

# RF Test Data for Bluetooth (Conducted Measurements)

| General Description of EUT                                                                                                                   |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Product Name:                                                                                                                                | Smart watch            |
| Test Model:                                                                                                                                  | E32 Pro                |
| Sample ID:                                                                                                                                   | HC-C-202406-0053-02-02 |
| Environmental Conditions                                                                                                                     |                        |
| Temperature:                                                                                                                                 | 24.2℃                  |
| Relative Humidity:                                                                                                                           | 46.2%                  |
| Test Voltage:                                                                                                                                | DC 3.8V                |
| Test Engineer:                                                                                                                               | Jolin Le               |
| Note: For a more detailed features description, please refer to the report TBR-C-202406-0053-11<br>The report only show the worst case data. |                        |

## Contents

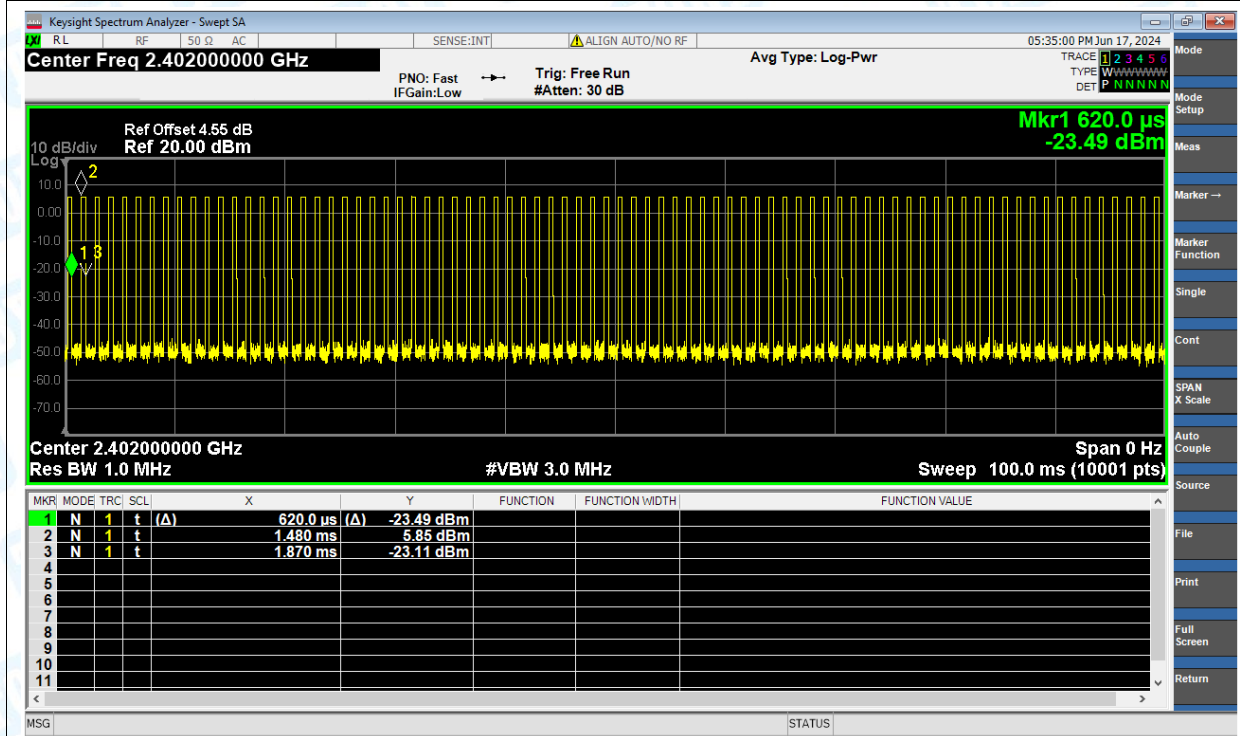
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1. Duty Cycle

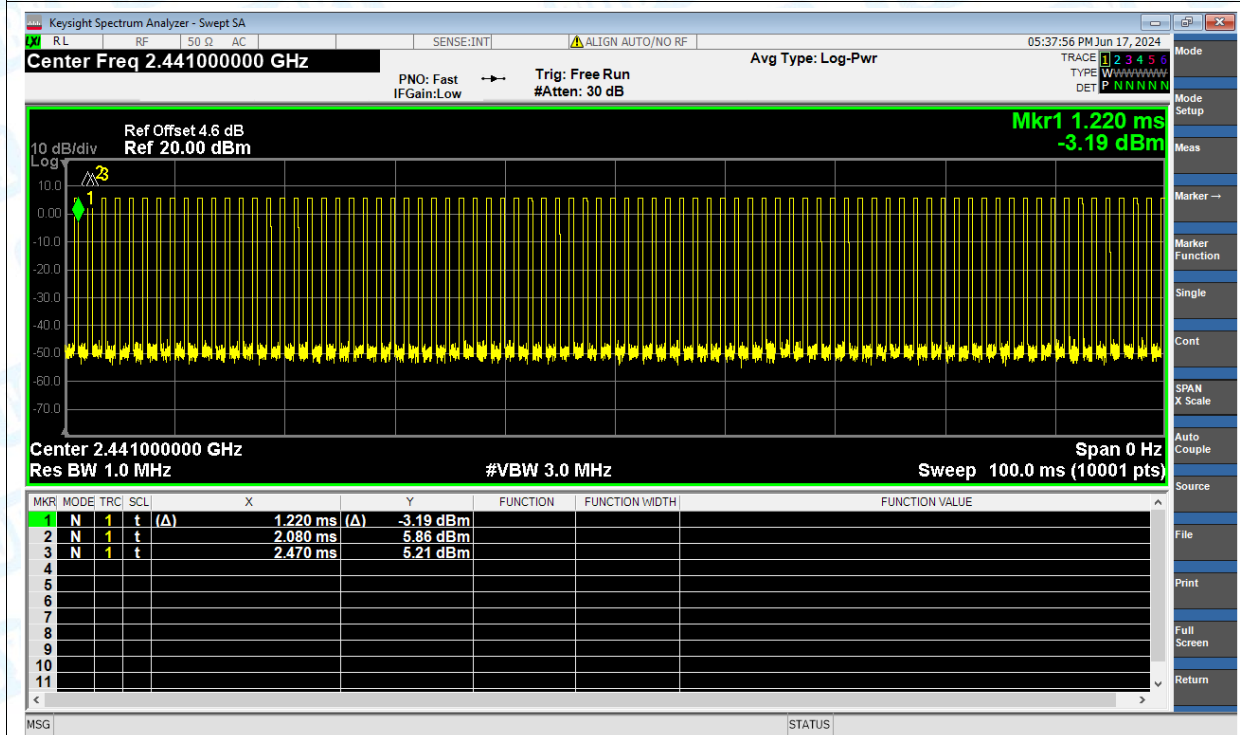
| Condition | Mode  | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|-------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 31.2           | 5.06                   | 2.56      |
| NVNT      | 1-DH1 | 2441            | Ant1    | 31.2           | 5.06                   | 2.56      |
| NVNT      | 1-DH1 | 2480            | Ant1    | 31.2           | 5.06                   | 2.56      |
| NVNT      | 2-DH1 | 2402            | Ant1    | 32             | 4.95                   | 2.5       |
| NVNT      | 2-DH1 | 2441            | Ant1    | 31.2           | 5.06                   | 2.56      |
| NVNT      | 2-DH1 | 2480            | Ant1    | 31.2           | 5.06                   | 2.56      |

### Test Graphs

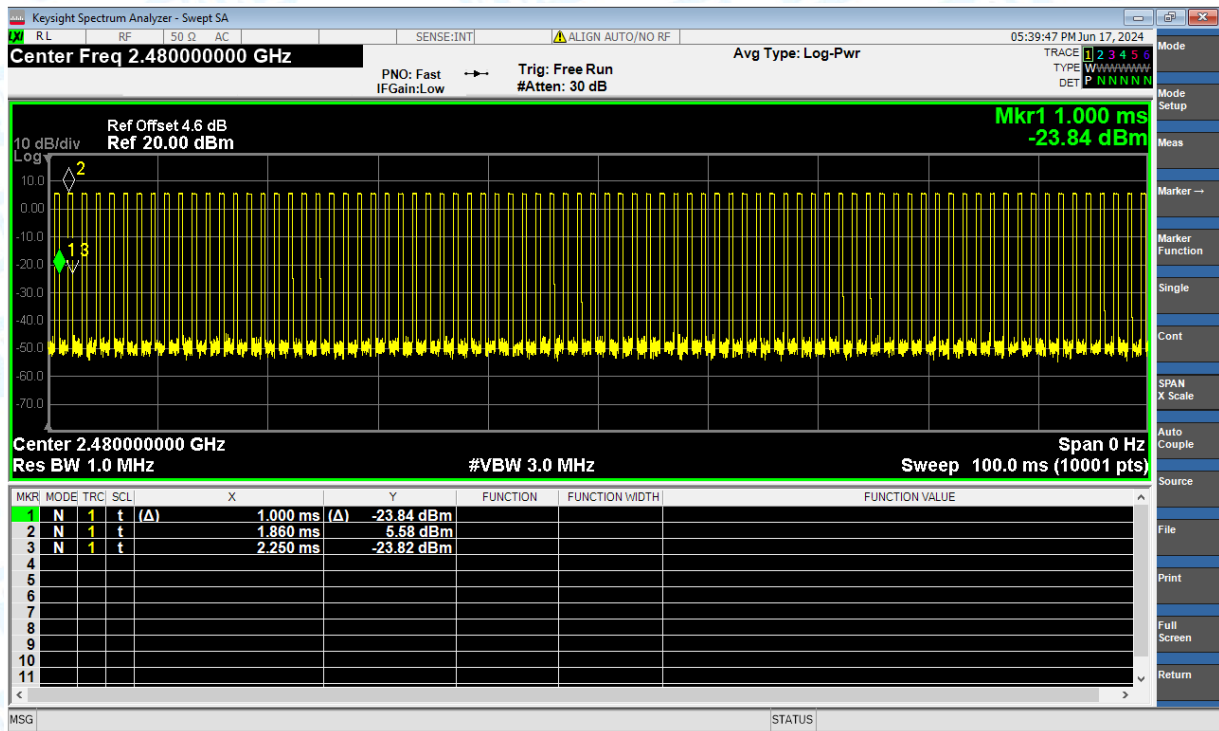
#### Duty Cycle NVNT 1-DH1 2402MHz Ant1



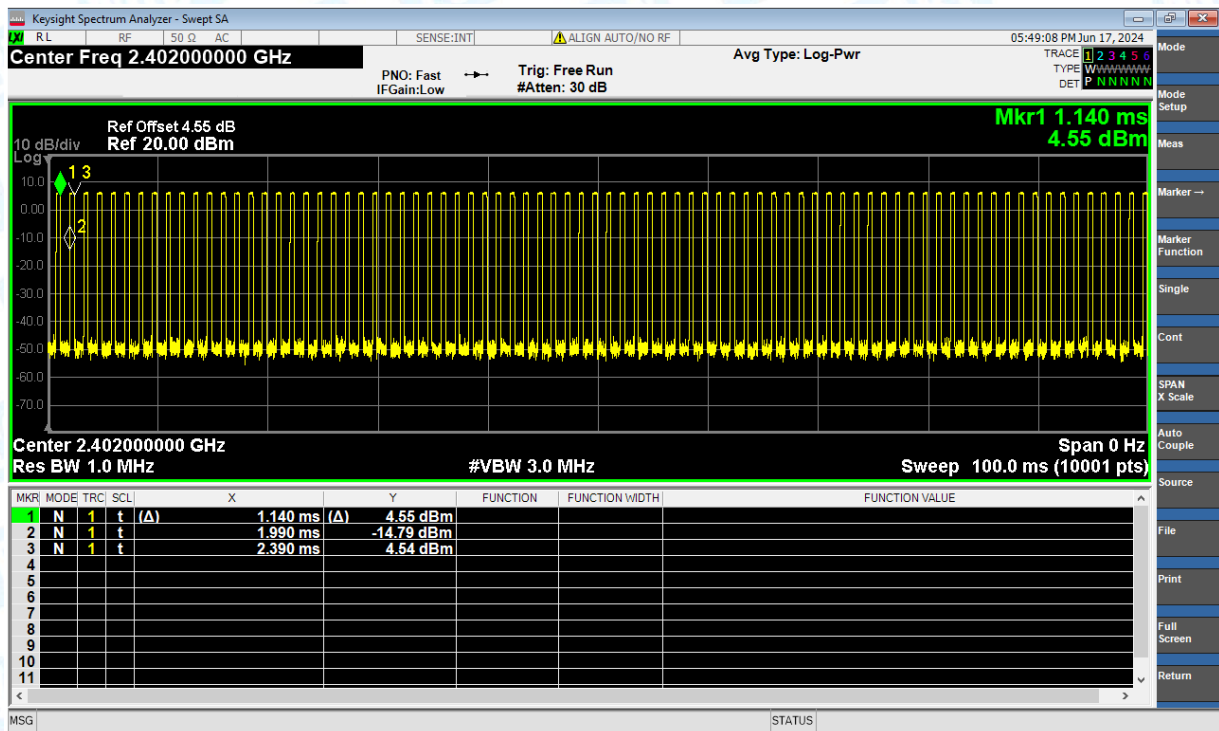
#### Duty Cycle NVNT 1-DH1 2441MHz Ant1



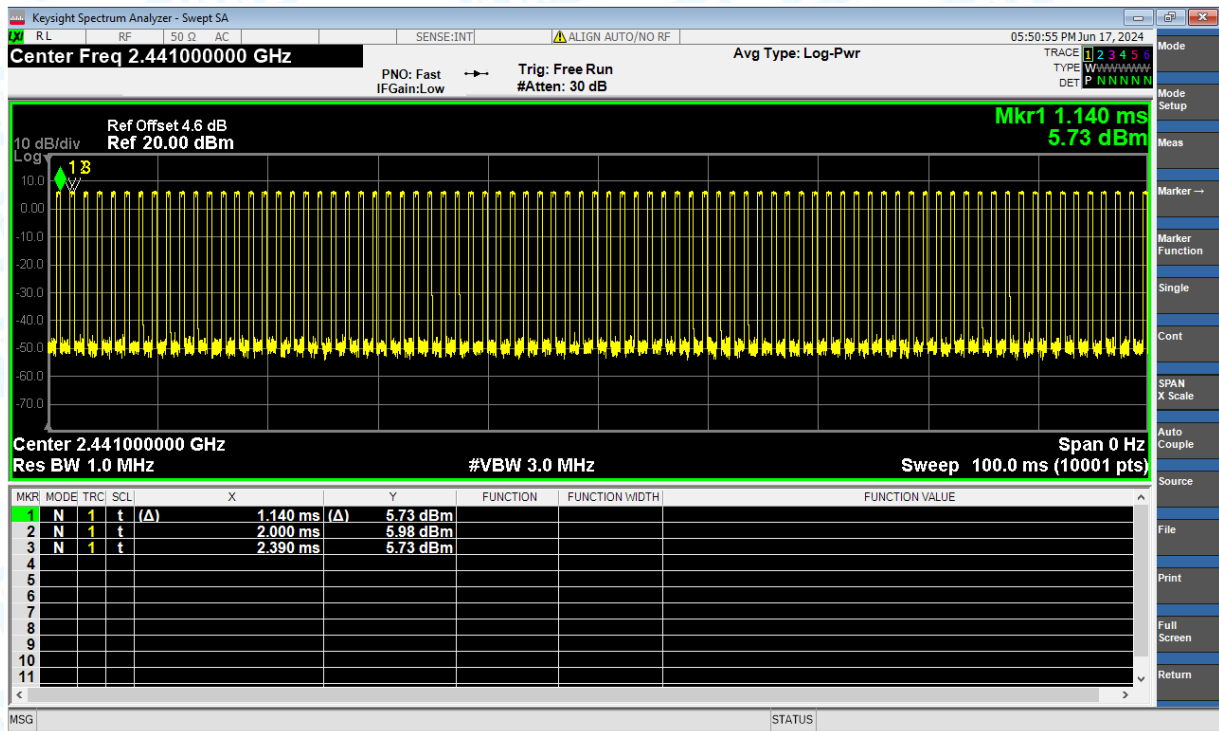
### Duty Cycle NVNT 1-DH1 2480MHz Ant1



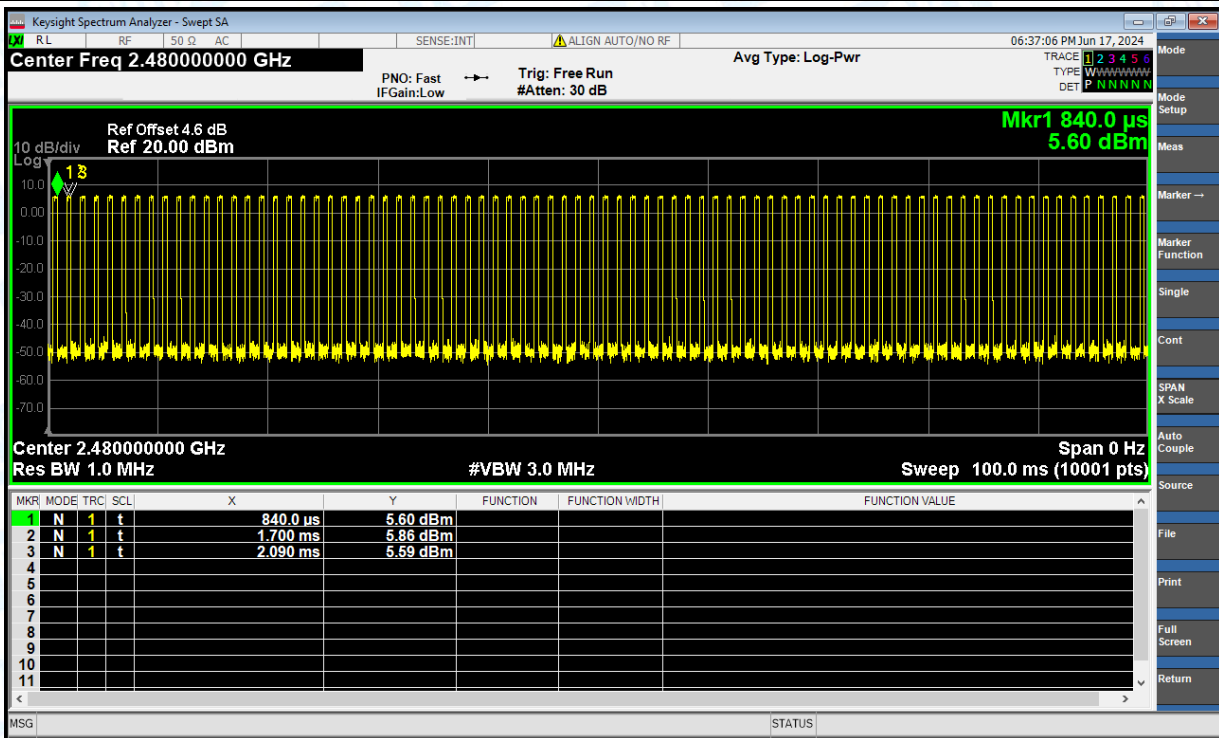
### Duty Cycle NVNT 2-DH1 2402MHz Ant1



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



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

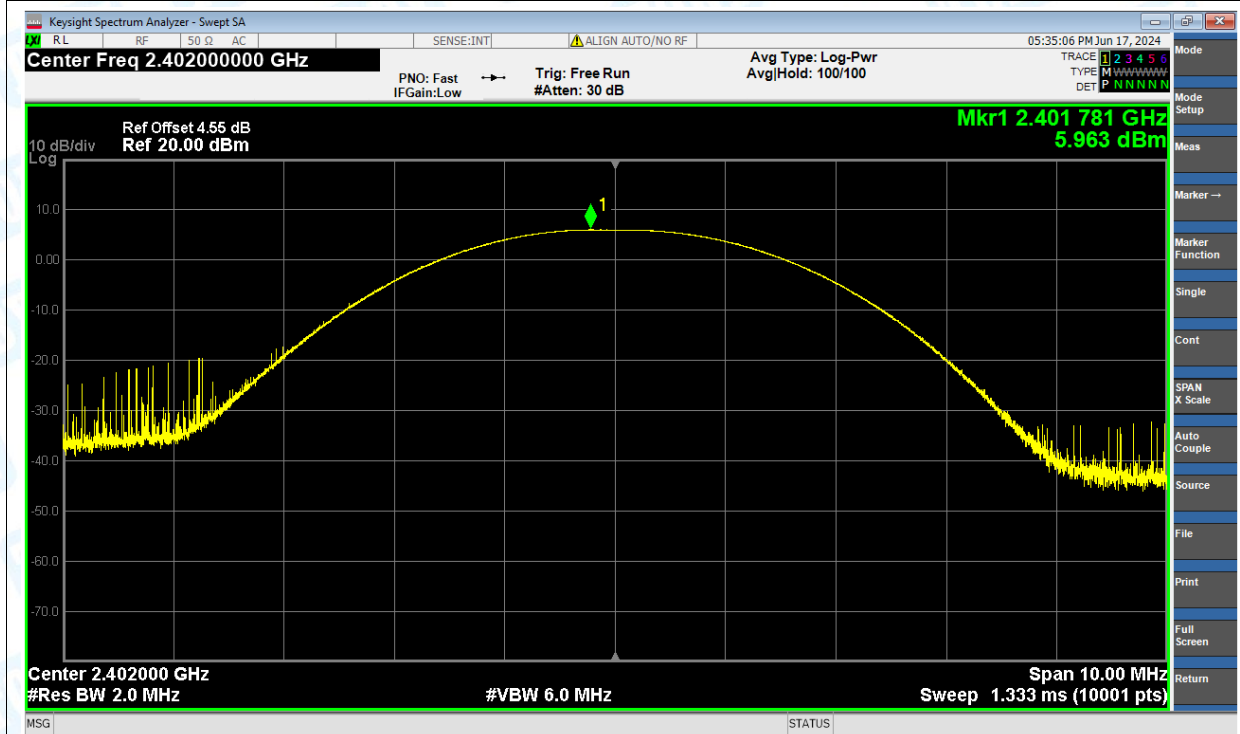


2. Maximum Conducted Output Power

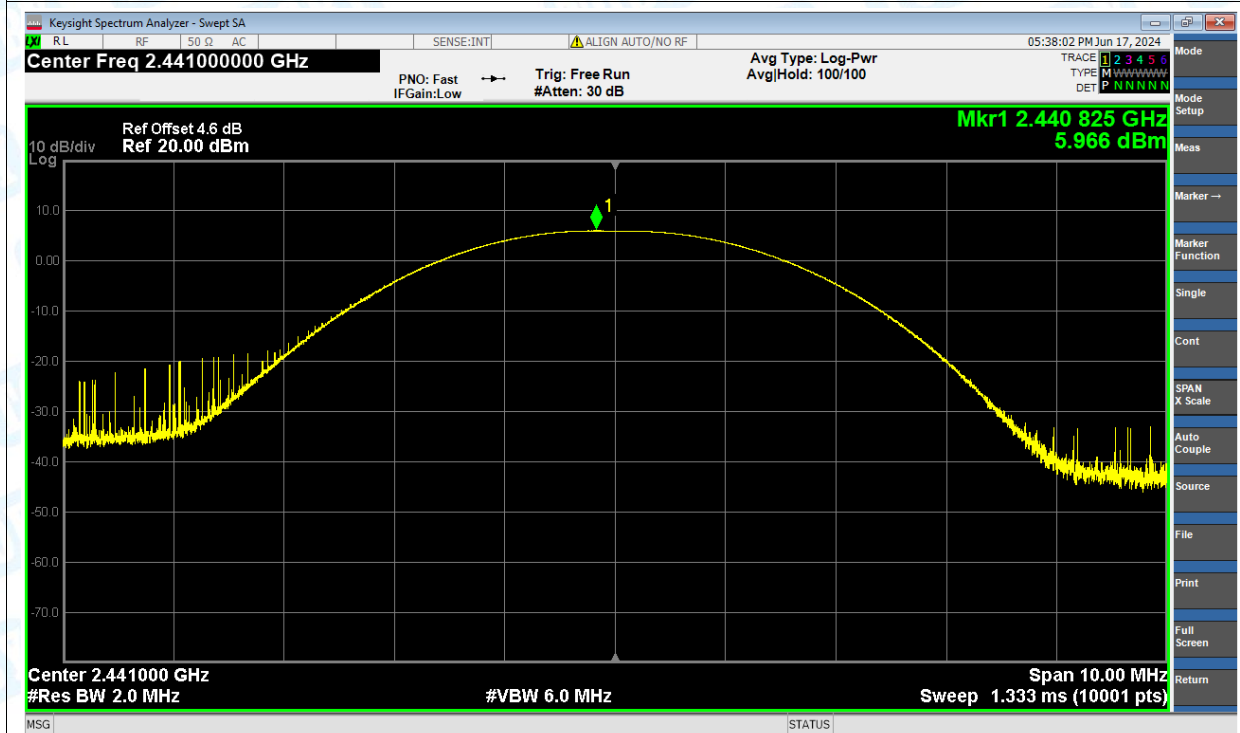
| Condition | Mode  | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|-------|-----------------|---------|-------------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 5.963             | 21          | Pass    |
| NVNT      | 1-DH1 | 2441            | Ant1    | 5.966             | 21          | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | 5.677             | 21          | Pass    |
| NVNT      | 1-DH3 | 2441            | Ant1    | 6.162             | 21          | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | 6.155             | 21          | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | 6.908             | 21          | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | 6.839             | 21          | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | 6.71              | 21          | Pass    |
| NVNT      | 2-DH3 | 2441            | Ant1    | 7.007             | 21          | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | 6.987             | 21          | Pass    |

