



# RF EXPOSURE Test Report

**Report No.:** MTi230907020-06E2

**Date of issue:** 2023-10-25

**Applicant:** Cherub Technology Co., Ltd.

**Product:** B-8 Wireless System

**Model(s):** B-8

**FCC ID:** 2BCVT-B-8RX

Shenzhen Microtest Co., Ltd.




<http://www.mtitest.com>

# Instructions

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<b>Test Result Certification</b>	
<b>Applicant:</b>	Cherub Technology Co., Ltd.
<b>Address:</b>	No.10, Keji 9th Road, Tangjiawan Town, Zhuhai High-tech Zone, Guangdong, China, 519080
<b>Manufacturer:</b>	Cherub Technology Co., Ltd.
<b>Address:</b>	No.10, Keji 9th Road, Tangjiawan Town, Zhuhai High-tech Zone, Guangdong, China, 519080
<b>Factory:</b>	Cherub Technology Co., Ltd.
<b>Address:</b>	No.10, Keji 9th Road, Tangjiawan Town, Zhuhai High-tech Zone, Guangdong, China, 519080
<b>Product description</b>	
<b>Product name:</b>	B-8 Wireless System
<b>Trademark:</b>	NUX
<b>Model name:</b>	B-8
<b>Serial Model:</b>	N/A
<b>Standards:</b>	N/A
<b>Test procedure:</b>	KDB 447498 D01 v06
<b>Date of Test</b>	
<b>Date of test:</b>	2023-10-18 to 2023-10-25
<b>Test result:</b>	Pass

<b>Test Engineer</b>	:	
		(Maleah Deng)
<b>Reviewed By</b>	:	
		(Leon Chen)
<b>Approved By</b>	:	
		(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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	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/cm<sup>2</sup>

$P_{out}$  = 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)

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. 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

### 2.4G SRD:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm<sup>2</sup>

Antenna gain:

ANT1: 2.43dBi;

ANT2: 2.19dBi

R=20cm

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

Ant1 gain Numeric= $10^{(dBi/10)}=10^{(2.43/10)}=1.75$

Ant2 gain Numeric= $10^{(dBi/10)}=10^{(2.19/10)}=1.66$

### ANT 1:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	7.67	7±1	8	6.310	2.43	1.75	0.0022	1
2441		6.53	6±1	7	5.012	2.43	1.75	0.0017	1
2480		6.93	6±1	7	5.012	2.43	1.75	0.0017	1

### ANT 2:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	7.79	7±1	8	6.310	2.19	1.66	0.0021	1
2441		6.65	6±1	7	5.012	2.19	1.66	0.0017	1
2480		7.07	7±1	8	6.310	2.19	1.66	0.0021	1

**Note:** ANT1 and ANT2 can't work simultaneously

### Conclusion:

For the max result:  $0.0022 \leq 1.0$ , No SAR is required.

----END OF REPORT----