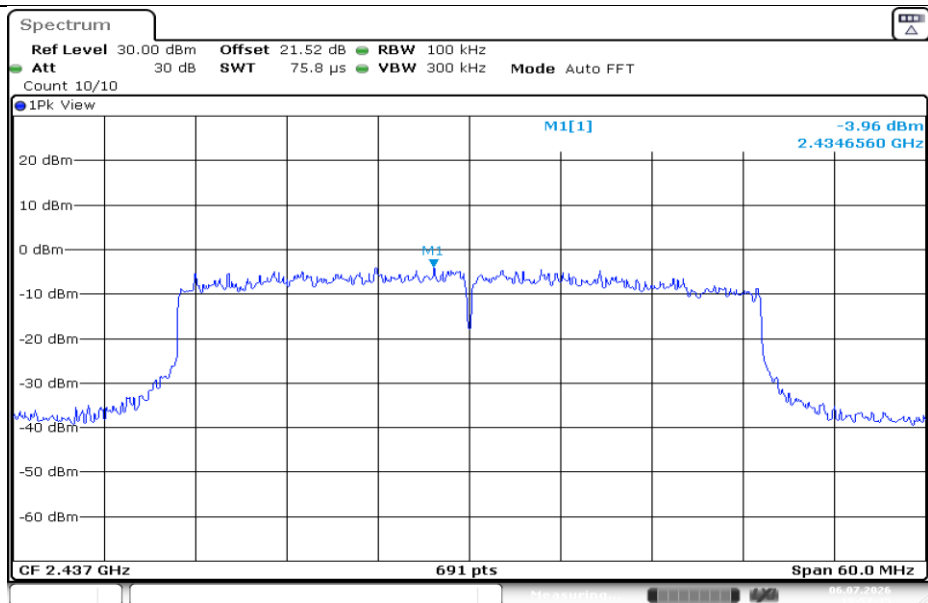
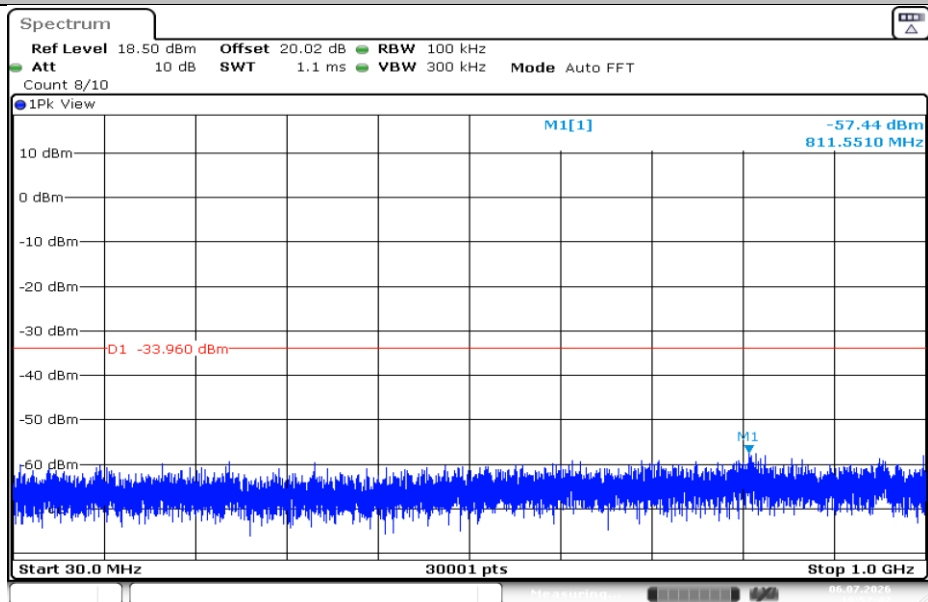
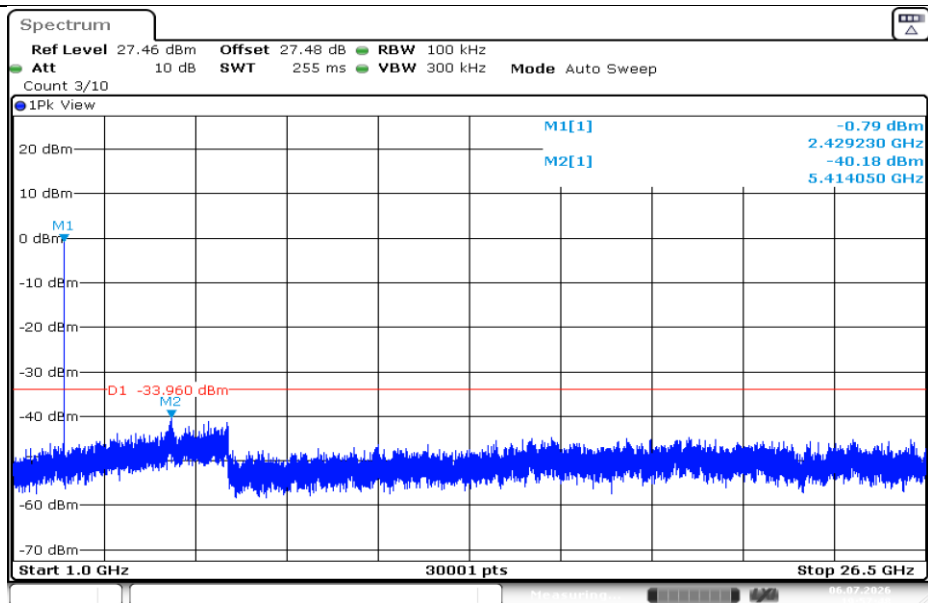




