



TAOGLAS EC40 EDGE Connect Cellular Connectivity User Guide

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TAOGLAS EC40 EDGE Connect Cellular Connectivity



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Introduction

Taoglas Air Insights™ empowers people with the ability to understand what's in their air and to optimise their surroundings if needed. With a customisable dashboard for ease of use, the Taoglas Air Insights is a plug and play, advanced air quality solution that automatically connects to the mobile network and gives instant, actionable advice to its users.

What's in the Box?

1. Taoglas EDGE EC40
2. Taoglas EDGE™ CO2 Expansion Pack
3. Micro-USB Cable
4. USB Power Supply – US Version (Regional adapters supplied with other SKU's)
5. Taoglas EDGE Insights™ Activation Card
6. Quickstart Guide

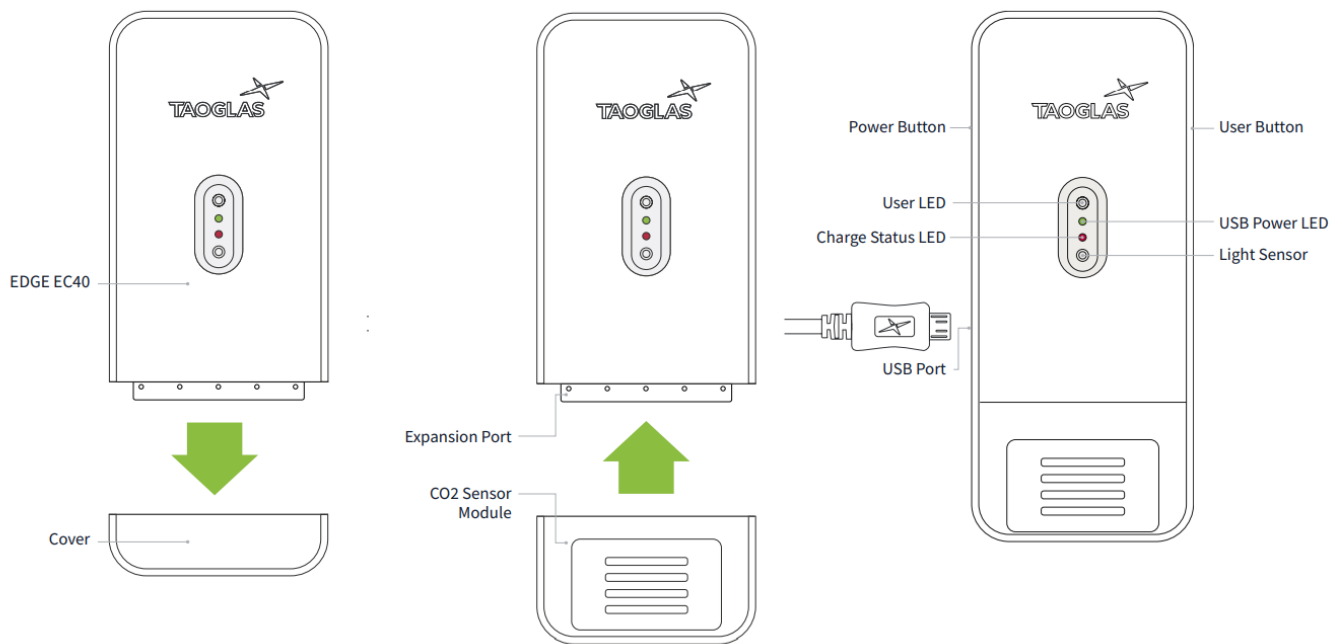


Support

For technical support please contact iotsupport@taoglas.com

1. Go to <https://www.taoglas.com/product/edge-connect> to access
 - a. Datasheet
 - b. User Guides

Set Up



Device Startup

1. Remove the cover from the bottom of the Taoglas EDGE™ Connect
2. Insert the Taoglas EDGE™ CO2 Expansion Pack in the EDGE EC40 Expansion Port 1.
3. To power on the EDGE EC40 press the Power Button once.
4. The EDGE EC40 should be fully charged before use, using the provided power supply. When you plug the EDGE EC40 into the provided USB power supply, the USB Power LED will illuminate. If the EDGE EC40 requires charging, the Charge Status LED will illuminate, otherwise the Charge Status LED will remain off. The EDGE EC40 is not intended to be charged using a computer USB.
5. Once powered on and initialised, the User LED will flash white 3 times.
6. At this stage you can check the battery level by pressing the Power Button once.
The User LED will blink a number of times according to the battery level.
Find more information on this in the Device Overview section below.
7. The device will start uploading to Taoglas Insights straight away. To view any uploaded samples, you will need to register an account and activate your device on connect.taoglas.com.

Account Setup

1. To create an Taoglas Insights account for your EDGE EC40 devices, navigate to connect.taoglas.com and click on 'Sign Up'.



