Secure centre of your home, powered by free software

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Turris Omnia

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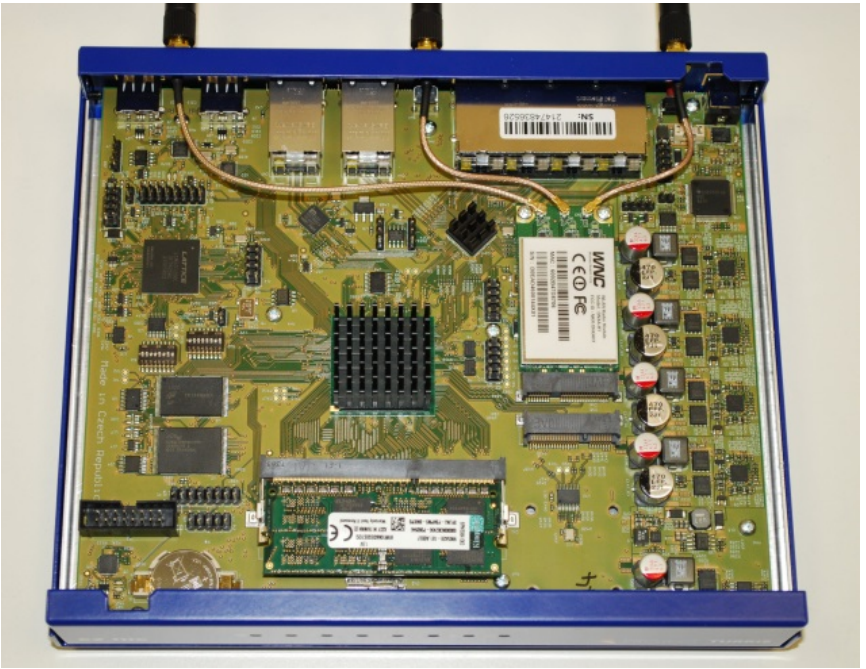
CZ.NIC | CZ DOMAIN REGISTRY

The association

- CZ.NIC z. s. p. o., .CZ domain registry
  - since 1998
  - making Internet better and safer
  - CSIRT.CZ team
  - BIRD Internet routing daemon
  - KNOT DNS server and resolver
- CZ.NIC LABS means open source and free software
  - Turris is a part

```
root@misicoolbook ~ # networkctl status
●        State: routable
      Address: 37.58.253.246 on wlan0
               192.168.127.1 on virbr0
               2a01:729:2:aa12:f0bb:87ff:fe33:bbb7 on wlan0
               fd51:119f:637d:aa12::8fe on wlan0
               fd51:119f:637d:aa12:f0bb:87ff:fe33:bbb7 on wlan0
               fe80::f0bb:87ff:fe33:bbb7 on wlan0
      Gateway: 37.58.253.1 (CZ.NIC, z.s.p.o.) on wlan0
               fe80::da58:[illegible]fe00:451b (CZ.NIC, z.s.p.o.) on wlan0
          DNS: 37.58.[illegible]
```

PROJECT:TURRIS



How we started?

- Project:Turris
- WHY?

- 4 years ago
  - open source
  - updates!
  - data collection and analysis
  - Made in Czech Republic
  - research and non-profit
- "Where can I buy it?"

- buyable version for all
- keeping values and key features
- learning and improving

- started on **INDIEGOGO**
  - 857% means $1,2 mil
  - big raise and internationalisation of our community
  - change a lot in plans

ČESKÝ® VÝROBEK

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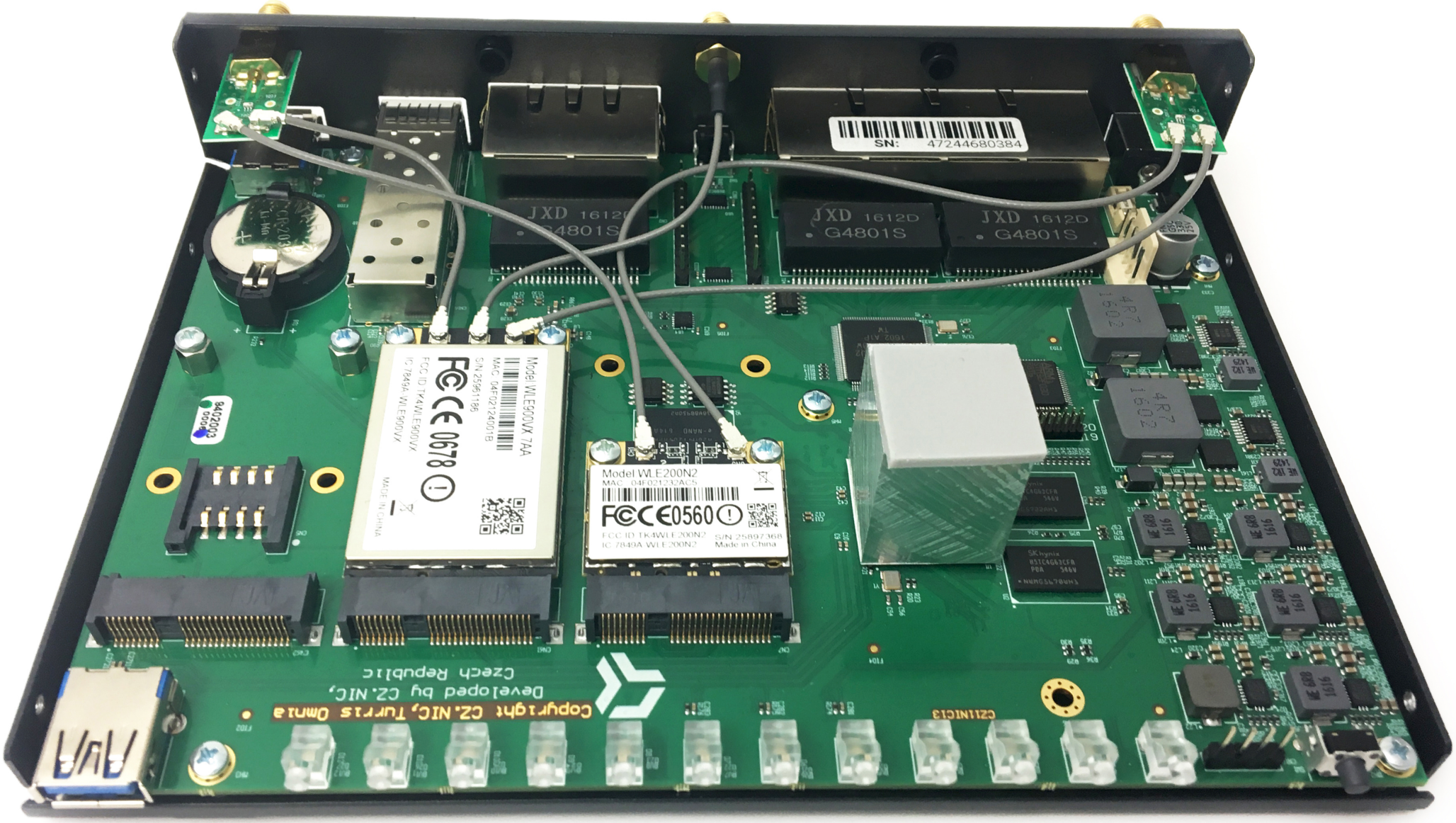


