

RF EXPOSURE Test Report

Report No. : MTi251022013-0105E3
Date of issue : 2025-11-27
Applicant : Gaozhou Yunkangyuan Technology Co., Ltd.
Product : Alarm Clock Radio with Bluetooth
Model(s) : YM-2509, YM-2509A, YM-2509B, YM-2509C, UP-
Max, UP-Pro, CR10, UP-Plus, UP-Ultra,
CR10DAB, YM-2509FM, YM-2509DAB, YM-
2509XXX, CR10XXX, CR20, CR20XXX (X:
numbers from 0-9, letters from A-Z, or blank)
FCC ID : 2BS2R-M-2509

Shenzhen Microtest Co., Ltd.

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Test Result Certification		
Applicant	Gaozhou Yunkangyuan Technology Co., Ltd.	
Applicant Address	Building B, No. 1 Yunhua Road, Yuntan Committee South Industrial Zone, Yuntan Town, Gaozhou, Guangdong Province, China.	
Manufacturer	Gaozhou Yunkangyuan Technology Co., Ltd.	
Manufacturer Address	Building B, No. 1 Yunhua Road, Yuntan Committee South Industrial Zone, Yuntan Town, Gaozhou, Guangdong Province, China.	
Factory	Gaozhou Yunkangyuan Technology Co., Ltd.	
Factory Address	Building B, No. 1 Yunhua Road, Yuntan Committee South Industrial Zone, Yuntan Town, Gaozhou, Guangdong Province, China.	
Product description		
Product name	Alarm Clock Radio with Bluetooth	
Trademark	Yunmei, Mangokit, LEMEGA	
Model name	YM-2509	
Series Model(s)	YM-2509A, YM-2509B, YM-2509C, UP-Max, UP-Pro, CR10, UP-Plus, UP-Ultra, CR10DAB, YM-2509FM, YM-2509DAB, YM-2509XXX, CR10XXX, CR20, CR20XXX (X: numbers from 0-9, letters from A-Z, or blank)	
Standards	47 CFR Part 2.1091	
Test method	KDB 447498 D01 v06	
Testing Information		
Date of test	2025-11-08 to 2025-11-27	
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

BT&BLE:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm²

Antenna Type: PCB Antenna

Antenna gain: -0.68dBi

R=20cm

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

Antenna gain Numeric= $10^{(dBi/10)}=10^{(-0.68/10)}=0.86$

BT:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
		(dBm)		tune-up power (dBm)	(mW)	Gain (dBi)	Numeric		
2402	GFSK	1.57	1±1	2	1.585	-0.68	0.86	0.0003	1
2441		1.56	1±1	2	1.585	-0.68	0.86	0.0003	1
2480		1.71	1±1	2	1.585	-0.68	0.86	0.0003	1
2402	π/4-DQPSK	2.26	2±1	3	1.995	-0.68	0.86	0.0003	1
2441		2.21	2±1	3	1.995	-0.68	0.86	0.0003	1
2480		2.22	2±1	3	1.995	-0.68	0.86	0.0003	1

BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
		(dBm)		tune-up power (dBm)	(mW)	Gain (dBi)	Numeric		
2402	GFSK-1M	1.48	1±1	2	1.585	-0.68	0.86	0.0003	1
2440		1.89	1±1	2	1.585	-0.68	0.86	0.0003	1
2480		1.55	1±1	2	1.585	-0.68	0.86	0.0003	1
2402	GFSK-2M	1.5	1±1	2	1.585	-0.68	0.86	0.0003	1
2440		1.94	1±1	2	1.585	-0.68	0.86	0.0003	1
2480		1.6	1±1	2	1.585	-0.68	0.86	0.0003	1

Conclusion:

For the max result: $0.003 \leq 1.0$ test exclusion threshold, No SAR is required.

Statement

TEST REPORT

Report No.: MTi251022013-0105E3

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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.
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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 *****