

# RF Test Data for 2.4G WiFi (Conducted Measurements)

| General Description of EUT                                                                                                                  |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Product Name:                                                                                                                               | Doorbell               |
| Test Model:                                                                                                                                 | DB-DBW2-B              |
| Sample ID:                                                                                                                                  | HC-C-202404-0342-01-01 |
| Environmental Conditions                                                                                                                    |                        |
| Temperature:                                                                                                                                | 23.8℃                  |
| Relative Humidity:                                                                                                                          | 48%                    |
| Test Voltage:                                                                                                                               | DC 5V                  |
| Test Engineer:                                                                                                                              | ZKN Zhou               |
| Note: For a more detailed features description, please refer to the report TBR-C-202404-0342-3<br>The report only show the worst case data. |                        |

## Contents

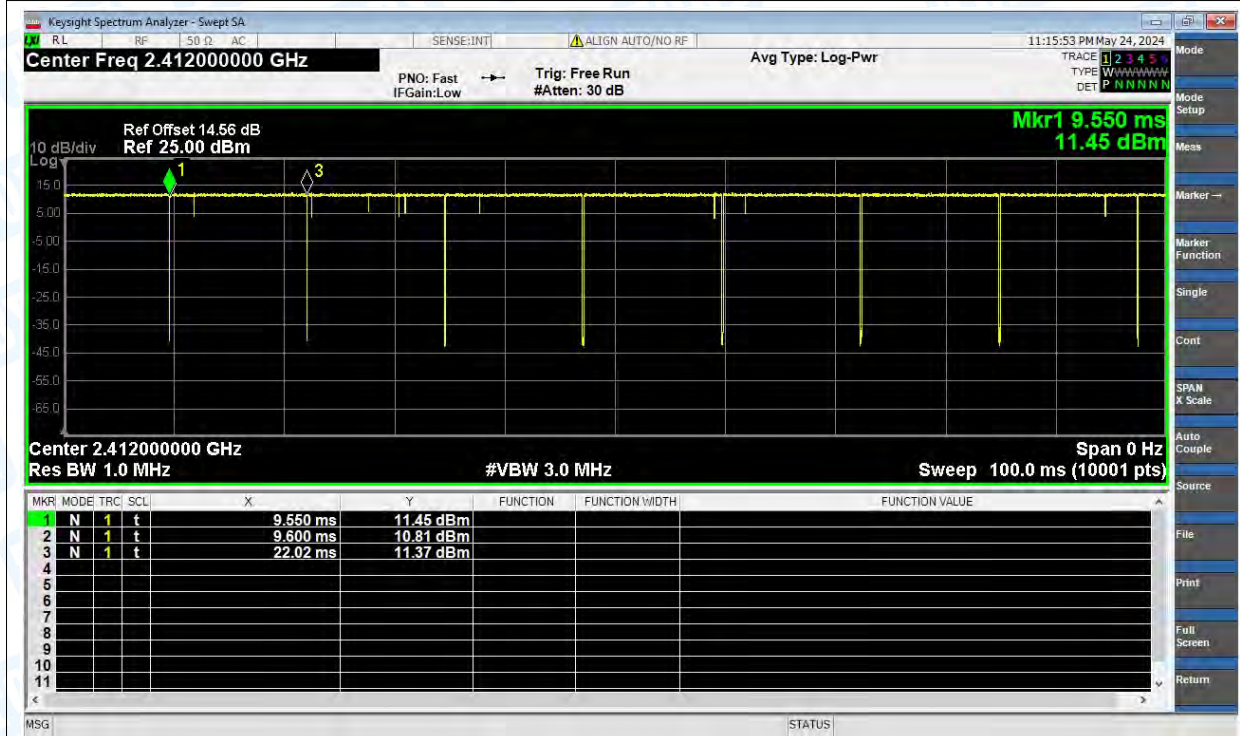
|    |                                            |    |
|----|--------------------------------------------|----|
| 1. | Duty Cycle .....                           | 3  |
| 2. | Maximum Conducted Output Power .....       | 10 |
| 3. | -6dB Bandwidth .....                       | 11 |
| 4. | Occupied Channel Bandwidth .....           | 18 |
| 5. | Maximum Power Spectral Density Level ..... | 25 |
| 6. | Band Edge .....                            | 32 |
| 7. | Conducted RF Spurious Emission .....       | 41 |
| 8. | Restrict Band .....                        | 54 |

## 1. Duty Cycle

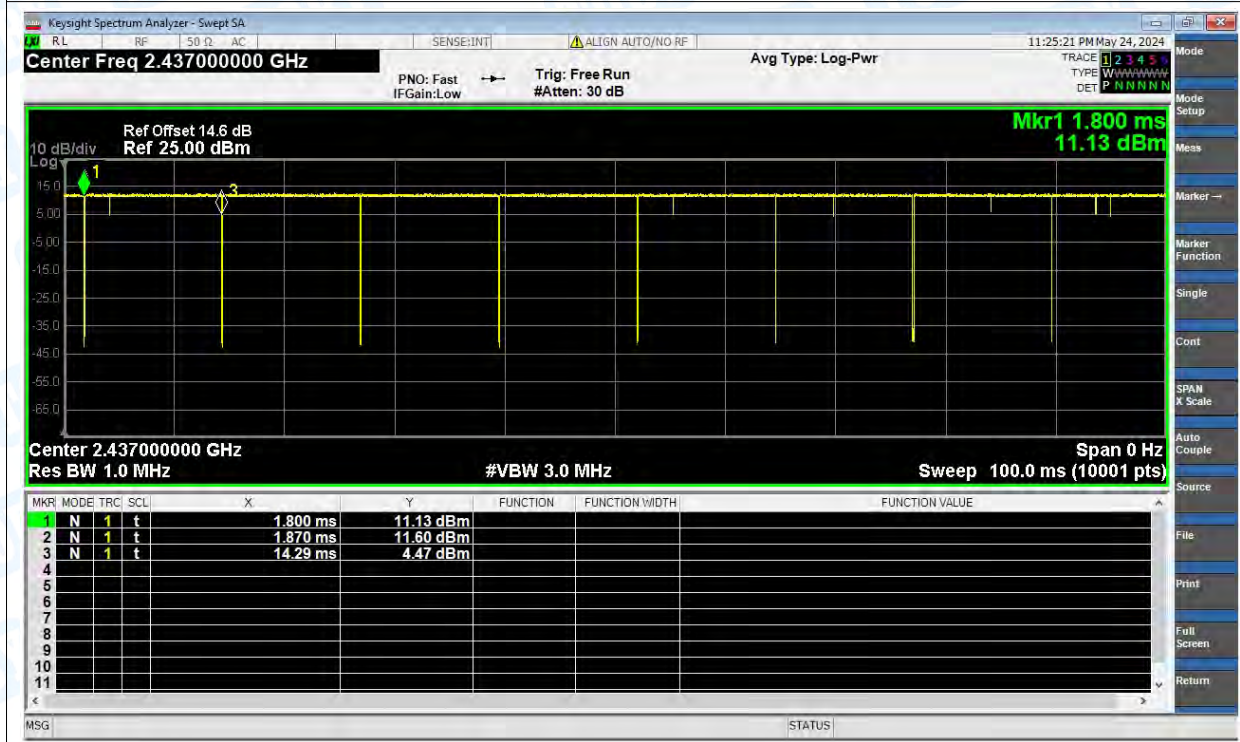
| Condition | Mode    | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|---------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | b       | 2412            | Ant1    | 99.60          | 0.02                   | 0.08      |
| NVNT      | b       | 2437            | Ant1    | 99.44          | 0.02                   | 0.08      |
| NVNT      | b       | 2462            | Ant1    | 98.73          | 0.06                   | 0.08      |
| NVNT      | g       | 2412            | Ant1    | 92.41          | 0.34                   | 0.48      |
| NVNT      | g       | 2437            | Ant1    | 92.38          | 0.34                   | 0.49      |
| NVNT      | g       | 2462            | Ant1    | 94.09          | 0.26                   | 0.48      |
| NVNT      | n(HT20) | 2412            | Ant1    | 93.66          | 0.28                   | 0.52      |
| NVNT      | n(HT20) | 2437            | Ant1    | 95.05          | 0.22                   | 0.52      |
| NVNT      | n(HT20) | 2462            | Ant1    | 93.66          | 0.28                   | 0.52      |
| NVNT      | n(HT40) | 2422            | Ant1    | 92.16          | 0.35                   | 1.06      |
| NVNT      | n(HT40) | 2437            | Ant1    | 87.85          | 0.56                   | 1.06      |
| NVNT      | n(HT40) | 2452            | Ant1    | 87.96          | 0.56                   | 1.05      |