Making Omnia alive

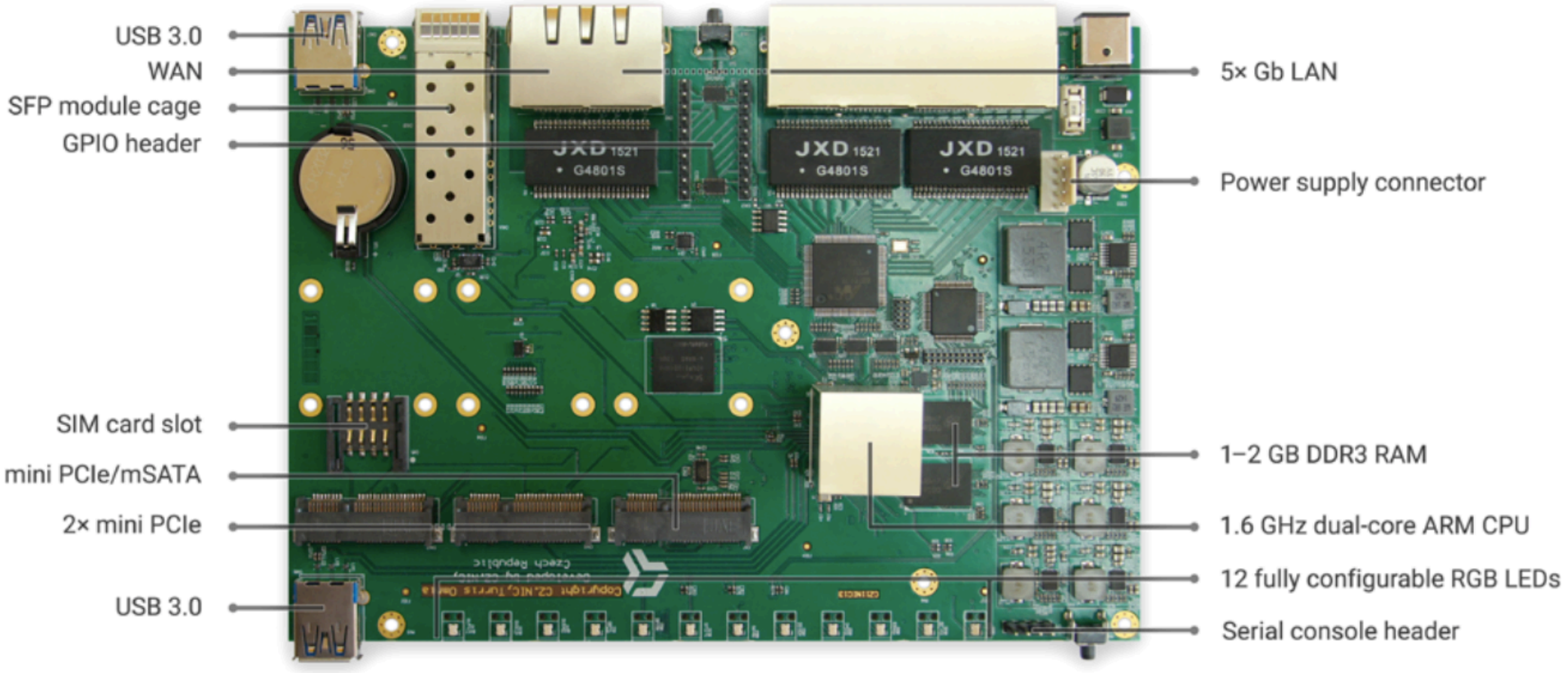
- design by Turris team in CZ.NIC
- components all around the world
- plain PCB in China
- Made in Czech Republic

- small batches
- schematics online
- PCB plan in the future (on T-shirts)

- 4382 pcs on IGG
- more than 1500 in retail
- working on next 5000 pcs batch

What does it have?

- 12 fully programable RGB LEDs with a button


USB 3.0
WAN
SFP module cage
GPIO header
SIM card slot
mini PCIe/mSATA
2× mini PCIe
USB 3.0
5× Gb LAN
Power supply connector
1–2 GB DDR3 RAM
1.6 GHz dual-core ARM CPU
12 fully configurable RGB LEDs
Serial console header

What's running on it?

