Bluetooth: A Matter of Life and Death?

SPEAG/IT'IS Ad Campaign

June 2, 2006

We've been tempted to think that some junior X-men have jumped off the big screen onto the streets of New York City. Well, not really, it just seems like that with so many people linking Bluetooth headsets to their cell phones.

The Bluetooth device transmits at very low power —no more than a couple of milliwatts. Some flash a cool blue light. At these levels, they should be fairly innocuous. Or so we thought until a few days ago when we were thumbing through the most recent issue of the *IEEE Microwave Magazine*, which goes to more than 12,000 RF engineers. A two-page, four-color ad caught our attention, and not just because it features a cartoon character which bears a striking resemblance to Angelina Jolie. It was more because the ad implies that designing a Bluetooth headset is a matter of "life and death."

The ad was unsigned. No attribution of any kind. But with a little reverse engineering (thanks to the ad index in the back), we soon learned that Zurich-based Schmid & Partner Engineering, better known as Speag, was behind it.

Speag sells high-tech dosimetry systems to the cell phone industry and is closely associated with IT'IS, the Foundation for Research on Information Technologies in Society which itself is affiliated with industry. (Niels Kuster runs both IT'IS and Speag.) For instance, former Motorola honcho Q. Balzano is an IT'IS vice president and Mike Milligan, the head of the Mobile Manufacturers Forum (MMF) in Brussels is another board member.

The subtext of the Speag ad is that if you don't design Bluetooth antennas correctly, your customer may suffer. A most surprising and contrarian message from a crew allied with industry. And for that very reason, a message that should be taken seriously.

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In a paper presented last fall at the URSI meeting in New Delhi, IT'IS' Sven Kuehn and Kuster showed that the maximum 1 g SAR of a Bluetooth device can reach 20 mW/Kg. That's not very high, though if Sweden's Leif Salford and Bertil Persson are right, that's enough energy to cause leaks in the blood-brain barrier and to kill off neurons.

How much RF exposure are those urban, Bluetooth-equipped cyborgs getting over the course of a day? We asked Kuehn whether the devices keep transmitting even when the user isn't talking on his cell phone (like a cell phone on standby). It's impossible to generalize, he replied.

We continue to be dismayed by how little we know about exposures and possible effects. Against this backdrop, Motorola's and the rest of the industry's calls to stop RF health research sound more and more bizarre.

Bluetooth, IT'IS, Speag, Niels Kuster, Q. Balzano, MMF, Leif Salford, Mike Milligan,

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