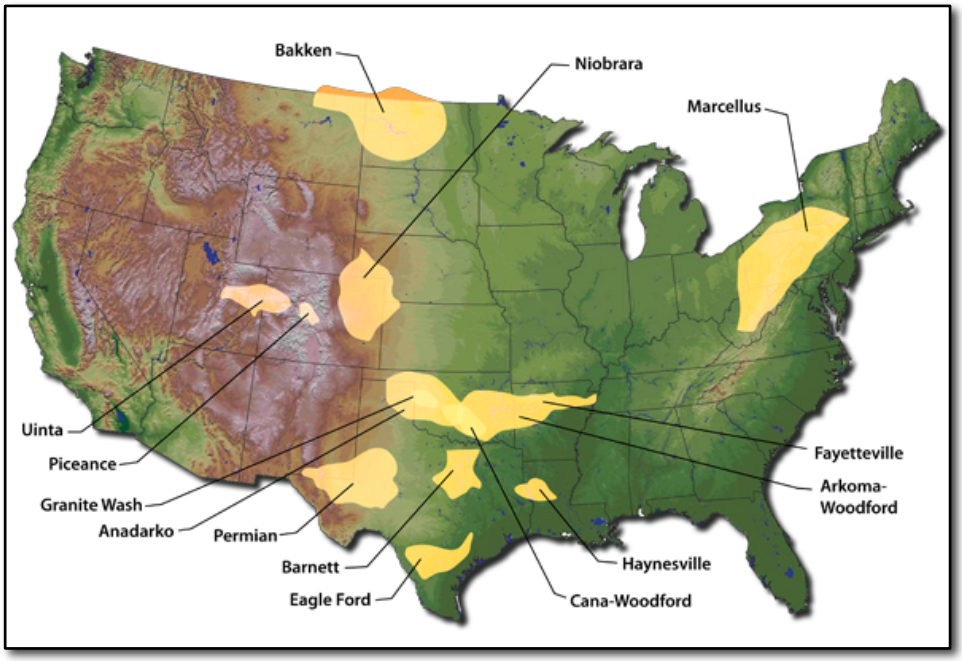
Griffin SCADA Platform

GRIFFIN I'NET, INC.

The Griffin SCADA Platform is a system designed to provide several services in the production monitoring space. At it's core, it is an advanced data logger that can record data from downhole instrumentation for years at a time. With more involved installations, it can send this live downhole instrumentation data back to town using cellular modems, radio links, RS485 networks, or other existing infrastructure.

Unlike most existing SCADA platforms using antiquated processing technology, the Griffin SCADA Platform uses a fast, modern ARM-based processor and runs a standard Linux operating system. This means that not only does the system have enough power to do advanced tasks, it can be expanded to use new hardware easily. This does not come at the cost of energy use, however... the core system only uses 0.5-1.5W of power. Modern cellphone processor technology is the driver that allows this to happen.

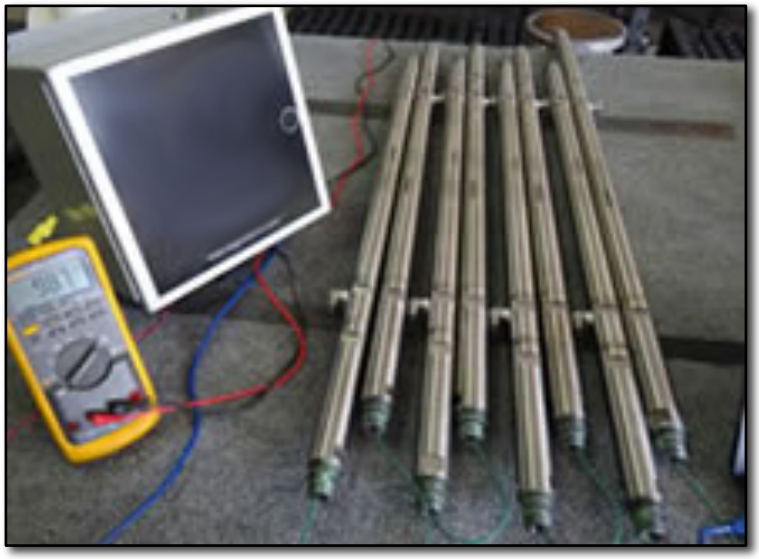


The Griffin SCADA Platform is field proven, with well over than ***2 million hours*** in the field to date.

Customers using the Griffin SCADA Platform are located across the US and around the world. To the left is a US location map showing where in the US the system may be found in the field. The system has also been installed in sites in the Middle East and New Zealand.

The product is lead-free/RoHS compliant, and comes standard in a NEMA 4 enclosure (IP66 rated).

