

# TEST REPORT

Applicant Name: Shenzhen Amazwear Technology CO., LTD.  
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Longhua District, Shenzhen, China  
Report Number: SZ1231207-73588E-RF-00B  
FCC ID: 2BEH2-TANKT3ULTRA

## Test Standard (s)

FCC PART 15.247

## Sample Description

Product Type: Smart Watch  
Model No.: TANK T3 Ultra  
Multiple Model(s) No.: N/A  
Trade Mark: KOSPET  
Date Received: 2024/01/20  
Report Date: 2024/03/13

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

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

## Prepared and Checked By:

*April Zhang*

April Zhang  
RF Engineer

## Approved By:

*Jimmy Xiao*

Jimmy Xiao  
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.

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## **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         |
| EXTERNAL I/O CABLE.....                                                 | 8         |
| BLOCK DIAGRAM OF TEST SETUP .....                                       | 8         |
| <b>SUMMARY OF TEST RESULTS .....</b>                                    | <b>10</b> |
| <b>TEST EQUIPMENT LIST .....</b>                                        | <b>11</b> |
| <b>FCC§15.247 (I), §1.1307 (B) (I) &amp;§2.1093 – RF EXPOSURE .....</b> | <b>12</b> |
| APPLICABLE STANDARD .....                                               | 12        |
| <b>FCC §15.203 - ANTENNA REQUIREMENT.....</b>                           | <b>13</b> |
| APPLICABLE STANDARD .....                                               | 13        |
| ANTENNA CONNECTOR CONSTRUCTION .....                                    | 13        |
| <b>FCC §15.207 (A) - AC LINE CONDUCTED EMISSIONS .....</b>              | <b>14</b> |
| APPLICABLE STANDARD .....                                               | 14        |
| EUT SETUP .....                                                         | 14        |
| EMI TEST RECEIVER SETUP.....                                            | 14        |
| TEST PROCEDURE .....                                                    | 14        |
| FACTOR & OVER LIMIT CALCULATION.....                                    | 15        |
| TEST DATA .....                                                         | 15        |
| <b>FCC §15.205, §15.209 &amp; §15.247(D) - RADIATED EMISSIONS.....</b>  | <b>18</b> |
| APPLICABLE STANDARD .....                                               | 18        |
| EUT SETUP .....                                                         | 18        |
| EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP .....                       | 19        |
| TEST PROCEDURE .....                                                    | 19        |
| FACTOR & OVER LIMIT/MARGIN CALCULATION .....                            | 20        |
| TEST DATA .....                                                         | 20        |
| <b>FCC §15.247(A) (1) - CHANNEL SEPARATION TEST .....</b>               | <b>45</b> |
| APPLICABLE STANDARD .....                                               | 45        |
| TEST PROCEDURE .....                                                    | 45        |
| TEST DATA .....                                                         | 45        |

|                                                                         |           |
|-------------------------------------------------------------------------|-----------|
| <b>FCC §15.247(A) (1) - 20 DB EMISSION BANDWIDTH.....</b>               | <b>50</b> |
| APPLICABLE STANDARD .....                                               | 50        |
| TEST PROCEDURE .....                                                    | 50        |
| TEST DATA .....                                                         | 50        |
| <b>FCC §15.247(A) (1) (III) - QUANTITY OF HOPPING CHANNEL TEST.....</b> | <b>55</b> |
| APPLICABLE STANDARD .....                                               | 55        |
| TEST PROCEDURE .....                                                    | 55        |
| TEST DATA .....                                                         | 55        |
| <b>FCC §15.247(A) (1) (III) - TIME OF OCCUPANCY (DWELL TIME).....</b>   | <b>57</b> |
| APPLICABLE STANDARD .....                                               | 57        |
| TEST PROCEDURE .....                                                    | 57        |
| TEST DATA .....                                                         | 57        |
| <b>FCC §15.247(B) (1) - PEAK OUTPUT POWER MEASUREMENT .....</b>         | <b>62</b> |
| APPLICABLE STANDARD .....                                               | 62        |
| TEST PROCEDURE .....                                                    | 62        |
| TEST DATA .....                                                         | 62        |
| <b>FCC §15.247(D) § 5.5 - BAND EDGES TESTING.....</b>                   | <b>66</b> |
| APPLICABLE STANDARD .....                                               | 66        |
| TEST PROCEDURE .....                                                    | 66        |
| TEST DATA .....                                                         | 66        |
| <b>EUT PHOTOGRAPHS.....</b>                                             | <b>73</b> |
| <b>TEST SETUP PHOTOGRAPHS .....</b>                                     | <b>74</b> |

DOCUMENT REVISION HISTORY

| Revision Number | Report Number           | Description of Revision | Date of Revision |
|-----------------|-------------------------|-------------------------|------------------|
| 0               | SZ1231207-73588E-RF-00B | Original Report         | 2024/03/13       |

## GENERAL INFORMATION

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

|                                    |                                                                                                    |
|------------------------------------|----------------------------------------------------------------------------------------------------|
| Product                            | Smart Watch                                                                                        |
| Tested Model                       | TANK T3 Ultra                                                                                      |
| Multiple Model(s)                  | N/A                                                                                                |
| Frequency Range                    | Bluetooth: 2402-2480MHz                                                                            |
| Transmit Peak Power                | 2.17dBm                                                                                            |
| Modulation Technique               | Bluetooth: GFSK, $\pi/4$ -DQPSK, 8DPSK                                                             |
| Antenna Specification <sup>#</sup> | -0.5dBi (provided by the applicant)                                                                |
| Voltage Range                      | DC 3.85V from battery or DC 5V from Magnetic charging base                                         |
| Sample serial number               | 2FX8-2 for RF Conducted Test<br>2FX8-6 for CE & Radiated Emissions<br>(Assigned by BACL, Shenzhen) |
| Sample/EUT Status                  | Good condition                                                                                     |
| Adapter Information                | N/A                                                                                                |
|                                    |                                                                                                    |

### Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.207, 15.205, 15.209 and 15.247 rules.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

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.

Each test item follows test standards and with no deviation.

## Measurement Uncertainty

| Parameter                          |                             | Uncertainty                           |
|------------------------------------|-----------------------------|---------------------------------------|
| Occupied Channel Bandwidth         |                             | ±5%                                   |
| RF output power, conducted         |                             | 0.72 dB(k=2, 95% level of confidence) |
| AC Power Lines Conducted Emissions | 9kHz~150 kHz                | 3.94dB(k=2, 95% level of confidence)  |
|                                    | 150 kHz ~30MHz              | 3.84dB(k=2, 95% level of confidence)  |
| Radiated Emissions                 | 9kHz - 30MHz                | 3.30dB(k=2, 95% level of confidence)  |
|                                    | 30MHz~200MHz (Horizontal)   | 4.48dB(k=2, 95% level of confidence)  |
|                                    | 30MHz~200MHz (Vertical)     | 4.55dB(k=2, 95% level of confidence)  |
|                                    | 200MHz~1000MHz (Horizontal) | 4.85dB(k=2, 95% level of confidence)  |
|                                    | 200MHz~1000MHz (Vertical)   | 5.05dB(k=2, 95% level of confidence)  |
|                                    | 1GHz - 6GHz                 | 5.35dB(k=2, 95% level of confidence)  |
|                                    | 6GHz - 18GHz                | 5.44dB(k=2, 95% level of confidence)  |
|                                    | 18GHz - 40GHz               | 5.16dB(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.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in an engineering mode.

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 0       | 2402            | 40      | 2442            |
| 1       | 2403            | 41      | 2443            |
| 2       | 2404            | 42      | 2444            |
| ...     | ...             | ...     | ...             |
| ...     | ...             | ...     | ...             |
| 36      | 2438            | 75      | 2477            |
| 37      | 2439            | 76      | 2478            |
| 38      | 2440            | 77      | 2479            |
| 39      | 2441            | 78      | 2480            |

EUT was tested with Channel 0, 39 and 78.

### EUT Exercise Software

“FCC.exe v2.24”<sup>#</sup> exercise software was used and the power level is 3<sup>#</sup>. The software and power level was provided by the applicant.

### Special Accessories

No special accessory.

### Equipment Modifications

No modification was made to the EUT tested.

### Support Equipment List and Details

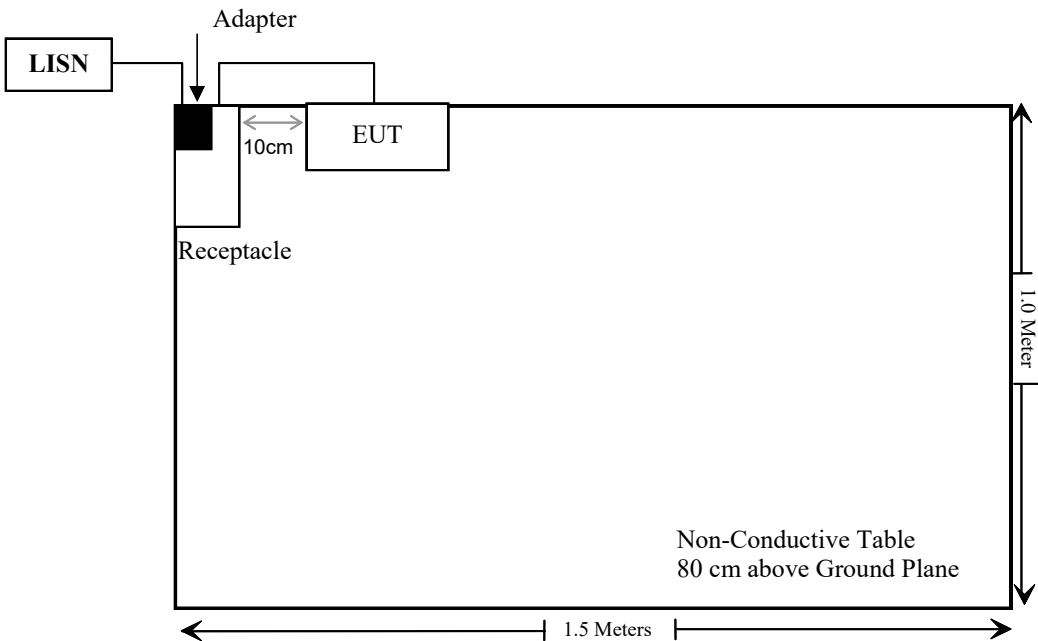
| Manufacturer | Description | Model   | Serial Number |
|--------------|-------------|---------|---------------|
| KODAK        | Adapter     | SGITL1A | Unknown       |

External I/O Cable

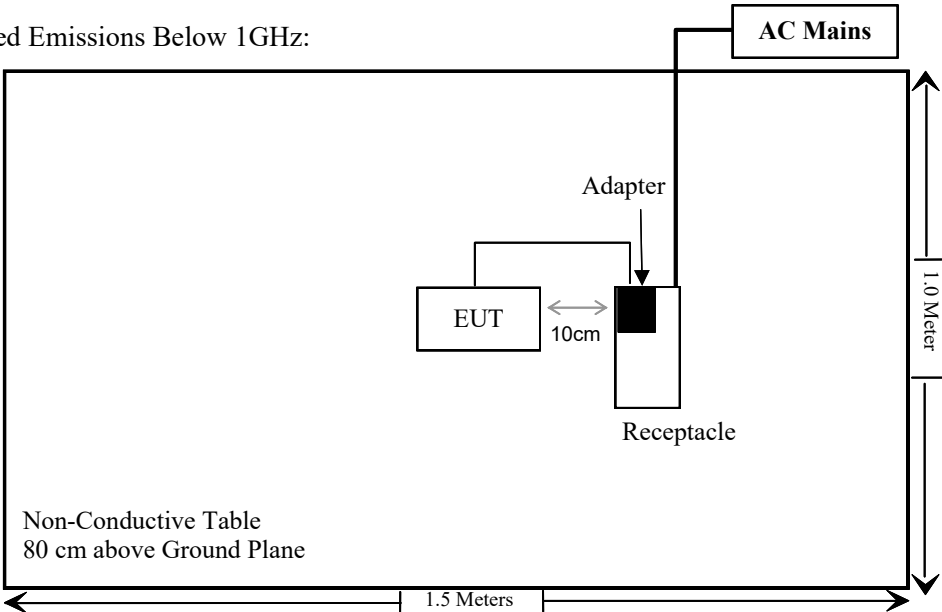
| Cable Description                 | Length (m) | From Port | To      |
|-----------------------------------|------------|-----------|---------|
| Un-shielding Detachable USB Cable | 1.0        | EUT       | Adapter |

Block Diagram of Test Setup

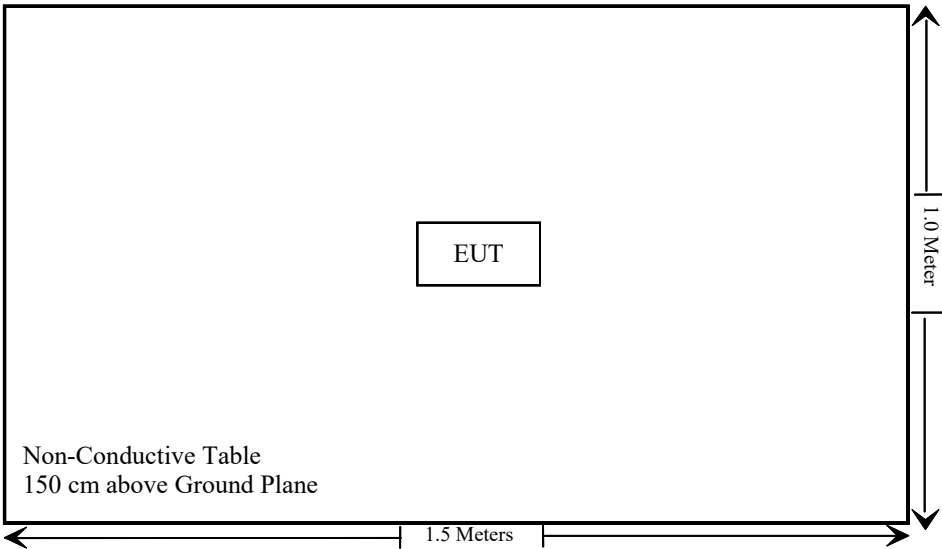
For Conducted Emission



For Radiated Emissions Below 1GHz:



For Radiated Emissions Above 1GHz:



**SUMMARY OF TEST RESULTS**

| Rules                                  | Description of Test              | Result    |
|----------------------------------------|----------------------------------|-----------|
| §15.247 (i), §1.1307 (b) (1) & §2.1093 | RF Exposure                      | Compliant |
| FCC §15.203                            | Antenna Requirement              | Compliant |
| FCC §15.207(a)                         | AC Line Conducted Emissions      | Compliant |
| FCC §15.205, §15.209, §15.247(d)       | Radiated Emissions               | Compliant |
| FCC §15.247(a)(1)                      | 20 dB Emission Bandwidth         | Compliant |
| FCC §15.247(a)(1)                      | Channel Separation Test          | Compliant |
| FCC §15.247(a)(1)(iii)                 | Time of Occupancy (Dwell Time)   | Compliant |
| FCC §15.247(a)(1)(iii)                 | Quantity of hopping channel Test | Compliant |
| FCC §15.247(b)(1)                      | Peak Output Power Measurement    | Compliant |
| FCC §15.247(d)                         | Band edges                       | 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                 | 2023/02/08       | 2024/02/07           |
| Rohde & Schwarz                | LISN                    | ENV216                  | 101613                 | 2023/02/08       | 2024/02/07           |
| Rohde & Schwarz                | Transient Limiter       | ESH3Z2                  | DE25985                | 2023/08/03       | 2024/08/02           |
| Unknown                        | CE Cable                | CE Cable                | UF A210B-1-0720-504504 | 2023/08/03       | 2024/08/02           |
| Audix                          | EMI Test software       | E3                      | 191218                 | NCR              | NCR                  |
| <b>Radiated Emission Test</b>  |                         |                         |                        |                  |                      |
| R&S                            | EMI Test Receiver       | ESR3                    | 102455                 | 2023/02/08       | 2024/02/07           |
| Sonoma instrument              | Pre-amplifier           | 310 N                   | 186238                 | 2023/06/08       | 2024/06/07           |
| Sunol Sciences                 | Broadband Antenna       | JB1                     | A040904-1              | 2023/07/20       | 2024/07/19           |
| ETS                            | Passive Loop Antenna    | 6512                    | 29604                  | 2023/07/07       | 2024/07/06           |
| Unknown                        | Cable                   | Chamber Cable 1         | F-03-EM236             | 2023/08/03       | 2024/08/02           |
| Unknown                        | Cable                   | Chamber Cable 4         | EC-007                 | 2023/08/03       | 2024/08/02           |
| Rohde & Schwarz                | Spectrum Analyzer       | FSV40                   | 101605                 | 2023/04/18       | 2024/04/17           |
| COM-POWER                      | Pre-amplifier           | PA-122                  | 181919                 | 2023/06/29       | 2024/06/28           |
| A.H.System                     | Pre-amplifier           | PAM-1840VH              | 190                    | 2023/08/03       | 2024/08/02           |
| Schwarzbeck                    | Horn Antenna            | BBHA9120D(1201)         | 1143                   | 2023/07/26       | 2024/07/25           |
| Electro-Mechanics Co           | Horn Antenna            | 3116                    | 2026                   | 2023/09/18       | 2026/09/17           |
| Unknown                        | RF Cable                | KMSE                    | 0735                   | 2023/10/08       | 2024/10/07           |
| Unknown                        | RF Cable                | UFA147                  | 219661                 | 2023/10/08       | 2024/10/07           |
| Unknown                        | RF Cable                | XH750A-N                | J-10M                  | 2023/10/08       | 2024/10/07           |
| UTIFLEX                        | RF Cable                | NO. 13                  | 232308-001             | 2023/08/03       | 2024/08/02           |
| MICRO-TRONICS                  | 2.8G Passband filter    | HPM50111                | F-03-EM217             | 2023/08/03       | 2024/08/02           |
| SNSD                           | 2.4G Band Reject filter | BSF2402-2480MN-0898-001 | 2.4G filter            | 2023/08/03       | 2024/08/02           |
| Audix                          | EMI Test software       | E3                      | 191218(V9)             | NCR              | NCR                  |
| <b>RF Conducted Test</b>       |                         |                         |                        |                  |                      |
| R&S                            | SPECTRUM ANALYZER       | FSU26                   | 200120                 | 2024/01/08       | 2025/01/07           |
| MARCONI                        | 10dB Attenuator         | 6534/3                  | 2942                   | 2023/07/04       | 2024/07/03           |
| Micro-Tronics                  | RF Cable                | 8082135                 | W1113                  | 2023/07/04       | 2024/07/03           |

\* **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§15.247 (i), §1.1307 (b) (1) &§2.1093 – RF EXPOSURE****Applicable Standard**

According to FCC §2.1093 and §1.1307(b) (1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 General RF Exposure Guidance

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

1.  $f(\text{GHz})$  is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test Exclusion.

