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CANFace CF3 — isolated USB-CAN FD adapter

CANFace CF3 is a robust USB-CAN FD and UART-CAN FD interface adapter designed for use as a development, debugging, and diagnostic tool for robotics and industrial systems, as well as an embeddable component in larger OEM systems. CF3 builds upon the success of CF1 “Babel” — the CAN tool of choice for drone engineers since 2017.

Applications

- **Development, debugging, and diagnostics of CAN networks** in drones, robotics, vehicular, and industrial applications.
- Embeddable USB-CAN and UART-CAN **protocol converter** in OEM applications.
- CAN-enabled high-voltage electronics thanks to the built-in 1 kV **galvanic isolation**.
- Custom **programmable CAN unit** in OEM applications — the firmware source code is available upon request.

Models

- **CF3A** — A full-featured model with a display designed as a development, debugging, and diagnostic tool for roboticists, embedded system engineers, and integration engineers (pictured). Unit price only **99 €**; quantity discounts available.
- **CF3B** — A compact board-level (bare PCB) version without the display designed for OEM applications. Unit price only **79 €**; quantity discounts available.

Features

- **CAN FD** and the **Classic CAN** via the industry-standard D-Sub DE-9 connector or the JST GH 4-pin connector popular in robotics and drones, depending on the model. An adapter cable from DE-9 to JST GH is available.
- **USB Type-C** interface with the industry-standard Geschwister Schneider USB/CAN (gs-usb) and SLCAN/LAWICEL encapsulation protocols, ensuring compatibility with virtually any CAN software out of the box. No drivers required. *Note: on Windows, only SLCAN is available.*
- Bit rates up to 1 Mbps for Classic CAN and CAN FD arbitration phase, up to **5 Mbps** for CAN FD data phase.
- **1000 V galvanic isolation** enabling safe interfacing with high-voltage power electronics such as EV traction drives. No additional power supply is required.
- Propagation latency **under 1 millisecond**; continuous throughput **over 5000 fps**.
- Large RX and TX queues. No inner priority inversion in the TX queue.
- Optional built-in termination resistor controlled by software.
- **Full compatibility** with most CAN software out of the box: SocketCAN, can-utils, Wireshark, Python-CAN, DroneCAN GUI Tool, Cangaroo, etc.
- [CF3A only] A **built-in display** provides key insights into the state and performance of the CAN bus, such as the bus utilization, detected errors, observed CAN ID, as well as the decoded higher-level protocol transactions, including Cyphal/UAVCAN/DroneCAN.
- [CF3B only] Castellated PCB pads allow **direct soldering** of the adapter onto a motherboard.