

RF EXPOSURE EVALUATION

EUT Specification

EUT	IP camera
Frequency band (Operating)	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz <input type="checkbox"/> Others(Bluetooth: 2.402GHz ~ 2.480GHz)
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
Antenna diversity	<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
Max. output power	18.88 dBm (77.27mW)
Antenna gain	0 dBi
Evaluation applied	<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 ²)
300-1500	--	--	F/1500
1500-100000	--	--	1

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

Where

P_d = Power density in mW/cm^2

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, $1mW/cm^2$. 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

Channel	Gain	Channel Frequency (MHz)	Max Output power (dBm)	Tolerance	Max Tune-UP power (mW)	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
IEEE 802.11b Mode							
Low	0	2412	16.00	± 0.5	44.67	0.00889	1
Middle	0	2437	16.42	± 0.5	49.20	0.00979	1
High	0	2462	16.07	± 0.5	45.39	0.00903	1
IEEE 802.11g Mode							
Low	0	2412	18.69	± 0.5	82.99	0.01651	1
Middle	0	2437	18.88	± 0.5	86.70	0.01725	1
High	0	2462	18.19	± 0.5	73.96	0.01471	1
IEEE 802.11n(HT20) Mode							
Low	0	2412	16.80	± 0.5	53.70	0.01068	1
Middle	0	2437	17.30	± 0.5	60.26	0.01199	1
High	0	2462	16.73	± 0.5	52.84	0.01051	1
IEEE 802.11n(HT40) Mode							
Low	0	2422	15.63	± 0.5	41.02	0.00816	1
Middle	0	2437	16.40	± 0.5	48.98	0.00974	1
High	0	2452	16.01	± 0.5	44.77	0.00891	1