# The NSA Playset

## a year of toys and tools

Michael Ossmann
Great Scott Gadgets

This presentation includes no content from leaked, classified documents.

It does contain information about leaks.

It's only

metadata.

[UNCLASSIFIED]

# HACKRF

## Software Defined Radio Peripheral

**(U//FOUO)** HACKRF is a Software Defined Radio peripheral capable of transmission or reception of arbitrary radio signals from 10 MHz to 6 GHz.

**12/31/13**

**(U//FOUO) HackRF One with optional enclosure**

**(U//FOUO)** HACKRF is an open source hardware platform designed to enable education, experimentation, and deployment of Software Defined Radio (SDR) technology.

**(U//FOUO)** HackRF One Features:

- 10 MHz to 6 GHz operating frequency
- half-duplex transceiver
- portable
- Hi-Speed USB 2.0, bus powered
- low cost
- open source
- works with GNU Radio
- 20 MHz bandwidth
- 8 bit resolution
- external clock input and output

**(U//FOUO)** Applications:

- spectrum analysis
- vector signal analysis
- vector signal generation
- reverse engineering
- spectrum sensing
- wireless security testing
- radio research and development

**(U//FOUO)** HACKRF makes cutting edge SDR technology available to everyone. Now you can build any radio you want.

**Status:** Available Q1 2014
http://greatscottgadgets.com/hackrf/

**Unit Cost:** $300 estimated

**POC:** [redacted], S32242, [redacted], [redacted]@nsa.ic.gov

**HackRF is open source hardware and software. Anyone may use it, build it, or modify it, not just the NSA.**

[UNCLASSIFIED]

