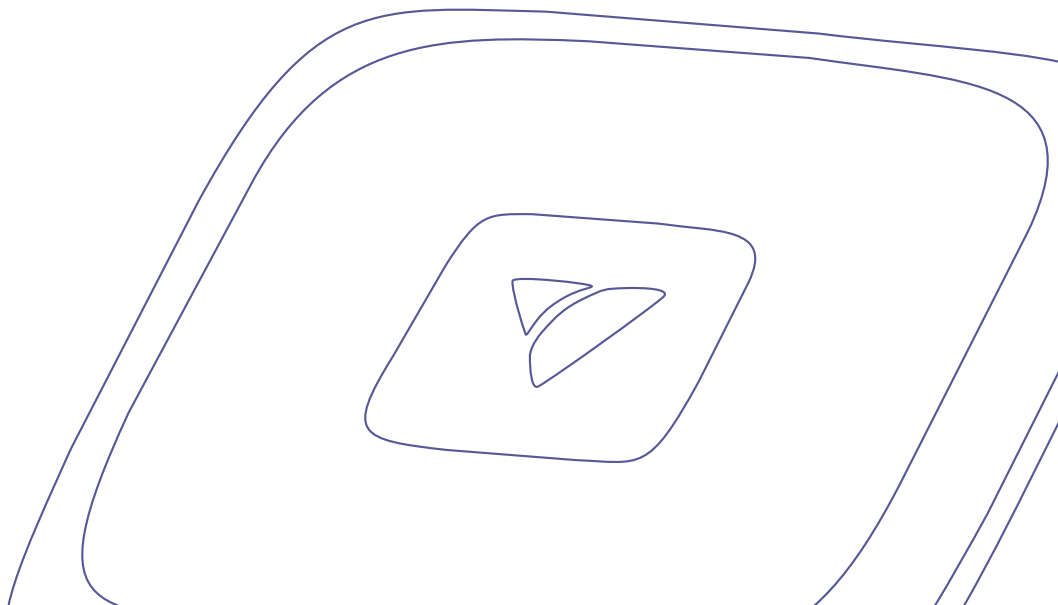




VeevaHub™ **Quick Start Guide**

VHH09 (LoRa)



Welcome to the Edge

Thank you for choosing Veeahub, the intelligent wireless hub that makes edge computing a reality.

● Your Veeahub at a glance	4
● Veeahub Basics	5
● Setting up multiple Veeahubs	6
● SIM and SD Memory Cards	21
● Pin-out and Far End cabling diagrams	22 - 23
● Reset Lights & Reset Button	24 - 25
● Troubleshooting & Safety Warnings	26 - 27

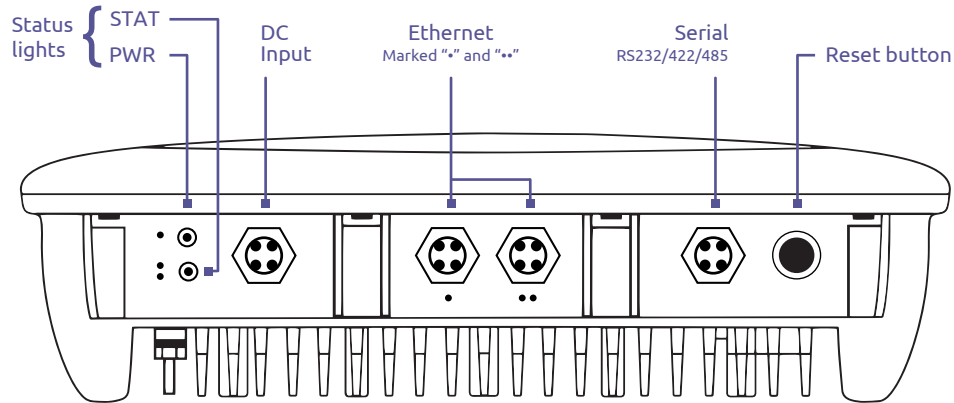
Setting up your Veeahub	1	Before you begin the installation	7
	2	Powering your Veeahub	8
	3	Connecting your Veeahub	10
	4	Download Veeahub Manager App	12
	5	Add your Veeahub	13
	6	Mounting your Veeahub	14
	7	Check the status of your Veeahub	18
	8	Connect other devices	19
	9	What's next?	20



WARNING

This product is designed for specific applications and needs to be installed by a qualified personnel who has RF and related rule knowledge. See Page 27 for more information.

