

## Appendix: Bluetooth LE

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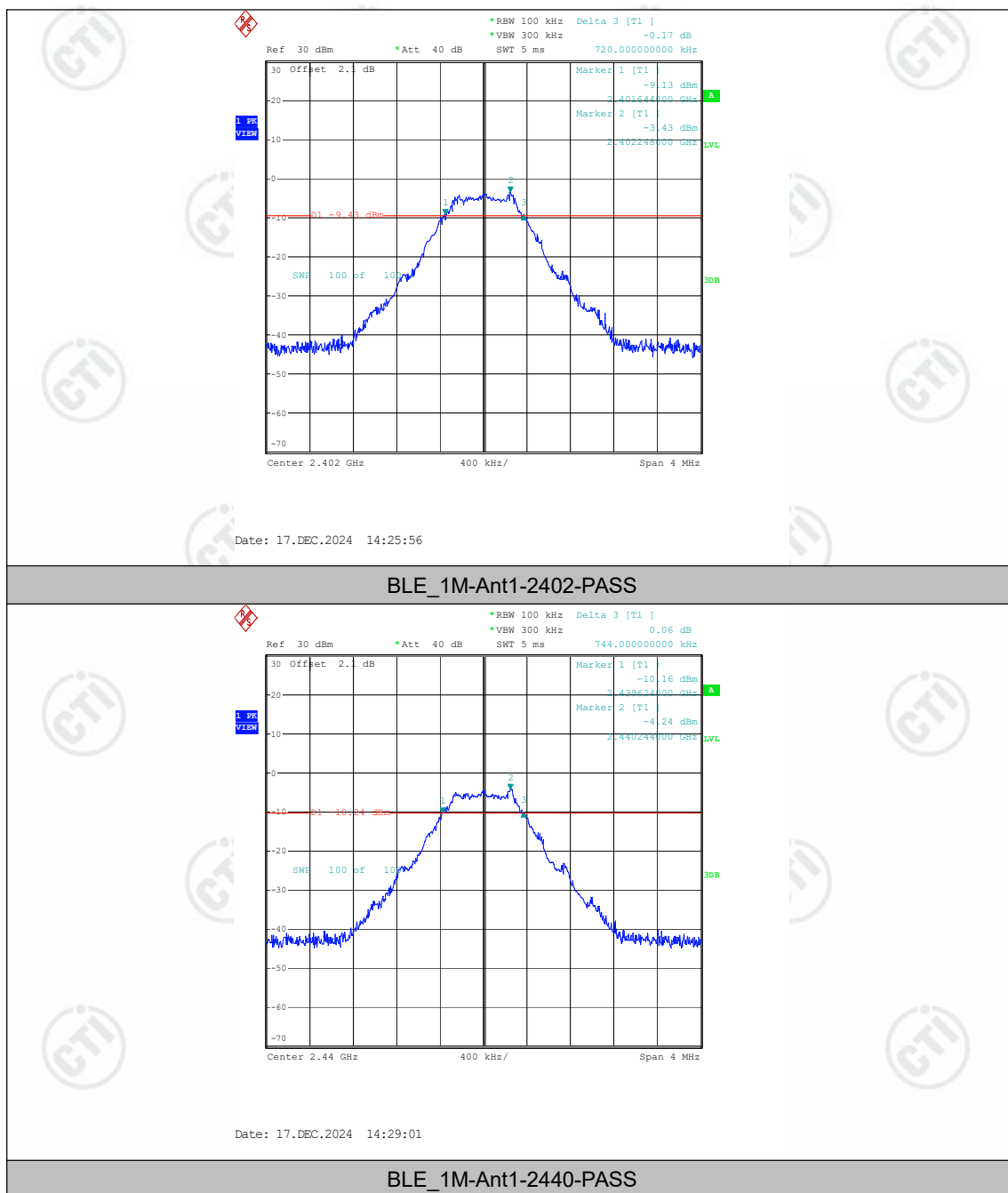
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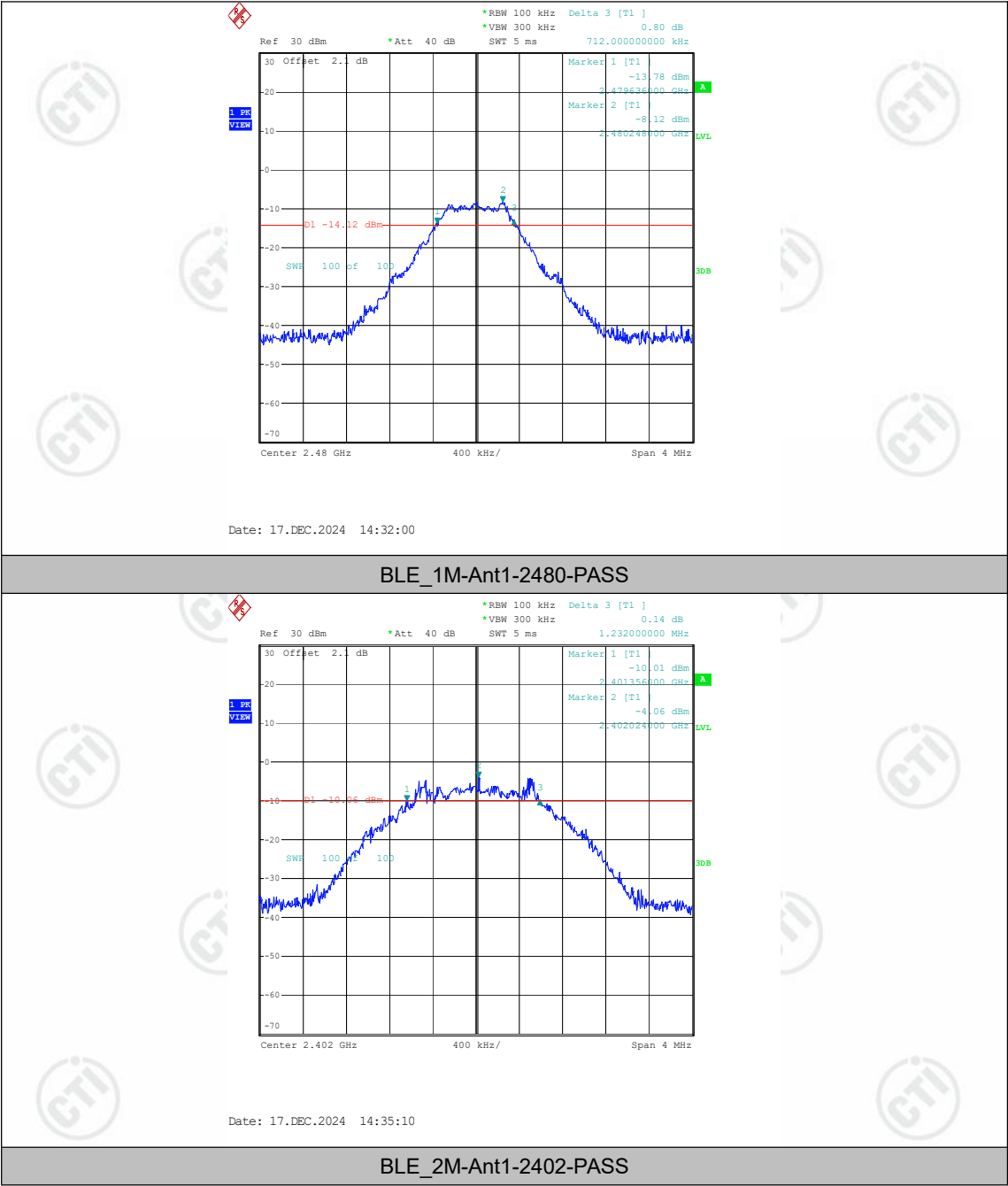
Appendix A: DTS Bandwidth

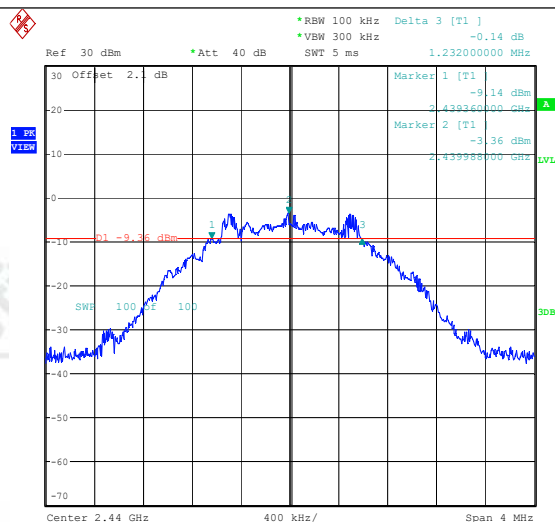
Test Result

| TestMode | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|----------|---------|----------------|--------------|---------|---------|------------|---------|
| BLE_1M   | Ant1    | 2402           | 0.72         | 2401.64 | 2402.36 | 0.5        | PASS    |
| BLE_1M   | Ant1    | 2440           | 0.74         | 2439.62 | 2440.37 | 0.5        | PASS    |
| BLE_1M   | Ant1    | 2480           | 0.71         | 2479.64 | 2480.35 | 0.5        | PASS    |
| BLE_2M   | Ant1    | 2402           | 1.23         | 2401.36 | 2402.59 | 0.5        | PASS    |
| BLE_2M   | Ant1    | 2440           | 1.23         | 2439.36 | 2440.59 | 0.5        | PASS    |
| BLE_2M   | Ant1    | 2480           | 1.23         | 2479.36 | 2480.58 | 0.5        | PASS    |

## Test Graphs

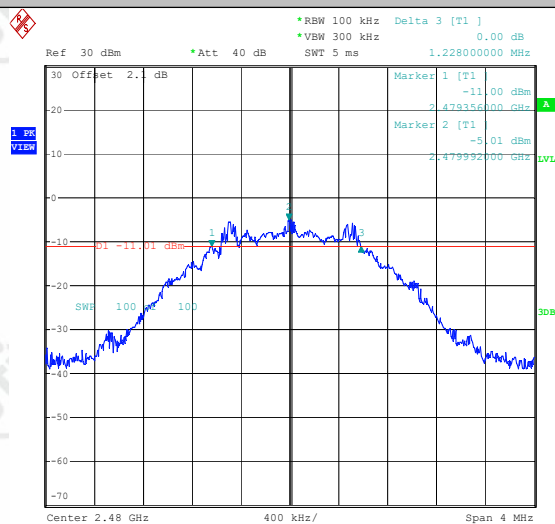






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## BLE 2M-Ant1-2440-PASS



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## BLE\_2M-Ant1-2480-PASS

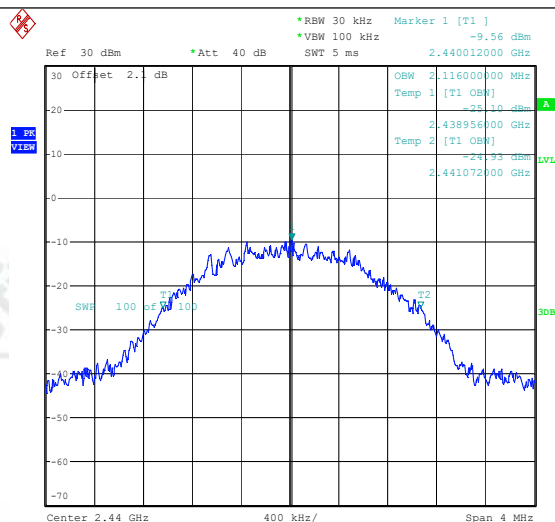
Appendix B: Occupied Channel Bandwidth

Test Result

| Test Mode | Antenna | Frequency[MHz] | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|-----------|---------|----------------|-----------|---------|---------|------------|---------|
| BLE_1M    | Ant1    | 2402           | 1.160     | 2401.42 | 2402.58 | ---        | ---     |
| BLE_1M    | Ant1    | 2440           | 1.213     | 2439.39 | 2440.60 | ---        | ---     |
| BLE_1M    | Ant1    | 2480           | 1.300     | 2479.34 | 2480.64 | ---        | ---     |
| BLE_2M    | Ant1    | 2402           | 2.116     | 2400.95 | 2403.07 | ---        | ---     |
| BLE_2M    | Ant1    | 2440           | 2.116     | 2438.96 | 2441.07 | ---        | ---     |
| BLE_2M    | Ant1    | 2480           | 2.128     | 2478.95 | 2481.08 | ---        | ---     |

