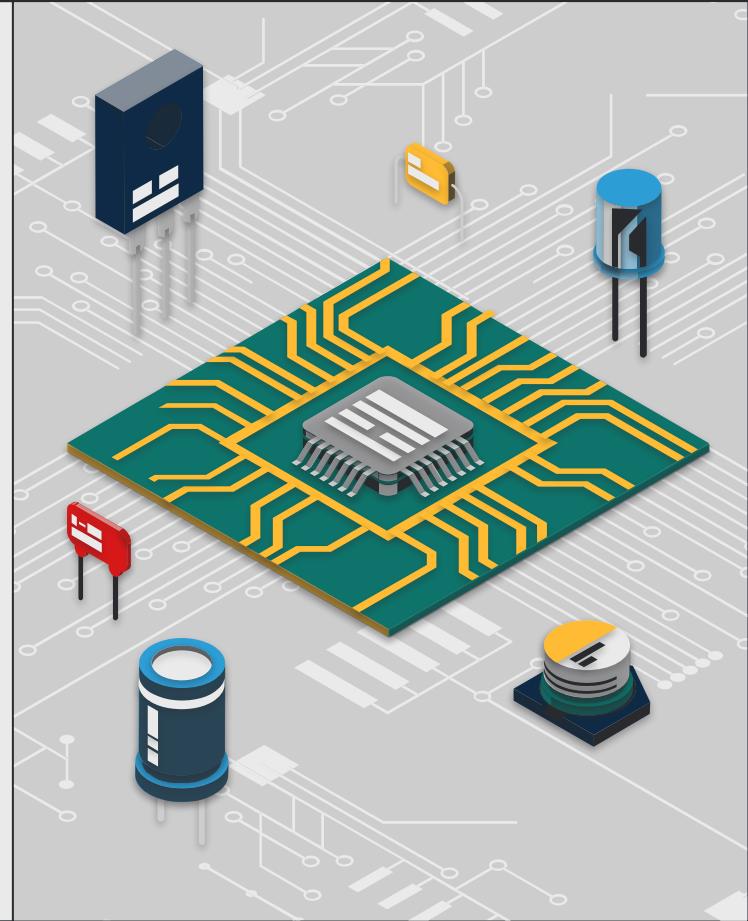
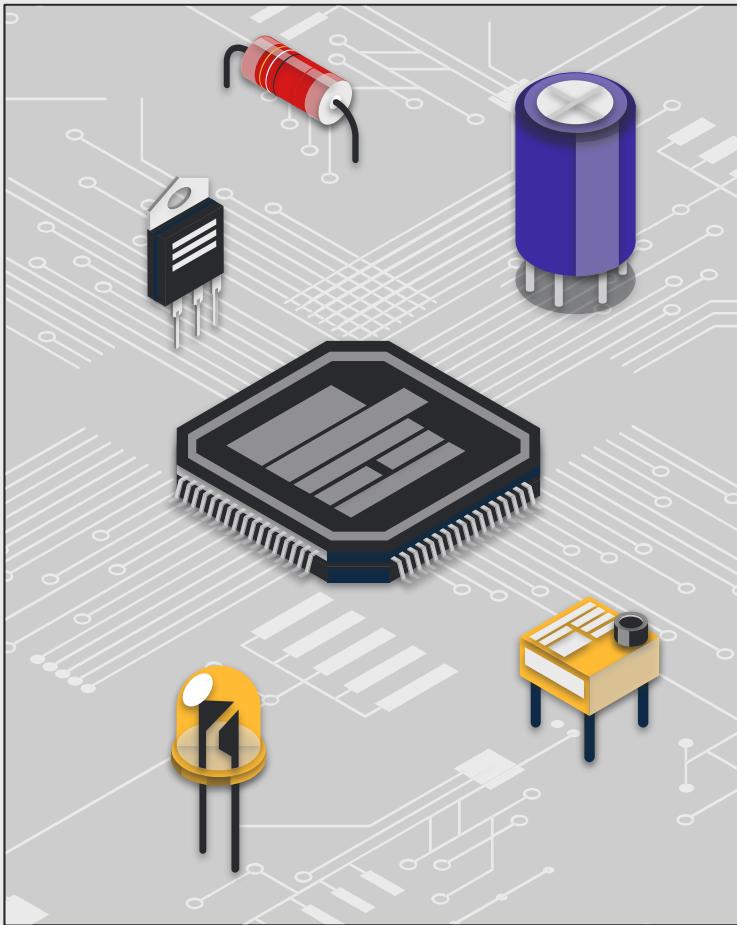


