MATRIX

borehole logging system

Combining their long experience in the slimhole logging industry Mount Sopris and ALT have teamed up to develop M A T R I X, providing a single solution to the multiplication of telemetry standards seen in the logging tool industry over the last decade. Since its introduction in 2006 the system has become the system of choice for a diverse range of end users acquiring borehole data in the mineral exploration, groundwater, geotechnical, and environmental industries.

- Uses the latest Digital Signal Processor (DSP) technology directly linked to the wireline through a pair of ultra fast high-resolution A/D and D/A converters.
- Supports all ALT & Mount Sopris tools, most analog tools and a wide range of 3rd party tools.
- Telemetry automatically adjusts for operation on most common wireline lengths and configurations.
- Settings totally software controlled (incl. depth encoder and wireline tension).
- Real time data display and printing using MATRIX software. Windows printer support, ALT and LAS data output.
- Support of sophisticated software tools such as digital scope, spectrum analysis and histograms for signal tuning and access to configuration database.
- Lightweight portable, but extremely robust and adaptable.

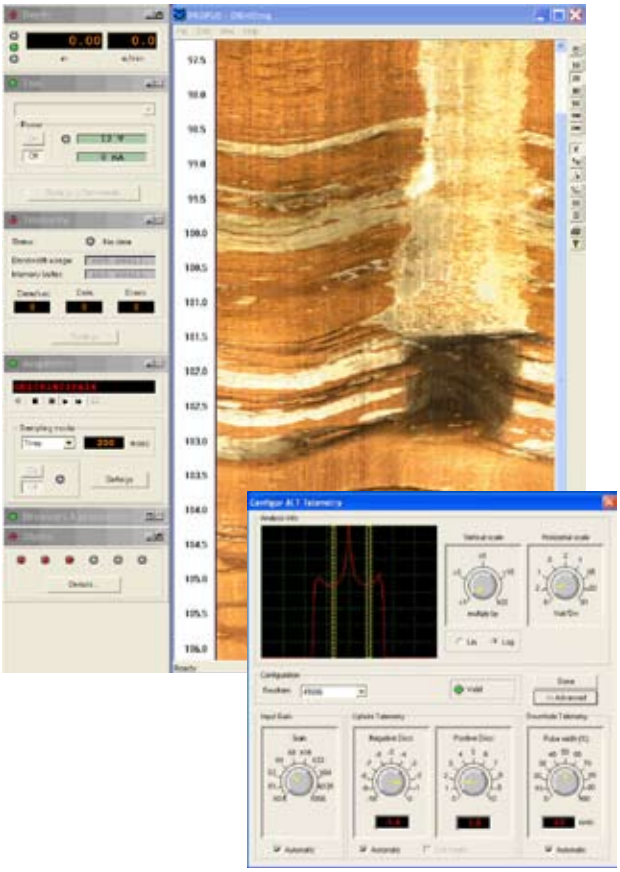
MOUNT SOPRIS INSTRUMENTS

ALT Advanced Logic Technology

Technical specifications

	MATRIX
Dimension (W x L x H)	20 x 33 x 10 cm 8 x 13 x 4 in
Weight	5 kg
Input Voltage	90 – 240 VAC, 50 – 60 Hz inverter compatible
Tool Power	Up to 200 V / 300 mA
Cable Connectors	18 Pin Mil-C-26482 (single connector for depth, tension and wirelines)
PC Connection	High speed USB
Operating System	Windows 2000, NT4, XP, VISTA
Logging Cable	Standard single, four, seven conductor and coax
Logging Speed	e.g. ABI 40 @ 3mm, 144 pts/trn : 2.5 m/min
Tools / Telemetry	ALT, MSI, Geovista, Robertson V106, Century, analog tools (up to 4 pulse channels)
Upgradeability	User upgradable firmware
Software	Matrix Software

Software



The heart of the graphical user interface is the Dashboard which consists of multiple threads running concurrently and handling specific system tasks simultaneously. The dashboard is the operator's control panel to select and control all system functions and to monitor the data acquisition process and tool status.
The Dashboard provides access to the following windows :

- Depth control
- Tool configuration and power control, and advanced tool settings
- Telemetry control and tuning
- Data sampling and replay control
- System status display
- Wireline weight indicator display
- Data browser and processor windows control

Browser windows are used for real time data monitoring and offer a wide choice display and printing options for conventional curves, full wave form sonic traces, acoustical and optical borehole images. A WYSIWYG header editor is available to provide sophisticated log headers with graphics. Special processors for acoustic velocity picking, spectral gamma display and stacking, and application of complex algorithms for real-time compensated density are included with the matrix software package.
Further developments of the software will allow a real time connection to the WellCAD v4.2 data processing platform enabling the user to apply templates, compare currently logged data with reference / repeat data or run processes. QA / QC tasks, data preprocessing and field interpretation can be executed on incoming data.

