ATTENTION

Read carefully these instructions before installing and using this device and keep them for future reference. Attention to installation and electrical wiring. ***Use this device only as described in this document and never use itself as a security device.*** *If the internet connection is lost, data logging pauses. The device must be disposed of in accordance with local standards for the collection of electrical and electronic equipment.*

CONTENTS

DESCRIPTION AND MODELS

IoTW is a Modbus to Wi-Fi gateway which connects a compatible device or a temperature/humidity sensor to the cloud IoT and the **Cortex** platform. Communication is established through the serial input of the device and via internet. User can access the platform either via mobile application or via a browser to any pc. Cortex platform can fully monitor and control many devices, send email and notifications to mobile, in case of an alarm. Connection to the local router is established via Wi-Fi protocol. IoTW gateway can connect to only one device through a supplied 5 pole cable; it has a control button and an indication LED. IoTW gateway is powered either with an external power supply +5Vdc or directly from the device via the serial input. **Complies to EN12830.**

Models

IoTW can monitor a NTC 10K temperature sensor and a device at the same time
IoTWH can monitor a humidity/temperature sensor SHT31-DIS and a device at the same time

For further information please contact us via support@kiour.com mentioning your Gateway name displayed on its label.

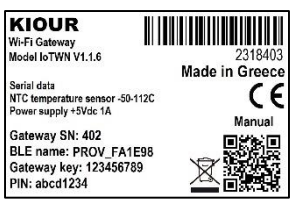
TECHINICAL SPECIFICATIONS

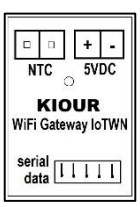
Power supply: +5Vdc (not included) / Minimum current operation: 1.5A
It is recommended using a power supply safety fuse: 1.5A (not included)
Temperature sensor NTC 10K with accuracy 1% 25ºC temperature range -50÷+112°C (-58÷+230°F) IP68 (not included)
Humidity and temperature sensor SHT31-DIS from 0-100%RH and from -40-125°C with metal tube Φ16mm and length 63mm (not included)
Humidity accuracy (SHT31-DIS) from 0-100%RH ±2%RH
Temperature accuracy (SHT31-DIS) from -40-125°C ±0.4°C
Cable 5 poles 0.5m length for connecting Wi-Fi gateway to the serial input of the device
Button / LED indication
Connections with plug-in terminal blocks / It is recommended using a torque wrench with maximum torque 0.4Nm
Operating temperature: -15÷+55°C / Storage temperature: -20÷+80°C
The device is mounted on Ω rail and it is restrained with one plastic bracket
Dimensions 20x59x78mm / IP20 Protection
EN12830 compatibility: Accuracy class: Class 1 / Software class: II / Suitability for storage (S) / Measuring range -30 to +30ºC

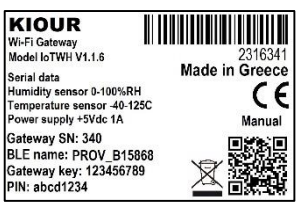
CONNECTIONS

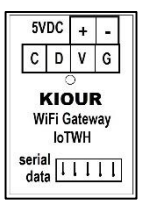
ATTENTION*: according to safety standards, the device must be properly positioned and protected from any contact with electrical parts. The device must be fastened in such a way that it cannot be removed without the use of tools. Disconnect the main safety switch of the installation before proceeding to any maintenance. Disconnect the power supply of the device before proceeding to any maintenance. Do not place the device near heat sources, equipment containing strong magnets, in areas affected by direct sunlight or rain. Prevent electrostatic discharges and sharp objects from been inserted to the device. Separate signal cables from power supply cables to prevent electromagnetic disorders. Signal cables must never be in the same pipe with the power supply cables.*

Connect the humidity/temperature sensor or/and the 5 pole calbe, which you will find connected on the serial input of the gateway, to the serial input of the device. If necessary, connect also the external power supply +5Vdc to the gateway. Power up your device.









