How to Provide Seamless Wi-Fi in Challenging Warehouse & Industrial Environments

Presented by Ventev

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How to Deploy Seamless Wi-Fi in Challenging Warehouse Environments

Solutions for Unique Warehouse / Industrial Challenges

March 2, 2016
After you choose the radio, choose Ventev to deploy, protect, power and improve your wireless network

A Comprehensive Ecosystem of Products to Support Your Access Point/Radio

Media Quotes / Customer Testimonials

“If you design wireless networks, you’ll want to know about Ventev.”
Network Computing, “Taking Wireless Infrastructure Outdoors”

“Ventev - a great set of products to help WLAN professionals do their jobs.”
Keith R. Parsons, Managing Director, Wireless LAN Professionals, Inc
Why is wireless network connectivity so important in Warehouse / Industrial environments?
High-performing, high-speed wireless network connectivity is essential in warehouse and other industrial locations

- Provide accurate, real-time information for managing operations
- Track inventory
- Ensure accurate order fulfillment and reliable remote communications.

Wireless devices and applications that depend on seamless Wi-Fi are now found in:

- Manufacturing Facilities
- Food Processing Facilities
- Warehouses
- Distribution Centers
- Big Box Retail Centers
Industry examples:

- Technicians at Lennox, a large manufacturer of heating and cooling systems, use tablets and Wi-Fi to access electronic technical manuals, schematics and track performance data. Production staff depend on network connectivity to monitor product quality, production machine settings and up-time trends and inventory levels.

- Shipping giants such as UPS use handheld RFID / barcode readers to scan and wirelessly (2.4 GHz) send results to asset tracking databases.

- Large retailers, such as Amazon, Home Depot, and Wal-Mart, employ Wi-Fi and several other wireless technologies to streamline and automate operations throughout massive warehouses. Essential business functions include tracking inventory and processing orders quickly and efficiently for shipping.
Deploying safe and reliable Wi-Fi in Warehouse/Industrial environments is uniquely challenging.
Challenging Warehouse/Industrial Areas

- Office Spaces
- Freezer Rooms
- Open Areas
- Aisles
- Loading Docks
- Yards
Wide Open Spaces

Ensuring optimum Wi-Fi coverage in large, open areas with very few mounting surfaces is tough. Protecting valuable access points from dirt, tampering and fast-moving equipment is essential.
Solutions: Wide Open Spaces

Compact Wall Mount
TESSCO No. 521473 w/ cover
TESSCO No. 538527 w/o cover

I-Beam Industrial Mount
TESSCO No. 520384
I-Beam Low Profile Mount
TESSCO No. 520385
**Solutions: Wide Open Spaces**

**Compact Wall Mount**
Allows mounting of indoor access points where they can provide optimal Wi-Fi coverage. Conceals cables and protects AP from tampering, dust and accidents.

**I-Beam Mounts**
New I-Beam Mounts allow safe, easy installation of equipment onto I-Beams. Attach antennas, APs and enclosures at ground level, and then install entire solution onto I-Beam.
Aisles

Warehouses have RF-blocking obstacles such as rows of stacked products that can make coverage spotty or nonexistent.
Solutions: Aisles

Co-Locating Mounts

CISCO AP - TESSCO No. 568600
RPSMA AP - TESSCO No. 520901
Solutions: Aisles

Patch Antennas
External directional antennas focus beamwidth between aisles to provide consistent coverage and capacity. Choose from a full range of high, medium, and low gain antennas.

Industrial Antenna Mounts
Designed for maximum strength and durability for tough indoor and outdoor environments. Articulates vertically and horizontally for precise coverage.

Co-Locating Mount
Durable, articulated mount installs AP and antenna together, making it an ideal choice for high ceilings. Aesthetically pleasing design conceals equipment and wires.
Cold Storage/ Freezer / Refrigeration Rooms

Access points must be protected from cold, condensation, frost and accidents. Thick walls and insulation block signals and make wiring for AC power expensive and time-consuming.
Solutions: Freezer Rooms

Cisco 3702e- 520842
Cisco 3602e- 501516
Aruba 200 Series- 509212

Directional Antennas

Freezer Room Enclosure
Directional Antenna
Solutions: Freezer Rooms

Freezer Room Wireless Enclosure System
Powers and protects indoor access points in refrigerator-type applications.

