



## Appendix B

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

Product Name: IP Phone

Test Model: UCV50

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.8° C   |
| Relative Humidity: | 52.1%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Nick Peng |
| Supervised by:     | Ling Zhu  |



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B.1 -6dB Bandwidth

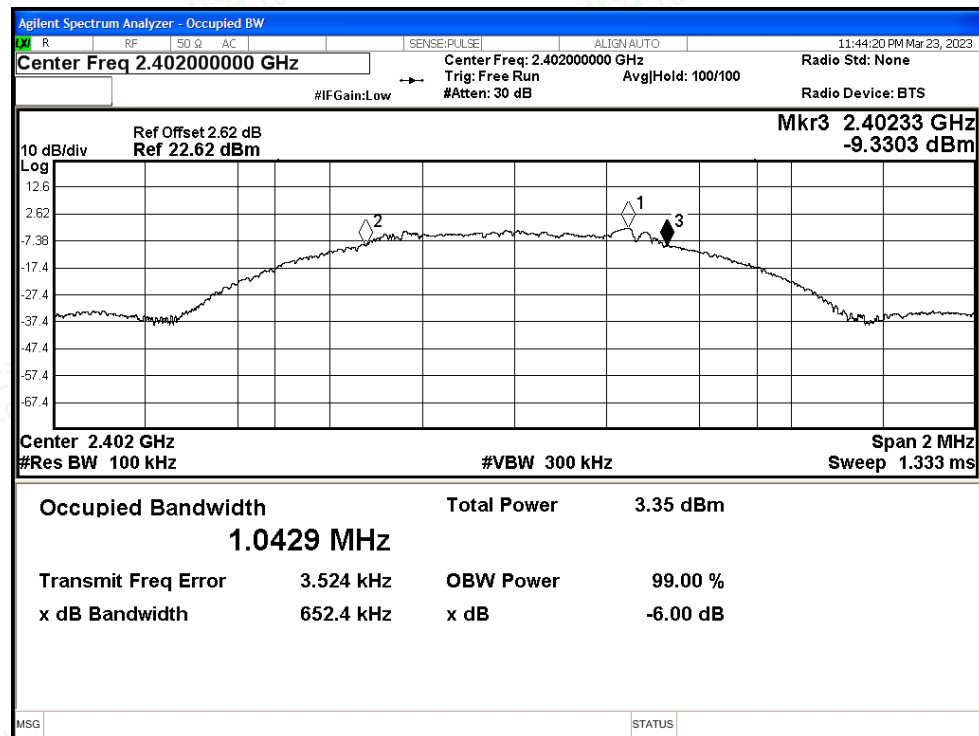
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.652                 | >=0.5                       | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.651                 | >=0.5                       | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.688                 | >=0.5                       | Pass    |



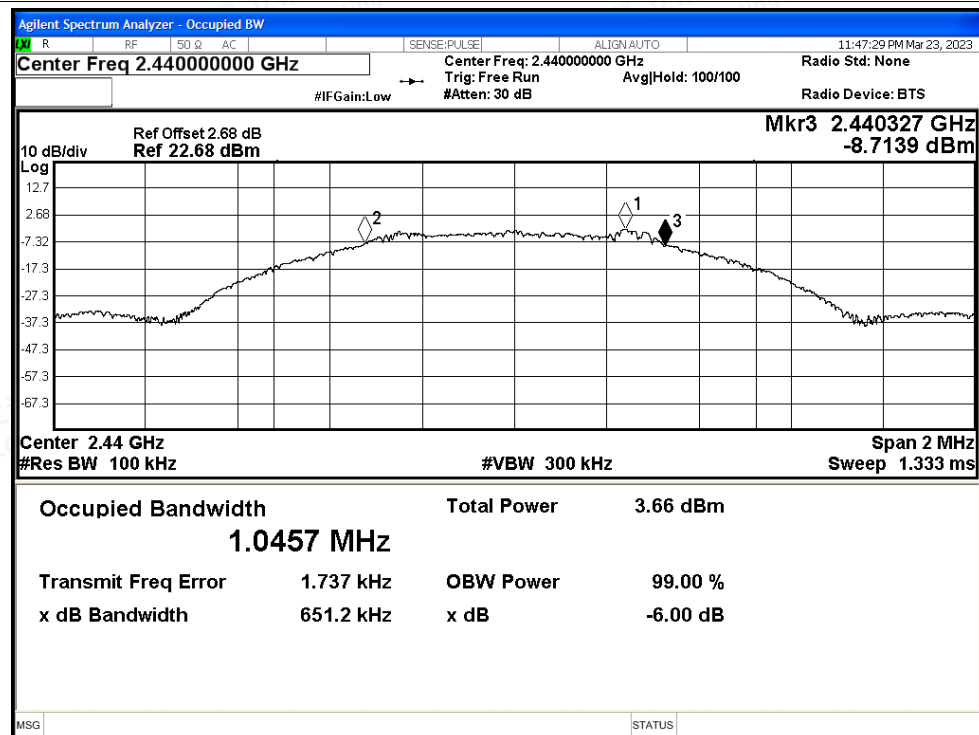


## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

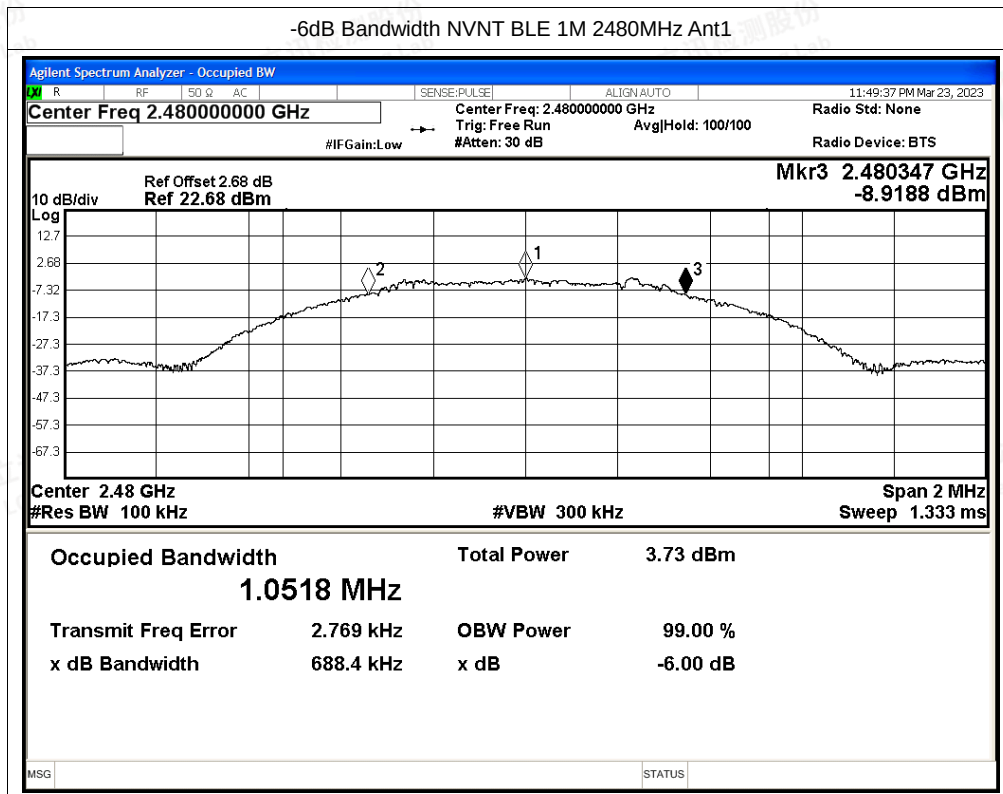


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## B.2 Maximum Conducted Output Power

| Condition | Mode   | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-------------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -2.46             | 30          | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -2.18             | 30          | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -1.96             | 30          | Pass    |

