



TEST REPORT

REPORT NUMBER: I23W00054-MPE-FCC

ON

Type of Equipment: 5G CPE
Type of Designation: PW550, PW571, PW512, JW515, PW550-NA
Manufacturer: Asiatelco Technologies Co.
Brand Name: ATEL
FCC ID: XYO-PW550

ACCORDING TO

**FCC CFR 47 Part 2.1091-2022
KDB 447498 D01
IEEE C95.1-2019**

Chongqing Academy of Information and Communication Technology

Month date, year

Sep20, 2023

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
I23W00054-MPE-FCC	00	2023-09-20

CONTENTS

1. TEST LABORATORY	2
1.1. TESTING LOCATION	2
1.2. TESTING ENVIRONMENT	2
1.3. PROJECT DATA	2
1.4. SIGNATURE	2
2. CLIENT INFORMATION	3
2.1. APPLICANT INFORMATION	3
2.2. MANUFACTURER INFORMATION	3
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	4
3.1. ABOUT EUT	4
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST	4
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST	4
4. REFERENCE DOCUMENTS	5
4.1. APPLICABLE STANDARDS	5
4.2. TEST LIMITS	5
5. TEST RESULTS	6
5.1. TUNE UP POWER AND ANTENNA GAIN	6
5.2. CALCULATION INFORMATION	8
5.3. RESULTS	9
5.4. RESULT OF ANT 8	11
5.5. RESULT OF ANT 3	18
5.6. RESULT OF ANT 6	19
5.7. RESULT OF ANT 1	20
5.8. RESULT OF BLE	21
ANNEX A: EUT PHOTOGRAPH	22

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:	--
Relative Humidity:	--

1.3. Project Data

Testing Start Date:	--
Testing End Date:	--

1.4. Signature



2023-09-20

Hu Bo
(Prepared this test report)

Date



2023-09-20

Yu Chun
(Reviewed this test report)

Date



2023-09-20

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



Report No. : I23W00054-MPE-FCC

2. Client Information

2.1. Applicant Information

Company Name:	Asiatelco Technologies Co.
Address /Post:	#68 HuaTuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201204, China
Country:	CHINA
Telephone:	--
Fax:	--
Email:	xsfeng@asiatelco.com
Contact Person:	xiaosheng.feng

2.2. Manufacturer Information

Company Name:	Asiatelco Technologies Co.
Address /Post:	#68 HuaTuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201204, China
Country:	CHINA
Telephone:	--
Fax:	--
Email:	xsfeng@asiatelco.com
Contact Person:	xiaosheng.feng

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

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

3.1. About EUT

EUT Description:	5G CPE
Model name:	PW550, PW571, PW512, JW515, PW550-NA
Brand name:	ATEL
Frequency Band:	WCDMA Band II /IV /V LTE Band 2/4/5/7/12/13/14/17/25/26/30/41/48/66/71, CA_41C NR SA n2/5/7/12/14/25/30/41/66/71/77/78 NR MIMO: n41/n77/n78
Type of modulation	WCDMA: QPSK/16 QAM LTE: QPSK/16 QAM/64 QAM/256 QAM NR: CP-OFDM QPSK/16 QAM/64 QAM/256 QAM DFT-s-OFDM QPSK/16 QAM/64 QAM/256 QAM BLE: GFSK
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
--	--	PW55-P1	CPE5_PW550_ N0_00_v1.0.2	2023-09-13

*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
--	--	--

*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 2.1091-2022.

FCC CFR 47 Part 2.1091-2022: Radio frequency radiation exposure evaluation: mobile devices

KDB447498 D01: General RF Exposure Guidance v06: RF Exposure Procedures and Equipment Authorization Policies For Mobile and Portable Devices.

IEEE C95.1:2019: IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz.

Note: KDB 447498 D01 and FCC CFR 47 Part 2.1091-2022 are not approved by A2LA.

