

# Appendix Report

|                |               |
|----------------|---------------|
| Project No.:   | CISR250415138 |
| Test Engineer: | James Wang    |
| Supervised by: | Rory Huang    |

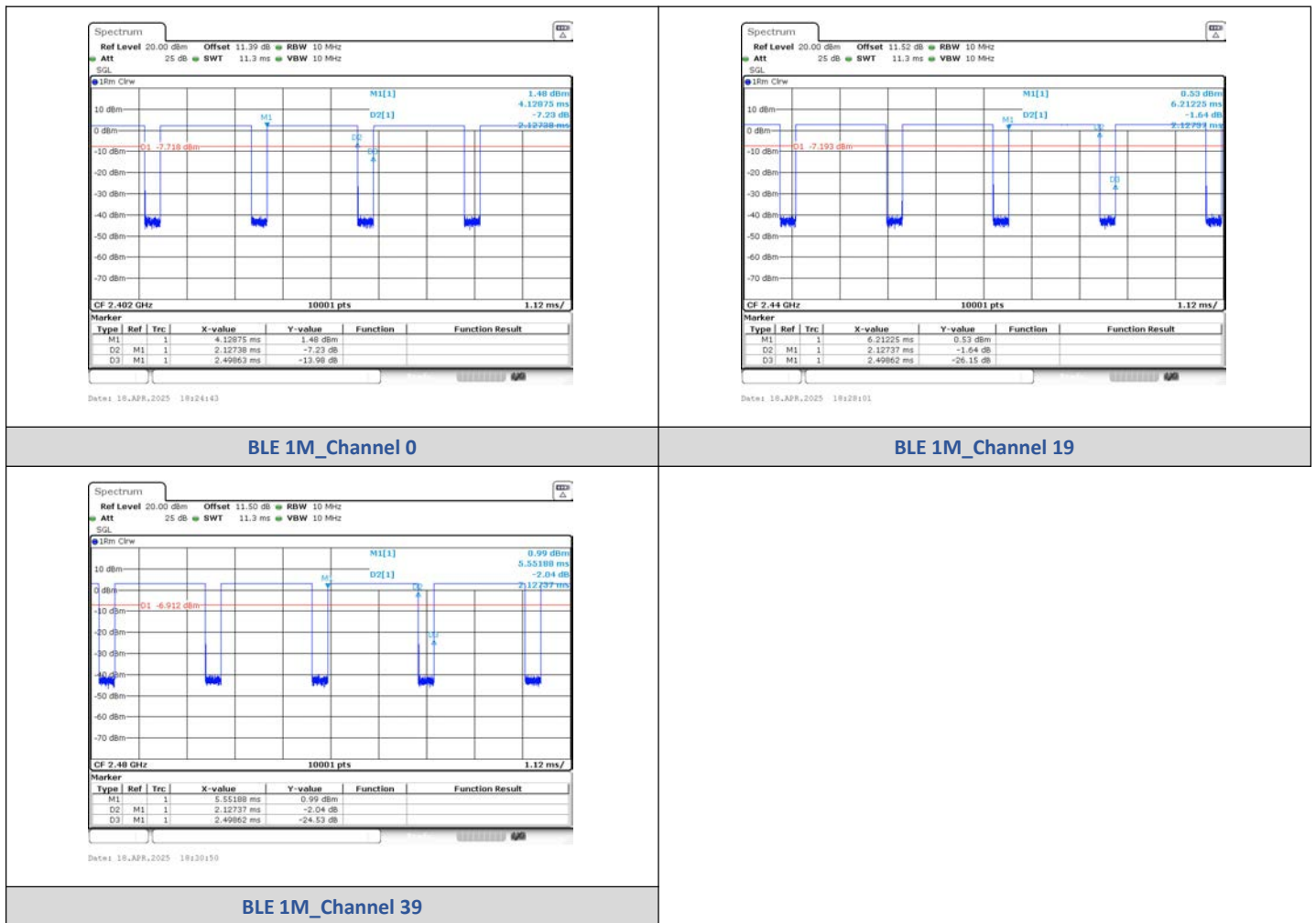
# 1) Duty Cycle

## Test Result

Left:

| Mode   | Channel | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle (linear) | Duty Cycle Factor (dB) | 1/T    |
|--------|---------|--------------|-------------|----------------|---------------------|------------------------|--------|
| BLE 1M | 0       | 2.127        | 2.499       | 85.14          | 0.8514              | 0.6987                 | 0.4701 |
|        | 19      | 2.127        | 2.499       | 85.14          | 0.8514              | 0.6987                 | 0.4701 |
|        | 39      | 2.127        | 2.499       | 85.14          | 0.8514              | 0.6987                 | 0.4701 |

