

## 1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### 1.1. Standard Applicable:

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
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 <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-15000	/	/	1.0	30

F = frequency in MHz

\* = Plane-wave equipment power density

**1.2. Measurement Result:**

Frequency (MHz)	Reading Power (dBm)	Output Power (W)	Limit (W)
902.25	<b>27.778</b>	0.59951	0.67
914.75	27.769	0.59827	0.67
927.75	27.559	0.57003	0.67

**1.3. MPE Prediction**

Prediction of MPE limit at a given distance

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

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

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

Max. output power including tune-up tolerancel:	<b>27.78</b>	(dBm)
Max. output power including tune-up tolerancel:	599.51493	(mW)
Duty cycle:	<b>27</b>	(%)
Maximum Pav :	161.86903	(mW)
Peak Antenna gain (Maximum):	<b>7.71</b>	(dBi)
Peak Antenna gain (linear):	5.9020108	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	<b>902.25</b>	(MHz)
MPE limit for uncontrolled exposure at prediction	0.6015	(mW/cm <sup>2</sup> )
Power density at predication frequency at 20 (cm)	0.190	(mW/cm <sup>2</sup> )

**Measurement Result**

The predicted power density level at 20 cm is 0.19 mW/cm<sup>2</sup>.

This is below the uncontrolled exposure limit of 1 mW/cm<sup>2</sup> at 902.25MHz