

RF EXPOSURE Test Report

Product: MLM2PRO

Trade Mark: Rapsodo

Model Number: MLM2.0P

FCC ID: 2AH3O-MLM2BP

Prepared for

Rapsodo Pte Ltd

Blk 20 Ayer Rajah Crescent, #08-05, Singapore 139964

Prepared by

Shenzhen HongBiao Certification& Testing Co., Ltd

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TEST RESULT CERTIFICATION

Applicant's Name..... : Rapsodo Pte Ltd

Address : Blk 20 Ayer Rajah Crescent, #08-05, Singapore 139964

Manufacturer's Name : Rapsodo Pte Ltd

Address : Blk 20 Ayer Rajah Crescent, #08-05, Singapore 139964

Product description

Product name : MLM2PRO

Model Number : MLM2.0P

Standards : FCC CFR 47 PART 1, 1.1310

FCC CFR 47 PART 2, 2.1091

Test procedure : KDB 447498 D01 General RF Exposure Guidance v06

This device described above has been tested by Shenzhen HongBiao Certification& Testing 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.

Date of Test:

Date (s) of performance of tests: Dec. 29, 2025~Jan. 28, 2026

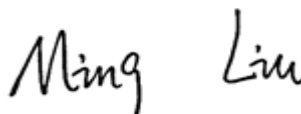
Test Result.....: **Pass**

Testing Engineer :



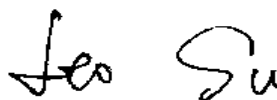
(Z o e S u)

Technical Manager :



(M i n g L i u)

Authorized Signatory :



(L e o S u)

Revision History

[illegible]

1 General Description

1.1 Description of EUT

Product name:	MLM2PRO
Model name:	MLM2.0P
Series Model:	N/A
Different of series model:	N/A
Operation frequency:	BLE: 2402-2480MHz BR&EDR: 2402-2480MHz 2.4GHz WIFI: 802.11b/g/n20: 2412-2462MHz 802.11n40: 2422-2452MHz 5GHz WIFI: U-NII-1: 5180 MHz to 5240 MHz U-NII-2A: 5260 MHz to 5320 MHz U-NII-2C: 5500 MHz to 5700 MHz U-NII-3: 5745 MHz to 5825 MHz Radar: 24000-24250MHz
Modulation type:	BLE: GFSK BR&EDR: GFSK, $\pi/4$ -DQPSK, 8DPSK 2.4GHz WIFI: IEEE 802.11b: DSSS (DBPSK, DQPSK, CCK) IEEE 802.11g/n (HT20/HT40): OFDM (64QAM, 16QAM, QPSK, BPSK) 5GHz WIFI: 802.11a/n/ac: OFDM(BPSK, QPSK, 16QAM, 64QAM, 256QAM) Radar: CW
Bit Rate of transmitter:	BLE: 1 Mbps, 2 Mbps BR&EDR: 1 Mbps, 2Mbps, 3Mbps 2.4GHz WIFI: 802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n(20MHz) use 800 ns GI: 65.0/58.5/52.0/39.0/26.0/19.5/13.0/6.5 Mbps (MCS0~MCS7) 802.11n(40MHz) use 800 ns GI: 13.5/27/40.5/54/81/108/121.5/135Mbps 5GHz WIFI: 802.11a: 6,9,12,18,24,36,48,54Mbps 802.11n(HT20/HT40): MCS0-MCS15 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40): NSS1, MCS0-MCS9 802.11ac(VHT80): NSS1, MCS0-MCS9
Antenna type:	BLE: FPC Antenna BR&EDR: FPC Antenna 2.4GHz & 5GHz WIFI ANT1&2: FPC Antenna Radar: Integrated Patch Antenna
Antenna gain:	BLE: 5.7dBi

	BR&EDR: 5.7dBi 2.4GHz & 5GHz WIFI ANT1&2: 5.7dBi Radar: 7dBi
Max. output power:	BLE: -0.79dBm BR&EDR: -0.15dBm 2.4GHz WIFI: 16.99dBm 5GHz WIFI: U-NII-1: 13.66dBm U-NII-2A: 15.66dBm U-NII-2C: 15.58dBm U-NII-3: 15.96dBm Radar: 104.6dBμV/m
Hardware version:	H
Software version:	4.0.12
Battery:	battery: DC 7.4V, 3300mAh spare battery: DC 7.4V, 3500mAh
Power supply:	Input: DC 5V/3A
Adapter information:	N/A

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	TX
2	/
3	/

1.3 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.4 Ancillary Equipment

Equipment	Model	S/N	Manufacturer
/	/	/	/

2 Test Facilities and Accreditations

2.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
FCC Registration No.:	CN1341
A2LA Certificate No.:	6765.01

2.2 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C~35°C
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

2.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

Measurement Frequency Range	U , (dB)	Note
RF frequency	2×10^{-5}	
RF power, conducted	± 0.57 dB	
Temperature	± 1 degree	
Humidity	± 5 %	

2.4 Test Software

Software name	Manufacturer	Model	Version
Conducted test system	MWRF-test	MTS 8310	2.0.0.0

3 RF Exposure

3.1 Standalone SAR test exclusion considerations

3.1.1. Limit

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).

