

Peak CAN to USB Interfaces

[COMSOL](#) distributes the Peak System range of CAN Interfaces, Adapters, I/O Modules, Data Acquisition Systems and Supporting Software.

This leaflet describes the Peak range of low cost interfaces between the PC's USB port and CAN. They provide bit rates of up to 1 Mbit/sec and can support 11 or 29 bit ID's. A full range of free drivers and supporting DLL as well as a simple CAN viewing and logging package are included.



Or follow these links for more information on:

[Other CAN PC Interfaces](#)

[Explorer - our PC based CAN data logging, control and display software](#)

[CAN Data Acquisition Systems](#)

[CAN I/O Modules](#)

[Software Support for FMS](#)

[Cables and Adapters](#)

Most of these items are available from our [Web Shop](#) for next day delivery.

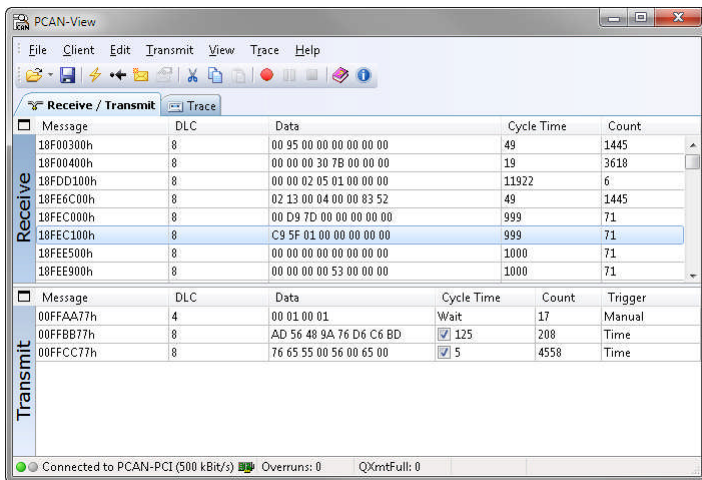
Using CAN

PEAK CAN Controllers

The Peak range of CAN interfaces provides simple and cost effective connections between PCs and CAN-networks and includes routers, extenders and adapters to the many CAN variants.



PCAN interfaces support both 11 bit ID and 29 bit ID CAN specifications with a maximum speed of 1Mbaud. They use the SJA1000 CAN-controller and the 82C251 driver. The CAN-bus connection is via a 9-pin SUB-D plug, whose pin assignments conform to the CiA recommendation. No termination is included in the interfaces. Optoisolated versions are available if required and most interfaces can be supplied with one or two ports.



Drivers and supporting DLL's are included to allow operation under XP, Vista, Windows 7 and Linux in 32 and 64* bit modes. CE6.x support* for ARM and x86 is also available. (* most interfaces). Language support is provided for C++, C#, C++/CLR, Delphi, VB.NET, Java and Python 2.6.

A Windows package PCAN-View is included with all interfaces to allow the user to view messages on the CAN bus. All data is displayed in Hex and messages are timed and counted. A trace buffer allows messages to be recorded and saved to disk. Errors such as over-run and baud rate problems are reported. Messages can be user created and

then sent as one-shot, repeating periodically or in response to a remote request (RTR).

Industrial I/O Modules

These Industrial I/O modules are available in a number of useful configurations including signal conditioning and termination in an industrial case. Up to 8 10 bit analogue inputs, 4 PWM/frequency outputs (to 20KHz) and 8 digital ins and outs are available. At 51 x 60 x 20mm, they are suitable for a wide variety of applications. The electrical connections provide snap-in termination; with a screw connection as an option. A windows package is provided so that the user can set message ID and data layouts and conversion constants as well as setting report rates or reporting on change.

