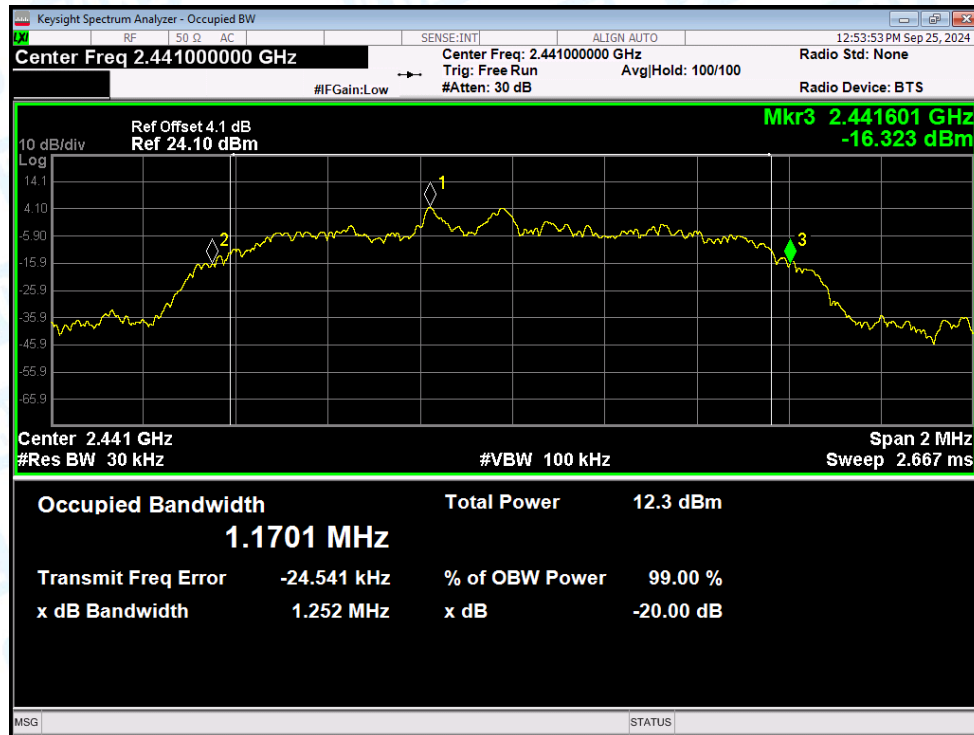
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



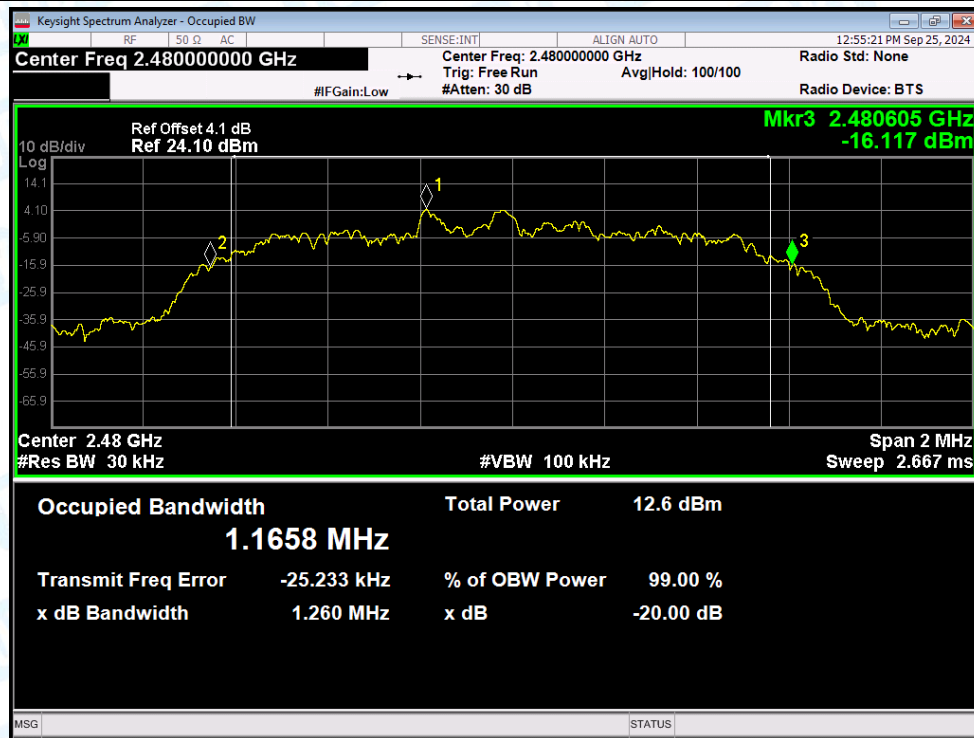
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1

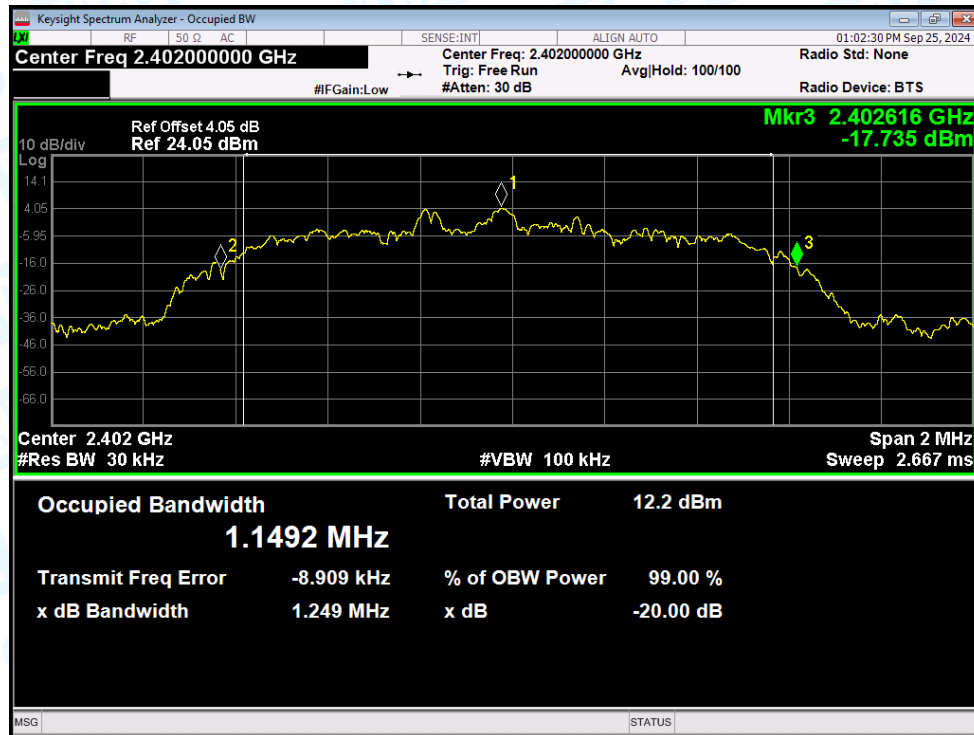


-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

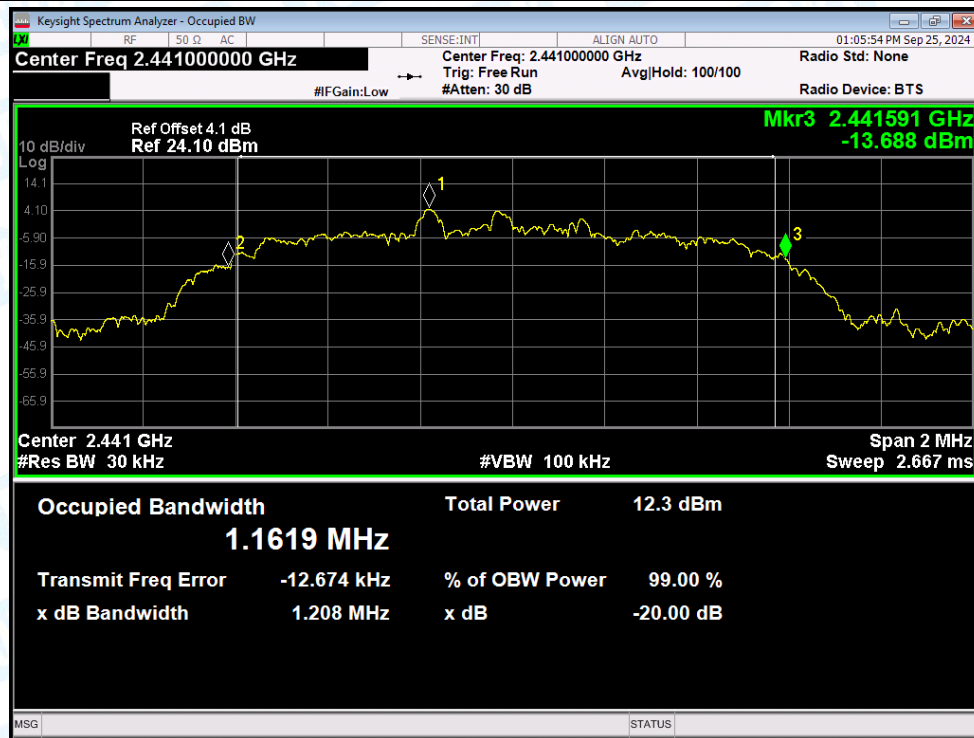


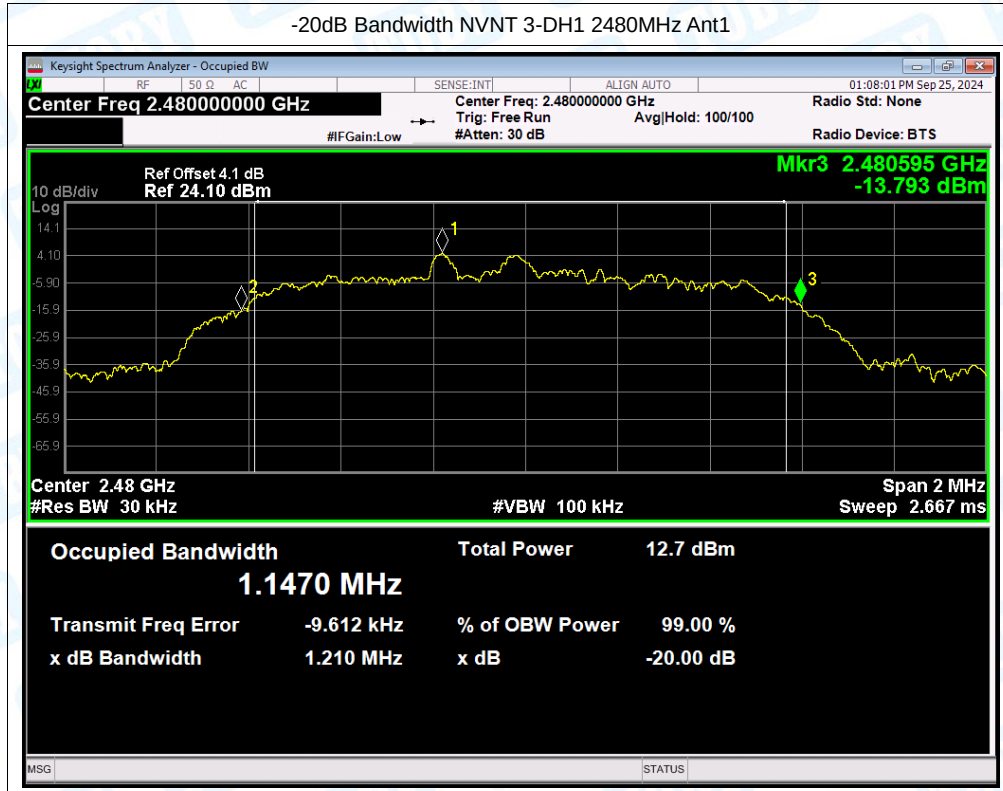


-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1





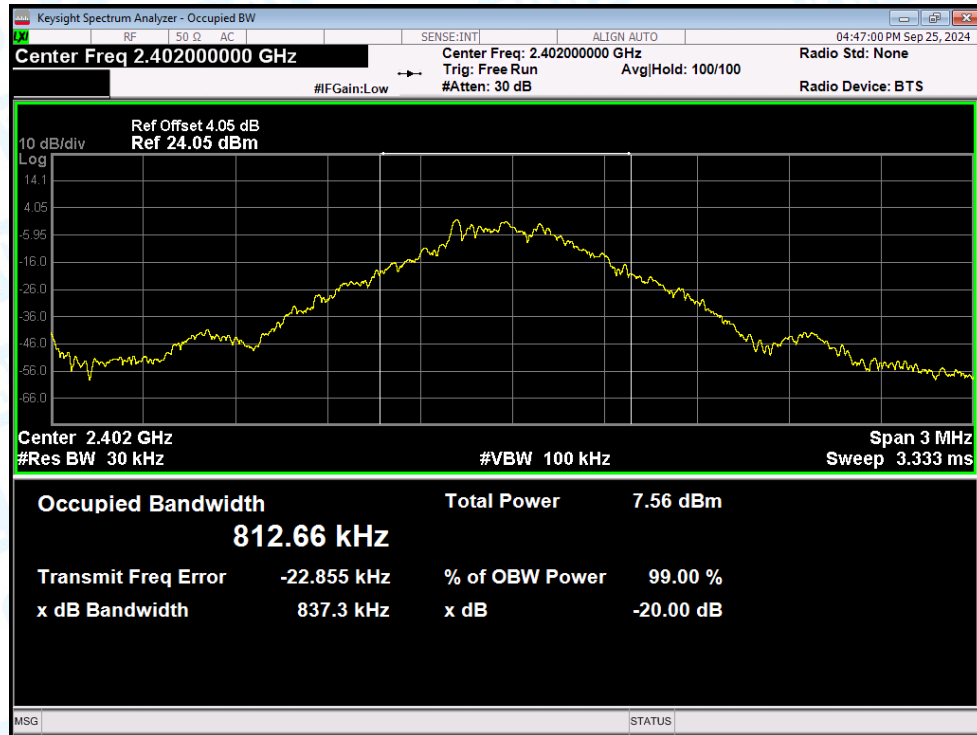


## 4. Occupied Channel Bandwidth

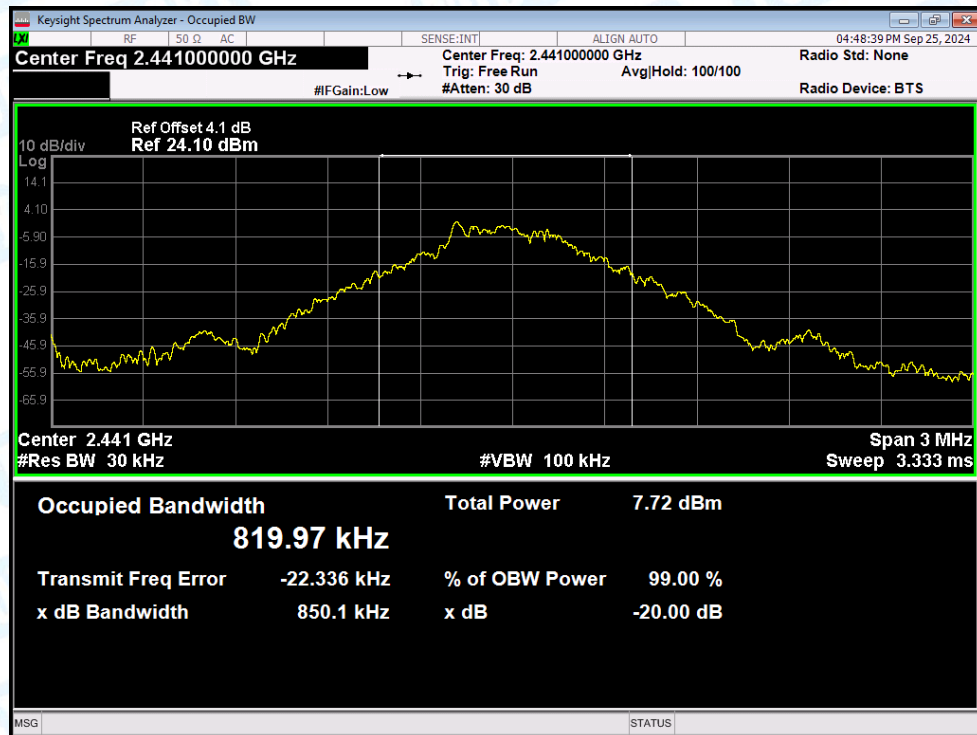
| Condition | Mode  | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|-------|-----------------|---------|---------------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 0.813         |
| NVNT      | 1-DH1 | 2441            | Ant1    | 0.82          |
| NVNT      | 1-DH1 | 2480            | Ant1    | 0.81          |
| NVNT      | 2-DH1 | 2402            | Ant1    | 1.163         |
| NVNT      | 2-DH1 | 2441            | Ant1    | 1.158         |
| NVNT      | 2-DH1 | 2480            | Ant1    | 1.163         |
| NVNT      | 3-DH1 | 2402            | Ant1    | 1.149         |
| NVNT      | 3-DH1 | 2441            | Ant1    | 1.159         |
| NVNT      | 3-DH1 | 2480            | Ant1    | 1.163         |

