



Case Study

Boosting Operational Efficiency at Indonesia's JICT Terminal with Darveen VT-540A & VT-740A VMCs

PT Jakarta International Container Terminal (JICT), located at Tanjung Priok Port in Jakarta, Indonesia, is one of the country's largest container terminal operators. Jointly established by Hutchison Ports and Indonesia's state-owned port operator Pelindo, JICT operates a 1,640-meter quay equipped with 16 quay cranes and 60 rubber-tired gantry (RTG) cranes, with an annual handling capacity of approximately 2.5 million TEUs.

Serving more than 20 global shipping lines, JICT is a key gateway for Indonesia's international trade. Efficient coordination between yard equipment, truck fleets, and the terminal operating system (TOS) is essential to maintaining smooth container handling operations.

Application

To improve container transfer efficiency between the yard and gate areas, JICT deployed Darveen **VT-540A** 7-inch and **VT-740A** 10.4-inch Android 11 industrial vehicle mount

computers on terminal tractors, RTG cranes, and other yard equipment.

Connected to the terminal operating system (TOS), these rugged vehicle mount terminals provide real-time work orders, container information, equipment status, and location data, while improving control-center visibility.

Challenges

JICT's outdoor terminal environment creates demanding requirements:

- **Harsh outdoor conditions:** High temperature, humidity, salt mist, and direct sunlight can accelerate display degradation and corrosion of standard commercial devices.
- **Unstable vehicle power:** Terminal tractors and cranes can generate significant voltage fluctuations and transient surges during engine or equipment startup, potentially causing unexpected reboots and data loss.
- **Continuous vibration and shock:** Vehicles operating across container yards are

exposed to constant vibration and mechanical shock, requiring ruggedized computing hardware.

- **Complex wireless coverage:** Wireless signals can vary across deep yard areas, quay crane zones, and gate areas, making reliable Wi-Fi roaming and cellular connectivity essential for real-time TOS communications.

Solution

VT-540A Vehicle Mount Computer for Terminal Tractors



The [VT-540A](#) is used for task dispatch, vehicle positioning, operational data transmission, and driver interaction.

- 7-inch 800 × 480 capacitive touchscreen with 0–9 numeric keys and F1–F6 programmable function keys; supports glove operation.

- Rockchip RK3399 hexa-core processor, fanless aluminum die-cast housing, and IP65 protection.
- 8–36V DC wide-range input, wide-temperature operation, and MIL-STD-810G vibration and shock testing.
- Dual-band Wi-Fi 5, Bluetooth, 4G LTE/5G, and multi-mode GNSS for TOS tasks, vehicle tracking, and real-time data communication.

As a container terminal vehicle PC, the VT-540A gives drivers direct access to dispatch instructions and container information while transmitting vehicle location data to the control center.

VT-740A RTG Crane Vehicle Computer



The [VT-740A](#) is deployed on RTG cranes for graphical task display, bay information, spreader status, and operational alerts.



- 10.4-inch capacitive multi-touch display with clear visualization of operational information.
- Rockchip RK3399 hexa-core processor, rugged aluminum housing, IP65 protection, and -20°C to 60°C operating temperature.
- Optional Wi-Fi, Bluetooth, 4G/5G, and GPS for reliable wireless communication and roaming.
- LAN, COM, and USB interfaces for industrial peripherals such as RFID readers and PLCs.

As an RTG crane vehicle computer, the VT-740A provides operators with a larger interface for accessing bay layouts, equipment status, and operational alerts.

Results

The deployment of [VT-540A](#) and [VT-740A](#) improved real-time visibility and coordination across JICT's yard operations. Drivers can access dispatch tasks and container information, while GNSS enables vehicle tracking and RTG operators can monitor bay layouts, equipment status, and alerts. Rugged construction, IP65 protection, and reliable Wi-Fi/4G/5G connectivity support stable operation in demanding terminal environments while reducing device-related maintenance.

Local Support for Port Terminal Operations

Darveen worked with its local Southeast Asian partner to provide deployment and on-site technical support. Combining rugged vehicle mounted computers with local service support gives container terminal operators a reliable VMT Terminal solution for mobile computing, wireless connectivity, and TOS integration in demanding yard environments.

About Darveen

Established in 2007, Darveen is dedicated to developing rugged industrial computing solutions tailored to the diverse needs of vertical industries. Our product portfolio includes vehicle mount computers, industrial panel PCs, industrial displays, embedded box computers, and rugged tablets. With nearly two decades of experience in product design and manufacturing, Darveen's solutions are widely adopted in smart ports, warehousing and logistics, and heavy-duty vehicle applications. Riding the Industry 4.0 wave, Darveen is expanding its reach into edge computing, smart manufacturing, industrial automation, healthcare, and marine sectors.

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