KDB 447498 D03 **IEEE C95.1**

47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

HD IP Camera

Model: OC830xxxxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-", for marking purpose)

Trade Name: Sercomm

Issued to

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Issued by

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	2015/06/11	Initial Issue	ALL	Becca Chen

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1. LIMIT

According to §15.247(i), 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 levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

Report No.: T150508D06-MF

2. EUT SPECIFICATION

EUT	HD IP Camera						
Model	OC830xxxxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-", for marking purpose)						
RF Module	REALTEK	RTL8192EU					
Model Discrepancy	All the above models are identical except for the designation of model numbers. The suffix of "X" (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or "-", for marking purpose) on model number is just for marketing purpose only.						
Frequency band (Operating)	 ⊠ 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz ⊠ 802.11 n HT40: 2.422GHz ~ 2.452GHz □ Others 						
Device category	☐ Portable (<20cm separation)☐ Mobile (>20cm separation)☐ Others						
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm²) ☐ General Population/Uncontrolled exposure (S=1mW/cm²)						
Antenna Specification	PIFA Antenna 2.4GHz: Right Antenna Gain 2.52 dBi (Numeric gain 1.79) wost Lift Antenna Gain: 2.16 dBi (Numeric gain 1.64)						
Maximum Average output power	Bm (67.764 mW) Bm (43.053 mW) Bm (66.681 mW) Bm (66.988 mW)						
Maximum Tune up Power	IEEE 802.11b Mode: IEEE 802.11g Mode: IEEE 802.11n HT 20 Mod IEEE 802.11n HT 40 Mod	19.00 dE e: 19.00 dE	3m (79.433 mW) 3m (79.433 mW)				
Evaluation applied	MPE Evaluation* SAR Evaluation N/A						

3. TEST RESULTS

No non-compliance noted.

Calculation

Given

$$E = \frac{\sqrt{30 \times P \times G}}{d} \& S = \frac{E^2}{377}$$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

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

Changing to units of mW and cm, using:

$$P(mW) = P(W) / 1000$$
 and

$$d(cm) = d(m) / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$
 Equation 1

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

 $S = Power density in mW / cm^2$



4. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using d = 20 cm into Equation 1:

 $S = 0.000199 \times P \times G$

Where P = Power in mW

G = Numeric antenna gain

 $S = Power density in mW / cm^2$

IEEE 802.11b mode:

I	Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
ſ	6	2437	79.433	1.79	20	0.0283	1

IEEE 802.11g mode:

ĺ	Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
ſ	11	2462	79.433	1.79	20	0.0283	1

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
6	2437	79.433	1.79	20	0.0283	1

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
9	2452	79.433	1.79	20	0.0283	1