## Test Graphs

### OBW NVNT 1-DH1 2402MHz Ant1

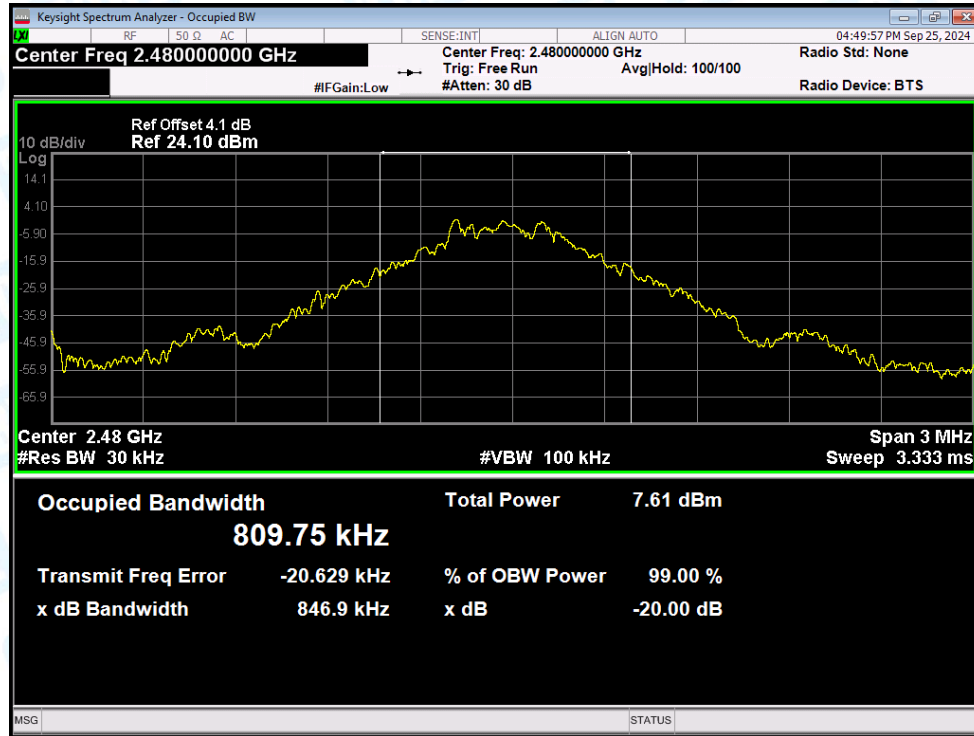


### OBW NVNT 1-DH1 2441MHz Ant1

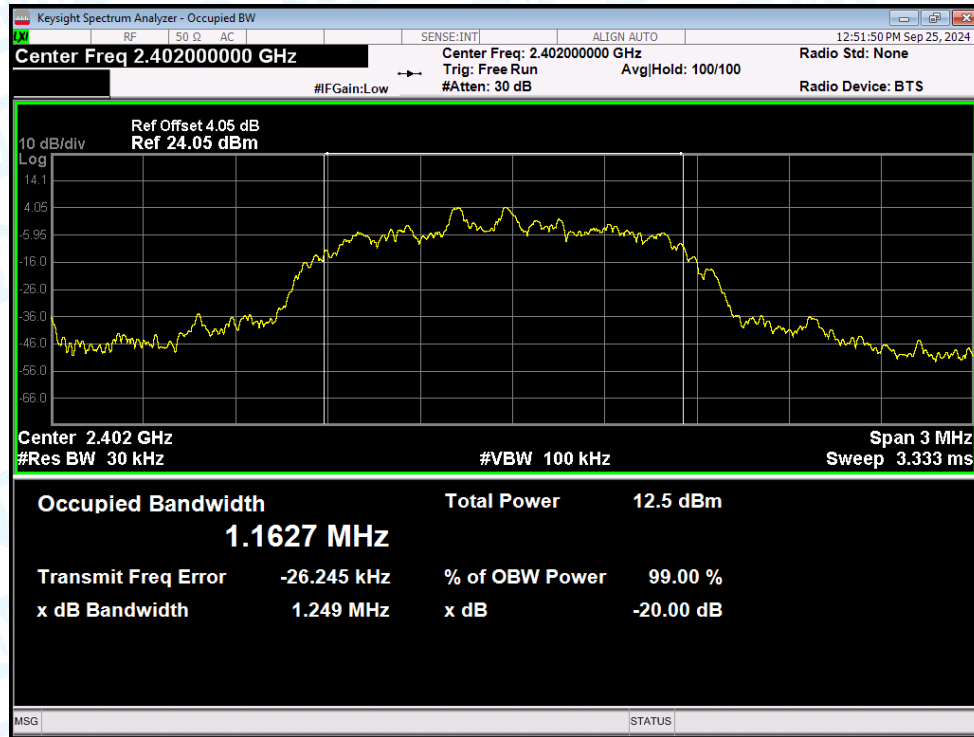




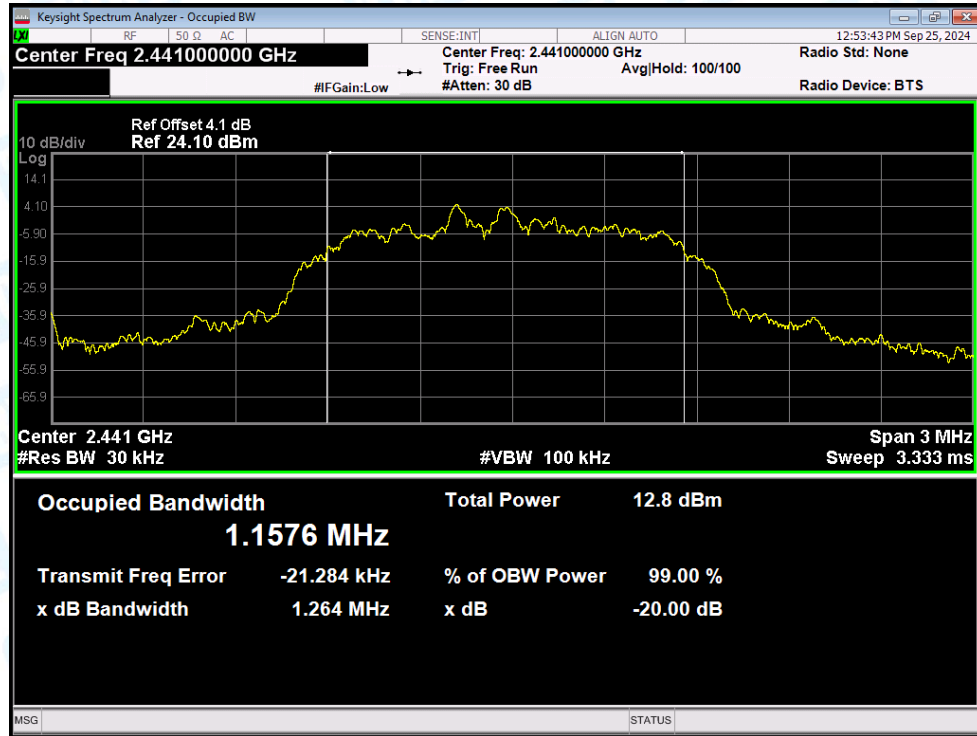
OBW NVNT 1-DH1 2480MHz Ant1



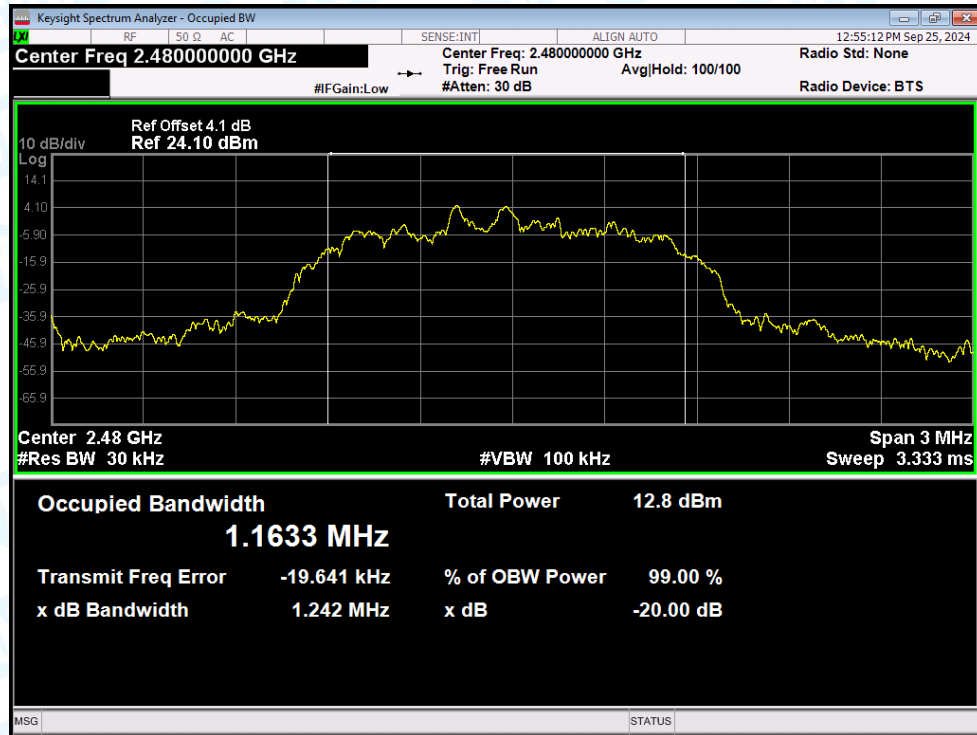
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1

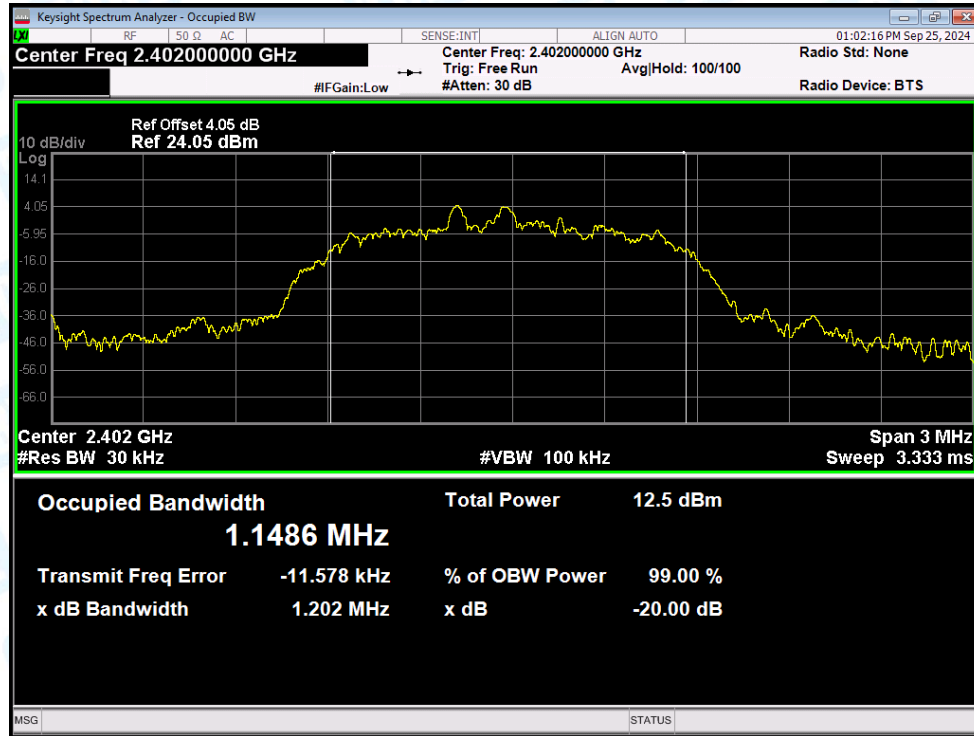


OBW NVNT 2-DH1 2480MHz Ant1

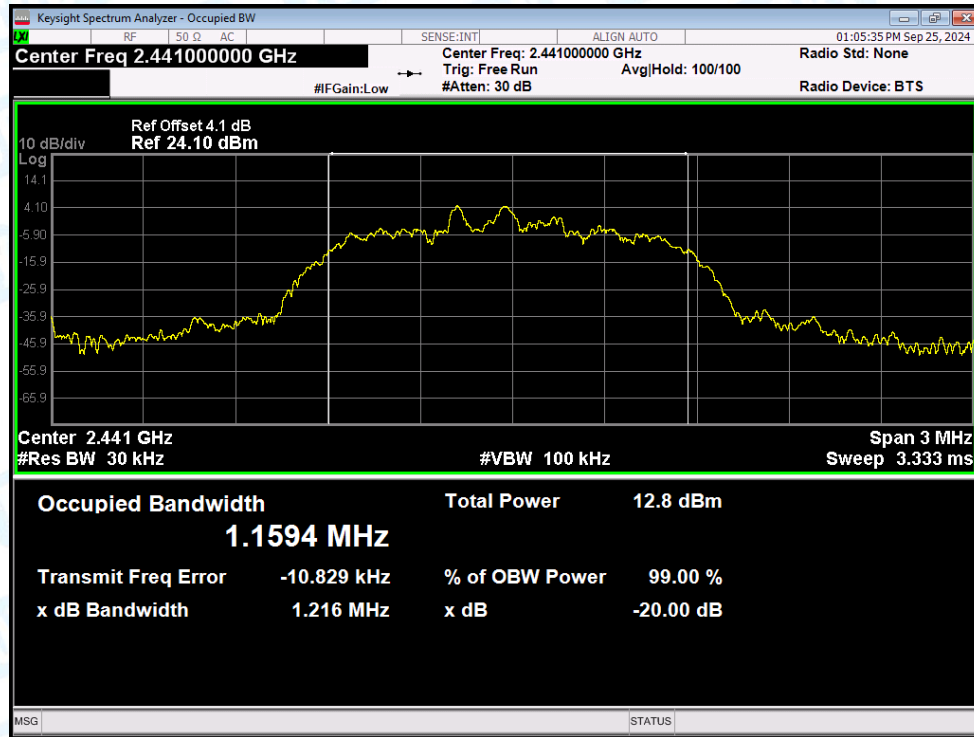


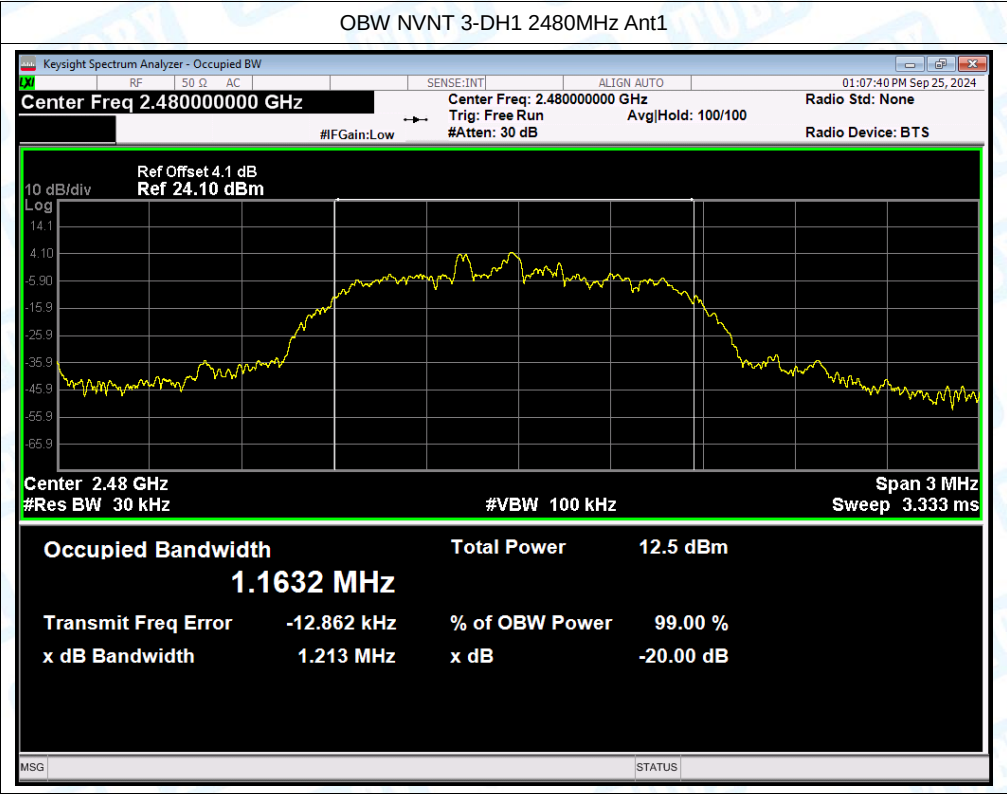


OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





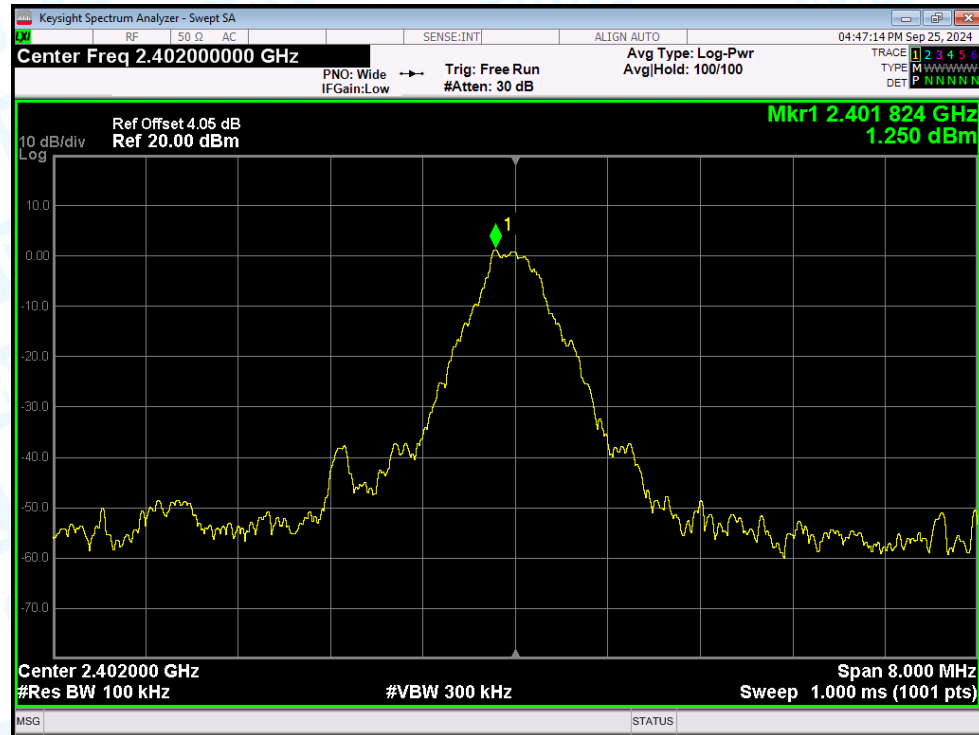


## 5. Band Edge

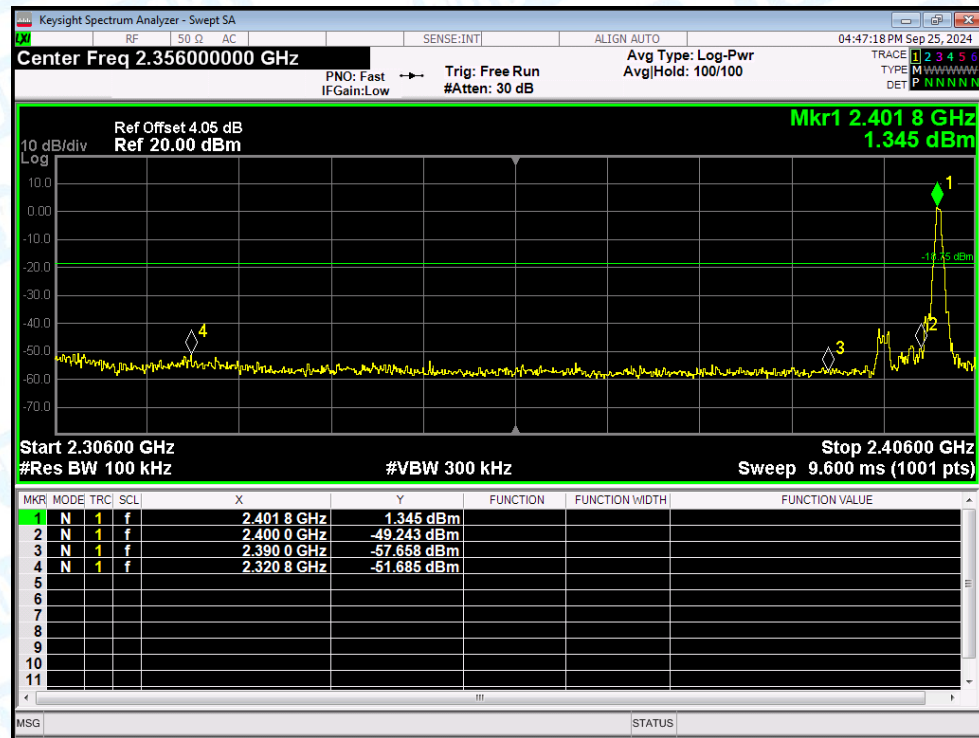
| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | -52.94          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | -52.32          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | -55.45          | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | -55.77          | -20         | Pass    |
| NVNT      | 3-DH1 | 2402            | Ant1    | No-Hopping   | -48.97          | -20         | Pass    |
| NVNT      | 3-DH1 | 2480            | Ant1    | No-Hopping   | -41.64          | -20         | Pass    |

