

RF Test Data for Bluetooth LE (Conducted Measurements)

| General Description of EUT | |
|---|------------------------|
| Product Name: | Wi-Fi BT Module |
| Test Model: | CDW-N37663U-02 |
| Sample ID: | HC-C-202403-0360-02-01 |
| Environmental Conditions | |
| Temperature: | 23.6°C |
| Relative Humidity: | 48% |
| Test Voltage: | DC 3.3V |
| Test Engineer: | Mike Yan |
| Note: For a more detailed features description, please refer to the report TBR-C-202403-0360-7. | |

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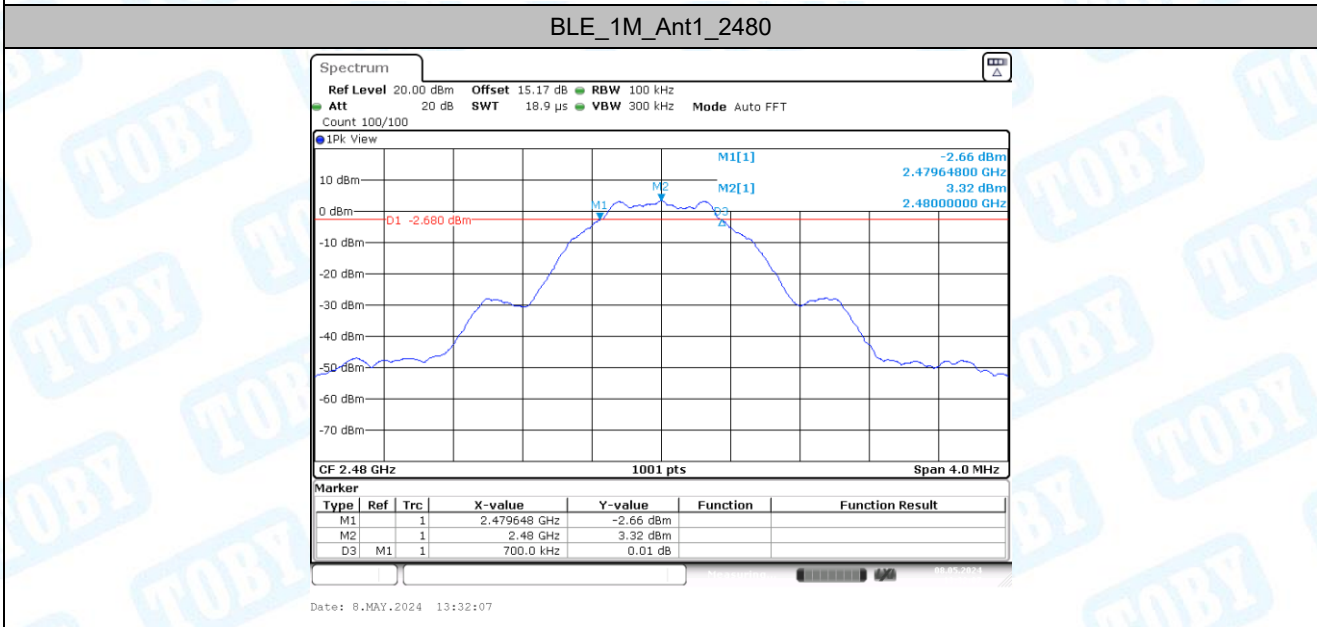
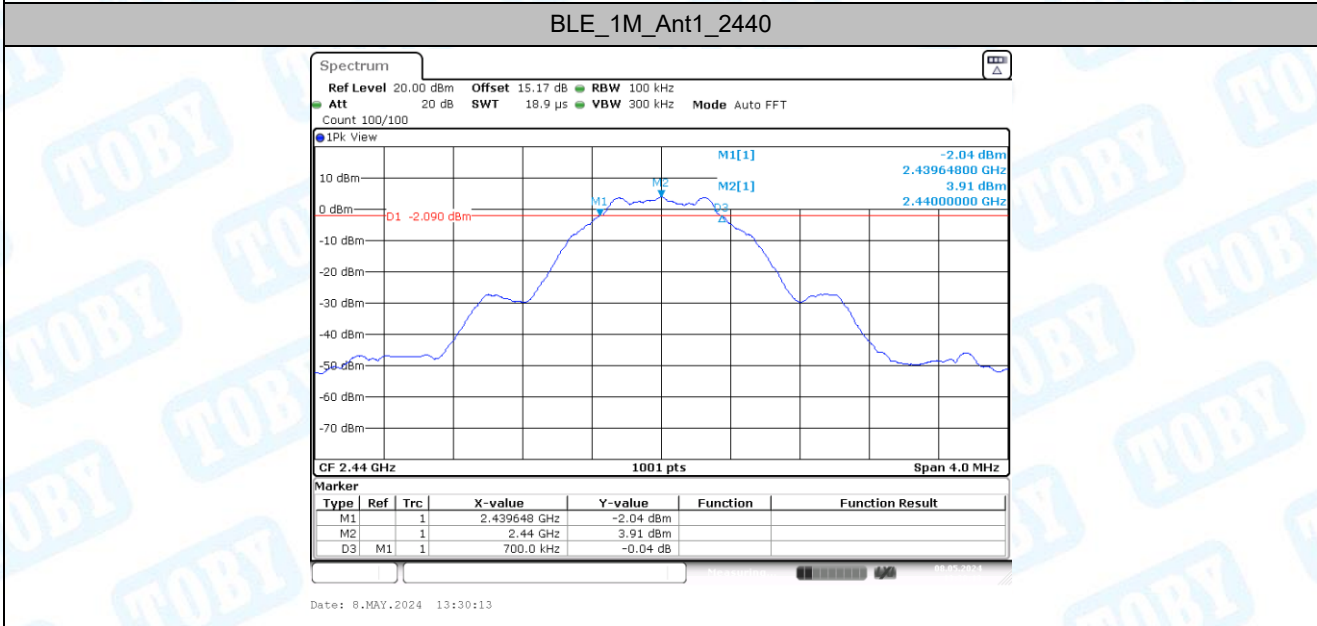
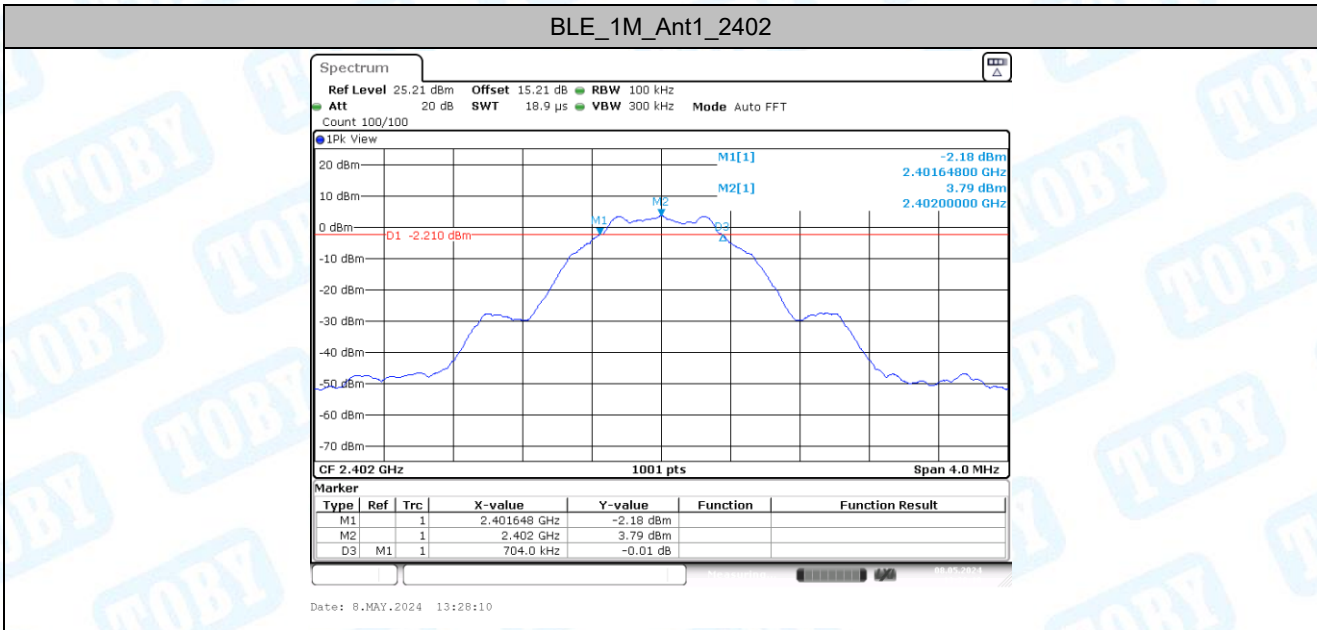
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1. DTS Bandwidth

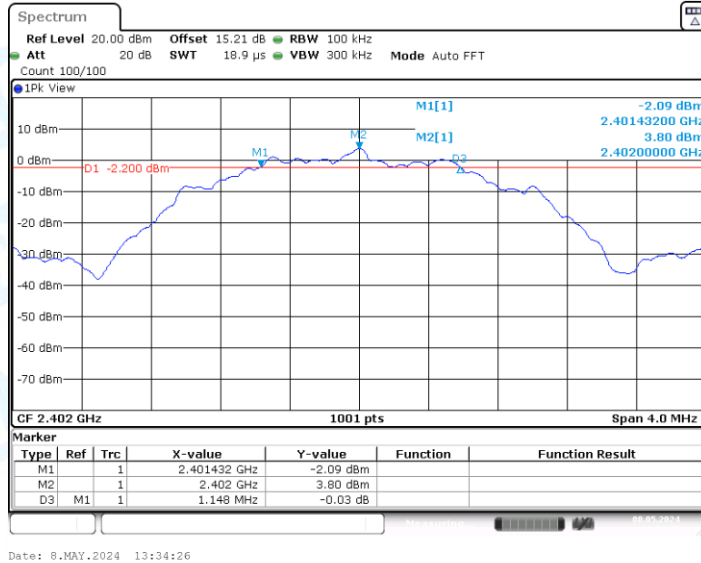
1.1. Test Result

| Test Mode | Antenna | Channel | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|---------|--------------|---------|---------|------------|---------|
| BLE_1M | Ant1 | 2402 | 0.70 | 2401.65 | 2402.35 | 0.5 | PASS |
| | | 2440 | 0.70 | 2439.65 | 2440.35 | 0.5 | PASS |
| | | 2480 | 0.70 | 2479.65 | 2480.35 | 0.5 | PASS |
| BLE_2M | Ant1 | 2402 | 1.15 | 2401.43 | 2402.58 | 0.5 | PASS |
| | | 2440 | 1.15 | 2439.43 | 2440.58 | 0.5 | PASS |
| | | 2480 | 1.15 | 2479.43 | 2480.58 | 0.5 | PASS |

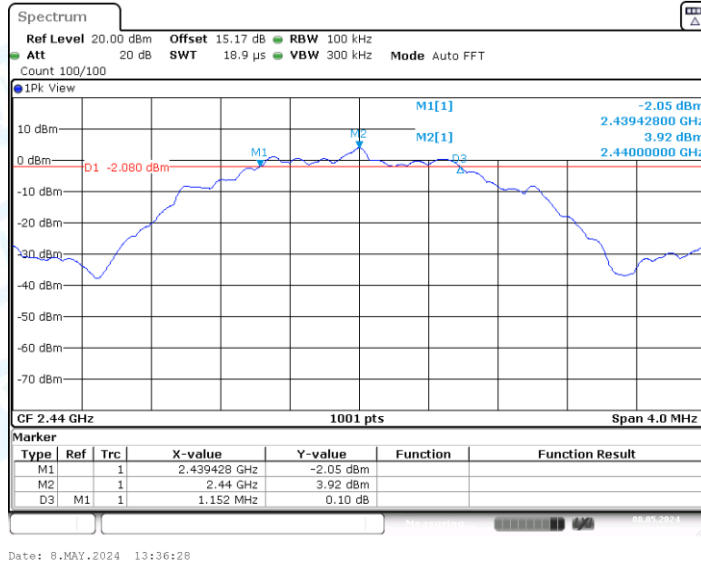
1.2. Test Graphs



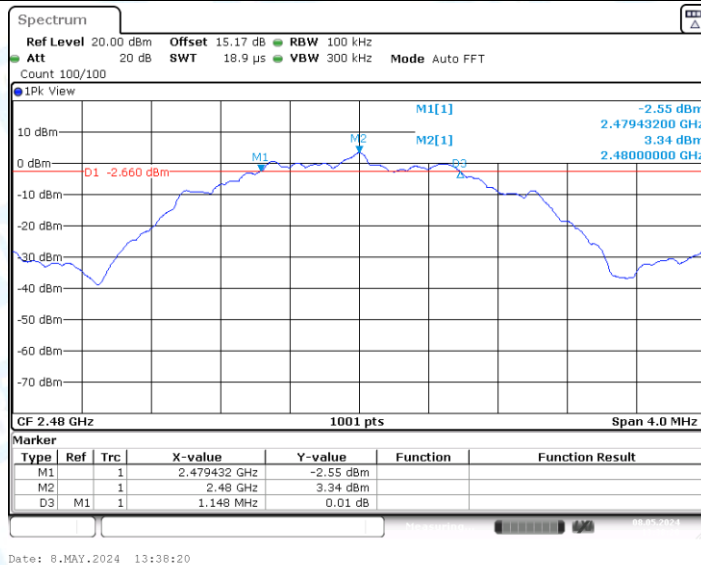
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

