



## Appendix A

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

Product Name: Macy FM RGB+Wifi

Test Model: FM-MAWT-SL

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.7°C    |
| Relative Humidity: | 54.6%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Jerry Chu |
| Supervised by:     | Can Kun   |

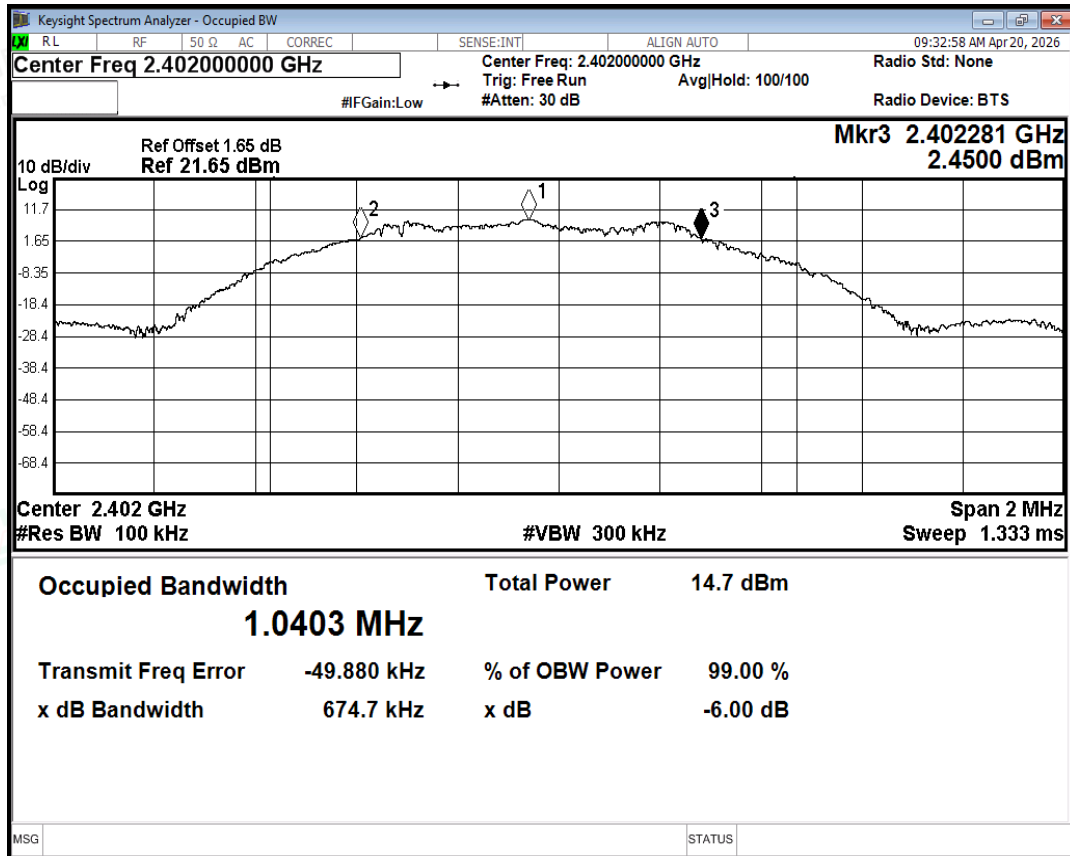




### A.1 -6dB Bandwidth

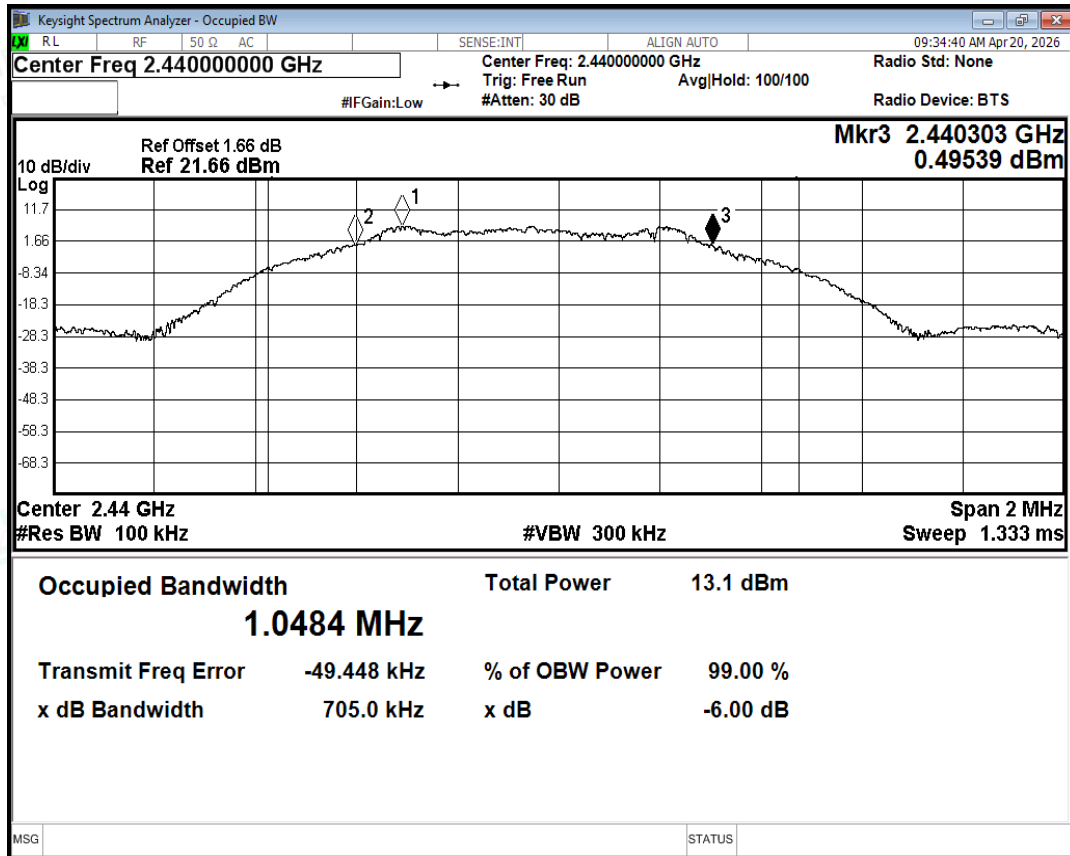
| Condition | Mode   | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 0.6747                | 0.5                         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 0.705                 | 0.5                         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 0.6729                | 0.5                         | Pass    |





-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1





-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

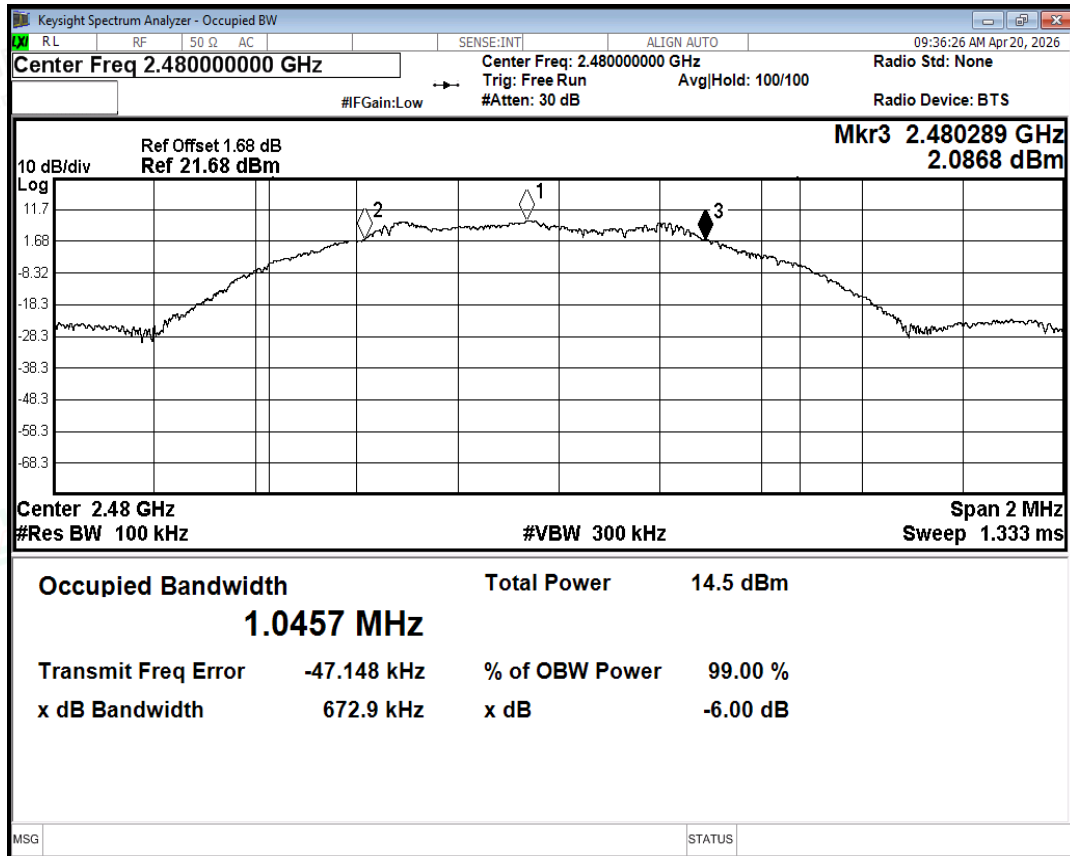


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-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1

