



FCC ID QIPEGS5

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

Maximum peak output power at antenna input terminal: 33.49 dBm (2.23357 W)

Predicted distance **R**: 20 cm

Predicted frequency: 836.6 MHz

MPE limit **S**: 0.5577333 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:

0.9870 dBi

Prediction

The maximum allowable MPE value of 0.5577333 mW/cm² will be reached in a distance of 20 cm in case that an antenna with an antenna gain of 0.9870 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 0.9870 dBi.



Calculations 1900 MHz band

Maximum peak output power at antenna input terminal: 30.48 dBm (1.11686 W)

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: **6.5327 dBi**
Maximum allowable antenna gain for other stations: **2.5303 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 6.5327 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 6.5327 dBi.

For mobile and portable stations the EIRP is restricted to 2.0 Watts, (§24.232 (c)).

Therefore the maximum antenna gain is 2.5303 dBi.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Holger Leutfeld', is written over a light blue rectangular background.

Holger Leutfeld, Project Manager