



www.winmate.com

WAREHOUSE & LOGISTICS

Warehouse Management/
Manufacturing/
Logistics

SOLUTIONS TO DRIVE
SUPPLY CHAIN INNOVATION

Q1 - 2023

About Winmate

Founded in 1996, Winmate Inc. is a pioneer in rugged computing technology. Winmate has provided business leaders worldwide with reliable, robust solutions for the most challenging industrial conditions for over two decades. From R&D to manufacturing to in-house testing, Winmate Inc. manages the entire product development process with ready-made products available for quick deployment. Today Winmate's innovative approach has helped countless enterprises at every level with equipment automation and seamless Industrial Internet of Things (IIoT) integration.

From the industrial display, panel PC, HMI, embedded systems to rugged mobile devices, Winmate caters to industries ranging from transportation and logistics to marine and military, railway, oil, and gas, and provides customization services to create a unique solution for specific customer requirements.

The Winmate Difference

Innovation and Ruggedness

With innovation and ruggedness, our products are designed to meet the requirements of vertical markets' environmental standards.

Engineering Intelligence

We are committed to maintaining the highest standards in engineering excellence to ensure our products deliver reliability, durability, and optimized performance.

Quality Commitment

Quality assurance and entire engineering processes are conducted in-house. It is why we invested significantly in our state-of-the-art testing facility with additional global support.

“ **INNOVATIVE
TECHNOLOGY FOR
OPERATIONAL
EXCELLENCE.** ”

Efficiency

Our team is committed to efficiency and maintaining the shortest possible development cycles. The whole development process is conducted in-house to achieve the market advantage in speed and quality from design to testing.

Reliability

Reliability, service, and support are part of our foundation. Every product scrutinizes industrial standards testing to verify electrical, mechanical, thermal, and firmware design performance.

Customized Solutions

Years of experience allow Winmate to offer customized solutions for different applications.

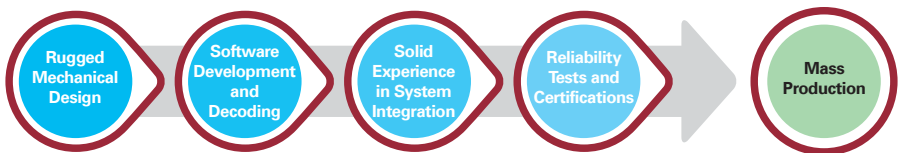
From product design to accessories, our engineering team designs and support the system integration process.

- CUSTOMIZED CONFIGURATION
- CUSTOM OS IMAGE
- CUSTOM BIOS
- ENCLOSURE DESIGN
- PERIPHERALS AND OPTIONS
- CUSTOM-DESIGNED ACCESSORIES

Technical Know-How

We understand that access to cutting-edge solutions purposely built for their applications is imperative for enterprises operating in rugged or potentially hazardous environments. As a result, Winmate locates its resources from project research and design, software development and customization, product verification and validation, and in-house testing to research and implement the latest technologies available.

The latest technologies we deploy for our rugged products:



- Dry and wet optical bonding
- Panel enhancement for sunlight readability
- Anti-reflection (AR) and anti-glare (AG) glass protection coating
- Light sensor
- Hyper dimming
- Electronic potting
- Touch screen integration: projected capacitive, resistive, or SAW touch
- Waterproof enclosure
- Military EMI and mesh coating
- Wireless capabilities
- Data capture devices integration
- Defroster for ultra-low temperature environments
- Stainless steel SUS 316/ AISI 316
- Shock and vibration resistance
- Wide-range operation temperature

Logistics and Transportation

Overview

In the warehouse environment, the ability to mount mobile devices and computers to forklifts, trucks, tuggers, and inventory pickers is essential for maximizing productivity. From inventory management to order fulfillment, asset tracking, shipping, and receiving, the warehouse floor is a complex ecosystem requiring highly efficient technology to keep things running smoothly.

