



## Appendix A

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

Product Name: BT RCU

Test Model: WH-7941\_BLE

#### Environmental Conditions

|                    |            |
|--------------------|------------|
| Temperature:       | 23.1°C     |
| Relative Humidity: | 52.3%      |
| ATM Pressure:      | 100.0 kPa  |
| Test Engineer:     | Eason Zhou |
| Supervised by:     | Nick Peng  |





## A.1 -6dB Bandwidth

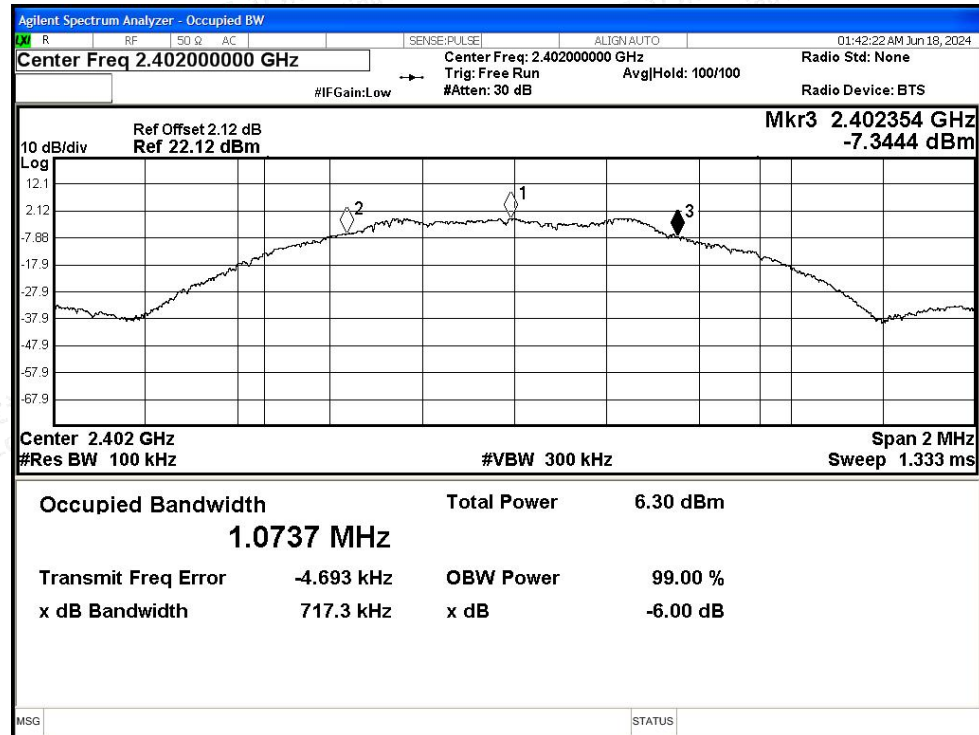
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.717                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.702                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.711                 | $\geq 0.5$                  | Pass    |



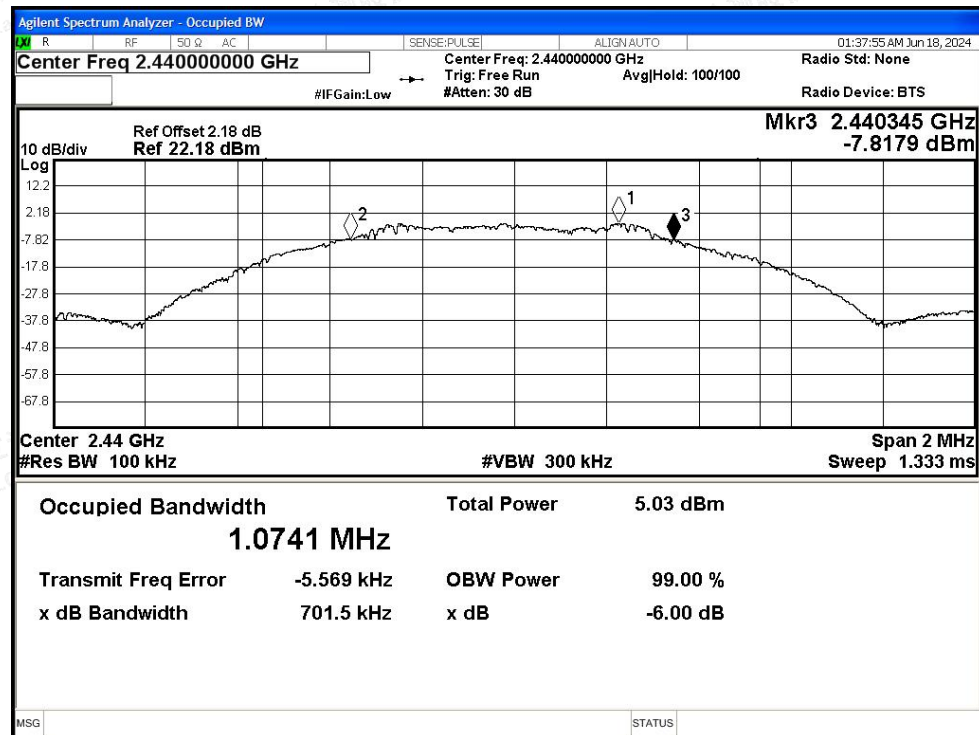


## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

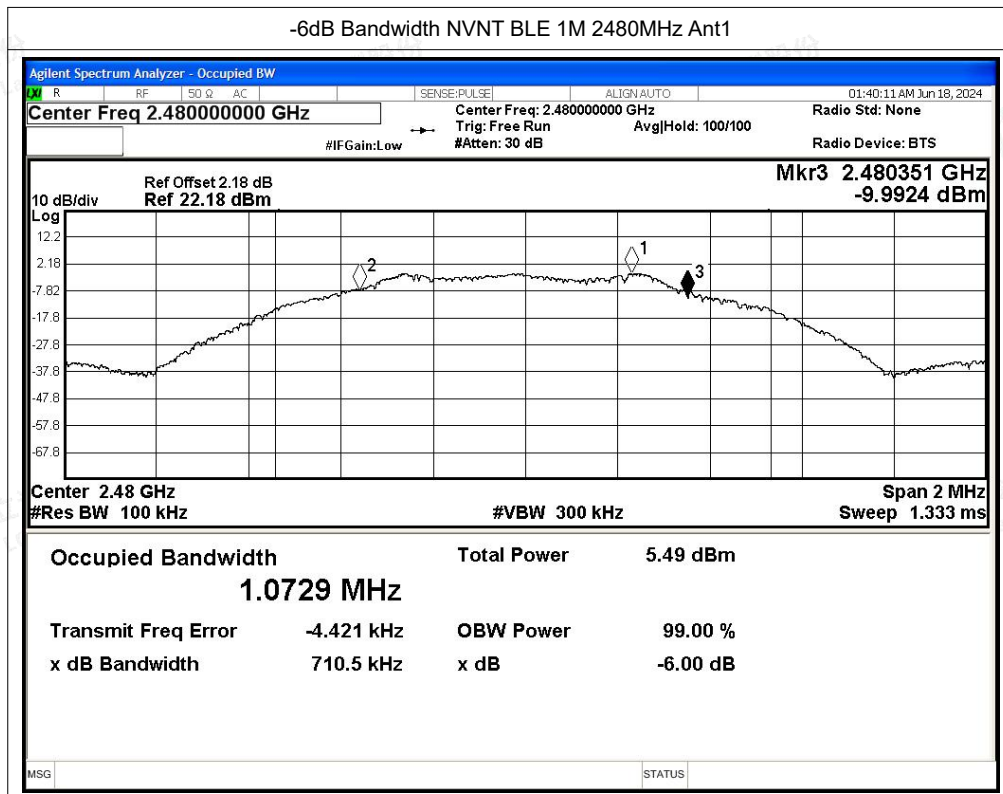


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## A.2 Maximum Conducted Output Power

| Condition | Mode   | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.53                  | 30          | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -0.65                 | 30          | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -0.3                  | 30          | Pass    |