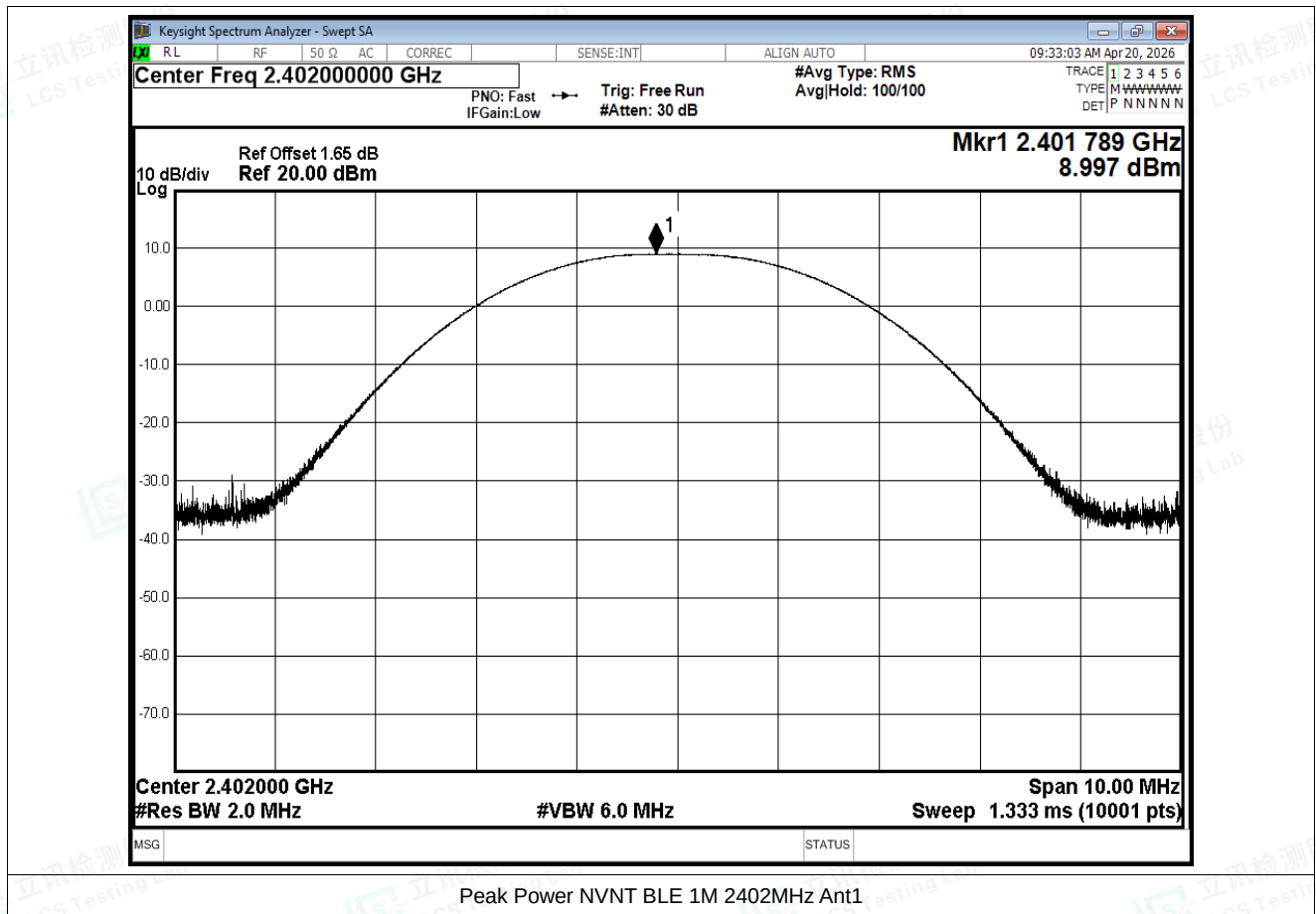


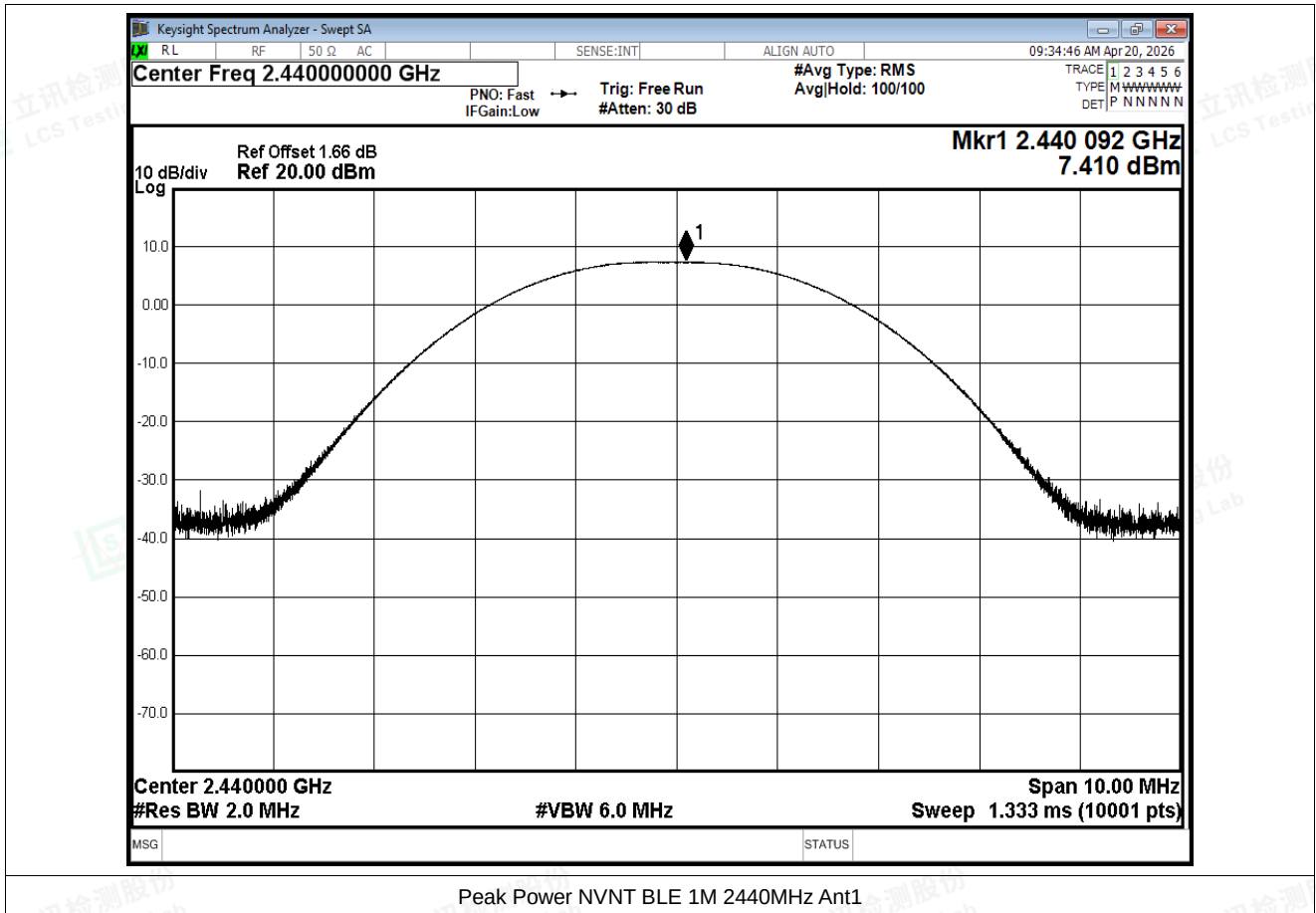


## A.2 Maximum Peak Conducted Output Power

| Condition | Mode   | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit Conducted(dBm) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|----------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | 9                     | 30                   | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | 7.41                  | 30                   | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 8.76                  | 30                   | Pass    |