### Test Graphs

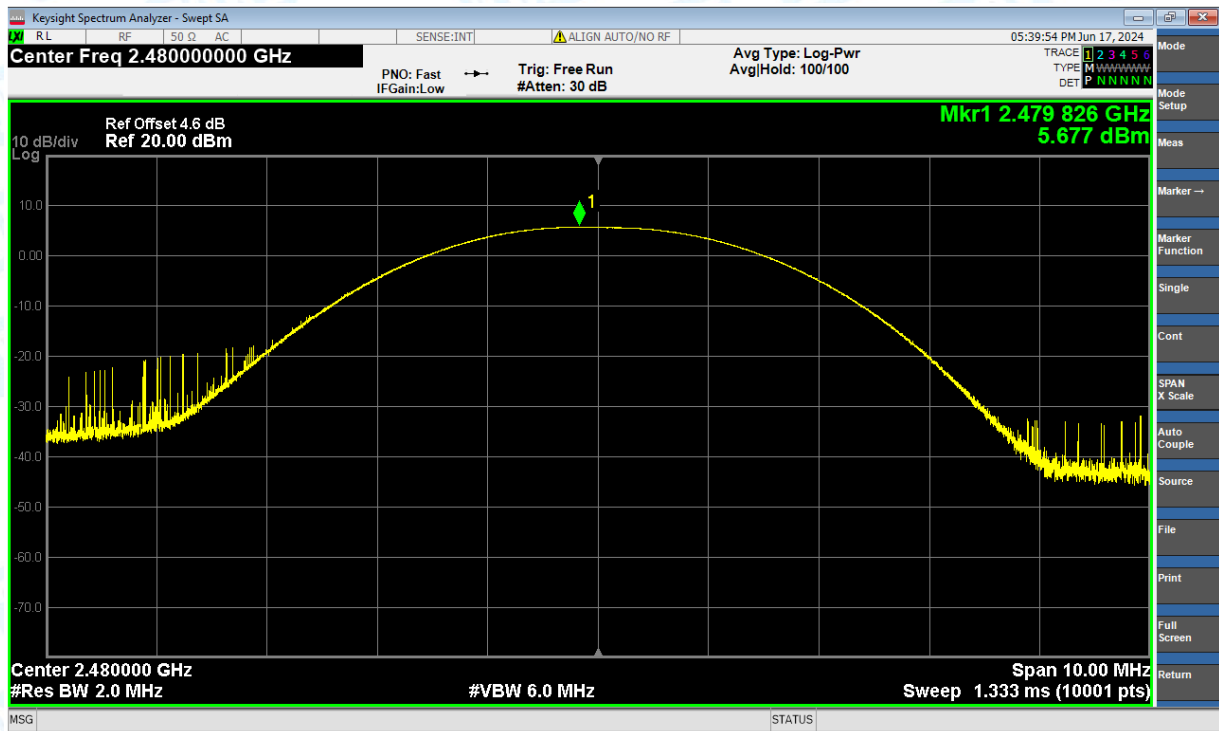
Power NVNT 1-DH1 2402MHz Ant1



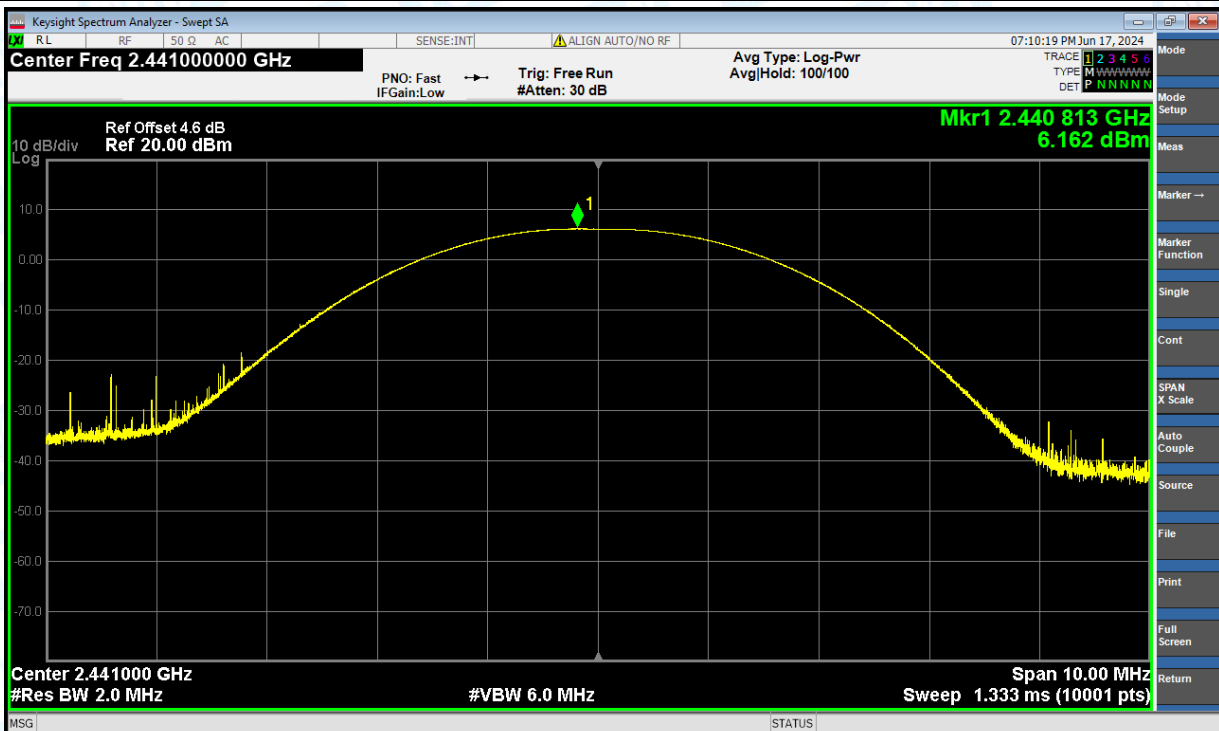
Power NVNT 1-DH1 2441MHz Ant1



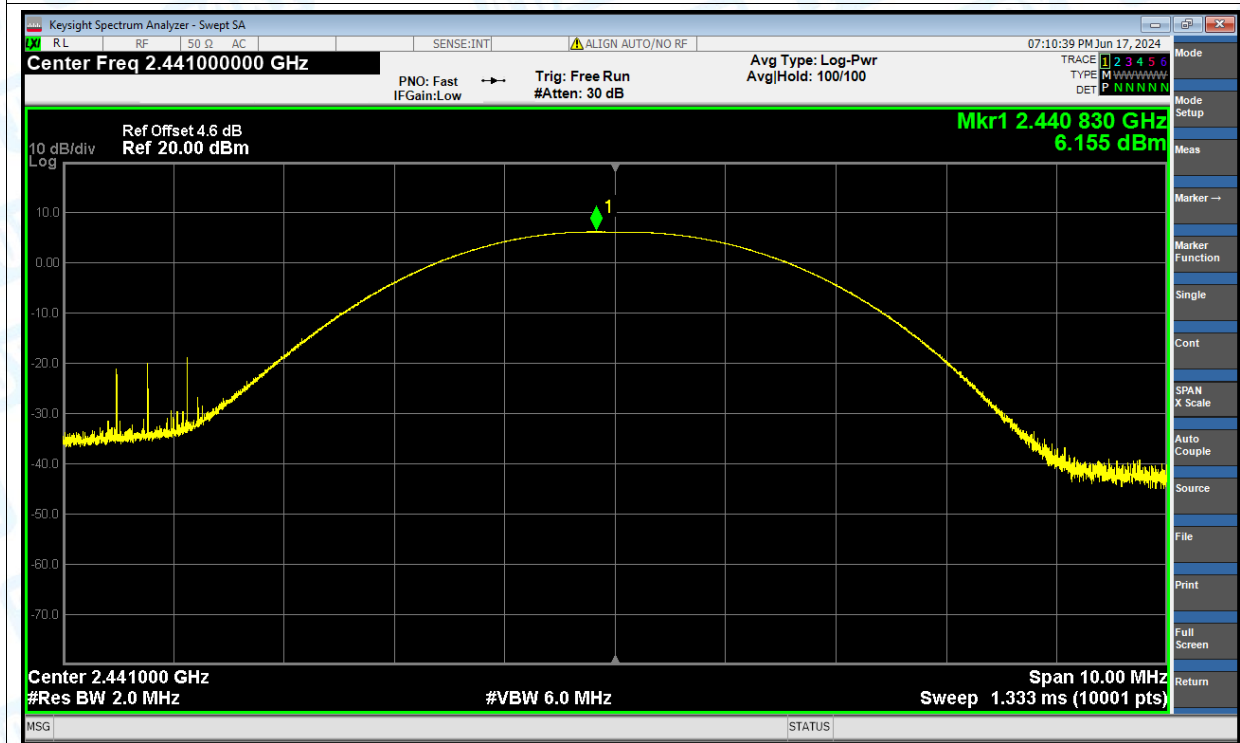
Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 1-DH3 2441MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1



Power NVNT 2-DH1 2441MHz Ant1



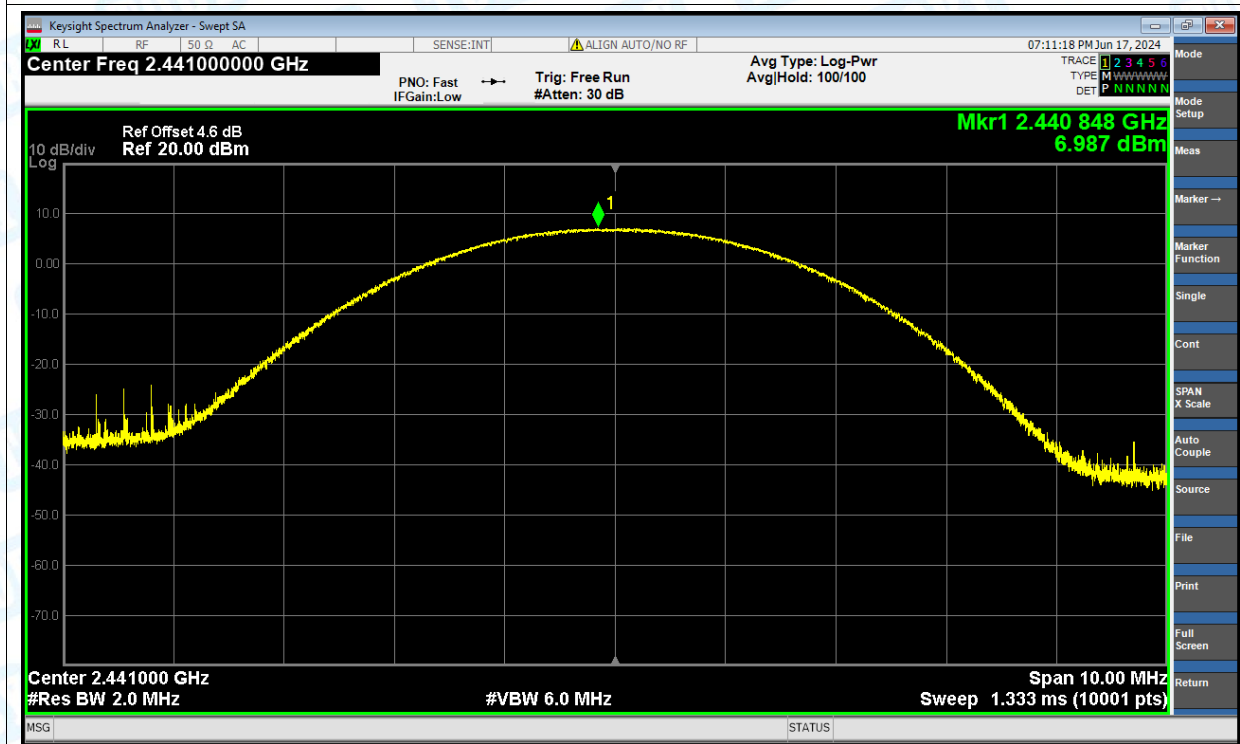
Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 2-DH3 2441MHz Ant1



Power NVNT 2-DH5 2441MHz Ant1

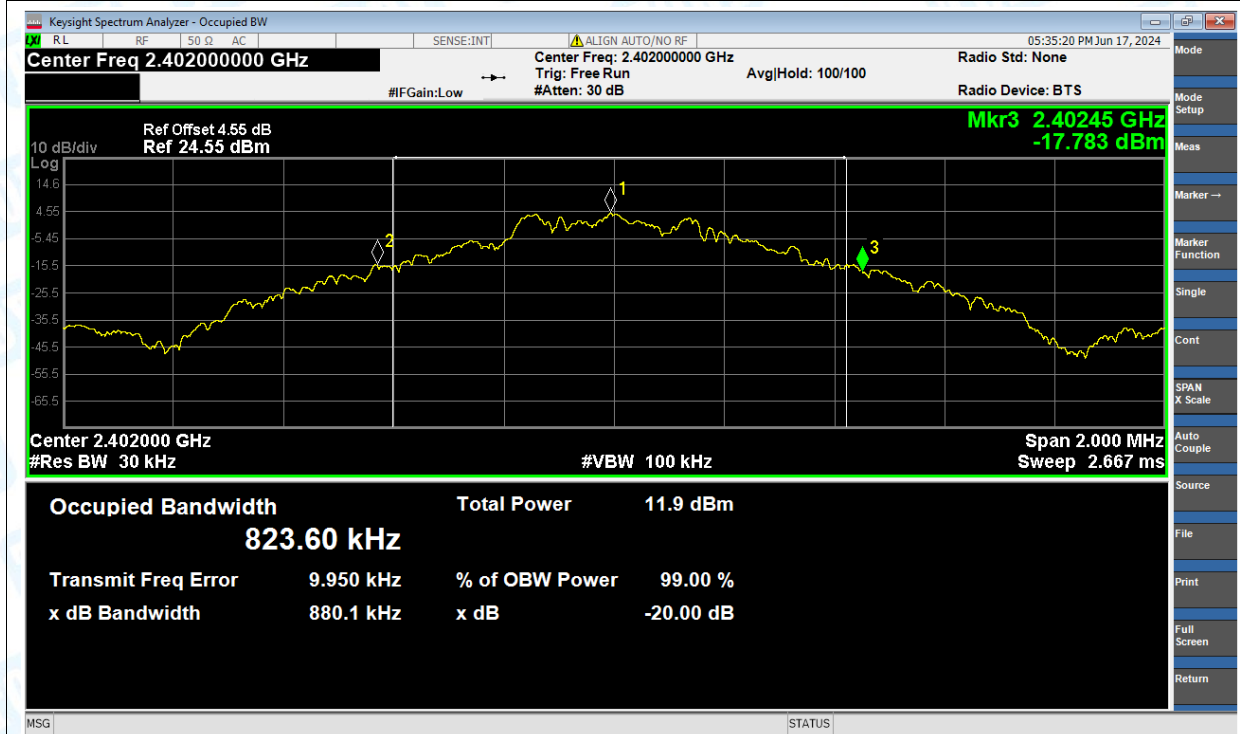


3. -20dB Bandwidth

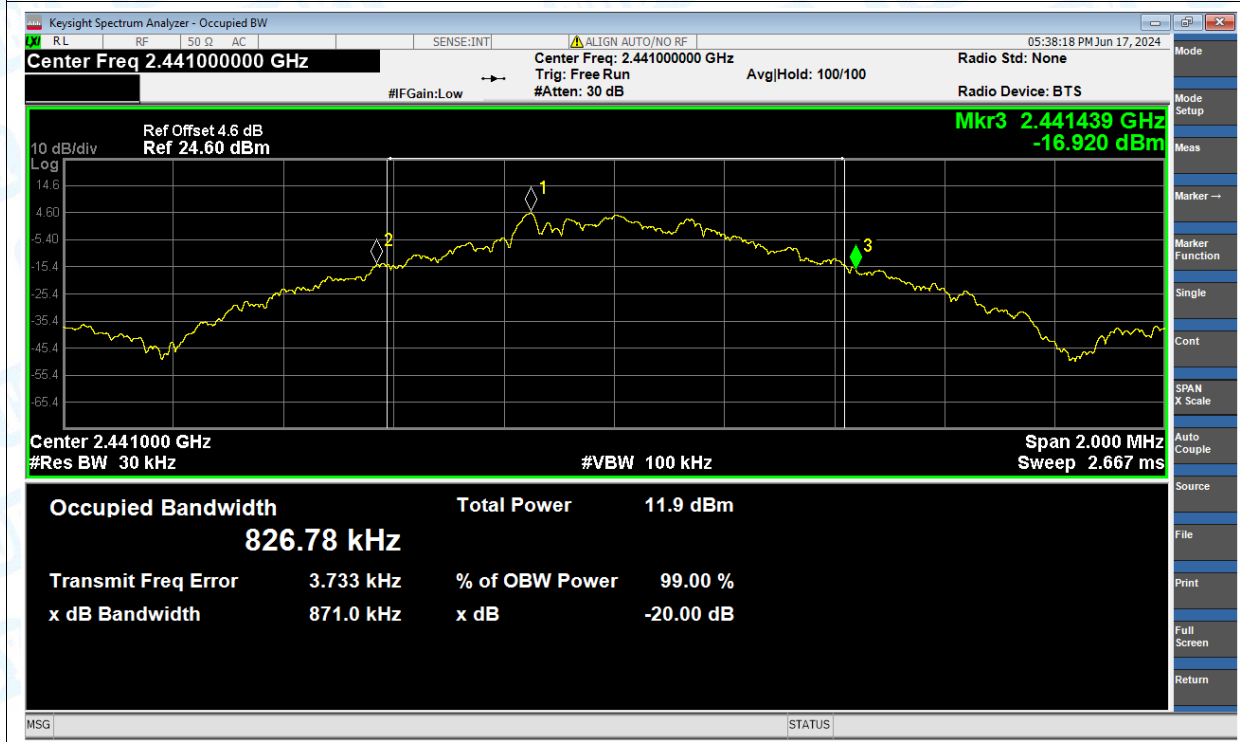
| Condition | Mode  | Frequency (MHz) | Antenna | -20 dB Bandwidth (MHz) | Limit -20 dB Bandwidth (MHz) | Verdict |
|-----------|-------|-----------------|---------|------------------------|------------------------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 0.88                   | 0                            | Pass    |
| NVNT      | 1-DH1 | 2441            | Ant1    | 0.87                   | 0                            | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | 0.86                   | 0                            | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | 1.25                   | 0                            | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | 1.24                   | 0                            | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | 1.23                   | 0                            | Pass    |

## Test Graphs

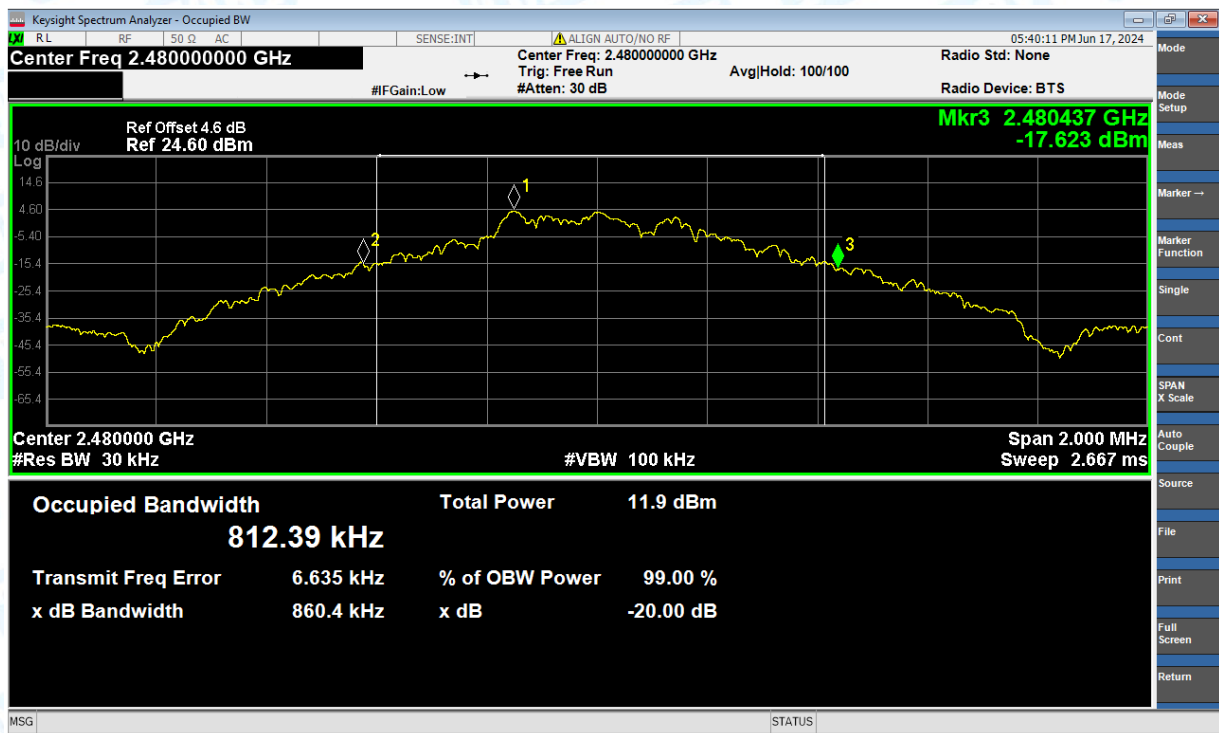
### -20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



