ID-BRIDGE

INDUSTRIAL IOT GATEWAY & DATA BRIDGE

CONNECT ANYTHING, ANYWHERE

The ID-Bridge is a versatile and robust industrial IoT gateway designed to serve as the central communication and data bridge for modern automation systems. It seamlessly routes data between wired and wireless input sources and target systems over any of its supported interfaces.

Built around a powerful dual-core processor with integrated Wi-Fi and Bluetooth LE, the ID-Bridge offers Ethernet, RS-232, and dual-role USB connectivity — all housed in a rugged enclosure ready for demanding industrial environments. Configuration is handled through CFG: commands on any active interface, or via **ID-Bridge Studio** desktop software.

FEATURES

- **Powerful dual-core processing** at 240 MHz provides ample capacity for on-device data processing, formatting, and protocol bridging.
- **Multi-interface connectivity** — Wi-Fi, Bluetooth LE, Ethernet, RS-232, USB Host (incl. USB HID) and USB Device (incl. USB HID) for maximum flexibility.
- **Dual-role USB** allows the ID-Bridge to simultaneously receive data from a USB input device (host) and transmit to a PC (device) — with no driver installation required on the PC.
- **Three processing modes** — Passthrough (PASS), Formatting (FMT), and GS1-128 parsing — adapt the data stream to the requirements of the target system.
- **Four keyboard layout profiles** — US, German (DE), Swiss German (CH_DE), and Swiss French (CH_FR) — for accurate HID keystroke mapping.
- **Robust power input** accepts 7–24 V DC via terminal block and is fully protected against surges, short-circuits, and reverse polarity.
- **Audio and visual feedback** via an onboard speaker and addressable RGB status LED. Optional 0.96" OLED display available on the DSPY variant.
- **Persistent configuration** — all settings saved on-device and retained without power. Retrievable at any time via `CFG:SHOW`.

SPECIFICATION

CORE PROCESSING

Processor	Dual-core 32-bit at 240 MHz
Storage	16 MB
RAM	8 MB
Operating System	Real-time operating system with custom application logic

WIRELESS COMMUNICATION

Wi-Fi	802.11 b/g/n, 2.4 GHz
Bluetooth	Bluetooth 5, Bluetooth Low Energy (BLE)
Antenna	External 2.4 GHz antenna, 2 dBi gain

WIRED COMMUNICATION

Ethernet	10/100 Mbps, RJ45 connector
Serial	RS-232, full duplex, DE-9 connector
USB Host	USB 2.0 Full-Speed (12 Mbps) — 1× USB-A + 1× USB-C (shared signal lines, one active at a time) — HID, CDC
USB Device	USB 2.0 Full-Speed (12 Mbps) — 1× USB-A — appears as virtual COM port or HID keyboard to host PC. No driver required on Windows 10/11, macOS, Linux.

ELECTRICAL

Power Supply	7 VDC to 24 VDC via DC terminal block
USB Host Power	USB-A: 5 V / 0.5 A per port (individually protected) · USB-C: 5 V / 0.9 A
Protection	Over-current, short-circuit, and reverse-polarity on all ports
Max. Power Consumption	Approx. 15 W (all ports under load)

SENSORS & INDICATORS

Environmental Sensor	Temperature, humidity, barometric pressure
Display	0.96" OLED via I2C — optional DSPY variant only
Status LED	Addressable RGB LED — 6 states (see user manual §3.2)
Port LEDs	Individual LEDs for USB port connection / fault status
Speaker	Onboard speaker with audio amplifier

MECHANICAL

Dimensions	120 × 70 × 40 mm (4.7" × 2.8" × 1.6")
Weight	Approx. 220 g (0.49 lbs)
Enclosure	Rugged plastic — wall mount or 35 mm DIN rail (optional clips)
Ingress Protection	IP20 standard · IP65 with optional sealed enclosure kit (sold separately)
Operating Temperature	−40 °C to +65 °C
Humidity	20% to 80% RH, non-condensing

GENERAL

Certification	CE, FCC (planned)
Configuration	CFG: commands (any active interface) · ID-Bridge Studio (USB / Ethernet)
Support	idsystems.ch/support