### Test Graphs

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

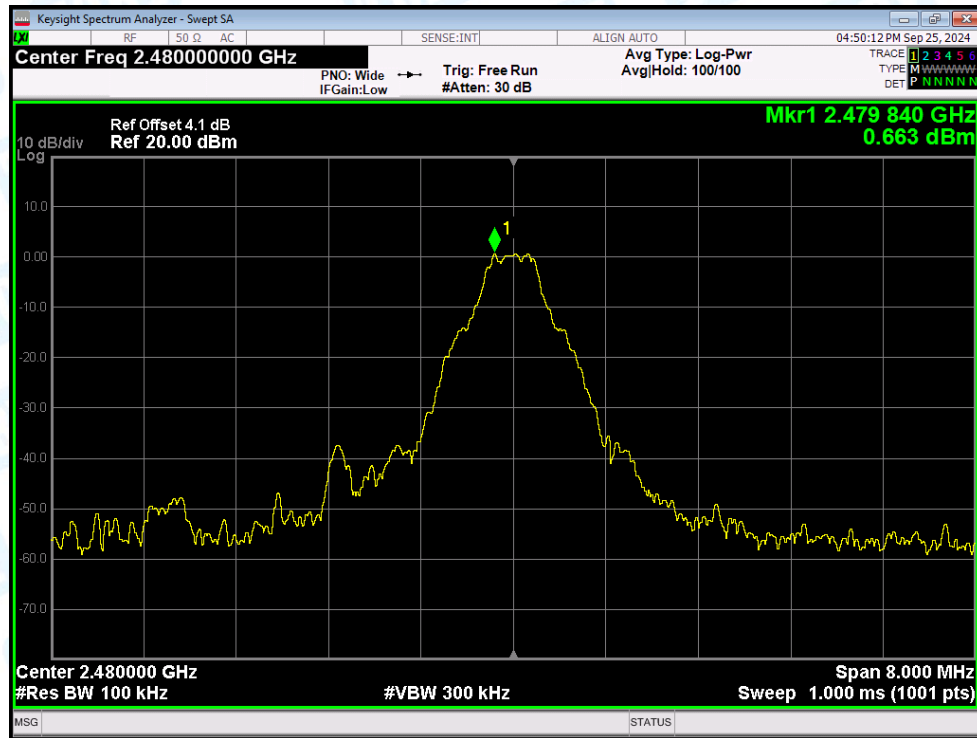


#### Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

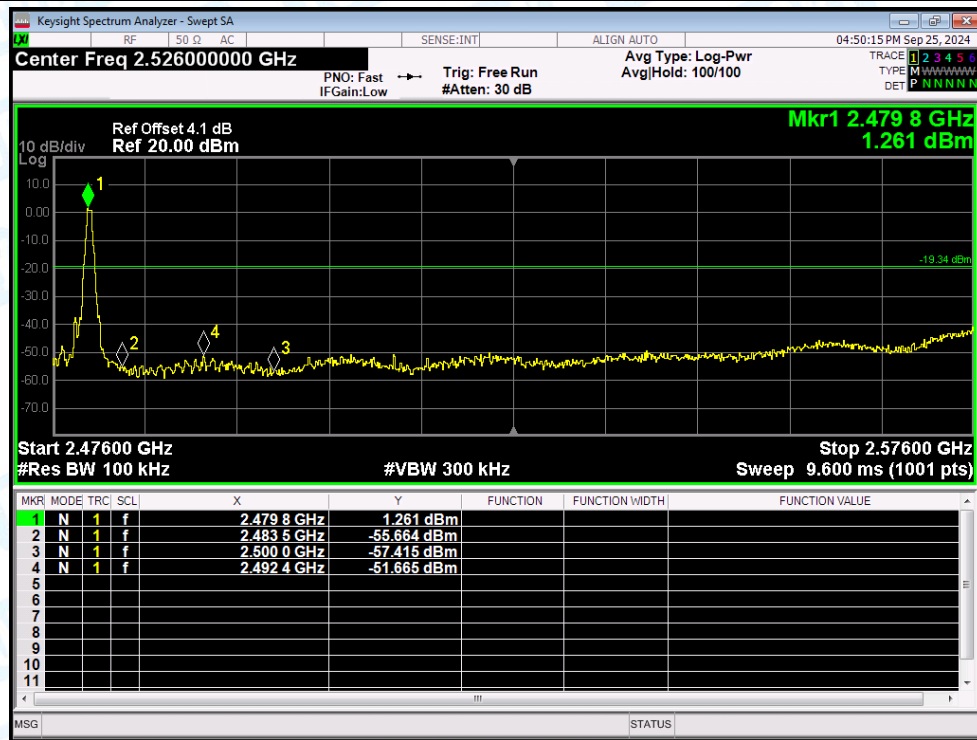




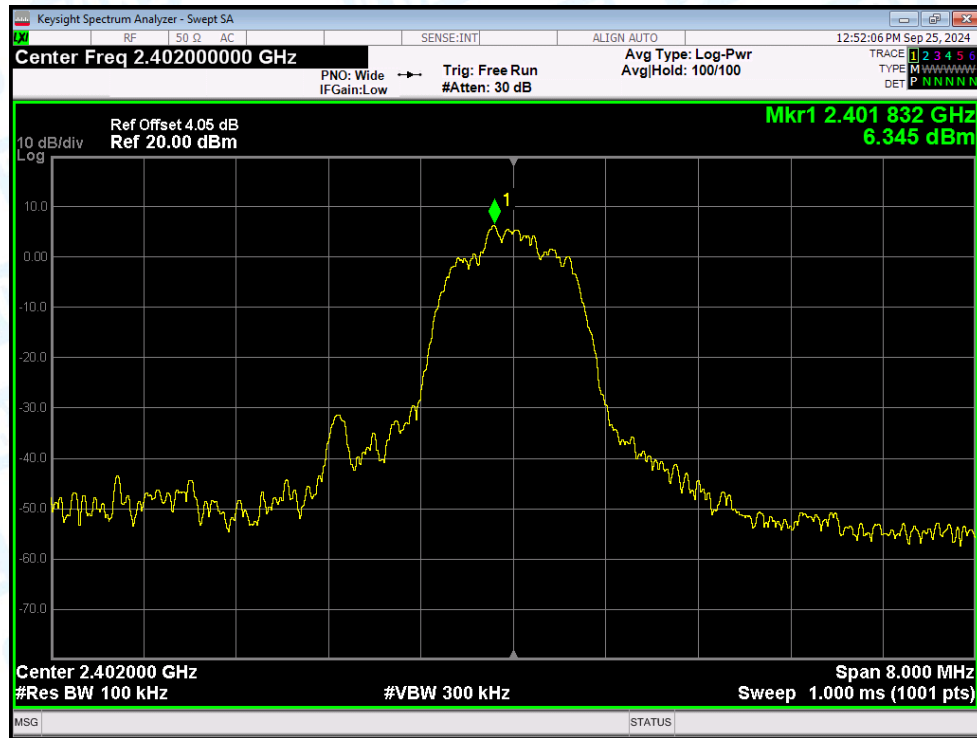
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



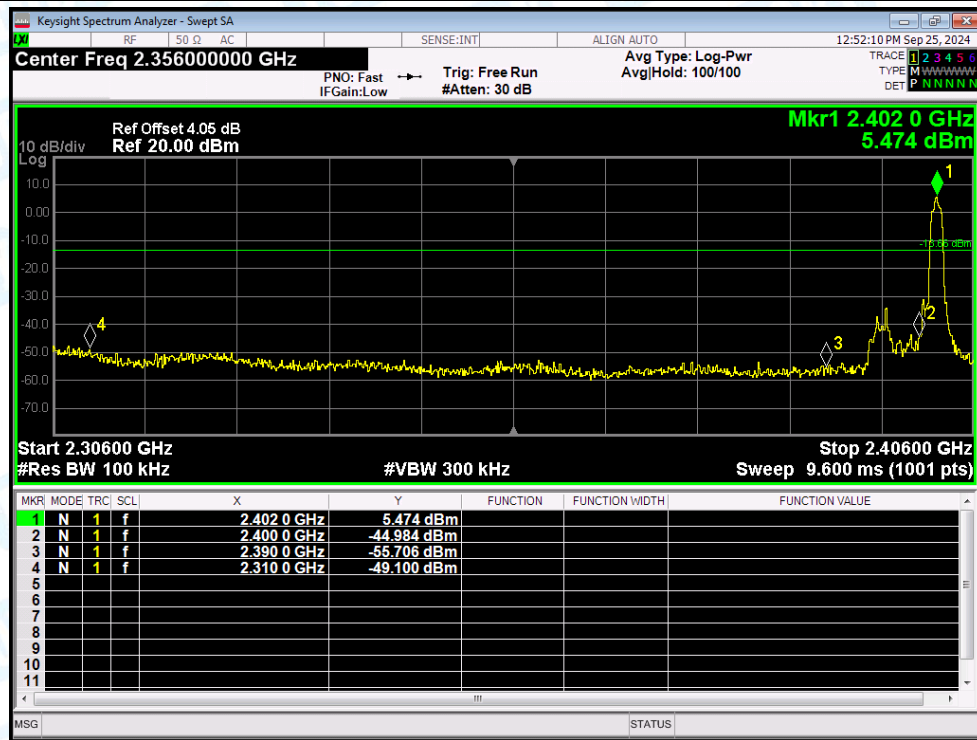
Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



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



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

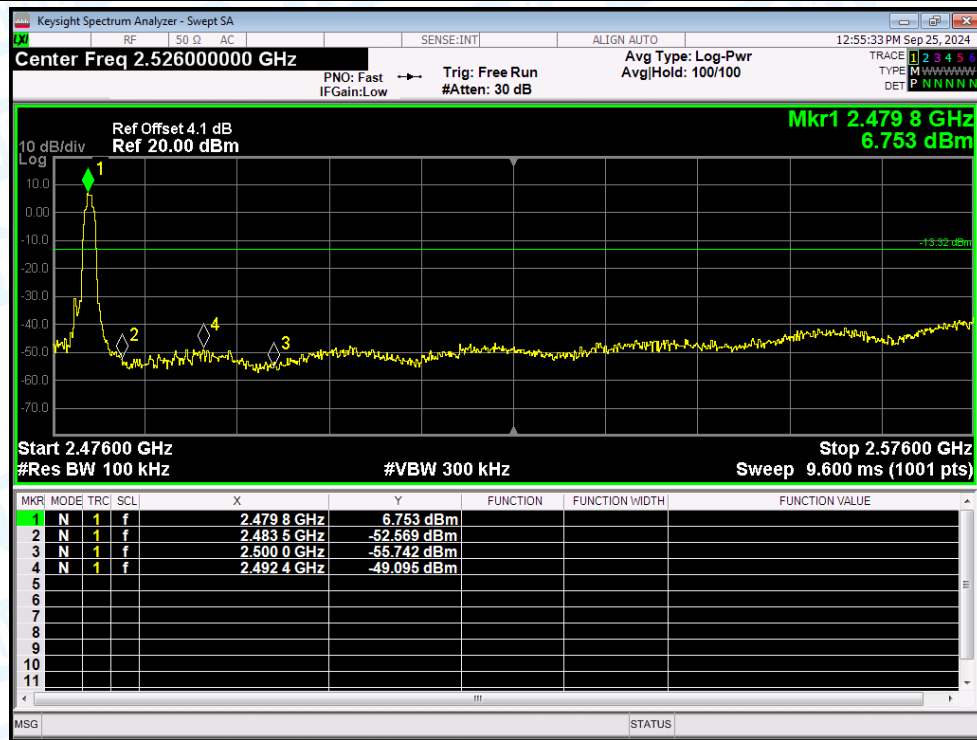




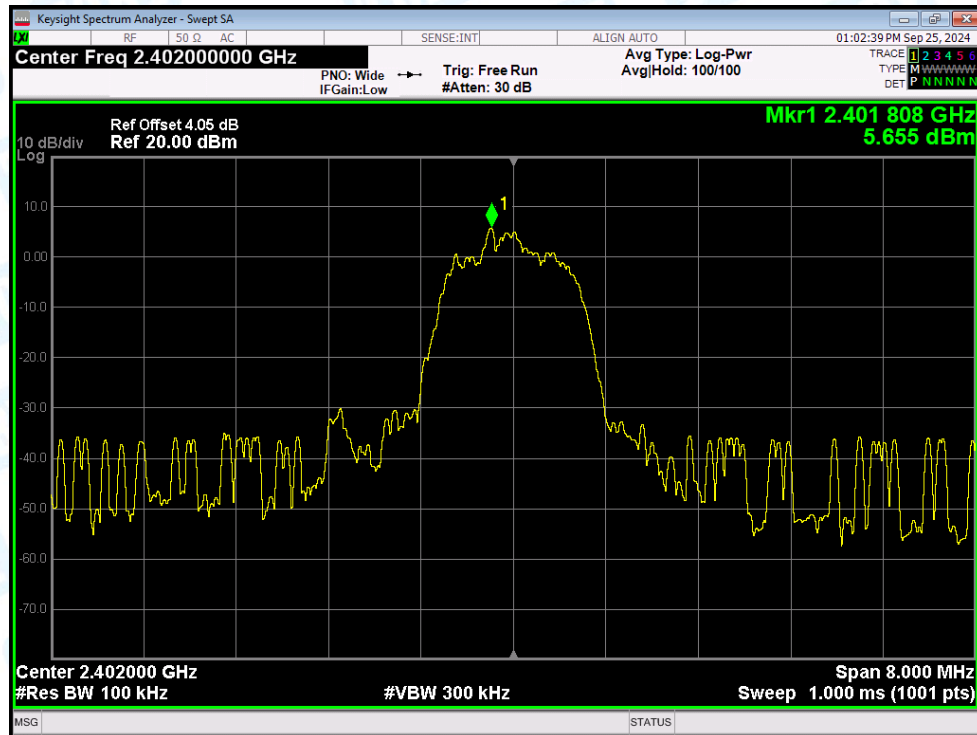
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref



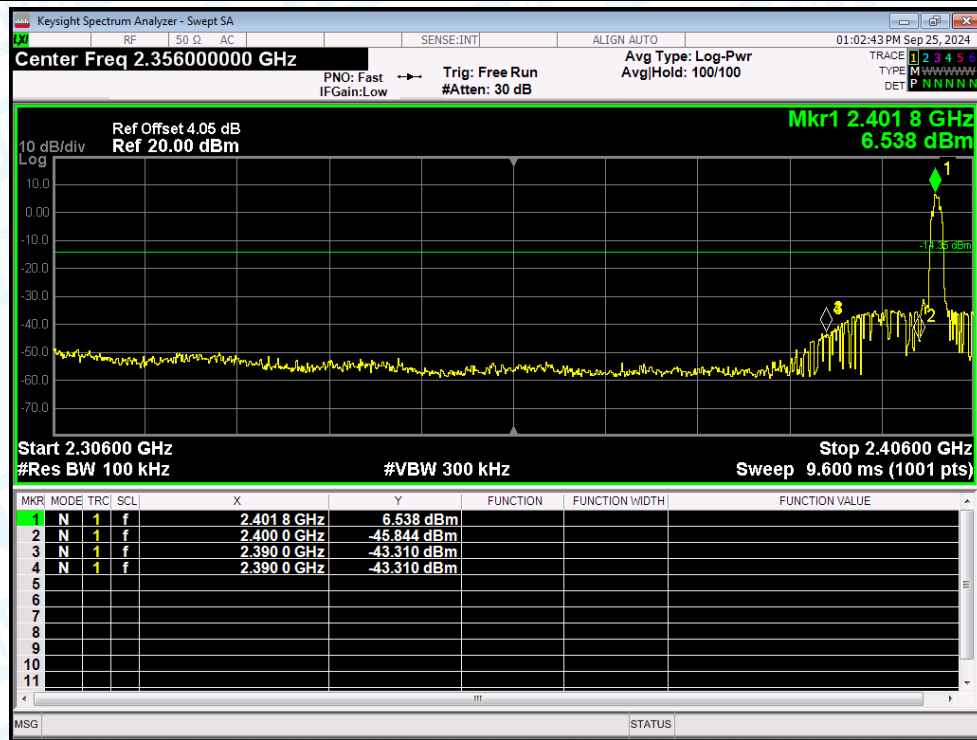
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



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

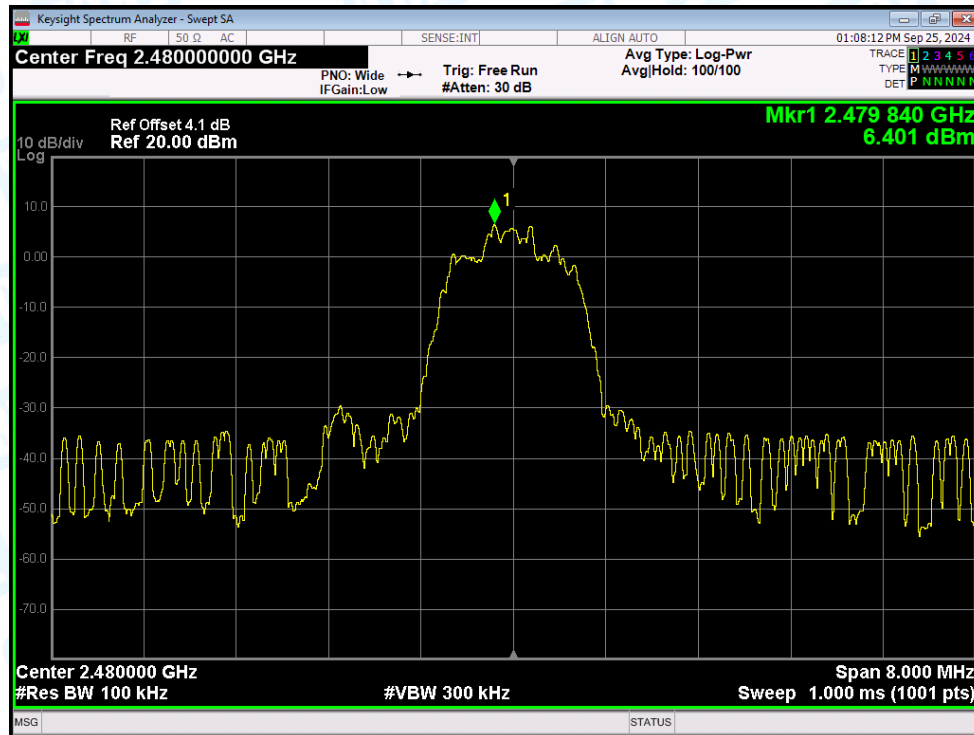


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission

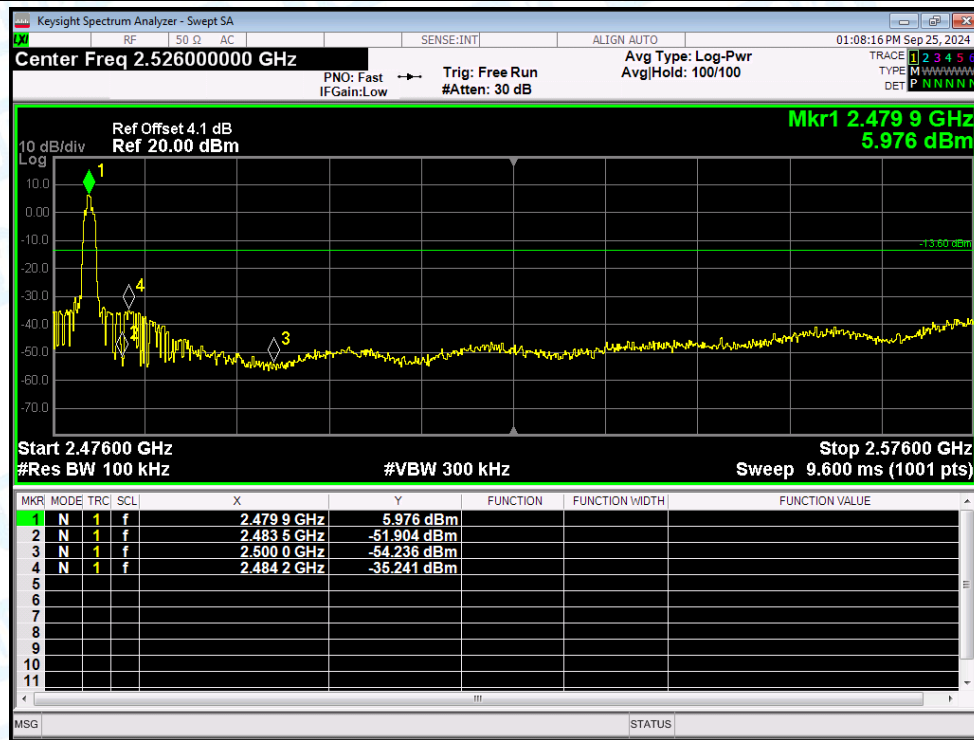




Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



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



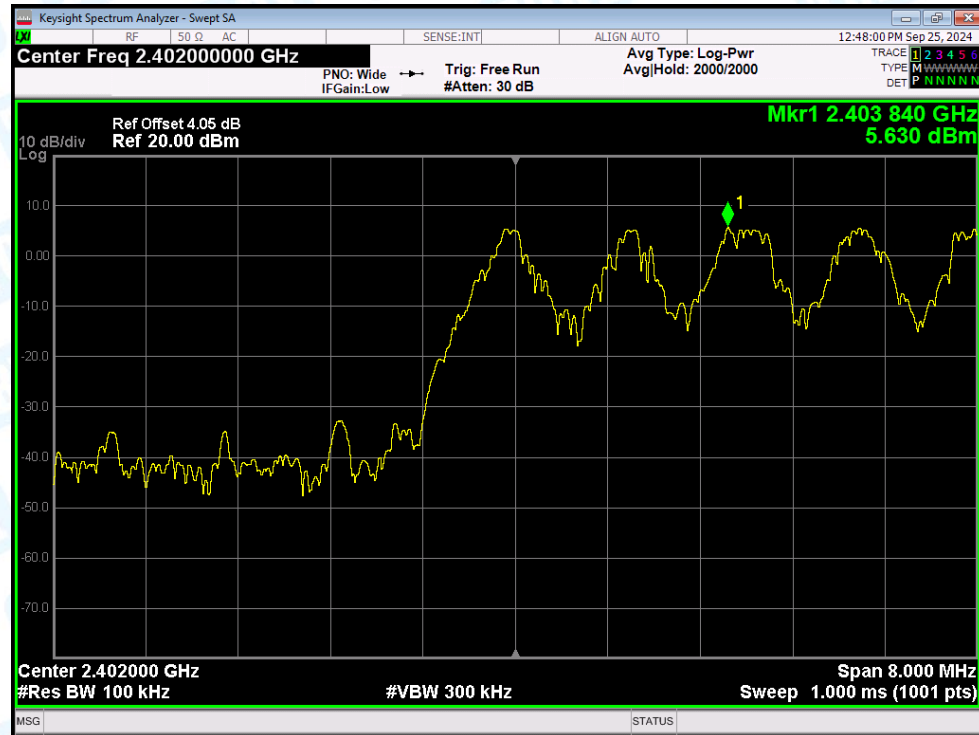
## 6. Band Edge(Hopping)

| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | Hopping      | -50.67          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | Hopping      | -44.72          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | Hopping      | -51.4           | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | Hopping      | -45.1           | -20         | Pass    |
| NVNT      | 3-DH1 | 2402            | Ant1    | Hopping      | -49.67          | -20         | Pass    |
| NVNT      | 3-DH1 | 2480            | Ant1    | Hopping      | -41.8           | -20         | Pass    |