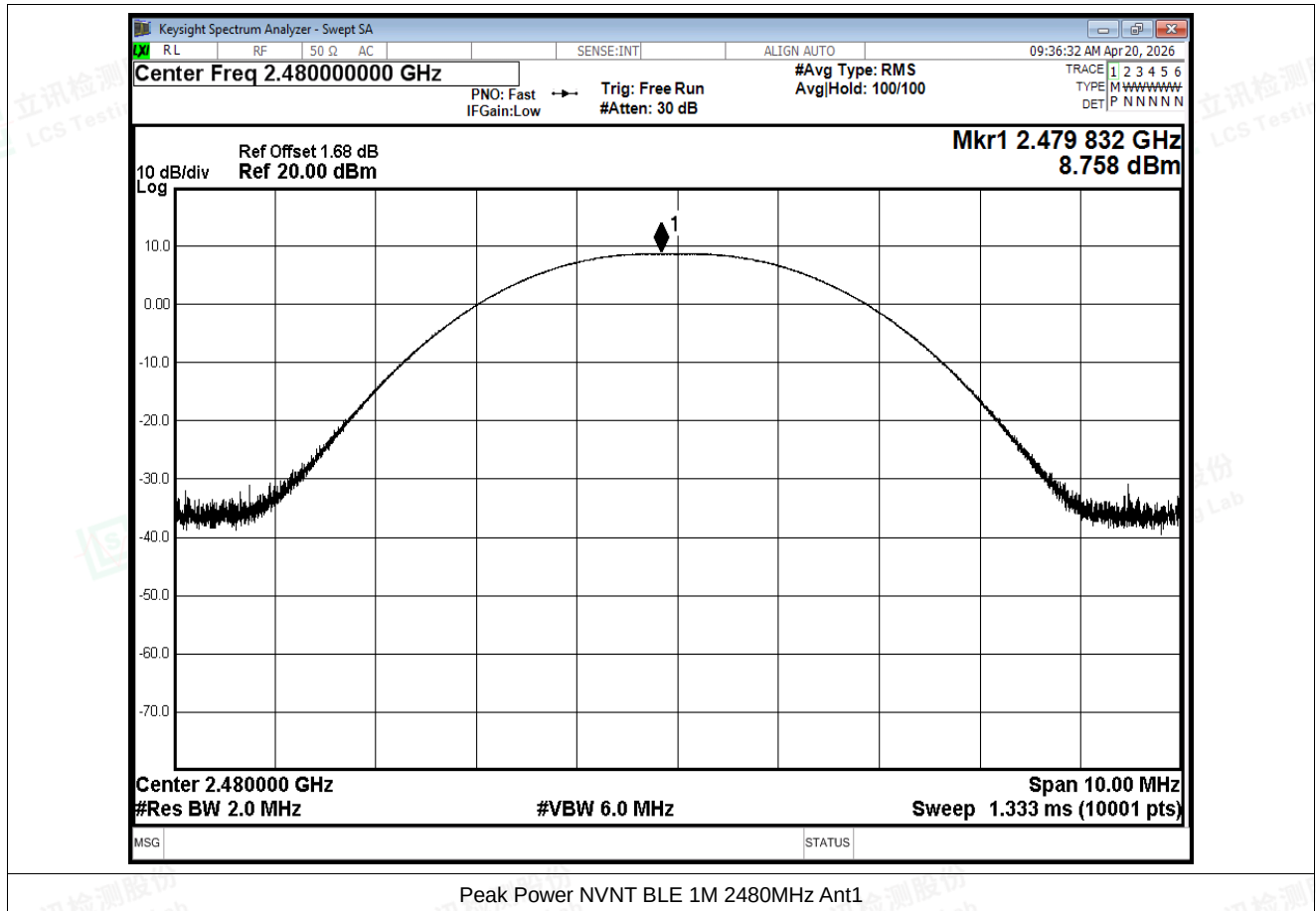


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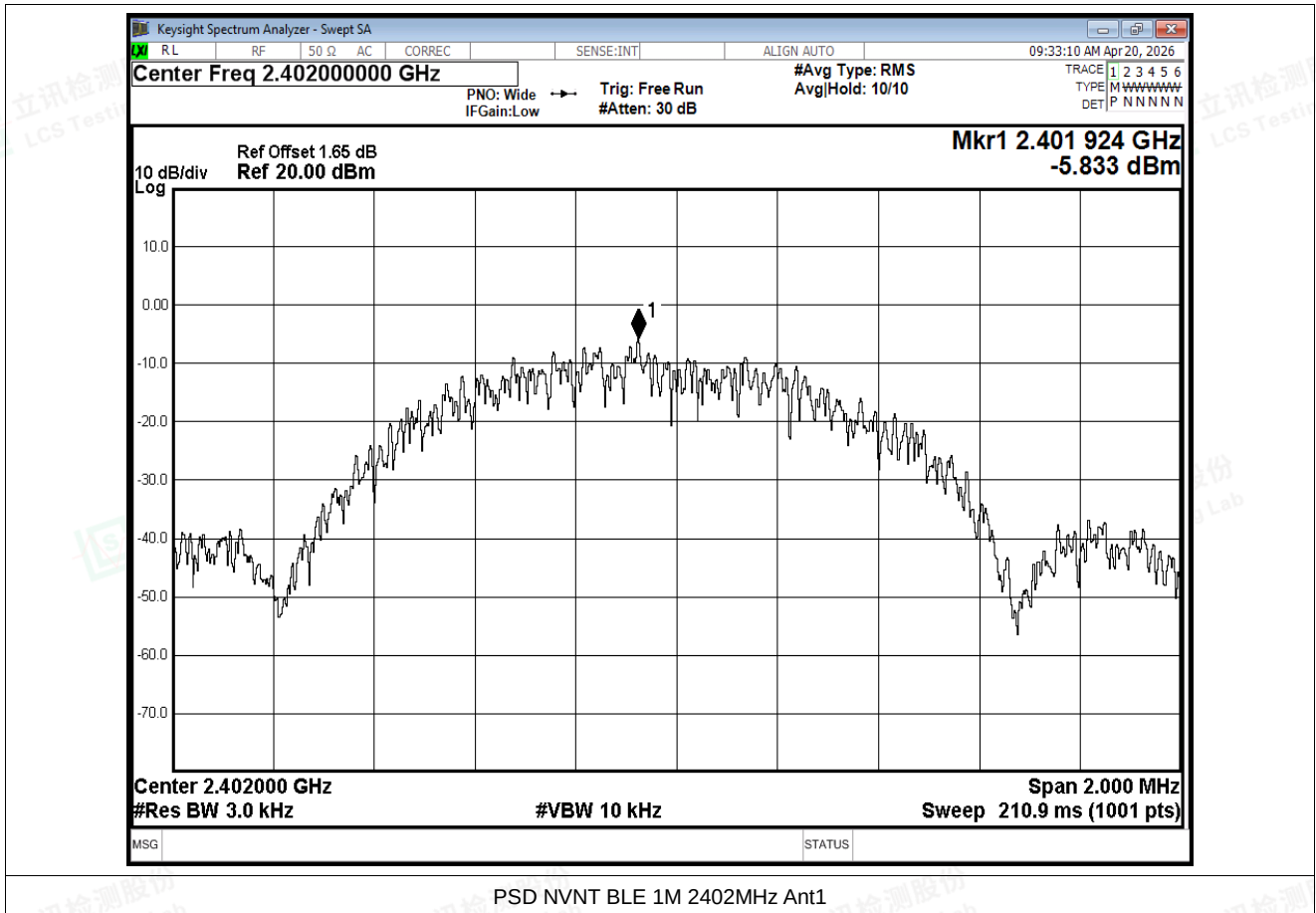


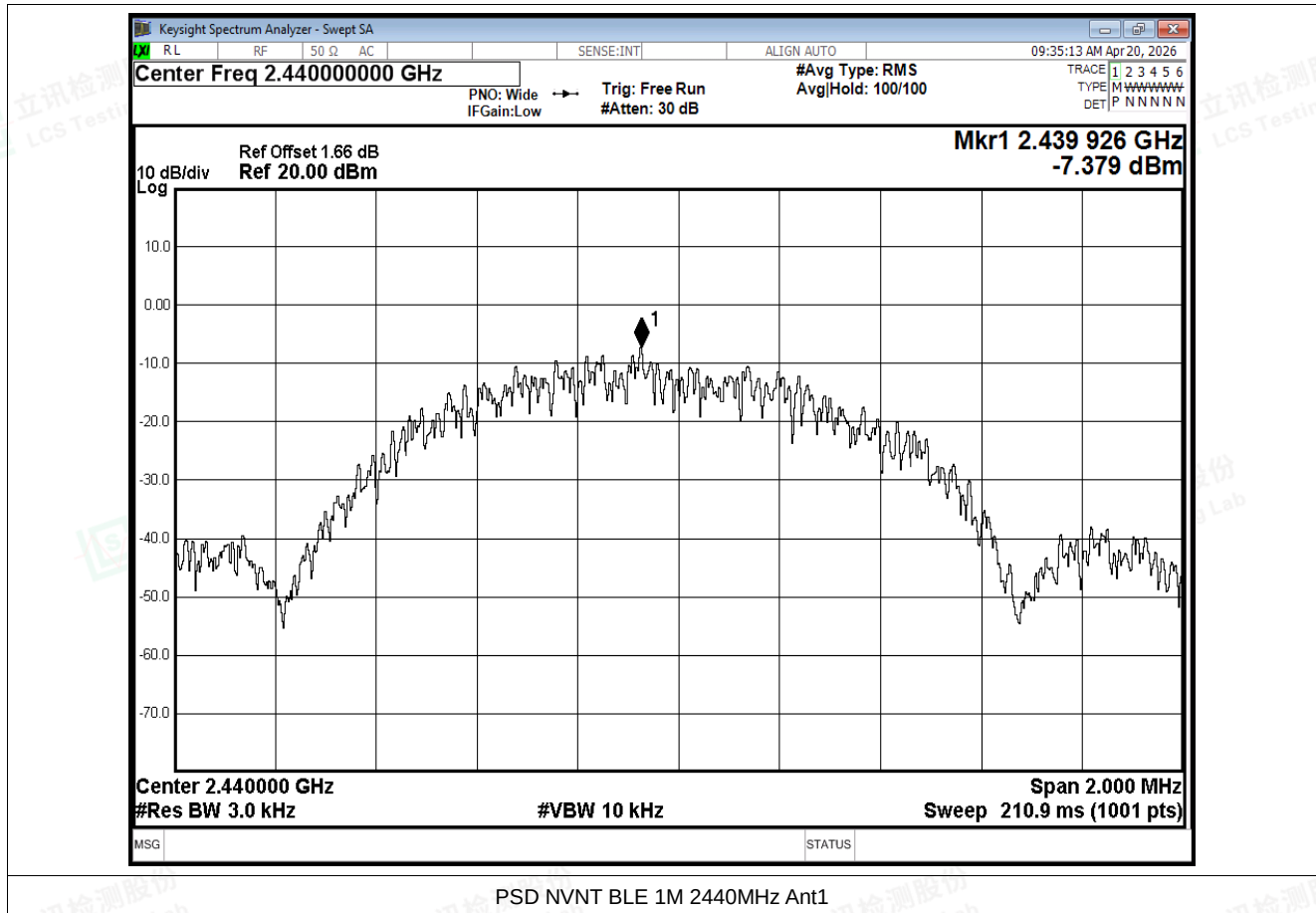


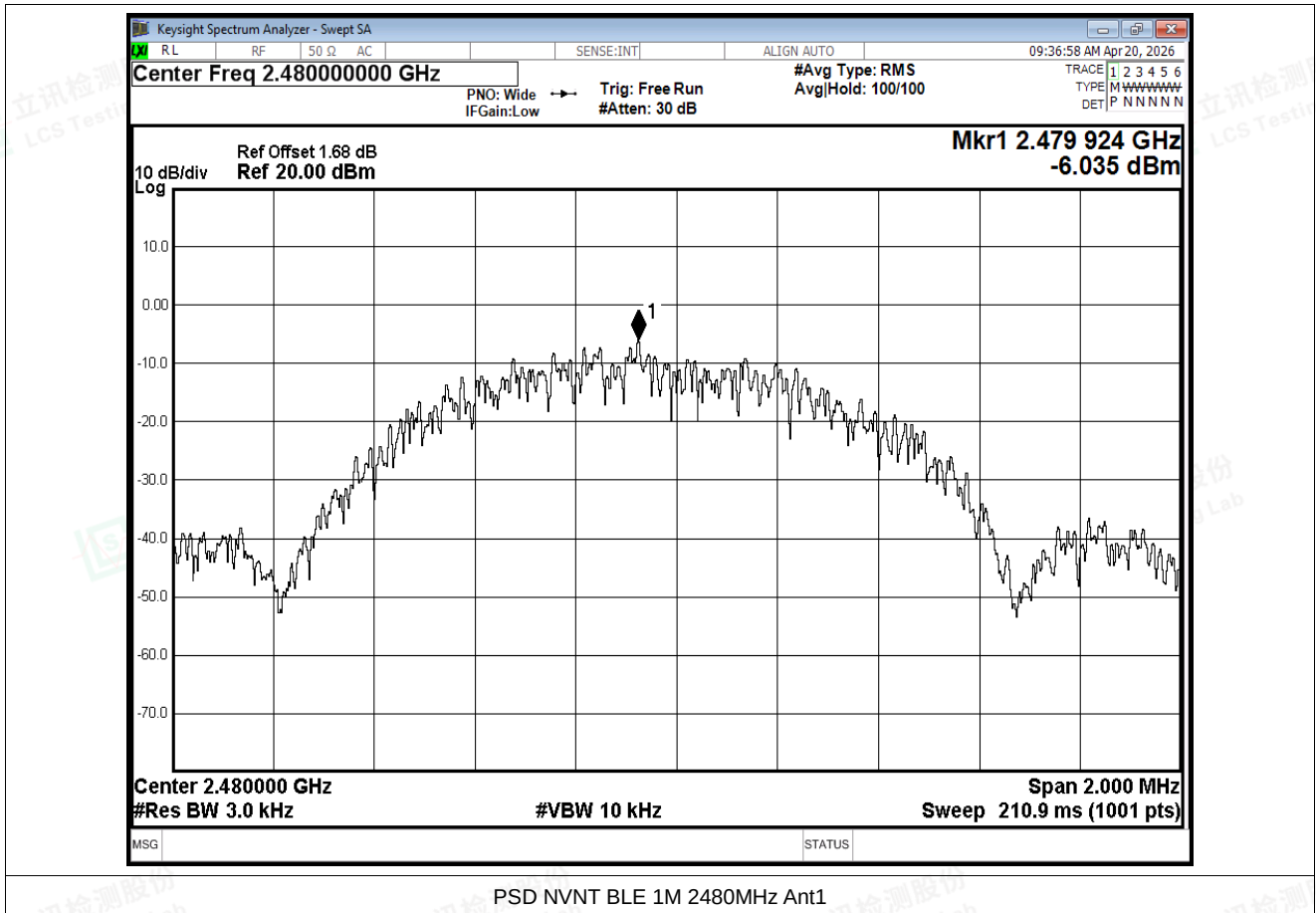
### A.3 Maximum Power Spectral Density Level

| Condition | Mode   | Frequency (MHz) | Antenna | Conducted PSD<br>(dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------------|------------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -5.83                       | 8                | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -7.38                       | 8                | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -6.04                       | 8                | Pass    |







