Reference Levels for Electric Field Strength, Magnetic Field Strength and Power Density in Uncontrolled Environments

Frequency (MHz)	Electric Field Strength (ERL), (V/m, RMS) 2009	Electric Field Strength (ERL), (V/m, RMS) 2015	Electromagnetic Field Strength (HRL), (A/m, RMS) 2009	Electromagnetic Field Strength (HRL), (A/m, RMS) 2015	Power Density (SRL), (W/m2)) 2009	Power Density (SRL), (W/m2)) 2015	Notes
0.003 - 1	28.00	-	2.190	-	-	-	
1 - 10	28.00	-	2.19 -0.219	-	-	-	
10 - 20	-	27.46	-	0.073	-	2.00	
10 - 30	28.00	-	0.219 -0.073	-	-	-	
20-48	-	27.46 - 22.06	-	0.0728 -0.05852	-	2 – 1.291	
30 – 300	28.00	-	0.073	-	2.00	-	Power density limit is applicable at frequencies greater than 100 MHz.
48 – 300	-	22.06	-	0.059	-	1.291	Power line Radiation is in this category, particular attest to Electric and Magnetic fields is appropriate
300	27.45	22.06	0.074	0.059	2.00	1.29	
400	31.70	24.34	0.086	0.065	2.67	1.57	
500	35.44	26.27	0.096	0.070	3.33	1.83	
600	38.82	27.96	0.105	0.074	4.00	2.07	
700	41.94	29.47	0.113	0.078	4.67	2.30	in US AT&T, Verizon Wireless, in Canada Recent Spectrum Auction, Expect some providers to start using these soon
800	44.83	30.85	0.121	0.082	5.33	2.52	in U.S AT&T, Verizon Wireless . Telcel, in Canada. Telus, Rogers, TIGO

900	47.55	32.11	0.128	0.085	6.00	2.74	BCHydro and other providers use this frequency band for Smart Meters
1000	50.12	33.29	0.135	0.088	6.67	2.94	
1100	52.57	34.39	0.142	0.091	7.33	3.14	
1200	54.91	35.43	0.148	0.094	8.00	3.33	
1300	57.15	36.41	0.154	0.097	8.67	3.52	
1400	59.31	37.35	0.160	0.099	9.33	3.70	
1500	61.39	38.24	0.166	0.101	10.00	3.88	
1600	61.40	39.09	0.163	0.104	10.00	4.05	
1700	61.40	39.91	0.163	0.106	10.00	4.22	In US T-Mobile, Cincinnati Bell Wireless in the U.S. WIND Mobile,in Canada. Mobilicity
1800	61.40	40.69	0.163	0.108	10.00	4.39	
1900	61.40	41.45	0.163	0.110	10.00	4.56	In US AT&T, T-Mobile, Sprint, Metro PCS Telcel, in Canada Telus, Rogers Some Smart Meters
2000	61.40	42.19	0.163	0.112	10.00	4.72	
2100	61.40	42.90	0.163	0.114	10.00	4.88	
2200	61.40	43.58	0.163	0.116	10.00	5.04	
2300	61.40	44.25	0.163	0.117	10.00	5.19	Some smart meters
2400	61.40	44.90	0.163	0.119	10.00	5.35	Routers, Shaw Go wifi
2500	61.40	45.53	0.163	0.121	10.00	5.50	
2600	61.40	46.14	0.163	0.122	10.00	5.65	
2700	61.40	46.74	0.163	0.124	10.00	5.80	
2800	61.40	47.33	0.163	0.126	10.00	5.94	
2900	61.40	47.90	0.163	0.127	10.00	6.09	
3000	61.40	48.45	0.163	0.129	10.00	6.23	
3100	61.40	49.00	0.163	0.130	10.00	6.37	
3200	61.40	49.54	0.163	0.131	10.00	6.51	
3300	61.40	50.06	0.163	0.133	10.00	6.65	
3400	61.40	50.57	0.163	0.134	10.00	6.78	
3500	61.40	51.08	0.163	0.135	10.00	6.92	
3600	61.40	51.57	0.163	0.137	10.00	7.06	

