# FCC CERTIFICATION TEST REPORT

| | | |
|---|---|---|
| **Applicant** | : | Tenetics, LLC |
| **Address of Applicant** | : | 8630 Guilford Road, Suite M #108, Columbia, MD 21046 USA |
| **Manufacturer** | : | Tenetics, LLC |
| **Address of Manufacturer** | : | 8630 Guilford Road, Suite M #108, Columbia, MD 21046 USA |
| **Equipment under Test** | : | wireless internet gateway |
| **Model No.** | : | GW3 |
| **FCC ID** | : | 2AA6Q-GW3 |
| **Test Standard(s)** | : | FCC Rules and Regulations Part 15 Subpart C, ANSI C63.10:2013 |
| **Report No.** | : | DDT-RE24092616-2E03 |
| **Issue Date** | : | 2025/01/07 |
| **Issue By** | : | Guangdong Dongdian Testing Service Co., Ltd.<br>Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808 |

REPORT

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# Test Report Declare

| | | |
|---|---|---|
| **Applicant** | : | Tenetics, LLC |
| **Address of Applicant** | : | 8630 Guilford Road, Suite M #108, Columbia, MD 21046 USA |
| **Equipment under Test** | : | wireless internet gateway |
| **Model No.** | : | GW3 |
| **Manufacturer** | : | Tenetics, LLC |
| **Address of Manufacturer** | : | 8630 Guilford Road, Suite M #108, Columbia, MD 21046 USA |

**Test Standard Used:**

FCC Rules and Regulations Part 15 Subpart C,
ANSI C63.10:2013

**We Declare:**

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

| | | | |
|---|---|---|---|
| **Report No.:** | DDT-RE24092616-2E03 | | |
| **Date of Receipt:** | 2024/12/04 | **Date of Test:** | 2024/12/04 - 2025/01/07 |

| ***Prepared By:*** | ***Approved By:*** |
|---|---|
| Tiger Mo | Damon Hu |
| ***Tiger Mo/Engineer*** | ***Damon Hu/EMC Manager*** |

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

# Revision History

| Rev. | Revisions | Issue Date | Revised By |
|---|---|---|---|
| --- | Initial issue | 2025/01/07 | |
| | | | |

# 1. Summary of Test Results

| No. | Test Parameter | Clause No. | Condition | Result |
|---|---|---|---|---|
| 1 | Maximum Peak Output Power | FCC Part 15: 15.247(b)(1) | / | Pass |
| 2 | 20 dB Bandwidth | FCC Part 15: 15.247(a)(1) | / | Pass |
| 3 | Carrier Frequency Separation | FCC Part 15: 15.247(a)(1) | / | Pass |
| 4 | Number of Hopping Channel | FCC Part 15: 15.247(a)(1)(iii) | / | Pass |
| 5 | Dwell Time | FCC Part 15: 15.247(a)(1)(iii) | / | Pass |
| 6 | RF Conducted Spurious Emissions | FCC Part 15: 15.247(d) | / | Pass |
| 7 | Radiated Emission | FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d) | / | Pass |
| 8 | Band Edge Compliance | FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d) | / | Pass |
| 9 | Power Line Conducted Emissions | FCC Part 15: 15.207(a) | / | Pass |
| 10 | Antenna Requirement | FCC Part 15: 15.203 | / | Pass |
| Note: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard. | | | | |

# 2. General Test Information

## 2.1. Description of EUT

| | | |
|---|---|---|
| EUT Name | : | wireless internet gateway |
| Model Number | : | GW3 |
| EUT Function Description | : | Please reference user manual of this device |
| Power Supply | : | DC 12V power by external adapter or solar panel or a built in 6V sealed lead-acid battery. |
| Antenna Type | : | Internal printed meandered inverted F antenna,<br>External Ziisor 3dBi omni-directional antenna,<br>External Laird FG0293 5dBi omni-directional antenna |
| Max Antenna Gain(dBi) | : | Internal printed meandered inverted F antenna, Max Gain 2.54dBi<br>External Ziisor 3dBi omni-directional antenna, Max Gain 3dBi<br>External Laird FG0293 5dBi omni-directional antenna, Max Gain 5dBi |

| | | |
|---|---|---|
| Operation Frequency | : | 902.3 MHz-914.9 MHz |
| Modulation | : | CSS/LoRa |

| Channel information | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 0 | 902.3 | 22 | 906.7 | 44 | 911.1 |
| 1 | 902.5 | 23 | 906.9 | 45 | 911.3 |
| 2 | 902.7 | 24 | 907.1 | 46 | 911.5 |
| 3 | 902.9 | 25 | 907.3 | 47 | 911.7 |
| 4 | 903.1 | 26 | 907.5 | 48 | 911.9 |
| 5 | 903.3 | 27 | 907.7 | 49 | 912.1 |
| 6 | 903.5 | 28 | 907.9 | 50 | 912.3 |
| 7 | 903.7 | 29 | 908.1 | 51 | 912.5 |
| 8 | 903.9 | 30 | 908.3 | 52 | 912.7 |
| 9 | 904.1 | 31 | 908.5 | 53 | 912.9 |
| 10 | 904.3 | 32 | 908.7 | 54 | 913.1 |
| 11 | 904.5 | 33 | 908.9 | 55 | 913.3 |
| 12 | 904.7 | 34 | 909.1 | 56 | 913.5 |
| 13 | 904.9 | 35 | 909.3 | 57 | 913.7 |
| 14 | 905.1 | 36 | 909.5 | 58 | 913.9 |
| 15 | 905.3 | 37 | 909.7 | 59 | 914.1 |
| 16 | 905.5 | 38 | 909.9 | 60 | 914.3 |
| 17 | 905.7 | 39 | 910.1 | 61 | 914.5 |
| 18 | 905.9 | 40 | 910.3 | 62 | 914.7 |
| 19 | 906.1 | 41 | 910.5 | 63 | 914.9 |
| 20 | 906.3 | 42 | 910.7 | / | |
| 21 | 906.5 | 43 | 910.9 | / | |

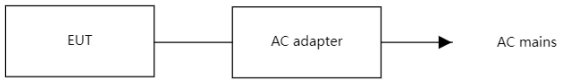
Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

"☒" means to be chosen or applicable; "□" means don't to be chosen or not applicable; This note applies to entire report.

## 2.2. Accessories of EUT

| Accessories | Manufacturer | Model number | Description |
|---|---|---|---|
| Adapter | NetBlt | NBS40C1203 00VU | Input: 100-240V~ 50/60Hz 1.0A<br>Output: 12.0⎓V3.0A |
| Solar panel | Zhiwang Energy | ZW-145145-12V | / |
| Rechargeable Soeled Lead Acx, Batery | Powersonic | PS-640F1 | Cycle use:DC 7.20-7.50V<br>Standby use: DC 6.75-6.90V |

## 2.3. Block diagram of EUT configuration for test




## 2.4. Decision of final test mode

According pre-test, the worst test modes were reported as below:

Test software: putty.exe

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

The pathloss of external cable: 0.5 dB (According to the manufacturer's claims)

| Tested mode, channel, information | | | |
|---|---|---|---|
| Mode | Setting Tx Power | Channel | Frequency (MHz) |
| LoRa/CSS hopping on Tx mode | Default | CH0 to CH63 | 902.3 to 914.9 |
| LoRa/CSS hopping off Tx mode | Default | CH0 | 902.3 |
| | Default | CH32 | 908.7 |
| | Default | CH63 | 914.9 |

## 2.5. Deviations of test standard

No deviation.

## 2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|---|---|
| Temperature range: | +15℃ to +35 ℃ |
| Humidity range: | 20% to 75% |
| Pressure range: | 86 kPa to106 kPa |

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

## 2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

## 2.8. Measurement uncertainty

| Test Item | Uncertainty |
|---|---|
| Bandwidth | 1.1% |
| Peak Output Power (Conducted) (Spectrum analyzer) | 0.86 dB (10 MHz ≤ f < 3.6 GHz); |
| | 1.38 dB (3.6 GHz ≤ f < 8 GHz) |
| Peak Output Power (Conducted) (Power Sensor) | 0.74 dB |
| Power Spectral Density | 0.74 dB (10 MHz ≤ f < 3.6 GHz); |
| | 1.38 dB (3.6 GHz ≤ f < 8 GHz) |
| Frequencies Stability | 6.7 x $10^{-8}$ (Antenna couple method) |
| | 5.5 x $10^{-8}$ (Conducted method) |
| Conducted spurious emissions | 0.86 dB (10 MHz ≤ f < 3.6 GHz); |
| | 1.40 dB (3.6 GHz ≤ f < 8 GHz) |
| | 1.66 dB (8 GHz ≤ f < 26.5 GHz) |
| Uncertainty for radio frequency (RBW < 20 kHz) | $3\times10^{-8}$ |
| Temperature | 0.4 ℃ |
| Humidity | 2 % |
| Uncertainty for Radiation Emission test (9 kHz – 30 MHz) | 3.44 dB |
| Uncertainty for Radiation Emission test (30 MHz - 1 GHz) | 4.70 dB (Antenna Polarize: V) |
| | 4.84 dB (Antenna Polarize: H) |
| Uncertainty for Radiation Emission test (1 GHz - 40 GHz) | 4.10 dB (1 - 6 GHz) |
| | 4.40 dB (6 GHz - 18 GHz) |

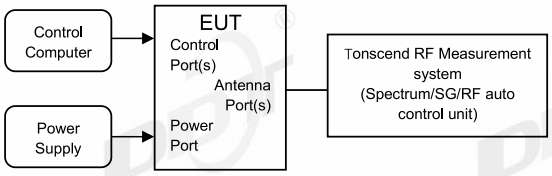
| | |
|---|---|
| | 3.54 dB (18 GHz - 26 GHz) |
| | 4.30 dB (26 GHz - 40 GHz) |
| Uncertainty for Power line conduction emission test | 3.34dB (150KHz-30MHz) |
| | 3.72dB (9KHz-150KHz) |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. | |

## 3. Equipment Used During Conductive Test

| Equipment | Manufacturer | Model No. | Serial Number | Due Date |
|---|---|---|---|---|
| ☒ RF Connected Test (RF Measurement System 2#) | | | | |
| SPECTRUM ANALYZER | R&S | FSU26 | 201124 | 2025/07/08 |
| Power Sensor | R&S | NRP-Z22 | 101254 | 2025/07/08 |
| Test Software | Tonscend | JS1120-3 | Ver.3.2.22 | N/A |

# 4. 20 dB Bandwidth

## 4.1. Block diagram of test setup




## 4.2. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

## 4.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 6.9.2.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously
(4) Use the following spectrum analyzer settings for the 20 dB bandwidth measurement:

| | |
|---|---|
| RBW: | 1% to 5% of the OBW |
| VBW: | approximately three times RBW |
| Span: | between 2 times and 5 times the OBW |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode: | Max hold |

(5) Measure and record the results in the report.

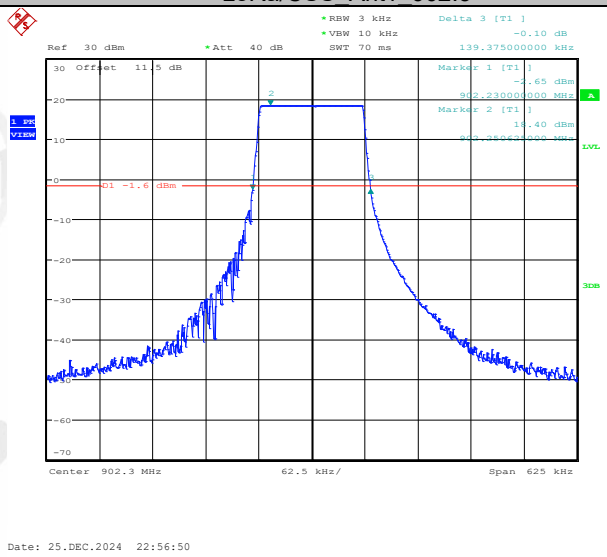
## 4.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

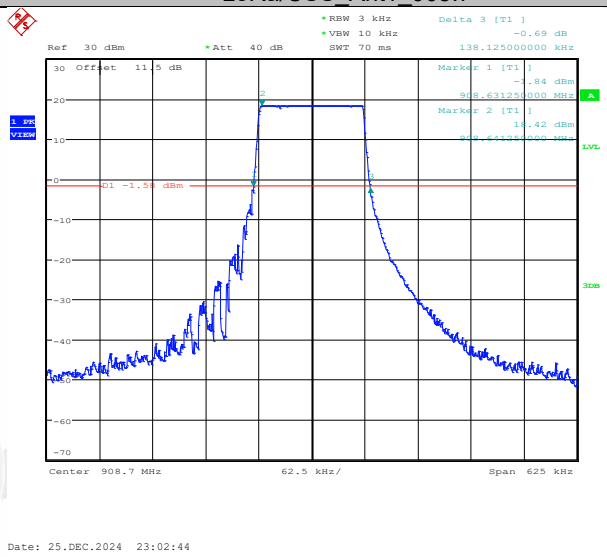
| Test Mode | Antenna | Frequency [MHz] | 20dB EBW[MHz] |
|---|---|---|---|
| LoRa/CSS | Ant1 | 902.3 | 0.14 |
| | | 908.7 | 0.14 |
| | | 914.9 | 0.14 |

## 4.5. Test graphs

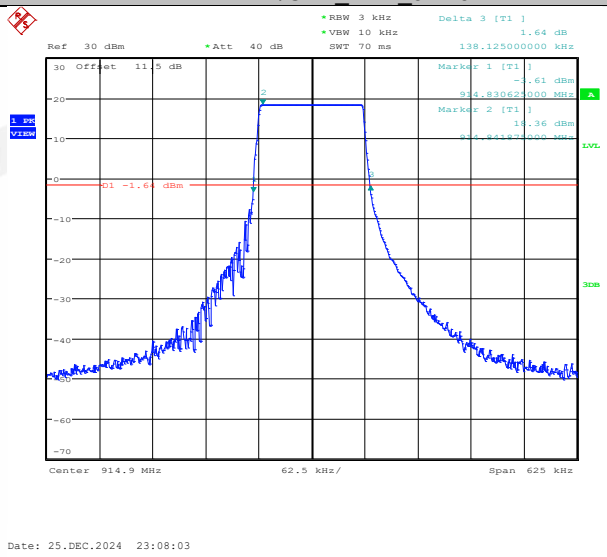
LoRa/CSS_Ant1_902.3




LoRa/CSS_Ant1_908.7

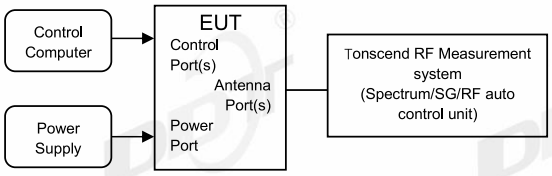



LoRa/CSS_Ant1_914.9



# 5. 99% Bandwidth

## 5.1. Block diagram of test setup




## 5.2. Limits

Just for Report.

## 5.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 6.9.3.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously
(4) Use the following spectrum analyzer settings for the 99% bandwidth measurement:

| | |
|---|---|
| RBW: | 1% to 5% of the OBW |
| VBW: | approximately three times RBW |
| Span: | between 1.5 times and 5.0 times the OBW |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode: | Max hold |

(5) Measure and record the results in the report.

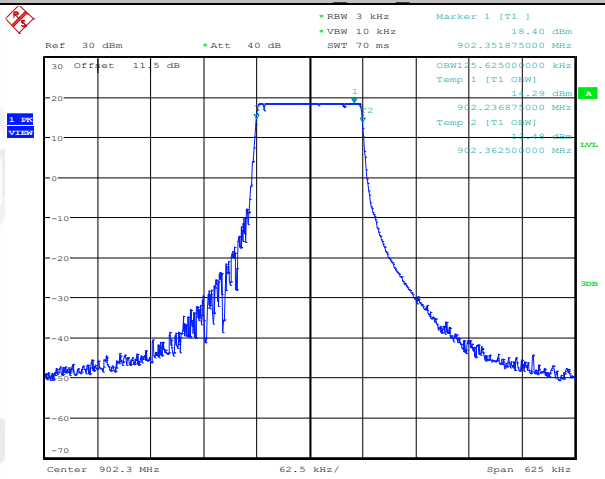
## 5.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

| Test Mode | Antenna | Frequency [MHz] | OCB [MHz] | FL[MHz] | FH[MHz] |
|---|---|---|---|---|---|
| LoRa/CSS | Ant1 | 902.3 | 0.126 | 902.2369 | 902.3625 |
| | | 908.7 | 0.126 | 908.6369 | 908.7625 |
| | | 914.9 | 0.126 | 914.8363 | 914.9619 |

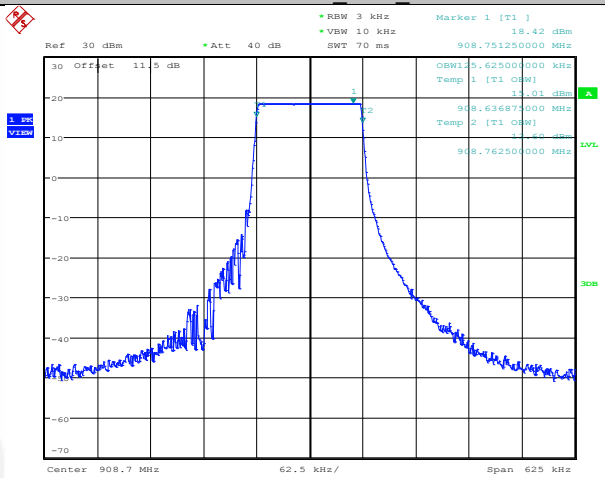
## 5.5. Test graphs

LoRa/CSS_Ant1_902.3



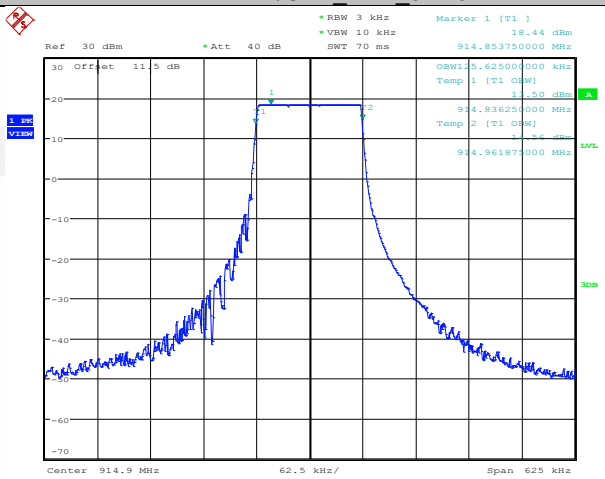

Date: 25.DEC.2024 22:57:41

LoRa/CSS_Ant1_908.7




Date: 25.DEC.2024 23:03:30

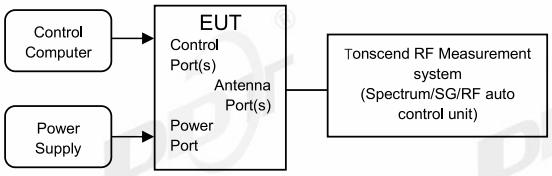
LoRa/CSS_Ant1_914.9




Date: 25.DEC.2024 23:08:54

# 6. Maximum Peak Output Power

## 6.1. Block diagram of test setup




## 6.2. Limits

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

## 6.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.5.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

| | |
|---|---|
| RBW: | > 20 dB bandwidth of the emission being measured. |
| VBW: | VBW ≥ RBW. |
| Span: | Approximately five times the 20 dB bandwidth, centered on a hopping channel. |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode: | Max hold |

(5) Use the marker-to-peak function to set the marker to the peak of the emission and record the results in the report.

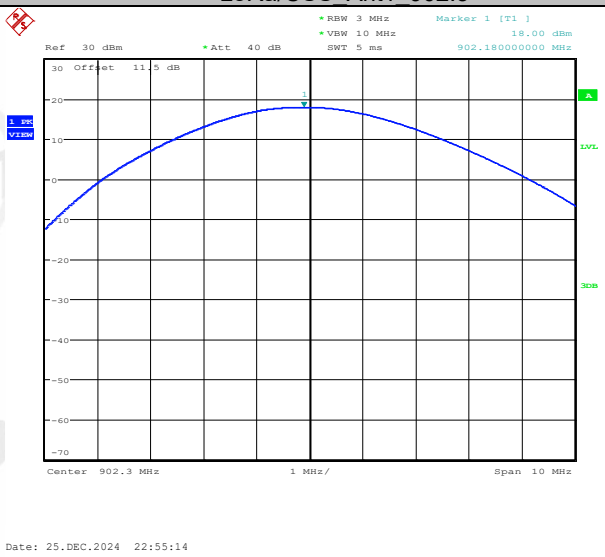
## 6.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

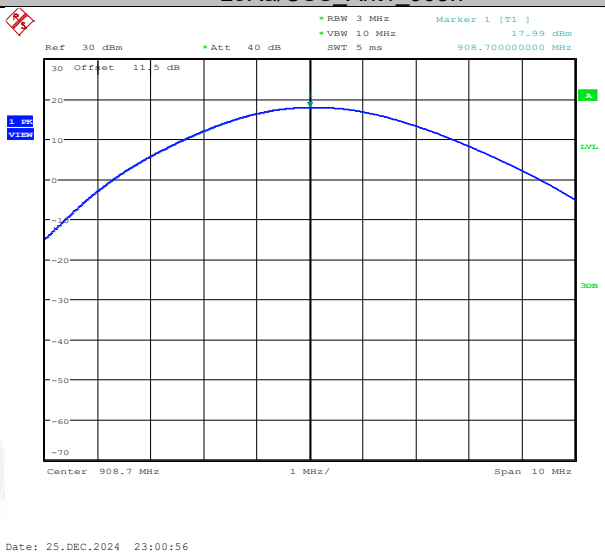
| Test Mode | Antenna | Frequency [MHz] | Conducted Peak Power[dBm] | Conducted Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| LoRa/CSS | Ant1 | 902.3 | 18.00 | ≤30 | PASS |
| | | 908.7 | 17.99 | ≤30 | PASS |
| | | 914.9 | 17.97 | ≤30 | PASS |

## 6.5. Test graphs

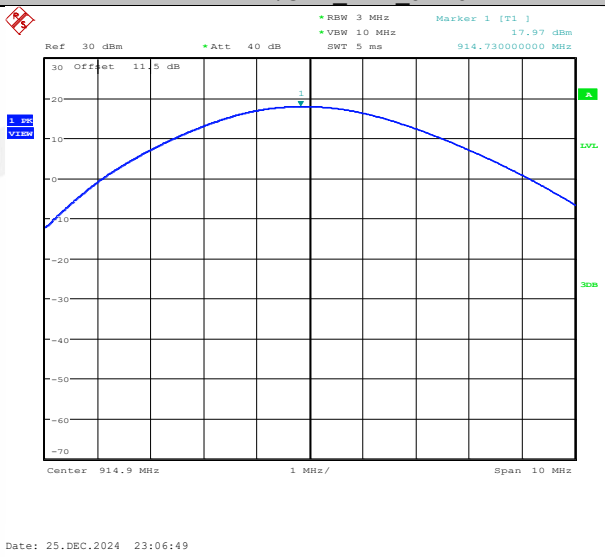
LoRa/CSS_Ant1_902.3




LoRa/CSS_Ant1_908.7

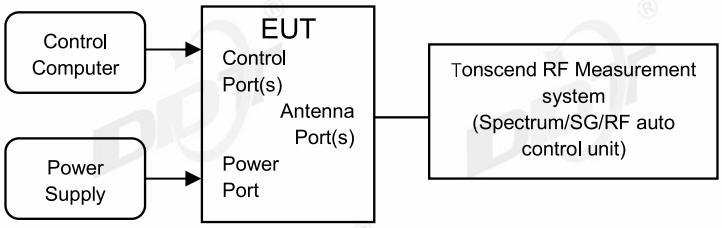



LoRa/CSS_Ant1_914.9



# 7. Carrier Frequency Separation

## 7.1. Block diagram of test setup




## 7.2. Limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

## 7.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.2.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

| | |
|---|---|
| RBW: | approximately 30% of the channel spacing |
| VBW: | VBW ≥ RBW. |
| Span: | Wide enough to capture the peaks of two adjacent channels. |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode: | Max hold |

(5) Use the marker-delta function to determine the separation between the peaks of the adjacent channels and record the results in the report.