Our vehicle mount computers include:

- The latest Android™ or Windows® operating system
- Robust wireless communications
- Vehicle mounting solutions

Winmate's rugged vehicle-mounted computers and rugged tablets are designed to fit seamlessly into forklifts and other warehouse vehicles, which helps minimize errors, streamline ordering and inventory management, and improve operational efficiencies.

Industrial Challenges

• **In-vehicle installation**

Computer hardware tailored for warehouse and logistics must be compatible with RAM mount or VESA mount in-vehicle installation methods.

• **Unstable power supply from the vehicle**

Instability during start-up and shutdown can cause system crashes and restarting issues. Devices that receive power from the vehicle must have a solution to ensure stable performance in unstable power supply situations.

• **Working in cold storage areas**

In a large warehouse environment, forklifts frequently go back and forth between the cold storage areas and room-temperature environments. The computer devices must show stable performance in low and high temperatures.

• **Driver's safety**

The computer must not distract the driver.

• **Strong vibration**

Devices installed on a forklift must be rugged enough to withstand all-day operations and vibration from the vehicle.

Technology

- RAM mount and VESA mount solutions
- Wide-range power input and ignition control
- Built-in defroster to work in cold storage
- Screen blanking function to automatically control screen behavior
- Waterproof, dust, and drop resistant IP65-rated enclosure
- Accessories tailored for warehouse and logistic applications



WE DELIVER RUGGED COMPUTING SOLUTIONS FOR YOUR LOGISTIC NEEDS.



RUGGED HANDHELD COMPUTERS

Rugged and robust handheld computers with built-in data collection options can stay connected no matter where the task takes you!



RUGGED TABLETS

Portable and wireless rugged tablet computers can survive in any environment and get real work done.



VEHICLE-MOUNTED COMPUTERS

Rugged vehicle-mounted computers are used for data collection in the warehouse and logistic applications, designed to fit seamlessly into forklifts, trucks, and other vehicles.

Application Story

Forklift Automation



Background

In our increasingly interconnected world, transportation and logistics play a crucial part in a globalized world that's keeping goods and workers on the move. Forklifts equipped with Winmate's vehicle-mounted computers can solve challenges in material handling. Modernized automated technology stands to reduce labor costs, minimize errors, streamline ordering and inventory management, and improve operational efficiencies.

Core Products

- Vehicle-mounted computers

Main Challenges

- Working in cold storage areas
- High level of vibration
- Mounting onto the forklift
- The device is subject to drops and breakage

“ **TECHNOLOGIES TO SIMPLIFY WAREHOUSE MANAGEMENT AND SPEED UP WAREHOUSE OPERATIONS.** ”

Why Winmate

- Reliable solution for cold environments
- Modular system that is easy to replace
- Vibration resistance
- RAM mount solution



Application Diagram: Forklift Automation

Application Story

Inventory Management



Background

Data collection, advanced communication, and connectivity are essential for efficient warehouse operations. Winmate's rugged tablets and mobile computers enable automation in the warehouse, which increases material handling, reduces costs associated with handling delays, and streamlines the supply chain. A built-in barcode scanner or RFID reader makes tracking incoming and outgoing shipments easier and enables warehouse inventory information to be monitored in real-time. Check a shipment's status and locate inventory records instantaneously. Advanced communication options enable uninterrupted communications and connectivity.

Core Products

- Rugged mobile computer
- Rugged tablet

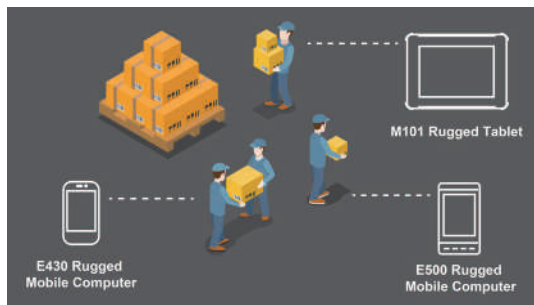
Main Challenges

- Scanning different types of barcode
- Working a full day

Why Winmate

- Rugged construction
- Integrated barcode scanner
- High capacity battery and battery hot-swap
- Fast and efficient customization service

“**STREAMLINE ORDERING AND INVENTORY MANAGEMENT, AND IMPROVE OPERATIONAL EFFICIENCIES.**”



