The **CrossCheck GSM/GPRS 850/1900** radio is a regular GSM product exclusively esigned for mainly mobile applications (Please refer to CrossCheck GSM/GPRS 850/1900 data sheet) for Asset management applications like fleet management etc.
Included in the users manual (page 86) are definitions for fixed and mobile applications and limitations of the antenna gain as appropriate for each application to ensure that the end user have been provided with the right information to permit them to avoid exceeding RF exposure guidelines as provided in the Commission's rule.

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. For fixed mount operation, the antenna co-location requirements of Section 1.1307 (b) (3) of the FCC rules must be satisfied.

RF Human Exposure Analysis as per 47CFR § 1.1310

For transmitter operating in the 824-890 Mhz range, paragraph 1.1310 Table 1 limits maximum permissible exposure (MPE) to f/1500 mW/cm² for uncontrolled environments and f/300 mW/cm² for controlled environments.

For transmitter operating in the 1850-1990 Mhz range, paragraph 1.1310 Table 1 limits maximum permissible exposure (MPE) to 1.0 mW/cm² for uncontrolled environments and 5.0 mW/cm² for controlled environments.

The far field on-axis power flux density (W/m²) is calculated using the following formula:

$S = G P_T / 4 \pi r^2$

S = Power density (mW/cm²)
P = Transmitted power in mW
r = Distance in cm

Calculations

Cellular Band 824-890 MHz – Limit 0.549 / 2.746

Max conducted average power = Max conducted peak power * Duty Cycle
= 1862 mW *(1:8.3) = 224mW

Maximum average ERP = 224mW * 2.0 = 448 mW

$S = 448mW*1,64 / (4 \cdot \pi \cdot 20^2) = 0,146$ mW/cm² < 0.549 mW/cm²

PCS Band 1850-1990 MHz - Limit 1.0 / 5.0

Max conducted average power = Max conducted peak power * Duty Cycle
= 925 mW *(1:8.3) = 112mW

Maximum average EIRP = 112mW * 2.0 = 224 mW

$S = 224 / (4 \cdot \pi \cdot 20^2) = 0,045$ mW/cm² < 1.0 mW/cm²