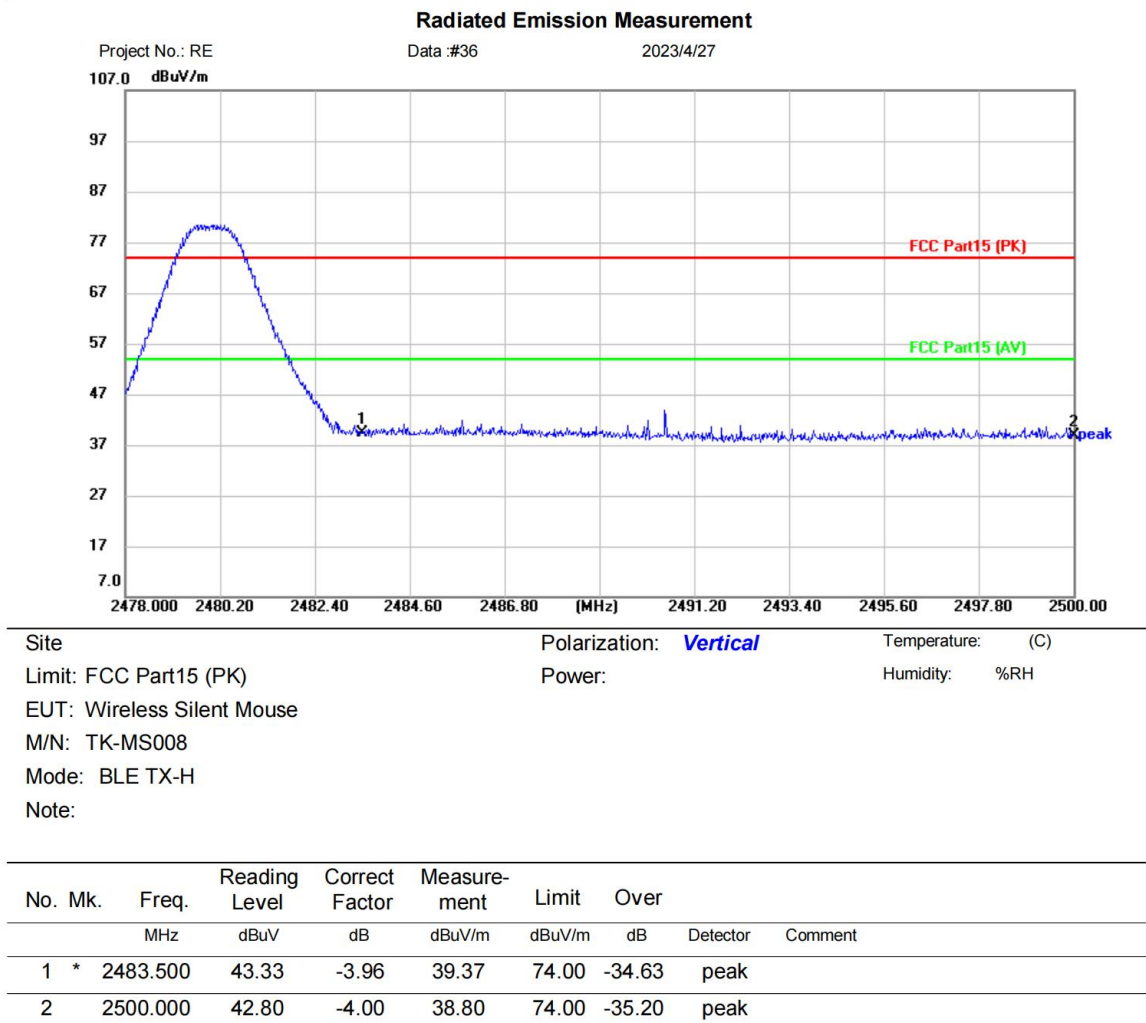


[TestMode: TX high channel]; [Polarity: Vertical]



\*:Maximum data    x:Over limit    !:over margin      <Reference Only

Receiver:      ESR\_1      Spectrum Analyzer:      FSP40

Antenna:      EZ 9120D 1G-18G      Engineer Signature:

**Test Result: Pass**

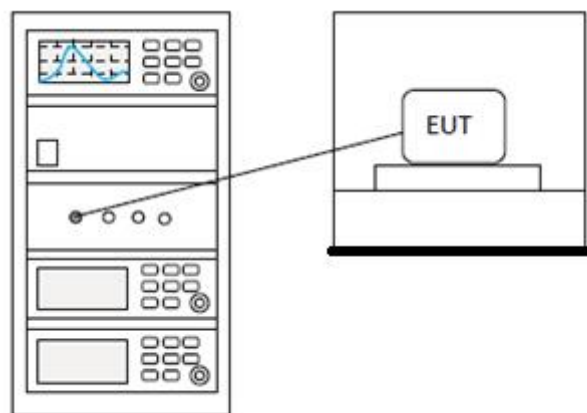
### 13 CONDUCTED SPURIOUS EMISSIONS

|                               |                                                  |
|-------------------------------|--------------------------------------------------|
| <b>Test Standard</b>          | 47 CFR Part 15, Subpart C 15.247                 |
| <b>Test Method</b>            | ANSI C63.10 (2013) Section 7.8.6 & Section 11.11 |
| <b>Test Mode (Pre-Scan)</b>   | TX                                               |
| <b>Test Mode (Final Test)</b> | TX                                               |
| <b>Tester</b>                 | Jozu                                             |
| <b>Temperature</b>            | 25°C                                             |
| <b>Humidity</b>               | 60%                                              |

#### 13.1 LIMITS

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Limit:</b> | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 13.2 BLOCK DIAGRAM OF TEST SETUP



### 13.3 TEST DATA

**Pass: Please Refer To Appendix: Appendix1 For Details**

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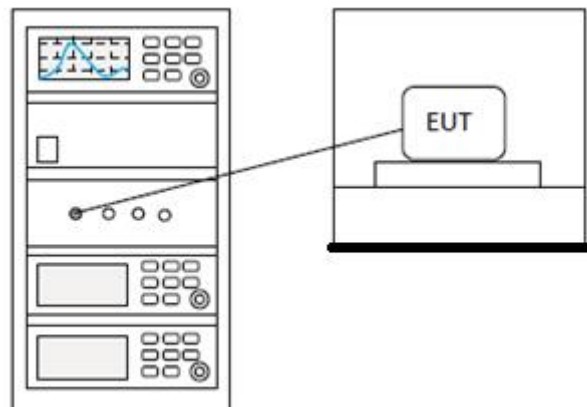
## 14 POWER SPECTRUM DENSITY

|                        |                                    |
|------------------------|------------------------------------|
| Test Standard          | 47 CFR Part 15, Subpart C 15.247   |
| Test Method            | ANSI C63.10 (2013) Section 11.10.2 |
| Test Mode (Pre-Scan)   | TX                                 |
| Test Mode (Final Test) | TX                                 |
| Tester                 | Jozu                               |
| Temperature            | 25°C                               |
| Humidity               | 60%                                |

### 14.1 LIMITS

**Limit:**  $\leq 8\text{dBm}$  in any 3 kHz band during any time interval of continuous transmission

### 14.2 BLOCK DIAGRAM OF TEST SETUP



### 14.3 TEST DATA

**Pass: Please Refer To Appendix: Appendix1 For Details**

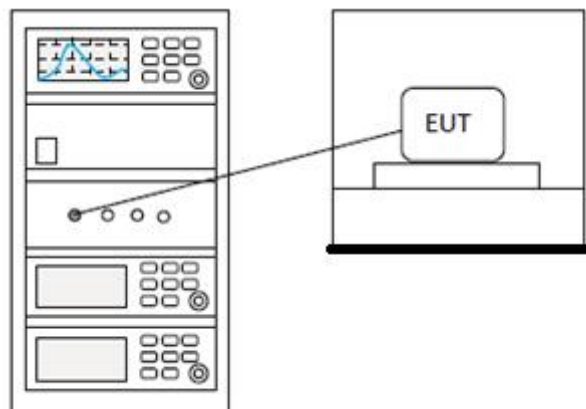
## 15 CONDUCTED PEAK OUTPUT POWER

|                        |                                  |
|------------------------|----------------------------------|
| Test Standard          | 47 CFR Part 15, Subpart C 15.247 |
| Test Method            | ANSI C63.10 (2013) Section 7.8.5 |
| Test Mode (Pre-Scan)   | TX                               |
| Test Mode (Final Test) | TX                               |
| Tester                 | Jozu                             |
| Temperature            | 25°C                             |
| Humidity               | 60%                              |