Your Veeahub at a glance



What's in the box?

- 1 × Veeahub Unit
- 1 × Quick Start Guide
- 1 × LoRa Antenna Short (light-gray)
- 2 × LTE Antenna Long (white)
- 2 × M12 male connectors for Ethernet and PoE
- 1 × M12 female connector for 48VDC power
- 1 × M12 male connector for RS232

Veeahub Basics



Mesh Networking

Your Veeahubs operate in a mesh. A mesh is a connected group of Veeahubs working together to provide a self-healing, self-configuring network:

- A mesh is always created when you enroll your Veeahub, even if you only have one Veeahub
- The first Veeahub added to a mesh is called the Mesh Edge Node (MEN). It is the Internet gateway for all the nodes in the mesh
- Additional Veeahubs added to a mesh are called 'Mesh Nodes'
- Many Veeahubs may be added to a mesh to extend the mesh over a large area.



Services & Subscriptions

Certain services available for your Veeahub require a subscription, sold separately.

- See Page 20 for more information.

Setting up multiple Veeahubs

If you are setting up multiple Veeahubs in a single session, we recommend the following steps for a faster, easier initial setup:

- 1 Bring all your Veeahubs** to where you have an Internet connection, and a suitable power source (Refer to Pages 7-11). Do not connect the power at this time.
Note. You can move your devices to their final locations once the setup is complete.
- 2 Decide which Veeahub will be the Mesh Edge Node (MEN).** The MEN will need to be connected to the Internet. The first device added to the mesh automatically becomes the MEN.
Note. If you have a 4G-capable Veeahub, it should be selected as your MEN to allow you to use our 4G services now or at a later date.
- 3 Add all your Veeahubs to your account** using the Veeahub Manager mobile app (Refer to Pages 12-13) before connecting them to power.
- 4 Connect the power and connect each device directly to the Internet:**
 - For a faster initial setup, use an Ethernet cable (CAT 6 or better) during the setup
 - If you have an Ethernet Switch, you can temporarily connect them all to the Internet at the same time.

1

Before you begin the installation

Dependent on the installation requirement, your professional installer will require some, or all, of the following materials (Not included in the box) in order to complete the installation:

- A 48V DC power supply rated @1.4 Amps or a PoE Midspan Injector
For PoE Midspan injector, Veea recommends Microchip PD-9601GO/AC or equivalent.
- #14 gauge grounding cable (to be cut to length)
- #14 gauge DC power cable (to be cut to length)
- CAT6 Ethernet cable (to be cut to length)
- Wall mount or Pole mount bracket
Sold separately¹. To order, please contact us by visiting veea.com/support
¹Wall Mount - Part no.: AC_WMT_H10 | Pole Mount - Part no.: L-COM HGX-PMT17.
- M12 dust caps for unused ports.



IMPORTANT:

Read the important safety and regulatory information on Page 27 before installing your device.

