WINMATE
www.winmate.com

ROBOTIC CONTROLLERS

PRECISION AND DURABILITY
FOR EVERY MISSION

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.

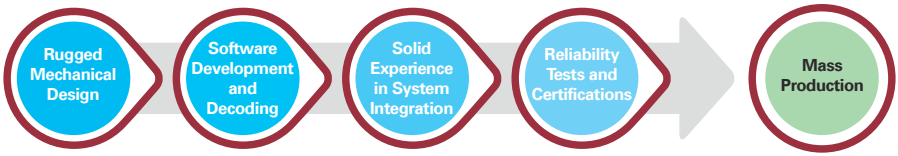
From product design to accessories, our engineering team designs and support the system integration process.

- 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

Robotic Controllers Solutions

Overview

Winmate's Robotic Controllers are cutting-edge platforms designed for precise management of unmanned systems and robotics in dynamic environments. These solutions integrate robust hardware with advanced software, providing operators with seamless control, real-time data visualization, and secure communication for mission-critical operations.

The Robotic Controllers is optimized for applications such as UAV navigation and autonomous vehicle coordination, featuring high-performance computing, intuitive user interfaces, and low-latency video streaming. The Robotic Controllers is tailored for robotics management, offering reliable control for ground-based robots with extended wireless connectivity, real-time processing, and environmental durability.

Built to meet industrial and military-grade standards, both stations are engineered for resilience in harsh environments, ensuring uninterrupted operation and precise execution of tasks. Winmate's Robotics Controller redefine operational efficiency and reliability, empowering industries from defense and logistics to agriculture and beyond.

Technology

Robotic Controllers Key Features

Winmate's Robotic Controllers are designed for critical environments, featuring MIL-Grade durability, advanced wireless connectivity, sunlight-readable displays, and extended battery life for every operations. With customizable modular interfaces and ergonomic designs, they provide reliable performance, operator comfort, and seamless control in applications such as rescue robotics, smart farming, defense operations, and unmanned device management.

Extended Ruggedized

Wireless Communication

All-Weather Display

Extended Battery Life

Customizable Options

Ergonomically Designed

NEXT-LEVEL CONTROL FOR EVERY MISSION.

Applications

Winmate's Robotics Controllers are versatile platforms designed for a wide range of applications, including emergency robotic response, industrial automation, and smart farming. These controllers provide precise real-time control and monitoring of autonomous robots in manufacturing, logistics, and field operations while supporting advanced diagnostics and seamless integration with automated systems.

With robust performance, durable construction, and high-precision capabilities, Winmate Robotics Controllers offer reliable and adaptable solutions for the most demanding environments and tasks.

ROBOT CONTROL PANEL

FIELD SERVICE

AUTOMATED MACHINERY

SURVEILLANCE & SECURITY

SMART FARMING

GEOSPATIAL MAPPING

SEARCH & RESCUE

Application Story

Smart Agriculture with AI and Robotics in Taiwan

Background

Taiwan has become a leader in smart agriculture, using technologies like AI, IoT, drones, and robotics to modernize farming practices. These innovations help farmers optimize resources, improve crop yields, and enhance efficiency despite challenges such as limited arable land and unpredictable weather. Precision farming leverages real-time data from IoT sensors and AI to monitor soil, weather, and crop health. Drones and robots automate tasks like irrigation and pest control, reducing labor needs and minimizing environmental impact.

Core Products

- G101TG - 10.1" Intel® Tiger Lake Robotics Controller

> "SMART SOLUTIONS FOR SMARTER AGRICULTURE."

Main Challenges

- Compatibility and Communication Integration
- Weather-Resistant Design
- Multi-Source Data Integration
- Real-Time Data Processing

Why Winmate

- Advanced Robotics Controller
- Precision Monitoring
- Facilitated Real-time Identification

Application Diagram: Smart Agriculture with AI and Robotics

Application Story

Enhancing Underwater Drone Control

Background

Unmanned devices like drones and robotics have transformed industries by enabling operations in challenging environments. Underwater drones have revolutionized subaquatic exploration, allowing detailed surveys, inspections, and research in hazardous marine conditions. Nordic Robotics and Winmate have partnered to enhance underwater exploration, integrating advanced drones with cutting-edge robotics controllers. This collaboration delivers greater precision, efficiency, and reliability, setting a new benchmark for underwater robotics.