### Test Graphs

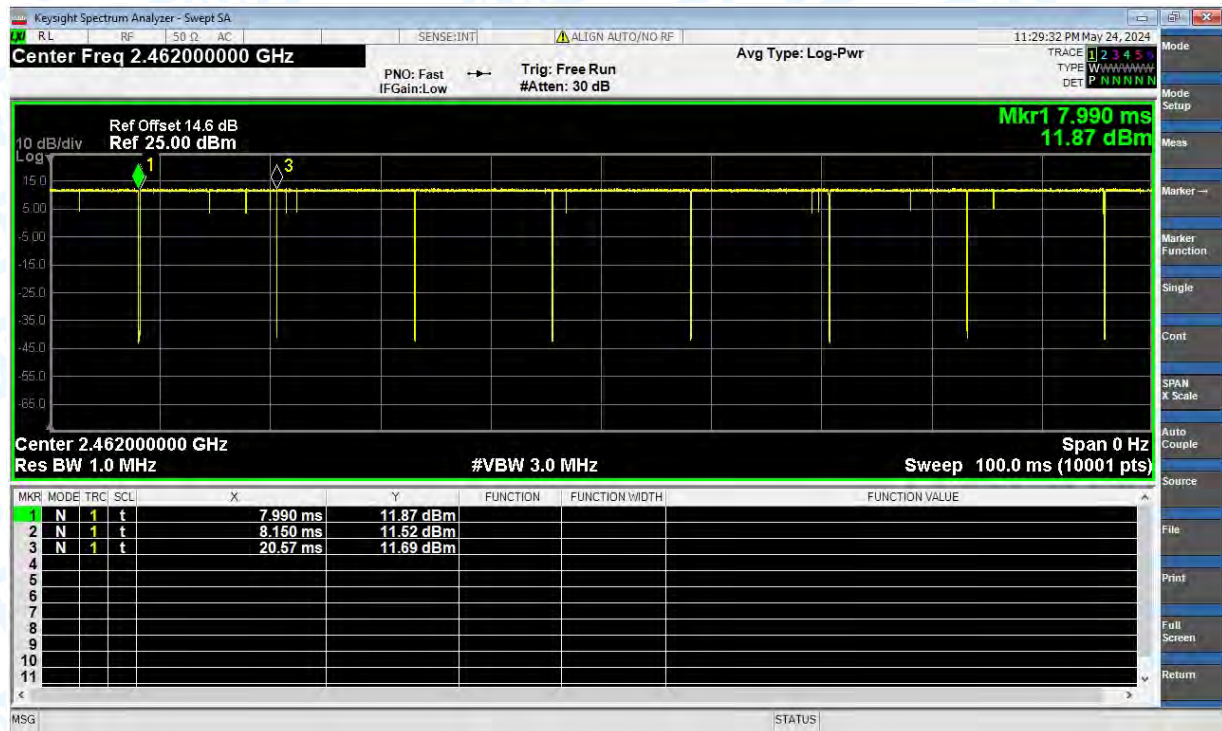
#### Duty Cycle NVNT b 2412MHz Ant1



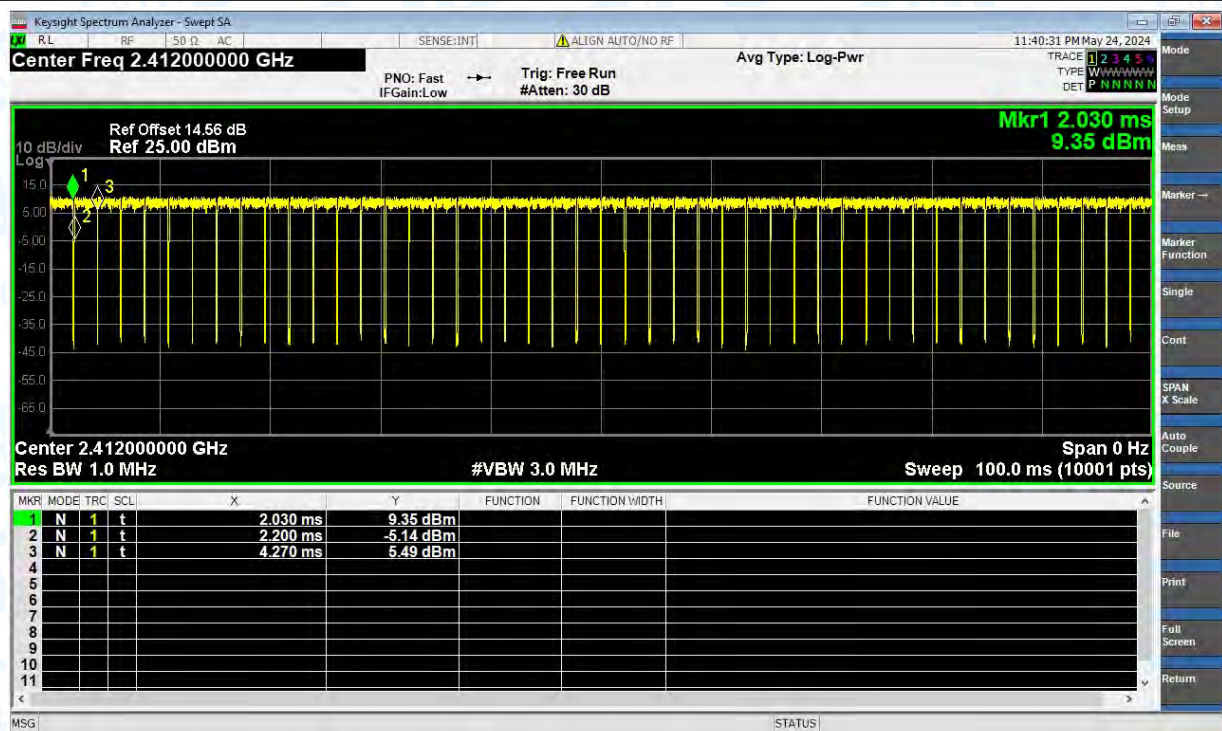
#### Duty Cycle NVNT b 2437MHz Ant1



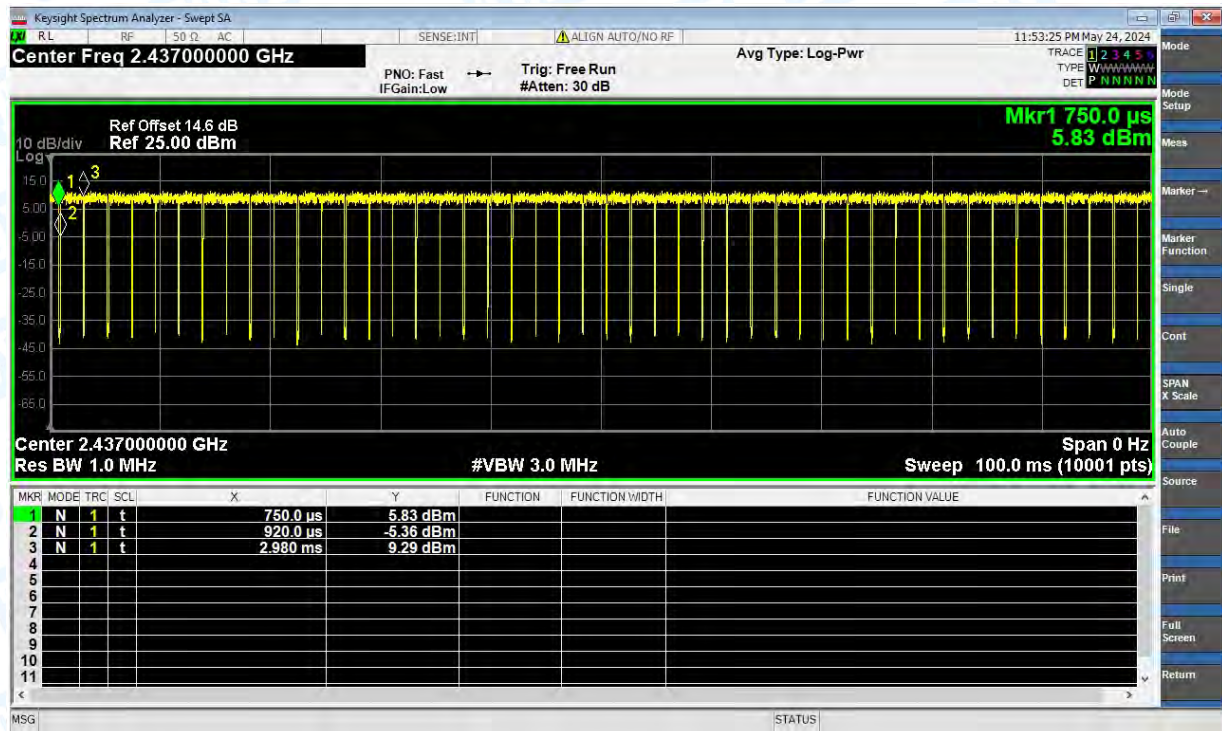
### Duty Cycle NVNT b 2462MHz Ant1



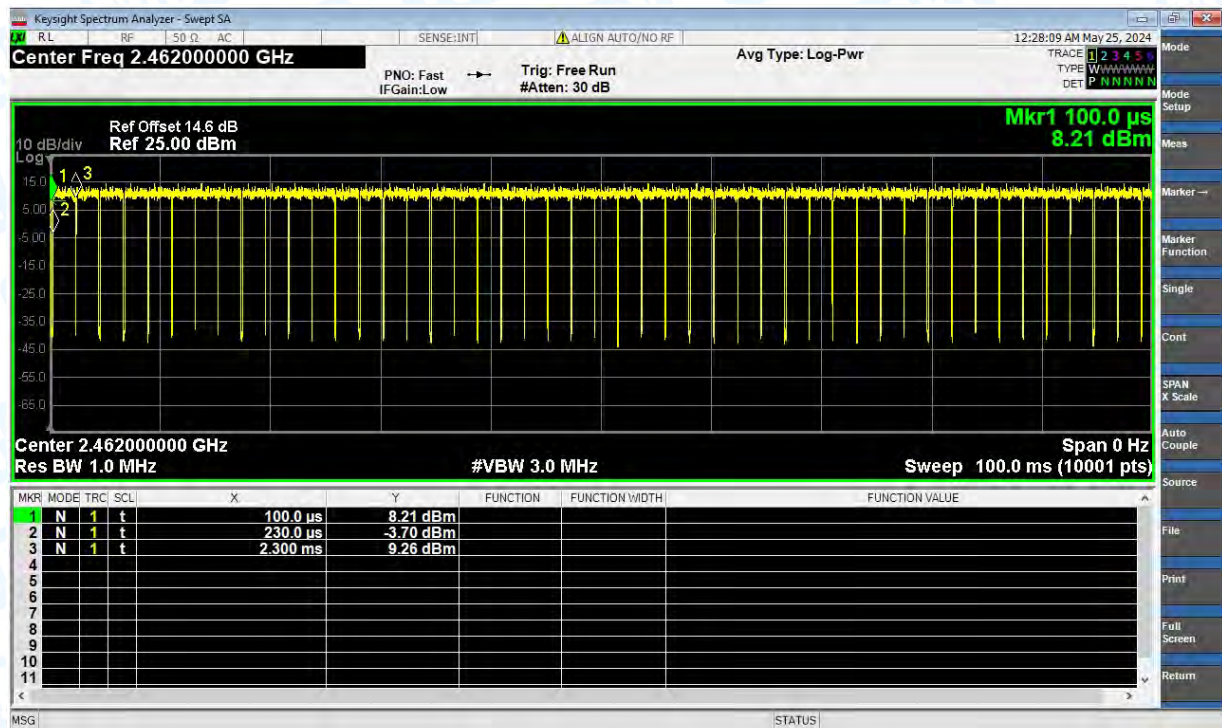
### Duty Cycle NVNT g 2412MHz Ant1



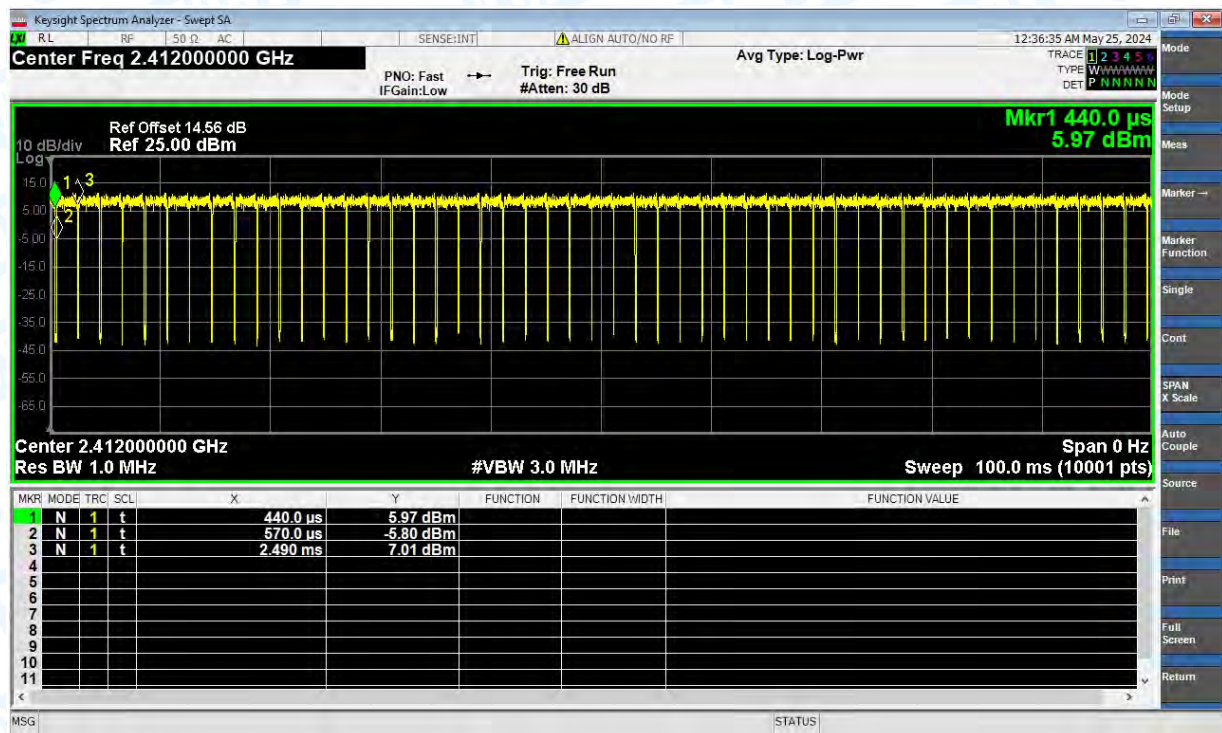
Duty Cycle NVNT g 2437MHz Ant1



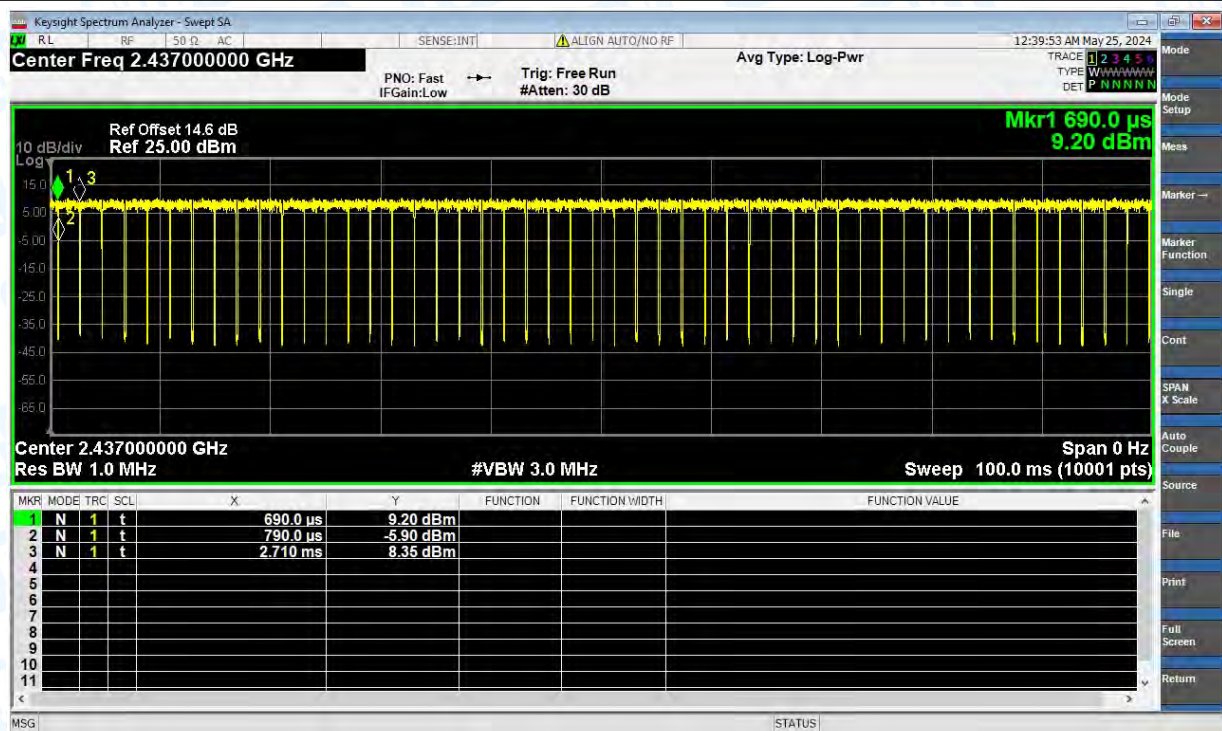
Duty Cycle NVNT g 2462MHz Ant1

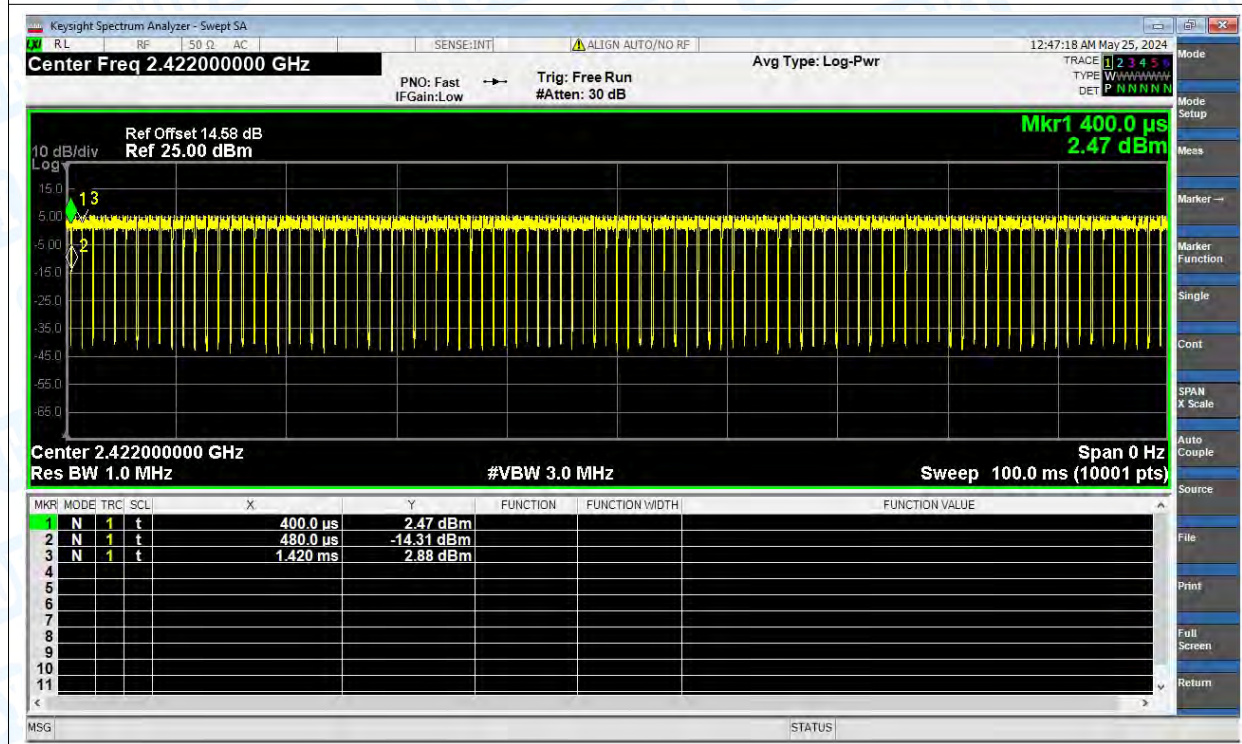
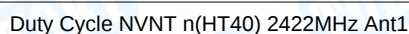


