

FCC RF Exposure Information

According to FCC §1.1310 and §2.1091 (Mobile Devices) RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure:

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	¹ (100)	30
1.34-30	824/f	2.19/f	¹ (180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f=frequency in MHz

¹=Plane-wave equivalent power density

MPE Prediction

Prediction of MPE limit at a given distance, equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to 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

Test Results:

The following results were calculated using the highest gain antennas used on this product.

Frequency Band 824-849MHz Uplink	Units	Value
Maximum peak output power at booster output	dBm	21.2
Cable loss (50 feet of RG-6 cable)	dB	3.2
Maximum peak output power at antenna input terminal	dBm	18.0
Maximum peak output power at antenna input terminal	mW	63.1
Prediction distance	cm	20
Prediction frequency	MHz	836.5
Antenna Gain, typical, using YX055-CEL antenna	dBi	15
Antenna Gain, typical	numeric	31.62
Power density at prediction frequency and distance	mW/cm ²	0.397
MPE limit for uncontrolled exposure at predication frequency	mW/cm ²	0.558

$$= PG/4\pi R^2$$

Frequency Band 869-894MHz Downlink	Units	Value	
Maximum peak output power at booster output	dBm	8.9	
Cable loss (50 feet of RG-6 cable)	dB	0.81	
Maximum peak output power at antenna input terminal	dBm	8.09	
Maximum peak output power at antenna input terminal	mW	6.4	
Prediction distance	cm	20	
Prediction frequency	MHz	881.5	
Antenna Gain, typical, using YX027-F antenna	dBi	6	
Antenna Gain, typical	numeric	3.98	
Power density at prediction frequency and distance	mW/cm ²	0.005	= $PG/4\pi R^2$
MPE limit for uncontrolled exposure at predication frequency	mW/cm ²	0.588	

Frequency Band 1930-1990MHz Uplink	Units	Value	
Maximum peak output power at booster output	dBm	19.0	
Cable loss (50 feet of RG-6 cable)	dB	4.6	
Maximum peak output power at antenna input terminal	dBm	14.4	
Maximum peak output power at antenna input terminal	mW	27.5	
Prediction distance	cm	20	
Prediction frequency	MHz	1960	
Antenna Gain, typical, using YX023-PCS antenna	dBi	13	
Antenna Gain, typical	numeric	19.95	
Power density at prediction frequency and distance	mW/cm ²	0.109	= $PG/4\pi R^2$
MPE limit for uncontrolled exposure at predication frequency	mW/cm ²	1.000	

Frequency Band 1850-1910MHz Downlink	Units	Value	
Maximum peak output power at booster output	dBm	8.9	
Cable loss (50 feet of RG-6 cable)	dB	1.29	
Maximum peak output power at antenna input terminal	dBm	7.61	
Maximum peak output power at antenna input terminal	mW	5.8	
Prediction distance	cm	20	
Prediction frequency	MHz	1880	
Antenna Gain, typical, using YX027-F antenna	dBi	8	
Antenna Gain, typical	numeric	6.31	
Power density at prediction frequency and distance	mW/cm ²	0.007	= $PG/4\pi R^2$
MPE limit for uncontrolled exposure at predication frequency	mW/cm ²	1.000	

Results

For uplink and downlink, the highest power density levels at 20cm are below the MPE uncontrolled exposure limit.