# USB/CAN Interface CPC-USB/embedded

## Special Features

- Powerful Cortex M3 microcontroller with internal CAN controller
- Extended temperature range
- Supports CAN protocols 2.0A and 2.0B
- Supply over USB
- Optional galvanic isolation between CAN and USB
- Firmware flashable over USB
- Linux socketCAN is supported
- Free of charge development kits for Windows 7/8.x/10/11 and Linux

## Description

CPC-USB/embedded is a CAN interface for internal USB ports. Due to its compact size it is eminently suitable for applications in embedded PCs. It is installed directly at a D-Sub9 case opening or a slot panel and wired with the included cable to a pin connector of an internal USB interface of the mainboard.

The interface is equipped with a Cortex M3 microcontroller providing onChip CAN and USB controllers. By combining the powerful CPU with internal peripherals low latencies can be achieved. The interface is powered via USB, a separate supply for the CAN side is not needed. CPC-USB/embedded provides galvanic decoupling between CAN and USB and has an extended operating temperature range. It supports 11-bit and 29-bit CAN identifiers.

CPC-USB/embedded-gc is a variant without galvanic decoupling for cost sensitive series applications.

For the operating systems Windows and Linux software development kits with identical API are available free of charge. Linux socketCAN is supported as well.

# Technical Data

### Layout and Connection

CPC-USB/embedded includes a CAN segment connected by a male plug of type D-Sub9, the pin assignment is complying to CiA DS-102 standard. In addition, the interface includes a USB connector that also carries the supply for CPC-USB/embedded.

The following table shows the assignment of the CAN connector:

| Pin | Name | Function |
|-----|------|----------|
| 2 | CAN_L | CAN data line (dominant low) |
| 3 | GND | Ground |
| 7 | CAN_H | CAN data line (dominant high) |

### Limiting Values

| Parameter | Minimal | Maximal | Unit |
|-----------|---------|---------|------|
| Storage temperature | -40 | +80 | °C |
| Operating temperature | -30 | +70 | °C |
| Supply voltage | 0 | +6 | V |
| Voltage on bus connections | -30 | +30 | V |

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CPC-USB/embedded and other connected devices. Exposure to limiting conditions for extended periods may affect the reliability and shorten the life cycle of the device.

### Nominal Values

| Parameter | Minimal | Typical | Maximal | Unit |
|-----------|---------|---------|---------|------|
| Current consumption | - | 100 | 250 | mA |
| Supply voltage | 4,0 | 5,0 | 5,5 | V |

All values, unless otherwise specified, refer to a supply voltage of 5 V and an environmental temperature of 20 °C.

# Scope of Delivery

- USB/CAN interface CPC-USB/embedded
- USB connection cable for pin header RM2.5
- User manual
- proCANtool CAN-Monitor for operating systems Windows 7/8.x/10/11