



MPE Calculations

Control4 Model: C4-SR150B-Z-B
Cisco Model: SCH-REMOTE-150

FCC ID: R33C4SR150Z
IC ID: 7848A-C4SR150B

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1.0 SCOPE:

This Report Demonstrates Evaluation and Compliance to the following standards:

- 1. Code of Federal Regulations Title 47, Volume 1, Section 1.1310.**
- 2. Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) - RSS-102 Issue 3**

2.0 REVISION LEVEL:

DATE	COMMENTS	REVISION
10/10/08	Created.	1.0
08/16/10	Added RSS-102 references	2.0

3.0 REFERENCE DOCUMENTS:

- (A) Limits for Maximum Permissible Exposure (MPE). Code of Federal Regulations Title 47, Volume 1, Section 1.1310.**
- (B) Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. OET Bulletin 67 Edition 97-01.**
- (C) Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) - RSS-102 Issue 3**

4.0 CALCULATIONS:

The following worst case emissions was calculated by using Method 1 below

Method 1: Based on a PPt (Peak Power Total) measurement of the total power into the antenna and the worst case antenna gain, based on the FCC & IC test reports.

Effective/Equivalent Isotropic Radiated Power [EIRP] dBm = Total power into the antenna [dBm] + antenna gain [dBi].

$$\text{EIRP (dBm)} = -3.16$$

To convert the values from dBm to mW

$$\text{mW} = 10^{\text{dBm}/10}$$

$$\text{EIRP (mW)} = 0.48$$

Method 2: Based on the radiated field strength measurement at 3 meters [at a calibrated OATS site, maximizing the antenna polarity and height.

After obtaining the EIRP, the Power density is calculated and compared against the FCC and IC limits.

S_{FCC} = Power density in mW/cm^2 for FCC

$$S_{\text{FCC}} = \text{EIRP}/4\pi \cdot R^2$$

$$\text{EIRP} = 0.48 \text{ (mW)}$$

R = Distance to the center of radiation of the antenna (20 cm)

$$S_{\text{FCC}} = 0.000096 \text{ mW/cm}^2$$

$$S_{\text{FCC}} \text{ Limit} = 1.0 \text{ mW/cm}^2$$

S_{IC} = Power density in W/m^2 for IC

$$S_{\text{IC}} = \text{EIRP}/4\pi \cdot R^2$$

$$\text{EIRP} = 0.00048 \text{ (W)}$$

R = Distance to the center of radiation of the antenna (0.2 m)

$$S_{\text{IC}} = 0.001 \text{ W/m}^2$$

$$S_{\text{IC}} \text{ Limit} = 10.0 \text{ W/cm}^2$$

5.0 CONCLUSION:

1. Based upon the limits for Maximum Permissible Exposure (MPE) given in Table 1 of reference documents (A) & (B) as shown above, this device falls under the required limits.
2. Based upon the limits given in section 4.2 of the reference document (C) as shown above, this device falls under the required limits.