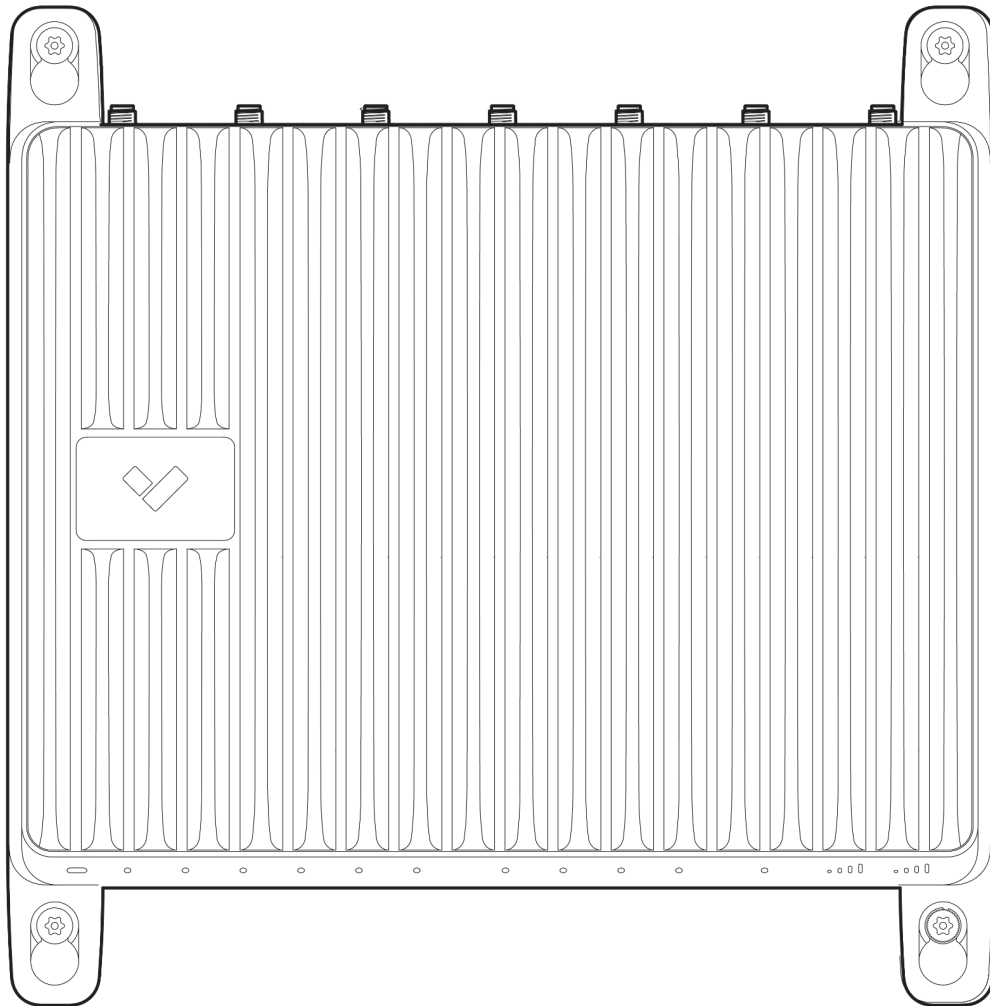


KGX61 Ruggedized Transportation Gateway



Document Details

Version

V1.0 20260915

(V1.0 published 20260915)

Firmware

Firmware version can be verified on Verkada

Command command.verkada.com.

Product Models

This install guide pertains to models:

- KGX61-HW

NOTE: This document contains preliminary specifications for prototypes of products currently in development. Verkada is not responsible for product installation. Professional installation is required. Improper installation may interfere with vehicle operation or passenger safety.

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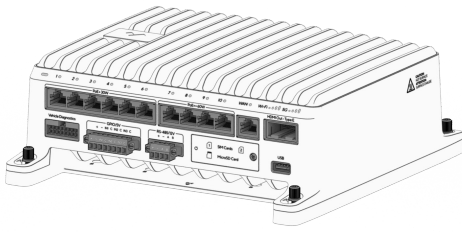
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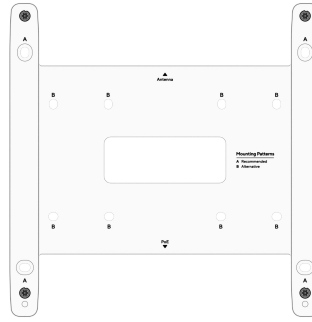


Introduction

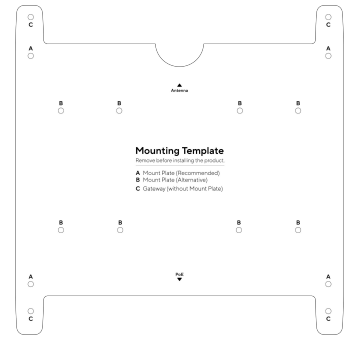
What's in the Box



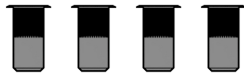
Transportation Gateway



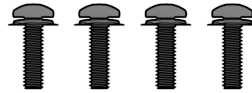
Wall mount



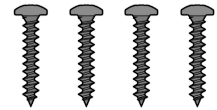
Mounting template



10-32 Rivet Nuts (4 pcs)
Length: 1.5" Grip Range: 1.0-3.3mm



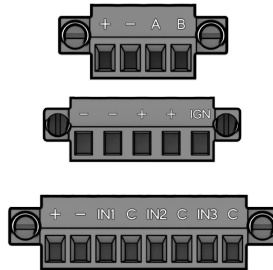
Machine Screws #10 (4 pcs)
Length: 1.5" Drive: #2 Phillips



Tapping Screws #10 (4 pcs)
Length: 1.5" Drive: #2 Phillips



T10 & T25 Torx Security L-Key



Terminal Blocks



Bluetooth Antenna

What you'll need

- A smartphone or laptop
- Electric Drill
 - 9/64" (3.5mm) - 5/32" (4mm) drill bit for mounting with pilot holes
 - 19/64" (7.5mm) drill bit for rivet nut for mounting on sheet metal
- #2 Phillips screwdriver bit
- SL2.0-head screwdriver
- Rivet Nut Tool for installing rivet nuts onto sheet metal
- 5/16" or 8 mm SMA Torque Wrench
- Four 16AWG cables for DC input
- 20AWG cable for ignition sensing wire

Connect

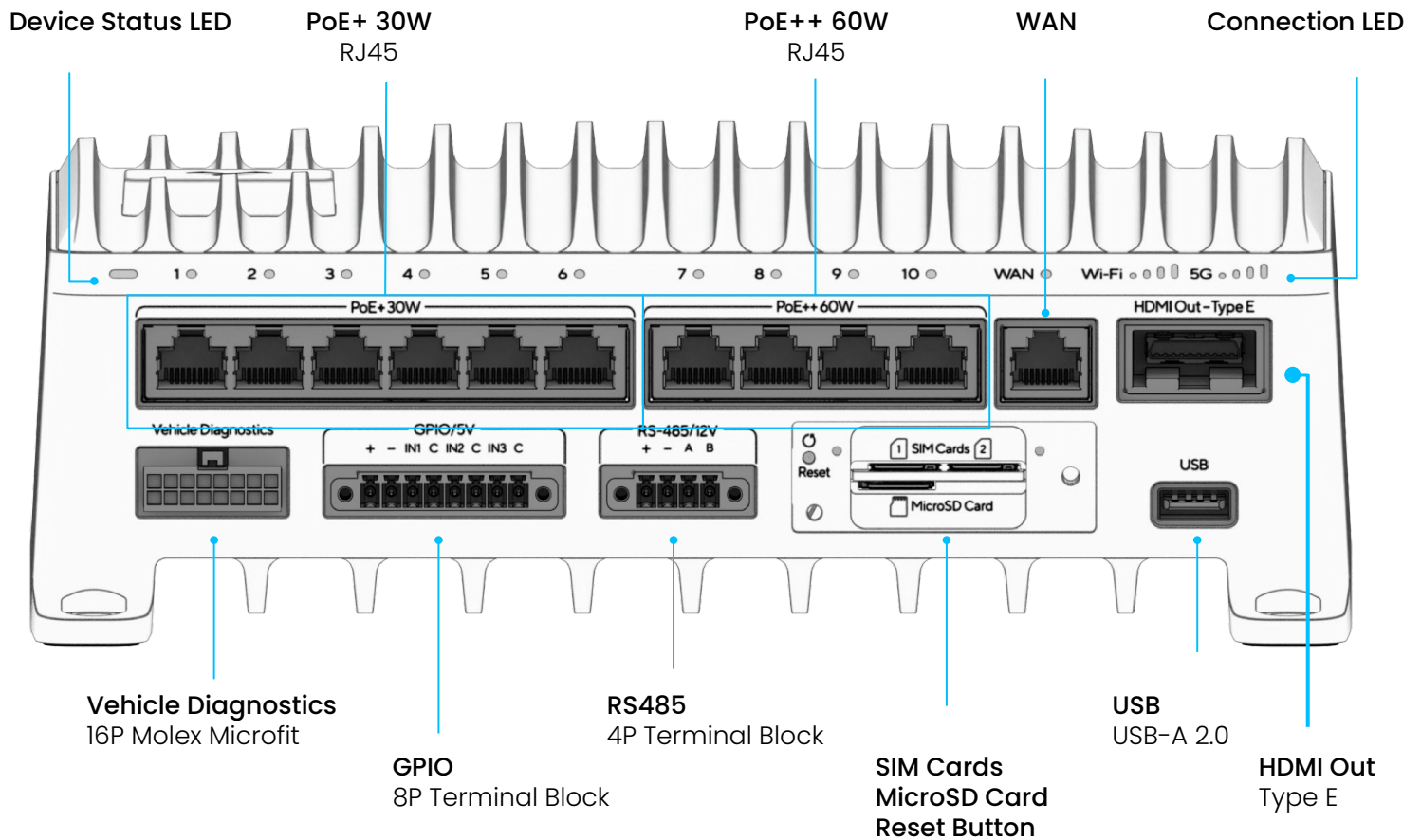
For easy registration and setup, scan the QR code on the product.

