

piSmart-Gateway Low Cost

Item number: 911130428



IoT gateway and CAN bus logger in one - for new and existing machines

Overview

The piSmart-Gateway Low Cost meets the requirements of modern IoT solutions. It is used as a data interface, as a data logger or as a retrofit module in devices, machines, vehicles and systems. The high-performance computing kernel enables the operating, sensor and position data to be processed and analyzed directly in the gateway. This data can then be transferred wirelessly to the pironex IoT cloud.

Integration with a pironex IoT app can be implemented if required.

- › **CAN-Interface** for checking and analyzing, e.g. the vehicle bus data
- › **microSD-Card** for secure data recording even without a permanent internet connection
- › **LTE NB-IoT** for optimal energy efficiency, thanks to functions such as sleep mode, long-periodic tracking area updates and extended discontinuous reception
- › **MQTT** for reliable and encrypted data transmission from environments with low bandwidth and high latency
- › **Cloud-Plattform** pironex-iot.com for the visualization and analysis of the data
- › **Different sensors as well as radio modules** for compatibility with numerous SPS / PLCs, HMIs and embedded controllers

Possible uses

As a module for the Industrial Internet of Things (IIoT), the piSmart gateway collects low-cost data in the direct vicinity of machines and systems. This makes it an easy-to-use solution for the implementation of Industry 4.0 concepts:

- › Remote diagnosis and device control
- › Over-the-Air-Updates
- › Sensor data acquisition

- › CAN-Bus-Logger for vehicles
- › Retrofit-Module for existing systems

As a CAN bus data logger with an integrated microSD card, the gateway can either process the recorded data in real time or store it temporarily for later evaluation. The CANopen messages are received and filtered according to the configuration.

As a retrofit module, the gateway meets the industrial requirements for upgrading existing systems to Industry 4.0. It offers the possibility of translating and transferring data between systems with different communication protocols and data formats.

The gateway has been specially designed for extreme environments with limited space and can withstand shocks, vibrations and a very wide temperature range. This makes it suitable for use in harsh vehicle environments.

The gateway is also **KBA type-approved** and holds **ECE type-approval E110R07/0110864*00**.

Application-specific modifications are possible - the form factor, the interfaces and the performance can be customized.



The system is flexible and can be adapted or expanded as required (including format format, interface expansion, battery life, software modules).

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Technical data

Basics

Supply voltage	12V or 24V DC $\pm 10\%$ max. 45V
Processor	ESP32-D0WD-V3 embedded, Xtensa® dual-core 32-bit LX6 micro-processor
Clock	up to 240 MHz
Battery (optional)	prismatic 1Ah
Dimensions	93 x 72,5 x 30 mm
Temperature	with external power supply: -40 - 60 °C in battery mode: -10 - 40°C

Other features

Sensors	- Acceleration - Temperature - Electricity consumption measurement
Memory	- SRAM: 520 KB SRAM, 16KB SRAM in RTC - Flash: 16MB - EEPROM: 448 KB ROM
Casing	- PA6, Aluminium - for screw connection

Interfaces

USB	for GSM updates
Inputs	2x 0-10V analogue/digital
Outputs	1x Opto-relay 2x H-bridge
CAN-Bus	up to 1MBit/s
SIM	SIM-Chip
Mobile radio	2G(EGPRS): 850/900/1800/1900 MHz, chip antenna - LTE-Cat M1 (LTE-FDD): B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85, chip antenna - LTE-NB-IoT (LTE-FDD): B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85, chip antenna
WiFi	802.11 b/g/n, 2,4 GHz
GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS, chip antenna

Software

Update	- FOTA - CAN-Bootloader
Supported protocols	- Modbus - CAN-Open - SSH - JSON - MQTT - AWS - https - CoAP
Functions	A-GPS
Cloud	pironex-iot.com with the following modules: - Data Logging - Monitoring - Sharing - Remote Control - Geofencing - Asset Tracking - Predictive Maintenance - Anomaly Detection