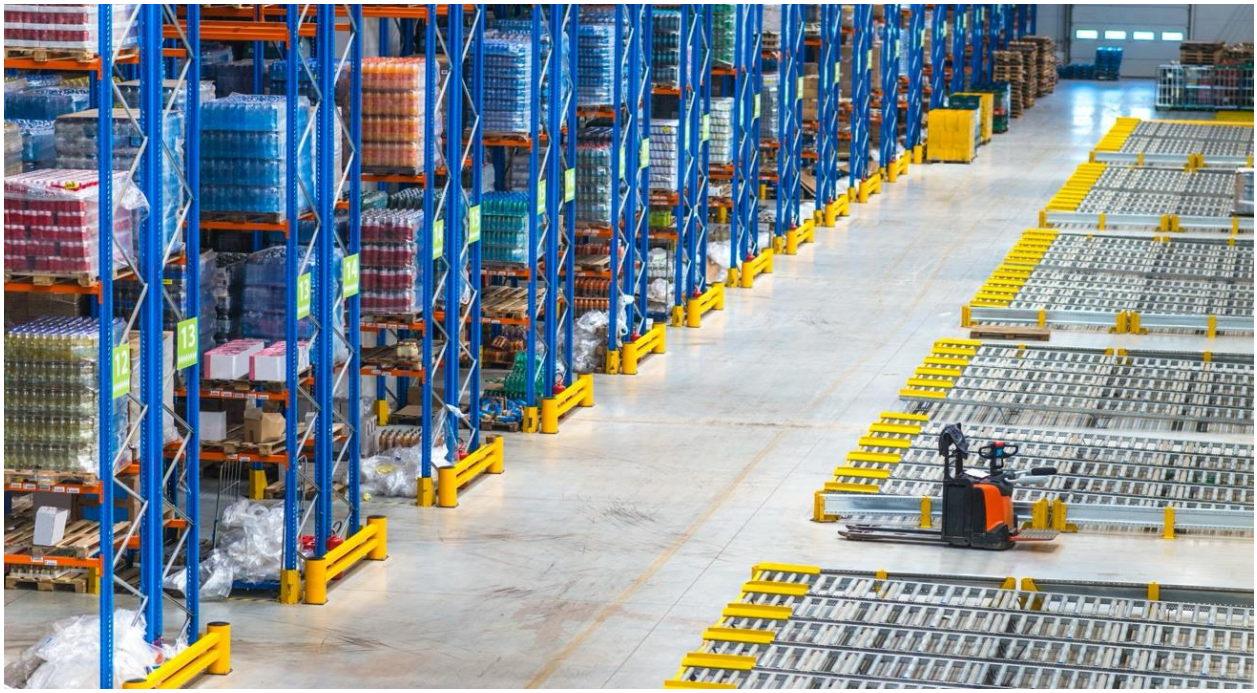


Overview

Altai Technologies empowered a cold chain logistics service provider to provide seamless cold chain logistics service. 29 x Altai A3-Ei access points and AltaiGate 210 WLAN management platform ensured continuous operations of warehousing management system, robotic operations and real-time temperature monitoring across various sections in the Cold Room.

Challenges

The customer, a pioneer in cold chain logistics provider, faced several challenges, including:

- **Stringent Cold Storage Conditions**: The cold room operated at designated temperature ranges - from 0-4°C, -18°C, -18 to -25°C and -25°C across various sections
- **Spotty Coverage**: The physical structure of the cold room, including insulated walls and mezzanine levels, posed significant obstacles to Wi-Fi signal propagation.
- **Power and Back-haul limitations**: All access points needed reliable power sources and Ethernet backhaul, which had to be carefully planned to avoid exceeding the 100-meter cable limit.
- **High Installation Requirements**: Access points had to be installed on high masts to ensure optimal coverage and clear sightlines across the area.

Customer:
A Cold Chain Logistics Provider

Deployment Location:
Hong Kong

Application:
Warehouse management system and autonomous robotic operation

Products used:
Altai A3-Ei & AltaiGate 210

Result:
Deployed 29x A3-Ei access points and 2 AltaiGate210 in the cold storage warehouse to provide seamless Wi-Fi connectivity in a challenging environment with temperatures ranging from -18°C to -25 °C.

The project achieved several immediate benefits, including seamless network connectivity, operational efficiency, and a scalable network design for future expansions. By utilizing robust technologies tailored for demanding conditions, this deployment not only addressed immediate logistical challenges but also set the foundation for ongoing improvements in cold chain operations. The integration of advanced networking and sophisticated logistical application accomplished operational excellence in cold chain service.

2025 Altai Technologies Ltd. All Rights Reserved

- **Automation and Connectivity Needs:** The warehouse's reliance on fully automated systems meant that any down-time in connectivity was unacceptable. All devices, such as Autonomous Mobile Robots, automatic door and conveyor belt systems, needed to be continually connected to the network with zero dead spots.



Source: IT PRO Magazine

Solution

- **Altai A3-Ei Access Points**: 29x A3-Ei access points were strategically installed throughout the cold room. With the capability to support up to 1000m line-of-sight (LOS) access, these access points are designed to operate in extreme temperatures, from -40°C to 60°C.

- **High Mast Installation**: Access points were installed on high masts to overcome physical barriers and ensure comprehensive coverage across the cold storage area.



Source: IT PRO Magazine

- **Centralized Wi-Fi Management:** AltaiGate 210 WLAN management provided full access point management, real-time Access Points/client station monitoring and statistics, ensuring seamless operations and monitoring.

Benefits

- **Enhanced Connectivity:** Robust Wi-Fi coverage enabled uninterrupted connectivity, improving communication and data transfer among various stations and client devices communicate within the cold room.
- **Cost-Effectiveness**: Industry-leading RF performance delivered coverage with much fewer access points, therefore requiring much lower deployment cost.
- **24/7 Zero Down-time Operation:** Leveraging Altai's AlwaysConnected feature, the cold chain was guaranteed zero down-time and low-latency connections, allowing all devices to maintain continuous network access, ensuring that automated systems remain operational and efficient 24/7.
- **Future Proof**: Altai delivers industry's richest set of client roaming performance and resilience, giving warehouse operators unmatched advantages in expanding robotic applications in the future.

Altai Technologies Limited
Unit 209, 2/F, Lakeside 2, 10 Science Park West Avenue, HK Science Park, Shatin, Hong Kong

Phone: +852 3758 6000
Fax: +852 2607 4021
Email: info@altaitechnologies.com
Website: www.altaitechnologies.com

2025 Altai Technologies Ltd. All Rights Reserved