### 15.1 LIMITS

| Frequency range(MHz) | Output power of the intentional radiator(watt)         |
|----------------------|--------------------------------------------------------|
| 902-928              | 1 for $\geq 50$ hopping channels                       |
|                      | 0.25 for $25 \leq \text{hopping channels} < 50$        |
|                      | 1 for digital modulation                               |
| 2400-2483.5          | 1 for $\geq 75$ non-overlapping hopping channels       |
|                      | 0.125 for all other frequency hopping systems          |
|                      | 1 for digital modulation                               |
| 5725-5850            | 1 for frequency hopping systems and digital modulation |

### 15.2 BLOCK DIAGRAM OF TEST SETUP



**15.3 TEST DATA**

**Pass: Please Refer To Appendix: Appendix1 For Details**

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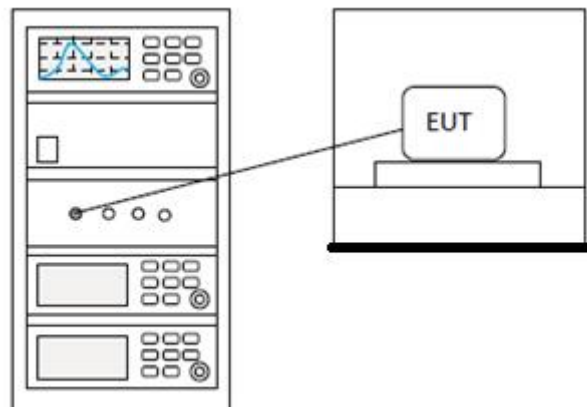
## 16 MINIMUM 6DB BANDWIDTH

|                        |                                   |
|------------------------|-----------------------------------|
| Test Standard          | 47 CFR Part 15, Subpart C 15.247  |
| Test Method            | ANSI C63.10 (2013) Section 11.8.1 |
| Test Mode (Pre-Scan)   | TX                                |
| Test Mode (Final Test) | TX                                |
| Tester                 | Jozu                              |
| Temperature            | 25℃                               |
| Humidity               | 60%                               |

### 16.1 LIMITS

|        |                |
|--------|----------------|
| Limit: | $\geq 500$ kHz |
|--------|----------------|

### 16.2 BLOCK DIAGRAM OF TEST SETUP



### 16.3 TEST DATA

**Pass: Please Refer To Appendix: Appendix1 For Details**

## 17 ANTENNA REQUIREMENT

|               |                                  |
|---------------|----------------------------------|
| Test Standard | 47 CFR Part 15, Subpart C 15.247 |
| Test Method   | N/A                              |

### 17.1 CONCLUSION

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The best case gain of the antenna is 1.8dBi.

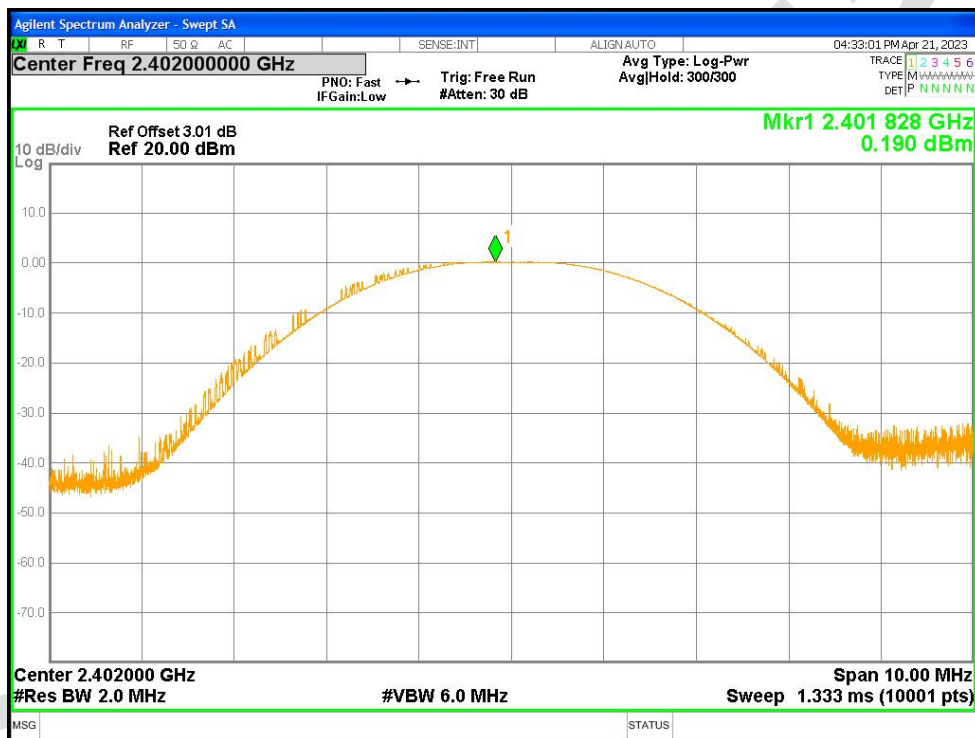
## 18 APPENDIX

### Appendix1

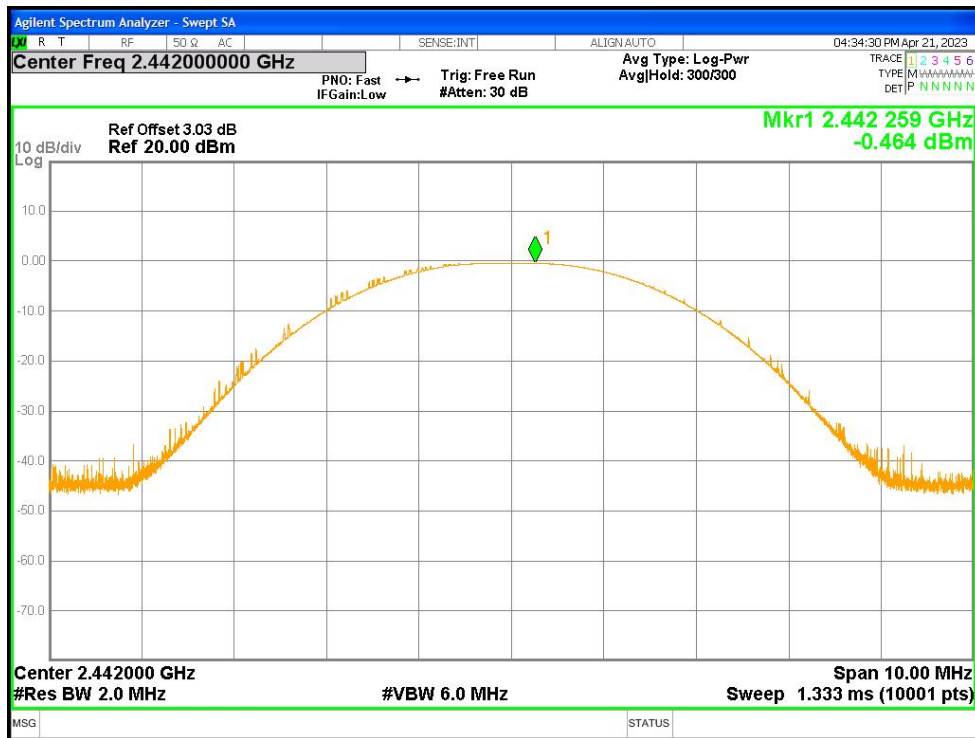
#### Maximum Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | BLE  | 2402            | Ant1    | 0.19                  | 30          | Pass    |
| NVNT      | BLE  | 2442            | Ant1    | -0.464                | 30          | Pass    |
| NVNT      | BLE  | 2480            | Ant1    | 0.152                 | 30          | Pass    |

