

RF EXPOSURE Test Report

Report No. : MTi260413007-0101E2
Date of issue : 2026-04-21
Applicant : Ming Shang Technology Co., Ltd.
Product : Wireless transmitter
Model(s) : HW-CL12
FCC ID : 2BT4R-020-00015

Shenzhen Microtest Co., Ltd.

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Test Result Certification		
Applicant	Ming Shang Technology Co., Ltd.	
Applicant Address	No. 569, Sanhe Section, Yetin Avenue, Huiyang Economic Development Zone. Huizhou City, Guangdong Province	
Manufacturer	Ming Shang Technology Co., Ltd.	
Manufacturer Address	No. 569, Sanhe Section, Yetin Avenue, Huiyang Economic Development Zone. Huizhou City, Guangdong Province	
Factory	Mingshang Technology (Malaysia)SDN BHD	
Factory Address	No.20, Jalan 1-Park 1/2, Taman Perindustrian I-Park, 81000 Kulai Johor, Malaysia	
Product description		
Product name	Wireless transmitter	
Trademark	N/A	
Model name	HW-CL12	
Series Model(s)	N/A	
Standards	47 CFR Part 2.1091	
Test method	KDB 447498 D01 v06	
Testing Information		
Date of test	2026-04-16 to 2026-04-21	
Test Result	Pass	
Prepared by:	Letter Lan	<i>Letter Lan.</i>
Reviewed by:	David Lee	<i>David. Lee</i>
Approved by:	Lewis Lian	<i>Lewis Lian</i>

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

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.

2 Measurement Result

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm²

Antenna Type: glue stick antenna

Antenna gain: 4.91dBi

R=20cm

 $mW=10^{(dBi/10)}$ Antenna gain Numeric= $10^{(dBi/10)}=10^{(4.91/10)}=3.10$

2.4G:

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		
2402	QPSK	9.37	9±1	10	10.000	4.91	3.10	0.0062	1
2441		9.26	9±1	10	10.000	4.91	3.10	0.0062	1
2480		9.20	9±1	10	10.000	4.91	3.10	0.0062	1

Conclusion:

For the max result: $0.0062 \leq 1.0$ test exclusion threshold, No SAR is required.

Statement

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2. The test results of this report are only responsible for the samples submitted. Client shall be responsible for representativeness of the sample and authenticity of the material.
3. The report shall not be partially reproduced without the written consent of the Laboratory.
4. This report is invalid if transferred, altered or tampered with in any form without authorization.
5. The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.
6. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

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