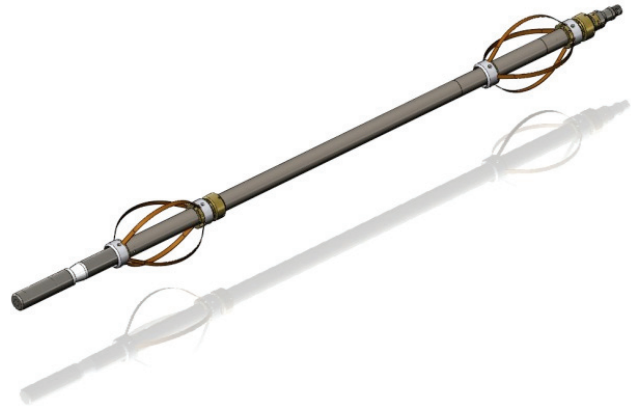


New generation of ABI40 acoustic televiewer - ABI40-2G

17.02.2013

Higher resolution, faster logging speed, improved signal/noise ratio to record unachieved borehole image quality!

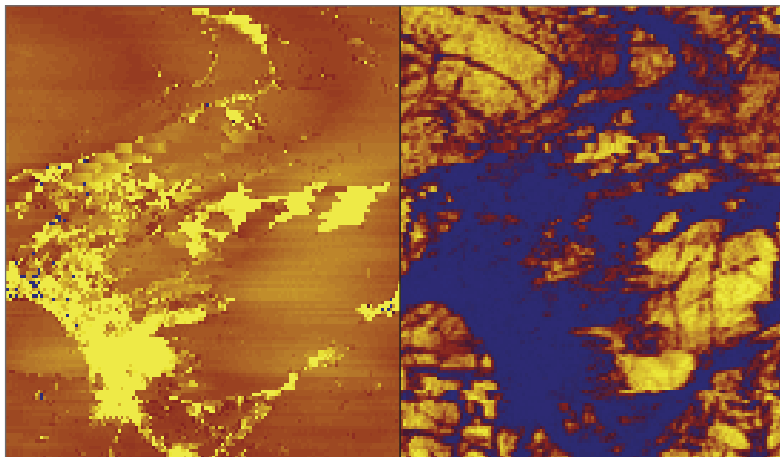


Dear customer,

Driven by our goal to improve the quality and performance of our products, ALT is pleased to announce the release of the **second generation** of the ABI40 acoustic televiewer (70°C-200 bar version) - **the ABI40-2G**.

This new generation of tool is the result of 20 years of experience in developing and manufacturing acoustic televiewers. In addition to the hardware improvements detailed hereafter in this document, the ABI40-2G is built using the latest generation of DSP processors and is implementing refined algorithms for processing in real time the reflected ultrasonic signals for both open and cased hole applications.

A new software interface is also delivered with the equipment to assist the operator in optimizing the tool parameters for the borehole logging.



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ABI40-2G - Quick review

1. Higher logging speed – speed of rotation of the mirror can reach up to 35 rps
2. Choice of azimuthal resolutions extended up to 360 acoustic traces per mirror revolution – higher image resolution obtained in bigger diameter boreholes
3. Dynamic range of the measurement extended to 16 bits
4. Improved signal/noise ratio – better results obtained in adverse borehole conditions
5. Casing thickness algorithms and process refined
6. Behind PVC operating mode available
7. Acoustic head ruggedized to prevent coax failure
8. Software interface reviewed for optimizing the tool settings

ABI40-2G - New features in details

Speed of rotation of the focusing mirror

With the first generation of the ABI40 tool, the main limiting factor in terms of logging speed was not always the wireline bandwidth or telemetry performance but the speed of rotation of the focusing mirror.

The **ABI40-2G** can now be configured to speed up the rotation of the focusing mirror to **35 revolutions** per second. It is almost three times of the speed achieved with the previous generation of tool.

In terms of tool operation, the result of this improvement is a **significant increase of the logging speed**.

Refer to the chart below.

As an example, in a 71/2" borehole, a logging speed of 8m/min can be achieved with the following tool configuration:

- Baudrate set to 250kbps (easily achievable with the ALTlogger or BBOX systems on a 4 conductor wireline)
- Azimuthal resolution: 144
- Vertical resolution: 4mm
- 35 rps

The logging speed is almost three times faster when compared with the first generation of the ABI40.