Username or Email address

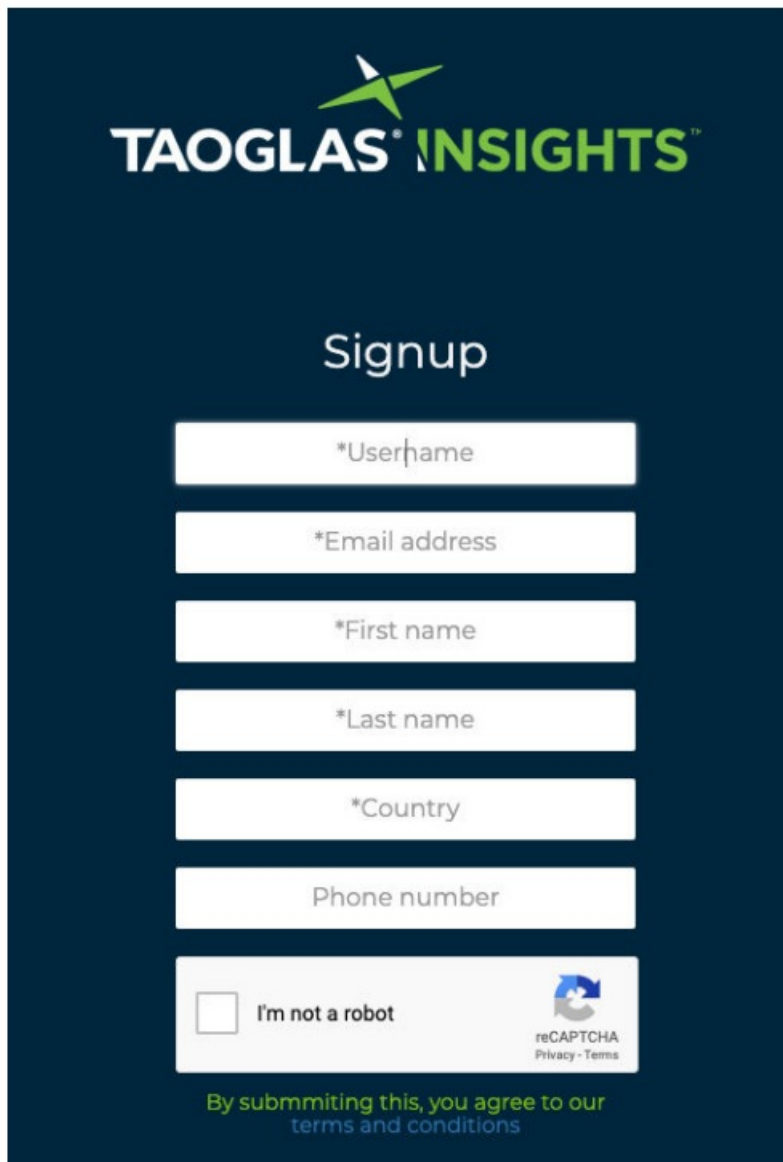
Password

Login

Sign Up

[Forgot password?](#)

2. Create a username and enter your details.



The image shows a dark blue background with the Taoglas Insights logo at the top. The logo consists of a green star-like icon above the text "TAOGLAS" in white and "INSIGHTS" in green. Below the logo is the word "Signup" in white. There are seven white input fields stacked vertically, each with a grey placeholder text: "*Username", "*Email address", "*First name", "*Last name", "*Country", "Phone number", and "I'm not a robot" (which is accompanied by a small square checkbox). To the right of the "I'm not a robot" checkbox is a reCAPTCHA logo and the text "reCAPTCHA Privacy - Terms". At the bottom of the form, there is a line of text: "By submmiting this, you agree to our terms and conditions", where "submmiting" is misspelled and "terms and conditions" is in blue.

3. Once your information has been submitted, you will need to confirm your registration by clicking the link sent to the email address provided

Your Taoglas Next Gen IoT user account has been created

Hi

You have been added as a user to **connect.taoglas.com**.
To complete your registration, please follow this link:
<http://connect.taoglas.com/password-set/confirm/MTE1/5ei-6d89cc62d89cc62/>

4. Upon clicking the link, a browser will open and you will be requested to create a password.



Choose a password

Please enter your password twice so we can verify you typed it in correctly.

New password:

New password confirmation:

Set password

5. After entering and confirming your password, registration is now complete, proceed to device activation.

Activating your Device

1. Using the details registered in the sign up process, you will be required to login to the Taoglas Insights™ platform in order to register your EDGE EC40.



Username or Email address

Password

Login

Sign Up

[Forgot password?](#)

2. The first time you log in, you will receive a popup message notifying you that you have not activated any devices. Click on the 'Devices Page' button on the pop up, this will direct you to the device list page.

Welcome to Taoglas

You have not activated any devices yet.

Go to **Devices Page** for activating your device

Cancel

Devices Page

3. To activate your EDGE EC40, click 'Activate New Device' at the bottom of the page, a popup window will request your EDGE EC40 S/N and Activation Code. After entering these, click 'Submit' to finish the activation process. The EDGE EC40 S/N and Activation Code can be found on the card included in the box.

DEVICE ACTIVATION

Cancel

Submit



4. After entering the EDGE EC40 S/N and Activation Code, click 'Submit' to activate your EDGE EC40.
5. The EDGE EC40 will now be listed on the devices page, see an example of this below.

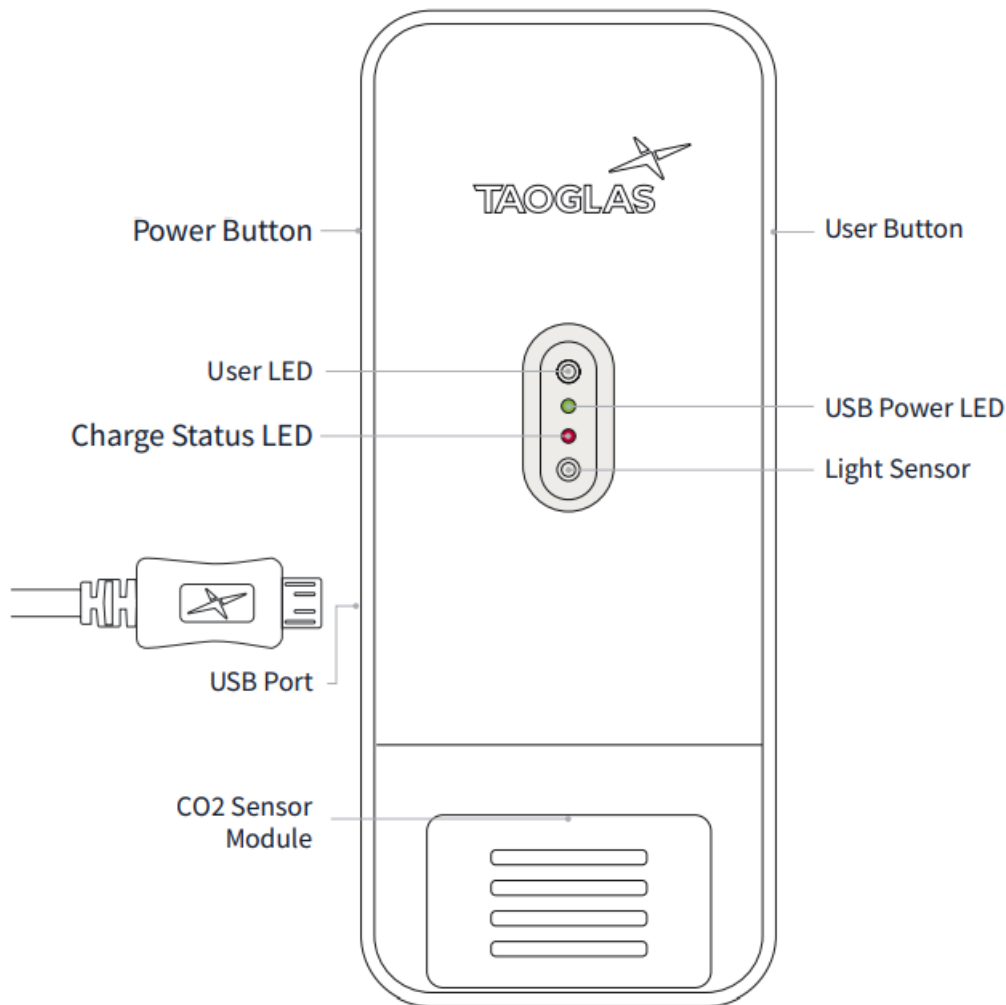
Devices						
<div> <div>Activate New Device</div> <div>Filter by State Device Type Sort by: Date Added Order: Ascending</div> <div>Search by Device Name or Serial</div> </div>						
No.	Device	Active	Last Connection	Device Type	Edit	Delete
1	Taoglas Lobby	● Yes	4G 02/07/2021, 12:20:11	Taoglas EDGE EC40		

6. If device activation fails please contact Taoglas IoT support at iotsupport@taoglas.com

Using the EDGE EC40

Device Overview

The EDGE EC40 has 2 buttons and 3 LED's. See the diagram below for an overview of the LED's and buttons.



