
I-BEE USER MANUAL

HUB Base station

V.4, 15.09.2021

www.i-bee.net

I-BEE SYSTEM

0. Greetings

Thank you for choosing i-bee. We hope that our product will exceed your expectations. We look forward to see your feedback and wishes. Contact us:

- info@i-bee.net
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1. Purpose

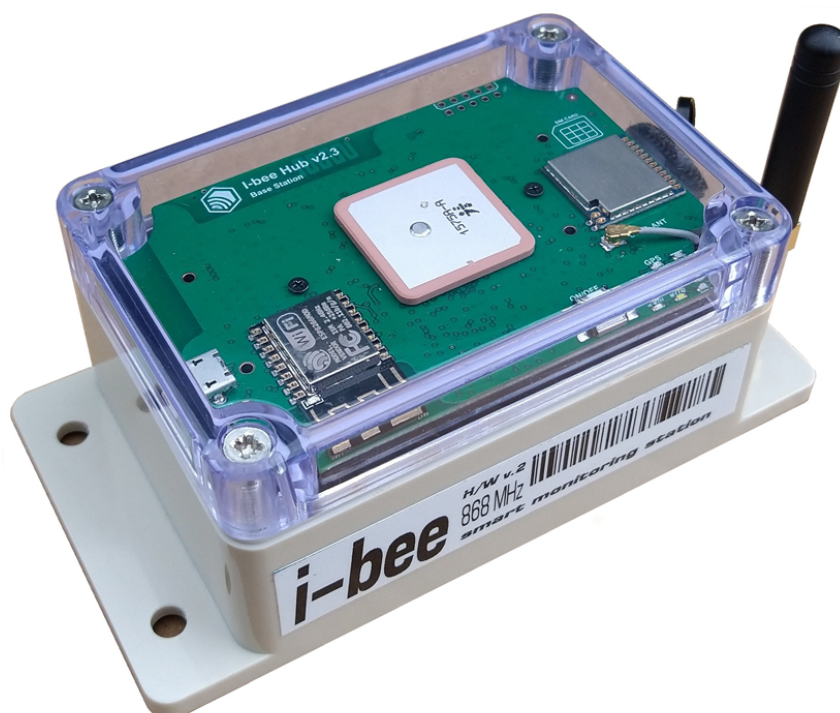
The i-bee system is made for:

- monitoring the condition of each equipped hive from everywhere in the world with the Internet connection via iOS and Android mobile applications
- keeping records of all operations in the beekeeper's diary
- receive alerts notifications to your smartphone in emergency cases

2. The i-bee system consists of:

- Base station – HUB
- Main block – HIVE
- Electronic weight – SCALES
- Electronic weight – SCALES-PRO
- Flight hole sensor - COUNTER
- Mobile Application «i-bee»

HUB Base station



Picture 1 - HUB

1. HUB functions:

Collection the data from hives where HIVE equipment is installed via the LORA wireless network with the 30 minutes interval.

Data transmission to the central server with the 30 minutes interval via WIFI or GSM-channel.

For critical parameter (alarm messages, such as triggering of the move sensor), data are send to the HUB and central server immediately.

2. HUB delivery kit:

- Base station – HUB - 1 pc.
- 868/915 MHz ISM-band antenna - 1 pcs.
- AC power supply 220V - 1 pcs.
- Drill for HUB installation (6,5-7,5 mm) - 1 pc.
- Magnet for activating HIVE - 1 pc.
- Quick Guide - 1 pc.
- Packaging - 1 pc.

3. Preparing HUB for work:

3.1. HUB charging

The HUB switches on at a certain battery level, so the HUB must be connected to the external power supply before operating.. Charging time to the required level can take up to 3 hours, depending on the initial charge level.

