



RF Exposure Evaluation Declaration

FCC ID: 2AYYZKMGR1T1R02

Applicant: XIAMEN KOMOO INTELLIGENT TECHNOLOGY CO., LTD.

Application Type: Certification

Product: 24GHz Microwave Radar Sensor Module

Model No.: KMGR-1T1R02

FCC Classification: Part 15 Field Disturbance Sensor (FDS)

Test Procedure(s): KDB 447498 D01v06

Test Date: March 26, 2021

Reviewed By:

Kevin Guo

Approved By:

Robin Wu



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2102RSU049-U3	Rev. 01	Initial Report	03-26-2021	Valid

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1. General Information

1.1. Applicant

XIAMEN KOMOO INTELLIGENT TECHNOLOGY CO.,LTD.
 No.0807, Unit 109, No.62, Chengyi North Street, Software 3, Xiamen

1.2. Manufacturer

XIAMEN KOMOO INTELLIGENT TECHNOLOGY CO.,LTD.
 No.0807, Unit 109, No.62, Chengyi North Street, Software 3, Xiamen

1.3. Testing Facility

<input checked="" type="checkbox"/>	Test Site – MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong)
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP)
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Accreditations
	A2LA: 3628.01 CNAS: L10551
	FCC: CN1166 ISED: CN0001
	VCCI: R-20025, G-20034, C-20020, T-20020
<input type="checkbox"/>	Test Site – MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen)
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 CNAS: L10551
	FCC: CN1284 ISED: CN0105
<input type="checkbox"/>	Test Site – MRT Taiwan Laboratory
	Laboratory Location (Taiwan)
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: L3261-190725
	FCC: 291082, TW3261 ISED: TW3261

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	24GHz Microwave Radar Sensor Module
Model No.	KMGR-1T1R02
Transmitting Frequency	24.15GHz
Operation Voltage	DC5V
EUT Identification No.	20210220@sample#13

2.2. Description of Available Antennas

Frequency Band	24.075 – 24.175GHz
Channel Number	1
Type of Modulation	CW
Antenna	Integrated antenna

3. RF Exposure Evaluation

3.1. Limits

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)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation 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 = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

3.2. Test Result of RF Exposure Evaluation

Product	24GHz Microwave Radar Sensor Module
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Fundamental Radiated Emission (dB μ V/m)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
Radar	24075 ~ 24175	99.3	4.1	0.0005	1

Note: Max. EIRP (dBm) = Fundamental Radiated Emission (dB μ V/m) – 95.2 = 99.3 – 95.2 = 4.1dBm

CONCLUSION:

The max Power Density at R (20 cm) = 0.0005mW/cm² = 0.0726 mW/cm² < 1 mW/cm².

Therefore, the Min Safety Distance is 20cm.

_____ The End _____

Appendix A - EUT Photograph

Refer to "2102RSU049-UE" file.