		180515	ımber:	Test N	2HnD-IN-U	Model: RB4011iGS+5HacQ	/likrot+B2:H49ik		
			added to the antenna gain in dBi.	d on TX powe	on. EIRP is b	MPE uses EIRP for calculation	MPE Calculator		
				or.	an isotropic ra	dBi = dB gain compared to a			
					n^2	S = power density in mW/cn	5		
dBi)	Antenna Gain (dBi)								
dBd	dBi to dBd	dBd + 2.17 = dBi		Power	Out				
Bd)	Antenna Gain (dBd)		0.500000	Watts)	Max A	2437	x Frequency (MHz)		
lBi)	Antenna minus cable (dBi)		27.0	(dBm)		0.0	able Loss (dB)		
		EIRP = Po(dBM) + Gain (dB)				Calculated ERP (mw)			
Bm	Radiated (EIRP) dBm				1990.536	Calculated EIRP (mw)			
_		ERP = EIRP - 2.17 dB		(S)	Power der				
.Bm	Radiated (ERP) dBm								
				mW/cm^2	EIRP				
				mvv/cm 2	4 p r^				
				r (cm)	EIRP (mV				
		limits per 1.1310	C radio frequency radiation exposure	F		Occupational Limit			
		Public Limit (mW/cm²)	Occupational Limit (mW/cm²)		Frequency	mW/cm ²	5		
		f/1500					_		
		1/1500	f/300		300-1,	W/m ²	50		
		1	5	JU	1,500-1	General Public Limit			
						mW/cm ²	1		
						W/m ²	10		
		nits per RSS-102	radio frequency radiation exposure lin	IC		Occupational Limit			
		Public Limit (W/m²)	Occupational Limit (W/m²)	Hz)	Frequency	W/m ²	$0.6455f^{0.5}$		
			$0.6455 f^{0.5}$		100-6,	W/m^2	31.86574		
			50	00	6,000-1	General Public Limit			
		1.291			48-3	W/m^2	$0.02619f^{0.6834}$		
		$0.02619f^{0.6834}$		1	300-6,	W/m ²	5.40397		
		10	50		6,000-1				
Distan	Distance	Distance	Distance		S	S	EIRP		
Feet	inches	meter	cm		W/n	mW/cm ²	milliwatts		
3.28	39.37	1.00	100.00		0.15	0.01584	1990.536		
2.40	28.74	0.73	73.00		0.29	0.02972	1990.536		
2.30	27.56	0.70	70.00		0.32	0.03233	1990.536		
1.97	23.62	0.60	60.00		0.44	0.04400	1990.536		
1.64	19.69	0.50	50.00		0.63	0.06336	1990.536		
1.31	15.75	0.40	40.00		0.99	0.09900	1990.536		
1.15	13.78	0.35	35.00		1.29	0.12931	1990.536		
0.98	11.81	0.30	30.00		1.76	0.17600	1990.536		
0.95	11.42	0.29	29.00		1.88	0.18835	1990.536		
0.92	11.02	0.28	28.00		2.02	0.20204	1990.536		
0.89	10.63 10.24	0.270 0.260	27.00 26.00		2.17	0.21729 0.23432	1990.536 1990.536		
0.85	9.84	0.260	25.00		2.53	0.23432	1990.536		
0.82	9.45	0.230	24.00		2.75	0.27500	1990.536		
0.79	7.87	0.240	20.00		3.96	0.39600	1990.536		
		0.200	15.00		7.04	0.70401	1990.536		
0.40		0.130	13.00	- 1		1.58402	1990.536		
0.49	5.91 3.94	0.100	10.00		15 9				
0.49	3.94	0.100	10.00		15.8	1.58402			
			10.00 cupational Limit minimum Distance	00		1.58402			
		0.100 Public Limit minimum distance (meters)		Hz) Oc	Frequency	1.58402			
			cupational Limit minimum Distance	HZ)		1.58402			