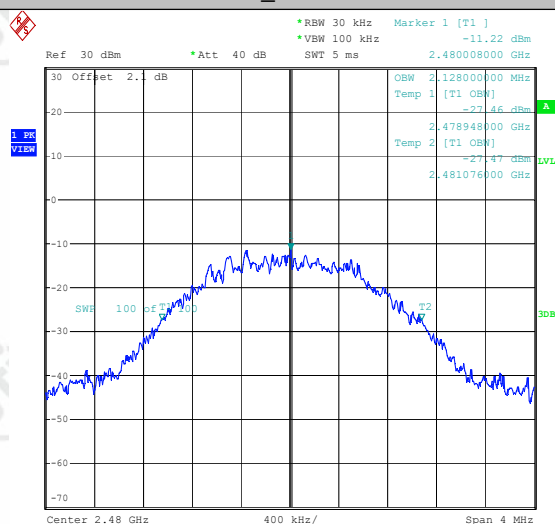






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## BLE\_2M-Ant1-2440



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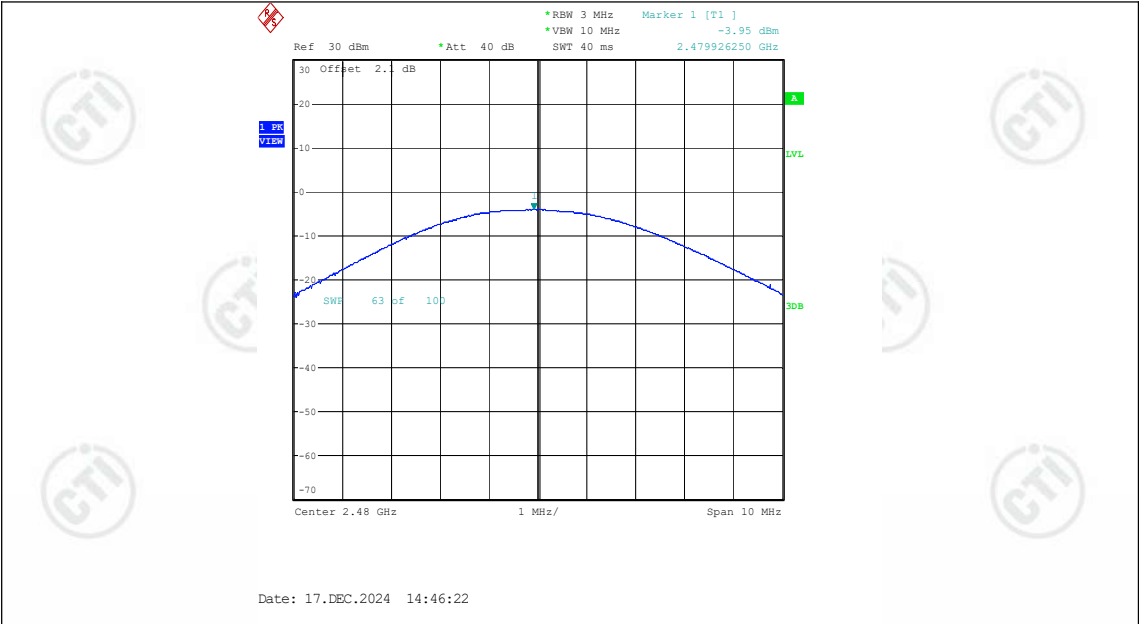
## BLE\_2M-Ant1-2480

Appendix C: Maximum conducted output power

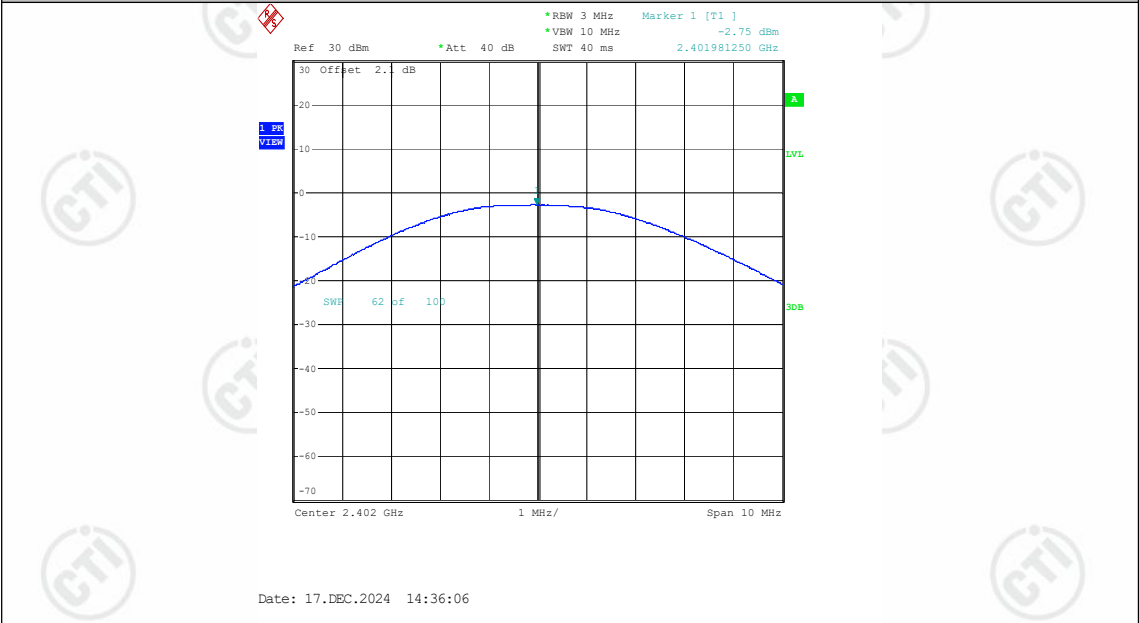
Test Result Peak

| TestMode | Antenna | Frequency[MHz] | Conducted Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|----------|---------|----------------|---------------------------|----------------------|---------|
| BLE_1M   | Ant1    | 2402           | -2.97                     | ≤30                  | PASS    |
| BLE_1M   | Ant1    | 2440           | -3.76                     | ≤30                  | PASS    |
| BLE_1M   | Ant1    | 2480           | -3.95                     | ≤30                  | PASS    |
| BLE_2M   | Ant1    | 2402           | -2.75                     | ≤30                  | PASS    |
| BLE_2M   | Ant1    | 2440           | -2.17                     | ≤30                  | PASS    |
| BLE_2M   | Ant1    | 2480           | -3.94                     | ≤30                  | PASS    |

