

# TEST REPORT

of

FCC Part 15 Subpart C §15.247  
IC RSS-247 Issue 4 and RSS-Gen Issue 5

FCC ID: 2BEYM-CR-1L  
IC Certification: 32025-CR1L

Equipment Under Test : Bluetooth Intercom  
Model Name : CR-1L  
Variant Model Name(s) : -  
FCC Applicant : KIDO SPORTS CO., LTD.  
IC Applicant : KIDO SPORTS CO., LTD.  
Manufacturer : KIDO SPORTS CO., LTD.  
Date of Receipt : 2026.05.21  
Date of Test(s) : 2026.06.15 ~ 2026.07.02  
Date of Issue : 2026.08.18

In the configuration tested, the EUT complied with the standards specified above.  
This test report does not assure KOLAS accreditation.

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- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
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- 4) The data marked ※ in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(※) provided by the customer

Tested by:



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**SGS Korea Co., Ltd. Gunpo Laboratory**

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## 1. General Information

### 1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

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- Designation number: KR0150

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### 1.2. Details of Applicant

FCC Applicant : KIDO SPORTS CO., LTD.

FCC Address : 395, Gonghang-daero, Gangseo-gu, Seoul, South Korea, 07590

IC Applicant : KIDO SPORTS CO., LTD.

IC Address : 395, Gonghang-daero, Gangseo-gu, Seoul, Korea(Republic of) 07590

Contact Person : Kim, Gi-young

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### 1.3. Details of Manufacturer

Company : Same as applicant

Address : Same as applicant

### 1.4. Description of EUT

|                             |                                              |
|-----------------------------|----------------------------------------------|
| <b>Kind of Product</b>      | Bluetooth Intercom                           |
| <b>Model Name</b>           | CR-1L                                        |
| <b>Serial Number</b>        | Conducted: 00001<br>Radiated: 00002          |
| <b>Power Supply</b>         | DC 3.7 V                                     |
| <b>Frequency Range</b>      | 2 402 MHz ~ 2 480 MHz (Bluetooth Low Energy) |
| <b>Modulation Technique</b> | GFSK                                         |
| <b>Number of Channels</b>   | 40 channels (Bluetooth Low Energy)           |
| <b>Antenna Type</b>         | PCB Pattern Antenna                          |
| <b>Antenna Gain*</b>        | 1.88 dB i                                    |
| <b>H/W Version</b>          | 1.0                                          |
| <b>S/W Version</b>          | 1.0                                          |
| <b>FVIN</b>                 | N/A                                          |

## 1.5. Test Equipment List

| Equipment                | Manufacturer                | Model                                | S/N                    | Cal. Date  | Cal. Interval | Cal. Due   |
|--------------------------|-----------------------------|--------------------------------------|------------------------|------------|---------------|------------|
| Spectrum Analyzer        | R&S                         | FSV30                                | 103210                 | 03/17/2026 | Annual        | 03/17/2027 |
| DC Power Supply          | R&S                         | HMP2020                              | 022802107              | 10/24/2025 | Annual        | 10/24/2026 |
| Attenuator               | AEROFLEX/INMET              | 40AH2W-6                             | 1                      | 03/09/2026 | Annual        | 03/09/2027 |
| Power Sensor             | R&S                         | NRP-Z81                              | 100669                 | 05/20/2026 | Annual        | 05/20/2027 |
| Loop Antenna             | Schwarzbeck Mess-Elektronik | FMZB 1519                            | 1519-039               | 10/01/2025 | Biennial      | 10/01/2027 |
| Bilog Antenna            | Schwarzbeck Mess-Elektronik | VULB 9163                            | 01126                  | 03/09/2026 | Biennial      | 03/09/2028 |
| Horn Antenna             | R&S                         | HF906                                | 100326                 | 03/03/2026 | Annual        | 03/03/2027 |
| Horn Antenna             | Schwarzbeck Mess-Elektronik | BBHA 9170                            | 9170-540               | 12/05/2025 | Annual        | 12/05/2026 |
| Turn Table               | Innco systems GmbH          | DS 1200 S                            | N/A                    | N.C.R.     | N/A           | N.C.R.     |
| Controller               | Innco systems GmbH          | CONTROLLER CO3000-4P                 | CO3000/963/3833 0516/L | N.C.R.     | N/A           | N.C.R.     |
| Antenna Mast             | Innco systems GmbH          | MA4640-XP-ET                         | MA4640/536/3833 0516/L | N.C.R.     | N/A           | N.C.R.     |
| Anechoic Chamber         | SY Corporation              | L × W × H<br>(9.6 m × 6.4 m × 6.6 m) | N/A                    | N.C.R.     | N/A           | N.C.R.     |
| Coaxial Cable            | SENSORVIEW                  | NMST-13A26-NMST-5 m                  | TPC2402190004          | 04/17/2026 | Semi-Annual   | 10/17/2026 |
| Coaxial Cable            | SENSORVIEW                  | NMST-13A26-NMST-10 m                 | TPC2402190001          | 04/17/2026 | Semi-Annual   | 10/17/2026 |
| Coaxial Cable            | Qualwave                    | QT50P-40-KK-1.5                      | 24270074               | 04/10/2026 | Semi-Annual   | 10/10/2026 |
| EMI Test Receiver        | R&S                         | ESU26                                | 100109                 | 01/21/2026 | Annual        | 01/21/2027 |
| Spectrum Analyzer        | Agilent                     | N9020A                               | MY53421758             | 09/10/2025 | Annual        | 09/10/2026 |
| Signal Conditioning Unit | R&S                         | SCU18F                               | 101058                 | 06/02/2026 | Annual        | 06/02/2027 |
| Preamplifier             | H.P.                        | 8447F                                | 2944A03909             | 03/31/2026 | Annual        | 03/31/2027 |
| Preamplifier             | TESTEK                      | TK-PA1840H                           | 130016                 | 03/06/2026 | Annual        | 03/06/2027 |
| Spectrum Analyzer        | R&S                         | FSW67                                | 103242                 | 01/26/2026 | Annual        | 01/26/2027 |
| Low Pass Filter          | Mini-Circuits               | NLP-1200+                            | V8979400903-2          | 02/02/2026 | Annual        | 02/02/2027 |
| High Pass Filter         | Wainwright Instrument GmbH  | WHKX3.0/18G-6SS                      | 4                      | 06/10/2026 | Annual        | 06/10/2027 |
| High Pass Filter         | Wainwright Instrument GmbH  | WHNX7.5/26.5G-6SS                    | 15                     | 06/10/2026 | Annual        | 06/10/2027 |
| Signal Generator         | R&S                         | SMA100B                              | 106887                 | 10/20/2025 | Annual        | 10/20/2026 |

## 1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 15 Subpart C, ISSED RSS-247 Issue 4 and RSS-Gen Issue 5 |                                                       |                                                                         |                   |
|------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------|-------------------|
| Section in FCC                                                                     | Section in IC                                         | Test Item(s)                                                            | Result            |
| 15.205(a)<br>15.209<br>15.247(d)                                                   | RSS-247 Issue 4<br>6.6<br>RSS-Gen Issue 5<br>8.9      | Transmitter Radiated Spurious Emissions and Conducted Spurious Emission | Pass              |
| 15.247(a)(2)                                                                       | RSS-247 Issue 4<br>6.3.1(a)<br>RSS-Gen Issue 5<br>6.7 | 6 dB Bandwidth & 99 % Bandwidth                                         | Pass              |
| 15.247(b)(3)                                                                       | RSS-247 Issue 4<br>6.3.2                              | Maximum Peak Conducted Output Power                                     | Pass              |
| 15.247(e)                                                                          | RSS-247 Issue 4<br>6.3.1(b)                           | Power Spectral Density                                                  | Pass              |
| 15.207                                                                             | RSS-Gen Issue 5<br>8.8                                | AC Power Line Conducted Emission                                        | N/A <sup>1)</sup> |

**Note;**

1) The test was not required, as the EUT is incapable of operation while charging.

## 1.7. Test Procedure(s)

The measurement procedures described in the American National Standard of Procedure for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2020 for FCC and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 for ISSED), as well as the guidance provided in KDB 558074 D01 15.247 Meas Guidance v05r02, were used in the measurement of the DUT.

All measurement procedures in the test report comply with both ANSI versions, with no effect on the test results

## 1.8. Sample Calculation

Where relevant, the following sample calculation is provided:

### 1.8.1. Conducted Test

Offset value (dB) = Attenuator (dB) + Cable loss (dB)

### 1.8.2. Radiation Test

Field strength level (dB $\mu$ V/m) = Measured level (dB $\mu$ V) + Antenna factor (dB/m) + Cable loss (dB) - Amplifier gain (dB) + Duty factor (dB)

## 1.9. Information of power setting and software for test

- Using the software of Bluetest3 v3.3.17 to test for Bluetooth.

| Mode                 | Frequency (MHz) | Power setting |        |
|----------------------|-----------------|---------------|--------|
|                      |                 | PHY 1M        | PHY 2M |
| Bluetooth Low Energy | 2 402           | 9             | 9      |
|                      | 2 440           | 9             | 9      |
|                      | 2 480           | 9             | 9      |

## 1.10. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Parameter                           | Uncertainty |         |
|-------------------------------------|-------------|---------|
| Maximum Peak Conducted Output Power | 0.35 dB     |         |
| Power Spectral Density              | 0.64 dB     |         |
| 99 % Bandwidth                      | 0.01 MHz    |         |
| 6 dB Bandwidth                      | 0.02 MHz    |         |
| Conducted Spurious Emission         | 0.86 dB     |         |
| Radiated Emission, 9 kHz to 30 MHz  | H           | 3.60 dB |
|                                     | V           | 3.60 dB |
| Radiated Emission, below 1 GHz      | H           | 5.50 dB |
|                                     | V           | 5.10 dB |
| Radiated Emission, above 1 GHz      | H           | 3.50 dB |
|                                     | V           | 3.40 dB |

All measurement uncertainty values are shown with a coverage factor of  $k=2$  to indicate a 95 % level of confidence.

## 1.11. Test Report Revision

| Revision | Report number        | Date of Issue | Description |
|----------|----------------------|---------------|-------------|
| 0        | F690501-RF-RTL007244 | 2026.08.18    | Initial     |

## 1.12. Duty Cycle of EUT

Regarding to KDB 558074 D01 15.247 Meas Guidance v05r02, 6, the maximum duty cycles of all modes were investigated and set the spectrum analyzer as below;

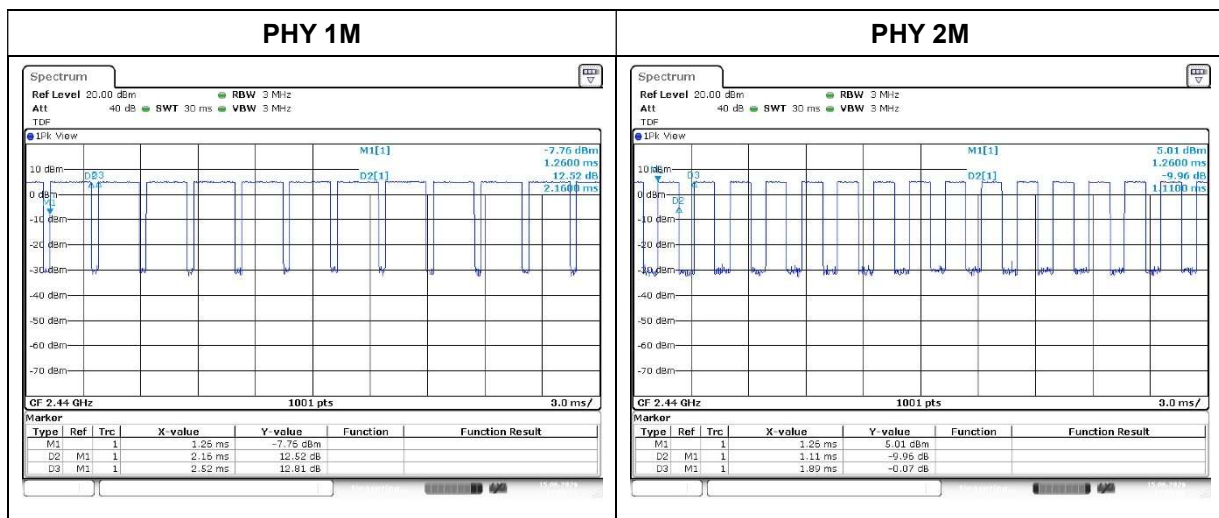
Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100.

| Mode   | Tx on time (ms) | Tx on+off time (ms) | Duty Cycle (%) | Correction Factor (dB) |
|--------|-----------------|---------------------|----------------|------------------------|
| PHY 1M | 2.16            | 2.52                | 85.71          | 0.67                   |
| PHY 2M | 1.11            | 1.89                | 58.73          | 2.31                   |