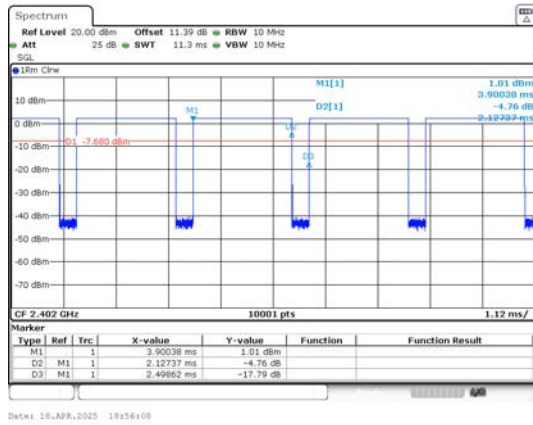
## Test Graphs



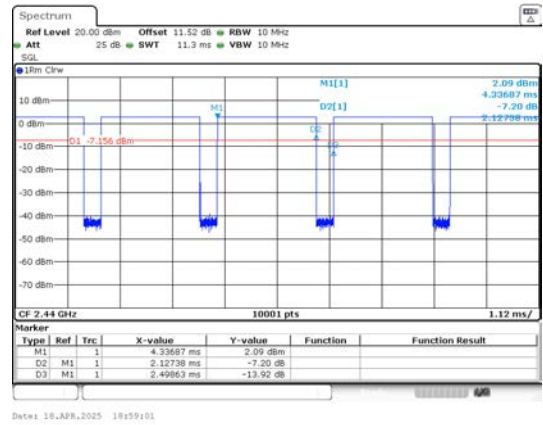
Right:

| Mode   | Channel | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle (linear) | Duty Cycle Factor (dB) | 1/T    |
|--------|---------|--------------|-------------|----------------|---------------------|------------------------|--------|
| BLE 1M | 0       | 2.127        | 2.499       | 85.14          | 0.8514              | 0.6987                 | 0.4701 |
|        | 19      | 2.127        | 2.499       | 85.14          | 0.8514              | 0.6987                 | 0.4701 |
|        | 39      | 2.127        | 2.499       | 85.14          | 0.8514              | 0.6987                 | 0.4701 |

