



## Appendix A

### RF Test Data for BT LE (Conducted Measurement)

Product Name: smart watch

Test Model: V69

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.7° C   |
| Relative Humidity: | 52.3%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Jerry Chu |
| Supervised by:     | Nick Peng |





## A.1 -6dB Bandwidth

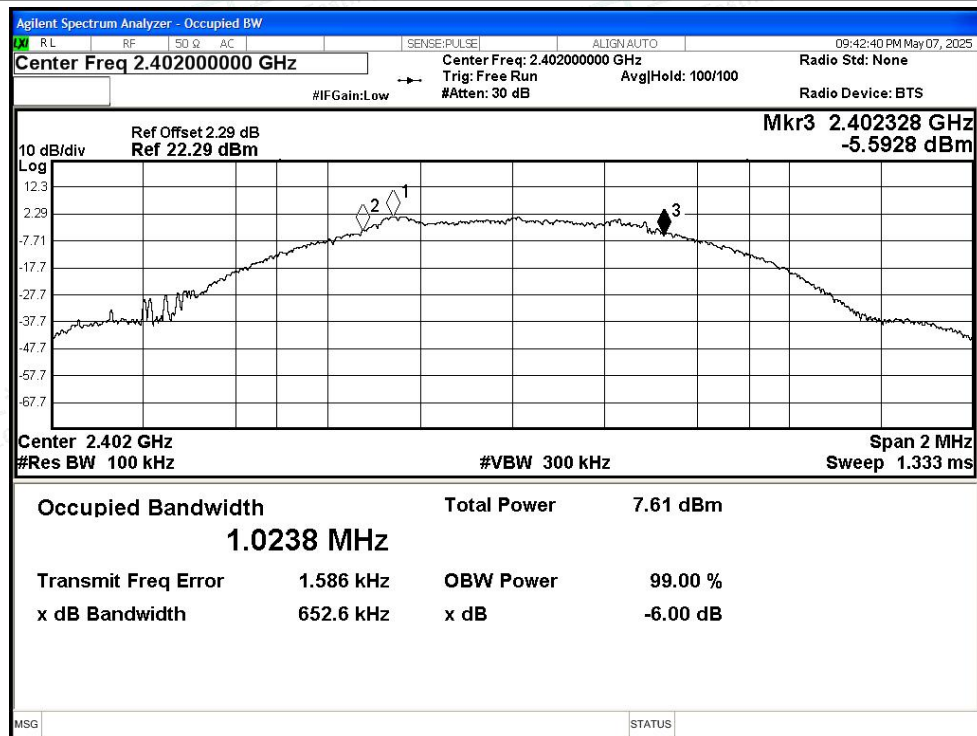
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.653                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.652                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.65                  | $\geq 0.5$                  | Pass    |



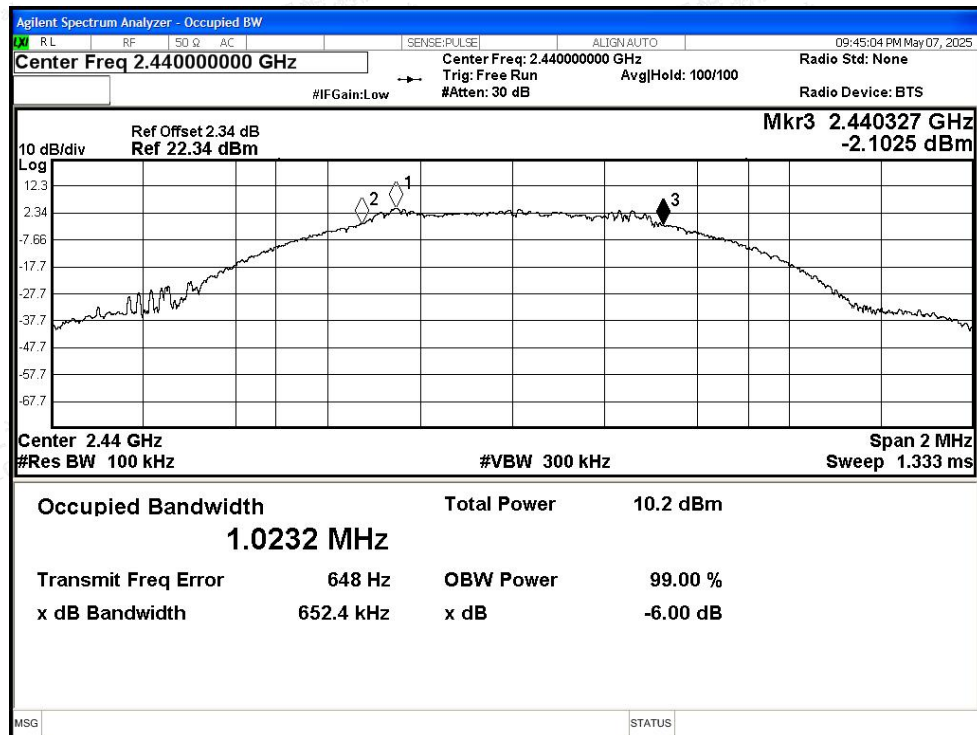


## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

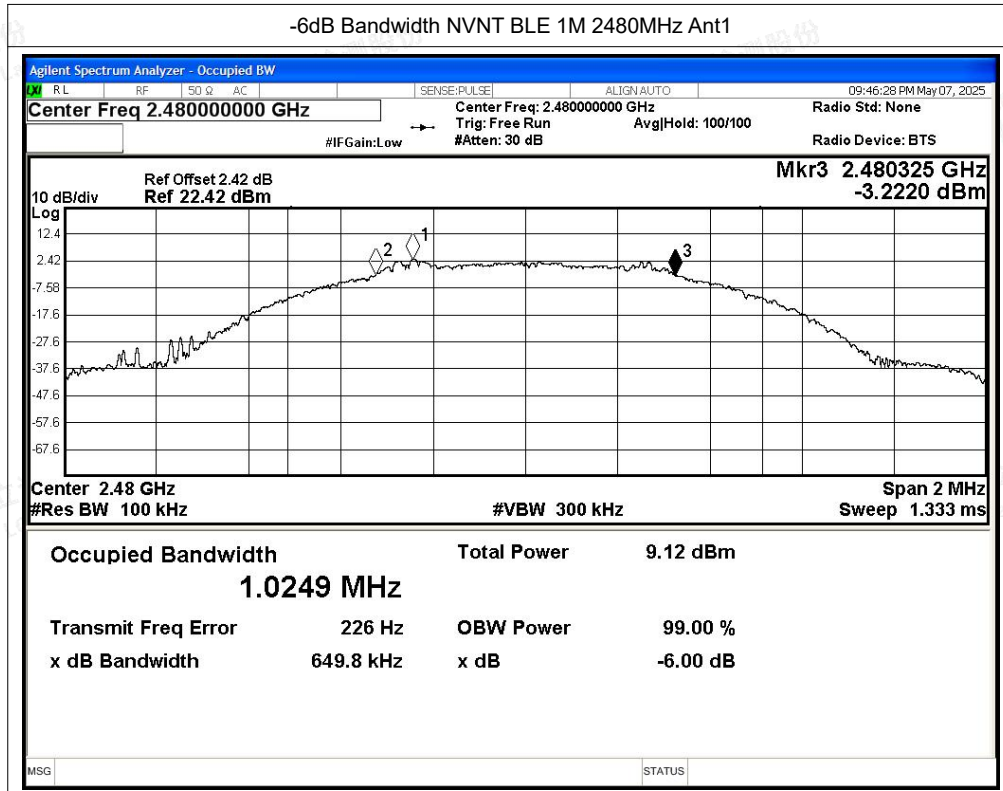


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## A.2 Maximum Peak Conducted Output Power