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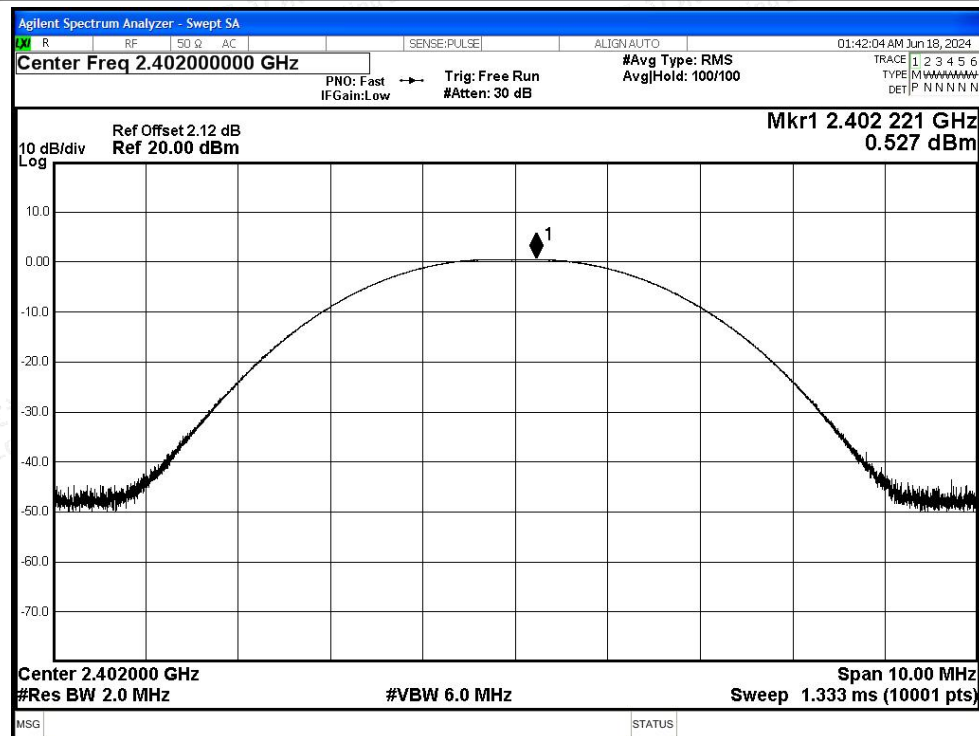
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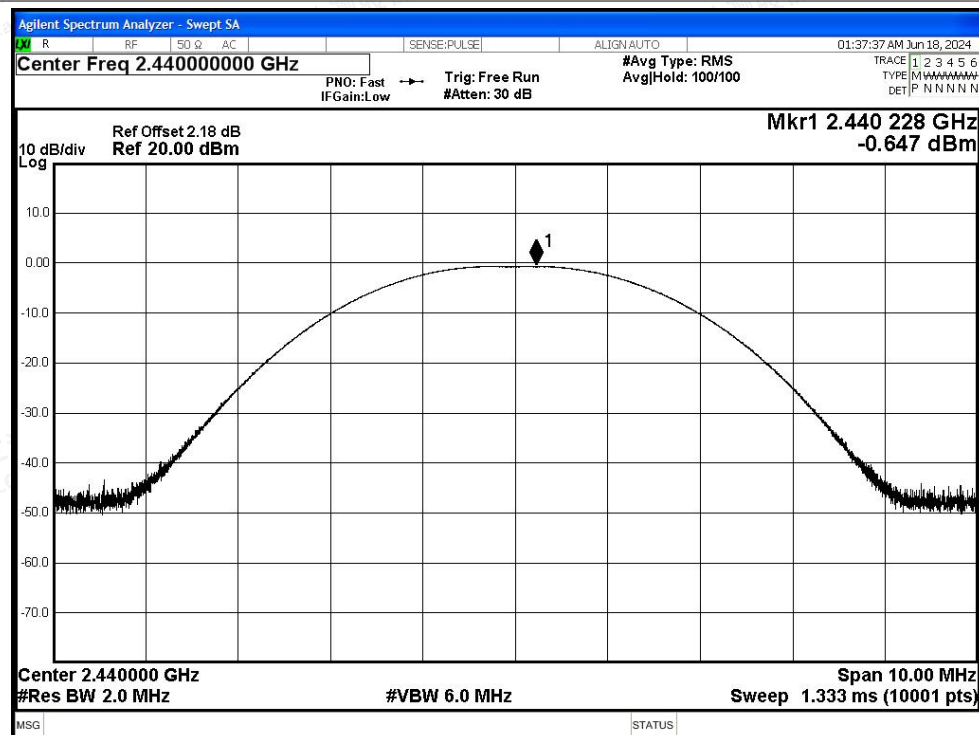


## Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1

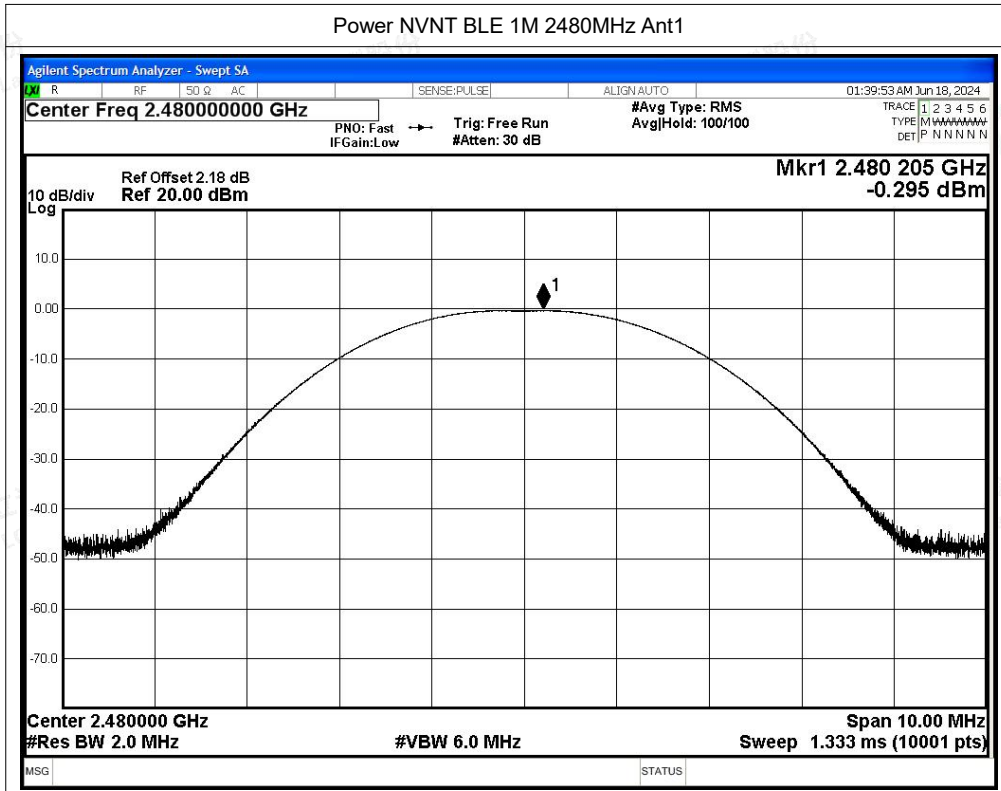


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### A.3 Maximum Power Spectral Density Level

| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -14.61                   | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -16.29                   | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -15.47                   | 8                | Pass    |



