Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this Chapter.

Limit

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	($180/f^2$)	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 *Plane-wave equivalent power density

MPE Prediction

Predication of MPE limit at a given distance.

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

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

Where: S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW)
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 (appropriate units, e.g., cm)

UHF RFID Reader mode

Maximum peak output power at antenna input	:	29.91 dBm (979.49 mW)
Prediction distance	:	20 cm
Predication frequency	:	927.25 MHz
Antenna gain(Max)	:	0 dBi(1.0 numeric)
Power density at predication frequency at 20 cm	:	0.195 mW/cm^2
MPE Limit for	:	0.6 mW/cm^2

Bluetooth mode

Maximum peak output power at antenna input	:	1.25 dBm (1.33 mW)
Prediction distance	:	20 cm
Predication frequency	:	2 402 MHz
Antenna gain(Max)	:	2.1dBi (1.62 numeric)
Power density at predication frequency at 20 cm	:	0.00043026 mW/cm^2
MPE Limit for	:	1 mW/cm^2

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Test Result

The power density level at 20 cm is 0.195 mW/cm^2 and 0.00043026 mW/cm^2 , which is below the uncontrolled exposure limit of 0.6 mW/cm^2 and 1 mW/cm^2 at 902 MHz to 928 MHz and 2 402 MHz to 2 480 MHz

Simutaneous Mode evaluation :
The sum of MPE factor is 0.195 / 0.6 + 0.00043/1 which is less than 1.
so the simutaneous mode is comply with MPE requirement.

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