



FCC RF Test Report

APPLICANT : Relay, Inc.
EQUIPMENT : Relay
BRAND NAME : RelayM
MODEL NAME : RY2267
FCC ID : 2AMBHRY2267
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System
TEST DATE(S) : Oct. 22, 2024 ~ Feb. 12, 2025

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

This report contains data that were produced under subcontract by Sporton International Inc. (ShenZhen)

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia



Approved by: Jason Jia

Sportun International Inc. (Kunshan)

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China



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APPENDIX A. CONDUCTED TEST RESULTS**APPENDIX B. AC CONDUCTED EMISSION TEST RESULT****APPENDIX C. RADIATED SPURIOUS EMISSION****APPENDIX D. RADIATED SPURIOUS EMISSION PLOTS****APPENDIX E. SETUP PHOTOGRAPHS**



REVISION HISTORY



SUMMARY OF TEST RESULT

| Report Section | FCC Rule | Description | Limit | Result | Remark |
|----------------|--------------------|--|-----------------------|-------------|------------------------------------|
| 3.1 | 15.247(a)(2) | 6dB Bandwidth | ≥ 0.5MHz | Pass | - |
| 3.1 | - | 99% Bandwidth | - | Report Only | - |
| 3.2 | 15.247(b)(3) | Output Power | ≤ 30dBm | Pass | - |
| 3.3 | 15.247(e) | Power Spectral Density | ≤ 8dBm/3kHz | Pass | - |
| 3.4 | 15.247(d) | Conducted Band Edges and Spurious Emission | ≤ 30dBc | Pass | - |
| 3.5 | 15.247(d) | Radiated Band Edges and Spurious Emission | 15.209(a) & 15.247(d) | Pass | Under limit 52.52 dB at 894.27 MHz |
| 3.6 | 15.207 | AC Conducted Emission | 15.207(a) | Pass | Under limit 13.46 dB at 0.549 MHz |
| 3.7 | 15.203 & 15.247(b) | Antenna Requirement | 15.203 & 15.247(b) | Pass | - |

Remark: Not required means after assessing, test items are not necessary to carry out.

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



1 General Description

1.1 Applicant

Relay, Inc.

2230 Bandmate Way, Suite 500, Raleigh, NC 27607, USA

1.2 Manufacturer

Relay, Inc.

2230 Bandmate Way, Suite 500, Raleigh, NC 27607, USA

1.3 Product Feature of Equipment Under Test

| Product Feature | |
|---------------------|--|
| Equipment | Relay |
| Brand Name | RelayM |
| Model Name | RY2267 |
| FCC ID | 2AMBHRY2267 |
| IMEI Code/SN | Conducted: CE5CA461 Conduction: 990007540010797/990007540010789 Radiation: 0010904 |
| HW Version | v01 |
| EUT Stage | Identical Prototype |

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification | |
|---|----------------------------------|
| Tx/Rx Frequency Range | 904 MHz ~ 926 MHz |
| Number of Channels | 23 |
| Bandwidth / Spread Factor | 500kHz / SF7 |
| Maximum Output Power to Antenna | LoRa DTS : 27.95 dBm (0.6237 W) |
| 99% Occupied Bandwidth | LoRa DTS : 0.52 MHz |
| Antenna Type / Gain | PIFA Antenna with gain -8.20 dBi |
| Type of Modulation | LoRa |

1.5 Modification of EUT

No modifications are made to the EUT during all test items.



1.6 Testing Location

Sportun International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

| | | | |
|---------------------------|--|----------------------------|---------------------------------------|
| Test Firm | Sportun International Inc. (Kunshan) | | |
| Test Site Location | No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 | | |
| Test Site No. | Sportun Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | CO01-KS TH01-KS | CN1257 | 314309 |

Sportun International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

| | | | |
|---------------------------|---|----------------------------|---------------------------------------|
| Test Firm | Sportun International Inc. (Shenzhen) | | |
| Test Site Location | 101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985 | | |
| Test Site No. | Sportun Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | 03CH04-SZ | CN1256 | 421272 |

Test data subcontracted: Radiated Spurious Emission test case in section 3.5 of this report.

1.7 Test Software

| Item | Site | Manufacturer | Name | Version |
|------|-----------|--------------|------|-------------|
| 1. | CO01-KS | AUDIX | E3 | 6.2009-8-24 |
| 2. | 03CH04-SZ | AUDIX | E3 | 6.2009-8-24 |



1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart C §15.247
- FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

| Frequency Band | Channel | Freq.(MHz) | Channel | Freq.(MHz) |
|----------------|---------|------------|---------|------------|
| 904-926 MHz | 1 | 904 | 13 | 916 |
| | 2 | 905 | 14 | 917 |
| | 3 | 906 | 15 | 918 |
| | 4 | 907 | 16 | 919 |
| | 5 | 908 | 17 | 920 |
| | 6 | 909 | 18 | 921 |
| | 7 | 910 | 19 | 922 |
| | 8 | 911 | 20 | 923 |
| | 9 | 912 | 21 | 924 |
| | 10 | 913 | 22 | 925 |
| | 11 | 914 | 23 | 926 |
| | 12 | 915 | - | - |

Note: The above EUT's information was declared by manufacturer.

2.2 Test Mode

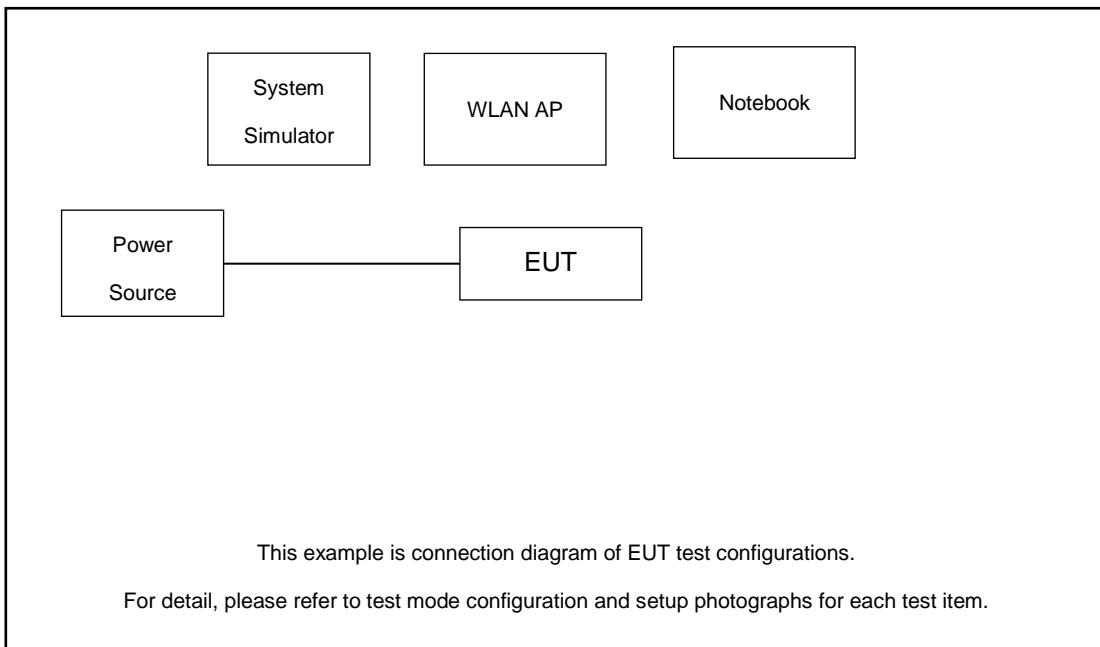
- The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.
- AC power line Conducted Emission was tested under maximum output power.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

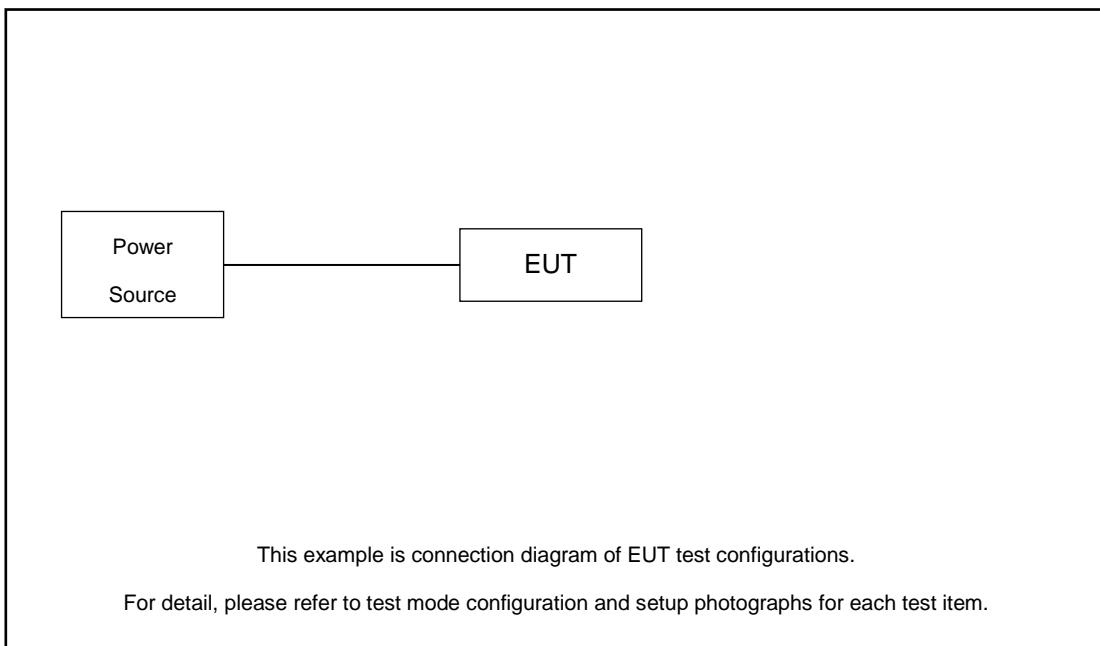
| Summary table of Test Cases | |
|-----------------------------|--|
| Test Item | Modulation |
| | Lora 500kHz DTS |
| Conducted TCs | Mode 1: LoRa Tx CH01_904 MHz Mode 2: LoRa Tx CH12_915 MHz Mode 3: LoRa Tx CH23_926 MHz |
| Radiated TCs | Mode 1: LoRa Tx CH01_904 MHz Mode 2: LoRa Tx CH12_915 MHz Mode 3: LoRa Tx CH23_926 MHz |
| AC Conducted Emission | Mode 1 : n12 Link + Bluetooth Link + WLAN Link(2.4G) + Lora Link |

2.3 Connection Diagram of Test System

AC Conducted Emission:



Radiated Emission:





2.4 Support Unit used in test configuration and system

| Item | Equipment | Trade Name | Model Name | FCC ID | Data Cable | Power Cord |
|------|--------------------|------------|---------------|---------------|------------|--|
| 1. | WLAN AP | D-link | DIR-655 | KA21R655B1 | N/A | Unshielded,1.8m |
| 2. | LTE Base Station | Anritus | MT8821C | N/A | N/A | Unshielded,1.8m |
| 3. | 5GNR Base Station | Anritus | MT8000A | N/A | N/A | Unshielded,1.8m |
| 4. | Bluetooth Earphone | Lenovo | thinkplus-BH3 | N/A | N/A | N/A |
| 5. | Notebook | Lenovo | G480 | QDS-BRCM1050I | N/A | AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m |
| 6. | USB cable | Motorola | SKN6378A | Fcc DoC | N/A | Unshielded,1m |
| 7. | Adapter | Amazon | PS57CP | Fcc DoC | N/A | N/A |

2.5 EUT Operation Test Setup

For LoRa function, the engineering test program was provided and enabled to make EUT continuous transmit.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 0.5 dB and 10dB attenuator.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 0.5 + 10 = 10.50 \text{ (dB)} \end{aligned}$$

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

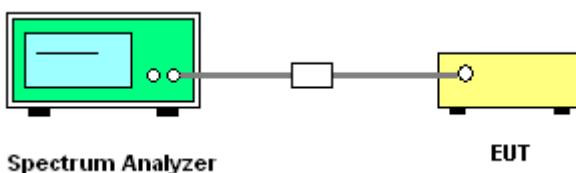
3.1.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.1.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.8
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 20kHz and set the Video bandwidth (VBW) = 100kHz.
6. Measure and record the results in the test report.

