JOOBY Indoor Gateway LoRaWAN 500 EU

Manual

INTRODUCTION

This data sheet contains information on the purpose, structure, operation and key technical characteristics of the Jooby Indoor Gateway LoRaWAN (hereinafter—Gateway or Device).
This manual will guide you through the installation, operation, and maintenance of the Gateway.
The model description can be found in Table 1.

Model Description **Table 1**

JOOBY Indoor Gateway LoRaWAN 500 EU	
Data transmission technology	LoRaWAN
LoRaWAN radio frequency band, MHz / LoRaWAN standard	863–873 / EU 868
LoRaWAN transmitter's radiated power, max mW	25
External LoRaWAN antenna gain, dBi	3
LoRaWAN channels quantity	8
Connection type	Ethernet 10/100
Special features	RS-485 (optionally)
Operating temperature	from -40 °C to +60 °C
Case sealing class	IP50

PURPOSE AND TECHNICAL CHARACTERISTICS

The Gateway can perform the following functions, depending on its model:

- The Gateway is powered by an external power supply 12V.
- The Gateway communicates with radio modules using the LoRaWAN interface over 8 communication channels with SF5-SF12 modulation at 868 Mhz frequency.
- Connection with the LoRaWAN Network server can be established via Ethernet, LTE-FDD, EDGE, or GPRS networks (optionally WiFi), depending on the model.
- The Gateway has a USB port to install software from a flash drive if its existing software is malfunctioning.
- The Gateway is designed in a rectangular DIN-rail plastic case (4 units size). The control module is located inside. Its LED-pcb board indicates the status of the Device's power supply and the operation of its interfaces (see Table 2.1 and Fig. 1).
- Time precision is ensured by the built-in GNSS module and NTP servers within the network, complemented by RTC (real-time clock) error compensation based on environmental temperature. In absence of external power, the Gateway's clock is powered by a lithium battery.
- Automatic software updates from the update server if a new version or settings are available.
- The Gateway has a web UI for remote setup and device management.

Gateway indicators guide **Table 2.1**

LED name	**Color**	**Description and purpose**
POWER	green	Connected to 15V power source or PoE
BAT	green red	Battery charge: —battery fully charged —battery charging
SYSTEM	green red	Gateway mode —active mode/successful loading —power-saving mode/error
ALARM	red	Unauthorized case opening
NET	green	LTE connection established
LINK/ACTIVITY	yellow	Connection / Activity
LoRa_NET	blue	LoRaWAN server connection established

See Table 2.2 for the Gateway's technical characteristics

Table 2.2

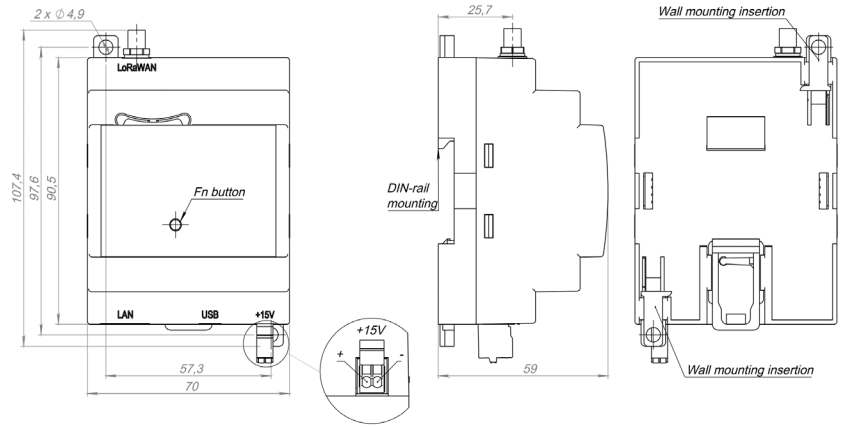
Attribute	**UOM**	**Value**
Voltage range of external power supply	V	15
Active power consumption, less or equal	W	10
Total power consumption, less or equal	V•A	10
Absolute clock error per day, less or equal	s	2
Standard clock deviation per day at 25 °C	s	± 0.5
Lithium battery service life (normal operation / no power)	year / hour	10 / 20 000
Dimensions	mm	107 x 70 x 59
Weight, less or equal	kg	0.160

- Users can read the following main parameters from the Dashboard: Gateway external panel indicators; CPU temperature and Gateway internal temperature; tamper and charging statuses; LoRaWAN network analytics; status of other network interfaces.
- Gateway access can be configured via a web UI or SSL for either a single network interface or all of them.
- Users can check the system error log.
- Gateway settings can be saved and restored.
- Vandalism prevention—custom factory settings prevent theft and further operation of the device.
- Gateway settings can be reset to custom or general factory settings, depending on the device. In addition, users can apply custom settings (user passwords, network parameters, etc.).

The Gateway is intended for continuous 24/7 operation both indoors and outdoors in case of device mounting inside of electrical cabinet.
If operating conditions are met, the device is resistant to environmental temperatures ranging from -40 °C to +60 °C and relative humidity of 90% at 25 °C. Mean time to failure with a failure probability of 0.8—at least 24 000 hours.

