



## SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/2

Report No.: SZCR250900387104

Page: 1 of 14

# RF Exposure Report

**Application No.:** SZCR2509003871AT  
**Applicant:** Xiamen Milesight IoT Co., Ltd.  
**Address of Applicant:** Building C09, Software Park Phase III, Xiamen 361024, Fujian, China  
**Manufacturer:** Xiamen Milesight IoT Co., Ltd.  
**Address of Manufacturer:** Building C09, Software Park Phase III, Xiamen 361024, Fujian, China  
**Equipment Under Test (EUT):**  
**EUT Name:** IoT Gateway  
**Model No.:** NQ71-L09NA-915M, EG71, NQ71, EG71-L08GL-915M, NQ71-L08GL-915M · EG71-L09NA-915M ♣  
♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade Mark:** Milesight  
**FCC ID:** 2AYHY-EG71  
**Standard(s) :** FCC Rules 47 CFR §2.1091  
KDB 447498 D04 interim General RF Exposure Guidance v01  
**Date of Receipt:** 2025-09-02  
**Date of Test:** 2025-12-17 to 2026-02-10  
**Date of Issue:** 2026-02-12

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

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

Keny Xu

Keny Xu  
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch Technical Services Co., Ltd. EMC Laboratory

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| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 01              |         | 2026-02-12 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                          |  |                            |  |  |
|--------------------------|--|----------------------------|--|--|
| Authorized for issue by: |  |                            |  |  |
|                          |  | Gebin Sun                  |  |  |
|                          |  | Gebin Sun/Project Engineer |  |  |
|                          |  | Eric Fu                    |  |  |
|                          |  | Eric Fu/Reviewer           |  |  |



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## 2 General Information

### 2.1 General Description of E.U.T.

|               |                                                  |
|---------------|--------------------------------------------------|
| Product Type: | <input type="checkbox"/> Portable device         |
|               | <input type="checkbox"/> Mobile device           |
|               | <input checked="" type="checkbox"/> Fixed device |

### 2.2 Details of E.U.T.

|                       |                                                                                                                     |
|-----------------------|---------------------------------------------------------------------------------------------------------------------|
| Power supply:         | AC/DC24V or PoE                                                                                                     |
| <b>For 2.4G WiFi:</b> |                                                                                                                     |
| Operation Frequency:  | 802.11b/g/n(HT20): 2412MHz to 2462MHz,<br>802.11n(HT40): 2422MHz to 2452MHz                                         |
| Modulation Type:      | 802.11b: DSSS(CCK, DQPSK, DBPSK)<br>802.11 g/n: OFDM(16QAM, 64QAM, QPSK, BPSK)                                      |
| Channel Spacing:      | 5MHz                                                                                                                |
| Number of Channels:   | 802.11b/g/n(HT20): 11<br>802.11n(HT40):7                                                                            |
| Antenna Type:         | External Suction cup Antenna                                                                                        |
| Antenna Gain:         | 2.69dBi                                                                                                             |
| <b>For LoRa:</b>      |                                                                                                                     |
| Operating Frequency:  | 902.3MHz to 927.6MHz                                                                                                |
| Channel Separation:   | 200KHz                                                                                                              |
| Modulation:           | CSS                                                                                                                 |
| Channel Number(s):    | 127                                                                                                                 |
| Antenna Type:         | External Suction cup Antenna                                                                                        |
| Antenna Gain:         | Antenna A: -0.74dBi<br>Antenna B: -2.86dBi                                                                          |
| Remark:               | The EUT can be assembled with separately two LORA antennas (Antenna A and B), both antennas were tested separately. |

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### For NFC

|                      |              |
|----------------------|--------------|
| Operation Frequency: | 13.56MHz     |
| Modulation Type:     | ASK          |
| Antenna Type:        | Loop Antenna |

