TRANSPORTATION

CONNECTIVITY FOR
VEHICLES ON THE ROAD

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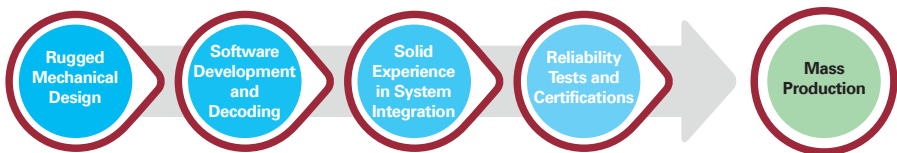
From product design to accessories, our engineering team designs and support the system integration process.

- 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:

Rugged Mechanical Design → Software Development and Decoding → Solid Experience in System Integration → Reliability Tests and Certifications → Mass Production

- 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 LOGISTICAL NEEDS.

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.

TABLET FOR VEHICLE MOUNT COMPUTERS

A tablet for Vehicle Mount Computers is a rugged device designed to withstand harsh environments. It securely attaches to a vehicle dashboard or windshield, serving as a mobile workstation. These tablets run applications like navigation, fleet management, and diagnostics, while connecting to peripherals. Winmate's rugged tablets integrate seamlessly into vehicle mount computers, empowering frontline workers in logistics, manufacturing, and public safety.

Application Story

Heavy Duty Trucks

Background

Integrating connected vehicle technology into the trucking sector presents enormous potential for creating safer and more efficient roadways. Winmate provides fixed-mounted computers for conventional field service fleet management to perform location tracking and task management.

Core Products

- GS Series Full IP65 Panel PC
- Embedded Box PC F65EAC-IK32

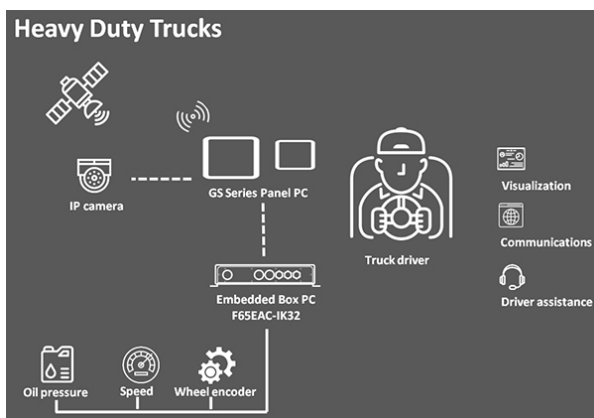**"PROVIDE CONNECTIVITY FOR VEHICLES ON THE ROAD."**

Main Challenges

- Connectivity in remote locations

Why Winmate

- Provide solution to enhance signal
- Devices resist strong vibration
- Customized BIOS

Application Diagram: Truck automation

Application Story

Train Cabin Operator Panel

Background

Winmate provides total solution for information display and computing for railway transportation. In the control room, Winmate offers displays of various sizes, and a full array of mounting options for limited installation space in trains. For computing needs, our EAC computer box provides I/O, thermal, and anti-shock requirements in a train. In addition, for passengers on board, we have displays to show timing information, as well as playing back entertainment or advertisement clips.

Core Products

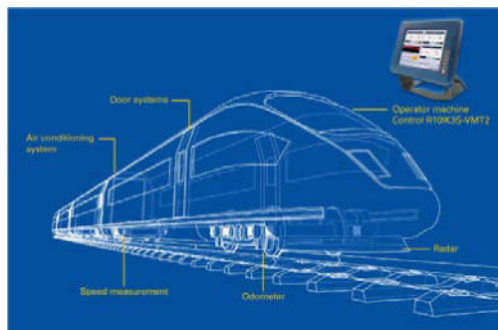- 10.4" G-WIN Panel PC R10IK3S-VMT2
- EAC Box PC

" RELIABLE AND DURABLE DISPLAY SOLUTION FOR NAVIGATION AND TASK MANAGEMENT "

Main Challenges

- Strong vibration
- Operating in cold environments

Why Winmate

- Vibration resistant design
- EN50155 EMC test report
- Offers a solution for operating in extreme temperatures -20°C to 60°C
- Strong hardware design capabilities to accommodate various truck configurations.

