



MPE REPORT

FCC ID: 2AYE8MIFIDATA

Product Name	:	4G ROUTER
Model Name	:	LC111,LC112,LC113,LC115,LC116,LC117,LC118,GC111,GC112,GC113,GC115,B315,B525,E5573,E3372
Brand Name	:	N/A
Report No.	:	PTC20091603002E-FC03
Prepared for		
ShenZhen MifiData technology Co.,Ltd.		
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Prepared by		
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TEST RESULT CERTIFICATION

Applicant's name : ShenZhen MifiData technology Co.,Ltd.
Address : 4/F building F, Station Industrial Park ,TianBao road,ShiYan
Town ,BaoAn District ,Shenzhen Guangdong, China

Manufacture's name : ShenZhen MifiData technology Co.,Ltd.
Address : 4/F building F, Station Industrial Park ,TianBao road,ShiYan
Town ,BaoAn District ,Shenzhen Guangdong, China

Product name : 4G ROUTER
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113,GC115,B315,B525,E5573,E3372

RF Exposure : KDB 447498 D01 v06
Procedures: :
Test Date : Dec 01, 2020 to Dec. 17, 2020
Date of Issue : Dec. 18, 2020

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:

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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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

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

P_d 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		Tune-up power		Max		Antenna	Evaluation result at 20cm			Power density Limits
		(dBm)		(dBm)		tune-up power		Gain	Power density(mW/cm2)			(mW/cm2)
						(dBm)	(mW)	Numeric				
		Ant 0	Ant 1	Ant 0	Ant 1	Ant 0 or Ant 1	Ant 0 or Ant 1	Ant 0 Ant 1	Ant 0	Ant 1	Sum	
2412	802.11b	18.23	18.21	18.5±1	18.5±1	19.5	89.13	3.14	0.0557	0.0557	/	
2437		18.36	18.32	18.5±1	18.5±1	19.5	89.13	3.14	0.0557	0.0557	/	1
2462		18.11	18.09	18.5±1	18.5±1	19.5	89.13	3.14	0.0557	0.0557	/	1
2412	802.11g	15.32	15.29	16.0±1	16.0±1	17.0	50.12	3.14	0.0313	0.0313	/	1
2437		15.58	15.50	16.0±1	16.0±1	17.0	50.12	3.14	0.0313	0.0313	/	1
2462		15.27	15.19	16.0±1	16.0±1	17.0	50.12	3.14	0.0313	0.0313	/	1

Channel Freq. (MHz)	modulation	conducted power		Tune-up power		Total Max		Antenna	Evaluation result at 20cm			Power density Limits
		(dBm)		(dBm)		tune-up power		Gain	Power density(mW/cm2)			(mW/cm2)
						(dBm)	(mW)	Numeric				
		Ant 0	Ant 1	Ant 0	Ant 1	Ant 0 + Ant 1	Ant 0 + Ant 1	Directional gain	Ant 0	Ant 1	Sum	
2412	802.11n-20MHz	14.38	14.17	15±1	15±1	19.0	79.6	6.28	/	/	0.0992	
2437		14.51	14.57	15±1	15±1	19.0	79.6	6.28	/	/	0.0992	1
2462		14.40	14.31	15±1	15±1	19.0	79.6	6.28	/	/	0.0992	1

LTE:

Band	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
	(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm2)
			(dBm)	(mW)	(dBi)	Numeric		
2	23.47	23±1	24	251.189	2.24	1.67	0.0837	1
4	23.64	23±1	24	251.189	2.86	1.93	0.0965	1
5	22.88	23±1	24	251.189	1.61	1.45	0.0724	0.56
7	23.03	24±1	25	200.90	4.14	2.59	0.1632	1

simultaneous transmit(Max):

WIFI + LTE Band 7 = 0.0992+0.1632=0.2624mW/cm2

Conclusion:

For the max result: $0.2624 \leq 1.0$ for 1g SAR, No SAR is required

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