

RF EXPOSURE TEST

RF EXPOSURE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi r^2} = \frac{EIRP}{4\pi r^2}$$

P :power input to the antenna in Mw

EIRP :Equivalent(effective) isotropic radiated power.

S :power density mW/ cm²

G ;numeric gain of antenna relative to isotropic radiator

R :distance to centre of radiation in cm

FCC radio frequency exposure limits may be exceeded at distances closer than r cm from the antenna of this device

$$r = \sqrt{\frac{PG}{4\pi S}} = \sqrt{\frac{EIRP}{4\pi S}}$$

$$EIRP=10^{(Antenna\ Gain+Peak\ Output\ Power/10)}$$

Note:

1. s=1.0 mW /cm² for limits for General Population/Uncontrolled Exposures.
2. The time averaged power over 30 minutes will be equaled Output Power.
3. The Power Density at a distance of 20cm calculated from the formula is far below the limit of 1MW/ cm²

TEST RESULTS

EUT :	WiFi IP Camera	Model Name :	IPC-5003WHD
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test Mode :	TX Mode		

Operating Mode:802.11 b

Channel (MHz)	Output power (PK)(dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm ²)	Limit of Power Density (S) (mW/ cm ²)	Result
2412	17.20	52.48	1.58(2dBi)	0.016	1	Pass
2437	17.17	52.11	1.58(2dBi)	0.016	1	Pass
2462	17.29	53.57	1.58(2dBi)	0.016	1	Pass

Operating Mode:802.11 g

Channel (MHz)	Output power (PK)(dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm ²)	Limit of Power Density (S) (mW/ cm ²)	Result
2412	14.57	28.64	1.58(2dBi)	0.007	1	Pass
2437	14.98	31.47	1.58(2dBi)	0.009	1	Pass
2462	14.54	28.44	1.58(2dBi)	0.008	1	Pass

NOTE: (For mobile or fixed location transmitters, the maximum power density is 1.0mW/cm² even if the calculation indicates that the power density would be larger)