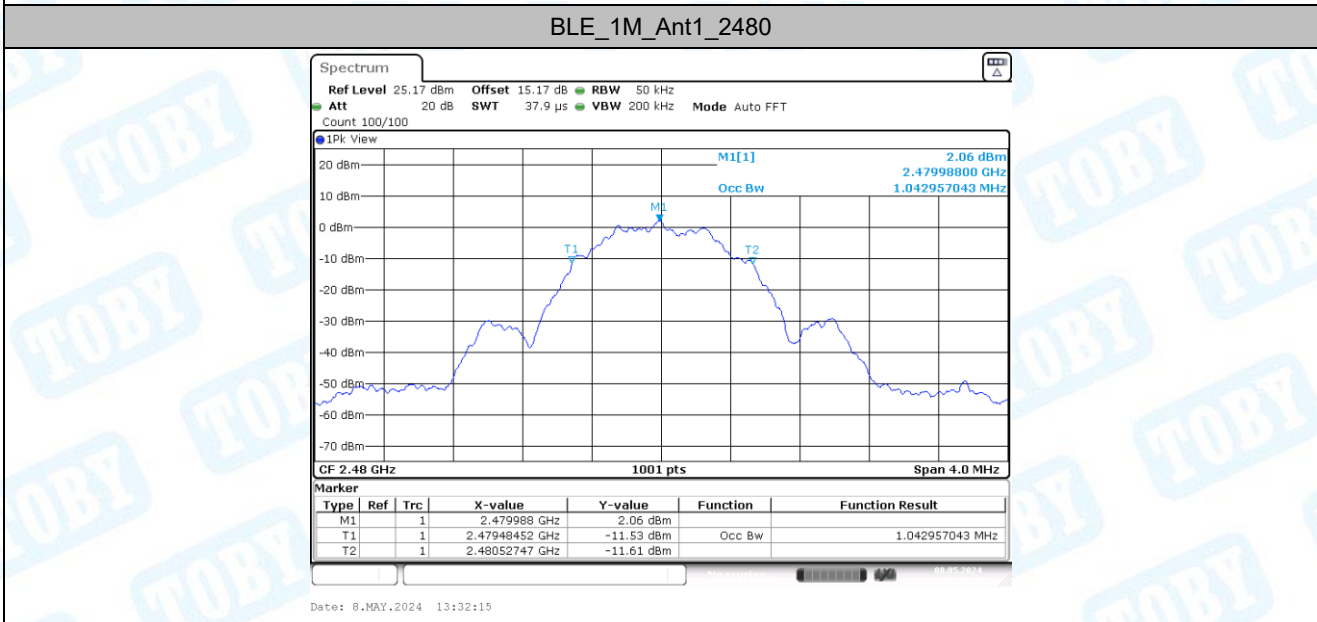
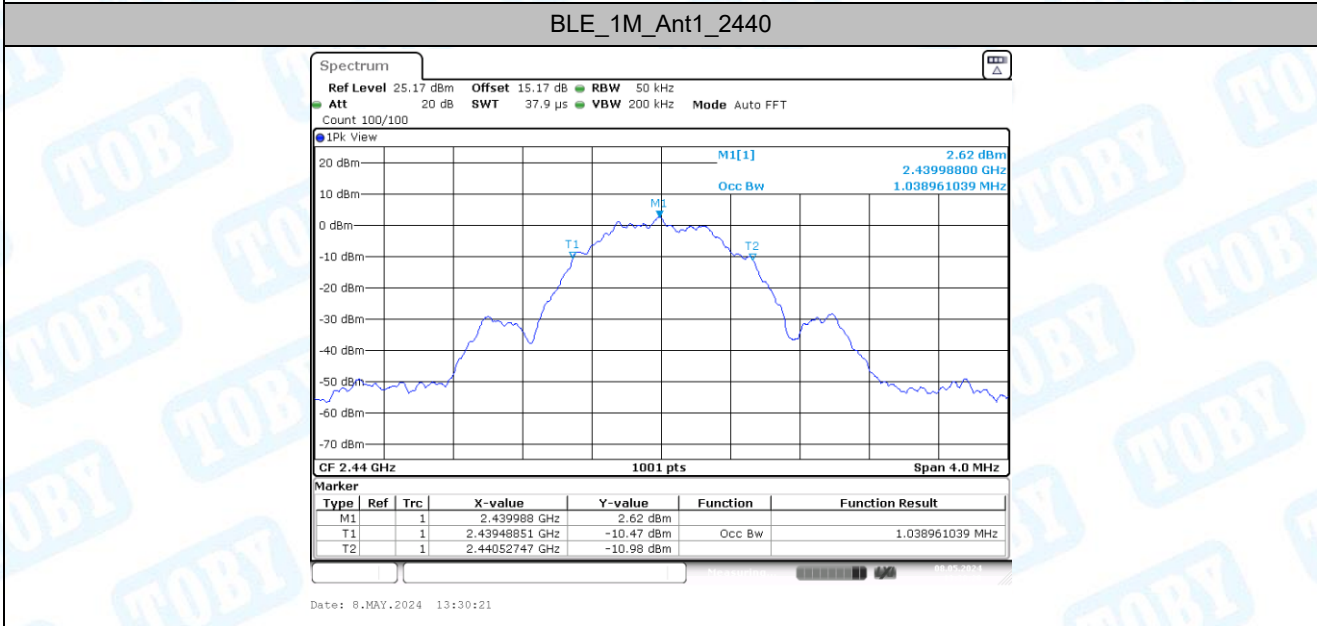
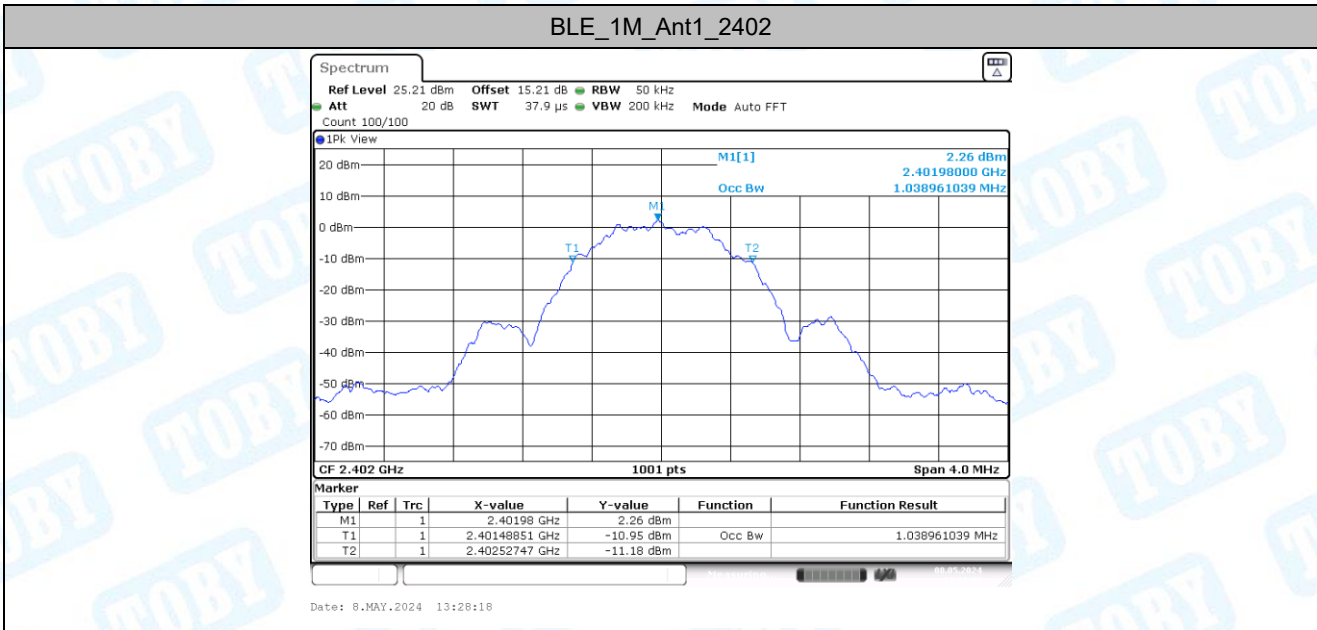


2. Occupied Channel Bandwidth

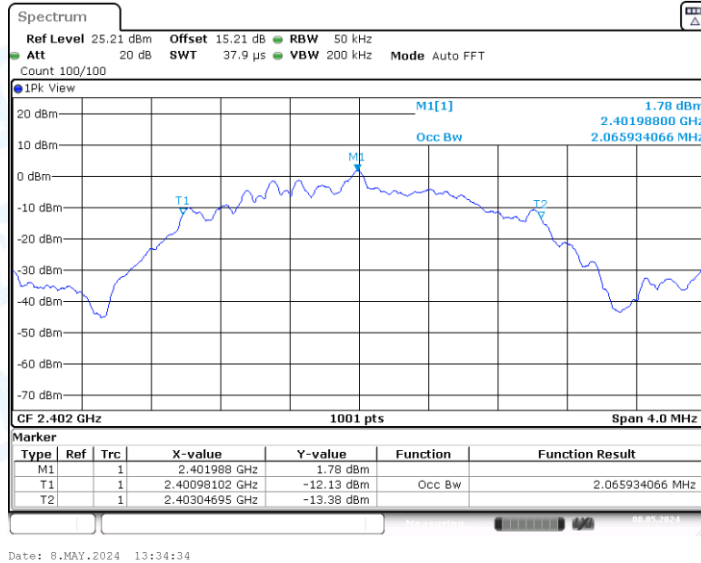
2.1. Test Result

| Test Mode | Antenna | Channel | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|---------|-----------|-----------|-----------|------------|---------|
| BLE_1M | Ant1 | 2402 | 1.039 | 2401.4885 | 2402.5275 | --- | --- |
| | | 2440 | 1.039 | 2439.4885 | 2440.5275 | --- | --- |
| | | 2480 | 1.043 | 2479.4845 | 2480.5275 | --- | --- |
| BLE_2M | Ant1 | 2402 | 2.066 | 2400.9810 | 2403.0470 | --- | --- |
| | | 2440 | 2.066 | 2438.9810 | 2441.0470 | --- | --- |
| | | 2480 | 2.066 | 2478.9810 | 2481.0470 | --- | --- |

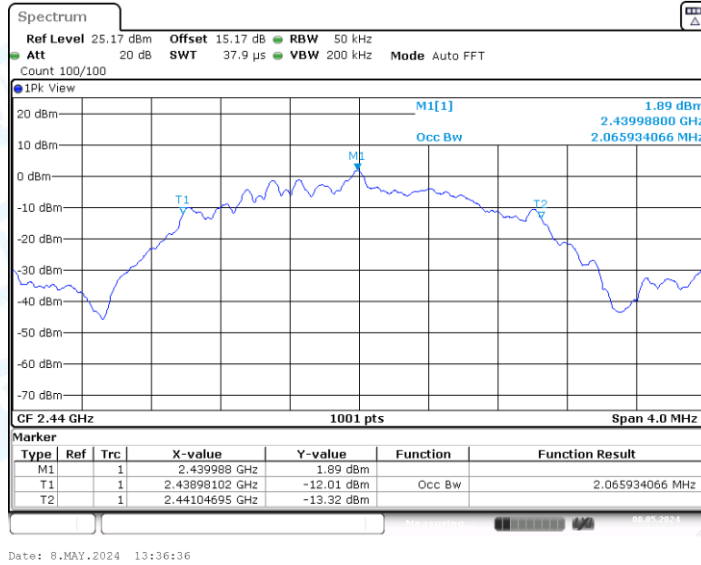
2.2. Test Graphs



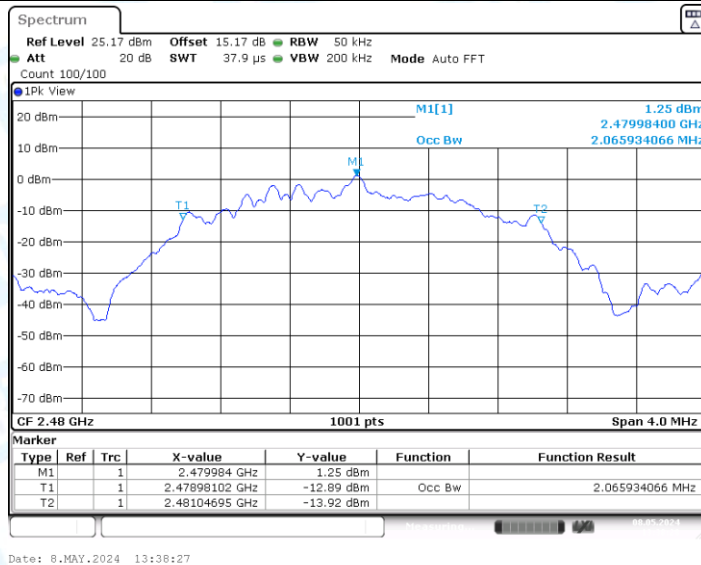
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