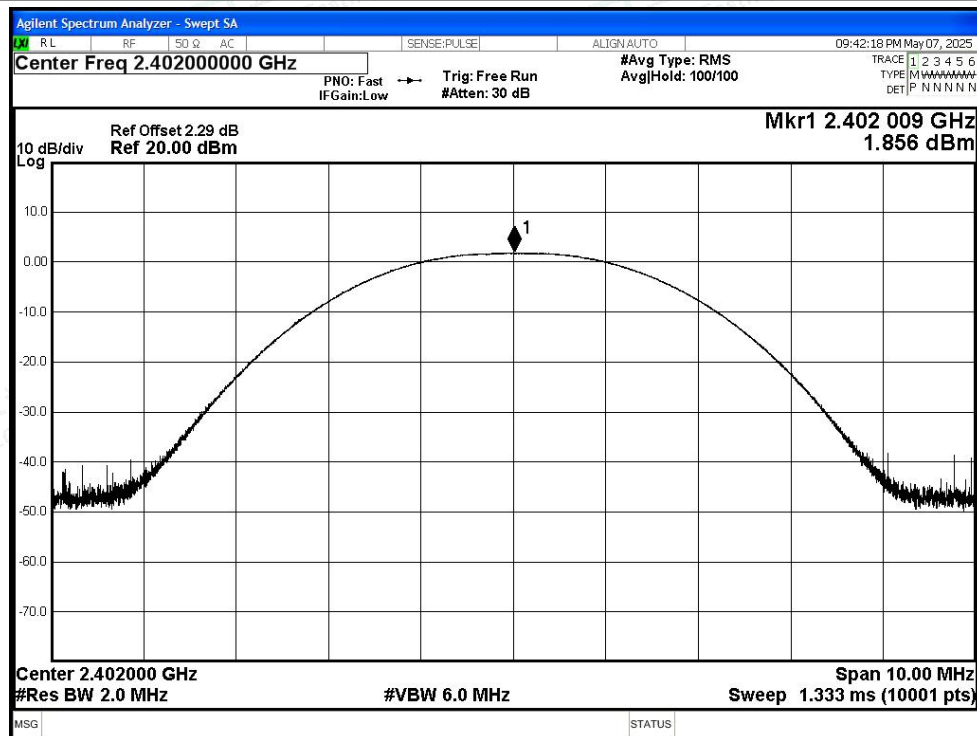
| Condition | Mode   | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 1.86                  | 30          | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 4.49                  | 30          | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 3.52                  | 30          | Pass    |



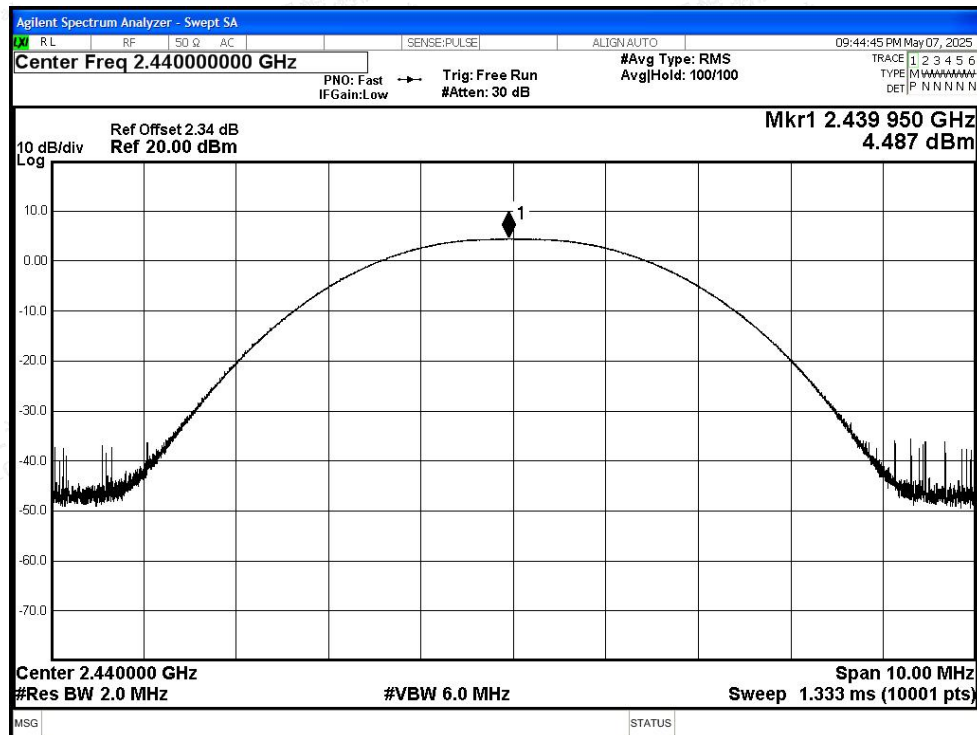


## Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1

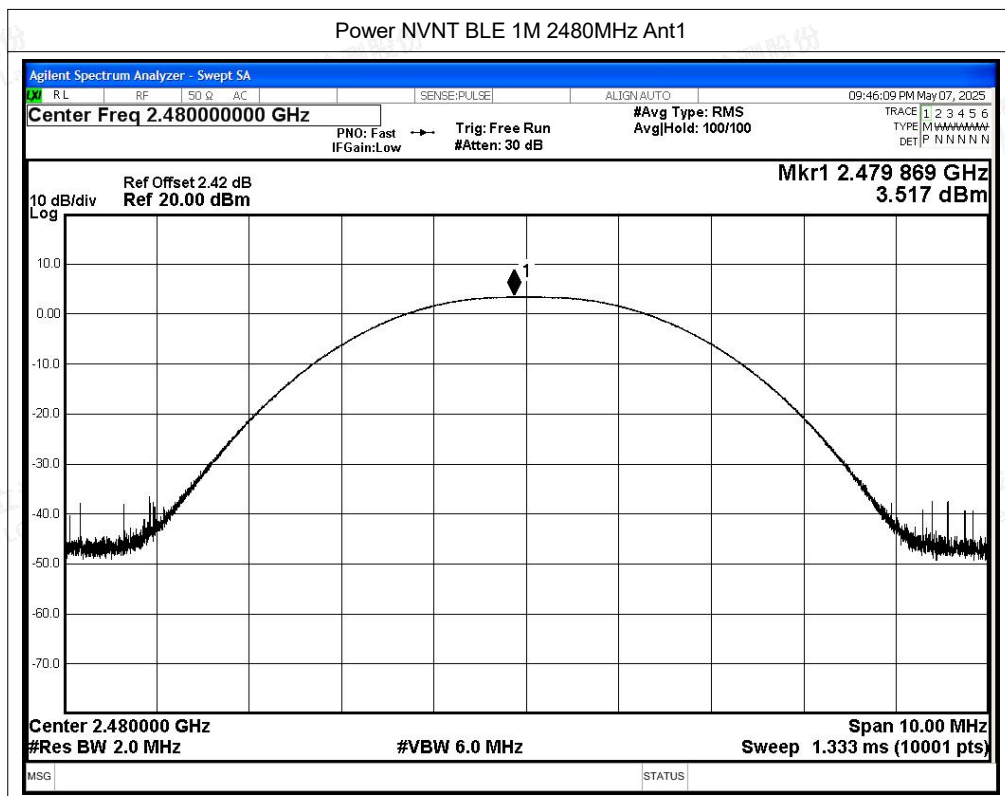


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### A.3 Maximum Power Spectral Density Level

| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|--------------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -14.56                   | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -11.74                   | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -13.14                   | 8                | Pass    |