### Remark;

1. Duty Cycle (%) = (Tx on time / Tx on + off time) x 100
2. Correction Factor (dB) = 10 log (1 / Duty Cycle)

### - Test plots

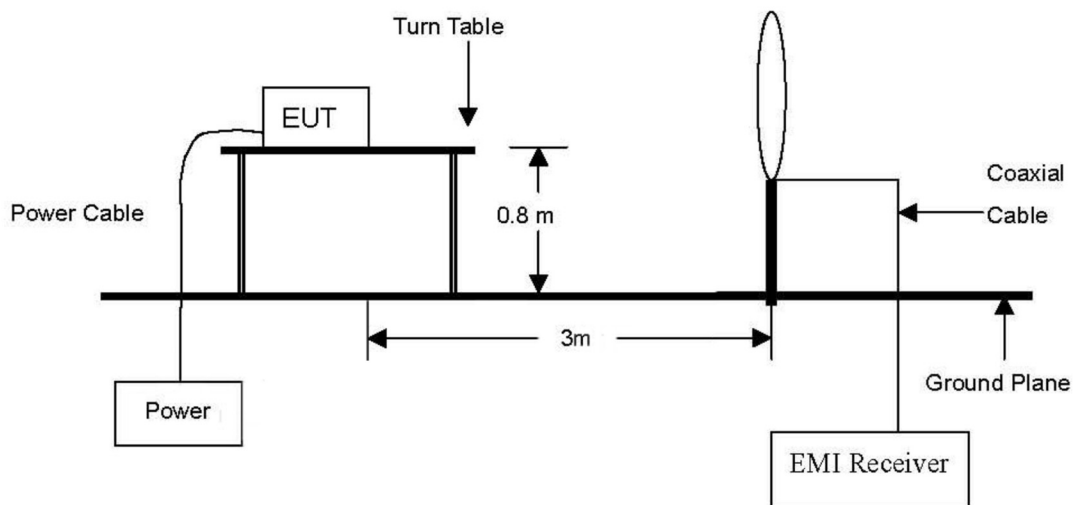


## 2. Transmitter Radiated Spurious Emissions and Conducted Spurious Emissions

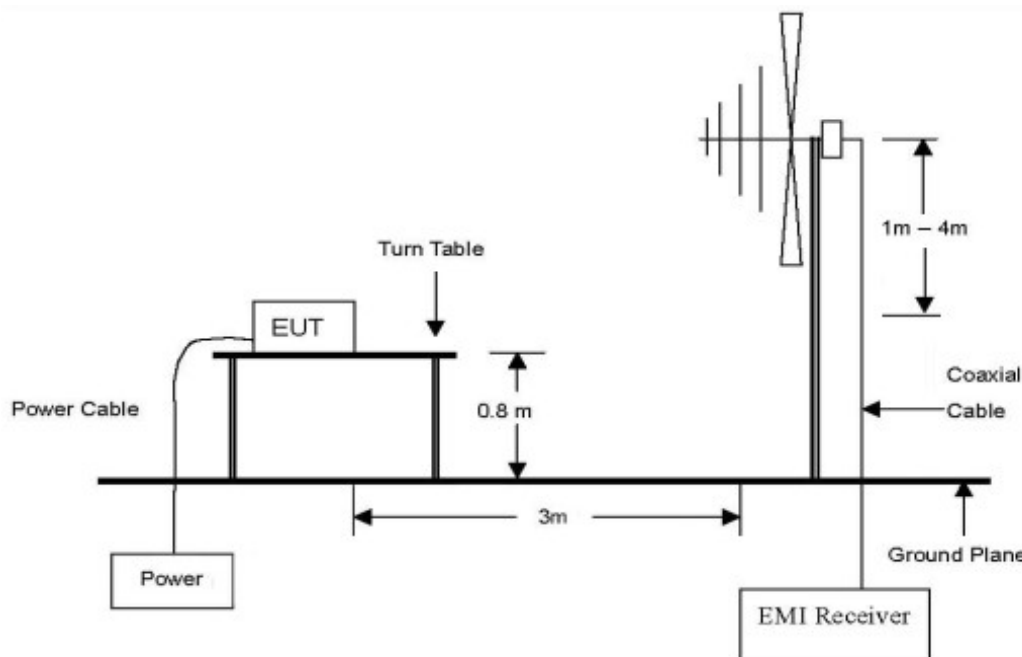
### 2.1. Test Setup

#### 2.1.1. Transmitter Radiated Spurious Emissions

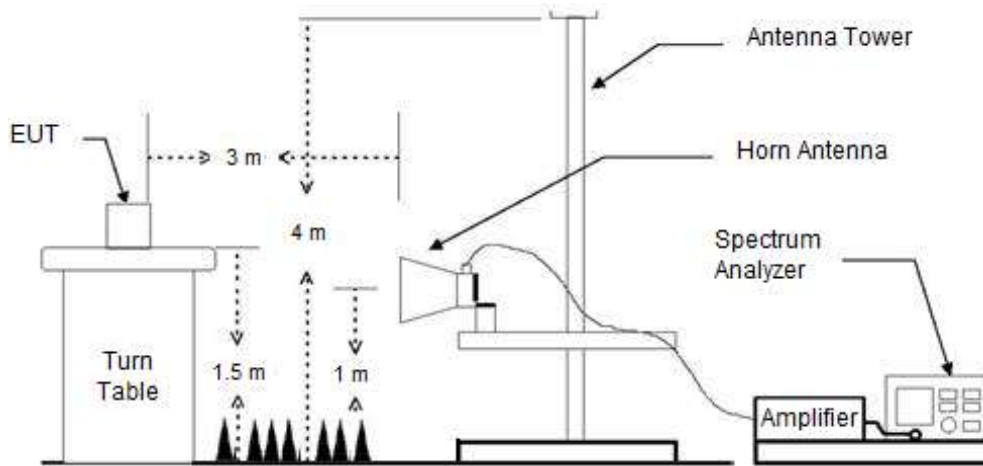
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz emissions.



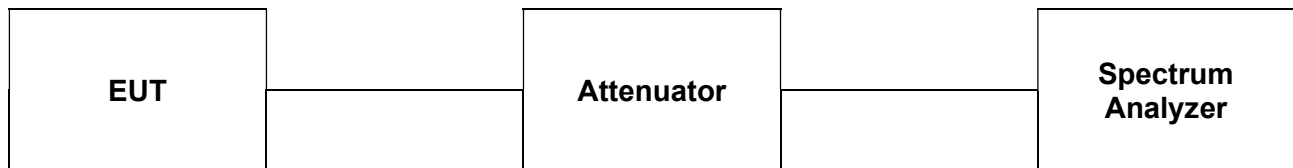
The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission. The spurious emissions were investigated from 1 GHz to the 10<sup>th</sup> harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.



### 2.1.2. Conducted Spurious Emissions



## 2.2. Limit

### 2.2.1. FCC

According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emission which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency<br>(MHz) | Field Strength<br>( $\mu\text{V}/\text{m}$ ) | Measurement Distance<br>(Meters) |
|--------------------|----------------------------------------------|----------------------------------|
| 0.009-0.490        | 2 400/F(kHz)                                 | 300                              |
| 0.490-1.705        | 24 000/F(kHz)                                | 30                               |
| 1.705-30.0         | 30                                           | 30                               |
| 30-88              | 100**                                        | 3                                |
| 88-216             | 150**                                        | 3                                |
| 216-960            | 200**                                        | 3                                |
| Above 960          | 500                                          | 3                                |

\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

### 2.2.2. IC

According to RSS-247 Issue 4, 6.6, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power – based on either an RF conducted or a radiated measurement– provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 6.3.2, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

According to RSS-Gen Issue 5, 8.9, except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

**Table 5 – General Field Strength Limits at frequencies above 30 MHz**

| Frequency (MHz) | Field Strength ( $\mu V/m$ at 3 m) |
|-----------------|------------------------------------|
| 30-88           | 100                                |
| 88-216          | 150                                |
| 216-960         | 200                                |
| Above 960       | 500                                |

**Table 6 – General Field Strength Limits at frequencies below 30 MHz**

| Frequency              | Magnetic Field Strength (H-Field) ( $\mu A/m$ ) | Measurement Distance (meters) |
|------------------------|-------------------------------------------------|-------------------------------|
| 9-490 kHz <sup>1</sup> | 6.37/F (F in kHz)                               | 300                           |
| 490-1 705 kHz          | 63.7/F (F in kHz)                               | 30                            |
| 1.705-30 MHz           | 0.08                                            | 30                            |

**Note<sup>1</sup>:** The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

## 2.3. Test Procedures

Radiated emissions from the EUT were measured in accordance with sections 11.11 & 11.12 of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISCED).

### 2.3.1. Test Procedures for emission below 30 MHz

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel and perpendicular of the antenna are set to make the measurement.
3. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.
4. The test-receiver system was set to average or quasi peak detect function and Specified Bandwidth with Maximum Hold Mode.

### 2.3.2. Test Procedures for emission from above 30 MHz

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site below 1 GHz and 1.5 meters above the ground at a 3 meter anechoic chamber test site above 1 GHz. The table was rotated 360 degrees to determine the position of the highest radiation.
2. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 3 meter away from the interference-receiving antenna.
3. The antenna is a bi-log antenna, a horn antenna and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. For measurements below 1 GHz resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.
6. For measurements Above 1 GHz resolution bandwidth is set to 1 MHz, the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

### 2.3.3. Test Procedures for Radiated Spurious Emissions

#### 1. Unwanted Emissions into Non-Restricted Frequency Bands

- The Reference Level Measurement refer to section 11.11.2

Set analyzer center frequency to DTS channel center frequency, SPAN  $\geq 1.5$  times the DTS bandwidth, the RBW = 100 kHz and VBW  $\geq 3 \times$  RBW, Detector = Peak, Sweep time = No faster than coupled (auto) time, Trace = Max hold.

- Unwanted Emissions Level Measurement refer to section 11.11.3

Set the center frequency and span to encompass frequency range to be measured, the RBW = 100 kHz and VBW  $\geq 3 \times$  RBW, Detector = Peak, Sweep time = No faster than coupled (auto) time, Trace = Max hold.

#### 2. Unwanted Emissions into Restricted Frequency Bands

- Peak Power measurement procedure refer to section 11.12.2.4

Set RBW = as specified in Table 16, VBW  $\geq 3 \times$  RBW, Detector = Peak, Sweep time = No faster than coupled (auto) time, Trace = Max hold.

**Table 16 – RBW as a function of frequency**

| Frequency           | RBW                |
|---------------------|--------------------|
| 9 kHz to 150 kHz    | 200 Hz to 300 Hz   |
| 0.15 MHz to 30 MHz  | 9 kHz to 10 kHz    |
| 30 MHz to 1 000 MHz | 100 kHz to 120 kHz |
| > 1 000 MHz         | 1 MHz              |

If the peak – detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

- Average Power measurements procedure refer to section 11.12.2.5.2

The EUT shall be configured to operate at the maximum achievable duty cycle.

Measure the duty cycle D of the transmitter output signal as described in section 11.6.

Set RBW = 1 MHz, VBW  $\geq 3 \times$  RBW, Detector = Power averaging (rms), if span / (# of points in sweep)  $\leq$  (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied then the detector mode shall be set to peak.

Averaging type = power (i.e., RMS).

As an alternative the detector and averaging type may be set for linear voltage averaging.

Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used. Sweep time = auto, Perform a trace average of at least 100 traces.

A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

- 1) If power averaging (rms) mode was used in step f), then the applicable correction factor is  $[10 \log (1 / D)]$ , where D is the duty cycle.
- 2) If a specific emission is demonstrated to be continuous ( $D \geq 98\%$ ) rather than turning ON and OFF with the transmit cycle, then no duty cycled correction is required for that emission.

#### 3. Definition of DUT Axis.

The radiation test of the EUT was investigated in three orthogonal orientations X, Y, and Z described in the test setup photo. All radiated testing of EUT was performed with worst case axis.

#### 2.3.4. Test Procedures for Conducted Spurious Emissions

Per the guidance of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISED), the reference level for out of band emissions is established from the plots of this section since the band edge emissions are measured with a RBW of 100 kHz. This reference level is then used as the limit in subsequent plots for out of band spurious emissions shown in section 2.4.3. The limit for out of band spurious emission at the band edge is 20 dB below the fundamental emission level measured in a 100 kHz bandwidth.

##### 1. Conducted Emissions at Band Edge

- The Measurement refer to section 11.11.3

Set the center frequency and span to encompass frequency range to be measured, the RBW = 100 kHz and VBW  $\geq 3 \times$  RBW, Detector = Peak, Sweep time = No faster than coupled (auto) time, Trace mode = Max hold, The trace was allowed to stabilize.

##### 2. Conducted Spurious Emissions

- The Measurement refer to section 11.11.3

Start frequency was set to 9 kHz and stop frequency was set to 25 GHz (separated plots per channel), RBW = 1 MHz, VBW  $\geq 3 \times$  RBW, Detector = Peak, Sweep time = No faster than coupled (auto) time, Trace = Max hold, The trace was allowed to stabilize.

##### 3. TDF function

- For plots showing conducted spurious emissions from 9 kHz to 25 GHz, all path loss of wide frequency range was investigated and compensated to spectrum analyzer as TDF function.  
So, the reading values shown in plots were final result.

