

## Cell Tower Radiation Exposure Guidelines in $\mu\text{W}/\text{m}^2$

(If not otherwise stated, limits apply to entire frequency range: ca. 600 to 3000 MHz)

<p>10,000,000 10,000,000 ~5,300,000</p>	<p>Canada Safety Code 6 (2009) 2400 MHz <a href="http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct-eng.php">http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct-eng.php</a> 1900 MHz 800 MHz</p> <p>ICNIRP International Guidelines (1998) <a href="http://www.icnirp.de/documents/emfgdl.pdf">http://www.icnirp.de/documents/emfgdl.pdf</a> 2400 MHz 1900 MHz 800 MHz</p> <p>These guidelines are based on biological effects of short-term, high-level exposures only, also referred to as thermal effects. Germany (1996), USA (1997), Japan (1997), Switzerland (2000), Australia (2002), Finland (2002), Sweden (2002), UK (2004), Austria (2006), etc.</p>
<p>~2,000,000 ~1,000,000</p>	<p>Belgium Guidelines (2001) 1900 MHz 800 MHz</p> <p>In 2009 a ruling of the constitutional court concluded that the setting of exposure levels for cell towers lies with the regional not the federal government. See further below. <a href="http://www.who.int/docstore/peh-emf/EMFStandards/who-0102/Europe/Belgium_files/table_be.htm">http://www.who.int/docstore/peh-emf/EMFStandards/who-0102/Europe/Belgium_files/table_be.htm</a></p>
<p>~100,000 (6 V/m)</p>	<p>China Ministry of Health Standard (1987) Exposure limit for "first grade environment" or sensitive areas <a href="http://www.who.int/docstore/peh-emf/EMFStandards/who-0102/Asia/China_files/table_ch.htm">http://www.who.int/docstore/peh-emf/EMFStandards/who-0102/Asia/China_files/table_ch.htm</a></p> <p>Toronto Board of Health, Canada (1999) Prudent Avoidance Policy for Siting of Cell Phone Base Stations: <a href="http://www.toronto.ca/health/hphe/pdf/rf_bon_update.pdf">http://www.toronto.ca/health/hphe/pdf/rf_bon_update.pdf</a></p> <p>Russia Ministry of Health Standard SanPin 2.1.8. (2003) Exposure limit for general public <a href="http://www.tesla.ru/english/protection/standards.html">http://www.tesla.ru/english/protection/standards.html</a></p> <p>Italy Decree (2003): Precautionary attention level not to be exceeded in sensitive areas <a href="http://www.who.int/docstore/peh-emf/EMFStandards/who-0102/Europe/Italy_files/table_datoteke/Italy_DPCM_RF_eng.pdf">http://www.who.int/docstore/peh-emf/EMFStandards/who-0102/Europe/Italy_files/table_datoteke/Italy_DPCM_RF_eng.pdf</a></p>
<p>~95,500 ~66,000 ~42,500</p>	<p>Switzerland Ordinance (NISV 2000) <a href="http://www.bafu.admin.ch/elektrosmog/01100/01101/index.html?lang=de">http://www.bafu.admin.ch/elektrosmog/01100/01101/index.html?lang=de</a> Precautionary cell tower exposure limit for sensitive areas 1800 MHz 900 MHz and 1800 MHz combined on transmitter site 900 MHz</p>
<p>~24,000 (3 V/m)</p>	<p>Regional Ordinances in Brussels (2007), Wallonia (2009), Flanders (2010) <a href="http://www.who.int/peh-emf/project/mapnatreps/BELGIUM_EMF_report_2008_2009.pdf">http://www.who.int/peh-emf/project/mapnatreps/BELGIUM_EMF_report_2008_2009.pdf</a> <a href="http://www.jokeschauvliege.be/upload/indepers/persbericht.pdf">http://www.jokeschauvliege.be/upload/indepers/persbericht.pdf</a></p>
<p>~10,000 (2 V/m)</p>	<p>ECOLOG Institute in Germany (2000) Precautionary recommendation based on review of scientific literature Emissions from single RF sources (e.g. cell tower) at max. 30% of precautionary limit <a href="http://www.hese-project.org/hese-uk/en/papers/ecolog2000.pdf">http://www.hese-project.org/hese-uk/en/papers/ecolog2000.pdf</a></p>