Application Diagram: Inventory Management

Application Story

AMR Lift Truck



Background

As technologies for sensing, mapping, and navigation have improved over the last decade, AGV (Automated Guided Vehicles) and Autonomous Mobile Robots (AMR, or Industrial Mobile Robots) are now available as an alternative to forklift trucks in warehousing, intralogistics industry, and factories. While AGVs often work in an environment separated from humans to maintain safety, AMR lift truck offers flexibility in navigating the workspaces through autonomy technology that combines data from cameras, LiDAR, and machine learning. The AMR's main components include an HMI controller, computing unit, battery, motors, sensors, and camera.

Core Products

- 7 to 14 inches Android / Windows vehicle-mounted computers
- 8 to 15 inches G-Win VM series Panel PC

“ **AMR LIFT TRUCK IS CONSIDERED MORE FLEXIBLE.** ”

Main Challenges

- Indoors to outdoors material flow
- Wide range of connectivity with stable computing capabilities

Why Winmate

- Reliable and versatile computing capabilities
- Each product has been tested based on the MIL-STD 810G/H against vibration, drop, and impact.



Application Diagram: Winmate rugged computers are designed durable and silent, adopting a fanless cooling system.

Application Story

Port Management



Background

The customer looked for tablets that can be carried around in hand and mounted in vehicles. Winmate offers a rugged tablet computer for the client to mounted in cars or carry on hand; it is user-friendly and easy to use. For better communication, our tablets offer 4G LTE WWAN, WLAN, GPS, and BT for port management solutions; also, they are certified by MIL-STD-810G and IP65 standards. Winmate solution brings you ruggedness and helps to increase productivity.

Core Products

- 10.4" Vehicle Mounted Computer, FM10
- 8" Rugged Tablet, M900P

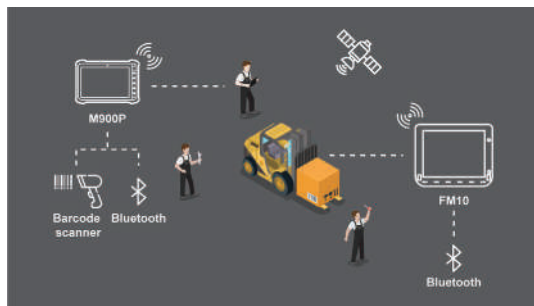
Main Challenges

- Fast delivery
- Easy to carry

“ **IMPROVE EFFICIENCIES WITH VEHICLE-MOUNTED COMPUTERS.** ”

Why Winmate

- Local support in Singapore/ Malaysia
- Competitive price
- Follow up tight with the right channel
- Provide the POC unit on time to match customer urgent demand



Application Diagram: Low-power components of industrial computers prevent overheating and are less likely to achieve high temperatures in the first place.

4.3" Android Rugged Handheld Computer E430RQ8



Custom configuration

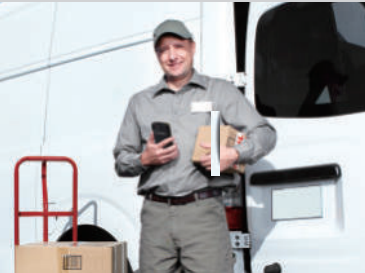


Barcode
Reader



NFC RFID
Reader

Application



Delivery Services

"RUGGED MOBILITY IN A
POCKET-SIZED DEVICE"

A famous chain store now uses versatile 4.3" Rugged Mobile Computer E430 with integrated 1D/2D barcode scanner to increase delivery services' efficiency. Ultimate productivity and data collection tools combined in a pocket-sized device to speed up delivery time and increase customer satisfaction.