### For LTE

|                             |                                                                                   |                                                                                                                                                                                                                                                                     |                  |
|-----------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Radio System Type           | <input checked="" type="checkbox"/> LTE                                           |                                                                                                                                                                                                                                                                     |                  |
| Supported Frequency Range   | Band                                                                              | TX                                                                                                                                                                                                                                                                  | RX               |
|                             | LTE Band 2                                                                        | 1850 to 1910 MHz                                                                                                                                                                                                                                                    | 1930 to 1990 MHz |
|                             | LTE Band 4                                                                        | 1710 to 1755 MHz                                                                                                                                                                                                                                                    | 2110 to 2155 MHz |
|                             | LTE Band 5                                                                        | 824 to 849 MHz                                                                                                                                                                                                                                                      | 869 to 894 MHz   |
|                             | LTE Band 12                                                                       | 699 to 716 MHz                                                                                                                                                                                                                                                      | 729 to 746 MHz   |
|                             | LTE Band 13                                                                       | 777 to 787 MHz                                                                                                                                                                                                                                                      | 746 to 756 MHz   |
|                             | LTE Band 66                                                                       | 1710 to 1780 MHz                                                                                                                                                                                                                                                    | 2110 to 2200 MHz |
| Supported Channel Bandwidth | LTE Band 2                                                                        | <input checked="" type="checkbox"/> 1.4 MHz <input checked="" type="checkbox"/> 3 MHz <input checked="" type="checkbox"/> 5 MHz <input checked="" type="checkbox"/> 10 MHz<br><input checked="" type="checkbox"/> 15 MHz <input checked="" type="checkbox"/> 20 MHz |                  |
|                             | LTE Band 4                                                                        | <input checked="" type="checkbox"/> 1.4 MHz <input checked="" type="checkbox"/> 3 MHz <input checked="" type="checkbox"/> 5 MHz <input checked="" type="checkbox"/> 10 MHz<br><input checked="" type="checkbox"/> 15 MHz <input checked="" type="checkbox"/> 20 MHz |                  |
|                             | LTE Band 5                                                                        | <input checked="" type="checkbox"/> 1.4 MHz <input checked="" type="checkbox"/> 3 MHz <input checked="" type="checkbox"/> 5 MHz <input checked="" type="checkbox"/> 10 MHz                                                                                          |                  |
|                             | LTE Band 12                                                                       | <input checked="" type="checkbox"/> 1.4 MHz <input checked="" type="checkbox"/> 3 MHz <input checked="" type="checkbox"/> 5 MHz <input checked="" type="checkbox"/> 10 MHz                                                                                          |                  |
|                             | LTE Band 13                                                                       | <input checked="" type="checkbox"/> 5 MHz <input checked="" type="checkbox"/> 10 MHz                                                                                                                                                                                |                  |
|                             | LTE Band 66                                                                       | <input checked="" type="checkbox"/> 1.4 MHz <input checked="" type="checkbox"/> 3 MHz <input checked="" type="checkbox"/> 5 MHz <input checked="" type="checkbox"/> 10 MHz<br><input checked="" type="checkbox"/> 15MHz <input checked="" type="checkbox"/> 20MHz   |                  |
|                             | Note: Only 27 Resource Blocks for 10MHz/15MHz/20MHz when the modulation is 16QAM. |                                                                                                                                                                                                                                                                     |                  |

|                                                                                                                                                                                   |             |         |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|---------|
| Characteristics                                                                                                                                                                   | Description |         |         |
| Designation of Emissions<br>(Remark: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) | E-UTRA:     | QPSK    | 16QAM   |
|                                                                                                                                                                                   | LTE Band 2  | 1M09G7D | 1M10W7D |
|                                                                                                                                                                                   |             | 2M70G7D | 2M69W7D |
|                                                                                                                                                                                   |             | 4M47G7D | 4M47W7D |
|                                                                                                                                                                                   |             | 8M94G7D | 4M88W7D |
|                                                                                                                                                                                   |             | 13M5G7D | 5M23W7D |
|                                                                                                                                                                                   |             | 18M0G7D | 5M28W7D |
|                                                                                                                                                                                   | LTE Band 4  | 1M09G7D | 1M10W7D |
|                                                                                                                                                                                   |             | 2M70G7D | 2M69W7D |
|                                                                                                                                                                                   |             | 4M47G7D | 4M47W7D |
|                                                                                                                                                                                   |             | 8M94G7D | 4M88W7D |
|                                                                                                                                                                                   |             | 13M5G7D | 5M23W7D |