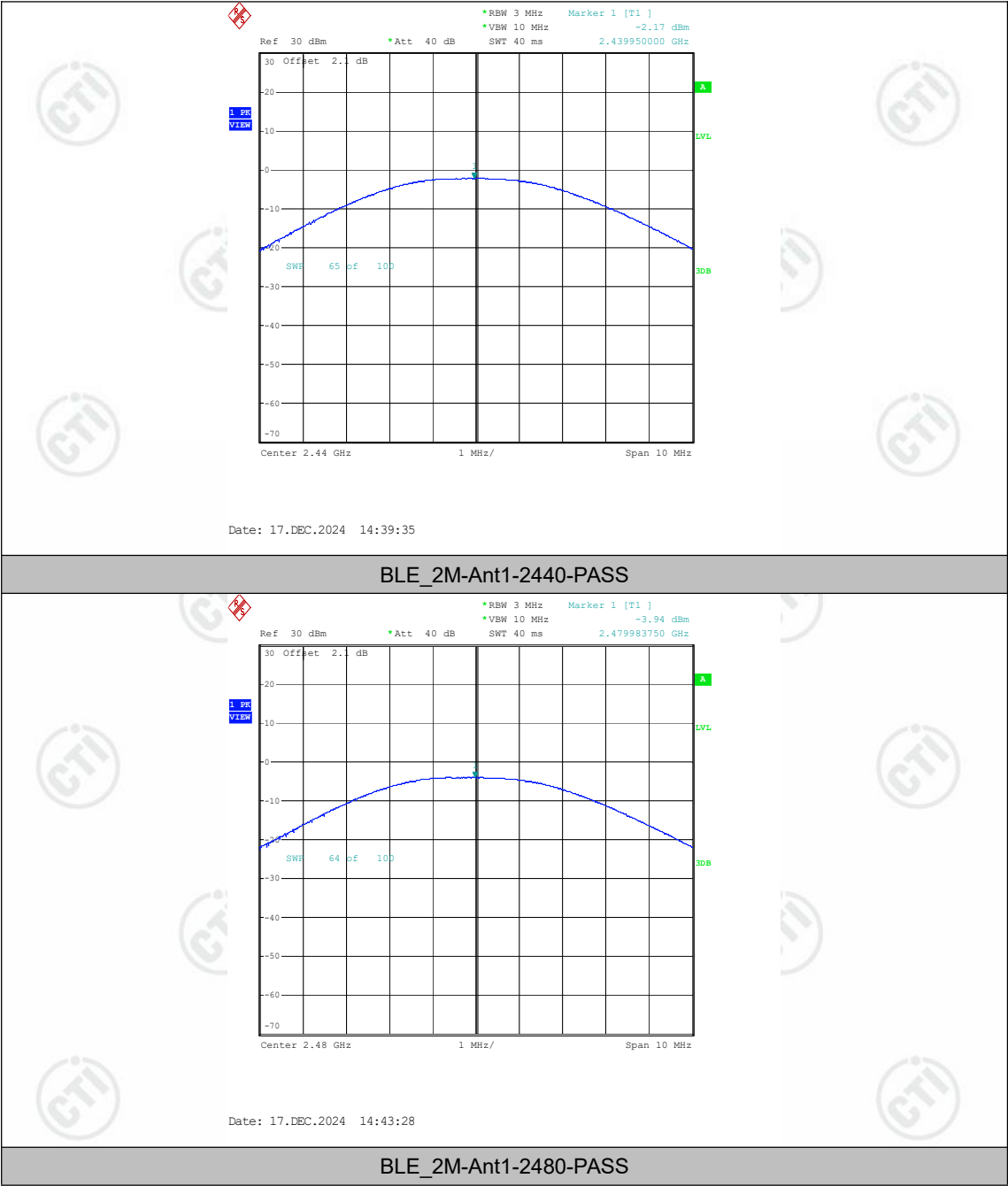




BLE\_1M-Ant1-2480-PASS



BLE\_2M-Ant1-2402-PASS

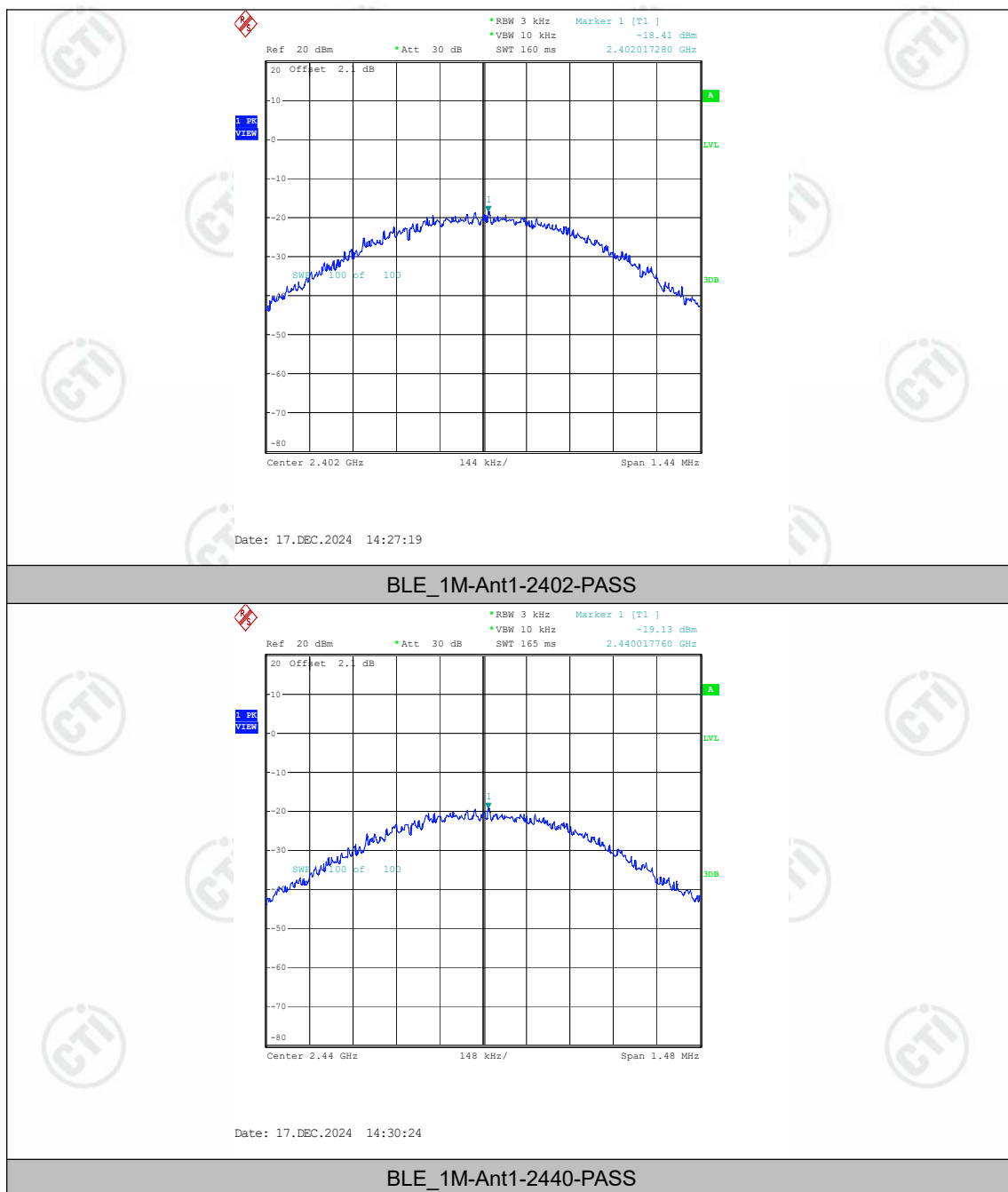


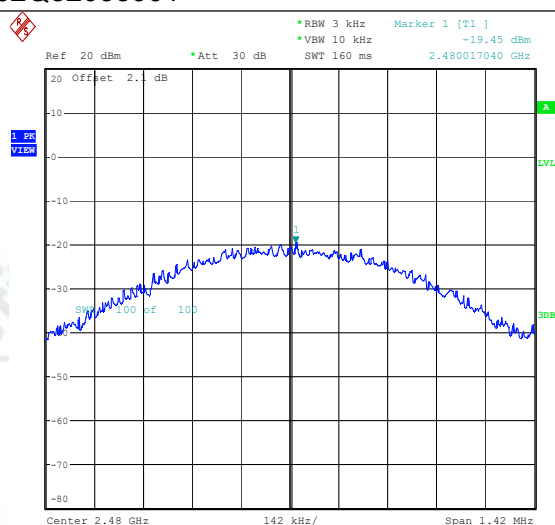
Appendix D: Maximum power spectral density

Test Result

| TestMode | Antenna | Frequency[MHz] | Result[dBm/3kHz] | Limit[dBm/3kHz] | Verdict |
|----------|---------|----------------|------------------|-----------------|---------|
| BLE_1M   | Ant1    | 2402           | -18.41           | ≤8.00           | PASS    |
| BLE_1M   | Ant1    | 2440           | -19.13           | ≤8.00           | PASS    |
| BLE_1M   | Ant1    | 2480           | -19.45           | ≤8.00           | PASS    |
| BLE_2M   | Ant1    | 2402           | -22.00           | ≤8.00           | PASS    |
| BLE_2M   | Ant1    | 2440           | -21.18           | ≤8.00           | PASS    |
| BLE_2M   | Ant1    | 2480           | -22.92           | ≤8.00           | PASS    |

