



attune

Attune Platform Training

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# Attune Hardware



## Gateway

Collects and sends data collected by Nodes or IAQ Packages to the cloud via ethernet internet connection. Each gateway is equipped with local memory storage.



## IAQ Package

Collects and transmits indoor air quality data wirelessly to the Gateway. The package is powered via a wall outlet or line-powered and will also relay data collected by other IAQs.

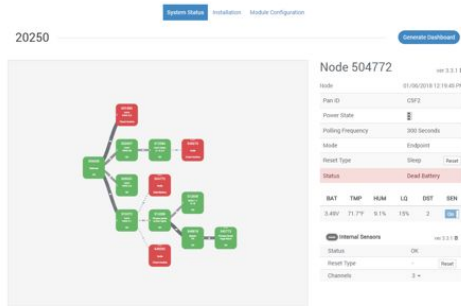


## Node

Connects with Bridges to collect and transmit data wirelessly to the Gateway. Nodes can also be used to relay data from other Nodes or IAQ Packages that are too far away.

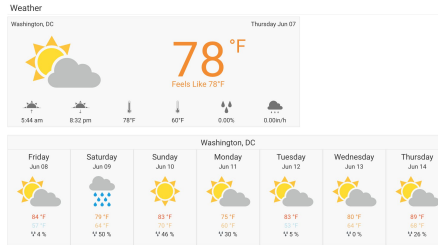
# Attune Platform

## Installation/ System Status



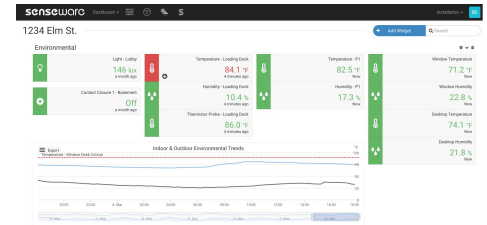
- Initial set-up tool
- Installation health
- Module configuration
- Troubleshooting

## Attune Tools



- Weather
- Data forwards
- Reports
- Analytics
- Meters

## Dashboard



- Charts
- Widgets
- Floor Plans
- Real-time and historical data
- Thresholds
- Data exports

# Login

1. Use the email invitation link you received from Attune to create an account
2. Log into my.senseware.co using your email and password

my.senseware.co

Dashboard - Dashb... Dashboard - Airbor... Gmail Salesforce Intercom Slack Senseware - Agent YouTube Maps New Tab Login | SaaSOptics Outlook