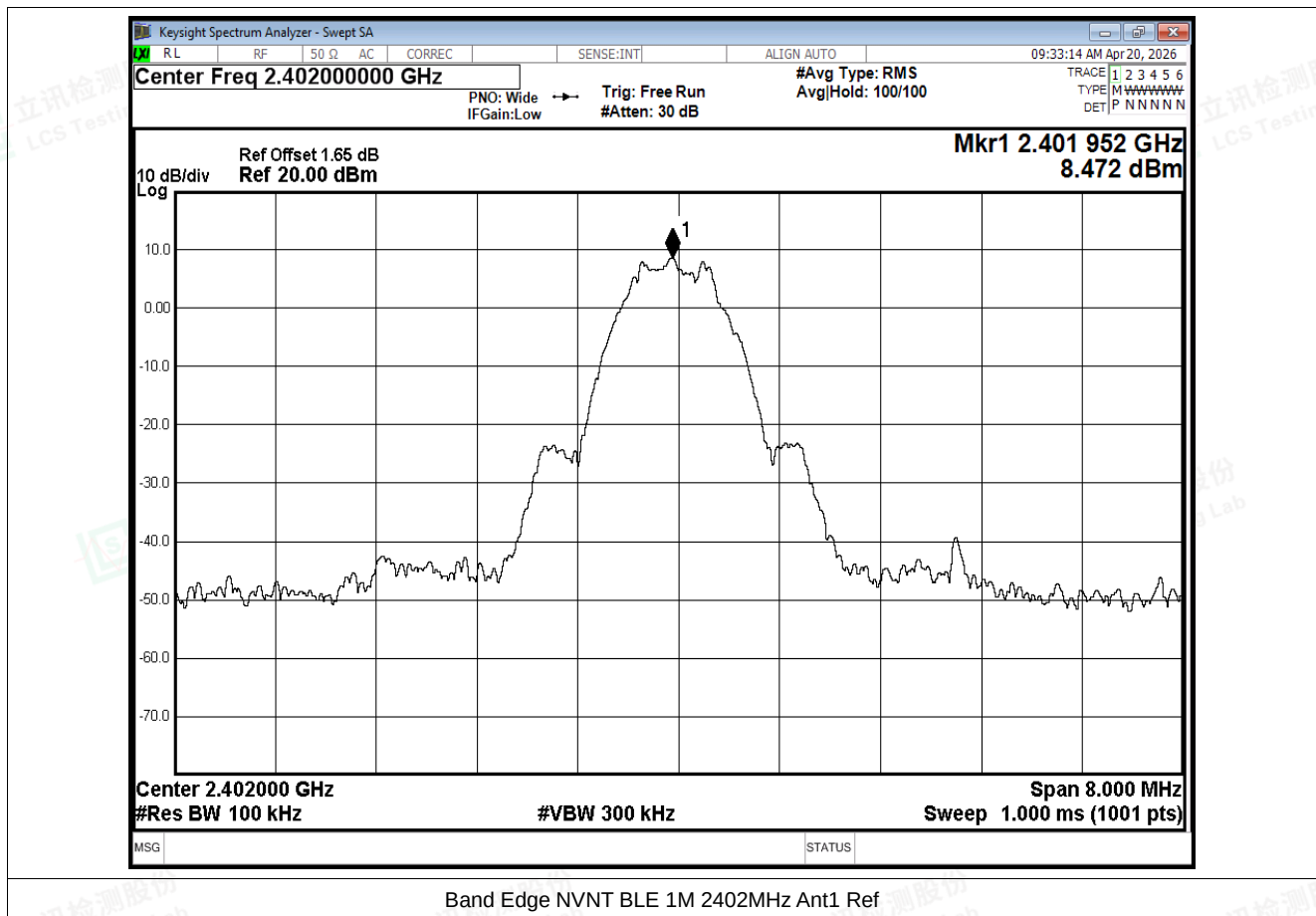


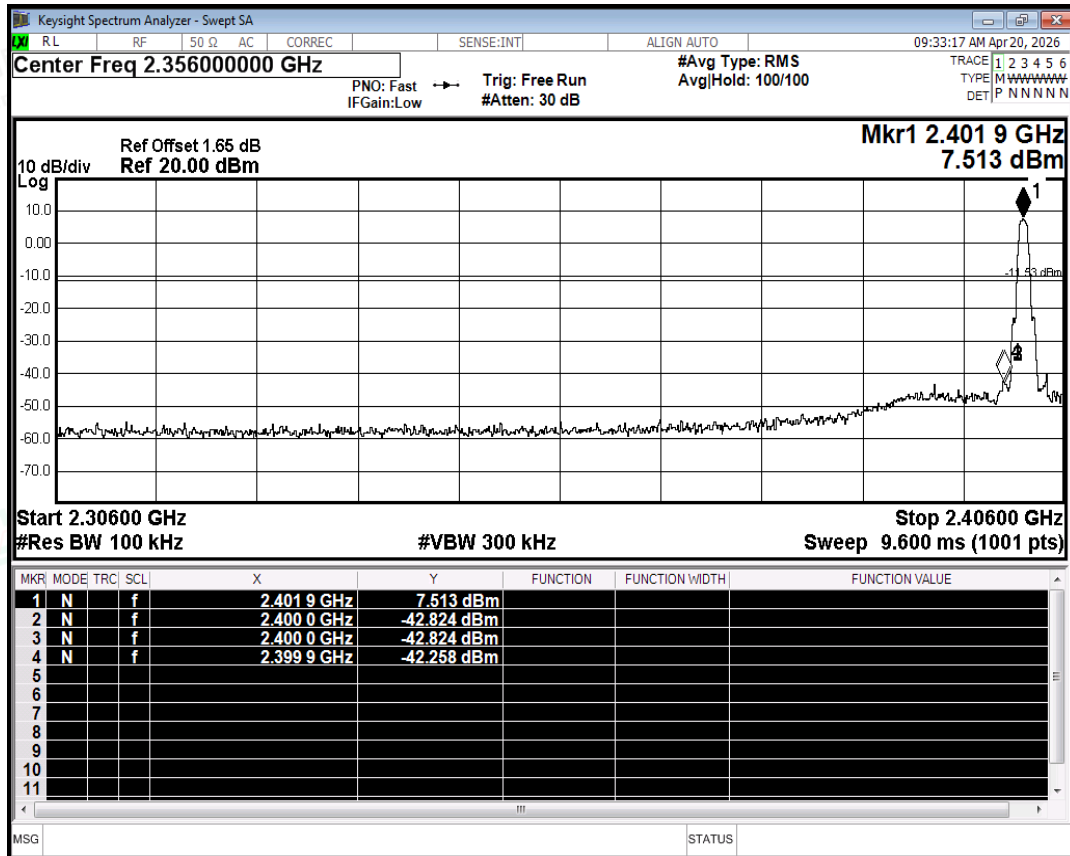


### A.4 Band Edge

| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -50.72          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -54.07          | -20         | Pass    |