If you prefer to manually register your product, please proceed to:

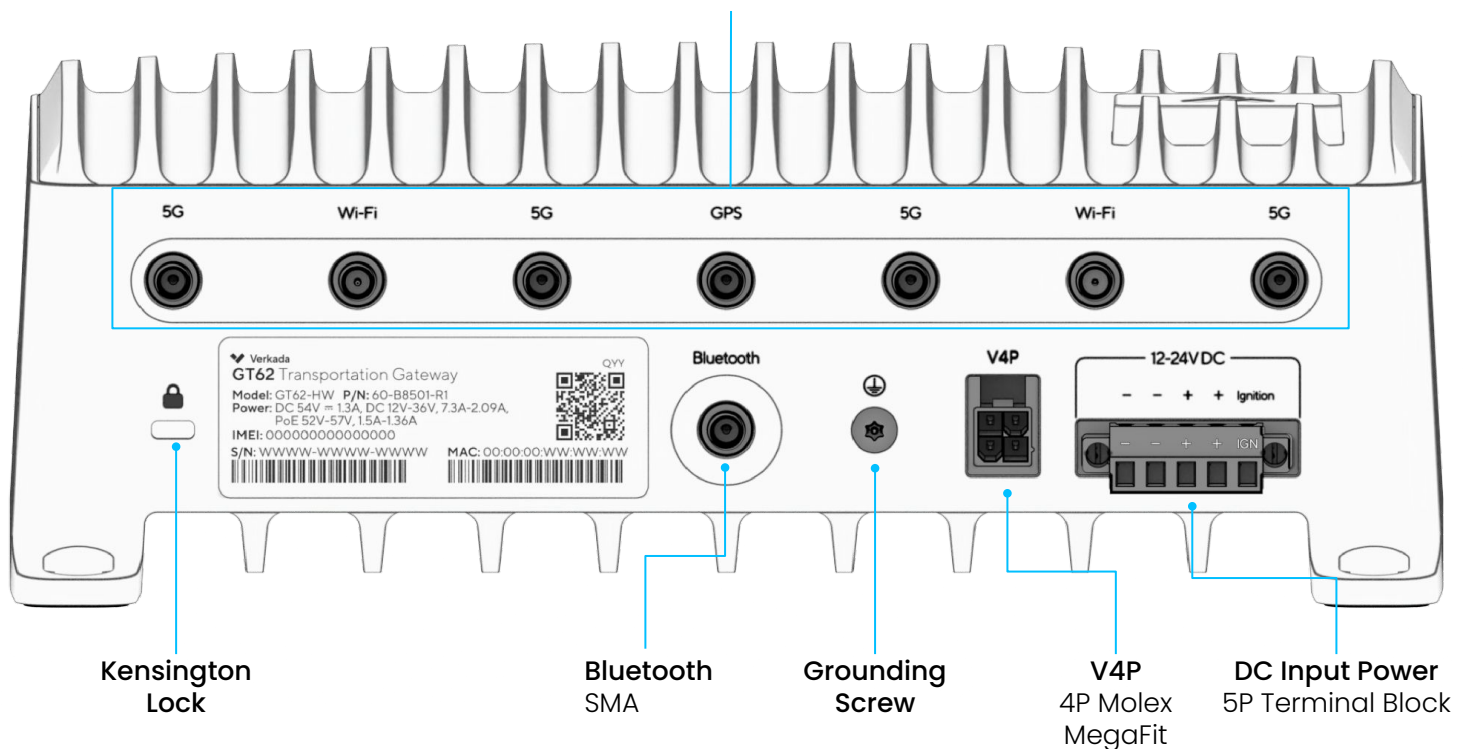
verkada.com/start

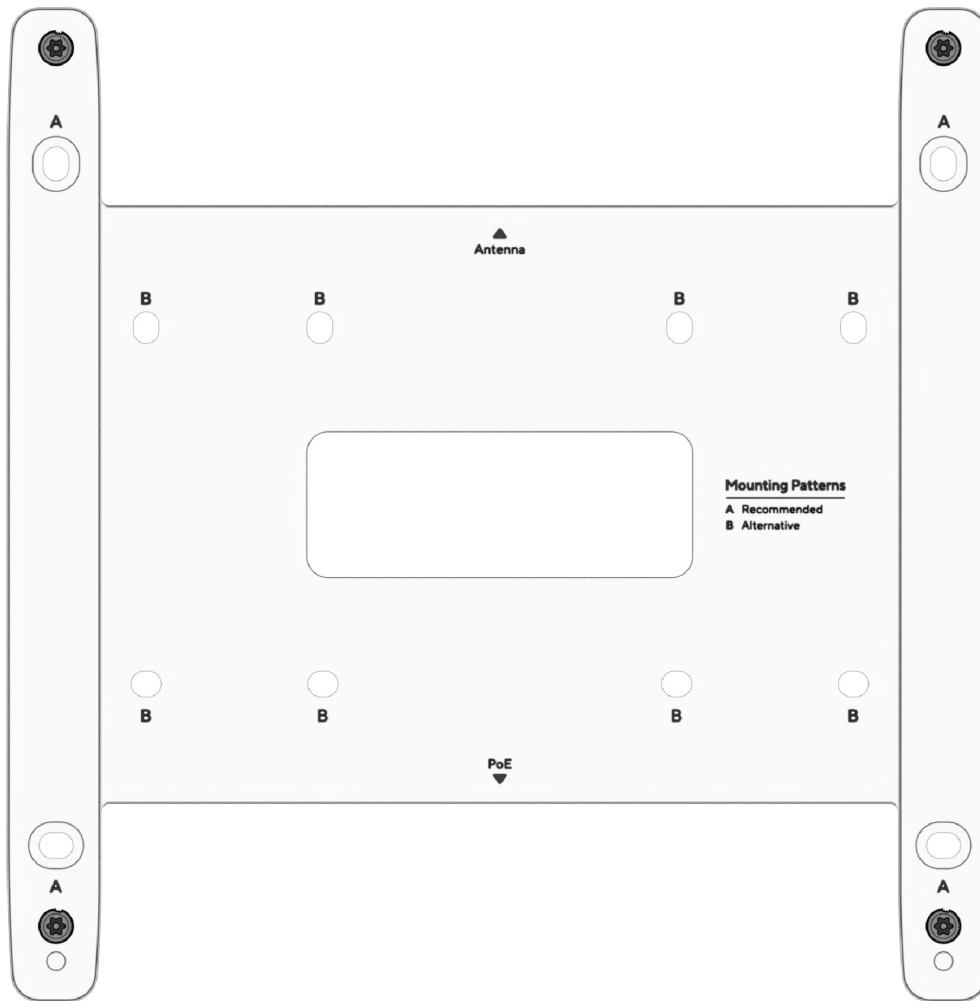


Introduction
Overview 1/2



Antenna SMA Connections

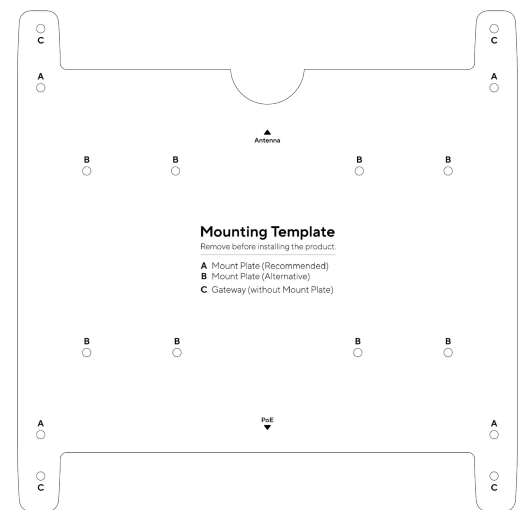




- A** Mount Plate (Recommended)
- B** Mount Plate (Alternative)
- C** Gateway (without Mount Plate)

Recommended to use Hole Pattern A, use Hole Pattern B if there are space constraints.

If mounting the device directly, use the Mount Template to mark the appropriate holes. Remove template before mounting device.