## 2.4. Test Results

Ambient temperature :  $(23 \pm 1) ^\circ\text{C}$

Relative humidity : 47 %

### 2.4.1. Radiated Spurious Emissions below 1 000 MHz

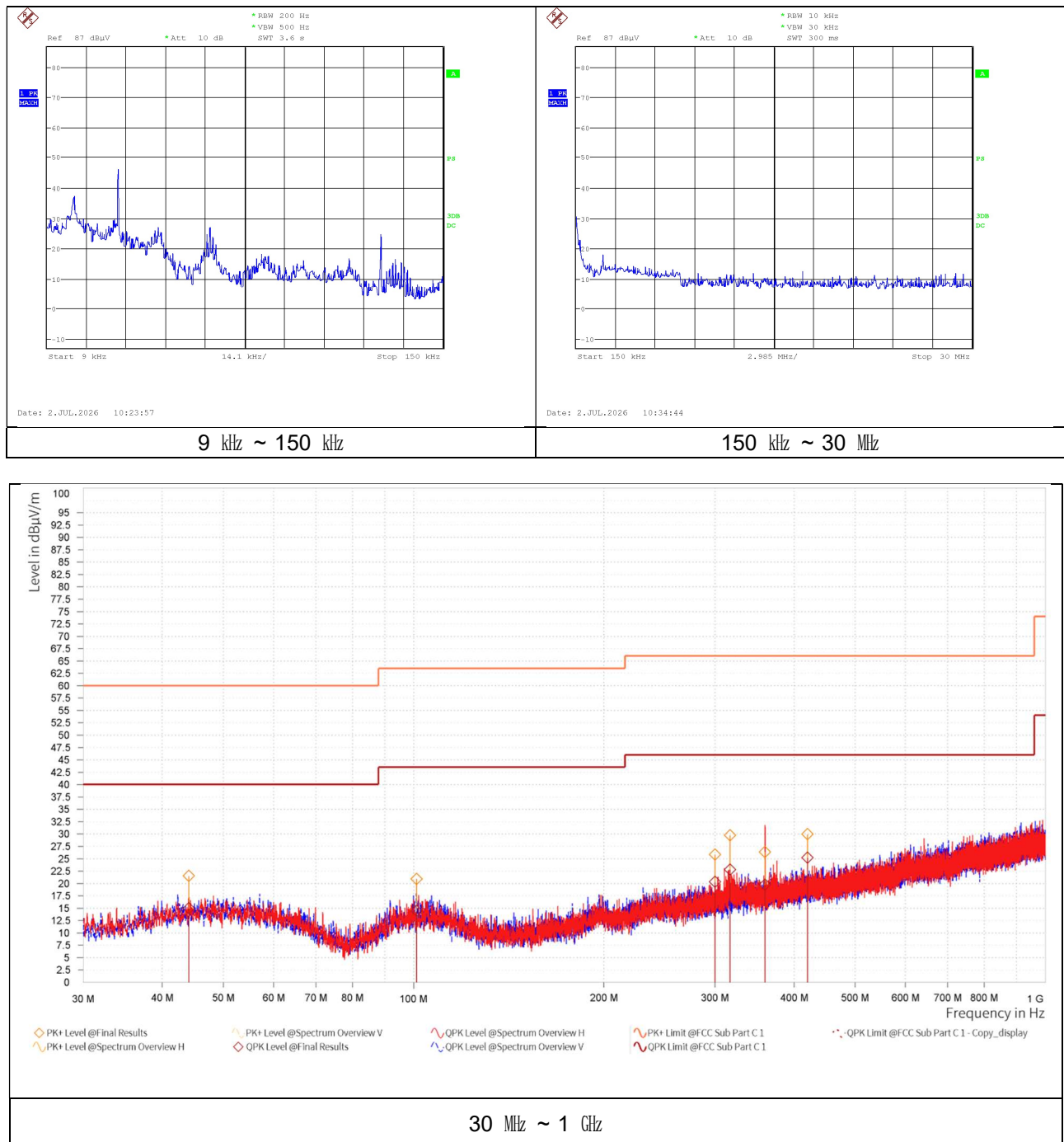
The frequency spectrum from 9 kHz to 1 000 MHz was investigated.

| Radiated Emissions |                         |                | Ant. | Correction Factors<br>(dB/m) | Total                    | Limit                   |                |
|--------------------|-------------------------|----------------|------|------------------------------|--------------------------|-------------------------|----------------|
| Frequency<br>(MHz) | Reading<br>(dB $\mu$ V) | Detect<br>Mode | Pol. |                              | Actual<br>(dB $\mu$ V/m) | Limit<br>(dB $\mu$ V/m) | Margin<br>(dB) |
| Below<br>30.00     | Not<br>detected         | -              | -    | -                            | -                        | -                       | -              |
| Above<br>30.00     | Not<br>detected         | -              | -    | -                            | -                        | -                       | -              |

#### Remark;

1. Spurious emissions for all channels were investigated and almost the same below 1 GHz.
2. Test from 30 MHz to 1 000 MHz was performed using the software of ELEKTRA(V5.02) from Rohde & Schwarz GmbH & Co. KG.
3. Reported spurious emissions are in **PHY 2M / Low channel** as worst case among other channels.
4. Radiated spurious emission measurement as below.  
 (Actual = Reading + Correction)  
 (Correction = Antenna Factor + AMP Factor + Cable Loss)
5. According to §15.31(o), emission levels are not report much lower than the limits by over 20 dB.

## - Test plots



### 2.4.2. Radiated Spurious Emissions above 1 000 MHz

The frequency spectrum above 1 000 MHz was investigated. All reading values are peak and average values.

#### - PHY 1M

Low Channel (2 402 MHz)

| Radiated Emissions |                |             | Ant. | Correction Factors |         |         | Total           | Limit          |             |
|--------------------|----------------|-------------|------|--------------------|---------|---------|-----------------|----------------|-------------|
| Frequency (MHz)    | Reading (dBμV) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| *2 310.00          | 16.22          | Peak        | H    | 28.06              | 7.32    | -       | 51.60           | 74.00          | 22.40       |
| *2 310.00          | 5.45           | Average     | H    | 28.06              | 7.32    | 0.67    | 41.50           | 54.00          | 12.50       |
| *2 389.56          | 21.14          | Peak        | H    | 28.22              | 7.60    | -       | 56.96           | 74.00          | 17.04       |
| *2 389.88          | 10.74          | Average     | H    | 28.22              | 7.60    | 0.67    | 47.23           | 54.00          | 6.77        |
| *2 390.00          | 20.84          | Peak        | H    | 28.22              | 7.60    | -       | 56.66           | 74.00          | 17.34       |
| *2 390.00          | 10.57          | Average     | H    | 28.22              | 7.60    | 0.67    | 47.06           | 54.00          | 6.94        |

| Radiated Emissions |                |             | Ant. | Correction Factors |         |         | Total           | Limit          |             |
|--------------------|----------------|-------------|------|--------------------|---------|---------|-----------------|----------------|-------------|
| Frequency (MHz)    | Reading (dBμV) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| *4 803.64          | 42.05          | Peak        | H    | 32.71              | -29.61  | -       | 45.15           | 74.00          | 28.85       |
| Above 4 900.00     | Not detected   | -           | -    | -                  | -       | -       | -               | -              | -           |

Middle Channel (2 440 MHz)

| Radiated Emissions |                |             | Ant. | Correction Factors |         |         | Total           | Limit          |             |
|--------------------|----------------|-------------|------|--------------------|---------|---------|-----------------|----------------|-------------|
| Frequency (MHz)    | Reading (dBμV) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| *4 880.59          | 40.48          | Peak        | H    | 33.02              | -28.89  | -       | 44.61           | 74.00          | 29.39       |
| Above 4 900.00     | Not detected   | -           | -    | -                  | -       | -       | -               | -              | -           |

High Channel (2 480 MHz)

| Radiated Emissions |                |             | Ant. | Correction Factors |         |         | Total           | Limit          |             |
|--------------------|----------------|-------------|------|--------------------|---------|---------|-----------------|----------------|-------------|
| Frequency (MHz)    | Reading (dBμV) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| *2 483.50          | 26.89          | Peak        | H    | 28.40              | 7.61    | -       | 62.90           | 74.00          | 11.10       |
| *2 483.50          | 15.50          | Average     | H    | 28.40              | 7.61    | 0.67    | 52.18           | 54.00          | 1.82        |
| *2 484.41          | 28.81          | Peak        | H    | 28.41              | 7.61    | -       | 64.83           | 74.00          | 9.17        |
| *2 485.00          | 15.77          | Average     | H    | 28.41              | 7.62    | 0.67    | <b>52.47</b>    | 54.00          | 1.53        |
| *2 500.00          | 14.95          | Peak        | H    | 28.50              | 7.69    | -       | 51.14           | 74.00          | 22.86       |
| *2 500.00          | 4.84           | Average     | H    | 28.50              | 7.69    | 0.67    | 41.70           | 54.00          | 12.30       |

| Radiated Emissions |                |             | Ant. | Correction Factors |         |         | Total           | Limit          |             |
|--------------------|----------------|-------------|------|--------------------|---------|---------|-----------------|----------------|-------------|
| Frequency (MHz)    | Reading (dBμV) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| *4 960.52          | 42.53          | Peak        | H    | 33.22              | -29.02  | -       | 46.73           | 74.00          | 27.27       |
| 9 919.14           | 40.43          | Peak        | V    | 37.64              | -22.23  | -       | 55.84           | 74.00          | 18.16       |
| Above 10 000.00    | Not detected   | -           | -    | -                  | -       | -       | -               | -              | -           |

**Remarks;**

1. "\*" means the restricted band.
2. Measuring frequencies from 1 GHz to the 10<sup>th</sup> harmonic of highest fundamental frequency.
3. Radiated emissions measured in frequency above 1 000 MHz were made with an instrument using peak/average detector mode.
4. Actual = Reading + AF + CL + (DF) or Reading + AF + AMP + CL + (DF).
5. According to § 15.31(o), emission levels are not reported much lower than the limits by over 20 dB.
6. The maximized peak measured value complies with the average limit, to perform an average measurement is unnecessary.
7. AF = Antenna Factor, CL = Cable Loss, DF = Duty Correction Factor.

**- PHY 2M**

Low Channel (2 402 MHz)

| Radiated Emissions |                      |             | Ant. | Correction Factors |         |         | Total                 | Limit                |             |
|--------------------|----------------------|-------------|------|--------------------|---------|---------|-----------------------|----------------------|-------------|
| Frequency (MHz)    | Reading (dB $\mu$ V) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) |
| *2 310.00          | 16.53                | Peak        | H    | 28.06              | 7.32    | -       | 51.91                 | 74.00                | 22.09       |
| *2 310.00          | 5.39                 | Average     | H    | 28.06              | 7.32    | 2.31    | 43.08                 | 54.00                | 10.92       |
| *2 389.45          | 21.44                | Peak        | H    | 28.22              | 7.60    | -       | 57.26                 | 74.00                | 16.74       |
| *2 389.56          | 9.33                 | Average     | H    | 28.22              | 7.60    | 2.31    | 47.46                 | 54.00                | 6.54        |
| *2 390.00          | 21.48                | Peak        | H    | 28.22              | 7.60    | -       | 57.30                 | 74.00                | 16.70       |
| *2 390.00          | 8.98                 | Average     | H    | 28.22              | 7.60    | 2.31    | 47.11                 | 54.00                | 6.89        |

| Radiated Emissions |                      |             | Ant. | Correction Factors |         |         | Total                 | Limit                |             |
|--------------------|----------------------|-------------|------|--------------------|---------|---------|-----------------------|----------------------|-------------|
| Frequency (MHz)    | Reading (dB $\mu$ V) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) |
| *4 802.83          | 42.36                | Peak        | H    | 32.71              | -29.61  | -       | 45.46                 | 74.00                | 28.54       |
| Above 4 900.00     | Not detected         | -           | -    | -                  | -       | -       | -                     | -                    | -           |

Middle Channel (2 440 MHz)

| Radiated Emissions |                      |             | Ant. | Correction Factors |         |         | Total                 | Limit                |             |
|--------------------|----------------------|-------------|------|--------------------|---------|---------|-----------------------|----------------------|-------------|
| Frequency (MHz)    | Reading (dB $\mu$ V) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) |
| *4 881.25          | 40.16                | Peak        | V    | 33.03              | -28.89  | -       | 44.30                 | 74.00                | 29.70       |
| Above 4 900.00     | Not detected         | -           | -    | -                  | -       | -       | -                     | -                    | -           |

High Channel (2 480 MHz)

| Radiated Emissions |                |             | Ant. | Correction Factors |         |         | Total           | Limit          |             |
|--------------------|----------------|-------------|------|--------------------|---------|---------|-----------------|----------------|-------------|
| Frequency (MHz)    | Reading (dBμV) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| *2 483.50          | 26.23          | Peak        | H    | 28.40              | 7.61    | -       | 62.24           | 74.00          | 11.76       |
| *2 483.50          | 13.57          | Average     | H    | 28.40              | 7.61    | 2.31    | 51.89           | 54.00          | 2.11        |
| *2 485.78          | 27.25          | Peak        | H    | 28.41              | 7.62    | -       | 63.28           | 74.00          | 10.72       |
| *2 483.63          | 13.82          | Average     | H    | 28.40              | 7.61    | 2.31    | <b>52.14</b>    | 54.00          | 1.86        |
| *2 500.00          | 16.64          | Peak        | H    | 28.50              | 7.69    | -       | 52.83           | 74.00          | 21.17       |
| *2 500.00          | 4.51           | Average     | H    | 28.50              | 7.69    | 2.31    | 43.01           | 54.00          | 10.99       |

| Radiated Emissions |                |             | Ant. | Correction Factors |         |         | Total           | Limit          |             |
|--------------------|----------------|-------------|------|--------------------|---------|---------|-----------------|----------------|-------------|
| Frequency (MHz)    | Reading (dBμV) | Detect Mode | Pol. | AF (dB/m)          | CL (dB) | DF (dB) | Actual (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
| Above 1 000.00     | Not detected   | -           | -    | -                  | -       | -       | -               | -              | -           |

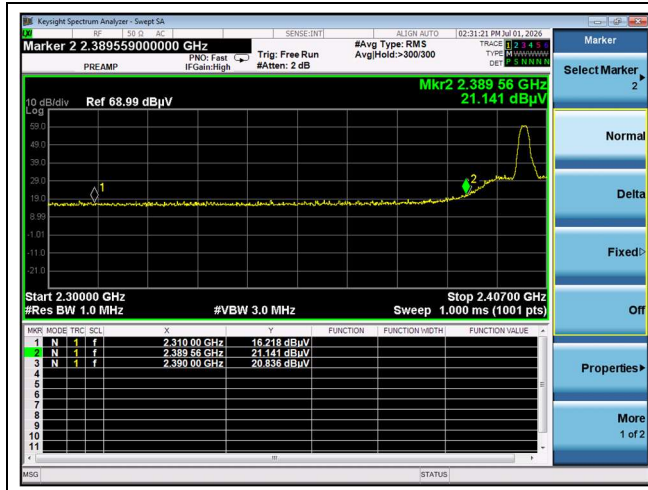
**Remarks;**

1. "\*" means the restricted band.
2. Measuring frequencies from 1 GHz to the 10<sup>th</sup> harmonic of highest fundamental frequency.
3. Radiated emissions measured in frequency above 1 000 MHz were made with an instrument using peak/average detector mode.
4. Actual = Reading + AF + CL + (DF) or Reading + AF + AMP + CL + (DF).
5. According to § 15.31(o), emission levels are not reported much lower than the limits by over 20 dB.
6. The maximized peak measured value complies with the average limit, to perform an average measurement is unnecessary.
7. AF = Antenna Factor, CL = Cable Loss, DF = Duty Correction Factor.