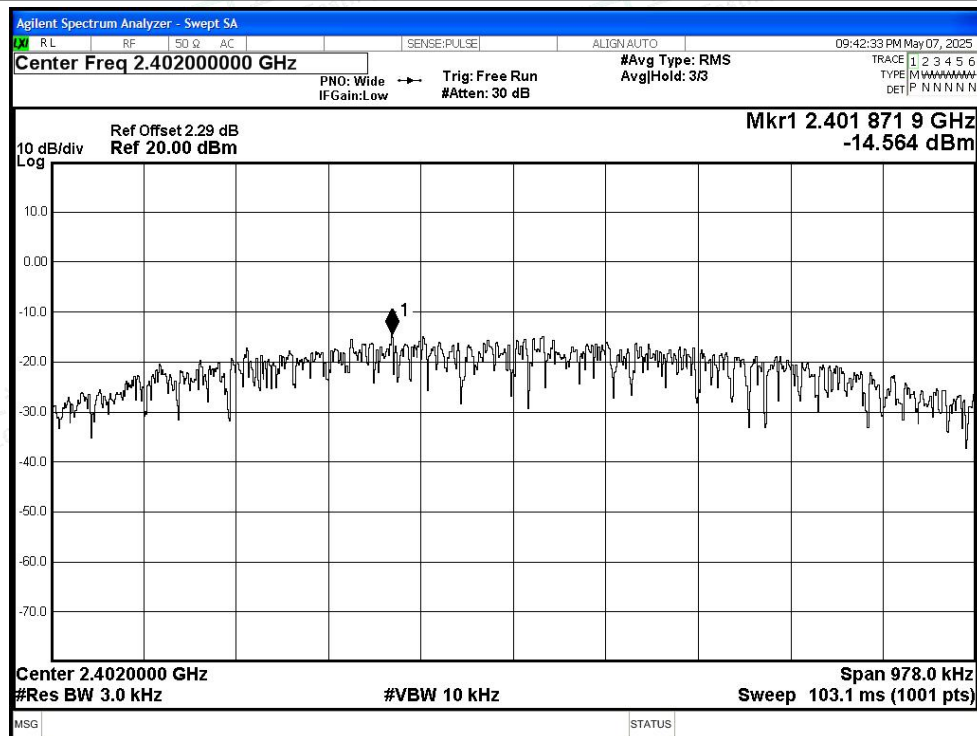




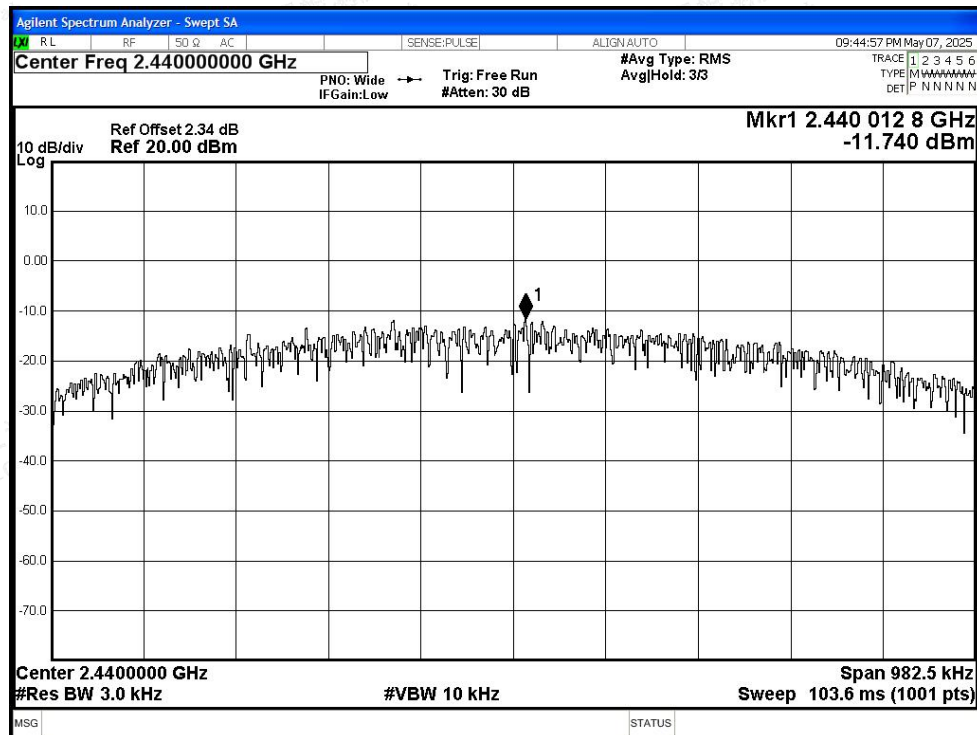


## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1

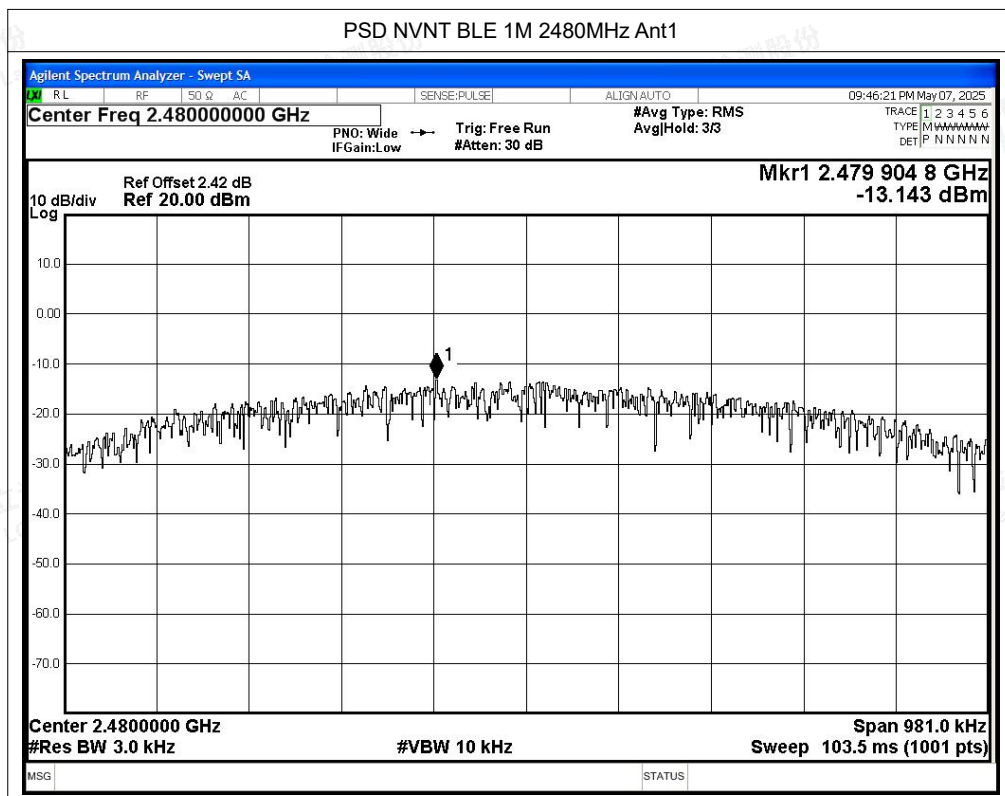


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## A.4 Band Edge

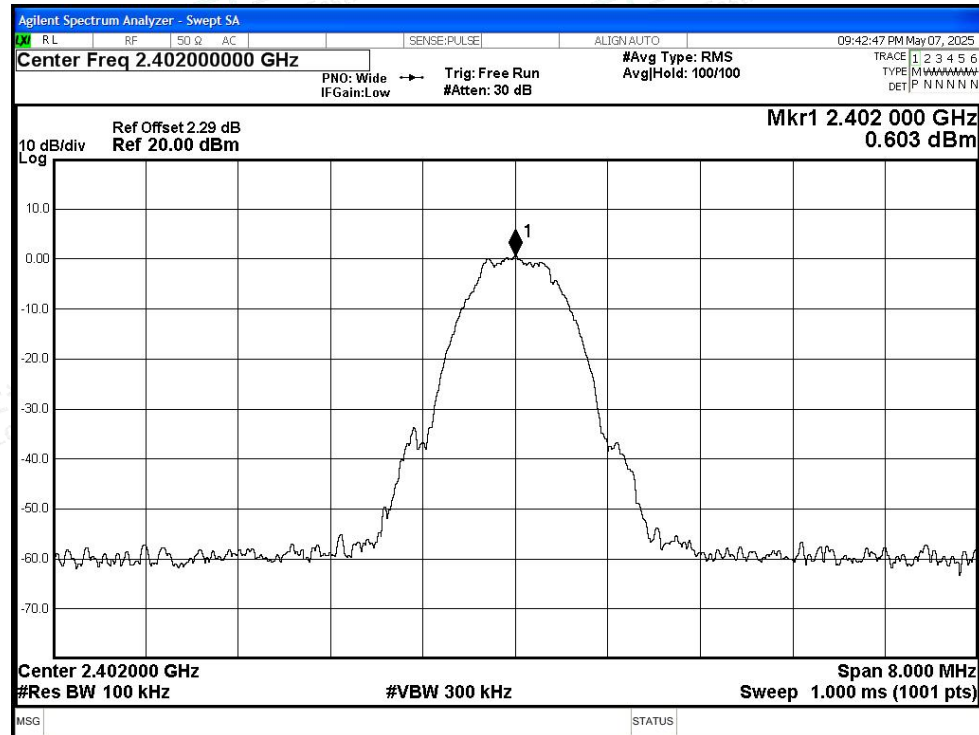
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -57.26          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -59.51          | -20         | Pass    |