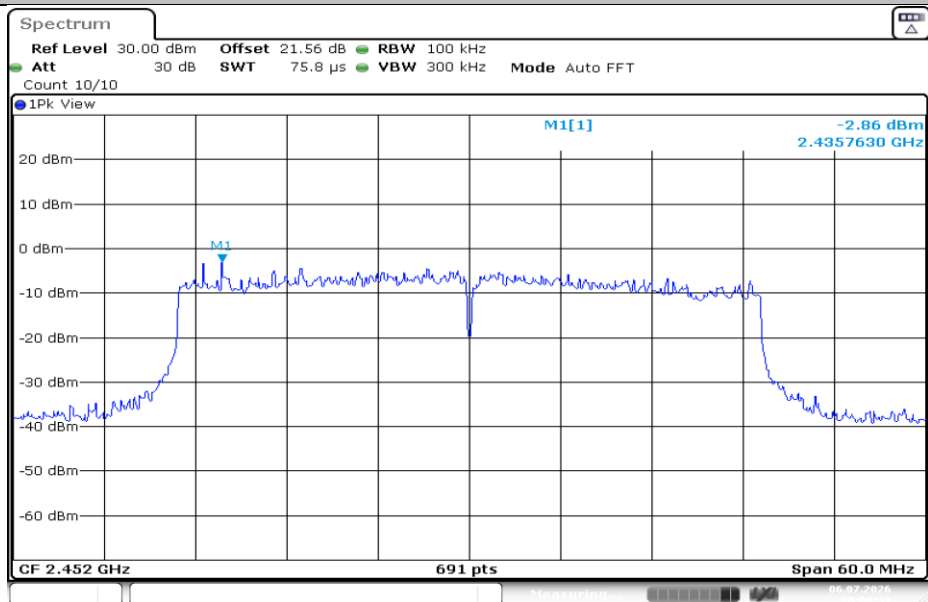
11AX40SISO-Ant1-2437-0~Reference-PASS



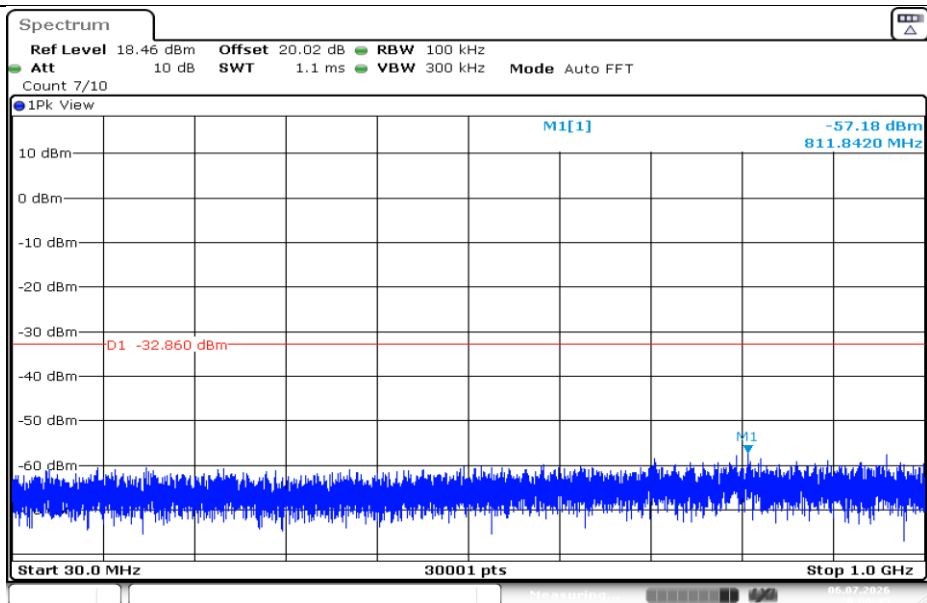
11AX40SISO-Ant1-2437-30~1000-PASS



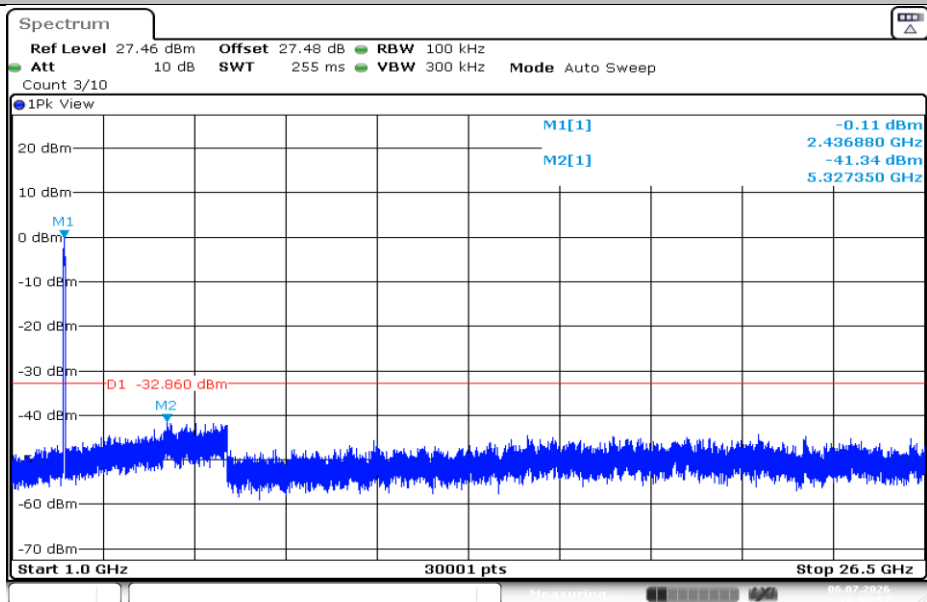
11AX40SISO-Ant1-2437-1000~26500-PASS



11AX40SISO-Ant1-2452-0~Reference-PASS

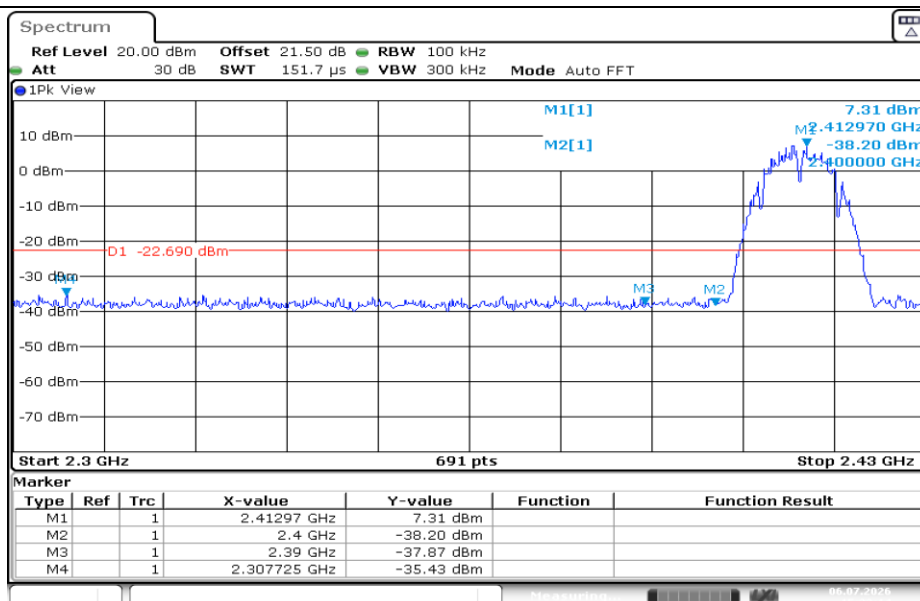


11AX40SISO-Ant1-2452-30~1000-PASS

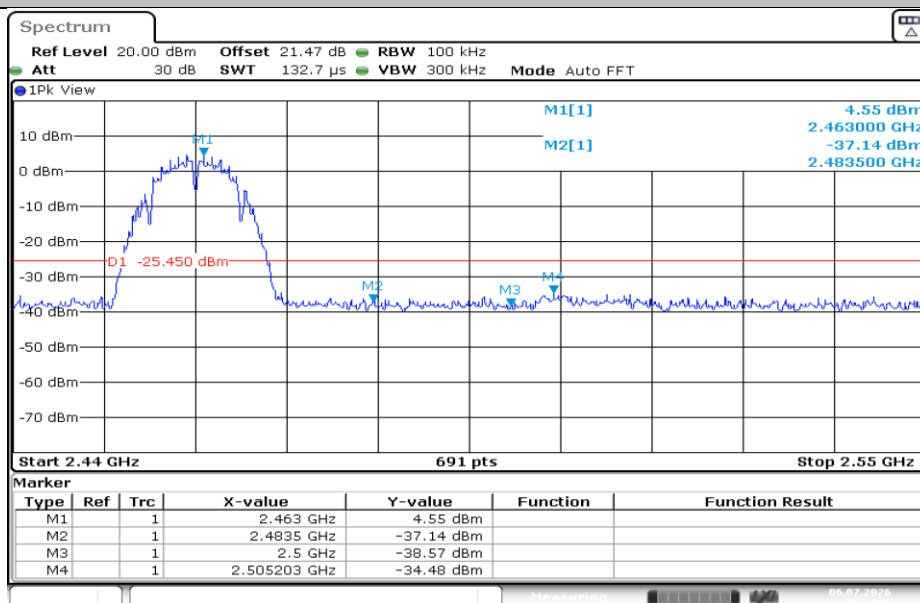


11AX40SISO-Ant1-2452-1000~26500-PASS

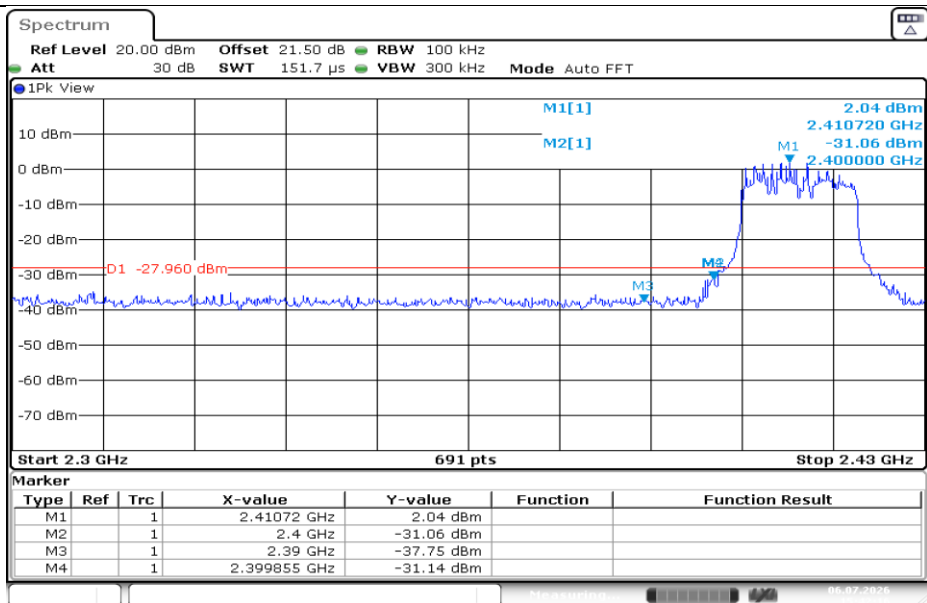
## Band edge



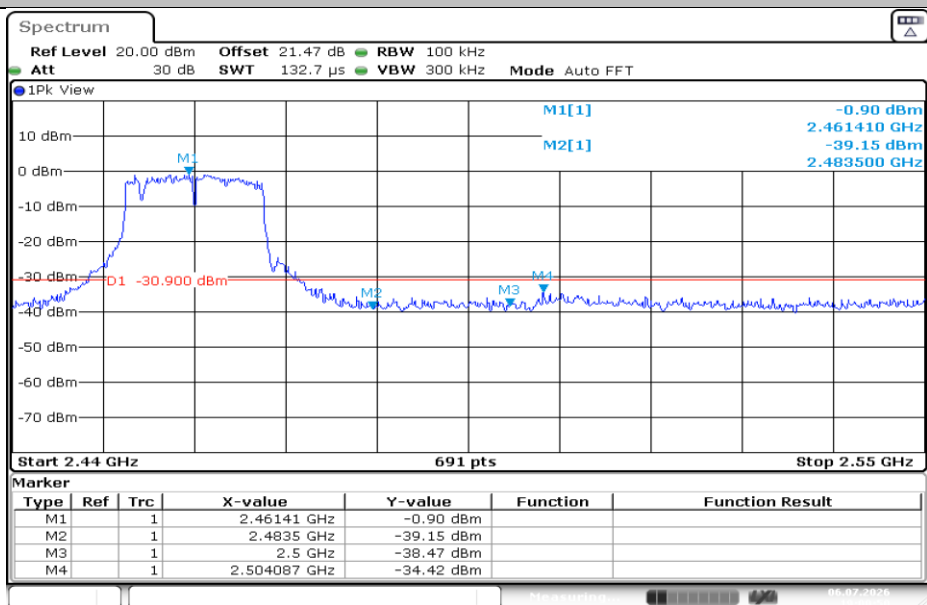
11B-Ant1-2412-PASS



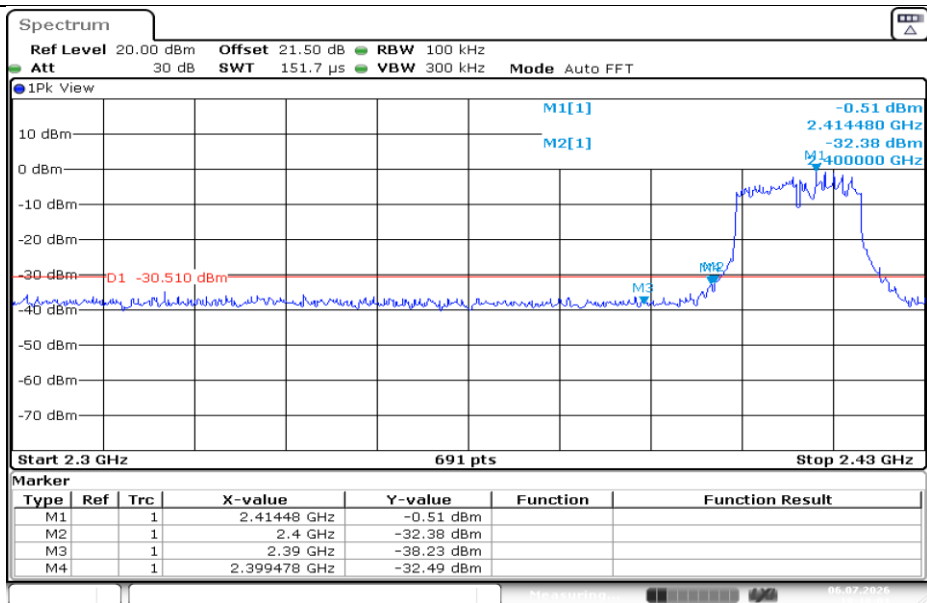
11B-Ant1-2462-PASS



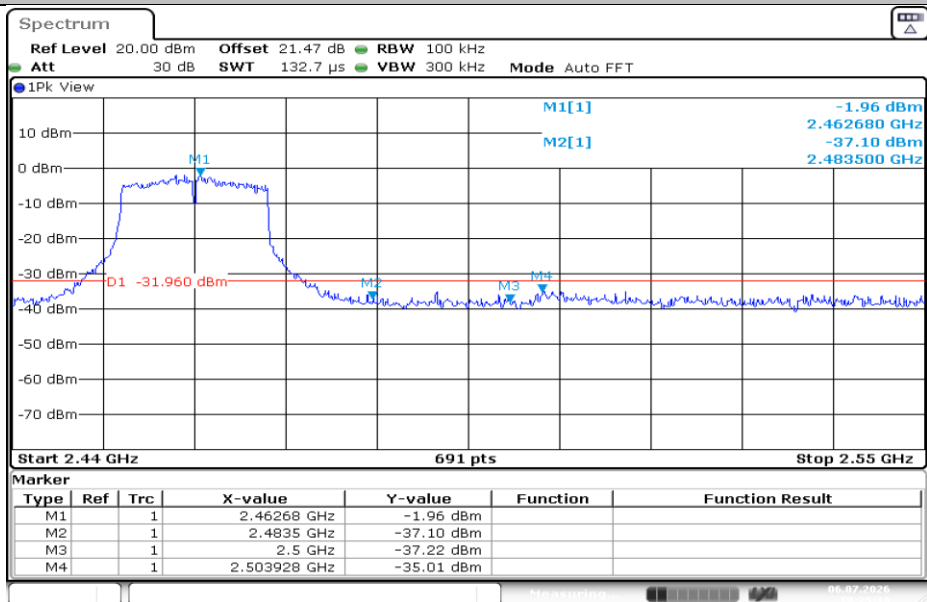
### 11G-Ant1-2412-PASS



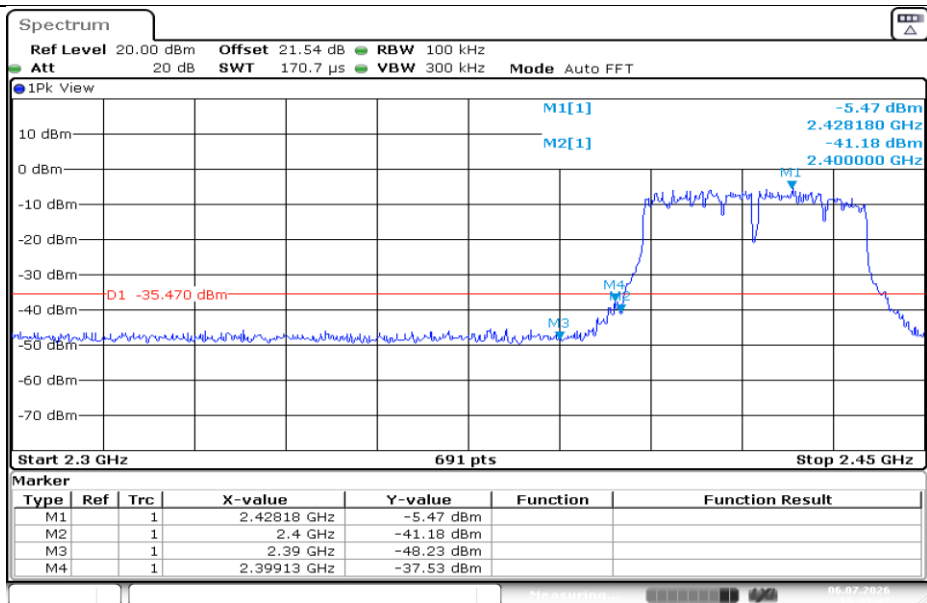
### 11G-Ant1-2462-PASS



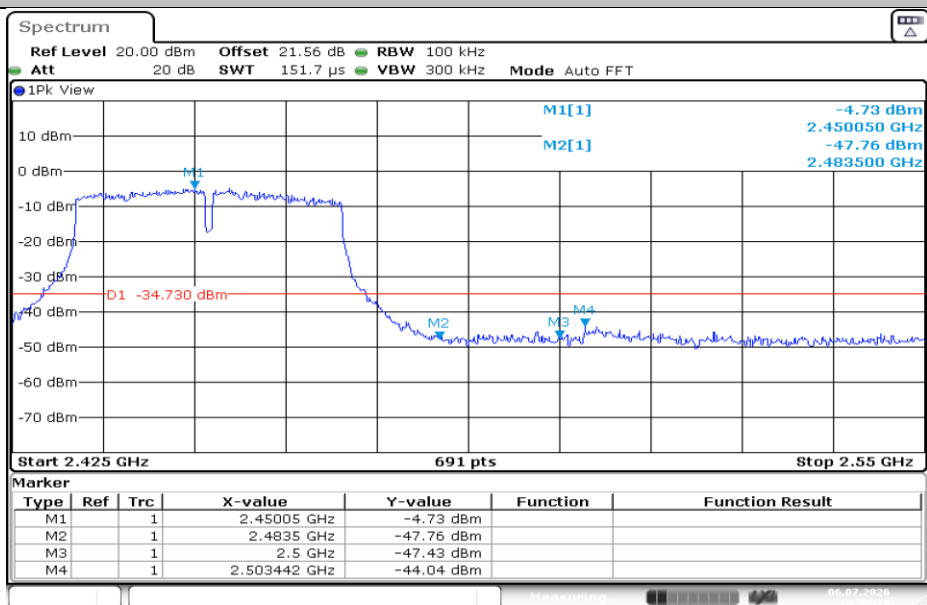
### 11N20SISO-Ant1-2412-PASS



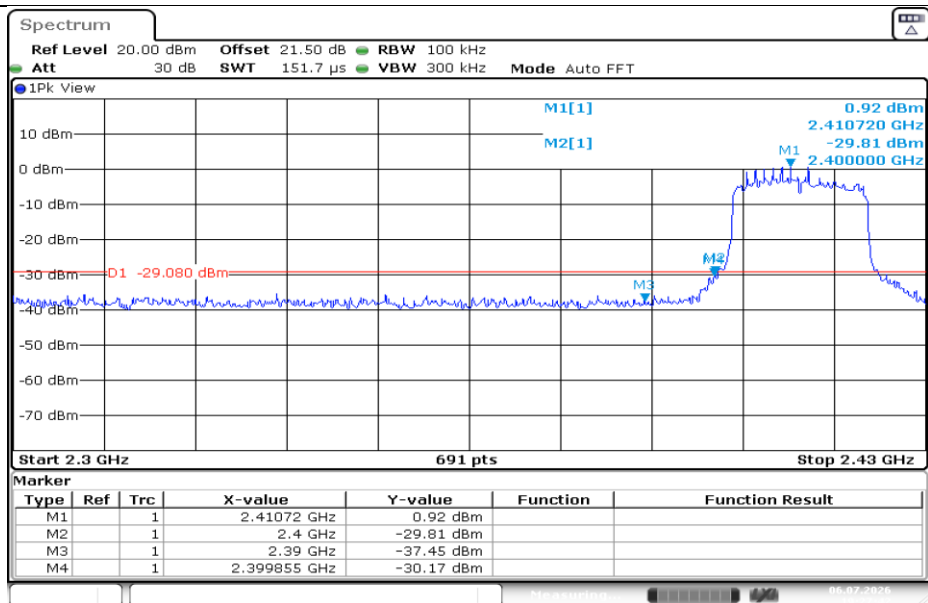
### 11N20SISO-Ant1-2462-PASS



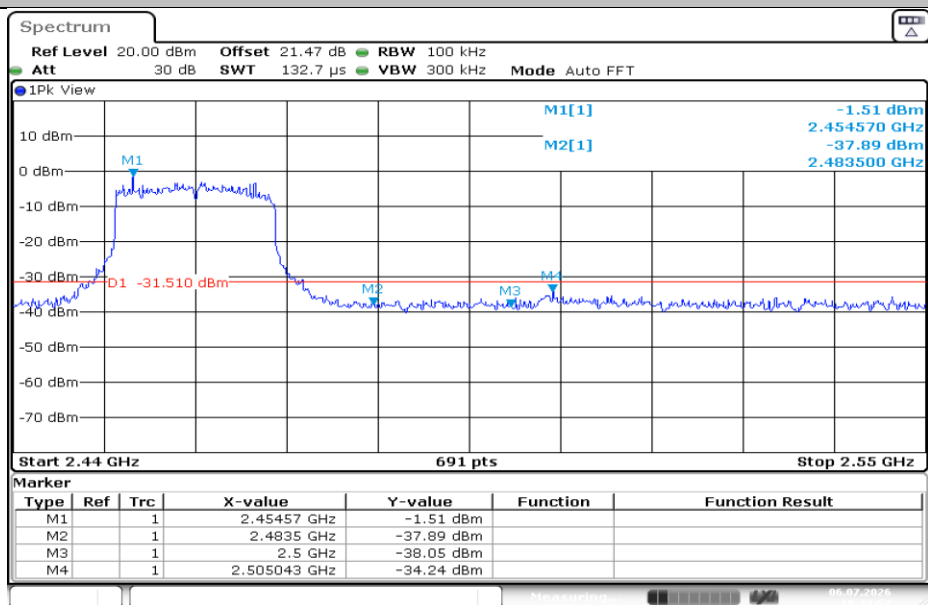
### 11N40SISO-Ant1-2422-PASS



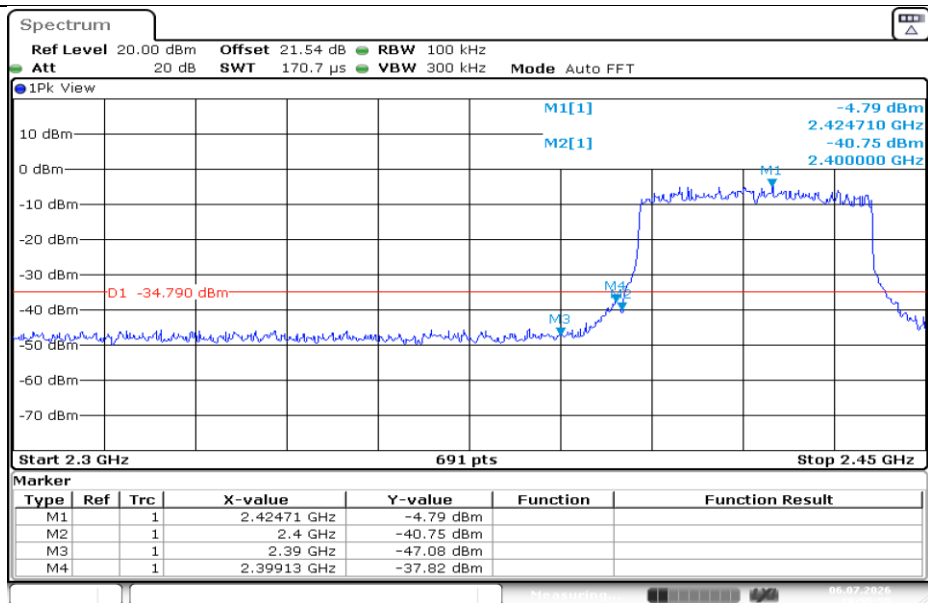
### 11N40SISO-Ant1-2452-PASS



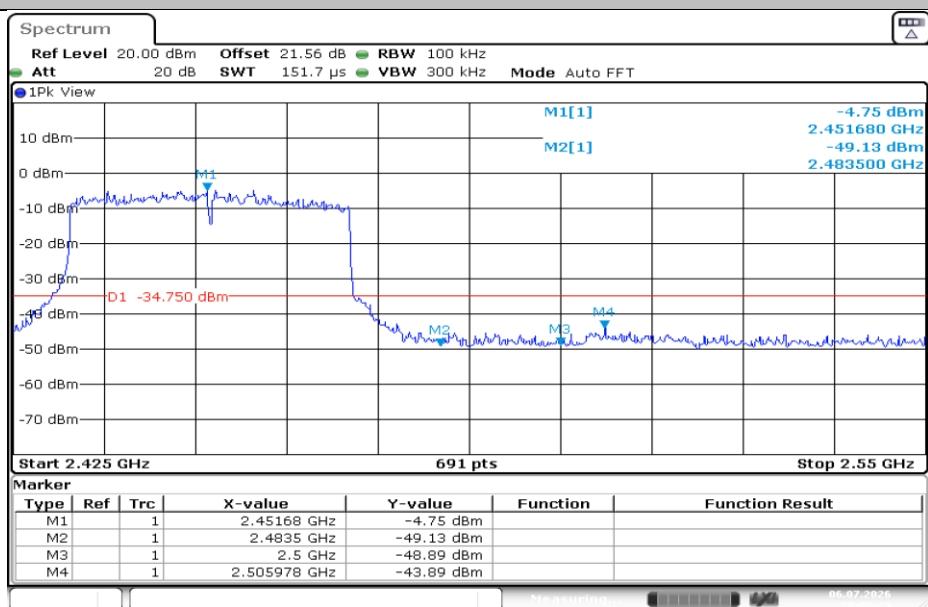
11AX20SISO-Ant1-2412-PASS



11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



11AX40SISO-Ant1-2452-PASS

### 3.4 6dB Bandwidth

#### 3.4.1 Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

#### 3.4.2 Test Procedure

| Test Method                                                                   |                                                  |
|-------------------------------------------------------------------------------|--------------------------------------------------|
| <input checked="" type="radio"/> Conducted Measurement                        | <input type="radio"/> Radiated Measurement       |
| Test Channels                                                                 |                                                  |
| <input checked="" type="radio"/> Lowest, Middle and Highest Channel           | <input type="radio"/> Lowest and Highest Channel |
| Environmental conditions                                                      |                                                  |
| <input checked="" type="radio"/> Normal                                       | <input type="radio"/> Normal and Extreme         |
| Note: <input checked="" type="radio"/> : Test <input type="radio"/> : No Test |                                                  |

a) The EUT was connected to the tonscend test system, and the spectrum analyser is set as follow:

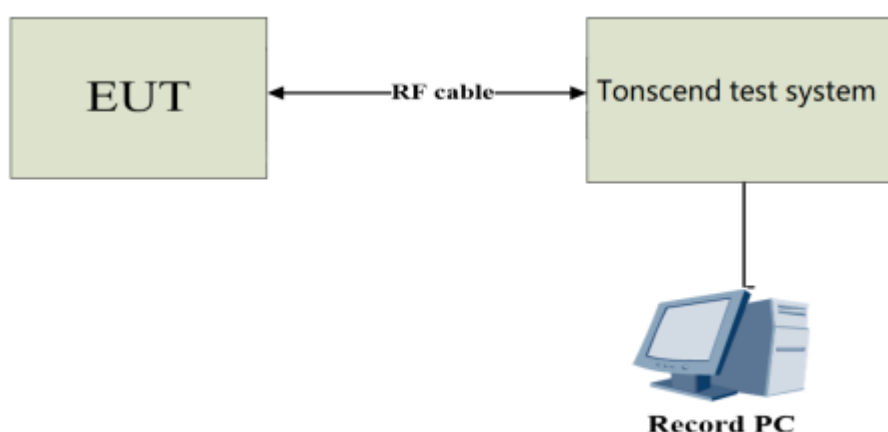
|                  |                                                |
|------------------|------------------------------------------------|
| Centre Frequency | The centre frequency of the channel under test |
| RBW              | 1%~5% OBW but not less than 100 kHz.           |
| VBW              | $\geq 3$ RBW                                   |
| Frequency span   | 2x Nominal Channel Bandwidth                   |
| Detector Mode    | Peak                                           |
| Trace Mode       | Max Hold                                       |
| Sweep Time       | Auto Couple                                    |

b) Wait for the trace to stabilize then find the peak value of the trace and place the analyser marker on this peak.

c) Use the -6dB bandwidth function of the spectrum analyser to measure the 6dB Bandwidth of the EUT. This value shall be recorded.

d) Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.

