

PRODUCT NORMS TO REDUCE EMF EXPOSURES AND ENERGY CONSUMPTION OF WIRELESS INTERNET (WiFi), CORDLESS DECT-PHONES AND DECT BABY MONITORS

CORDLESS DECT-PHONES:

Cordless 'DECT'-phones ('Digital Enhanced Cordless Telecommunications') **continuously** emit radiofrequency electromagnetic radiation, even when no phone call is taking place. In proximity to the base station (upon which the telephone is recharged), radiation levels can amount up to 7 Volt per meter. This leads to high exposures.

Several health experts, for example the head of the Belgian Health Council Prof. André Vander Vorst, are of the opinion that this type of telephone should have never been brought on the market, as this technology was developed for industrial purposes and emits much too powerfully for use in homes and work places.

But **technological solutions exist to massively reduce exposures in time AND in intensity**. Indeed, some companies already offer 'low radiation' cordless phones.

1. Reducing exposures in time:

While the base stations of conventional cordless DECT-phones emit signals all of the time, 24/7, **low radiation phones only emit when you are actually making a call**. This **massively** reduces exposure in time.

In the absence of additional handsets, the radiation emitted by the base station in stand-by mode should not just be 'lower', but **reduced to zero**. This should be the case even when the handset is not put back into the base station to charge.

When additional handsets are being used, the radiation in stand-by mode should be reduced with at least 80 to 90%. This should be the case even when the handset has not been put back into the base station to charge.

2. Reducing the intensity of the exposure

Low radiation phones **adjust the power of the signal according to the distance of the telephone (the person making the call) to the base station**. Conventional cordless phones always emit at full power, while low radiation phones lower the power of the signal when the user is closer to the base station. In this way, exposures are minimised.

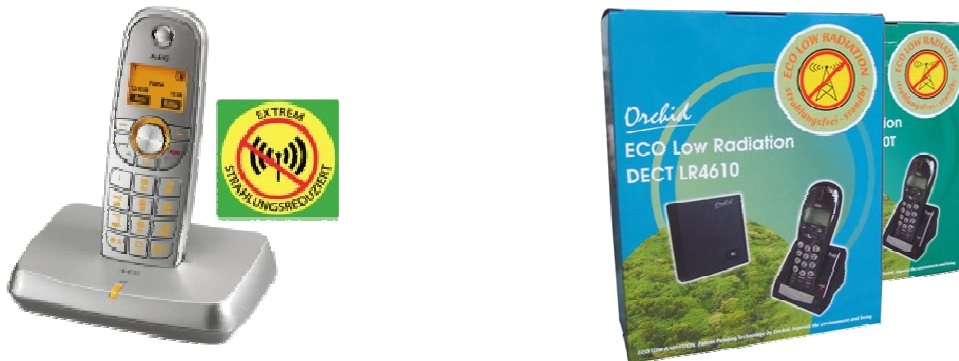
We propose to make **ALL cordless telephones low in radiation by means of product norms**. This type of telephone already exists on the market so technically it is perfectly feasible.

We also think it's necessary that it is mentioned on the package that these telephones emit radiofrequency electromagnetic signals.

Some examples of low radiation cordless phones:

- Cordless phones of the brand 'Orchid'
- AEG Ecological DECT range (models include EOLE 1625)
- Certain newer models of Siemens can be set in "Eco Mode Plus" (models include Siemens C380/C385)

The disadvantage however with some of these 'Eco DECT' phones is that consumers have to specify or change the settings himself to the "Eco Mode". We advocate that this should be the default setting.



CORDLESS DECT BABY MONITORS:

Babies are more vulnerable than adults, also for the effects of pulsed electromagnetic radiation than adults. As baby monitors (devices which enable parents to monitor the sounds their infants make when they are asleep) using DECT-technology expose babies to a very significant amount of electromagnetic radiation, they are considered as hazardous by many scientists and health experts.

Therefore, with reference to the Precautionary Principle, manufacturers of baby monitors should be obliged to **reduce the power with which baby monitors emit.**

It is also worth considering to encourage or oblige manufacturers to start using **analogue signals** again **instead of digitally pulsed signals**, which are characteristic for DECT technology. Analogue signals offer less 'high tech' possibilities but are considered to be far less harmful.

