

# RF Test Data for BLE (Conducted Measurements)

| General Description of EUT                                                                      |                        |
|-------------------------------------------------------------------------------------------------|------------------------|
| EUT Name:                                                                                       | TV BOX                 |
| Model:                                                                                          | GD2                    |
| Sample ID:                                                                                      | HC-C-202408-0094-02-01 |
| Test Standard:                                                                                  | FCC Part 15.247        |
| Environmental Conditions                                                                        |                        |
| Ambient Temperature:                                                                            | 24.0℃                  |
| Ambient Humidity:                                                                               | 46%RH                  |
| Test Power Supply:                                                                              | DC 12V                 |
| Test Engineer:                                                                                  | Mike Yan               |
| Note: For a more detailed features description, please refer to the report TBR-C-202408-0094-10 |                        |

## Contents

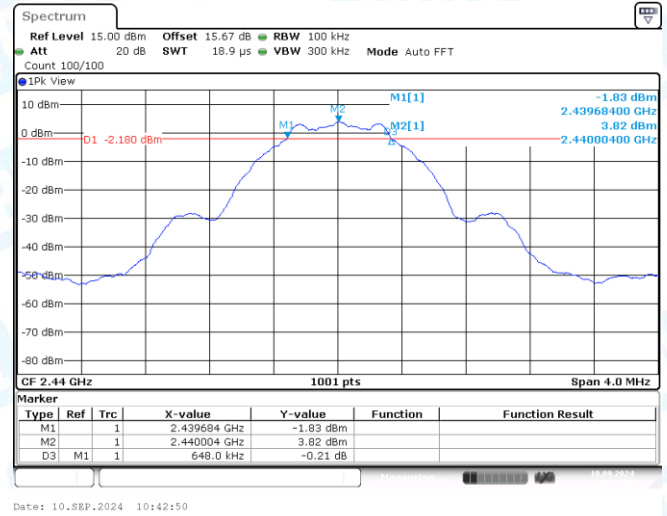
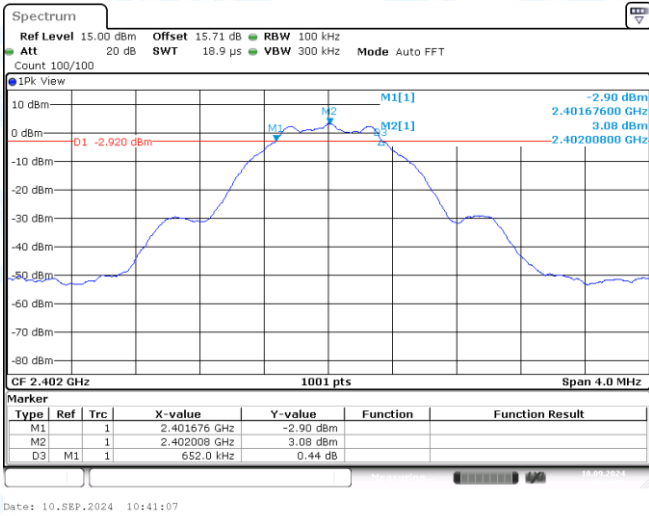
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## 1: DTS Bandwidth

### 1.1 Test Result

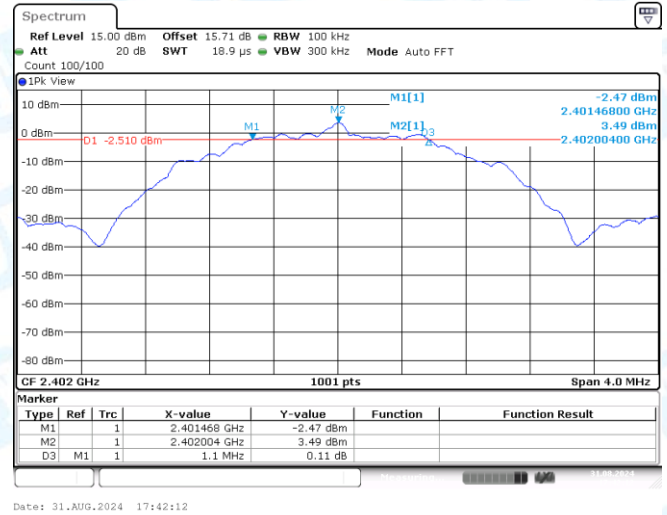
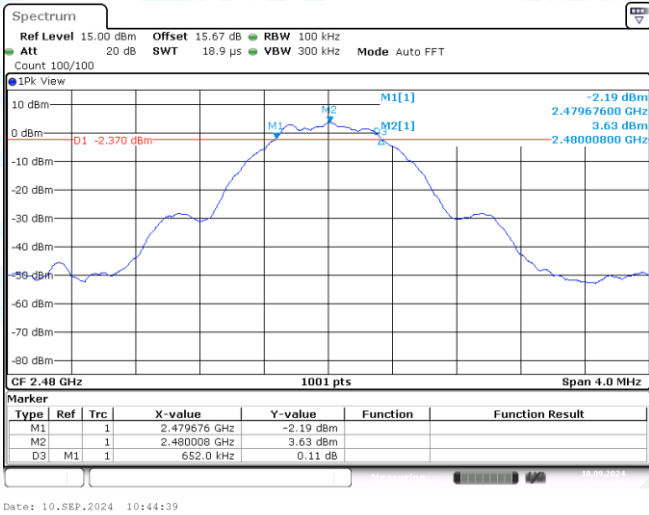
| Test Mode | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|----------------|--------------|---------|---------|------------|---------|
| BLE_1M    | Ant1    | 2402           | 0.65         | 2401.68 | 2402.33 | 0.5        | PASS    |
| BLE_1M    | Ant1    | 2440           | 0.65         | 2439.68 | 2440.33 | 0.5        | PASS    |
| BLE_1M    | Ant1    | 2480           | 0.65         | 2479.68 | 2480.33 | 0.5        | PASS    |
| BLE_2M    | Ant1    | 2402           | 1.10         | 2401.47 | 2402.57 | 0.5        | PASS    |
| BLE_2M    | Ant1    | 2440           | 0.95         | 2439.46 | 2440.41 | 0.5        | PASS    |
| BLE_2M    | Ant1    | 2480           | 1.10         | 2479.46 | 2480.56 | 0.5        | PASS    |

## 1.2 Test Graphs



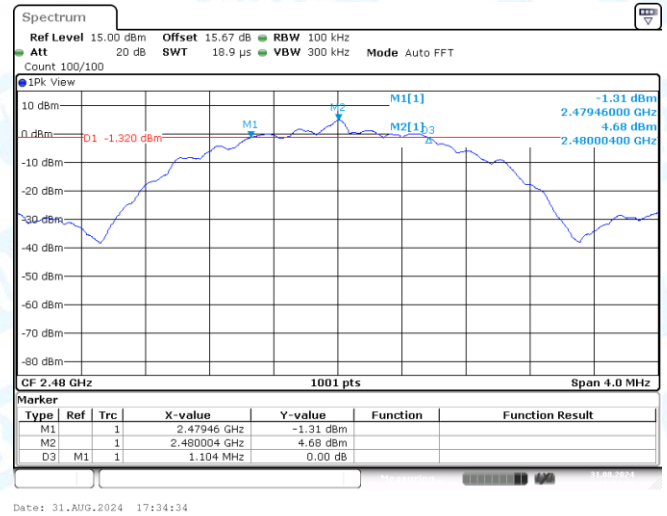
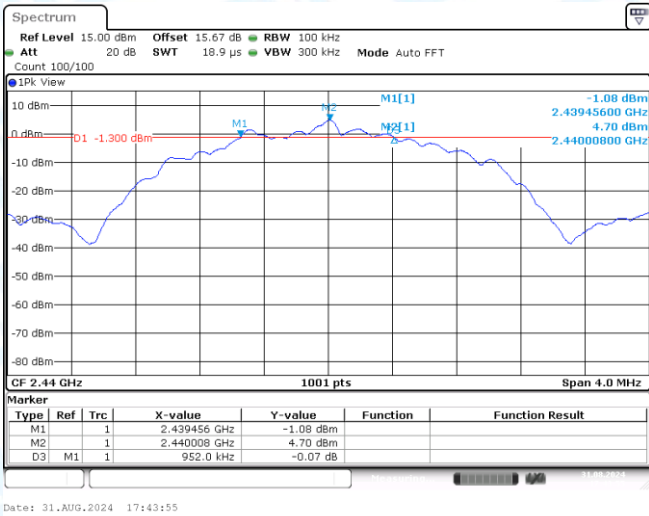
BLE\_1M-Ant1-2402-PASS