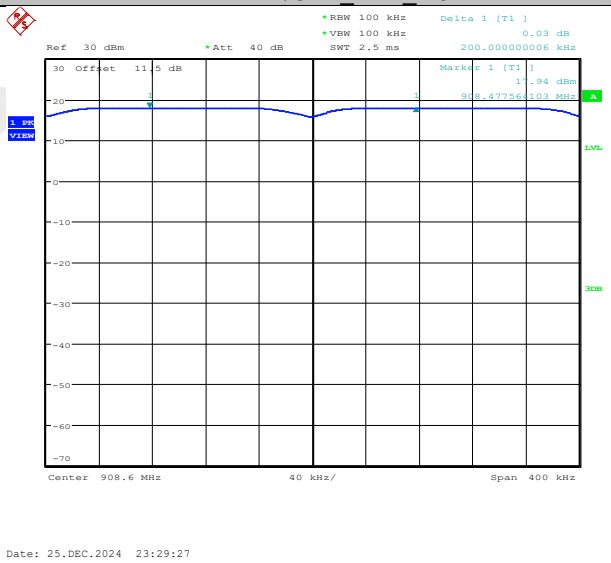
## 7.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

| Test Mode | Frequency [MHz] | Result [MHz] | Limit [MHz] | Verdict |
|---|---|---|---|---|
| LoRa/CSS | hopping on | 200 | ≥25 | PASS |

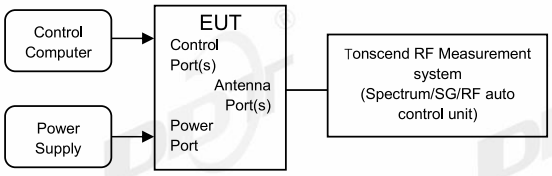
## 7.5. Test graphs

LoRa/CSS_Ant1_HOP



# 8. Dwell Time

## 8.1. Block diagram of test setup




## 8.2. Limits

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

## 8.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.4.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

| | |
|---|---|
| RBW: | ≤ channel spacing and where possible RBW should be set >>1 / T |
| VBW: | VBW ≥ RBW. |
| Span: | Zero span, centered on a hopping channel. |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode: | Clear Write. |

(5) The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s
(6) Measure the hopping number and on time of each pulse with spectrum analyzer in zero span set, and calculate dwell time with formula Dwell time = total hops *pulse's on time.
(7) Measure and record the results in the report.

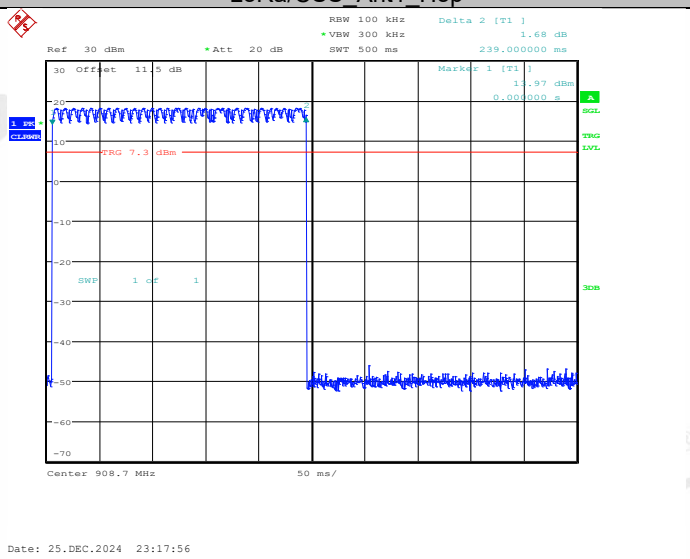
## 8.4. Test result

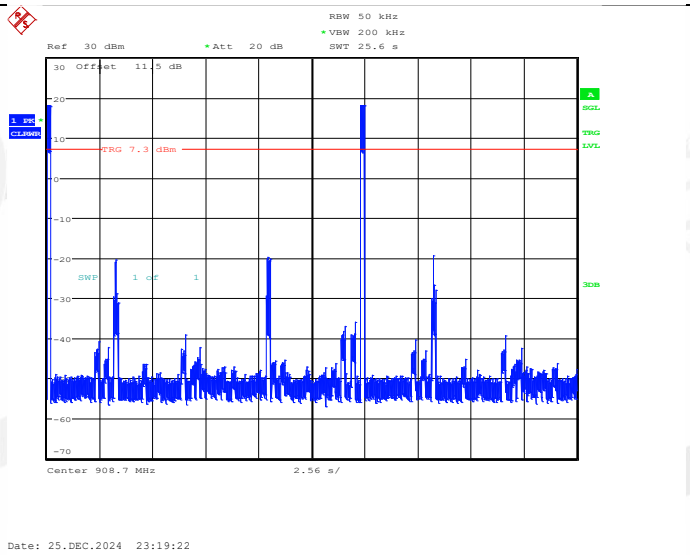
| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

| Test Mode | Antenna | Frequency [MHz] | BurstWidth [ms] | TotalHops [Num] | Result[s] | Limit[s] | Verdict |
|---|---|---|---|---|---|---|---|
| LoRa/CSS | Ant1 | Hop | 239.000 | 1.5625 | 0.373 | ≤0.4 | PASS |

## 8.5. Test graphs

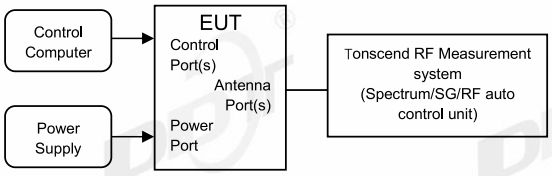
LoRa/CSS_Ant1_Hop



# 9. Number of Hopping Channel

## 9.1. Block diagram of test setup




## 9.2. Limits

For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels.

## 9.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.3.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

| | |
|---|---|
| RBW: | RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller. |
| VBW: | VBW ≥ RBW. |
| Span: | The frequency band of operation |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode: | Max hold |

(5) Measure the hopping number and record the results in the report.
(6) Measure and record the results in the report.

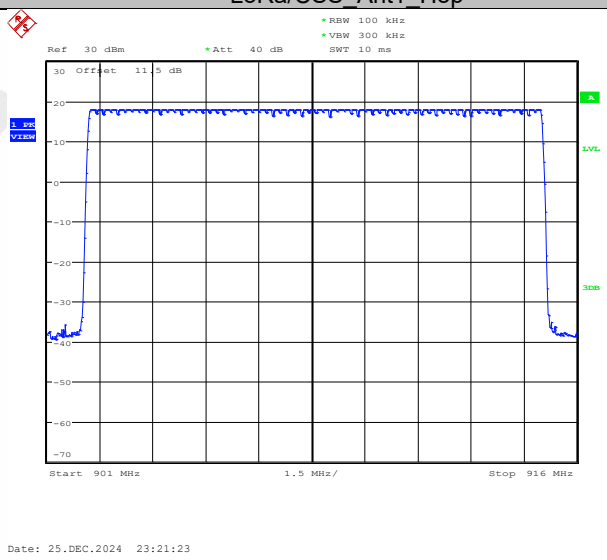
## 9.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

| Test Mode | Antenna | Frequency [MHz] | Result [Num] | Limit [Num] | Verdict |
|---|---|---|---|---|---|
| LoRa/CSS | Ant1 | Hop | 64 | ≥50 | PASS |

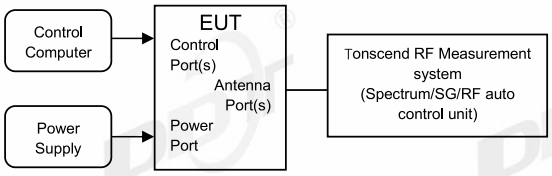
## 9.5. Test graphs

LoRa/CSS_Ant1_Hop



# 10. Band Edge Compliance (Conducted Method)

## 10.1. Block diagram of test setup




## 10.2. Limit

All restriction band should comply with 15.209, other emission should be at least 20dB below the fundamental.

## 10.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.
(2) Establish a reference level by using the following procedure:

| | |
|---|---|
| RBW: | 100 kHz |
| VBW: | 300 kHz |
| Span | Encompass frequency range to be measured |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode | Max hold |

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.
(4) Then mark the maximum amplitude of all unwanted emissions outside of the authorized frequency band.

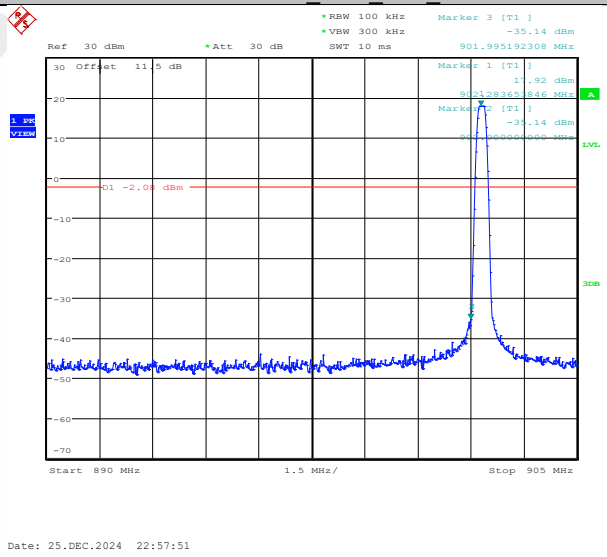
## 10.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

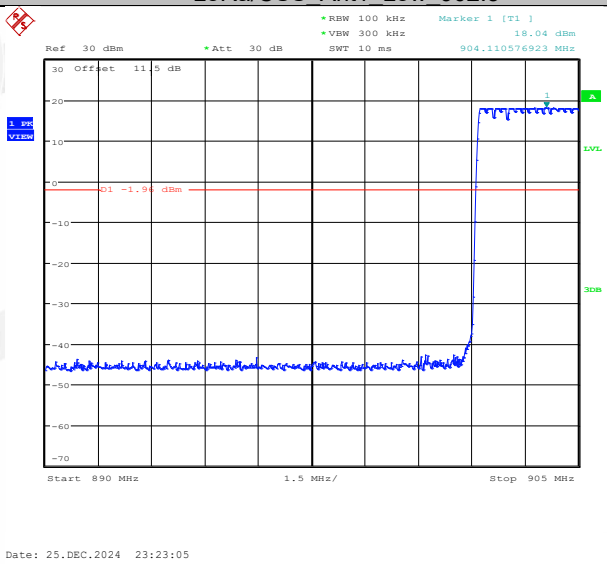
| Mode | Freq. (MHz) | Verdict |
|---|---|---|
| LoRa/CSS | Hopping off 902.3 | Pass |
| | Hopping off 914.9 | Pass |
| | Hopping on | Pass |

## 10.5. Test graphs

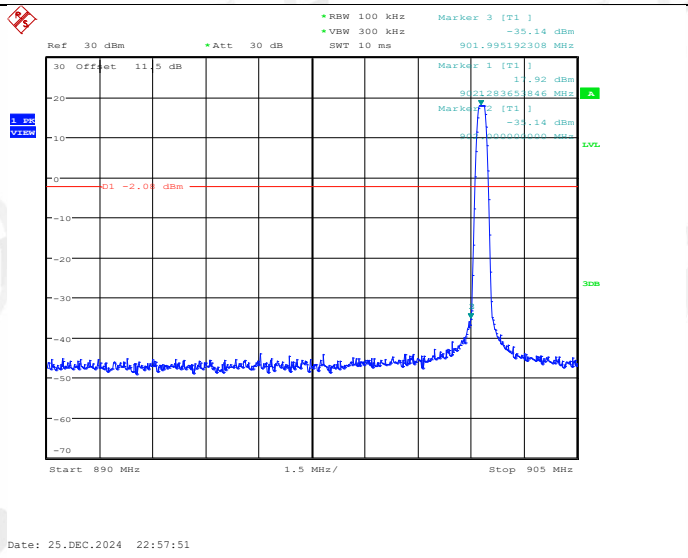
LoRa/CSS_Ant1_Low_902.3



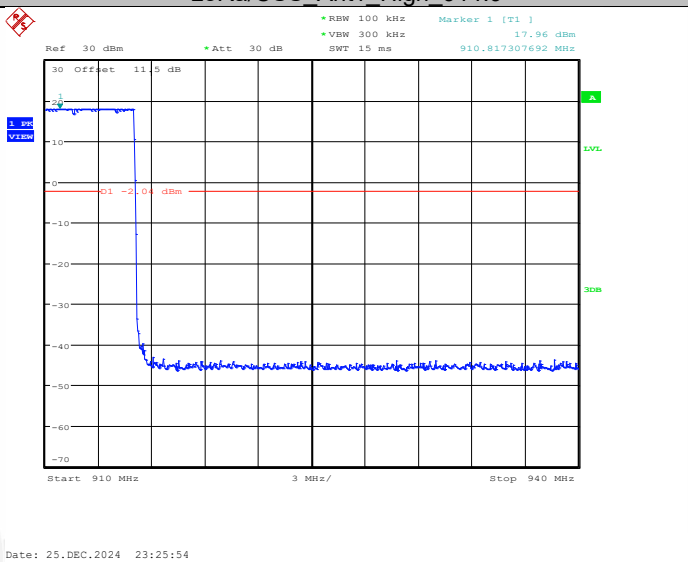

LoRa/CSS_Ant1_Low_902.3




LoRa/CSS_Ant1_High_914.9

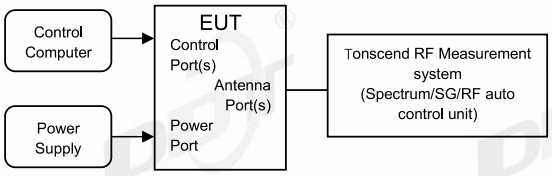



LoRa/CSS_Ant1_High_914.9



# 11. RF Conducted Spurious Emissions

## 11.1. Block diagram of test setup




## 11.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

## 11.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.
(2) Establish a reference level by using the following procedure:

| | |
|---|---|
| Center frequency | Test frequency |
| RBW: | 100 kHz |
| VBW: | 300 kHz |
| Span | Wide enough to capture the peak level of the in-band emission |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode | Max hold |

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.
(4) Set the spectrum analyzer as follows:

| | |
|---|---|
| RBW: | 100 kHz |
| VBW: | 300 kHz |
| Span | Encompass frequency range to be measured |
| Number of measurement points | ≥Span/RBW |
| Detector Mode: | Peak |
| Sweep time: | Auto |
| Trace mode | Max hold |

Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

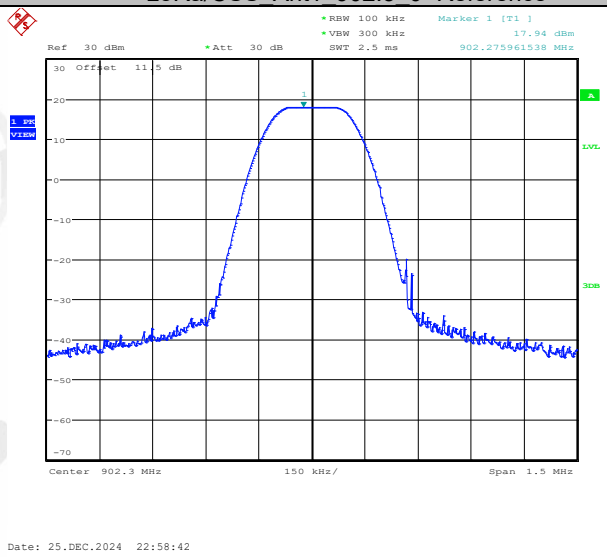
## 11.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

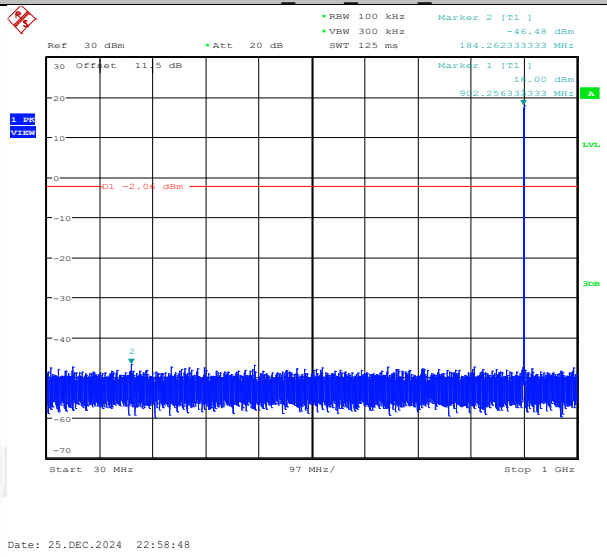
| Mode | Freq. (MHz) | Verdict |
|---|---|---|
| LoRa/CSS | Hopping off 902.3 | Pass |
| | Hopping off 908.7 | Pass |
| | Hopping off 914.9 | Pass |

