

Renodepedia - From Zephyr's structured data to traceable and testable open hardware

The Zephyr Project, 2022-11-03

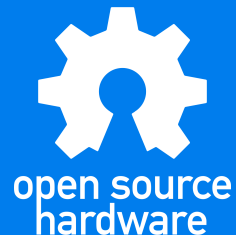
Peter Zierhoffer, pzierhoffer@antmicro.com

Michael Gielda, mgielda@antmicro.com



BACKGROUND

- Antmicro's work spans across a variety of hardware: ARM, RISC-V, other, MCUs, application processors, GPUs, FPGAs, AI accelerators
- The entire company is built around open source and understanding how things work
- The Renode simulator was an internal tool to increase that understanding and give us an edge
- Since its open sourcing it continues to be a big part of our open source hardware story



RENODE

- Open-source, software agnostic hardware simulator framework
- Turns HW into SW!
- Helps build spacecraft, robots, self-driving cars, wearables etc.
- Building block based, reflects structure of hardware
- github.com/renode/renode

A large, stylized white logo consisting of the letters 'R' and 'E' on a blue background. The 'R' is a thick, blocky letter with a curved top. The 'E' is composed of three horizontal bars of equal length, with the top and bottom bars being slightly wider than the middle one.

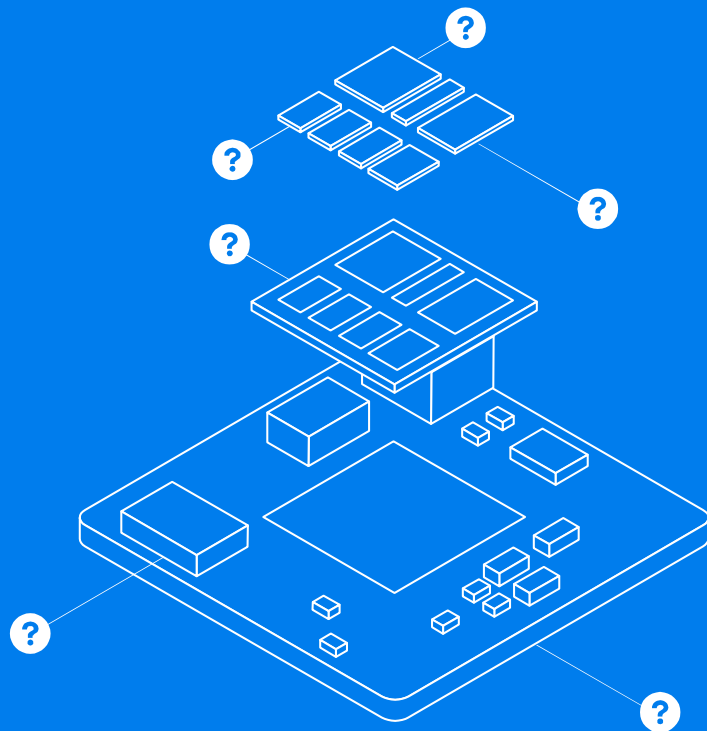
ZEPHYR

- Multi-platform, multi-vendor RTOS and ecosystem with a huge community
- Antmicro was an early supporter of Zephyr - Platinum member
- Working on real applications, integration with other frameworks, new platform porting
- Zephyr has structure (just like Renode) - tries to find good abstractions for wide range of HW!
- Helps you understand, reason about platforms in a structured way
- What if we added 2+2 together...



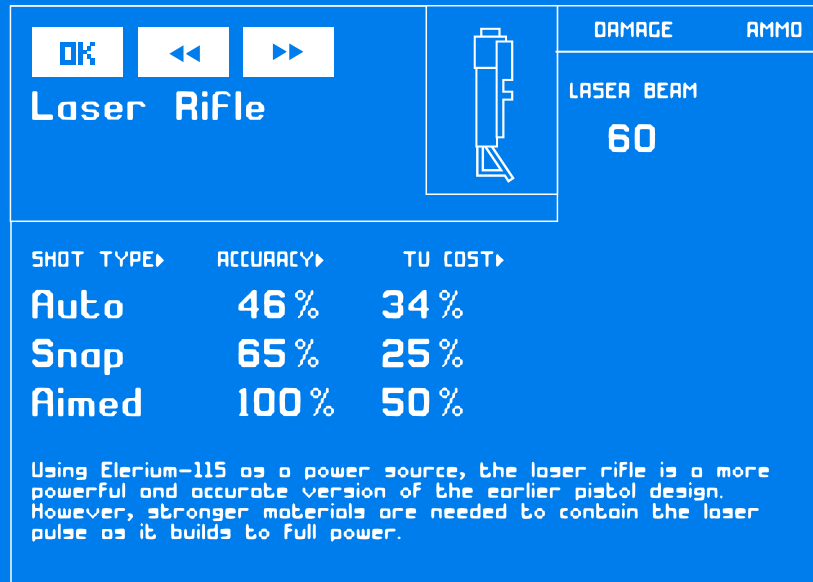
RENODEPEDIA

- The (soon) ultimate hardware resource
- We'll tell you more about it today: how it came about and how Zephyr was instrumental in building it
- Primary goal: understand hardware, and - thanks to Zephyr and Renode - experience it first-hand without having to physically have it



RENODEPEDIA - THE UFOPAEDIA OF HARDWARE

- The original inspiration for Renodepedia was a feeling I had playing old video games
- Browsing in-game lore, immersion, comparing parameters

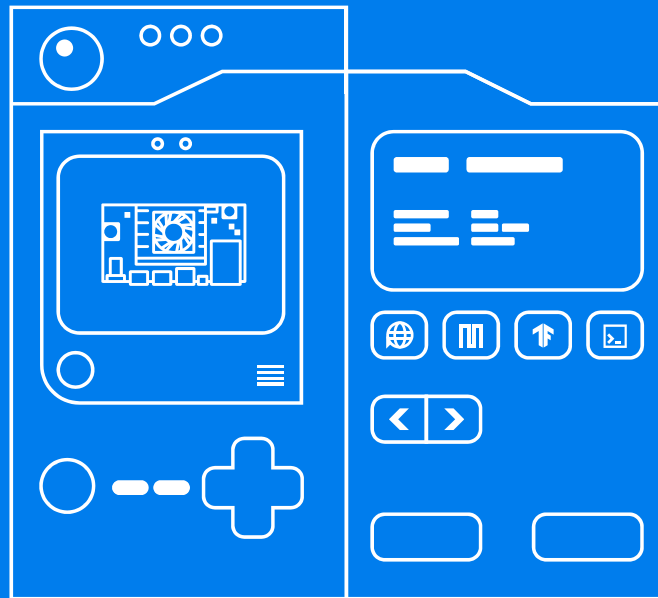


	DAMAGE	AMMO
Laser Rifle	LASER BEAM	60
SHOT TYPE▶	ACCURACY▶	TU COST▶
Auto	46%	34%
Snap	65%	25%
Aimed	100%	50%

Using Elerium-115 as a power source, the laser rifle is a more powerful and accurate version of the earlier pistol design. However, stronger materials are needed to contain the laser pulse as it builds to full power.

RENODEPEDIA - THE ~~UFOPAEDIA~~ POKEDEX OF HARDWARE

- embedded.fm podcast (airing later today):
 - “Can you tell us more about Renodepedia, or the Pokedex of hardware”



QUESTIONS?



zephyr-dashboard.renode.io/renodepedia



zephyr-dashboard.renode.io



github.com/renode/renode



**THANK YOU
FOR YOUR ATTENTION!**