BLE\_1M-Ant1-2440-PASS



BLE\_1M-Ant1-2480-PASS

BLE\_2M-Ant1-2402-PASS



BLE\_2M-Ant1-2440-PASS

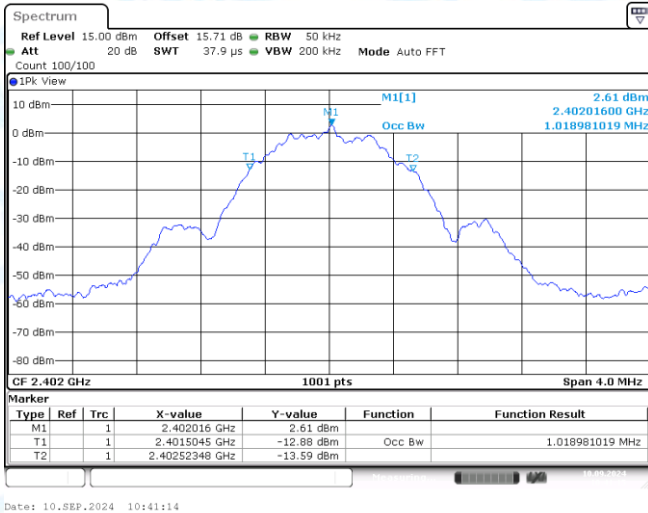
BLE\_2M-Ant1-2480-PASS

## 2: Occupied Channel Bandwidth

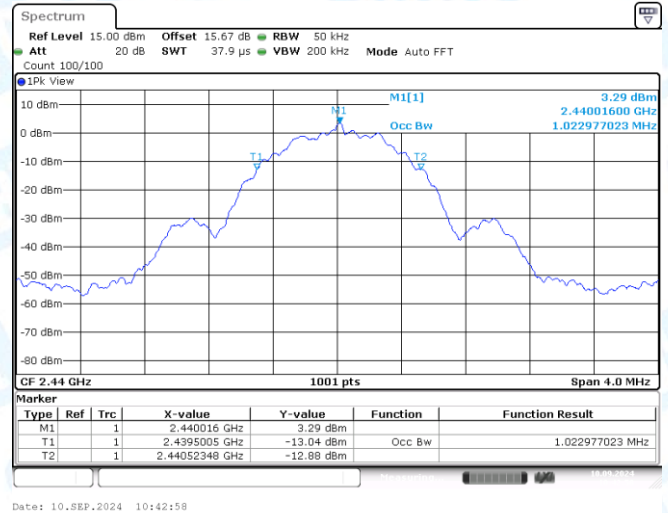
### 2.1 Test Result

| Test Mode | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|-----------|---------|----------------|-----------|-----------|-----------|------------|---------|
| BLE_1M    | Ant1    | 2402           | 1.019     | 2401.5045 | 2402.5235 | ---        | ---     |
| BLE_1M    | Ant1    | 2440           | 1.023     | 2439.5005 | 2440.5235 | ---        | ---     |
| BLE_1M    | Ant1    | 2480           | 1.023     | 2479.4965 | 2480.5195 | ---        | ---     |
| BLE_2M    | Ant1    | 2402           | 2.042     | 2401.0050 | 2403.0470 | ---        | ---     |
| BLE_2M    | Ant1    | 2440           | 2.054     | 2438.9970 | 2441.0509 | ---        | ---     |
| BLE_2M    | Ant1    | 2480           | 2.054     | 2478.9970 | 2481.0509 | ---        | ---     |

