



## Multi-NRG-Gateway

Item number: 911131158

### Features

- LoRa
- wM-Bus
- Modbus
- S0/D0 - Input
- LTE CAT-1

### Overview

The Multi-NRG-Gateway is a flexible gateway that can be customised to your needs.

This gateway contains a high-performance ESP32-S3-WROOM module from Espressif. This has two cores which run at up to 240MHz clock frequency. You can easily programme the device. The software can also be provided by pironex GmbH.

The device has all common interfaces in the metering sector. This makes it possible to read both wired and wireless sensors and consumption meters. The data can be transferred to a server on the Internet via the WLAN or LTE interface.

The Multi-NRG-Gateway has the following interfaces:

- 1x LTE CAT-1
- WIFI 802.11 b/g/n
- 1x wM-Bus radio interface
- 1x LoRa radio interface
- 1x mBus master
- 1x S0
- 1x Modbus
- 1x eHZ

The MQTT protocol is used for data transmission to ensure secure data transmission.

You can use our IoT portal <https://pironex-iot.com/> to quickly analyse and conveniently visualise your data.



### Unique selling point

- Multi-input gateway with variable backend service

### Place of use

- Indoor
- Residential and commercial buildings

### Target group

- Measurement service provider
- Housing management
- Planner



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### Technical data

#### Microcontroller/processor

<b>Processor</b>	ESP32-S3-WROOM-1 Dual-Core 32 bit Xtensa LX7 microprocessor up to 240 MHz
<b>Flash</b>	16MB
<b>SRAM</b>	512 KB
<b>ROM</b>	384 KB
<b>SRAM in RTC</b>	16 KB

#### Additional properties

<b>Data sources</b>	External LoRa sensors
<b>Control elements</b>	Reset button Wake up button

#### Ambient conditions

<b>Place of use</b>	Indoors, protect from direct sunlight protect
<b>Working temperature</b>	with external power supply: -40 °C to +60 °C in battery mode: -10 °C to 40 °C
<b>Storage temperature</b>	-40°C to +80°C
<b>Transport temperature</b>	-40 °C to +80 °C
<b>Temperature change</b>	5 K/min (no condensation permitted)
<b>Relative humidity</b>	Max. 70%, condensation must be excluded
<b>Altitude above NHN</b>	Up to max. 2000m
<b>Altitude above NHN (storage/transport)</b>	Up to 3000 m above sea level
<b>Degree of contamination</b>	Pollution degree 2



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## Interfaces

<b>USB-C 2.0</b>	1x USB-C firmware update and terminal
<b>RS485 for Modbus RTU</b>	Half duplex, up to 1 Mbps, galvanically isolated up to 4 kV transient, 560V AC voltage
<b>RS232 for eHz</b>	up to 250 kbps, RJ10-4p4c connector
<b>S0 counter input</b>	galvanically isolated up to 3750 V
<b>mBus master</b>	in accordance with EN1434 + EN13757-2/3
<b>GSM:</b>	
<b>Frequencies/Bands</b>	850/900/1800/1900MHz
<b>Transmission power</b>	Class 5 (Typ. 21 dbm)
<b>Cat-1</b>	
<b>Frequencies/Bands</b>	B1/B2/B3/B4/B5/B8/B12/B13/ B14/B18/B19/B20/B25/B26/ B27/B28/B66/B85
<b>Transmission power</b>	Class 5 (Typ. 21 dbm)
<b>Cat-NB</b>	
<b>Frequencies/Bands</b>	B1/B2/B3/B4/B5/B8/B12/B13/ B18/B19/B20/B25/B26/B28/ B66/B71/B85
<b>Transmit power</b>	Class 5 (type 21 dbm)
<b>GNSS:</b>	GPS L1, GLONASS, BeiDou, Galileo
<b>Frequencies/Bands</b>	GPS: 1574.4-1576.44 MHz GLONASS: 1598.0625 -1605.375 MHz BeiDou: 1559.052-1591.788 MHz Galileo: 1574.4-1576.44 MHz
<b>Wi-Fi:</b>	IEEE 802.11b/g/n
<b>Frequencies/Bands</b>	2412MHz-2484MHz
<b>Transmission power</b>	max. 20.5dBm
<b>wireless M-Bus / OMS</b>	Wireless M-Bus EN13757-4: 2013 standard, OMS (Open Metering System) support
<b>Frequencies/Bands</b>	868.3 - 869.525 MHz
<b>Transmission power</b>	max. 14 dBm
<b>LPWAN concentrator:</b>	Semtech SX1303 and SX126X
<b>Frequencies/Bands</b>	up to 10 programmable parallel demodulation paths 8 x 8 channel LoRa packet detectors, 8 x SF5-SF12 LoRa demodulators, 8 x SF5-SF10 LoRa demodulators 862 - 1020 MHz
<b>Transmission power</b>	max. 27 dBm
<b>Reception sensitivity</b>	-139 dBm @ SF12, BW 125 kHz

Data sheet Multi-NRG-Gateway



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### Further guidelines

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

### Power supply

<b>Voltage VDC</b>	24 V $\pm$ 30%
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