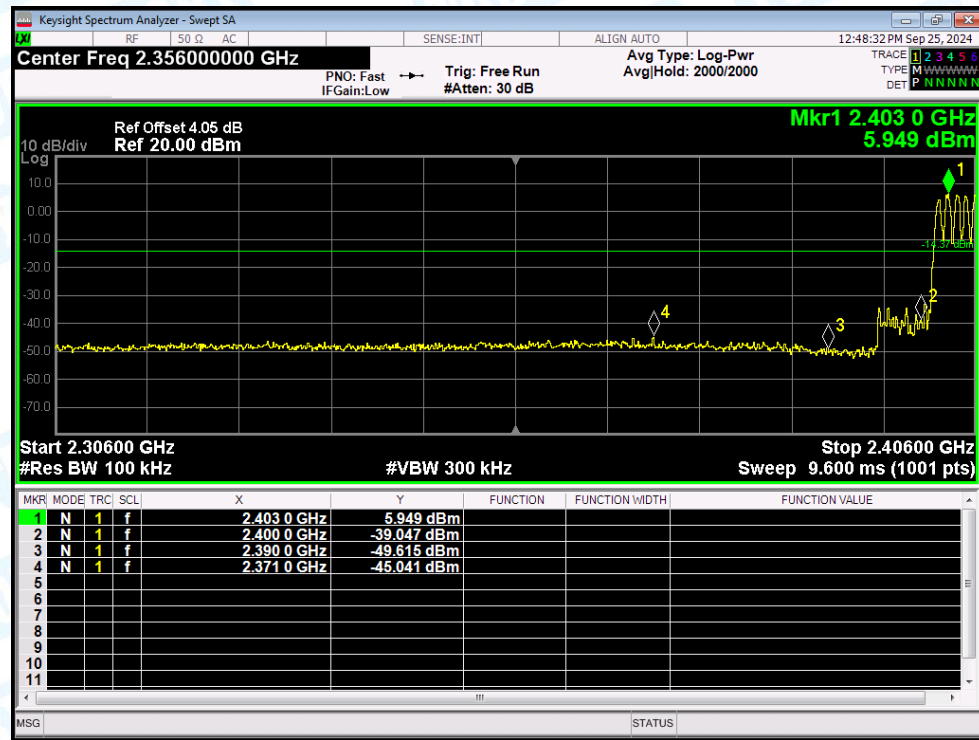


# Test Graphs

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



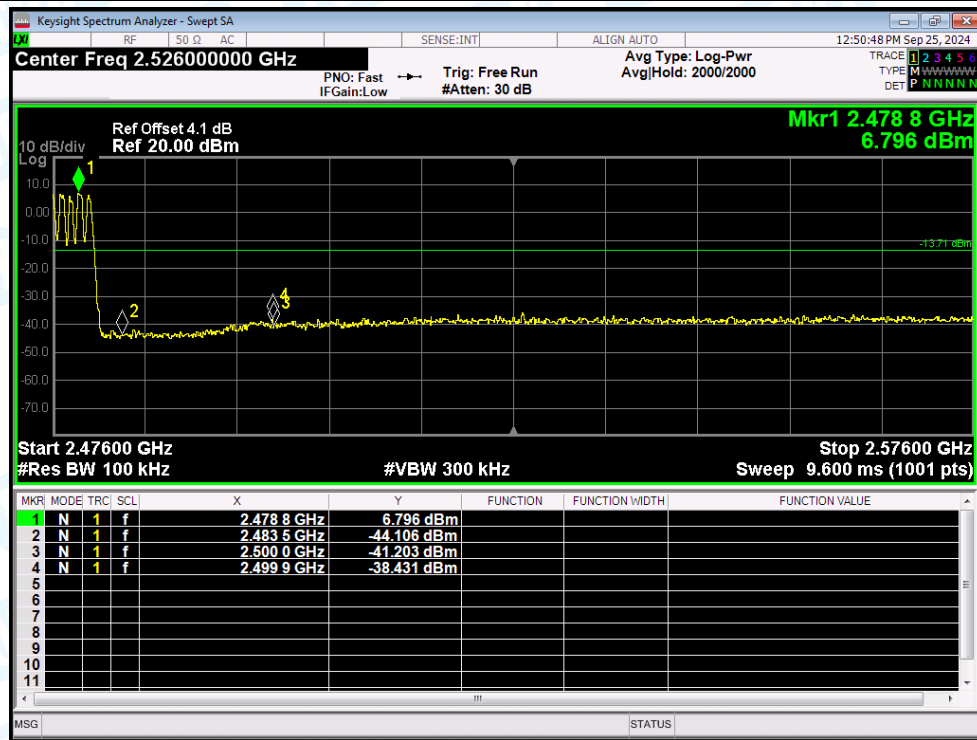
## Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



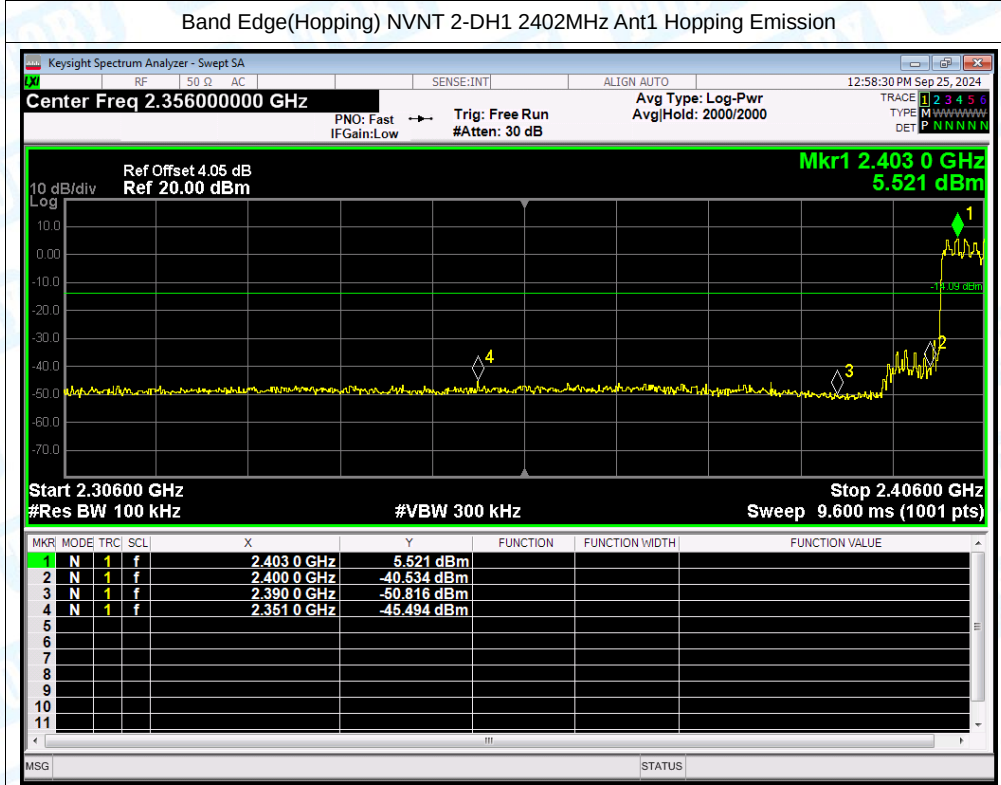
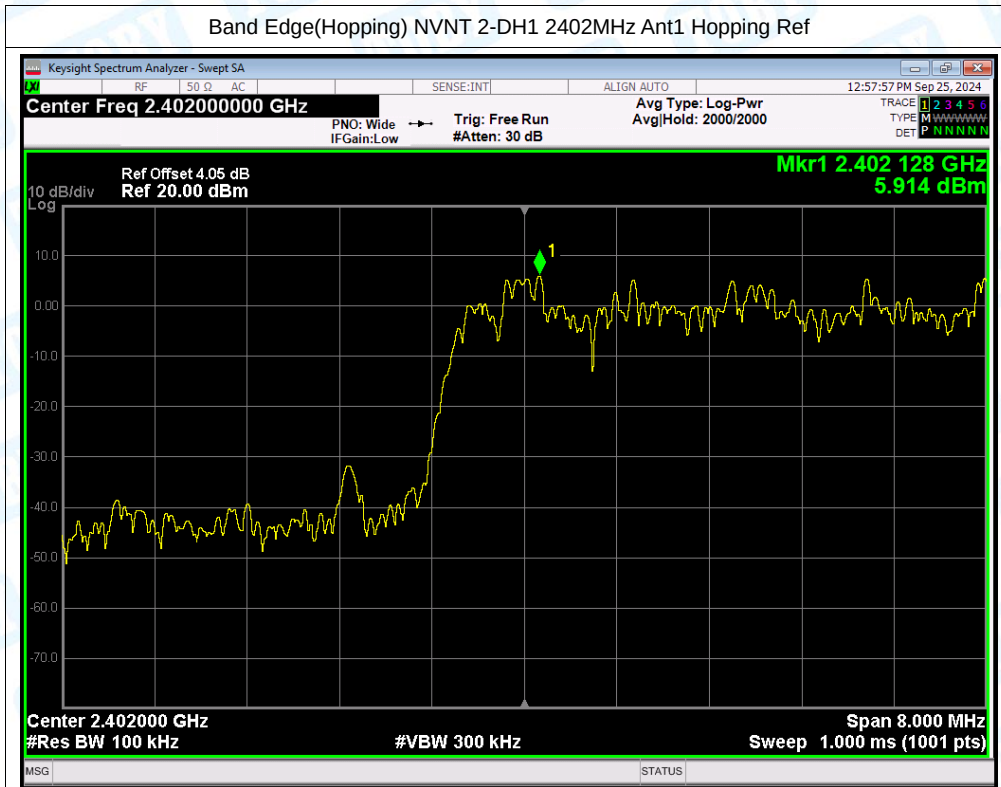
### Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref

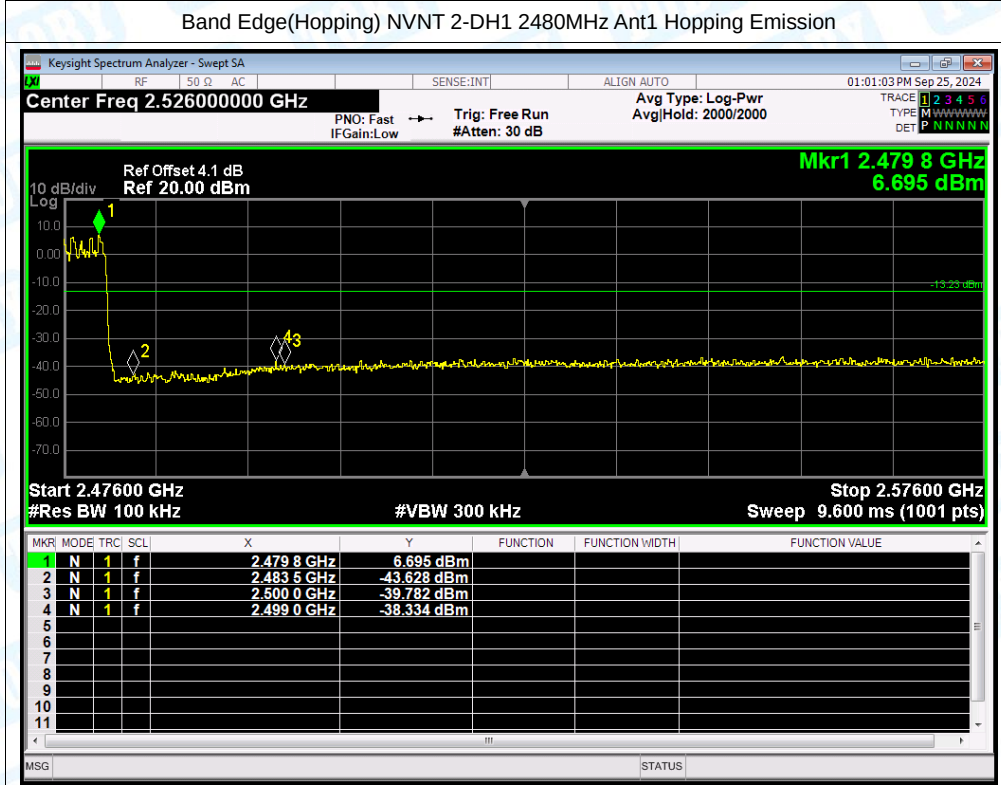
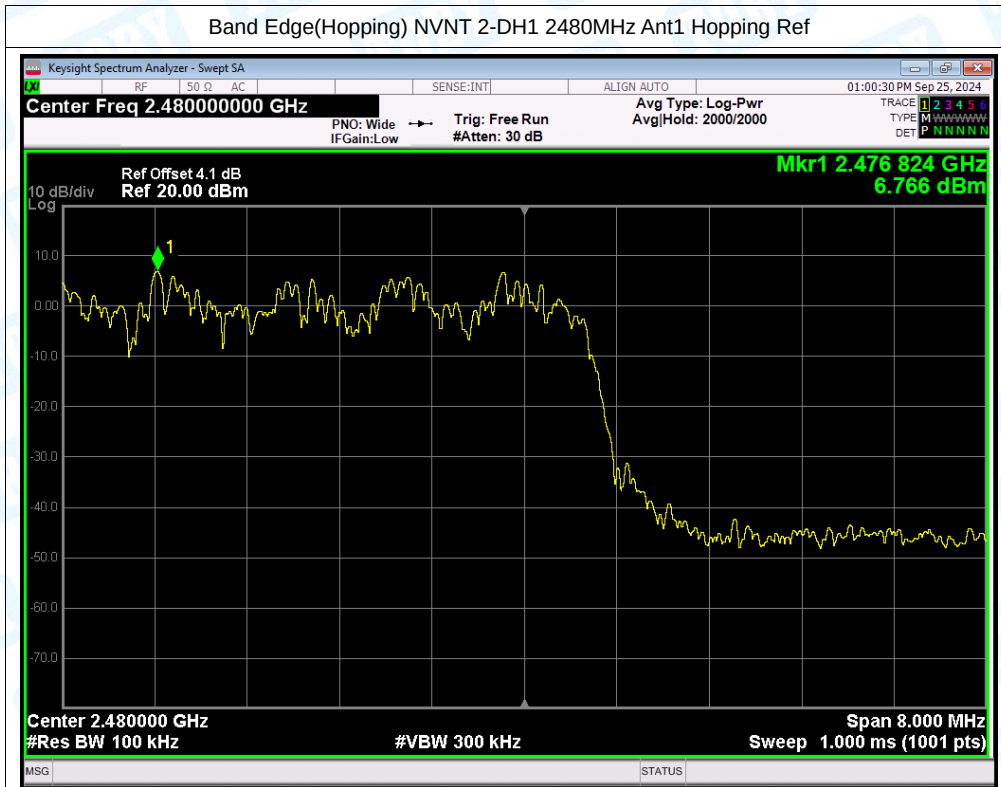


### Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission

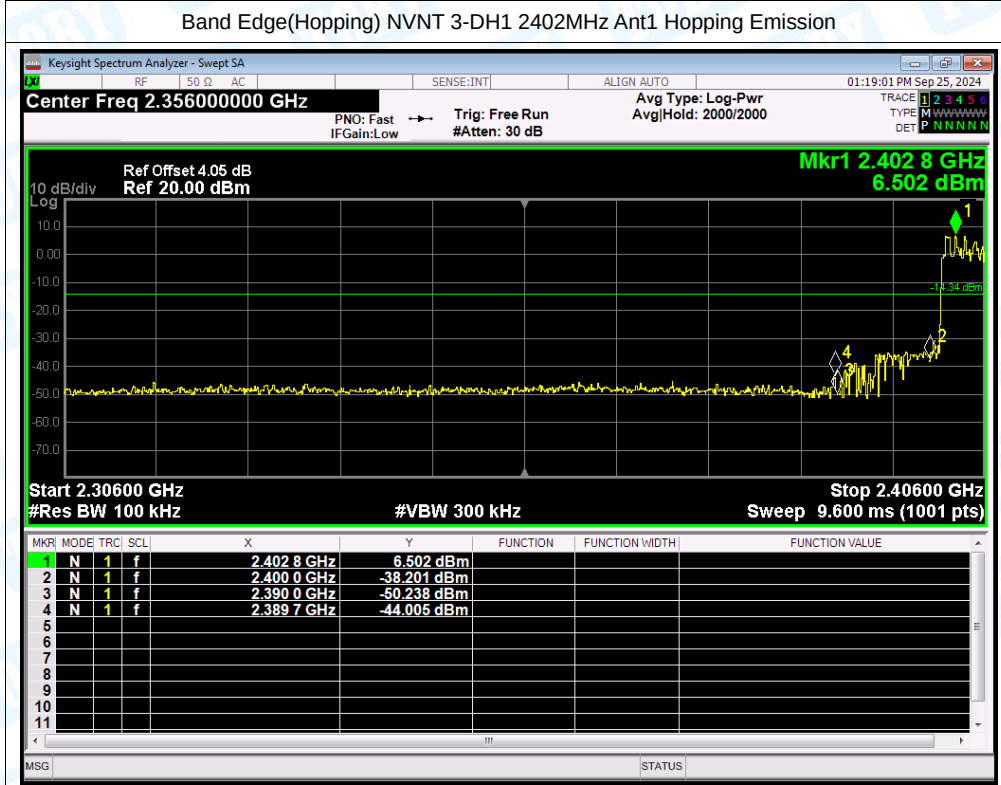
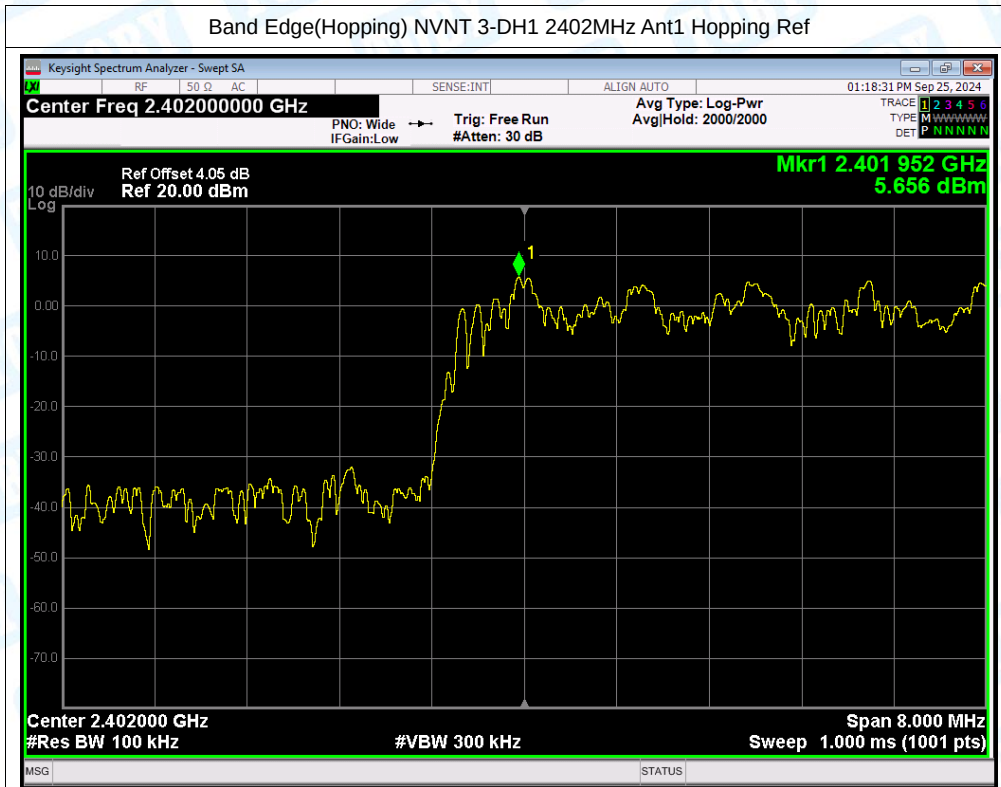