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 0.2 m 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. Tune Up Power and Antenna Gain

Antenna	Frequency Band	Highest Averaged Tune Up Power(dBm)	Highest Frame-Averaged Tune Up Power (dBm)	Antenna Gain(dBi)
ANT 8	WCDMA Band II (1850MHz-1910MHz)	25.00	25.00	1.70
ANT 8	WCDMA Band IV(1710MHz-1755MHz)	25.00	25.00	1.82
ANT 8	WCDMA Band V (824MHz-849MHz)	25.00	25.00	1.56
ANT 8	LTE Band 2(1850MHz-1910MHz)	24.50	24.50	1.70
ANT 8	LTE Band 4(1710MHz-1755MHz)	24.50	24.50	1.82
ANT 8	LTE Band 5(824MHz-849MHz)	24.50	24.50	1.56
ANT 8	LTE Band 7(2500MHz-2570MHz)	24.50	24.50	1.07
ANT 8	LTE Band 12(699MHz-716MHz)	24.50	24.50	0.92
ANT 8	LTE Band 13(777MHz-787MHz)	24.50	24.50	0.43
ANT 8	LTE Band 14(788MHz-798MHz)	24.50	24.50	0.43
ANT 8	LTE Band 17(704MHz-716MHz)	24.50	24.50	0.92
ANT 8	LTE Band 25(1850MHz-1915MHz)	24.50	24.50	1.70
ANT 8	LTE Band 26(814MHz-849MHz)	24.50	24.50	1.56
ANT 8	LTE Band 30(2305MHz-2315MHz)	23.50	23.50	0.22
ANT 3	LTE Band 41(2496MHz-2690MHz)	27.50	27.50	1.92
ANT 6	LTE Band 48(3550MHz-3700MHz)	22.00	22.00	1.84
ANT 8	LTE Band 66(1710MHz-1780MHz)	24.50	24.50	1.82
ANT 8	LTE Band 71(663MHz-698MHz)	24.50	24.50	0.92
ANT 3	LTE CA_41C(2496MHz-2690MHz)	27.50	27.50	1.92
ANT 8	NR n2(1850MHz-1910MHz)	24.50	24.50	1.70
ANT 8	NR n5(824MHz-849MHz)	24.50	24.50	1.56
ANT 8	NR n7(2500MHz-2570MHz)	24.50	24.50	1.07
ANT 8	NR n12(699MHz-716MHz)	24.50	24.50	0.92
ANT 8	NR n14(788MHz-798MHz)	24.50	24.50	0.43
ANT 8	NR n25(1850MHz-1915MHz)	24.50	24.50	1.70
ANT 8	NR n30(2305MHz-2315MHz)	23.50	23.50	0.22
ANT 3	NR n41(2496MHz-2690MHz)	27.50	27.50	1.92
ANT 8	NR n66(1710MHz-1780MHz)	24.50	24.50	1.82
ANT 8	NR n71(663MHz-698MHz)	24.50	24.50	0.92
ANT 6	NR n77(3300MHz-4200MHz)	27.50	27.50	1.84

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. : I23W00054-MPE-FCC

ANT 6	NR n78(3300MHz-3800MHz)	27.50	27.50	1.84
ANT 3	NR n41 MIMO(2496MHz-2690MHz)	23.50	23.50	1.92
ANT 8		23.50	23.50	1.77
ANT 1	NR n77 MIMO(3300MHz-4200MHz)	23.50	23.50	1.91
ANT 6		23.50	23.50	1.84
ANT 1	NR n78 MIMO(3300MHz-3800MHz)	23.50	23.50	1.61
ANT 6		23.50	23.50	1.84
BT	BLE(2402MHz-2480MHz)	5.50	5.50	3.87

Notes:

1) Disclaimers: The highest tune 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