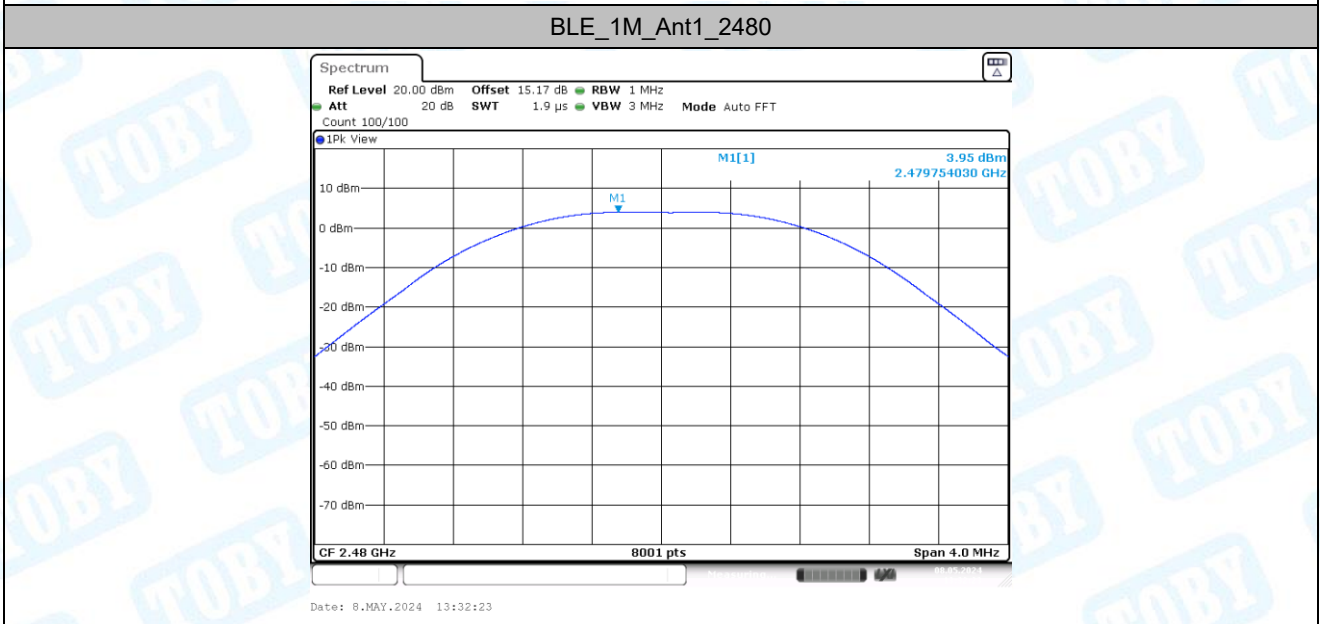
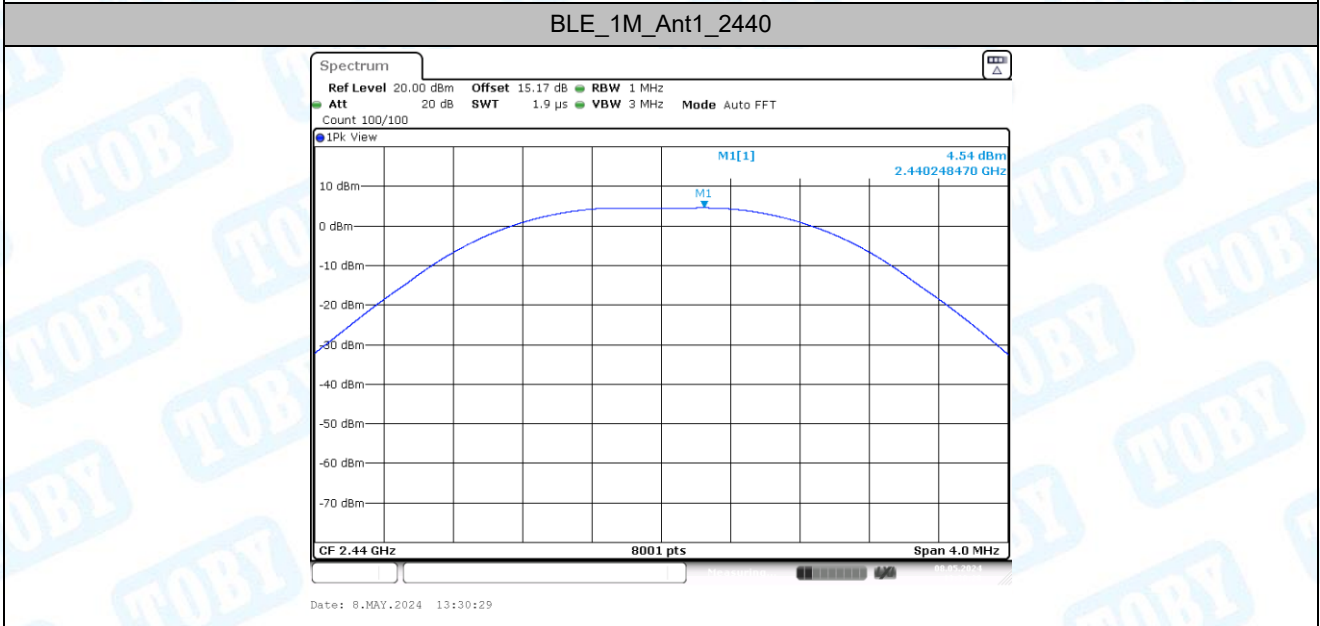
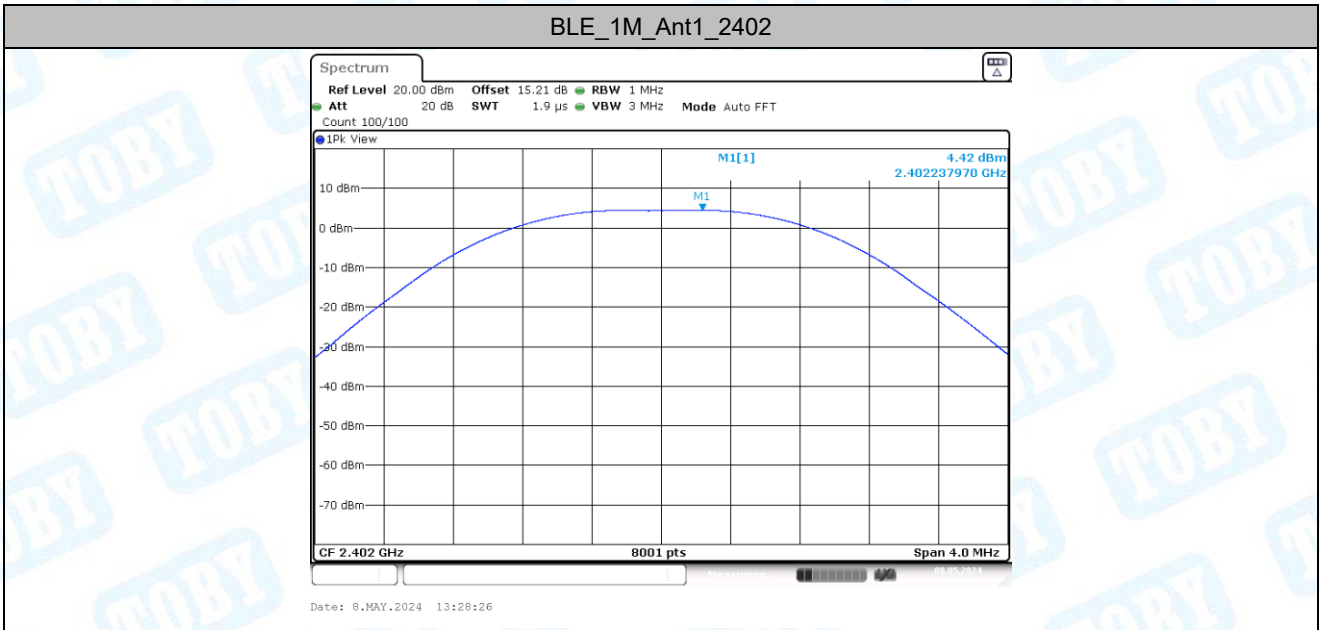
3. Maximum Peak conducted output power

3.1. Test Result

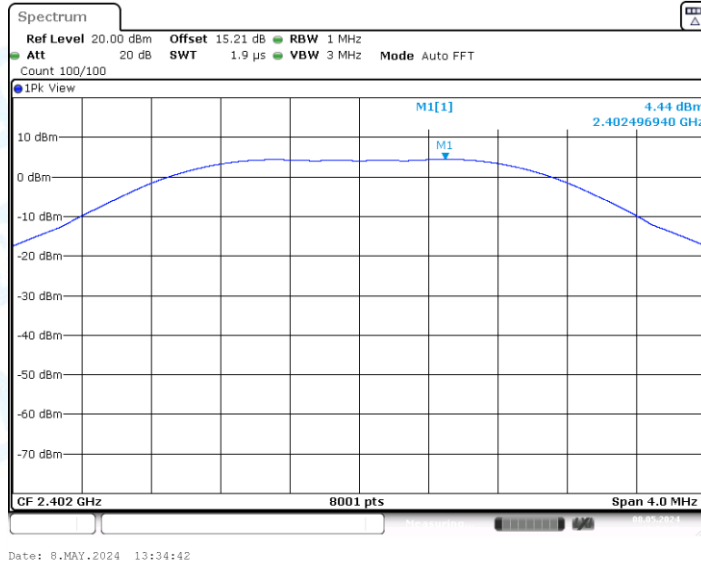
| Test Mode | Antenna | Channel | Result [dBm] | Limit [dBm] | Gain [dBm] | EIRP [dBm] | EIRP Limit[dBm] | Verdict |
|-----------|---------|---------|--------------|-------------|------------|------------|-----------------|---------|
| BLE_1M | Ant1 | 2402 | 4.42 | ≤30 | 4.70 | 9.12 | ≤36 | PASS |
| | | 2440 | 4.54 | ≤30 | 4.70 | 9.24 | ≤36 | PASS |
| | | 2480 | 3.95 | ≤30 | 4.70 | 8.65 | ≤36 | PASS |
| BLE_2M | Ant1 | 2402 | 4.44 | ≤30 | 4.70 | 9.14 | ≤36 | PASS |
| | | 2440 | 4.59 | ≤30 | 4.70 | 9.29 | ≤36 | PASS |
| | | 2480 | 3.97 | ≤30 | 4.70 | 8.67 | ≤36 | PASS |

Note: This module will use two different BT antennas, and only the one with the larger antenna gain(4.70dBi) will be used for conducted test.

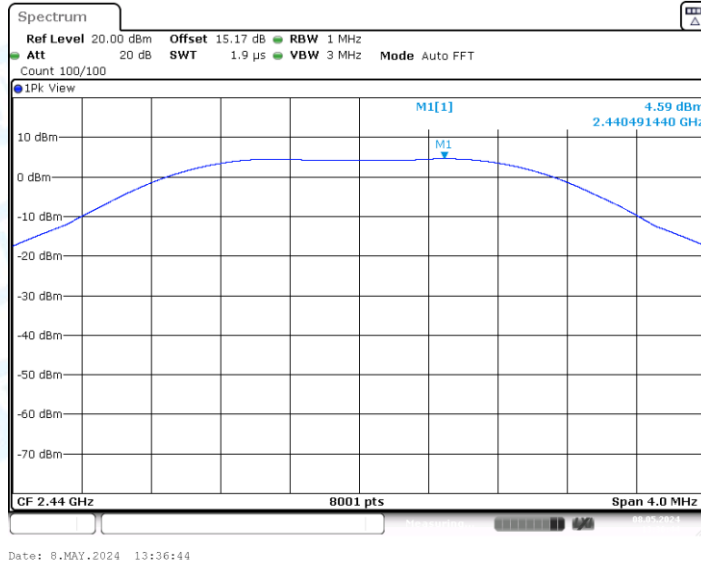
3.2. Test Graphs



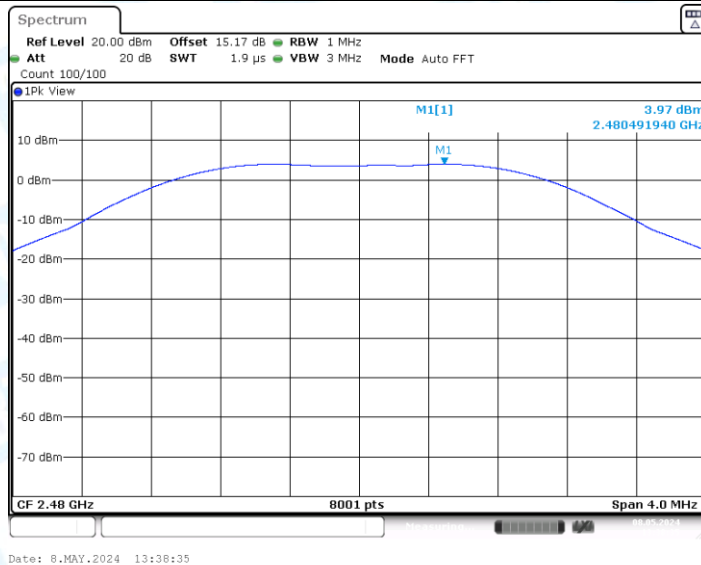
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

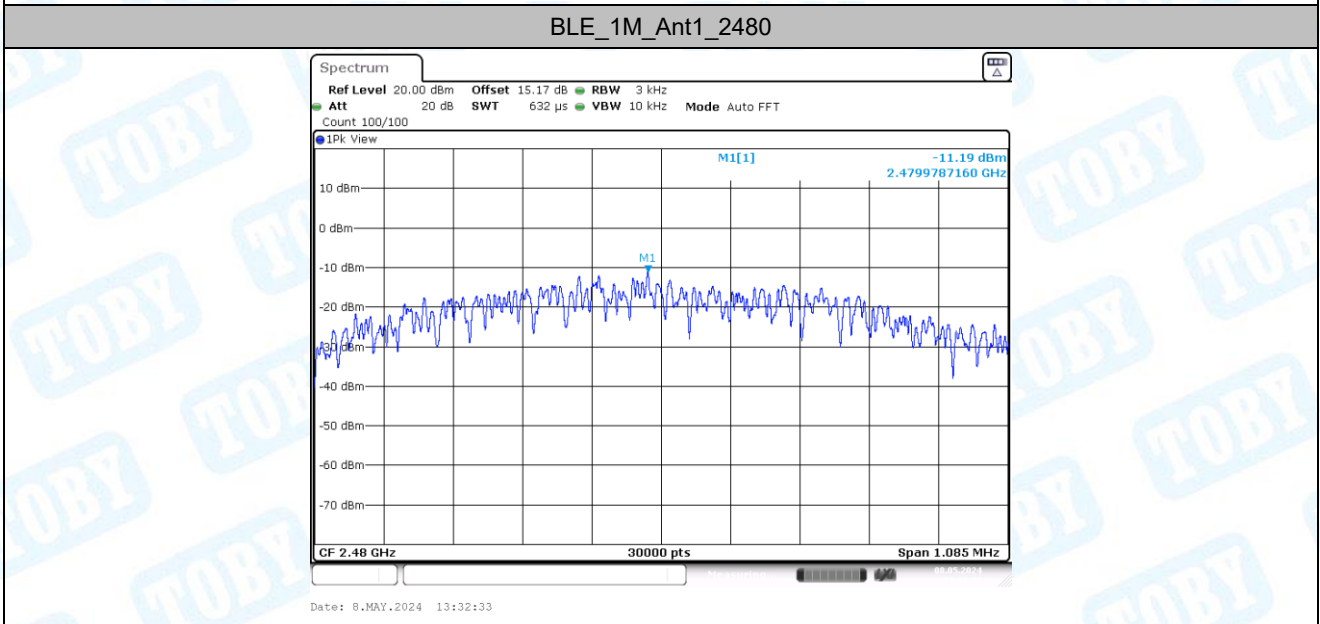
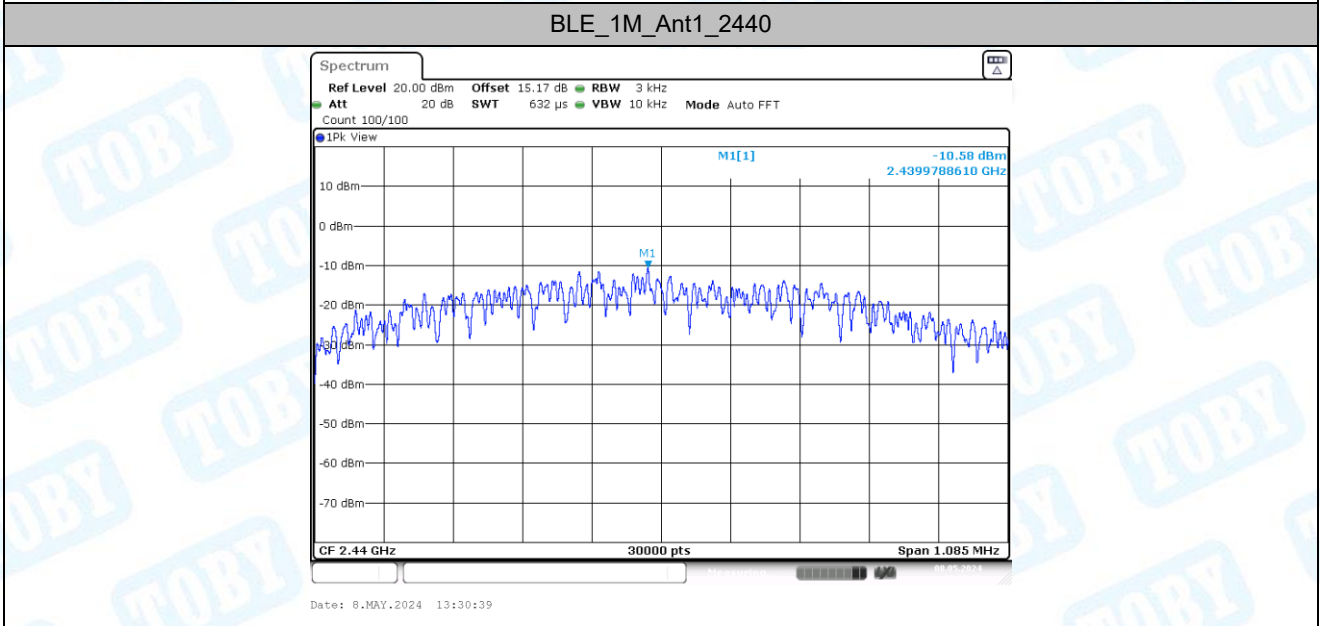
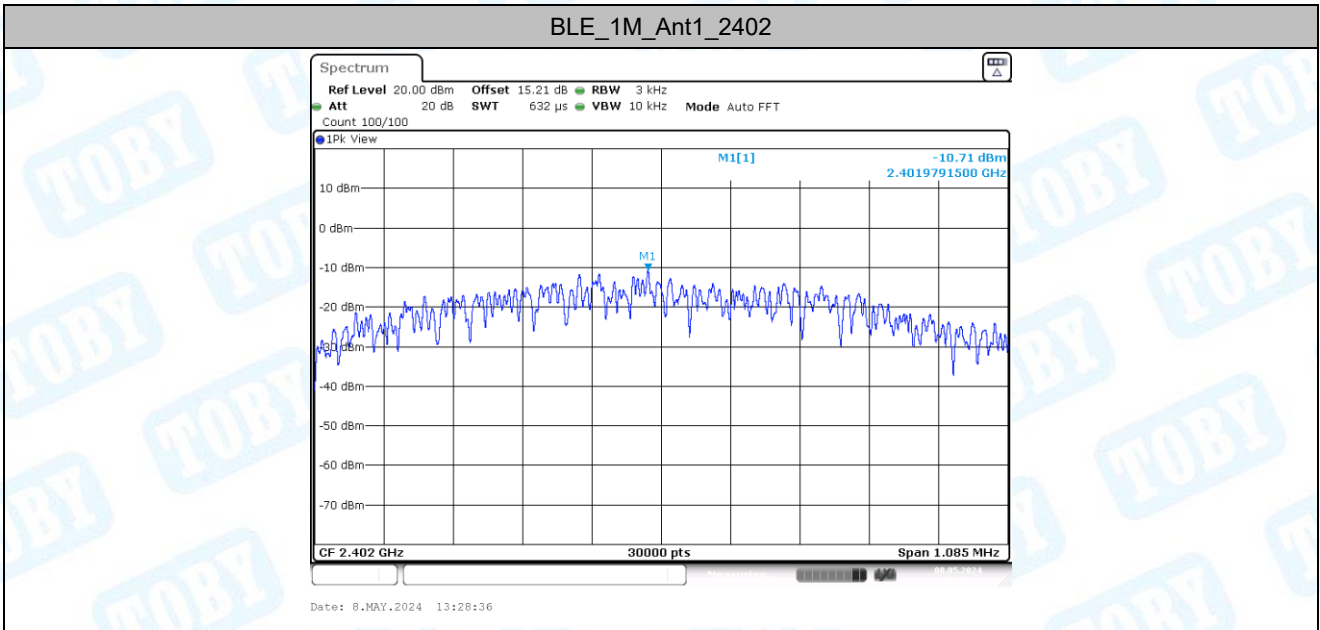