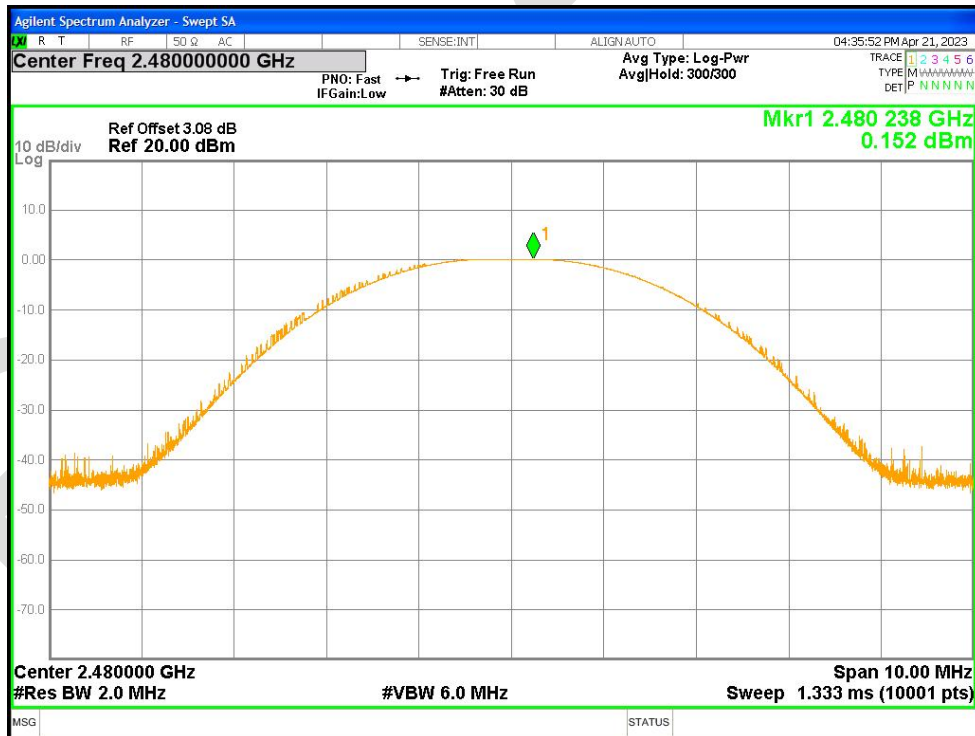
Power NVNT BLE 2402MHz Ant1



Power NVNT BLE 2442MHz Ant1



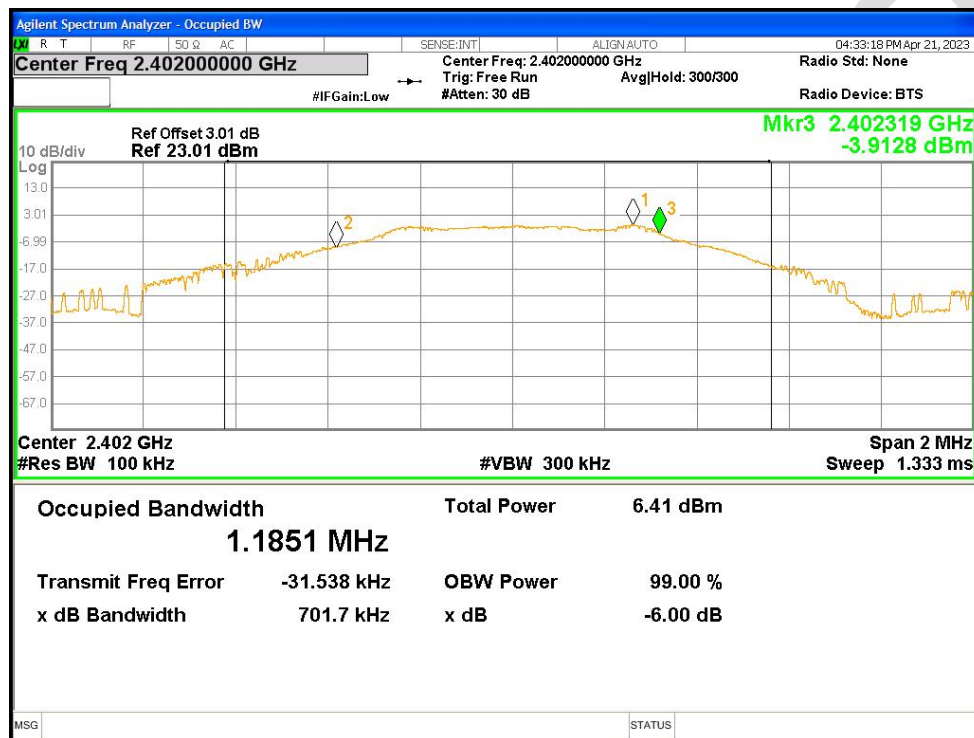
Power NVNT BLE 2480MHz Ant1



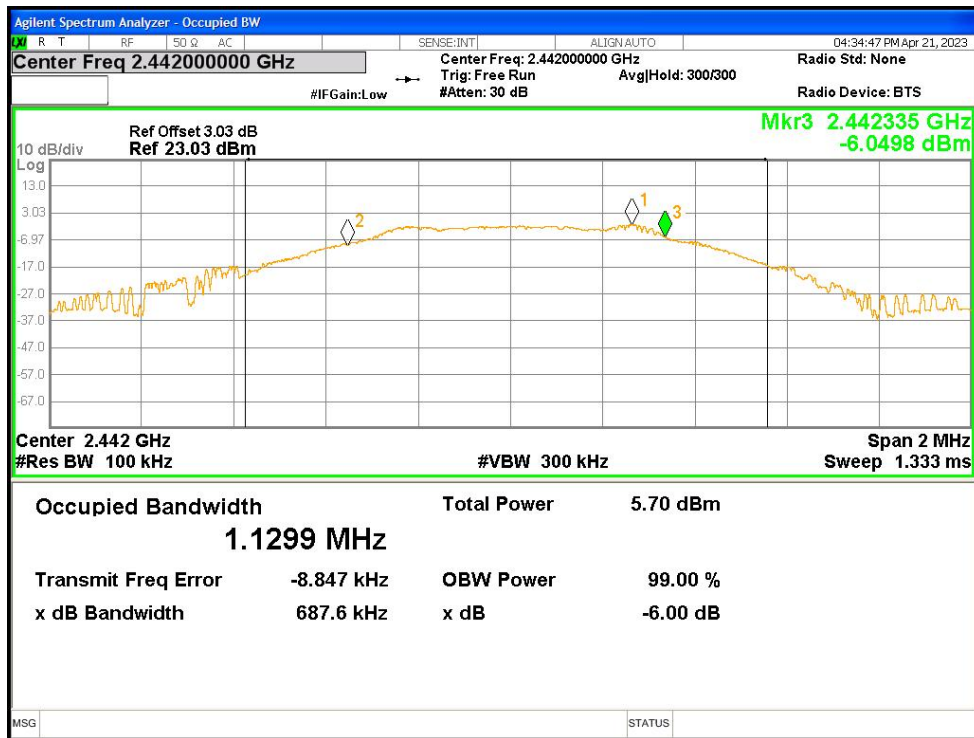
### -6dB Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | BLE  | 2402            | Ant1    | 0.702                 | 0.5                         | Pass    |
| NVNT      | BLE  | 2442            | Ant1    | 0.688                 | 0.5                         | Pass    |
| NVNT      | BLE  | 2480            | Ant1    | 0.7                   | 0.5                         | Pass    |