Orione

Customizable 60% keyboard

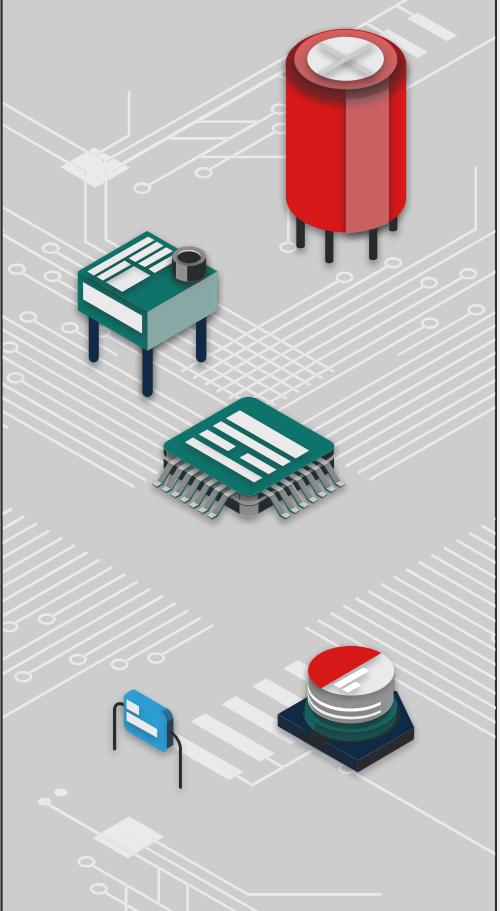
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Powered by Raspberry Pi Pico





The need for a keyboard with a rotary encoder that could be fully customized sparked this project. Orione combines advanced functionality in a compact and minimalist design.

Orione uses the 60% layout to maximize ergonomics by eliminating unnecessary keys. The dual-layer system accessible through a function key maintains all functionality in a reduced footprint. Two keyboards in one



Key features

- **Dual-layer:** Immediate access to additional functions
- **Rotary encoder:** Intuitive volume control (raise/lower/mute)
- **Caps Lock LED:** Instant visual feedback
- **Custom firmware:** Every key is reprogrammable
- **Switch mix:** Gateron Yellow (linear) + Blue (tactile)