### Duty Cycle NVNT n(HT20) 2412MHz Ant1

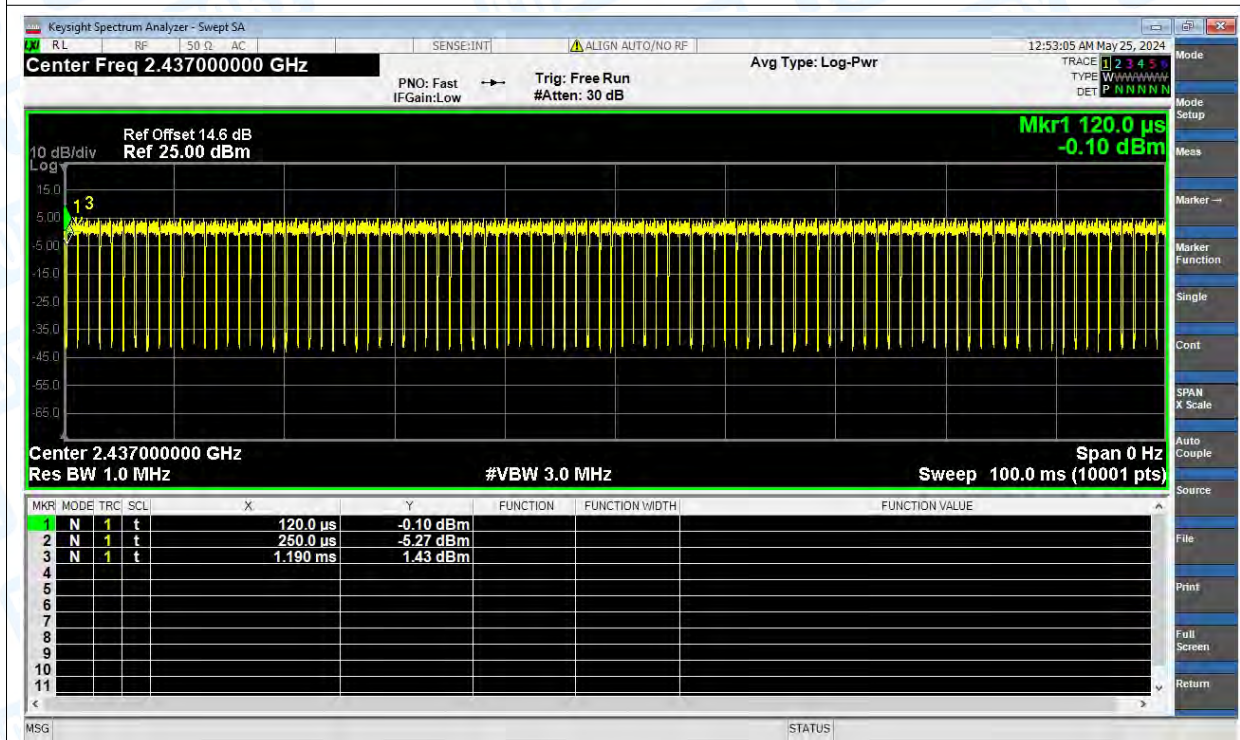


### Duty Cycle NVNT n(HT20) 2437MHz Ant1

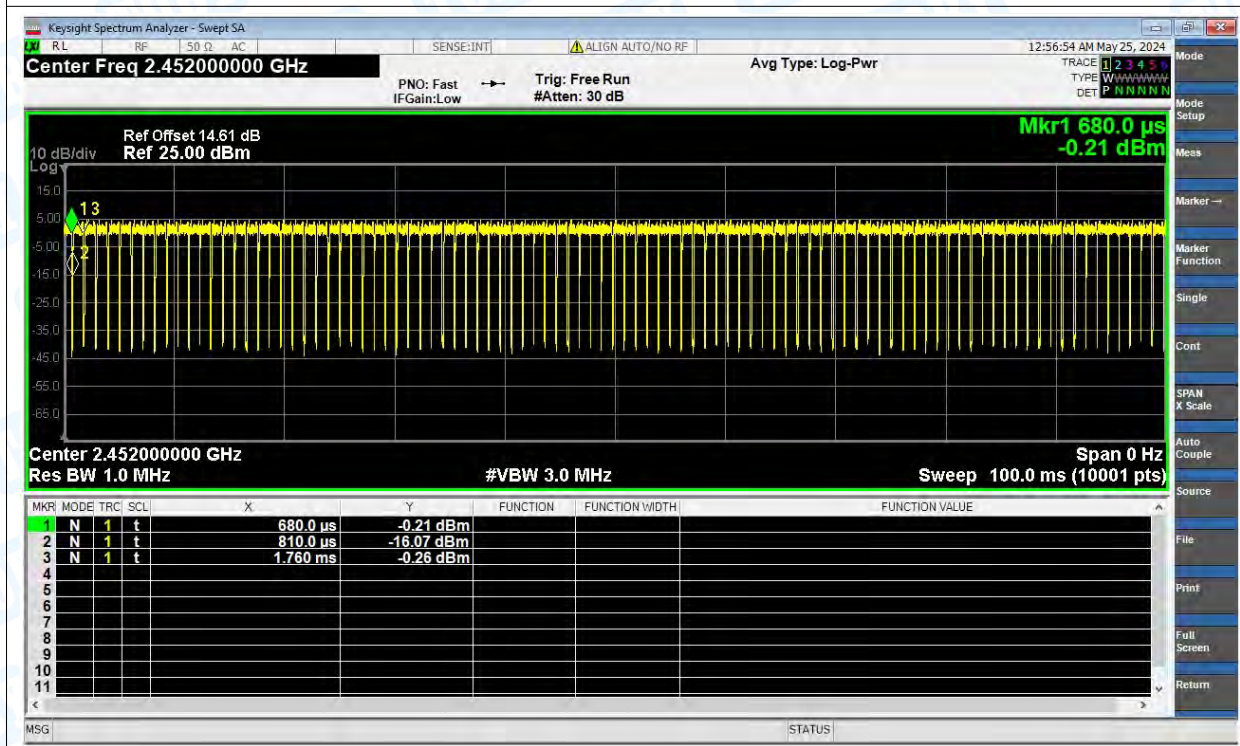




Duty Cycle NVNT n(HT40) 2437MHz Ant1



Duty Cycle NVNT n(HT40) 2452MHz Ant1



## 2. Maximum Conducted Output Power

| Condition | Mode    | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|---------|-----------------|---------|-------------------|-------------|---------|
| NVNT      | b       | 2412            | Ant1    | 15.92             | 30          | Pass    |
| NVNT      | b       | 2437            | Ant1    | 15.93             | 30          | Pass    |
| NVNT      | b       | 2462            | Ant1    | 15.79             | 30          | Pass    |
| NVNT      | g       | 2412            | Ant1    | 15.57             | 30          | Pass    |
| NVNT      | g       | 2437            | Ant1    | 15.46             | 30          | Pass    |
| NVNT      | g       | 2462            | Ant1    | 14.70             | 30          | Pass    |
| NVNT      | n(HT20) | 2412            | Ant1    | 15.66             | 30          | Pass    |
| NVNT      | n(HT20) | 2437            | Ant1    | 15.26             | 30          | Pass    |
| NVNT      | n(HT20) | 2462            | Ant1    | 15.25             | 30          | Pass    |
| NVNT      | n(HT40) | 2422            | Ant1    | 14.50             | 30          | Pass    |
| NVNT      | n(HT40) | 2437            | Ant1    | 15.09             | 30          | Pass    |
| NVNT      | n(HT40) | 2452            | Ant1    | 13.64             | 30          | Pass    |

### 3. -6dB Bandwidth

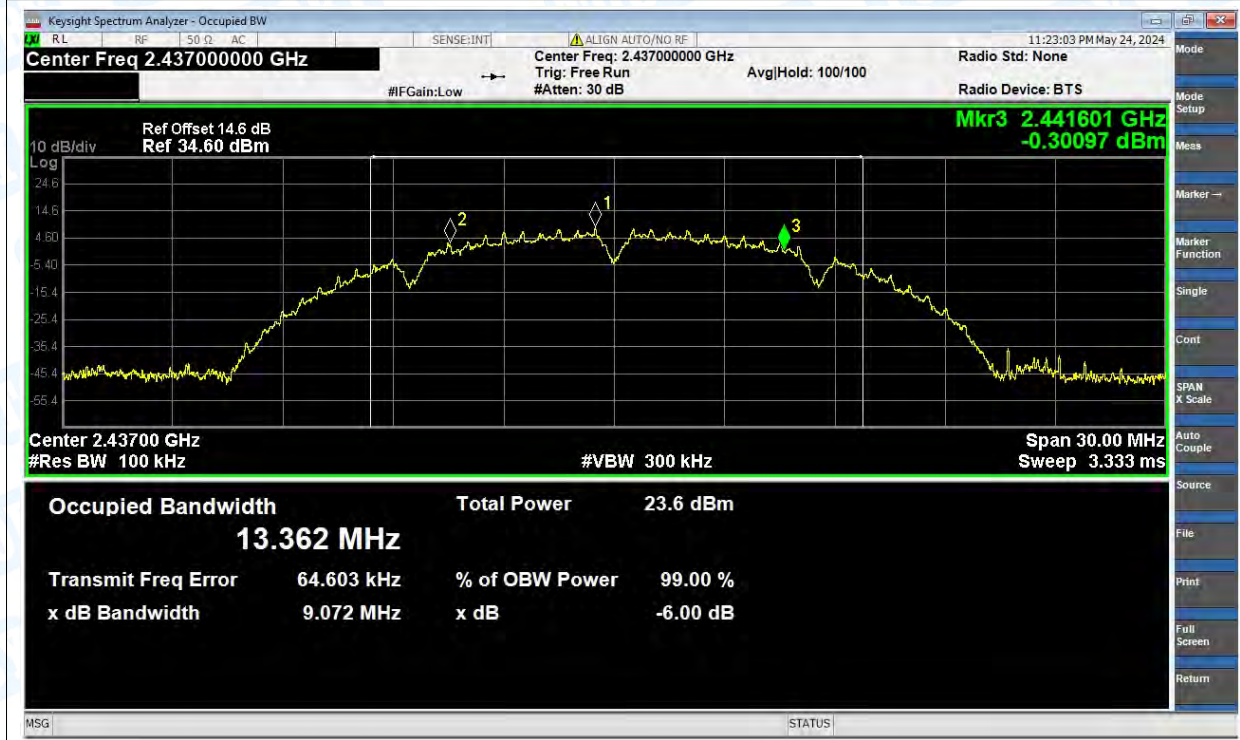
| Condition | Mode    | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|---------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | b       | 2412            | Ant1    | 8.56                  | 0.5                         | Pass    |
| NVNT      | b       | 2437            | Ant1    | 9.07                  | 0.5                         | Pass    |
| NVNT      | b       | 2462            | Ant1    | 9.07                  | 0.5                         | Pass    |
| NVNT      | g       | 2412            | Ant1    | 16.35                 | 0.5                         | Pass    |
| NVNT      | g       | 2437            | Ant1    | 16.34                 | 0.5                         | Pass    |
| NVNT      | g       | 2462            | Ant1    | 16.35                 | 0.5                         | Pass    |
| NVNT      | n(HT20) | 2412            | Ant1    | 17.31                 | 0.5                         | Pass    |
| NVNT      | n(HT20) | 2437            | Ant1    | 17.56                 | 0.5                         | Pass    |
| NVNT      | n(HT20) | 2462            | Ant1    | 17.57                 | 0.5                         | Pass    |
| NVNT      | n(HT40) | 2422            | Ant1    | 36.07                 | 0.5                         | Pass    |
| NVNT      | n(HT40) | 2437            | Ant1    | 36.29                 | 0.5                         | Pass    |
| NVNT      | n(HT40) | 2452            | Ant1    | 36.09                 | 0.5                         | Pass    |

