



MPE Test Report

Report No.: MTi210309019-03E2

Date of issue: Mar. 22, 2021

Applicant: Earda Technologies Co., Ltd

Product name: BT Mesh Module

Model(s): EWN-8258FAT1HA,
EWN-8250FGT1HA

FCC ID: 2AMM6-825X1HA

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



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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.
Manufacturer's Name	Earda Technologies Co., Ltd
Address.....	Block A, LianFeng Creative Industry Park, 2 JiSheng Road., HuangGe Town, NanSha District, Guangzhou, PRC.

Product description

Product name.....	BT Mesh Module
Trademark	EARDATEK
Model Name	EWN-8258FAT1HA
Serial Model	EWN-8250FGT1HA
Standards.....	N/A
Test procedure	KDB 447498 D01 v06

Date of Test

Date (s) of performance of tests... :	Mar. 12, 2021 ~ Mar. 22, 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 EMC requirements. And it is applicable only to the tested sample identified in the report.

Testing Engineer

:

(Danny Xu)

Technical Manager

:

(Leo Su)

Authorized Signatory

:

(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

BLE:

Operation Frequency: GFSK: 2402-2480MHz

Power density limited: 1mW/ cm²

Antenna Type: BT Antenna: PCB Antenna;
BT antenna gain: 0.5dBi

R=20cm

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

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

Chann el Freq. (MHz)	modulat ion	conduct ed power	Tune- up power (dBm)	Max		Antenna		Evalua tion result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/c m2)	(mW/c m2)
				(dBm)	(mW)	(dBi)	Numeri c		
2402	GFSK	4.955	5±1	6	3.981	0.50	1.12	0.0009	1
2440		5.367	5±1	6	3.981	0.50	1.12	0.0009	1
2480		5.688	5±1	6	3.981	0.50	1.12	0.0009	1

Conclusion:

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

----END OF REPORT----