

## Lantronix Powers Cameras and Wireless Radios as Part of Park Assist Parking Guidance and Security System at Mall of America

**Company Type:** Smart Park and Surveillance

**Lantronix Products Deployed:** Self-Enclosed Managed Hardened Gigabit Ethernet PoE++ Switch

The [Mall of America](#), located in Bloomington, Minnesota, is the largest shopping mall in the U.S. and is home to retail, dining and entertainment, attracting nearly 40 million visitors each year.

There are approximately 15,000 parking spaces at the mall. Visitors can easily spend many hours at the facility, and parking can become difficult as additional guests arrive throughout the day. To make parking easier for guests, the Mall of America worked with [Park Assist](#) to implement a parking guidance system.

One key part of the parking guidance system is the large digital signs at the east and west parking ramps that display the number of open parking spaces on each level. Once on a level, directional wayfinding signage and in-aisle pointer signage guides drivers to the nearest available space. Mall guests can also view parking availability from their computer or mobile device before arriving at the mall. The parking data is updated in real-time.

Another critical part of the system is the ability to integrate with an outdoor camera surveillance system. High-perched cameras used in a typical surveillance system can collect video and rich data that drives the core intelligence of the system. The camera system eliminates the need for digging up asphalt to install in-ground bay sensors. In addition, wireless radios transport data from the camera to the parking system removing the need to trench new cables throughout the ramp or lot.



### How it Works - Park Assist S1 Outdoor Surface Lot System

The S1 Outdoor Surface Lot System from Park Assist is an advanced camera-based sensing system. Cameras are mounted on the parking ramp and overlook the surface lot to provide an omniscient view, monitoring multiple parking bays, collecting video and data. As the S1 System monitors each parking bay, it also functions as a sitewide video security system, acting as a constant visual deterrent to crime and giving visitors an added sense of safety.

One challenge is powering the outdoor cameras and transferring camera data back to a central server to be analyzed using the S1 system's analytics software. Park Assist uses PoE-powered cameras for monitoring and an outdoor Wi-Fi system to send the collected data. Using wireless radios means Park Assist did not need to have fiber installed in the parking lots. However, the wireless system used was the Ubiquiti PrismStation, which requires 24VDC (or "Passive PoE") input power instead of the IEEE 802.3 Standard Power over Ethernet used for the cameras. Thus, a traditional PoE switch used to power the cameras would not also support powering the radios, which increases the amount of equipment needed.

So Park Assist turned to Lantronix to develop a solution to power both the cameras and the radios.

## Lantronix Solution

Park Assist selected Lantronix's flagship smart city switch, the Self-Enclosed Managed Hardened Gigabit Ethernet PoE++ Switch (SESPM), for its compact size, form factor, and flexibility. The SESPM is an all-in-one solution used to simplify the connection and powering of outdoor devices such as security and surveillance cameras, wireless access points, and IoT sensors. The switch enclosure is NEMA 4X/IP-66 rated to withstand the harsh outdoor elements in Minnesota. SESPM also incorporates its own power supply, fuse protection, surge protection, and tamper detection. It includes four IEEE 802.3af/at/bt PoE ports and provides up to 90W of power on multiple ports ( $\leq 180W$  or  $240W$ , depending on the version). These ports are used to power the PoE cameras.



With a new, optional **24V Passive PoE Module** installed safely and securely inside the SESPM, the switch can also power the 24VDC wireless system. Because the Wi-Fi devices do not follow IEEE PoE standards, they would typically require a separate power source; however, the SESPM can now safely provide power for these non-standard devices as well. Park Assist can backhaul the camera data wirelessly without mounting additional external DC power sources for the radios.

Configuration of the SESPM is fast and straightforward using a mobile app provided with the switch. The switch is equipped with near-field communications (NFC), so settings can be configured and transferred from a mobile device into the switch without taking the switch out of its box or power it up before sending it to the job site.

## Success

In addition to simplifying the installation by providing power to both the IEEE PoE cameras and non-IEEE-compliant radios, the SESPM also reduces Park Assist's challenges, time, and expense of maintaining the powered devices connected to the switch. With the same mobile app used to configure the switch before installation, Park Assist technicians can connect to the switch and make modifications after installation through Bluetooth Low Energy (BLE) technology. BLE allows remote access from the ground for troubleshooting, monitoring, or rebooting the cameras and radios installed high on the ramp or light poles without needing a ladder or scissor-lift for access. Accessing through the mobile app with BLE can save up to \$1,000 per occasion compared to gaining physical access for similar incidents. This is

expected to represent significant cost and time savings to Park Assist related to resolving future issues with the system.

For more information on Lantronix, connect with our experts: [lantronix.com/about-us/contact/](https://lantronix.com/about-us/contact/)