WINMATE
www.winmate.com

SMART MANUFACTURING (INDUSTRY 4.0)

IIoT/ Manufacturing Digitalization/ Edge Computing

INCREASE PRODUCTION RATE WITH INTEGRATED TECHNOLOGIES

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.

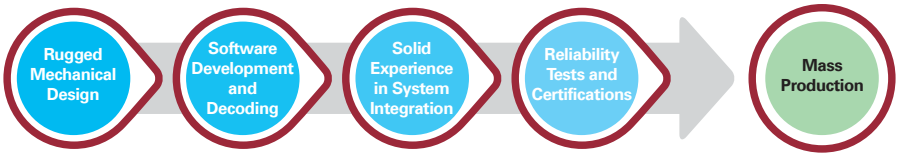
From product design to accessories, our engineering team designs and support the system integration process.

- 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

IIoT & Edge Computing

Overview

Winmate offers a full range of embedded platforms for you to build unique solutions for industrial embedded systems. Our embedded computing solutions are designed to give developers the freedom to create fast and convenient solutions for industrial applications such as factory automation, machine control, transportation, IoT gateways, and edge computing.

Our embedded computing solutions include:

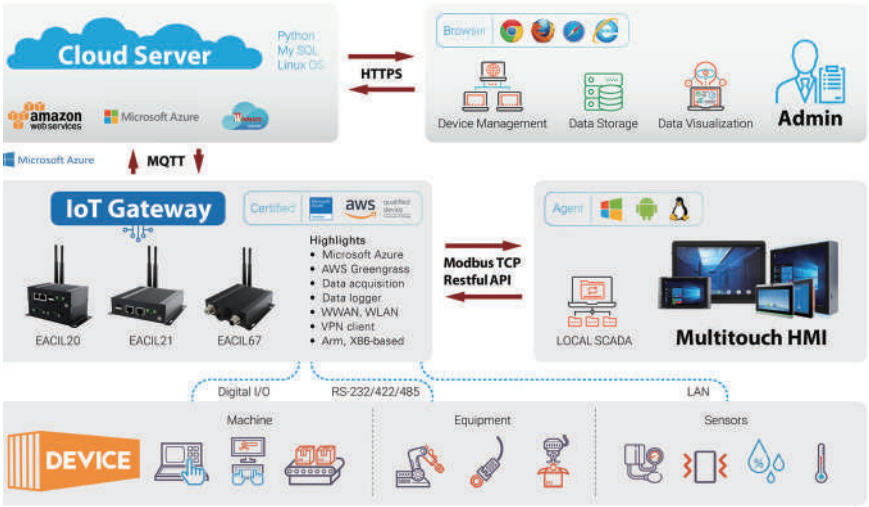
- AI-ready embedded hardware, IoT gateways, embedded box PCs, industrial servers, and Single Board Computers (SBC)
- The latest Windows®, Android™, and Linux operating system
- Board development and production purpose-built for your needs

First-class enterprises already benefit from IoT and plant-floor data using the collected data to predict and prevent equipment failure, improve reliability and reduce downtime. Manufacturers apply data insights to upgrade the quality and lower inspection costs.

Technology

The Industrial Internet of Things (IIoT) requires the right software, hardware, and expertise to make the whole ecosystem smoothly. And Winmate is ready to provide new solutions and services for the IoT market.

Winmate IoT Solution & Services



Why Winmate

Our expertise for your application:

Hardware designed for the IoT applications

Interfaces to enable machine-to-machine communications and wireless connectivity to send data to the cloud.

Experience in software integration

Our software team has Windows, Android, and Linux operating systems and software integration experience.

Customization for your unique application

We have a strong customization capability and can help you design hardware for specific needs.

Application Story

Predictive Maintenance

Background

The customer in this application was looking for a new high-performance HMI as a production line controller of an intelligent factory. The customer desired a high-performance multi-touch interface that could handle the everyday task of controlling a production line and is also easily maintainable. Winmate offered the M Series HMI with Intel's Core i5 CPU as the solution. The modular design of the M Series allows for easy repairs for either the display or the Box PC module, thus reducing the total cost of ownership.

Core products

- M Series HMI Panel PC

> "INCREASE PRODUCTIVITY AND EFFICIENCY ON THE FACTORY FLOOR."