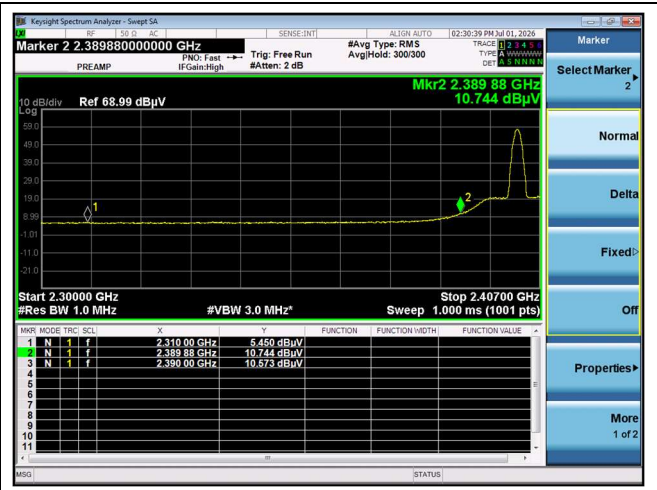
- Test plots

- PHY 1M

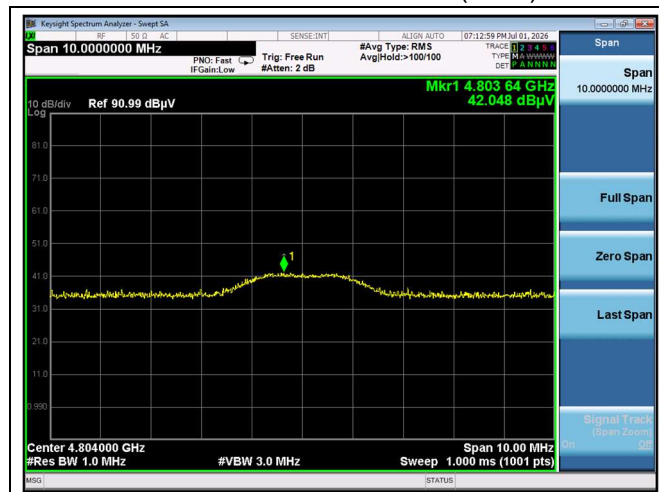
Low channel band edge (Peak)



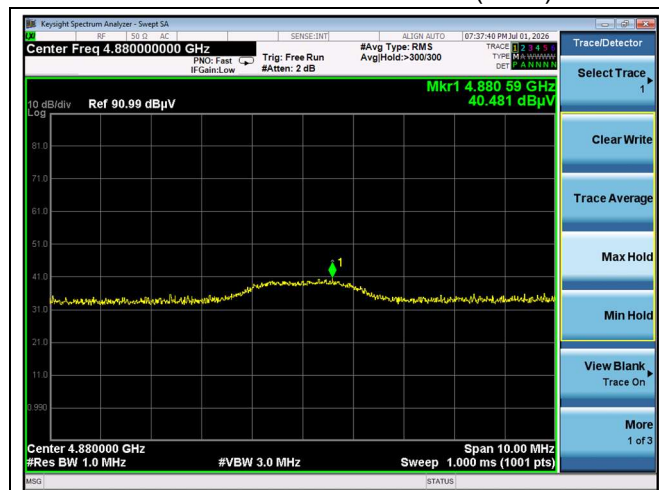
Low channel band edge (Average)



Low channel 2<sup>nd</sup> harmonic (Peak)



Middle channel 2<sup>nd</sup> harmonic (Peak)



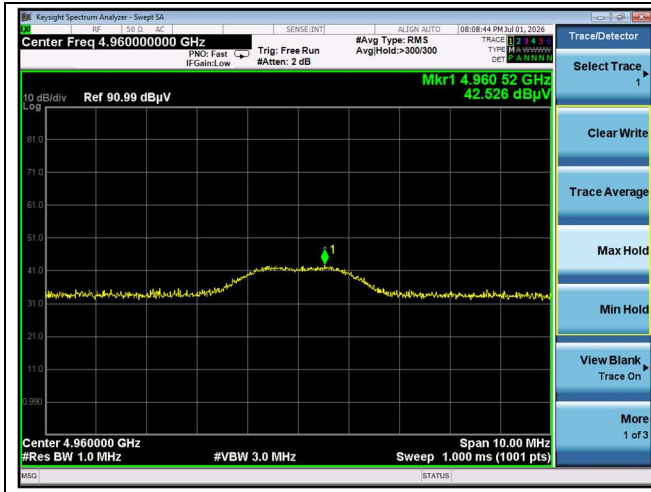
High channel band edge (Peak)



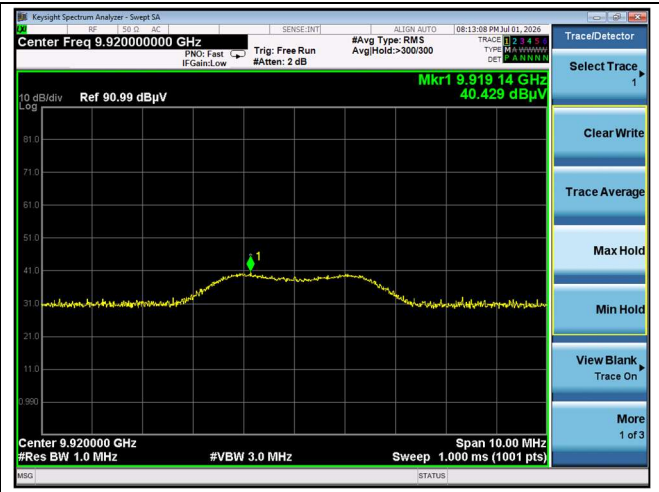
High channel band edge (Average)



High channel 2<sup>nd</sup> harmonic (Peak)

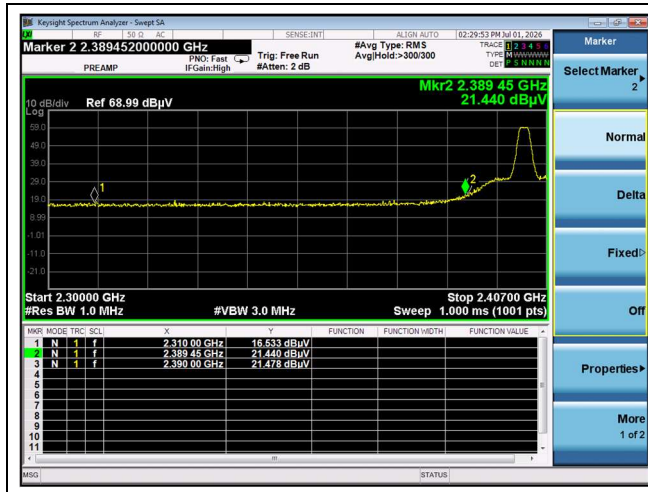


High channel 4<sup>th</sup> harmonic (Peak)



## - PHY 2M

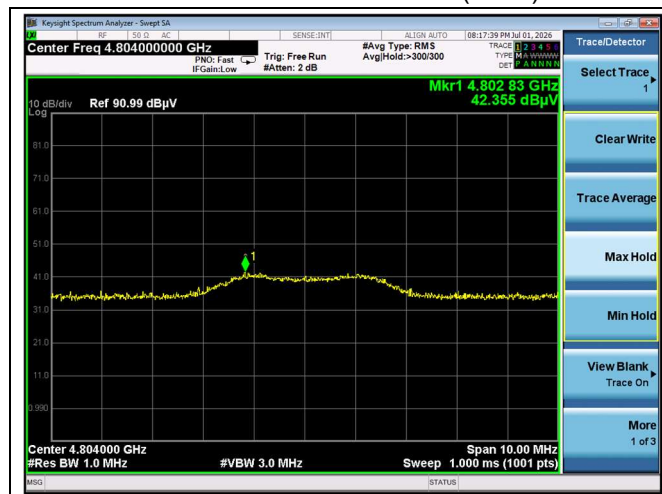
Low channel band edge (Peak)



Low channel band edge (Average)



Low channel 2<sup>nd</sup> harmonic (Peak)



Middle channel 2<sup>nd</sup> harmonic (Peak)



High channel band edge (Peak)



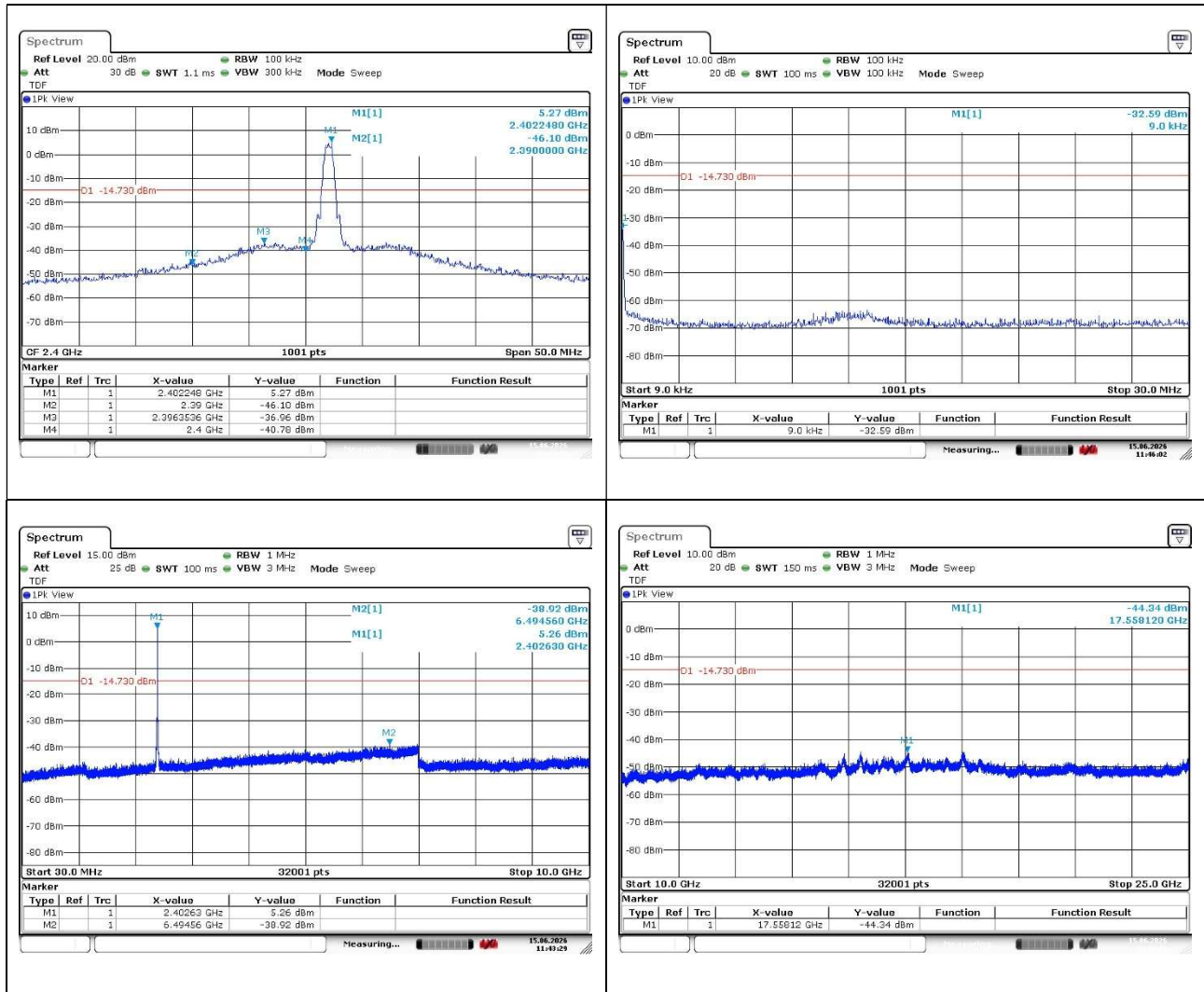
High channel band edge (Average)



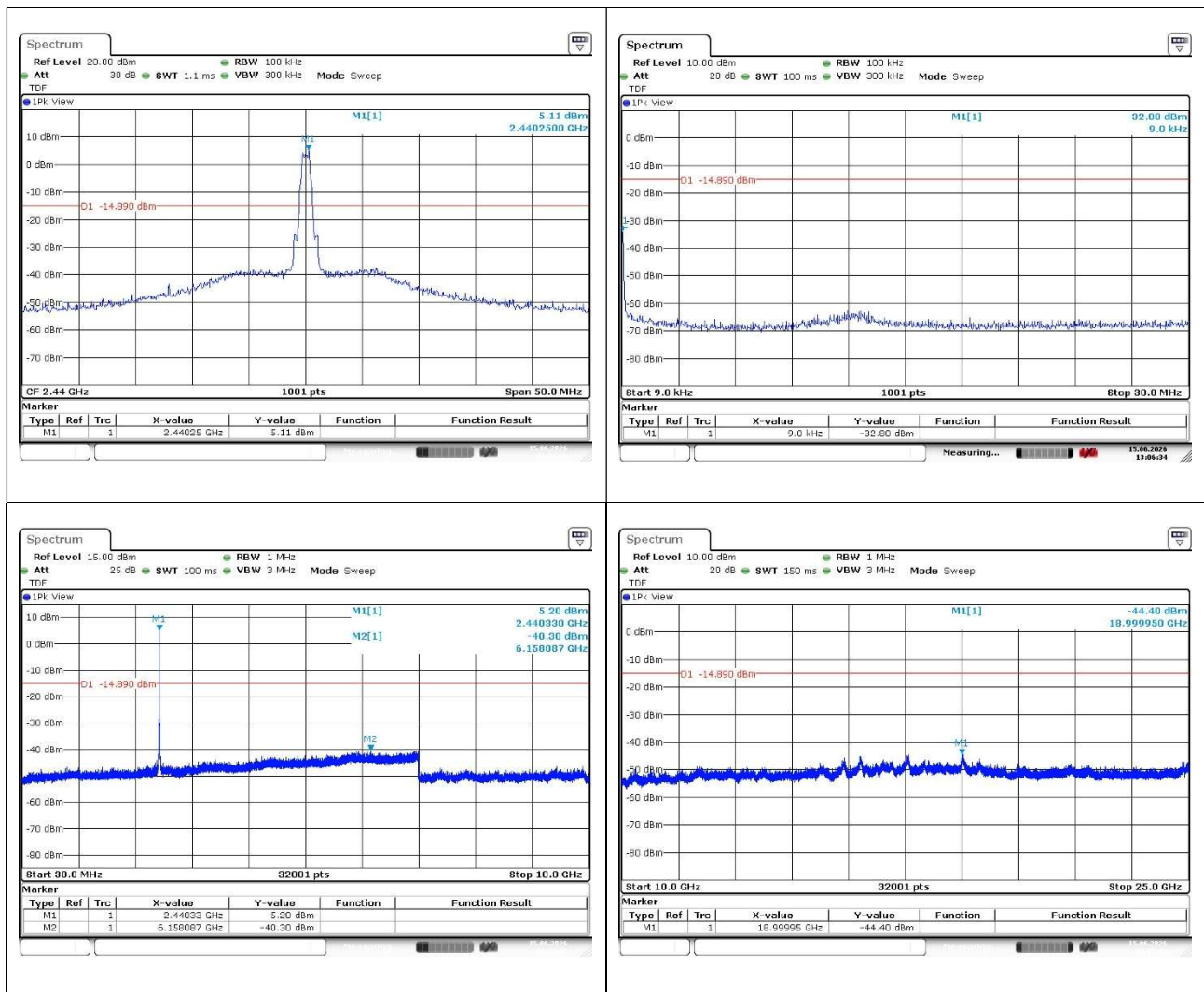
### 2.4.3. Plot of Conducted Spurious Emissions

