

# TEST REPORT

Applicant Name : SHENZHEN REFINED TECHNOLOGY CO., LTD  
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Report Number : 2504V71148E-RF-00A  
FCC ID: 2BPIA-POOL12VAC

## Test Standard (s)

FCC PART 15.231

## Sample Description

Product Type: Remote Controller  
Model No.: R18  
Trade Mark: N/A  
Date Received: 2025-07-31  
Date of Test: 2025-08-01 to 2025-08-25  
Report Date: 2025-08-25

|              |                                            |
|--------------|--------------------------------------------|
| Test Result: | The EUT complied with the standards above. |
|--------------|--------------------------------------------|

## Prepared and Checked By:

*Roger Ling*

Roger.Ling  
EMC Engineer

## Approved By:

*Bob.Liao*

Bob.Liao  
EMC Engineer

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DOCUMENT REVISION HISTORY

| Revision Number | Report Number      | Description of Revision | Date of Revision |
|-----------------|--------------------|-------------------------|------------------|
| Rev.00          | 2504V71148E-RF-00A | Original Report         | 2025-08-25       |

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

|                                    |                                            |
|------------------------------------|--------------------------------------------|
| Product                            | Remote Controller                          |
| Tested Model                       | R18                                        |
| Frequency Range                    | 315MHz                                     |
| Maximum E-field Strength           | 80.36dBuV/m@3m                             |
| Modulation Technique               | ASK                                        |
| Antenna Specification <sup>#</sup> | Integral Antenna                           |
| Voltage Range <sup>#</sup>         | DC 12V from battery(1PCS 23A battery )     |
| Sample Serial Number               | 37BQ-1, 37BQ-2 (Assigned by ATC, Shenzhen) |
| Sample/EUT Status                  | Good condition                             |

Objective

All the test measurements were performed according to the measurement procedure described in ANSI C63.10-2020.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.209, 15.35(c) and 15.231 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method.

## Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

Accredited by American Association for Laboratory Accreditation (A2LA).The Certificate Number is 4297.01.

## Measurement Uncertainty

| Parameter                    |              | Uncertainty            |
|------------------------------|--------------|------------------------|
| Occupied Channel Bandwidth   |              | 5 %                    |
| RF Frequency                 |              | $0.064 \times 10^{-7}$ |
| Unwanted Emission, conducted |              | 1.2 dB                 |
| Emissions,<br>Radiated       | 9kHz - 30MHz | 2.1 dB                 |
|                              | 30MHz - 1GHz | 4.3 dB                 |
|                              | 1GHz - 18GHz | 4.9 dB                 |
| Temperature                  |              | 1 °C                   |
| Humidity                     |              | 7 %                    |
| 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.*

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode and the power is default, which was provided and declared by manufacturer.

Operating frequency: 315MHz

EUT Exercise Software and Power Level<sup>#</sup>

|                    |                  |
|--------------------|------------------|
| Exercise Software: | Engineering mode |
| Power Level:       | default          |

Note 1: The information in the above table is provided by the applicant.  
Note 2<sup>#</sup>: According to applicant, all the keys with same power setting, the EUT was configured to an engineering mode that with continue transmitting when power on for the testing.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

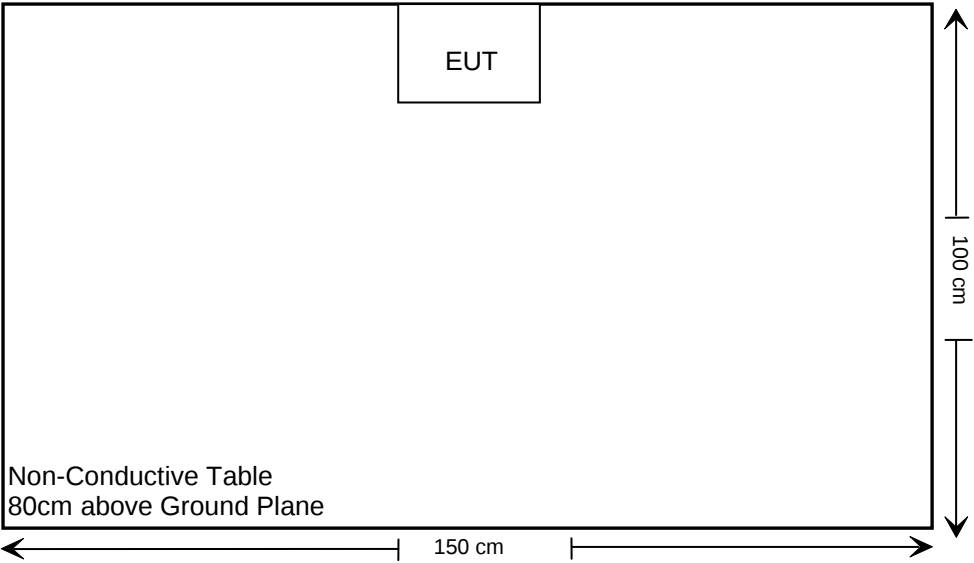
| Manufacturer | Description | Model | Serial Number |
|--------------|-------------|-------|---------------|
| /            | /           | /     | /             |

External I/O Cable

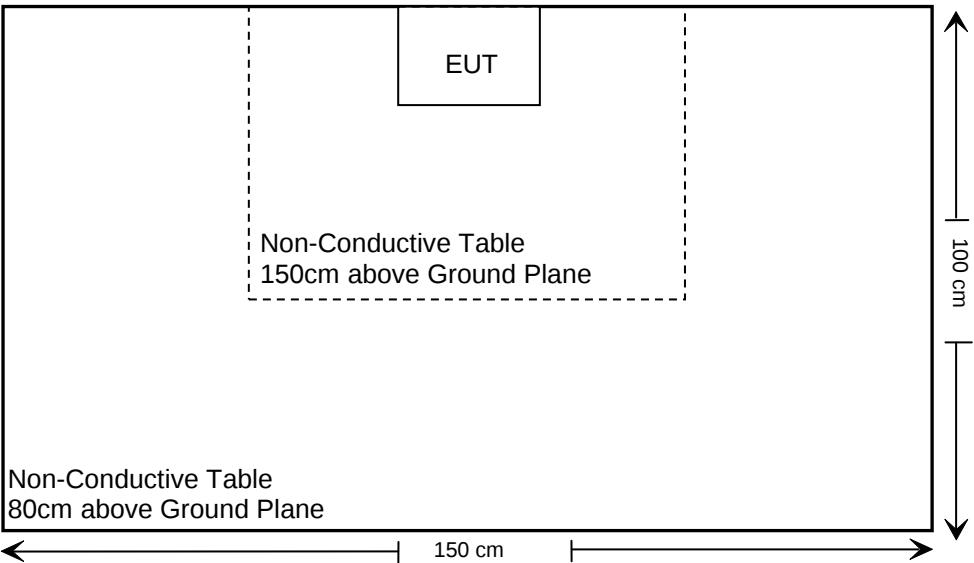
| Cable Description | Shielding Type | Length (m) | From Port | To |
|-------------------|----------------|------------|-----------|----|
| /                 | /              | /          | /         | /  |

Block Diagram of Test Setup

For Radiated Emission(Below 1GHz):



For Radiated Emission(Above 1GHz):



SUMMARY OF TEST RESULTS

| FCC Rules                    | Description of Test        | Result         |
|------------------------------|----------------------------|----------------|
| §15.203                      | Antenna Requirement        | Compliance     |
| FCC §15.207(a)               | AC Line Conducted Emission | Not Applicable |
| §15.205, §15.209, §15.231(b) | Radiated Emissions         | Compliance     |
| §15.231 (c)                  | 20dB Emission Bandwidth    | Compliance     |
| §15.231 (a) (1)              | Deactivation               | Compliance     |

Note 1: Not Applicable: The device only powered by battery.

Note 2: For Radiated Spurious Emissions, after pre-scan in the X, Y and Z axes of orientation, the worst case as setup photos was recorded.

Note 3: All keys were evaluated the duty cycle, only the worst case(button: WHT) duty cycle was recorded in report.

TEST EQUIPMENT LIST AND DETAILS

| Manufacturer                  | Description                       | Model     | Serial Number | Calibration Date | Calibration Due Date |
|-------------------------------|-----------------------------------|-----------|---------------|------------------|----------------------|
| Rohde & Schwarz               | Test Receiver                     | ESR       | 102725        | 2024/11/08       | 2025/11/07           |
| SONOMA INSTRUMENT             | Amplifier                         | 310N      | 186131        | 2025/03/26       | 2026/03/25           |
| Schwarzbeck                   | Bilog Antenna                     | VULB9163  | 9163-323      | 2024/08/08       | 2027/08/07           |
| Unknown                       | RF Coaxial Cable                  | No.12     | N040          | 2024/10/08       | 2025/10/07           |
| Unknown                       | RF Coaxial Cable                  | No.13     | N300          | 2024/10/08       | 2025/10/07           |
| Unknown                       | RF Coaxial Cable                  | No.14     | N800          | 2024/10/08       | 2025/10/07           |
| BACL                          | LOOP ANTENNA                      | 1313-1A   | 3110711       | 2024/01/16       | 2027/01/15           |
| Rohde & Schwarz               | Spectrum Analyzer                 | FSV40     | 101949        | 2024/10/08       | 2025/10/07           |
| Decentest                     | Filter Switch Unit                | DT7220FSU | DQ77927       | 2024/10/08       | 2025/10/07           |
| Decentest                     | Multiplex Switch Test Control Set | DT7220CSU | DQ77924       | 2024/10/08       | 2025/10/07           |
| A.H. Systems, inc.            | Preamplifier                      | PAM-0118  | 226           | 2025/03/20       | 2026/03/19           |
| Schwarzbeck                   | Horn Antenna                      | BBHA9120D | 837           | 2023/02/22       | 2026/02/21           |
| Unknown                       | RF Coaxial Cable                  | No.10     | N050          | 2024/10/08       | 2025/10/07           |
| Unknown                       | RF Coaxial Cable                  | No.11     | N1000         | 2024/10/08       | 2025/10/07           |
| Unknown                       | RF Coaxial Cable                  | No.19     | N500          | 2024/10/08       | 2025/10/07           |
| Test Software: e3 191218 (V9) |                                   |           |               |                  |                      |

\* **Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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## FCC §15.203-ANTENNA REQUIREMENT

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### Applicable Standard

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.