Main Challenges

- Integrating the various components and sensors of the production line to the M Series HMI

Why Winmate

- Modular design for repairs with minimum downtime
- High-performance processor
- Digital I/O to allow industrial sensors to be integrated with the HMI
- PCAP multi-touch screen and user-friendly interface

Application Diagram: Predictive Maintenance

Application Story

Operator Control and Monitoring Systems

Background

Winmate understands the demands of modern factories and industrial facilities by offering a series of industrial-grade HMI made to deliver stable performance and functionality for increased productivity and efficiency. Winmate's multi-touch HMI goes beyond the standard industrial panel computers with its elegant, edge-to-edge design, rugged build, powerful performance, a full line-up of I/O options, and flexible mounting options.

Core Products

- E Series HMI Panel PC

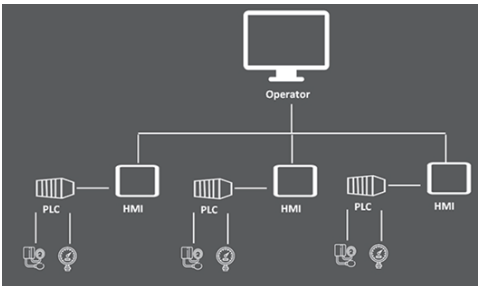
> **“HIGH-PERFORMANCE HMI TOUCH PANELS FOR OPERATOR MONITOR AND CONTROL”**

Main Challenges

- Series of certification and documentation
- Software customization

Why Winmate

- Extensive know-how for industrial systems with ARM and Linux OS
- Fast product development
- After-sales service and customer support



Application Diagram: Industrial Field Work

Custom configuration

WLAN

WWAN

Expansion Module

Application

Predictive Maintenance System

" BRIDGING THE GAP BETWEEN IT AND OT"

Most predictive maintenance systems rely on machine learning to formulate predictions. The advantages are numerous and can significantly reduce costs, while eliminating the need for planned downtime in many cases.

IoT Gateway EAC Mini Series

EACIL20/ EACIL21/ EACIL67

" CONNECT EVERYTHING, CONTROL EVERYWHERE. "

- Compact design
- Intel® Celeron® N3350 (2M Cache, up to 2.4 GHz)
- Intel® Pentium® N4200 (2M Cache, up to 2.5 GHz) (Optional)
- Windows 10 IoT Enterprise (Optional), Linux Ubuntu 18.04 (Optional)

Fanless cooling system Industrial IoT Gateway
4 GB LPDDR4 2400MHz
Expansion module for additional interfaces
Two RJ45 for Ethernet
USB 2.0, USB 3.0 (EACIL20/ EACIL21); USB Type-C (EACIL21)
9~36 V DC, chassis grounding
Desk, wall, VESA, DIN-Rail
IP30/ IP67 (EACIL67) waterproof and dustproof
Certified Microsoft Azure for IoT, AWS IoT Greengrass

IoT Gateway EAC Mini Series

EACIM20

“FOR ANDROID-BASED IIOT APPLICATIONS.”

- Compact design
- A53 Quad-core 2.0 GHz
- Android 11
  Linux Yocto 5.10.104 with QT5.15 (Optional),

Fanless cooling system Industrial IoT Gateway
4GB LPDDR4, 32GB eMMC
Compact size 100 x 70 x 31 mm (w/o mounting bracket)
Various mounting options: desk, wall, VESA, DINRail
Microsoft Azure Certified for IoT
Support Android or Linux operating system
9~36 V DC, chassis grounding
Two RJ45 for Ethernet
Expansion module for additional interfaces

Custom configuration

HDMI | Expansion Module

WWAN | WLAN

Application

Industrial Utility Control

”IMPROVE EFFICIENCY AND REDUCE OPERATIONAL COSTS”

Efficient utility control can improve efficiency and reduce operational costs of the entire plant or factory. Complex system with the IoT gateway EACIM20 includes automation to control HVAC, lighting, utility consumption and access control systems.

Custom configuration

Up to 16 GB

Memory

Up to 512 GB

Storage

WLAN

WLAN

DIN

DIN-Rail Mounting

Application

Factory Automation

"STABLE PERFORMANCE IN A COMPACT RUGGED DESIGN"

This DIN Rail Box PC was integrated as the system controller for a beverage production line.

