MAXIMUM PERMISSIBLE EXPOSURE FOR SUBPART C 2.4 GHz BAND

Calculations

Power density at the specific separation:

$S = PG/(4R^2p)$
$S = (4.009 * 2.24) / (4 * 20^2 * p)$
$S = 0.00178654607$ mW/cm^2 (at 20 cm)
Limit = 0.6015 mW/cm^2 (902.2 MHz / 1500)

where

S = Maximum power density (mW/cm^2)
P = Power input to the antenna (mW) – 6.03 dBm
G = Numeric power gain of the antenna
R = distance to the center of the radiation of the antenna (20 cm or 1 cm = limit for MPE)

The maximum permissible exposure (MPE) for the general population is 0.6 mW/cm^2.

The power density at 20 cm does not exceed the 0.6015 mW/cm^2. Therefore, the exposure condition is compliant with FCC rules.

The numeric gain (G) of the antenna with a gain specified in dB is determined by:

$G = Log^{-1}$ (dB antenna gain/10)
$G = Log^{-1}$ (3.50121 dBi/10)
G = 2.24