



MPE Test Report

Report No.: MTi201225011-03E3

Date of issue: May 14, 2021

Applicant: Cherub Technology Co., Ltd

Product name: BASS AMPLIFIER

Model(s): MIGHTY BASS 50BT

FCC ID: 2AOAAMIGHTYBASS50BT

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



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TEST RESULT CERTIFICATION

Applicant's name	Cherub Technology Co., Ltd
Address	Room507, Block 1, Nanhai E-Cool, No. 6 Xinghua Road, Shekou, Nanshan District, Shenzhen City, Guangdong Province, China, 518067
Manufacturer's Name	Cherub Technology Co., Ltd
Address	Room507, Block 1, Nanhai E-Cool, No. 6 Xinghua Road, Shekou, Nanshan District, Shenzhen City, Guangdong Province, China, 518067
Factory's Name	Cherub Technology Co., Ltd (Zhuhai High-tech Park)
Address	No.10, Keji No.9Rd, Tangjiawan Town, Zhuhai National Hi-tech Industrial Development Zone, Zhuhai City, Guangdong Province, China, 519080

Product description

Product name	BASS AMPLIFIER
Trademark	NUX
Model Name	MIGHTY BASS 50BT
Serial Model	N/A
Standards	N/A
Test procedure	KDB 447498 D01 v06

Date of Test

Date (s) of performance of tests... :	Jan. 15, 2021 ~ May 14, 2021
Test Result	Pass

This device described above has been tested by Shenzhen Microtest Co., Ltd. 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.

Testing Engineer

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Danny Xu

(Danny Xu)

Technical Manager

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Leo Su

(Leo Su)

Authorized Signatory

:

Tom Xue

(Tom Xue)



1 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)

1.1 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.



1.2 Measurement Result

Operation Frequency: BT GFSK, $\pi/4$ -DQPSK, 8DPSK: 2402-2480MHz

Power density limited: 1mW/ cm²

Antenna Type: BT Antenna;;

BT antenna gain: 1.5dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(2.5/10)}=1.78$

Chann el Freq. (MHz)	modulati on	conduct ed power	Tune-up power (dBm)	Max		Antenna		Evaluat ion result (mW/c m2)	Power density Limits (mW/cm 2)
		tune-up power		Gain					
		(dBm)		(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	7.963	8±1	9	7.943	1.5	1.41	0.0022	1
2441		8.334	8±1	9	7.943	1.5	1.41	0.0022	1
2480		7.174	8±1	9	7.943	1.5	1.41	0.0022	1
2402	π/4- DQPSK	8.026	9±1	10	10.000	1.5	1.41	0.0028	1
2441		9.196	9±1	10	10.000	1.5	1.41	0.0028	1
2480		8.389	9±1	10	10.000	1.5	1.41	0.0028	1
2402	8DPSK	8.403	9±1	10	10.000	1.5	1.41	0.0028	1
2441		9.179	9±1	10	10.000	1.5	1.41	0.0028	1
2480		8.462	9±1	10	10.000	1.5	1.41	0.0028	1

Channel Freq. (MHz)	modulation	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		
2402	GFSK	3.924	4±1	5	3.162	1.50	1.41	0.0009	1
2440		4.737	4±1	5	3.162	1.50	1.41	0.0009	1
2480		3.574	4±1	5	3.162	1.50	1.41	0.0009	1

Conclusion:

For the max result: BT: $0.0028 \leq 1.0$, BLE: $0.0009 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----