**Measurement Result**

**For worst case:**

| Mode | Frequency (MHz) | Max tune-up conducted power <sup>#</sup> (dBm) | Max tune-up conducted power <sup>#</sup> (mW) | Distance (mm) | Calculated value | Threshold (1-g SAR) | SAR Test Exclusion |
|------|-----------------|------------------------------------------------|-----------------------------------------------|---------------|------------------|---------------------|--------------------|
| BT   | 2402-2480       | 2.5                                            | 1.78                                          | 5             | 0.6              | 3.0                 | Yes                |

**Result:** Compliant.

## **FCC §15.203 - 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.

### **Antenna Connector Construction**

The EUT has one internal antenna arrangement, which was permanently attached, the antenna gain<sup>#</sup> is -0.5 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

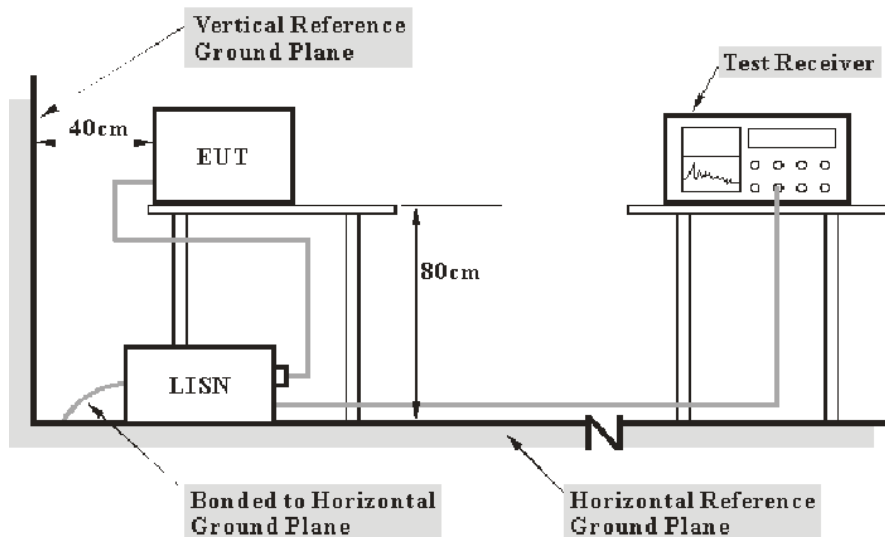
**Result: Compliant**

## FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

### Applicable Standard

FCC §15.207(a)

### 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 C63.10-2013. The related limit was specified in FCC Part 15.207.

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  | IF B/W |
|------------------|--------|
| 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

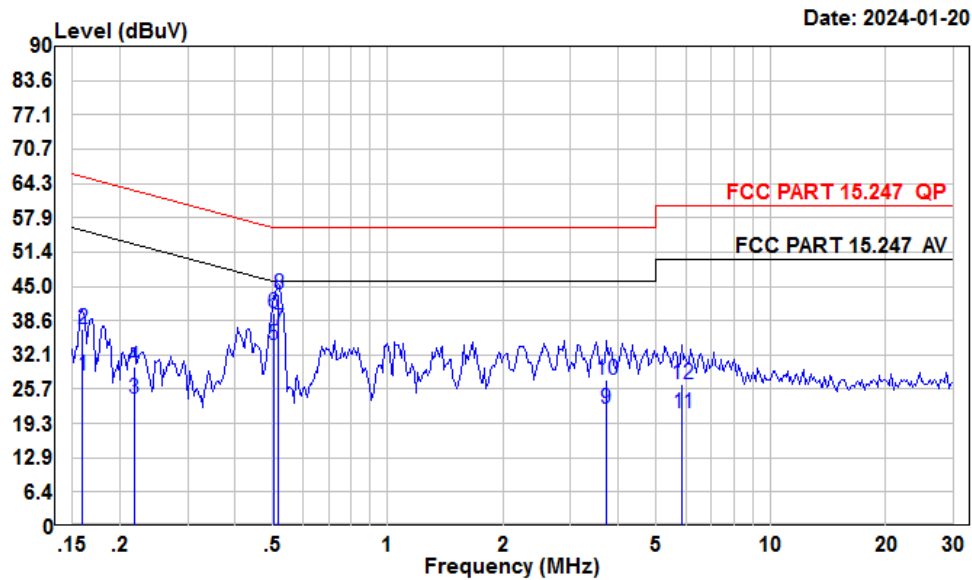
### Environmental Conditions

|                    |         |
|--------------------|---------|
| Temperature:       | 25 °C   |
| Relative Humidity: | 46 %    |
| ATM Pressure:      | 101 kPa |

*The testing was performed by Macy Shi on 2024-01-20.*

*EUT operation mode: Transmitting (Maximum output power mode, GFSK low channel)*

## AC 120V/60 Hz, Line



Condition: Line

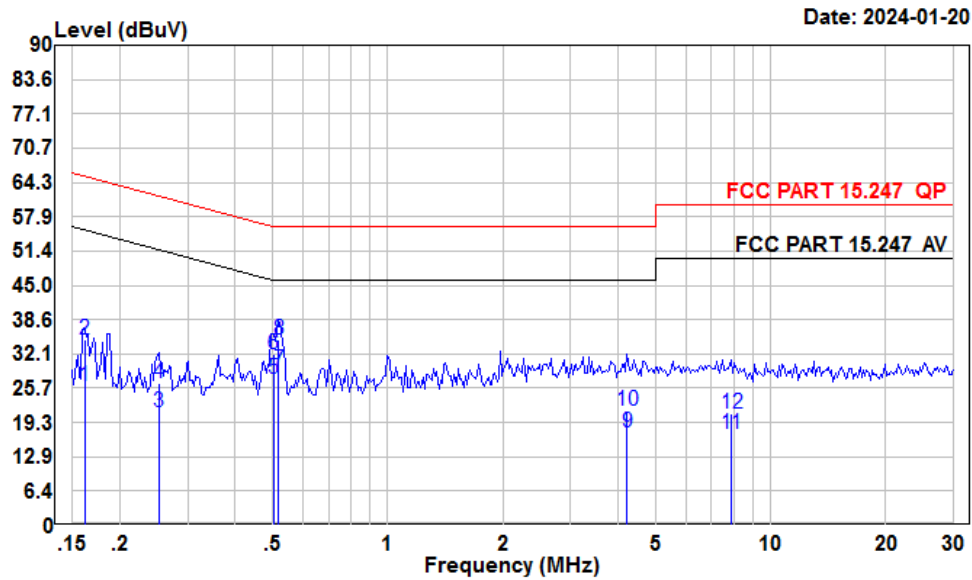
Project : SZ1231207-73588E-RF

Tester : Macy shi

Note : BT

|    | Freq | Read Level | LISN Level | LISN Factor | Cable Loss | Limit Line | Over Limit | Remark  |
|----|------|------------|------------|-------------|------------|------------|------------|---------|
|    | MHz  | dBuV       | dBuV       | dB          | dB         | dBuV       | dB         |         |
| 1  | 0.16 | 8.04       | 28.39      | 10.20       | 10.15      | 55.47      | -27.08     | Average |
| 2  | 0.16 | 16.76      | 37.11      | 10.20       | 10.15      | 65.47      | -28.36     | QP      |
| 3  | 0.22 | 3.71       | 24.04      | 10.20       | 10.13      | 52.92      | -28.88     | Average |
| 4  | 0.22 | 9.67       | 30.00      | 10.20       | 10.13      | 62.92      | -32.92     | QP      |
| 5  | 0.50 | 13.78      | 34.13      | 10.20       | 10.15      | 46.00      | -11.87     | Average |
| 6  | 0.50 | 19.60      | 39.95      | 10.20       | 10.15      | 56.00      | -16.05     | QP      |
| 7  | 0.52 | 16.49      | 36.87      | 10.22       | 10.16      | 46.00      | -9.13      | Average |
| 8  | 0.52 | 23.13      | 43.51      | 10.22       | 10.16      | 56.00      | -12.49     | QP      |
| 9  | 3.72 | 1.55       | 22.10      | 10.29       | 10.26      | 46.00      | -23.90     | Average |
| 10 | 3.72 | 6.97       | 27.52      | 10.29       | 10.26      | 56.00      | -28.48     | QP      |
| 11 | 5.87 | 0.94       | 21.32      | 10.16       | 10.22      | 50.00      | -28.68     | Average |
| 12 | 5.87 | 6.29       | 26.67      | 10.16       | 10.22      | 60.00      | -33.33     | QP      |

## AC 120V/60 Hz, Neutral



Condition: Neutral

Project : SZ1231207-73588E-RF

Tester : Macy shi

Note : BT

|    | Freq | Read Level | LISN Level | LISN Factor | Cable Loss | Limit Line | Over Limit | Remark  |
|----|------|------------|------------|-------------|------------|------------|------------|---------|
|    | MHz  | dBuV       | dBuV       | dB          | dB         | dBuV       | dB         |         |
| 1  | 0.16 | 5.68       | 26.06      | 10.23       | 10.15      | 55.38      | -29.32     | Average |
| 2  | 0.16 | 14.33      | 34.71      | 10.23       | 10.15      | 65.38      | -30.67     | QP      |
| 3  | 0.25 | 0.84       | 21.32      | 10.27       | 10.21      | 51.69      | -30.37     | Average |
| 4  | 0.25 | 6.10       | 26.58      | 10.27       | 10.21      | 61.69      | -35.11     | QP      |
| 5  | 0.50 | 7.18       | 27.53      | 10.20       | 10.15      | 46.00      | -18.47     | Average |
| 6  | 0.50 | 11.88      | 32.23      | 10.20       | 10.15      | 56.00      | -23.77     | QP      |
| 7  | 0.52 | 8.73       | 29.10      | 10.21       | 10.16      | 46.00      | -16.90     | Average |
| 8  | 0.52 | 14.50      | 34.87      | 10.21       | 10.16      | 56.00      | -21.13     | QP      |
| 9  | 4.22 | -2.99      | 17.46      | 10.20       | 10.25      | 46.00      | -28.54     | Average |
| 10 | 4.22 | 0.92       | 21.37      | 10.20       | 10.25      | 56.00      | -34.63     | QP      |
| 11 | 7.89 | -3.44      | 17.02      | 10.23       | 10.23      | 50.00      | -32.98     | Average |
| 12 | 7.89 | 0.60       | 21.06      | 10.23       | 10.23      | 60.00      | -38.94     | QP      |

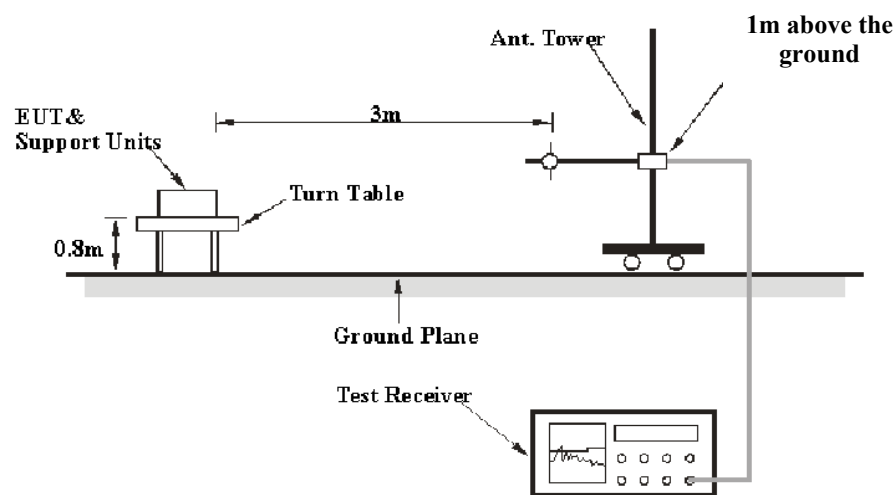
## FCC §15.205, §15.209 & §15.247(d) - RADIATED EMISSIONS

### Applicable Standard

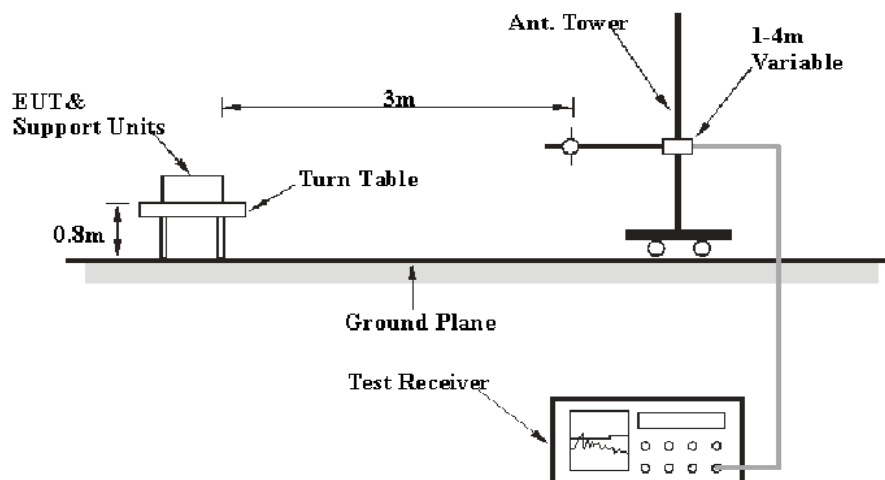
FCC §15.205; §15.209; §15.247(d)

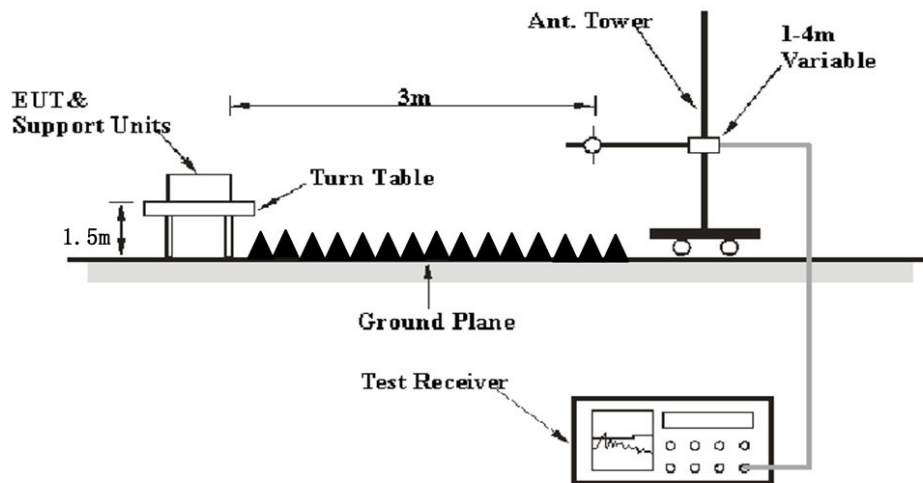
### EUT Setup

9 kHz-30MHz:



30MHz-1GHz:



**Above 1GHz:**

The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.247 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 |
|-------------------|---------|-----------|---------|-------------|
| 9 kHz – 150 kHz   | /       | /         | 200 Hz  | QP          |
|                   | 300 Hz  | 1 kHz     | /       | PK          |
| 150 kHz – 30 MHz  | /       | /         | 9 kHz   | QP          |
|                   | 10 kHz  | 30 kHz    | /       | PK          |
| 30 MHz – 1000 MHz | /       | /         | 120 kHz | QP          |
|                   | 100 kHz | 300 kHz   | /       | PK          |
| Above 1 GHz       | 1MHz    | 3 MHz     | /       | PK          |
|                   | 1MHz    | 10 Hz     | /       | AV          |

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.

**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 for frequency range of 9 kHz -1 GHz and peak and Average detection modes for frequencies above 1 GHz.

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

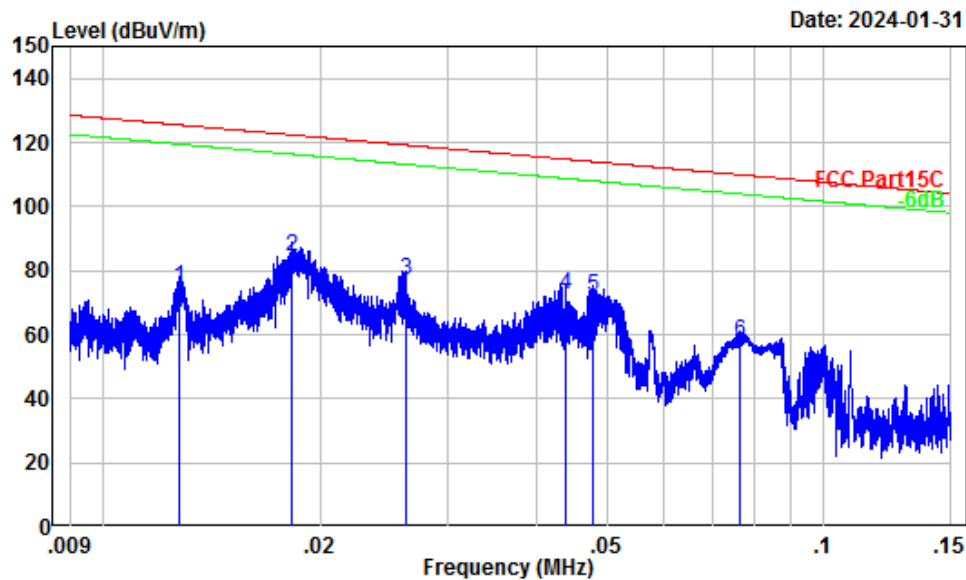
|                    |            |
|--------------------|------------|
| Temperature:       | 22~26.5 °C |
| Relative Humidity: | 52~54 %    |
| ATM Pressure:      | 101 kPa    |

*The testing was performed by Anson Su & Warren Huang on 2024-01-31 for below 1GHz and Dylan Yang on 2024-01-25 to 2024-03-13 for above 1GHz.*