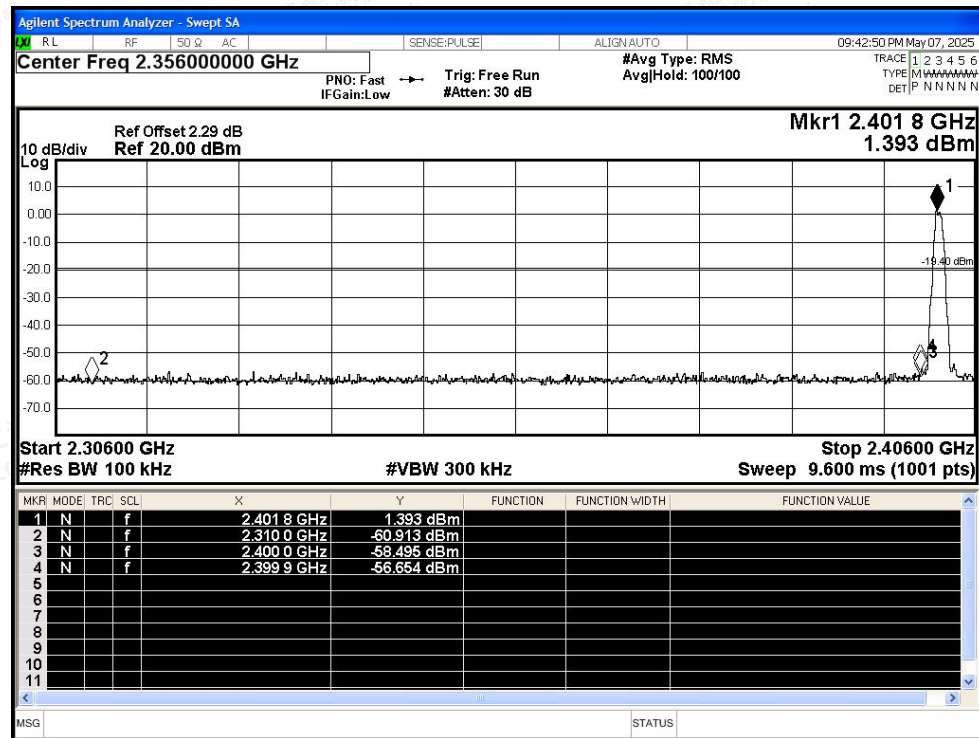


## Test Graphs

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



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



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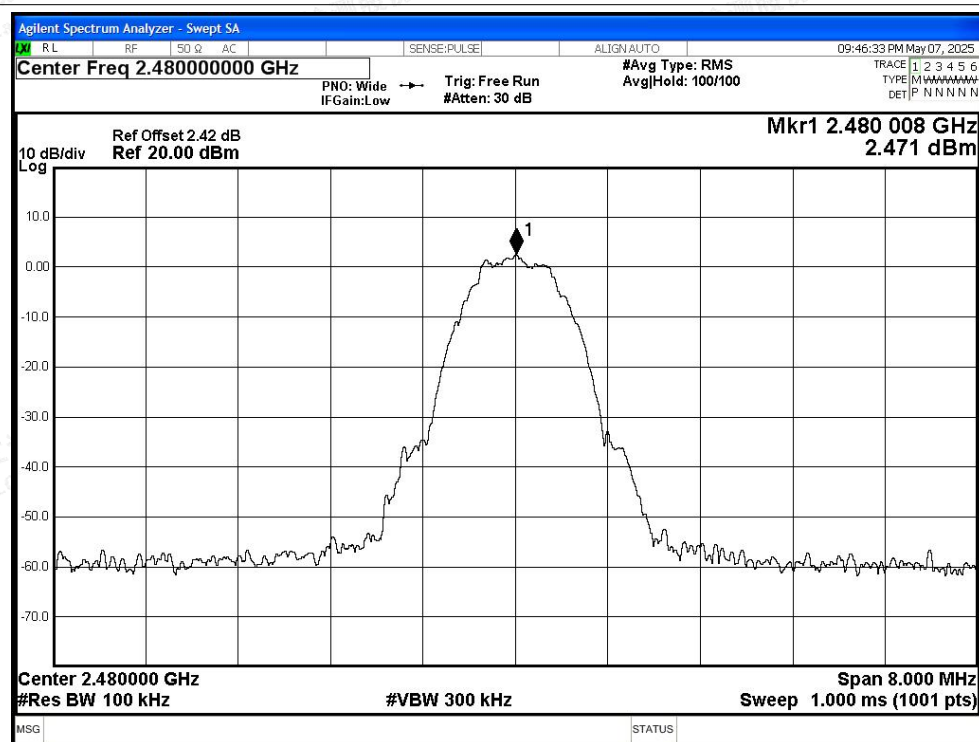
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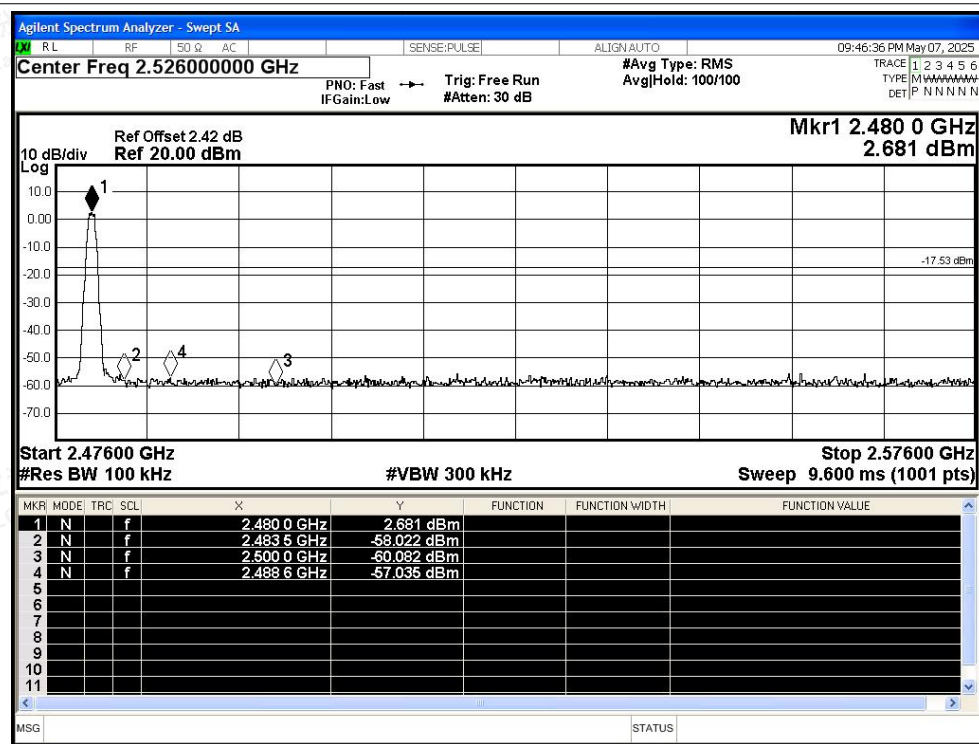
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## Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