Mounting Template

Installation

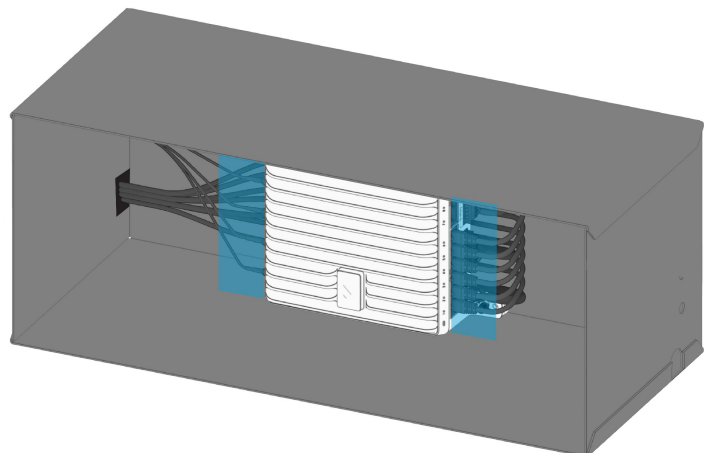
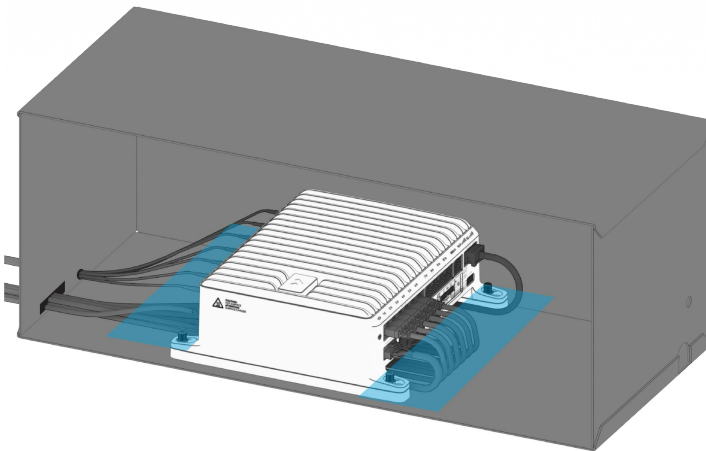
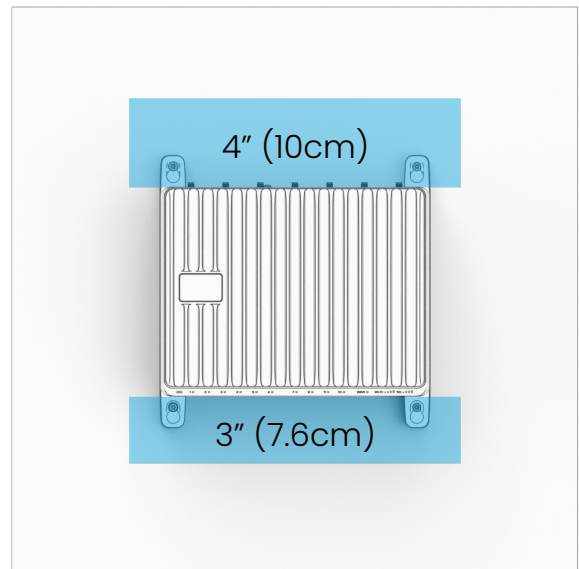
Mounting Positions

Requirement:

- Reserve 4" on the antenna side, and 3" on the PoE output side

Recommendations:

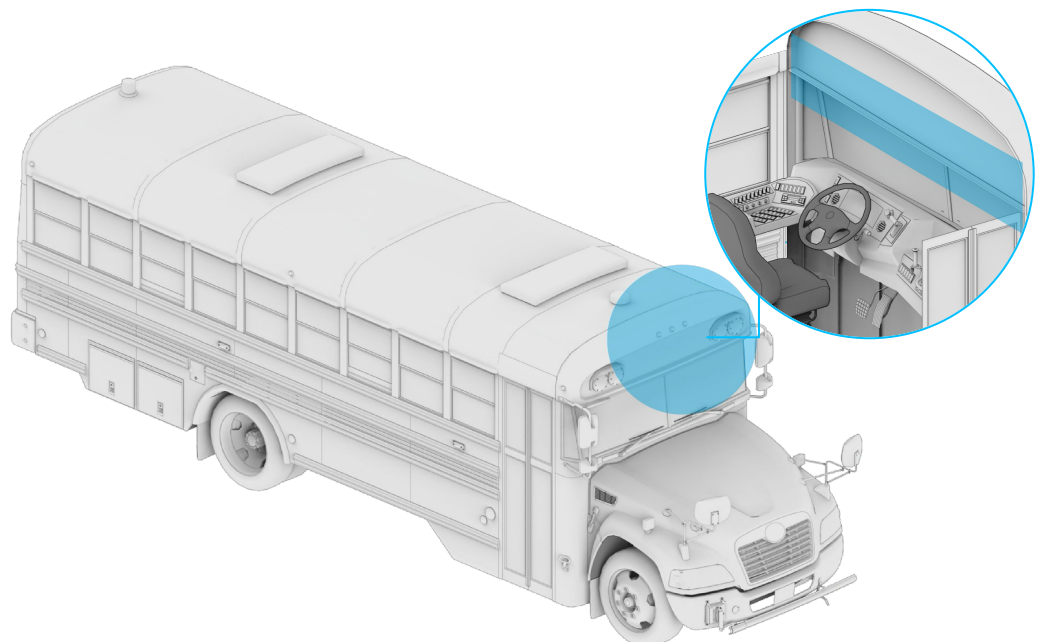
- In an enclosure with a door lock, and away from direct sunlight
- On a flat surface



Vehicle Placement

Recommendations:

- Place near the front of the vehicle
- Optimal place for all the wires to connect



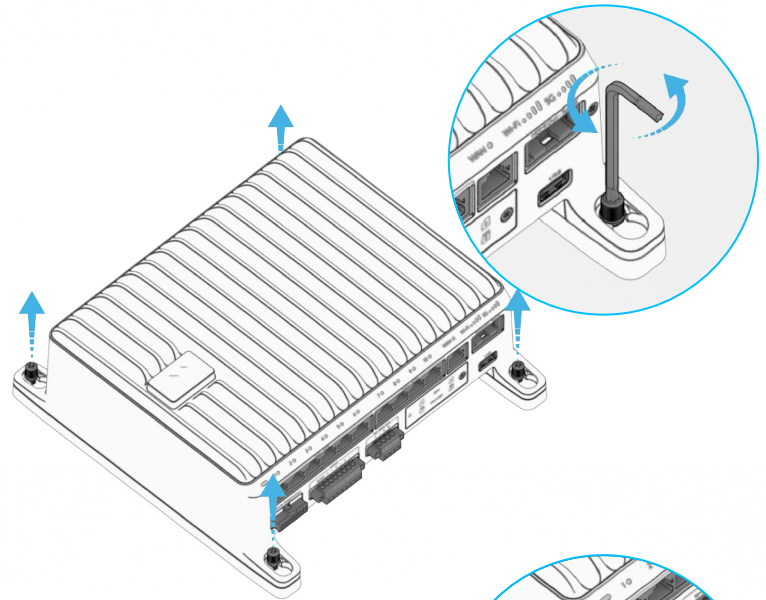
Technical Specifications

Power Draw	14W standby , 300W maximum (TBD)
Input Voltage	Terminal Block: 12V-24V, 180W-300W V4P: 48V-54V, 300W
Output Voltage	RS485: 12V/15W +/- 3% USB: 5V/2.5W, +/- 3% GPIO: 5V/2.5W, +/- 3%
PoE Output	A total of 10 x Ethernet ports with one additional WAN port 120W Scenario @ 12V/24V 70C environmental temperature: - Up to 2 x 802.3bt Type 3 devices (max 60W each) - Up to 4 x 802.3at devices (max 30W each) 240W Scenario @ 24V 50C environmental temperature: - Up to 4 x 802.3bt Type 3 devices (max 60W each) - Up to 8 x 802.3at devices (max 30W each)
RF connectivity	5G-NR - n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48 (CBRS), n66, n71, n76, n77, n78, n79 LTE Fallback - B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48 (CBRS), B66, B71
I/O ports	PoE Out X10, WAN RJ45, RS485 Out, USB-A 2.0, Nano SIM Card x2, SD Card x 2, HDMI Type-E, GPIO terminal block, Vehicle Diagnostic port, DC in terminal port, V4P port, 5G, WiFi and BLE ANT.
LEDs	Status LEDs: RGB + Orange x1 Cell Signal Strength: White x4 WiFi Signal Strength: White x4 SIM indicator LEDs: Blue x 2 RJ45 status LEDs: RGB x11+ Orange x11
Operating Temp. & Humidity	-40°C to 70°C / -40°F to 158°F @ 120W power output -40°C to 50°C / -40°F to 122°F @ 240W power output 5-95% RH non-condensing
Dimension	238mm x 240mm x 78.8mm (9.37" x 9.45" x 3.10")
Weight	3.2kg (7.05lb)
Compliance	For hardware certification information, please visit verkada.com/compliance

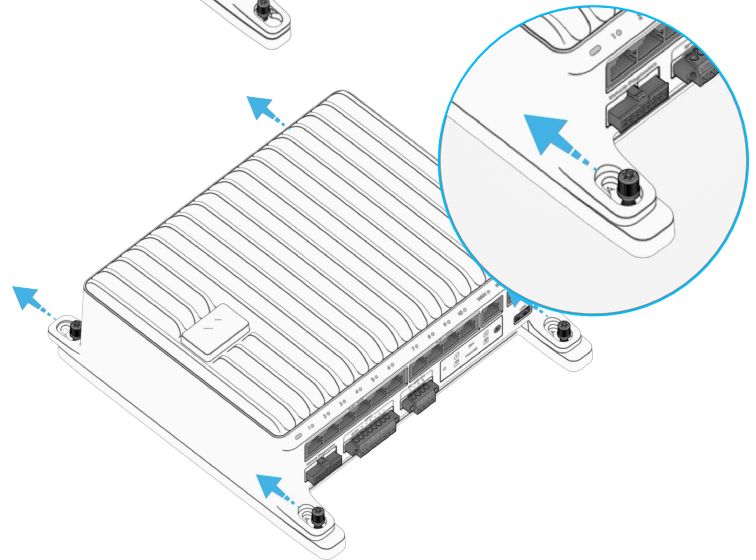
Installation

Preparation 1/2

Use the T25 Torx L-Key to unscrew the four captive screws on the Mount Plate.