### Antenna Connector Construction

The EUT has an integral antenna arrangement which cannot replace by end-user, fulfill the requirement of this section. Please refer to EUT photos.

**Result:** Compliance.

**FCC §15.205, §15.209, §15.231 (b)-RADIATED EMISSIONS****Applicable Standard**

FCC §15.205, §15.209, §15.231 (b)

According to FCC §15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

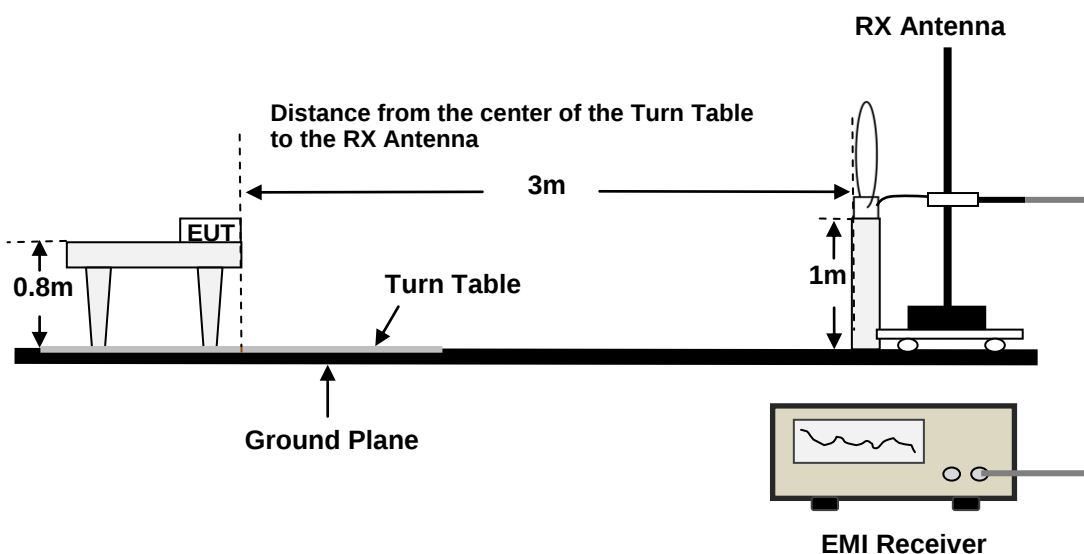
| Fundamental frequency (MHz) | Field Strength of Fundamental (Microvolts /meter) | Field Strength of spurious emissions (Microvolts /meter) |
|-----------------------------|---------------------------------------------------|----------------------------------------------------------|
| 40.66-40.70                 | 2250                                              | 225                                                      |
| 70-130                      | 1250                                              | 125                                                      |
| 130-174                     | 1250 to 3750**                                    | 125 to 375**                                             |
| 174-260                     | 3750                                              | 375                                                      |
| 260-470                     | 3750 to 12500**                                   | 375 to 1250**                                            |
| Above 470                   | 12500                                             | 1250                                                     |

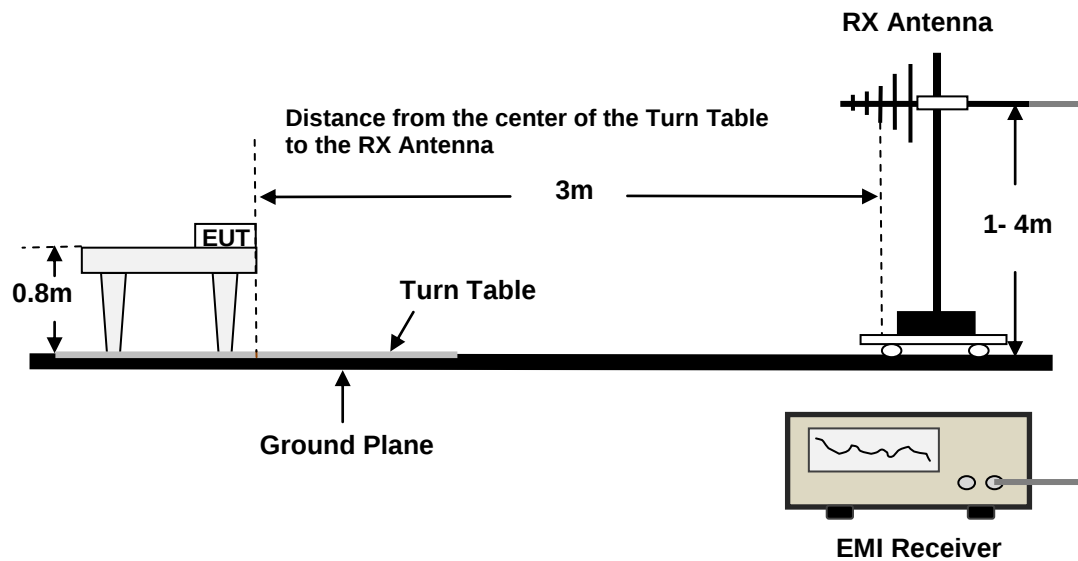
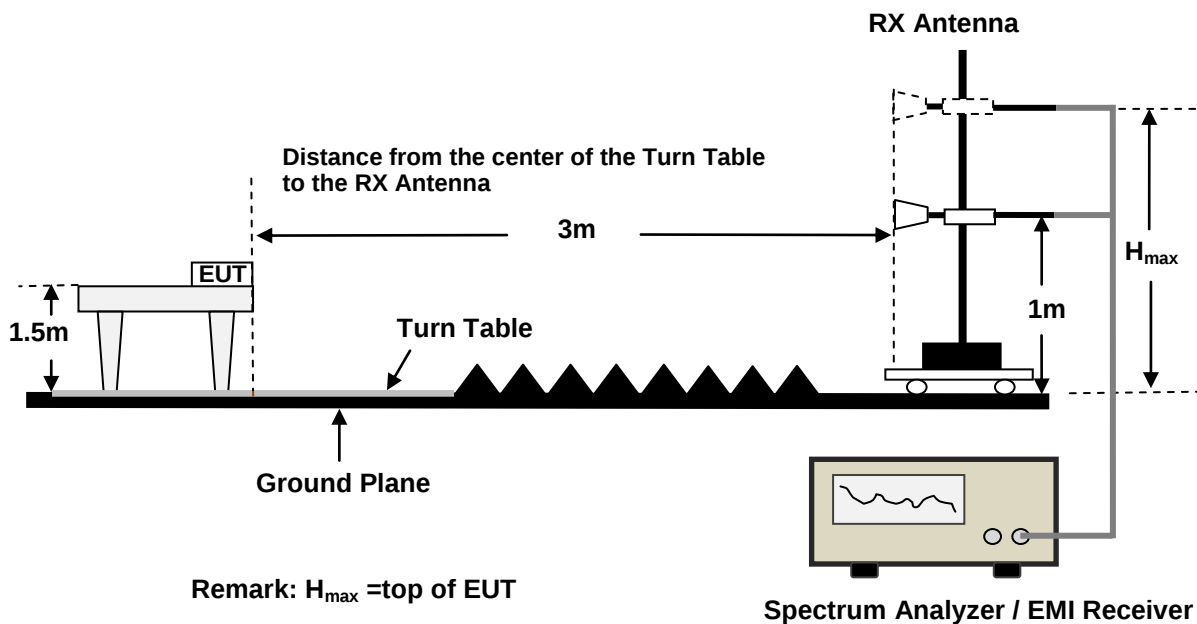
\*\*linear interpolations

The above field strength limits are specified at a distance of 3-meters the tighter limits apply at the band edges.

**EUT Setup**

9kHz - 30MHz:



**30MHz - 1GHz:****Above 1GHz:**

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15 § 15.209, 15.205 and 15.231.

## EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9kHz to 4.5GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

9kHz - 1000MHz:

| Frequency Range | Measurement | RBW    | Video B/W | IF B/W | Detector |
|-----------------|-------------|--------|-----------|--------|----------|
| 9kHz - 150kHz   | PK          | 0.3kHz | 1kHz      | /      | PK       |
|                 | QP/AV       | /      | /         | 200Hz  | QP/AV    |
| 150kHz - 30MHz  | PK          | 10kHz  | 30kHz     | /      | PK       |
|                 | QP/AV       | /      | /         | 9kHz   | QP/AV    |
| 30MHz - 1000MHz | PK          | 100kHz | 300kHz    | /      | PK       |
|                 | QP          | /      | /         | 120kHz | QP       |

1GHz – 4.5GHz:

Pre-scan:

| Measurement | Detector | RBW  | Video B/W |
|-------------|----------|------|-----------|
| PK          | Peak     | 1MHz | 3MHz      |

Note 1: The other spurious emission which is in the noise floor level was not recorded.

