



June 17, 2011

Attn: Application Examiner, Reviewing Engineer

Since the Spectrum 800 SMR/AWS Path 1 SRAU is a low power device that is not hand-held, its antenna would rarely be within 20 cm of an individual, and the ERP is less than 3 watts, we are in compliance with SAR requirements of 2.1091.

The maximum TX output power from the EUT antenna port is 26.95 dBm.
The maximum gain antenna that could be for use with the EUT has a gain of 7.82 dBi.
From the following equations:

Peak Output of EUT at antenna Connector (dBm) + Gain of Antenna (dBd) = Peak TX Power (dBm) ERP

$10 * \log_{10}(\text{Peak TX Power} * E^3 \text{ Watts}) = \text{Peak TX Power (dBm) ERP}$

$26.95 \text{ dBm} + 7.82 \text{ dBi} = 34.77 \text{ dBm EIRP}$

$34.77 \text{ dBm ERP} = 3.0 \text{ Watts EIRP}$

To convert to EIRP use the relation: $\text{EIRP} = \text{ERP} * 1.64$. ($2.55 \text{ EIRP} = 1.56 \text{ ERP}$)

To convert to dBi to dBd use the relation: $\text{dBi} = \text{dBd} + 2.14$. ($7.14 \text{ dBi} = 5.0 \text{ dBd}$)

Per OET 65:

Maximum Permissible Exposure is 1.0 mW/cm² over 30 minutes. (1500 MHz - 100,000 MHz)

The following equations determine the distance from the antenna that the power density is $\leq 1.0 \text{ mW/cm}^2$.

$3.0 \text{ Watts EIRP} = 3.0 * 10^3 \text{ mWatts ERP}$

$1.0 \text{ mW/cm}^2 = 3.0 * 10^3 \text{ mW} / (4 * \pi * r^2)$

$r = \text{SQRT}(3.0 * 10^3 / 4 * \pi * 1.0)$

$r = 15.45 \text{ cm or } 0.1545 \text{ Meters}$

In addition, the following statement is in our installation manual:

To comply with Maximum Permissible Exposure (MPE) requirements, antennas must be installed to provide at least 20 centimeters of separation from all persons per FCC 47CFR, Part 2.1091 and IC RSS-102, Section 2.5.2.

Sincerely,

Joshua J. Wittman
Compliance Engineer

Tele: 952 403-8322

Fax: 952 403-8858

Email: joshua.wittman@te.com