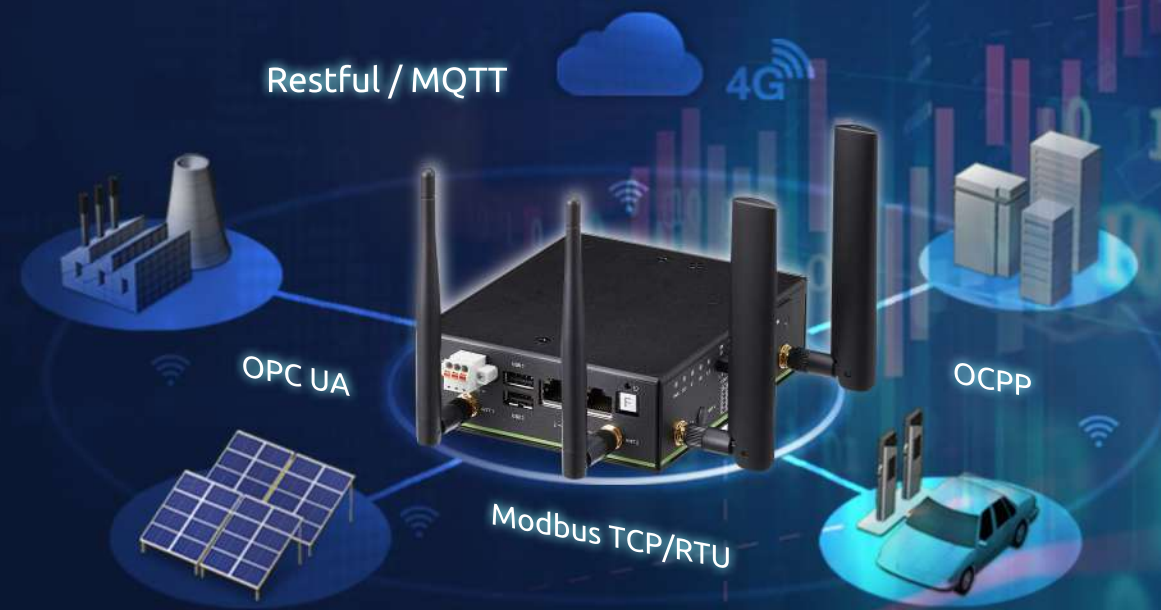
ADLINK
LEADING EDGE COMPUTING

USE CASE



EMU-200

Arm-based Application-ready and Programmable IIoT Gateway

2023 IoT Solutions & Technology

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Target Applications









Smart Manufacturing

- Energy management system
- Predictive maintenance

Renewable Energy

- Solar, wind farm energy monitoring
- Energy storage system
- Energy asset management

Smart Charging

- EV charging station load balance
- Energy storage system

Smart Building

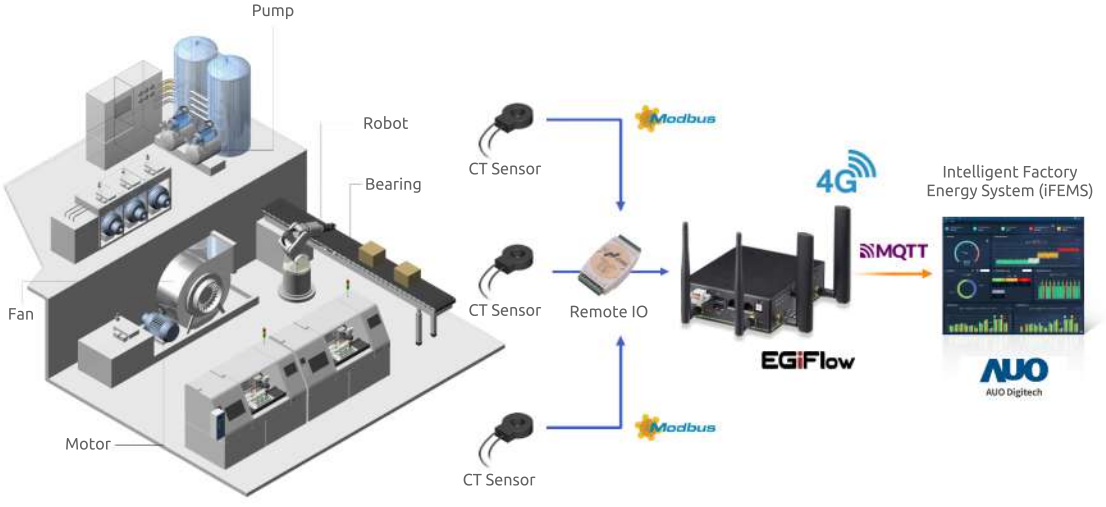
- Energy management system
- HVAC & environmental monitoring



