Empowering Connections for Cities and Beyond

Integrated PtP & PtMP Solutions for Last-Mile and Backhaul Applications

EnGenius Broadband
Outdoor Wireless Solution

Bridging Connectivity Across Landscape

EnGenius Broadband Outdoor Wireless Solution

Challenges in Diverse Connectivity: Addressing the Need for High-Speed, Reliable Networks

The demand for reliable, high-speed connectivity is paramount in today's diverse and expanding environments, ranging from bustling urban areas to remote industrial sites. Wireless Internet Service Providers (WISPs) and urban planners face significant challenges in deploying scalable networks that can adapt to various settings. These challenges include complex deployments and ensuring spectrum efficiency and stable connectivity, often proving too intricate for conventional solutions.

Innovative Wireless Solutions: The EnGenius Broadband Outdoor EOC Series

The EnGenius Broadband Outdoor EOC Series is an innovative solution to these widespread challenges. These solutions are designed to work in various environments, and our PtP & PtMP solutions redefine the approach to outdoor wireless connectivity. The EOC series offers a versatile and robust solution with features like dual 5GHz radios for high throughput and IP67-rated casings for environmental resilience, coupled with intelligent RF management. It stands as a pivotal advancement in meeting the diverse connectivity needs of modern landscapes, from urban centers to specialized industrial areas.
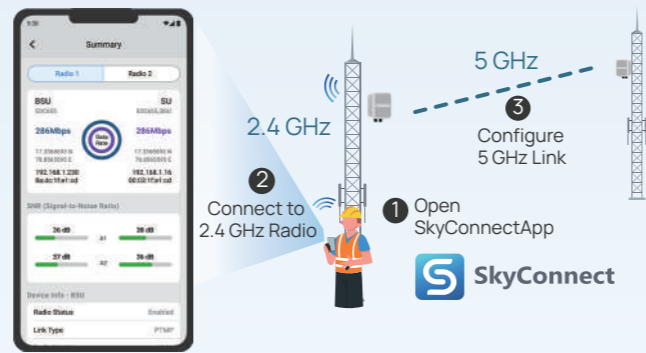
Simplifying 5 GHz Network and Antenna Setup

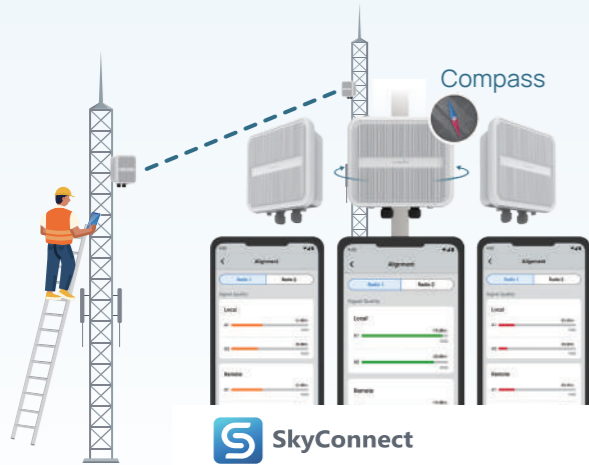## Dedicated 2.4 GHz Radio
Integration with Mobile App

The series features a dedicated 2.4 GHz management radio specifically designed to enhance the management of 5 GHz PtP/PtMP links via a mobile app- SkyConnect. This integration facilitates seamless setup, configuration, and network monitoring, ensuring uninterrupted data traffic performance. The app offers a user-friendly platform for efficient network adjustments and troubleshooting, bolstering the reliability and accessibility of the 5 GHz links.