Table 5.3-1: Standalone Evaluation

Antenna	Frequency Band	Limit (mW/cm ²)	Results (mW/cm ²)	Results /Limit	Verdict
ANT 8	WCDMA Band II (1850MHz-1910MHz)	1.000	0.093	0.093	PASS
ANT 8	WCDMA Band IV (1710MHz-1755MHz)	1.000	0.096	0.096	PASS
ANT 8	WCDMA Band V (824MHz-849MHz)	0.549	0.090	0.164	PASS
ANT 8	LTE Band 2(1850MHz-1910MHz)	1.000	0.083	0.083	PASS
ANT 8	LTE Band 4(1710MHz-1755MHz)	1.000	0.085	0.085	PASS
ANT 8	LTE Band 5(824MHz-849MHz)	0.549	0.080	0.146	PASS
ANT 8	LTE Band 7(2500MHz-2570MHz)	1.000	0.072	0.072	PASS
ANT 8	LTE Band 12(699MHz-716MHz)	0.466	0.069	0.148	PASS
ANT 8	LTE Band 13(777MHz-787MHz)	0.518	0.062	0.120	PASS
ANT 8	LTE Band 14(788MHz-798MHz)	0.525	0.062	0.118	PASS
ANT 8	LTE Band 17(704MHz-716MHz)	0.469	0.069	0.147	PASS
ANT 8	LTE Band 25(1850MHz-1915MHz)	1.000	0.083	0.083	PASS
ANT 8	LTE Band 26(814MHz-849MHz)	0.543	0.080	0.147	PASS
ANT 8	LTE Band 30(2305MHz-2315MHz)	1.000	0.047	0.047	PASS
ANT 3	LTE Band 41(2496MHz-2690MHz)	1.000	0.174	0.174	PASS
ANT 6	LTE Band 48(3550MHz-3700MHz)	1.000	0.048	0.048	PASS
ANT 8	LTE Band 66(1710MHz-1780MHz)	1.000	0.085	0.085	PASS
ANT 8	LTE Band 71(663MHz-698MHz)	0.442	0.069	0.156	PASS
ANT 3	LTE CA_41C(2496MHz-2690MHz)	1.000	0.174	0.174	PASS
ANT 8	NR n2(1850MHz-1910MHz)	1.000	0.083	0.083	PASS
ANT 8	NR n5(824MHz-849MHz)	0.549	0.080	0.146	PASS
ANT 8	NR n7(2500MHz-2570MHz)	1.000	0.072	0.072	PASS
ANT 8	NR n12(699MHz-716MHz)	0.466	0.069	0.148	PASS
ANT 8	NR n14(788MHz-798MHz)	0.525	0.062	0.118	PASS
ANT 8	NR n25(1850MHz-1915MHz)	1.000	0.083	0.083	PASS
ANT 8	NR n30(2305MHz-2315MHz)	1.000	0.047	0.047	PASS
ANT 3	NR n41(2496MHz-2690MHz)	1.000	0.174	0.174	PASS
ANT 8	NR n66(1710MHz-1780MHz)	1.000	0.085	0.085	PASS
ANT 8	NR n71(663MHz-698MHz)	0.442	0.069	0.156	PASS
ANT 6	NR n77(3300MHz-4200MHz)	1.000	0.171	0.171	PASS

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

ANT 6	NR n78(3300MHz-3800MHz)	1.000	0.171	0.171	PASS
ANT 3	NR n41 MIMO(2496MHz-2690MHz)	1.000	0.069	0.069	PASS
ANT 8		1.000	0.067	0.067	PASS
ANT 1	NR n77 MIMO(3300MHz-4200MHz)	1.000	0.069	0.069	PASS
ANT 6		1.000	0.068	0.068	PASS
ANT 1	NR n78 MIMO(3300MHz-3800MHz)	1.000	0.065	0.065	PASS
ANT 6		1.000	0.068	0.068	PASS
BT	BLE(2402MHz-2480MHz)	1.000	0.002	0.002	PASS

Table 5.3-2: Simultaneous transmission evaluation

Antenna	Frequency range	Worst case ratios: (Results/Limit)	Sum of Ratios	Limit of Ratios	Verdict
ANT 3	LTE Band 41/CA_41C	0.174	0.176	1.000	Pass
BT	BLE	0.002			
ANT 3	NR n41	0.174	0.176	1.000	Pass
BT	BLE	0.002			
ANT 3	NR n41 MIMO	0.069	0.138	1.000	Pass
ANT 8		0.067			
BT	BLE	0.002	0.139	1.000	Pass
ANT 1	NR n77 MIMO	0.069			
ANT 6		0.068			
BT	BLE	0.002	0.135	1.000	Pass
ANT 1	NR n78 MIMO	0.065			
ANT 6		0.068			
BT	BLE	0.002			

Conclusion: The Sum of the Ratios is smaller than 1, and simultaneous transmissions is compliant.

