

# TEST REPORT

**Application No.:** SUCR2511001080AT  
**FCC ID:** 2AH25M3WN  
**Applicant:** Shanghai Sunmi Technology Co.,Ltd.  
**Address of Applicant:** Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China  
**Manufacturer:** Shanghai Sunmi Technology Co.,Ltd.  
**Address of Manufacturer:** Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China  
**Equipment Under Test (EUT):**  
**EUT Name:** Wireless Data Terminal  
**Model No.:** TF31A  
**Trade Mark:** SUNMI  
**FCC ID:** 2AH25M3WN  
**Standard(s) :** 47 CFR Part 15, Subpart C 15.225  
**Date of Receipt:** 2025-11-06  
**Date of Test:** 2025-12-04  
**Date of Issue:** 2025-12-05

**Test Result:**
**Pass\***

\* In the configuration tested, the EUT complied with the standards specified above.

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| Revision Record |             |            |        |
|-----------------|-------------|------------|--------|
| Version         | Description | Date       | Remark |
| 01              | Original    | 2025-12-05 | /      |
|                 |             |            |        |
|                 |             |            |        |

|                          |  |                                                                  |  |
|--------------------------|--|------------------------------------------------------------------|--|
| Authorized for issue by: |  |                                                                  |  |
| Tested By                |  | <div>Hayley Zhang</div> <div>Hayley Zhang/Project Engineer</div> |  |
|                          |  |                                                                  |  |
| Approved By              |  | <div>Cedar cheng</div> <div>Cedar Cheng /Reviewer</div>          |  |
|                          |  |                                                                  |  |

## 2 Test Summary

| Radio Spectrum Technical Requirement |                                  |        |                                  |        |
|--------------------------------------|----------------------------------|--------|----------------------------------|--------|
| Item                                 | Standard                         | Method | Requirement                      | Result |
| Antenna Requirement                  | 47 CFR Part 15, Subpart C 15.225 | N/A    | 47 CFR Part 15, Subpart C 15.203 | Pass   |

| Radio Spectrum Matter Part                            |                                  |                                |                                              |        |
|-------------------------------------------------------|----------------------------------|--------------------------------|----------------------------------------------|--------|
| Item                                                  | Standard                         | Method                         | Requirement                                  | Result |
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | 47 CFR Part 15, Subpart C 15.225 | ANSI C63.10 (2020) Section 6.2 | 47 CFR Part 15, Subpart C 15.207             | Pass   |
| 20dB Bandwidth                                        |                                  | ANSI C63.10 (2020) Section 6.9 | 47 CFR Part 15, Subpart C 15.215             | Pass   |
| Emission Mask                                         |                                  | ANSI C63.10 (2020) Section 6.4 | 47 CFR Part 15, Subpart C 15.225(a)&(b)&(C ) | Pass   |
| Frequency tolerance                                   |                                  | ANSI C63.10 (2020) Section 6.8 | 47 CFR Part 15, Subpart C 15.225(e)          | Pass   |
| Radiated Emissions (9kHz-30MHz)                       |                                  | ANSI C63.10 (2020) Section 6.4 | 47 CFR Part 15, Subpart C 15.225(d) & 15.209 | Pass   |
| Radiated Emissions (30MHz-1GHz)                       |                                  | ANSI C63.10 (2020) Section 6.5 | 47 CFR Part 15, Subpart C 15.225(d) & 15.209 | Pass   |

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## 4 General Information

### 4.1 Details of E.U.T.

|                      |                                                                                                                                                                             |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply:        | Adapter1: CK18W02U Input: AC100-240V 50/60Hz 0.5A Output: DC5V3A/9V2A/12V1.5A<br>Adapter2: TD-661G120167UF01 Input: AC100-240V 50/60Hz 0.6A Output: DC5V3A/9V2.22A/12V1.67A |
| Operation Frequency: | 13.56MHz                                                                                                                                                                    |
| Modulation Type:     | ASK                                                                                                                                                                         |
| Antenna Type:        | FPC Antenna                                                                                                                                                                 |

### 4.2 Environment Parameter

| Environment Parameter                         | Selected Values During Tests |            |
|-----------------------------------------------|------------------------------|------------|
| Relative Humidity                             | Ambient                      |            |
| Value                                         | Temperature(°C)              | Voltage(V) |
| NTNV                                          | 25                           | 3.87       |
| Note: NV:Normal Voltage NT:Normal Temperature |                              |            |

### 4.3 Description of Support Units

| Description                                     | Manufacturer | Model No. | Serial No. |
|-------------------------------------------------|--------------|-----------|------------|
| --                                              | --           | --        | --         |
| The EUT has been tested as an independent unit. |              |           |            |

#### 4.4 Measurement Uncertainty & Decision Rule

| No.                                                                                                                                                                                                                                                                                                                                             | Item                         | Measurement Uncertainty              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------|
| 1                                                                                                                                                                                                                                                                                                                                               | Radio Frequency              | $\pm 7.25 \times 10^{-8}$            |
| 2                                                                                                                                                                                                                                                                                                                                               | Duty cycle                   | $\pm 0.37\%$                         |
| 3                                                                                                                                                                                                                                                                                                                                               | Occupied Bandwidth           | $\pm 3\%$                            |
| 4                                                                                                                                                                                                                                                                                                                                               | Conduction emission          | $\pm 3.0\text{dB}$ (150kHz to 30MHz) |
| 5                                                                                                                                                                                                                                                                                                                                               | RF conducted power           | $\pm 0.75\text{dB}$                  |
| 6                                                                                                                                                                                                                                                                                                                                               | RF power density             | $\pm 2.84\text{dB}$                  |
| 7                                                                                                                                                                                                                                                                                                                                               | Conducted Spurious emissions | $\pm 0.75\text{dB}$                  |
| 8                                                                                                                                                                                                                                                                                                                                               | RF Radiated power            | $\pm 2.6\text{dB}$ (30MHz-1GHz)      |
|                                                                                                                                                                                                                                                                                                                                                 |                              | $\pm 2.7\text{dB}$ (1GHz-18GHz)      |
| 9                                                                                                                                                                                                                                                                                                                                               | Temperature test             | $\pm 1^\circ\text{C}$                |
| 10                                                                                                                                                                                                                                                                                                                                              | Humidity test                | $\pm 3\%$                            |
| 11                                                                                                                                                                                                                                                                                                                                              | Supply voltages              | $\pm 1\%$                            |
| 12                                                                                                                                                                                                                                                                                                                                              | Time                         | $\pm 3\%$                            |
| Remark:<br>The $U_{\text{lab}}$ (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results<br>– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;<br>– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit. |                              |                                      |

#### 4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu)  
Pilot Free Trade Zone

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

#### 4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 6336.01.

- **FCC**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1312.