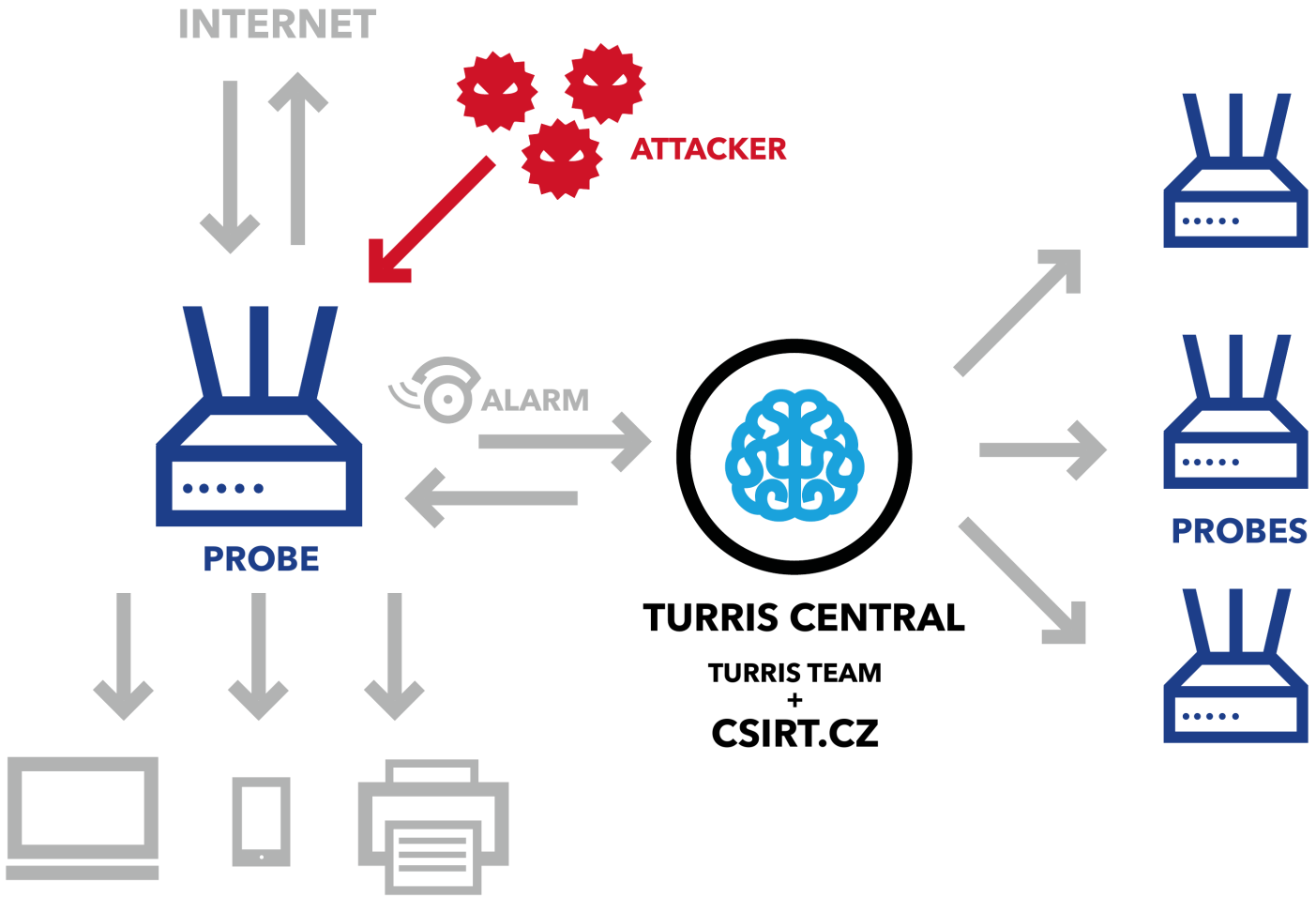
- Turris OS based on OpenWRT
  - easy config thanks to Foris
  - advanced settings in LuCI or terminal
  - snapshots thanks to btrfs
    - restore from USB drive saves it all
  - comfortable LXC integration
- can route 1 Gbit/s
- HW and SW expandability

Security

- by design of HW and a service
- automatic updates bring fast security fixes and new features
- collective firewall
- data collection
- honeypots and minipots
- using know-how from running CZ Internet
- syslog-ng
- Suricata IDS/IPS

How the Project Turris works?

Complex secure ecosystem consisting of ~~2000~~ pcs secure-by-design routers (probes) and Turris Central



What is Turris central?

Updates, updates, updates…

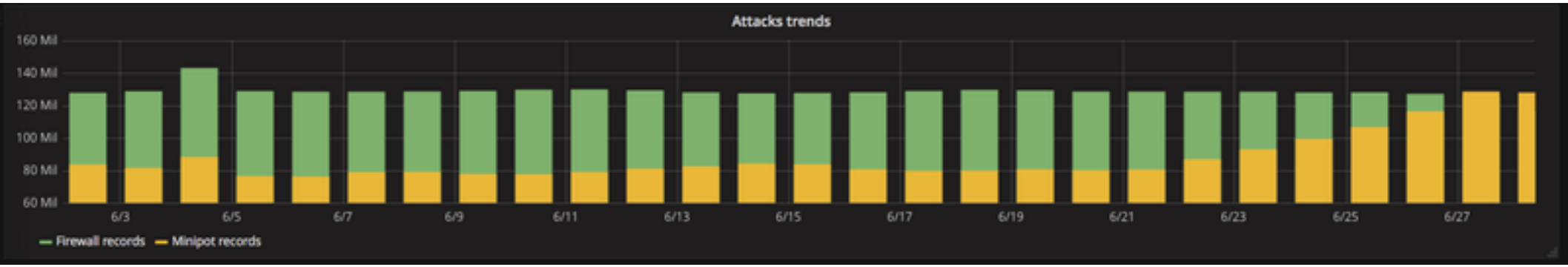
- instant security fixes
- regular updates every 14 days
- new features every month

