

PCAN-Router Pro FD

Programmable 6-Channel Router for CAN and CAN FD with I/O and Data Logger

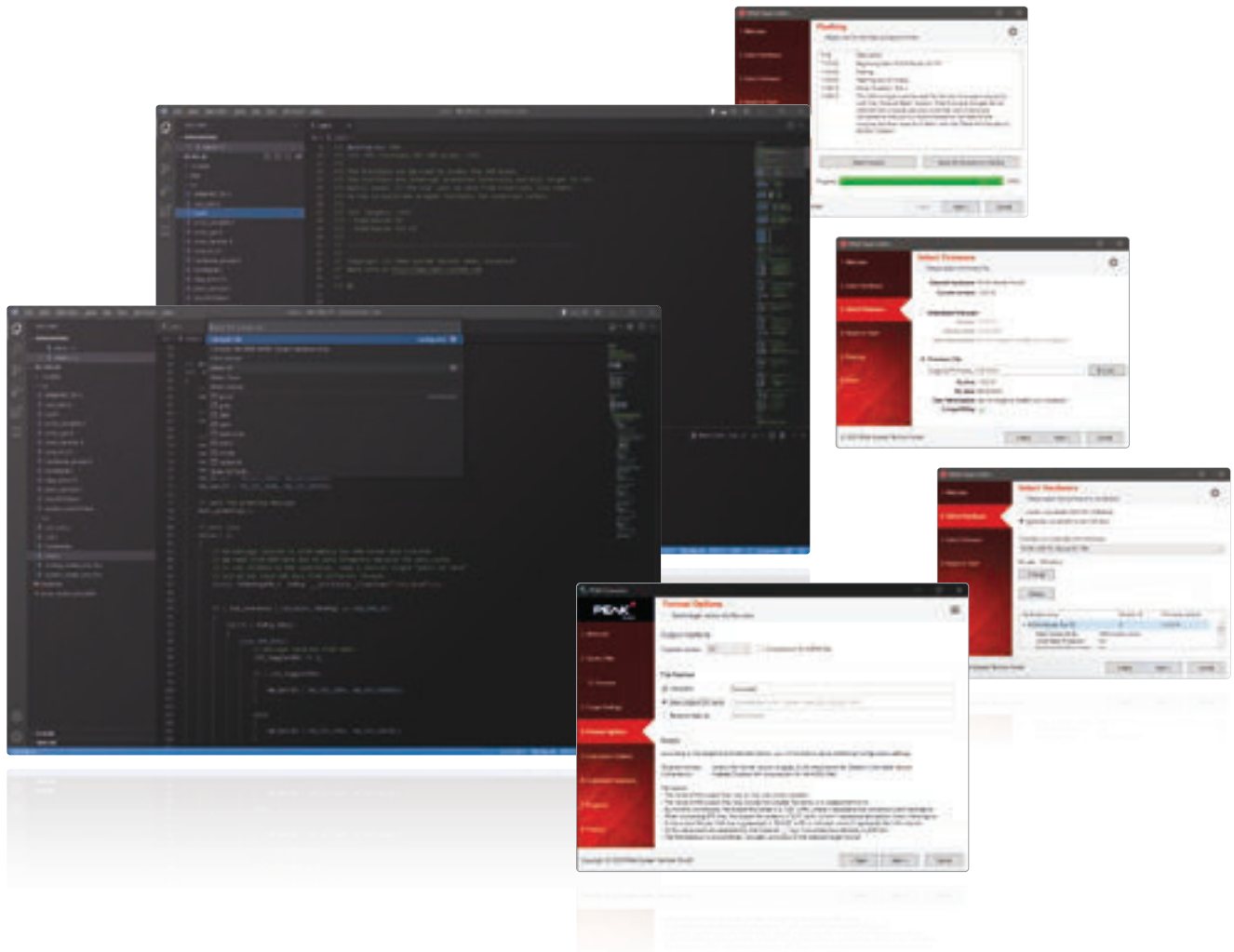


With six channels, the PCAN-Router Pro FD links the data traffic of modern CAN FD and classic CAN buses. Pluggable CAN transceiver modules allow flexible adaptation of each CAN channel to the respective requirements. In addition, the router is equipped with an analog input and four digital I/Os. The CAN messages can be recorded on the internal memory or on an inserted memory card and later read out via the USB connection. With the PCAN-Router Pro FD the data flow of test benches and production plants can be managed, monitored, and controlled. The conversion from CAN to CAN FD or vice versa enables the integration of new CAN FD applications into existing CAN 2.0 networks.