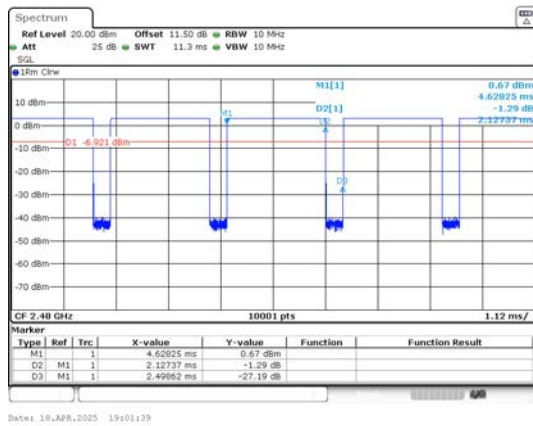
## Test Graphs



BLE 1M\_Channel 0



BLE 1M\_Channel 19



BLE 1M\_Channel 39

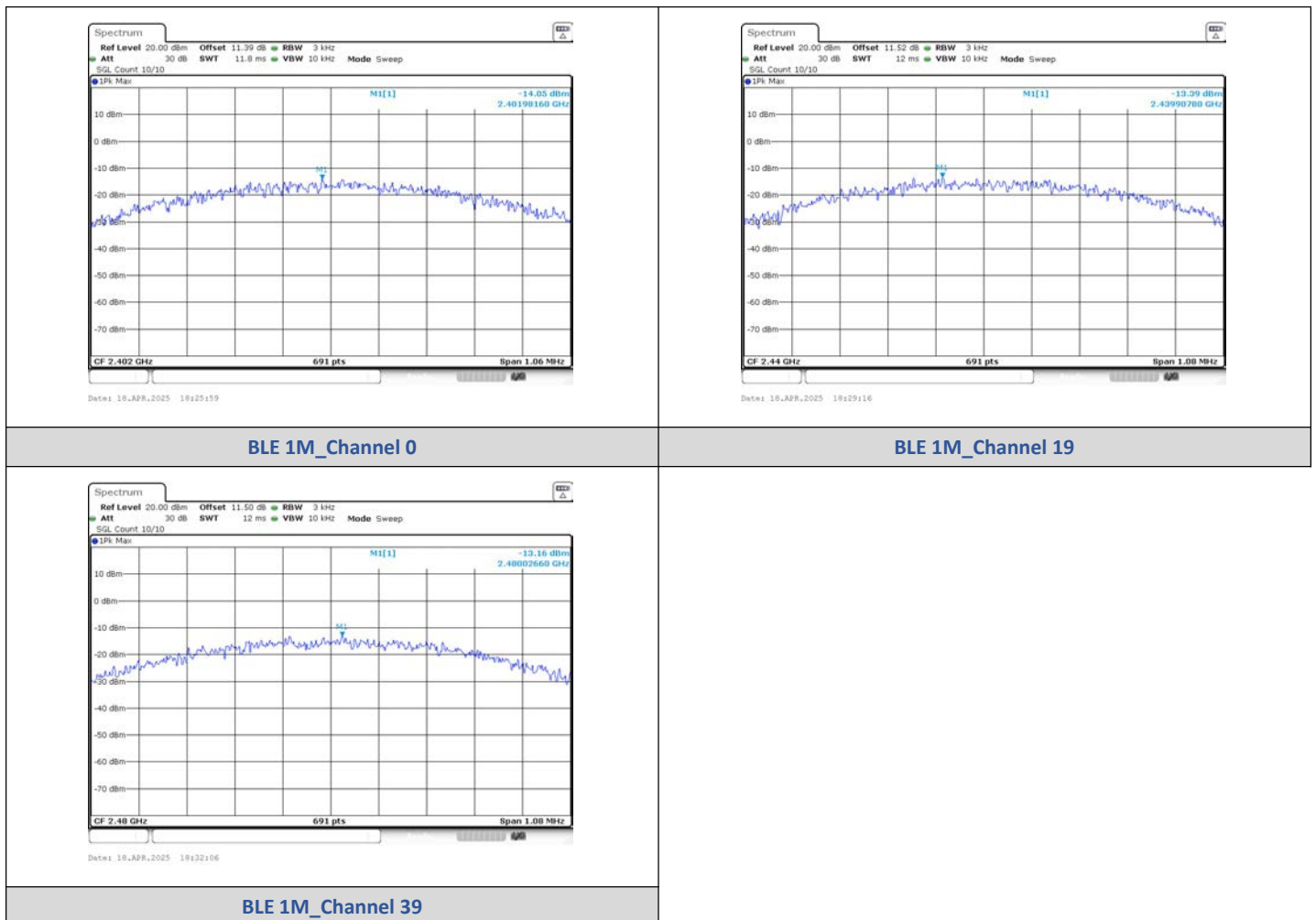
## 2) Power Spectral Density

### Test Result

Left:

| Mode   | Channel | PSD (dBm/3kHz) | Limit (dBm/3kHz) | Result |
|--------|---------|----------------|------------------|--------|
| BLE 1M | 0       | -14.050        | ≤8               | PASS   |
| BLE 1M | 19      | -13.390        | ≤8               | PASS   |
| BLE 1M | 39      | -13.160        | ≤8               | PASS   |

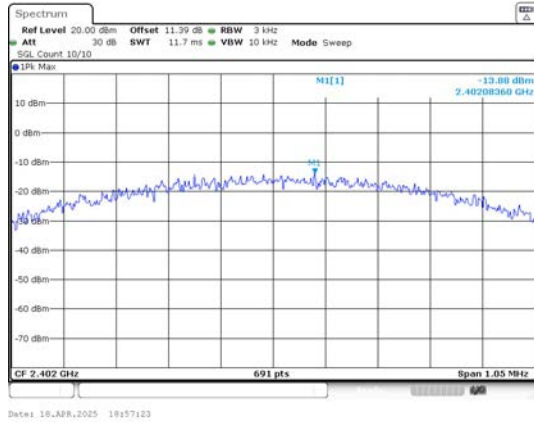
### Test Graphs



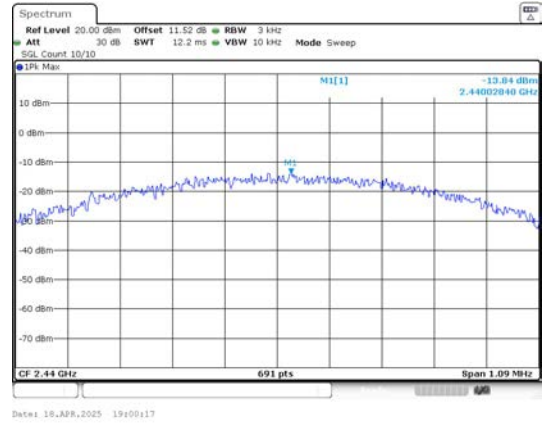
Right:

| Mode   | Channel | PSD (dBm/3kHz) | Limit (dBm/3kHz) | Result |
|--------|---------|----------------|------------------|--------|
| BLE 1M | 0       | -13.880        | ≤8               | PASS   |
| BLE 1M | 19      | -13.840        | ≤8               | PASS   |
| BLE 1M | 39      | -13.520        | ≤8               | PASS   |