### Test Graphs

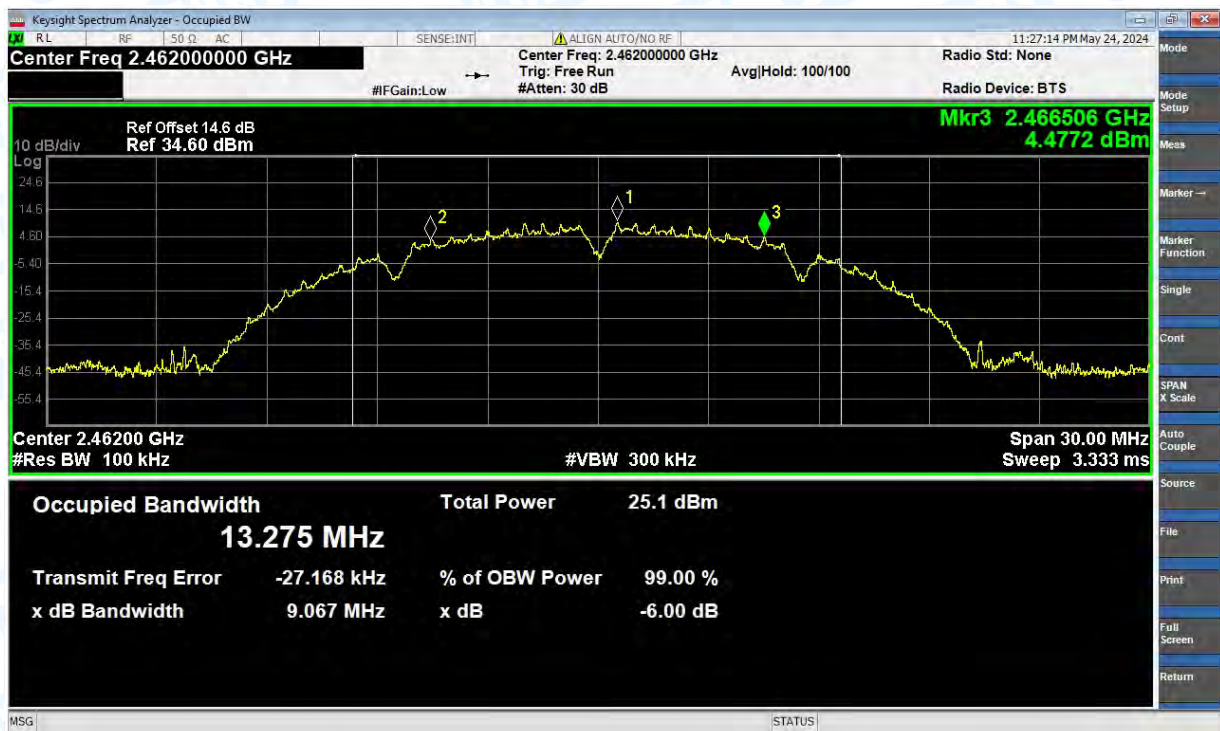
-6dB Bandwidth NVNT b 2412MHz Ant1



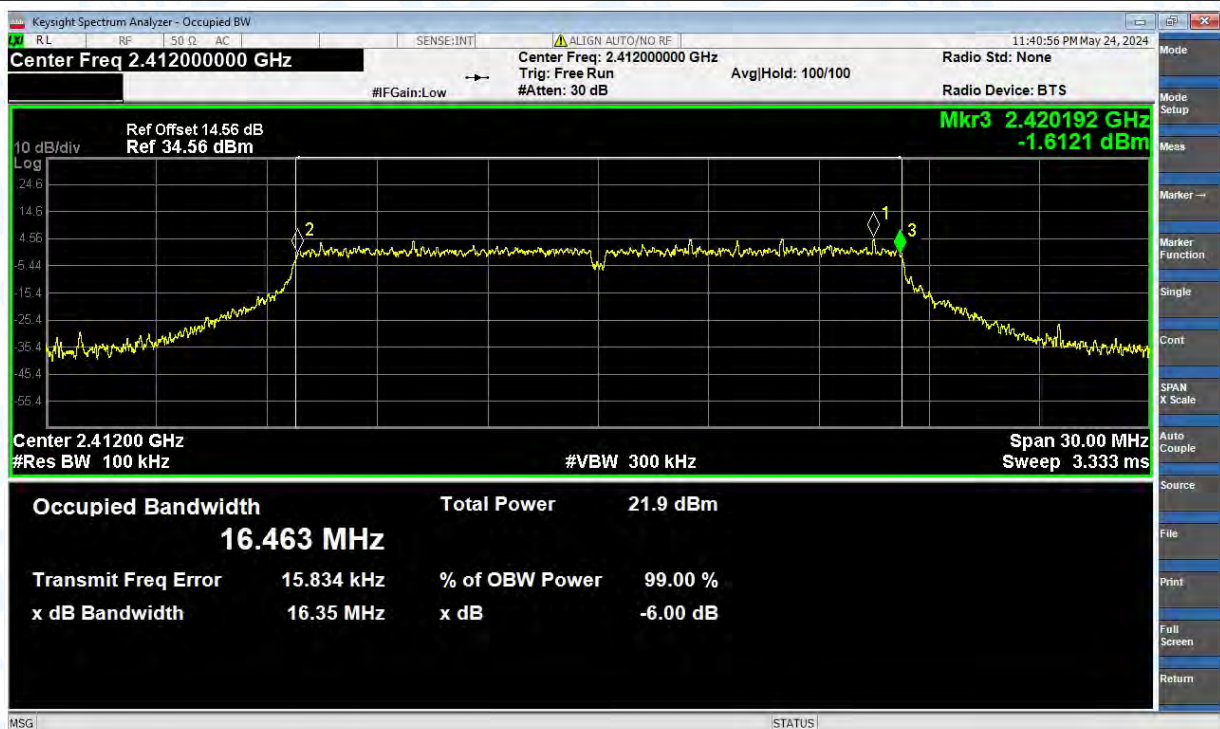
-6dB Bandwidth NVNT b 2437MHz Ant1



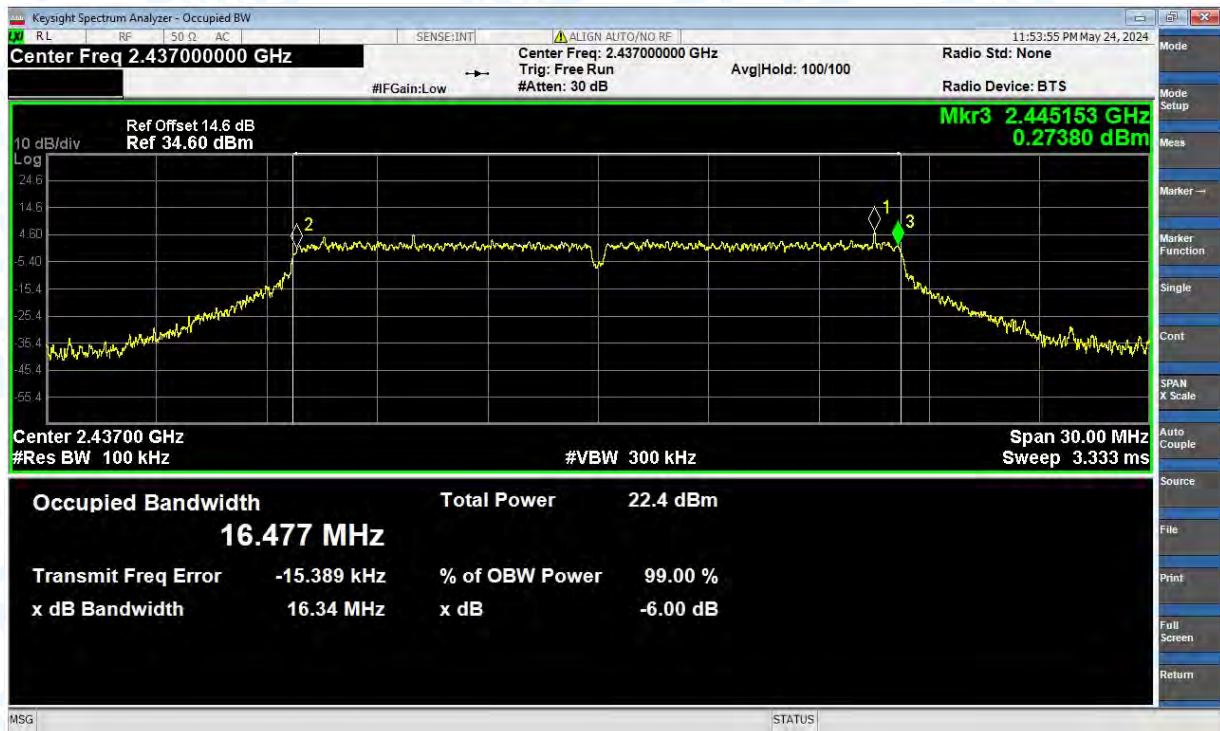
-6dB Bandwidth NVNT b 2462MHz Ant1



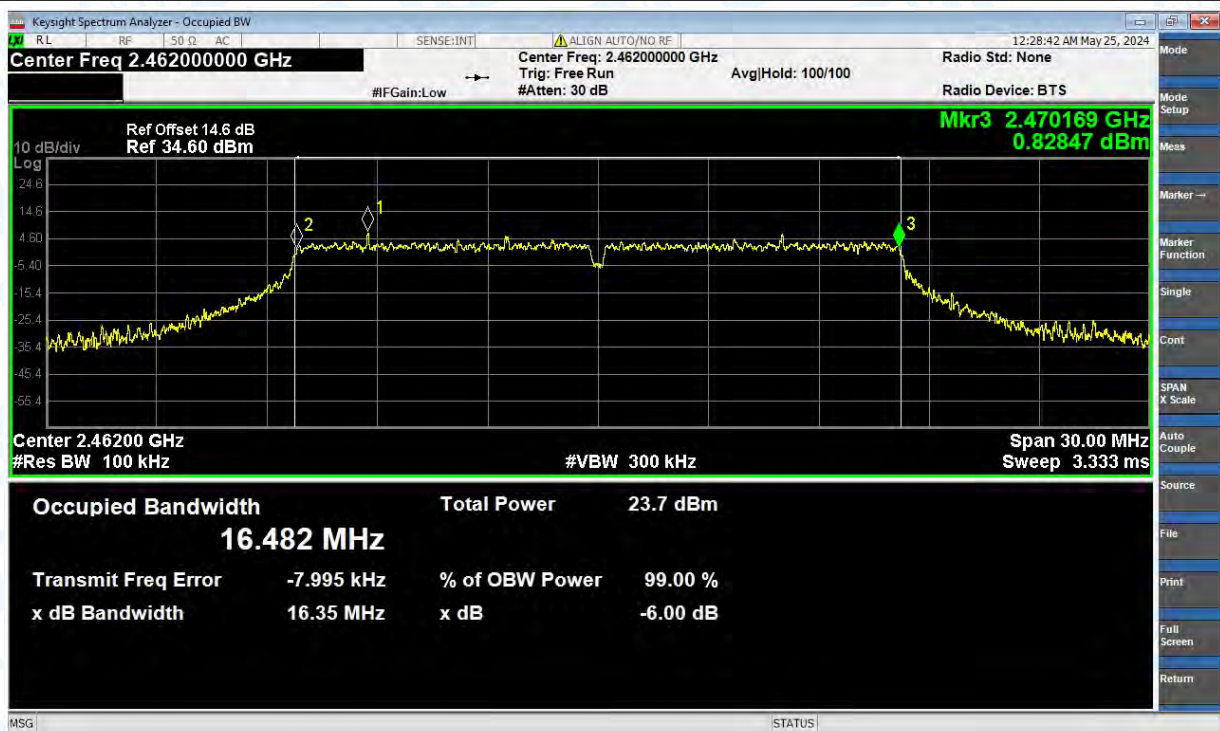
-6dB Bandwidth NVNT g 2412MHz Ant1



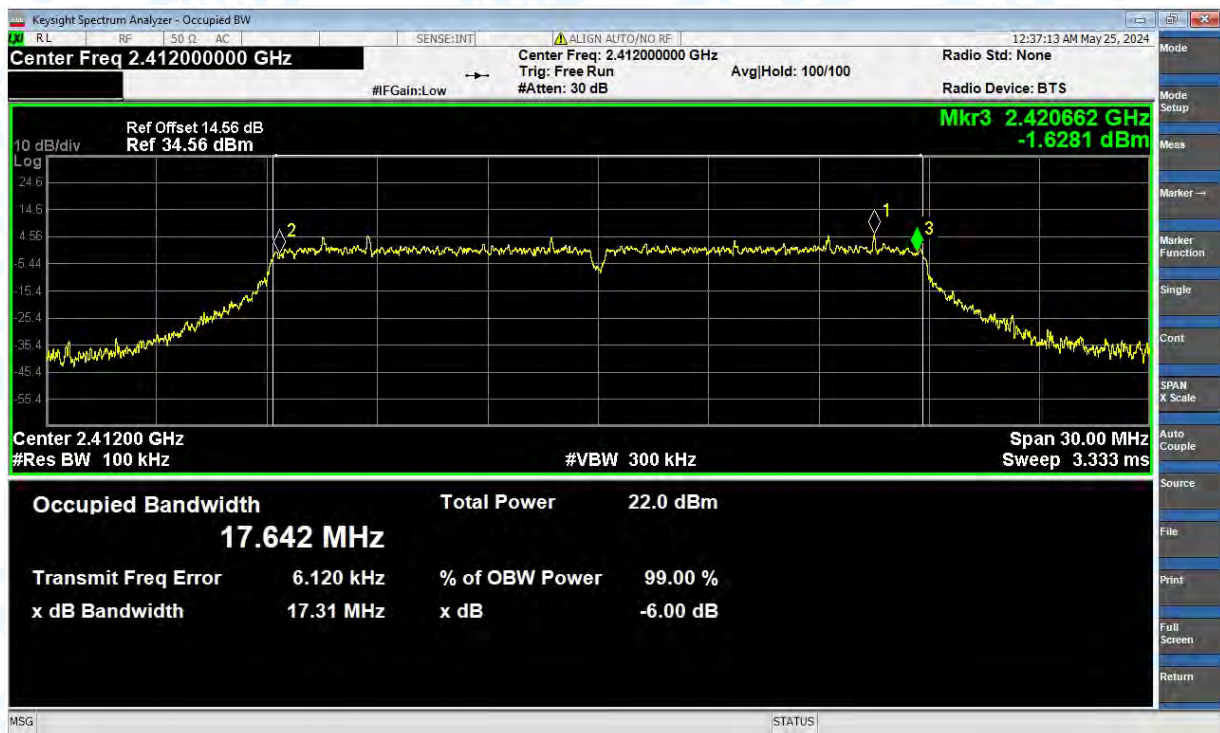
-6dB Bandwidth NVNT g 2437MHz Ant1



-6dB Bandwidth NVNT g 2462MHz Ant1



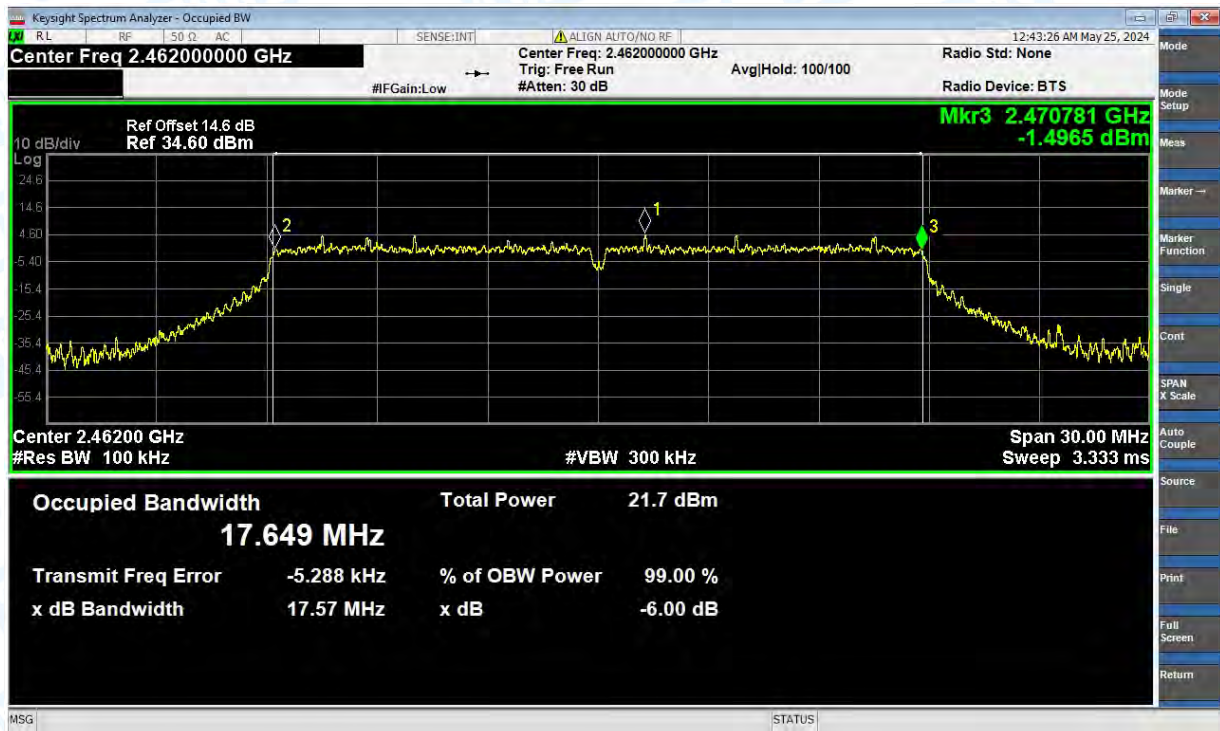
-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



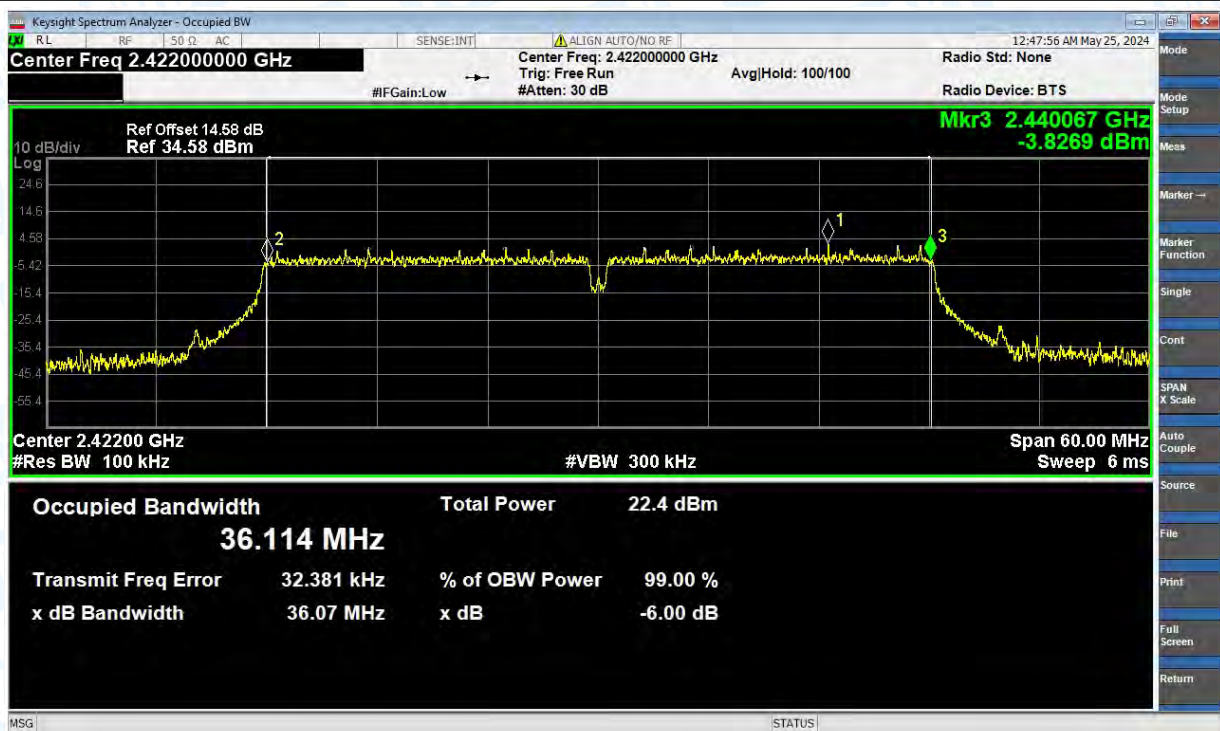
-6dB Bandwidth NVNT n(HT20) 2437MHz Ant1



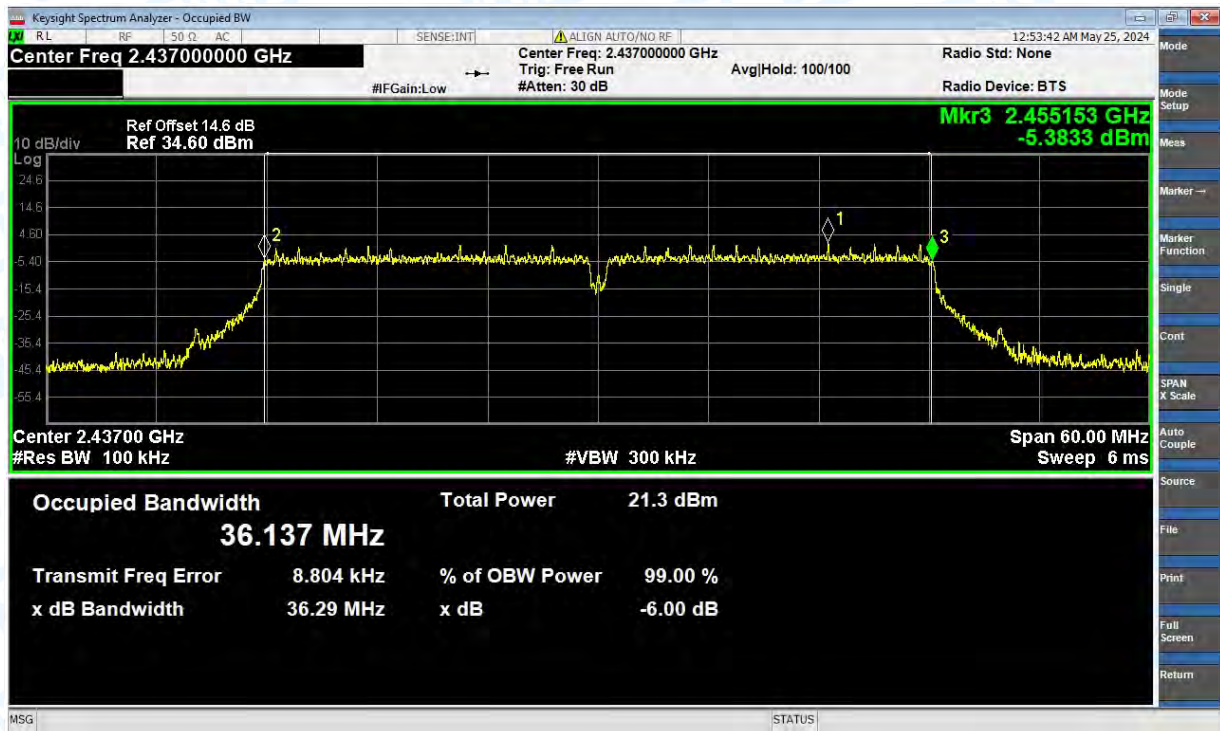
-6dB Bandwidth NVNT n(HT20) 2462MHz Ant1



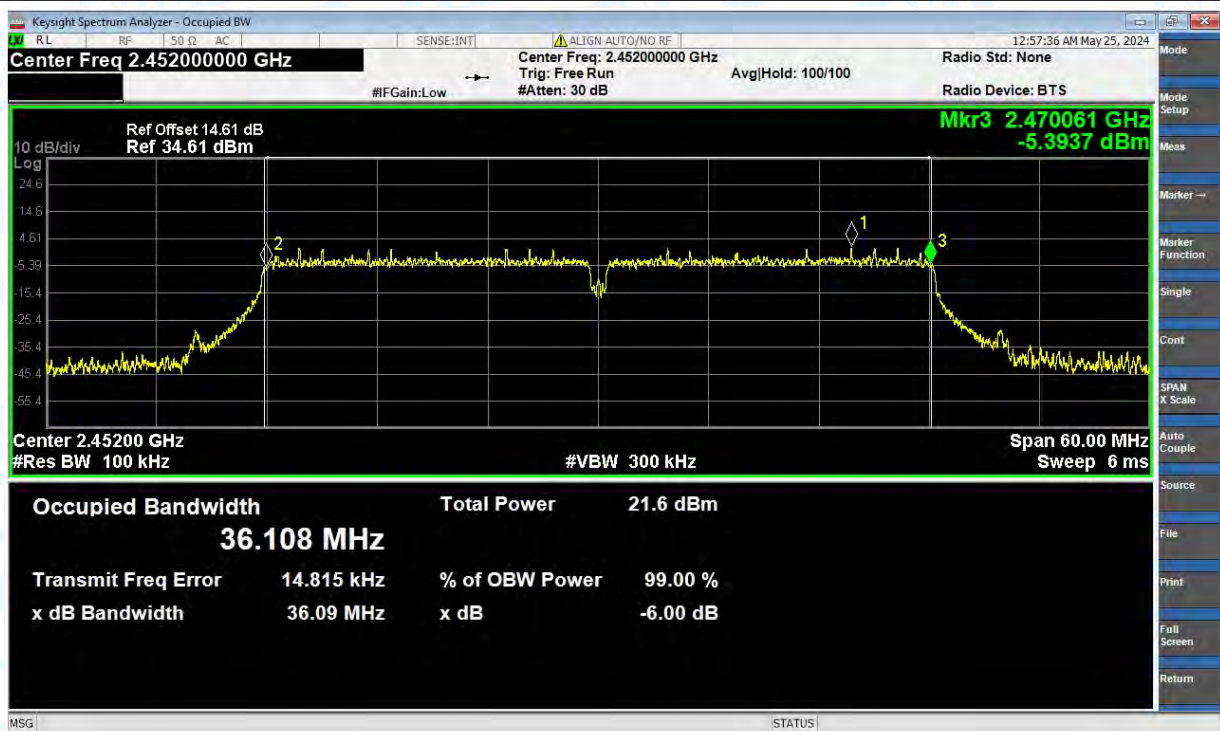
-6dB Bandwidth NVNT n(HT40) 2422MHz Ant1