## 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    | -56             | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -57.95          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -57.64          | -20         | Pass    |

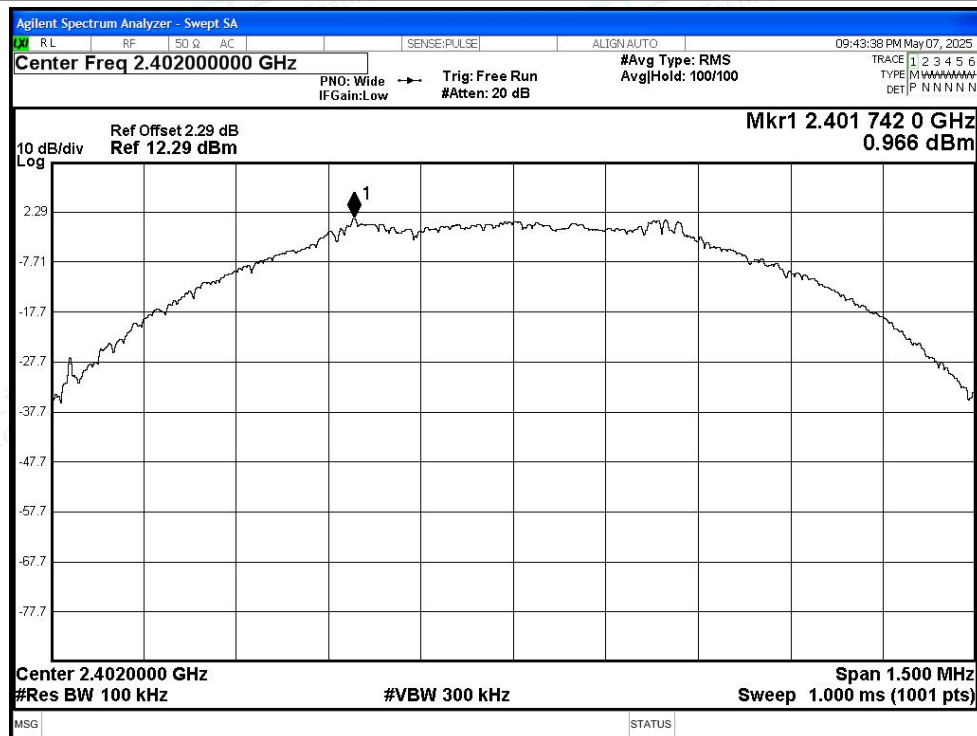




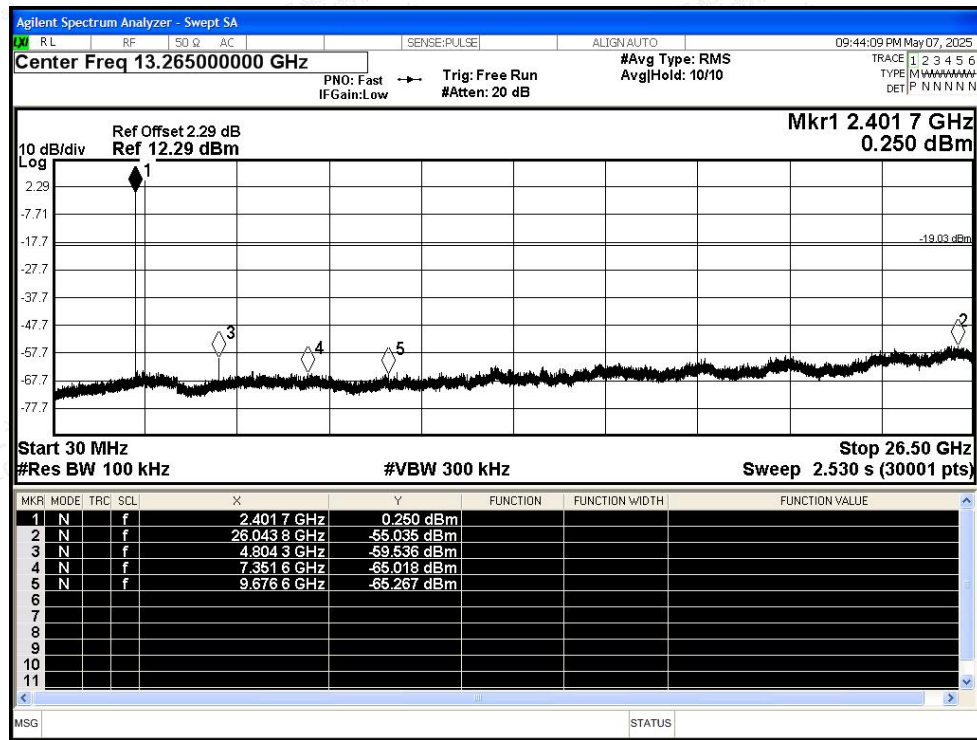


## Test Graphs

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



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



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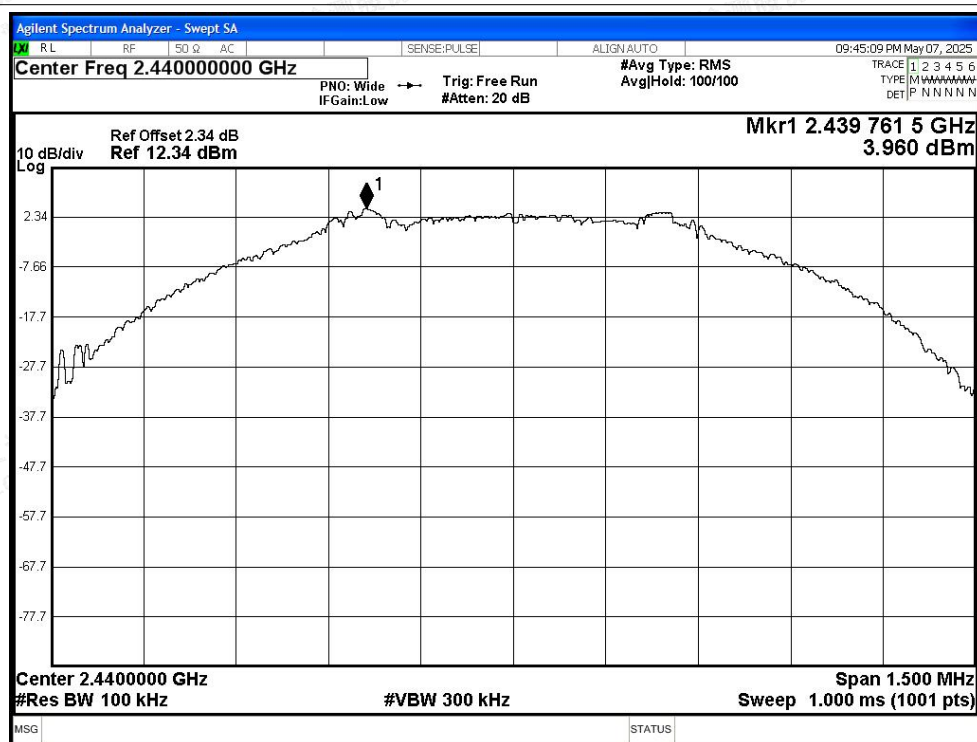
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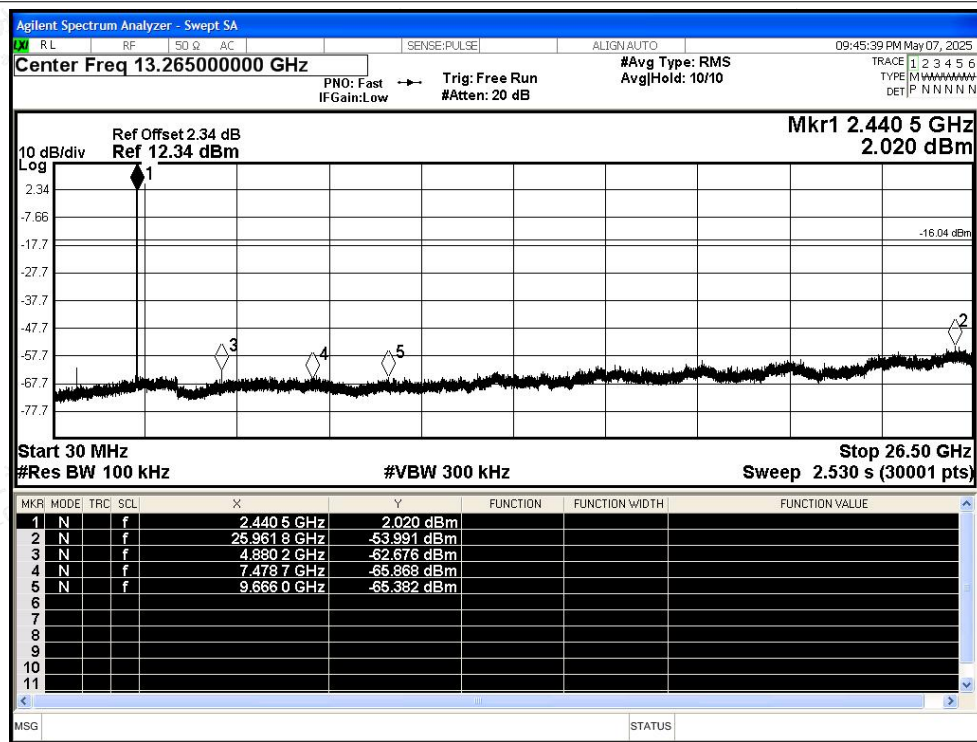
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## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