*Test mode: Transmitting*

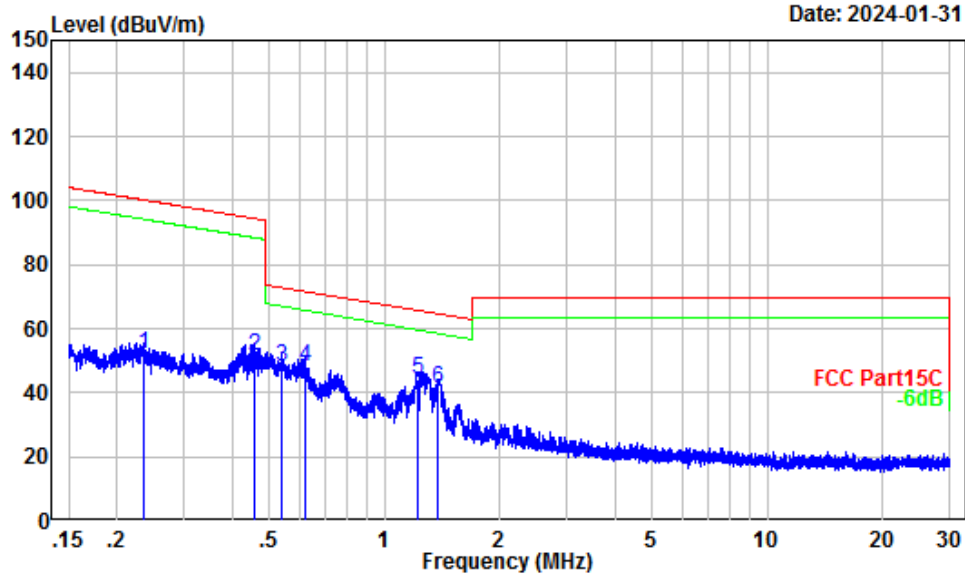
*Note: After pre-scan in the X, Y and Z axes of orientation, the worst case is below.*

9 kHz-30MHz: (Maximum output power mode, GFSK low channel, Parallel)



Site : chamber  
Condition : 3m  
Project Number: SZ1231207-73588E-RF  
Note : BT  
Tester : Warren Huang

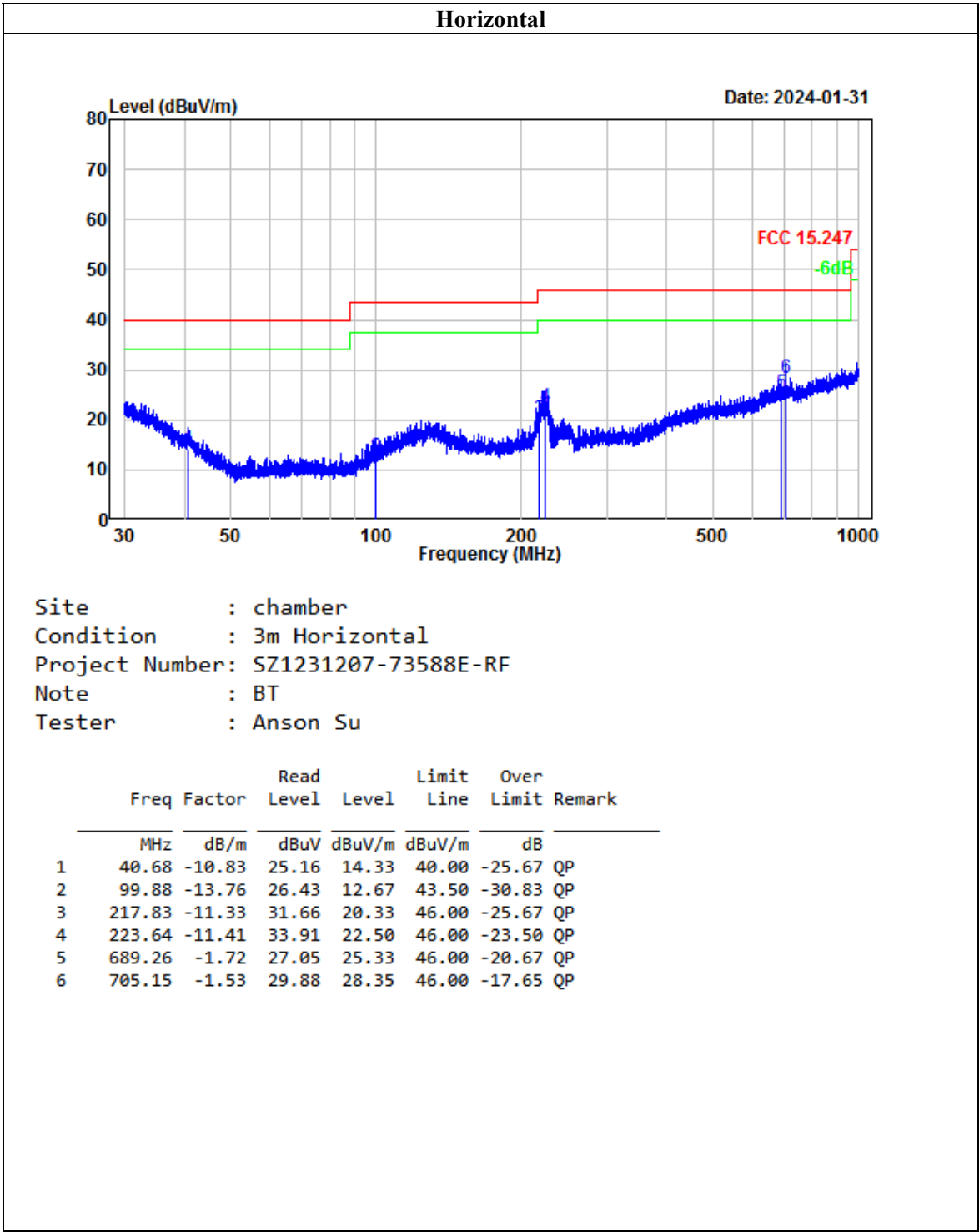
|   | Freq | Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|------|--------|------------|--------|------------|------------|--------|
|   | MHz  | dB/m   | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 0.01 | 52.45  | 22.10      | 74.55  | 125.46     | -50.91     | QP     |
| 2 | 0.02 | 50.76  | 33.42      | 84.18  | 122.36     | -38.18     | QP     |
| 3 | 0.03 | 48.27  | 28.66      | 76.93  | 119.18     | -42.25     | QP     |
| 4 | 0.04 | 42.93  | 29.76      | 72.69  | 114.79     | -42.10     | QP     |
| 5 | 0.05 | 41.66  | 30.12      | 71.78  | 114.01     | -42.23     | QP     |
| 6 | 0.08 | 37.36  | 20.13      | 57.49  | 109.93     | -52.44     | QP     |



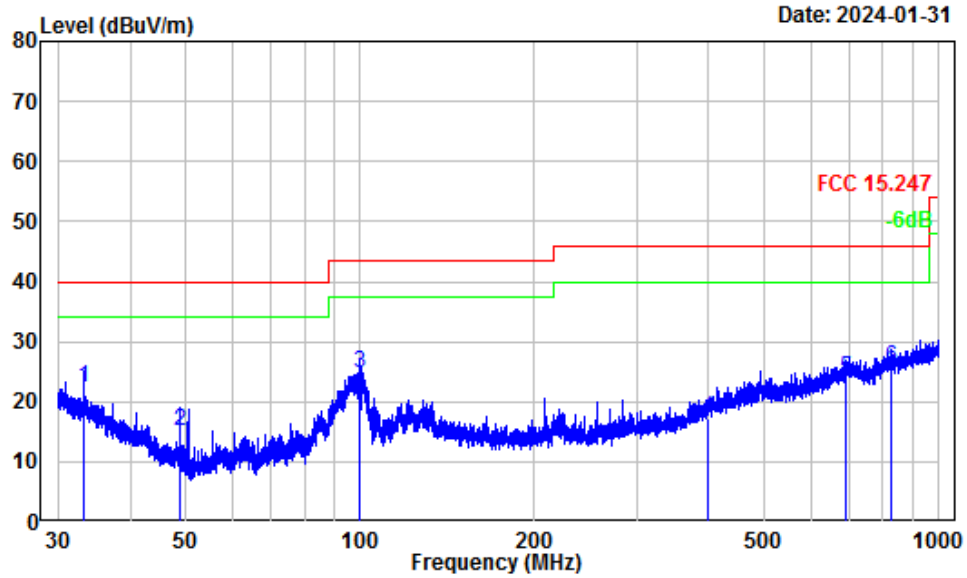
Site : chamber  
 Condition : 3m  
 Project Number: SZ1231207-73588E-RF  
 Note : BT  
 Tester : Warren Huang

|   | Freq | Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|------|--------|------------|--------|------------|------------|--------|
|   | MHz  | dB/m   | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 0.24 | 27.71  | 24.35      | 52.06  | 100.15     | -48.09     | QP     |
| 2 | 0.46 | 21.56  | 29.68      | 51.24  | 94.43      | -43.19     | QP     |
| 3 | 0.54 | 20.43  | 27.44      | 47.87  | 72.92      | -25.05     | QP     |
| 4 | 0.62 | 19.37  | 28.62      | 47.99  | 71.69      | -23.70     | QP     |
| 5 | 1.23 | 14.32  | 29.87      | 44.19  | 65.65      | -21.46     | QP     |
| 6 | 1.39 | 13.53  | 27.75      | 41.28  | 64.58      | -23.30     | QP     |

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



## Vertical



Site : chamber  
Condition : 3m Vertical  
Project Number: SZ1231207-73588E-RF  
Note : BT  
Tester : Anson Su

|   | Freq Factor |        | Read  |        | Limit  | Over   | Remark |
|---|-------------|--------|-------|--------|--------|--------|--------|
|   | MHz         | dB/m   | dBuV  | dBuV/m | dBuV/m | Limit  |        |
| 1 | 33.33       | -7.70  | 30.00 | 22.30  | 40.00  | -17.70 | QP     |
| 2 | 48.65       | -16.73 | 31.87 | 15.14  | 40.00  | -24.86 | QP     |
| 3 | 99.79       | -15.27 | 40.00 | 24.73  | 43.50  | -18.77 | QP     |
| 4 | 398.51      | -7.64  | 24.82 | 17.18  | 46.00  | -28.82 | QP     |
| 5 | 690.47      | -2.09  | 26.00 | 23.91  | 46.00  | -22.09 | QP     |
| 6 | 824.60      | -0.38  | 25.90 | 25.52  | 46.00  | -20.48 | QP     |

**Above 1GHz:**

| Frequency<br>(MHz)     | Receiver          |        | Polar<br>(H/V) | Factor<br>(dB/m) | Corrected<br>Amplitude<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) |
|------------------------|-------------------|--------|----------------|------------------|------------------------------------|-------------------|----------------|
|                        | Reading<br>(dBμV) | PK/Ave |                |                  |                                    |                   |                |
| GFSK                   |                   |        |                |                  |                                    |                   |                |
| Low Channel 2402MHz    |                   |        |                |                  |                                    |                   |                |
| 4804.00                | 61.03             | PK     | H              | 2.42             | 63.45                              | 74                | -10.55         |
| 4804.00                | 47.99             | Ave    | H              | 2.42             | 50.41                              | 54                | -3.59          |
| 4804.00                | 52.91             | PK     | V              | 2.42             | 55.33                              | 74                | -18.67         |
| 4804.00                | 46.83             | Ave    | V              | 2.42             | 49.25                              | 54                | -4.75          |
| Middle Channel 2441MHz |                   |        |                |                  |                                    |                   |                |
| 4882.00                | 61.11             | PK     | H              | 2.56             | 63.67                              | 74                | -10.33         |
| 4882.00                | 47.78             | Ave    | H              | 2.56             | 50.34                              | 54                | -3.66          |
| 4882.00                | 52.68             | PK     | V              | 2.56             | 55.24                              | 74                | -18.76         |
| 4882.00                | 46.39             | Ave    | V              | 2.56             | 48.95                              | 54                | -5.05          |
| High Channel 2480MHz   |                   |        |                |                  |                                    |                   |                |
| 4960.00                | 60.18             | PK     | H              | 2.68             | 62.86                              | 74                | -11.14         |
| 4960.00                | 47.52             | Ave    | H              | 2.68             | 50.20                              | 54                | -3.80          |
| 4960.00                | 59.77             | PK     | V              | 2.68             | 62.45                              | 74                | -11.55         |
| 4960.00                | 46.23             | Ave    | V              | 2.68             | 48.91                              | 54                | -5.09          |
| π/4-DQPSK              |                   |        |                |                  |                                    |                   |                |
| Low Channel 2402MHz    |                   |        |                |                  |                                    |                   |                |
| 4804.00                | 62.63             | PK     | H              | 2.42             | 65.05                              | 74                | -8.95          |
| 4804.00                | 44.81             | Ave    | H              | 2.42             | 47.23                              | 54                | -6.77          |
| 4804.00                | 53.62             | PK     | V              | 2.42             | 56.04                              | 74                | -17.96         |
| 4804.00                | 40.66             | Ave    | V              | 2.42             | 43.08                              | 54                | -10.92         |
| Middle Channel 2441MHz |                   |        |                |                  |                                    |                   |                |
| 4882.00                | 62.36             | PK     | H              | 2.56             | 64.92                              | 74                | -9.08          |
| 4882.00                | 44.77             | Ave    | H              | 2.56             | 47.33                              | 54                | -6.67          |
| 4882.00                | 53.25             | PK     | V              | 2.56             | 55.81                              | 74                | -18.19         |
| 4882.00                | 40.08             | Ave    | V              | 2.56             | 42.64                              | 54                | -11.36         |
| High Channel 2480MHz   |                   |        |                |                  |                                    |                   |                |
| 4960.00                | 65.47             | PK     | H              | 2.68             | 68.15                              | 74                | -5.85          |
| 4960.00                | 46.15             | Ave    | H              | 2.68             | 48.83                              | 54                | -5.17          |
| 4960.00                | 55.92             | PK     | V              | 2.68             | 58.60                              | 74                | -15.40         |
| 4960.00                | 37.87             | Ave    | V              | 2.68             | 40.55                              | 54                | -13.45         |

| Frequency<br>(MHz)     | Receiver          |        | Polar<br>(H/V) | Factor<br>(dB/m) | Corrected<br>Amplitude<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) |
|------------------------|-------------------|--------|----------------|------------------|------------------------------------|-------------------|----------------|
|                        | Reading<br>(dBμV) | PK/Ave |                |                  |                                    |                   |                |
| 8DPSK                  |                   |        |                |                  |                                    |                   |                |
| Low Channel 2402MHz    |                   |        |                |                  |                                    |                   |                |
| 4804.00                | 63.69             | PK     | H              | 2.42             | 66.11                              | 74                | -7.89          |
| 4804.00                | 43.93             | Ave    | H              | 2.42             | 46.35                              | 54                | -7.65          |
| 4804.00                | 53.47             | PK     | V              | 2.42             | 55.89                              | 74                | -18.11         |
| 4804.00                | 40.76             | Ave    | V              | 2.42             | 43.18                              | 54                | -10.82         |
| Middle Channel 2441MHz |                   |        |                |                  |                                    |                   |                |
| 4882.00                | 65.82             | PK     | H              | 2.56             | 68.38                              | 74                | -5.62          |
| 4882.00                | 45.48             | Ave    | H              | 2.56             | 48.04                              | 54                | -5.96          |
| 4882.00                | 55.53             | PK     | V              | 2.56             | 58.09                              | 74                | -15.91         |
| 4882.00                | 41.63             | Ave    | V              | 2.56             | 44.19                              | 54                | -9.81          |
| High Channel 2480MHz   |                   |        |                |                  |                                    |                   |                |
| 4960.00                | 65.75             | PK     | H              | 2.68             | 68.43                              | 74                | -5.57          |
| 4960.00                | 45.85             | Ave    | H              | 2.68             | 48.53                              | 54                | -5.47          |
| 4960.00                | 55.98             | PK     | V              | 2.68             | 58.66                              | 74                | -15.34         |
| 4960.00                | 42.33             | Ave    | V              | 2.68             | 45.01                              | 54                | -8.99          |

**Note:**

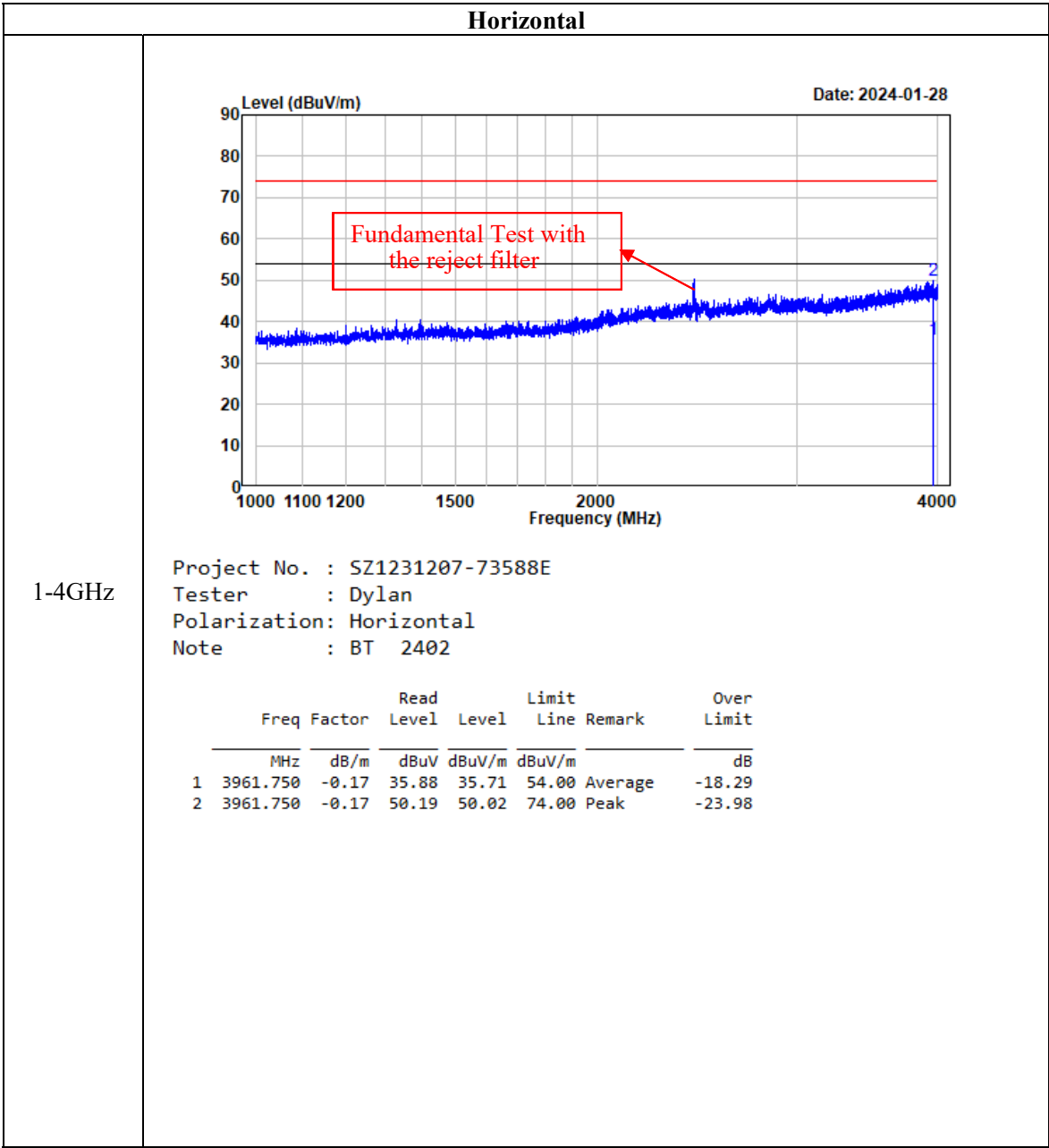
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