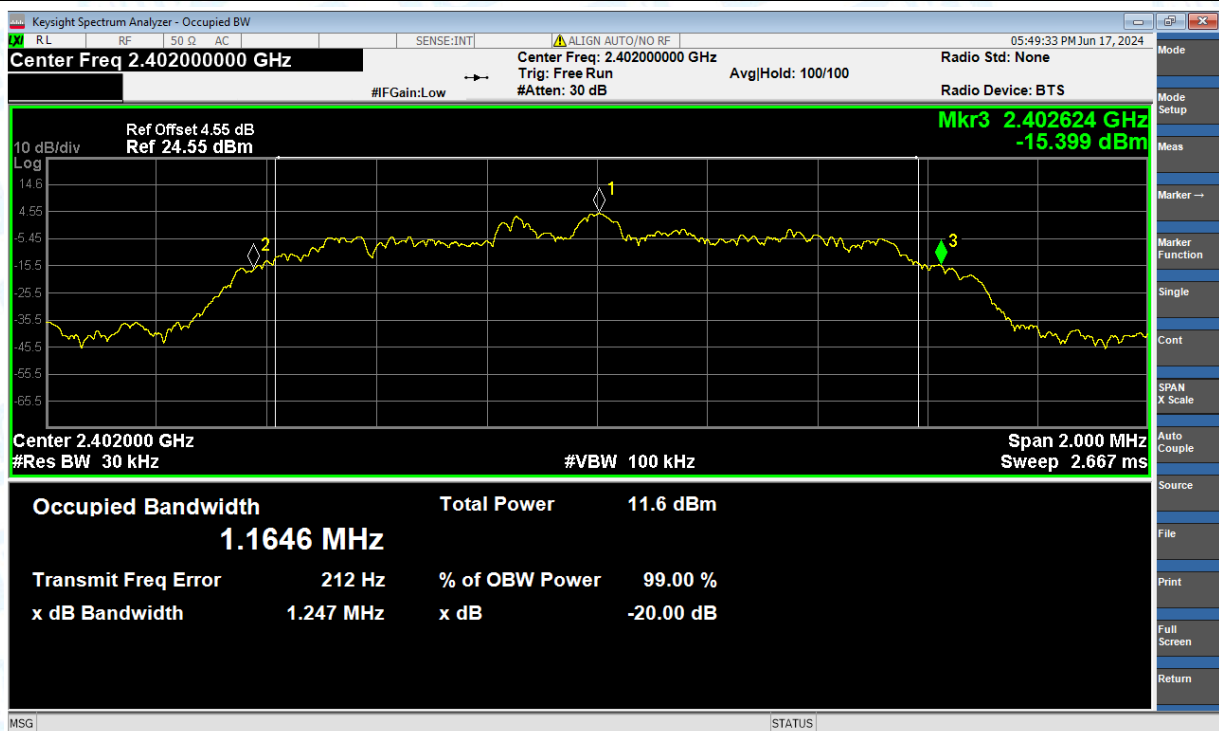
### -20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



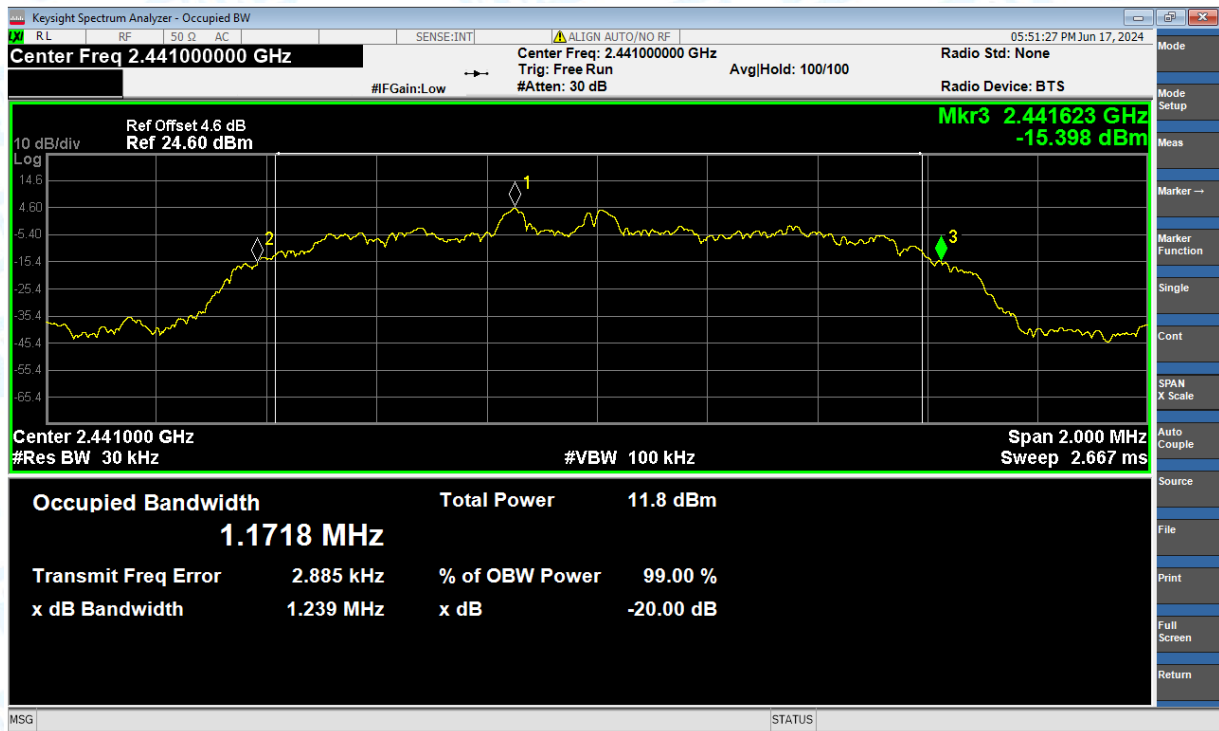
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



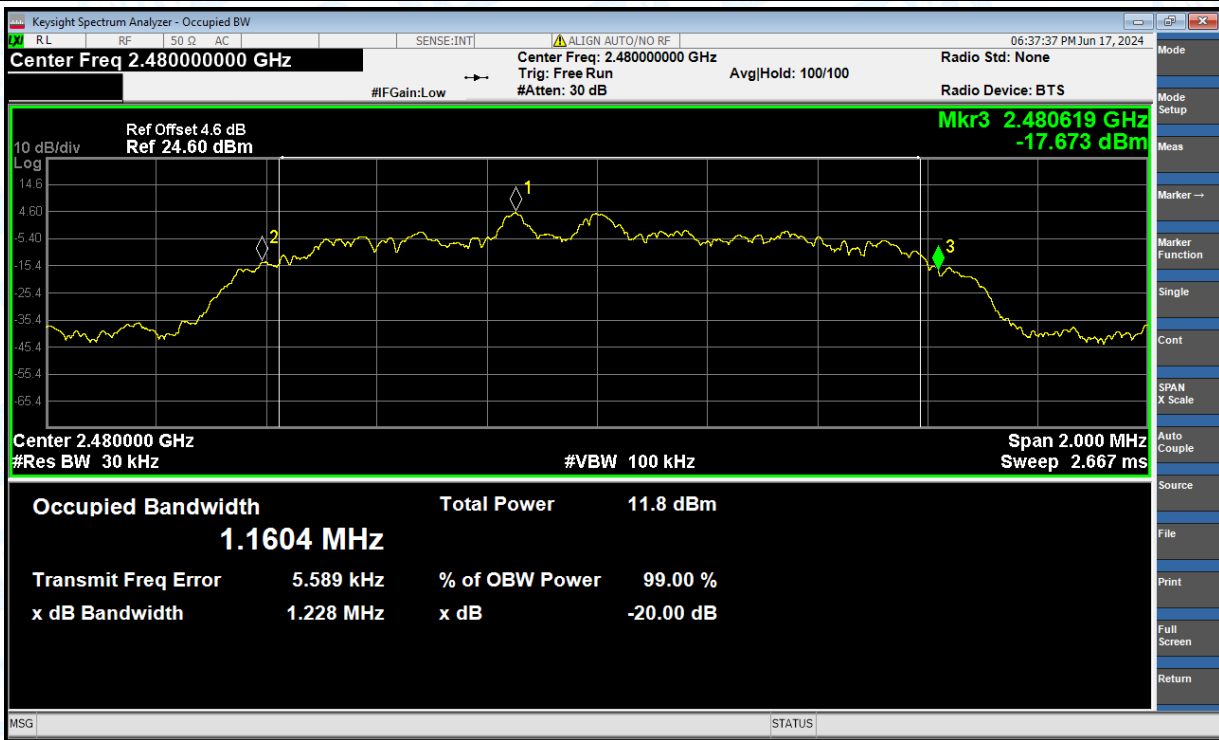
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1

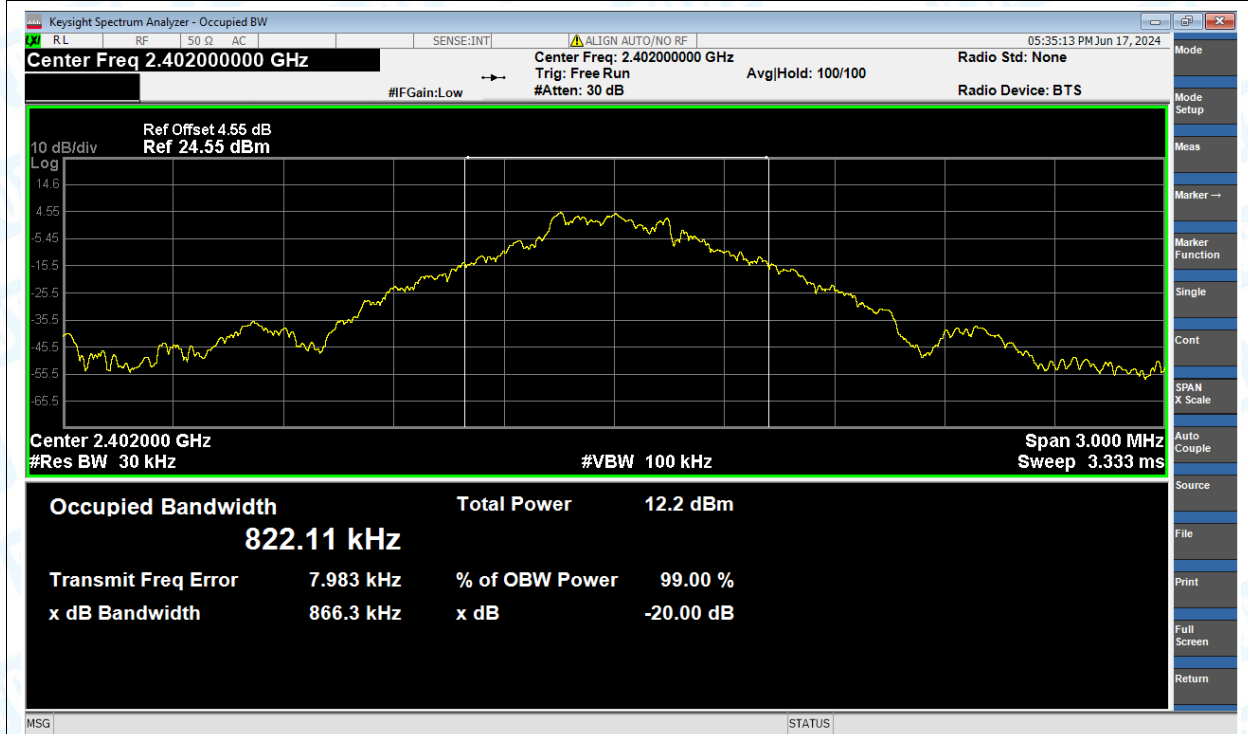


## 4. Occupied Channel Bandwidth

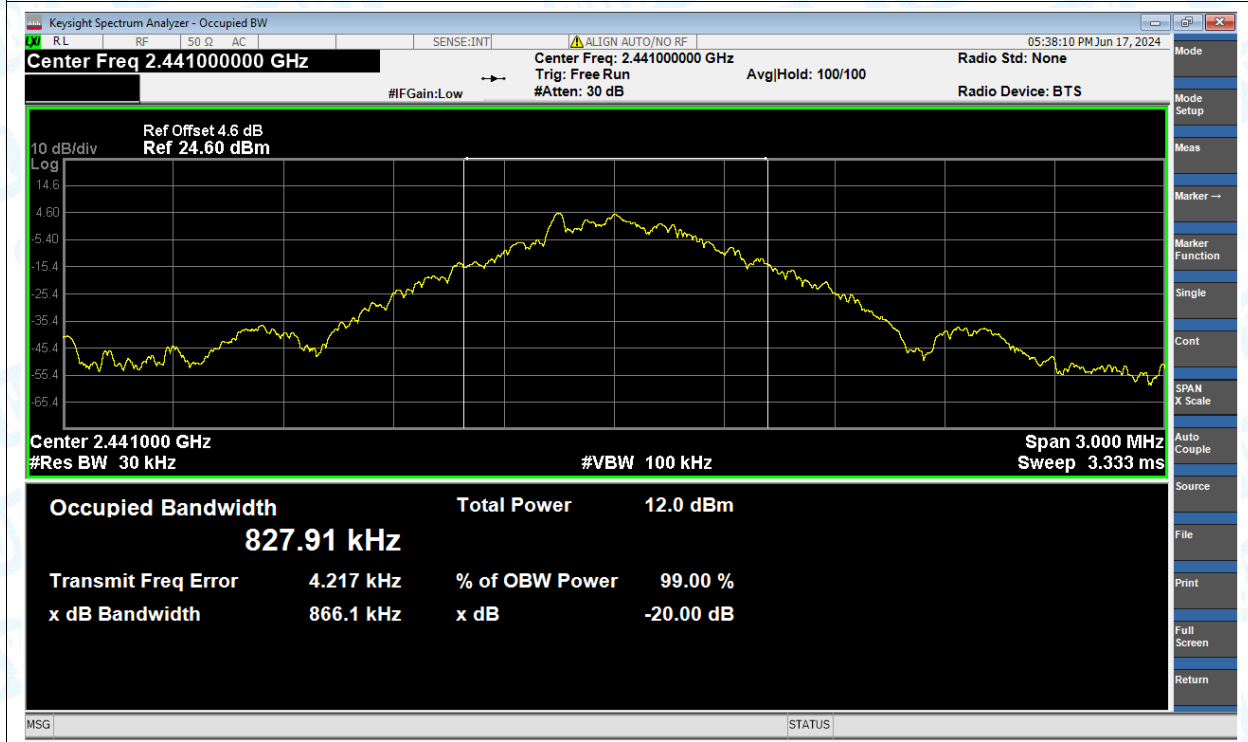
| Condition | Mode  | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|-------|-----------------|---------|---------------|
| NVNT      | 1-DH1 | 2402            | Ant1    | 0.822         |
| NVNT      | 1-DH1 | 2441            | Ant1    | 0.828         |
| NVNT      | 1-DH1 | 2480            | Ant1    | 0.795         |
| NVNT      | 2-DH1 | 2402            | Ant1    | 1.148         |
| NVNT      | 2-DH1 | 2441            | Ant1    | 1.139         |
| NVNT      | 2-DH1 | 2480            | Ant1    | 1.159         |