- Remove the cover from the bottom of the EDGE EC40
- Insert the EDGE CO2 Expansion Pack in the EDGE EC40 Expansion port.
- To power on the EDGE EC40, push the Power Button once. When the EDGE EC40 is powered on and has successfully initialised, the User LED will flash white 3 times in quick succession.
- To power off the EDGE EC40, hold the Power Button, while the EDGE EC40 is powering down the User LED will blink red continuously. The User LED will stop blinking when the EDGE EC40 has completely powered off.
- When you plug the EDGE EC40 into the provided USB Power supply, the USB Power LED will illuminate. If the EDGE EC40 requires charging, the Charge Status LED will illuminate, otherwise the Charge Status LED will remain off.
- Once powered, the EDGE EC40 will automatically connect to Taoglas Insights to gather configuration information. The EDGE EC40 will continue to operate at the sampling and upload intervals set on Taoglas Insights, for more information on these intervals see Device Management Section.
- The EDGE EC40 can be forced into making a connection with Taoglas Insights outside of the upload interval using either of the following methods:
 - A single press of the Power Button, followed by a single press of the User Button will trigger the Taoglas Air Insights EC40 to connect to Taoglas Insights and gather new configuration information.
 - A single press of the Power Button, followed by a longer push of the User Button (more than 4 seconds) will

trigger the EDGE EC40 to sample all configured sensors and upload them to Taoglas Insights.

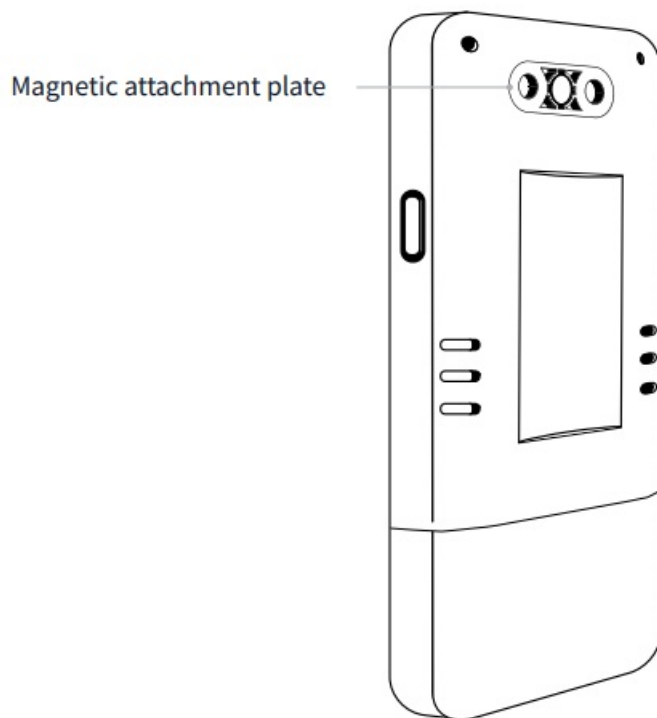
- The EDGE EC40 uploads its battery level to Taoglas Insights, however, the battery status can also be checked by pushing the Power Button once. This will cause the User LED to flash red a number of times according to the battery level, as per the table below:

20%	1 Flash
40%	2 Flashes
60%	3 Flashes
80%	4 Flashes
100%	5 Flashes

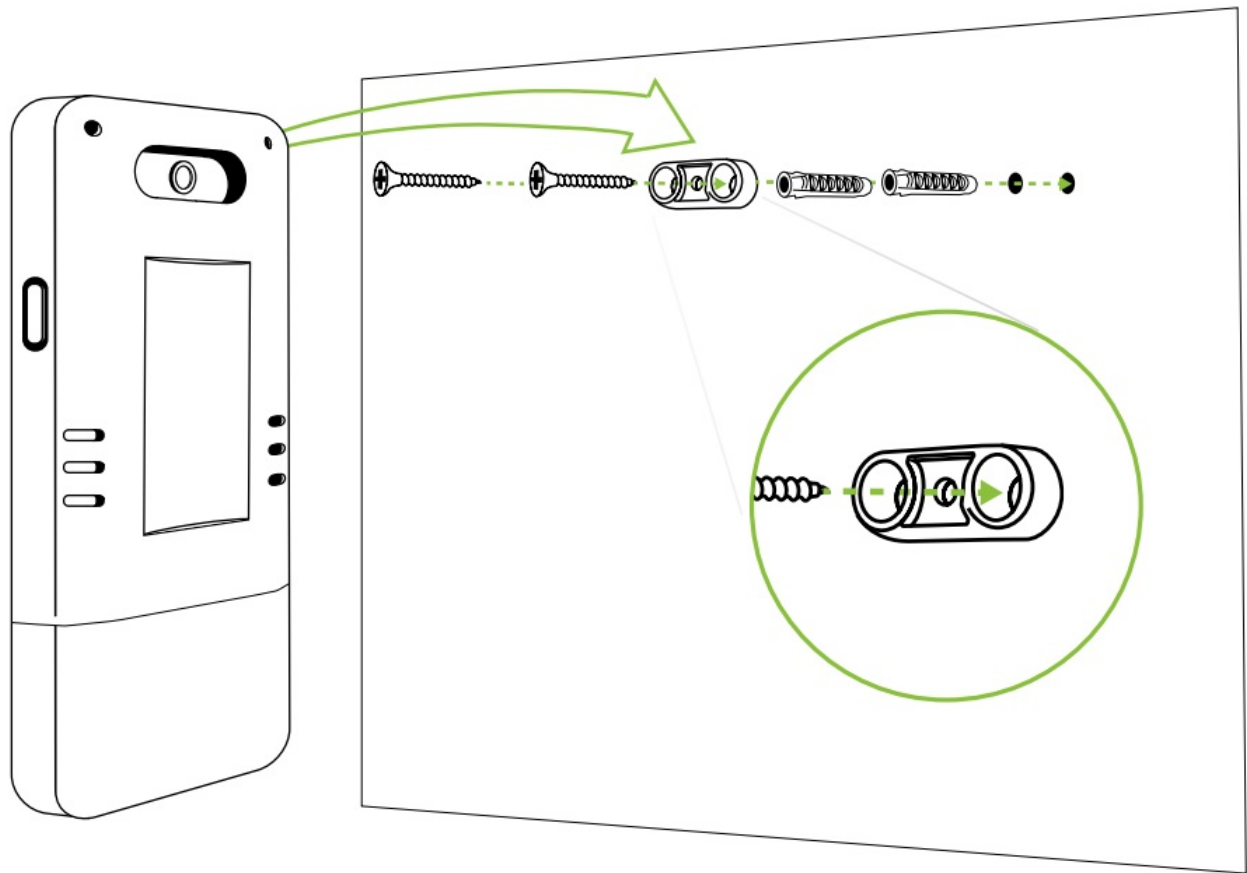
Wall Mounting the EDGE EC40

The EDGE EC40 can be mounted to a vertical surface using a magnetic attachment plate.