2

Powering your Veeahub

Grounding your unit

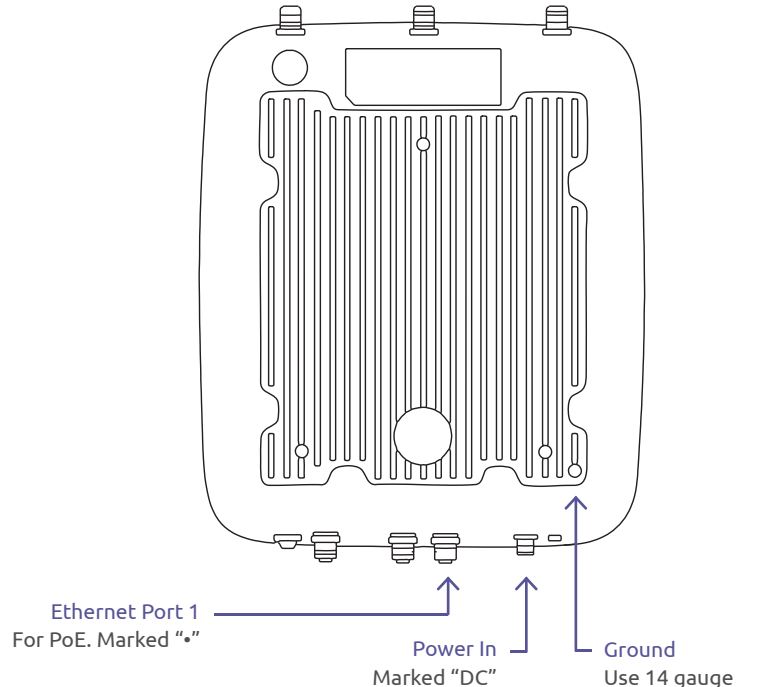
The VHH09 (LoRa) unit must be properly grounded first to ensure reliable operation, help dissipate lightning effects and prevent buildup of static charge. The grounding connection must be securely and effectively connected to an actual earth ground. A grounding stake, grounded pole or similar grounded metal structure may be used.

Powering your unit with Power over Ethernet (PoE)

A PoE switch or a cable injector may be used to power this unit. The VHH09 (LoRa) is classified as an 802.3bt Type 4 device which can consume up to 90W. However, the VHH09 (LoRa) has a typical power consumption of less than 60W.

Powering your unit using a separate DC Power Cable

Refer to Pages 22-23 for power cable connections. When using a separate DC power cable, use a minimum 14# conductor cable of Maximum length 50 feet.



IMPORTANT:

Any unused connector must be protected by a dust cap.

3

Connecting your VeevaHub

Ethernet

The M12 connectors are provided so that custom cable lengths can be created for each unique installation. Please see Pages 22-23 for the M12 connector pin assignments and cable twisted pair diagrams.

Ethernet Port 1 ("•") supports PoE and is capable up to 1GbE.

Ethernet Port 2 ("••") is capable up to 5GbE but does not support PoE.

Both ports can be used for WAN or LAN connections.

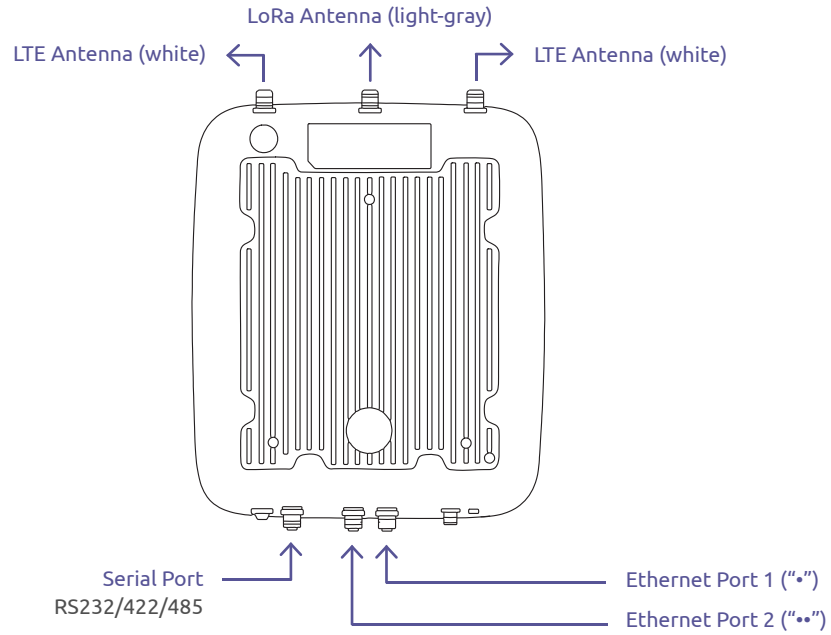
Serial Port

Your device supports RS232/422/485 connections using the Serial Port.