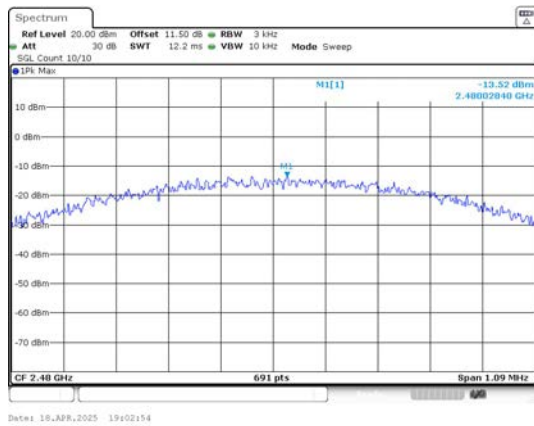
### Test Graphs



BLE 1M\_Channel 0



BLE 1M\_Channel 19



BLE 1M\_Channel 39

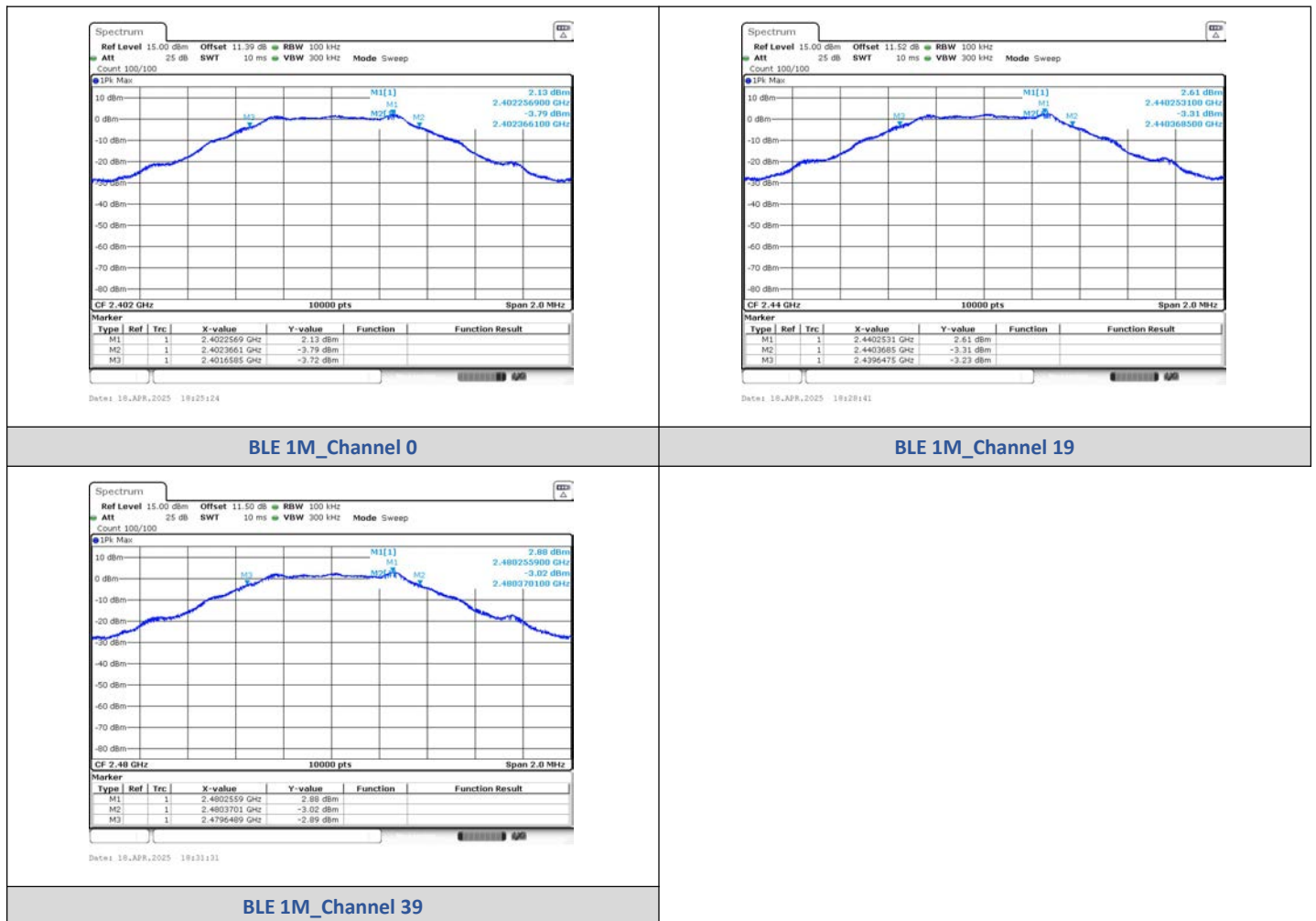
### 3) 6dB Bandwidth

#### Test Result

Left:

| Mode   | Channel | Center Frequency (MHz) | 6 dB Bandwidth (MHz) | Limit (MHz) | Result |
|--------|---------|------------------------|----------------------|-------------|--------|
| BLE 1M | 0       | 2402                   | 0.7100               | ≥0.5        | PASS   |
|        | 19      | 2440                   | 0.7200               |             | PASS   |
|        | 39      | 2480                   | 0.7200               |             | PASS   |

