MPE Calculator	RF Exposure uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dBi.				
	dBi = dB gain compared to an isotropic radiator.				
	S = power density in mW/cm^2				
	Transmitter Output power (mW)	2,177.7		Antenna Gain (dBi)	14
	Transmitter Output power (W)	2.18			
Output Power for % duty Cycle operation (Watts)	100	2.18		Antenna Gain (Numeric)	25.12
Output Power for 100% duty Cycle operation (Watts)		2.18			
Tx Frequency (MHz)	915	Calculation power (Watts)	2.18	dBd + 2.17 = dBi	dBi to dBd	2.17
				Antenna Gain (dBd)	11.83
Cable Loss (dB)	0.0	Adjusted Power (dBm)	33.38	Antenna minus cable (dBi)	14.00
				Antenna Gain (Numeric)	25.12
	Calculated ERP (mw)	33189.446		EIRP = Po(dBm) + Gain (dB)	
	Calculated EIRP (mw)	54701.596		Radiated (EIRP) dBm	47.380
				ERP = EIRP - 2.17 dB	
				Radiated (ERP) dBm	45.210

$$\text{Power density (S) mW/cm}^2 = \frac{\text{EIRP}}{4\,p\,r^2}$$

r (cm)   EIRP (mW)

FCC radio frequency radiation exposure limits per 1.1310

Occupational Limit		Frequency (MHz)	Occupational Limit (mW/cm²)	Public Limit (mW/cm²)
3.05	mW/cm²			
30.5	W/m²	30-300	1	0.2
General Public Limit		300-1,500	f/300	f/1500
0.61	mW/cm²	1,500-10,000	5	1
6.1	W/m²			

IC radio frequency radiation exposure limits per RSS-102

Occupational Limit		Frequency (MHz)	Occupational Limit (W/m²)	Public Limit (W/m²)
$0.6455 f^{0.5}$	W/m²			
19.5	W/m²	100-6,000	$0.6455 f^{0.5}$	
General Public Limit		6,000-15,000	50	
$0.02619 f^{0.6834}$	W/m²	48-300		1.291
2.77	W/m²	300-6,000		$0.02619 f^{0.6834}$
		6,000-15,000	50	10

				General Public	Occupational	
f = Transmit Frequency (MHz)			f (MHz) =	915	915	MHz
P_T = Power Input to Antenna (mW)			P_T (mW) =	2,177.7098	2,177.7098	mW
Duty cycle (percentage of operation)			% =	100	100	%
P_A = Adjusted Power due to Duty cycle or Cable Loss (mW)			P_A (mW) =	2,177.71	2,177.71	mW
G_N = Numeric Gain of the Antenna			GN (numeric) =	25.12	25.12	numeric
S_{20} = Power Density of device at 20cm (mW/m²)	$S_{20}=(P_A G_N)/(4\pi R_{20})^2$		S_{20} (mW/m²) =	10.88	10.88	mW/m²
S_{20} = Power Density of device at 20cm (W/m²)	$S_{20}=(P_A G_N)/(4\pi R_{20})^2$		S_{20} (W/m²) =	108.83	108.83	W/m²
S_L = Power Density Limit (W/m²) FCC			S_L (W/m²)=	6.100	30.500	W/m²
S_L = Power Density Limit (W/m²) Canada			S_L (W/m²)=	2.767	19.526	W/m²
R_C = Minimum distance to the Radiating Element for Compliance (cm) FCC	$R_C=\sqrt{(P_A G_N/4\pi S_L)}$		R_C (cm) =	84.5	37.8	cm
R_C = Minimum distance to the Radiating Element for Compliance (cm) Canada	$R_C=\sqrt{(P_A G_N/4\pi S_L)}$		R_C (cm) =	125.4	47.2	cm
S_C = Power Density of the device at the Compliance Distance R_C (W/m²) FCC	$S_C=(P_A G_N)/(4\pi R_C)^2$		S_C (W/m²) =	6.10	30.50	W/m²
S_C = Power Density of the device at the Compliance Distance R_C (W/m²) Canada	$S_C=(P_A G_N)/(4\pi R_C)^2$		S_C (W/m²) =	2.77	19.53	W/m²
R_{20} = 20cm			R20=	20	20	cm

For Compliance with Canada General Population Limits, User Manual must indicate a minimum separation distance of	125.4	cm
Or in Meters for Compliance with Canada General Population Limits, a minimum separation distance of	1.25	Meters

Summary: Standalone MPE Calculations and Summary

	Tx Duty Cycle (%)	Tx Frequency (MHz)	Power Total (mW)	Antenna Gain (numeric)	Public Limit S_L (W/m²)	S_{20} (W/m²)	Public R_C (cm)	S_C (W/m²)
FCC	100	915	2,178	25.12	6.100	108.83	84.5	6.10
Canada	100	915	2,178	25.12	2.767	108.83	125.4	2.77

	Limit Public	Limit Occupational	Overall Minimum (cm)	Overall Minimum (inches)
FCC (cm)	84.5	37.8		
FCC (inches)	34.0	15.0		
Canada (cm)	125.4	47.2		
Canada (inches)	50.0	19.0		

Overall Minimum Limit Public	Overall Minumu Limit Occuppational
126 cm	48 cm
50 inches	19 inches