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

Mikrotik	Model: R11e-5HacD					
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					
					Antenna Gain (dBi)	9
		Output Power		dBd + 2.17 = dBi	dBi to dBd	2.2
Tx Frequency (MHz)	5210	Maximum (Watts)	0.069000		Antenna Gain (dBd)	6.83
Cable Loss (dB)	0.0	(dBm)	18.4		Antenna minus cable (dBi)	9.00
	Calculated ERP (mw)	332.544		EIRP = Po(dBM) + Gain (dB)		
	Calculated EIRP (mw)	548.086			Radiated (EIRP) dBm	27.388
				ERP = EIRP - 2.17 dB		
					Radiated (ERP) dBm	25.218

Power density (S)

EIRP
------- = mW/cm^2
4 p 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	f/300	f/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)
46.59240	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
9.08286	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
548.086	0.00436	0.044	100.00	1.00	39.37	3.28
548.086	0.00538	0.054	90.00	0.90	35.43	2.95
548.086	0.00681	0.068	80.00	0.80	31.50	2.62
548.086	0.00890	0.089	70.00	0.70	27.56	2.30
548.086	0.01212	0.121	60.00	0.60	23.62	1.97
548.086	0.01745	0.174	50.00	0.50	19.69	1.64
548.086	0.02726	0.273	40.00	0.40	15.75	1.31
548.086	0.04846	0.485	30.00	0.30	11.81	0.98
548.086	0.10904	1.090	20.00	0.20	7.87	0.66
548.086	0.19385	1.938	15.00	0.15	5.91	0.49
548.086	0.43615	4.362	10.00	0.100	3.94	0.33
548.086	0.53846	5.385	9.00	0.090	3.54	0.30
548.086	0.68149	6.815	8.00	0.080	3.15	0.26
548.086	0.89011	8.901	7.00	0.070	2.76	0.23
548.086	1.21154	12.115	6.00	0.060	2.36	0.20
548.086	1.74461	17.446	5.00	0.050	1.97	0.16
548.086	2.72596	27.260	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

U-NII-3 Band (5745-5825 MHz)

Mikrotik	Model: R11e-5HacD					
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					
					Antenna Gain (dBi)	24
		Output Power		dBd + 2.17 = dBi	dBi to dBd	2.2
Tx Frequency (MHz)	5785	Maximum (Watts)	0.194389		Antenna Gain (dBd)	21.8
Cable Loss (dB)	0.0	(dBm)	22.9		Antenna minus cable (dBi)	24.00
	Calculated ERP (mw)	29625.887		EIRP = Po(dBM) + Gain (dB)		
	Calculated EIRP (mw)	48828.273			Radiated (EIRP) dBm	46.887
				ERP = EIRP - 2.17 dB		
					Radiated (ERP) dBm	44.717

Power density (S)

EIRP
------- = mW/cm^2
4 p 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	f/300	f/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
48828.273	0.38856	3.886	100.00	1.00	39.37	3.28
48828.273	0.47971	4.797	90.00	0.90	35.43	2.95
48828.273	0.60713	6.071	80.00	0.80	31.50	2.62
48828.273	0.79299	7.930	70.00	0.70	27.56	2.30
48828.273	0.91968	9.197	65.00	0.65	25.59	2.13
48828.273	0.94864	9.486	64.00	0.64	25.20	2.10
48828.273	1.07934	10.793	60.00	0.60	23.62	1.97
48828.273	1.55425	15.543	50.00	0.50	19.69	1.64
48828.273	2.42852	24.285	40.00	0.40	15.75	1.31
48828.273	4.31737	43.174	30.00	0.30	11.81	0.98
48828.273	4.62025	46.203	29.00	0.290	11.42	0.95
48828.273	4.95616	49.562	28.00	0.280	11.02	0.92
48828.273	5.33008	53.301	27.00	0.270	10.63	0.89
48828.273	5.74797	57.480	26.00	0.260	10.24	0.85
48828.273	6.21701	62.170	25.00	0.250	9.84	0.82
48828.273	9.71408	97.141	20.00	0.200	7.87	0.66
48828.273	38.85631	388.563	10.00	0.100	3.94	0.33

Frequency (MHz)	Occupational Limit minimum Distance (meters)	Public Limit minimum distance (meters)
47CFR 1.1310	0.29	0.64
RSS-102	0.29	0.64