



## Appendix A

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

**Product Name: Notebook**

**Test Model: WWK14C4BK128**

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.8℃     |
| Relative Humidity: | 52.1%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Taylor Hu |
| Supervised by:     | Li Huan   |





## A.1 -6dB Bandwidth

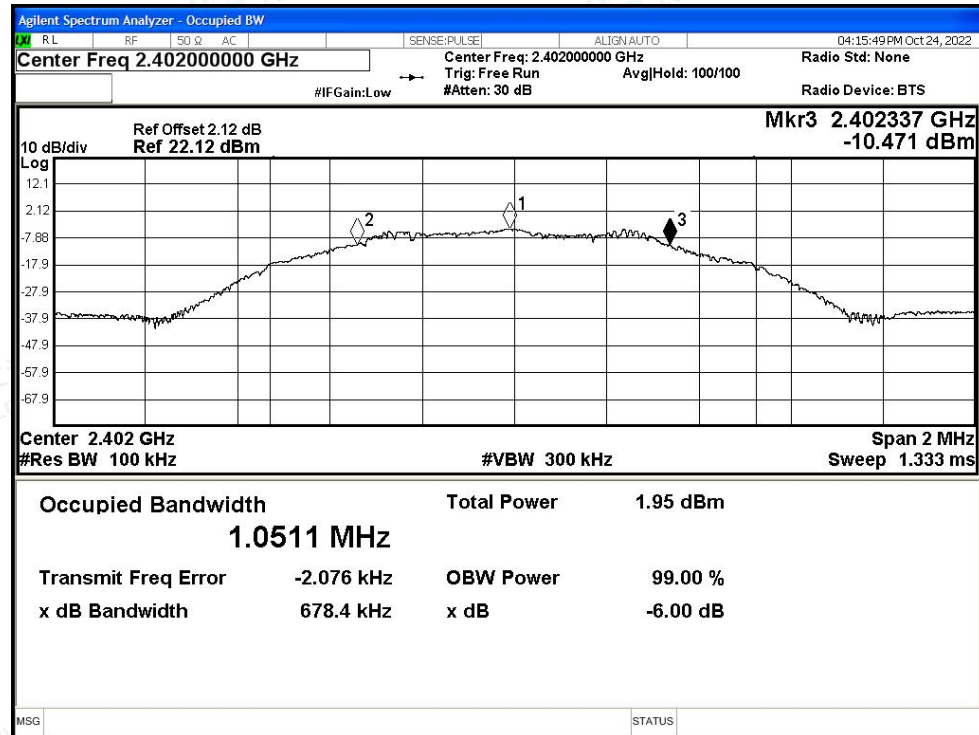
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.678                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.677                 | $\geq 0.5$                  | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.677                 | $\geq 0.5$                  | Pass    |



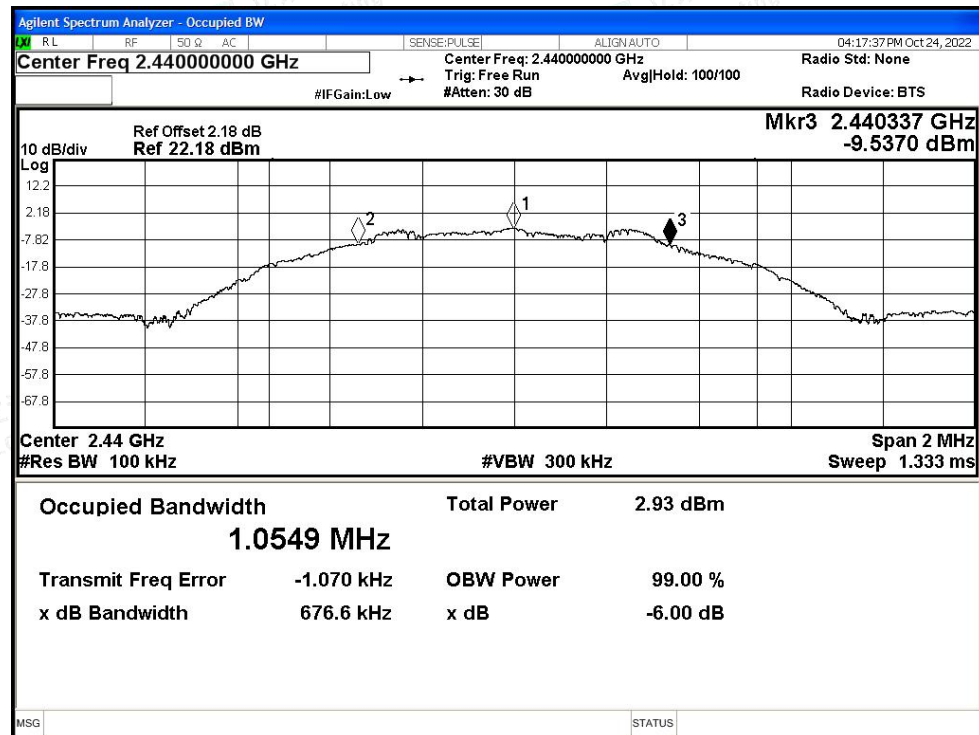


## Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

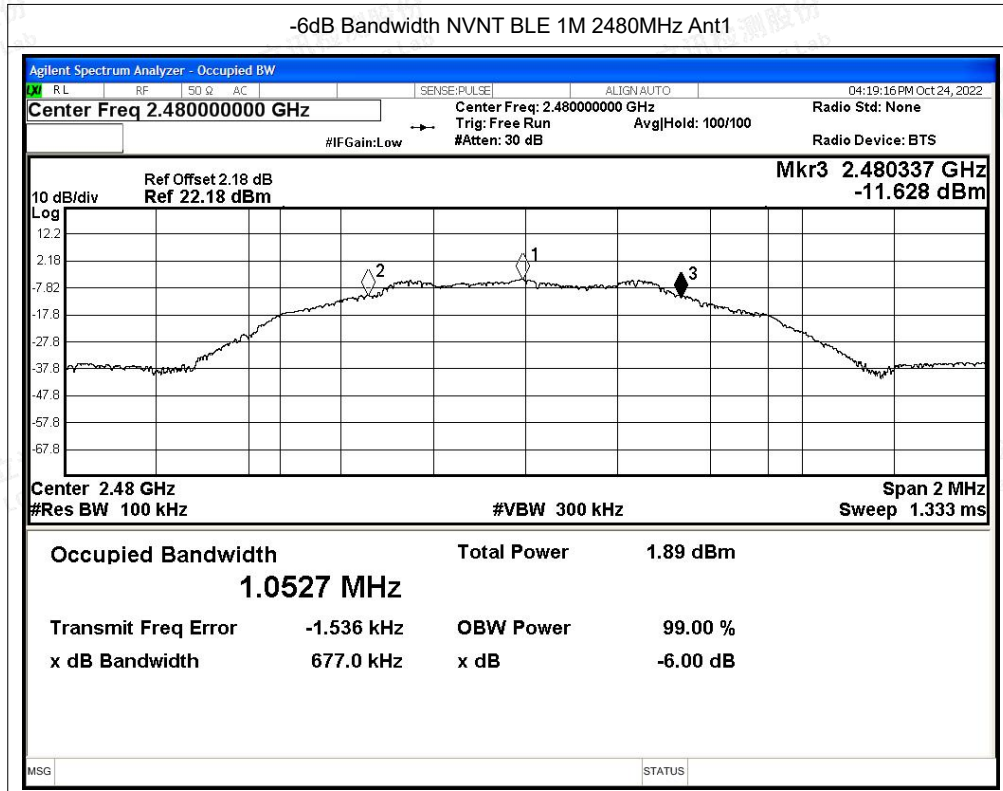


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## A.2 Maximum Conducted Output Power