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



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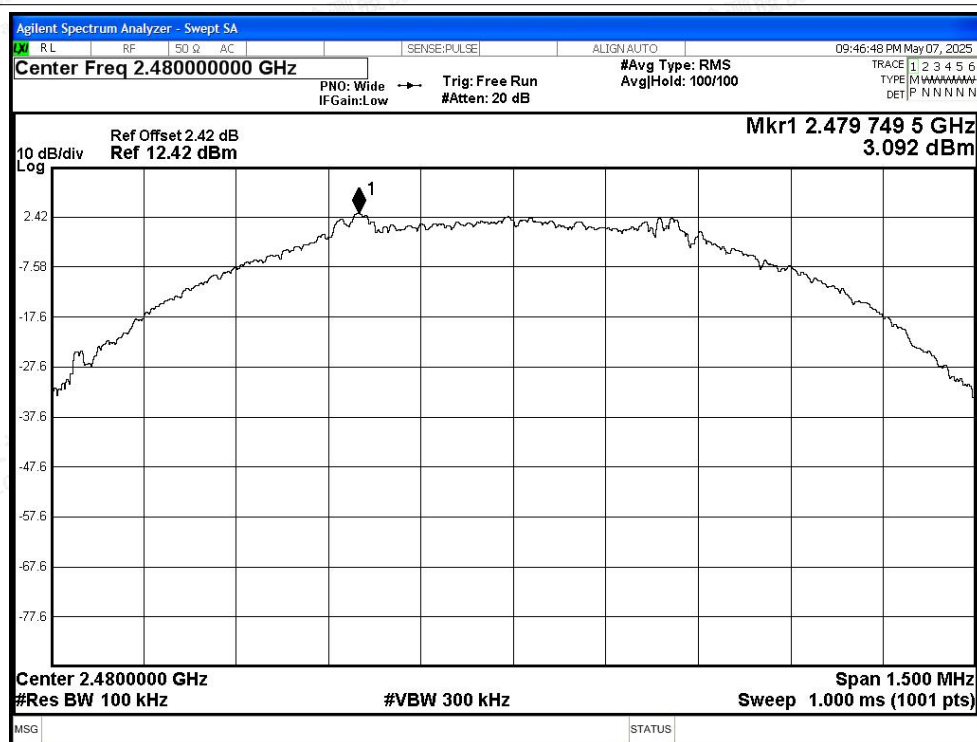
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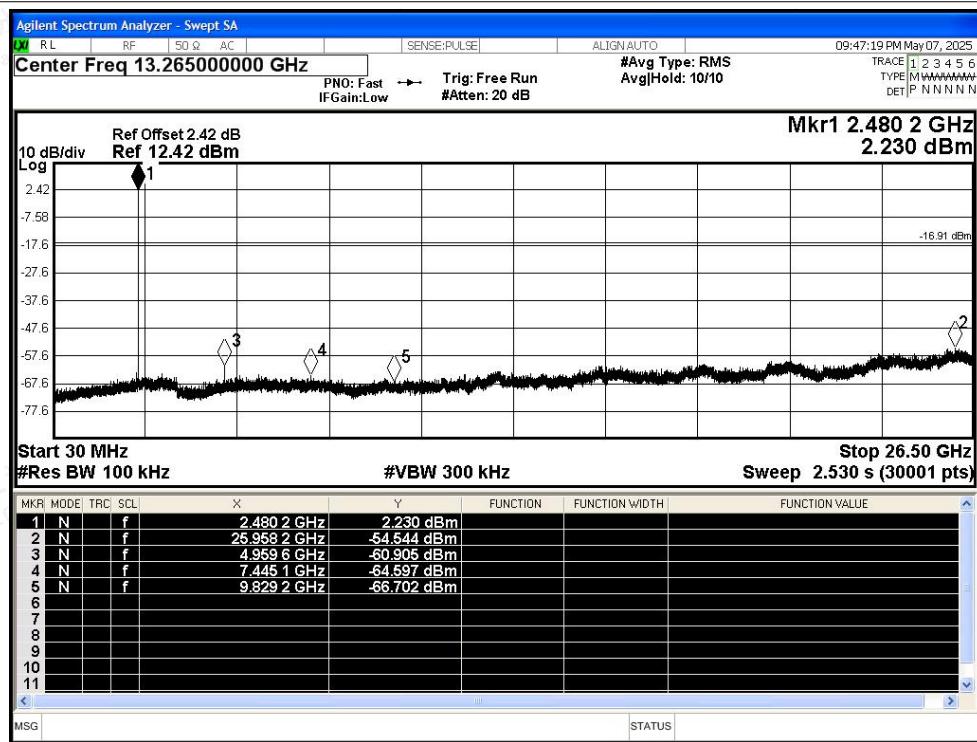




## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



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



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## A.6 Duty Cycle

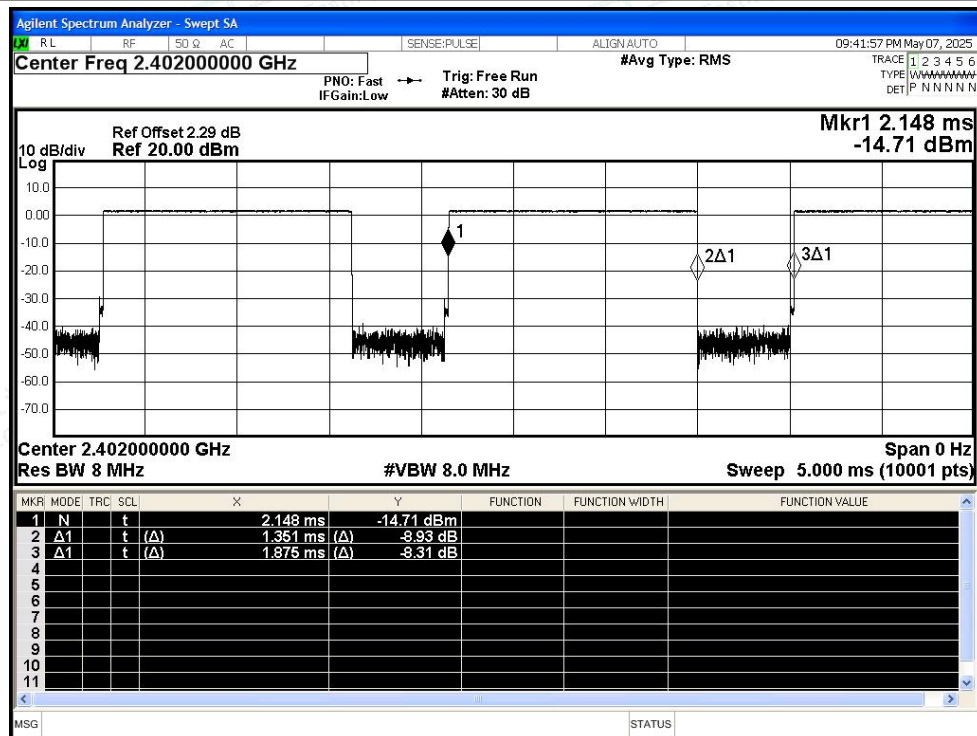
| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 72.05          | 1.42                   | 0.74      |
| NVNT      | BLE 1M | 2440            | Ant1    | 72.05          | 1.42                   | 0.74      |
| NVNT      | BLE 1M | 2480            | Ant1    | 72.05          | 1.42                   | 0.74      |