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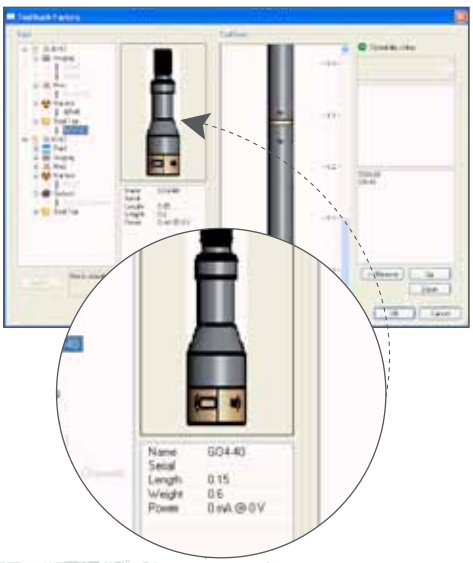
ALT LOGGER3 acquisition system

Building on the success of the ALT Logger series ALT developed a new generation of this successful logging system. The modular and flexible architecture of the system allows easy customization to connect virtually any logging tool. Whether mounted into a standard 19” rack or used in light weight portable configuration the ALT Logger still offers the unique combination of versatility, ruggedness and ease of use appreciated by many logging operators. ALT Logger systems are used worldwide in a diverse range of applications supporting also the interests of the Oil & Gas industry.

- Increased logging speed through ultra high speed USB interface, runs on any windows PC compatible notebook.
- Supports all ALT, analog and a wide range of 3rd party tools.
- Full compatibility with new Quick Link probe line supporting slim hole tool strings.
- Customization to user specific requirements (e.g. customised/specific tool adapters).
- Availability as 19” rack mounted or portable mini rack system.
- Totally software controlled using LoggerSuite software. Real Time Data display and printing.
- Very easy to use, with graphical user interface, self diagnostic features, configurable through files, minimal user input required.
- Robust heavy duty system, fault tolerant.
- Preferred solution for customer preferring a rack mounted system or looking for customization of the system to meet the requirements of existing tools.
- Compatible with most winches, depth encoders and cables.



Advanced Logic Technology

MOUNT SOPRIS INSTRUMENTS

ALT LOGGER3 acquisition system

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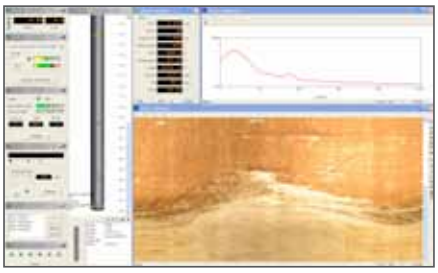

Browser windows are used for real time data monitoring and offer a wide choice of display and printing options for conventional curves, full wave form sonic traces, acoustical and optical borehole images. A header editor is available to provide sophisticated log headers with graphics. Special processors can be activated and configured for real time processing (acoustic velocity picking, spectral gamma display and stacking…). Using the WellCAD Browser add-on module allows a real-time connection to the WellCAD data processing platform enabling the user to apply templates, compare currently logged data with reference / repeat data or run processes. QA / QC tasks, data preprocessing and field interpretation can be executed on incoming data.

Technical specifications

	ALT LOGGER mini rack	ALT LOGGER 19" rack
Dimension (W x L x H)	38 x 35 x 13 cm 15 x 14 x 3 in	48 x 50 x 13 cm 19 x 19.7 x 3 in
Weight	12 – 16 kg	16 – 20 kg
Input Voltage	100 – 240 VAC	100 – 240 VAC
Tool Power	500 mA, Max 300 V	500 mA, Max 300 V
PC Connection	High speed USB	High speed USB
Logging Cable	Standard single, four, seven conductor and coax	Standard single, four, seven conductor and coax
Tools / Telemetry	ALT, QL protocole analog tools (up to 4 pulse channels) 3rd party : list available upon request	ALT, QL protocole analog tools (up to 4 pulse channels) 3rd party : list available upon request
Upgradeability	4 free extension slots	9 free extension slots, tension adapter available upon request
Software	LoggerSuite Software	LoggerSuite Software

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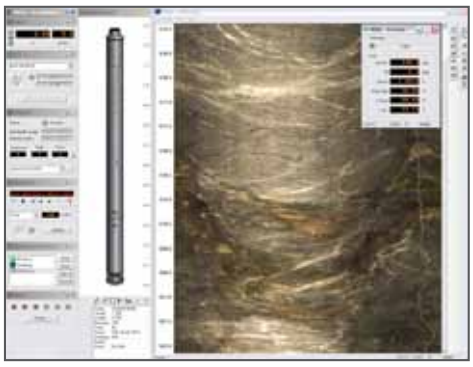
BBOX borehole logging system

Building on the success of the ABOX series ALT developed a new generation of this successful logging system. The BBOX offers the unique combination of high performance, ruggedness and ease of use appreciated by many logging operators.

