



RF EXPOSURE Test Report

Report No.: MTi221122006-01E3
Date of issue: 2022-12-09
Applicant: Bouffalo Lab (Nanjing) Co., Ltd
Product: BL602 Module
Model(s): BL602C40IT16P00
FCC ID: 2A9HW-BL602

Shenzhen Microtest Co., Ltd.
<http://www.mtitest.com>



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Test Result Certification	
Applicant:	Bouffalo Lab (Nanjing) Co., Ltd
Address:	5F, Building A, No. 9 Yunzheng Street, Jiangbei New District, Nanjing, China
Manufacturer:	Shenzhen Anxinke Technology Co., Ltd
Address:	Room410, Building C, Huafeng Intelligence Innovation Port, Gushu, Xixiang, Baoan District, Shenzhen
Factory:	Shenzhen Anxinke Technology Co., Ltd
Address:	Floor 3, Building A, Dongfang Industrial Park, Sixth Industrial Zone, Dachai Village, Nanlang Town, Zhongshan City, Guangdong Province
Product description	
Product name:	BL602 Module
Trademark:	Bouffalo Lab
Model name:	BL602C40IT16P00
Serial Model:	N/A
Standards:	N/A
Test procedure:	KDB 447498 D01 v06
Date of Test	
Date of test:	2022-12-05~2022-12-26
Test result:	Pass

Test Engineer :

Letter. Lan.

(Letter Lan)

Reviewed By :

Leon Chen

(Leon Chen)

Approved By :

Tom Xue

(Tom Xue)



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

BLE:

Operation Frequency: 2402-2480MHz, Power density limited: 1mW/ cm²

2.4GWiFi:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz, 802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm²

Antenna Type: PCB Antenna; antenna gain: 2.36dBi, R=20cm, mW=10^{^(dBi/10)}

antenna gain Numeric=10^{^(dBi/10)}= 10^{^(2.36/10)}=1.72

BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
2402	BLE-1M	8.91	9±1	10	10.000	2.36	1.72	0.0034	1
2440		8.76	9±1	10	10.000	2.36	1.72	0.0034	1
2480		9.01	9±1	10	10.000	2.36	1.72	0.0034	1

2.4GWiFi:

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/cm ²)	(mW/cm ²)
				(dBm)	(mW)	Numeric		
2412	802.11b	21.2	21±1	22	158.489	1.72	0.05423	1
2437		21.53	21±1	22	158.489	1.72	0.05423	1
2462		21.82	21±1	22	158.489	1.72	0.05423	1
2412	802.11g	23.2	23±1	24	251.189	1.72	0.08595	1
2437		23.51	23±1	24	251.189	1.72	0.08595	1
2462		23.95	23±1	24	251.189	1.72	0.08595	1
2412	802.11n20	22.02	22±1	23	199.526	1.72	0.06827	1
2437		22.14	22±1	23	199.526	1.72	0.06827	1
2462		22.27	22±1	23	199.526	1.72	0.06827	1

Conclusion:

For the max result: 0.08595≤ 1.0 SAR, No SAR is required.



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