

Reference: Cellular modem transmit powers are taken from original module EMF report I17D00184-MPE01

Mesh Radio transmit power is worst case antenna port + antenna gain

RF Exposure – USA

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

The maximum permitted values of S for general population / uncontrolled exposure are:

- F/1500 mW/cm² for frequencies 300 – 1500 MHz
- 1.0 mW/cm² for frequencies above 1500 MHz

The calculation of minimum distance “r” is made by summing the EIRP of the two radios:

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

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

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

Frequency Band	Frequency (MHz)	Cellular modem			Mesh radio EIRP (mW)	S (mW/cm ²)	Minimum r (cm)
		Transmit power (dBm)	Antenna gain (dBi)	EIRP (mW)			
LTE band 2	1850	25	2	501.2	10.50	1.00	6.38
LTE band 4	1710	25	2	501.2	10.50	1.00	6.38
LTE band 5	824	25	0	316.2	10.50	0.55	6.88
LTE band 7	2500	25	2.5	562.3	10.50	1.00	6.75
LTE band 12	698	25	0	316.2	10.50	0.47	7.47
LTE band 18	815	25	0	316.2	10.50	0.54	6.92
LTE band 19	830	25	0	316.2	10.50	0.55	6.85
GSM 850	824	25.97	0	395.4	10.50	0.55	7.67
GSM 1900	1850	22.97	2	314.1	10.50	1.00	5.08
UMTS band 2	1850	25	2	501.2	10.50	1.00	6.38
UMTS band 4	1710	25	2	501.2	10.50	1.00	6.38
UMTS band 5	824	25	0	316.2	10.50	0.55	6.88

All values of r are < 20 cm so the safe distance is 20 cm