3.2. You need to connect HUB to the server

There are two ways to do this:

- use a SIM card
- connect to WIFI

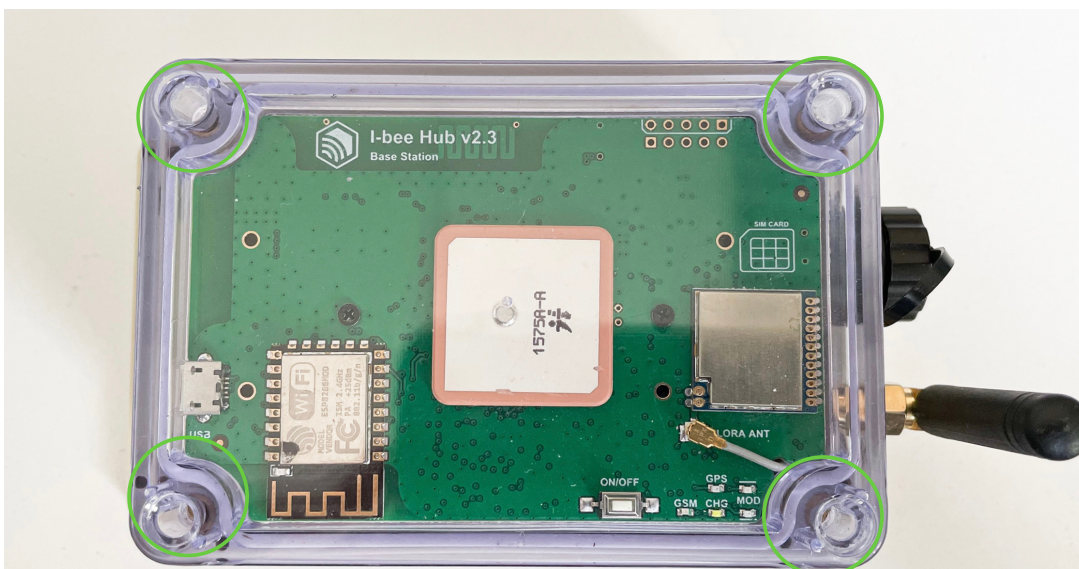
3.3. Info about SIM card

The device comes with a SIM card of one of the GSM 900/1800 mobile operators, the choice of the operator depends on the quality of coverage in the location of the HUB and pre-agrees with the customer. SIM-cards are provided only for clients who are on the territory of Ukraine.

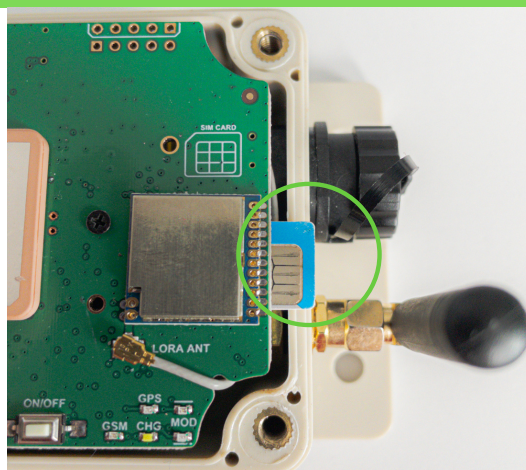
Customers from other countries should choose the SIM-card of the mobile operator, focusing on the quality of coverage in the location of the apiary and maintain a positive balance. If you need to replace the SIM card, below are instructions on how to replace it.

SIM card replacement

Next, unscrew the 4 screws of the airtight cover (Picture 2) and insert the SIM card (Picture 3).