Collective firewall

- rules made by Turris team for all
- based on collected data
- better thanks to CSIRT.CZ

Data collection

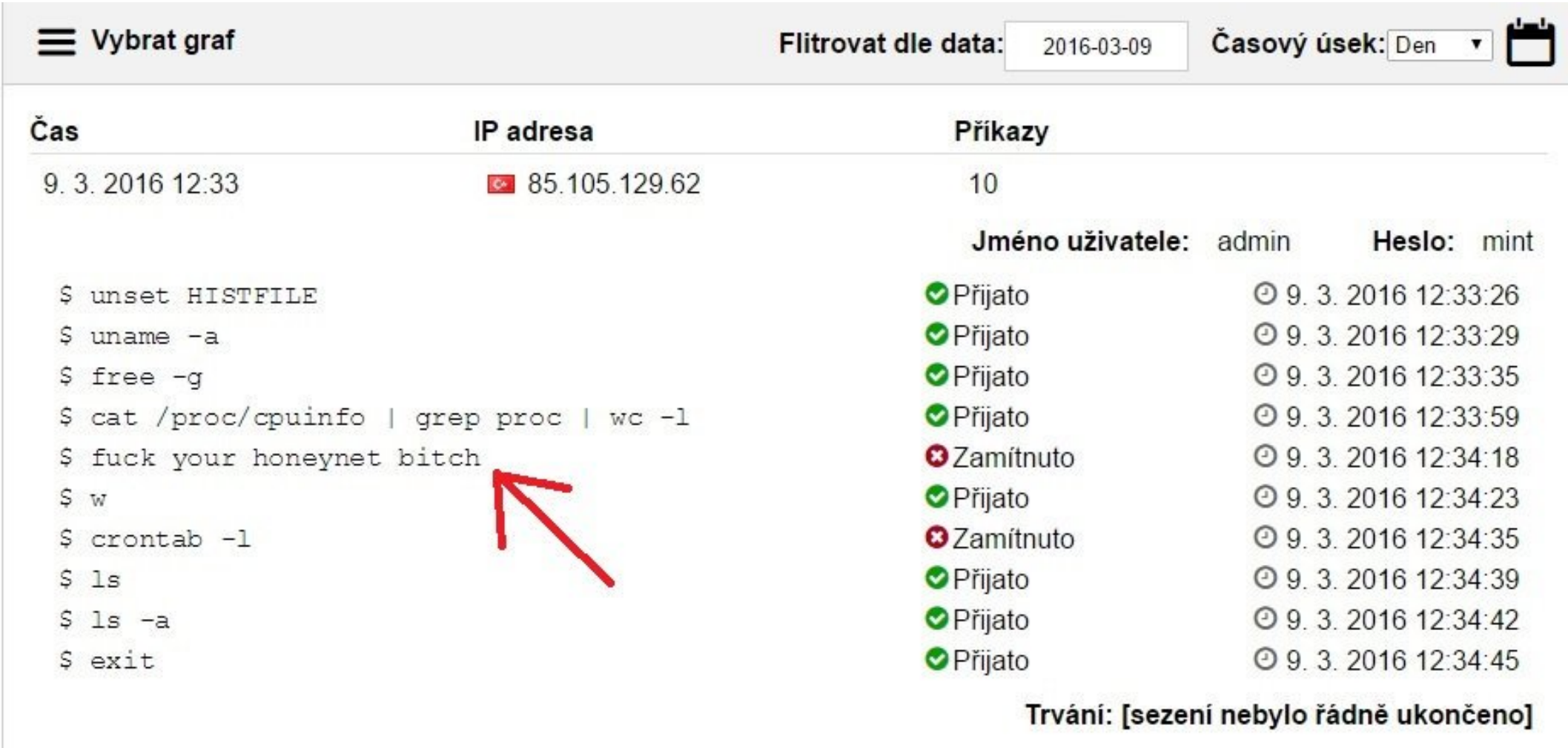
- anonymised data about attacks
- no ports 80, 8080, 443…
- mainly telnet, SSH
- we know MIRAI well
- we are trying to recognise new botnets and malware



Honeypots/minipots as-a-service

- bad guy forwarded to our servers
- no possible harm to you
- not using power of your system
- logging their activity
- making fixes for all

How it can look?