 Rogers Labs, Inc.
 Mikrotikls SIA
 S/N's: 8736081F0F4D/813, 873608E3B390/813

 4405 W. 259th Terrace
 Model: RB4011iGS+5HacQ2HnD-IN-US
 IC: 7442A-4011G5Q2

 Louisburg, KS 66053
 Test #: 180515
 FCC ID: TV74011GS-5HQ2HD

 Phone/Fax: (913) 837-3214
 Test to: 47CFR, 15.407, RSS-247
 Date: August 1, 2018

 Revision 1
 File: 4011GS5HQ2HD RFExp
 Page 1 of 3

Mikrotik	Model: RB4011iGS+5HacQ	2HnD-IN-US	Test Number:	180515		
MPE Calculator	MPE uses EIRP for calculation	on. EIRP is based on TX	power added to the antenna gain in dBi.			
	dBi = dB gain compared to a	n isotropic radiator.				
	S = power density in mW/cm	r^2				
					Antenna Gain (dBi)	
		Output Power		dBd + 2.17 = dBi	dBi to dBd	2
x Frequency (MHz)	5210	Maximum (Watts)	0.019158		Antenna Gain (dBd)	6.
1		(,			()	
Cable Loss (dB)	0.0	(dBm)	12.8		Antenna minus cable (dBi)	9.
,		(,			,	
	Calculated ERP (mw)	92 332		EIRP = Po(dBM) + Gain (dB)		
	Calculated EIRP (mw)				Radiated (EIRP) dBm	21.8
	()			ERP = EIRP - 2.17 dB		
		Power density (S)			Radiated (ERP) dBm	19.6
		EIRP				-,
		= mW/cn	r^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/cm²)		
50						
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 lin	its per RSS-102		
$0.6455 f^{0.5}$	W/m ²	Frequency (MHz)	Occupational Limit (W/m²)	Public Limit (W/m ²)		
46.59240	W/m ²	100-6,000	0.6455 f ^{0.5}	Tubic Limit (17711)		
40.39240	General Public Limit		50			
0.6924		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		$0.02619f^{0.6834}$		
		6,000-15,000	50	10		
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches	Feet
152.177	0.00121	0.012	100.00	1.00	39.37	3.28
152.177	0.00150	0.015	90.00	0.90	35.43	2.95
152.177	0.00189	0.019	80.00	0.80	31.50	2.62
152.177	0.00247	0.025	70.00	0.70	27.56	2.30
152.177	0.00336	0.034	60.00	0.60	23.62	1.97
152.177	0.00484	0.048	50.00	0.50	19.69	1.64
152.177	0.00757	0.076	40.00	0.40	15.75	1.31
152.177	0.01346	0.135	30.00	0.30	11.81	0.98
152.177	0.03027	0.303	20.00	0.20	7.87	0.66
152.177	0.05382	0.538	15.00	0.15	5.91	0.49
152.177	0.12110	1.211	10.00	0.100	3.94	0.33
152.177	0.14950	1.495	9.00	0.090	3.54	0.30
152.177	0.18922	1.892	8.00	0.080	3.15	0.26
152.177	0.24714	2.471	7.00	0.070	2.76	0.23
152.177	0.33639	3.364	6.00	0.060	2.36	0.20
152.177	0.48440	4.844	5.00	0.050	1.97	0.16
152.177	0.75687	7.569	4.00	0.040	1.57	0.13
		46				
		Frequency (MHz)	Occupational Limit minimum Distance	Public Limit minimum distance (meters)		
		riequency (MHZ)	(meters)	r ubic Limit minimum distance (meters)		
		47CFR 1.1310		0.20		

 Rogers Labs, Inc.
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 S/N's: 8736081F0F4D/813, 873608E3B390/813

