

Prediction of MPE Limit
OET Bulletin 65, Edition 97-01



Equation from page 18

$$S = \frac{PG}{4\pi R^2}$$

$$R = \sqrt{\frac{PG}{4\pi S}}$$

S= power density
P= power input to the antenna
G= power gain of the antenna in the direction of interest relative to an isotropic radiator
R= distance to the center of radiation of the antenna

Choose

↓

Occupational/Controlled -(BTS)

General Population/Uncontrolled -(MODEM)

ENTER

↓

Tx Frequency: 2360.00 (MHz)

Maximum Peak Power at Antenna Input Terminal: 31.70 (dBm)

Antenna gain (typical): 5.00 (dBi)

S= 1.00 (mW/cm²)
P= 1479.11 (mW)
G= 3.16 (numeric)

R = 19.29 (cm)

NOTE: The following warning must appear in the installation manual.

CAUTION:

This device is a radio frequency transmitter. It is required to comply with FCC RF exposure requirements for mobile transmitting devices. A minimum separation distance of 20.00 cm or more must be maintained between the antenna and all persons during device operations to ensure compliance with the FCC's rules for Radio Frequency Exposure. If this minimum distance cannot be maintained, exposure to RF levels that exceed the FCC's limits may result.

20cm calculation is based on the maximum peak power averaged over one 10mS frame:
 Max conducted RMS power to antenna port = +28.7 dBm
 Peak to Average ratio = 6 dB
 Antenna gain = 5 dBi

Max transmitter duty cycle = 50%

Maximum average peak power to antenna terminal = $+28.7 - 3 \text{ dB}(50\% \text{ duty cycle}) + 6 \text{ dB(p/A)} = +31.7 \text{ dB}$