**attune**

## Sign in

**Next**

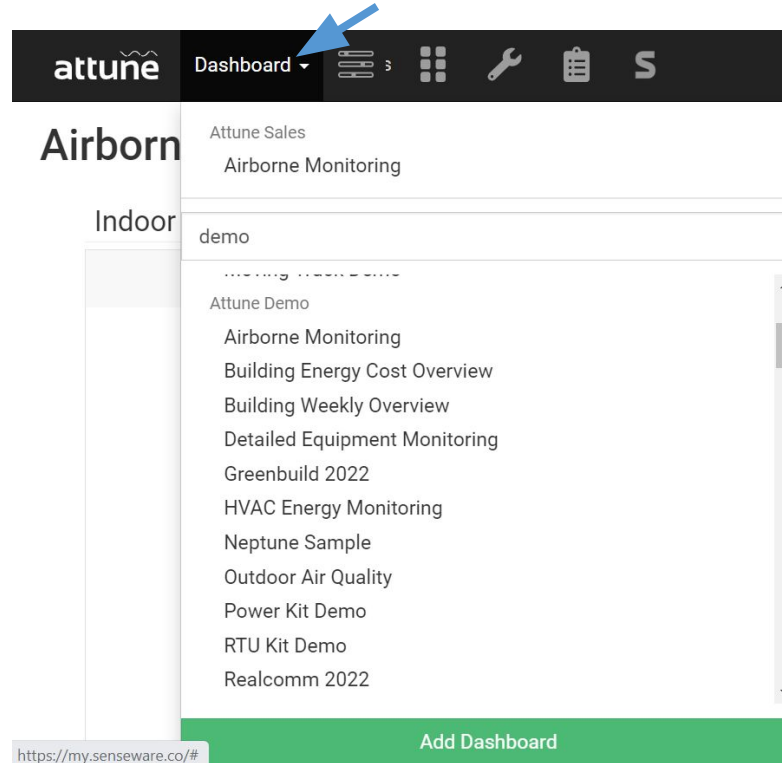
Powered by Attune Account Help

**attune**

# Dashboard Overview

# Search

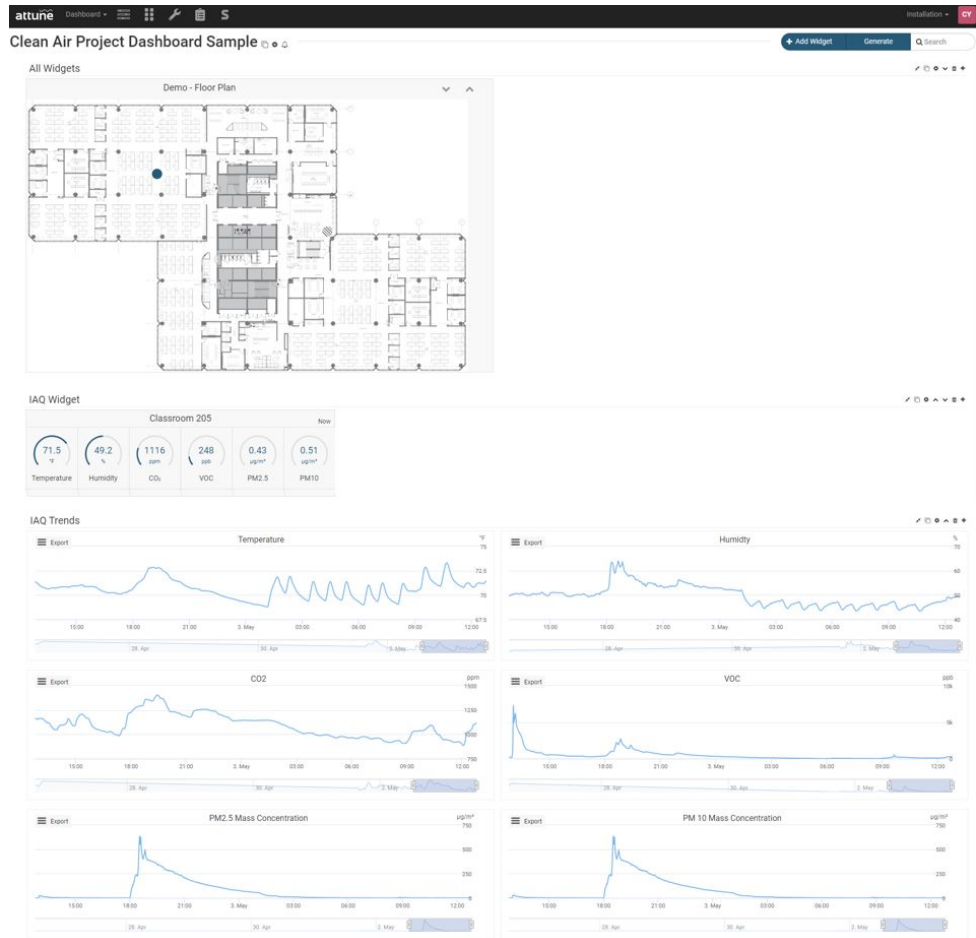
To view a dashboard, go to the Dashboard dropdown and search or choose the building site you would like to view. Users will only have access to view their assigned sites.



# Dashboard

## Dashboard Layout:

- Floor Plan
- Indoor Air Quality (IAQ) Widgets
- IAQ Trends





# Floor Plan Layout

Layouts allow you to intuitively monitor your installation, based on where your hardware is installed. Each dashboard will include floor plans showing IAQ locations within the school. Click on the IAQ unit to quickly view readings.

The screenshot shows the attune dashboard interface. At the top, there is a navigation bar with the attune logo, a 'Dashboard' dropdown, and several utility icons. On the right side of the navigation bar, it says 'Installation - AK'. Below the navigation bar, the main heading is 'Clean Air Project Dashboard Sample'. To the right of this heading are buttons for '+ Add Widget', 'Generate', and a search bar labeled 'Search'. Below the heading, there is a section titled 'All Widgets' with a 'Demo - Floor Plan' widget selected. The floor plan widget displays a detailed architectural drawing of a building. A specific IAQ unit is highlighted with a blue dot, and a pop-up window displays its current readings. The pop-up window is titled 'Indoor Air Quality' and includes a 'Now' indicator. The readings are as follows:

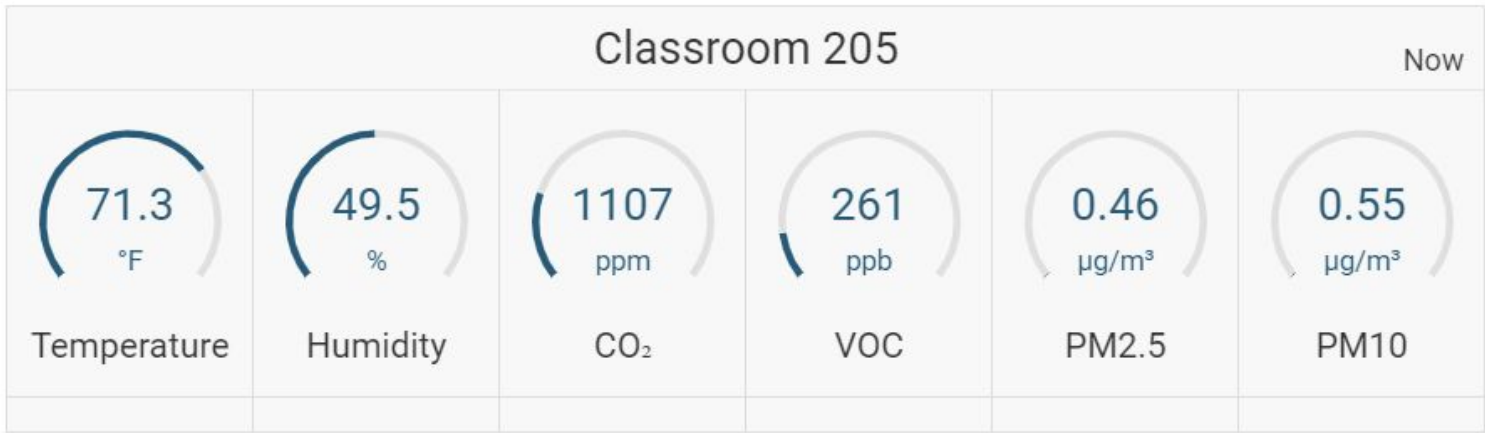
Parameter	Value
Temperature	↑ 71.5 °F
Humidity	↑ 49.2 %
Carbon Dioxide (CO <sub>2</sub> )	↑ 1116 ppm
Volatile Organic Compound...	↑ 249 ppb
PM 2.5 Mass Concentration	↑ 0.40 µg/m <sup>3</sup>
PM 10 Mass Concentration	↑ 0.47 µg/m <sup>3</sup>

At the bottom of the pop-up window, there is a green button labeled 'Add or Edit Channels'. The floor plan widget also has a small toolbar at the bottom right with icons for 'clone', '+ move', 'edit', and 'x remove'.

