



# USB/CAN Interface CPC-USB/ARM7

## Special Features

- Powerful Cortex M3 microcontroller with internal CAN and USB controller
- Supports CAN protocols 2.0A and 2.0B
- Display of USB communication and CAN data transfer via LEDs
- Supply completely over USB
- Optional with galvanic isolation between CAN and USB
- Optional with low speed transceiver TJA1054A
- Optional with  $\pm 80$  V tolerant CAN transceiver MAX13052
- Optional available with RJ45 CAN connector
- Linux socketCAN is supported
- Free of charge development kits for Windows 7/8.x/10/11 and Linux

## Description

CPC-USB/ARM7 is a CAN interface for USB ports in a compact and robust metal housing. Due to easy handling and favorable price CPC-USB/ARM7 is suitable for configuration and analysis of CAN systems.

CPC-USB/ARM7 is equipped with a Cortex M3 microcontroller providing onChip CAN and USB controller. By combining the powerful CPU with internal peripherals low latencies can be achieved. The interface is completely supplied via USB, a separate supply for the CAN side is not needed.

The interface is optionally available with galvanic isolation. In addition also a variant with low speed transceiver TJA1054A is available. For applications, where a higher fault voltage on the CAN bus terminals cannot be avoided, the version HV is available. The use of the transceiver MAX 13052 allows voltages up to  $\pm 80$  V on the CAN bus lines. Also a version with RJ45 CAN connector is available.

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

## Technical Data

### Layout and Connection

CPC-USB/ARM7 includes a CAN segment connected by a male plug of type D-Sub9, the pin assignment is complying to CiA DS-102 for the standard version. In addition, the interface includes a USB connector that also carries the supply for CPC-USB/ARM7.

The following table shows the assignment of the CAN connector:

| Pin        | Name  | Description Standard Version | Description Low Speed Version                                                            |
|------------|-------|------------------------------|------------------------------------------------------------------------------------------|
| 1          | RTL   | Not connected                | Connected with Pin 2 by a 5k6 resistor and with dedicated Pin of TJA1054 CAN transceiver |
| 2          | CAN_L | CAN bus line (dominant low)  | CAN bus line (dominant low)                                                              |
| 3          | GND   | Ground                       | Ground                                                                                   |
| 7          | CAN_H | CAN bus line (dominant high) | CAN bus line (dominant high)                                                             |
| 8          | RTH   | Not connected                | Connected with Pin 7 by a 5k6 resistor and with dedicated Pin of TJA1054 CAN transceiver |
| 4, 5, 6, 9 | -     | Not connected                | Not connected                                                                            |

### Limiting Values

| Parameter                                  | Minimal | Maximal | Unit |
|--------------------------------------------|---------|---------|------|
| Storage temperature                        | -20     | +80     | °C   |
| Operating temperature                      | 0       | +60     | °C   |
| Supply voltage                             | 0       | +6      | V    |
| Voltage on CAN bus lines, standard version | -30     | +30     | V    |
| Voltage on CAN bus lines, LS version       | -27     | +30     | V    |
| Voltage on CAN bus lines, HV version       | -80     | +80     | V    |

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CPC-USB/ARM7 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 (idle mode)      | -       | 100     | -       | mA   |
| Current consumption (operation mode) | -       | -       | 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/ARM7
- USB connection cable
- User manual
- proCANtool CAN-Monitor for operating systems Windows 7/8.x/10/11