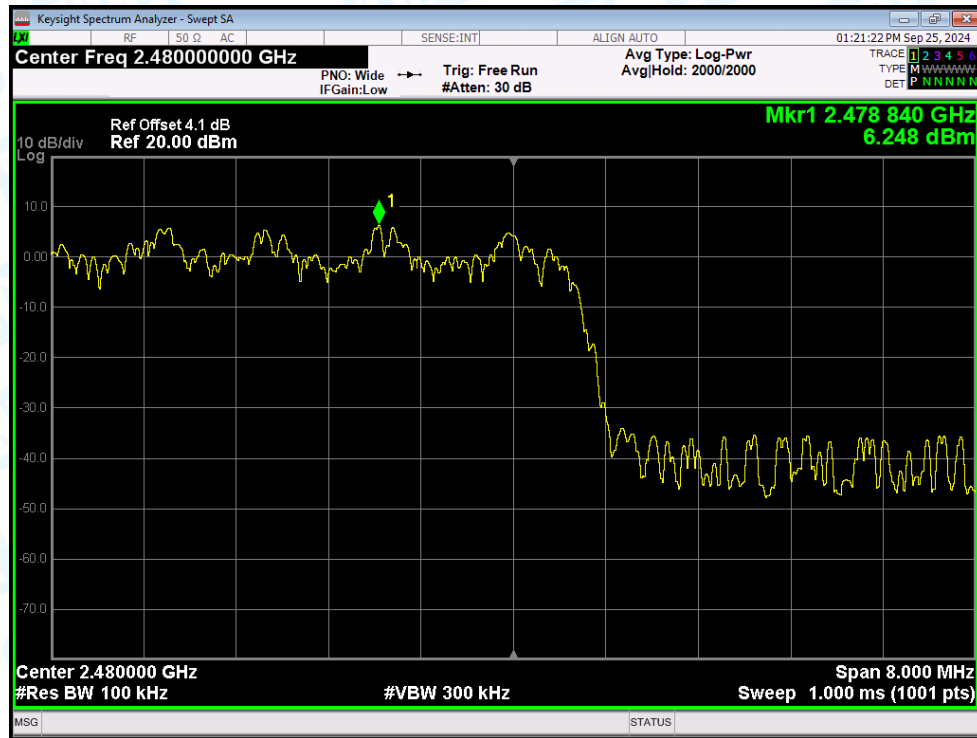




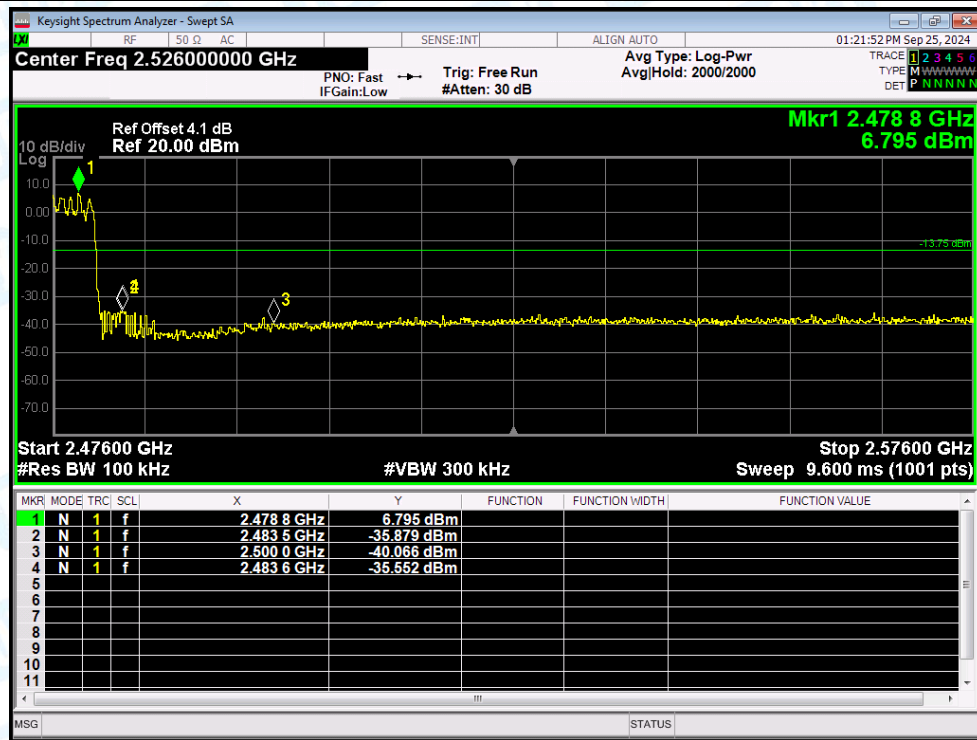




### Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref



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



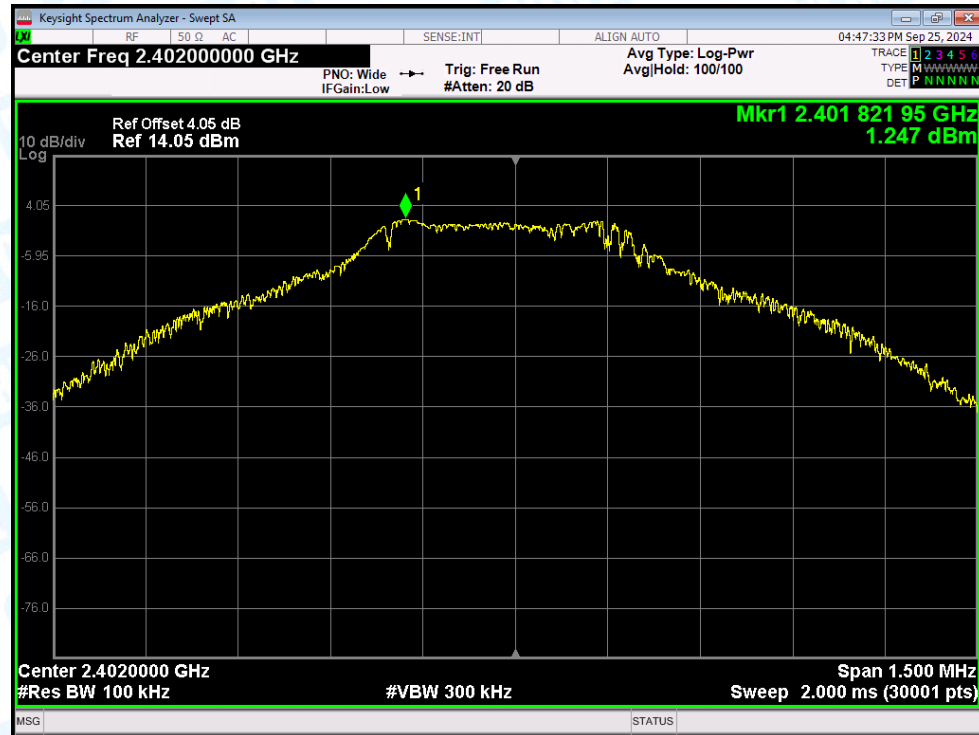


## 7. Conducted RF Spurious Emission

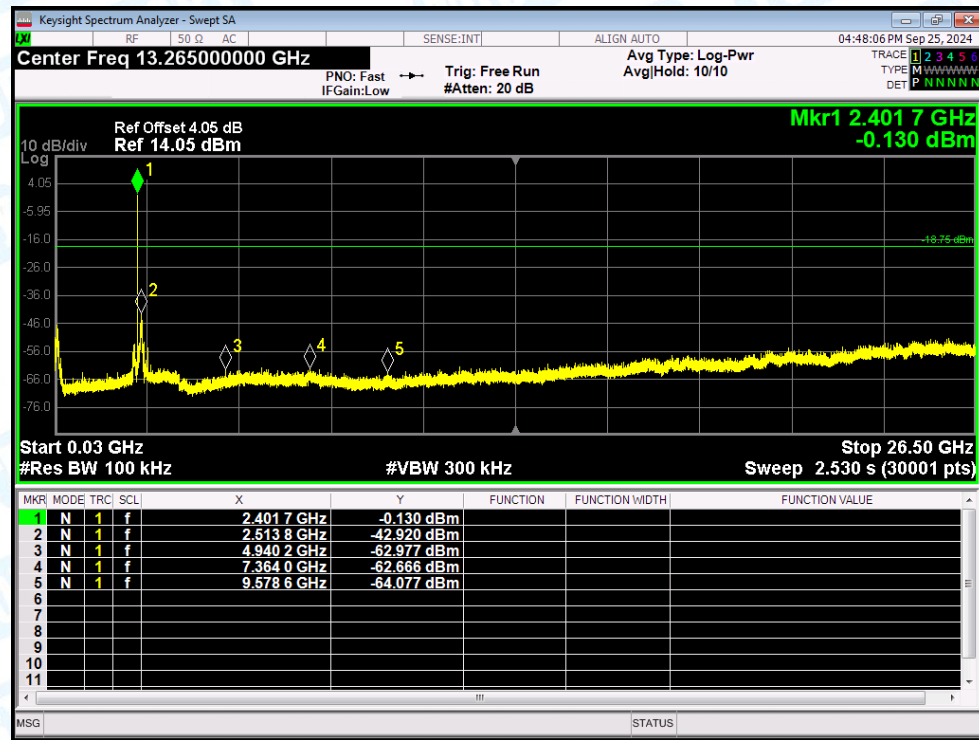
| Condition | Mode  | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | -44.17          | -20         | Pass    |
| NVNT      | 1-DH1 | 2441            | Ant1    | -43.1           | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | -43.64          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | -45.46          | -20         | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | -44.7           | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | -44.63          | -20         | Pass    |
| NVNT      | 3-DH1 | 2402            | Ant1    | -44.94          | -20         | Pass    |
| NVNT      | 3-DH1 | 2441            | Ant1    | -45.12          | -20         | Pass    |
| NVNT      | 3-DH1 | 2480            | Ant1    | -44.24          | -20         | Pass    |

### Test Graphs

#### Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref

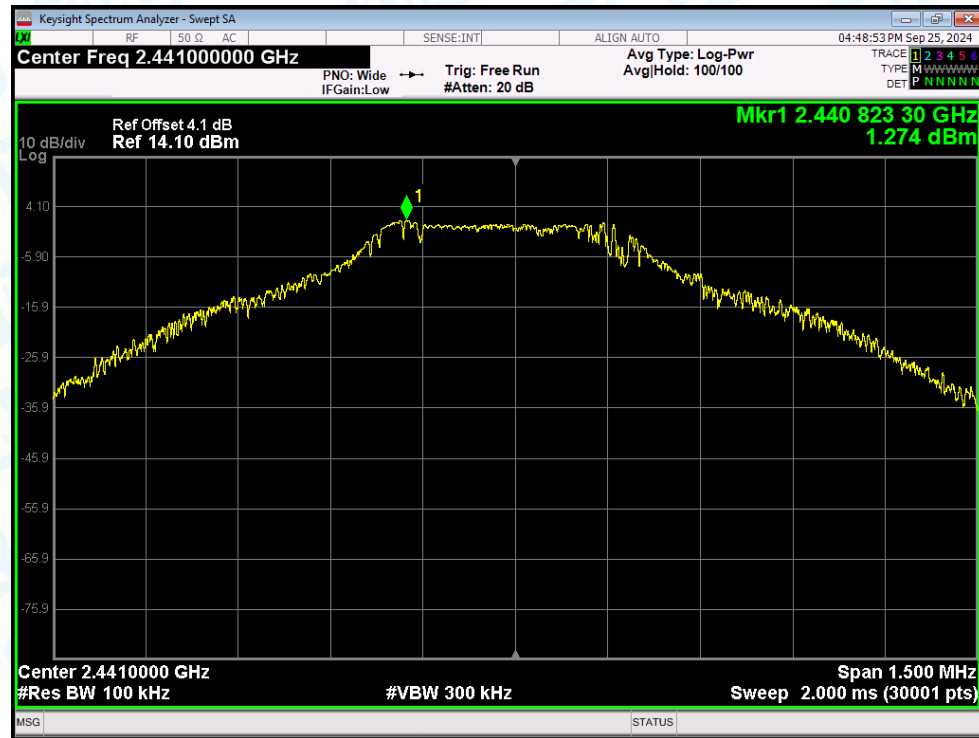


#### Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission

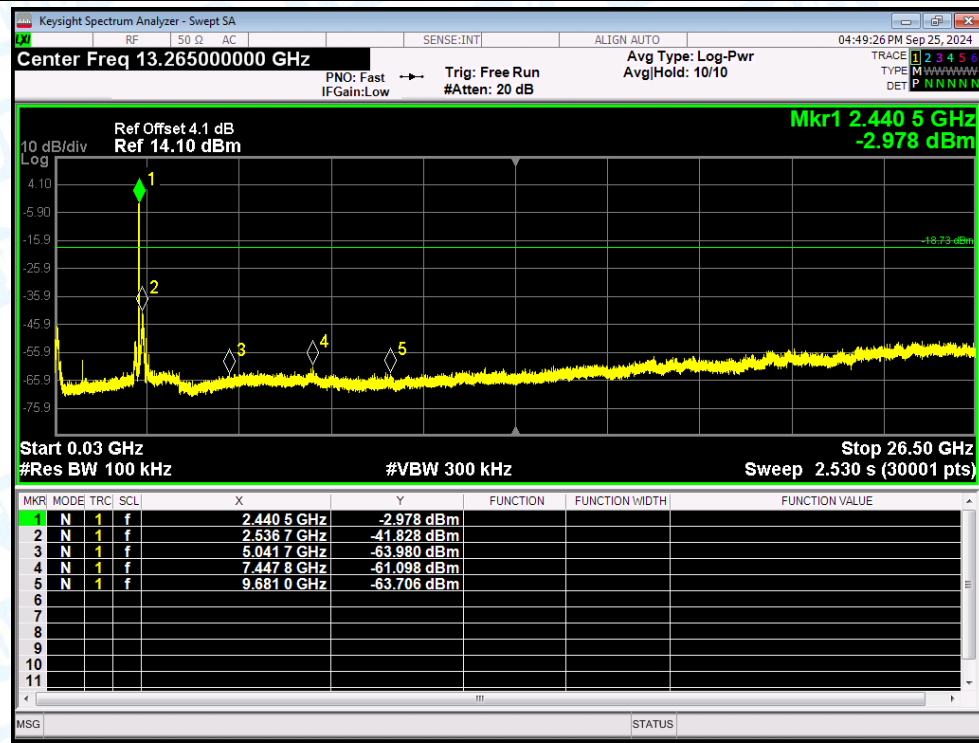




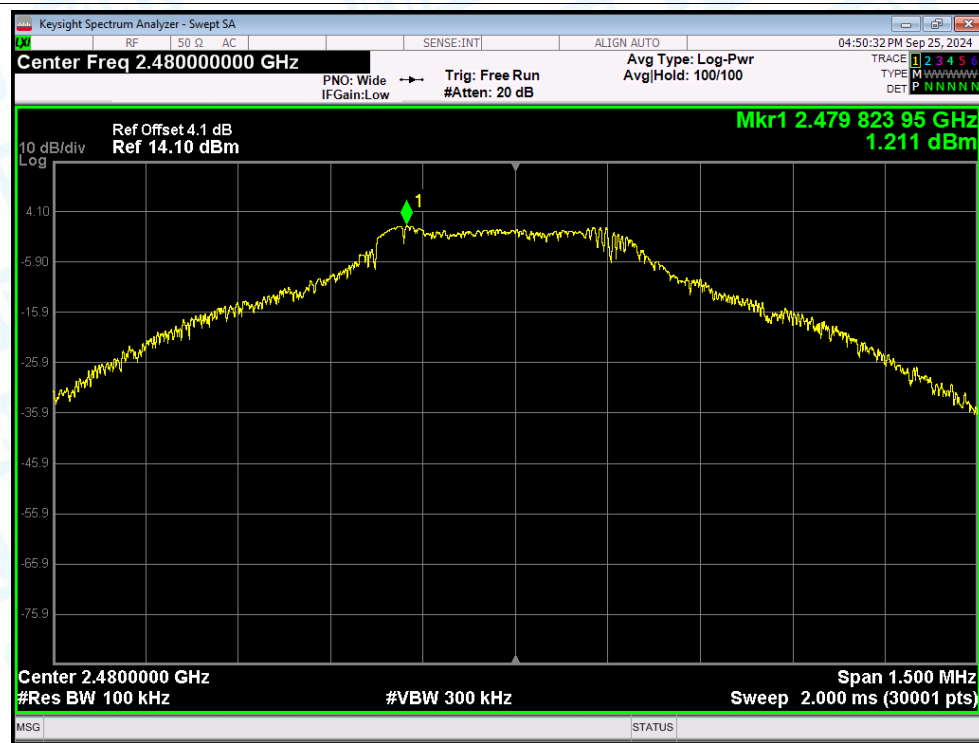
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



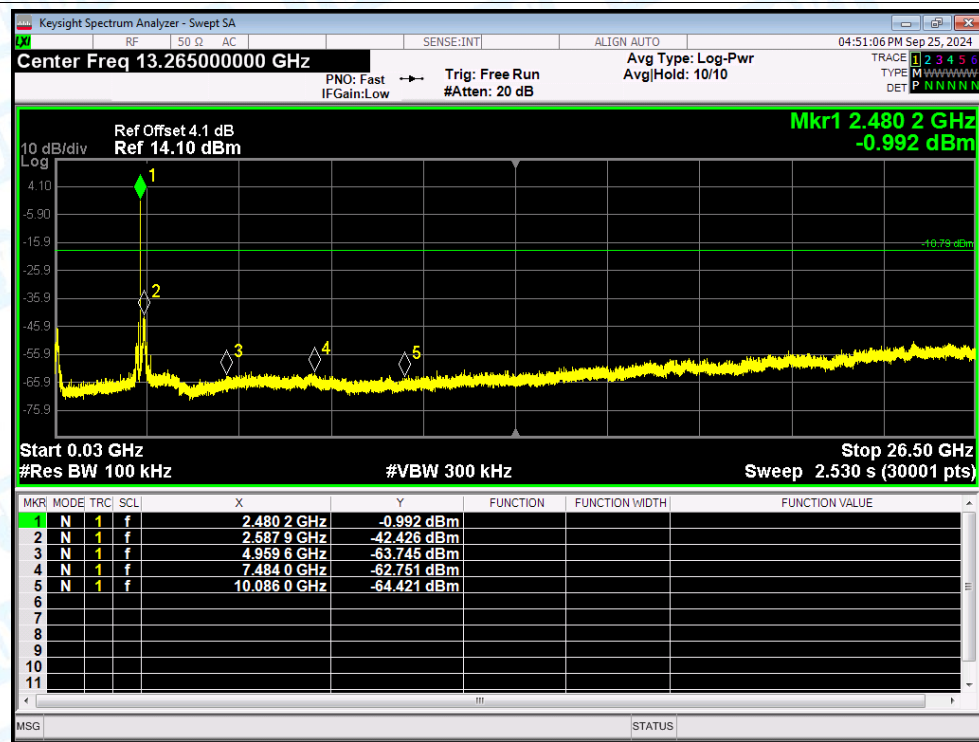
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref

