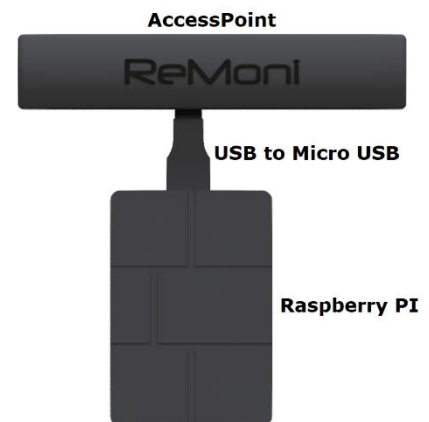


## Data Sheet Gateway, routing data between sensors and cloud

Revised: November 2019

- ❖ Gateway for routing data between sensors/repeaters and the cloud, ReCalc.
- ❖ Route data to and from up to 500 sensors.
- ❖ Transmits data to ReCalc using Ethernet, mobile network or WiFi.
- ❖ 5V power supply, through standard micro USB power supply.
- ❖ The AccessPoint (including the sensor radio) can be mounted away from the gateway, if needed.



## APPLICATION

The ReMoni system monitor technical installations/devices/machines and their energy consumption.

Data are monitored on different units (machines, devices, etc.) and wirelessly transmitted to the gateway and further to the cloud solution ReCalc. Measured data and graphical views can be accessed from ReCalc<sup>1</sup>.

The gateway links the communication between sensors and the cloud, transmitting data from the wireless sensors to the cloud, and disseminates parameter settings from the cloud to the sensors.

The gateway consists of:

- An AccessPoint (radio with built-in antenna), for receiving measured data from sensors/repeaters.
- A Raspberry Pi for data handling. It comes with built-in Ethernet and WiFi and can optionally be extended with mobile data via a dongle<sup>2</sup>.
- A USB cable connecting the AccessPoint and the Raspberry Pi.
- A standard 5V 2.5A micro USB power supply.

Several gateways can be used together if needed. This will also establish a redundant system. Install them with a minimum distance of 2 meters between them to avoid data collisions.



<sup>1</sup> <https://recalc.remoni.com/>

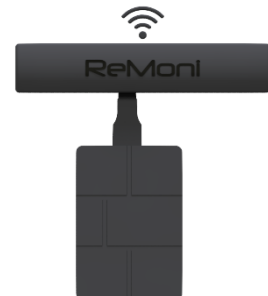
<sup>2</sup> Please note that ReMoni can only guaranty that dongles ordered via ReMoni, or listed positive on the ReMoni website will work on the gateway, since mobile data dongle vary a lot.

## INTERNET CONNECTION

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The gateway must be connected to the internet, for transferring data to ReCalc, using one of the following solutions:

- ❖ Solution 1: The built-in Ethernet on Raspberry Pi.
- ❖ Solution 2: Mobile data via USB dongle connected to the Raspberry Pi. The USB dongle has a built-in antenna, and need a SIM card to transmit data.<sup>2</sup>
- ❖ Solution 3: The built-in WiFi on Raspberry Pi.



### Solution 1:

Communication via Ethernet. Recommended by ReMoni since connection via cable ensures the most reliable connection.

### Solution 2:

Mobile data communication module, as an USB dongle with a SIM card.

### Solution 3:

Communication via WiFi.

## INSTALLATION

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The installation manual can be downloaded from ReMonis website in the download section:  
<https://www.remoni.com/support>

## WIRELESS DATA TRANSMISSION

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The data sheet for wireless communication can be downloaded from ReMonis website in the download section:  
<https://www.remoni.com/support>

## HARDWARE AND SOFTWARE TESTS

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All ReMoni products are tested individually before shipped from the factory.

## SOFTWARE CONFIGURATION

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There is no software to be configured on the gateway. All configurations are made in ReCalc:  
<https://recalc.remoni.com>

