

# TEST REPORT

Applicant Name: FCC: VTech Telecommunications Ltd  
IC: VTECH TELECOMMUNICATIONS LIMITED  
Address: FCC: 23/F Tai Ping Ind Center Block 1 57 Ting Kok Rd Tai Po NT, Hong Kong  
IC: BL.1 23/F Tai Ping Industr Ctr. 57 Ting Kok Road Tai Po, NT Hongkong  
Report Number: 2501W00691E-RFB  
FCC ID: EW780-2365-01A  
IC: 1135B-80236500A

## Test Standard (s)

FCC PART 15.247; RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2; RSS-247 ISSUE 3, AUGUST 2023

## Sample Description

Product Type: Video Baby Monitor  
Model No.: VM819  
Multiple Model(s) No.: N/A  
Trade Mark: VTech  
Date Received: 2025/08/11  
Issue Date: 2025/10/24

|              |       |
|--------------|-------|
| Test Result: | Pass▲ |
|--------------|-------|

▲ In the configuration tested, the EUT complied with the standards above.

## Prepared and Checked By:

*Bruce Lin*

Bruce Lin  
RF Engineer

## Approved By:

*Nancy Wang*

Nancy Wang  
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

## Bay Area Compliance Laboratories Corp. (Shenzhen)

5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, Futian Free Trade Zone, Shenzhen, China

Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

## **TABLE OF CONTENTS**

|                                                                                           |           |
|-------------------------------------------------------------------------------------------|-----------|
| <b>DOCUMENT REVISION HISTORY .....</b>                                                    | <b>4</b>  |
| <b>GENERAL INFORMATION.....</b>                                                           | <b>5</b>  |
| PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....                                  | 5         |
| OBJECTIVE .....                                                                           | 5         |
| TEST METHODOLOGY .....                                                                    | 5         |
| MEASUREMENT UNCERTAINTY.....                                                              | 6         |
| TEST FACILITY .....                                                                       | 6         |
| <b>SYSTEM TEST CONFIGURATION.....</b>                                                     | <b>7</b>  |
| DESCRIPTION OF TEST CONFIGURATION .....                                                   | 7         |
| EUT EXERCISE SOFTWARE .....                                                               | 7         |
| SPECIAL ACCESSORIES.....                                                                  | 7         |
| EQUIPMENT MODIFICATIONS .....                                                             | 7         |
| SUPPORT EQUIPMENT LIST AND DETAILS .....                                                  | 7         |
| BLOCK DIAGRAM OF TEST SETUP .....                                                         | 8         |
| <b>SUMMARY OF TEST RESULTS .....</b>                                                      | <b>10</b> |
| <b>TEST EQUIPMENT LIST .....</b>                                                          | <b>11</b> |
| <b>RSS-102 - RF EXPOSURE .....</b>                                                        | <b>14</b> |
| APPLICABLE STANDARD .....                                                                 | 14        |
| <b>FCC §15.203 &amp; RSS-GEN §6.8 - ANTENNA REQUIREMENT .....</b>                         | <b>15</b> |
| APPLICABLE STANDARD .....                                                                 | 15        |
| ANTENNA CONNECTOR CONSTRUCTION .....                                                      | 15        |
| <b>FCC §15.207 (A) &amp; RSS-GEN §8.8 - AC LINE CONDUCTED EMISSIONS.....</b>              | <b>16</b> |
| APPLICABLE STANDARD .....                                                                 | 16        |
| EUT SETUP .....                                                                           | 17        |
| EMI TEST RECEIVER SETUP.....                                                              | 17        |
| TEST PROCEDURE .....                                                                      | 17        |
| FACTOR & OVER LIMIT CALCULATION.....                                                      | 18        |
| TEST DATA .....                                                                           | 18        |
| <b>FCC §15.205, §15.209 &amp; §15.247(D) &amp; RSS-247§ 5.5 - RADIATED EMISSIONS.....</b> | <b>23</b> |
| APPLICABLE STANDARD .....                                                                 | 23        |
| EUT SETUP .....                                                                           | 23        |
| EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP .....                                         | 24        |
| TEST PROCEDURE .....                                                                      | 25        |
| FACTOR & OVER LIMIT/MARGIN CALCULATION.....                                               | 25        |
| TEST DATA .....                                                                           | 25        |
| <b>FCC §15.247(A) (1) &amp; RSS-247 § 5.1 (B) - CHANNEL SEPARATION TEST .....</b>         | <b>50</b> |
| APPLICABLE STANDARD .....                                                                 | 50        |
| TEST PROCEDURE .....                                                                      | 50        |
| TEST DATA .....                                                                           | 51        |

|                                                                                                                                    |           |
|------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>FCC §15.247(A) (1) &amp; RSS-GEN § 6.7 &amp; RSS-247 § 5.1 (A) - 99% OCCUPIED BANDWIDTH &amp; 20 DB EMISSION BANDWIDTH.....</b> | <b>52</b> |
| APPLICABLE STANDARD .....                                                                                                          | 52        |
| TEST PROCEDURE .....                                                                                                               | 52        |
| TEST DATA .....                                                                                                                    | 53        |
| <b>FCC §15.247(A) (1) (III) &amp; RSS-247 § 5.1 (D) - QUANTITY OF HOPPING CHANNEL TEST.....</b>                                    | <b>56</b> |
| APPLICABLE STANDARD .....                                                                                                          | 56        |
| TEST PROCEDURE .....                                                                                                               | 56        |
| TEST DATA .....                                                                                                                    | 57        |
| <b>FCC §15.247(A) (1) (III) &amp; RSS-247 § 5.1 (D) - TIME OF OCCUPANCY (DWELL TIME) .....</b>                                     | <b>58</b> |
| APPLICABLE STANDARD .....                                                                                                          | 58        |
| TEST PROCEDURE .....                                                                                                               | 58        |
| TEST DATA .....                                                                                                                    | 59        |
| <b>FCC §15.247(B) (1) &amp; RSS-247§ 5.1(B) &amp; § 5.4(B) - PEAK OUTPUT POWER MEASUREMENT .....</b>                               | <b>61</b> |
| APPLICABLE STANDARD .....                                                                                                          | 61        |
| TEST PROCEDURE .....                                                                                                               | 61        |
| TEST DATA .....                                                                                                                    | 62        |
| <b>FCC §15.247(D) &amp; RSS-247 § 5.5 - BAND EDGES TESTING .....</b>                                                               | <b>64</b> |
| APPLICABLE STANDARD .....                                                                                                          | 64        |
| TEST PROCEDURE .....                                                                                                               | 64        |
| TEST DATA .....                                                                                                                    | 65        |
| <b>EUT PHOTOGRAPHS.....</b>                                                                                                        | <b>71</b> |
| <b>TEST SETUP PHOTOGRAPHS .....</b>                                                                                                | <b>72</b> |

DOCUMENT REVISION HISTORY

| Revision Number | Report Number   | Description of Revision | Date of Revision |
|-----------------|-----------------|-------------------------|------------------|
| 0               | 2501W00691E-RFB | Original Report         | 2025/10/24       |

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

|                                     |                                                                                                                                                                                                          |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HVIN                                | 35-202514PUA                                                                                                                                                                                             |
| FVIN                                | N/A                                                                                                                                                                                                      |
| Product                             | Video Baby Monitor                                                                                                                                                                                       |
| Tested Model                        | VM819                                                                                                                                                                                                    |
| Multiple Model(s)                   | N/A                                                                                                                                                                                                      |
| Frequency Range                     | 2405-2475MHz                                                                                                                                                                                             |
| Maximum conducted Peak output power | 18.62dBm                                                                                                                                                                                                 |
| Modulation Technique                | GFSK                                                                                                                                                                                                     |
| Antenna Specification <sup>#</sup>  | 0dBi(It is provided by the applicant)                                                                                                                                                                    |
| Voltage Range                       | DC 5V by adapter or DC 3.6V from Battery                                                                                                                                                                 |
| Sample number                       | 386P-6 for RF Conducted Test<br>386P-2 for Radiated Emissions<br>(Assigned by BACL, Shenzhen)                                                                                                            |
| Sample/EUT Status                   | Good condition                                                                                                                                                                                           |
| Adapter Information                 | Adapter1<br>Model: A318-050100W-US2<br>Input: AC 100-240V, 50/60Hz, 0.2A<br>Output: DC 5.0V, 1.0A<br>Adapter2<br>Model: VT05EUS05100<br>Input: AC100-240V, 50/60Hz, 0.15A<br>Output: DC 5.0V, 1.0A, 5.0W |

### Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules and RSS-247 Issue 3, August 2023, RSS-GEN Issue 5, Feb. 2021Amendment 2 of the Innovation, Science and Economic Development Canada rules.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020 + Cor.1-2023▼, RSS-Gen and RSS-247.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

## Measurement Uncertainty

| Parameter                             |                             | Uncertainty                            |
|---------------------------------------|-----------------------------|----------------------------------------|
| Occupied Channel Bandwidth            |                             | 109.2kHz(k=2, 95% level of confidence) |
| RF Frequency                          |                             | 56.6Hz(k=2, 95% level of confidence)   |
| RF output power, conducted            |                             | 0.86dB(k=2, 95% level of confidence)   |
| Unwanted Emission, conducted          |                             | 1.60dB(k=2, 95% level of confidence)   |
| AC Power Lines<br>Conducted Emissions | 9 kHz~150 KHz               | 3.63dB(k=2, 95% level of confidence)   |
|                                       | 150 kHz ~30MHz              | 3.66dB(k=2, 95% level of confidence)   |
| Radiated Emissions                    | 9kHz - 30MHz                | 3.60dB(k=2, 95% level of confidence)   |
|                                       | 30MHz~200MHz (Horizontal)   | 5.32dB(k=2, 95% level of confidence)   |
|                                       | 30MHz~200MHz (Vertical)     | 5.43dB(k=2, 95% level of confidence)   |
|                                       | 200MHz~1000MHz (Horizontal) | 5.77dB(k=2, 95% level of confidence)   |
|                                       | 200MHz~1000MHz (Vertical)   | 5.73dB(k=2, 95% level of confidence)   |
|                                       | 1GHz - 6GHz                 | 5.34dB(k=2, 95% level of confidence)   |
|                                       | 6GHz - 18GHz                | 5.40dB(k=2, 95% level of confidence)   |
|                                       | 18GHz - 40GHz               | 5.64dB(k=2, 95% level of confidence)   |
| Temperature                           |                             | ±1°C                                   |
| Humidity                              |                             | ±1%                                    |
| Supply voltages                       |                             | ±0.4%                                  |

*Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

## Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in an engineering mode.

Channel list

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 1       | 2405            | 9       | 2422            | 17      | 2439            | 25      | 2458            |
| 2       | 2407            | 10      | 2424            | 18      | 2441            | 26      | 2460            |
| 3       | 2409            | 11      | 2426            | 19      | 2444            | 27      | 2462            |
| 4       | 2411            | 12      | 2428            | 20      | 2446            | 28      | 2467            |
| 5       | 2413            | 13      | 2430            | 21      | 2450            | 29      | 2469            |
| 6       | 2415            | 14      | 2433            | 22      | 2452            | 30      | 2471            |
| 7       | 2418            | 15      | 2435            | 23      | 2454            | 31      | 2473            |
| 8       | 2420            | 16      | 2437            | 24      | 2456            | 32      | 2475            |

EUT was test in channel 1,18, 32.

### EUT Exercise Software

“SecureCRT.exe<sup>#</sup>” exercise software was used and the power level is default<sup>#</sup>. The software and power level was provided by the manufacturer.

### Special Accessories

No special accessory.

### Equipment Modifications

No modification was made to the EUT tested.

### Support Equipment List and Details

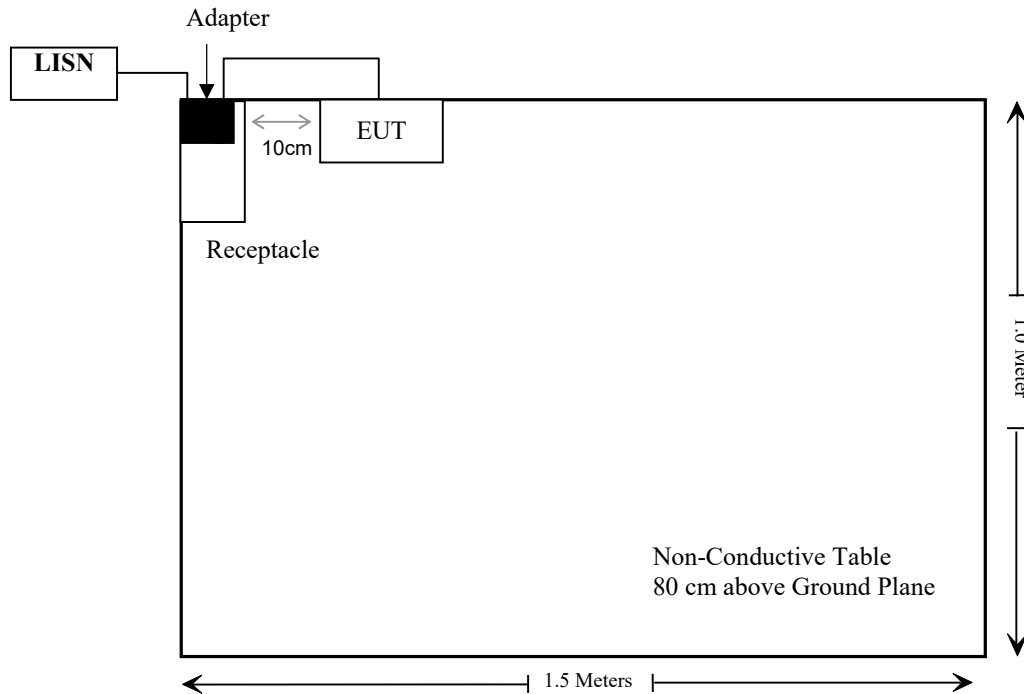
| Manufacturer | Description | Model   | Serial Number |
|--------------|-------------|---------|---------------|
| OUPU         | Receptacle  | Unknown | 6971041358020 |

### External I/O Cable

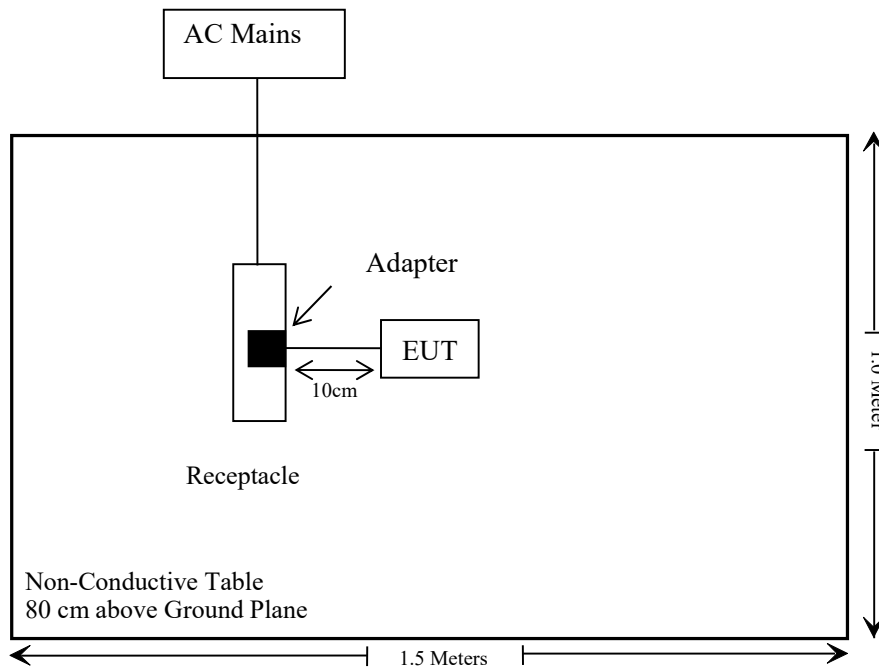
| Cable Description              | Length (m) | From Port     | To         |
|--------------------------------|------------|---------------|------------|
| Unshielded detachable AC cable | 1.2        | AC mains/LISN | Receptacle |
| Unshielded detachable DC cable | 1.2        | EUT           | Adapter    |

## Block Diagram of Test Setup

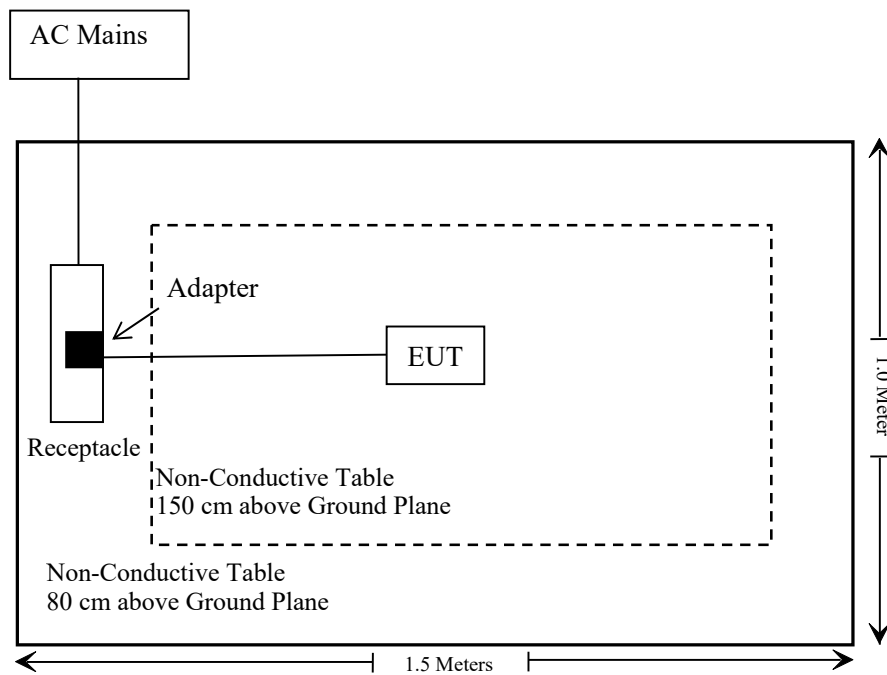
For Conducted Emission



For Radiated Emission for Below 1GHz



For Radiated Emission for Above 1GHz



**SUMMARY OF TEST RESULTS**

| <b>FCC Rules</b>              | <b>ISED Rules</b>               | <b>Description of Test</b>                        | <b>Result</b> |
|-------------------------------|---------------------------------|---------------------------------------------------|---------------|
| §1.1307§ &§2.1093             | RSS-102 §6                      | RF Exposure                                       | Compliant     |
| §15.203                       | RSS-Gen §6.8                    | Antenna Requirement                               | Compliant     |
| §15.207(a)                    | RSS-Gen §8.8                    | AC Line Conducted Emissions                       | Compliant     |
| §15.205, §15.209 & §15.247(d) | RSS-247 § 5.5                   | Radiated Emissions                                | Compliant     |
| §15.247(a)(1)                 | RSS- Gen§6.7, RSS-247 § 5.1 (a) | 99% Occupied Bandwidth & 20 dB Emission Bandwidth | Compliant     |
| §15.247(a)(1)                 | RSS-247 § 5.1 (b)               | Channel Separation Test                           | Compliant     |
| §15.247(a)(1)(iii)            | RSS-247 § 5.1 (d)               | Time of Occupancy (Dwell Time)                    | Compliant     |
| §15.247(a)(1)(iii)            | RSS-247 § 5.1 (d)               | Quantity of hopping channel Test                  | Compliant     |
| §15.247(b)(1)                 | RSS-247 § 5.1(b) &§ 5.4(b)      | Peak Output Power Measurement                     | Compliant     |
| §15.247(d)                    | RSS-247 § 5.5                   | Band edges                                        | Compliant     |
| §15.247(d)                    | RSS-247 § 5.5                   | Conducted Spurious Emission                       | Compliant     |

**TEST EQUIPMENT LIST**

| Manufacturer                   | Description                       | Model             | Serial Number          | Calibration Date | Calibration Due Date |
|--------------------------------|-----------------------------------|-------------------|------------------------|------------------|----------------------|
| <b>Conducted Emission Test</b> |                                   |                   |                        |                  |                      |
| Rohde & Schwarz                | EMI Test Receiver                 | ESCI              | 101120                 | 2024/12/04       | 2025/12/03           |
| Rohde & Schwarz                | LISN                              | ENV216            | 101613                 | 2024/12/04       | 2025/12/03           |
| Rohde & Schwarz                | Transient Limiter                 | ESH3Z2            | DE25985                | 2025/04/29       | 2026/04/28           |
| Unknown                        | CE Cable                          | Unknown           | UF A210B-1-0720-504504 | 2025/04/29       | 2026/04/28           |
| Audix                          | EMI Test software                 | E3                | 191218(V9)             | NCR              | NCR                  |
| <b>Radiated Emission Test</b>  |                                   |                   |                        |                  |                      |
| Rohde & Schwarz                | EMI Test Receiver                 | ESR3              | 102455                 | 2024/12/04       | 2025/12/03           |
| Sonoma instrument              | Pre-amplifier                     | 310 N             | 186238                 | 2025/04/29       | 2026/04/28           |
| Sunol Sciences                 | Broadband Antenna                 | JB1               | A040904-1              | 2023/07/20       | 2026/07/19           |
| Unknown                        | Cable                             | Chamber A Cable 1 | N/A                    | 2025/04/29       | 2026/04/28           |
| Unknown                        | Cable                             | XH500C            | J-10M-A                | 2025/04/29       | 2026/04/28           |
| BACL                           | Active Loop Antenna               | 1313-1A           | 4031911                | 2024/05/14       | 2027/05/13           |
| Unknown                        | Cable                             | 2Y194             | 0735                   | 2024/12/04       | 2025/12/03           |
| Unknown                        | Cable                             | PNG214            | 1354                   | 2024/12/04       | 2025/12/03           |
| Audix                          | EMI Test software                 | E3                | 19821b(V9)             | NCR              | NCR                  |
| Rohde & Schwarz                | Spectrum Analyzer                 | FSV40             | 101605                 | 2025/09/01       | 2026/08/31           |
| A.H.System                     | Preamplifier                      | PAM-0118P         | 489                    | 2024/11/15       | 2025/11/14           |
| Schwarzbeck                    | Horn Antenna                      | BBHA9120D(1201)   | 1143                   | 2023/07/26       | 2026/07/25           |
| Unknown                        | RF Cable                          | KMSE              | 735                    | 2024/12/06       | 2025/12/05           |
| Unknown                        | RF Cable                          | UFA147            | 219661                 | 2024/12/06       | 2025/12/05           |
| Unknown                        | RF Cable                          | XH750A-N          | J-10M                  | 2024/12/06       | 2025/12/05           |
| JD                             | Filter Switch Unit                | DT7220FSU         | DS79906                | 2025/08/12       | 2026/08/11           |
| JD                             | Multiplex Switch Test Control Set | DT7220SCU         | DS79903                | 2025/08/12       | 2026/08/11           |
| Audix                          | EMI Test software                 | E3                | 191218(V9)             | NCR              | NCR                  |
| A.H.System                     | Pre-amplifier                     | PAM-1840VH        | 190                    | 2025/04/29       | 2026/04/28           |
| Electro-Mechanics Co           | Horn Antenna                      | 3116              | 9510-2270              | 2023/09/18       | 2026/09/17           |
| UTIFLEX                        | RF Cable                          | NO. 13            | 232308-001             | 2024/12/18       | 2025/12/17           |

| Manufacturer      | Description       | Model   | Serial Number | Calibration Date | Calibration Due Date |
|-------------------|-------------------|---------|---------------|------------------|----------------------|
| RF Conducted Test |                   |         |               |                  |                      |
| Rohde & Schwarz   | Spectrum Analyzer | FSU26   | 200120        | 2024/12/04       | 2025/12/03           |
| Unknown           | 10dB Attenuator   | Unknown | F-03-EM190    | 2025/06/26       | 2026/06/25           |

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

---

## **FCC §1.1307& §2.1093 - RF EXPOSURE**

---

### **Applicable Standard**

FCC§1.1307 and §2.1093.