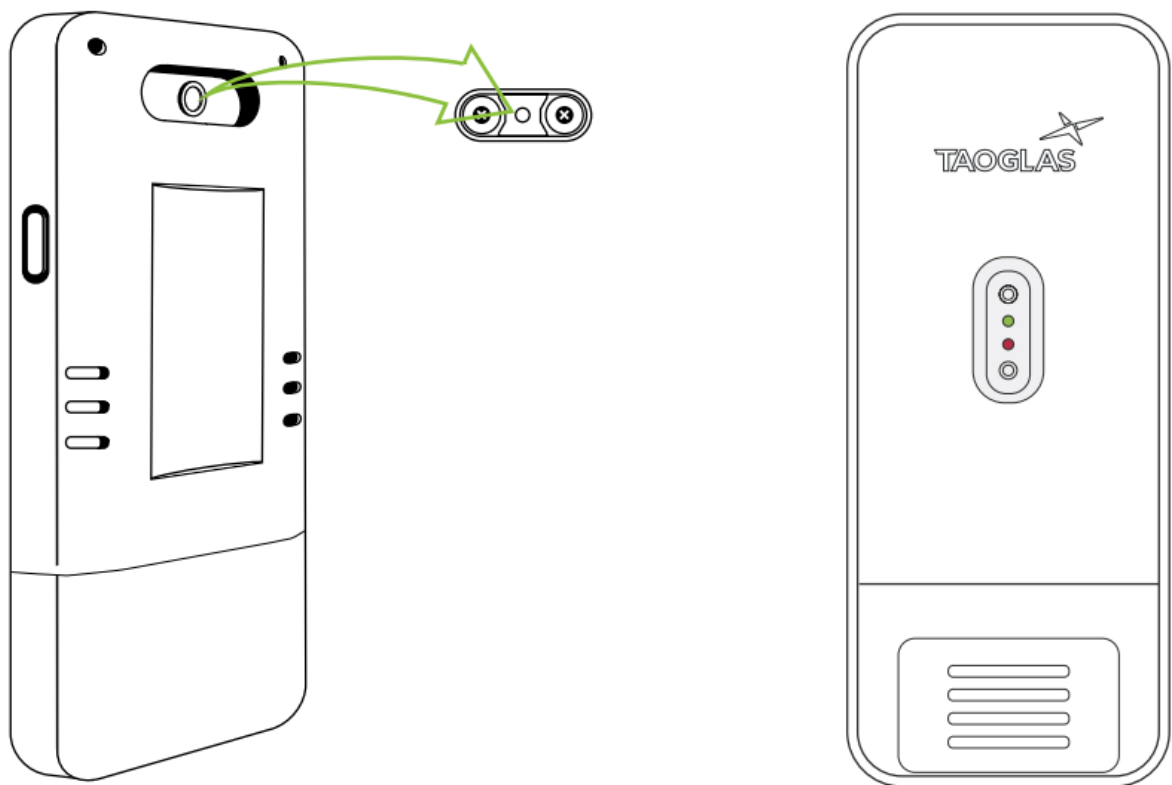
- The plate is supplied with the product, located in the upper rear of the enclosure.



- Two 4 mm diameter screw holes allow for fixing the plate to the surface with screws (not supplied).



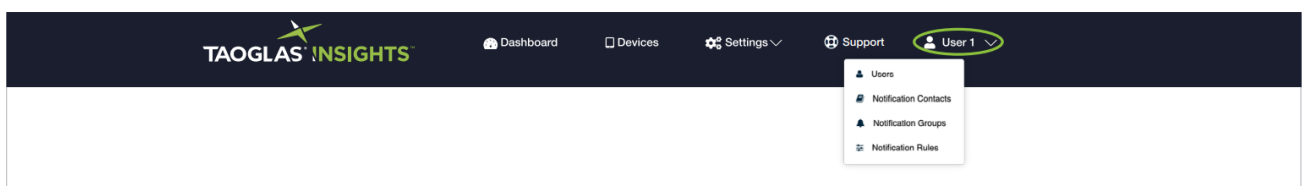
- The EDGE EC40 then clicks in place and remains in place on the magnetic and can be removed for charging etc.