5.4. Result of ANT 8

WCDMA Band II Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850 MHz~1910 MHz; The maximum conducted is 25.00 dBm. The maximum gain is 1.70 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.093 mW/cm²

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

WCDMA Band IV Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710 MHz~1755 MHz; The maximum conducted is 25.00 dBm. The maximum gain is 1.82 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.096 mW/cm²

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

WCDMA Band V Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824 MHz~849 MHz; The maximum conducted is 25.00 dBm. The maximum gain is 1.56 dBi. Therefore, maximum limit for general public RF exposure: 0.549 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=0.090 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.549 mW/cm² limit for uncontrolled exposure.

LTE Band 2 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850 MHz~1910 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.70 dBi. Therefore, maximum limit for general public RF exposure: 1 mW/cm².

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

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

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=0.083 mW/cm²

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

LTE Band 4 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710 MHz ~ 1755 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.82 dBi. Therefore, maximum limit for general public RF exposure: 1 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.

LTE Band 5 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824 MHz ~ 849 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.56 dBi. Therefore, maximum limit for general public RF exposure: 0.549 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=0.080 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.549 mW/cm² limit for uncontrolled exposure.

LTE Band 7 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2500 MHz ~ 2570 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.07 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.072 mW/cm²

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

LTE Band 12 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 699 MHz ~ 716 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 0.92 dBi. Therefore,

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

maximum limit for general public RF exposure: 0.466 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=0.069 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.466 mW/cm² limit for uncontrolled exposure.

LTE Band 13 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 777 MHz ~ 787 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 0.43 dBi. Therefore, maximum limit for general public RF exposure: 0.518 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=0.062 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.518 mW/cm² limit for uncontrolled exposure.

LTE Band 14 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 788 MHz ~ 798 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 0.43 dBi. Therefore, maximum limit for general public RF exposure: 0.525 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=0.062 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.525 mW/cm² limit for uncontrolled exposure.

LTE Band 17 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 704 MHz ~ 716 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 0.92 dBi. Therefore, maximum limit for general public RF exposure: 0.469 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=0.069 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.469 mW/cm² limit for uncontrolled exposure.

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

LTE Band 25 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850 MHz ~ 1915 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.70 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.083 mW/cm²

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

LTE Band 26 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 814 MHz ~ 849 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.56 dBi. Therefore, maximum limit for general public RF exposure: 0.543 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=0.080 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.543 mW/cm² limit for uncontrolled exposure.

LTE Band 30 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2305 MHz ~ 2315 MHz; The maximum conducted is 23.50 dBm. The maximum gain is 0.22 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.047 mW/cm²

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

LTE Band 66 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710 MHz ~ 1780 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.82 dBi. Therefore, maximum limit for general public RF exposure: 1 mW/cm².

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

P= input power of the antenna (mW)

G = antenna gain (numeric)

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

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.

LTE Band 71 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 663 MHz ~ 698 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 0.92 dBi. Therefore, maximum limit for general public RF exposure: 0.442 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=0.069 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.442 mW/cm² limit for uncontrolled exposure.

NR n2 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850 MHz ~ 1910 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.70 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.083 mW/cm²

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

NR n5 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 824 MHz ~ 849 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.56 dBi. Therefore, maximum limit for general public RF exposure: 0.549 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=0.080 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.549 mW/cm² limit for uncontrolled exposure.

NR n7 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2500 MHz ~ 2570 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.07 dBi. Therefore, maximum limit for general public RF exposure: 1 mW/cm².