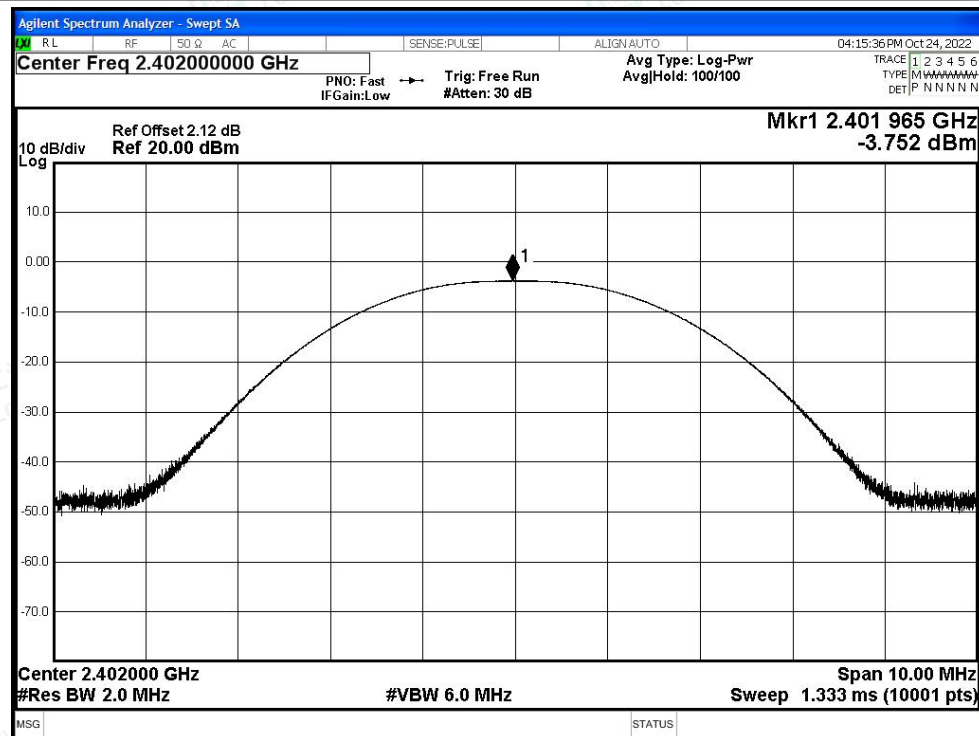
| Condition | Mode   | Frequency<br>(MHz) | Antenna | Conducted Power<br>(dBm) | Limit<br>(dBm) | Verdict |
|-----------|--------|--------------------|---------|--------------------------|----------------|---------|
| NVNT      | BLE 1M | 2402               | Ant1    | -3.75                    | 30             | Pass    |
| NVNT      | BLE 1M | 2440               | Ant1    | -2.81                    | 30             | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | -3.92                    | 30             | Pass    |



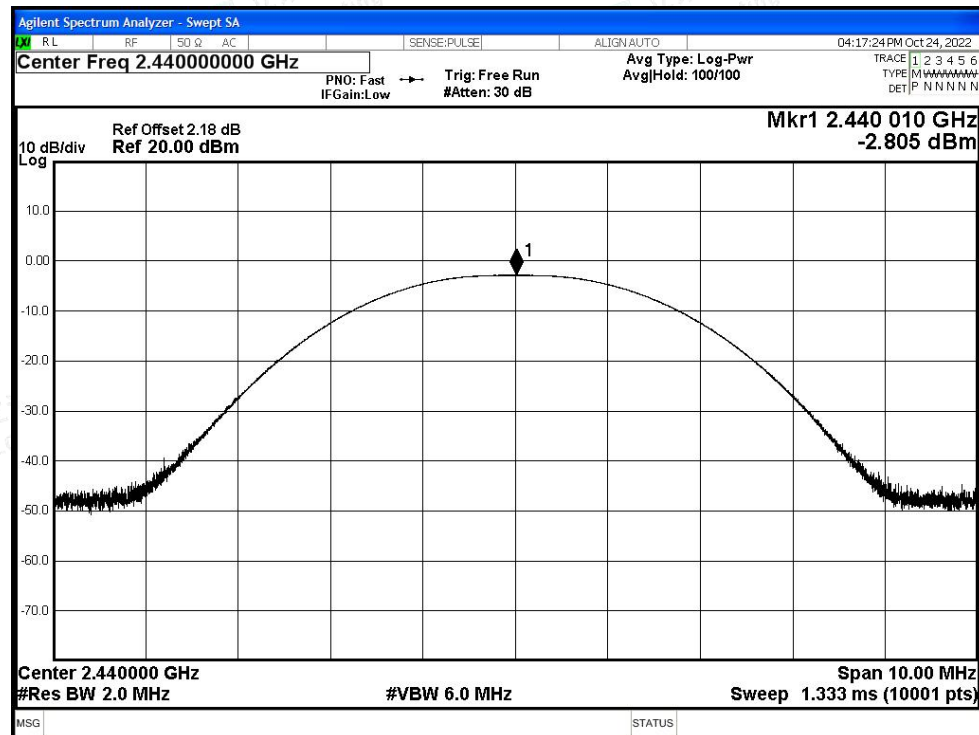


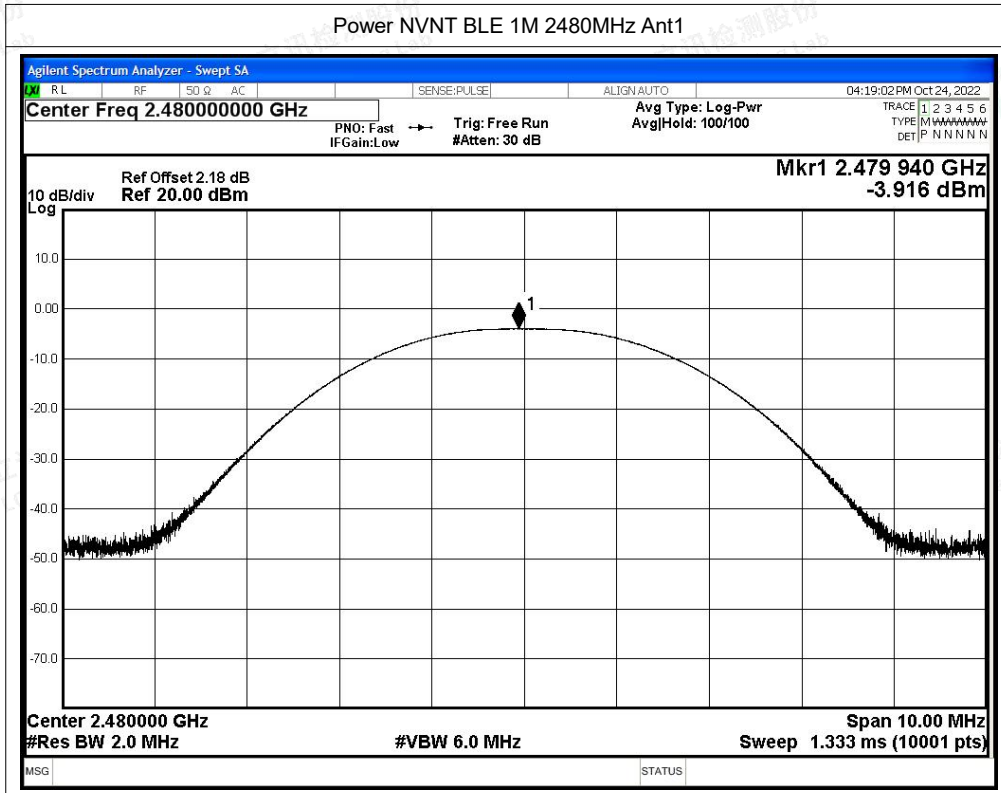
## Test Graphs

## Power NVNT BLE 1M 2402MHz Ant1



## Power NVNT BLE 1M 2440MHz Ant1







### A.3 Maximum Power Spectral Density Level

| Condition | Mode   | Frequency<br>(MHz) | Antenna | Conducted PSD<br>(dBm/3kHz) | Limit<br>(dBm/3kHz) | Verdict |
|-----------|--------|--------------------|---------|-----------------------------|---------------------|---------|
| NVNT      | BLE 1M | 2402               | Ant1    | -19                         | 8                   | Pass    |
| NVNT      | BLE 1M | 2440               | Ant1    | -17.61                      | 8                   | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | -18.79                      | 8                   | Pass    |