**“ RUGGED EFFICIENCY
ON-THE-GO. ”**

- 4.3", 800 x 480, PCAP touchscreen
- Qualcomm® Snapdragon™ 660 (Octa-Core 2.2 GHz)
- Android 9.0

3 GB RAM, 32 GB eMMC

8 MP webcam, 13 MP rear camera with autofocus

Ambient light sensor, E-compass, Gyro & acceleration sensors

WLAN, BT

USB 3.0 Type C (OTG), docking connector

NFC (Read / Write, Peer-to-Peer mode)(Optional)

260g lightweight portability

IP65 waterproof and dustproof

MIL-STD-810G shock, vibration and drop resistance

5" Rugged Handheld Computer E500QK



“ **RUGGED DESIGN
BUILT TO SURVIVE.** ”

- 5", PCAP touchscreen
- Qualcomm® Snapdragon™ 660 (Octa-core 2.2 GHz)
- Android 9.0

3 GB RAM, 32 GB eMMC

Optical bonding for sunlight viewability

8 MP webcam, 13 MP rear camera with autofocus

WLAN, BT, GPS/ GLONASS

19 keypad include power key

Ambient light sensor, E-compass, Gyro, acceleration sensors

IP67 waterproof and dustproof

MIL-STD-810G shock, vibration and drop resistance

Custom configuration



Docking
Connector



NFC RFID
Reader



WWAN

Application



Courier Shipping Service

“COMPACT AND DURABLE
HANDHELD COMPUTER”

Rugged specifications of the compact E500QK handheld computer mean that personnel can take photos, enter data, and take photos in any harsh environment. The latest

Android operating system offers tremendous potential for developing or adapting mobile computer applications.

7" ARM A53 Android Vehicle Mounted PC FM07M



Custom configuration



Application



Easy In-Vehicle Installation

“SUPPORTS BOTH VESA AND RAM MOUNTS”

Winmate FM07 series supports both VESA mount and RAM mounts to help you save the time and ease installing the vehicle-mounted computer. The FM07M is easily mounted and fully-rugged, helps you to have higher work efficiency.

“VEHICLE POWER SOLUTION.”

- ARM A53 Quad Core 2.0GHz Processor
- 7", 1024 x 600 panel with projected capacitive multi-touch screen

Wide power input 9-24V DC with ignition

Wide-range operating temperature

RAM mount, support VESA mount

M12 waterproof connectors , IP65 waterproof and dustproof

Shock and vibration resistance according to MIL-STD-810H

Support Android or Linux operating system

7" Vehicle Mounted Computer with M12 connector

FM07/ FM07E



“ VIBRATION AND SHOCK-PROOF DESIGN. ”

- Intel® Celeron® N3350 Apollo or Intel® Celeron® N6210 Elkhart Lake
- 7", 1024 x 600 panel with projected capacitive Multi-Touch screen
- Wide power input 9-36V DC with ignition

M12 waterproof connectors

IP65 waterproof and dustproof

Shock and vibration resistance according to MIL-STD-810G

Programmable function keys

Built to survive the extreme temperature range

Custom configuration

Up to
16 GB

Memory
(FM07E)

Up to
8 GB

Memory
(FM07)



WWAN

Application



Warehouse Management

“IMPROVE OPERATIONAL EFFICIENCIES WITH VEHICLE MOUNTED COMPUTERS”

Winmate's vehicle-mounted computers are designed to fit seamlessly into forklifts and other vehicles in a warehouse complex. With a range of mounting options and high-performance Intel processors to choose from, these VMCs can minimize errors and streamline inventory management.

10.4" / 12.1" / 14" Android Forklift Computers

FM10Q-V / FM12Q-V FM14Q-V

NEW
PRODUCT



“ WIDE RANGE OPERATING TEMPERATURE. ”

- All in one HMI design, Integrated I/O function
- Qualcomm Snapdragon™ 660 octa-core, 2.2 GHz CPU, Android forklift computers
- 10.4" / 12.1", 1024 x 768 Panel with PCAP touchscreen
- 14", 1920 x 1080 Panel with PCAP touchscreen

Wide power input 10-60V DC with ignition

Wide range operating temperature

Support RAM mount and VESA mount

High-performance Qualcomm® Snapdragon™ CPU

Compact housing with anti-scratch P-Cap multi-touch screen

Vibration and shock-proof design ensure reliable performance

IP65 waterproof and dustproof vehicle mounted computer

1 x USB 2.0 port, 1 x USB 3.0 Type-C (OTG), 2 x COM Port, 1 x Micro SD card slot, 1 x SIM card slot, 1 x LAN, 1 x DIDO (Optional), 1 x CANBUS (Optional), 1 x Audio (Optional)

