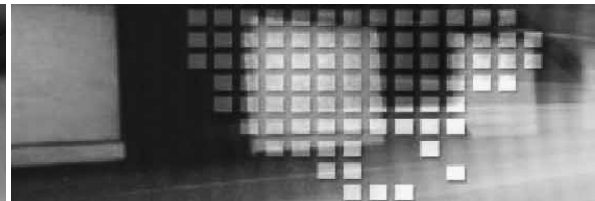
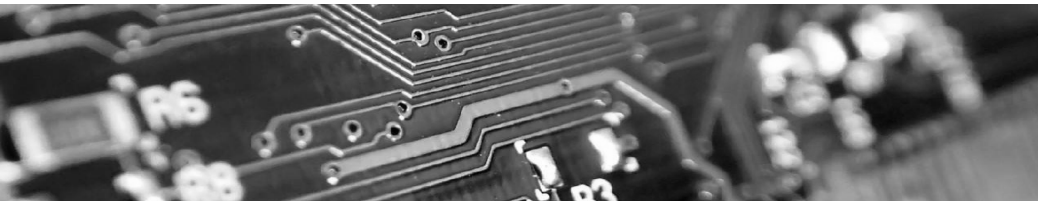




## Gateway 3 – LAN Version Quick Start Guide



Version A.01  
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## Introduction

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 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.*

**To comply with FCC RF exposure requirements, the Gateway and the antenna for the Gateway must be installed to ensure a minimum separation distance of 20 cm or more from a person's body. Other operating configurations should be avoided.**

No changes or modifications of any type are allowed to the Gateway<sup>3</sup>. Any changes or modifications will void the user's authority to operate the Gateway<sup>3</sup>..

## Gateway - QSG

MeshPlus® networks are used for remote monitoring and control of commercial, industrial, and municipal equipment such as utility infrastructure, municipal lighting, and traffic management. Hundreds of thousands of devices are currently being monitored and controlled by MeshPlus® networks. The MeshPlus® Gateway 3 – LAN Version (Gateway) is the central component of any MeshPlus® wide-area telemetry network. Each Gateway manages a mesh network and connects it to a local area network. By following the instructions in this quick start guide, you can get your Gateway up and running quickly and easily.

Your Gateway product kit includes:

- Gateway
- Mounting hardware
- Lightning arrestor
- System Manager software on CD or DVD

Installation also requires (available as options):

- USB A-B cable
- GPS active antenna
- 902-928MHz antenna
- Coaxial antenna cable with N-type connectors
- Grounding cable for lightning arrestor
- Ethernet cable (for Ethernet deployments)
- 3mm allen key
- 10mm nut driver
- 5/16" nut driver

Recommended:

- USB SMiRF with MeshPlus® Tablet or notebook computer  
OR SMiRF® PDA

Please make sure you have all of the tools and components required before getting started.

The Gateway works in conjunction with other MeshPlus® products that allow you to remotely configure and manage your Gateway. In particular, the MeshMaster Server software communicates with the Gateway to send it configuration and to collect the mesh data received and stored by the Gateway. The MeshMaster client software provides graphical tools to configure your Gateway and monitor its operation. The following products should be installed before you setup your Gateway.

- MeshMaster Server software
- MeshMaster Client software

Please refer to the user's guide for each product to for details on their operation. This guide provides basic installation and configuration guidance for the Gateway-specific aspects of these software products.

This manual will help you get your Gateway installed, configured, and connected to the MeshMaster Server software.

## Quick Tour

Let's examine the Gateway:



The Gateway is contained in an 8.5" x 11" IP-65 rated hinged aluminum enclosure making it suitable for outdoor operation; all screws and metal components are aluminum or stainless-steel. The exterior is off-white powder-coat to resist weather and minimize thermal rise due to sunlight.

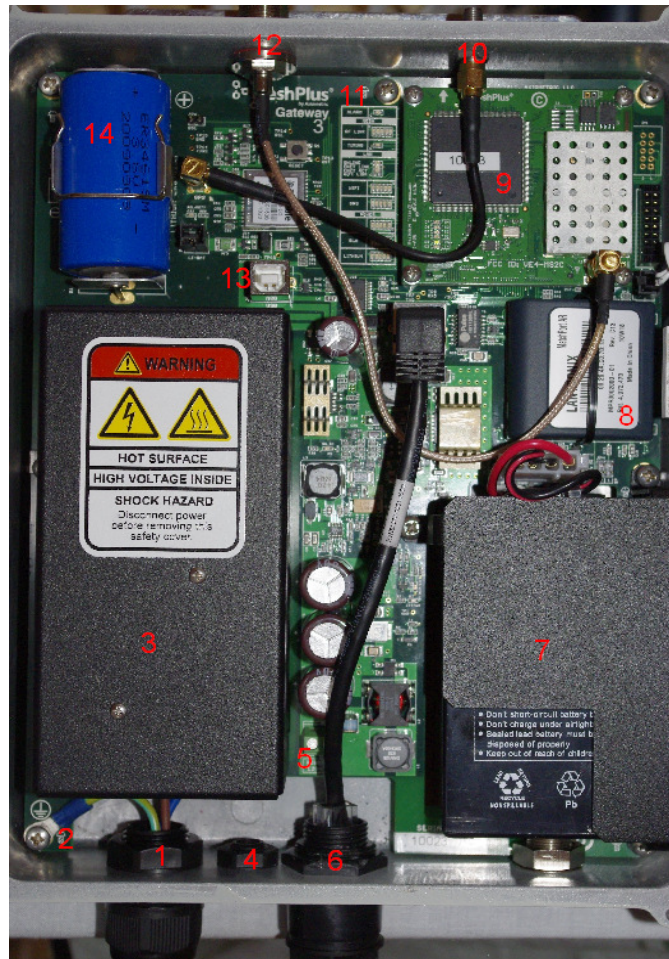
The Gateway has the following connectors:

1. Mesh antenna connector: N-type
2. GPS antenna connector: SMA-type
3. Power connector/cable: 110vac or 220vac; outdoor-rated cable and gland
4. Waterproof Ethernet LAN connector: 10/100 Base TX

The chassis is closed and secured with 4 captive tamper-resistant 3mm hex bolts. A silicone gasket keeps water out of the enclosure; a Gore-tex vent maintains pressure equalization and prevents accumulation of dangerous gasses (e.g. if a rechargeable battery vents).

### Gateway - QSG

Open the Gateway by loosening the (four) 3mm hex bolts securing each corner. The bolts should be loosened until they have cleared the chassis but not removed from the top cover; they are captive so that they are not lost when the chassis is opened.



Gateway Interior

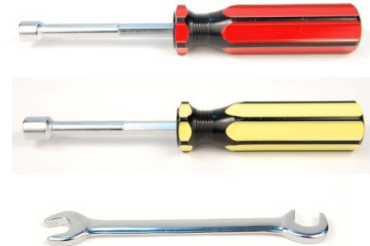
The internal components include:

1. Waterproof cable gland for external AC or DC power cable
2. Chassis ground connection
3. AC power supply safety shield and AC heater
4. Gore-Tex pressure vent
5. External DC power connector (screw terminals)
6. Waterproof Ethernet connector
7. Sealed Lead Acid (SLA) backup battery
8. Ethernet Network Interface Card (NIC)
9. Mesh Interface Card (Mesh Stamp® II)
10. GPS antenna connector
11. LED Status Indicators
12. Mesh antenna connector
13. USB connector
14. Lithium backup battery

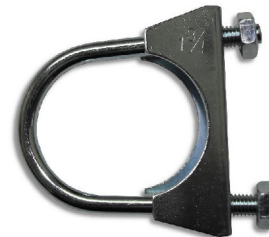
## Mounting

The Gateway is supplied with mounting hardware for structure or pole mounting. The installation tools required for the MeshPlus® Gateway installation are:

- 3mm allen key
- a 5/16-inch nut driver
- 10 mm nut driver (deep well suggested)
- open-ended wrench.

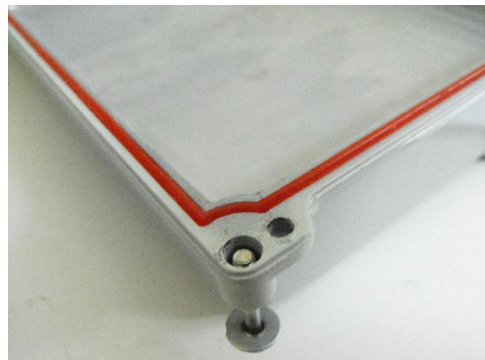


The two mounting brackets are fastened to the back of the gateway chassis with stainless-steel bolts and may be used to mount the Gateway directly to a structure.



Two U-bolts and clamps are also supplied to allow the Gateway to be mounted to a pole up to 2" in diameter.

A silicone rubber gasket seals the Gateway enclosure against water intrusion when closed. Care should be exercised to avoid damaging the gasket when the chassis is open. Note the captive screws in the cover; when opening the cover, the screws should be loosened until they are no longer holding the front cover to the chassis, but they should not be removed from the front cover.



For maximum efficiency, the MeshPlus® Gateway should be mounted in an area where it is easily accessible. For example, if the Gateway is pole mounted, the Gateway should be mounted low enough on the pole to allow service without requiring a bucket truck or other lift.

The Gateway Mesh antenna should be located as high as possible with an unobstructed view of as many mesh devices as possible. Increasing the antenna height increases its range. However, the MeshPlus® Gateway will operate correctly as long as it is within wireless range of at least one mesh device.



## Power

### AC Mains Power

The Gateway typically operates from mains power, either 110-120V AC or 220-240V AC 50Hz or 60Hz. The voltage selection (120 or 240vac) is a factory option and is indicated on the main board.