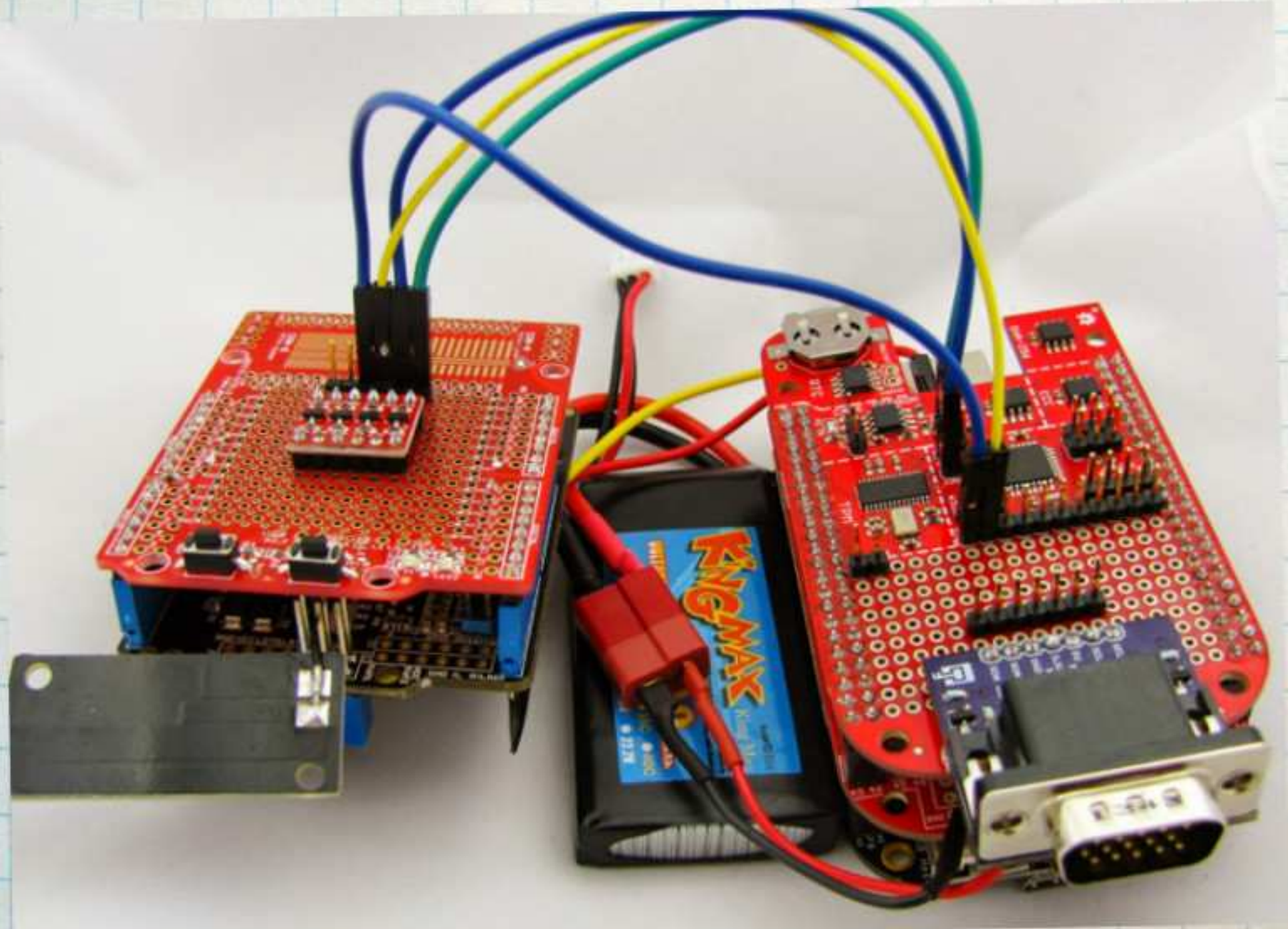
# Dean Pierce

https://blogs.oracle.com/DanX/entry/toorcon_11

# SLOTSCREAMER

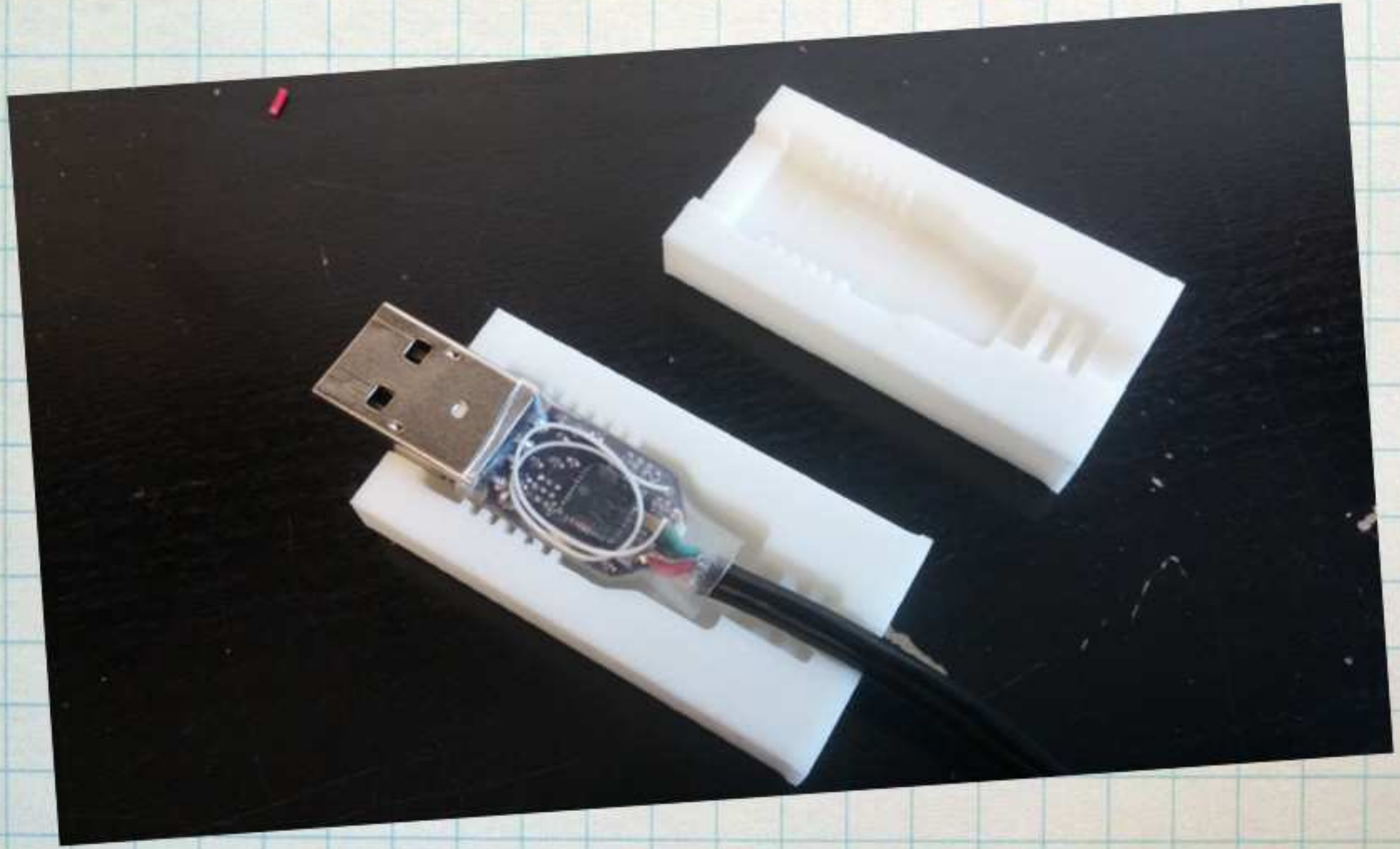
Joe FitzPatrick & Miles Grabill

# CHUCKWAGON



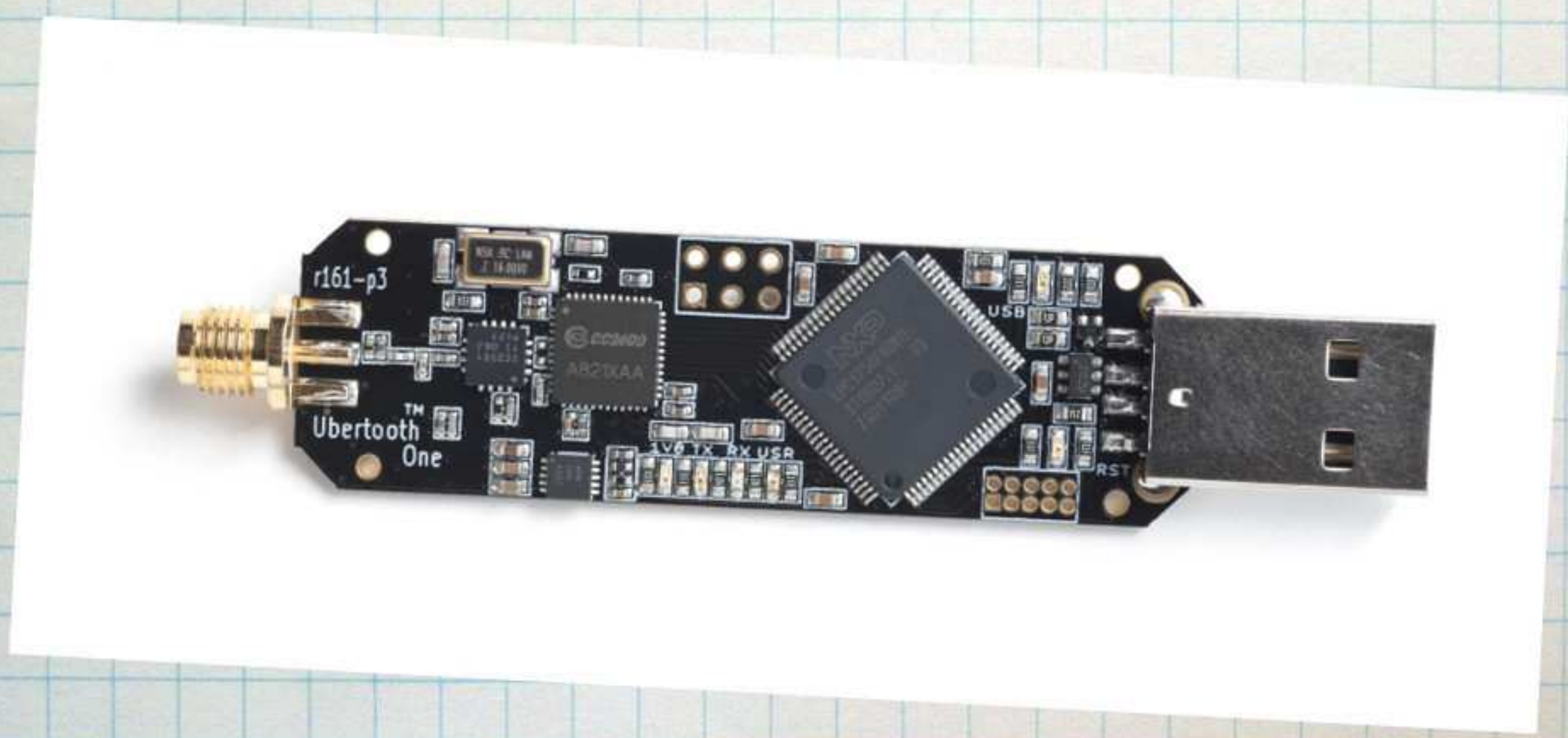

Josh Datko & Teddy Reed