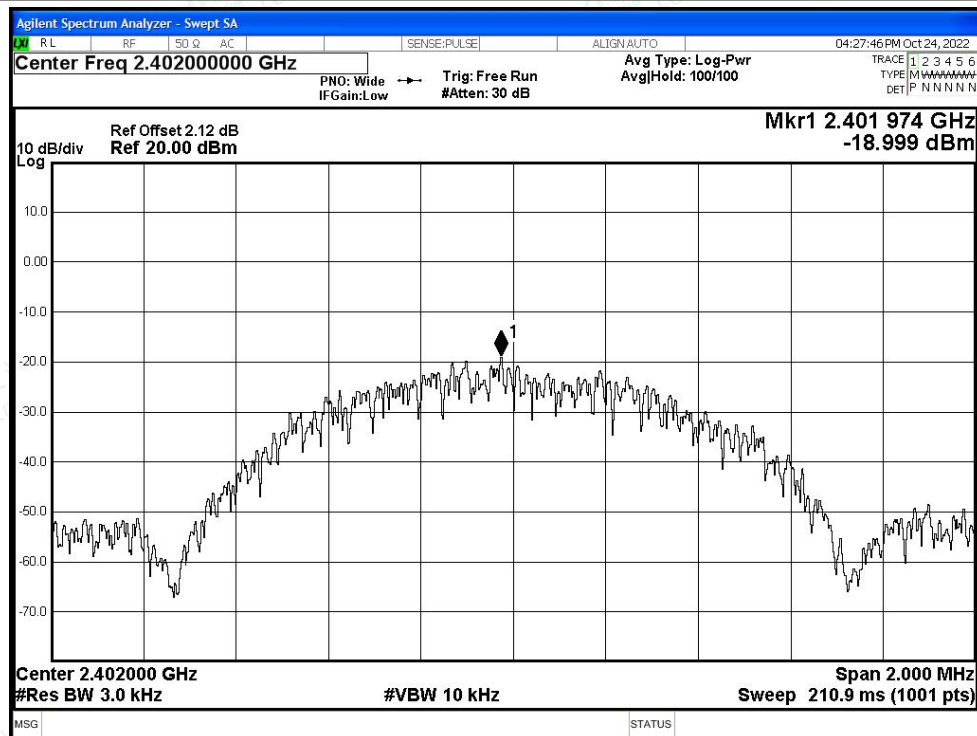




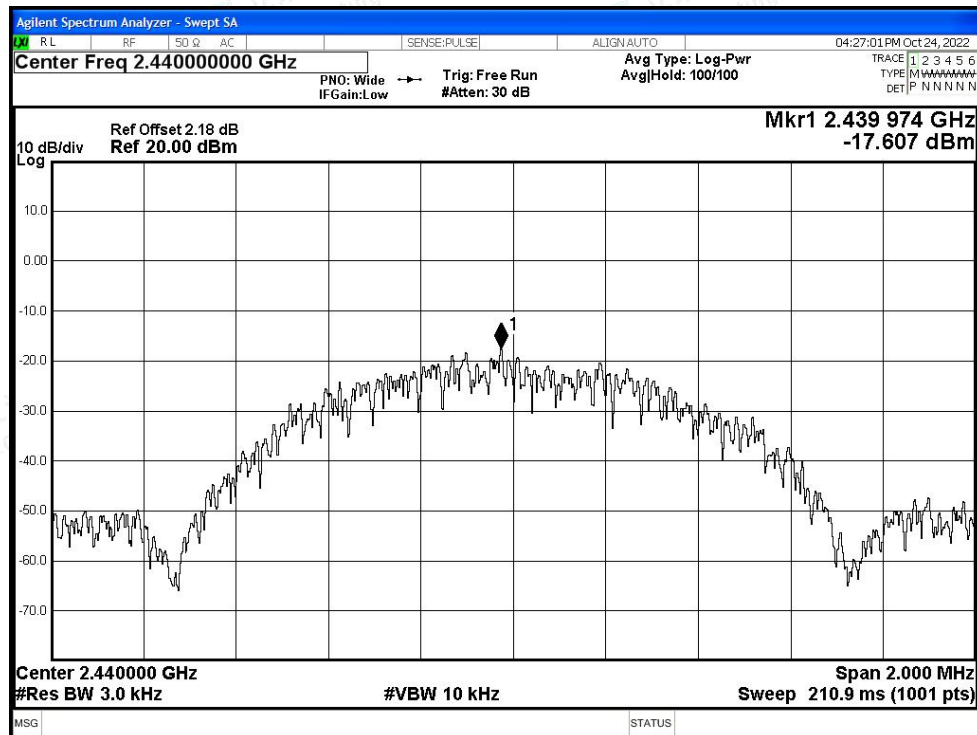


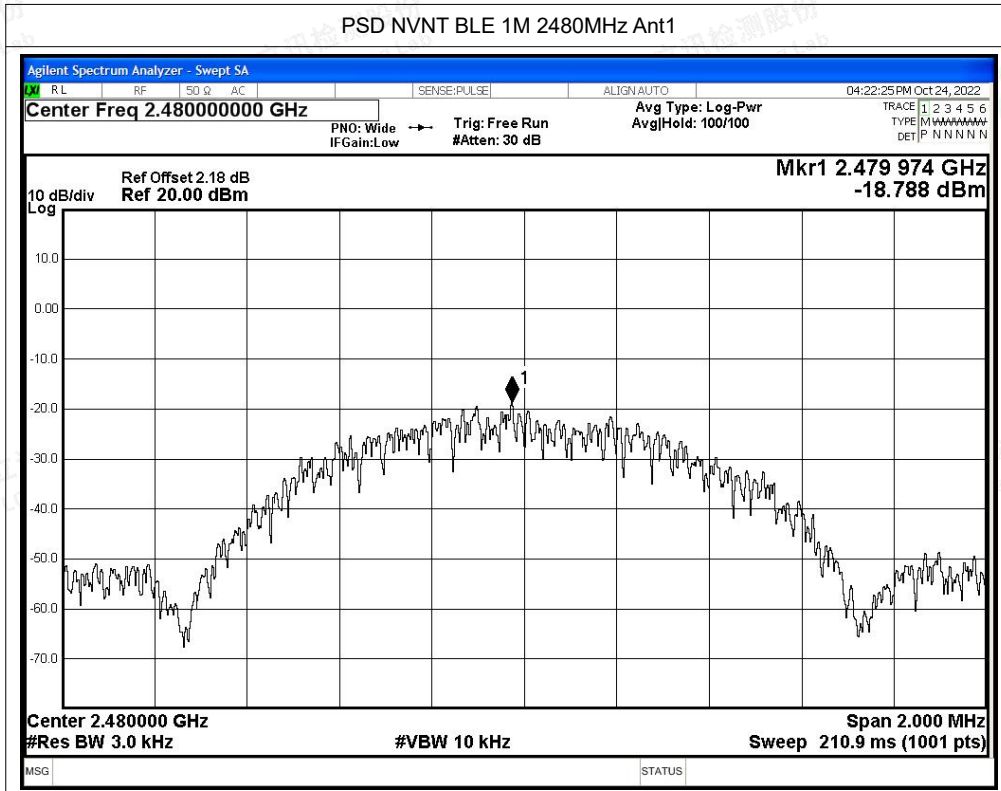
## Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1