Custom configuration



WWAN



GPS/
GLONASS



UPS Battery



Brightness



CANBUS



DIDO



Audio

Application



Reliable And Rugged

“WORKABLE IN HOT AND COLD WAREHOUSE”

To meet the challenging nature of cold chain solutions, our rugged computers are built with thermal sensors to automatically activate and deactivate the defroster (optional) to avoid inner condensation and provide stable performance.

10.4" / 12.1" / 14" Windows Vehicle Mounted PC

FM10E-V / FM12E-V / FM14E-V



“ WIDE RANGE OPERATING TEMPERATURE. ”

- All in one HMI design, Integrated I/O function
- Intel® Elkhart lake x6425E Processor vehicle computer
- 10.4" / 12.1"; 1024 x 768 Panel with PCAP touch screen
- 14"; 1920 x 1080 Panel with PCAP touch screen

IP65 waterproof and dustproof

Wide power input 10-60V DC with ignition

Wide range operating temperature

Support RAM mount and VESA mount

1 x USB 2.0 port, 1 x USB 3.0 Type-C (OTG), 2 x COM Port, 1 x Micro SD card slot, 1 x SIM card slot, 1 x LAN, 1 x DIDO (Optional), 1 x CANBUS (Optional), 1 x Audio (Optional)

Custom configuration



WWAN



GPS/
GLONASS



UPS Battery



Brightness



CANBUS



DIDO



Audio

Application



Minimize Errors and Streamline Inventory Management

“WITH A RANGE OF MOUNTING OPTIONS”

The vehicle mounted computers or tablet PCs installed on a forklift must be rugged enough to withstand all-day operations with vibration from the vehicle.

Custom configuration



Application



Advanced Communications

“ENABLE UNINTERRUPTED COMMUNICATIONS”

In a large warehouse environment, forklifts usually go back and forth between the cold and regular ambient storage. The rugged computers must show the same stable performance in both low and high temperatures.

10.4" / 12.1" / 14" Windows Vehicle Mounted PC

FM10AD-V/ FM12AD-V/ FM14AD-V



“ENABLE AUTOMATION IN THE WAREHOUSE.”

- All in one HMI design, Integrated I/O function
- 12th Gen. Intel® Processor Family – Alder Lake Processor
- 10.4" / 12.1", 1024 x 768 Panel with PCAP touch screen
- 14", 1920 x 1080 Panel with PCAP touch screen

IP65 waterproof and dustproof

Wide power input 10-60V DC with ignition

Wide range operating temperature

Support RAM mount and VESA mount

1 x USB 2.0 port, 1 x USB 3.0 Type-C (OTG), 2 x COM Port, 1 x Micro SD card slot, 1 x SIM card slot, 1 x LAN, 1 x DIDO (Optional), 1 x CANBUS (Optional), 1 x Audio (Optional)

10.4" / 12.1" Android Vehicle Mounted PC FM10Q/ FM12Q



“ FOR YOUR UNIQUE ANDROID IN-VEHICLE APPLICATION. ”

- 10.4" / 12.1", 1024 x 768, PCAP touchscreen
- Qualcomm® Snapdragon™ 660 octa-core, 2.2 GHz

RAM mount/VESA mount

Field replaceable front panel to reduce service costs

IP65 waterproof and dustproof vehicle mounted computer

Wide range -30°C to 50°C operating temperature

GPS/ GLONASS, G-sensor, Temp. sensor

Magnesium alloy back cover with plastic bezel

Fanless design

1 x USB 3.0 Type-C (OTG) (tablet), 1 x DB9 connector for 2 x USB 2.0 port (docking)

Custom configuration



WWAN



Brightness
800 nits



UPS Battery



GPS

Application



Forklift Automation

“MEETING A VARIETY
OF CUSTOMER
REQUIREMENTS”

Winmate's FM10Q/FM12Q are powerful vehicle mounted computers that features a Qualcomm® Snapdragon™ 660 CPU and Android 9.0 operating system. The Android-based platform allows fast development of a variety of customized applications for every level across the enterprise.

