

47 CFR 1.1310(e)(1) Maximum Permissible Exposure (MPE) - Limits for General Population/Uncontrolled Exposure

	Frequency (f)	Power (P)	Antenna Gain (G)	Duty Cycle (DC)	EIRP ¹	EIRP	R	Power Density ² (PD)	Power Density Limit	PD/Limit
	MHz	dBm	dBi	%	dBm	mW	cm	mW/cm ²	mW/cm ²	
GSM 850	824	33.0	1.3	50.0	31.3	1346	25	0.171	0.55	0.31
GSM 1900	1850	30.0	2.6	50.0	29.6	910	25	0.116	1.0	0.12
UMTS Band 5	824	24.0	1.3	100	25.3	339	25	0.043	0.55	0.08
UMTS Band 2	1850	24.0	2.6	100	26.6	457	25	0.058	1.0	0.06
LTE Band 2	1850	23.0	2.6	100	25.6	363	25	0.046	1.0	0.05
LTE Band 4	1710	23.0	2.6	100	25.6	363	25	0.046	1.0	0.05
LTE Band 5	824	23.0	1.3	100	24.3	269	25	0.034	0.55	0.06
LTE Band 12	699	23.0	1.3	100	24.3	269	25	0.034	0.47	0.07
Wi-Fi ³	2400	18.5	2.0	100	20.5	112	25	0.014	1.0	0.014
NFC	13.56				-31.23	7.5E-04	25	9.6E-08	0.98	9.8E-08
Fractional power density =			0.31	+	0.014	+	9.8E-08	=	0.33	<1

Canada RSS-102 Issue 5 (4. Exposure Limits) Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

	Frequency (f)	Power (P)	Antenna Gain (G)	Duty Cycle (DC)	EIRP ¹	EIRP	R	Power Density ² (PD)	Power Density Limit	PD/Limit
	MHz	dBm	dBi	%	dBm	W	m	W/cm ²	W/cm ²	
GSM 850	824	33.0	1.3	50	31.3	1.35	0.25	1.71	2.58	0.67
GSM 1900	1850	30.0	2.6	50	29.6	0.91	0.25	1.16	4.48	0.26
UMTS Band 5	824	24.0	1.3	100	25.3	0.34	0.25	0.43	2.58	0.17
UMTS Band 2	1850	24.0	2.6	100	26.6	0.46	0.25	0.58	4.48	0.13
LTE Band 2	1850	23.0	2.6	100	25.6	0.36	0.25	0.46	4.48	0.10
LTE Band 4	1710	23.0	2.6	100	25.6	0.36	0.25	0.46	4.24	0.11
LTE Band 5	824	23.0	1.3	100	24.3	0.27	0.25	0.34	2.58	0.13
LTE Band 12	699	23.0	1.3	100	24.3	0.27	0.25	0.34	2.30	0.15
Wi-Fi ³	2400	18.5	2.0	100	20.5	0.11	0.25	0.14	5.35	0.027
NFC	13.56				-31.2	7.5E-07	0.25	9.6E-07	2.00	4.8E-07
Fractional power density =			0.67	+	0.027	+	4.8E-07	=	0.69	<1

¹EIRP_{dBm} = P + G+10Log(D/100)

²PD = EIRP/(4πR²)

³Wi-Fi antenna gain = (2.5 - 0.5) = 2.0 dBi by addition of 0.5 dB attenuation (ref. p25 SCH_FM5_Reg_Rev2.)