How It's Used



In a production oilfield setting, the Griffin SCADA Platform is connected to sensors that are positioned deep in an oil well. The sensors are connected to the surface using an armored TEC cable. These sensors measure pressure and temperature at various points in the well.

The visibility that this data provides is very valuable for planning and monitoring field operations.

The system can also be connected to surface sensors, such as surface pressure meters or solar battery health monitoring.

Integrator friendly

The Griffin SCADA Platform can be provided with customer branding. The unit's front panel can use a custom label, and the PC software can display a customer logo and watermark.

Roles for the Griffin SCADA Platform

The Griffin SCADA Platform is a fundamentally a general purpose computer system designed for use in the field. It is designed in a way that makes it easily expanded... so if just changing software isn't enough to add a new use case, adding an expansion card probably would be.

The system usually serves a standard "***SCADA RTU***" role (Supervisory Control And Data Acquisition - Remote Terminal Unit). This is defined as a computer controlled electronic device that interfaces objects in the real world to a distributed control system or SCADA network. It transmits telemetry data from sensors and other devices to a master system. It can also operate relays and perform switching tasks, controlled from a master system.

The Griffin SCADA Platform also can act as a data concentrator. In this role, the system combines telemetry streams from multiple RTUs or other devices and presents the combined whole to a master system. It can also combine control for relays and other switching tasks.

The Griffin SCADA Platform has an additional role as a data logging system. It records telemetry data from various sensors and other downstream devices to it's own memory or industrial microSD cards. An advanced data export and plotting package allows easy viewing or export of this data by the customer. Software automation tools are available to download the logged data remotely at whatever interval is required.

Applications for SCADA

Manufacturing

SCADA systems are used in many points in the factory. On production lines, SCADA systems may be employed in various roles such as tracking product counts, providing measurements, and managing environmental controls and monitoring tasks. SCADA systems often perform sensor integration roles where they report various measurement values to control room systems. They can also operate equipment by turning on and off relays and other types of switches.

SCADA systems can monitor temperatures, humidity, flow rates, tank levels, and many more sensors. These measurements can be passed to control room systems and/or operate alarms and light panels.

Building and Process Security

SCADA systems may also be configured to monitor against physical intrusions by reporting when magnetic door sensors and PIR motion sensors are tripped. They can be used to collect local sensor data and passing it to other SCADA systems to form a broad network covering an entire enterprise.