10.4" / 12.1" Windows Vehicle Mounted PC FM10E/ FM12E

NEW
PRODUCT

Custom configuration

Up to
8 GB

Memory

Up to
256 GB

Storage



WWAN

WWAN



FC CE

Application



Forklift Automation

“ULTRA-RUGGED
TOUCH SCREEN
FOR THE TOUGHEST
ENVIRONMENTS”

The large screen with the latest mobility platform for future-proofing, and features that will make the transition to a completely different OS as painless as possible.

“ DATA COLLECTION IN LOGISTICS APPLICATIONS. ”

- 10.4" / 12.1", 1024 x 768 Panel with PCAP Touch
- Intel® Elkhart lake x6425E Processor
- Windows 10 IoT Enterprise

4 GB SODIMM DDR4-3200, 128 GB M.2 MLC SSD

WLAN, BT, GPS/AGPS

G-Sensor, light sensor, temperature sensor

2 MP front camera

Screen blanking function for driver's safety

RAM mount, support VESA mount

Power input 10-60V DC with ignition control

IP65 waterproof and dustproof

MIL-STD-810H vibration, shock resistant

8" Windows Vehicle Mounted PC M101BK



**“ QWERTY KEYPAD TO INPUT
DATA IN ANY CONDITIONS. ”**

- Long battery life with Intel® Celeron® N2930 Bay Trail-M Processor
- 8", 1280x800 wide viewing angle with PCAP touch, in vehicle computer mounts
- 5MP Auto-focus camera

IP65 waterproof and dustproof

ISO/IEC 9995-3 QWERTY Keypad

Hot-swappable battery design with optional high capacity battery pack

MIL-STD-810G compliant

Optional extendable UHF RFID reader

Optional built-in 1D/2D barcode, HF RFID reader

4GB SO-DIMM, DDR3L 1600 MHz

1 x Intel® Ethernet Controller WG82574L

Custom configuration



Memory



Storage



WWAN

Application



Distribution Center

“IMPROVES OPERATOR
PRODUCTIVITY”

The M101BK can handle the challenges of the modern warehouse, even in cold storage environments. The QWERTY keypad allows comfortable typing even while wearing thick gloves. The detachable front panel provides mobility for forklift operators who wish to perform tasks outside the forklift.

10.1" Android Rugged Tablet S101M9/ L



Custom configuration



NFC Reader



Barcode Reader



WWAN



Battery Hotswap



Micro HDMI Port



Application



Stable and lightweight

“RUGGED, RESILIENT PERFORMANCE”

The functional flexibility and customizability of the S101M9/L ensure that your workers have the right computing tool to thrive in their environment.

“**ROBUST TABLET TO WITHSTAND INDUSTRIAL USE.**”

- 10.1", 1280 x 800 TFT LCD Display (S101M9L)
- 10.1", 1920 x 1200 TFT LCD Display (S101M9)
- Android 11.0
- ARM A73 x 4 (2.0 GHz) + A53 x 4 (2.0 GHz)

Integrated 1D/2D barcode reader (Optional)

NFC (Read/ Write, Peer to Peer mode) (Optional)

8.0 MP camera in front side

13.0 MP rear camera (with LED auxiliary light, auto focus)

4 GB RAM + 32 GB eMMC

Anti-glare touch treatment

SOTI MobiControl compliance

WLAN, BT, GPS, GLONASS, WWAN (Optional)

Convenient operation and efficient data input with
**WINMATE ALL-IN-ONE DESIGN
VEHICLE COMPUTING SOLUTIONS**

