

U-NII-1 Band (5180-5240 MHz)

Mikrotik	Model: R11e-5HnD					
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)	9
		Maximum (Watts)	0.058145		dBi to dBd	2.2
Tx Frequency (MHz)	5210				Antenna Gain (dBd)	6.83
Cable Loss (dB)	0.0	(dBm)		17.6	Antenna minus cable (dBi)	9.00
	Calculated ERP (mw)	280.227		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	461.859			Radiated (EIRP) dBm	26.645
		Power density (S)		ERP = EIRP - 2.17 dB		
		EIRP			Radiated (ERP) dBm	24.475
		----- = mW/cm ²				
		4 π r ²				
		EIRP (mW), r (cm)				
	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				
0.6455 ^{f^{0.5}}	W/m ²	Frequency (MHz)	Occupational Limit (W/m ²)	Public Limit (W/m ²)		
46.59240	W/m ²	100-6,000	0.6455 ^{f^{0.5}}			
	General Public Limit	6,000-15,000	50			
0.02619 ^{f^{0.6834}}	W/m ²	48-300		1.291		
9.08286	W/m ²	300-6,000		0.02619 ^{f^{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
461.859	0.00368	0.037	100.00	1.00	39.37	3.28
461.859	0.00454	0.045	90.00	0.90	35.43	2.95
461.859	0.00574	0.057	80.00	0.80	31.50	2.62
461.859	0.00750	0.075	70.00	0.70	27.56	2.30
461.859	0.01021	0.102	60.00	0.60	23.62	1.97
461.859	0.01470	0.147	50.00	0.50	19.69	1.64
461.859	0.02297	0.230	40.00	0.40	15.75	1.31
461.859	0.04084	0.408	30.00	0.30	11.81	0.98
461.859	0.09188	0.919	20.00	0.20	7.87	0.66
461.859	0.16335	1.633	15.00	0.15	5.91	0.49
461.859	0.36754	3.675	10.00	0.100	3.94	0.33
461.859	0.45375	4.537	9.00	0.090	3.54	0.30
461.859	0.57428	5.743	8.00	0.080	3.15	0.26
461.859	0.75007	7.501	7.00	0.070	2.76	0.23
461.859	1.02093	10.209	6.00	0.060	2.36	0.20
461.859	1.47014	14.701	5.00	0.050	1.97	0.16
461.859	2.29710	22.971	4.00	0.040	1.57	0.13
		Frequency (MHz)	Occupational Limit minimum Distance (meters)	Public Limit minimum distance (meters)		
		47CFR 1.1310		0.20		
		RSS-102		0.20		

Rogers Labs, Inc.
 4405 W. 259th Terrace
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 Phone/Fax: (913) 837-3214
 Revision 1

Mikrotik SIA
 Model: R11e-5HnD
 Test #: 190204
 Test to: 47CFR, 15.407, RSS-247
 File: R11E5HM RFEExp

S/N: 8EDB09784363/632/r2
 FCC ID: TV7R11E5HM
 IC: 7442A- R11E5HND
 Date: February 27, 2019
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U-NII-3 Band (5745-5825 MHz)

Mikrotik	Model: R11e-5HnD					
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)	9
Tx Frequency (MHz)	5785	Maximum (Watts)	0.255893		Antenna Gain (dBd)	6.8
Cable Loss (dB)	0.0	(dBm)		24.1	Antenna minus cable (dBi)	9.00
	Calculated ERP (mw)	1233.272			EIRP = Po(dBm) + Gain (dB)	
	Calculated EIRP (mw)	2032.632			Radiated (EIRP) dBm	33.081
		Power density (S)			ERP = EIRP - 2.17 dB	
		EIRP			Radiated (ERP) dBm	30.911
		----- = mW/cm ²				
		4 π r ²				
		EIRP (mW), r (cm)				
	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	£300	£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				
0.6455f ^{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	0.6455f ^{0.5}			
	General Public Limit	6,000-15,000	50			
0.02619f ^{0.6834}	W/m ²	48-300		1.291		
9.75649	W/m ²	300-6,000		0.02619f ^{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
2032.632	0.01618	0.162	100.00	1.00	39.37	3.28
2032.632	0.01997	0.200	90.00	0.90	35.43	2.95
2032.632	0.02527	0.253	80.00	0.80	31.50	2.62
2032.632	0.03301	0.330	70.00	0.70	27.56	2.30
2032.632	0.03828	0.383	65.00	0.65	25.59	2.13
2032.632	0.03949	0.395	64.00	0.64	25.20	2.10
2032.632	0.04493	0.449	60.00	0.60	23.62	1.97
2032.632	0.06470	0.647	50.00	0.50	19.69	1.64
2032.632	0.10109	1.011	40.00	0.40	15.75	1.31
2032.632	0.17972	1.797	30.00	0.30	11.81	0.98
2032.632	0.40438	4.044	20.00	0.200	7.87	0.66
2032.632	0.71890	7.189	15.00	0.150	5.91	0.49
2032.632	1.61752	16.175	10.00	0.100	3.94	0.33
2032.632	1.99693	19.969	9.00	0.090	3.54	0.30
2032.632	2.52737	25.274	8.00	0.080	3.15	0.26
2032.632	3.30106	33.011	7.00	0.070	2.76	0.23
2032.632	4.49310	44.931	6.00	0.060	2.36	0.20
		Frequency (MHz)	Occupational Limit minimum Distance (meters)	Public Limit minimum distance (meters)		
		47CFR 1.1310	0.06	0.20		
		RSS-102	6.00	0.20		

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