Picture 2



Picture 3

3.4. WIFI connection

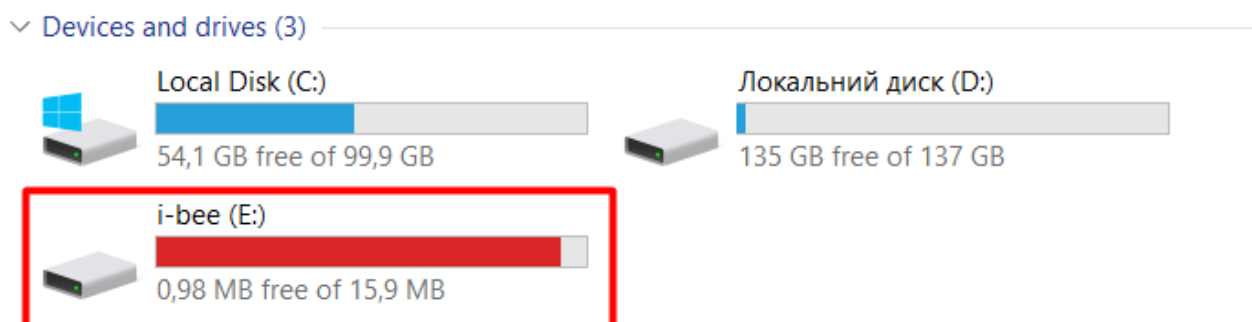
To set up a WIFI network connection, connect the HUB to your computer using a USB cable (Picture 4).



Picture 4

3.5. Display on computer

Once connected, HUB is displayed as a device named as i-bee (Picture 5), open it:



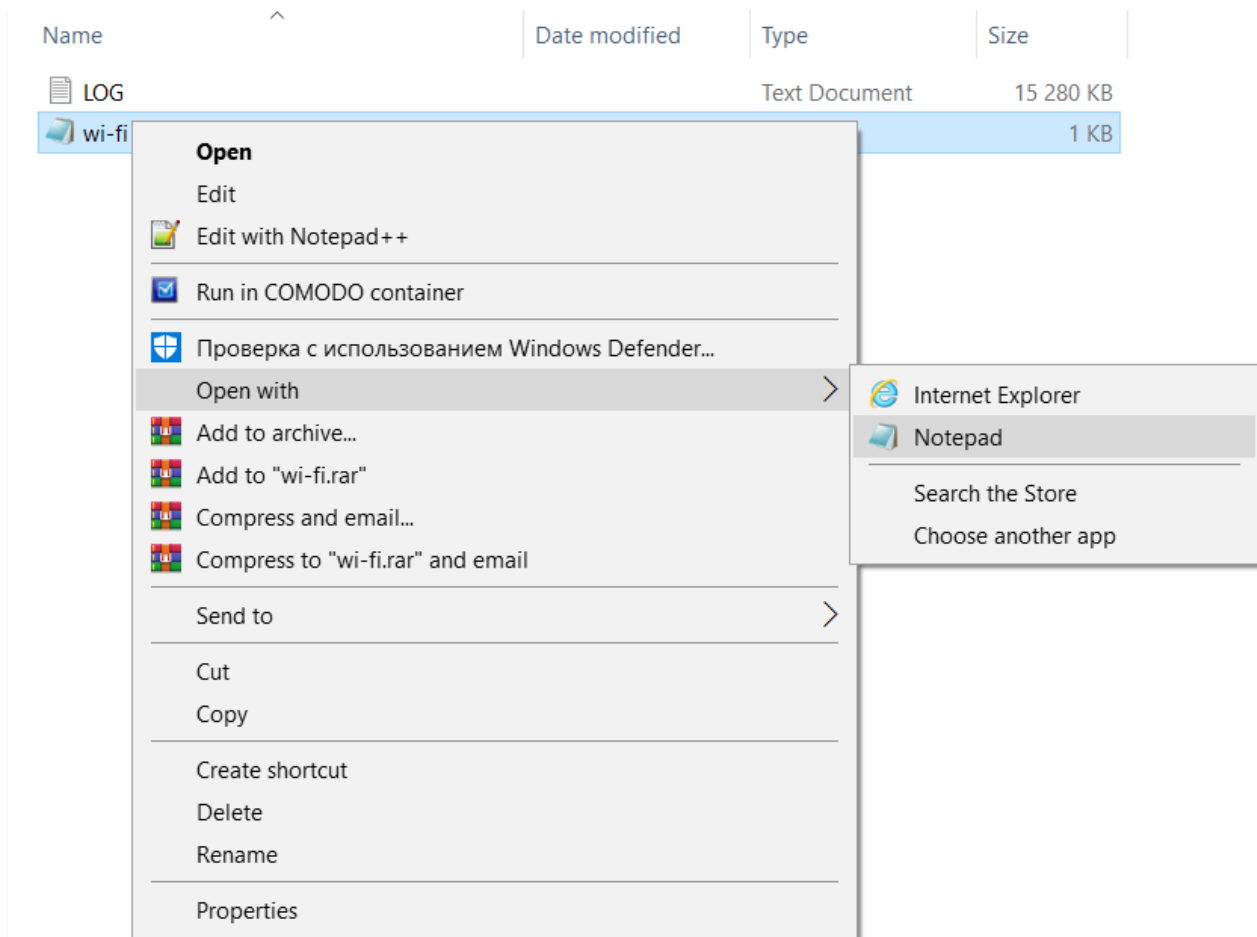
Picture 5

Next, select the file named wi-fi (Picture 6):

Name	Date modified	Type	Size
LOG		Text Document	15 280 KB
wi-fi	04.10.2019 18:08	CFG File	1 KB