@Buritos007 - user on Twitter

Parental control

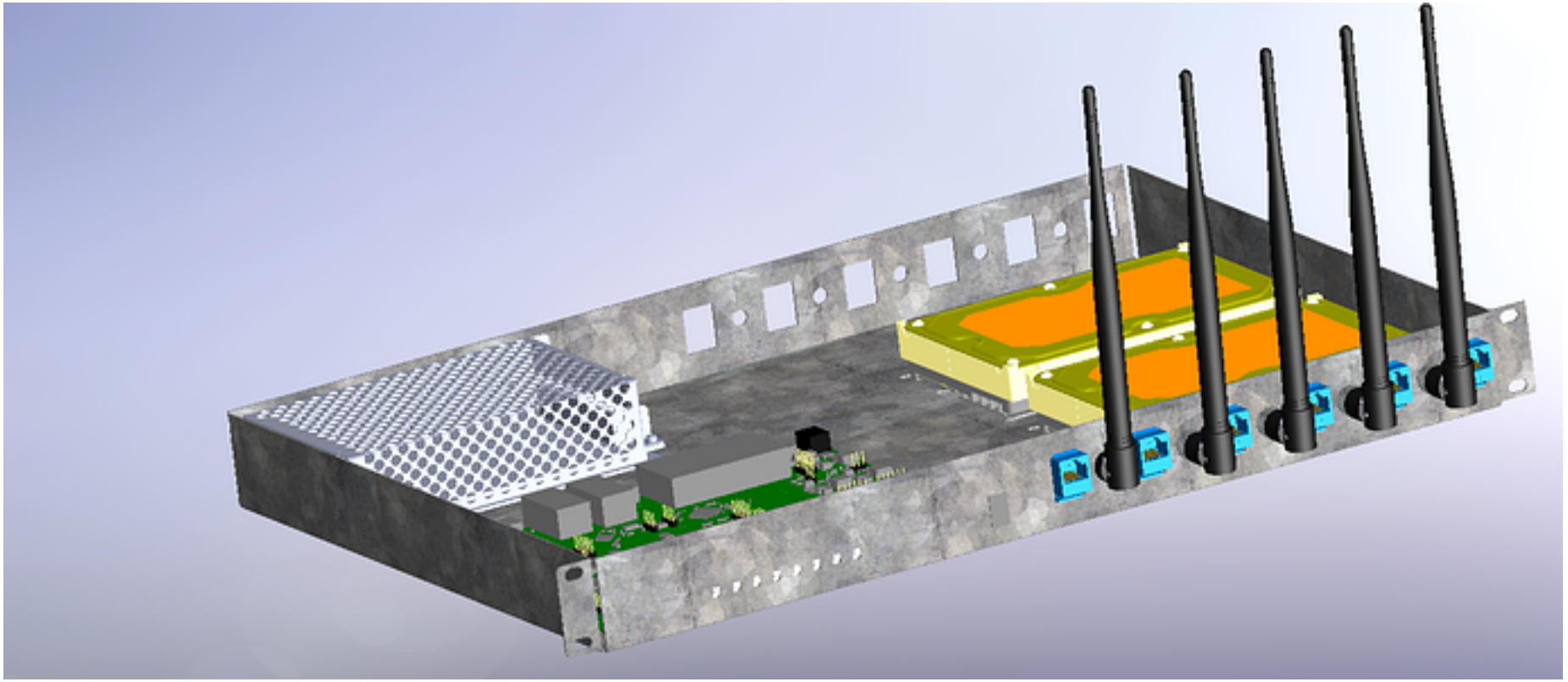
- easy-to-use
- "foolproof"
- "bulletproof"

- starting with new device detection

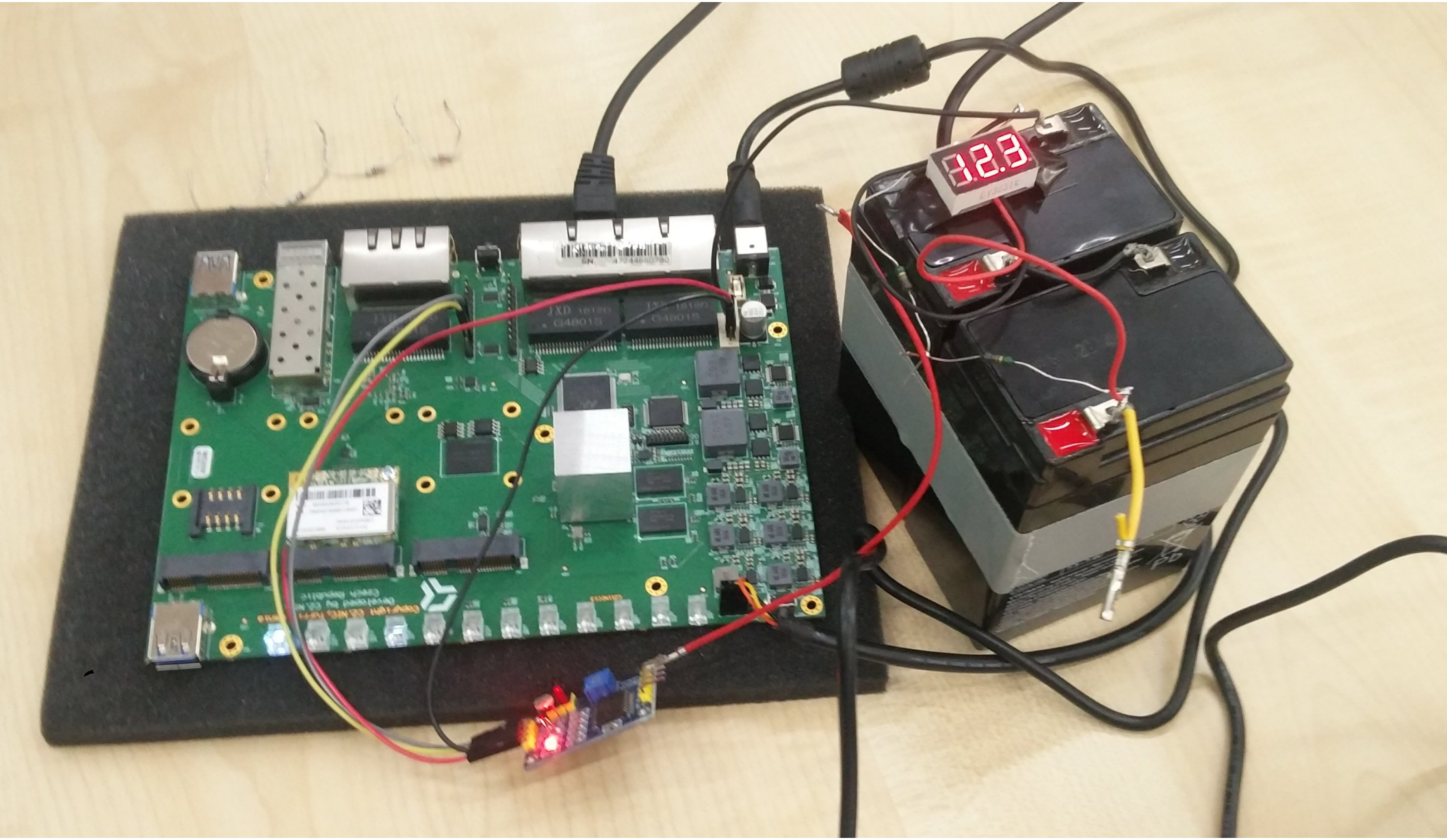
Suricata, syslog-ng and more….