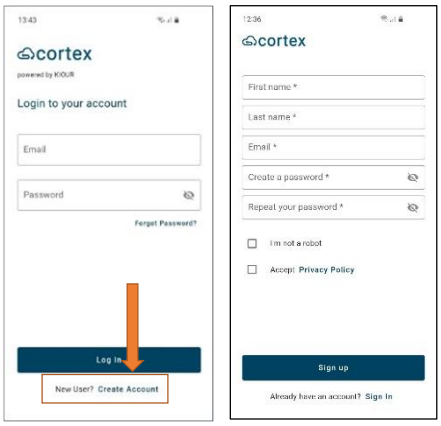
LED INDICATIONS, Wi-Fi SIGNAL AND SYMBOLS DESCRIPTION ON CORTEX PLATFORM

LED indications on gateway	
2 times/sec	connecting to a Wi-Fi network status
1 time/sec (quick)	claiming gateway status
1 time/sec (prolonged)	restarts every time it blinks
blinks	sends data to cloud
steady ON	no connection to router

Wi-Fi signal on Cortex platform	
---	no signal – device is offline
Excellent	excellent signal
Good	good signal
Low	low signal
Very low	very low signal

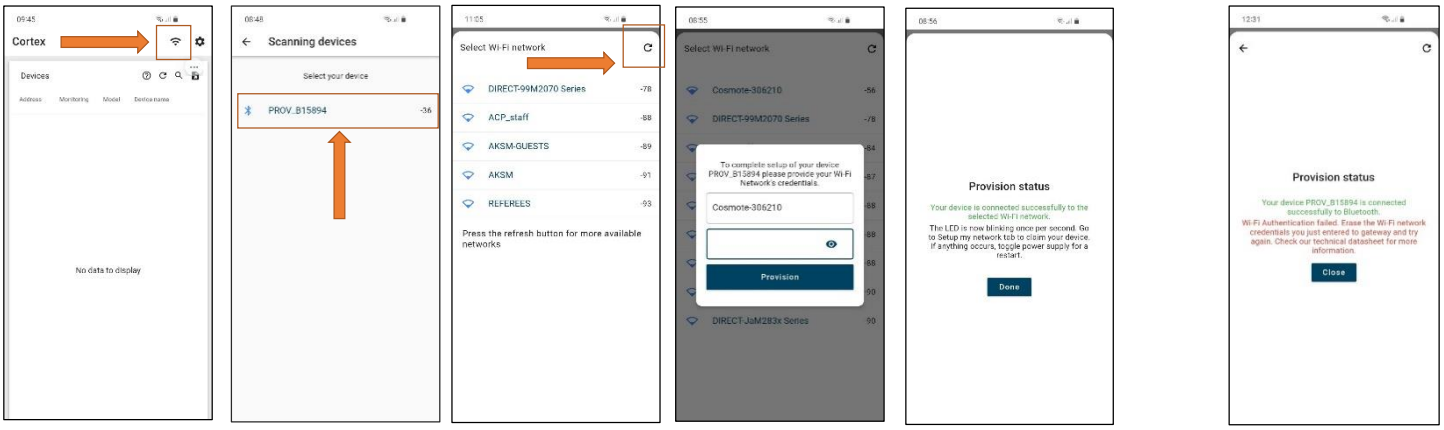
Symbols on Cortex platform	
	help
	information
	restart gateway
	edit gateway settings
	more details
	refresh table
	open technical datasheet
	export data
	search
	maximize screen
	minimize screen

CREATE AN ACCOUNT TO THE CORTEX PLATFORM

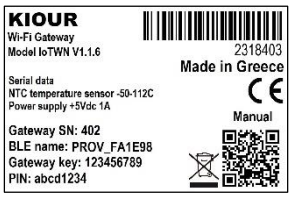


1. From your smartphone and from the app store, download the application KIOUR **Cortex KIOUR** and give access to anything the application needs. The connection between the mobile and the gateway is established via Bluetooth BLE, so enable Bluetooth to your mobile and give access to Bluetooth and the location of your device.
2. Create an account by clicking on *Create Account*. The email you are about to register will receive future notifications in case of alarms and cannot change later. Only the password can change later.
3. Once an account is created, a confirmation email is send to the registered mail. Press the link from the mobile where the application is located, in order to activate your Cortex account and you will redirect to the main dashboard of the platform.
4. Once you are in, no device is listed yet to the main dashboard and it is displayed **No data to display**.