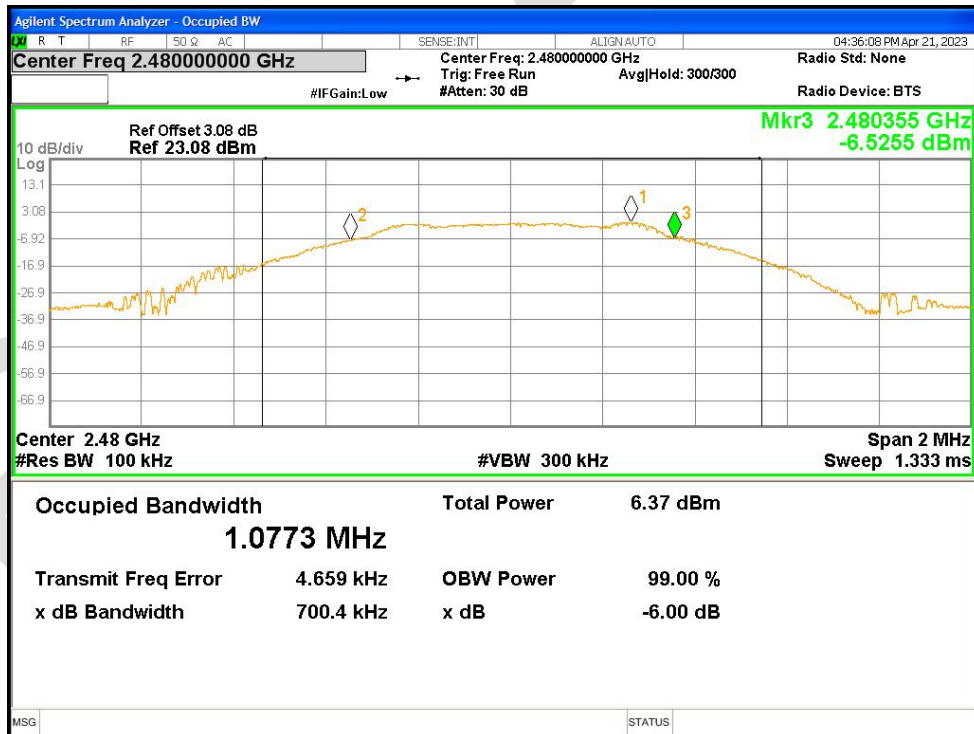
### -6dB Bandwidth NVNT BLE 2402MHz Ant1



### -6dB Bandwidth NVNT BLE 2442MHz Ant1



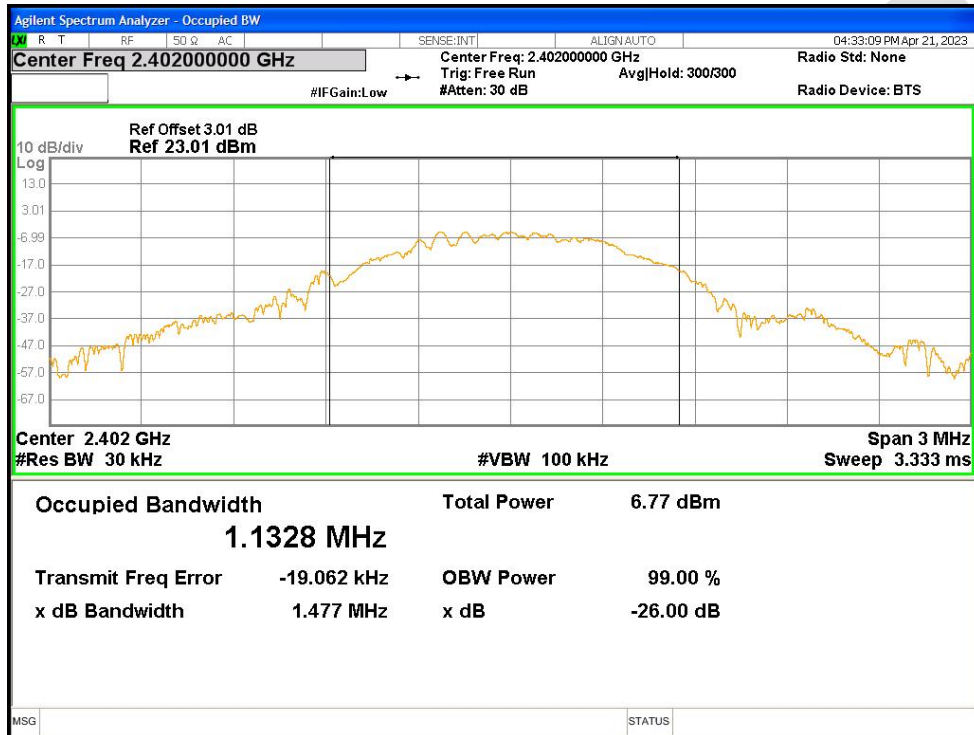
-6dB Bandwidth NVNT BLE 2480MHz Ant1



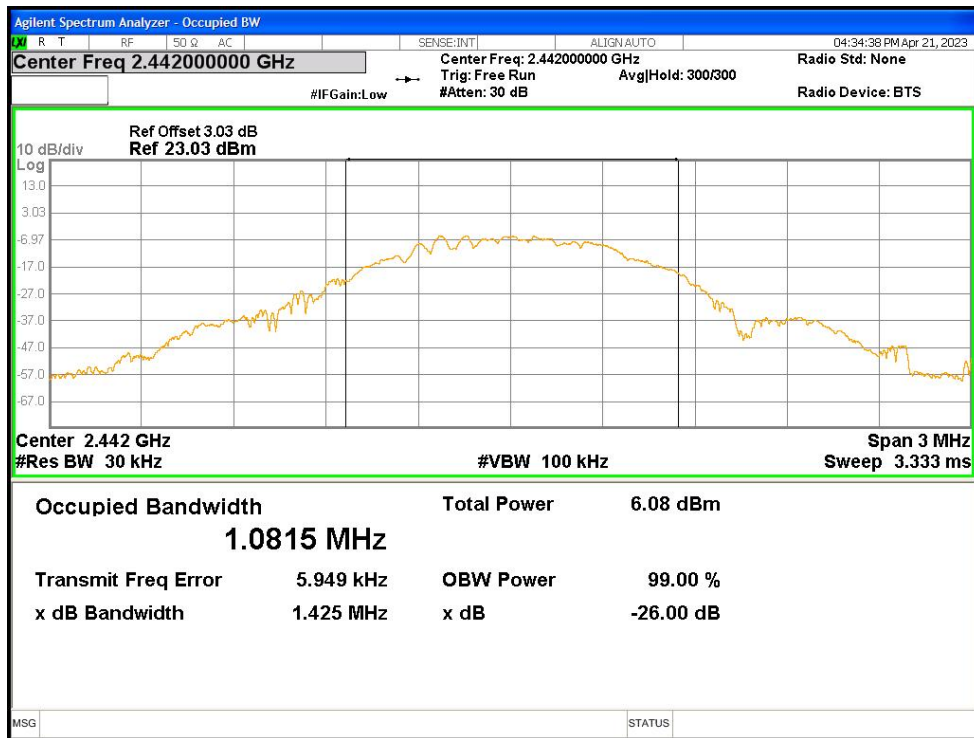
### Occupied Channel Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|------|-----------------|---------|---------------|
| NVNT      | BLE  | 2402            | Ant1    | 1.1328        |
| NVNT      | BLE  | 2442            | Ant1    | 1.0815        |
| NVNT      | BLE  | 2480            | Ant1    | 1.0573        |

