

CC Maximum Permissible Exposure (MPE) limits for equipment operating in the frequency range 1500 – 100,000 MHz is 1.0 mW/cm².

Following installation and commissioning, the safe distance from the antenna is the greater of:

20cm

Or

r cm, where $r = \sqrt{PG/4\pi S}$

P: power input to antenna(s) in mW

G: numeric gain of antenna relative to isotropic radiator

S: power density in mW/cm² = 1.0 mW/cm²

The safe distance from the antenna shall be the greater of:

20 cm or $\sqrt{PG/4\pi S}$

The worst case P*G value is obtained with the maximum antenna gain of 26 dBi, with a maximum conducted power of 24 dBm

The maximum permitted antenna gain is 26.5 dBi (446.7 linear)

Maximum transmit power is 24.0 dBm (inc. tune-up) or 251 mW (for each of the 6 beams)

Close to the antenna, the beams are not fully formed and separated, so whilst the antenna are is > 1m², for the purpose of this calculation, it will be considered a point source launching 6 beams

So

$$r = \sqrt{(6 \times 251 \times 446.7 / 4 \times \pi \times 1)} = 231.4 \text{ cm}$$

So antenna safe distance is 232 cm

Power Density, S at 20cm:

$$S = PG/4\pi r^2 = 0.995 \text{ mW/cm}^2, \text{ which is less than the limit of } 1.0 \text{ mW/cm}^2$$