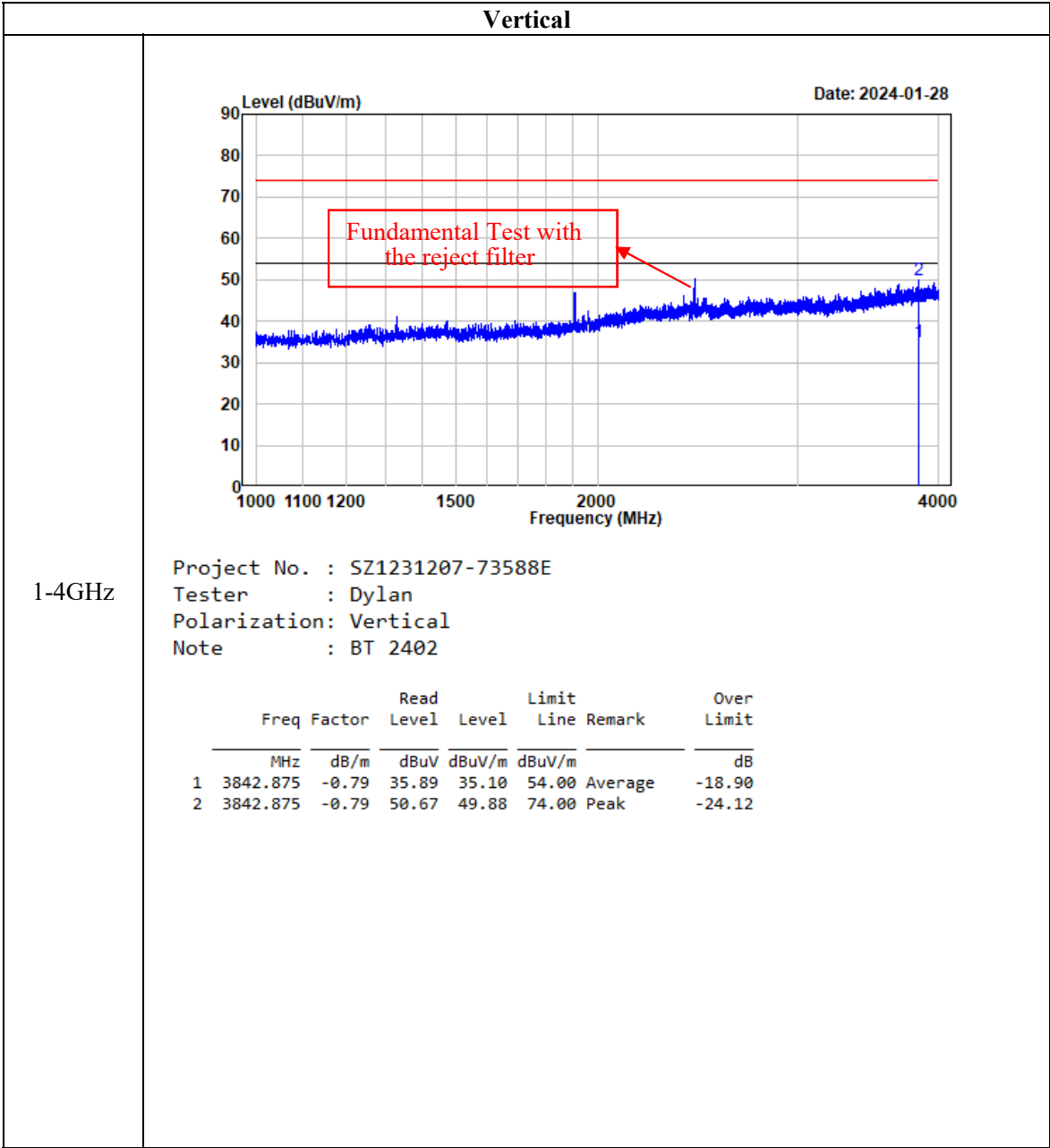
Corrected Amplitude = Factor + Reading

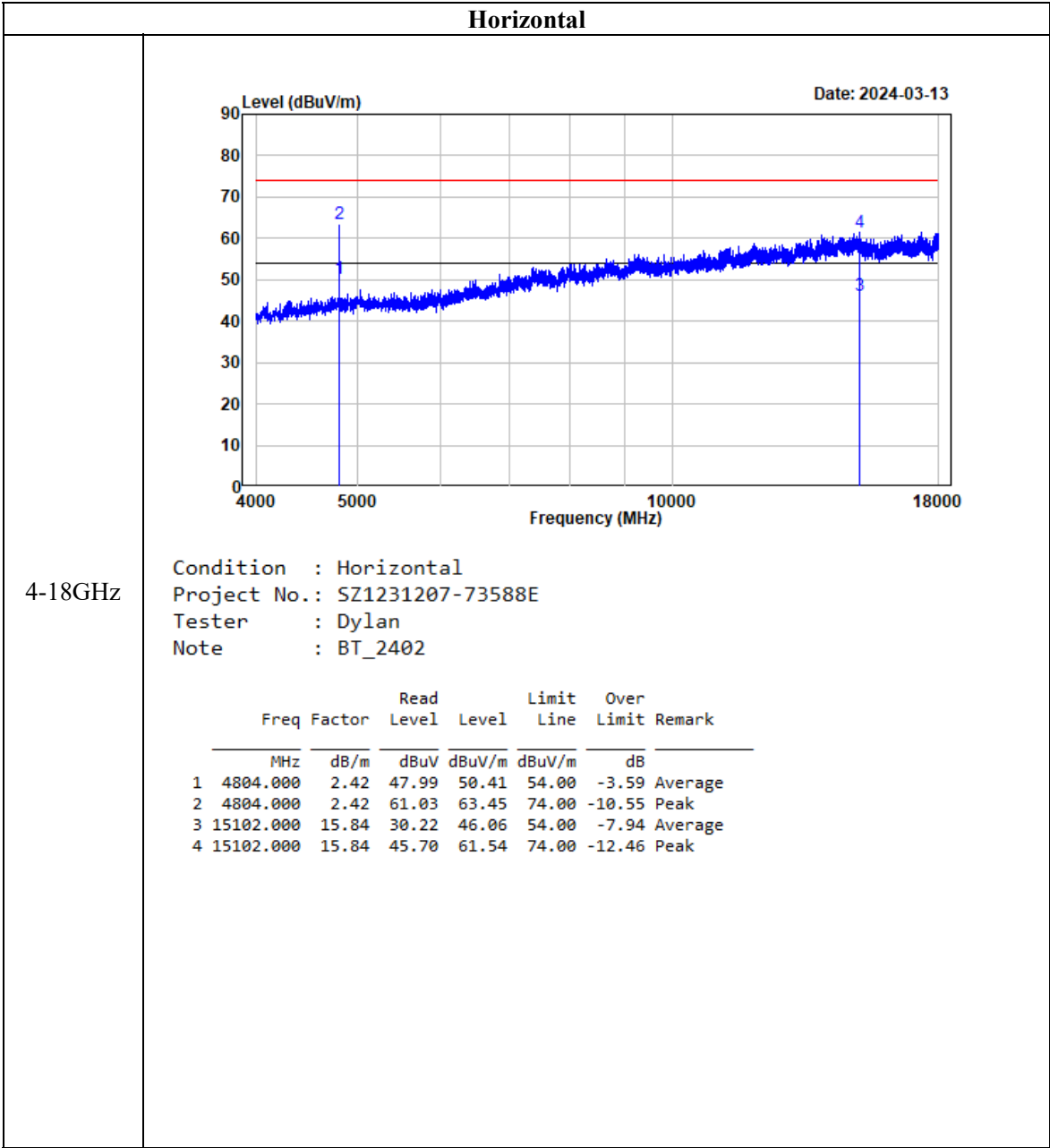
Margin = Corrected. Amplitude - Limit

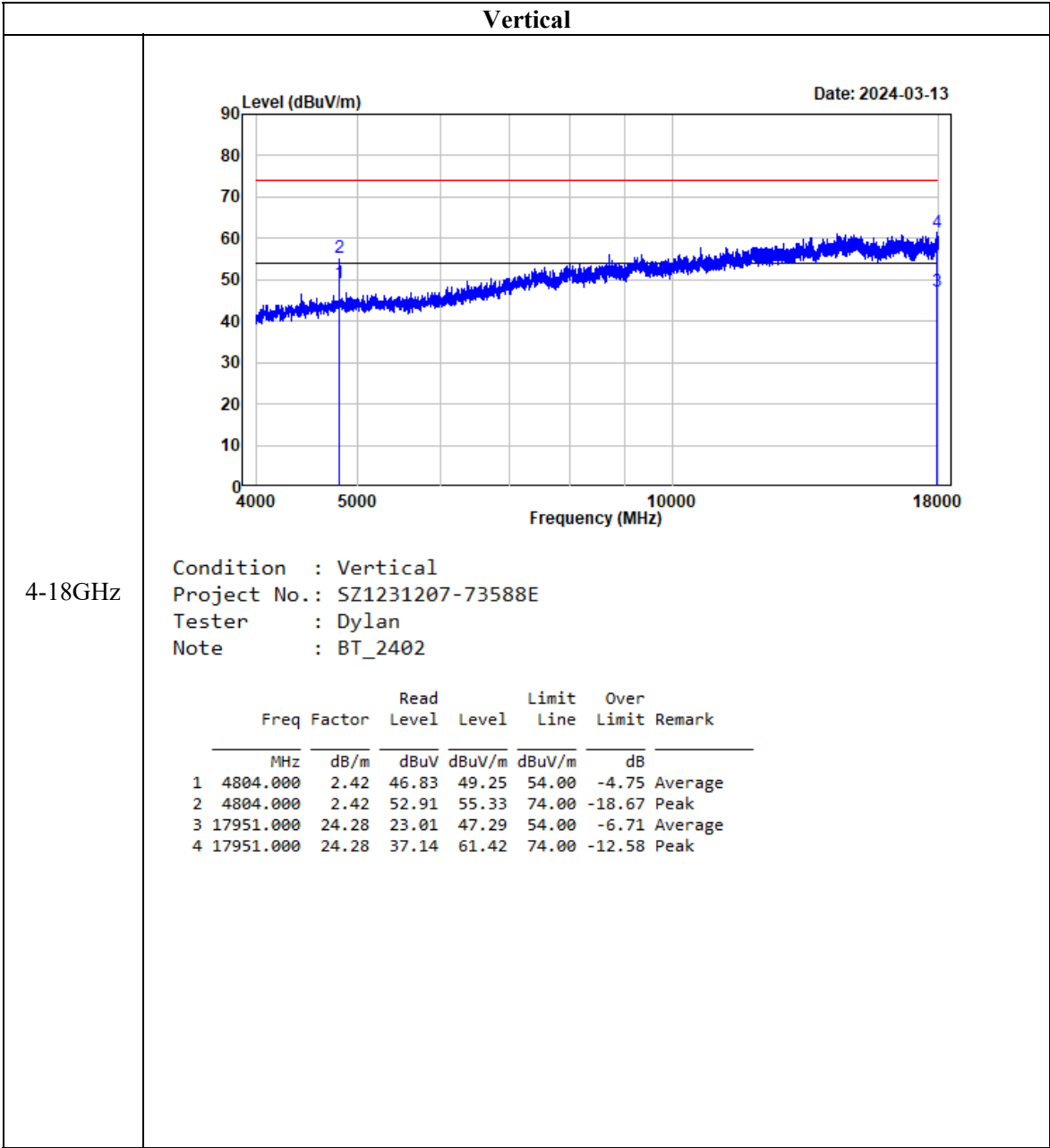
The other spurious emission which is 20dB below the limit of in the noise floor level was not recorded.

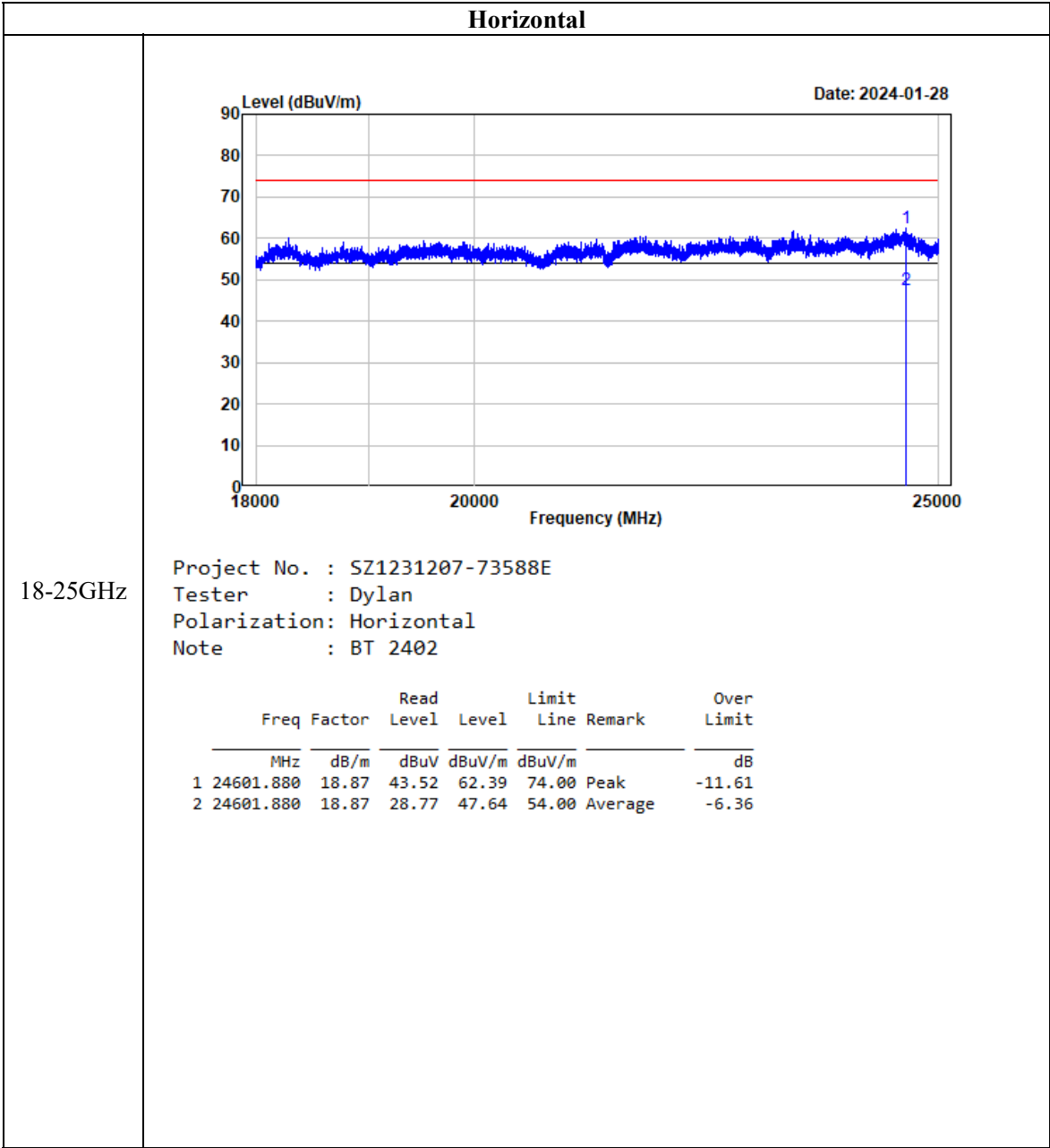
Listed with the worst harmonic margin test plot:

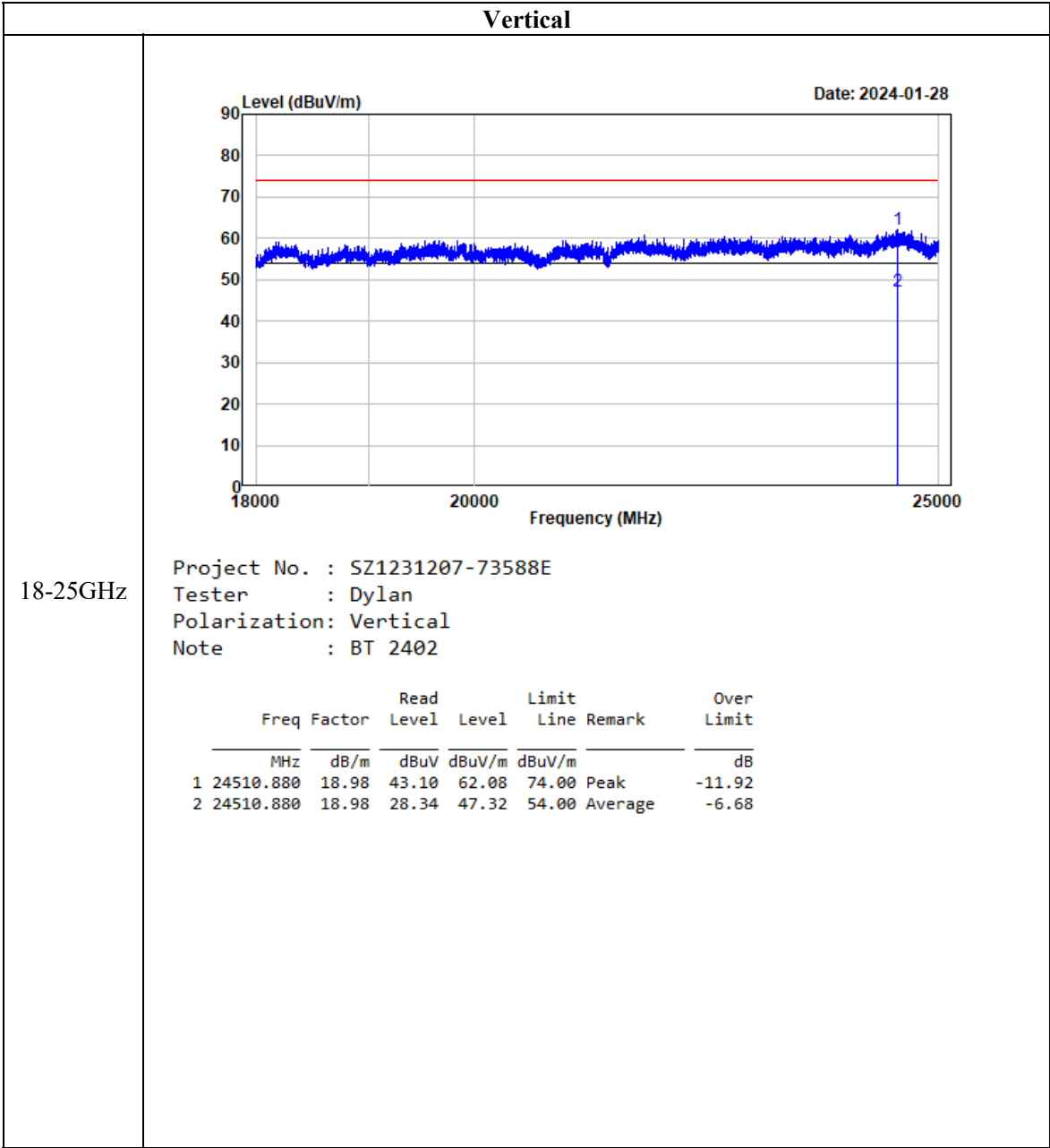




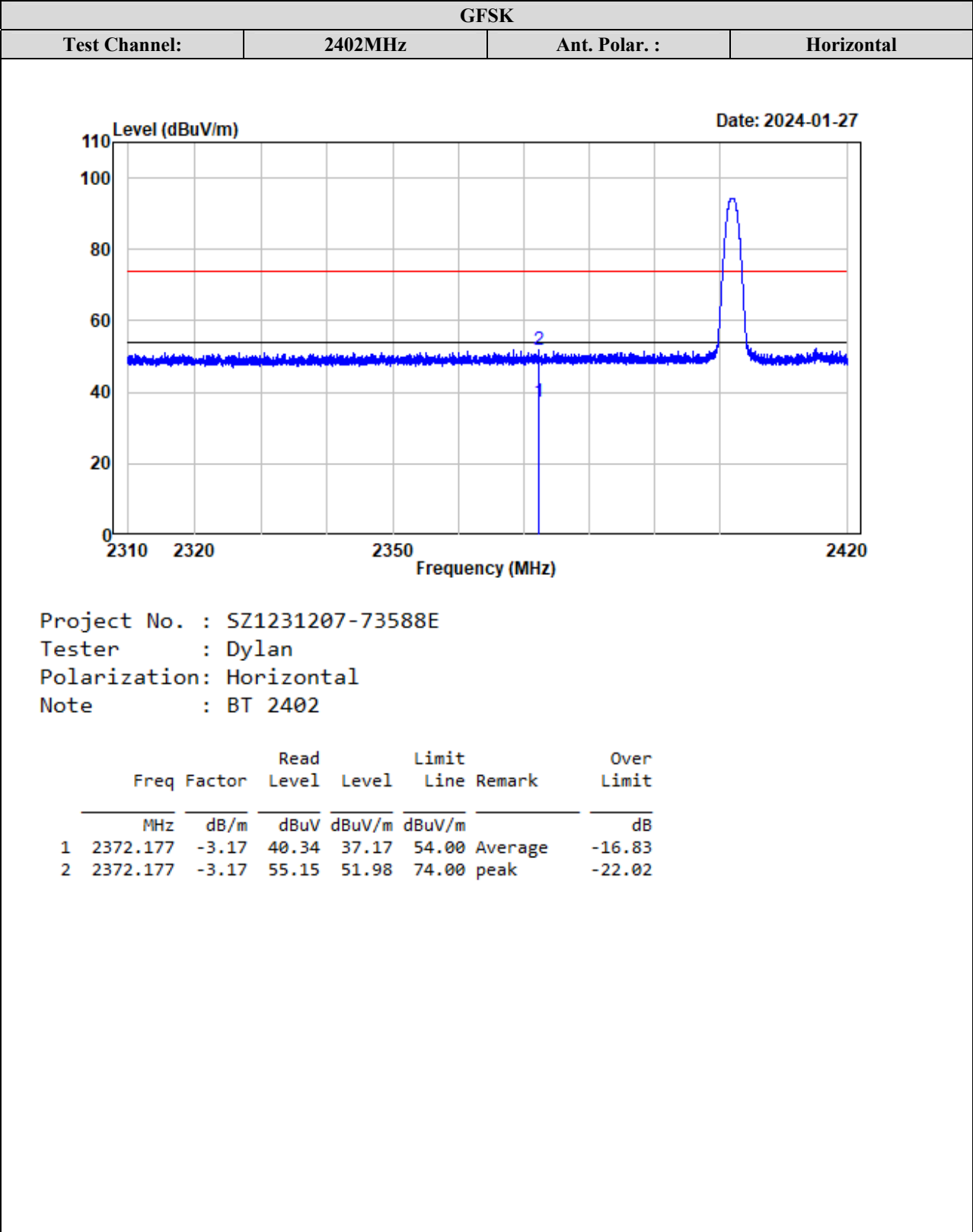


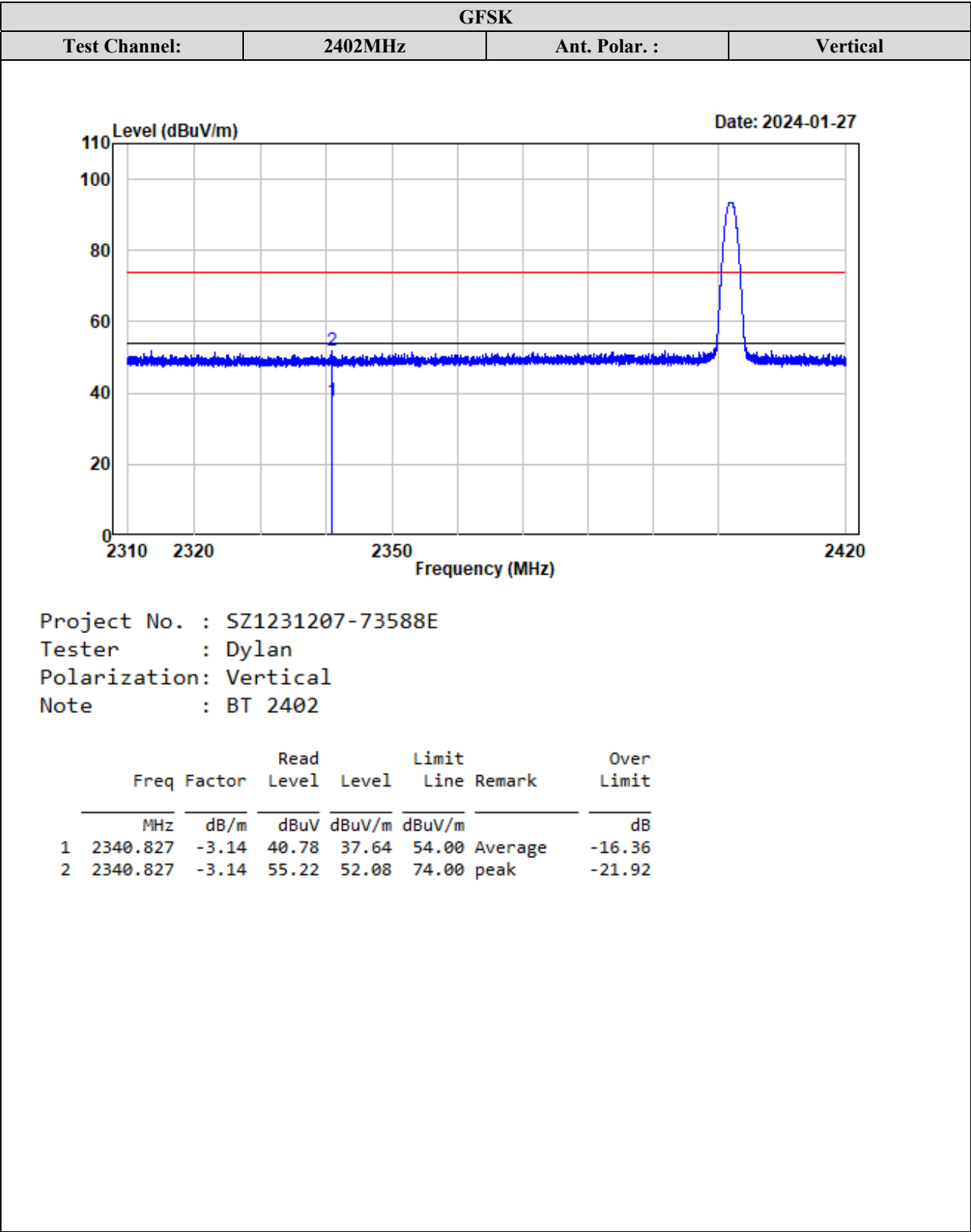


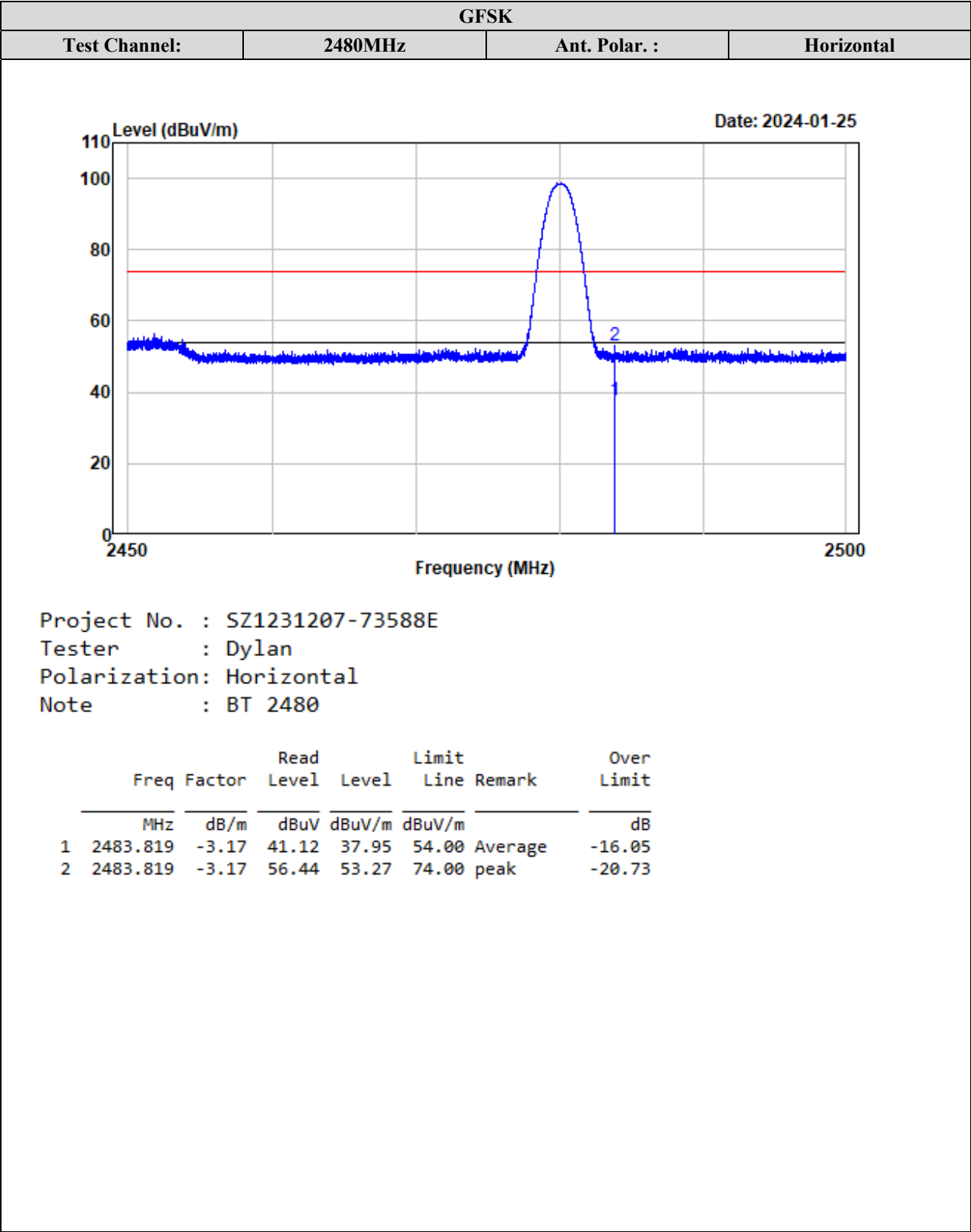


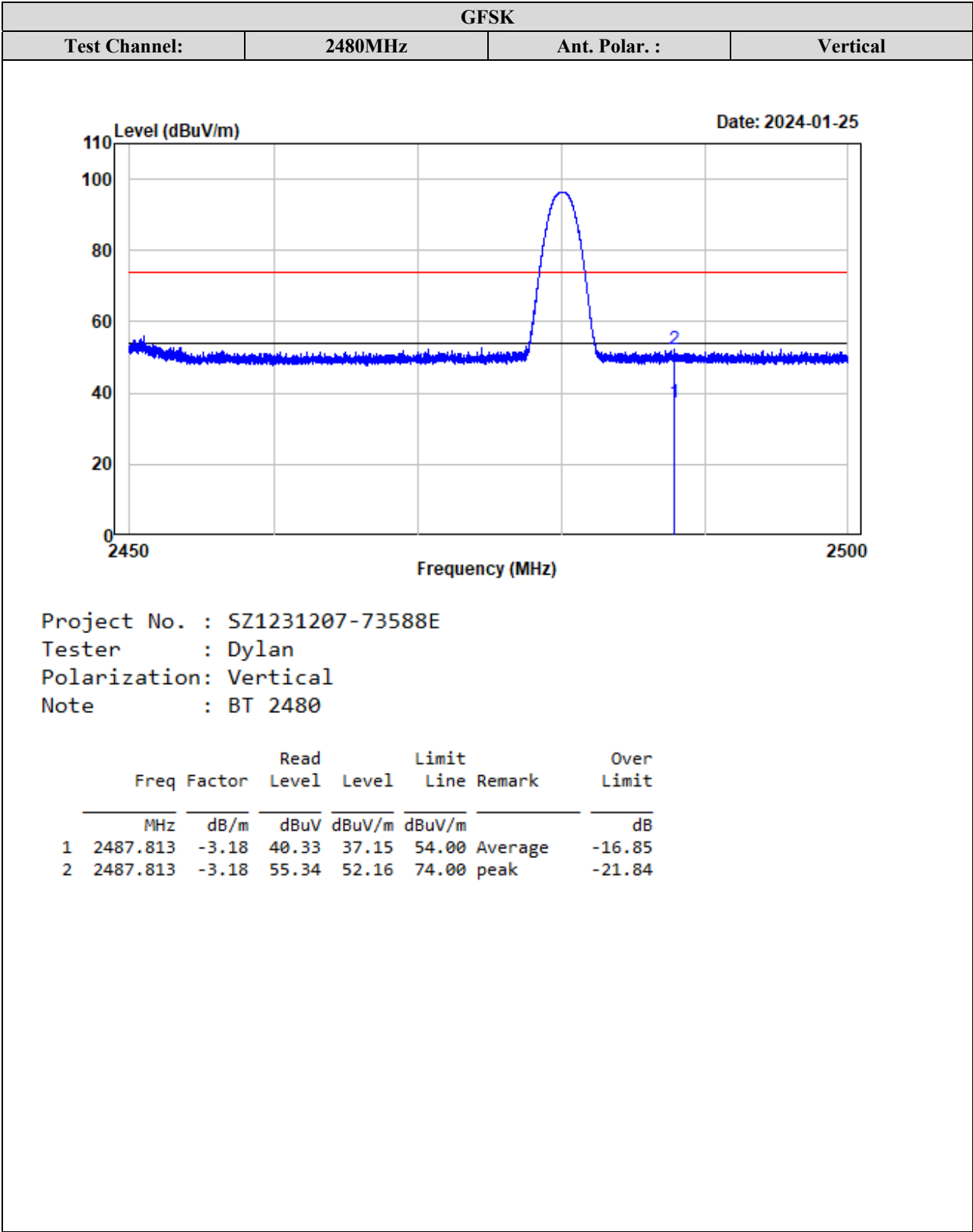


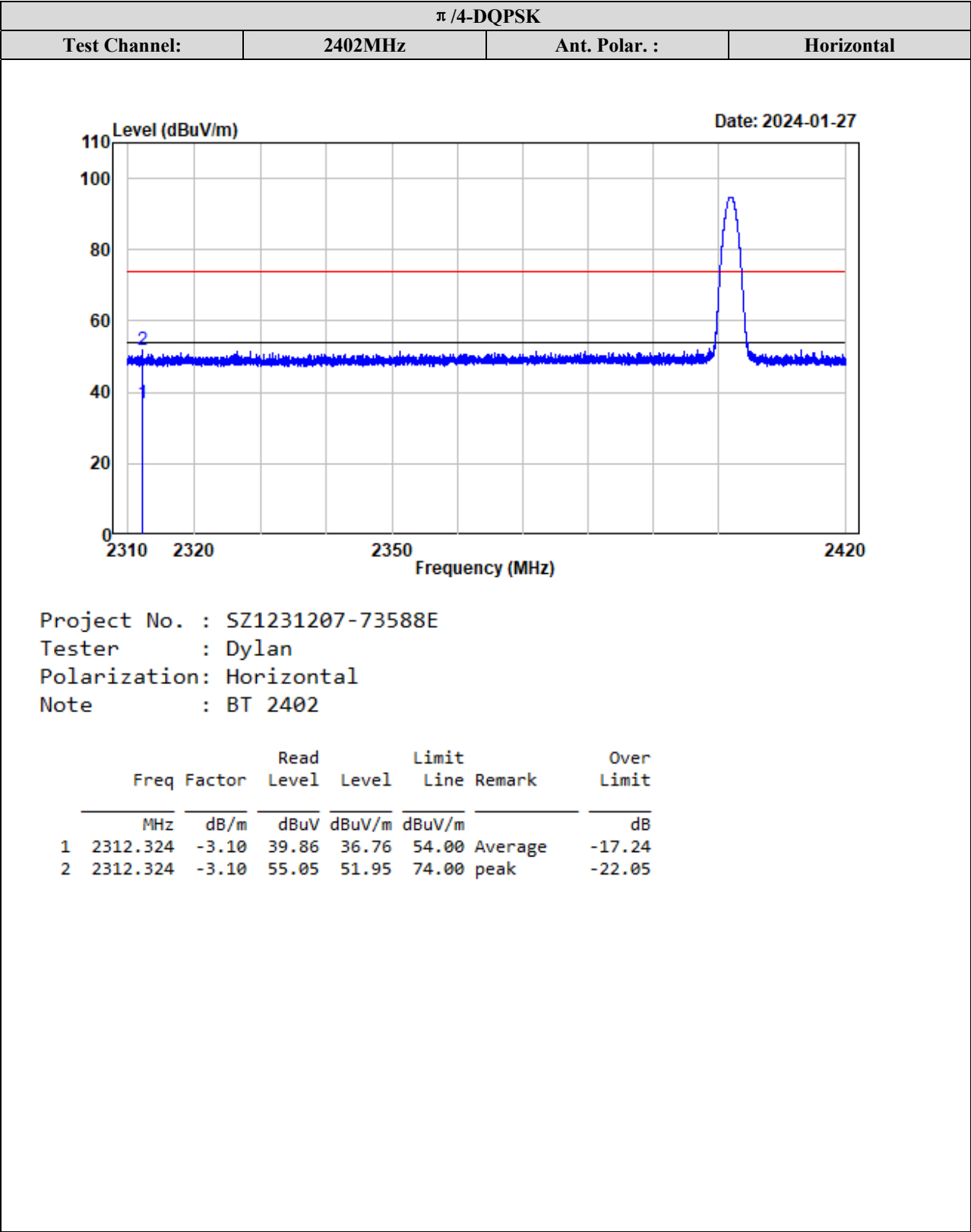
Test plots for Band Edge Measurements (Radiated):