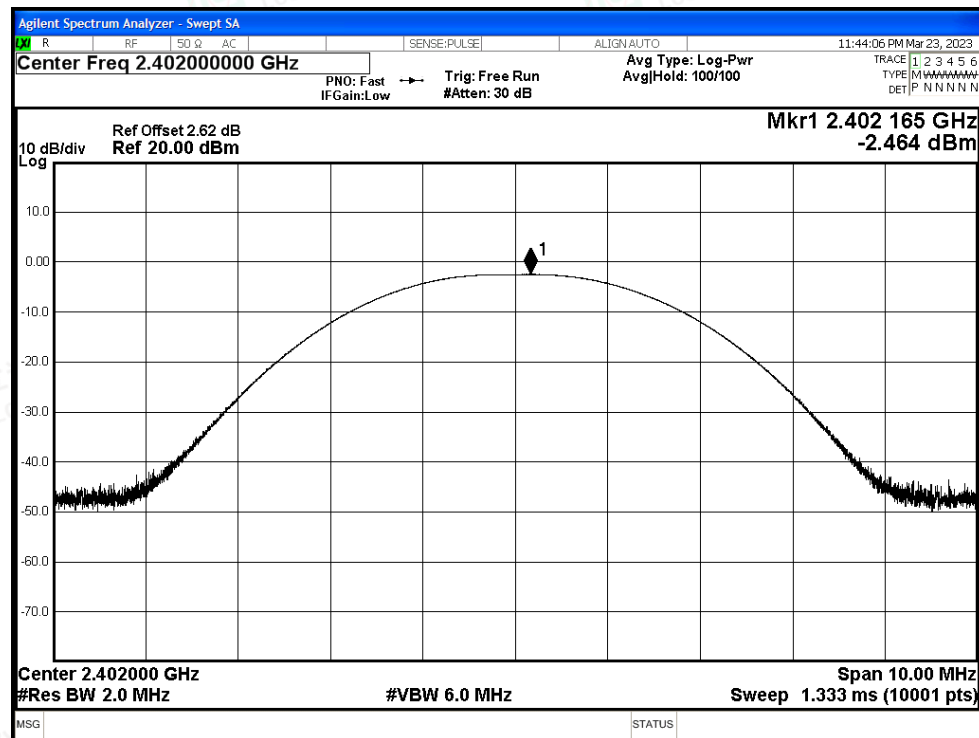


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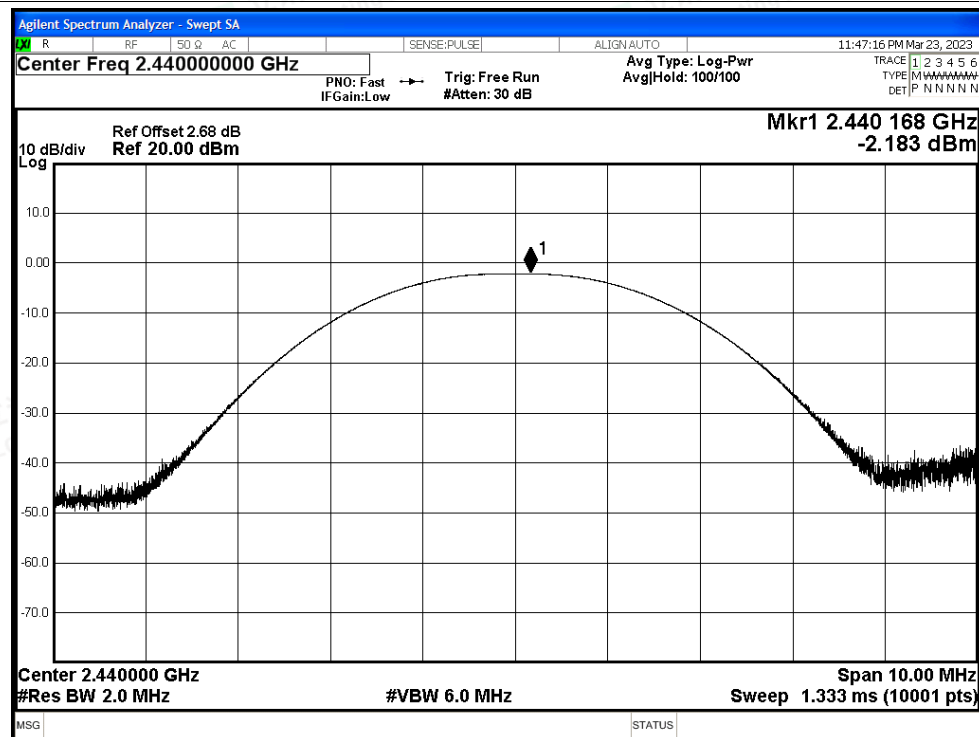


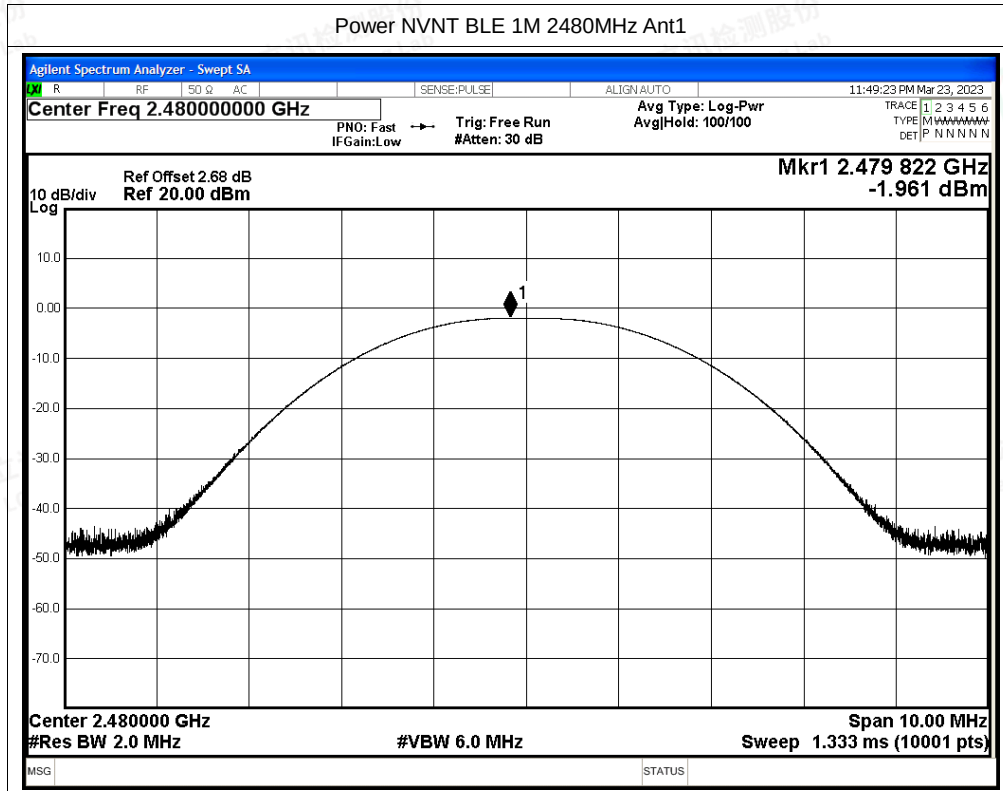
## Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1







