

Exposure Evaluation

t-Series *t30*TMps Single Band Low Remote Unit

FCCID: HCOT30SNI1A

Date: Jun 11, 2015

Model No.: t30-SNI-1NB

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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 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 8.138 dB, the EIRP is 39 dBm.

The maximum power density safe exposure level for general population/uncontrolled exposure of 30 minutes for the frequency of 862 MHz is 0.575 mW/cm².

Conducted Output Power (dBm)	Max Antenna Gain (dBi)	Max EIRP (mW)	Power Density Limit Allowed (mW/cm ²)	Safe Distance (cm)
31	8.138	8200	0.575	34

RF Exposure Evaluation Distance Calculation

$$d = \sqrt{\left(\frac{EIRP}{4\pi S}\right)}$$

Where:

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

S = Allowable Power Density Limit (mW/cm²)

EIRP = Equivalent isotropically radiated power (mW) = 10^{[TX Power (dBm) + Ant Gain (dBi)]/10}

As shown above, the minimum distance where the MPE limit is reached is 34 cm from the unit with a 8.138 dBi antenna and no distribution loss.

If the antenna will be positioned closer to end users than 34 cm, then the installer must calculate the safe distance for a given installation using the formulas provided.