Other Industries

- Telecom

- Food Production

- Electric and Gas Utilities

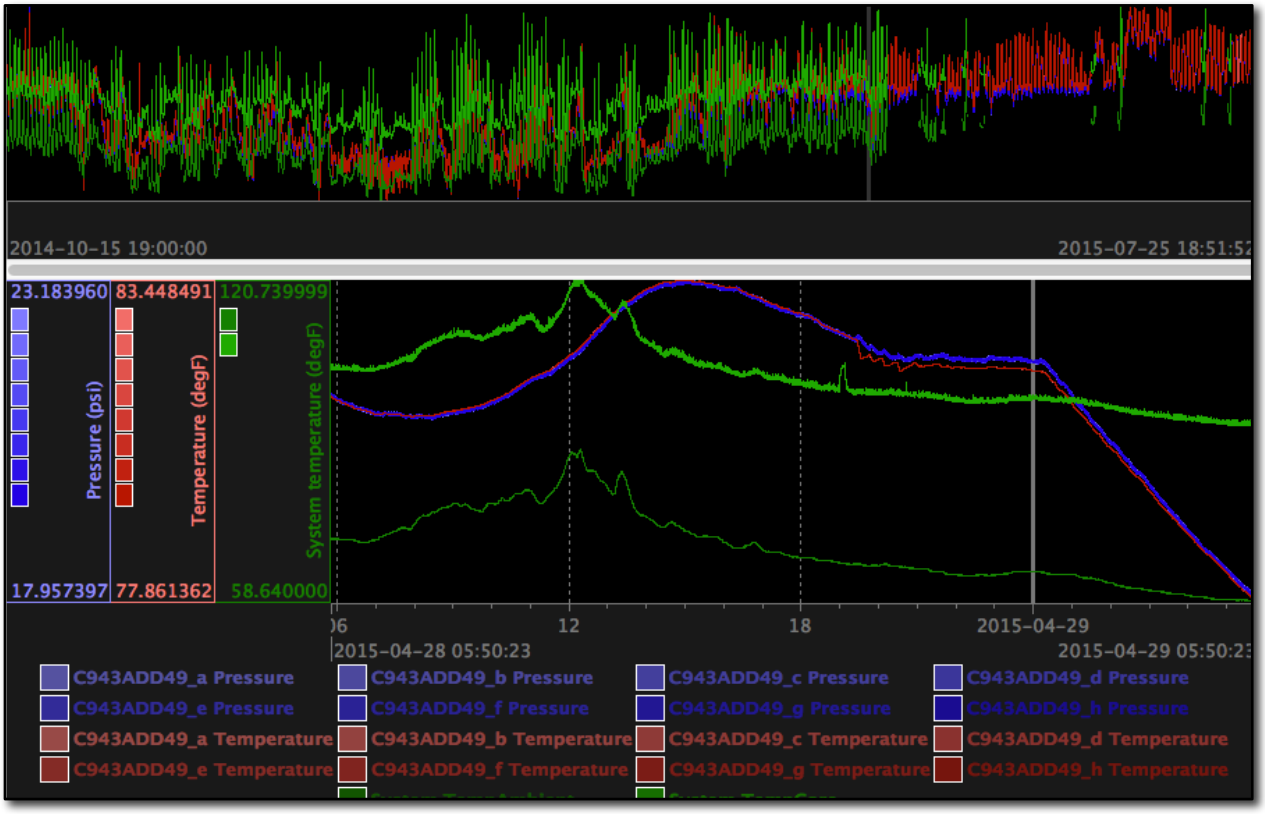
- Wastewater Treatment

Remote and Cloud Connectivity

The Griffin SCADA Platform can be remotely operated using a cellular modem or a customer network. A 10/100 Ethernet connection is standard. Data can be sent over this link to a network or cloud server.

Advanced Plotting Capabilities

The PC software for the Griffin SCADA Platform includes extensive plotting features that give you a great deal of visibility into your data.



Standard Industrial Interfaces

The Griffin SCADA Platform supports several industry standard live data transport mechanisms such as MODBUS and WITS.

Export To Automation

Griffin SCADA Platform historical data can be exported to automation systems using a straightforward command line interface tool. This tool can be configured to run in scripts for automated data import jobs.

Griffin SCADA System Hardware Specifications

General Specifications

-40 to 75 degC ambient temperature range
NEMA 4 enclosure
Dimensions 10x10x6" (H x W x D)

CPU Module

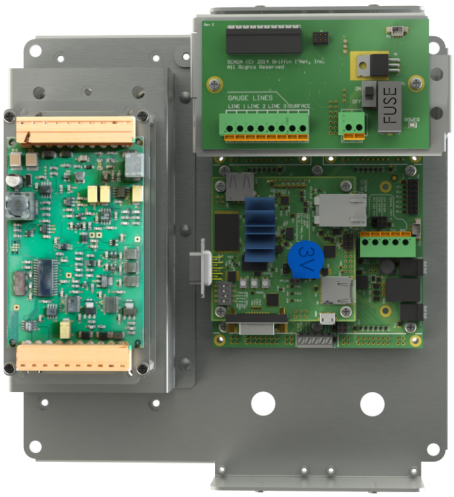
454MHz ARM-based CPU
128MB DDR2 SDRAM
512MB Internal FLASH storage
MicroSD slot for additional storage space
10/100 Ethernet port
USB host port
USB OTG port (host or device)
4 RS232/RS485 serial ports
1 RS232 serial port (used for system monitoring)
Optional system serial port (linux console)
RTC module with wide temperature coin-cell battery backup
System temperature sensor
System expansion bus port

Griffin SCADA System Backplane

Wide 24VDC input (9-32VDC)
High efficiency 24V to 5V 1A DC/DC converter
4 expansion card connectors, 1 display connector
TEC line voltage input, up to 57V
Optional 5V input header

Gauge TEC Line Driver Expansion Card

Up to 57V 650mA
Software configurable voltage and current limit
Voltage and current waveform readback
FPGA-accelerated communications



30V / 48V Power Modules

Wide 24VDC input (9-32V, reduced power under 18V)
Supplies 30V or 48V power for TEC lines
Trimmable output +/- 10%
Two 30V power modules can be wired in series for 57V

Access Bracket

Main system 24V input
On/off slide switch
System protection fuse
Convenient test point access to power and TEC lines
Common point of routing for TEC lines

Griffin SCADA System Software Specifications

Linux Operating System

- Kernel version 2.6.35
- SSH secure shell service for remote console login
- SSH uses two-factor authentication: key and password
- Standard Linux command line utilities

Griffin SCADA Platform

- Software version 1.87
- Ethernet interface for configuration, control, and data transfer
- Operates and logs data from gauges as configured by software
- Configurable RS232/RS485 port function map
- Modbus over RS485, Ethernet
- Configurable register map

Griffin SCADA Client

- Windows, Linux, & Mac versions are available
- Android and iOS tablet versions
- Connects to a SCADA unit over Ethernet
- Configures gauges for each TEC line
- Controls TEC line voltage and current limit
- Monitors TEC line voltage and current
- Views live gauge data (realtime or historical)
- Downloads gauge data to the PC for processing
- Exports downloaded gauge data to CSV files
- Support for custom software branding/logos