



TEST REPORT

REPORT NUMBER: I22W00076-MPE-Rev1

ON

| | |
|-----------------------------|--------------------------------------|
| Type of Equipment: | IoT Module |
| Type of Designation: | L710 |
| Manufacturer: | Shanghai MobileTek Communication Ltd |
| Brand Name: | LYNQ |
| FCC ID: | 2AK9D-L710G |

ACCORDING TO

FCC CFR 47 Part 2.1091 《Radiofrequency radiation exposure evaluation: mobile devices》

FCC CFR 47 Part1.1310 《Radiofrequency radiation exposure limits》

Chongqing Academy of Information and Communication Technology

Month date, year

Dec. 29th, 2022

Signature

Xiang Luoyong

Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.



Revision Version

| Report Number | Revision | Date | Memo |
|--|----------|------------|---------------------------------|
| I22W00076-MPE | 00 | 2022-12-13 | Initial creation of test report |
| I22W00076-MPE-Rev1 | 01 | 2022-12-29 | First change of test report |
| Note: This version has changed frequency band2 antenna gain of NB-IoT and CAT-M1, also changed frequency band2 tune up power of CAT-M1, and then recalculated the PD for these frequency band2 . | | | |



Report No. : I22W00076-MPE-Rev1

CONTENTS

| | |
|--|----|
| 1. TEST LABORATORY | 3 |
| 1.1. TESTING LOCATION | 3 |
| 1.2. TESTING ENVIRONMENT | 3 |
| 1.3. PROJECT DATA | 3 |
| 1.4. SIGNATURE | 3 |
| 2. CLIENT INFORMATION | 4 |
| 2.1. APPLICANT INFORMATION | 4 |
| 2.2. MANUFACTURER INFORMATION | 4 |
| 3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) | 5 |
| 3.1. ABOUT EUT | 5 |
| 3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST | 5 |
| 3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST | 5 |
| 4. REFERENCE DOCUMENTS | 6 |
| 4.1. APPLICABLE STANDARDS | 6 |
| 4.2. TEST LIMITS | 6 |
| 5. TEST RESULTS | 7 |
| 5.1. TUNNE UP POWER | 7 |
| 5.2. CALCULATION INFORMATION | 8 |
| 5.3. RESULTS | 9 |
| 5.4. RESULT OF GSM 850 | 10 |
| 5.5. RESULT OF GSM 1900 | 10 |
| 5.6. RESULT OF GPRS 850 4TS | 10 |
| 5.7. RESULT OF GPRS 1900 4TS | 11 |
| 5.8. RESULT OF EGPRS 850 4TS | 11 |
| 5.9. RESULT OF EGPRS 1900 4TS | 11 |

Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336

Tel: 0086-23-88069965

FAX:0086-23-88608777



Report No. : I22W00076-MPE-Rev1

| | |
|--|----|
| 5.10. RESULT OF CAT-M1 BAND 2 | 12 |
| 5.11. RESULT OF CAT-M1 BAND 4 | 12 |
| 5.12. RESULT OF CAT-M1 BAND 5 | 12 |
| 5.13. RESULT OF CAT-M1 BAND 12 | 13 |
| 5.14. RESULT OF CAT-M1 BAND 13 | 13 |
| 5.15. RESULT OF CAT-M1 BAND 26 (814MHZ~824MHZ) | 13 |
| 5.16. RESULT OF CAT-M1 BAND 26 (824MHZ~849MHZ) | 14 |
| 5.17. RESULT OF NB-IOT BAND 2 | 14 |
| 5.18. RESULT OF NB-IOTBAND 4 | 14 |
| 5.19. RESULT OF NB-IOT BAND 5 | 15 |
| 5.20. RESULT OF NB-IOT BAND 12 | 15 |
| 5.21. RESULT OF NB-IOT BAND 13 | 15 |
| 5.22. RESULT OF NB-IOT BAND 26 (814MHZ~824MHZ) | 16 |
| 5.23. RESULT OF NB-IOT BAND 26 (824MHZ~849MHZ) | 16 |
| ANNEX A: EUT PHOTOGRAPH | 17 |

Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336

Tel: 0086-23-88069965

FAX:0086-23-88608777

1. Test Laboratory

1.1. Testing Location

| | |
|---------------|---|
| Company Name: | Chongqing Academy of Information and Communications Technology |
| Address: | Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China |
| Postal Code: | 401336 |
| Telephone: | 0086-23-88069965 |
| Fax: | 0086-23-88608777 |