### **Test Result**

Compliance, please refer to the SAR report: 2501W00691E-SAA.

---

## **RSS-102 - RF EXPOSURE**

---

### **Applicable Standard**

According to RSS-102 Issue 6, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

**Result:** Compliance.

Please refer to SAR Report Number: 2501W00691E-SAB.

## **FCC §15.203 & RSS-GEN §6.8 - ANTENNA REQUIREMENT**

### **Applicable Standard**

According to FCC § 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.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device. Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

### **Antenna Connector Construction**

The EUT has one internal antenna arrangements which were permanently attached and the gain is 0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

| Type     | Antenna Gain <sup>#</sup> | Impedance |
|----------|---------------------------|-----------|
| Monopole | 0dBi                      | 50Ω       |

**Result: Compliant**

## **FCC §15.207 (a) & RSS-GEN §8.8 - AC LINE CONDUCTED EMISSIONS**

### **Applicable Standard**

FCC §15.207(a) & RSS-Gen §8.8

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50  $\mu$ H / 50  $\Omega$  line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

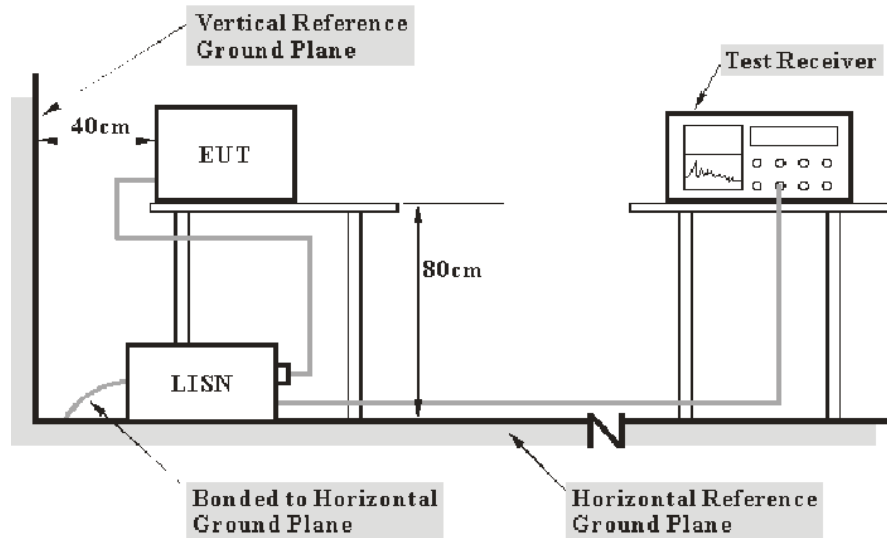
| <b>Table 4 - AC Power Lines Conducted Emission Limits</b> |                                              |                       |
|-----------------------------------------------------------|----------------------------------------------|-----------------------|
| <b>Frequency range<br/>(MHz)</b>                          | <b>Conducted limit (dB<math>\mu</math>V)</b> |                       |
|                                                           | <b>Quasi-Peak</b>                            | <b>Average</b>        |
| 0.15 – 0.5                                                | 66 to 56 <sup>1</sup>                        | 56 to 46 <sup>1</sup> |
| 0.5 – 5                                                   | 56                                           | 46                    |
| 5 – 30                                                    | 60                                           | 50                    |

**Note 1:** The level decreases linearly with the logarithm of the frequency.

For an EUT with a permanent or detachable antenna operating between 150 kHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:

- (a) Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.
- (b) Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

## EUT Setup



Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with ANSI C63.10-2020. The related limit was specified in FCC Part 15.207 and RSS-Gen limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

## EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

| Frequency Range  | RBW   |
|------------------|-------|
| 150 kHz – 30 MHz | 9 kHz |

## Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

## Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

$$\text{Factor} = \text{LISN VDF} + \text{Cable Loss}$$

The “**Over limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

$$\begin{aligned}\text{Over Limit} &= \text{Level} - \text{Limit} \\ \text{Level} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

## Test Data

### Environmental Conditions

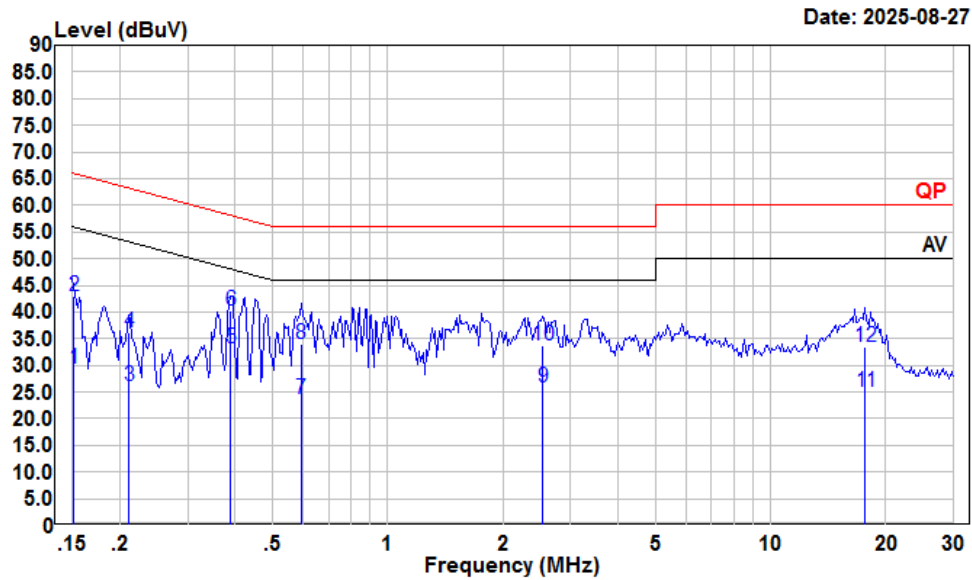
|                           |             |
|---------------------------|-------------|
| <b>Temperature:</b>       | 24~27 °C    |
| <b>Relative Humidity:</b> | 60~70 %     |
| <b>ATM Pressure:</b>      | 100~101 kPa |

*The testing was performed by Alex Yan and Macy Shi from 2025-08-27 to 2025-09-27.*

*EUT operation mode: Transmitting (worst case is low channel)*

For Adapter1

AC 120V/60 Hz, Line



Condition: Line

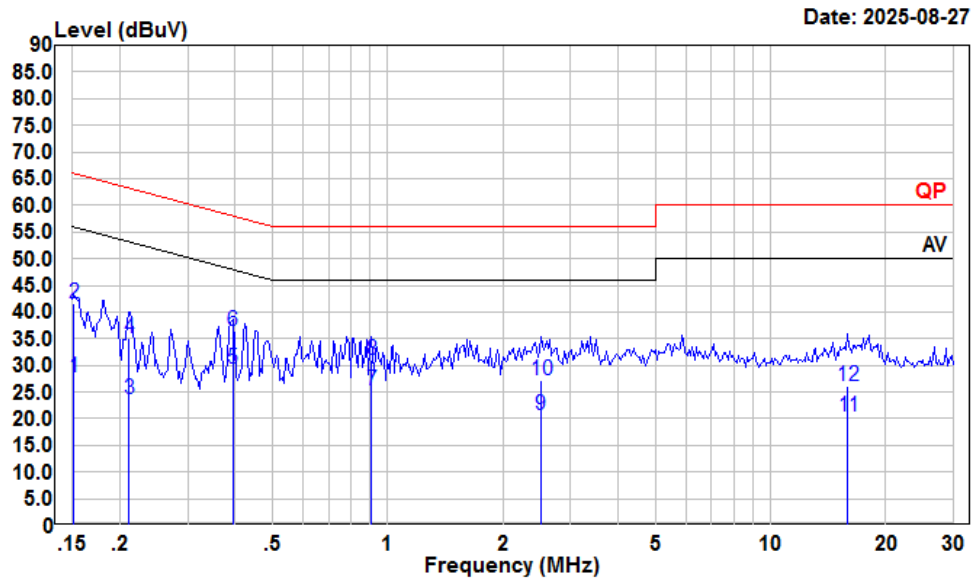
Project : 2501W00691E-RF

tester : Alex Yan Note:Transmitting

Setting : RBW:9kHz

|    | Freq   | Read Level | LISN Level | LISN Factor | Cable Loss | Limit Line | Over Limit | Remark  |
|----|--------|------------|------------|-------------|------------|------------|------------|---------|
|    | MHz    | dBuV       | dBuV       | dB          | dB         | dBuV       | dB         |         |
| 1  | 0.152  | 8.86       | 29.43      | 10.41       | 10.16      | 55.91      | -26.48     | Average |
| 2  | 0.152  | 22.32      | 42.89      | 10.41       | 10.16      | 65.91      | -23.02     | QP      |
| 3  | 0.211  | 5.17       | 26.05      | 10.69       | 10.19      | 53.18      | -27.13     | Average |
| 4  | 0.211  | 15.27      | 36.15      | 10.69       | 10.19      | 63.18      | -27.03     | QP      |
| 5  | 0.389  | 12.46      | 33.22      | 10.55       | 10.21      | 48.08      | -14.86     | Average |
| 6  | 0.389  | 19.56      | 40.32      | 10.55       | 10.21      | 58.08      | -17.76     | QP      |
| 7  | 0.595  | 2.84       | 23.78      | 10.71       | 10.23      | 46.00      | -22.22     | Average |
| 8  | 0.595  | 13.13      | 34.07      | 10.71       | 10.23      | 56.00      | -21.93     | QP      |
| 9  | 2.540  | 4.57       | 25.85      | 11.03       | 10.25      | 46.00      | -20.15     | Average |
| 10 | 2.540  | 12.50      | 33.78      | 11.03       | 10.25      | 56.00      | -22.22     | QP      |
| 11 | 17.661 | 3.96       | 24.92      | 10.70       | 10.26      | 50.00      | -25.08     | Average |
| 12 | 17.661 | 12.49      | 33.45      | 10.70       | 10.26      | 60.00      | -26.55     | QP      |

## AC 120V/60 Hz, Neutral



Condition: Neutral

Project : 2501W00691E-RF

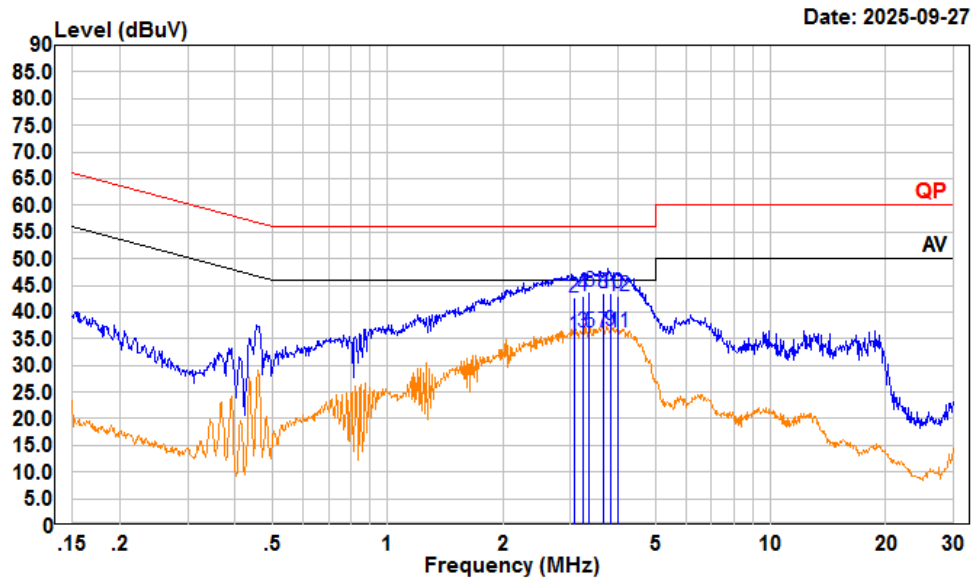
tester : Alex Yan Note:Transmitting

Setting : RBW:9kHz

|    | Freq   | Read Level | LISN Level | LISN Factor | Cable Loss | Limit Line | Over Limit | Remark  |
|----|--------|------------|------------|-------------|------------|------------|------------|---------|
|    | MHz    | dBuV       | dBuV       | dB          | dB         | dBuV       | dB         |         |
| 1  | 0.152  | 7.27       | 27.84      | 10.41       | 10.16      | 55.91      | -28.07     | Average |
| 2  | 0.152  | 21.13      | 41.70      | 10.41       | 10.16      | 65.91      | -24.21     | QP      |
| 3  | 0.211  | 2.79       | 23.76      | 10.78       | 10.19      | 53.18      | -29.42     | Average |
| 4  | 0.211  | 14.22      | 35.19      | 10.78       | 10.19      | 63.18      | -27.99     | QP      |
| 5  | 0.393  | 8.67       | 29.46      | 10.58       | 10.21      | 47.99      | -18.53     | Average |
| 6  | 0.393  | 15.62      | 36.41      | 10.58       | 10.21      | 57.99      | -21.58     | QP      |
| 7  | 0.909  | 4.41       | 25.38      | 10.75       | 10.22      | 46.00      | -20.62     | Average |
| 8  | 0.909  | 10.05      | 31.02      | 10.75       | 10.22      | 56.00      | -24.98     | QP      |
| 9  | 2.513  | -0.48      | 20.57      | 10.80       | 10.25      | 46.00      | -25.43     | Average |
| 10 | 2.513  | 6.02       | 27.07      | 10.80       | 10.25      | 56.00      | -28.93     | QP      |
| 11 | 15.885 | -0.30      | 20.43      | 10.46       | 10.27      | 50.00      | -29.57     | Average |
| 12 | 15.885 | 5.44       | 26.17      | 10.46       | 10.27      | 60.00      | -33.83     | QP      |

For Adapter2

AC 120V/60 Hz, Line



Condition: Line

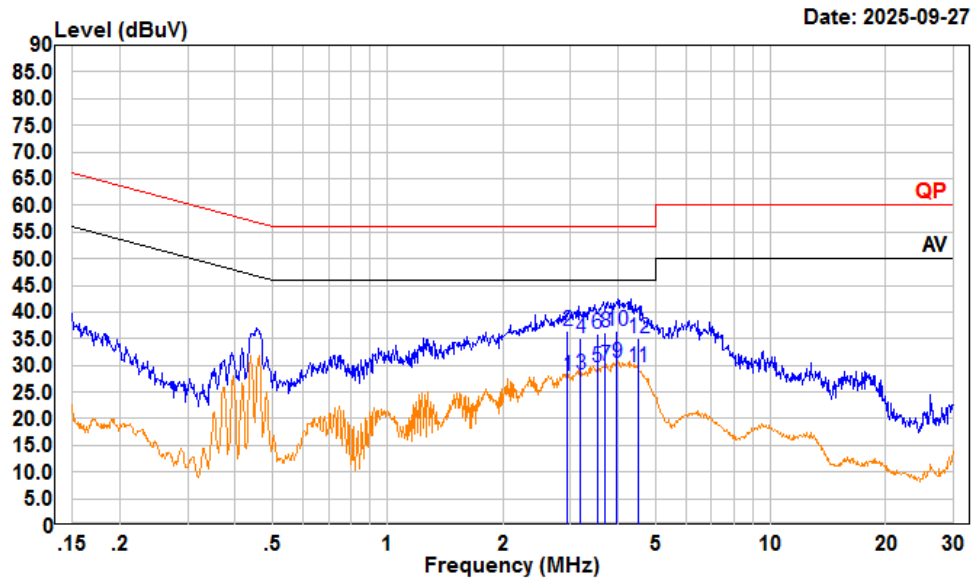
Project : 2501W00691E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9kHz

|    | Freq  | Read Level | LISN Level | LISN Factor | Cable Loss | Limit Line | Over Limit | Remark  |
|----|-------|------------|------------|-------------|------------|------------|------------|---------|
|    | MHz   | dBuV       | dBuV       | dB          | dB         | dBuV       | dB         |         |
| 1  | 3.061 | 14.49      | 35.74      | 10.98       | 10.27      | 46.00      | -10.26     | Average |
| 2  | 3.061 | 21.52      | 42.77      | 10.98       | 10.27      | 56.00      | -13.23     | QP      |
| 3  | 3.229 | 15.04      | 36.26      | 10.96       | 10.26      | 46.00      | -9.74      | Average |
| 4  | 3.229 | 21.89      | 43.11      | 10.96       | 10.26      | 56.00      | -12.89     | QP      |
| 5  | 3.367 | 15.07      | 36.28      | 10.95       | 10.26      | 46.00      | -9.72      | Average |
| 6  | 3.367 | 22.57      | 43.78      | 10.95       | 10.26      | 56.00      | -12.22     | QP      |
| 7  | 3.654 | 15.12      | 36.30      | 10.93       | 10.25      | 46.00      | -9.70      | Average |
| 8  | 3.654 | 22.23      | 43.41      | 10.93       | 10.25      | 56.00      | -12.59     | QP      |
| 9  | 3.809 | 15.22      | 36.38      | 10.91       | 10.25      | 46.00      | -9.62      | Average |
| 10 | 3.809 | 22.41      | 43.57      | 10.91       | 10.25      | 56.00      | -12.43     | QP      |
| 11 | 4.006 | 14.94      | 36.08      | 10.90       | 10.24      | 46.00      | -9.92      | Average |
| 12 | 4.006 | 21.71      | 42.85      | 10.90       | 10.24      | 56.00      | -13.15     | QP      |

## AC 120V/60 Hz, Neutral



Condition: neutral

Project : 2501W00691E-RF

tester : Macy.shi Note:Transmitting

Setting : RBW:9kHz

|    | Freq  | Read Level | LISN Level | LISN Factor | Cable Loss | Limit Line | Over Limit | Remark  |
|----|-------|------------|------------|-------------|------------|------------|------------|---------|
|    | MHz   | dBuV       | dBuV       | dB          | dB         | dBuV       | dB         |         |
| 1  | 2.955 | 6.90       | 28.04      | 10.87       | 10.27      | 46.00      | -17.96     | Average |
| 2  | 2.955 | 15.20      | 36.34      | 10.87       | 10.27      | 56.00      | -19.66     | QP      |
| 3  | 3.184 | 7.17       | 28.33      | 10.90       | 10.26      | 46.00      | -17.67     | Average |
| 4  | 3.184 | 13.95      | 35.11      | 10.90       | 10.26      | 56.00      | -20.89     | QP      |
| 5  | 3.523 | 8.57       | 29.77      | 10.95       | 10.25      | 46.00      | -16.23     | Average |
| 6  | 3.523 | 14.74      | 35.94      | 10.95       | 10.25      | 56.00      | -20.06     | QP      |
| 7  | 3.696 | 8.76       | 29.98      | 10.97       | 10.25      | 46.00      | -16.02     | Average |
| 8  | 3.696 | 14.97      | 36.19      | 10.97       | 10.25      | 56.00      | -19.81     | QP      |
| 9  | 3.963 | 9.33       | 30.57      | 11.00       | 10.24      | 46.00      | -15.43     | Average |
| 10 | 3.963 | 15.22      | 36.46      | 11.00       | 10.24      | 56.00      | -19.54     | QP      |
| 11 | 4.499 | 8.58       | 29.76      | 10.92       | 10.26      | 46.00      | -16.24     | Average |
| 12 | 4.499 | 14.03      | 35.21      | 10.92       | 10.26      | 56.00      | -20.79     | QP      |

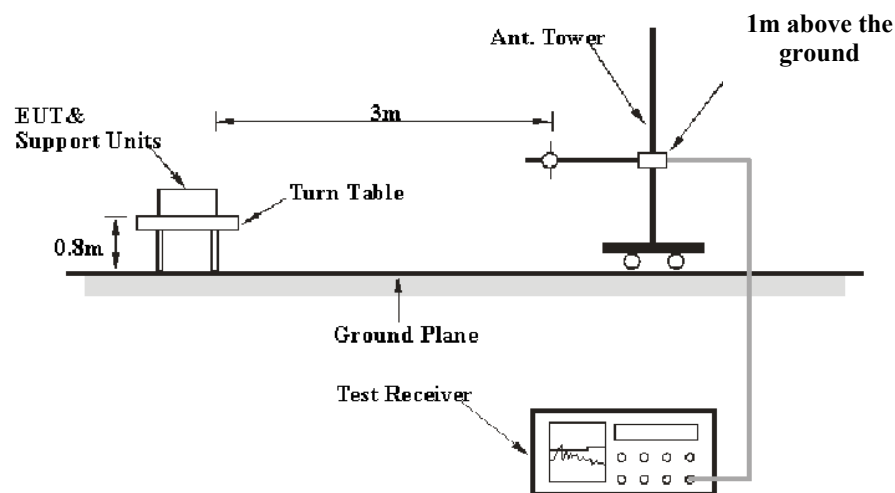
## FCC §15.205, §15.209 & §15.247(d) & RSS-247§ 5.5 - RADIATED EMISSIONS

### Applicable Standard

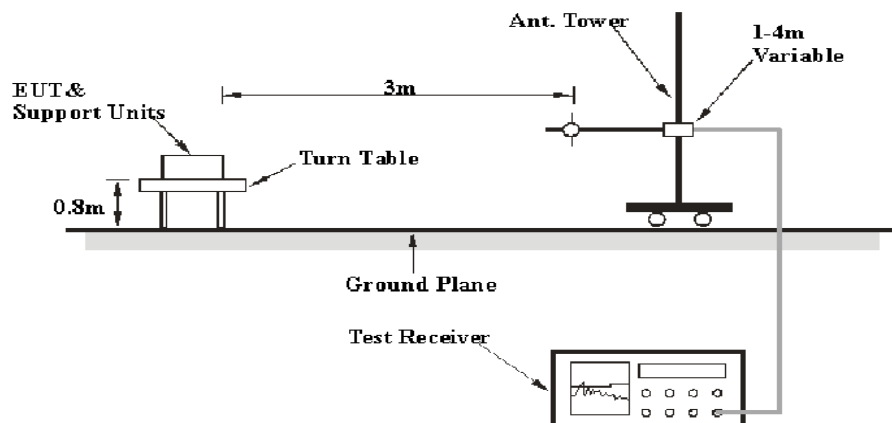
FCC §15.205; §15.209; §15.247(d) and RSS-247§ 5.5; RSS-GEN § 8.10

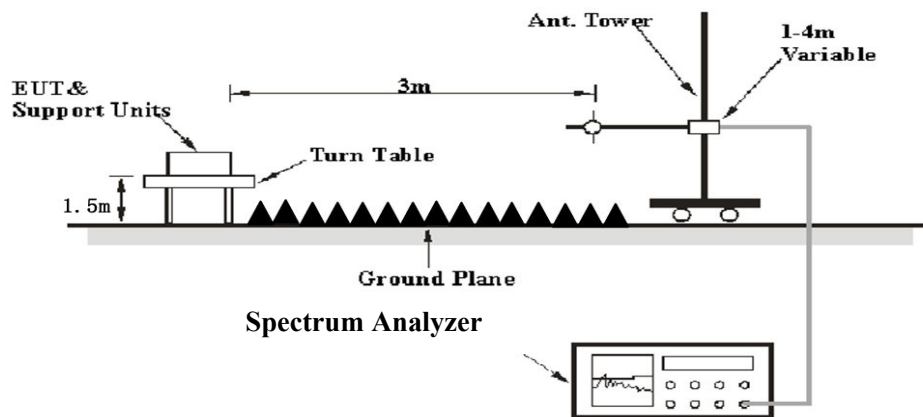
### EUT Setup

9 kHz-30MHz:



30MHz-1GHz:



**Above 1GHz:**

The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209, FCC 15.247 limits and RSS-247/RSS-Gen limits.

