PowerScan PBT7100 Wireless Basestation
Basestation Class: BC7010 and BC7030
MPE Calculation - 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 = Effective Isotropically Radiated Power

R = distance to the centre of radiation of the antenna

For the PowerScan PBT7100 (IBM SurePOS)

Transmitter frequency range = 2402 MHz to 2480 MHz

Maximum EIRP = 0.031 W

Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of FCC Rule Part 1.1310 for the band 2402 to 2480 MHz:

$S = 1.0 \text{ mW/cm}^2$

Calculation for 20cm safe distance for stated maximum EIRP

Values: EIRP = 31 mW; R = 20 cm

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

$S = 31/ (12.56 \times 20^2)$

$= 31/ 5024$

$S = 0.006 \text{ mW/cm}^2$

Conclusion

The MPE value of the PowerScan PBT7100 Wireless Basestation at 20 cm is .006 mW/cm^2, this is well below the maximum allowed of 1.0mW/cm^2. The PBT7100 Wireless Basestation meets the RF exposure limits of OET Bulletin 65.