

INTERTEK TESTING SERVICES

RF Exposure report

FCC ID: 2AI25OC02

The Equipment Under Test (EUT) is a IP-Camera with WiFi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing , 5180 MHz - 5240MHz for 802.11a/n/ac-HT20 with 4 channels and 5745MHz - 5825MHz for 802.11a/n/ac-HT20 with 5 channels. The EUT was powered by USB port (DC 5V) with AC/DC adapter(Input: 120VAC,60Hz, Output: 5VDC). For more detailed features description, please refer to the user's manual.

Antenna Type: Integral antenna.

Antenna Gain: 0dBi

Modulation Type: BPSK, QPSK, 16QAM, 64QAM, CCK, DQPSK, DBPSK.

The nominal conducted average output power specified:

802.11b/g/n: 16 dBm \pm 3 dB (2.4GHz Band)

802.11a/n/ac: 10 dBm \pm 3dB(5GHz Band)

According to FCC Part 2.1091, this unlicensed transmitting devices is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, According to the KDB 447498 and OET 65, the simple calculation as below:

For 2.4GHz Band

The maximum conducted output power for the EUT is 16.2 dBm in the frequency 2437MHz in 802.11b mode which is within the production variation.

The minimum conducted output power for the EUT is 14.5dBm in the frequency 2.412MHz in 802.11n-HT20 mode which is within the production variation.

For 5GHz Band

The maximum conducted output power for the EUT is 10.9 dBm in the frequency 5240MHz in 802.11a mode which is within the production variation.

The minimum conducted output power for the EUT is 9.9dBm in the frequency 5240MHz in 802.11ac-HT20 mode which is within the production variation.

The maximum EIRP= 19.0Bm=79.4mW

The source-based time averaged maximum radiated power = 79.4mW x Duty Cycle = 79.4mW

From above data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna for 2.4GHz band and 5GHz band can be calculated according to OET 65 as follow:

$$\begin{aligned} &= 79.4 / 4\pi R^2 \\ &= 0.016 \text{ mW/cm}^2 \end{aligned}$$

The MPE limit is 1.0 mW/cm² for general population and uncontrolled exposure in the 2.4GHz and 5GHz frequency range according to FCC Part 1.1310. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons.

Transmitter Duty Cycle Calculation

The EUT transmit continuously during the test, the duty cycle is 1.

The following RF exposure statement or similar sentence is proposed to be included in the user manual:

“FCC RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”