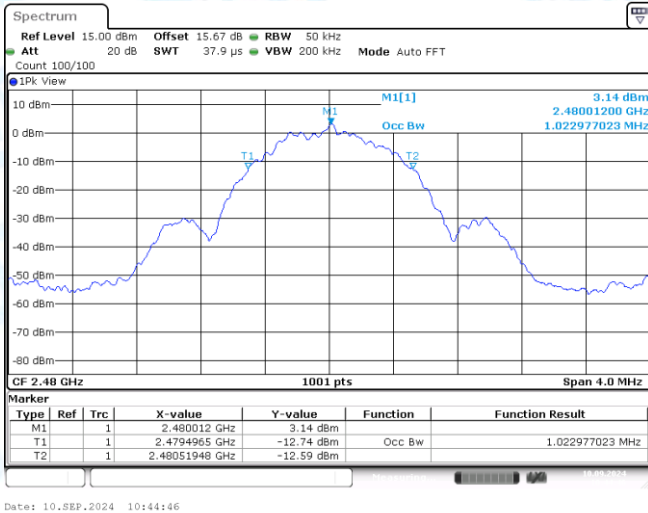
## 2.2 Test Graphs



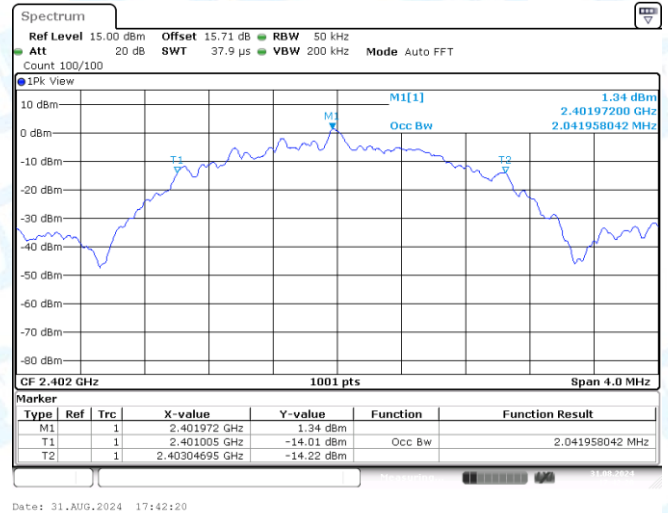
BLE\_1M-Ant1-2402



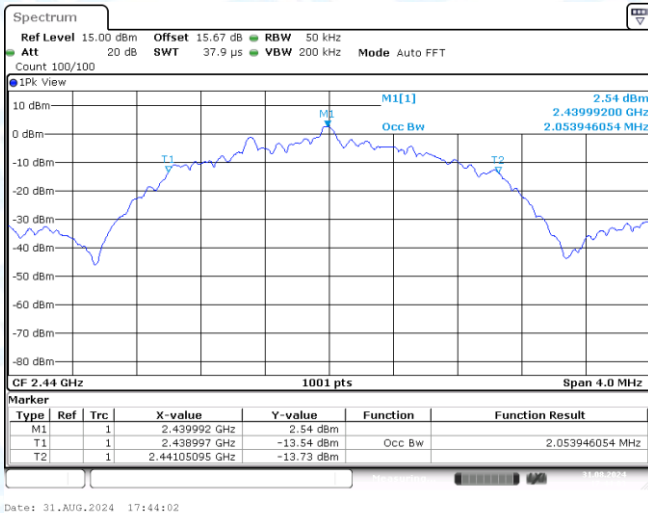
BLE\_1M-Ant1-2440



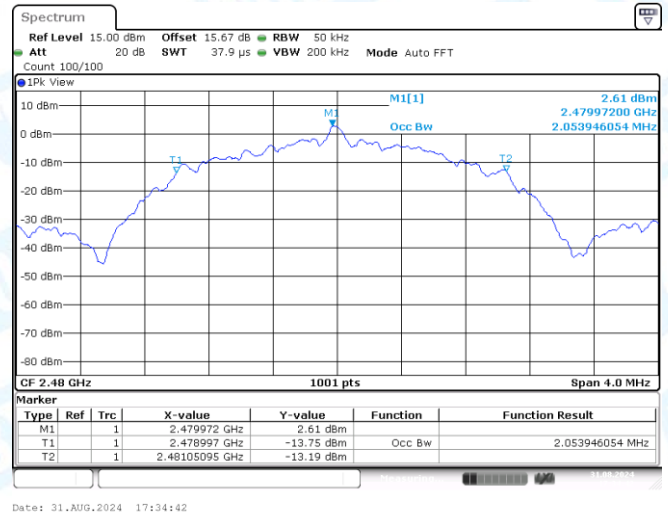
BLE\_1M-Ant1-2480



BLE\_2M-Ant1-2402



BLE\_2M-Ant1-2440



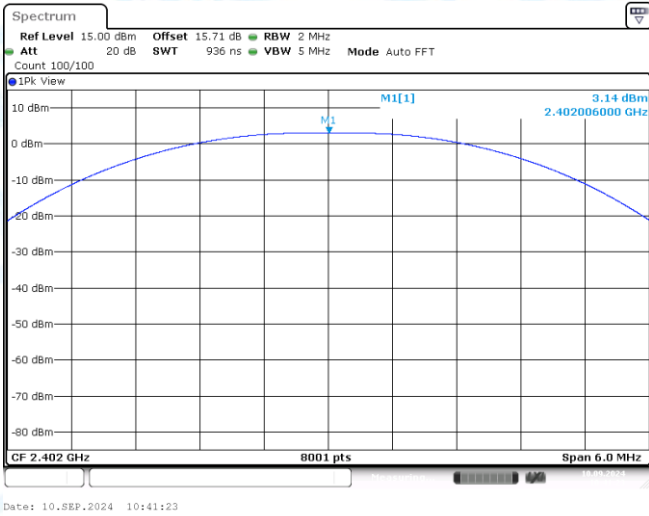
BLE\_2M-Ant1-2480

### 3: Maximum conducted output power

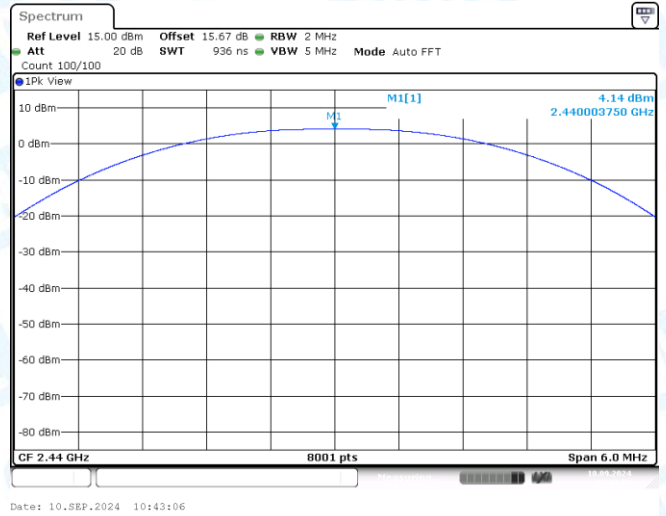
#### 3.1 Test Result Peak

| Test Mode | Antenna | Frequency[MHz] | Conducted Peak Power[dBm] | Conducted Limit[dBm] | EIRP[dBm] | EIRP Limit[dBm] | Verdict |
|-----------|---------|----------------|---------------------------|----------------------|-----------|-----------------|---------|
| BLE_1M    | Ant1    | 2402           | 3.14                      | ≤30                  | 3.11      | ≤36             | PASS    |
| BLE_1M    | Ant1    | 2440           | 4.14                      | ≤30                  | 4.11      | ≤36             | PASS    |
| BLE_1M    | Ant1    | 2480           | 3.92                      | ≤30                  | 3.89      | ≤36             | PASS    |
| BLE_2M    | Ant1    | 2402           | 3.28                      | ≤30                  | 3.25      | ≤36             | PASS    |
| BLE_2M    | Ant1    | 2440           | 4.62                      | ≤30                  | 4.59      | ≤36             | PASS    |
| BLE_2M    | Ant1    | 2480           | 4.58                      | ≤30                  | 4.55      | ≤36             | PASS    |