5 GHz

2.4 GHz

③ Configure 5 GHz Link

② Connect to 2.4 GHz Radio

① Open SkyConnectApp

SkyConnect

Compass

SkyConnect

Intuitive Mobile App
Easy Antenna Alignment

The series incorporates compass sensors to align antennas, which is critical for optimal signal strength precisely. During installation, the mobile app offers real-time orientation feedback, ensuring that PtP and PtMP configurations antennas are correctly directed. This app-assisted alignment guarantees enhanced signal quality and network performance in various outdoor settings.
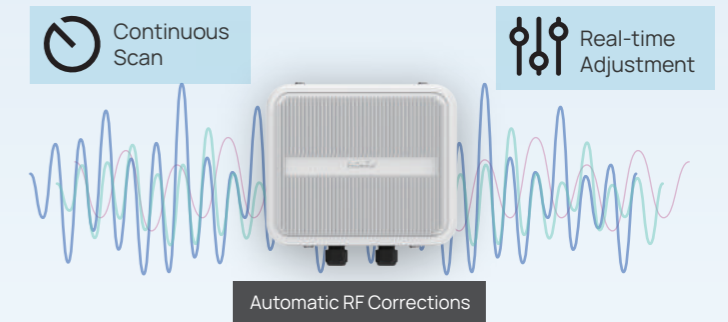
Advanced Stability & Rapid Response
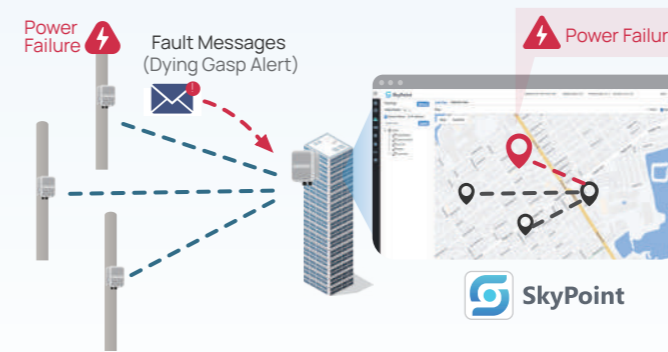
Intelligent RF Management
Fortified Stability

This product features advanced RF management, automatically monitoring and adjusting the RF environment to optimize performance. By actively scanning for interference and signal issues, it adapts settings like power levels and frequency bands, ensuring consistent network stability. This automatic correction minimizes downtime and maintains high-quality performance, crucial in varied RF conditions.

Continuous Scan

Real-time Adjustment

Automatic RF Corrections

Dying Gasp
Rapid Power Outage Response

The EOC655 series' 'Dying Gasp' feature detects imminent power loss, swiftly sending alerts to the network management system. This rapid notification includes critical device status, enabling administrators to pinpoint and address power-related issues quickly. Utilizing residual energy efficiently, it ensures prompt alert transmission, significantly reducing network downtime and aiding in faster troubleshooting, especially in large or complex networks
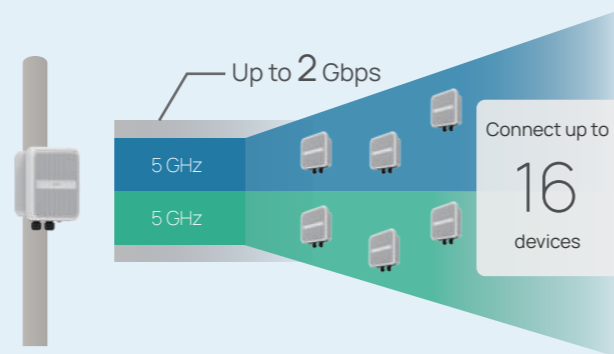
Power Failure

Fault Messages (Dying Gasp Alert)

Power Failure

SkyPoint

High-Speed, High-Capacity Networking

Dual 5 GHz Radios
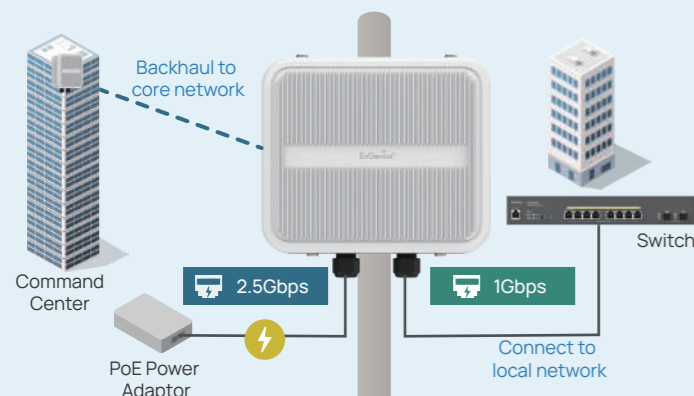### High-Capacity Connectivity

The series is equipped with Dual 5 GHz Radios and boasts a 2 Gbps link capacity, ideal for high-density RF environments. This setup facilitates robust, high-speed data transmission and supports connecting up to 16 devices in PtMP setups. It ensures stable and efficient connectivity, crucial for handling multiple high-bandwidth demands simultaneously, making it an excellent choice for network-intensive scenarios.