CONNECT IoTW GATEWAY TO Wi-Fi – PROVISIONING

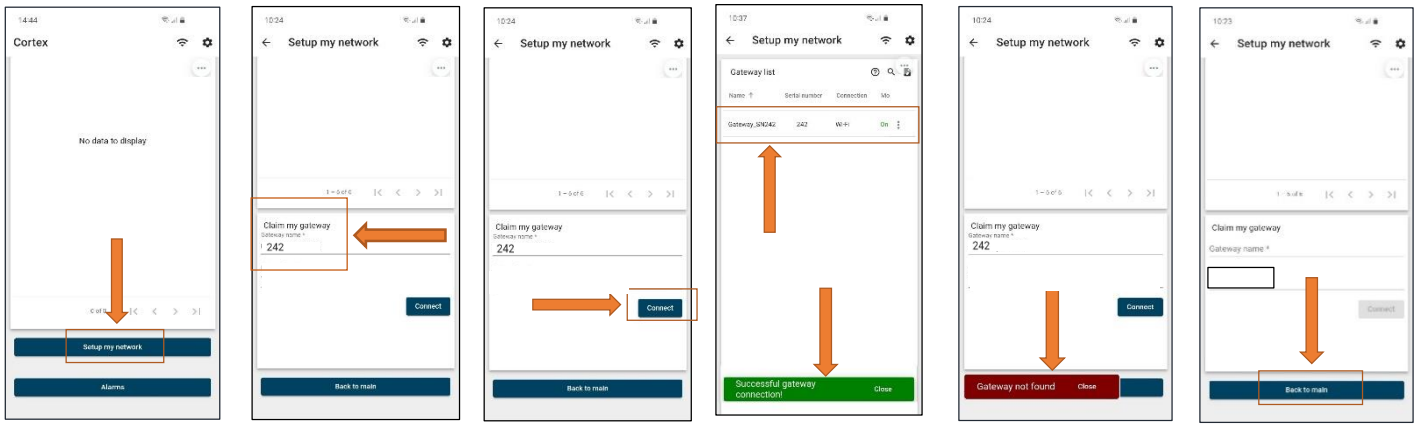


1. Connect the serial input of the device to the gateway via the supplied 5-pole cable. Power up the device and the gateway. Gateway's LED starts blinking 2 times/second, which indicates that the gateway is waiting to connect to the local Wi-Fi.
2. Press in the upper right corner, to find your device and register the available Wi-Fi network. On the gateway's label find its data.
3. If your network is not listed, press refresh in the upper right corner.
4. If the Wi-Fi credentials are *correct*, the provisioning is *successful* and *Done* is displayed on screen. By pressing it, you are back to the main dashboard.
   If the Wi-Fi credentials are *incorrect*, the provisioning has *failed* and *Close* is displayed on screen. By pressing it, you are back to the main dashboard. Now the Wi-Fi credentials must be erased and start the procedure from the beginning. For more information on how to erase a Wi-Fi network click on Erase registered Wi-Fi network from gateway.



*Gateway's connection to the Wi-Fi is executed only once and there will be no need to repeat this procedure, except only if you want to change the Wi-Fi network on your gateway. *In case of not being able to connect your gateway with the above procedure, please go to paragraph* Alternative way of registering a Wi-Fi- network.

