

MPE Calculation : WCDMA,LTE,NR

RF function or Mode	Frequency range (MHz)	Max Target Power (dBm)	ANT Gain (dBi)	Calculated EIRP (dBm)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	FCC Requirement (mW/cm ²)
LTE 71	665.50 ~ 695.50	25.00	5.50	30.50	30.50	1122.018	0.223	0.444
n71	665.50 ~ 715.30	25.00	5.50	30.50	30.50	1122.018	0.223	0.444
LTE 12	669.70 ~ 715.30	25.00	5.50	30.50	30.50	1122.018	0.223	0.446
LTE 13	779.50 ~ 784.50	24.50	6.50	31.00	31.00	1258.925	0.250	0.520
LTE 14	790.50 ~ 795.50	25.00	6.00	31.00	31.00	1258.925	0.250	0.527
WCDMA 5	826.40 ~ 846.60	24.30	6.10	30.40	30.40	1096.478	0.218	0.551
LTE5	824.70 ~ 848.30	25.00	6.10	31.10	31.10	1288.250	0.256	0.550
n5	826.50 ~ 846.50	25.00	6.10	31.10	31.10	1288.250	0.256	0.551
WCDMA 4	1712.40 ~ 1752.60	24.30	5.20	29.50	29.50	891.251	0.177	1.000
LTE 66/4	1710.70 ~ 1779.30	24.80	5.20	30.00	30.00	1000.000	0.199	1.000
n66	1712.50 ~ 1777.50	24.50	5.20	29.70	29.70	933.254	0.186	1.000
WCDMA 2	1852.40 ~ 1907.60	24.30	8.20	32.50	32.50	1778.279	0.354	1.000
LTE 25/2	1850.70 ~ 1909.30	24.80	8.20	33.00	33.00	1995.262	0.397	1.000
n2	1852.50 ~ 1907.50	24.50	8.20	32.70	32.70	1862.087	0.370	1.000
LTE 30	2307.50 ~ 2312.50	23.50	0.50	24.00	24.00	251.189	0.050	1.000
LTE 41 (PC2)	2498.50 ~ 2687.50	26.50	6.50	33.00	33.00	1995.262	0.397	1.000
LTE 41 (PC3)	2498.50 ~ 2687.50	24.50	6.50	31.00	31.00	1258.925	0.250	1.000
n41#0	2501.01 ~ 2685.00	24.10	6.50	30.60	30.60	1148.154	0.228	1.000
n41#1	2501.01 ~ 2685.00	24.50	6.50	31.00	31.00	1258.925	0.250	1.000
LTE 7	2502.50 ~ 2567.50	24.80	8.20	33.00	33.00	1995.262	0.397	1.000
n77 (3450-3550 MHz)	3455.01 ~ 3544.98	24.50	5.50	30.00	30.00	1000.000	0.199	1.000
LTE 48	3552.50 ~ 3697.50	23.00	0.00	23.00	23.00	199.526	0.040	1.000
n77 (3700-3980 MHz)	3705.00 ~ 3975.00	24.50	5.50	30.00	30.00	1000.000	0.199	1.000

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 1845430196 / (4 \times 20^2 \times \pi) \\
 &= 3479053107 \text{ mW/cm}^2
 \end{aligned}$$

- Note
 S= Maximum power dens
 EIRP= Equivalent Isotropic
 R= Distance to the center of the radiat

§1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm ²)	Averaging time (minutes)
0.3 ~ 1.34	614	1.63	*100	30
1.34 ~ 30	824/f	2.19 / f	*180 / f ²	30
30 ~ 300	27.5	0.073	0.2	30
300 ~ 1,500			f / 1500	30
1,500 ~ 100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Conclusion : The exposure condition of this device is compliant with FCC