Another alternative which could be encouraged is the use of **'powerline' or 'homeplug'-technology.**

Some companies already offer low radiation baby monitors. Two examples are:

- Vivanco Eco babyphone (www.babyfon.com/en/)
- 'Angelcare AC420' (www.angelcare-monitor.com)



Angelcare AC420



Vivanco Eco baby monitor

We can also mention here that in France, legislation has already been drafted that is meant to better protect children under 6 from exposure to devices emitting radiofrequency radiation ('LOI n° 2010-788 du 12 juillet 2010 portant engagement national pour l'environnement').

ROUTERS FOR WIRELESS INTERNET:

1. A simple on/off button for wireless internet

The wireless function is often activated by default on internet routers, without the consumer/user actively choosing for this option. In other words, it is possible that wireless internet is switched on, even when it is not being used. As a result, consumers (and their neighbours) are unnecessarily exposed to the emitted electromagnetic radiation.

Consumers often find it difficult or complicated to switch off the wireless. It is often unclear how to do this.

We propose to make it easier for consumers to avoid unnecessary WiFi-exposure by making a simple, easy to use on/off button for the wireless function obligatory for internet routers.

Also, manufacturers could look into the possibility to automatically switch on the wireless connection when the computer is turned on, and to automatically turn it off when the computer is turned off. In this way the router does not transmit when it is not being used. (But of course, this system should only operate for those consumers who actively chose to use WiFi and activated this function on the router.)

2. Adaptable power

Most wireless routers emit with a certain, fixed power level. The signal reaches over a distance of about 100 meters or more.

However, in reality, the distance over which the signal is needed can vary immensely. For example, users living in an apartment need a smaller reach than users living in a (big) house. It is even possible that the computer on which the internet is being used is standing right next to the router.

We propose to make the power with which wireless routers emit adaptable in function of the distance at which the signal is needed.

For example, manufacturers could **develop different types of routers**; a type meant for use in apartments (smaller distance and thus less power) and a type for use in houses (larger distance and thus more power).

The power level which is currently used by most routers – which is sufficient for use in houses – should be the maximum allowable level.

Another option is to give consumers the possibility to adjust the power levels themselves, in function of the distance at which they need the signal. For example, the device could ask consumers to specify the distance at which the signal is needed after which the necessary power level is calculated automatically. This allows consumers to minimise the signal strength according to their needs. Here also the maximum allowable power level should be the level now currently used by most routers.

It is important to add that these measures are also capable of reducing the involuntary, passive exposure of neighbours living in nearby houses or apartments.

GENERAL REMARKS:

- **Warning on the package and in the manual**

Consumers have a right to be informed. The **package** of wireless/cordless devices should clearly mention that these devices emit microwave radiation. Often consumers are not aware of this.

Also, the **manual** of these devices should encourage the user, in accordance with the precautionary principle, to use wired alternatives whenever the use of wireless products can be avoided. Consumers should also be encouraged to switch wireless devices off when not in use and especially at night, to reduce exposures as well as to save energy. This can easily be done by using time switches.

- **Biocompatibility**

There are indications that the potential adverse biological effects of wireless telecommunications are not due directly to the microwave carrier frequencies but are due to the way they are modulated, with sudden stops and starts of the microwave signal as it transmits the digital information.

Indeed, the potential 'non-thermal' effects seem to depend on the existence of an 'oscillatory similitude' between the frequencies of the radiation and those of certain endogenous biological electrical activities in the organism. This is a dimension of the problem that is not addressed by existing safety guidelines.

In a STOA-study prepared for the European Parliament in March 2001, it was argued that this problem could be resolved by:

"Ensuring that there is no *ELF* frequencies (Extremely Low Frequencies) - either of amplitude modulations (including pulsing, as the extreme case) of *RF* fields, or of other electric/magnetic fields - in the range of human electrical brain-wave activity, or windows of calcium efflux."

(See the executive summary: www.europarl.europa.eu/stoa/archive/summaries/20000703_en.pdf and the final study: www.europarl.europa.eu/stoa/publications/studies/20000703_en.pdf)

Therefore, we propose that research should be conducted in order to find solutions to avoid non-thermal, frequency-specific influences of electromagnetic radiation and thus to make wireless technologies more 'biocompatible'.