**EMI Test Receiver & Spectrum Analyzer Setup**

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

| Frequency Range   | RBW                                                           | Video B/W | IF B/W  | Measurement | Detector |
|-------------------|---------------------------------------------------------------|-----------|---------|-------------|----------|
| 9 kHz – 150 kHz   | /                                                             | /         | 200 Hz  | QP          | QP       |
|                   | 300 Hz                                                        | 1 kHz     | /       | PK          | Peak     |
| 150 kHz – 30 MHz  | /                                                             | /         | 9 kHz   | QP          | QP       |
|                   | 10 kHz                                                        | 30 kHz    | /       | PK          | Peak     |
| 30 MHz – 1000 MHz | /                                                             | /         | 120 kHz | QP          | QP       |
|                   | 100 kHz                                                       | 300 kHz   | /       | PK          | Peak     |
| Above 1 GHz       | Harmonics                                                     |           |         |             |          |
|                   | 1MHz                                                          | 3 MHz     | /       | PK          | Peak     |
|                   | Average Emission Level=Peak Emission Level+20*log(Duty cycle) |           |         |             |          |
|                   | Band Edge & Other Emissions                                   |           |         |             |          |
|                   | 1MHz                                                          | 3 MHz     | /       | PK          | Peak     |
|                   | 1MHz                                                          | ≥10 Hz    | /       | Average     | Peak     |

For Duty cycle measurement:

Use the duty cycle factor correction factor method per 15.35(c).

Duty cycle=On time/100milliseconds, On time= $N_1 \cdot L_1 + N_2 \cdot L_2 + \dots + N_{n-1} \cdot L_{n-1} + N_n \cdot L_n$ ,

Where  $N_1$  is number of type 1 pulses,  $L_1$  is length of type 1 pulse, etc.

## Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

All emissions under the average limit and under the noise floor have not recorded in the report.

## Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Over Limit/Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

$$\begin{aligned}\text{Over Limit/Margin} &= \text{Level/Corrected Amplitude} - \text{Limit} \\ \text{Level / Corrected Amplitude} &= \text{Read Level} + \text{Factor}\end{aligned}$$

## Test Data

### Environmental Conditions

|                    |                 |
|--------------------|-----------------|
| Temperature:       | 22.1~25.2 °C    |
| Relative Humidity: | 51~54 %         |
| ATM Pressure:      | 100.2~101.5 kPa |

*The testing was performed by Anson Su on 2025-08-29 for below 1GHz and Leon Guo on 2025-09-18 for above 1GHz.*

*EUT operation mode: Transmitting*

*Note: Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.*

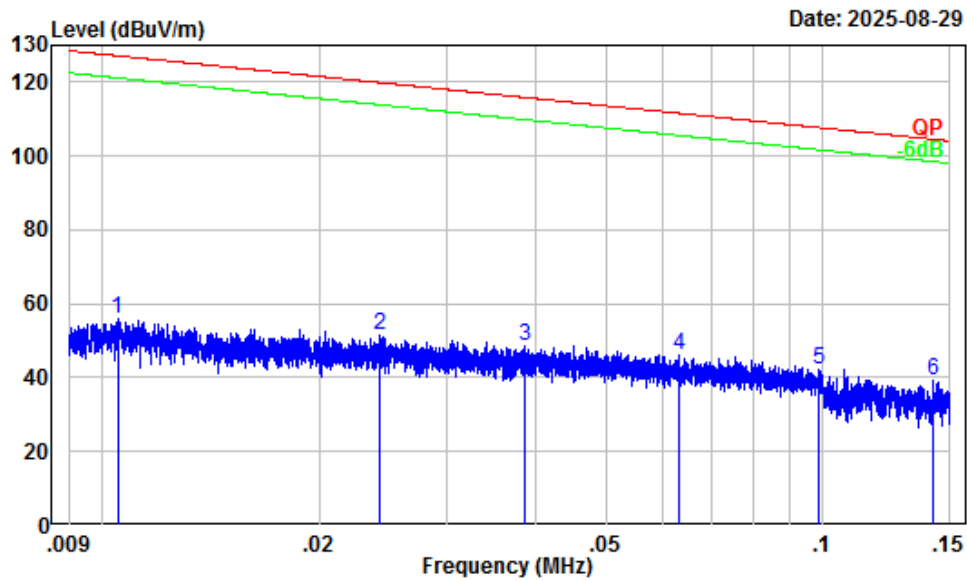
*The spurious emission from 9 kHz-30MHz of IC RSS-Gen standard, the unit of final result on the test plots are dBμV/m, so the limit should be added by 51,5 dB from dBμA/m to dBμV/m.*

For Adapter1

**9 kHz-30MHz:**

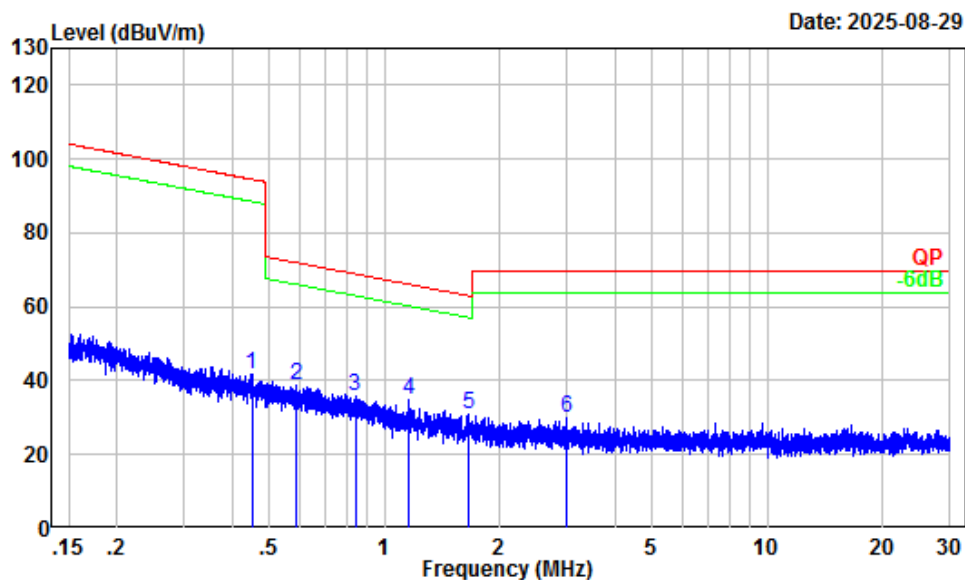
Note: When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.

Parallel (worst case)



Site : Chamber A  
Condition : 3m  
Project Number : 2501W00691E-RF  
Test Mode : Transmitting  
Note : PU  
Detector: Peak RBW/VBW: 0.3/1kHz  
Tester : Anson Su

|   | Freq  | Factor | Read<br>Level | Limit<br>Level | Over<br>Limit | Remark      |
|---|-------|--------|---------------|----------------|---------------|-------------|
|   | MHz   | dB/m   | dBuV          | dBuV/m         | dB            |             |
| 1 | 0.011 | 32.20  | 23.67         | 55.87          | 127.17        | -71.30 Peak |
| 2 | 0.024 | 29.58  | 21.84         | 51.42          | 119.88        | -68.46 Peak |
| 3 | 0.039 | 27.59  | 20.87         | 48.46          | 115.85        | -67.39 Peak |
| 4 | 0.063 | 25.09  | 21.10         | 46.19          | 111.60        | -65.41 Peak |
| 5 | 0.099 | 22.09  | 20.30         | 42.39          | 107.72        | -65.33 Peak |
| 6 | 0.142 | 19.52  | 19.58         | 39.10          | 104.56        | -65.46 Peak |

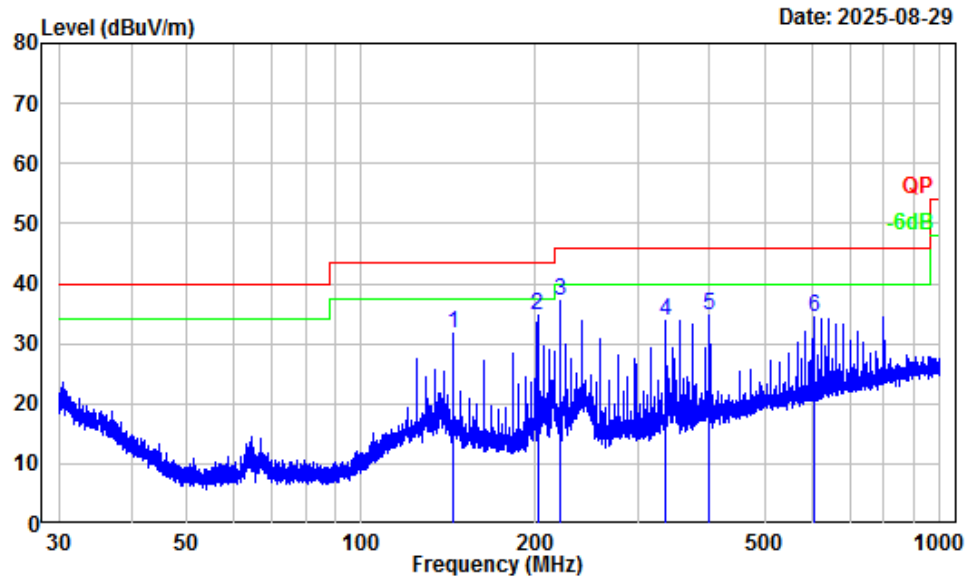


Site : Chamber A  
 Condition : 3m  
 Project Number : 2501W00691E-RF  
 Test Mode : Transmitting  
 Note : PU  
 Detector: Peak RBW/VBW: 10/30kHz  
 Tester : Anson Su

|   | Freq  | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|-------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz   | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 0.451 | 7.34   | 34.35         | 41.69  | 94.53         | -52.84        | Peak   |
| 2 | 0.592 | 5.27   | 33.49         | 38.76  | 72.13         | -33.37        | Peak   |
| 3 | 0.839 | 2.41   | 33.27         | 35.68  | 69.03         | -33.35        | Peak   |
| 4 | 1.160 | 0.75   | 34.15         | 34.90  | 66.16         | -31.26        | Peak   |
| 5 | 1.657 | -0.64  | 31.51         | 30.87  | 62.99         | -32.12        | Peak   |
| 6 | 2.986 | -2.14  | 32.13         | 29.99  | 69.54         | -39.55        | Peak   |

30MHz-1GHz: (Maximum output power mode, low channel)

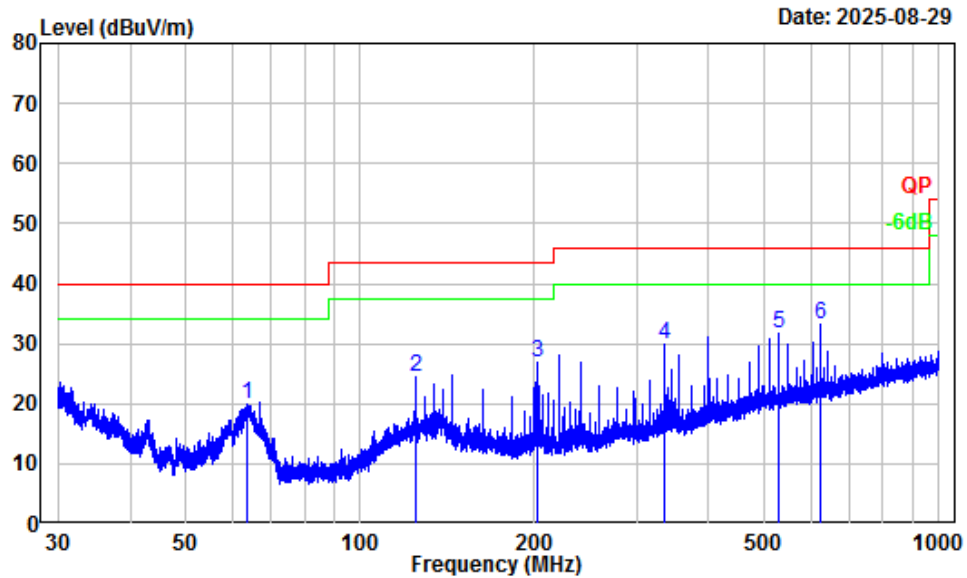
Horizontal



Site : Chamber A  
Condition : 3m Horizontal  
Project Number : 2501W00691E-RF  
Test Mode : Transmitting  
Note : PU  
Detector: Peak RBW/VBW: 100/300kHz  
Tester : Anson Su

|   | Freq   | Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|--------|--------|------------|--------|------------|------------|--------|
|   | MHz    | dB/m   | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 144.02 | -12.18 | 43.80      | 31.62  | 43.50      | -11.88     | Peak   |
| 2 | 201.57 | -13.18 | 47.95      | 34.77  | 43.50      | -8.73      | Peak   |
| 3 | 220.81 | -14.17 | 51.41      | 37.24  | 46.00      | -8.76      | Peak   |
| 4 | 336.04 | -10.50 | 44.17      | 33.67  | 46.00      | -12.33     | Peak   |
| 5 | 400.08 | -8.41  | 43.23      | 34.82  | 46.00      | -11.18     | Peak   |
| 6 | 604.86 | -5.28  | 39.80      | 34.52  | 46.00      | -11.48     | Peak   |

## Vertical



Site : Chamber A  
Condition : 3m Vertical  
Project Number : 2501W00691E-RF  
Test Mode : Transmitting  
Note : PU  
Detector: Peak RBW/VBW: 100/300kHz  
Tester : Anson Su

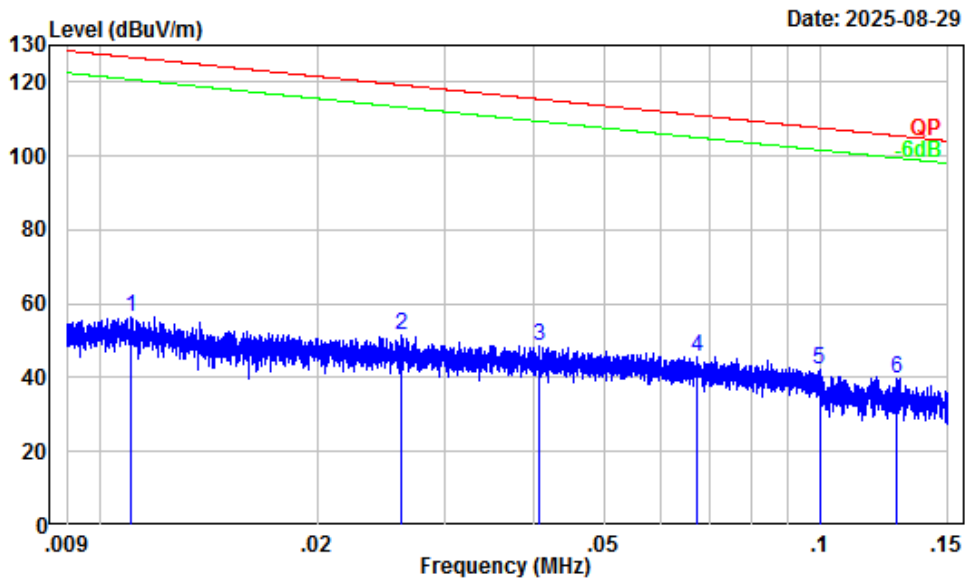
|   | Freq   | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|--------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz    | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 63.59  | -18.05 | 37.98         | 19.93  | 40.00         | -20.07        | Peak   |
| 2 | 124.79 | -11.14 | 35.74         | 24.60  | 43.50         | -18.90        | Peak   |
| 3 | 201.66 | -13.18 | 40.00         | 26.82  | 43.50         | -16.68        | Peak   |
| 4 | 336.04 | -10.50 | 40.48         | 29.98  | 46.00         | -16.02        | Peak   |
| 5 | 528.01 | -5.80  | 37.52         | 31.72  | 46.00         | -14.28        | Peak   |
| 6 | 623.98 | -4.70  | 37.91         | 33.21  | 46.00         | -12.79        | Peak   |

For Adapter2

**9 kHz-30MHz:**

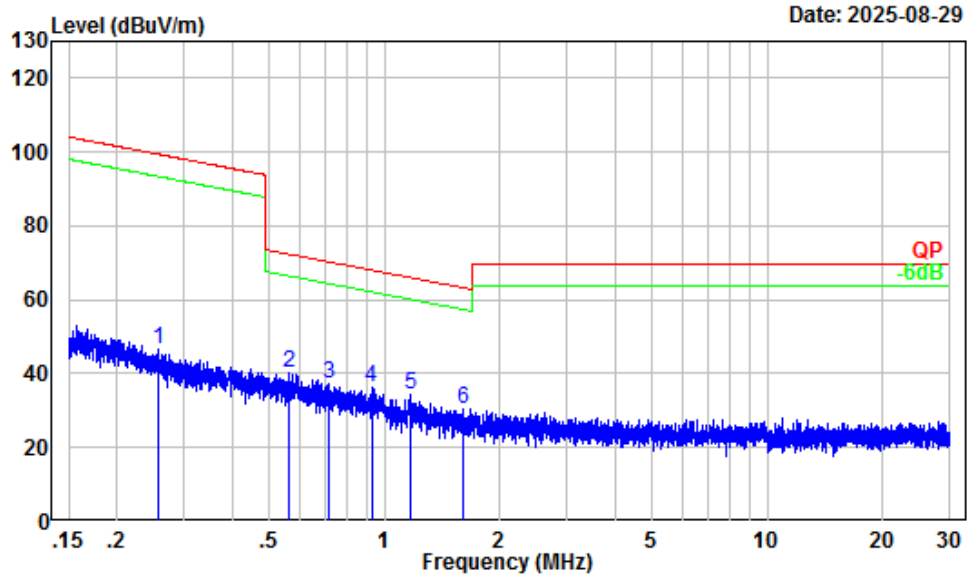
Note: When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.

Parallel (worst case)



Site : Chamber A  
Condition : 3m  
Project Number : 2501W00691E-RF  
Test Mode : Transmitting  
Note : PU  
Detector: Peak RBW/VBW: 0.3/1kHz  
Tester : Anson Su

|   | Freq  | Factor | Read<br>Level | Limit<br>Level | Over<br>Limit | Remark      |
|---|-------|--------|---------------|----------------|---------------|-------------|
|   | MHz   | dB/m   | dBuV          | dBuV/m         | dBuV/m        | dB          |
| 1 | 0.011 | 32.10  | 24.21         | 56.31          | 126.72        | -70.41 Peak |
| 2 | 0.026 | 29.22  | 22.40         | 51.62          | 119.24        | -67.62 Peak |
| 3 | 0.041 | 27.38  | 21.40         | 48.78          | 115.42        | -66.64 Peak |
| 4 | 0.067 | 24.68  | 20.80         | 45.48          | 111.06        | -65.58 Peak |
| 5 | 0.100 | 22.03  | 20.16         | 42.19          | 107.64        | -65.45 Peak |
| 6 | 0.128 | 20.37  | 19.53         | 39.90          | 105.48        | -65.58 Peak |

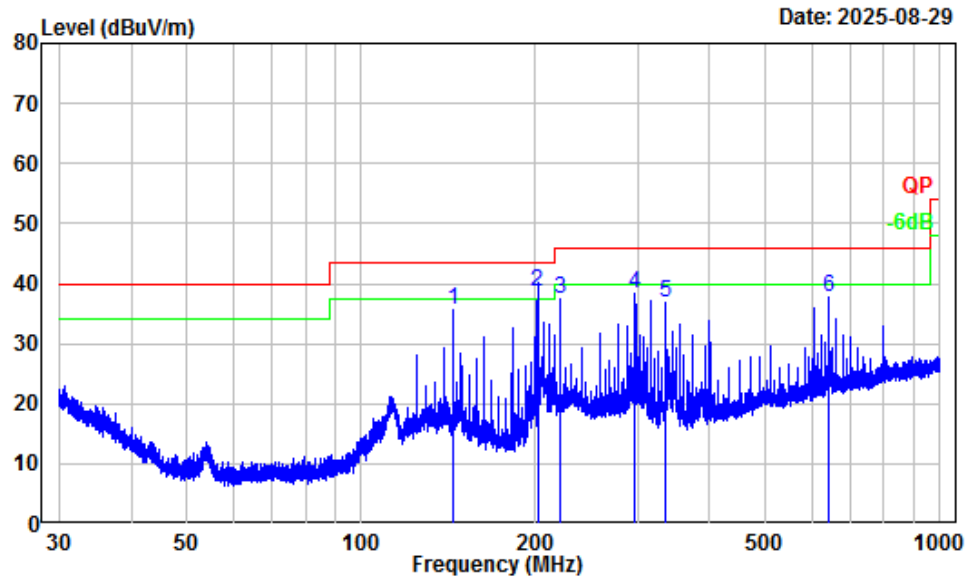


Site : Chamber A  
 Condition : 3m  
 Project Number : 2501W00691E-RF  
 Test Mode : Transmitting  
 Note : PU  
 Detector: Peak RBW/VBW: 10/30kHz  
 Tester : Anson Su

|   | Freq  | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|-------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz   | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 0.257 | 12.74  | 34.03         | 46.77  | 99.41         | -52.64        | Peak   |
| 2 | 0.561 | 5.65   | 34.34         | 39.99  | 72.60         | -32.61        | Peak   |
| 3 | 0.718 | 3.71   | 33.51         | 37.22  | 70.41         | -33.19        | Peak   |
| 4 | 0.926 | 1.76   | 34.38         | 36.14  | 68.16         | -32.02        | Peak   |
| 5 | 1.166 | 0.74   | 33.58         | 34.32  | 66.11         | -31.79        | Peak   |
| 6 | 1.612 | -0.51  | 31.12         | 30.61  | 63.24         | -32.63        | Peak   |

30MHz-1GHz: (Maximum output power mode, low channel)