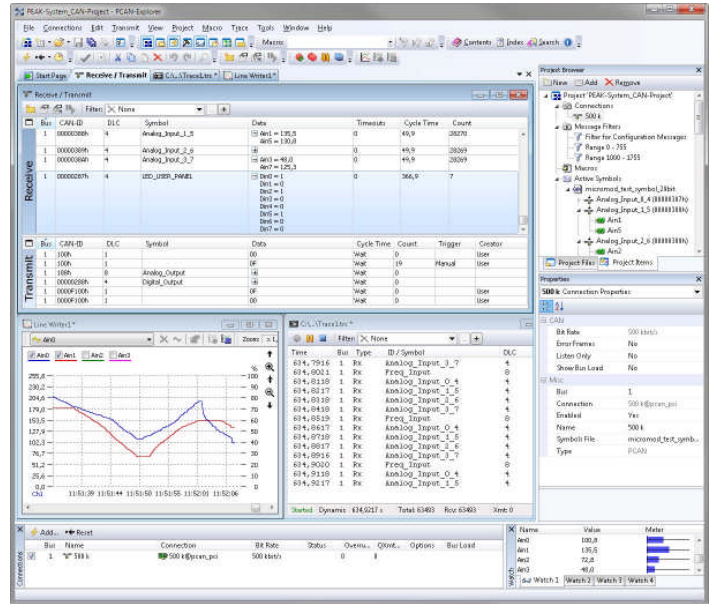


CAN Open firmware is also available if required.

PCAN-Explorer

This tool can be used as an advanced CAN bus traffic monitor. It provides the following features: Message identifiers can be given names avoiding having to remember each messages HEX value. Message data can be displayed in a wide range of formats including text, hex, signed and floating point.

An extensive conditional macro language allows complex tests and simulations to be performed. Optional packages provide sophisticated graphing, CANdb data exchange, a visual GUI to control and display CAN data collection and a full J1939 symbol database simplifying control of ECU's.



PCAN-FMS Toolkit

A special software package is available to support FMS and Bus-FMS standards. It logs and translates the CAN messages in real time providing the user with a "Dashboard display". The log can be replayed to a CAN bus or values can be set manually from a convenient Windows display for system simulation.

Data Acquisition Systems

Peak have a growing range of units designed to suite a variety of data acquisition requirements such as multi Thermocouple, A/D and D/A conversions and digital I/O. As well as data logging and mobile GPRS links there are also CAN Routers and filters. Some have full C programmability others only need simple windows configuration.

CAN MicroMod Boards

A flexible, small format, Analogue and Digital I/O board with a CAN-Bus interface.

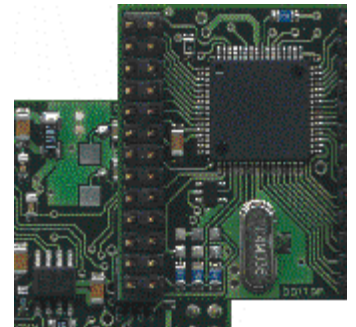
The PCAN-MicroMod board can be plugged into an application to provide control and monitoring services via the CAN-Bus. It provides the following

- 8 analogue inputs, 10-bits resolution, Vref 5 V
- 8 digital inputs & 8 digital outputs
- 4 PWM / frequency outputs, with a range 1 Hz-20 kHz

The integrated firmware provides simple configuration of the target system via a Windows utility program, the configuration data being sent to the board via CAN. No embedded programming skills are required to set up a system. Up to 32 PCAN-MicroMod boards can be put onto a single CAN network.

An optional evaluation board simplifies development of user designed carrier boards and also makes the MicroMod an ideal CAN evaluation tool.

Call or email us with your requirements.



PCAN-USB


USB to CAN Interface

The PCAN-USB adapter enables simple connection to CAN networks. Its compact plastic casing makes it suitable for mobile applications.

The opto-decoupled version guarantees galvanic isolation of up to 500 Volts between the PC and the CAN sides.

The package is also supplied with the CAN monitor PCAN-View for Windows and the programming interface PCAN-Basic.