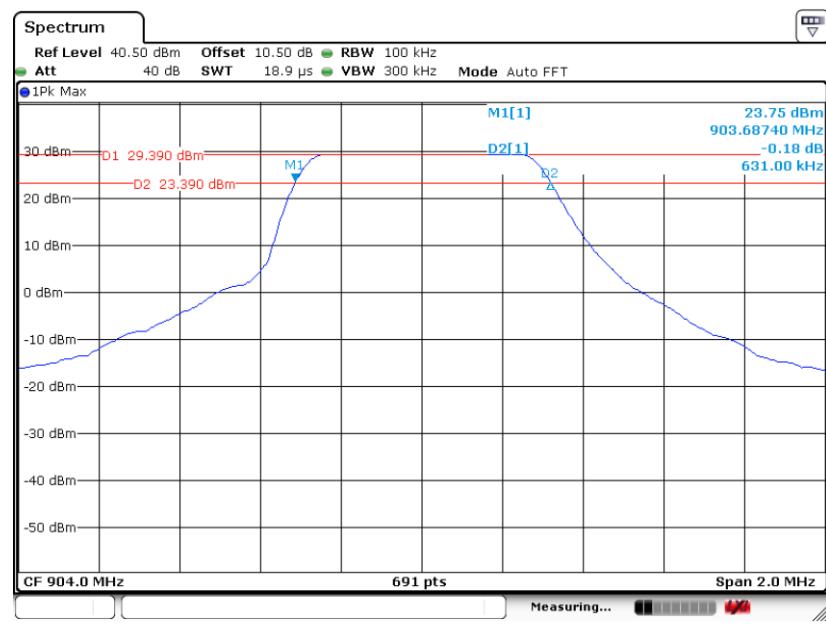
3.1.4 Test Setup



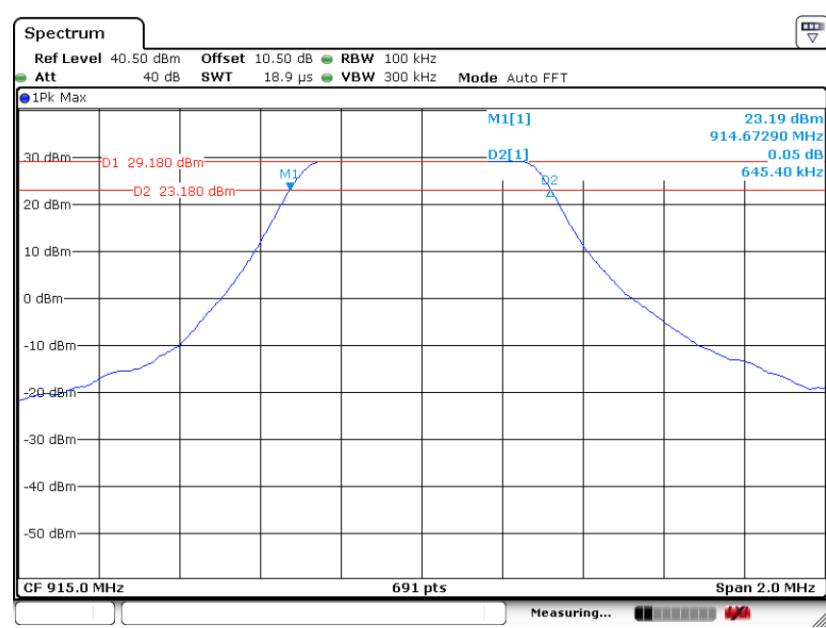
3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

6 dB Bandwidth Plot on 904MHz

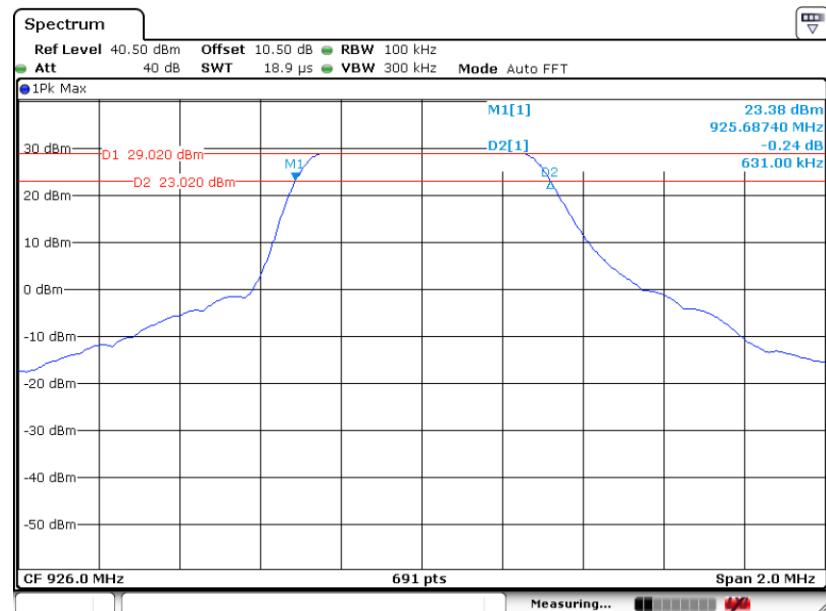


6 dB Bandwidth Plot on 915 MHz





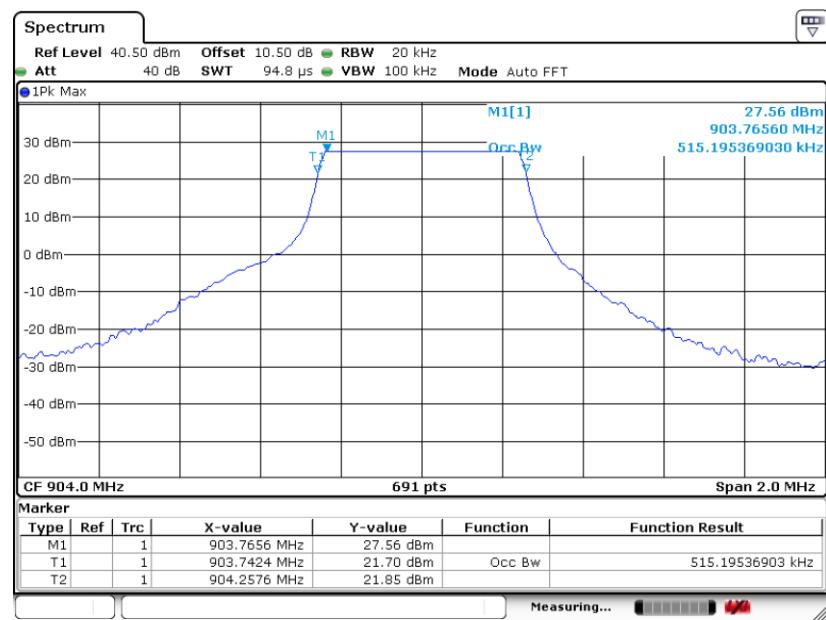
6 dB Bandwidth Plot on 926 MHz



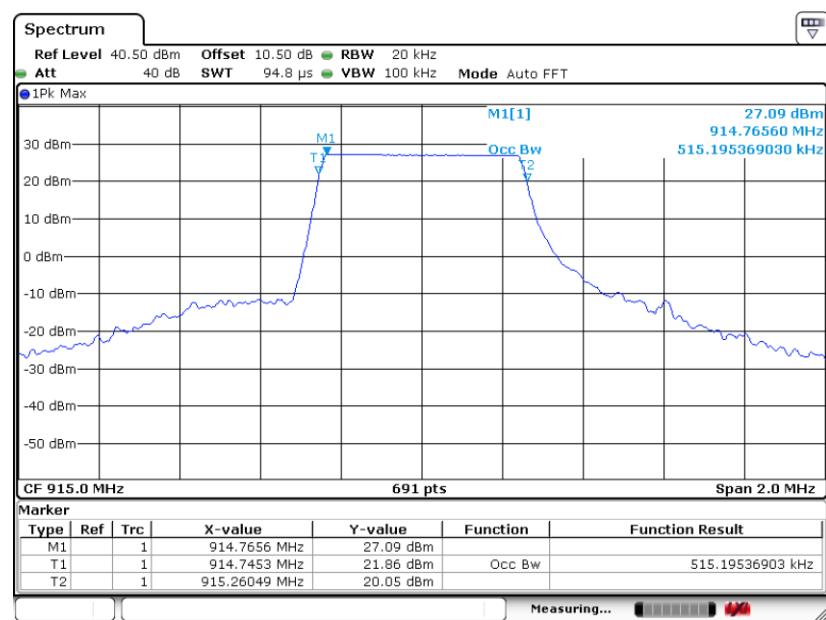
3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

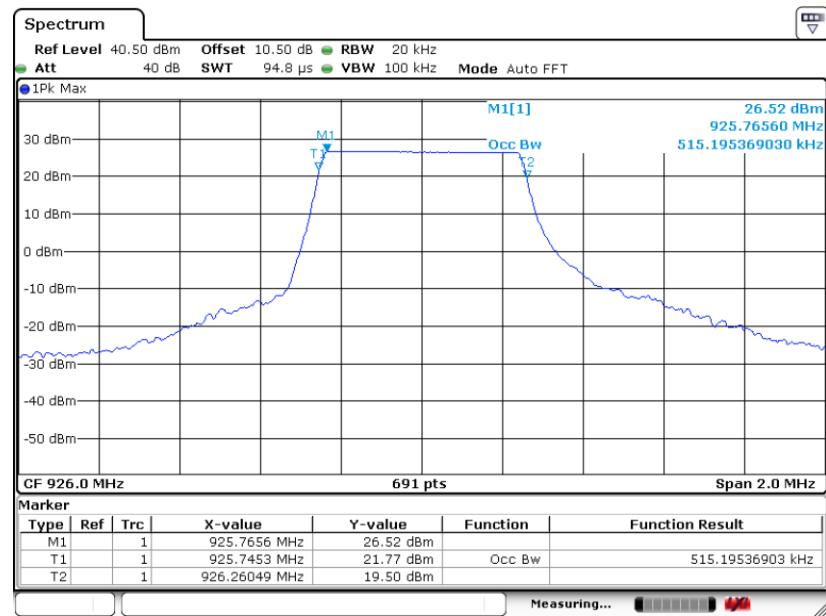
99% Bandwidth Plot on 904MHz



99% Bandwidth Plot on 915 MHz



99% Bandwidth Plot on 926 MHz



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 902-928MHz, the limit for output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi is used, the output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

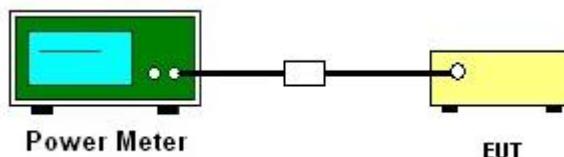
3.2.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.2.3.2 Method AVGPM-G method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

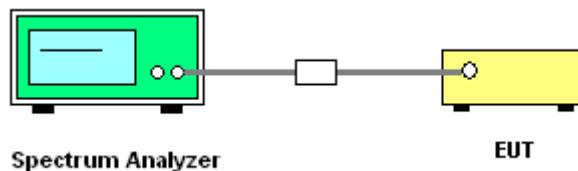
3.3.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure of ANSI C63.10-2013 clause 11.10.5 Method AVGPSD-2.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = power averaging (rms), Sweep time = auto couple. Use the peak marker function to determine the maximum power level.
6. Employ trace averaging (rms) mode over a minimum of 100 traces.
7. Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / \text{RBW}]$.
8. Measure and record the results in the test report.
9. Add $[10 \log (1 / D)]$, where D is the duty cycle.
10. The Measured power density (dBm)/ 100kHz is a reference level and used as 30dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



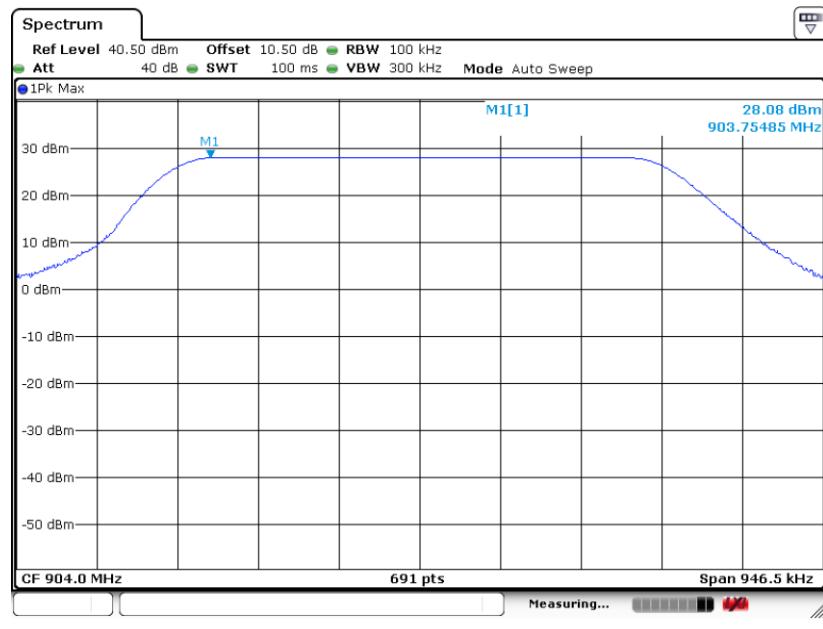
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

