

RF EXPOSURE REPORT

FOR

Applicant	:	XGIMI Technology Co., Ltd
Address	:	Building No.4, Zone A, No.1129, Shijicheng Road, Chengdu High-tech Zone, Sichuan Pilot Free Trade Zone, China
Equipment under Test	:	Projector
Model No.	:	XK03T, XK04T
Trade Mark	:	XGIMI
FCC ID	:	2AFENXK03T
Manufacturer	:	XGIMI Technology Co., Ltd
Address	:	Building No.4, Zone A, No.1129, Shijicheng Road, Chengdu High-tech Zone, Sichuan Pilot Free Trade Zone, China

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

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REPORT

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Test Report Declare

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Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:

The equipment described above is assessed by Dongguan Dongdian Testing Service Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No.:	DDT-R22122619-2E11		
Date of Receipt:	Dec. 26, 2022	Date of Test:	Dec. 26, 2022~ Feb. 15, 2023

Prepared By:

Jacky Huang

Jacky Huang/Engineer

Approved By:



Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Feb. 20, 2023	

1. General Information

1.1. Description of equipment

EUT* Name	: Projector
Model Number	: XK03T, XK04T
Model Differences	: XK03T and XK04T are mainly in appearance (XK04T with TOF camera), resolution (XK03T is 720P, XK04T is 1080P), optical machine, driver plate, hardware version and main plate material number are different, other places and wireless parts are completely consistent. According exploratory explorer test, the difference between the two models only affects Radiated Emission (below 1G) and Power Line Conducted Emission, so only these two items were tested on both models, the rest of the items tested only the worse model XK03T.
EUT function description	: Please reference user manual of this device
Power supply	: DC 20V from external switching power supply
Radio Specification	: Bluetooth V5.2, IEEE802.11b/g/n/a/ac
Operation frequency	: Bluetooth: 2402MHz-2480MHz IEEE802.11b/g/n/a/ac: 2412MHz-2462MHz, 5180MHz-5320MHz, 5500MHz-5700MHz, 5745MHz-5825MHz
Modulation	: Bluetooth: GFSK, $\pi/4$ -DQPSK, 8DPSK IEEE 802.11b: DSSS (CCK, QPSK, BPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: VHT20, VHT40, VHT80: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Transmitter rate	: Bluetooth: 1Mbps, 2Mbps, 3Mbps IEEE 802.11b: up to 11 Mbps IEEE 802.11g/a: up to 54 Mbps IEEE 802.11n HT20: up to 144.4 Mbps IEEE 802.11n HT40: up to 300 Mbps IEEE 802.11ac VHT20: up to 173.4 Mbps IEEE 802.11ac VHT40: up to 400 Mbps IEEE 802.11ac VHT80: up to 866.6 Mbps
Antenna Gain	: Bluetooth Antenna: maximum PK gain: 2.4 dBi WIFI Antenna 1: 2.4G band maximum PK gain: 2.7 dBi, 5G band maximum PK gain: 3.4 dBi WIFI Antenna 2: 2.4G band maximum PK gain: 3.1 dBi, 5G band maximum PK gain: 3.7 dBi
Sample Number	: S22122619-09 for conducted, S22122619-17 and S22122619-18 for radiated

Bluetooth:

Antenna information	
	Ant gain
GFSK	2.4
$\pi/4$ -DQPSK	2.4
8DPSK	2.4

2.4G Band:

Antenna information			
	Ant1 gain	Ant2 gain	Directional gain
IEEE 802.11b	2.7	3.1	/
IEEE 802.11g	2.7	3.1	/
IEEE 802.11n HT20	2.7	3.1	2.9
IEEE 802.11n HT40	2.7	3.1	2.9

5G Band:

Antenna information			
	Ant1 gain	Ant2 gain	Directional gain
IEEE 802.11a	3.4	3.7	/
IEEE 802.11n HT20	3.4	3.7	3.55
IEEE 802.11n HT40	3.4	3.7	3.55
IEEE 802.11ac VHT20	3.4	3.7	3.55
IEEE 802.11ac VHT40	3.4	3.7	3.55
IEEE 802.11ac VHT80	3.4	3.7	3.55

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City,
Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2. RF Exposure Evaluation

2.1. Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2. Calculation method

$$E(\text{V/m}) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } S(\text{mW/cm}^2) = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (mW)

G = EUT Antenna numeric gain (numeric)=

d = Separation distance between radiator and human body (m)

The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance, d= 0.2 m, as well as the gain of the used antenna, the RF power density can be obtained.

2.3. Estimation result

Mode	PK Output power (dBm)	Output power (mW)	tune up power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	MPE Values (mW/cm ²)	MPE Limit (mW/cm ²)
BT	12.79	19.01	14	2.40	1.74	0.00658	1
BLE	5.61	3.64	7	2.40	1.74	0.00126	1
2.4G WIFI	18.91	77.80	20	2.90	1.95	0.03018	1
5G WIFI	18.85	76.74	20	3.55	2.26	0.03450	1

Simultaneous:

Bluetooth+2.4G WIFI= $0.00658/1+0.03018/1=0.03676<1$

Bluetooth+5G WIFI= $0.00658/1+0.03450/1=0.04108<1$

Note: The estimation distance is 20 cm

Conclusion: The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

END OF REPORT