# TURNIPSCHOOL



Dominic Spill & Michael Ossmann

# TINYALAMO




Mike Ryan

# KEYSWEEPER

Samy Kamkar

# LÉVITICUS

http://bb.osmocom.org/

http://www.youtube.com/watch?v=QNZUC9xqSkE

# TWILIGHTVEGETABLE

Dean Pierce & Loki

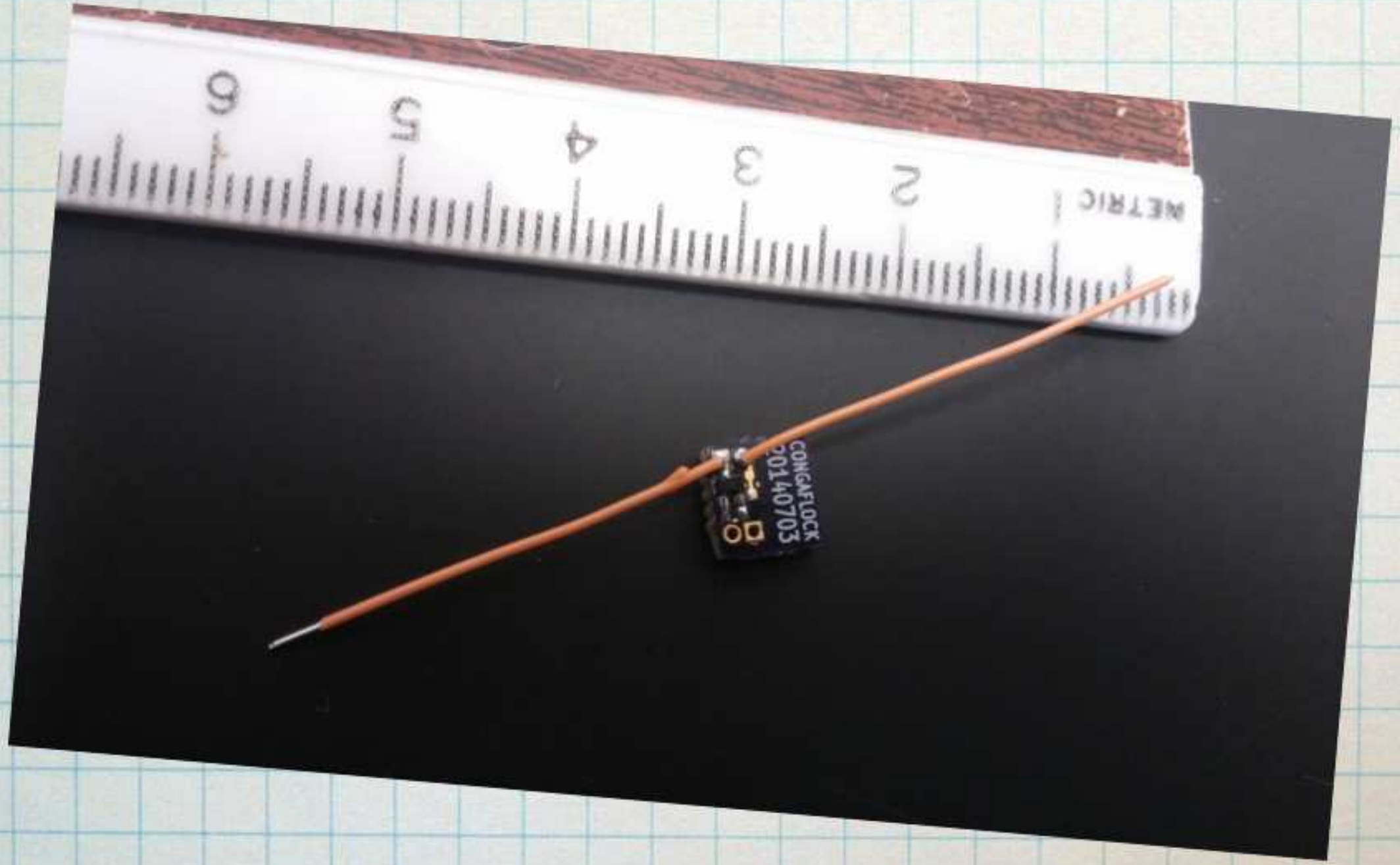