## Test Graphs

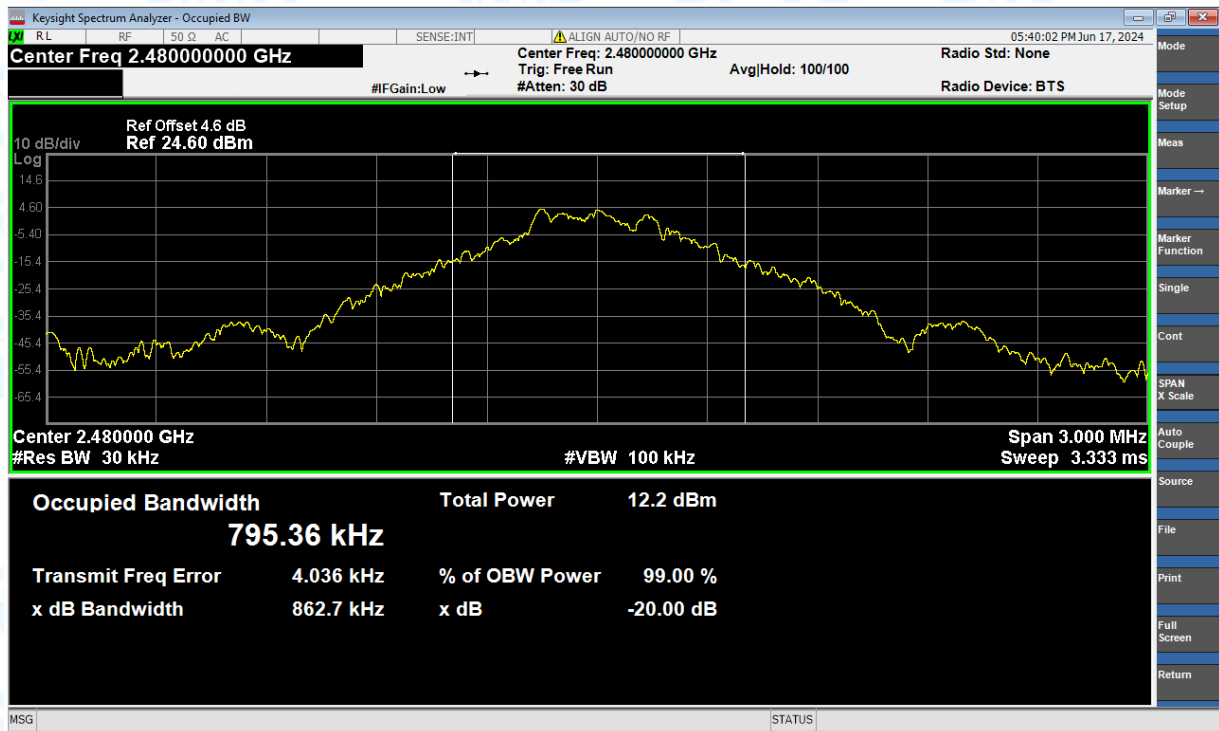
### OBW NVNT 1-DH1 2402MHz Ant1



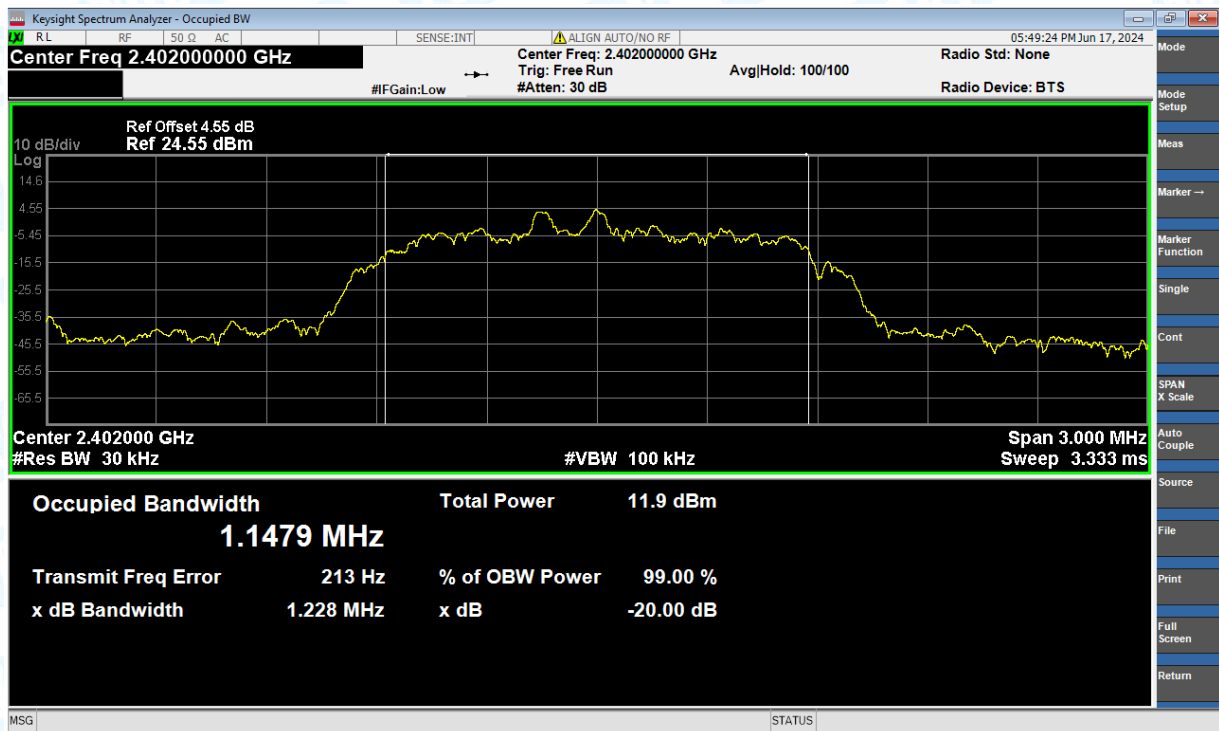
### OBW NVNT 1-DH1 2441MHz Ant1



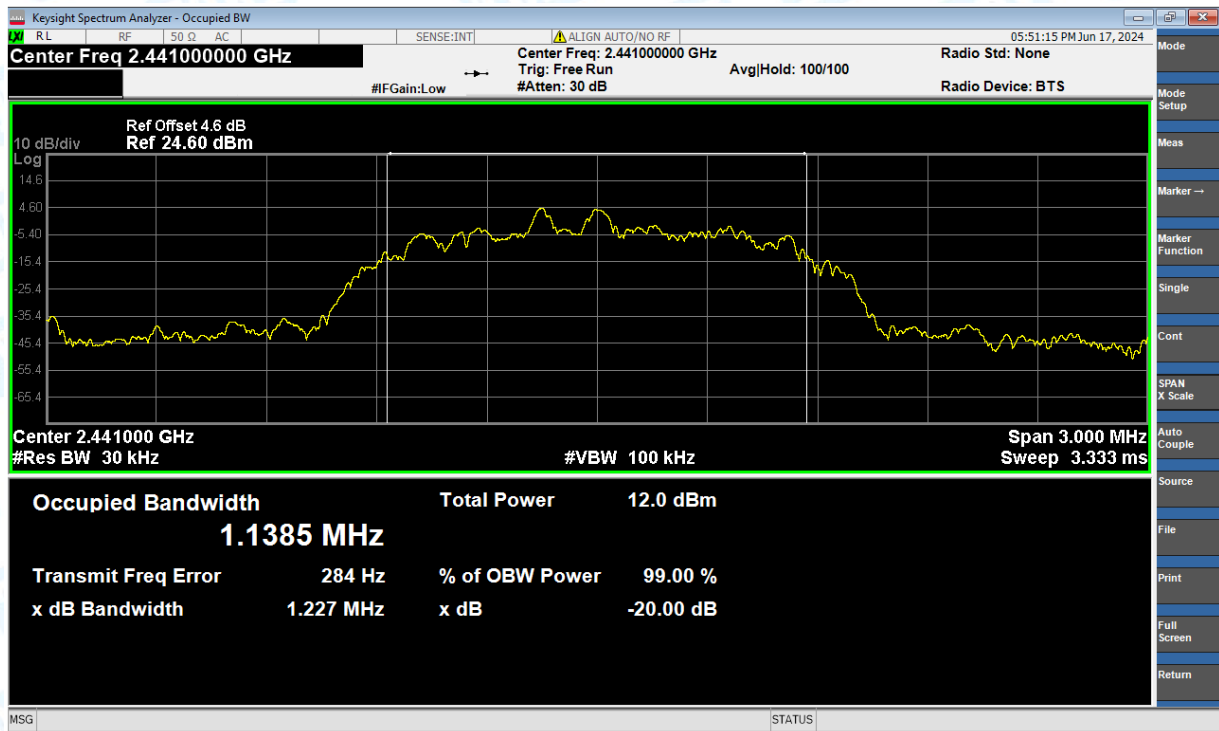
OBW NVNT 1-DH1 2480MHz Ant1



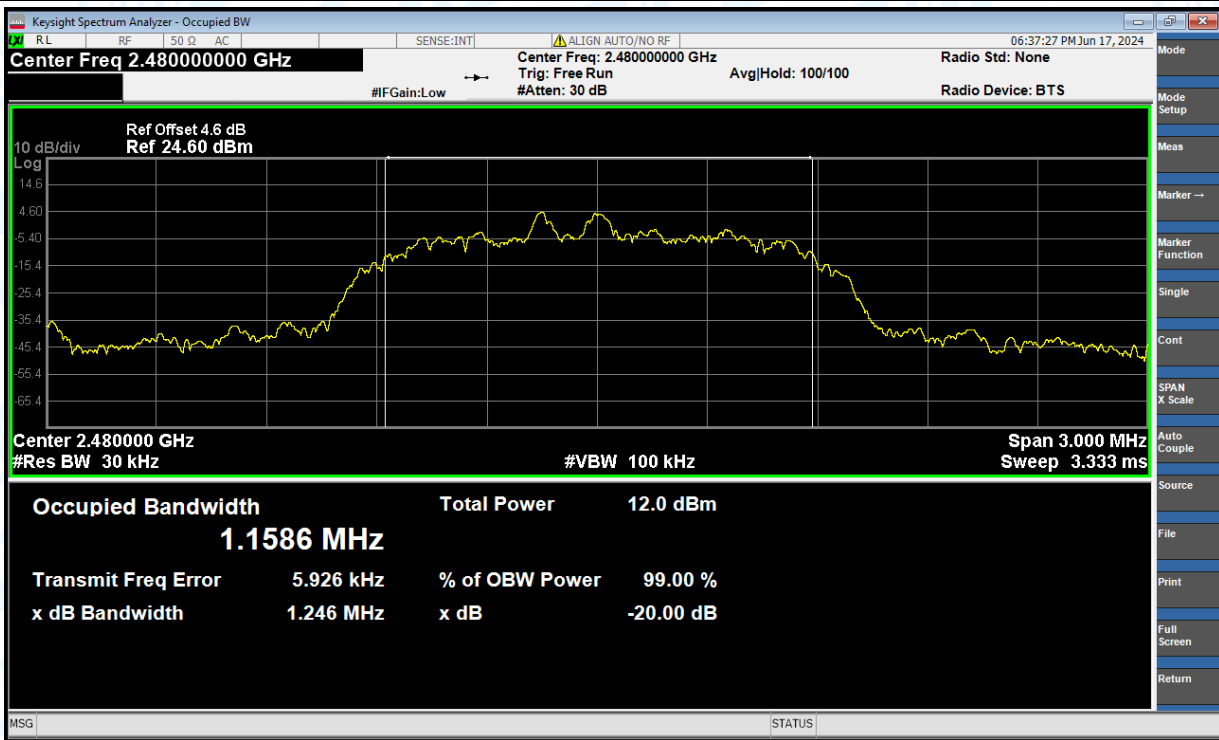
OBW NVNT 2-DH1 2402MHz Ant1



OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1



5. Band Edge

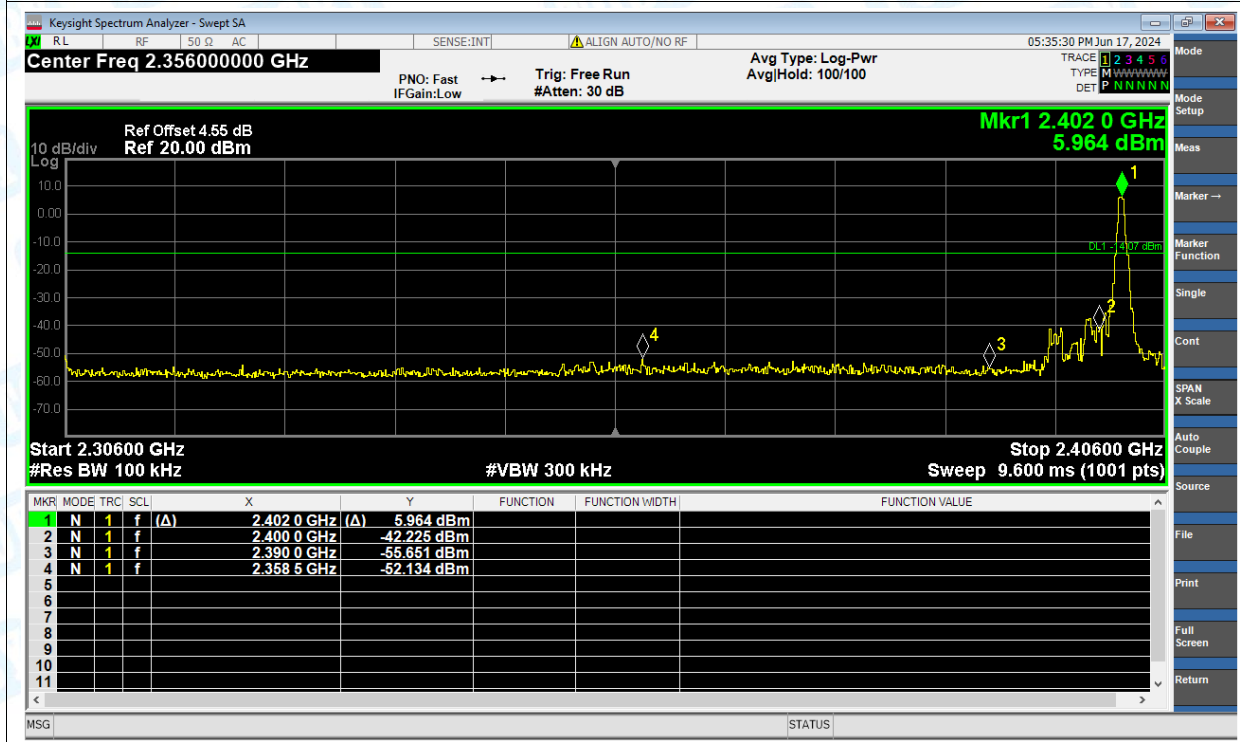
| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | -58.06          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | -57.28          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | -58.96          | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | -58.65          | -20         | Pass    |

## Test Graphs

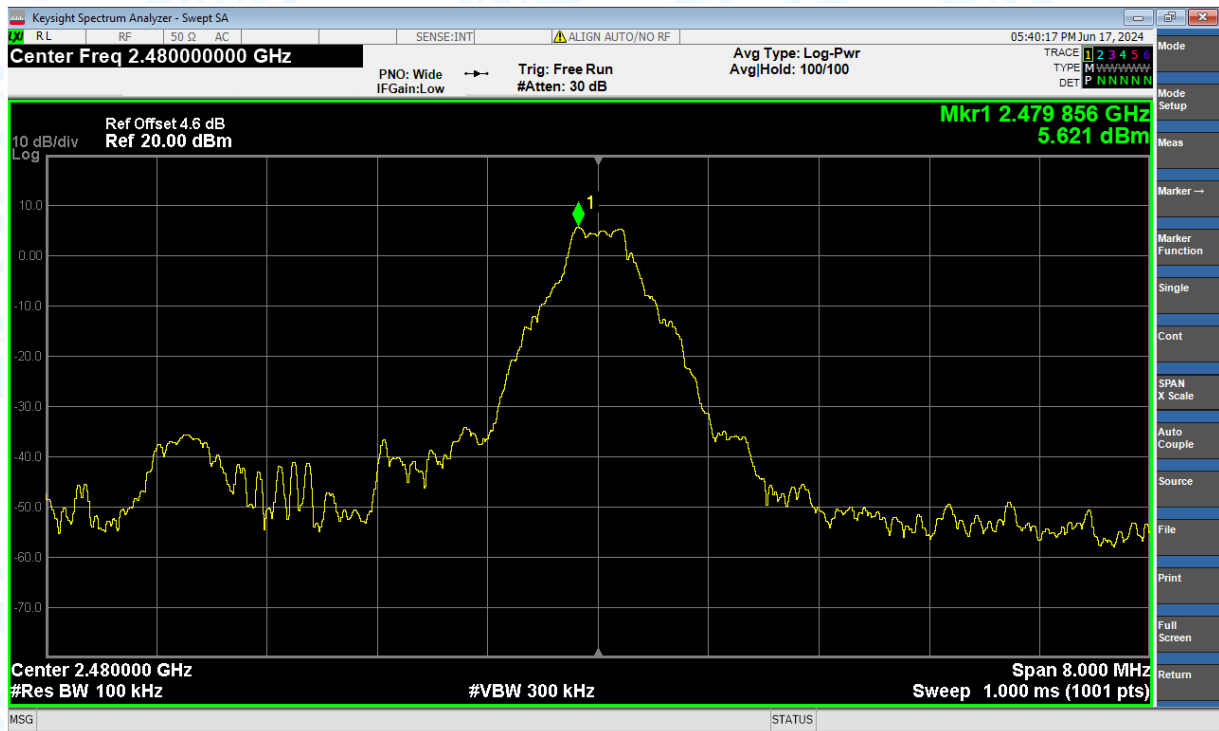
### Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



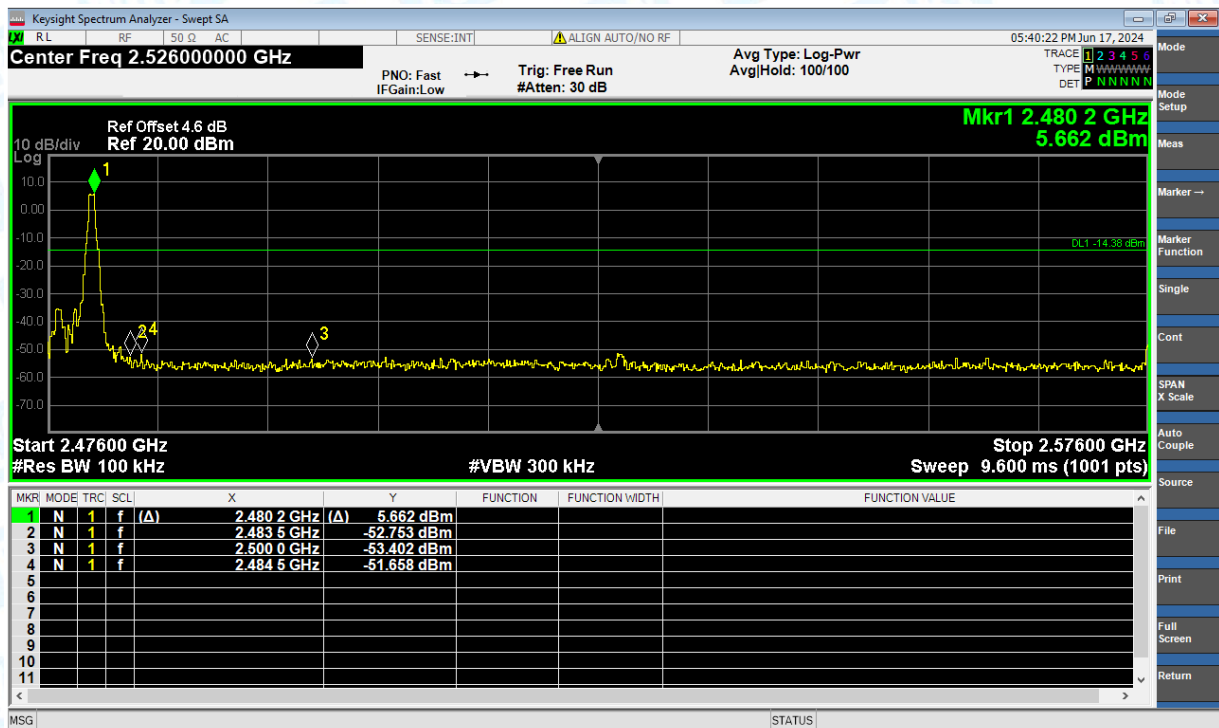
### Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



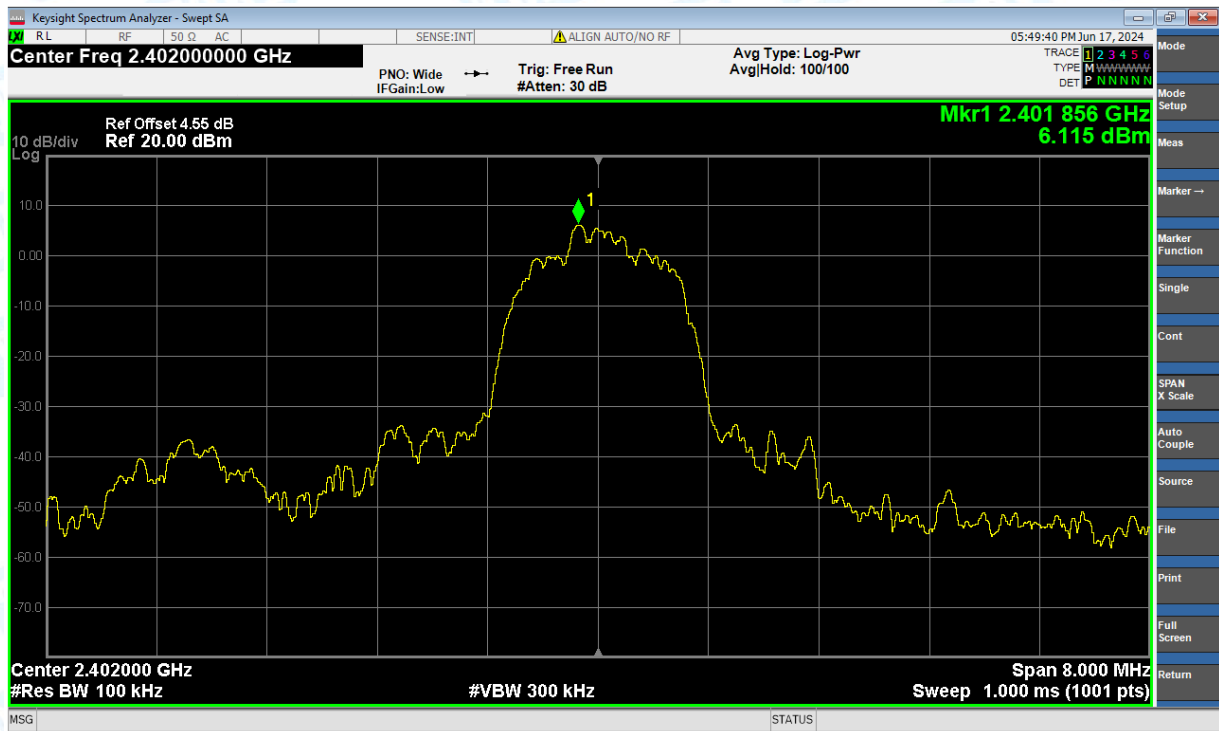
### Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



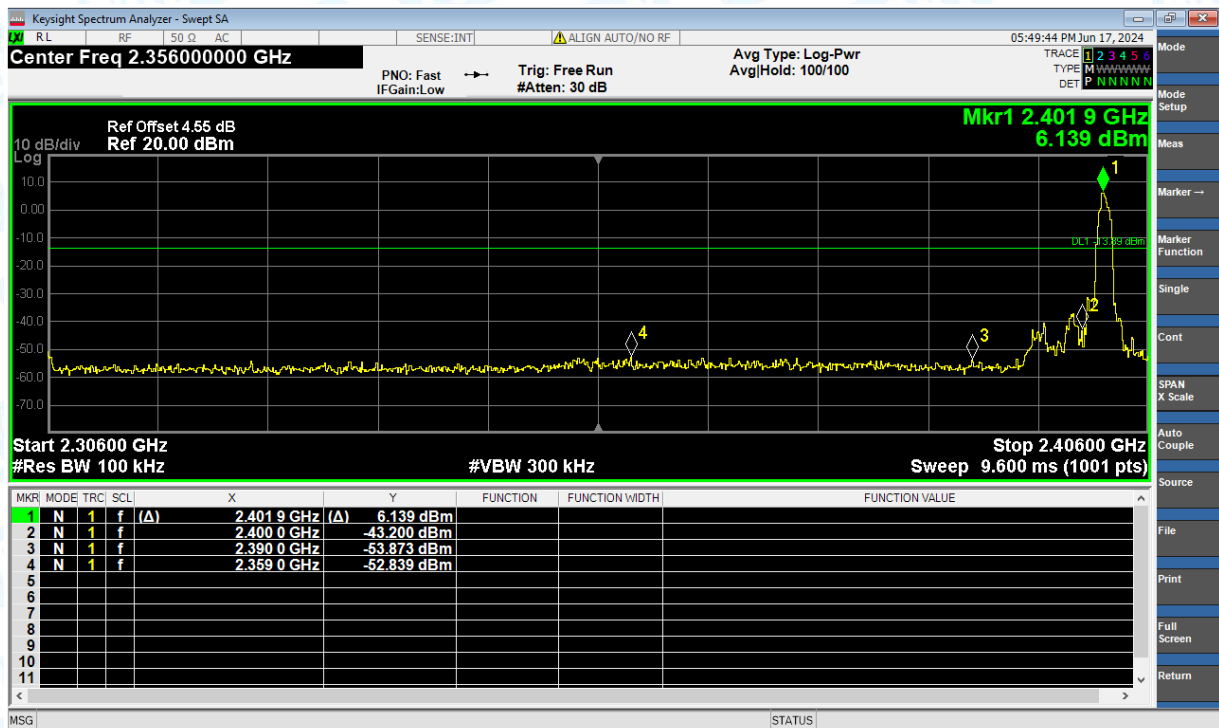
### Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



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



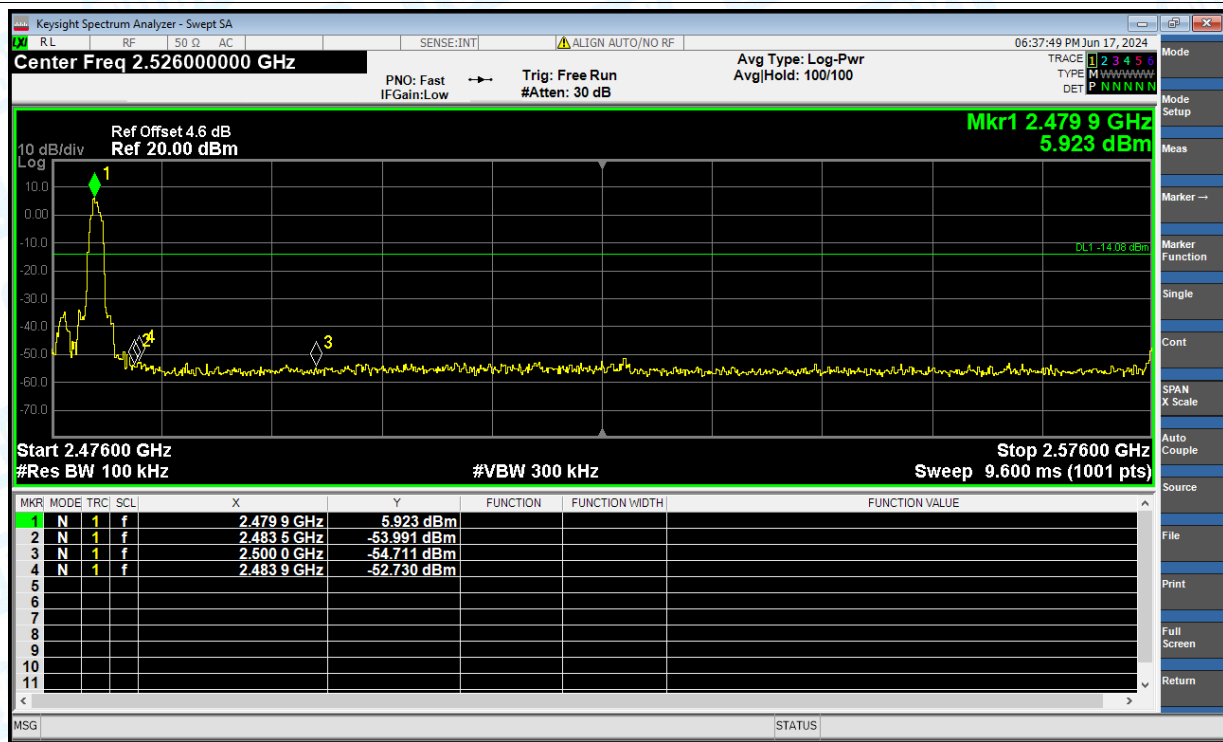
### Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



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



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



## 6. Band Edge(Hopping)

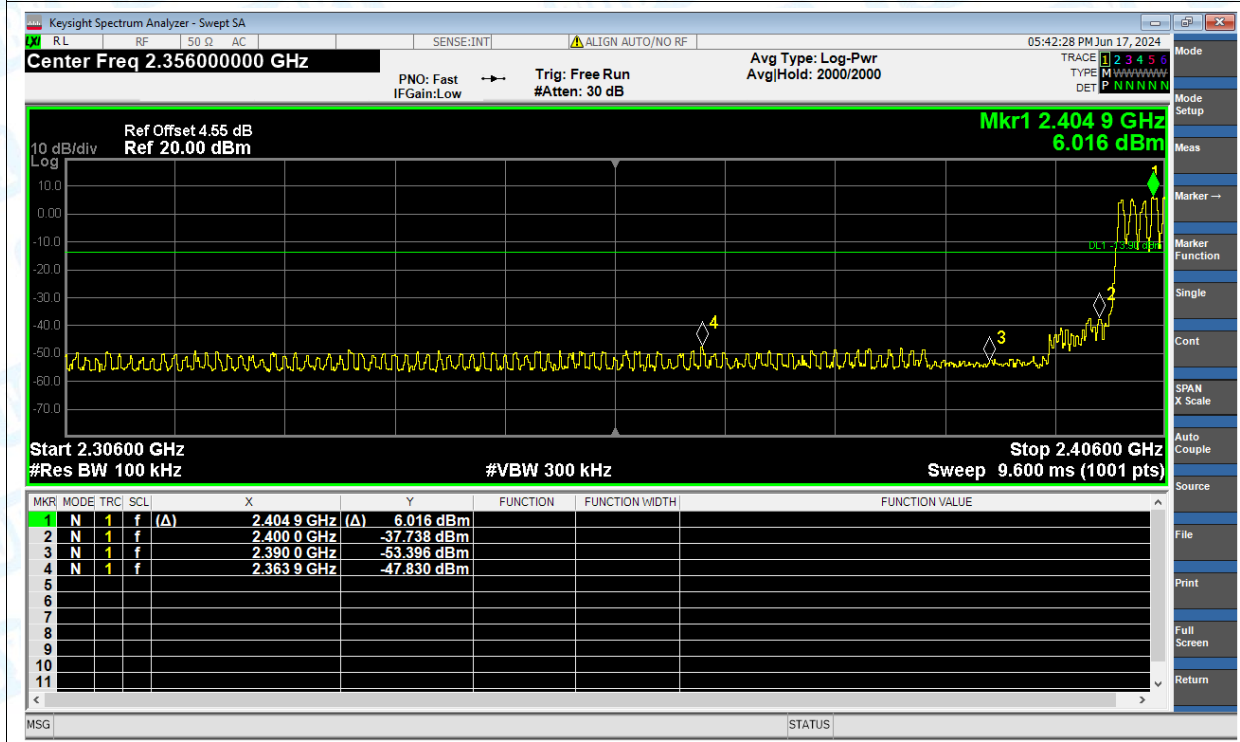
| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | Hopping      | -53.93          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | Hopping      | -53.22          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | Hopping      | -52.09          | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | Hopping      | -52.04          | -20         | Pass    |