Application Diagram: The dashboard cabin

Application Story

Urban Waste Collection

Background

An innovative waste management company catering to millions of residents through municipal services deploys the IoT for intelligent waste collection. Yet, they were looking for a rugged Android-based vehicle-mounted computer to help integrate the data collected through the sensors, and RFID readers,then communicate with the command center to take their truck tracking system to the next level.

Core Products

- 10.4" FM10Q vehicle-mounted computer

" A SMART IN-VEHICLE COMPUTING SOLUTION FOR SMART CITIES. "

Main Challenges

- Extreme operating environment

- Multiple I/O ports

- Reliable wireless communication capabilities.

Why Winmate

- We provide IP65 rated and MIL-STD-810G certified rugged computers to survive the dusty waste collection environments.

- We provide a customization service to meet your specific needs.

FM10Q VMC installed firmly on the truck

7" Android Vehicle Mounted PC
FM07M

" VEHICLE POWER SOLUTION. "

- ARM A53 Quad Core 2.0GHz Processor
- 7", 1024 x 600 panel with projected capacitive multi-touch screen
- Android 11, Linux Yocto, Linux Ubuntu OS

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

Custom Configuration

WWAN

NFC RFID Reader

SIM Card Slot

Application

Easy In-Vehicle Installation

SUPPORTS BOTH VESA AND RAM MOUNTS

Winmate FM07M 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.

Up to 16 GB Memory (FM07E)

Up to 8 GB Memory

WWAN 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.

7" Vehicle Mounted Computer with M12 connector
FM07/ FM07E

IP65   MIL-STD 810G   (E13) FC C E

" VIBRATION AND SHOCK-PROOF DESIGN. "

- Intel Celeron N3350 or Intel Pentium N4200 (FM07)
- Intel Celeron N6211 (FM07E)
- 7", 1024 x 600 panel with projected capacitive Multi-Touch screen
- Wide power input 9-36V DC with ignition
- Windows 10 IoT Enterprise, Linux, Ubuntu 20.04 (Optional)

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

10.4"/ 12.1"/ 14" Android Forklift Computers
FM10Q-V/ FM12Q-V/ FM14Q-V

IP65 · **COMPLIANT MIL-STD 810H** · **FC** **C** **€**

" WIDE RANGE OPERATING TEMPERATURE. "

- All in one design, integrated I/O function
- Qualcomm Snapdragon™ 660 octa-core, 2.2 GHz CPU, Android 9
- 10.4"/ 12.1", 1024 x 768 Panel with P-CAP touchscreen
- 14", 1920 x 1080 Panel with P-CAP touchscreen

Wide power input 10-60V DC with ignition

Wide range operating temperature

Support VESA mount

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

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.

WWAN

WWAN

GPS/
GLONASS
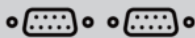
UPS
Battery

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.

10.4" / 12.1" / 14" Windows Vehicle Mounted PC
FM10E-V/ FM12E-V/ FM14E-V

IP65 · **COMPLIANT MIL-STD 810H** · **FC** **CE**

" WIDE RANGE OPERATING TEMPERATURE. "

- All in one design, Integrated I/O function
- FM10E-V,FM12E-V：Intel® Elkhart lake x6413E
- FM14E-V：Intel® Elkhart lake x6425E
- 10.4"/ 12.1", 1024 x 768 Panel with P-CAP touch screen
- 14", 1920 x 1080 Panel with P-CAP touch screen

IP65 waterproof and dustproof

Wide power input 10-60V DC with ignition

Wide range operating temperature

Support VESA mount

10.4"/ 12.1"/ 14" Windows Vehicle Mounted PC
FM10AD-V/ FM12AD-V/ FM14AD-V

IP65 · MIL-STD 810H COMPLIANT · FC · C E

" 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 P-CAP touch screen
- 14", 1920 x 1080 Panel with P-CAP touch screen

IP65 waterproof and dustproof

Wide power input 10-60V DC with ignition

Wide range operating temperature

Support VESA mount

Custom Configuration

WWAN

GPS/ GLONASS

Brightness

CANBUS

DIDO

Audio

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.