#### - PHY 1M

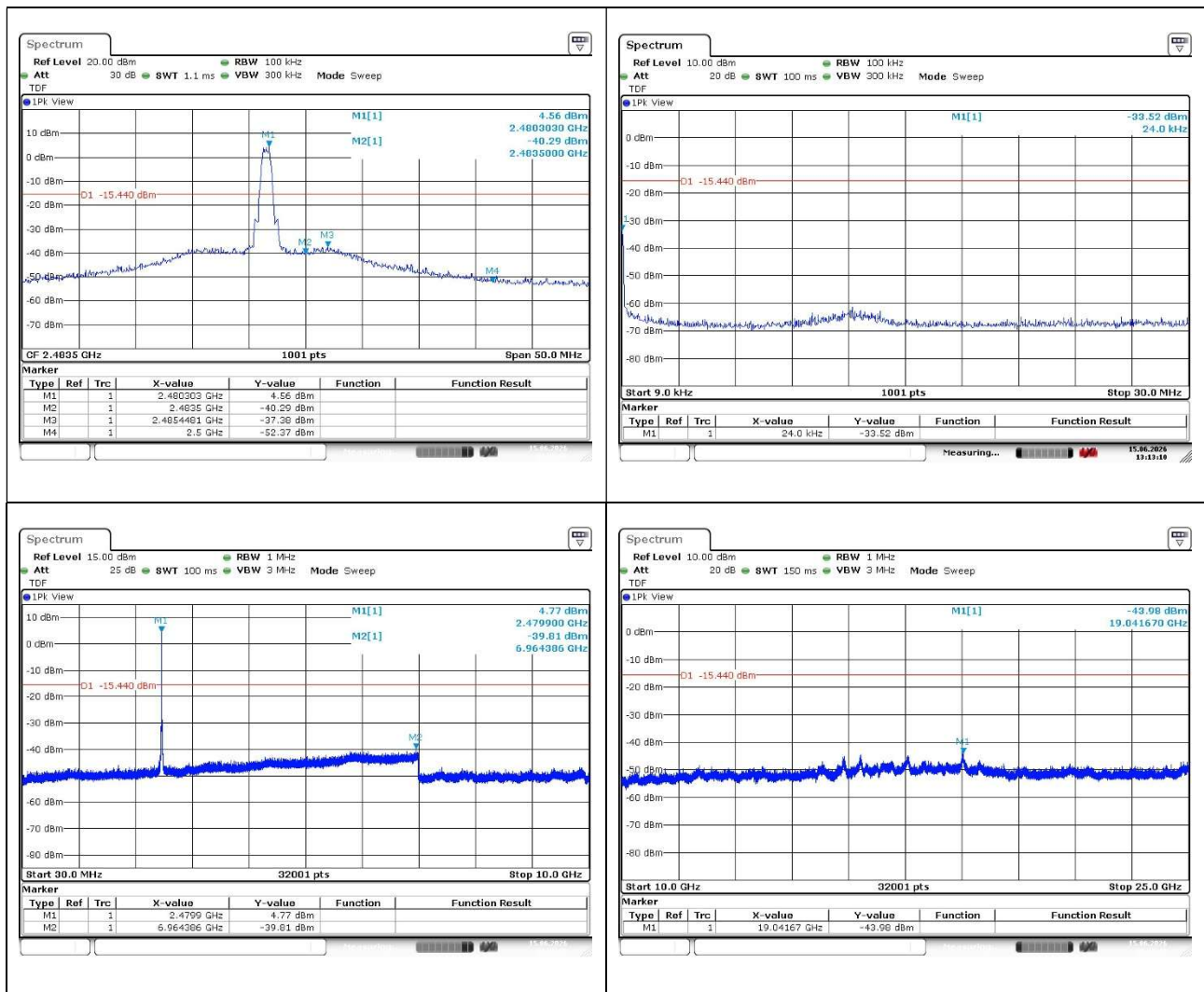
##### Low Channel



## Middle Channel

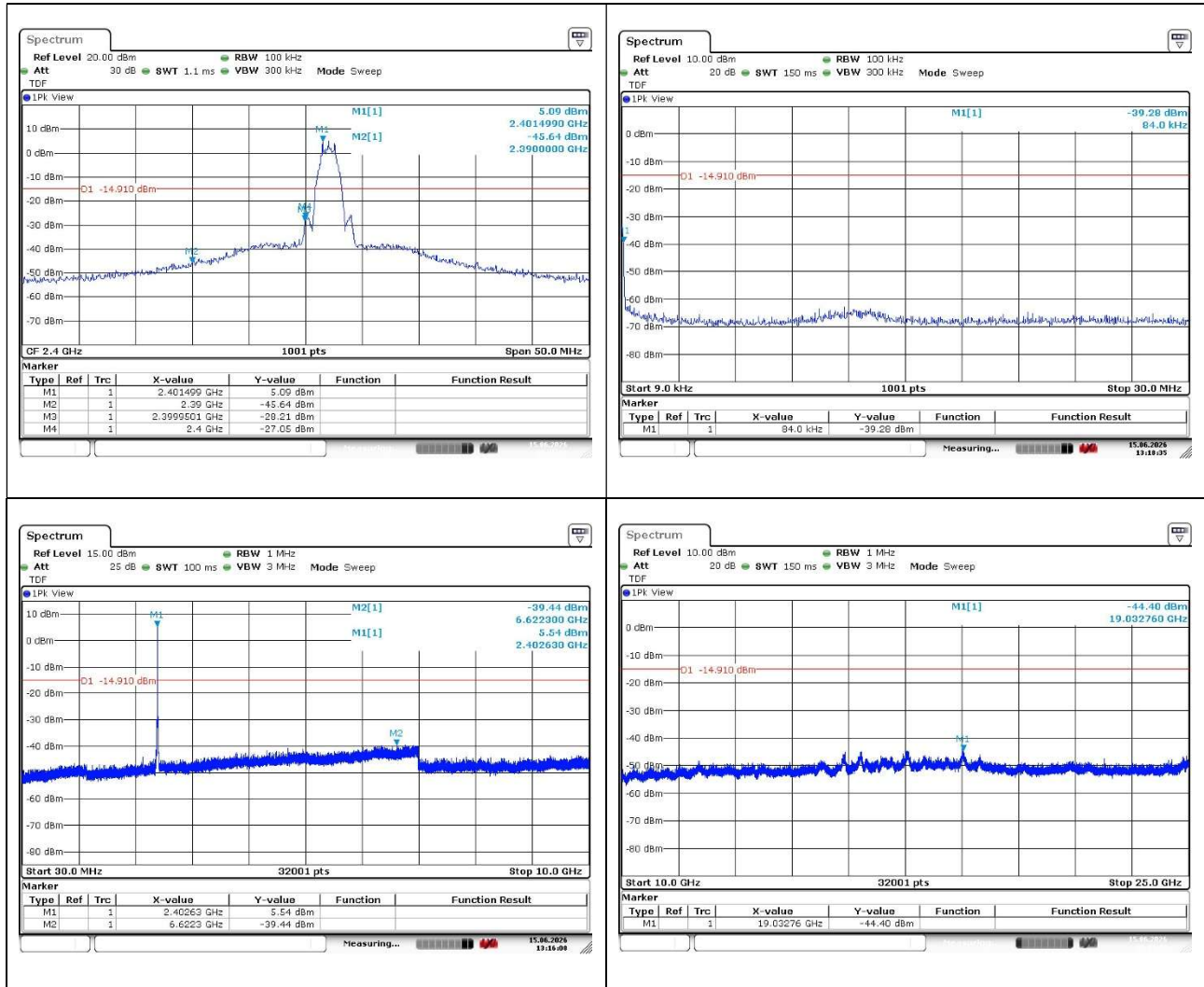


## High Channel

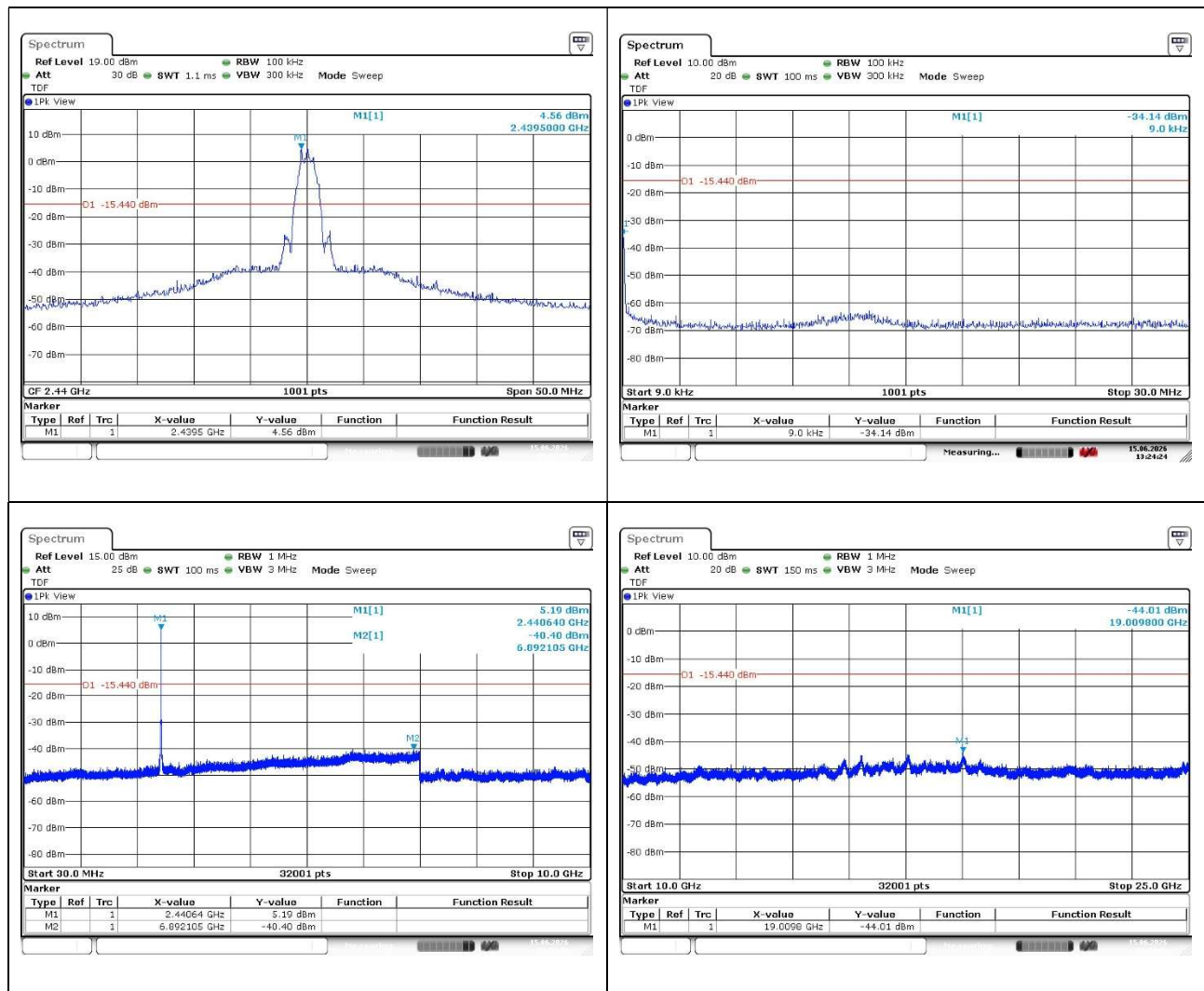


## - PHY 2M

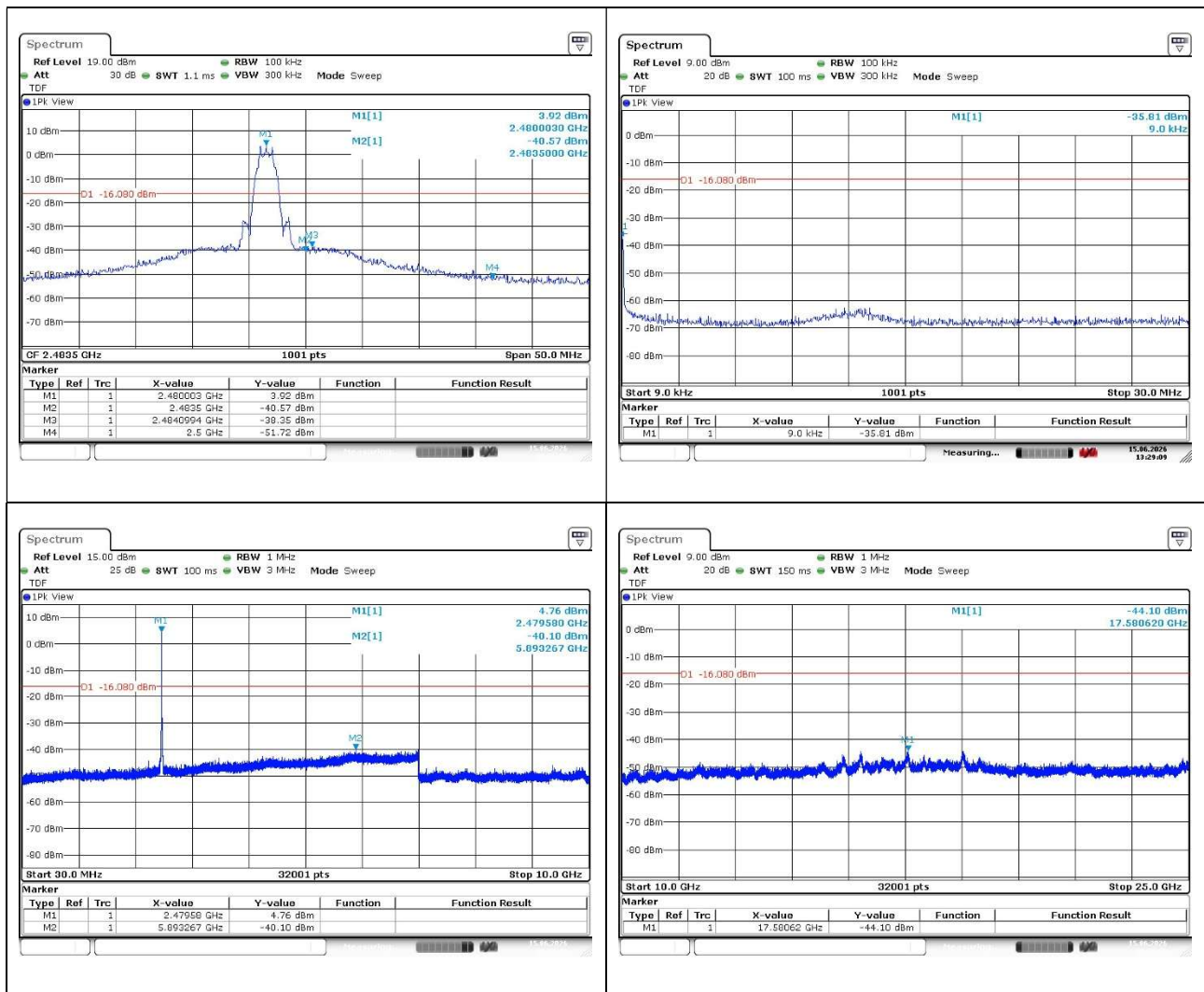
### Low Channel



## Middle Channel



## High Channel



## 3.6 dB Bandwidth and 99 % Bandwidth

### 3.1. Test Setup



### 3.2. Limit

#### 3.2.1. FCC

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902-928 MHz, 2 400-2 483.5 MHz, and 5 725-5 850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

#### 3.2.2. IC

According to RSS-247 Issue 4, 6.3.1(a), the minimum 6 dB bandwidth shall be 500 kHz

### 3.3. Test Procedure

The test follows section 11.8 DTS bandwidth of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISED).

#### 3.3.1. 6 dB Bandwidth

Tests performed using section 11.8.1 Option 1.

- Option 1:

1. Set RBW to = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
2. Set the VBW  $\geq [3 \times \text{RBW}]$ .
3. Detector = peak.
4. Trace mode = max hold.
5. Sweep = No faster than coupled (auto) time.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "-6 dB down amplitude". If a marker is below this "-6 dB down amplitude" value, then it shall be as close as possible to this value.

### 3.3.2. 99 % Bandwidth

The test follows section 6.9.3 of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISSED).

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.
  - 1) When measuring OBW for UWB, the VBW shall be set to three times the RBW or the maximum available VBW of the measuring instrument.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than  $[10 \log (\text{OBW}/\text{RBW})]$  below the reference level. Specific guidance is given in 4.1.6.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

### 3.4. Test Results

Ambient temperature :  $(23 \pm 1) ^\circ\text{C}$   
 Relative humidity : 47 %

#### - 6 dB Bandwidth

| Mode   | Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Bandwidth (kHz) |
|--------|---------|-----------------|----------------------|-------------------------|
| PHY 1M | Low     | 2 402           | 0.759                | 500                     |
|        | Middle  | 2 440           | 0.749                |                         |
|        | High    | 2 480           | 0.749                |                         |
| PHY 2M | Low     | 2 402           | 1.319                |                         |
|        | Middle  | 2 440           | 1.249                |                         |
|        | High    | 2 480           | 1.249                |                         |

#### - 99 % Bandwidth

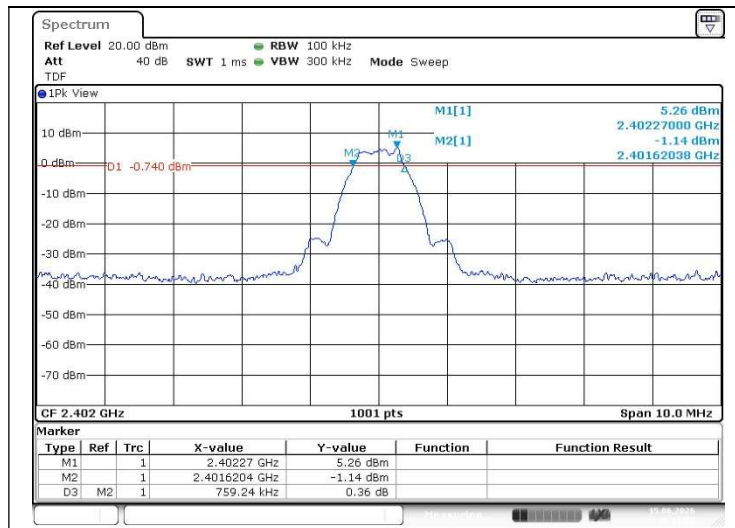
| Mode   | Channel | Frequency (MHz) | 99 % Bandwidth (MHz) | Limit |
|--------|---------|-----------------|----------------------|-------|
| PHY 1M | Low     | 2 402           | 1.044                | -     |
|        | Middle  | 2 440           | 1.039                |       |
|        | High    | 2 480           | 1.044                |       |
| PHY 2M | Low     | 2 402           | 2.058                |       |
|        | Middle  | 2 440           | 2.053                |       |
|        | High    | 2 480           | 2.053                |       |