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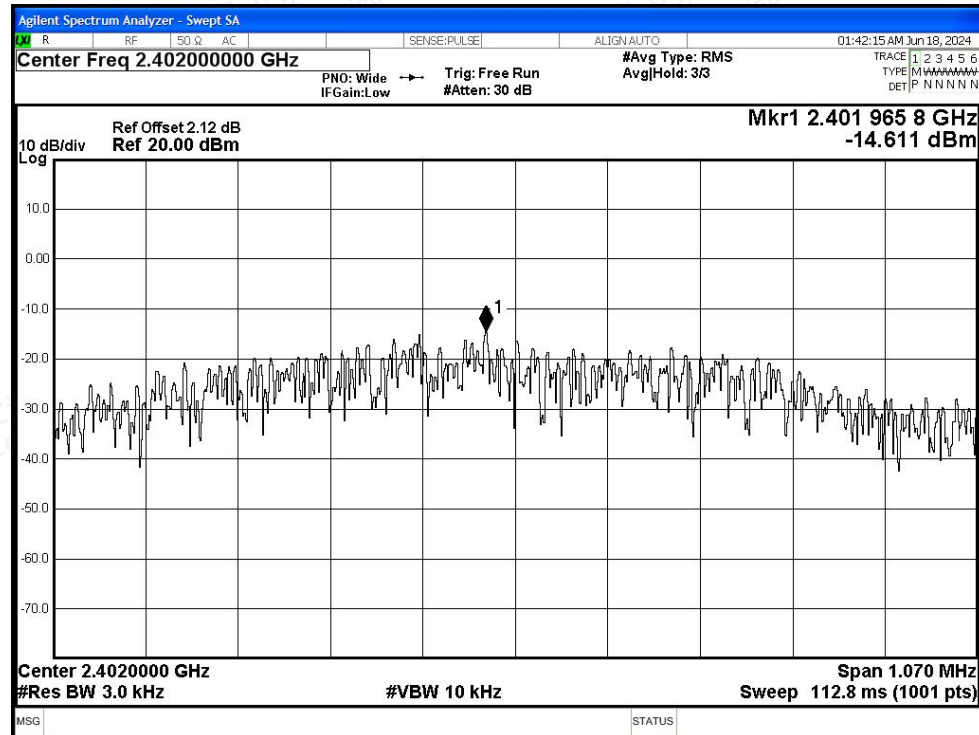
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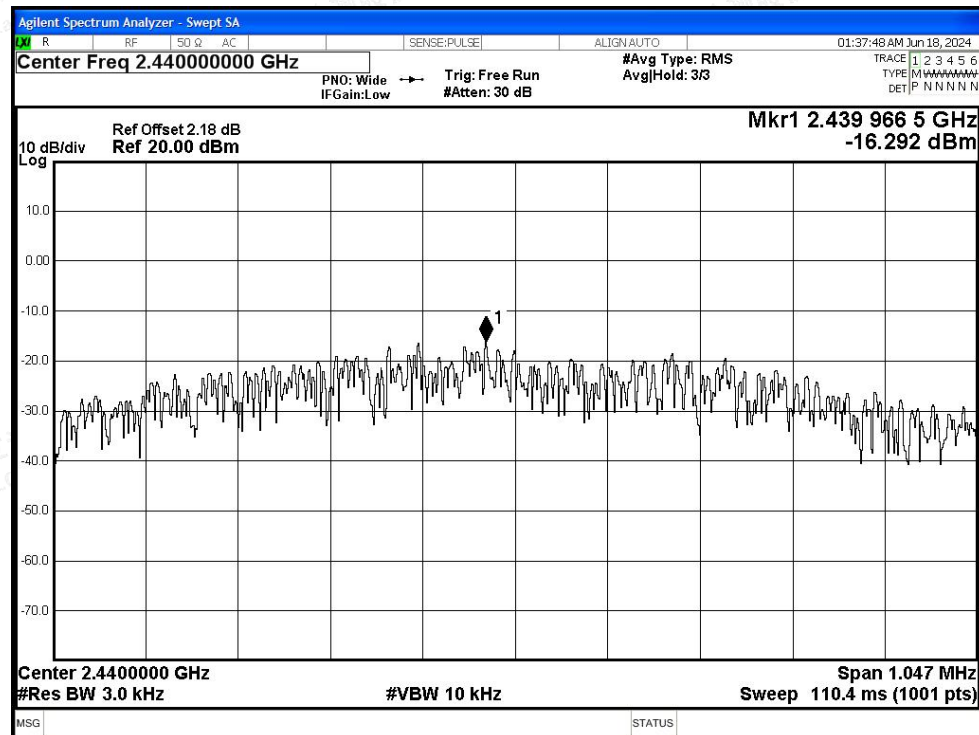


## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1

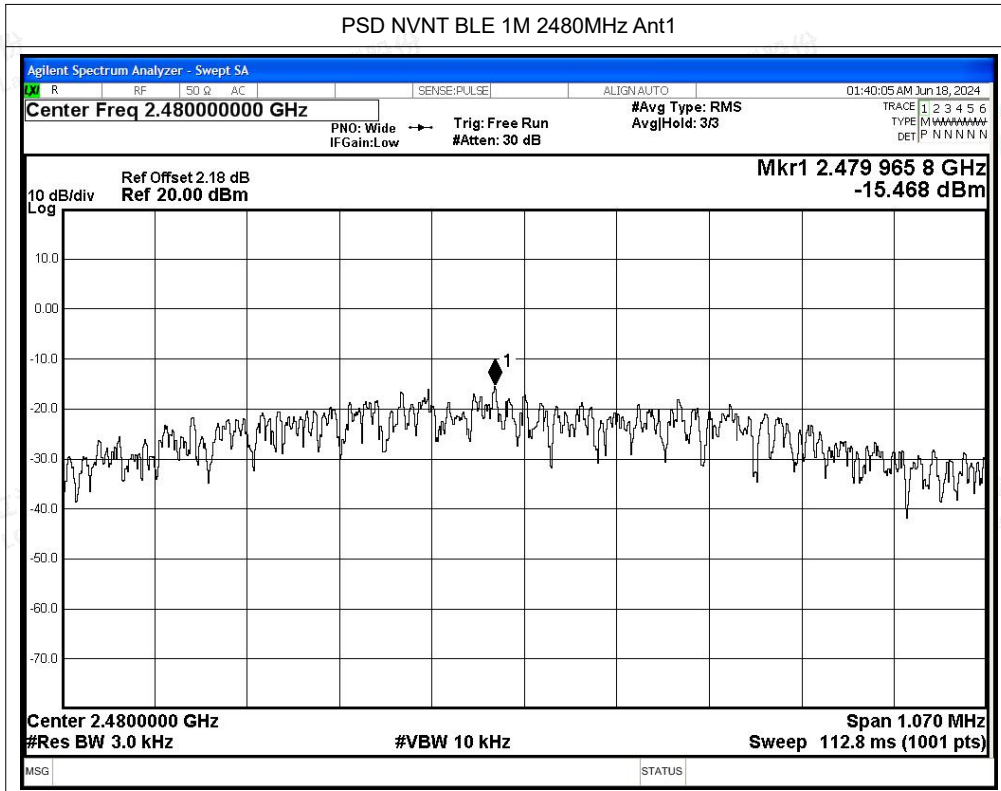


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## A.4 Band Edge

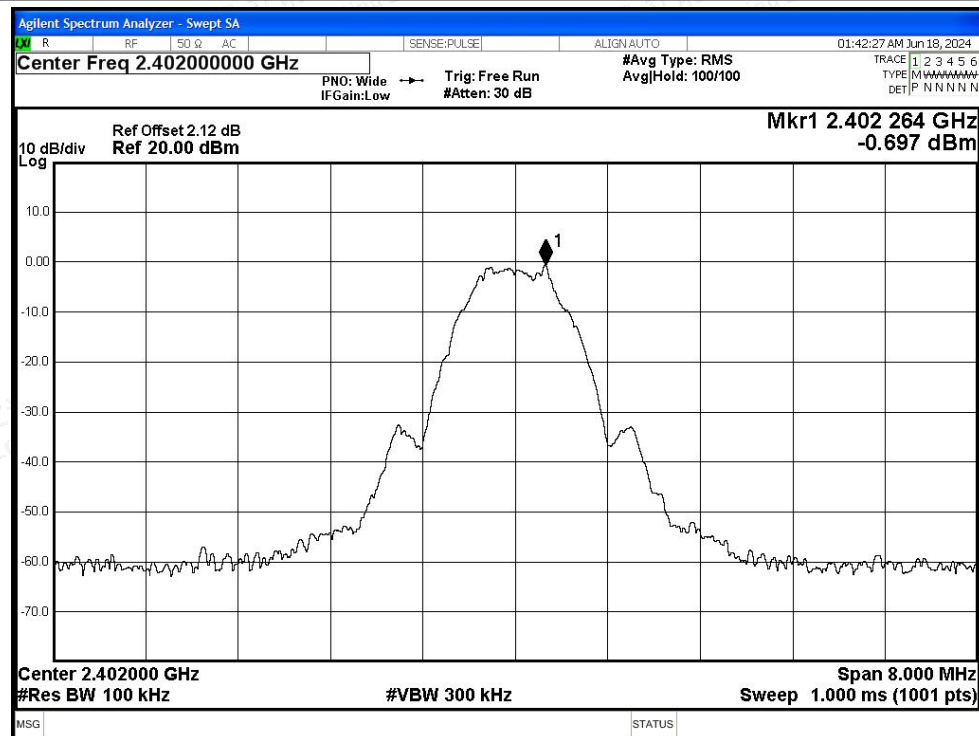
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -56.08          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -56.05          | -20         | Pass    |