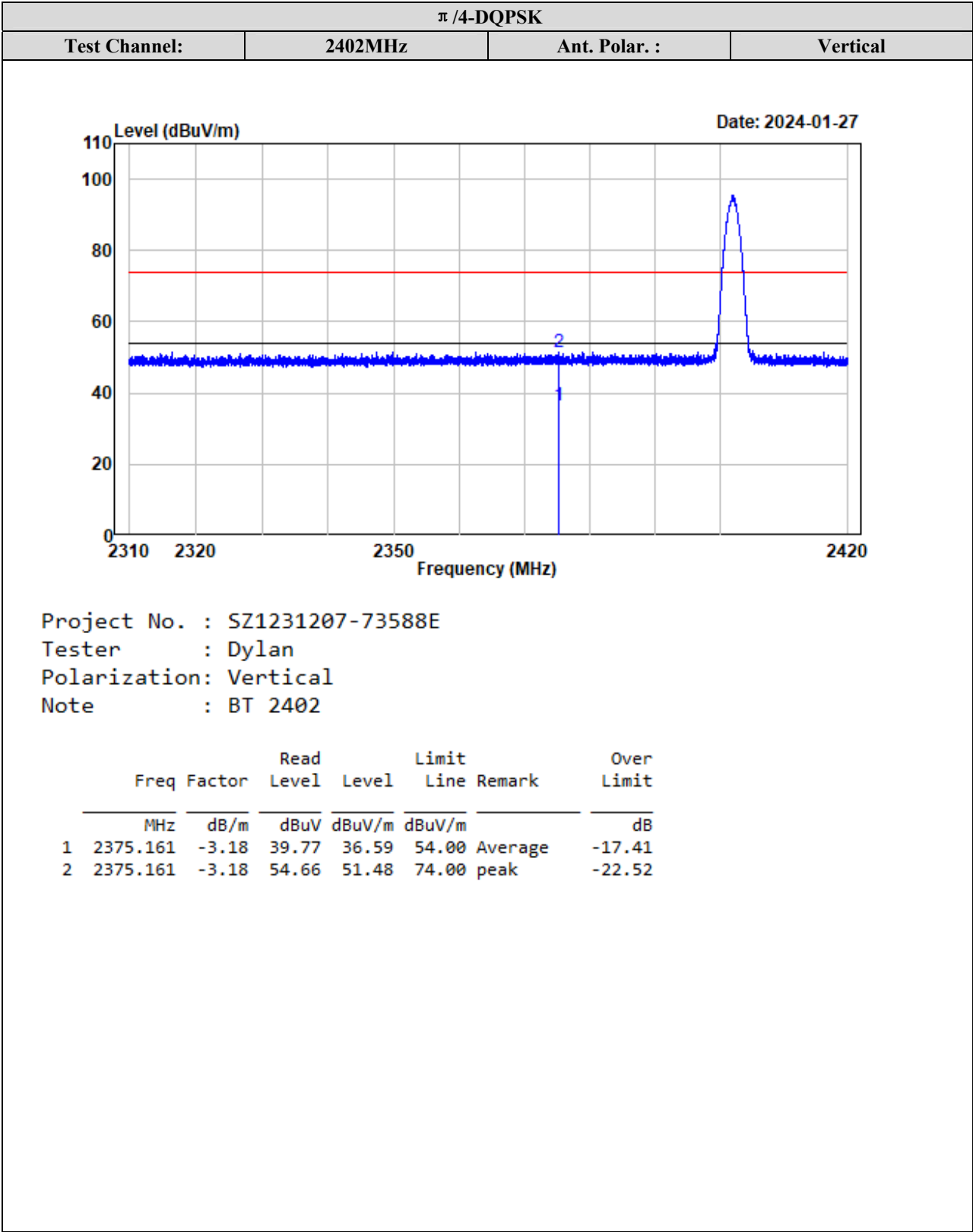


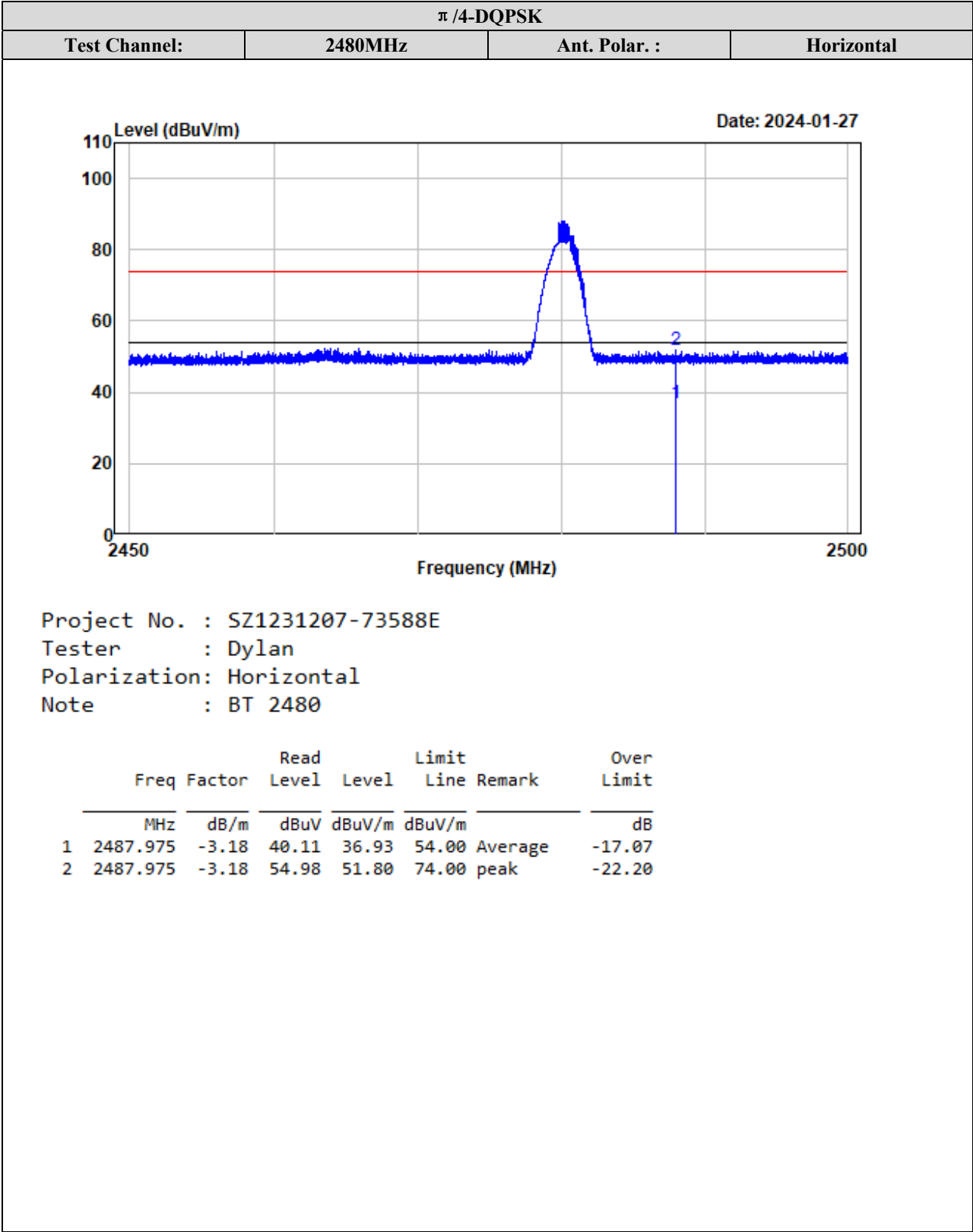


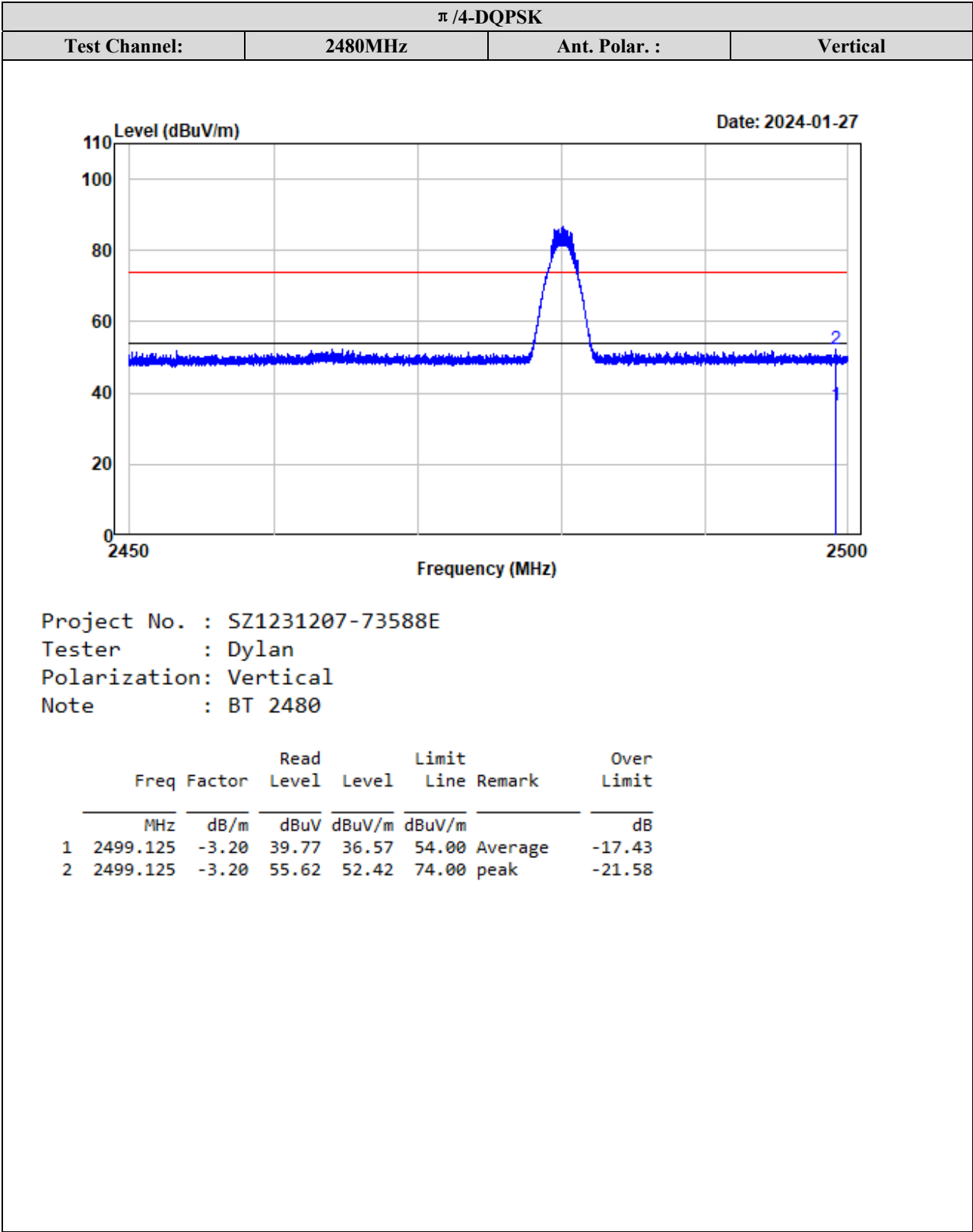


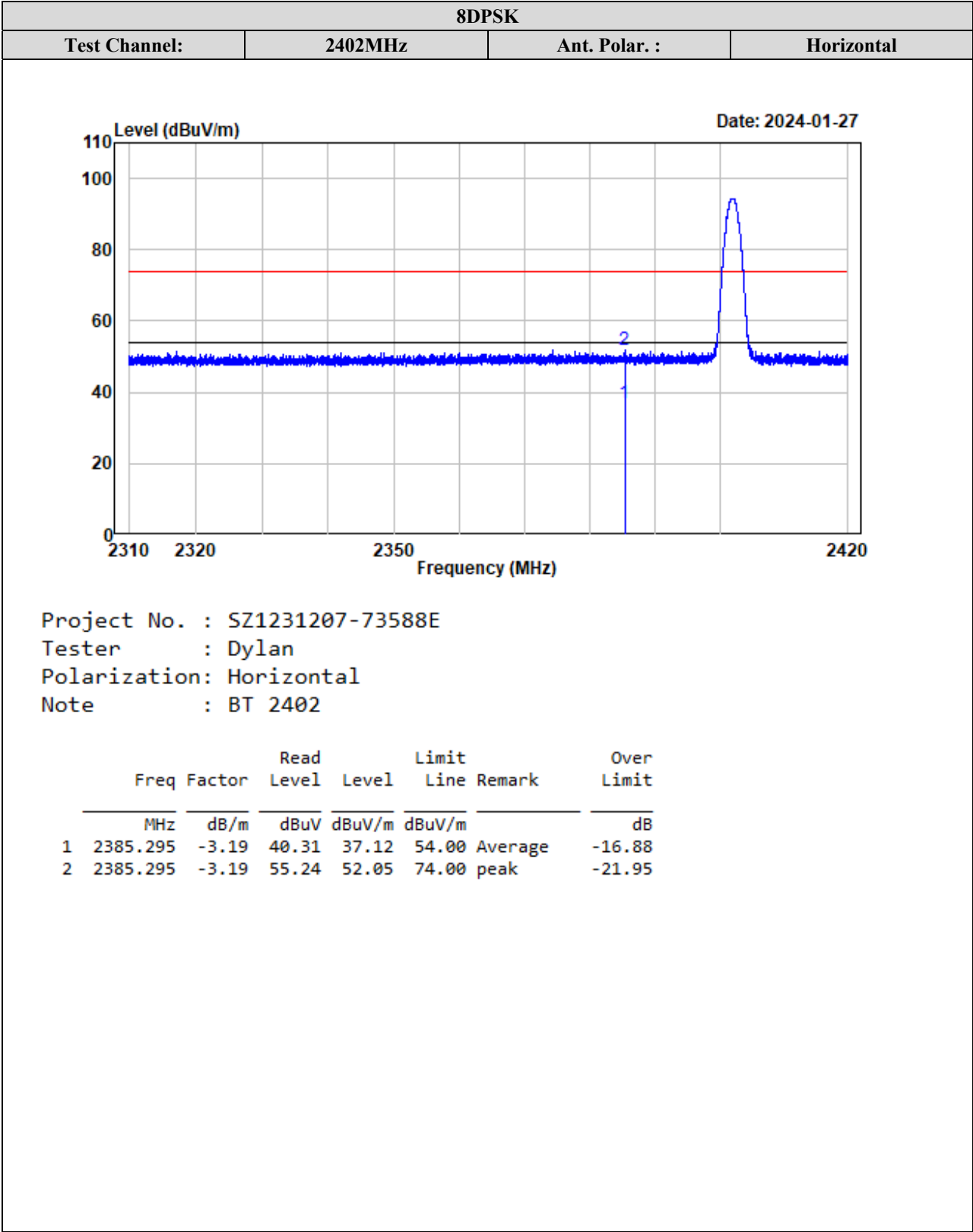


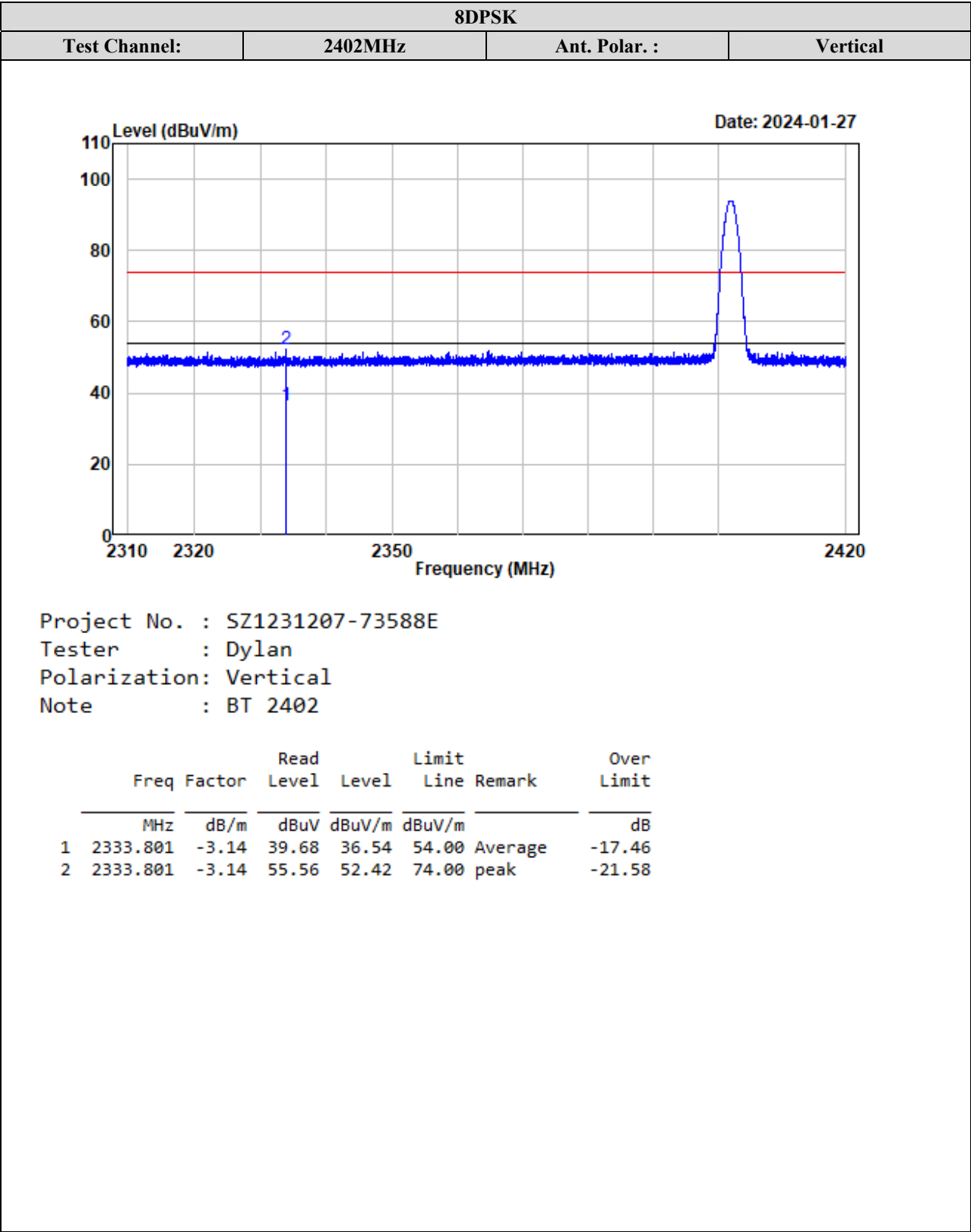


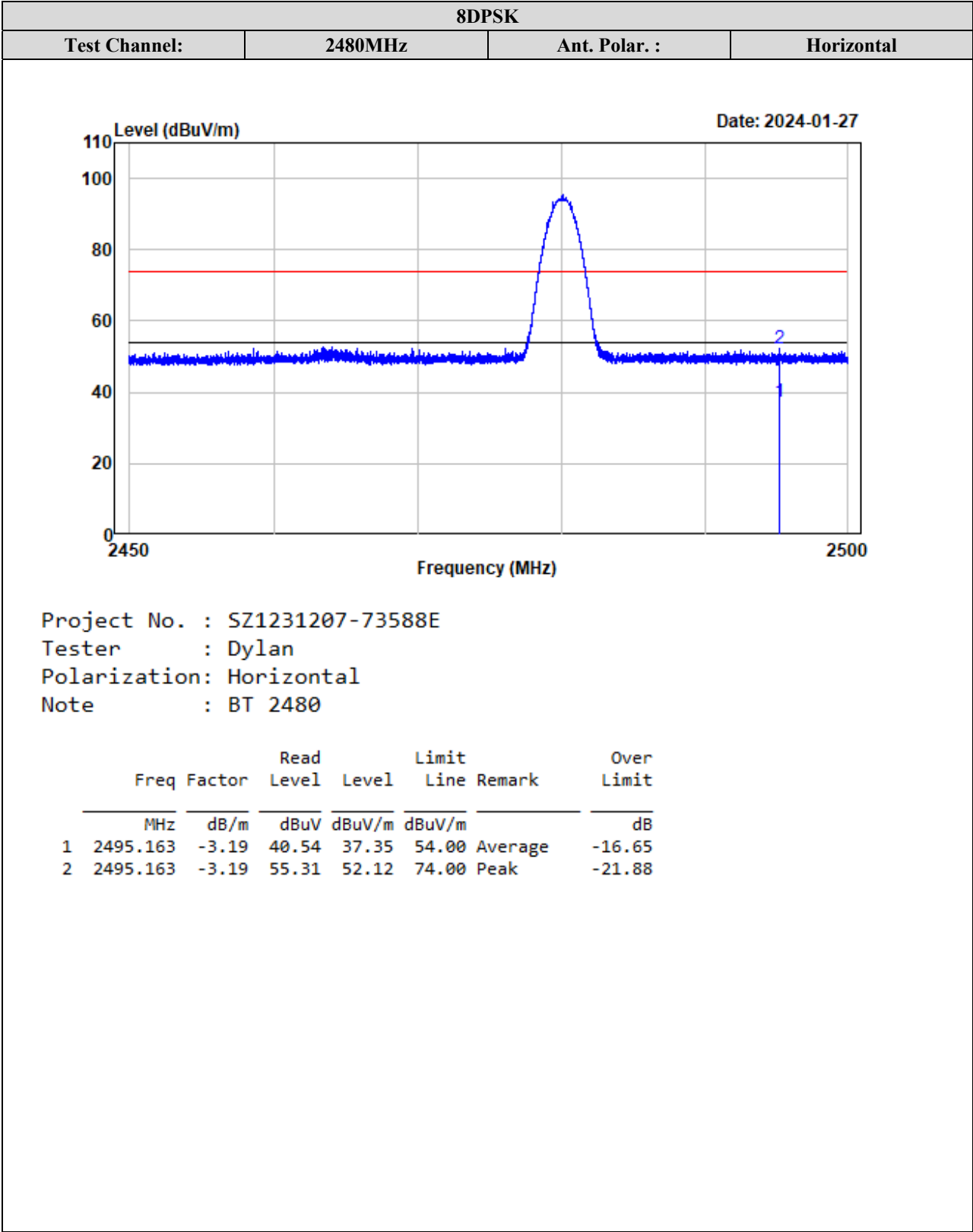


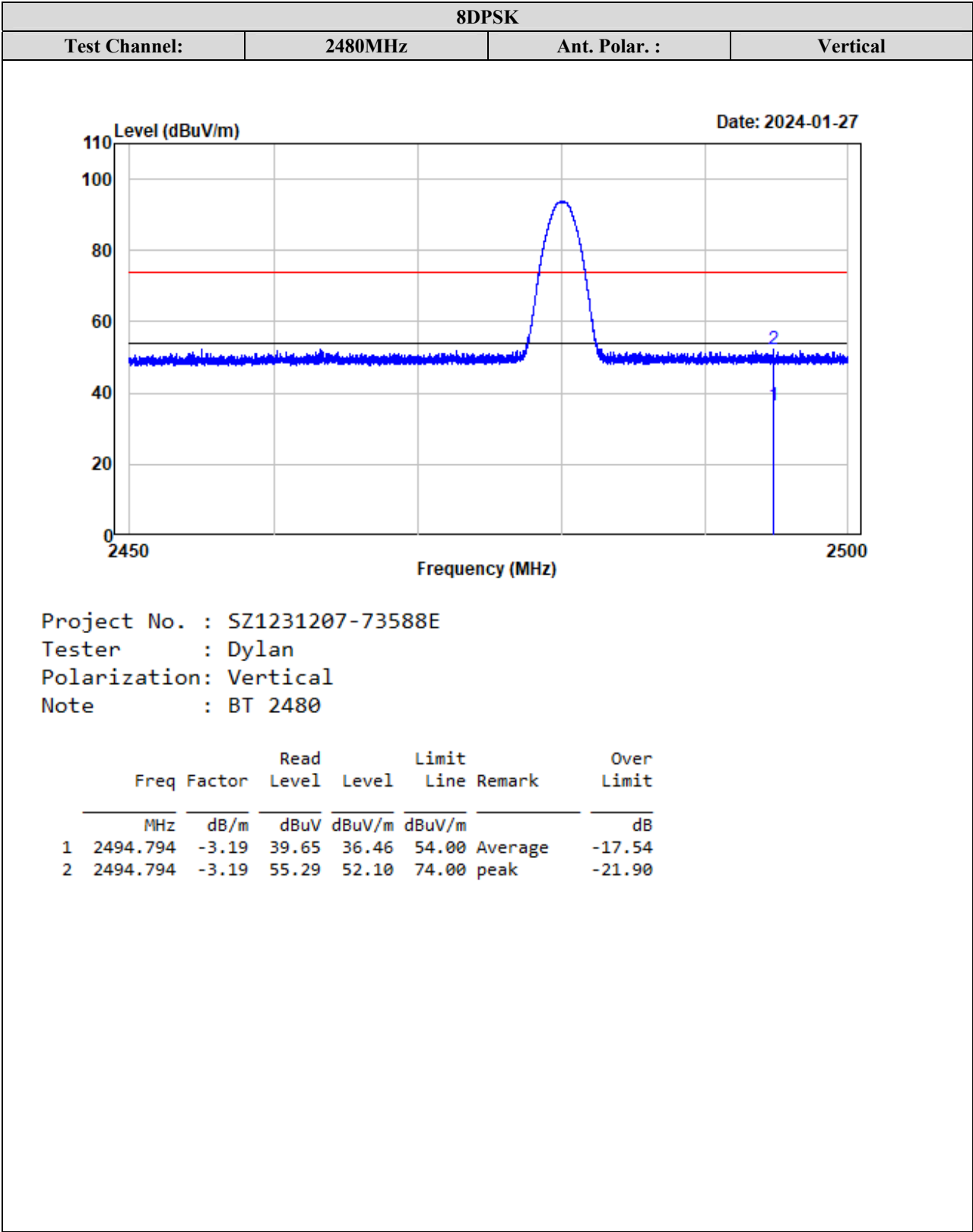












## FCC §15.247(a) (1) - CHANNEL SEPARATION TEST

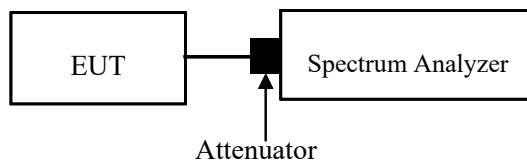
### Applicable Standard

Frequency hopping systems 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.

### Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.2

1. Set the EUT in transmitting mode, maxhold the channel.
2. Set the adjacent channel of the EUT and maxhold another trace.
3. Measure the channel separation.



### Test Data

#### Environmental Conditions

|                    |         |
|--------------------|---------|
| Temperature:       | 24.2 °C |
| Relative Humidity: | 40 %    |
| ATM Pressure:      | 101 kPa |

*The testing was performed by Cheeb Huang on 2024-01-28.*

*EUT operation mode: Transmitting*

***Test Result: Compliant.***

| Test Modes                 | Test Frequency (MHz) | Channel Separation (MHz) | Limits (MHz) |
|----------------------------|----------------------|--------------------------|--------------|
| BDR Mode (GFSK)            | 2402                 | 1.002                    | 0.627        |
|                            | 2441                 | 1.002                    | 0.627        |
|                            | 2480                 | 1.002                    | 0.627        |
| EDR Mode ( $\pi/4$ -DQPSK) | 2402                 | 0.996                    | 0.811        |
|                            | 2441                 | 1.002                    | 0.805        |
|                            | 2480                 | 1.002                    | 0.811        |
| EDR Mode (8DPSK)           | 2402                 | 0.996                    | 0.797        |
|                            | 2441                 | 1.002                    | 0.795        |
|                            | 2480                 | 1.002                    | 0.795        |

Note: Limit = (2/3) \* 20dB bandwidth







## FCC §15.247(a) (1) - 20 dB EMISSION BANDWIDTH

### Applicable Standard

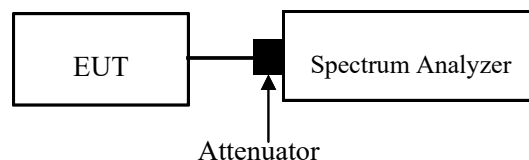
Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

### Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.7 & Clause 6.9.2

The following conditions shall be observed for measuring the occupied bandwidth and 20 dB bandwidth:

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- The detector of the spectrum analyzer shall be set to “Sample”. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or “Max Hold”) may be necessary to determine the occupied / 20 dB bandwidth if the device is not transmitting continuously.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / 20 dB bandwidth and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.



### Test Data

#### Environmental Conditions

|                    |         |
|--------------------|---------|
| Temperature:       | 24.2 °C |
| Relative Humidity: | 40 %    |
| ATM Pressure:      | 101 kPa |

*The testing was performed by Cheeb Huang on 2024-01-28.*

*EUT operation mode: Transmitting*

***Test Result: Compliant.***

| Test Modes                 | Test Channel | Test Frequency (MHz) | 20 dB Bandwidth (MHz) |
|----------------------------|--------------|----------------------|-----------------------|
| BDR Mode (GFSK)            | Lowest       | 2402                 | 0.94                  |
|                            | Middle       | 2441                 | 0.94                  |
|                            | Highest      | 2480                 | 0.94                  |
| EDR Mode ( $\pi/4$ -DQPSK) | Lowest       | 2402                 | 1.22                  |
|                            | Middle       | 2441                 | 1.21                  |
|                            | Highest      | 2480                 | 1.22                  |
| EDR Mode (8DPSK)           | Lowest       | 2402                 | 1.20                  |
|                            | Middle       | 2441                 | 1.19                  |
|                            | Highest      | 2480                 | 1.19                  |

20 dB Bandwidth

