

## RF Exposure Calculations

Mikrotik	Model: RB921GS-5HPacD-15S/19S	Test Number:	170327		
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 <sup>2</sup>				
		Output Power		Antenna Gain (dBi)	22
		Maximum (Watts)	0.089764	dBi to dBd	2.2
Tx Frequency (MHz)	5745			Antenna Gain (dBd)	19.83
Cable Loss (dB)	0.0	(dBm)	19.5	Antenna minus cable (dBi)	22.00
	Calculated ERP (mw)	8631.846		EIRP = Po(dBm) + Gain (dB)	
	Calculated EIRP (mw)	14226.684		Radiated (EIRP) dBm	41.531
		Power density (S)		ERP = EIRP - 2.17 dB	
		EIRP ----- = mW/cm <sup>2</sup> 4 π r <sup>2</sup>		Radiated (ERP) dBm	39.361
		EIRP (mW), r (cm)			
	<b>Occupational Limit</b>	FCC radio frequency radiation exposure limits per 1.1310			
	5 mW/cm <sup>2</sup>	Frequency (MHz)	Occupational Limit (mW/cm <sup>2</sup> )	Public Limit (mW/cm <sup>2</sup> )	
	50 W/m <sup>2</sup>	300-1,500	f/300	f/1500	
	<b>General Public Limit</b>	1,500-10,000	5	1	
	1 mW/cm <sup>2</sup>				
	10 W/m <sup>2</sup>				
	<b>Occupational Limit</b>	IC radio frequency radiation exposure limits per RSS-102			
	0.6455 f <sup>0.5</sup> W/m <sup>2</sup>	Frequency (MHz)	Occupational Limit (W/m <sup>2</sup> )	Public Limit (W/m <sup>2</sup> )	
	48.92617 W/m <sup>2</sup>	100-6,000	0.6455 f <sup>0.5</sup>		
	<b>General Public Limit</b>	6,000-15,000	50		
	0.02619 f <sup>0.6834</sup> W/m <sup>2</sup>	48-300		1.291	
	9.71034 W/m <sup>2</sup>	300-6,000		0.02619 f <sup>0.6834</sup>	
		6,000-15,000	50	10	
EIRP	S	S	Distance	Distance	Distance
milliwatts	mW/cm <sup>2</sup>	W/m <sup>2</sup>	cm	meter	inches
14226.684	0.13977	1.39768	90.00	0.90	35.43
14226.684	0.17689	1.76894	80.00	0.80	31.50
14226.684	0.23105	2.31046	70.00	0.70	27.56
14226.684	0.31448	3.14479	60.00	0.60	23.62
14226.684	0.45285	4.52849	50.00	0.50	19.69
14226.684	0.70758	7.07577	40.00	0.40	15.75
14226.684	0.92418	9.24182	35.00	0.35	13.78
14226.684	2.83031	28.30309	20.00	0.20	7.87
14226.684	4.83627	48.36275	15.30	0.15	6.02
14226.684	17.68943	176.89430	8.00	0.08	3.15
14226.684	31.44788	314.47875	6.00	0.060	2.36
14226.684	37.42557	374.25571	5.50	0.055	2.17
14226.684	45.28494	452.84941	5.00	0.050	1.97
14226.684	70.75772	707.57720	4.00	0.040	1.57
14226.684	125.79150	1257.91501	3.00	0.030	1.18
14226.684	283.03088	2830.30878	2.00	0.020	0.79
14226.684	1132.12351	11321.23513	1.00	0.010	0.39
		Frequency (MHz)	Occupational Limit minimum Distance (meters)	Public Limit minimum distance (meters)	
		47CFR 1.1310	0.15	0.35	
		RSS-102	0.15	0.35	

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File: RB921GS-5HPacD-19S-US RFExp Page 1 of 1