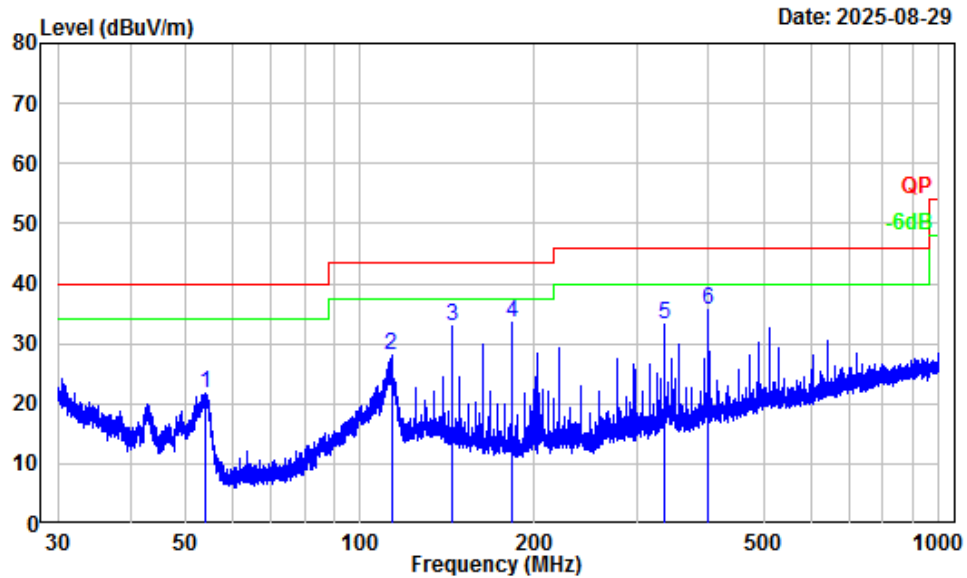
Horizontal



Site : Chamber A  
Condition : 3m Horizontal  
Project Number : 2501W00691E-RF  
Test Mode : Transmitting  
Note : PU  
Detector: Peak RBW/VBW: 100/300kHz  
Tester : Anson Su

|   | Freq   | Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|--------|--------|------------|--------|------------|------------|--------|
|   | MHz    | dB/m   | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 143.96 | -12.18 | 47.78      | 35.60  | 43.50      | -7.90      | Peak   |
| 2 | 201.57 | -13.18 | 51.70      | 38.52  | 43.50      | -4.98      | QP     |
| 3 | 220.81 | -14.17 | 51.48      | 37.31  | 46.00      | -8.69      | Peak   |
| 4 | 297.62 | -11.21 | 49.44      | 38.23  | 46.00      | -7.77      | Peak   |
| 5 | 336.04 | -10.50 | 47.39      | 36.89  | 46.00      | -9.11      | Peak   |
| 6 | 643.43 | -4.24  | 42.07      | 37.83  | 46.00      | -8.17      | Peak   |

## Vertical



Site : Chamber A  
Condition : 3m Vertical  
Project Number : 2501W00691E-RF  
Test Mode : Transmitting  
Note : PU  
Detector: Peak RBW/VBW: 100/300kHz  
Tester : Anson Su

|   | Freq   | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|--------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz    | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 54.12  | -18.32 | 40.03         | 21.71  | 40.00         | -18.29        | Peak   |
| 2 | 113.12 | -12.53 | 40.48         | 27.95  | 43.50         | -15.55        | Peak   |
| 3 | 144.02 | -12.18 | 44.94         | 32.76  | 43.50         | -10.74        | Peak   |
| 4 | 182.48 | -13.87 | 47.25         | 33.38  | 43.50         | -10.12        | Peak   |
| 5 | 336.04 | -10.50 | 43.63         | 33.13  | 46.00         | -12.87        | Peak   |
| 6 | 400.08 | -8.41  | 43.94         | 35.53  | 46.00         | -10.47        | Peak   |

**Above 1GHz:**

| Frequency (MHz)                                                                    | Reading (dBμV) | PK/AV | Polar (H/V) | Factor (dB/m) | Corrected Amplitude (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|------------------------------------------------------------------------------------|----------------|-------|-------------|---------------|------------------------------|----------------|-------------|
| Low Channel 2405MHz                                                                |                |       |             |               |                              |                |             |
| The maximum value of the main wave on the X-axis:101.84dBμV                        |                |       |             |               |                              |                |             |
| The maximum value of the main wave on the Y-axis:102.49dBμV                        |                |       |             |               |                              |                |             |
| The maximum value of the main wave on the Z-axis:103.70dBμV *(worst case position) |                |       |             |               |                              |                |             |
| 4810.00                                                                            | 56.69          | PK    | H           | -7.78         | 48.91                        | 74             | -25.09      |
| 4810.00                                                                            | 57.49          | PK    | V           | -7.78         | 49.71                        | 74             | -24.29      |
| Middle Channel 2441MHz                                                             |                |       |             |               |                              |                |             |
| 4882.00                                                                            | 55.04          | PK    | H           | -7.59         | 47.45                        | 74             | -26.55      |
| 4882.00                                                                            | 55.19          | PK    | V           | -7.59         | 47.60                        | 74             | -26.40      |
| High Channel 2475MEHz                                                              |                |       |             |               |                              |                |             |
| 4882.00                                                                            | 55.52          | PK    | H           | -7.59         | 47.93                        | 74             | -26.07      |
| 4882.00                                                                            | 54.05          | PK    | V           | -7.59         | 46.46                        | 74             | -27.54      |

**Note:**

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

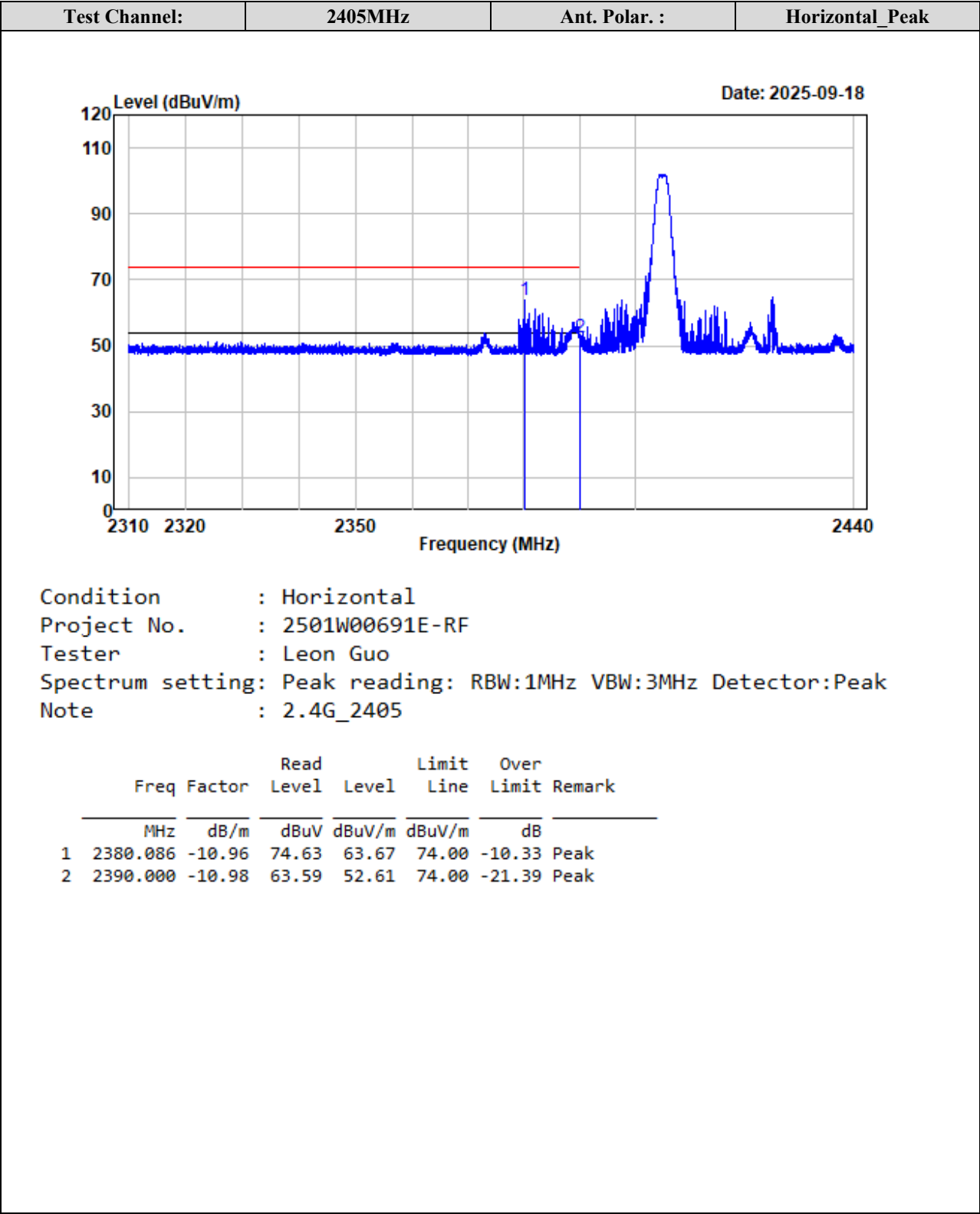
Corrected Amplitude = Corrected Factor + Reading

Margin = Corrected. Amplitude - Limit

Other emissions which were more than 20dB below limit or on noise floor level was not recorded.

The test result of peak was less than the limit of average, so just peak values were recorded.

Test plots for Band Edge Measurements (Radiated):

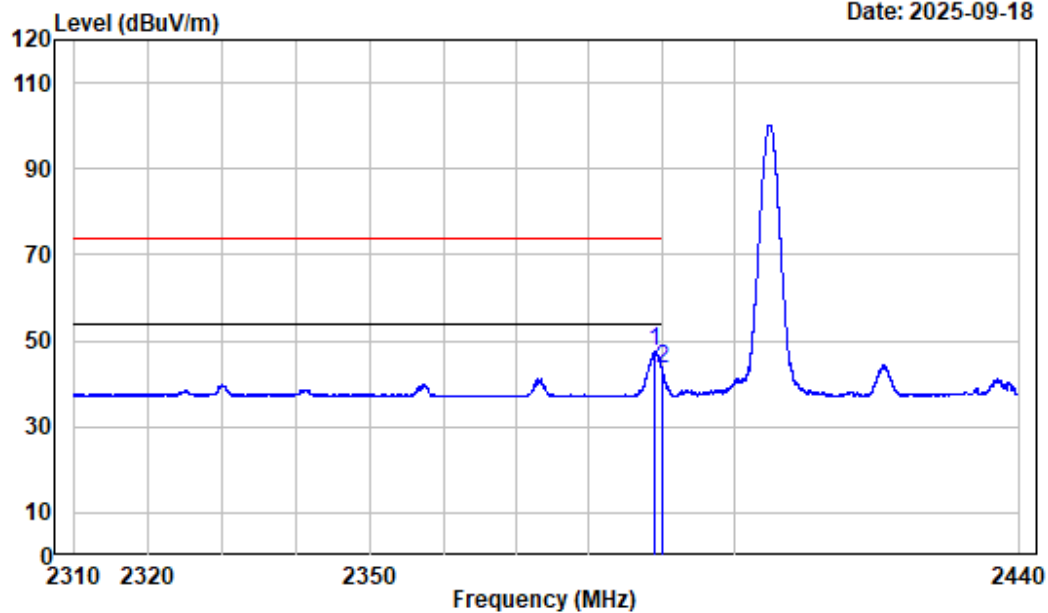


Test Channel:

2405MHz

Ant. Polar. :

Horizontal\_Average



Condition : Horizontal

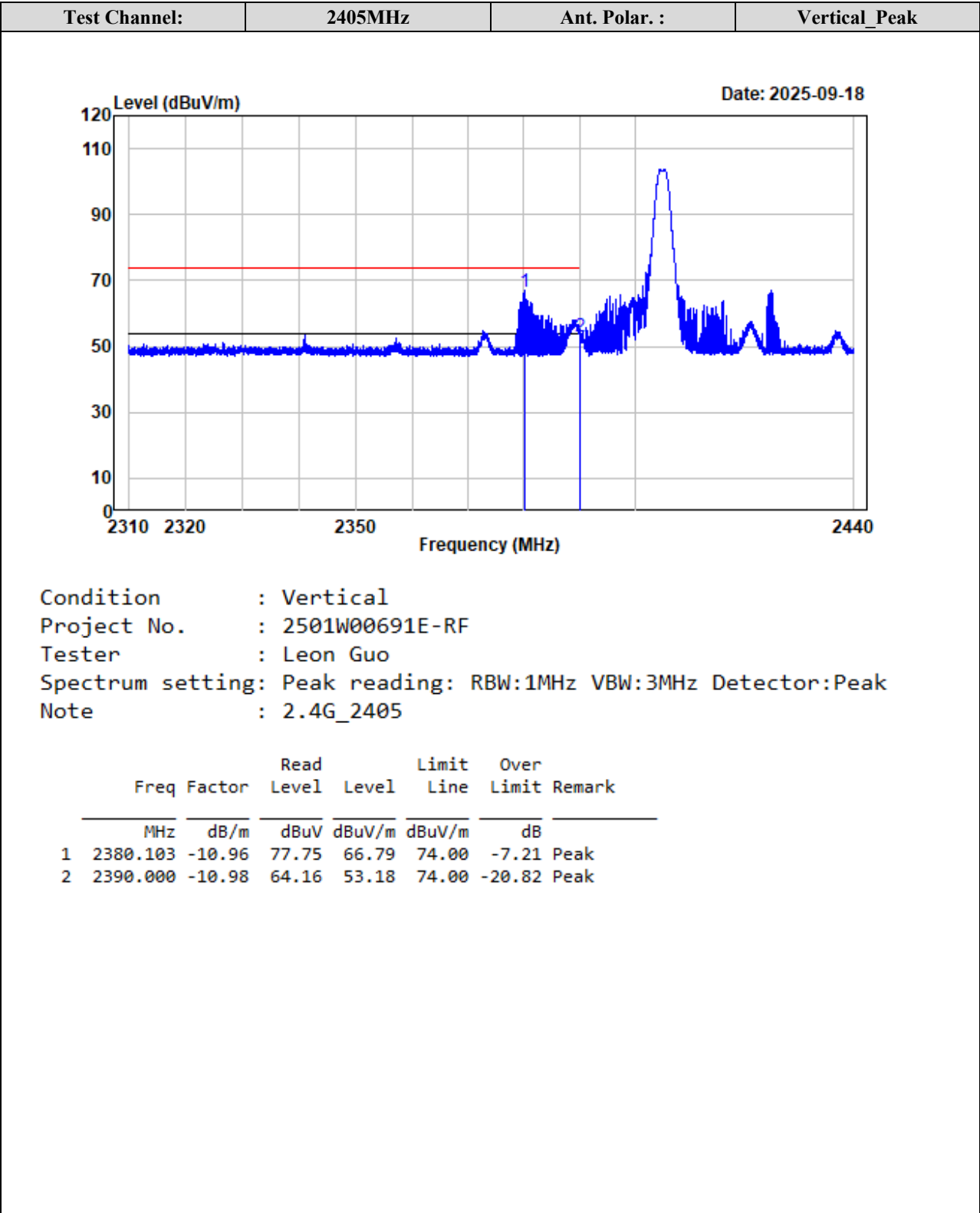
Project No. : 2501W00691E-RF

Tester : Leon Guo

Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak

Note : 2.4G\_2405

|             |          | Read   |       | Limit  | Over   | Remark         |
|-------------|----------|--------|-------|--------|--------|----------------|
| Freq Factor |          | Level  | Level | Line   | Limit  |                |
|             |          |        |       |        |        |                |
|             | MHz      | dB/m   | dBuV  | dBuV/m | dBuV/m | dB             |
| 1           | 2389.137 | -10.98 | 58.73 | 47.75  | 54.00  | -6.25 Average  |
| 2           | 2390.000 | -10.98 | 54.48 | 43.50  | 54.00  | -10.50 Average |

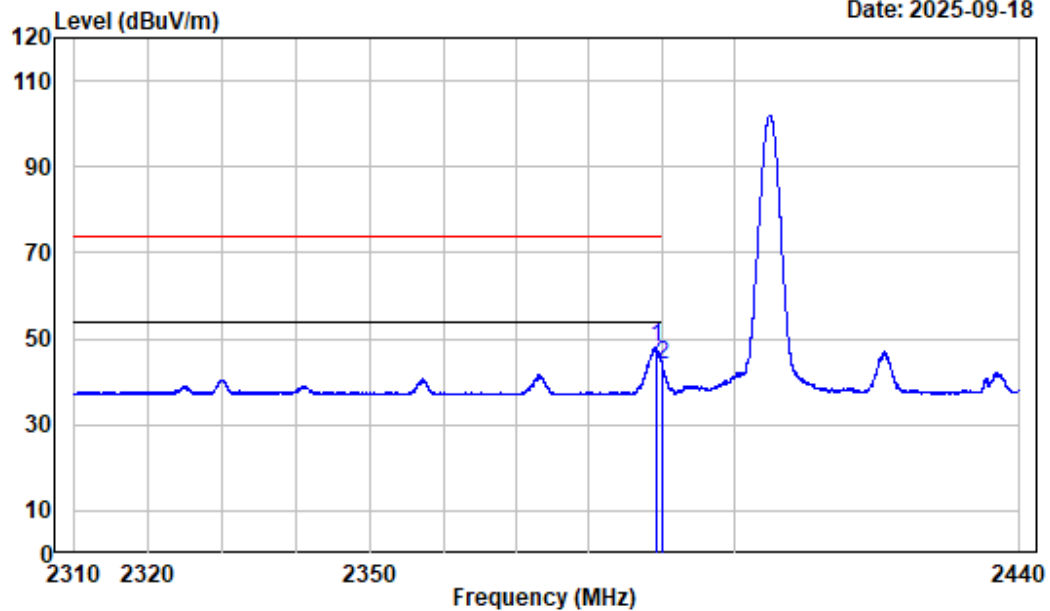


Test Channel:

2405MHz

Ant. Polar. :

Vertical\_Average



Condition : Vertical

Project No. : 2501W00691E-RF

Tester : Leon Guo

Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak

Note : 2.4G\_2405

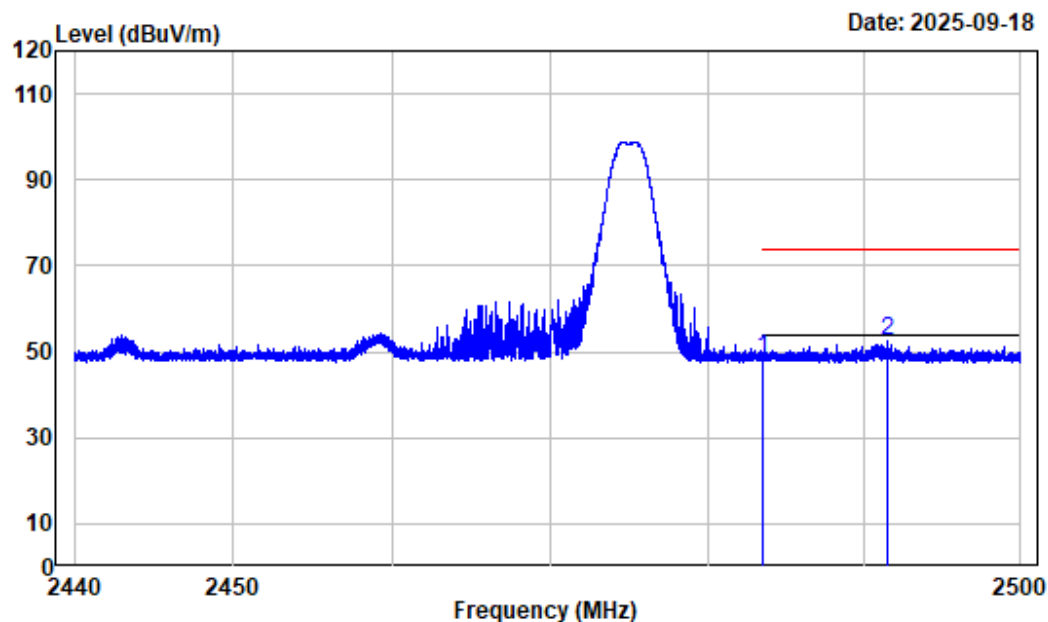
|   | Freq     | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark  |
|---|----------|--------|---------------|--------|---------------|---------------|---------|
|   | MHz      | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |         |
| 1 | 2389.170 | -10.98 | 59.12         | 48.14  | 54.00         | -5.86         | Average |
| 2 | 2390.000 | -10.98 | 54.98         | 44.00  | 54.00         | -10.00        | Average |

Test Channel:

2475MHz

Ant. Polar. :

Horizontal\_Peak



Condition : Horizontal

Project No. : 2501W00691E-RF

Tester : Leon Guo

Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak

Note : 2.4G\_2475

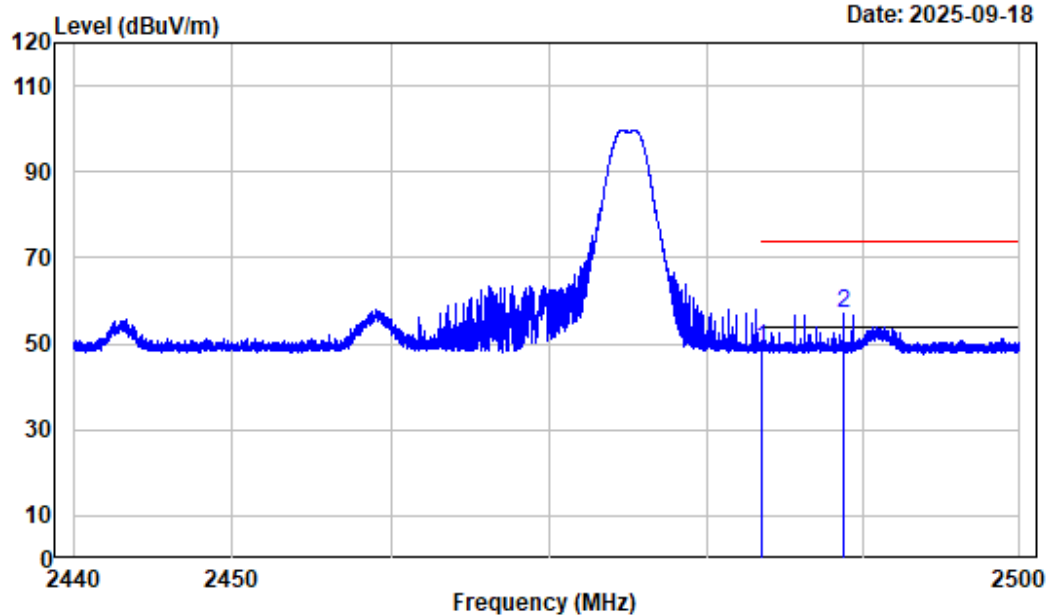
|   | Freq Factor |        | Read Level |        | Limit  | Over   | Remark |
|---|-------------|--------|------------|--------|--------|--------|--------|
|   | MHz         | dB/m   | dBuV       | dBuV/m | dBuV/m | dB     |        |
| 1 | 2483.500    | -10.97 | 59.41      | 48.44  | 74.00  | -25.56 | Peak   |
| 2 | 2491.502    | -10.98 | 63.29      | 52.31  | 74.00  | -21.69 | Peak   |