DIN Rail Box PC
IBDRW100-EL

FC CE

"COMPACT. POWERFUL. VERSATILE."

- DIN Rail mount
- Intel® Celeron® N6210 (1.5M Cache, up to 2.6GHz)
- Windows IoT Enterprise, Linux Ubuntu

DIN Rail design for industrial automation application
1 x SO-DIMM DDR4 memory, up to 16GB
1 x RS232/ 422/ 485 communication, select thru BIOS
4 x Giga LAN, 3 x USB 3.2 Gen1x1, 1 x USB 2.0, 1 x VGA
1 x Line out, 1 x line in, 1x Mic in, 1 x Power Jack
Fanless, streamlined enclosure for highly efficient heat dissipation
AWS IoT greengrass certified

7”~15.6” Featured Display

USB Type-C

“SINGLE CABLE SOLUTION.”

- 7”~15.6”, PCAP touchscreen
- USB Type-C port
- Chassis or open-frame housing

USB Type-C Alt mode (5V/3A) for power, touch, video input

Support VESA mount

Custom configuration

Audio and Speaker

Protection Glass

Application

Industrial Machinery

”SAVE CABLE SPACE BY USING A SINGLE CABLE”

The USB Type-C display connected to the EAC Mini IoT gateway is used as a machine vision solution for industrial machinery applications, delivering higher power and performance than traditional USB 2.0 and USB 3.0 protocols.

Custom configuration

Protection Glass

Speaker

Application

Factory Building Digital Signage

"POWER AND DATA IN A SINGLE CABLE."

The PoE Touch Monitor was installed as digital signage in a factory building. The PoE function can be installed high up on a wall without the need for additional wiring costs.

10.1"~15.6" Featured Display

PoE Series

FC CE

"FAST INSTALLATION WITHOUT ADDITIONAL ELECTRICAL WIRING."

- 10.1"~15.6", PCAP touchscreen
- Power over Ethernet (PoE)
- Chassis housing

Power Device (PD) follows IEEE 802.3at (25 W), IEEE 802.3af (15 W)
VGA, HDMI video input
Panel mount, support VESA mount
Stylish and elegant design
OSD control five keys

10.1”~21.5” Stainless Panel PC

IP65 B Series with Push Buttons

IP65

FC CE

“SPEED UP RESPONSE TIME IN EMERGENCY SITUATIONS.”

- 10.1”~21.5”, PCAP touchscreen
- Intel® Celeron® N2930 (2M Cache, up to 2.16 GHz)

Fanless cooling system
Full IP65 waterproof enclosure, good corrosion resistance
A true flat, easy-to-clean front surface with an edge-to-edge design
Supports VESA mount
Rotary switch adjust different touch mode for hand/ rain/ glove application
Emergency and flat buttons for automation device control
Stainless steel housing

Custom configuration

Up to 8 GB — Memory

Up to 512 GB — Storage

9~36V DC — Wide Power Input

Application

Factory Automation

”VANDAL RESISTANT, STYLISH HMI CONTROLS IN HARSH ENVIRONMENTS”

Winmate's all-new 17” panel PC with push buttons was installed inside machine-control terminals in the factory operating in the food and beverage industry. Push buttons on the HMI terminal provide excellent tactical feedback necessary for emergencies.

Custom configuration

Up to 32 GB
Memory

Up to 4 TB
Storage

9~36V DC
Wide Power Input

Application

Pharmaceutical Packaging Automation

"CORROSION-RESISTANT, HYGIENIC, HIGH-PERFORMANCE"

HMI control terminals for packaging machines to improve processes, capping, labeling, and collation systems and monitor the operation on a supervisory level, checking for low hopper levels, fallen bottles, and low-level supplies.

15"~23.8" Stainless Panel PC

IP69K P Series with Conduit Pipe

IP69K FC CE

"PERFECT TERMINAL FOR STRICT HYGIENE DEMANDS."

- 15"~23.8", PCAP touchscreen
- Intel® Core™ i5-8265U 1.6 GHz (turbo to 3.9 GHz)
- Windows 10 IoT Enterprise (Optional), Linux Ubuntu 18.04 (Optional)

Fanless cooling system
Stainless steel for food and chemical industries
Full IP69K waterproof enclosure, good corrosion resistance
A true flat, easy-to-clean front surface with an edge-to-edge design
Waterproof sealed conduit pipe for cable protection
Supports VESA mount, and optional Yoke mount stand

7”~23.8” Windows HMI Panel PC

Open Frame Panel PC

FC CE

“OPEN FRAME. BEST FOR KIOSK APPLICATIONS.”