### B.3 Maximum Power Spectral Density Level

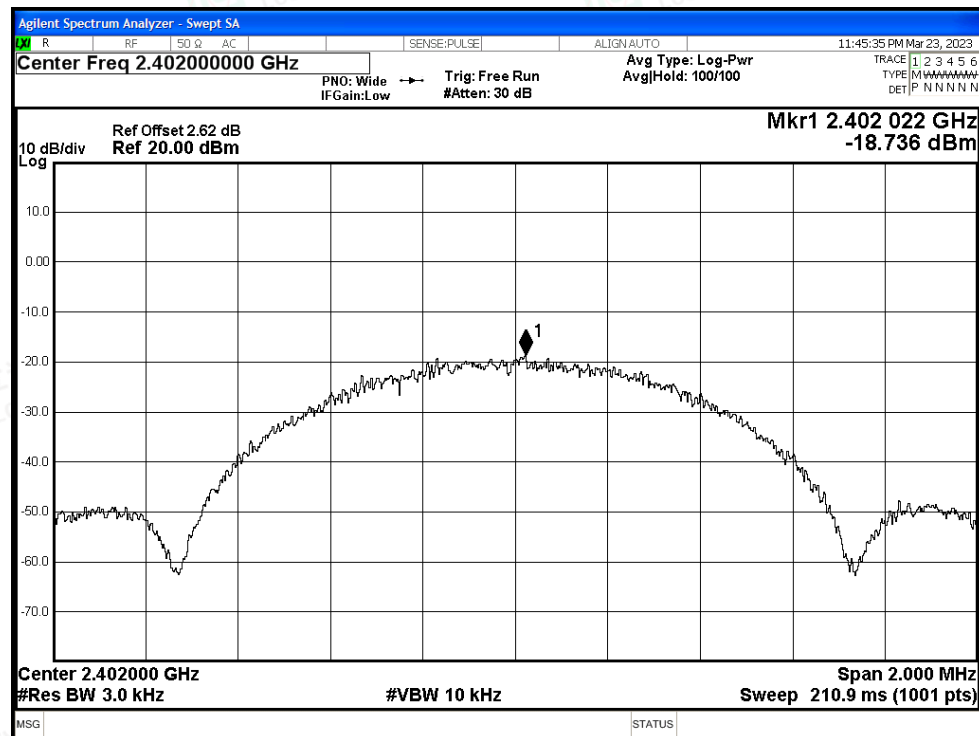
| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -18.74                   | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -18.4                    | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -18.2                    | 8                | Pass    |



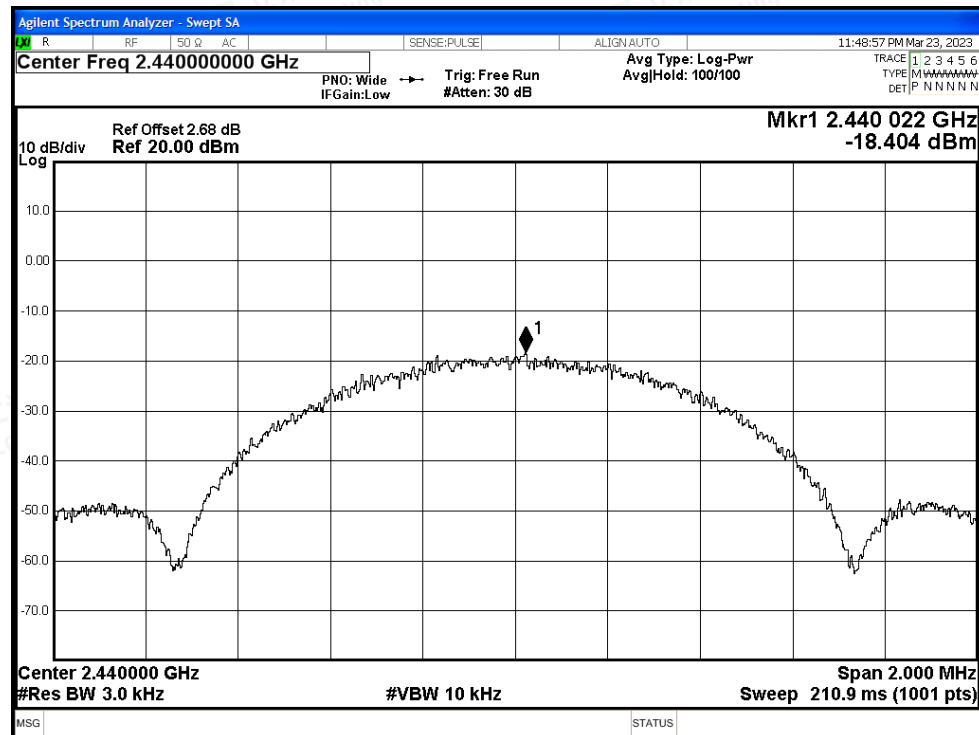


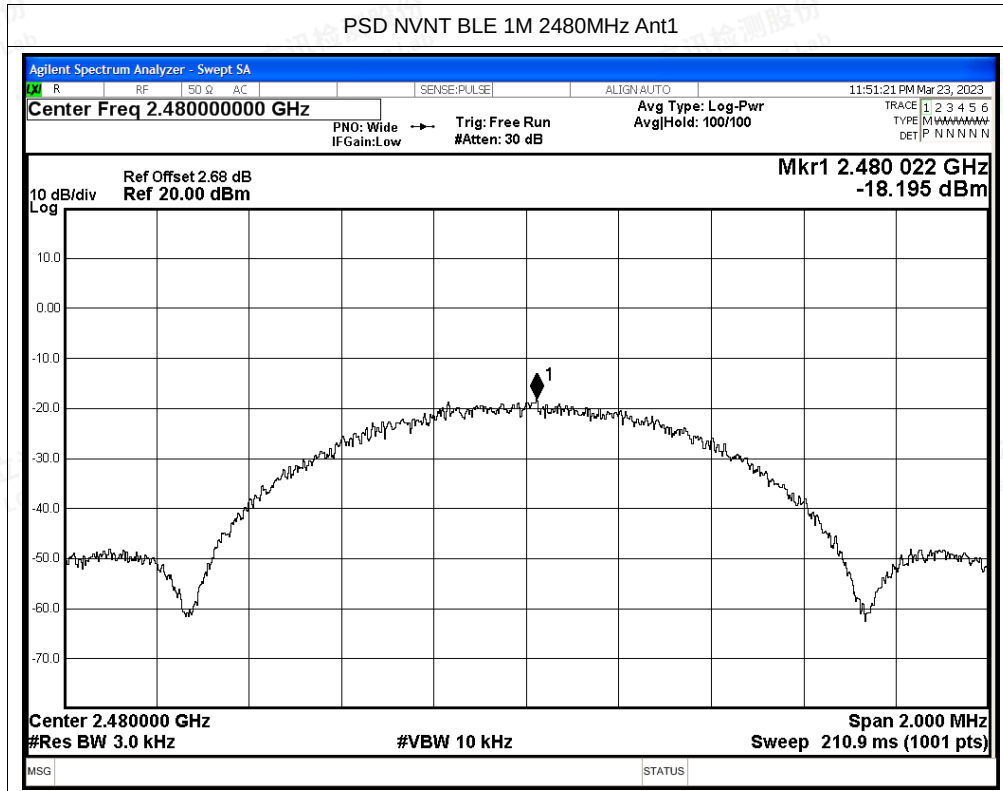
## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1







