

**ADVANTECH**

*Enabling an Intelligent Planet*

# Advantech's Rugged DLT VMTs with DeviceOn Enable Reliable Operation and Remote Device Management at the Tianjin Port



Location: Tianjin Port, China

Customer: Tianjin Port Container Terminal (TCT)

System Integrator: ShouHui (Tianjin) Technology Co. Ltd

# Project Introduction

The Tianjin Port is a major modern port in China. Not only is it the largest port in northern China, but also one of the top ten largest container ports in the world. In 2023, Tianjin Port achieved a cargo throughput of 476 million tons and a container throughput of 22.17 million TEUs. Tianjin Port Container Terminal (TCT), owned by the Tianjin Port Group, is one of the container terminal operators with an annual handling capacity of 6.0 million TEUs.

In 2010, as its first step toward digitalizing terminal operations, TCT implemented Advantech's Intelligent Vehicle Mount Terminals (VMTs) on quay cranes, RTGs, stackers, and trucks to facilitate data processing and improve container handling efficiency. For this project, Advantech worked closely with its partner, Tianjin SH Technology, to provide not only industrial-grade VMTs but also comprehensive technical support. As a result, when TCT decided to upgrade its old VMT devices for enhanced computing performance, it chose Advantech's latest DLT series of VMTs.

General Manager Wang Chengxu of ShouHui Technology, mentioned that the reliability and longevity of devices as the most important factors for port companies looking to reduce turnaround times and maintain stable operations. Advantech's [DLT-V8312](#) and [DLT-V7210K](#) models offer high computing performance, a durable system design, and long product lifespans. In terms of software support, both models are certified with the Navis N4 Terminal Operating System to ensure seamless upgrades and are compatible with Advantech's DeviceOn solution for advanced device management.

## System Requirements

- 10" and 12" displays with rugged touchscreen
- Built-in antenna with high signal reception capability
- Programmable keys and integrated full-size keyboards
- 4G/LTE and external antenna support
- Supports smart device management solution
- Certified with Navis N4

# Deployed Products



[DLT-V8312](#)  
[12.1" Rugged VMT](#)

- All-around IP66 rating
- Programmable front keys (5/26 keys)
- Certified with Navis N4 software
- Supports Advantech DeviceOn software



[DLT-V7210K](#)  
[10.1" Rugged VMT](#)

- All-around IP65 rating
- Programmable front keys and integrated full-size keyboard
- Certified with Navis N4 software
- Supports Advantech DeviceOn software

## Applications and Benefits

### Improved Efficiency and Reduced Downtime with Industrial-Grade System Design

Equipped with Intel® Core-i5 processors, Advantech's [DLT-V8312](#) devices were installed on quay cranes and RTGs to deliver high computing performance for efficient cargo handling. Meanwhile, the [DLT-V7210K](#), integrated with a full-size 55-key keyboard, was installed on container stackers and trucks to allow easy and accurate data input. Tianjin Port is located in a mid-high latitude zone, experiencing hot, humid summers and cold, windy winters, with winter temperatures reaching as low as -10°C to -15°C. Additionally, sea winds carry large amounts of salt, combined with high humidity, which are the main causes of equipment corrosion at ports. DLT VMTs feature a wide operating temperature range (-30 ~ 50°C / -22 ~ 122°F) to withstand extreme cold, and they are IP66/65-rated to protect against water and sea salt ingress.

## **Secure and Reliable Data Transmission with the Latest Communication Technologies**

Secure and reliable data transmission is a top priority for container port operations, as it enables real-time coordination of vessel docking, container handling, inventory management, and transport arrangements. This improves efficiency, reduces costs and delays, and enhances collaboration and security. The DLT Series VMTs support the latest WLAN, 4G/LTE, and Bluetooth 5.0 technologies, and are equipped with additional RSMA and SMA connectors for external antennas to provide enhanced wireless connectivity and uninterrupted data transmission, ensuring all vehicles remain connected during critical operations.