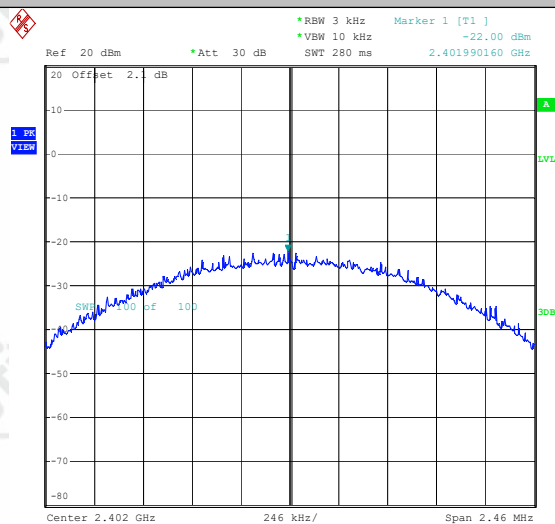
## Test Graphs





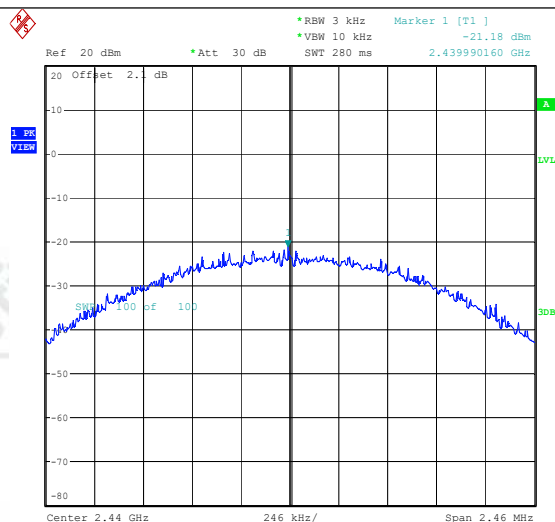
Date: 17.DEC.2024 14:46:48

## BLE\_1M-Ant1-2480-PASS



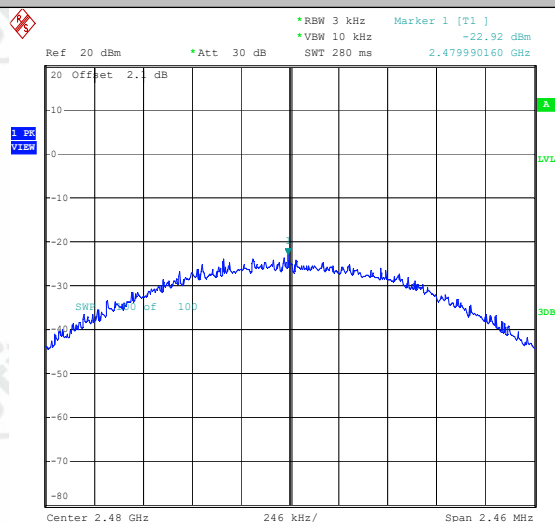
Date: 17.DEC.2024 14:36:48

## BLE\_2M-Ant1-2402-PASS



Date: 17.DEC.2024 14:40:17

## BLE 2M-Ant1-2440-PASS



Date: 17.DEC.2024 14:44:10

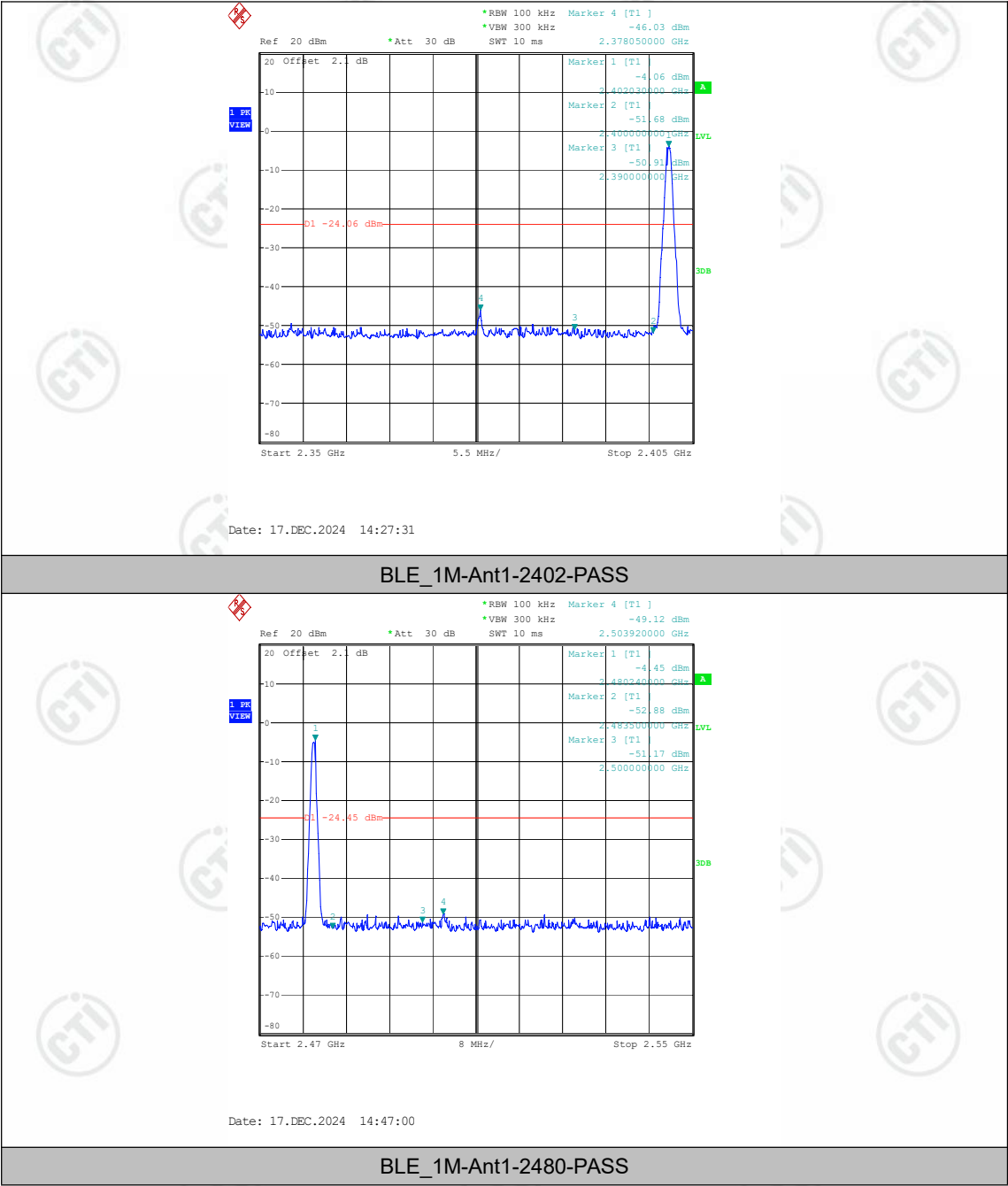
## BLE 2M-Ant1-2480-PASS

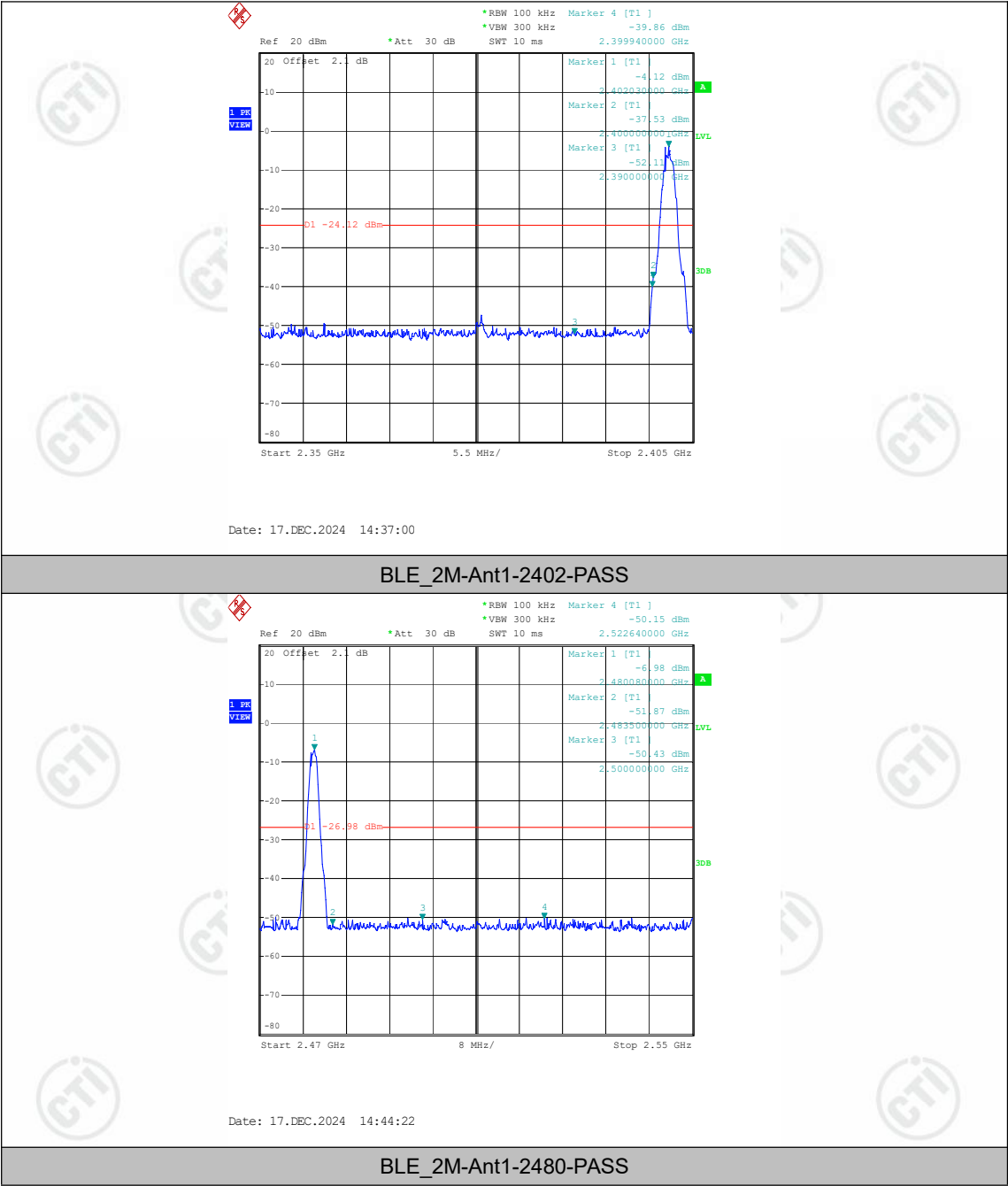
Appendix E: Band edge measurements

Test Result

| TestMode | Antenna | ChName | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|--------|----------------|---------------|-------------|------------|---------|
| BLE_1M   | Ant1    | Low    | 2402           | -4.06         | -46.03      | ≤-24.06    | PASS    |
| BLE_1M   | Ant1    | High   | 2480           | -4.45         | -49.12      | ≤-24.45    | PASS    |
| BLE_2M   | Ant1    | Low    | 2402           | -4.12         | -39.86      | ≤-24.12    | PASS    |
| BLE_2M   | Ant1    | High   | 2480           | -6.98         | -50.15      | ≤-26.98    | PASS    |

Test Graphs



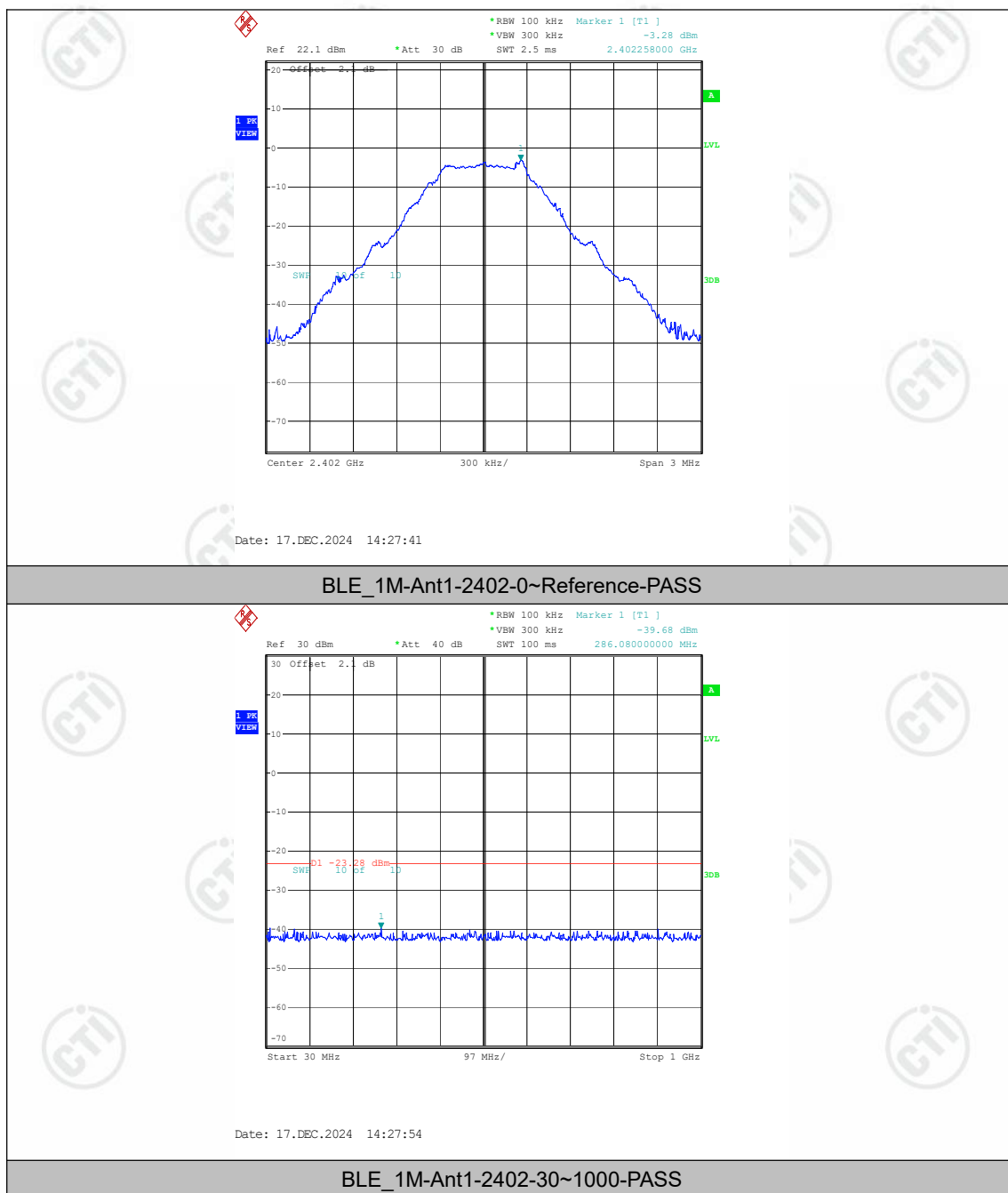


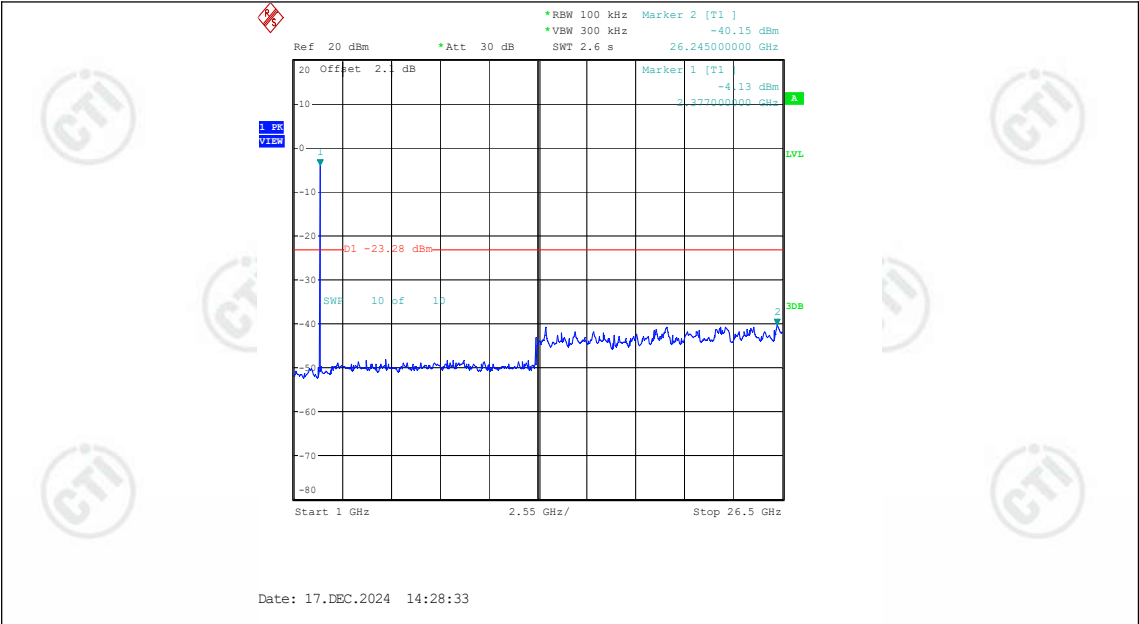
## Appendix F: Conducted Spurious Emission