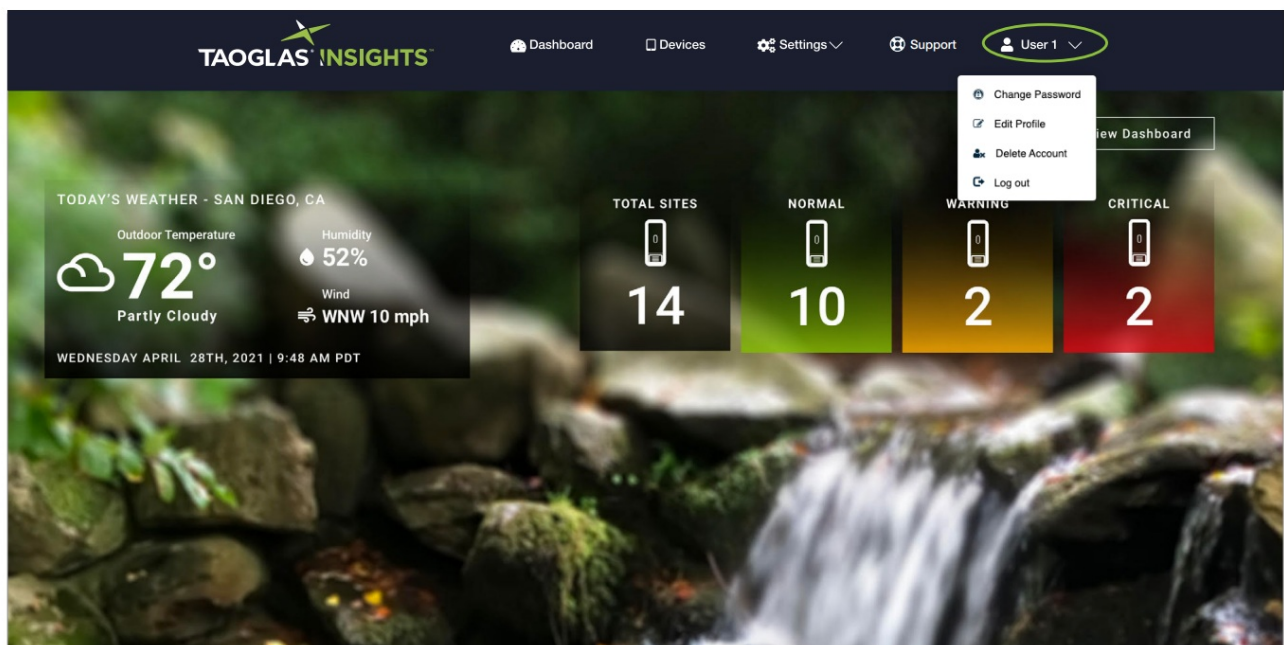
Using Taoglas Insights™

Insights Navigation

1. When you login to your account, you will land on the Dashboard page. For instructions on activating an EDGE EC40 on your account, please refer to the Activating your Device section.
2. You can use the links on the top of Taoglas Insights interface to navigate between your dashboard, device list page and account management pages.
 - a. Dashboard will bring you to your dashboard where you can see all the sensor data uploaded by your EDGE EC40.
 - b. Devices will bring you to your device list page, from here you can manage each of the devices you have activated on your account.
 - c. Clicking on 'Settings' will display a dropdown with various account management options, including:
 - i. Add/edit Users
 - ii. Edit Device Notification Rules
 - iii. Edit Device Notification Groups
 - iv. Edit Device Notification Contacts



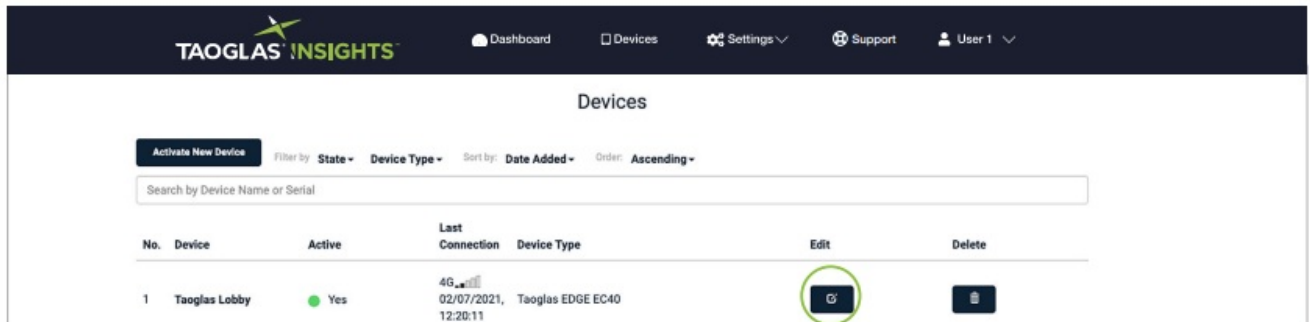
- d. Clicking on 'Support' will display a dropdown with support links.
- e. Clicking on 'Username' will display a dropdown with various account management options, including:
 - i. Changing your password
 - ii. Editing your account details
 - iii. Deleting your account
 - iv. Logging out of your account



Device Management

1. You can edit the details for an individual device by clicking the edit icon (📝) on the devices page.
2. This will direct you to the Edit Device page, from here you can amend the following:

- a. Device Name, here you can enter a customized name for your EDGE EC40.
- b. Address, here you can enter your address.
- c. Upload Interval, this is the rate at which the EDGE EC40 will upload recorded sensor samples to Taoglas Insights.
- d. Upload Retries, in the event where the EDGE EC40 fails to upload samples, this is the number of times it will attempt to upload before backing off.



Edit Device

Parameters
Display Mode

Device Name

Device S/N

Device IMEI

BLE Name

Address

Upload Interval

Upload Retries

Notification Rules 6 items selected

Device Parameters

Edge-Connect-CO2

Ambient Light - Ambient Light Sense Interval
15 minutes

Battery - Battery Sense Interval
15 minutes

Temperature - Temperature Sense Interval
15 minutes

Humidity - Humidity Sense Interval
15 minutes

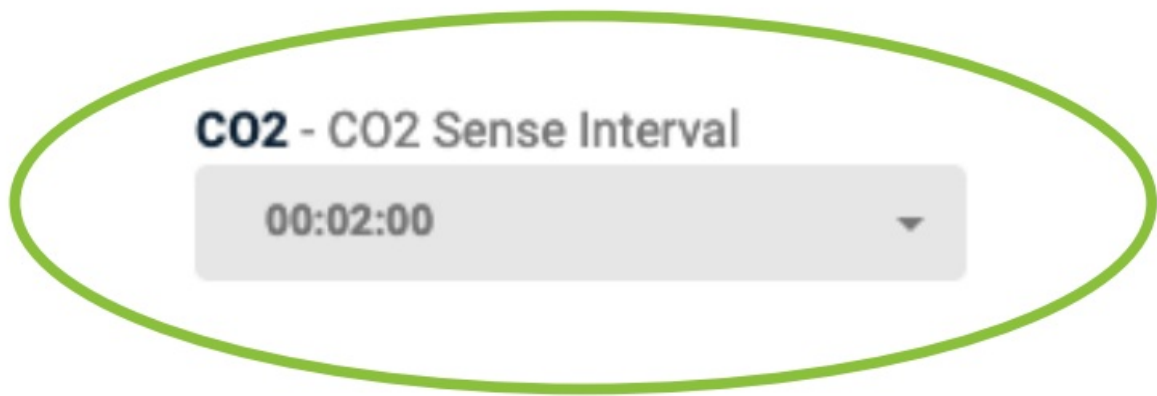
Pressure - Pressure Sense Interval
15 minutes