# DRIZZLECHAIR

Dean Pierce & Loki

# Porcupine Masquerade

Darren Kitchen & Piotr Esden-Tempski

# CONGAFLOCK

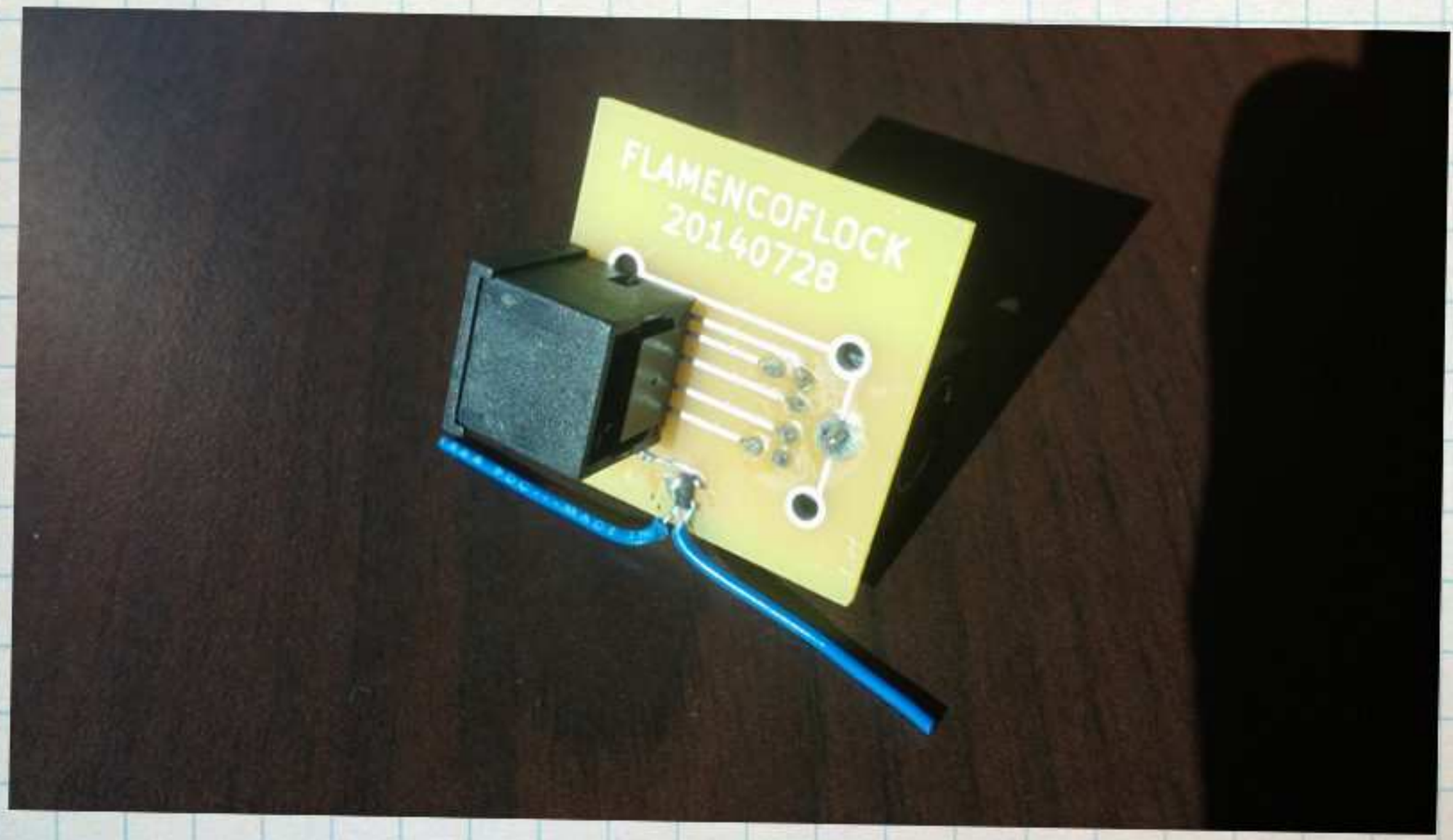



Michael Ossmann

# TANGOFLOCK

Michael Ossmann

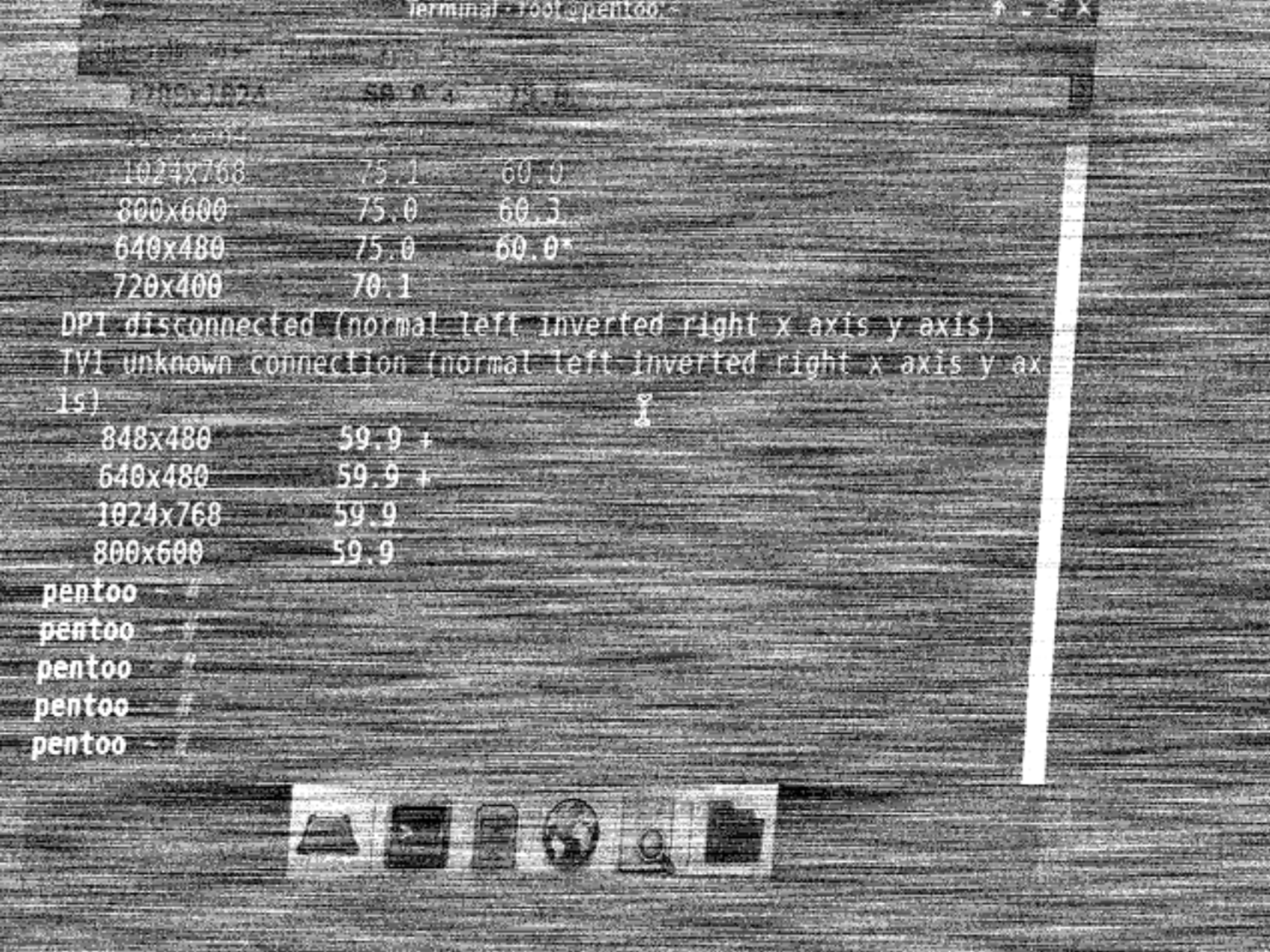
# FLAMENCOFLOCK




Michael Ossmann

# SALSAFLOCK

Michael Ossmann


Terminal - root@pentoo:~
1024x768 75.1 60.0
800x600 75.0 60.3
640x480 75.0 60.0*
720x400 70.1
DP1 disconnected (normal left inverted right x axis y axis)
TV1 unknown connection (normal left inverted right x axis y axis)
848x480 59.9 +
640x480 59.9 +
1024x768 59.9
800x600 59.9
pentoo ~ #
pentoo ~ #
pentoo ~ #
pentoo ~ #
pentoo ~ #

# the future

the future
more playset?

the future
more playset?
more
retroreflectors!

the future

more playset?

more retroreflectors!