-6dB Bandwidth NVNT n(HT40) 2437MHz Ant1



-6dB Bandwidth NVNT n(HT40) 2452MHz Ant1

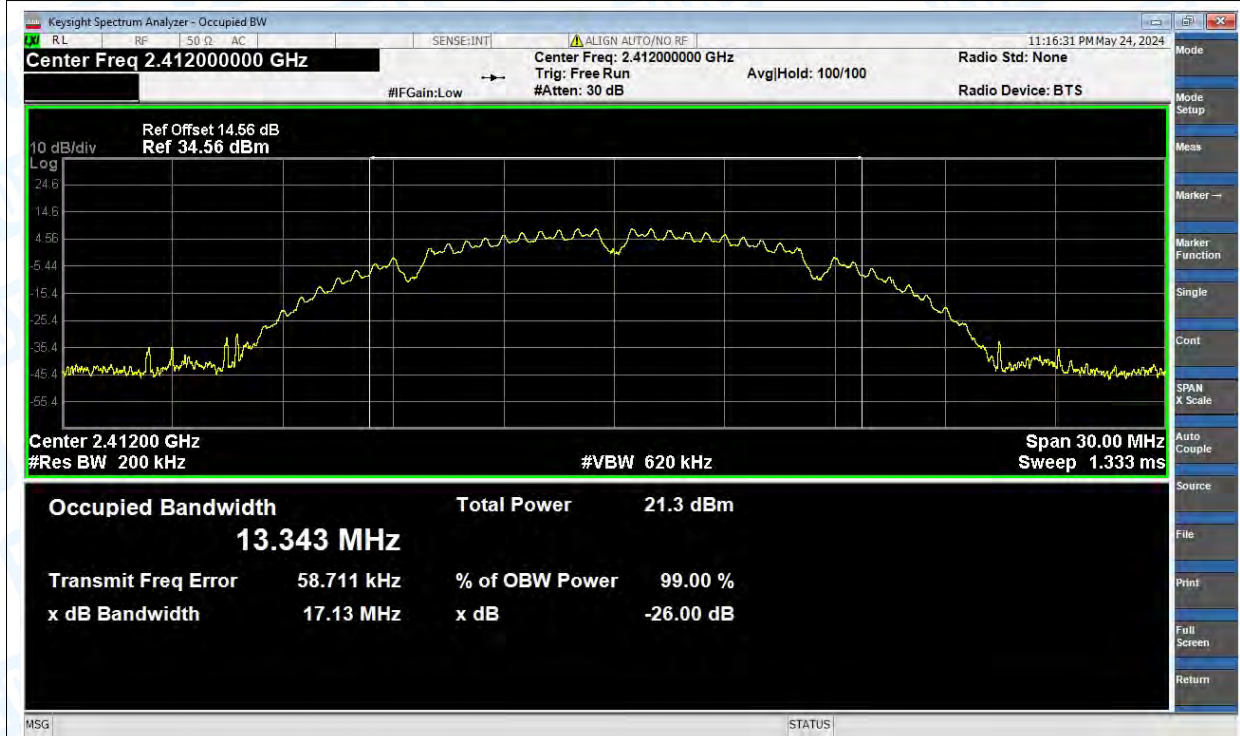


## 4. Occupied Channel Bandwidth

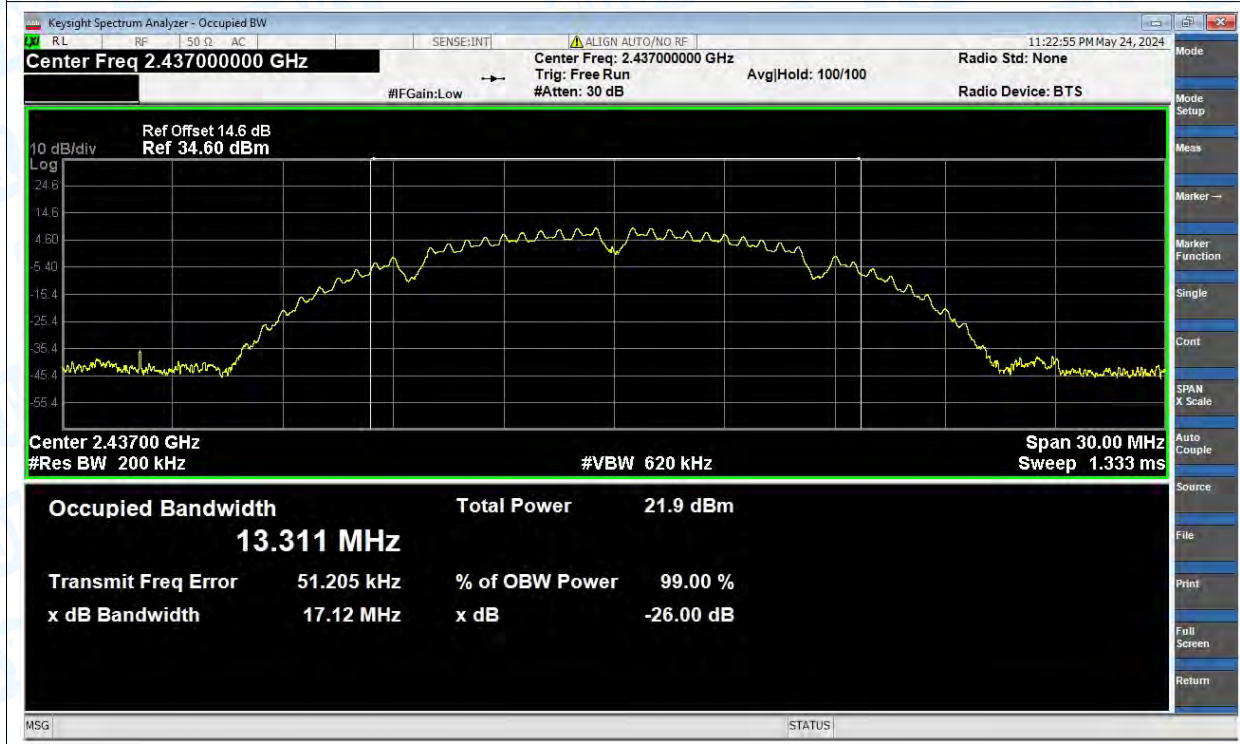
| Condition | Mode    | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|---------|-----------------|---------|---------------|
| NVNT      | b       | 2412            | Ant1    | 13.343        |
| NVNT      | b       | 2437            | Ant1    | 13.311        |
| NVNT      | b       | 2462            | Ant1    | 13.297        |
| NVNT      | g       | 2412            | Ant1    | 16.578        |
| NVNT      | g       | 2437            | Ant1    | 16.641        |
| NVNT      | g       | 2462            | Ant1    | 16.62         |
| NVNT      | n(HT20) | 2412            | Ant1    | 17.689        |
| NVNT      | n(HT20) | 2437            | Ant1    | 17.758        |
| NVNT      | n(HT20) | 2462            | Ant1    | 17.737        |
| NVNT      | n(HT40) | 2422            | Ant1    | 36.293        |
| NVNT      | n(HT40) | 2437            | Ant1    | 36.259        |
| NVNT      | n(HT40) | 2452            | Ant1    | 36.232        |

