

HVIN: 051136		Test Number: 220715			
MPE Calculator		RF Exposure uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dB.			
dB _i = dB gain compared to an isotropic radiator.					
S = power density in mW/cm ²					
Transmitter Output power (mW)		4.8			
Transmitter Output power (W)		0.005			
Output Power for % duty Cycle operation (Watts)		100		Antenna Gain (dB _i)	
Output Power for 100% duty Cycle operation (Watts)		0.005		0	
Tx Frequency (MHz)		915		Antenna Gain (Numeric)	
Calculation power (Watts)		0.00		1.00	
Antenna Gain (dB _d)		dB _d + 2.17 = dB _i		dB _i to dB _d	
Cable Loss (dB)		0.0		Antenna Gain (dB _d)	
Adjusted Power (dBm)		6.77		-2.17	
Calculated ERP (mw)		2.885		Antenna minus cable (dB _i)	
Calculated EIRP (mw)		4.755		0.00	
Power density (S) mW/cm ² =		EIRP		Antenna Gain (Numeric)	
		-----		1.00	
		4 p r ²		EIRP = Po(dBm) + Gain (dB)	
		r (cm) EIRP (mW)		Radiated (EIRP) dBm	
		ERP = EIRP - 2.17 dB		6.771	
		Radiated (ERP) dBm		4.601	
FCC Occupational Limit		FCC radio frequency radiation exposure limits per 1.1310			
3.05		mW/cm ²		Frequency (MHz)	
30.5		W/m ²		Occupational Limit (mW/cm ²)	
		30-300		Public Limit (mW/cm ²)	
		1		0.2	
FCC General Public Limit		300-1,500		f/300	
0.61		mW/cm ²		f/1500	
6.1		W/m ²		1,500-10,000	
		5		1	
ISED Occupational Limit Canada		ISED Occupational Limit Canada			
0.6455 f ^{0.5}		W/m ²		IC radio frequency radiation exposure limits per RSS-102	
19.5		W/m ²		Frequency (MHz)	
		Frequency (MHz)		Occupational Limit (W/m ²)	
ISED General Public Limit Canada		100-6,000		Public Limit (W/m ²)	
0.02619 f ^{0.6834}		W/m ²		0.6455 f ^{0.5}	
2.77		W/m ²		6,000-15,000	
		50		1,291	
		48-300		300-6,000	
		1,291		0.02619 f ^{0.6834}	
		6,000-15,000		50	
		10			
f = Transmit Frequency (MHz)		f (MHz) =		General Public	
P _T = Power Input to Antenna (mW)		P _T (mW) =		915	
Duty cycle (percentage of operation)		% =		4.7547	
P _A = Adjusted Power due to Duty cycle or Cable Loss (mW)		P _A (mW) =		100	
G _N = Numeric Gain of the Antenna		GN (numeric) =		4.75	
S ₂₀ = Power Density of device at 20cm (mW/m ²)		S ₂₀ =(P _A G _N)/(4πR ₂₀) ²		4.75 mW	
S ₂₀ = Power Density of device at 20cm (W/m ²)		S ₂₀ =(P _A G _N)/(4πR ₂₀) ²		1.00	
S _L = Power Density Limit (W/m ²) FCC		S ₂₀ (mW/m ²) =		1.00 numeric	
S _L = Power Density Limit (W/m ²) Canada		S ₂₀ (W/m ²) =		0.00 mW/m ²	
R _C = Minimum distance to the Radiating Element for Compliance (cm) FCC		S _L (W/m ²) =		0.01 W/m ²	
R _C = Minimum distance to the Radiating Element for Compliance (cm) Canada		S _L (W/m ²) =		6.100 30.500 W/m ²	
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) FCC		R _C (cm) =		2.767 19.526 W/m ²	
S _C = Power Density of the device at the Compliance Distance R _C (W/m ²) Canada		R _C (cm) =		0.8 0.4 cm	
R ₂₀ = 20cm		S _C (W/m ²) =		1.2 0.4 cm	
		S _C (W/m ²) =		1.20 20 cm	
		R20=		2.77 19.53 W/m ²	
				2.77 19.53 W/m ²	
				20 20 cm	
For Compliance with Canada General Population Limits, User Manual must indicate a minimum separation distance of		1.2 cm			
Or in Meters for Compliance with Canada General Population Limits, a minimum separation distance of		0.01 Meters			

Summary: Standalone MPE Calculations and Summary					Public Limit	Public		
	Tx Duty Cycle (%)	Tx Frequency (MHz)	Power Total (mW)	Antenna Gain (numeric)	S_L (W/m ²)	S_{20} (W/m ²)	R_C (cm)	S_C (W/m ²)
FCC	100	915	5	1.00	6.100	0.01	0.8	6.10
Canada	100	915	5	1.00	2.767	0.01	1.2	2.77
			Limit		Overall Minimum (cm)	Overall Minimum (inches)		
			Public	Occupational				
FCC (cm)	0.8		0.4					
FCC (inches)	1.0		1.0					
Canada (cm)	1.2		0.4					
Canada (inches)	1.0		1.0					
Overall Minimum Limit Public			Overall Minimum Limit Occupational					
2 cm			1 cm					
1 inches			1 inches					

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Revision 1

Transcore
HVIN: 051136
Test: 220715
Test to: 47CFR Parts 2, 90 and RSS-137
File: 051136 RFExp

SN: ENG1
FCC ID: FIH051136
IC: 1584A- FIH051136
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