MAXIMUM PERMISSIBLE EXPOSURE FOR SUBPART C 900 MHz BAND

Calculations

Power density at the specific separation:

$S = PG/(4R^2\pi)$
$S = (171.40 * 1.009) / (4 * 2.5^2 * \pi)$
$S = 2.202$ mW/cm^2 (at 2.5 cm)
Limit = 3.0366 mW/cm^2 (f in MHz / 300)

where

S = Maximum power density (mW/cm^2)
P = Power input to the antenna (mW) – 22.34 dBm
G = Numeric power gain of the antenna
R = distance to the center of the radiation of the antenna (2.5 cm = limit for MPE)

Note: The EUT also is below the low threshold requirement ($375/f_{GHz}$) mW which is 409.84 mW. The middle channel was used for f_{GHz} per note 3 of the TCB Exclusion list.

The maximum permissible exposure (MPE) for Occupational / Controlled Exposure is 3.0366 mW/cm^2.

The power density at 2.5 cm does not exceed the 3.0366 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)
$G = Log^{-1}$ (0.04 dBi/10)
G = 1.009