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Maximum Permissible Exposure (MPE) Compliance Statement for the SpotCell 100 (800 MHz) Adaptive Repeater

The SpotCell 100 (800 MHz) A/B equipment has been tested and the performance characterized in accordance with the MPE requirements of 47 CFR.

The system is a low power adaptive repeater, having integral antennas built into the SCU and DDU modules. At the maximum operating frequency of 894 MHz the MPE limit for the General Population/Uncontrolled Exposure is $0.6\text{mW}/\text{cm}^2$. The SpotCell 100 (800MHz) complies with this limit at the following line of sight distances from the antenna element:

DDU : 12 cm
SCU : 0.4 cm

The analysis is provided below.

For the general uncontrolled population the Maximum Permissible Exposure (MPE) limit is given by $F/1500 \text{ mW}/\text{cm}^2$, where F is the operating frequency of the product, giving a limit of $0.6 \text{ mW}/\text{cm}^2$

The prediction methods provided are based on worst-case far-field calculations;

$$S = \text{EIRP}/(4\pi R^2)$$

Using this calculation, for the DDU

S= 0.6 mW
EIRP = 1000 mW
R= 11.5 cm

The User Manual, which also incorporates the Installation instructions includes a warning on page (i) of the document under the heading "Important Safety Information". The warning instructs the installer to ensure the DDU is mounted in a location where people will not approach within 1m of the front of the unit. This distance provides additional safety margin for the product.

For the SCU



S=0.6 mW
EIRP = 1mW
R= 0.36 cm

The integral radome on the SCU provides > 0.5cm physical separation from the antenna so that no warning statement is required for this module.

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