

Scientific Data Systems, Inc.

Warrior Pulse-Analog Well Logging System

The **Warrior Well Logging System** for pulse type tools employs advanced software and widely available hardware to provide a cost-effective solution to well logging requirements in cased hole applications. Its main features include:

Windows Based System Using XP, Vista, Windows7 and Windows 8

The real time logging operation may be conducted at the same time as other tasks, such as plotting, log heading editor, job ticket preparation etc. The use of Windows ensures longevity, future enhancement and support for the system.

Ease of Use with Graphical User Interface

The system provides an easy to use interface compatible with all current Windows versions. Data monitoring and all log functions are available in separate windows, which may be resized and repositioned as the user wishes.



The system supports most downhole tools using pulse type data transmission. It also includes a connector for input of analog signals allowing the system to be used as a data recorder.

The operator interface includes a display of the positive and negative pulse heights (obviating the need for an oscilloscope), and discriminator levels may be set manually, or automatically by the software.

Services are predefined so that the operator simply selects the required services and is presented with a fully configured service set up with the last tool string and calibrations run. If other tools are to be run, the graphical tool string editor is used to select the required tool and load the appropriate parameters and calibrations.

Data monitors include raw and calibrated data of all sensors, including depth and line speed.

Multiple log plot windows may be opened for comparison of, for example, main and repeat log sections. Log plots may be paused and scrolled to any depth and annotations added, while data acquisition continues.

Depth correlation may be performed while logging, with the screen plot and system depth updated until correct depth is attained.

Log curve scales and other presentation parameters may be adjusted while logging and the screen plot redrawn until the desired output is obtained.

The hardcopy plotter may be stopped and started at any time, presenting any interval with any desired presentation format.

Multitasking allows log-heading data entry and other ancillary tasks to be performed while logging continues. In this way rig time is reduced and logs are delivered faster.

Notebook or Rackmount Computer

The system uses the industry standard Universal Serial Bus (USB) for interconnection between the tool interface and the PC. Almost any Windows based notebook or other personal computer may be used.

Tool Interface and Power Supply

A compact tool interface and power supply is provided which is suitable for the most downhole tools. It includes a tool power supply, depth encoder and line weight sensor interface, as well as circuitry for pulse detection, collar logging, and analog inputs as previously mentioned. The primary functions of the tool interface are controlled from Windows by means of slider bars. The interface panel includes a USB hub for connection of other USB peripherals.

Plotter Support

Generation of the final log print with heading, annotated log sections, calibrations, tool string diagrams, etc., is easily achieved. The system supports most well log plotter types currently in use, including color and the generation of multiple copies using pre-folded paper. Multiple plotters may be driven concurrently and independently. The system also supports .pdf and .tif file formats as a plot output, which may be emailed directly to the customer.

Typical Specification:

Software:

Windows XP, Vista, Windows 7 and 8, 32/64 Bit
System services include:

- Calibrations
- Filtering
- Graphical Tool String Configuration
- Tool String Diagrams
- Real Time Data Monitors
- High Speed Multi-Well Log Database

Acquisition Modules include the following services:

- Gamma Ray
- Gravel Pack
- Neutron
 - Single Detector (most types)
 - Dual Detector
- Collar Locator
- Tracer with Real Time Interpretation
- Multi-arm Calipers with Pipe Tally
- Casing Inspection
- Temperature
- Pressure
- Production Logging Analog Tools
- User Defined Tools and Services
- Recalculation (Relog) from raw data
- Log Heading Editor
- System Setup Control
 - Depth Units
 - Data Units
 - Display Parameters
- Graphical Log Format Editor
- Well Sketch
- Merge, Splice and TVD Correction
- Log Annotations and Curve Labeling
- Log Presentation Editor
- LAS ASCII Writer and Reader
- LIS Reader/Writer

Hardware:

Computer

Windows Xp, Vista, Windows 7 32 & 64 bit and Windows 8
Notebook or rack mount 101 keyboard with mouse or trackball

Tool Interface and Power Supply

- Pulse Detection
- Collar Logging
- 250vdc, 250ma Power Supply
- Depth Encoder and Line Tension
- Customer Analog and Counter Inputs
- 16 Channel, 16 bit ADC
- 6 Channel Counter/Timer
- 4 Port USB Hub

Plotter, includes support for

- Printrex
- ISys
- Neuralog
- HP DesignJet, PaintJet, DeskJet Color
- Epson Stylus

Wired and Wireless Surface Sensor Integration

- Carry Case (front connections)
- Rack Mount (rear connections)



Other configurations and specifications available upon request. For more details and demonstration software, please contact:

Scientific Data Systems, Inc.

16840 Clay Road, Suite 105, Houston TX 77084, U.S.A.

Tel: 281 550 1109 Fax: 281 550 2068 E-mail: sds.info@warriorsystem.com

www.warriorsystem.com

Brands, product names, and other names are trademarks of their respective organizations.