



## Application Note: EnStationAC and Outdoor Wireless Surveillance Cameras

Installing an outdoor wireless network is challenging. Equipment must be placed in difficult-to-reach locations where power outlets are scarce or unavailable. It must be protected from variable and extreme weather conditions. And it must ensure clear signals over long ranges. The addition of an element such as surveillance cameras exacerbates the challenge.

EnGenius has a solution.

### Three Steps to Reliable Long-Range, High-Speed Wi-Fi Surveillance:

1. Get a free Wireless Network Design Proposal from EnGenius Technologies.
2. Install EnStationACs with security cameras tethered to secondary ports.
3. Enjoy stable, robust connectivity, optimal bandwidth, and high-speed data rates.



### Why EnStationAC?

- > Point-to-point and point-to-multipoint connectivity with data rates of up to 867 Mbps over extremely long distances—up to 5 miles in clear line-of-sight deployments.
- > PoE (Power-over-Ethernet) ports provide power to remote IP cameras, eliminating the need to run expensive cables to difficult locations (such as under the eaves of roofs or atop utility poles).
- > Video streams from tethered camera travels back to your central/base location with significantly better results than traditional non-tethered wireless surveillance setups.
- > EnStationAC is designed to perform in harsh environments, with an IP-55-rated waterproof and dustproof casing that protects it from sunlight, extreme cold, frost, snow, rain, humidity, and more.

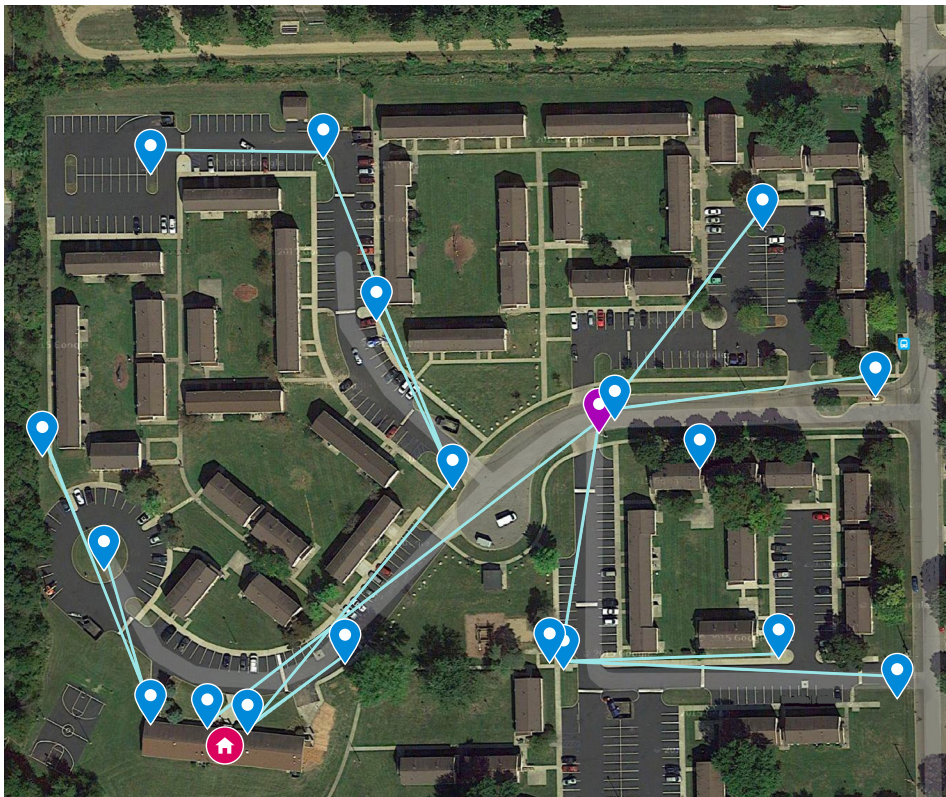
### Ideal Users and Example Uses

- > Cities/municipalities: Security cameras in parks and outdoor areas.
- > Traffic and transportation: Monitor traffic cameras and security cameras in bridges and tunnels.
- > Schools and campuses: Enhance student safety with security cameras around the campus.
- > Infrastructure: Monitor waterways, reservoirs, and dams.
- > Business: Security cameras in warehouses, inventory and storage areas, and parking lots.
- > RV Parks and campgrounds: Monitor common picnic and recreational areas.
- > Marinas: Extend surveillance over docks.

## Sample Network Design: Apartment Complex

The following sample wireless surveillance plan for an apartment complex proposes 19 EnStationAC units, one omni-directional AP, and one switch to power and monitor 20 surveillance cameras. Each EnStationAC has two Ethernet ports, with the primary designed for PoE (Power-over-Ethernet) injection. These PoE ports allow a camera to be connected at each location.

EnStationAC units are designed to be mounted on rooftops or poles, and can be configured in three modes: Access Point, Client Bridge, and WDS Bridge. This flexibility allows networks to be updated or reconfigured as needs change. (In this example, each EnStationAC is configured in "WDS Bridge" mode.)



Sample Point-to-Multipoint design.

In the sample point-to-multipoint design above:

- > Blue pins: EnStationAC locations, most of which host one or two cameras. (In locations with two cameras, a hub is required for the additional camera connection.)
- > Blue lines: Two-way bridge signals between EnStationACs.
- > Purple pin: Omni-directional AP (ENH710EXT) broadcasting a Wi-Fi signal.
- > Red house icon: Central management location with switch, PC and video monitoring station.

Application	Product/Solution	Qty	Capacity
Apartment complex with 20 surveillance cameras	EnStationAC Access Point/Bridges	19	11ac Wireless Speeds to 867Mbps; to 400Mbps at ½ mile
	ENH710EXT Access Point	1	11n Speeds Up to 600 Mbps
	EGS7278P Comprehensive Layer 2 PoE+ Switch	1	24 Gigabit Ports; 185W PoE Power Budget
	Wireless surveillance cameras	20	

All video signals make their way over the wireless network back to the switch in the operations office (red house icon), where they can be monitored from a PC with video management software for multi-camera viewing. Thus the EnStationAC extends the range of a surveillance network while eliminating expensive cable runs and trenching.

Exceptional network planning is a complex task. EnGenius can help.

Contact EnGenius now for more information on using EnStation units to extend wireless surveillance systems or to request a FREE wireless networking proposal showing the best configuration for a property.