Up to 2 Gbps

5 GHz
5 GHz

Connect up to 16 devices

Backhaul to core network

Command Center

2.5Gbps   1Gbps

Switch

PoE Power Adaptor

Connect to local network

Dual PoE Ports
Enhanced Bandwidth and Flexibility

The broadband outdoor wireless AP has Dual Ethernet Ports, offering enhanced bandwidth capabilities of up to 2.5 Gbps. This design boosts network speed and efficiency and provides flexible connectivity options. One port can serve a wired local network connection if needed, accommodating diverse network architectures and catering to various connectivity requirements with ease.
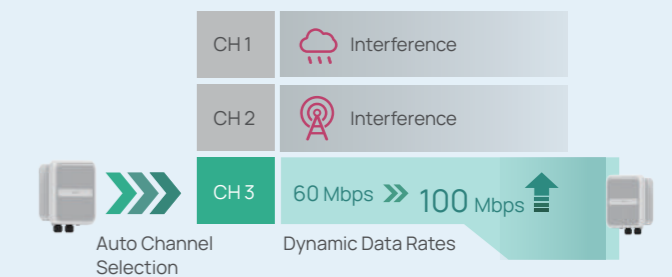
Smart Connectivity: Dynamic Rates & Enhanced QoS

Dynamic Data Rates
Auto Channel Selection

This AP series can dynamically adjust data rates to balance speed and stability, enhancing connection quality even in fluctuating signal conditions. Additionally, Auto & Dynamic Channel Selection continuously scans for and switches to the least congested channels, significantly reducing interference. This dual approach ensures the network remains robust and efficient, improving performance and reliability in various wireless environments.

CH 1   Interference
CH 2   Interference
CH 3   60 Mbps ≫ 100 Mbps

Auto Channel Selection

Dynamic Data Rates

QoS Management
Optimized Traffic Flow

QoS management in the EOC655 Series prioritizes essential traffic, allocating bandwidth to critical applications such as VoIP and video conferencing. This approach is vital in busy networks, ensuring high performance for priority services. Managing traffic effectively enhances user experience, especially for time-sensitive applications requiring high bandwidth, thus maintaining consistent and optimal network functionality.

Before QoS

Others
Video
Voice

After QoS

Voice   Priority 1
Video   Priority 2
Others   Priority 3

Total Network Bandwidth
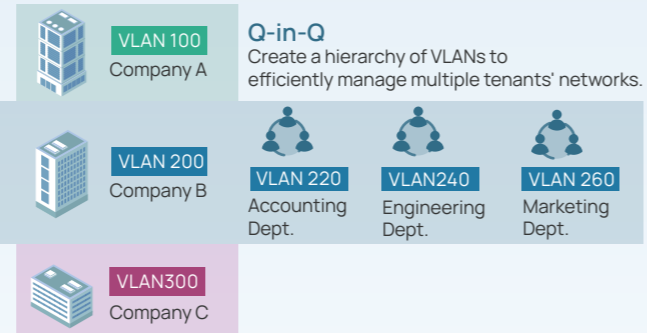
Optimized Multi-Tenant Networking

VLAN & Q-in-Q

Efficient Traffic Isolation

VLAN technology in this Series facilitates secure traffic isolation for each tenant in multi-tenant environments, creating distinct networks on shared infrastructure. Q-in-Q technology allows efficient management of complex network hierarchies, like in campuses or business centers, by encapsulating multiple VLAN tags within a single VLAN, streamlining network structure while maintaining data separation and reducing operational costs.
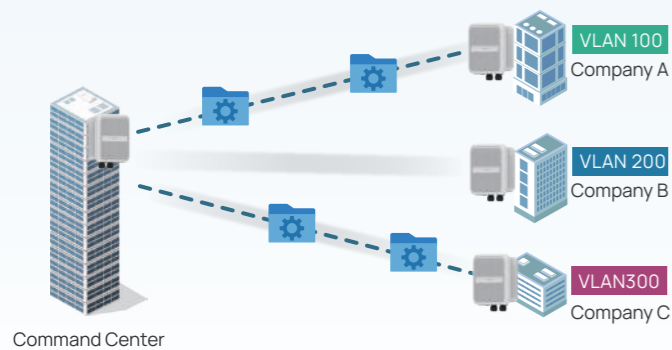
VLAN
Segment a single physical network into multiple independent networks.