Shock - Shock Sense Interval
15 minutes

CO2 - CO2 Sense Interval
00:15:00

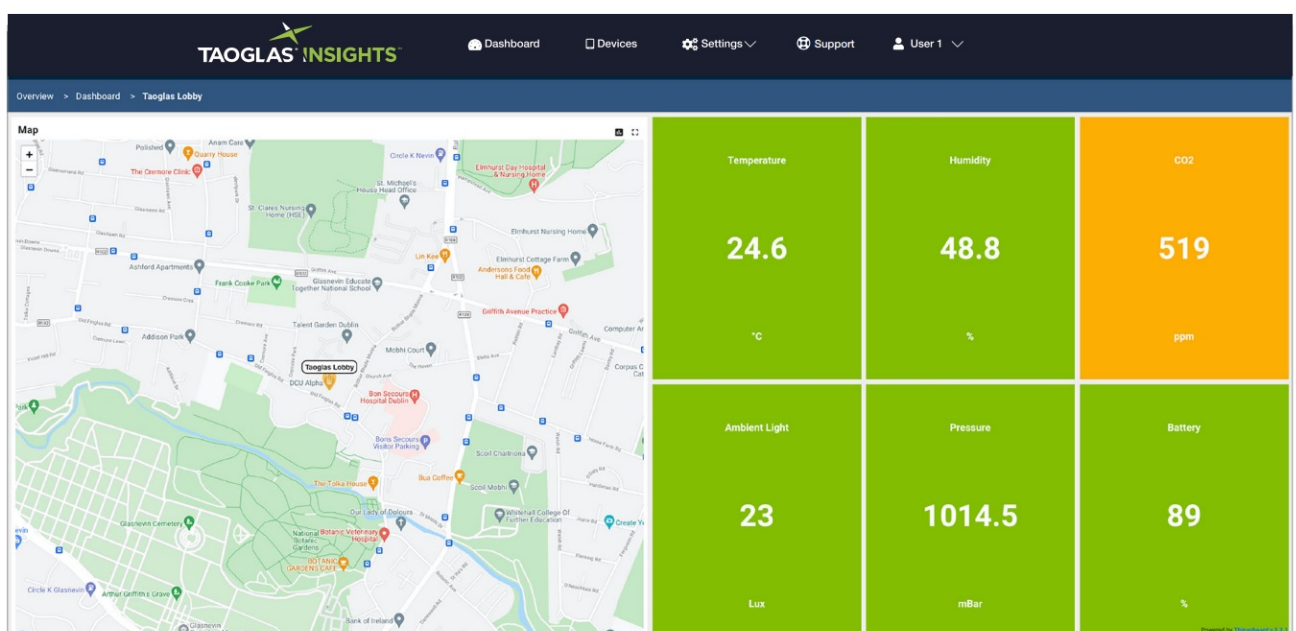
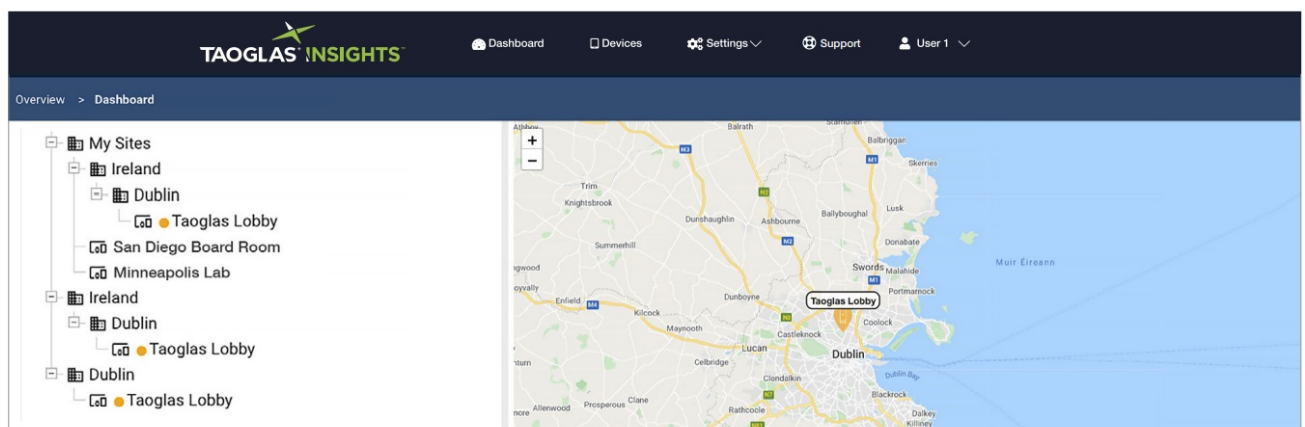
Cancel
Submit

3. Depending on your device type and the sensors associated with it you will be able to set the individual sensor sampling intervals in the Device Parameters section.
 - a. Simply enter the sampling interval in the format **HH:MM:SS** into the text box next to the sensor name.
 - b. For an example, see see CO2 sensor which has a sampling interval of 15 minutes(00:15:00)



Dashboard

1. To view the samples uploaded for an individual device, select and click on the device name. This will bring you to the Sensor Data view of the dashboard.



2. Realtime and historic sensor data for each of your devices can be viewed on the dashboard tab of Taoglas Insights.



3. The sensor data view of the dashboard allows you to:
 - a. View plots of sensor data over a period of time.
 - b. Download historical sensor data by clicking the download icon(↓) at the top right of each plot, this will download the data as comma-separated values.

Sensor Notification Rules

1. Taoglas Insights allows you to notify a group of contacts based on an uploaded sensor value.
2. To do this you will first have to add a contact to Taoglas Insights, click 'Settings' followed by 'Notification Contacts' at the top of the screen.
3. A page listing all the contacts associated with your account will appear, this will be empty if no contacts have been added. Click the 'Add New Contact' button.

The screenshot shows the 'Settings' page in Taoglas Insights. The 'Settings' menu item in the top navigation bar is highlighted with a green circle. A dropdown menu is open, showing 'Notification Contacts' as the selected option, also highlighted with a green box. Below the dropdown, the 'Notification C' page is visible. It includes an 'Add New Contact' button and a table with the following data:

No.	Name	Email	Email Notifications	Edit	Delete
1	User1	User1@taoglas.com	● Yes		

4. On the next screen, enter the name and email address of the contact you want to notify, then click 'Submit'.

TAOGLAS INSIGHTS™ Dashboard Devices Settings Support User 1

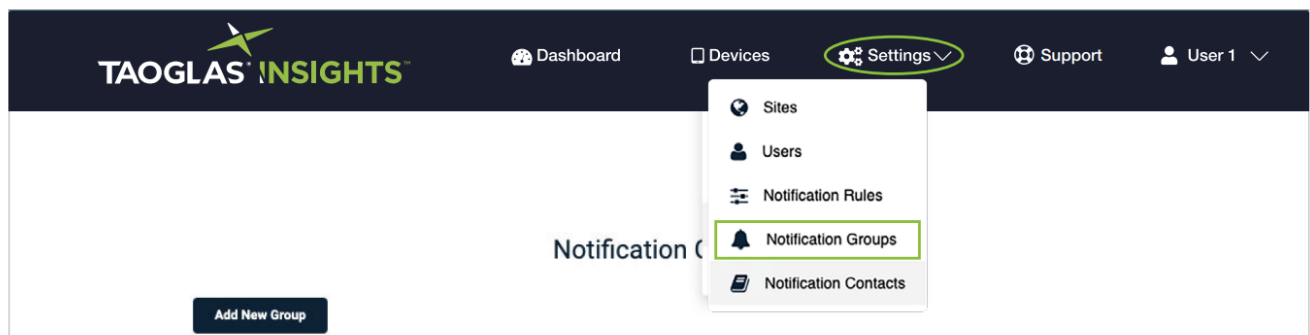
Add New Contact

Name Email

Receive Email Notifications ☒ On

[Cancel](#) [Submit](#)

5. Repeat steps 3 and 4 multiple times to add multiple contacts, regardless of whether or not they are Taoglas Insights users.
6. After adding all the contacts you wish to notify, click 'Settings' followed by 'Notification Groups'. This will display a list of your notification groups, which will be empty initially.