Note 2: Above 30MHz-1GHz, when the test result of Peak was more than 6dB below the limit of QP, just the Peak value was recorded.

Note 3: For above 1GHz, the test result of peak was 20dB below to the limit of peak, which can be compliant to the average limit, so just peak value was recorded.

## 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 the Quasi-peak detection mode from 30MHz to 1GHz, Peak and average detection mode above 1 GHz.

If the maximized peak measured value complies with the limit, then it is unnecessary to perform QP/Average measurement.

## 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:

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

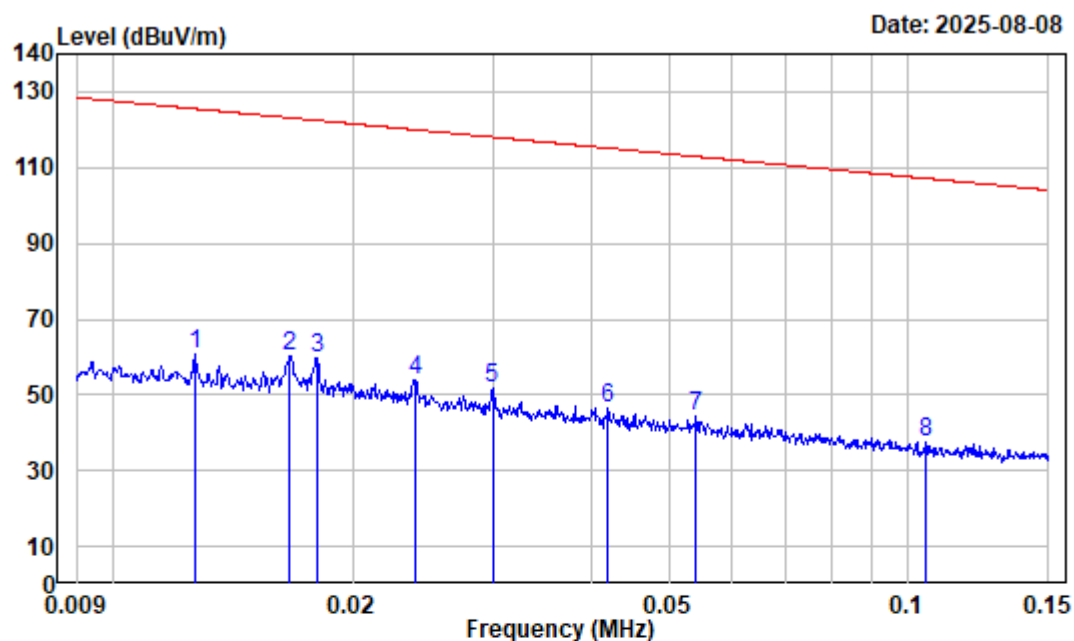
Test Data

Environmental Conditions

| Test Item:          | RE 9kHz-1GHz | RE 1GHz-4.5GHz | Duty Cycle   |
|---------------------|--------------|----------------|--------------|
| Temperature:        | 24.3℃        | 23 ℃           | 25 ℃         |
| Relative Humidity:  | 57 %         | 50 %           | 50 %         |
| ATM Pressure:       | 99.3 kPa     | 99.3 kPa       | 99.3 kPa     |
| Test Engineer:      | Colin Lin    | Lorne Huang    | Cayde Hou    |
| Test Date:          | 2025-08-08   | 2025-08-14     | 2025-08-25   |
| EUT Operation Mode: | Transmitting | Transmitting   | Transmitting |

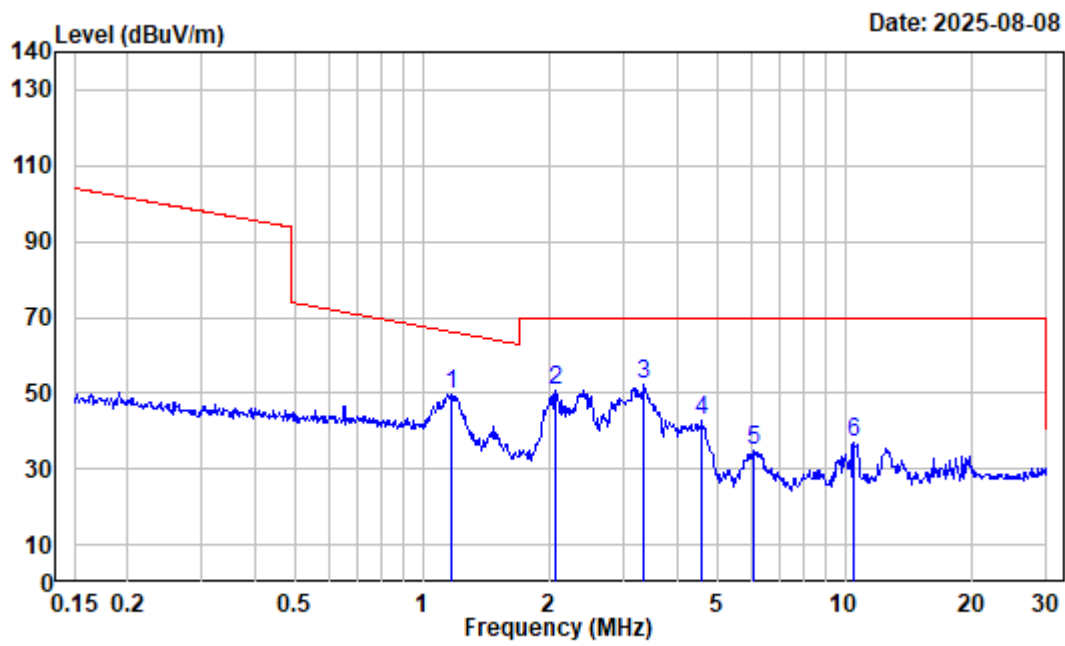
Test Result: Compliance, please refer to the below data.

## 9kHz~30MHz



Site : Chamber  
Condition : 3m  
Job No. : 2504V71148E-RF  
Polarization : Parallel Tester: Colin Lin  
Test Mode : Transmitting  
Receiver Setting: RBW:300Hz VBW:1kHz

|   | Freq  | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|-------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz   | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 0.013 | 34.63  | 26.21         | 60.84  | 125.54        | -64.70        | Peak   |
| 2 | 0.017 | 32.87  | 27.55         | 60.42  | 123.17        | -62.75        | Peak   |
| 3 | 0.018 | 32.27  | 27.31         | 59.58  | 122.48        | -62.90        | Peak   |
| 4 | 0.024 | 29.60  | 24.21         | 53.81  | 119.99        | -66.18        | Peak   |
| 5 | 0.030 | 26.95  | 24.90         | 51.85  | 118.06        | -66.21        | Peak   |
| 6 | 0.042 | 24.48  | 22.06         | 46.54  | 115.15        | -68.61        | Peak   |
| 7 | 0.054 | 22.23  | 22.22         | 44.45  | 112.95        | -68.50        | Peak   |
| 8 | 0.105 | 16.20  | 21.47         | 37.67  | 107.16        | -69.49        | Peak   |