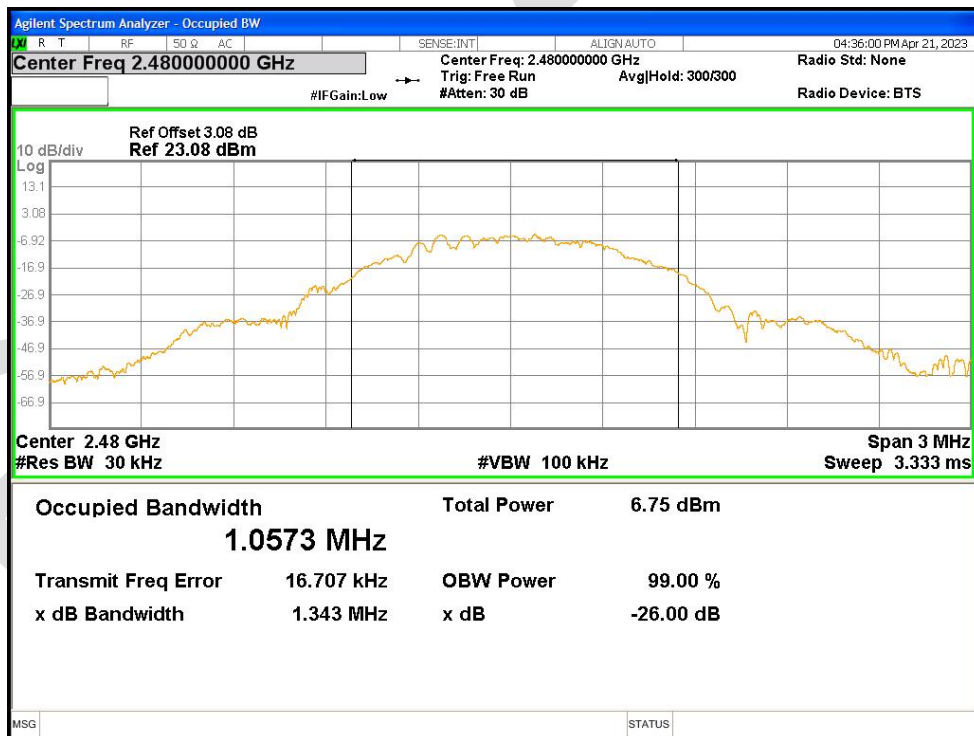
#### OBW NVNT BLE 2402MHz Ant1



#### OBW NVNT BLE 2442MHz Ant1



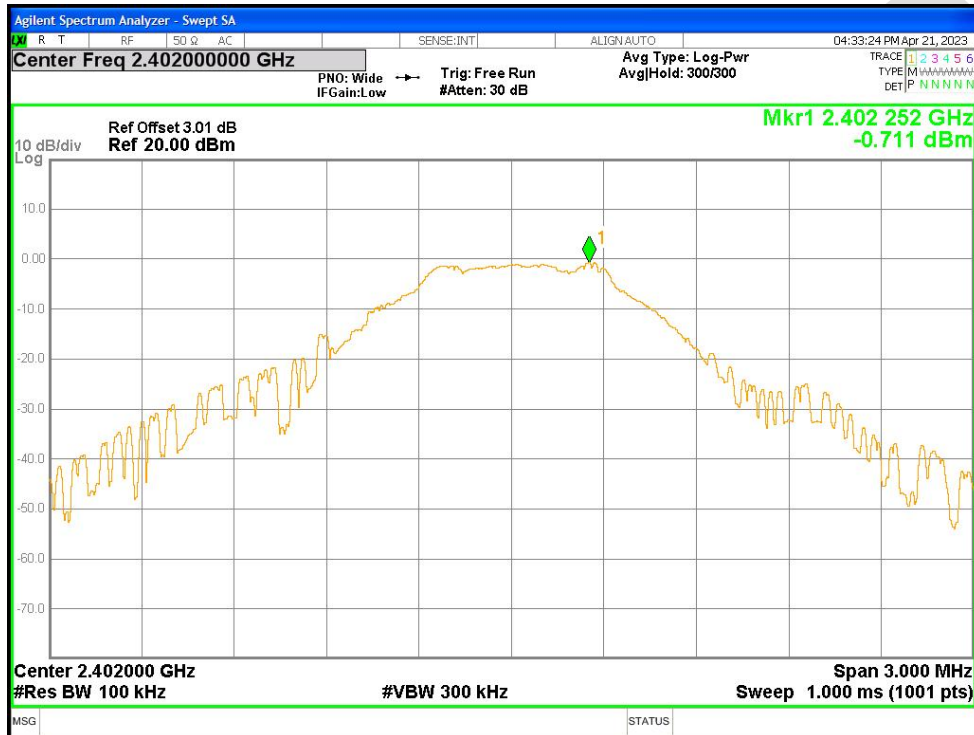
OBW NVNT BLE 2480MHz Ant1



**Maximum Power Spectral Density Level**

| Condition | Mode | Frequency (MHz) | Antenna | Max PSD (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------|-------------|---------|
| NVNT      | BLE  | 2402            | Ant1    | -0.711        | 8           | Pass    |
| NVNT      | BLE  | 2442            | Ant1    | -1.352        | 8           | Pass    |
| NVNT      | BLE  | 2480            | Ant1    | -0.799        | 8           | Pass    |

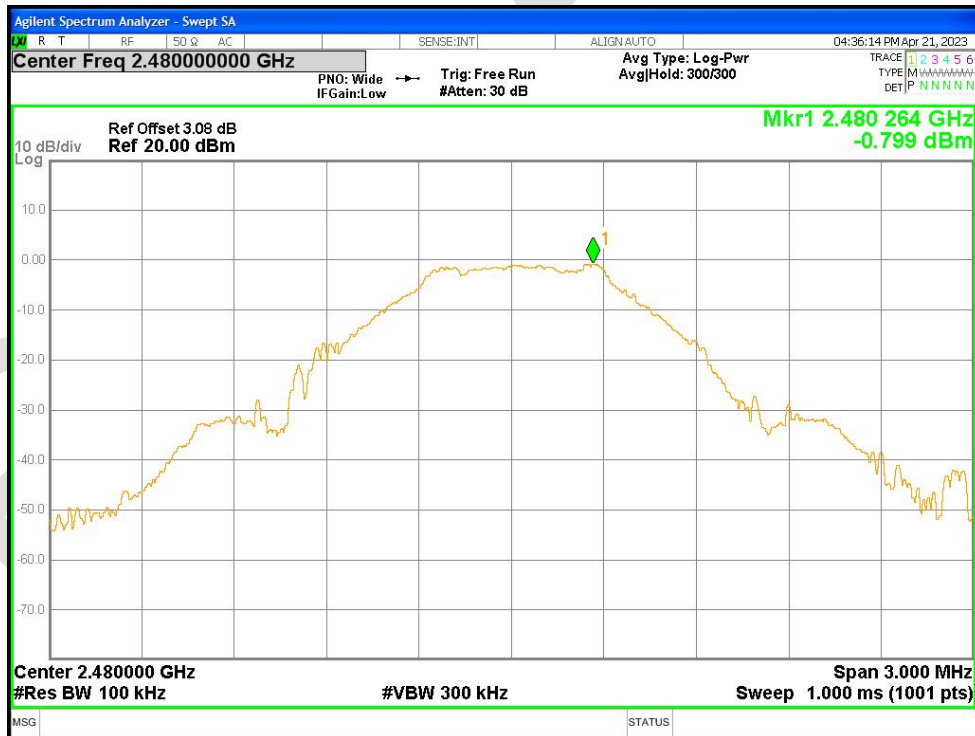
PSD NVNT BLE 2402MHz Ant1



PSD NVNT BLE 2442MHz Ant1



PSD NVNT BLE 2480MHz Ant1



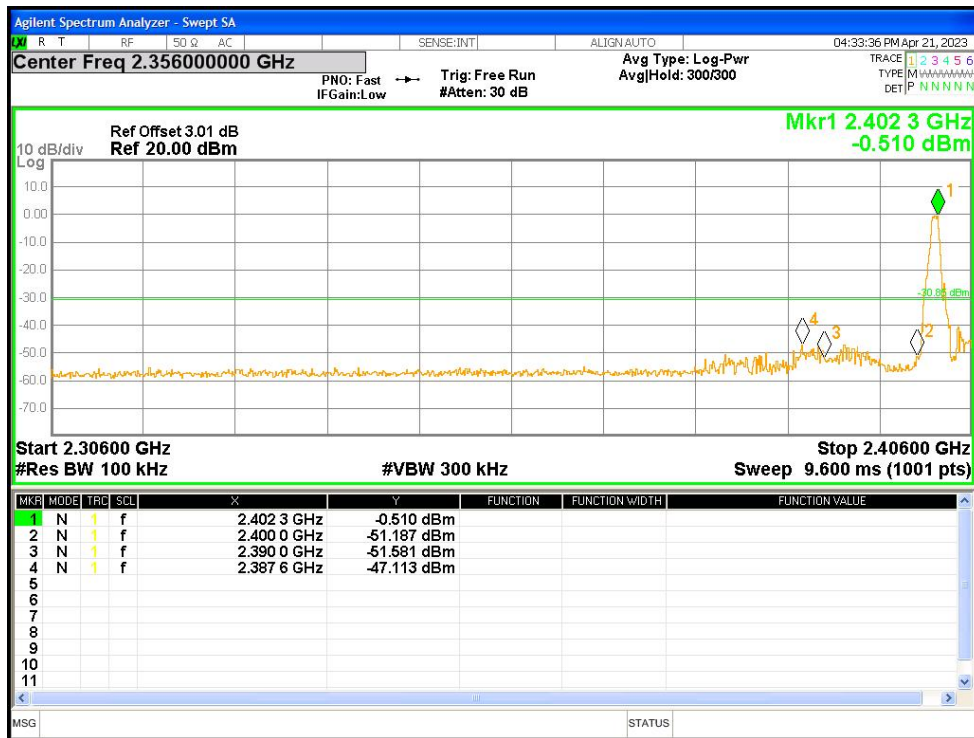
### Band Edge

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE  | 2402            | Ant1    | -46.26          | -30         | Pass    |
| NVNT      | BLE  | 2480            | Ant1    | -53.78          | -30         | Pass    |