7. Click, 'Add New Group', on the screen that follows, please:
 - a. Enter the name you wish to give the notification group
 - b. Select the contacts you wish to add to the group.

TAOGLAS INSIGHTS™ Dashboard Devices Settings Support User 1

Notification Groups

[Add New Group](#)

No.	Name	Edit	Delete
1	CO2 Alert Group	Edit	Delete

- c. Select the max frequency you wish to notify the group, for example selecting 'Once a day', will only notify the group once in a 24 hour period, regardless of the number of times the rule associated with the notification is triggered.
8. Once you have entered the above information, click 'Submit' to create the group.

TAOGLAS INSIGHTS

Dashboard Devices Settings Support User 1

Add New Notification Group

Name

Remind me Once a day

Contacts Select Contact

Cancel Submit

9. Now that the group has been created, will be required to add a rule which will trigger the notification. Click, 'Settings' followed by 'Notification Rules'. This will bring you to your list of rules. To add a new rule, click 'Add new Notification Rules'. This will bring you to your list of rules. The device comes with a set of default rules based on the recommendations of world renowned entities and follows and the table below:

TAOGLAS INSIGHTS

Dashboard Devices Settings Support User 1

Notification Rules

Add New Search Notification by Name or Metric


Default Rules

Name	Metric	Condition	Severity	Category	Enable	Edit
Carbon Dioxide	CO2	Greater than 1000 ppm	WARNING	None	Off	
Humidity High	Humidity	Greater than 65 %	WARNING	None	Off	
Humidity Low	Humidity	Less than 30 %	WARNING	None	Off	
Temperature High	Temperature	Greater than 26 °C	WARNING	None	Off	
Temperature Low	Temperature	Less than 20 °C	WARNING	None	Off	

Custom Rules

Name	Metric	Condition	Severity	Enable	Edit	Delete
CO2 Warning Notice	CO2	Greater than 400 ppm	WARNING	On		
High temperature - critical	Temperature	Greater than 10 °C	CRITICAL	Off		
Low temperature - critical	Temperature	Less than -30 °C	CRITICAL	Off		

10. These rules can be turned on or off depending on the use taken for the device, and they can be edited to show different notes when the email is sent.
11. Custom rules can also be added according to the user's needs. To add a new rule, click 'Add new'.
12. On the window that appears:
- Select a metric (sensor)
 - Give the rule a name.
 - Select the severity (Warning for yellow status or Critical for red status).
 - Select the device that the rule is applied to.
 - Enter a threshold.
 - Select the notification group.
 - Write the message that will be sent via e-mail when the threshold is reached.



[Dashboard](#)
[Devices](#)
[Settings](#)
[Support](#)
[User 1](#)

Create a new Notification Rule

Select Metric
Temperature

Information:

Name: Temperature Warning

Severity: WARNING

Enable: ☒ On

Devices:

Apply to: Taoglas Lobby | 3554650723

Threshold:

Level: Less-than (<) 10

Notification List:

Select the group that will receive the notifications

Groups: CO2 Alert Group


Notification Message:

Message sent by email when the notification is triggered

Message: The temperature is too low, we recommend to turn on the heating system.

Cancel Submit

The above screenshot will trigger the notification if a temperature sample with a value less than 10°C is uploaded to Taoglas Insights.

13. Once all the information has been completed, click 'Submit'.
14. The rule is now available to apply to the devices associated with your account.
15. To do this, navigate to the devices list page by clicking 'Devices'.
16. Click the edit icon  on the device you want to add the rule to, this will bring up the device edit page.
17. Select the rule from the 'Notification Rules' dropdown as in the screenshot below and click 'Submit'.

TAOGLAS INSIGHTS™ Dashboard Devices Settings Support User 1

Edit Device

Parameters Display Mode

Device Name: Taoglas Lobby Device IMEI: [Empty]

Device S/N: 685865074336507 BLE Name: [Empty]

Address: DCU Alpha, Old Finglas Road, Glasnevin, Dublin, Ireland

Upload Interval: 01:00:00 Upload Retries: 3

Notification Rules: Temperature Warning

Rules Selection

Select All Deselect All

Edge-Connect-4

Ambient

15 min

Battery -

15 min

Temperature

15 min

Humidity

15 minutes

Pressure - Pressure Sense Interval

15 minutes

Shock - Shock Sense Interval

15 minutes

CO2 - CO2 Sense Interval

00:02:00

Cancel Submit

Add New Users

1. To add a new user so that they can view the devices you have activated on your account, click 'Settings' followed by 'Users'.

TAOGLAS INSIGHTS™ Dashboard Devices Settings Support User 1

Sites Users Notification Rules Notification Groups Notification Contacts

Users

Add New User Filter by: Role Sort by: Date Joined Order: Ascending

Search

First Name	Last Name	Username	Email	Role	Edit	Delete
------------	-----------	----------	-------	------	------	--------

2. The users list page will appear, click 'Add New User', which will bring you to a page which allows you to add a new user.