Site : Chamber

Condition : 3m

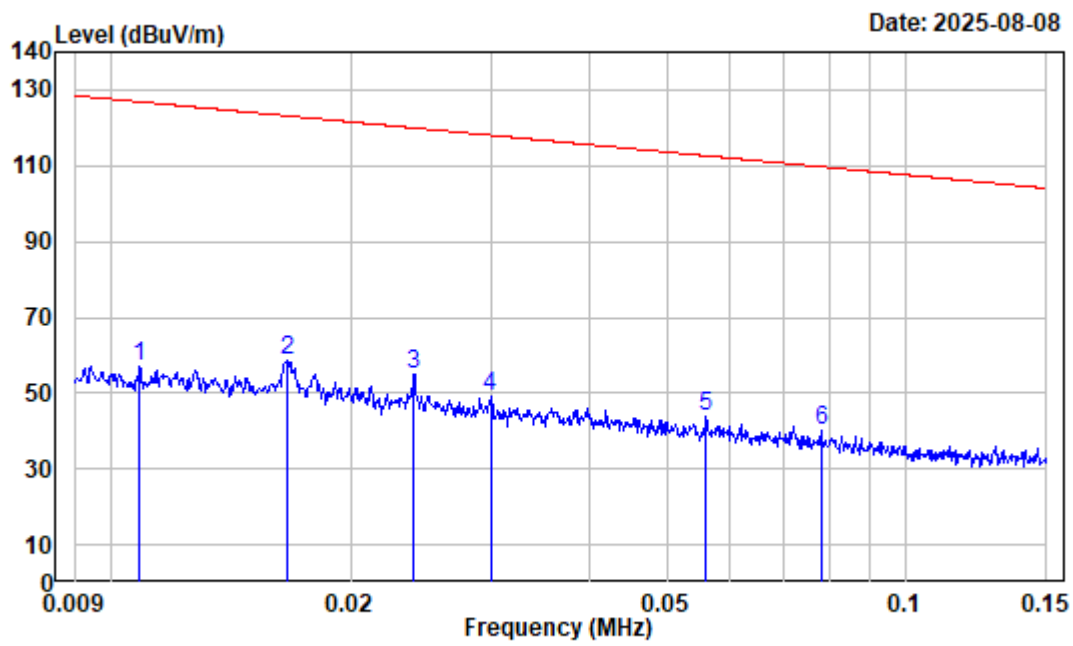
Job No. : 2504V71148E-RF

Polarization : Parallel Tester: Colin Lin

Test Mode : Transmitting

Receiver Setting: RBW:10kHz VBW:30kHz

|   | Freq   | Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|--------|--------|------------|--------|------------|------------|--------|
|   | MHz    | dB/m   | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 1.166  | -2.42  | 52.23      | 49.81  | 66.11      | -16.30     | Peak   |
| 2 | 2.055  | -5.41  | 56.27      | 50.86  | 69.54      | -18.68     | Peak   |
| 3 | 3.346  | -5.99  | 58.46      | 52.47  | 69.54      | -17.07     | Peak   |
| 4 | 4.598  | -6.30  | 49.02      | 42.72  | 69.54      | -26.82     | Peak   |
| 5 | 6.056  | -6.21  | 40.94      | 34.73  | 69.54      | -34.81     | Peak   |
| 6 | 10.452 | -5.24  | 42.40      | 37.16  | 69.54      | -32.38     | Peak   |



Site : Chamber

Condition : 3m

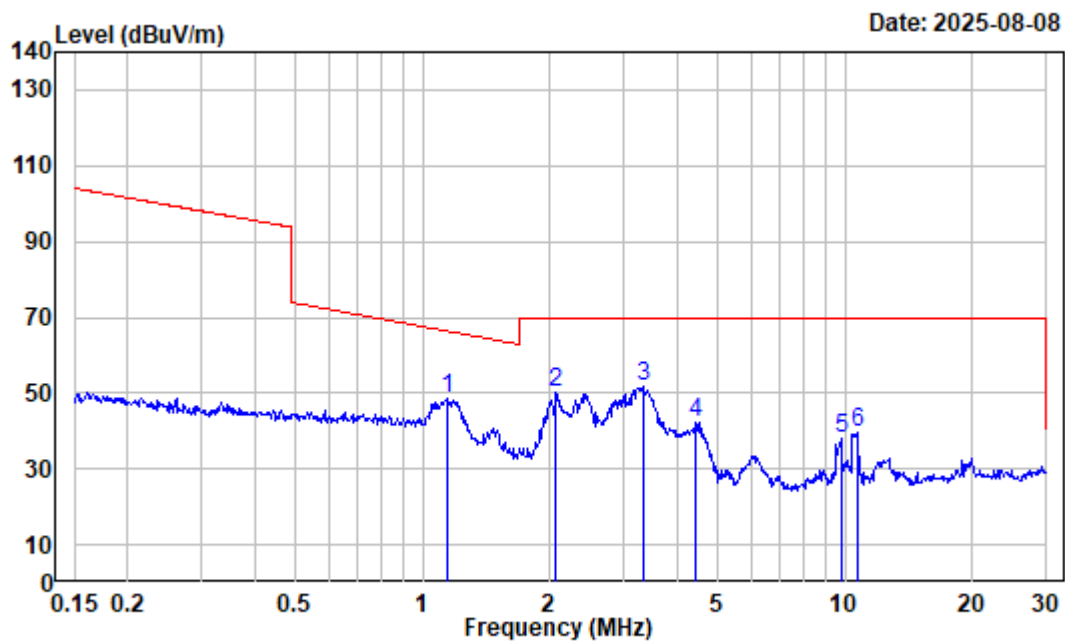
Job No. : 2504V71148E-RF

Polarization : Perpendicular Tester: Colin Lin

Test Mode : Transmitting

Receiver Setting: RBW:300Hz VBW:1kHz

|   | Freq  | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|-------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz   | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 0.011 | 35.44  | 21.39         | 56.83  | 126.88        | -70.05        | Peak   |
| 2 | 0.017 | 32.87  | 25.72         | 58.59  | 123.17        | -64.58        | Peak   |
| 3 | 0.024 | 29.60  | 25.26         | 54.86  | 119.99        | -65.13        | Peak   |
| 4 | 0.030 | 26.95  | 22.37         | 49.32  | 118.06        | -68.74        | Peak   |
| 5 | 0.056 | 21.95  | 21.71         | 43.66  | 112.64        | -68.98        | Peak   |
| 6 | 0.078 | 18.80  | 21.15         | 39.95  | 109.75        | -69.80        | Peak   |



Site : Chamber

Condition : 3m

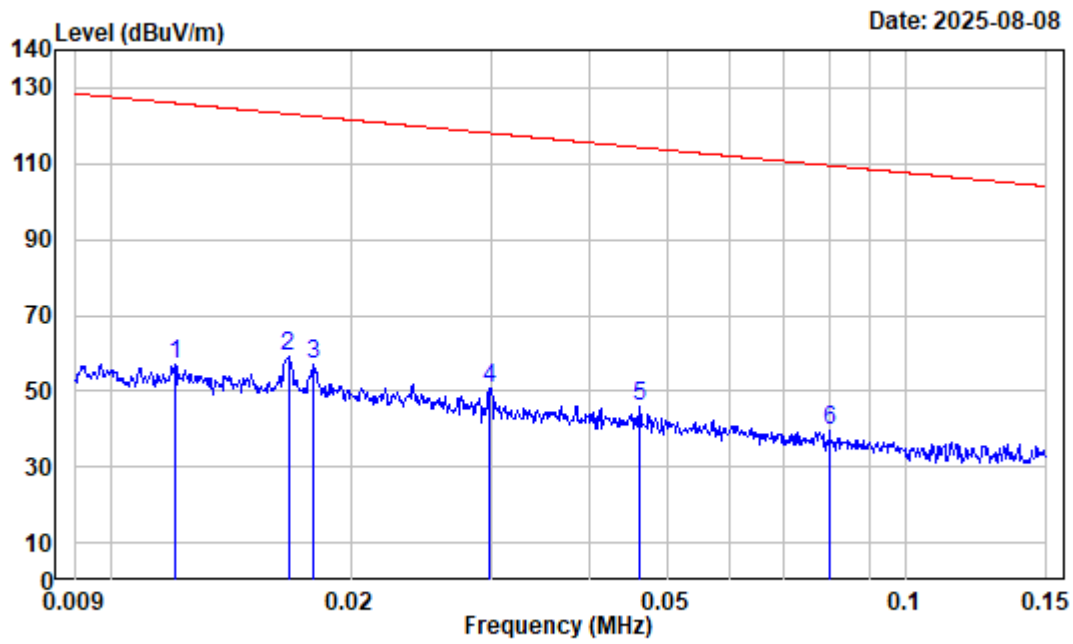
Job No. : 2504V71148E-RF

Polarization : Perpendicular Tester: Colin Lin

Test Mode : Transmitting

Receiver Setting: RBW:10kHz VBW:30kHz

|   | Freq   | Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|--------|--------|------------|--------|------------|------------|--------|
|   | MHz    | dB/m   | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 1.141  | -2.33  | 50.82      | 48.49  | 66.30      | -17.81     | Peak   |
| 2 | 2.066  | -5.41  | 55.45      | 50.04  | 69.54      | -19.50     | Peak   |
| 3 | 3.346  | -5.99  | 58.02      | 52.03  | 69.54      | -17.51     | Peak   |
| 4 | 4.430  | -6.30  | 48.39      | 42.09  | 69.54      | -27.45     | Peak   |
| 5 | 9.809  | -5.38  | 43.50      | 38.12  | 69.54      | -31.42     | Peak   |
| 6 | 10.676 | -5.18  | 44.65      | 39.47  | 69.54      | -30.07     | Peak   |