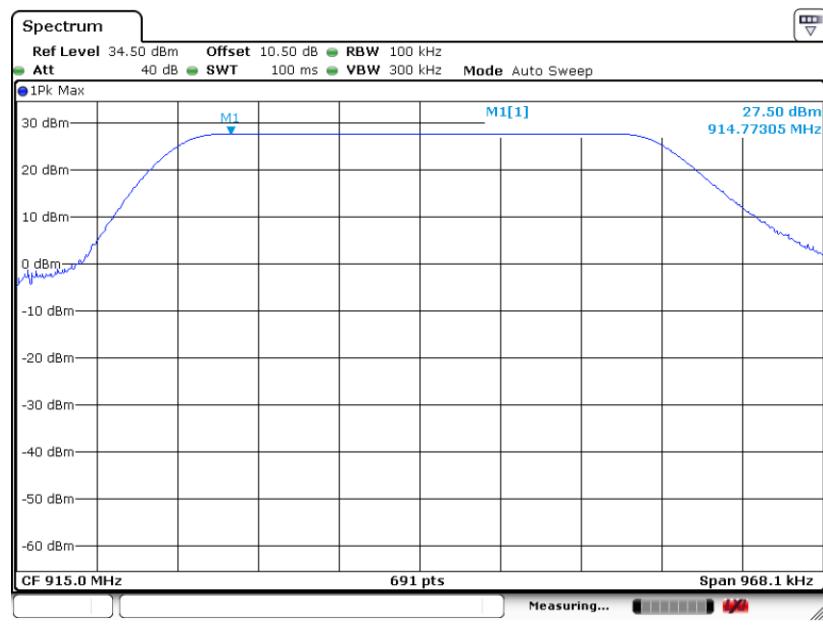


3.3.6 Test Result of Power Spectral Density Plots (100kHz)

PSD 100kHz Plot on 904 MHz

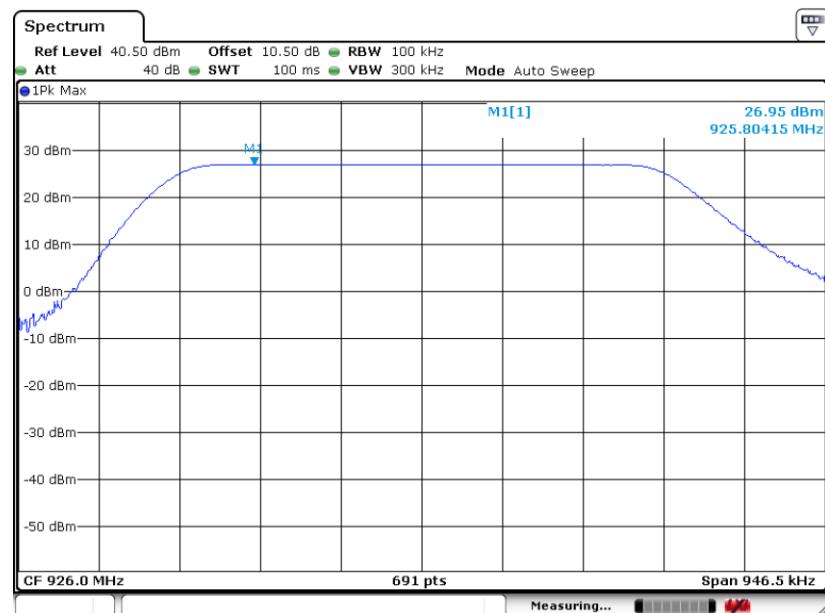


PSD 100kHz Plot on 915 MHz





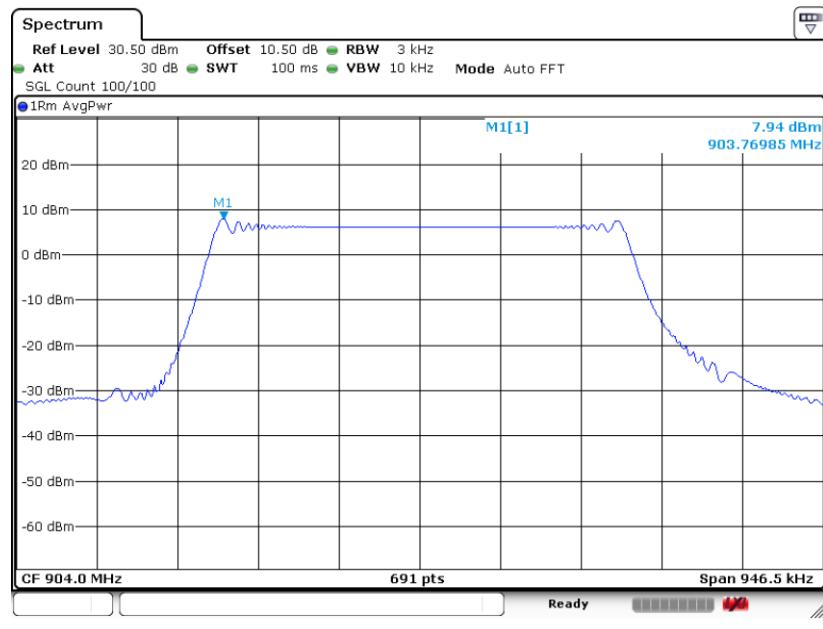
PSD 100kHz Plot on 926 MHz



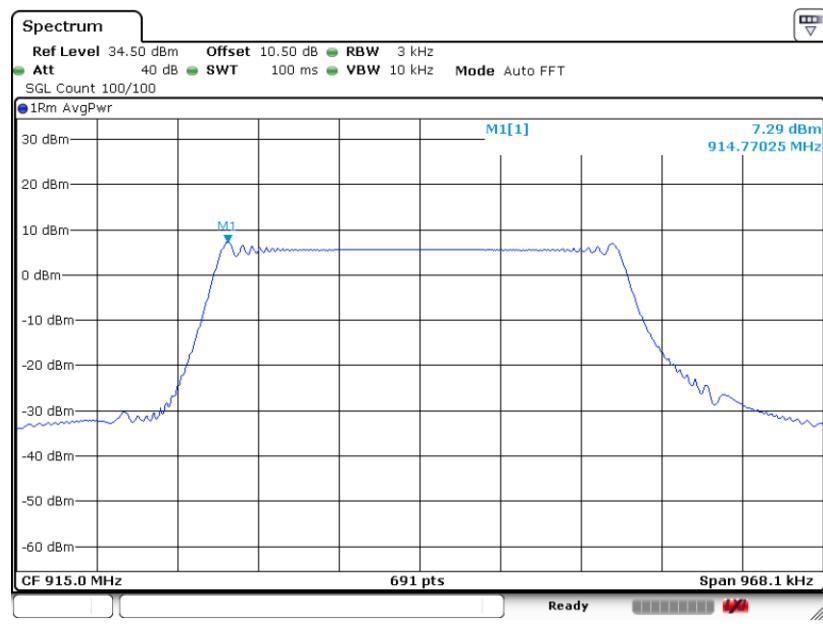
Date: 23.OCT.2024 01:40:50

3.3.7 Test Result of Power Spectral Density Plots (3kHz)

PSD 3kHz Plot on 904 MHz



PSD 3kHz Plot on 915 MHz





PSD 3kHz Plot on 926 MHz



Date: 23.OCT.2024 01:39:06

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 30 dB down from the highest emission level within the authorized band.

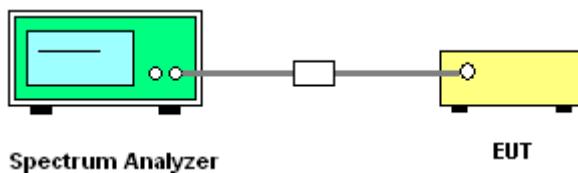
3.4.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.4.3 Test Procedure

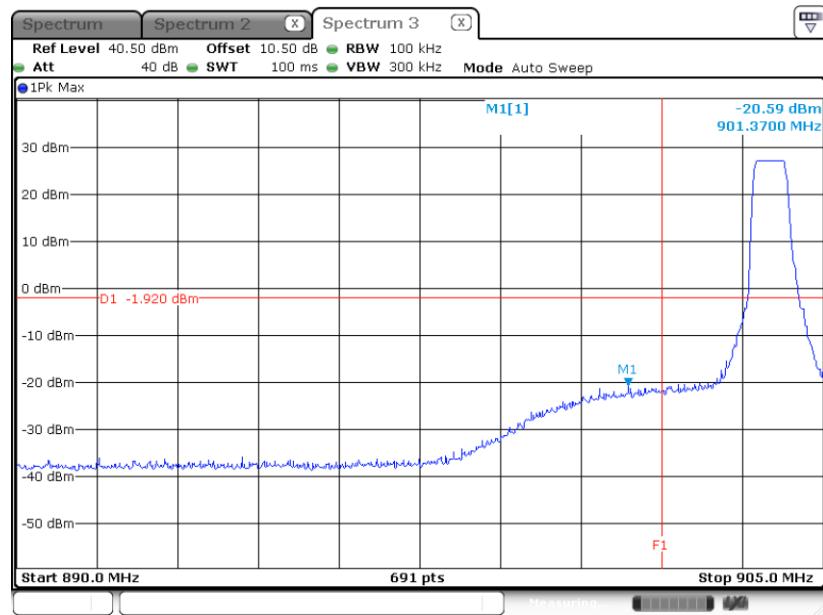
1. The testing follows ANSI C63.10-2013 clause 11.13
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz when the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



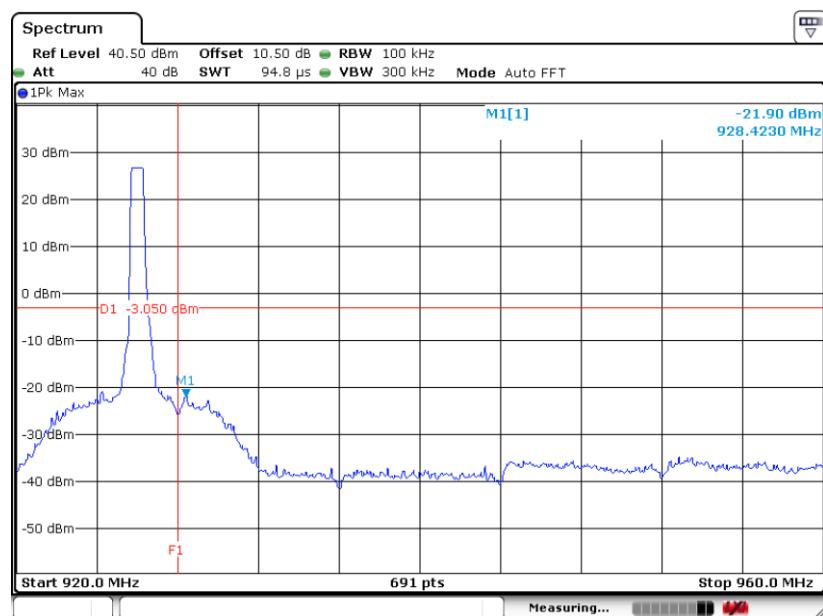
3.4.5 Test Result of Conducted Band Edges Plots