- 15”~23.8”,TFT SVGA LCD
- Integrated HDMI, DP, 24 bit Dual-channel LVDS, DVI

1 x SATA II, 2 x COM, 1 x USB 2.0, 1 x USB 3.2 Gen2x1, 2 x M12 slot
1 x M.2 E-Key slot for wifi module
1 x Brightness adjustment knob
2 x Gigabit Ethernet

Custom configuration

Up to 8 GB — Memory

Up to 4 TB — Storage

WLAN — WLAN

Application

Self-Service Kiosk

”SUITABLE FOR EMBEDDED SOLUTIONS”

Installed a self-service payment kiosk Winmate’s 15” open frame HMI and data reader components brings automation to gas stations.

Custom configuration

SATA III

WLAN

Application

Operator Control & Monitoring

"VIVID GRAPHICS AND USER-FRIENDLY CONTROLS"

Accurate machine control and monitoring with vivid images depicted on a 21.5" screen with crystal clear resolution for more complex graphics inside smart factory.

10.4"~23.8" Windows HMI Panel PC

PP Series

FC CE

"HIGH COMPUTING PERFORMANCE. PANEL MOUNT."

- 10.4"~23.8", PCAP touchscreen
- Intel® Core™ i5-8265U (6M Cache, 1.6 GHz up to 3.9 GHz)
- Windows 10 IoT Enterprise (Optional), Linux Ubuntu 20.04 (Optional)

4 GB SO-DIMM, DDR4 2400 MHz, 64 GB M.2 M-key SSD
Expansion M.2 2242/2280 Slot (for NVME SSD or SATA III SSD), 1 x M.2 2232 E-Key Slot (for half-size Wi-Fi module)
Two USB 3.2 Gen.1x1 (Type-A)
RS-232/422/485 (Default RS232), RS232
Two Giga LAN RJ45 for Ethernet
Brightness adjustment knob
Panel mount, support VESA mount
Front IP65 waterproof and dustproof

10.1”~15” G-WIN Windows Panel PC

G-WIN GS Series

IP65

FC CE

“TOUGH. RUGGED. HEAVY DUTY.”

- 10.1”~15”, P-CAP touchscreen
- Low power consumption with Intel® Celeron® N2930
- Fanless cooling system and ultra low power

1 x SO-DIMM, DDR3L 1600 MHz, 4GB 8GB (Optional)
VESA mount/ Panel mount
A true flat, easy-to-clean front surface with edge-to-edge design
Plenty of I/O, including 1 x LAN, 1 x COM, 1 x USB 2.0
Complete input range power supply
Full IP65 protection against water and dust with M12 connectors

Custom configuration

Up to 8 GB — Memory

Up to 512 GB — Storage

mPCIe

WLAN — WLAN

Protection Glass

Application

Automated Machine Control Panel

”ULTIMATE IMAGING. COMPACT FORM FACTOR”

Winmate 15" GS Series Panel PC was installed as a part of an automated machine control panel in a smart factory application. Monitor and control factory operations in real-time for increased productivity.

Custom configuration

Up to 2 GB

Memory (NXP)

Up to 32 GB

Storage (NXP)

Protection Glass

Application

Robot Hand Machine Industry

"INTERACTIVE AND SMART TERMINAL FOR INDUSTRIAL AUTOMATION"

Tailored for those who are in demand of compact and excellent vizualisation systems operated in rugged environments that experience strong vibration from industrial machine operations.

7"~15" G-WIN Android Panel PC

G-WIN GS Series

IP65

FC CE

"SATISFY YOUR HEAVY-DUTY NEEDS."