### A.4 Band Edge

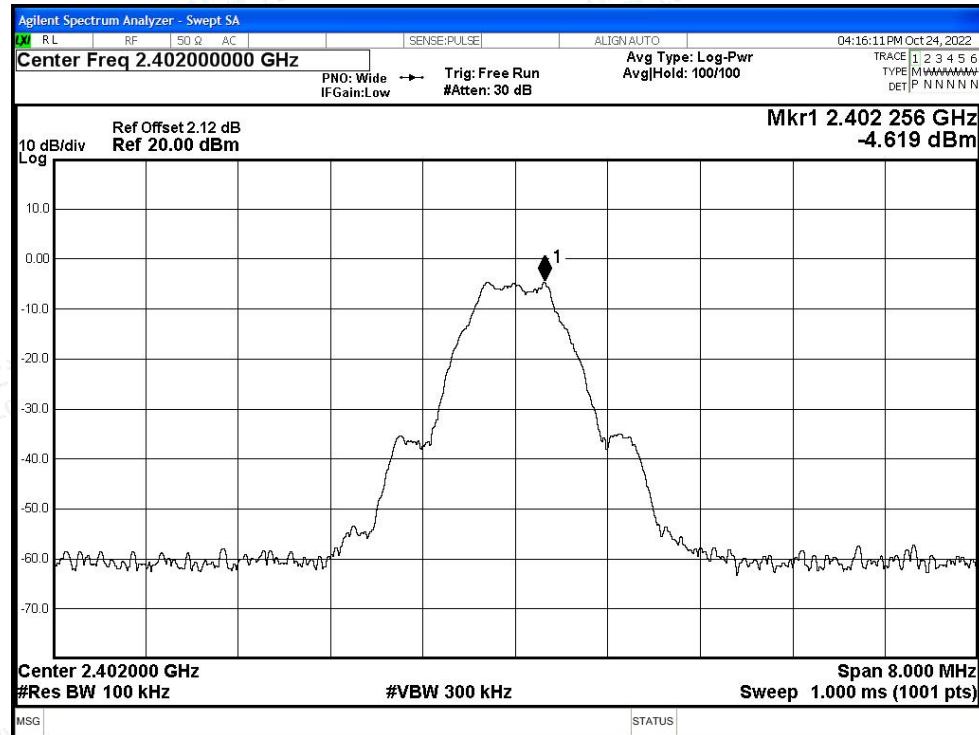
| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -52.39          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -51.89          | -20         | Pass    |



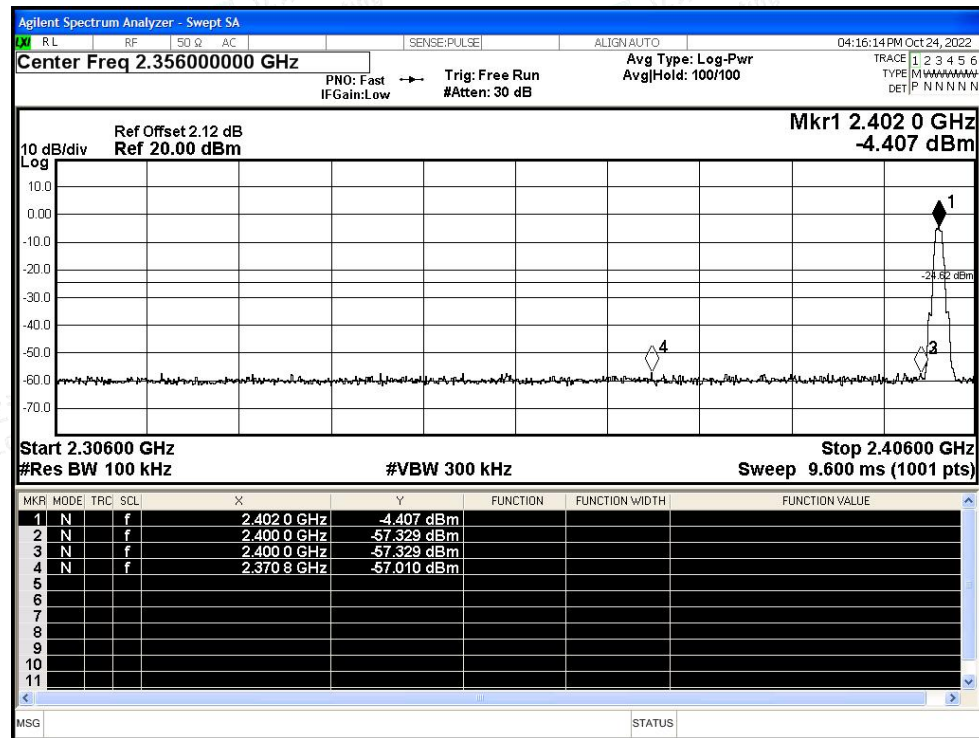


## Test Graphs

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



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

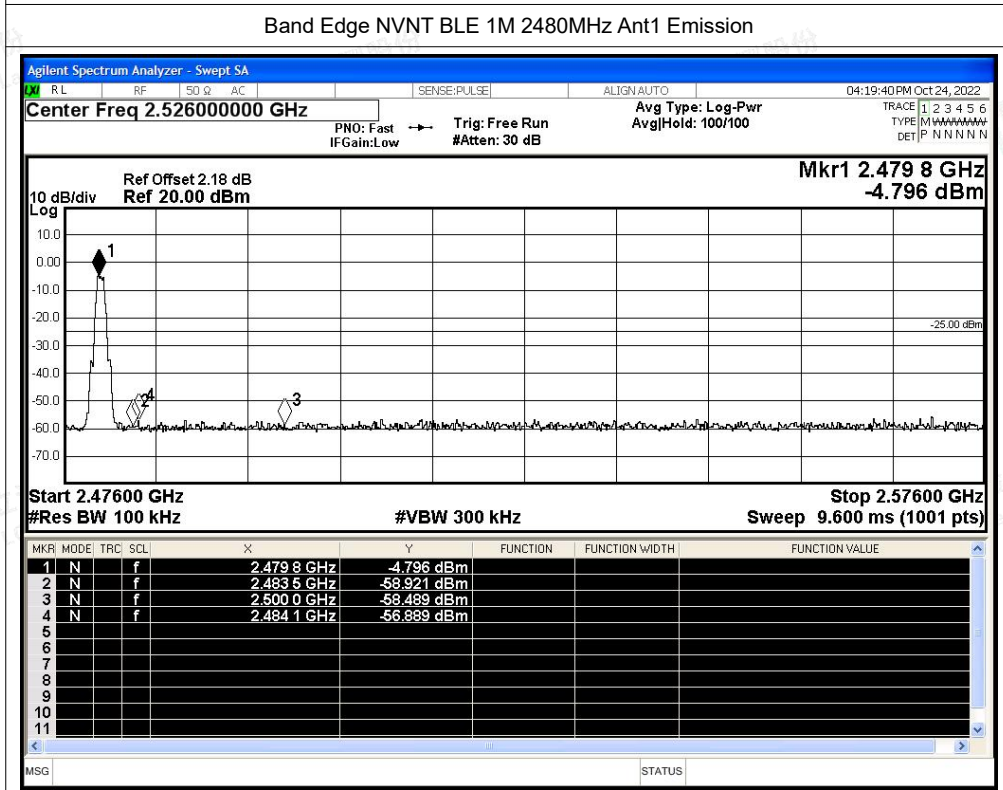
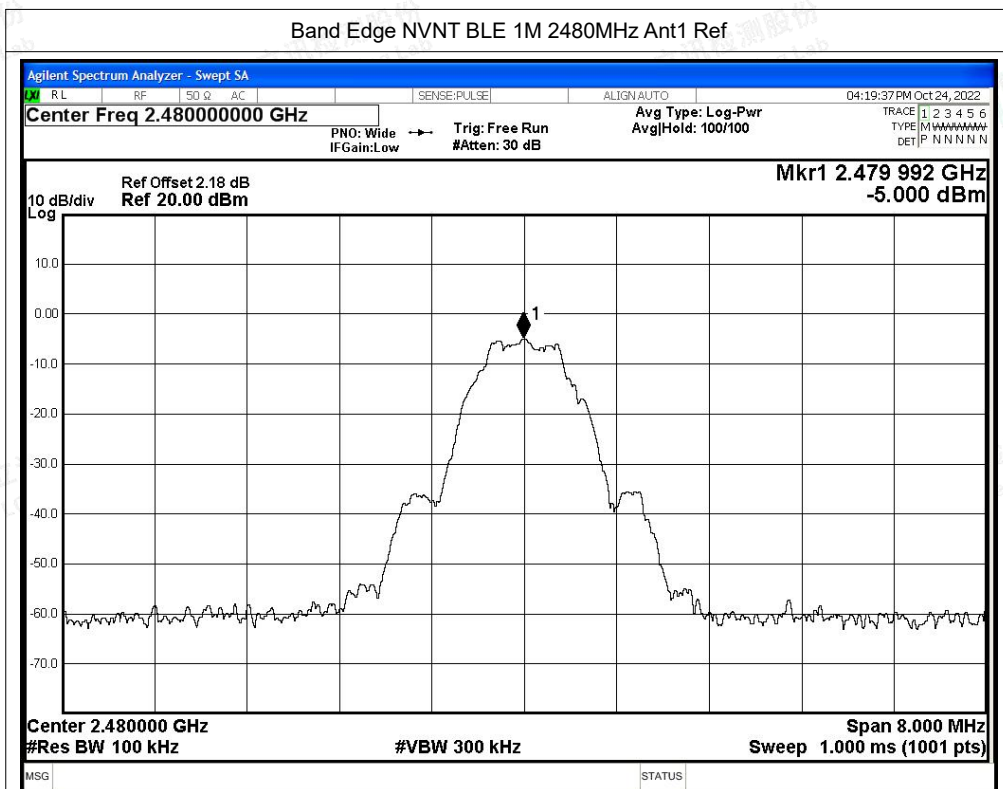