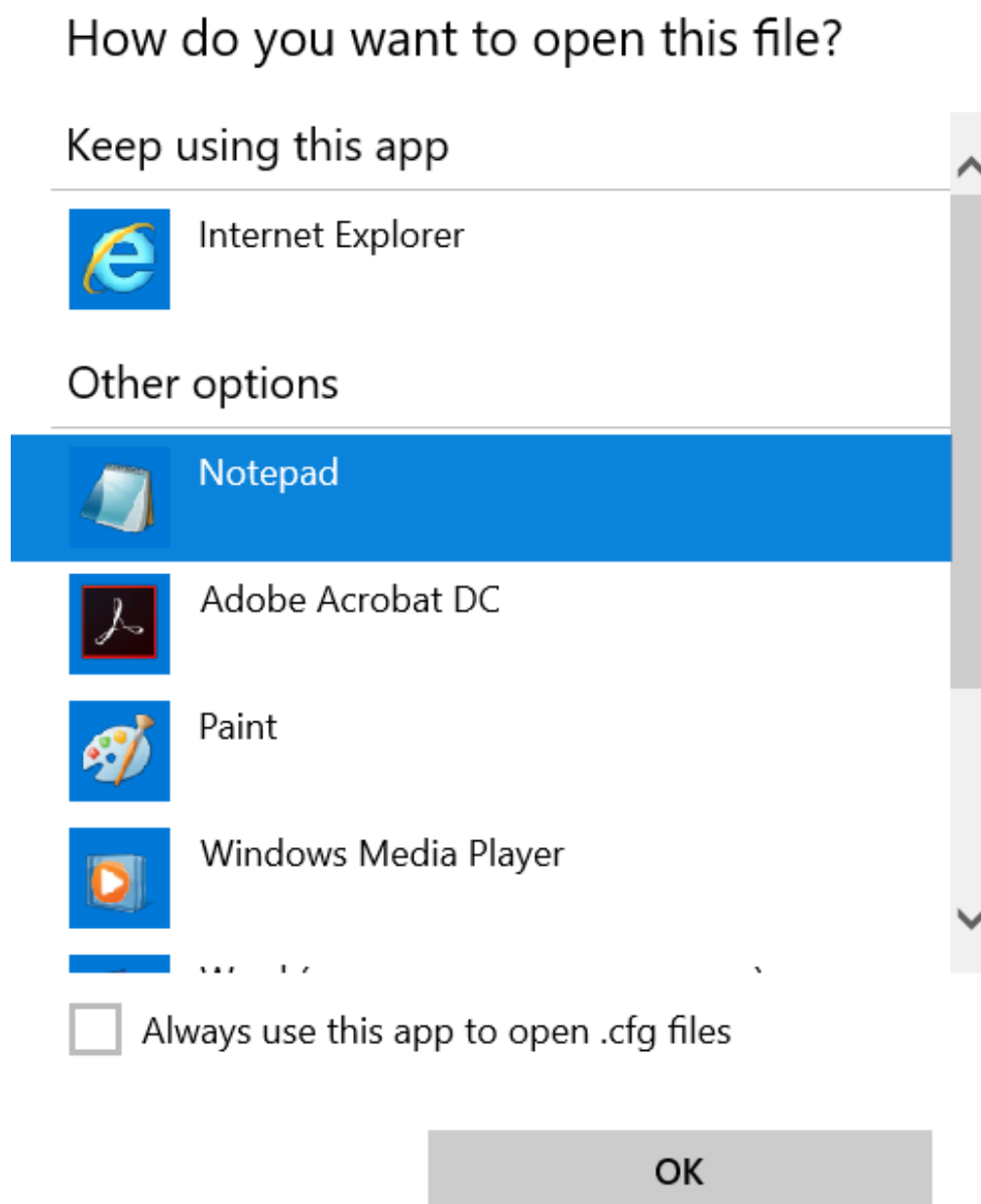
Picture 6

Open a wi-fi file using Notepad. To do this, right-click the file and select Open with (Picture 7).



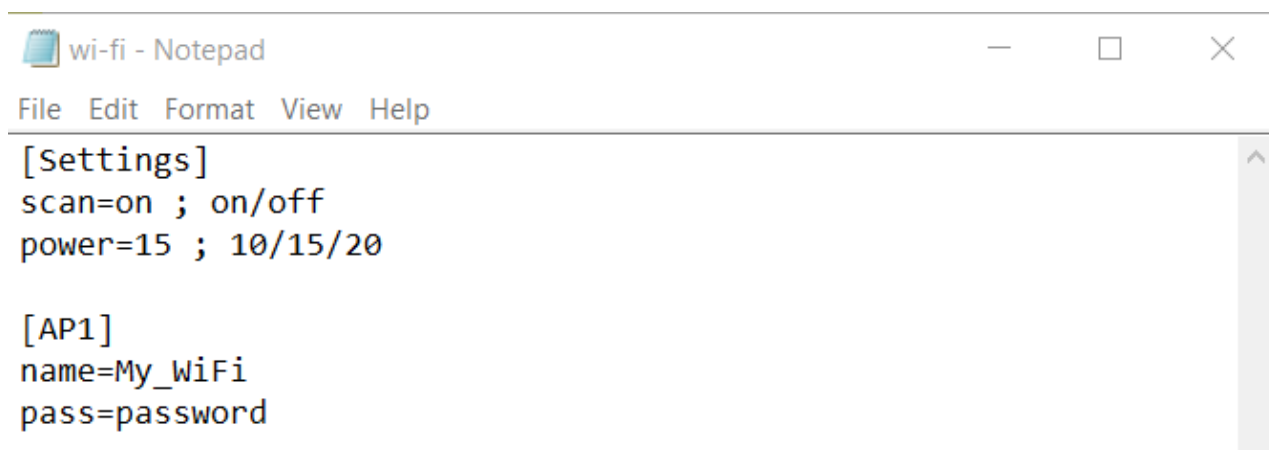
Picture 7

If the Notepad is not in the list - you need to open the additional list by clicking the Other options button (Picture 8)



Picture 8

The file contains the following information (Picture 9):



Picture 9

The **scan** parameter determines whether the WIFI module will choose the one in which signal will be better and connect to it, or connect to only one network (first one).

If set to scan = off, the WIFI module will only connect to the first set WIFI network [AP1].

If set to scan = on, the WIFI module will scan the WIFI networks from the list specified in this file and connect to the network with the best signal.

