

# MPE Calculation

$$S = \text{EIRP}/(4R^2\pi)$$

S = Maximum power density (mW/cm<sup>2</sup>)

P = Power input to the antenna (mW)

G = Numeric power gain of the antenna

R = Distance to the center of the radiation of the antenna

EIRP = Equivalent Isotropic Radiated Power(mW) (=P\*G)

Frequency range (MHz)			Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging time (minutes)
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	~	1,500			f / 1500	30
1,500	~	100,000			1	30

Model Name : **RED4S\_FF**

FCC ID : **Y3D-RED4SFF**

Separation distance (R) : **20.0 cm**

Modulation	Frequency (MHz)	Measured Maximum Average power	Tune-up tolerance	Max. Power with tune-up tolerance (P)		Antenna Gain (G)		Power Density (S)	Limit of Power Density (S)	Result
		(dBm)		(dBm)	(mW)	(dBi)	(numeric)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )	
RFID	917.1	16.55	± 1.00	17.55	56.89	-1.32	0.74	0.0084	0.61	<b>PASS</b>
	921.9	16.44		17.44	55.46	-1.32	0.74	0.0081	0.61	<b>PASS</b>
	926.9	16.27		17.27	53.33	-1.32	0.74	0.0078	0.61	<b>PASS</b>

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.