#### 3.4.3 Test Setup

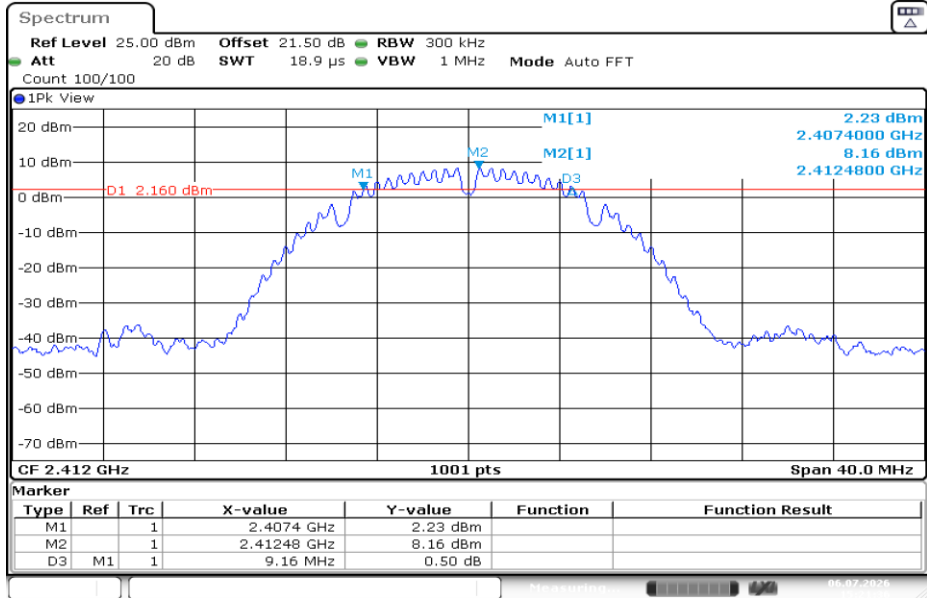


### 3.4.4 Test Result

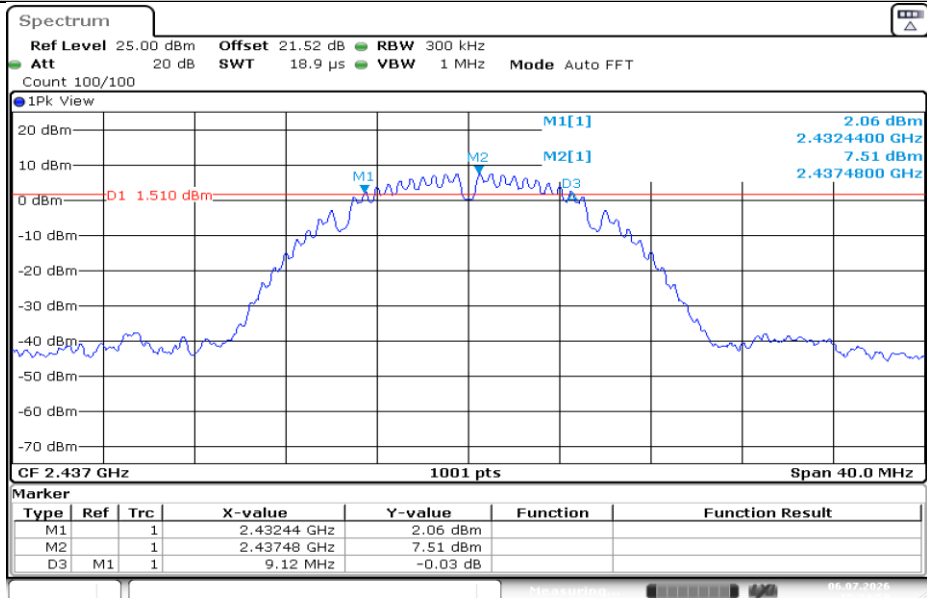
#### DTS Bandwidth

| Test Mode  | Antenna | Frequency [MHz] | DTS BW [MHz] | FL [MHz] | FH [MHz] | Limit [MHz] | Verdict |
|------------|---------|-----------------|--------------|----------|----------|-------------|---------|
| 11B        | Ant1    | 2412            | 9.16         | 2407.40  | 2416.56  | 0.5         | PASS    |
| 11B        | Ant1    | 2437            | 9.12         | 2432.44  | 2441.56  | 0.5         | PASS    |
| 11B        | Ant1    | 2462            | 9.16         | 2457.40  | 2466.56  | 0.5         | PASS    |
| 11G        | Ant1    | 2412            | 16.32        | 2403.76  | 2420.08  | 0.5         | PASS    |
| 11G        | Ant1    | 2437            | 16.04        | 2428.92  | 2444.96  | 0.5         | PASS    |
| 11G        | Ant1    | 2462            | 16.36        | 2453.84  | 2470.20  | 0.5         | PASS    |
| 11N20SISO  | Ant1    | 2412            | 17.60        | 2403.20  | 2420.80  | 0.5         | PASS    |
| 11N20SISO  | Ant1    | 2437            | 17.56        | 2428.20  | 2445.76  | 0.5         | PASS    |
| 11N20SISO  | Ant1    | 2462            | 17.60        | 2453.16  | 2470.76  | 0.5         | PASS    |
| 11N40SISO  | Ant1    | 2422            | 36.24        | 2403.84  | 2440.08  | 0.5         | PASS    |
| 11N40SISO  | Ant1    | 2437            | 35.60        | 2418.92  | 2454.52  | 0.5         | PASS    |
| 11N40SISO  | Ant1    | 2452            | 36.24        | 2433.92  | 2470.16  | 0.5         | PASS    |
| 11AX20SISO | Ant1    | 2412            | 18.68        | 2402.44  | 2421.12  | 0.5         | PASS    |
| 11AX20SISO | Ant1    | 2437            | 18.28        | 2427.48  | 2445.76  | 0.5         | PASS    |
| 11AX20SISO | Ant1    | 2462            | 19.04        | 2452.52  | 2471.56  | 0.5         | PASS    |
| 11AX40SISO | Ant1    | 2422            | 37.76        | 2403.04  | 2440.80  | 0.5         | PASS    |
| 11AX40SISO | Ant1    | 2437            | 33.44        | 2418.12  | 2451.56  | 0.5         | PASS    |
| 11AX40SISO | Ant1    | 2452            | 37.76        | 2433.12  | 2470.88  | 0.5         | PASS    |