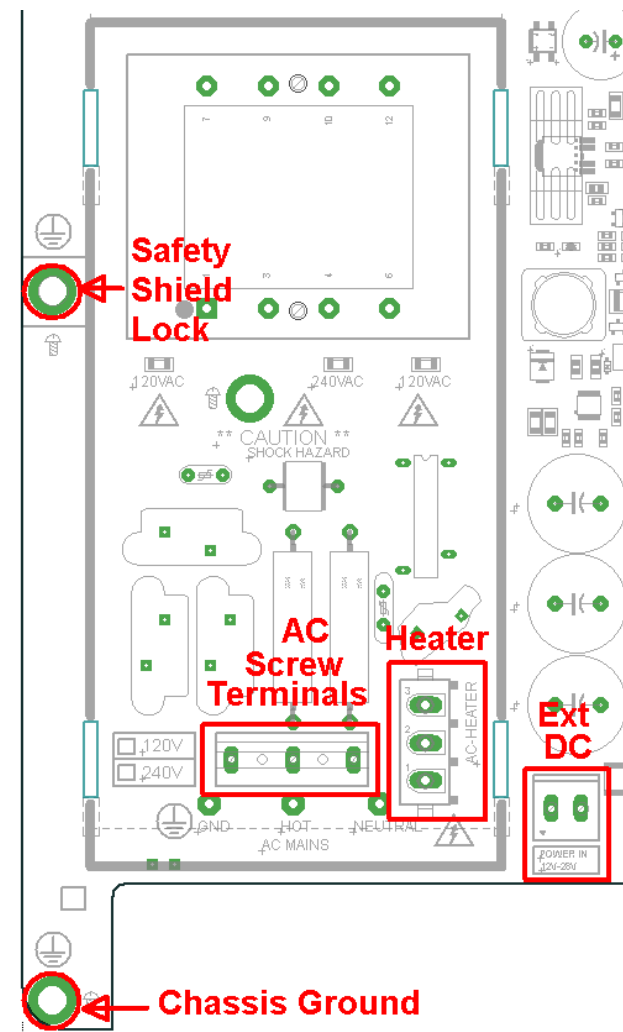
An outdoor-rated (UV stabilized) AC cable connects power to the gateway through a waterproof cable gland. The AC cable **must** be connected to a grounded outlet.

**WARNING:** failure to connect or bypassing the chassis ground can result in extremely dangerous conditions. Observe all local electrical code requirements; consult with a licensed electrician if in doubt.



The AC cable connects to screw terminals on the main board beneath the black aluminum safety shield. The AC ground wire connects to the chassis ground.

The AC safety shield helps prevent accidental access to AC mains voltages. The AC cable is field replaceable, but cable replacement should only be performed by qualified personnel and **only** with AC power off and disconnected.



The safety shield mounts to the main board with 4 locking feet and is secured with a single machine screw through the Safety Shield Lock. This screw also grounds the safety shield; a stainless-steel screw and lock washer must be used to ensure proper grounding of the safety shield. The safety shield should not be removed while AC power is connected to the Gateway. Note that the AC shield also serves as the AC heater and may be hot.

To remove the AC cable:

1. Loosen the safety shield lock screw but do not remove it.
2. Grasp the AC safety shield on both sides and slide it towards the top of the chassis
3. Lift the AC safety shield straight up so the locking feet clear the slots in the main board
4. Disconnect the heater connector if present
5. Remove the AC safety shield and heater assembly from the chassis.
6. Loosen the AC screw terminal connections
7. Loosen the AC cable gland
8. Remove the AC cable



## AC Cable Replacement

To replace the AC cable:

- Strip 1 ¾" of the outer jacket of the new AC power cord.
- Strip 1/4" of the insulation from the end of each wire
- Install the new AC power cable by reversing the steps above. Ensure that the hot, neutral, and ground connections are connected to the appropriate screw terminals.  
**WARNING:** Failure to connect the proper wire to the proper terminal will create a severe safety hazard.
- Most wire is color-coded, but not all manufacturers follow the same standards and not all installations have been done properly. Typical color codes (per the US National Electrical Code IRC E3307) are:
  - Ground = Green or Green/Yellow or bare
  - Neutral = White or Gray
  - Hot = Any other color (typically Black or Red)

In the US, any color other than white, green, or gray may indicate a hot wire; there are also exceptions allowing use of tape or other markers to re-code a wire. All wiring should be checked with a voltmeter to ensure proper connections.

Most European countries use IEC standards where blue indicates Neutral and brown, black, or gray indicate Hot.

Canadian standards are governed by the CEC and may use black, red, or blue for Hot.

- The ground wire **must** be connected to the chassis ground using a double-crimped ring terminal. The chassis ground screw is stainless-steel and requires a lock washer.
- Check your cable with an electrical tester to ensure proper connection.
- Be sure to tighten all screws.
- Tighten the cable gland
- Replace the AC safety shield PRIOR to restoring AC power.