Please see Pages 22-23 for the M12 connector pin assignments and cable twisted pair diagrams.

Antennas

Connect the two long white colored LTE antennas, one on the socket on the left and one on the socket on the right. Connect the short light-gray colored LoRa antenna to the socket in the middle. Make sure all three antennas are screwed on properly and are facing upwards.

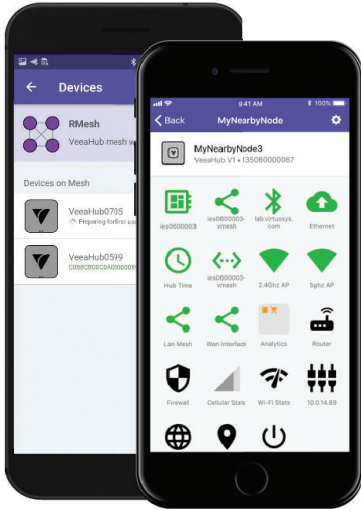


! **IMPORTANT:**
Any unused connector must be protected by a dust cap.

4

Download Veeahub Manager

Veeahub Manager allows you to add, manage and check the status of your Veeahub devices from any mobile device.



Download Veeahub Manager from



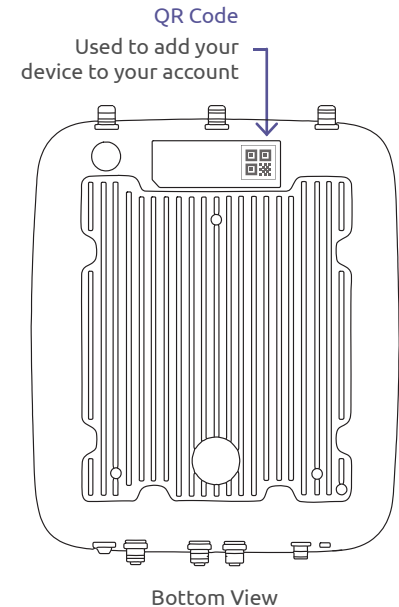
Learn more about Veeahub Manager

Go to www.veea.com/support

5

Add your Veeahub

- 1 **Log into** the Veeahub Manager.
- 2 Tap on the **+ Add Veeahub** button.
- 3 Follow the on-screen instructions.
- 4 If you have more than one device and you want to create a mesh network, repeat steps 2 and 3 for each additional device.



IMPORTANT:

If you have a 4G-enabled device and plan to use our 4G services, add your 4G-enabled device first.

6

Mounting your Veeahub

The unit may be mounted either on a flat surface (such as a wall) or on a pole. The installation kit provides options for either a wall mount or pole mount bracket.

Pole Mounting is described on Page 15.

Wall Mounting is described on Pages 16-17.

Unless ordered specifically, your Veeahub does not ship with either the pole or wall mounting kits. Please contact support at www.veea.com/support to order a mounting kit that fits your needs.

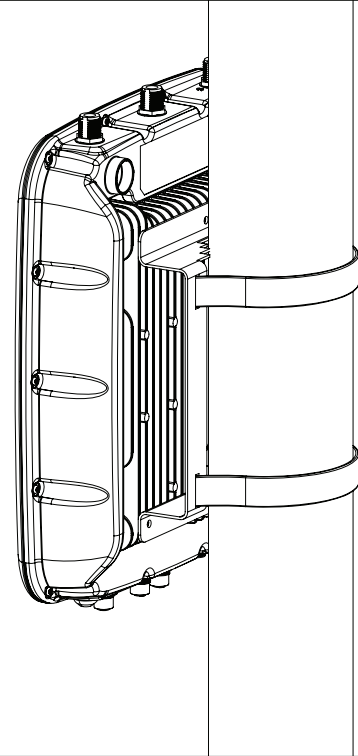
Pole Mounting

The pole mount bracket (L-COM HGX-PMT17) is a single piece bracket which bolts to the VHH09 (LoRa) unit using three M5 x .8mm x 10mm long stainless steel screws and attaches to a pole in diameter 3 to 12 inches with off-the-shelf steel bands.