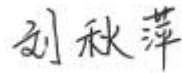
1.2. Testing Environment

| | |
|---------------------|-------|
| Normal Temperature: | 21.3℃ |
| Relative Humidity: | 65.0% |

1.3. Project Data

| | |
|---------------------|------------|
| Testing Start Date: | 2022-12-13 |
| Testing End Date: | 2022-12-13 |

1.4. Signature



2022-12-29

Liu Qiuping
(Prepared this test report)

Date



2022-12-29

Yu Chun
(Reviewed this test report)

Date



2022-12-29

Xiang Luoyong
Director of the laboratory
(Approved this test report)

Date

Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336
Tel: 0086-23-88069965 FAX: 0086-23-88608777

2. Client Information

2.1. Applicant Information

| | |
|-----------------|---|
| Company Name: | Shanghai MobileTek Communication Ltd. |
| Address /Post: | Free Trade Zone No. 33, No. 17 building 6H3, Xiya Road China (Shanghai) |
| Country: | CHINA |
| Telephone: | 15821966417 |
| Fax: | -- |
| Email: | qh.zhang@mobiletek.cn |
| Contact Person: | Qinghua Zhang |

2.2. Manufacturer Information

| | |
|-----------------|---|
| Company Name: | Shanghai MobileTek Communication Ltd. |
| Address /Post: | Free Trade Zone No. 33, No. 17 building 6H3, Xiya Road China (Shanghai) |
| Country: | CHINA |
| Telephone: | 15821966417 |
| Fax: | -- |
| Email: | qh.zhang@mobiletek.cn |
| Contact Person: | Qinghua Zhang |

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

| | |
|--|----------------------|
| EUT Description: | IoT Module |
| Model name: | L710 |
| GSM Frequency Band: | GSM850/GSM1900 |
| CAT-M1 Frequency Band: | B2/B4/B5/B12/B13/B26 |
| NB IoT Frequency Band: | B2/B4/B5/B12/B13/B26 |
| Note: Photographs of EUT are shown in ANNEX A of this test report. | |

3.2. Internal Identification of EUT used during the test

| EUT ID* | SN or IMEI | HW Version | SW Version | Date of receipt |
|---------|-----------------|------------|-----------------------|-----------------|
| S4 | 866884049909641 | V4.0 | L710v09.01b01G_FGP.01 | 2022-10-27 |

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

| EUT ID* | SN | Description |
|---------|----|-------------|
| NA | NA | NA |

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Applicable Standards

The MPE report was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 2.1091.

FCC CFR 47 Part 2.1091: Radiofrequency radiation exposure evaluation: mobile devices

4.2. Test Limits

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

MPE for the upper tier (people in controlled environments)

| Frequency Range [MHz] | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|---|-------------------------------------|-------------------------------------|--|-----------------------------|
| (A) Limits for Occupational/Controlled Exposure | | | | |
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842/f | 4.89/f | (900/f ²)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | -- | -- | f/300 | 6 |
| 1500-100000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f ²)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | -- | -- | f/1500 | 30 |
| 1500-100000 | -- | -- | 1.0 | 30 |

Note: f=frequency in MHz; *Plane-wave equivalent power density

For the DUT, the limits for the general public when an RF safety program is unavailable.

Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336

Tel: 0086-23-88069965

FAX: 0086-23-88608777

5. Test Results

5.1. Tunne Up Power

| Frequency Band | Highest Averaged Tunne Up Power(dBm) | Highest Frame-Averaged Tunne Up Power (dBm) | Antenna Gain(dBi) |
|----------------------------------|--|--|----------------------|
| GSM850 | 30.7 | 21.67 | 3 |
| GSM1900 | 31 | 21.97 | 2 |
| GPRS850 4TS | 30.7 | 27.69 | 3 |
| GPRS1900 4TS | 31 | 27.99 | 2 |
| EGPRS850 4TS | 30.7 | 27.69 | 3 |
| EGPRS1900 4TS | 31 | 27.99 | 2 |
| CAT-M1 Band2 | 24.5 | 24.5 | 2 |
| CAT-M1 Band4 | 23 | 23 | 4 |
| CAT-M1 Band5 | 23 | 23 | 3 |
| CAT-M1 Band12 | 23 | 23 | 4 |
| CAT-M1 Band13 | 23 | 23 | 4 |
| CAT-M1 Band26 (814MHz~824MHz) | 23 | 23 | 4 |
| CAT-M1 Band26 (824MHz~849MHz) | 23 | 23 | 3 |
| NB-IoT Band2 | 22 | 22 | 2 |
| NB-IoT Band4 | 22 | 22 | 4 |
| NB-IoT Band5 | 22 | 22 | 3 |
| NB-IoT Band12 | 22 | 22 | 4 |
| NB-IoT Band13 | 22 | 22 | 4 |
| NB-IoT Band26 (814MHz~824MHz) | 22 | 22 | 4 |
| NB-IoT Band26 (824MHz~849MHz) | 22 | 22 | 3 |