- workshop
- today
- 16:20

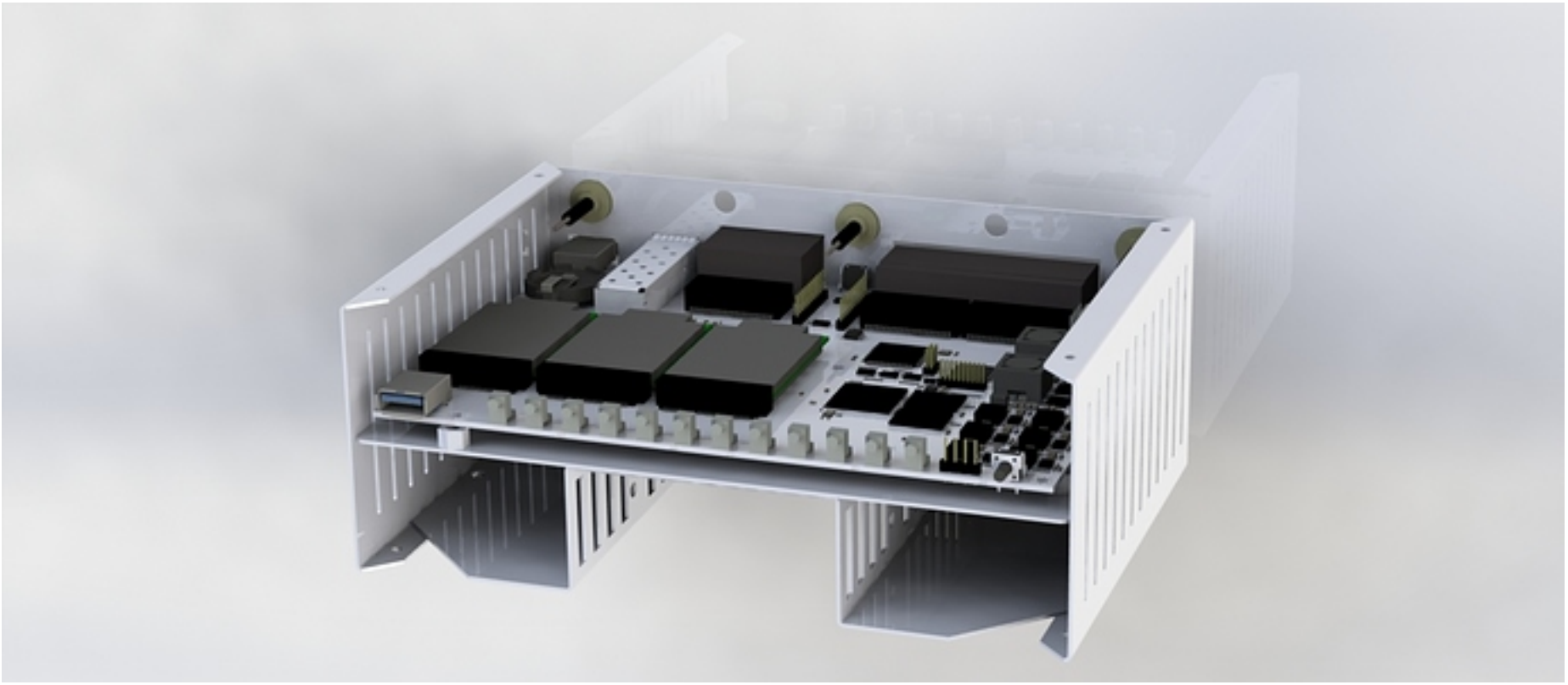
- Michal Hrušecký, Turris developer



linomaniac - forum user



Jarda - hackathon attendee



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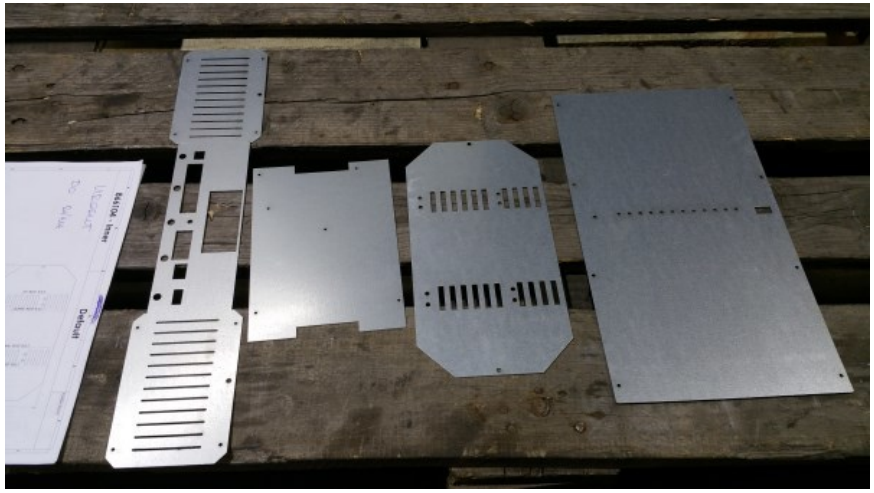

