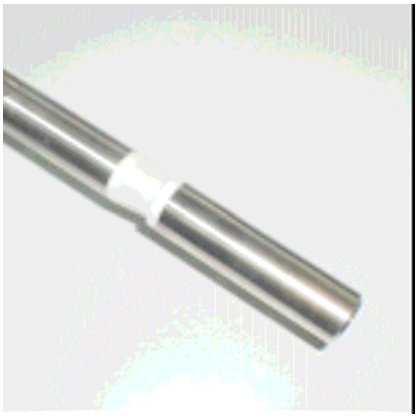
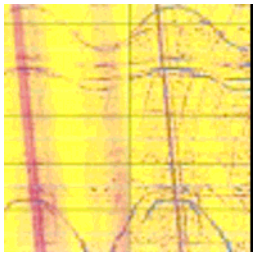
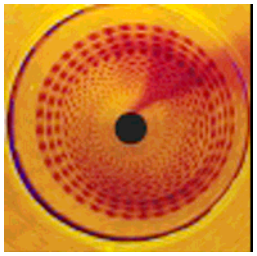
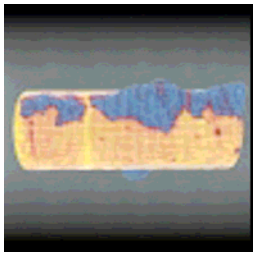
ABI 40

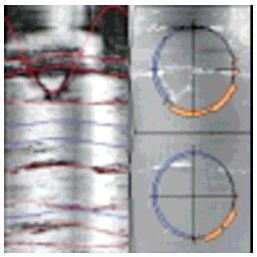
slimhole acoustic televiewer



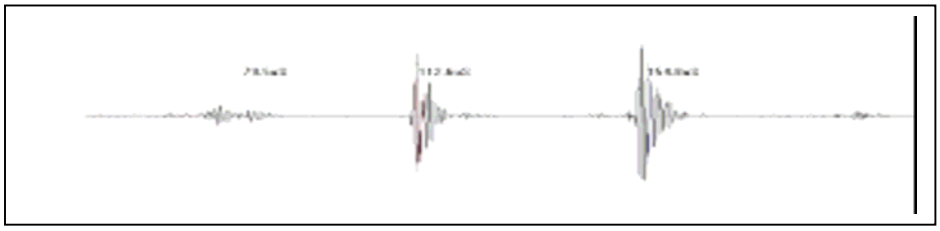


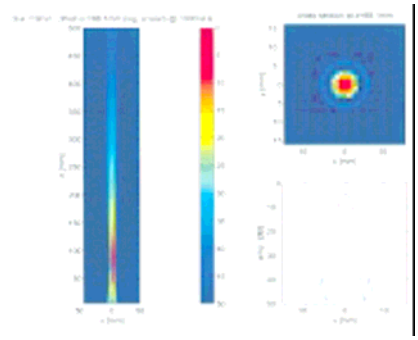


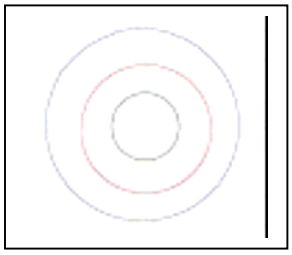




The ABI40 is the next generation of the pioneering FAC40. Based on 8 years of experience and market leadership with BHTV technology, the new system consists of the industry standard focused acoustical head with new deviation subsystem and completely redesigned electronic. The new electronic architecture uses a 14bits@10Mhz A/D converter directly coupled to a super FAST 75Mops DSP processor capable of performing complex data processing in real time on each individual ultrasonic wave train.







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ABI 40

slimhole acoustic televiewer

- Direct linear 14bits@10Mhz A/D conversion (operator is free from any gain settings)
- Dynamic range of amplitude measurement is 84dB
- Caliper resolution is better than 0. 1 mm
- New orientation sensor (3 accelerometers and 3 axis magnetometer)
- Increased telemetry bandwidth (baud rate up to 500 Kbps depending on wire line.), 166 Kbps typical on 3000m four-conductor
- Full waveform recording and real time display for quality control
- Multi-echo mode to realize acoustic measurements through plastic pipes
- Pipe-inspection mode to detect inner corrosion, outer corrosion, and wall thickness*
- Automatic self adapting echo detection algorithm to gain optimum performance under variable borehole conditions

The ABI40 tool generates an image of the borehole wall by transmitting ultrasound pulses from a rotating sensor and recording the amplitude and travel time of the signals reflected at the interface between mud and borehole wall. The amplitude of these reflections is representative for the properties of the rock surrounding the borehole. The travel time represents the borehole shape and diameter and is used to provide exceptionally accurate borehole diameter measurements, which makes the tool ideal for casing inspection, of and structural geology. Compared to the Fac40, which measures one echo (amplitude and travel time), the new ABI tool is a multi-echo system. This is achieved by digital recording of the reflected acoustic wave train. Online processing of the acoustic data is made by an attached DSP. Sophisticated detection algorithm allows the system to separate the echo of the acoustic window from the echo of the borehole wall, without any input from the operator. The system offers different operating modes. E.g. when run inside a plastic casing, the tool records both the echo of the casing and of the borehole wall. Moreover the digital processing capabilities are used to improve the dynamic range of the system and to yield very high travel time resolution.

Applications:

The purpose of the ultrasonic borehole-imaging tool is to provide detailed, oriented, structural information on the basis of pulse-echo ultrasonic measurements. Possible applications are:

- fracture detection and evaluation
- detection of thin beds
- determination of bedding dip
- lithological characterization
- breakout analysis
- monitoring of earth stress field
- casing inspection
- high resolution caliper measurements

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Technical specifications

Diameter:	40mm
Length:	1.6 m
Weight:	6kgs
Max temp:	70°C
Max pressure:	200 bar
Borehole diameter:	2" to 21" depending on mud conditions
Logging speed:	variable function of resolution and wire line. i.e 2.0 m/min at 144x3mm

Cable:

Cable type:	mono, four-conductor, seven-conductor
digital data transmission:	up to 500 Kbps per second depending on wire line.
compatibility:	ABOX - MATRIX

Sensor:

acoustic sensor:	fixed transducer and rotating focusing mirror
focusing:	3" or 6"
frequency:	1.2 MHz
acoustic beam width:	1.5 mm (-3db) focal distance
rotation speed:	up to 10 revolutions per second - automatic
samples per revolution:	72, 144, 288 user defined
caliper resolution:	0.08mm
orientation:	3 axis magnetometer, 3 accelerometers
Inclination accuracy:	0.5 degree
Azimuth accuracy:	1.0 degree

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

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