**WARNING:** AC line voltages are hazardous and can cause shock, burns, or death. The AC safety shield should only be removed by qualified personnel experienced with handling high voltages. AC power must be disconnected at the circuit breaker or fuse box prior to making any changes to Gateway AC cabling.

## Surge Suppression

Devices powered from AC supplied outside the service entrance for a building may be exposed to significantly more and larger power surges due to lightning striking the power grid. While no system can protect against direct lightning strikes, the Gateway AC power supply includes proprietary surge suppression circuitry designed to protect the gateway from hundreds of 6000V 3000A surges (ref. ANSI C62.41).

In the event of a failure, the surge suppression circuit is designed to fail open-circuit to prevent dangerous conditions. The power supply also includes a self-resetting fuse for over-current protection. Note that the self-resetting fuse does not completely disconnect AC power but only keeps it to safe levels; AC power **must** be disconnected externally for safety before removing the AC safety shield, even if power appears to be off.

## AC Heater

The Gateway includes an optional 20W or 40W AC-powered heater that operates automatically when temperatures fall below freezing (0C). The heater allows the SLA battery to charge when outside conditions fall below freezing, helps prevent condensation from forming inside the Gateway, and allows the Gateway to operate below its rated minimum voltage (-40C). The heater controls are an automatic solid-state thermostat and solid-state relay; the heater is separately fused and surge protected.

## Electrical Safety

### **IMPORTANT: always observe electrical safety rules:**

- Do not use with a damaged AC power cord or plug.
- Do not pull or carry the Gateway by its AC power cord.
- Do not drop or throw the Gateway; severe impact can damage the Gateway and create a hazardous condition.
- Observe and comply with all electrical, safety, and building codes and regulations.
- Electrical connections should be installed and serviced only by trained and qualified personnel.
- Do not install or service your Gateway during wet conditions (e.g. rain, snow).
- When installing the Gateway in an elevated location, use a fiberglass or other non-conductive ladder.
- Antennas should be installed with appropriate lightning protection such as a lightning arrestor with ground wire and ground rod. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information about proper electrical grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for grounding electrode.
- Do not place antennas near overhead power lines or other electric light or power circuits, or where it can fall into power lines or circuits. When installing antenna systems, take care to avoid touching power lines or circuits which could be fatal.

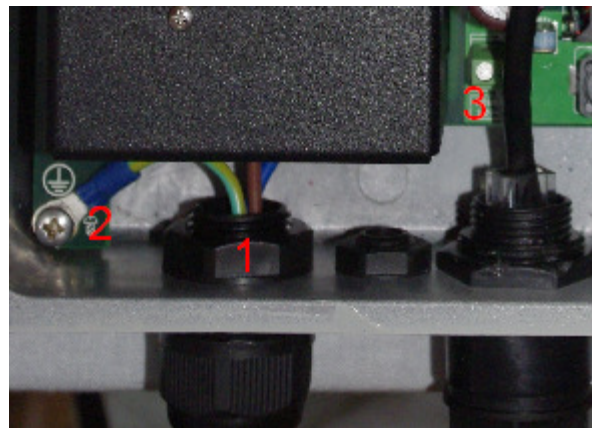
**Failure to comply with the above warnings will void the Gateway warranty and can create hazardous conditions.**

## External DC Power

In some cases, it is desirable to operate the Gateway from an external DC power source such as when external AC power is not available or when using external solar power.

The Gateway requires 12-28V DC at 4W. Power can be supplied using an outdoor-rated DC power cable or via spare pairs in the Ethernet cable (Passive PoE).

To use external DC power with a separate DC power cable, remove the AC power cable as described above and install an outdoor-rated DC power cable through cable gland (1). Even with DC power, a safety ground connection is recommended and should be connected to the chassis ground screw (2). The DC power should be connected to the DC power input screw terminals J1 (3). Polarity is not important.



## DC Power Requirements

The Gateway typically consumes less than 3W of power with maximum DC power consumption of 15W. The minimum input voltage is 12v for proper operation of the Gateway SLA charger. If the SLA backup battery is not required, lower input voltages may be used with a minimum external input voltage of 8v. The external power LEDs in the external status panel provide visual feedback indicating that the power levels are sufficient; if the voltage is too low or too high, the external power error red LED illuminates; otherwise, between one and 4 green LEDs illuminate to indicate the voltage is in the adequate range.

An external 12vdc supply should be capable of supplying at least 1.5A to meet the maximum power requirements while accounting for cable and other losses; a 24vdc supply need only supply 750mA. Note that when supplying power via PoE (over a CAT5 cable), the maximum current allowed is 1.154A. Accordingly, an 18-24vdc or higher power supply is recommended when supplying power via PoE.

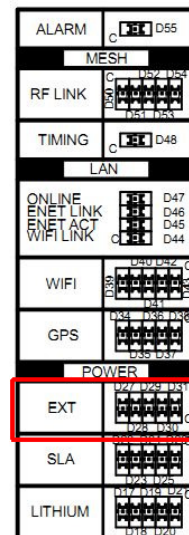
Note that long cable runs will reduce the voltage delivered to the Gateway; accordingly a higher voltage power source may be needed to compensate for the cable loss.