## 11.5. Test graphs

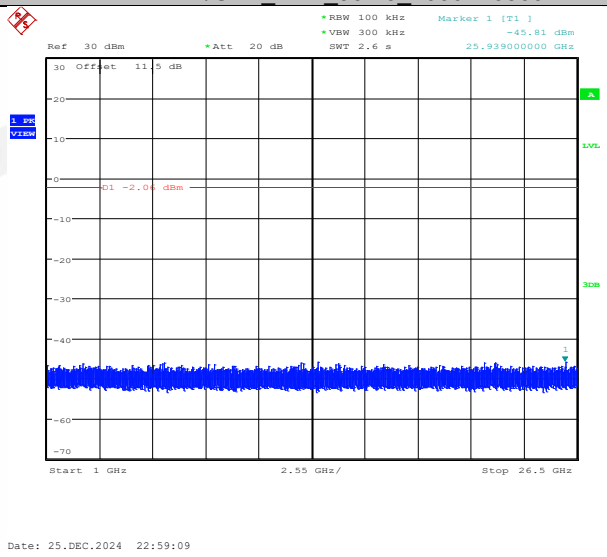
LoRa/CSS_Ant1_902.3_0~Reference



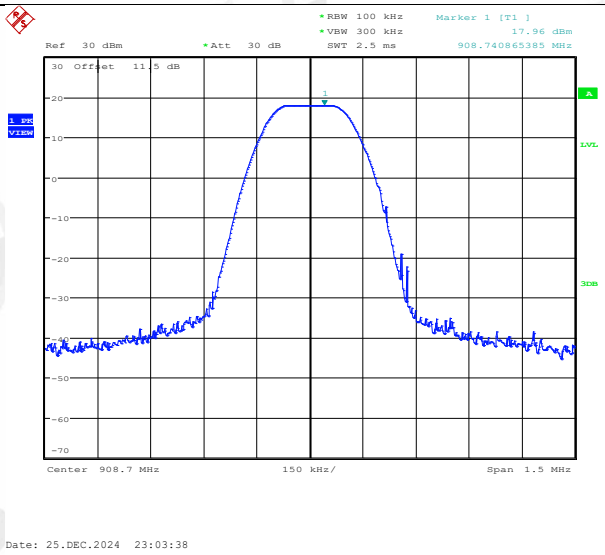

LoRa/CSS_Ant1_902.3_30~1000



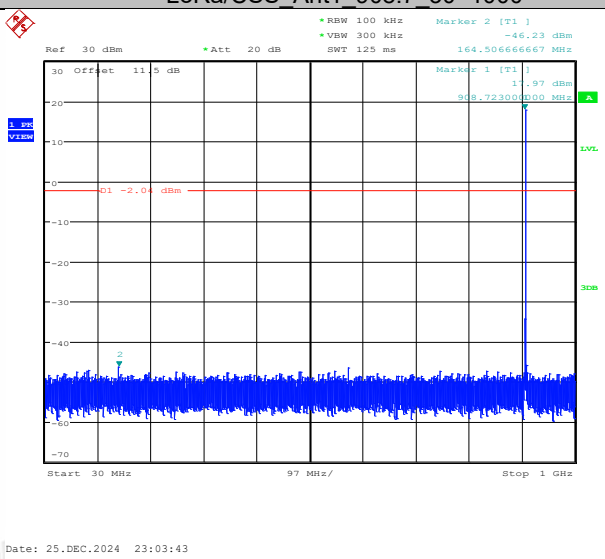

LoRa/CSS_Ant1_902.3_1000~26500



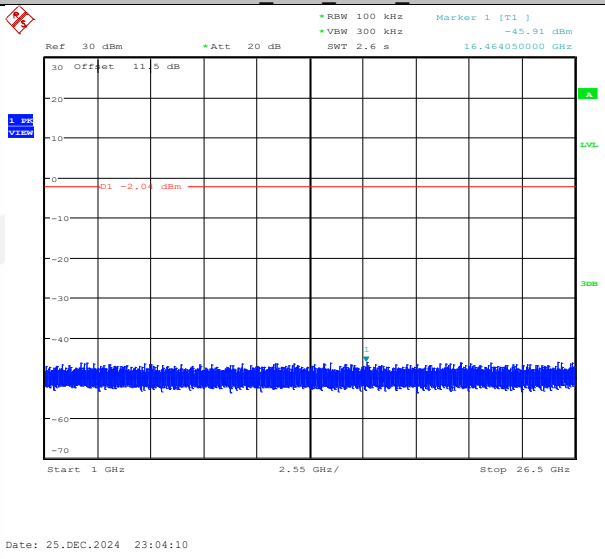

LoRa/CSS_Ant1_908.7_0~Reference



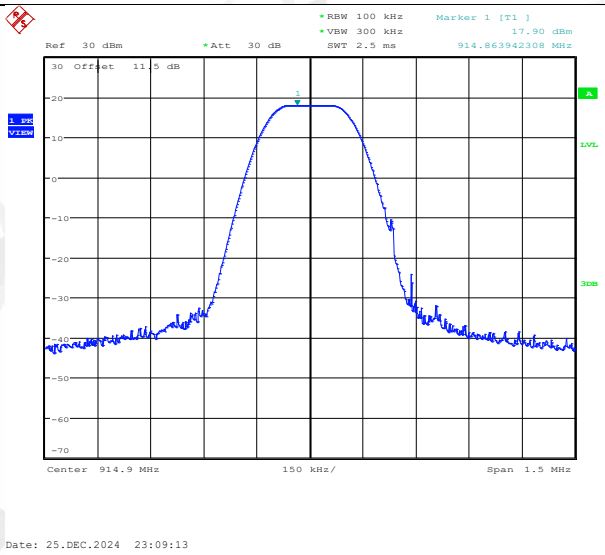

LoRa/CSS_Ant1_908.7_30~1000



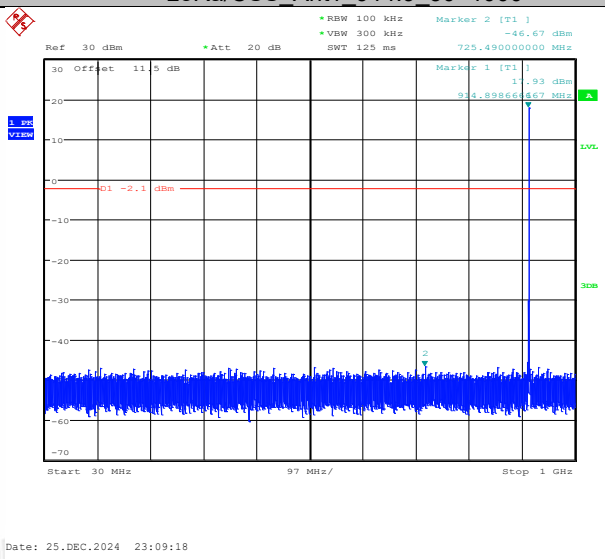

LoRa/CSS_Ant1_908.7_1000~26500



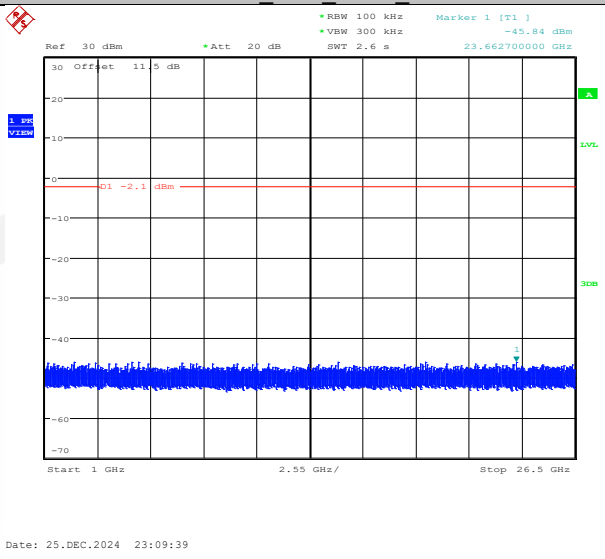

LoRa/CSS_Ant1_914.9_0~Reference




LoRa/CSS_Ant1_914.9_30~1000

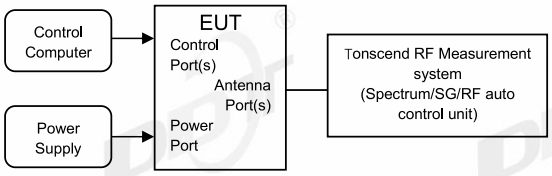



LoRa/CSS_Ant1_914.9_1000~26500



# 12. Duty cycle

## 12.1. Block diagram of test setup




## 12.2. Limit

Just for Report.

## 12.3. Test procedure

(1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, The cable loss and attenuator loss have been put into spectrum analyzer as amplitude offset.
set the Spectrum Analyzer as below:
Centre Frequency: The centre frequency of the middle hopping channel.
Resolution BW: 10 MHz.
Video BW: 10 MHz.
Span: Zero span.
Detector: Peak.
Trace Mode: Clear Write.
Sweep: Video Trigger

(2) When the trace is complete, measure the sending time of 1 burst and the duty cycle of 1 burst cycle.

(3) Calculate dwell time follow below formula:
Duty cycle= Pulse's on time / Burst cycle

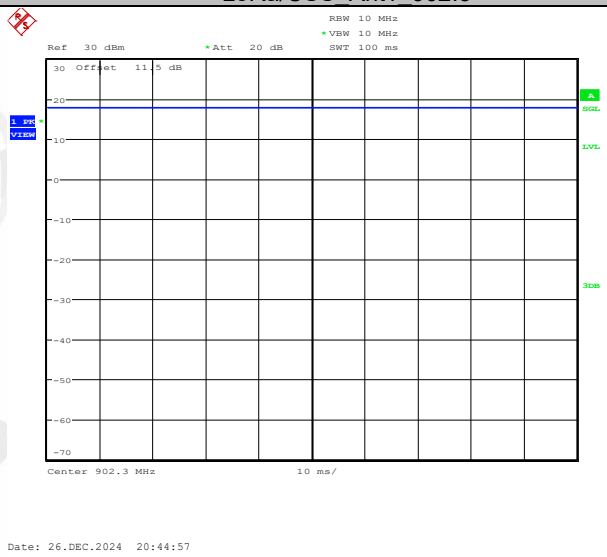
## 12.4. Test result

| | | | |
|---|---|---|---|
| Test Engineer: | Haofeng | Test Site: | RF Measurement System 2# |
| Ambient Condition: | 23.9℃,35.1%RH | Test Date: | 2024.12.25~2024.12.26 |
| Test Power Supply: | DC 12V | Sample Number: | S24092616-002 |

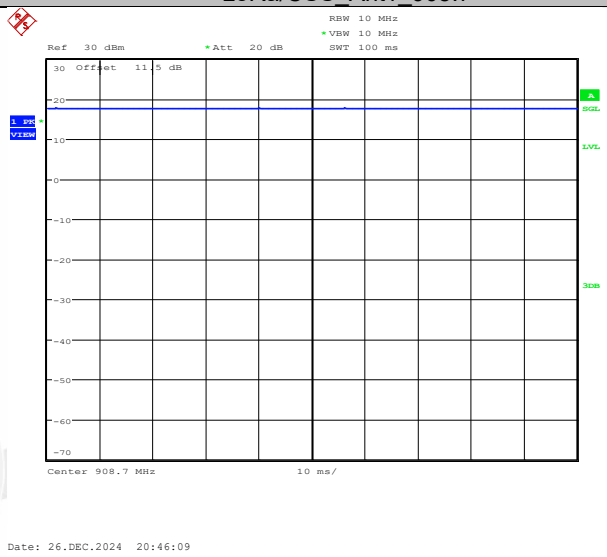
| Test Mode | Antenna | Frequency [MHz] | ON Time [ms] | Period [ms] | Duty Cycle [%] | Duty Cycle Factor[dB] |
|---|---|---|---|---|---|---|
| LoRa/CSS | Ant1 | 902.3 | 100.00 | 100.00 | 100.00 | 0.00 |
| | | 908.7 | 100.00 | 100.00 | 100.00 | 0.00 |
| | | 914.9 | 100.00 | 100.00 | 100.00 | 0.00 |

## 12.5. Test graphs

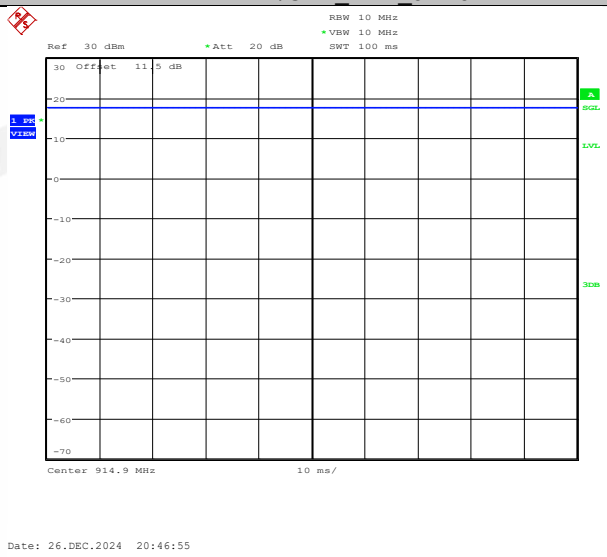
LoRa/CSS_Ant1_902.3




LoRa/CSS_Ant1_908.7




LoRa/CSS_Ant1_914.9



# 13. Antenna Requirements

## 13.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## 13.2. Result

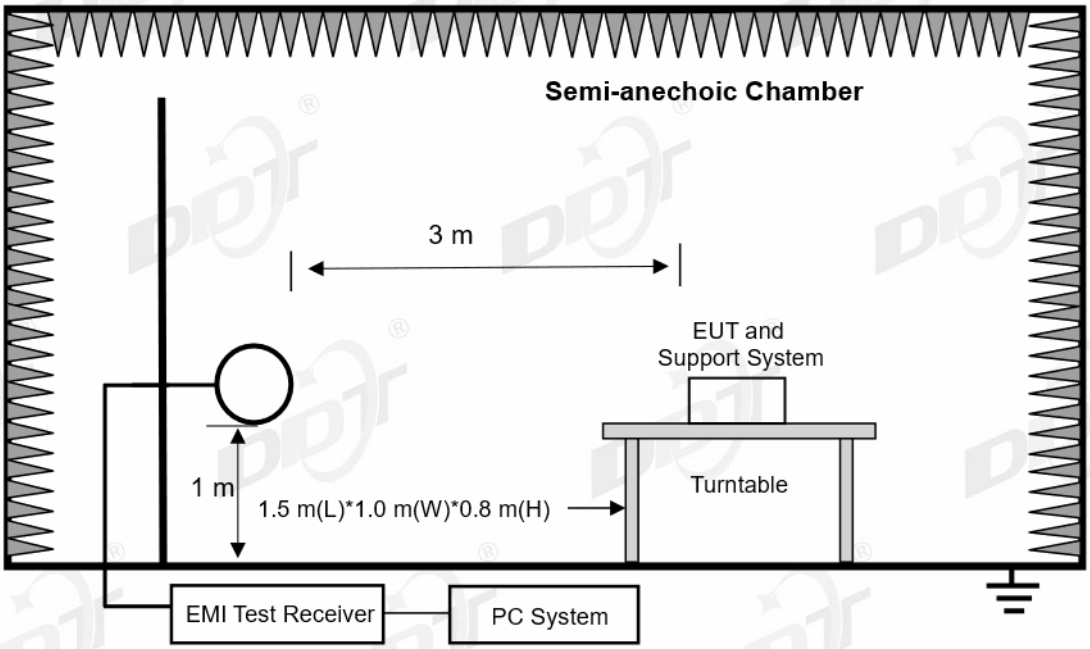
The antenna used for this product as Antenna information described in section 2.1 of the report, and there is no other antenna than that furnished by the responsible party shall be used with the device.

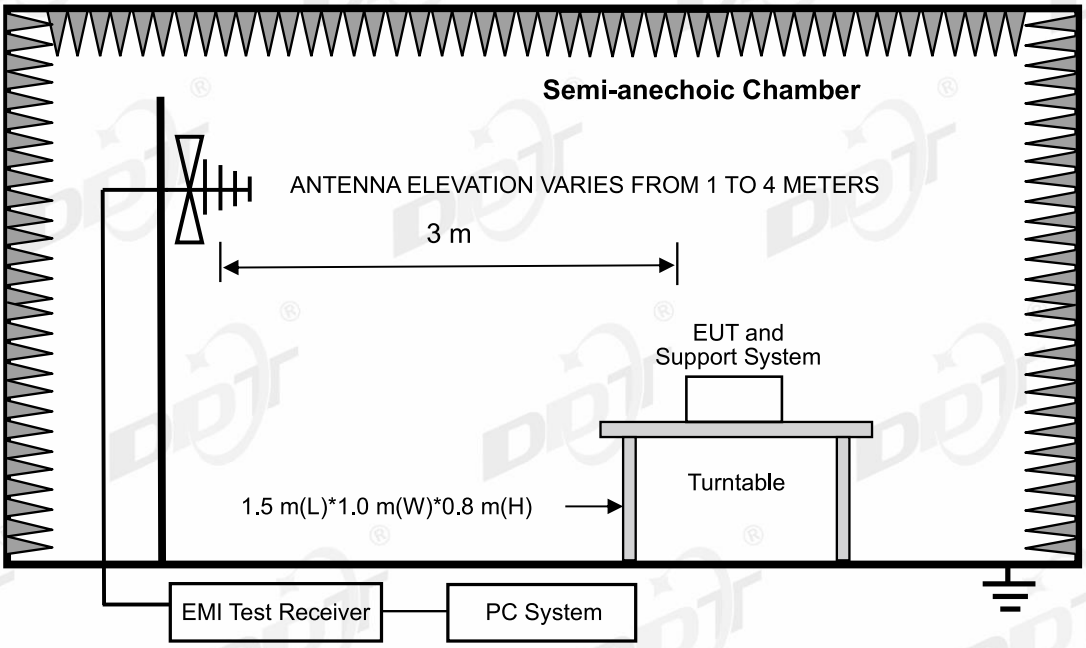
# 14.Radiated Emission

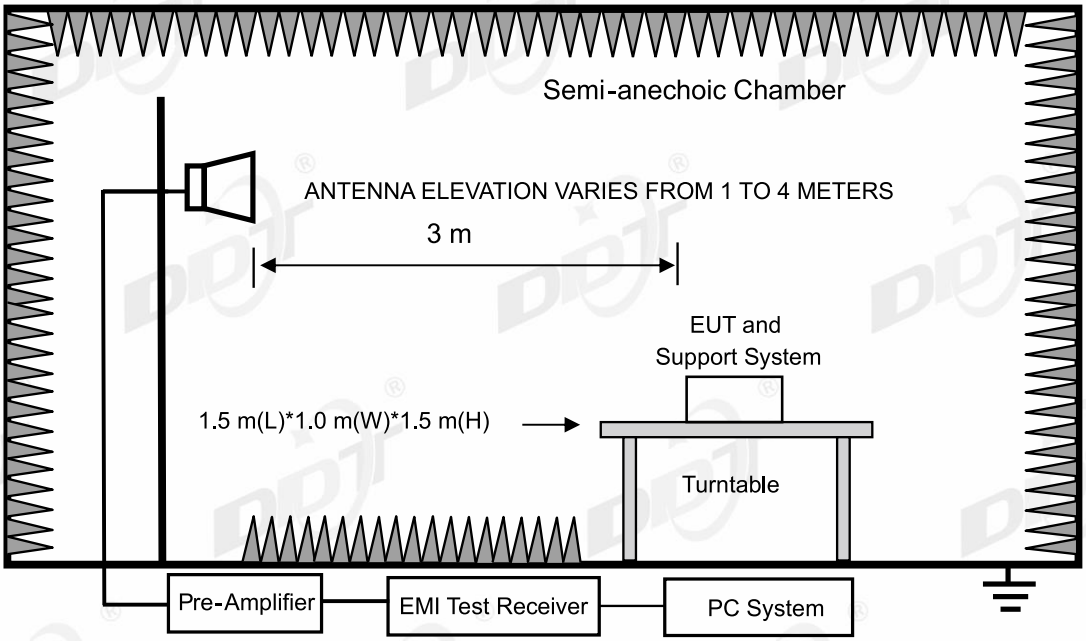
## 14.1. Test equipment

| Equipment | Manufacturer | Model No. | Serial No. | Cal Due To |
|---|---|---|---|---|
| Micro-Tronics filters | REBES | BRM50702 | DDT-ZC03242 | / |
| Pre-amplifier | COM-POWER | PAM-118A | DDT-ZC01293 | 2025/08/25 |
| Active Loop Antenna | Schwarzbeck | FMZB1519 | DDT-ZC00524 | 2025/09/11 |
| High pass filter | Micro-Tronics | HPM50102 | DDT-ZC00561 | 2025/04/22 |
| RF Cable | N/A | W13.02 AP1-X2 | DDT-ZC04023 | 2025/03/31 |
| EMI TEST RECEIVER | R&S | ESU26 | DDT-ZC01909 | 2025/03/31 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA 9170 | DDT-ZC00506 | 2025/04/26 |
| Hochgewinn-Hornantenne | SCHWARZBECK | BBHA 9120 D | DDT-ZC02129 | 2025/09/18 |
| RF Cable | N/A | W24.02 HL-562 | DDT-ZC04022 | 2025/03/31 |
| Trilog Broadband Antenna | Schwarzbeck | VULB 9163 | DDT-ZC02050 | 2025/07/11 |
| High Pass filter | Xi'an Xingbo | XBLBQ-GTA67 | DDT-ZC02179 | 2025/04/22 |
| Micro-Tronics filters | REBES | BRM50716 | DDT-ZC03240 | / |
| High pass filter | Micro-Tronics | HPM50108 | DDT-ZC00560 | 2025/04/22 |
| Pre-amplifier | COM-POWER | PAM-840A | DDT-ZC01693 | 2025/03/31 |
| PSA Series Spectrum Analyzer | Agilent | E4447A | DDT-ZC00517 | 2025/03/31 |
| RF cable | Zhongke Junchuang | JCT26S-NJ-NJ-1.5M | DDT-ZC02762 | 2025/03/31 |
| RF cable | Yuhu Technology | ZT26S-SMAJ-SMAJ-1M | DDT-ZC02037 | 2025/03/31 |
| RF cable | Yuhu Technology | JCTB810-NJ-NJ-9M | DDT-ZC02538 | 2025/03/31 |

## 14.2. Block diagram of test setup






## 14.3. Limits

(1) FCC 15.205 Restricted frequency band

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| [1]0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.1772&4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.2072&4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | ([2]) |
| 13.36-13.41 | | | |

1Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2Above 38.6

(2) FCC 15.209 Limit

| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|---|---|---|---|
| | | uV/m | dBuV/m |
| 0.009 ~ 0.490 | 300 | 2400/F(kHz) | 67.6-20log(F) |
| 0.490 ~ 1.705 | 30 | 24000/F(kHz) | 87.6-20log(F) |
| 1.705 ~ 30.0 | 30 | 30 | 29.54 |
| 30 ~ 88 | 3 | 100 | 40.0 |
| 88 ~ 216 | 3 | 150 | 43.5 |
| 216 ~ 960 | 3 | 200 | 46.0 |
| 960 ~ 1000 | 3 | 500 | 54.0 |
| Above 1000 | 3 | 74.0 dBuV/m (Peak)<br>54.0 dBuV/m (Average) | |

Note:

(1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz and above 1000 MHz, radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30 MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m)$$

(3) Limit for this EUT

The emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20 dB below the fundamental emissions or comply with 15.209 limits.

## 14.4. Assistant equipment used for test

| Assistant equipment | Manufacturer | Model number | Description | other |
|---|---|---|---|---|
| / | / | / | / | / |

## 14.5. Test procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for below 1G and 150 cm above the ground plane inside a fully-anechoic chamber for above 1G.

(2) Test antenna was located 3 m from the EUT on an adjustable mast, and the antenna used as below table.

| Test frequency range | Test antenna used | Test antenna distance |
|---|---|---|
| 9 kHz - 30 MHz | Active Loop antenna | 3 m |
| 30 MHz - 1 GHz | Trilog Broadband Antenna | 3 m |
| 1 GHz - 18 GHz | Double Ridged Horn Antenna(1 GHz-18 GHz) | 3 m |

| | | |
|---|---|---|
| 18 GHz - 40 GHz | Horn Antenna(18 GHz-40 GHz) | 1 m |

According ANSI C63.10:2013 clause 6.4.6 and 6.5.3, for measurements below 30 MHz, Antenna was located 3 m from EUT, the loop antenna was positioned in three antenna orientations (parallel, perpendicular, and round-parallel), for each measurement antenna alignment, the EUT shall be rotated through 0° to 360° on a turntable, and the lowest height of the magnetic antenna shall be 1 m above the ground. For measurement above 30MHz, the trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 25 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1 m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 25 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18 GHz to 25 GHz, so below final test was performed with frequency range from 9 kHz to 18 GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.

(5) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz, for emissions from 9 kHz - 90 kHz,110 kHz - 490 kHz and above 1 GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW.

| Frequency band | RBW |
|---|---|
| 9 kHz - 150 kHz | 200 Hz |
| 150 kHz - 30 MHz | 9 kHz |
| 30 MHz - 1 GHz | 120 kHz |

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; According ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.

(8) For portable device, X axis, Y axis, Z axis are tested, and worse setup is reported.

(9) According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 25 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

(10) For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in worst mode.