Site : Chamber

Condition : 3m

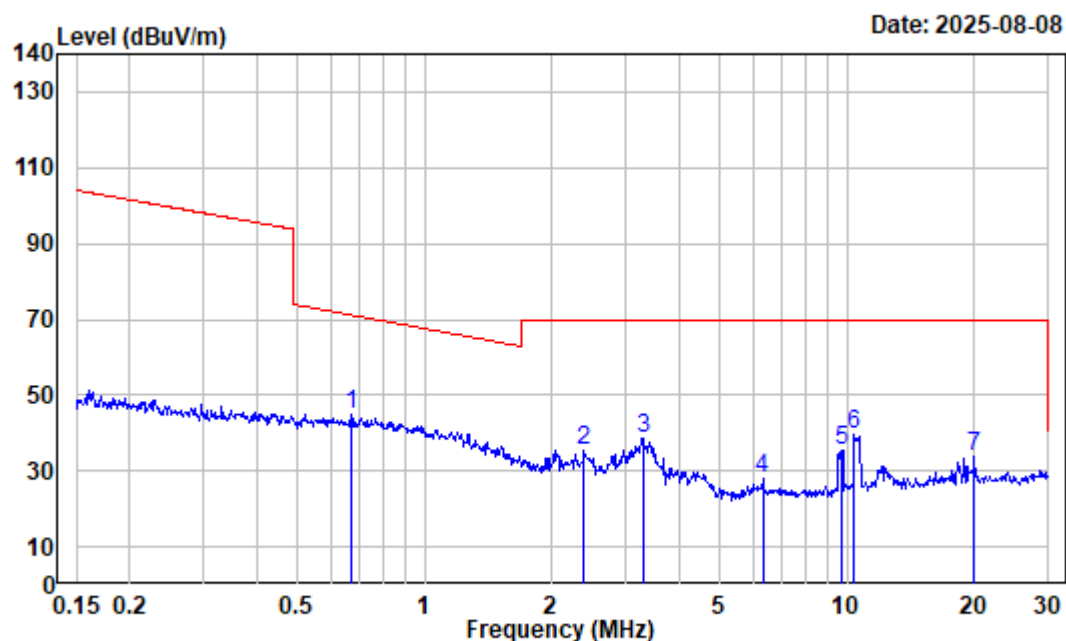
Job No. : 2504V71148E-RF

Polarization : Ground-parallel Tester: Colin Lin

Test Mode : Transmitting

Receiver Setting: RBW:300Hz VBW:1kHz

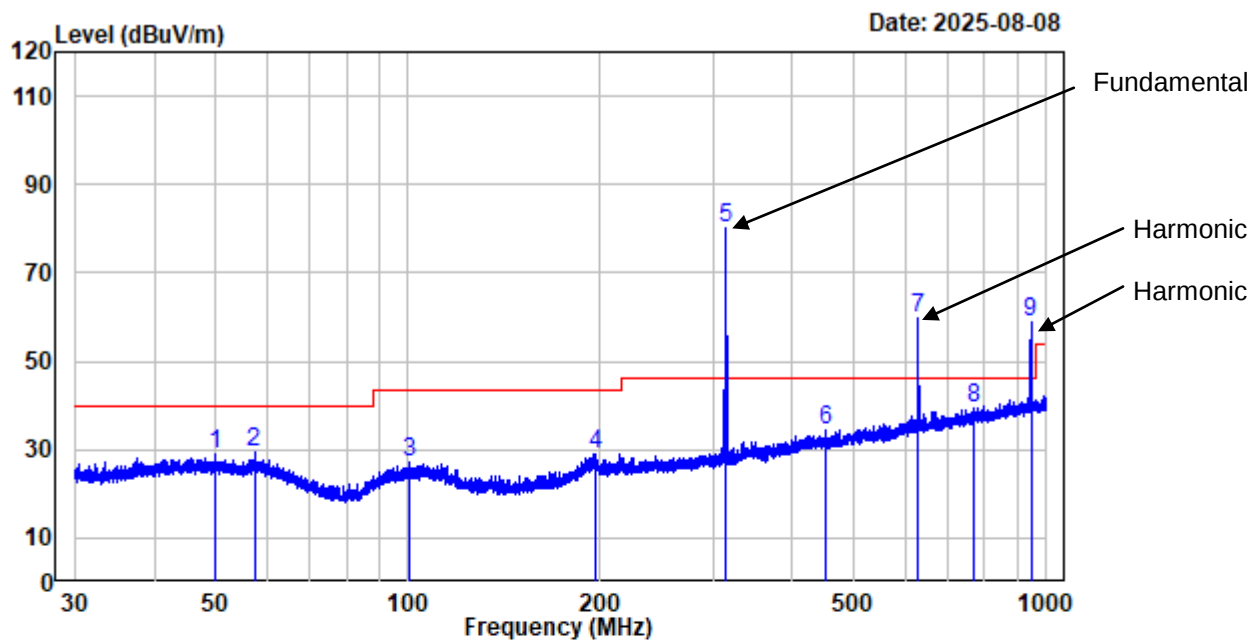
|   | Freq  | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|-------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz   | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 0.012 | 34.91  | 22.01         | 56.92  | 125.98        | -69.06        | Peak   |
| 2 | 0.017 | 32.85  | 26.20         | 59.05  | 123.14        | -64.09        | Peak   |
| 3 | 0.018 | 32.29  | 24.84         | 57.13  | 122.51        | -65.38        | Peak   |
| 4 | 0.030 | 26.99  | 23.57         | 50.56  | 118.09        | -67.53        | Peak   |
| 5 | 0.046 | 23.58  | 22.47         | 46.05  | 114.30        | -68.25        | Peak   |
| 6 | 0.080 | 18.52  | 21.27         | 39.79  | 109.53        | -69.74        | Peak   |



Site : Chamber  
Condition : 3m  
Job No. : 2504V71148E-RF  
Polarization : Ground-parallel Tester: Colin Lin  
Test Mode : Transmitting  
Receiver Setting: RBW:10kHz VBW:30kHz

|   | Freq   | Factor | Read<br>Level | Level  | Limit<br>Line | Over<br>Limit | Remark |
|---|--------|--------|---------------|--------|---------------|---------------|--------|
|   | MHz    | dB/m   | dBuV          | dBuV/m | dBuV/m        | dB            |        |
| 1 | 0.672  | 1.26   | 43.42         | 44.68  | 71.00         | -26.32        | Peak   |
| 2 | 2.384  | -5.55  | 40.83         | 35.28  | 69.54         | -34.26        | Peak   |
| 3 | 3.293  | -5.97  | 44.60         | 38.63  | 69.54         | -30.91        | Peak   |
| 4 | 6.319  | -6.14  | 33.90         | 27.76  | 69.54         | -41.78        | Peak   |
| 5 | 9.757  | -5.39  | 41.00         | 35.61  | 69.54         | -33.93        | Peak   |
| 6 | 10.397 | -5.25  | 44.68         | 39.43  | 69.54         | -30.11        | Peak   |
| 7 | 20.056 | -3.36  | 37.13         | 33.77  | 69.54         | -35.77        | Peak   |

30MHz~1GHz



Site : Chamber

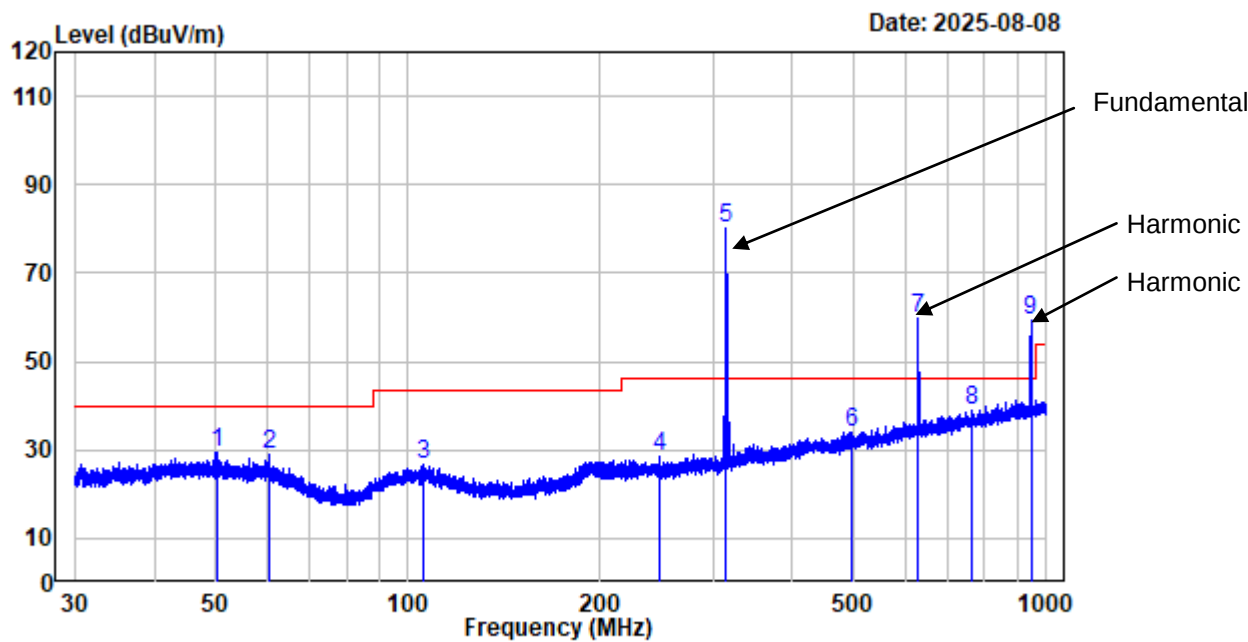
Condition : 3m HORIZONTAL

Job No. : 2504V71148E-RF      Tester: Colin Lin

Test Mode : Transmitting

Receiver Setting: RBW:100kHz VBW:300kHz

|   | Freq    |        | Read  |        | Limit  | Over   | Remark |
|---|---------|--------|-------|--------|--------|--------|--------|
|   | MHz     | Factor | Level | Level  | Line   | Limit  |        |
|   | MHz     | dB/m   | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 | 49.794  | -9.93  | 38.95 | 29.02  | 40.00  | -10.98 | Peak   |
| 2 | 57.392  | -10.24 | 39.86 | 29.62  | 40.00  | -10.38 | Peak   |
| 3 | 100.273 | -11.36 | 38.48 | 27.12  | 43.50  | -16.38 | Peak   |
| 4 | 196.424 | -9.93  | 39.12 | 29.19  | 43.50  | -14.31 | Peak   |
| 5 | 315.066 | -8.61  | 88.97 | 80.36  | 95.62  | -15.26 | Peak   |
| 6 | 451.135 | -4.84  | 39.03 | 34.19  | 46.00  | -11.81 | Peak   |
| 7 | 630.306 | -1.69  | 61.36 | 59.67  | 75.62  | -15.95 | Peak   |
| 8 | 771.449 | 0.40   | 38.94 | 39.34  | 46.00  | -6.66  | Peak   |
| 9 | 945.440 | 2.21   | 56.88 | 59.09  | 75.62  | -16.53 | Peak   |



