

LightGrid™ FAQ

Outdoor Wireless Control System



1. What is LightGrid™?

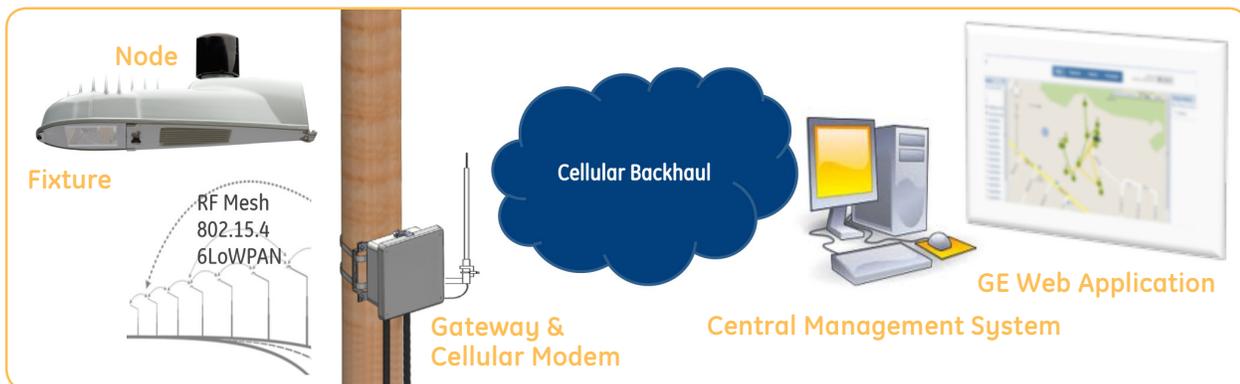
LightGrid™ is a breakthrough technology system from GE for Outdoor Wireless Control that allows remote monitoring and control, utility-grade energy metering and GPS mapping of streetlights.

2. How does the LightGrid™ system work?

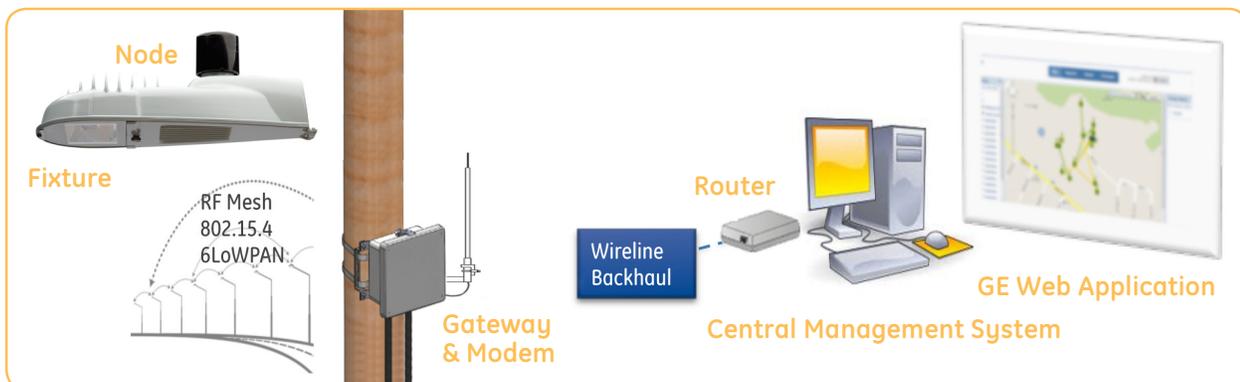
The architecture diagram below gives an overview of the LightGrid™ system.

- Nodes reside on top of each Light Fixture.
- Nodes collect data (Voltage, Current...) for the respective fixture and send this information to the Central Management Server (CMS) via a Gateway
- The backhaul Network can be wireline or cell based
- The CMS can be installed at the customer site or hosted by GE Lighting
- The fixtures can be remotely configured, monitored and controlled (Turn on/off/dim..) by sending commands to the nodes via the Gateway from the CMS

Cell Based Network



Wireline Based Network



3. Can I install LightGrid™ at all my global locations?

LightGrid™ is designed to be a Global platform. However, most countries have strict regulatory requirement and restrictions on allowed frequencies for operation. Please contact us at lightgrid@ge.com if you have a requirement for a specific country.

4. How secure is my data?

LightGrid™ system is designed to be highly secure using sophisticated encryption and certificate based authentication technologies.

5. What if I have more questions about LightGrid™?

Please contact us at lightgrid@ge.com. Our customer service team will be happy to assist you.