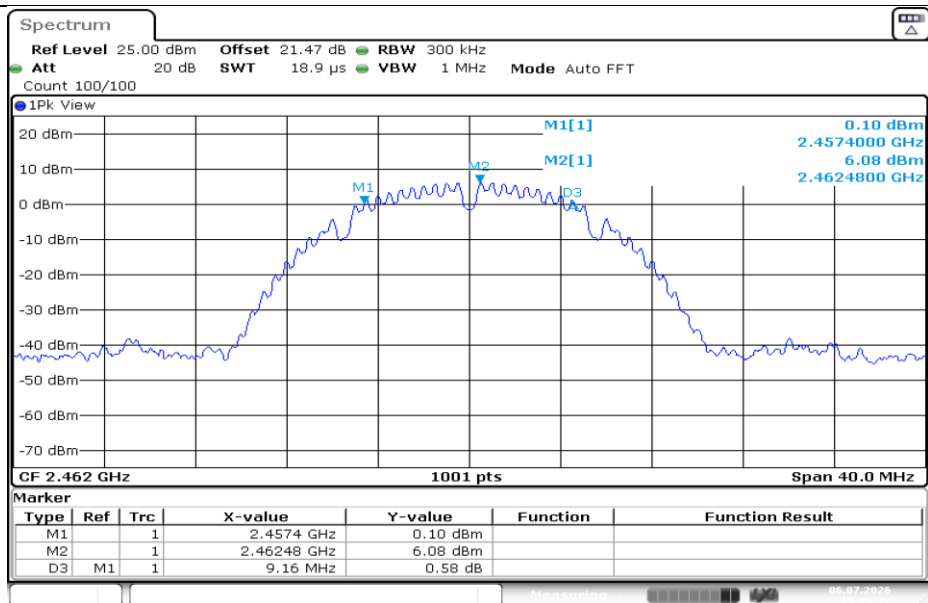
## Test Graphs



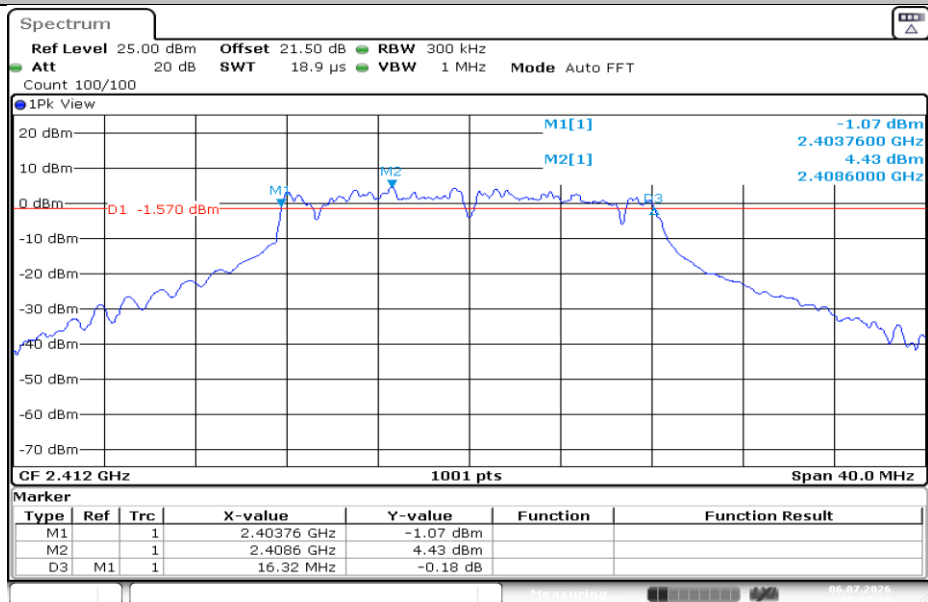
11B-Ant1-2412-PASS



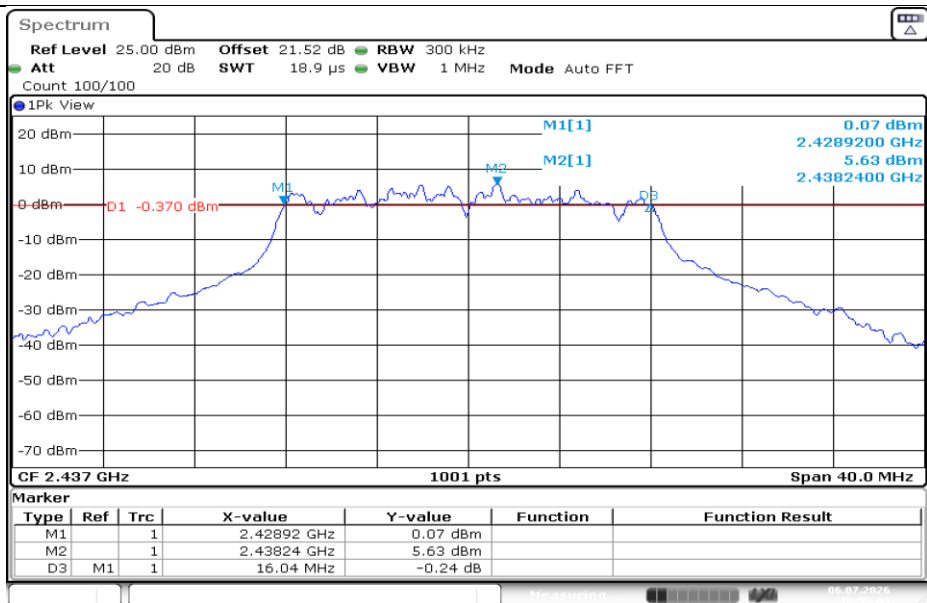
11B-Ant1-2437-PASS



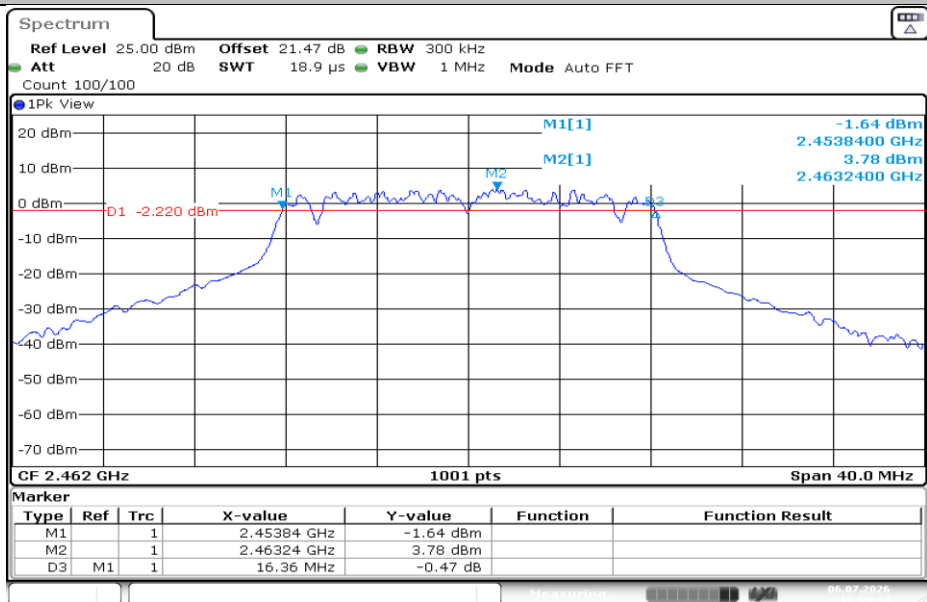
### 11B-Ant1-2462-PASS



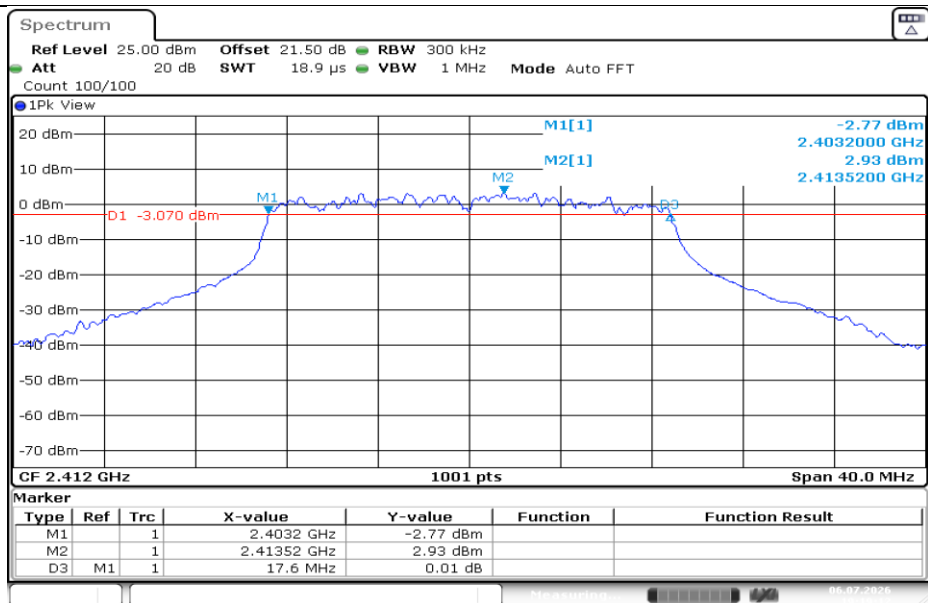
### 11G-Ant1-2412-PASS



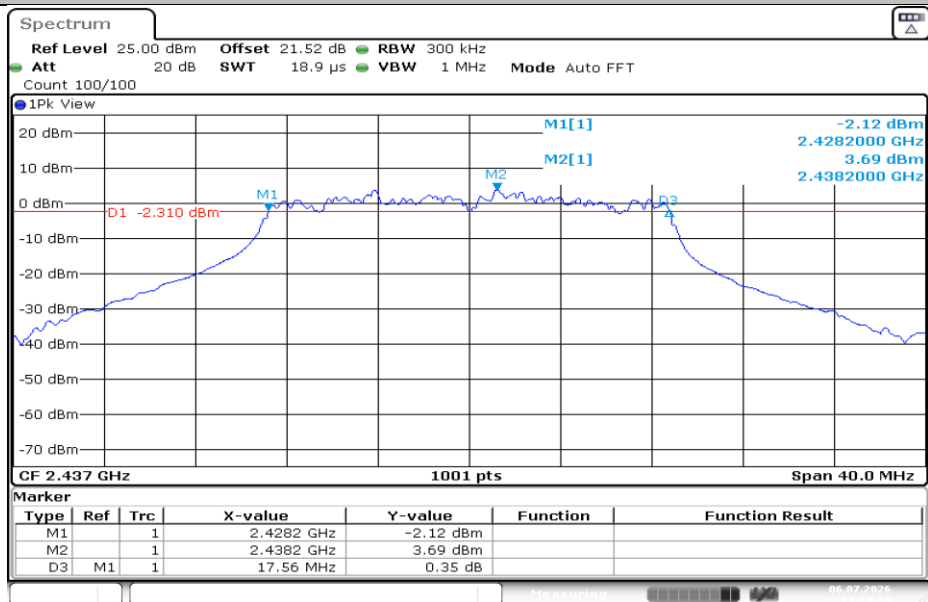
11G-Ant1-2437-PASS



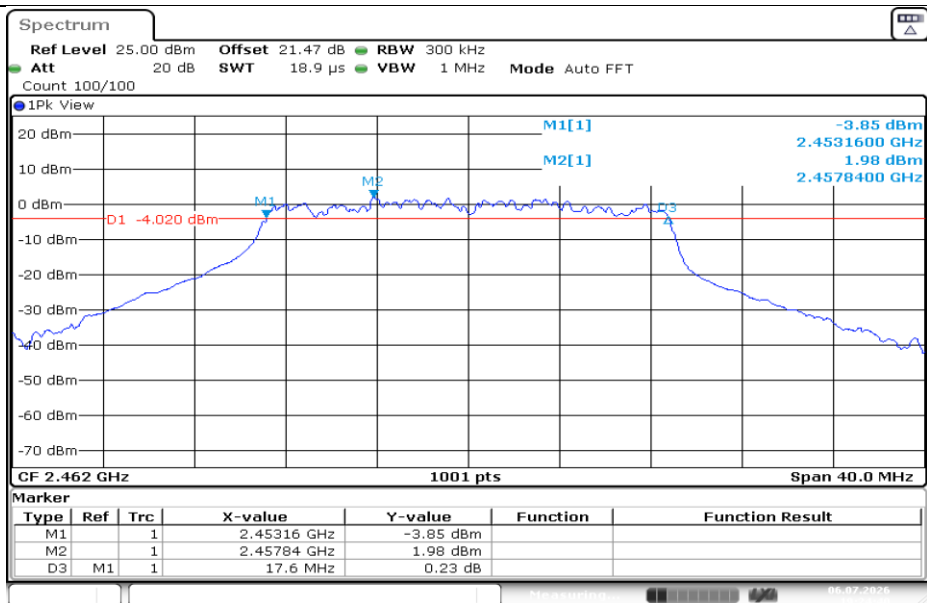
11G-Ant1-2462-PASS



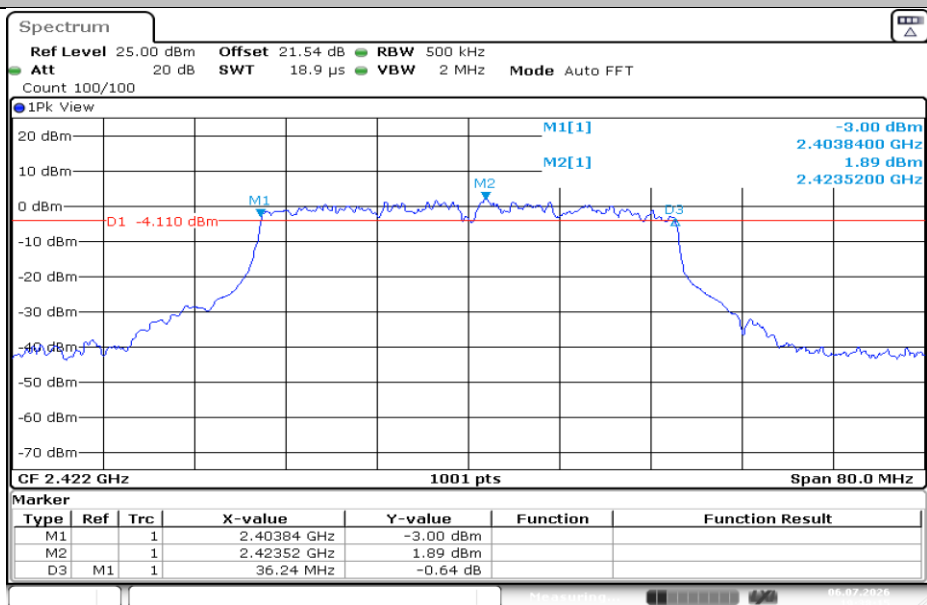
### 11N20SISO-Ant1-2412-PASS



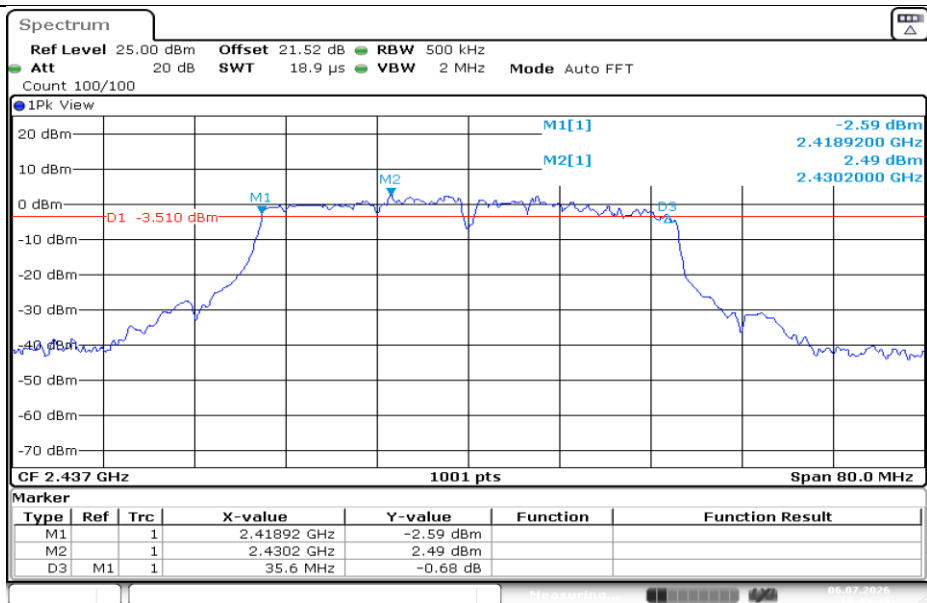
### 11N20SISO-Ant1-2437-PASS



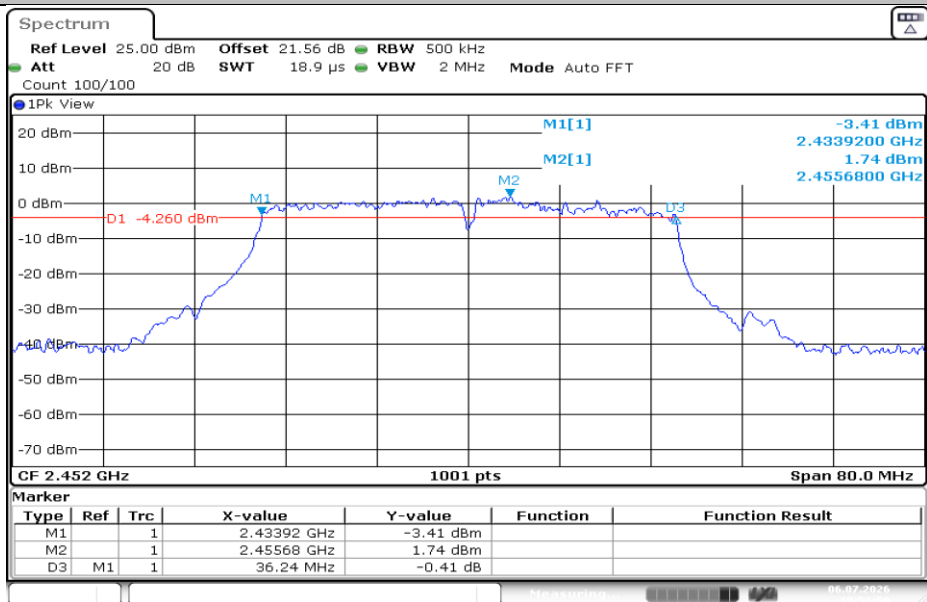
11N20SISO-Ant1-2462-PASS



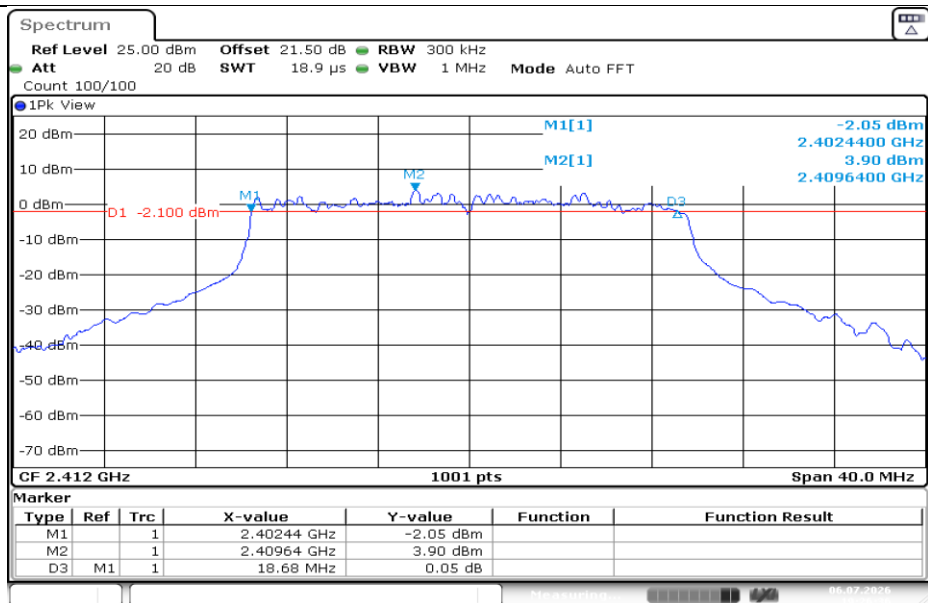
11N40SISO-Ant1-2422-PASS



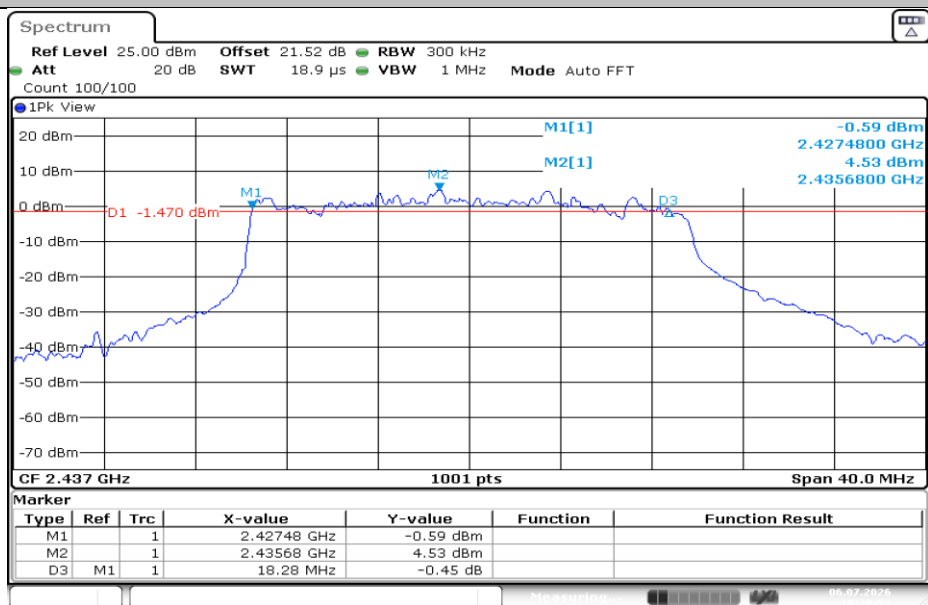
### 11N40SISO-Ant1-2437-PASS



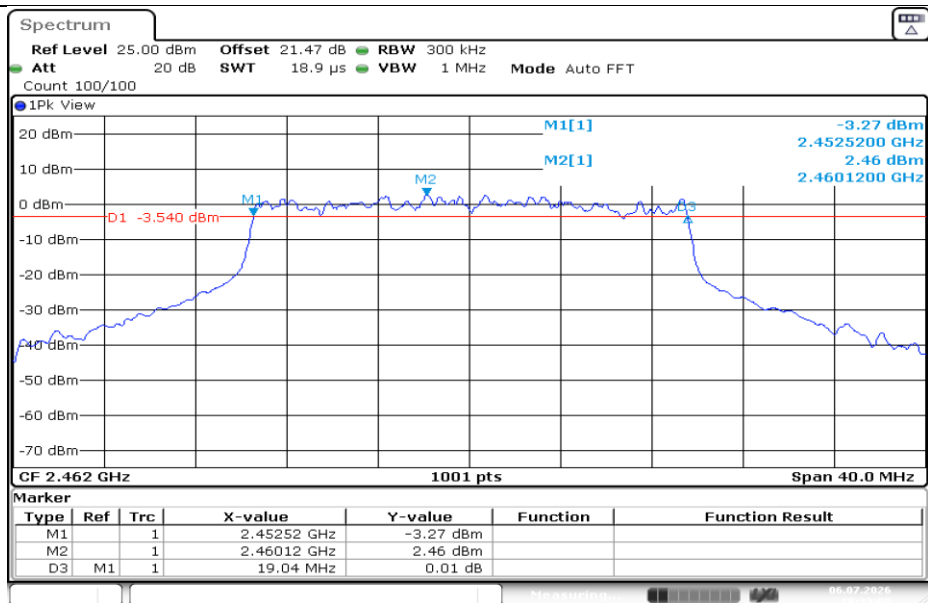
### 11N40SISO-Ant1-2452-PASS



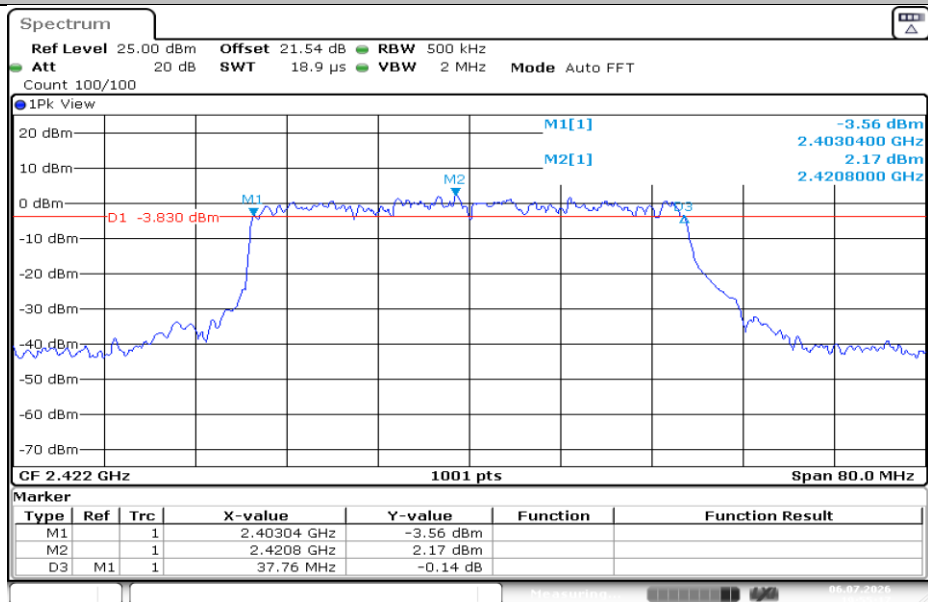
11AX20SISO-Ant1-2412-PASS



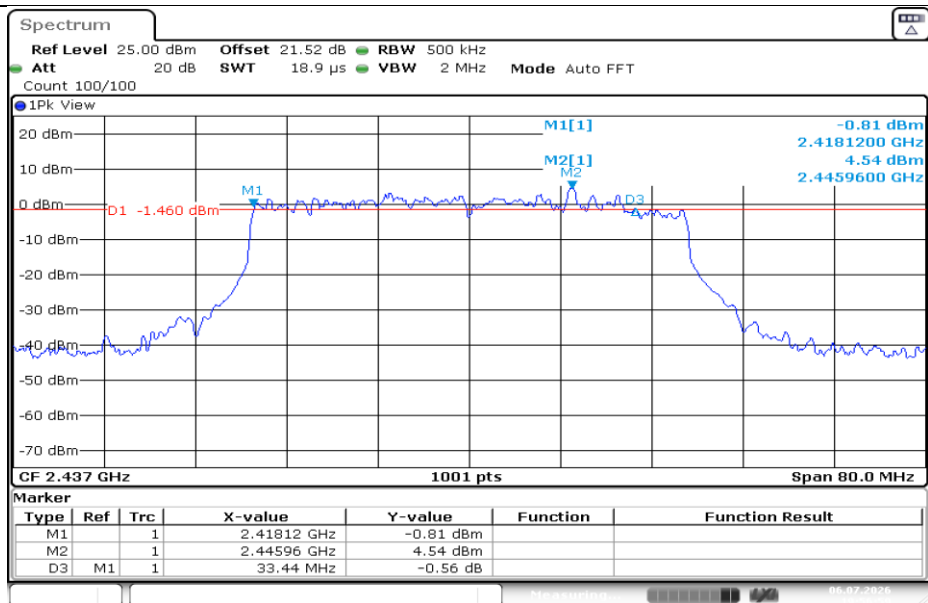
11AX20SISO-Ant1-2437-PASS



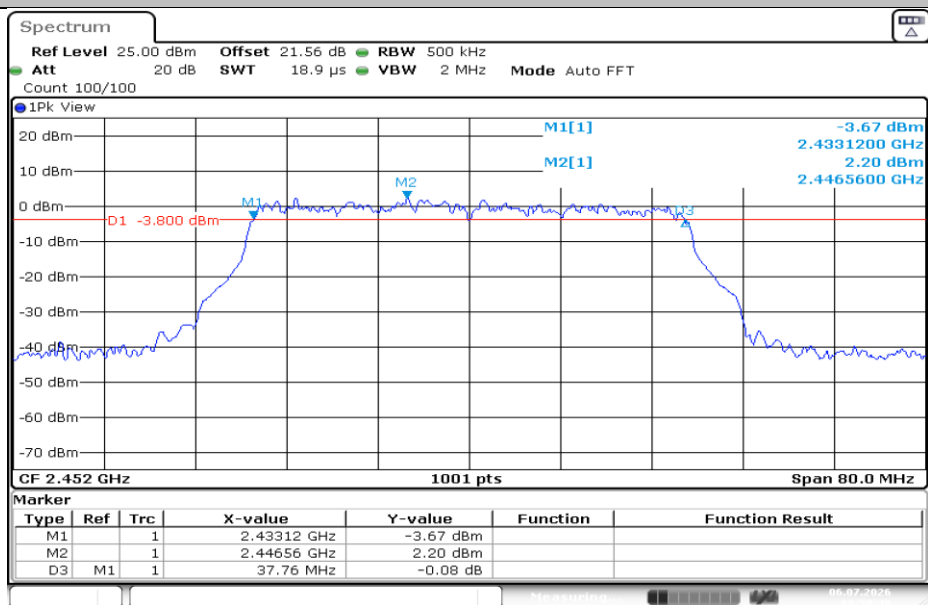
11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



### 11AX40SISO-Ant1-2437-PASS

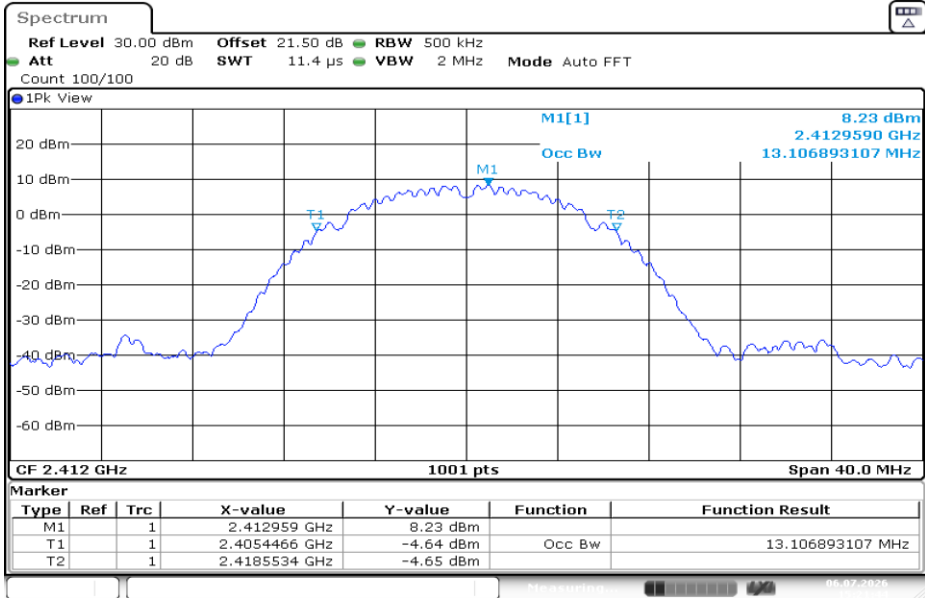


### 11AX40SISO-Ant1-2452-PASS

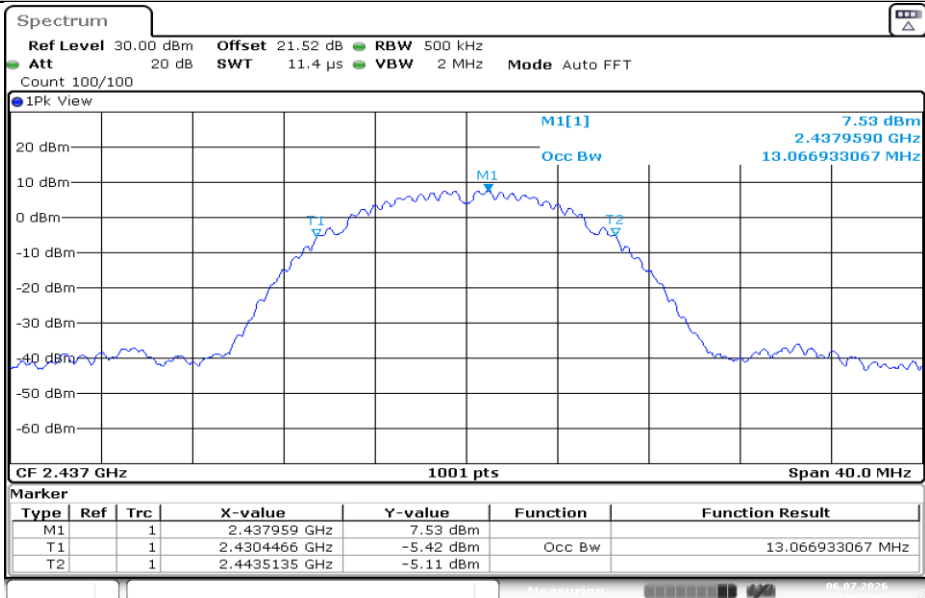
## Occupied Channel Bandwidth

| TestMode   | Antenna | Channel<br>Frequency[MHz] | OCB [MHz] | FL[MHz]   | FH[MHz]   | Limit[MHz] | Verdict |
|------------|---------|---------------------------|-----------|-----------|-----------|------------|---------|
| 11B        | Ant1    | 2412                      | 13.107    | 2405.4466 | 2418.5534 | ---        | ---     |
| 11B        | Ant1    | 2437                      | 13.067    | 2430.4466 | 2443.5135 | ---        | ---     |