- Test plots

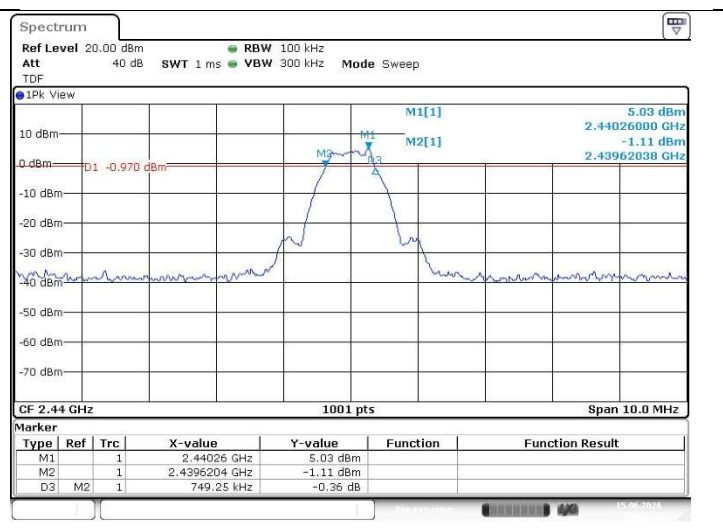
- 6 dB Bandwidth

- PHY 1M

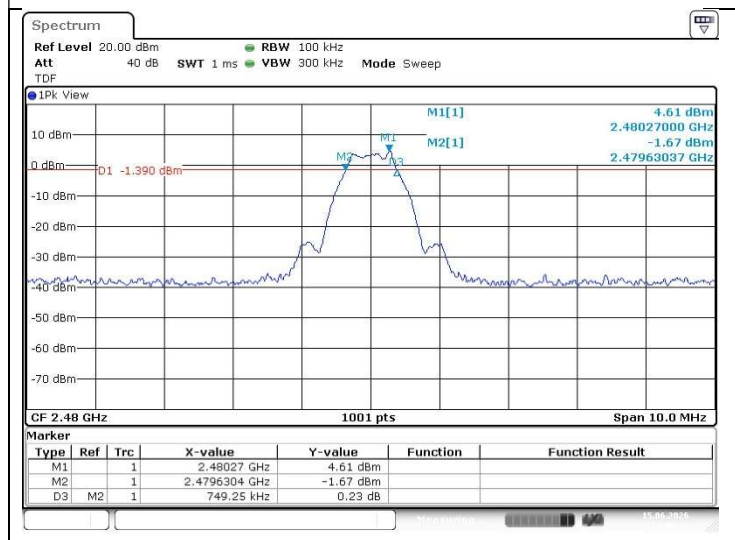
Low Channel



Middle Channel

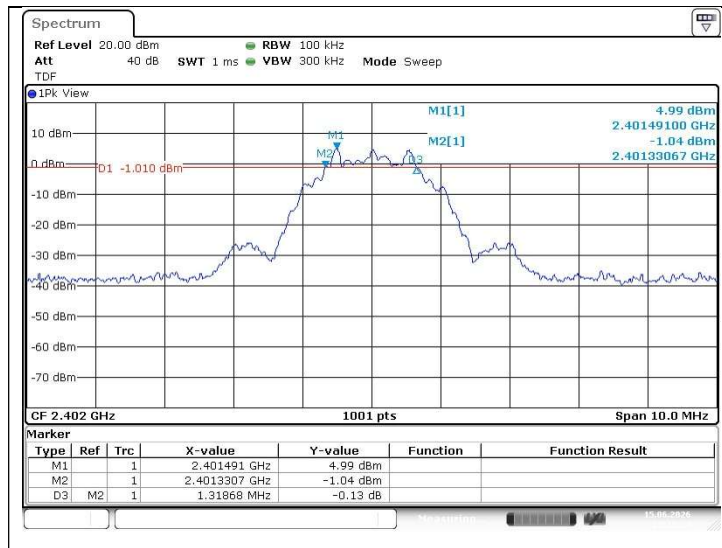


High Channel

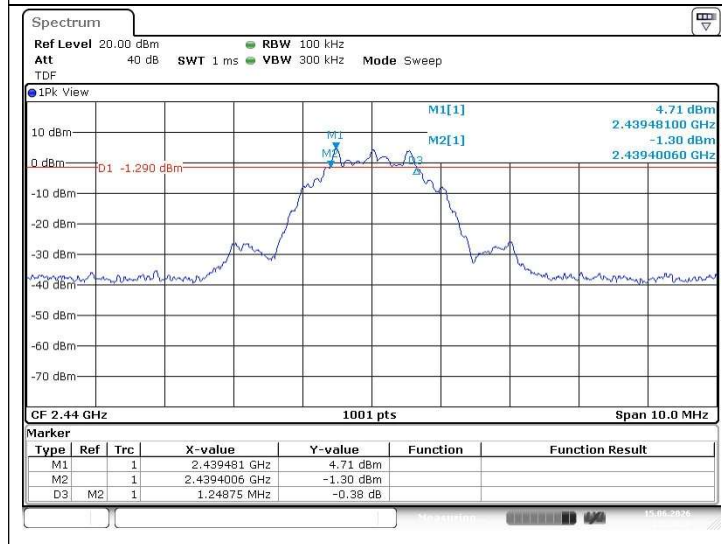


## - PHY 2M

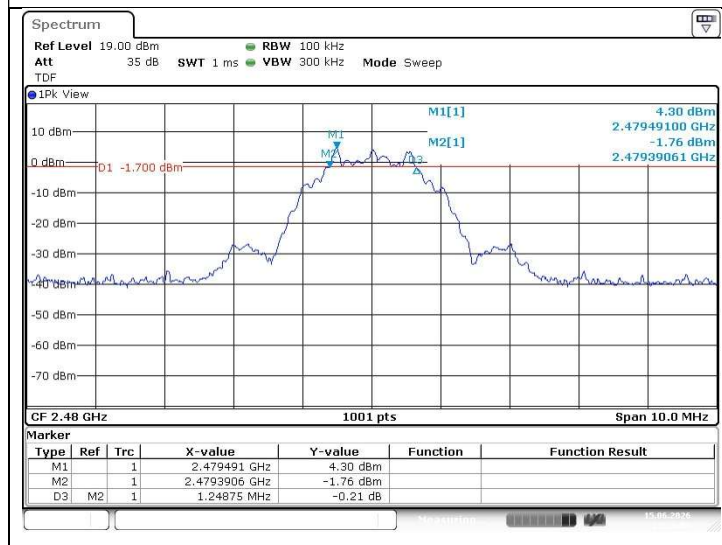
### Low Channel



### Middle Channel



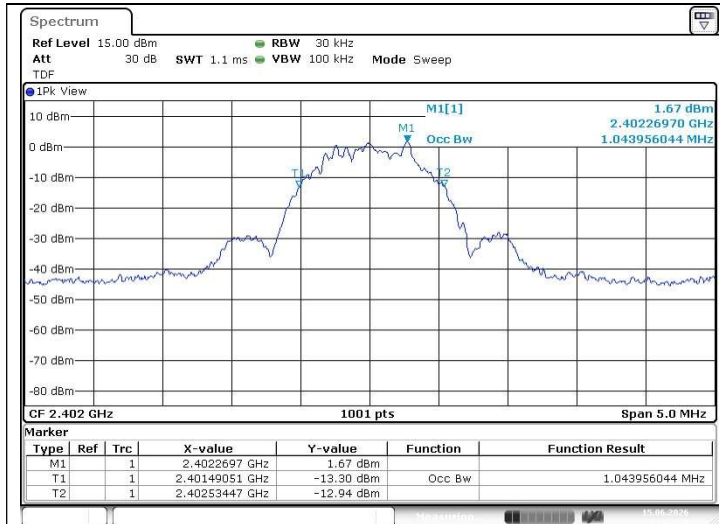
### High Channel



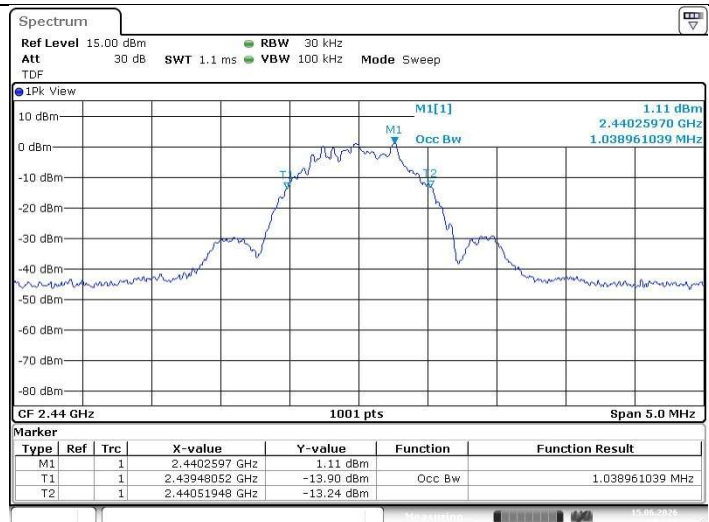
- 99 % Bandwidth

- PHY 1M

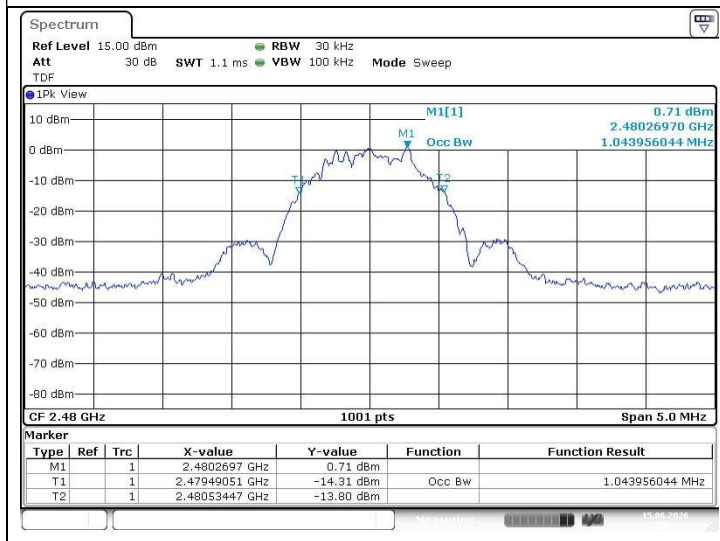
Low Channel



Middle Channel

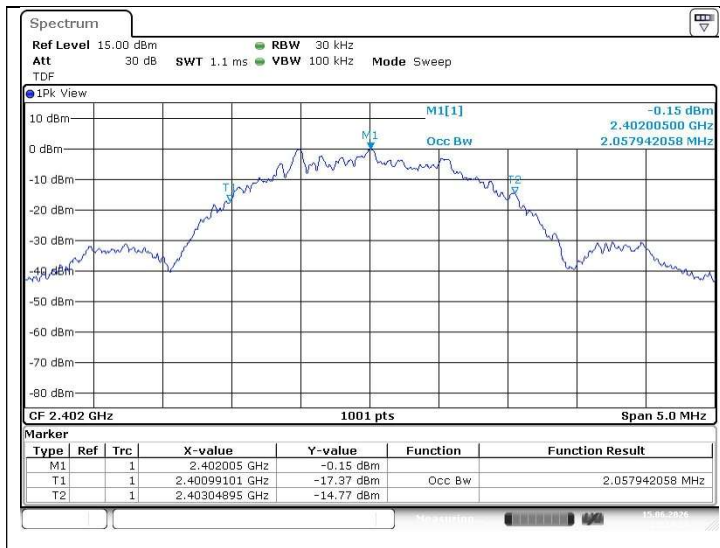


High Channel

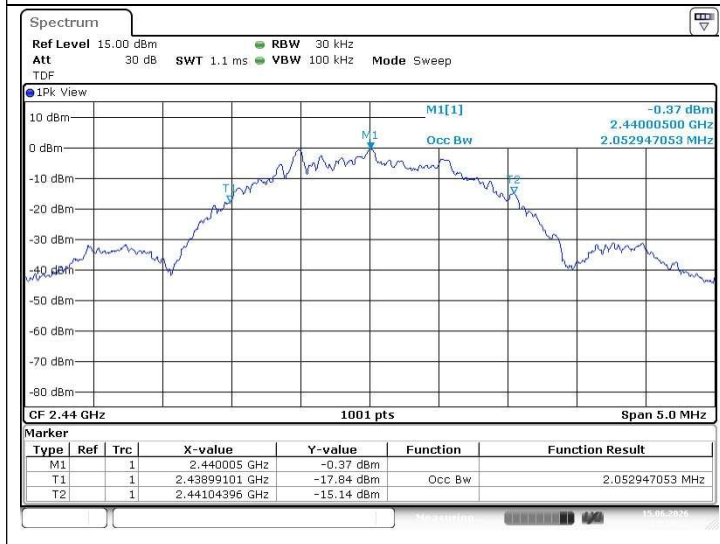


## - PHY 2M

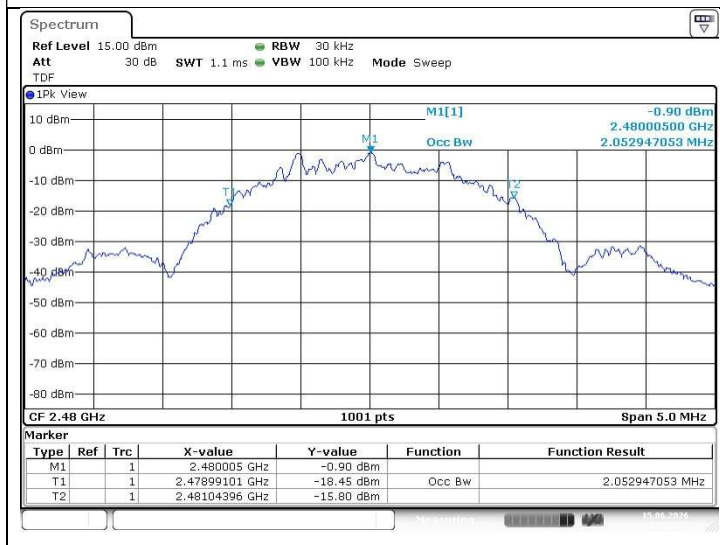
### Low Channel



### Middle Channel

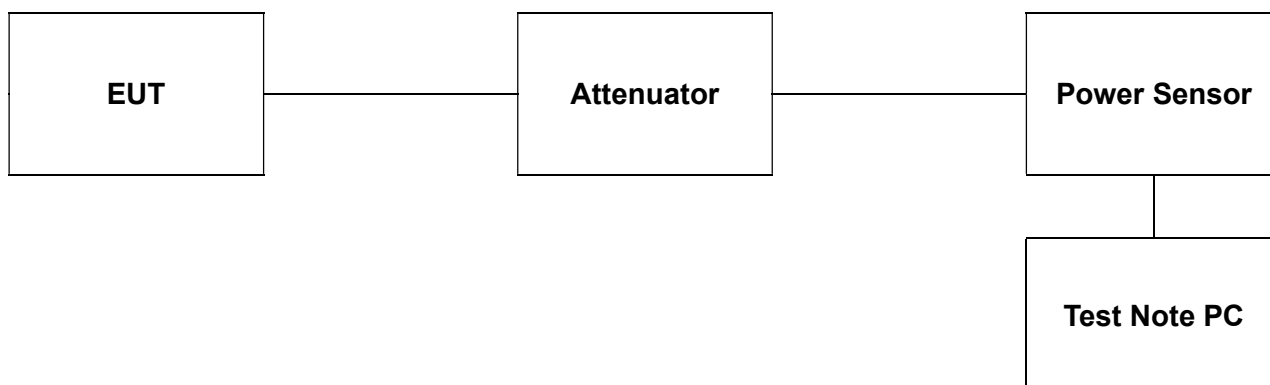


### High Channel



## 4. Maximum Peak Conducted Output Power

### 4.1. Test Setup



### 4.2. Limit

#### 4.2.1. FCC

According to §15.247(b)(3), for systems using digital modulation in the 902-928 MHz, 2 400-2 483.5 MHz, and 5 725-5 850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraph (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 4.2.2. IC

According to RSS-247 Issue 4, 6.3.2, For DTS operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W.

For DTS operating in the band 2 400-2 483.5 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W, except as provided in section 6.5 a) and b).

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power.

### 4.3. Test Procedure

The test follows section 11.9.1.3 of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISSED).

#### **PKPM1 Peak-reading power meter method**

- The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

The test follows section 11.9.2.3.2 of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISSED).

#### **Method AVGP-M (Measurement using a gated RF average-reading power meter)**

- Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

