

HVIN: AI1422V5		Test Number: 220210	
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)	2,089.3	
	Transmitter Output power (W)	2.09	
Output Power for % duty Cycle operation (Watts)	100	2.09	Antenna Gain (dBi) 10
Output Power for 100% duty Cycle operation (Watts)		2.09	Antenna Gain (Numeric) 10.00
Tx Frequency (MHz)	915	Calculation power (Watts) 2.09	dBd + 2.17 = dBi dBi to dBd 2.17
			Antenna Gain (dBi) 7.83
Cable Loss (dB)	0.0	Adjusted Power (dBm) 33.20	Antenna minus cable (dB) 10.00
			Antenna Gain (Numeric) 10.00
	Calculated ERP (mw) 12676.519		EIRP = Po(dBm) + Gain (dB)
	Calculated EIRP (mw) 20892.961		Radiated (EIRP) dBm 43.200
			ERP = EIRP - 2.17 dB
			Radiated (ERP) dBm 41.030
	<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	f/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) =	2,089.2961
Duty cycle (percentage of operation)		% =	100
P _A = Adjusted Power due to Duty cycle or Cable Loss (mW)		P _A (mW) =	2,089.30
G _N = Numeric Gain of the Antenna		GN (numeric) =	10.00
S ₂₀ = Power Density of device at 20cm (mW/m ²)		S ₂₀ (mW/m ²) =	4.16
S ₂₀ = Power Density of device at 20cm (W/m ²)		S ₂₀ (W/m ²) =	41.57
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) =	52.2
R _C = Minimum distance to the Radiating Element for Compliance (cm) Canada		R _C (cm) =	77.5
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		R20 =	20
		General Public	Occupational
		915 MHz	915 MHz
		2,089.2961 mW	2,089.2961 mW
		100 %	100 %
		2,089.30 mW	2,089.30 mW
		10.00 numeric	10.00 numeric
		4.16 mW/m ²	4.16 mW/m ²
		41.57 W/m ²	41.57 W/m ²
		6.100 W/m ²	30.500 W/m ²
		2.767 W/m ²	19.526 W/m ²
		52.2 cm	23.3 cm
		77.5 cm	29.2 cm
		6.10 W/m ²	30.50 W/m ²
		2.77 W/m ²	19.53 W/m ²
		20 cm	20 cm
	For Compliance with Canada General Population Limits, User Manual must indicate a minimum separation distance of	77.5 cm	
	Or in Meters for Compliance with Canada General Population Limits, a minimum separation distance of	0.78 Meters	
Summary: Standalone MPE Calculations and Summary			
	Tx Duty Cycle (%)	Tx Frequency (MHz)	Power Total (mW)
FCC	100	915	2,089
Canada	100	915	2,089
		Antenna Gain (numeric)	10.00
		S _L (W/m ²)	6.100
		S ₂₀ (W/m ²)	41.57
		R _C (cm)	52.2
		S _C (W/m ²)	6.10
		R20	20
		Public Limit	Public
		6.100	6.10
		41.57	41.57
		52.2	52.2
		6.10	6.10
		2.77	2.77
		20	20
		Limit	Overall Minimum (cm)
		Overall Minimum (inches)	
		Public	Occupational
FCC (cm)	52.2	23.3	
FCC (inches)	21.0	10.0	
Canada (cm)	77.5	29.2	
Canada (inches)	31.0	12.0	
	Overall Minimum Limit Public	Overall Minimu Limit Occupational	
	78 cm	30 cm	
	31 inches	12 inches	

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 Revision 1

Transcore
 HVIN: AI1422V5 PMN: AI1422
 Test: 220210
 Test to: 47CFR Parts 2, 90 and RSS-137
 File: AI1422V5 RFExp

SN: 21321992
 FCC ID: FIH1422PT90V5
 IC: 1584A-1422R137V5
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