### Test Result

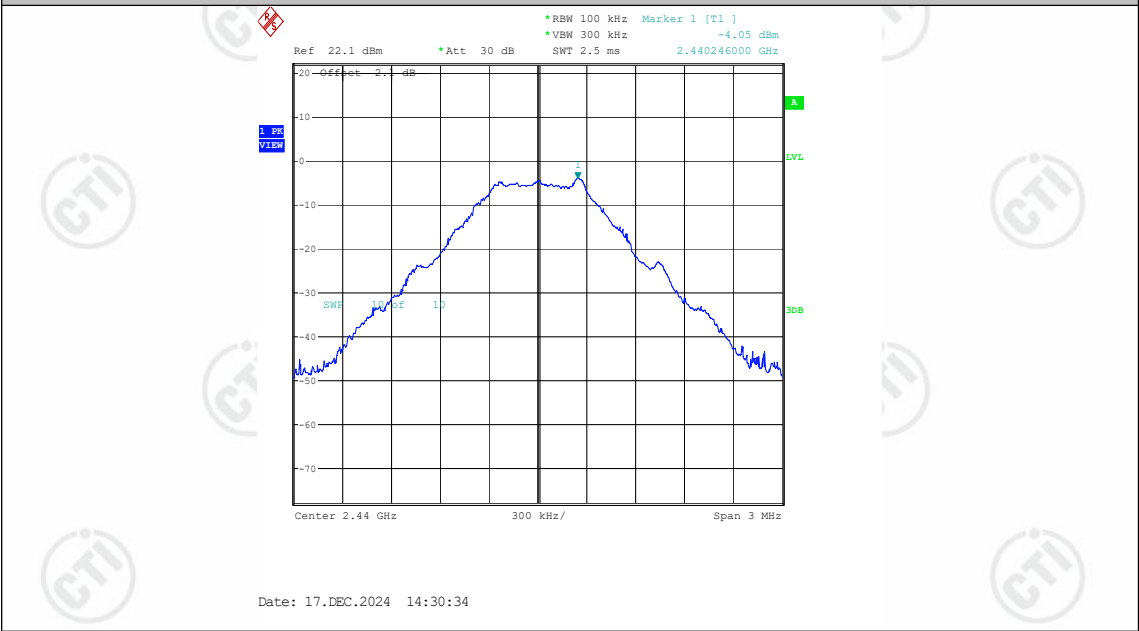
| TestMode | Antenna | Frequency [MHz] | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|----------|---------|-----------------|-----------------|----------------|-------------|------------|---------|
| BLE_1M   | Ant1    | 2402            | 0~Reference     | -3.28          | -3.28       | ---        | PASS    |
| BLE_1M   | Ant1    | 2402            | 30~1000         | -3.28          | -39.68      | ≤-23.28    | PASS    |
| BLE_1M   | Ant1    | 2402            | 1000~26500      | -3.28          | -40.15      | ≤-23.28    | PASS    |
| BLE_1M   | Ant1    | 2440            | 0~Reference     | -4.05          | -4.05       | ---        | PASS    |
| BLE_1M   | Ant1    | 2440            | 30~1000         | -4.05          | -39.48      | ≤-24.05    | PASS    |
| BLE_1M   | Ant1    | 2440            | 1000~26500      | -4.05          | -39.7       | ≤-24.05    | PASS    |
| BLE_1M   | Ant1    | 2480            | 0~Reference     | -4.41          | -4.41       | ---        | PASS    |
| BLE_1M   | Ant1    | 2480            | 30~1000         | -4.41          | -39.65      | ≤-24.41    | PASS    |
| BLE_1M   | Ant1    | 2480            | 1000~26500      | -4.41          | -40.31      | ≤-24.41    | PASS    |
| BLE_2M   | Ant1    | 2402            | 0~Reference     | -3.73          | -3.73       | ---        | PASS    |
| BLE_2M   | Ant1    | 2402            | 30~1000         | -3.73          | -38.86      | ≤-23.73    | PASS    |
| BLE_2M   | Ant1    | 2402            | 1000~26500      | -3.73          | -39.39      | ≤-23.73    | PASS    |
| BLE_2M   | Ant1    | 2440            | 0~Reference     | -3.00          | -3.00       | ---        | PASS    |
| BLE_2M   | Ant1    | 2440            | 30~1000         | -3.00          | -39.39      | ≤-23       | PASS    |
| BLE_2M   | Ant1    | 2440            | 1000~26500      | -3.00          | -39.79      | ≤-23       | PASS    |
| BLE_2M   | Ant1    | 2480            | 0~Reference     | -4.84          | -4.84       | ---        | PASS    |
| BLE_2M   | Ant1    | 2480            | 30~1000         | -4.84          | -39.59      | ≤-24.84    | PASS    |
| BLE_2M   | Ant1    | 2480            | 1000~26500      | -4.84          | -40.02      | ≤-24.84    | PASS    |

