



AirGTW-FWD

LoRa Gateway FWD for LoRaWAN networks



Characteristics

- LoRa Gateway has the LoRa receiver / transmitter function and the packet forwarder, receives / broadcasts LoRa messages and transmits them to the assigned server.
- LoRa Gateway serves as a transceiver for customers who have their own server solutions.
- The Gateway (or BTS - Based Transceiver Station) serves as a tool to create your own LoRa home network for the Internet of Things.
- It collects requests from end devices, and then transfers them to a predetermined Server.
- The antenna provides radiation in all directions.
- The gateway is also designed for outdoor use.
- For proper Gateway functionality, you need a connected Ethernet cable and a permanent 48 V DC / POE power supply.

General instructions

Internet of Things (IoT)

- The IOT wireless communications category describes the Low Power Wide Area (LPWA). This technology is designed to provide full-range coverage both inside and outside buildings, energy-saving and low-cost operation of individual devices. Individual networks - Sigfox, LoRa, NarrowBand - are available to use this standard.

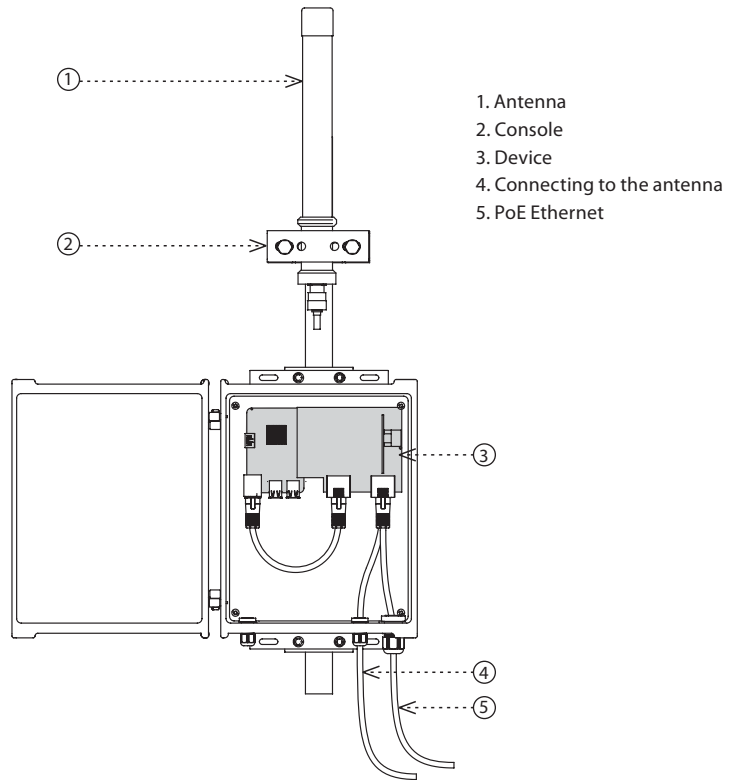
LoRa network information

- The network is bidirectional and its communication uses free frequency band.
 - 865 - 867 MHz India
 - 867 - 869 MHz Europe
 - 902 - 928 MHz North America, Japan, Korea
- The advantage of this network is the possibility of freely deploying individual stations in local locations, thus strengthening their signal. It can therefore be used efficiently in company premises or, for example, in local parts of cities.
- For more information on this technology, please visit www.lora-alliance.org.

Cautions for proper operation of the device:

- Products are installed according to the wiring diagram given for each product.
- The device must be registered on the server.

Description



Assembly

LoRa Gateway is attached by brackets to the classic boom or at the top of the mast. The placement must be such as to have a „free view“ in which it does not interfere with other antennas or metal elements. It is necessary to space apart the different antennas on a common mast.

Connection



Safe handling



When handling a device unboxed it is important to avoid contact with liquids. avoid unnecessary contact with the components of the device.

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Power supply

Supply voltage:	48 V DC / active PoE
Input:	max. 6 W

Connection

Connection:	PoE connector with RJ 45 power supply according to the 802.11af standard.
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Communication

Protocol:	LoRa
Transmitter frequency	
- UPLINK:	868,1 MHz, 868,3 MHz, 868,5 MHz
- DOWNLINK:	869,525 MHz
Encryption:	AES128
Range in open space:	Approx. 10 km
Transmission power (max.):	500 mW / 27 dBm

Hardware

Baseplate:	Rapsberry Pi 3
Max. connected nodes	thousands
OS:	Linux
LoRa chip:	Semtech SX-1301 s SX-1257

Antenna

Emission:	omnidirectional VGD4
Material:	high quality fiberglass
Gain:	8 dBi
Polarization:	vertical