TAOGLAS INSIGHTS™ Dashboard Devices Settings Support User 1

Add New User

Email address Username

First name Last name

Address Role

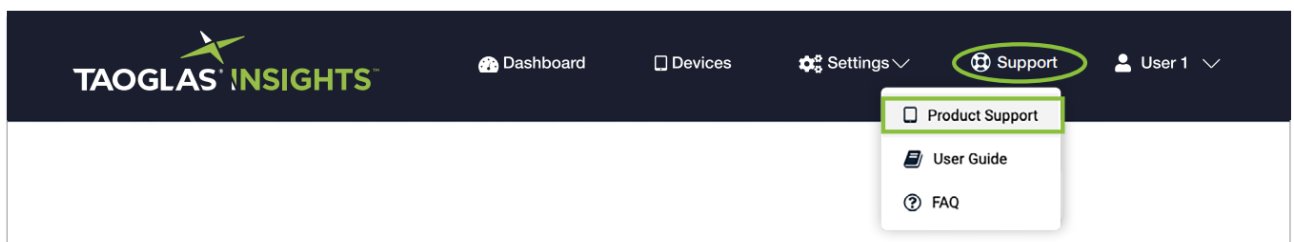
Sites User Enabled ☒

Cancel Submit

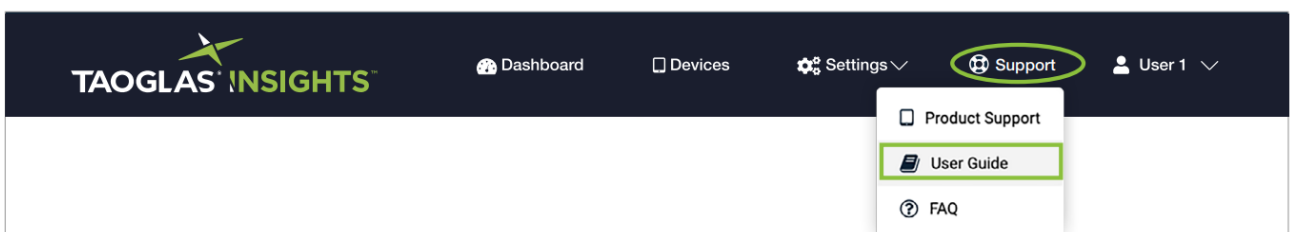
3. On this page enter the users:
 - a. Email address
 - b. Username
 - c. First name
 - d. Last name
 - e. Address
 - f. Role
 - g. Site
4. Click 'Submit' to add the user.
5. A new user will be emailed informing them of their new account.

Support

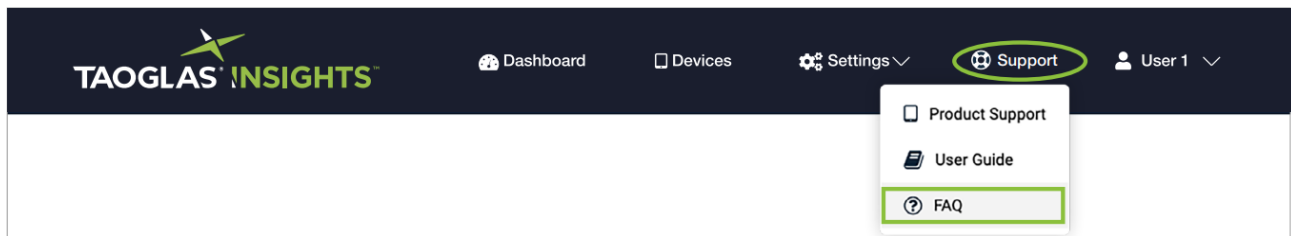
1. To access Product Support, click 'Support' followed by 'Product Support' which will bring you to an online Product support page.



2. To access the User Guide click 'User Guide', which will bring you to an online user guide.



3. To access the 'FAQ', which will bring you an online source for Frequently Asked Questions.



Appendix

Security

The EDGE EC40 device security is provided by four mechanisms:

1. Connection to the Cloud-based components via HTTPS, with the servers public certificates held on the EDGE EC40 device.
2. Authentication of the device by the Taoglas Insights Platform, with the unique and individual private key held securely in a cryptographic coprocessor.
3. Whitelisting of the domains to which the EDGE EC40 APN can connect – Taoglas Insights and Taoglas Insights Platform and NTP servers only.
4. The device periodically reports its configuration hash (security), firmware versions, and certificate bundle version to the Taoglas Insights Platform. A report is sent each time a device is powered up, or when the configuration, certificate, or firmware has changed.

Safety and Regulatory Requirements

Warning: Failure to follow instructions could increase risk to safety and noncompliance with regional laws and regulations.

Warning: DO NOT SHORT CIRCUIT, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE.

BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 100 °C (212 °F).

Warning: HAZARDOUS AREA WARNING: This instrument has not been designed to be intrinsically safe for use in areas classified as hazardous locations. For your safety, DO NOT use it in hazardous (classified) locations.

Caution: In the case of an emergency, degraded performance will occur if wireless reception is inhibited.

Note: The device has an operating range between -20 and +60 degrees Celsius (-4 to 140 Fahrenheit).

The device can be safely charged in an ambient temperature range of between 0 – 40 degrees Celsius (32-104 degrees Fahrenheit).

The device can be charged with a 5 V/0.5 A power supply and Micro USB Cable.

Note:

- **a)** Do not disassemble or open crush, bend or deform, puncture or shred
- **b)** Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to

water or other liquids, expose to fire, explosion or other hazard.

- **c)** Only use the battery for the system for which it is specified
- **d)** Only use the battery with a charging system that has been qualified with the system per CTIA Certification Requirements for Battery System Compliance to IEEE 1725. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazard.
- **e)** Do not short circuit a battery or allow metallic conductive objects to contact battery terminals.
- **f)** Replace the battery only with another battery that has been qualified with the system per this standard, IEEE-Std-1725. Use of an unqualified battery may present a risk of fire, explosion, leakage or other hazard. Only authorized service providers shall replace battery. (If the battery is non-user replaceable).
- **g)** Promptly dispose of used batteries in accordance with local regulations
- **h)** Battery usage by children should be supervised.
- **i)** Avoid dropping the device or battery. If the device or battery is dropped, especially on a hard surface, and the user suspects damage, take it to a service center for inspection.
- **j)** Improper battery use may result in a fire, explosion or other hazard.

Caution: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Federal Communication Commission Interference Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

- Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

RF Exposure Information (SAR)

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal

The exposure standard for wireless device employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg. *Tests for SAR are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. This is because the device is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output. The highest SAR value for the model device as reported to the FCC when worn on the body, as described in this user guide, is 1.1 W/Kg (Body-worn measurements differ among device models, depending upon available accessories and FCC requirements.)

While there may be differences between the SAR levels of various devices and at various positions, they all meet the government requirement.

The FCC has granted an Equipment Authorization for this model device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model device is on file with the FCC and can be found under the Display Grant section of www.fcc.gov/oet/ea/fccid after searching on FCC ID: WYPEU0312.

For body worn operation, this device has been tested and meets the FCC RF exposure guidelines for use with an accessory that contains no metal and be positioned a minimum of 1 cm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

Customers Support

taoglas.com

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Documents / Resources



TAOGLAS EC40 EDGE Connect Cellular Connectivity [pdf] User Guide

EC40 EDGE Connect Cellular Connectivity, EC40, EDGE Connect Cellular Connectivity, Connect Cellular Connectivity, Cellular Connectivity, Connectivity

References

- [✈ Taoglas IOT Solutions Division](#)
- [✈ Antennas, Advanced IoT Components, & Custom Design Services - Taoglas](#)
- [✈ IoT Support - Taoglas](#)
- [✈ Taoglas IOT Solutions Division](#)
- [✈ Antennas, Advanced IoT Components, & Custom Design Services - Taoglas](#)
- [✈ Help Center: Taoglas Resource Library](#)
- [✈ Taoglas EDGE Connect with US 4G/3G Cellular Connectivity | EC40B](#)
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