# Indoor Air Quality Widgets

Indoor Air Quality Widgets automatically detect and create widgets based on the IAQ packages in your installation. Each school dashboard will display an IAQ widget for each unit installed.

## IAQ Widget



# Trending

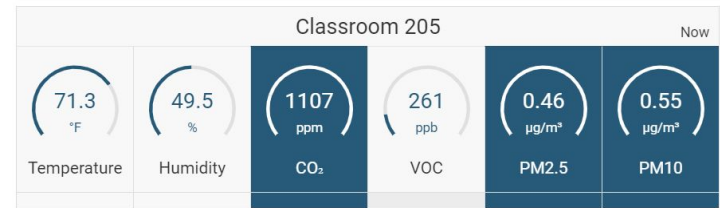
The ability to quickly trend any channel during a specific timeframe by clicking on the IAQ unit on the floor plan or clicking channels on the IAQ widget. Once the channels have been selected move to the bottom of the dashboard to view or export data. See next slide.

The screenshot shows the attune dashboard interface. At the top, there is a navigation bar with the attune logo, a 'Dashboard' dropdown, and several utility icons. Below this is the title 'Clean Air Project Dashboard Sample' with a '+ Add Widget' button. The main area displays a floor plan of a building. A blue circle on the floor plan indicates the location of an IAQ unit. A pop-up window titled 'Indoor Air Quality' is overlaid on the floor plan, showing real-time data for various air quality metrics. The data is as of 'Now'.

Metric	Value
Temperature	↑ 71.3 °F
Humidity	↑ 48.8 %
Carbon Dioxide (CO <sub>2</sub> )	↑ 1077 ppm
Volatile Organic Compound...	↑ 192 ppb
PM 2.5 Mass Concentration	↑ 0.34 µg/m <sup>3</sup>
PM 10 Mass Concentration	↑ 0.39 µg/m <sup>3</sup>

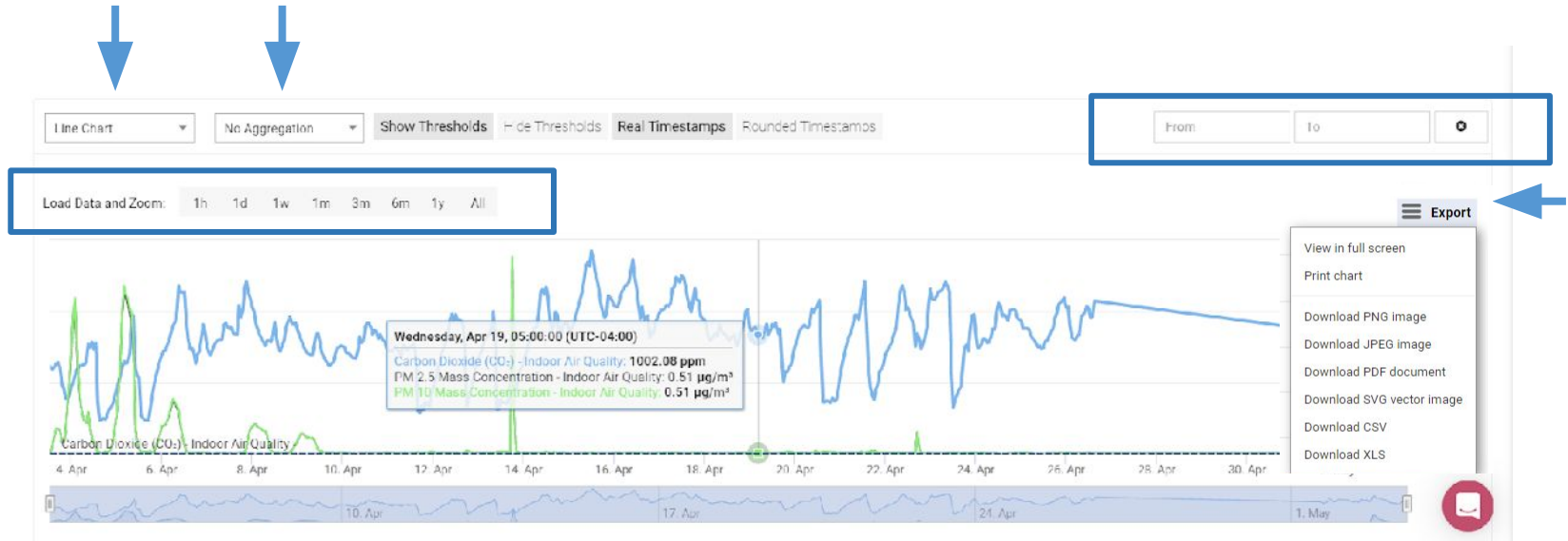
At the bottom of the pop-up window is a green button labeled 'Add or Edit Channels'.

## IAQ Widget



# Trending

On this graph you can choose the type of chart, aggregation period, and select the date range by choosing an option in the Load Data and Zoom feature or inputting a custom timeframe to view or export.