## Test Graphs

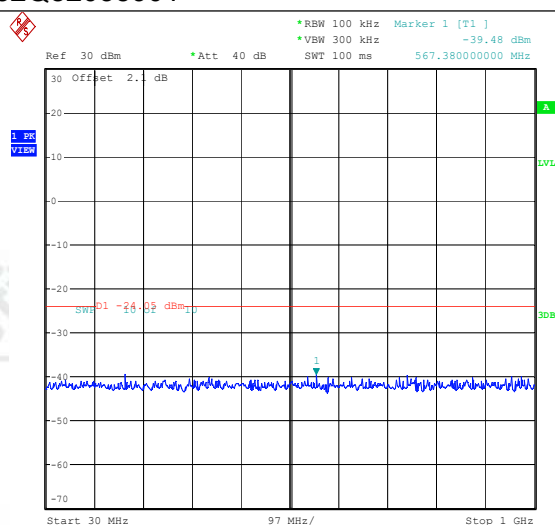




BLE\_1M-Ant1-2402-1000~26500-PASS

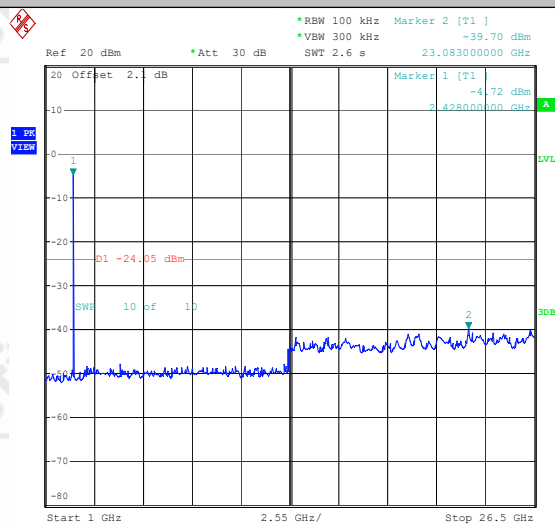


BLE\_1M-Ant1-2440-0~Reference-PASS



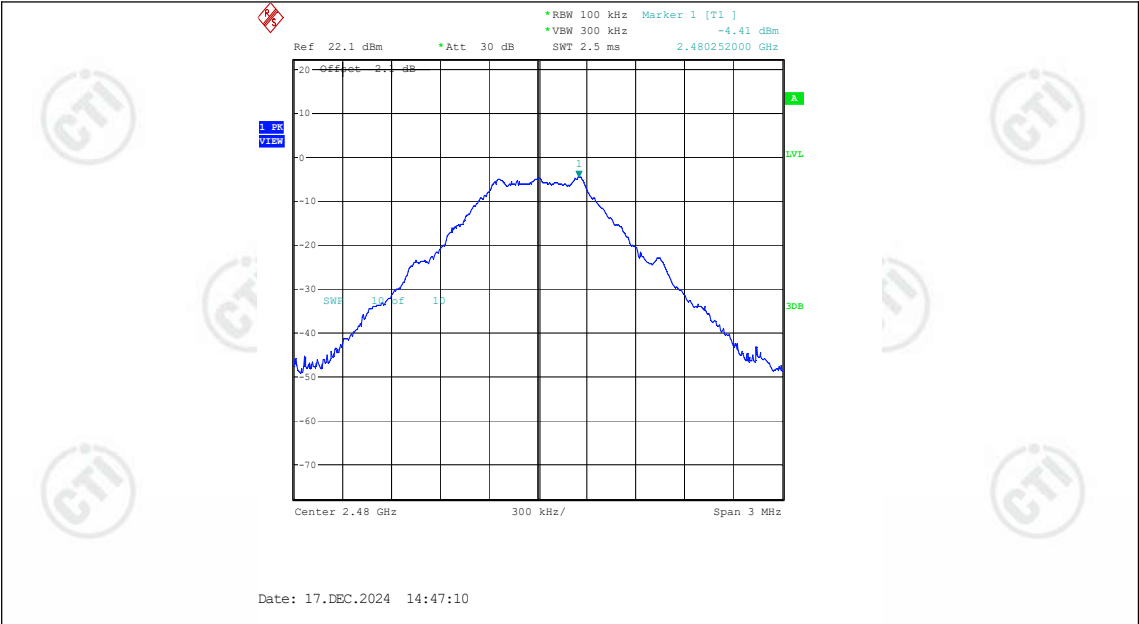
Date: 17.DEC.2024 14:30:47

## BLE\_1M-Ant1-2440-30~1000-PASS

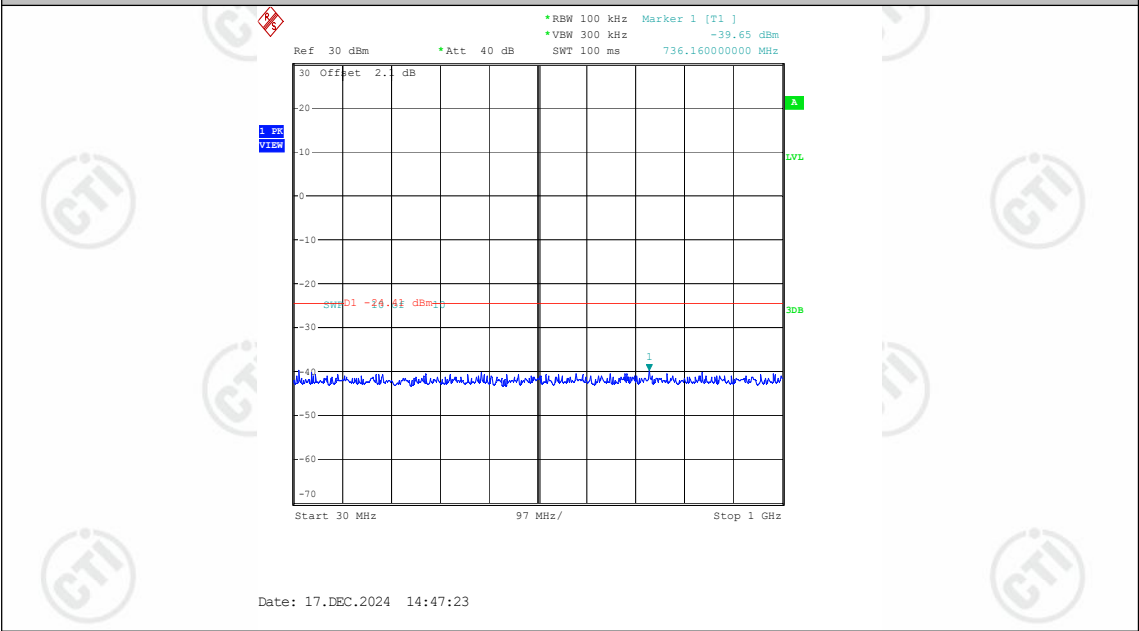


Date: 17.DEC.2024 14:31:26

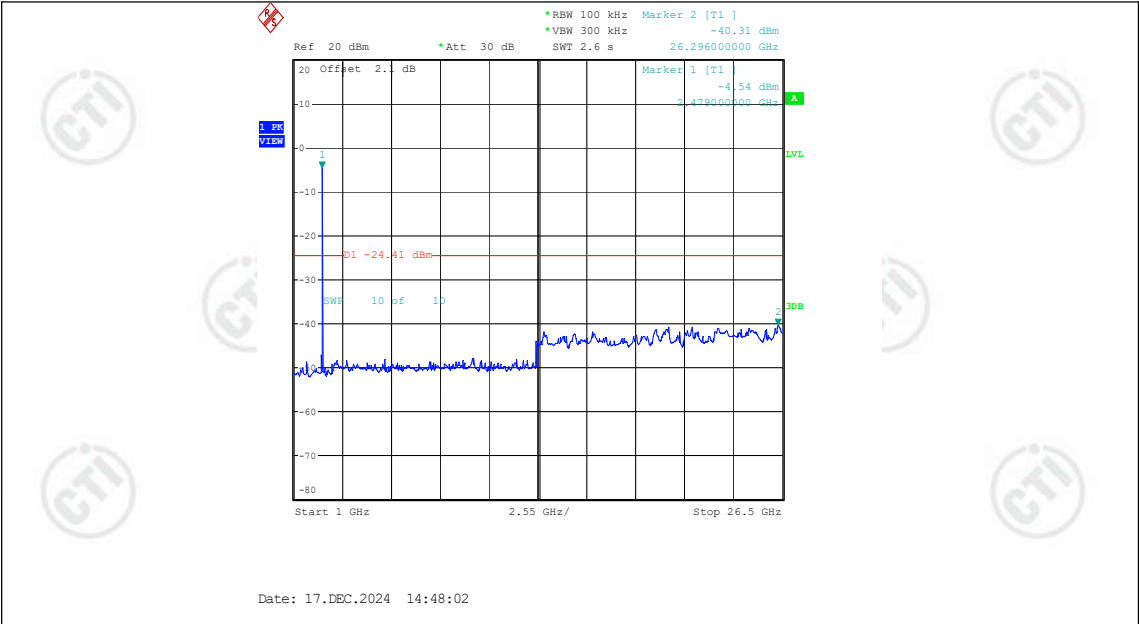
## BLE\_1M-Ant1-2440-1000~26500-PASS



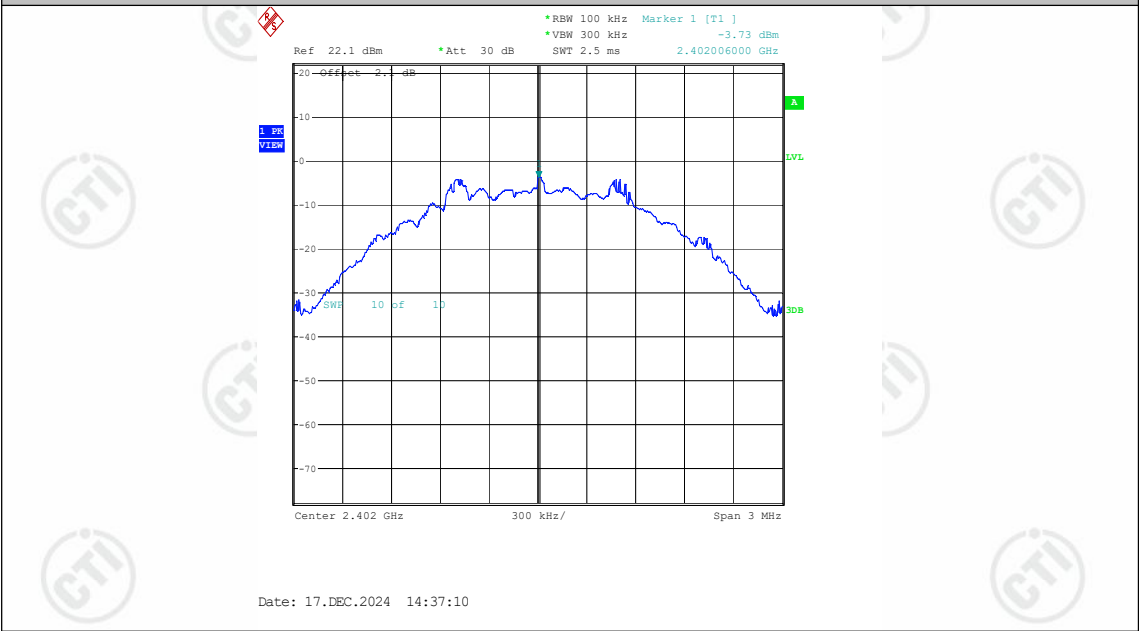
BLE\_1M-Ant1-2480-0~Reference-PASS



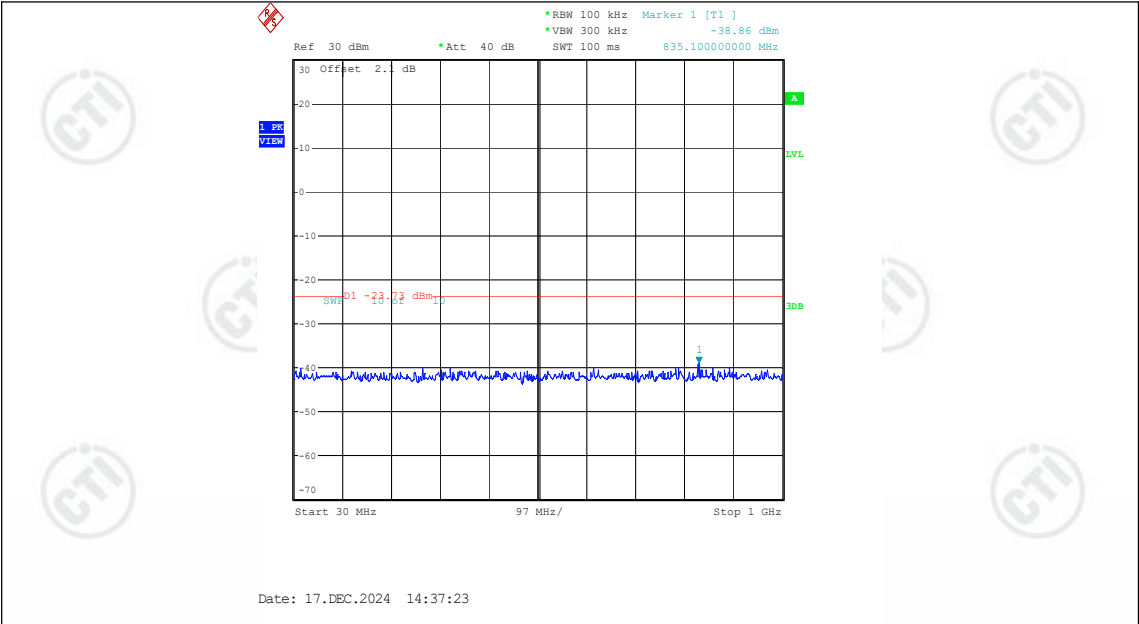
BLE\_1M-Ant1-2480-30~1000-PASS



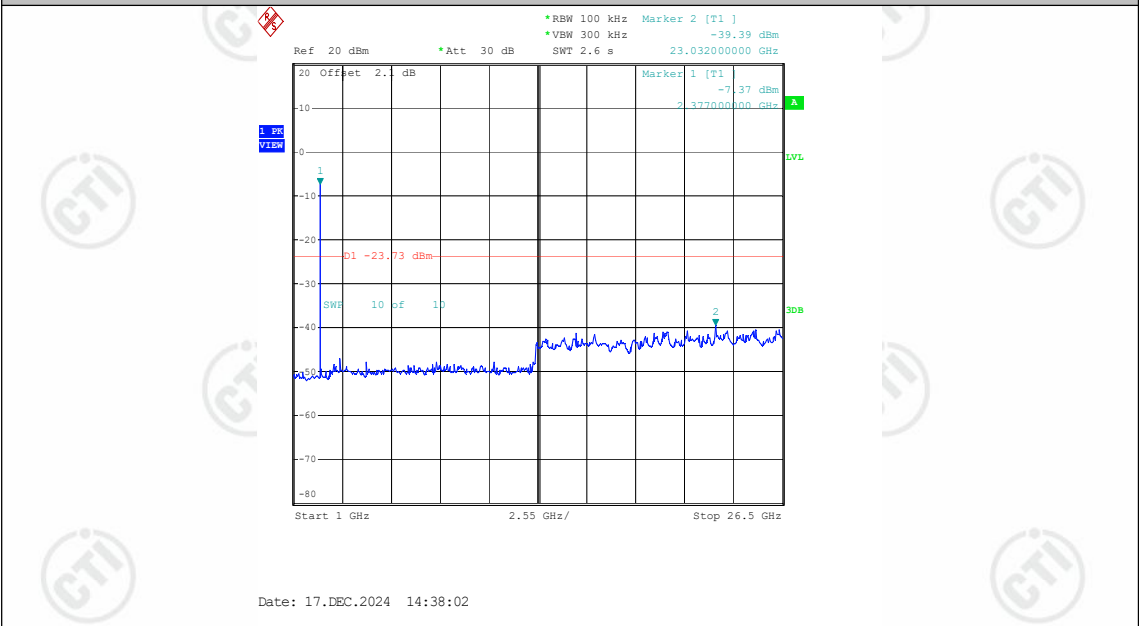
BLE\_1M-Ant1-2480-1000~26500-PASS



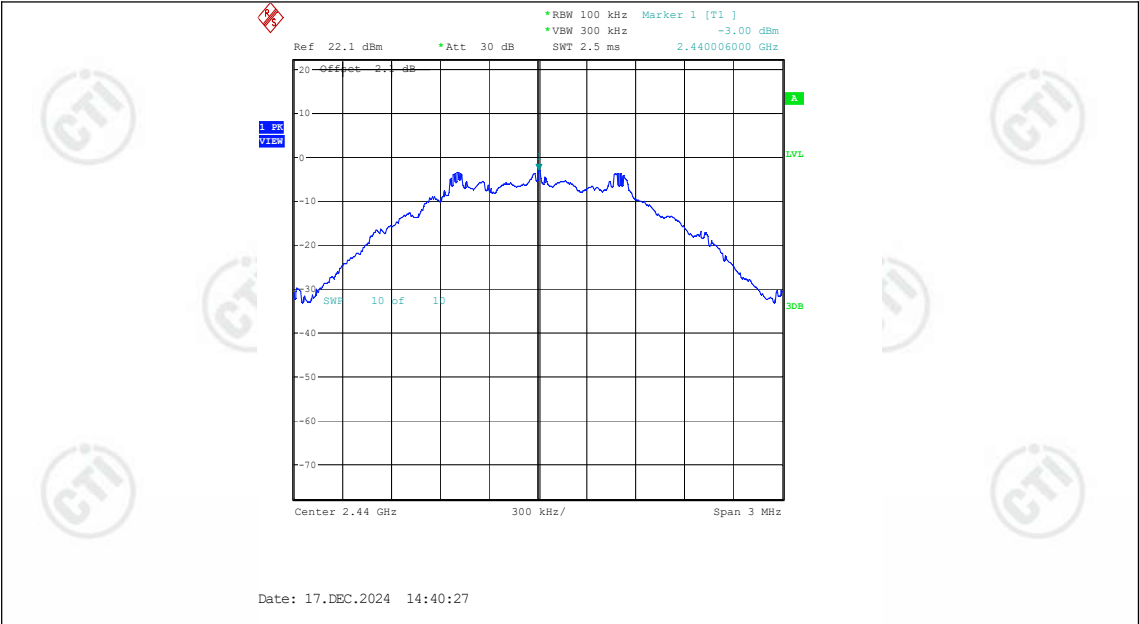
BLE\_2M-Ant1-2402-0~Reference-PASS



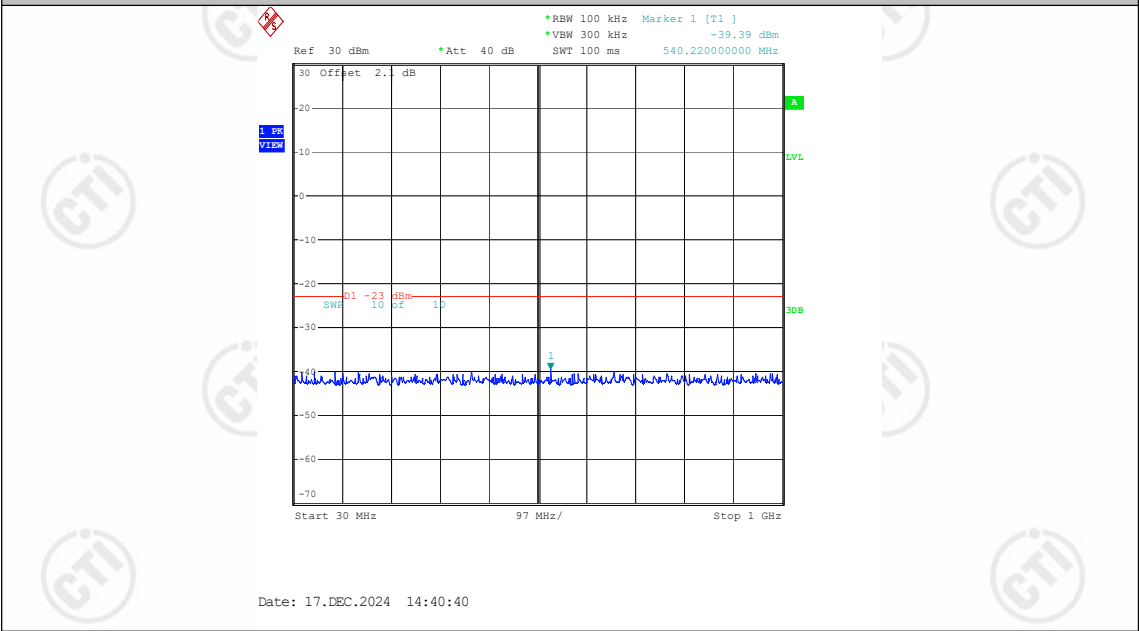
BLE\_2M-Ant1-2402-30~1000-PASS