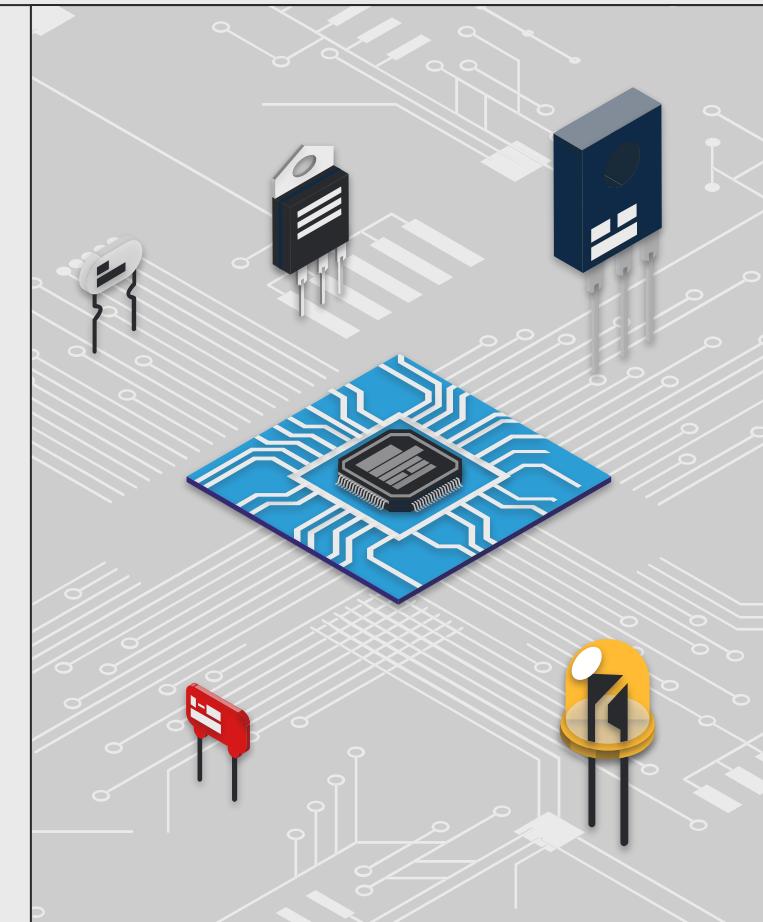
Hardware Components

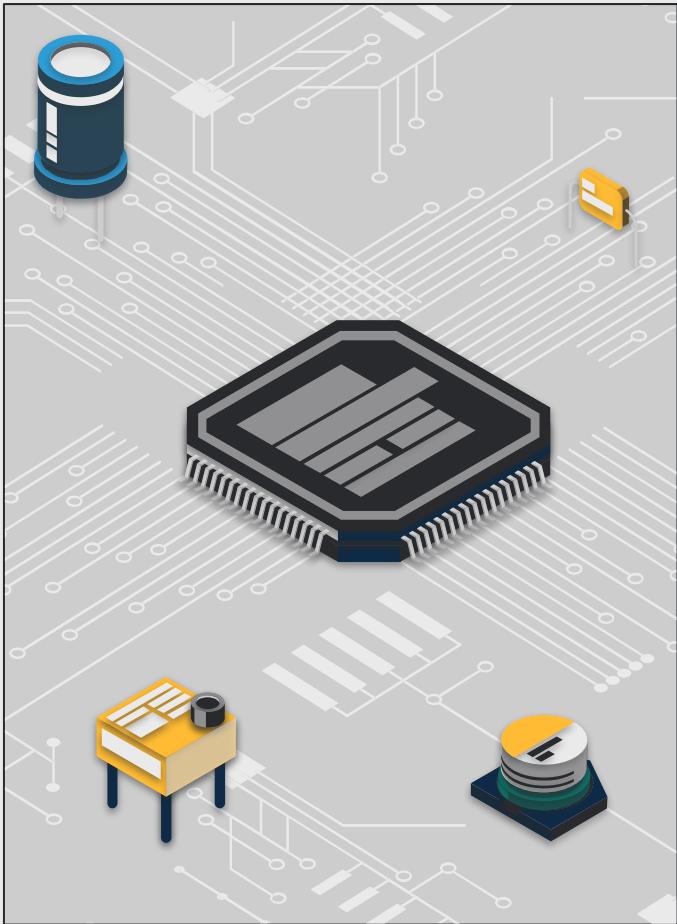
At Orione's heart is the Raspberry Pi Pico, a reliable and affordable microcontroller. The rotary encoder ensures precise control, while 68 mechanical switches and diodes form the key matrix. An LED with a 220Ω resistor indicates Caps Lock status.



Software and Tools

The project uses VS Code for firmware development, KiCad for PCB design, and Blender for 3D modeling of the case. The firmware is based on the Pico C/C++ SDK, while TinyUSB handles USB HID communication with the computer.



