

# Mesh systems in commercial lighting controls and their advantages

There are a lot of lighting controls systems on the market today. Although people usually talk about each lighting controls system's function; the method of how each device in the system communicate with each other is also very important but rarely being discussed.

Some of the systems use traditional wired communication via Cat 5 cable. One example of this would be the Blue Box from LC&D. This kind of system is great for small to medium scale project, but rarely used in larger project due to the high labor cost it generates; the contractor would need to run long cables throughout the building. This kind of communication method is just simply not capable for such large projects.

That's why a lot of the lighting controls systems have developed a wireless communication method. One of the example of this kind of communication would be the Lutron Energi TriPak system. Each device of the Energi TriPak system communicates to its power pack wirelessly. This saves a lot of labor costs. All a contractor needs to do is install the power packs and sensors to its designed place and they are done. However, this kind of the system has a big problem when facing large rooms where each sensor is very far away from the power pack.

If the center broadcasting device is offline, then the users will not be able to control the entire zone. If the distance between the power pack and the other control devices in the zone is too large, then the wireless signal from occupancy sensor or a Pico switch will not be able to reach the power pack. Making the control of the zone impossible.

This is where the benefits of a wireless mesh network come into play. Unlike a traditional wireless network, a mesh network functions like multiple mini versions of broadcasting device on top of their normal functions. Each device is a node and can both receive and broadcast information. If one route is down, then the network can signal from other paths where it's online. This way, if the power pack is on the far-left side of the room and the wireless switch is on the other side; then the switch can talk to the occupancy sensor in between them and carry the signal to the power pack to switch (on/off) the light. With traditional wireless system, everything needs to wirelessly connect to the power pack; in a large space, like the example, it would be impossible for the wireless signal of the switch to reach the power pack.

One of the lighting control system that uses this kind of communication method is the XPoint Wireless from Acuity Brands. A zone of XPoint Wireless consists the Load controller and various sensors. Each device can both receive and broadcast signals, therefore making the system perfect for larger rooms where traditional wireless signals cannot reach to every single device.

Although there aren't many lighting controls systems that utilize mesh wireless network communication. It definitely is a perfect alternative to the traditional wireless lighting control systems. For more info on lighting controls visits our website [here](#).

Here are some great articles related to the mesh networking with lighting controls.

**[Link Building Controls with a Mesh Network](#)**

**[Wireless 101: Mesh networking](#)**