



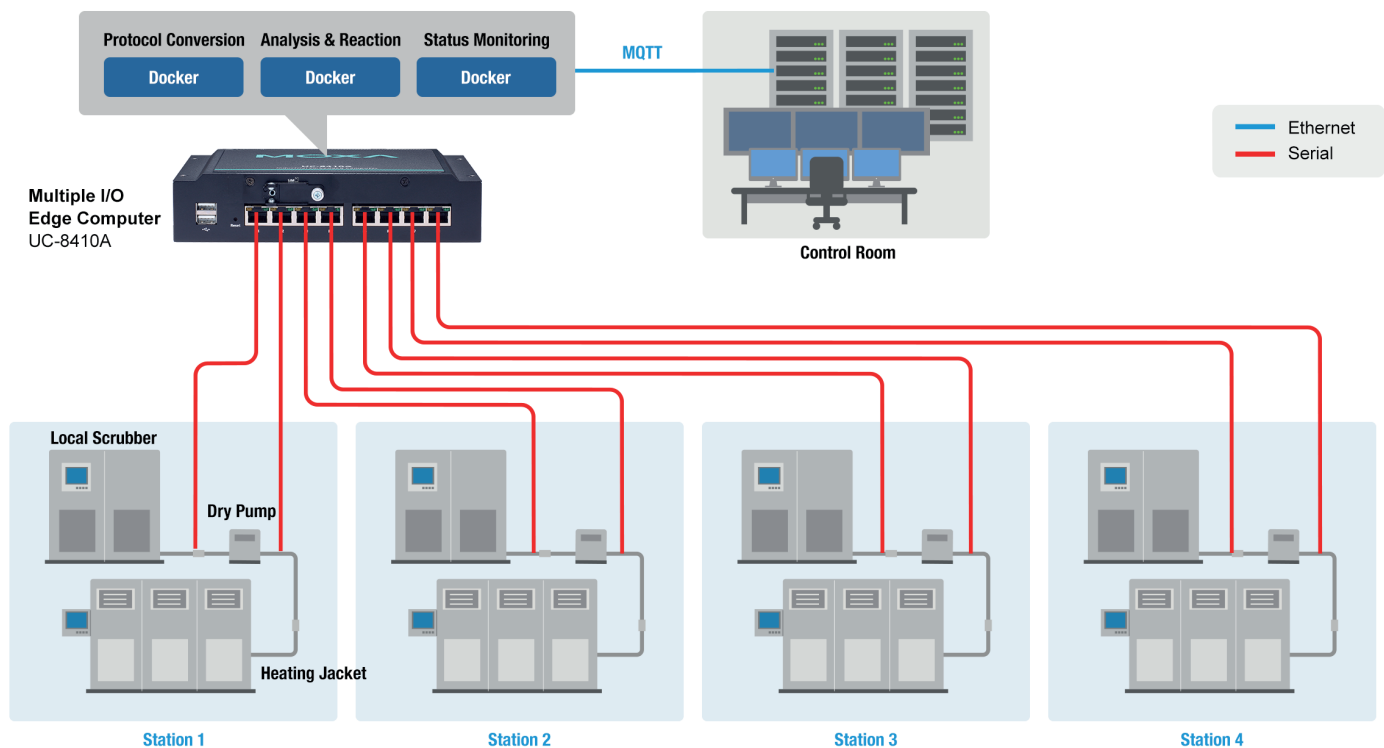
Edge Computing Solution for Semiconductor Machine Status Analysis

Background

In semiconductor manufacturing, local-scrubber systems are used to treat and process the inflammable and toxic gases generated by the manufacturing equipment before the air is sent to a central scrubber. Because of the high risk of leakage of gas and solvents, the treatment system including scrubber, dry pumps, and heating jackets are critical elements that need to be monitored in a semiconductor factory.

Computing platforms, deployed at field sites, should be able to connect equipment that use different communication protocols to a central control room for machine status monitoring, event monitoring, and data analysis. The data collected from the field sites is processed and then sent to the control center through Ethernet and using IT protocols. Hence, a reliable high-performance computing platform is required at the field sites in order to derive the full benefit of the edge computing architecture.