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## A.5 Conducted RF Spurious Emission

| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -51.09          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -52.07          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -48.95          | -20         | Pass    |



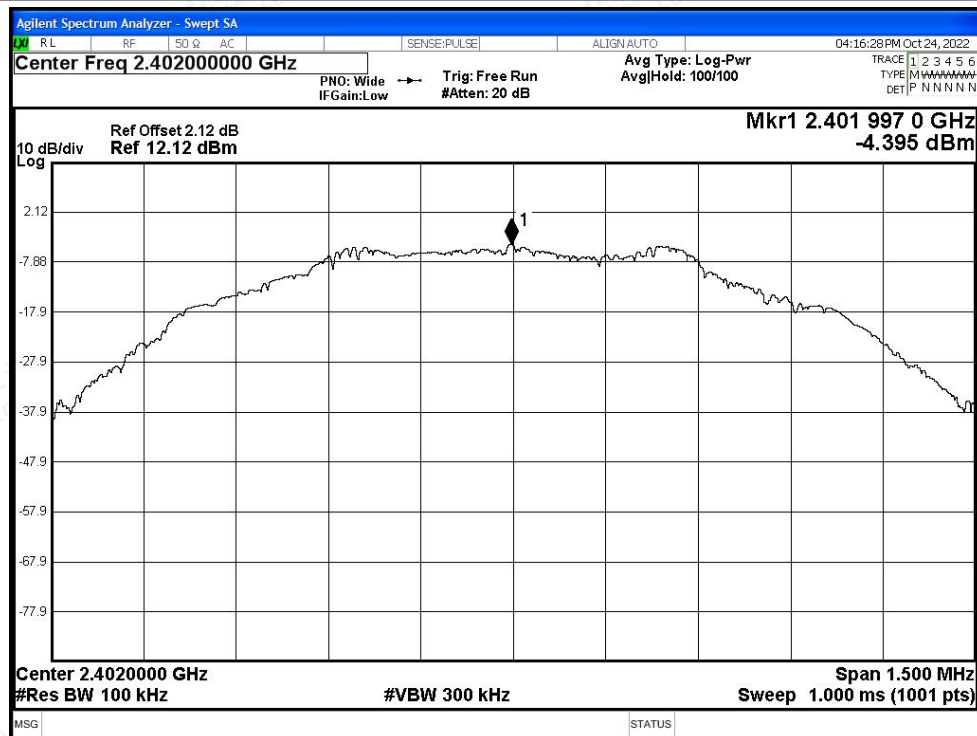
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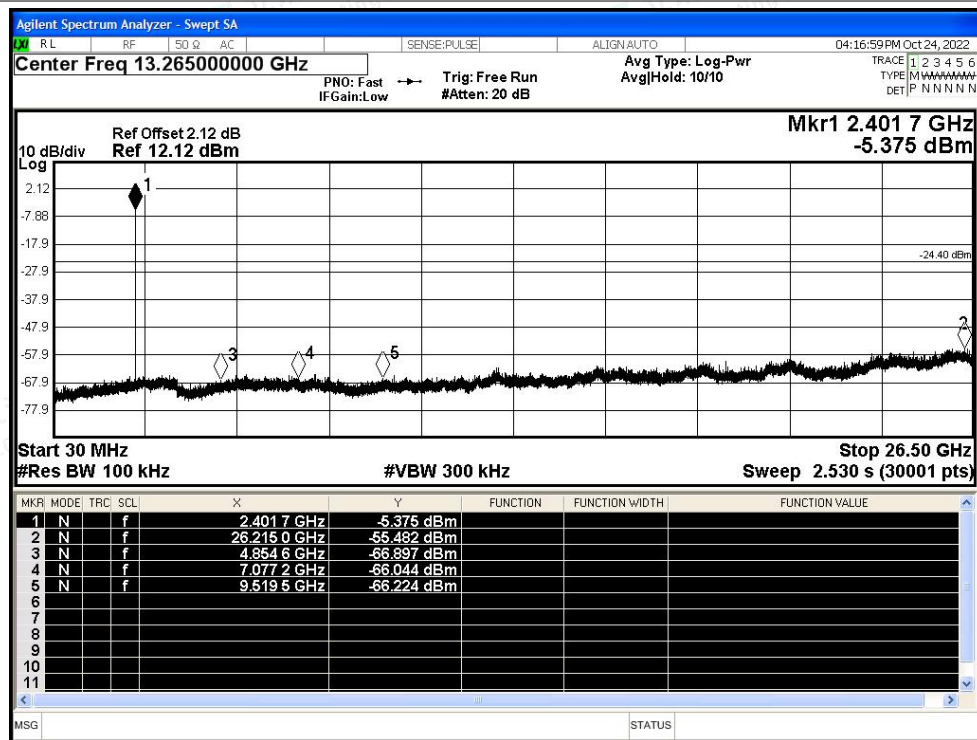