Low Band Edge Plot on 904 MHz



Date: 12.FEB.2025 10:18:34

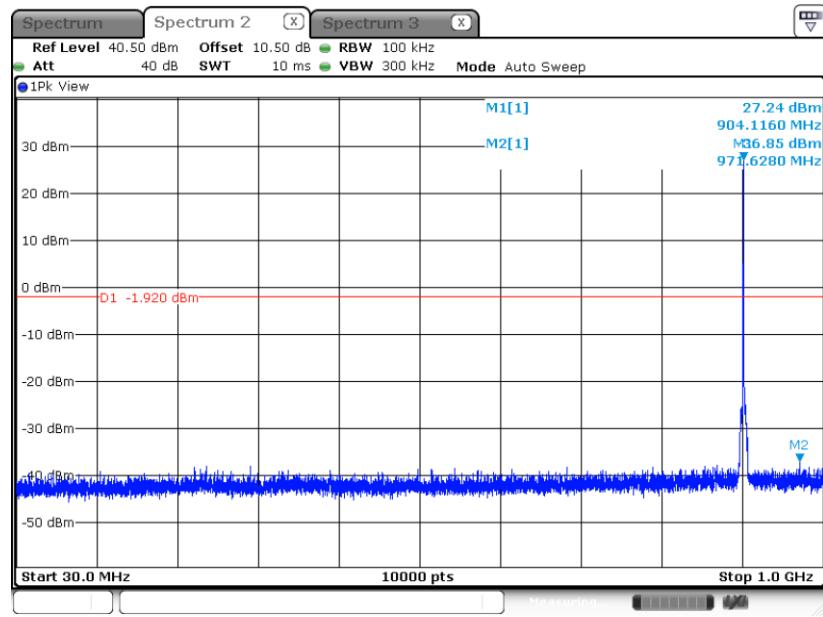
High Band Edge Plot on 926 MHz



Date: 23.OCT.2024 01:44:03

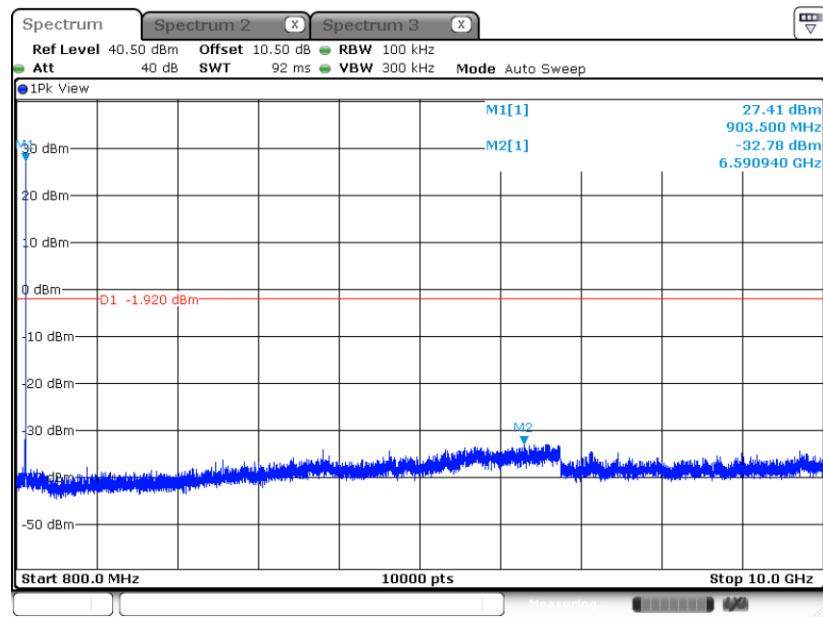
3.4.6 Test Result of Conducted Spurious Emission Plots

Conducted Spurious Emission Plot on 904 MHz



Date: 12.FEB.2025 10:26:05

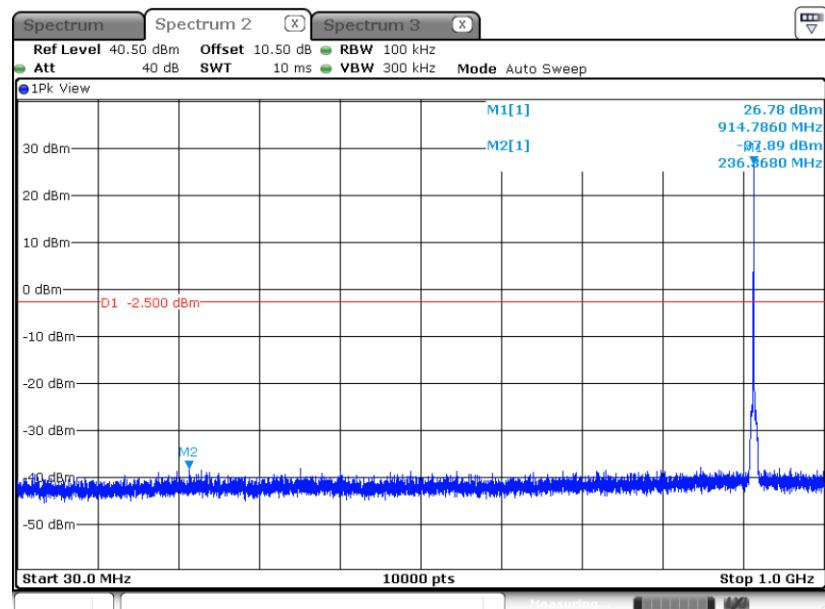
Conducted Spurious Emission Plot on 904 MHz



Date: 12.FEB.2025 10:25:48

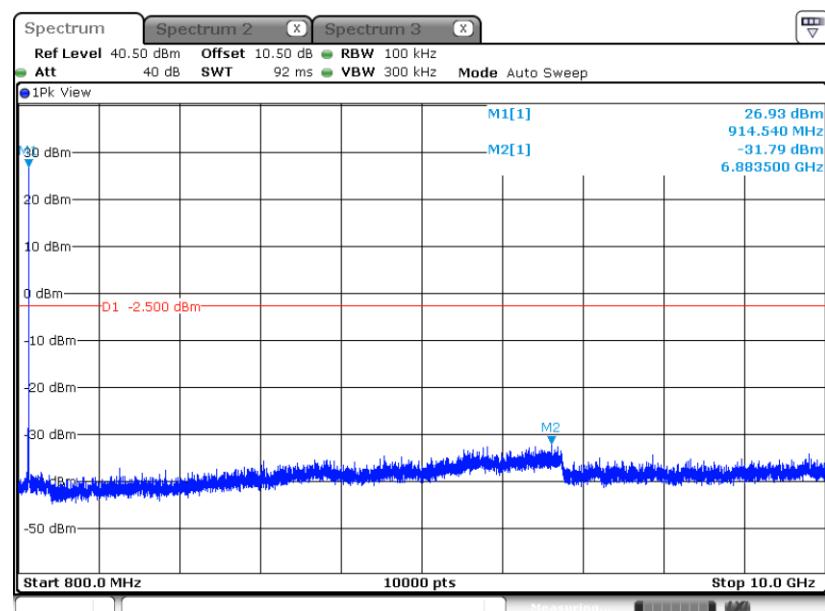


Conducted Spurious Emission Plot on 915 MHz



Date: 12.FEB.2025 10:25:02

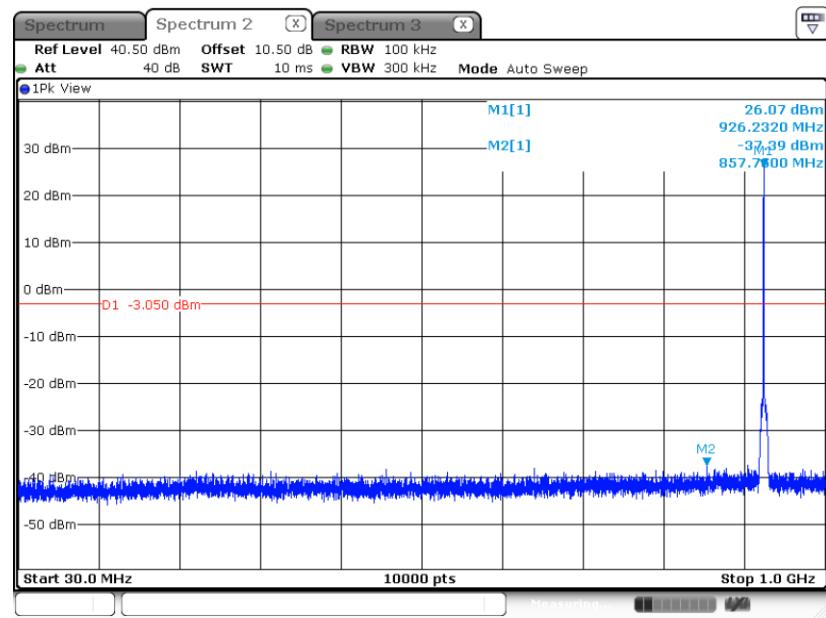
Conducted Spurious Emission Plot on 915 MHz



Date: 12.FEB.2025 10:24:48

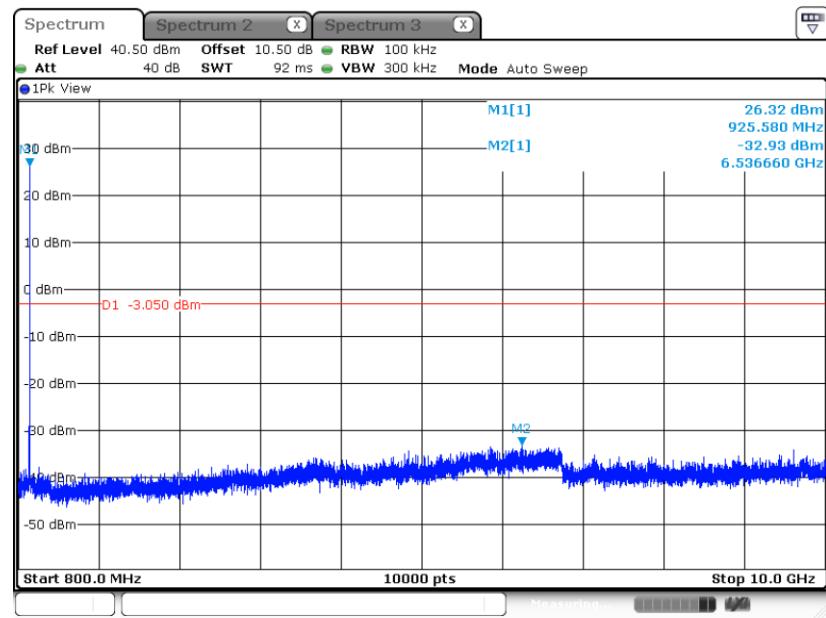


Conducted Spurious Emission Plot on 926 MHz



Date: 12.FEB.2025 10:27:06

Conducted Spurious Emission Plot on 926 MHz



Date: 12.FEB.2025 10:26:52



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|--------------------|--------------------------------------|----------------------------------|
| 0.009 – 0.490 | 2400/F(kHz) | 300 |
| 0.490 – 1.705 | 24000/F(kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |
| 30 – 88 | 100 | 3 |
| 88 – 216 | 150 | 3 |
| 216 - 960 | 200 | 3 |
| Above 960 | 500 | 3 |

3.5.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.



3.5.3 Test Procedures

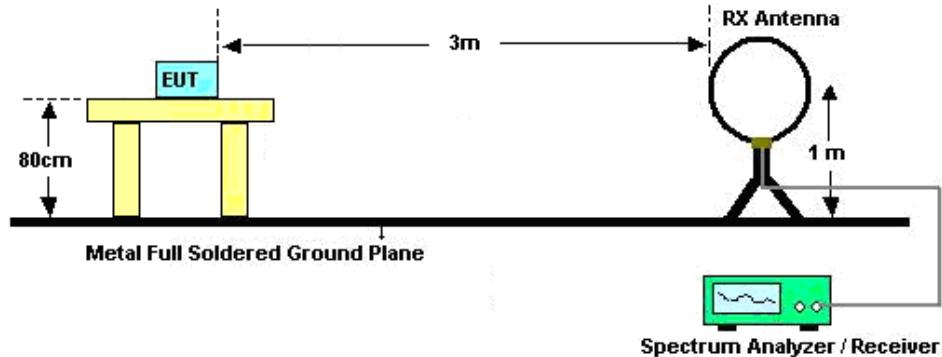
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

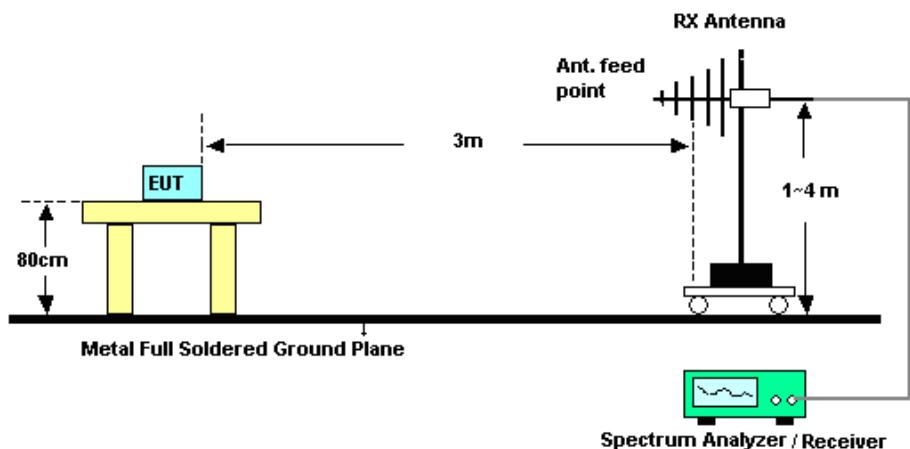
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
- VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

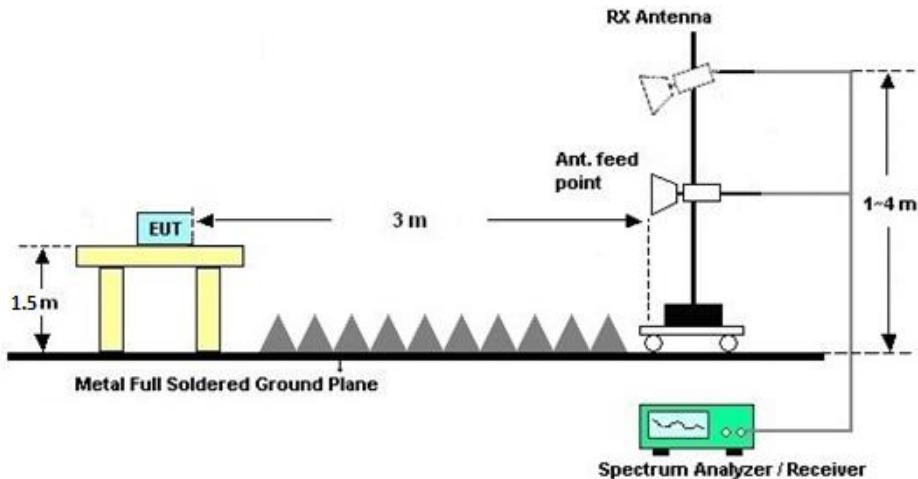
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C&D.