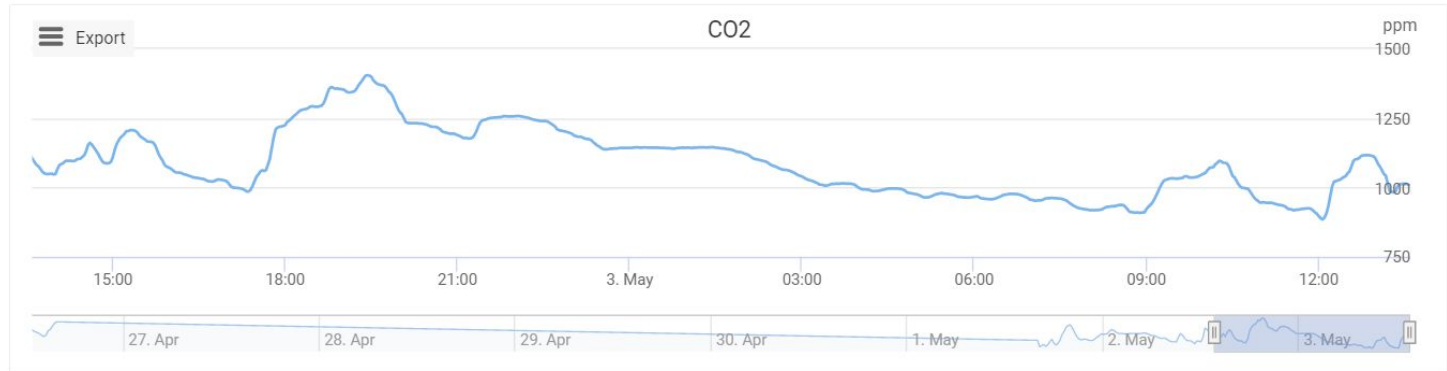


# Chart Widgets

Chart widgets allow you display a permanent graph of one or more sensor channels on your Dashboard. Each school will have graphs displayed for the following sensors:

- Temperature
- Humidity
- CO2
- VOC
- PM 2.5
- PM 10

Example:



# Indoor Air Quality Measurements For Schools

Measurement	Description	Sources & Controls
<b>Temperature</b>	Temperature relates to human comfort; if too cold or too warm, productivity levels will be reduced.	Temperature levels are largely governed by local climatic condition, occupancy and HVAC performance.
<b>Relative Humidity</b>	Humidity is an index of how much water vapor is present in room air. This relates to human comfort as well as building materials (mold growth).	Humidity levels are largely set by local climatic conditions and air conditioner performance.
<b>Carbon Dioxide</b>	Is exhaled by building occupants and removed by building ventilation systems.	CO <sub>2</sub> levels under occupied conditions are indicative of HVAC ventilation performance.
<b>Particulate Matter (PM)</b>	Airborne microscopic particles that building occupants inhale indoors; the PM <sub>subscript</sub> denoted the aerodynamic diameter of the particles in fractions of millimeters.	Indoor particulate matter levels are largely governed by local pollution, wind patterns, routine cleaning practices, occupants and their activities. Can be controlled by systemic HVAC filtration and/or supplementary portable air cleaners.
<b>PM<sub>10</sub></b>		
<b>PM<sub>2.5</sub></b>	<b>PM<sub>10</sub></b> : Size of respirable particles retained in nose, mouth and sinuses <b>PM<sub>2.5</sub></b> : Size of respirable particles that can penetrate lungs	
<b>Volatile Organic Carbon (VOC)</b>	Broad class of chemicals used for cleaning and esthetics, including soaps, detergents, disinfectants and perfumes.	Indoor VOC levels are largely controlled by cleaning practices and the personal care products (and perfumes) from occupants.

# User Access

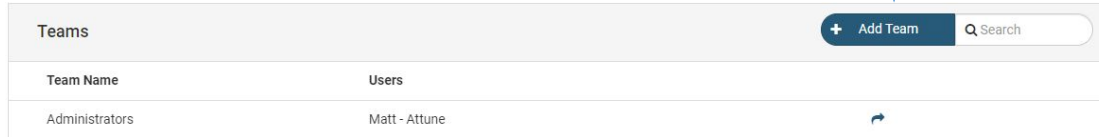
# Teams

The Attune Platform is Team-based. All permissions and users are adjusted within the Teams of the Organizations. To create a new Team (from the Account Page):

- Select the “Team” Icon:



- Select “Add Team”:



Teams		+ Add Team	Q Search
Team Name	Users		
Administrators	Matt - Attune		

- Name Team based on desired group information:

## Create a new Team

Team Name

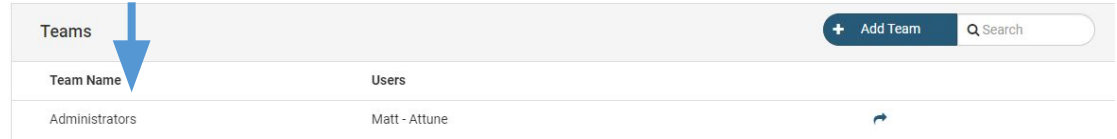
- For more information: [click here](#)



# Permissions

The Attune Platform is Team-based. All permissions and users are adjusted within the Teams of the Organizations. To modify permissions for a certain Team (from the Team Page):

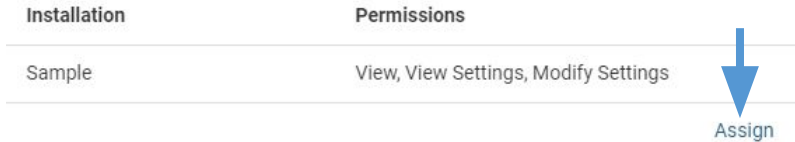
- Select the desired “Team”:  
(NOTE: Administrators automatically receive full access to platform)



Team Name	Users
Administrators	Matt - Attune

- Select “Assign” on the permission to be modified:  
(This can be for Dashboards, Reports, Teams, etc)