Each 100 feet of CAT5 adds 1.2-ohms of resistance which reduces the voltage delivered to the Gateway. For a Gateway to operate at maximum power at 18vdc/833mA, the power source voltage would need to be increased to 19vdc/833mA to compensate for the 1v lost in the 100' CAT5 cable. Alternatively, the power source current could be increased to 18vdc/883mA which would deliver the same amount of power but at a lower voltage (17vdc/883mA) to the Gateway. When lowering the voltage delivered to the Gateway, be sure to observe the maximum current limits of the cable (1.154A max for CAT5).

## PoE (Power over Ethernet)

When power is supplied over pins 4,5 and 7,8 (two pairs) of a CAT5 Ethernet connection (PoE); this arrangement is commonly referred to as "passive PoE". When using Power over Ethernet, a MeshPlus Passive PoE injector **must** be used. The PoE injector voltage is lower than many IT router PoE devices; attaching the Gateway to other PoE power devices which commonly supply 48vdc can damage the Gateway. Placing the Axiometric PoE injector between the Gateway and other PoE equipment will prevent harm to the Gateway and will not affect the other PoE equipment.

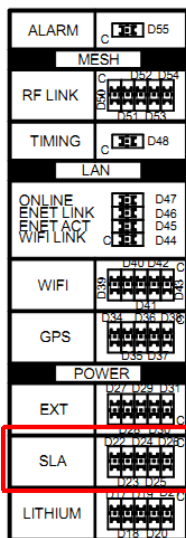
The External DC power input has extensive voltage surge protection as well as over-current and over-voltage protection. If the input voltage exceeds 30v, a MOV will trip a self-resetting fuse to protect the Gateway from damage.



## Sealed Lead-Acid Backup Battery

The Gateway is designed to continue operating during power outages. A 6v 4.5AH sealed lead-acid (SLA) battery (7) provides full power for 12-24 hours during power outages. Blackouts longer than this are very rare in the United States.

The Gateway automatically charges and conditions the SLA battery whenever external power is present using an intelligent switching charger that adjusts charging voltage according to ambient temperature; this is essential for long service life in outdoor applications. The charger also automatically detects battery faults such as failure to charge or internal short circuits and stops charging the battery. Although SLA batteries do not normally vent, in the event of a catastrophic failure, if venting occurs, the Gateway includes a Gore-Tex vent that prevents gas pressure from building within the Gateway chassis while maintaining a tight seal against liquid water.



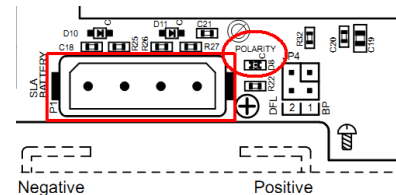
The Gateway monitors the SLA voltage and status and displays them on the LED status panel. When the SLA is fully charged, the 4 green SLA LEDs will be illuminated. When the SLA is charging, the LEDs will walk from left to right indicating charging; when the SLA is discharging, the LEDs will indicate the remaining capacity of the battery; when no LEDs are lit, the battery is fully discharged. Any error conditions such as a missing or failed battery will result in the red SLA LED being illuminated. More detailed information can be found using the System Manager graphical user interface software including the battery installation date, current voltage, number of full battery cycles, and the nature of any failure.

The SLA battery connector is keyed to prevent reverse insertion and locks in place to prevent disconnection due to vibration.

The Gateway is also protected against battery reverse-polarity if the wiring harness is installed incorrectly on a new battery. If a reverse polarity battery is installed, it is automatically disconnected electrically by the Gateway and a red polarity LED next to the battery connector illuminates.

SLA batteries have a typical service life of 4-5 years; service life is affected by factors including number of charge/discharge cycles, ambient temperature, and usage patterns. The Gateway protects the SLA against damage from deep discharge by automatically disconnecting the battery when it discharges to 5.5vdc. The Gateway also automatically tracks the SLA battery installation date and number of charge/discharge cycles to aid in battery maintenance.

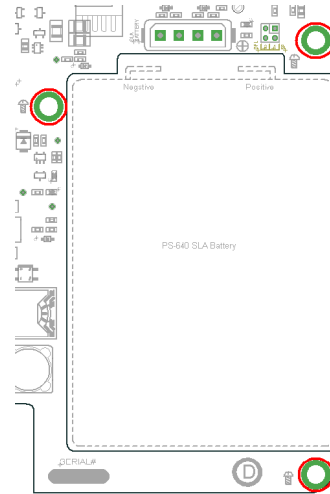
SLA batteries can supply power for the Gateway from -20C to +65C; recommended replacement batteries include: GH Prism GH645 and Powersonic PS640 F1.



