

RF Exposure

Method

The test methods used comply with ANSI C63.10. Unless otherwise stated no deviations were made from FCC OET 65 & IC RSS-102.

This testing was performed at Intertek Denver, located at 1795 Dogwood St. Suite 200, Louisville, CO 80027.

Test Requirement/Specification

- FCC OET Bulletin 65/ KDB 447498
- RSS-102

Results:

The sample tested was found to comply.

RF Exposure Requirements - MPE

Project #:	G101503607	Test Area:	Intertek Louisville
Test Method:	FCC CFR47 Part 1.1310	Test Date:	1/29/2014
EUT Model #:	W5800-01		
EUT Serial #:	DEN1402111313		
Manufacturer:	FreeWave Technologies Inc.		
EUT Description:	802.11 b/g/n PCIe Radio Module		
Notes:	▪ With antenna model: RadioWaves SPD4-5.2S (4' Parabolic "Dish" Antenna) Gain: 34.9dBi		

The following limit is from table 1 (B) Limits for Occupational/Controlled Exposure
Exposure in FCC part 1.1310:

Power Density Limit for Frequency Range 1500 – 100,000 MHz = 5 mW/cm²

The following calculation was used to determine compliance to the above limit. The calculation is from FCC OET bulletin 65.

$$\text{Power Density(S)} = \text{PG}/4\pi\text{R}^2 \text{ or } \text{S} = \text{EIRP}/4\pi\text{R}^2$$

To determine what minimum distance the product can satisfy the Power Density Limit:

$$\text{R(cm)} = \text{SQRT}[(\text{P} \cdot \text{G}) / (4 \cdot \pi \cdot \text{S})]$$

Where:

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (mW).

G = numeric power gain of the antenna in the direction of interest relative to an isotropic radiator.

R = distance to the center of radiation of the antenna (cm)

Maximum measured conducted power to the antenna = 478 mW

Maximum typical gain declared by the manufacture = 34.9 dBi

Therefore: Minimum Distance = 154 cm

Power Density

Power (mW)	Gain (dbi)	Gain numeric	Distance (cm)	Power Density (mW/cm ²)
478	34.9	3090.3	154	4.96

Therefore: Power Density Margin (Δ Limit) = 4.96 – 5 = -0.04 mW/cm²