4. Maximum power spectral density

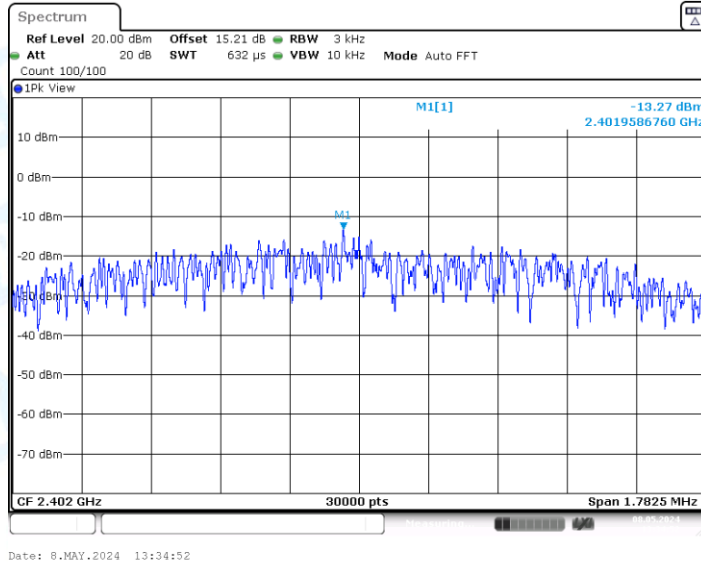
4.1. Test Result

| Test Mode | Antenna | Channel | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|-----------|---------|---------|------------------|-----------------|---------|
| BLE_1M | Ant1 | 2402 | -10.71 | ≤8.00 | PASS |
| | | 2440 | -10.58 | ≤8.00 | PASS |
| | | 2480 | -11.19 | ≤8.00 | PASS |
| BLE_2M | Ant1 | 2402 | -13.27 | ≤8.00 | PASS |
| | | 2440 | -13.20 | ≤8.00 | PASS |
| | | 2480 | -13.74 | ≤8.00 | PASS |

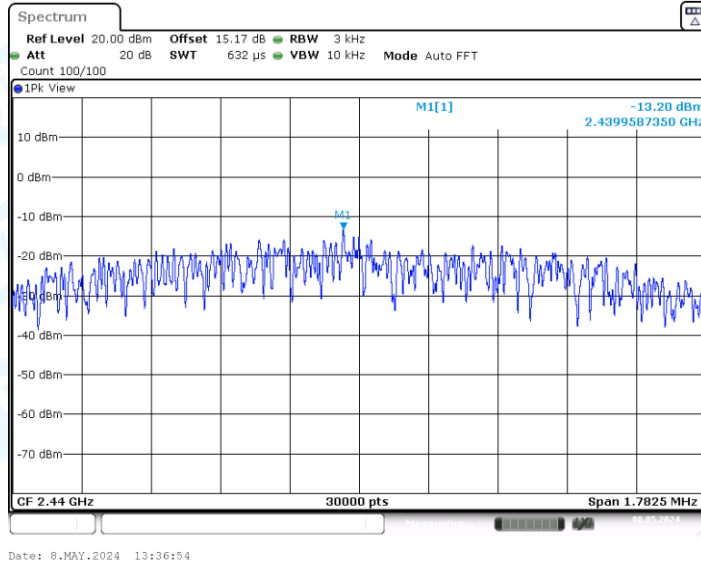
4.2. Test Graphs



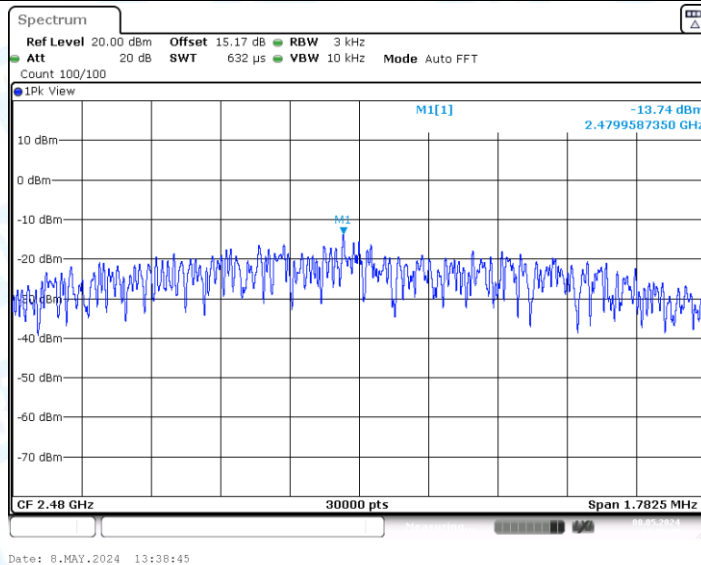
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

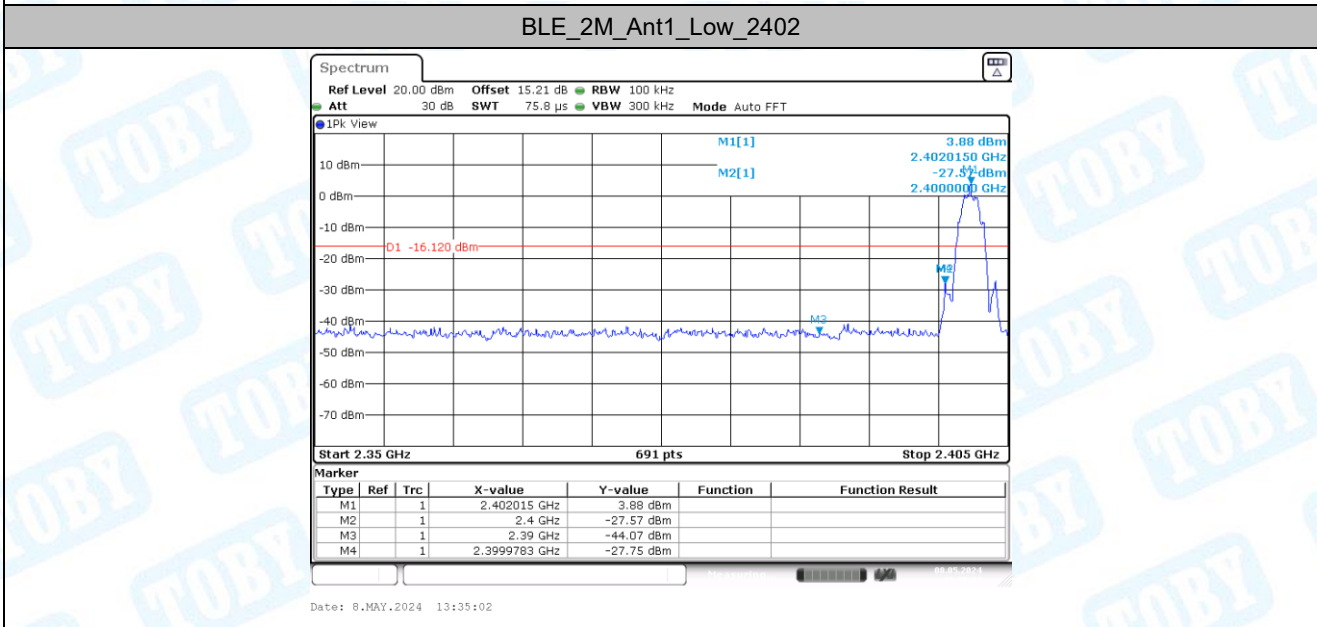
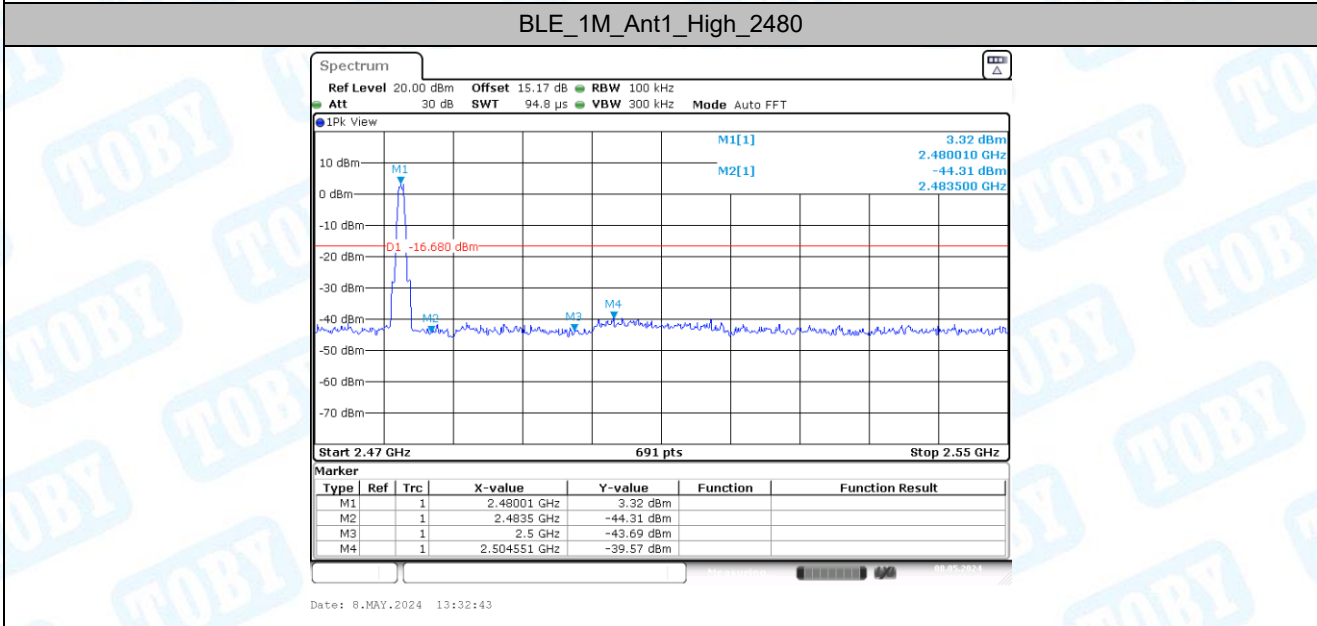
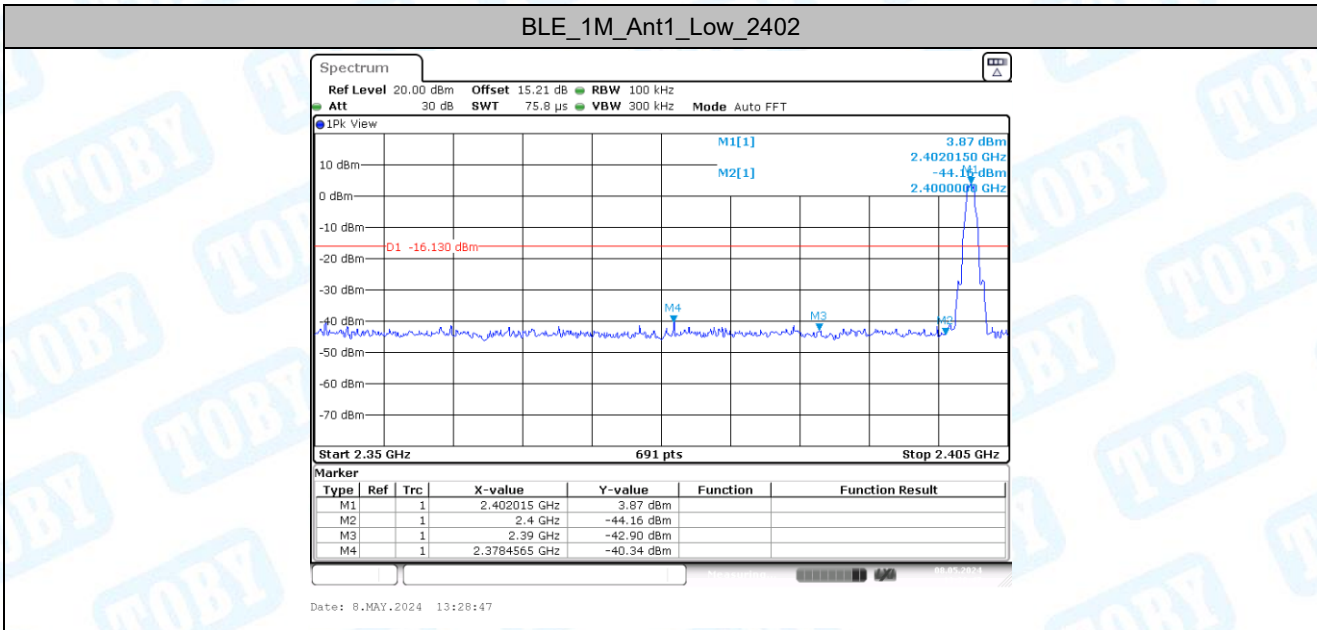


