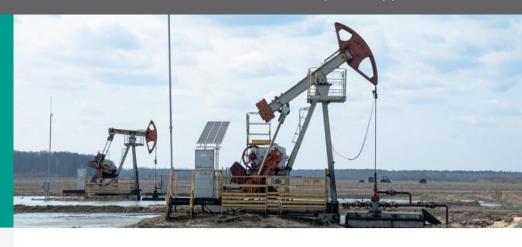# Efficient Wellhead Monitoring System With 64-bit Arm-based Computers and LTE Capability

Why Moxa

Moxa's UC-2200A 64-bit Arm-based computer features low power consumption, a dual-core Arm-based CPU, hazardous-location certifications, and compliance with the IEC 62443-4-2 standard, ensuring industrial-grade reliability, enhanced security, and efficiency even in extreme temperatures and difficult environments. Equipped with LTE Cat. 4, the UC-2200A enables transmission of data to the cloud for analysis and monitoring, making it ideal as data-acquisition gateways in remote unmanned areas of oil and gas fields.

UC-2200A Series

- Arm Cortex-A53 dual-core 1 GHz processor
- 2 LAN, 2 RS-232/422/485, and 1 USB ports
- -40 to 70°C operating temperature range
- Security functions compliant with IEC 62443-4-2 SL2
- LTE-ready with Verizon and AT&T carrier approvals and CE, FCC, and UL certifications

Background

In the oil and gas sector, regular monitoring of pressure and temperature plays a critical role in safely containing the pressure and flow from the wells to prevent leaks or blowouts. Permanent downhole gauges installed in the well are used to accurately measure the pressure and temperature. On-site maintenance staff need to read these gauges to ensure data integrity. However, this practice poses significant challenges, especially when wellheads and downhole gauges are distributed over a wide area.

Assigning staff to monitor data on site not only consumes a significant amount of time but also becomes increasingly problematic as oil and gas companies expand their operations and fields. Reporting issues and responding to them in a timely manner becomes difficult. The long distances involved, coupled with the harsh environmental conditions, substantially increases the time required and the costs to maintain stable real-time data.

Moxa's Solutions

Reliable, precise, and rugged wellhead monitoring systems are essential for assessing pressure and temperature information from wells using a continuous inflow of accurate data. Moxa's UC-2200A Series 64-bit Arm-based computers, designed as embedded data-acquisition gateways, support data preprocessing and transmit only the relevant information to the cloud in real time, significantly lowering data-transmission costs. The dual-core processor in the UC-2200A can control up to twice the number of wells, thereby boosting efficiency and reducing overall costs. A compact design, featuring low power consumption and LTE Cat. 4 wireless capabilities, makes the computer ideal for space-limited and unmanned monitoring applications.

MOXA®