- **ISED**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 27594

#### 4.7 Deviation from Standards

None

#### 4.8 Abnormalities from Standard Conditions

None

## 5 Equipment List

| Item                                         | Equipment                                 | Manufacturer               | Model            | Inventory No  | Cal Date   | Cal. Due Date |
|----------------------------------------------|-------------------------------------------|----------------------------|------------------|---------------|------------|---------------|
| <b>Conducted Emission at Mains Terminals</b> |                                           |                            |                  |               |            |               |
| 1                                            | EMI Test Receive                          | R&S                        | ESR7             | SUWI-01-10-01 | 1/15/2025  | 1/14/2026     |
| 2                                            | LISN                                      | R&S                        | ENV216           | SUWI-01-19-03 | 5/8/2025   | 5/7/2026      |
| 3                                            | LISN                                      | Schwarzbeck                | ENV216           | SUWI-01-19-04 | 5/8/2025   | 5/7/2026      |
| 4                                            | Test Software                             | Tonscend                   | JS32-CE 4.0.0.2  | SUWI-02-09-05 | N.C.R      | N.C.R         |
| <b>RF Conducted Test</b>                     |                                           |                            |                  |               |            |               |
| 1                                            | Signal Analyzer                           | ROHDE&SCHWARZ              | FSW43            | SUWI-01-02-04 | 1/20/2025  | 1/19/2026     |
| 2                                            | Signal Analyzer                           | KEYSIGHT                   | N9020A           | SUWI-01-02-15 | 11/21/2025 | 11/20/2026    |
| 3                                            | MXG Vector signal genitor                 | KEYSIGHT                   | N5182B           | SUWI-01-38-01 | 1/15/2025  | 1/14/2026     |
| 4                                            | Signal Generator                          | ROHDE&SCHWARZ              | SMW200A          | SUWI-01-07-08 | 3/27/2025  | 3/26/2026     |
| 5                                            | Signal Generator                          | ROHDE&SCHWARZ              | SMW100A          | SUWI-01-8-01  | 1/16/2025  | 1/15/2026     |
| 6                                            | MXG Vector Signal Generator               | ROHDE&SCHWARZ              | SMR20            | SUWI-01-33-01 | 11/21/2025 | 11/20/2026    |
| 7                                            | Wideband Radio Communication Tester       | ROHDE&SCHWARZ              | CMW500           | SUWI-01-16-13 | 5/8/2025   | 5/7/2026      |
| 8                                            | Wideband Radio Communication Test Ststion | Anritsu                    | MT8000A          | SUWI-01-34-02 | 11/21/2025 | 11/20/2026    |
| 9                                            | Wideband Radio Communication Tester       | Anritsu                    | MT8821C          | SUWI-01-26-03 | 11/21/2025 | 11/20/2026    |
| 10                                           | Power meter                               | Anritsu                    | ML2495A          | SUWI-01-31-01 | 11/21/2025 | 11/20/2026    |
| 11                                           | Pulse power sensor                        | Anritsu                    | MA2411B          | SUWI-01-32-01 | 11/21/2025 | 11/20/2026    |
| 12                                           | DC Power Supply                           | HYELEC                     | HY3005B          | SUWI-01-18-01 | 1/15/2025  | 1/14/2026     |
| 13                                           | Temperature and humidity meter            | MingGao                    | TH101B           | SUWI-01-01-07 | 2/13/2025  | 2/12/2026     |
| 14                                           | Temperature Chamber                       | GIANT FORCE                | ICT-017-40-SP-SD | SUWI-01-13-02 | 5/7/2025   | 5/6/2026      |
| 15                                           | Measurement Software                      | TST                        | TST 272 V2.02    | SUWI-03-55-03 | NCR        | NCR           |
| <b>RF Radiated Test</b>                      |                                           |                            |                  |               |            |               |
| 1                                            | Semi-Anechoic Chamber                     | Brilliant-emc              | N/A              | SUWI-04-02-01 | 6/3/2023   | 6/2/2026      |
| 2                                            | Signal Analyzer                           | ROHDE&SCHWARZ              | FSW43            | SUWI-01-02-04 | 1/20/2025  | 1/19/2026     |
| 3                                            | Signal Analyzer                           | KEYSIGHT                   | N9020A           | SUWI-01-02-09 | 11/21/2025 | 11/20/2026    |
| 4                                            | Test receiver                             | ROHDE&SCHWARZ              | ESR7             | SUWI-01-10-01 | 1/15/2025  | 1/14/2026     |
| 5                                            | Signal Generator                          | ROHDE&SCHWARZ              | SMW100A          | SUWI-01-18-01 | 1/16/2025  | 1/15/2026     |
| 6                                            | Receiving antenna                         | SCHWRZBECK MESS-ELEKTRONIK | VULB 9168        | SUWI-01-11-04 | 9/10/2025  | 9/9/2027      |

|    |                                           |                                   |                    |               |            |            |
|----|-------------------------------------------|-----------------------------------|--------------------|---------------|------------|------------|
| 7  | Receiving antenna                         | SCHWRZBECK<br>MESS-<br>ELEKTRONIK | BBHA 9120D         | SUWI-01-11-02 | 5/7/2025   | 5/6/2027   |
| 8  | Receiving antenna                         | SCHWRZBECK<br>MESS-<br>ELEKTRONIK | BBHA 9170          | SUWI-01-11-03 | 5/7/2025   | 5/6/2027   |
| 9  | Active Loop Antenna                       | SCHWRZBECK<br>MESS-<br>ELEKTRONIK | FMZB 1519B         | SUWI-01-21-01 | 5/7/2025   | 5/6/2027   |
| 10 | Amplifier                                 | Tonscend                          | TAP9K3G40          | SUWI-01-14-01 | 1/16/2025  | 1/15/2026  |
| 11 | Amplifier                                 | Tonscend                          | TAP01018050        | SUWI-01-14-02 | 1/16/2025  | 1/15/2026  |
| 12 | Amplifier                                 | Tonscend                          | TAP18040048        | SUWI-01-14-03 | 1/20/2025  | 1/19/2026  |
| 13 | Wideband Radio<br>Communication<br>Tester | Anritsu                           | MT8820C            | SUWI-01-26-01 | 11/21/2025 | 11/20/2026 |
| 14 | Wideband Radio<br>Communication<br>Tester | Anritsu                           | MT8821C            | SUWI-01-26-03 | 8/25/2025  | 8/24/2026  |
| 15 | Wideband Radio<br>Communication<br>Tester | ROHDE&SCHWARZ                     | CMW500             | SUWI-01-16-09 | 8/26/2025  | 8/25/2026  |
| 16 | Radio<br>Communication<br>Analyzer        | StarPoint                         | SP9500E            | SUWI-01-28-02 | 11/21/2025 | 11/20/2026 |
| 17 | Signal Generator                          | ROHDE&SCHWARZ                     | SMB100A            | SUWI-01-08-01 | 1/16/2025  | 1/15/2026  |
| 18 | DC Power Supply                           | HYELEC                            | HY3005B            | SUWI-01-18-01 | 1/15/2025  | 1/14/2026  |
| 19 | Temperature and<br>humidity meter         | MingGao                           | TH101B             | SUWI-01-01-05 | 2/13/2025  | 2/12/2026  |
| 20 | Measurement<br>Software                   | Tonscend                          | JS32-RE<br>4.0.0.0 | SUWI-02-09-06 | NCR        | NCR        |

## 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

#### 6.1.2 Conclusion

15.203 requirement:

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, 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.

EUT Antenna:

The antenna is FPC antenna and no consideration of replacement.

Antenna location: Refer to Internal photos

## 7 Radio Spectrum Matter Test Results

### 7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2020) Section 6.2

Limit:

| Frequency range (MHz) | Limit (dBuV) |           |
|-----------------------|--------------|-----------|
|                       | Quasi-peak   | Average   |
| 0.15-0.5              | 66 to 56*    | 56 to 46* |
| 0.5-5                 | 56           | 46        |
| 5-30                  | 60           | 50        |

\* Decreases with the logarithm of the frequency.

