

MPE REPORT

FCC ID:2AMM6-825X1CA

Date of issue: Aug. 26, 2020

Report number:	MTi20073016-10E2
Sample description:	BT Mesh Module
Model(s):	EWN-8258FAT1CA, EWN-8250FGT1CA
Applicant:	Earda Technologies Co., Ltd
Address:	Block A, LianFeng Creative Industry Park, 2 JiSheng Road, HuangGe Town, NanSha District, Guangzhou, PRC.
Date of test:	Aug. 14, 2020 to Aug. 26, 2020

Shenzhen Microtest Co., Ltd.

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TEST RESULT CERTIFICATION	
Applicant's name:	Earda Technologies Co., Ltd
Address:	Block A, LianFeng Creative Industry Park, 2 JiSheng Road, HuangGe Town, NanSha District, Guangzhou, PRC.
Manufacture's name:	Earda Technologies Co., Ltd
Address:	Block A, LianFeng Creative Industry Park, 2 JiSheng Road, HuangGe Town, NanSha District, Guangzhou, PRC.
Product name:	BT Mesh Module
Trademark:	EARDATEK
Model and/or type reference:	EWN-8258FAT1CA
Serial model:	EWN-8250FGT1CA
RF exposure procedures:	KDB 447498 D01 v06

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.

Tested by: *Demi Mu*

Demi Mu Aug. 26, 2020

Reviewed by: *Leo Su*

Leo Su Aug. 26, 2020

Approved by: *Tom Xue*

Tom Xue Aug. 26, 2020



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

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

Antenna Type: PCB Antenna;

Antenna gain: 0.5dBi

R=20cm

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

antenna gain Numeric= $10^{(dBi/10)}=10^{(0.5/10)}=1.12$

1M:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	7.499	8±1	9	7.943	0.50	1.12	0.0018	1
2440		7.861	8±1	9	7.943	0.50	1.12	0.0018	1
2480		8.193	8±1	9	7.943	0.50	1.12	0.0018	1

2M:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	7.501	8±1	9	7.943	0.50	1.12	0.0018	1
2440		7.878	8±1	9	7.943	0.50	1.12	0.0018	1
2480		8.18	8±1	9	7.943	0.50	1.12	0.0018	1

Conclusion:

For the max result: $0.0018 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----