3700	61.40	52.05	0.163	0.138	10.00	7.19	
3800	61.40	52.53	0.163	0.139	10.00	7.32	
3900	61.40	53.00	0.163	0.141	10.00	7.45	
4000	61.40	53.46	0.163	0.142	10.00	7.58	
4100	61.40	53.91	0.163	0.143	10.00	7.71	
4200	61.40	54.36	0.163	0.144	10.00	7.84	
4300	61.40	54.80	0.163	0.145	10.00	7.97	
4400	61.40	55.23	0.163	0.147	10.00	8.09	
4500	61.40	55.66	0.163	0.148	10.00	8.22	
4600	61.40	56.08	0.163	0.149	10.00	8.34	
4700	61.40	56.49	0.163	0.150	10.00	8.47	
4800	61.40	56.90	0.163	0.151	10.00	8.59	
4900	61.40	57.30	0.163	0.152	10.00	8.71	
5000	61.40	57.70	0.163	0.153	10.00	8.83	Routers, Shaw Go wifi
5100	61.40	58.09	0.163	0.154	10.00	8.95	
5200	61.40	58.47	0.163	0.155	10.00	9.07	
5300	61.40	58.86	0.163	0.156	10.00	9.19	
5400	61.40	59.23	0.163	0.157	10.00	9.31	
5500	61.40	59.61	0.163	0.158	10.00	9.43	
5600	61.40	59.97	0.163	0.159	10.00	9.54	
5700	61.40	60.34	0.163	0.160	10.00	9.66	
5800	61.40	60.70	0.163	0.161	10.00	9.77	
5900	61.40	61.05	0.163	0.162	10.00	9.89	
6000	61.40	61.40	0.163	0.163	10.00	10.00	
6100	61.4	61.4	0.163	0.163	10.00	10.00	
6200	61.4	61.4	0.163	0.163	10.00	10.00	
6300	61.4	61.4	0.163	0.163	10.00	10.00	
6400	61.4	61.4	0.163	0.163	10.00	10.00	
6500	61.4	61.4	0.163	0.163	10.00	10.00	
6600	61.4	61.4	0.163	0.163	10.00	10.00	
6700	61.4	61.4	0.163	0.163	10.00	10.00	
6800	61.4	61.4	0.163	0.163	10.00	10.00	
6900	61.4	61.4	0.163	0.163	10.00	10.00	
7000	61.4	61.4	0.163	0.163	10.00	10.00	
7100	61.4	61.4	0.163	0.163	10.00	10.00	
7200	61.4	61.4	0.163	0.163	10.00	10.00	
7300	61.4	61.4	0.163	0.163	10.00	10.00	
7400	61.4	61.4	0.163	0.163	10.00	10.00	
7500	61.4	61.4	0.163	0.163	10.00	10.00	
7600	61.4	61.4	0.163	0.163	10.00	10.00	
7700	61.4	61.4	0.163	0.163	10.00	10.00	
7800	61.4	61.4	0.163	0.163	10.00	10.00	

7900	61.4	61.4	0.163	0.163	10.00	10.00	
8000	61.4	61.4	0.163	0.163	10.00	10.00	
8100	61.4	61.4	0.163	0.163	10.00	10.00	
8200	61.4	61.4	0.163	0.163	10.00	10.00	
8300	61.4	61.4	0.163	0.163	10.00	10.00	
8400	61.4	61.4	0.163	0.163	10.00	10.00	
8500	61.4	61.4	0.163	0.163	10.00	10.00	
8600	61.4	61.4	0.163	0.163	10.00	10.00	
8700	61.4	61.4	0.163	0.163	10.00	10.00	
8800	61.4	61.4	0.163	0.163	10.00	10.00	
8900	61.4	61.4	0.163	0.163	10.00	10.00	
9000	61.4	61.4	0.163	0.163	10.00	10.00	
9100	61.4	61.4	0.163	0.163	10.00	10.00	
9200	61.4	61.4	0.163	0.163	10.00	10.00	
9300	61.4	61.4	0.163	0.163	10.00	10.00	
9400	61.4	61.4	0.163	0.163	10.00	10.00	
9500	61.4	61.4	0.163	0.163	10.00	10.00	
9600	61.4	61.4	0.163	0.163	10.00	10.00	
9700	61.4	61.4	0.163	0.163	10.00	10.00	
9800	61.4	61.4	0.163	0.163	10.00	10.00	
9900	61.4	61.4	0.163	0.163	10.00	10.00	
10000	61.4	61.4	0.163	0.163	10.00	10.00	In General Radars and other specialized equipment operate in Frequencies above 10,000MHz (10GHz)
10100	61.4	61.4	0.163	0.163	10.00	10.00	
10200	61.4	61.4	0.163	0.163	10.00	10.00	
10300	61.4	61.4	0.163	0.163	10.00	10.00	
10400	61.4	61.4	0.163	0.163	10.00	10.00	
10500	61.4	61.4	0.163	0.163	10.00	10.00	
10600	61.4	61.4	0.163	0.163	10.00	10.00	
10700	61.4	61.4	0.163	0.163	10.00	10.00	
10800	61.4	61.4	0.163	0.163	10.00	10.00	
10900	61.4	61.4	0.163	0.163	10.00	10.00	
11000	61.4	61.4	0.163	0.163	10.00	10.00	
11100	61.4	61.4	0.163	0.163	10.00	10.00	
11200	61.4	61.4	0.163	0.163	10.00	10.00	
11300	61.4	61.4	0.163	0.163	10.00	10.00	
11400	61.4	61.4	0.163	0.163	10.00	10.00	
11500	61.4	61.4	0.163	0.163	10.00	10.00	