|                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div data-bbox="292 600 443 627">Low Channel</div>      | <div data-bbox="595 309 1117 869"><div data-bbox="667 309 885 338">BDR Mode (GFSK)</div><div data-bbox="595 347 1117 772"><div data-bbox="595 347 638 470"><div>Ref 30 dBm</div><div>Att 25 dB</div><div>RBW 20 kHz</div><div>VBW 50 kHz</div><div>SWT 20 ms</div></div><div data-bbox="981 347 1109 392"><div>Delta 1 [T1]</div><div>0.51 dB</div><div>940.00000000 kHz</div></div><div data-bbox="630 392 1109 772"><div>30 Offset 11 dB</div><div>20</div><div>10</div><div>0</div><div>-10</div><div>-20</div><div>-30</div><div>-40</div><div>-50</div><div>-60</div><div>-70</div><div data-bbox="630 504 646 526">D1</div><div data-bbox="630 571 646 593">D2</div><div data-bbox="981 392 1109 436"><div>Marker 1 [T1]</div><div>-21.15 dBm</div><div>2.401551000 GHz</div></div><div data-bbox="1109 459 1125 481">LVL</div><div data-bbox="1109 593 1125 616">3dB</div><div data-bbox="630 761 1109 772"><div>Center 2.402 GHz</div><div>200 kHz/</div><div>Span 2 MHz</div></div></div></div><div data-bbox="595 840 901 869"><div>ProjectNo.:SZ1231207-73588E-RF</div><div>Tester:Cheeb Huang</div><div>Date: 28.JAN.2024 01:11:31</div></div></div>                          |
| <div data-bbox="276 1137 459 1164">Middle Channel</div> | <div data-bbox="595 884 1117 1400"><div data-bbox="667 884 885 913">BDR Mode (GFSK)</div><div data-bbox="595 913 1117 1339"><div data-bbox="595 913 638 1037"><div>Ref 30 dBm</div><div>Att 25 dB</div><div>RBW 20 kHz</div><div>VBW 50 kHz</div><div>SWT 20 ms</div></div><div data-bbox="981 913 1109 958"><div>Delta 1 [T1]</div><div>0.23 dB</div><div>940.00000000 kHz</div></div><div data-bbox="630 913 1109 1339"><div>30 Offset 11 dB</div><div>20</div><div>10</div><div>0</div><div>-10</div><div>-20</div><div>-30</div><div>-40</div><div>-50</div><div>-60</div><div>-70</div><div data-bbox="630 1025 646 1048">D1</div><div data-bbox="630 1093 646 1115">D2</div><div data-bbox="981 913 1109 958"><div>Marker 1 [T1]</div><div>-21.54 dBm</div><div>2.440551000 GHz</div></div><div data-bbox="1109 981 1125 1003">LVL</div><div data-bbox="1109 1115 1125 1137">3dB</div><div data-bbox="630 1328 1109 1339"><div>Center 2.441 GHz</div><div>200 kHz/</div><div>Span 2 MHz</div></div></div></div><div data-bbox="595 1373 901 1400"><div>ProjectNo.:SZ1231207-73588E-RF</div><div>Tester:Cheeb Huang</div><div>Date: 28.JAN.2024 01:12:37</div></div></div>           |
| <div data-bbox="292 1675 443 1702">High Channel</div>   | <div data-bbox="595 1417 1117 1933"><div data-bbox="667 1417 885 1447">BDR Mode (GFSK)</div><div data-bbox="595 1447 1117 1872"><div data-bbox="595 1447 638 1570"><div>Ref 30 dBm</div><div>Att 25 dB</div><div>RBW 20 kHz</div><div>VBW 50 kHz</div><div>SWT 20 ms</div></div><div data-bbox="981 1447 1109 1491"><div>Delta 1 [T1]</div><div>0.43 dB</div><div>940.00000000 kHz</div></div><div data-bbox="630 1447 1109 1872"><div>30 Offset 11 dB</div><div>20</div><div>10</div><div>0</div><div>-10</div><div>-20</div><div>-30</div><div>-40</div><div>-50</div><div>-60</div><div>-70</div><div data-bbox="630 1559 646 1581">D1</div><div data-bbox="630 1626 646 1648">D2</div><div data-bbox="981 1447 1109 1491"><div>Marker 1 [T1]</div><div>-21.86 dBm</div><div>2.479551000 GHz</div></div><div data-bbox="1109 1514 1125 1536">LVL</div><div data-bbox="1109 1648 1125 1671">3dB</div><div data-bbox="630 1861 1109 1872"><div>Center 2.48 GHz</div><div>200 kHz/</div><div>Span 2 MHz</div></div></div></div><div data-bbox="595 1910 901 1937"><div>ProjectNo.:SZ1231207-73588E-RF</div><div>Tester:Cheeb Huang</div><div>Date: 28.JAN.2024 01:15:56</div></div></div> |





FCC §15.247(a) (1) (iii) - QUANTITY OF HOPPING CHANNEL TEST

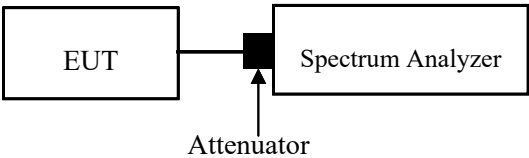
Applicable Standard

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.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.3

- 1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- 2. Set the EUT in hopping mode from first channel to last.
- 3. By using the max-hold function record the quantity of the channel.



Test Data

Environmental Conditions

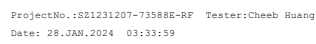
|                    |             |
|--------------------|-------------|
| Temperature:       | 24.2~26.8℃  |
| Relative Humidity: | 40~49 %     |
| ATM Pressure:      | 101~102 kPa |

The testing was performed by Cheeb Huang from 2024-01-28 to 2024-02-06.

EUT operation mode: Transmitting

Test Result: Compliant.

| Test Modes | Frequency Range (MHz) | Number of Hopping Channel | Limits |
|------------|-----------------------|---------------------------|--------|
| GFSK       | 2400-2483.5           | 79                        | ≥15    |
| π/4-DQPSK  | 2400-2483.5           | 79                        | ≥15    |
| 8DPSK      | 2400-2483.5           | 79                        | ≥15    |

**GFSK**

ProjectNo.:SZ1231207-73588E-RF    Tester:Cheeb Huang  
Date: 6.FEB.2024    14:23:07

ProjectNo.:SZ1231207-73588E-RF Tester:Cheeb Huang  
Date: 6.FEB.2024 14:33:59

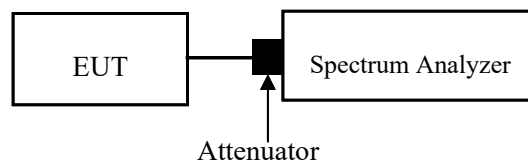
**FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)****Applicable Standard**

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.

