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Maximize Productivity with Darveen's Industrial Panel PCs in Factory MES Systems

For a long time, automotive recalls have been one of the most impactful events in the manufacturing industry. Common reasons for recalls include airbag issues, wiring problems, and brake system defects. From engine problems in the early 1970s to recent design flaws in autonomous driving systems, these issues can be devastating for car manufacturers. Manufacturing Execution Systems (MES) can provide real-time production data and detailed traceability records, helping to limit the scope of at-risk products in the event of a recall.

Manufacturing Execution System (MES): Key to Enhancing Production Efficiency and Quality Control

Manufacturing Execution Systems (MES) play a crucial role in improving production efficiency and quality control. Since the 1990s, industry organizations like MESA International have been advocating for the application of MES systems. The main purpose is to maintain quality control through MES systems while minimizing production costs and reducing product recall incidents. MES systems use computerized technology to track and record the entire manufacturing process from materials to finished products. This information can be used by decision-makers to improve shop floor conditions and increase productivity.

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MES monitors multiple elements in the production process in real-time, including material tracking, workforce management, resource scheduling, and equipment efficiency management. Within the framework of smart manufacturing, MES can integrate various facilities to form a unified data platform. It connects with ERP planning management systems at the top and interfaces with PLCs, sensors, NFC/RFID/barcode scanners, and machinery at the bottom. Industrial panel PCs are used to display shop floor data and work orders from ERP systems, issuing production instructions to operators or lower-level equipment.

Challenges in Factory Environments

In production and manufacturing, industrial panel PCs are essential tools for implementing MES and realizing smart manufacturing processes. Compared to general commercial interactive touch computers, industrial panel PCs can address the following challenges and demands:

- **Harsh On-site Work Environments**
High and low temperatures, dust, and vibration impose stringent requirements for equipment durability and stability.

- **Multiple Types of IO Ports**
Industrial panel PCs provide diverse connectivity options, supporting data capture and real-time data transmission for various sensors and devices.

- **Stable 24-hour Operation**
Industrial panel PCs offer high reliability, ensuring continuous execution of MES systems and preventing production stoppages.

- **Data Visualization and Intuitive Operation**
Equipped with sensitive and user-friendly touch interfaces, industrial panel PCs enable operators to quickly understand and process production instructions, thereby improving overall operational efficiency.

Rugged Panel Computers are Key

To address these challenges and ensure long-term reliability and performance, industrial panel PCs must be equipped with robust features to ensure their durability.

- **Durability**
They must have a robust casing and structure capable of withstanding harsh environments such as high and low temperatures, dust, vibration, and chemical corrosion, typically requiring an IP65 protection rating. In food processing plants, stainless steel casings offer better corrosion resistance, bacterial resistance, and ease of cleaning.

- **Diverse IO Ports**

They provide a wide range of IO connection options, such as USB, COM, Ethernet, and more, to support real-time data transmission for various sensors and data acquisition devices.

- **High Reliability and Stability**

Industrial panel computers need to operate continuously for long periods, so their internal components must be of industrial-grade quality to ensure stable, long-term operation.

- **Visualized and Intuitive Operating Interface**

They are equipped with high-definition screens and sensitive, durable resistive or projected capacitive touch interfaces to ensure that operators can perform tasks quickly and accurately.

Darveen's Panel PC Solutions

Darveen offers a comprehensive range of panel PC products, meeting various customer needs promptly. Features include:

- **Comprehensive Selections**

Darveen offers industrial panel PCs ranging from 8 inches to 21.5 inches in size. This includes the Windows-based DPC series, Android-based APC series, the stainless steel-cased SPC series, and the fully IP65 waterproof RPC series. The CPU platforms range from ARM to Intel Celeron/Core-i.

- **User-friendly Touch Screen**

Touch options include an ultra-sensitive multi-point projective capacitive touchscreen (PCAP) or a single-point resistive touchscreen.

- **Built Tough for Harsh Environments**

The entire series is fanless and provides diverse specifications for different environments, including IP65 front panels, full IP65 with M12 connectors, and full IP66 stainless steel with M12 connectors.

