KNUDSEN
ENGINEERING LIMITED

BSI REGISTERED
ISO 9001:2000
FM 99514

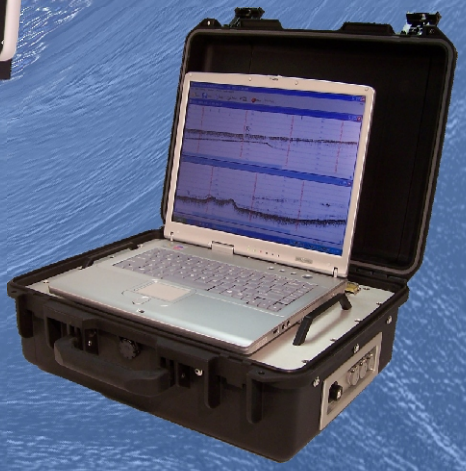
ANNOUNCING.....

The next benchmark in survey.....

SOUNDER
1600 SERIES

SOUNDER 1600

SOUNDER 1620



SOUNDER 1610

KNUDSEN ENGINEERING LIMITED

ISO 9001:2000
FM 99514

SOUNDER 1600 SERIES

The Sounder 1600 Echosounder is KEL's first completely new design since the introduction of the successful 320 Series. Based on the latest generation of 16-bit Digital Signal Processors from industry leader Texas Instruments, the Sounder 1600 becomes the new benchmark for performance and accuracy.

Digital signal processing is key to the performance of the new systems. The Sounder 1600 digitizes the entire incoming signal over an exceptionally wide bandwidth of 230 kHz, and extracts the frequency of interest entirely with digital signal processing software. The digital filters implemented in the Sounder 1600 provide stability and selectivity simply not achievable with analog components, and the TI DSP has the processing power to recover the signal from even the noisiest environments.

Similarly, the transmit signal waveforms are synthesized in software, and are optimized for the bandwidth and frequency response of the transducer. The result is superb frequency agility over a 24 kHz to 210 kHz range with none of the compromises inherent in analog designs.

Another new feature of the Sounder 1600 is a built-in precision test signal generator. This combination of DSP performance and built-in convenience means that no calibration or re-alignment is required - ever. In addition, transducer testing and impedance measurement are now standard.

The first three members of this new echosounder family are the Sounder 1600, 1610 and 1620. Common to all of the new systems is full-speed (12 Mbps) USB 2.0 connectivity. Multiple Sounder 1600 units can be connected to the same PC to provide a total of up to four simultaneous channels, which may be any combination of sidescan and vertical.

SounderSuite

All Sounder 1600 systems come with Knudsen SounderSuite software, which provides a flexible and highly functional graphical user interface for the sounder on any Windows PC. In addition to the user interface, SounderSuite provides a high-resolution echogram display, sensor interface (heave, GPS, etc.) and datalogging functions.

Sounder 1600

With up to four channels in a single 3U rackmount case, the Sounder 1600 provides an economical solution for survey vessels where splashproof packaging is not a requirement. The standard unit is fitted with a universal input power supply (85-365VAC), but 9-36 volt DC power is an option.

Sounder 1610

A waterproof plastic case makes this model ideal for portable applications and small boats. It is available in single or dual-channel versions, with 9-36 VDC power.

Sounder 1620

A built-in thermal greyscale printer distinguishes this Sounder 1600 model. In addition to the real-time paper record, the printer in the Sounder 1620 can be used with PostSurvey for printing recorded data. SounderSuite software enables the Sounder 1620 user to have real time hard copy printing plus simultaneous scrolling colour echogram display completely under computer control. Both AC and DC power inputs are provided.

Technical Specifications *(subject to change without notice)*:

Units: Metres, Feet or Fathoms

Main Ranges: 10
20
50
100
200
500
1000
2000
5000

Phased Ranges: Multiple 50% overlapped phases of each range (20% overlap optional), manual or automatic selection.

Frequencies: User-selectable from 24 kHz to 210 kHz

Power: 4 user-selectable power levels up to 1kW per channel

Resolution: 1 cm (0-99.99), 1 dm (100-999.9), 1 m (>1000)
1/100 ft (0-99.99), 1/10 ft (100-999.9), 1 ft (>1000)
1/100 fm (0-99.99), 1/10 fm (100-999.9), 1 fm (>1000)

Sound Velocity: 1300 - 1700 m/s Resolution: 1 m/s
4265 - 5577 ft/s Resolution: 1 ft/s
710 - 929 fm/s Resolution: 1 fm/s

Draft: 0 - 100 m Resolution: 1 cm
0 - 328.08 ft Resolution: 0.01 ft
0 - 54.68 fm Resolution: 0.01 fm

Pulse Length: Automatically selected, with operator override.

Gain Controls: AGC, TVG and manual receive gain for each frequency

Interface: USB 2.0 full-speed (12Mbps)

Knudsen SounderSuite Software:

Windows 2000, and Windows XP compatible
Post-Processing Software, for any Windows PC
Control: Easy to use graphical user interface (GUI)
Display: Scrolling echogram with depth overlay, plus digital depth
Heave: Supports all popular heave sensors
Position: Supports all popular GPS receivers
Printers: Standard Windows printers plus all popular thermal printers
Simultaneous operation with other Survey software such as HYPACK

Output Data:

Full resolution envelope data in XTF (sidescan) and KEL format
User-configurable ASCII Digital Depth Strings

Additional Features:

Convenient USB interface to Windows PC and SounderSuite
Frequency Agility: Either channel can be used at any frequency from 24 kHz to 210 kHz, user selectable
All Digital: No calibration or analog alignment required - ever!
All new design
Latest DSP technology
Built-in signal generator for comprehensive end-to-end self test
Transducer impedance measurement

Options:

Network Operation: Supports multiple instances on networked PCs
Transducers (many are available)
Transducer 'over the side' mounting brackets
On-site training/installation

Printed in Canada
D131-04241-Rev1.0

10 Industrial Rd. Perth Ontario Canada K7H 3P2 Phone - Canada: (613) 267-1165 US: (315) 393-8861
Fax: (613) 267-7085 Homepage: http://knudsenengineering.com Email: info@knudsenengineering.com