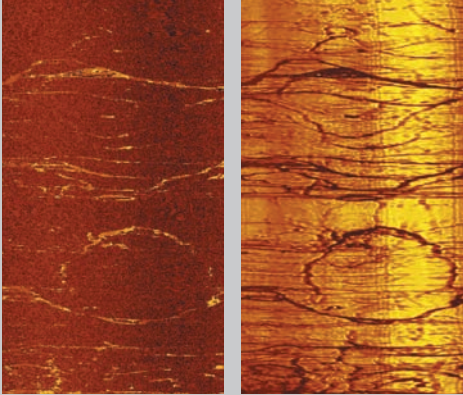


RG HRAT High resolution acoustic televiewer



The HRAT is the latest RG development in acoustic borehole imaging. It provides high-resolution orientated 'unwrapped' ultrasound images of the borehole walls.

Applications include:

- Fracture identification and orientation
- Stratigraphic studies
- Local stress studies (break-out)
- Core orientation
- Cased hole studies

The probe uses a fixed acoustic transducer and a rotating acoustic mirror to scan the borehole walls with a focussed ultrasound beam. The amplitude and travel time of the reflected acoustic signal are recorded as separate image logs. Features such as fractures reduce the reflected amplitude and appear as dark sinusoidal traces on the log. The travel-time log is equivalent to a high-precision 360-arm caliper and shows diameter changes within open fractures and 'break-outs'. Directional information is also recorded and used to orient the images in real time.

The HRAT includes many new features such as automatic optimisation of head rotation speed according to borehole diameter, cable speed and desired resolution. A new design of acoustic transducer provides improved image focus and resolution compared to first-generation probes.

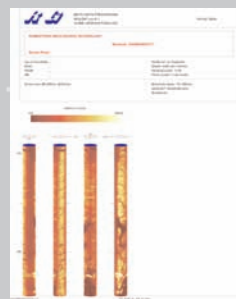
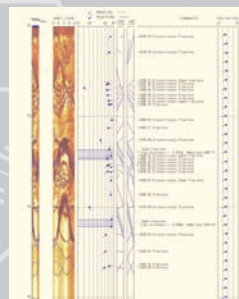
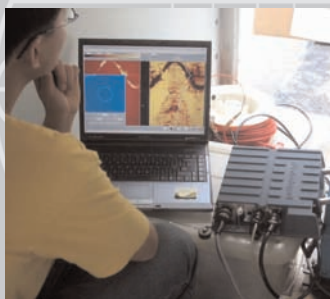


SPECIFICATIONS

Diameter:	42mm
Length:	1.62m (2.06m with natural-gamma option)
Transducer type:	piezo-composite
Frequency:	1.5MHz
Mirror rotation:	5 – 20 rev/s
Sample rate:	up to 360/rev
Orientation device:	precision 3 axis magnetometer and 3 accelerometers
Inclination accuracy:	0.5 degree
Azimuth accuracy:	1.0 degree

SALES INFORMATION

25 112 000	HRAT probe (4-core version)
25 112 001	HRAT including natural-gamma



60°