3.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C&D.

3.5.8 Duty cycle

| Mode | Duty Cycle |
|--------------|------------|
| LoRa DTS SF7 | 100% |



3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

| Frequency of emission (MHz) | Conducted limit (dB μ V) | |
|-----------------------------|------------------------------|-----------|
| | 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.

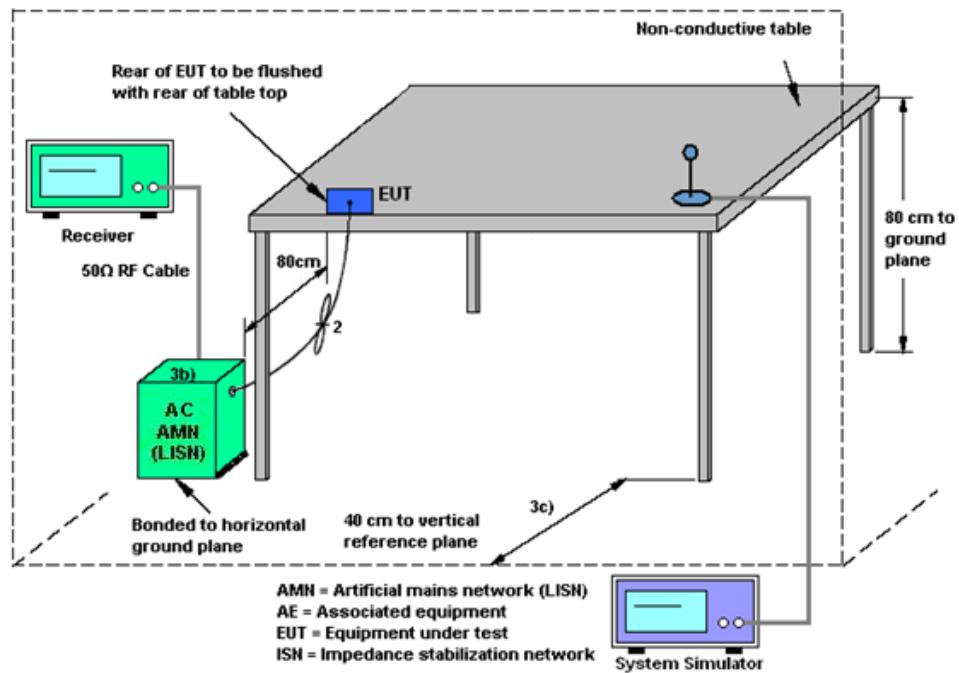
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. 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 rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|-----------------------------------|----------------------|----------------------------|---------------|-------------------------|------------------|-----------------------------|---------------|-----------------------|
| Spectrum Analyzer | R&S | FSV40 | 101040 | 10Hz~40GHz | Oct. 10, 2024 | Oct. 22, 2024~Feb. 12, 2025 | Oct. 09, 2025 | Conducted (TH01-KS) |
| Pulse Power Senor | Anritsu | MA2411B | 0917070 | 300MHz~40GHz | Jan. 03, 2024 | Oct. 22, 2024~Feb. 12, 2025 | Jan. 02, 2025 | Conducted (TH01-KS) |
| Pulse Power Senor | Anritsu | MA2411B | 0917070 | 300MHz~40GHz | Jan. 02, 2025 | Oct. 22, 2024~Feb. 12, 2025 | Jan. 01, 2026 | Conducted (TH01-KS) |
| Power Meter | Anritsu | ML2495A | 1005002 | 50MHz Bandwidth | Jan. 03, 2024 | Oct. 22, 2024~Feb. 12, 2025 | Jan. 02, 2025 | Conducted (TH01-KS) |
| Power Meter | Anritsu | ML2495A | 1005002 | 50MHz Bandwidth | Jan. 02, 2025 | Oct. 22, 2024~Feb. 12, 2025 | Jan. 01, 2026 | Conducted (TH01-KS) |
| EMI Test Receiver | R&S | ESR7 | 101404 | 9kHz~7GHz | Oct. 14, 2024 | Jan. 09, 2025~Feb. 12, 2025 | Oct. 13, 2025 | Radiation (03CH04-SZ) |
| EXA Spectrum Analyzer | KEYSIGHT | N9010A | MY551502 13 | 10Hz~44GHz | Jul. 03, 2024 | Jan. 09, 2025~Feb. 12, 2025 | Jul. 02, 2025 | Radiation (03CH04-SZ) |
| Loop Antenna | R&S | HFH2-Z2E | 101141 | 9kHz~30MHz | Dec. 28, 2024 | Jan. 09, 2025~Feb. 12, 2025 | Dec. 27, 2025 | Radiation (03CH04-SZ) |
| Bilog Antenna | TeseQ | CBL6111D | 41909 | 30MHz~1GHz | May 09, 2024 | Jan. 09, 2025~Feb. 12, 2025 | May 08, 2025 | Radiation (03CH04-SZ) |
| Double Ridge Horn Antenna | SCHWARZBECK | BBHA9120D | 9120D-147 4 | 1GHz~18GHz | Jul. 07, 2023 | Jan. 09, 2025~Feb. 12, 2025 | Jul. 06, 2025 | Radiation (03CH04-SZ) |
| Amplifier | Burgeon | BPA-530 | 102211 | 0.01Hz~3000MHz | Oct. 18, 2024 | Jan. 09, 2025~Feb. 12, 2025 | Oct. 17, 2025 | Radiation (03CH04-SZ) |
| HF Amplifier | MITEQ | AMF-7D-001 01800-30-10 P-R | 1943528 | 1GHz~18GHz | Oct. 14, 2024 | Jan. 09, 2025~Feb. 12, 2025 | Oct. 13, 2025 | Radiation (03CH04-SZ) |
| Amplifier | Agilent Technologies | 83017A | MY572801 36 | 500MHz~26.5GHz | Jul. 03, 2024 | Jan. 09, 2025~Feb. 12, 2025 | Jul. 02, 2025 | Radiation (03CH04-SZ) |
| AC Power Source | APC | AFV-S-600B | F11905001 9 | N/A | Oct. 14, 2024 | Jan. 09, 2025~Feb. 12, 2025 | Oct. 13, 2025 | Radiation (03CH04-SZ) |
| Turn Table | EM | EM1000 | N/A | 0~360 degree | NCR | Jan. 09, 2025~Feb. 12, 2025 | NCR | Radiation (03CH04-SZ) |
| Antenna Mast | EM | EM1000 | N/A | 1 m~4 m | NCR | Jan. 09, 2025~Feb. 12, 2025 | NCR | Radiation (03CH04-SZ) |
| EMI Receiver | R&S | ESCI7 | 100768 | 9kHz~7GHz; | Apr. 18, 2024 | Feb. 05, 2025 | Apr. 17, 2025 | Conduction (CO01-KS) |
| AC LISN (for auxiliary equipment) | MessTec | AN3016 | 060103 | 9kHz~30MHz | Aug. 20, 2024 | Feb. 05, 2025 | Aug. 19, 2025 | Conduction (CO01-KS) |
| AC LISN | MessTec | AN3016 | 060105 | 9kHz~30MHz | Apr. 18, 2024 | Feb. 05, 2025 | Apr. 17, 2025 | Conduction (CO01-KS) |
| AC Power Source | Chroma | 61602 | ABP00000 0811 | AC 0V~300V, 45Hz~1000Hz | Oct. 09, 2024 | Feb. 05, 2025 | Oct. 08, 2025 | Conduction (CO01-KS) |

NCR: No Calibration Required



5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

| | |
|--|----------|
| Conducted Spurious Emission & Bandedge | ±2.22 dB |
| Occupied Channel Bandwidth | ±0.1% |
| Conducted Power | ±0.50 dB |
| Conducted Power Spectral Density | ±0.90 dB |
| Frequency | ±0.4 Hz |

Uncertainty of AC Conducted Emission Measurement (0.15 MHz ~ 30 MHz)

| | |
|--|---------|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 2.84 dB |
|--|---------|

Uncertainty of Radiated Emission Measurement (9 KHz ~ 30 MHz)

| | |
|--|--------|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 2.5 dB |
|--|--------|

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

| | |
|--|-------|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 5.1dB |
|--|-------|

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

| | |
|--|-------|
| Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y)) | 4.8dB |
|--|-------|

----- THE END -----



Appendix A. Conducted Test Results

LoRa-DTS-Spreading Factor 7

| | | | | |
|----------------|-----------------------|--------------------|-------|----|
| Test Engineer: | Jacob Zhang | Temperature: | 20~26 | °C |
| Test Date: | 2024/10/22~2024/10/23 | Relative Humidity: | 40~51 | % |

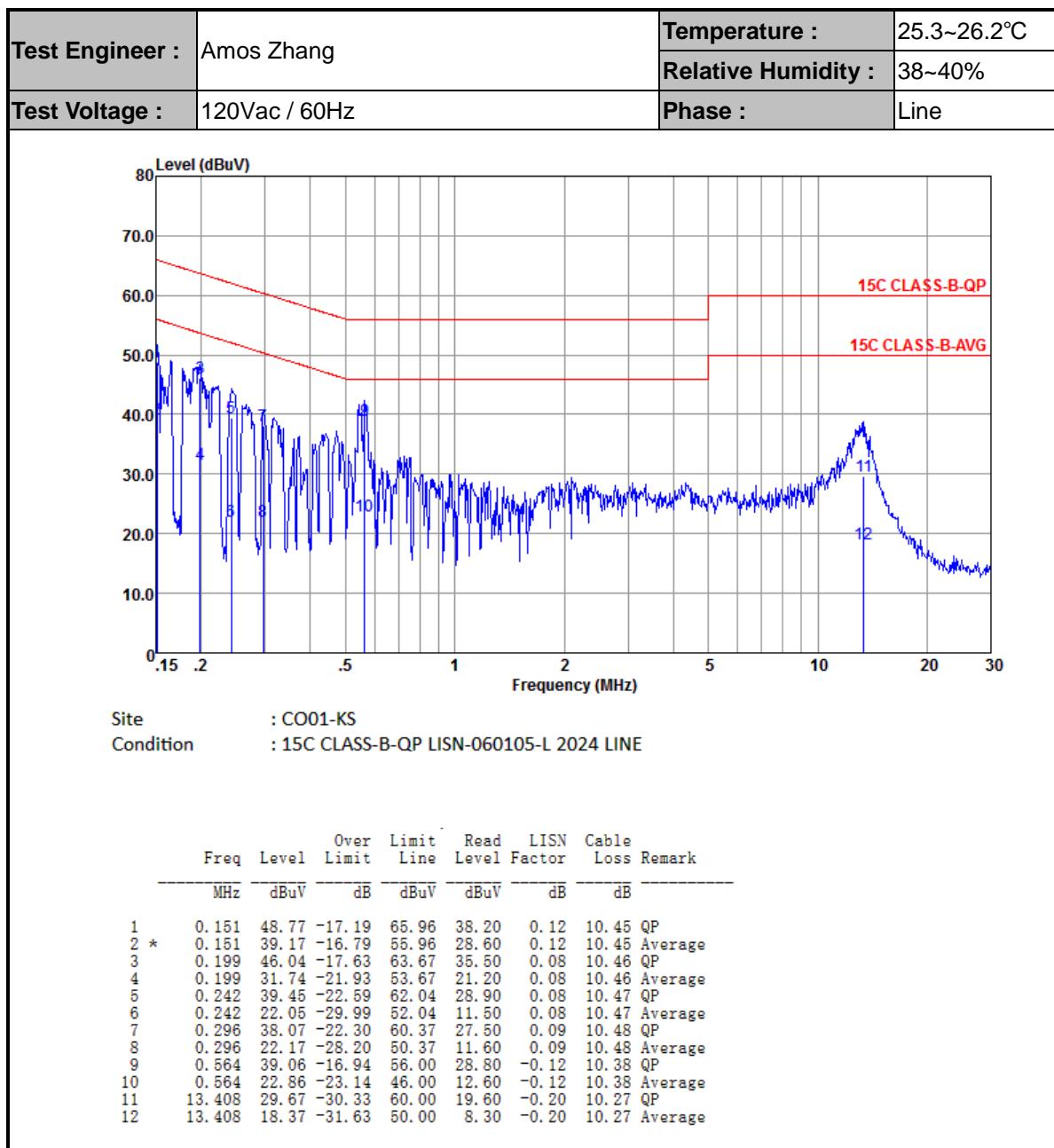
| <u>TEST RESULTS DATA</u> <u>6dB and 99% Occupied Bandwidth</u> | | | | | | |
|---|---------|----------------|--------------------------------|-----------------|--------------------------|-----------|
| Mod. | Channel | Freq. (MHz) | 99% Occupied BW (MHz) | 6dB BW (MHz) | 6dB BW Limit (MHz) | Pass/Fail |
| | L | 904Mhz | 0.52 | 0.63 | 0.50 | Pass |
| | M | 915Mhz | 0.52 | 0.65 | 0.50 | Pass |
| | H | 926Mhz | 0.52 | 0.63 | 0.50 | Pass |

