

## The EU Safety Guideline on Display Screen Equipment:

“All radiation with the exception of the visible part of the electromagnetic spectrum shall be reduced to negligible levels from the point of view of the protection of workers’ safety and health.”



### Office Environment



## Office Environment Packed with Electronics



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### What does building biology have to offer?

Building biology consultants of the Building Biology Association (VB) are experts in identifying and reducing environmental risks in indoor environments.

They measure, analyze, and assess RF radiation exposures of DECT cordless phones as well as mobile phones in addition to many other factors, including mold, indoor toxins, electromagnetic pollution, radioactivity, air quality, and indoor climate. They also make recommendations for remediations.

Building biology consultants help find and reduce disease-causing factors that often hide within our own four walls or workplace.

We are less interested in discussing or arguing about unreasonable exposure limits than in taking positive action.

Life and work are more satisfying when there are less stressors involved—as a precaution and to be on the safe side.

Your Building Biology Consultant  
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The Building Biology Association (VB) follows the Standard of Building Biology Testing Methods SBM and works in cooperation with the Institute of Building Biology and Ecology IBN/Neubeuern.

Comprehensive information on Low-Emission Office Environments can be found at <http://www.buildingbiology.ca/healthyoffice.php> and on building biology in Wolfgang Maes' book "Stress durch Strom und Strahlung" (German ISBN 3-923531-25-7).



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**Do precautionary limits for low-emission screens and office workplaces exist?**

In European countries, at least every computer screen now bears the TCO label, which also guarantees good ergonomics, low toxicity, and energy savings.

**Which electromagnetic fields occur at computer workstations?**

These days there is an electronic helper for everything. A higher number of electronic devices, however, do not necessarily translate into a higher exposure level. The type of technology being used, the distance, and the emission levels are what counts. In the past it was mainly about magnetic fields from CRT monitors, but today we especially face wireless radiation from DECT cordless phones and Wi-Fi networks.

**Which type of “radiation” do I have to expect?**

- AC electric fields
- AC magnetic fields
- RF radiation
- Static electricity
- Static magnetic fields

(The VB has published flyers about the above-listed electromagnetic fields.)

**AC Electric Fields**

When the computer or any other office equipment is not turned on but only plugged into an outlet, it is already energized and AC electric fields are emitted. These fields couple onto a person and exert stress. And these fields can be especially strong when the grounding conductor is missing from e.g. the laptop’s power cord (identifiable by a two-prong plug).

**AC Magnetic Fields**

As soon as the computer or any other office equipment is turned on, a current flows which generates a more or less intense magnetic field.



microwave radiation, but also generate rather strong magnetic fields very close to the body—even during standby.

**RF Radiation**

No more tangled cables. Wireless is „in“. The DECT cordless phone on the desk continuously transmits microwaves, the wireless Internet access (WLAN) next to it does the same incessantly—whether they are being used or not. The hand on the wireless mouse (Bluetooth) is directly exposed. When, in addition, the cell phone pressed to the ear roams for the next base station, then even official exposure limits may be exceeded. And precautionary recommendations of international scientists may be exceeded by a factor of 10.000 to 100.000.

**Static Electricity**

The CRT monitors of the first generation generated intense static electricity. Fortunately, such electric storms are unknown to LCD screens. Plexiglas furniture, polished surfaces, synthetic curtains and office carpeting, however, can build up an extremely high amount of static electricity, and thus indoor air quality will suffer greatly.

**Static Magnetic Fields**

In offices, magnets are hidden in phone receivers, headsets and loudspeakers. Steel desks and steel mechanisms in adjustable office chairs distort the earth’s magnetic field and impact the regulatory mechanisms of human cells.

**Can office furnishings be detrimental?**

Furniture should not outgas any toxins; furnishings should not “smell”. Solvents and formaldehyde cause serious illness! Poor-quality air in offices increases

LCD screens are naturally low-emission. In contrast, CRT monitors, chargers, transformers in low-voltage lamps, printers, even desktops emit strong magnetic fields that may adversely affect the human body. PDAs, the computers in a cell phone package, not only emit

susceptibility to the flu. Air humidity should always stay between 40 – 60%. Water damage needs to be cleaned up by professionals so that no hidden mold problems remain. Very important: ventilate any indoor workspace regularly!

**How can I protect myself from EMF and RF radiation exposures?**

The fundamental ergonomic principle applies: Adapt the workstation to fit the needs of the person and not the other way around. Low-emission office work is possible. You can lower your daily radiation dose by the following means:

- Low-emission screens and office equipment certified by TCO
- Two-foot minimum distance to computer screen
- Shielded extension/power cords, multiple outlet power strips
- Light with full spectrum, shielded
- Increased distance to nonshielded extension/power cords, electrical equipment
- Wired network, keyboard, mouse
- Landline with piezophone
- Antistatic floor coverings, furnishings and surface treatments
- All large metal components (e.g. desk, filing cabinet, loudspeaker) not in close proximity to the body

If in doubt, have an EMR survey done: Specific shielding and grounding should only ever be installed after appropriate testing has been performed and then only by a qualified specialist.

