

## RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

FCC ID: 2AOKB-T8441

### EUT Specification

<b>EUT</b>	Outdoor Cam Pro
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.24GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz <input checked="" type="checkbox"/> Others: 2.402GHz~2.480GHz
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )
<b>Antenna diversity</b>	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Max. output power</b>	2.4G WIFI: 15.58dBm (0.0361W); BLE: 5.921dBm (0.0039W)
<b>Antenna gain (Max)</b>	2.9 dBi
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation

Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm <sup>2</sup> )	Average Time
<b>(A) Limits for Occupational/Control Exposures</b>				
<b>300-1500</b>	--	--	<b>F/300</b>	<b>6</b>
<b>1500-100000</b>	--	--	<b>5</b>	<b>6</b>
<b>(B) Limits for General Population/Uncontrol Exposures</b>				
<b>300-1500</b>	--	--	<b>F/1500</b>	<b>6</b>
<b>1500-100000</b>	--	--	<b>1</b>	<b>30</b>

## Friis transmission formula: $P_d = \frac{P_{out} * G}{4 * \pi * R^2}$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in Mw

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

## Measurement Result

### 2.4GHz WiFi:

Operating Mode	Channel Frequency	Measured Power	Tune up tolerance	Max. Tune up Power	Antenna Gain	Power density at 20cm	Power density Limits (mW/cm <sup>2</sup> )
	(MHz)	(dBm)	(dBm)	(dBm)	(dBi)	(mW/ cm <sup>2</sup> )	
802.11b	2412	14.30	14.30±1	15.3	2.9	0.0132	1
	2437	14.25	14.25±1	15.25	2.9	0.0130	1
	2462	14.03	14.03±1	15.03	2.9	0.0124	1
802.11g	2412	14.97	14.97±1	15.97	2.9	0.0153	1
	2437	15.15	15.15±1	16.15	2.9	0.0160	1
	2462	15.16	15.16±1	16.16	2.9	0.0160	1
802.11n (HT20)	2412	15.11	15.11±1	16.11	2.9	0.0158	1
	2437	15.29	15.29±1	16.29	2.9	0.0165	1
	2462	<b>15.58</b>	15.58±1	16.58	2.9	0.0177	1
BLE	2402	5.283	5.283±1	6.283	2.9	0.0016	1
	2440	5.615	5.615±1	6.615	2.9	0.0018	1
	2480	5.921	5.921±1	6.921	2.9	0.0019	1