Smart Manufacturing

Energy Management System

An Energy Management System (EMS) in smart manufacturing optimizes energy usage and reduces costs by utilizing digital technologies and data analytics to monitor, control, and enhance energy consumption and production processes, thereby promoting environmental sustainability.



Challenges & Requirements:

- Hard to capture and track the overall power and energy data via individually distributed equipment
- Low monitoring capabilities to identify factors for improvement
- High productivity cost and carbon reduction layout

Why ADLINK:

- Delivers integrated CT sensors, remote I/O, IIoT gateways, and energy management software to allow end-to-end deployment
- Visualizes power data and detects abnormalities, ensuring the safe operation of electric systems
- Able to collaborate with third-party system integrators' software to deliver the integrated energy management solutions

Smart Manufacturing

Predictive Maintenance

Predictive equipment maintenance employs data analytics, sensors, and machine learning to predict failures. Continuous monitoring identifies early issues like vibration or temperature change, reducing downtime, extending equipment life, and optimizing costs and energy efficiency.

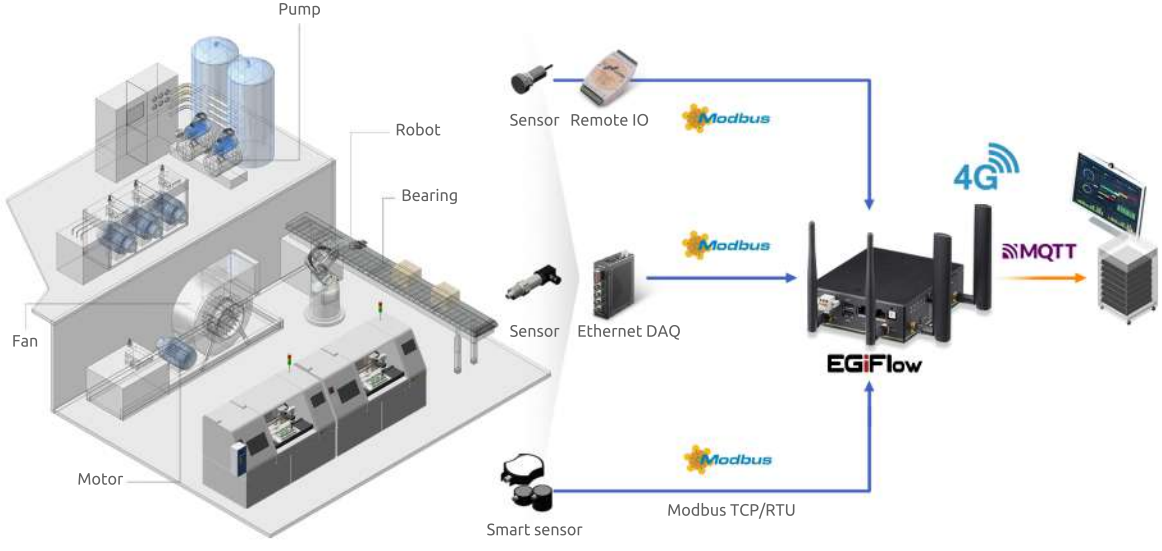


Challenges & Requirements:

- Hard to integrate equipment data from different signal sources and locations
- 24/7 monitoring and alarms with automatic real-time data logging, analysis and uploading, connected with SCADA system

Why ADLINK:

- Supports data acquisition and transmission with remote IO, Ethernet DAQ systems and IIoT gateways
- Built-in web console (EGiFlow) streamlines data transmission process from edge sensor to SCADA to predictive forecasting of equipment is sues to help prepare for early intervention

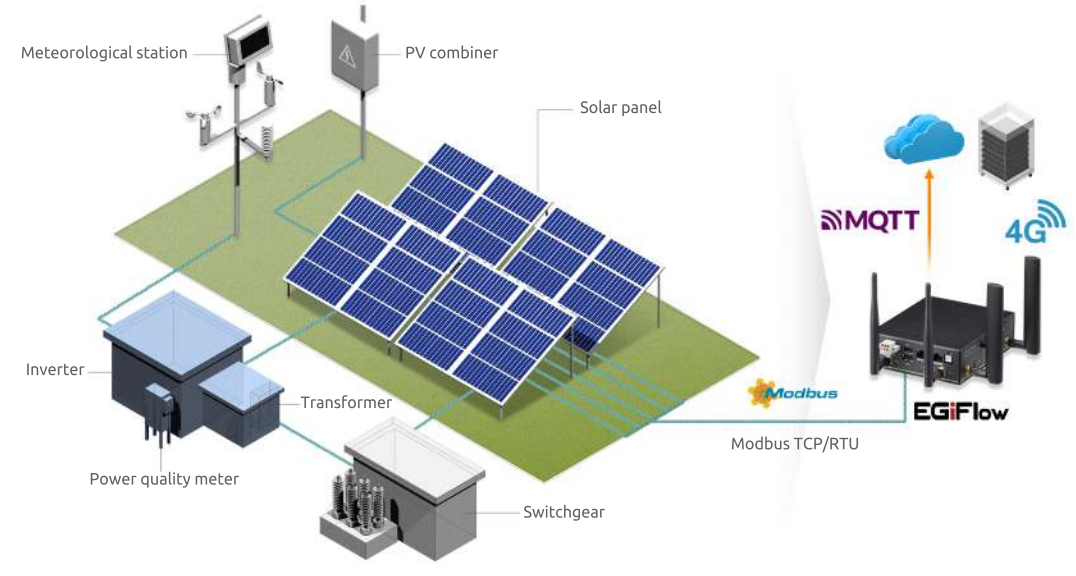




Renewable Energy

Solar Farm Energy Monitoring

Solar farm energy monitoring is a crucial aspect of modern renewable energy infrastructure. It involves the real-time collection and analysis of data from various energy generation components to maximize energy output and ensure efficiency, while contributing to clean energy sustainability and environmental responsibility.



Challenges & Requirements:

- Monitoring and analysis of diverse components in a large-scale solar farm (solar panels, inverter, meteorological station, etc.)
- Industrial-grade hardware requirement for harsh environments to ensure stable data delivery

Why ADLINK:

- Enables efficient component data collection and accelerates deployment by quick protocol conversion from Modbus to Restful/MQTT via built-in web console (EGiFlow)

- Suitable for outdoor applications with wide temperature range from -40°C to 70°C

Smart Charging

EV Charging Station Load Balance & Storage

As electric vehicles become more popular, there is a growing need for efficient smart charging infrastructure. Energy load balance and storage at EV charging stations is crucial for efficient operation. Transmitting overall energy usage to energy management systems helps operators manage infrastructure and boost EV adoption.



