Calculation of Power Density on Antenna Panel Surface

- **In our case, the Tx power is:**
  - **Pout/PA = 23.6dBm max = 0.23W**
  - **Number of PAs = 16**
  - **Total power during Transmit = 35.6dBm = 3.7W**
  - **For a 67% Tx duty cycle, the average Tx power = 33.9dBm = 2.4W**

- **The antenna area is:**
  - **Antenna size is 10.5 inches x 18.2 inches.**
  - **Area = 191 in^2 = 1233 cm^2**

- **The antenna and feed losses are 2.1dB (from PA output to antenna element)**
  - **The effective average transmit power at the elements is 31.8dBm = 1.5W**

- **The power density on the antenna panel surface using S=4*P/A is:**
  - **Power density = 4.89mW/cm^2**
  - **The calculation uses the S=4*P/A equation to compute the power density on the surface of an aperture antenna as given in OET Bulletin 65.**
  - **The power density is below the FCC limit for occupational/controlled exposure on the antenna panel surface.**