IMPORTANT:

You must ensure that the unit is mounted vertically, so that the edge with the antenna connections faces up.



Wall Mounting

In the case of the wall mount bracket, there are two pieces: one piece attaches to the VHH09 (LoRa) unit and the other piece gets mounted to the surface of the wall.

- 1.** Attach the unit side of the wall mounting bracket to the back of the unit with three M5 x .8mm x 10mm long stainless steel screws. **(Fig. 1)** Note that a single bolt attaches in the middle at the top of the bracket and two bolts attach the bottom of the bracket. Holes on the top left and right corner are unused.
- 2.** Attach the wall piece of the wall mounting bracket to the wall surface so that it is oriented as shown, with the side rails away from the wall and locking flanges on the bottom **(Fig. 2)**.
- 3.** Attach the grounding cable to the grounding connection on the VeeaHub heat sink, as described on Pages 8-9.
- 4.** Hang the unit assembly on the wall piece of the bracket by matching up the bracket side flanges and sliding the unit assembly down onto the mounted wall piece until it rests on the locking flanges. Insert two M8 screws into the locking flanges at the bottom to fasten the two pieces of the mounting bracket together **(Fig. 3)**.

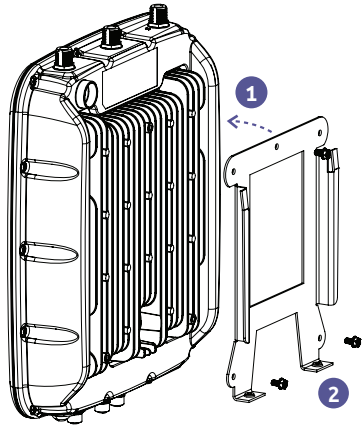


Fig 1. Installing the wall mounting bracket

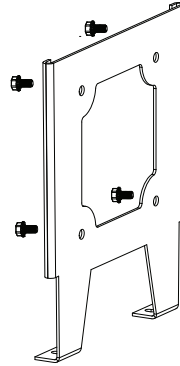


Fig 2. Installing the wall piece

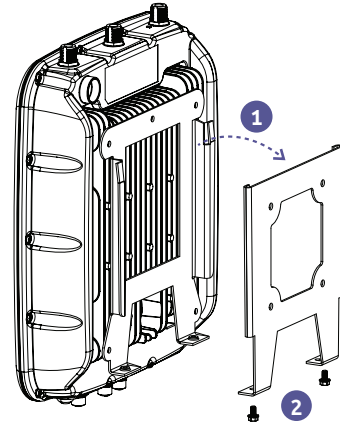


Fig 3. Installing unit to wall piece



IMPORTANT:

You must ensure that the unit is mounted vertically, so that the edge with the antenna connections faces up.

7

Check the status of your Veeahub

Once your device is connected to power and Internet through the Ethernet port, it will start the initial setup process. Use the Veeahub Manager app to see the progress of your device.

Once powered on, your device will:

- Download the latest software and your settings
- Download the device configuration



Once this process starts, it can take up to 30 minutes to finish.

Do not power down the Veeahub during the software download or device configuration process.

Your Veeahub setup is complete when the Veeahub Manager app finishes and both status lights are solid green.

Upon completion of initial setup, move each device to its desired location and connect your other devices. For information on how to position your device and optimize your network, go to veea.com/support

8

Connect other devices

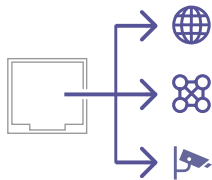
Once your mesh network setup is complete, you can connect other devices such as your laptop, printer and phone to your Veeahub.