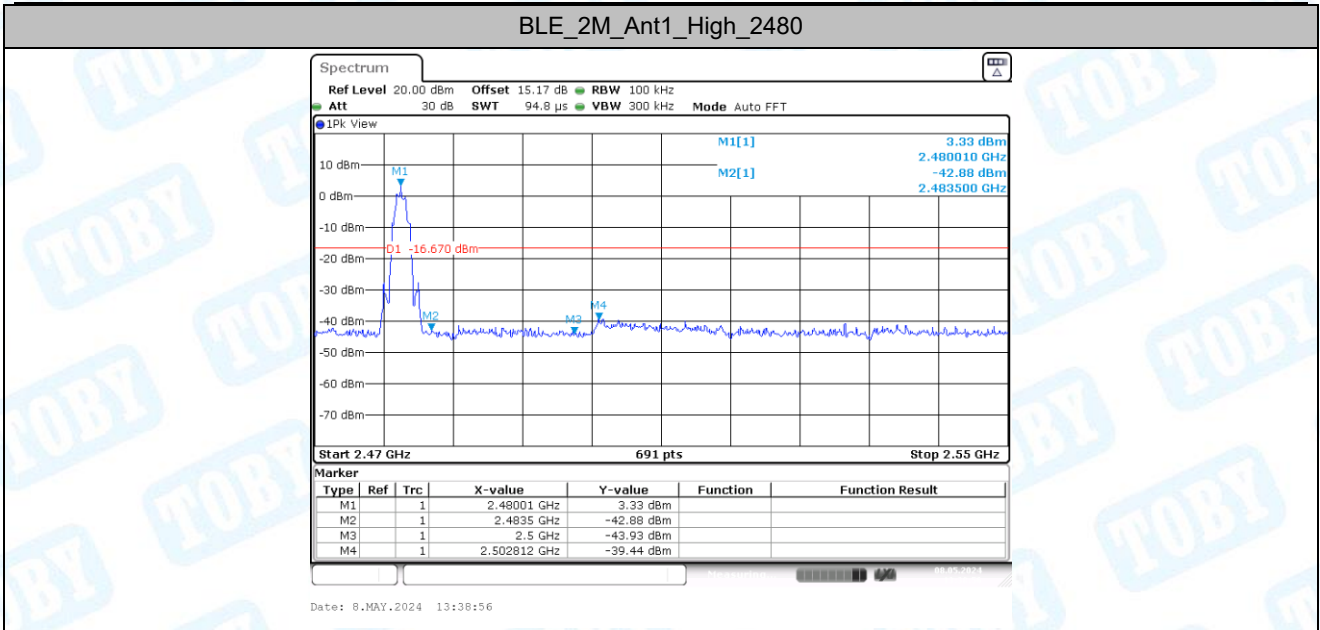
5. Band edge measurements

5.1. Test Result

| Test Mode | Antenna | ChName | Channel | Ref.Level[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|--------|---------|----------------|-------------|------------|---------|
| BLE_1M | Ant1 | Low | 2402 | 3.87 | -40.34 | ≤-16.13 | PASS |
| | | High | 2480 | 3.32 | -39.57 | ≤-16.68 | PASS |
| BLE_2M | Ant1 | Low | 2402 | 3.88 | -27.75 | ≤-16.12 | PASS |
| | | High | 2480 | 3.33 | -39.44 | ≤-16.67 | PASS |

5.2. Test Graphs



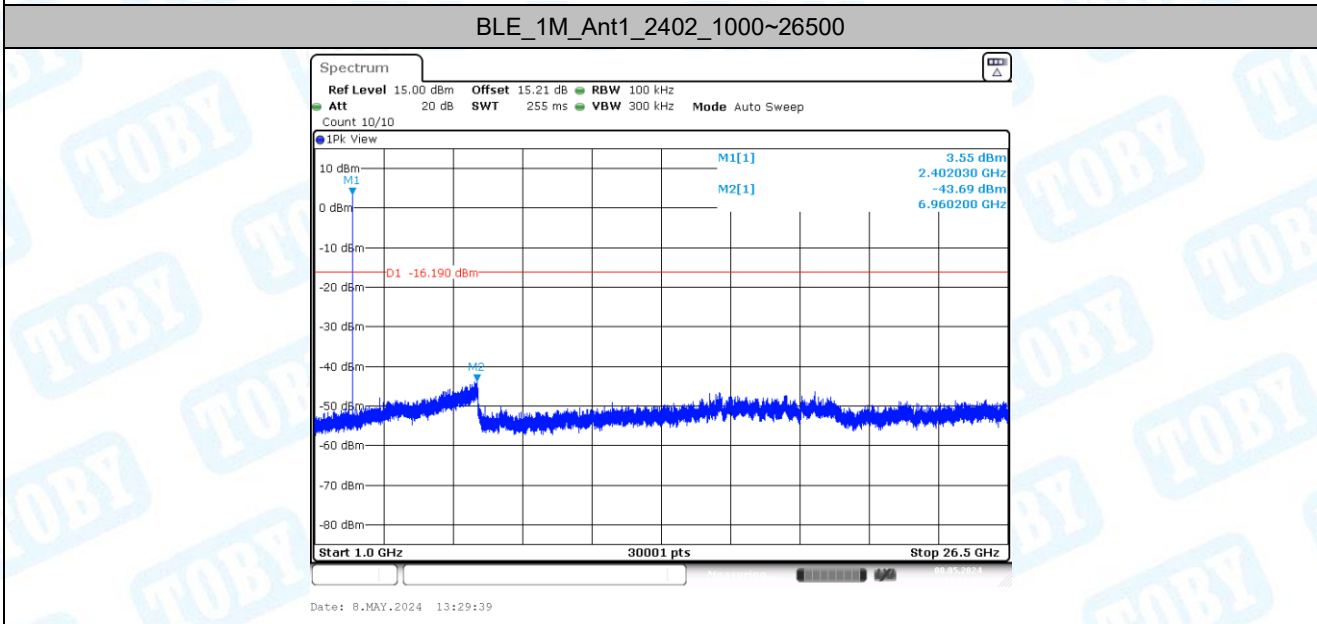
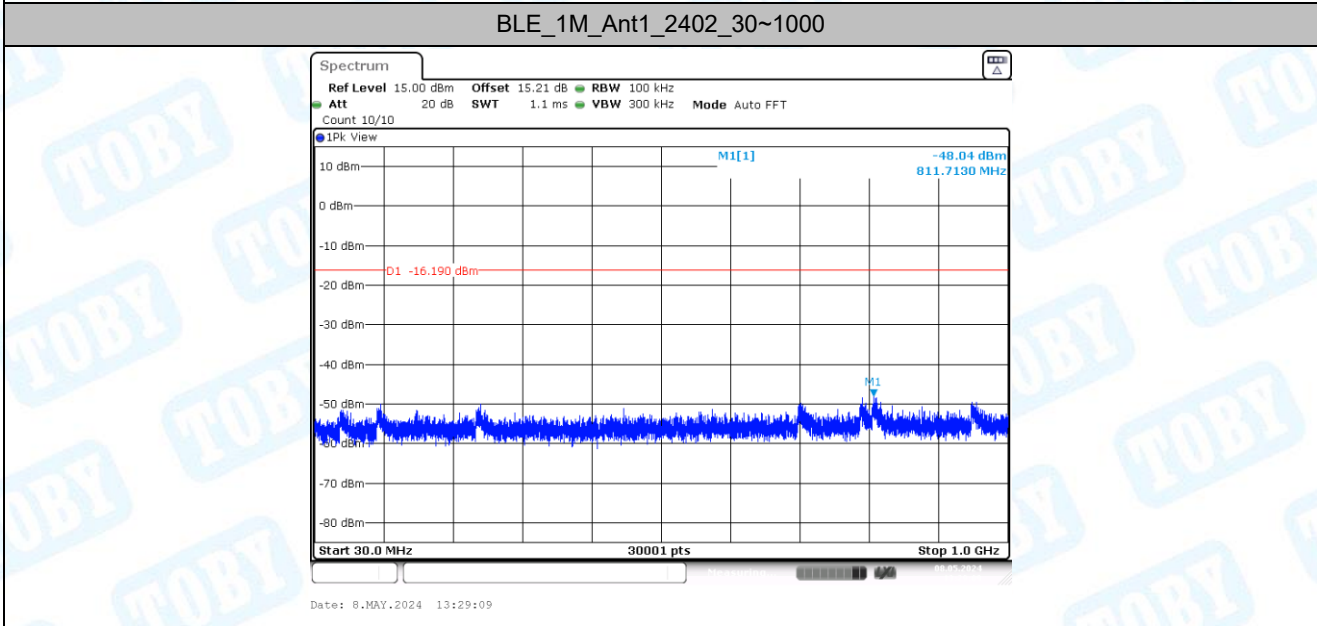
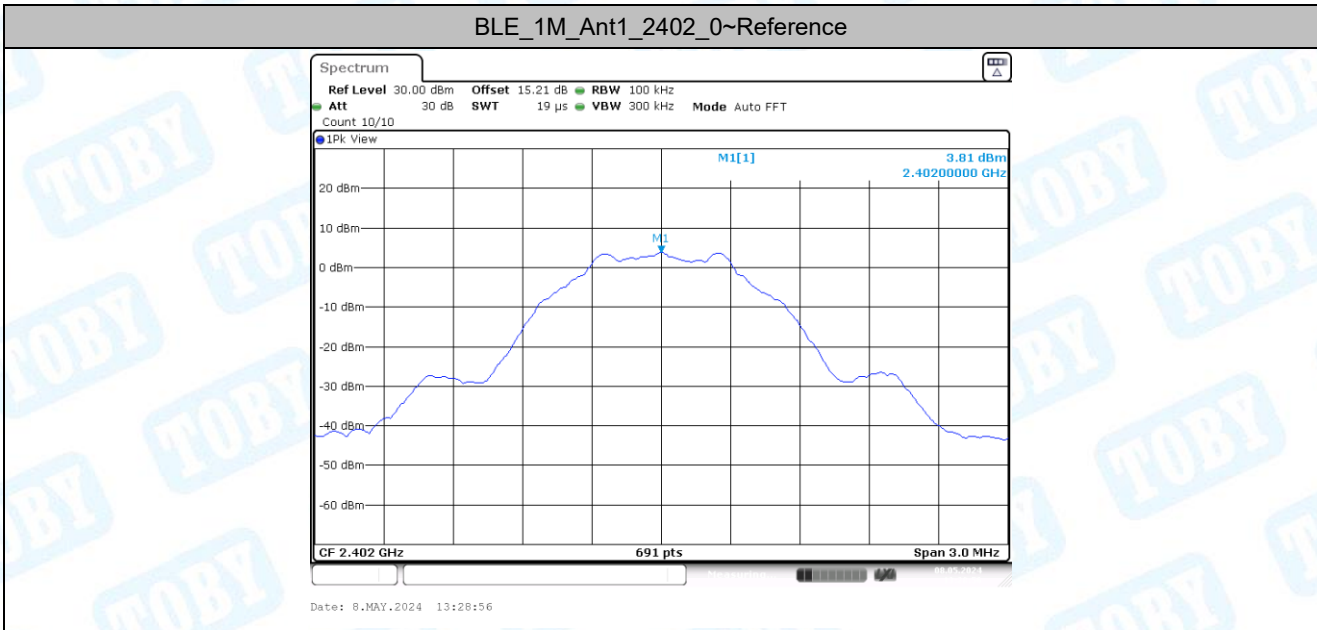


6. Conducted Spurious Emission

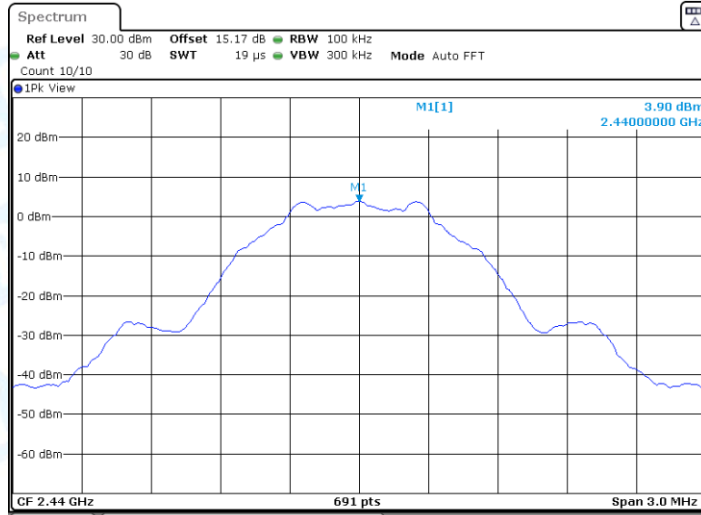
6.1. Test Result

| Test Mode | Antenna | Channel | Freq. Range [MHz] | Ref. Level [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|---------|-------------------|------------------|-------------|------------|---------|
| BLE_1M | Ant1 | 2402 | Reference | 3.81 | 3.81 | --- | PASS |
| | | | 30~1000 | 3.81 | -48.04 | ≤-16.19 | PASS |
| | | | 1000~26500 | 3.81 | -43.69 | ≤-16.19 | PASS |
| | | 2440 | Reference | 3.90 | 3.90 | --- | PASS |
| | | | 30~1000 | 3.90 | -48.69 | ≤-16.1 | PASS |
| | | | 1000~26500 | 3.90 | -43.18 | ≤-16.1 | PASS |
| | | 2480 | Reference | 3.29 | 3.29 | --- | PASS |
| | | | 30~1000 | 3.29 | -47.56 | ≤-16.71 | PASS |
| | | | 1000~26500 | 3.29 | -43.33 | ≤-16.71 | PASS |
| BLE_2M | Ant1 | 2402 | Reference | 3.83 | 3.83 | --- | PASS |
| | | | 30~1000 | 3.83 | -48.14 | ≤-16.17 | PASS |
| | | | 1000~26500 | 3.83 | -43.28 | ≤-16.17 | PASS |
| | | 2440 | Reference | 3.90 | 3.90 | --- | PASS |
| | | | 30~1000 | 3.90 | -48.07 | ≤-16.1 | PASS |
| | | | 1000~26500 | 3.90 | -43.39 | ≤-16.1 | PASS |
| | | 2480 | Reference | 3.31 | 3.31 | --- | PASS |
| | | | 30~1000 | 3.31 | -48.12 | ≤-16.69 | PASS |
| | | | 1000~26500 | 3.31 | -43.93 | ≤-16.69 | PASS |

