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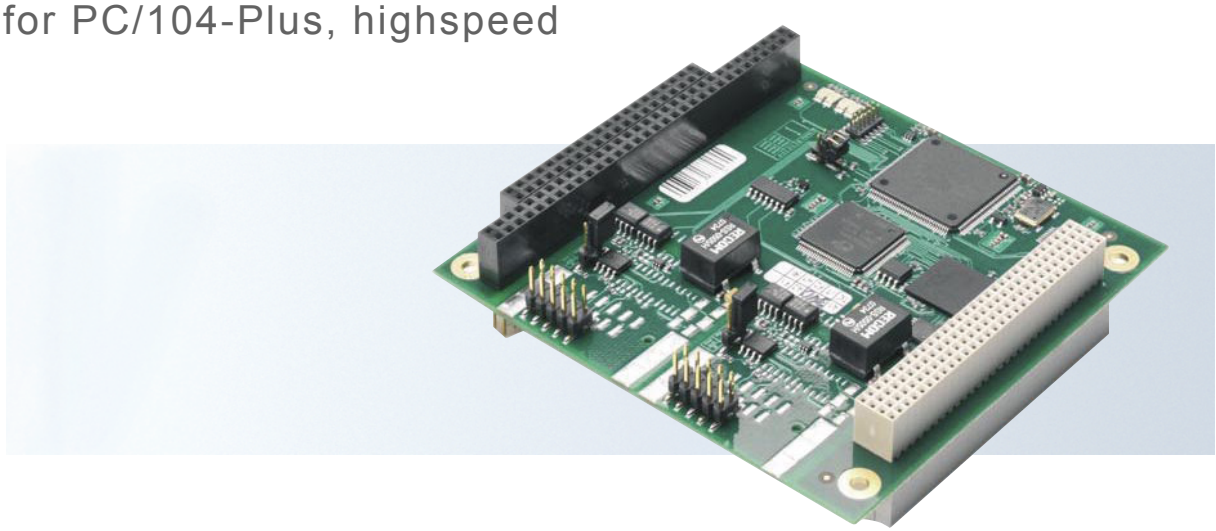
HiCO.CAN-PC104+-2H-HD

Two channel active CAN-bus card

for PC/104-Plus, highspeed



Key features:

- PC/104+ Format and connectors
- 2 CAN channels CAN 2.0A and CAN 2.0B
- Philips CAN Controller LPC2292 (ARM7), 60 MHz
- On-board 32bit intelligence, with option for custom specific firmware
- Integrated CAN Transceivers with galvanic isolation up to 3kV
- Supports all standard (CiA-DS-102) baudrates at 100% bus load
- Timestamps at 1µs resolution
- Internal buffers for 500 CAN telegrams per CAN node
- Optional industrial temperature range from -40°C to +85°C
- Driver support for Windows CE, Windows XP, Windows 98/ME, Windows 2000, Windows NT, Linux 2.6 and QNX 6.3, Support also coming for DOS.
- Also available with DSUB9 instead of headers and as PCI-104 module (PCI connector only).

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Hardware features

- **2 independent CAN nodes** (CAN 2.0B) with integrated CAN transceivers and galvanic isolation up to 3kV.
- **Dimensions:** 96 mm x 96 mm x 26 mm. compliant with PCI-104 specification. Card weights 85g.
- **Cable:** 2xDSUB9 with standard pin-out - CANL, CANH and ground. Optional available with headers instead of DSUB9.
- **Current consumption:** 80 mA (max).
- **Operating temperature range:** -0°C … 70°C, optional industrial - from -40 °C to +85°C
- **Flexibility:** optional PC/104+ “compliant” PCI only for compatibility with PC/104-Plus systems.
- **Status leds** for CAN bus traffic and bus errors.

Operational features

- **Automatic baud rate detection:** CAN bus traffic is listened in passive mode and scanned for the correct baud-rate. This enables “hot-plugging” into a CAN bus with unknown baud rate.
- **Active mode and passive mode:** In passive mode, CAN bus traffic is listened, but not affected in anyway (monitoring)
- **Flexible message filtering** with up to four filters per CAN node of type mask & code or ID-range.
- **Message buffering** - 500 CAN telegrams per CAN node.
- **Timestamps** at 1µs resolution enable an accurate reproduction of the data flow.
- **Option for custom firmware:** The board firmware can be updated changed via the API.
- **Baud rates** – support for standard (CiA DS-102) baud rates 10kb/s, 20 kb/s, 50 kb/s, 125 kb/s, 250 kb/s, 500 kb/s, 800kb/s and 1Mb/s.

Windows XP Driver

Windows API for the HiCO.CAN-PC104+-2H-DS driver is much the same as for the other HiCO.CAN-* family cards from emtrion. Following list shows the most important API calls (not all):

```
HiCOCNOpenDriver()      HiCOCANCloseDriver()
HiCOCANResetDriver()    HiCOCANOpen()
HiCOCANClose()          HiCOCANStart()
HiCOCANStop()           HiCOCANReset()
HiCOCANWrite()          HiCOCANRead()
HiCOCANState()
```

Linux 2.6 Driver

The driver provides a standard posix file system interface to the card - open(), read(), write(), etc. Special commands, like setting the baud rate, are done via diverse ioctl calls. Sending and receiving CAN messages is done fully interrupt driven. Following code snippet shows a trivial example of usage:

```
int fd,rate;
struct can_msg msg;
/* open CAN node 0 for reading and writing */
fd = open( „/dev/hicocan0“ ,O_RDWR);
/* Set baudrate to 20kbit/s */
rate=20*1000;
ioctl(fd, SET_BITRATE, &rate);
/* Start to read messages */
while(running){
        read(fd,&msg,sizeof(msg));
        printf( “received message with id
        %x”,msg.id);
}
/* Stop using the node */
close(fd)
```

QNX 6.3 Driver

The driver is implemented as multithreaded resource manager. API for the QNX driver is the same as for the Linux driver.

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