[AP1] - WIFI network number in the list.

name - the name of the WIFI network, name = My_WiFi, where My_WiFi is the name of the WIFI network.

pass - WIFI network password, pass = password, where password is the WIFI network password.

Example №1

There is a WIFI network called New_WiFi and a password of 12345678.

To add a WIFI network to the list, you need to change the value of the **name** parameter, after the = sign, enter the name of the WIFI network which you want to connect, for example **name** = New_WiFi.

The password for the WIFI network is entered in the pass parameter after the sign =, for example **pass** = 12345678.

We get the following result:

[Settings]

scan = off; on / off

power = 15; 10/15/20

[AP1]

name = New_WIFI

pass = 12345678

Example №2

There are several WIFI networks:

- network called New_WIFI and password 12345678
- network called New_WIFI1 and password 123456789
- network called New_WIFI2 and password 1234567890

Adding is done the same as in the example №1, only each WIFI network must have a unique number in the list [AP1], [AP2], [AP3], etc. and the scan parameter must be set to on.

The following result should be:

[Settings]

scan = on; on / off

power = 15; 10/15/20

[AP1]

name = New_WIFI

pass = 12345678

[AP2]

name = New_WIFI1

pass = 123456789

[AP3]

name = New_WIFI2

pass = 1234567890

ATTENTION!

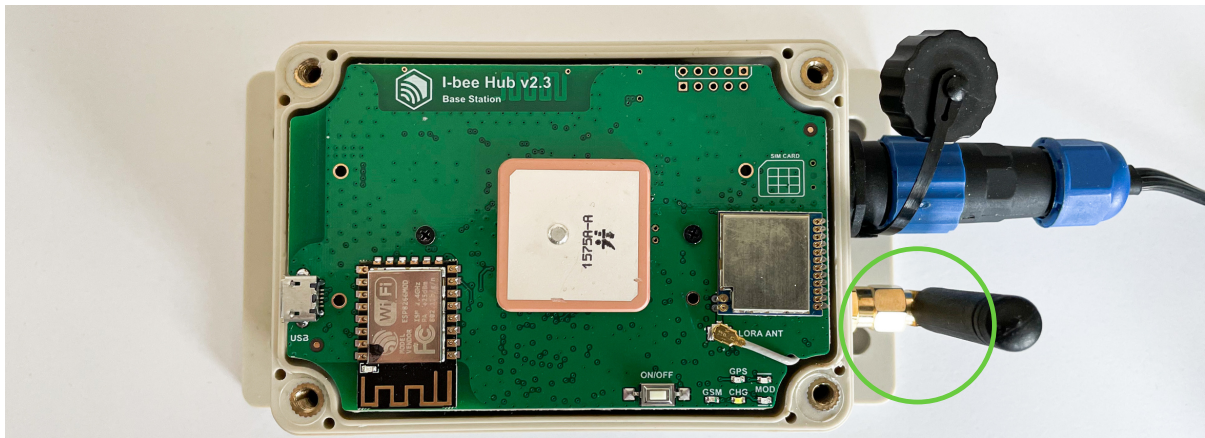
HUB has the ability to transfer data to the server via one of two communication channels:

- through the network of the mobile operator (whose SIM card is installed in the HUB)
- via Wi-Fi network (network name and password are registered in the settings)

It works on one of the communication channels, but can switch freely if both channels are active, the SIM card is turned on and there are Wi-Fi network settings.

3.6. Connect the antenna to the HUB

The antenna connects to the SMA connector. It is required for the HIVE controller to communicate with the HUB.



Picture 10 - antenna connection

3.7. Connecting the power source

The power supply unit is connected to a hermetic connector located on the side of the case and plugged into a 220V socket (standard Euro plug type, without grounding, compatible with both sockets, without or with grounding).

