

**Matt Katzer**

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**From:** Bob Jacobsen [Bob\_Jacobsen@lbl.gov]  
**Sent:** Tuesday, November 13, 2001 9:43 AM  
**To:** loconet\_hackers@yahoogroups.com  
**Subject:** Re: LocoNet bridge (was Re: [loconet\_info] locobuffer)

At 1:08 PM +0000 11/13/01, Juergen Hauschild wrote:

>Here in Germany we have a lot of initiatives of citizens who want the  
>government to forbid the DECT as well as the GSM technology because it  
>influences our biological communication via the nerve system.  
>A lot of experts have done studies and they show up that pulsed  
>microwaves which are send out from the DECT and GSM can be very  
>dangerous to human live. Lots of effects are described in the  
>international literature.

Although its off-topic to some extent, I think a reply to this is appropriate. If you'd like to discuss this more, please contact me off-list.

Juergen's statement is not consistent with the scientific literature.

My background: I was trained as an electrical engineer, and am currently a Physics Professor at the University of California at Berkeley. I've studied the question of biological effects of EM fields at some length.

In 1999, the United States Food & Drug Administration surveyed the literature and found "no scientific evidence" of health hazards from consumer-level exposure to microwaves, including cell phones of all three types in use in the US. That result explicitly included frequencies around 2GHz used by DECT, although DECT was not mentioned by name.

Additional studies were funded and completed to cover certain topics where the evidence was incomplete or inconclusive. Those were again surveyed by the U.S. GAO (an arm of Congress), who concluded in May 2001 that "The consensus of the Food and Drug Administration (FDA), the World Health Organization, and other major health agencies is that the research to date does not show radiofrequency energy emitted from mobile phones has harmful health effects, but there is not yet enough information to conclude that they pose no risk."

Various groups (not scientific organizations!) have interpreted the final phrase to mean "the studies haven't shown anything, there's still a large risk". That is an incorrect interpretation. What the studies have shown is that any risks that are present for the vast majority of the public are at least a factor of 3000 smaller than the (mostly unknown) factors that cause the general level of health of the population. What we don't know is whether there is exists one or more small (less than 0.1% of the population) subgroups who may have a sensitivity resulting a small increase in adverse health effects, e.g. cancer. As you can imagine, this is a very hard thing to prove or disprove. Should such populations exist with worst-case sensitivity, the total cancer rate in the US would increase by 0.004%.

If you're interested in learning more, a good place to start is with the GAO report, available online at <http://www.gao.gov/new.items/d01545.pdf> or via the GAO web site. I can also provide direct references in the scientific literature to specific studies and meta-studies done in US, UK, France, Germany and Sweden. Unfortunately, these are not generally available on the web but should be obtainable in any university library. Please contact me off-list if you're interested.

I encourage people to make their own choices for their own use of technology. That's particularly true for a hobby activity such as DCC. Personally, I've concluded that the risk from cellphones is outweighed by the benefits. I use one, as do other members of my family. I also think that attempts to significantly reduce use of microwave technology are not motivated by scientific evidence, but rather by other political and ideological factors.

Bob

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