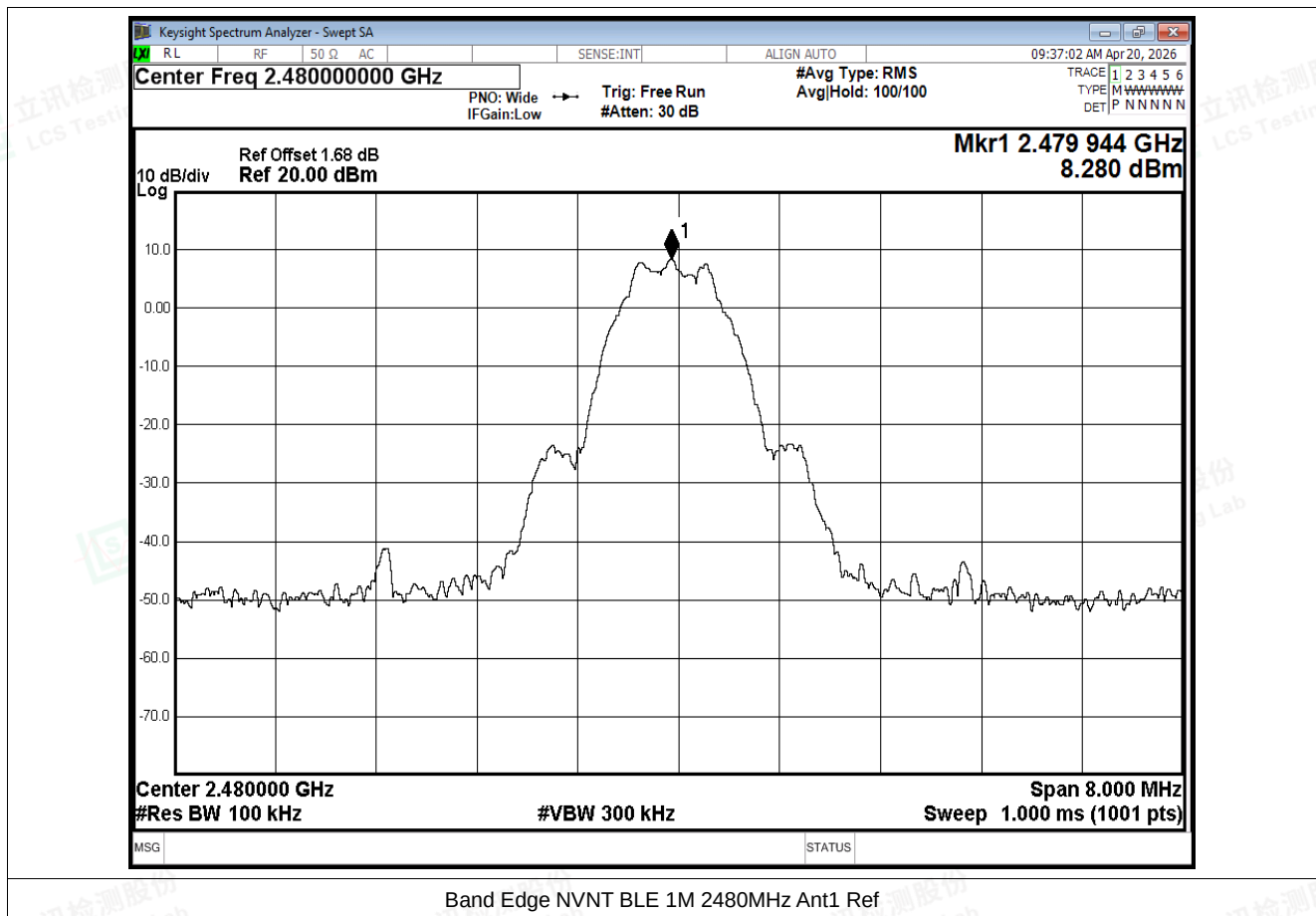


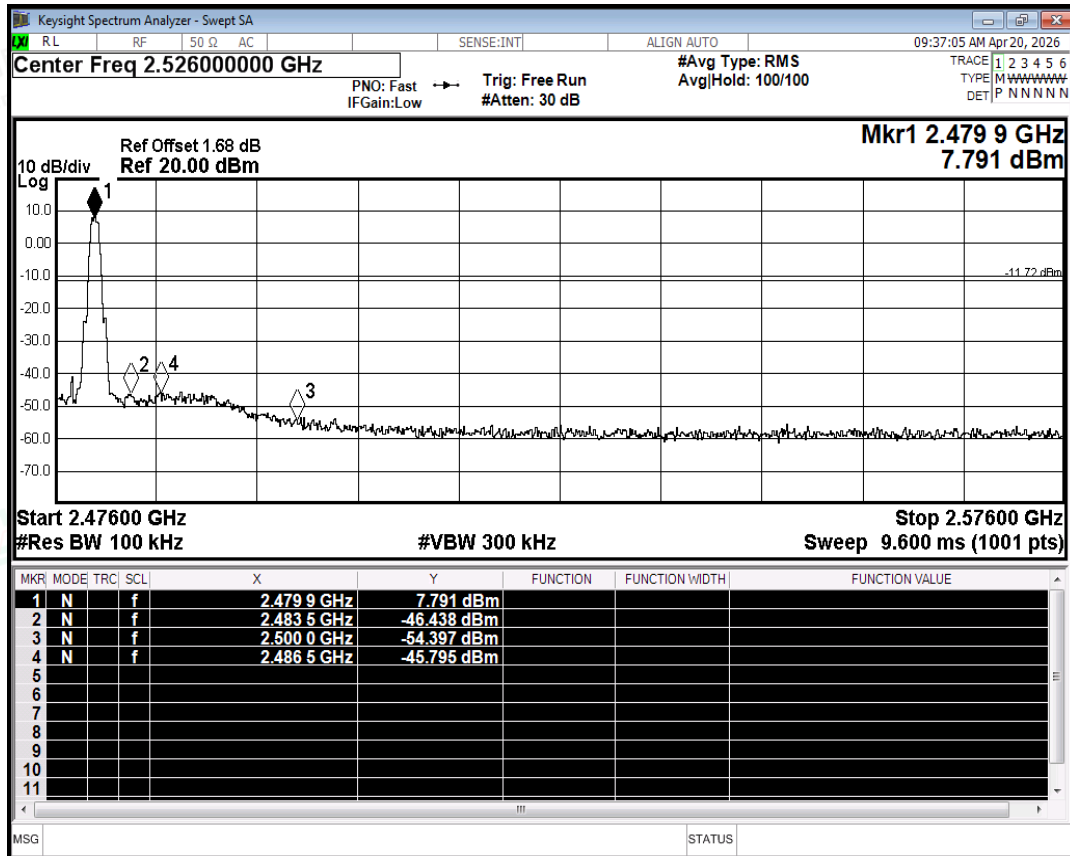




Band Edge NVNT BLE 1M 2402MHz Ant1 Emission







Band Edge NVNT BLE 1M 2480MHz Ant1 Emission

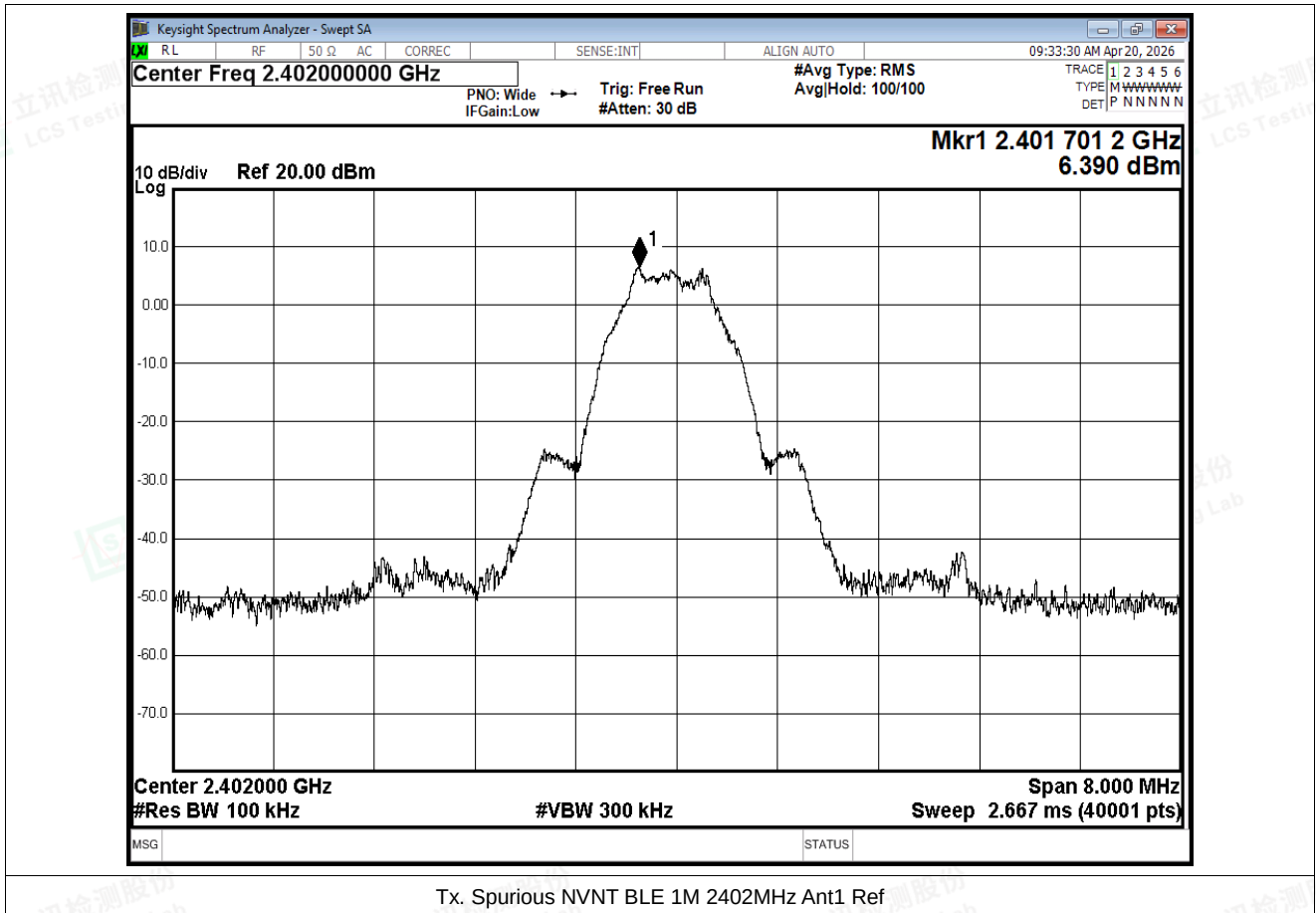


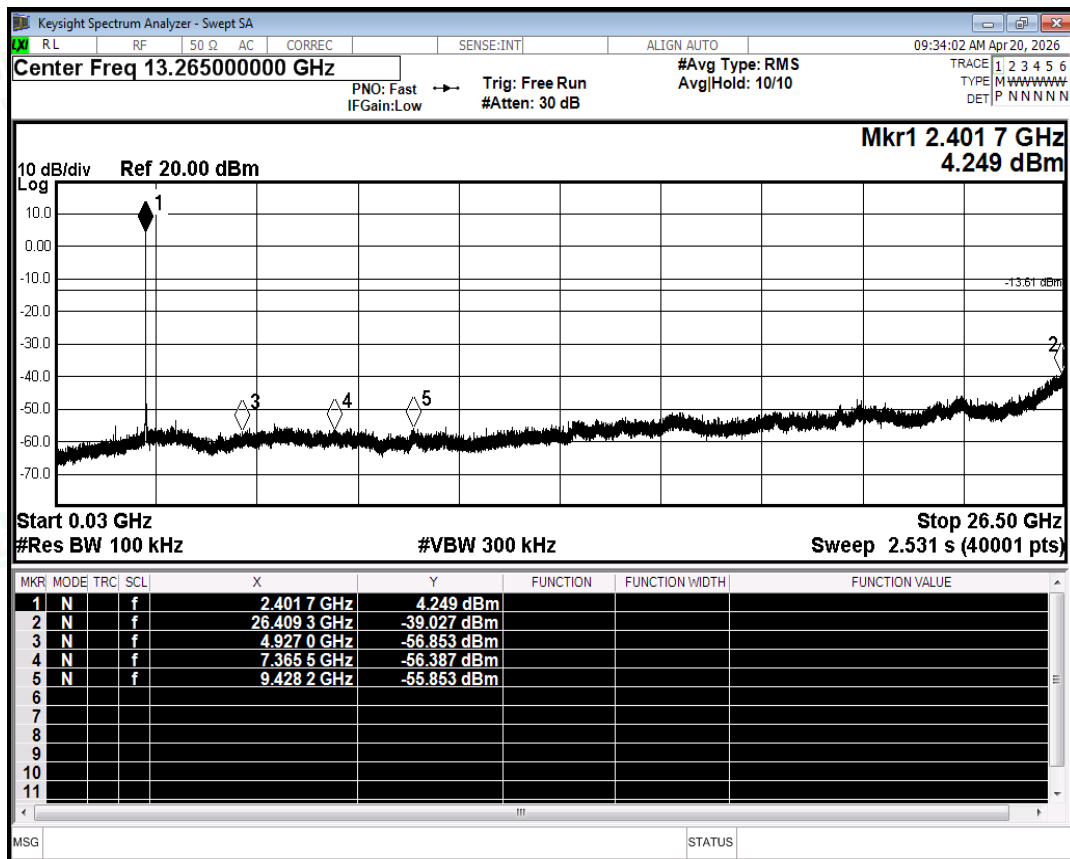


### A.5 Conducted RF Spurious Emission

| Condition | Mode   | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE 1M | 2402            | Ant1    | -45.41          | -20         | Pass    |
| NVNT      | BLE 1M | 2440            | Ant1    | -45.23          | -20         | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | -46.32          | -20         | Pass    |