## Test Graphs

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

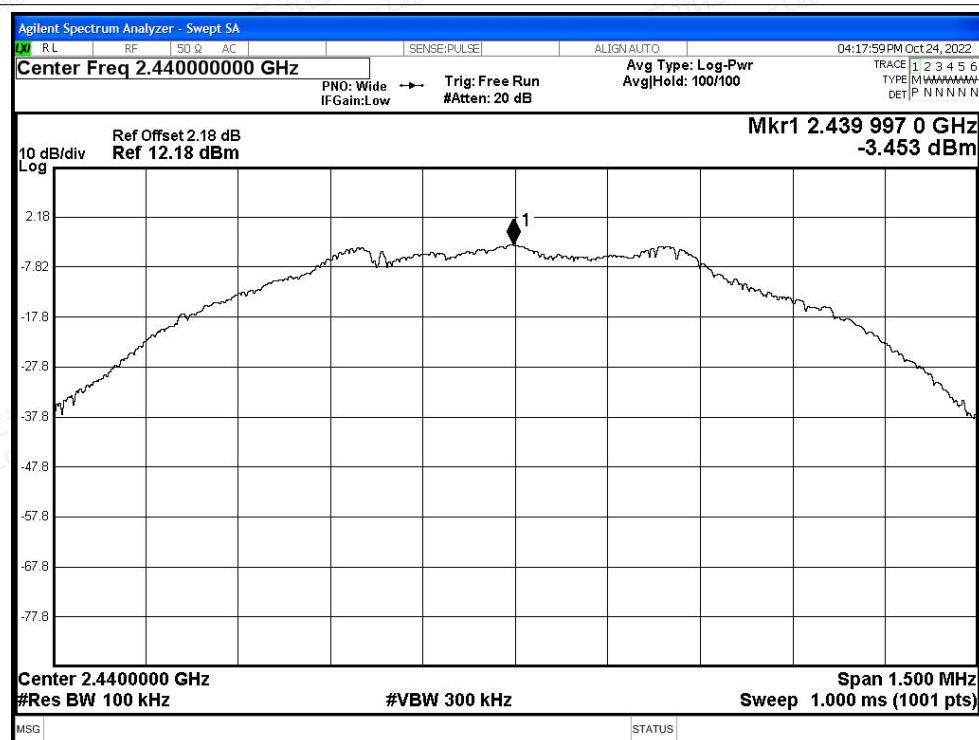


## Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission

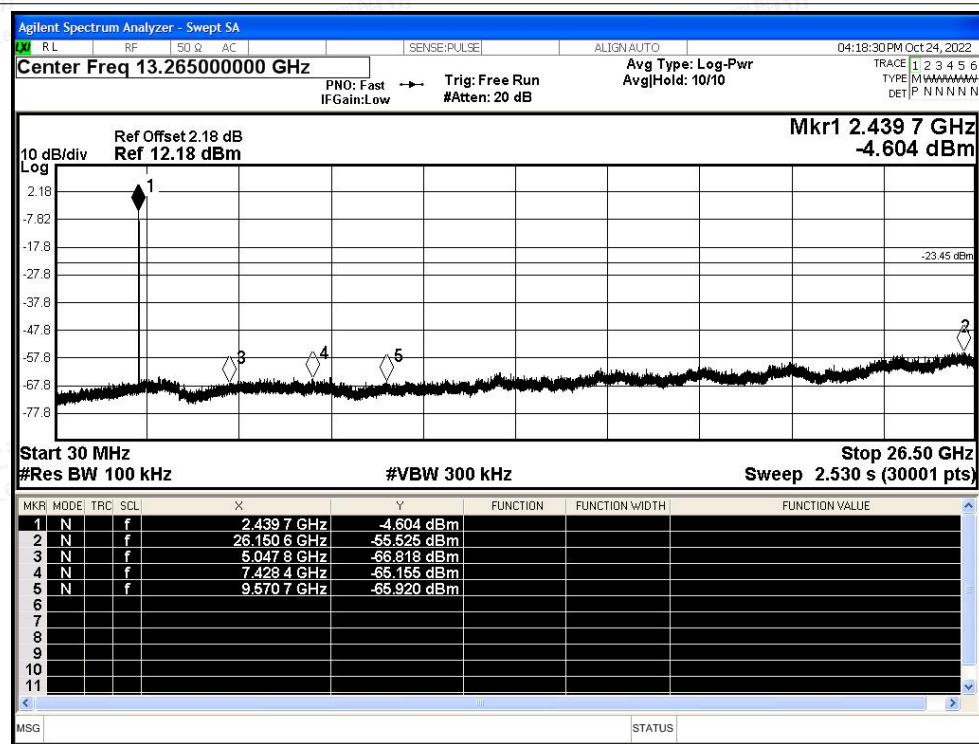




## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



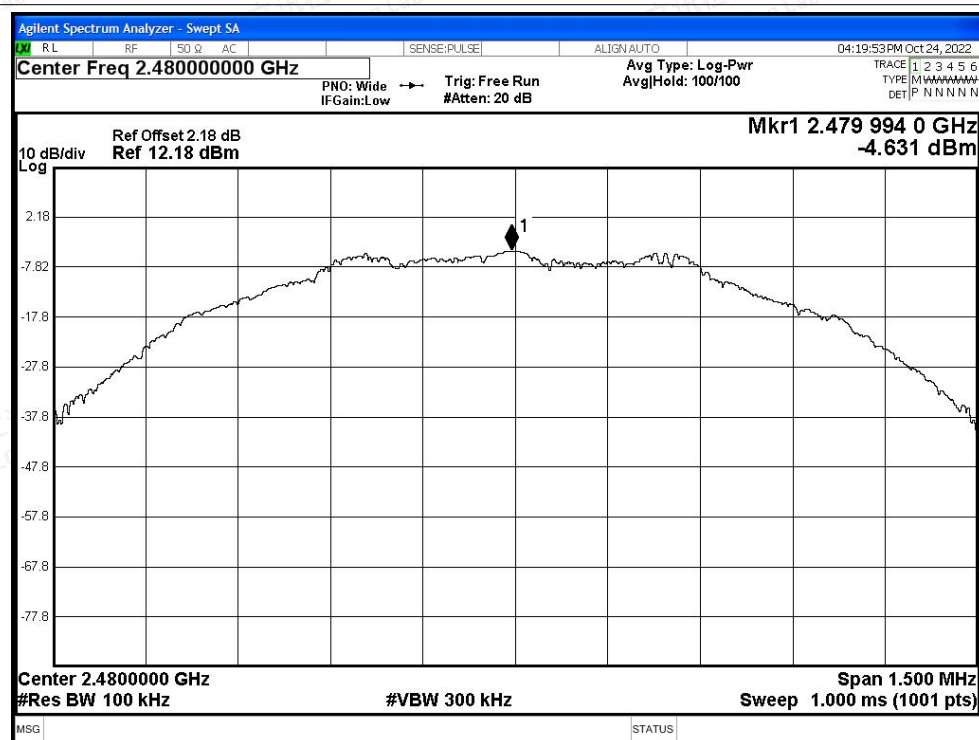
## Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