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″ Android Vehicle Mounted PC
FM10Q/ FM12Q

IP65   COMPLIANT MIL-STD 810G   COMPLIANT MIL-STD 810H   FC C €

" FOR YOUR UNIQUE ANDROID IN-VEHICLE APPLICATION. "

- 10.4″/ 12.1″, 1024 x 768, P-CAP 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 60°C operating temperature

GPS/ GLONASS, G-sensor, Temp. sensor

Aluminum Alloy Housing

Fanless design

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

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

"
DATA COLLECTION IN LOGISTICS APPLICATIONS.
"

- 10.4"/ 12.1", 1024 x 768 Panel with P-CAP Touch
- Intel® Elkhart lake x6413E Processor
- Windows 10 IoT Enterprise

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

WLAN, BT, GPS/AGPS

G-Sensor, light sensor, temperature sensor

2 MP front camera

RAM mount, support VESA mount

Power input 10-60V DC with ignition control

IP65 waterproof and dustproof

MIL-STD-810H vibration, shock resistant

Custom Configuration

Up to 8 GB
Memory

Up to 256 GB
Storage

WWAN
WWAN

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.

Application

Connected Truck

CONNECTIVITY FOR VEHICLES ON THE ROAD

Winmate developed a smart truck solution for a heavy-duty vehicle. Installed on a dashboard using a vehicle cradle, the 8" rugged tablet M900P and custom-designed vehicle gateway VG-100 now connects in-vehicle systems and allows status monitoring of semi-trucks in Europe.

8" Windows Rugged Tablet
M900P/ M900PT

" ORTABLE AND POWERFUL SOLUTION. "

- 8", 1280 x 800, P-CAP touchscreen
- Intel® Pentium® N4200 (up to 2.5 GHz)
- Windows 10 IoT Enterprise

4 GB LPDDR4, 128 GB SSD

Light sensor, g-sensor, Gyro

2 MP webcam, 8 MP rear camera with autofocus

WLAN, BT, GPS, GLONASS

USB 3.0 (Type A), USB 3.0 (Type C), docking connector

D-sub for vehicle gateway connection

Built-in smart card reader (Default M900PT)

IP65 waterproof and dustproof

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

10.1" Windows Rugged Tablet PC
M101AD

NEW
PRODUCT

" RUGGED, CUSTOM, AND READY FOR FIELD SERVICE "

- Intel® Core™ i5-1235U Alder Lake processor
- 10.1" 1920 x 1200 IPS LED Panel with direct optical bonding
- Sunlight readable with antiglare solution
- Hot-swappable battery design
- USB TypeC port support PD 3.0 and ALT mode

The M101AD's hot-swappable battery design allows users to replace the battery without shutting down the device, ensuring continuous operation and minimizing downtime.

Compliant with MIL-STD-810H standards and rated IP65 for water and dust resistance, the tablet is built to withstand harsh industrial environments.

Featuring a USB Type-C port that supports Power Delivery 3.0 and ALT mode, as well as an integrated GigaLAN port, the M101AD offers flexible connectivity options for various peripherals and networks.

Custom Configuration

Up to
32 GB
Memory

Up to
2 TB
Storage

WWAN
WWAN

Application

Ready for Field Service

Optimizing Industrial Operations

The M101AD rugged tablet revolutionized fieldwork with its powerful performance, sunlight-readable display, and hot-swappable battery. It ensured seamless workflows and reliability in demanding industrial environments.

M101EK

FC C€

" QWERTY KEYPAD TO INPUT DATA IN ANY CONDITIONS. "

- Intel® Elkhart Lake Celeron® N6211 Processor
- 10.1″ 1920 x 1200 IPS LED Panel with direct optical bonding
- IP65 water and dust proof with MIL-STD-810H rugged housing
- Low power consumption with fanless design

Removable battery with hot-swap function for all day productivity

Sunlight readable with antiglare solution

USB Type-C port supports power delivery 20V In

Integrated 4G/5G Wireless WWAN (Optional)

10.1" Windows Rugged Tablet
M101TG

" ROBUST TABLET TO WITHSTAND INDUSTRIAL USE. "

- 10.1", 1920 x 1200, P-CAP touchscreen
- Intel® Core™ i5-1135G7
- Windows 10 IoT Enterprise

10.1" 1920 x 1200 IPS LED Panel with direct optical bonding

Intel® Core™ i5-1135G7 Tiger Lake processor

IP65 waterproof and dustproof

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

Sunlight readable with anti-glare solution

Hot-swappable battery design

USB Type-C port support power delivery 20V In

Custom Configuration

Up to 32 GB	Up to 2 TB	
Memory	Storage	Barcode Reader
WWAN	RFID	
WWAN	HF RFID Reader	High Capacity Battery

Application

Delivery Service

INSTANTLY ACCESS ORDER INFORMATION

The M101TG rugged tablet with an LTE module and barcode scanner boosts productivity and speeds up delivery services, giving quick access to order information anywhere you go. The solution includes a vehicle cradle for in-vehicle mounting and charging.