6.2. Test Graphs

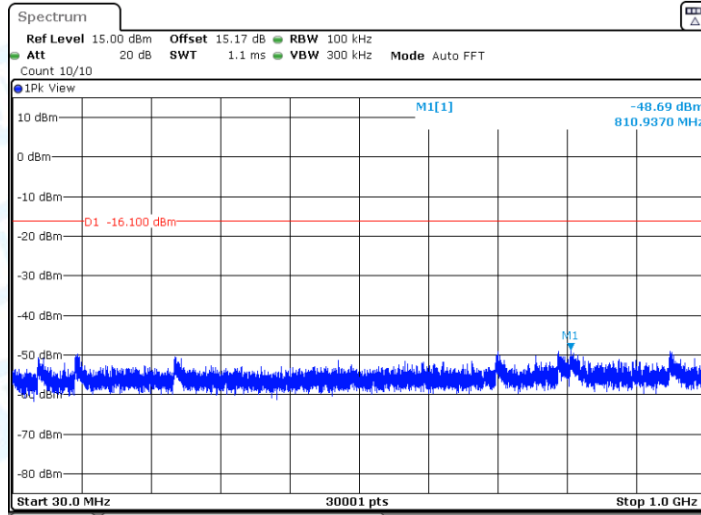


BLE_1M_Ant1_2440_0~Reference



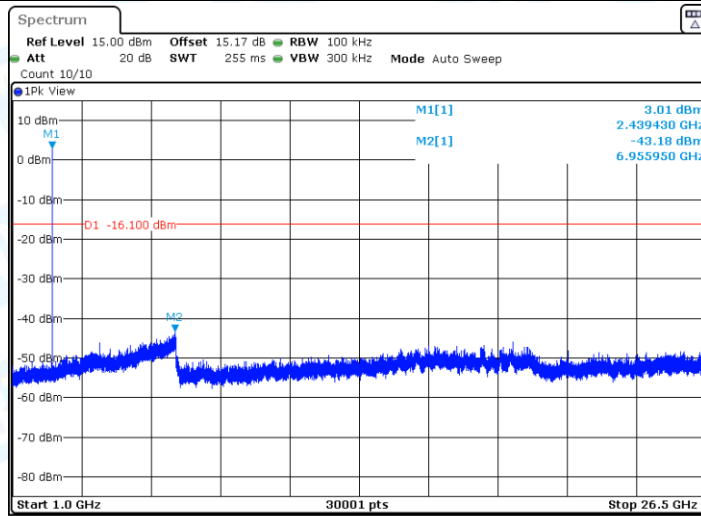
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BLE_1M_Ant1_2440_30~1000



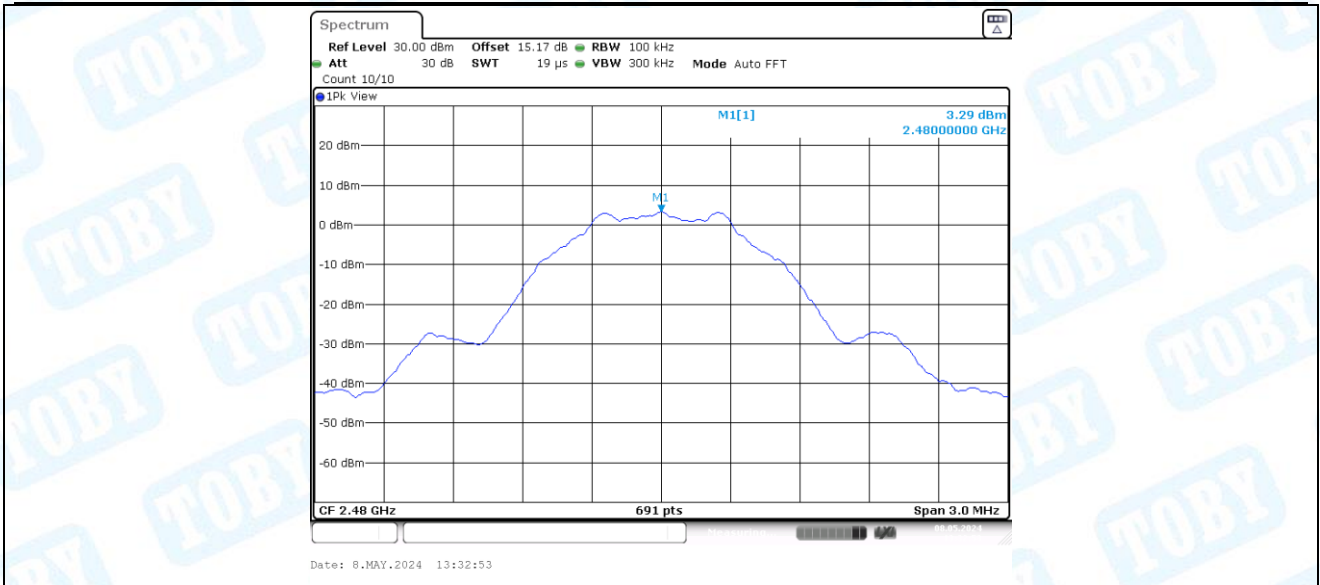
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BLE_1M_Ant1_2440_1000~26500

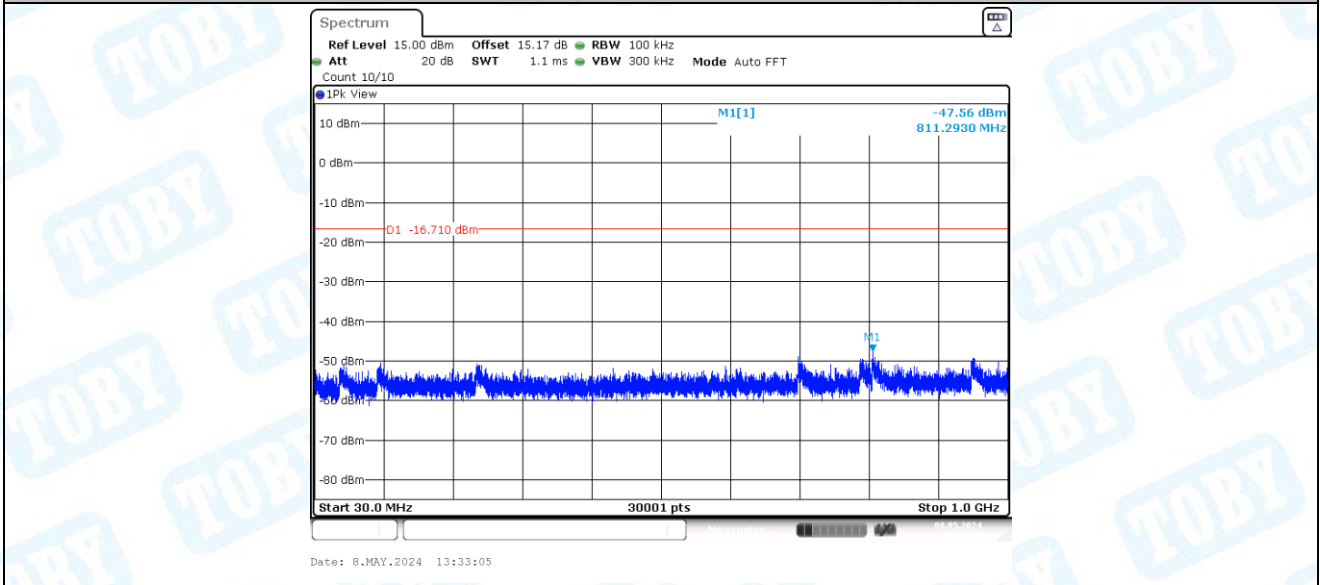


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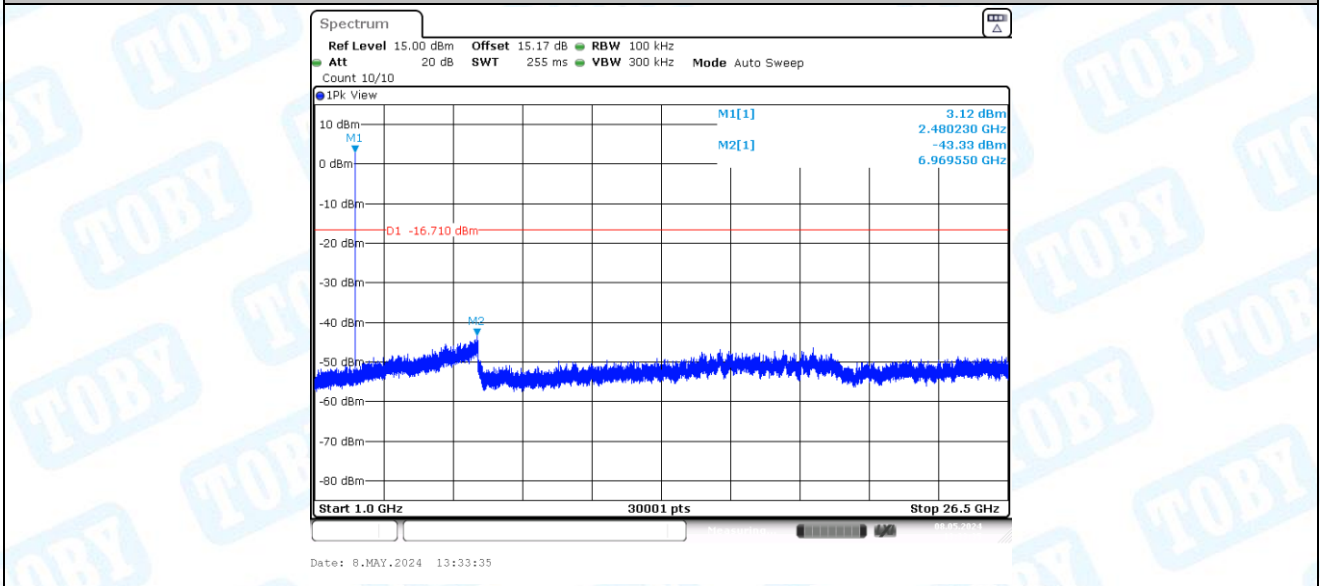
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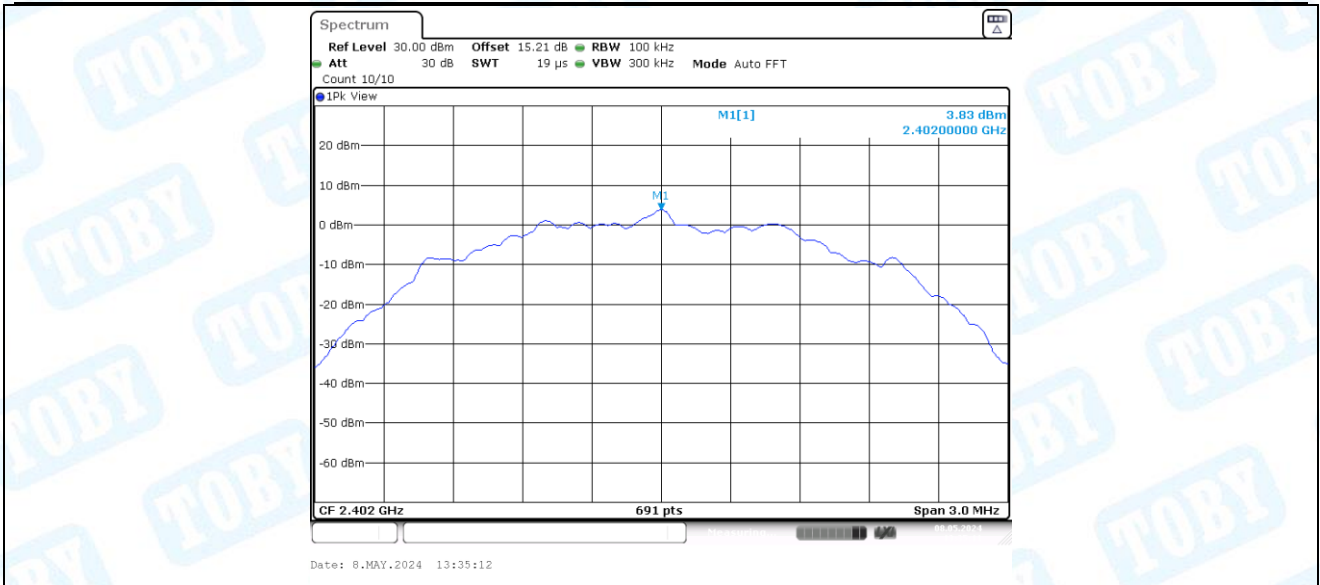
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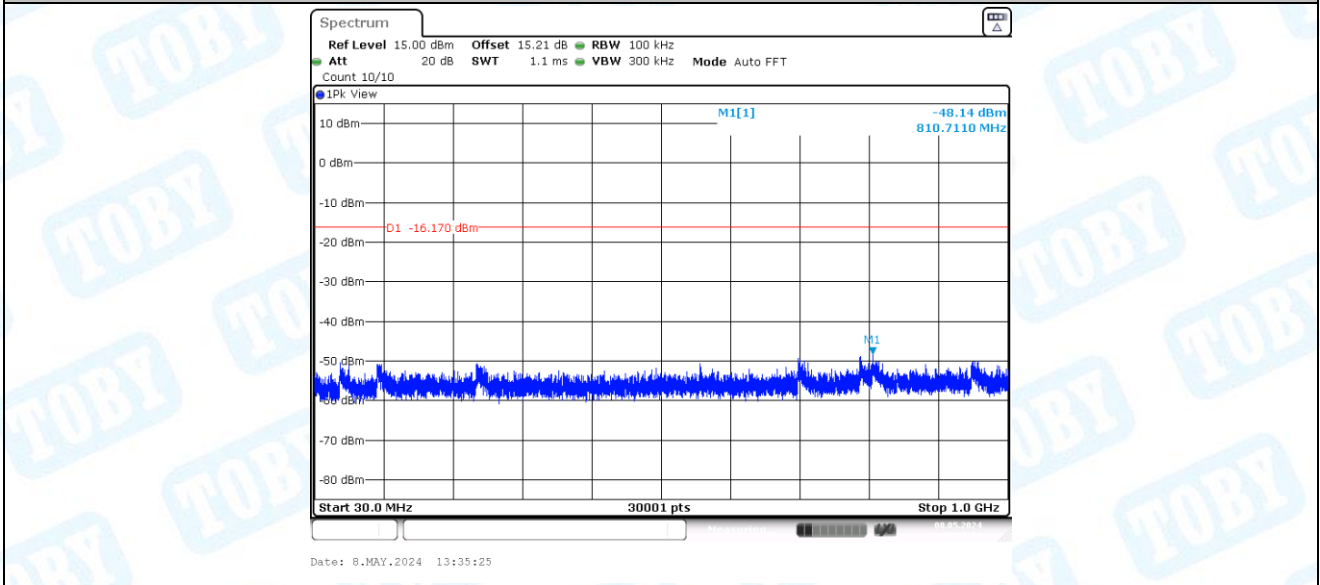
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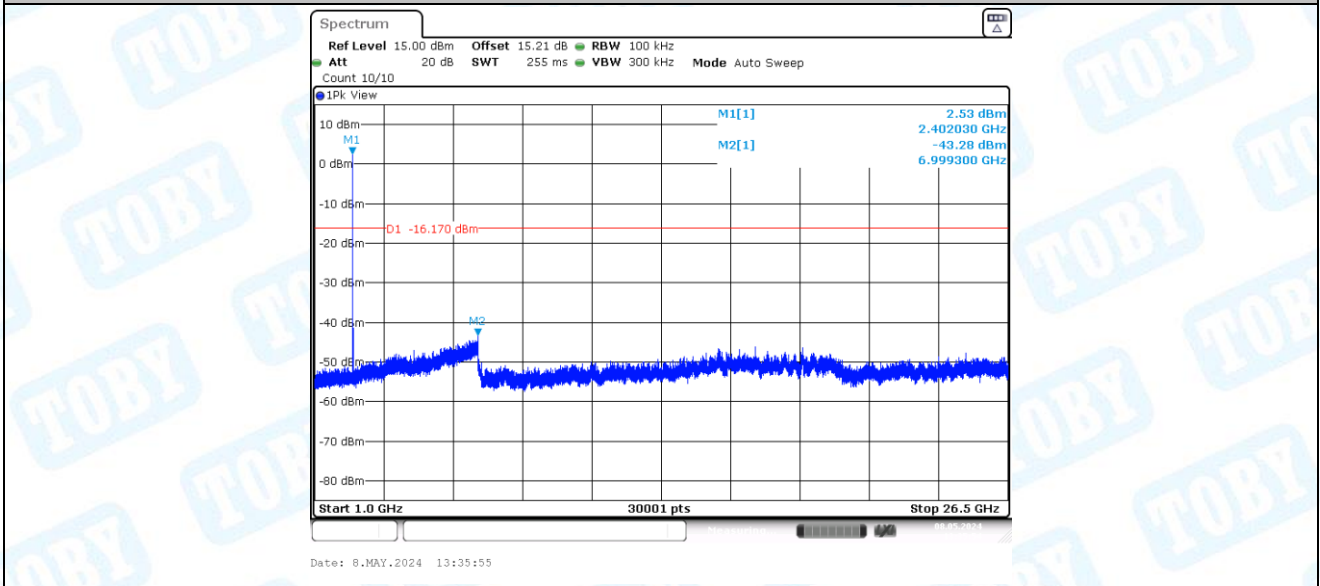
BLE_2M_Ant1_2402_0~Reference