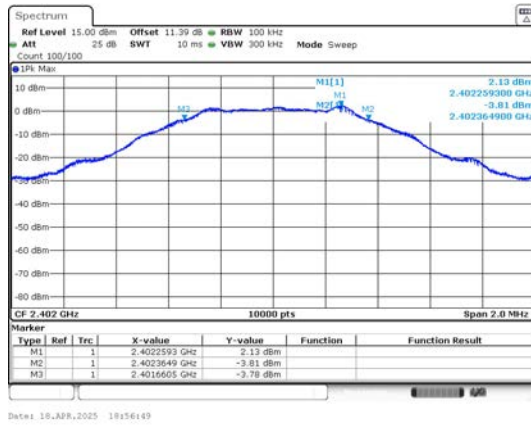
#### Test Graphs



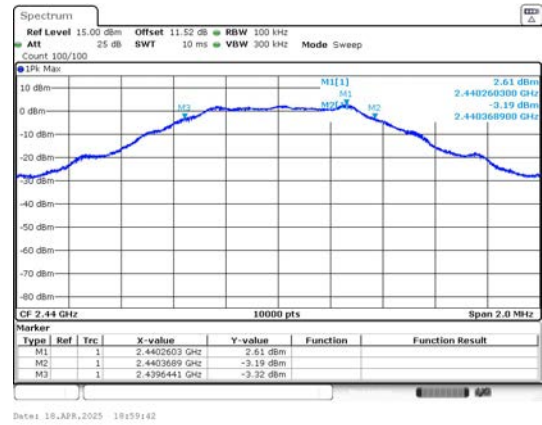
Right:

| Mode   | Channel | Center Frequency (MHz) | 6 dB Bandwidth (MHz) | Limit (MHz) | Result |
|--------|---------|------------------------|----------------------|-------------|--------|
| BLE 1M | 0       | 2402                   | 0.7000               | ≥0.5        | PASS   |
|        | 19      | 2440                   | 0.7300               |             | PASS   |
|        | 39      | 2480                   | 0.7300               |             | PASS   |

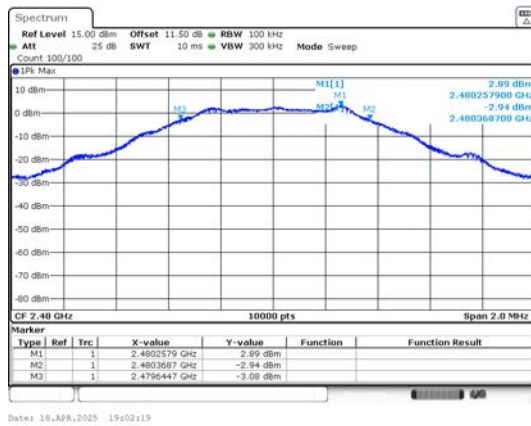
#### Test Graphs



BLE 1M\_Channel 0



BLE 1M\_Channel 19



BLE 1M\_Channel 39

## 4) Conducted Output Power

### Test Result

Left:

| Mode   | Channel | Peak Output Power (dBm) | Peak Output Power (mW) | Limit (dBm) | Result |
|--------|---------|-------------------------|------------------------|-------------|--------|
| BLE 1M | 0       | 2.31                    | 1.7                    | ≤30         | PASS   |
|        | 19      | 2.84                    | 1.92                   | ≤30         | PASS   |
|        | 39      | 3.15                    | 2.07                   | ≤30         | PASS   |