### B.4 Band Edge

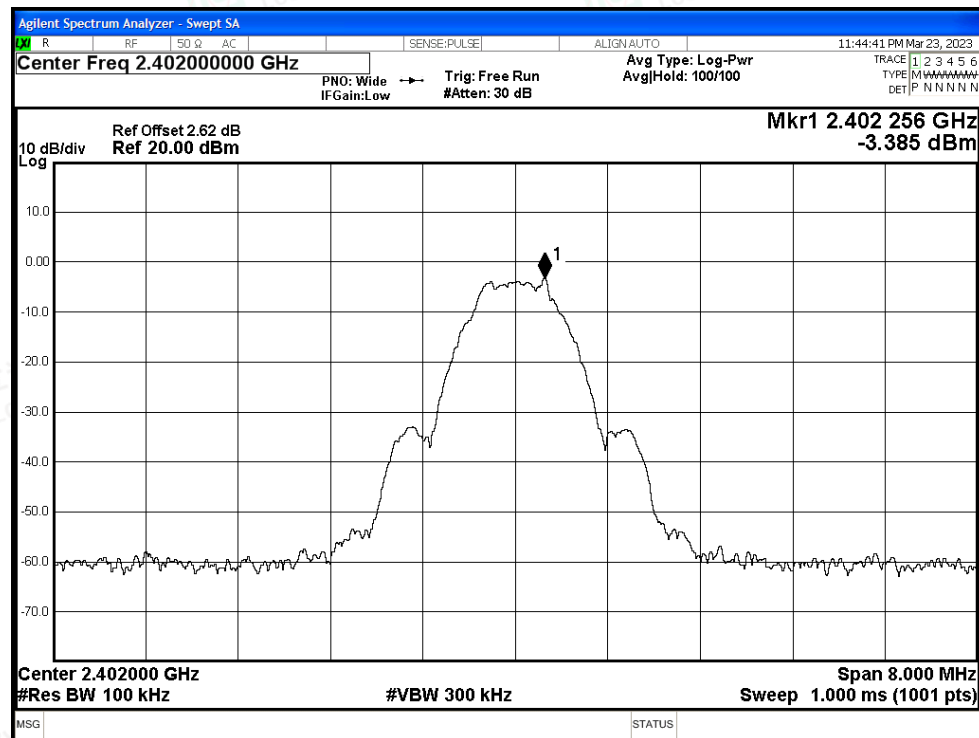
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -52.67          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -52.92          | -20         | Pass    |



