



TEST REPORT

REPORT NUMBER: 24B02W000021-003-V1

ON

Type of Equipment:	LTE Module
Type of Designation:	L511A
Manufacturer:	Shanghai MobileTek Communication Ltd.
Brand Name:	LYNQ
FCC ID:	2AK9DL511A

ACCORDING TO

FCC CFR 47 Part 2.1091
FCC CFR 47 Part 1.1310

Chongqing Academy of Information and Communication Technology

Month date, year

Jun. 11th, 2024

Signature

Zhou Jin

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.



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Revision Version

Report Number	Revision	Date
24B02W000021-003	00	2024-06-06
24B02W000021-003-V1	01	2024-06-11
Note: This version has changed software version.		



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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



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1. Test Laboratory

1.1. Testing Location

Company Name:	Chongqing Academy of Information and Communications Technology
Designation Number:	CN1239
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:	22.5 °C
Relative Humidity:	58.3 %

1.3. Project Data

Testing Start Date:	2024-05-17
Testing End Date:	2024-05-17

1.4. Signature

刘秋萍

2024-06-11

Liu Qiuping
(Prepared this test report)

Date

喻春

2024-06-11

Yu Chun
(Reviewed this test report)

Date

周进

2024-06-11

Zhou Jin
Director of the laboratory
(Approved this test report)

Date

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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

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

3.1. About EUT

EUT Description:	LTE Module
Model name:	L511A
Brand name:	LYNQ
LTE Frequency Band:	B2/B4/B5/B12/B13/B66/B71
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
24B02W000021#S2	IMEI: 865357069912010	L511A_V1	L511Av03.01b02.00	2024-05-07

*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: Radio frequency 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.

5. Test Results

5.1. Tune Up Power and Antenna Gain

Frequency Band	Highest Averaged Tune Up Power(dBm)	Highest Frame-Averaged Tune Up Power (dBm)	Antenna Gain(dBi)
LTE Band2	24	24	2.3
LTE Band4	24	24	2.3
LTE Band5	25	25	2.3
LTE Band12	25	25	2.3
LTE Band13	24	24	2.3
LTE Band66	24	24	2.3
LTE Band71	25	25	2.3
Notes: 1) Disclaimers: The highest tune up power and antenna gain in the above table are provided by the customer			

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



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5.3. Results

Frequency Band	Limit(mW/cm ²)	Results(mW/cm ²)	Verdict
LTE Band2	1.00	0.085	PASS
LTE Band4	1.00	0.085	PASS
LTE Band5	0.55	0.107	PASS
LTE Band12	0.47	0.107	PASS
LTE Band13	0.52	0.085	PASS
LTE Band66	1.00	0.085	PASS
LTE Band71	0.44	0.107	PASS

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5.4. Result of LTE Band 2

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850.0 MHz ~ 1909.9MHz; The maximum conducted is 24 dBm. The maximum gain is 2.3 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=0.085 mW/cm²

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

5.5. Result of LTE Band 4

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710.0 MHz ~ 1754.9MHz; The maximum conducted is 24 dBm. The maximum gain is 2.3 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=0.085 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 LTE Band 5

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824.0 MHz ~ 848.9 MHz; The maximum conducted is 25 dBm. The maximum gain is 2.3 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=0.107 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 LTE Band 12

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 699.00 MHz~715.90 MHz; The maximum conducted is 25 dBm. The maximum gain is 2.3 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=0.107 mW/cm²

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

5.8. Result of LTE Band 13

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 777.00 MHz~786.90 MHz; The maximum conducted is 24 dBm. The maximum gain is 2.3 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=0.085 mW/cm²

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

5.9. Result of LTE Band 66

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710.00 MHz~1779.90 MHz; The maximum conducted is 24 dBm. The maximum gain is 2.3 dBi. Therefore, maximum limit for general public RF exposure: 1.00 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=0.085 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 LTE Band 71

Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 663.00 MHz~697.90 MHz; The maximum conducted is 25 dBm. The maximum gain is 2.3 dBi. Therefore, maximum limit for general public RF exposure: $663.00/1500=0.44 \text{ mW/cm}^2$.

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

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=0.107 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.44 mW/cm² limit for uncontrolled exposure.



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ANNEX A: EUT photograph

See the document "LTE Module Photos".

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

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