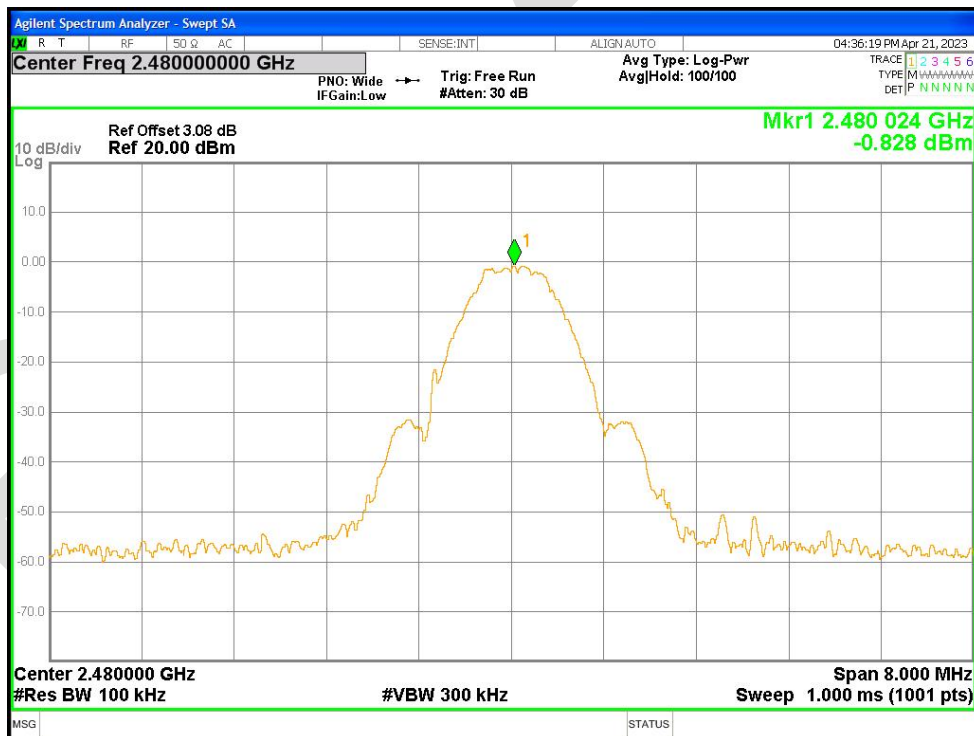
Band Edge NVNT BLE 2402MHz Ant1 Ref



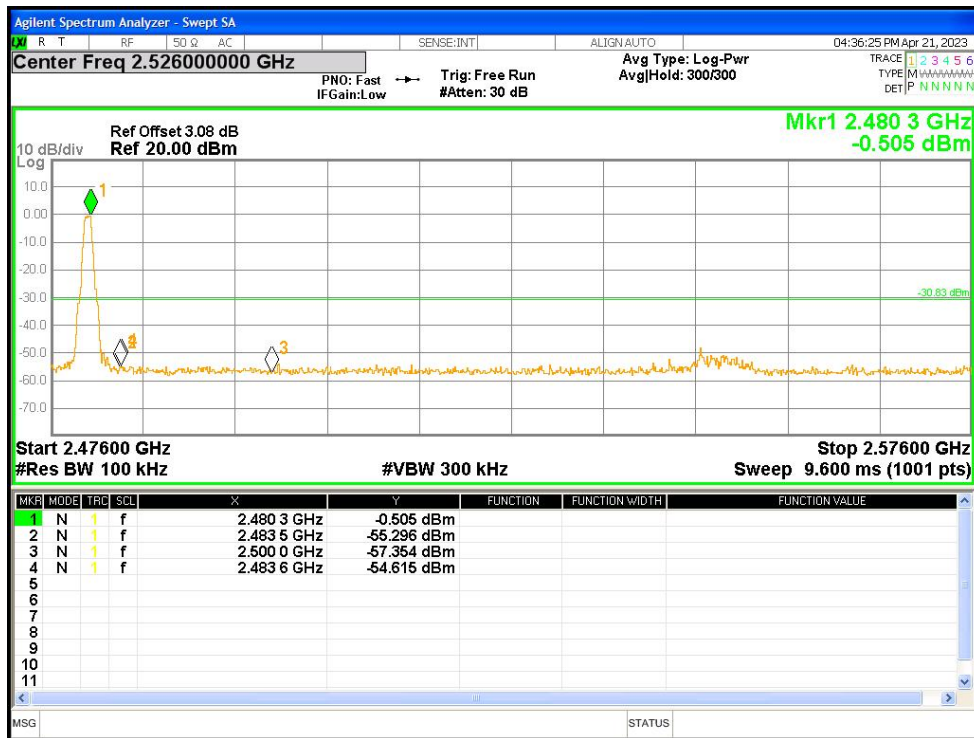
Band Edge NVNT BLE 2402MHz Ant1 Emission



Band Edge NVNT BLE 2480MHz Ant1 Ref



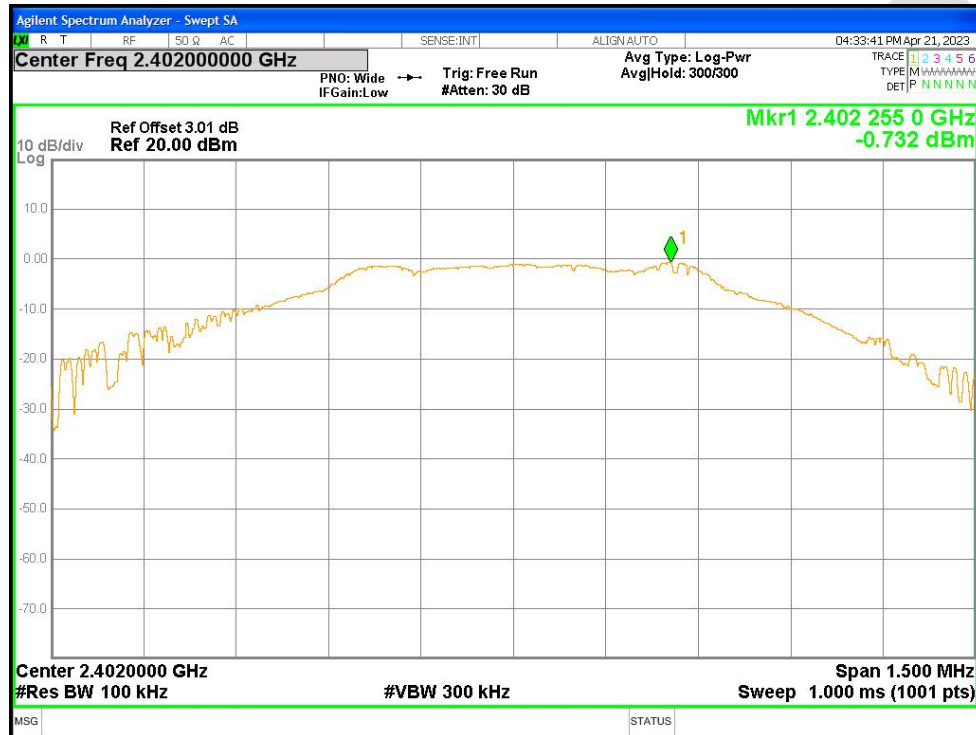
Band Edge NVNT BLE 2480MHz Ant1 Emission