System Architecture



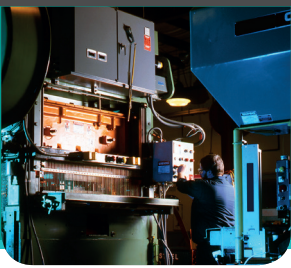
System Requirements

- A computing system to share the computing load from the server so as to implement edge data analysis
- Multi-serial port connectivity
- Stable and reliable systems
- Open Linux-based platform for quick application development

Why Moxa

- Dual Core RISC CPU with low power consumption for edge computing applications
- UC-8410A fanless embedded computer with 8 serial ports & 3 Giga LANs
- Industrial-grade and fanless design for reliable operations
- Moxa Industrial Linux with 10-year long-term support* and Debian-compatible open platform for Linux docker software

* Terms and conditions apply. Contact Moxa for details.



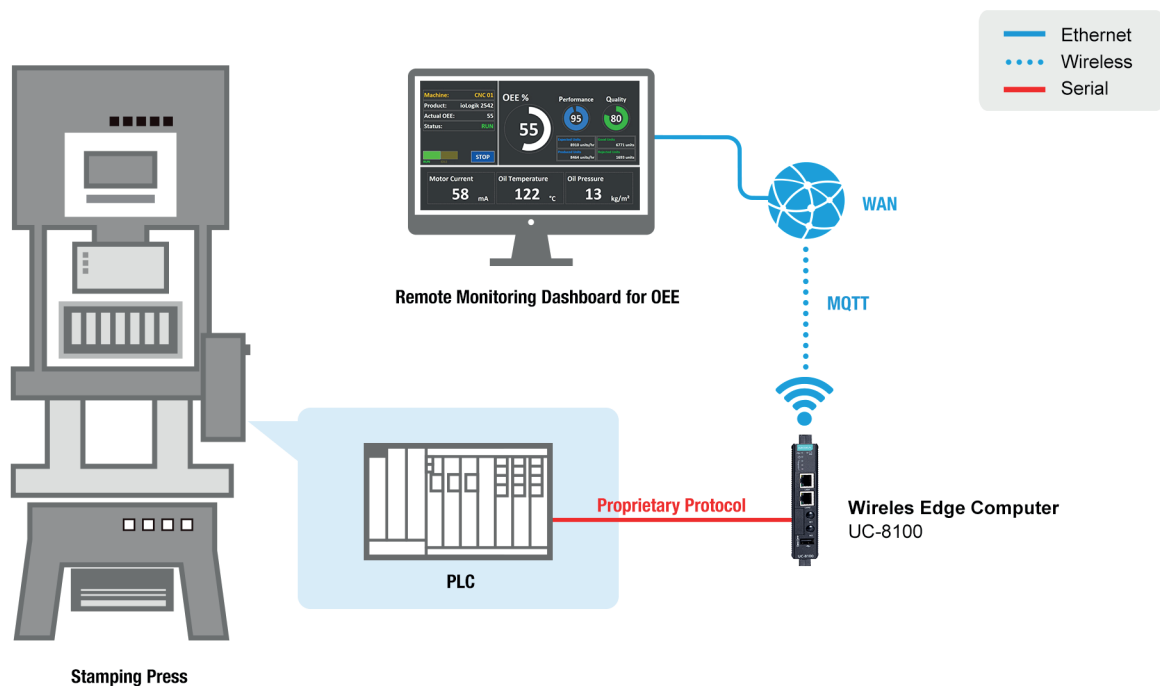
Machine Data Acquisition through PLCs for Machine Tool Builders

Background

Traditional machine tool builders are now willing to invest in new IIoT trends so that they can provide more value with their products and improve the quality of machine status data collected for post-sales management and services.