This connector can be used also for connection of the 12V solar panel (can be bought separately)



Picture 11 - connecting the power source

4. Indication

The power-on indication should be as follows:

Green LED MODE	Illuminates for 2 seconds, indicating that the unit has switched on
Green and red LEDs MODE	May flash periodically
Blue LED GSM	Will flash (possibly with different frequency) for 4 minutes after power on
Green LED GPS	Will flash continuously at different frequencies
After turning on the HUB to the charge, no LED is lit / flashing, except the CHARGE indication	Press the red button and hold for 4 seconds

ATTENTION!

Connecting the USB cable to the connector is necessary only in case of device verifying (Picture 12) and connect it to an external computer and can't be used for power supply.



Picture 12

5. Technical characteristics - HUB

Parameters	Characteristics
Power type	External power supply unit 12V, 1A (Or solar battery 12V at least 20W)
Type of batteries	Li-ion
Battery capacity	10000 mAh
Physical data transmission environment	868/915 MHz radio channel (ISM-band)
Physical environment for communication with the server	GSM900/1800 GPRS class 10, Wi-Fi 2.4GHz (optional)
Coverage area, m	from 200 to 1500 depending on the terrain and location
GPS antenna	built in
GSM antenna	built in
SIM card slot	1
Dimensions, L * W * H, mm	140*70*50mm
Weight, kg	0,45
Case protection class	IP65

Operating conditions:

- Humidity up to 95% at + 30 ° C
- Atmospheric pressure from 84 kPa to 107 kPa (from 630 to 800 mmHg)
- Storage temperature range: from -40 ° C to + 65 ° C
- Operating temperature range: -40 ° C to + 65 ° C

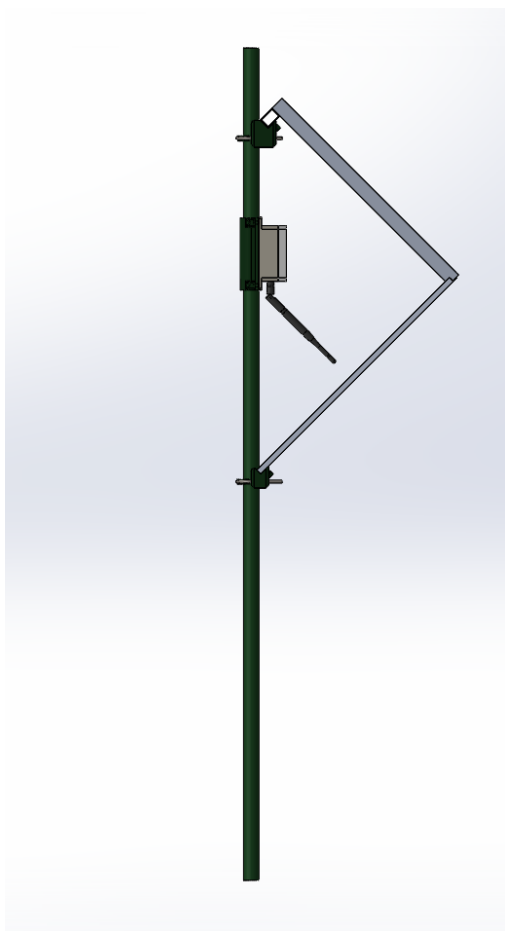
Installation recommendations:

Base station - HUB can be installed both indoors (preferably closer to the window for better data transmission) and outdoors (preferably under cover).

You must also make sure that there are no significant obstacles between HUB and HIVE.

On HUB it is not necessary to spend a magnet, only to connect to power supply.

The most frequently asked questions can be found in the appendix under "Help"



Picture 13



Picture 14

Street installation of a base station with autonomous power supply (Picture 13). The pipe needs to be fixed by means of extensions or to cement, all fastenings are calculated on a pipe with a diameter of 28 mm. The solar panel should be installed facing south and not shaded. The HUB is mounted under the solar battery with the antenna down (Picture 14).

QR code for documentation:

- Privacy policy
- Public offer for equipment
- Public offer for services
- Other i-bee system manuals



Technical support: support@i-bee.net