

RF Exposure Calculations

Mikrotik	Model: RB911-5HnD-US	Test Number:	170406			
MPE Calculator	MPE 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					
		Output Power		dBd + 2.17 = dBi	Antenna Gain (dBi) 35	
Tx Frequency (MHz)	5785	Maximum (Watts)	0.275521		dBi to dBd 2.2	
					Antenna Gain (dBd) 32.83	
Cable Loss (dB)	0.0	(dBm)		24.4	Antenna minus cable (dBi) 35.00	
	Calculated ERP (mw)	528634.212		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	871275.028			Radiated (EIRP) dBm 59.402	
		Power density (S) EIRP ----- = mW/cm ² 4 π r ² EIRP (mW), r (cm)		ERP = EIRP - 2.17 dB		
					Radiated (ERP) dBm 57.232	
	Occupational Limit	FCC radio frequency radiation exposure limits per 1.1310				
5	mW/cm ²	Frequency (MHz)	Occupational Limit (mW/cm ²)	Public Limit (mW/cm ²)		
50	W/m ²	300-1,500	ƒ/300	ƒ/1500		
	General Public Limit	1,500-10,000	5	1		
1	mW/cm ²					
10	W/m ²					
	Occupational Limit	IC radio frequency radiation exposure limits per RSS-102				
0.6455ƒ ^{0.5}	W/m ²	Frequency (MHz)	Occupational Limit (W/m ²)	Public Limit (W/m ²)		
49.09621	W/m ²	100-6,000	0.6455ƒ ^{0.5}			
	General Public Limit	6,000-15,000	50			
0.02619ƒ ^{0.6834}	W/m ²	48-300		1.291		
9.75649	W/m ²	300-6,000		0.02619ƒ ^{0.6834}		
		6,000-15,000	50	10		
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches	Feet
871275.028	0.77038	7.704	300.00	3.00	118.11	9.84
871275.028	0.91681	9.168	275.00	2.75	108.27	9.02
871275.028	1.10934	11.093	250.00	2.50	98.43	8.20
871275.028	1.36956	13.696	225.00	2.25	88.58	7.38
871275.028	1.73335	17.333	200.00	2.00	78.74	6.56
871275.028	2.26396	22.640	175.00	1.75	68.90	5.74
871275.028	3.08151	30.815	150.00	1.50	59.06	4.92
871275.028	4.43737	44.374	125.00	1.25	49.21	4.10
871275.028	4.81485	48.149	120.00	1.20	47.24	3.94
871275.028	4.89611	48.961	119.00	1.19	46.85	3.90
871275.028	4.97945	49.795	118.00	1.180	46.46	3.87
871275.028	5.24264	52.426	115.00	1.150	45.28	3.77
871275.028	5.73007	57.301	110.00	1.100	43.31	3.61
871275.028	6.93339	69.334	100.00	1.000	39.37	3.28
871275.028	8.55974	85.597	90.00	0.900	35.43	2.95
871275.028	10.83342	108.334	80.00	0.800	31.50	2.62
871275.028	14.14977	141.498	70.00	0.700	27.56	2.30
		Frequency (MHz)	Occupational Limit minimum Distance (meters)	Public Limit minimum distance (meters)		
		47CFR 1.1310	1.19	2.75		
		RSS-102	1.19	2.75		

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 Revision 1

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