The data acquisition system must be capable of acquiring data from different brands of PLCs with their own proprietary protocols, send the data to backstage control server, and display the data on a dashboard remotely and locally. Furthermore, a compact and reliable device for data acquisition is required without having to changing the structure of machines. Which means, the system should be small enough to fit in existing control cabinets.

System Architecture



System Requirements

- Computing solution to collect data from PLC to monitor the status of the stamping press remotely and locally through Wi-Fi
- The solution should work with PLCs from Mitsubishi, Delta, and Allen-Bradley
- Compact-sized and vibration-proofed systems for reliable operation in the cabinet of the stamping press

Why Moxa

- The UC-8100 Series embedded computer that can collect proprietary data from PLC and perform local intelligence as well as wireless capability
- DIN-rail and compact size industrial-grade computer for cabinet installation with limited space
- Moxa Industrial Linux with 10-year long-term support* and Debian-compatible open platform for local database and dashboard applications

* Terms and conditions apply. Contact Moxa for details.

Recommended Products

Industrial IoT Gateways / Industrial Computers



Model	UC-2100	UC-3100	UC-5100	UC-8100-ME-T	UC-8410A Series
CPU	TI AM335x Cortex-A8 600 MHz / 1 GHz	TI AM335x Cortex-A8 1 GHz	TI AM335x Cortex-A8 1 GHz	TI AM335x Cortex-A8 1 GHz	NXP LS1021A Cortex-A7 Dual 1GHz
RAM / Storage	Up to 512 MB / 8 GB	512 MB / 4 GB	512 MB / 8 GB	512 MB / 4 GB	1 GB / 8 GB
Serial Ports	Up to 2	Up to 2 (supports 1 additional CAN port)	4 (supports 2 additional CAN ports)	2	8
LAN Ports	Up to 2	2	2	2	3
Wireless Expansion	Wi-Fi/LTE	Wi-Fi/LTE	Wi-Fi/LTE	LTE	Wi-Fi/LTE
Operating Temperature	-40 to 75°C	-30 to 70°C (with LTE module)	<ul style="list-style-type: none"> -40 to 85°C -40 to 70°C (with LTE module) 	<ul style="list-style-type: none"> -40 to 85°C -40 to 70°C (with LTE module) 	-40 to 75°C

IIoT Software



Model	ThingsPro™ Suite
Features	<ul style="list-style-type: none"> ThingsPro Gateway: Ready-to-use Modbus data acquisition platform with LTE connectivity, MQTT communication capabilities, and a built-in AWS IoT client ThingsPro Server: Device management platform for locating and remotely managing ThingsPro Gateways

HMI Panel Computers



Model	MPC-2070/2120
Panel Size	7" (16:9) / 12" (4:3)
Light Intensity	350/1,000 nits
CPU	Intel Atom E3826/E3845
Operating Temperature	-40 to 70°C

Ethernet Remote I/O



Model	ioLogik E1200
Input/Output Interface	E1210: 16 DI E1211: 16 DO E1212: 8 DI, 8 DIO E1213: 8 DI, 4 DO, 4 DIO E1214: 6 DI, 6 Relay E1240: 8 AI E1241: 4 AO E1242: 4 AI, 4 DI, 4 DIO E1260: 6 RTD E1262: 8 TC
Unmanaged Switch Ports	2
Operating Temperature	<ul style="list-style-type: none"> -10 to 60°C -40 to 75°C (-T model)

Industrial Networking Solution



Model	EDS-510E	EDS-P506E-4PoE
Type	Managed DIN-rail switch	Managed DIN-rail switch
No. of Ports	10	6
Gigabit Ethernet	3	2
Power Supplies	12/24/48/-48 VDC	12/24/48 VDC
Operating Temperature	<ul style="list-style-type: none"> -10 to 60°C -40 to 75°C (-T model) 	<ul style="list-style-type: none"> -10 to 60°C -40 to 75°C (-T model)
Redundancy	RSTP, MSTP, Turbo Ring, and Turbo Chain	RSTP, MSTP, Turbo Ring, and Turbo Chain