D-Sub	Pin	Pin assignment
	1	Not connected / optional +5V
	2	CAN-L
	3	GND
	4	Not connected
	5	Not connected
	6	GND
	7	CAN-H
	8	Not connected
	9	Not connected / optional +5V

Specifications

- Adapter for USB connection (USB 1.1, compatible with USB 2.0)
- USB voltage supply
- Bit rates up to 1 Mbit/s
- Time stamp resolution approx. 42 μ s
- 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[®] 102)
- NXP SJA1000 CAN controller, 16 MHz clock frequency
- NXP PCA82C251 CAN transceiver
- 5-Volts supply to the CAN connection can be connected through a solder jumper, e.g. for external bus converter
- Extended operating temperature range from -40 to 85 °C (-40 to 185 °F)

Optionally available:

- Galvanic isolation on the CAN connection up to 500 V

Ordering information

Designation	Art. No.
PCAN-USB	IPEH-002021
PCAN-USB opto-decoupled	IPEH-002022

Scope of supply

- PCAN-USB in plastic casing
- Device drivers for Windows 7/Vista/XP/Linux (32/64-bit)
- Device driver for Windows CE 6.x (x86 and ARMv4 processor support)
- PCAN-View CAN monitor for Windows
- PCAN-Basic programming interface consisting of an interface DLL, examples, and header files for all common programming languages
- Manual in PDF format

PCAN-USB Pro

High-Speed USB 2.0 to CAN/LIN Interface

The PCAN-USB Pro adapter enables simple connection of a PC to CAN and LIN networks. Two field busses can be connected at the same time, with up to four connections available using appropriate adapter cables (2 x CAN, 2 x LIN). Its robust aluminum casing makes the PCAN-USB Pro adapter suitable for mobile applications.

The supplied monitor applications PCAN-View and PLIN-View Pro as well as the PCAN-Basic and PLIN programming interfaces round off the range.



Specifications

- Adapter for USB connection (USB 2.0)
- Transmitting and receiving of CAN and LIN messages using 2 D-Sub connections (both with pin assignment for CAN and LIN bus)
- Time stamp resolution 1 μ s
- Extended operating temperature range from -40 to 85 °C (-40 to 185 °F)

CAN operation properties:

- Bit rates up to 1 Mbit/s
- Fulfills CAN specifications 2.0A and 2.0B
- MAX3057ASA CAN transceiver
- Each CAN channel is separately opto-decoupled against USB and LIN
- Measurement of bus load including error frames and overload frames
- Induced error generation for incoming and outgoing CAN messages

LIN operation properties:

- Bit rates of 1 – 20 kbit/s
- AMIS-30600 LIN transceiver
- Both LIN channels (common ground) are opto-decoupled against USB and CAN
- Can be used as a LIN master or slave (1 ms master task resolution)
- Automatic bit rate, frame length, and checksum type recognition
- Autonomous scheduler with support for unconditional, event, and sporadic frames
- Hardware can work through a schedule table (up to 8 schedule tables can be configured with a total of 256 slots)

D-Sub	Pin	Pin assignment
	1	+5V
	2	CAN-L
	3	CAN-GND
	4	LIN
	5	LIN-GND
	6	LIN-GND
	7	CAN-H
	8	Not connected
	9	V _{BAT}

Ordering information

Designation	Art. No.
PCAN-USB Pro	IPEH-002061

Scope of supply

- PCAN-USB Pro in aluminum casing
- Device drivers for Windows 7/Vista/XP/Linux (32/64-bit)
- PCAN-View CAN monitor for Windows
- PLIN-View Pro LIN monitor for Windows
- PCAN-Basic programming interface consisting of an interface DLL, examples, and header files for all common programming languages
- PLIN-API programming interface consisting of an interface DLL, an example, and header files for all common programming languages
- Manual in PDF format

PCAN-USB Hub


All-in-one USB Adapter for Communication through USB, CAN, and RS-232

The PCAN-USB Hub provides multiple hardware interfaces through a USB connection. It offers the user one CAN, two RS-232, and two further USB interfaces.

