



Pomeroy Chooses Ventev Antennas to Ensure Network Coverage and Capacity at Global Manufacturer's Facilities

Executive Summary

Client:

Pomeroy / Global Vehicle OEM Manufacturer

Client Goals:

Bring state-of-the-art wireless connectivity to manufacturing plants across the country to meet demanding coverage and capacity requirements for high-performance voice and data transmission.

- Upgrade Wi-Fi networks to 2.4/5GHz technology for faster voice and data transmission rates
- Ensure seamless network connectivity throughout, even in high-ceiling areas with RF-blocking obstacles
- Reduce CAPEX and interference by limiting number of APs

Product Solutions:

2.4 / 5 GHz 6 dBi Outdoor Omni Antenna- 577629

A Cisco AP-compatible antenna designed to operate with 802.11n/ac MIMO access points.

- Dual-band to support both 2.4 and 5 GHz
- 6 dBi gain provides ample signal strength to reach the floor from high ceilings.
- Rugged enclosure protects in harsh environments



Industrial Beam Clamps- 306544

- Allows quick, easy installation of antennas onto I-Beams

Six-foot Cable Assemblies

Extra-long cable assembly for flexible, precise placement

Pomeroy, a leader in designing, managing and optimizing IT infrastructure, was recently hired by one of the world's largest manufacturers of vehicle OEM components to provide networking, telephony and wireless technology assessments and upgrades for their manufacturing plants across the U.S. The manufacturer required cutting-edge wireless network infrastructure in each plant to support increasing demands for high-performance voice and data transmission.

David King, Pomeroy's managing consultant for Enterprise Networking and Practice Manager for Mobility, and Hoyt Hamilton, a Pomeroy engineer, led the Pomeroy team in assessing the client's current network services and establishing a plan to provide the coverage and capacity needed.

Challenges

Ensuring reliable Wi-Fi connectivity in manufacturing facilities can be challenging. These environments often have multiple, RF-blocking obstacles such as moving machinery and vehicles, rows of metal racks stacked with parts, and building structures. Also, the number of Wi-Fi devices connecting to the network have increased dramatically, and will require additional capacity. In addition, large buildings with high ceilings make it difficult to mount wireless equipment and transmit adequate signal throughout.

The Pomeroy team began the project by performing a detailed analysis of each manufacturing plant's networking infrastructure, number of users, physical structure and the application requirements for the coverage area. The manufacturing plants used older 2.4 GHz technology, Cisco access points and dipole antennas. These facilities had high ceilings, some in excess of 35 feet. Mounting APs lower than ceiling height was not possible because of the nature of the work done in the manufacturing facilities. The relatively low gain that dipole antennas offered caused insufficient signal strength at the floor level, which meant insufficient coverage and capacity. To compensate for higher ceilings and lower gain antennas, additional access points had been inserted into the network to ensure coverage. However, the additional access points actually increased interference and reduced capacity because the original channel mapping was affected and channel spacing decreased without an adjustment to AP power level.

"We wanted to provide ample coverage and signal strength to meet the customer's requirements," said King. "We also wanted to reduce the number of APs used."

Solutions

First, Pomeroy recommended updating the single band 2.4 GHz technology to 2.4/5GHz technology to provide more capacity and additional speed. To accommodate the high ceilings, Pomeroy recommended switching from dipole antennas, which typically have relatively low gain (2-4 dBi) to higher gain 6 dBi omnidirectional antennas. The antenna they chose was Ventev's 2.4/5GHz 6 dBi

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