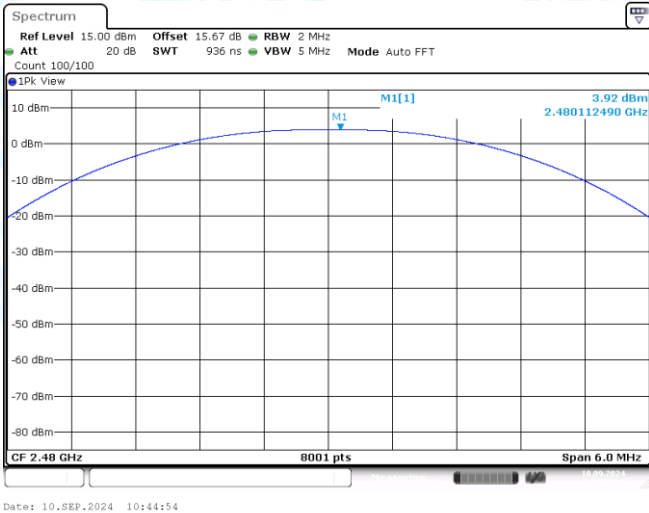
### 3.2 Test Graphs Peak



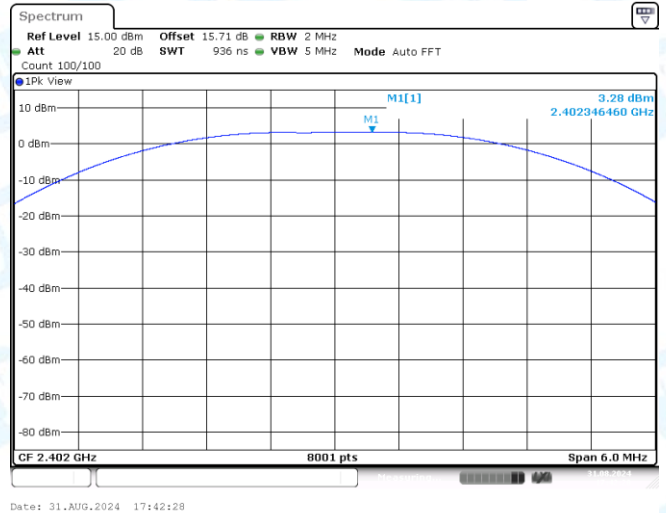
BLE\_1M-Ant1-2402-PASS



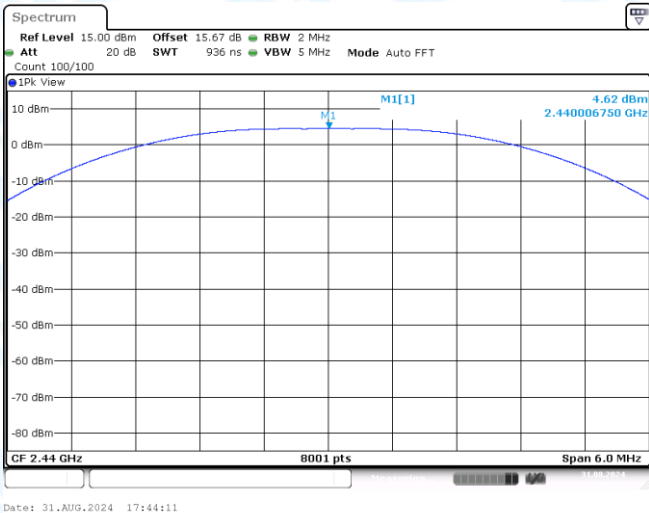
BLE\_1M-Ant1-2440-PASS



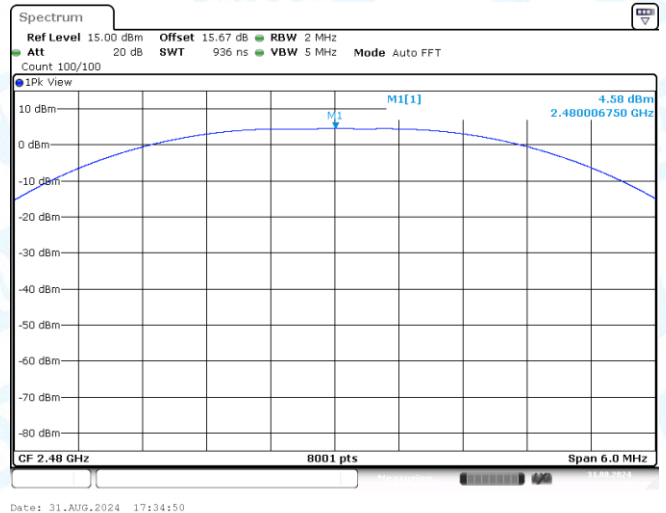
BLE\_1M-Ant1-2480-PASS



BLE\_2M-Ant1-2402-PASS



BLE\_2M-Ant1-2440-PASS



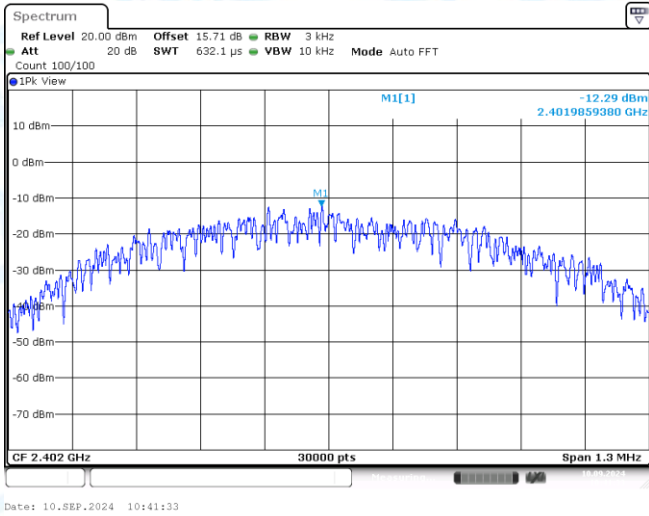
BLE\_2M-Ant1-2480-PASS

## 4: Maximum power spectral density

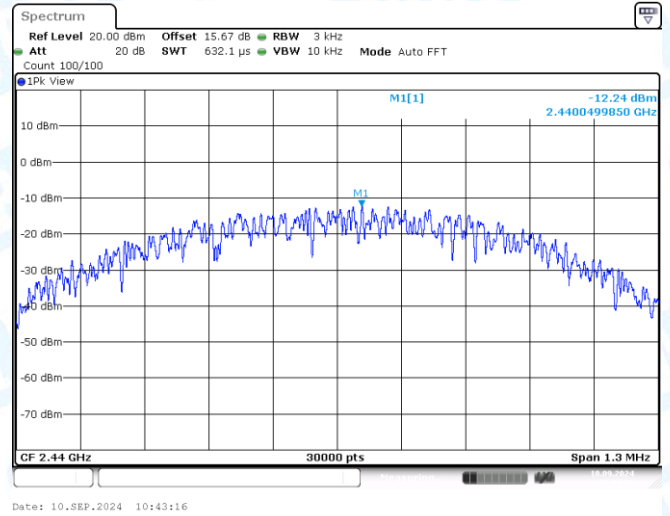
### 4.1 Test Result

| Test Mode | Antenna | Frequency[MHz] | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|-----------|---------|----------------|------------------|-----------------|---------|
| BLE_1M    | Ant1    | 2402           | -12.29           | ≤8.00           | PASS    |
| BLE_1M    | Ant1    | 2440           | -12.24           | ≤8.00           | PASS    |
| BLE_1M    | Ant1    | 2480           | -10.80           | ≤8.00           | PASS    |
| BLE_2M    | Ant1    | 2402           | -14.78           | ≤8.00           | PASS    |
| BLE_2M    | Ant1    | 2440           | -13.68           | ≤8.00           | PASS    |
| BLE_2M    | Ant1    | 2480           | -13.49           | ≤8.00           | PASS    |