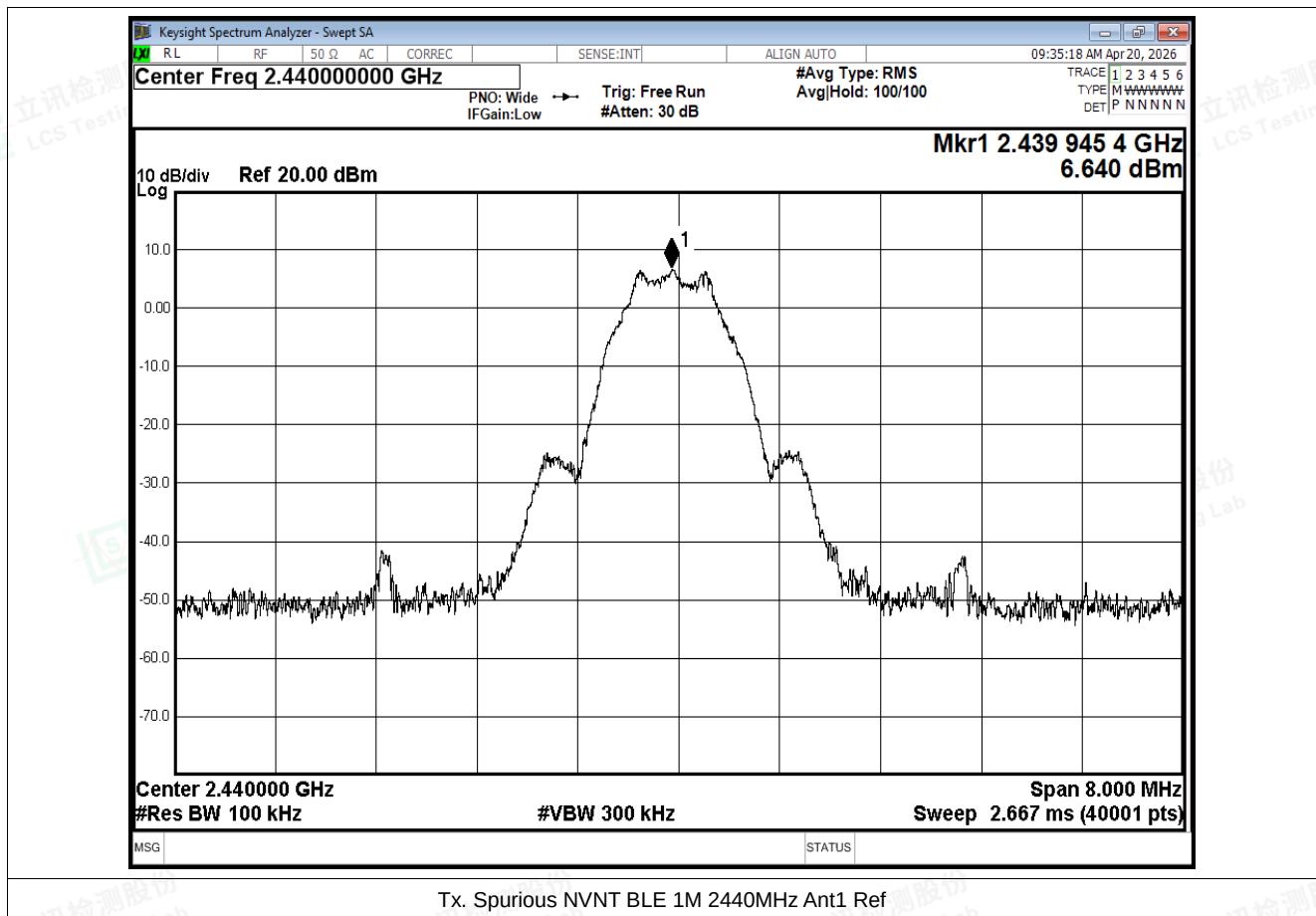


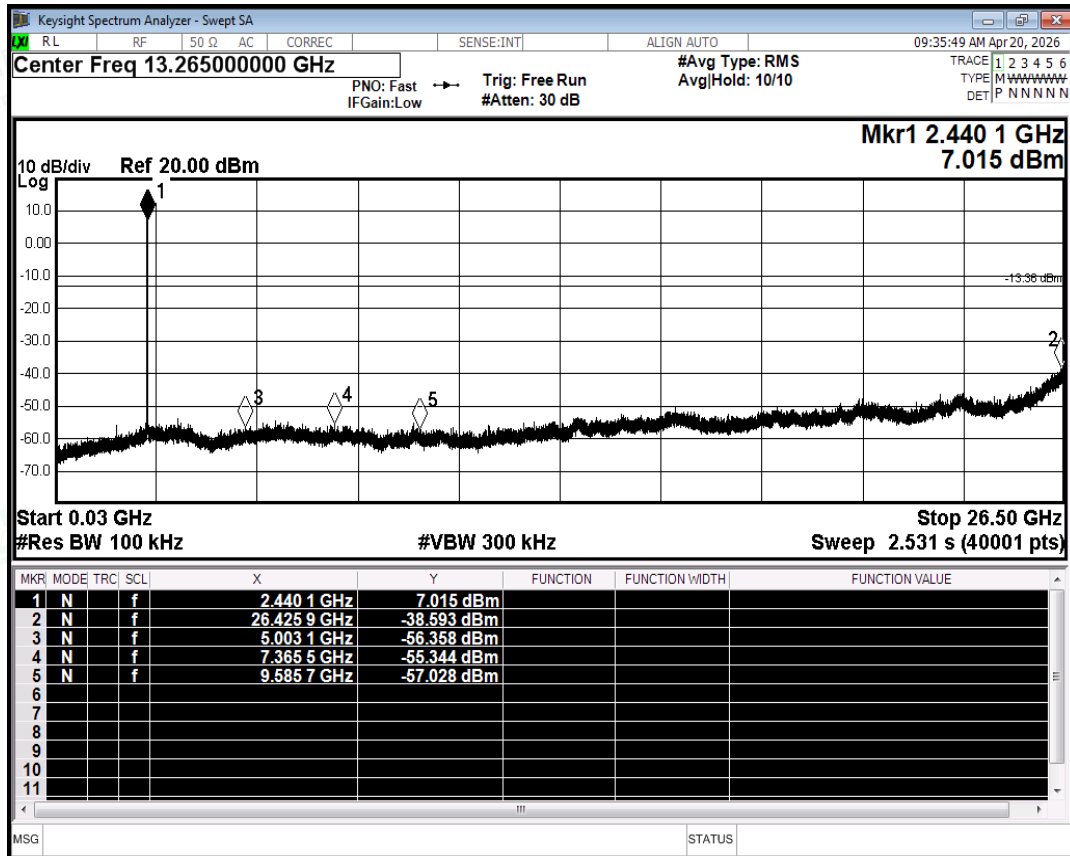




Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission

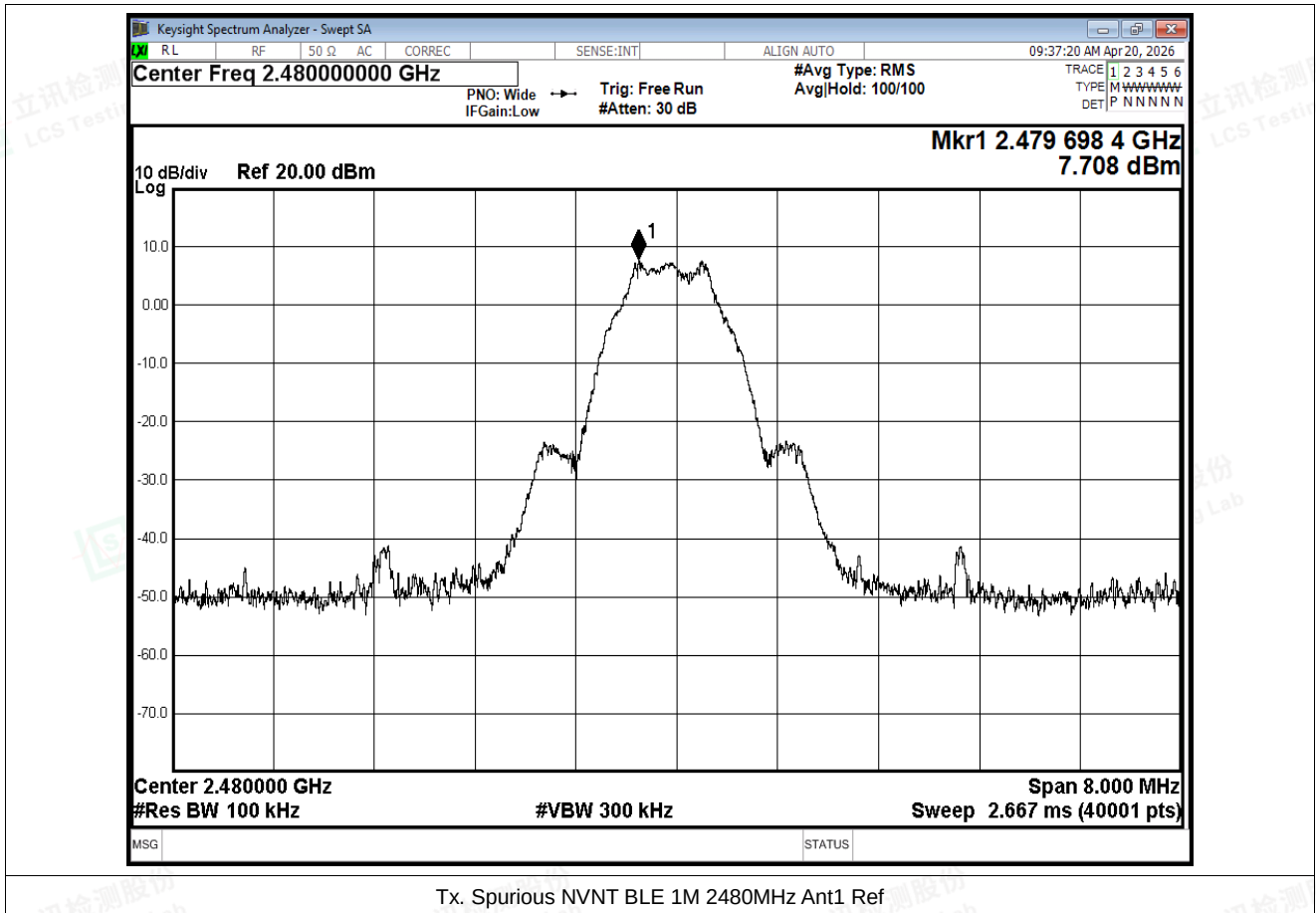


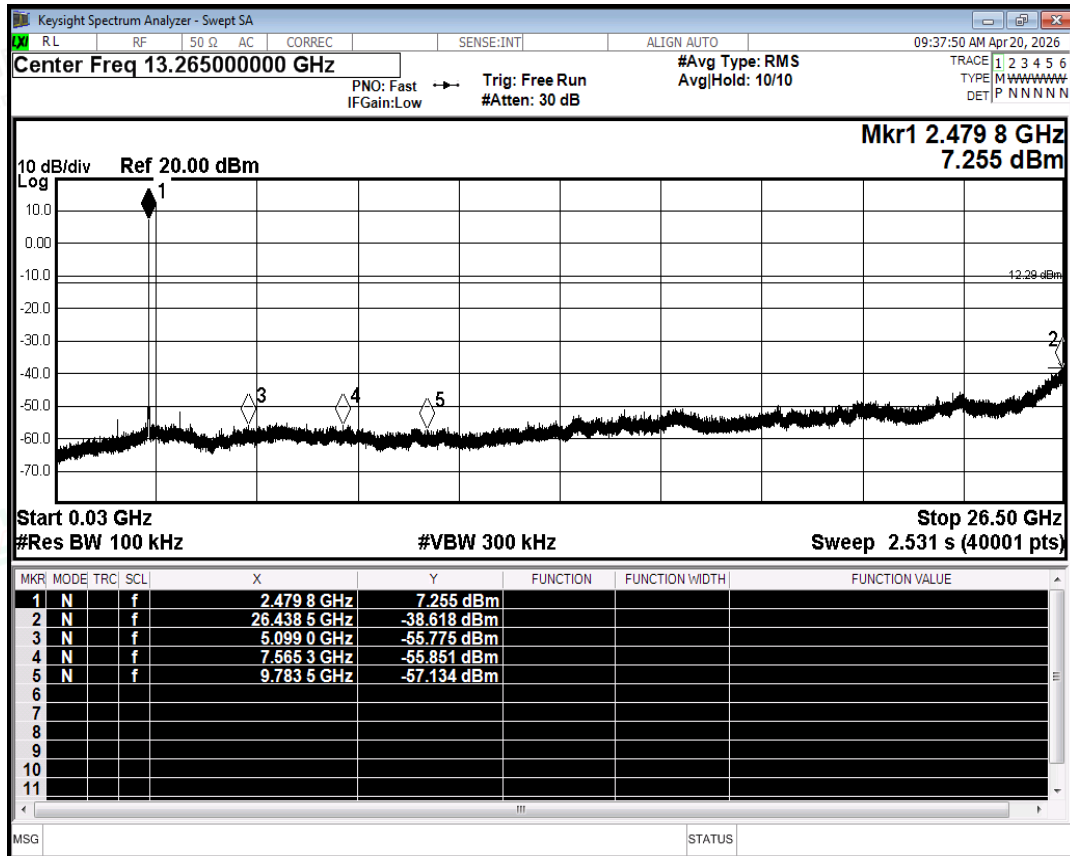




Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission







Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission

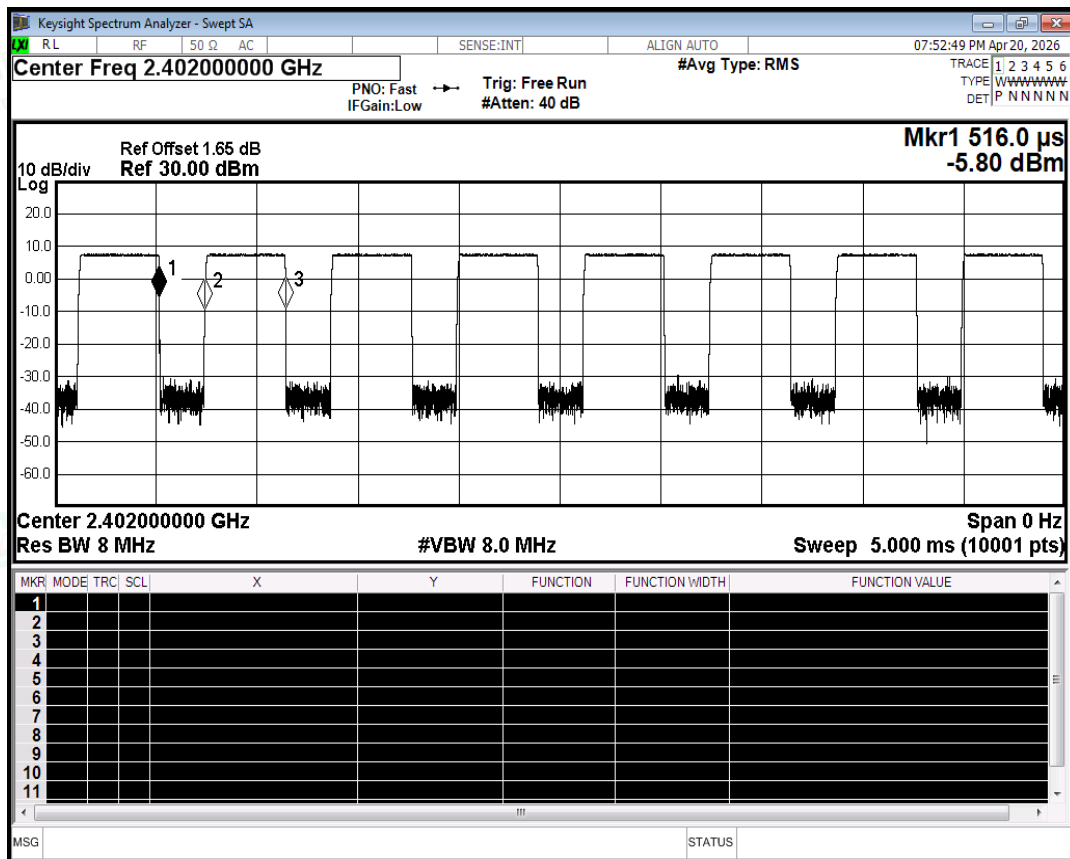




## A.6 Duty Cycle

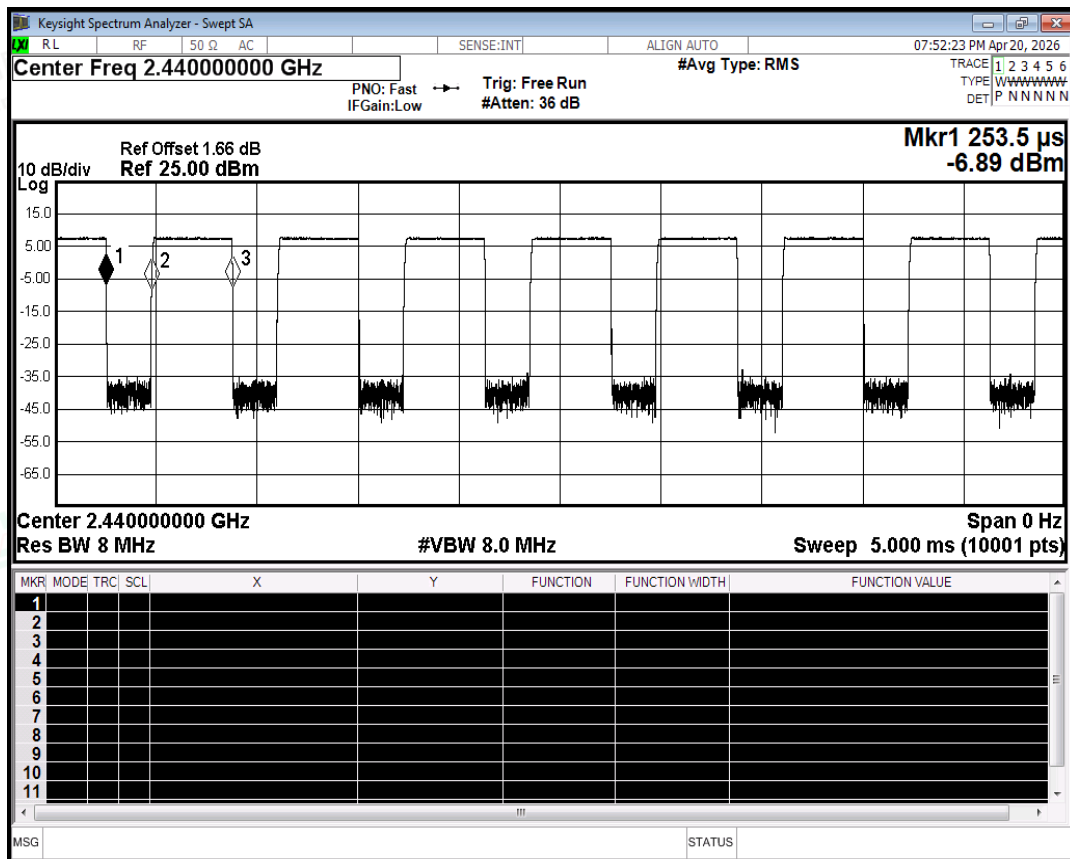
| Condition | Mode   | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | BLE 1M | 2402            | Ant1    | 64.19          | 1.93                   | 2.49      |
| NVNT      | BLE 1M | 2440            | Ant1    | 64.32          | 1.92                   | 2.49      |
| NVNT      | BLE 1M | 2480            | Ant1    | 64.32          | 1.92                   | 2.49      |





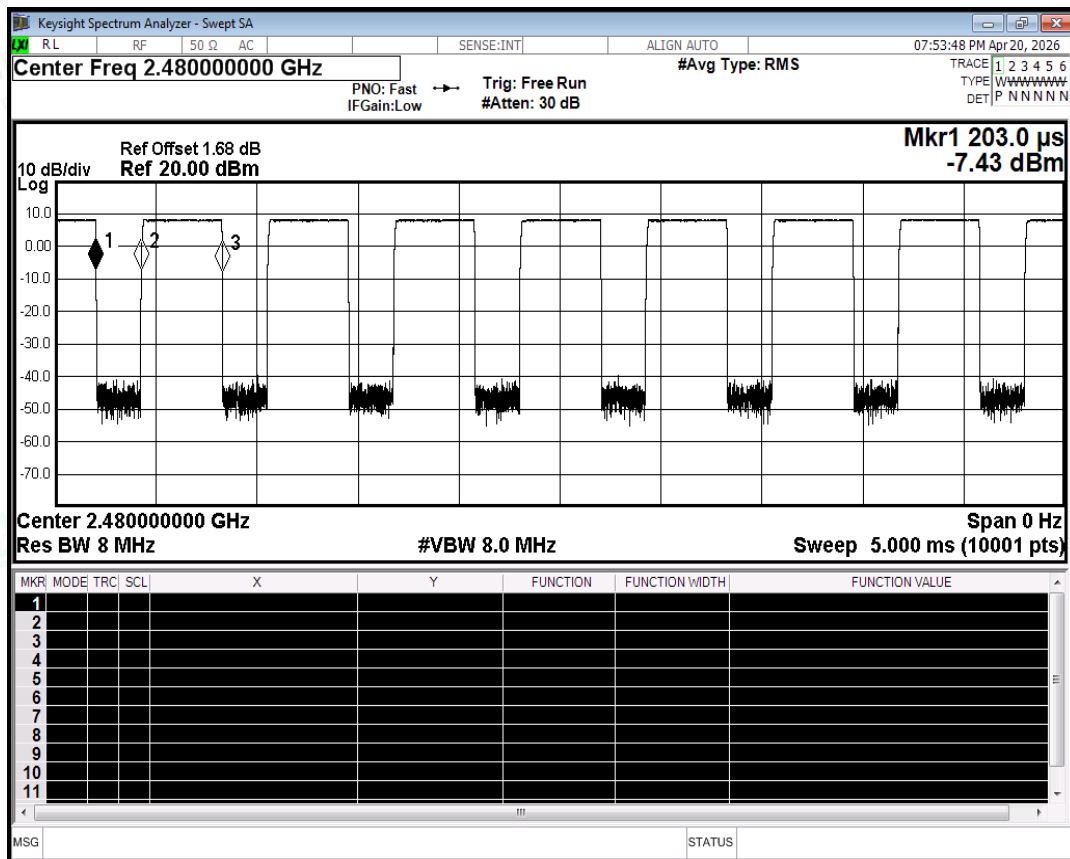
Duty Cycle NVNT BLE 1M 2402MHz Ant1





Duty Cycle NVNT BLE 1M 2440MHz Ant1





Duty Cycle NVNT BLE 1M 2480MHz Ant1





## A.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            | -50.12      | 2          | 47.14      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2310            | -56.42      | 2          | 40.84      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2388.912        | -39.9       | 2          | 57.36      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2389.968        | -46.77      | 2          | 50.49      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -39.15      | 2          | 58.11      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2402            | Ant1    | 2390            | -46.48      | 2          | 50.78      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -38.49      | 2          | 58.77      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2483.5          | -44.4       | 2          | 52.86      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2485.48         | -35.77      | 2          | 61.49      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2487.64         | -43.65      | 2          | 53.61      | Average  | 54             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -46.05      | 2          | 51.21      | Peak     | 74             | Pass    |
| NVNT      | BLE 1M | 2480            | Ant1    | 2500            | -52.3       | 2          | 44.96      | Average  | 54             | Pass    |