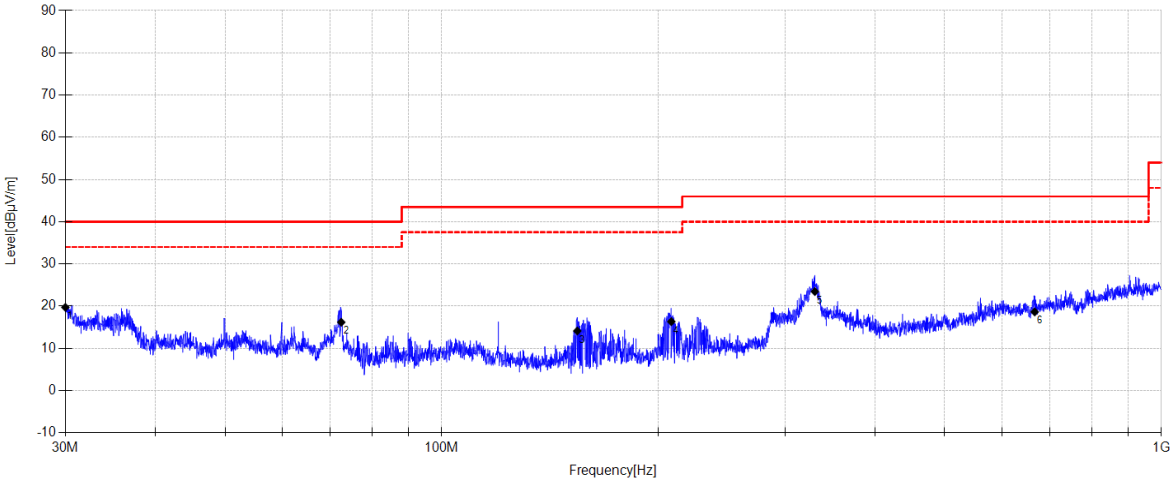
## 14.6. Test result

**PASS. (See below detailed test result)**

## 14.7. Test data

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-23 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW 1G\20241223-223532_H | | |
| **Memo**: | Sample Number:S24042326 (PCB Antenna) | | |

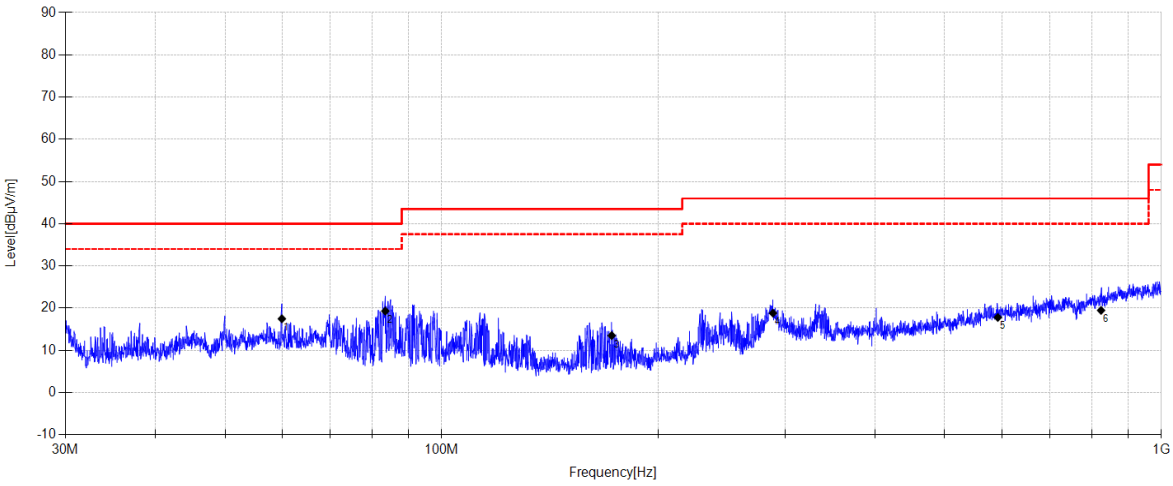



| Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable Loss [dB]** | **Result [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 30.000 | 36.76 | 10.30 | 3.76 | 19.72 | 40.00 | 20.28 | QP | Horizontal |
| 2 | 72.528 | 33.86 | 9.39 | 4.04 | 16.19 | 40.00 | 23.81 | QP | Horizontal |
| 3 | 154.336 | 31.74 | 9.03 | 4.51 | 14.13 | 43.50 | 29.37 | QP | Horizontal |
| 4 | 208.499 | 32.23 | 10.53 | 4.80 | 16.34 | 43.50 | 27.16 | QP | Horizontal |
| 5 | 330.037 | 35.24 | 14.30 | 5.34 | 23.46 | 46.00 | 22.54 | QP | Horizontal |
| 6 | 666.792 | 24.13 | 19.43 | 6.58 | 18.64 | 46.00 | 27.36 | QP | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-23 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW 1G\20241223-223548_V | | |
| **Memo**: | Sample Number:S24042326 (PCB Antenna) | | |

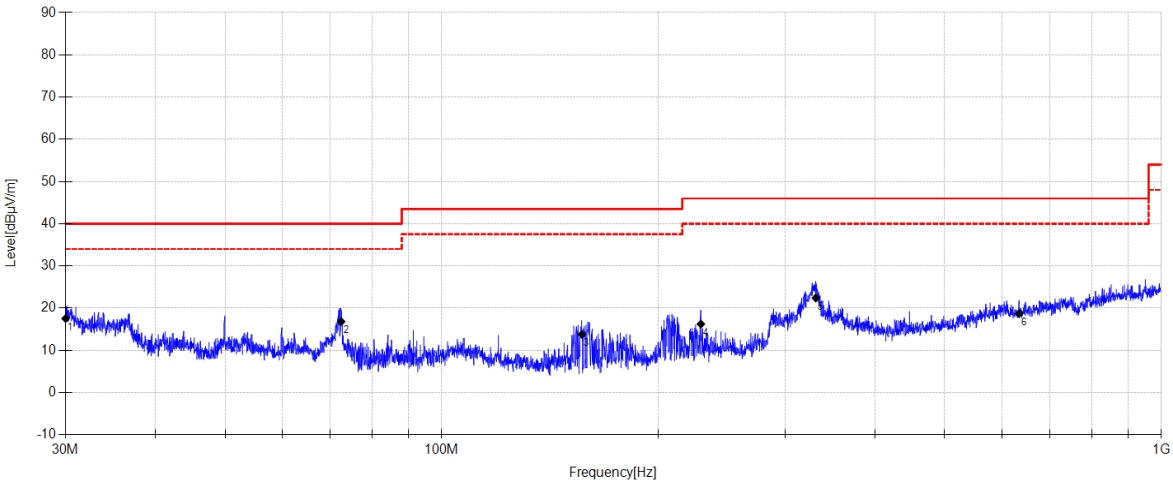



| Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable Loss [dB]** | **Result [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 59.977 | 31.83 | 12.79 | 3.96 | 17.48 | 40.00 | 22.52 | QP | Vertical |
| 2 | 83.505 | 37.35 | 8.95 | 4.11 | 19.31 | 40.00 | 20.69 | QP | Vertical |
| 3 | 172.297 | 30.75 | 9.32 | 4.61 | 13.51 | 43.50 | 29.99 | QP | Vertical |
| 4 | 288.669 | 32.1 | 12.93 | 5.17 | 18.82 | 46.00 | 27.18 | QP | Vertical |
| 5 | 592.696 | 24.3 | 18.66 | 6.34 | 17.80 | 46.00 | 28.20 | QP | Vertical |
| 6 | 824.629 | 23 | 20.38 | 7.01 | 19.47 | 46.00 | 26.53 | QP | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-23 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW 1G\20241223-224033_H | | |
| **Memo**: | Sample Number:S24042326 (3dBi Antenna) | | |

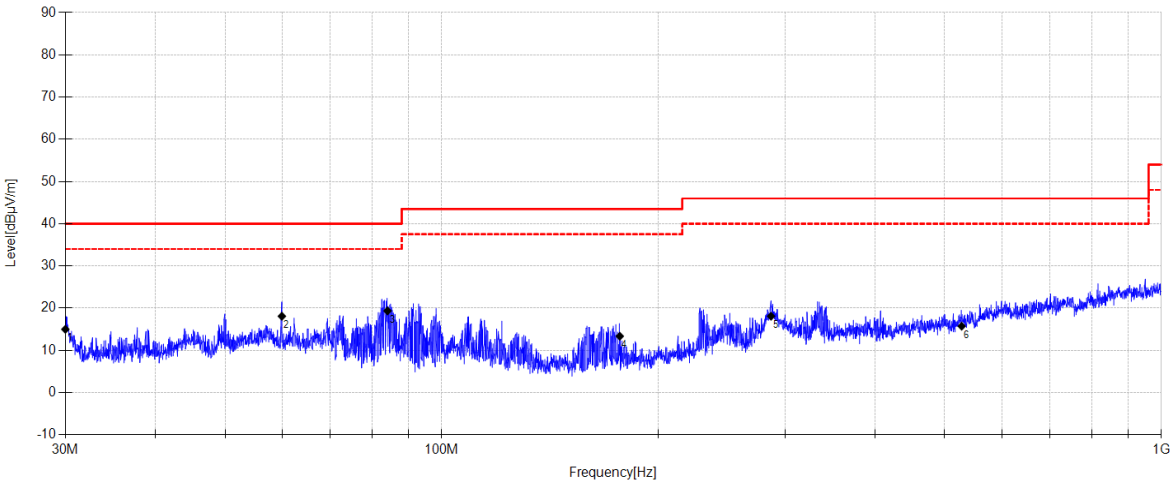



| Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable Loss [dB]** | **Result [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 30.021 | 34.59 | 10.30 | 3.76 | 17.55 | 40.00 | 22.45 | QP | Horizontal |
| 2 | 72.528 | 34.49 | 9.39 | 4.04 | 16.82 | 40.00 | 23.18 | QP | Horizontal |
| 3 | 156.626 | 32.16 | 8.25 | 4.53 | 13.78 | 43.50 | 29.72 | QP | Horizontal |
| 4 | 229.200 | 30.88 | 11.72 | 4.89 | 16.23 | 46.00 | 29.77 | QP | Horizontal |
| 5 | 330.963 | 34.12 | 14.36 | 5.34 | 22.40 | 46.00 | 23.60 | QP | Horizontal |
| 6 | 634.410 | 25.14 | 18.58 | 6.48 | 18.70 | 46.00 | 27.30 | QP | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-23 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW 1G\20241223-224049_V | | |
| **Memo**: | Sample Number:S24042326 (3dBi Antenna) | | |

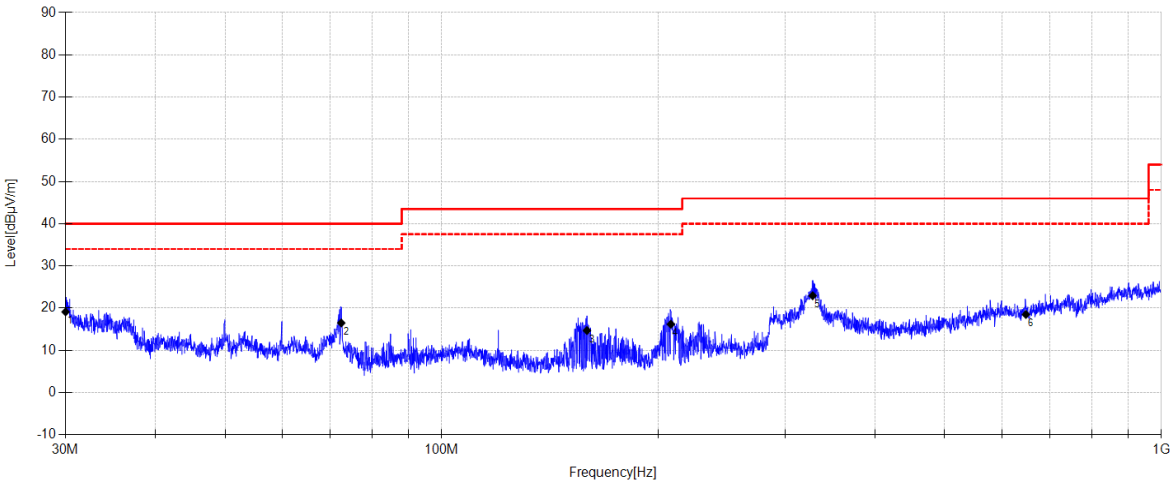



| Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable Loss [dB]** | **Result [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 30.000 | 32.03 | 10.30 | 3.76 | 14.99 | 40.00 | 25.01 | QP | Vertical |
| 2 | 59.977 | 32.44 | 12.79 | 3.96 | 18.09 | 40.00 | 21.91 | QP | Vertical |
| 3 | 84.093 | 37.68 | 8.66 | 4.11 | 19.35 | 40.00 | 20.65 | QP | Vertical |
| 4 | 176.825 | 30.18 | 9.72 | 4.63 | 13.35 | 43.50 | 30.15 | QP | Vertical |
| 5 | 286.853 | 31.72 | 12.57 | 5.16 | 18.08 | 46.00 | 27.92 | QP | Vertical |
| 6 | 527.943 | 23.5 | 17.62 | 6.10 | 15.72 | 46.00 | 30.28 | QP | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-23 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW 1G\20241223-224512_H | | |
| **Memo**: | Sample Number:S24042326 (5dBi Antenna) | | |

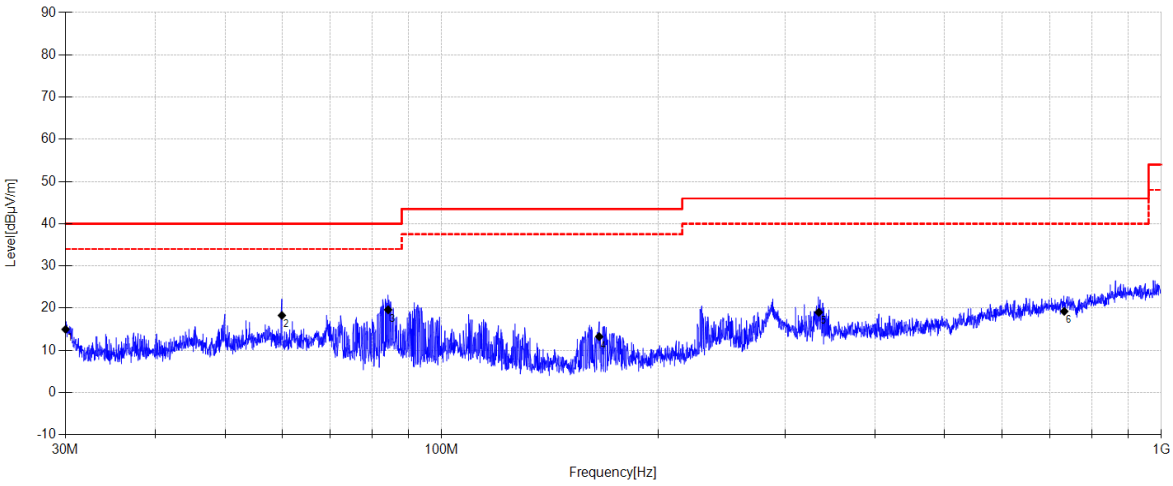



| Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable Loss [dB]** | **Result [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 30.021 | 36.15 | 10.30 | 3.76 | 19.11 | 40.00 | 20.89 | QP | Horizontal |
| 2 | 72.528 | 34.16 | 9.39 | 4.04 | 16.49 | 40.00 | 23.51 | QP | Horizontal |
| 3 | 159.172 | 32.67 | 8.65 | 4.54 | 14.70 | 43.50 | 28.80 | QP | Horizontal |
| 4 | 208.207 | 32.07 | 10.54 | 4.80 | 16.19 | 43.50 | 27.31 | QP | Horizontal |
| 5 | 327.731 | 35.08 | 13.94 | 5.33 | 22.94 | 46.00 | 23.06 | QP | Horizontal |
| 6 | 648.350 | 24.19 | 19.30 | 6.52 | 18.51 | 46.00 | 27.49 | QP | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-23 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW 1G\20241223-224528_V | | |
| **Memo**: | Sample Number:S24042326 (5dBi Antenna) | | |



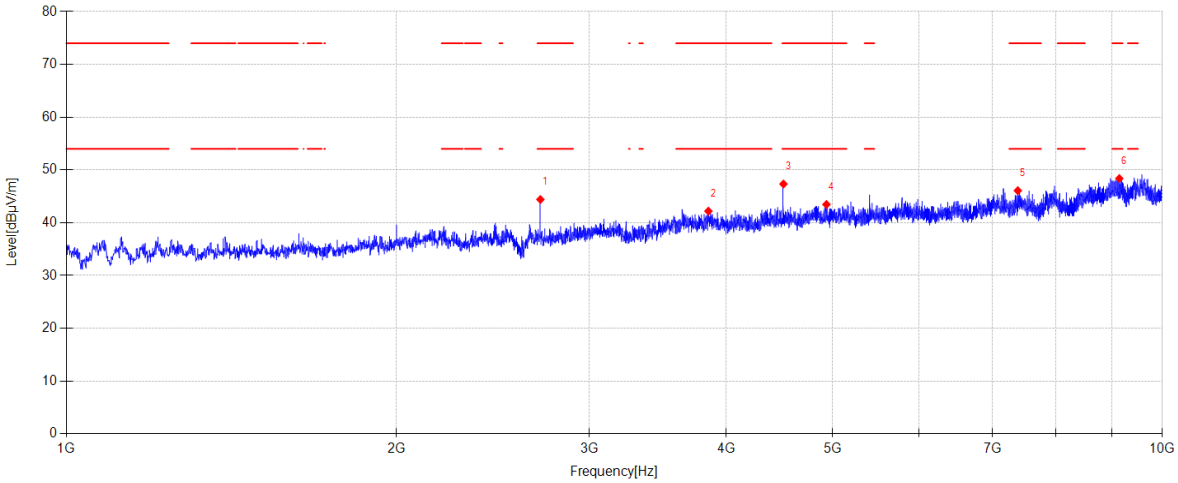

| Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable Loss [dB]** | **Result [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 30.021 | 32.02 | 10.30 | 3.76 | 14.98 | 40.00 | 25.02 | QP | Vertical |
| 2 | 59.977 | 32.62 | 12.79 | 3.96 | 18.27 | 40.00 | 21.73 | QP | Vertical |
| 3 | 84.270 | 37.83 | 8.76 | 4.12 | 19.61 | 40.00 | 20.39 | QP | Vertical |
| 4 | 165.546 | 31.2 | 8.65 | 4.57 | 13.25 | 43.50 | 30.25 | QP | Vertical |
| 5 | 334.228 | 30.53 | 14.55 | 5.36 | 19.02 | 46.00 | 26.98 | QP | Vertical |
| 6 | 732.993 | 23.84 | 19.96 | 6.78 | 19.23 | 46.00 | 26.77 | QP | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-11 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\13 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

**Test Graph**



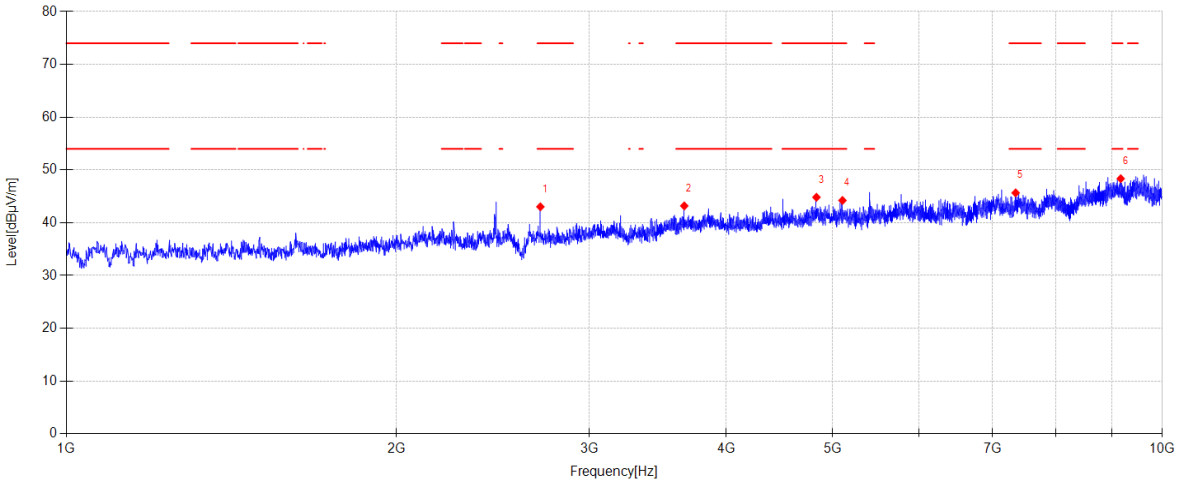

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2707.300 | 50.92 | 27.51 | 5.04 | -39.07 | 44.40 | 74.00 | 29.60 | PK | Horizontal |
| 2 | 3853.000 | 45.84 | 30.92 | 5.07 | -39.64 | 42.19 | 74.00 | 31.81 | PK | Horizontal |
| 3 | 4511.800 | 49.80 | 31.82 | 5.36 | -39.64 | 47.34 | 74.00 | 26.66 | PK | Horizontal |
| 4 | 4937.500 | 44.38 | 33.08 | 5.61 | -39.61 | 43.46 | 74.00 | 30.54 | PK | Horizontal |
| 5 | 7381.900 | 43.36 | 36.74 | 6.64 | -40.66 | 46.08 | 74.00 | 27.92 | PK | Horizontal |
| 6 | 9136.000 | 41.45 | 38.50 | 7.34 | -38.91 | 48.38 | 74.00 | 25.62 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-11 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\14 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

**Test Graph**



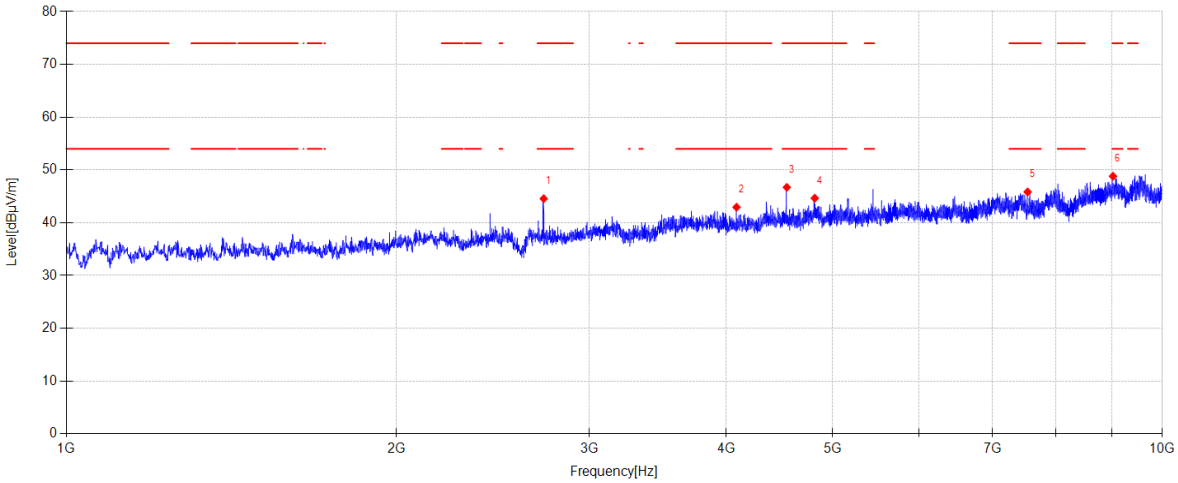

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2707.300 | 49.54 | 27.51 | 5.04 | -39.07 | 43.02 | 74.00 | 30.98 | PK | Vertical |
| 2 | 3663.100 | 47.43 | 30.25 | 5.11 | -39.60 | 43.19 | 74.00 | 30.81 | PK | Vertical |
| 3 | 4834.900 | 45.47 | 33.41 | 5.55 | -39.61 | 44.82 | 74.00 | 29.18 | PK | Vertical |
| 4 | 5106.700 | 44.71 | 33.40 | 5.71 | -39.60 | 44.22 | 74.00 | 29.78 | PK | Vertical |
| 5 | 7347.700 | 42.93 | 36.80 | 6.62 | -40.69 | 45.66 | 74.00 | 28.34 | PK | Vertical |
| 6 | 9163.000 | 41.40 | 38.53 | 7.35 | -38.93 | 48.35 | 74.00 | 25.65 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-11 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 908.7MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\15 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

