

No Anomaly	Slight Anomaly	Severe Anomaly	Extreme Anomaly
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A FIELDS, WAVES, RADIATION

1 AC ELECTRIC FIELDS (Low Frequency, ELF/VLF)

	V/m	< 1	1 - 5	5 - 50	> 50
Field strength with ground potential in volt per meter	V/m	< 1	1 - 5	5 - 50	> 50
Body voltage with ground potential in millivolt	mV	< 10	10 - 100	100 - 1000	> 1000
Field strength potential-free in volt per meter	V/m	< 0.3	0.3 - 1.5	1.5 - 10	> 10

Values apply up to and around 50 (60) Hz, higher frequencies and predominant harmonics should be assessed more critically.

ACGIH occupational TLV: 25000 V/m; DIN/VDE: occupational 20000 V/m, public 7000 V/m; ICNIRP: 5000 V/m; TCO: 10 V/m; US Congress / EPA: 10 V/m; BUND: 0.5 V/m; studies on oxidative stress, free radicals, melatonin and childhood leukemia: 10-20 V/m; nature: < 0.0001 V/m

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2 AC MAGNETIC FIELDS (Low Frequency, ELF/VLF)

	nT	< 20	20 - 100	100 - 500	> 500
Flux density in nanotesla	nT	< 20	20 - 100	100 - 500	> 500
in milligauss	mG	< 0.2	0.2 - 1	1 - 5	> 5

Values apply to frequencies up to and around 50 (60) Hz, higher frequencies and predominant harmonics should be assessed more critically. Line current (50-60 Hz) and traction current (16.7 Hz) are recorded separately.

In the case of intense and frequent temporal magnetic field fluctuations, the 95th percentile of the data logging records, especially those from nighttime logging, shall be used for the assessment.

DIN/VDE: occupational 5000000 nT, public 400000 nT; ACGIH occupational TLV: 200000 nT; ICNIRP: 100000 nT; Switzerland 1000 nT; WHO: 300-400 nT "possibly carcinogenic"; TCO: 200 nT; US Congress / EPA: 200 nT; Bio Initiative: 100 nT; BUND: 10 nT; nature: < 0.0002 nT

A FIELDS, WAVES, RADIATION

3 RADIO-FREQUENCY RADIATION (High Frequency, Electromagnetic Waves)

Power density in microwatt per square meter $\mu\text{W}/\text{m}^2$ | < 0.1 | 0.1-10 | 10-1000 | > 1000 |

Values apply to single RF sources, e.g. GSM, UMTS, TETRA, LTE, WiMAX, Radio, TV, WLAN, DECT, Bluetooth..., and refer to peak measurements. They do not apply to rotating-antenna radar.

More critical RF sources like pulsed or periodic signals (GSM, TETRA, DECT, WLAN, digital broadcasting...) and broadband technologies with pulsed signals/patterns (UMTS, LTE...) should be assessed more seriously, especially at higher levels, and less critical RF sources like non-pulsed and non-periodic signals (FM, short, medium, long wave, analog broadcasting...) should be assessed more generously, especially at lower levels.

Former Building Biology Evaluation Guidelines for RF radiation / HF electromagnetic waves (SBM-2003): pulsed fields < 0.1 no, 0.1-5 slight, 5-

DIRTY ELECTRICITY:

RECOMMENDED EMI LEVELS

Ideally, dirty electricity (EMI) levels should be below 25 millivolts (mV).

Levels between 25 and 50 mV are marginal and should be reduced if possible.

Levels above 50 mV are undesirable and steps should be taken to lower them.

A good rule of thumb is to reduce local levels of dirty electricity (EMI) to less than 50 mV or by at least 80% on a majority of outlets in your environment. The lower you can get dirty electricity, the better!

**Stetzerizer[®] MICROSURGE METER
MODEL GS-M300-A**

**Stetzerize™ Your Electrical Environment
Reduce Undesirable Power Line EM Radiation Levels**

Reading(GS)	Condition	Recommendation
Less than 25	Good	Monitor weekly
25 to 50	Average	Monitor weekly
More than 50	Undesirable	Add filters

NB: The Kazakhstan government mandates a level 50 GS units or less at 50 Hz AC for building wiring.