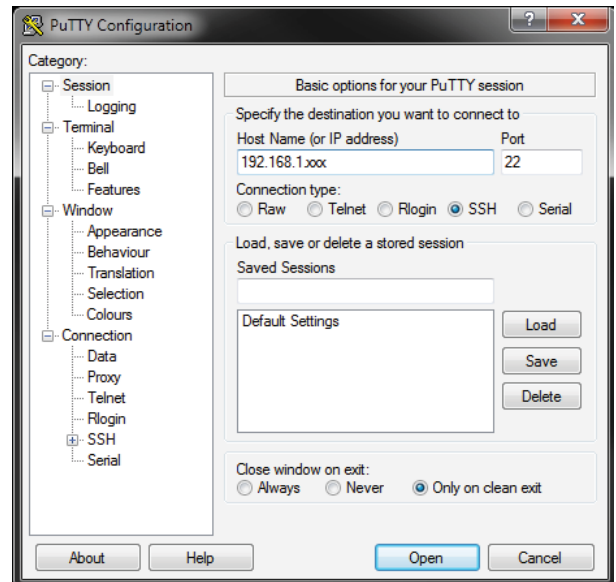
Other parameters

Working temperature:	-20 ... + 60 °C
Relative humidity:	95 %
Montage:	on the boom Ø 30-50 mm
Protection degree:	IP56
Overvoltage category:	III.
Pollution degree:	2
Dimension without antenna:	280 x 213 x 90 mm
Weight:	1731 g (without antenna)
Antenna length:	660 mm
Antenna Weight:	1400 g

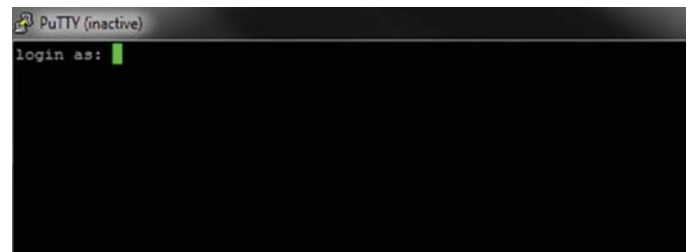
Warning

Read the operating instructions before installing the device and putting it into operation. Instruction manual is designated for mounting and also for user of the device. It is always a part of its packing. Installation and connection can be carried out only by a person with adequate professional qualification upon understanding this instruction manual and functions of the device, and while observing all valid regulations. Trouble-free function of the device also depends on transportation, storing and handling. In case you notice any sign of damage, deformation, malfunction or missing part, do not install this device and return it to its seller. It is necessary to treat this product and its parts as electronic waste after its lifetime is terminated. Before starting installation, make sure that all wires, connected parts or terminals are de-energized. While mounting and servicing observe safety regulations, norms, directives and professional, and export regulations for working with electrical devices. Do not touch parts of the device that are energized – life threat. To ensure the transmission of the radio signal, make sure that the devices in the building where the installation is installed are correctly located. Unless otherwise stated, the devices are not intended for installation in outdoor and damp areas, they must not be installed in metal switchboards or in plastic cabinets with metal doors - this prevents transmission of the radio frequency signal. iNELS Air is not recommended for controlling life-saving instruments or for controlling hazardous devices such as pumps, heaters without thermostat, lifts, hoists, etc. - radio frequency transmission may be overshadowed by obstruction, interference, transmitter battery may be discharged etc., thereby disabling the remote control.

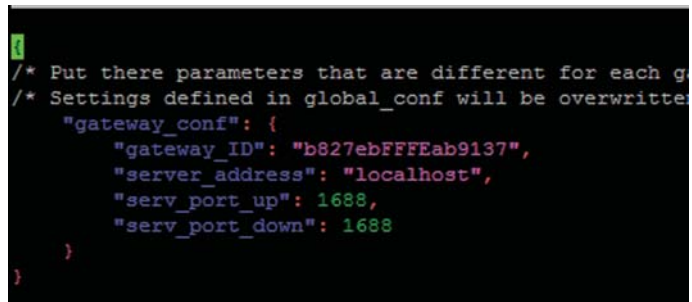
1) Connect SSH to GW. You need to know its assigned IP address.



2) Log in using the default username and password (elkoep, elkoGw12). After the first login, it is recommended to change the password.



3) In a text editor, open a configuration file, for example: `sudo nano /opt/semtech/packet_forwarder/lora_pkt_fwd/local_conf.json`. In the `local_conf.json` změníte pole `server_address`, `serv_port_up`, `serv_port_down` field to the desired server.



4) Save and reboot GW (sudo reboot now).