

Efficient Monitoring for Semiconductor Manufacturing With 5G-ready Arm Computers



Why Moxa

The UC-4400A Series Arm-based computers provide an all-in-one solution with 5G connectivity and optional Wi-Fi for backup, eliminating the need for multiple devices and saving cost and space. The computers run on Moxa Industrial Linux 3 (MIL3), offering long-term support and security, compliant with SEMI E187 cybersecurity standards for semiconductor equipment. Moxa also specializes in QXDM log analysis for 5G troubleshooting, ensuring reliable connectivity.



UC-4400A Series

- 5G built-in
- Moxa Industrial Linux 3 (MIL3)
- Moxa Swift tool for mass provisioning
- Moxa connection manager (MCM) utility for simplified wireless, automatic network failover, and connection keep-alive

Background

The semiconductor industry depends on real-time monitoring of systems like dry pumps and chillers for uninterrupted operations. Edge computers are deployed to collect and transmit data from different systems and equipment via cables to a DCS. As facilities grow, cable-based networks face challenges with installation, maintenance, and flexibility, leading to higher costs and clutter. Wired connections also cause data transmission delays, impacting real-time monitoring. Switching to 5G private networks reduces complexity, improves scalability, and helps future-proof the system for evolving needs.

Moxa's Solutions

Moxa's UC-4400A Series equipped with built-in 5G capabilities, offers an all-in-one solution that combines data collection, processing, and wireless connectivity. This simplifies infrastructure and enables easy relocation or expansion of equipment without additional wiring, ensuring faster installation and reduced downtime. Additionally, the UC-4400A can help significantly reduce wiring and maintenance costs.

By replacing the original physical network with a 5G network, the UC-4400A Series provides high-speed, low-latency data transmission, enabling real-time monitoring of critical systems like dry pumps, scrubbers, chillers, and LDS. This is essential for maintaining production efficiency.

The UC-4400A computers come with security features compliant with IEC 62443-4-2 SL2 and 10-year long-term support for MIL3. Critical security patches are also included, ensuring long-term reliability and protection against evolving security threats.