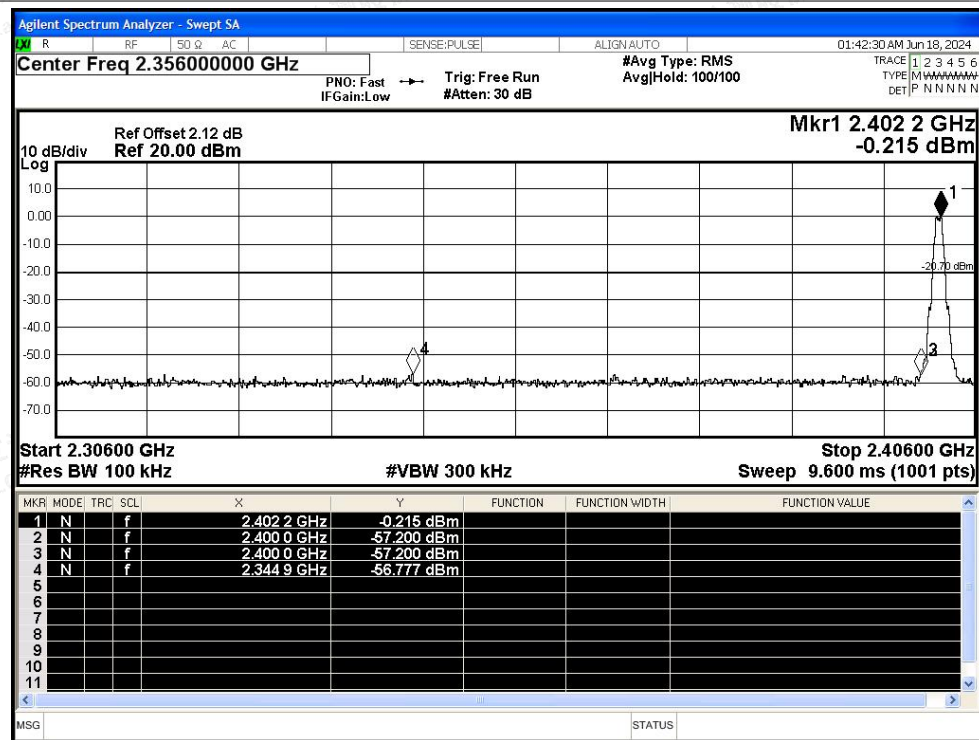


## Test Graphs

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



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



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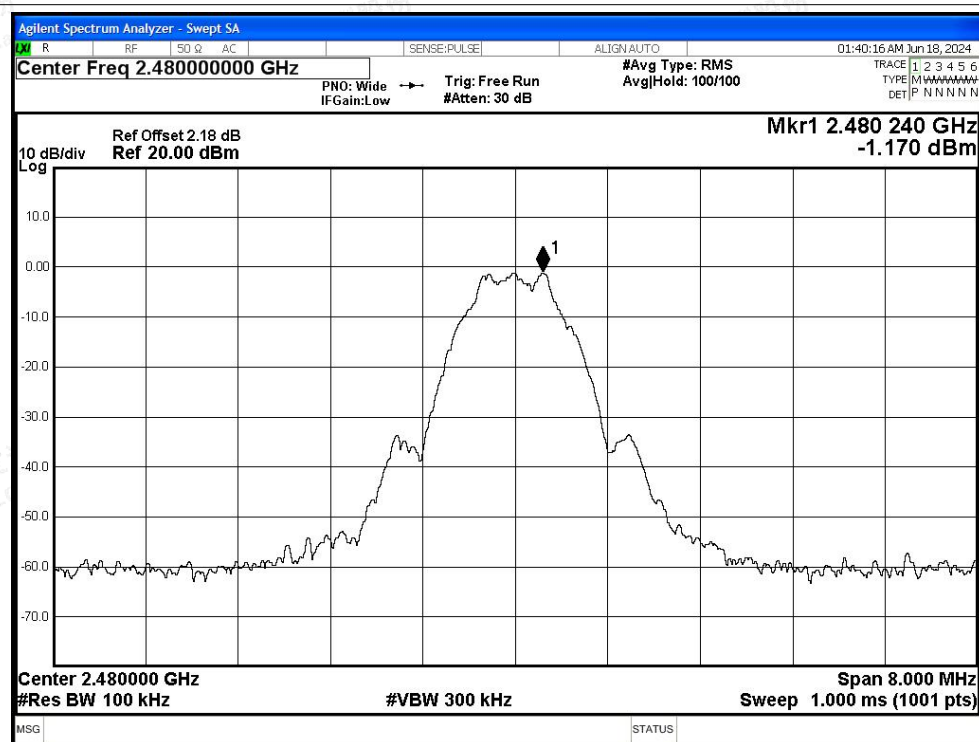
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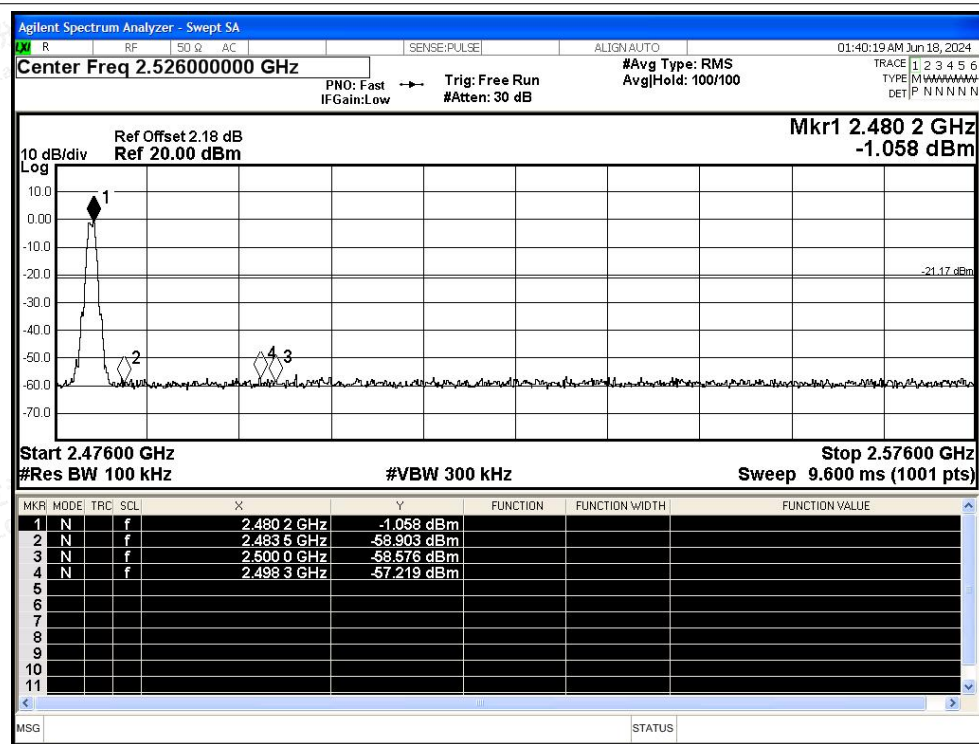
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## Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



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



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## A.5 Conducted RF Spurious Emission