VLAN 100
Company A

Q-in-Q
Create a hierarchy of VLANs to efficiently manage multiple tenants' networks.

VLAN 200
Company B

VLAN 220
Accounting Dept.

VLAN240
Engineering Dept.

VLAN 260
Marketing Dept.

VLAN300
Company C

Multicast and Broadcast Filtering
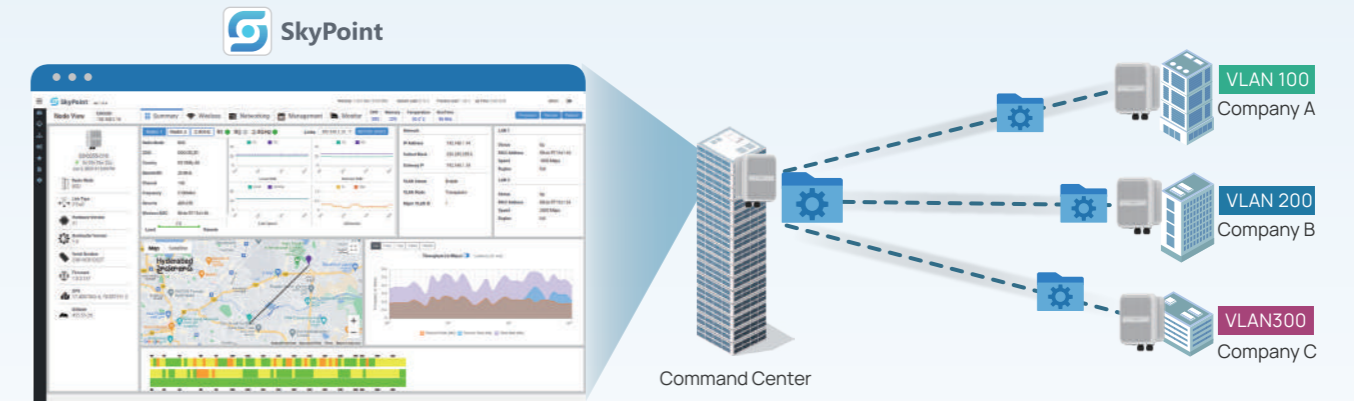
Optimal Bandwidth Utilization

Multicast and broadcast filtering efficiently manage bandwidth in multi-tenant environments by selectively controlling traffic types. This technique ensures only relevant data is transmitted, preventing unnecessary bandwidth consumption and network congestion. It's particularly beneficial in shared network settings, enabling ISPs to provide faster, more reliable internet services by optimizing bandwidth usage and enhancing the overall network experience for all tenants.

VLAN 100
Company A

VLAN 200
Company B

VLAN300
Company C

Command Center

Unified Management

SkyPoint NMS

Centralized Management and Configuration

SkyPoint

Command Center

VLAN 100
Company A

VLAN 200
Company B

VLAN300
Company C

Unified Platform:

Efficiently monitor and manage network performance, health, and security via a centralized web-based platform.

Auto Provisioning:

Simplify large-scale network setup by using template-based configuration or pre-configured settings.

Enhanced Protection and Durability

IP67

Extreme Durability

IP67 casing ensures superior environmental protection.