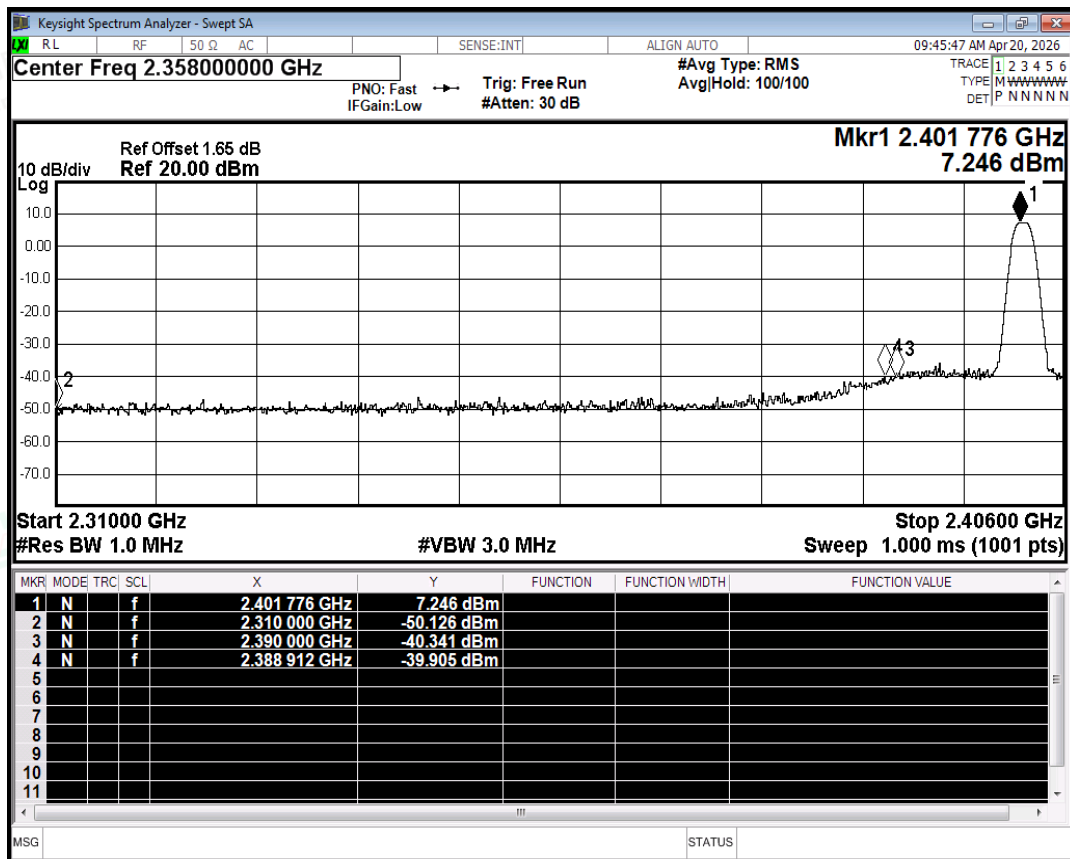


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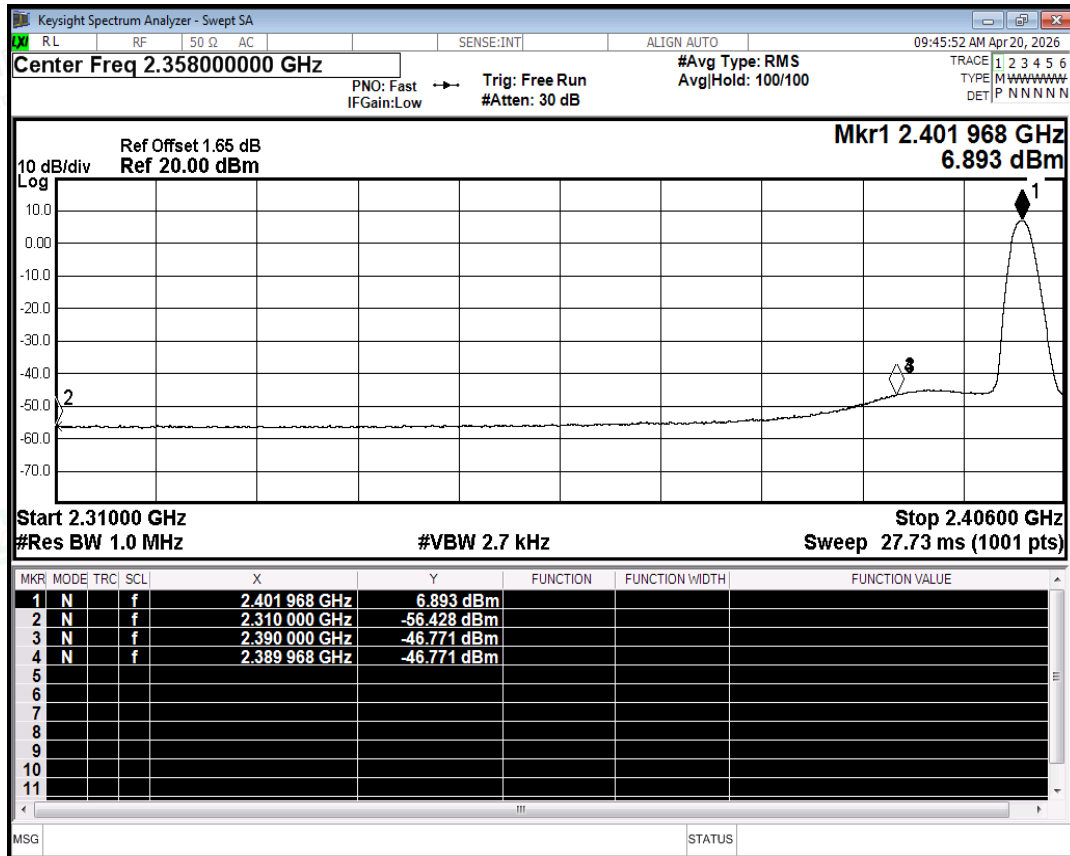
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Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak



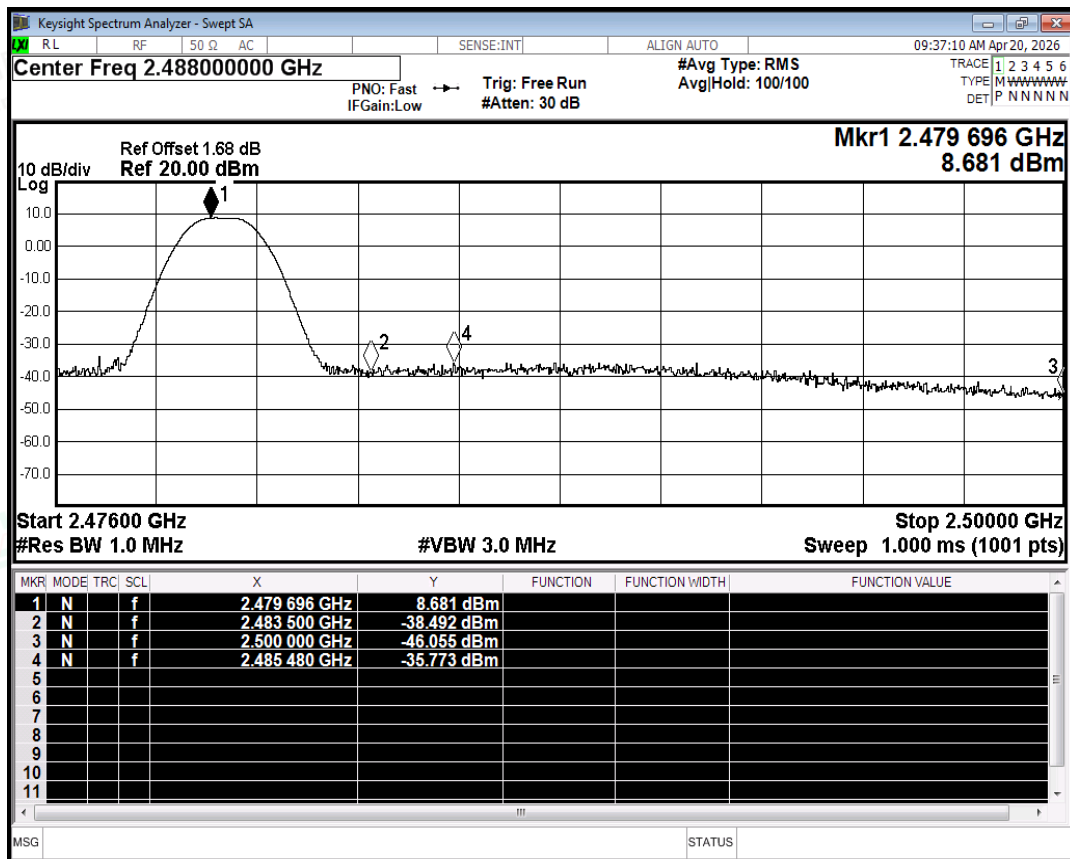
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Restrict Band NVNT BLE 1M 2402MHz Ant1 Average



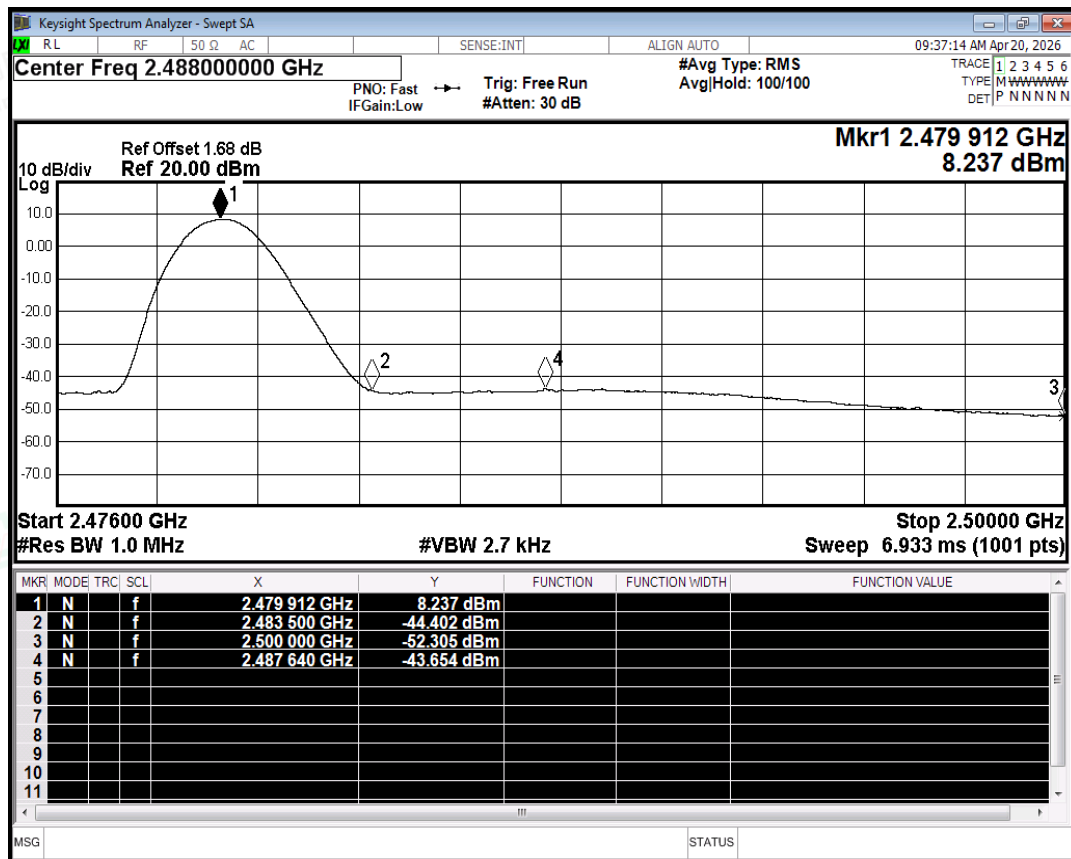
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Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



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Restrict Band NVNT BLE 1M 2480MHz Ant1 Average



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