



Maximum Permissible Exposure (MPE) & Exposure evaluation

FCC ID: 2AT37FLEETONE

Applied procedures / limit

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

Predication 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

$\pi = 3.1416$

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure"

Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz

* = Plane-wave equivalent power density



MPE PREDICTION

Technologies:	Maximum Power (dBm)	
FleetOne Shipborne Satellite Broadband Terminal	Antenna1	Antenna2
	44.42	45.87

Prediction: minimum safety distance (worst case for each antenna)

	Max Output Power (dBm)	Antenna Gain(dBi)	Limit (mW/cm ²)	Minimum safety distance during operation / cm
ANT1	44.42	10	1.0	250
ANT2	45.87	10	1.0	250

	Target power W/ tolerance (dBm)	Max tune up power tolerance (dBm)	Output power to antenna (mW)	Antenna Gain(dBi)	Power Density at R=250cm (mW/cm ²)	Total Power Density at R=250cm (mW/cm ²)	Limit (mW/c m ²)	Result
ANT1	44±1.0	45	31622.78	10 (10dBi)	0.402633	0.909518	1.0	Pass
ANT2	45±1.0	46	39810.72	10 (10dBi)	0.506885			