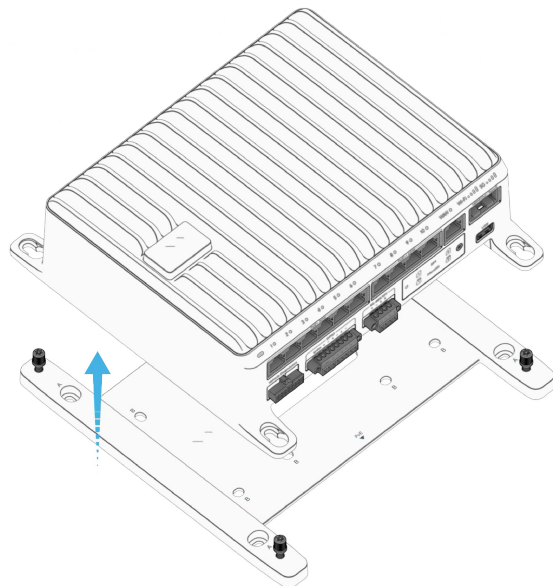


Slide up and out to separate Gateway and Mount Plate.



Lift the Gateway up to detach from the Mount Plate.

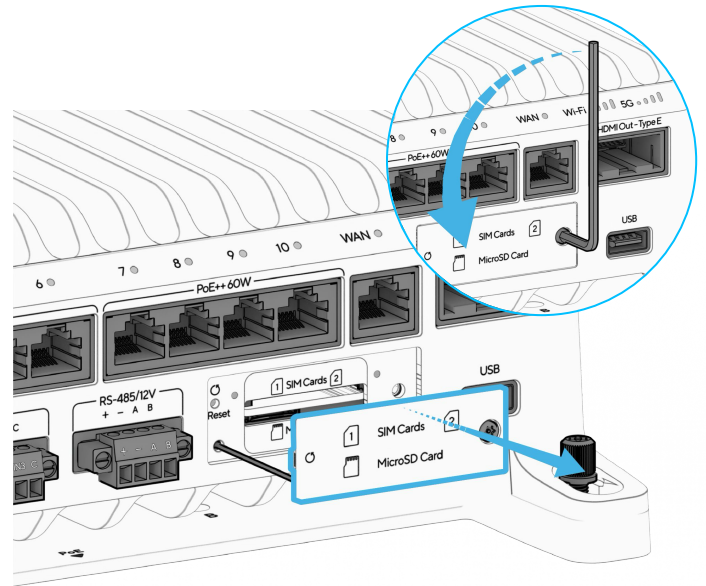
Set aside Mount Plate.



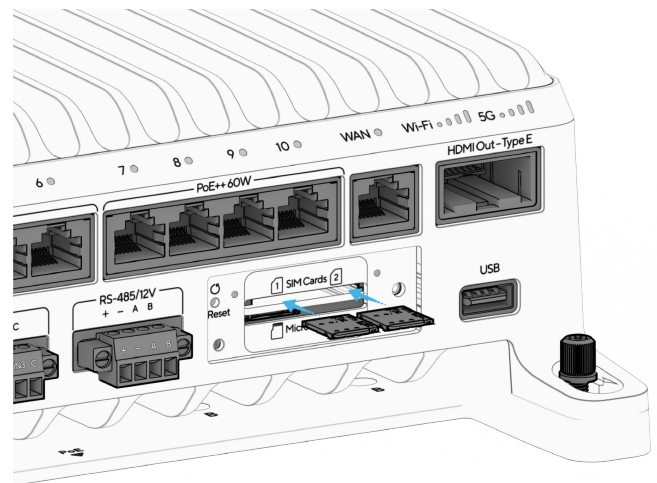
Installation

Preparation 2/2

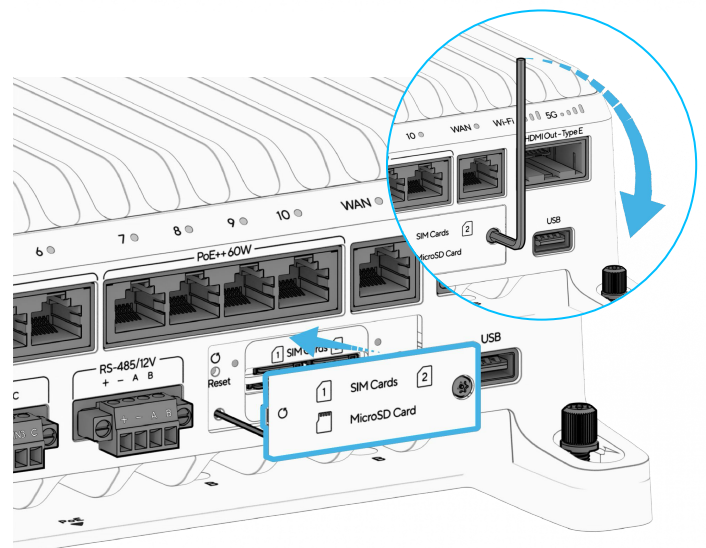
Loosen the Security Screw with the T10 L-Key to detach the door.



The Gateway contains an embedded e-SIM. You can optionally insert your own SIM card into one or both of the upper card slots.



Reattach the door by tightening the Security Screw with the T10 L-Key.



Installation

Mounting Overview

The installation depends on the material and space available. If electing to omit the Mount Plate, utilize Hole Pattern **C**. Pattern **B** is optional and not shown in this guide.