6KV

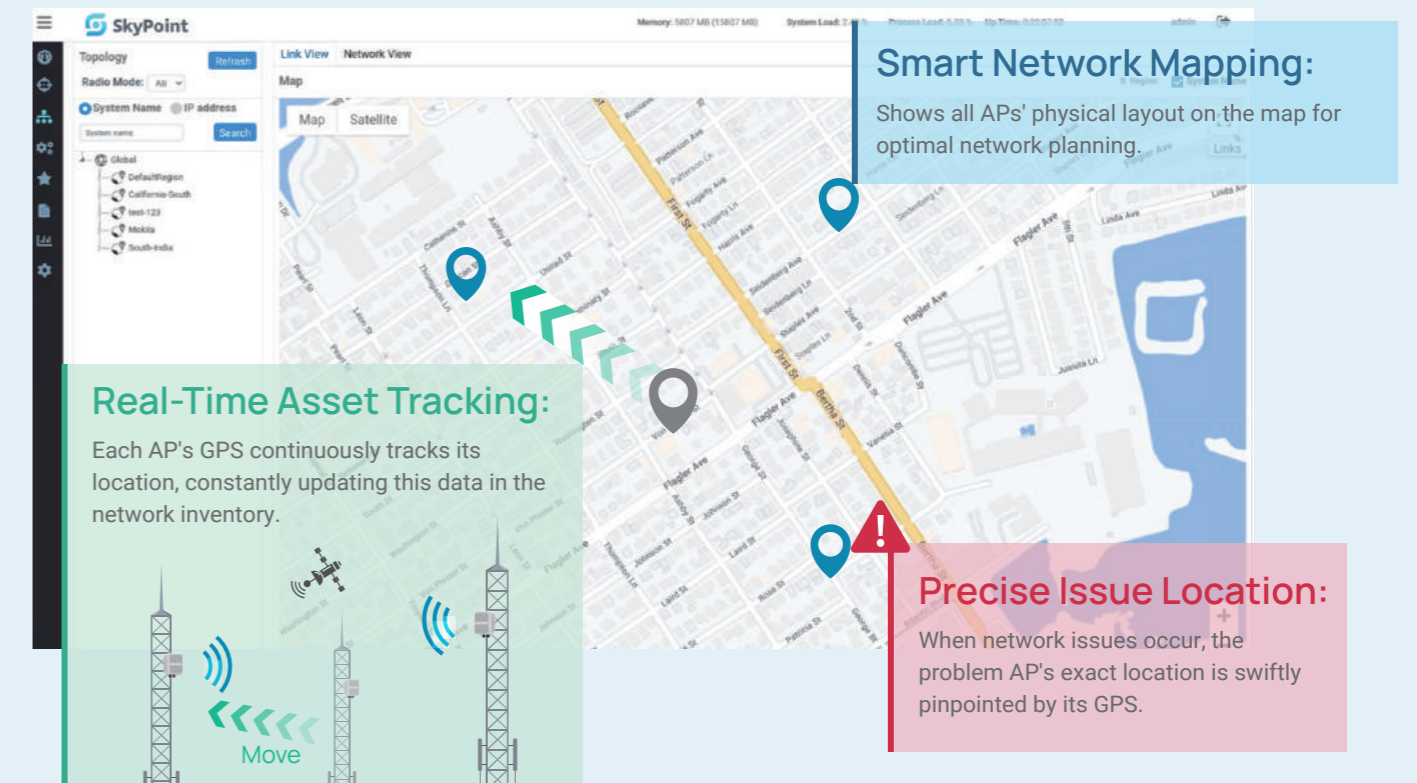### Advanced Surge Shielding

Robust up to 6KV surge defense.