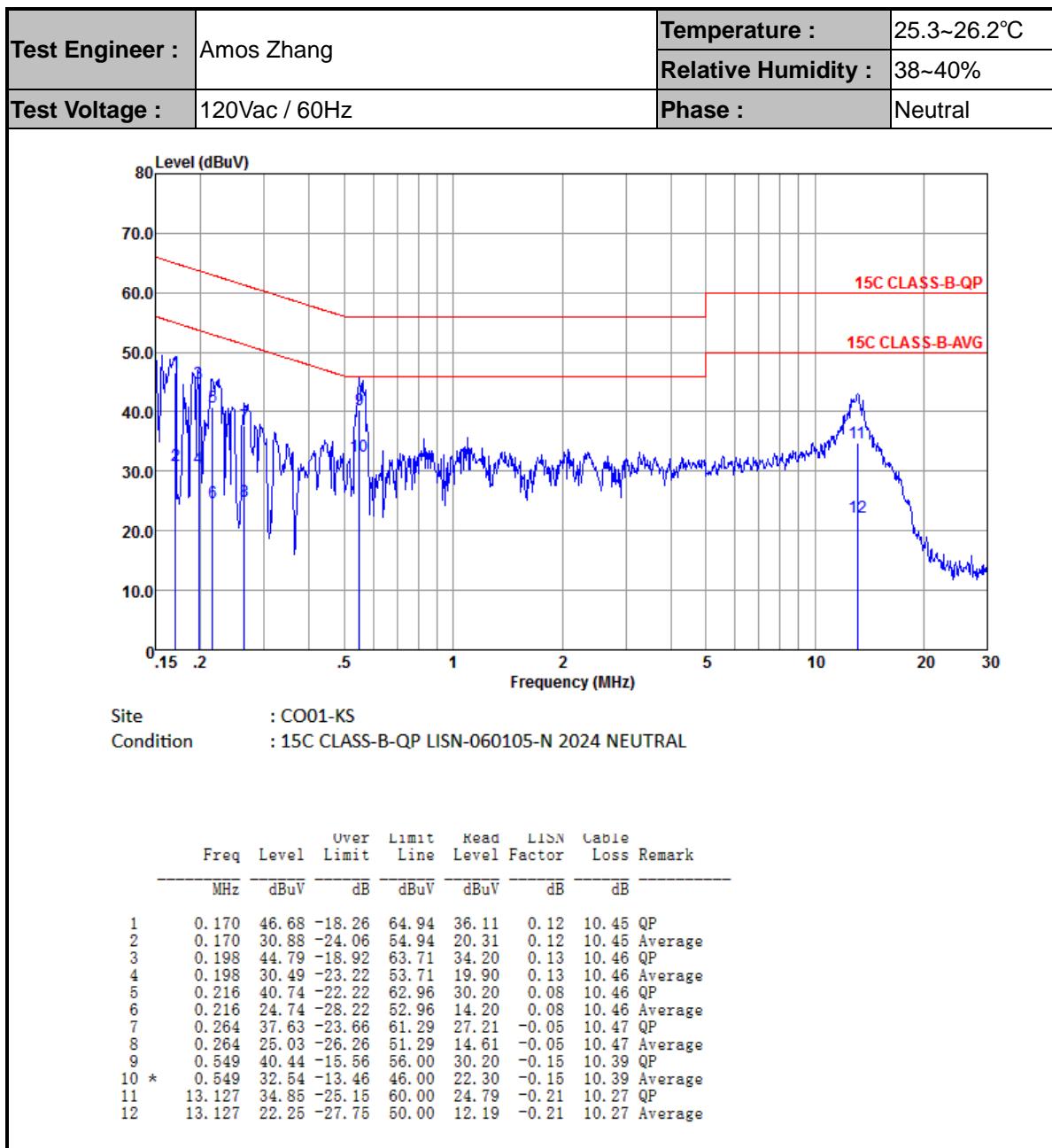
| <u>TEST RESULTS DATA</u> <u>Average Power Table</u> | | | | |
|--|---------|----------------|------------------------|--|
| Mod. | Channel | Freq. (MHz) | Duty Factor (dB) | Average Conducted Power (dBm) |
| | L | 904Mhz | 0.00 | 27.95 |
| | M | 915Mhz | 0.00 | 27.41 |
| | H | 926Mhz | 0.00 | 26.77 |

| <u>TEST RESULTS DATA</u> <u>Peak Power Density</u> | | | | | | | |
|---|---------|----------------|------------------------------|-----------------------|-------------|-------------------------------------|-----------|
| Mod. | Channel | Freq. (MHz) | Peak PSD (dBm /100kHz) | PSD (dBm /3kHz) | DG (dBi) | Peak PSD Limit (dBm /3kHz) | Pass/Fail |
| | L | 904Mhz | 28.08 | 7.94 | -8.20 | 8.00 | Pass |
| | M | 915Mhz | 27.50 | 7.29 | -8.20 | 8.00 | Pass |
| | H | 926Mhz | 26.95 | 6.66 | -8.20 | 8.00 | Pass |

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

Appendix B. AC Conducted Emission Test Results





Note:

1. Level(dB μ V) = Read Level(dB μ V) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dB μ V) – Limit Line(dB μ V)



Appendix C. Radiated Spurious Emission

904~926MHz

LoRa DTS 500KHz SF=7 (30Mhz-1Ghz@ 3m)

| | Note | Frequency | Level | Margin | Limit | Read | Antenna | Cable | Preamp | Ant | Table | Peak | Pol. | |
|--------|---|-----------|------------------|--------|------------------|----------------|----------|--------|--------|--------|---------|-------|-------|--------|
| | | | | | | | | | | | | Line | Level | Factor |
| | | (MHz) | (dB μ V/m) | (dB) | (dB μ V/m) | (dB μ V) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) | |
| 904MHz | | 102.75 | 29.56 | -13.94 | 43.5 | 43.71 | 16.51 | 1.03 | 31.69 | - | - | P | H | |
| | | 225.94 | 28.44 | -17.56 | 46 | 42.4 | 16 | 1.54 | 31.5 | - | - | P | H | |
| | * | 904 | 116.99 | - | - | 115.01 | 29.8 | 3.17 | 30.99 | - | - | P | H | |
| | | 101.78 | 28.92 | -14.58 | 43.5 | 42.19 | 17.4 | 1.03 | 31.7 | - | - | P | V | |
| | | 195.87 | 24.89 | -18.61 | 43.5 | 39.4 | 15.58 | 1.42 | 31.51 | - | - | P | V | |
| | * | 904 | 113.36 | - | - | 114.37 | 26.81 | 3.17 | 30.99 | - | - | P | V | |
| 915MHz | | 99.84 | 32.42 | -11.08 | 43.5 | 46.99 | 16.11 | 1.02 | 31.7 | - | - | P | H | |
| | | 228.85 | 24.78 | -21.22 | 46 | 38.54 | 16.18 | 1.56 | 31.5 | - | - | P | H | |
| | * | 915 | 117.65 | - | - | 115.43 | 29.99 | 3.18 | 30.95 | - | - | P | H | |
| | | 99.84 | 31.09 | -12.41 | 43.5 | 44.65 | 17.12 | 1.02 | 31.7 | - | - | P | V | |
| | | 199.75 | 24.11 | -19.39 | 43.5 | 38.71 | 15.47 | 1.43 | 31.5 | - | - | P | V | |
| | * | 915 | 113.29 | - | - | 114.32 | 26.74 | 3.18 | 30.95 | - | - | P | V | |
| 926MHz | | 98.87 | 30.93 | -12.57 | 43.5 | 45.65 | 15.97 | 1.01 | 31.7 | - | - | P | H | |
| | | 261.83 | 25.67 | -20.33 | 46 | 35.86 | 19.64 | 1.69 | 31.52 | - | - | P | H | |
| | * | 926 | 115.07 | - | - | 112.5 | 30.29 | 3.2 | 30.92 | - | - | P | H | |
| | | 97.9 | 29.3 | -14.2 | 43.5 | 43.28 | 16.72 | 1 | 31.7 | - | - | P | V | |
| | | 189.08 | 23.64 | -19.86 | 43.5 | 38.49 | 15.27 | 1.4 | 31.52 | - | - | P | V | |
| | * | 926 | 108.88 | - | - | 109.69 | 26.91 | 3.2 | 30.92 | - | - | P | V | |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | | |



LoRa 500KHz SF=7 (Band Edge @ 3m)

| | Note | Frequency | Level | Margin | Limit | Read | Antenna | Cable | Preamp | Ant | Table | Peak | Pol. | |
|--------|---|-----------|--------|--------|-------|--------|---------|-------|--------|-----|-------|---------|------|--|
| | | | | | | | | | | | | (P/A) | | |
| | | | | | | | | | | | | | | |
| 904MHz | | 871.96 | 41.22 | -55.77 | 96.99 | 39.73 | 29.42 | 3.1 | 31.03 | 100 | 154 | P | H | |
| | * | 904 | 116.99 | ---- | ---- | 115.01 | 29.8 | 3.17 | 30.99 | 100 | 154 | P | H | |
| | | 935.98 | 39.86 | -57.13 | 96.99 | 36.83 | 30.71 | 3.21 | 30.89 | 100 | 154 | P | H | |
| | | 861.29 | 33.92 | -59.44 | 93.36 | 35.31 | 26.57 | 3.08 | 31.04 | 100 | 65 | P | V | |
| | * | 904 | 113.36 | ---- | ---- | 114.37 | 26.81 | 3.17 | 30.99 | 100 | 65 | P | V | |
| | | 935.98 | 35.38 | -57.98 | 93.36 | 35.83 | 27.23 | 3.21 | 30.89 | 100 | 65 | P | V | |
| 915MHz | | 882.63 | 43.76 | -53.89 | 97.65 | 42.21 | 29.45 | 3.12 | 31.02 | 100 | 136 | P | H | |
| | * | 915 | 117.65 | ---- | ---- | 115.43 | 29.99 | 3.18 | 30.95 | 100 | 136 | P | H | |
| | | 946.65 | 37.93 | -59.72 | 97.65 | 34.32 | 31.24 | 3.23 | 30.86 | 100 | 136 | P | H | |
| | | 883.6 | 38 | -55.29 | 93.29 | 38.99 | 26.91 | 3.12 | 31.02 | 100 | 89 | P | V | |
| | * | 915 | 113.29 | ---- | ---- | 114.32 | 26.74 | 3.18 | 30.95 | 100 | 89 | P | V | |
| | | 946.65 | 34.68 | -58.61 | 93.29 | 35.01 | 27.3 | 3.23 | 30.86 | 100 | 89 | P | V | |
| 926MHz | | 894.27 | 42.55 | -52.52 | 95.07 | 40.81 | 29.6 | 3.15 | 31.01 | 100 | 174 | P | H | |
| | * | 926 | 115.07 | ---- | ---- | 112.5 | 30.29 | 3.2 | 30.92 | 100 | 174 | P | H | |
| | | 957.32 | 37.54 | -57.53 | 95.07 | 33.44 | 31.69 | 3.24 | 30.83 | 100 | 174 | P | H | |
| | | 894.27 | 35.81 | -53.01 | 88.88 | 36.76 | 26.91 | 3.15 | 31.01 | 100 | 81 | P | V | |
| | * | 926 | 108.88 | ---- | ---- | 109.69 | 26.91 | 3.2 | 30.92 | 100 | 81 | P | V | |
| | | 958.29 | 31.75 | -57.13 | 88.88 | 32.11 | 27.23 | 3.24 | 30.83 | 100 | 81 | P | V | |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | | |



LoRa DTS 500KHz SF=7 (Harmonic @ 3m)

| | Note | Frequency | Level | Margin | Limit | Read | Antenna | Cable | Preamp | Ant | Table | Peak | Pol. |
|--------|---|-----------|------------------|--------|------------------|----------------|----------|--------|--------|--------|---------|-------|-------|
| | | | | | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| | | (MHz) | (dB μ V/m) | (dB) | (dB μ V/m) | (dB μ V) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| 904MHz | | 1808 | 51.75 | -45.24 | 96.99 | 70.21 | 29.97 | 4.67 | 53.1 | - | - | P | H |
| | | 2712 | 42.62 | -31.38 | 74 | 58.65 | 31.35 | 5.68 | 53.06 | - | - | P | H |
| | | 3616 | 39.88 | -34.12 | 74 | 52.74 | 33.61 | 6.68 | 53.15 | - | - | P | H |
| | | 1808 | 51.06 | -42.3 | 93.36 | 69.52 | 29.97 | 4.67 | 53.1 | - | - | P | V |
| | | 2712 | 41.22 | -32.78 | 74 | 57.25 | 31.35 | 5.68 | 53.06 | - | - | P | V |
| | | 3616 | 40.06 | -33.94 | 74 | 52.92 | 33.61 | 6.68 | 53.15 | - | - | P | V |
| 915MHz | | 1830 | 49.76 | -47.89 | 97.65 | 68.14 | 30.05 | 4.67 | 53.1 | - | - | P | H |
| | | 2745 | 42.28 | -31.72 | 74 | 58.18 | 31.44 | 5.71 | 53.05 | - | - | P | H |
| | | 3660 | 39.69 | -34.31 | 74 | 52.4 | 33.69 | 6.74 | 53.14 | - | - | P | H |
| | | 1830 | 50.59 | -42.7 | 93.29 | 68.97 | 30.05 | 4.67 | 53.1 | - | - | P | V |
| | | 2745 | 43.76 | -30.24 | 74 | 59.66 | 31.44 | 5.71 | 53.05 | - | - | P | V |
| | | 3660 | 39.2 | -34.8 | 74 | 51.91 | 33.69 | 6.74 | 53.14 | - | - | P | V |
| 926MHz | | 1852 | 49.38 | -45.69 | 95.07 | 67.63 | 30.14 | 4.71 | 53.1 | - | - | P | H |
| | | 2778 | 40.31 | -33.69 | 74 | 56.09 | 31.52 | 5.74 | 53.04 | - | - | P | H |
| | | 3704 | 39.93 | -34.07 | 74 | 52.48 | 33.77 | 6.8 | 53.12 | - | - | P | H |
| | | 1852 | 52.33 | -36.55 | 88.88 | 70.58 | 30.14 | 4.71 | 53.1 | - | - | P | V |
| | | 2778 | 39.69 | -34.31 | 74 | 55.47 | 31.52 | 5.74 | 53.04 | - | - | P | V |
| | | 3704 | 39.72 | -34.28 | 74 | 52.27 | 33.77 | 6.8 | 53.12 | - | - | P | V |
| Remark | 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. | | | | | | | | | | | | |

**Note symbol**

| | |
|-----|--|
| * | Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. |
| ! | Test result is over limit line. |
| P/A | Peak or Average |
| H/V | Horizontal or Vertical |



A calculation example for radiated spurious emission is shown as below:

| | Note | Frequency | Level | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Ant Pos | Table Pos | Peak Avg. | Pol. |
|----------|------|-----------|------------------|------------|------------------|----------------|----------------|------------|---------------|---------|-----------|-----------|---------|
| | | (MHz) | (dB μ V/m) | (dB) | (dB μ V/m) | (dB μ V) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| 902.5MHz | | 2708.20 | 51.89 | -22.11 | 74 | 76.80 | 33.05 | 7.58 | 65.54 | 333 | 243 | P | H |
| | | 2708.20 | 50.19 | -3.81 | 54 | 75.10 | 33.05 | 7.58 | 65.54 | 333 | 243 | A | H |

1. Level(dB μ V/m) = Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dB μ V) - Preamp Factor(dB)
2. Over Limit(dB) = Level(dB μ V/m) - Limit Line(dB μ V/m)

For Peak Limit @ 2708.20MHz:

$$\begin{aligned}
 1. \quad & \text{Level(dB μ V/m)} \\
 &= \text{Antenna Factor(dB/m)} + \text{Cable Loss(dB)} + \text{Read Level(dB μ V)} - \text{Preamp Factor(dB)} \\
 &= 33.05(\text{dB/m}) + 7.58(\text{dB}) + 76.80(\text{dB μ V}) - 65.54 (\text{dB}) \\
 &= 51.89 (\text{dB μ V/m}) \\
 2. \quad & \text{Over Limit(dB)} \\
 &= \text{Level(dB μ V/m)} - \text{Limit Line(dB μ V/m)} \\
 &= 51.89(\text{dB μ V/m}) - 74(\text{dB μ V/m}) \\
 &= -22.11(\text{dB})
 \end{aligned}$$

For Average Limit @ 2708.20MHz:

$$\begin{aligned}
 1. \quad & \text{Level(dB μ V/m)} \\
 &= \text{Antenna Factor(dB/m)} + \text{Cable Loss(dB)} + \text{Read Level(dB μ V)} - \text{Preamp Factor(dB)} \\
 &= 33.05(\text{dB/m}) + 7.58(\text{dB}) + 75.10(\text{dB μ V}) - 65.54 (\text{dB}) \\
 &= 50.19 (\text{dB μ V/m}) \\
 2. \quad & \text{Over Limit(dB)} \\
 &= \text{Level(dB μ V/m)} - \text{Limit Line(dB μ V/m)} \\
 &= 50.19(\text{dB μ V/m}) - 54(\text{dB μ V/m}) \\
 &= -3.81(\text{dB})
 \end{aligned}$$

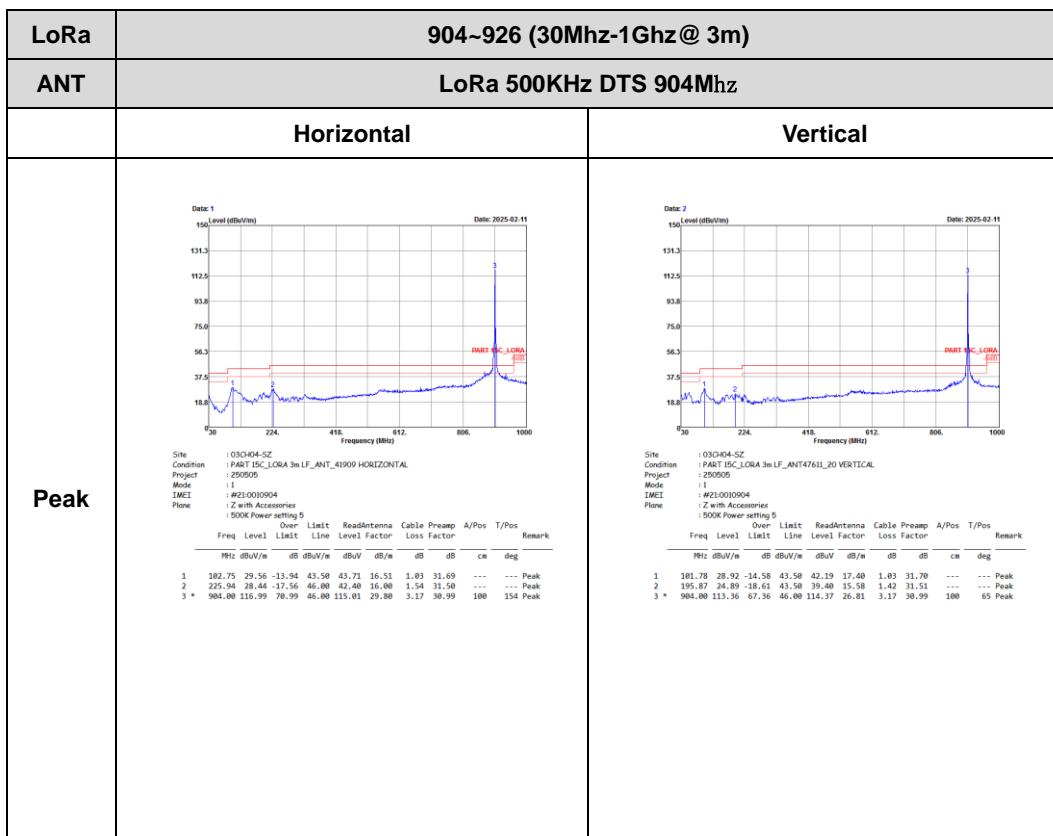
Both peak and average measured complies with the limit line, so test result is "PASS".

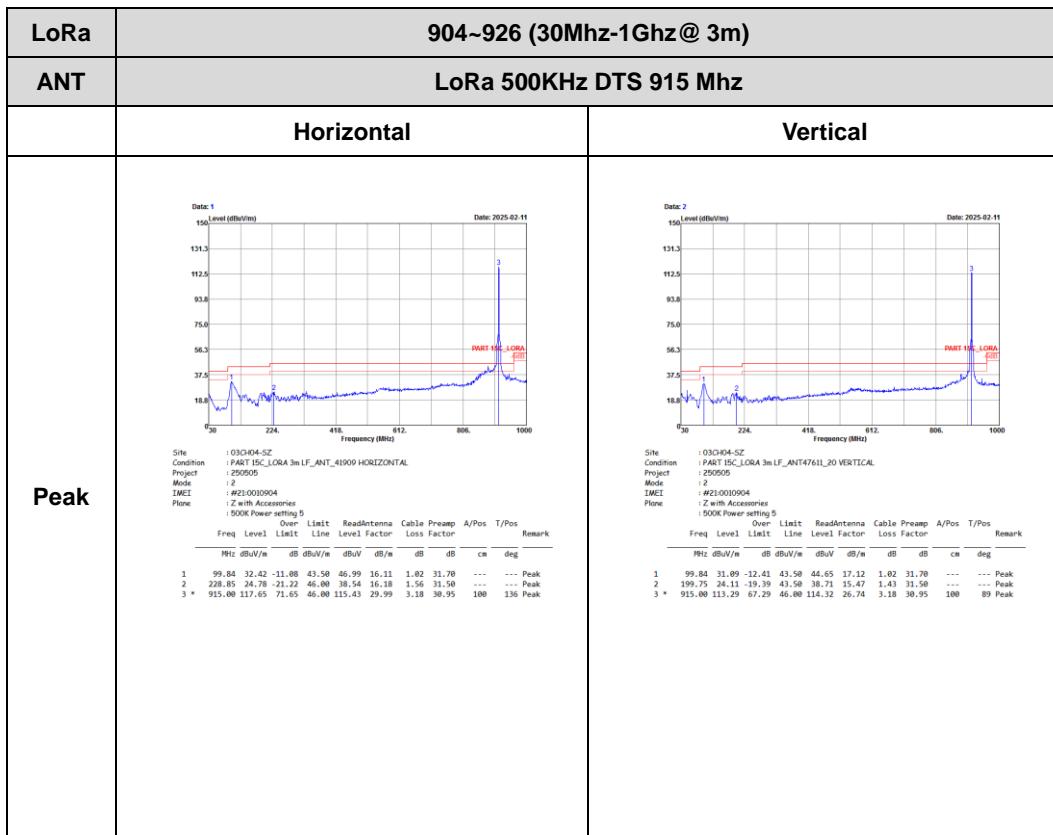


Appendix D. Radiated Spurious Emission Plots

904~926MHz

LoRa DTS 500KHz SF=7 (30Mhz-1Ghz@ 3m)