Its robust aluminum casing makes the PCAN-USB Hub suitable for mobile applications.


The package is also supplied with the CAN monitor PCAN-View for Windows and the programming interface PCAN-Basic.



D-Sub	Pin	Pin assignment RS-232
	1	DCD
	2	RxD
	3	TxD
	4	DTR
	5	GND
	6	DSR
	7	RTS
	8	CTS
	9	RI

Specifications

- High-speed USB 2.0 hub with
 - USB to CAN interface, connection through 9-pin D-Sub (in accordance with CiA® 102)
 - Two USB to RS-232 converters using two D-Sub connectors (9-pin)
 - Two High-speed USB 2.0 downstream ports
- Passive (bus-powered) hub operation through the USB port of a PC enables power consumption of up to 100 mA per USB channel
- Active (self-powered) hub operation through the optional external hub power supply (9 – 36 V) enables power consumption of up to 500 mA per USB channel
- Guaranteed high bit rates on all channels if a Full-speed device is connected, thanks to a hub controller with 4 transaction translators
- Bit rates up to 1 Mbit/s
- Time stamp resolution approx. 42 µs
- Compliant with CAN specifications 2.0A and 2.0B
- NXP PCA82C251 CAN transceiver
- 5-Volt and external power supply at the CAN connector connectible by solder bridges, e.g. for external bus converter
- Extended operating temperature range

D-Sub	Pin	Pin assignment CAN
	1	Not connected / optional +5V
	2	CAN-L
	3	CAN-GND
	4	Not connected
	5	Not connected
	6	PWR-GND
	7	CAN-H
	8	Not connected
	9	PWR-OUT

Ordering information

Designation	Art. No.
PCAN-USB Hub	IPEH-002004

Scope of supply

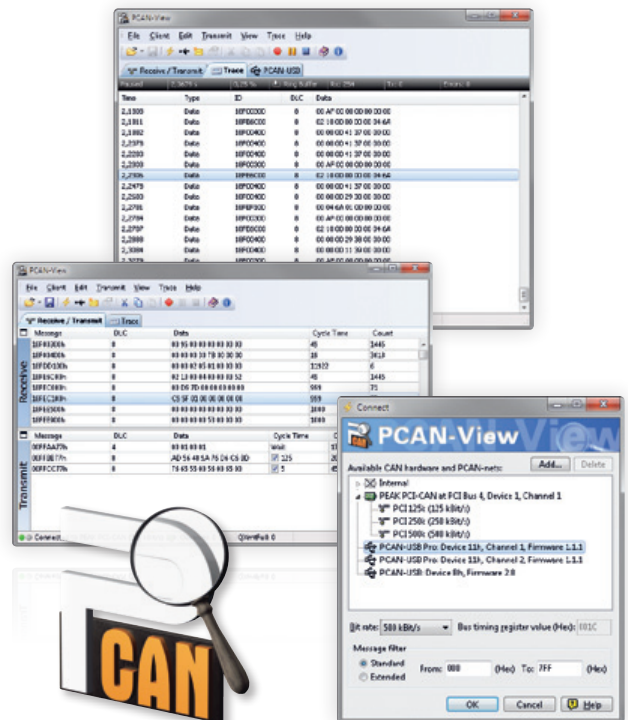
- PCAN-USB Hub in aluminum casing
- Mating connector for voltage supply
- Device drivers for Windows 7/Vista/XP/Linux (32/64-bit)
- Device driver for Windows CE 6.x (x86 and ARMv4 processor support)
- PCAN-View CAN monitor for Windows
- PCAN-Basic programming interface consisting of an interface DLL, examples, and header files for all common programming languages
- Manual in PDF format

PCAN-View

Windows Compatible Software for Displaying CAN Messages

The software PCAN-View for Windows is a simple CAN monitor for viewing, sending, and recording CAN data traffic. Messages can be sent manually and periodically at a user-determined bit rate of up to 1 Mbit/s. Bus system errors and memory overflows in the CAN hardware being controlled are displayed during the process. The trace function can be used to record and save CAN data traffic.