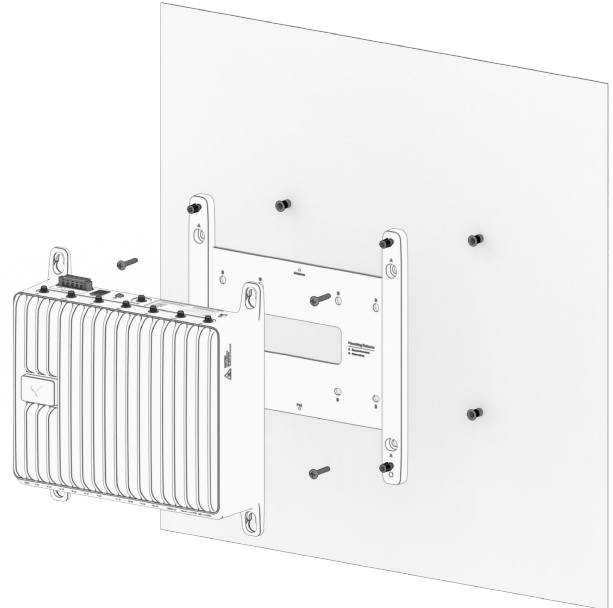
Mounting Gateway on Wood

With Mount Plate

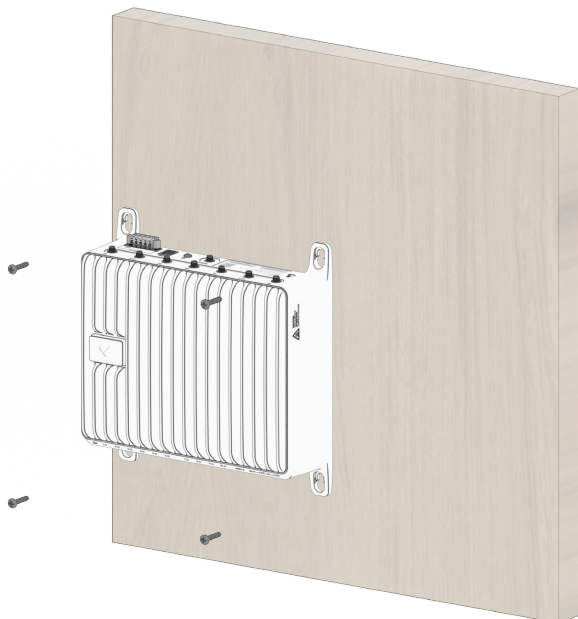


Mounting Gateway on Metal

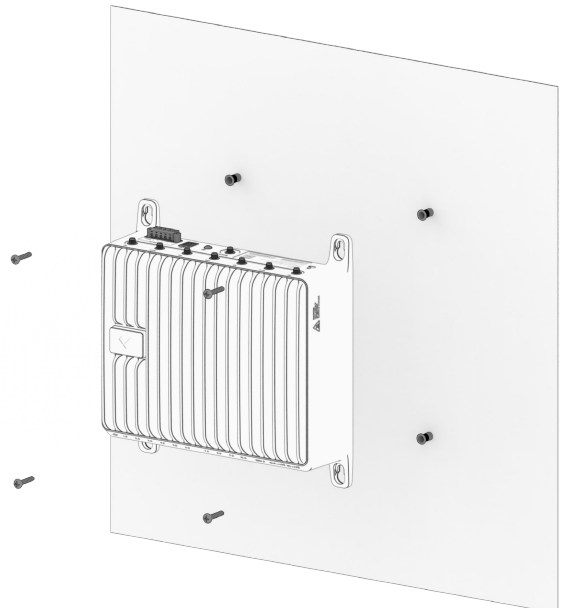
With Mount Plate



Alternative Mounting Options



Without Mount Plate



Without Mount Plate

Installation

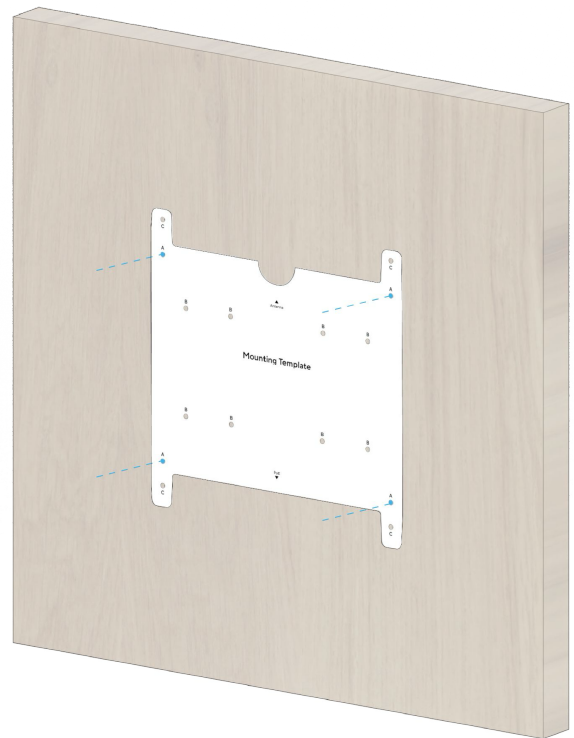
Mounting Gateway on Wood 1/2

Use the provided template to mark the appropriate pilot holes.

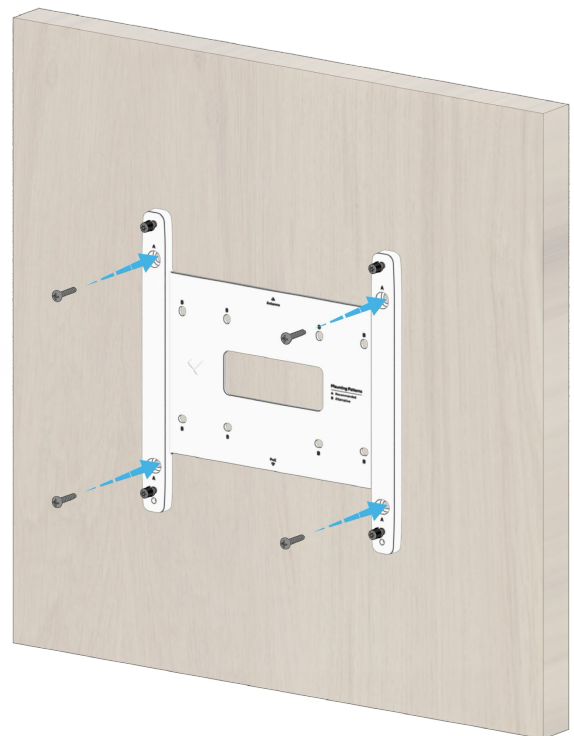
Note: Pay attention to the areas labeled "Antenna" and "PoE" on the Mounting Template to ensure that the Gateway is positioned optimally for cable routing.

Drill pilot holes.

For a **wood** material, drill 9/64" (3.5mm) – 5/32" (4mm) pilot holes.



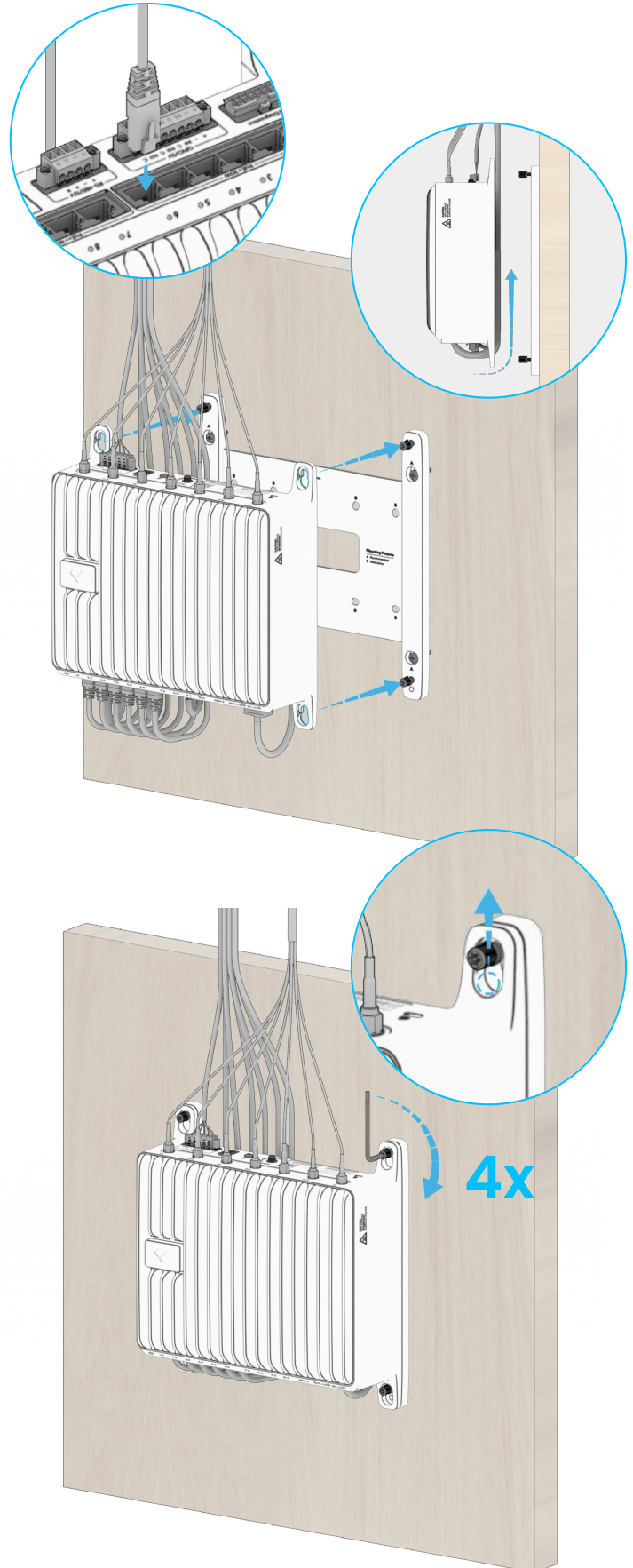
Secure the Mount Plate by driving the tapping screws directly into the pilot holes.



Mounting Gateway on Wood 2/2

Connect the cables to the Gateway.

Align the thumbscrews on the Mount Plate with the Gateway openings and hook into it. Make sure the cables goes between the Mount Plate and the Gateway.



Use the T25 L-key to secure all four of the thumbscrews of the Mount Plate to the Gateway.

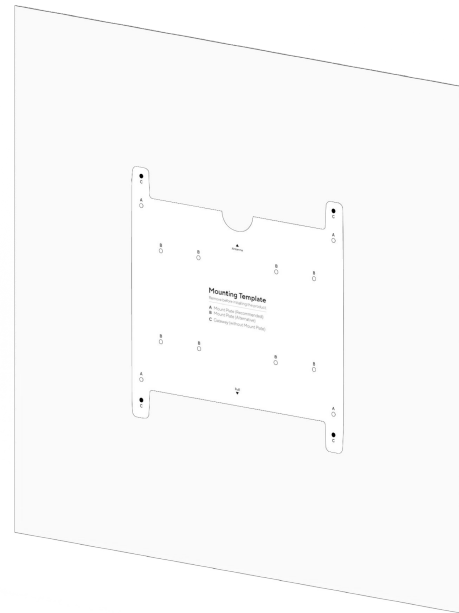
Installation

Mounting Gateway on Sheet Metal 1/2

Use the provided template to mark the appropriate pilot holes.