## Gateway - QSG

To replace the SLA battery:

- unplug the battery connector
- loosen the 3 bracket bolts shown in the diagram to the right (do not remove the bolts; they are captive to the bracket)
- disconnect the wiring harness from the old SLA battery
- connect the wiring harness to the new battery paying careful attention to the polarity: the red wire goes to the positive battery terminal and the black wire goes to the negative battery terminal.
- Place the new battery in the Gateway and plug the harness back into the Gateway battery connector; observe the red reverse-polarity indication light: it should be off.
- If external power is present, the SLA status LEDs should indicate that the battery is charging.



When shipping the Gateway or storing it for extended periods, the SLA should be disconnected from the Gateway.

**Warning:** SLA batteries are capable of supplying large amounts of power and can be dangerous if short-circuited. The Gateway circuitry includes a self-resetting fuse that automatically limits the battery current in the event of a short circuit, however care should be exercised while handling SLA batteries.

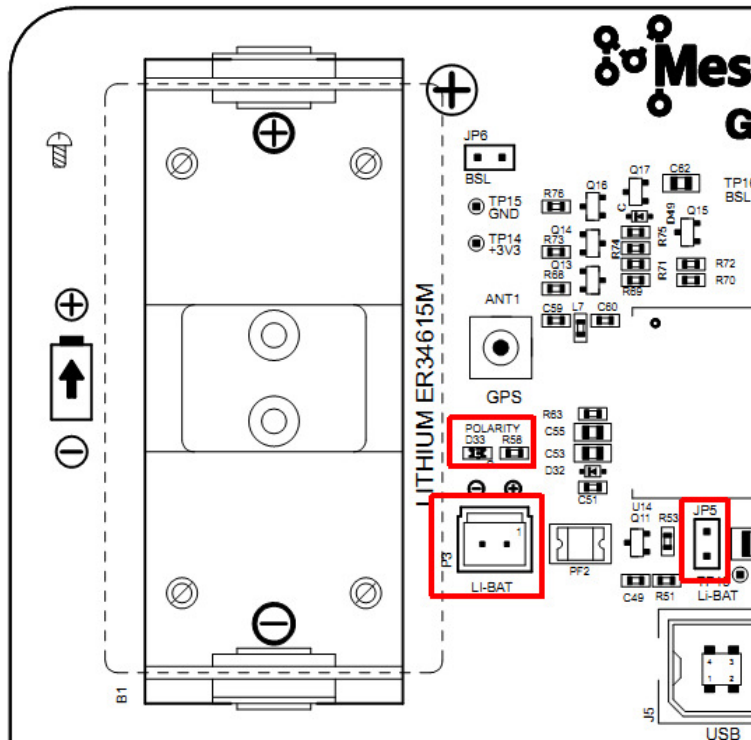


## Lithium Backup Battery

If an extended power outage depletes the SLA battery, a non-rechargeable Lithium battery keeps the Gateway operating its mesh and collecting reports and alarms for up to several months. When operating on Lithium backup power, most of the Gateway's subsystems are shut down to conserve power; only the critical mesh networking and storage subsystems are powered. Moreover, the Gateway operates the mesh at a reduced duty-cycle while operating on battery power.

The Lithium backup battery is a 3.6v 13AH spiral-wound Lithium Thionyl battery model number ER34615M; please note that the 'M' is important and non-M batteries should

not be used. Lithium batteries operate from -40 to +85C making them capable of supplying emergency power for the gateway over its entire operating range.





### Gateway - QSG

The Lithium battery is installed in aluminum battery holder B1 with the positive terminal facing up as shown. If the battery is inserted incorrectly, the battery is automatically disconnected from the GW3 circuitry for safety and the red reverse-polarity indicator LED will illuminate.

The lithium battery is available in two configurations:

- a button-cell (D-cell flashlight-style battery) uses the battery holder connections
- a battery with a wired locking connector which is plugged into Li-Bat connector P3

For shipping and extended storage, disconnect the lithium battery from the Gateway; by removing the battery, disconnecting it from P3, or by removing jumper JP5 (manufacturing option). The battery

**must** be disconnected for air shipment (some air shippers do not ship Lithium batteries at all, but all want the battery disconnected); jumper J5 allows shipment of the Gateway with the battery installed but disconnected.

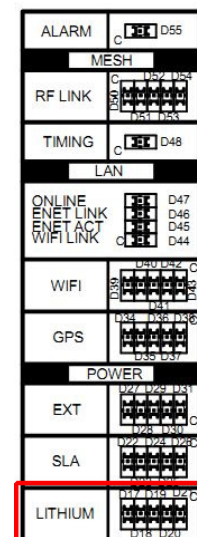


Battery holder (B1) has a retaining clip that holds the battery securely against vibration and shock. When the Lithium battery is depleted, slide the clip off the holder, remove and replace the battery, then replace the clip.

The GW3 constantly monitors the Lithium battery and displays the battery status using the Lithium LEDs on the LED status panel. A fresh Lithium battery will have 4 green LEDs illuminated; as the battery discharges, the LEDs will turn off one at a time and when the battery is nearly discharged, all of the green LEDs will turn off. When the battery is depleted or if other battery problems are detected, the Lithium red error LED will illuminate.