### Test Graphs

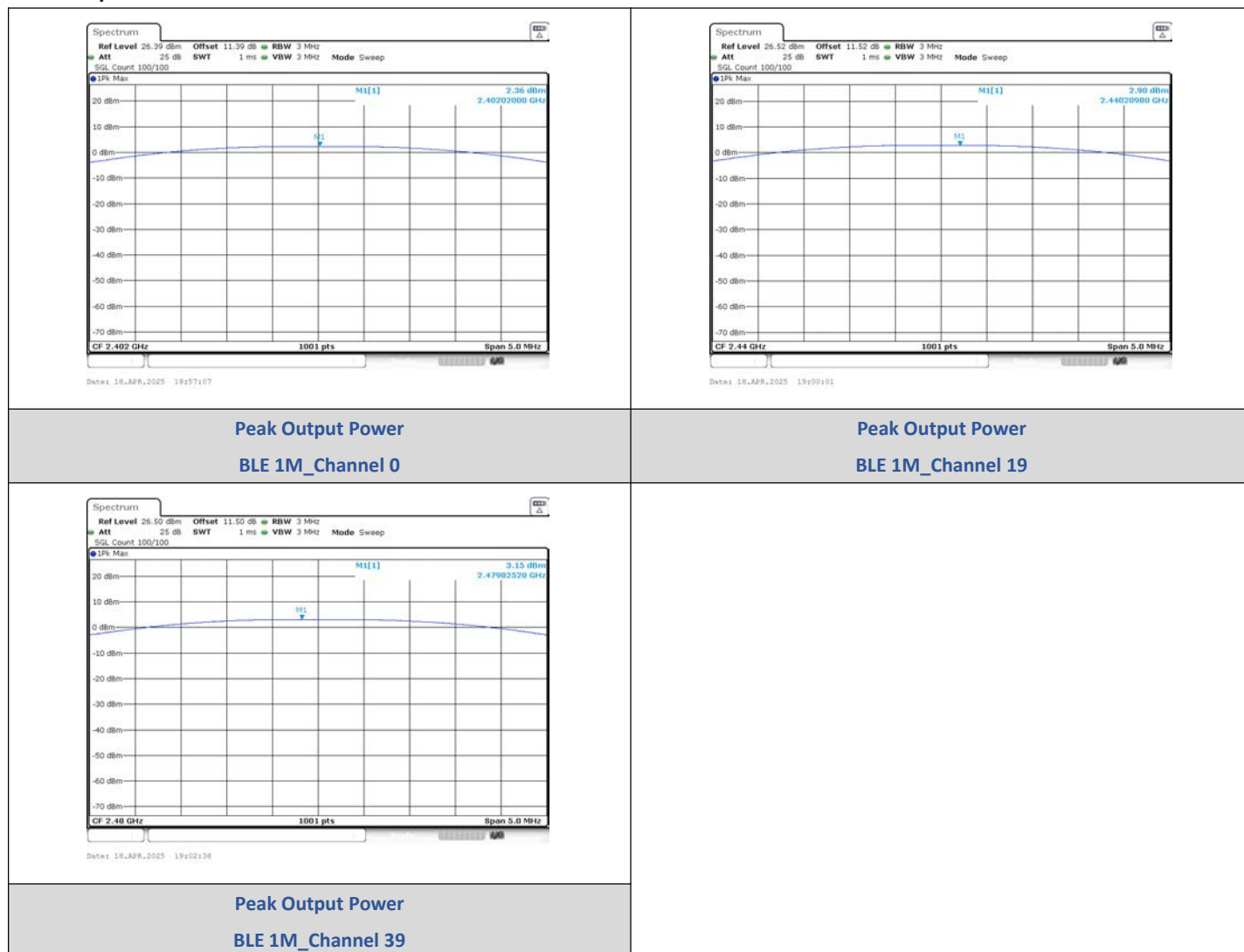


Right:

| Mode   | Channel | Peak Output Power (dBm) | Peak Output Power (mW) | Limit (dBm) | Result |
|--------|---------|-------------------------|------------------------|-------------|--------|
| BLE 1M | 0       | 2.36                    | 1.72                   | ≤30         | PASS   |
|        | 19      | 2.90                    | 1.95                   | ≤30         | PASS   |

|  |    |      |      |     |      |
|--|----|------|------|-----|------|
|  | 39 | 3.15 | 2.07 | ≤30 | PASS |
|--|----|------|------|-----|------|

## Test Graphs



## 5) Conducted Out Of Band Emission

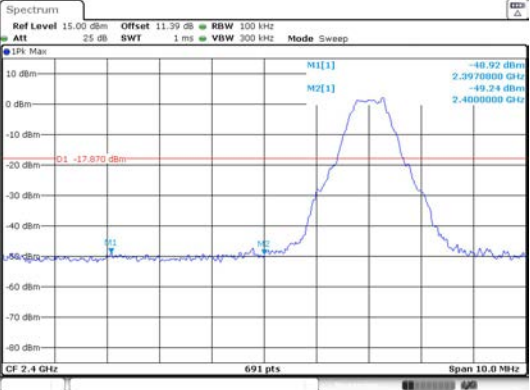
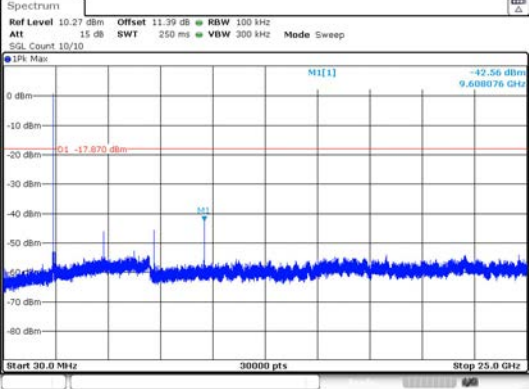
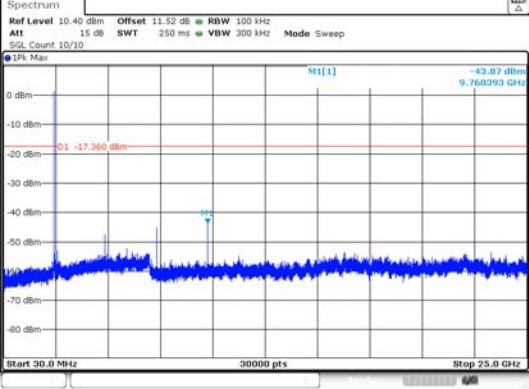
### Test Result

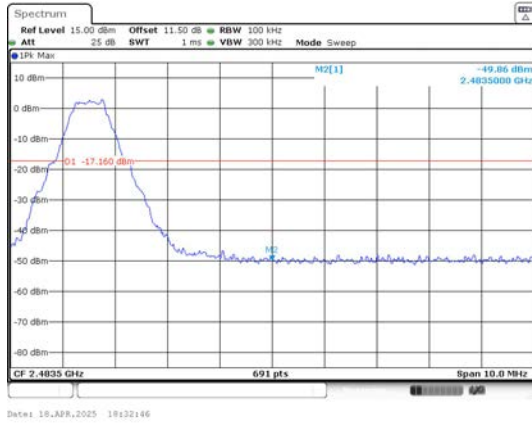
Left:

| Mode   | Channel | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|--------|---------|------------------------------|--------------------------|-------------|-----------------|--------|
| BLE 1M | 0       | 2397.08                      | -48.922                  | -17.87      | -31.052         | PASS   |
|        |         | 2400.00                      | -49.240                  | -17.87      | -31.370         | PASS   |
|        |         | 9608.10                      | -42.561                  | -17.87      | -24.691         | PASS   |
|        | 19      | 9760.39                      | -43.872                  | -17.36      | -26.512         | PASS   |
|        | 39      | 2483.50                      | -49.960                  | -17.16      | -32.800         | PASS   |

