Mobile Gateway

The Mobile Gateway receives data from ioLiving measurement devices and transfers it to the ioLiving cloud service via mobile network.

Dimensions:	100*58*25 mm
Power supply:	Powered with included USB charger and rechargeable battery. Battery capacity 20 hours.
Protection:	IP65, protected against water jets
Status lights:	The LEDs (red, blue, and green) indicate the operation of the device and possible error conditions
Temperature:	Operating temperature 0° - 40°C
4G/LTE radio:	Channels 3 and 20, Cat M1 and NB1
Bluetooth LE radio:	2.4 GHz
LoRa radio:	871.5 MHz

CE

Description of operation

The Mobile Gateway receives measurement data from ioLiving measurement devices via Bluetooth and LoRa (also repeated) radios and transfers the measurement data to the ioLiving cloud service via mobile network. The device is meant to be powered from mains current, although it includes an internal rechargeable battery, which keeps the device operating during the short power failures. The battery capacity is enough to support about 20 hours of operation.

The device operation requires that it is located within the coverage area of the mobile network and within the range of the measurement devices' data transfer signals.

The device scans and chooses the best available network operator during the startup (Mobile Gateway version 2.1 and newer).

The Mobile Gateway does not transfer stored measurement data from the measurement devices, like other ioLiving Gateway devices do. If it is necessary to transfer the stored measurement data, it can be done with an Android phone using ioLiving Handy application. The device is not designed to be used in a moving vehicle, because rapid switching of mobile network base station may cause loss of the network connection.

Internet connection

The Mobile Gateway includes a factory assembled international SIM card, and it does not have to be connected to WiFi or LAN network. All the network parameters and settings are preset. The device connects to 4G/LTE network and internet automatically. The SIM card can be removed or replaced only by an authorized service.

The SIM card operates in following countries: Bosnia & Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Jersey, Luxembourg, Macedonia, Malta, Monaco, Netherlands, Norway, Poland, Serbia, Slovakia, Spain, Sweden, Switzerland, and United Kingdom.

Starting the use

The Mobile Gateway is activated by connecting the device to the mains and switching it on. The version 2.1 searches for the available Mobile networks and chooses the best available one. This takes normally 5-15 minutes depending on the quality of the networks.

1. **Functional check in the ioLiving service**
   Mobile Gateway must be activated in the ioLiving service:

   → Device settings
   → Gateway devices

   The data transfer device is activated by adding its serial number to the service, giving the device a nickname, and selecting "Activate". After the activation, the data transfer device and its information is displayed here.

2. **Operation of status** lights
   You can view the operation of the Mobile Gateway with the cover light. The following table describes the operation of the indicator light in different situations.

Status lights on startup (0-15 min)		**Status lights after the startup**	
TURQUOISE VIOLET	Connecting to mobile network	GREEN TURQUOISE	**On alternately =** The device receives the LoRa message and is connected to the server
BLUE RED	**Blinks alternately =** SIM card is missing or incorrectly inserted. No mobile network connection.	BLUE RED	**Blinks alternately =** SIM card is missing or incorrectly inserted. No mobile network connection.
GREEN	**On 500 ms =** The device is on and starts operating **On 1000 ms =** Self-test completed successfully **Constantly on =** The device is connected to a mobile network	RED AND VIOLET	**On alternately =** The device receives the LoRa message. No connection to the server.
BLUE	**Blinks once per second** **10 times =** The Bluetooth communication starts **Fast blinking =** LoRa module failure **Constantly on =** The device is connected via Bluetooth to a mobile phone, for example	BLUE	**Blinks once per second** **10 times =** The Bluetooth communication starts **Fast blinking =** LoRa module failure **Constantly on =** The device is connected via Bluetooth to a mobile phone, for example
RED	**Blinks 3 times =** Battery voltage low, connect the device to the power supply **Fast blinks =** IOT module failure **Constantly on =** Could not connect to mobile network	RED	**Blinks 3 times =** Battery voltage low, connect the device to the power supply **Fast blinks =** IOT module failure

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