

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

Attention: Reviewing Engineer

The **Itronix Corporation Laptop** is a ruggedized Laptop with a built in GSM card

Due to the construction and the position of the antenna a distance under normal operating conditions of more than 20 cm is guaranteed. Additionally the user manual

This information includes the following: *A minimum separation distance of 20 cm must be maintained between the antenna and the person for this device to satisfy the RF exposure requirements of the FCC.*

The maximum output power of the Burst 1820 mW (32.6 dBm).

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

The power density is:

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

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

This formula converted using the EIRP is

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

$$1820 / 4\pi * 100 = 1.449 \text{ mW/cm}^2$$

Further, the device uses the GSM protocol, which is a TDD format ratio of 1/8 in GSM mode and 4/8 in GPRS mode. Thus the 1.449 mWatts/cm² is further reduced by this ratio or it is equivalent to 0.7245 mW/cm² for GPRS mode in 10 cm distance. In GSM mode this reduces to 0.1811 mW/cm²

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

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

Yours truly,



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