Test Channel:

2475MHz

Ant. Polar. :

Vertical\_Peak



Condition : Vertical

Project No. : 2501W00691E-RF

Tester : Leon Guo

Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak

Note : 2.4G\_2475

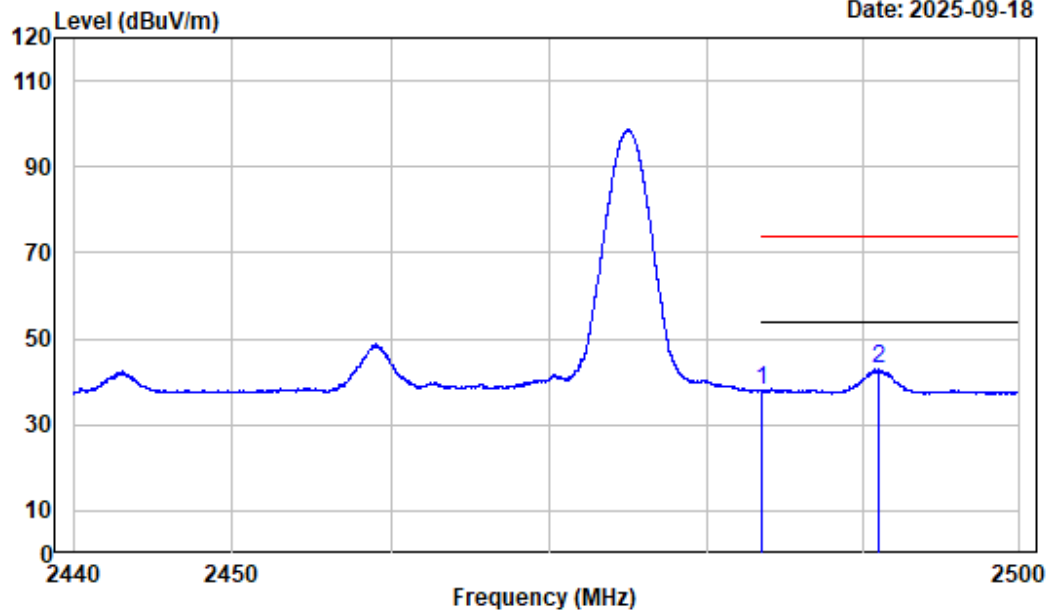
|   | Freq Factor |        | Read Level |        | Limit  | Over   | Remark |
|---|-------------|--------|------------|--------|--------|--------|--------|
|   | MHz         | dB/m   | dBuV       | dBuV/m | dBuV/m | dB     |        |
| 1 | 2483.500    | -10.97 | 59.74      | 48.77  | 74.00  | -25.23 | Peak   |
| 2 | 2488.705    | -10.98 | 68.14      | 57.16  | 74.00  | -16.84 | Peak   |

Test Channel:

2475MHz

Ant. Polar. :

Vertical\_Average



Condition : Vertical

Project No. : 2501W00691E-RF

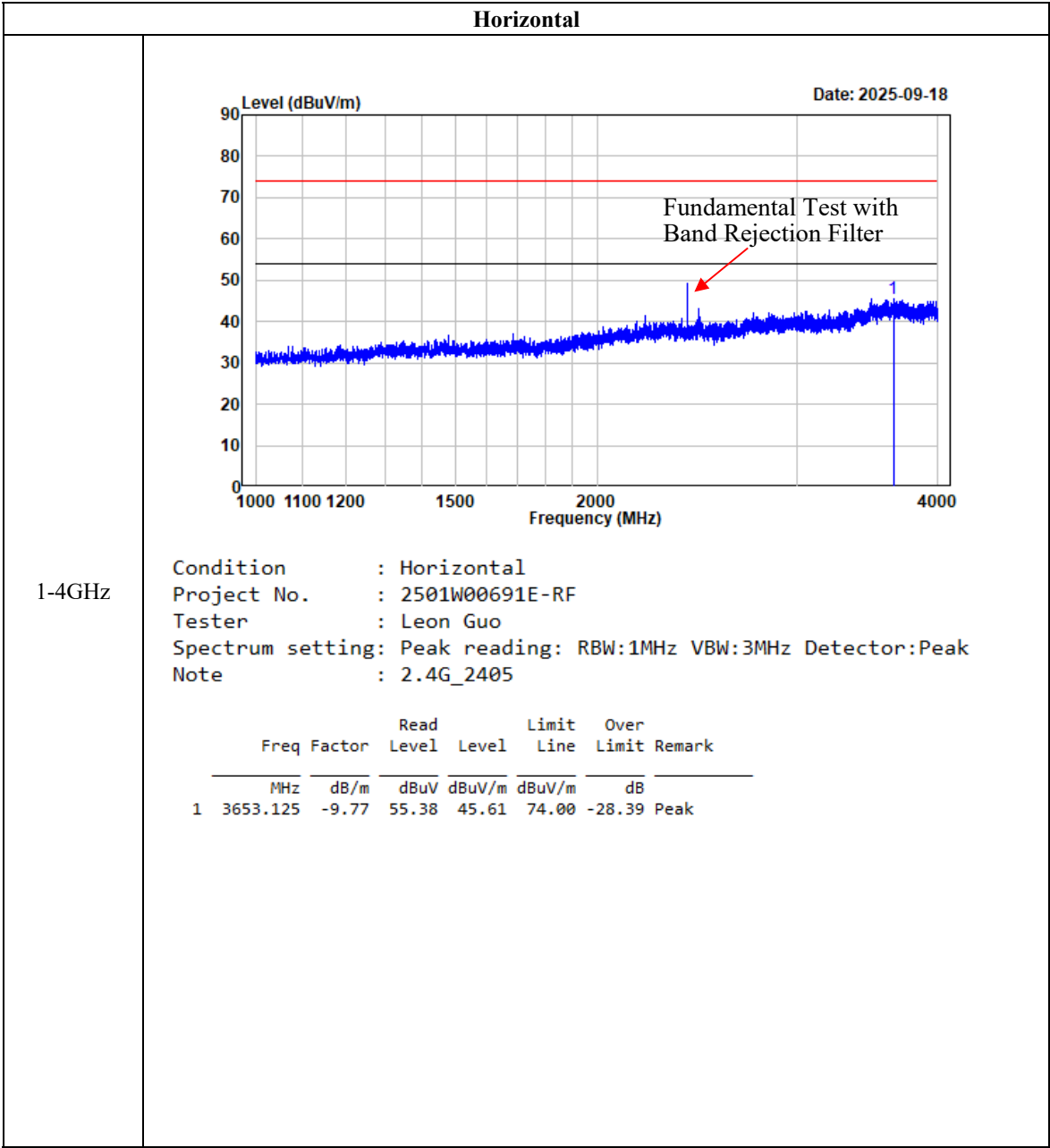
Tester : Leon Guo

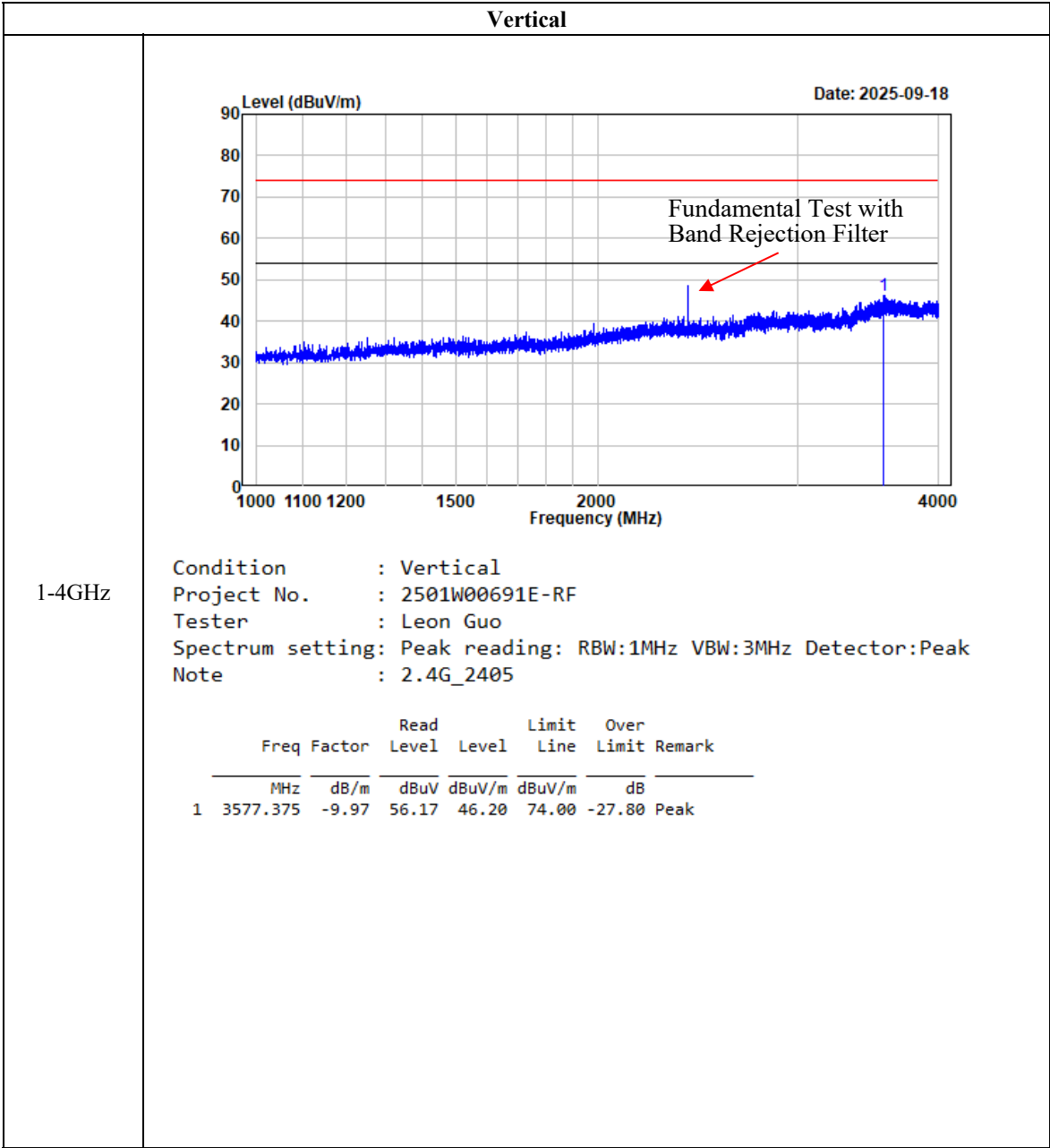
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak

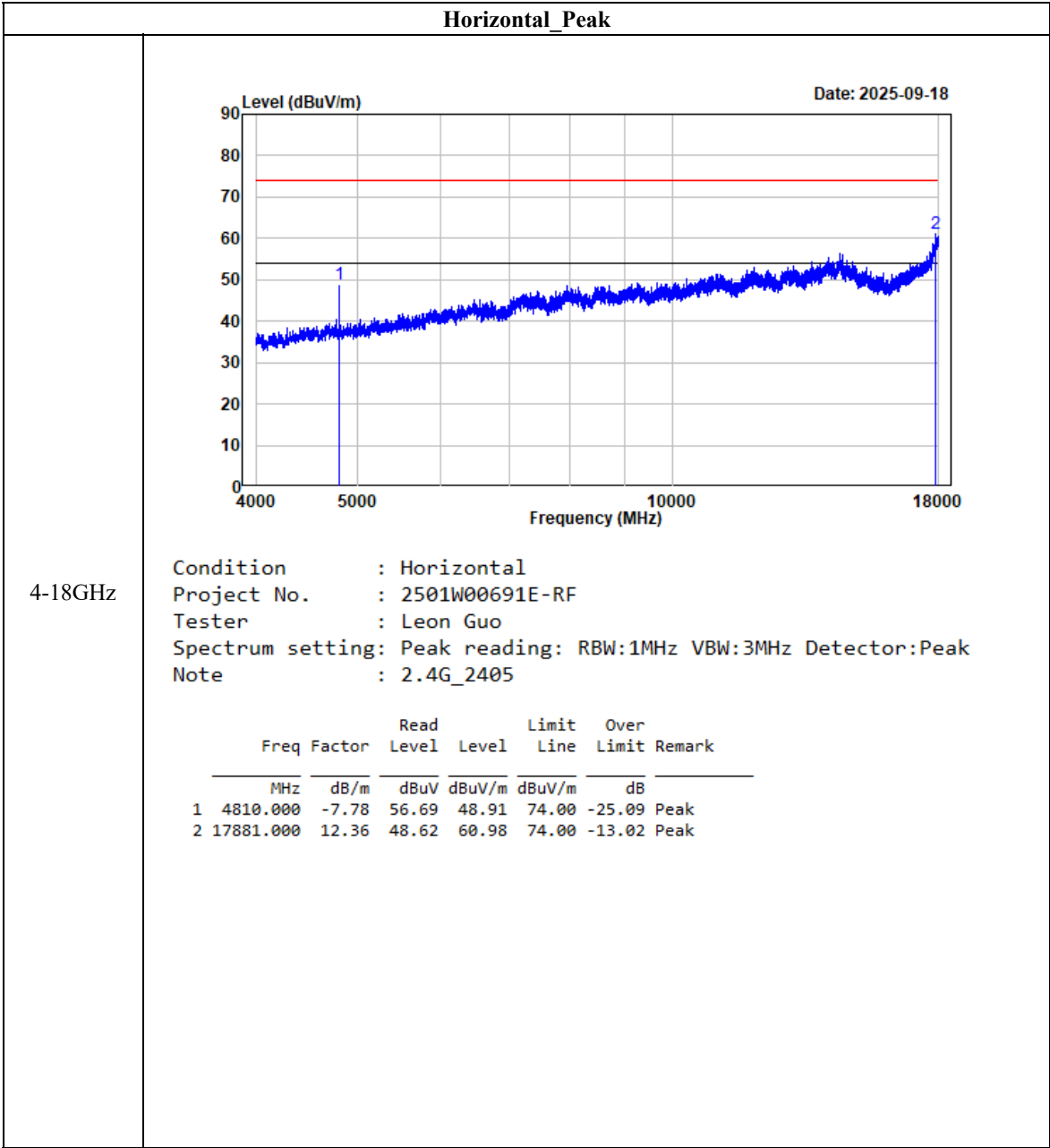
Note : 2.4G\_2475

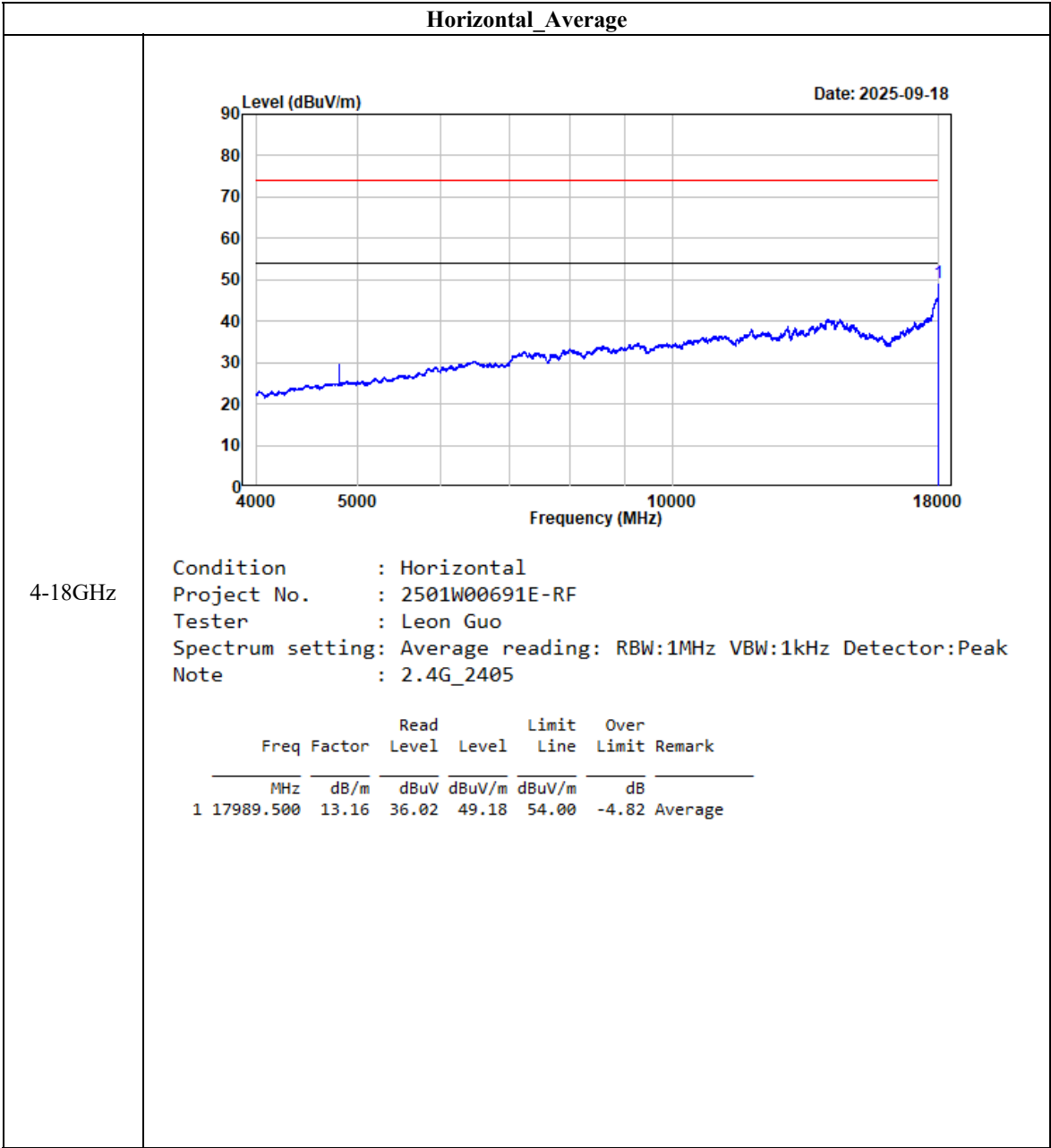
|             |          | Read   |        | Limit  | Over  | Remark         |
|-------------|----------|--------|--------|--------|-------|----------------|
| Freq Factor |          | Level  | Level  | Line   | Limit |                |
| MHz         | dB/m     | dBuV   | dBuV/m | dBuV/m | dB    |                |
| 1           | 2483.500 | -10.97 | 48.90  | 37.93  | 54.00 | -16.07 Average |
| 2           | 2490.970 | -10.98 | 53.94  | 42.96  | 54.00 | -11.04 Average |

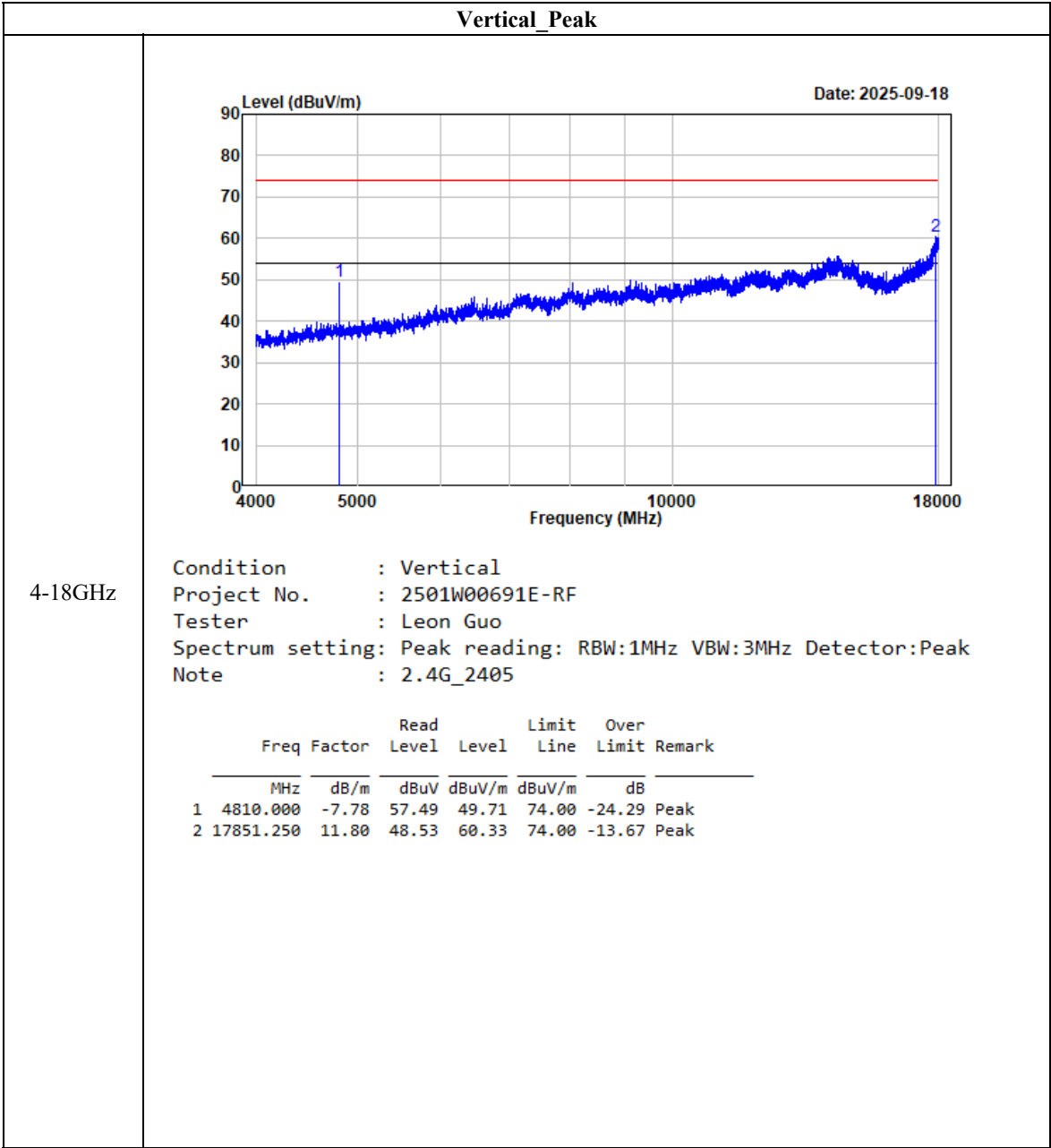
Listed with the worst margin test plot:

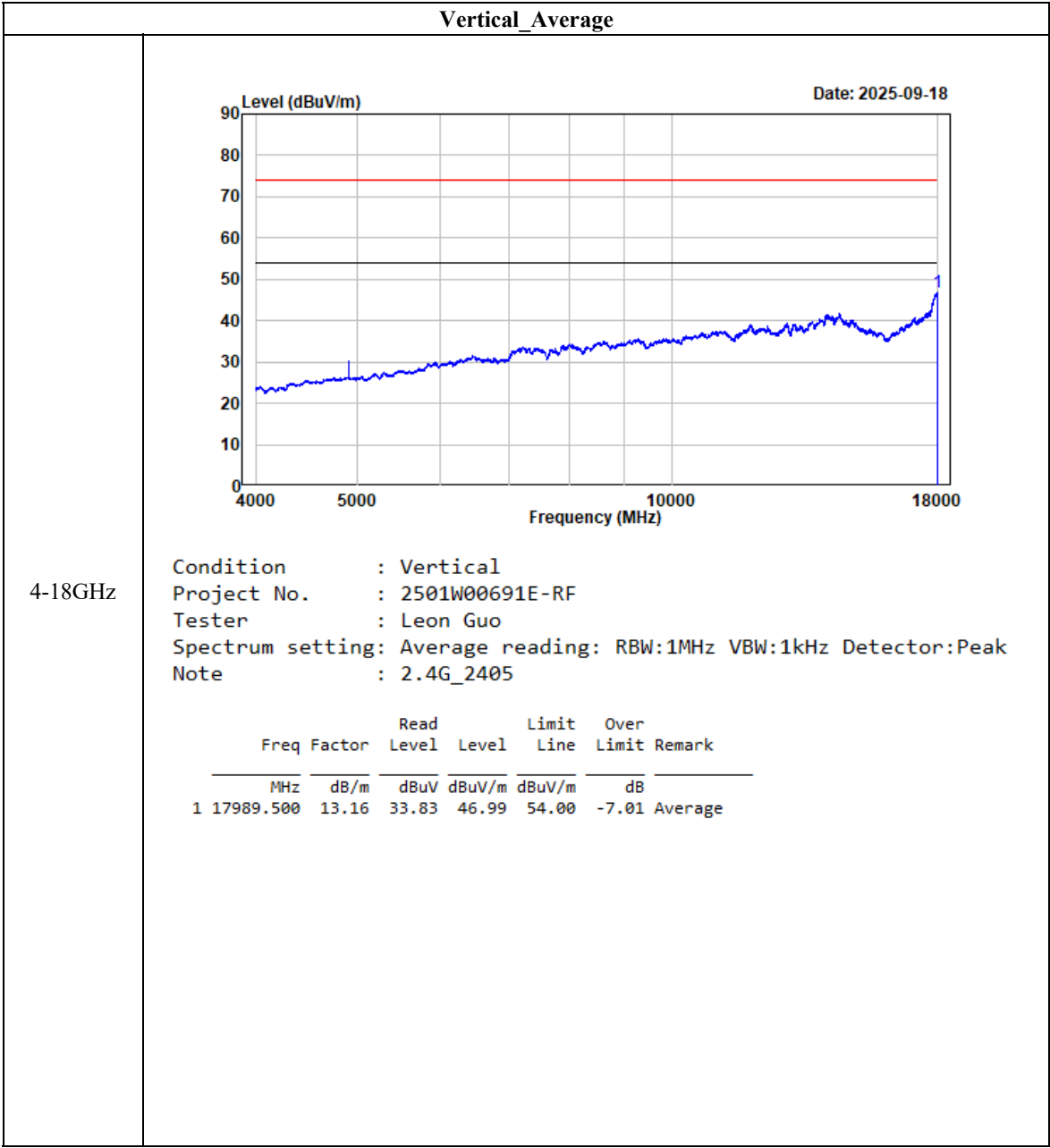


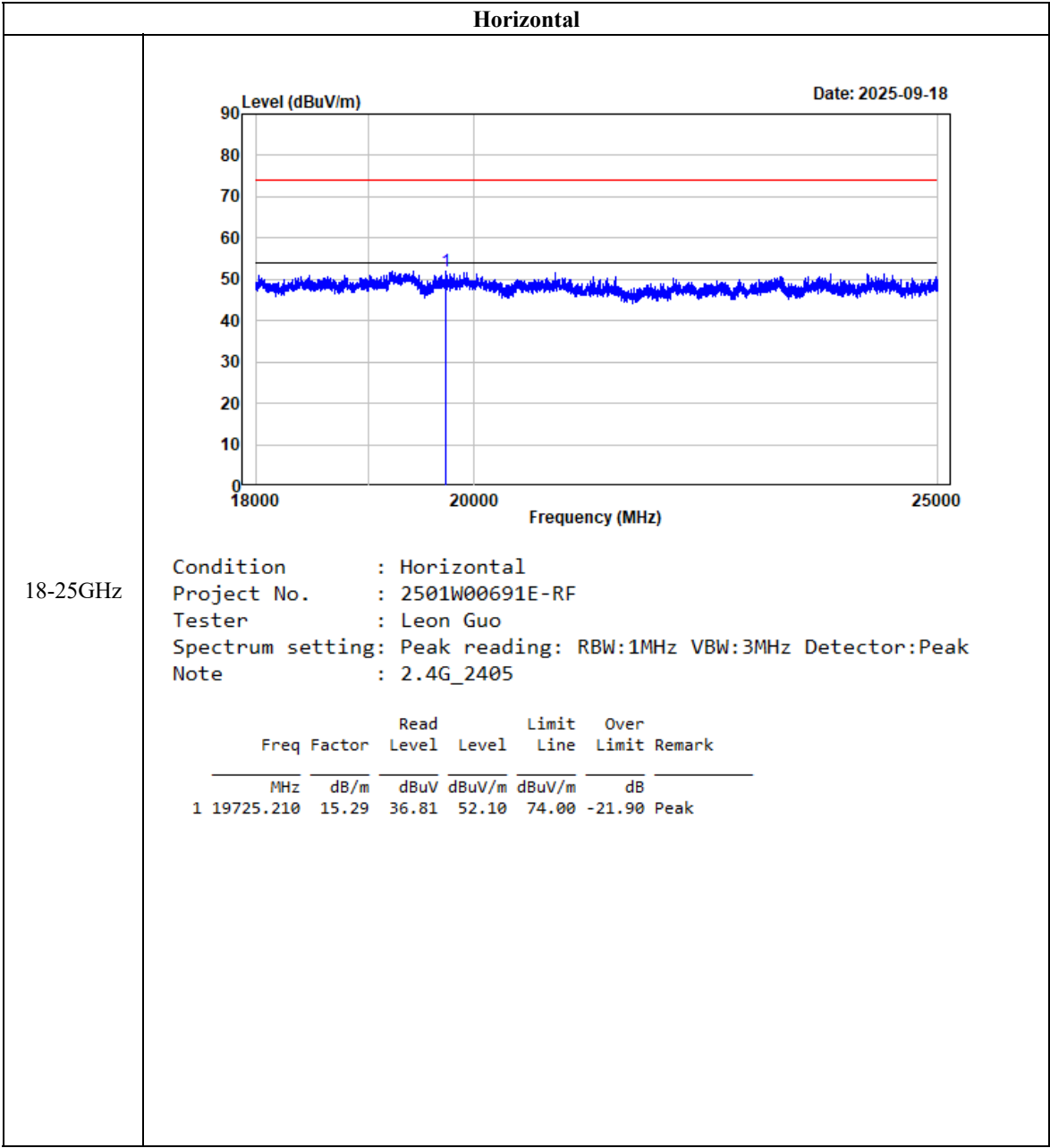


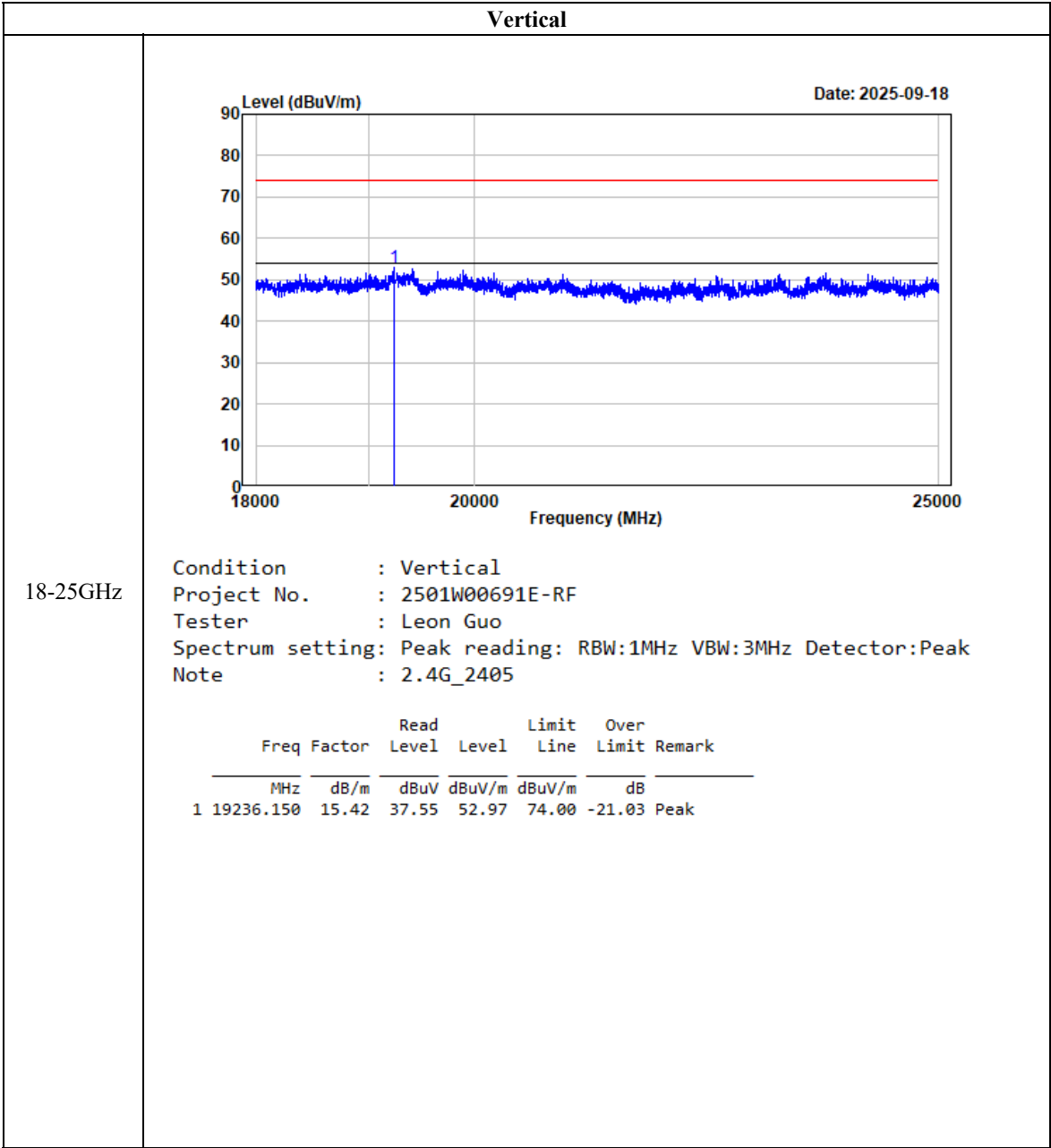












## **FCC §15.247(a) (1) & RSS-247 § 5.1 (b) - CHANNEL SEPARATION TEST**

### **Applicable Standard**

According to FCC §15.247(a) (1):

Frequency hopping systems (FHSs) shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

According to RSS-247 § 5.1 (b):

Frequency hopping systems (FHSs) shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the -20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, FHSs operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two thirds of the -20 dB bandwidth of the hopping channel, whichever is greater, provided that the systems operate with an output power no greater than 0.125 W. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

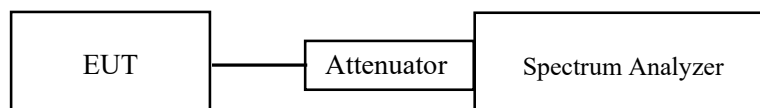
### **Test Procedure**

Test Method: ANSI C63.10-2020 Clause 7.8.2

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span: Wide enough to capture the peaks of two adjacent channels.
- b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- c) Video (or average) bandwidth (VBW)  $\geq$  RBW.
- d) Sweep: Auto.
- e) Detector function: Peak.
- f) Trace: Max hold.
- g) Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined.



Test Data

Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 25.9 °C   |
| Relative Humidity: | 51 %      |
| ATM Pressure:      | 100.5 kPa |

The testing was performed by Cheeb Huang on 2025-08-29.

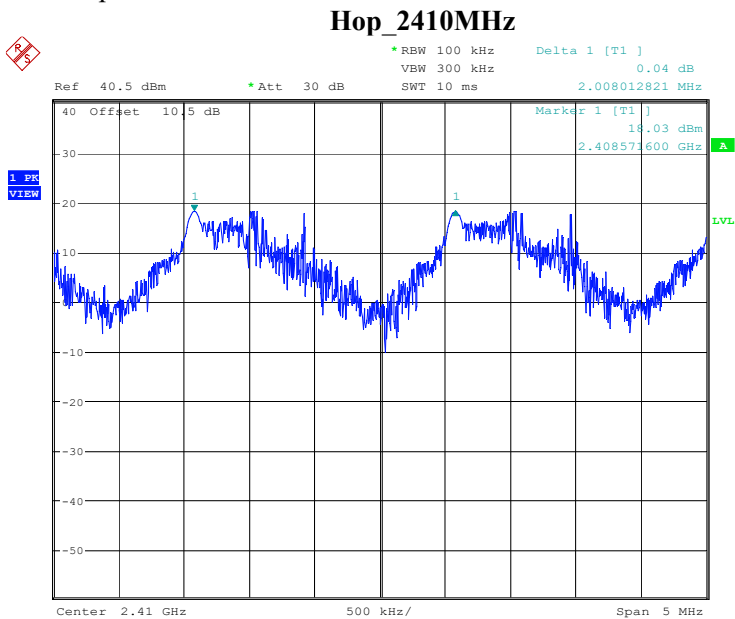
EUT operation mode: Transmitting

Test Result: Compliant

Note: According to frequency table in page 7 and investigating the hopping channel test in page 57, the minimum channel separation is the worst case which were recorded as below:

| Test Mode                                      | Test Frequency (MHz) | Channel Separation (MHz) | Limits (MHz) |
|------------------------------------------------|----------------------|--------------------------|--------------|
| GFSK                                           | Hop_2410             | 2.008                    | 1.465        |
| Note: Limit= Two-thirds of the 20 dB bandwidth |                      |                          |              |

Please refer to the below plots:



ProjectNo.:2501W00691E-RF-PU    Tester:Cheeb Huang  
Date: 29.AUG.2025    14:35:22

---

**FCC §15.247(a) (1) & RSS-GEN § 6.7 & RSS-247 § 5.1 (a) - 99% OCCUPIED BANDWIDTH & 20 dB EMISSION BANDWIDTH**

---

**Applicable Standard**

According to FCC §15.247(a) (1):

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

According to RSS-247 § 5.1 (a), RSS-GEN § 6.7:

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the “20 dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated 20 dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

**Test Procedure**

Test Method: ANSI C63.10-2020 Clause 7.8.7 & Clause 6.9.2

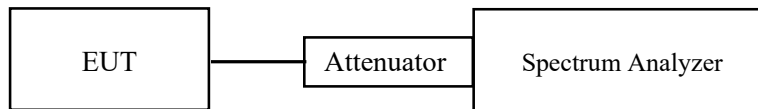
- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.
- 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.
- d) Steps a) through c) might require iteration to adjust within the specified tolerances.
- e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.
- f) Set detection mode to peak and trace mode to max hold.
- g) Determine the reference value: Set the EUT to transmit an un-modulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
- h) Determine the “-xx dB down amplitude” using  $[(\text{reference value}) - \text{xx}]$ . Alternatively, this calculation may be made by using the marker-delta function of the instrument.

i) If the reference value is determined by an un-modulated carrier, then turn the EUT modulation on, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).

j) Place 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 “- xx dB down

amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “- xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

k) The occupied bandwidth shall be reported by providing 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).



## Test Data

### Environmental Conditions

|                           |           |
|---------------------------|-----------|
| <b>Temperature:</b>       | 25.9 °C   |
| <b>Relative Humidity:</b> | 51 %      |
| <b>ATM Pressure:</b>      | 100.5 kPa |

The testing was performed by Cheeb Huang on 2025-08-29.

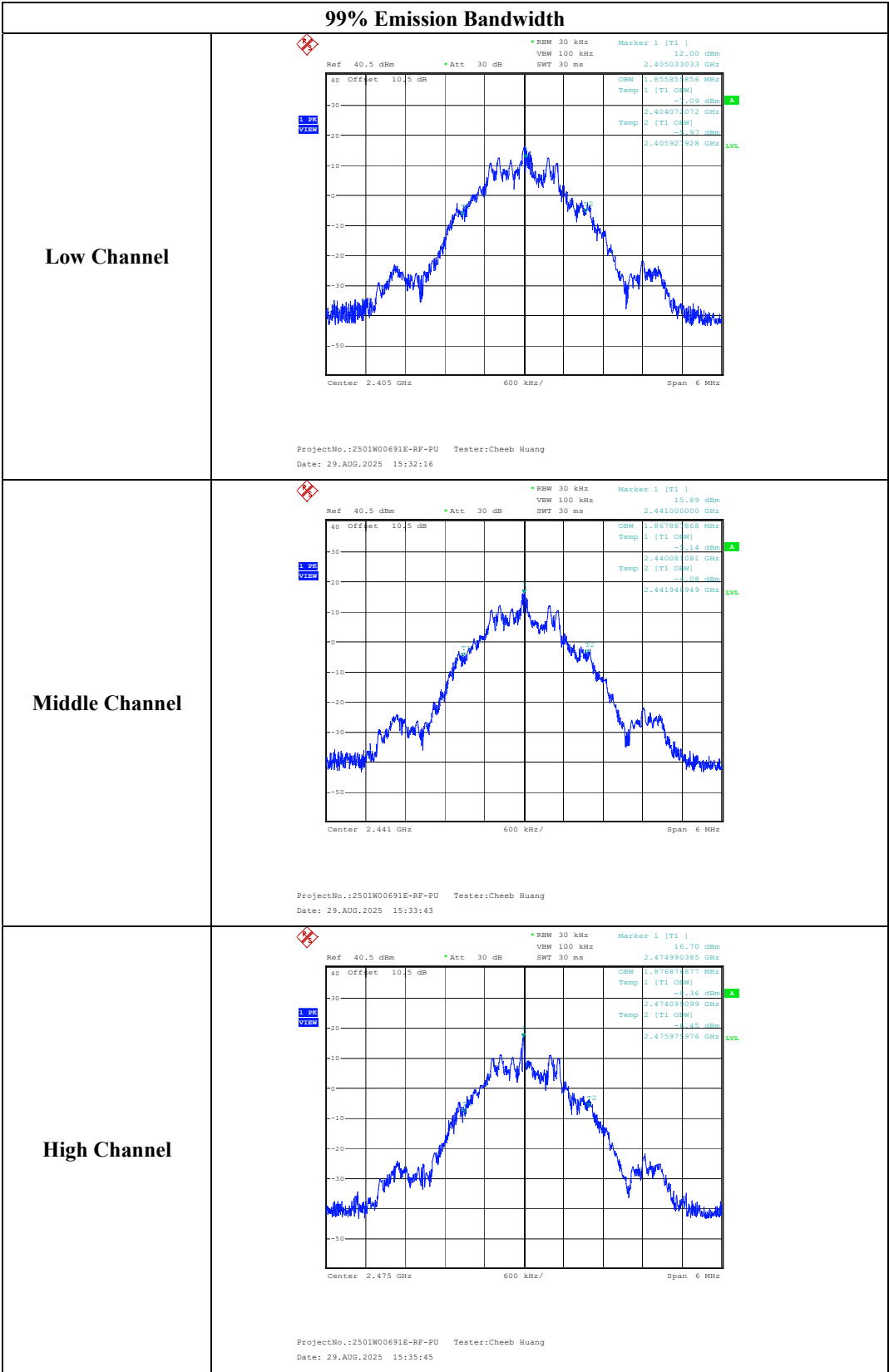
EUT operation mode: Transmitting

### Test Result: Compliant

| Mode | Channel | Frequency (MHz) | 20 dB Emission Bandwidth (MHz) | OBW (MHz) |
|------|---------|-----------------|--------------------------------|-----------|
| GFSK | Lowest  | 2405            | 2.198                          | 1.856     |
|      | Middle  | 2441            | 2.179                          | 1.868     |
|      | Highest | 2475            | 2.188                          | 1.877     |

Please refer to the below plots:

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div data-bbox="292 566 442 593">Low Channel</div> | <div data-bbox="595 273 1131 846"><div data-bbox="678 273 874 300">20 dB Bandwidth</div><div data-bbox="595 315 1131 736"><div data-bbox="595 315 1131 736"><div data-bbox="595 315 1131 347">Ref 40.5 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -1.46 dBm<br/>VSW 300 kHz SWT 10 ms 2.403896154 GHz</div><div data-bbox="595 347 1131 736"><div data-bbox="595 347 1131 378">40 Offset 10.5 dB Delta 1 [T1] -1.09 dBm<br/>2.403896154 GHz</div><div data-bbox="595 378 1131 736"><div data-bbox="595 378 1131 409">20 D1 18.3 dBm</div><div data-bbox="595 409 1131 441">0 D2 -1.5 dBm</div><div data-bbox="595 441 1131 736"><div data-bbox="595 441 1131 472">-20</div><div data-bbox="595 472 1131 504">-10</div><div data-bbox="595 504 1131 535">0</div><div data-bbox="595 535 1131 566">10</div><div data-bbox="595 566 1131 598">20</div><div data-bbox="595 598 1131 629">30</div><div data-bbox="595 629 1131 660">40</div><div data-bbox="595 660 1131 692">50</div><div data-bbox="595 692 1131 723">60</div><div data-bbox="595 723 1131 754">70</div><div data-bbox="595 754 1131 786">80</div><div data-bbox="595 786 1131 817">90</div><div data-bbox="595 817 1131 848">100</div><div data-bbox="595 848 1131 880">110</div><div data-bbox="595 880 1131 911">120</div><div data-bbox="595 911 1131 943">130</div><div data-bbox="595 943 1131 974">140</div><div data-bbox="595 974 1131 1005">150</div><div data-bbox="595 1005 1131 1037">160</div><div data-bbox="595 1037 1131 1068">170</div><div data-bbox="595 1068 1131 1099">180</div><div data-bbox="595 1099 1131 1131">190</div><div data-bbox="595 1131 1131 1162">200</div><div data-bbox="595 1162 1131 1193">210</div><div data-bbox="595 1193 1131 1225">220</div><div data-bbox="595 1225 1131 1256">230</div><div data-bbox="595 1256 1131 1288">240</div><div data-bbox="595 1288 1131 1319">250</div><div data-bbox="595 1319 1131 1350">260</div><div data-bbox="595 1350 1131 1382">270</div><div data-bbox="595 1382 1131 1413">280</div><div data-bbox="595 1413 1131 1444">290</div><div data-bbox="595 1444 1131 1476">300</div><div data-bbox="595 1476 1131 1507">310</div><div data-bbox="595 1507 1131 1538">320</div><div data-bbox="595 1538 1131 1570">330</div><div data-bbox="595 1570 1131 1601">340</div><div data-bbox="595 1601 1131 1632">350</div><div data-bbox="595 1632 1131 1664">360</div><div data-bbox="595 1664 1131 1695">370</div><div data-bbox="595 1695 1131 1727">380</div><div data-bbox="595 1727 1131 1758">390</div><div data-bbox="595 1758 1131 1789">400</div><div data-bbox="595 1789 1131 1821">410</div><div data-bbox="595 1821 1131 1852">420</div><div data-bbox="595 1852 1131 1883">430</div><div data-bbox="595 1883 1131 1915">440</div><div data-bbox="595 1915 1131 1946">450</div><div data-bbox="595 1946 1131 1977">460</div><div data-bbox="595 1977 1131 2009">470</div><div data-bbox="595 2009 1131 2040">480</div><div data-bbox="595 2040 1131 2072">490</div><div data-bbox="595 2072 1131 2103">500</div><div data-bbox="595 2103 1131 2134">510</div><div data-bbox="595 2134 1131 2166">520</div><div data-bbox="595 2166 1131 2197">530</div><div data-bbox="595 2197 1131 2228">540</div><div data-bbox="595 2228 1131 2240">550</div><div data-bbox="595 2240 1131 2240">560</div><div data-bbox="595 2251 1131 2240">570</div><div data-bbox="595 2262 1131 2240">580</div><div data-bbox="595 2273 1131 2240">590</div><div data-bbox="595 2284 1131 2240">600</div><div data-bbox="595 2296 1131 2240">610</div><div data-bbox="595 2307 1131 2240">620</div><div data-bbox="595 2318 1131 2240">630</div><div data-bbox="595 2329 1131 2240">640</div><div data-bbox="595 2340 1131 2240">650</div><div data-bbox="595 2352 1131 2240">660</div><div data-bbox="595 2363 1131 2240">670</div><div data-bbox="595 2374 1131 2240">680</div><div data-bbox="595 2385 1131 2240">690</div><div data-bbox="595 2396 1131 2240">700</div><div data-bbox="595 2408 1131 2240">710</div><div data-bbox="595 2419 1131 2240">720</div><div data-bbox="595 2430 1131 2240">730</div><div data-bbox="595 2441 1131 2240">740</div><div data-bbox="595 2452 1131 2240">750</div><div data-bbox="595 2464 1131 2240">760</div><div data-bbox="595 2475 1131 2240">770</div><div data-bbox="595 2486 1131 2240">780</div><div data-bbox="595 2497 1131 2240">790</div><div data-bbox="595 2508 1131 2240">800</div><div data-bbox="595 2520 1131 2240">810</div><div data-bbox="595 2531 1131 2240">820</div><div data-bbox="595 2542 1131 2240">830</div><div data-bbox="595 2553 1131 2240">840</div><div data-bbox="595 2564 1131 2240">850</div><div data-bbox="595 2576 1131 2240">860</div><div data-bbox="595 2587 1131 2240">870</div><div data-bbox="595 2598 1131 2240">880</div><div data-bbox="595 2609 1131 2240">890</div><div data-bbox="595 2620 1131 2240">900</div><div data-bbox="595 2632 1131 2240">910</div><div data-bbox="595 2643 1131 2240">920</div><div data-bbox="595 2654 1131 2240">930</div><div data-bbox="595 2665 1131 2240">940</div><div data-bbox="595 2676 1131 2240">950</div><div data-bbox="595 2688 1131 2240">960</div><div data-bbox="595 2699 1131 2240">970</div><div data-bbox="595 2710 1131 2240">980</div><div data-bbox="595 2721 1131 2240">990</div><div data-bbox="595 2732 1131 2240">1000</div><div data-bbox="595 2744 1131 2240">1010</div><div data-bbox="595 2755 1131 2240">1020</div><div data-bbox="595 2766 1131 2240">1030</div><div data-bbox="595 2777 1131 2240">1040</div><div data-bbox="595 2788 1131 2240">1050</div><div data-bbox="595 2800 1131 2240">1060</div><div data-bbox="595 2811 1131 2240">1070</div><div data-bbox="595 2822 1131 2240">1080</div><div data-bbox="595 2833 1131 2240">1090</div><div data-bbox="595 2844 1131 2240">1100</div><div data-bbox="595 2856 1131 2240">1110</div><div data-bbox="595 2867 1131 2240">1120</div><div data-bbox="595 2878 1131 2240">1130</div><div data-bbox="595 2889 1131 2240">1140</div><div data-bbox="595 2900 1131 2240">1150</div><div data-bbox="595 2912 1131 2240">1160</div><div data-bbox="595 2923 1131 2240">1170</div><div data-bbox="595 2934 1131 2240">1180</div><div data-bbox="595 2945 1131 2240">1190</div><div data-bbox="595 2956 1131 2240">1200</div><div data-bbox="595 2968 1131 2240">1210</div><div data-bbox="595 2979 1131 2240">1220</div><div data-bbox="595 2990 1131 2240">1230</div><div data-bbox="595 3001 1131 2240">1240</div><div data-bbox="595 3012 1131 2240">1250</div><div data-bbox="595 3024 1131 2240">1260</div><div data-bbox="595 3035 1131 2240">1270</div><div data-bbox="595 3046 1131 2240">1280</div><div data-bbox="595 3057 1131 2240">1290</div><div data-bbox="595 3068 1131 2240">1300</div><div data-bbox="595 3080 1131 2240">1310</div><div data-bbox="595 3091 1131 2240">1320</div><div data-bbox="595 3102 1131 2240">1330</div><div data-bbox="595 3113 1131 2240">1340</div><div data-bbox="595 3124 1131 2240">1350</div><div data-bbox="595 3136 1131 2240">1360</div><div data-bbox="595 3147 1131 2240">1370</div><div data-bbox="595 3158 1131 2240">1380</div><div data-bbox="595 3169 1131 2240">1390</div><div data-bbox="595 3180 1131 2240">1400</div><div data-bbox="595 3192 1131 2240">1410</div><div data-bbox="595 3203 1131 2240">1420</div><div data-bbox="595 3214 1131 2240">1430</div><div data-bbox="595 3225 1131 2240">1440</div><div data-bbox="595 3236 1131 2240">1450</div><div data-bbox="595 3248 1131 2240">1460</div><div data-bbox="595 3259 1131 2240">1470</div><div data-bbox="595 3270 1131 2240">1480</div><div data-bbox="595 3281 1131 2240">1490</div><div data-bbox="595 3292 1131 2240">1500</div><div data-bbox="595 3304 1131 2240">1510</div><div data-bbox="595 3315 1131 2240">1520</div><div data-bbox="595 3326 1131 2240">1530</div><div data-bbox="595 3337 1131 2240">1540</div><div data-bbox="595 3348 1131 2240">1550</div><div data-bbox="595 3360 1131 2240">1560</div><div data-bbox="595 3371 1131 2240">1570</div><div data-bbox="595 3382 1131 2240">1580</div><div data-bbox="595 3393 1131 2240">1590</div><div data-bbox="595 3404 1131 2240">1600</div><div data-bbox="595 3416 1131 2240">1610</div><div data-bbox="595 3427 1131 2240">1620</div><div data-bbox="595 3438 1131 2240">1630</div><div data-bbox="595 3449 1131 2240">1640</div><div data-bbox="595 3460 1131 2240">1650</div><div data-bbox="595 3472 1131 2240">1660</div><div data-bbox="595 3483 1131 2240">1670</div><div data-bbox="595 3494 1131 2240">1680</div><div data-bbox="595 3505 1131 2240">1690</div><div data-bbox="595 3516 1131 2240">1700</div><div data-bbox="595 3528 1131 2240">1710</div><div data-bbox="595 3539 1131 2240">1720</div><div data-bbox="595 3550 1131 2240">1730</div><div data-bbox="595 3561 1131 2240">1740</div><div data-bbox="595 3572 1131 2240">1750</div><div data-bbox="595 3584 1131 2240">1760</div><div data-bbox="595 3595 1131 2240">1770</div><div data-bbox="595 3606 1131 2240">1780</div><div data-bbox="595 3617 1131 2240">1790</div><div data-bbox="595 3628 1131 2240">1800</div><div data-bbox="595 3640 1131 2240">1810</div><div data-bbox="595 3651 1131 2240">1820</div><div data-bbox="595 3662 1131 2240">1830</div><div data-bbox="595 3673 1131 2240">1840</div><div data-bbox="595 3684 1131 2240">1850</div><div data-bbox="595 3696 1131 2240">1860</div><div data-bbox="595 3707 1131 2240">1870</div><div data-bbox="595 3718 1131 2240">1880</div><div data-bbox="595 3729 1131 2240">1890</div><div data-bbox="595 3740 1131 2240">1900</div><div data-bbox="595 3752 1131 2240">1910</div><div data-bbox="595 3763 1131 2240">1920</div><div data-bbox="595 3774 1131 2240">1930</div><div data-bbox="595 3785 1131 2240">1940</div><div data-bbox="595 3796 1131 2240">1950</div><div data-bbox="595 3808 1131 2240">1960</div><div data-bbox="595 3819 1131 2240">1970</div><div data-bbox="595 3830 1131 2240">1980</div><div data-bbox="595 3841 1131 2240">1990</div><div data-bbox="595 3852 1131 2240">2000</div><div data-bbox="595 3864 1131 2240">2010</div><div data-bbox="595 3875 1131 2240">2020</div><div data-bbox="595 3886 1131 2240">2030</div><div data-bbox="595 3897 1131 2240">2040</div><div data-bbox="595 3908 1131 2240">2050</div><div data-bbox="595 3920 1131 2240">2060</div><div data-bbox="595 3931 1131 2240">2070</div><div data-bbox="595 3942 1131 2240">2080</div><div data-bbox="595 3953 1131 2240">2090</div><div data-bbox="595 3964 1131 2240">2100</div><div data-bbox="595 3976 1131 2240">2110</div><div data-bbox="595 3987 1131 2240">2120</div><div data-bbox="595 3998 1131 2240">2130</div><div data-bbox="595 4009 1131 2240">2140</div><div data-bbox="595 4020 1131 2240">2150</div><div data-bbox="595 4032 1131 2240">2160</div><div data-bbox="595 4043 1131 2240">2170</div><div data-bbox="595 4054 1131 2240">2180</div><div data-bbox="595 4065 1131 2240">2190</div><div data-bbox="595 4076 1131 2240">2200</div><div data-bbox="595 4088 1131 2240">2210</div><div data-bbox="595 4099 1131 2240">2220</div><div data-bbox="595 4110 1131 2240">2230</div><div data-bbox="595 4121 1131 2240">2240</div><div data-bbox="595 4132 1131 2240">2250</div><div data-bbox="595 4144 1131 2240">2260</div><div data-bbox="595 4155 1131 2240">2270</div><div data-bbox="595 4166 1131 2240">2280</div><div data-bbox="595 4177 1131 2240">2290</div><div data-bbox="595 4188 1131 2240">2300</div><div data-bbox="595 4200 1131 2240">2310</div><div data-bbox="595 4211 1131 2240">2320</div><div data-bbox="595 4222 1131 2240">2330</div><div data-bbox="595 4233 1131 2240">2340</div><div data-bbox="595 4244 1131 2240">2350</div><div data-bbox="595 4256 1131 2240">2360</div><div data-bbox="595 4267 1131 2240">2370</div><div data-bbox="595 4278 1131 2240">2380</div><div data-bbox="595 4289 1131 2240">2390</div><div data-bbox="595 4300 1131 2240">2400</div><div data-bbox="595 4312 1131 2240">2410</div><div data-bbox="595 4323 1131 2240">2420</div><div data-bbox="595 4334 1131 2240">2430</div><div data-bbox="595 4345 1131 2240">2440</div><div data-bbox="595 4356 1131 2240">2450</div><div data-bbox="595 4368 1131 2240">2460</div><div data-bbox="595 4379 1131 2240">2470</div><div data-bbox="595 4390 1131 2240">2480</div><div data-bbox="595 4401 1131 2240">2490</div><div data-bbox="595 4412 1131 2240">2500</div><div data-bbox="595 4424 1131 2240">2510</div><div data-bbox="595 4435 1131 2240">2520</div><div data-bbox="595 4446 1131 2240">2530</div><div data-bbox="595 4457 1131 2240">2540</div><div data-bbox="595 4468 1131 2240">2550</div><div data-bbox="595 4480 1131 2240">2560</div><div data-bbox="595 4491 1131 2240">2570</div><div data-bbox="595 4502 1131 2240">2580</div><div data-bbox="595 4513 1131 2240">2590</div><div data-bbox="595 4524 1131 2240">2600</div><div data-bbox="595 4536 1131 2240">2610</div><div data-bbox="595 4547 1131 2240">2620</div><div data-bbox="595 4558 1131 2240">2630</div><div data-bbox="595 4569 1131 2240">2640</div><div data-bbox="595 4580 1131 2240">2650</div><div data-bbox="595 4592 1131 2240">2660</div><div data-bbox="595 4603 1131 2240">2670</div><div data-bbox="595 4614 1131 2240">2680</div><div data-bbox="595 4625 1131 2240">2690</div><div data-bbox="595 4636 1131 2240">2700</div><div data-bbox="595 4648 1131 2240">2710</div><div data-bbox="595 4659 1131 2240">2720</div><div data-bbox="595 4670 1131 2240">2730</div><div data-bbox="595 4681 1131 2240">2740</div><div data-bbox="595 4692 1131 2240">2750</div><div data-bbox="595 4704 1131 2240">2760</div><div data-bbox="595 4715 1131 2240">2770</div><div data-bbox="595 4726 1131 2240">2780</div><div data-bbox="595 4737 1131 2240">2790</div><div data-bbox="595 4748 1131 2240">2800</div><div data-bbox="595 4760 1131 2240">2810</div><div data-bbox="595 4771 1131 2240">2820</div><div data-bbox="595 4782 1131 2240">2830</div><div data-bbox="595 4793 1131 2240">2840</div><div data-bbox="595 4804 1131 2240">2850</div><div data-bbox="595 4816 1131 2240">2860</div><div data-bbox="595 4827 1131 2240">2870</div><div data-bbox="595 4838 1131 2240">2880</div><div data-bbox="595 4849 1131 2240">2890</div><div data-bbox="595 4860 1131 2240">2900</div><div data-bbox="595 4872 1131 2240">2910</div><div data-bbox="595 4883 1131 2240">2920</div><div data-bbox="595 4894 1131 2240">2930</div><div data-bbox="595 4905 1131 2240">2940</div><div data-bbox="595 4916 1131 2240">2950</div><div data-bbox="595 4928 1131 2240">2960</div><div data-bbox="595 4939 1131 2240">2970</div><div data-bbox="595 4950 1131 2240">2980</div><div data-bbox="595 4961 1131 2240">2990</div><div data-bbox="595 4972 1131 2240">3000</div><div data-bbox="595 4984 1131 2240">3010</div><div data-bbox="595 4995 1131 2240">3020</div><div data-bbox="595 5006 1131 2240">3030</div><div data-bbox="595 5017 1131 2240">3040</div><div data-bbox="595 5028 1131 2240">3050</div><div data-bbox="595 5040 1131 2240">3060</div><div data-bbox="595 5051 1131 2240">3070</div><div data-bbox="595 5062 1131 2240">3080</div><div data-bbox="595 5073 1131 2240">3090</div><div data-bbox="595 5084 1131 2240">3100</div><div data-bbox="595 5096 1131 2240">3110</div><div data-bbox="595 5107 1131 2240">3120</div><div data-bbox="595 5118 1131 2240">3130</div><div data-bbox="595 5129 1131 2240">3140</div><div data-bbox="595 5140 1131 2240">3150</div><div data-bbox="595 5152 1131 2240">3160</div><div data-bbox="595 5163 1131 2240">3170</div><div data-bbox="595 5174 1131 2240">3180</div><div data-bbox="595 5185 1131 2240">3190</div><div data-bbox="595 5196 1131 2240">3200</div><div data-bbox="595 5208 1131 2240">3210</div><div data-bbox="595 5219 1131 2240">3220</div><div data-bbox="595 5230 1131 2240">3230</div><div data-bbox="595 5241 1131 2240">3240</div><div data-bbox="595 5252 1131 2240">3250</div><div data-bbox="595 5264 1131 2240">3260</div><div data-bbox="595 5275 1131 2240">3270</div><div data-bbox="595 5286 1131 2240">3280</div><div data-bbox="595 5297 1131 2240">3290</div><div data-bbox="595 5308 1131 2240">3300</div><div data-bbox="595 5320 1131 2240">3310</div><div data-bbox="595 5331 1131 2240">3320</div><div data-bbox="595 5342 1131 2240">3330</div><div data-bbox="595 5353 1131 2240">3340</div><div data-bbox="595 5364 1131 2240">3350</div><div data-bbox="595 5376 1131 2240">3360</div><div data-bbox="595 5387 1131 2240">3370</div><div data-bbox="595 5398 1131 2240">3380</div><div data-bbox="595 5409 1131 2240">3390</div><div data-bbox="595 5420 1131 2240">3400</div><div data-bbox="595 5432 1131 2240">3410</div><div data-bbox="595 5443 1131 2240">3420</div><div data-bbox="595 5454 1131 2240">3430</div><div data-bbox="595 5465 1131 2240">3440</div><div data-bbox="595 5476 1131 2240">3450</div><div data-bbox="595 5488 1131 2240">3460</div><div data-bbox="595 5499 1131 2240">3470</div><div data-bbox="595 5510 1131 2240">3480</div><div data-bbox="595 5521 1131 2240">3490</div><div data-bbox="595 5532 1131 2240">3500</div><div data-bbox="595 5544 1131 2240">3510</div><div data-bbox="595 5555 1131 2240">3520</div><div data-bbox="595 5566 1131 2240">3530</div><div data-bbox="595 5577 1131 2240">3540</div><div data-bbox="595 5588 1131 2240">3550</div><div data-bbox="595 5600 1131 2240">3560</div><div data-bbox="595 5611 1131 2240">3570</div><div data-bbox="595 5622 1131 2240">3580</div><div data-bbox="595 5633 1131 2240">3590</div><div data-bbox="595 5644 1131 2240">3600</div><div data-bbox="595 5656 1131 2240">3610</div><div data-bbox="595 5667 1131 2240">3620</div><div data-bbox="595 5678 1131 2240">3630</div><div data-bbox="595 5689 1131 2240">3640</div><div data-bbox="595 5700 1131 2240">3650</div><div data-bbox="595 5712 1131 2240">3660</div><div data-bbox="595 5723 1131 2240">3670</div><div data-bbox="595 5734 1131 2240">3680</div><div data-bbox="595 5745 1131 2240">3690</div><div data-bbox="595 5756 1131 2240">3700</div><div data-bbox="595 5768 1131 2240">3710</div><div data-bbox="595 5779 1131 2240">3720</div><div data-bbox="595 5790 1131 2240">3730</div><div data-bbox="595 5801 1131 2240">3740</div><div data-bbox="595 5812 1131 2240">3750</div><div data-bbox="595 5824 1131 2240">3760</div><div data-bbox="595 5835 1131 2240">3770</div><div data-bbox="595 5846 1131 2240">3780</div><div data-bbox="595 5857 1131 2240">3790</div><div data-bbox="595 5868 1131 2240">3800</div><div data-bbox="595 5880 1131 2240">3810</div><div data-bbox="595 5891 1131 2240">3820</div><div data-bbox="595 5902 1131 2240">3830</div><div data-bbox="595 5913 1131 2240">3840</div><div data-bbox="595 5924 1131 2240">3850</div><div data-bbox="595 5936 1131 2240">3860</div><div data-bbox="595 5947 1131 2240">3870</div><div data-bbox="595 5958 1131 2240">3880</div><div data-bbox="595 5969 1131 2240">3890</div><div data-bbox="595 5980 1131 2240">3900</div><div data-bbox="595 5992 1131 2240">3910</div><div data-bbox="595 6003 1131 2240">3920</div><div data-bbox="595 6014 1131 2240">3930</div><div data-bbox="595 6025 1131 2240">3940</div><div data-bbox="595 6036 1131 2240">3950</div><div data-bbox="595 6048 1131 2240">3960</div><div data-bbox="595 6059 1131 2240">3970</div><div data-bbox="595 6070 1131 2240">3980</div></div></div></div></div></div></div> |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## FCC §15.247(a) (1) (iii) & RSS-247 § 5.1 (d) - QUANTITY OF HOPPING CHANNEL TEST

### Applicable Standard

According to FCC §15.247(a) (1) (iii):

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

According to RSS-247 § 5.1 (d):

Frequency hopping systems (FHSS) operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that at least 15 hopping channels are used.

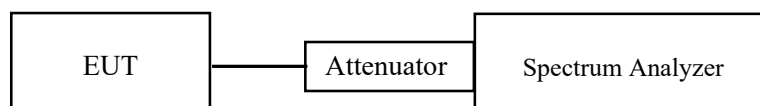
### Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.3

- a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
- b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- c) VBW  $\geq$  RBW.
- d) Sweep: Auto.
- e) Detector function: Peak.
- f) Trace: Max hold.

It might prove necessary to break the span up into sub ranges to show clearly all of the hopping frequencies.

Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels.



Test Data

Environmental Conditions

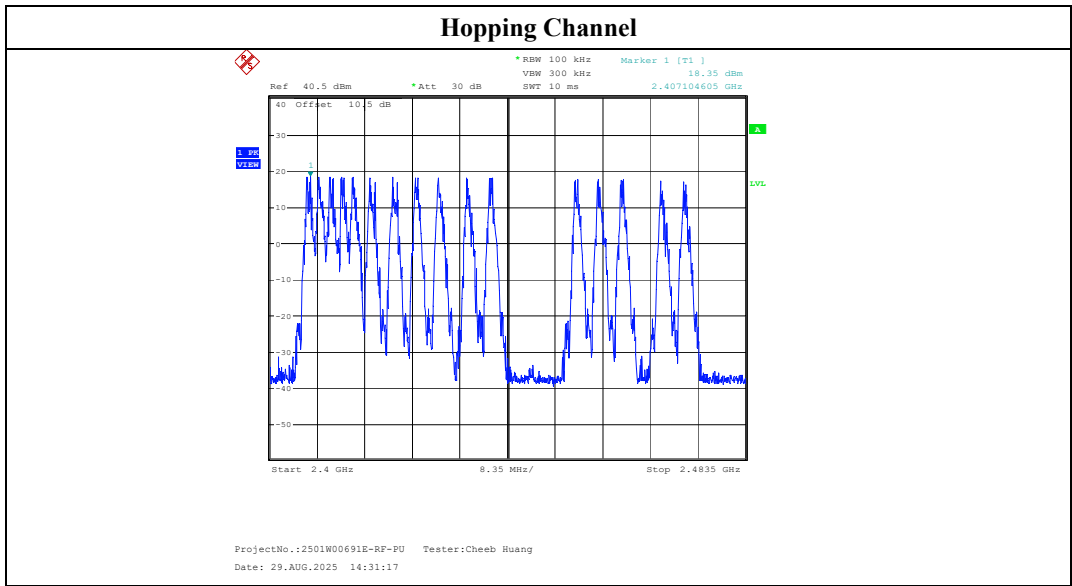
|                    |           |
|--------------------|-----------|
| Temperature:       | 25.9 °C   |
| Relative Humidity: | 51 %      |
| ATM Pressure:      | 100.5 kPa |

The testing was performed by Cheeb Huang on 2025-08-29.