Site : Chamber  
Condition : 3m VERTICAL  
Job No. : 2504V71148E-RF      Tester: Colin Lin  
Test Mode : Transmitting  
Receiver Setting: RBW:100kHz VBW:300kHz

|   | Freq    | Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|---------|--------|------------|--------|------------|------------|--------|
|   | MHz     | dB/m   | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 50.035  | -9.95  | 39.26      | 29.31  | 40.00      | -10.69     | Peak   |
| 2 | 60.386  | -10.70 | 39.85      | 29.15  | 40.00      | -10.85     | Peak   |
| 3 | 105.364 | -11.14 | 37.91      | 26.77  | 43.50      | -16.73     | Peak   |
| 4 | 247.682 | -10.04 | 38.55      | 28.51  | 46.00      | -17.49     | Peak   |
| 5 | 315.066 | -8.61  | 88.86      | 80.25  | 95.62      | -15.37     | Peak   |
| 6 | 495.283 | -3.88  | 38.02      | 34.14  | 46.00      | -11.86     | Peak   |
| 7 | 630.306 | -1.69  | 61.24      | 59.55  | 75.62      | -16.07     | Peak   |
| 8 | 766.057 | -0.02  | 39.05      | 39.03  | 46.00      | -6.97      | Peak   |
| 9 | 945.440 | 2.21   | 57.28      | 59.49  | 75.62      | -16.13     | Peak   |

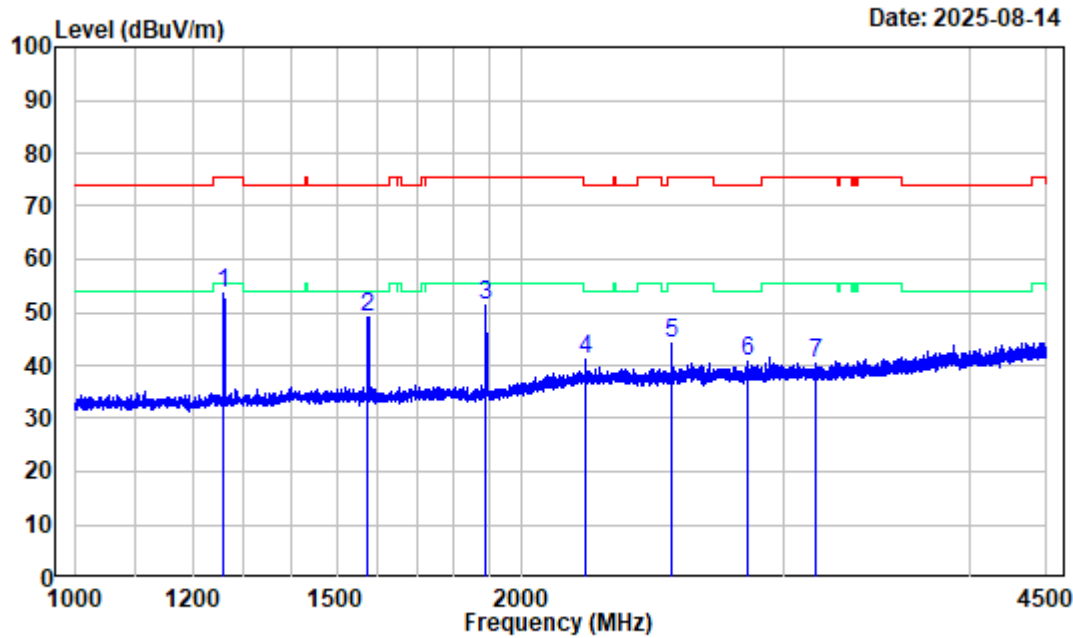
| Field Strength of Average |                               |             |                                   |                              |                |             |             |
|---------------------------|-------------------------------|-------------|-----------------------------------|------------------------------|----------------|-------------|-------------|
| Frequency (MHz)           | Peak Measurement @3m (dBμV/m) | Polar (H/V) | Duty Cycle Correction Factor (dB) | Corrected Amplitude (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Comment     |
| 315MHz                    |                               |             |                                   |                              |                |             |             |
| 315                       | 80.36                         | H           | -6.76                             | 73.6                         | 75.62          | -2.02       | Fundamental |
| 315                       | 80.25                         | V           | -6.76                             | 73.49                        | 75.62          | -2.13       | Fundamental |
| 630                       | 59.67                         | H           | -6.76                             | 52.91                        | 55.62          | -2.71       | Harmonic    |
| 630                       | 59.55                         | V           | -6.76                             | 52.79                        | 55.62          | -2.83       | Harmonic    |
| 945                       | 59.09                         | H           | -6.76                             | 52.33                        | 55.62          | -3.29       | Harmonic    |
| 945                       | 59.49                         | V           | -6.76                             | 52.73                        | 55.62          | -2.89       | Harmonic    |

Note 1: Duty Cycle  
Total on time=Ton1\*N1+Ton2\*N2  
Duty Cycle=( Total on time)/Tp  
Duty cycle Factor=20\*log(Duty Cycle)= -6.76

Note 2:  
Average Amplitude= Peak Measurement + Duty Cycle Factor  
Margin= Average Corrected Amplitude-Limit

1GHz-4.5GHz

315MHz 1GHz-4.5GHz\_HORIZONTAL



Site : chamber

Condition : 3m HORIZONTAL

Project No.: 2504V71148E-RF

Test Mode : Transmitting

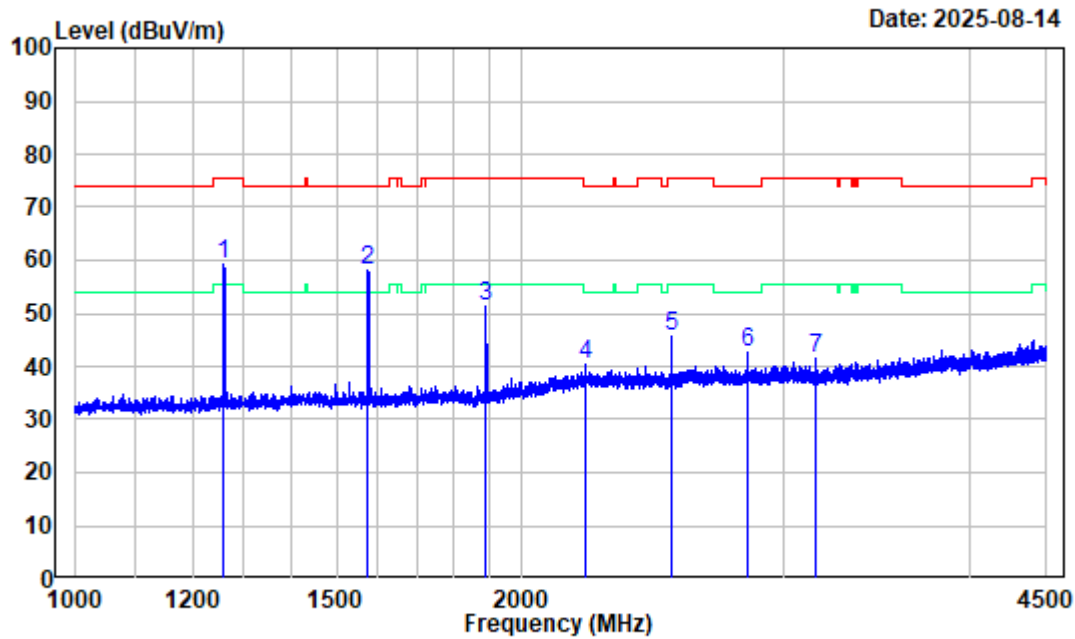
Note : 315MHz

SA setting : Peak:RBW:1MHz,VBW:3MHz

Tester:Lorne Huang

|   | Freq     | Factor | Read Level | Level  | Limit  | Over Limit | Remark |
|---|----------|--------|------------|--------|--------|------------|--------|
|   | MHz      | dB/m   | dBuV       | dBuV/m | dBuV/m | dB         |        |
| 1 | 1260.313 | -13.78 | 67.22      | 53.44  | 75.62  | -22.18     | Peak   |
| 2 | 1575.313 | -13.45 | 62.56      | 49.11  | 74.00  | -24.89     | Peak   |
| 3 | 1890.313 | -12.87 | 64.23      | 51.36  | 75.62  | -24.26     | Peak   |
| 4 | 2205.750 | -9.96  | 51.18      | 41.22  | 74.00  | -32.78     | Peak   |
| 5 | 2520.313 | -10.19 | 54.42      | 44.23  | 75.62  | -31.39     | Peak   |
| 6 | 2836.188 | -9.84  | 50.72      | 40.88  | 74.00  | -33.12     | Peak   |
| 7 | 3149.875 | -9.75  | 50.31      | 40.56  | 75.62  | -35.06     | Peak   |