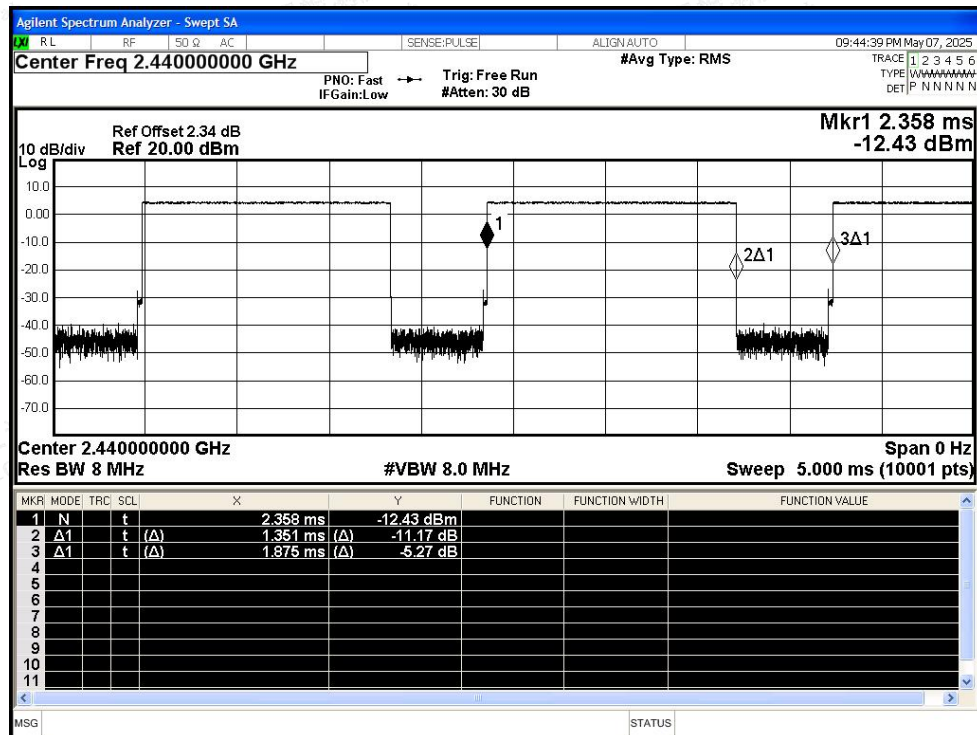


## Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant1



Duty Cycle NVNT BLE 1M 2440MHz Ant1

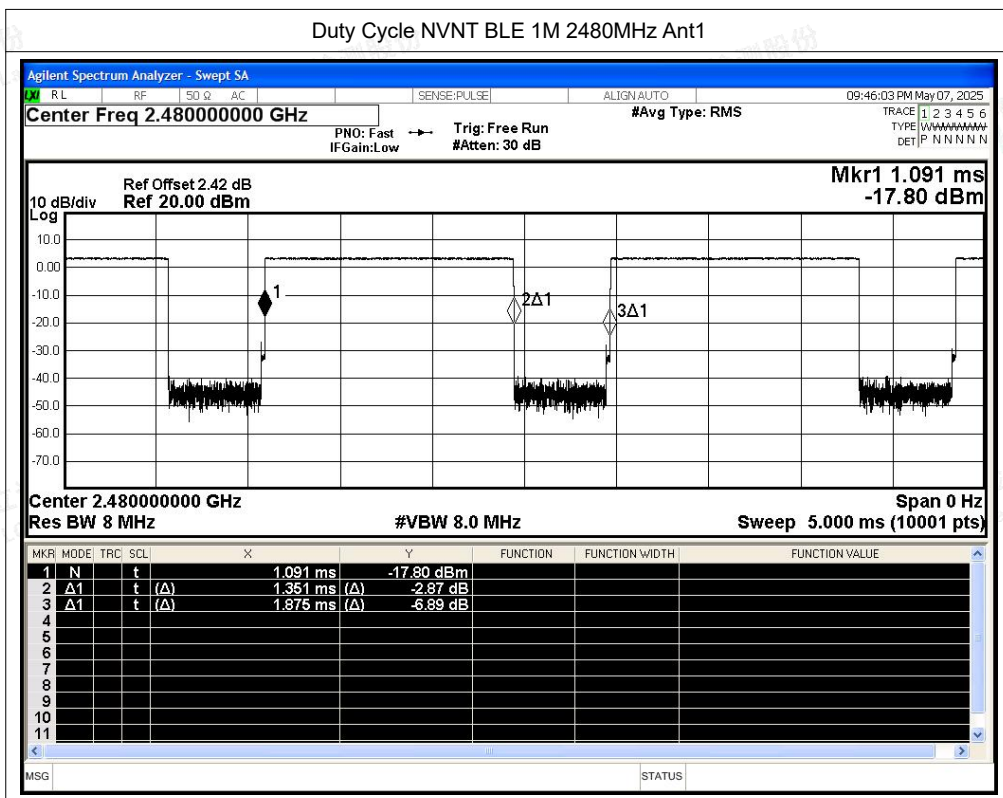


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## A.7 Restrict Band

| 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            | -49.09      | 2          | -                | 48.17      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -58.78      | 2          | 0                | 38.48      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2320.56         | -46.94      | 2          | -                | 50.32      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2386.416        | -57.28      | 2          | 0                | 39.98      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -50.33      | 2          | -                | 46.93      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -57.77      | 2          | 0                | 39.49      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -50.1       | 2          | -                | 47.16      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -57.16      | 2          | 1.42             | 41.52      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2486.656        | -43.71      | 2          | -                | 53.55      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2486.536        | -56.37      | 2          | 1.42             | 42.31      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -49.66      | 2          | -                | 47.60      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -57.46      | 2          | 1.42             | 41.22      | Average  | 54             | Pass    |



