

FCC MPE calculation Camera Hub

The Camera Hub contains two radio transmitters:

- Telit Cinterion (Thales) PLS63-W Cellular Modem. FCC ID: QIPPLS63-W with GTT Wireless OS-LTE-11-C0 antenna which has gains of:
 - 0.0 dBi maximum between 698 and 960 MHz
 - 3.2 dBi maximum between 1710 and 2170 MHz
 - 2.3 dBi maximum between 2300 and 2690 MHz
- Senceive FlatMesh radio with GTT Wireless OS-ISMDB-0507-C0-WL antenna which has gains of:
 - 4.0 dBi maximum between 2400 - 2500 MHz

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 three 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 $\sqrt{(PG/4\pi S)}$

For the purposes of this calculation the FlatMesh transmit power is added to the cellular power and compared to the limit for the cellular band in questions

The table of calculations is on the page below, but all values of r are ≤ 15.16 cm so the safe distance is 20 cm.

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Frequency Band	Lowest Freq. (MHz)	Cellular modem			FlatMesh radio EIRP (mW) ¹	Minimum r (cm)	S (mW/cm ²) at 20 cm distance
		Transmit power (W)	Antenna gain (dBi)	EIRP (mW)			
LTE band 2	1850	0.32	3.2	660.7	6.4	7.29	0.13
LTE band 4	1710	0.32	3.2	660.7	6.4	7.29	0.13
LTE band 5	824	0.32	1.2	416.9	6.4	7.83	0.08
LTE band 7	2500	0.32	2.3	537.0	6.4	6.58	0.11
LTE band 12	698	0.32	0	316.2	6.4	7.43	0.06
LTE band 13	777	0.32	0	316.2	6.4	7.04	0.06
LTE band 25	1850	0.32	3.2	660.7	6.4	7.29	0.13
LTE band 26	814	0.32	0	316.2	6.4	6.88	0.06
LTE band 38	2570	0.32	2.3	537.0	6.4	6.58	0.11
LTE band 41	2496	0.32	2.3	537.0	6.4	6.58	0.11
LTE band 4	1710	0.32	3.2	660.7	6.4	7.29	0.13
GSM 850	824	3.16	0	1581.1	6.4	15.16	0.32
GSM 1900	1850	1.58	3.2	1655.7	6.4	11.50	0.33
UMTS band 2	1850	0.32	3.2	660.7	6.4	7.29	0.13
UMTS band 4	1710	0.32	3.2	660.7	6.4	7.29	0.13
UMTS band 5	824	0.32	0	316.2	6.4	6.84	0.06

¹ Highest power in report H5975 FR is 4.04 dBm with 4dBi antenna gain