| 11B        | Ant1    | 2462                      | 13.107    | 2455.4466 | 2468.5534 | ---        | ---     |
| 11G        | Ant1    | 2412                      | 16.783    | 2403.6484 | 2420.4316 | ---        | ---     |
| 11G        | Ant1    | 2437                      | 17.143    | 2428.3686 | 2445.5115 | ---        | ---     |
| 11G        | Ant1    | 2462                      | 16.823    | 2453.5684 | 2470.3916 | ---        | ---     |
| 11N20SISO  | Ant1    | 2412                      | 17.862    | 2402.9690 | 2420.8312 | ---        | ---     |
| 11N20SISO  | Ant1    | 2437                      | 18.262    | 2427.7692 | 2446.0310 | ---        | ---     |
| 11N20SISO  | Ant1    | 2462                      | 18.501    | 2452.6893 | 2471.1908 | ---        | ---     |
| 11N40SISO  | Ant1    | 2422                      | 37.003    | 2403.6983 | 2440.7013 | ---        | ---     |
| 11N40SISO  | Ant1    | 2437                      | 36.683    | 2418.3786 | 2455.0619 | ---        | ---     |
| 11N40SISO  | Ant1    | 2452                      | 36.204    | 2433.7782 | 2469.9820 | ---        | ---     |
| 11AX20SISO | Ant1    | 2412                      | 19.141    | 2402.4096 | 2421.5504 | ---        | ---     |
| 11AX20SISO | Ant1    | 2437                      | 19.500    | 2427.0500 | 2446.5504 | ---        | ---     |
| 11AX20SISO | Ant1    | 2462                      | 19.101    | 2452.4496 | 2471.5504 | ---        | ---     |
| 11AX40SISO | Ant1    | 2422                      | 37.722    | 2402.9790 | 2440.7013 | ---        | ---     |
| 11AX40SISO | Ant1    | 2437                      | 37.642    | 2418.0589 | 2455.7013 | ---        | ---     |
| 11AX40SISO | Ant1    | 2452                      | 37.962    | 2432.8192 | 2470.7812 | ---        | ---     |