Lithium batteries have a typical service life in excess of 10 years. In most cases, the SLA battery will power the gateway through any power outages and the lithium battery will last for its expected service life. If an extended power outage drains the lithium battery, it must be replaced.

**Warning:** Lithium Thionyl batteries are capable of supplying large amounts of power and can be dangerous if short-circuited. The Gateway circuitry includes a self-resetting fuse that automatically limits the battery current in the event of a short circuit, however care should be exercised while handling Lithium batteries.

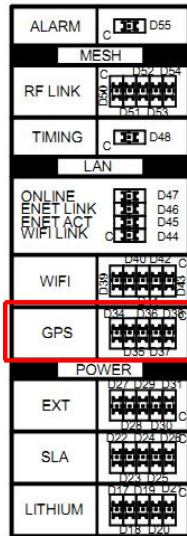
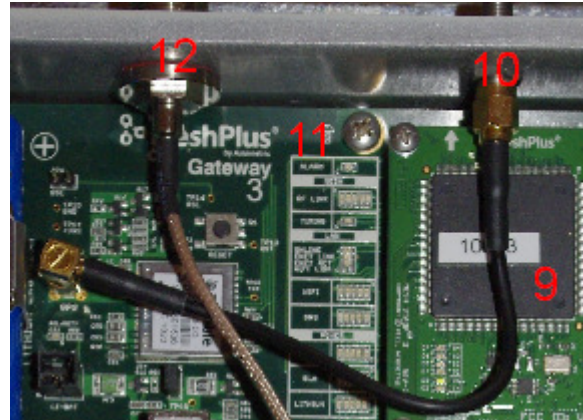


### Passivation

When lithium batteries are not used, they develop an internal oxidation layer called passivation that prevents them from delivering their rated current. As the battery is used (loaded), the passivation dissipates and the battery is able to deliver full current. When batteries sit on the shelf for extended periods or are used in a standby capacity, this passivation can render the batteries unusable. When a new battery is installed in the Gateway, a load is automatically applied for 5 minutes to remove passivation; thereafter, a load is applied weekly to prevent accumulation of more passivation; this assures that battery will always be ready to provide backup power.

## GPS Antenna Connection

The Gateway requires an active (amplified) GPS antenna connected via SMA connector (10). The Gateway has an integrated GPS receiver which receives signals from the GPS satellites and automatically determines the gateway's location and the current time of day with great precision.



An external GPS antenna should be attached to connector 10; the GPS antenna should be positioned such that it has a clear view of the sky. The Gateway requires a view of at least 4 GPS satellites to operate properly.

The GPS status LEDs provide visual indication of the GPS receiver status and the number of satellites in view. If no GPS antenna is connected or if the antenna cable has a short or open circuit, the red GPS status LED will illuminate. Additional information about the fault is displayed in System Manager (see below). If the antenna is connected, one green LED is illuminated for every two satellites in view:

- 1 green = 2 satellites
- 2 green = 4 satellites
- 3 green = 6 satellites
- 4 green = 8 or more satellites

Acquiring satellites may take several minutes when the Gateway is first started.

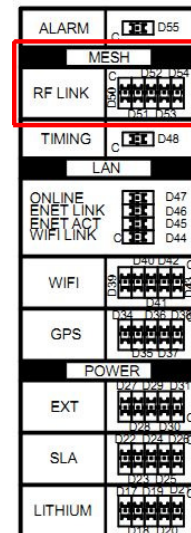
## Mesh Antenna Connection

**Note: To comply with FCC RF exposure requirements, the Gateway and the antenna for the Gateway must be installed to ensure a minimum separation distance of 20 cm or more from a person's body. Other operating configurations should be avoided.**

The Gateway requires a 902-928MHz antenna connected via coaxial cable to the N-type connector (12) on the top of the chassis (see photo above). The Gateway transceiver communicates with the wireless mesh network via this antenna. **An 8 dBi gain Vertical Antenna is supplied with the Gateway. Higher gain antennas are not allowed. If a smaller vertical antenna with less than 8 dBi gain is desired for installation, contact Axiometric for a list of approved antennas. Only antennas approved by Axiometric are authorized for use with the Gateway.**

The Gateway has built in antenna monitoring circuitry that measures the efficiency of the antenna and the coaxial cable; if the antenna is missing or if the connection to the antenna is open or short-circuited, or if the antenna is positioned in such a way as to make communications ineffective, the Gateway will light the red fault indicator in the RF Link Status LED bar.

Transmissions are monitored for VSWR and power to ensure an efficient antenna system is in place; the VSWR and power measurements can be viewed in the System Manager; this eliminates the need for expensive and





### Gateway - QSG

complex antenna analyzers during installation and allows remove and continuous monitoring of the antenna during operation. If the antenna or the coaxial feed-line are damaged, the Gateway will detect the condition and issue an alarm.