- Increased logging speed through ultra high speed USB interface, runs on any PC compatible notebook.
- Supports all ALT tools and tools with QL telemetry.
- Full compatibility with new Quick Link probe line supporting slim hole tool strings.
- Totally software controlled using the Logger Suite software. Real Time Data display and printing.
- Very easy to use, with graphical user interface, self diagnostic features, configurable through files, minimal user input required.
- Robust heavy duty system, fault tolerant.
- Preferred solution for customer looking for light weight high performance equipment.



Advanced Logic Technology

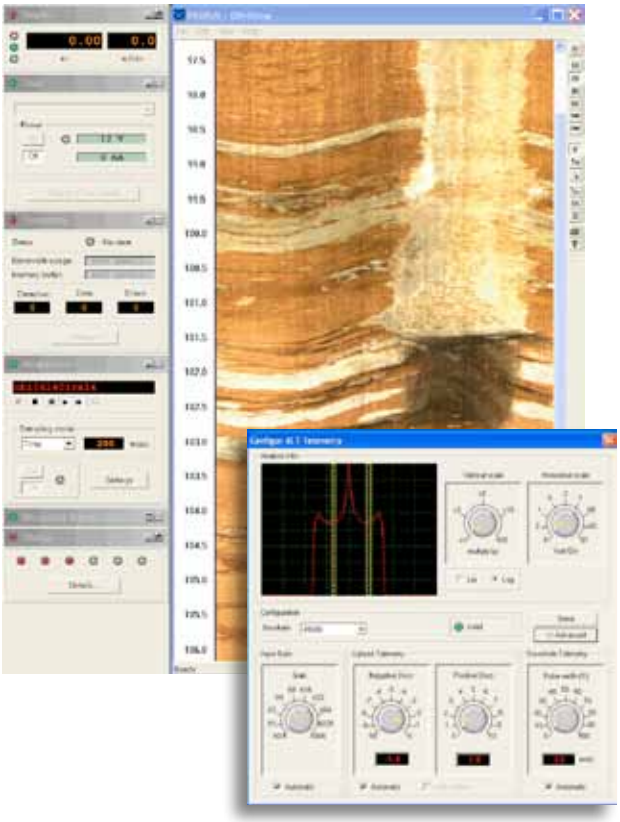
MOUNT SOPRIS INSTRUMENTS

BBOX borehole logging system

The heart of the graphical user interface is a dashboard, the operators control panel to select and control all system functions, monitor the data acquisition process and observe the logging tool status. The dashboard consists of multiple threads running concurrently, handling specific system tasks simultaneously.
The Dashboard provides access to the following windows :

- Depth control
- Tool configuration and power control, and advanced tool settings
- Telemetry control and tuning
- Data sampling record and replay control
- System status display
- Wireline weight indicator display
- Data browser and processor control windows

Browser windows are used for real time data monitoring and offer a wide choice of display and printing options for conventional curves, full wave form sonic traces, acoustical and optical borehole images. A header editor is available to provide sophisticated log headers with graphics. Special processors can be activated and configured for real time processing (acoustic velocity picking, spectral gamma display and stacking…). Using the WellCAD Browser add-on module allows a real-time connection to the WellCAD data processing platform enabling the user to apply templates, compare currently logged data with reference / repeat data or run processes. QA / QC tasks, data preprocessing and field interpretation can be executed on incoming data.



Technical specifications

Dimension (W x L x H)	17 x 30 x 11 cm 7 x 12 x 4 in
Weight	2,5 kg
Input Voltage	90 – 240 VAC, 50 – 60 Hz inverter compatible
Tool Power	Up to 200 V / 300 mA
PC Connection	High speed USB
Operating System	NT4, XP, VISTA, Win7
Logging Cable	Standard single, four, seven conductor and coax
Tools / Telemetry	ALT tools and QL probe line
Upgradeability	User upgradeable firmware
Software	LoggerSuite Software

The specifications are not contractual and are subject to modification without notice.

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