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|  |             |         |         |
|--|-------------|---------|---------|
|  | LTE Band 5  | 18M0G7D | 5M25W7D |
|  |             | 1M09G7D | 1M10W7D |
|  |             | 2M70G7D | 2M69W7D |
|  |             | 4M47G7D | 4M47W7D |
|  |             | 8M95G7D | 4M89W7D |
|  | LTE Band 12 | 1M09G7D | 1M10W7D |
|  |             | 2M70G7D | 2M69W7D |
|  |             | 4M47G7D | 4M47W7D |
|  |             | 8M95G7D | 4M89W7D |
|  | LTE Band 13 | 4M47G7D | 4M47W7D |
|  |             | 8M92G7D | 4M89W7D |
|  | LTE Band 66 | 1M09G7D | 1M10W7D |
|  |             | 2M70G7D | 2M69W7D |
|  |             | 4M47G7D | 4M47W7D |
|  |             | 8M95G7D | 4M89W7D |
|  |             | 13M5G7D | 5M22W7D |
|  |             | 18M0G7D | 5M26W7D |

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### Declaration of EUT Family Grouping:

Model No.: NQ71-L09NA-915M, EG71, NQ71, EG71-L08GL-915M, NQ71-L08GL-915M · EG71-L09NA-915M

Only the model EG71-L08GL-915M was tested. According to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on appearance logo and product model.

### 2.3 Separation Distance

|                                                                                                                                                                                                                                                                                                               |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Minimum test separation distance:                                                                                                                                                                                                                                                                             | 20cm |
| Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander. |      |



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## 2.4 Test Location

All tests were performed at:

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No tests were sub-contracted.

## 2.5 Test Facility

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

### • A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

### • VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

### • FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

### • Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



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### 3 FCC Radiofrequency radiation exposure limits

Test exemptions apply for devices used in general population/uncontrolled exposure environments, according to the SAR-based, or MPE-based exemption thresholds.

#### 3.1 Blanket 1 mW Blanket Exemption

The 1 mW Blanket Exemption of §1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

The 1-mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph §1.1307(b)(3)(ii)(A).

The 1-mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

#### 3.2 MPE-based Exemption

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

**Table B.1—Thresholds For Single RF Sources Subject to Routine Environmental Evaluation**

| RF Source Frequency |   |           | Minimum Distance   |   |                    | Threshold ERP                        |
|---------------------|---|-----------|--------------------|---|--------------------|--------------------------------------|
| $f_L$ MHz           |   | $f_H$ MHz | $\lambda_L / 2\pi$ |   | $\lambda_H / 2\pi$ | W                                    |
| 0.3                 | — | 1.34      | 159 m              | — | 35.6 m             | 1,920 R <sup>2</sup>                 |
| 1.34                | — | 30        | 35.6 m             | — | 1.6 m              | 3,450 R <sup>2</sup> /f <sup>2</sup> |
| 30                  | — | 300       | 1.6 m              | — | 159 mm             | 3.83 R <sup>2</sup>                  |
| 300                 | — | 1,500     | 159 mm             | — | 31.8 mm            | 0.0128 R <sup>2</sup> f              |
| 1,500               | — | 100,000   | 31.8 mm            | — | 0.5 mm             | 19.2R <sup>2</sup>                   |

Subscripts L and H are low and high;  $\lambda$  is wavelength.  
From §1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.

The table applies to any RF source (i.e. single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least  $\lambda/2\pi$ . The thresholds are

based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.

For mobile devices that are not exempt per Table B.1 [Table 1 of §1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in §1.1310 is necessary if the ERP of the device is greater than  $ERP_{20cm}$  in Formula (B.1) [repeated from §2.1091(c)(1); also in §1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B. 1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of  $\lambda/4$  or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

| Limit calculation |                |                       |                  |
|-------------------|----------------|-----------------------|------------------|
| Frequency range   | Frequency(MHz) | $R(\lambda/2\pi)$ (m) | Threshold ERP(W) |
| 300~1500MHz       | <b>915</b>     | 0.0522                | 0.032            |
| 1500~100000MHz    | <b>2480</b>    | 0.0193                | 0.007            |

### 3.3 SAR-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of  $\lambda/4$ .

As for devices with antennas of length greater than  $\lambda/4$  where the gain is not well defined, but always less than that of a half-wave dipole (length  $\lambda/2$ ), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known. The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.



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The SAR-based exemption formula of §1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold  $P_{th}$  (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and  $f$  is in GHz,  $d$  is the separation distance (cm), and  $ERP_{20 \text{ cm}}$  is per Formula (B.1).