PCAN-View is supplied with every PCAN PC hardware product and enables a fast and simple initial hardware operation. All available PEAK CAN interfaces are listed in the connection dialog. After selecting the hardware and the bit rate, the user can access all the software functions, hardware-specific settings, and information.



Features

- Manual and periodic transmission of CAN messages with bit rates up to 1 Mbit/s and a resolution of 10 ms
- Support for CAN 2.0A (11-bit ID) and 2.0B (29-bit-ID) specifications
- Saving and reloading of CAN messages as transmit lists
- CAN message reception with a resolution of 1 ms
- Recording CAN messages in trace files
- Display of receive, transmit, and error states
- CAN controller hardware reset (SJA1000)
- Access to hardware-specific settings and information

Note: ISA and parallel port CAN interfaces only support 32-bit

Ordering information

Designation

PCAN-View

Scope of supply

- PCAN-View software
- Documentation in HTML Help format

The current version ...

- ... is available on the product CD (supplied with our hardware)
- ... can be downloaded from the Internet free of charge at www.peak-system.com

System requirements

- Windows 7/Vista/XP (32/64-bit)
- At least 512 MB RAM and 1 GHz CPU

PCAN-Basic

CAN Software API for Windows

The PCAN-Basic API (application programming interface) enables easy development of powerful software with CAN support. It includes all of the functions that a application needs in order to communicate with PCAN PC hardware. The cross-operation system design makes it possible to easily port software projects between platforms.

PCAN-Basic consists of the actual device driver and an interface DLL, which provides the API functions.

As the successor to PCAN-Light, PCAN-Basic offers increased functionality and extended language support. It provides various functions for developers under C++, C#, C++/CLR, Delphi, VB.NET, Java, and Python 2.6.



Features

- ___ Supports Windows 7/Vista/XP (32/64-bit) and Windows CE 6.x operating systems
- ___ Multiple PEAK-System applications and your own can be operated on a physical CAN channel at the same time
- ___ Use of a single DLL for all supported hardware types
- ___ Use of up to 8 channels for each hardware unit (depending on the PEAK CAN interface used)
- ___ Simple switching between channels of a PEAK CAN interface
- ___ Driver-internal buffering of 32,768 messages per CAN channel
- ___ Precision of time stamps on received messages up to 1 µs (depending on the PEAK CAN interface used)
- ___ Access to specific hardware parameters, such as listen-only mode
- ___ Notification of the application through Windows events when a message is received

- ___ Extended system for debugging operations
- ___ Multilingual debugging output
- ___ Output language depends on operating system
- ___ Debugging information can be defined individually