## Cell Tower Radiation Exposure Guidelines in $\mu\text{W}/\text{m}^2$

(If not otherwise stated, limits apply to entire frequency range: ca. 600 to 3000 MHz)

1,000-100,000	In the vicinity of cell towers (up to 400 m)
2,000-20,000	Cordless phones (DECT/GHz technology) (1 m distance)
1,000-10,000	Wi-Fi router/access point/PC card (50 cm distance)
1,000	Salzburg Resolution on Mobile Telecommunication Base Stations (2000) Precautionary recommendation by leading scientists <a href="http://www.salzburg.gv.at/salzburg_resolution_e.htm">http://www.salzburg.gv.at/salzburg_resolution_e.htm</a>  BioInitiative Working Group (2007) Precautionary recommendation for outdoor environment <a href="http://www.bioinitiative.org/report/index.htm">http://www.bioinitiative.org/report/index.htm</a>
$\geq 500$ -1,000	Health effects observed in populations near cell towers (Kundi 2009)
170	Seletun Consensus Statement (2010) Precautionary recommendation <a href="http://iemfa.org/index.php/publications/seletun-resolution">http://iemfa.org/index.php/publications/seletun-resolution</a>
100	Working Group of EU STOA Panel (2001) Precautionary recommendation <a href="http://www.europarl.europa.eu/stoa/publications/studies/20000703_en.pdf">http://www.europarl.europa.eu/stoa/publications/studies/20000703_en.pdf</a>  BioInitiative Working Group (2007) Precautionary recommendation for indoor environment <a href="http://www.bioinitiative.org/report/index.htm">http://www.bioinitiative.org/report/index.htm</a>  BUND (Friends of the Earth Germany) (2008) Precautionary recommendation for hazard protection <a href="http://www.bund.net/fileadmin/bundnet/publikationen/sonstiges/20081028_sonstiges_funktechnologien_position.pdf">http://www.bund.net/fileadmin/bundnet/publikationen/sonstiges/20081028_sonstiges_funktechnologien_position.pdf</a>
10	Health Department of the Federal State of Salzburg (Austria 2002) Precautionary recommendation for outdoor environment (GSM sum total) <a href="http://www.salzburg.gv.at/konfliktmanagement_salzburger_modell.pdf">http://www.salzburg.gv.at/konfliktmanagement_salzburger_modell.pdf</a>
1	Health Department of the Federal State of Salzburg (Austria 2002) Precautionary recommendation for indoor environment (GSM sum total) <a href="http://www.salzburg.gv.at/konfliktmanagement_salzburger_modell.pdf">http://www.salzburg.gv.at/konfliktmanagement_salzburger_modell.pdf</a>  BUND (Friends of the Earth Germany) (2008) Precautionary recommendation for general protection <a href="http://www.bund.net/fileadmin/bundnet/publikationen/sonstiges/20081028_sonstiges_funktechnologien_position.pdf">http://www.bund.net/fileadmin/bundnet/publikationen/sonstiges/20081028_sonstiges_funktechnologien_position.pdf</a>
$< 0.1$	Building Biology Evaluation Guidelines (SBM-2008) "No Concern" Specifically designed for sleeping areas associated with long-term risks <a href="http://www.baubiologie.de/downloads/english/richtwerte_2008_englisch.pdf">http://www.baubiologie.de/downloads/english/richtwerte_2008_englisch.pdf</a>
0.001	Minimum level required to maintain connection with cell phone handset
$< 0.000\ 0001$	Natural background

$0.1\ \text{W}/\text{m}^2 = 100\ \text{mW}/\text{m}^2 = 100,000\ \mu\text{W}/\text{m}^2 = 10\ \mu\text{W}/\text{cm}^2$