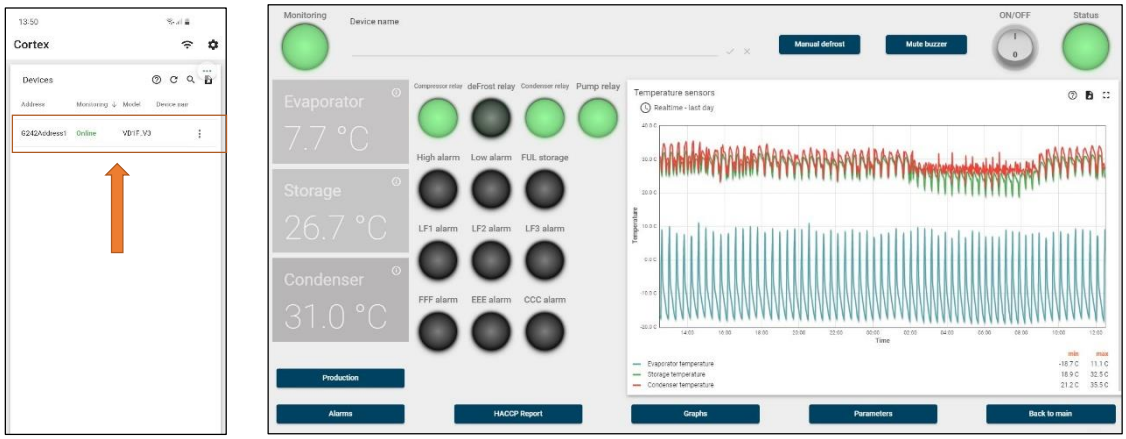
CONNECT IoTW GATEWAY TO CORTEX



1. To the bottom of the main dashboard page, click on *Setup my network*. Gateway's LED starts blinking now 1 time/second, which indicates that the gateway is waiting to connect to your Cortex account.
2. To *Setup my network* page and *Claim my gateway* window, register your *Gateway SN* as noted on your gateway's label.
3. Click on *Connect*.
4. The *successful* registration is displayed on the down side of the screen and your gateway is listed in the gateway list.
   If the registration has *failed*, the message ***Gateway not found*** is displayed.
5. To the bottom of the page, click on *Back to main* and you are back to the main dashboard.

Multiple gateways can connect to an account using this procedure and check them all from the gateway's list.

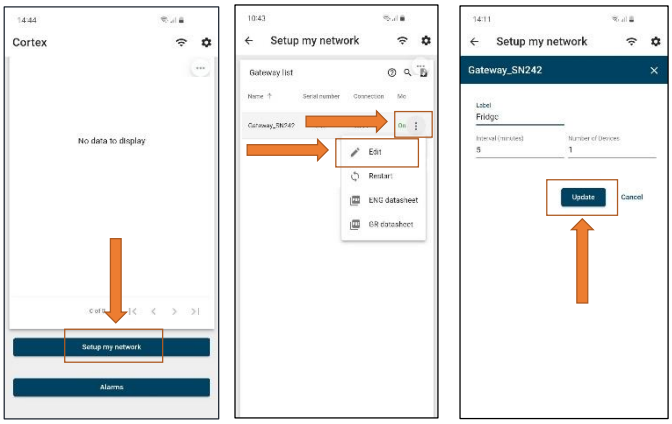
DEVICE UNDER MONITORING



Screenshot from PC

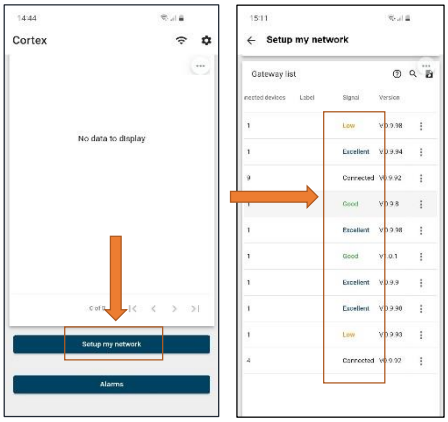
Having successfully registered the Wi-Fi network to the IoTW gateway, you are back to the main dashboard. Automatically the connected device must appear on the dashboard. If not, toggle the power supply of both device and gateway and wait for the device to appear automatically. By pressing on the device, you enter to the device dashboard where you have full control and data logging on progress. The temperatures are updated every few seconds, while the data logging is executed based on the gateway's settings. Follow this link to edit data logging interval Adjust data logging interval.