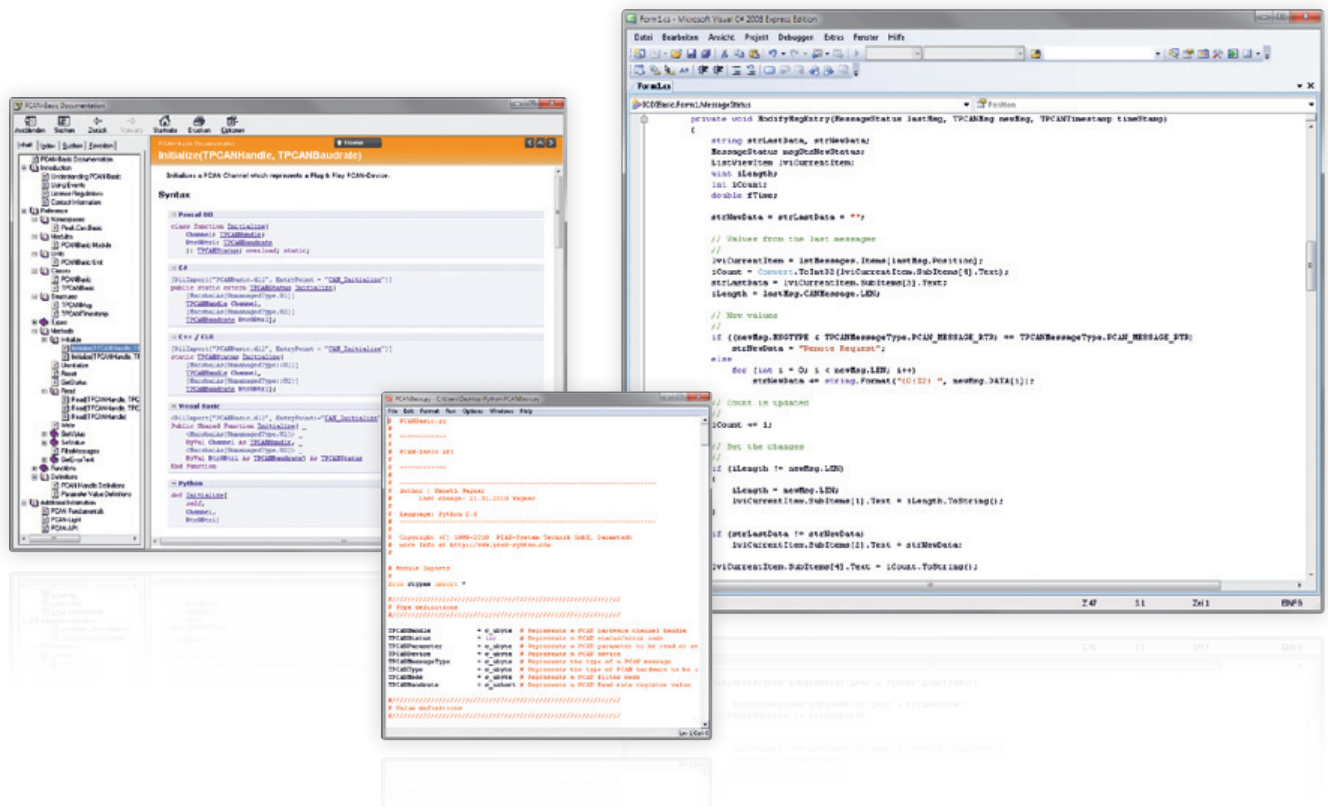
Note: ISA and parallel port CAN interfaces only support 32-bit

PCAN-Basic for Windows CE

PEAK-System provides PCAN-Basic API to allow the development of your own CAN applications for Windows CE 6.x. Programmers can also use the languages C++, C# and VB.NET.

PCAN-Basic for Linux

A Linux version of the PCAN-Basic API is currently being developed and will be available soon.



Functions

- Connection:
- Initialize: Initialize hardware, set the bit rate, drivers log on
- Uninitialize: Drivers log out
- Configuration:
- SetValue: Setup of hardware parameters such as debug log, listen-only, and auto-reset
- FilterMessages: Register messages to be received
- Information:
- GetValue: Read out DLL and API information
- GetStatus: Read out CAN bus status information
- GetErrorText: Get an error code description
- CAN communication:
- Read: Read a CAN message or status inc. time stamp
- Write: Transmit a CAN message (11/29-bit ID and RTR possible)
- Reset: Clear the transmit and receive buffer

Ordering information

Designation

PCAN-Basic

Scope of supply

- Interface DLL, examples, and header files for all common programming languages
- Documentation in HTML Help format

The current version ...

... is available on the product CD (supplied with our hardware)
 ... can be downloaded from the Internet free of charge at www.peak-system.com

System requirements

- Windows 7/Vista/XP (32/64-bit) or Windows CE 6.x
- At least 512 MB RAM and 1 GHz CPU