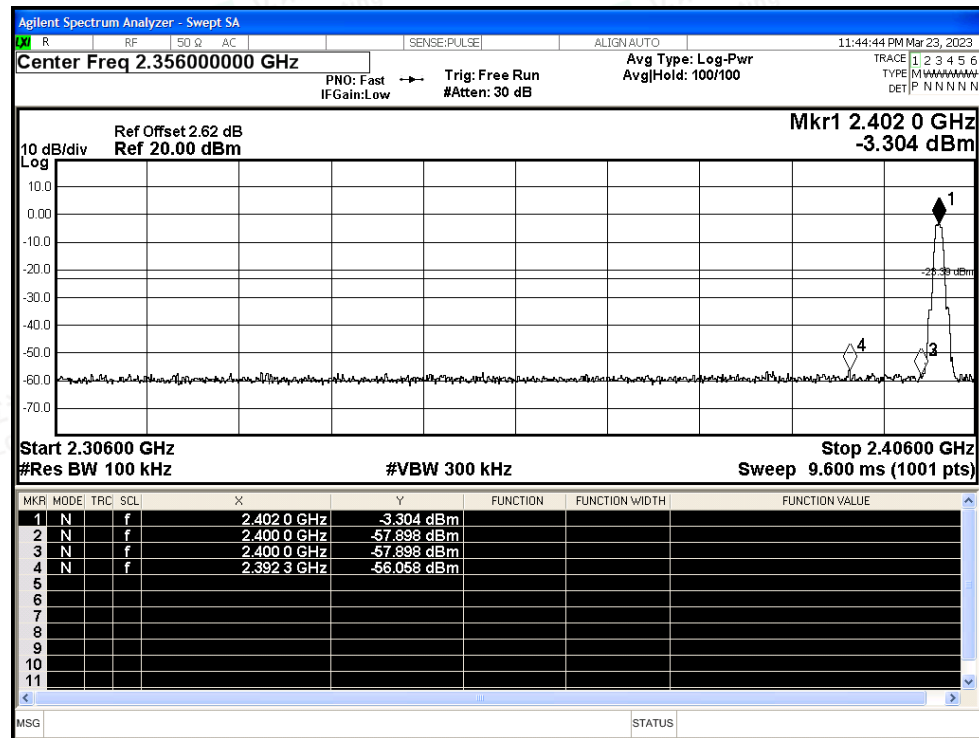


## Test Graphs

## Band Edge NVNT BLE 1M 2402MHz Ant1 Ref

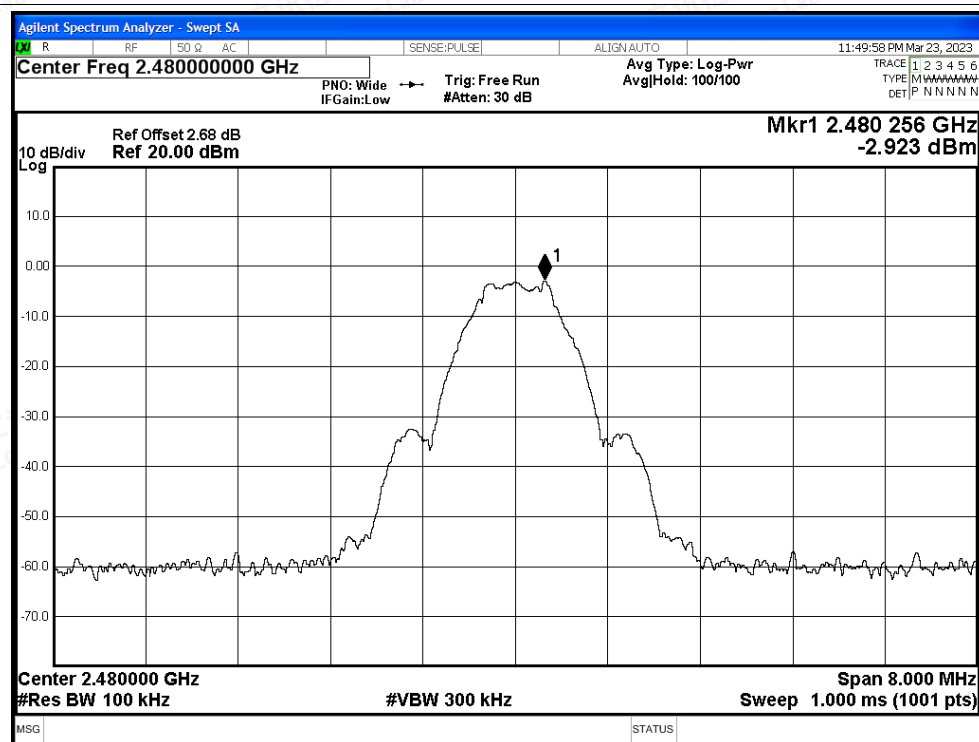


## Band Edge NVNT BLE 1M 2402MHz Ant1 Emission

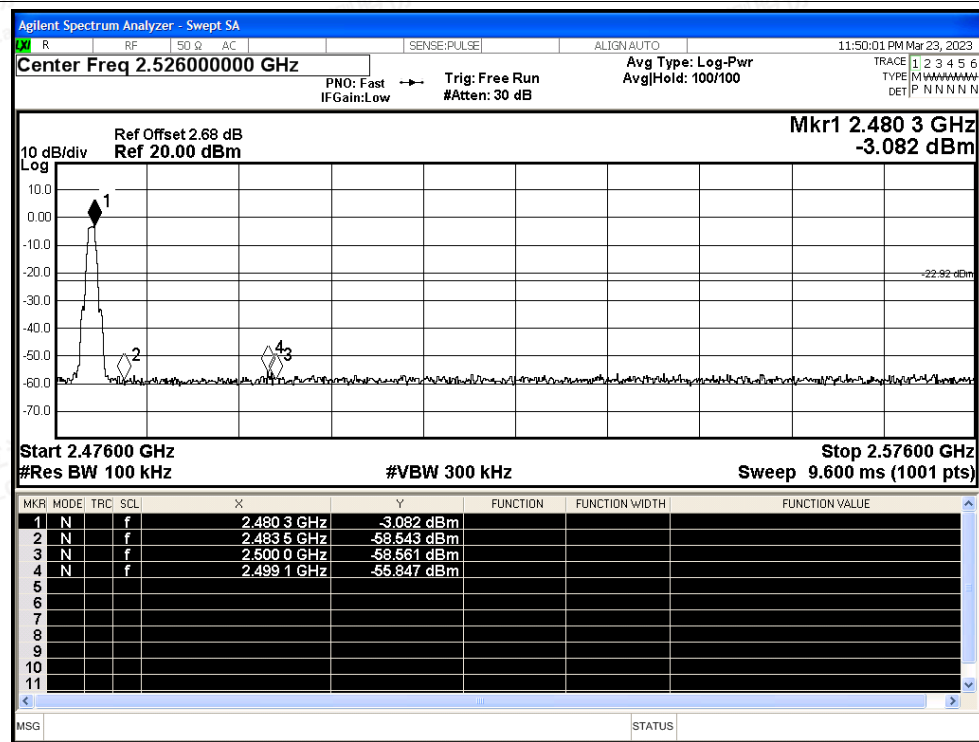




## Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



## Band Edge NVNT BLE 1M 2480MHz Ant1 Emission





### B.5 Conducted RF Spurious Emission

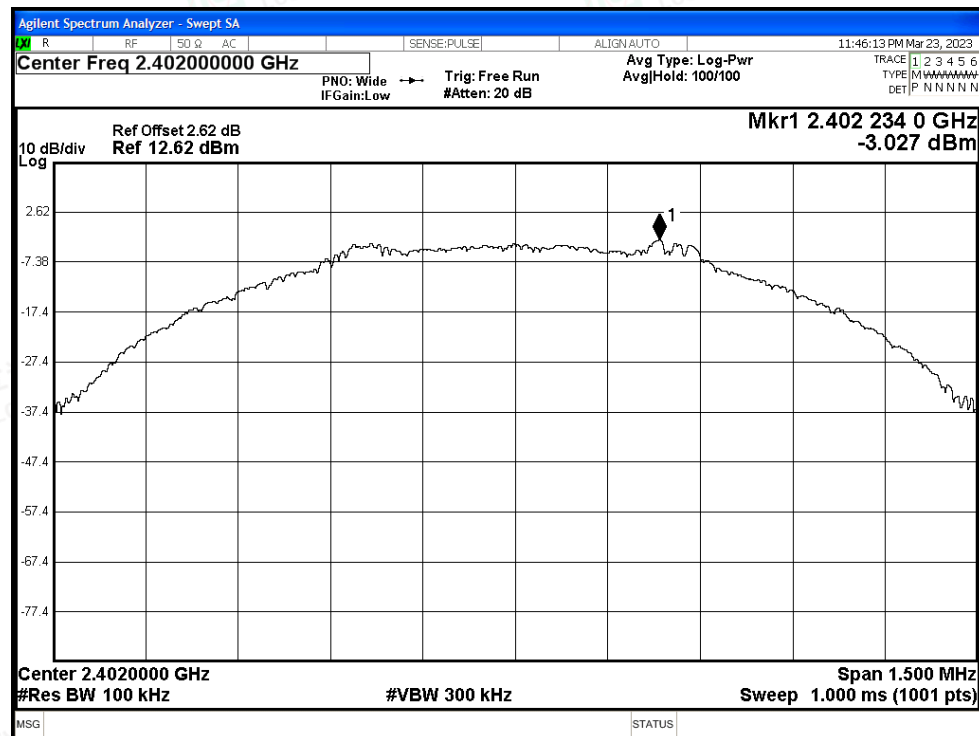
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -51.75          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -52.11          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -51.89          | -20         | Pass    |