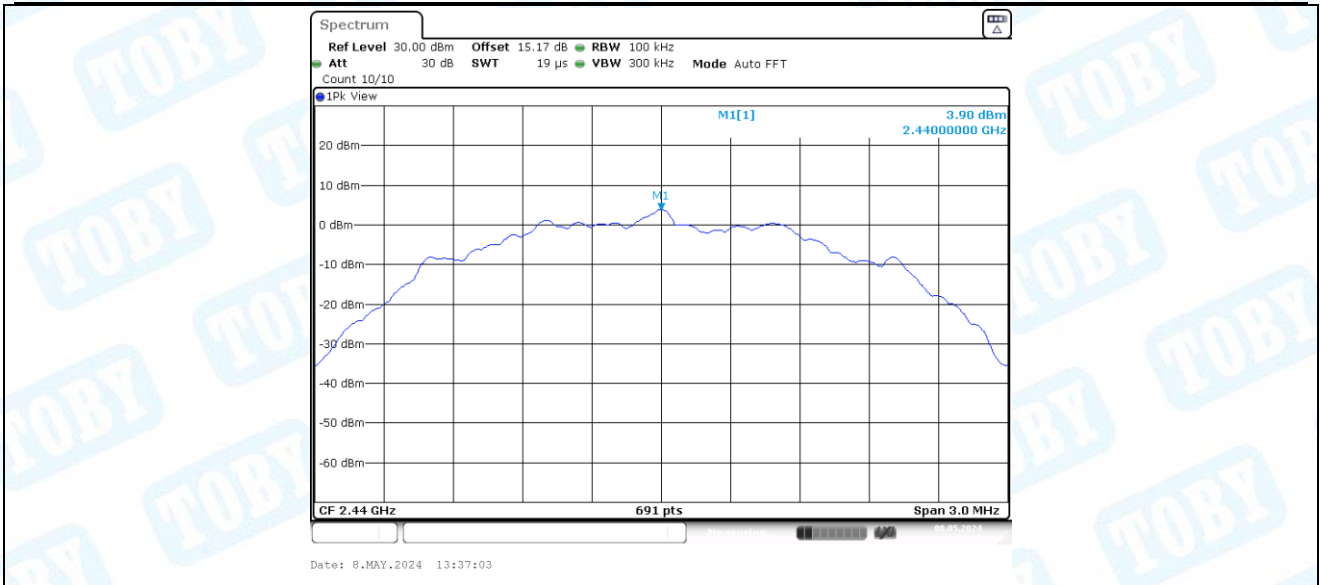
BLE_2M_Ant1_2402_30~1000



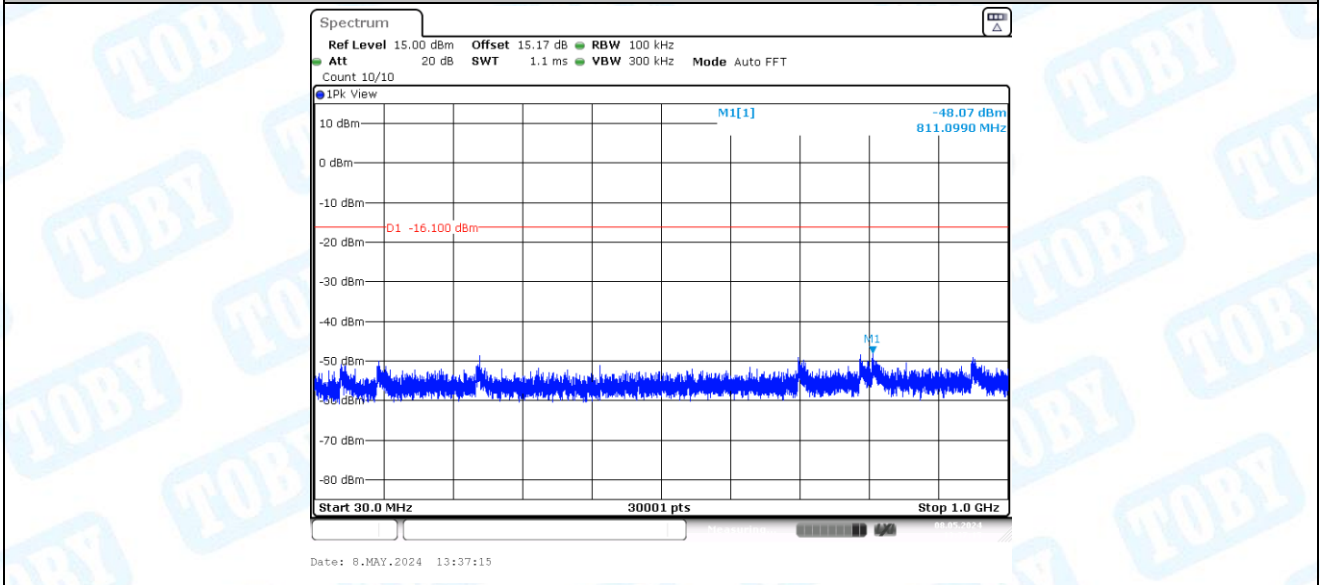
BLE_2M_Ant1_2402_1000~26500



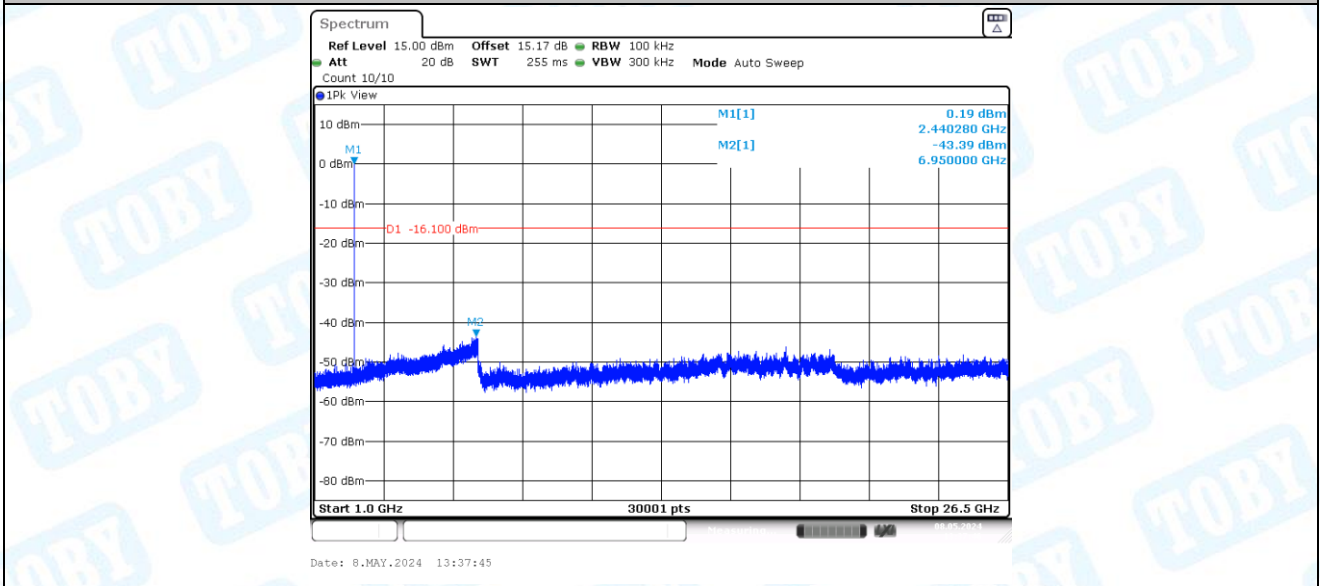
BLE_2M_Ant1_2440_0~Reference



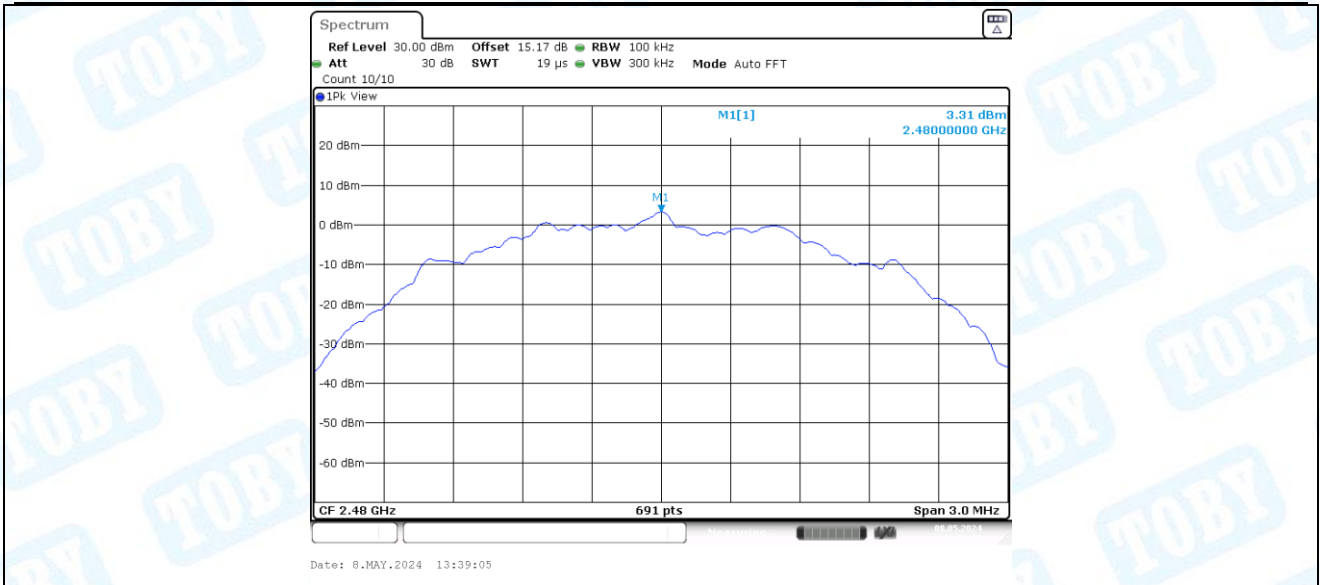
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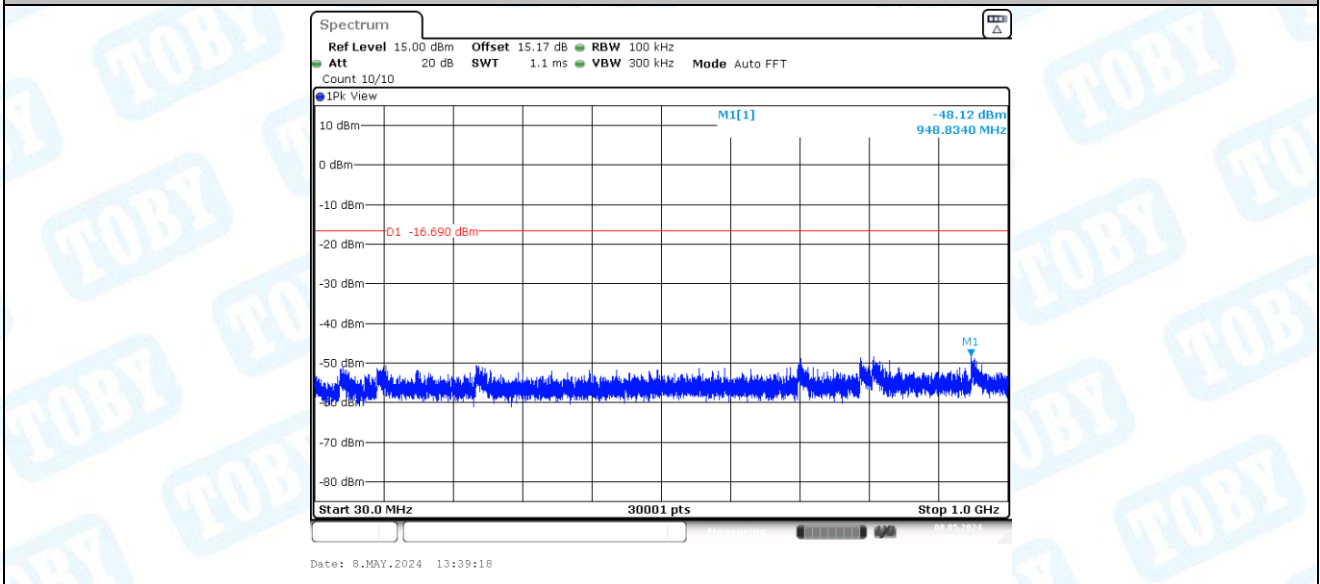
BLE_2M_Ant1_2440_1000~26500