Connecting via Wi-Fi

To connect to your Veeahub via Wi-Fi, select the network name (SSID) you created earlier while creating your mesh and enter the Wi-Fi password you've set.

Connecting via Ethernet

To connect wired devices to your Veeahub, connect another M12 Ethernet cable to an available Ethernet port on the back of your Veeahub and then to your wired device.



Internet connection for the Mesh Edge Node (MEN)

Your MEN uses the Ethernet port unless you are using 4G as your primary Internet connection.

Connection to a mesh

You can connect additional Veeahubs into a mesh network using Ethernet instead of Wi-Fi.

Connection to your other devices

You can connect other devices such as security cameras to the network using Ethernet.

9

What's Next?

Once your device is added to your account, you can:



Download applications or sign up for additional services

Visit the Control Center to add services to your device.¹

→ **control.veea.com**



Sign up for 4G/LTE service

If you have a 4G-enabled VeeaHub, go to the Control Center to purchase a data plan and enable your SIM Card.

SIM and SD Memory Cards

Your Veeahub comes with both a SD card and an optional SIM card slot.

SD Memory Card

Your Veeahub comes with a 128 GB SD memory card as standard. To upgrade or replace your memory card, please contact support at veea.com/support

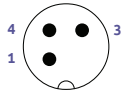


WARNINGS

The SIM card is housed in a waterproof sealed port. Opening this port will impair water resistance and void your warranty. If you need to replace the SIM card, contact us by visiting www.veea.com/support

The SD memory is housed in a waterproof sealed port. Opening this port will impair water resistance and void your warranty. If you need to replace the memory card, contact us by visiting www.veea.com/support

Pin Diagrams



Power

- Pin 1: **V+** (Red)
- Pin 3: **V-** (Black)
- Pin 4: **GND** (Green/Yellow)

Twisted pairs:

- Pin 1 & 3

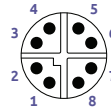


RS232/422/485 Serial

- Pin 1: **RTS** (White/Orange)
- Pin 2: **CTS** (White/Green)
- Pin 3: **TXD** (Orange)
- Pin 4: **RXD** (Green)
- Pin 5: **GND** (Brown)

Twisted pairs:

- Pin 1 & 3
- Pin 2 & 4



Ethernet (• and ••)

- Pin 1: **DA+** (White/Orange)
- Pin 2: **DA-** (Orange)
- Pin 3: **DB+** (White/Green)
- Pin 4: **DB-** (Green)
- Pin 5: **DD+** (White/Brown)
- Pin 6: **DD-** (Brown)
- Pin 7: **DC-** (White/Blue)
- Pin 8: **DC+** (Blue)

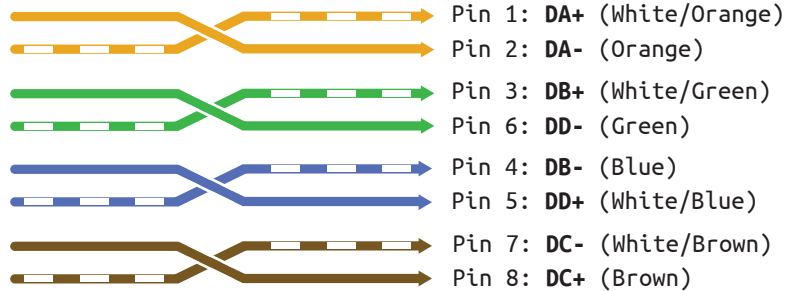
Notes: Port one (•) can be used for both Ethernet and PoE. Port two (••) is Ethernet only.

