RF EXPOSURE Test Report

Product: MLM2XPro

Trade Mark: Rapsodo

Model Number: MLM2.0XP

FCC ID: 2AH3O-MLM2XPRO

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 ..... :	MLM2XPro
Model Number ..... :	MLM2.0XP
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..... :	July 13, 2026~July 27, 2026
Test Result..... :	**Pass**

Testing Engineer : Zoe Su

(Zoe Su)

Technical Manager : Ming Liu

(Ming Liu)

Authorized Signatory : Leo Su

(Leo Su)

Revision History

Revised No.	Date of Issue	Description
01	July 27, 2026	Original

1 General Description

1.1 Description of EUT

Product name:	MLM2XPro
Model name:	MLM2.0XP
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/n/ax20: 2412-2462MHz 802.11n/ax40: 2422-2452MHz 5GHz WIFI: U-NII-1: 5180-5240MHz U-NII-2A: 5260-5320MHz U-NII-2C: 5500-5700MHz U-NII-3: 5745-5825MHz Radar: 24000-24250MHz
Modulation type:	BLE: GFSK BR&EDR: GFSK, π/4-DQPSK, 8DPSK 2.4GHz WIFI: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g/n/ax (HT20/H40): OFDMA (BPSK, QPSK,16QAM, 64QAM, 256QAM, 1024QAM) 5GHz WIFI: IEEE 802.11a/n(HT20/40)/ac(VHT20/40/80)/ax(VHT20/40/80): OFDMA (BPSK, QPSK,16QAM, 64QAM, 256QAM, 1024QAM) Radar: CW
Bit Rate of transmitter:	BLE: 1 Mbps, 2 Mbps BR&EDR: 1 Mbps, 2Mbps, 3Mbps 2.4GHz WIFI: IEEE 802.11b: 1/2/5.5/11Mbps IEEE 802.11g: 6/9/12/18/24/36/48/54Mbps IEEE 802.11n(20MHz): MCS0-7, up to 72.2Mbps IEEE 802.11n(40MHz): MCS0-7, up to 150Mbps IEEE 802.11ax(20MHz): MCS0-11, up to 143.4Mbps IEEE 802.11ax(40MHz): MCS0-11, up to 286.8 Mbps 5GHz WIFI: 802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n (20MHz): MCS0-7, up to 72.2Mbps 802.11n (40MHz): MCS0-7, up to 150Mbps 802.11ac (20MHz): MCS0-8, up to 86.7Mbps 802.11ac (40MHz): MCS0-9, up to 200Mbps. 802.11ac (80MHz): MCS0-9, up to 433.3Mbps 802.11ax (20MHz): VMCS0-8, up to 143.4Mbps 802.11ax (40MHz): VMCS0-10, up to 286.8Mbps 802.11ax (80MHz): VMCS0-11, up to 600.5Mbps
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 WIFI: ANT1: 5.7dBi ANT2: 5.7dBi 5GHz WIFI: ANT1: 5.7dBi ANT2: 5.7dBi Radar: 7dBi
Max. output power:	BLE: -1.07dBm BR&EDR: -1.09dBm 2.4GHz WIFI: 17.67dBm 5GHz WIFI: U-NII-1: 14.99dBm U-NII-2A: 15.14dBm U-NII-2C: 14.99dBm U-NII-3: 16.87dBm Radar: 104.6dBμV/m
Hardware version:	V1.0
Software version:	V1.0
Battery:	DC 7.4V, 3300mAh
Power supply:	Input: 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:	15ºC~35ºC
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

2.3 Measurement Uncertainty

The reported uncertainty of measurement y ± 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	$2x\ 10^{-5}$	
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: Pd= (Pout*G)\ (4*pi*R^2)
Where
Pd= Power density in mW/cm^2
Pout=output power to antenna in mW
G= Numeric gain of the antenna relative to isotropic antenna
Pi=3.1415926
R= distance between observation point and center of the radiator in cm(20cm)
Pd the limit of MPE, 1mW/cm^2.
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/cm^2

BR&EDR:
Operation Frequency: 2402-2480MHz
Antenna Type: FPC antenna
BT antenna gain: 5.7dBi
Power density limited: 1mW/cm^2

2.4GHz WIFI:
Operation Frequency:
802.11b/g/n/ax20: 2412-2462MHz
802.11n/ax40: 2422-2452MHz
Antenna Type: FPC Antenna
2.4G WIFI antenna gain:
ANT 1: 5.7dBi
ANT 2: 5.7dBi
Power density limited: 1mW/cm^2

5GHz WIFI:
Operation Frequency:
U-NII-1: 5180-5240MHz
U-NII-2A: 5260-5320MHz
U-NII-2C: 5500-5700MHz
U-NII-3: 5745-5825MHz
Antenna Type: FPC Antenna
5G WIFI antenna gain:
ANT1: 5.7dBi
ANT2: 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):

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		
2440	GFSK(1M)	-1.07	0±1	1	1.259	5.7	3.72	0.0009	1

BR&EDR(Worst):

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	GFSK	-1.09	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/cm²)	(mW/cm²)
				(dBm)	(mW)	(dBi)	Numeric		
2437 (SUM)	802.11n20	17.67	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/cm²)	(mW/cm²)
				(dBm)	(mW)	(dBi)	Numeric		
5825 (Ant1)	802.11a	16.87	16±1	17	50.119	5.7	3.72	0.0370	1

Radar(Worst):

Channel Freq. (MHz)	Maximum field stregth	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/cm²)	(mW/cm²)
				(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/cm²)
	BLE (mW/cm²)	BR&EDR (mW/cm²)	2.4GHz WIFI (mW/cm²)	5GHz WIFI (mW/cm²)	Radar (mW/cm²)	
1	0.0009	0.0009	0.0466	0.0370	0.0100	1

Simultaneous transmit:

NO	Configurations	Maximum MPE Value					Limits (mW/cm²)
		BLE (mW/cm²)	BR&EDR (mW/cm²)	2.4GHz WIFI (mW/cm²)	Radar (mW/cm²)	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≤ 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 ********