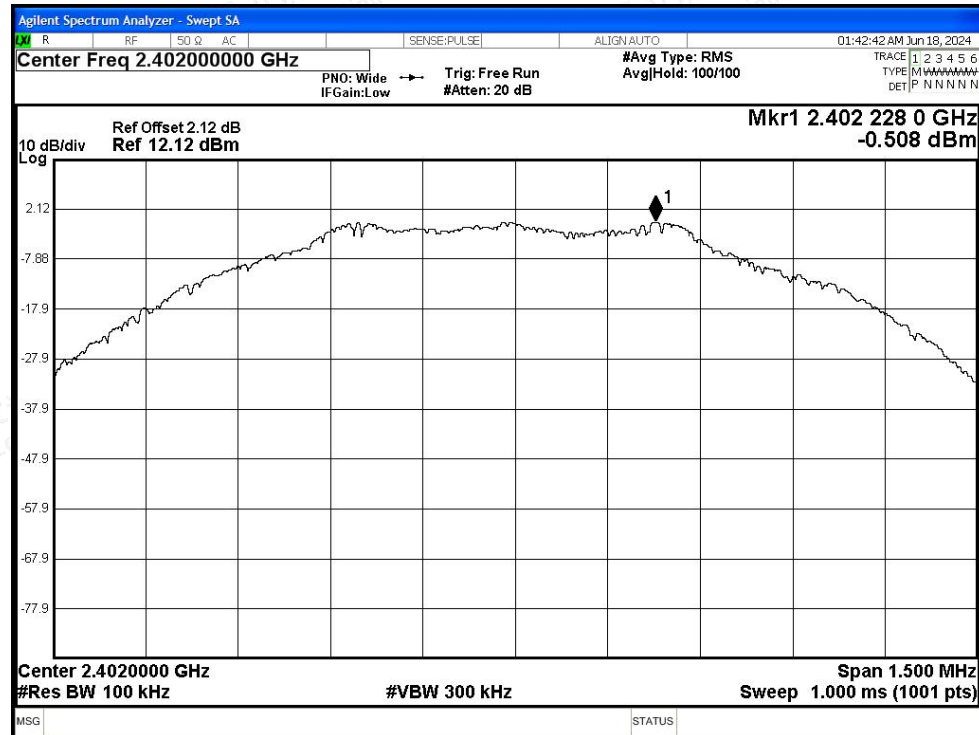
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -54.21          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -53.67          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -53.55          | -20         | Pass    |



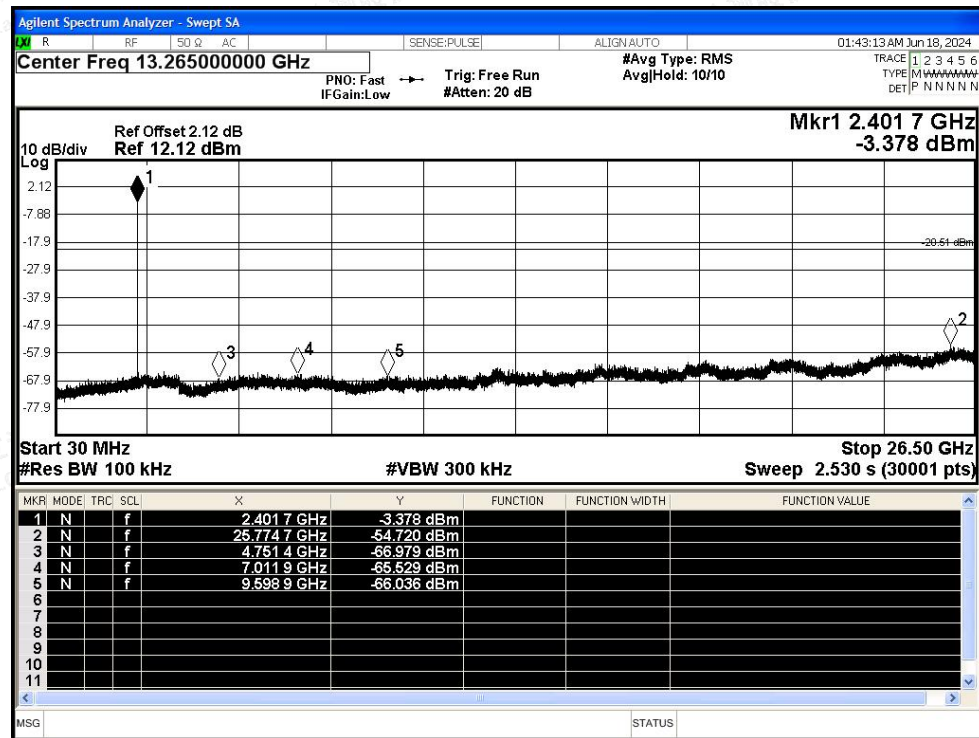


## Test Graphs

## Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



## Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



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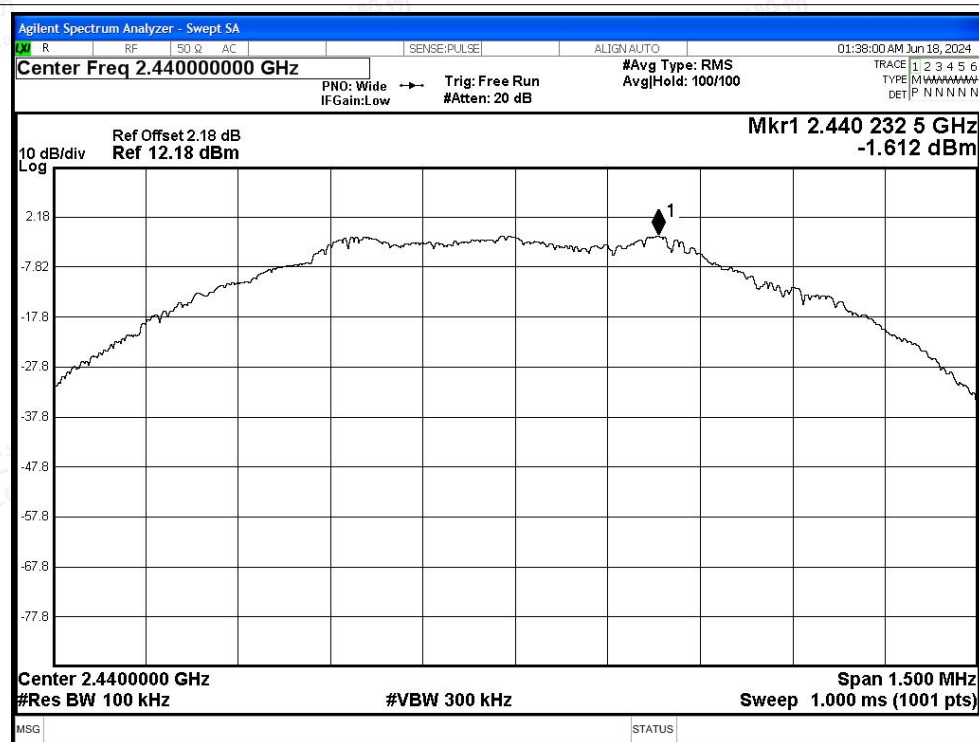
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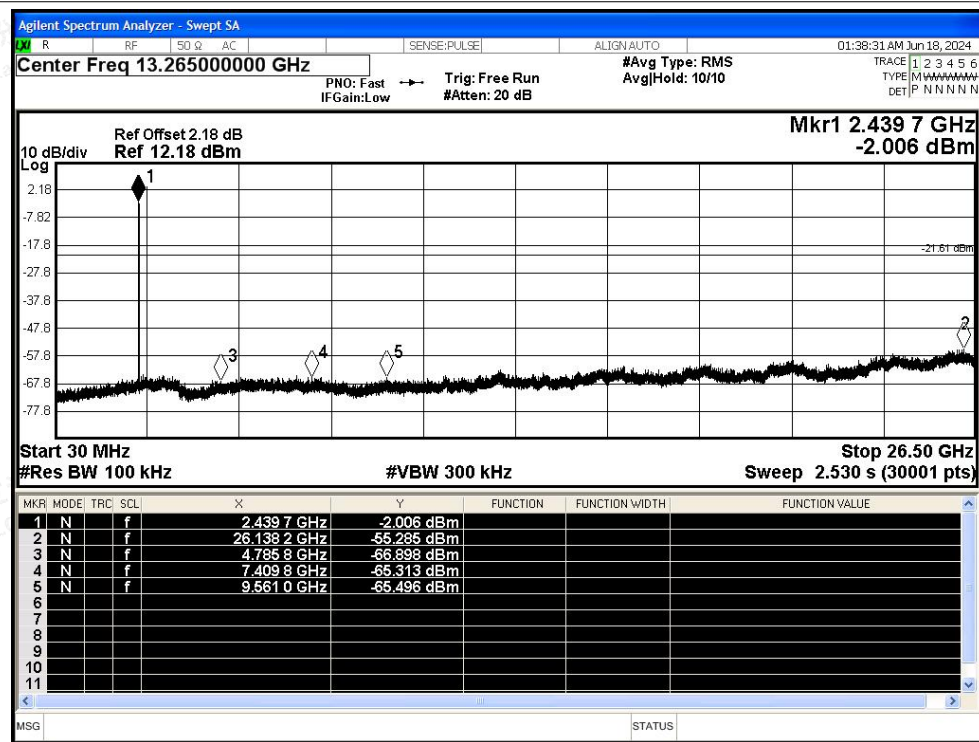
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## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