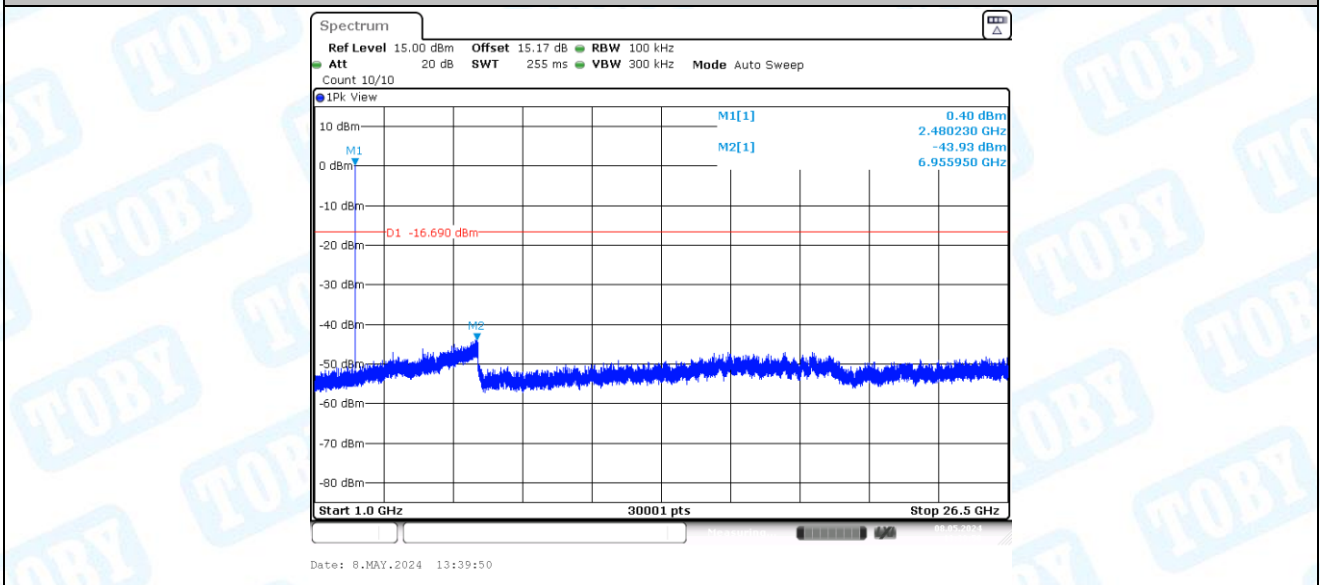
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BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500

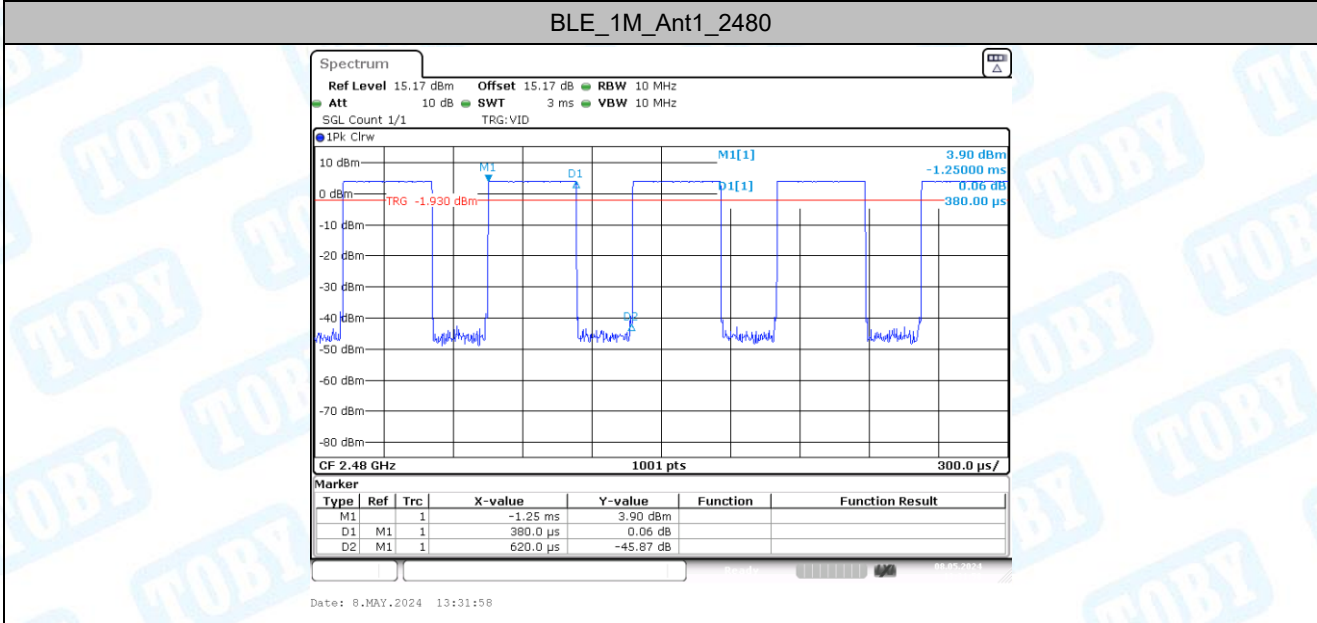
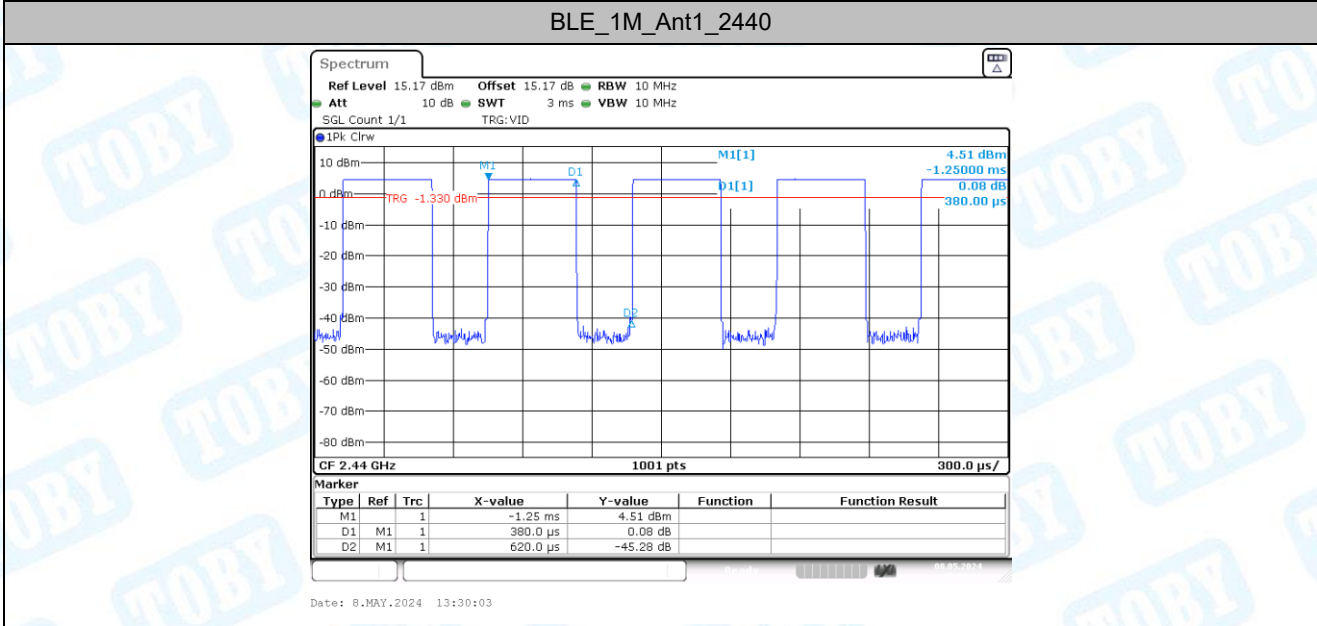
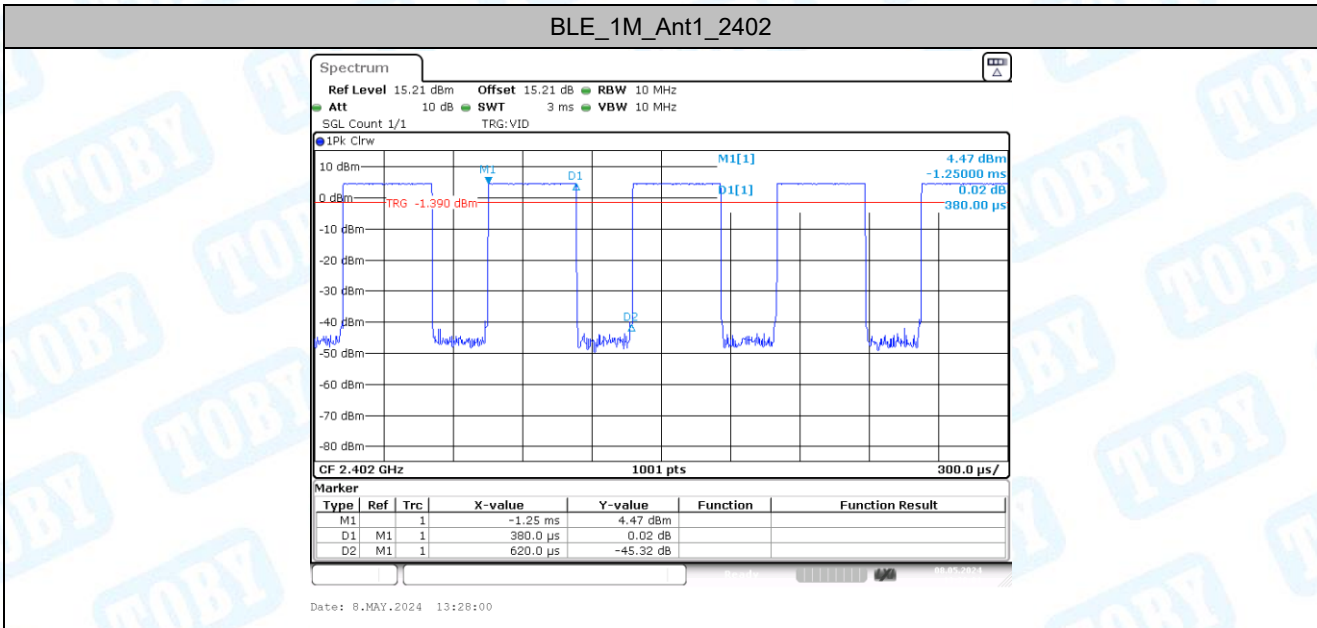


7. Duty Cycle

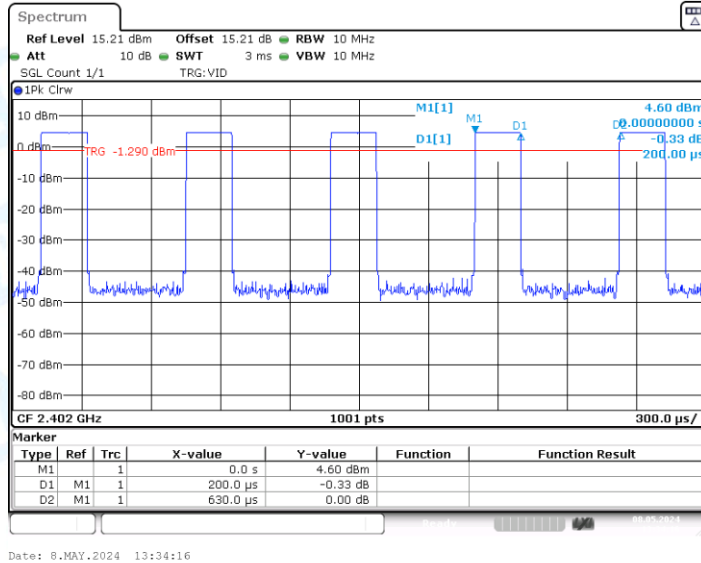
7.1. Test Result

| Test Mode | Antenna | Channel | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | 1/T [kHz] | Verdict |
|-----------|---------|---------|----------------------------|--------------------------|----------------|-----------|---------|
| BLE_1M | Ant1 | 2402 | 0.38 | 0.62 | 61.29 | 2.63 | --- |
| | | 2440 | 0.38 | 0.62 | 61.29 | 2.63 | --- |
| | | 2480 | 0.38 | 0.62 | 61.29 | 2.63 | --- |
| BLE_2M | Ant1 | 2402 | 0.20 | 0.63 | 31.75 | 5.00 | --- |
| | | 2440 | 0.20 | 0.63 | 31.75 | 5.00 | --- |
| | | 2480 | 0.20 | 0.63 | 31.75 | 5.00 | --- |

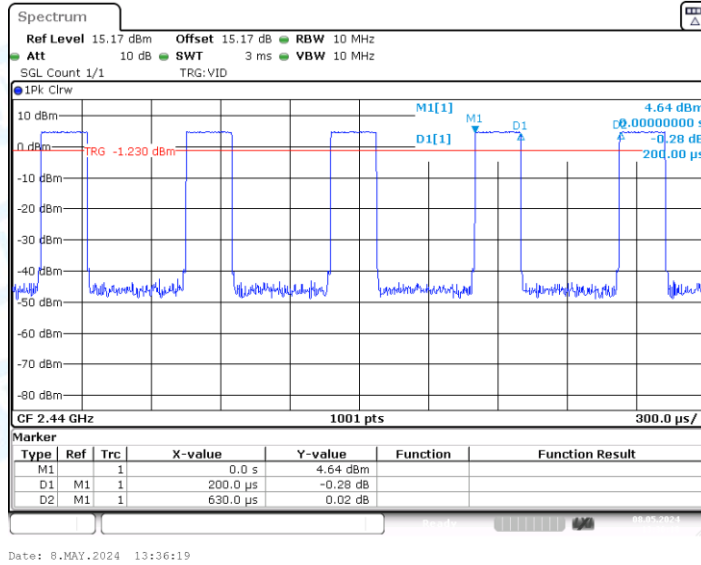
7.2. Test Graphs



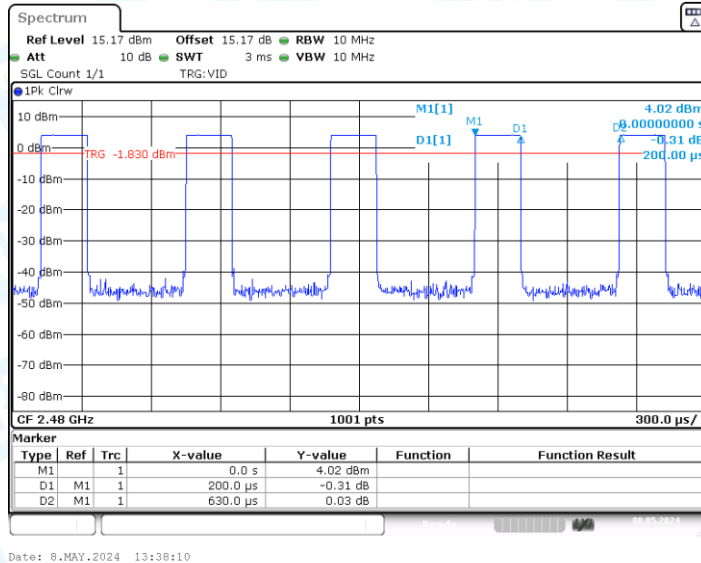
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



-----End of the report-----