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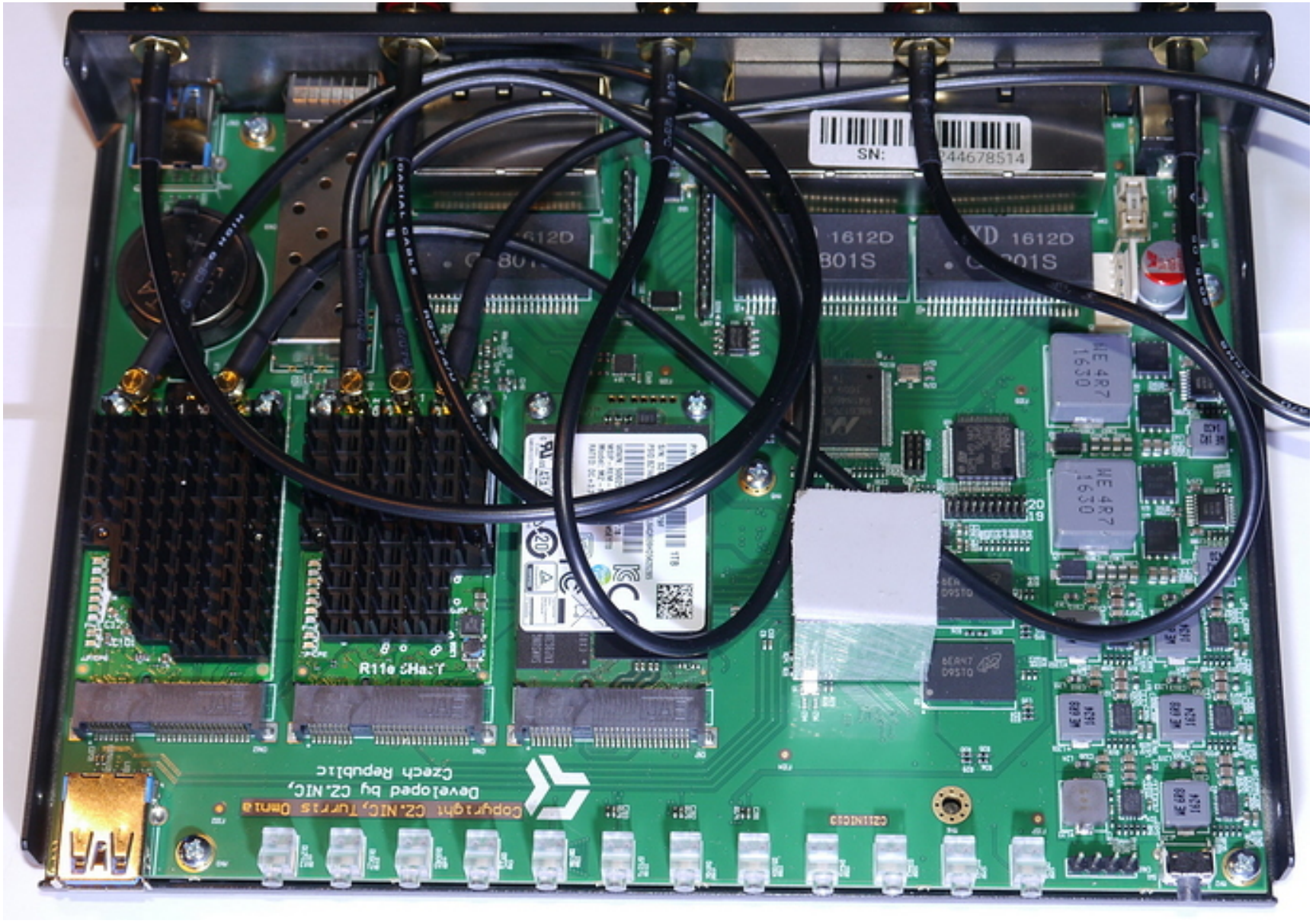
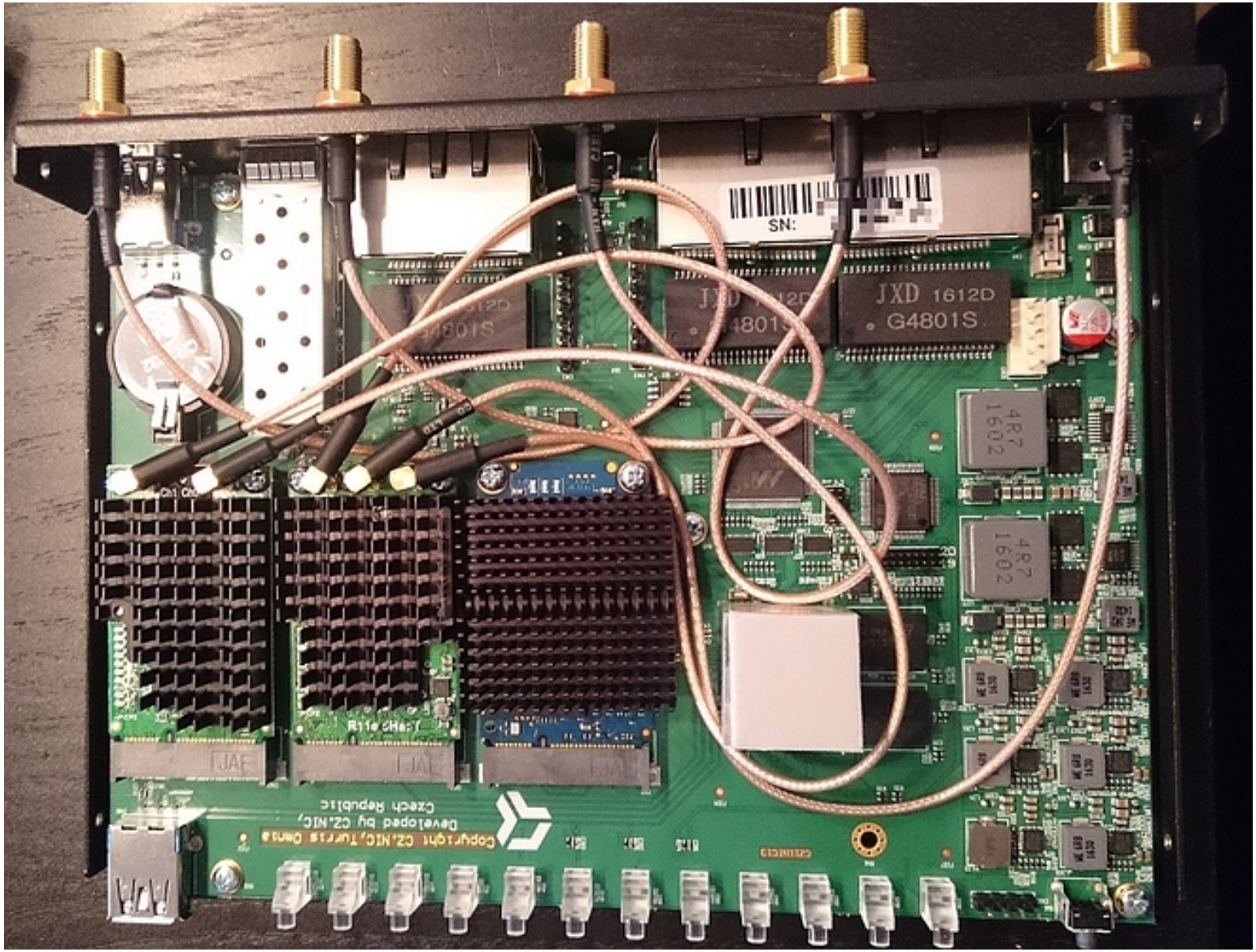


