MPE Calculation page

Mikrotikls Sia   Model: R52   Test Number: 070904

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) 2442	Average (Watts) 0.0380	Antenna Gain (dBd)		21.83
Cable Loss (dB) 0.0	(dBm) 15.80	Antenna minus cable (dBi)		24.00

Calculated ERP (mw) 5791.400

Calculated EIRP (mw) 9545.168

$$EIRP = Po(dBM) + Gain\ (dB)$$

Radiated (EIRP) dBm   39.798

$$ERP = EIRP - 2.17\ dB$$

Radiated (ERP) dBm   37.628

Occupational Limit

5.00000 mW/cm^2

General Public Limit

1.00000 mW/cm^2

Power density (S)

$$\frac{EIRP}{4\,\pi\,r^2} = mW/cm^2$$

r (cm)   EIRP (mW)

FCC radio frequency radiation exposure limits per 1.1310		
Frequency (MHz)	Occupational Limit	Public Limit
300-1,500	f/300	f/1500
1,500-10,000	5	1

FCC radio frequency radiation exposure limits per 1.1310		
Frequency (MHz)	Occupational Limit @ Tx Freq (mW/cm^2)	Public Limit @ Tx Freq (mW/cm^2)
300-1,500	8.14	1.628
1,500-10,000	5	1

EIRP	Distance	Distance	S	Distance
milliwatts	cm	inches	mW/cm^2	Feet
9545.168	350.00	137.80	0.00620	11.48
9545.168	300.00	118.11	0.00844	9.84
9545.168	275.00	108.27	0.01004	9.02
9545.168	250.00	98.43	0.01215	8.20
9545.168	225.00	88.58	0.01500	7.38
9545.168	200.00	78.74	0.01899	6.56
9545.168	175.00	68.90	0.02480	5.74
9545.168	170.00	66.93	0.02628	5.58
9545.168	160.00	62.99	0.02967	5.25
9545.168	150.00	59.06	0.03376	4.92
9545.168	140.00	55.12	0.03875	4.59
9545.168	130.00	51.18	0.04495	4.27
9545.168	120.00	47.24	0.05275	3.94
9545.168	110.00	43.31	0.06278	3.61
9545.168	100.00	39.37	0.07596	3.28
9545.168	90.00	35.43	0.09378	2.95
9545.168	85.00	33.46	0.10513	2.79
9545.168	80.00	31.50	0.11868	2.62
9545.168	75.00	29.53	0.13504	2.46
9545.168	70.00	27.56	0.15502	2.30
9545.168	60.00	23.62	0.21099	1.97
9545.168	50.00	19.69	0.30383	1.64
9545.168	40.00	15.75	0.47474	1.31
9545.168	35.00	13.78	0.62007	1.15
9545.168	30.00	11.81	0.84398	0.98
9545.168	27.00	10.63	1.04195	0.89
9545.168	20.00	7.87	1.89895	0.66
9545.168	15.00	5.91	3.37591	0.49
9545.168	13.00	5.12	4.49456	0.43
9545.168	12.50	4.92	4.86131	0.41
9545.168	11.00	4.33	6.27752	0.36

Frequency (MHz)	Occupational Limit minimum Distance (cm/inches)	Public Limit minimum distance (cm/inches)
300-1,500	N/A	N/A
1,500-10,000	12.5 / 4.9	27 / 10.6

Mikrotikls Sia

MODEL: R52

Test #: 070904

Test to: FCC Part 15.247

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)	32
	Output Power		dBd + 2.17 = dBi dBi to dBd	2.2
Tx Frequency (MHz)	5790	Average (Watts)	0.0360	Antenna Gain (dBd)	29.83
Cable Loss (dB)	0.0	(dBm)	15.56	Antenna minus cable (dBi)	32.00

Calculated ERP (mw) 34618.042   EIRP = Po(dBM) + Gain (dB)
Calculated EIRP (mw) 57056.155   Radiated (EIRP) dBm   47.563
                                         ERP = EIRP - 2.17 dB
                                                  Radiated (ERP) dBm   45.393

Occupational Limit
5.00000 mW/cm²

General Public Limit
1.00000 mW/cm²

Power density (S)
$$S = \frac{EIRP}{4\pi r^2} = mW/cm^2$$
r (cm)   EIRP (mW)

FCC radio frequency radiation exposure limits per 1.1310		
Frequency (MHz)	Occupational Limit	Public Limit
300-1,500	f/300	f/1500
1,500-10,000	5	1

FCC radio frequency radiation exposure limits per 1.1310		
Frequency (MHz)	Occupational Limit @ Tx Freq (mW/cm^2)	Public Limit @ Tx Freq (mW/cm^2)
300-1,500	19.3	3.86
1,500-10,000	5	1

EIRP	Distance	Distance	S	Distance
milliwatts	cm	inches	mW/cm²	Feet
57056.155	350.00	137.80	0.03706	11.48
57056.155	300.00	118.11	0.05045	9.84
57056.155	275.00	108.27	0.06004	9.02
57056.155	250.00	98.43	0.07265	8.20
57056.155	225.00	88.58	0.08969	7.38
57056.155	200.00	78.74	0.11351	6.56
57056.155	175.00	68.90	0.14826	5.74
57056.155	170.00	66.93	0.15711	5.58
57056.155	160.00	62.99	0.17736	5.25
57056.155	150.00	59.06	0.20179	4.92
57056.155	140.00	55.12	0.23165	4.59
57056.155	130.00	51.18	0.26866	4.27
57056.155	120.00	47.24	0.31530	3.94
57056.155	110.00	43.31	0.37524	3.61
57056.155	100.00	39.37	0.45404	3.28
57056.155	90.00	35.43	0.56054	2.95
57056.155	85.00	33.46	0.62843	2.79
57056.155	80.00	31.50	0.70944	2.62
57056.155	75.00	29.53	0.80718	2.46
57056.155	70.00	27.56	0.92661	2.30
57056.155	65.00	25.59	1.07465	2.13
57056.155	50.00	19.69	1.81615	1.64
57056.155	40.00	15.75	2.83774	1.31
57056.155	35.00	13.78	3.70644	1.15
57056.155	30.00	11.81	5.04487	0.98
57056.155	27.00	10.63	6.22824	0.89
57056.155	20.00	7.87	11.35096	0.66
57056.155	15.00	5.91	20.17949	0.49
57056.155	13.00	5.12	26.86618	0.43
57056.155	12.50	4.92	29.05846	0.41
57056.155	11.00	4.33	37.52384	0.36

Frequency (MHz)	Occupational Limit minimum Distance (cm / inches)	Public Limit minimum distance (cm / inches)
300-1,500	N/A	N/A
1,500-10,000	30 / 11.8	65 / 25.6