

Quantum Automation **TECH** **CORNER** | with Brian Gallogly



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Quantum Automation is now able to offer cellular monitoring at 3G speeds with world renowned vendor Moxa. Used throughout many different industries including water, wastewater, oil, gas and others. Moxa's ioLogik W5340-HSDPA has cost effective benefits with trouble-free maintenance and easy deployment. Learn more about this product at www.quantumautomation.com.

Static Public IPs:

For most cellular solutions, both the cellular modems at the remote sites and the SCADA server at the central site should be assigned static public IPs in order to establish bi-directional communications. However, cellular network carriers charge higher monthly fees for static public IPs than dynamic private IPs. Since cellular fees are charged monthly, budget could be an issue. For this reason, managers may decide to shut down some remote sites.

Dynamic Private IPs with Active OPC

Most cellular solutions require static public IPs—which can be extremely expensive—to allow the central site to query the data loggers at any time. Moxa's ioLogik W5300 series and patented Active OPC software allow users to subscribe to a dynamic private IP data plan for the RTUs. The ioLogik W5300 can automatically establish communications with the Active OPC Server using a fixed IP, and the Active OPC Server will receive and register the ioLogik W5300's IP address and receive or record tag updates accordingly. ioLogik W5300 RTUs are very easy and cost effective to deploy and manage in a dynamic private IP environment.



\$1,256.00_{ea}

ioLogik W5340-HSDPA Series

HSDPA Micro Controller with 4 AIs, 8 DIOs, and 2 relay outputs.

Visit www.QuantumAutomation.com or call 714-854-0800

Data Consistency:

Cellular communications helps users collect data logs from remote sites without needing to make site visits. During data transmission, it is challenging to ensure data consistency through cellular communications, given that signal quality and downtime may vary by location. An ideal data logger should be able to re-transmit data logs after cellular reconnection, while avoiding transmitting duplicated data so as to reduce data transmission cost.

Data Consistency with DA-Center

Collecting data logs over the air from a central site, without needing to visit remote sites, is one of the benefits of using cellular RTUs. In an ideal operation, the cellular RTUs should be able to retransmit non-duplicated data logs after cellular reconnection. With Moxa's DA-Center, this task is much easier. The DA-Center provides a standard OPC interface that interacts with Active OPC Server for real-time data collection. After each cellular connection, the DA-Center will compare the historical data and the real-time data, and then complement the missing data by asking the ioLogik W5300 RTUs to re-transmit non-duplicated data logs into the dataset.

In addition, the DA-Center is able to convert this dataset into a tabular format for exporting the log files to a database or spreadsheets. Figure 2 shows the architecture of the DA-Center solution.



Figure 1: Moxa's Dynamic Private IP Solution

Hodgepodge Device Management:

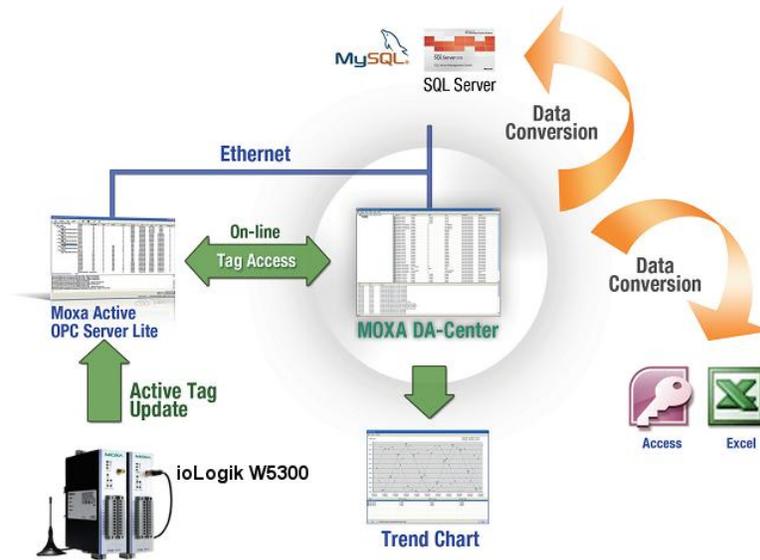
Some cellular solutions on the market use a hodgepodge of devices, including DTUs (data transfer units), data loggers, I/O controllers, and video servers. Whether the devices are from the same vendor or not, system integrators (SIs) must make sure the devices are compatible, and take the time to properly configure all of the devices.

In such cases, troubleshooting can cause a lot of hassles for the following reasons. First of all, it can take quite a bit of time for system integrators to learn new protocols or functions supported by unfamiliar devices. Secondly, it can be difficult to locate which device is causing problems when an error occurs. Moreover, system integrators may have problems finding qualified devices that support wide operating temperatures. Devices installed in harsh, wide temperature environments should at least support an operating temperature range from -20 to 70°C (-4 to 158°F).

All-in-one Solution: Cellular Modem, Data Logger, and I/O Controller

Get a cellular modem, data logger, and I/O controller in one compact box, and easily integrate it with other devices.

In order to dramatically reduce the amount of effort required to integrate devices from multiple vendors, the ioLogik W5300 RTU combines a cellular modem, a data logger, and an I/O controller in one compact box. If more I/O devices are required, the ioLogik W5300 RTU's I/O channels can be expanded by connecting it to the ioLogik E1200. If a video server is required, the ioLogik W5300 RTU can be integrated with Moxa's VPort 461 products. In addition, all products from the ioLogik W5300 series and ioLogik E1200 series, plus the VPort 461, support a wide operating temperature range for use in harsh environments.



When it's time to deploy the 3G Cellular Monitoring & Control solution you will need to contract with Crossbridge solutions. They will provide you with a SIM card to go into the ioLogik W5340-HSDPA and the charge will be anywhere between \$2 and \$50/month depending on usage. If you buy a lot of them for a major project, then they do site licensing. They are a Data Mobile Virtual Network Operator who focuses exclusively on wireless data. They do all of the Moxa solutions in the United States.

So where do you use these?

- Pipelines – Water, Oil, Gas – Remote Monitoring – Metering - Got leakage problems?
- Oil Production – Pump Jacks – Historian up to 32GB with SD card
- Water – Remote Lift Stations – Tank Farm & Pumping Stations
- Wastewater Treatment Plants – Lift Stations, Sewer Monitoring, Effluent Discharge
- Big Factories & Industrial Parks – Water Quality & Consumption – EPA issues?

These are quick and easy to deploy.

Let me know how we can help,

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