WINMATE

FM14AD-V

FM12E

FM10Q-V

FM10E-V

FM07E

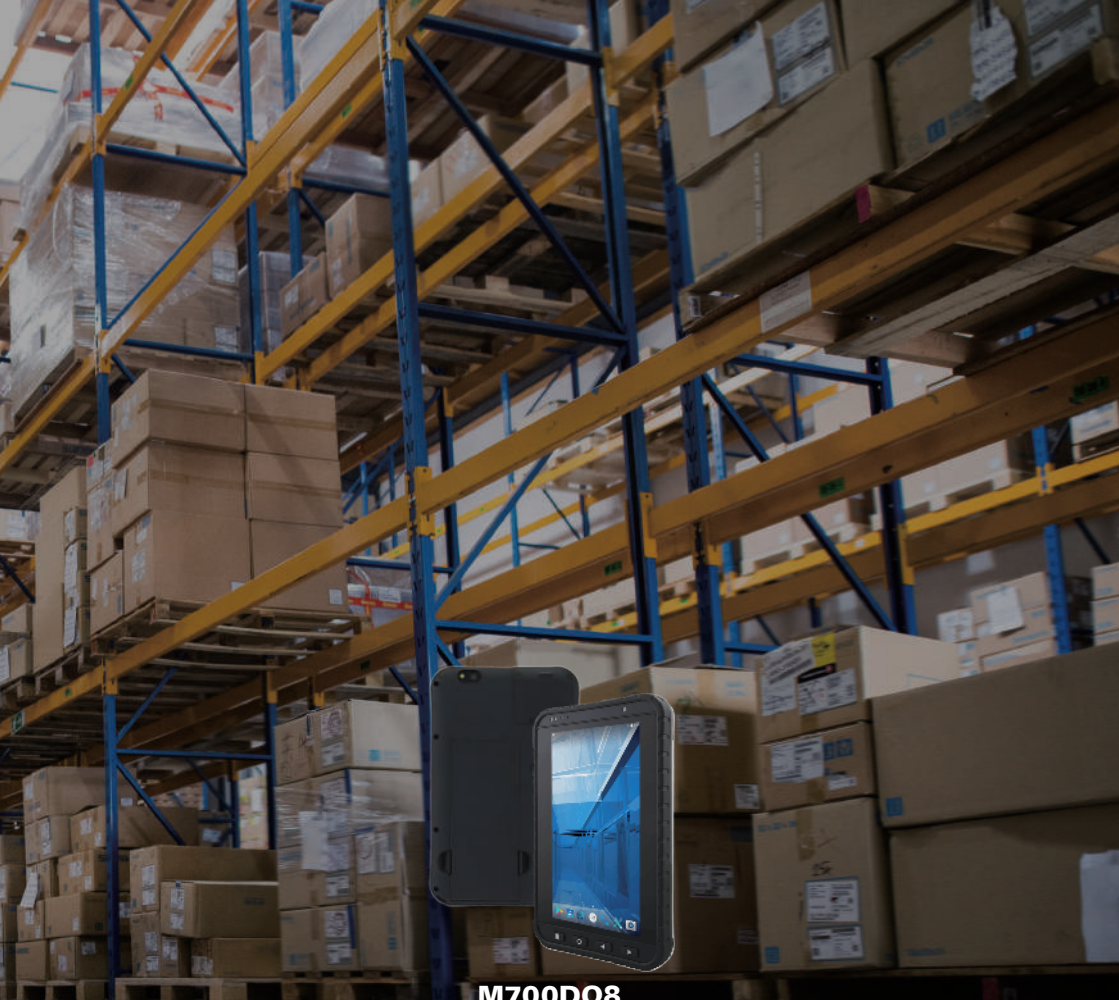
FM12Q-V



A photograph of a warehouse worker operating a yellow forklift. The worker is wearing a yellow hard hat and a high-visibility vest. The forklift is carrying a pallet of cardboard boxes. The warehouse has high ceilings and tall shelving units filled with boxes.

INVENTORY MANAGEMENT WITH QUALCOMM-POWERED DEVICES AND SOTI MOBICONTROL

WWW.WINMATE.COM



M700DQ8
7" RUGGED TABLET



FM10Q
**10.4" VEHICLE MOUNTED
COMPUTER**



FM12Q
**12.1" VEHICLE MOUNTED
COMPUTER**