**Test Procedure**

Test Method: ANSI C63.10-2013 Clause 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**

|                    |         |
|--------------------|---------|
| Temperature:       | 24.2 °C |
| Relative Humidity: | 40 %    |
| ATM Pressure:      | 101 kPa |

*The testing was performed by Cheeb Huang on 2024-01-28.*

*EUT operation mode: Transmitting*

***Test Result: Compliant.***

| Test Modes                 | Packet Type | Test Frequency (MHz) | Pulse width (ms) | Result (s) | Limit (s) |
|----------------------------|-------------|----------------------|------------------|------------|-----------|
| BDR Mode (GFSK)            | DH1         | 2441                 | 0.371            | 0.119      | 0.400     |
|                            | DH3         | 2441                 | 1.619            | 0.259      | 0.400     |
|                            | DH5         | 2441                 | 2.886            | 0.308      | 0.400     |
| EDR Mode ( $\pi/4$ -DQPSK) | 2DH1        | 2441                 | 0.381            | 0.122      | 0.400     |
|                            | 2DH3        | 2441                 | 1.630            | 0.261      | 0.400     |
|                            | 2DH5        | 2441                 | 2.902            | 0.310      | 0.400     |
| EDR Mode (8DPSK)           | 3DH1        | 2441                 | 0.379            | 0.121      | 0.400     |
|                            | 3DH3        | 2441                 | 1.625            | 0.260      | 0.400     |
|                            | 3DH5        | 2441                 | 2.894            | 0.309      | 0.400     |

Note:

DH1:Dwell time=Pulse time (ms)  $\times$  (1600/2/79)  $\times$  31.6 s

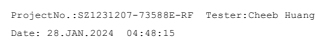
DH3:Dwell time=Pulse time (ms)  $\times$  (1600/4/79)  $\times$  31.6 s

DH5:Dwell time=Pulse time (ms)  $\times$  (1600/6/79)  $\times$  31.6 s

Version 1.0 (2023/10/07)

Version 1.0 (2023/10/07)

### 3DH1



ProjectNo.:SZ1231207-73588E-RF Tester:Cheeb Huang  
Date: 28.JAN.2024 04:45:07

ProjectNo.:SZ1231207-73588E-RF    Tester:Cheeb Huang  
Date: 28.JAN.2024    04:43:38

## FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

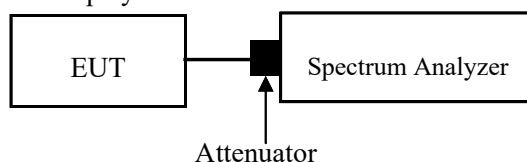
### Applicable Standard

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.

### Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.5

1. Place the EUT on a bench and set in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



### Test Data

#### Environmental Conditions

|                    |         |
|--------------------|---------|
| Temperature:       | 24.2 °C |
| Relative Humidity: | 40 %    |
| ATM Pressure:      | 101 kPa |

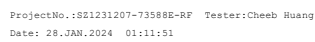
The testing was performed by Cheeb Huang on 2024-01-28.

EUT operation mode: Transmitting

Test Result: Compliant.

| Test Modes                 | Test Frequency (MHz) | Peak Conducted Output Power (dBm) | Limits (dBm) |
|----------------------------|----------------------|-----------------------------------|--------------|
| BDR Mode (GFSK)            | 2402                 | 2.17                              | 21           |
|                            | 2441                 | 1.49                              | 21           |
|                            | 2480                 | 1.52                              | 21           |
| EDR Mode ( $\pi/4$ -DQPSK) | 2402                 | 1.84                              | 21           |
|                            | 2441                 | 1.24                              | 21           |
|                            | 2480                 | 1.30                              | 21           |
| EDR Mode (8DPSK)           | 2402                 | 1.94                              | 21           |
|                            | 2441                 | 1.30                              | 21           |
|                            | 2480                 | 1.34                              | 21           |

### Low Channel



\* BW 3 MHz Marker 1 [T1] 1.49 dBm  
 \* VBW 10 MHz SMT 2.5 ms 2.440746200 GHz  
 Ref 30 dBm Att 25 dB  
 30 Offset 11 dB  
 1.99 MHz  
 0  
 -10  
 -20  
 -30  
 -40  
 -50  
 -60  
 -70  
 Center 2.441 GHz 470 kHz/ Span 4.7 MHz

ProjectNo.:SZ1231207-73588E-RF Tester:Cheeb Huang  
Date: 28.JAN.2024 01:13:00

Ref 30 dBm Att 25 dB SWT 2.5 ms 1.52 dBm 2.479877800 GHz

Offset 11 dB

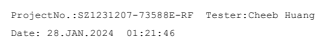
1.52 dBm

Center 2.48 GHz 470 kHz/ Span 4.7 MHz

ProjectNo.:SZ1231207-73588E-RF Tester:Cheeb Huang  
Date: 28.JAN.2024 01:16:19



### Low Channel



Ref 30 dBm Att 25 dB BW 3 MHz VM 10 MHz SMT 2.5 ms Marker 1 [T1] 1.30 dBm 2.440880600 GHz

30 dBm

30 dB

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.441 GHz 596 kHz/ Span 5.96 MHz

ProjectNo.:SZ1231207-73588E-RF    Tester:Cheeb Huang  
Date: 28.JAN.2024    01:23:03

Ref 30 dBm Att 25 dB SWT 2.5 ms Marker 1 [T1] 1.34 dBm 2.480000000 GHz

30 dB

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.48 GHz Span 5.96 MHz

596 kHz/

ProjectNo.:SZ1231207-73588E-RF Tester:Cheeb Huang  
Date: 28.JAN.2024 01:24:04

## FCC §15.247(d) § 5.5 - BAND EDGES TESTING

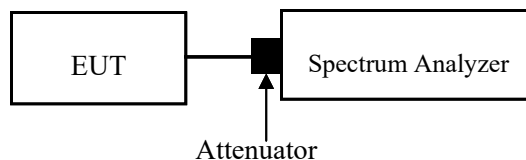
### Applicable Standard

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)).

### Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.6 & Clause 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

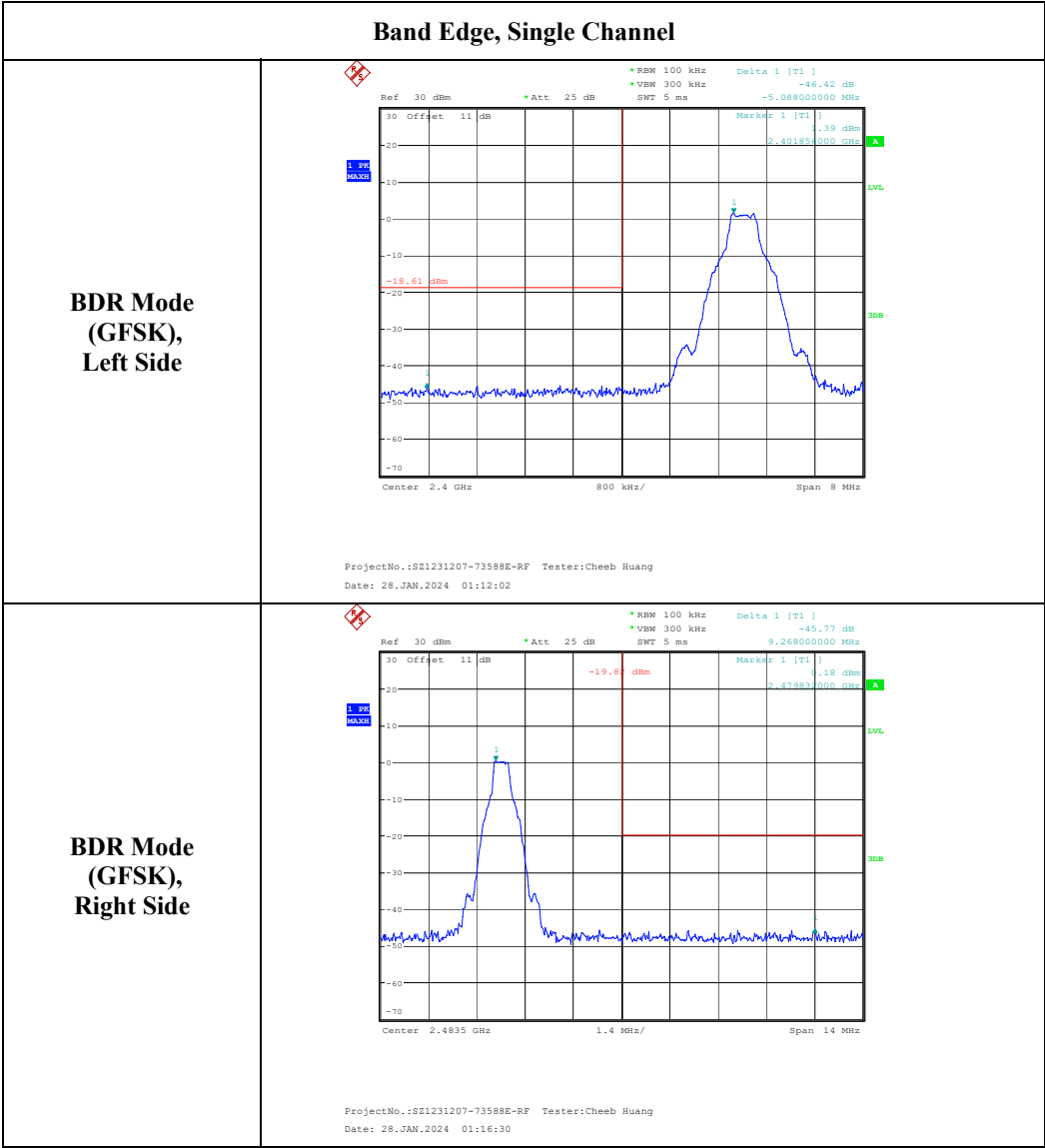
#### Environmental Conditions

|                    |         |
|--------------------|---------|
| Temperature:       | 24.2 °C |
| Relative Humidity: | 40 %    |
| ATM Pressure:      | 101 kPa |

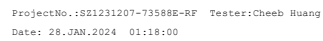
*The testing was performed by Cheeb Huang on 2024-01-28.*

*EUT operation mode: Transmitting*

***Test Result: Compliant.***



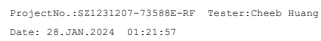
**EDR Mode  
( $\pi/4$ -DQPSK),  
Left Side**



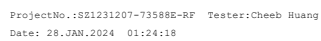
**EDR Mode  
( $\pi/4$ -DQPSK),  
Right Side**

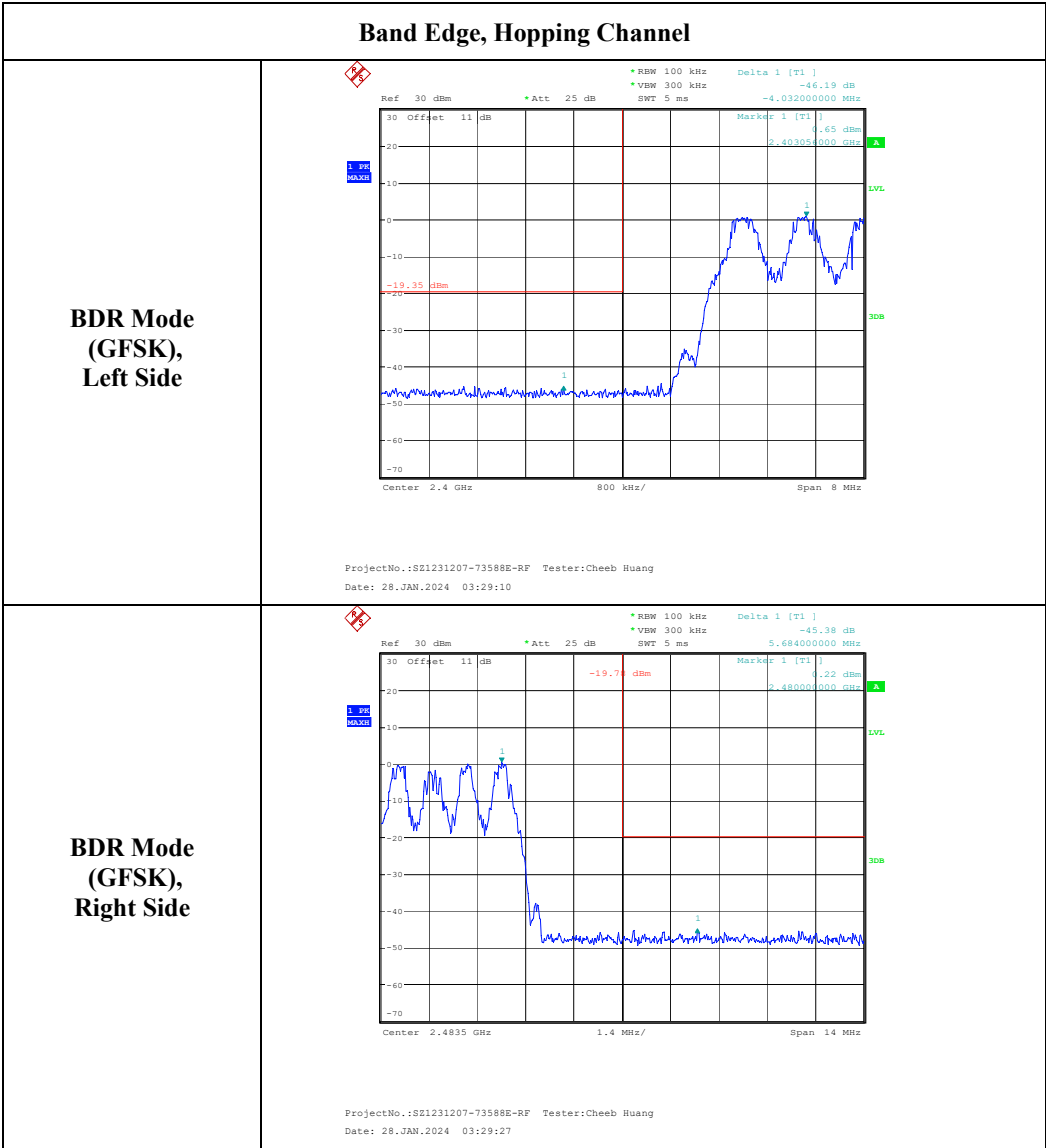


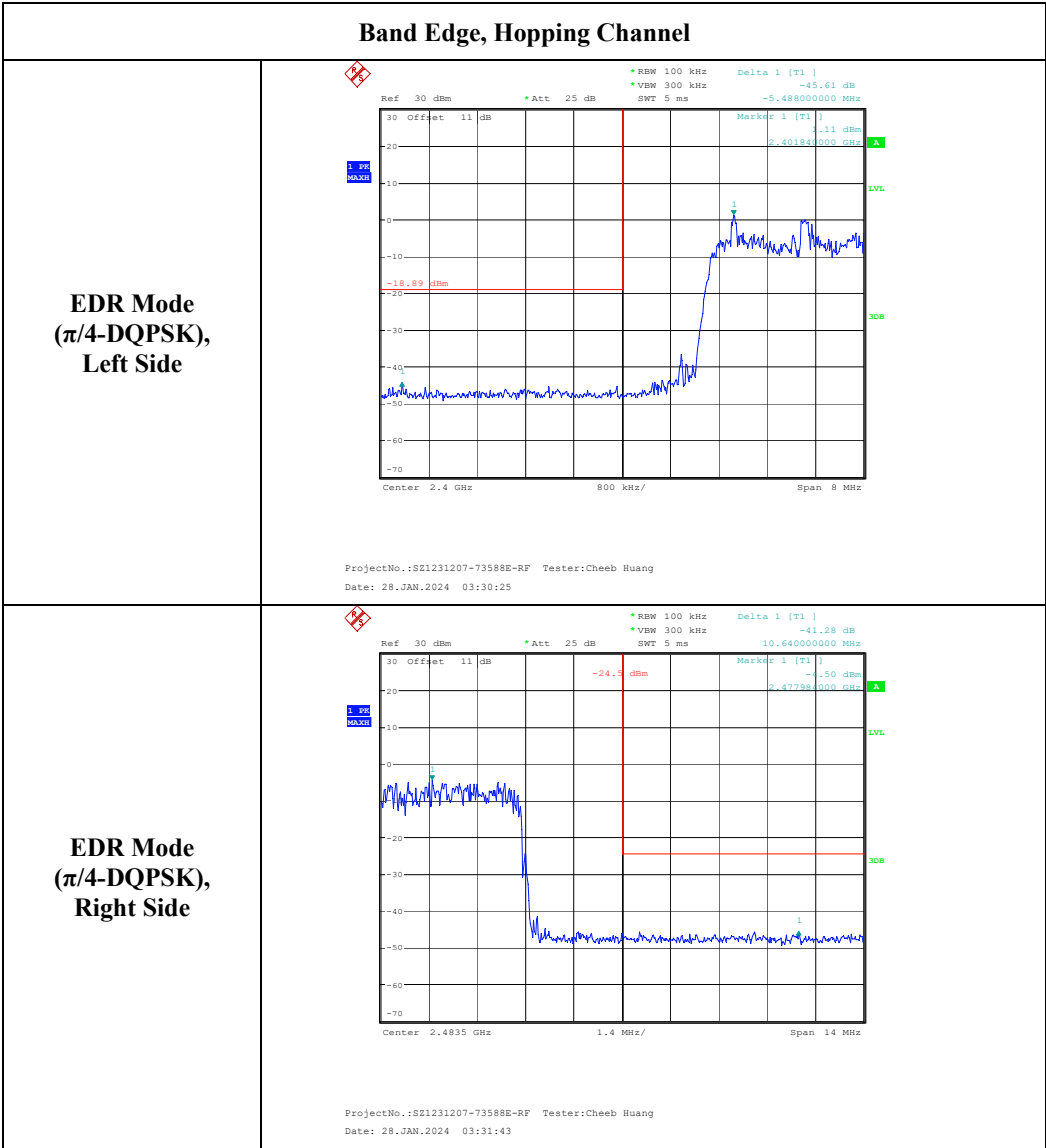
### EDR Mode (8DPSK), Left Side



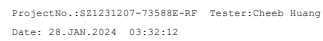
**EDR Mode  
(8DPSK),  
Right Side**



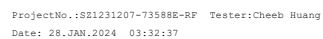




### EDR Mode (8DPSK), Left Side



**EDR Mode  
(8DPSK),  
Right Side**



## **EUT PHOTOGRAPHS**

Please refer to the attachment SZ1231207-73588E-RF External photo and SZ1231207-73588E-RF Internal photo.

## **TEST SETUP PHOTOGRAPHS**

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Please refer to the attachment SZ1231207-73588E-RF Test Setup photo.

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