

Prediction of MPE at a given distance

1. Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m rms)	Magnetic field strength (A/m rms)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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
300–1500			f/1500	30
1500–100,000			1	30

2. Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

3. Result

CDMA2000 BC0 Uplink (Worst case)

MODE	Frequency (MHz)	power (dBm)	Ant Gain (dBi)	EIRP (dBm)	EIRP (mW)
CDMA2000 BC0	836.52	26	20	46	39810

Limit for controlled (mW/cm ²)	Limit for uncontrolled (mW/cm ²)	Safety Distance for controlled exposure (cm)	Safety Distance for uncontrolled exposure (cm)
2.79	0.56	34	76

CDMA2000 BC0 Downlink (Worst case)

MODE	Frequency (MHz)	power (dBm)	Ant Gain (dBi)	EIRP (dBm)	EIRP (mW)
CDMA2000 BC0	878.49	38	8	46	39810

Limit for controlled (mW/cm ²)	Limit for uncontrolled (mW/cm ²)	Safety Distance for controlled exposure (cm)	Safety Distance for uncontrolled exposure (cm)
2.93	0.59	33	74

CDMA2000 BC1 Uplink (Worst case)

MODE	Frequency (MHz)	power (dBm)	Ant Gain (dBi)	EIRP (dBm)	EIRP (mW)
CDMA2000 BC1	1851.25	26	20	46	39810

Limit for controlled (mW/cm ²)	Limit for uncontrolled (mW/cm ²)	Safety Distance for controlled exposure (cm)	Safety Distance for uncontrolled exposure (cm)
5	1	25	57

CDMA2000 BC1 Downlink (Worst case)

MODE	Frequency (MHz)	power(dBm)	Ant Gain (dBi)	EIRP (dBm)	EIRP (mW)
CDMA2000 BC1	1988.75	38	8	46	39810

Limit for controlled (mW/cm ²)	Limit for uncontrolled (mW/cm ²)	Safety Distance for controlled exposure (cm)	Safety Distance for uncontrolled exposure (cm)
5	1	25	57