USBCAN-I-BC

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USB-CAN Converter Module | **Isolated CAN Bus Interface** | **SocketCAN Compatible**

OVERVIEW

The Tittron USBCAN-I-BC USB-CAN Converter serves engineers, technicians, students and hobbyists who need to connect USB hosts to a CAN bus network for testing, debugging and data acquisition. It addresses common challenges such as ground-loop noise, voltage surge hazards, and the shortage of simple USB-to-CAN bridging hardware for bench and field deployment.



USBCAN-I-BC
Isolated USB-CAN Converter Module

It is a plug-and-play, USB bus-powered bidirectional USB-to-CAN interface that enables stable long-distance communication between a USB host and the CAN bus. The module supports bidirectional transmission of CAN frames encapsulated within USB packets. With compatible host software, users can transmit CAN messages, monitor raw CAN bus traffic and log bus data. Integrated galvanic isolation separates the USB side from the CAN side, protecting the host device against ground-loop interference and voltage surges. A jumper-selectable 120 Ω termination resistor accommodates different CAN bus topologies.

Typical applications include commissioning and debugging industrial controllers, automotive CAN communication testing, BMS development and validation, robot actuator commissioning, CAN bus data logging, CAN protocol training, and developing Raspberry Pi-based CAN gateways or data acquisition nodes. Its compact form factor suits both bench testing and on-site service.

KEY FEATURES

- Compatible with Raspberry Pi Zero (W), Pi 3B+, Pi 4, BeagleBone, Tinker Board and other single-board computers
- Plug-and-play, USB bus-powered; no external power supply needed
- Software-configurable CAN baud rate: 20 kbps ~ 1 Mbps
- Onboard STM32F0 (48 MHz) MCU with DMA for high-speed data transfer
- Supports CAN 2.0A (standard frame) / CAN 2.0B (extended frame)
- TI ISO1050DUBR isolated CAN transceiver; galvanic isolation, surge and ESD protection
- Jumper-selectable 120 Ω CAN termination resistor
- SocketCAN compatible; C & Python demo codes supplied
- Cross-platform API for Windows, macOS, Linux; Python supported
- User manual and technical support included

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SPECIFICATIONS

CORE HARDWARE

Chipsets	STM32F072CBT6 + ISO1050DUBR
Firmware Reference	candleLight / Canable open-source firmware
Model	USBCAN-I-BC
Product Type	USB-CAN Converter

INTERFACE & CAN

USB Interface	USB 2.0 Full-Speed, Micro USB
CAN Interface	9-pin D-SUB
CAN Standard	CAN 2.0A (standard frame), CAN 2.0B (extended frame), ISO 11898-2 High-Speed CAN
Baud Rate	20 kbps ~ 1 Mbps, software configurable
Main MCU	STM32F072CBT6 (48 MHz), DMA supported
CAN Transceiver	ISO1050DUBR (Texas Instruments, isolated)
Isolation Rating	1.5 kVDC / 1 min; 3 kVDC / 1 s
Termination Resistor	120 Ω, jumper selectable
Protection	Surge protection, ESD protection

POWER, SOFTWARE & MECHANICAL

Power Supply	USB bus-powered, no external power required
Supported Host OS	Windows, macOS, Linux (SocketCAN compatible)
SBC Compatibility	Raspberry Pi Zero (W), Pi 3B+, Pi 4, BeagleBone, Tinker Board and other SBCs
Operating Temperature	-40 °C ~ +85 °C
Relative Humidity	15% ~ 90%, non-condensing
PCBA Dimensions (L × W × H)	56.50 mm × 31.20 mm × 14.20 mm
Weight	15.5 g

APPLICATION GUIDANCE

Connect the Micro USB cable to your host. Connect the 9-pin D-SUB to your CAN bus. Select the 120 Ω termination resistor via jumper if required by your bus topology. Use compatible SocketCAN software or provided API to send, receive and log CAN frames.

IMPORTANT NOTES

This module is a USB-CAN bridge, not a standalone protocol analyzer. All CAN frame parsing and analysis rely on host-side software. Confirm bus termination and baud rate match your target CAN device before powering up.