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PCAN-GPS

Programmable Sensor Module with CAN Connection

The PCAN-GPS is a programmable sensor module for position and orientation determination. It has a satellite receiver, a magnetic field sensor, an accelerometer, and a gyroscope. The sampled data can be transmitted on a CAN bus and logged on the internal memory card. The data processing is performed by a microcontroller of the NXP LPC4000 series.

Using the supplied library and the Yagarto GNU ARM toolchain (contains the GNU Compiler Collection GCC for C and C++), custom firmware can be created and then transferred to the module via CAN. This gives a whole range of options for manipulation, evaluation, filtering, and routing of the data traffic.

On delivery, the PCAN-GPS is provided with a demo firmware that transmits the raw data of the sensors periodically on the CAN bus. The source code of the demo firmware as well as further programming examples are included in the scope of supply.



Specifications

- NXP LPC4000 series microcontroller (ARM Cortex-M4)
- Receiver for navigation satellites u-blox MAX-7W (GPS, Galileo, GLONASS, QZSS, and SBAS)
- Bosch BMC050 electronic three-axis magnetic field sensor and three-axis accelerometer
- Gyroscope STMicroelectronics L3GD20
- High-speed CAN channel (ISO 11898-2) with bit rates from 40 kbit/s up to 1 Mbit/s
- Complies with CAN specifications 2.0 A/B
- On-chip 4 kByte EEPROM
- microSD™ memory card slot
- Wake-up by CAN bus or by separate input
- 2 digital inputs (high-active)
- 1 digital output (low-side driver)
- LEDs for status signaling
- Connection via a 10-pole terminal strip (Phoenix)
- Voltage supply from 8 to 30 V
- Extended operating temperature range from -40 to 85 °C (with exception of the button cell)
- New firmware can be loaded via CAN interface

Ordering information

Designation	Part No.
PCAN-GPS	IPEH-002110

Scope of supply

- PCAN-GPS in plastic casing including mating connector
- External antenna for satellite reception
- Windows development software (Yagarto GNU ARM toolchain, flash program)
- Library with programming examples
- Manual in PDF format

Requirements

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