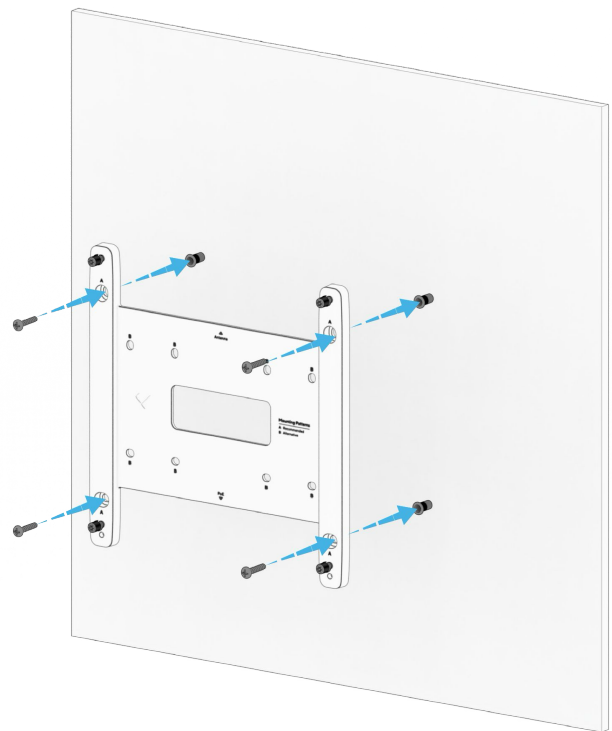
Note: Pay attention to the areas labeled "Antenna" and "PoE" on the Mounting Template to ensure that the Gateway is positioned optimally for cable routing.

For **sheet metal** material, drill 19/64" (7.5mm) pilot holes.



Strike the Rivet Nuts into the pilot holes.

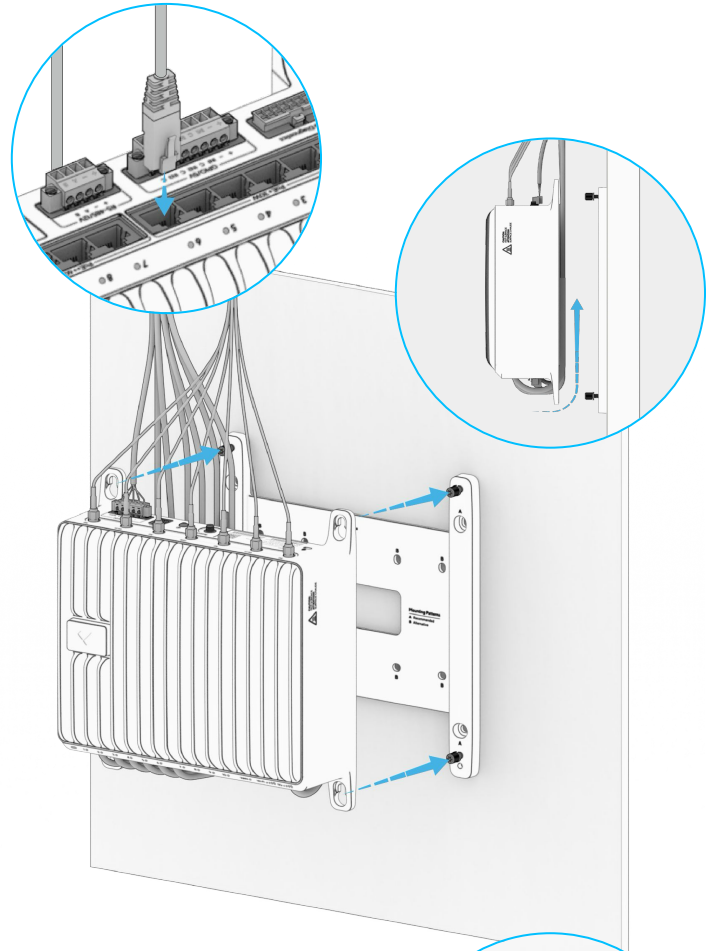
Align the Mount Plate screws with the Rivet Nuts and secure.



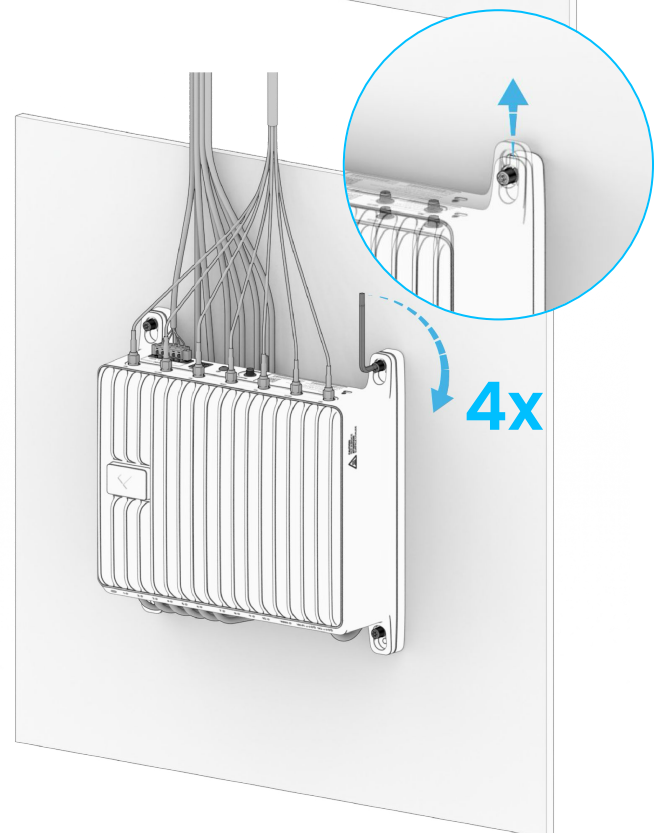
Mounting Gateway in Sheet Metal 2/2

Connect the cables to the Gateway.

Align the thumbscrews on the Mount Plate with the Gateway openings and hook into it. Make sure the cables goes between the Mount Plate and the Gateway.



Use the T25 L-key to secure all four of the thumbscrews of the Mount Plate to the Gateway.



Installation

Connection

Power Option 1: Terminal Block Power (12-24V DC)

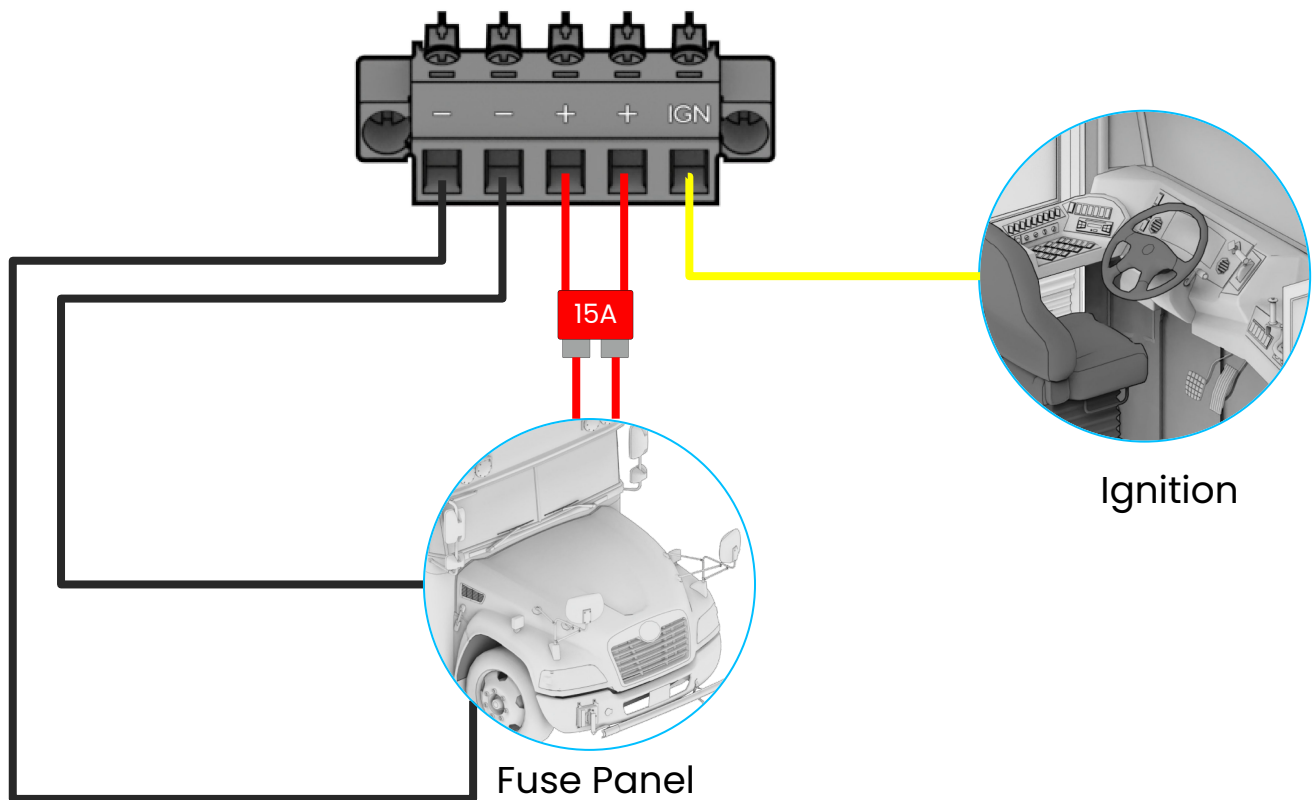
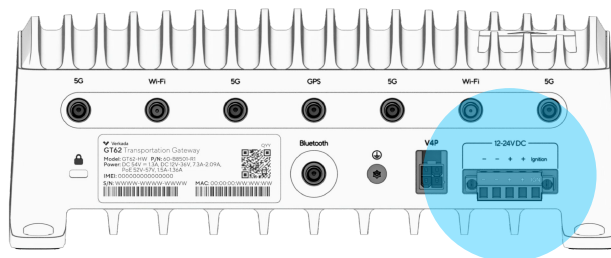
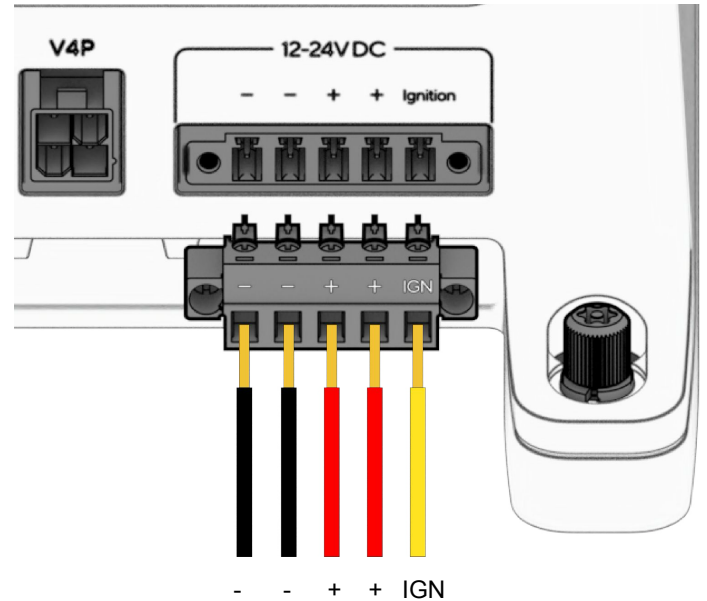
Use the terminal blocks shipped with the Transportation Gateway.