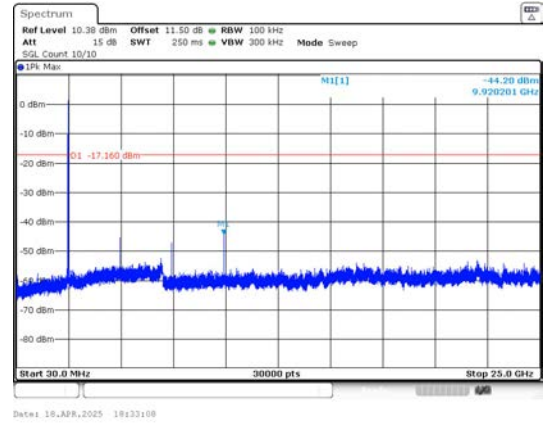
|  |  |         |         |        |         |      |
|--|--|---------|---------|--------|---------|------|
|  |  | 9920.20 | -44.202 | -17.16 | -27.042 | PASS |
|--|--|---------|---------|--------|---------|------|

## Test Graphs

|                                                                                                                                                |                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p><b>In-Band Reference Level<br/>BLE 1M_Channel 0</b></p>   |  <p><b>Out Of Band Emission<br/>BLE 1M_Channel 0</b></p>       |
|  <p><b>30.0 MHz - 25000.0 MHz<br/>BLE 1M_Channel 0</b></p>   |  <p><b>In-Band Reference Level<br/>BLE 1M_Channel 19</b></p>  |
|  <p><b>30.0 MHz - 25000.0 MHz<br/>BLE 1M_Channel 19</b></p> |  <p><b>In-Band Reference Level<br/>BLE 1M_Channel 39</b></p> |



**Out Of Band Emission**  
**BLE 1M\_Channel 39**

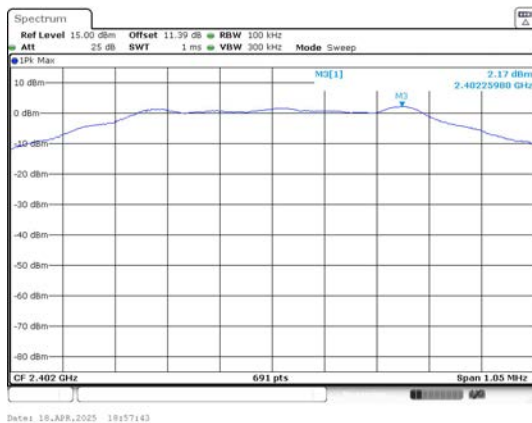


**30.0 MHz - 25000.0 MHz**  
**BLE 1M\_Channel 39**

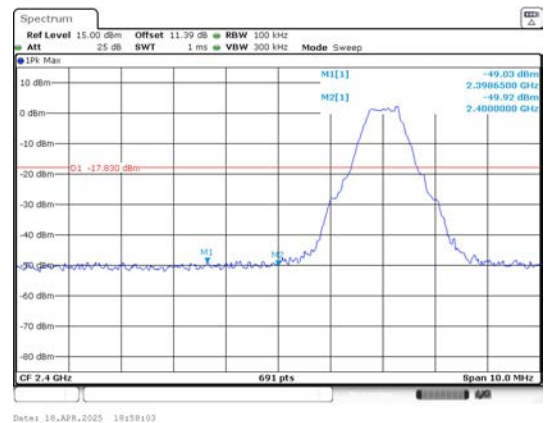
Right:

| Mode   | Channel | OOB Emission Frequency (MHz) | OOB Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result |
|--------|---------|------------------------------|--------------------------|-------------|-----------------|--------|
| BLE 1M | 0       | 2398.65                      | -49.031                  | -17.83      | -31.201         | PASS   |
|        |         | 2400.00                      | -49.920                  | -17.83      | -32.090         | PASS   |
|        |         | 9608.10                      | -41.482                  | -17.83      | -23.652         | PASS   |
|        | 19      | 9760.39                      | -43.755                  | -17.34      | -26.415         | PASS   |
|        |         | 2483.50                      | -48.860                  | -17.13      | -31.730         | PASS   |
|        |         | 9920.20                      | -42.846                  | -17.13      | -25.716         | PASS   |