Figure 1 — Gateway appearance, overall dimensions, and installation dimensions dimensions

Jooby Indoor Gateway LoRaWAN 500 EU



PARTS LIST

Name	**JOOBY Indoor Gateway LoRaWAN 500 EU**
	Quantity
Gateway	1 pcs
Manual	1 copy
LoRaWAN antenna	1 pcs
External power adapter 220V / 15V	1 pcs
Li-ion battery with plastic holder	1 set
Packaging	1 pcs

Note. Can be shipped in multi-piece transport packaging

OPERATION AND STORAGE

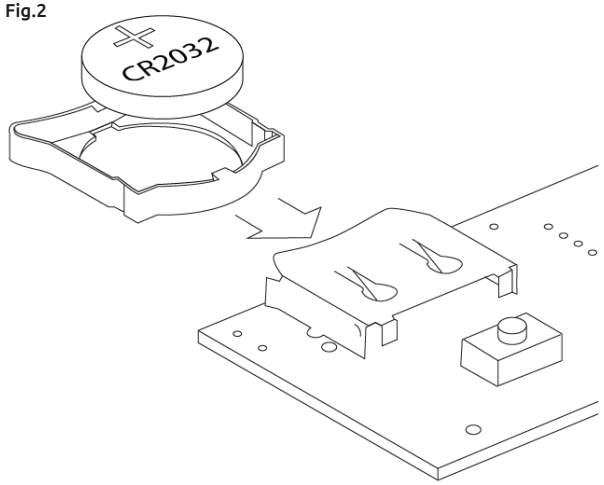
Before installing the Gateway on site, perform an external examination and ensure that all the required parts are available and there is no mechanical damage.

The Gateway can be installed on flat surfaces / wall or DIN-rail, utilizing the special fixtures provided with the device.

Steps to install, connect, and start the Gateway:

1. To mount the Gateway on a DIN-rail, use the corresponding standard central plastic fixture as shown in Fig.1. To mount the Gateway on a flat surface / a wall, pull out the wall mounting insertions into its opening positions and fix the device with screws. The appearance, overall dimensions, and installation dimensions of the Gateway are shown in Fig.1.
2. Connect the external antenna (-s) from the Parts list to corresponding plugs at the case of the device as shown in Fig.1.
3. Connect the Ethernet cable to the corresponding LAN port on the built-in control module and check the indicators to ensure that all functional nodes are powered and operational. The indicators are explained in Table 1. Insert a SIM card (if available) into the slot. It should support GSM, LTE, EDGE, GPRS modes.
4. Place the Li-ion battery into its plastic holder and set up it in a slot of Device as shown in Fig.2.

Fig.2



Warning! If the dashboard lithium battery is low, replace it with a new lithium battery of the same type (CR2032).

The Gateway can be shipped in packaging via any transportation mode, providing its protection from direct exposure to precipitation. The Gateway can be transported at temperatures ranging from -40 °C to +85 °C. The level of dust, acid, and alkali vapors, aggressive gasses and other harmful contaminants that cause corrosion in storage facilities should not exceed the level of corrosive agents for C1 atmosphere.

MANUFACTURER'S WARRANTIES

The manufacturer guarantees that the device meets the requirements specified in the technical documentation, provided that the user ensures proper installation and operating conditions. The manufacturer guarantees that the radio equipment can operate in Ukraine as intended without violating the established conditions for the use of Ukraine's radio frequency resource.

Warranty period—24 months from delivery date, but no more than 30 months from manufacture date. During this period, the manufacturer offers warranty repair services for the device. Follow the link to learn more about the conditions and exceptions for warranty service: www.jooby.eu/warranty-en/

Service center: Telecommunication Technologies LLC. 4D Nebesnoi Sotni Ave., Odesa, 65121, Ukraine. Tel.: +38 (048) 759-09-00. Email: warranty@infomir.com.

Trademarks

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Conformity Assessment

EU

Hereby, Telecommunication Technologies LLC declares that the Jooby Indoor Gateway LoRaWAN is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://jooby.eu/declarations-en/

UK

Hereby, Telecommunication Technologies LLC declares that the Jooby Indoor Gateway LoRaWAN is in compliance with the Radio Equipment Regulations 2017. The full text of the EU declaration of conformity is available at the following internet address: https://jooby.eu/declarations-en/

Warning! The Gateway utilizes a lithium battery that is not accessible to users. Only a qualified technician is permitted to open the device and replace this component.

DAMAGE LOG

Damage registration date	Conclusion	Signature, stamp

LITHIUM **This device contains a lithium battery**	Fire, explosion and severe burn hazard. Do not recharge, crush, disassemble, heat above 212 °F (100 °C), incinerate, short circuit or expose contents to water.
	The crossed-out wheeled bin symbol indicates that all electrical and electronic products and batteries must be collected separately at the end of their working life. Do not dispose of these products with unsorted municipal waste: take them for recycling. For information on the nearest recycling point, please contact your local waste authority.

ACCEPTANCE CERTIFICATE

Gateway:
complies with all design documentation and is recognized as suitable for operation.

The manufacturer reserves the right to modify the design or specifications of the device at their discretion, provided that such changes do not impair its functional characteristics. Hence, the manufacturer reserves the right to alter the appearance and the components outlined in this manual without prior notification to consumers.

Model Serial number

Date of sale

_____(_____)

Manufacturer:
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