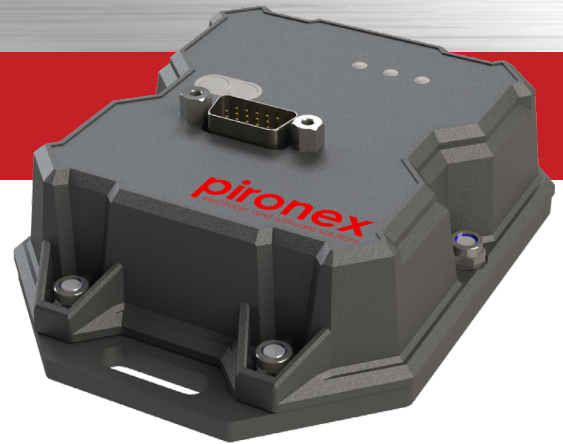# pironex
electronic and software solutions

piSmart-Gateway-II-IoT
Article number: 911130412

Gateway

Unique Features

- Zigbee/Thread
- RFID
- GNSS
- LTE CAT M1
- Accelerometer + Gyroscope
- Temperature sensor
- microSD card
- WiFi (optional)
- CAN bus (optional)

Description

❯ LTE CAT M1 for data transmission over long distances, even in urban regions.

❯ Zigbee/Thread for integration in home automation

❯ RFID for reliable reading of RFID tags over short distances

❯ GNSS for accurate positioning of the unit

❯ CAN bus for robust data exchange between several participants over medium distances

❯ Multi-function sensor for a wide range of measured values such as temperatures, intrinsic movement, direction of rotation and orientation of the unit

❯ Multiple interfaces for expansion of the gateway with any desired functions

❯ microSD card slot for recording various data such as position or self-acceleration

Operation Location

The piSmart-Gateway-II-IoT is a flexible gateway for IoT applications through a wide range of interfaces and is characterised by a small form factor. In addition, the development of an expansion board is possible, e.g. with new sensor technology, actuator technology or interfaces.

❯ Activation of locks for e.g. cycle stations or lockers

❯ Remote control/maintenance of systems

❯ Logging

❯ Geofencing

❯ BT asset tracking

❯ GPS tracking

❯ Vehicle anti-theft

The gateway is designed specifically for space-constrained environments and can withstand shock, vibration and extreme temperature conditions.

Application-specific modifications are possible - so the form factor, interfaces as well as performance can be customised.

User groups

- B2B
- Hard- and Software developer

Operating environment, country

- Outdoor
- Indoor
- home or industrial use

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Microcontroller/Processor

Processor	STM32L486VGT6
	Arm® 32-bit Cortex®-M4
	up to 80MHz
SRAM	128kB
Flash	1MB

Interfaces

CAN	1x CAN Transceiver, bis 1 Mbit/s
LTE CAT M1	
Frequency/Band	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B85
Transmission Power	max. 33dBm
GNSS:	GPS, GLONASS, BeiDou
Frequency/Band	GPS: 1575MHz GLONASS: 1597.5MHz BeiDou: 1561MHz
Transmission Power	15dBm
GSM/GPRS:	
Frequency/Band	GSM 800-900MHz / E-GSM: 880-960MHz
Sensitivity	-109dBm
UART	up to 220Kbaud
I²C	up to 400kbit/s, 3.3V or 5V
PDM	connection for a PDM-Mikrophone
H-Bridge	max. 12V, 0.8A, 2 Bridges
Frequency/Band	2.4GHz
Transmission Power	10dBm
RFID:	
Supported protocolls	ISO14443 A und B, ISO15693
Frequency	13,56MHz
Programming Interface	SWD (STM32F105RC), JTAG (CC2640F128RGZT)
digital Input Optocoupler:	

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Operating Voltage	0V - 18V
Withstand Voltage	20V continuous
Low-Level VL (log. "0")	Ground
High-Level VH(log. "1")	external voltage connected to P30:9
I @ log. 0	max. 100mA
Reference Potential	Ground potential of the piSmart-Gateway-2
Protection	Short circuits against ground and supply
Digital Output Optorelais:	
Operating Voltage	0V - 40V
Withstand Voltage	45V, 60s
Low-Level VL (log. "0")	[0 V ; 0.8]
High-Level VH(log. "1")	[1,2V ; 40V]
I @ log. 1	max. 55mA

Additional Features

Sensors	3G-Sensor:
	· 3 axis
	· 14 bit
	· ± 2 g / ±4 g /± 8 g / ±16 g
	Magnetometer
	· 3 Axis
	· 16 bit
	· ±1200 µT
Memory	EEPROM, 16kbit
	Flash, 32Mbit
Real Time Clock	32.768kHz-Crystal, Timer-Function, Alarm-Function

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Enviromental Conditions

Operating Location	Indoor, Outdoor: only within the limits mentioned below, protect from direct sun
Operating Temperature	"with Voltage Supply: -40 °C to +60 °C when used with Battery Pack: -10 °C to 40 °C"
Storage Temperature	-40 °C to +60 °C
Transport Temperature	-40 °C to +60 °C
Gradient of Temperature	5 K/min (avoid dew)
Relative Humidity	Max. 70%, avoid dew
Height above Sea Level	up to 2000 m
Height above Sea Level (Storage/Transport)	up to 3000 m
Degree of Pollution	Pollution Degree 2

Voltage Supply

Voltage VDC	4,5VDC - 50VDC
max. Power Pmax	10W
max. Current Imax	1.45A
Battery	Lithium-Polymer-Akku or primary cell, charge variable / 3.7 V
Widthstand Voltage	54V, 60s
Reverse Polarity Protection	yes

Directives

2014/53/EU	Radio Equipment Directive
2011/65/EU	Restriction of certain Hazardous Substances (ROHS)
2012/19/EU	Waste of Electrical and Eletronic Equipment (WEEE)
EC 1907/2006	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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Mechanic

Dimensions	122 mm x 88,5 mm x 36 mm, height depending on the required mounting plate
Weight	195g inc. Battery
IP-Class	IP65-68 (DIN EN 60529:2014-09; VDE 0470-1:2014-09) depending on the number and type of cables required.
Material	Housing PA6GF / base plate depending on application, AlMg3 or PC
Resistance of the Housing against aggressive chemicals	Resistant to cooling lubricants and hydraulic fluids Light cleaning agents
Resistance of the Housing against UV-Light	yes, in industrial use
Mounting Type	Customised mounting plate / housing is screwed in place

Technical drawing (dimensions in mm)