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## 5.2 RF Exposure Test Exemptions for Simultaneous Transmission<sup>←</sup>

The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph (b)(3)(i)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).<sup>←</sup>

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluated<sub>k</sub> term) shall be used to determine exemption for simultaneous transmission. In the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.<sup>←</sup>

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

## 4 Measurement and Calculation

### 4.1 Maximum transmit power

#### For 2.4G WIFI:

Antenna Gain: 2.69dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

| Frequency   | Maximum Conducted Power [dBm] | Maximum EIRP [dBm] | Maximum EIRP (mW) |
|-------------|-------------------------------|--------------------|-------------------|
| 2412 / 2462 | 16.33                         | 19.02              | 79.80             |

Note: Refer to report No. SZCR250900387102 for EUT test Max Power Value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

#### For Lora:

Antenna A: -0.74dBi; Antenna B: -2.86dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

| Frequency | Maximum Conducted Power [dBm] | Maximum Conducted Power (mW) | Maximum EIRP [dBm] | Maximum EIRP (mW) |
|-----------|-------------------------------|------------------------------|--------------------|-------------------|
| 902.3     | 22.62                         | 182.81                       | 21.88              | 154.17            |

Note: Refer to report No. SZCR250900387103 for EUT test Max Power Value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

## 4.2 RF Exposure Calculation

**Remark:** we used the maximum power between the conducted power and ERP/EIRP to perform RF exposure exemption evaluation.

### For 2.4G WIFI:

The Max. EIRP Power is 79.80mW

|                                     | Evaluation method               | Exempt Limit(mW) | Verdict |
|-------------------------------------|---------------------------------|------------------|---------|
| <input type="checkbox"/>            | Blanket 1 mW Blanket Exemption  | 1mW              | N/A     |
| <input type="checkbox"/>            | MPE-based Exemption(ERP)        | 7mW(ERP)         | N/A     |
| <input checked="" type="checkbox"/> | SAR-based Exemption( $P_{th}$ ) | 3060             | Yes     |

So, the device is to qualify for SAR test exemption, the exemption report is in lieu of the SAR report.

### For LoRa:

The Max. conducted power is 182.81mW

|                                     | Evaluation method               | Exempt Limit(mW) | Verdict |
|-------------------------------------|---------------------------------|------------------|---------|
| <input type="checkbox"/>            | Blanket 1 mW Blanket Exemption  | 1mW              | N/A     |
| <input type="checkbox"/>            | MPE-based Exemption(ERP)        | 7mW(ERP)         | N/A     |
| <input checked="" type="checkbox"/> | SAR-based Exemption( $P_{th}$ ) | 1840             | Yes     |

So, the device is to qualify for SAR test exemption, the exemption report is in lieu of the SAR report.

### For NFC

| Test Mode | Frequency (MHz) | E-field strength(dBuV/m) | E-field strength(V/m) | ERP (mW) | Limit(mW) | Verdict |
|-----------|-----------------|--------------------------|-----------------------|----------|-----------|---------|
| NFC       | 13.56           | 50.21                    | 0.0003                | 0.00002  | 1         | Pass    |

Remark: NFC can't transmit with other transmitters.

Note: Refer to report No. SZCR250900387105 for EUT test value

## Calculation of Co-located Transmitters

| NO. | Simultaneous Conditions | Mode/Band   | % of limit | Total exposure ratio(<1) |
|-----|-------------------------|-------------|------------|--------------------------|
| 1   | LTE +2.4G Wi-Fi+LORA    | 2.4G Wi-Fi  | 2.61       | 72.32%                   |
|     |                         | LORA        | 9.94       |                          |
|     |                         | LTE Band 12 | 59.77      |                          |

**Note: for LTE**

**The Maximum EIRP:**

| Band        | Maximum Conducted Power [dBm] | Antenna Gain [dBi] | Maximum EIRP [dBm] | Maximum EIRP (mW) |
|-------------|-------------------------------|--------------------|--------------------|-------------------|
| LTE Band 12 | 25                            | 4.31               | 29.31              | 853.10            |

According to the Table above, we can conclude that the calculation results of all simultaneous transmission possibilities are less than 1, so it is into compliance.

The Max. sum of the MPE ratios for 2.4G Wi-Fi , LORA and Band 12 is 72.32%< 1

Therefore, the product also meets the requirements under multiple sources condition.

**--End of the Report--**



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