## Installation Permissions



Installation	Permissions
Sample	View, View Settings, Modify Settings

- Toggle to the desired level of access:  
(If Modify-level access is selected, all other options will automatically select)



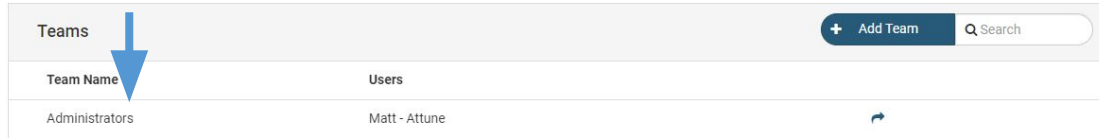
Installation	View	View Settings	Modify Settings
Sample	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- For more information: [click here](#)

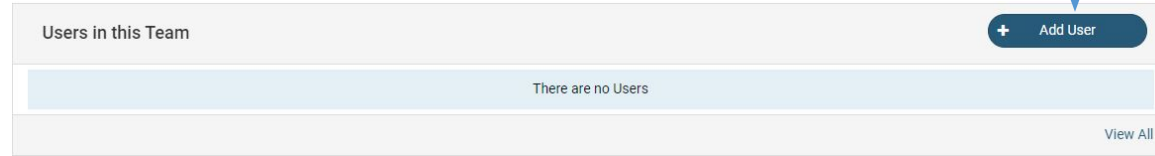
# Users

The Attune Platform is Team-based. All permissions and users are adjusted within the Teams of the Organizations. To Add a New User (from the Team Page):

- Select the "Team":



- Select "Add User" from the Team that you would like to Add to:



- Add User information:  
(Name and Email Address are required)

The screenshot shows a modal window titled 'Add User to Administrators'. It contains the following fields:

- Name:** A text input field with the placeholder 'Name'.
- Company:** A text input field with the value 'Attune Training'.
- Role:** A text input field with the placeholder 'Role' and a note below it: 'E.g. Property Manager, Building Engineer'.
- Email Address:** A text input field with the placeholder 'Email Address'.
- Phone Number:** A text input field with the placeholder 'Phone Number'.
- Timezone:** A dropdown menu with the selected value 'GMT-05:00 (DST) New York, Ohio, Florida, Ontario, Quebec, C'.

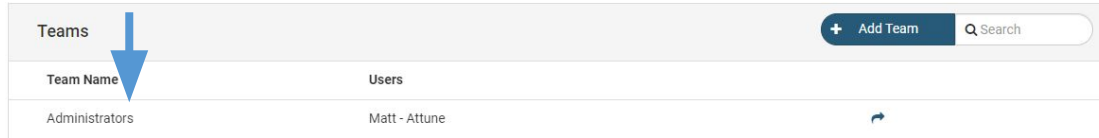
At the bottom of the form, there are two buttons: a white 'Cancel' button and a green 'Add' button.

- For more information: [click here](#)

# Notifications

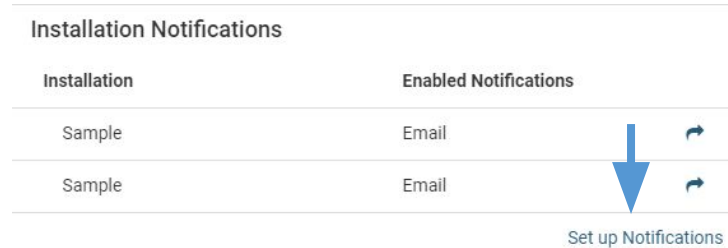
The Attune Platform is Team-based. All permissions and users are adjusted within the Teams of the Organizations. To modify Notifications (from the Team Page):

- Select the “Team”:



Team Name	Users
Administrators	Matt - Attune

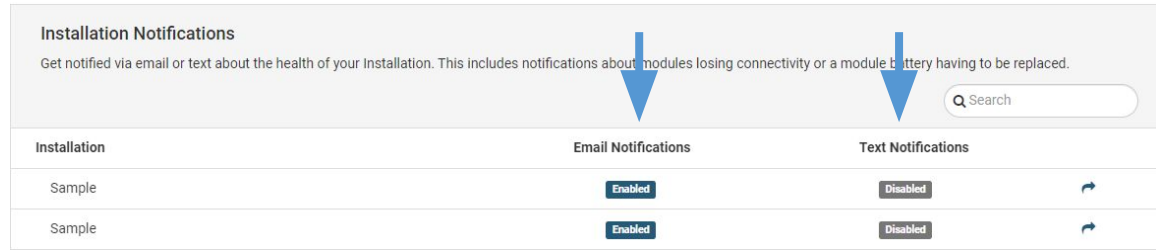
- Select “Set up Notifications”:



Installation	Enabled Notifications
Sample	Email
Sample	Email

Set up Notifications

- Select if you’d prefer Email or Text Notifications:  
(Text requires User’s phone number to be added)



Installation	Email Notifications	Text Notifications
Sample	Enabled	Disabled
Sample	Enabled	Disabled

- For more information: [click here](#)

# Notifications (continued)

The Attune Platform is Team-based. All permissions and users are adjusted within the Teams of the Organizations. To modify Notifications (from the Team Page):

- Select the Notification type:  
(This can be both Email and Text Notifications)
- Select the Notification Interval:
- Select if you'd like any Quiet Times (can be adjusted with slider):  
(You will receive a summary of any notifications that occurred during this time)
- For more information: [click here](#)

**Installation Notification**  
Get notified via email or text about the health of your Installation. This includes notifications about modules losing connectivity or a module battery having to be replaced.

**Settings**

**Email Notifications**  Enabled

**Text (SMS) Notifications**  Disabled

Members of this group must have entered a valid phone number in order to receive text notifications. Message and data rates may apply.