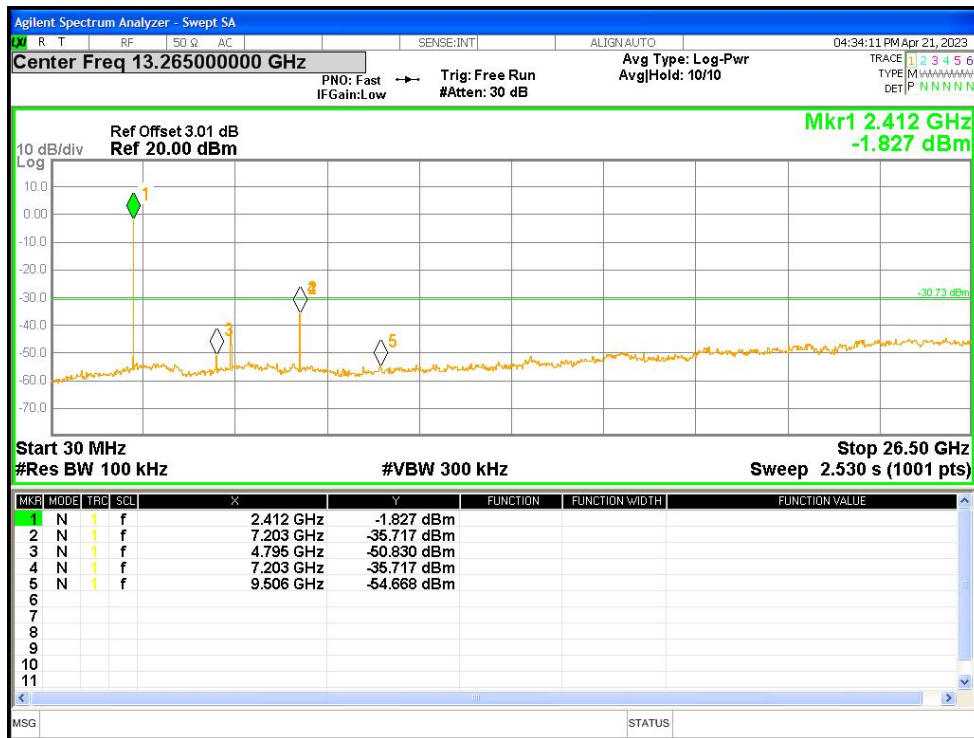
### Conducted RF Spurious Emission

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | BLE  | 2402            | Ant1    | -34.98          | -30         | Pass    |
| NVNT      | BLE  | 2442            | Ant1    | -39.78          | -30         | Pass    |
| NVNT      | BLE  | 2480            | Ant1    | -43.35          | -30         | Pass    |

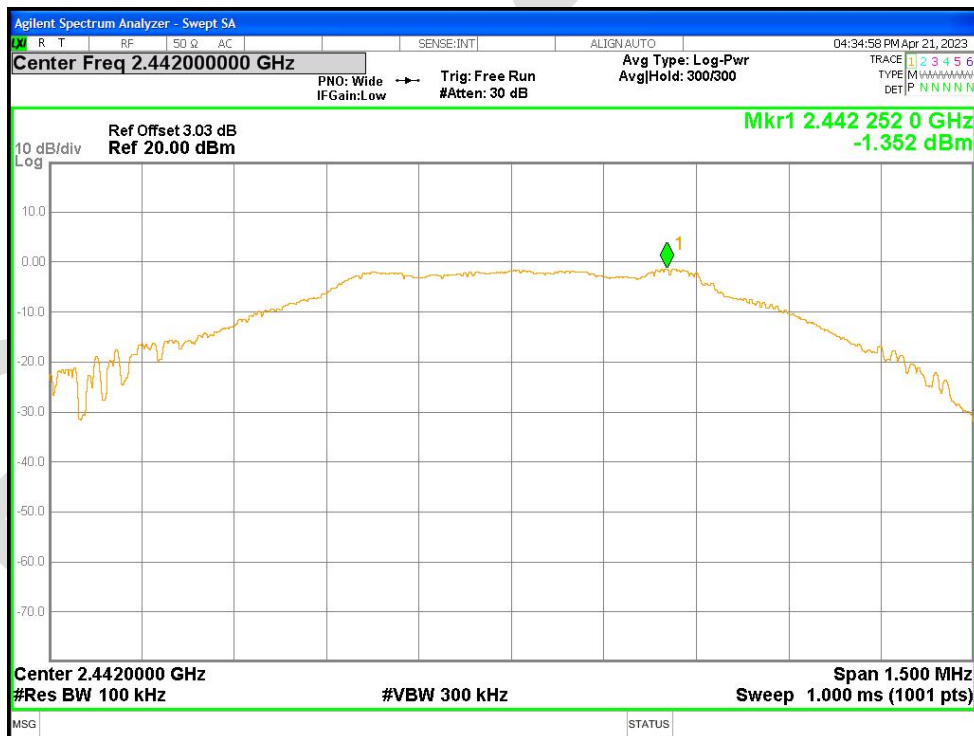
### Tx. Spurious NVNT BLE 2402MHz Ant1 Ref



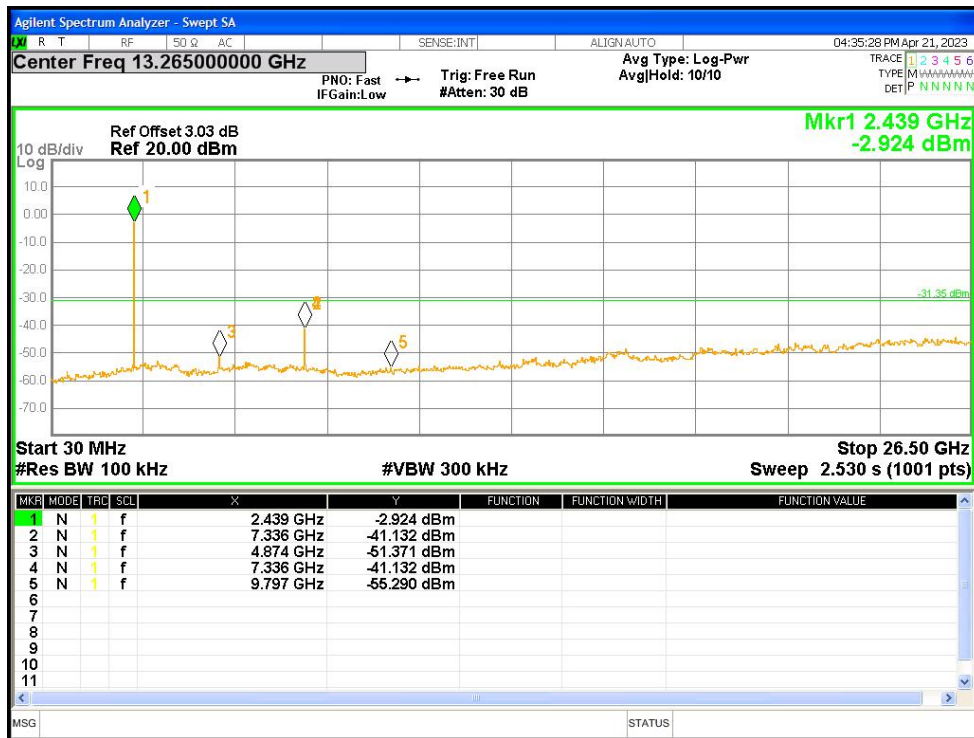
### Tx. Spurious NVNT BLE 2402MHz Ant1 Emission