ADJUST DATA LOGGING INTERVAL



1. To the bottom of the main dashboard page, click on *Setup my network*.
2. Find *Gateway list* and press ⋮ next to the gateway you want to adjust the data logging interval and then click on *Edit*. A new window opens, where you can adjust the interval in minutes and register a name to the gateway which is send in the notifications.
3. When you are done, click *Update*.

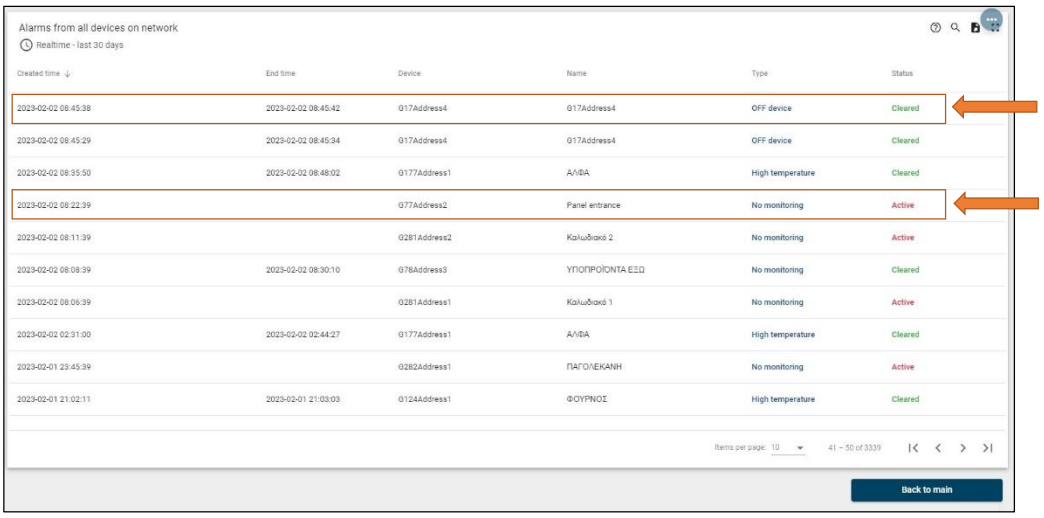
GATEWAY PLACEMENT AND Wi-Fi SIGNAL



1. To the bottom of the main dashboard page, click on *Setup my network*.
2. Find *Gateway list* and the Signal column, which indicates the signal strength coming from gateway.
   Signal has the following 4 levels: **Excellent**, **Good**, **Low**, **Very low**.
   When the indication "---" is displayed, there is no signal available.

   *It is recommended to place the gateway in a place where **Good** signal is displayed.*

NOTIFICATIONS IN CASE OF ALARM



Screenshot from PC

Notifications for the device alarms and lost connection to the platform are sent automatically to the email you have registered during sign up, as well as to the mobile application. No notifications are sent once the device alarms are restored.
To check the notifications, you received, to the bottom of the main dashboard page, click on *Alarms*. A table with all the alarms of the account appears. Each line is an alarm and the following are displayed: created date/time of the alarm, end data/time of the alarm, device address, device name, type of the alarm and its status, if it is *Active* or *Cleared*.

ADJUSTING THE DEVICE CONNECTED TO GATEWAY

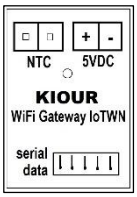
Search for the technical datasheet of the relevant device for more information regarding the programming of its parameters.
The device is able to communicate with the IoTW gateway, only if the following two parameters are set as follows: **Add = 1 and bAU = 3**.