- Single PoE line; no AC power or outlet needed
- Heating element continuously maintains AP manufacturer-specified operating temperatures
- NEMA 4X polycarbonate enclosure with clear door and latch locks protects against tampering and theft. Water-proof to protect during wash-downs.
- Optional TerraWave Omni Antenna or external Patch Antenna available to improve network coverage

Cisco 3702e- 520842
Cisco 3602e- 501516
Aruba 200 Series- 509212

Directional Antennas
Loading Docks - Indoor

Network continuity is required inside and outside for integrated, efficient tracking and communications. Loading docks are heavy traffic areas; protection from fast-moving equipment is required.
Solutions: Loading Docks - Indoor

Polycarb Enclosures

Compact Wall Mount
TESSCO No. 521473 w/ cover
TESSCO No. 538527 w/o cover

I-Beam Spring Mount

I-Beam Spring Mount with Antenna

I-Beam Spring Mount Video
Solutions: Loading Docks- Indoor

Polycarbonate Enclosures
Ready-to-ship, high-quality polycarbonate enclosures are preconfigured for specific deployments, ready to install AP.

Compact Wall Mount
Allows mounting of indoor access points where they can provide optimal Wi-Fi coverage. Conceals cables and protects AP from tampering, dust and accidents.

I-Beam Spring Mount and 6 dBi Omni Antenna
Install antennas onto I-beams for seamless Wi-Fi. Antenna attaches to mount with an industrial spring that flexes to help minimize damage if bumped. Omnidirectional antennas are an aesthetically-pleasing choice for demanding applications used in indoor wireless systems.

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Loading Docks- Outdoor, Connecting Network to Fleet Vehicles

Efficient asset and fleet management depends on reliable high-speed data transmission.
Solutions: Loading Docks Outdoor Connecting to Fleet
**Solutions: Loading Docks Outdoor Connecting to Fleet**

**Mobile Antennas**
Provide high-performing wireless connectivity across LTE, Wi-Fi and GPS for reliable, high-speed data transmission needed in warehouses and distribution centers.

**Directional Antennas and Industrial Mounts**
Ensure seamless connectivity between incoming vehicles and warehouse network. Industrial mounts are designed for maximum strength and durability to safely install heavier antennas and equipment in tough environments.

**PoE Enclosures**
Enables the use of indoor APs in outdoor applications. Housed in a 12”x10”x6” NEMA 3RX enclosure, this compact system includes heating / cooling to keep temperature of the enclosure within manufacturer specified operating temperatures.
Extending Wi-Fi outdoors to surrounding grounds, parking lots and industrial yards to manage communications, assets and inventory can be expensive and labor intensive.
Solutions: Outdoors and Yard

- PoE Enclosures
- Directional Antennas
- Antenna Mounts
- Outdoor UPS for Wi-Fi Access Points
- PoE Enclosure
- Outdoor UPS for Wi-Fi Antennas
- PoE Enclosure with Directional Antenna
Solutions: Outdoors and Yard

Temperature-Controlled Enclosures
Safely expands indoor Wi-Fi outside. Delivered fully-integrated with heating, cooling or both to protect even in extreme weather.

Directional Antennas and Industrial Mounts
Ensure seamless connectivity between incoming vehicles and warehouse network. Industrial mounts are designed for maximum strength and durability to safely install heavier antennas, and equipment in tough indoor and outdoor environments.

