

Re: intentional EMI

Source: <http://sci.tech--archive.net/Archive/sci.electronics.components/2005-07/msg00136.html>

- *From:* dplatt@xxxxxxxxxxxxx (Dave Platt)
 - *Date:* Thu, 21 Jul 2005 19:01:17 -0000
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In article <uYPDe.190298\$75.8223760@xxxxxxxxxxxxx>, victim <qwerty97@xxxxxxxx> wrote:

>Hi ,

>this is the first time i send a message on this news group, buy the way i'd

>like to know :

>if it's possible to remote controlling XP, buy sending intentional EMI using

>computer communication protocol.

Well, I think there are several issues here. It depends whether you're talking about someone **controlling** a PC running XP by sending EMI to it, or whether you're talking about information leakage from your XP system by having it generate EMI which could be interpreted elsewhere.

To the first – somebody controlling your PC with intentional EMI – I believe that this is **extremely** unlikely (to the point of being near-impossible) in the general case of a standard PC with known-to-be-good software running on it. PC's are not designed as radio receivers, they aren't designed to be sensitive to external RF, they generate a large amount of RF noise within themselves as a side-effect of their digital circuitry.

In most countries PCs are required to be shielded and filtered to prevent their internal RF noise from getting out of the case in sufficient strength to interfere with other devices, and this same shielding and filtering makes it difficult for external RF to get into the case.

A very strong external RF field could, quite possibly, get into the PC well enough to disrupt its operation by "brute force". Any such effect would almost certainly be random, chaotic, and unpredictable... and hence it would tend to show up as software errors or system crashes. I wouldn't personally consider this to be "remote controlling" of the system, any more than I'd say that one would be "remote controlling" someone driving a car by throwing a brick through the windshield and causing a crash :-)

Re: intentional EMI

As you apparently know, it's possible for a PC's own "side effect" radio emissions to be detected, and in some cases interpreted by an external listener – e.g. reconstructing the image displayed on the screen. This doesn't allow the external listener to control the PC, just to monitor its activity. There's no good cure for this other than improved RF shielding and filtering of the PC.

There are, I'm afraid, a lot of ways in which a PC's security can be compromised, allowing the PC to be controlled remotely over the Internet and its content to be spied upon. This doesn't involve radio (or, at most, only incidentally, if you happen to be using a wireless network connection rather than a wired Ethernet). It involves "spyware", "trojanware" (viruses or worms, which install themselves in your OS or applications and then contact a remote site and allow the remote site to control your PC, snoop on your keystrokes, scan your registry for passwords, etc.).

Such infections by spyware and trojans is very, **very** common these days. A high percentage of in-the-home personal computers on broadband (cable and DSL) networks are infected in this way. I've heard reports of PCs which were found to be infected with many **hundreds** of different viruses, spyware modules, and other bits of malware. Such infections can slow down or disrupt the operation of XP so badly that the system becomes unusable.

The problem on many networks is so bad that if you take a new PC, put a right-out-of-the-box Windows XP installation on it, power it up, hook it to your network, and immediately run Windows Update to download the Microsoft security updates to XP... you're probably too late. By the time you finish downloading the security updates, there's a good chance that at least one piece of malicious software on another system on the Internet has scanned your machine, found a security vulnerability, and has infected your machine. You're "owned", and it's possible in principle for the attacker to monitor every keystroke you enter, from there on out.

>I've been damaged 2 hard disk from radio amateur on the zone, but i don't
>know how to localize it 8(

If your systems have been physically damaged by strong RF fields, the best remedy is to improve your filtering and shielding. Add clamp-on ferrite "cores" to every wire going into or out of the PC case (power, keyboard, mouse, Ethernet, monitor). Buy and use a good RF/EMI plug-in filter for your AC mains power.

To be honest, though, I'd look to other causes to explain the damage to your hard drives.

>and not mentioning the annoying problem about evedropping from crt
>emi...i've read something on internet about emi+crt and "intentional emi"
>and i found that very useful, but i'd like to know the opinion of the people

Re: intentional EMI

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>that count on this matter, because this is a very privacy problem for me and
>I don't see anybody doing something about designing new component less emi,
>or jammer to protect from sendin emi.

I truly don't think you have to worry about somebody controlling your PC via EMI signals. It's technically extremely difficult to do (to the point of it being implausible in practice).

The same is true, to a lesser extent with regards to privacy (picking up RF leakage from your PC and spying on you with it). It's certainly possible but it think it's unlikely.

For another thing, there are **far** greater risks to your PC's integrity and privacy than RF. Viruses, spyware, trojan-horse software, and the like are **very** common, and are a very real hazard to the typical PC user these days. That's where all of the attention is going, because these are much larger risks to your privacy than EMI detection by a nearby listener. You don't spend a lot of time worrying about hangnails and blisters, when your arm is on fire :-)

If you don't already have a good, modern, up-to-date virus scanner and malware/spyware detector, get one right away... or unplug your PC and leave it powered off until you do.

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Dave Platt <dplatt@xxxxxxxxxxxx> AE6EO

Hosting the Jade Warrior home page: <http://www.radagast.org/jade-warrior>

I do not wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

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• *References:*

◆ *intentional EMI*

◇ *From:* victim

- Prev by Date: *intentional EMI*
- Next by Date: *Need help identifying resistor*
- Previous by thread: *intentional EMI*
- Next by thread: *Re: intentional EMI*
- Index(es):
 - ◆ *Date*
 - ◆ *Thread*