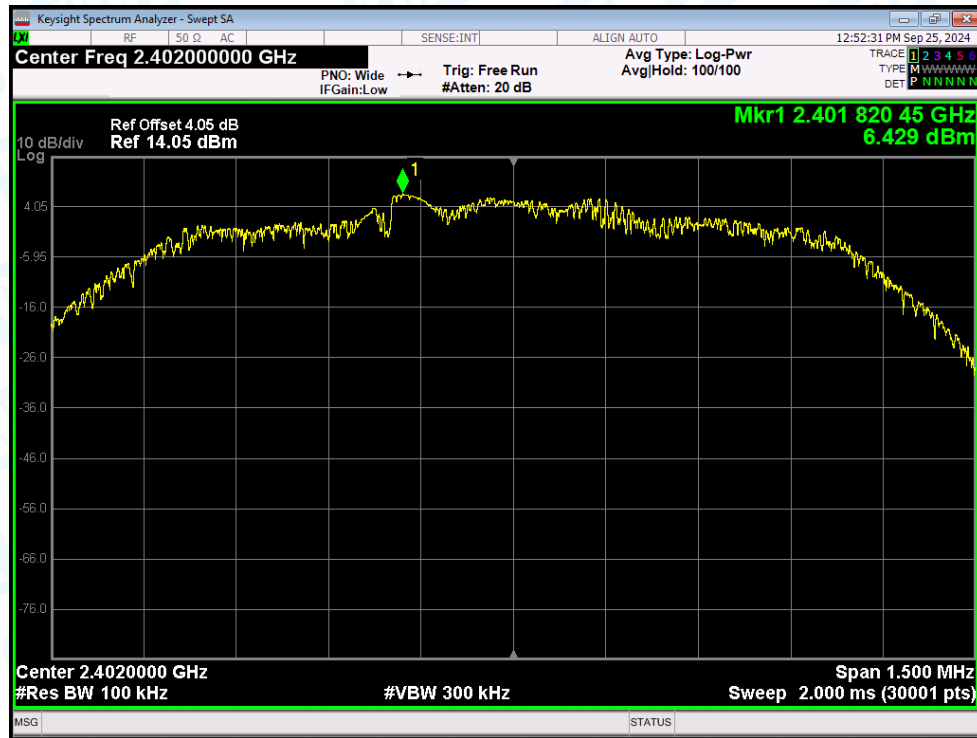


Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

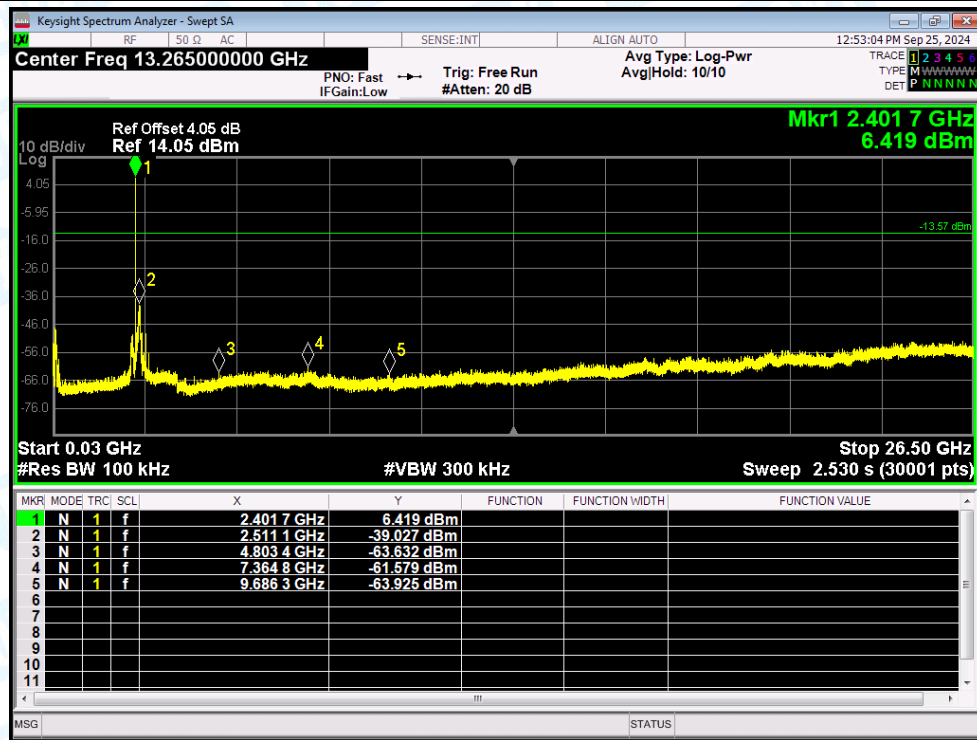




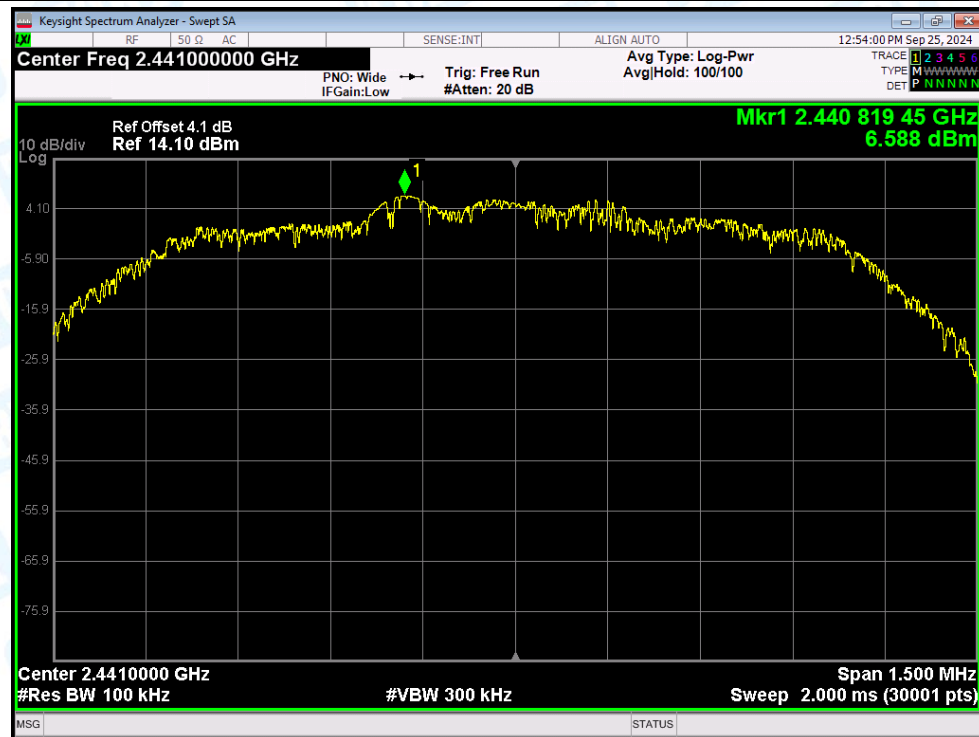
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



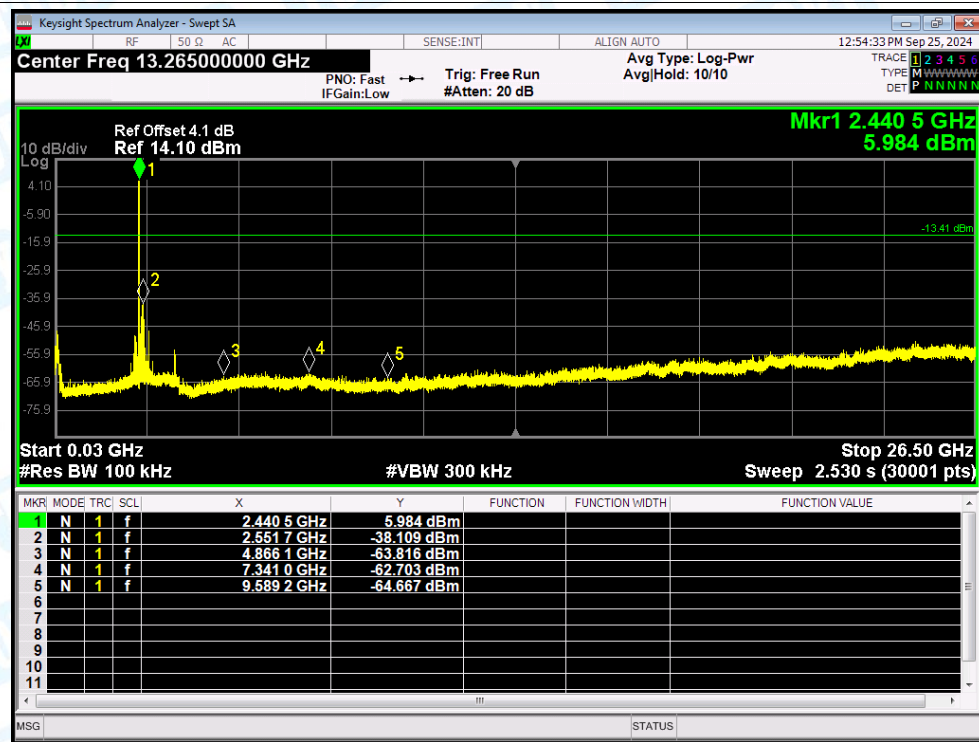
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref

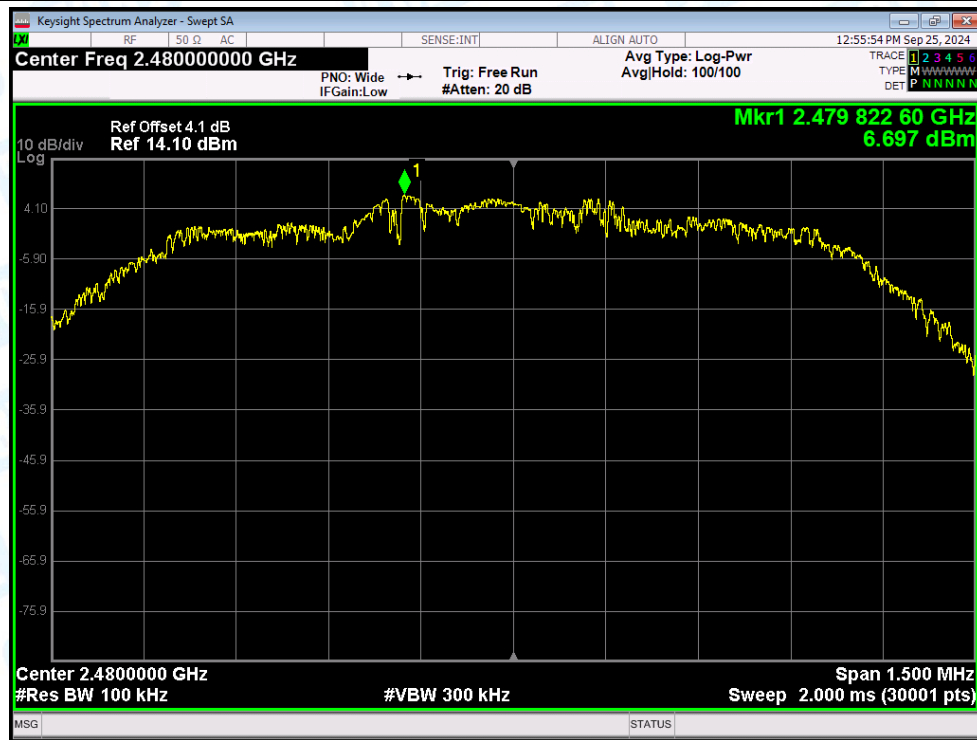


Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission

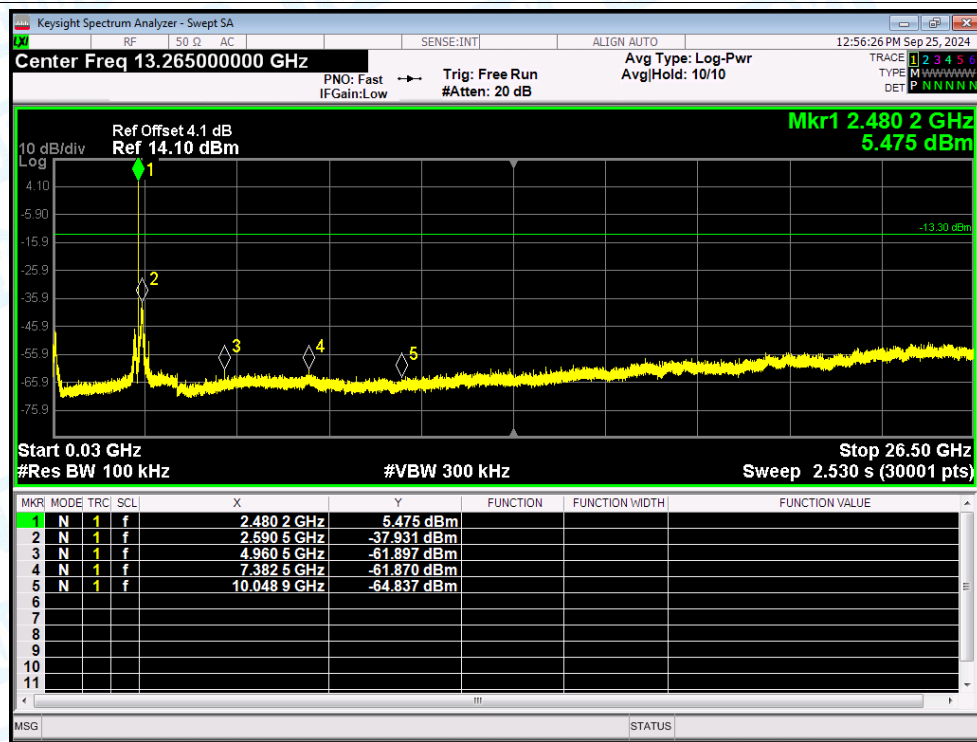




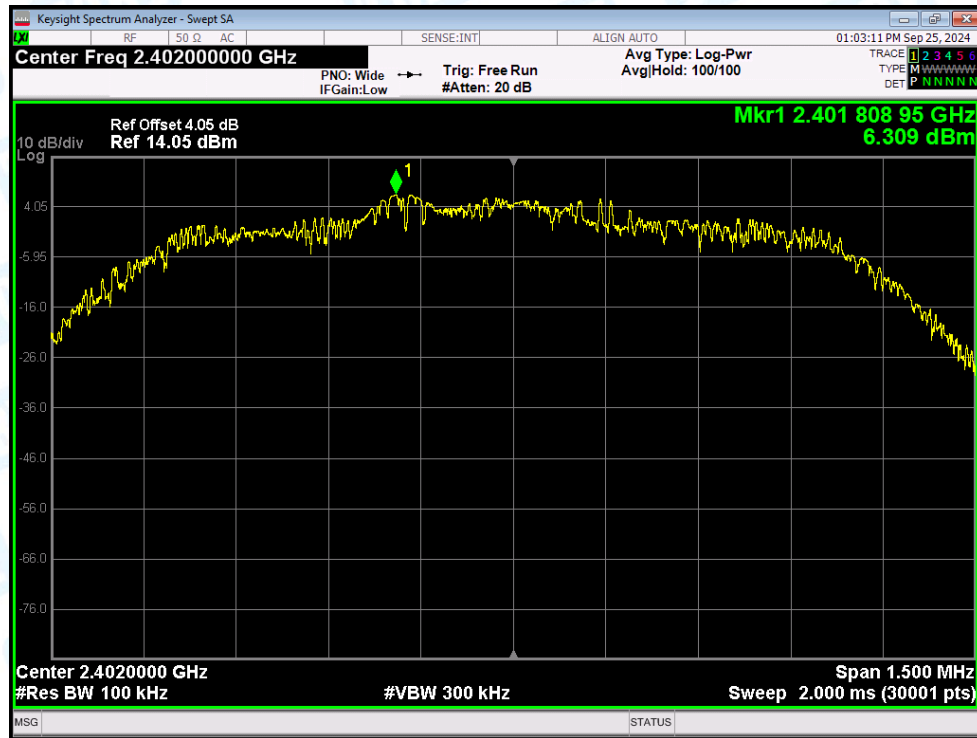
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



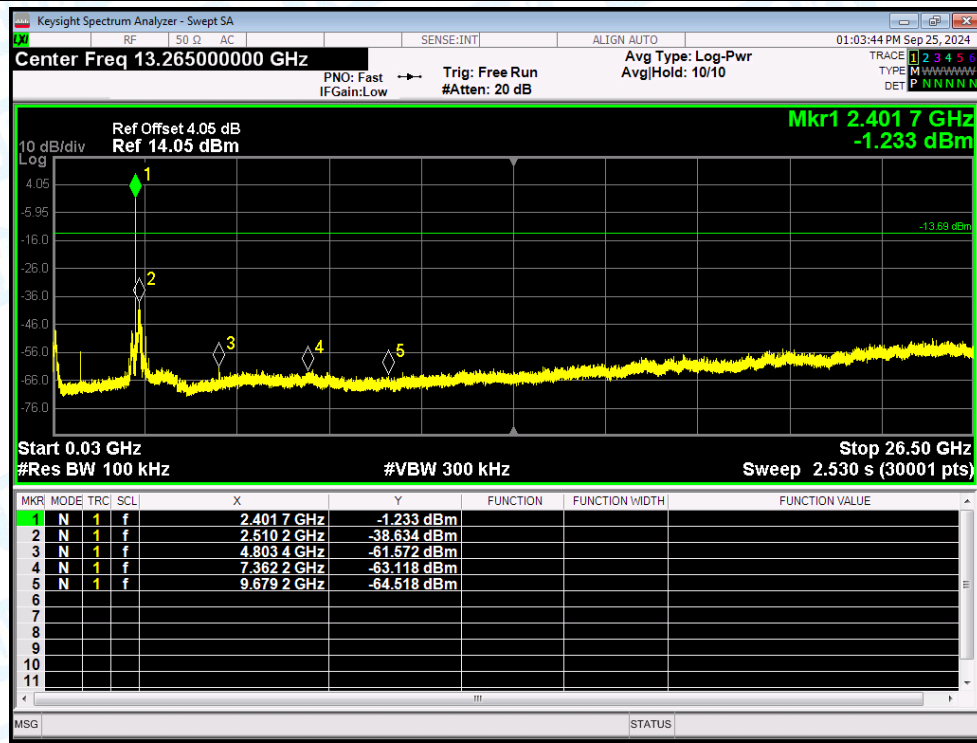
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref

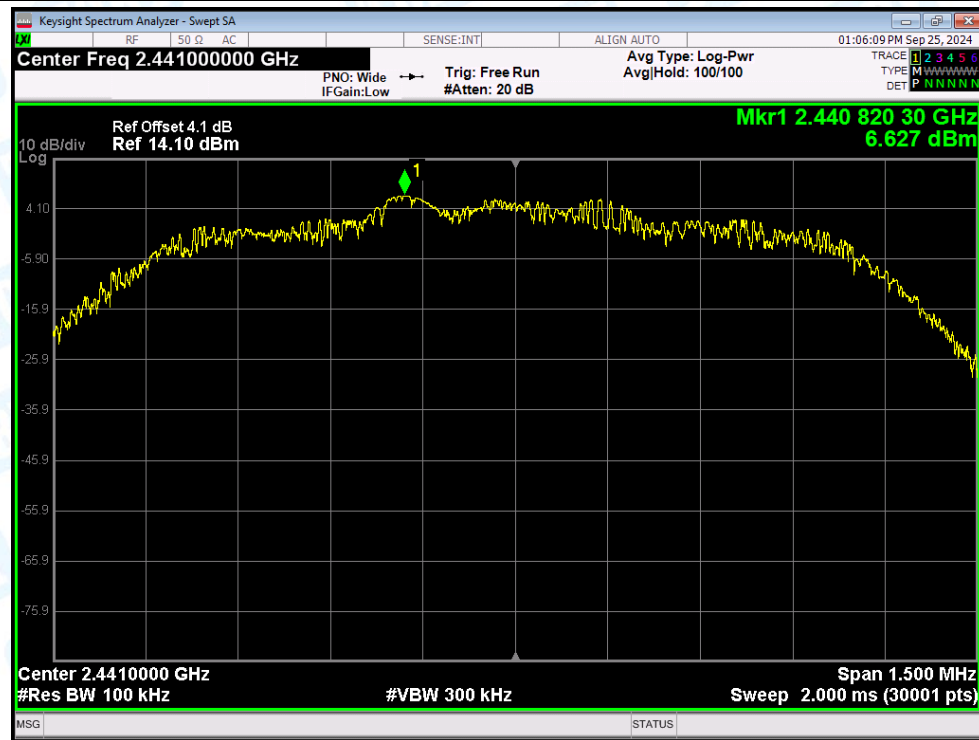


Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

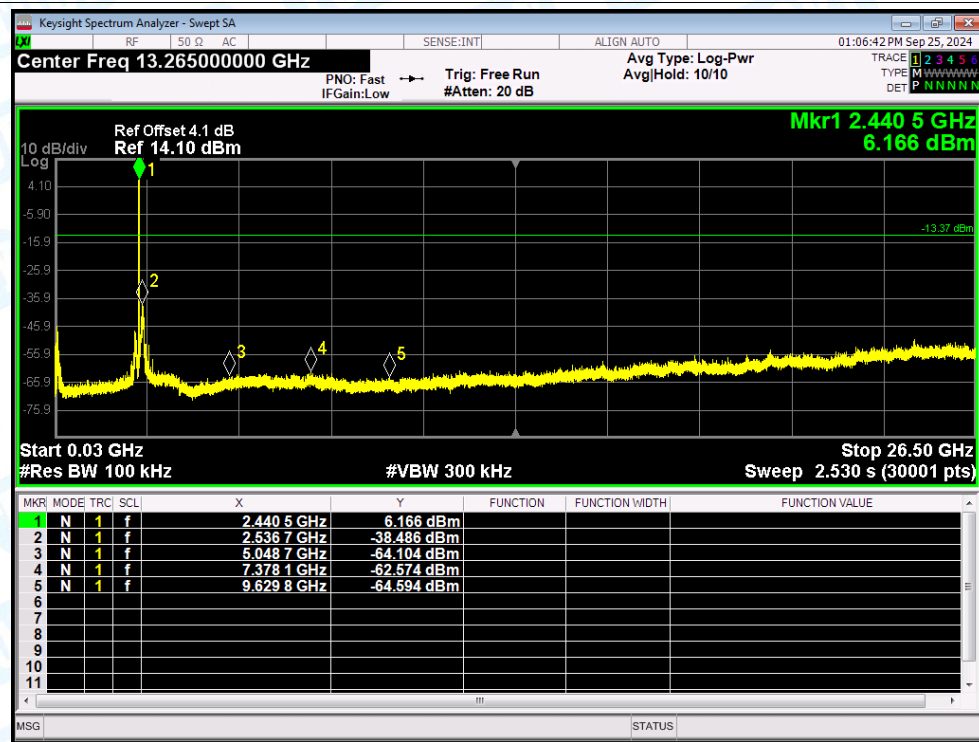




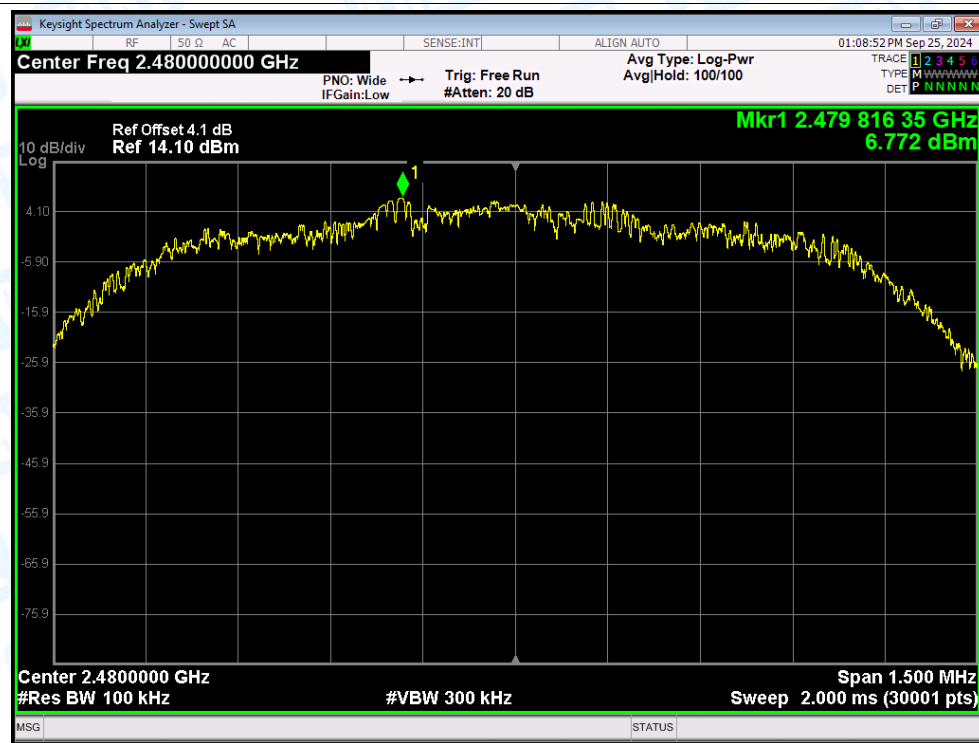
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