315MHz 1GHz-4.5GHz\_VERTICAL



Site : chamber

Condition : 3m VERTICAL

Project No.: 2504V71148E-RF

Test Mode : Transmitting

Note : 315MHz

SA setting : Peak:RBW:1MHz,VBW:3MHz

Tester:Lorne Huang

|   | Freq     | Factor | Read Level | Limit Level | Over Limit | Remark      |
|---|----------|--------|------------|-------------|------------|-------------|
|   | MHz      | dB/m   | dBuV       | dBuV/m      | dBuV/m     | dB          |
| 1 | 1260.313 | -13.78 | 73.12      | 59.34       | 75.62      | -16.28 Peak |
| 2 | 1575.313 | -13.45 | 71.63      | 58.18       | 74.00      | -15.82 Peak |
| 3 | 1890.313 | -12.87 | 64.01      | 51.14       | 75.62      | -24.48 Peak |
| 4 | 2205.313 | -9.96  | 50.37      | 40.41       | 74.00      | -33.59 Peak |
| 5 | 2520.750 | -10.19 | 55.91      | 45.72       | 75.62      | -29.90 Peak |
| 6 | 2835.750 | -9.84  | 52.55      | 42.71       | 74.00      | -31.29 Peak |
| 7 | 3150.750 | -9.75  | 51.38      | 41.63       | 75.62      | -33.99 Peak |

| Field Strength of Average |                                        |                |                                               |                                    |                   |                |          |
|---------------------------|----------------------------------------|----------------|-----------------------------------------------|------------------------------------|-------------------|----------------|----------|
| Frequency<br>(MHz)        | Peak<br>Measurement<br>@3m<br>(dBµV/m) | Polar<br>(H/V) | Duty<br>Cycle<br>Correction<br>Factor<br>(dB) | Corrected<br>Amplitude<br>(dBµV/m) | Limit<br>(dBµV/m) | Margin<br>(dB) | Comment  |
| 315MHz                    |                                        |                |                                               |                                    |                   |                |          |
| 1260.313                  | 53.44                                  | H              | -6.76                                         | 46.68                              | 55.62             | -8.94          | Harmonic |
| 1260.313                  | 59.34                                  | V              | -6.76                                         | 52.58                              | 55.62             | -3.04          | Harmonic |
| 1575.313                  | 49.11                                  | H              | -6.76                                         | 42.35                              | 54                | -11.65         | Harmonic |
| 1575.313                  | 58.18                                  | V              | -6.76                                         | 51.42                              | 54                | -2.58          | Harmonic |
| 1890.313                  | 51.36                                  | H              | -6.76                                         | 44.6                               | 55.62             | -11.02         | Harmonic |
| 1890.313                  | 51.14                                  | V              | -6.76                                         | 44.38                              | 55.62             | -11.24         | Harmonic |
| 2205.750                  | 41.22                                  | H              | -6.76                                         | 34.46                              | 54                | -19.54         | Harmonic |
| 2205.313                  | 40.41                                  | V              | -6.76                                         | 33.65                              | 54                | -20.35         | Harmonic |
| 2520.313                  | 44.23                                  | H              | -6.76                                         | 37.47                              | 55.62             | -18.15         | Harmonic |
| 2520.750                  | 45.72                                  | V              | -6.76                                         | 38.96                              | 55.62             | -16.66         | Harmonic |
| 2836.188                  | 40.88                                  | H              | -6.76                                         | 34.12                              | 54                | -19.88         | Harmonic |
| 2835.750                  | 42.71                                  | V              | -6.76                                         | 35.95                              | 54                | -18.05         | Harmonic |
| 3149.875                  | 40.56                                  | H              | -6.76                                         | 33.8                               | 55.62             | -21.82         | Harmonic |
| 3150.750                  | 41.63                                  | V              | -6.76                                         | 34.87                              | 55.62             | -20.75         | Harmonic |

Note 1: Duty Cycle  
Total on time=Ton1\*N1+Ton2\*N2  
Duty Cycle=( Total on time)/Tp  
Duty cycle Factor=20\*log(Duty Cycle)= -6.76

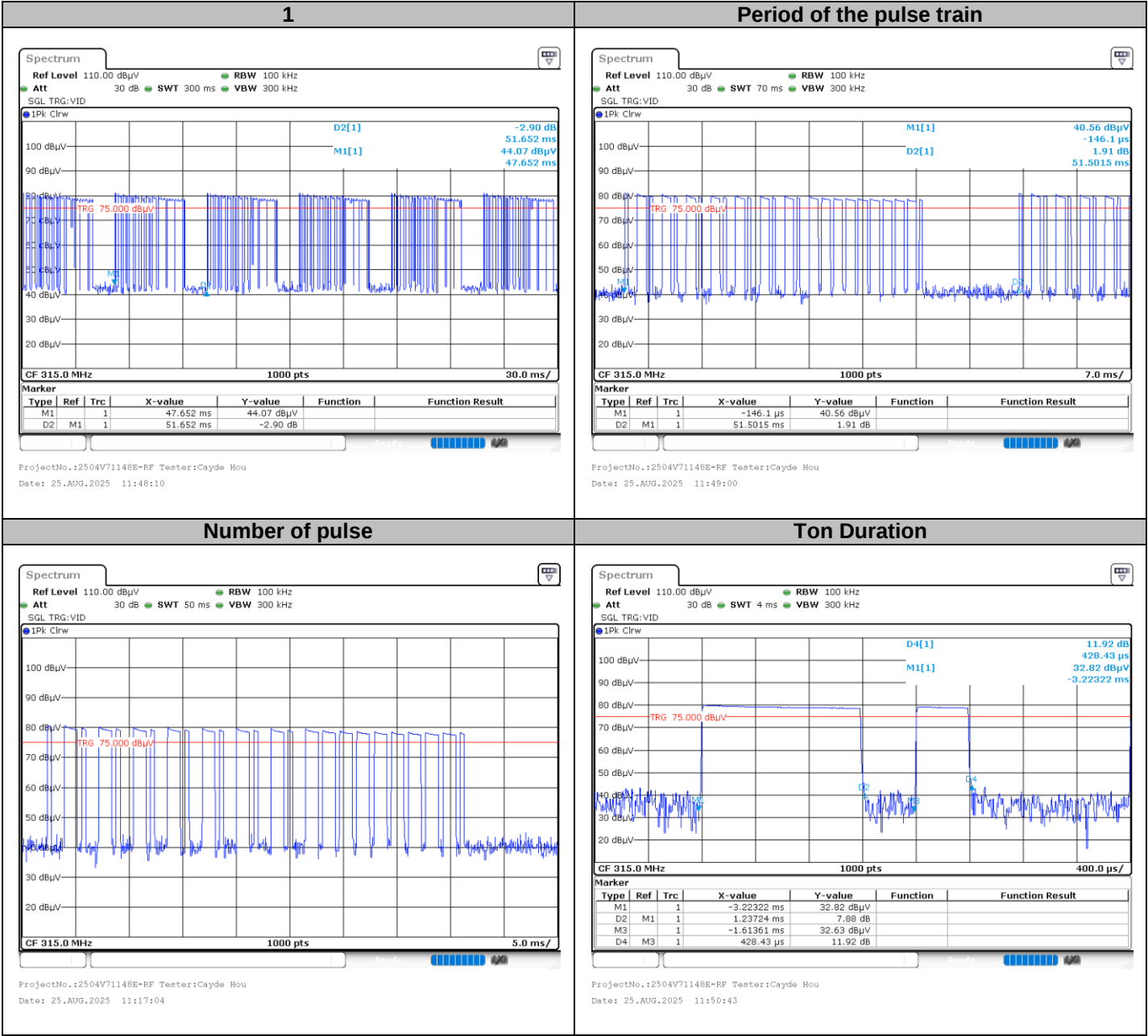
Note 2:  
Average Amplitude= Peak Measurement + Duty Cycle Factor  
Margin= Average Corrected Amplitude-Limit

Duty cycle

| Sub-pulse             | Ton Duration (ms) | Number of pulse (n) | Total on time (ms) | Period of the pulse train (ms) | Duty Cycle (%) |
|-----------------------|-------------------|---------------------|--------------------|--------------------------------|----------------|
| 1                     | 1.23724           | 16                  | 23.65171           | 51.50150                       | 45.92431       |
| 2                     | 0.42843           | 9                   |                    |                                |                |
| Duty cycle Factor(dB) |                   | -6.76               |                    |                                |                |

Note:

Total on time=Ton1\*N1+Ton2\*N2=1.23724\*16+0.42843\*9=23.65171ms  
Duty Cycle=( Total on time)/Tp=23.65171 /51.50150=0.4592431=45.92431%  
Duty cycle Factor=20\*log(Duty Cycle) =20\*log(0.4592431)= -6.76



