6a.6 Effective Radiated Power (ERP) – Pursuant 15.247(b) (3)

The radiated power received at a spectrum analyzer was measured from the radio product specimen with integral antenna at 2 degrees increments as the specimen was rotated. These recorded power readings are uncalibrated ERP measurements. To convert these readings to ERP values a reference reading was obtained from a calibrated (to an ideal dipole) antenna to which was applied the same power level as the measured output power of the radio specimen. The reading at the spectrum analyzer from this calibrated reference antenna served to calibrate the spectrum analyzer readings for ERP measurements. By comparing the readings between the reference antenna and the radio product specimen, and with a measurement of the output power of the radio product specimen, this measurement also serves to determine the radio specimen antenna gain.

The following calculations show how the reported scaled ERP was determined.

$$Measured\ ERP, dBd = 10 * \log(measured\ output\ power, mW) + measured\ antenna\ gain, dBd$$

The resulting ERP was converted to mW:

$$MeasuredERP, mW = 10^{\left(\frac{Measured\ ERP, dBd}{10}\right)}$$

Since the measured ERP was not determined at the production maximum output power, a simple scaling is performed to 700 mW:

$$Scaled\ ERP, mW = Measured\ ERP, mW * \left(\frac{700mW}{measured\ output\ power, mW}\right)$$

The method above was used to process all rotational measurement data and, for brevity, the Table below and the following Figure summarizes the maximum ERP values obtained in the two transmit bands.

Freq, MHz	Maximum Scaled ERP, mW	Azimuth, degrees
800	536	82.6
900	528.5	106.6

Table 6a-17: Maximum ERP Values

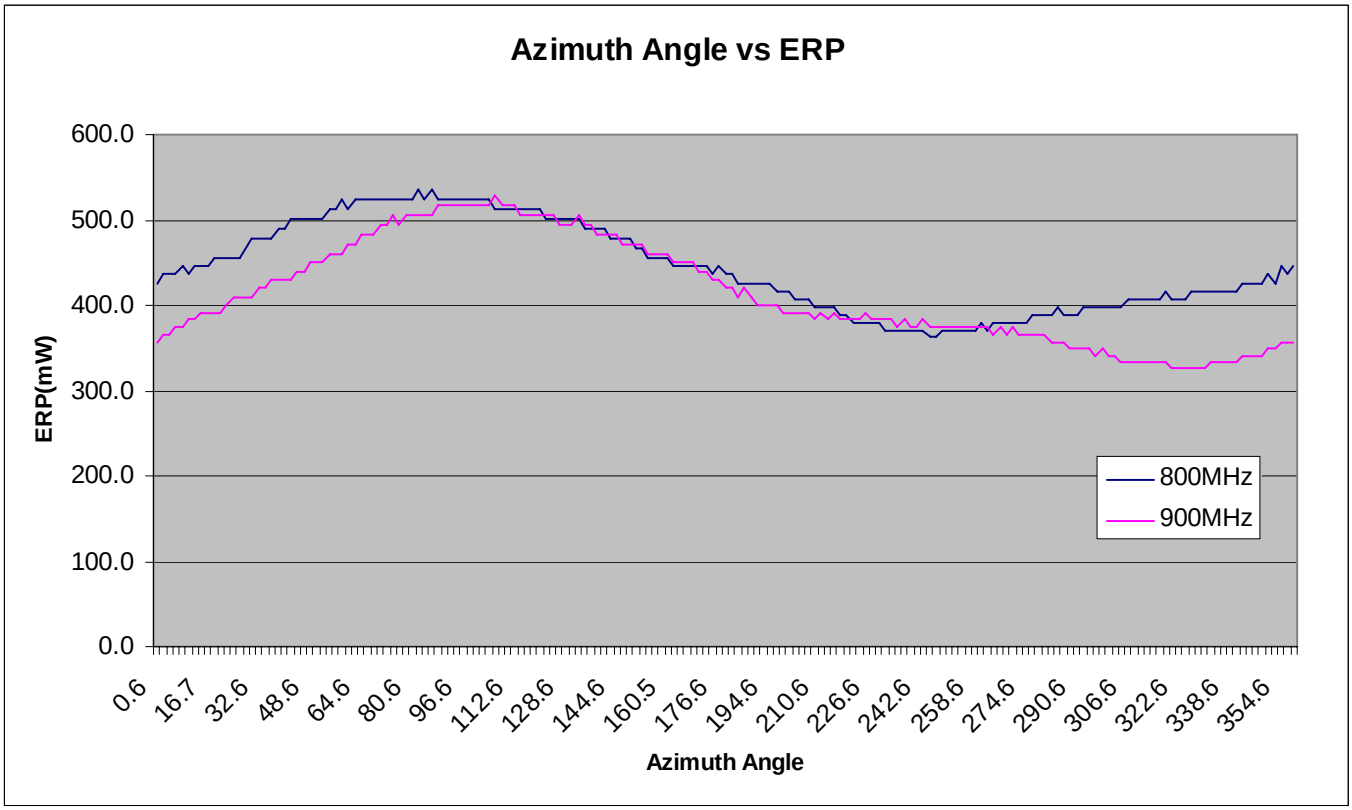

Figure 6a-94. Scaled ERP vs. Azimuth Angle