Uncompromised Security

AES-256 and FIPS-140-2 compliance for maximum data protection.
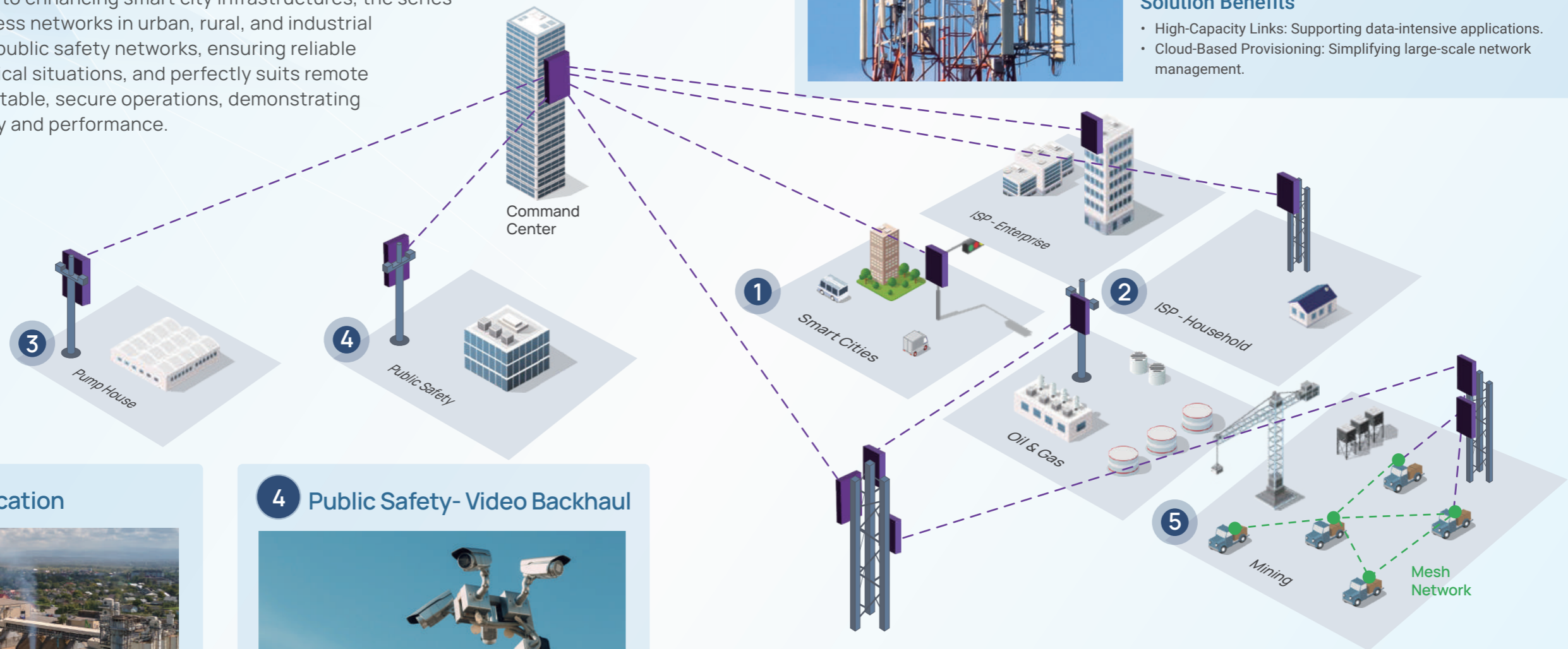
Integrated GPS

Real-Time and Precise Mapping

SkyPoint

Smart Network Mapping:

Shows all APs' physical layout on the map for optimal network planning.

Real-Time Asset Tracking:

Each AP's GPS continuously tracks its location, constantly updating this data in the network inventory.

Move

Precise Issue Location:

When network issues occur, the problem AP's exact location is swiftly pinpointed by its GPS.

Maximizing Connectivity in Urban, Rural, and Industrial Applications

The EnGenius Broadband Outdoor EOC Series excels in diverse settings, offering tailored solutions for each unique application.

From empowering Wireless Internet Service Providers with efficient last-mile connectivity to enhancing smart city infrastructures, the series supports robust wireless networks in urban, rural, and industrial domains. It's ideal for public safety networks, ensuring reliable communication in critical situations, and perfectly suits remote industrial control for stable, secure operations, demonstrating unparalleled versatility and performance.

1 Smart Cities- Utilities & Traffic Intersection

Challenge
Difficulties in network resilience, scalability, and security for diverse urban needs amidst security concerns.

Solution Benefits
- GPS Integration: Efficient smart utility and traffic system deployment.
- Intelligent RF Management: Reliable urban connectivity with minimized interference.

2 Enterprise & ISP Connectivity Services

Challenge
Struggling with network scalability and deployment complexities.

Solution Benefits
- High-Capacity Links: Supporting data-intensive applications.
- Cloud-Based Provisioning: Simplifying large-scale network management.

3 SCADA Application

Challenge
Communication disruptions and security risks in industry.

Solution Benefits
- AES-256 Security: Paramount for SCADA data integrity.
- Adaptive Connectivity: Stable operation in industrial environments for consistent data flow.

4 Public Safety- Video Backhaul

Challenge
Inconsistent video transmission and environmental vulnerability.

Solution Benefits
- High-Speed Video Transmission: Ensure uninterrupted surveillance footage.
- Advanced Layer 2 Features: Efficient traffic segmentation for public safety.

5 Mining- Access & Mesh Network Backhaul

Challenge
Communication instability in harsh in remote environments.

