

Uncontrolled Exposure RF Exposure Requirements – 1.1307(b)(2); 1.1310

Specification: **Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's Guidelines.**

EUT meets the requirements of these sections.

MPE CALCULATION

MPE Limit Calculation: EUT's lowest frequency channel @ 1850.6 MHz; therefore, for the PCS band's uplink,
Limit for Uncontrolled exposure: 1.0 mW/cm² or 10 W/m²

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 = 15.6 \text{ mW} * 3.98 / 4 * 3.14 * (20 \text{ cm})^2 = 61.9 \text{ mW} / 5.03 * 10^3 \text{ cm}^2 = 0.0123 \text{ mW/cm}^2$$

where, S = Power Density (mW/cm²)

P = Power Input to antenna (15.6 milli-Watts)

G = Maximum Antenna Gain (6 dBi)

R = distance to the center of radiation of the antenna (20 cm or 0.2 m for the minimum distance)

The power density @ 20 cm = 0.0123 mW/cm², therefore EUT meets the Uncontrolled exposure limit.

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EUT meets the requirements of these sections.

MPE CALCULATION

MPE Limit Calculation: EUT's operating over the frequency band of 824.6-848.4 MHz; therefore, for the Cellular band's uplink,

Limit for Uncontrolled exposure: 0.55 mW/cm² or 5.5 W/m²

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 = 17.6 \text{ mW} * 3.98 / 4 * 3.14 * (20 \text{ cm})^2 = 70.1 \text{ mW} / 5.03 * 10^3 \text{ cm}^2 = 0.0139 \text{ mW/cm}^2$$

where, S = Power Density (mW/cm²)

P = Power Input to antenna (17.6 milli-Watts)

G = Maximum Antenna Gain (6 dBi)

R = distance to the center of radiation of the antenna (20 cm or 0.2 m for the minimum distance)

The power density @ 20 cm = 0.0139 mW/cm² , therefore EUT meets the Uncontrolled exposure limit.

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EUT meets the requirements of these sections.

MPE CALCULATION

MPE Limit Calculation: EUT's lowest frequency channel @ 1930.6 MHz; therefore, for the PCS band's downlink,
Limit for Uncontrolled exposure: 1.0 mW/cm² or 10 W/m²

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 = 10.23 \text{ mW} * 5.01 / 4 * 3.14 * (20 \text{ cm})^2 = 51.3 \text{ mW} / 5.03 * 10^3 \text{ cm}^2 = 0.01 \text{ mW/cm}^2$$

where, S = Power Density (mW/cm²)

P = Power Input to antenna (10.23 milli-Watts)

G = Maximum Antenna Gain (7 dBi)

R = distance to the center of radiation of the antenna (20 cm or 0.2 m for the minimum distance)

The power density @ 20 cm = 0.01 mW/cm², therefore EUT meets the Uncontrolled exposure limit.

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EUT meets the requirements of these sections.

MPE CALCULATION

MPE Limit Calculation: EUT's operating over the frequency band of 869.6-893.4 MHz; therefore, for the Cellular band's downlink, the

Limit for Uncontrolled exposure: 0.58 mW/cm² or 5.8 * 10⁻⁴ W/m²

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 = 13.6 \text{ mW} * 5.01 / 4 * 3.14 * (20 \text{ cm})^2 = 68.14 \text{ mW} / 5.03 * 10^3 \text{ cm}^2 = 0.0136 \text{ mW/cm}^2$$

where, S = Power Density (mW/cm²)

P = Power Input to antenna (13.6 milli-Watts)

G = Maximum Antenna Gain (7 dBi)

R = distance to the center of radiation of the antenna (20 cm or 0.2 m for the minimum distance)

The power density @ 20 cm = 0.0136 mW/cm² , therefore EUT meets the Uncontrolled exposure limit.