Tom - forum user



quietsche - forum user

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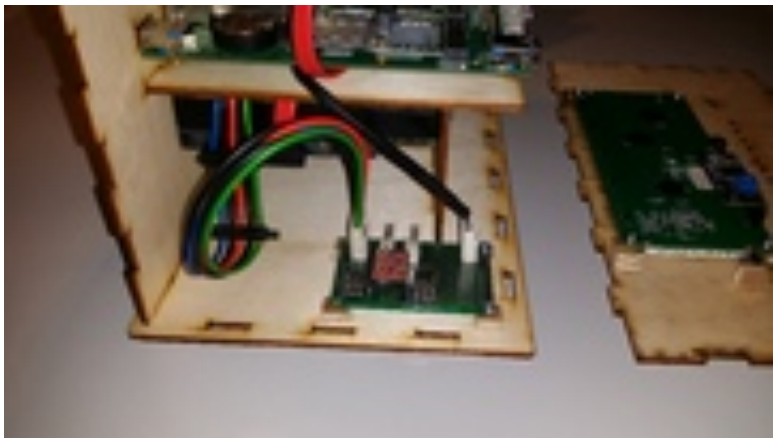
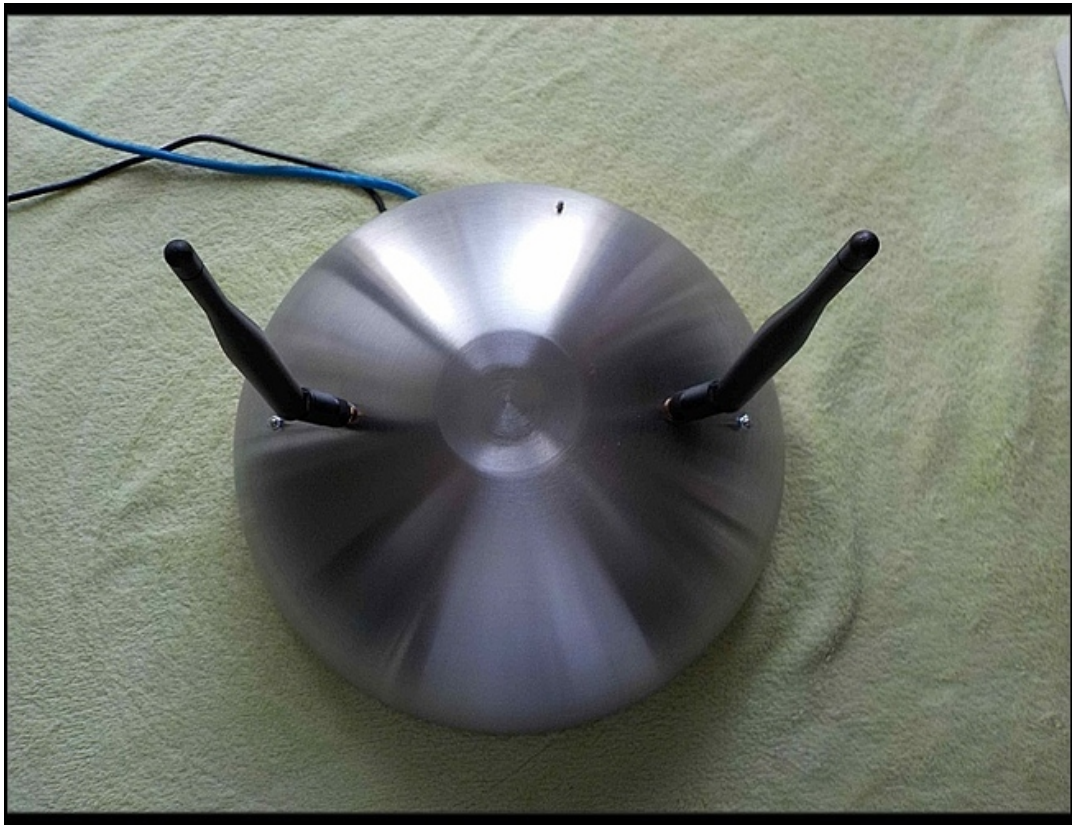
DarioX7 - forum user - model



DarioX7 - forum user - making



it007 - forum user

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Thank you for you attention!

I will gladly answer your questions…

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