



MPE Test Report

Report No.: MTi210427001-01E1

Date of issue: May 19, 2021

Applicant: Xiamen Creotech, Inc

Product name: Bluetooth module

Model(s): KLMKBM-01

FCC ID: 2AZTV-KLMKBM-01

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

Instructions

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TEST RESULT CERTIFICATION

Applicant's name.....:	Xiamen Creotech, Inc
Address.....:	Room N404 Weiye Building, Huo-Ju High-Tech Squire, Xiamen City, Fujian, China
Manufacturer's Name	Xiamen Creotech, Inc
Address.....:	Room N404 Weiye Building, Huo-Ju High-Tech Squire, Xiamen City, Fujian, China

Product description

Product name.....:	Bluetooth module
Trademark	Creotech
Model Name	KLMKBM-01
Serial Model	N/A
Standards.....:	N/A
Test procedure	KDB 447498 D01 v06

Date of Test

Date (s) of performance of tests... :	May 10, 2021 ~ May 19, 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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(Cindy Qin)

Technical Manager

:

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

WIFI:

Operation Frequency: BLE GFSK: 2402-2480MHz

Power density limited: 1mW/ cm²

Antenna Type: BT Antenna: PCB Antenna;

BT antenna gain: 2dBi

R=20cm

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

antenna gain Numeric= $10^{(dBi/10)}=10^{(2/10)}=1.58$

1M:

Chann el Freq. (MHz)	modula tion	conduct ed power	Tune- up power (dBm)	Max		Antenna		Evalu ation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/c m2)	(mW/c m2)
				(dBm)	(mW)	(dBi)	Numeri c		
2402	GFSK	4.729	5±1	6	3.981	2	1.58	0.0013	1
2441		4.701	5±1	6	3.981	2	1.58	0.0013	1
2480		4.605	5±1	6	3.981	2	1.58	0.0013	1

2M:

Chann el Freq. (MHz)	modula tion	conduct ed power	Tune- up power (dBm)	Max		Antenna		Evalu ation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/c m2)	(mW/c m2)
				(dBm)	(mW)	(dBi)	Numeri c		
2402	GFSK	4.418	5±1	6	3.981	2	1.58	0.0013	1
2441		4.472	5±1	6	3.981	2	1.58	0.0013	1
2480		4.485	5±1	6	3.981	2	1.58	0.0013	1

Conclusion:

For the max result: 0.0013≤ 1.0 for 1g SAR, No SAR is required.

----END OF REPORT----