CAN-USB-Busconverter User Manual

BCE-Elektronik GmbH
Lagesche Str. 10 – 14
D-32657 Lemgo
Tel.: 0 52 61 / 77 99 77-0, Fax: -99

E-Mail: info@bce-elektronik.de

Internet: www.bce-elektronik.de

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1. Introduction

The galvanic isolated BCE CAN-USB-Busconverter gives you the possibility to easily connect to Controller Area Networks. You can either use it with the CANtastic™ Software (Free Basic License with every device) to monitor and trace (log) the bus traffic or analyse recorded traces and visualise variables if you have a "Pro License" – or implement the available API in your own Software. (No dedicated drivers necessary. The device acts as virtual comport.)

Its compact and robust housing makes it suitable for mobile applications.

1.1. Overview

- USB Full Speed (12 Mbit/s) connection
- High-Speed CAN (1 Mbit/s) - (CAN FD 5 Mbit/s with future updates)
- Galvanic Isolation: 1kV
- Timestamp resolution < 1µs
- Compliant with CAN specifications 2.0A (11-Bit ID) and 2.0B (29-Bit ID)
- CAN-Bus connection via D-Sub, 9-pin (in accordance with CiA® 303-1)
- STM32G4 Microcontroller running at 168MHz
- TI ISO1042 CAN FD Transceiver
- Voltage supply via USB

1.2. System Requirements

- Operating System: Microsoft Windows® (at least Vista®)
- Free USB Port[1]

[1] The use of an extension cable does not comply with the USB specification and can lead to malfunction of the device.

2. Connect to a CAN bus

- Plug in the USB Cable
- Connect the D-Sub connector to the bus (Standard pinout – See CiA 303-1)
- Make sure the bus is terminated with 120 Ohms at both ends
    - The BCE CAN-USB-Busconverter provides an internal termination resistor. For applying it, remove the housing and plug in a jumper right next to the D-Sub connector.
- Connect the device to a software.

3. Status LED

Status	**Meaning**
Green blinking	Device is running but not connected to an application.
Green	Device is connected to an application.
Blue flashes up	CAN data is transmitted.
Blue	CAN data is transmitted fast.
Blue blinking	Bootloader is running.
Blue / red blinking	Bootloader recognised an error.
Red	Device is in hard fault handler.

4. Technical Specifications

Connectors	
Computer	USB Plug Type A
CAN	D-Sub, male, 9 pins

USB	
Type	USB 2.0 Full-Speed (12 Mbit/s)

CAN[2]	
Specification	ISO 11898-1, ISO 11898-2, CAN FD, 2.0A and 2.0B
Bitrates	33 kbit/s – 5 Mbit/s
Controller	STM32G431
Transceiver	TI ISO1042
Galvanic Isolation	Transceivers maximum isolation working voltage: 1500V DC Transceivers Power Supply Isolation Voltage: 1000V DC
Internal Termination	Plug In Jumper (Next to D-Sub connector. Not activated at delivery.)

Power Supply	
Supply Voltage	+5V DC (via USB)

Dimensions	
Housing (L × W × H)	66.65 × 42.67 × 23.47 mm
USB Cable Length	1m

Thermal Characteristics	
Operating Temperature	-40°C -> 85°C
Storage Temperature	-55°C -> 125°C

[2] Please note that the device as well as its API is currently working only as High-Speed CAN device with a bitrate limit of 1 Mbit/s