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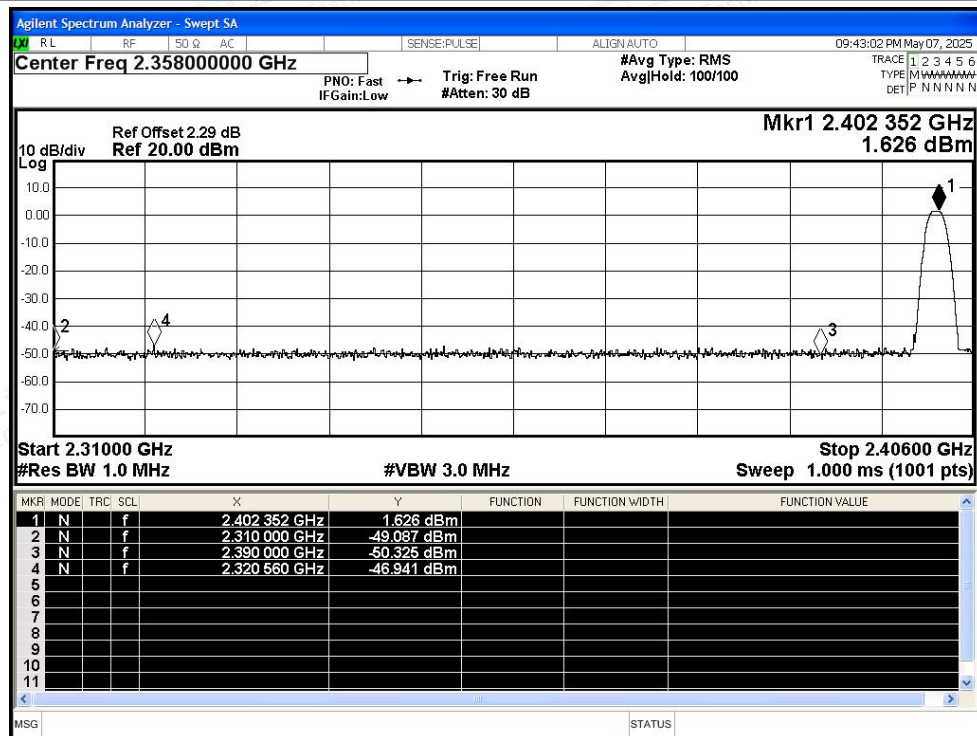
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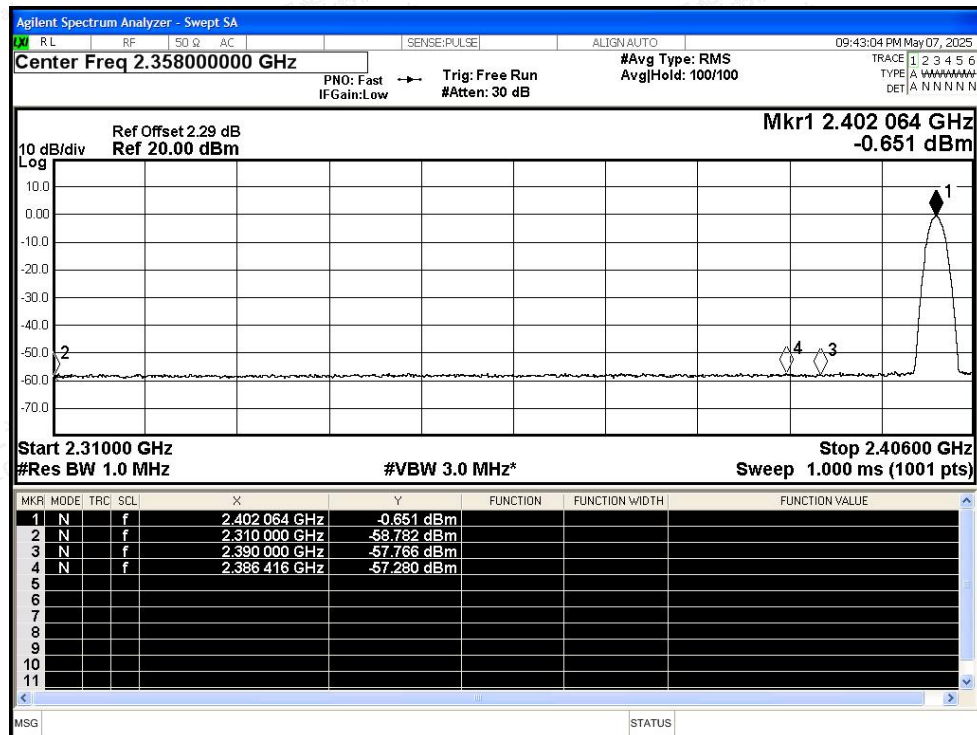


## Test Graphs

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



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



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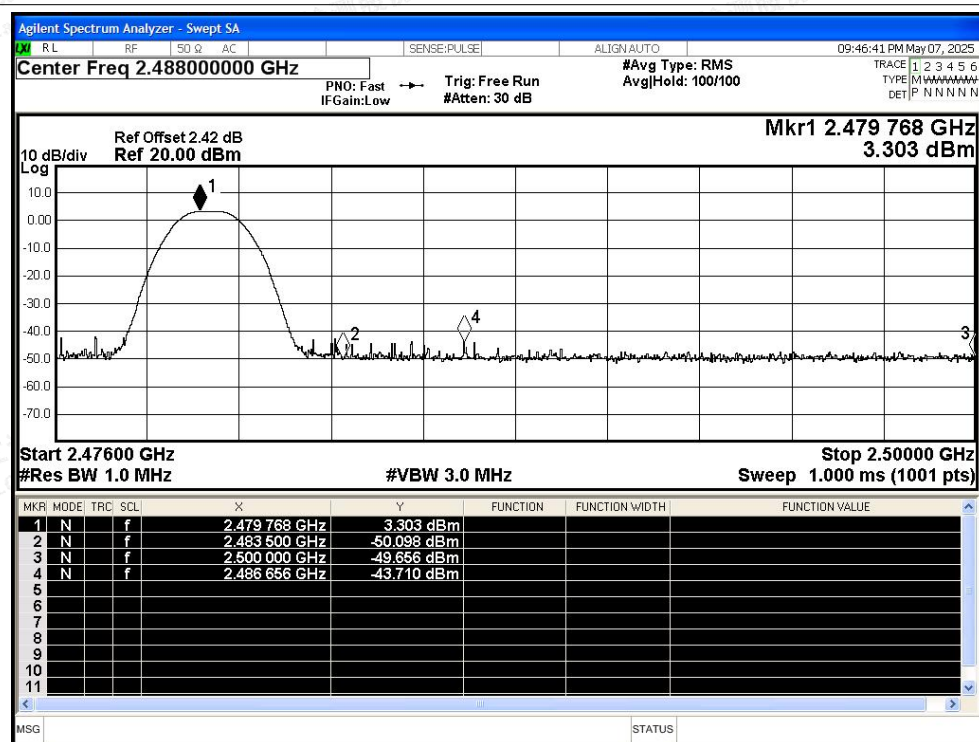
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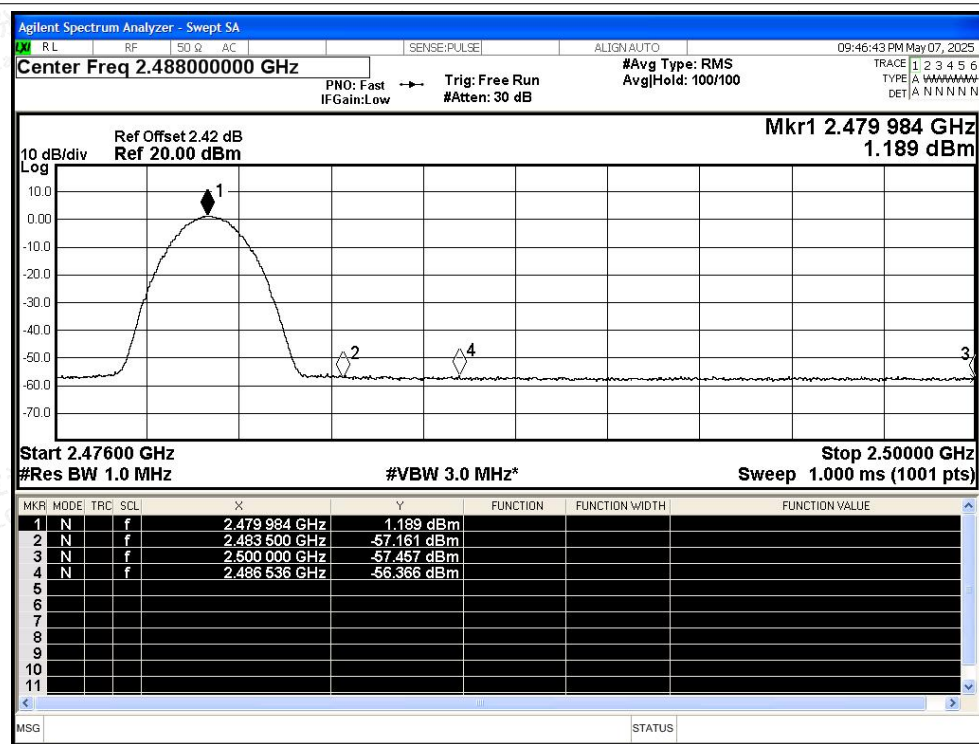




## Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



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



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