**Notification Interval**

- Immediately
- At most hourly
- At most every 6 hours
- At most every 12 hours
- At most daily

**Quiet time**  
When do you not want to be disturbed? The following times are in each users timezone.

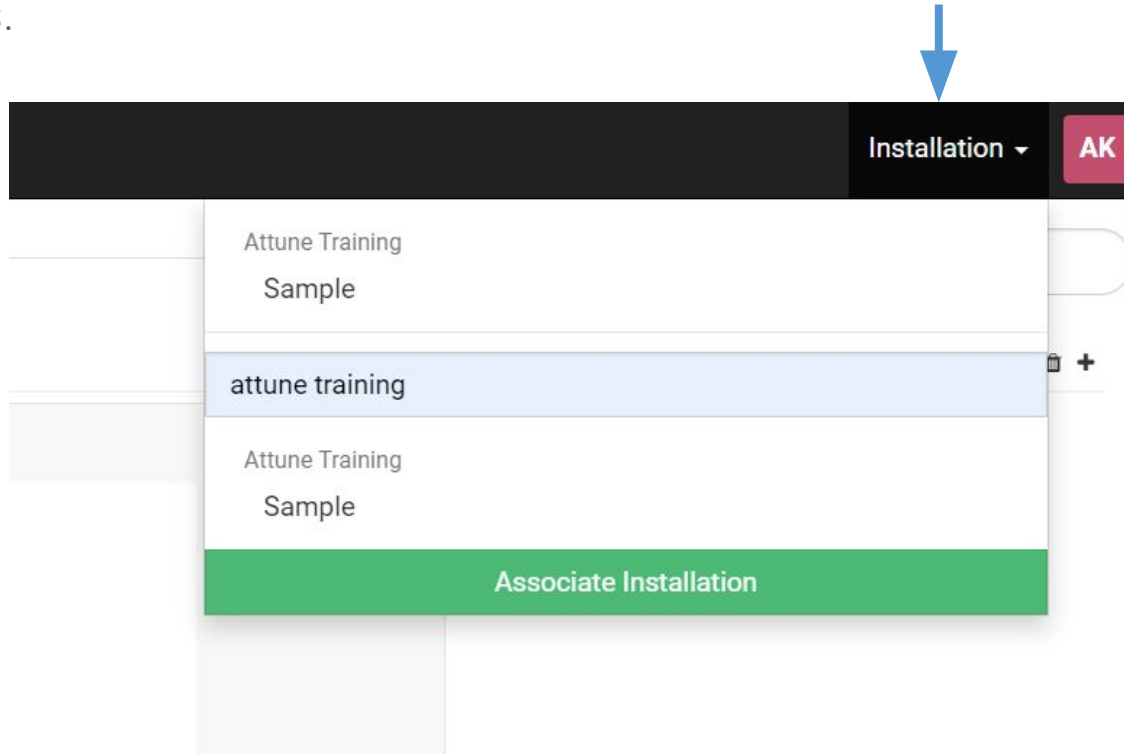
**Weekday Quiet Time**  Disabled  Day

**Weekend Quiet Time**  Disabled  Day

# Troubleshooting

# Installation Overview

To view the health of the installation, go to the Installation dropdown and search or choose the school you would like to view. Users will only have access to view their assigned schools.



# Connectivity

Navigate to the System Status page.



000BC1D5

Generate Dashboard

Node 766844

ver 3.5.2

Classroom 10/09/2020 12:24:39 PM

Pan ID C1D5

Power State

Sampling Frequency 60 Seconds

Mode Relay

Reset Type -

Status Online

BAT	TMP	HUM	LQ	DST	PCK
4.68V	85.7°F	24.1%	57%	1	<input type="button" value="Off"/>

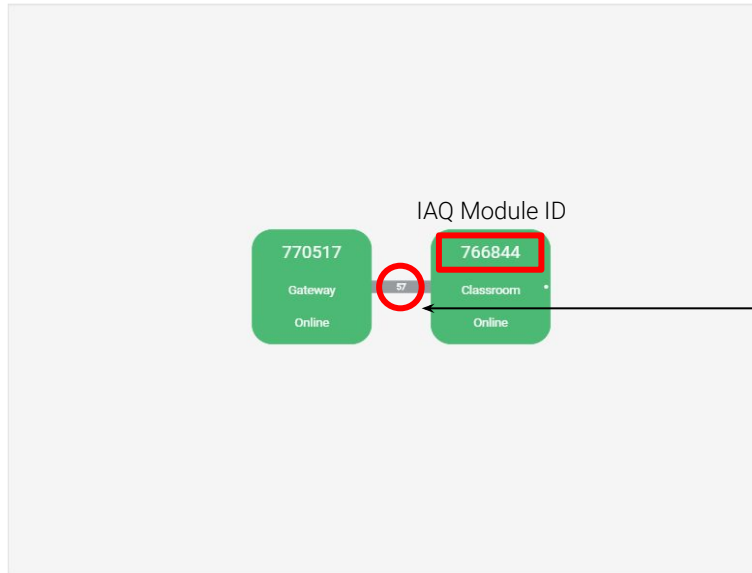
Indoor Air Quality ver 3.5.1

Status Connected

Reset Type -

Channels 15

150-300 feet is the typical wireless communication distance between an IAQ and the nearest IAQ or Gateway



