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Maximum Permissible Exposure calculation

Dear Madams or Sirs,

please find here our Maximum Permissible Exposure calculations for the Bluetooth/WLAN Module EN1.

Best Regards

i.V.



Carsten Steinröder

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)

<i>Frequency range (MHz)</i>	<i>Power density (mW/cm²)</i>
300 – 1,500	f/1500
1,500 – 100,000	1.0

Calculations 2400-2483.5 MHz band

Maximum peak output power at antenna input terminal for Bluetooth/WLAN module:

0.062 W

Prediction distance **R**: 20 cm
Prediction frequency: 2.4 GHz
Prediction Antenna Gain **G**: -2.0 dBi (WiFi Antenna)

MPE limit **S**: 1 mW/cm²

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

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 permissible power density: **0.0077 mW/cm²**

=> Delta to MPE Limit: **0.9923 mW/cm²**