 4405 W. 259th Terrace
 Model: RB4011iGS+5HacQ2HnD-IN-US
 IC: 7442A-4011G5Q2

 Louisburg, KS 66053
 Test #: 180515
 FCC ID: TV74011GS-5HQ2HD

 Phone/Fax: (913) 837-3214
 Test to: 47CFR, 15.407, RSS-247
 Date: August 1, 2018

 Revision 1
 File: 4011GS5HQ2HD RFExp
 Page 2 of 3

Mikrotik	Model: RB4011iGS+5HacQ	2HnD-IN-US	Test Number:	180515		
MPE Calculator	MPE uses EIRP for calculation	on. EIRP is based on TX	power added to the antenna gain in dBi.			
	dBi = dB gain compared to a	in isotropic radiator.	·			
	S = power density in mW/cm					
					Antenna Gain (dBi)	
		Output Power		dBd + 2.17 = dBi	dBi to dBd	2
Tx Frequency (MHz)	5825	Maximum (Watts)	0.069032		Antenna Gain (dBd)	6.
		(,				
Cable Loss (dB)	0.0	(dBm)	18.4		Antenna minus cable (dBi)	9.0
,		(,, ,			,	
	Calculated ERP (mw)	332.699		EIRP = Po(dBM) + Gain(dB)		
	Calculated EIRP (mw)			, , , , , , , , , , , , , , , , , , , ,	Radiated (EIRP) dBm	27.39
		Power density (S)		ERP = EIRP - 2.17 dB	,	
		rower density (3)			Radiated (ERP) dBm	25.22
		EIRP			` '	
		= mW/cn	r^2			
		4 p r^2				
		EIRP (mW), r (cm)				
	Occupational Limit		FCC radio frequency radiation exposure	limits per 1.1310		
5		Frequency (MHz)	Occupational Limit (mW/cm²)	Public Limit (mW/cm²)		
50		300-1,500	f/300	f/1500		
50				1/1300		
	General Public Limit	1,500-10,000	5	1		
1	mW/cm ²					
10	W/m ²					
	Occupational Limit		IC radio frequency radiation exposure lin	nits per RSS-102		
$0.6455f^{0.5}$	W/m^2	Frequency (MHz)	Occupational Limit (W/m ²)	Public Limit (W/m ²)		
49.26565		100-6,000	$0.6455f^{0.5}$			
	General Public Limit	6,000-15,000	50			
$0.02619f^{0.6834}$	W/m ²	48-300	50	1.291		
	-					
9.80254	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
548.342	0.00436	0.044	100.00	1.00	39.37	3.28
548.342	0.00539	0.054	90.00	0.90	35.43	2.95
548.342	0.00682	0.068	80.00	0.80	31.50	2.62
548.342	0.00891	0.089	70.00	0.70	27.56	2.30
548.342	0.01212	0.121	60.00	0.60	23.62	1.97
548.342	0.01745	0.175	50.00	0.50	19.69	1.64
548.342	0.02727	0.273	40.00	0.40	15.75	1.31
548.342	0.04848	0.485	30.00	0.30	11.81	0.98
548.342	0.10909	1.091	20.00	0.20	7.87	0.66
548.342	0.12087	1.209	19.00	0.19	7.48	0.62
548.342	0.13468	1.347	18.00	0.180	7.09	0.59
548.342	0.14248	1.425	17.50	0.175	6.89	0.57
548.342	0.17045	1.705	16.00	0.160	6.30	0.52
548.342	0.19394	1.939	15.00	0.150	5.91	0.49
548.342	0.43636	4.364	10.00	0.100	3.94	0.33
548.342	0.53871	5.387	9.00	0.090	3.54	0.30
548.342	0.68181	6.818	8.00	0.080	3.15	0.26
			Occupational Limit minimum Distance			
		Frequency (MHz)	(meters)	Public Limit minimum distance (meters)		
		47CFR 1.1310	0.08	0.18		
			0.08			
		RSS-102	0.08	0.18		

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