Challenges & Requirements:

- OCPP protocol required for charging points and energy management system due to public security issues
- Real-time power consumption monitoring for dynamic load balancing that does not exceed the overall maximum energy capacity

Why ADLINK:

- Equipped with abundant protocols to collect diverse system data of overall power capacity, power consumption from solar panels, energy storage, and charging points (Modbus, OCPP)
- Pre-tested support for mainstream EV charger brands (Delta, PHIHONG, ABB)

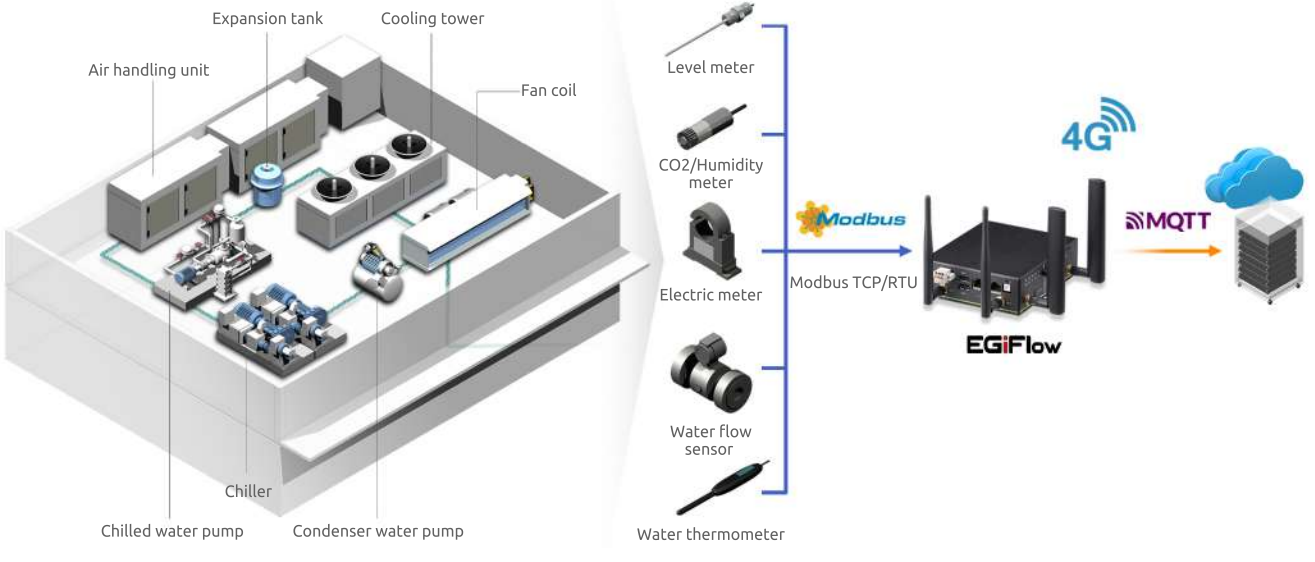




Smart Building

Energy Management System

Most energy consumption in buildings consists of HVAC systems that include cooling water towers, pumps, chillers, fan coils, etc. Adding seamless sensor connectivity and data transmission enhances energy management and contributes to the development of a robust ESG ecosystem, supporting corporate sustainability.



Challenges & Requirements:

- Different data transmission protocols from equipment to energy management system
- Seamless data collection of temperature, humidity, and occupancy from different meters (temperature, flow meters, CO2, energy)

Why ADLINK:

- Quick and simple protocol conversion from Modbus to MQTT/Private cloud via built-in web console (EGiFlow)
- Covert multi-sensor data into a valuable index for an energy management system with Python programming

EMU-200

Arm-based Application-ready and Programmable IIoT Gateway



Fast Edge-to-Cloud Connection

with Built-in web console- EGiFlow

Rich OT-to-IT Protocol Support

Modbus TCP/RTU, OCP UA, OCPP, MQTT, RESTful API, Azure IoT Hub, AWS IoT Core

Remote Device Monitor Ready

compatible with remote IO, smart sensor, Ethernet DAQ

Wireless Ready for Server/Cloud

with 5 antenna support (2x WiFi, 2x LTE, 1x GNSS)

Adaptable to Broad Temperature Range

-40 to 70 °C wide ranging temperature

Flexible Mounting Solution

Support din rail, wall mount

Scan QR code to get quote

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