

RF EXPOSURE Test Report

Report No. : MTi250604022-0102E2
Date of issue : 2025-07-30
Applicant : Qingdao Eastsoft Communication Technology Co., Ltd.
Product : Eastsoft Wi-SUN ESMD70101 Solution
Model(s) : ESMD70101
FCC ID : 2BP5O-ESWSN0CDF

Shenzhen Microtest Co., Ltd.

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Test Result Certification		
Applicant	Qingdao Eastsoft Communication Technology Co., Ltd.	
Applicant Address	A, 16 Shangqing Road, Shibei District, Qingdao, Shandong Province, China	
Manufacturer	Qingdao Eastsoft Communication Technology Co., Ltd.	
Manufacturer Address	A, 16 Shangqing Road, Shibei District, Qingdao, Shandong Province, China	
Product description		
Product name	Eastsoft Wi-SUN ESMD70101 Solution	
Trademark	Eastsoft®	
Model name	ESMD70101	
Series Model(s)	N/A	
Standards	47 CFR Part 2.1091	
Test method	KDB 447498 D01 v06	
Testing Information		
Date of test	2025-06-17 to 2025-07-25	
Test Result	Pass	
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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)

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

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.

2 Measurement Result

BT&BLE:

Operation Frequency: 902-928MHz,

Power density limited: 1mW/ cm²

Antenna Type: Monopole Antenna

Antenna gain: 1dBi

R=20cm

 $mW=10^{(dBm/10)}$ Antenna gain Numeric= $10^{(dBi/10)}=10^{(1/10)}=1.26$

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
902.4	FSK	28.66	28±1	29	794.328	1	1.26	0.1989	0.602
914.8		27.74	27±1	28	630.957	1	1.26	0.1580	0.610
927.6		27.39	27±1	28	630.957	1	1.26	0.1580	0.618

Conclusion:For the max result: $0.1989 \leq 0.602$ test exclusion threshold, No SAR is required.

Statement

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***** END OF REPORT *****