**Test Graph**



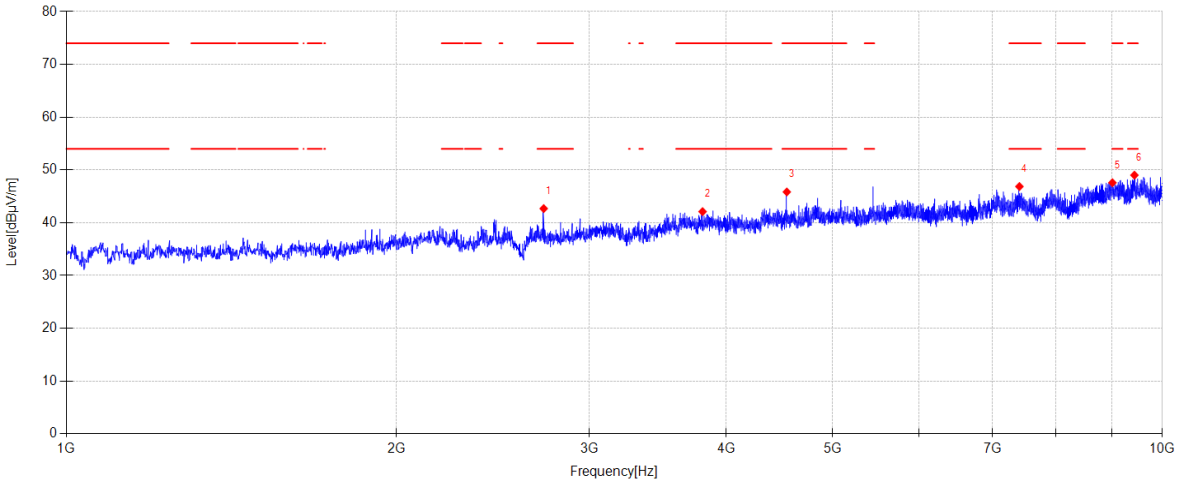

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2726.200 | 51.06 | 27.55 | 5.05 | -39.10 | 44.56 | 74.00 | 29.44 | PK | Horizontal |
| 2 | 4087.900 | 46.43 | 31.08 | 5.10 | -39.67 | 42.94 | 74.00 | 31.06 | PK | Horizontal |
| 3 | 4543.300 | 49.08 | 31.89 | 5.38 | -39.64 | 46.71 | 74.00 | 27.29 | PK | Horizontal |
| 4 | 4817.800 | 45.76 | 32.96 | 5.54 | -39.61 | 44.65 | 74.00 | 29.35 | PK | Horizontal |
| 5 | 7534.900 | 43.21 | 36.43 | 6.72 | -40.52 | 45.84 | 74.00 | 28.16 | PK | Horizontal |
| 6 | 9014.500 | 41.99 | 38.33 | 7.30 | -38.81 | 48.81 | 74.00 | 25.19 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-11 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 908.7MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\16 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

**Test Graph**



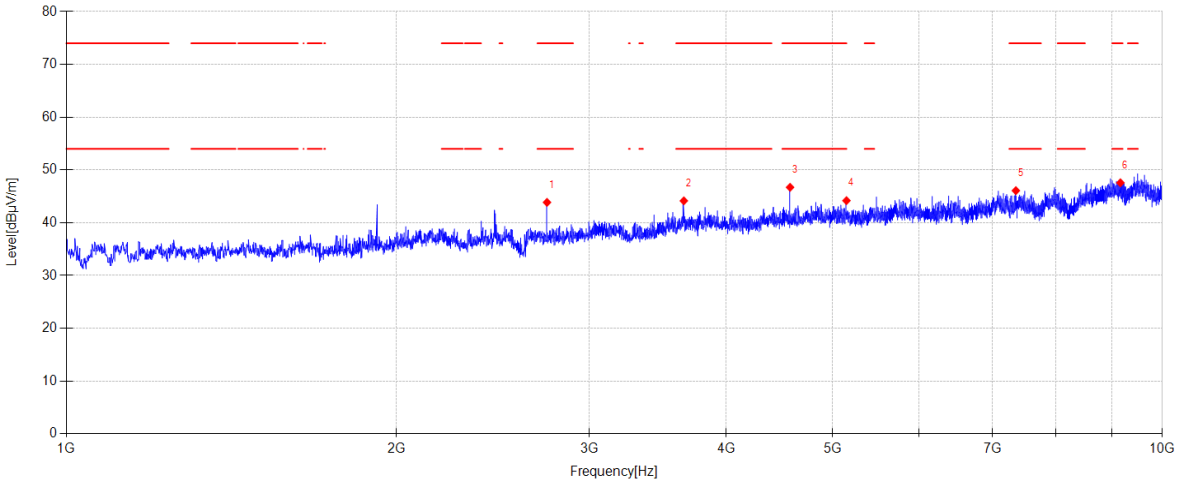

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2726.200 | 49.18 | 27.55 | 5.05 | -39.10 | 42.68 | 74.00 | 31.32 | PK | Vertical |
| 2 | 3806.200 | 45.93 | 30.72 | 5.08 | -39.63 | 42.10 | 74.00 | 31.90 | PK | Vertical |
| 3 | 4543.300 | 48.21 | 31.89 | 5.38 | -39.64 | 45.84 | 74.00 | 28.16 | PK | Vertical |
| 4 | 7406.200 | 44.14 | 36.69 | 6.66 | -40.63 | 46.86 | 74.00 | 27.14 | PK | Vertical |
| 5 | 9004.600 | 40.77 | 38.31 | 7.30 | -38.80 | 47.58 | 74.00 | 26.42 | PK | Vertical |
| 6 | 9430.300 | 42.01 | 38.70 | 7.44 | -39.14 | 49.01 | 74.00 | 24.99 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-11 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\17 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

**Test Graph**



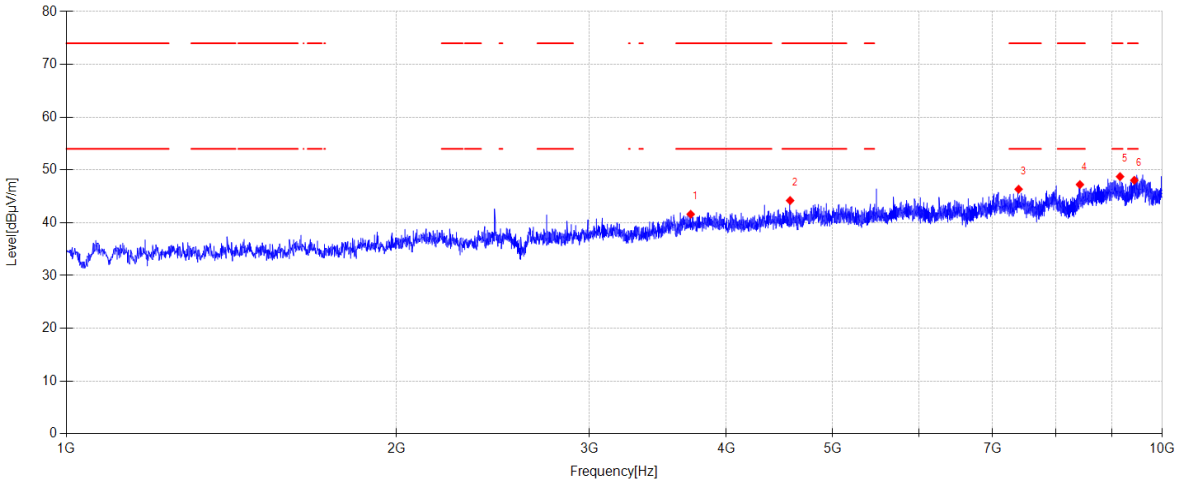

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2745.100 | 50.33 | 27.59 | 5.06 | -39.12 | 43.86 | 74.00 | 30.14 | PK | Horizontal |
| 2 | 3659.500 | 48.40 | 30.24 | 5.11 | -39.60 | 44.15 | 74.00 | 29.85 | PK | Horizontal |
| 3 | 4574.800 | 49.05 | 31.90 | 5.39 | -39.63 | 46.71 | 74.00 | 27.29 | PK | Horizontal |
| 4 | 5149.900 | 44.66 | 33.40 | 5.73 | -39.60 | 44.19 | 74.00 | 29.81 | PK | Horizontal |
| 5 | 7351.300 | 43.33 | 36.80 | 6.63 | -40.68 | 46.08 | 74.00 | 27.92 | PK | Horizontal |
| 6 | 9156.700 | 40.64 | 38.51 | 7.35 | -38.93 | 47.57 | 74.00 | 26.43 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-11 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\18 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

**Test Graph**



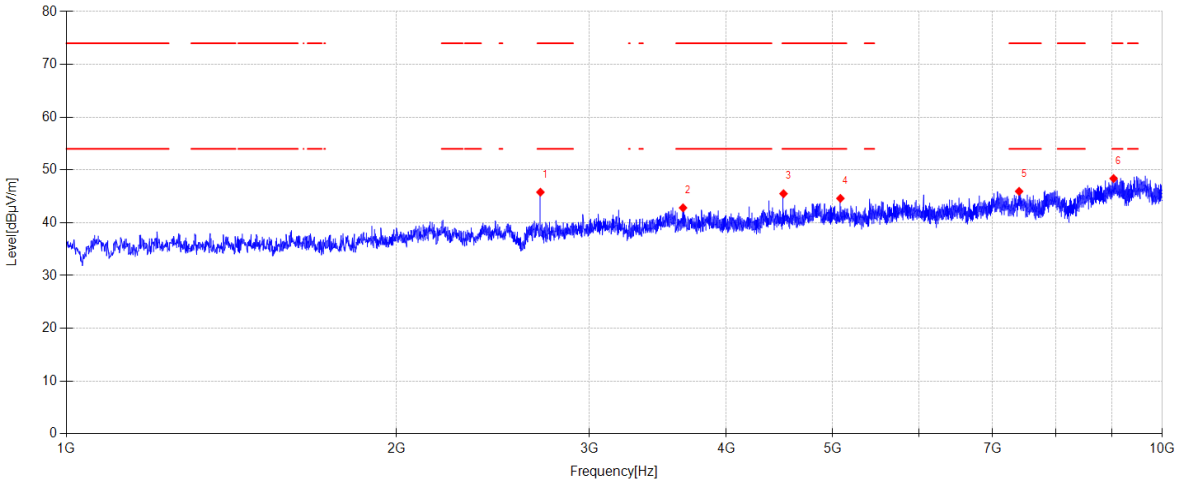

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 3712.600 | 45.69 | 30.43 | 5.10 | -39.61 | 41.61 | 74.00 | 32.39 | PK | Vertical |
| 2 | 4574.800 | 46.54 | 31.90 | 5.39 | -39.63 | 44.20 | 74.00 | 29.80 | PK | Vertical |
| 3 | 7393.600 | 43.64 | 36.71 | 6.65 | -40.65 | 46.35 | 74.00 | 27.65 | PK | Vertical |
| 4 | 8410.600 | 42.19 | 37.50 | 7.11 | -39.57 | 47.23 | 74.00 | 26.77 | PK | Vertical |
| 5 | 9150.400 | 41.81 | 38.50 | 7.35 | -38.92 | 48.74 | 74.00 | 25.26 | PK | Vertical |
| 6 | 9428.500 | 41.04 | 38.70 | 7.44 | -39.14 | 48.04 | 74.00 | 25.96 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\73 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

**Test Graph**



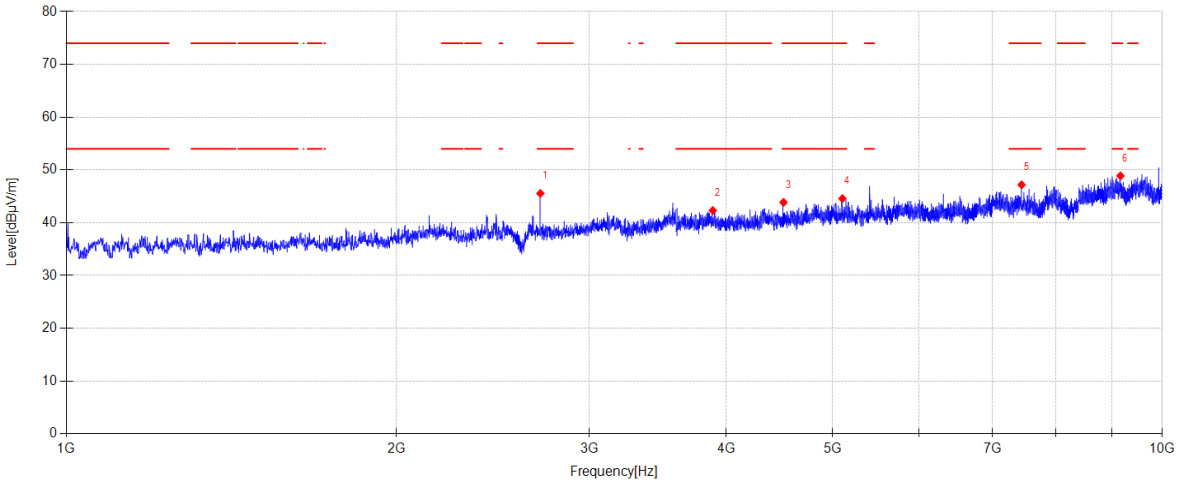

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2707.300 | 52.31 | 27.51 | 5.04 | -39.07 | 45.79 | 74.00 | 28.21 | PK | Horizontal |
| 2 | 3653.200 | 47.10 | 30.21 | 5.11 | -39.60 | 42.82 | 74.00 | 31.18 | PK | Horizontal |
| 3 | 4511.800 | 47.96 | 31.82 | 5.36 | -39.64 | 45.50 | 74.00 | 28.50 | PK | Horizontal |
| 4 | 5085.100 | 45.14 | 33.37 | 5.70 | -39.60 | 44.61 | 74.00 | 29.39 | PK | Horizontal |
| 5 | 7401.700 | 43.24 | 36.70 | 6.65 | -40.64 | 45.95 | 74.00 | 28.05 | PK | Horizontal |
| 6 | 9026.200 | 41.54 | 38.35 | 7.31 | -38.82 | 48.38 | 74.00 | 25.62 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\74 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

**Test Graph**



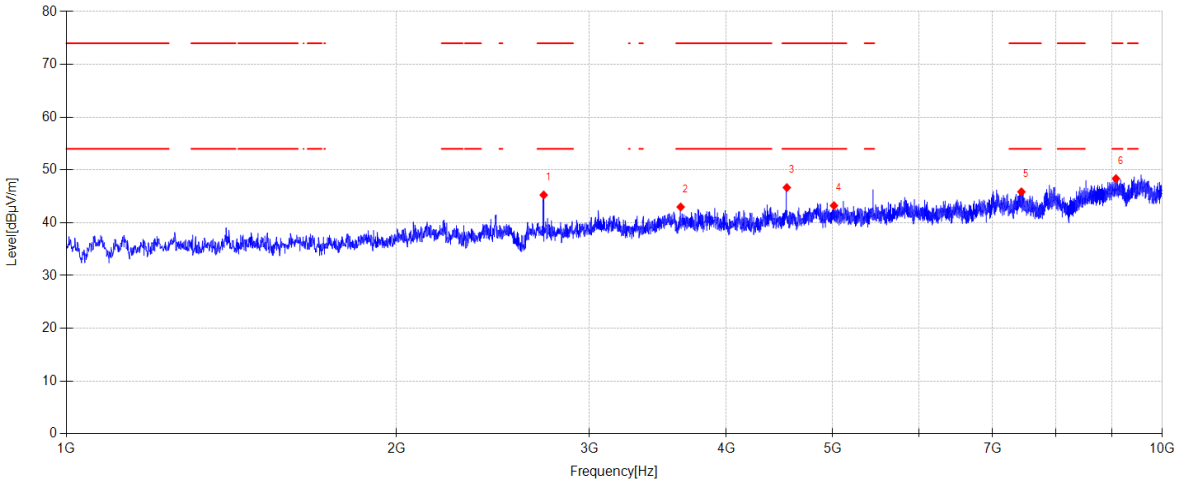

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2707.300 | 52.07 | 27.51 | 5.04 | -39.07 | 45.55 | 74.00 | 28.45 | PK | Vertical |
| 2 | 3889.000 | 45.77 | 31.13 | 5.07 | -39.65 | 42.32 | 74.00 | 31.68 | PK | Vertical |
| 3 | 4511.800 | 46.32 | 31.82 | 5.36 | -39.64 | 43.86 | 74.00 | 30.14 | PK | Vertical |
| 4 | 5106.700 | 45.07 | 33.40 | 5.71 | -39.60 | 44.58 | 74.00 | 29.42 | PK | Vertical |
| 5 | 7440.400 | 44.50 | 36.62 | 6.67 | -40.60 | 47.19 | 74.00 | 26.81 | PK | Vertical |
| 6 | 9157.600 | 41.94 | 38.52 | 7.35 | -38.93 | 48.88 | 74.00 | 25.12 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 908.7MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\75 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

**Test Graph**



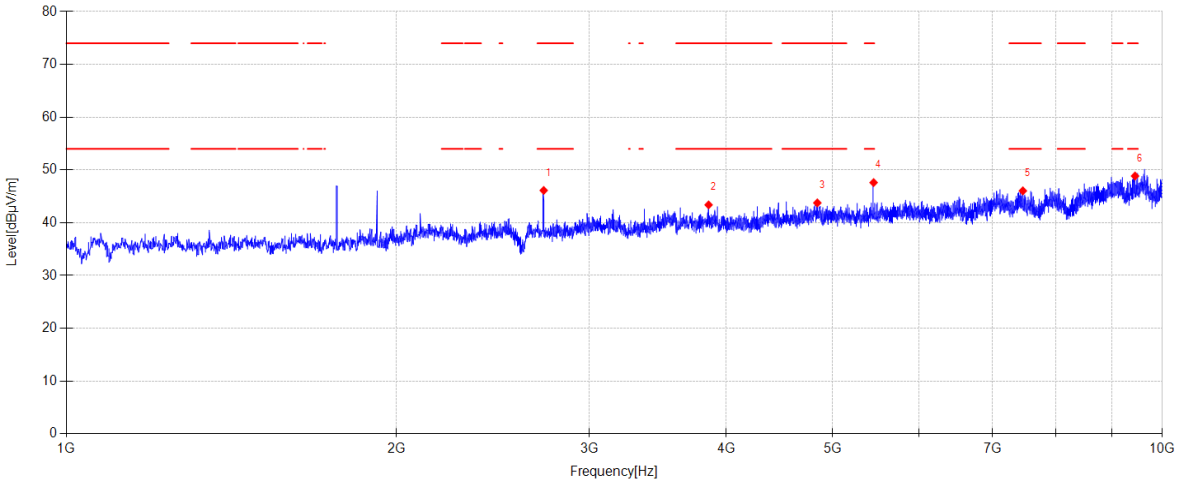

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2726.200 | 51.76 | 27.55 | 5.05 | -39.10 | 45.26 | 74.00 | 28.74 | PK | Horizontal |
| 2 | 3635.200 | 47.33 | 30.14 | 5.11 | -39.59 | 42.99 | 74.00 | 31.01 | PK | Horizontal |
| 3 | 4543.300 | 49.03 | 31.89 | 5.38 | -39.64 | 46.66 | 74.00 | 27.34 | PK | Horizontal |
| 4 | 5016.700 | 43.95 | 33.23 | 5.66 | -39.60 | 43.24 | 74.00 | 30.76 | PK | Horizontal |
| 5 | 7437.700 | 43.18 | 36.62 | 6.67 | -40.61 | 45.86 | 74.00 | 28.14 | PK | Horizontal |
| 6 | 9072.100 | 41.46 | 38.44 | 7.32 | -38.86 | 48.36 | 74.00 | 25.64 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 908.7MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\76 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

**Test Graph**



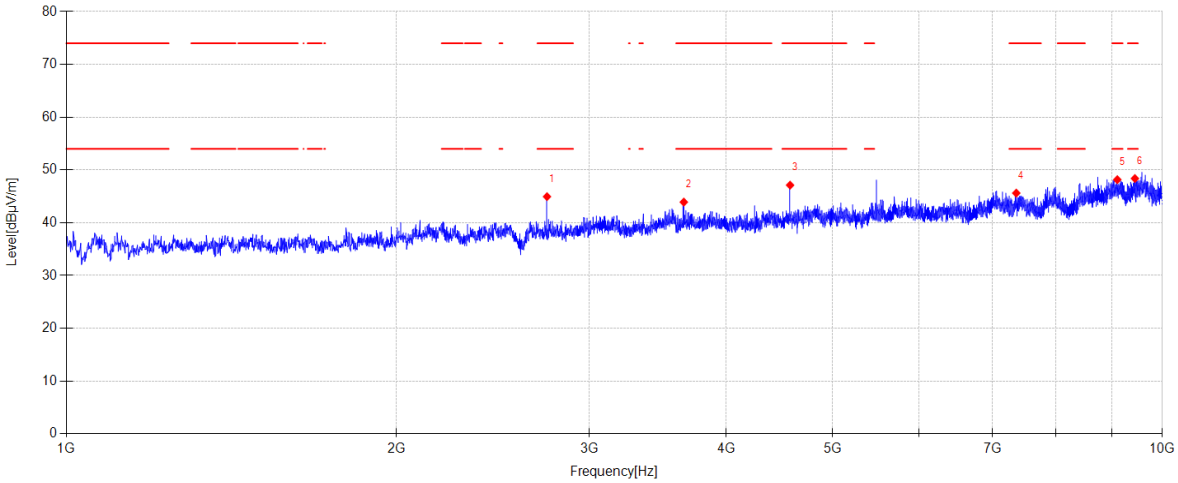

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2726.200 | 52.62 | 27.55 | 5.05 | -39.10 | 46.12 | 74.00 | 27.88 | PK | Vertical |
| 2 | 3854.800 | 47.03 | 30.93 | 5.07 | -39.65 | 43.38 | 74.00 | 30.62 | PK | Vertical |
| 3 | 4843.900 | 44.17 | 33.64 | 5.56 | -39.61 | 43.76 | 74.00 | 30.24 | PK | Vertical |
| 4 | 5452.300 | 48.32 | 33.00 | 5.89 | -39.60 | 47.61 | 74.00 | 26.39 | PK | Vertical |
| 5 | 7460.200 | 43.37 | 36.58 | 6.68 | -40.59 | 46.04 | 74.00 | 27.96 | PK | Vertical |
| 6 | 9442.900 | 41.85 | 38.70 | 7.45 | -39.15 | 48.85 | 74.00 | 25.15 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\77 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

