Krunch <adrien@kunysz.be>
DC4420, London, November 2013

Background

- ▶ badBIOS twatting nonsense
- ▶ is utrasound communication possible with commodity hardware?
- ▶ many people (used to) think it's not

Demo

- generate a 16-20kHz tone (Audacity,. . .)
- watch for it on spectrum analyser (Audacity, jaaa,. . .)

Similar experiments

http://blog.sesse.net/blog/tech/2013-11-02-13-25_badbios_and_ultrasound.html
http://fileperms.org/badbios-high-frequency-malware-communication-test/
http://holmes.meklu.org/static/highfreq/

More complete experiment

Michael Hanspach and Michael Goetz: On Covert Acoustical Mesh
Networks in Air
http://www.jocm.us/index.php?a=show&catid=124&id=600

Commercial use

- Sonic Notify can use "any speaker" to communicate with smartphone applications via inaudible signals: https://sonicnotify.com/
- Furbys 2012 can talk with smartphones around 17.5kHz: https://github.com/iafan/Hacksby

Conclusion

- ultrasonic communication with commodity hardware is feasible
- don't trust signal processing^W^W experts from the internets
- looking forward to buggy applications and IDS that can be exploited via ultrasound

Questions?

- `adrien@kunysz.be`
- Krunch on Freenode