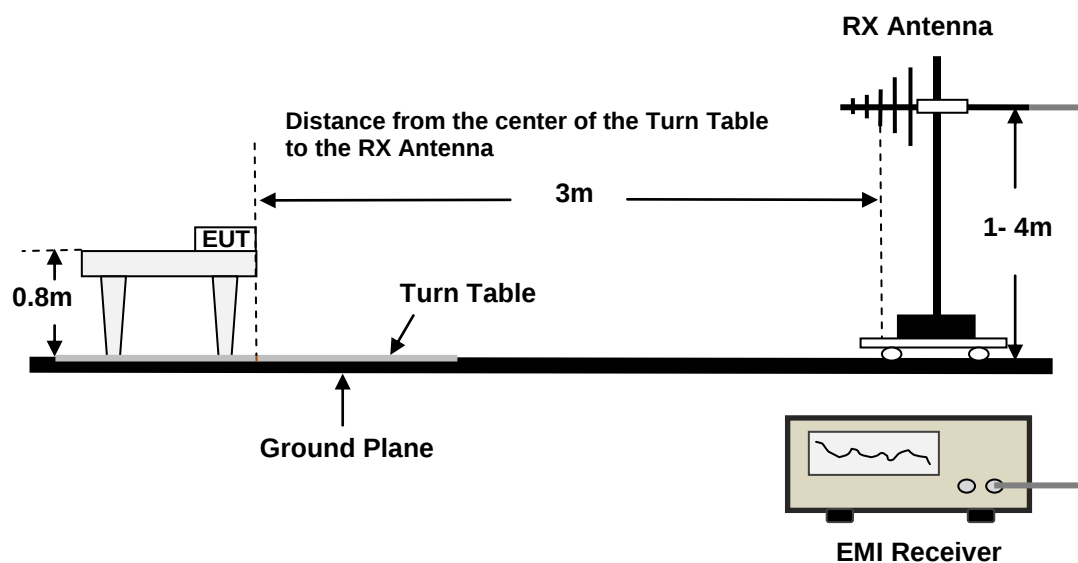
## FCC §15.231(a) (1)-DEACTIVATION TESTING

### Applicable Standard

Per FCC §15.231(a) (1), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

### Test Procedure

1. Set center frequency of spectrum analyzer=operating frequency.
2. Set the spectrum analyzer as RBW=100kHz/ VBW=300kHz/ Span=0Hz.
3. Repeat above procedures until all frequency measured was complete.



### Test Data

#### Environmental Conditions

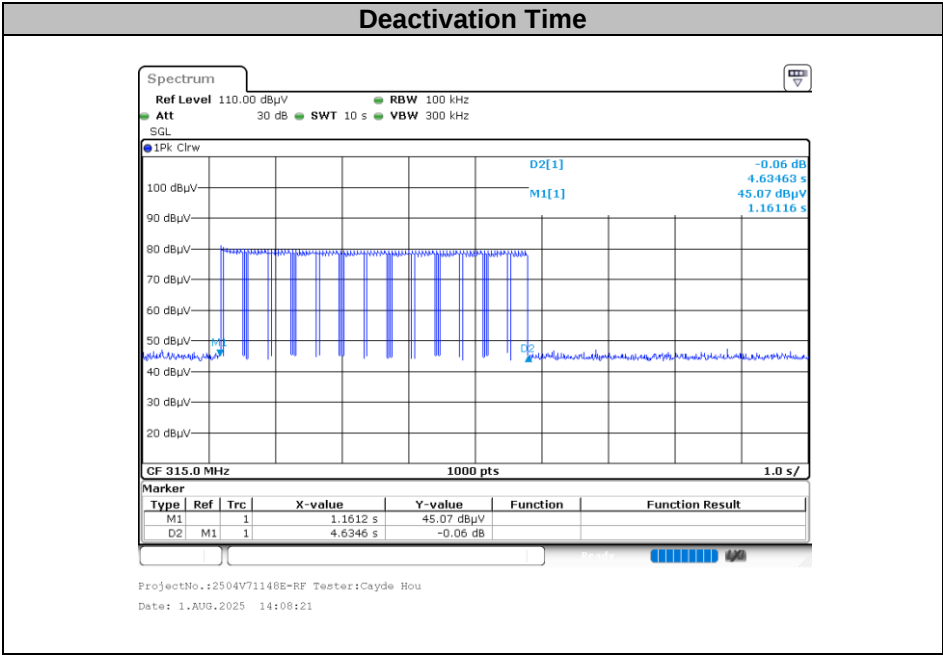
|                    |          |
|--------------------|----------|
| Temperature:       | 23 °C    |
| Relative Humidity: | 51 %     |
| ATM Pressure:      | 99.3 kPa |

The testing was performed by Cayde Hou on 2025-08-01.

EUT operation mode: Transmitting

**Test Result:** Compliance. This product will cease transmission within 5 seconds after activation. Please refer to following data.

| Channel Frequency (MHz) | Deactivation Time (s) | Limit (s) |
|-------------------------|-----------------------|-----------|
| 315                     | 4.6346                | ≤5        |



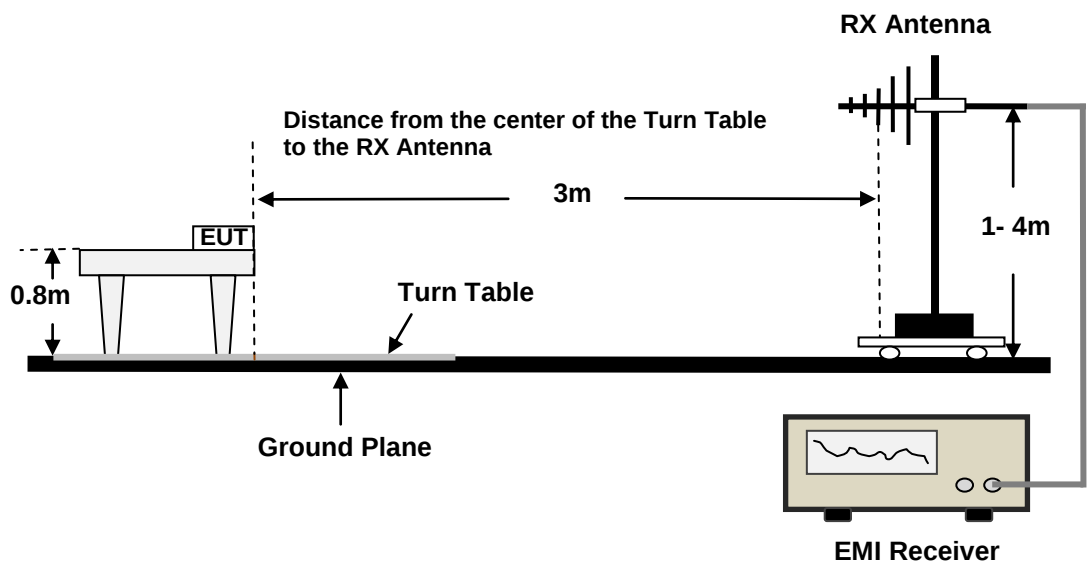
FCC §15.231(c)-20 dB EMISSION BANDWIDTH TESTING

Applicable Standard

Per 15.231(c), The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Procedure

The EUT is setting to the transmit mode, the waveform was received by the test antenna which was connected to the spectrum analyzer, plot the 20 dB bandwidth.



Test Data

Environmental Conditions

|                    |          |
|--------------------|----------|
| Temperature:       | 23 °C    |
| Relative Humidity: | 51 %     |
| ATM Pressure:      | 99.3 kPa |

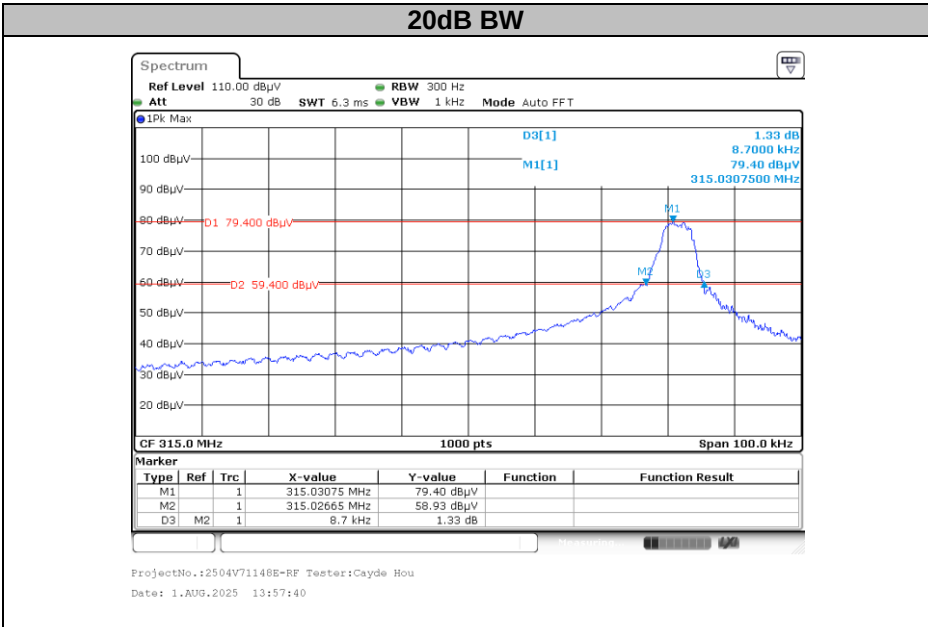
The testing was performed by Cayde Hou on 2025-08-01.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the data.

| Channel Frequency (MHz) | 20dB BW (kHz) | Limit (kHz) |
|-------------------------|---------------|-------------|
| 315                     | 8.7           | 787.5       |

Note :Limit=Channel Frequency\*0.25%



## **EXHIBIT A-EUT PHOTOGRAPHS**

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Please refer to the Attachment No.1 2504V71148E-RF EUT External Photos and Attachment No.2 2504V71148E-RF EUT Internal Photos.

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## **EXHIBIT B-TEST SETUP PHOTOGRAPHS**

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Please refer to the Attachment No.3 2504V71148E-RF-00A Test Photos.

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