Notes:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

2) According to the conducted power as above, the measurements are performed with 1Txslots for 850MHz and 1900MHz.

3) Disclaimers: The highest tunne up power and antenna gain in the above table are provided by the customer.

Chongqing Academy of Information and Communication Technology

Address: No. 8,Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China,401336

Tel: 0086-23-88069965

FAX:0086-23-88608777

5.2. Calculation Information

For conservative evaluation consideration, only maximum power of each frequency band based on the tighter limits respectively are used to calculate the boundary power density.

Based on the FCC KDB 447498 D01 and 47 CFR §2.1091, the DUT is evaluated as a mobile device.

$$S = \frac{PG}{4\pi d^2}$$

Where

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

5.3. Results

| Frequency range | Limit(mW/cm ²) | Results(mW/cm ²) | Verdict |
|-------------------------------|----------------------------|------------------------------|---------|
| GSM850 | 0.55 | 0.06 | PASS |
| GSM1900 | 1.00 | 0.05 | PASS |
| GPRS850 4TS | 0.55 | 0.23 | PASS |
| GPRS1900 4TS | 1.00 | 0.20 | PASS |
| EGPRS850 4TS | 0.55 | 0.23 | PASS |
| EGPRS1900 4TS | 1.00 | 0.20 | PASS |
| CAT-M1 Band2 | 1.00 | 0.09 | PASS |
| CAT-M1 Band4 | 1.00 | 0.10 | PASS |
| CAT-M1 Band5 | 0.55 | 0.08 | PASS |
| CAT-M1 Band12 | 0.47 | 0.10 | PASS |
| CAT-M1 Band13 | 0.52 | 0.10 | PASS |
| CAT-M1 Band26 (814MHz~824MHz) | 0.54 | 0.10 | PASS |
| CAT-M1 Band26 (824MHz~849MHz) | 0.55 | 0.08 | PASS |
| NB-IoT Band2 | 1.00 | 0.05 | PASS |
| NB-IoT Band4 | 1.00 | 0.08 | PASS |
| NB-IoT Band5 | 0.55 | 0.06 | PASS |
| NB-IoT Band12 | 0.47 | 0.08 | PASS |
| NB-IoT Band13 | 0.52 | 0.08 | PASS |
| NB-IoT Band26 (814MHz~824MHz) | 0.54 | 0.08 | PASS |
| NB-IoT Band26 (824MHz~849MHz) | 0.55 | 0.06 | PASS |

5.4. Result of GSM 850

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.20 MHz~848.80 MHz; The maximum conducted is 21.67 dBm. The maximum gain is 3.00 dBi. Therefore, maximum limit for general public RF exposure: $824.20/1500=0.55 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.06 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.55 mW/cm² limit for uncontrolled exposure.

5.5. Result of GSM 1900

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850.20 MHz~1909.80MHz; The maximum conducted is 21.97 dBm. The maximum gain is 2.00 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.05 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.

5.6. Result of GPRS 850 4TS

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.20 MHz~848.80 MHz; The maximum conducted is 27.69 dBm. The maximum gain is 3.00 dBi. Therefore, maximum limit for general public RF exposure: $824.20/1500=0.55 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.23 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.55 mW/cm² limit for uncontrolled exposure.

5.7. Result of GPRS 1900 4TS

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850.20 MHz~1909.80MHz; The maximum conducted is 27.99 dBm. The maximum gain is 2.00 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.20 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.

5.8. Result of EGPRS 850 4TS

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.20 MHz~848.80 MHz; The maximum conducted is 27.69 dBm. The maximum gain is 3.00 dBi. Therefore, maximum limit for general public RF exposure: 824.20/1500=0.55 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.23 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.55 mW/cm² limit for uncontrolled exposure.