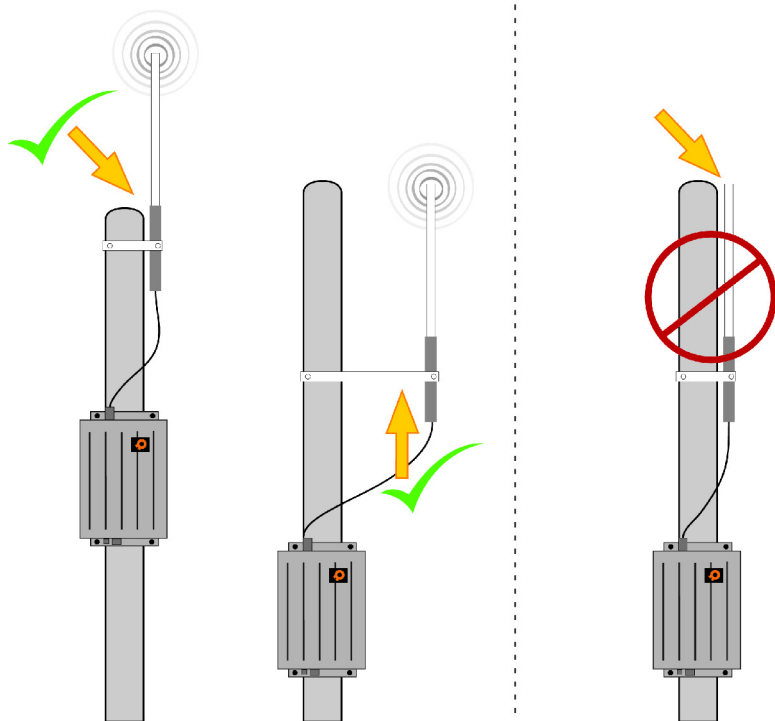
The coaxial cable connecting the antenna to the gateway should have low loss at 902-928MHz. Only high quality cable such as LMR400 should be used. Many popular calculators are available on-line to determine the loss a given type of cable will cause at 915MHz for example:

<http://www.timesmicrowave.com/cgi-bin/calculate.pl>

Although N-connectors are waterproof and designed for rugged outdoor operation, it is often desirable to further waterproof the connections; heat-shrink tubing with internal glue is often used to seal the connection between the cable and the connector.

The antenna should be mounted as high as possible. The antenna should not be placed close to other objects (including the pole itself); other metal objects in close proximity to the antenna will result in particularly poor performance.

If the antenna cannot be mounted at the top of a pole, it should be mounted on an arm that places the antenna as far from the pole as possible. Refer to the diagrams to the right for examples of good and bad antenna mounting practices.



### Lightning Arrestor

A lightning arrestor should be mounted to the N-Connector on the Gateway chassis and the other end connected to the antenna cable. The lightning arrestor **must** be grounded using a 12-14 AWG solid core wire to a high quality ground. Failure to use a lightning arrestor and ground cable will void the Gateway warranty and may create hazardous conditions. The lightning arrestor may be grounded directly to the pole if the pole is metal and is itself grounded; if the arrestor is not grounded, the Gateway chassis grounding will provide the ground path for any antenna discharges which may result in damage to the Gateway's sensitive radio circuitry.



## Network Connection

The gateway requires a 10/100 Base TX Ethernet connection to a TCP/IP network. The MeshMaster data collection software uses this connection to remotely manage the Gateway and to retrieve data the Gateway has received and stored from the wireless mesh.

The Gateway Network Interface is connected to the chassis exterior via a short cable and a waterproof RJ-45 Ethernet connector. The connector unscrews and the portion that detaches includes a rubber split washer that is placed around the Ethernet cable; the washer and cable are then placed through the threaded assembly which forms a compression seal when screwed back onto the Gateway connector.

ALARM	C	D55
MESH	C	D57 D58
RF LINK	C	D59 D60
TIMING	C	D48
LAN	C	D47
ONLINE	C	D46
ENET LINK	C	D45
ENET ACT	C	D44
WIFI LINK	C	D43
WIFI	C	D42
GPS	C	D35 D36
POWER	C	D37 D38 D39
EXT	C	D31 D32 D33
SLA	C	D30 D31 D32
LITHIUM	C	D29 D30 D31

The Network Status LEDs indicate the network connection status. If the link is connected to an Ethernet switch or hub, the green ENET\_LINK LED will illuminate indicating a good connection. Activity on the Ethernet link will cause the ENET ACT LED to blink. If a remote connection is made to the Gateway via the System Manager or MeshMaster Data Collector software, the ONLINE LED will indicate that the gateway is online and connected to a remote device.

The Gateway supports an optional WiFi network interface; if equipped with a WiFi NIC, the WiFi link LED illuminates when the Gateway is connected to an access point; the WiFi status bars show the signal strength of the WiFi connection.

The initial configuration of the network interface is as a DHCP client; this allows remote management of the Gateway IP address by the network administrator. You can also configure the gateway to use a static IP address using the System Manager.