**Test Graph**



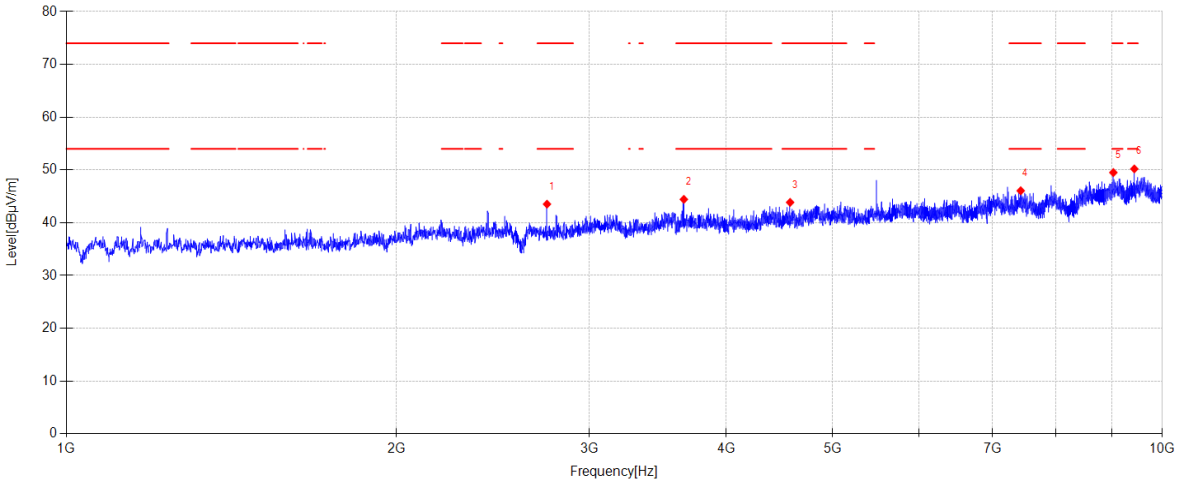

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2745.100 | 51.41 | 27.59 | 5.06 | -39.12 | 44.94 | 74.00 | 29.06 | PK | Horizontal |
| 2 | 3659.500 | 48.16 | 30.24 | 5.11 | -39.60 | 43.91 | 74.00 | 30.09 | PK | Horizontal |
| 3 | 4574.800 | 49.46 | 31.90 | 5.39 | -39.63 | 47.12 | 74.00 | 26.88 | PK | Horizontal |
| 4 | 7357.600 | 42.88 | 36.78 | 6.63 | -40.68 | 45.61 | 74.00 | 28.39 | PK | Horizontal |
| 5 | 9097.300 | 41.22 | 38.49 | 7.33 | -38.88 | 48.16 | 74.00 | 25.84 | PK | Horizontal |
| 6 | 9440.200 | 41.38 | 38.70 | 7.45 | -39.15 | 48.38 | 74.00 | 25.62 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\78 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

**Test Graph**



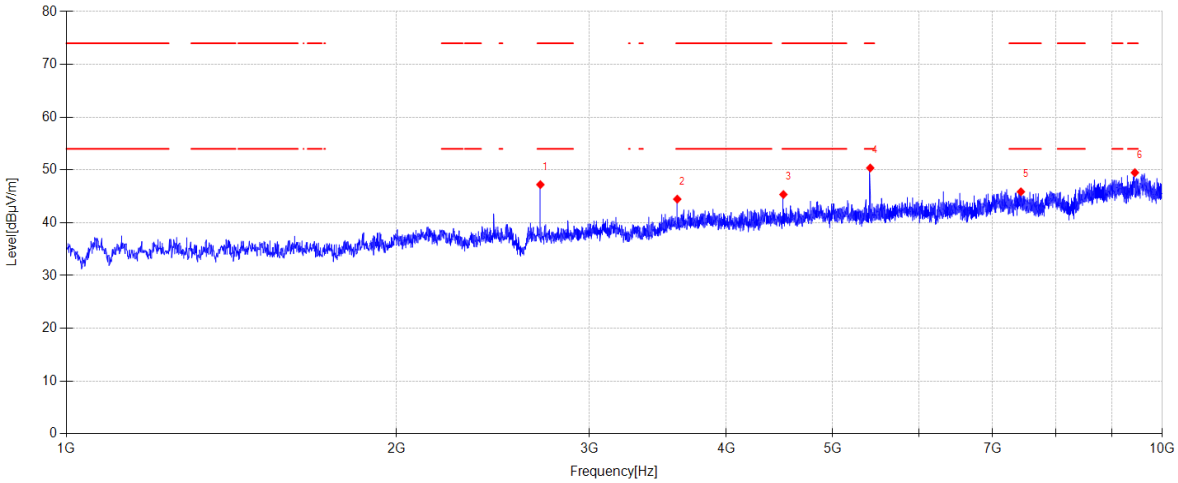

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2745.100 | 49.99 | 27.59 | 5.06 | -39.12 | 43.52 | 74.00 | 30.48 | PK | Vertical |
| 2 | 3659.500 | 48.68 | 30.24 | 5.11 | -39.60 | 44.43 | 74.00 | 29.57 | PK | Vertical |
| 3 | 4574.800 | 46.20 | 31.90 | 5.39 | -39.63 | 43.86 | 74.00 | 30.14 | PK | Vertical |
| 4 | 7426.000 | 43.36 | 36.65 | 6.67 | -40.62 | 46.06 | 74.00 | 27.94 | PK | Vertical |
| 5 | 9021.700 | 42.68 | 38.34 | 7.31 | -38.82 | 49.51 | 74.00 | 24.49 | PK | Vertical |
| 6 | 9428.500 | 43.20 | 38.70 | 7.44 | -39.14 | 50.20 | 74.00 | 23.80 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-12 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\43 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

**Test Graph**



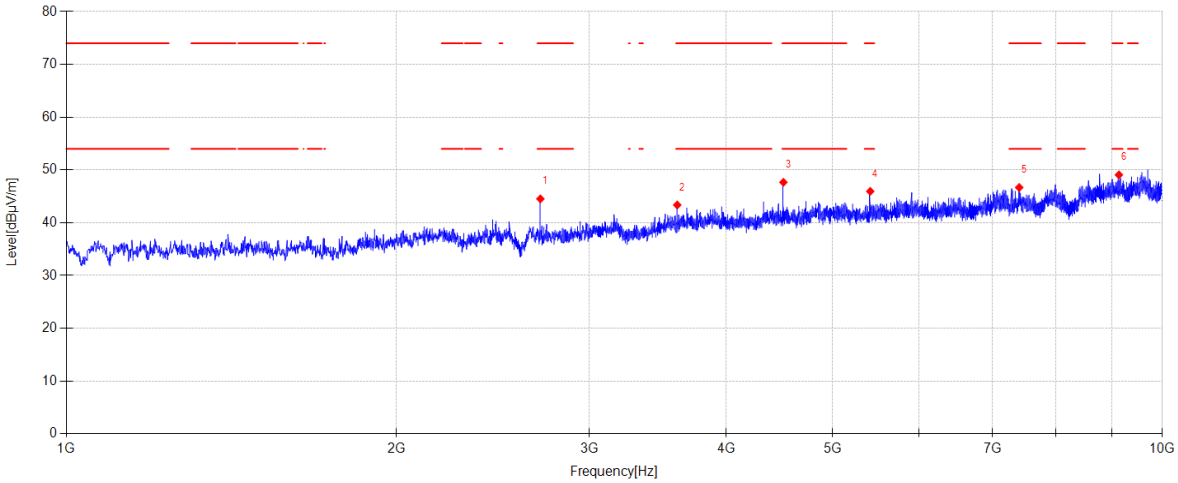

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2707.300 | 53.74 | 27.51 | 5.04 | -39.07 | 47.22 | 74.00 | 26.78 | PK | Horizontal |
| 2 | 3609.100 | 48.90 | 30.04 | 5.12 | -39.59 | 44.47 | 74.00 | 29.53 | PK | Horizontal |
| 3 | 4510.900 | 47.81 | 31.82 | 5.36 | -39.64 | 45.35 | 74.00 | 28.65 | PK | Horizontal |
| 4 | 5413.600 | 51.03 | 33.07 | 5.87 | -39.60 | 50.37 | 74.00 | 23.63 | PK | Horizontal |
| 5 | 7429.600 | 43.17 | 36.64 | 6.67 | -40.61 | 45.87 | 74.00 | 28.13 | PK | Horizontal |
| 6 | 9439.300 | 42.50 | 38.70 | 7.44 | -39.15 | 49.49 | 74.00 | 24.51 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-12 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\44 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

**Test Graph**



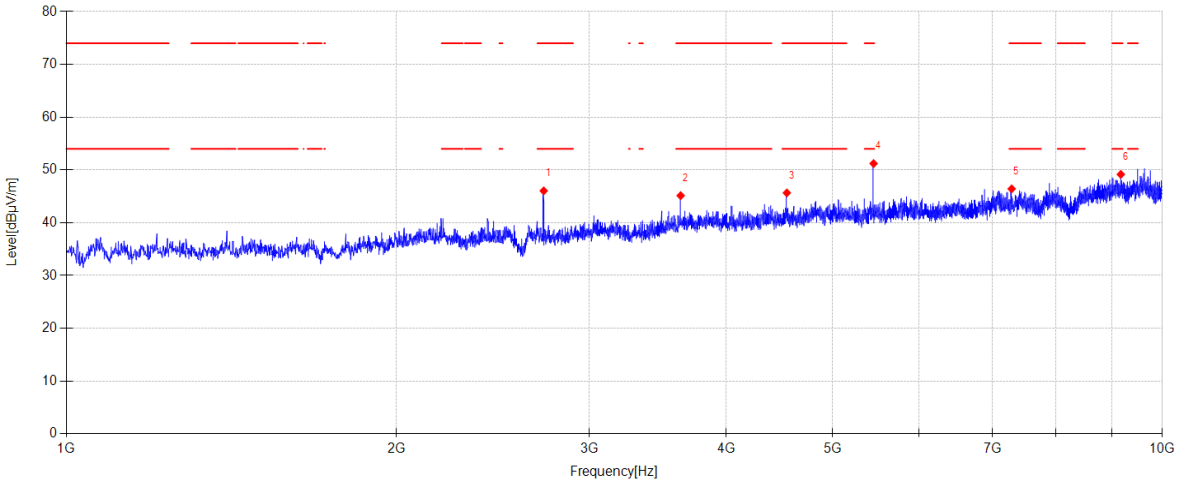

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2707.300 | 51.04 | 27.51 | 5.04 | -39.07 | 44.52 | 74.00 | 29.48 | PK | Vertical |
| 2 | 3609.100 | 47.79 | 30.04 | 5.12 | -39.59 | 43.36 | 74.00 | 30.64 | PK | Vertical |
| 3 | 4510.900 | 50.12 | 31.82 | 5.36 | -39.64 | 47.66 | 74.00 | 26.34 | PK | Vertical |
| 4 | 5413.600 | 46.61 | 33.07 | 5.87 | -39.60 | 45.95 | 74.00 | 28.05 | PK | Vertical |
| 5 | 7402.600 | 43.98 | 36.69 | 6.65 | -40.64 | 46.68 | 74.00 | 27.32 | PK | Vertical |
| 6 | 9127.900 | 42.13 | 38.50 | 7.34 | -38.90 | 49.07 | 74.00 | 24.93 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-12 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 908.7MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\45 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

**Test Graph**



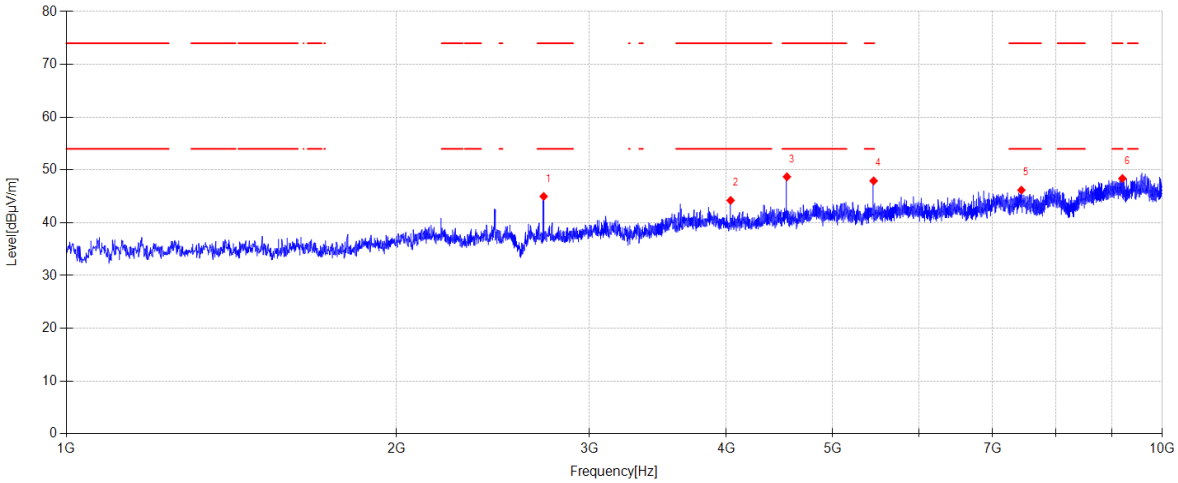

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2726.200 | 52.54 | 27.55 | 5.05 | -39.10 | 46.04 | 74.00 | 27.96 | PK | Horizontal |
| 2 | 3635.200 | 49.48 | 30.14 | 5.11 | -39.59 | 45.14 | 74.00 | 28.86 | PK | Horizontal |
| 3 | 4543.300 | 48.02 | 31.89 | 5.38 | -39.64 | 45.65 | 74.00 | 28.35 | PK | Horizontal |
| 4 | 5452.300 | 51.92 | 33.00 | 5.89 | -39.60 | 51.21 | 74.00 | 22.79 | PK | Horizontal |
| 5 | 7286.500 | 43.70 | 36.87 | 6.59 | -40.74 | 46.42 | 74.00 | 27.58 | PK | Horizontal |
| 6 | 9164.800 | 42.21 | 38.53 | 7.35 | -38.93 | 49.16 | 74.00 | 24.84 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-12 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 908.7MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\46 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

**Test Graph**



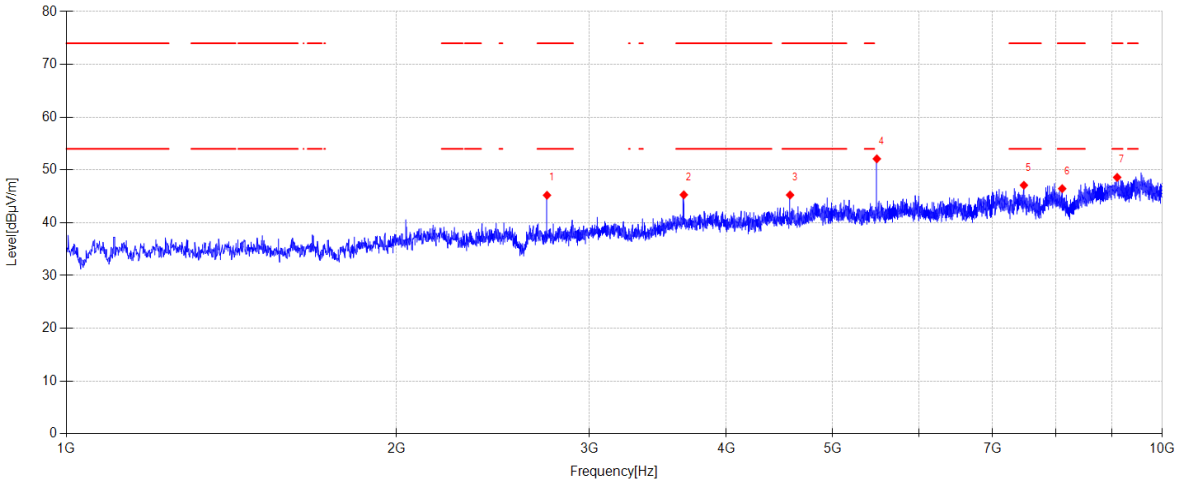

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2726.200 | 51.48 | 27.55 | 5.05 | -39.10 | 44.98 | 74.00 | 29.02 | PK | Vertical |
| 2 | 4037.500 | 47.86 | 30.98 | 5.07 | -39.68 | 44.23 | 74.00 | 29.77 | PK | Vertical |
| 3 | 4544.200 | 51.08 | 31.89 | 5.38 | -39.64 | 48.71 | 74.00 | 25.29 | PK | Vertical |
| 4 | 5452.300 | 48.64 | 33.00 | 5.89 | -39.60 | 47.93 | 74.00 | 26.07 | PK | Vertical |
| 5 | 7436.800 | 43.49 | 36.63 | 6.67 | -40.61 | 46.18 | 74.00 | 27.82 | PK | Vertical |
| 6 | 9195.400 | 41.39 | 38.59 | 7.36 | -38.96 | 48.38 | 74.00 | 25.62 | PK | Vertical |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-12 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\47 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

**Test Graph**



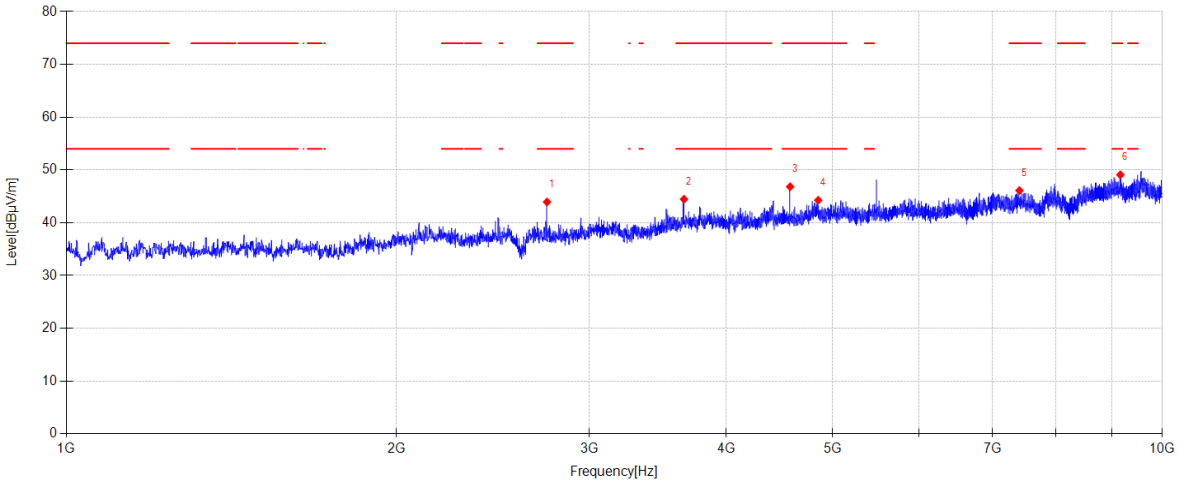

| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2745.100 | 51.68 | 27.59 | 5.06 | -39.12 | 45.21 | 74.00 | 28.79 | PK | Horizontal |
| 2 | 3659.500 | 49.54 | 30.24 | 5.11 | -39.60 | 45.29 | 74.00 | 28.71 | PK | Horizontal |
| 3 | 4574.800 | 47.59 | 31.90 | 5.39 | -39.63 | 45.25 | 74.00 | 28.75 | PK | Horizontal |
| 4 | 5489.200 | 52.80 | 33.00 | 5.91 | -39.60 | 52.11 | - | - | PK | Horizontal |
| 5 | 7476.400 | 44.44 | 36.55 | 6.69 | -40.57 | 47.11 | 74.00 | 26.89 | PK | Horizontal |
| 6 | 8102.800 | 42.23 | 37.20 | 7.00 | -39.97 | 46.46 | 74.00 | 27.54 | PK | Horizontal |
| 7 | 9094.600 | 41.66 | 38.49 | 7.33 | -38.88 | 48.60 | 74.00 | 25.40 | PK | Horizontal |

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-12 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC ABOVE 1G\48 | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

**Test Graph**




| Data List | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Limit [dBµV/m]** | **Margin [dB]** | **Detector** | **Polarity** |
| 1 | 2745.100 | 50.40 | 27.59 | 5.06 | -39.12 | 43.93 | 74.00 | 30.07 | PK | Vertical |
| 2 | 3660.400 | 48.71 | 30.24 | 5.11 | -39.60 | 44.46 | 74.00 | 29.54 | PK | Vertical |
| 3 | 4574.800 | 49.16 | 31.90 | 5.39 | -39.63 | 46.82 | 74.00 | 27.18 | PK | Vertical |
| 4 | 4852.900 | 44.56 | 33.75 | 5.56 | -39.61 | 44.26 | 74.00 | 29.74 | PK | Vertical |
| 5 | 7406.200 | 43.38 | 36.69 | 6.66 | -40.63 | 46.10 | 74.00 | 27.90 | PK | Vertical |
| 6 | 9155.800 | 42.14 | 38.51 | 7.35 | -38.92 | 49.08 | 74.00 | 24.92 | PK | Vertical |

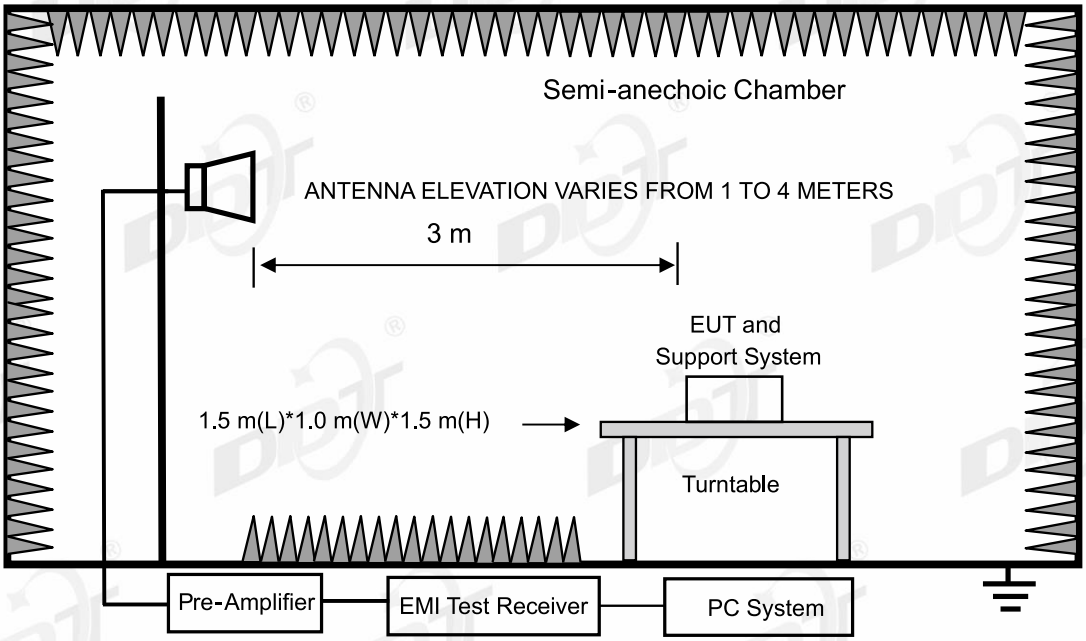
Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# 15.Band Edge Compliance

## 15.1. Test equipment

| Equipment | Manufacturer | Model No. | Serial No. | Cal Due To |
|---|---|---|---|---|
| RF cable | Yuhu Technology | ZT26S-SMAJ-SMAJ-1M | DDT-ZC02037 | 2025/03/31 |
| High Pass filter | Xi'an Xingbo | XBLBQ-GTA67 | DDT-ZC02179 | 2025/04/22 |
| Trilog Broadband Antenna | Schwarzbeck | VULB 9163 | DDT-ZC02050 | 2025/07/11 |
| Pre-amplifier | COM-POWER | PAM-118A | DDT-ZC01293 | 2025/08/25 |
| Active Loop Antenna | Schwarzbeck | FMZB1519 | DDT-ZC00524 | 2025/09/11 |
| EMI TEST RECEIVER | R&S | ESU26 | DDT-ZC01909 | 2025/03/31 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA 9170 | DDT-ZC00506 | 2025/04/26 |
| PSA Series Spectrum Analyzer | Agilent | E4447A | DDT-ZC00517 | 2025/03/31 |
| RF cable | Zhongke Junchuang | JCT26S-NJ-NJ-1.5M | DDT-ZC02762 | 2025/03/31 |
| RF Cable | N/A | W13.02 AP1-X2 | DDT-ZC04023 | 2025/03/31 |
| Pre-amplifier | COM-POWER | PAM-840A | DDT-ZC01693 | 2025/03/31 |
| Micro-Tronics filters | REBES | BRM50702 | DDT-ZC03242 | / |
| Micro-Tronics filters | REBES | BRM50716 | DDT-ZC03240 | / |
| Hochgewinn-Hornantenne | SCHWARZBECK | BBHA 9120 D | DDT-ZC02129 | 2025/09/18 |
| High pass filter | Micro-Tronics | HPM50102 | DDT-ZC00561 | 2025/04/22 |
| RF Cable | N/A | W24.02 HL-562 | DDT-ZC04022 | 2025/03/31 |
| RF cable | Yuhu Technology | JCTB810-NJ-NJ-9M | DDT-ZC02538 | 2025/03/31 |
| High pass filter | Micro-Tronics | HPM50108 | DDT-ZC00560 | 2025/04/22 |

## 15.2. Block diagram of test setup




## 15.3. Limits

All restriction band should comply with 15.209 limits, other emission should be at least 20 dB below the fundamental.