With the DC cables disconnected, plug the terminal plug end into the mating DC Power terminal block on the Panel.

Connect the terminal block to the device.

Cable thickness:

- Four 16AWG cable for DC input
- One 20AWG cable for ignition sensing wire



Installation

Antenna Installation

It's recommended to use Verkada
Verkada ACC-TSP-ANT-1 (External Dome
Antenna for KGX61).

Bluetooth Antenna

Use the Bluetooth antenna shipped with
the KGX61. Attach the antenna to
Bluetooth SMA connector.

All-in-1 Antenna

Connect the antenna cables by matching
them to the color-coded labels on the
connectors:

- 5G Antenna: Red
- Wi-Fi Antenna: Yellow
- GPS Antenna: Blue

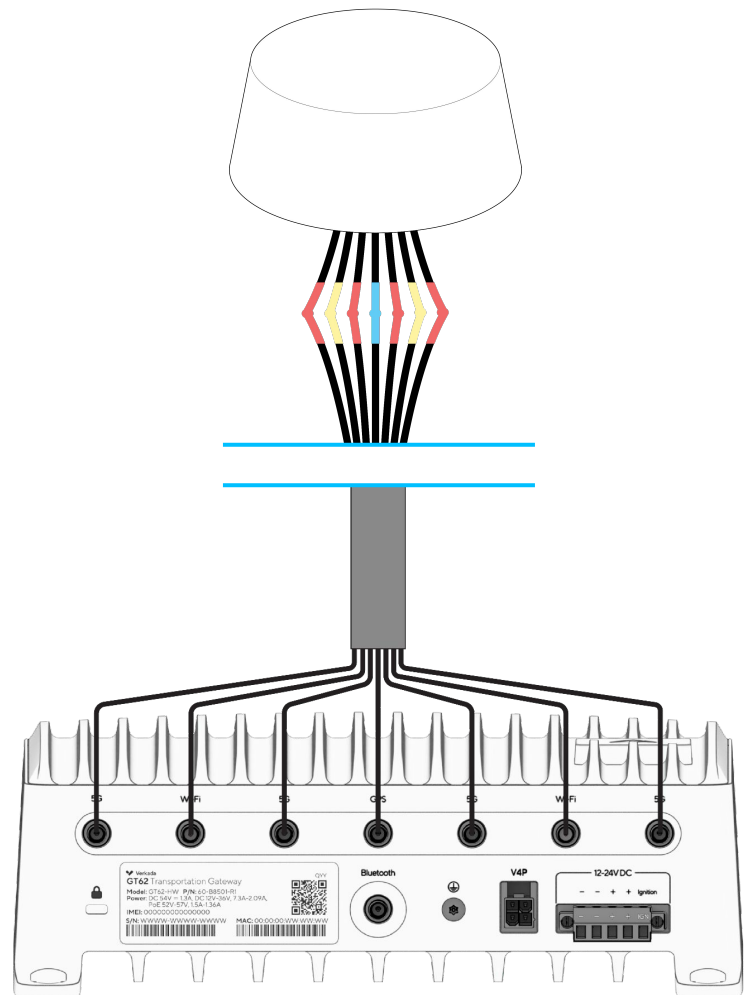
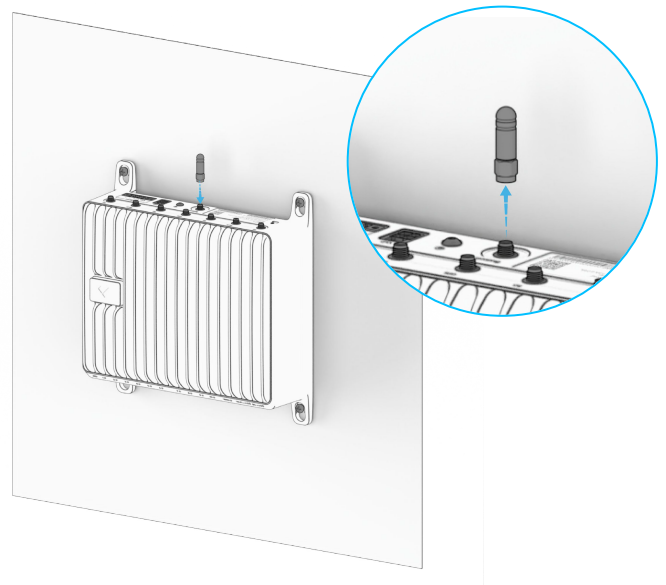
*Refer to Verkada ACC-TSP-ANT-1 Install
Guide for further installation process.*

Third Party Antenna Requirements

Customers deploying third-party
antennas must ensure full compliance
with the following constraints:

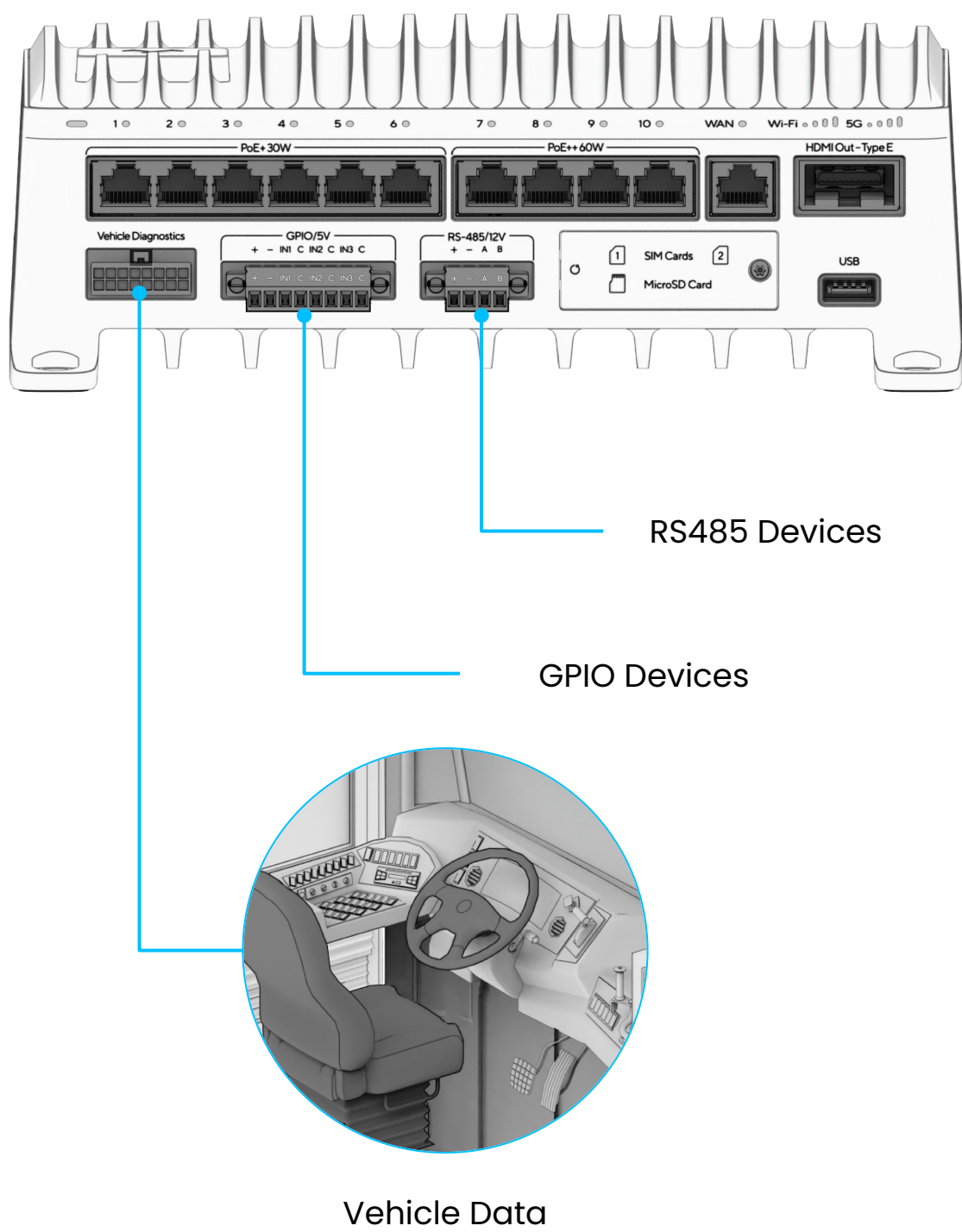
- Gain Specifications: The selected
antenna must comply with the gain
limits provided in the compliance
section's power table. Failure to do
so may void regulatory
certifications
- Connector Compatibility: Verify that
the antenna connectors match the
device interfaces:
 - 5G / GPS: standard SMA.
 - Wi-Fi: RP-SMA