Twisted pairs:

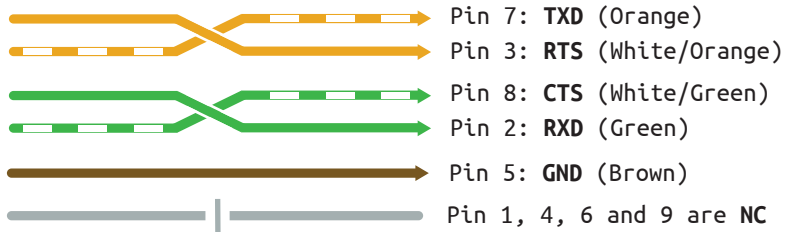
- Pin 1 & 2
- Pin 3 & 4
- Pin 5 & 6
- Pin 7 & 8

Cable Far End Wiring Diagrams

Ethernet RJ-45





Serial DB-9M





Status Lights

Use the status lights to check the status of your device and diagnose problems.

Normal Operation

PWR  Solid green
STAT  Solid green

Booting/Recovering or high CPU load

PWR  Flashing green
STAT  Solid green

Hardware and/or software error

PWR  Determined by error
STAT  Flashing green

When the STAT light is slowly flashing this is an indication of a software or hardware problem.

For basic troubleshooting information, please see Page 26.

For further information on lights, please visit www.veea.com/support

Reset Button (Multi-function) Usage

Press and hold the reset button to select the activity you wish to perform. As you enter each mode, both lights will change their pattern to show the new mode. When the button is released, the activity indicated is executed.

 Reboot 1-5	PWR ○ ○ ○ ○ ○ STAT ● ○ ● ○ ●	Press and hold for 1-5 seconds. PWR light will be off and STAT light will be flashing.
 Reset 5-10	PWR ● ● ● ● ● STAT ● ○ ● ○ ●	Press and hold for 5-10 seconds. PWR light will be solid and STAT light will be flashing.
 Recovery 10-15	PWR ● ○ ● ○ ● STAT ● ○ ● ○ ●	Press and hold for 10-15 seconds. Both lights will be flashing.
 No action 15+	PWR ● ● ● ● ● STAT ● ● ● ● ●	Press and hold for more than 15 seconds. Both lights will be solid.

Troubleshooting

If you are having problems with your device, try the following in sequence:

- **Ensure that the Veeahub has power** and the power light is on
- **Make sure the Ethernet cable is plugged in** and your device can connect to the Internet
- **Check the status of your device.** Check the Control Center and your Veeahub Manager app to see if your device is listed as “Healthy” or not and if you are able to connect to your device
- **Check the status lights.** If both status lights are not solid green, it might mean that your device is booting up, updating its software and/or still pairing with your account. See Page 24 for more information.

Check your device status on the Veeahub Manager.

If it is still in setup mode after 30 minutes, do the following:

- **Restart your device.** Power down your Veeahub 30 seconds and then reapply power
- **If above steps did not resolve the issue, reset/recover your device.** See Page 25 for more information
- **If the problem continues,** go to veea.com/support to contact customer support.

Important Safety Warnings

- This unit contains a lithium CR2032 coin cell battery and should be disposed properly
- The ambient operating temperature range of this equipment is -40 °C to 65 °C (-40 °F to 149 °F)
- The airflow around your Veeahub should not be obstructed
- For regulatory compliance information, visit veea.com/regulatory

IMPORTANT: This product is designed for specific applications and needs to be installed by a qualified personnel who has RF and related rule knowledge. The general user shall not attempt to install or change the setting. The unit MUST be earth grounded for shielding against lightening. The radiating antennas of the Veeahub should be installed at least 20 cm away from people. Use only the antennas which have been approved by the manufacturer. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may violate radio-frequency regulations governed by the country where the Veeahub is installed. Please carefully select the installation position and make sure that the final output power does not exceed the limit set forth in relevant rules. The violation of the rule could lead to serious penalty.

Questions?
veea.com/support

© 2018 - 2022 Veeva Inc. All rights reserved.
Veeva and VeevaHub are trademarks of Veeva Inc. All other trademarks and tradenames are the property of their respective owners.