10. RF EXPOSURE STATEMENT

1. LIMITS

According to §1.1310 and §2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

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 - 1500	.....	.....	f/1500	30
1500 - 100.000	.....	.....	1.0	30

F = frequency in MHz

* = Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

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

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

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

2-1. iDen Downlink (800 MHz)

Max Peak output Power at antenna input terminal	21.010	dBm
Max Peak output Power at antenna input terminal	126.183	mW
Prediction distance	25.000	cm
Prediction frequency	851.0125	MHz
Antenna Gain(typical)	12.000	dBi
Antenna Gain(numeric)	15.849	-
Power density at prediction frequency(S)	0.255	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	0.567	mW/cm^2

2-2. iDen Uplink (800 MHz)

Max Peak output Power at antenna input terminal	21.040	dBm
Max Peak output Power at antenna input terminal	127.057	mW
Prediction distance	25.000	cm
Prediction frequency	806.0125	MHz
Antenna Gain(typical)	12.000	dBi
Antenna Gain(numeric)	15.849	-
Power density at prediction frequency(S)	0.256	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	0.537	mW/cm^2

2-3. iDen Downlink (900 MHz)

Max Peak output Power at antenna input terminal	21.050	dBm
Max Peak output Power at antenna input terminal	127.350	mW
Prediction distance	25.000	cm
Prediction frequency	935.0125	MHz
Antenna Gain(typical)	12.000	dBi
Antenna Gain(numeric)	15.849	-
Power density at prediction frequency(S)	0.257	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	0.623	mW/cm^2

2-4. iDen Uplink (900 MHz)

Max Peak output Power at antenna input terminal	20.970	dBm
Max Peak output Power at antenna input terminal	125.026	mW
Prediction distance	25.000	cm
Prediction frequency	896.0125	MHz
Antenna Gain(typical)	12.000	dBi
Antenna Gain(numeric)	15.849	-
Power density at prediction frequency(S)	0.252	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	0.597	mW/cm^2

3. RESULTS

The power density level at 25 cm is 0.256 mW/cm²(iDen 800 MHz UpLink), 0.255 mW/cm²(iDen 800 MHz DownLink), 0.252 mW/cm²(iDen 900 MHz UpLink), 0.257 mW/cm²(iDen 900 MHz DownLink), which is below the uncontrolled exposure limit for iDEN Band.

Simultaneous MPE at 25 Cm is (0.255/0.567) + (0.257/0.623) = 0.862 < 1 (DownLink),
(0.256/0.537) + (0.252/0.597) = 0.898 < 1 (UpLink),

Warning: In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, it must also have a minimum distance of 25 cm from the body during normal operation.