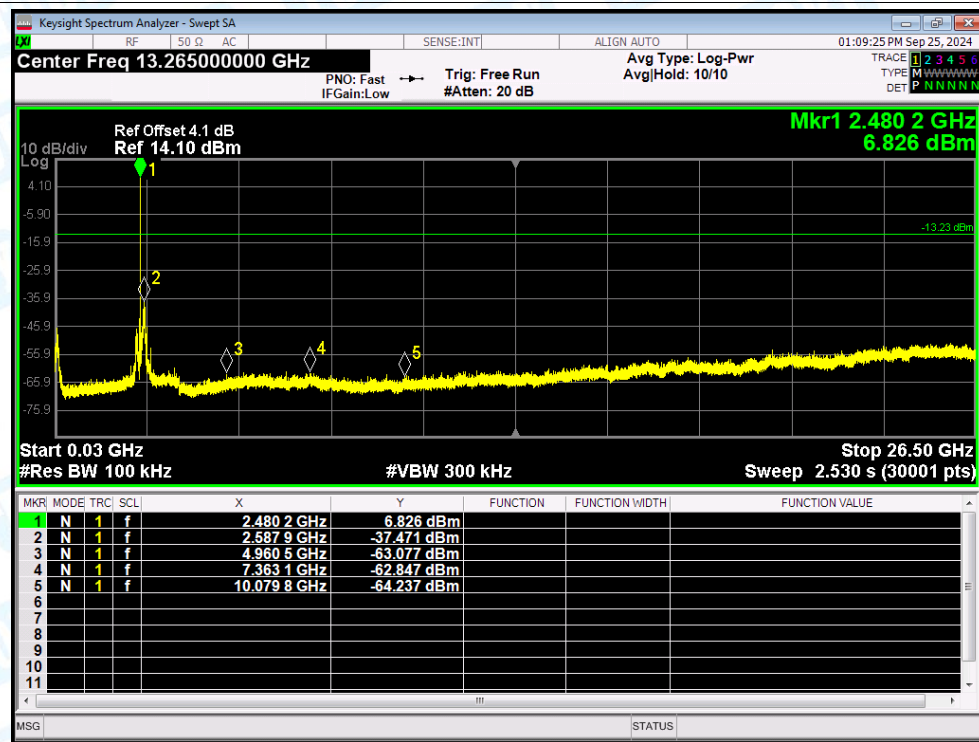
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission



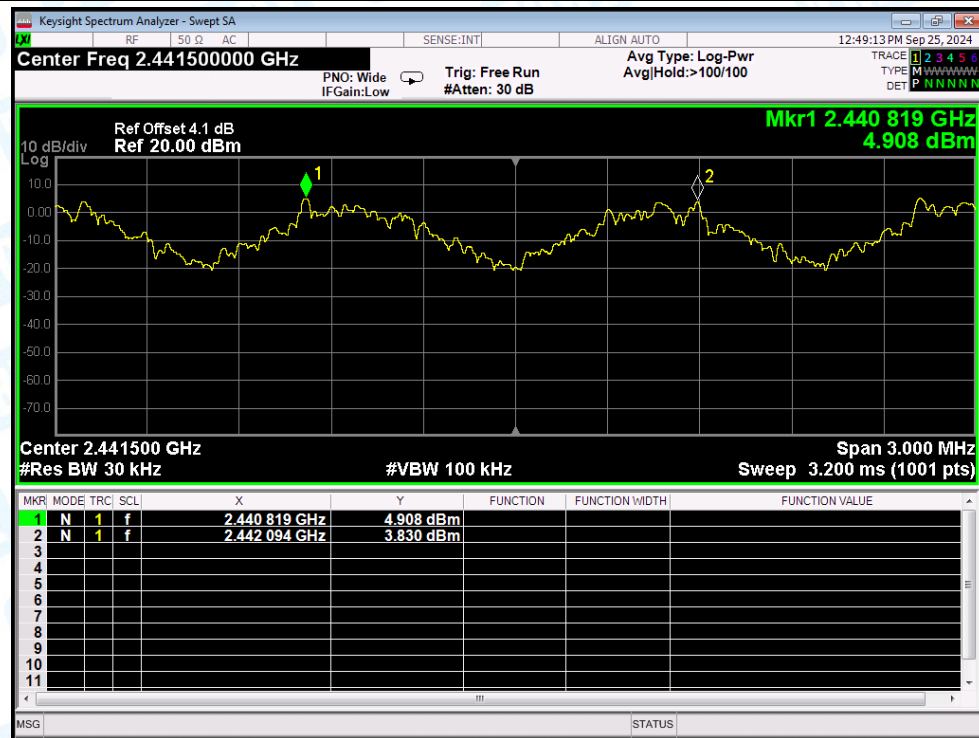


## 8. Carrier Frequencies Separation

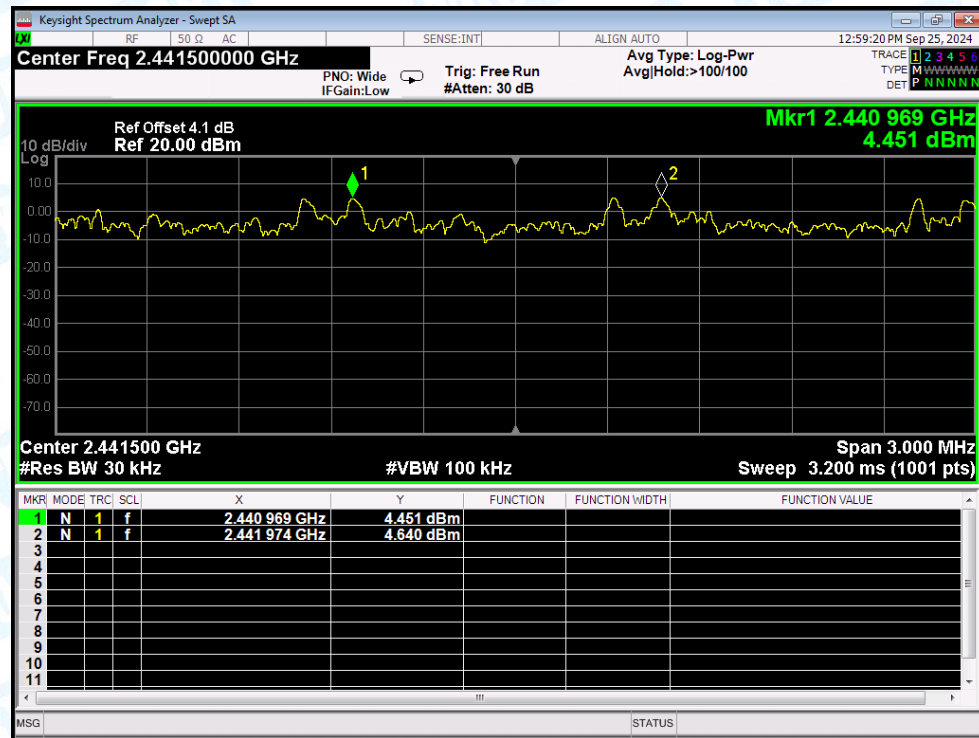
| Condition | Mode  | Antenna | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|-----------|-------|---------|---------------------|---------------------|-----------|-------------|---------|
| NVNT      | 1-DH1 | Ant1    | 2440.819            | 2442.094            | 1.275     | 0.573       | Pass    |
| NVNT      | 2-DH1 | Ant1    | 2440.969            | 2441.974            | 1.005     | 0.84        | Pass    |
| NVNT      | 3-DH1 | Ant1    | 2440.822            | 2441.818            | 0.996     | 0.833       | Pass    |

### Test Graphs

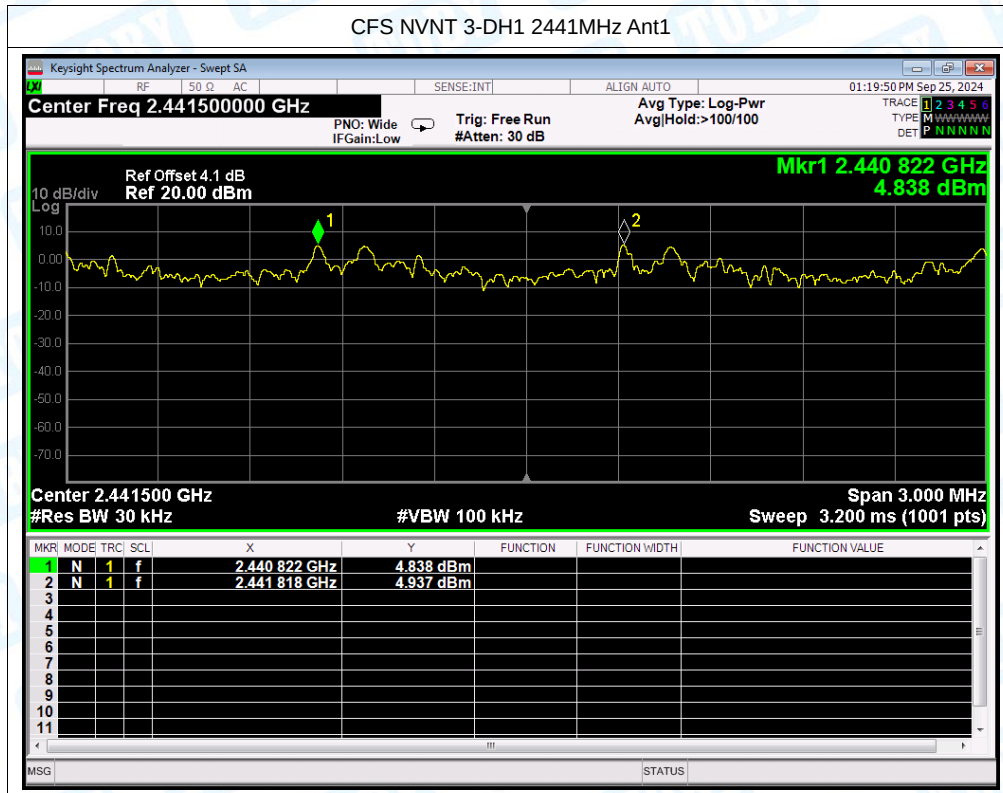
#### CFS NVNT 1-DH1 2441MHz Ant1



#### CFS NVNT 2-DH1 2441MHz Ant1







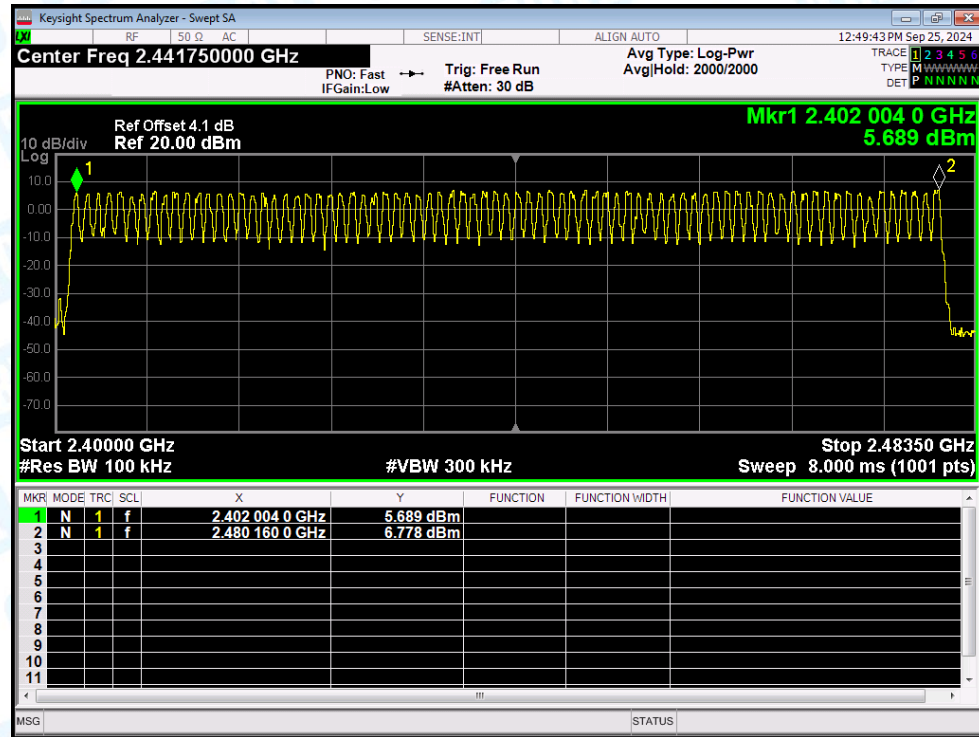
## 9. Number of Hopping Channel

| Condition | Mode  | Antenna | Hopping Number | Limit | Verdict |
|-----------|-------|---------|----------------|-------|---------|
| NVNT      | 1-DH1 | Ant1    | 79             | 15    | Pass    |
| NVNT      | 2-DH1 | Ant1    | 79             | 15    | Pass    |
| NVNT      | 3-DH1 | Ant1    | 79             | 15    | Pass    |

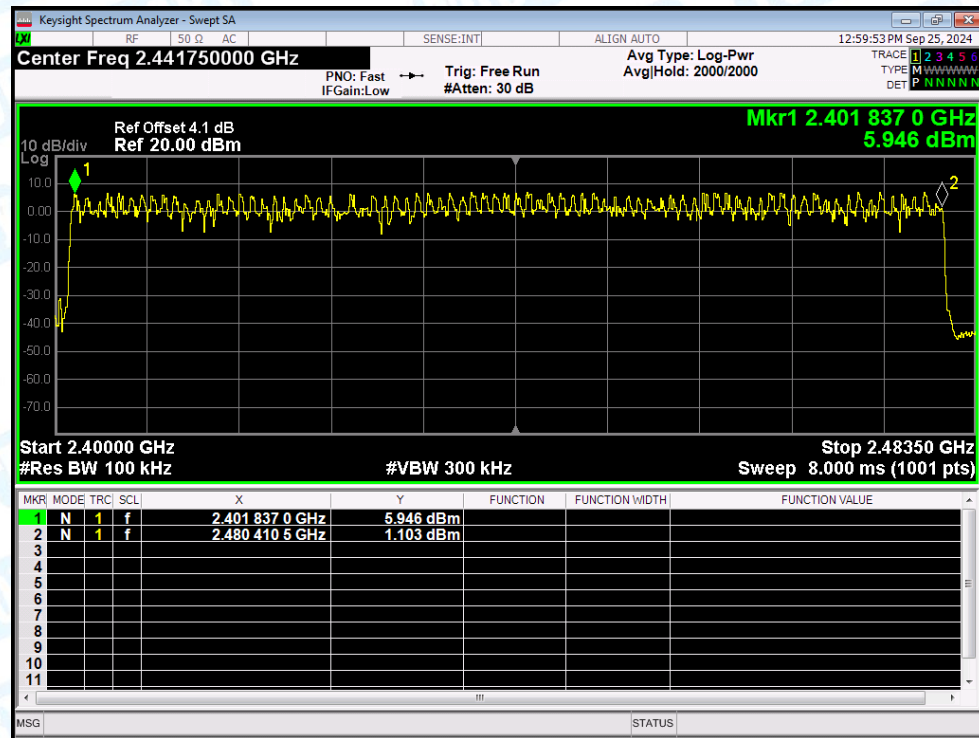


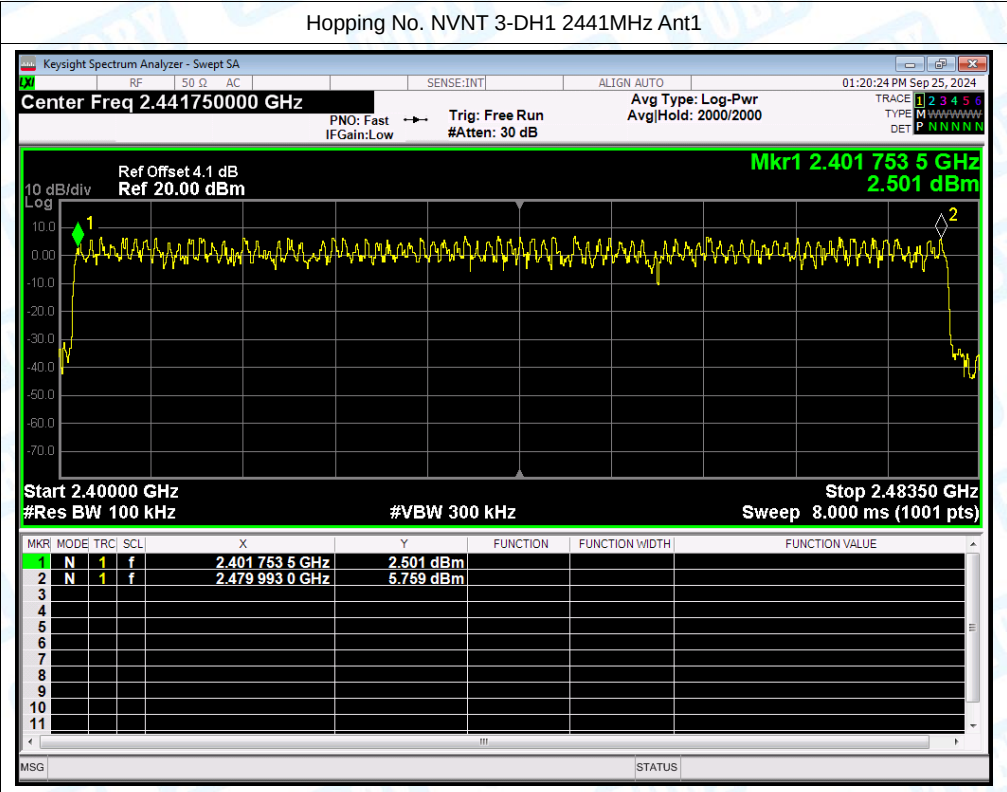
### Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1