- 7"~15", P-CAP touchscreen
- NXP i.MX6 Dual Core 1GHz (Optional Quad Core)(FA series), ARM A53 Quad Core 2.0GHz (IM series)
- Fanless cooling system and ultra-low power

Onboard 1GB LPDDR3, 16GB eMMC (FA series)
Onboard 4GB LPDDR4, 32GB eMMC (IM series)
Support Android or Linux operating system
1 x LAN, 1 x RS232, 1 x USB, 1 x USB OTG, 1 x Micro SD
Storage temperature -30°C to 60°C

15" Windows HMI Panel PC

R15IB3S-EHC3

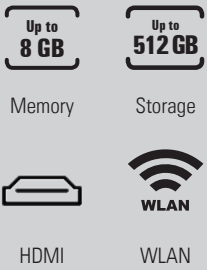
FC CE

"ELEGANT DESIGN."

- 15", 1024 x 768 with PCAP Multi-touch screen
- Intel® Celeron® N2930 (2M Cache, up to 2.16 GHz)
- Front IP65 Water and Dust Proof

Dual Gigabit Ethernet
Fanless cooling system and ultra-low power consumption
Plastic front bezel with metal back cover
1 x RS232/422/485 (Default RS232)

Custom configuration



Application

Factory Control System

"FAST SPEED AND STABLE PERFORMANCE"

The multi-touch panel PC offered advanced performance, an intuitive user interface. Being connected to the PLC through an Ethernet cable the operator panel ensures faster and more reliable operations.

7”~15.6” Android HMI Panel PC

E Series

Custom configuration

WLAN

WLAN Mirco HDMI

Application

Energy Efficiency Systems

”EASE OF USE, DURABILITY AND ACCURATE CONTROLS”

Lower operational costs with HMI operator panels installed inside intelligent building to control energy consumption.

“EASY TO INSTALL. ERGONOMIC. COMPACT.”

- 7” ~15.6”, PCAP touch screen
- NXP iMx6 Dual Core, 1.0 GHz (FA series), A53 Quad Core 2.0 GHz (IM series), Qualcomm Snapdragon™ 660 (IQ series)
- Support Android or Linux operating system

Onboard 1GB LPDDR3, 16GB eMMC (FA series)
Onboard 3GB LPDDR4, 32GB eMMC (IQ series)
Onboard 4GB LPDDR4, 32GB eMMC (IM series)
Fanless cooling system and ultra-low power consumption
2 x USB 2.0 (Type-A), 1 x USB OTG, 1 x RS232/422/485 (Default RS232), 1 x Micro SD card slot, 1 x Micro HDMI (Optional), 1 x LAN
Expansion mPCIe slot(1 for Wi-Fi), 1 x CANBUS (NXP)
Panel mount, VESA mount
Front IP65 waterproof and dustproof

7”~15” Windows HMI Panel PC

S Series

“SMART SOLUTION FOR OPERATOR CONTROL.”

- 7”~15”, PCAP touchscreen
- Intel® Celeron® N2930 (2M Cache, up to 2.16 GHz)
  Inte® Pentium® N4200 (2M Cache, up to 2.5 GHz)
- Windows 10 IoT Enterprise (Optional)

4 GB SO-DIMM, DDR3L 1600 MHz, 128 GB mSATA SSD/ 128 GB M.2 SATA SSD
Fanless cooling system
Expansion mPCIe slot(for half-size Wi-Fi module), mPCIe slot (for SSD) (IB3S)
USB 3.2 Gen 1x1 (Type-A), USB 2.0 (Type-A)
RS-232/422/485 (Default RS-232)
RJ 45-10/100/1000 Mbps (LAN), RJ 45 (PoE)
Panel mount, VESA mount, front side wall mount
Front IP65 waterproof and dustproof

Custom configuration

Up to 8 GB — Memory

Up to 512 GB — Storage

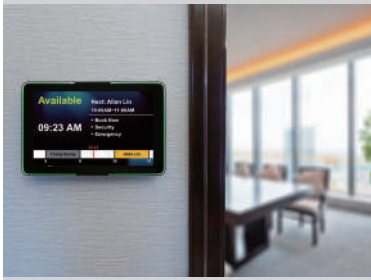
2 MP Webcam

LED Light Bar

WLAN

HR RFID Reader

Application



Meeting Room Booking System

”OPTIMIZE MEETING ROOM UTILIZATION”

Installed at the entrance of the meeting room, 10.1” S Series HMI with HF RFID reader helps to control the access to the meeting room, book schedule and check status from afar.