11600	61.4	61.4	0.163	0.163	10.00	10.00	
11700	61.4	61.4	0.163	0.163	10.00	10.00	
11800	61.4	61.4	0.163	0.163	10.00	10.00	
11900	61.4	61.4	0.163	0.163	10.00	10.00	
12000	61.4	61.4	0.163	0.163	10.00	10.00	
12100	61.4	61.4	0.163	0.163	10.00	10.00	
12200	61.4	61.4	0.163	0.163	10.00	10.00	
12300	61.4	61.4	0.163	0.163	10.00	10.00	
12400	61.4	61.4	0.163	0.163	10.00	10.00	
12500	61.4	61.4	0.163	0.163	10.00	10.00	
12600	61.4	61.4	0.163	0.163	10.00	10.00	
12700	61.4	61.4	0.163	0.163	10.00	10.00	
12800	61.4	61.4	0.163	0.163	10.00	10.00	
12900	61.4	61.4	0.163	0.163	10.00	10.00	
13000	61.4	61.4	0.163	0.163	10.00	10.00	
13100	61.4	61.4	0.163	0.163	10.00	10.00	
13200	61.4	61.4	0.163	0.163	10.00	10.00	
13300	61.4	61.4	0.163	0.163	10.00	10.00	
13400	61.4	61.4	0.163	0.163	10.00	10.00	
13500	61.4	61.4	0.163	0.163	10.00	10.00	
13600	61.4	61.4	0.163	0.163	10.00	10.00	
13700	61.4	61.4	0.163	0.163	10.00	10.00	
13800	61.4	61.4	0.163	0.163	10.00	10.00	
13900	61.4	61.4	0.163	0.163	10.00	10.00	
14000	61.4	61.4	0.163	0.163	10.00	10.00	
14100	61.4	61.4	0.163	0.163	10.00	10.00	
14200	61.4	61.4	0.163	0.163	10.00	10.00	
14300	61.4	61.4	0.163	0.163	10.00	10.00	
14400	61.4	61.4	0.163	0.163	10.00	10.00	
14500	61.4	61.4	0.163	0.163	10.00	10.00	
14600	61.4	61.4	0.163	0.163	10.00	10.00	
14700	61.4	61.4	0.163	0.163	10.00	10.00	
14800	61.4	61.4	0.163	0.163	10.00	10.00	
14900	61.4	61.4	0.163	0.163	10.00	10.00	
15000	61.4	61.4	0.163	0.163	10.00	10.00	
15100	61.4	61.4	0.163	0.163	10.00	10.00	
15000 - 150000	61.4	61.4	0.163	0.163	10	10	
150000 - 300000	61.19 – 86.54	61.19 – 86.54	0.163-0.231	0.163-0.231	10.05-20.01	10.05-20.01	

The notes on which device uses which frequency is not complete or comprehensive, some devices (routers) may operate on several frequencies. Many devices and cell towers transmit on more than one channel within their band, The total of all channels is the amount of radiation at the particular frequency.

Cordless phones.1.7 GHz (1.64–1.78 GHz, up to 5 channels, AM modulation [1]) 43–50 MHz (Base: 43.72–46.97 MHz, Handset: 48.76–49.99 MHz, allocated in November 1984 for 10 channels, and later 25 channels, FM modulation) 900 MHz (902–928 MHz, allocated in 1993) 1.9 GHz (1880–1900 MHz, used for DECT communications outside the US) 1.9 GHz (1920–1930 MHz, developed in 1993 and allocated in October 2005, especially with DECT 6.0) 2.4 GHz (2400–2500 MHz, allocated in 1998) 5.8 GHz (5725–5875 MHz, allocated in

For further reference on radio Frequencies, how to measure them and allowable limits in Canada There are various Industry Canada and Heath Canada Documents available from their web sites that should be consulted

In many ways the biggest change between Safety Code 6 (2009) and (2014) is for the frequencies of the greatest concern one must refer to the allowable limit in relation to the particular frequency – generally lumping all into a global 10 watts/sq m will no longer be

1.9 Ghz	3m	Wavelength 0.158 (6 in)	Intermediat	114 m	374 feet
			Near Field	28.5 m	93 ft