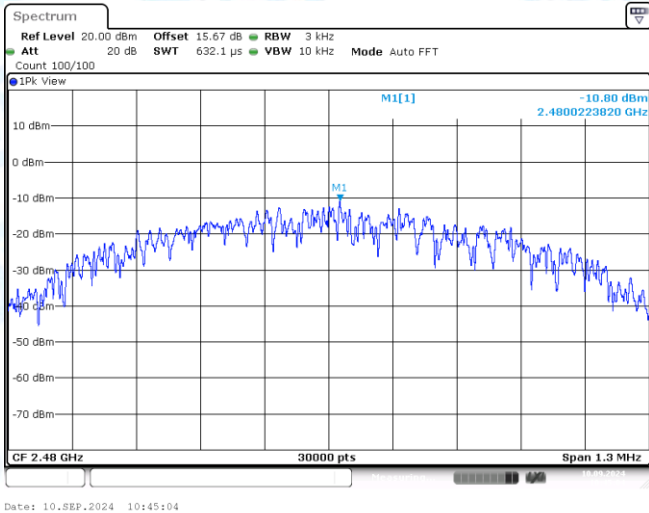
## 4.2 Test Graphs



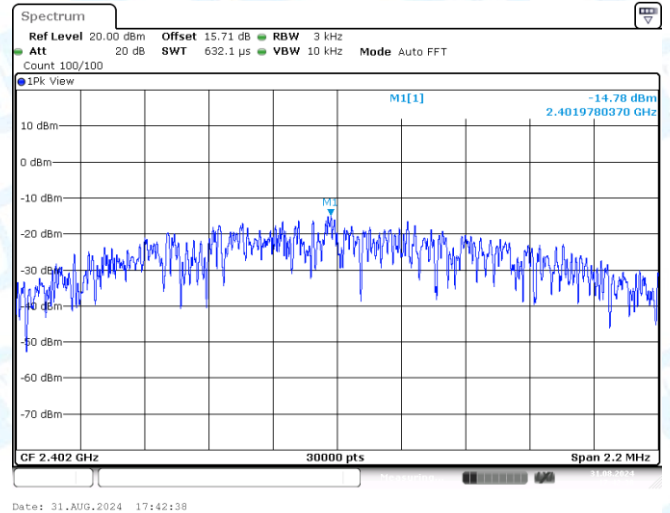
BLE\_1M-Ant1-2402-PASS



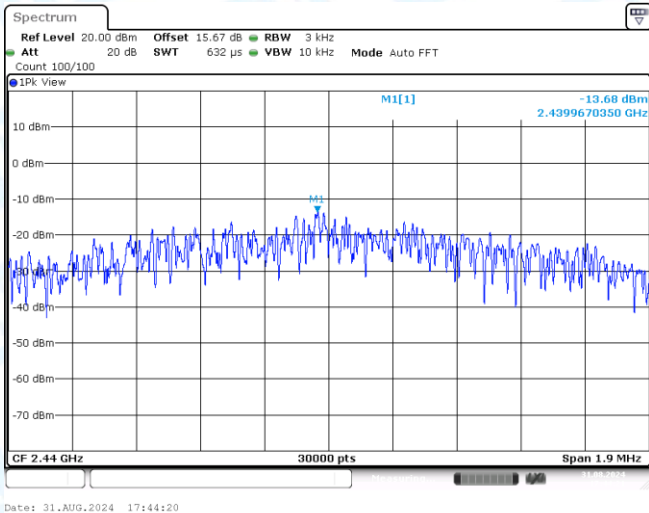
BLE\_1M-Ant1-2440-PASS



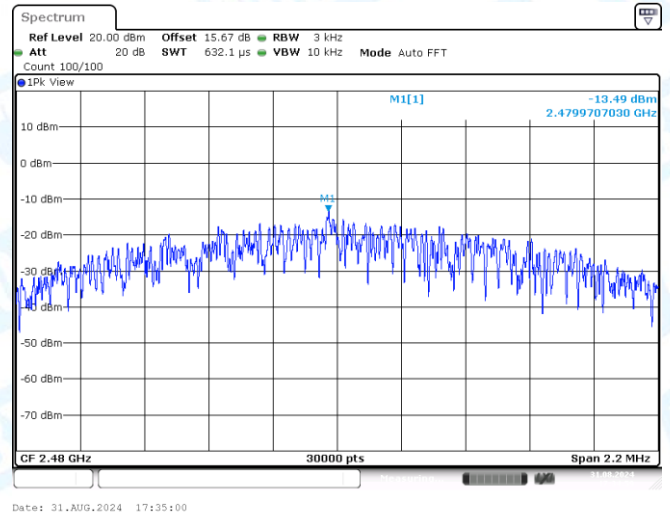
BLE\_1M-Ant1-2480-PASS



BLE\_2M-Ant1-2402-PASS



BLE\_2M-Ant1-2440-PASS



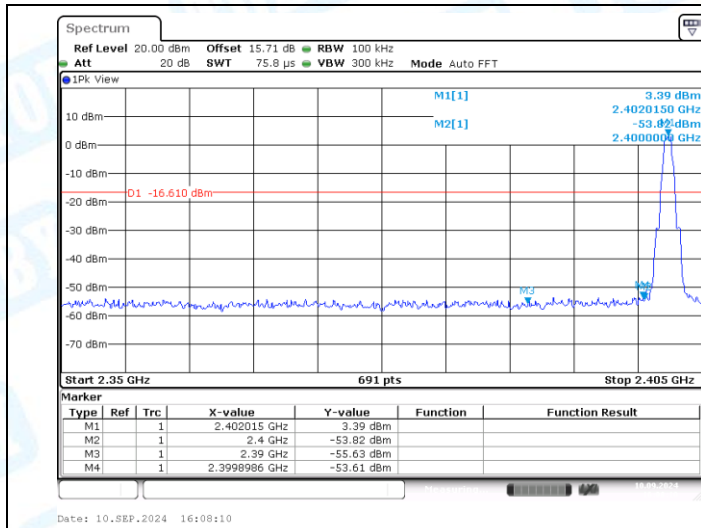
BLE\_2M-Ant1-2480-PASS

## 5: Band edge measurements

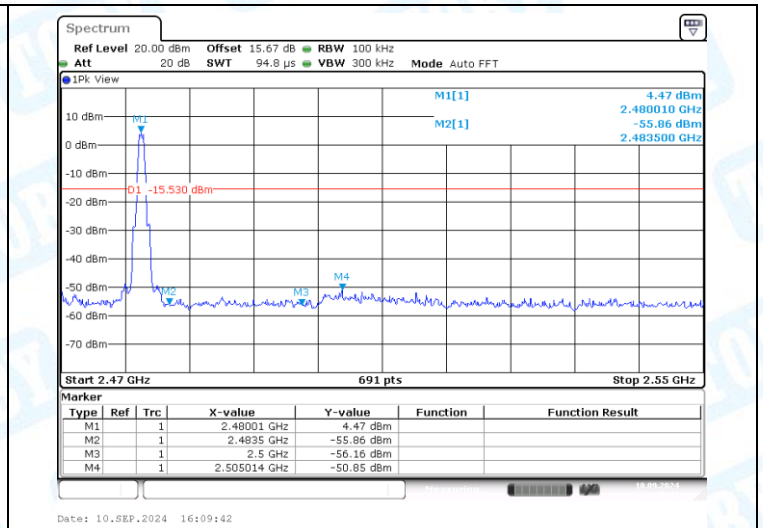
### 5.1 Test Result

| Test Mode | Antenna | ChName | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|--------|----------------|---------------|-------------|------------|---------|
| BLE_1M    | Ant1    | Low    | 2402           | 3.39          | -53.61      | ≤-16.61    | PASS    |
| BLE_1M    | Ant1    | High   | 2480           | 4.47          | -50.85      | ≤-15.53    | PASS    |
| BLE_2M    | Ant1    | Low    | 2402           | 2.91          | -30.75      | ≤-17.09    | PASS    |
| BLE_2M    | Ant1    | High   | 2480           | 4.51          | -52.26      | ≤-15.49    | PASS    |