#### 7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C

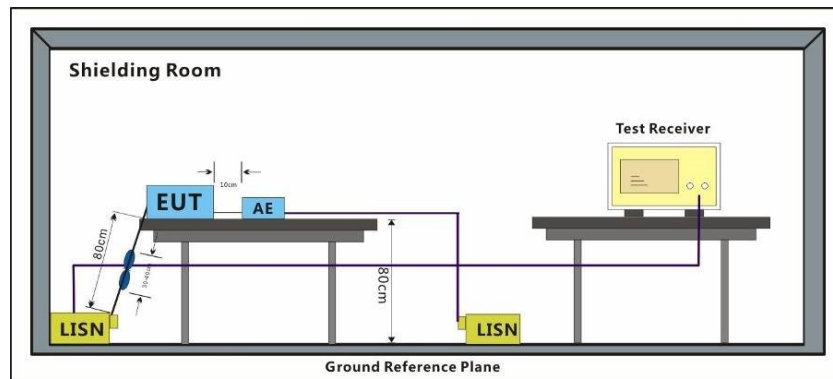
Humidity: 44 % RH

Atmospheric Pressure: 1024 mbar

#### 7.1.2 Test Mode Description

| Pre-scan /<br>Final test | Mode<br>Code | Description             |
|--------------------------|--------------|-------------------------|
| Final test               | 00           | TX mode with modulation |

#### 7.1.3 Test Setup Diagram

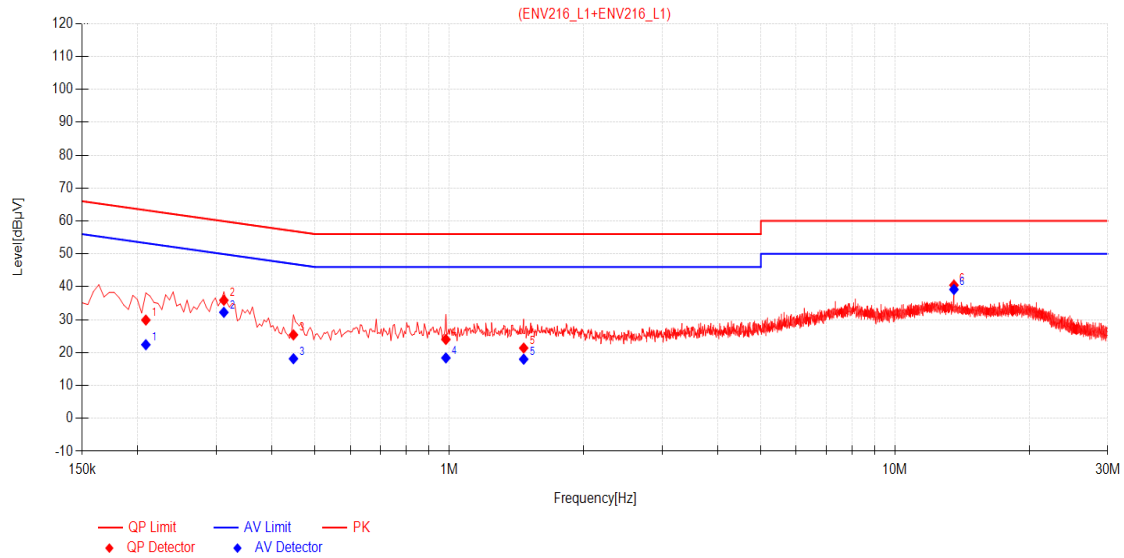


#### 7.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor

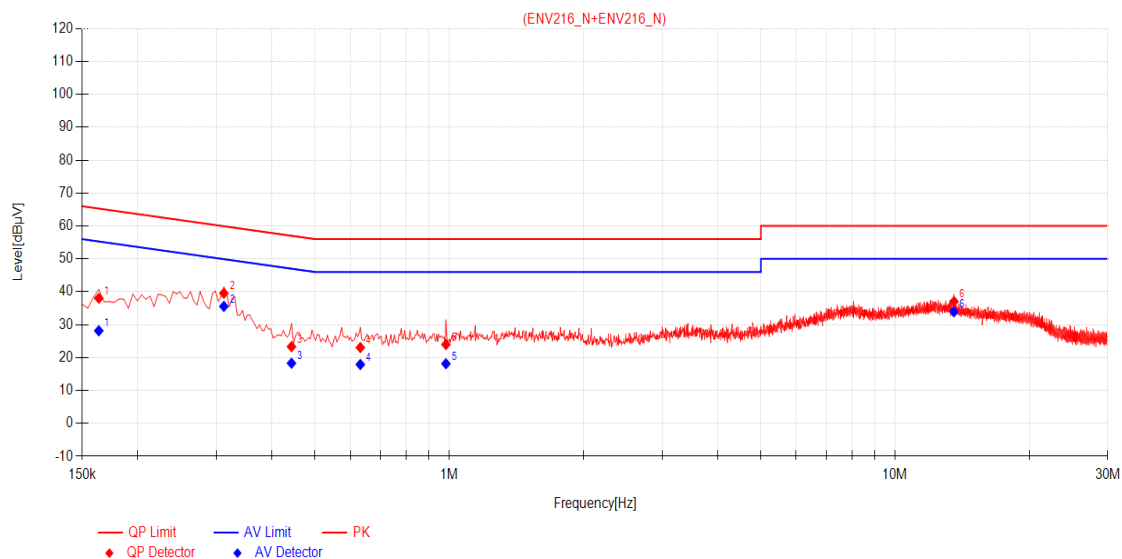
Test Mode: 00; Line: Live line



## Final Data List

| NO. | Frequency [MHz] | Factor [dB] | QP Reading [dBμV] | QP Value [dBμV] | QP Limit [dBμV] | QP Margin [dB] | AV Reading [dBμV] | AV Value [dBμV] | AV Limit [dBμV] | AV Margin [dB] | Verdict |
|-----|-----------------|-------------|-------------------|-----------------|-----------------|----------------|-------------------|-----------------|-----------------|----------------|---------|
| 1   | 0.2085          | 9.96        | 19.92             | 29.88           | 63.26           | 33.38          | 12.43             | 22.39           | 53.26           | 30.87          | PASS    |
| 2   | 0.3120          | 9.97        | 25.93             | 35.90           | 59.92           | 24.02          | 22.26             | 32.23           | 49.92           | 17.69          | PASS    |
| 3   | 0.4470          | 9.95        | 15.43             | 25.38           | 56.93           | 31.55          | 8.18              | 18.13           | 46.93           | 28.80          | PASS    |
| 4   | 0.9825          | 9.93        | 14.06             | 23.99           | 56.00           | 32.01          | 8.45              | 18.38           | 46.00           | 27.62          | PASS    |
| 5   | 1.4685          | 9.95        | 11.44             | 21.39           | 56.00           | 34.61          | 8.04              | 17.99           | 46.00           | 28.01          | PASS    |
| 6   | 13.5600         | 10.47       | 30.02             | 40.49           | 60.00           | 19.51          | 28.71             | 39.18           | 50.00           | 10.82          | PASS    |

Test Mode: 00; Line: Neutral Line



## Final Data List

| NO. | Frequency [MHz] | Factor [dB] | QP Reading [dBμV] | QP Value [dBμV] | QP Limit [dBμV] | QP Margin [dB] | AV Reading [dBμV] | AV Value [dBμV] | AV Limit [dBμV] | AV Margin [dB] | Verdict |
|-----|-----------------|-------------|-------------------|-----------------|-----------------|----------------|-------------------|-----------------|-----------------|----------------|---------|
| 1   | 0.1635          | 9.95        | 28.08             | 38.03           | 65.28           | 27.25          | 18.20             | 28.15           | 55.28           | 27.13          | PASS    |
| 2   | 0.3120          | 9.97        | 29.58             | 39.55           | 59.92           | 20.37          | 25.58             | 35.55           | 49.92           | 14.37          | PASS    |
| 3   | 0.4425          | 9.93        | 13.39             | 23.32           | 57.01           | 33.69          | 8.36              | 18.29           | 47.01           | 28.72          | PASS    |
| 4   | 0.6315          | 9.91        | 13.14             | 23.05           | 56.00           | 32.95          | 7.99              | 17.90           | 46.00           | 28.10          | PASS    |
| 5   | 0.9825          | 9.90        | 14.06             | 23.96           | 56.00           | 32.04          | 8.23              | 18.13           | 46.00           | 27.87          | PASS    |
| 6   | 13.5600         | 10.62       | 26.41             | 37.03           | 60.00           | 22.97          | 23.31             | 33.93           | 50.00           | 16.07          | PASS    |