The behavior of the PCAN-Router Pro FD can be programmed freely for specific applications. The firmware is created using the included development package with GNU compiler for C and C++ and is then transferred to the module via CAN. Various programming examples, such as message forwarding or recording, facilitate the implementation of own solutions.

Specifications

- ___ 6 High-speed CAN channels (ISO 11898-2)
 - Comply with CAN specifications 2.0 A/B and FD
 - CAN FD support for ISO and Non-ISO standards
 - CAN FD bit rates for the data field (64 bytes max.) from 40 kbit/s up to 12 Mbit/s
 - CAN bit rates from 40 kbit/s up to 1 Mbit/s
 - NXP TJA1043 CAN transceiver with wake-up
 - Alternative pluggable transceiver modules on request (details on page 9)
- ___ CAN connections are D-Sub, 9-pin (in accordance with CiA® 106)
- ___ CAN termination switchable, separately for each CAN channel
- ___ Wake-up function using separate input, CAN bus, or real-time clock
- ___ 2 digital I/Os, each usable as input or output with High-side switch
- ___ 2 digital I/Os, each usable as input or output with Low-side switch
- ___ 1 analog input (0 to 32 V)
- ___ Recording of CAN data and error frames
- ___ Internal memory: 16 GByte pSLC eMMC
- ___ SD card slot for additional memory



- ___ USB connection for accessing the data memory (e.g. recorded log data)
- ___ Conversion of logging data to various output formats using the Windows software PEAK-Converter
- ___ Battery-buffered real-time clock (RTC), can also be used for wake-up
- ___ Beeper
- ___ Status LEDs for CAN channels, memory cards, and power supply
- ___ Microcontroller STM32F765NIH6 (based on Arm® Cortex® M7)
- ___ 32 MByte SDRAM in addition to microcontroller RAM
- ___ Aluminum casing with flange
- ___ 8 to 32 V power supply, protection against overvoltage and reverse polarity
- ___ Slot for a backup battery for defined switch-off behavior (e.g. for log data saving)
- ___ Ethernet interface via RJ-45 socket, max. 100 Mbit/s (only for IPEH-002222)
- ___ Extended operating temperature range from -40 to +85 °C (-40 to +185 °F)

Data Logging

On delivery, the PCAN-Router Pro FD is equipped with a firmware for recording CAN and CAN FD data traffic. The messages of all six CAN channels can be stored on the internal eMMC memory or on an inserted SD card. The storage media can be accessed via a USB connection.

Users can configure the recording with a text file without any programming knowledge. Various options are available:

- ___ Separate configuration of the 6 CAN channels
 - Setting the CAN specification to 2.0 A/B, CAN FD ISO, or CAN FD Non-ISO
 - Setting the nominal and data bit rates
 - Enabling or disabling the Listen-Only mode
- ___ Recording of data frames, error frames, or data and error frames
- ___ Setting of the trace mode and maximum file size
- ___ Setting of the storage medium for saving the trace files
- ___ Definition of a CAN message for setting the real-time clock (RTC)



- ___ Configuration of events for starting and stopping the recording
 - Powering the device
 - By pressing the Log Off Card button
 - By receiving a specific CAN message
- ___ Configuration of timeout events for stopping the recording or shutting-down the device
 - Data traffic has stopped
 - Power loss on terminal 15 (Wake-up / pin 1 of the power connector)
 - Main power loss
- ___ Defining beep patterns for tracing start, end, and error events
- ___ Defining the LED blinking pattern
- ___ Automatic charging of an inserted backup battery
- ___ Only when used with Ethernet interface (IPEH-002222):
 - FTP access for downloading trace files and uploading the configuration file
 - WebSocket connection for remote controlling via Ethernet with message transfer in JSON format (example website included in the development package)

Besides the programming examples, the data logger firmware is included in the development package for the PCAN-Router Pro FD and can be downloaded for free.

Ordering information

Designation	Part No.
PCAN-Router Pro FD	IPEH-002220
PCAN-Router Pro FD with Ethernet interface	IPEH-002222

Scope of supply

- ___ PCAN-Router Pro FD in aluminum casing including mating connectors for I/O and power
- ___ USB connector cable
- ___ IPEH-002222: RJ-45 network patch cord (2 m)
- ___ Windows development package with GCC ARM Embedded, flash program, and programming examples
- ___ Conversion software PEAK-Converter for Windows 11 (x64/ARM64), 10 (x64)
- ___ Manual in PDF format

Requirements

- ___ The transfer of the firmware via CAN requires a PEAK CAN interface