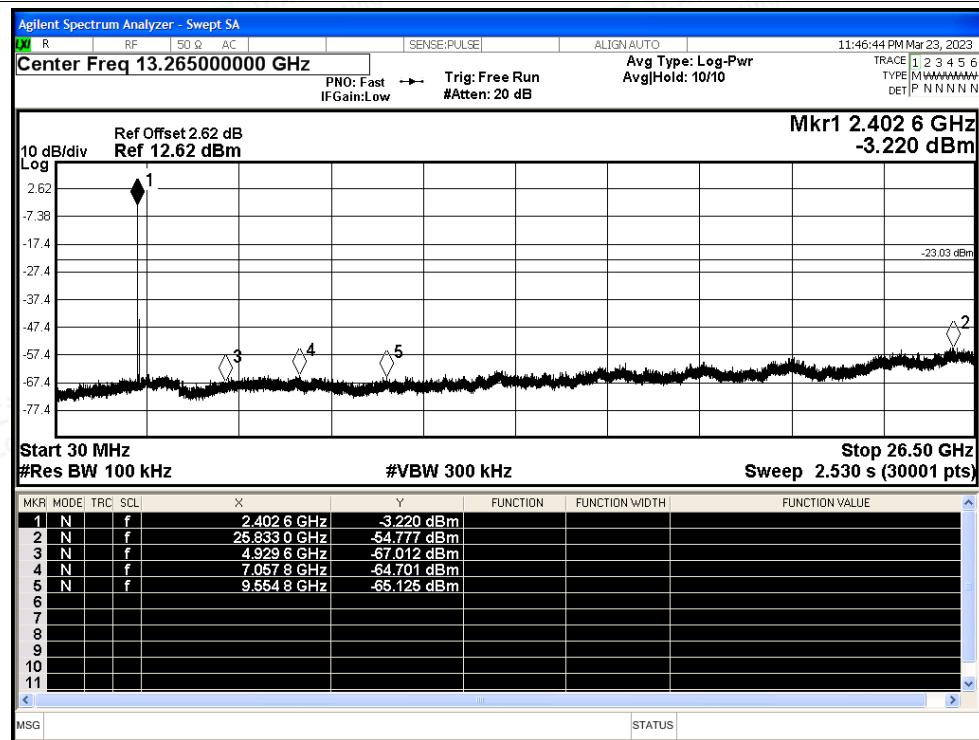


## Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref

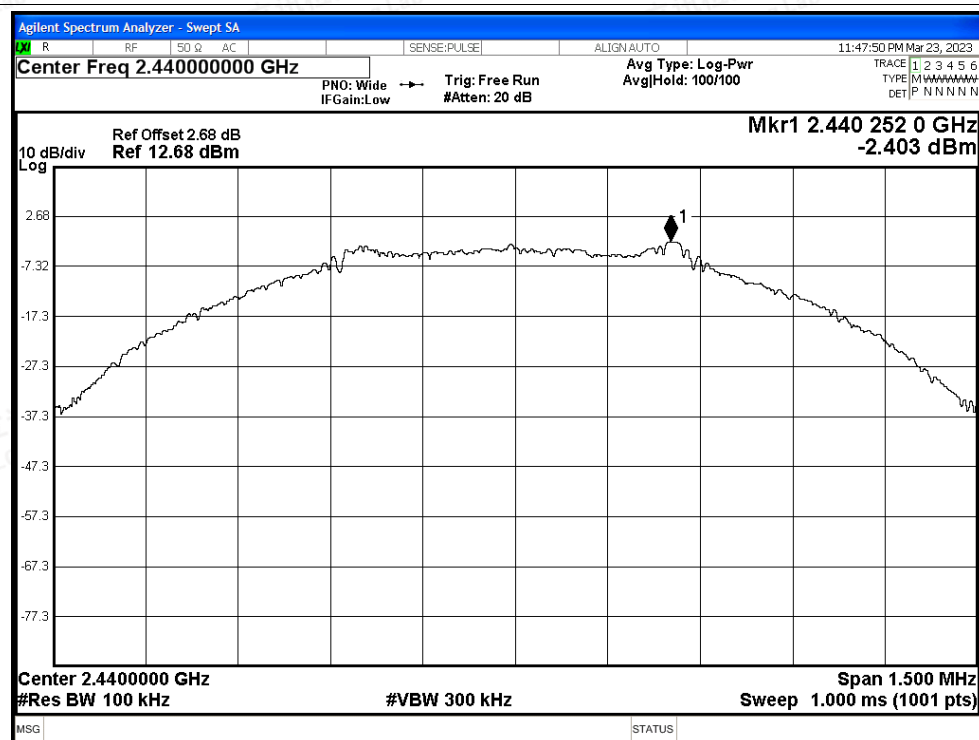


Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission

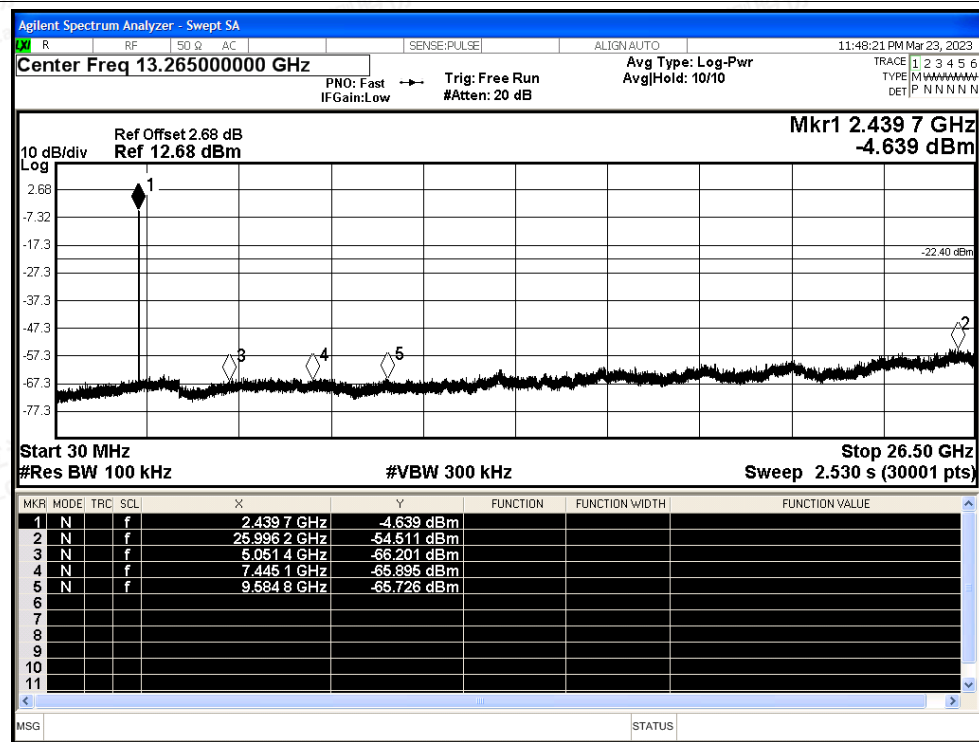




## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref

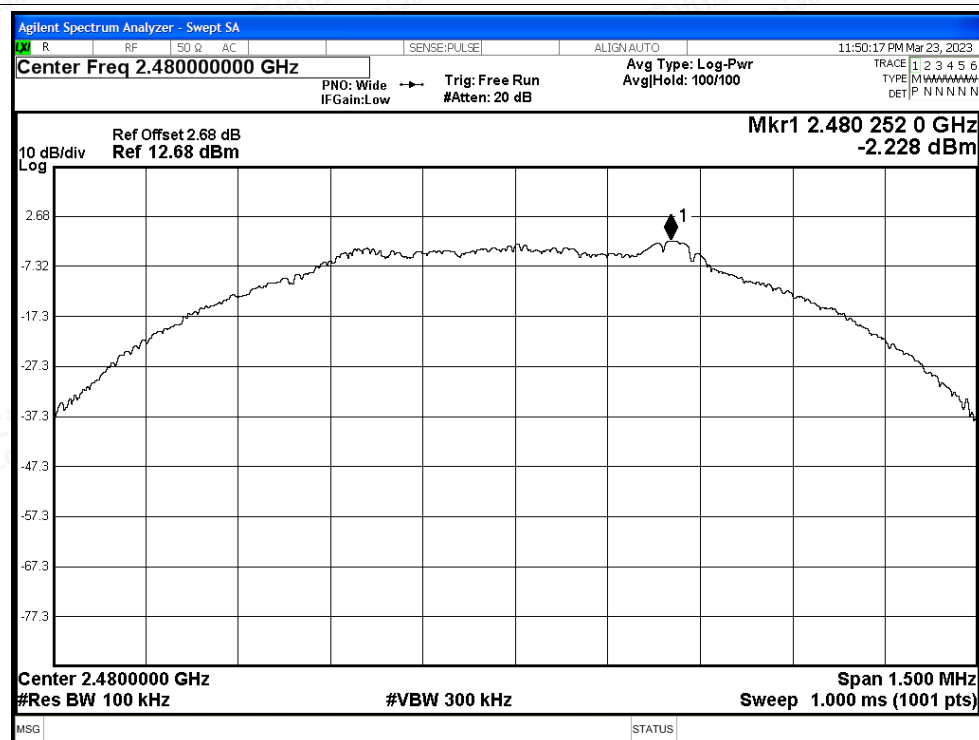


## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission

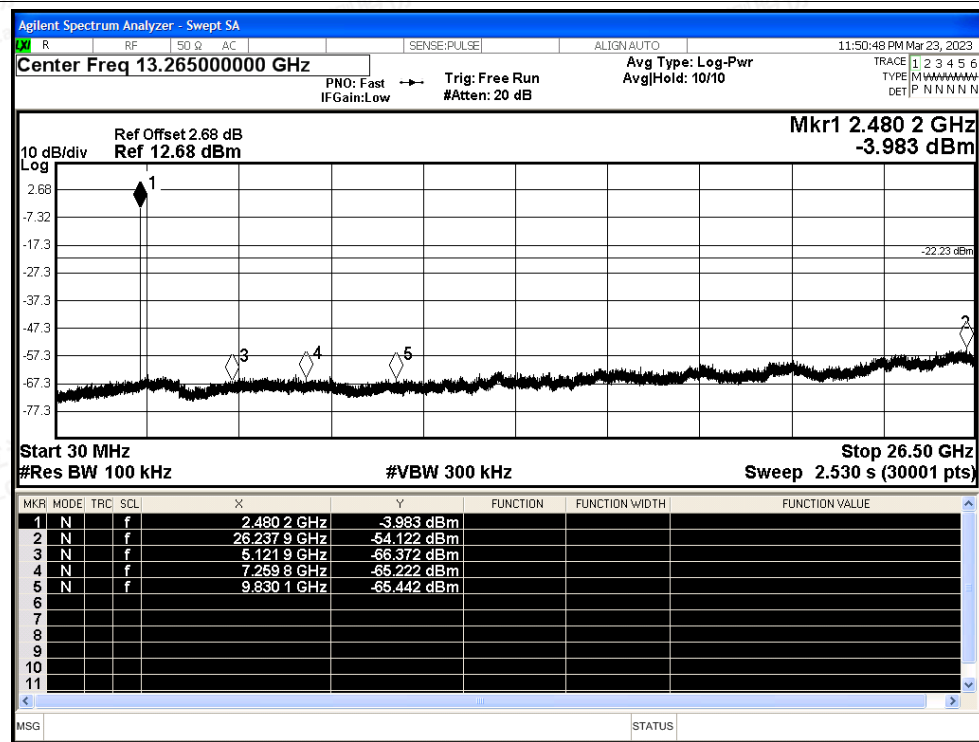




## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission





## B.6 Duty Cycle

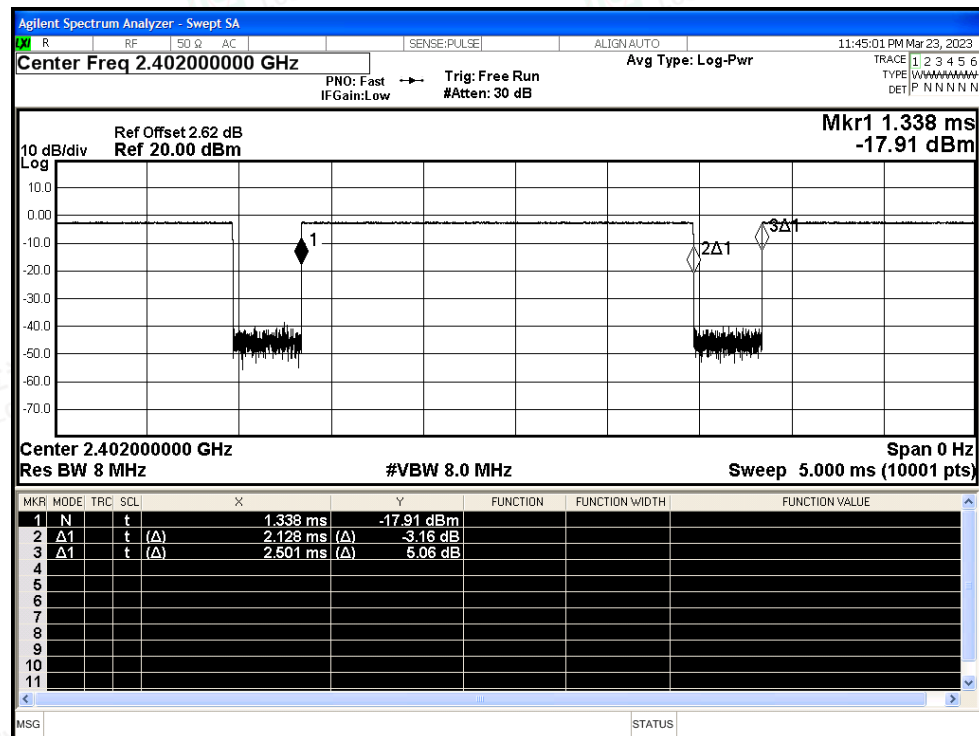
| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 85.1           | 0.7                    | 0.47      |
| NVNT      | BLE 1M | 2440            | Ant1    | 85.1           | 0.7                    | 0.47      |
| NVNT      | BLE 1M | 2480            | Ant1    | 85.1           | 0.7                    | 0.47      |