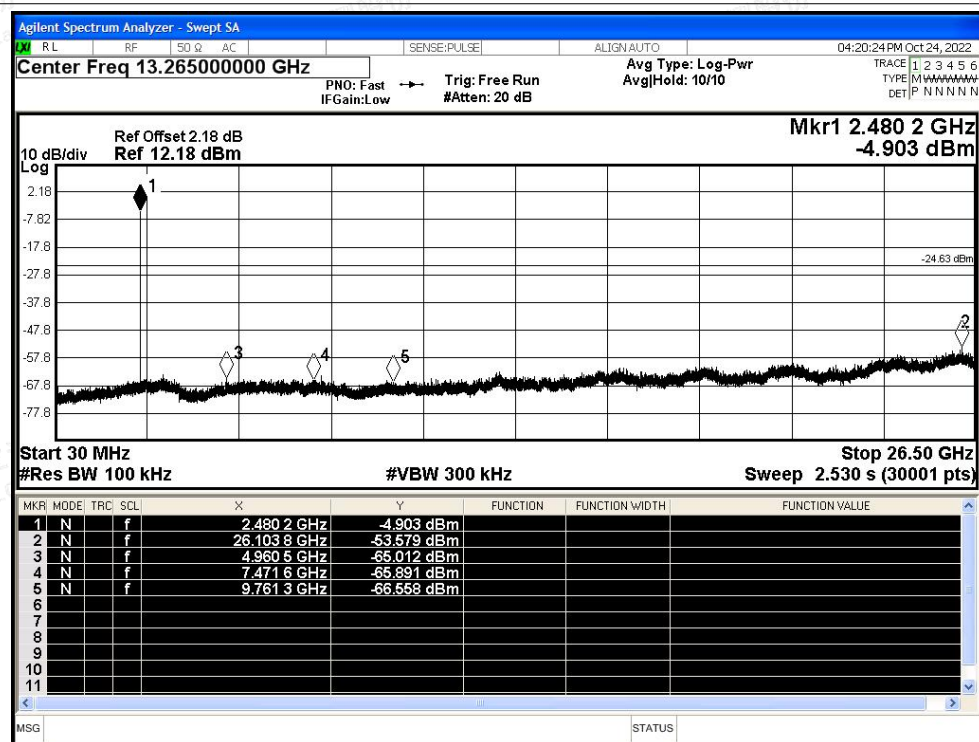




## Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



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





## 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    | 61.36          | 2.12                   | 2.61      |

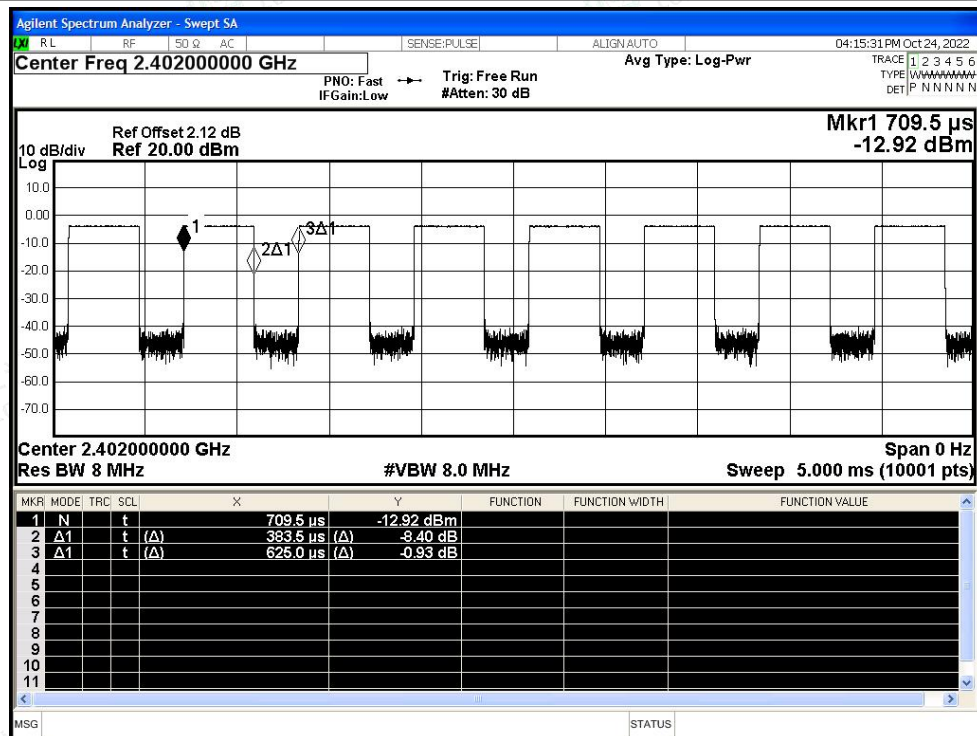


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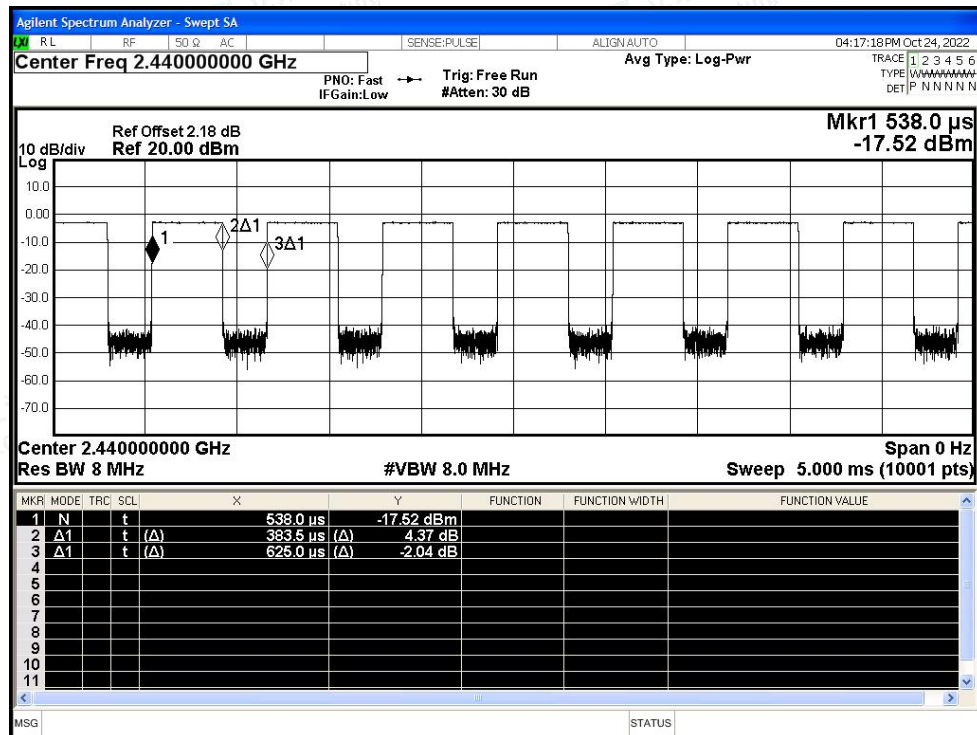


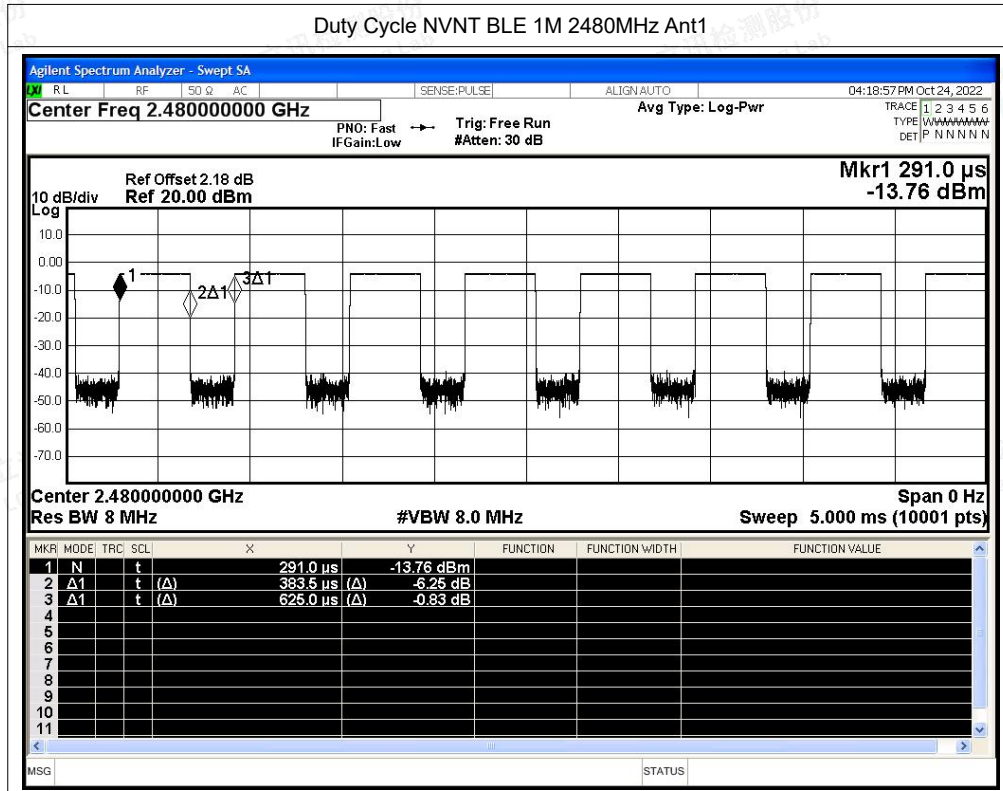
## Test Graphs

## Duty Cycle NVNT BLE 1M 2402MHz Ant1



## Duty Cycle NVNT BLE 1M 2440MHz Ant1







## A.7 Restrict Band

| Condition | Mode   | Frequency<br>(MHz) | Antenna | Spur Freq<br>(MHz) | Power<br>(dBm) | Gain<br>(dBi) | E<br>(dBuV/m) | Detector | Limit<br>(dBuV/m) | Verdict |
|-----------|--------|--------------------|---------|--------------------|----------------|---------------|---------------|----------|-------------------|---------|
| NVNT      | BLE 1M | 2402               | Ant1    | 2310               | -49.66         | 2             | 47.6          | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2310               | -59.6          | 2             | 37.66         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2341.008           | -47.65         | 2             | 49.61         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2372.784           | -58.72         | 2             | 38.54         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2390               | -51.12         | 2             | 46.14         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2402               | Ant1    | 2390               | -59.37         | 2             | 37.89         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2483.5             | -48.32         | 2             | 48.94         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2483.5             | -59.14         | 2             | 38.12         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2491.984           | -45.6          | 2             | 51.66         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2496.064           | -58.52         | 2             | 38.74         | Average  | 54                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2500               | -50.4          | 2             | 46.86         | Peak     | 74                | Pass    |
| NVNT      | BLE 1M | 2480               | Ant1    | 2500               | -58.93         | 2             | 38.33         | Average  | 54                | Pass    |