5.9. Result of EGPRS 1900 4TS

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850.20 MHz~1909.80MHz; The maximum conducted is 27.99 dBm. The maximum gain is 2.00 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.20 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.

5.10. Result of CAT-M1 Band 2

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850.0 MHz ~ 1909.9MHz; The maximum conducted is 24.50 dBm. The maximum gain is 2.00 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.09 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.

5.11. Result of CAT-M1 Band 4

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710.0 MHz ~ 1754.9MHz; The maximum conducted is 23.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.10 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.

5.12. Result of CAT-M1 Band 5

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.0 MHz ~ 848.9 MHz; The maximum conducted is 23.00 dBm. The maximum gain is 3.00 dBi. Therefore, maximum limit for general public RF exposure: 824.00/1500=0.55 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.08 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.55 mW/cm² limit for uncontrolled exposure.

5.13. Result of CAT-M1 Band 12

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 699.00 MHz~715.90 MHz; The maximum conducted is 23.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: $699.00/1500=0.47 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.10 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.47 mW/cm² limit for uncontrolled exposure.

5.14. Result of CAT-M1 Band 13

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 777.00 MHz~786.90 MHz; The maximum conducted is 23.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: $777.00/1500=0.52 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.10 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.52 mW/cm² limit for uncontrolled exposure.

5.15. Result of CAT-M1 Band 26 (814MHz~824MHz)

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 814.00 MHz~824.00 MHz; The maximum conducted is 23.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: $814.00/1500=0.54 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.10 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.54 mW/cm² limit for uncontrolled exposure.

5.16. Result of CAT-M1 Band 26 (824MHz~849MHz)

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.00 MHz~849.00 MHz; The maximum conducted is 23.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: $824.00/1500=0.55 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.08 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.54 mW/cm² limit for uncontrolled exposure.

5.17. Result of NB-IoT Band 2

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850.0 MHz~1909.9MHz; The maximum conducted is 22.00 dBm. The maximum gain is 2.00 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.05 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.

5.18. Result of NB-IoTBand 4

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710.0 MHz~1754.9MHz; The maximum conducted is 22.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: 1.00 mW/cm².

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.08 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 1.00 mW/cm² limit for uncontrolled exposure.

5.19. Result of NB-IoT Band 5

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.0 MHz ~ 848.9 MHz; The maximum conducted is 22.00 dBm. The maximum gain is 3.00 dBi. Therefore, maximum limit for general public RF exposure: $824.00/1500=0.55 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.06 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.55 mW/cm² limit for uncontrolled exposure.

5.20. Result of NB-IoT Band 12

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 699.00 MHz ~ 715.90 MHz; The maximum conducted is 22.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: $699.00/1500=0.47 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.08 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.47 mW/cm² limit for uncontrolled exposure.

5.21. Result of NB-IoT Band 13

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 777.0 MHz ~ 786.9MHz; The maximum conducted is 22.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: $777.00/1500=0.52 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.08 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.52 mW/cm² limit for uncontrolled exposure.

5.22. Result of NB-IoT Band 26 (814MHz~824MHz)

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 814.00 MHz~824.00 MHz; The maximum conducted is 22.00 dBm. The maximum gain is 4.00 dBi. Therefore, maximum limit for general public RF exposure: $814.00/1500=0.54 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.08 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.54 mW/cm² limit for uncontrolled exposure.

5.23. Result of NB-IoT Band 26 (824MHz~849MHz)

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.00 MHz~849.00 MHz; The maximum conducted is 22.00 dBm. The maximum gain is 3.00 dBi. Therefore, maximum limit for general public RF exposure: $824.00/1500=0.55 \text{ mW/cm}^2$.

$$S = \frac{PG}{4\pi d^2}$$

P= input power of the antenna (mW)

G = antenna gain (numeric)

r = distance to the center of radiation of antenna (in meter)=20 cm

S=0.06 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.55 mW/cm² limit for uncontrolled exposure.



Report No.: I22W00076-MPE-Rev1

ANNEX A: EUT photograph

See the document "IoT Module Photos".

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

Chongqing Academy of Information and Communication Technology

Address: No. 8, Yuma Road, Chayuan New City, Nan'an District, Chongqing, P. R. China, 401336
Tel: 0086-23-88069965 FAX: 0086-23-88608777