## 15.4. Assistant equipment used for test

| Assistant equipment | Manufacturer | Model number | Description | other |
|---|---|---|---|---|
| / | / | / | / | / |

## 15.5. Test procedure

Same with Radiated Emission except change investigated frequency range.
Remark: All restriction band have been tested, and only the worst case is shown in report.

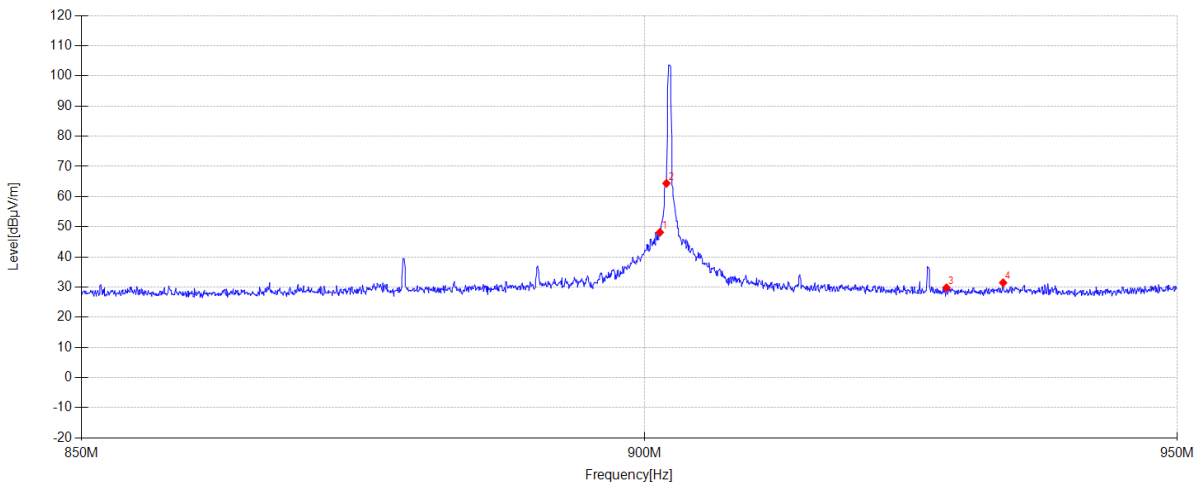
## 15.6. Test result

**PASS. (See below detailed test result)**

## 15.7. Test data

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2025-01-03 | **Tested By**: | Zhong Nan |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:23.2°C;Humi:62.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW1G 0103\20250103-030058_H | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

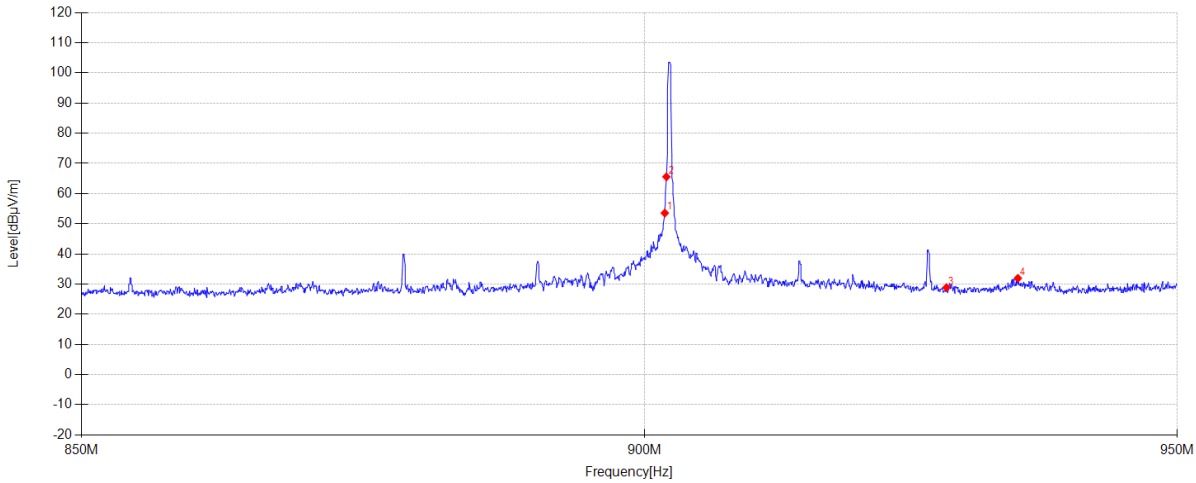



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 901.400 | 49.59 | 21.90 | 7.20 | -30.56 | 48.13 | PK | Horizontal |
| 2 | 902.000 | 65.85 | 21.90 | 7.21 | -30.56 | 64.40 | PK | Horizontal |
| 3 | 928.000 | 31.38 | 21.54 | 7.27 | -30.44 | 29.75 | PK | Horizontal |
| 4 | 933.350 | 32.65 | 21.90 | 7.29 | -30.41 | 31.43 | PK | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2025-01-03 | **Tested By**: | Zhong Nan |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:23.2°C;Humi:62.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW1G 0103\20250103-030144_V | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

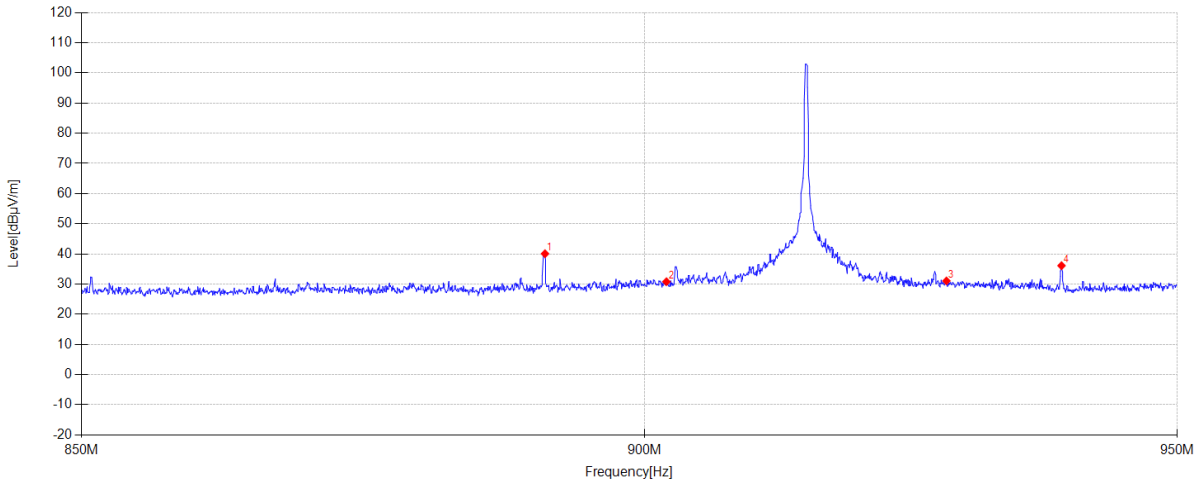



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 901.850 | 54.99 | 21.90 | 7.20 | -30.56 | 53.53 | PK | Vertical |
| 2 | 902.000 | 67.00 | 21.90 | 7.21 | -30.56 | 65.55 | PK | Vertical |
| 3 | 928.000 | 30.47 | 21.54 | 7.27 | -30.44 | 28.84 | PK | Vertical |
| 4 | 934.750 | 32.94 | 22.07 | 7.29 | -30.40 | 31.90 | PK | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2025-01-03 | **Tested By**: | Zhong Nan |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:23.2°C;Humi:62.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW1G 0103\20250103-030401_H | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

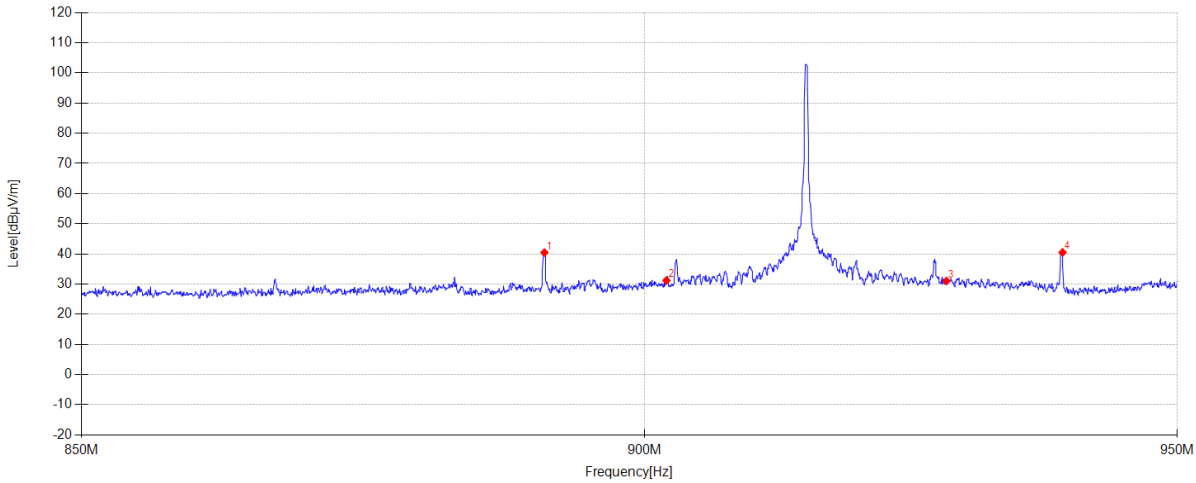



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 890.950 | 41.96 | 21.52 | 7.18 | -30.61 | 40.05 | PK | Horizontal |
| 2 | 902.000 | 32.23 | 21.90 | 7.21 | -30.56 | 30.78 | PK | Horizontal |
| 3 | 928.000 | 32.66 | 21.54 | 7.27 | -30.44 | 31.03 | PK | Horizontal |
| 4 | 938.900 | 37.94 | 21.24 | 7.30 | -30.39 | 36.09 | PK | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2025-01-03 | **Tested By**: | Zhong Nan |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:23.2°C;Humi:62.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\FCC BELOW1G 0103\20250103-030446_V | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (PCB Antenna) | | |

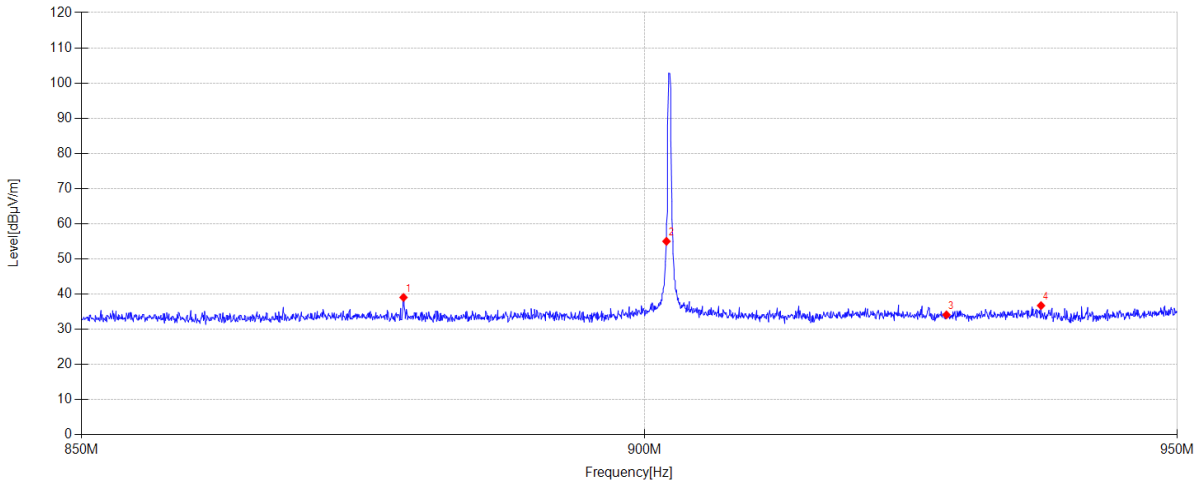



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 890.900 | 42.33 | 21.53 | 7.18 | -30.61 | 40.43 | PK | Vertical |
| 2 | 902.000 | 32.65 | 21.90 | 7.21 | -30.56 | 31.20 | PK | Vertical |
| 3 | 928.000 | 32.63 | 21.54 | 7.27 | -30.44 | 31.00 | PK | Vertical |
| 4 | 939.000 | 42.35 | 21.22 | 7.30 | -30.38 | 40.49 | PK | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-222547_H | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

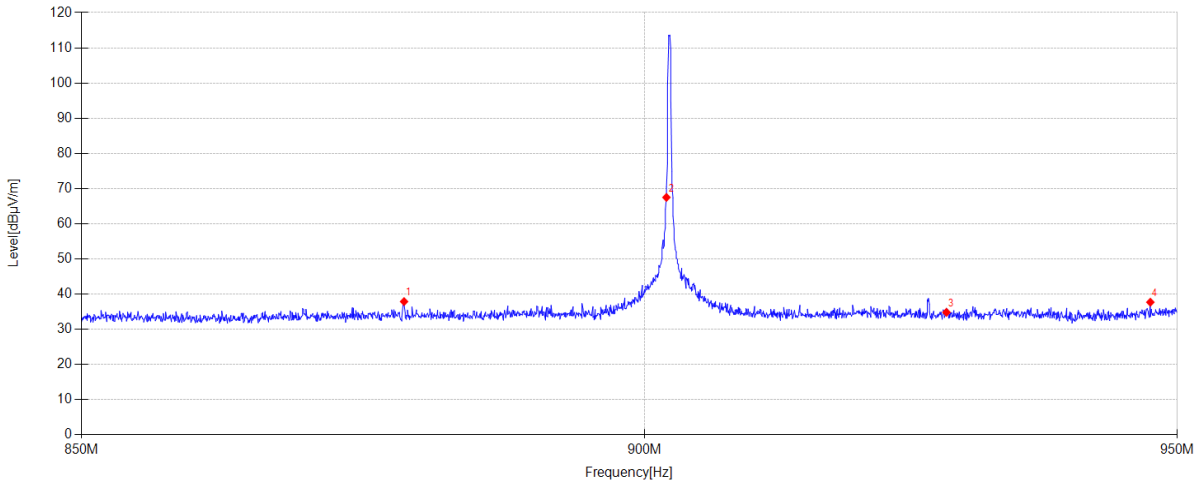



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 878.250 | 10.52 | 21.37 | 7.15 | 0.00 | 39.04 | PK | Horizontal |
| 2 | 902.000 | 25.88 | 21.90 | 7.21 | 0.00 | 54.99 | PK | Horizontal |
| 3 | 928.000 | 5.29 | 21.54 | 7.27 | 0.00 | 34.10 | PK | Horizontal |
| 4 | 936.950 | 7.75 | 21.67 | 7.30 | 0.00 | 36.72 | PK | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-222633_V | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

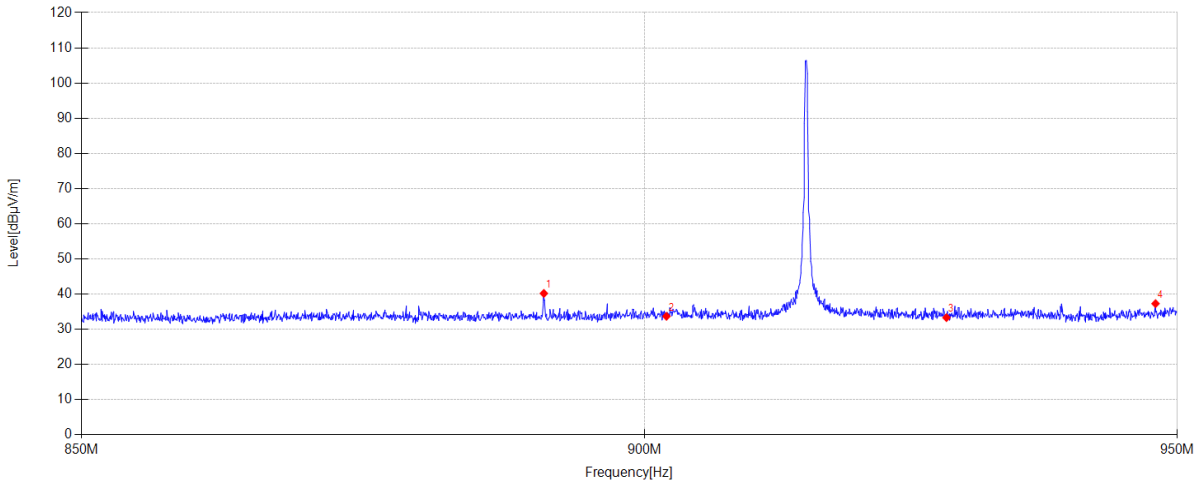



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 878.300 | 9.36 | 21.37 | 7.15 | 0.00 | 37.88 | PK | Vertical |
| 2 | 902.000 | 38.38 | 21.90 | 7.21 | 0.00 | 67.49 | PK | Vertical |
| 3 | 928.000 | 6.01 | 21.54 | 7.27 | 0.00 | 34.82 | PK | Vertical |
| 4 | 947.400 | 8.29 | 22.08 | 7.32 | 0.00 | 37.69 | PK | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-223411_H | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

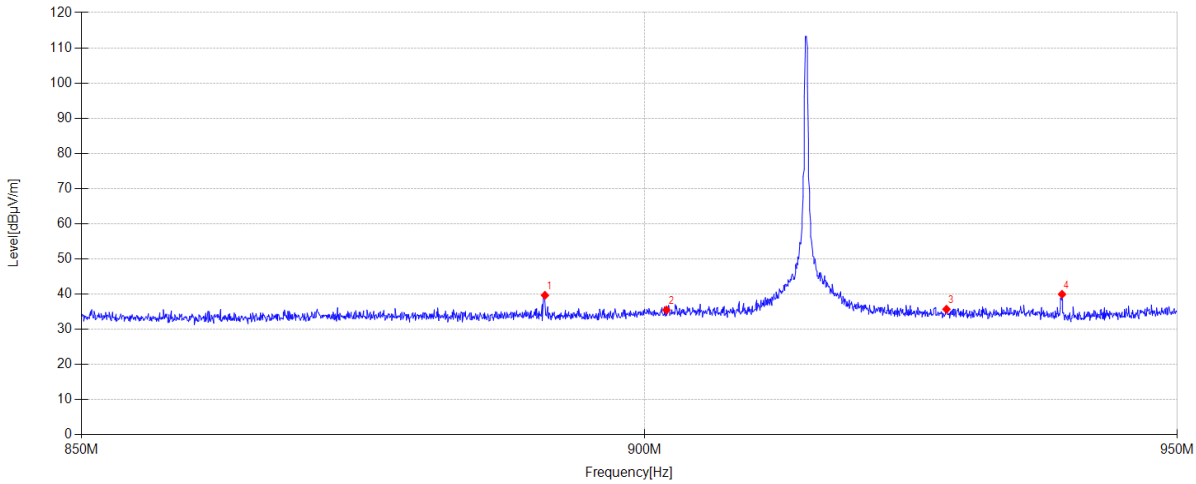



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 890.850 | 11.47 | 21.53 | 7.18 | 0.00 | 40.18 | PK | Horizontal |
| 2 | 902.000 | 4.58 | 21.90 | 7.21 | 0.00 | 33.69 | PK | Horizontal |
| 3 | 928.000 | 4.49 | 21.54 | 7.27 | 0.00 | 33.30 | PK | Horizontal |
| 4 | 947.900 | 7.77 | 22.20 | 7.32 | 0.00 | 37.29 | PK | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-223500_V | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (3dBi Antenna) | | |