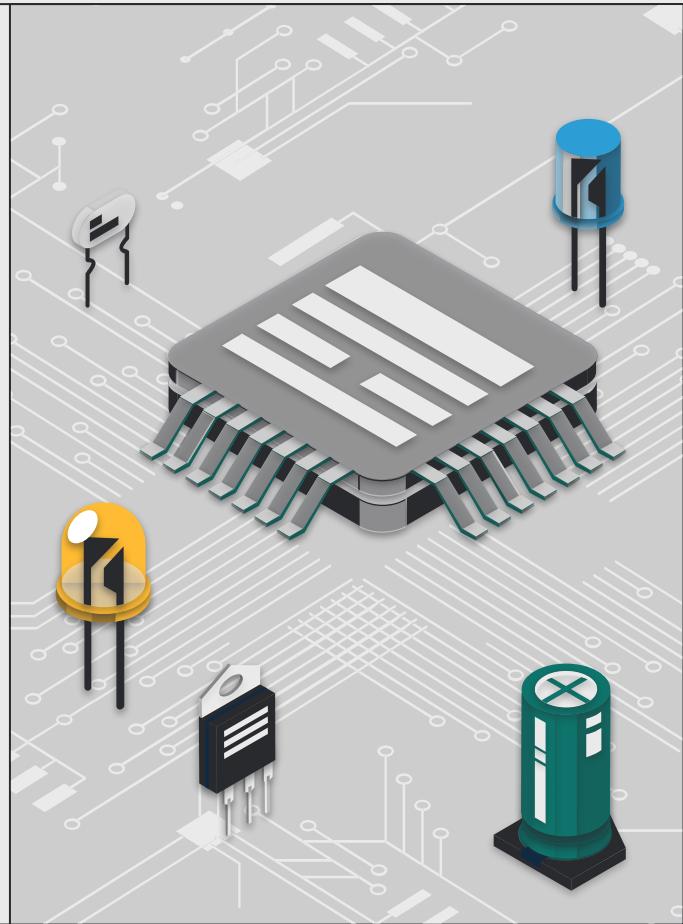


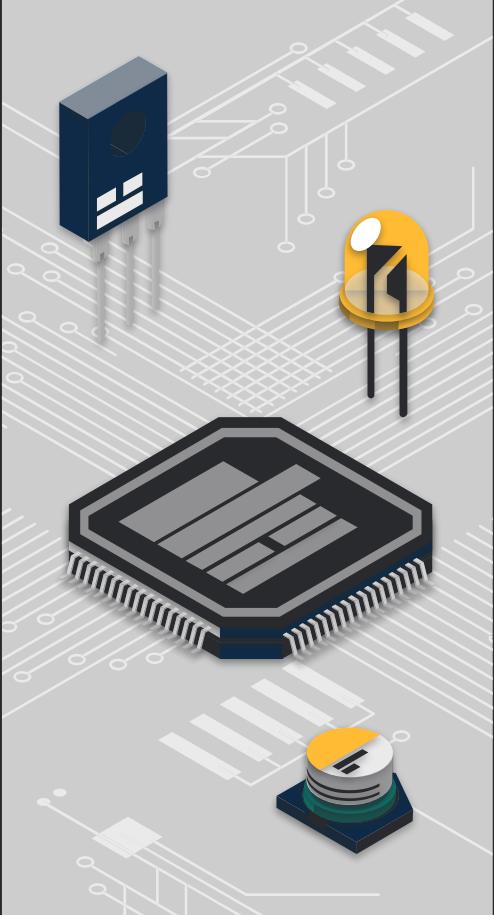
Firmware Customization

The open-source firmware allows complete customization. Simply modify the keymap configuration files, recompile, and flash to the Pico. No limits: every key, every function can be adapted to your workflow.

MSP432

The project was initially developed on the MSP432, but various issues, including the UART interface with the PC, particularly driver-related difficulties and synchronization problems, led us to migrate to a new platform: the Raspberry Pi Pico, which is more reliable and easier to integrate.





Thanks!

Github repository: <https://github.com/ilBuso/Orione>

Team: Alessandro Busola, Giulio Pimenoff Verdolin, Michele Pezzo, Daniel Biz