DARVEEN

Empowering Agricultural Vehicles for Smarter and Sustainable Farming

To meet the growing global population and diverse consumer demands, agricultural technology is evolving rapidly. Additionally, labor shortages in farming have become a common challenge. Today, smart agriculture, also known as smart farming, leverages digital technologies to optimize processes and drive innovation. From data-driven crop management, resource allocation, and agricultural production strategies to supply chain management supported by edge computing, farmers are embracing technology to reduce costs, increase efficiency, and meet market needs.

Darveen's vehicle mount computers and rugged tablets are designed to tackle the unique challenges of fieldwork and agricultural machinery operations. These solutions withstand harsh farming environments, including dust, high humidity, and vibrations. Whether it's using vehicle mount computers installed on tractors or harvesters for precise navigation and continuous monitoring during planting or harvesting, or deploying rugged tablets as mobile devices for field inspections, enabling quick data access, real-time crop condition recording, and on-the-spot analysis, Darveen provides flexible and reliable solutions. These technologies empower farmers to achieve their smart agriculture goals.

Requirements for Computers in Agricultural Vehicles

- **User-Friendly Interface:** Vehicle mount computers installed on tractors should feature responsive touchscreens for easy input by operators. Portable rugged tablets must also have high-brightness displays to ensure visibility under direct sunlight.
- **Rugged Durability:** The computers must withstand unpredictable outdoor conditions, including extreme temperatures, accidental drops, and intense vibrations from vehicle operations, ensuring stable performance.
- **Connectivity:** Supports connection to various peripheral devices, expandable to sensors for collecting field data or to CAN bus for monitoring fleet status and operation parameters.
- **Wireless Communication and High-Precision Positioning:** Integrated Bluetooth, Wi-Fi, LTE/5G wireless communication capabilities are vital for real-time data transmission and communication. RTK differential technology is supported to achieve precise positioning within 1–2 centimeters, enabling accurate operations.
- **Power Management:** Must meet vehicle equipment power conditions, capable of managing voltage surges during operation to ensure long-lasting reliability.

Applications for Vehicle Mount Computers and Rugged Tablets

Both vehicle mount computers and rugged tablets can monitor crop growth, soil moisture, and climate data while tracking operational progress. They also support wireless connectivity for seamless communication with remote teams. However, their applications differ in the following ways:

	Vehicle Mount Computers	Rugged Tablets
Space Requirements	Fixed in agricultural machinery, they connect to sensors for fleet management and predictive maintenance.	Portable and adaptable, they can be used across vehicles or in the field for inspections, photos, and crop condition recording.
Environmental Adaptability	Designed for stationary installation, they typically feature long-term resistance to vibration, dust, and water.	Portable with dustproof, waterproof, and drop-resistant capabilities, they also offer sunlight-readable displays for outdoor use.
Data Recording	Collect and process data through onboard sensors, making them ideal for large-scale data analysis.	Better suited for real-time recording, capturing on-site photos or videos, and quickly sharing information with teams.

Darveen's Computer Solutions for Smart Agriculture

Darveen offers a range of rugged solutions to enhance efficiency, sustainability, and profitability in agricultural management, including vehicle mount computers and rugged tablets. These computers are specifically designed to withstand harsh environments, featuring shock resistance, vibration endurance, tolerance for extreme temperatures, and compatibility with specialized power requirements. Certified to US military-grade standards, they deliver stable and reliable performance.

Additionally, Darveen provides a variety of accessories to support diverse operational needs. For vehicle mount computers, available options include the DV-MOUNT swivel mounting kit, industrial IP65 keyboards, sunshades, and antennas with varying gain levels to meet specific requirements in the cabin.

For rugged tablets, Darveen offers a durable vehicle dock for secure installation in the driver's seat and a vehicle charger for in-vehicle power supply and charging. Accessories like hand straps and shoulder straps make it easy for operators to carry and use the device on the go.

Recommended Products

Vehicle Mount Computers

	VT Series • Powered by Intel® Core™ i5 / Celeron® Rockchip RK3399 / RK3588 CPU • 8" to 15" resistive or P-Cap touchscreen (up to 1,000 nits) • Supports Windows 11/10 or Android 11 • Available with numeric, function keys, or QWERTY keyboard • 30 to 60°C wide operating temperature • Full IP66/ IP65 protection • Compliant with MIL-STD-810H/G • 8-36 VDC power input with ignition control • Wi-Fi 7, Wi-Fi 6E, Bluetooth 5.4, 5G/4G, GPS, CAN2.0B • Supports RTK precision positioning with accuracy down to 1-2 cm • Rich I/O including USB, COM, GbLAN, DIO, CAN bus (optional)
	FMT Series • Powered by Rockchip RK3588 CPU • 8" and 10.1" P-Cap touchscreen (up to 750 nits) • Supports Android 12 • 30 to 60°C wide operating temperature • IP66 front panel • Compliant with MIL-STD-810H • 8-36 VDC power input with ignition control • Built-in Wi-Fi, Bluetooth, 5G/4G, GNSS, CAN2.0B • Supports standard/M12/DT connectors

Rugged Tablets

	RTC Series (Windows OS) • 12th gen Intel® Core™ i7/ i5 / Celeron® processor • 8", 10.1", and 11.6" screen size, sunlight readable • Integrated 1D/2D barcode reader, NFC, RFID, fingerprint for data collection • Supports 4G, Wi-Fi, Bluetooth, and GNSS • Rich I/O interfaces, including COM, LAN, USB, HDMI • Removable high-capacity battery design • Hot-swappable dual-battery design (RTC-I116 only) • IP67/IP66 and MIL-STD-810H certified

RTC Series (Android OS)
- MediaTek MT6771 Octa-core processor
- 8" and 10.1" screen size, sunlight readable
- Integrated 1D/2D barcode reader, NFC, RFID, fingerprint for data collection
- Supports 4G, Wi-Fi, Bluetooth, and GNSS
- Rich I/O interfaces, including COM, LAN, USB, HDMI
- Removable high-capacity battery design
- IP67 and MIL-STD-810H certified

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