Core Products

- G101TG - 10.1" Intel® Tiger Lake Robotics Controller

Main Challenges

- Implementing Nordic Robotics' Live Remote Control
- Compatibility with Hybrid Systems
- Environmental Resilience
- Low-Latency, High-Resolution Video Streaming

Why Winmate

- Reliable Operation in Extreme Conditions
- Customizable and Secure
- Real-Time Video Performance
- Rugged Durability
- Advanced Connectivity

> **"SEAMLESS PERFORMANCE BENEATH THE SURFACE."**

Application Diagram: Enhancing Underwater Drone Control

Application Story

Boosting Safety and Efficiency in Nuclear Plants

Background

Nuclear power plants play a vital role in the global energy supply, offering sustainable, low-carbon energy. However, maintenance and inspection pose challenges due to high radiation, confined spaces, and complex infrastructure. Unmanned robots equipped with advanced control systems address these issues by performing structural inspections, environmental monitoring, and decontamination, reducing human exposure and improving precision. Robust robot controller ensure reliable communication and operation in these critical environments.

Core Products

- G101AD-A Robotics Controller

Main Challenges

- High Radiation Environments
- Confined and Complex Spaces
- Extreme Reliability Requirements
- Limited Visibility and Accessibility
- Demand for Real-Time Data

Why Winmate

- Advanced Performance
- Intuitive and Ergonomic Design
- Rugged and Reliable
- Enhanced Safety and Precision

“ENHANCING SAFETY THROUGH ADVANCED ROBOTICS CONTROL.”

Application Diagram: Boosting Safety and Efficiency in Nuclear Plants

5.5" Android Rugged Robotic Controller

G500G7

“COMPACT POWER, UNLIMITED CONTROL.”

- 5.5", 1920 x 1080 TFT LCD Panel with Direct Optical Bonding and PCAP Touch
- ARM Genio 510 2 x A78 2.0GHz + 4 x A55 2.0GHz
- Android 13.0
- 1x Micro HDMI, 1x USB 3.0 (Type C), 1x M10 LAN Connector, 1x Micro SD Card
- Support up to 1000 nits (High Brightness)

Compact and Ergonomic Design

Supports WIFI/BT

Tailored Configurations for Versatile Applications

Compact and Durable Design for Any Environment

Custom Configuration

Up to 4 GB — Memory

Up to 64 GB — Storage

WLAN

BT

Application

Operating Room Control

COMPACT AND ERGONOMIC DESIGN FOR ROBOTICS CONTROL

Winmate compact robotic controller offers a lightweight and ergonomic design, providing operators with seamless and efficient control over robotics systems in industrial environments.

Custom Configuration

Up to 4 GB
Memory

Up to 64 GB
Storage

WLAN
WLAN

BT

GPS/ GLONASS

Hot-swappable Design

Application

Optimizing Agriculture with Robotic Controllers

PRECISION FARMING MADE SMARTER

Enhance agricultural productivity with robotic controllers, enabling automated drone operations for precision spraying and monitoring.

8" Android Rugged Robotic Controller

G900G7

COMPLIANT MIL-STD 810H

FC CE

> **“ COMPACT, RELIABLE, AND READY FOR ACTION. ”**

- 8", 1920 x 1200 IPS LED Panel with Direct Optical Bonding and PCAP Touch
- 4GB RAM + 64GB eMMC
- ARM Genio 510 2 x A78 2.0GHz + 4 x A55 2.0GHz
- Android 13.0
- 1x Micro HDMI, 1x USB 3.0 (Type A), 1x USB 2.0 (Type C), 1x M8 LAN Connector
- Support up to 1000 nits (High Brightness)
- Hot-Swappable Battery Design
- Optional 4G/5G Connectivity

