

RFID-Zapper Shoots to Kill

Two students turned a disposable camera into a gadget that shocks the life out of RFID tags; now, a privacy advocacy group hopes to sell devices based on their design.

By Jonathan Collins

Jan. 23, 2006—German privacy advocacy group [FoeBuD](#) plans to manufacture and sell a device that consumers could use to disable RFID tags permanently. The gadget—called the RFID-Zapper—was developed by two students in Berlin, Germany.

FoeBuD says it wants to manufacture the RFID-Zapper and sell it at its online store. The group met with a hardware developer last week, but says it has no timescale for production or product price yet.

The creative minds behind the RFID-Zapper belong to Tim and Chris (the pair would not divulge their last names), also known, respectively, as MiniMe and Mahajivana. The young inventors say their motivation was concern over the potential use of RFID tags on individual items purchased by consumers. "We read a lot about RFID and its future use and got worried," says Mahajivana. "Some easy way of getting rid of them had to be found. Frying them in the microwave oven wouldn't be an adequate solution most of the time, as it could damage the already-purchased item the tag was attached to. But causing the chip to burn through somehow seemed to be a good idea."

The duo's prototype uses the casing and electronics of a single-use camera with a flash. Within the next few weeks, the duo claims they will post online instructions explaining how others can build a copy of their tag killer for their own use. "Whoever wants to build an RFID-Zapper is welcome to do so, as long as he's not making any profit with it," says Mahajivana.

The design replaces the camera's built-in flash with a coil of coated copper wire. The inventors removed the film and, after disconnecting the camera's capacitor from the flash, soldered one end of the coil to the capacitor and the other end to one pole of a switch used to turn the device on or off. They then connected the switch's remaining pole to the capacitor's other terminal. Once the camera is reassembled and held very close to an RFID tag, the duo explains, pressing its shutter button causes the coil to emit an electromagnetic pulse that will overload the tag's circuitry and destroy its ability to function.

After zapping several tags, MiniMe and Mahajivana used an RFID-Tag-Finder to test them for signs of life. "It finds passive RFID tags operating at 13.56 MHz, which are the ones we can zap," explains Mahajivana. The inventors built the RFID-Tag-Finder based on details published in an [article](#) appearing on the Web site of *C'T*, a technology magazine.

The students first posted [their own article](#) about the project on Dec. 27 on the Public Wiki Web site. The site was developed for the [22nd annual Chaos Communication Congress \(22C3\)](#), a four-day conference organized by the [Chaos Computer Club \(CCC\)](#), which bills itself as Europe's largest hacker group. Since then, the two developers say, their posted article has had 35,000 hits.

On the Web site, RFID-Zapper's inventors note that users of their creation should exercise some caution: "Modifying a single-use-camera into an RFID-Zapper isn't completely free of risks," they warn. "If the capacitor is still charged fully or partly, you might catch yourself an electric shock. We also recommend against using the RFID-Zapper on RFID-Tags found within electrical devices, for these are likely to suffer damage, as well. You also shouldn't use RFID-Zappers too near to electric devices, especially if they are expensive. You also shouldn't use it near any magnetic data storage, like floppy disc, MCs, hard discs, credit cards, streamer-cartridges and so on. And don't try it near your grandpa's pacemaker or other sensitive medical equipment either!"

In the future, the developers say they have ideas about adding other functions to the RFID-Zapper. "For quite some time, I've been thinking about some further use of the concept. A combination of a tag-finder and a tag zapper would be cool, as it would be a design that would allow small mass production," says Mahajivana. Given the close proximity to the tag required for the RFID-Zapper to work, a tag finder would help determine the location of an RFID tag to zap.

Although the RFID-Zapper's design is complete, the duo says they have thus far been able to test their zapper only on 13.56 MHz tags, as those have been the only kind they have had access to. They say they would welcome the chance to test their device on tags operating at other frequencies, however, and have asked visitors to [the RFID-Zapper Web site](#) to provide the team with such tags.

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