## 7.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215  
Test Method: ANSI C63.10 (2020) Section 6.9

### 7.2.1 E.U.T. Operation

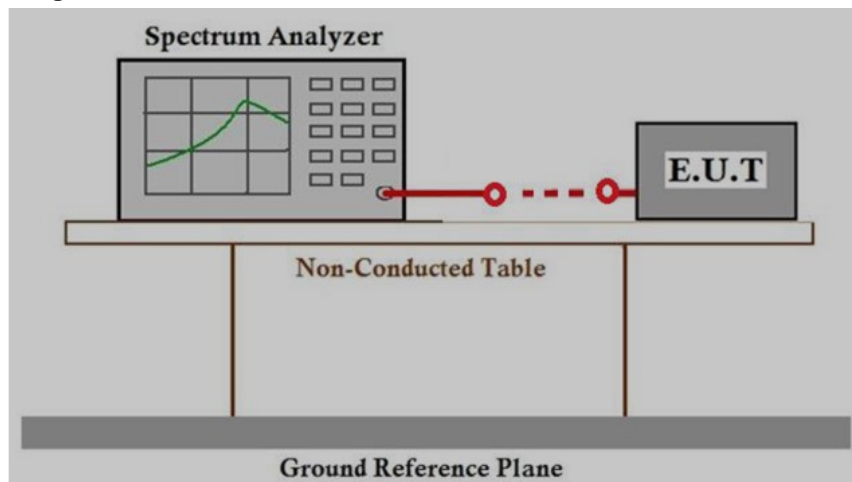
Operating Environment:

Temperature: 23 °C Humidity: 44 % RH Atmospheric Pressure: 1024 mbar

### 7.2.2 Test Mode Description

| Pre-scan /<br>Final test | Mode<br>Code | Description             |
|--------------------------|--------------|-------------------------|
| Final test               | 00           | TX mode with modulation |

### 7.2.3 Test Setup Diagram



### 7.2.4 Measurement Procedure and Data

The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector.

Please Refer to Appendix for Details

## 7.3 Emission Mask

Test Requirement 47 CFR Part 15, Subpart C 15.225(a)&(b)&(C )  
Test Method: ANSI C63.10 (2020) Section 6.4

### 7.3.1 E.U.T. Operation

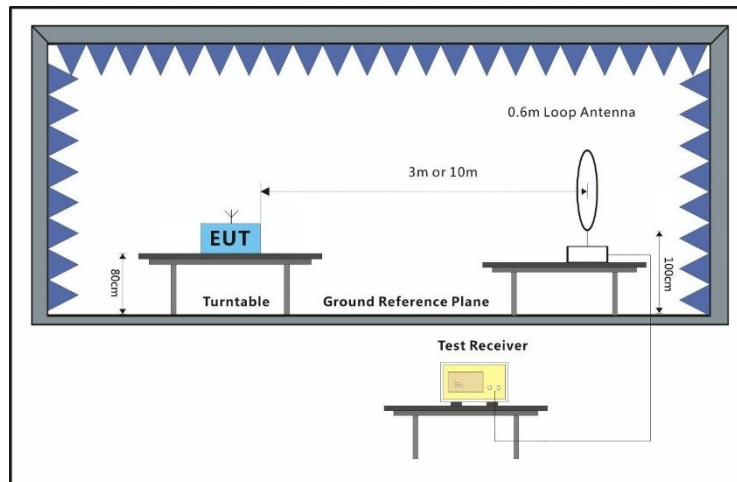
Operating Environment:

Temperature: 23 °C Humidity: 44 % RH Atmospheric Pressure: 1001 mbar

### 7.3.2 Test Mode Description

| Pre-scan /<br>Final test | Mode<br>Code | Description             |
|--------------------------|--------------|-------------------------|
| Final test               | 00           | TX mode with modulation |

### 7.3.3 Test Setup Diagram



### 7.3.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.

Please Refer to Appendix for Details

## 7.4 Frequency tolerance

Test Requirement 47 CFR Part 15, Subpart C 15.225(e)

Test Method: ANSI C63.10 (2020) Section 6.8

Limit:  $\pm 0.01$

### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

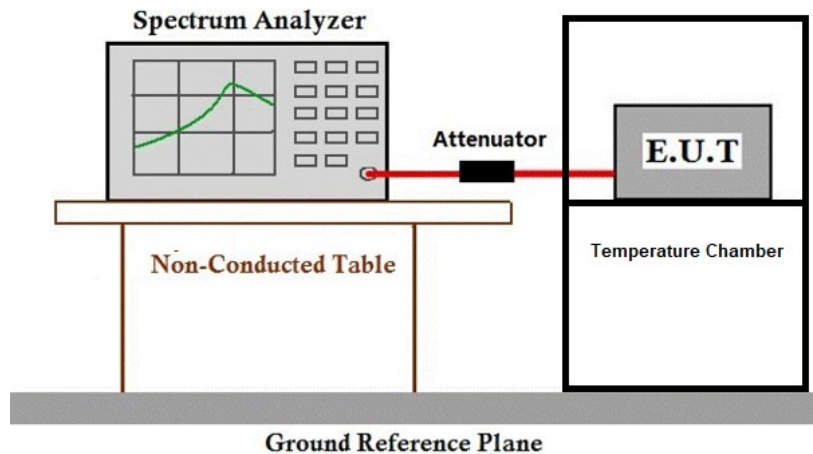
Humidity: 44 % RH

Atmospheric Pressure: 1024 mbar

### 7.4.2 Test Mode Description

| Pre-scan /<br>Final test | Mode<br>Code | Description             |
|--------------------------|--------------|-------------------------|
| Final test               | 00           | TX mode with modulation |

### 7.4.3 Test Setup Diagram



### 7.4.4 Measurement Procedure and Data

The EUT was placed in an environmental test chamber and powered such that control element received normal voltage and the transmitter provided maximum RF output.

Please Refer to Appendix for Details

## 7.5 Radiated Emissions (9kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d) & 15.209  
Test Method: ANSI C63.10 (2020) Section 6.4  
Test Distance 3m

### 7.5.1 E.U.T. Operation

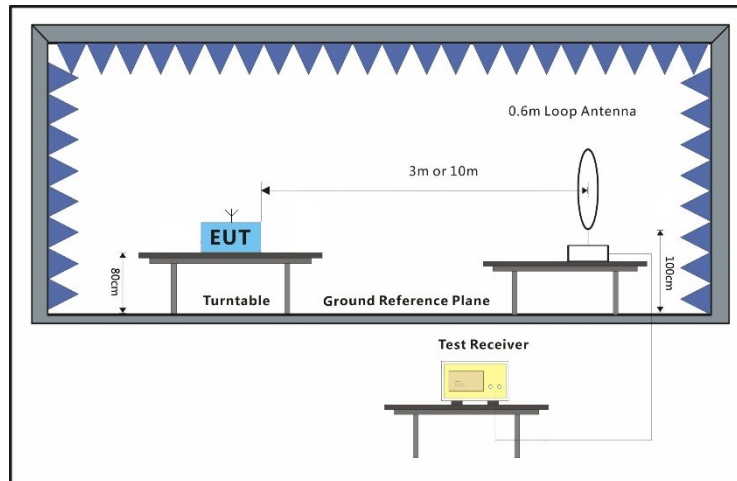
Operating Environment:

Temperature: 24 °C Humidity: 44 % RH Atmospheric Pressure: 1024 mbar

### 7.5.2 Test Mode Description

| Pre-scan /<br>Final test | Mode<br>Code | Description             |
|--------------------------|--------------|-------------------------|
| Final test               | 00           | TX mode with modulation |

### 7.5.3 Test Setup Diagram



### 7.5.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.

Please Refer to Appendix for Details

## 7.6 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d) & 15.209  
Test Method: ANSI C63.10 (2020) Section 6.5  
Test Distance 3m

Limit:

| Frequency(MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Field strength(microvolts/meter) | Measurement distance(meters) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------|
| 30-88                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 100                              | 3                            |
| 88-216                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 150                              | 3                            |
| 216-960                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 200                              | 3                            |
| Above 960                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 500                              | 3                            |
| Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands above 1000 MHz. Radiated emission limits in these three bands (9-90kHz,110-490kHz and Above 1GHz) are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. |                                  |                              |

### 7.6.1 E.U.T. Operation

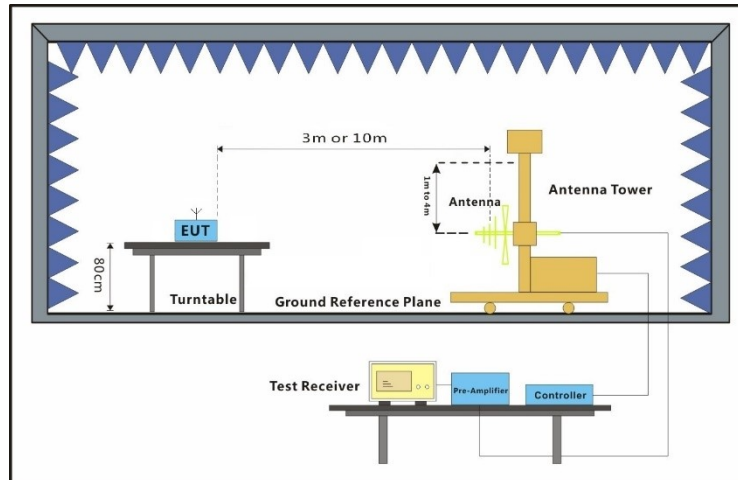
Operating Environment:

Temperature: 24 °C Humidity: 44 % RH Atmospheric Pressure: 1024 mbar

### 7.6.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description             |
|-----------------------|-----------|-------------------------|
| Final test            | 00        | TX mode with modulation |

## 7.6.3 Test Setup Diagram



## 7.6.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Please Refer to Appendix for Details

## 8 Test Setup Photo

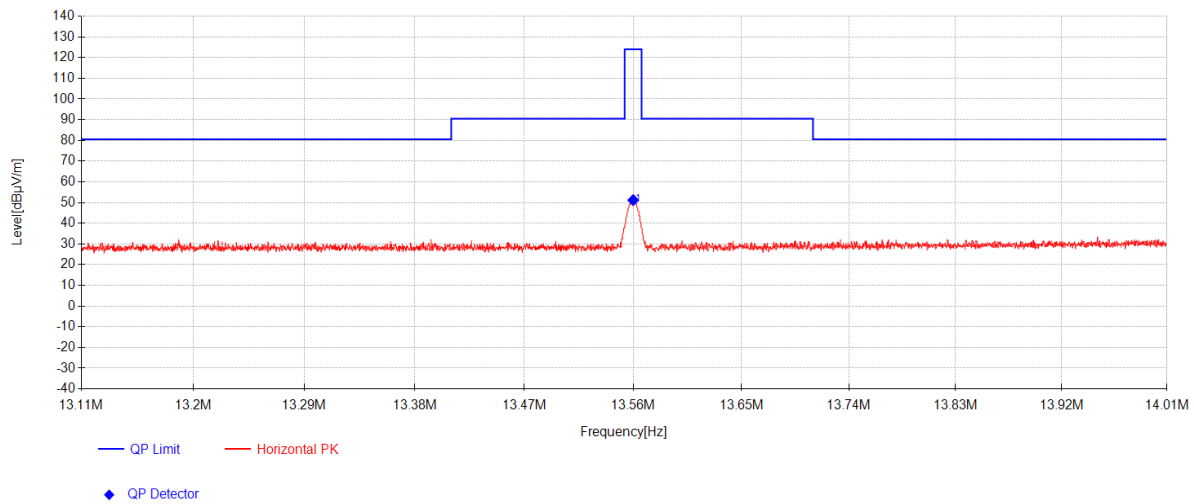
Refer to Appendix - Test Setup Photo for SUCR2511001080AT

## 9 EUT Constructional Details (EUT Photos)

Refer to Appendix - External Photos for SUCR2511001080AT and Appendix - Internal Photos for SUCR2511001080AT