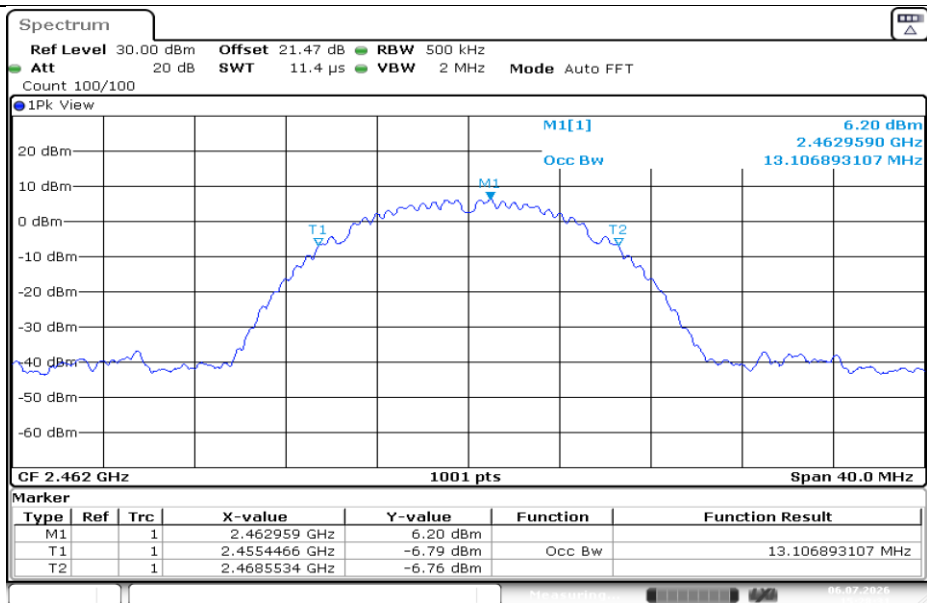
## Test Graphs



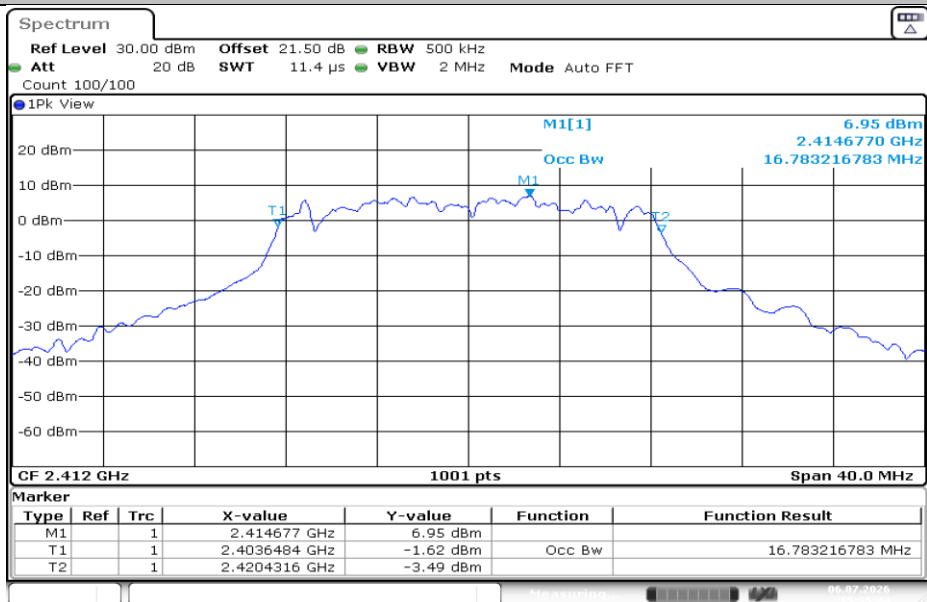
11B-Ant1-2412



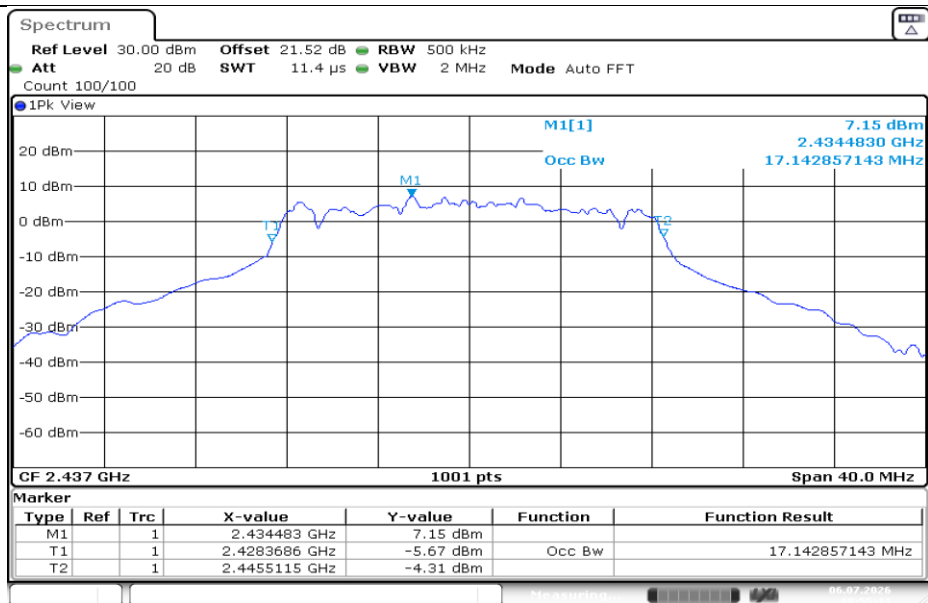
11B-Ant1-2437



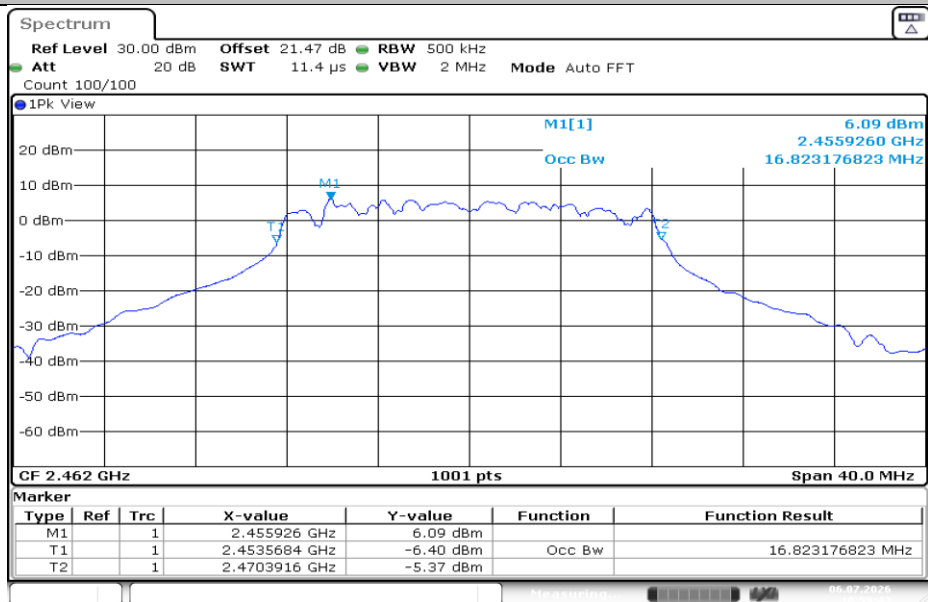
11B-Ant1-2462



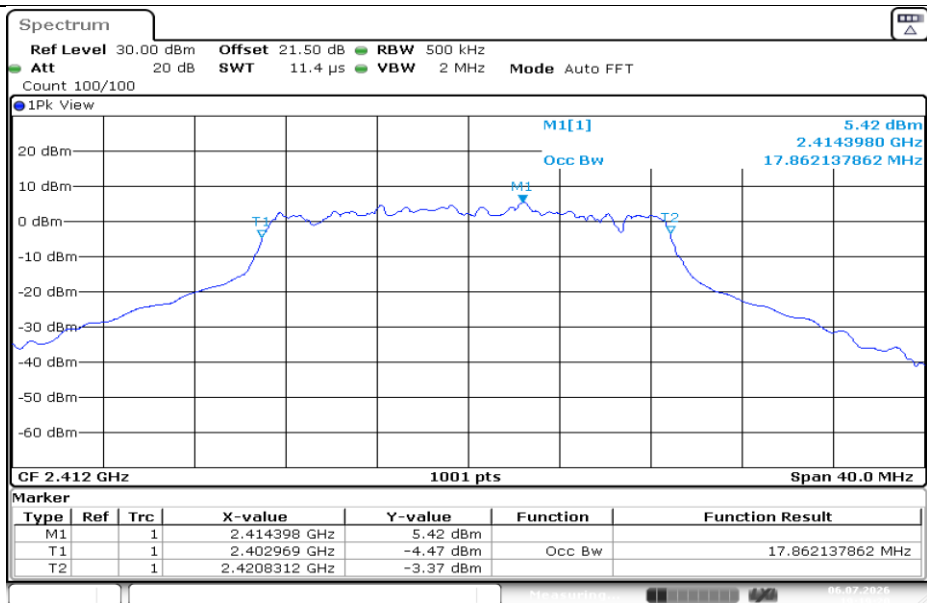
11G-Ant1-2412



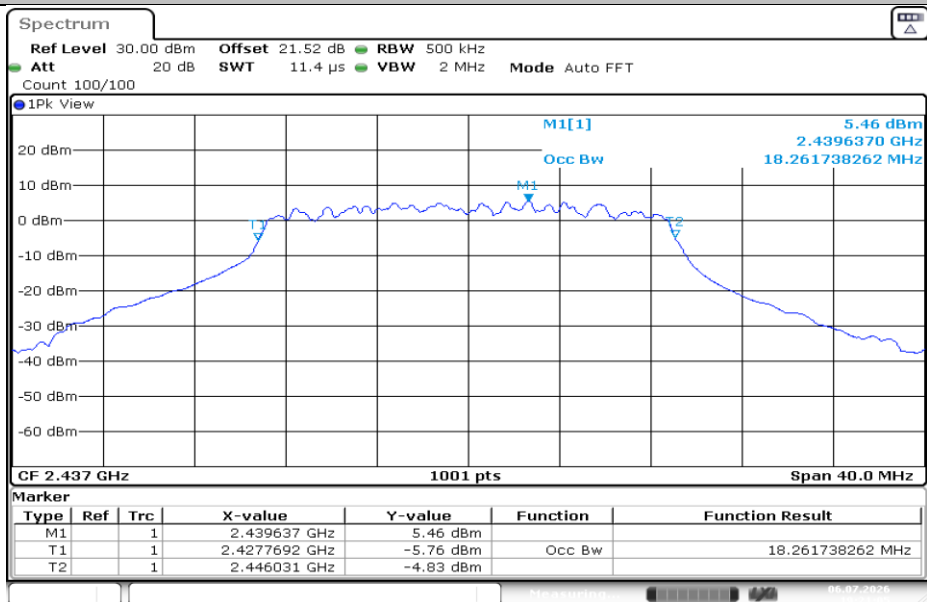
11G-Ant1-2437



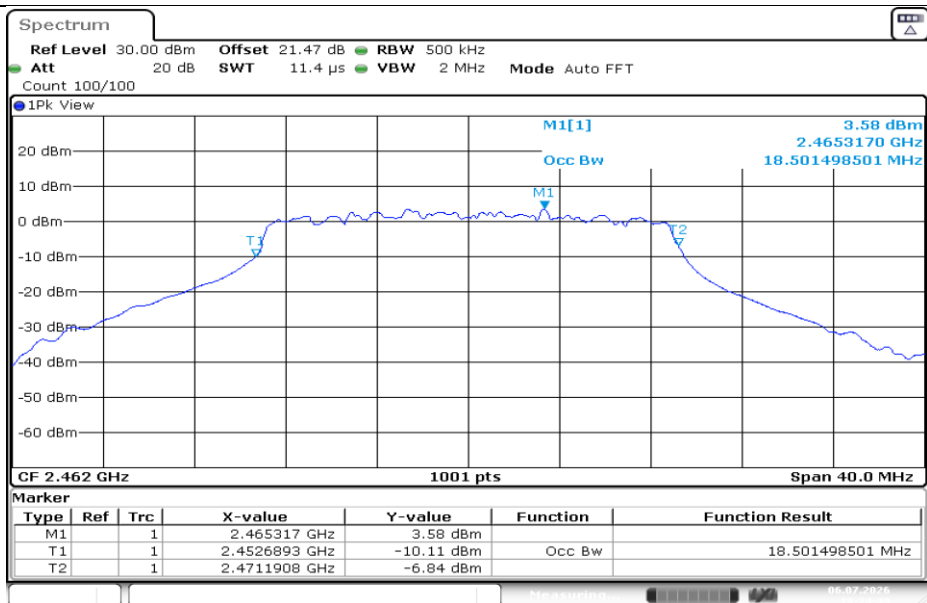
11G-Ant1-2462



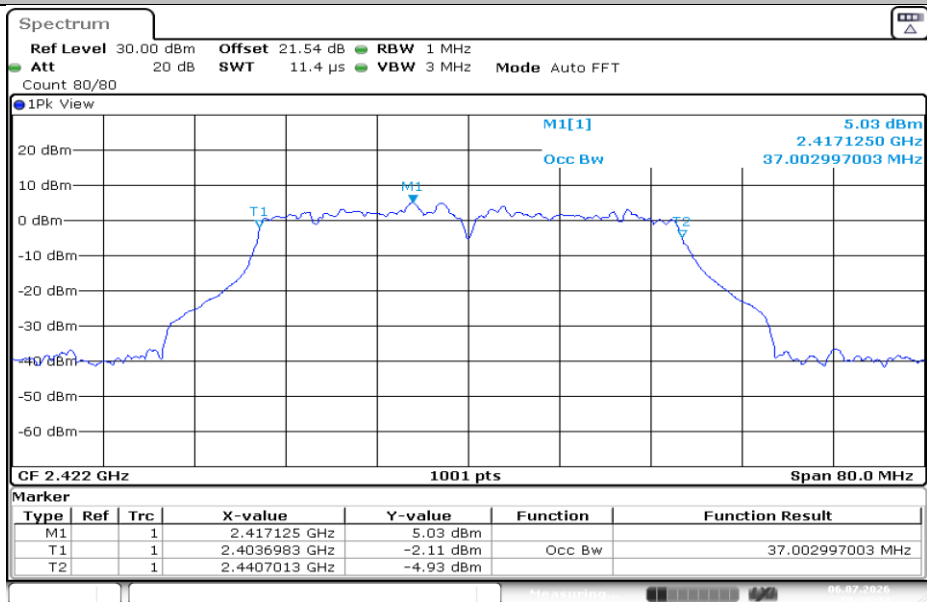
11N20SISO-Ant1-2412



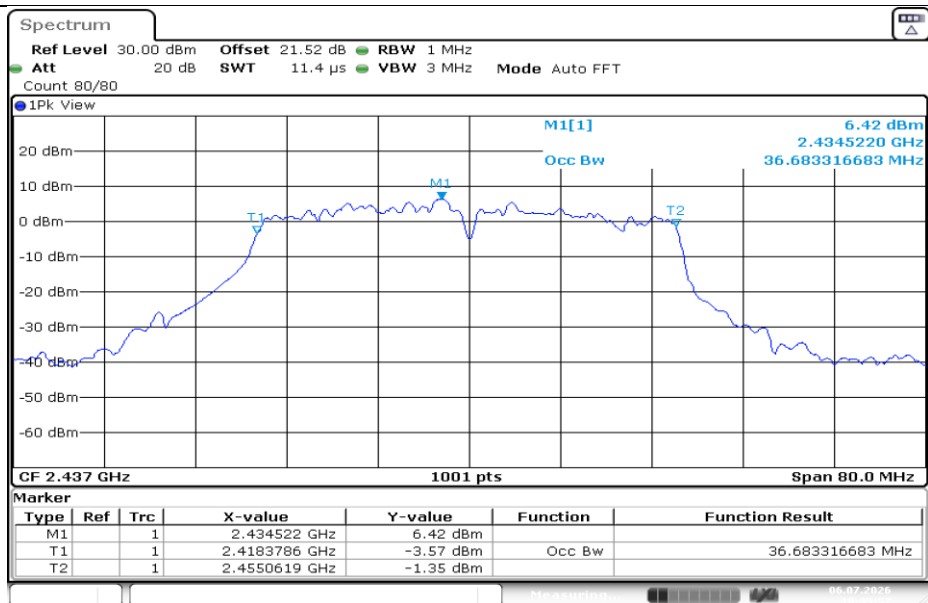
11N20SISO-Ant1-2437



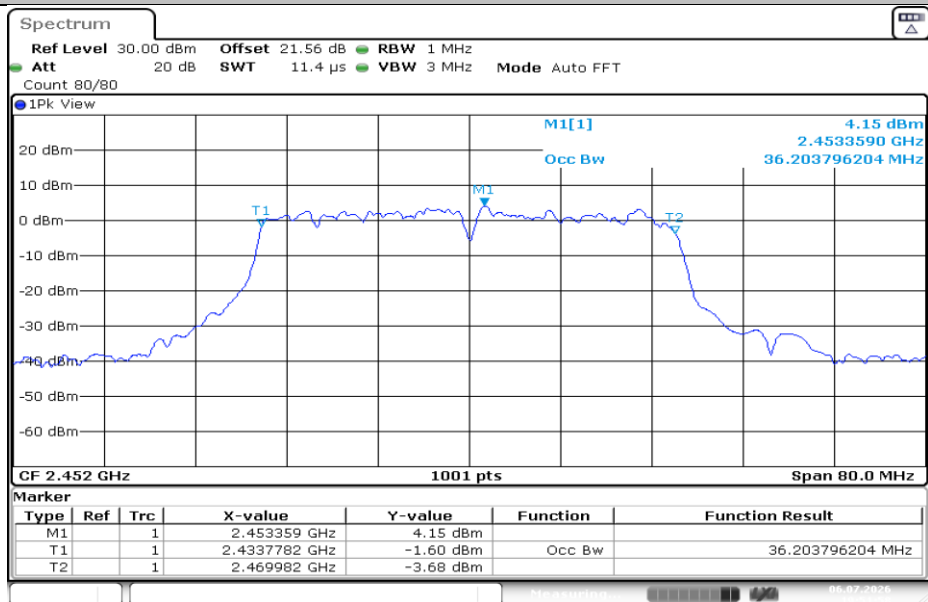
11N20SISO-Ant1-2462



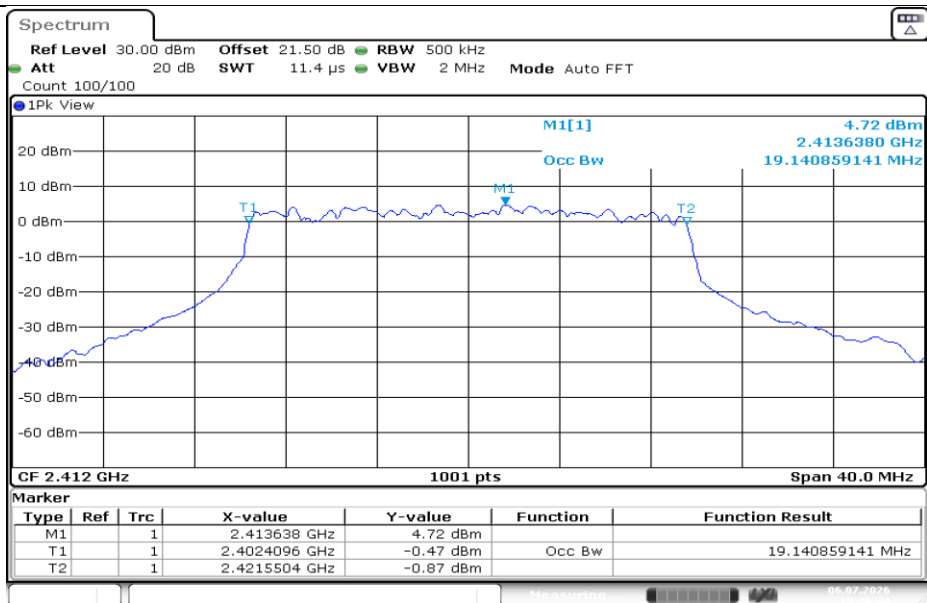
11N40SISO-Ant1-2422



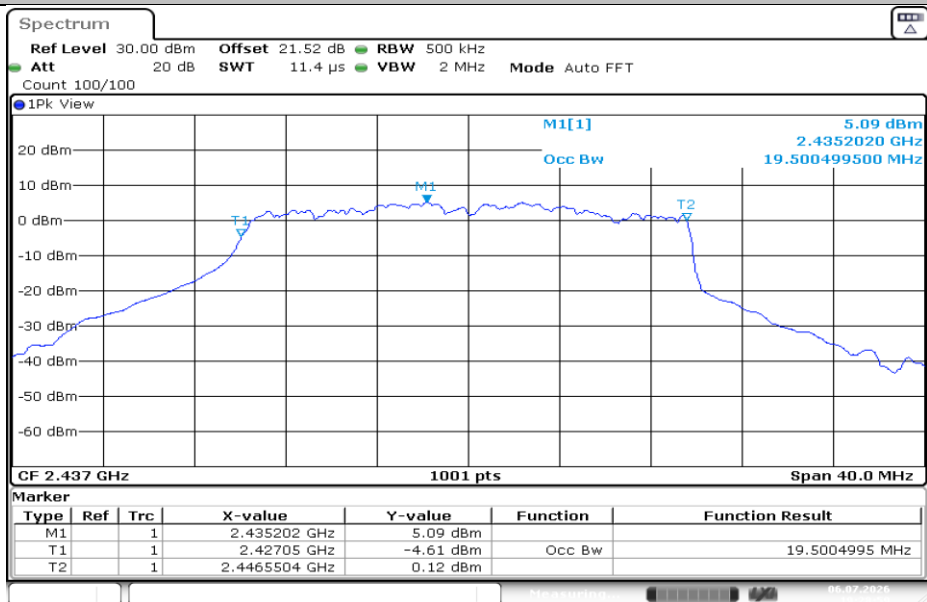
11N40SISO-Ant1-2437



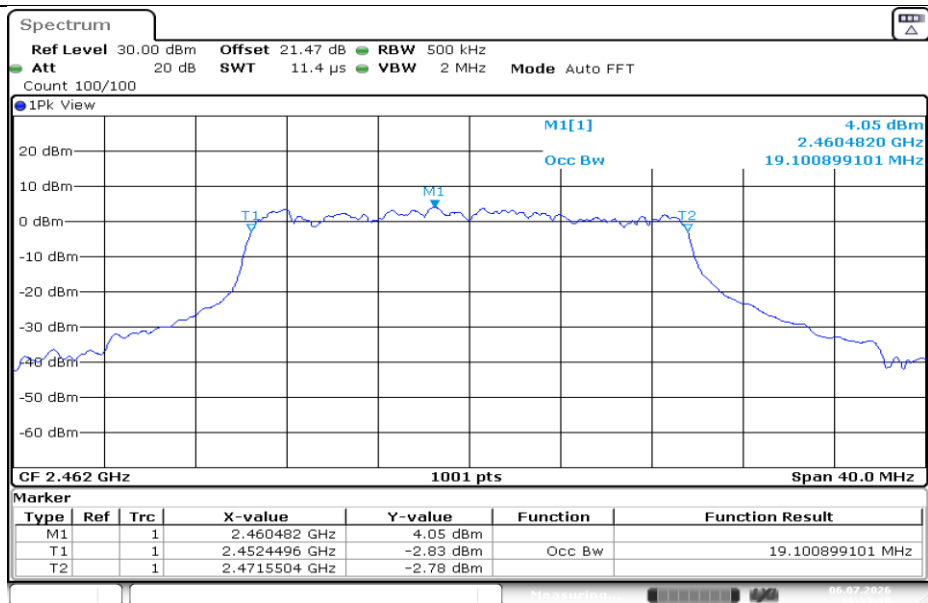
11N40SISO-Ant1-2452



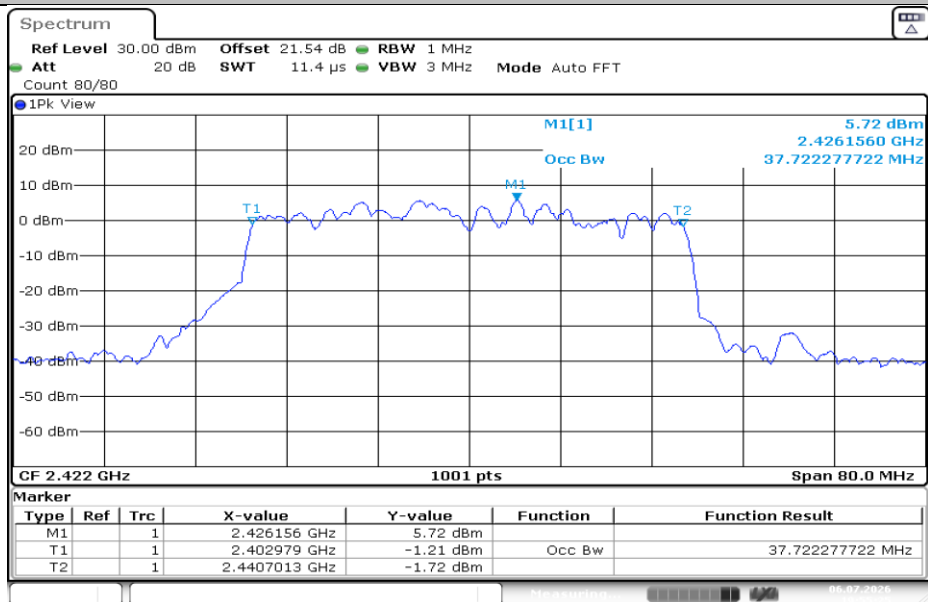
11AX20SISO-Ant1-2412



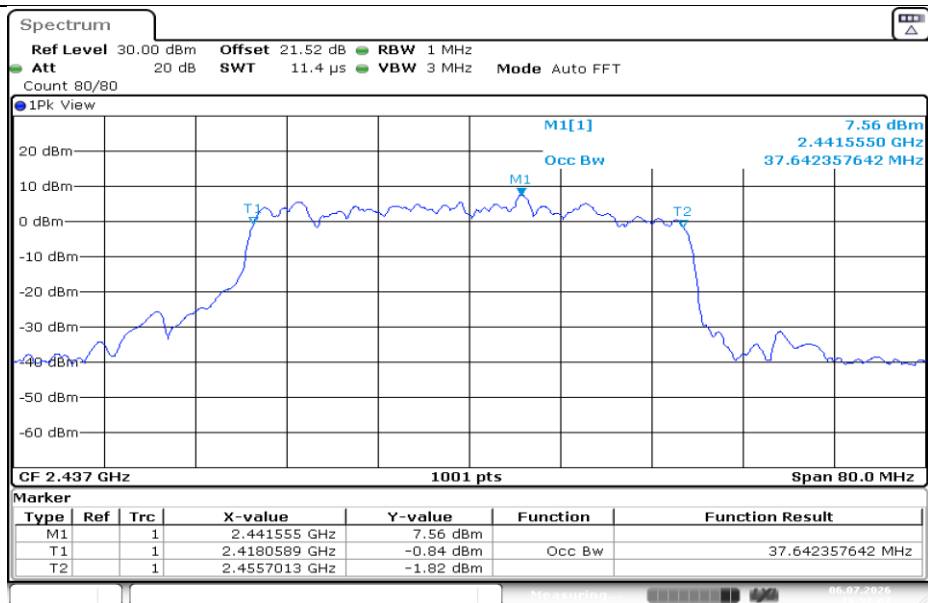
11AX20SISO-Ant1-2437



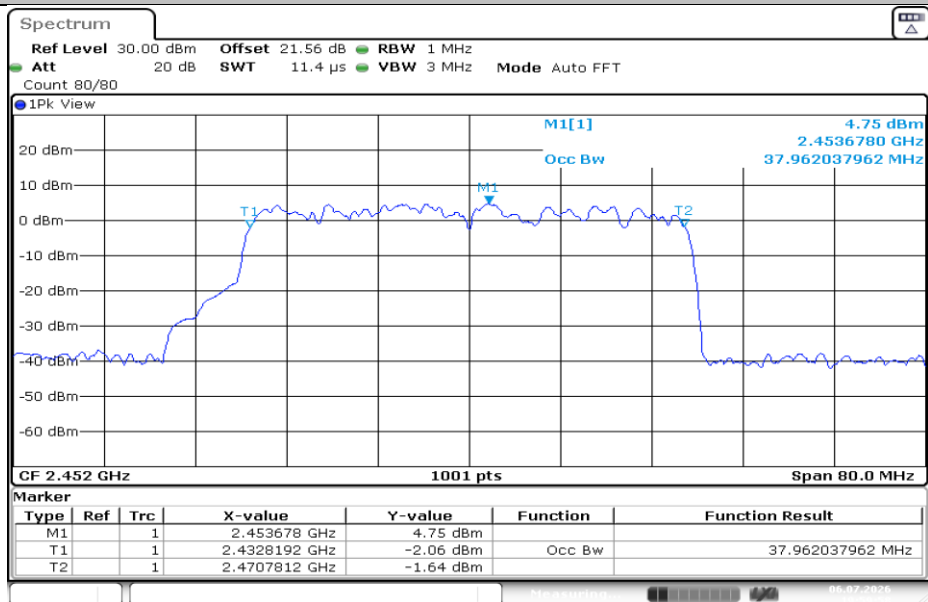
11AX20SISO-Ant1-2462



11AX40SISO-Ant1-2422



11AX40SISO-Ant1-2437



11AX40SISO-Ant1-2452

### 3.5 Maximum conducted output power

#### 3.5.1 Limit

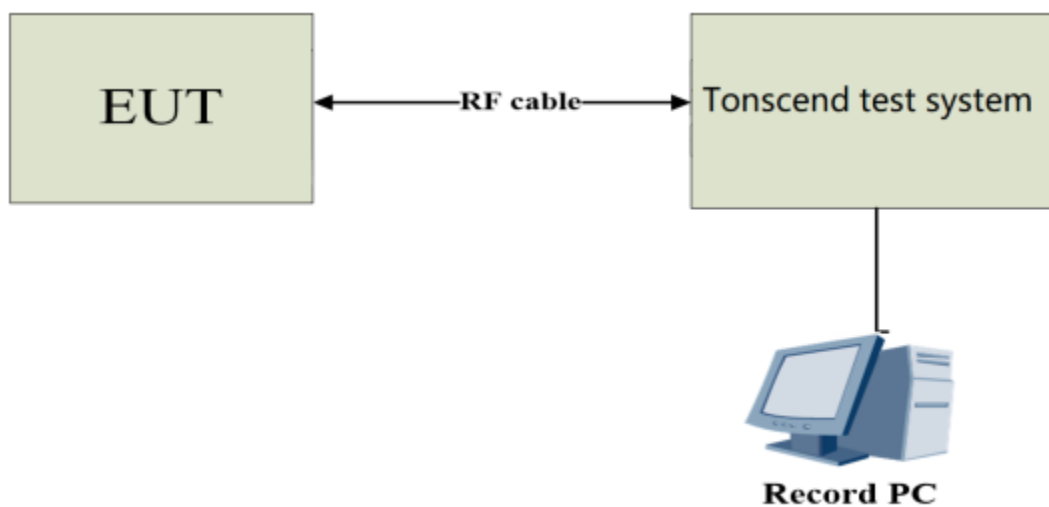
For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W(30dBm)

#### 3.5.2 Test Procedure

| Test Method                                                         |                                                  |
|---------------------------------------------------------------------|--------------------------------------------------|
| <input checked="" type="radio"/> Conducted Measurement              | <input type="radio"/> Radiated Measurement       |
| Test Channels                                                       |                                                  |
| <input checked="" type="radio"/> Lowest, Middle and Highest Channel | <input type="radio"/> Lowest and Highest Channel |
| Environmental conditions                                            |                                                  |
| <input checked="" type="radio"/> Normal                             | <input type="radio"/> Normal and Extreme         |
| Note: ● : Test    ○ : No Test                                       |                                                  |

- The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.2.3.1 (for method AVGPM)of ANSI C63.10-2020.

#### 3.5.3 Test Setup



### 3.5.4 Table of Parameters of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

| Test Software Version | UART FF |      |      |
|-----------------------|---------|------|------|
| Frequency (MHz)       | 2412    | 2437 | 2462 |
| IEEE 802.11b          | 13      | 13   | 13   |
| IEEE 802.11g          | 13      | 13   | 13   |
| IEEE 802.11n20        | 13      | 13   | 13   |
| IEEE 802.11ax20       | 13      | 13   | 13   |
| Frequency (MHz)       | 2422    | 2437 | 2452 |
| IEEE 802.11n40        | 13      | 13   | 13   |
| IEEE 802.11ax40       | 13      | 13   | 13   |

### 3.5.5 The Result

| Test Mode  | Antenna | Frequency [MHz] | Result [dBm] | Limit [dBm] | Verdict |
|------------|---------|-----------------|--------------|-------------|---------|
| 11B        | Ant1    | 2412            | 16.08        | ≤30.00      | PASS    |
| 11B        | Ant1    | 2437            | <b>16.25</b> | ≤30.00      | PASS    |
| 11B        | Ant1    | 2462            | 13.93        | ≤30.00      | PASS    |
| 11G        | Ant1    | 2412            | 13.76        | ≤30.00      | PASS    |
| 11G        | Ant1    | 2437            | 15.27        | ≤30.00      | PASS    |
| 11G        | Ant1    | 2462            | 14.92        | ≤30.00      | PASS    |
| 11N20SISO  | Ant1    | 2412            | 12.64        | ≤30.00      | PASS    |
| 11N20SISO  | Ant1    | 2437            | 13.69        | ≤30.00      | PASS    |
| 11N20SISO  | Ant1    | 2462            | 12.40        | ≤30.00      | PASS    |
| 11N40SISO  | Ant1    | 2422            | 11.49        | ≤30.00      | PASS    |
| 11N40SISO  | Ant1    | 2437            | 13.17        | ≤30.00      | PASS    |
| 11N40SISO  | Ant1    | 2452            | 11.24        | ≤30.00      | PASS    |
| 11AX20SISO | Ant1    | 2412            | 12.91        | ≤30.00      | PASS    |
| 11AX20SISO | Ant1    | 2437            | 13.15        | ≤30.00      | PASS    |
| 11AX20SISO | Ant1    | 2462            | 11.40        | ≤30.00      | PASS    |
| 11AX40SISO | Ant1    | 2422            | 11.21        | ≤30.00      | PASS    |
| 11AX40SISO | Ant1    | 2437            | 11.98        | ≤30.00      | PASS    |
| 11AX40SISO | Ant1    | 2452            | 12.82        | ≤30.00      | PASS    |

Note: The duty cycle factor is compensated in the average conducted output power.

