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2SAA-1000F Multi-Frequency Full Waveform Sonic

The **Multi-Frequency, Monopole-Dipole Full Waveform Sonic tool** is compatible with ***MATRIX*** & MGX II Portable Digital Logging Systems and will operate on single or multiconductor wirelines. The standard probe includes transmitter - receiver spacings of 3 & 4 feet. Customers can order probes with different spacings (metric or english) and can combine it with natural gamma (2SNA-1000)

Several features of the 2SAA-1000F sonic probe set it apart from conventional probes. The tool is modular, which allows the user to connect various sections together to form the specific tool needed. It is a variable frequency tool that can be used for surveys in many different environments and can be configured in the monopole or dipole mode of operation. The receivers can also stack and average multiple waveforms to cancel noise when the received signal amplitude is low.
P/N: 2SAA-1000F

Recommended Spares / Optional Items:

* FWS for WellCAD (08XXX-0122)

* Additional acoustic transmitter (2STA-1000)

* Additional receiver section (2SRA-1000)

* 6-foot isolator (2SIA-1000/6) or special 3-foot 2SIC-1000 soft isolator for slow formations

* (Spare Tx stave screws (set of 24, 2STA-0013)

* Spare set of 6 Tx staves (2STA-0008)

* 2CNA-3000 centralizers for boreholes 2.2-3.5" (56-89mm) dia.

* 2CNA-4000 centralizers for boreholes 3-12" (76-310 mm) dia.

Specifications

Maximum pressure	3000 PSI
Operation temperature range	-20°C to 70°C
Storage temperature	-40°C to 100°C
Sample resolution:	12 bit
Receiver frequency response	1 - 40 KHz
Receiver gain:	1, 2, 4, 8, 16, AGC
Sampling	2uS (no stacking), 4 uS – 100 in 4 uS increments
Number of samples per receiver:	0 to 1024
Sample hold off time	10 to 2500 uS in 10 uS increments
Number of waveforms stacked and averaged	1 to 16
Stack interval	1-250 ms
Receiver modes	software configurable Monopole, dipole, reverse dipole stacking
Number of receivers	1-8
Transmitter frequency bands	0.5 to 1.5 KHz, 1 to 3 KHz, 1.5 to 4.5 KHz, 2 to 6 KHz, 2.5 to 7.5 KHz, 3.6 to 10.5 KHz, 5 to 15 KHz, 7.5 to 22.5 KHz, 10 to 30 KHz, 12.5 to 37.5 KHz, and 15 to 45 KHz.
Transmitter modes	user configurable ,Monopole dipole, reverse dipole stacking
Number of transmitters	1-2
2SMA-1000 Modem Section	
Length (assembled)	24.625 inches (62.55 cm)
Diameter	1.5 inches (3.81 cm)
2SRA-1000 Receiver Section	
Length (assembled)	1 ft (30.48 cm)
Diameter	1.5 inches (3.81 cm)
2SIA-1000 and 2SIB-1000 (2SIC-1000 and 2SID-1000) Isolator Sections	
Length (assembled)	29 (65) inches (73.66 [165.1] cm)
Diameter	1.75 inches (4.445 cm)
2STA-1000 Transmitter Section	
Length (assembled)	25.25 inches (64.135 cm)
Diameter	1.5 inches (3.81 cm)
Centralizers	
Diameter	1.75 inches (4.445 cm)
Two receiver single transmitter probe	
Length (assembled)	80.875 inches (205.42 cm)
Diameter	1.75 inches (4.445 cm)
Weight	26 lbs (9.7 kg)