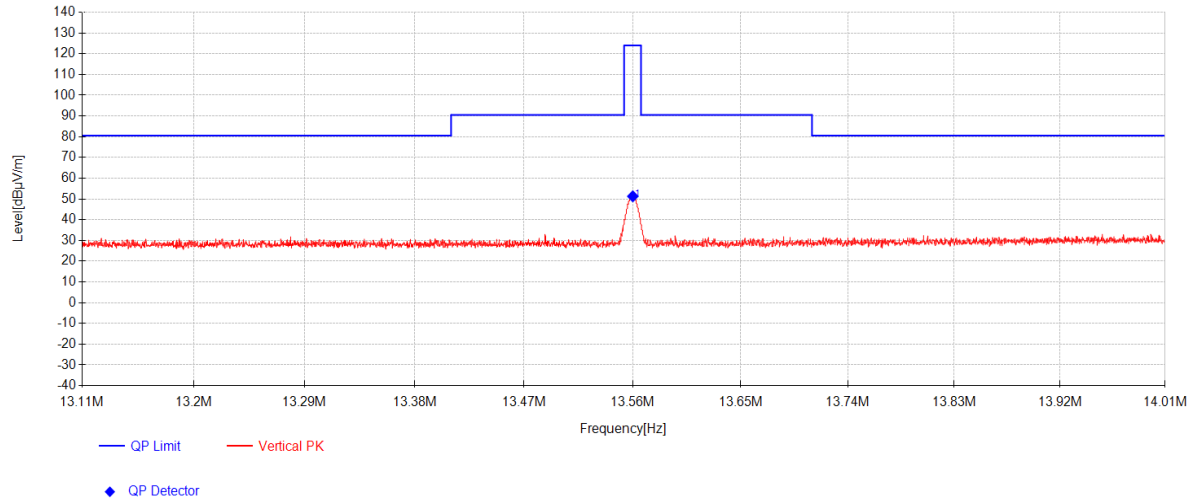
## 10 Appendix

### Emission Mask



#### Final Data List

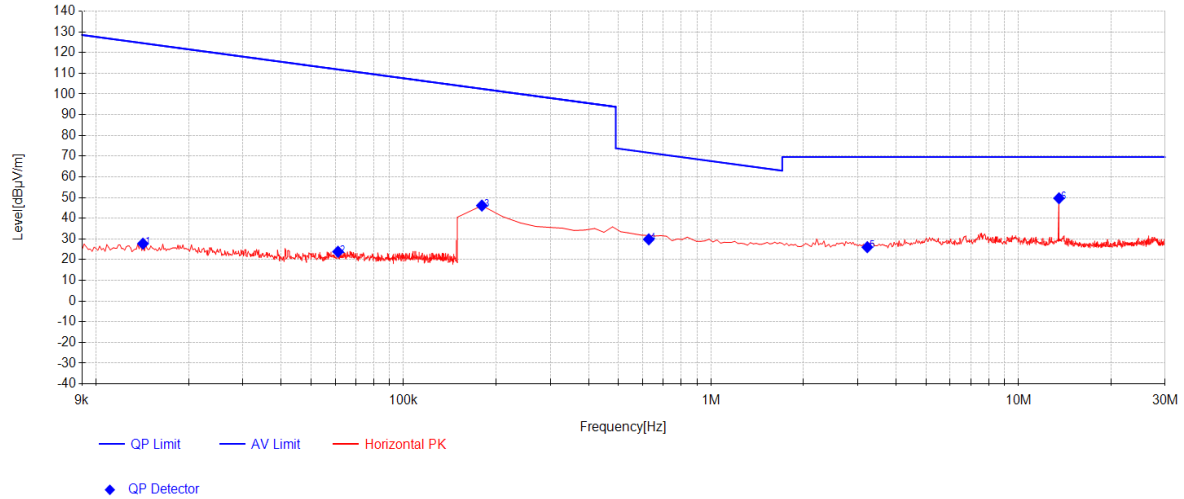
| NO. | Frequency [MHz] | Reading [dBμV] | AF [dB/m] | Factor [dB] | QP Value [dBμV/m] | QP Limit [dBμV/m] | QP Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-----------------|----------------|-----------|-------------|-------------------|-------------------|----------------|-------------|-----------|----------|
| 1   | 13.56           | 30.44          | 20.04     | 0.69        | 51.17             | 124.00            | 72.83          | 100         | 206       | Coaxial  |



## Final Data List

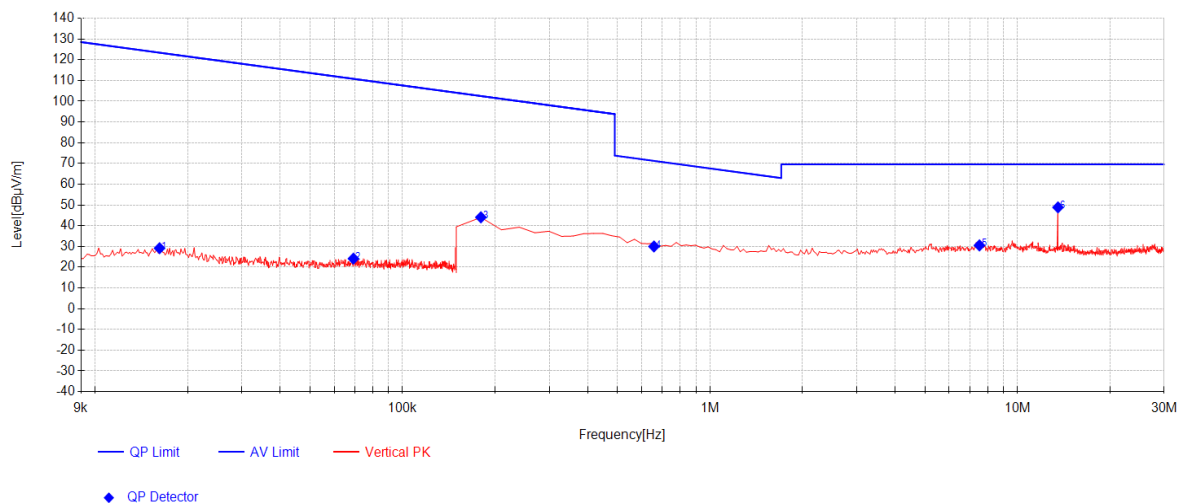
| NO. | Frequency [MHz] | Reading [dBμV] | AF [dB/m] | Factor [dB] | QP Value [dBμV/m] | QP Limit [dBμV/m] | QP Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-----------------|----------------|-----------|-------------|-------------------|-------------------|----------------|-------------|-----------|----------|
| 1   | 13.5602         | 30.55          | 20.04     | 0.69        | 51.28             | 124.00            | 72.72          | 100         | 204       | Coplanar |

## Radiated Emissions (9kHz-30MHz)



### Final Data List

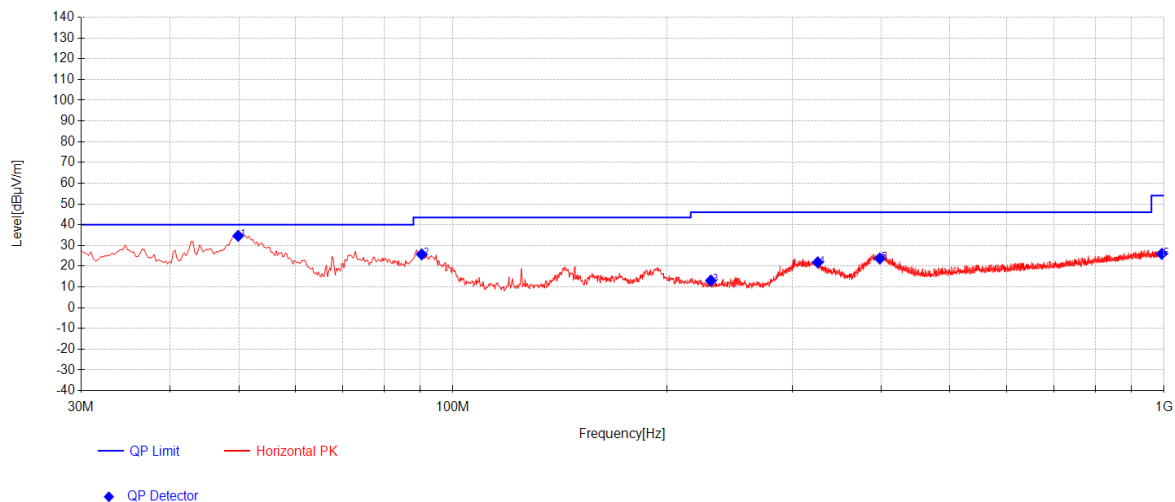
| NO. | Frequency [MHz] | Reading [dBμV] | AF [dB/m] | Factor [dB] | QP Value [dBμV/m] | QP Limit [dBμV/m] | QP Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-----------------|----------------|-----------|-------------|-------------------|-------------------|----------------|-------------|-----------|----------|
| 1   | 0.0142          | 7.59           | 19.70     | 0.43        | 27.72             | 124.55            | 96.83          | 100         | 39        | Coaxial  |
| 2   | 0.0612          | 3.56           | 19.86     | 0.43        | 23.85             | 111.86            | 88.01          | 100         | 185       | Coaxial  |
| 3   | 0.1798          | 25.77          | 19.91     | 0.43        | 46.11             | 102.51            | 56.40          | 100         | 136       | Coaxial  |
| 4   | 0.6276          | 9.33           | 20.03     | 0.44        | 29.80             | 71.65             | 41.85          | 100         | 311       | Coaxial  |
| 5   | 3.2245          | 5.61           | 19.93     | 0.49        | 26.03             | 69.54             | 43.51          | 100         | 126       | Coaxial  |
| 6   | 13.5526         | 28.92          | 20.04     | 0.69        | 49.65             | 69.54             | 19.89          | 100         | 191       | Coaxial  |



