



FCC ID XXMOM12001000
IC ID: 8764A-OM12001000

Maximum Permissible Exposure

as specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure

Frequency range (MHz)	Power density (mW/cm ²)
300 – 1,500	f/1500
1,500 – 100,000	1.0

Calculations 850 MHz band

The output power at antenna input terminal: 31.66 dBm

Predicted distance **R**: 20 cm
Predicted frequency: 848.8 MHz

MPE limit **S**: 0.5659 mW/cm²

Equation OET bulletin 65, page 18, edition 97-01: $S = P * G / (4\pi R^2)$

- S = power density
- P = power input to the antenna
- G = power gain of the antenna in the direction of interest relative to an isotropic radiator
- R = distance to the centre of radiation of the antenna

Maximum allowable antenna gain: (Mobile applications) **2.24** **dB**i
Maximum allowable antenna gain: (Fixed applications) **2.75** **dB**i

Prediction

The maximum allowable MPE value of 0.5659 mW/cm² will be reached in a distance of 20 cm in case that an antenna with an antenna gain of 2.24 dBi will be used. This means that the power density levels in a distance of 20 cm are in accordance with the FCC regulations as long as the used antenna has a gain below 2.24 dBi for mobile applications.



Calculations 1900 MHz band

The output power at antenna input terminal: 28.81 dBm

Prediction distance **R**: 20 cm
Prediction frequency: 1850.2 MHz

MPE limit **S**: 1 mW/cm²

Equation OET bulletin 65, page 18, edition 97-01: $S = P * G / (4\pi R^2)$

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

Maximum allowable antenna gain for mobile/portable stations: **4.20 dBi**
Maximum allowable antenna gain for other stations: **8.20 dBi**

Prediction

The maximum allowable MPE value of 1 mW/cm² will be reached in a distance of 20 cm in case that an antenna with an antenna gain of 8.20 dBi will be used. This means that the power density levels in a distance of 20 cm are in accordance with the FCC regulations as long as the used antenna has a gain below 8.20 dBi. For mobile and portable stations the EIRP is restricted to 2.0 Watts, (§24.232 (c)). Therefore the maximum antenna gain is 4.20 dBi.

Note. The calculation was made under the consideration of the duty cycle effect.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'P. Lomax', is written over a horizontal line.

Patrick Lomax, Project Manager