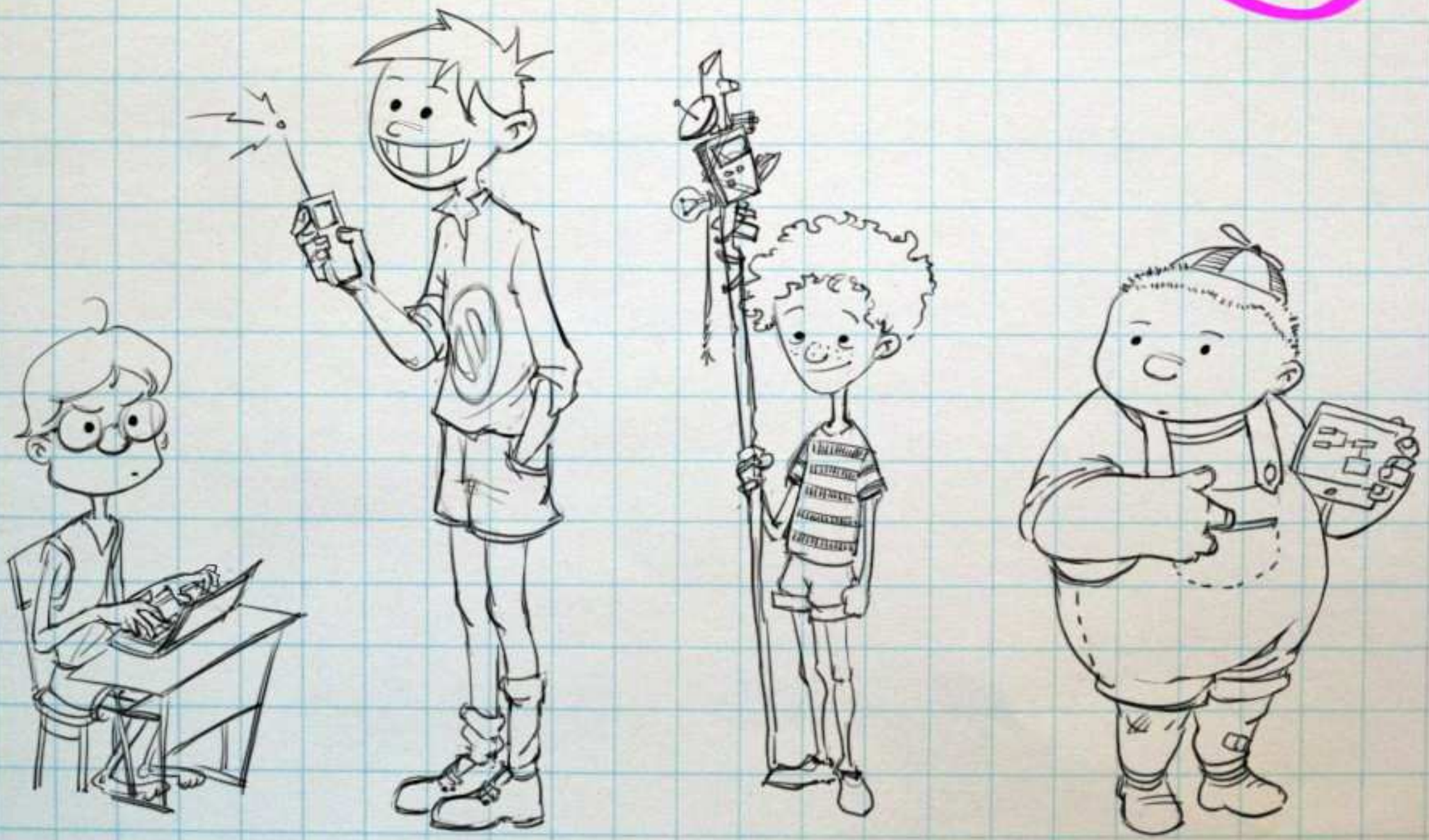
use by spooks?

# Thank You!

Dean Pierce

Nick Malar

Røøt Killah

and the whole NSA Playset crew

# nsaplayset.org