### Test Graphs

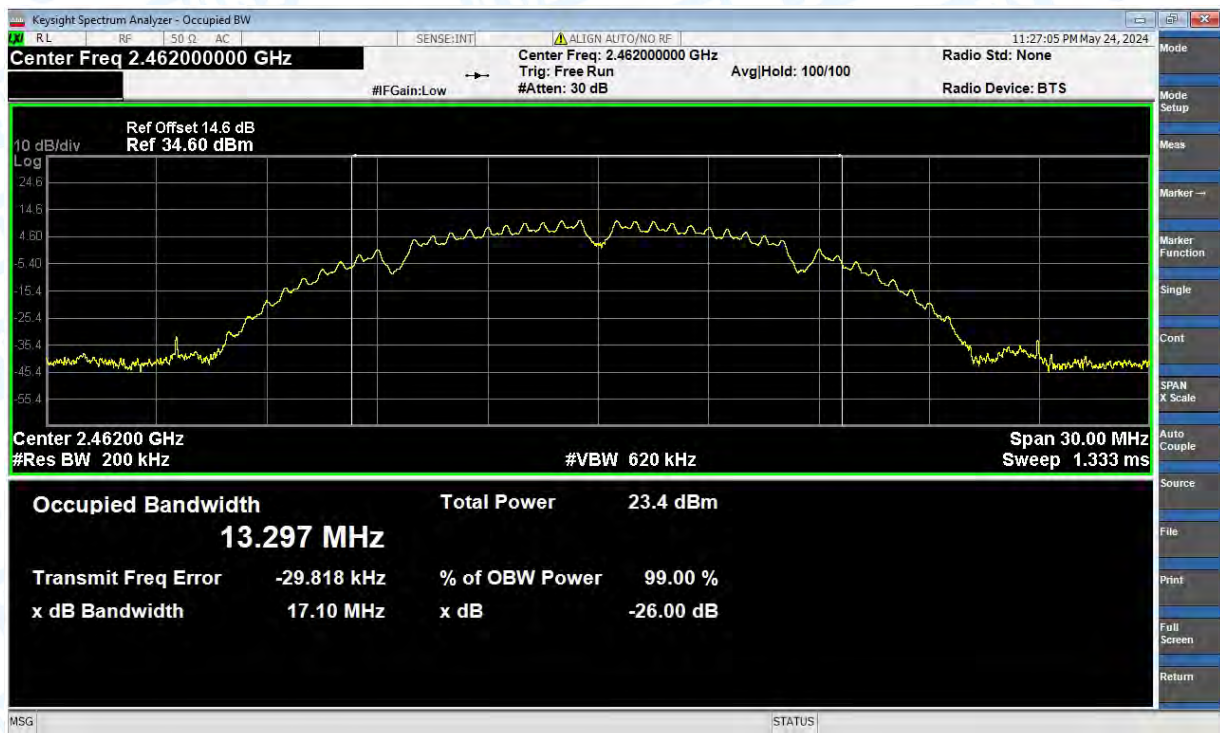
#### OBW NVNT b 2412MHz Ant1



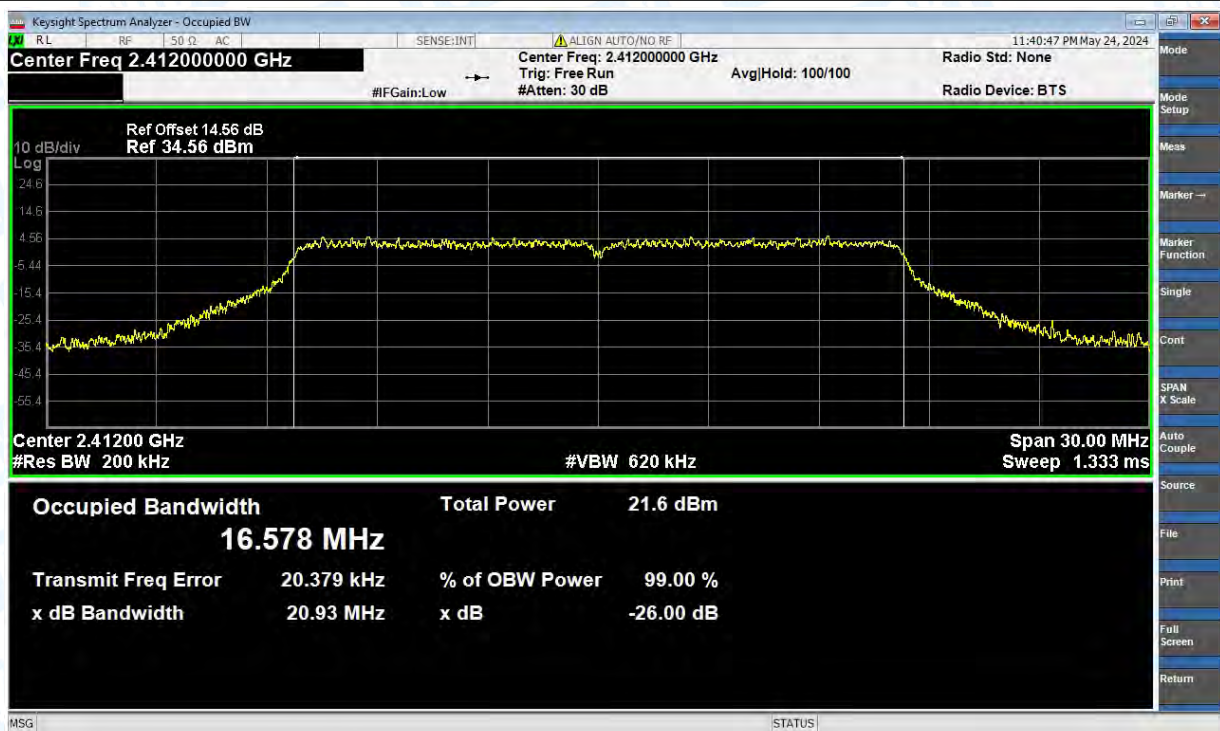
#### OBW NVNT b 2437MHz Ant1



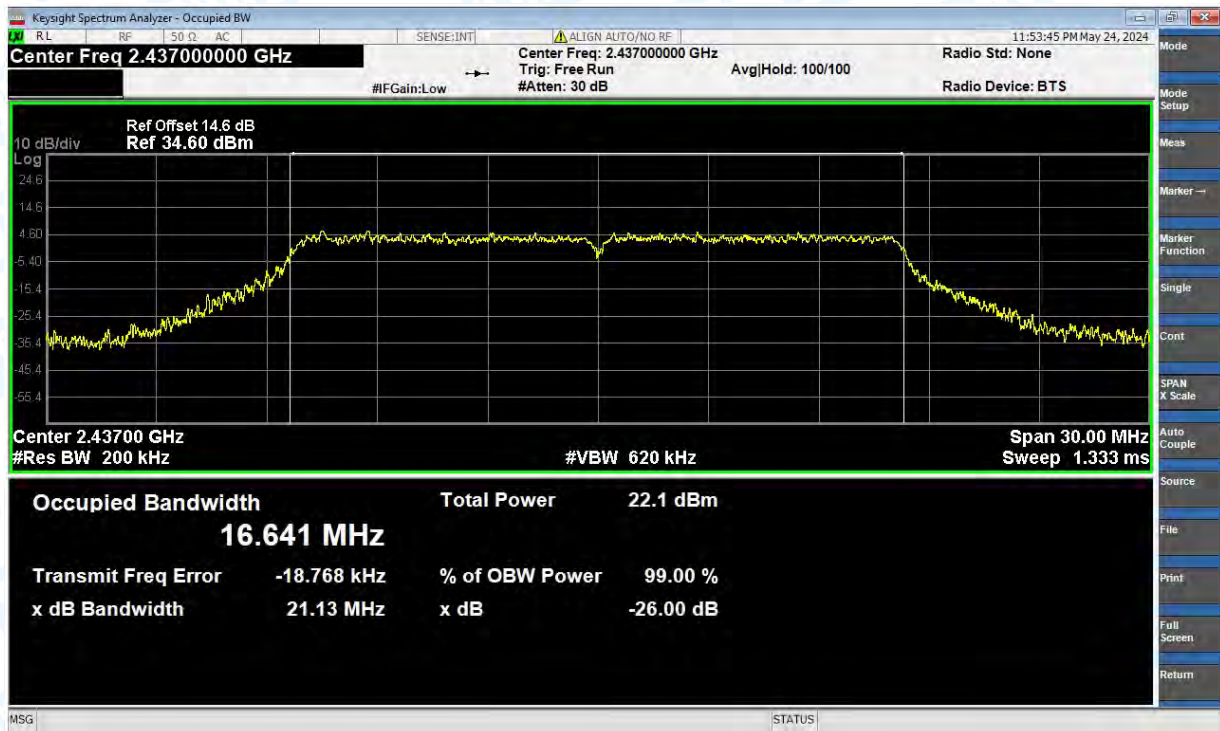
OBW NVNT b 2462MHz Ant1



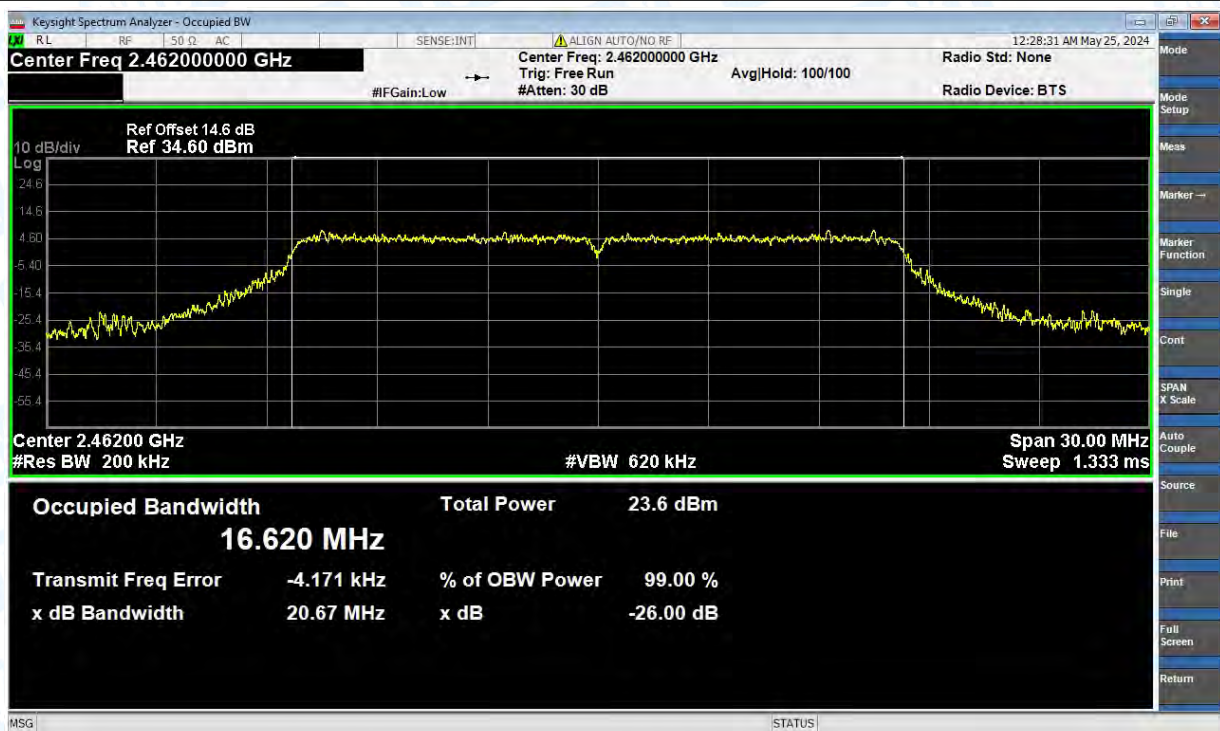
OBW NVNT g 2412MHz Ant1



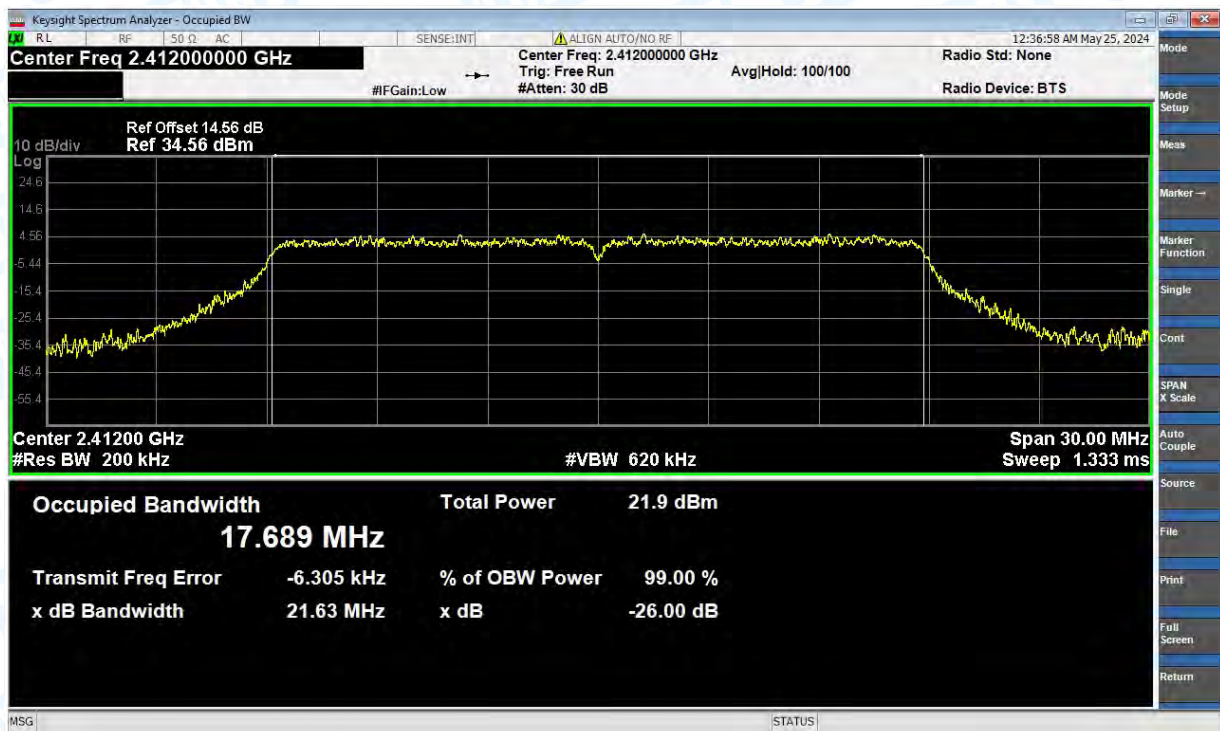
OBW NVNT g 2437MHz Ant1



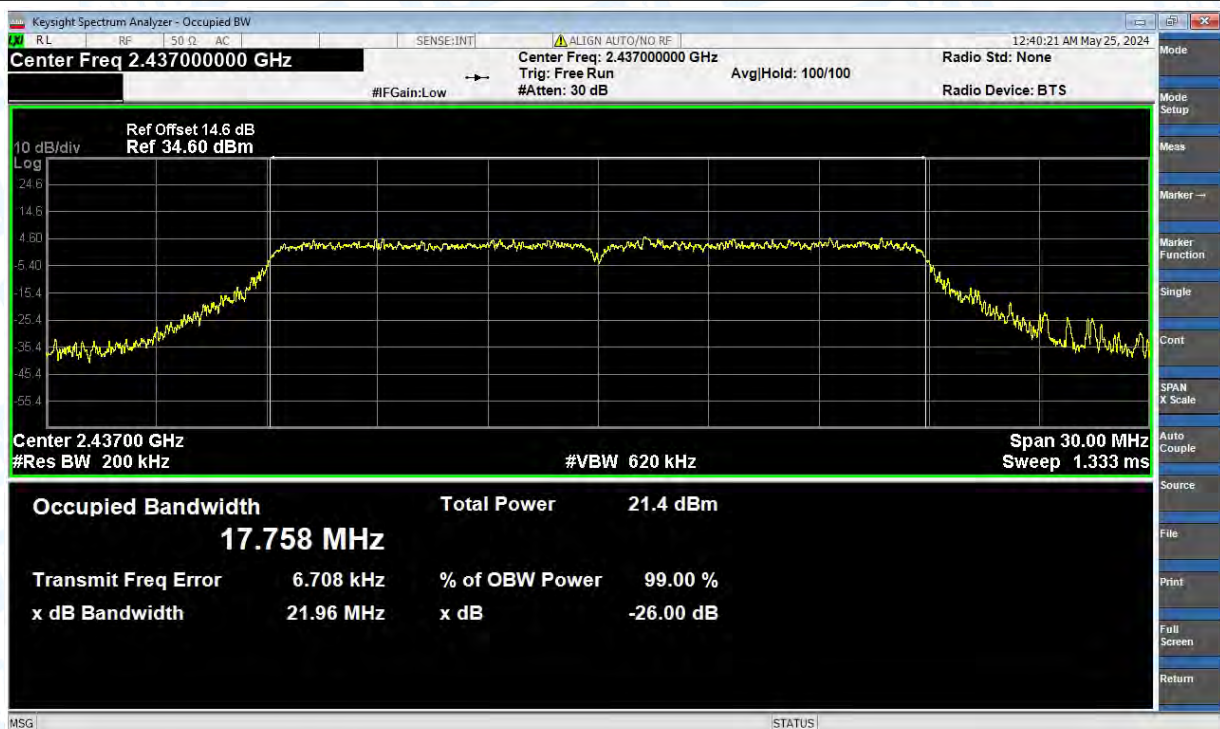
OBW NVNT g 2462MHz Ant1



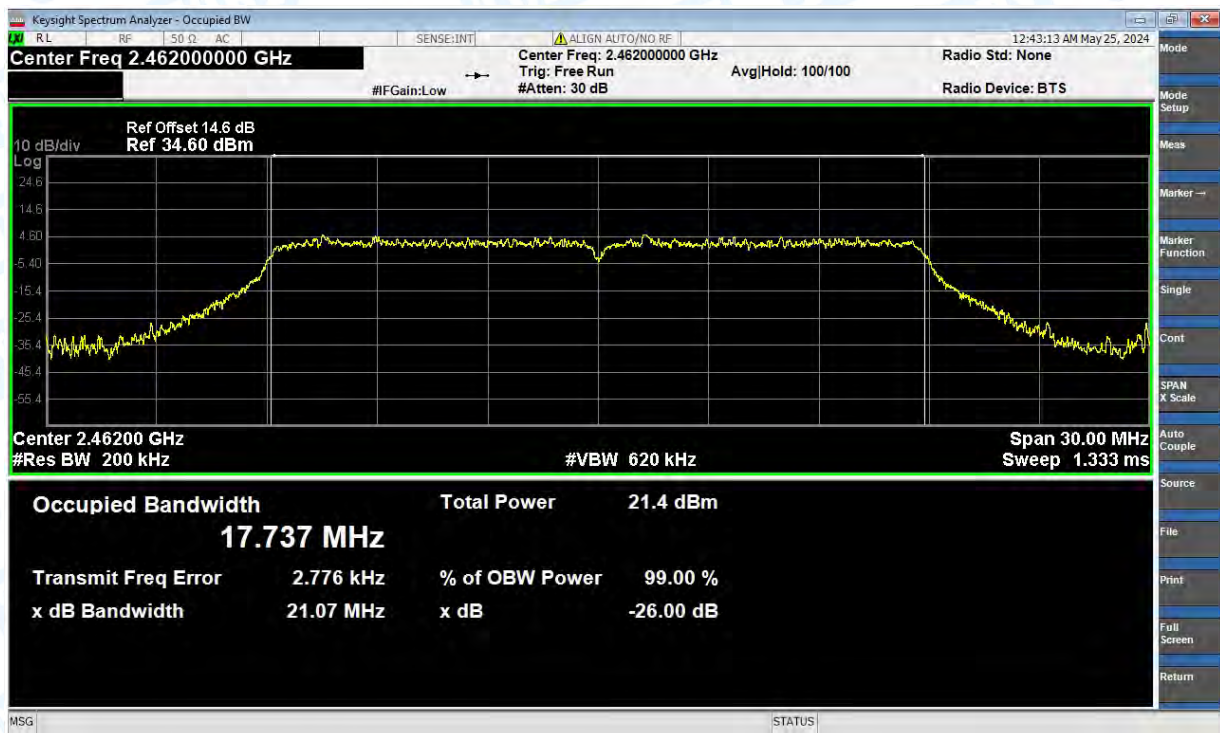
OBW NVNT n(HT20) 2412MHz Ant1



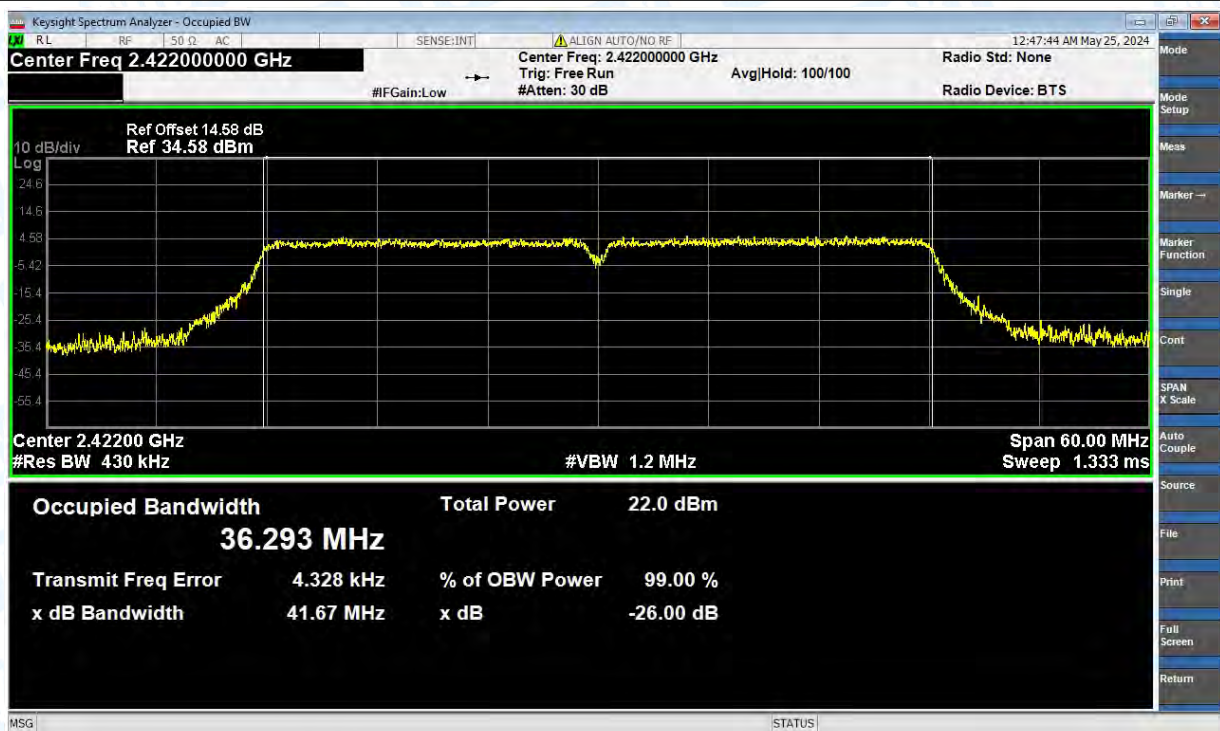
OBW NVNT n(HT20) 2437MHz Ant1



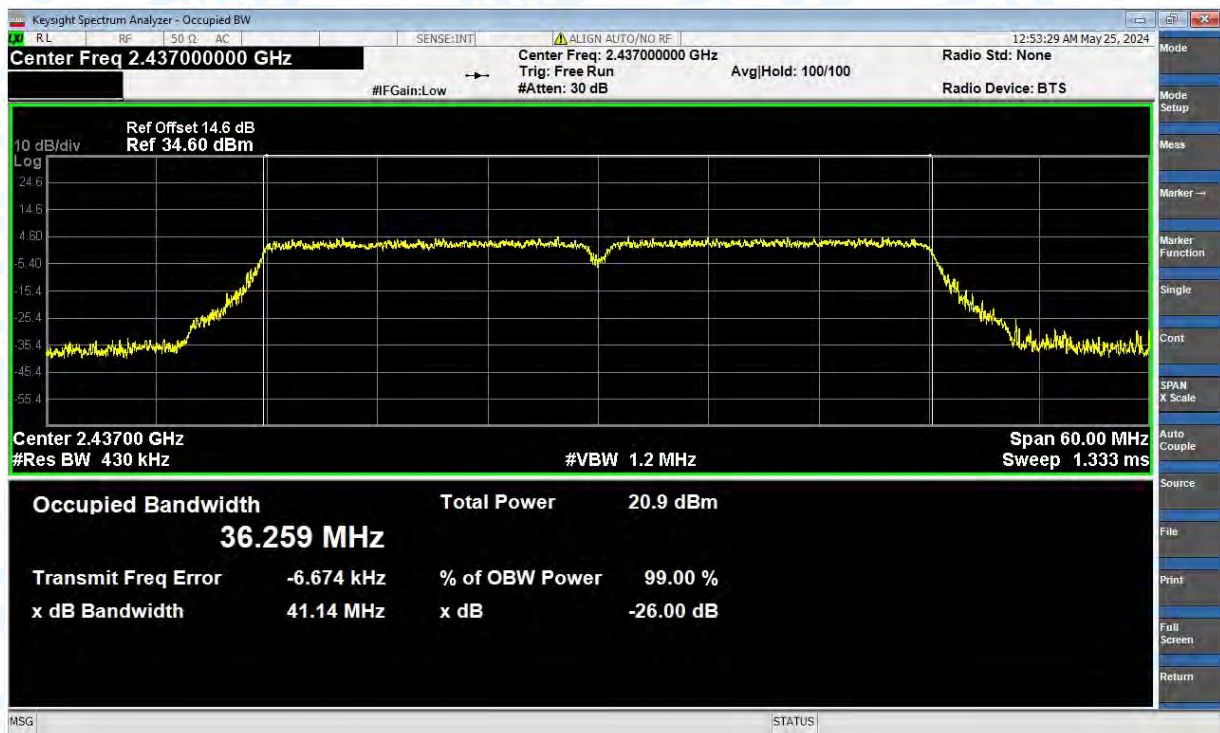
OBW NVNT n(HT20) 2462MHz Ant1



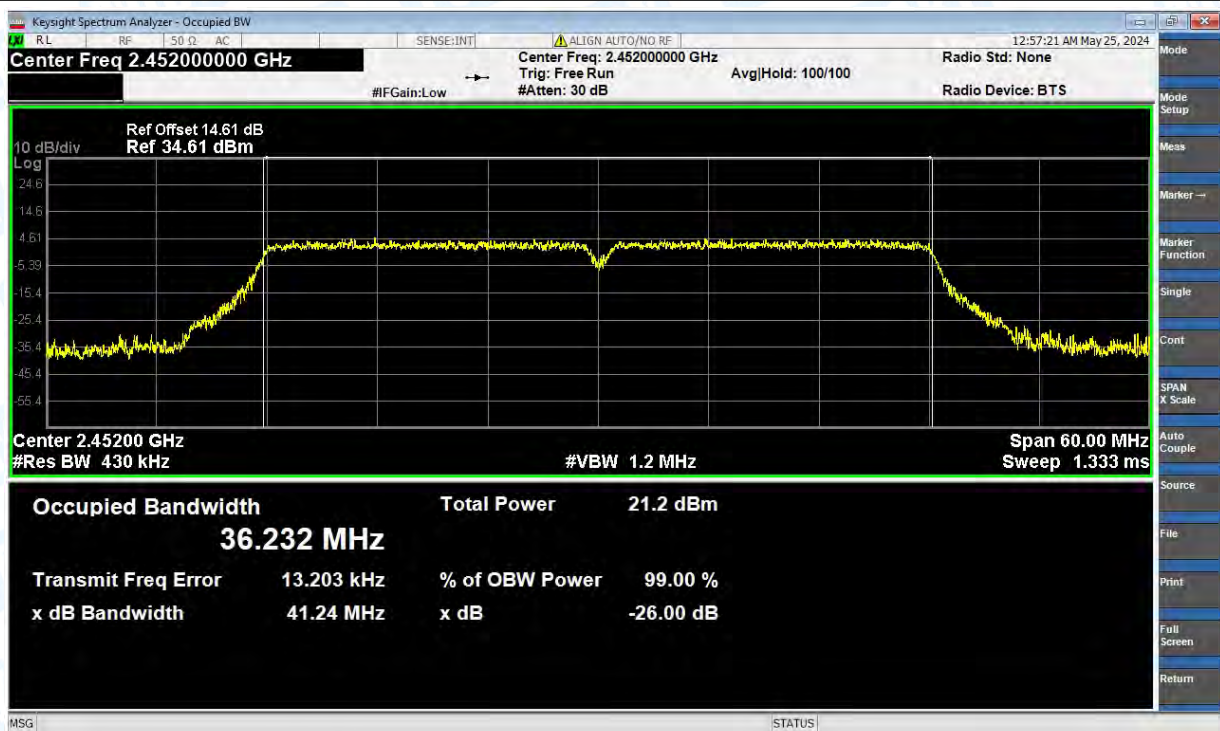
OBW NVNT n(HT40) 2422MHz Ant1



OBW NVNT n(HT40) 2437MHz Ant1



OBW NVNT n(HT40) 2452MHz Ant1



## 5. Maximum Power Spectral Density Level

| Condition | Mode    | Frequency (MHz) | Antenna | Max PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|---------|-----------------|---------|--------------------|------------------|---------|
| NVNT      | b       | 2412            | Ant1    | -15.08             | 8                | Pass    |
| NVNT      | b       | 2437            | Ant1    | -15.103            | 8                | Pass    |
| NVNT      | b       | 2462            | Ant1    | -15.191            | 8                | Pass    |
| NVNT      | g       | 2412            | Ant1    | -18.544            | 8                | Pass    |
| NVNT      | g       | 2437            | Ant1    | -18.605            | 8                | Pass    |
| NVNT      | g       | 2462            | Ant1    | -18.18             | 8                | Pass    |
| NVNT      | n(HT20) | 2412            | Ant1    | -18.762            | 8                | Pass    |
| NVNT      | n(HT20) | 2437            | Ant1    | -18.46             | 8                | Pass    |
| NVNT      | n(HT20) | 2462            | Ant1    | -18.168            | 8                | Pass    |
| NVNT      | n(HT40) | 2422            | Ant1    | -22.544            | 8                | Pass    |
| NVNT      | n(HT40) | 2437            | Ant1    | -22.252            | 8                | Pass    |
| NVNT      | n(HT40) | 2452            | Ant1    | -23.448            | 8                | Pass    |

