

# Maximum Permissible Exposure Evaluation

## FCC ID: 2AEP6-XM-JPRZ-2R

### 1. Client Information

Applicant	:	Hangzhou Xiongmai Technology Co., Ltd.
Address	:	9th Floor, Building 9, Yinhu Innovation Center, No.9 Fuxian Road, Yinhu Street, Hangzhou, China.
Manufacturer	:	Hangzhou Xiongmai Technology Co., Ltd.
Address	:	9th Floor, Building 9, Yinhu Innovation Center, No.9 Fuxian Road, Yinhu Street, Hangzhou, China.

### 2. General Description of EUT

EUT Name	:	Robot Camera								
Models No.	:	XM-JPRZ-2R, XM-JPRZ-3R, XM-JPRZ-3D, XM-JPRZ-4R, XM-JPRZ-5R, XM-JPRZ-2D, XM-JPRZ-4D, XM-JPRZ-5D								
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name.								
Brand Name	:	N/A								
Product Description	:	<table border="1"><tr><td>Operation Frequency:</td><td>802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n (HT40): 2422MHz~2452MHz</td></tr><tr><td>Number of Channel:</td><td>802.11b/g/n(HT20): 11 Channels 802.11n (HT40): 7 Channels</td></tr><tr><td>RF Output Power:</td><td>802.11b: 18.304 dBm 802.11g: 19.154 dBm 802.11n(HT20): 19.160 dBm 802.11n(HT40): 17.847 dBm</td></tr><tr><td>Antenna Gain:</td><td>3.0dBi Internal Antenna</td></tr></table>	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n (HT40): 2422MHz~2452MHz	Number of Channel:	802.11b/g/n(HT20): 11 Channels 802.11n (HT40): 7 Channels	RF Output Power:	802.11b: 18.304 dBm 802.11g: 19.154 dBm 802.11n(HT20): 19.160 dBm 802.11n(HT40): 17.847 dBm	Antenna Gain:	3.0dBi Internal Antenna
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RF Output Power:	802.11b: 18.304 dBm 802.11g: 19.154 dBm 802.11n(HT20): 19.160 dBm 802.11n(HT40): 17.847 dBm									
Antenna Gain:	3.0dBi Internal Antenna									
Power Rating	:	DC 5V from adapter: Input: AC 100-240V 50/60Hz Output: DC 5V1.2A								
Software Version	:	V1.0								
Hardware Version	:	V1.0								
Connecting I/O Port(S)	:	Please refer to the User's Manual								
Remark	:	the MPE report used the EUT (20210309-22-2#).								

## MPE Calculations for WIFI

### 1. Antenna Gain:

Internal Antenna:3.0dBi.

### 2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

### 3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = (PG) / 4\pi R^2$$

Where

**S**: power density

**P**: power input to the antenna

**G**: power gain of the antenna in the direction of interest relative to an isotropic radiator.

**R**: distance to the center of radiation of the antenna

### 4. Test Result:

#### 2.4G WiFi

Mode	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm <sup>2</sup> ) [S]	Limit of Power Density (mW/ cm <sup>2</sup> ) (S)
802.11B	18.304	18±1	19	3	20	0.03150	1
802.11G	19.154	19±1	20	3	20	0.03970	1
802.11N(HT20)	19.160	19±1	20	3	20	0.03970	1
802.11N(HT40)	17.847	17±1	18	3	20	0.02500	1

**5. Conclusion:**

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

**Limits for General Population/ Uncontrolled Exposure**

Frequency Range (MHz)	Power density (mW/ cm <sup>2</sup> )
300-1,500	F/1500
1,500-100,000	1.0

For 2.4WIFI:2412~2462 MHz

MPE limit S: 1mW/ cm<sup>2</sup>

The MPE is calculated as **0.03970 mW / cm<sup>2</sup> < limit 1mW / cm<sup>2</sup>**. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

**Note**

For a more detailed features description, please refer to the RF Test Report.

**6. Conclusion:**

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

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