Gate triggering can be implemented in such a way that the sweep of the instrument is only active during the burst period of the device. Any Gate triggering shall be performed on the full power portion of the pulses and care must be taken to ensure that static portions of the pulse are not included in the measurement (ensuring that the trace is averaged over the entire symbol range). All Gate triggered measurements shall be accompanied by a Gate setup plot in the test report.

#### **Test program: (S/W name: R&S Power Viewer, Version: 3.2.0)**

1. Initially overall offset for attenuator and cable loss is measured per frequency.
2. Measured offset is inserted in test program in advance of measurement for output power.
3. Power for each frequency (channel) of device is investigated as final result.
4. Final result reported on this section from R&S power viewer program includes with several factors and test program shows only final result.

#### 4.4. Test Results

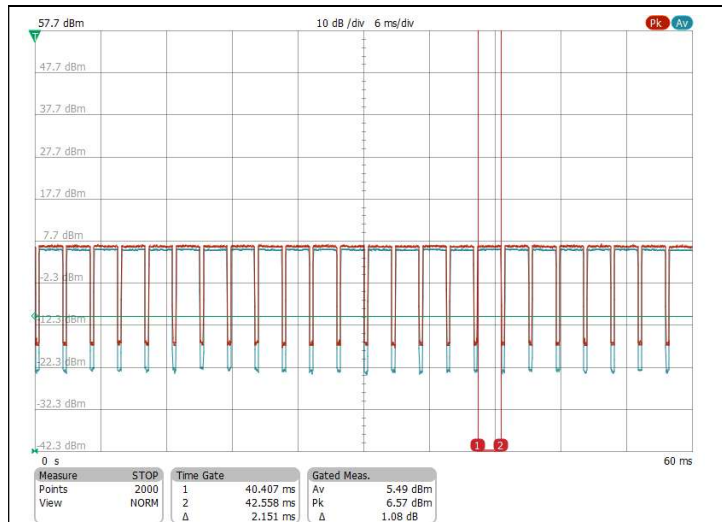
Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 %

| Mode   | Channel | Frequency<br>(MHz) | Average Power<br>Result<br>(dB m) | Peak Power<br>Result<br>(dB m) | Limit<br>(dB m) |
|--------|---------|--------------------|-----------------------------------|--------------------------------|-----------------|
| PHY 1M | Low     | 2 402              | <u>5.49</u>                       | <u>6.57</u>                    | 30              |
|        | Middle  | 2 440              | 5.14                              | 6.32                           |                 |
|        | High    | 2 480              | 4.68                              | 5.93                           |                 |
| PHY 2M | Low     | 2 402              | <u>5.34</u>                       | <u>6.60</u>                    |                 |
|        | Middle  | 2 440              | 5.04                              | 6.25                           |                 |
|        | High    | 2 480              | 4.82                              | 6.02                           |                 |