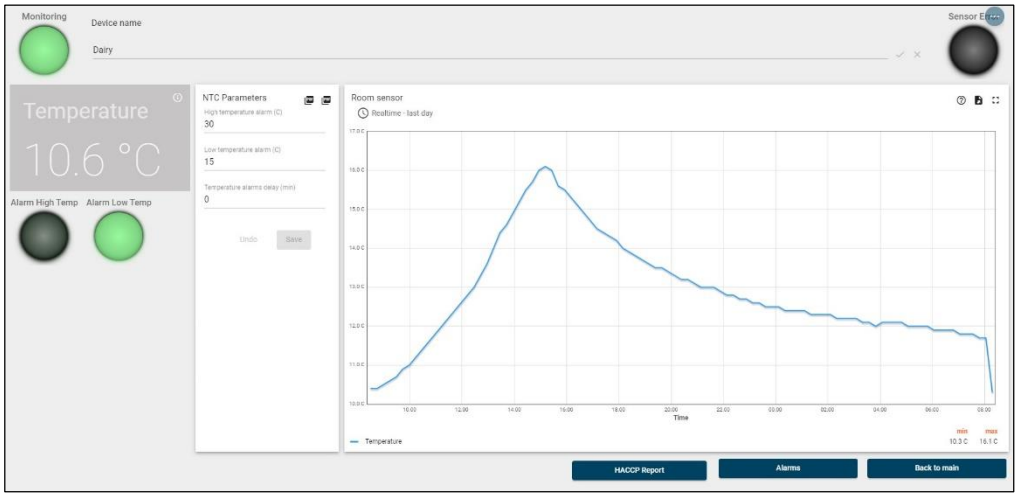
CONNECT A TEMPERATURE SENSOR NTC OR A HUMIDITY/TEMPERATURE SENSOR

The sensors connect to plug-in terminal blocks of the gateway. The gateway can monitor and control at the same time a KIOUR device and a temperature sensor NTC (gateway model IoTWN) or a humidity/temperature sensor SHT31-DIS (model IoTWH). Through Cortex platform you can adjust the parameters of NTC and SHT31-DIS for high/low temperature and high/low humidity among with time delays.

