

Cambium Networks: Industrial Wi-Fi

Reliable, Cost Effective Industrial Alternatives

Cambium Networks' cnPilot™ Wi-Fi industrial solutions are a smart investment when balancing business needs with network performance and budget realities.

Industrial Wi-Fi networks require reliable and secure solutions to support the next generation field area networks that deliver productivity-boosting



performance. Demand for diverse, scalable, high-capacity communications infrastructure only increases – even as budgets tighten.

INDUSTRIAL WI-FI CHALLENGES:

- **Reoccurring cost from licenses:** Many enterprise and industrial Wi-Fi solution OEMs charge annual software license fees and maintenance fees, for basic maintenance and feature releases as well as software bug fixes and patch releases. Most programs require a 1-year minimum commitment and charge per access point (AP), with cost per access point ranging from \$50 to \$500 each. For industrial customers with hundreds or even thousands of APs deployed in their networks, software and maintenance costs represent a huge line item budget expense for annual OPEX.
- **Security:** Because many industrial remote locations lack physical security to prevent network intrusions on site, the systems themselves must be secure. Wi-Fi access points should require secure user authentication and verify certain security parameters before allowing full access to the corporate or guest network. In addition to authentication methods, industrial Wi-Fi must be able to support secure VLANs for different networks and create VLAN tunnels to segment multiple SSIDs for various user groups.
- **Reliability:** Some end users make attempts to utilize enterprise Wi-Fi solutions in more rugged industrial environments, such as housing a non-industrial Wi-Fi access point in an enclosure or cabinet mounted with external antennas. Failure points result due to a few factors; external antennas, RF cables, and many of the access points themselves are not designed to be mounted in an enclosure. Although the initial cost to deploy this type of solution may be attractive, the maintenance cost and potential for failure is high. Additionally, limited antenna options for outdoor

Wi-Fi solutions make RF planning and design difficult for industrial customers trying to deploy systems in areas with high reflection points.

- **Expense:** The lack of reliable industrial Wi-Fi solutions impacts maintenance costs for field dispatches as well as network downtime due to the time and money spent adding or replacing access points in the field. Combined with the software license fees, deployment of non-industrial Wi-Fi equipment generally results in high Total Cost of Ownership (TCO) for industrial end users.

CAMBIUM NETWORKS – PROVEN WIRELESS COMMUNICATIONS SOLUTIONS

A major oil and gas company in Oklahoma was using two known enterprise networking brands – one to provide Wi-Fi access at corporate facilities and guard sites, and the other for Wi-Fi in at remote well sites for access to corporate and guest networks. Declining oil prices drove increasing pressure for the business units to reduce operating expenses. The company decided to try Cambium Networks for long range outdoor point-to-point and outdoor wide area point-to-multipoint solutions to support their field area networks in different regions across the U.S. The reliability, security, and efficacy of Cambium Networks' fixed wireless broadband products offered a compelling solution to overcome their connectivity shortcomings.

DESIGNED FOR THE OUTDOORS

- 802.11ac with dual Gigabit ports
- UV rated IP-67 enclosure
- Operating Temp: -30°C ~ +60°C
- Electrical heater for cold start
- Rugged electrical surge & ESD protection Circuitry
- Flexible Wall mount or Pole mount bracket design
- Special LTE coexistence filter for enhanced interference rejection
- Light weight - 881g

After learning about the companies' Wi-Fi challenges and corporate mandate to reduce operating expenses, Cambium Networks provided cnPilot™ Outdoor 802.11ac Access Points to test in the field. The customer was extremely impressed with the rich features of the cnPilot™ APs, such as automatic channel scanning, band steering, and general outperformance of their existing Wi-Fi solutions. In one field test the customer was able to provide reliable connectivity at a distance of 1 mile from the access point.

In addition to evaluating the RF performance, additional field tests were required to pass the company's network security policies and the cnPilot™ Outdoor APs' ability to integrate into the network. The first test was integrating the cnPilot™ units into the corporate authentication service Cisco ISE, which was successful. Next, the GRE tunneling feature was tested in order to set up separate secure VLANs on different SSIDs such as corporate and guest networks.

Cambium's cnMaestro™ end-to-end management system was installed as the Wi-Fi controller, from which the customer conducted tests of monitoring, data reporting, provisioning, and onboarding features such as zero-touch provisioning, template configuration, bulk software distribution and software updates. cnMaestro™ made the transition to the cnPilot™ Outdoor simple and repeatable for the customer as they continue to replace other access points.

The Cambium Networks was proven in the industrial oilfields of Oklahoma as a reliable, cost-effective, secure Wi-Fi solution, lowering the customer's operating costs by \$17,219 in annual maintenance and software license fees for outdoor Wi-Fi.

	CAMBIUM NETWORKS	CISCO WI-FI	ARUBA WI-FI
Annual Cost for software and maintenance	No Charge	\$100 - \$300 per AP	\$50* - \$350 per AP

**Entry level, controller less version*

Lower TCO: Dual on-board Active/Standby memory banks ensure that the cnPilot™ 802.11ac Outdoor can store two versions of the software – defaulting to working operational software if necessary – reducing the likelihood of site visits and protecting network uptime. With other features such as zero touch provisioning and the benefits of having a cloud or on premise controller with cnMaestro™, the cnPilot™ Outdoor is user-friendly and low-maintenance, reducing overall operating expenses.

Lower Price per AP + NO Annual Software License Fees = LOWER TOTAL COST OF OWNERSHIP



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