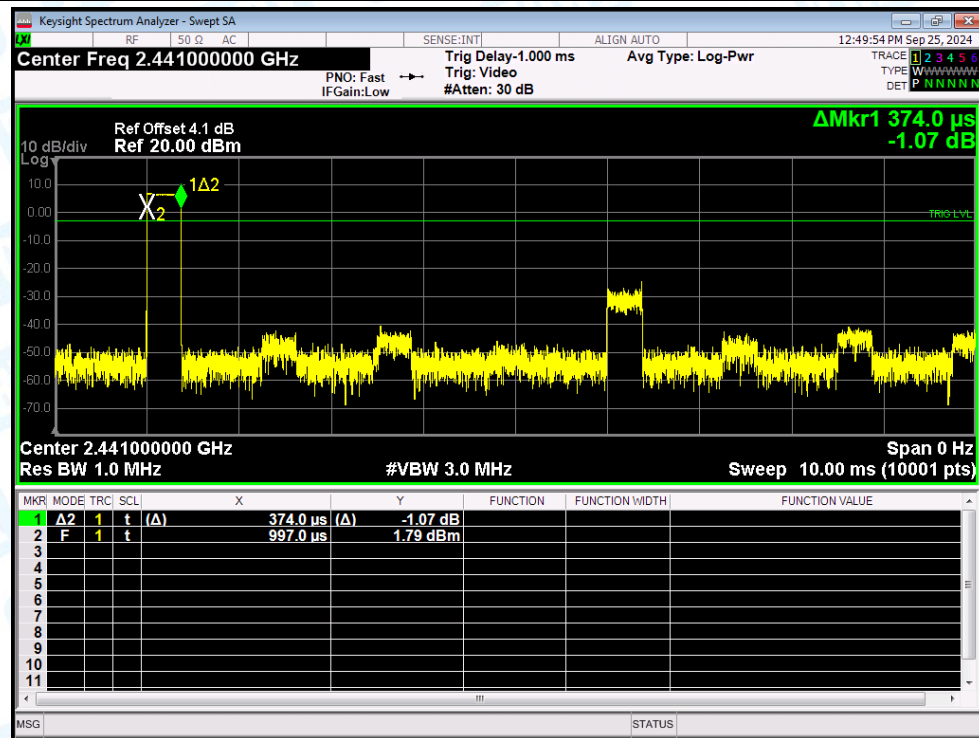


## 10. Dwell Time

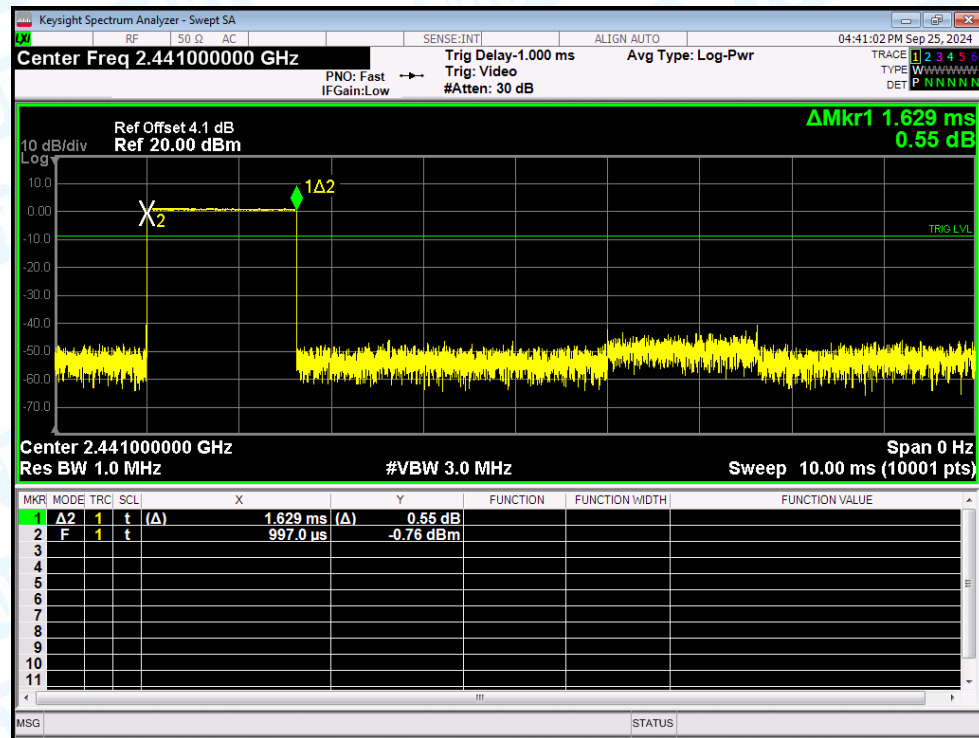
| Condition | Mode  | Frequency (MHz) | Antenna | Pulse Time (ms) | Total Dwell Time (ms) | Period Time (ms) | Limit (ms) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-----------------------|------------------|------------|---------|
| NVNT      | 1-DH1 | 2441            | Ant1    | 0.374           | 119.68                | 31600            | 400        | Pass    |
| NVNT      | 1-DH3 | 2441            | Ant1    | 1.629           | 260.64                | 31600            | 400        | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | 2.877           | 306.88                | 31600            | 400        | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | 0.383           | 122.56                | 31600            | 400        | Pass    |
| NVNT      | 2-DH3 | 2441            | Ant1    | 1.636           | 261.76                | 31600            | 400        | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | 2.883           | 307.52                | 31600            | 400        | Pass    |
| NVNT      | 3-DH1 | 2441            | Ant1    | 0.384           | 122.88                | 31600            | 400        | Pass    |
| NVNT      | 3-DH3 | 2441            | Ant1    | 1.634           | 261.44                | 31600            | 400        | Pass    |
| NVNT      | 3-DH5 | 2441            | Ant1    | 2.886           | 307.84                | 31600            | 400        | Pass    |

### Test Graphs

#### Dwell NVNT 1-DH1 2441MHz Ant1

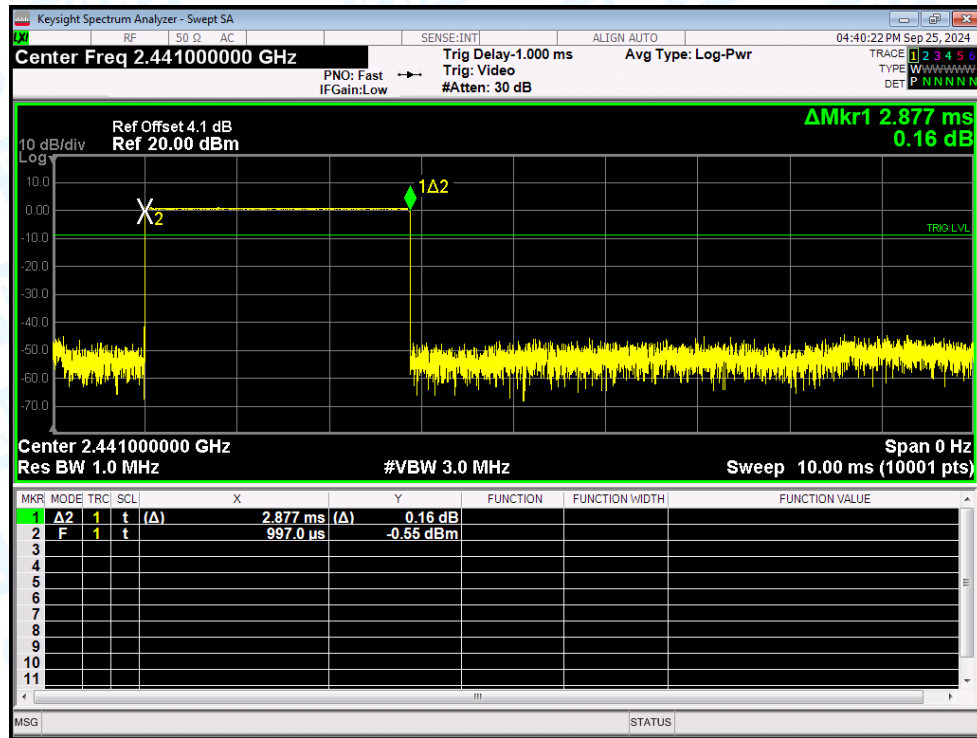


#### Dwell NVNT 1-DH3 2441MHz Ant1

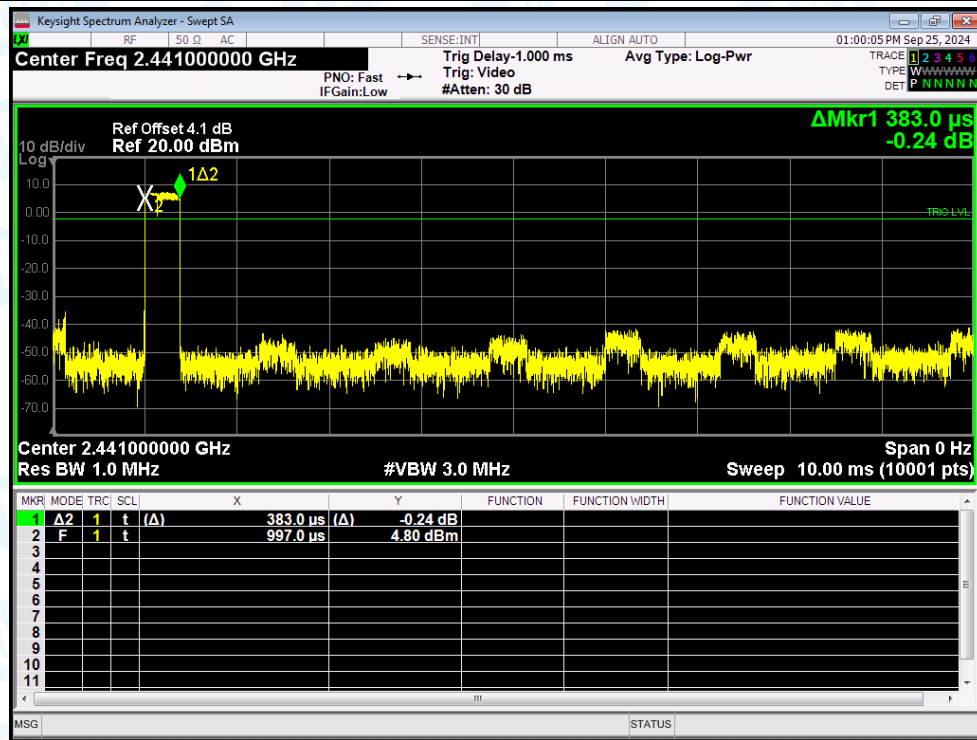




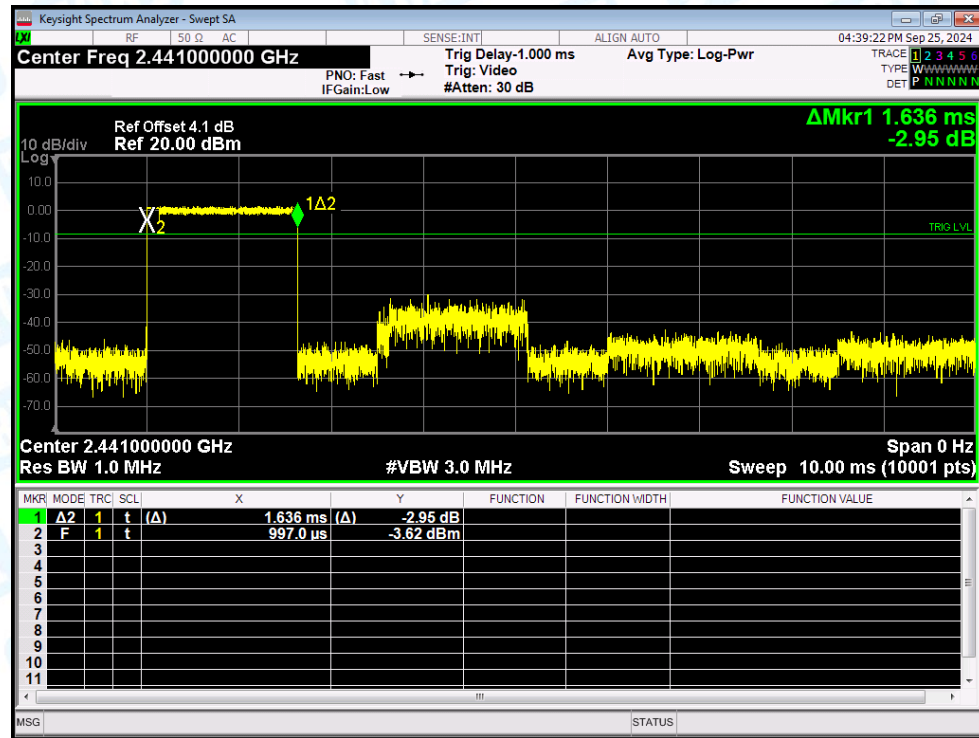
Dwell NVNT 1-DH5 2441MHz Ant1



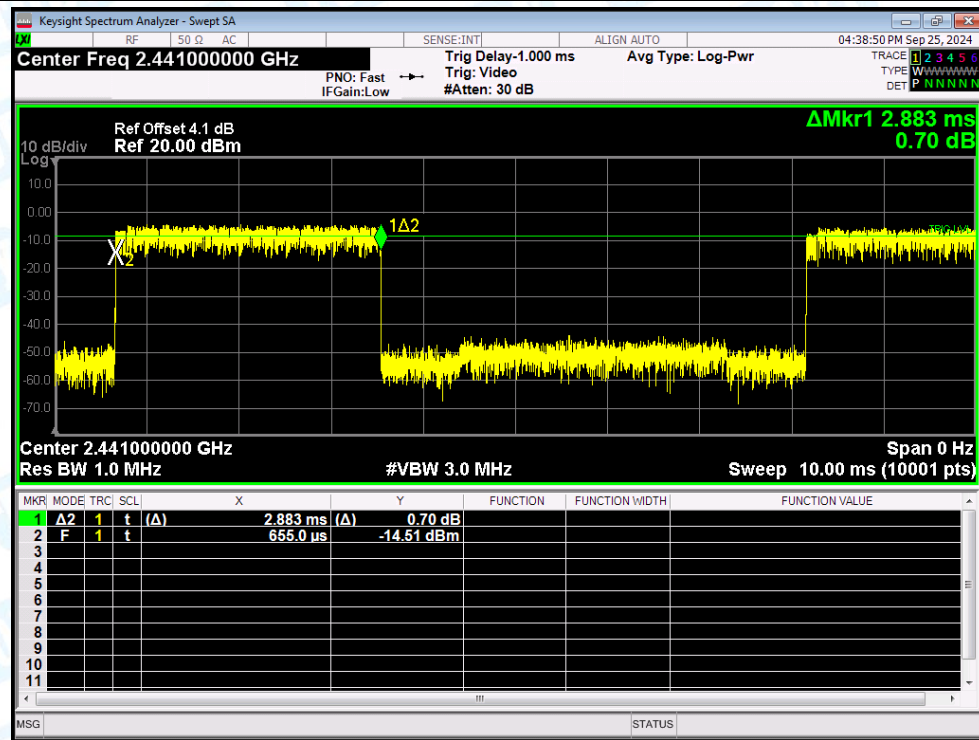
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1

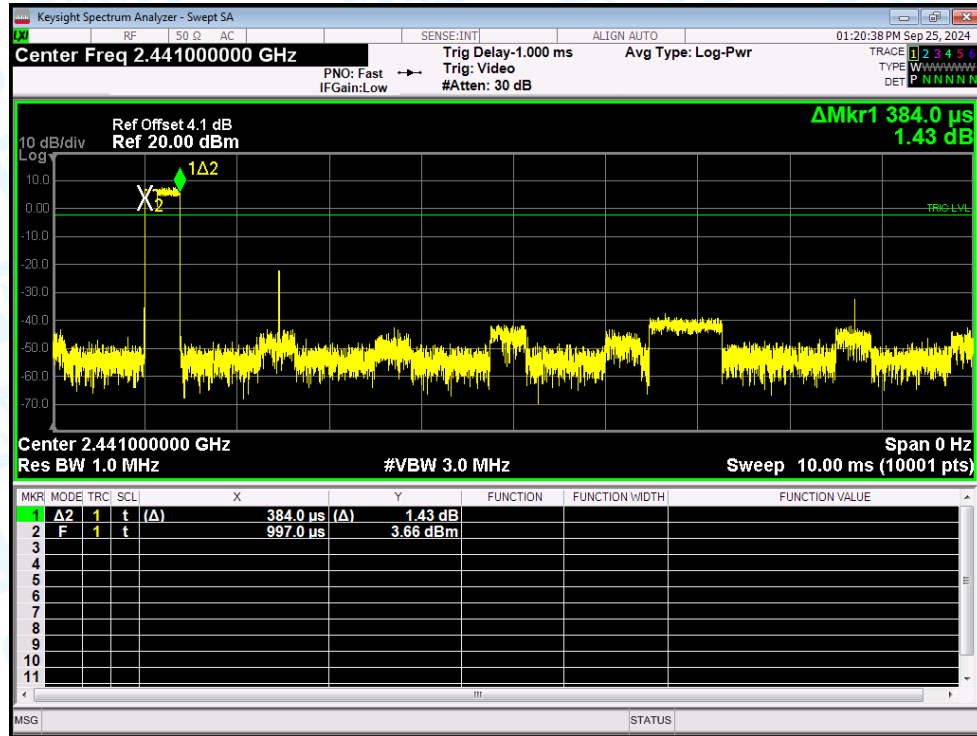


Dwell NVNT 2-DH5 2441MHz Ant1

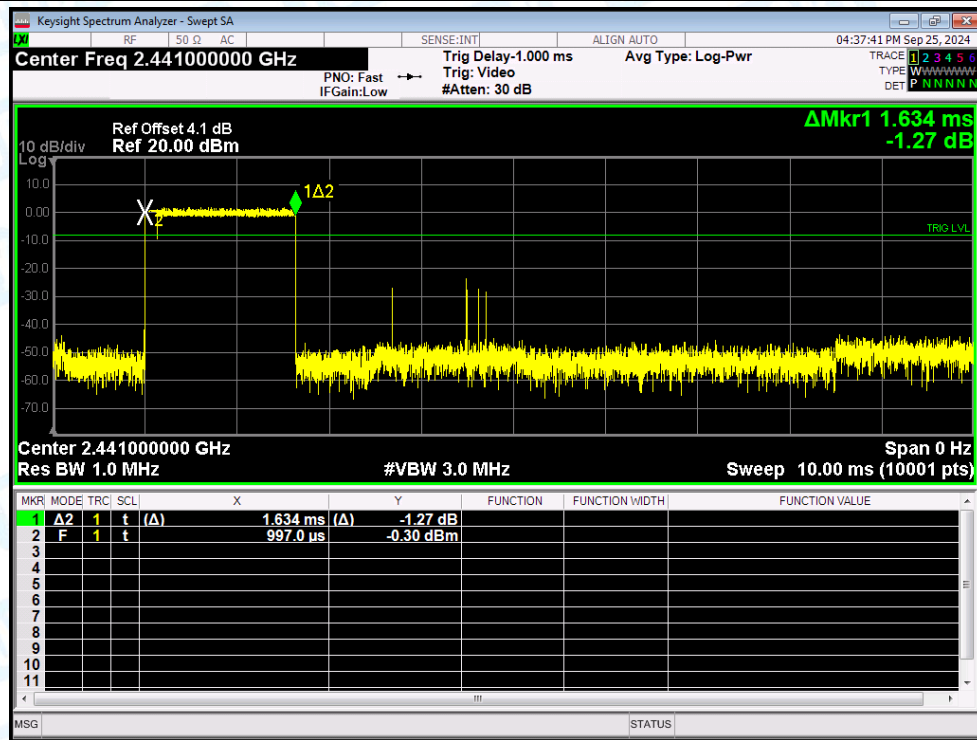


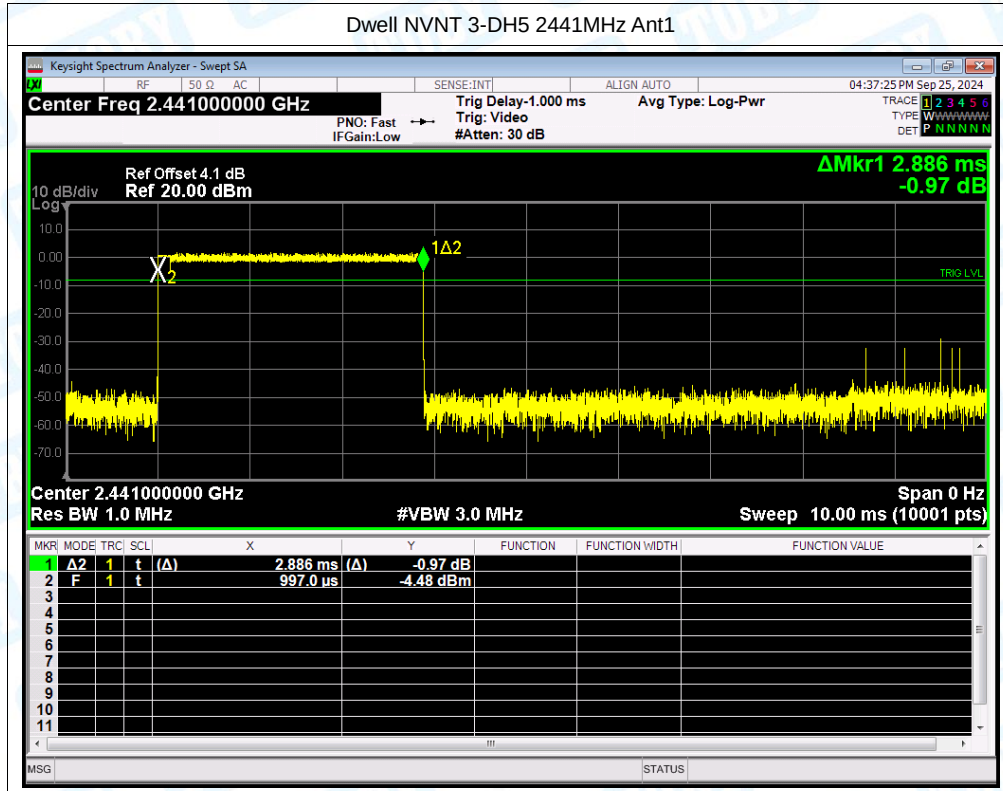


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1





-----END OF THE REPORT-----