FCC 47 CFR MPE REPORT

Zhuhai Gotech Intelligent Technology Co., Ltd.

Wifi Camera with Battery

Model Number: MC3L

Additional Model: MC4L, MC5L, MC3LA, MC3LB, MC3LC

FCC ID: 2A4GF-MC3L

Applicant:	Zhuhai Gotech Intelligent Technology Co., Ltd.
Address:	66 Yongda Road, Hongqi Town, Jinwan District, Zhuhai 519090 P.R.China.
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

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Maximum Permissible Exposure

1. Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

1.1. Limits for Maximum Permissible Exposure (MPE)

(a) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.o	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: Pd (W/m}^2) = \frac{E^2}{377}$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
IEEE 802.11b	2412	16.20	41.687
	2437	16.97	49.774
	2462	15.99	39.719
IEEE 802.11g	2412	18.13	65.013
	2437	19.13	81.847
	2462	18.17	65.614
IEEE 802.11n HT20	2412	18.19	65.917
	2437	19.17	82.603
	2462	18.26	66.989

3. Calculated Result and Limit

Mode	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain (dBi)	(Linear)	Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
2.4G Band								
IEEE 802.11b	16.97	16±l	17	2.35	1.718	0.01713	1	Complies
IEEE 802.11g	19.13	19±l	20	2.35	1.718	0.03418	1	Complies
IEEE 802.11n HT20	19.17	19±l	20	2.35	1.718	0.03418	1	Complies

End of Test Report