### Test Graphs

PSD NVNT b 2412MHz Ant1



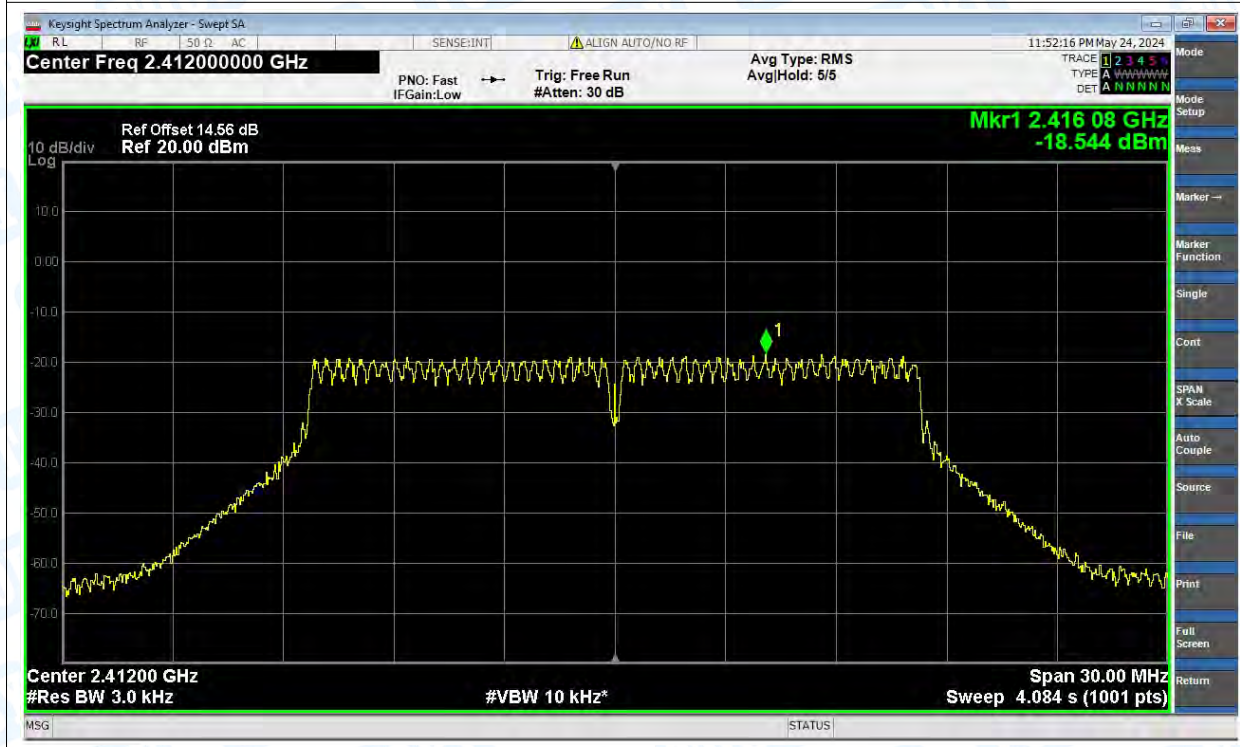
PSD NVNT b 2437MHz Ant1



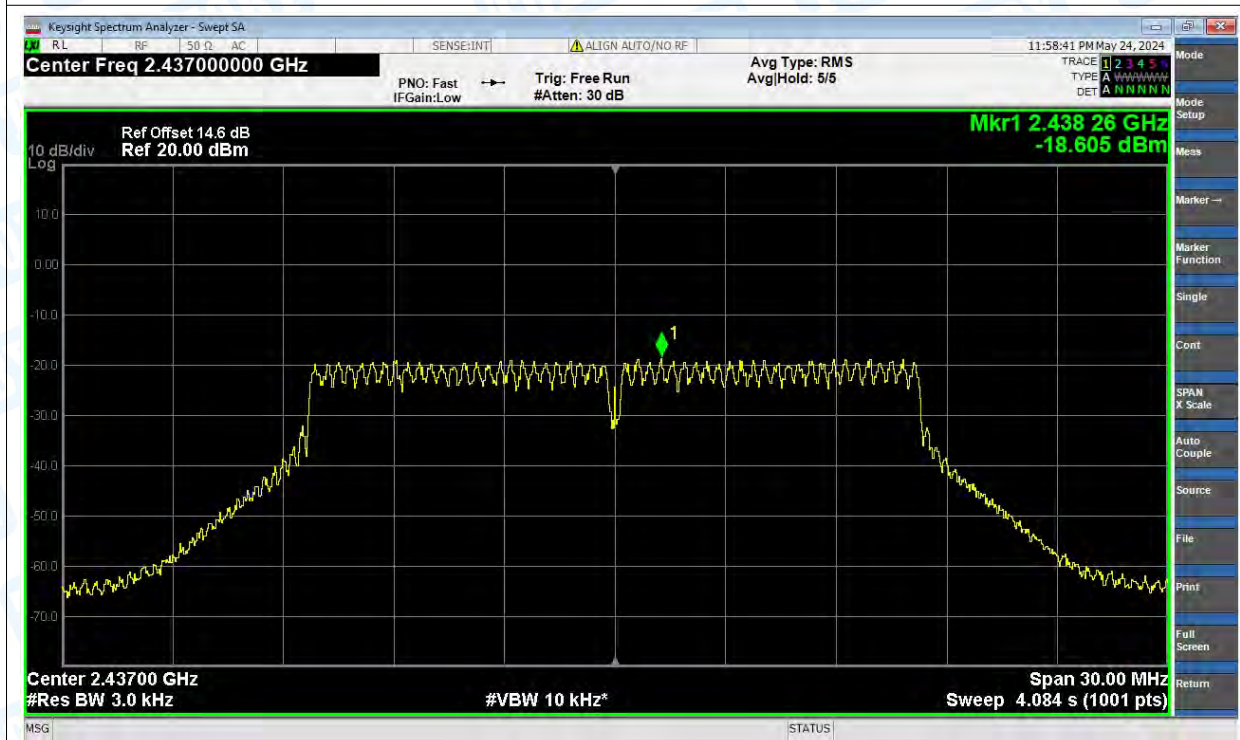
PSD NVNT b 2462MHz Ant1



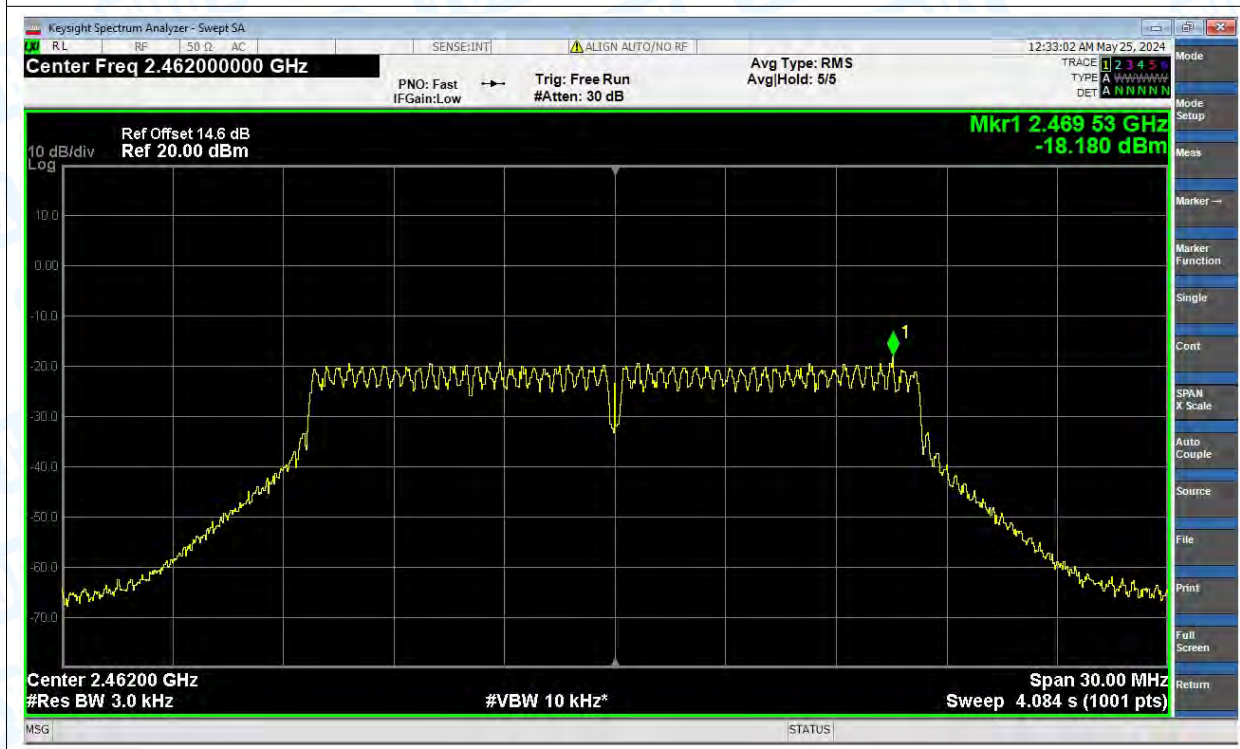
PSD NVNT g 2412MHz Ant1



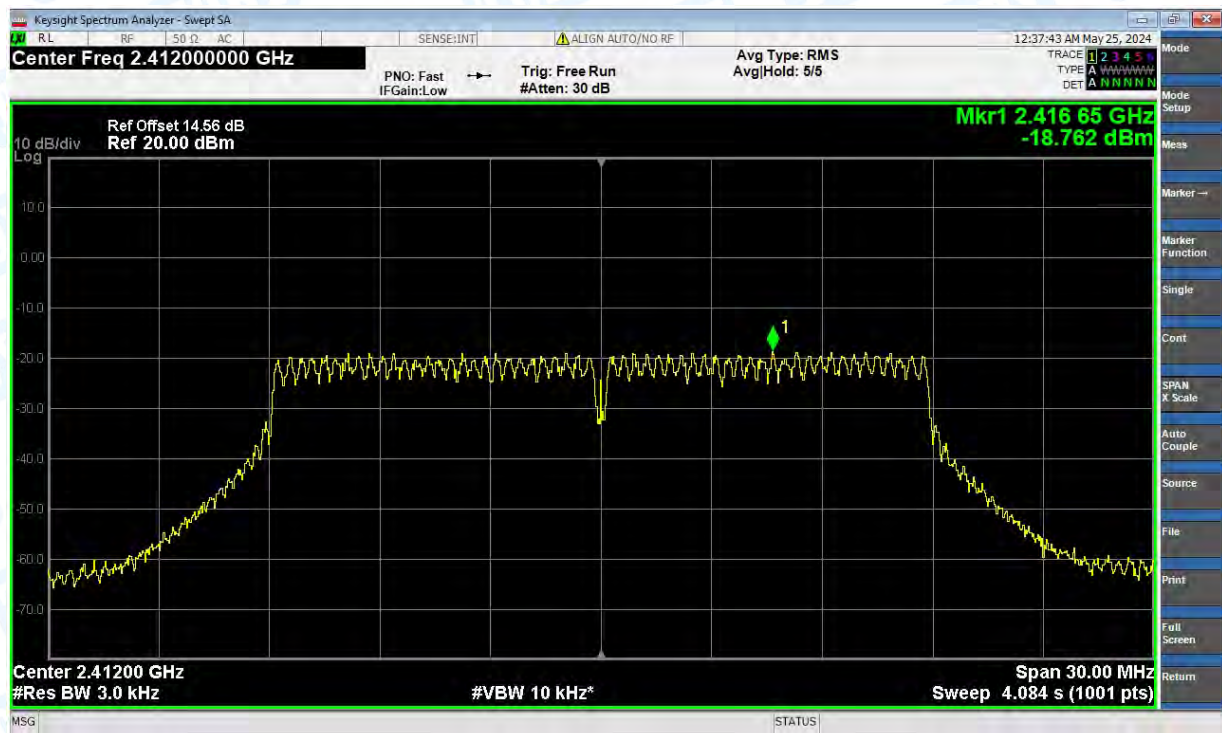
PSD NVNT g 2437MHz Ant1



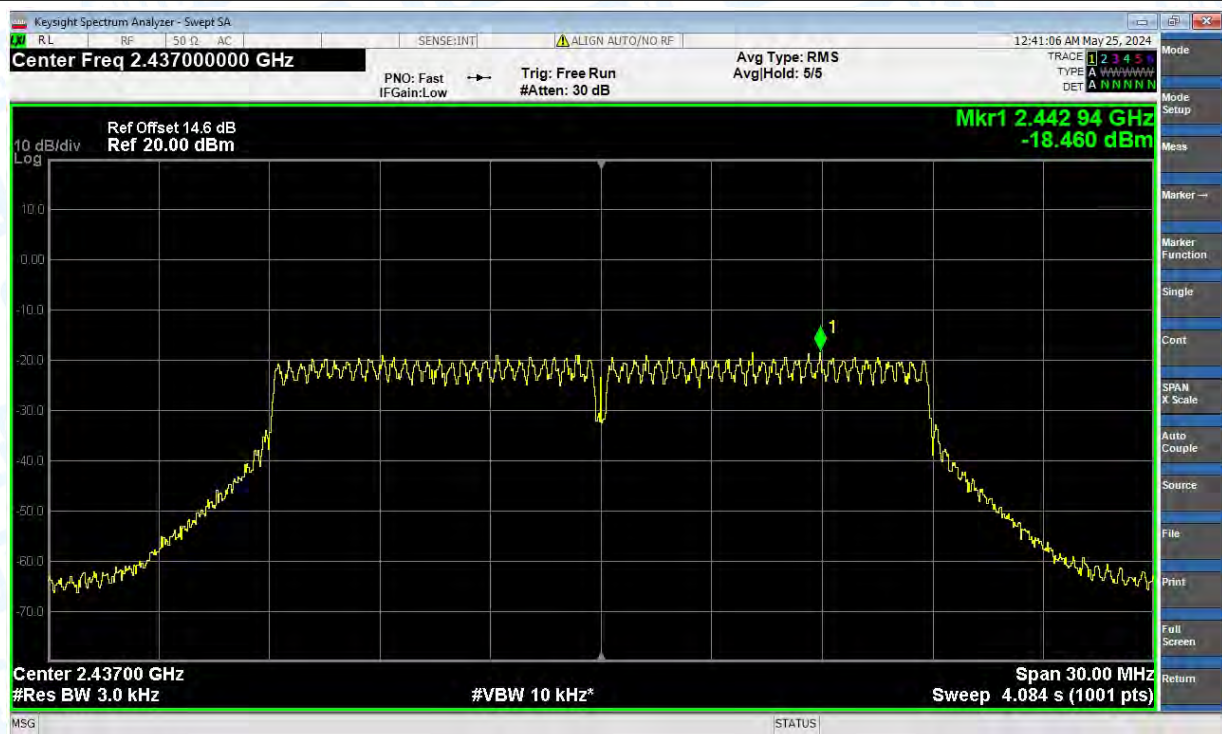
PSD NVNT g 2462MHz Ant1

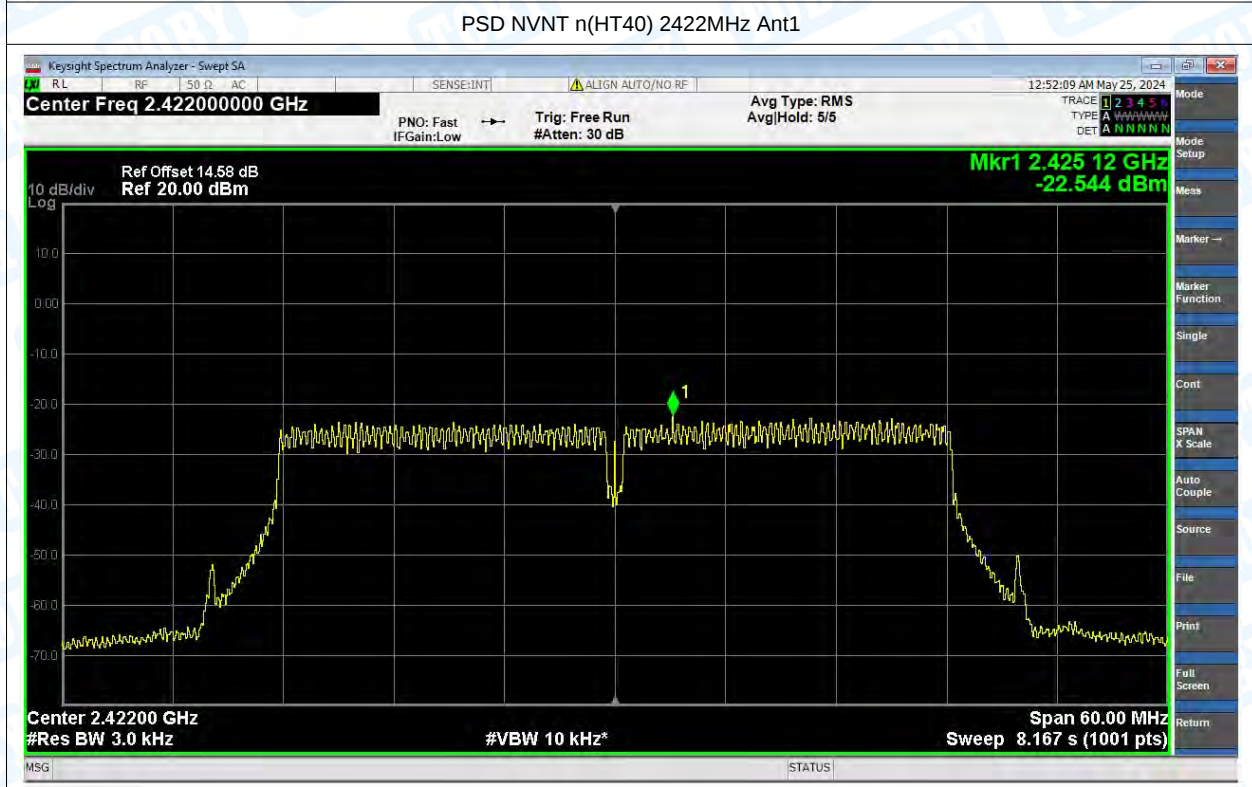
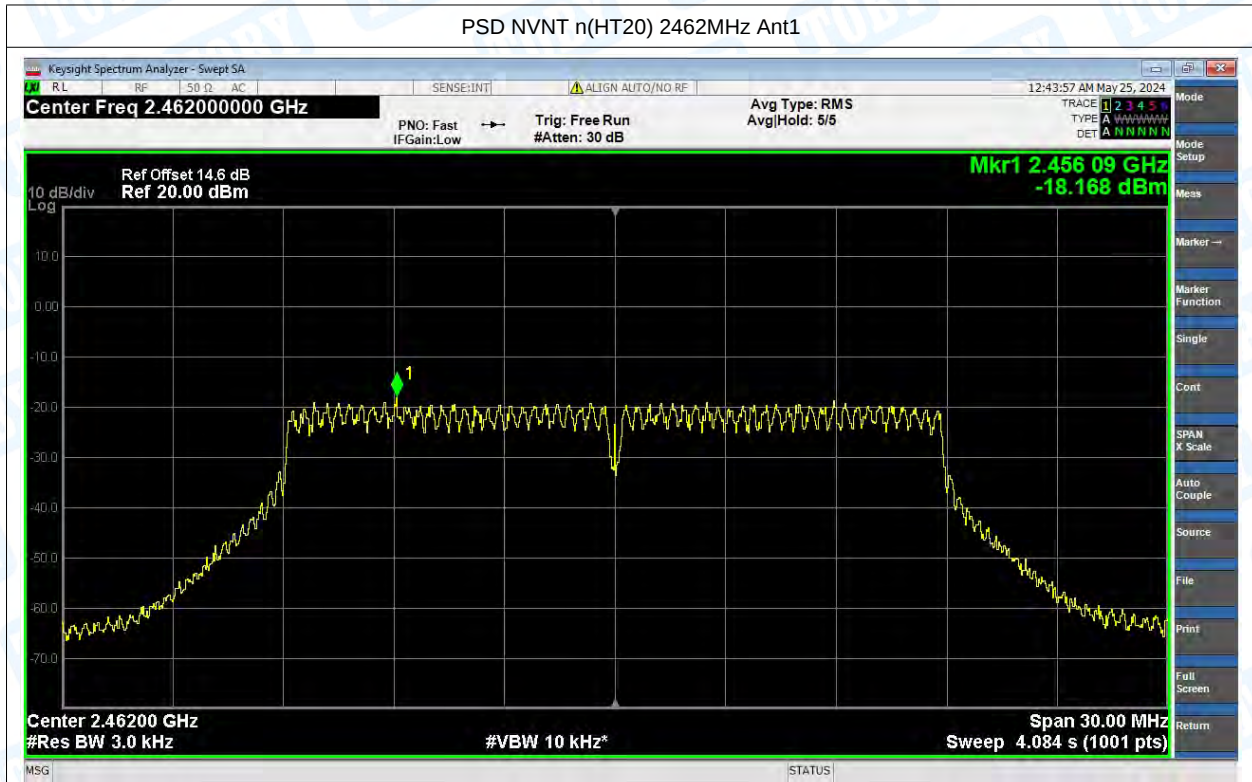


PSD NVNT n(HT20) 2412MHz Ant1

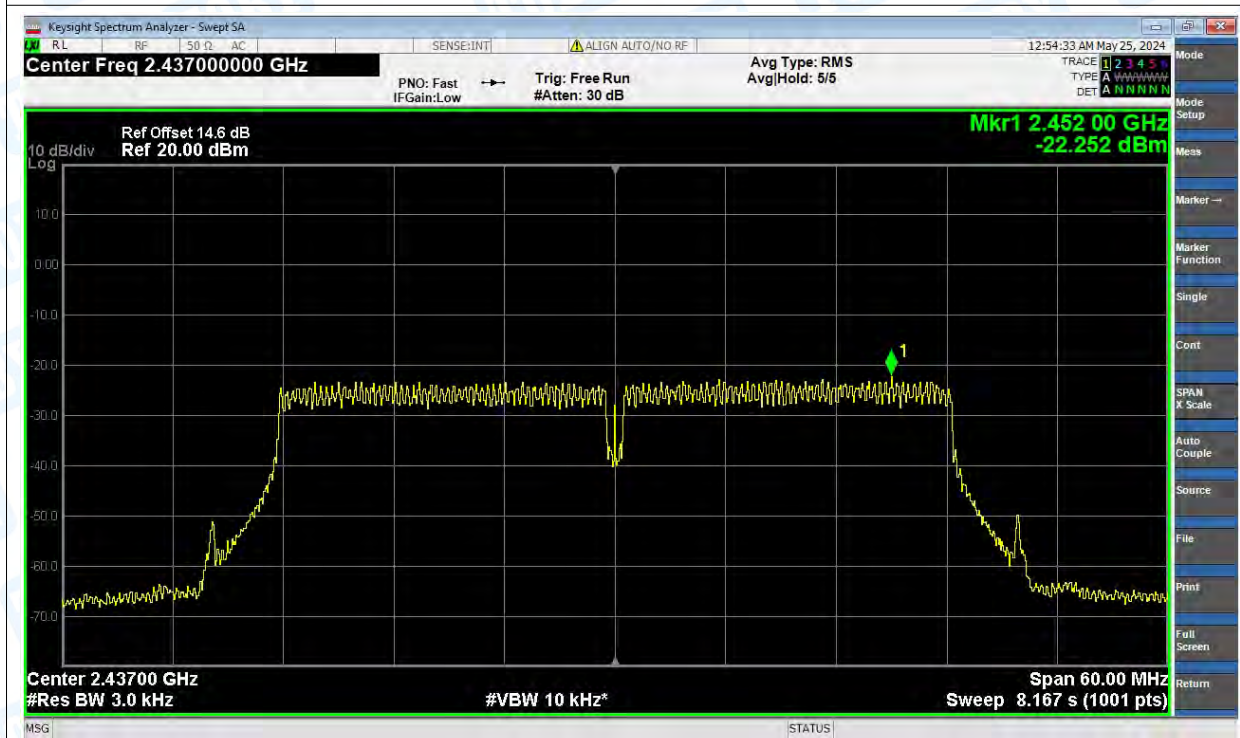


PSD NVNT n(HT20) 2437MHz Ant1

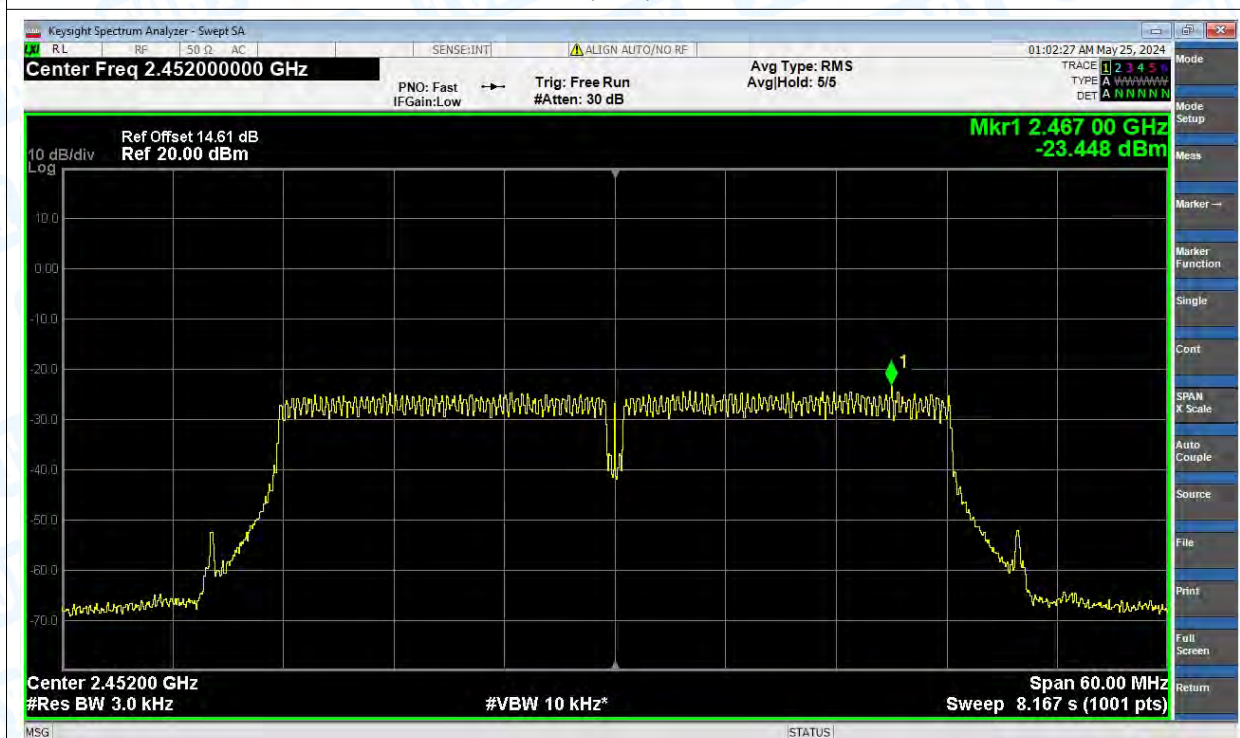




PSD NVNT n(HT40) 2437MHz Ant1



PSD NVNT n(HT40) 2452MHz Ant1



## 6. Band Edge

| Condition | Mode    | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|---------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | b       | 2412            | Ant1    | -52.93          | -30         | Pass    |
| NVNT      | b       | 2462            | Ant1    | -53.77          | -30         | Pass    |
| NVNT      | g       | 2412            | Ant1    | -43.82          | -30         | Pass    |
| NVNT      | g       | 2462            | Ant1    | -43.61          | -30         | Pass    |
| NVNT      | n(HT20) | 2412            | Ant1    | -46.02          | -30         | Pass    |
| NVNT      | n(HT20) | 2462            | Ant1    | -44.33          | -30         | Pass    |
| NVNT      | n(HT40) | 2422            | Ant1    | -41.61          | -30         | Pass    |
| NVNT      | n(HT40) | 2452            | Ant1    | -38.66          | -30         | Pass    |