

Comparing Standards for general public RF exposure levels (900 and 1800 MHz are the two main existing UK mobile phone bands)

Prepared by Alasdair Philips, Technical Director, Powerwatch, June 2000

Multiple signals should be added together, as the square root of the sum of squares of the individual signals.
 Figures in bold in the table below are the main units given in the guidance.
 'Near-field' levels next to a working mobile phone handset vary enormously depending on the antenna design but can often exceed the electric field and power density levels set in the general exposure standards.

General Public Levels	Frequency MHz	E field V/m	Power W/m ²	Power μ W/cm ²
NRPB, 1993 (Current UK Investigation Levels) <i>2000</i>	900 1800	112 194	33 100	3300 10000
FCC OET65:1997-01 (USA) based on ANSI/IEEE C95.1-1992	900 1800	47 61	6 10	600 1000
Canadian Safety Code 6 (SC6) 1993	900 1800	47 61	6 10	600 1000
ICNIRP, 1998 (recognised by WHO) CENELEC, 1995 (EU) <i>3G</i>	900 1800	41 58	4.5 9 <i>10</i>	450 900 <i>1000</i>
Australia 1988 (under review)	900 / 1800	27	2	200
Two USA research bases (1995)	30 - 100000	19	1	100
Poland (non-stationary people) (stationary people)	300 - 300000	19 6	1 0.1	100 10
Russia 1988 (general public)	300 - 300000	6	0.1	10
Italy, Decree 381 (1999)	30 - 30000	6	0.1	10
Toronto Health Board 2000, proposal based on SC6/100	900 1800	5 6	0.06 0.1	6 10
Swiss Ordinance ORNI (for base stations) From 1st.Feb.2000	900 1800	4 6	not specified	not specified
EU & UK EMC Regulations equipment suscept test level (domestic & comm.)	30 - 2000	3	not specified	not specified
Typical max in public areas near base station masts (can be much higher)	900 & 1800	2	0.01	1
City of Salzburg, Austria, 1998	300 - 300000	0.62	0.001	0.1
Dr Cherry (NZ) proposal for now	300 - 300000	0.28	0.0002	0.02
Average US (EPA 1980) → City Dweller max (FCC 1999) →	approx 30 - 300000	< 0.13 < 2	< 0.00005 < 0.01	< 0.005 < 1
Broadband 'natural' background	300 - 3000	< 0.00003	< 0.00000001	< 0.000001
** Typical, close to handset antenna	900 & 1800	50 - 300	2 - 50	200 - 5000

microWatts per centi meter square

= UK

10,000 times lower than UK/Issey