Custom configuration

2 MP Webcam

LED Light Bar

WLAN

HR RFID Reader

Application

Machine Controller

"EASY TO MAINTAIN AND COST EFFECTIVE"

Installed in a packaging zone of a food processing manufacturer S Series HMI operator control panel brings automation to packaging line.

7"~15" Android HMI Panel PC

S Series

"KNOW-HOW IN POE AND TOUCH TECHNOLOGY."

- 7"~15", PCAP touchscreen
- NXP i.MX6 Dual Core, 1.0GHz (FA series), A53 Quad Core 2.0 GHz (IM series), Qualcomm® Snapdragon™ 660 (Octa-Core 2.2 GHz) (IQ series),
- Support Android or Linux operating system

Onboard 1GB LPDDR3, 16GB eMMC (FA series)
Onboard 3GB LPDDR4, 32GB eMMC (IQ series)
Onboard 4GB LPDDR4, 32GB eMMC (IM series)
Fanless cooling system and ultra-low power consumption
2 x USB 2.0 (Type-A), 1 x USB OTG, 1 x RS232/422/485 (Default RS232), 1 x Micro SD card slot, 1 x Micro HDMI (Optional), 1 x LAN
Expansion mPCIe slot(1 for Wi-Fi), 1 x CANBUS (NXP)
Panel mount, VESA mount
Front IP65 waterproof and dustproof
Support PoE function
Optional RGB LED Light Bar Indicator
Optional 2MP Front Camera and HF RFID Reader

12.1”~23.8” Windows HMI Panel PC

M Series

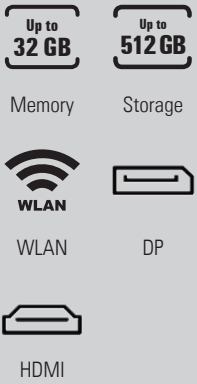
FC CE

“ **MODULAR DESIGN. INCREASED FLEXIBILITY.** ”

- Intel® 11th Generation Tiger Lake UP3 Core™ i5 CPU
- Signature true flat display screen with edge-to-edge design
- Aluminum, anti-corrosion treated housing
- Superior sealing with front IP65 protection against dust and water

Projected Capacitive Multi-Touch Screen (PCAP)
Fanless design
Support wide range 9-29 V DC input
Quick & easy removable 2.5” SSD bay slot
Support PCIe x 4 card
Class 1 Division 2, Group A-D, certified for hazardous area application
Signature true flat display screen with edge-to-edge design
Superior sealing with front IP65 protection against dust and water

Custom configuration



Application

Outdoor Checkpoint

”BRIGHT SUNLIGHT READABLE DISPLAY”

Total solution for access control with customized enclosure for track drivers to enter the territory without times losses even in extreme weather conditions and temperature changes.

Custom configuration

- Up to 8 GB — Memory
- Up to 512 GB — Storage
- Barcode Reader
- WWAN — WWAN
- RFID — RFID Reader
- Micro HDMI Port
- High Capacity Battery 16hr
- USB/ RS-232 — Expansion Port

Application

Durable Waterproof Tablet PC

"DESIGNED WITH A DUST-TIGHT"

Winmate waterproof tablet is designed with splashproof IP65 rating. It can also withstand shock, drop, vibration, and a wide range of operating temperatures, allowing the tablet to be used in harsh environments for industrial and military use.

10.1" Windows Rugged Tablet PC

M101EK

NEW PRODUCT

FC CE

"RUGGED ENOUGH TO WITHSTAND WEAR & TEAR."

- 10.1" 1920 x 1200 IPS LED Panel with direct optical bonding
- Intel Celeron N6210 1.2 GHz (turbo boost up to 2.60 GHz), Intel Pentium N6415 1.2 GHz (turbo boost up to 3.00 GHz) (Optional)

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 anti-glare solution
Integrated 4G/5G Wireless WWAN (Optional)
USB 3.0 (Type-C support Power Delivery 20V In)

WINMATE

HMI PANEL PC SERIES

G-WIN SERIES

QUALITY EXCELLENCE IN THE AUTOMOTIVE INDUSTRY

WWW.WINMATE.COM


LINE A
LINE B
LINE C
START
STOP
START
STOP
START
STOP
SYSTEM
100%

WINMATE

WINMATE HYGIENIC PANEL PCS DESIGNED TO MEET FOOD & BEVERAGE MANUFACTURING CHALLENGES