

Client	Zen Within Inc
Product	Zen
Standard(s)	RSS 210 Issue 8:2010 / FCC Part 15 Subpart C 15:2013



Maximum Permissible Exposure

Purpose

The purpose of this test is to ensure that the RF energy intentionally transmitted, in terms of power density emitted from the EUT at a stated operating distance does not exceed the limits listed below as defined in the applicable test standard, as calculated based upon readings obtained during testing. This helps protect human exposure to excessive RF fields.

Limit(s) and Method

The limits, as defined in FCC 15.247(i) and FCC 1.1310 Table 1 (B) limits for general public exposure was applied. The limit for the frequency range of 1.5 GHz to 100 GHz was applied. This is a limit of 1.0 mW/cm². The distance used for calculations was 20cm, as this is the minimum distance an operator will be from the EUT during normal operation, as stated by the manufacturer.

Results

The EUT passed the requirements. The worst case calculated power density was 0.020 mW/cm², this is significantly under the 1.0 mW/cm² requirement.

Calculations

Method 1 (conducted power)

$$P_d = (P_t * G) / (4 * \pi * R^2)$$

Where Pt = 19.53 dBm or 89.74 mW as per Peak power conducted output

Where G = 0.5 dBi, or numerically 1.12

Where R = 20 cm

$$P_d = (89.74 \text{ mW} * 1.12) / (4 * \pi * 20\text{cm}^2)$$

$$P_d = 100.51 \text{ mW} / 5026 \text{ cm}^2$$

$$P_d = 0.020 \text{ mW/cm}^2$$