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11.12.2008
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WLAN of Motorola VC6096 – predictions for Maximum Permissible Exposure

Dear Mr. Roketlishvili,

please find our Maximum Permissible Exposure calculations for Motorola VC6096
based on Symbol Technologies Inc, WLAN module FCC ID H9P2192955.

Best Regards

Oliver Wagener

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 2412 - 2462 MHz band

Maximum peak output power at antenna input terminal: 20.3 dBm (107 mW)

Prediction distance **R**:   20 cm
Prediction antenna gain **G**:   2.3 dBi

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

Solving for S, the power density at 20 cm is 0.3620 mW/cm² under the given prediction.

Prediction

The calculated MPE value is 0.0362 mW/cm² at a distance of 20 cm. This value is 0.9638 dB below the specified limit in Table 1B of 47 CFR 1.1310. In this case the specified limit is 1 mW/cm².

Calculations 5745 - 5825 MHz band

Maximum peak output power at antenna input terminal: 20.2 dBm (105 mW)

Prediction distance **R**:   20 cm
Prediction antenna gain **G**:   1.5 dBi

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

Solving for S, the power density at 20 cm is 0.0294 mW/cm² under the given prediction.

Prediction

The calculated MPE value is 0.0294 mW/cm² at a distance of 20 cm. This value is 0.9706 dB below the specified limit in Table 1B of 47 CFR 1.1310. In this case the specified limit is 1 mW/cm².