“Slimhole” BSR Array System

Miniaturized Multi-component Borehole Sonde String

Digital Module Features:

- *Slimhole BSR Array:* **B**orehole **S**eismic **R**eceiver **A**rray
- *24-Bit x 4-Channel Digitizer in each Shuttle*
- *Ultra Low Noise Digitizer enables recording of low amplitude microseismic events, 3D-VSP, Crosswell Seismic Imaging, etc.*
- *Slimhole sonde 1.6 inch O.D. (<41 mm)*
- *3C Sensor Packages available: 3C Tri-axis Orthogonal Geophone.*
- *OMNI-2400 High-output Geophone Sensors*
- *Machined Stainless Steel Housing Minimizes Mechanical Resonance for High Resolution, High Frequency Recording*
- *Direct connection sub-arrays, Armored Wireline or Rigid Interconnects available with high-pressure multi-conductor booted connectors*
- *Flexible or Rigid Interconnects may be connected “back-to-back” to form longer intervals*
- *Maximum distance between sonde modules is 100 meters*
- *Maximum Temperature Rating —150 °C*
- *Maximum Pressure Rating — 20,000 psi*
- *Up to 480 3-Component levels per well deployment*
- *Configurations for vertical, deviated, horizontal wellbore deployments*
- *Adaptable housing for user defined , application specific coupling devices*

"Slimhole" BSR Array System

Miniaturized Multi-component Borehole Sonde String

SPECIFICATIONS

Outside Diameter	1.6 in	(4.064 cm)		
Length	16 in	(40.64 cm)		
Tool Weight	5 lbs	(1.866 kg)		
Anchoring System	Mechanical in each shuttle		Tubing Mandrel	Permanent (cemented)
Anchoring-to-Weight Ratio	7:1	(passive spring)		
Tool Anchoring Range	Custom adaptors for dimension ranges		Sizes available upon request	
Points of Contract	5 points, including opposing clamp axis			
Sensor Package	3-C w/ OMNI-2400, mutually orthogonal sensor set standard		3-C w/ OMNI-2400	
Interconnect Options	Rigid Tubing (Stainless steel)		Flexible Armored Wireline Cable	
Standard Lengths	3, 6, 9 meters		9, 12, 15, 20 meters	
	Custom lengths up to 100 meters available upon request			
Maximum Temperature Rating	150 °C			
Maximum Pressure Rating	20,000 psi			

Digital Module 4-CH x 24-Bit Digitizer SPECIFICATIONS

Sampling Rates	1/4, 1/2 , 1, 2, and 4 ms			
Pre-amplifier Gains	0 dB	8 dB	19 dB	31 dB
Equivalent Input Noise@ *2 ms*	1.830 µvolts rms	0.774 µvolts rms	0.304 µvolts rms	0.202 µvolts rms
Maximum Input Signal	1.590 vrms	0.635 vrms	0.187 vrms	0.045 vrms
Gain Accuracy	< 1%			
Frequency Response	3 to 1.6 KHz			
Anti-alias filter	80% Nyquist			
Instantaneous Dynamic Range	119 dB			
Cross-feed Isolation	>90 dB			
THD	0.0018%			
System Timing Accuracy	Better Than 1 PPM			

Note: All specifications subject to change at sole discretion of Geospace Technologies

GEOSPACE Technologies

7007 Pinemont Drive • Houston, Texas 77040 USA
www.geospace.com
Tel: 713.986.4444 • Fax: 713.986.4445

GEOSPACE ENGINEERING RESOURCES INTERNATIONAL, INC.

Regional Offices

Geospace Technologies, Canada
2735 - 37th Avenue N.E.
Calgary, Alberta, Canada T1Y 5R8
403 250-9600

Geospace Technologies, Eurasia
Kirovogradskaya, 36
Ufa, Baskortostan, Russia 450001
011 (7) 3472 25 39 73

Geospace Technologies, China
Room 700, 7th Floor, Lido Office Tower, Lido Place
Jichang Road, Jiang Tai Road, Beijing, 100004, P.R.China
011 (86) 10 643 78 758

Geospace Engineering Resources International (GERI), UK
F3 Bramingham Business Park, Enterprise Way, Luton
Bedfordshire LU3 4BU, England
011 44 (0) 7775 688 467

592-03100-01 Rev A