Rugged and Advanced Build Design

Supports WIFI/BT

Tailored Configurations for Versatile Applications

8" Windows Rugged Robotic Controller

G900AD

> **“ STREAMLINED CONTROL, OPTIMIZED RESULTS. ”**

- 8", 1920 x 1200 IPS LED Panel with Direct Optical Bonding and PCAP Touch
- 8GB DDR5 SDRAM + 256GB SSD
- Intel® Core™ i5-1235U Processor
- Windows 10 IoT Enterprise , Windows 11 IoT Enterprise (Optional), Linux Ubuntu 22.04 (Optional)
- 1x Micro HDMI, 1x USB 3.0 (Type A), 1x USB 3.0 (Type C), 1x M12 LAN Connector,
- Support up to 1000 nits (High Brightness)
- Hot-Swappable Battery Design
- Optional 4G/5G Connectivity

Rugged and Advanced Build Design

Supports WIFI/BT

Tailored Configurations for Versatile Applications

Custom Configuration

Up to 32 GB — Memory

Up to 2 TB — Storage

WLAN — WLAN

BT

GPS/ GLONASS

Hot-swappable Design

Application

Robotic Controllers for Defense Applications

TACTICAL CONTROL FOR STRATEGIC MISSIONS

Strengthen defense operations with rugged robotic controllers designed for deploying autonomous systems in challenging field conditions.

Custom Configuration

Up to 8 GB — Memory

Up to 128 GB — Storage

WLAN — WLAN

BT

GPS/ GLONASS

Hot-swappable Design

Application

Robotic Controllers for Emergency Response

RAPID DEPLOYMENT FOR CRITICAL MISSIONS

Support emergency operations with robotic controllers, enabling precise coordination of drones and autonomous vehicles for disaster management.

10.1" Android Rugged Robotic Controller

G101Q9-A

COMPLIANT MIL-STD 810H

FC CE

“INNOVATIVE DESIGN FOR ADVANCED APPLICATIONS.”

- 10.1", 1920 x 1200 IPS LED Panel with PCAP Touch
- 8GB RAM + 128GB eMMC
- Qualcomm® 6490 (Octa-core2.7 GHz) Processor
- Android 13.0
- 1x Micro HDMI, 1x USB 2.0 (Type A), 1x USB 3.0 (Type C), 1x M10 LAN Connector
- Support up to 1000 nits (High Brightness)
- Hot-Swappable Battery Design
- Optional 4G/5G Connectivity

Rugged and Advanced Build Design

Supports WIFI/BT

Tailored Configurations for Versatile Applications

10.1" Windows Rugged Robotic Controller

G101AD-A

“CONTROL SMARTER, OPERATE BETTER.”

- 10.1", 1920 x 1200 IPS LED Panel with PCAP Touch
- 8GB DDR5 SDRAM + 256GB SSD
- Intel® Core™ i5-1235U Processor
- Windows 10 IoT Enterprise ,
  Windows 11 IoT Enterprise (Optional),
  Linux Ubuntu 22.04 (Optional)
- 1x Micro HDMI, 1x USB 3.0 (Type A),
  1x USB 3.0 (Type C), 1x M10 LAN Connector,
- Support up to 1000 nits (High Brightness)
- Hot-Swappable Battery Design
- Optional 4G/5G Connectivity

Rugged and Advanced Build Design

Supports WIFI/BT

Tailored Configurations for Versatile Applications

Custom Configuration

Up to 32 GB — Memory

Up to 2 TB — Storage

WLAN — WLAN

BT — BT

GPS/ GLONASS

Hot-swappable Design

Application

Advanced Robotics Control in Smart Industries

EMPOWERING INNOVATION IN AUTOMATION

Facilitate high-performance industrial processes with robotic controllers tailored for reliability in automated environments.