EUT operation mode: Transmitting

Test Result: Compliant

| Mode | Frequency Range (MHz) | Number of Hopping Channel (CH) | Limit (CH) |
|------|-----------------------|--------------------------------|------------|
| GFSK | 2400-2483.5           | 16                             | ≥15        |



Note: The EUT has 32 channels available, but only 16 channels will be activated randomly each time.

## **FCC §15.247(a) (1) (iii) & RSS-247 § 5.1 (d) - TIME OF OCCUPANCY (DWELL TIME)**

### **Applicable Standard**

According to FCC §15.247(a) (1) (iii):

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

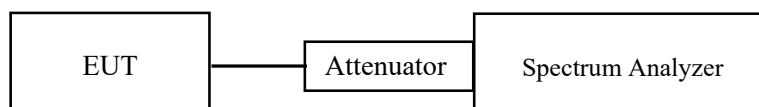
According to RSS-247 § 5.1 (d):

Frequency hopping systems (FHSs) operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed. Transmissions on particular hopping frequencies may be avoided or suppressed provided that at least 15 hopping channels are used.

### **Test Procedure**

According to ANSI C63.10-2020 section 7.8.4

1. The EUT was worked in channel hopping.
2. Set the RBW to: 1MHz.
3. Set the VBW  $\geq 3 \times$  RBW.
4. Set the span to 0Hz.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Recorded the time of single pulses



**Test Data****Environmental Conditions**

|                           |           |
|---------------------------|-----------|
| <b>Temperature:</b>       | 25.9 °C   |
| <b>Relative Humidity:</b> | 51 %      |
| <b>ATM Pressure:</b>      | 100.5 kPa |

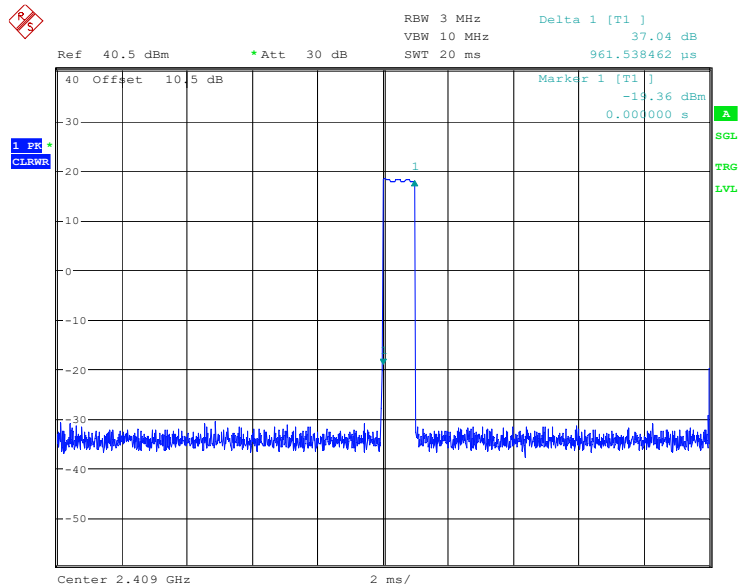
*The testing was performed by Cheeb Huang on 2025-08-29.*

*EUT operation mode: Transmitting*

**Test Result: Compliant**

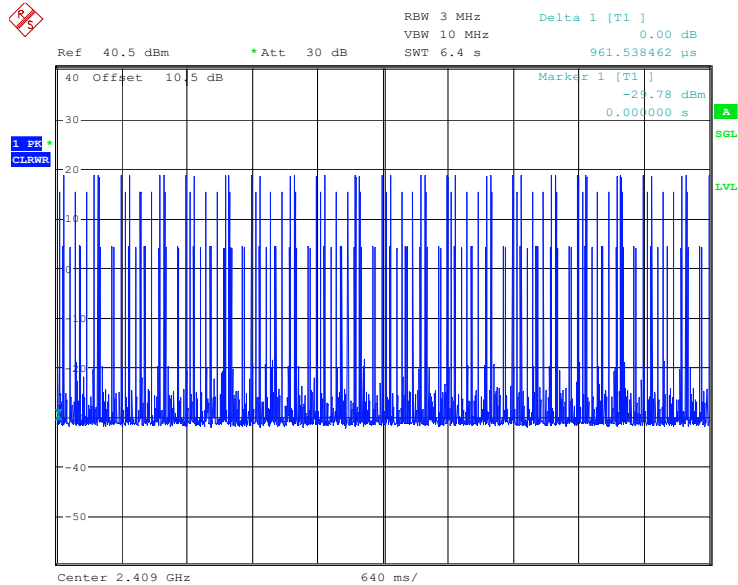
| <b>Test Frequency (MHz)</b>                                                                                                             | <b>Pulse Width (ms)</b> | <b>Observation time (s)</b> | <b>Hopping Numbers in Observation time</b> | <b>Dwell Time (s)</b> | <b>Limit (s)</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------|--------------------------------------------|-----------------------|------------------|
| Hop_2409                                                                                                                                | 0.962                   | 6.4                         | 39                                         | 0.038                 | 0.400            |
| Note: Observation time= Hopping Channel Number× 0.4= 16× 0.4= 6.4 (s)<br>Dwell Time = Pulse Width × Hopping Numbers in Observation time |                         |                             |                                            |                       |                  |

### Pulse Width



ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
 Date: 29.AUG.2025 14:38:36

### Hopping Numbers in 6.4s



ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
 Date: 29.AUG.2025 14:39:52

## FCC §15.247(b) (1) & RSS-247§ 5.1(b) &§ 5.4(b) - PEAK OUTPUT POWER MEASUREMENT

### Applicable Standard

According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. And for all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

According to § RSS-247§ 5.4(b), For frequency hopping systems (FHSs) operating in the band 2400–2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels. The e.i.r.p. shall not exceed 4 W (see Section 5.4(e) for exceptions).

According to § RSS-247§ 5.1(b), Frequency hopping systems (FHSs) shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, FHSs operating in the band 2400–2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two thirds of the -20 dB bandwidth of the hopping channel, whichever is greater, provided that the systems operate with an output power no greater than 0.125 W.

### Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.5

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. The hopping shall be disabled for this test:

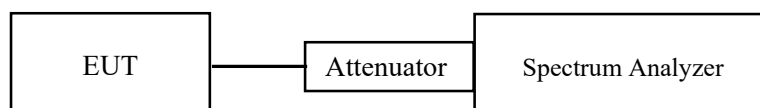
a) Use the following spectrum analyzer settings:

- 1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
- 2) RBW > 20 dB bandwidth of the emission being measured.
- 3) VBW ≥ RBW.
- 4) Sweep: Auto.
- 5) Detector function: Peak.
- 6) Trace: Max hold.

b) Allow trace to stabilize.

c) Use the marker-to-peak function to set the marker to the peak of the emission.

d) The indicated level is the peak output power, after any corrections for external attenuators and cables.



Note: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable loss

**Test Data****Environmental Conditions**

|                           |           |
|---------------------------|-----------|
| <b>Temperature:</b>       | 25.9 °C   |
| <b>Relative Humidity:</b> | 51 %      |
| <b>ATM Pressure:</b>      | 100.5 kPa |

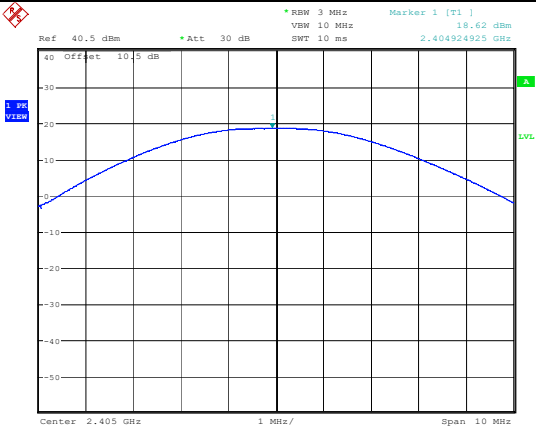
*The testing was performed by Cheeb Huang on 2025-08-29.*

*EUT operation mode: Transmitting*

***Test Result: Compliant***

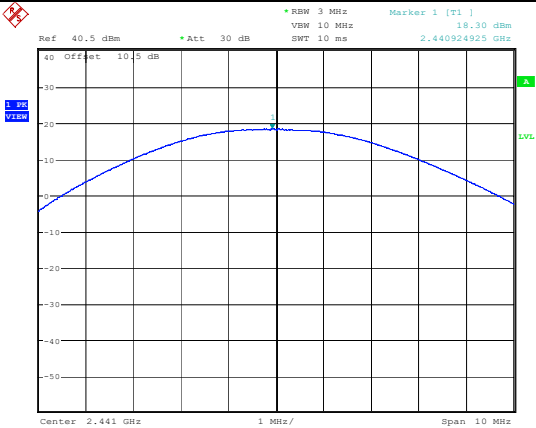
| Mode                                                                     | Test Channel | Test Frequency (MHz) | Maximum Peak Conducted Output Power (dBm) | Limits (dBm) |
|--------------------------------------------------------------------------|--------------|----------------------|-------------------------------------------|--------------|
| <b>GFSK</b>                                                              | Lowest       | 2405                 | 18.62                                     | 21           |
|                                                                          | Middle       | 2441                 | 18.30                                     | 21           |
|                                                                          | Highest      | 2475                 | 17.40                                     | 21           |
| Note: the antenna gain=0dBi, the maximum EIRP=18.62dBm<36dBm(ISED limit) |              |                      |                                           |              |

Low Channel



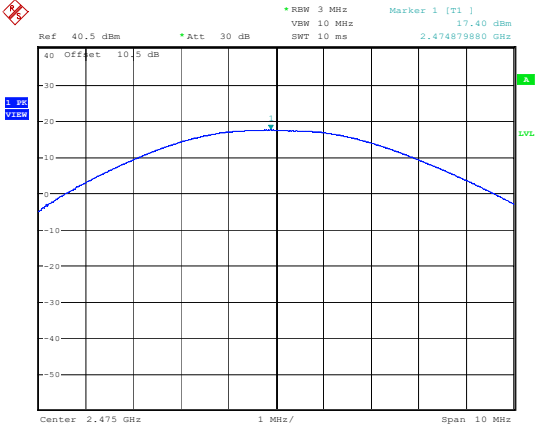
ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
Date: 29.AUG.2025 14:47:50

Middle Channel



ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
Date: 29.AUG.2025 14:48:36

High Channel



ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
Date: 29.AUG.2025 14:49:57

## **FCC §15.247(d) & RSS-247 § 5.5 - BAND EDGES TESTING**

### **Applicable Standard**

According to FCC §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 emissions 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)).

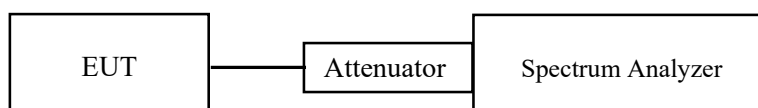
According to RSS-247 § 5.5.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device 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 5.4(e), 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.

### **Test Procedure**

According to ANSI C63.10-2020 section 6.10

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



**Test Data****Environmental Conditions**

|                           |           |
|---------------------------|-----------|
| <b>Temperature:</b>       | 25.9 °C   |
| <b>Relative Humidity:</b> | 51 %      |
| <b>ATM Pressure:</b>      | 100.5 kPa |

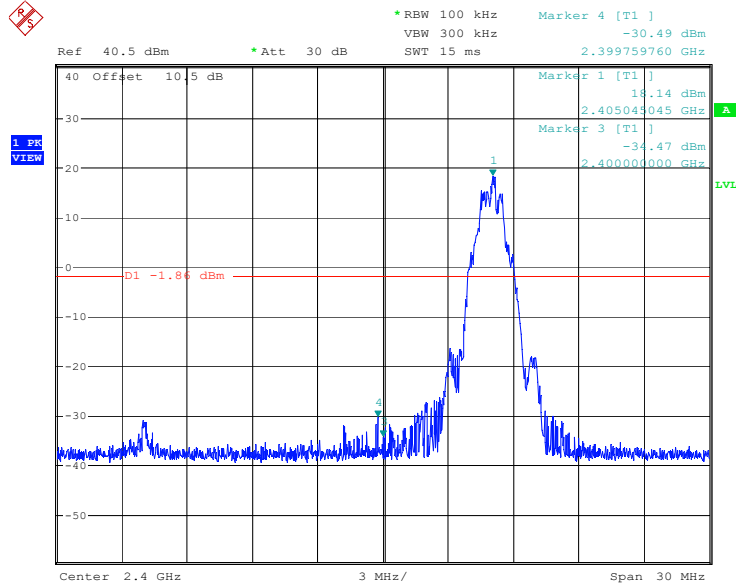
*The testing was performed by Cheeb Huang on 2025-08-29.*

*EUT operation mode: Transmitting*

***Test Result: Compliant***

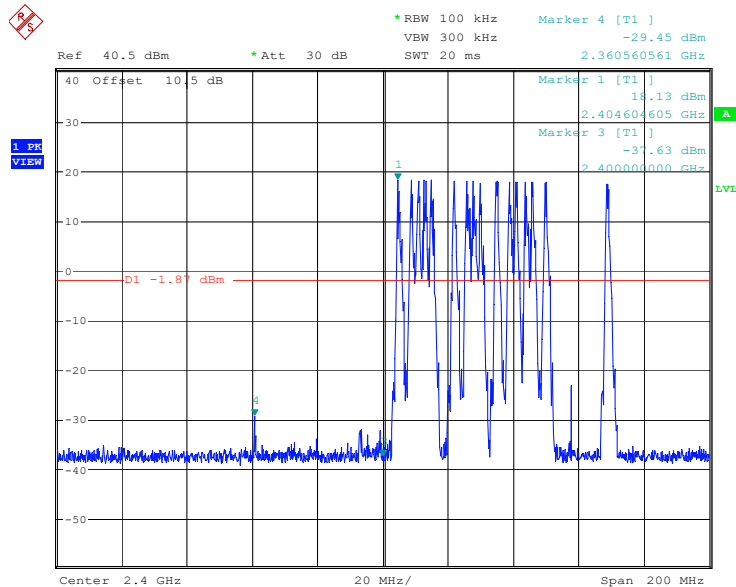
# Conducted Band Edge Result:

## GFSK\_Low Channel



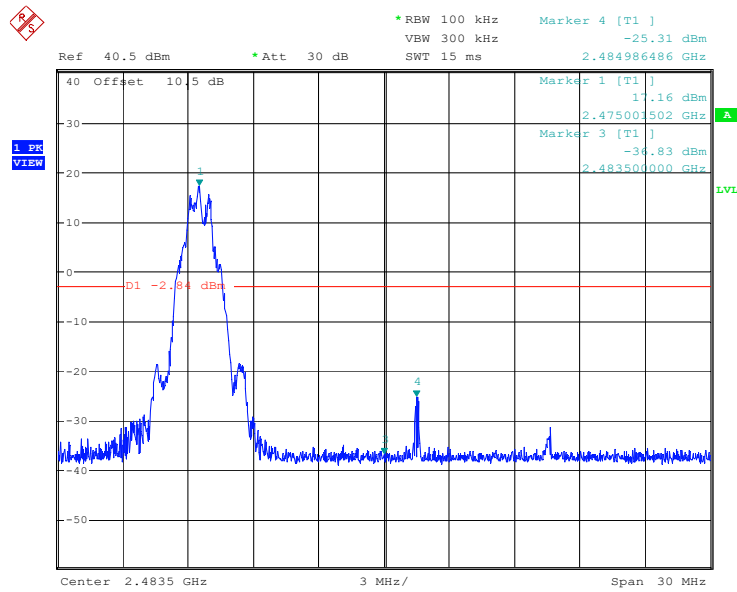
ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
Date: 29.AUG.2025 14:58:54

## GFSK\_Hop\_Low Channel



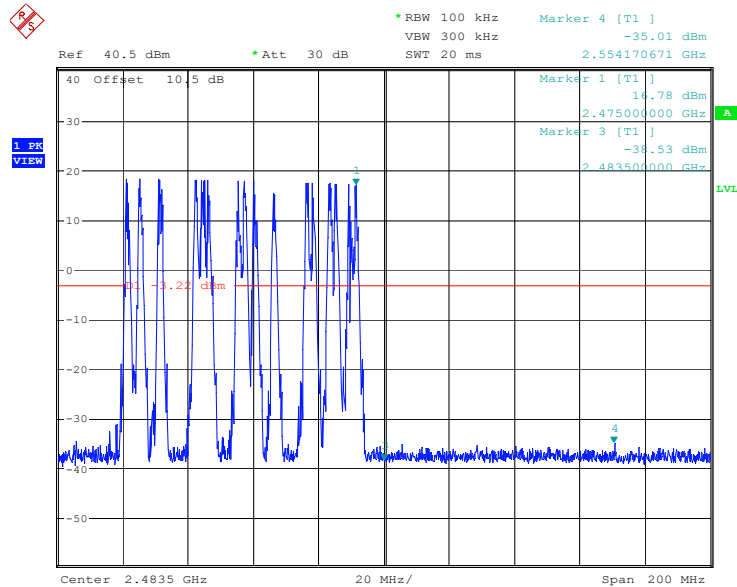
ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
Date: 29.AUG.2025 14:25:35

### GFSK\_High Channel



ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
Date: 29.AUG.2025 14:56:46

### GFSK\_Hop\_High Channel



ProjectNo.:2501W00691E-RF-PU Tester:Cheeb Huang  
Date: 29.AUG.2025 14:22:51

---

**FCC §15.247(d) & RSS-247 § 5.5 - CONDUCTED SPURIOUS EMISSION**

---

**Applicable Standard**

According to FCC §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 emissions 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 RSS-247 §5.5.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device 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 5.4(e), 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.

**Test Procedure**

Test Method: ANSI C63.10-2020 Clause 11.11.3

Establish an emission level by using the following procedure:

a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

b) Set the RBW = 100 kHz.

c) Set the VBW  $\geq [3 \times \text{RBW}]$ .

d) Detector = peak.

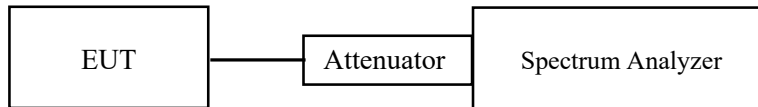
e) Sweep time = No faster than coupled (auto) time.

f) Trace mode = max-hold.

g) Allow trace to fully stabilize.

h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit



Note: Worst case: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

## Test Data

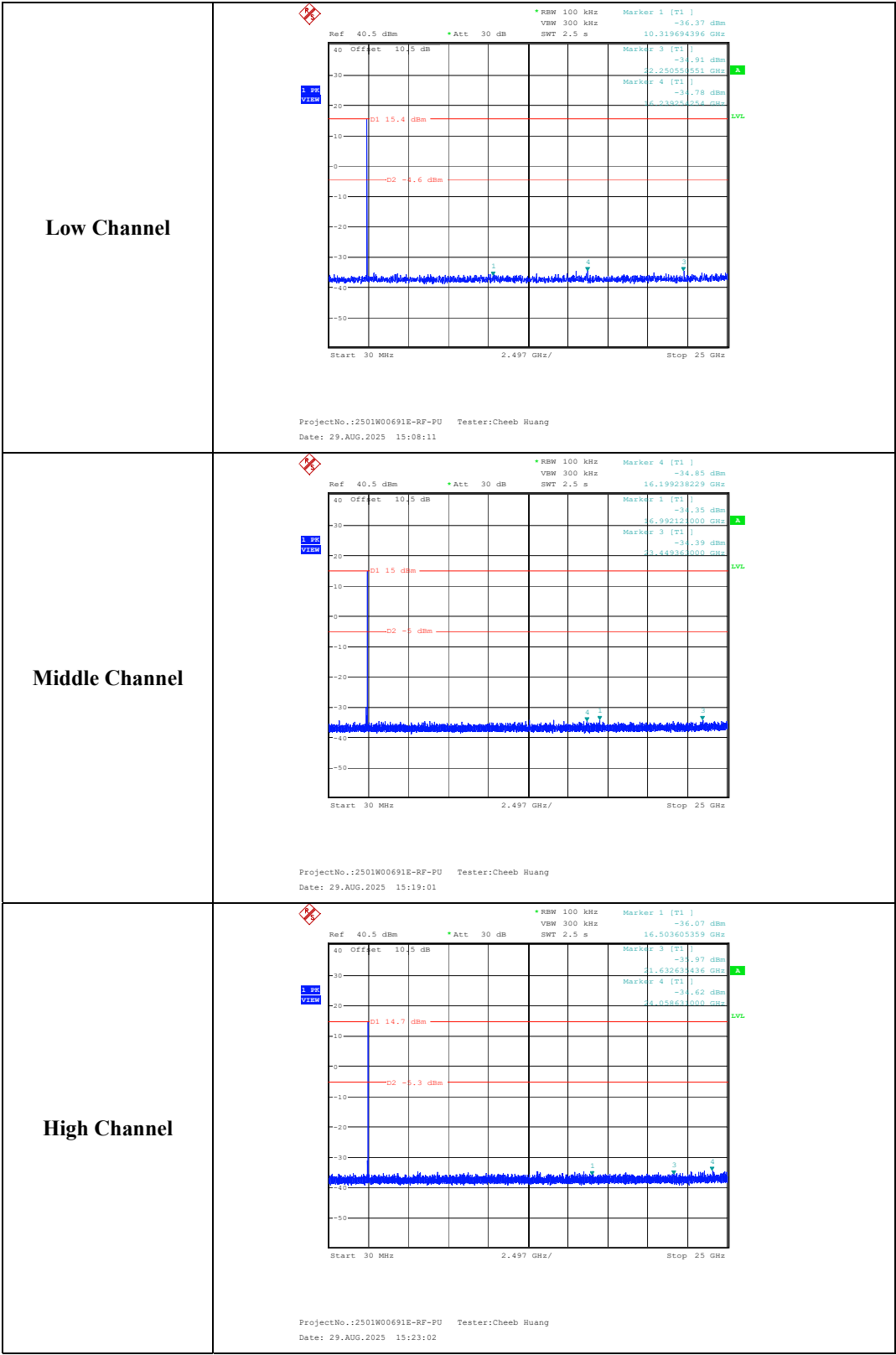
### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 25.9 °C   |
| Relative Humidity: | 51 %      |
| ATM Pressure:      | 100.5 kPa |

*The testing was performed by Cheeb Huang on 2025-08-29.*

*EUT operation mode: Transmitting*

***Test Result: Compliant***



## **EUT PHOTOGRAPHS**

Please refer to the attachment 2501W00691E-RF-EXPB External photo and 2501W00691E-RF-INPB Internal photo.

## **TEST SETUP PHOTOGRAPHS**

---

Please refer to the attachment 2501W00691E-RFB-TSP Test Setup photo.

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