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.

3.1.2. Test Result

BLE:

Operation Frequency: 2402-2480MHz

Antenna Type: FPC antenna

BT antenna gain: 5.7dBi

Power density limited: 1mW/ cm²

BR&EDR:

Operation Frequency: 2402-2480MHz

Antenna Type: FPC antenna

BT antenna gain: 5.7dBi

Power density limited: 1mW/ cm²

2.4GHz WIFI:

Operation Frequency:

802.11b/g/n20: 2412-2462MHz,

802.11n40: 2422-2452MHz

Antenna Type: FPC Antenna

2.4G WIFI antenna gain: 5.7dBi

Power density limited: 1mW/ cm²**5GHz WIFI:**

Operation Frequency:

U-NII-1: 5180 MHz to 5240 MHz

U-NII-2A: 5260 MHz to 5320 MHz

U-NII-2C: 5500 MHz to 5680 MHz

U-NII-3: 5745 MHz to 5825 MHz

Antenna Type: FPC Antenna

WIFI antenna gain: 5.7dBi

R=20cm

 $mW=10^{(dBm/10)}$ **Radar:**

24000-24250MHz

Antenna gain: 7dBi

BLE: Antenna gain Numeric= $10^{(dBi/10)}=10^{(5.7/10)}=3.72$ BR&EDR: Antenna gain Numeric= $10^{(dBi/10)}=10^{(5.7/10)}=3.72$ 2.4GHz WIFI: Antenna gain Numeric= $10^{(dBi/10)}=10^{(5.7/10)}=3.72$ 5GHz WIFI: Antenna gain Numeric= $10^{(dBi/10)}=10^{(5.7/10)}=3.72$ Radar: Antenna gain Numeric= $10^{(dBi/10)}=10^{(7/10)}=5.01$ **BLE(Worst):**

Chann el Freq. (MHz)	modulation	conduct ed power	Tune-u p power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Num eric		
2440	GFSK(2M)	-0.79	0±1	1	1.259	5.7	3.72	0.0009	1

BR&EDR(Worst):

Chann el Freq. (MHz)	modulation	conduct ed power	Tune-u p power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Num eric		
2441	8DPSK	-0.15	0±1	1	1.259	5.7	3.72	0.0009	1

2.4GHz WIFI(Worst):

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna		Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain		Power density (mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
2412 (ANT2)	802.11g	16.99	17±1	18	63.096	5.7	3.72	0.0466	1

5GHz WIFI(Worst):

Frequency (MHz)	Modulation	conducted power	Tune-up power	Max		Antenna		Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain		Power density (mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
5785 (ANT2)	802.11a	15.96	16±1	17	50.119	5.7	3.72	0.0370	1

Radar(Worst):

Channel Freq. (MHz)	Maximum field strength	conducted power	Tune-up power	Max		Antenna		Evaluation result at 20cm	Power density Limits
	dBμV/m	(dBm)	(dBm)	tune-up power		Gain		Power density (mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
24000-24250	104.6	9.4	9±1	10	10	7	5.01	0.0100	1

Note: EIRP=dBμV/m-95.2=104.6-95.2=9.4 dBm

Conclusion:

NO	Maximum MPE Value					Limits (mW/cm ²)
	BLE (mW/cm ²)	BR&EDR (mW/cm ²)	2.4GHz WIFI (mW/cm ²)	5GHz WIFI (mW/cm ²)	Radar (mW/cm ²)	
1	0.0009	0.0009	0.0466	0.0370	0.0100	1

Simultaneous transmit:

NO	Configurations	Maximum MPE Value					Limits (mW/cm ²)
		BLE (mW/cm ²)	BR&EDR (mW/cm ²)	2.4GHz WIFI (mW/cm ²)	Radar (mW/cm ²)	Transmit simultaneously	
1	BLE + BR&EDR + 2.4GHz WIFI + Radar	0.0009	0.0009	0.0466	0.0100	0.0584	1

NO	Configurations	Maximum MPE Value					Limits (mW/cm ²)
		BLE (mW/cm ²)	BR&EDR (mW/cm ²)	5GHz WIFI (mW/cm ²)	Radar (mW/cm ²)	Transmit simultaneously	
1	BLE + BR&EDR + 5GHz WIFI + Radar	0.0009	0.0009	0.0370	0.0100	0.0488	1

Note:

According to KDB 447498 D01 General RF Exposure Guidance v06, At the transmit simultaneously calculation method is as follows:

Transmit simultaneously MPE = Σ of MPE ratios

MPE ratios = Field strengths or power density / MPE limit at the test frequency

For the max result: $0.0584 \leq 1.0$ SAR, No SAR is required.

Host integrated overall module, maximum power reference to original radar module FCC ID: UXS-SMR3X3.

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