## **Advanced Device Management and Seamless System Upgrades with Advantech DeviceOn Support and Navis Certification**

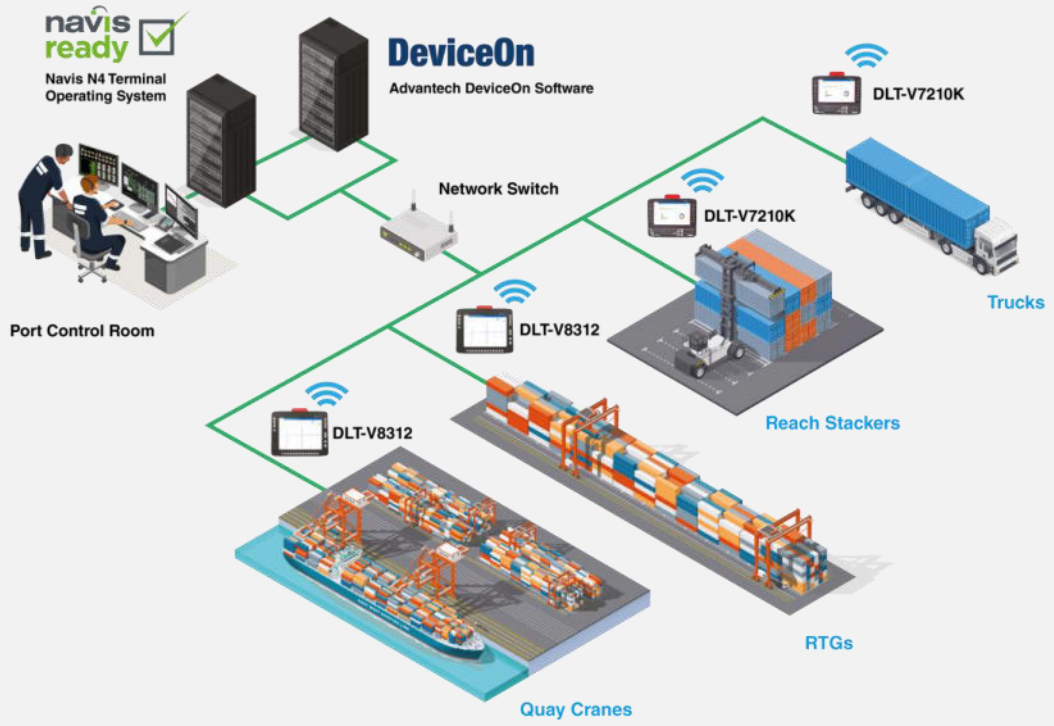
The [DLT-V8312](#) and [DLT-V7210K](#) series are equipped with Advantech's DeviceOn software, a next-generation unified device management solution based on the WISE-DeviceOn platform. With support for batch operations and multi-device control, DeviceOn enables easy device configuration and deployment, making remote device management more convenient. Additionally, both devices are certified with Navis N4 TOS software, ensuring seamless integration into Navis N4 environments on both the hardware and software levels.

## **Successful Project Implementation through a Strong Partnership**

Since 2010, Tianjin Port Container Terminal has established a long-term and robust partnership with Advantech and ShouHui Technology. ShouHui Technology brings extensive experience in meeting the port's environmental requirements, system specifications, and equipment integration. Advantech provides professional and reliable hardware solutions, while ShouHui Technology offers comprehensive technical support, including pre-planning, implementation, and post-service, as well as on-site equipment installation and testing. This project successfully reduced downtime at Tianjin Port, ensuring uninterrupted 24/7 operations. The success of Tianjin Port demonstrates the outstanding performance of Advantech's VMT products and the exceptional technical services provided by our partners, which is why customers continue to choose Advantech VMT products.

# System Diagram

## System Diagram



# Related Products

## Advantech DLT-V83



10.4"/12.1"/15.1" Rugged, High-Performance Vehicle Mount Terminal

- 10.4"/12.1"/15.1" color TFT display
- Intel® Core™ i5-4300U/Celeron® 2980U dual-core processor
- Rugged, IP66-rated design with 5M2/5M3 certification
- Fully configurable to support specific application requirements
- IK08-certified touchscreen for impact tolerance and abrasion resistance
- Wide operating temperature range (-30 ~ 50 °C/-22 ~ 122 °F) to withstand extreme environments
- Supports latest WLAN standard with seamless Wi-Fi roaming capability
- Certified with SOTI and Navis N4 software

## Advantech DLT-V7210 K



10.1" Rugged Vehicle Mount Terminal with Keyboard

- 10.1" widescreen WXGA color TFT display with 1280 x 800 resolution and 500 cd/m<sup>2</sup> brightness
- Intel® Atom® E3845 quad-core, 1.91 GHz, with 4 GB RAM
- Superior wireless connectivity and roaming capabilities
- Abrasion-resistant projected capacitive touchscreen with IK08 impact protection
- Full IP65 rating for water and dust resistance, and 5M3 certification for shock and vibration tolerance
- Wide operating temperature range (-30 ~ 50 °C/-22 ~ 122 °F)
- Integrated keyboard for convenient operation
- Optional uninterruptible power supply
- Certified with SOTI MobiControl and Navis N4.3.6 software