## TECHNICAL DATA

<p><b>Technical data, Raspberry Pi.</b></p> 	Control module base:	Raspberry Pi. <sup>3</sup>
	Raspberry Pi generations:	Raspberry Pi 3.
	Power supply:	A standard 5V 2.5A micro USB power supply.
	Connection:	To access point, USB to Micro USB connector
	Number of access points per Raspberry Pi:	1
	No. of sensors:	Up to 500 sensors.
	Data transmission to the internet and cloud is obtained using one of the following methods:	a) Ethernet. b) Mobile data. (requires a dongle and SIM card) c) WiFi.
	Security:	The Gateway only uses outgoing messages and is therefore not open for ingoing messages to improve security.
	Data management:	If the Gateway loses its internet connection the data is logged. When the internet has been reestablished, the data is sent.
	Connection to other sensors:	Coming later.
	Encapsulation:	Standard Raspberry Pi plastic casing.
	Data availability:	Data for more than 500 sensors can be stored for more than a month.
	Multiple gateways:	Multiple gateways can be installed with a minimum distance of 2 meters, operating simultaneously, forming a redundant data chain.
	Surrounding temperature:	-10 to 70°C
	Transport temperature:	-40 to 80°C
	Protection class:	Indoor mounting.
	Color:	Black. Alternative casing can be used.
Approvals:	CE approved <sup>4</sup> .	

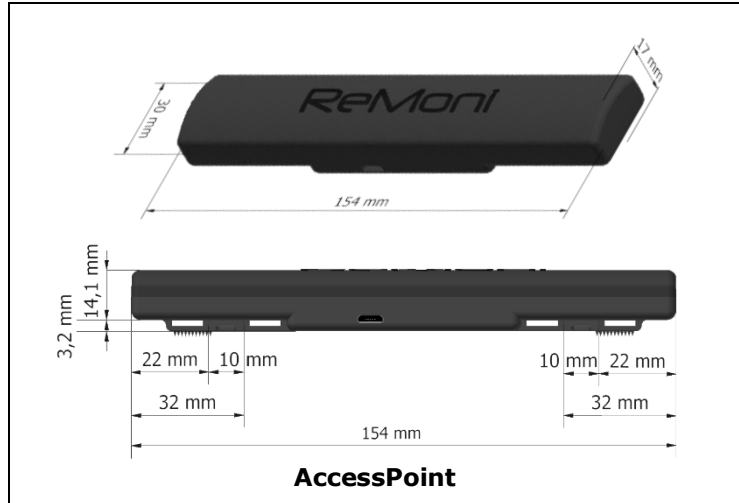
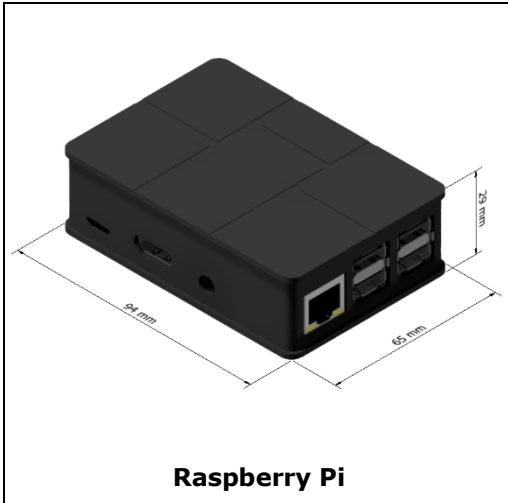
<sup>3</sup> See the Raspberry Pi datasheet for further details.

<sup>4</sup> CE approved by a third party vendor.

<b>Technical data; AccessPoint.</b> 	Power supply:	From the Raspberry Pi.
	Connection:	Connected to Raspberry Pi using a USB to Micro USB connector
	Multiple gateways:	Multiple gateways can be installed with a minimum distance of 2 meters, operating simultaneously, forming a redundant data chain.
	Surrounding temperature:	-20 to 70°C
	Transport temperature:	-40 to 80°C
	Encapsulation:	PC, polycarbonate.
	Protection class:	IP20.
	Color:	RAL 9005 (black).
	Weight:	49 g.
	Placement:	For indoor mounting. Outdoors possible in a suitable cabinet.
	Product conformity:	CE. - RED (2014/53/EU). - LVD (2014/35/EU). - RoHS Directive 2011/65/EU.
	Standards:	RED: - EN 300 220-2 V3.1.1:2017-02 - EN 301 489-1 V2.2.0 (2017-03) - EN 301 489-3 V2.1.1 (2017-03) LVD: - EN 62311:2008

For technical information about *wireless technology, network, transmissions range, transmissions rate, and data security* see separate data sheet.

## DIMENSIONS



## ANNEX

Instructions for disposal of WEEE by users of the European Union



This product must not be disposed of with other waste. Instead, it's the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensures that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local office, your household waste disposal or where you purchased your product.

## CONTACT

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The latest version of the datasheet is available at <https://support.remoni.com/>.