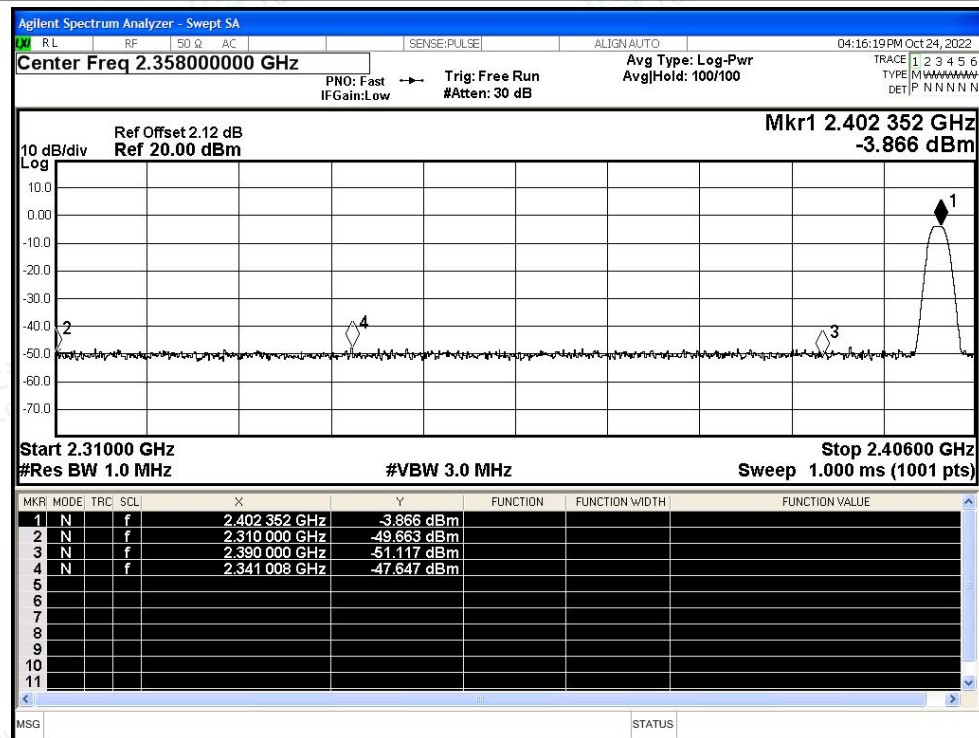


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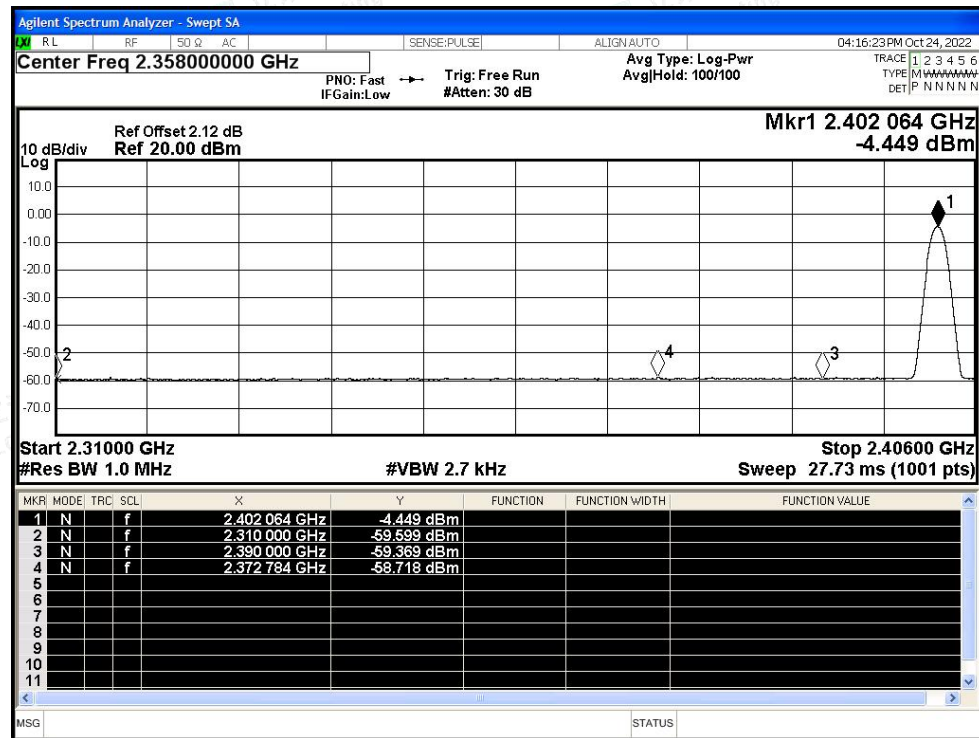


## Test Graphs

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



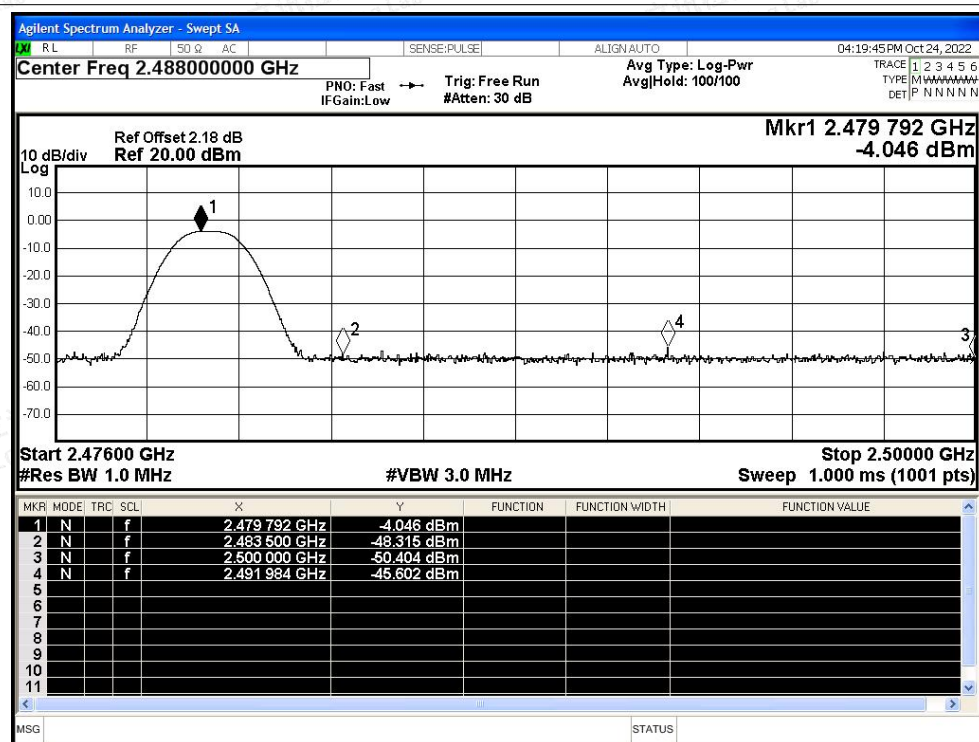
## Restrict Band NVNT BLE 1M 2402MHz Ant1 Average







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



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