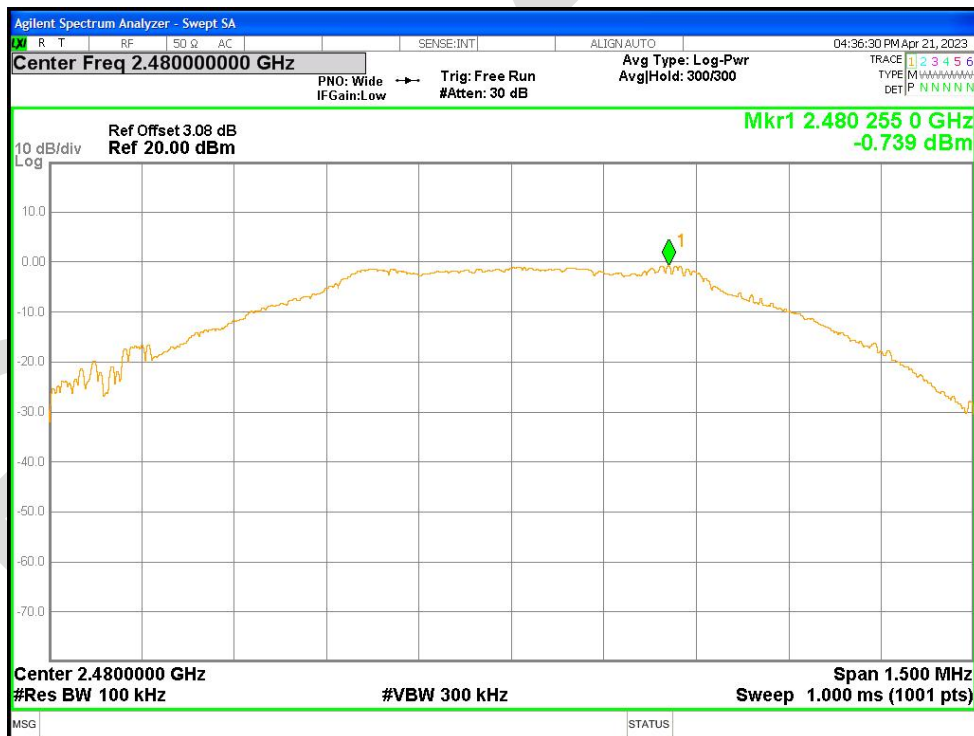
Tx. Spurious NVNT BLE 2442MHz Ant1 Ref



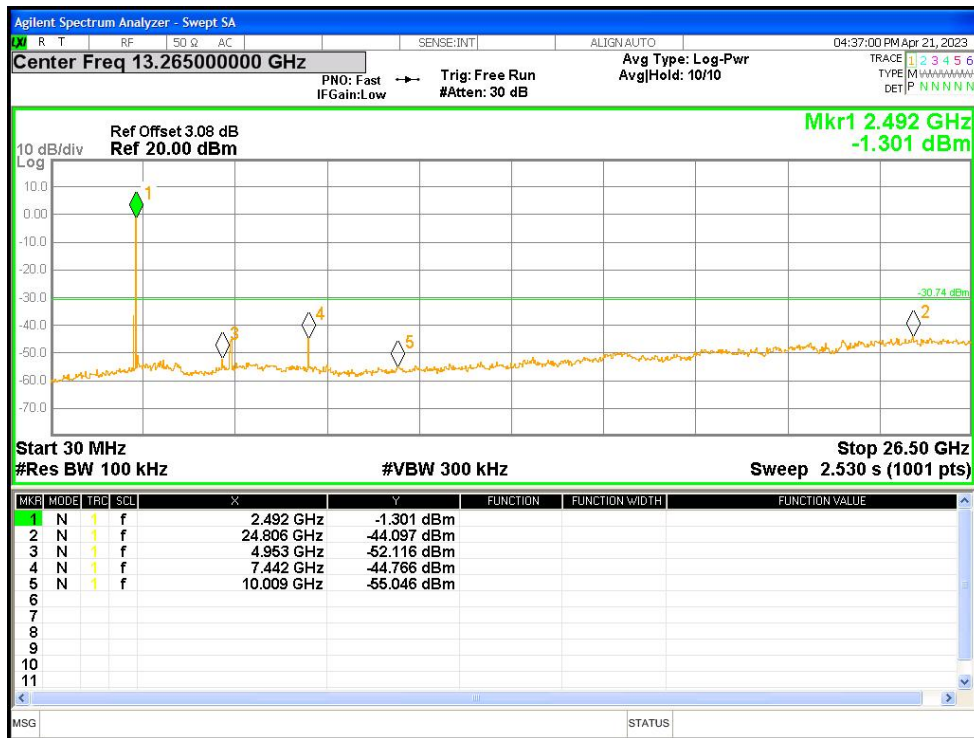
Tx. Spurious NVNT BLE 2442MHz Ant1 Emission



Tx. Spurious NVNT BLE 2480MHz Ant1 Ref

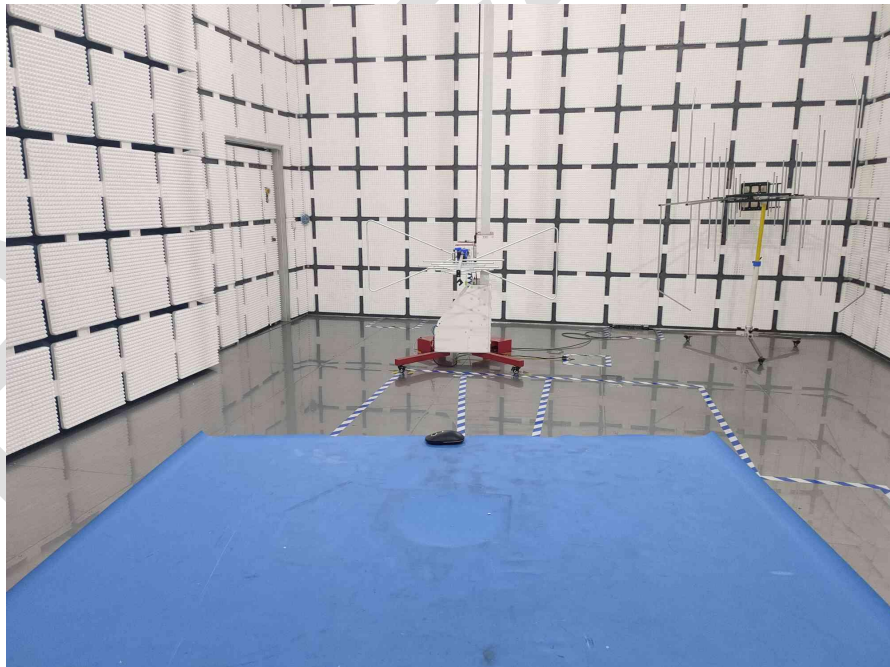
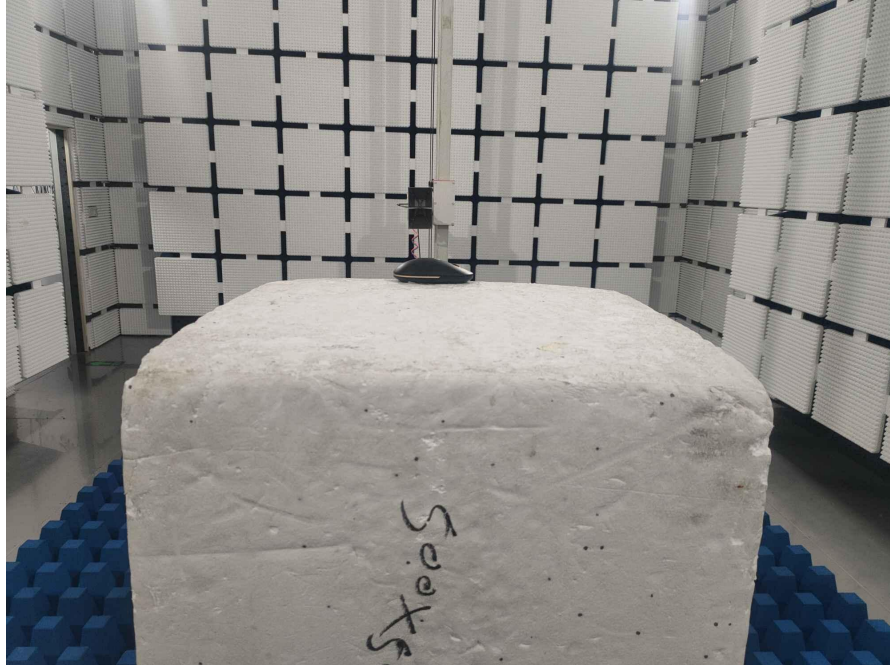


Tx. Spurious NVNT BLE 2480MHz Ant1 Emission



## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

### Radiated Spurious Emissions



**APPENDIX B: PHOTOGRAPHS OF EUT**

Reference to the test report No. BLA-EMC-202304-A1001

**----END OF REPORT----**

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