



RF EXPOSURE EVALUATION

EUT Specification

EUT	RCTA Wireless Camera
Model Number	RV-RCTA-01
FCC ID	2A6MJ-RV-RCTA-01
Antenna gain (Max)	0dBi
Operation Frequency	2410-2478MHz
Input Rating	DC 12V
Modulation	QPSK
Max. output power	12.98dBm(0.0199W)

Test Requirement:

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)

Limits for Maximum Permissible Exposure (MPE)

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

11.1 Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

R = distance between observation point and center of the radiator in cm=20cm

Find the limit of MPE, $1\text{mW}/\text{cm}^2$. 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.

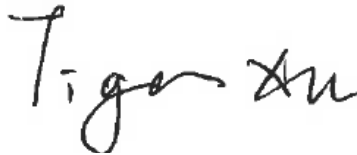
11.2 Measurement Result

Antenna gain: 0 dBi

2.4G:

Mode	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm^2)	Power density Limits (mW/cm^2)
QPSK	2410	9.64	10 ± 1	11	1	0.002505	1
QPSK	2440	11.64	12 ± 1	13	1	0.003969	1
QPSK	2478	12.98	13 ± 1	14	1	0.004997	1

Signature:



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