Novero GmbH
Ms. Ines Baufeld
Rensingstr. 15
44807 Bochum

Holger Leutfeld
12.04.2010
Phone +49 (0) 2102 749 317
Fax +49 (0) 2102 749 350

Maximum Permissible Exposure for product: Novero HT-4, FCC ID: WJLHT-4

Dear Ms. Baufeld,

please find our Maximum Permissible Exposure calculations for the Novero HT-4

Best Regards

Holger Leutfeld (Project manager)

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/cm²)
300 – 1,500	f/1500
1,500 – 100,000	1.0

Calculations 850 MHz band

Maximum output power at antenna input terminal: 31.65 dBm
Maximum output power at antenna input terminal under consideration of the duty cycle effect: 29.61 dBm.

Prediction distance **R**: 20 cm
Prediction frequency: 824,20 MHz

MPE limit **S**: 0.5495 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 permissible antenna gain: **4.80 dBi**

Prediction

The maximum allowed MPE value of 0.5495 mW/cm²will be reached in a distance of 20 cm in case that an antenna with an antenna gain of 4.80 dBi would 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 4.80 dBi.

The average values in the FCC test report were determined over the transmit period only. For MS class 32 a duty cycle of -2.04dBm has to be considered in the calculation.

Calculations 1900 MHz band

Maximum output power at antenna input terminal: 29.19 dBm
Maximum output power at antenna input terminal under consideration of the duty cycle effect: 27.15 dBm.

Prediction distance **R**:   20 cm
Prediction frequency: 1850,20 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 permissible antenna gain: **9.86 dBi**
Maximum permissible antenna gain for mobile / portable stations   **3.43 dBi**

Prediction

The maximum allowed 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 9.86 dBi would 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 9.86 dBi. Considering the max output power of 2 Watts EIRP (FCC §24.235) for mobile / portable stations the maximum antenna gain is 3.43 dBi, which is below 9.86 dBi and in accordance to the FCC regulations.

The average values in the FCC test report were determined over the transmit period only. For MS class 32 a duty cycle of -2.04dBm has to be considered in the calculation.