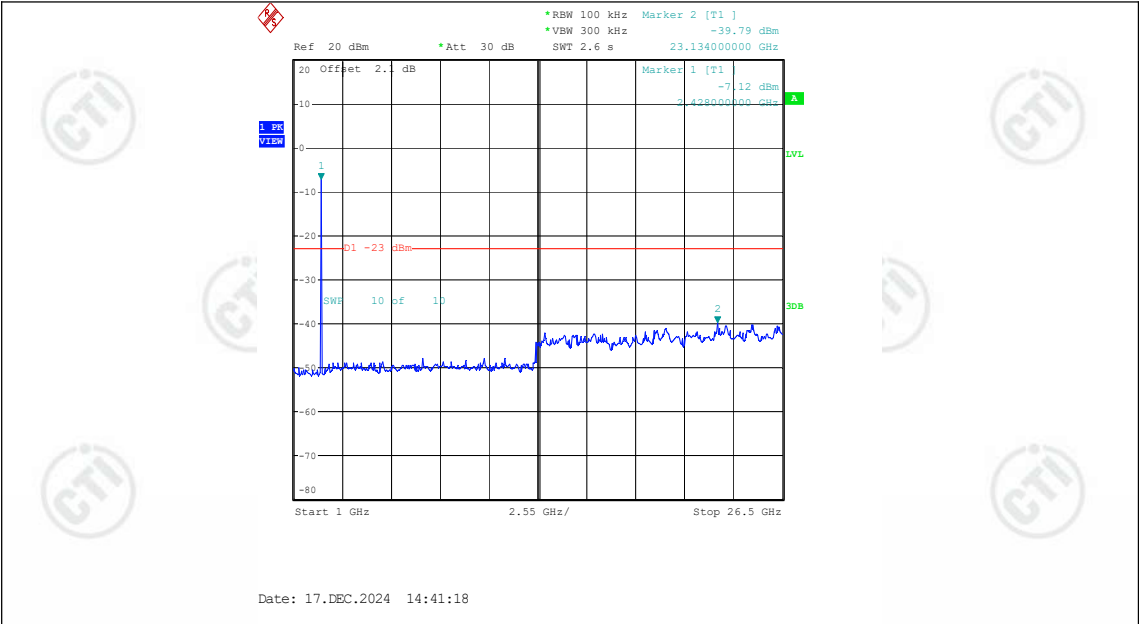
BLE\_2M-Ant1-2402-1000~26500-PASS



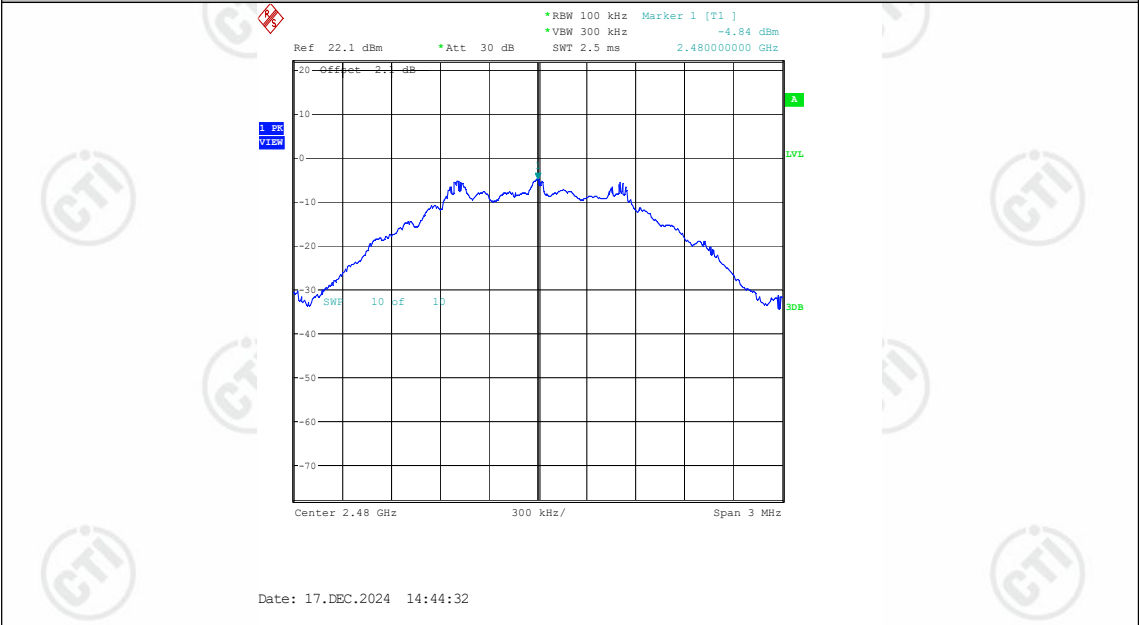
BLE\_2M-Ant1-2440-0~Reference-PASS



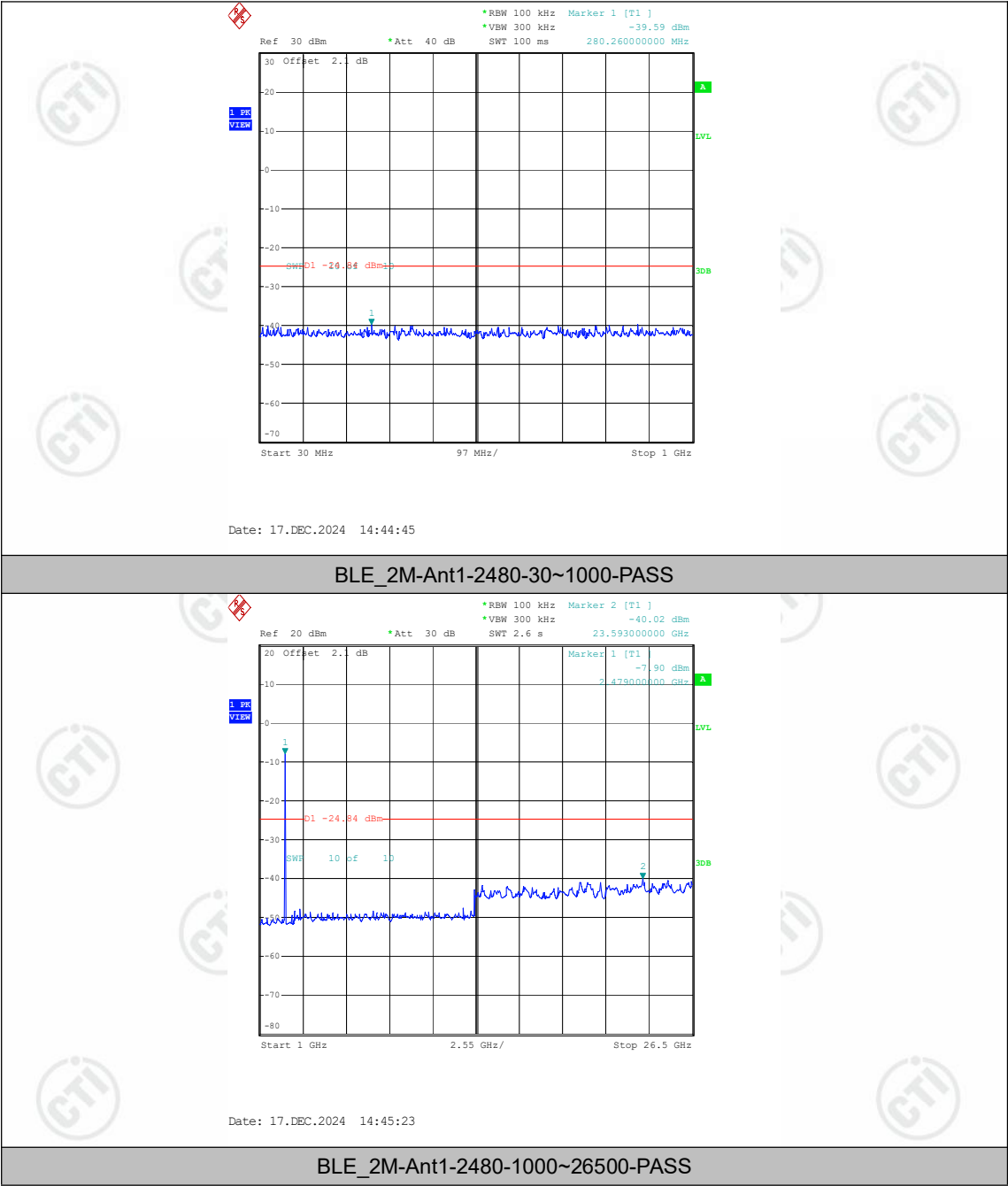
BLE\_2M-Ant1-2440-30~1000-PASS



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



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

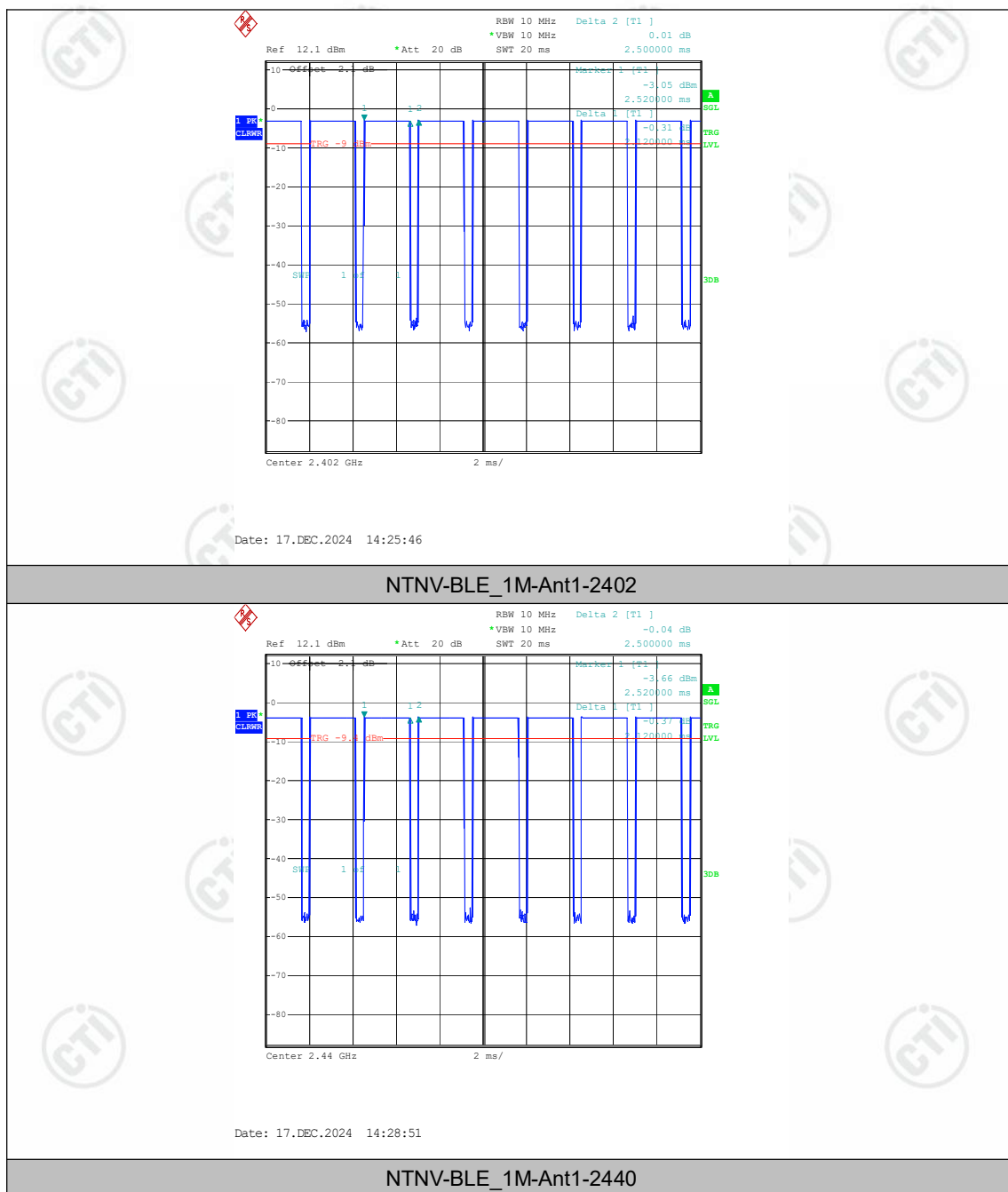


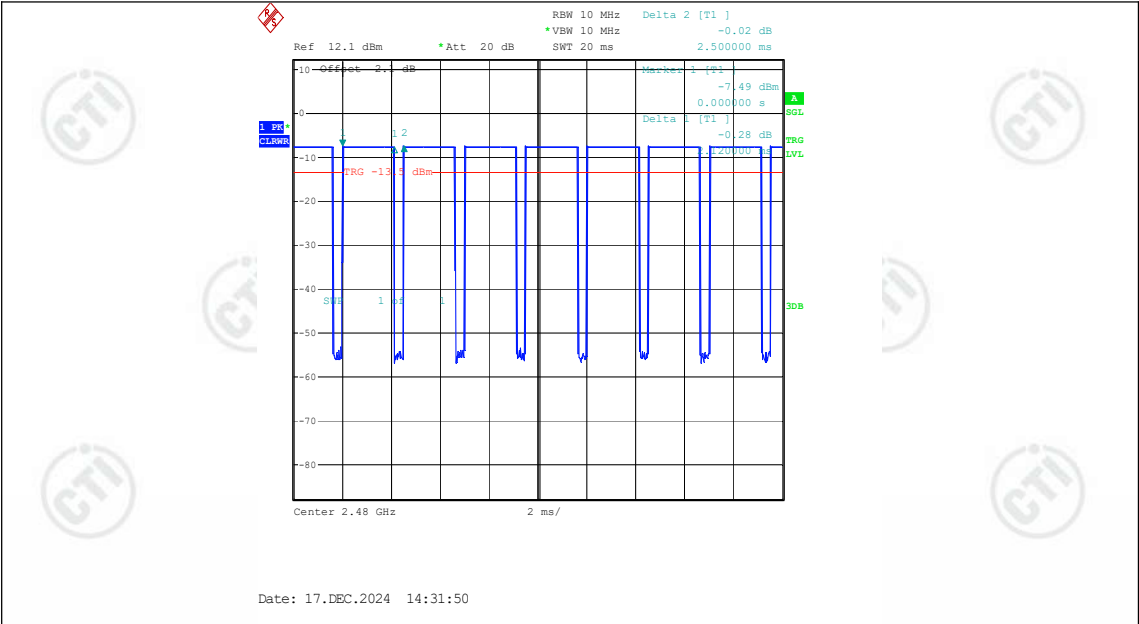
Appendix G: Duty Cycle

Test Result

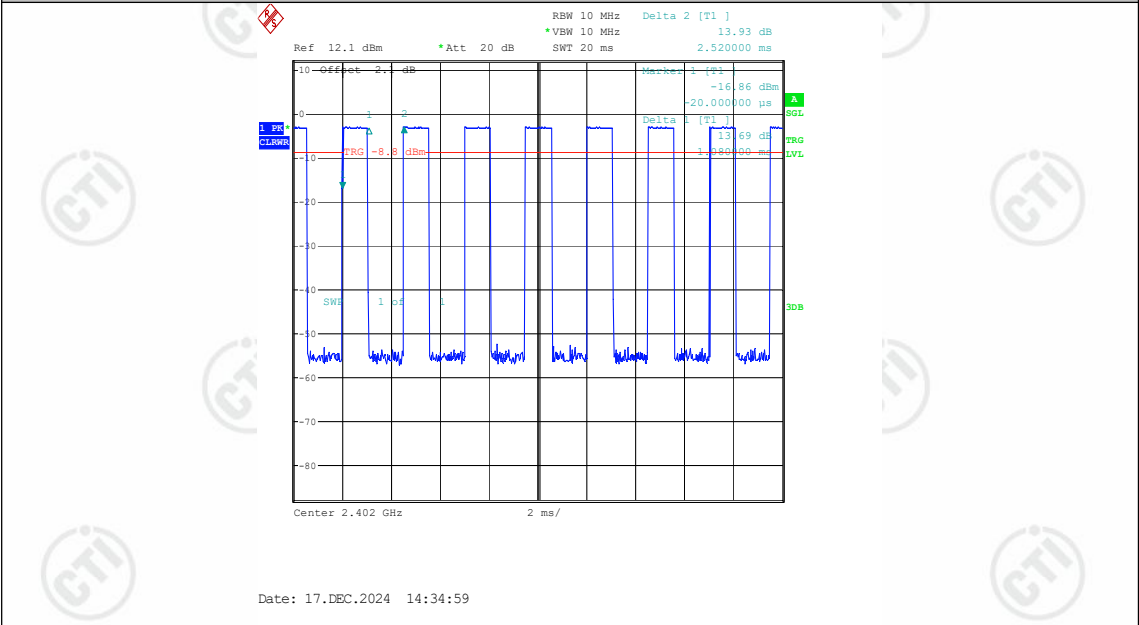
| TestMode | Antenna | Frequency[MHz] | ON Time [ms] | Period [ms] | Duty Cycle [%] | Duty Cycle Factor[dB] |
|----------|---------|----------------|--------------|-------------|----------------|-----------------------|
| BLE_1M   | Ant1    | 2402           | 2.12         | 2.50        | 84.80          | 0.72                  |