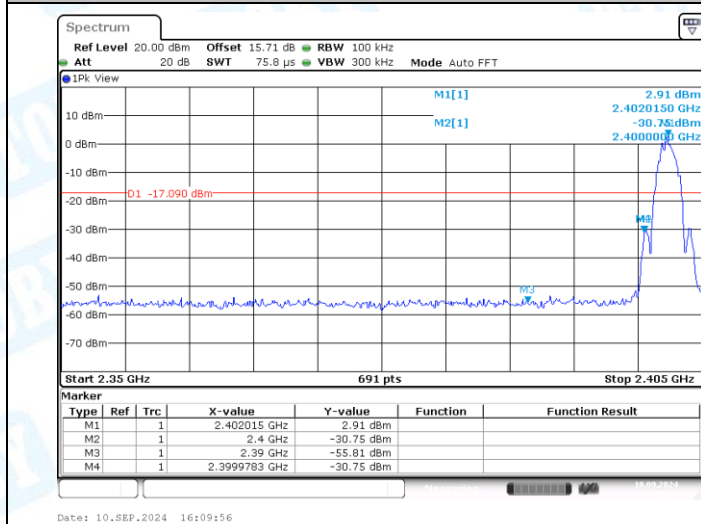
## 5.2 Test Graphs



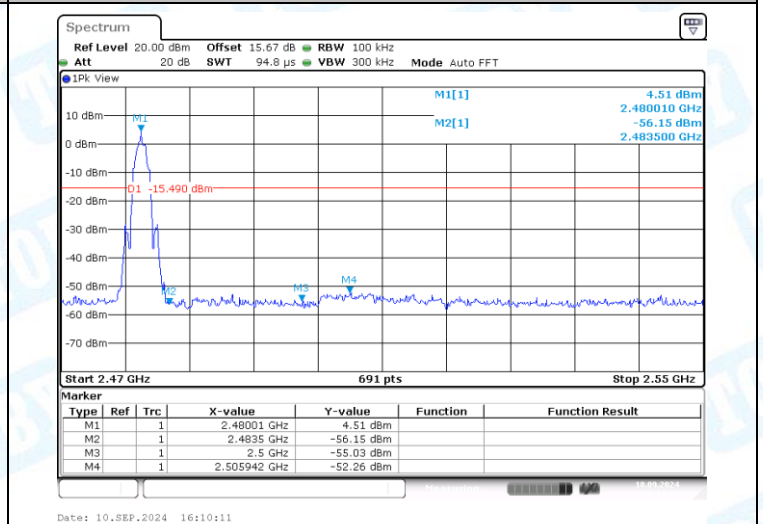
BLE\_1M-Ant1-2402-PASS



BLE\_1M-Ant1-2480-PASS



BLE\_2M-Ant1-2402-PASS



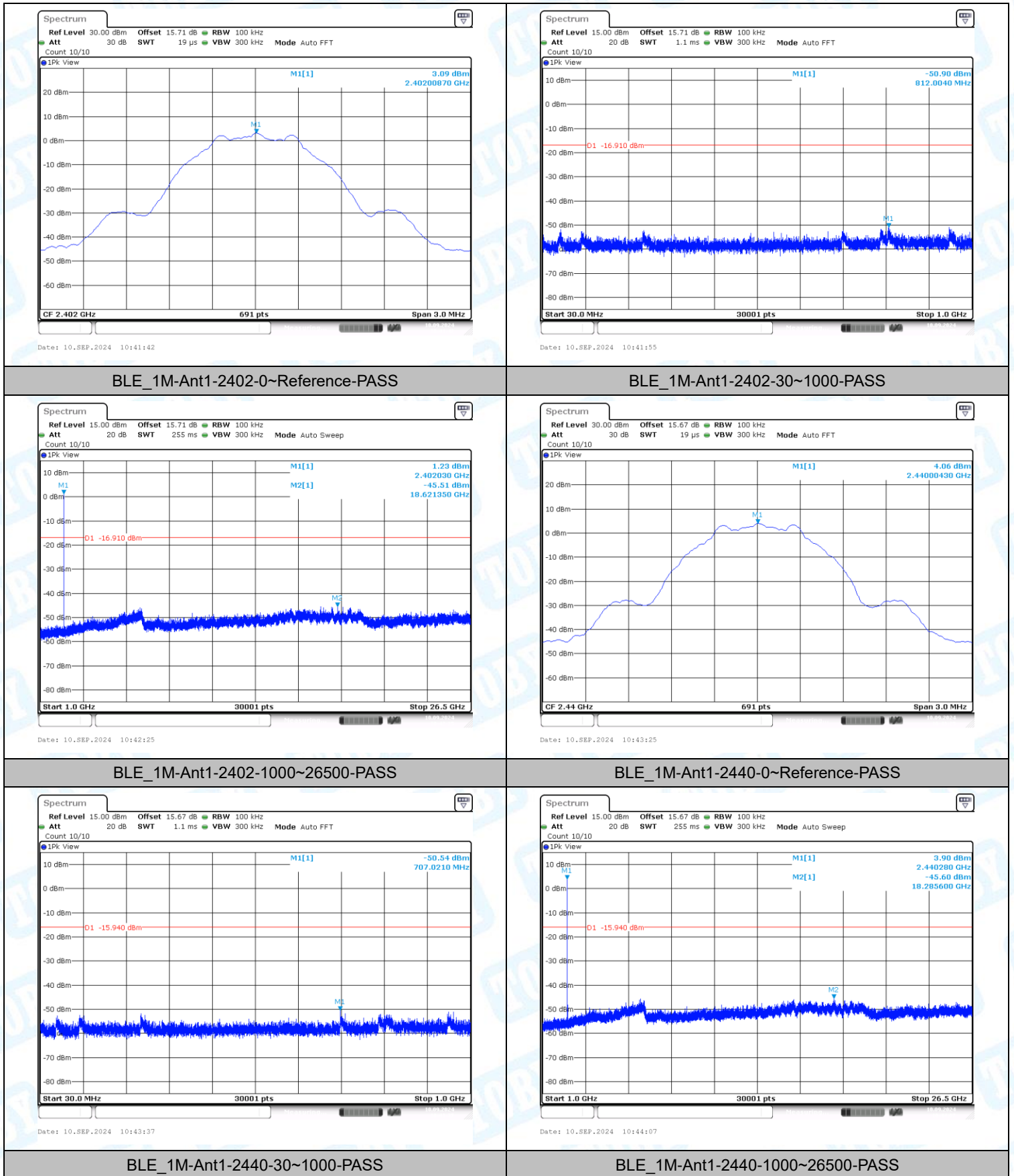
BLE\_2M-Ant1-2480-PASS

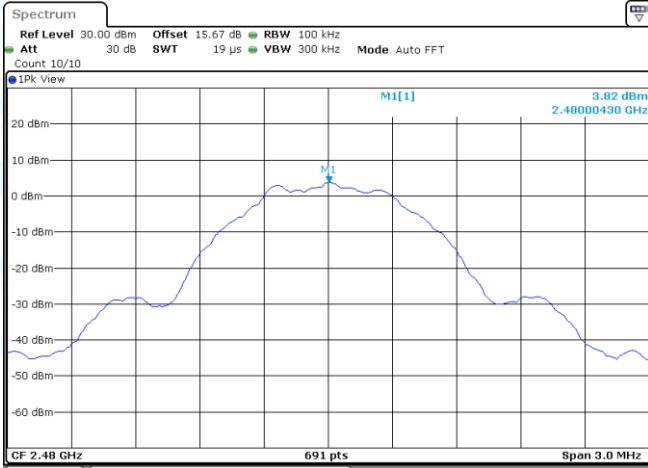
## 6: Conducted Spurious Emission

### 6.1 Test Result

| Test Mode | Antenna | Frequency[MHz] | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|----------------|-----------------|----------------|-------------|------------|---------|
| BLE_1M    | Ant1    | 2402           | 0~Reference     | 3.09           | 3.09        | ---        | PASS    |
| BLE_1M    | Ant1    | 2402           | 30~1000         | 3.09           | -50.9       | ≤-16.91    | PASS    |
| BLE_1M    | Ant1    | 2402           | 1000~26500      | 3.09           | -45.51      | ≤-16.91    | PASS    |
| BLE_1M    | Ant1    | 2440           | 0~Reference     | 4.06           | 4.06        | ---        | PASS    |
| BLE_1M    | Ant1    | 2440           | 30~1000         | 4.06           | -50.54      | ≤-15.94    | PASS    |
| BLE_1M    | Ant1    | 2440           | 1000~26500      | 4.06           | -45.6       | ≤-15.94    | PASS    |
| BLE_1M    | Ant1    | 2480           | 0~Reference     | 3.82           | 3.82        | ---        | PASS    |
| BLE_1M    | Ant1    | 2480           | 30~1000         | 3.82           | -50.87      | ≤-16.18    | PASS    |
| BLE_1M    | Ant1    | 2480           | 1000~26500      | 3.82           | -45.3       | ≤-16.18    | PASS    |
| BLE_2M    | Ant1    | 2402           | 0~Reference     | 3.67           | 3.67        | ---        | PASS    |
| BLE_2M    | Ant1    | 2402           | 30~1000         | 3.67           | -51.46      | ≤-16.33    | PASS    |
| BLE_2M    | Ant1    | 2402           | 1000~26500      | 3.67           | -44.99      | ≤-16.33    | PASS    |
| BLE_2M    | Ant1    | 2440           | 0~Reference     | 4.69           | 4.69        | ---        | PASS    |
| BLE_2M    | Ant1    | 2440           | 30~1000         | 4.69           | -51.04      | ≤-15.31    | PASS    |
| BLE_2M    | Ant1    | 2440           | 1000~26500      | 4.69           | -44.62      | ≤-15.31    | PASS    |
| BLE_2M    | Ant1    | 2480           | 0~Reference     | 4.51           | 4.51        | ---        | PASS    |
| BLE_2M    | Ant1    | 2480           | 30~1000         | 4.51           | -51.41      | ≤-15.49    | PASS    |
| BLE_2M    | Ant1    | 2480           | 1000~26500      | 4.51           | -45.24      | ≤-15.49    | PASS    |

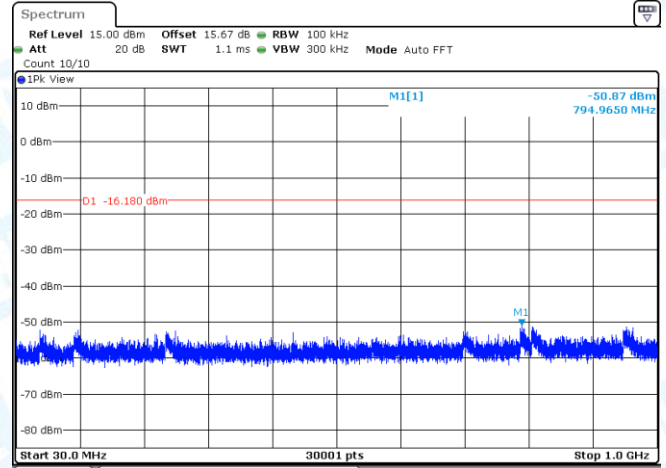
## 6.2 Test Graphs





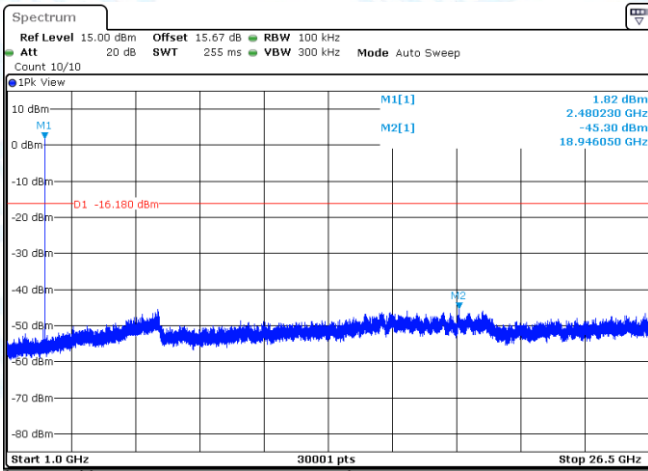
Date: 10.SEP.2024 10:45:13

BLE\_1M-Ant1-2480-0~Reference-PASS



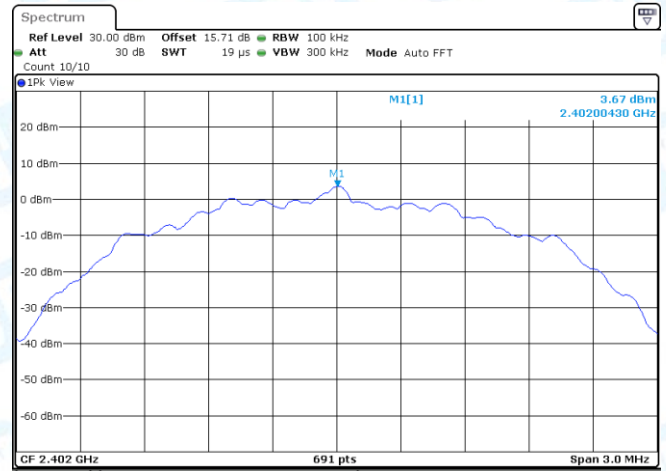
Date: 10.SEP.2024 10:45:26

BLE\_1M-Ant1-2480-30~1000-PASS



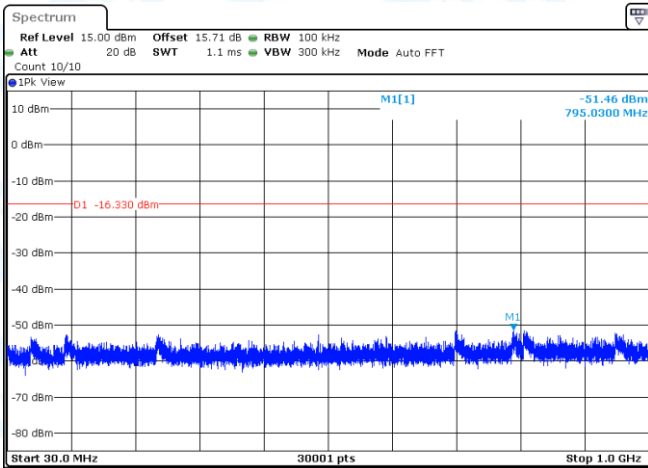
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BLE\_1M-Ant1-2480-1000~26500-PASS