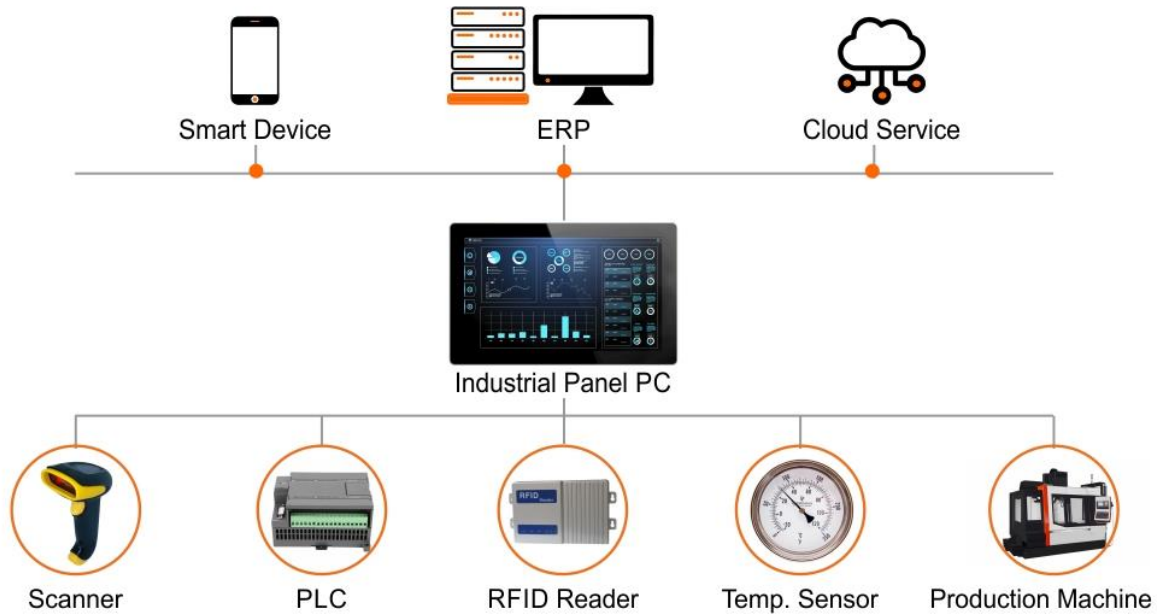- **Rich I/O Connectors for Easy Connection to Factory Equipment**

Available ports include USB, GbE LAN, and COM to connect to factory equipment such as scanners, RFID readers, printers, alarms, and sensors.

- **Stainless Steel Series**

For food processing plants, which often deal with residue and greasy working environments, Darveen offers stainless steel panel computers SPC series.

- **Versatile Installation Options**

Darveen's panel computers offer a variety of mounting accessories, including options for cantilever suspension, wall mounting, and stand-alone installation.

Smart Device — ERP — Cloud Service

Industrial Panel PC

Scanner — PLC — RFID Reader — Temp. Sensor — Production Machine

Recommended Products

	Industrial Panel PCs (DPC Series) • Processor: - DPC-7000 and DPC-8000 series: 10/11th Gen high-performance Intel® Core™ i processor - DPC-9000 series: Intel® Core™ U-Series / Celeron® processor • Rugged aluminum housing and fanless design • Supports Wi-Fi 6 (DPC-7000), Bluetooth, 4G, and 5G • IP65 rated front panel
	Android Panel PCs (APC Series) • Rockchip RK3399 processor • Rugged aluminum housing and fanless design • Supports Wi-Fi, 4G, and 5G • IP65 rated front panel

	Stainless Panel PCs (SPC Series) • Intel® Core™ i5 or Celeron® processor • Food-grade SUS304 stainless steel housing for corrosion resistance • M12 I/O connectors • Full IP66/IP65 protection • Optional Wi-Fi, Bluetooth, 4G, and 5G
	IP65 Waterproof Panel PCs (RPC Series) • Intel® Core™ i5 or Celeron® processor • Rugged aluminum housing and fanless design • M12 I/O connectors • Full IP65 protection • Optional Wi-Fi, Bluetooth, 4G

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