### Test Graphs

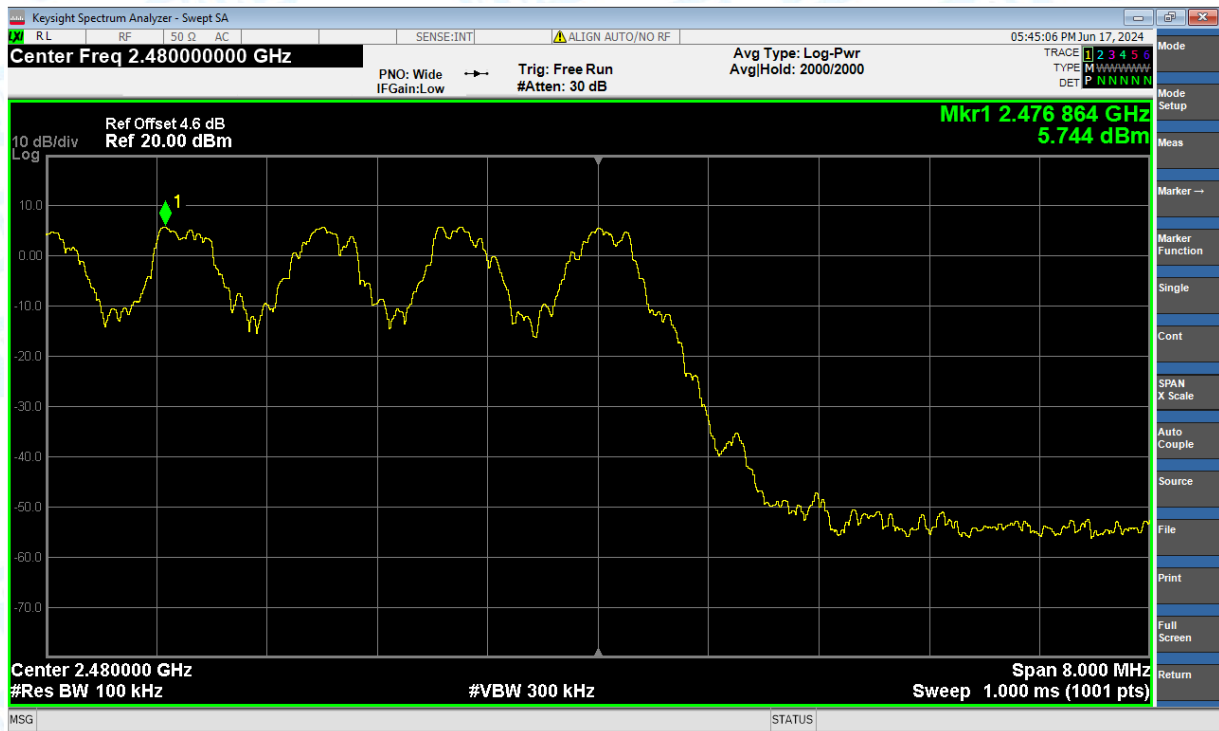
#### Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



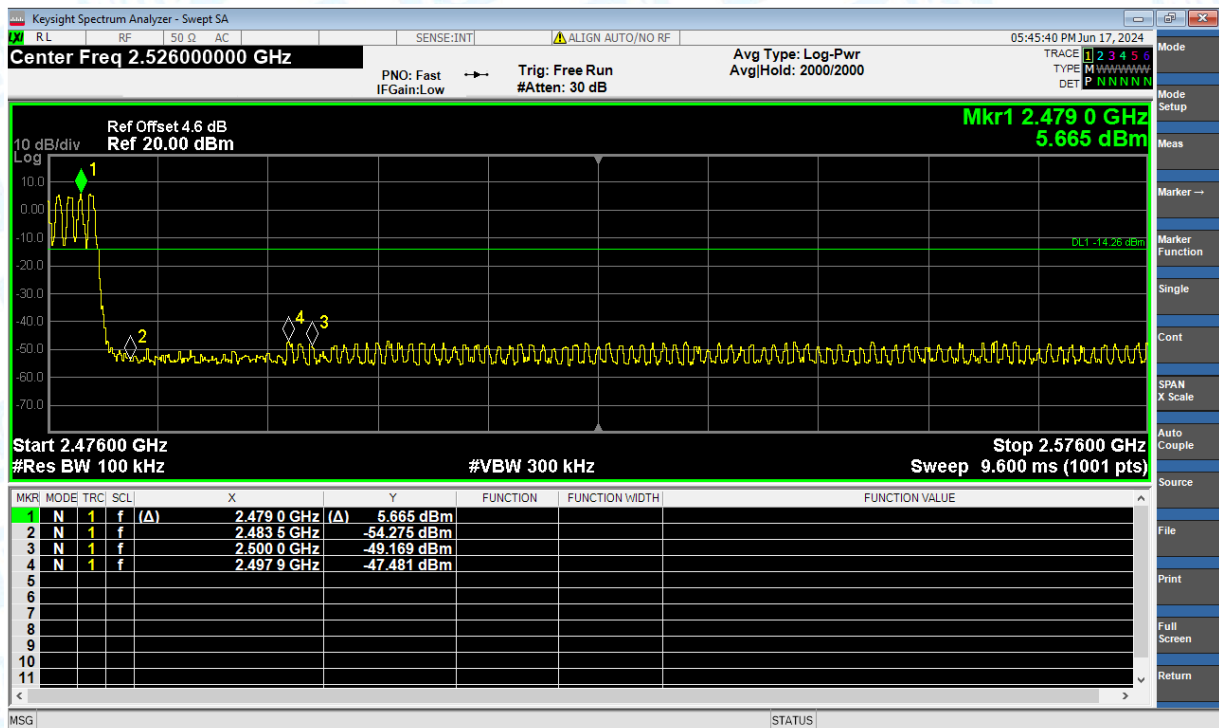
#### Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



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



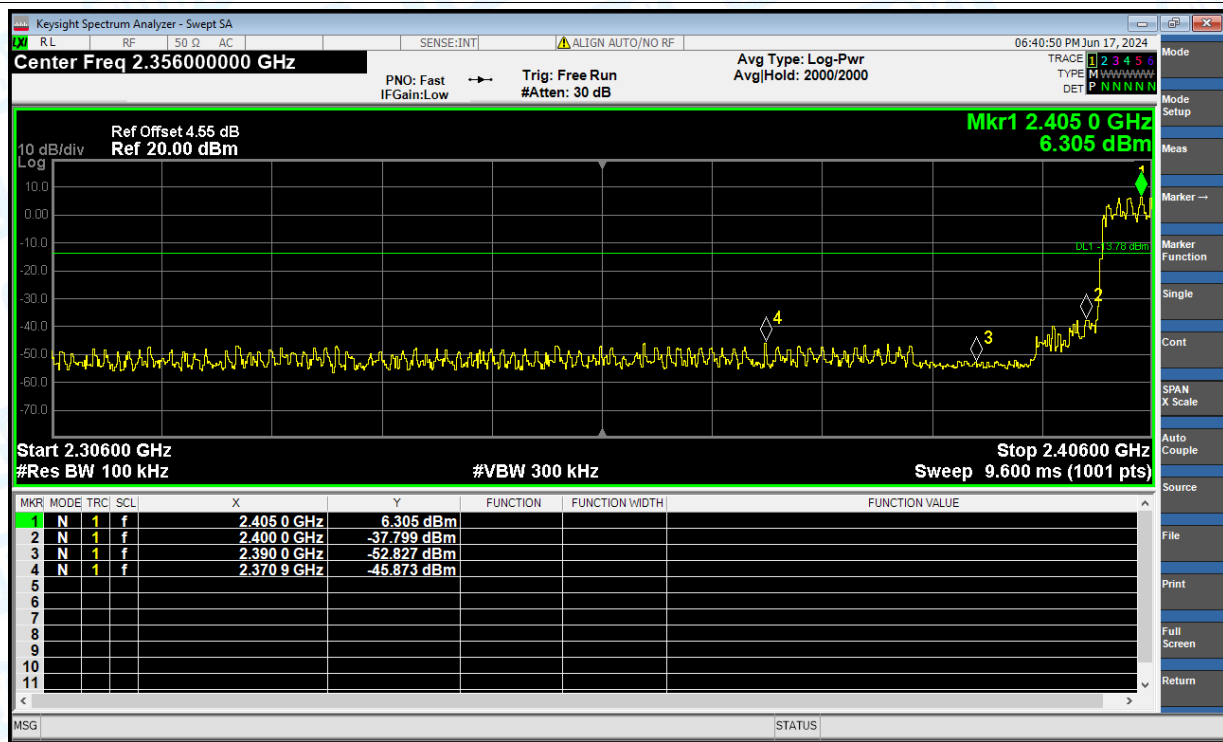
### Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



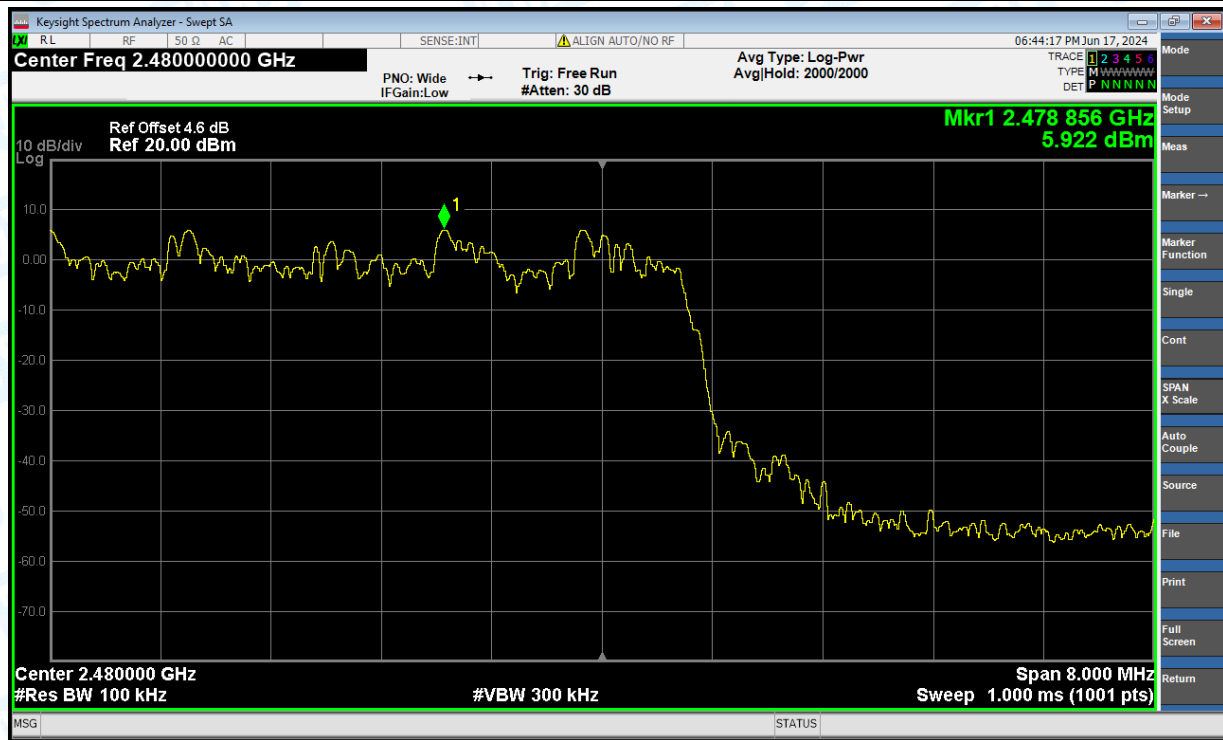
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



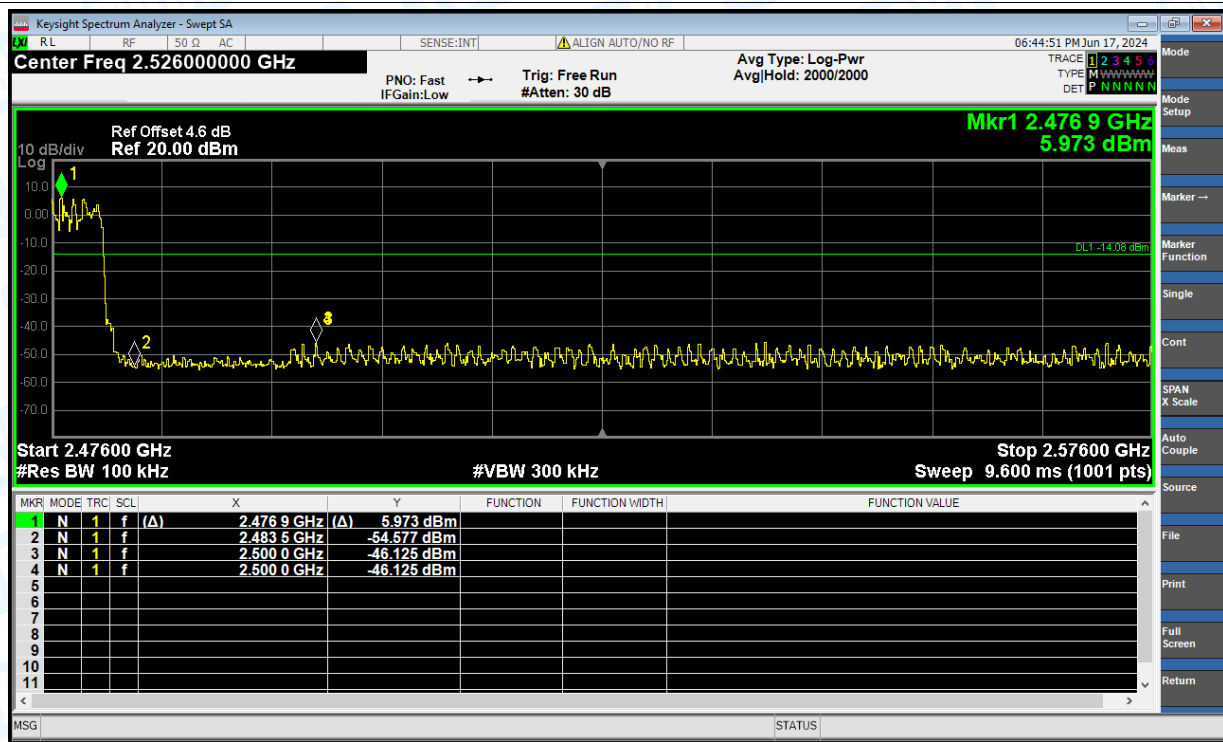
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission

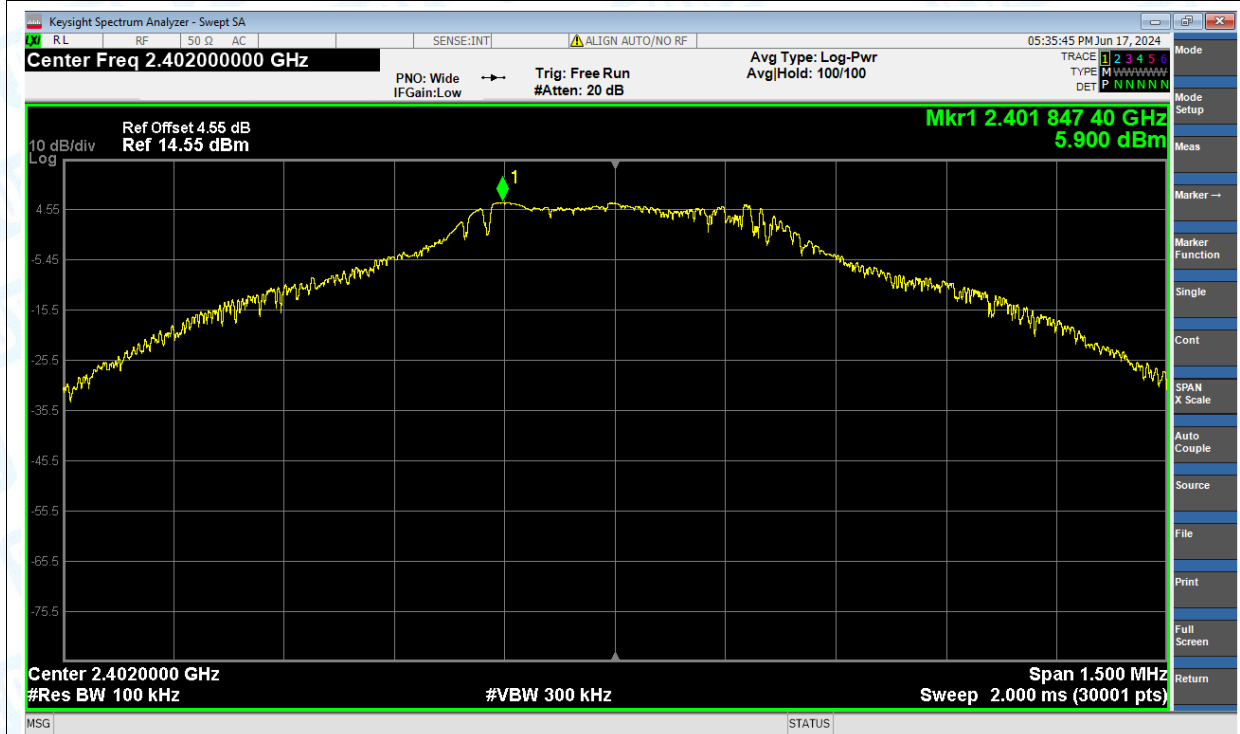


7. Conducted RF Spurious Emission

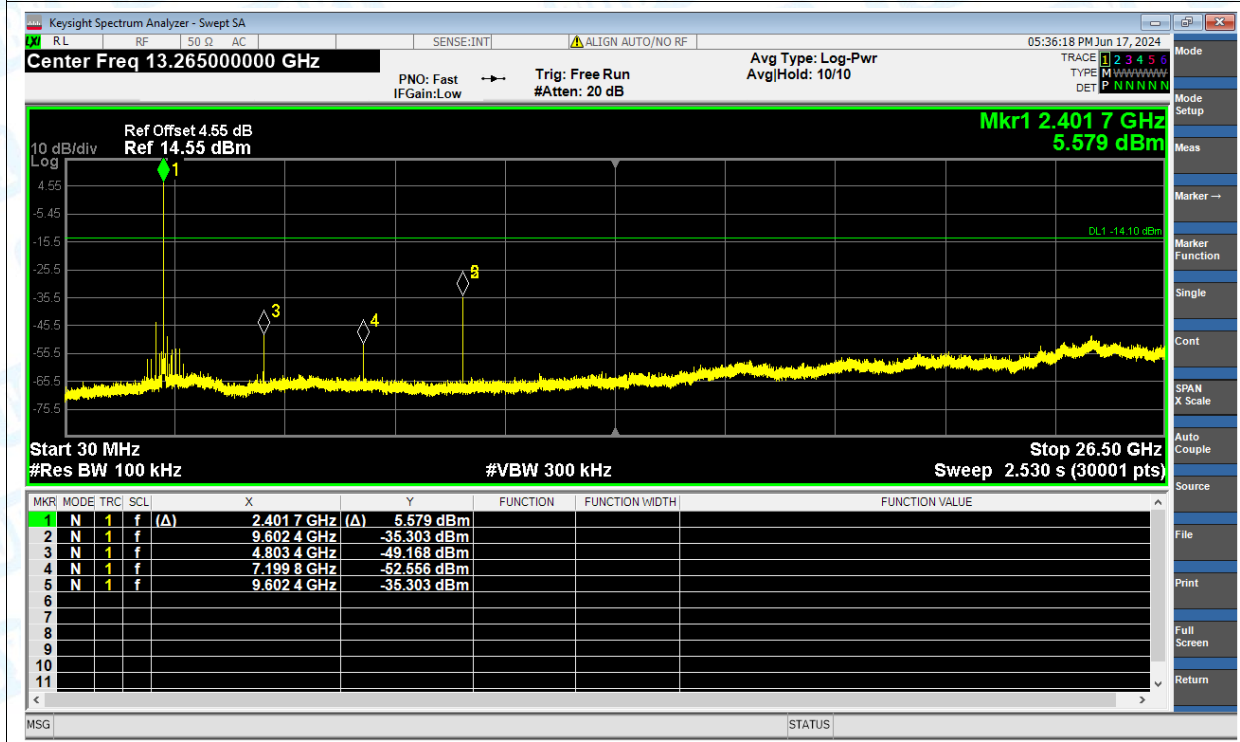
| Condition | Mode  | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | -41.2           | -20         | Pass    |
| NVNT      | 1-DH1 | 2441            | Ant1    | -39.56          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | -37.43          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | -40.58          | -20         | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | -39.02          | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | -37.07          | -20         | Pass    |

### Test Graphs

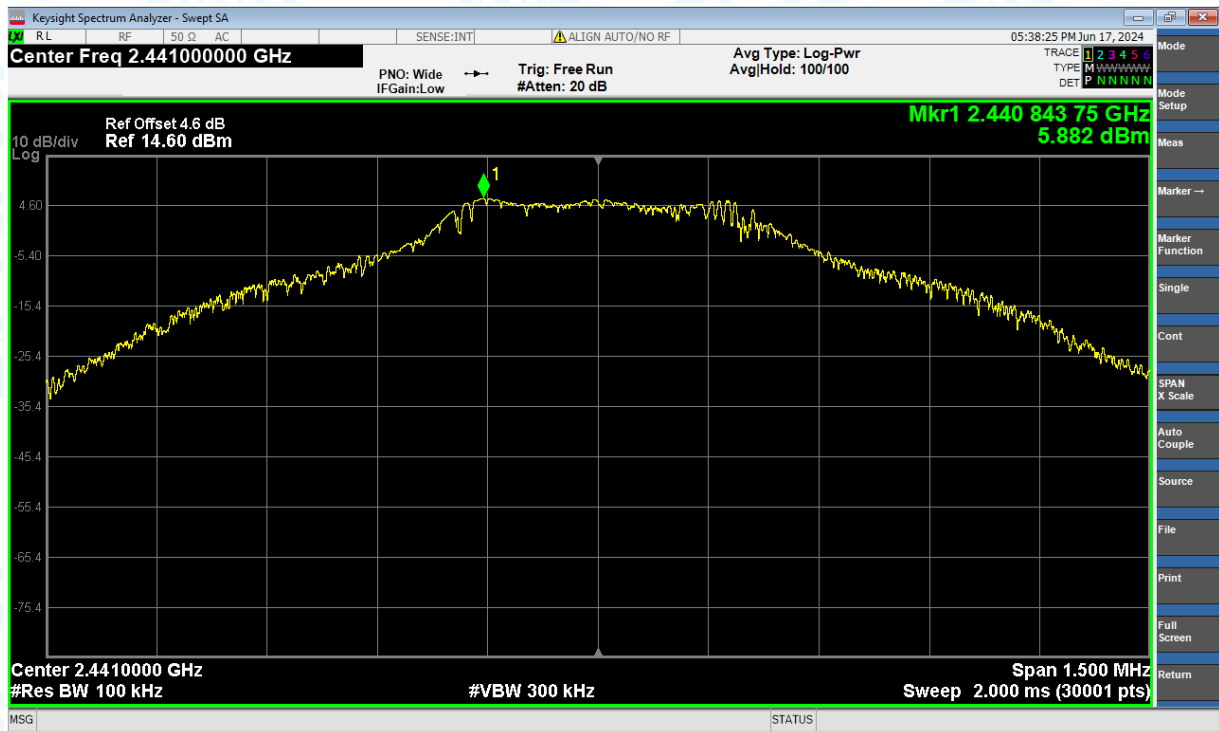
#### Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