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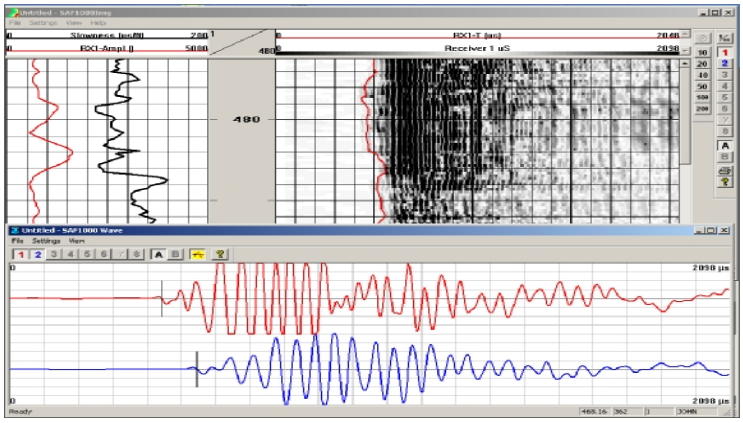
ADVANTAGES:

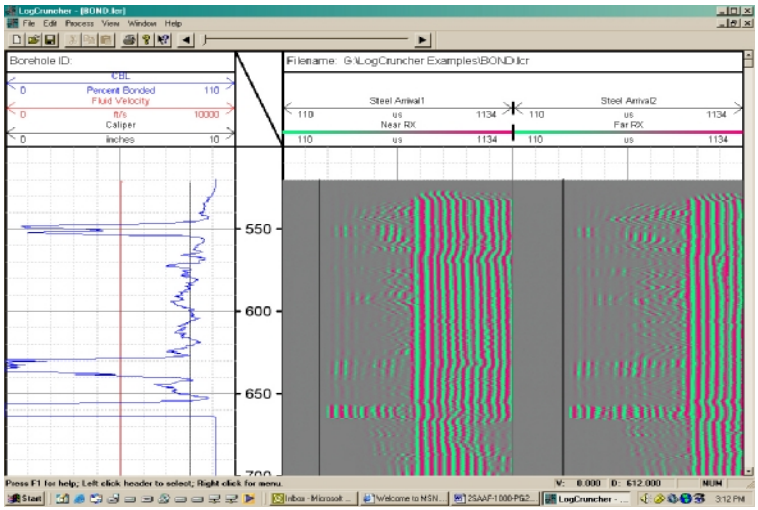
- Ability to record long wave train for Stonely wave analysis and the measurement of fracture aperature and permeabilty index.
- The absolute value of the amplitude of the received waveform is measureable thus allowing for amplitude calibration.
- Truly modular: other receiver and/or transmiter combinations possible up to 8 receivers and two transmitters.

FEATURES:

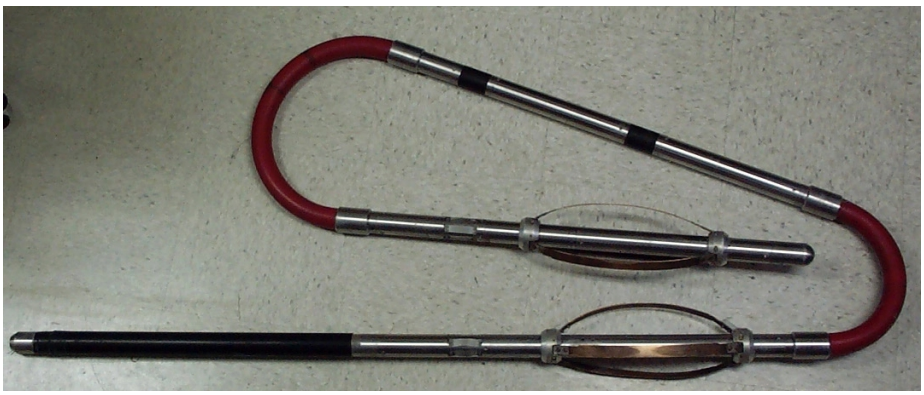
- Real-time slowness, amplitude and VDL plotting
- User-defined waveform window
- Full waveform analysis, including:
- first arrival repicking
- waveform filtering
- stand-off correction
- mechanical property calculations
- velocity analysis
- trace coherence analysis
- reflected tube-wave analysis.
- semblance processing
- Individual waveform pair plotting
- Well Completion Evaluation



Example of **real-time log** data from 2-receiver sonic in 4.5" PVC, 30 kHz Tx frequency



Sonic CBL Example



2 Transmitter – 2 Receiver, dual isolator 2SAA(F) FWS Tool

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