MPE REPORT

FCC ID: FCC/IC RF Test Report
FCC ID:2AX9H-25126
IC： 26675-25126

Product	:	4G lte router
Model Name	:	CPE810, LC111,GC111, CPE812, L100 ,CPE120
Brand	:	N/A
Report No.	:	**PTC20092106702E-FC03**

Prepared for

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name	:	Shen Zhen Shi JuHui Tou Zi Guan li You Xian Gong Si
Address	:	5A09 Unit A building B. BaoNeng Zhi Chuang Gu PingHu Longgang Shenzhen China 518111
Product name	:	4G lte router
Model name	:	CPE810, LC111,GC111, CPE812, L100 ,CPE120
RF Exposure Procedures:	:	KDB 447498 D01 v06
Test Date	:	Nov.20, 2020 to Dec.31, 2020
Date of Issue	:	Jan.04, 2021

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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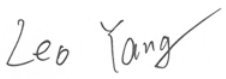
Test Engineer:



Leo Yang / Engineer

Technical Manager:

Chris Du / Manager

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

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

MPE Calculation Method

Friis transmission formula: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1415926

R= distance between observation point and center of the radiator in cm (20cm)

Pd the limit of MPE, 1mW/cm2. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

R=20cm

2.4G WIFI:

Channel Freq. (MHz)	modulation	conducted power (dBm)		Tune-up power (dBm)		Max tune-up power (dBm)		Max tune-up power (mW)		Antenna Gain Numeric		Evaluation result at 20cm Power density(mW/cm2)			Power density Limits (mW/cm2)
		Ant 0	Ant 1	Ant 0	Ant 1	Ant 0	Ant 1	Ant 0	Ant 1	Ant 0	Ant 1	Ant 0	Ant 1	Sum	
2412	802.11b	19.14	19.45	20±1	20±1	21	21	125.9	125.9	2	2	0.05	0.05	0.1	1
2437		18.01	19.5	19±1	20±1	20	21	100	125.9	2	2	0.0398	0.05	0.0898	1
2462		18.22	19.41	19±1	20±1	20	21	100	125.9	2	2	0.0398	0.05	0.0898	1
2412	802.11g	19.87	19.61	20±1	20±1	21	21	125.9	125.9	2	2	0.05	0.05	0.1	1
2437		19.16	19.89	20±1	20±1	21	21	125.9	125.9	2	2	0.05	0.05	0.1	1
2462		19.27	19.75	20±1	20±1	21	21	125.9	125.9	2	2	0.05	0.05	0.1	1
2412	802.11n H20	21.16	20.89	22±1	21±1	23	21	199.5	125.9	2	2	0.0794	0.05	0.1294	1
2437		20.48	21.28	21±1	22±1	22	23	158.5	199.5	2	2	0.063	0.0794	0.1424	1
2462		20.69	20.75	21±1	21±1	22	22	158.5	158.5	2	2	0.063	0.063	0.126	1
2422	802.11n H40	21.03	21.39	22±1	22±1	23	23	199.5	199.5	2	2	0.0794	0.0794	0.1588	1
2437		21.3	21.51	22±1	22±1	23	23	199.5	199.5	2	2	0.0794	0.0794	0.1588	1
2452		21.73	21.81	22±1	22±1	23	23	199.5	199.5	2	2	0.0794	0.0794	0.1588	1

LTE:

Band	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
2	22.29	23±1	24	251.189	2.0	2.0	0.0999	1
4	22.87	23±1	24	251.189	2.0	2.0	0.0999	1
7	23.09	24±1	25	316.2	2.0	2.0	0.1258	0.466

simultaneous transmit:

WIFI + LTE Band 2 = 0.1588+0.0999=0.2587mW/cm2

WIFI + LTE Band 4 = 0.1588+0.0999=0.2587mW/cm2

WIFI+ (LTE Band 12/ Power density Limits) =

0.1587+(0.1258/0.466)= 0.1587+0.27=0.4287mW/cm2

Conclusion:

For the max result: 0.4287≤ 1.0 for 1g SAR, No SAR is required

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