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ABI-1/ABI-2 Logging Speed Comparison
Open Hole - 144 pts

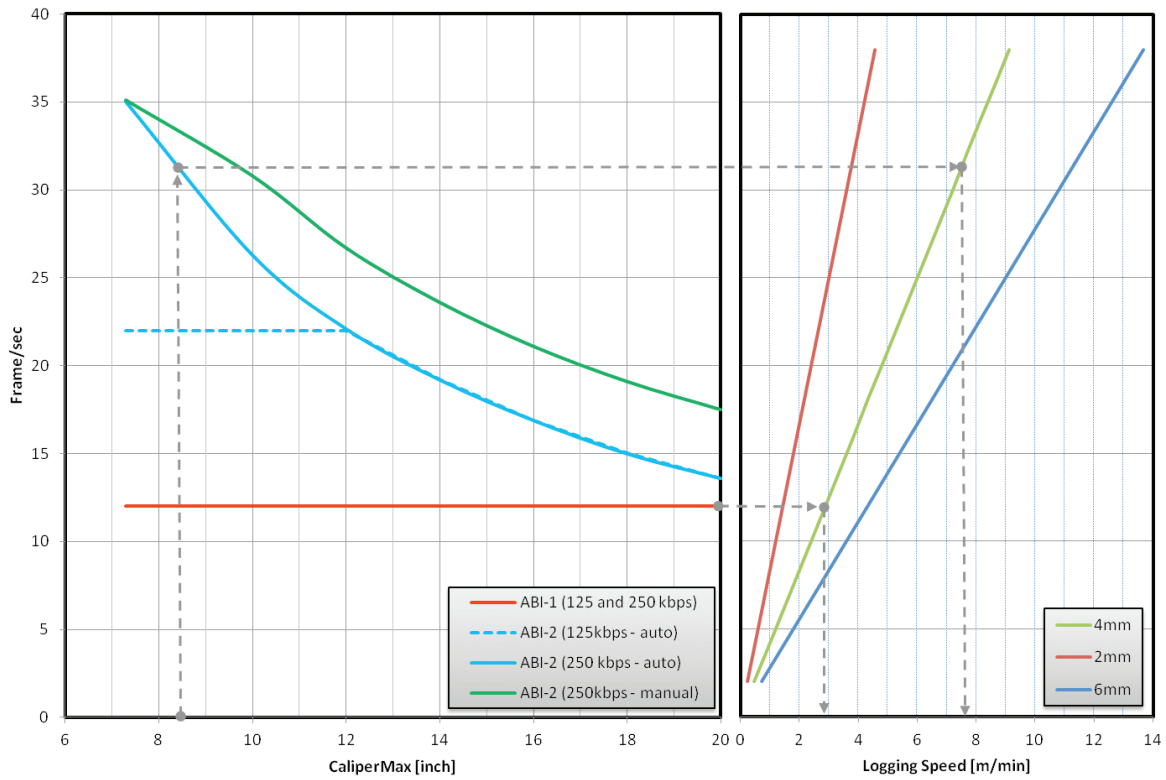
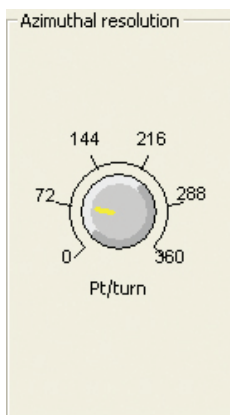


Figure Logging speed comparison between ABI40-1G and ABI40-2G

Azimuthal resolution



The choice of azimuthal resolution values is extended.
72-144-216-288 and 360 are now possible.

The higher sampling rate can be used for better resolution in larger diameter boreholes.

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Dynamic range

The new electronic design implemented in the ABI40-2G extends the dynamic range of the measurement up to **16 bits**. The **signal/noise ratio** is also **improved** in order to increase the definition of the images in adverse borehole conditions (i.e. in front of cavities).

