

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

K.52

Corrigendum 1
(05/2009)

SERIES K: PROTECTION AGAINST INTERFERENCE

Guidance on complying with limits for human
exposure to electromagnetic fields

Corrigendum 1

Recommendation ITU-T K.52 (2004) – Corrigendum 1



Recommendation ITU-T K.52

Guidance on complying with limits for human exposure to electromagnetic fields

Corrigendum 1

Source

Corrigendum 1 to Recommendation ITU-T K.52 (2004) was agreed on 29 May 2009 by ITU-T Study Group 5 (2009-2012).

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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Recommendation UIT-T K.52

Guidance on complying with limits for human exposure to electromagnetic fields

Corrigendum 1

Replace Table I.2 by the following:

Table I.2 – ICNIRP reference levels (unperturbed rms values)

Type of exposure	Frequency range	Electric field strength (V/m)	Magnetic field strength (A/m)	Equivalent plane wave power density S_{eq} (W/m ²)
Occupational exposure	Up to 1 Hz	–	1.63×10^5	–
	1-8 Hz	20 000	$1.63 \times 10^5/f^2$	–
	8-25 Hz	20 000	$2 \times 10^4/f$	–
	0.025-0.82 kHz	$500/f$	$20/f$	–
	0.82-65 kHz	610	24.4	–
	0.065-1 MHz	610	$1.6/f$	–
	1-10 MHz	$610/f$	$1.6/f$	–
	10-400 MHz	61	0.16	10
	400-2000 MHz	$3f^{1/2}$	$0.008f^{1/2}$	$f/40$
	2-300 GHz	137	0.36	50
General public	Up to 1 Hz	–	3.2×10^4	–
	1-8 Hz	10 000	$3.2 \times 10^4/f^2$	–
	8-25 Hz	10 000	$4\,000/f$	–
	0.025-0.8 kHz	$250/f$	$4/f$	–
	0.8-3 kHz	$250/f$	5	–
	3-150 kHz	87	5	–
	0.15-1 MHz	87	$0.73/f$	–
	1-10 MHz	$87/f^{1/2}$	$0.73/f$	–
	10-400 MHz	28	0.073	2
	400-2000 MHz	$1.375f^{1/2}$	$0.0037f^{1/2}$	$f/200$
	2-300 GHz	61	0.16	10

NOTE 1 – f is as indicated in the frequency range column.

NOTE 2 – For frequencies between 100 kHz and 10 GHz, the averaging time is 6 minutes.

NOTE 3 – For frequencies up to 100 kHz, the peak values can be obtained by multiplying the rms value by $\sqrt{2}$ (≈ 1.414). For pulses of duration t_p , the equivalent frequency to apply should be calculated as $f = 1/(2t_p)$.

NOTE 4 – Between 100 kHz and 10 MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100 MHz to the 32-fold peak at 10 MHz. For frequencies exceeding 10 MHz, it is suggested that the peak equivalent plane-wave power density, as averaged over the pulse width, does not exceed 1000 times the S_{eq} limit, or that the field strength does not exceed the 32 times field strength exposure levels given in the table.

NOTE 5 – For frequencies exceeding 10 GHz, the averaging time is $68/f^{1.05}$ minutes (f in GHz).

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