## Tip:

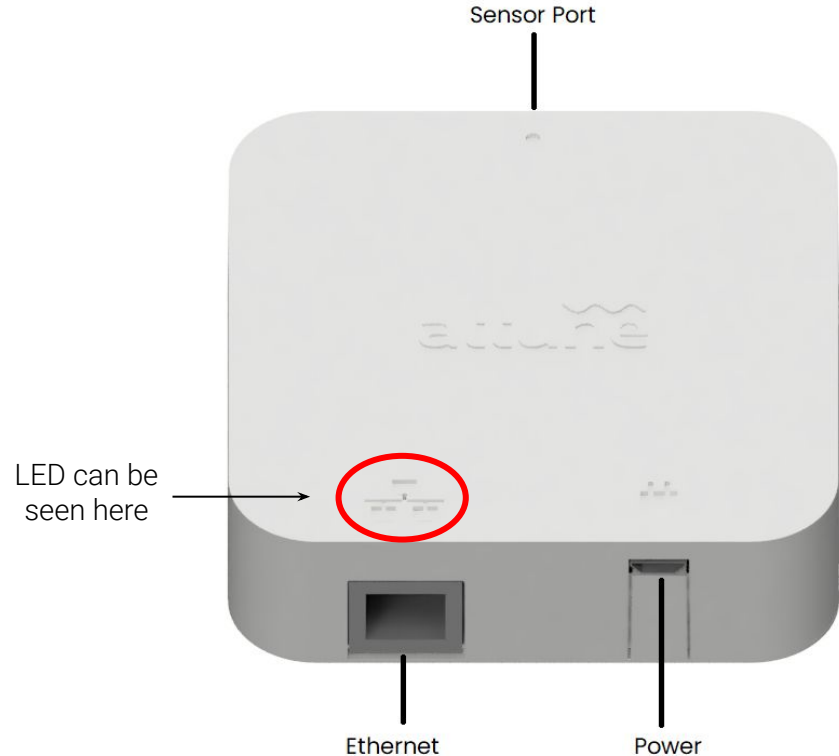
LQ should generally be above 25-30% to avoid any potential connectivity issues. If it is below, move the IAQ closer to the nearest Gateway or IAQ or install a relay node (if you have one) in between

Select the "Channels" drop down to trend data and verify data collection

# Gateway Troubleshooting

## What if the Gateway is offline?

- 1) Make sure to wait a few minutes and refresh the System Status page
- 2) Verify internet connectivity on the ethernet port connection
- 3) Verify that the USB power cord is plugged into the USB port next to the Ethernet cord beneath the engraved Power Plug symbol (not into the sensor port on the opposite side of the Gateway)
- 4) If the status LED did not blink when everything was plugged in, verify that the outlet has power.
- 5) If the Gateway does not appear online after verifying connections, please refer to the Status LED breakdown on the next slide.

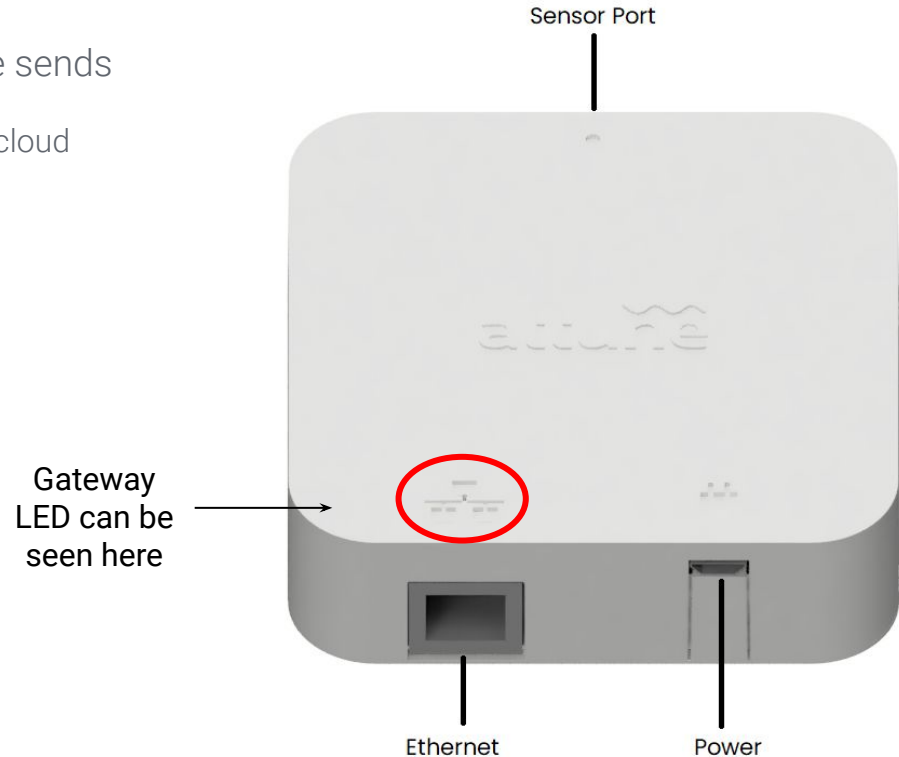




# Gateway Troubleshooting

## Gateway LED Colors Explained

- White (typically once a minute or when a Node sends data, unlit otherwise)
  - Data has successfully been sent to the Attune cloud
- Blue
  - Gateway is resetting
- Green
  - A Node has connected to the Gateway
- Yellow (Blinking)
  - Gateway cannot connect to the internet
- Yellow (Solid)
  - Internal storage is full
- Red
  - Power cord is not connected properly



# IAQ Monitor Troubleshooting

What if the IAQ Package is offline?