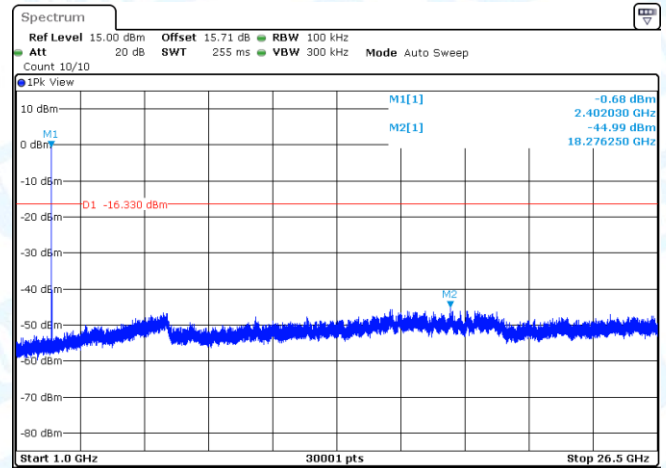
Date: 31.AUG.2024 17:48:46

BLE\_2M-Ant1-2402-0~Reference-PASS



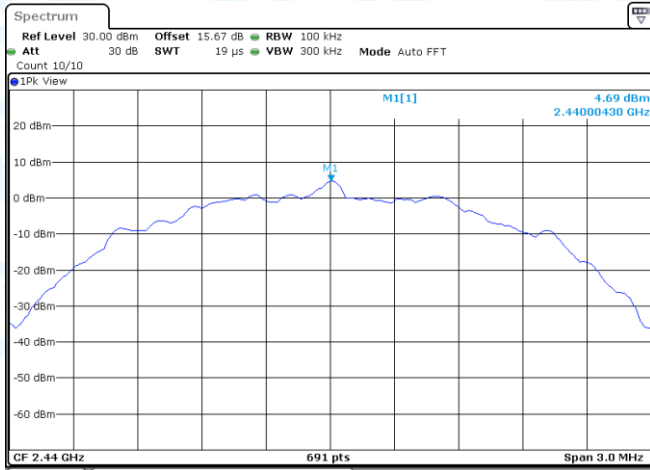
Date: 31.AUG.2024 17:48:59

BLE\_2M-Ant1-2402-30~1000-PASS

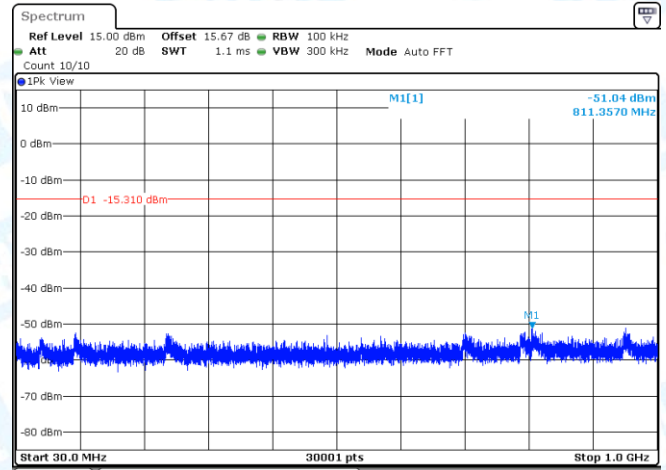


Date: 31.AUG.2024 17:49:29

BLE\_2M-Ant1-2402-1000~26500-PASS



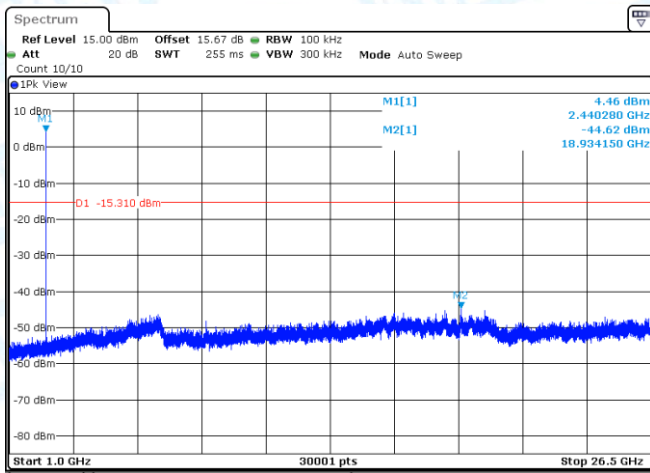
Date: 31.AUG.2024 17:47:38



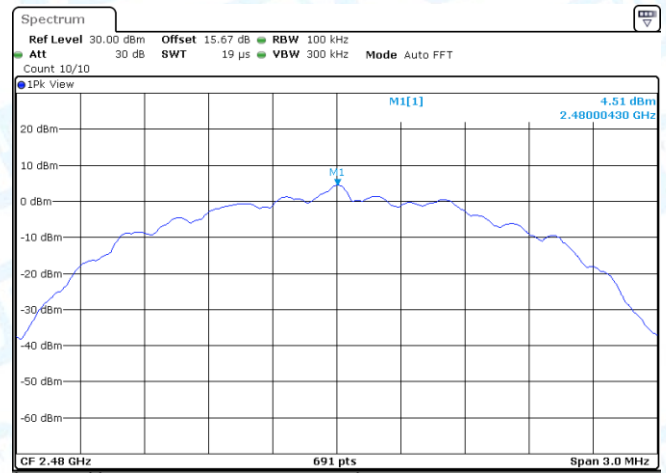
Date: 31.AUG.2024 17:47:50

BLE\_2M-Ant1-2440-0~Reference-PASS

BLE\_2M-Ant1-2440-30~1000-PASS



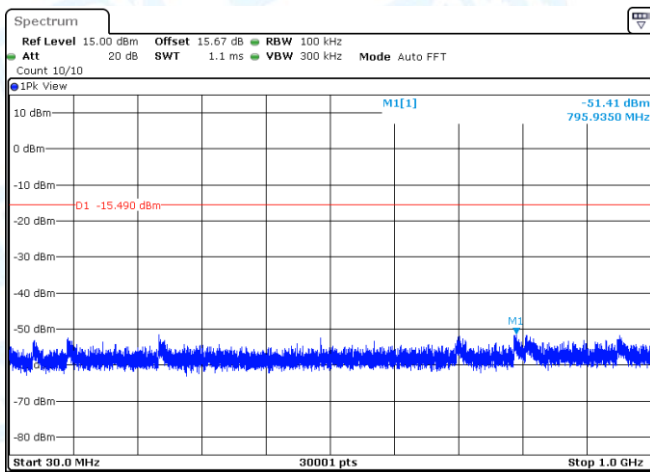
Date: 31.AUG.2024 17:48:20



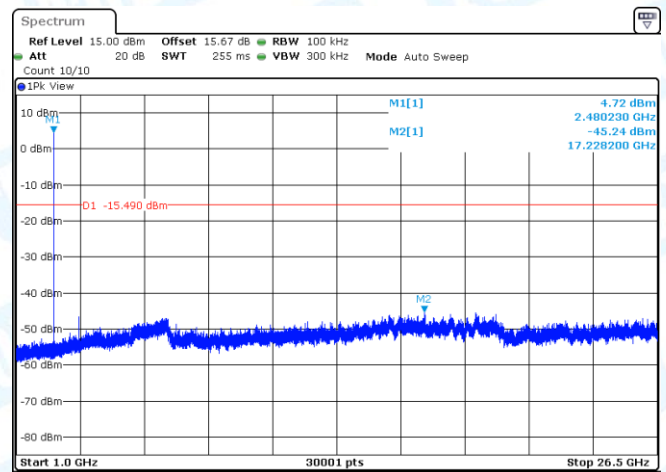
Date: 31.AUG.2024 17:35:10

BLE\_2M-Ant1-2440-1000~26500-PASS

BLE\_2M-Ant1-2480-0~Reference-PASS



Date: 31.AUG.2024 17:35:22



Date: 31.AUG.2024 17:35:52

BLE\_2M-Ant1-2480-30~1000-PASS

BLE\_2M-Ant1-2480-1000~26500-PASS

## 7: Duty Cycle

### 7.1 Test Result

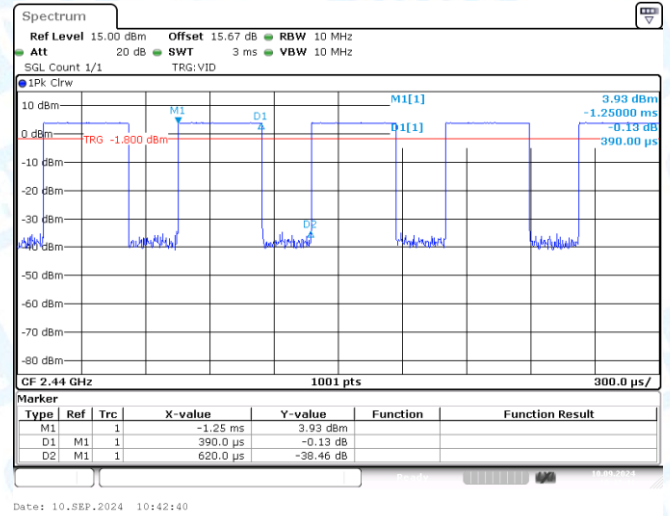
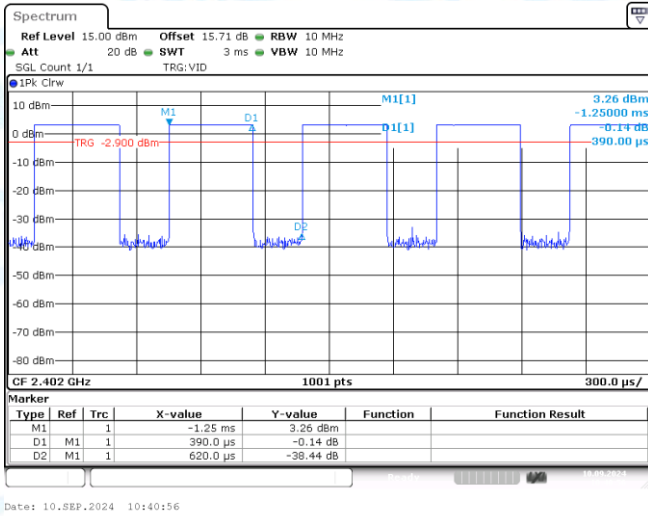
| TestMode | Antenna | Frequency [MHz] | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | DC Factory | 1/T [kHz] |
|----------|---------|-----------------|----------------------------|--------------------------|----------------|------------|-----------|