## Final Data List

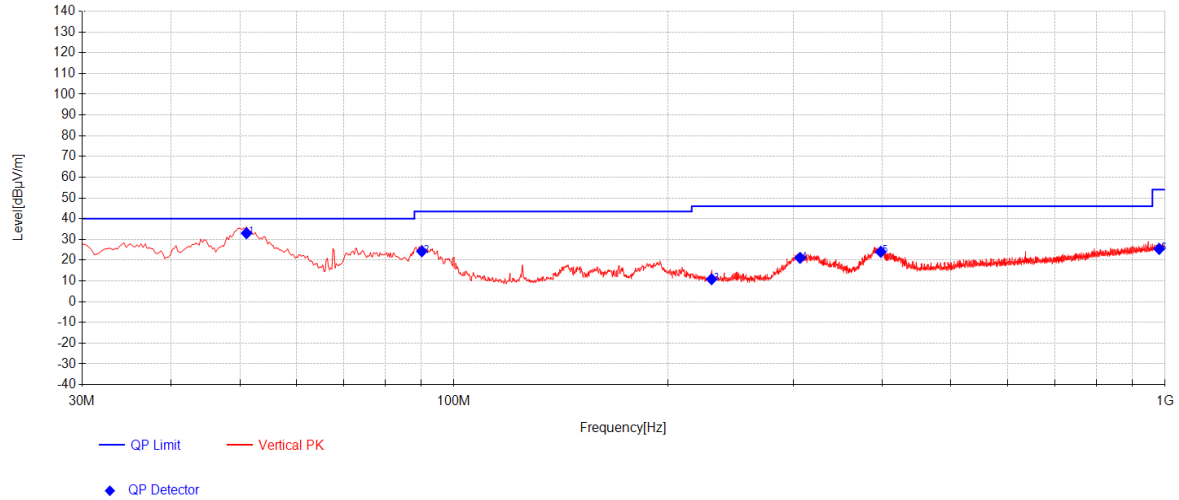
| NO. | Frequency [MHz] | Reading [dBμV] | AF [dB/m] | Factor [dB] | QP Value [dBμV/m] | QP Limit [dBμV/m] | QP Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-----------------|----------------|-----------|-------------|-------------------|-------------------|----------------|-------------|-----------|----------|
| 1   | 0.0162          | 9.02           | 19.70     | 0.43        | 29.15             | 123.41            | 94.26          | 100         | 106       | Coplanar |
| 2   | 0.0692          | 3.79           | 19.90     | 0.43        | 24.12             | 110.80            | 86.68          | 100         | 106       | Coplanar |
| 3   | 0.1798          | 23.69          | 19.91     | 0.43        | 44.03             | 102.51            | 58.48          | 100         | 294       | Coplanar |
| 4   | 0.6574          | 9.52           | 20.03     | 0.44        | 29.99             | 71.25             | 41.26          | 100         | 229       | Coplanar |
| 5   | 7.523           | 9.69           | 20.25     | 0.57        | 30.51             | 69.54             | 39.03          | 100         | 3         | Coplanar |
| 6   | 13.5526         | 28.11          | 20.04     | 0.69        | 48.84             | 69.54             | 20.70          | 100         | 191       | Coplanar |

## Radiated Emissions (30MHz-1GHz)



### Final Data List

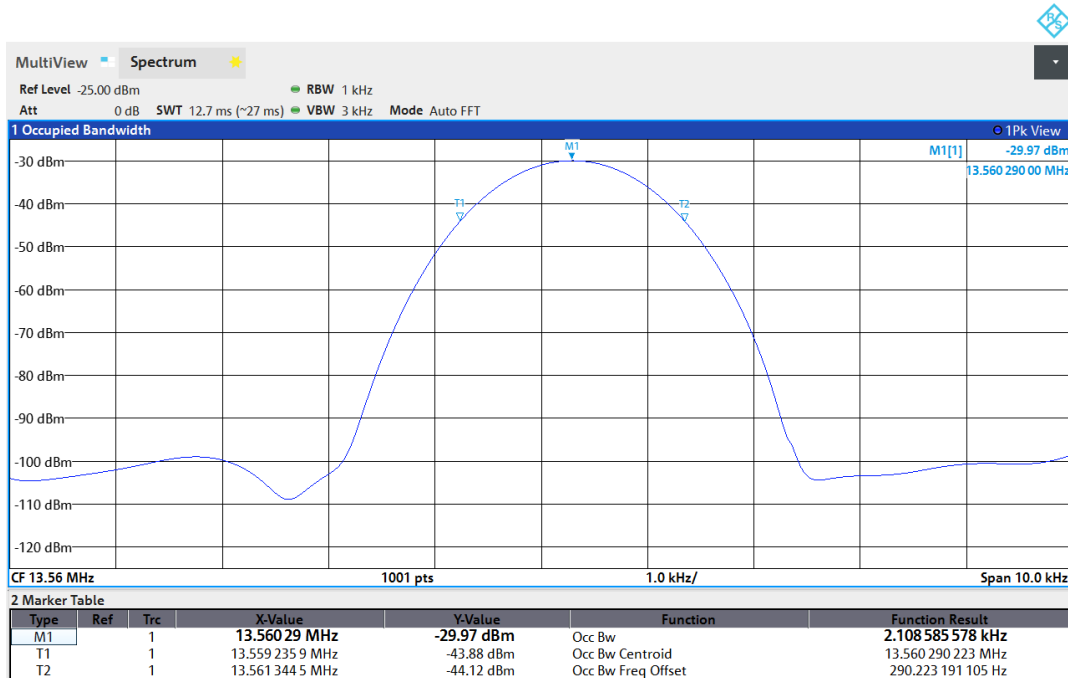
| NO. | Frequency [MHz] | Reading [dBμV] | AF [dB/m] | Factor [dB] | QP Value [dBμV/m] | QP Limit [dBμV/m] | QP Margin [dB] | Height [cm] | Angle [°] | Polarity   |
|-----|-----------------|----------------|-----------|-------------|-------------------|-------------------|----------------|-------------|-----------|------------|
| 1   | 49.885          | 54.81          | 13.50     | -33.69      | 34.61             | 40.00             | 5.39           | 100         | 1         | Horizontal |
| 2   | 90.3825         | 50.03          | 8.91      | -33.25      | 25.69             | 43.50             | 17.81          | 100         | 246       | Horizontal |
| 3   | 230.5475        | 34             | 11.19     | -32.10      | 13.09             | 46.00             | 32.91          | 100         | 0         | Horizontal |
| 4   | 325.85          | 39.81          | 13.58     | -31.51      | 21.87             | 46.00             | 24.13          | 100         | 50        | Horizontal |
| 5   | 398.3575        | 39             | 15.75     | -31.03      | 23.72             | 46.00             | 22.28          | 100         | 133       | Horizontal |
| 6   | 992.725         | 29.36          | 24.44     | -27.88      | 25.92             | 54.00             | 28.08          | 100         | 328       | Horizontal |