Outdoor UPS for Wi-Fi Access Points
Provides 4 - 8 hours reliable battery backup for one or two APs to ensure network reliability during power outages. Ideal for powering APs or security cameras on light poles with intermittent power.
Office Spaces

Administrative office spaces require high performance Wi-Fi and aesthetically pleasing installations.
Solutions: Office Spaces

Ceiling Tile Enclosures

Bubble Enclosures

Compact Wall Mount

TESSCO No. 521473 w/ cover
TESSCO No. 538527 w/o cover

Bubble Mount

Compact Wall Mount

Ceiling Tile Enclosure
Solutions: Office Spaces

Ceiling Tile Enclosures
Conceal access points within ceiling tile grids and protect from tampering, theft and dust.

Bubble Enclosure
Durable Bubble Enclosures hide APs and provide affordable protection from damage caused by dust, theft or tampering. Accommodates APs with integrated antennas.

Compact Wall Mount
Allows mounting of indoor access points where they can provide optimal Wi-Fi coverage. Conceals cables and protects AP from tampering, dust and accidents.
Case Study: Global Furniture Manufacturer

**Ventev Customer:** One of the largest manufacturers of furniture in the world with over 450 stores in North America alone and regional warehouses across the country

**Challenges**
- Ensure Wi-Fi coverage and capacity for reliable, high-speed data transmission throughout the new distribution facility.
- The antennas need to be durable and compatible with the Cisco 3702 access point.

The customer planned to include the antennas in the site survey, test the products at the new site, and then rollout the solution in new site and upgrade sites across the country.

**Solutions:**
- For uniform coverage and capacity in all areas: **6 dBi Omnidirectional Antenna (SKU 577629)**
- To focus coverage throughout aisles of RF-blocking products: **2.4/5 GHz 6 dBi Quad Patch Antenna (SKU 503910)**
- For data backhaul within the warehouse: **Sector Panel Antenna (SKU 524955)**
Solutions for Warehouse/Industrial

Coverage
Improve WLAN coverage with Ventev TerraWave broad choice of Omni and Patch Antennas

Capacity
Improve WLAN throughput/bandwidth/capacity with Ventev TerraWave High Density Antennas

Aesthetics
Allow wireless equipment (APs, antennas, mounts) to blend in inconspicuously into indoor or outdoor environment by design: concealed, small form factor, camouflaged

Security
Add built-in security against theft and tampering in workplace environment or outdoors

Protection
Add protection against physical elements (dust, debris, impact) in workplace environment or extreme weather conditions (hot/cold, rain/sleet/snow/ice, corrosion) outdoors

Power
Enable alternative power sources outdoors (PoE, Solar) and backup power for mission critical applications.

Go to Warehouse Solutions Online
Warehouse Installation - Typical Scenario

1. What AP are you using?

2. What type of environment?

3. Do you need to protect/power the AP?
   Integrated enclosure solutions (ease of installation)

4. How will you mount APs/Antennas/Enclosures?
   Spring mount, warehouse mounts
   Extend the antenna - cable extension in any length
   Using CISCO antenna 2566? Adapter plate with optional mount

5. What type of antennas are needed?
   Omni (577629)
   Patch (503910)
   High Density options (572251)

6. Site survey?
# Products and Solutions

## Antennas
- Patch/Panel
- Omnidirectional
- Rubber Duck
- Direct Mount
- Dual-Band, Single Band

## Enclosures
- Ceiling Tile
- Wall Mount
- Polycarbonate
- Bubble
- Temperature-Controlled
- PoE Enclosures

## Mounts
- Pole/Mast Mounts
- Wall Mounts
- I-Beam Mounts
- Warehouse Mounts

## Cable
- Bulk Cable
- Cable Assemblies /Jumpers
- Lightning Arrestors
- Splitters /Couplers
- Connectors
Why choose Ventev?

The Ventev Advantage

• Unrivaled product expertise
• A comprehensive ecosystem of products to support your radio or access point
• Accessory product development
• Easy-to-install, pre-configured, fully-integrated radio deployments
• TerraPoints partnership with GigaWave®

The TESSCO Advantage

• Comprehensive inventory
• Access to your pricing
• Risk-free purchasing, guaranteed delivery
• Exceptional customer service
• Access to technical and educational tools and training

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