LightGrid™ Node

1. What is the advantage of having a GPS in each node?

GPS in each node helps keep track of your assets by location (GPS coordinates). This will also be a way to keep track of any thefts in case you see unexpected "movement" of assets.

2. What is the advantage of having a Utility Grade Metering in every node?

LightGrid™ nodes are design to measure the power consumption by the respective fixtures to a high level of accuracy. This will provide the opportunity to "pay per use" and/or "pay per time of use" instead of a flat rate.

3. How do the nodes communicate to each other and to the Central Management System?

LightGrid™ nodes operate in a Mesh Network. They communicate to each other and to the Gateway using an industry standard 6LoWPAN protocol based on IEEE 802.15.4. The gateway communicates to the Central Management System using Cell or Fiber network.

4. Why did you select 6LoWPAN instead of Zigbee or other Industry standards?

6LoWPAN protocol addresses several needs that are more suitable for outdoor lighting controls such as the low bandwidth, low data rate, low power consumption and low cost.

5. What is OTA process?

OTA stands for Over The Air. GE Lighting will continue to upgrade software to add new features, fix any reported bugs to continuously improve the performance of the LightGrid™ system. LightGrid™ system is designed in such a way that any changes made to the software that resides in the nodes can be sent over the air (OTA). This will avoid the hassle of physically accessing the Nodes for upgrades.

LightGrid™ Gateway

1. Can Gateway software be upgraded through OTA process?

Yes. GE Lighting will continue to upgrade software to add new features, fix any reported bugs to continuously improve the performance of the LightGrid™ system. LightGrid™ system is designed in such a way that any changes made to the software that resides in the gateway can be sent over the air (OTA). This will avoid the hassle of physically accessing the Gateways for upgrades.

2. How many nodes can be supported by 1 gateway?

Up to 500 Nodes can be supported using 1 gateway. This will however depend on the geographic location of the nodes with respect to the gateway. Nodes can communicate to each other and to the gateway up a distance of 1500 feet with a clear line of sight.

LightGrid™ Backhaul Network

1. What happens if my backhaul network is down. Will my lights turn on at night?

Yes. LightGrid™ system is built to be fault tolerant. If the network is down for any reason, each node is designed to operate in stand alone mode and will continue to turn on and turn off the light fixture based on the Photocell input.

2. When my backhaul network is down, will I lose my energy consumption data?

LightGrid™ nodes are designed with internal memory. With this, the node can locally store data, such as power consumption by the fixture, up to 4 days. Once the back haul network is up and running, the node will transmit this data to the central management server.

3. What is the difference between using Cell vs Wireline? Is one system more secure than the other?

Both systems are equally secure. Please refer the "LightGrid™ Network" on the pros and cons on each approach.

4. If I select the cellular backhaul option who will activate my network?

GE Lighting will take care of activating your network.

5. If I select the cellular backhaul option what will be my monthly service fee?

Monthly service will depend on the amount data that you expect to transmit using the cell network on a monthly basis. GE Lighting team will work closely with you to assess your data needs and recommend the optimum data plan for you.

6. If I select the cellular backhaul option will I be dealing with the service providers such as Verizon or AT&T directly for billing?

No. You will be dealing only with GE Lighting or our nominated distributor/agent.

LightGrid™ Central Management Server

1. Will GE Lighting host my data?

Yes. GE Lighting will gladly host your data. You will be able to access your data any time through a Web Interface using a secure Login ID and Password.

2. Can I host my own data?

Yes. LightGrid™ is designed to be a flexible system where you can either host your own data or GE Lighting will gladly host for you. Please refer the “LightGrid™ Server Options” to understand the pros and cons of each approach.

3. Will GE Lighting be launching new versions of the GUI software? How do I ensure I have the latest version?

Yes. GE Lighting will continue to upgrade software to add new features, fix any reported bugs to continuously improve the performance of the LightGrid™ system. If GE Lighting is hosting your data – the software upgrades will be done by GE Lighting and you will always get to use the latest version as per the maintenance contract. If you are hosting the data, GE Lighting offers an attractive software yearly maintenance package that you could purchase.

4. Will I be able to turn on and turn off the lights remotely?

Yes. LightGrid™ offers a user friendly interface for you to control your lights remotely. The access to this interface is protected through a secure login.

5. Will I be able to view the status of all the lights remotely?

Yes. LightGrid™ offers a user friendly “Map View” to remotely view the status of each of your light fixtures.

6. Will I be able to get real time data for any light fixture or groups of fixtures?

Yes. LightGrid™ offers a user friendly interface to remotely collect real time data for any fixture or groups of fixtures.