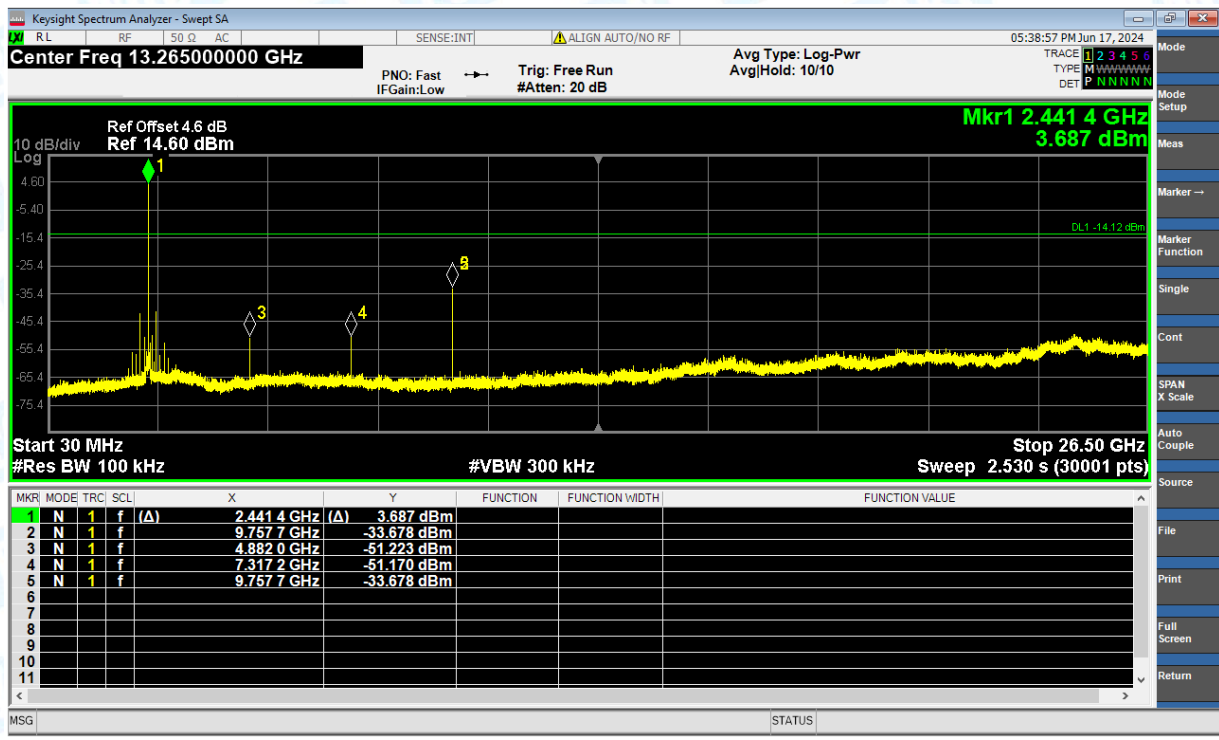
#### Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



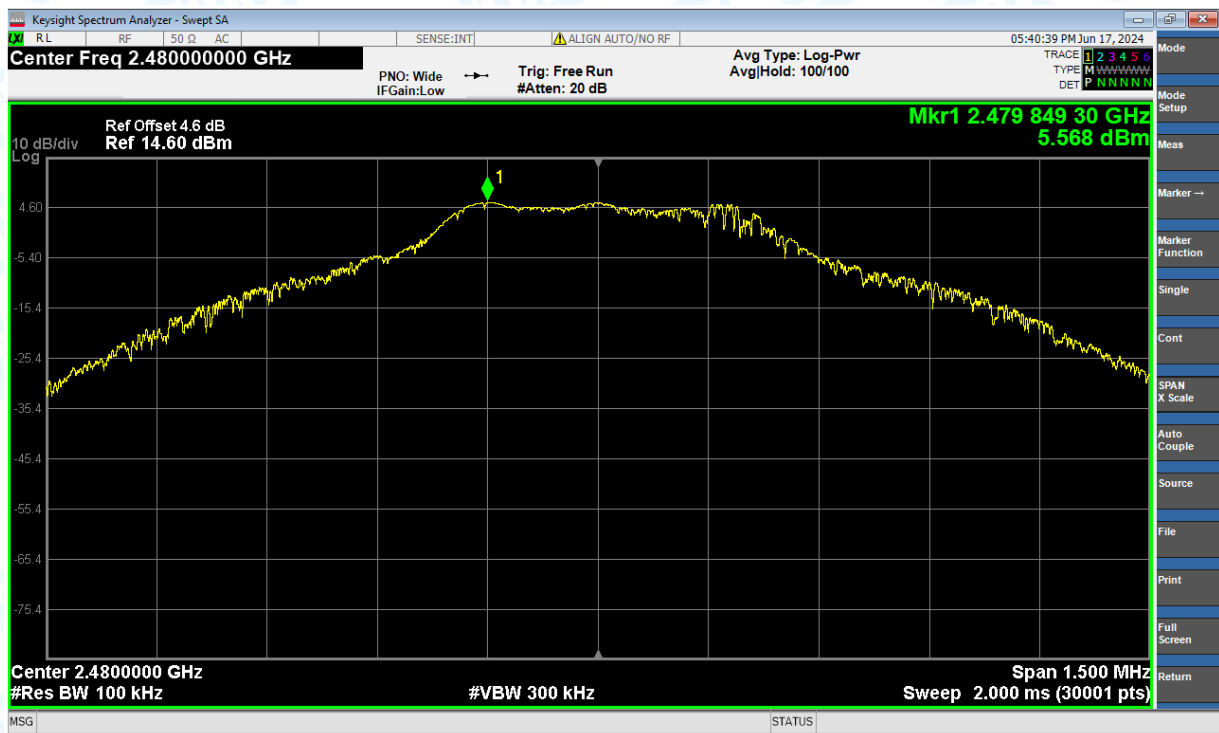
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



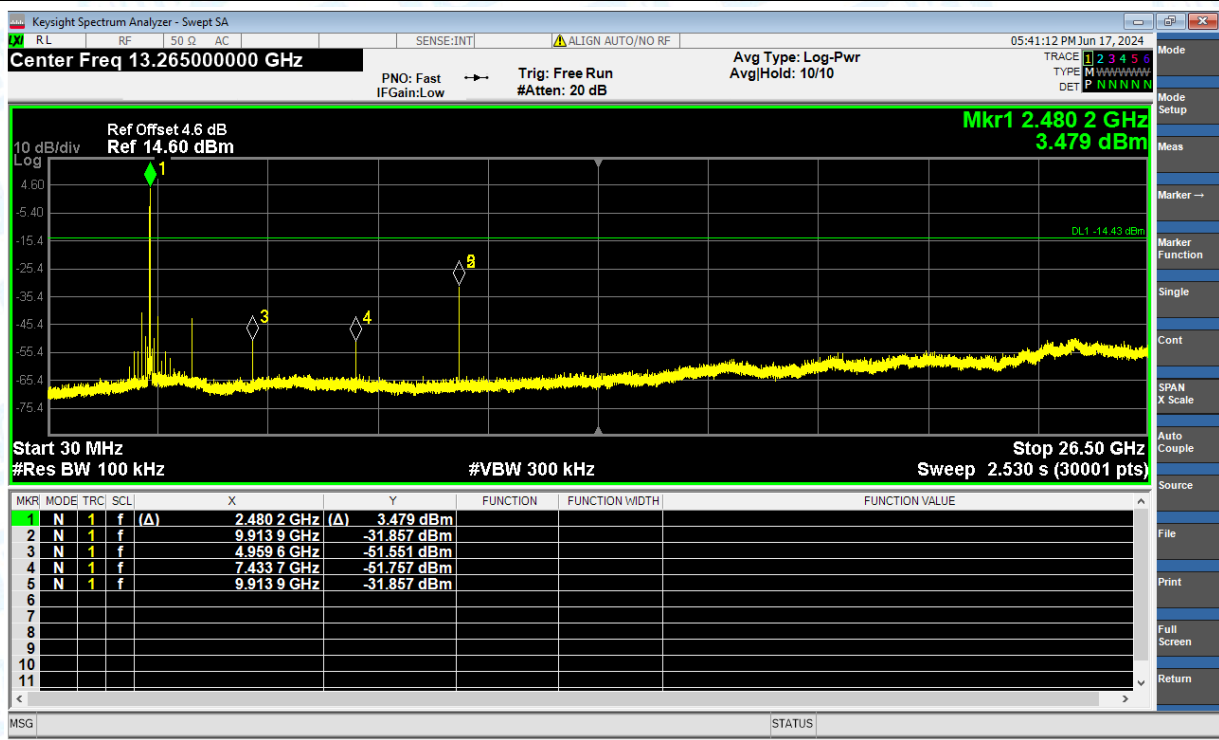
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



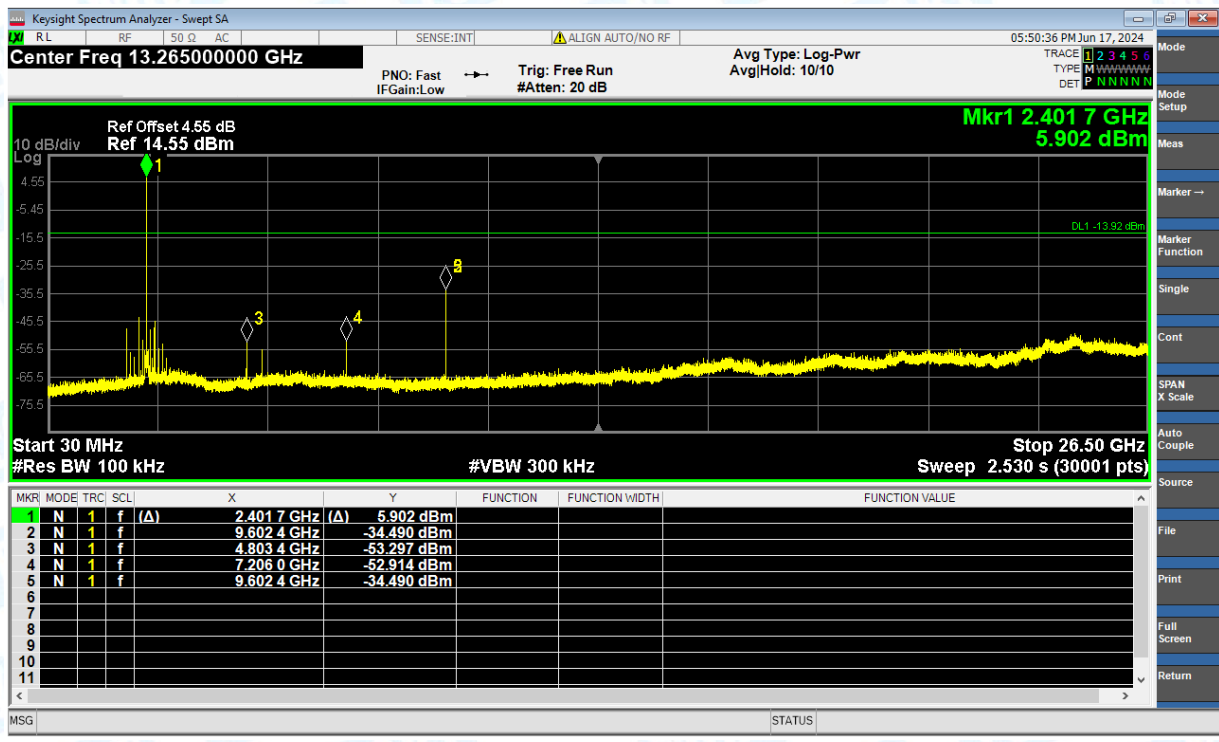
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



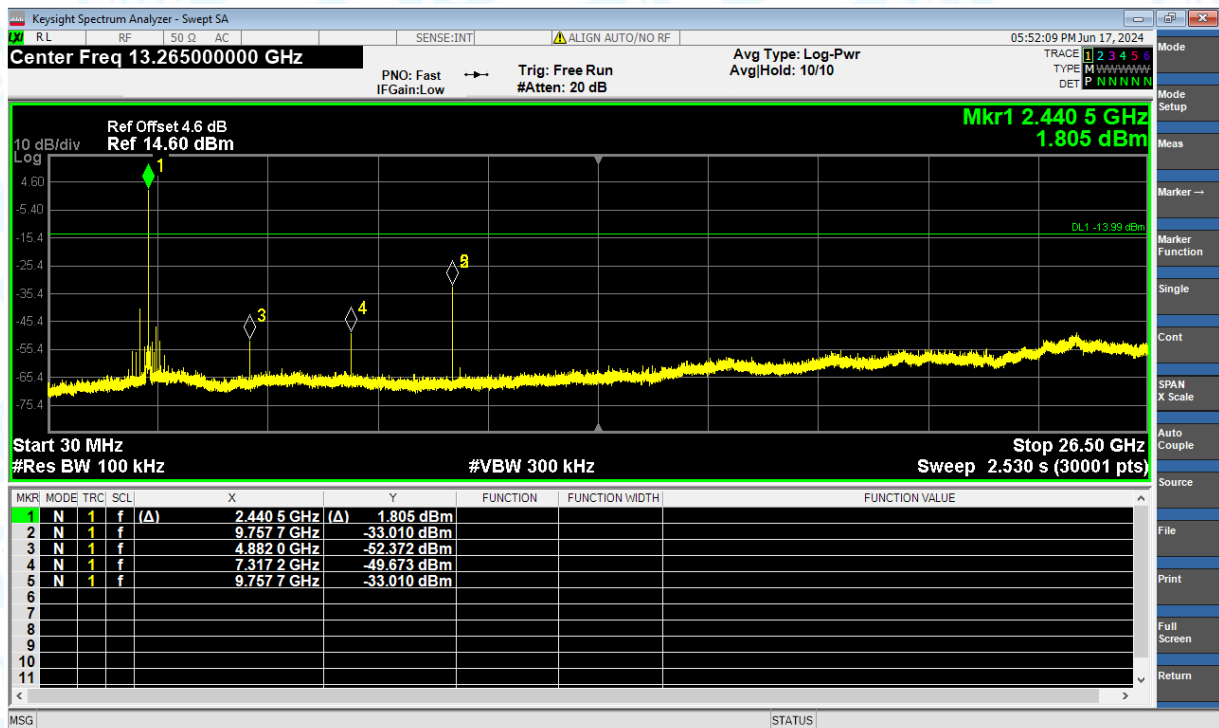
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



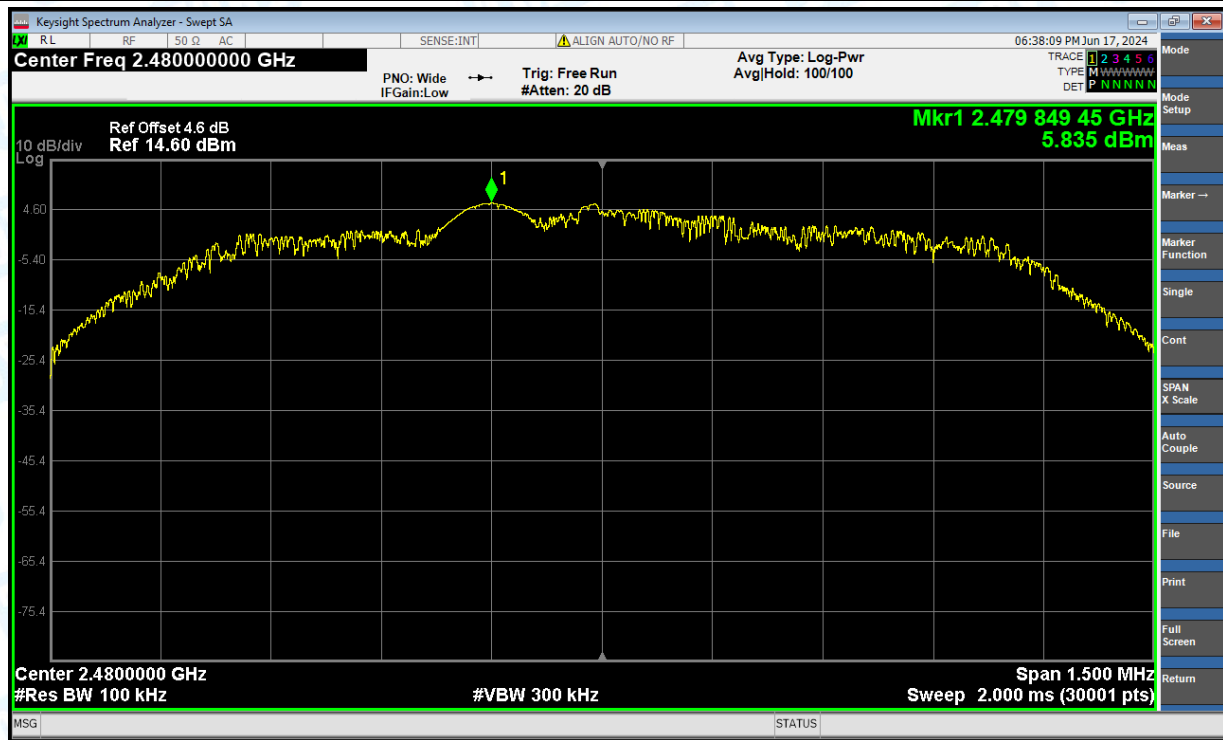
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



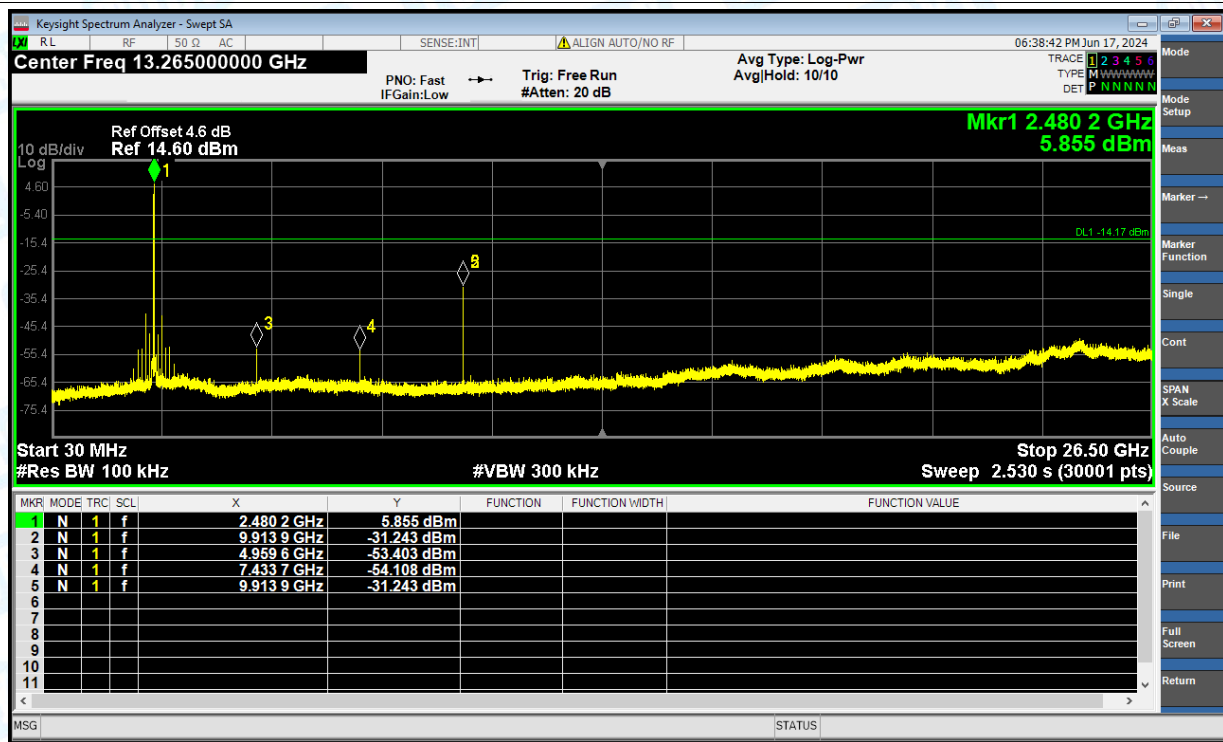
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

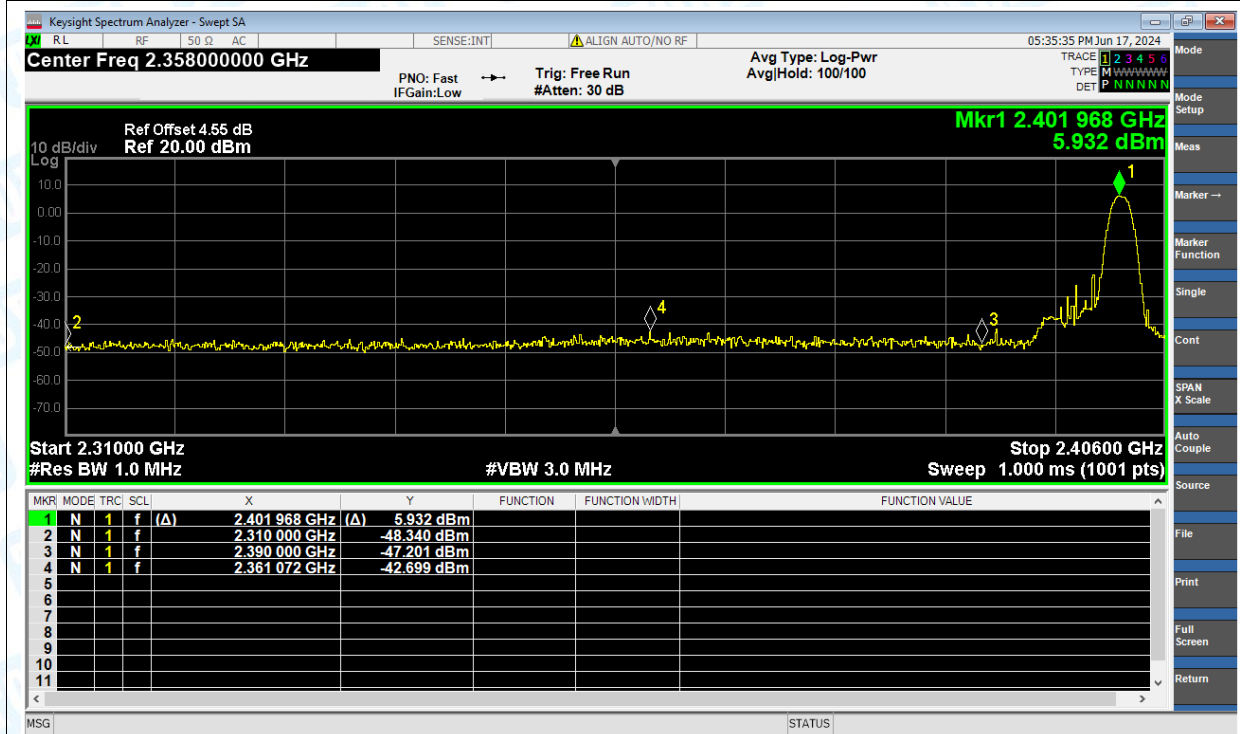


## 8. Restrict Band

| 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-DH1 | 2402            | Ant1    | No-Hopping   | 2310            | -48.34      | 2          | -                | 48.92      | Peak     | 74             | Pass    |
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | 2310            | -55.24      | 2          | 5.06             | 47.08      | Average  | 54             | Pass    |
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | 2361.072        | -42.7       | 2          | -                | 54.56      | Peak     | 74             | Pass    |
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | 2373.84         | -53.9       | 2          | 5.06             | 48.42      | Average  | 54             | Pass    |
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | 2390            | -47.2       | 2          | -                | 50.06      | Peak     | 74             | Pass    |
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | 2390            | -54.65      | 2          | 5.06             | 47.67      | Average  | 54             | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | 2483.5          | -45.57      | 2          | -                | 51.69      | Peak     | 74             | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | 2483.5          | -53.22      | 2          | 5.06             | 49.1       | Average  | 54             | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | 2485.984        | -37.35      | 2          | -                | 59.91      | Peak     | 74             | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | 2483.512        | -53.22      | 2          | 5.06             | 49.1       | Average  | 54             | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | 2500            | -46.4       | 2          | -                | 50.86      | Peak     | 74             | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | 2500            | -54.68      | 2          | 5.06             | 47.64      | Average  | 54             | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | 2310            | -47.71      | 2          | -                | 49.55      | Peak     | 74             | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | 2310            | -56.14      | 2          | 4.95             | 46.07      | Average  | 54             | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | 2373.84         | -41.94      | 2          | -                | 55.32      | Peak     | 74             | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | 2379.6          | -54.04      | 2          | 4.95             | 48.17      | Average  | 54             | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | 2390            | -45.72      | 2          | -                | 51.54      | Peak     | 74             | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | 2390            | -54.88      | 2          | 4.95             | 47.33      | Average  | 54             | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | 2483.5          | -43.75      | 2          | -                | 53.51      | Peak     | 74             | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | 2483.5          | -53.75      | 2          | 5.06             | 48.57      | Average  | 54             | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | 2485.048        | -42.67      | 2          | -                | 54.59      | Peak     | 74             | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | 2483.8          | -53.22      | 2          | 5.06             | 49.1       | Average  | 54             | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | 2500            | -44.73      | 2          | -                | 52.53      | Peak     | 74             | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | 2500            | -54.1       | 2          | 5.06             | 48.22      | Average  | 54             | Pass    |