| BLE_1M   | Ant1    | 2440           | 2.12         | 2.50        | 84.80          | 0.72                  |
| BLE_1M   | Ant1    | 2480           | 2.12         | 2.50        | 84.80          | 0.72                  |
| BLE_2M   | Ant1    | 2402           | 1.08         | 2.52        | 42.86          | 3.68                  |
| BLE_2M   | Ant1    | 2440           | 1.08         | 2.52        | 42.86          | 3.68                  |
| BLE_2M   | Ant1    | 2480           | 1.08         | 2.52        | 42.86          | 3.68                  |

## Test Graphs

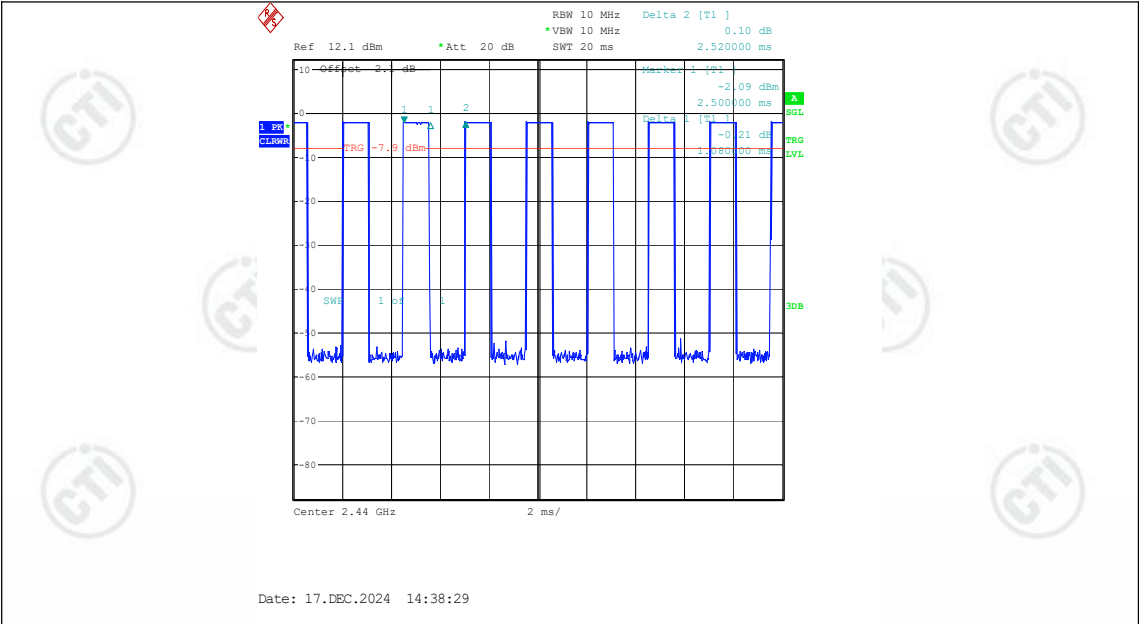




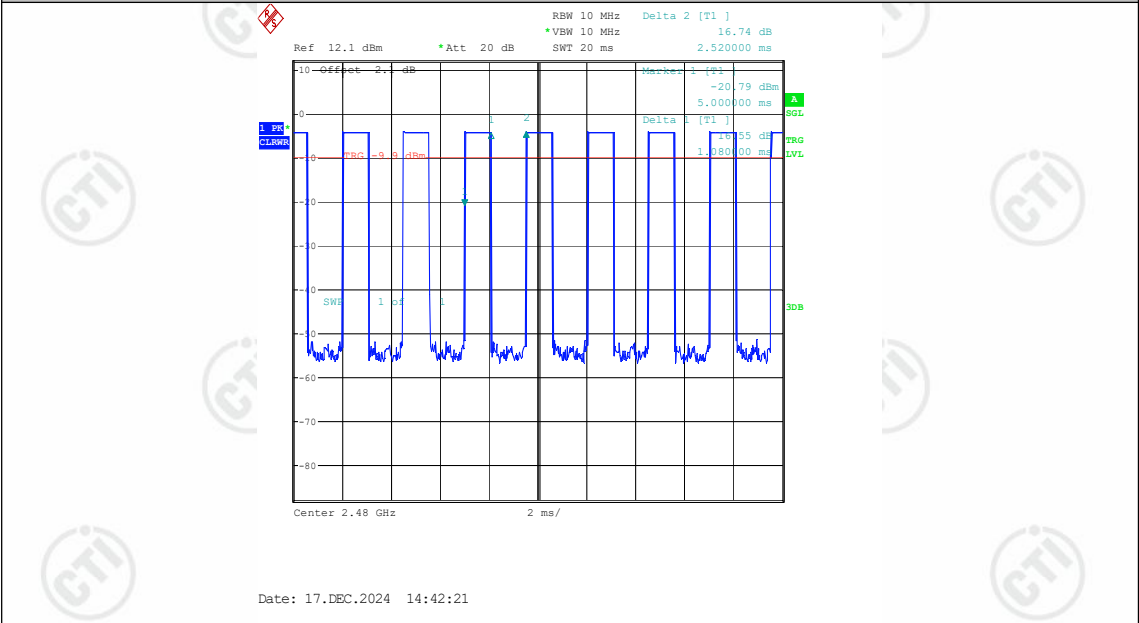
NTNV-BLE\_1M-Ant1-2480



NTNV-BLE\_2M-Ant1-2402



NTNV-BLE\_2M-Ant1-2440



NTNV-BLE\_2M-Ant1-2480

\*\*\*END OF REPORT\*\*\*