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



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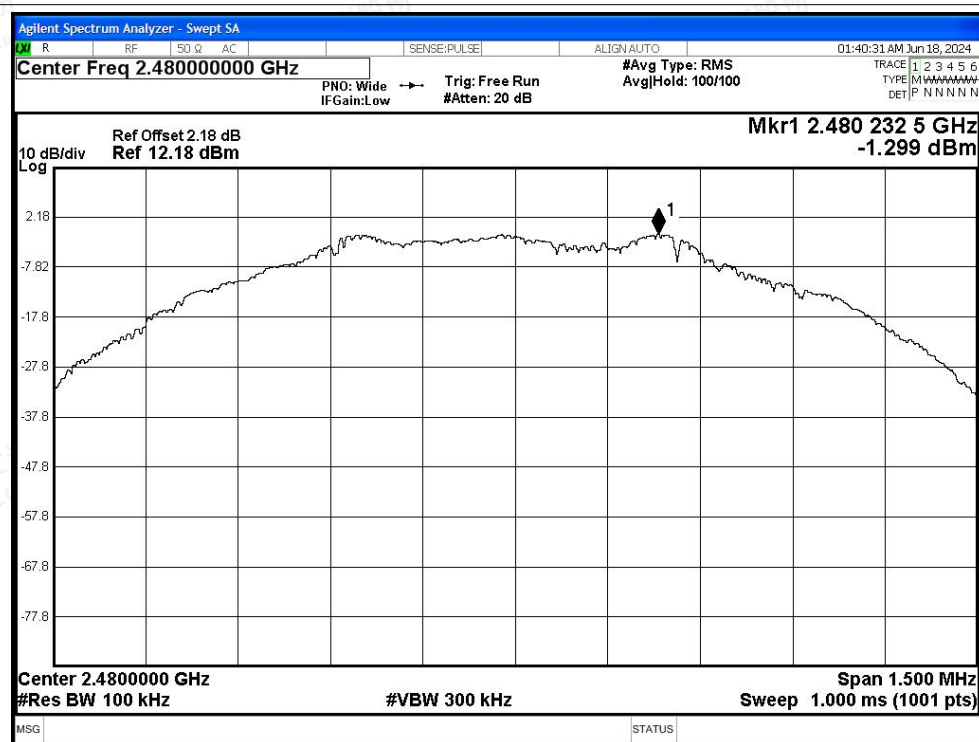
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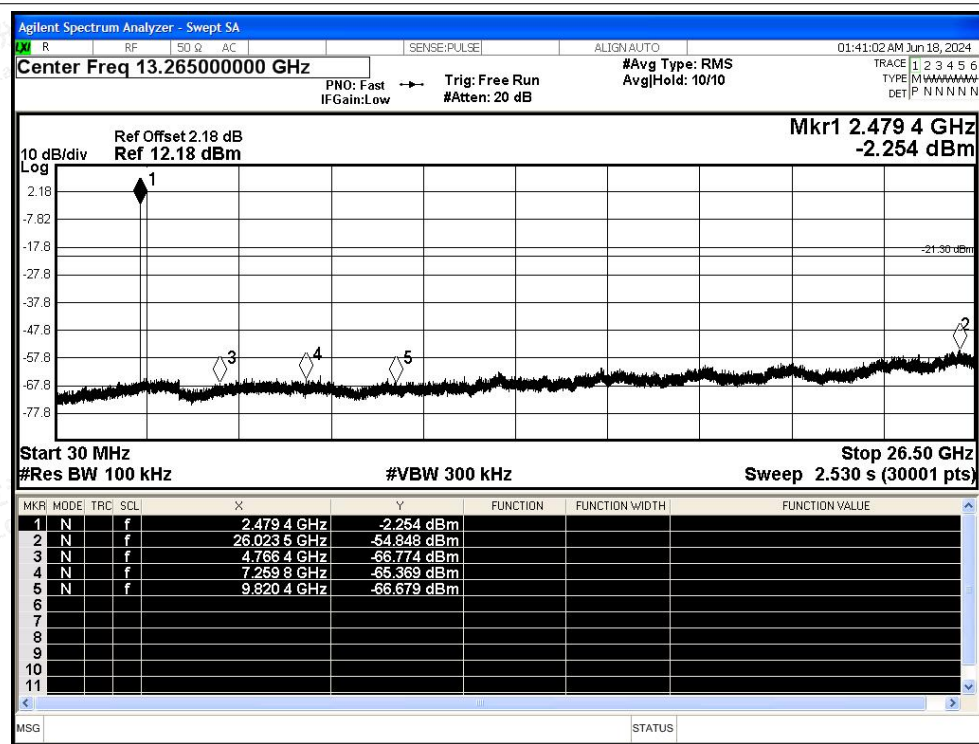
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## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



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



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## A.6 Duty Cycle

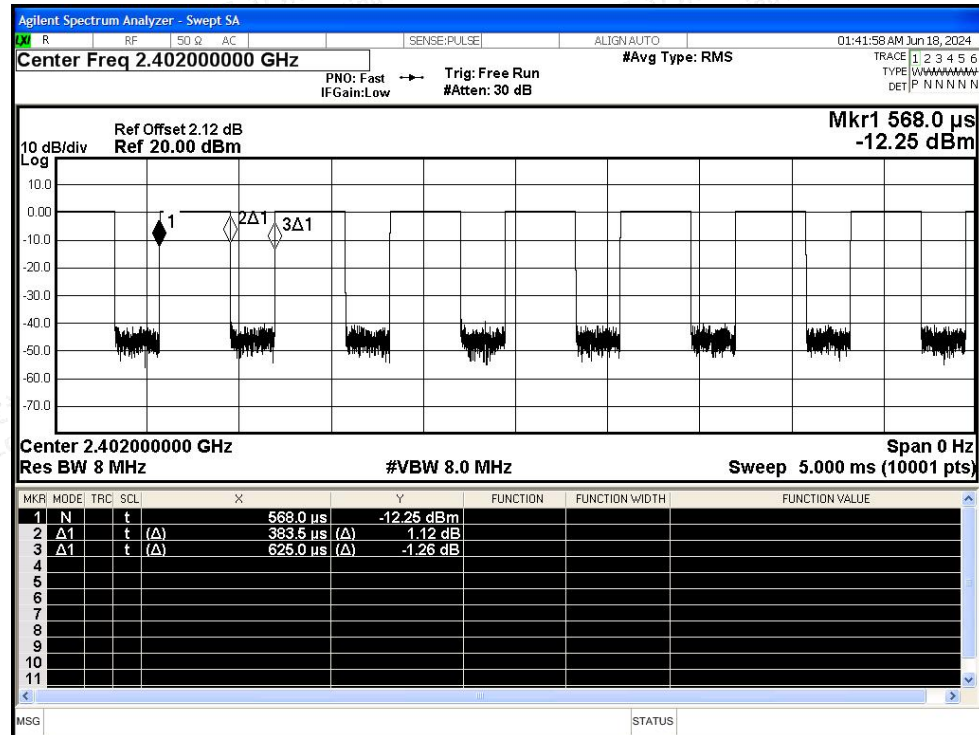
| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 61.36          | 2.12                   | 2.61      |
| NVNT      | BLE 1M | 2440            | Ant1    | 61.36          | 2.12                   | 2.61      |
| NVNT      | BLE 1M | 2480            | Ant1    | 61.44          | 2.12                   | 2.6       |