- 1) Make sure to wait a few minutes and refresh the System Status page
- 2) Verify the IAQ Package is powered
  - The IAQ LED should blink colors when first plugged in if receiving power
- 1) Verify the IAQ Package can reach the nearest IAQ or Gateway
  - If the IAQ LED is continually blinking red, then it cannot reach the nearest IAQ or Gateway
  - Move the IAQ closer or install a relay node (if you have one) in between
- 1) See the next slide for more information on IAQ LED colors

IAQ LED  
can be  
seen here



# IAQ Monitor Troubleshooting

## IAQ LED Colors Explained

- White (typically once a minute or when the IAQ sends data, unlit otherwise)
  - Data has successfully been sent to the primary neighbor
- Green
  - IAQ has successfully found a neighbor during discovery
- Red
  - IAQ is unable to find a neighbor during discovery (too far away)
- Magenta
  - IAQ is able to find a neighbor during discovery, but there is no route to the Gateway; this most often occurs if the Gateway is not powered. Alternatively, if the Node is not in discovery, it will briefly flash Magenta if it receives an update or action.
- Cyan
  - IAQ is checking for a valid timestamp from the primary neighbor

IAQ LED  
can be  
seen here



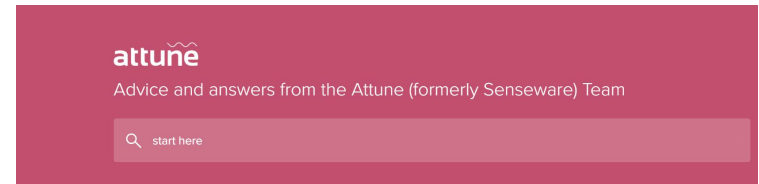
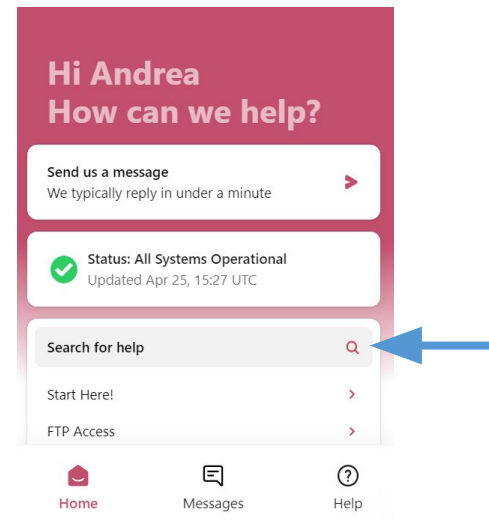
# Attune Support

We are here to help with any questions!

Attune's online chat feature is available for all your support needs. Our online chat can be accessed by clicking the chat icon on the bottom right-hand side of the portal.



You can also access our library of online help articles in the chat feature or visit <https://help.senseware.co> for assistance.



Search results for: start here

#### Start Here!

enclosure unless you've been advised to do so by a Senseware technician (see advanced instructions [here](#)). You can review these limitations [here](#)

Written by Julien Stamatakis. Updated over a week ago

# CU Support

Please visit <https://www.colorado.edu/faculty/hernandez/clean-air-schools-project> for additional project and resource information.

The screenshot shows a website header for Mark Hernandez at the University of Colorado Boulder, College of Engineering and Applied Science. A navigation menu includes 'Clean Air For Schools' (highlighted), Courses, Gallery, Lab Services, People, Press, Publications, Research, Resume, and Broadening Participation. The main content area is titled 'Clean Air For Schools Project' and contains a detailed paragraph about the project's goals and implementation. Below the text is a list of services provided by the lab team, followed by a note about the subscription fee. At the bottom, there are two call-to-action boxes: one for 'Indoor Air Quality Training & Resources for Schools' with a 'Training Resources' link, and another for 'Project Enrollment Information for Schools' with buttons for 'Sign up for HEPA Filters' and 'Sign up for Indoor Air Quality Monitors'.

University of Colorado Boulder

**Mark Hernandez**  
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

[Clean Air For Schools](#) Courses Gallery Lab Services People Press Publications Research Resume Broadening Participation

## Clean Air For Schools Project

This project serves to implement a program that provides a systemic network of indoor air quality monitors in Colorado schools that receive HEPA portable air cleaners (PACs) through CDPHE's Clean Air for Schools Program. PACs can supplement existing air handling systems to help improve air circulation while reducing common indoor air pollutants in classrooms. When used as part of a school facility's operation management toolkit, indoor air quality (IAQ) monitoring can help facility managers and staff understand in real-time when classroom air filtration needs to be addressed or when ventilation needs to be increased. IAQ monitoring combined with the supplemental air filtration PACs provide, are valuable in the management and maintenance of a healthy indoor environment for all students and staff. Through the "Clean Air for Schools" program, CDPHE will provide PACs for approximately 30,000 classrooms, with strategic deployments prioritized in approximately 50-70% of the K-12 schools across the state of Colorado (approximately 1,000 to 1,400 schools) by the end of the project period (July 31, 2023). The goal of this project with the "Clean Air for Schools" program is to complement the PAC distribution by implementing an air monitoring network in approximately 2,400 classrooms in Colorado K-12 schools.

Dr. Hernandez's Aerobiology & Disinfection Lab team will:

- Enroll interested schools in the program
- Install free air quality monitors in school classrooms across the state with a free two year subscription for indoor air quality monitoring services\*
- Provide subject matter expertise on indoor air quality issues

*\*After the free two year subscription ends, schools can choose whether or not to continue paying the annual subscription fee (\$175/unit/year or \$14.5/unit/month).*

Indoor Air Quality Training & Resources for Schools  
**Training Resources**

Indoor Air Quality Guidance for Schools

Project Enrollment Information for Schools

[Sign up for HEPA Filters](#)

[Sign up for Indoor Air Quality Monitors](#)