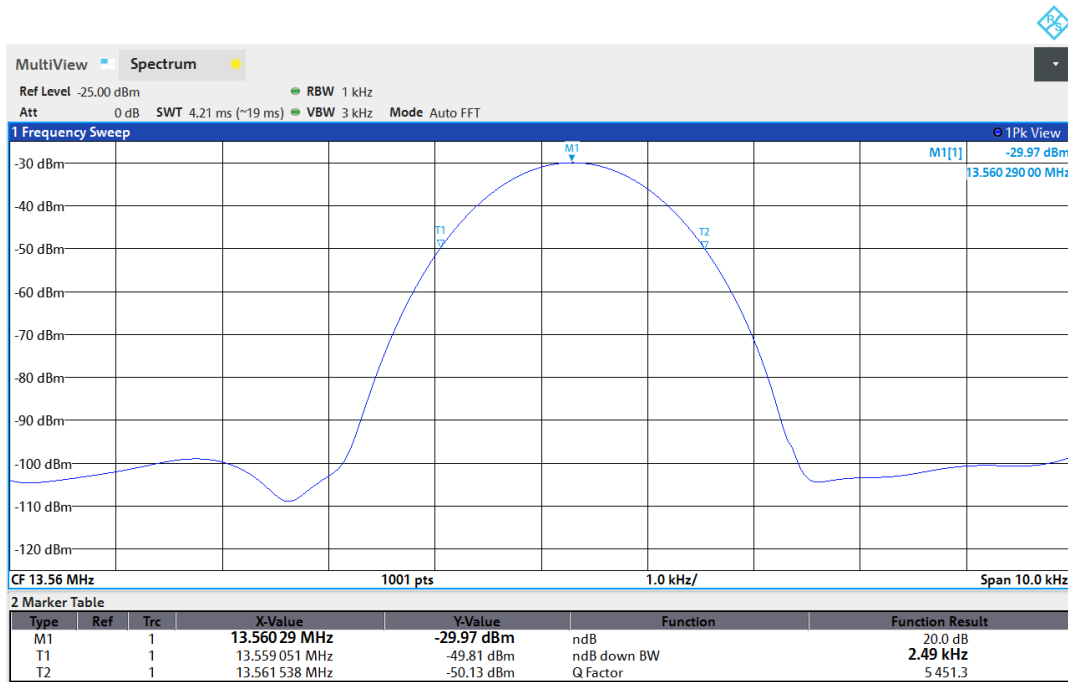
## Final Data List

| NO. | Frequency [MHz] | Reading [dBμV] | AF [dB/m] | Factor [dB] | QP Value [dBμV/m] | QP Limit [dBμV/m] | QP Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-----------------|----------------|-----------|-------------|-------------------|-------------------|----------------|-------------|-----------|----------|
| 1   | 51.0975         | 53.34          | 13.37     | -33.68      | 33.03             | 40.00             | 6.97           | 100         | 63        | Vertical |
| 2   | 90.14           | 48.64          | 8.90      | -33.26      | 24.29             | 43.50             | 19.21          | 100         | 207       | Vertical |
| 3   | 230.305         | 31.75          | 11.17     | -32.10      | 10.82             | 46.00             | 35.18          | 100         | 360       | Vertical |
| 4   | 306.6925        | 39.69          | 13.00     | -31.58      | 21.11             | 46.00             | 24.89          | 100         | 207       | Vertical |
| 5   | 398.3575        | 39.31          | 15.75     | -31.03      | 24.03             | 46.00             | 21.97          | 100         | 164       | Vertical |
| 6   | 981.085         | 29.05          | 24.35     | -27.97      | 25.43             | 54.00             | 28.57          | 100         | 22        | Vertical |

## 99% Bandwidth



## 20dB Bandwidth



## Frequency tolerance

| Declared Frequency (MHz) |              | 13.56MHz                   |                         |           |        |
|--------------------------|--------------|----------------------------|-------------------------|-----------|--------|
| Startup                  |              |                            |                         |           |        |
| Temperature (°C)         | Voltage(VDC) | Measurement Frequency(MHz) | Frequency Tolerance (%) | Limit (%) | Result |
| 50                       | 3.85         | 13.55991                   | 0.0009                  | ±0.01     | Pass   |
| 40                       |              | 13.55996                   | 0.0004                  |           | Pass   |
| 30                       |              | 13.55992                   | 0.0008                  |           | Pass   |
| 20                       |              | 13.55993                   | 0.0007                  |           | Pass   |
| 10                       |              | 13.55996                   | 0.0004                  |           | Pass   |
| 0                        |              | 13.55995                   | 0.0005                  |           | Pass   |
| -10                      |              | 13.55993                   | 0.0007                  |           | Pass   |
| -20                      |              | 13.55995                   | 0.0005                  |           | Pass   |
| 20                       |              | 4.40                       | 13.55996                |           | 0.0004 |
|                          | 3.60         | 13.55997                   | 0.0003                  | Pass      |        |

| Declared Frequency (MHz) |              | 13.56MHz                   |                         |           |        |
|--------------------------|--------------|----------------------------|-------------------------|-----------|--------|
| 2mins                    |              |                            |                         |           |        |
| Temperature (°C)         | Voltage(VDC) | Measurement Frequency(MHz) | Frequency Tolerance (%) | Limit (%) | Result |
| 50                       | 3.85         | 13.55992                   | 0.0008                  | ±0.01     | Pass   |
| 40                       |              | 13.55996                   | 0.0004                  |           | Pass   |
| 30                       |              | 13.55993                   | 0.0007                  |           | Pass   |
| 20                       |              | 13.55995                   | 0.0005                  |           | Pass   |
| 10                       |              | 13.55992                   | 0.0008                  |           | Pass   |
| 0                        |              | 13.55991                   | 0.0009                  |           | Pass   |
| -10                      |              | 13.55998                   | 0.0002                  |           | Pass   |
| -20                      |              | 13.55994                   | 0.0006                  |           | Pass   |
| 20                       | 4.40         | 13.55997                   | 0.0003                  |           | Pass   |
|                          | 3.60         | 13.55994                   | 0.0006                  |           | Pass   |

| Declared Frequency (MHz) |              | 13.56MHz                   |                         |           |        |
|--------------------------|--------------|----------------------------|-------------------------|-----------|--------|
| 5mins                    |              |                            |                         |           |        |
| Temperature (°C)         | Voltage(VDC) | Measurement Frequency(MHz) | Frequency Tolerance (%) | Limit (%) | Result |
| 50                       | 3.85         | 13.55995                   | 0.0005                  | ±0.01     | Pass   |
| 40                       |              | 13.55997                   | 0.0003                  |           | Pass   |
| 30                       |              | 13.55996                   | 0.0004                  |           | Pass   |
| 20                       |              | 13.55997                   | 0.0003                  |           | Pass   |
| 10                       |              | 13.55998                   | 0.0002                  |           | Pass   |
| 0                        |              | 13.55991                   | 0.0009                  |           | Pass   |
| -10                      |              | 13.55994                   | 0.0006                  |           | Pass   |
| -20                      |              | 13.55992                   | 0.0008                  |           | Pass   |
| 20                       |              | 4.40                       | 13.55998                |           | 0.0002 |
|                          | 3.60         | 13.55994                   | 0.0006                  | Pass      |        |

| Declared Frequency (MHz) |              | 13.56MHz                   |                         |           |        |
|--------------------------|--------------|----------------------------|-------------------------|-----------|--------|
| 10mins                   |              |                            |                         |           |        |
| Temperature (°C)         | Voltage(VDC) | Measurement Frequency(MHz) | Frequency Tolerance (%) | Limit (%) | Result |
| 50                       | 3.85         | 13.55996                   | 0.0004                  | ±0.01     | Pass   |
| 40                       |              | 13.55993                   | 0.0007                  |           | Pass   |
| 30                       |              | 13.55994                   | 0.0006                  |           | Pass   |
| 20                       |              | 13.55997                   | 0.0003                  |           | Pass   |
| 10                       |              | 13.55998                   | 0.0002                  |           | Pass   |
| 0                        |              | 13.55995                   | 0.0005                  |           | Pass   |
| -10                      |              | 13.55994                   | 0.0006                  |           | Pass   |
| -20                      |              | 13.55997                   | 0.0003                  |           | Pass   |
| 20                       |              | 4.40                       | 13.55998                |           | 0.0002 |
|                          | 3.60         | 13.55994                   | 0.0006                  | Pass      |        |

- End of the Report -