## 3.6 Power Spectral Density

### 3.6.1 Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmitting.

### 3.6.2 Test Procedure

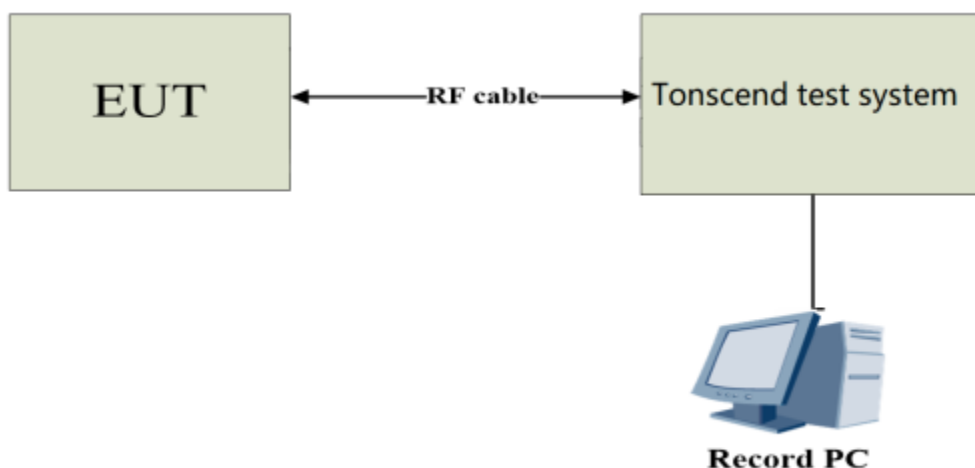
| Test Method                                                                   |                                                  |
|-------------------------------------------------------------------------------|--------------------------------------------------|
| <input checked="" type="radio"/> Conducted Measurement                        | <input type="radio"/> Radiated Measurement       |
| Test Channels                                                                 |                                                  |
| <input checked="" type="radio"/> Lowest, Middle and Highest Channel           | <input type="radio"/> Lowest and Highest Channel |
| Environmental conditions                                                      |                                                  |
| <input checked="" type="radio"/> Normal                                       | <input type="radio"/> Normal and Extreme         |
| Note: <input checked="" type="radio"/> : Test <input type="radio"/> : No Test |                                                  |

a) The EUT was directly connected to the tonscond test system and antenna output port as show in the block diagram below.

b) Spectrum analyser settings as following:

| Spectrum Parameters | Setting                   |
|---------------------|---------------------------|
| Span Frequency      | 2 times the OBW bandwidth |
| RBW                 | 3 kHz                     |
| VBW                 | 10 kHz                    |
| Detector            | RMS                       |
| Trace               | RMS                       |
| Sweep Time          | Auto                      |

### 3.6.3 Test Setup

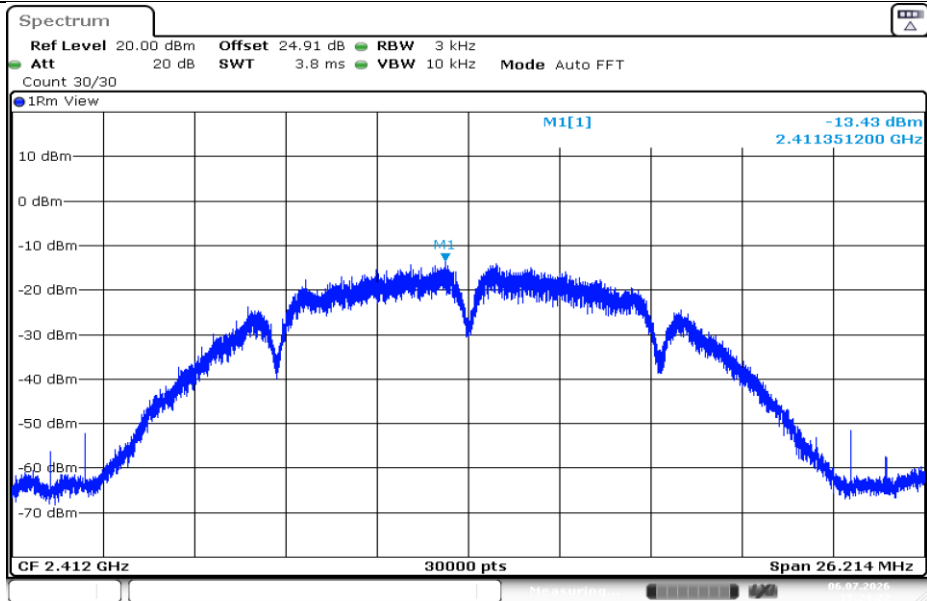


### 3.6.4 The Result

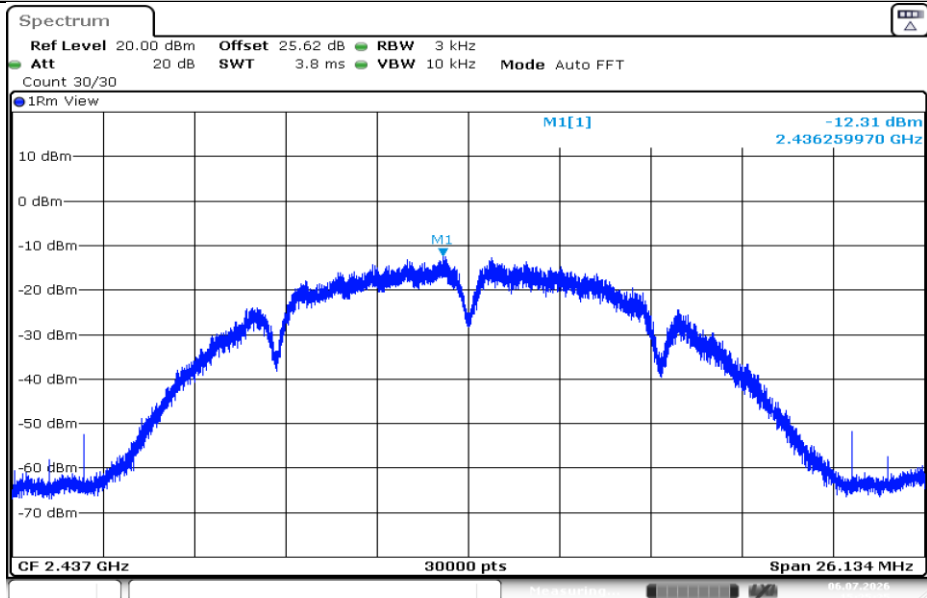
| Test Mode  | Antenna | Frequency [MHz] | Result [dBm/3kHz] | Limit [dBm/3kHz] | Verdict |
|------------|---------|-----------------|-------------------|------------------|---------|
| 11B        | Ant1    | 2412            | -13.43            | ≤8.00            | PASS    |
| 11B        | Ant1    | 2437            | -12.31            | ≤8.00            | PASS    |
| 11B        | Ant1    | 2462            | -14.85            | ≤8.00            | PASS    |
| 11G        | Ant1    | 2412            | -15.39            | ≤8.00            | PASS    |
| 11G        | Ant1    | 2437            | -14.36            | ≤8.00            | PASS    |
| 11G        | Ant1    | 2462            | -14.21            | ≤8.00            | PASS    |
| 11N20SISO  | Ant1    | 2412            | -19.34            | ≤8.00            | PASS    |
| 11N20SISO  | Ant1    | 2437            | -18.71            | ≤8.00            | PASS    |
| 11N20SISO  | Ant1    | 2462            | -18.56            | ≤8.00            | PASS    |
| 11N40SISO  | Ant1    | 2422            | -20.70            | ≤8.00            | PASS    |
| 11N40SISO  | Ant1    | 2437            | -20.52            | ≤8.00            | PASS    |
| 11N40SISO  | Ant1    | 2452            | -19.88            | ≤8.00            | PASS    |
| 11AX20SISO | Ant1    | 2412            | -20.53            | ≤8.00            | PASS    |
| 11AX20SISO | Ant1    | 2437            | -20.17            | ≤8.00            | PASS    |
| 11AX20SISO | Ant1    | 2462            | -21.72            | ≤8.00            | PASS    |
| 11AX40SISO | Ant1    | 2422            | -20.90            | ≤8.00            | PASS    |
| 11AX40SISO | Ant1    | 2437            | -22.52            | ≤8.00            | PASS    |
| 11AX40SISO | Ant1    | 2452            | -23.58            | ≤8.00            | PASS    |

Note: The duty cycle factor has been included in the test diagram.