| BLE_1M   | Ant1    | 2402            | 0.39                       | 0.62                     | 62.90          | 2.01       | 2.56      |
| BLE_1M   | Ant1    | 2440            | 0.39                       | 0.62                     | 62.90          | 2.01       | 2.56      |
| BLE_1M   | Ant1    | 2480            | 0.39                       | 0.62                     | 62.90          | 2.01       | 2.56      |
| BLE_2M   | Ant1    | 2402            | 0.21                       | 0.62                     | 33.87          | 4.70       | 4.76      |
| BLE_2M   | Ant1    | 2440            | 0.21                       | 0.62                     | 33.87          | 4.70       | 4.76      |
| BLE_2M   | Ant1    | 2480            | 0.21                       | 0.62                     | 33.87          | 4.70       | 4.76      |

Note: 1, Duty Cycle= Transmission Duration/ Transmission Period

2, DC Factory=10\*Log<sub>10</sub>(1/Duty Cycle)

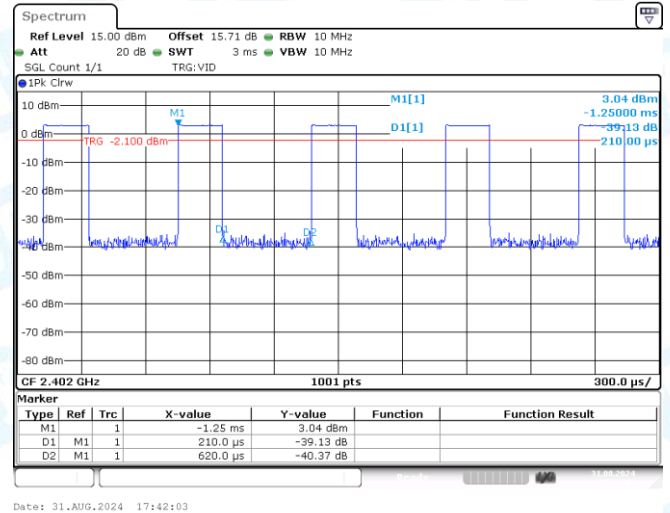
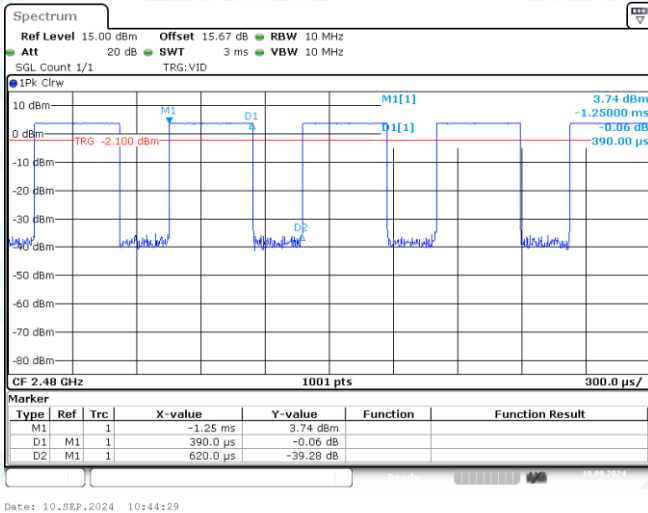
3, 1/T=1/ Transmission Duration

## 7.2 Test Graphs



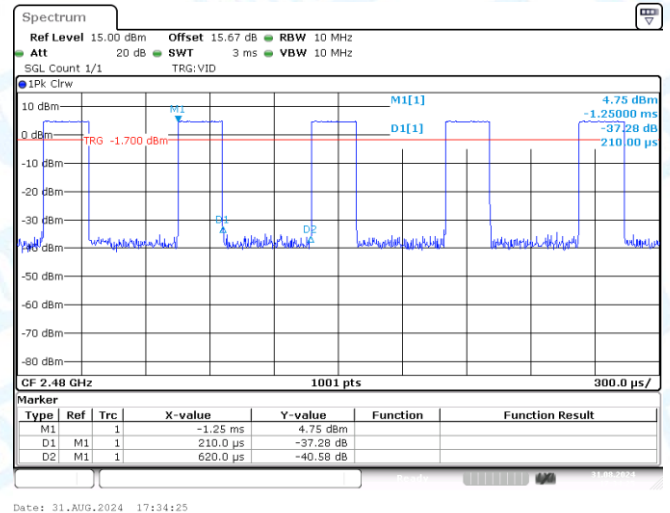
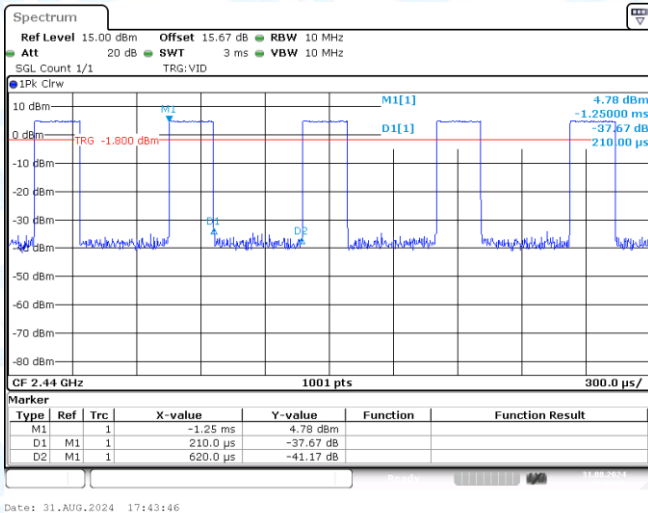
NTNV-BLE\_1M-Ant1-2402

NTNV-BLE\_1M-Ant1-2440



NTNV-BLE\_1M-Ant1-2480

NTNV-BLE\_2M-Ant1-2402



NTNV-BLE\_2M-Ant1-2440

NTNV-BLE\_2M-Ant1-2480

-----END OF THE REPORT-----