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OPENWIFI

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OPENWIFI

- **WHAT**
- **PROGRESS**
- **OPEN QUESTIONS**

WHAT IS OPENWIFI?

THE WORLD'S 1ST FREE AND OPEN WIFI CHIP DESIGN





UGent, CUHK (Honkong), CUHK (Shenzhen),
Northeastern university, Stony Brook university,
Michigan State university, Trinity College Dublin,
University of Massachusetts, Danang University
(Vietnam), Tsinghua University, Nanjing University,
Wuhan university, BUPT (China), UST Korea,
University of Dortmund, unibs (Italy), Loughborough
University, University of Liverpool, etc.

Also many industrial companies.

On github (17/05/2021)
SW+HW repositories

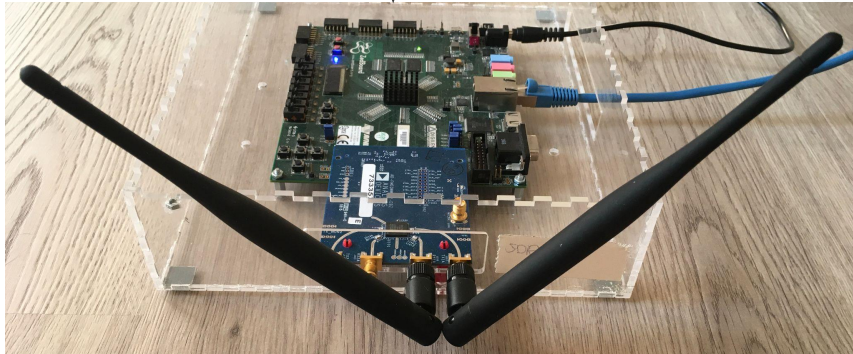
- 1.8K+0.2K stars
- 253+83 forks
- 96+27 watch
- 43+19 issues closed

Rank 2~3 of Verilog
topic on github:
<https://github.com/topic/verilog>

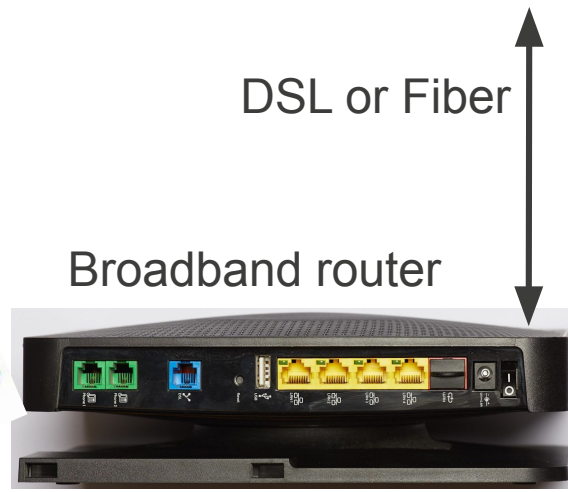
openwifi AP in 3 steps!

(DO check your local micro-power ISM band regulation)

From github



(COTS FPGA board. **Not** from us)



Broadband router

DSL or Fiber

Power ON!



SSID: openwifi

PROGRESS

Born “outdated”: 802.11a/g, the end of 2019

Catching up the state of art:

- 802.11n (**nlnet**) -- done
- Packet aggregation (AMPDU) -- on going
- 802.11ax/WiFi 6 -- basic PHY, end of 2021
- MIMO -- on going

Becoming unique compared with COTS:

- Dedicated NIC/WiFi - CPU/ARM on-chip connection: real-time and low latency
- CSI sensing and anti-CSI-sensing: CSI fuzzer
- IQ sample: triggered instead of streaming
- Fuzzing: low/deep level
- You ideas/applications matter!

OPEN QUESTIONS

From open source project to a real chip?

- Not just click the button
- People and funding

Sustainability?

- Can open wifi chip be a successful business? Game of volume?
- Swim in **red sea** or **blue sea**



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embracing a better life