## Test Graphs

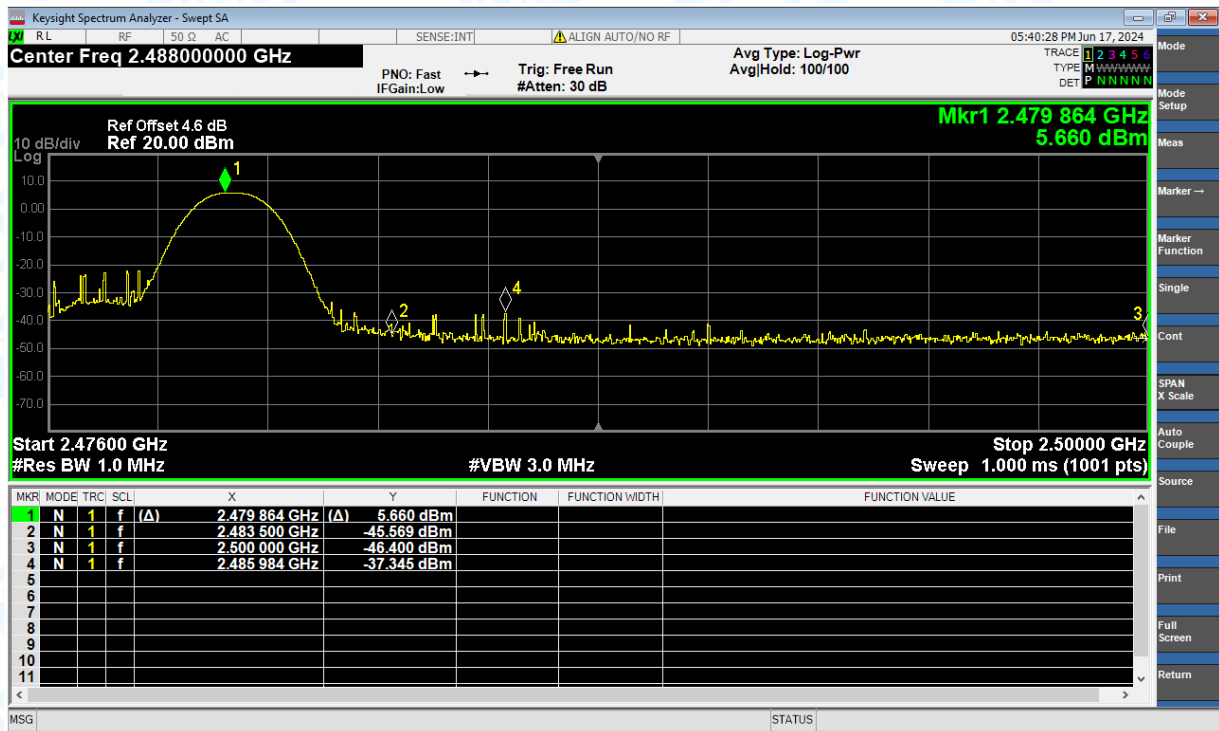
### Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



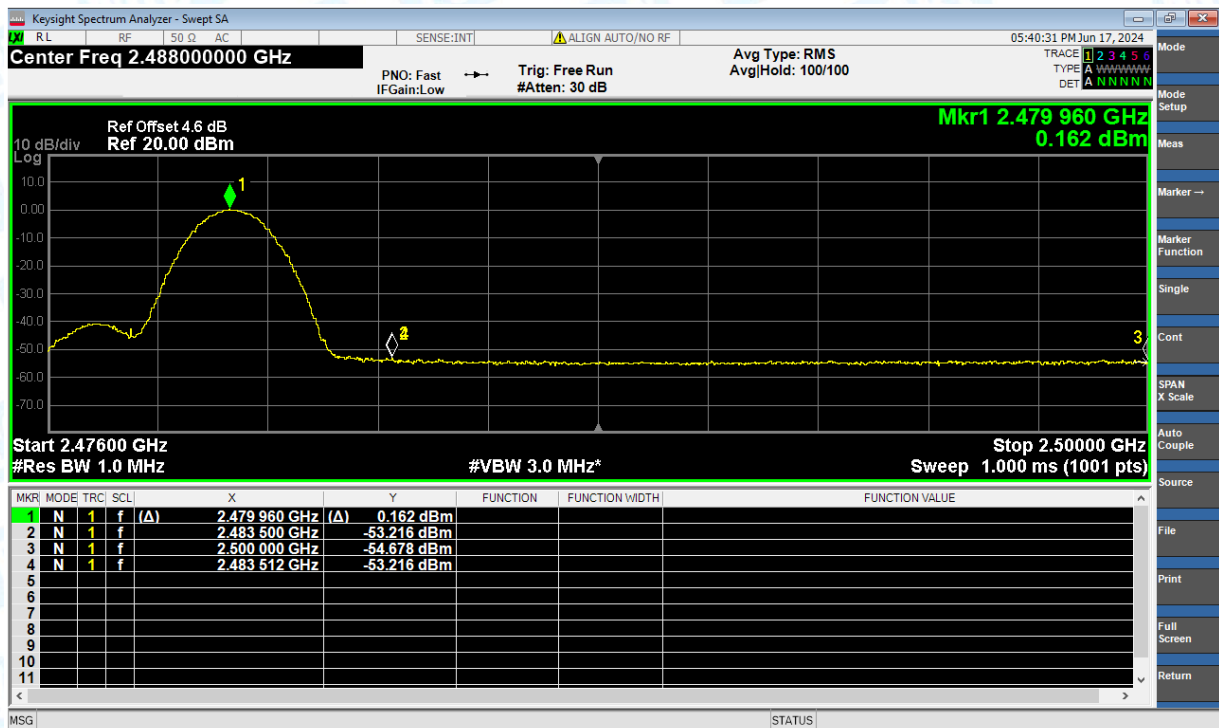
### Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



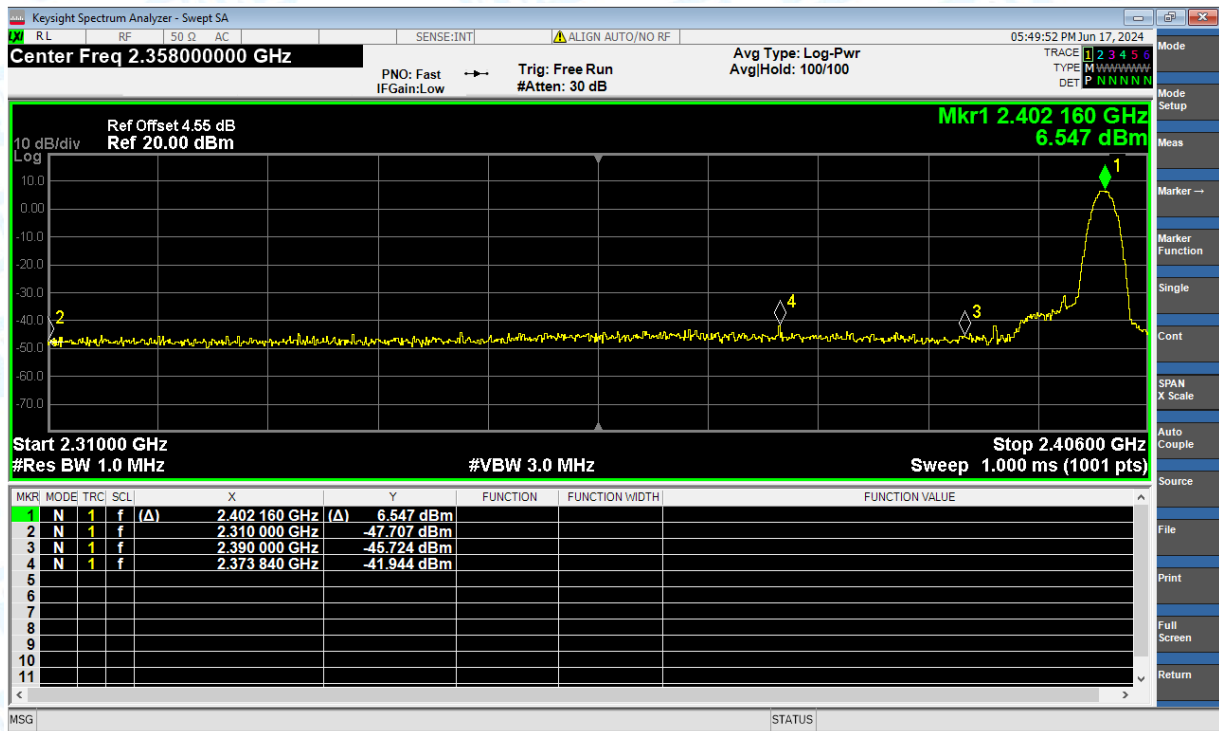
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



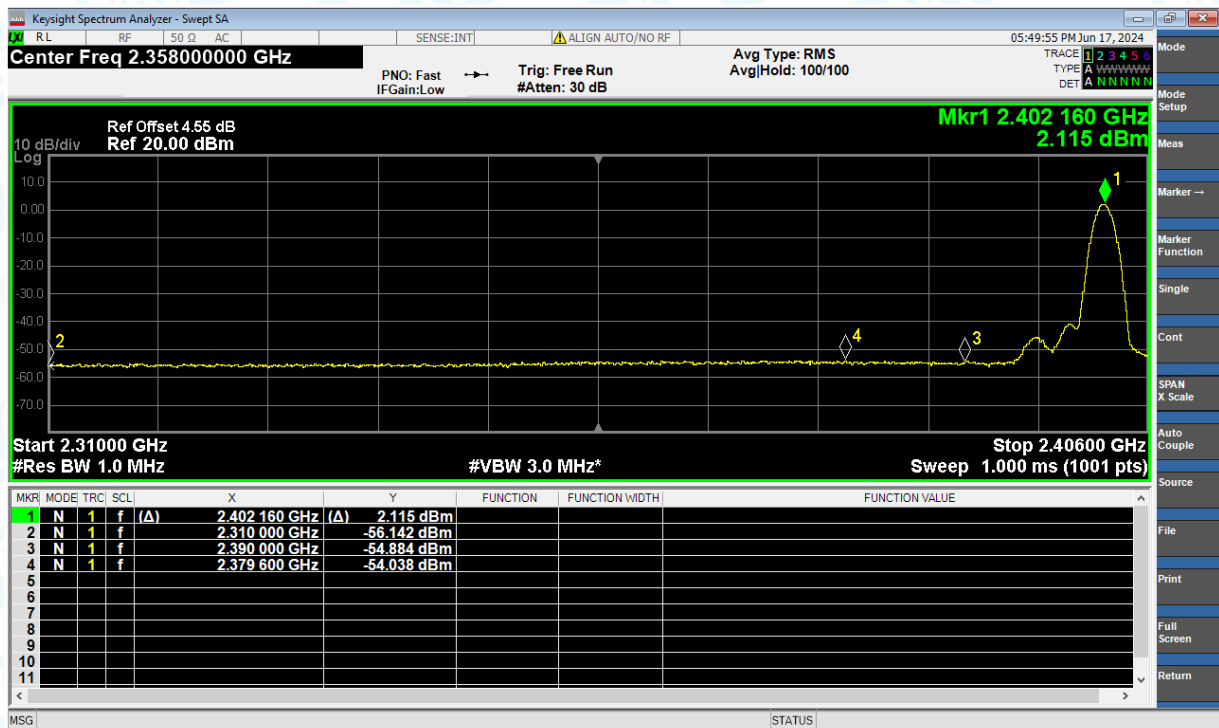
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



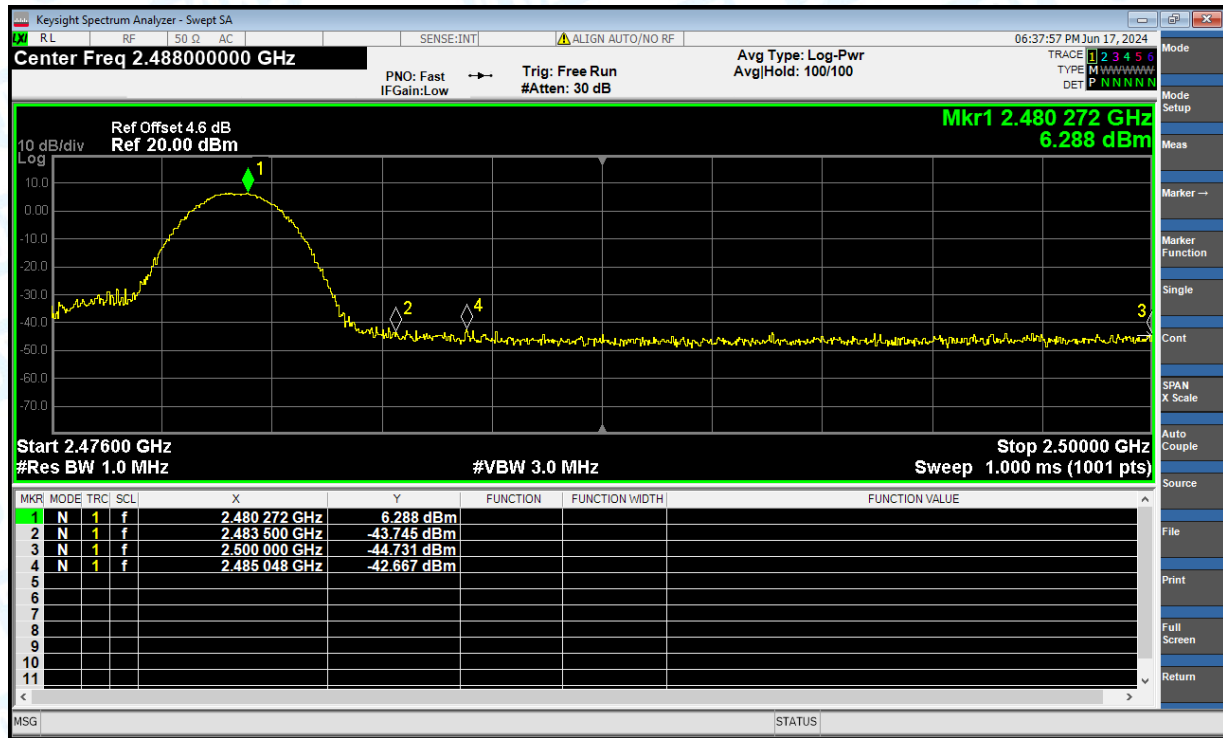
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average

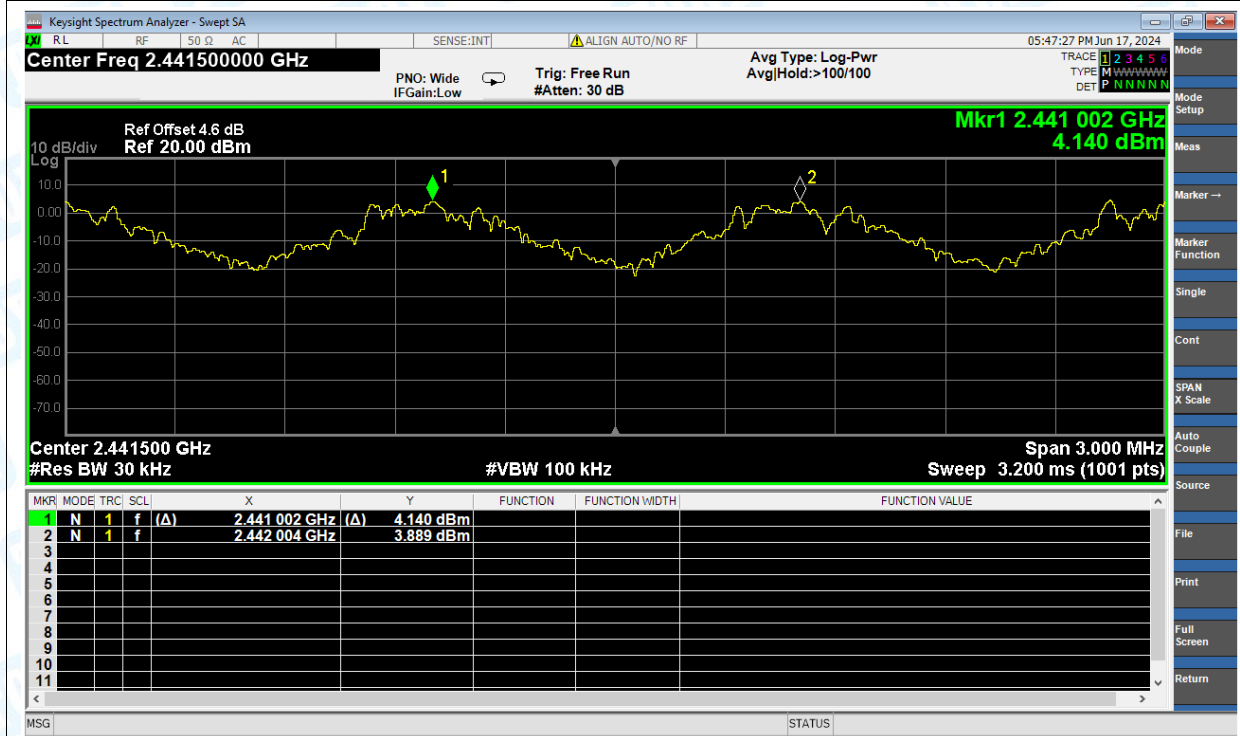


## 9. Carrier Frequencies Separation

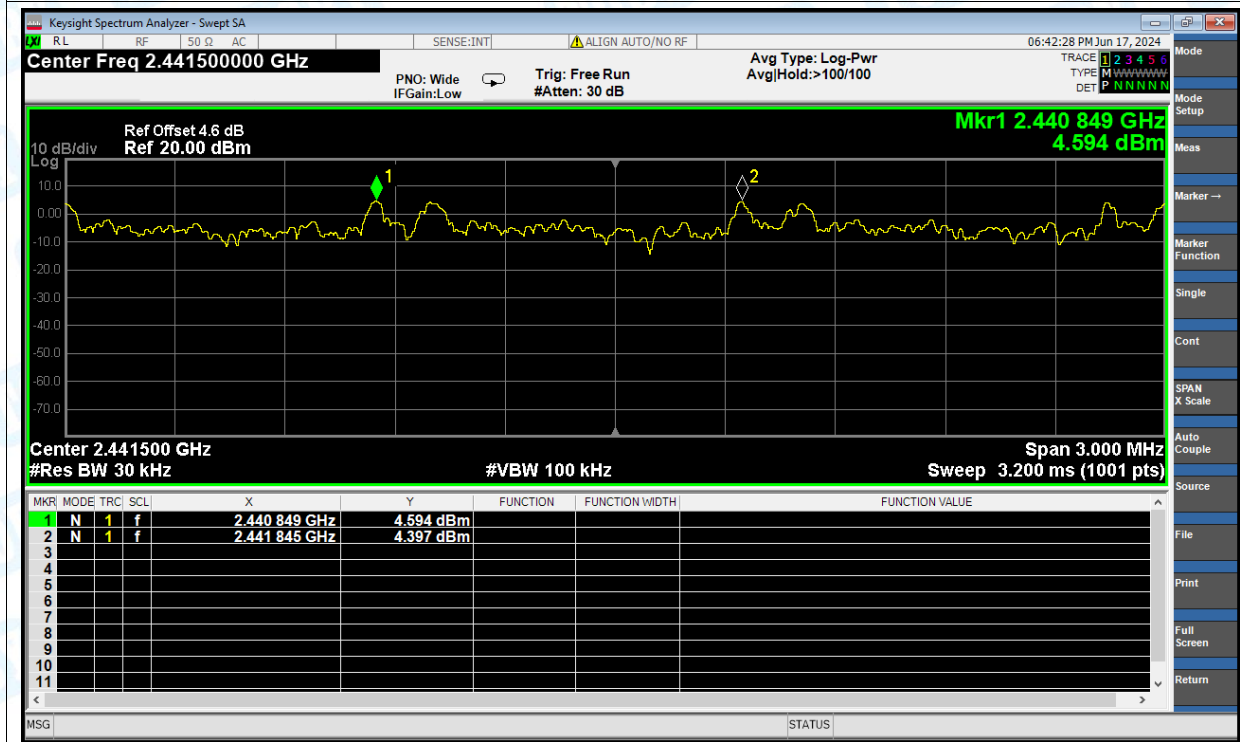
| Condition | Mode  | Antenna | Hopping Freq1 (MHz) | Hopping Freq2 (MHz) | HFS (MHz) | Limit (MHz) | Verdict |
|-----------|-------|---------|---------------------|---------------------|-----------|-------------|---------|
| NVNT      | 1-DH1 | Ant1    | 2441.002            | 2442.004            | 1.002     | 0.58        | Pass    |
| NVNT      | 2-DH1 | Ant1    | 2440.849            | 2441.845            | 0.996     | 0.827       | Pass    |