Custom Configuration

Up to
8 GB
Memory

Up to
512 GB
Storage

WWAN
WWAN

VESA Mount Kit

Carry Bag

Shoulder Strap

Application

Distribution Center

Streamlining Warehouse Operations

The M101EKB rugged tablet improved inventory management with its compact design, real-time data synchronization, and durable build. It enhanced efficiency and accuracy in challenging warehouse environments.

8 inch Windows Rugged Tablet PC
M101EKB

" QWERTY KEYPAD TO INPUT DATA IN ANY CONDITIONS. "

- Intel® Elkhart Lake Celeron® N6211 Processor
- 8" 1280x800 wide viewing angle with PCAP touch
- ISO/IEC 99953 QWERTY Keypad
- USB Type-C port supports power delivery 20V In

IP65 water and dust proof with MIL-STD-810H rugged housing

Low power consumption with fanless design

Removable battery with hotswap function for all day productivity

Integrated 4G/5G Wireless WWAN (Optional)

11.6" Windows Rugged Tablet PC
M116AD

Custom Configuration

Up to 32 GB Memory	**Up to 2 TB** Storage	**WWAN** WWAN
GigaLAN Port	Barcode Reader	**RFID** HF RFID Reader

" RELIABLE TECH FOR WATER UTILITY MAINTENANCE. "

- 11.6″ 1920 x 1080 LED Panel with PCAP touch
- Intel® Core™ i5-1235U (Up to 4.40GHz)
- Windows 10 IoT Enterprise

IP65 waterproof and dustproof

MIL-STD-810H shock, vibration, and drop

2MP Webcam , 8MP Auto-Focus Rear Camera

Optional GigaLAN port design

Optional 1D/2D Barcode Reader and HF RFID Reader

Built-in Mic with Noise Cancellation

Hot-swappable Main Battery

Application

Service Tablets for Water Utility Maintenance

RELIABLE TECHNOLOGY IN EVERY SITUATION

Winmate rugged mobile computers deployed for receiving work instructions, sending and receiving data, infrastructure maps, and photographic evidence for electronic work records.

Custom Configuration

Up to 32 GB	**Up to 2 TB**	**WWAN**
Memory	Storage	WWAN
GigaLAN Port	Barcode Reader	**RFID** HF RFID Reader

Application

Machinery & Equipment Inspections

HIGH PROCESSING POWER AND BRILLIANT TOUCH SCREEN

The M116TG features high processing power and a brilliant 11.6″ touch screen, ideal for checking operation manuals and SOP procedures for live inspection and production supervision.

11.6″ Windows Rugged Tablet
M116TG

COMPLIANT MIL-STD 810H   IP65   FC CE

" HIGH PROCESSING POWER IN A RUGGED ENCLOSURE. "

- 11.6″, 1920 x 1080, 850 nits IPS LED Panel with direct optical bonding
- Intel® Core™ i5-1135G7 Tiger Lake processor
- Windows 10 IoT Enterprise

IP65 waterproof

Dustproof, MIL-STD-810H shock, vibration and drop resistance

Sunlight readable with antiglare solution

Hotswappable battery design

USB Type-C port support power delivery 20V-in

WINMATE

RELIABLE COMPUTING SOLUTIONS FOR NAVIGATION AND TASK MANAGEMENT.

M900P/PT SERIES
9" RUGGED TABLET

M101S
10.1" WINDOWS
RUGGED TABLET

VMC SERIES
7" ~12.1" VEHICLE
MOUNTED COMPUTER

FM14AD-V

FM10Q-V

WINMATE

Convenient operation and efficient data input with

WINMATE ALL-IN-ONE DESIGN VEHICLE COMPUTING SOLUTIONS.

FM12E

FM12Q-V

FM10E-V

FM07E

DELIVERING RUGGED PERFORMANCE AND SEAMLESS CONNECTIVITY FOR INDUSTRIAL VEHICLES

WINMATE TABLET FOR VEHICLE MOUNT COMPUTER

M101AD

M101EK

M101EKB