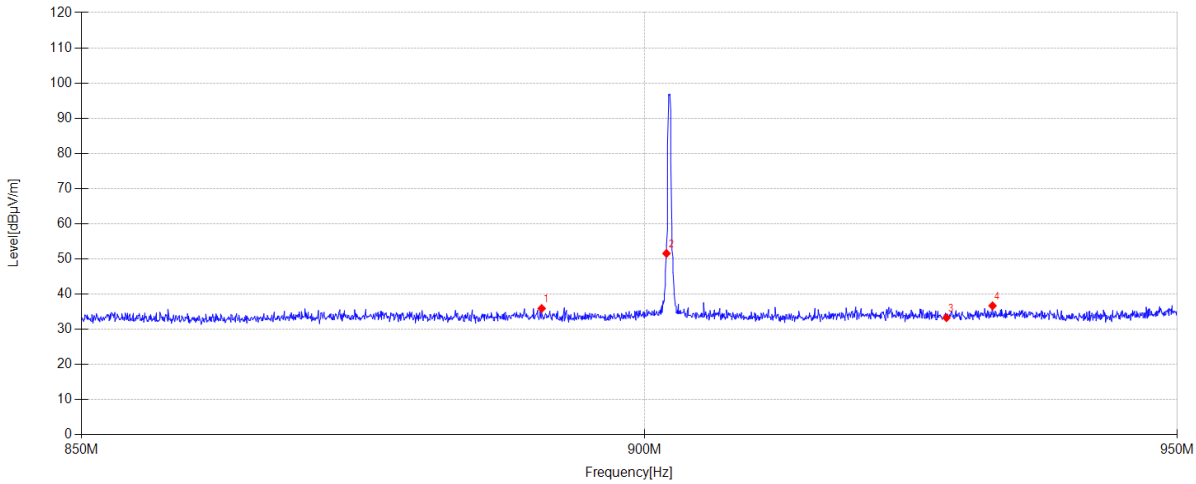



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 890.950 | 10.96 | 21.52 | 7.18 | 0.00 | 39.66 | PK | Vertical |
| 2 | 902.000 | 6.37 | 21.90 | 7.21 | 0.00 | 35.48 | PK | Vertical |
| 3 | 928.000 | 6.88 | 21.54 | 7.27 | 0.00 | 35.69 | PK | Vertical |
| 4 | 938.950 | 11.42 | 21.23 | 7.30 | 0.00 | 39.95 | PK | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-232238_H | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

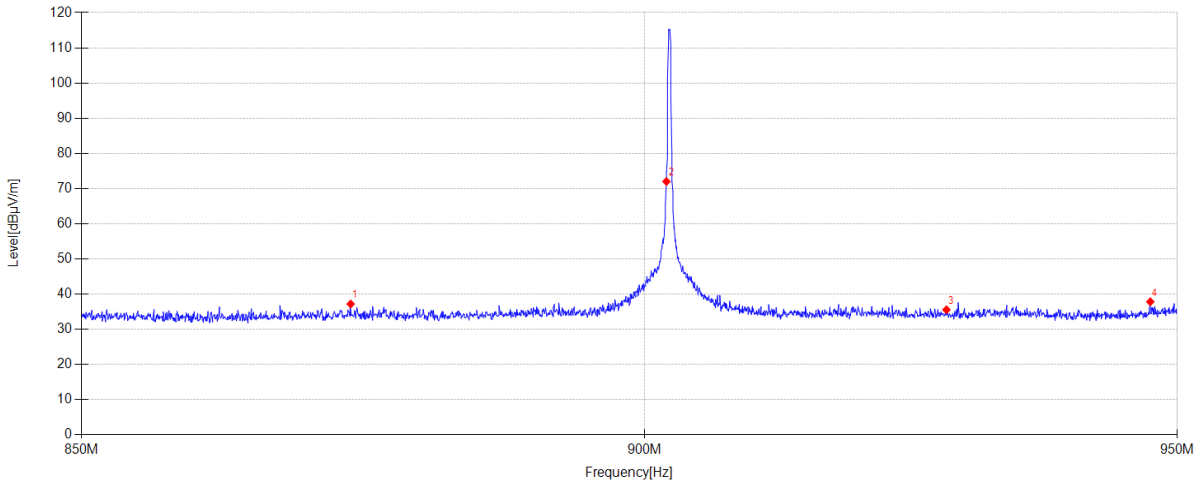



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 890.650 | 7.19 | 21.55 | 7.18 | 0.00 | 35.92 | PK | Horizontal |
| 2 | 902.000 | 22.45 | 21.90 | 7.21 | 0.00 | 51.56 | PK | Horizontal |
| 3 | 928.000 | 4.46 | 21.54 | 7.27 | 0.00 | 33.27 | PK | Horizontal |
| 4 | 932.350 | 7.62 | 21.78 | 7.28 | 0.00 | 36.68 | PK | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 902.3MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-232323_V | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

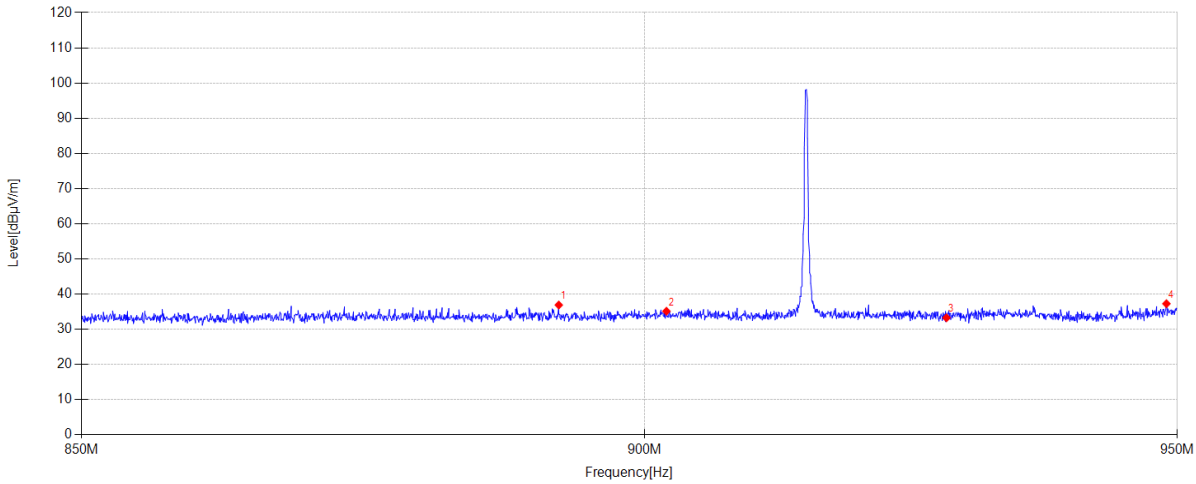



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 873.550 | 8.59 | 21.47 | 7.13 | 0.00 | 37.19 | PK | Vertical |
| 2 | 902.000 | 42.89 | 21.90 | 7.21 | 0.00 | 72.00 | PK | Vertical |
| 3 | 928.000 | 6.74 | 21.54 | 7.27 | 0.00 | 35.55 | PK | Vertical |
| 4 | 947.400 | 8.42 | 22.08 | 7.32 | 0.00 | 37.82 | PK | Vertical |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-232706_H | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |

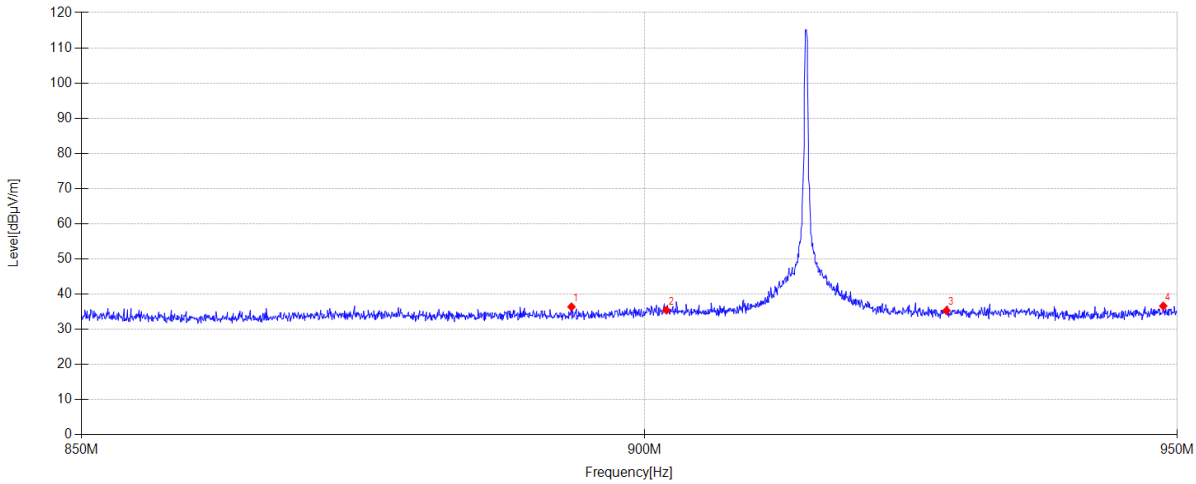



| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 892.200 | 8.29 | 21.42 | 7.18 | 0.00 | 36.89 | PK | Horizontal |
| 2 | 902.000 | 6.02 | 21.90 | 7.21 | 0.00 | 35.13 | PK | Horizontal |
| 3 | 928.000 | 4.45 | 21.54 | 7.27 | 0.00 | 33.26 | PK | Horizontal |
| 4 | 948.950 | 7.49 | 22.45 | 7.33 | 0.00 | 37.27 | PK | Horizontal |

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

| | | | |
|---|---|---|---|
| **Test Date**: | 2024-12-16 | **Tested By**: | Genliu |
| **EUT**: | wireless internet gateway | **Model Number**: | GW3 |
| **Test Mode**: | LoRa-64channels 914.9MHz | **Power Supply**: | DC 12V |
| **Condition**: | Temp:21.2°C;Humi:52.7% | **Test Site**: | DDT 3# Chamber |
| **File Path**: | d:\ts\2024 report data\Q24092616-2E\1211 FCC BELOW 1G \20241216-232750_V | | |
| **Memo**: | Sample Number:S24042326 Power Setting:20 (5dBi Antenna) | | |




| Data List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **Freq. [MHz]** | **Reading [dBµV/m]** | **Antenna Factor [dB]** | **Cable loss [dB]** | **AMP [dB]** | **Level [dBµV/m]** | **Detector** | **Polarity** |
| 1 | 893.350 | 7.87 | 21.33 | 7.18 | 0.00 | 36.38 | PK | Vertical |
| 2 | 902.000 | 6.31 | 21.90 | 7.21 | 0.00 | 35.42 | PK | Vertical |
| 3 | 928.000 | 6.49 | 21.54 | 7.27 | 0.00 | 35.30 | PK | Vertical |
| 4 | 948.650 | 6.90 | 22.38 | 7.33 | 0.00 | 36.61 | PK | Vertical |

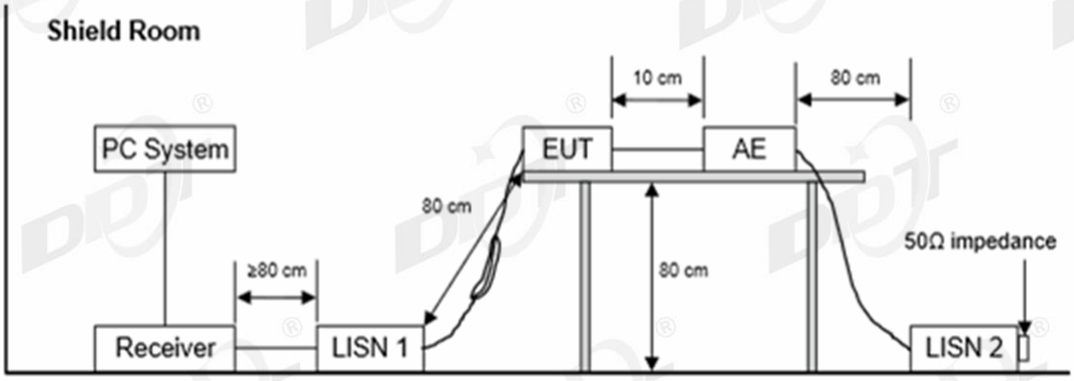
Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# 16.Power Line Conducted Emissions

## 16.1. Test equipment

| Equipment | Manufacturer | Model No. | Serial No. | Cal Due To |
|---|---|---|---|---|
| RF Cable | Yuhu Technology | Z806-NJ-NJ-6M | DDT-ZC02004 | 2025/07/08 |
| Three-phase artificial power network | SCHWARZBECK | NSLK 8163 | DDT-ZC01572 | 2025/07/08 |
| Δ-shaped artificial power network | SCHWARZBECK | PVDC 8301 | DDT-ZC03939 | 2025/03/31 |
| Two Line V-Network | R&S | ENV216 | DDT-ZC02059 | 2025/07/08 |
| Pulse Limiter | SCHWARZBECK | VTSD 9561 | DDT-ZC02128 | 2025/07/08 |
| Condected Radiated Software | Audix | E3 | DDT-ZC00562 | / |
| EMI Test Receiver | R&S | ESCI/E3 | DDT-ZC01297 | 2025/07/08 |
| Two Line V-Network | R&S | ENV216 | DDT-ZC02056 | 2025/07/08 |

## 16.2. Block diagram of test setup




## 16.3. Limits

| Frequency | Quasi-Peak Level dB(uV) | Average Level dB(uV) |
|---|---|---|
| 150 kHz~500 kHz | 66 ~ 56* | 56 ~ 46* |
| 500 kHz~5 MHz | 56 | 46 |
| 5 MHz~30 MHz | 60 | 50 |

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

## 16.4. Assistant equipment used for test

| Assistant equipment | Manufacturer | Model number | Description | other |
|---|---|---|---|---|
| / | / | / | / | / |

## 16.5. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.
The bandwidth of test receiver is set at 9 kHz.

## 16.6. Test result

**PASS. (See below detailed test result)**

Note1: All emissions not reported below are too low against the prescribed limits.

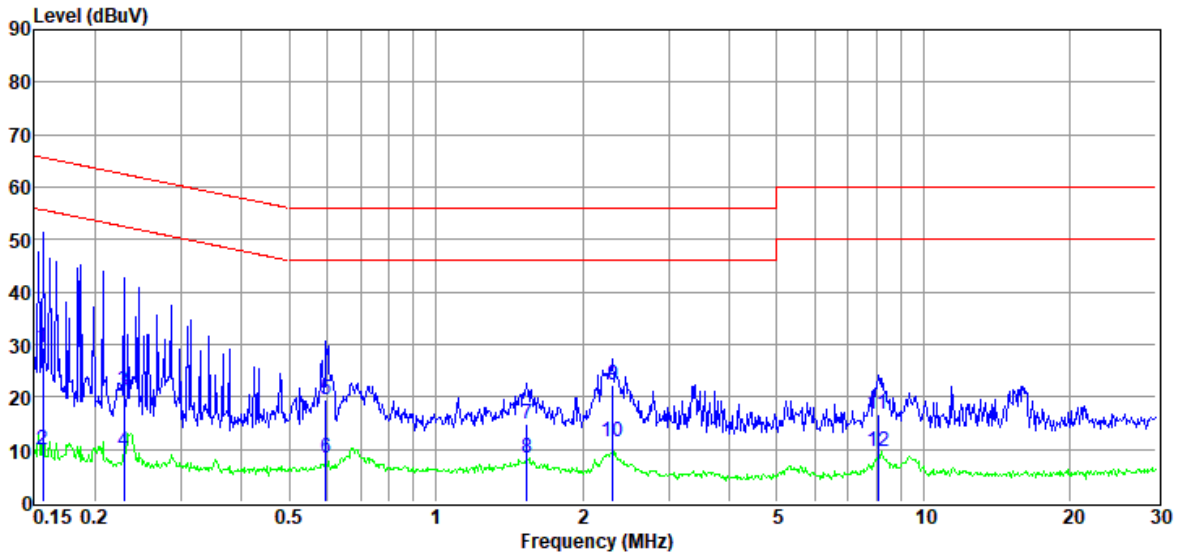
Note2: "-----" means Peak detection; "-----" means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded the worst case.

## 16.7. Test data

# TR-4-E-010 Conducted Emission Test Result

| | | | |
|---|---|---|---|
| **Test Site** | : DDT 6# Shield Room | D:\2024 Report Date\Q24092616-2E\1224 CE.EM6 | |
| **Test Date** | : 2024-12-24 | **Tested By** | : Gen Liu |
| **EUT** | : wireless internet gateway | **Model Number** | : GW3 |
| **Power Supply** | : AC 120V/60Hz | **Test Mode** | : LoRa-64channels |
| **Condition** | : Temp:21.9°C,Humi:56.2% | **LISN** | : 2024 ENV216 3#/NEUTRAL |
| **Memo** | : | | |

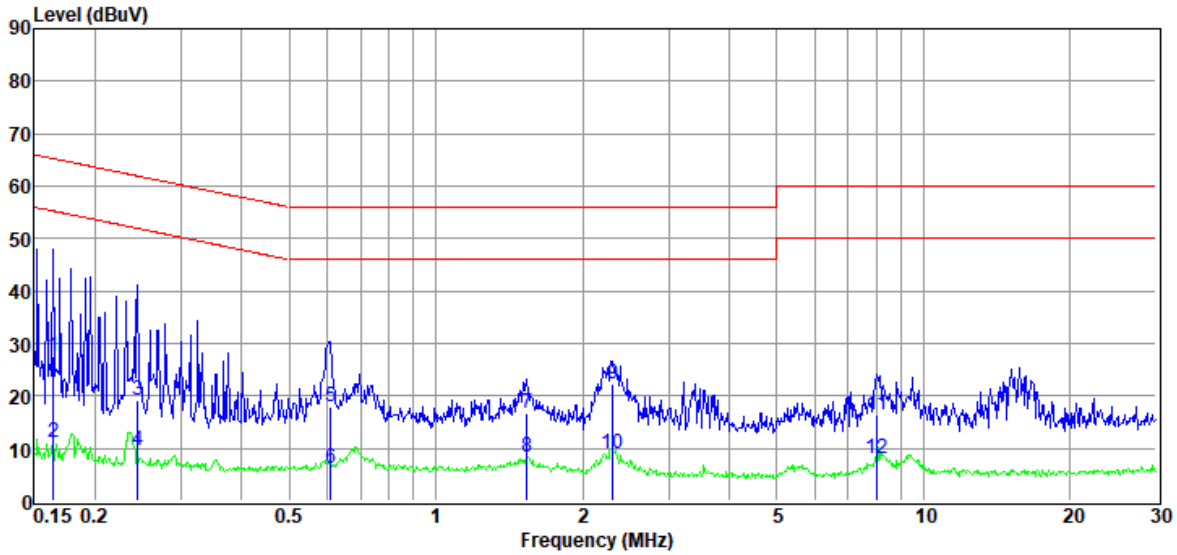



| Item (Mark) | Freq. (MHz) | Read Level (dBµV) | LISN Factor (dB) | Cable Loss (dB) | Pulse Limiter Factor (dB) | Result Level (dBµV) | Limit Line (dBµV) | Over Limit (dB) | Detector | Phase |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.16 | 9.79 | 9.78 | 0.07 | 9.83 | 29.47 | 65.65 | -36.18 | QP | NEUTRAL |
| 2 | 0.16 | -9.89 | 9.78 | 0.07 | 9.83 | 9.79 | 55.65 | -45.86 | Average | NEUTRAL |
| 3 | 0.23 | 1.33 | 9.76 | 0.06 | 9.83 | 20.98 | 62.48 | -41.50 | QP | NEUTRAL |
| 4 | 0.23 | -10.17 | 9.76 | 0.06 | 9.83 | 9.48 | 52.48 | -43.00 | Average | NEUTRAL |
| 5 | 0.59 | -0.27 | 9.75 | 0.09 | 9.83 | 19.40 | 56.00 | -36.60 | QP | NEUTRAL |
| 6 | 0.59 | -11.38 | 9.75 | 0.09 | 9.83 | 8.29 | 46.00 | -37.71 | Average | NEUTRAL |
| 7 | 1.54 | -4.87 | 9.77 | 0.11 | 9.84 | 14.85 | 56.00 | -41.15 | QP | NEUTRAL |
| 8 | 1.54 | -11.36 | 9.77 | 0.11 | 9.84 | 8.36 | 46.00 | -37.64 | Average | NEUTRAL |
| 9 | 2.31 | 2.49 | 9.77 | 0.11 | 9.84 | 22.21 | 56.00 | -33.79 | QP | NEUTRAL |
| 10 | 2.31 | -8.15 | 9.77 | 0.11 | 9.84 | 11.57 | 46.00 | -34.43 | Average | NEUTRAL |
| 11 | 8.06 | -3.11 | 9.83 | 0.18 | 9.87 | 16.77 | 60.00 | -43.23 | QP | NEUTRAL |
| 12 | 8.06 | -10.18 | 9.83 | 0.18 | 9.87 | 9.70 | 50.00 | -40.30 | Average | NEUTRAL |

Note: 1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

# TR-4-E-010 Conducted Emission Test Result

| | | | |
|---|---|---|---|
| **Test Site** | : DDT 6# Shield Room | D:\2024 Report Date\Q24092616-2E\1224 CE.EM6 | |
| **Test Date** | : 2024-12-24 | **Tested By** | : Gen Liu |
| **EUT** | : wireless internet gateway | **Model Number** | : GW3 |
| **Power Supply** | : AC 120V/60Hz | **Test Mode** | : LoRa-64channels |
| **Condition** | : Temp:21.9°C,Humi:56.2% | **LISN** | : 2024 ENV216 3#/LINE |
| **Memo** | : | | |




| Item (Mark) | Freq. (MHz) | Read Level (dBµV) | LISN Factor (dB) | Cable Loss (dB) | Pulse Limiter Factor (dB) | Result Level (dBµV) | Limit Line (dBµV) | Over Limit (dB) | Detector | Phase |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.16 | 7.97 | 9.78 | 0.07 | 9.83 | 27.65 | 65.25 | -37.60 | QP | LINE |
| 2 | 0.16 | -8.63 | 9.78 | 0.07 | 9.83 | 11.05 | 55.25 | -44.20 | Average | LINE |
| 3 | 0.24 | -0.43 | 9.76 | 0.06 | 9.83 | 19.22 | 61.95 | -42.73 | QP | LINE |
| 4 | 0.24 | -9.98 | 9.76 | 0.06 | 9.83 | 9.67 | 51.95 | -42.28 | Average | LINE |
| 5 | 0.61 | -1.79 | 9.75 | 0.09 | 9.83 | 17.88 | 56.00 | -38.12 | QP | LINE |
| 6 | 0.61 | -13.34 | 9.75 | 0.09 | 9.83 | 6.33 | 46.00 | -39.67 | Average | LINE |
| 7 | 1.54 | -3.06 | 9.75 | 0.11 | 9.84 | 16.64 | 56.00 | -39.36 | QP | LINE |
| 8 | 1.54 | -11.46 | 9.75 | 0.11 | 9.84 | 8.24 | 46.00 | -37.76 | Average | LINE |
| 9 | 2.31 | 2.48 | 9.75 | 0.11 | 9.84 | 22.18 | 56.00 | -33.82 | QP | LINE |
| 10 | 2.31 | -10.73 | 9.75 | 0.11 | 9.84 | 8.97 | 46.00 | -37.03 | Average | LINE |
| 11 | 8.02 | -3.35 | 9.82 | 0.17 | 9.87 | 16.51 | 60.00 | -43.49 | QP | LINE |
| 12 | 8.02 | -11.82 | 9.82 | 0.17 | 9.87 | 8.04 | 50.00 | -41.96 | Average | LINE |

Note: 1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

## 18. Photos of the EUT

Please refer to DDT-Q24092616-2E appendix I

**----------End Report----------**