MPE Calculation for AutOS - OET Bulletin 65

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from a device to the body of a user.

The MPE calculation as given in FCC OET Bulletin 65, page 19 is used to calculate the safe operating distance for the user.

$$S = EIRP/4 \pi R^2$$

Where S = Power density
EIRP = Transmitter Power x Antenna gain
R = distance to the centre of radiation of the antenna

For 2.4GHz band (WIFI)

Transmitter frequency range = 2412 – 2462MHz band
Max. measured Transmitter EIRP = 19.1dBm max. (81.3mW)
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MPE Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of FCC Rule Part 1.1310 for PCS1900

$S = 1.0 mW/cm^2$

MPE Calculation for AutOS

Values: R = 20cm
EIRP = 81.3

$S = EIRP/4 \pi R^2$
$S = 81.3/(12.56 \times 20^2)$
$S = 81.3/ 5024$
$S = 0.016 mW/cm^2$

For 2.4GHz band (Bluetooth®)

Transmitter frequency range = 2402 – 2480MHz band
Max. measured Transmitter EIRP = 4.0dBm max. (2.5mW)

ie: 2.4GHz operation has Tx powers below the $60/f_{(GHz)}$ mW level for RF exposure consideration of KDB447498

Conclusion

The MPE value of the AutOS at 20 cm meets the FCC Rule Part 1.1310

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