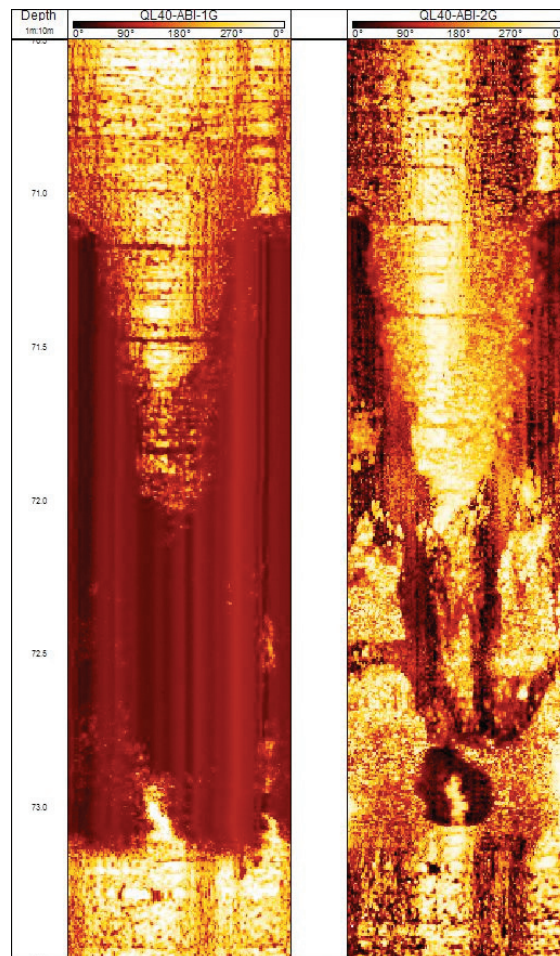


Figure 2 Amplitude log comparison in front of a cavity between ABI40-1G and ABI40-2G

For casing thickness application, new refined algorithms and processes optimize the casing thickness records.

Behind PVC operating mode

The ABI40-2G offers a third operating mode - the “**Behind PVC**” mode to record the image of the borehole wall behind a PVC casing.

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Acoustic head ruggedized

The design of the acoustic head has been reviewed in order to increase its reliability and to prevent coax failure.

New software interface

A more user friendly software interface is delivered with the equipment. By selecting the nominal size of the borehole or casing, the system pre-defines the most adequate settings for the record (azimuthal resolution, echo gate settings,...). User still has the option to customize manually the tool settings.

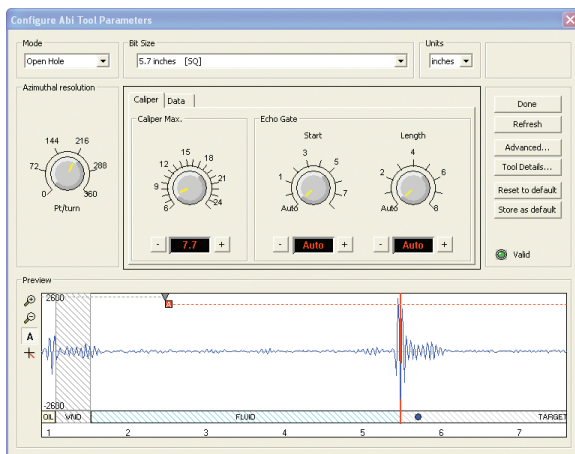


Figure 3 ABI-2G software interface – Open hole mode

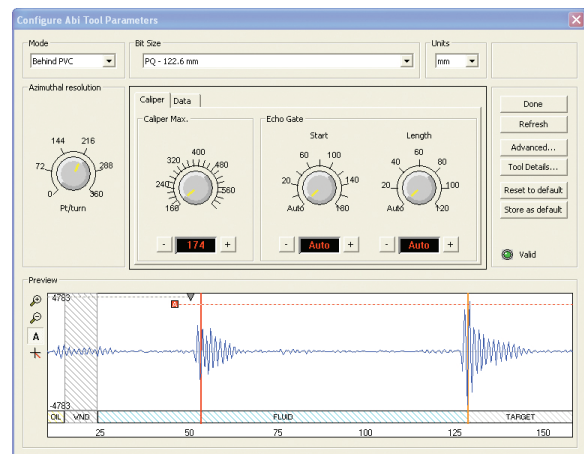


Figure 4 ABI-2G software interface – Behind PVC mode

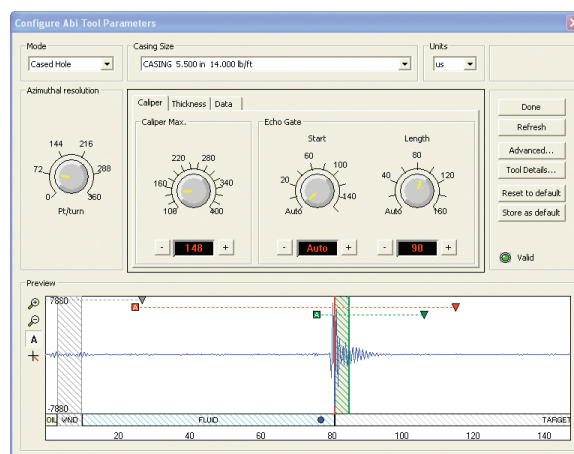


Figure 5 ABI-2G software interface – Cased hole mode

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ABI40-2G - Software/Firmware requirements

Software

- LoggerSuite 11.1
- WellCad 4.4 (minimum)

Firmware

- Matrix: 113-117-100
- JazzLogger: 108 (minimum)