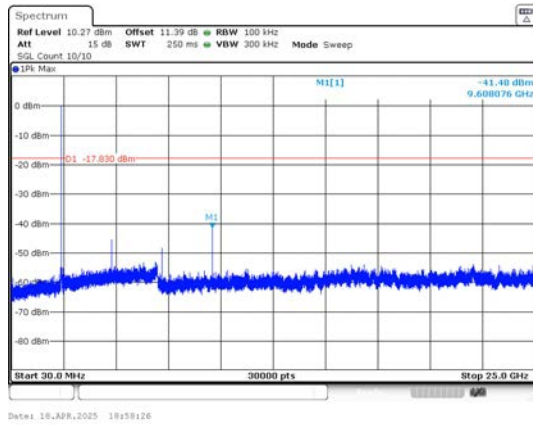
Test Graphs



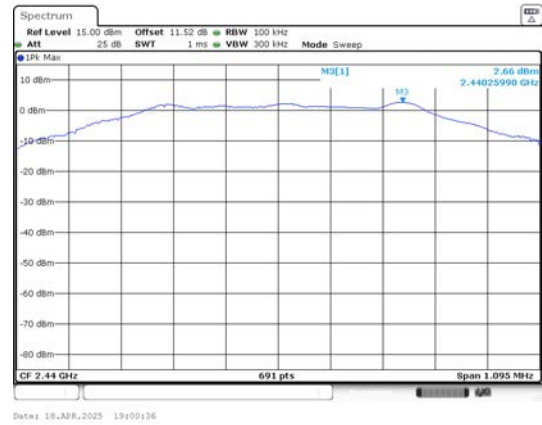
**In-Band Reference Level**  
**BLE 1M\_Channel 0**



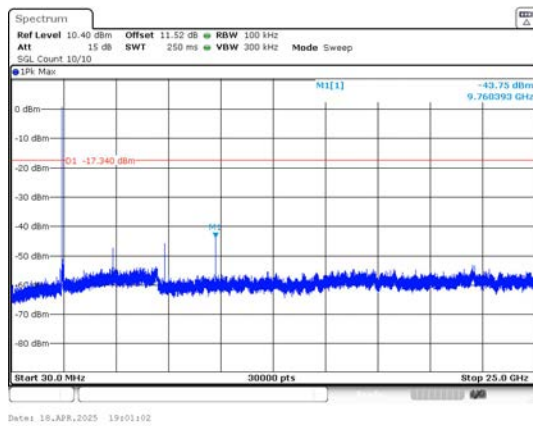
**Out Of Band Emission**  
**BLE 1M\_Channel 0**



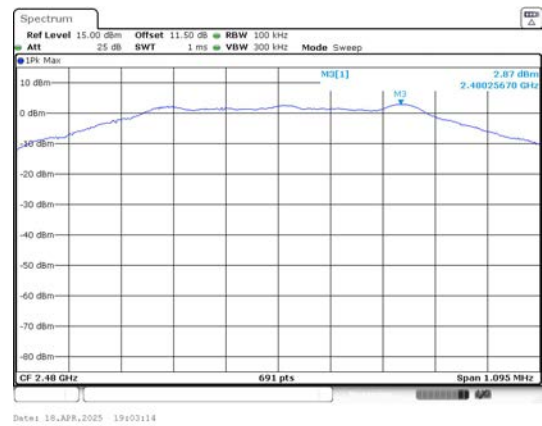
30.0 MHz - 25000.0 MHz  
BLE 1M\_Channel 0



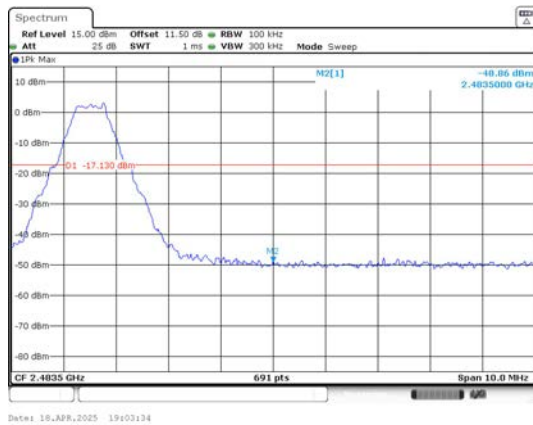
In-Band Reference Level  
BLE 1M\_Channel 19



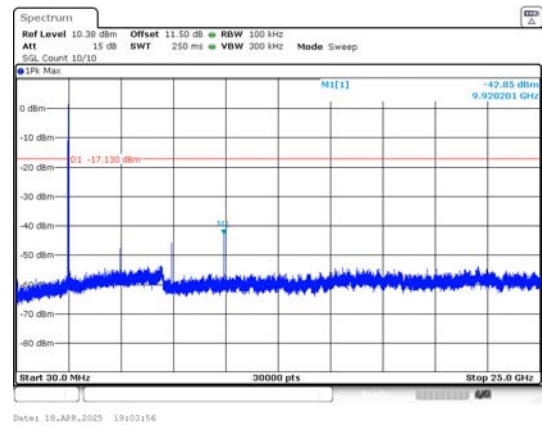
30.0 MHz - 25000.0 MHz  
BLE 1M\_Channel 19



In-Band Reference Level  
BLE 1M\_Channel 39



Out Of Band Emission  
BLE 1M\_Channel 39



30.0 MHz - 25000.0 MHz  
BLE 1M\_Channel 39

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