Solution Benefits
- Rugged Outdoor Performance: Suited for harsh mining conditions.
- Effortless Setup via the App: Simplify remote area network management.

Command Center

Pump House

Public Safety

ISP - Enterprise

Smart Cities

ISP - Household

Oil & Gas

Mining

Mesh Network

Streamline Your Broadband Outdoor Network Management

Experience effortless network control with EnGenius' suite of management tools. SkyLink, SkyConnect, SkyLocator, and SkyPoint NMS synergize to offer unparalleled ease in deployment, monitoring, and maintenance, ensuring your network's optimal performance and reliability across all environments.

Download Management Tools

Pre-Install Planning

SkyLink

Link Budget Tool

SkyLink is a critical tool for wireless network planning and design, used in pre-installation. It calculates RF link performance, ensuring network design feasibility and guiding the selection of appropriate equipment and configurations.
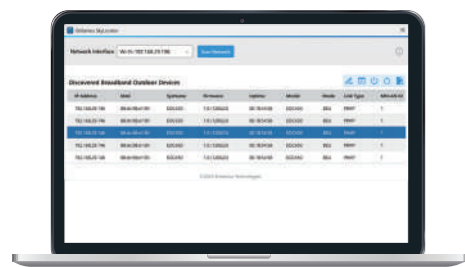
On-site Deployment

SkyConnect

Mobile App

SkyConnect an intuitive app designed to assist users in easily deploying and configuring wireless PTP and PTMP APs. It provides real-time monitoring, various configuration options, antenna alignment assistance, and RF link testing streamlining the setup process.
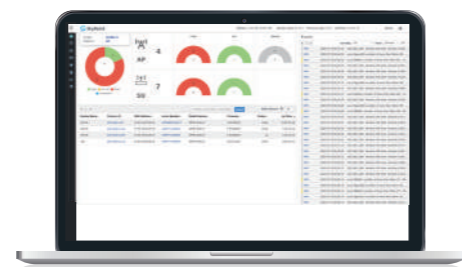
On-site Monitoring

SkyLocator

Discovery and Management Tool

SkyLocator is a tool that helps service providers and enterprises manage outdoor wireless networks by discovering and monitoring outdoor broadband devices. It assists in inventory tracking, performance assessment, and troubleshooting.

Unified Management

SkyPoint

Network Management Software

SkyPoint NMS is a centralized, web-based platform tailored for managing enterprise-class broadband outdoor wireless APs. It offers comprehensive network monitoring, management, template-based setup, and advanced configuration capabilities, serving as a central hub for the entire network infrastructure.

EnGenius Broadband Outdoor EOC Series

Broadband Outdoor Access Point

EOC655

Model Number	EOC655	EOC655-C18
Wi-Fi Standard	802.11a/n/ac/ax	802.11a/n/ac/ax
Radio	5 GHz / 5GHz	5 GHz / 5GHz
Max. Data Rate (2.4 GHz)	-	-
Max. Data Rate (5 GHz)	up to 2.4 Gbps	up to 2.4 Gbps
Radio Chains	2 x 2:2 (per radio)	2 x 2:2 (per radio)
Transmit Power on (2.4 GHz)	25dBm	25dBm
Transmit Power on (5 GHz)	24dBm / 21dBm	24dBm / 21dBm
Antennas (2.4 GHz)	3.5dBi	3.5dBi
Antennas (5 GHz)	N-Type / N-Type	18dBi / N-Type
Antenna Beamwidth	NA	Azimuth:, Elevation:
Power-over-Ethernet	802.3af/at / Proprietary 56V	802.3af/at / Proprietary 56V
Ethernet Ports	1x 2.5G 802.3at PoE Port 1x GE Proprietary PoE Port 6KV Cable Surge Protection on all ports	1x 2.5G 802.3at PoE Port 1x GE Proprietary PoE Port 6KV Cable Surge Protection on all ports
Mounting Type	Pole mount	Pole mount
IP Rating	IP67	IP67
Dimensions	267 x 227 x 82mm 267 x 258.1 x 82mm (w/n-type & cable gland)	267 x 227 x 82mm 267 x 258.1 x 82mm (w/n-type & cable gland)
Operating Modes	AP/STA	AP/STA
MU-MIMO	●	●
Beamforming	●	●
Mobile App	● (SkyConnect)	● (SkyConnect)

EnGenius