

Federal Communication Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

Attention: Reviewing Engineer

The **Itronix Laptop** is a ruggedized Laptop with a built in GSM/GPRS card.

Due to the construction and the position of the antenna (TX and RX) a minimum distance under normal operating conditions of more than **20 cm** to the antenna is guaranteed. The manual contains a relevant statement. The calculation was made for this worst case.

The maximum peak output power for this device is 581 mW (27.64 dBm).

Regarding MPE limits, GPUC environment limits maximum exposure to 1 mW/cm².

The power density is:

$$S = E^2/3770 = 13 H^2 < 1 \text{ mW/cm}^2$$

Where: S = Power density (mW/cm²)
E = electrical field strength (V/m)

This formula converted using the EIRP is

$$P_{\text{out}} * G/4\pi * r^2 \text{ (mW/cm}^2\text{)}$$

$$581/4\pi * 20^2 = \mathbf{0.1156 \text{ mW/cm}^2}$$

Calculations are based on standard formula for calculating field strength at a distance and converting power density using free space impedance.

Further this device uses the GSM protocol, which is a TDD format ratio of 1/8 in GSM mode and in 4/8 in GPRS mode. This reduces the max. power density to 0.0578 mW/cm².

If you should have any questions regarding this submission, please feel free to contact the undersigned.

Yours truly,



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