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**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**

**Smart Cloud Camera**

**Model:**  
**SMC-86, TX-57, SMC-86X (X=0~9, A~Z or blank)**

**Trade Name: Technaxx 、SALIX**

*Issued to*

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## Revision History

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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.

## 2. EUT SPECIFICATION

|                                     |                                                                                                                                                                                                           |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT</b>                          | Smart Cloud Camera                                                                                                                                                                                        |
| <b>Model</b>                        | SMC-86, TX-57, SMC-86X (X=0~9, A~Z or blank)                                                                                                                                                              |
| <b>Model Discrepancy</b>            | All the specification and layout are identical except they come with different model numbers for marketing purposes.                                                                                      |
| <b>Frequency band (Operating)</b>   | <input checked="" type="checkbox"/> 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz<br><input type="checkbox"/> Others                                                                                              |
| <b>Device category</b>              | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Others                                                  |
| <b>Exposure classification</b>      | <input type="checkbox"/> Occupational/Controlled exposure ( $S = 5\text{mW}/\text{cm}^2$ )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure ( $S=1\text{mW}/\text{cm}^2$ ) |
| <b>Antenna Specification</b>        | PCB Antenna :<br>Ethertronics / Salix SMC-86<br>2.4GHz: Antenna Gain : 3.6 dBi (Numeric gain 2.29)                                                                                                        |
| <b>Maximum Average output power</b> | IEEE 802.11g Mode: 17.13 dBm (51.642 mW)<br>IEEE 802.11n HT 20 Mode: 15.23 dBm (33.343 mW)<br>IEEE 802.11n HT 40 Mode: 14.39 dBm (27.479 mW)                                                              |
| <b>Maximum Tune up Power</b>        | IEEE 802.11b Mode: 19.00 dBm (79.433 mW)<br>IEEE 802.11g Mode: 17.00 dBm (50.119 mW)<br>IEEE 802.11n HT 20 Mode: 16.00 dBm (39.811 mW)                                                                    |
| <b>Evaluation applied</b>           | <input checked="" type="checkbox"/> MPE Evaluation*<br><input type="checkbox"/> SAR Evaluation<br><input type="checkbox"/> 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:

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

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

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

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

## 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<sup>2</sup>

### IEEE 802.11b mode:

| Ch. | Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|--------|-------------|--------|---------------------------------------|----------------|
| 1   | 2412      | 79.433 | 2.29        | 20     | 0.0362                                | 1              |

### IEEE 802.11g mode:

| Ch. | Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|--------|-------------|--------|---------------------------------------|----------------|
| 1   | 2412      | 50.119 | 2.29        | 20     | 0.0228                                | 1              |

### IEEE 802.11n HT20 mode:

| Ch. | Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|--------|-------------|--------|---------------------------------------|----------------|
| 1   | 2412      | 39.811 | 2.29        | 20     | 0.0181                                | 1              |