

# Maximum Permissible Exposure Evaluation

## FCC ID: CMOQRT-601

### 1. Client Information

**Applicant** : KGUARD INFORMATION CO., LTD.  
**Address** : 4F, NO.113, Jian 2nd Rd., Jhonghe Dist., New Taipei City 23585, Taiwan  
**Manufacturer** : Shenzhen Annidigital Technology Co., LTD  
**Address** : 3rd Floor, building D, Shangxue HiTech Industrial Park, Bantian, Longgang District, Shenzhen City, China

### 2. General Description of EUT

|                            |                          |                                                                                                                                 |
|----------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT Name</b>            | :                        | Wireless IP Camera                                                                                                              |
| <b>Models No.</b>          | :                        | QRT-601, QRC-601                                                                                                                |
| <b>Brand Name</b>          | :                        |                                              |
| <b>Model Difference</b>    | :                        | All these models are identical in the same PCB layout and electrical circuit, the only difference is model name for commercial. |
| <b>Product Description</b> | Operation Frequency:     | 802.11b/g/n(HT20): 2412MHz~2462MHz<br>802.11n(HT40): 2422MHz~2452MHz                                                            |
|                            | Number of Channel:       | 802.11b/g/n(HT20):11 channels see note(3)<br>802.11n(HT40):9 channels see note(3)                                               |
|                            | RF Output Power:         | 802.11b: 16.76 dBm<br>802.11g: 16.68 dBm<br>802.11n (HT20): 16.08 dBm<br>802.11n (HT40): 15.83 dBm                              |
|                            | Antenna Gain:            | 3.23 dBi Ceramic Antenna                                                                                                        |
|                            | Modulation Type:         | 802.11b: CCK, DQPSK, DBPSK<br>802.11g: OFDM<br>802.11n: OFDM                                                                    |
|                            | Bit Rate of Transmitter: | 802.11b:11/5.5/2/1 Mbps<br>802.11g:54/48/36/24/18/12/9/6 Mbps<br>802.11n:up to 150Mbps                                          |
| <b>Power Supply</b>        | :                        | DC power by AC/DC Adapter(TS-A010-050020AH).                                                                                    |

TB-RF-075-1.0

|                                   |   |                                                   |
|-----------------------------------|---|---------------------------------------------------|
| <b>Power Rating</b>               | : | Input:100-240V, 50/60Hz, 0.4A.<br>Output: 5V, 2A. |
| <b>Connecting<br/>I/O Port(S)</b> | : | Please refer to the User's Manual                 |



## MPE Calculations for WiFi

### 1. Antenna Gain:

Ceramic Antenna: 3.23 dBi.

### 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:

| Worst Maximum MPE Result |                 |             |                            |                    |                             |                    |                   |                                          |
|--------------------------|-----------------|-------------|----------------------------|--------------------|-----------------------------|--------------------|-------------------|------------------------------------------|
| Mode                     | N <sub>TX</sub> | Freq. (MHz) | 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] |
| 802.11b                  | 1               | 2412        | 16.76                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2437        | 16.57                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2462        | 16.63                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
| 802.11g                  | 1               | 2412        | 16.68                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2437        | 16.64                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2462        | 16.59                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
| 802.11n (HT20)           | 1               | 2412        | 16.06                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2437        | 16.08                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2462        | 16.03                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
| 802.11n (HT40)           | 1               | 2422        | 15.75                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2437        | 15.83                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |
|                          |                 | 2452        | 15.69                      | 16±1               | 17                          | 3.23               | 20                | 0.021                                    |

**Note:**  
 (1) N<sub>TX</sub>= Number of Transmit Antennas  
 (2) RF Output power specifies that Maximum Conducted Peak Output Power.

**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 802.11b/g/n (2412~2462 MHz)

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

The MPE is calculated as  $0.021 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$ . 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.

-----END OF REPORT-----