

Radio Frequency Exposure Report

On Behalf of

TENVIS Technology Co., Ltd.

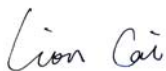
FCC ID: N6QIPROBOT3
Product Description: IP Camera
Model No.: IPROBOT 3
Supplementary Model: IPROBOT 4,IPROBOT 5,IPROBOT 6,IP391W-HD,IP392W-HD,IP393W-HD,MINI319W-HD, MINI329W-HD,MINI339W-HD

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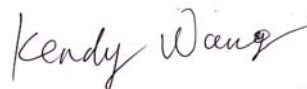
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Tested by:



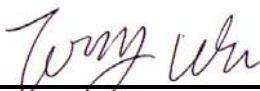
Lion Cai

Reviewed by:



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1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Applicant:	TENVIS Technology Co., Ltd.
Address of Applicant:	301,Building 6,No.3,Puxiaxia'an Street, Liuyue, Henggang Town, Longgang District ,Shenzhen
Manufacturer:	TENVIS Technology Co., Ltd.
Address of Manufacturer:	301,Building 6,No.3,Puxiaxia'an Street, Liuyue, Henggang Town, Longgang District ,Shenzhen

General Description of E.U.T

Items	Description
EUT Description:	IP Camera
Trade Name:	TENVIS
Model No.:	IPROBOT 3
Supplementary Model:	IPROBOT 4,IPROBOT 5,IPROBOT 6,IP391W-HD,IP392W-HD, IP393W-HD,MINI319W-HD, MINI329W-HD,MINI339W-HD
Frequency Band:	IEEE 802.11b/g, IEEE 802.11n HT20 (ISM Band) : 2412MHz~2462MHz, IEEE 802.11n HT40 (ISM Band) : 2422MHz~2452MHz
Channel Spacing:	IEEE 802.11b/g, 802.11n HT20/HT40: 5MHz
Number of Channels:	IEEE 802.11b/g, 802.11n HT20:11 Channels IEEE 802.11n HT40 :7 Channels
Transmit Data Rate:	maximum of 150Mbps
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20/40: OFDM (64QAM, 16QAM, QPSK, BPSK)
Antenna Type:	External antenna
Antenna Gain:	2dBi
Power Supply:	Input: DC 5V 1500mA
Adapter Information:	Model: RHD10W050150 Input:100-240V 50/60Hz 1.5A Output: 5VDC 1.5A

Remark: * The test data gathered are from the production sample provided by the manufacturer.

* Supplementary models appearance , internal circuit and electrical principles are the same, just named and color differently

1.2 Objective

The objective of the following report is used to demonstrate that EUT operated in a manner that ensures the public is not exposed to radio frequency energy levels in excess of the relative provisions of FCC 47CFR Part 1.1307

1.3 General Description of Test

Items	Description
EUT Frequency band	☐ FHSS: 2.400GHz ~ 2.483GHz ☒ WLAN: 2.400GHz ~ 2.483GHz ☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐ WLAN: 5.745GHz ~ 5825GHz ☐ Others: _____
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others _____
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²) ☐ Others: _____
Antenna diversity	☒ Single antenna ☐ Multiple antennas: ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Max. output power	15.86dBm (0.0385W)
Antenna gain (Max)	2 dBi (Numeric gain:1.58)
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation
Note: 1. The maximum output power is 15.86dBm (0.0923W) at 2412MHz B Mode(with 10 numeric antenna gain.) 2. For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20 cm, even if the calculations indicate that the MPE distance would be lesser.	

1.4 Human Exposure Assessment Results

Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$$

Where E = Field Strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power Density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = 100 * d \text{ (m)}$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power Density in mW / cm²

EUT parameter (data from the separate report)	
Given $E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$	Where G: numerical gain of transmitting antenna; TP: Transmitted power in watt; d: distance from the transmitting antenna in meter
Max average output power in Watt (TP)	15.86dBm (0.0385W)
Antenna gain (G)	2 dBi (Numeric gain: 1.58)
Exposure classification	S=1mW/cm ²
Minimum distance in meter (d) (from transmitting structure to the human body)	20cm (0.2m)
Yields $S = \frac{30 \times P \times G}{3770d^2}, \quad P=0.0385W, G=1.58, d=0.2$ $S=0.0121\text{mW/cm}^2$ Or $d = \sqrt{\frac{30 \times P \times G}{3770S}}, \quad S=1, P=0.0385W, G=1.58$ $d=0.00048\text{m}$	
Conclusion: S=0.1581mW/cm ² is significant lower than the General Population Exposure Power Density Limit 1mW/cm ² or except the distance when human body proximity to the antenna is less than 0.48 cm then will reach the General Population Exposure Power Density Limit (For mobile or fixed location transmitters, the maximum power density is 1.0 mW / cm ² even if the calculation indicates that the power density would be larger.)	