

# Exposure Evaluation

**hd30™**

**Quad-Band Low Power Remote Unit**

FCCID: HCOHD304NACEHIO1A

Date: Nov 23, 2016

Model No.: HD30-4-NA-CEHI-O1H



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## RF Exposure Evaluation

According to FCC Part 1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. More information on evaluating compliance with these limits can be found in the FCC's OST/OET Bulletin Number 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation".

In the Frequency Range of 300 to 1500 MHz, the maximum power density limit for the occupational/controlled exposures is F/300 for an average time of 6 minutes.

In the Frequency Range of 300 to 1500 MHz, the maximum power density limit for the general population/uncontrolled exposures is F/1500 for an average time of 30 minutes.

The antenna connected to the product is specific to the deployment. The worst case scenario occurs when using a very high gain antenna as shown in the following example:

The highest expected output power may be 1 dB above the rated 30 dBm. For an output level of 31 dBm with an antenna gain of 14.5 dB, the EIRP is 45.5 dBm.

The maximum power density safe exposure level for general population/uncontrolled exposure of 30 minutes for the frequency of 728 MHz is 0.485 mW/cm<sup>2</sup>.

Conducted Output Power (dBm)	Max Antenna Gain (dBi)	Max EIRP (mW)	Power Density Limit Allowed (mW/cm <sup>2</sup> )	Safe Distance (cm)
31	14.5	35481	0.485	77

### RF Exposure Evaluation Distance Calculation

$$d = \sqrt{(EIRP/4\pi S)}$$

Where:

**d** = Distance to the center of radiation of the antenna (cm) for the allowable Power Density

**S** = Allowable Power Density Limit (mW/cm<sup>2</sup>)

**EIRP** = Equivalent isotropically radiated power (mW) = 10<sup>[TX Power (dBm) + Ant Gain (dBi)/10]</sup>

As shown above, the minimum distance where the MPE limit is reached is 77 cm from the unit with a 14.5 dBi antenna and no distribution loss.

If the antenna will be positioned closer to end users than 77 cm, then the installer must calculate the safe distance for a given installation using the formulas provided.