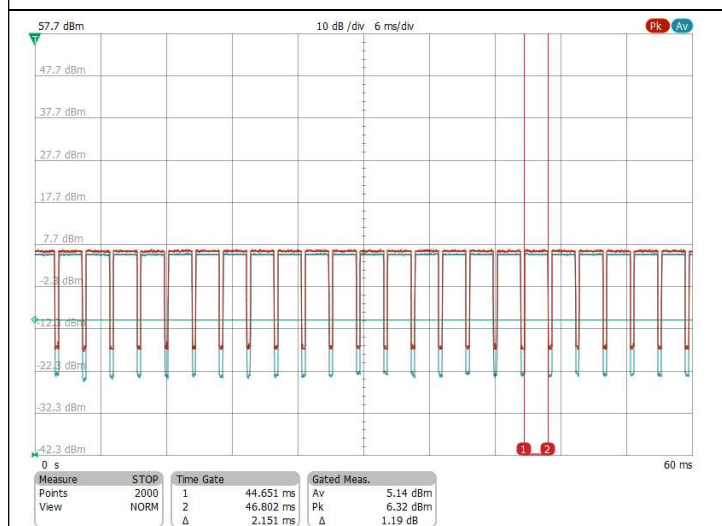
## Test plots

### - PHY 1M

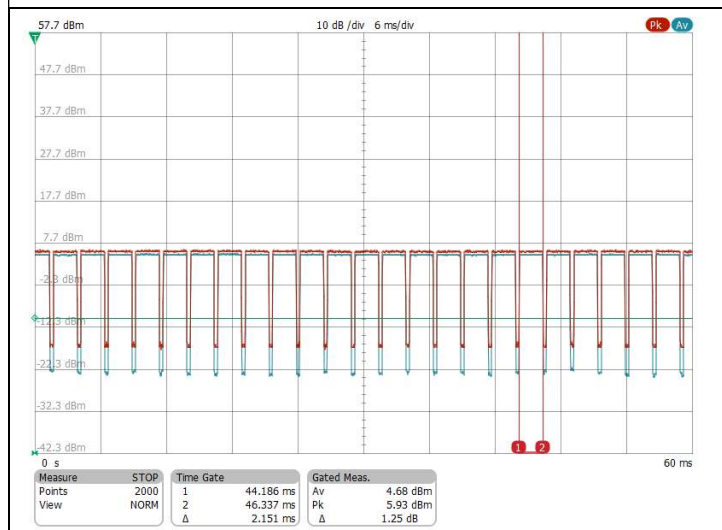
Low Channel



Middle Channel

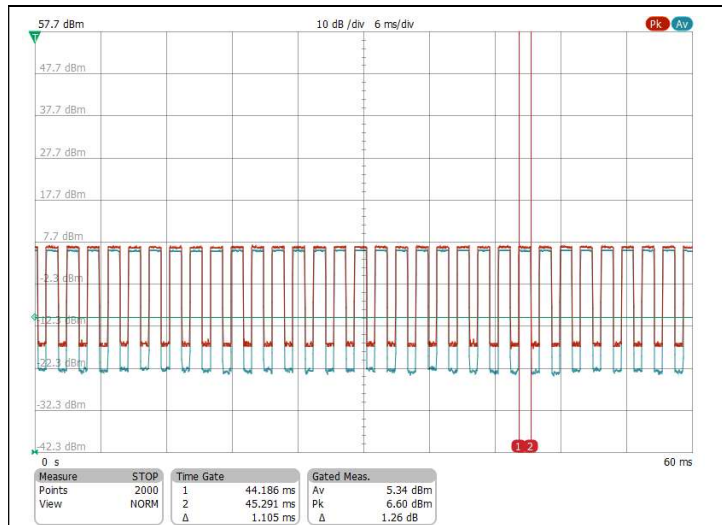


High Channel

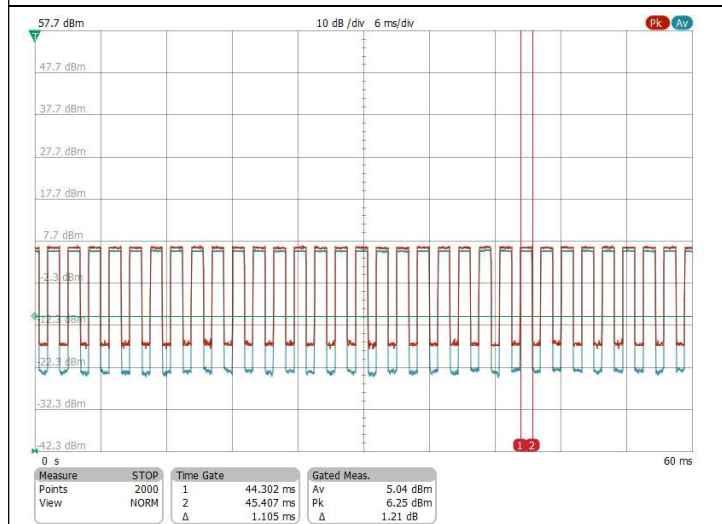


## - PHY 2M

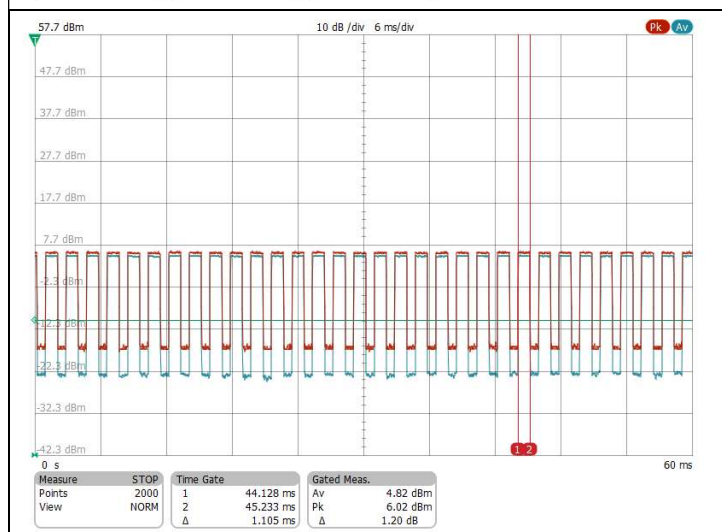
### Low Channel



### Middle Channel



### High Channel



## 5. Power Spectral Density

### 5.1. Test Setup



### 5.2. Limit

#### 5.2.1 FCC

According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

#### 5.2.2 IC

According to RSS-247 Issue 4, 6.3.1(b), the transmitter power spectral density conducted from the transmitter to the antenna(s) shall not be greater than 8 dBm/3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 6.3.2 The power spectral density shall be determined using the same method as is used to determine the maximum conducted output power.

### 5.3. Test Procedure

The measurements are recorded using the PKPSD measurement procedure in section 11.10.2 of ANSI C63.10-2020 (for FCC) and ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024 (for ISED).

- The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and is optional if the maximum conducted (average) output power was used to determine compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span > 1.5 times the DTS bandwidth.
3. Set the RBW to  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
4. Set the VBW  $\geq [3 \times \text{RBW}]$ .
5. Detector = peak.
6. Sweep time = No faster than coupled (auto) time.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

#### Note;

- For test plots, the reading values shown in plots were final results because all path loss of the cable and attenuator were investigated and compensated to spectrum analyzer as TDF function.

## 5.4. Test Results

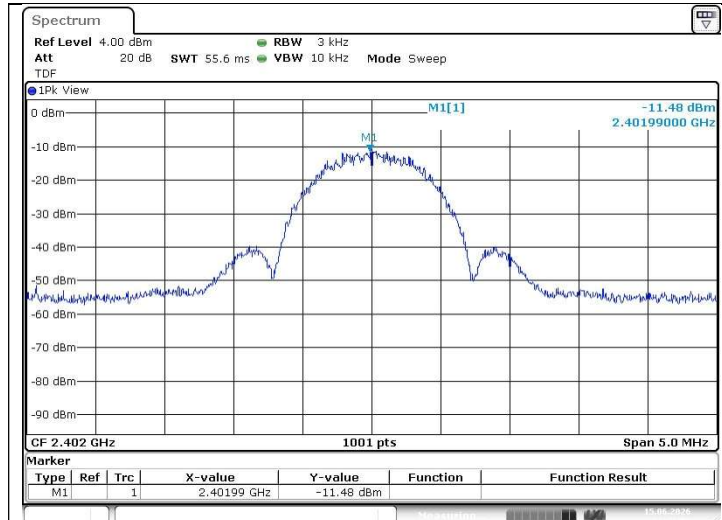
Ambient temperature :  $(23 \pm 1) ^\circ\text{C}$   
 Relative humidity : 47 %

| Mode   | Channel | Frequency<br>(MHz) | Measured PSD<br>(dB m/3 kHz) | Limit<br>(dB m/3 kHz) |
|--------|---------|--------------------|------------------------------|-----------------------|
| PHY 1M | Low     | 2 402              | -11.48                       | 8                     |
|        | Middle  | 2 440              | -11.77                       |                       |
|        | High    | 2 480              | -11.99                       |                       |
| PHY 2M | Low     | 2 402              | -13.23                       |                       |
|        | Middle  | 2 440              | -13.48                       |                       |
|        | High    | 2 480              | -14.08                       |                       |

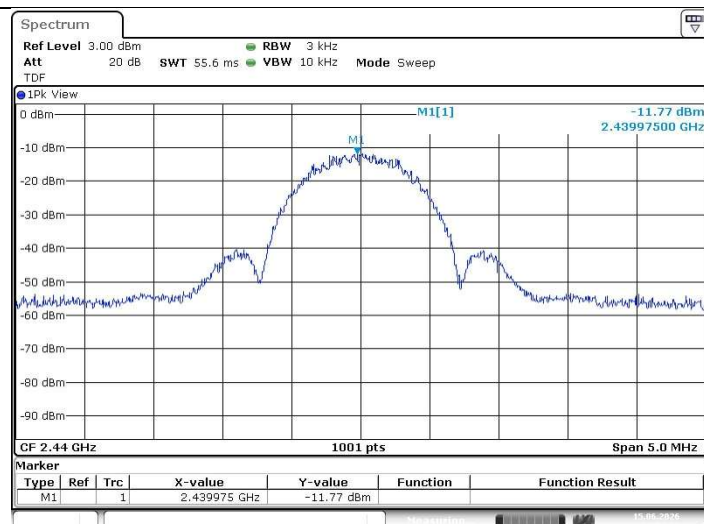
- Test plots

- PHY 1M

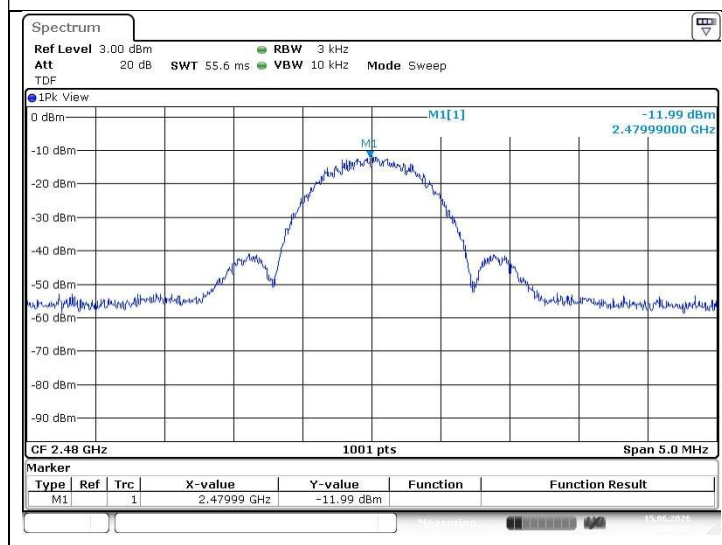
Low Channel



Middle Channel

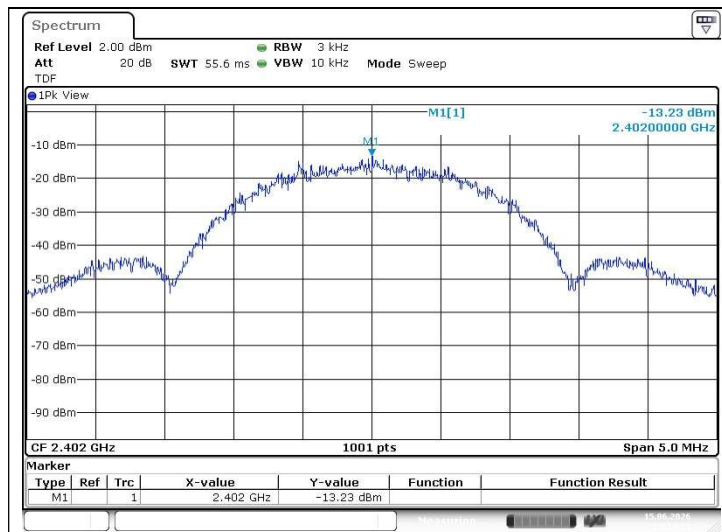


High Channel

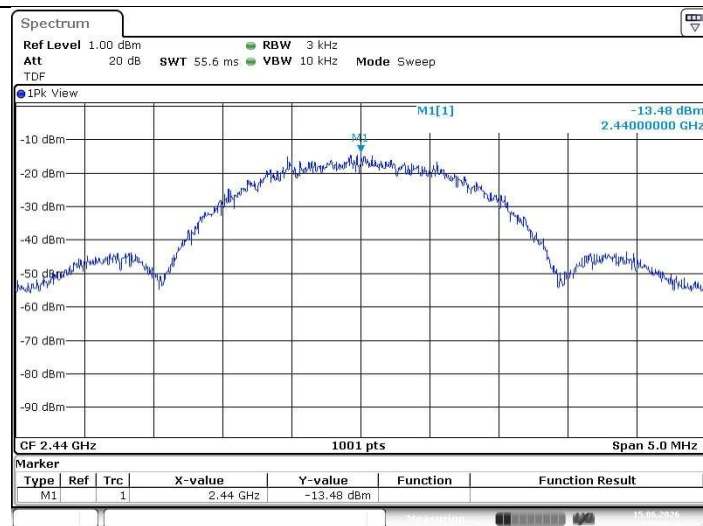


- PHY 2M

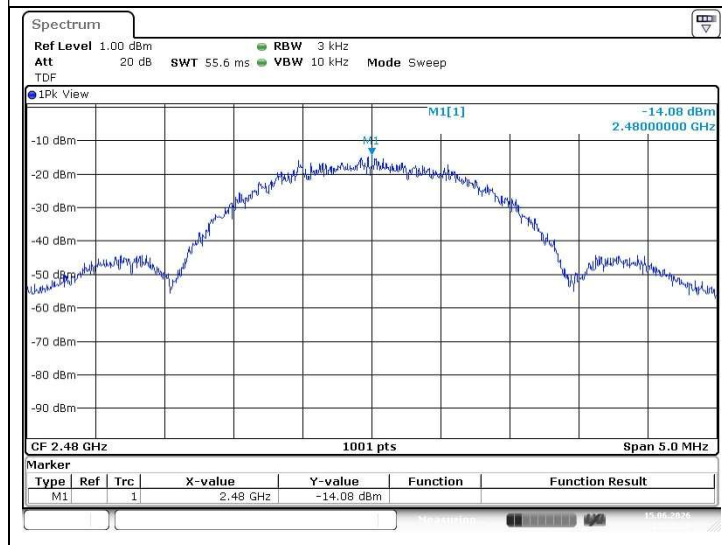
Low Channel



Middle Channel



High Channel





## 6. Antenna Requirement

### 6.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded. And according to FCC 47 CFR Section §15.247(b) if transmitting antennas of directional gain greater than 6 dB i are used, the conducted output power shall be reduced appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dB i.

### 6.2. Antenna Connected Construction

Antenna used in this product is PCB Pattern Antenna with gain of 1.88 dB i.

**- End of the Test Report -**