### Test Graphs

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



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

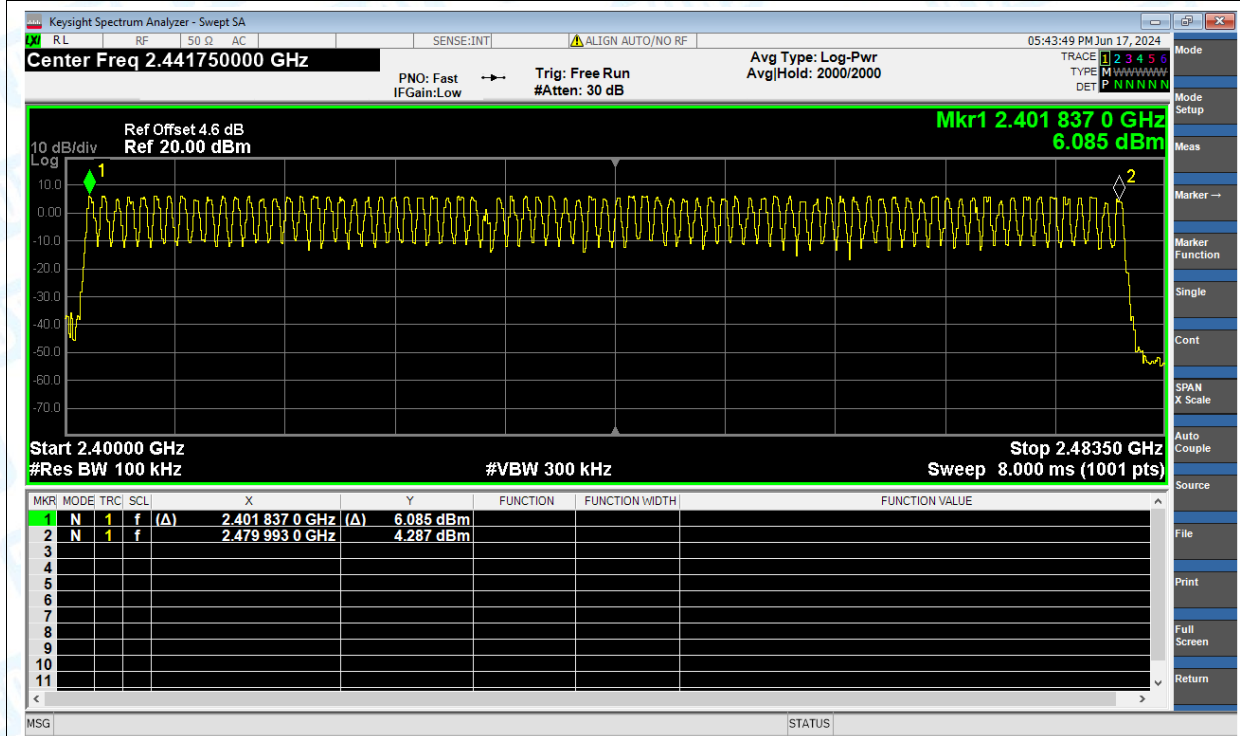


10. Number of Hopping Channel

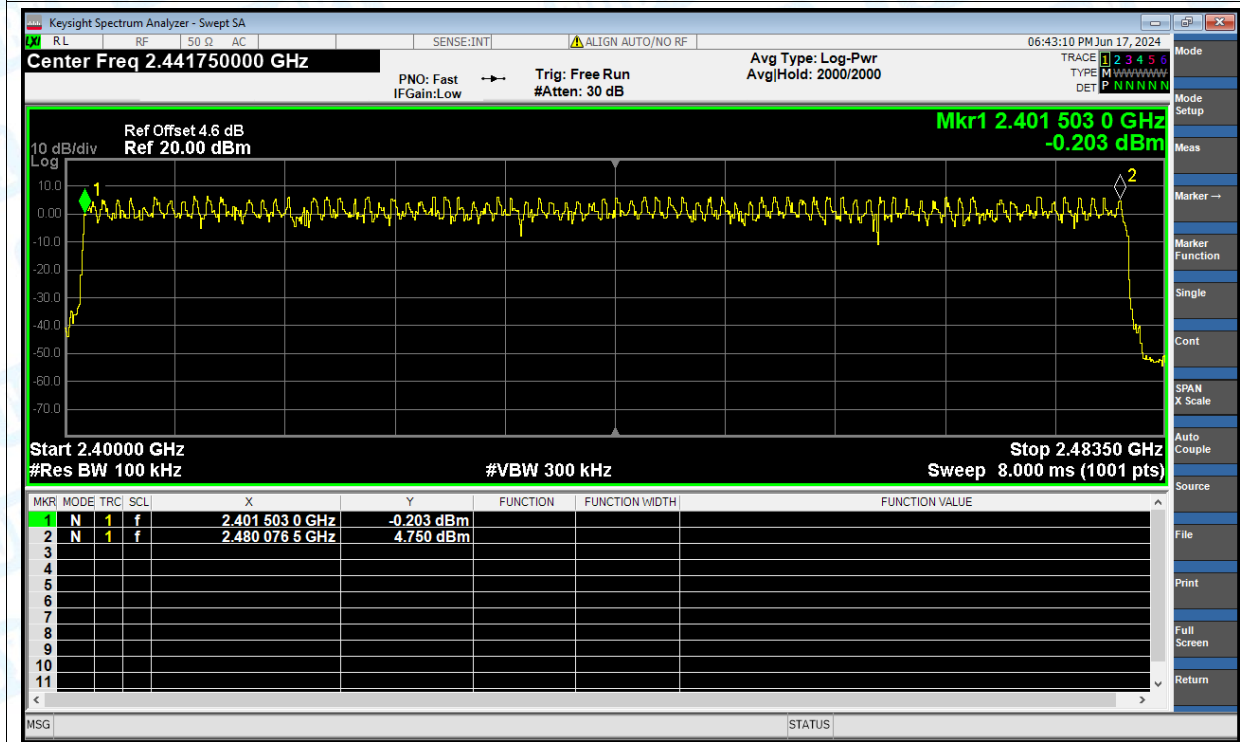
| Condition | Mode  | Antenna | Hopping Number | Limit | Verdict |
|-----------|-------|---------|----------------|-------|---------|
| NVNT      | 1-DH1 | Ant1    | 79             | 15    | Pass    |
| NVNT      | 2-DH1 | Ant1    | 79             | 15    | Pass    |

### Test Graphs

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1

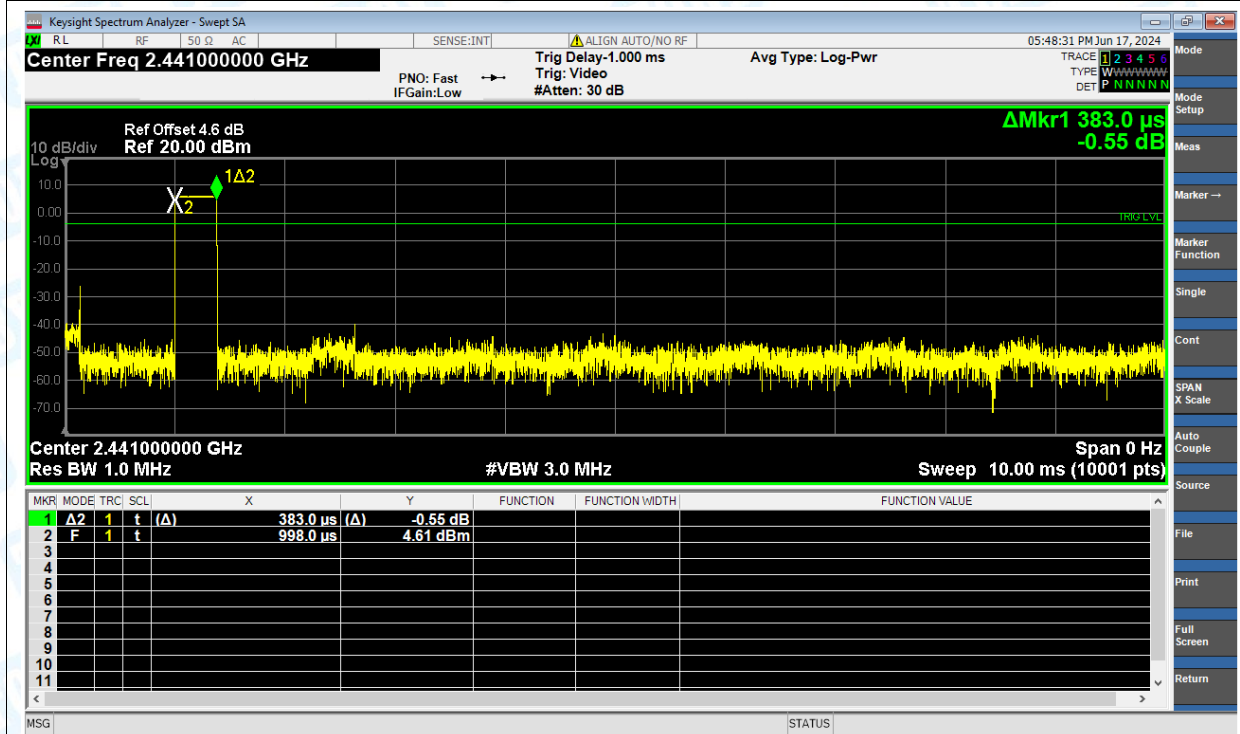


## 11. Dwell Time

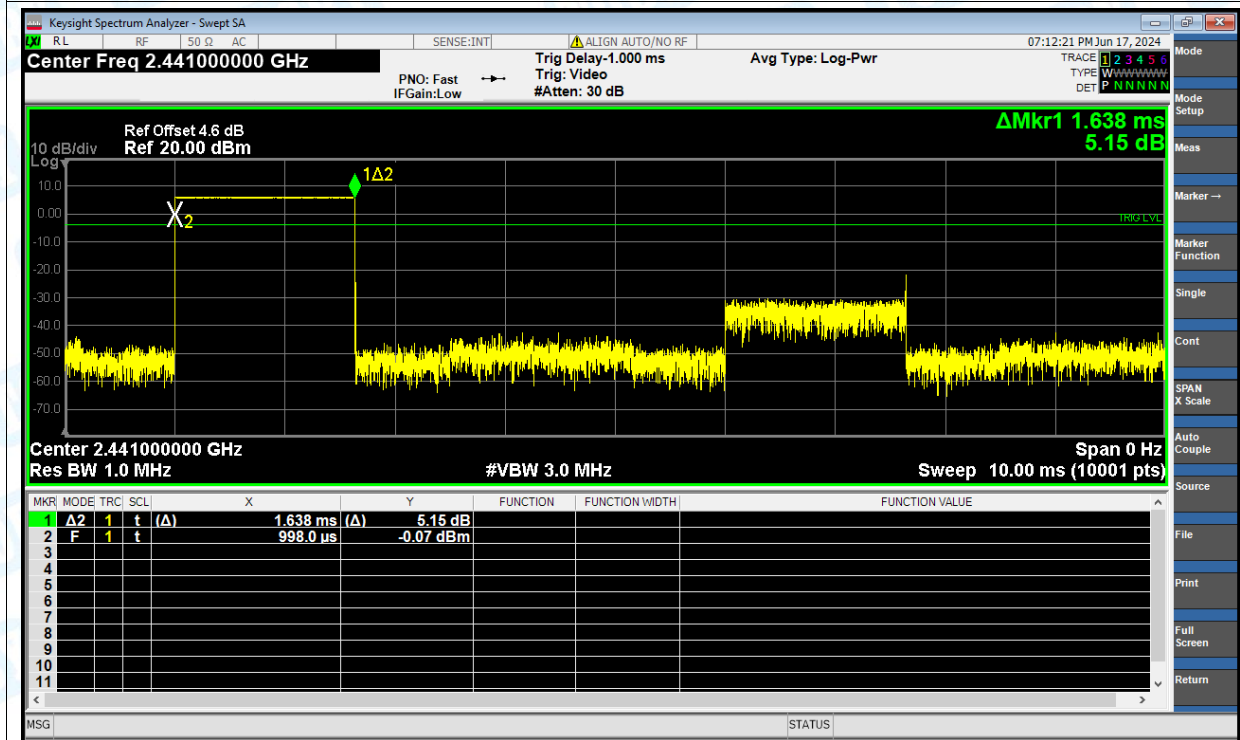
| Condition | Mode  | Frequency (MHz) | Antenna | Pulse Time (ms) | Total Dwell Time (ms) | Period Time (ms) | Limit (ms) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-----------------------|------------------|------------|---------|
| NVNT      | 1-DH1 | 2441            | Ant1    | 0.383           | 122.56                | 31600            | 400        | Pass    |
| NVNT      | 1-DH3 | 2441            | Ant1    | 1.638           | 262.08                | 31600            | 400        | Pass    |
| NVNT      | 1-DH5 | 2441            | Ant1    | 2.886           | 307.84                | 31600            | 400        | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | 0.392           | 125.44                | 31600            | 400        | Pass    |
| NVNT      | 2-DH3 | 2441            | Ant1    | 1.644           | 263.04                | 31600            | 400        | Pass    |
| NVNT      | 2-DH5 | 2441            | Ant1    | 2.892           | 308.48                | 31600            | 400        | Pass    |

### Test Graphs

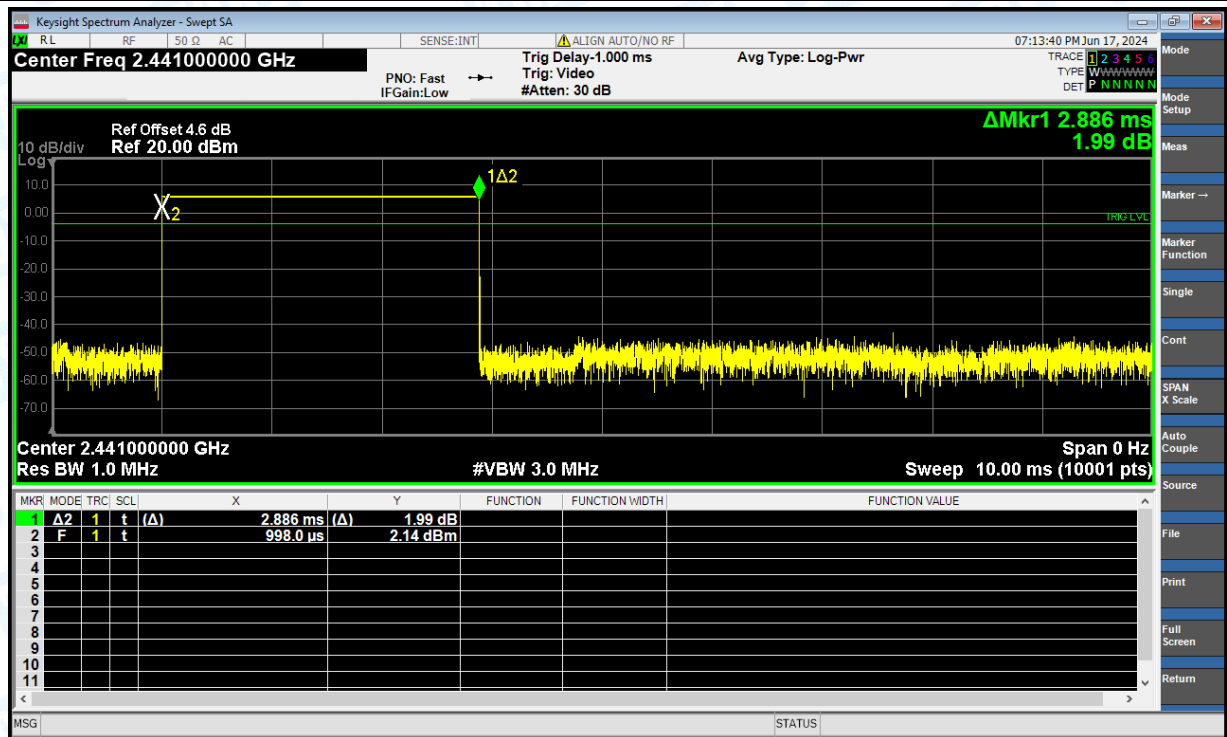
Dwell NVNT 1-DH1 2441MHz Ant1



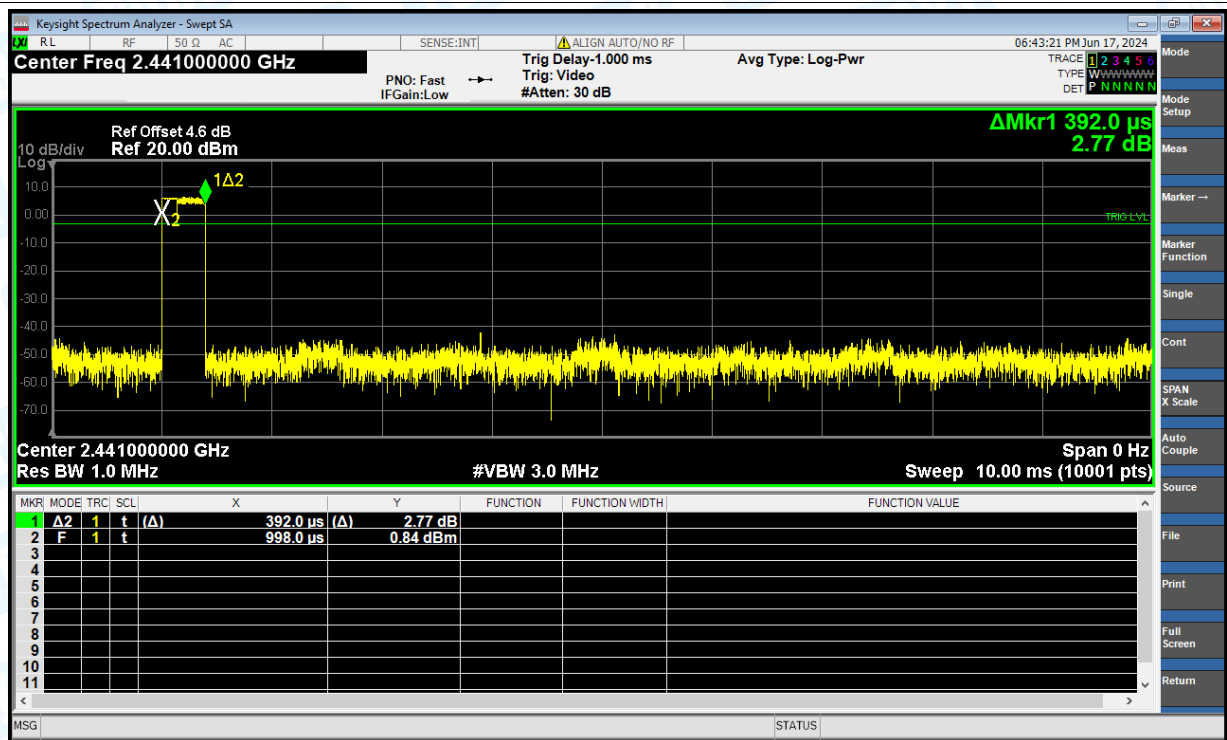
Dwell NVNT 1-DH3 2441MHz Ant1



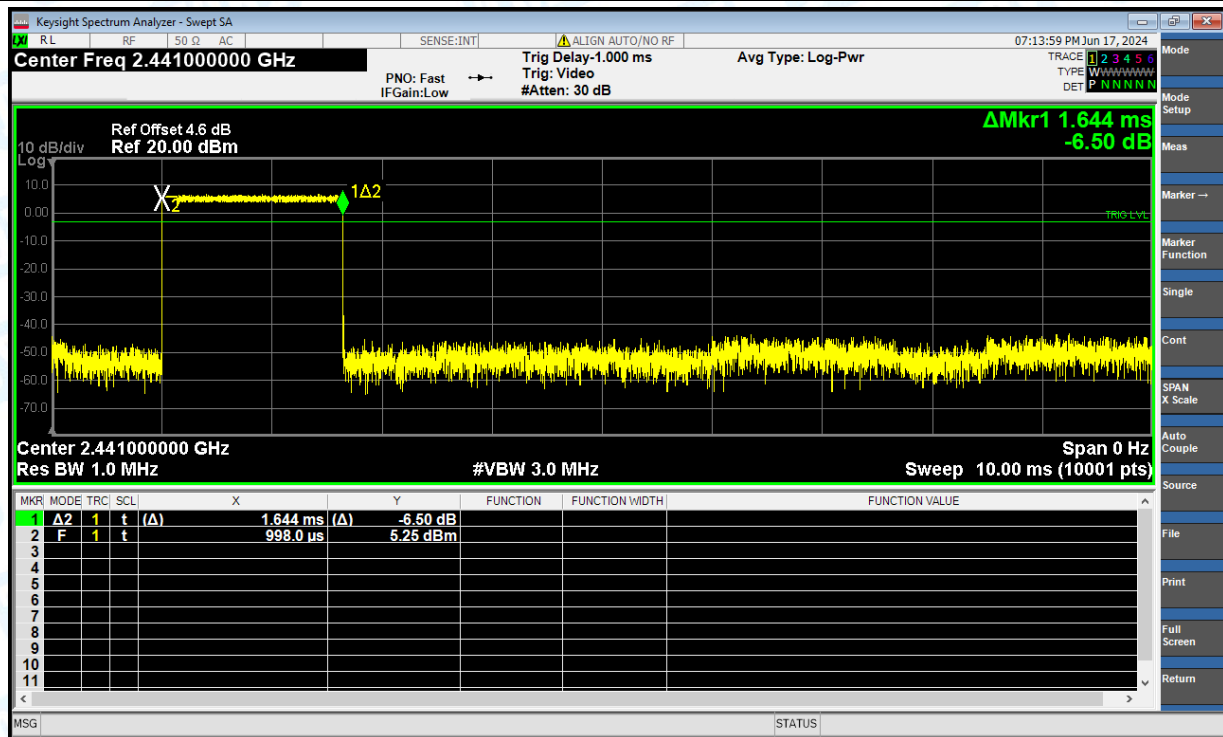
Dwell NVNT 1-DH5 2441MHz Ant1



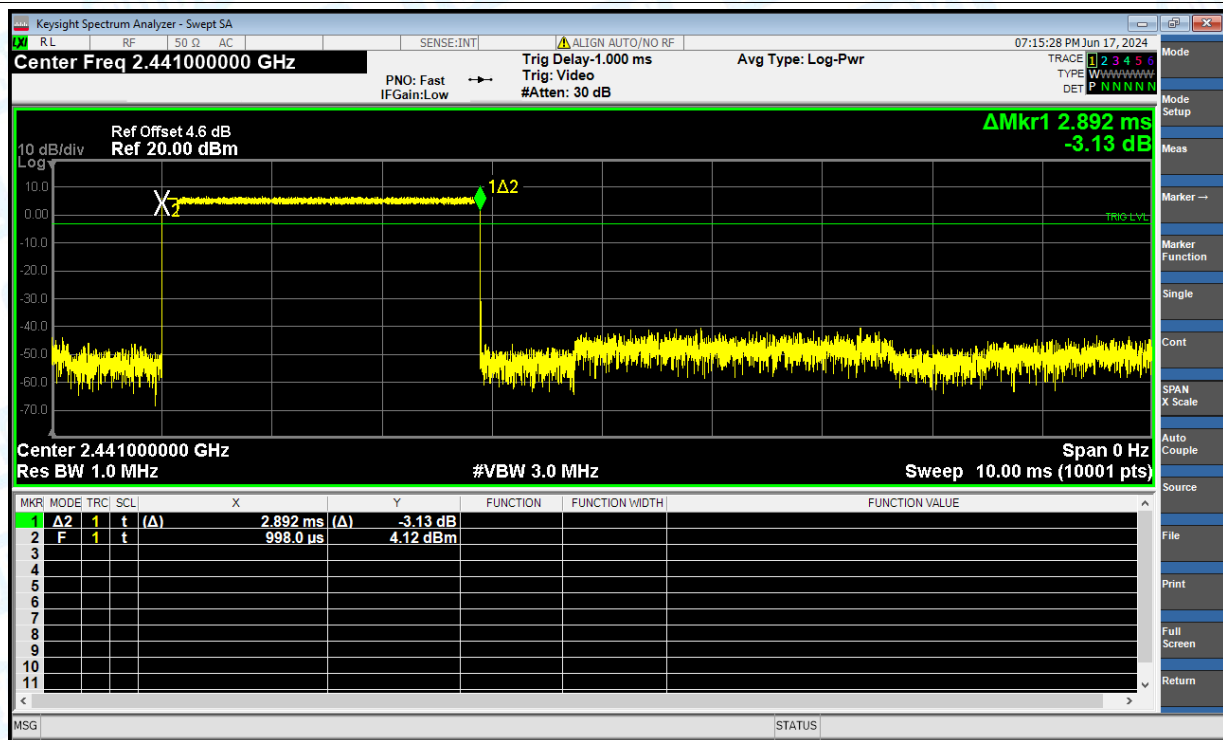
Dwell NVNT 2-DH1 2441MHz Ant1



Dwell NVNT 2-DH3 2441MHz Ant1



Dwell NVNT 2-DH5 2441MHz Ant1



-----End of report-----