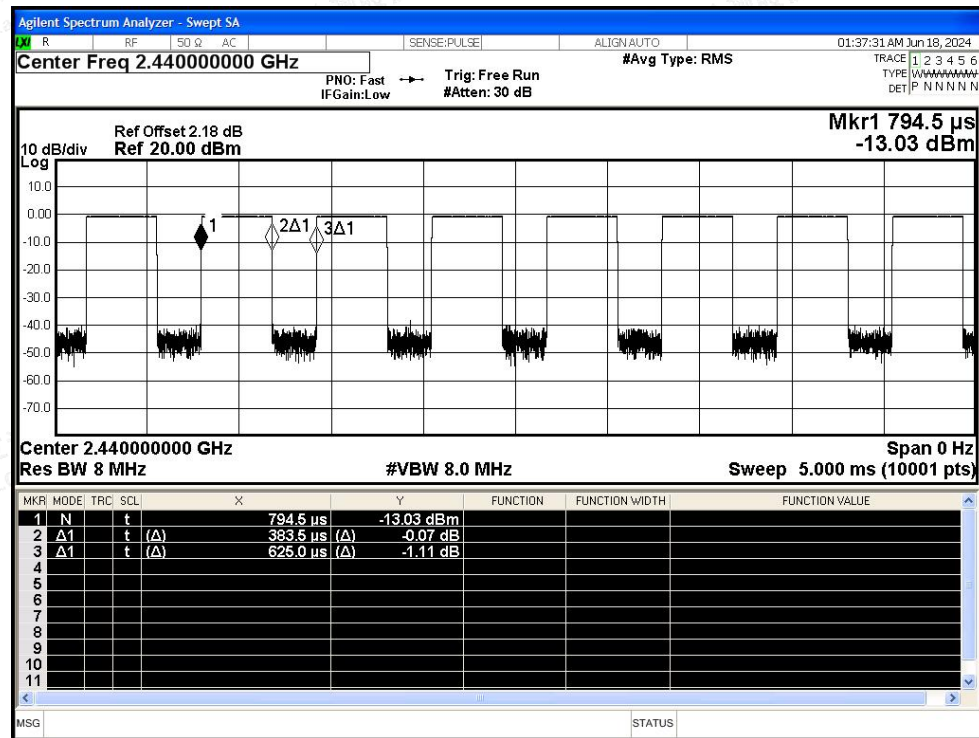


## Test Graphs

## Duty Cycle NVNT BLE 1M 2402MHz Ant1



## Duty Cycle NVNT BLE 1M 2440MHz Ant1

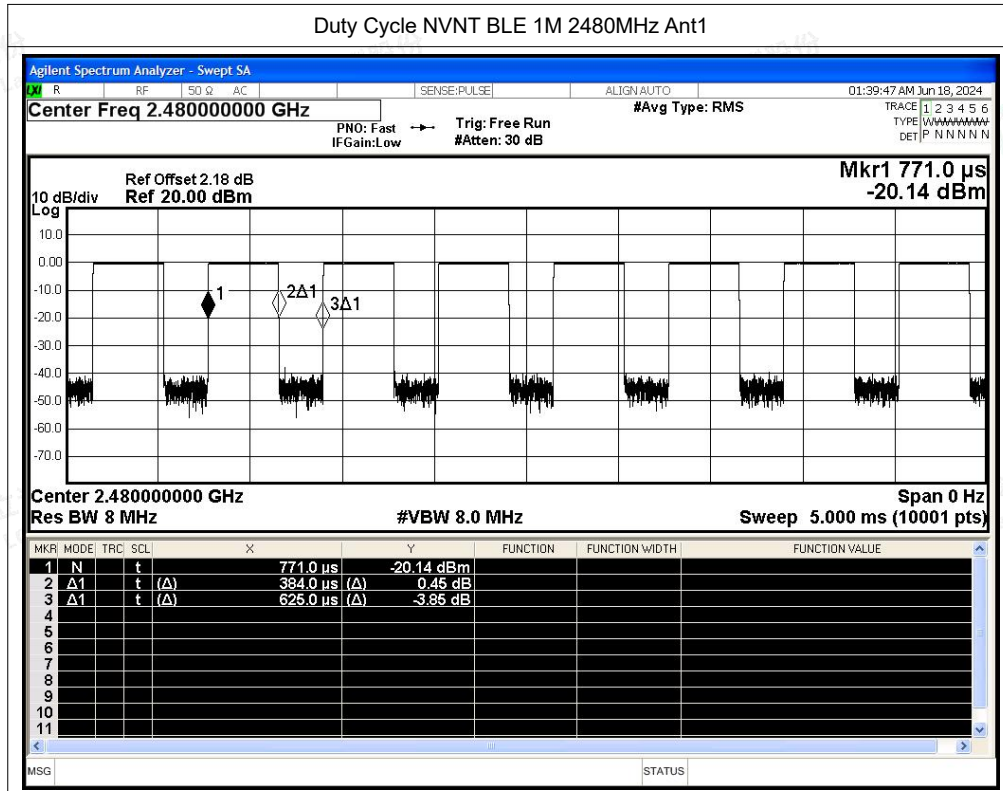


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## A.7 Restrict Band

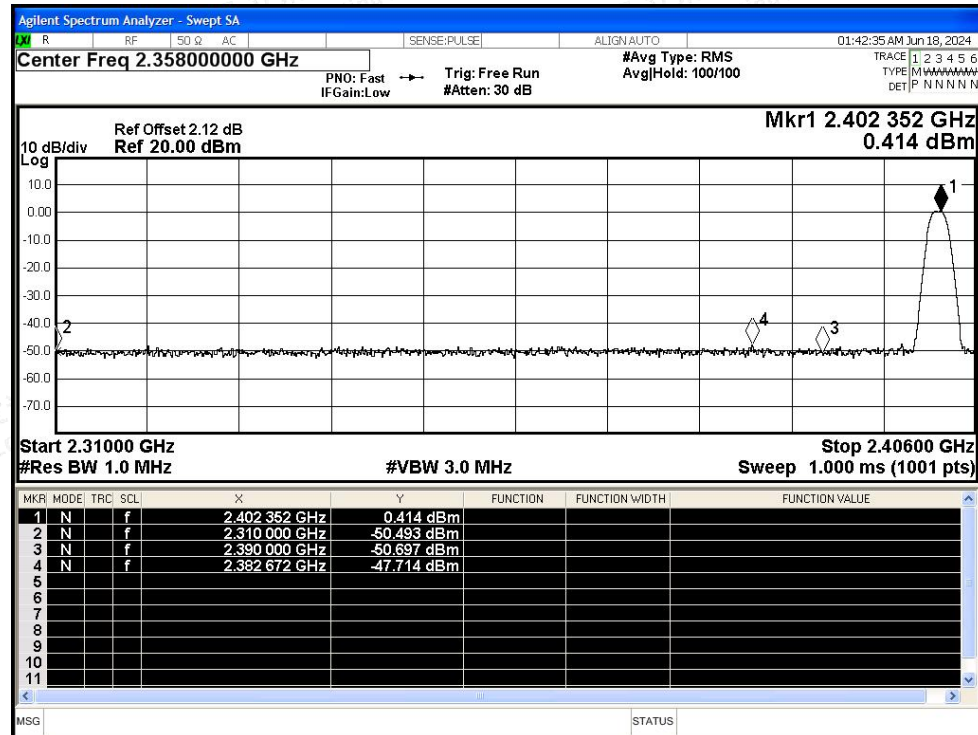
| Condition | Mode   | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor (dB) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|------------|------------------|------------|----------|----------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -50.49      | 2.0        | -                | 46.77      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -58.79      | 2.0        | 2.12             | 40.59      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2382.672        | -47.71      | 2.0        | -                | 49.55      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2384.112        | -57.65      | 2.0        | 2.12             | 41.73      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -50.7       | 2.0        | -                | 46.56      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -58.07      | 2.0        | 2.12             | 41.31      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -49.7       | 2.0        | -                | 47.56      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -57.93      | 2.0        | 2.12             | 41.45      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2491.528        | -47.18      | 2.0        | -                | 50.08      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2495.272        | -57.16      | 2.0        | 2.12             | 42.22      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -49.52      | 2.0        | -                | 47.74      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -57.84      | 2.0        | 2.12             | 41.54      | Average  | 54             | Pass    |



