

FCC 47 CFR MPE REPORT

Shenzhen Interthings Technology Co., Ltd.

Smart Baby Camera

Model Number: IPC163

Additional Model: DG163BMPK, DG163BMBL, BKWIFICAMB

FCC ID: 2AQ7B-IPC163

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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			1.0	30

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

1.2. MPE Calculation Method

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

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, $d=0.2\text{m}$, 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)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11b	2412	18.96	78.705	18±2	2	1.585
	2437	16.96	49.659	16±2	2	1.585
	2462	15.21	33.189	15±2	2	1.585
IEEE 802.11g	2412	18.89	77.446	18±2	2	1.585
	2437	16.68	46.559	16±2	2	1.585
	2462	14.80	30.200	14±2	2	1.585
IEEE 802.11n HT20	2412	18.56	71.779	18±2	2	1.585
	2437	16.76	47.424	16±2	2	1.585
	2462	14.82	30.339	14±2	2	1.585
IEEE 802.11n HT40	2422	18.52	71.121	18±2	2	1.585
	2437	17.07	50.933	17±2	2	1.585
	2452	15.74	37.497	15±2	2	1.585

3. Calculated Result and Limit

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
		(dBi)	(Linear)			
2.4G Band						
IEEE 802.11b	20	2	1.585	0.03153	1	Compiles
IEEE 802.11g	20	2	1.585	0.03153	1	Compiles
IEEE 802.11n HT20	20	2	1.585	0.03153	1	Compiles
IEEE 802.11n HT40	20	2	1.585	0.03153	1	Compiles

End of Test Report