Exposure Evaluation

t-Series *t*43™ps

Dual-Band High Power Remote Unit

FCCID: HCOT43DQDD1A

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Labs: 8618 Commerce Court, Burnaby, BC, V5A 4N6, Canada

Daryl Meerkerk
Manager

Guihua Sophie Piao
Test Engineer

Dali Wireless, Inc.
535 Middlefield Road, Suite 280
Menlo Park, CA 94025
http://www.daliwireless.com

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/300 for an average time of 6 seconds.

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 43 dBm. For an output level of 44 dBm with an antenna gain of 21 dB, the EIRP is 65 dBm.

The maximum power density safe exposure level for general population/uncontrolled exposure of 6 seconds for the frequency of 869 MHz is 0.6 mW/cm^2.

Conducted Output Power (dBm)	Max Antenna Gain (dBi)	Max EIRP (mW)	Power Density Limit Allowed (mW/cm^2)	Safe Distance (cm)
44	21	3162000	0.58	660

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/cm^2)

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

As shown above, the minimum distance where the MPE limit is reached is 660 cm from the unit with a 21 dBi antenna and no distribution loss.

If the antenna will be positioned closer to end users than 660 cm, then the installer must calculate the safe distance for a given installation using the formulas provided.