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

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

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=0.072 mW/cm²

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

NR n12 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 699 MHz~716 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 0.92 dBi. Therefore, maximum limit for general public RF exposure: 0.466 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=0.069 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.466 mW/cm² limit for uncontrolled exposure.

NR n14 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 788 MHz~798 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 0.43 dBi. Therefore, maximum limit for general public RF exposure: 0.525 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=0.062 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.525 mW/cm² limit for uncontrolled exposure.

NR n25 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1850 MHz~1915 MHz; The maximum conducted is 24.50 dBm. The maximum gain is 1.70 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.083 mW/cm²

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

NR n30 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2305 MHz~2315 MHz;

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

The maximum conducted is 23.50 dBm. The maximum gain is 0.22 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.047 mW/cm²

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

NR n66 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 1710 MHz~1780 MHz;

The maximum conducted is 24.50 dBm. The maximum gain is 1.82 dBi. Therefore, maximum limit for general public RF exposure: 1 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.

NR n71 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 663 MHz~698 MHz; The

maximum conducted is 24.50 dBm. The maximum gain is 0.92 dBi. Therefore, maximum limit for general public RF exposure: 0.442 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=0.069 mW/cm²

Therefore, at 20 cm the spectral power density is less than the 0.442 mW/cm² limit for uncontrolled exposure.

NR n41 MIMO Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2496 MHz~2690

MHz; The maximum conducted is 23.50 dBm. The maximum gain is 1.77 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.067 mW/cm²

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

Therefore, at 20 cm the spectral power density is less than the 1 mW/cm² limit for uncontrolled exposure.

5.5. Result of ANT 3

LTE Band 41 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2496 MHz~2690 MHz; The maximum conducted is 27.50 dBm. The maximum gain is 1.92 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.174 mW/cm²

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

LTE CA_41C Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2496 MHz~2690 MHz; The maximum conducted is 27.50 dBm. The maximum gain is 1.92 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.174 mW/cm²

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

NR n41 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2496 MHz~2690 MHz; The maximum conducted is 27.50 dBm. The maximum gain is 1.92 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.174 mW/cm²

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

NR n41 MIMO Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2496 MHz~2690 MHz; The maximum conducted is 23.50 dBm. The maximum gain is 1.92 dBi. Therefore, maximum limit for general public RF exposure: 1 mW/cm².

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

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

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=0.069 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 ANT 6

LTE Band 48 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 3350 MHz ~ 3700MHz; The maximum conducted is 22.00 dBm. The maximum gain is 1.84 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.048 mW/cm²

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

NR n77 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 3300 MHz ~ 4200MHz; The maximum conducted is 27.50 dBm. The maximum gain is 1.84 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.171 mW/cm²

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

NR n77 MIMO Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 3300 MHz ~ 4200MHz; The maximum conducted is 23.50 dBm. The maximum gain is 1.84 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.068 mW/cm²

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

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

NR n78 Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 3300 MHz ~ 3800MHz; The maximum conducted is 27.50 dBm. The maximum gain is 1.84 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.171 mW/cm²

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

NR n78 MIMO Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 3300 MHz ~ 3800MHz; The maximum conducted is 23.50 dBm. The maximum gain is 1.84 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.068 mW/cm²

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

5.7. Result of ANT 1

NR n77 MIMO Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 3300 MHz ~ 4200 MHz; The maximum conducted is 23.50 dBm. The maximum gain is 1.91 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.069 mW/cm²

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

NR n78 MIMO Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 3300 MHz ~ 3800 MHz; The maximum conducted is 23.50 dBm. The maximum gain is 1.61 dBi. Therefore, maximum limit for general public RF exposure: 1 mW/cm².

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

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

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=0.065 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 BLE

BT Test Results: MPE Limit Calculation: the EUT'S operating frequencies @ 2402 MHz~2480 MHz; The maximum conducted is 5.50 dBm. The maximum gain is 3.87 dBi. Therefore, maximum limit for general public RF exposure: 1 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=0.002 mW/cm²

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



Report No. : I23W00054-MPE-FCC

ANNEX A: EUT photograph

See the document “5G CPE 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