

HVIN: MPRXFH5		Test Number: 220525	
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)	1000.0	
	Transmitter Output power (W)	1.00	
Output Power for % duty Cycle operation (Watts)	100	1.00	Antenna Gain (dBi) 14
Output Power for 100% duty Cycle operation (Watts)	1.00	1.00	Antenna Gain (Numeric) 25.12
Tx Frequency (MHz)	915	Calculation power (Watts) 1.00	dBd + 2.17 = dBi dBi to dBd 2.17
			Antenna Gain (dBd) 11.83
Cable Loss (dB)	8.0	Adjusted Power (dBm) 30.00	Antenna minus cable (dBi) 6.00
			Antenna Gain (Numeric) 3.98
	Calculated ERP (mw) 2415.461		EIRP = Po(dBm) + Gain (dB)
	Calculated EIRP (mw) 3981.072		Radiated (EIRP) dBm 36.000
			ERP = EIRP - 2.17 dB
			Radiated (ERP) dBm 33.830
	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Power density (S) mW/cm² = $\frac{\text{EIRP}}{4 \pi r^2}$ r (cm) EIRP (mW) </div>		
	Occupational Limit	FCC radio frequency radiation exposure limits per 1.1310	
3.05	mW/cm ²	Frequency (MHz)	Occupational Limit (mW/cm ²)
30.5	W/m ²	30-300	1
	General Public Limit	300-1,500	1/300
0.61	mW/cm ²	1,500-10,000	5
6.1	W/m ²		1
	Occupational Limit	IC radio frequency radiation exposure limits per RSS-102	
0.6455f ^{0.5}	W/m ²	Frequency (MHz)	Occupational Limit (W/m ²)
19.5	W/m ²	100-6,000	0.6455f ^{0.5}
	General Public Limit	6,000-15,000	50
0.02619f ^{0.6834}	W/m ²	48-300	
2.77	W/m ²	300-6,000	1.291
		6,000-15,000	0.02619f ^{0.6834}
			10
f = Transmit Frequency (MHz)		f (MHz) =	915
P _T = Power Input to Antenna (mW)		P _T (mW) =	1,000.0000
Duty cycle (percentage of operation)		% =	100
P _A = Adjusted Power due to Duty cycle or Cable Loss (mW)		P _A (mW) =	1,000.00
G _N = Numeric Gain of the Antenna		G _N (numeric) =	3.98
S ₂₀ = Power Density of device at 20cm (mW/m ²)		S ₂₀ (mW/m ²) =	0.79
S ₂₀ = Power Density of device at 20cm (W/m ²)		S ₂₀ (W/m ²) =	7.92
S _L = Power Density Limit (W/m ²) FCC		S _L (W/m ²) =	6.100
S _L = Power Density Limit (W/m ²) Canada		S _L (W/m ²) =	2.767
R _C = Minimum distance to the Radiating Element for Compliance (cm) FCC		R _C (cm) =	22.8
R _C = Minimum distance to the Radiating Element for Compliance (cm) Canada		R _C (cm) =	33.8
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) FCC		S _C (W/m ²) =	6.10
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) Canada		S _C (W/m ²) =	2.77
R ₂₀ = 20cm		R ₂₀ =	20
			33.8 cm
			0.34 Meters
For Compliance with Canada General Population Limits, User Manual must indicate a minimum separation distance of			
Or in Meters for Compliance with Canada General Population Limits, a minimum separation distance of			
Summary: Standalone MPE Calculations and Summary			
	Tx Duty Cycle (%)	Tx Frequency (MHz)	Power Total (mW)
FCC	100	915	1,000
Canada	100	915	1,000
			Antenna Gain (numeric) 3.98
			3.98
			2.767
			7.92
			22.8
			33.8
			6.10
			2.77
		Limit	Overall Minimum (cm)
		Public	Overall Minimum (inches)
		Occupational	
FCC (cm)		22.8	
FCC (inches)		9.0	
Canada (cm)		33.8	
Canada (inches)		14.0	

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 Revision 1

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