Technical specifications of temperature sensor type NTC

NTC 10K with accuracy 1% 25ºC temperature range -50÷+112°C (-58÷+230°F) IP68

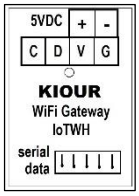


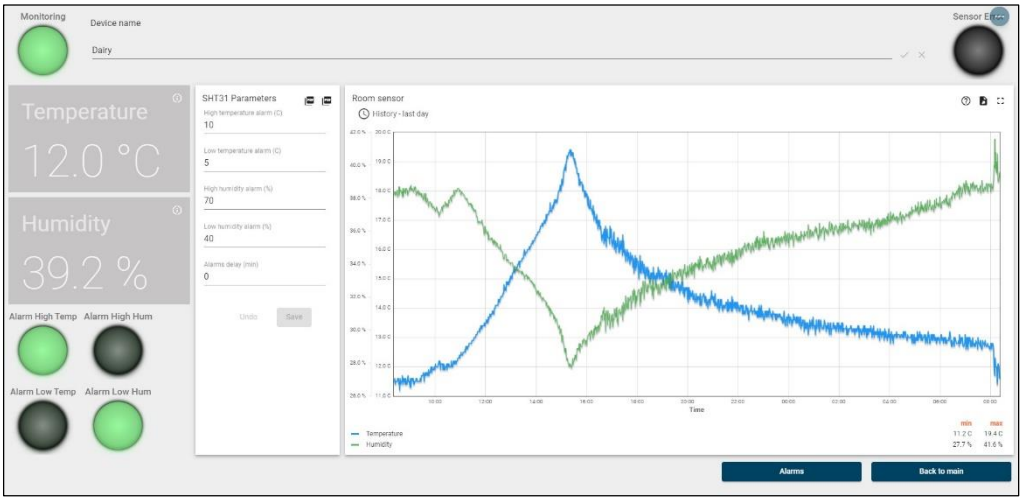


Screenshot from PC

Technical specifications of humidity/temperature sensor SHT31-DIS

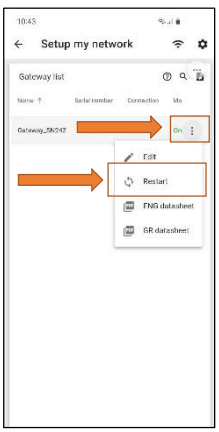
Humidity and temperature sensor SHT31-DIS from 0-100%RH and from -40-125°C with metal tube Φ16mm and length 63mm
Humidity accuracy from 0-100%RH ±2%RH
Temperature accuracy from -40-125°C ±0.4°C





Screenshot from PC

REMOTE RESTART OF IOTW GATEWAY



If you want to restart your gateway, follow these steps:

1. To the bottom of the main dashboard page, click on *Setup my network*.
2. Find *Gateway list* and press ⋮ next to the gateway you want to restart. Click once ( ) *Restart* and wait for 10 seconds. Check the *Status* column to display *Online*, which indicates that the gateway has restarted successfully.

ERASE REGISTERED WI-FI NETWORK FROM GATEWAY

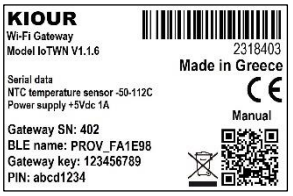
In order to erase a Wi-Fi network from the IoTW gateway and register a new one, follow these steps:

1. Gateway must be powered off.
2. Press and hold the gateway's button while you power it up. Gateway's LED starts blinking fast and it has entered setup mode. Release the button
3. Press again the button and hold it more than 5 seconds. Release the button. LED starts blinking 2 times/second: old Wi-Fi network is erased and the gateway is waiting to connect to a new Wi-Fi network.
4. Follow the steps from paragraph Connect IoTW gateway to Wi-Fi – Provisioning to register a new Wi-Fi network.

ALTERNATIVE WAY OF REGISTERING A WI-FI NETWORK

If you are unable to connect your gateway as described on paragraph Connect IoTW gateway to Wi-Fi – Provisioning, check the following:

1. Press and hold the gateway's button while you power it up. Gateway's LED starts blinking fast and it has entered setup mode. Release the button
2. Press again the button and hold it more than for 20 seconds. Release the button. LED starts blinking 3 times/second: the gateway is waiting to connect to the local Wi-Fi network using an alternative way.
3. Find on gateway's label the BLE Name and PIN.



4. Download the application ESP BLE Provisioning and enable access to anything needed. Click on **Provision new device**. From the list find your gateway and register its PIN.
5. A list with the available networks appears and we register the desired Wi-Fi network. The connection between the gateway and the local Wi-Fi network is complete.
6. Gateway's LED starts blinking now 1 time/second, which indicates that the gateway is waiting to connect to your Cortex account. Continue with steps as described on paragraph Connect IoTW gateway to Cortex in order to connect your gateway to your account.

If your smartphone has an old operating version, the application might not be available or not operate accordingly. Please find another smartphone to access the application. Gateway's connection to the Wi-Fi is executed only once and there will be no need to repeat this procedure, except only if you want to change the Wi-Fi network on your gateway. The application is used only for this procedure and not for the monitoring and controlling of the device.

Made in Greece.

The device is under two year's guarantee. The guarantee is valid only if the manual instructions have been applied. The control and service of the device must be done by an authorized technician. The guarantee covers only the replacement or the service of the device. KIOUR PC implements a Quality Management System according to EN ISO 9001:2015 Standard with registration number 01013192. KIOUR preserves the right to adjust its products without further notice.