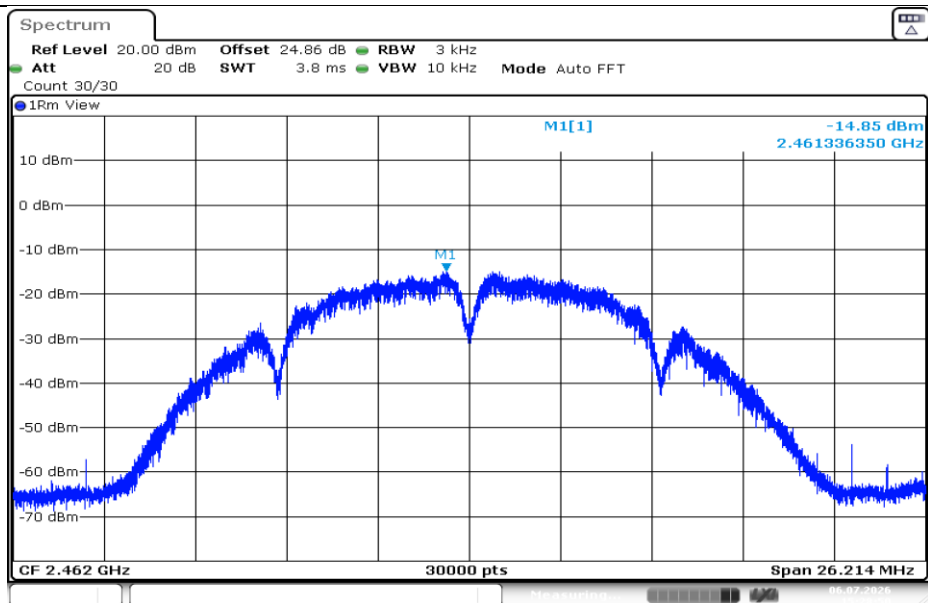
## Test Graphs



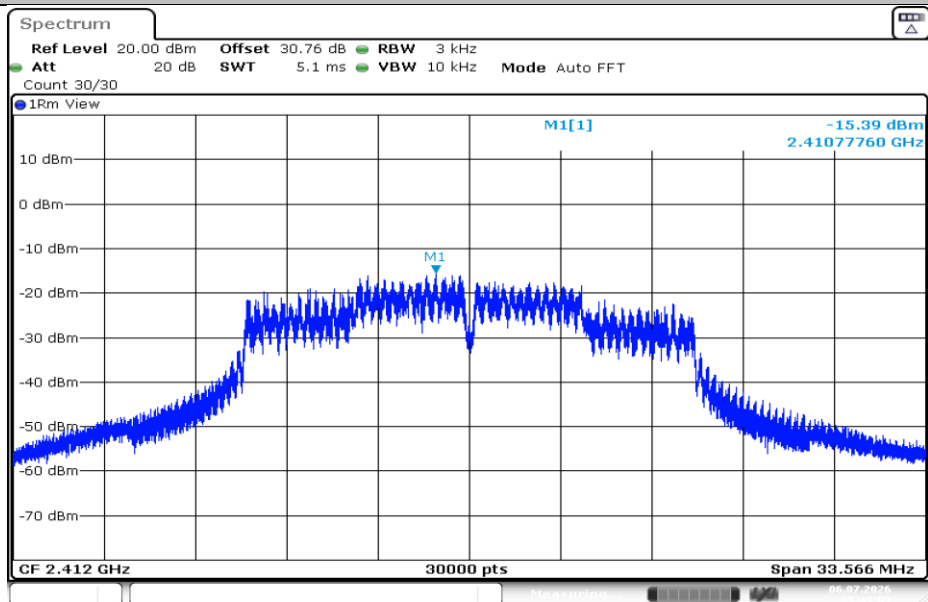
11B-Ant1-2412-PASS



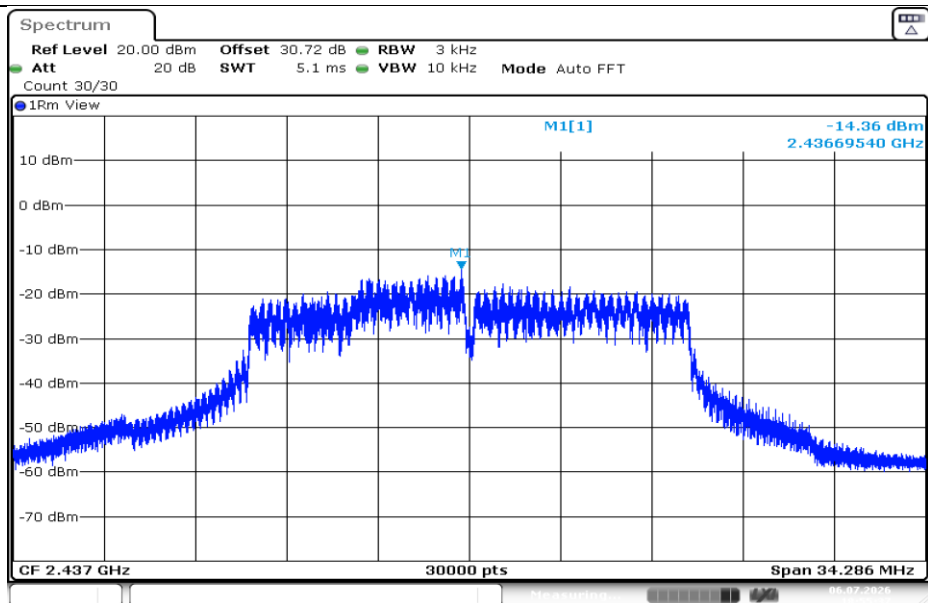
11B-Ant1-2437-PASS



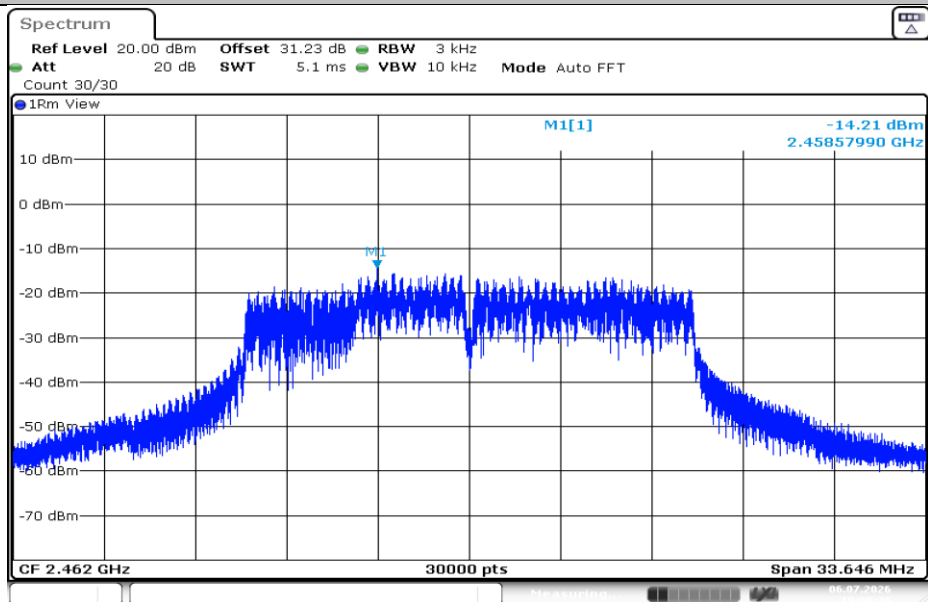
11B-Ant1-2462-PASS



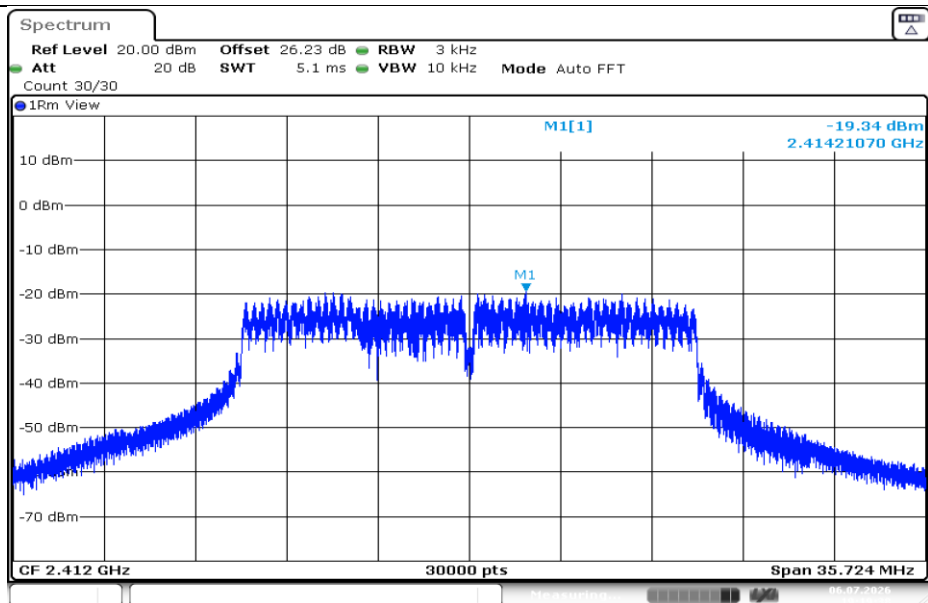
11G-Ant1-2412-PASS



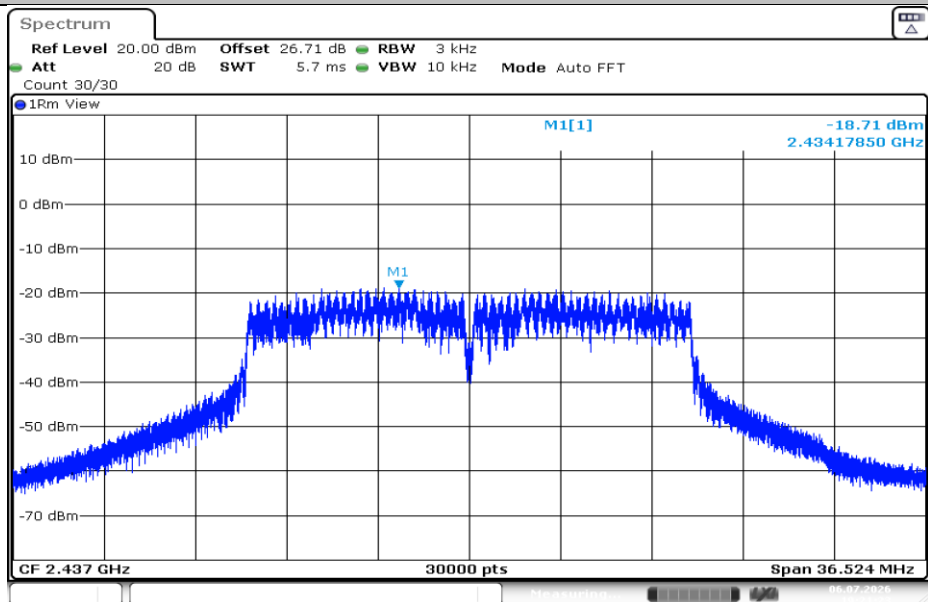
11G-Ant1-2437-PASS



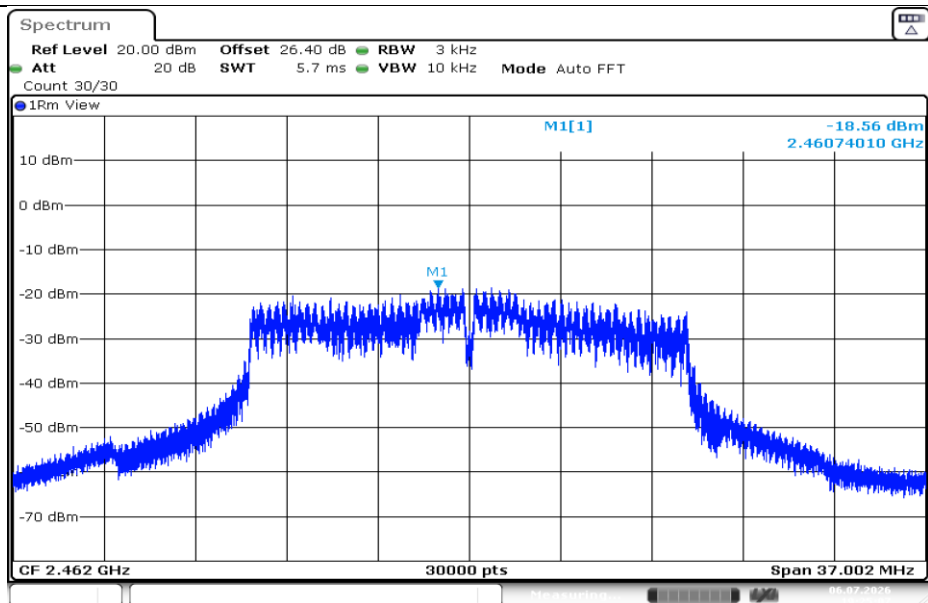
11G-Ant1-2462-PASS



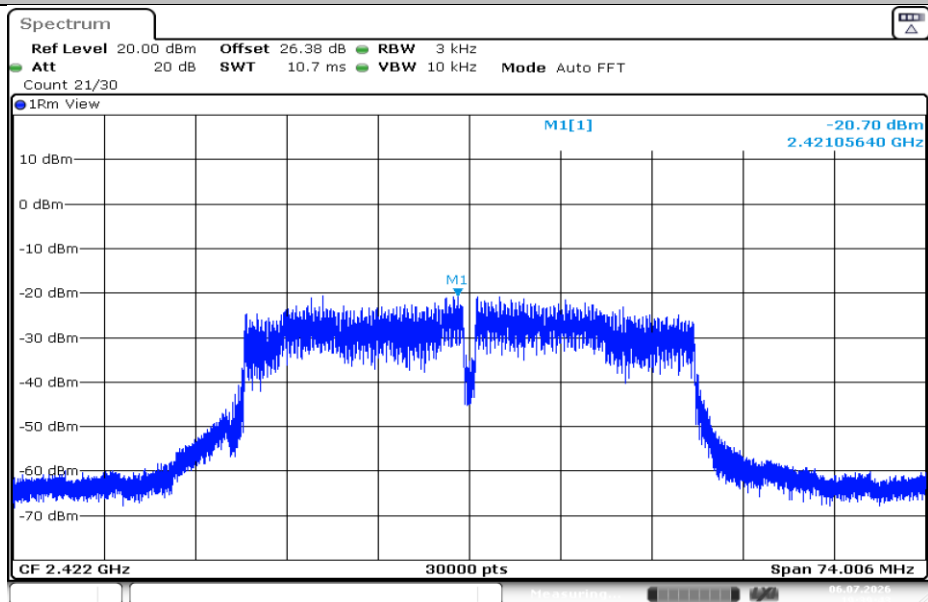
11N20SISO-Ant1-2412-PASS



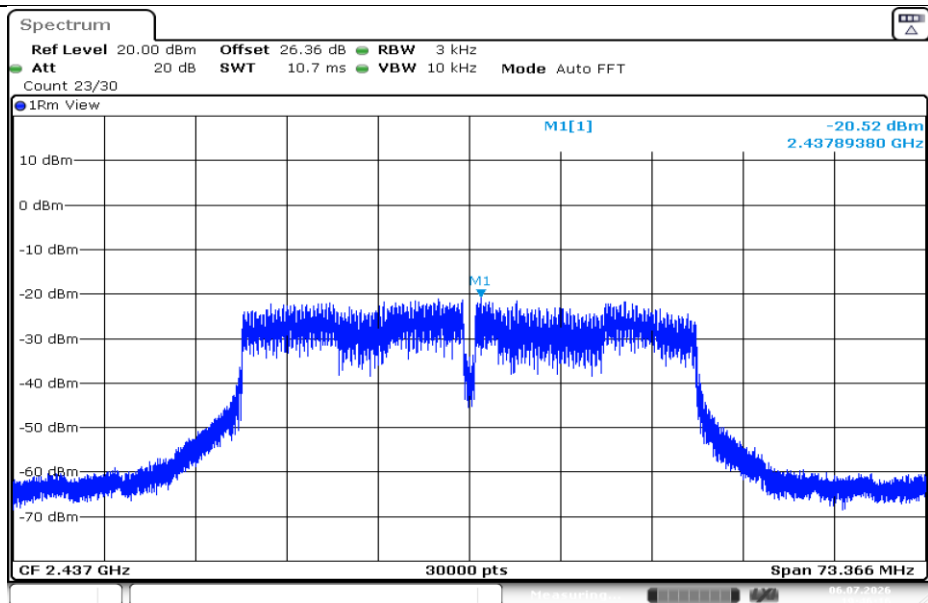
11N20SISO-Ant1-2437-PASS



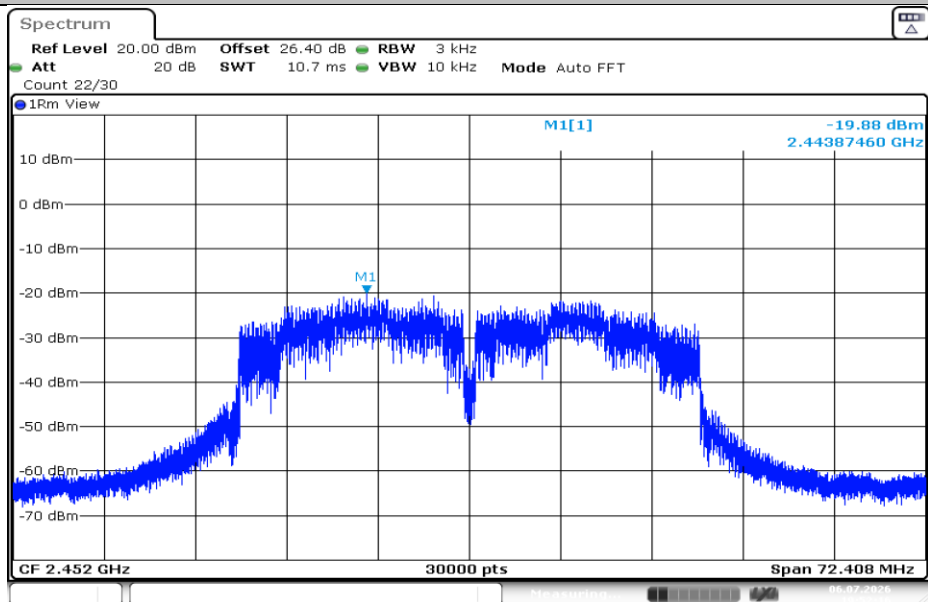
11N20SISO-Ant1-2462-PASS



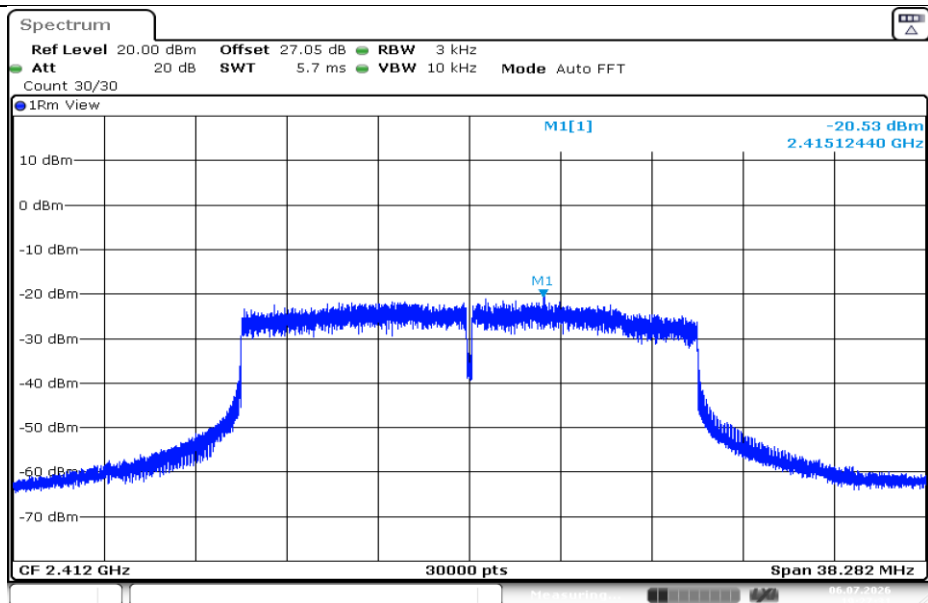
11N40SISO-Ant1-2422-PASS



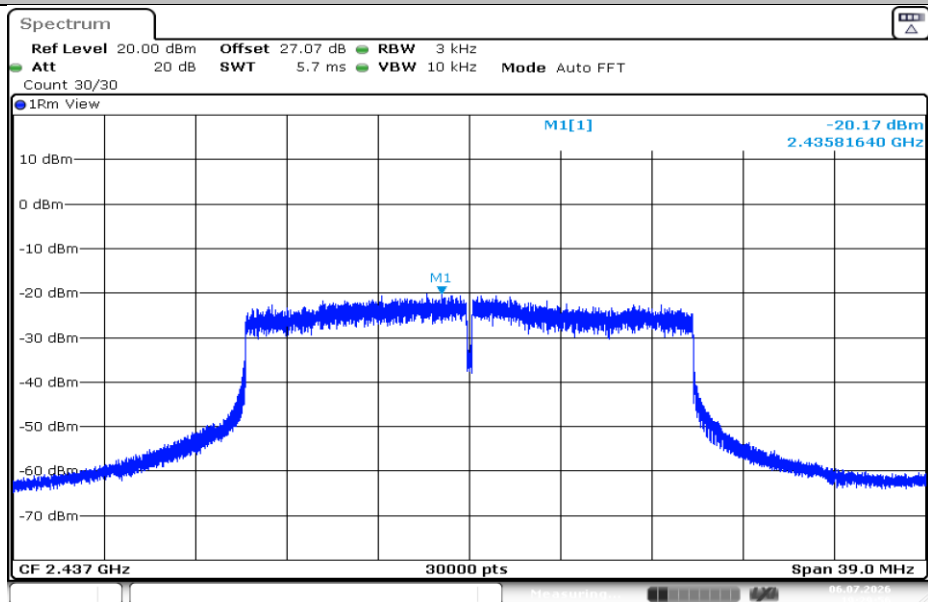
11N40SISO-Ant1-2437-PASS



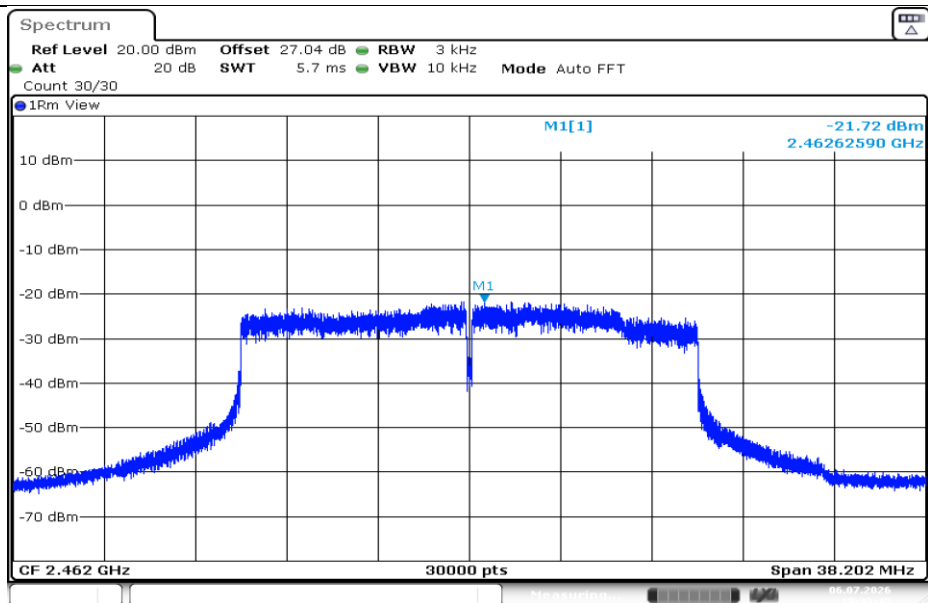
11N40SISO-Ant1-2452-PASS



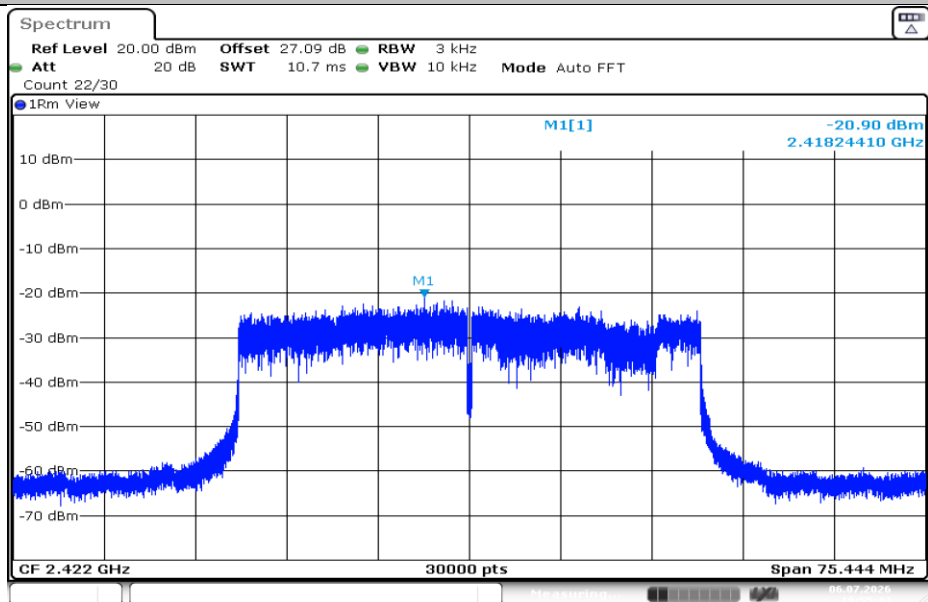
11AX20SISO-Ant1-2412-PASS



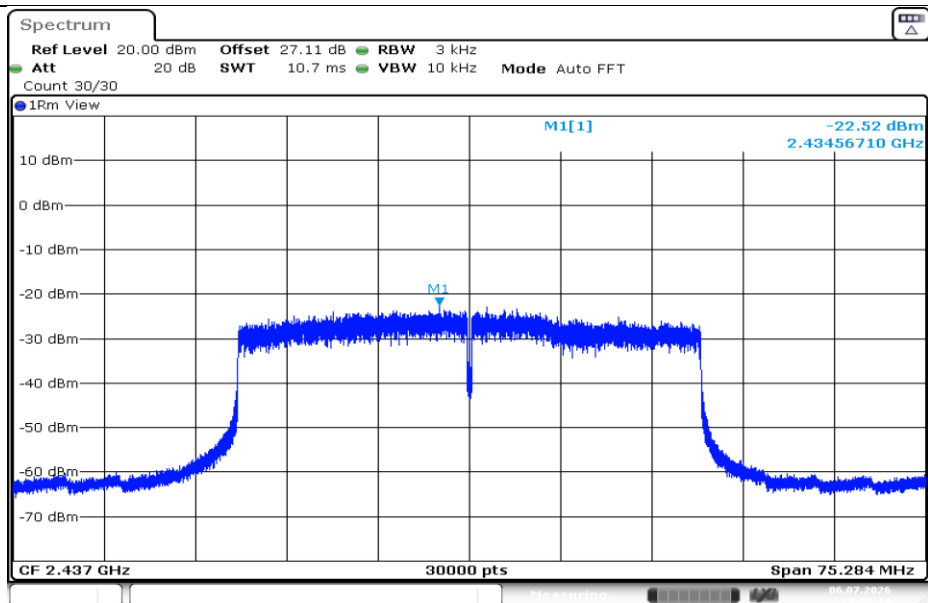
11AX20SISO-Ant1-2437-PASS



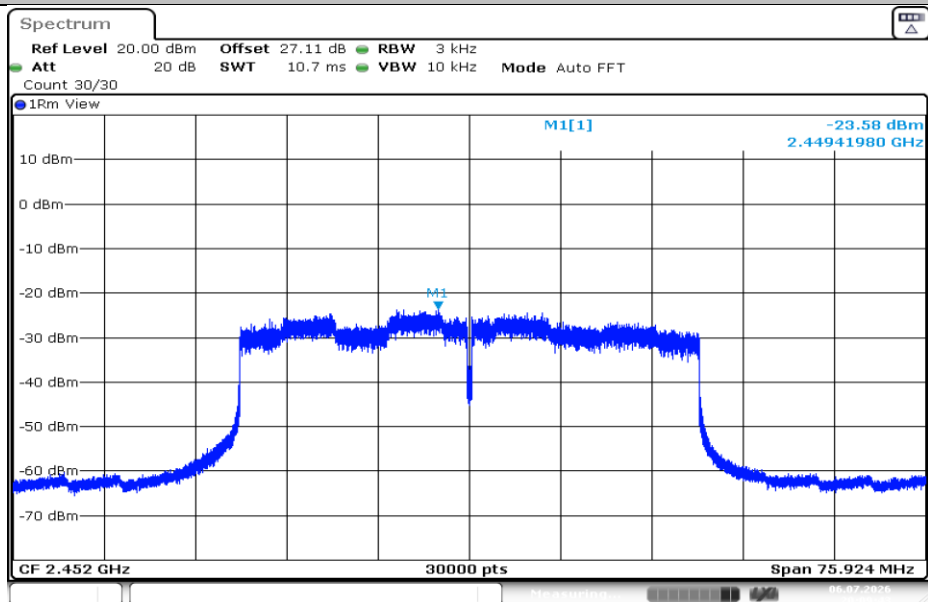
11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



11AX40SISO-Ant1-2437-PASS



11AX40SISO-Ant1-2452-PASS

## Statement

1. The report is invalid without the official seal or special seal of Shenzhen Haiyun Standard Technical Co., Ltd. (hereinafter referred to as the unit).
2. The report is invalid without the signature of the approver.
3. The report is invalid if altered arbitrarily.
4. The report shall not be partially copied without the written approval of the unit.
5. The reported test results are only valid for the tested samples.
6. If there is any objection to the test report, it shall be submitted to the test unit within 15 days from the date of receiving the report, and the overdue shall not be accepted.

## Shenzhen Haiyun Standard Technical Co., Ltd.

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**End of Test Report**