Custom Configuration

Up to 4 GB
Memory

Up to 64 GB
Storage

WLAN
WLAN

BT
BT

GPS/ GLONASS

Hot-swappable Design

Application

Revolutionizing Smart Manufacturing with Robotic Controllers

SEAMLESS INTEGRATION FOR INDUSTRIAL EFFICIENCY

Power intelligent factory automation with robust robotic controllers designed for precise machine operation and data integration.

10.1" Android Rugged Robotic Controller
G101G7

COMPLIANT MIL-STD 810H

FC CE

> **“ROBUST CONNECTIVITY, SEAMLESS OPERATION.”**

- 10.1", 1920 x 1200 IPS LED Panel with Direct Optical Bonding and PCAP Touch
- 4GB RAM + 64GB eMMC
- ARM Genio 510 2 x A78 2.2GHz + 4 x A55 2.0GHz
- Android 13.0/Linux Ubuntu
- 1x USB 2.0, 1x M8 LAN Connector, 1x M10 Push Pull Connector (optional)
- Support up to 800 nits
- Hot-Swappable Battery Design
- Optional 4G Connectivity
- Embedded TPM IC

Rugged and Advanced Build Design

Supports WIFI/BT

Tailored Configurations for Versatile Applications

10.1" Windows Rugged Robotic Controller

G101TG

> “VERSATILITY MEETS DURABILITY IN CONTROL.”

- 10.1", 1920 x 1200 IPS LED Panel with Direct Optical Bonding and PCAP Touch
- 8GB DDR5 SDRAM + 128GB SSD
- Intel® Core™ i5-1135G7 2.4 GHz (up to 4.2 GHz), Intel Core i3/i7 Processor (Optional)
- Windows 10 IoT Enterprise, Windows 11 IoT Enterprise (Optional), Linux Ubuntu 22.04 (Optional)
- 1x USB 2.0, 1x M8 LAN Connector, 1x M10 Push Pull Connector (optional), 1x Micro SD Card, 2x Micro HDMI
- Support 800 nits and up to 1200 nits (Optional)
- Hot-Swappable Battery Design
- Optional 4G/ 5G Connectivity
- Embedded TPM IC

Rugged and Advanced Build Design

Supports WIFI/BT

Tailored Configurations for Versatile Applications

Custom Configuration

Up to 32 GB — Memory

Up to 2 TB — Storage

WLAN — WLAN

BT

GPS/ GLONASS

Hot-swappable Design

Application

High-Precision Robotics for Industrial Automation

SIMPLIFYING COMPLEX WORKFLOWS

Manage robotic arms and industrial machinery efficiently using rugged robotics controllers for real-time monitoring and seamless operation.

Custom Configuration

Up to 32 GB
Memory

Up to 2 TB
Storage

M12 Connector

Hot-swappable Design

Application

Portable and Rugged Robotics Controller Suitcase

MOBILITY MEETS ROBUST PERFORMANCE

The Winmate rugged robotic controller suitcase combines portability and durability, enabling on-the-go control and monitoring of robotic systems in demanding industrial settings.

15.6" Rugged Portable Robotic Controller

G156AD-SUIT

COMPLIANT MIL-STD 810H

FC CE

“ENGINEERED FOR THE MISSION, BUILT FOR SUCCESS.”

- 15.6", 1920 x 1080 with Direct Optical Bonding and PCAP Touch
- 1x SO-DIMM, DDR5 4800 MHz, 8GB
- Intel® Core™ i5-1235U 3.3 GHz (up to 4.40 GHz)
- Windows 11 IoT Enterprise (Optional), Windows 11 IoT Pro (Optional), Linux Ubuntu 22.04 (Optional)
- 1x USB 3.0, 1x HDMI, 1x Giga LAN, 1x M12 Connector (All Waterproof)
- Support up to 2000 nits (High Brightness)
- Hot-Swappable Battery Design

MIL-Grade Durability for Extreme Conditions

Rugged Protector Case for Unmatched Equipment Security

IP65 Water-Resistant Design for Reliable Performance

Enhanced Security Precision and Durability for Every Mission

WINMATE