Note: It is recommended to use an SMA
torque wrench to tighten all connectors to
the proper torque specification.



Installation

Vehicle Diagnostic



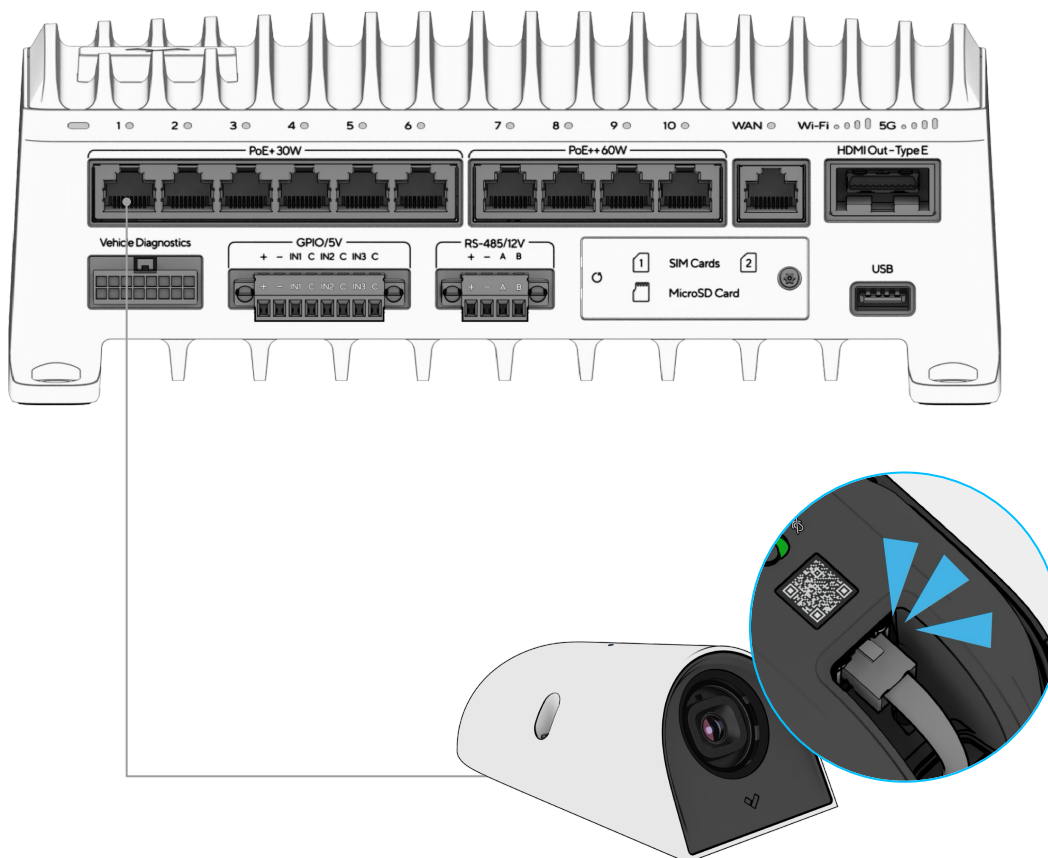
Installation

PoE Outputs (PoE 1-10)

- Total PoE Power Budget
 - 120W total @ 12-24V DC input
 - 240W total @ 54V DC input
- Per Port Wattage
 - Port 1~6:
 - Port 7~10:
- ~~Max Cable Length: ???m~~

Note:

- Be aware total PoE power budget will be limited at 120W once environment temperature exceed 50°C
- Highly recommended to dress the cables by zip tight and fixed cables to cabinet or chassis to avoid connect pins damaged from vibration.



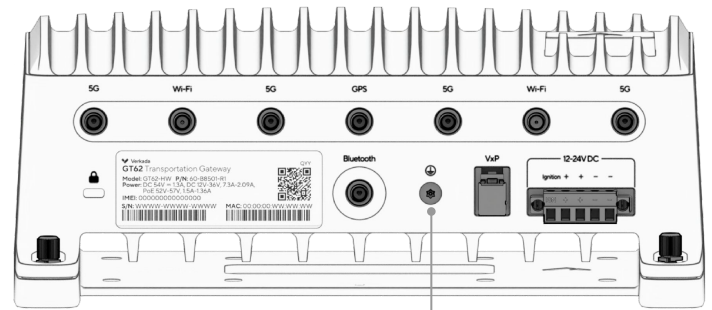
Installation

Grounding

In order to attach the ground cable to the gateway, perform the following:

Align a 20 AWG or larger grounding cable with a ring terminal and drive an 10-32 x 6mm screw through the terminal and into the threaded grounding point on the back of the device as shown on the right.

Attach the other terminal of a grounding cable directly to a circuit breaker, ground rod or earth ground.



**Grounding
Screw**

Local Server (Optional)

To configure your SIM card prior to establishing a connection, use the local server.

Connect the Gateway to a computer with an Ethernet cable.

Navigate to **192.168.1.1** on any internet browser, and follow the instructions on the page..

Once connected, you can configure the SIM card though **Verkada Command**.

The screenshot displays the web interface for a GC31E Outdoor Gateway. At the top, it shows the device name 'GC31E Outdoor Gateway' with an 'ONLINE' status and a 'Page available in 4:36' timer. Below this, it lists the S/N (XXXX-XXXX-XXXX), IP address (100.100.100.100), and IMEI (XXXXXXXXXXXXXXX). The main configuration area is divided into two sections for SIM cards. The first section, 'SIM Card 1', is currently active and shows a 'T-Mobile' carrier. It includes fields for APN Name, Username, Password, and PIN, each with a corresponding icon (a red asterisk for APN Name, and an eye icon for Password and PIN). The second section, 'SIM Card 2', is inactive and shows the same fields. At the bottom right, there is a blue 'Apply' button.

GC31E Outdoor Gateway **ONLINE** Page available in 4:36

S/N XXXX-XXXX-XXXX | IP wlan0: 100.100.100.100 | IMEI XXXXXXXXXXXXXXXXX

ACTIVE

SIM Card 1 T-Mobile ☒ Auto ☐ Manual

APN Name *

Username

Password

PIN

SIM Card 2 ☒ Auto ☐ Manual

APN Name *

Username

Password

PIN

Apply

Appendix

Compliance

Caution	1. Maintenance and repair work must always be carried out by qualified technical personnel. Disconnect power from the unit when performing a maintenance task. 2. Wiring methods used for the connection of the equipment to earth shall be in accordance with the National Electrical Code, ANSI/NFPA 70, and the Canadian Electrical Code, Part 1, CSA C22.1. 3. The product must be installed and protected in a location that is not easily accessible. 4. The device is only to be connected to PoE networks without routing to outside plants. 5. If powered by batteries on the vehicle, need to ensure the correct size fuses are installed
FCC Compliance	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. NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Any changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment. FCC Radiation Exposure Statement : This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. Professional Installation: This device must be professionally installed. The intended use is generally not for the general public. It is generally for industry/commercial use. Installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance and other FCC rules. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Country Code selection feature is disabled for products marketed to the US/CANADA

ISED
Compliance

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- 1. This device may not cause interference.
- 2. This device must accept any interference, including interference that can cause undesired operation of the device.

L'émetteur ou le récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1. L'appareil ne doit pas produire de brouillage.
- 2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC Radiation Exposure Statement:
This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux rayonnements d'IC : Cet équipement est conforme aux limites d'exposition aux rayonnements IC RSS-102 définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

Detachable antenna:

- 1. For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
- 2. For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate;

Supported Antennas:
This radio transmitter [26271-68B8501] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio [26271-68B8501] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

Antenna Type	Connector	Antenna Gain (dBi)		
		2.4 GHz	5.15 GHz	5.85 GHz



Appendix

Support

Thank you for purchasing this Verkada product. If for any reason you're experiencing issues or need assistance, please contact our 24/7 Technical Support Team immediately.

Sincerely,
The Verkada Team
verkada.com/support