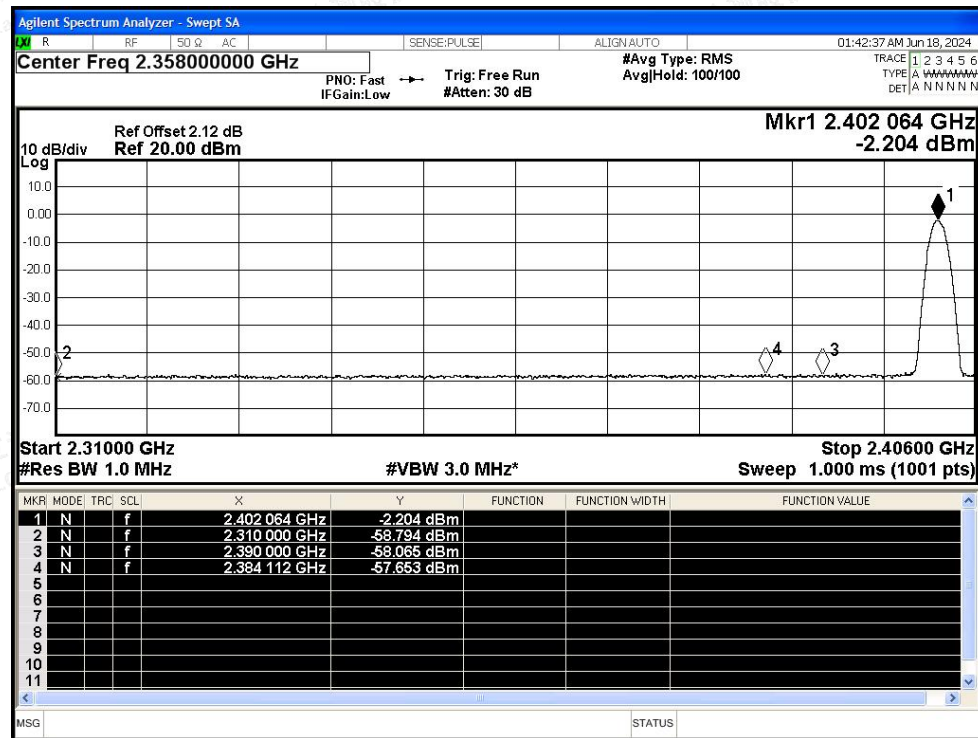


## Test Graphs

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



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



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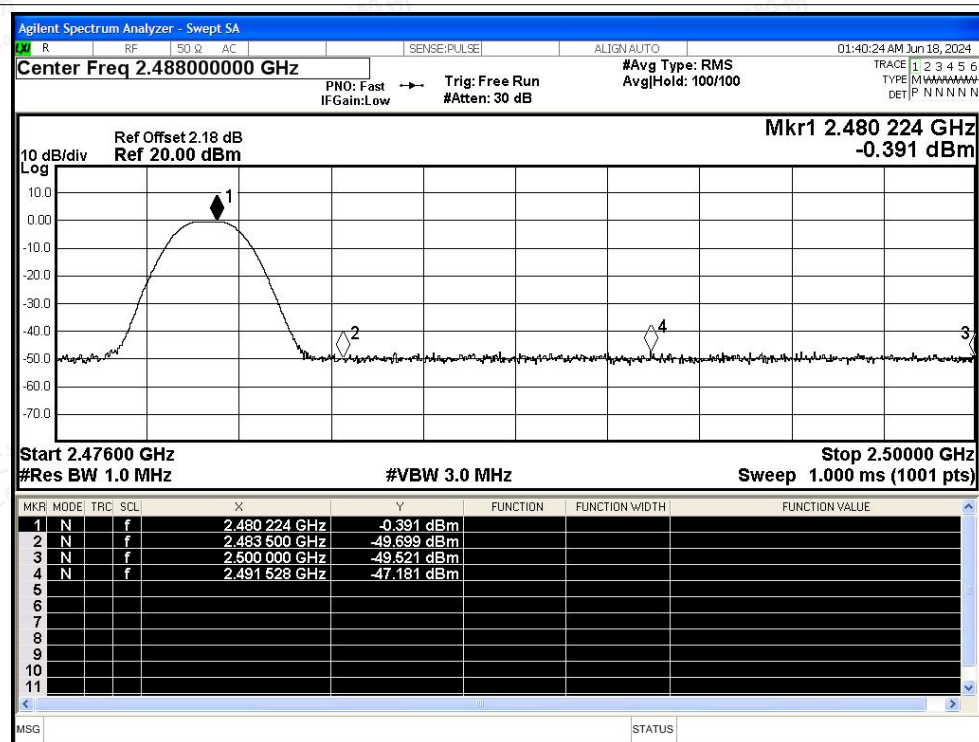
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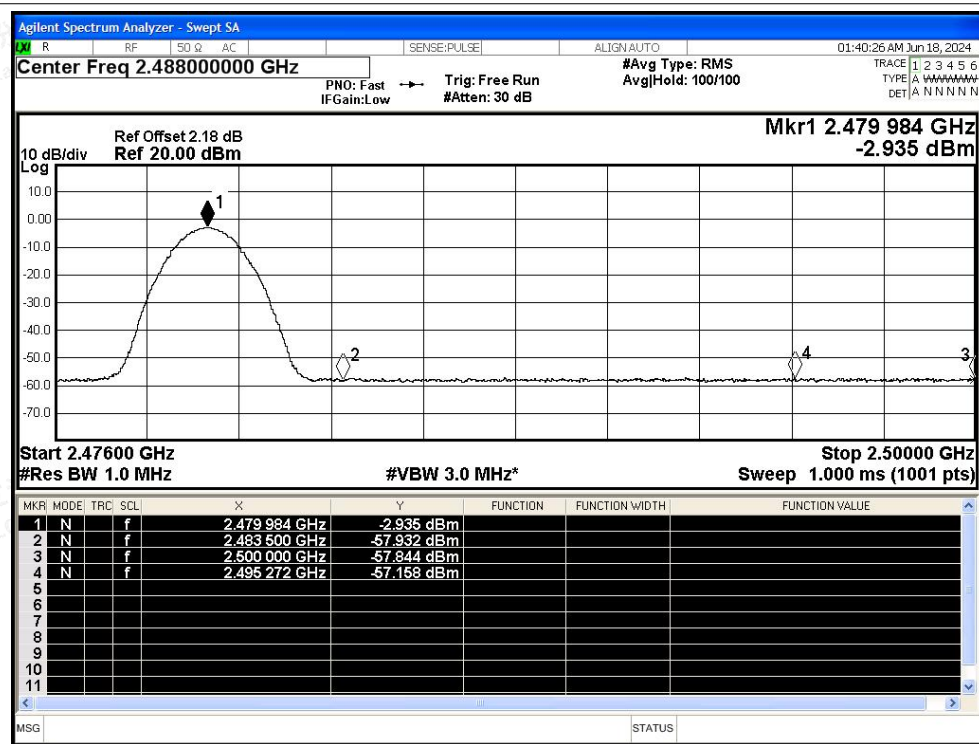
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## Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



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



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