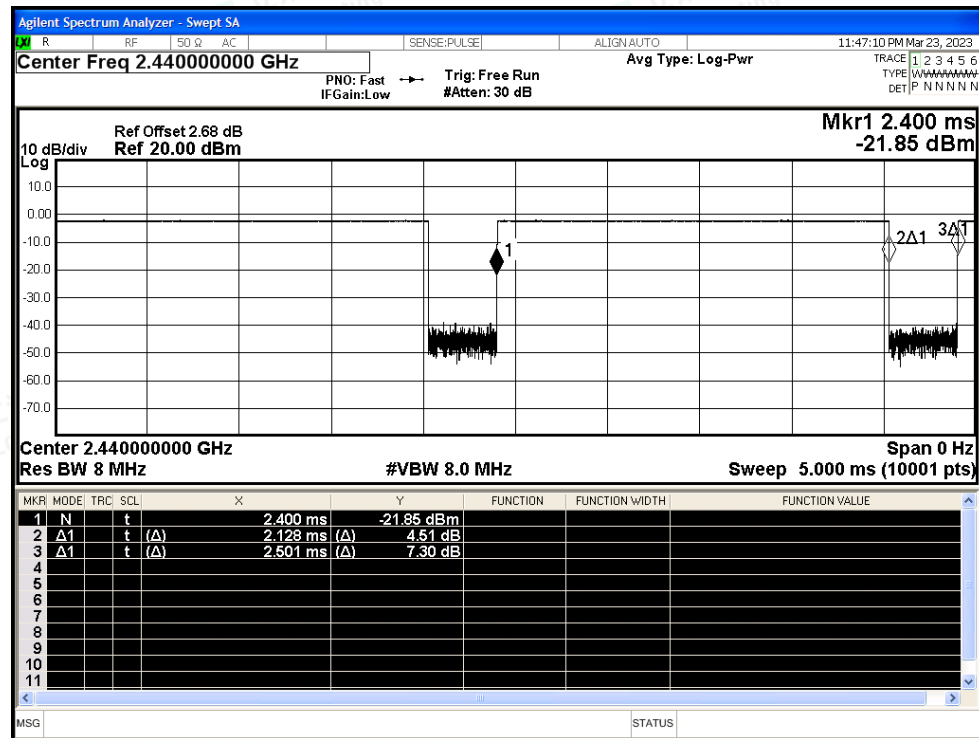


## Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant1



Duty Cycle NVNT BLE 1M 2440MHz Ant1

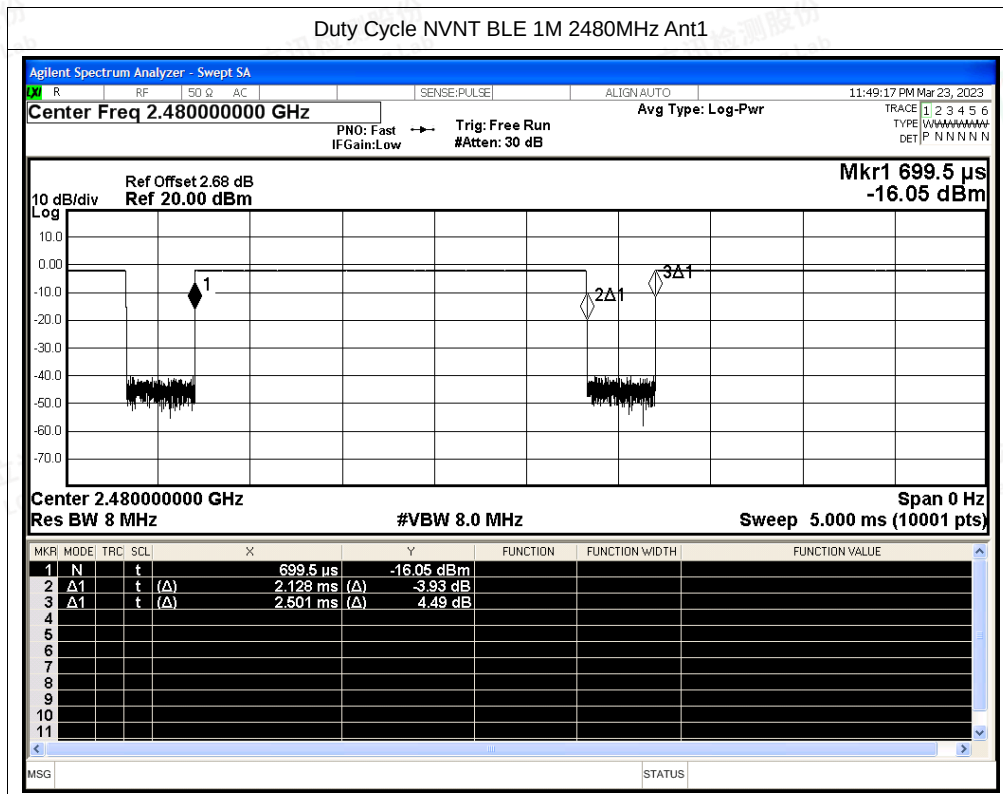


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## B.7 Restrict Band

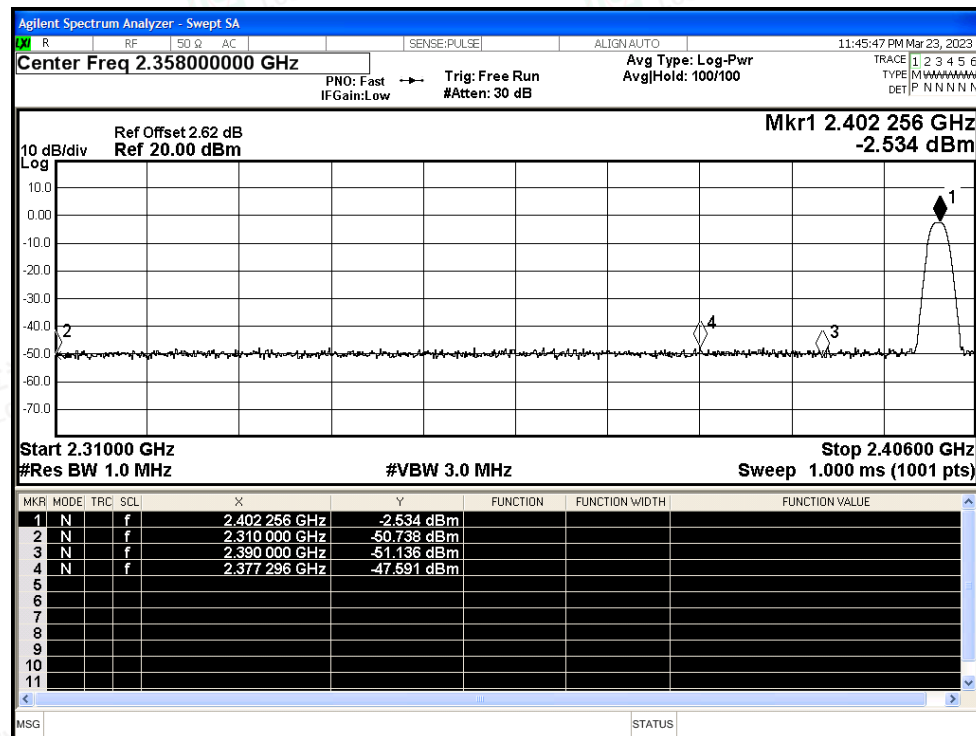
| Condition | Mode   | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|------------|------------|----------|----------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -50.74      | 3.8        | 48.29      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -59.74      | 3.8        | 39.29      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2377.296        | -47.59      | 3.8        | 51.44      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2381.712        | -59.22      | 3.8        | 39.81      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -51.14      | 3.8        | 47.89      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -59.39      | 3.8        | 39.64      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -48.05      | 3.8        | 50.98      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -59.01      | 3.8        | 40.02      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2489.392        | -47.16      | 3.8        | 51.87      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2489.776        | -58.86      | 3.8        | 40.17      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -50.53      | 3.8        | 48.50      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -59.1       | 3.8        | 39.93      | Average  | 54             | Pass    |



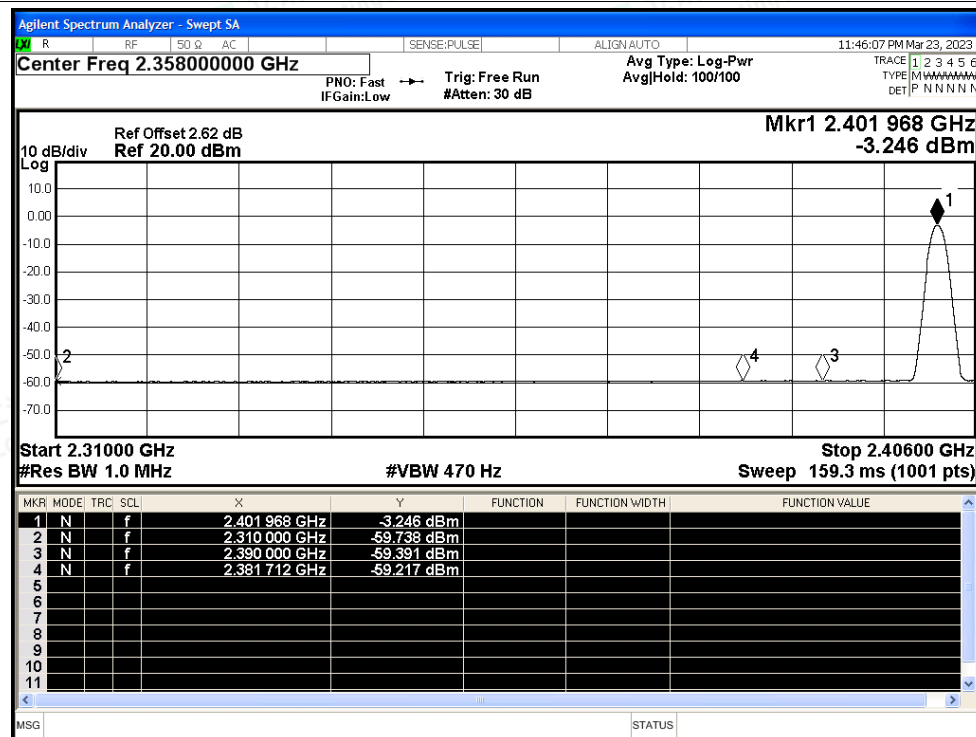


## Test Graphs

## Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak

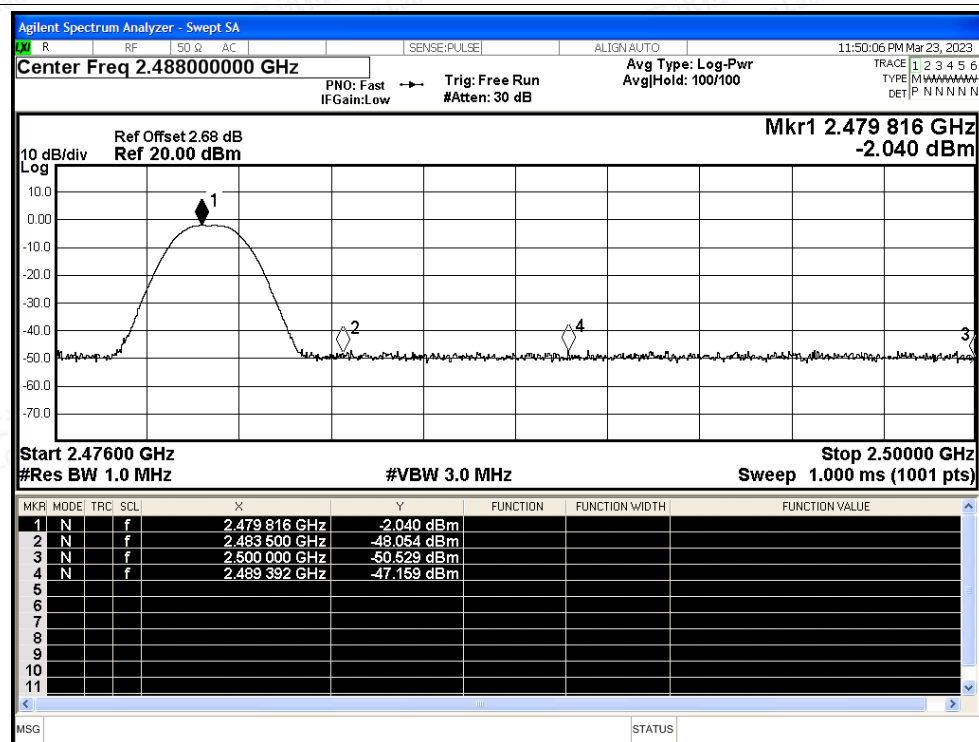


## Restrict Band NVNT BLE 1M 2402MHz Ant1 Average





## Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



## Restrict Band NVNT BLE 1M 2480MHz Ant1 Average