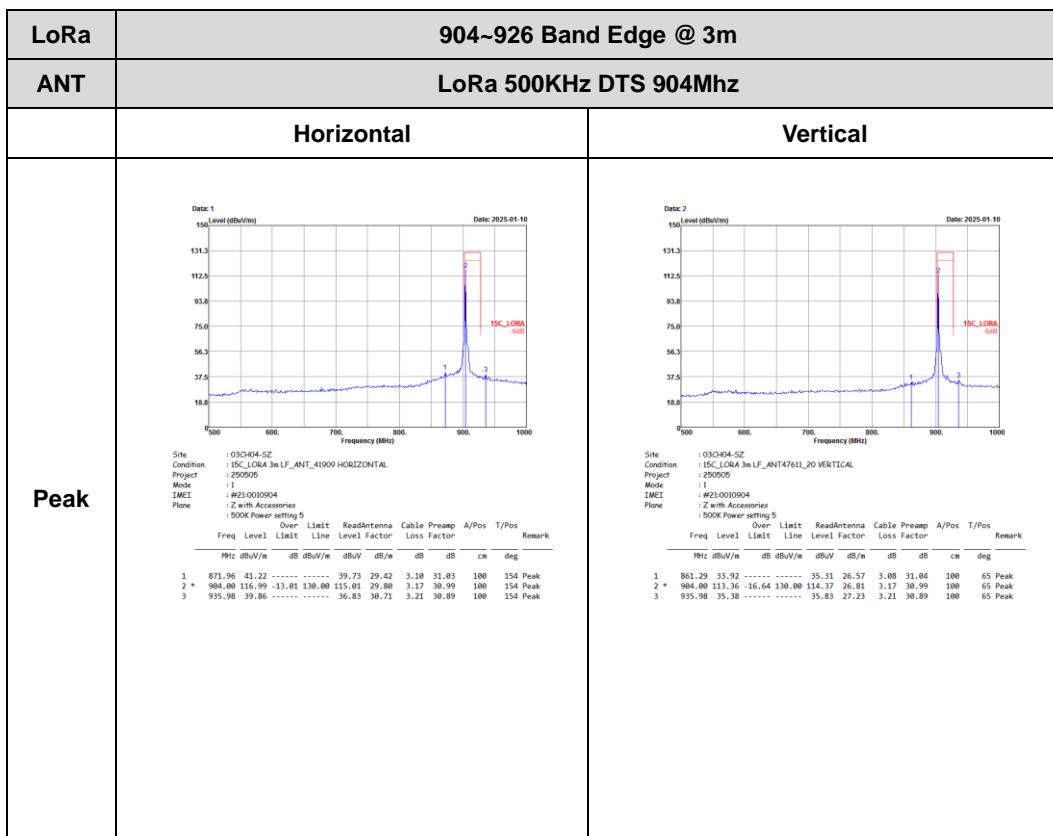


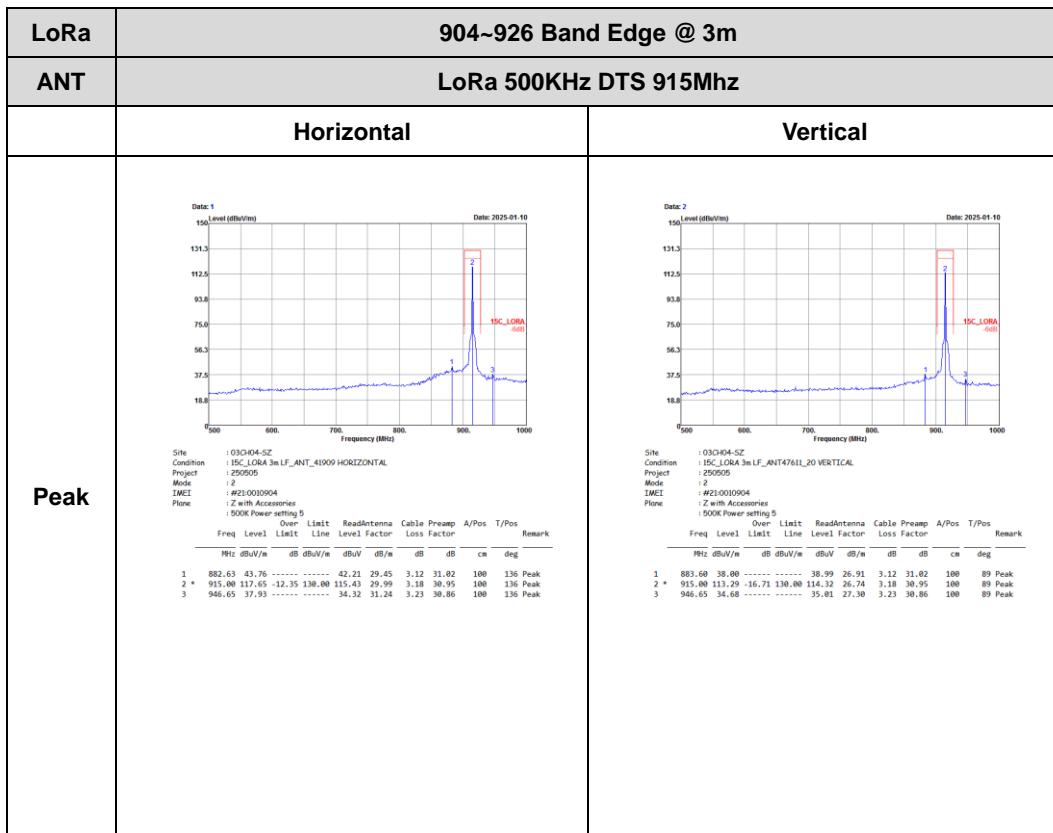


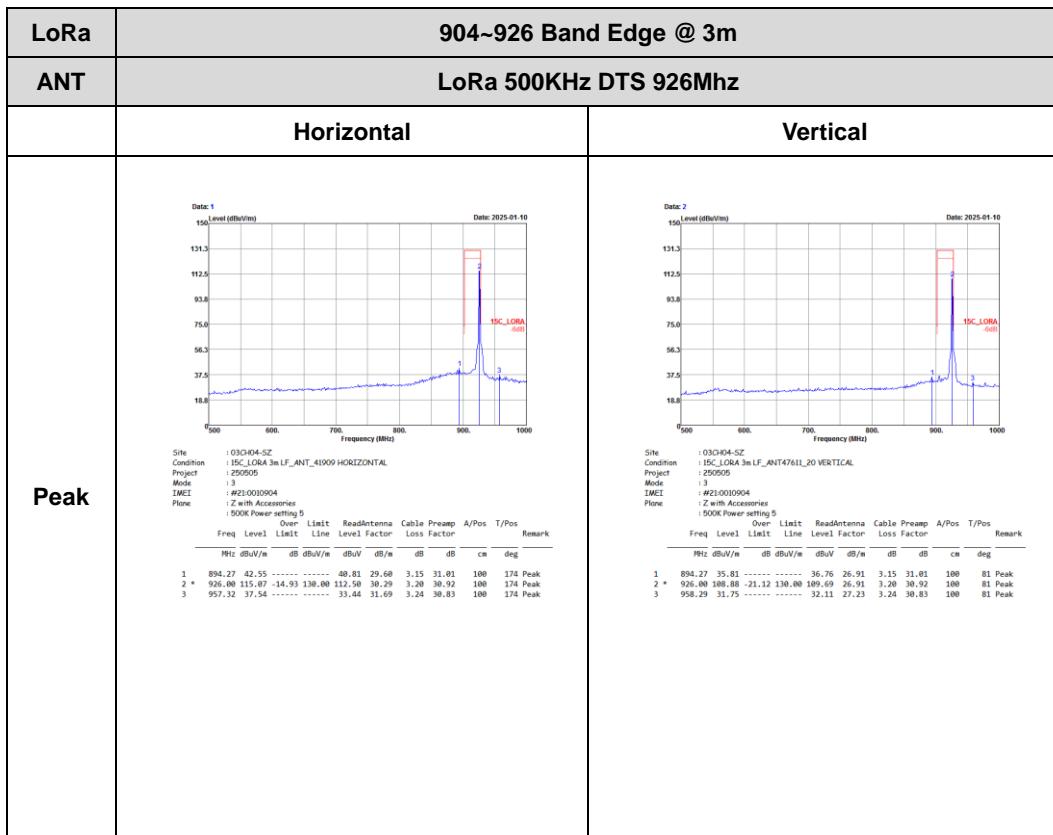
| LoRa | 904~926 (30Mhz-1Ghz@ 3m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|----------|--------|---------|--------|---------|-------|--------|----------|-------|--------|-----|--------|----|--------|----|----|----|----|-----|--|---|-------|-------|--------|-------|-------|-------|------|-------|-----|---|--------|-------|--------|-------|-------|-------|------|-------|-----|-----|--------|--------|-------|-------|--------|-------|------|-------|----------|------|-------|-------|------|---------|-------|--------|-------|-------|--------|-----|--------|----|--------|----|----|----|----|-----|--|---|-------|-------|--------|-------|-------|-------|------|-------|-----|---|--------|-------|--------|-------|-------|-------|------|-------|-----|-----|--------|--------|-------|-------|--------|-------|------|-------|----------|--|
| ANT | LoRa 500KHz DTS 926Mhz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Horizontal | Vertical | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peak | <p>Date: 1</p> <p>Date: 2025-02-11</p> <p>Site: 030404-S2 Condition: PART 15C_LORA 3m LF_ANT_41909 HORIZONTAL Project: 250505 Model: 4 IMEI: #210010504 Plane: Z with Accessories 500K Power setting: 5</p> <table border="1"><thead><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Read</th><th>Antenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr></thead><tbody><tr><td>1</td><td>98.87</td><td>30.93</td><td>-12.57</td><td>43.50</td><td>45.65</td><td>15.97</td><td>1.01</td><td>31.70</td><td>---</td></tr><tr><td>2</td><td>261.83</td><td>25.67</td><td>-26.33</td><td>46.00</td><td>35.86</td><td>19.64</td><td>1.69</td><td>31.52</td><td>---</td></tr><tr><td>3 *</td><td>926.00</td><td>115.87</td><td>69.07</td><td>46.00</td><td>112.58</td><td>30.29</td><td>3.28</td><td>30.92</td><td>100 Peak</td></tr></tbody></table> <p>Date: 2</p> <p>Date: 2025-02-11</p> <p>Site: 030404-S2 Condition: PART 15C_LORA 3m LF_ANT47611_20 VERTICAL Project: 250505 Model: 4 IMEI: #210010504 Plane: Z with Accessories 500K Power setting: 5</p> <table border="1"><thead><tr><th>Freq</th><th>Level</th><th>Limit</th><th>Read</th><th>Antenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr></thead><tbody><tr><td>1</td><td>97.90</td><td>29.30</td><td>-14.20</td><td>43.50</td><td>43.28</td><td>16.72</td><td>1.00</td><td>31.70</td><td>---</td></tr><tr><td>2</td><td>189.88</td><td>23.64</td><td>-19.86</td><td>43.50</td><td>38.49</td><td>15.27</td><td>1.48</td><td>31.52</td><td>---</td></tr><tr><td>3 *</td><td>926.00</td><td>188.88</td><td>62.88</td><td>46.00</td><td>189.69</td><td>26.91</td><td>3.28</td><td>30.92</td><td>100 Peak</td></tr></tbody></table> | Freq | Level | Limit | Read | Antenna | Cable | Preamp | A/Pos | T/Pos | Remark | MHz | dBuV/m | dB | dBuV/m | dB | dB | dB | cm | deg | | 1 | 98.87 | 30.93 | -12.57 | 43.50 | 45.65 | 15.97 | 1.01 | 31.70 | --- | 2 | 261.83 | 25.67 | -26.33 | 46.00 | 35.86 | 19.64 | 1.69 | 31.52 | --- | 3 * | 926.00 | 115.87 | 69.07 | 46.00 | 112.58 | 30.29 | 3.28 | 30.92 | 100 Peak | Freq | Level | Limit | Read | Antenna | Cable | Preamp | A/Pos | T/Pos | Remark | MHz | dBuV/m | dB | dBuV/m | dB | dB | dB | cm | deg | | 1 | 97.90 | 29.30 | -14.20 | 43.50 | 43.28 | 16.72 | 1.00 | 31.70 | --- | 2 | 189.88 | 23.64 | -19.86 | 43.50 | 38.49 | 15.27 | 1.48 | 31.52 | --- | 3 * | 926.00 | 188.88 | 62.88 | 46.00 | 189.69 | 26.91 | 3.28 | 30.92 | 100 Peak | |
| Freq | Level | Limit | Read | Antenna | Cable | Preamp | A/Pos | T/Pos | Remark | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHz | dBuV/m | dB | dBuV/m | dB | dB | dB | cm | deg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 98.87 | 30.93 | -12.57 | 43.50 | 45.65 | 15.97 | 1.01 | 31.70 | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 261.83 | 25.67 | -26.33 | 46.00 | 35.86 | 19.64 | 1.69 | 31.52 | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 * | 926.00 | 115.87 | 69.07 | 46.00 | 112.58 | 30.29 | 3.28 | 30.92 | 100 Peak | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Freq | Level | Limit | Read | Antenna | Cable | Preamp | A/Pos | T/Pos | Remark | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHz | dBuV/m | dB | dBuV/m | dB | dB | dB | cm | deg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 97.90 | 29.30 | -14.20 | 43.50 | 43.28 | 16.72 | 1.00 | 31.70 | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 3 * | 926.00 | 188.88 | 62.88 | 46.00 | 189.69 | 26.91 | 3.28 | 30.92 | 100 Peak | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



LoRa 500KHz SF=7 (Band Edge @ 3m)









LoRa DTS 500KHz SF=7 (Harmonic @ 3m)

