



www.pingdsp.com

3DSS-iDX Integrated Shallow Water Mapping/Imaging System

- 3DSS-DX-450 Sonar
- integrated AML MicroX Sound Velocity Sensor
- integrated SBG Ellipse2-E IMU
- optional integrated Septentrio dual GNSS

SUPERIOR SHALLOW WATER HYDROGRAPHY

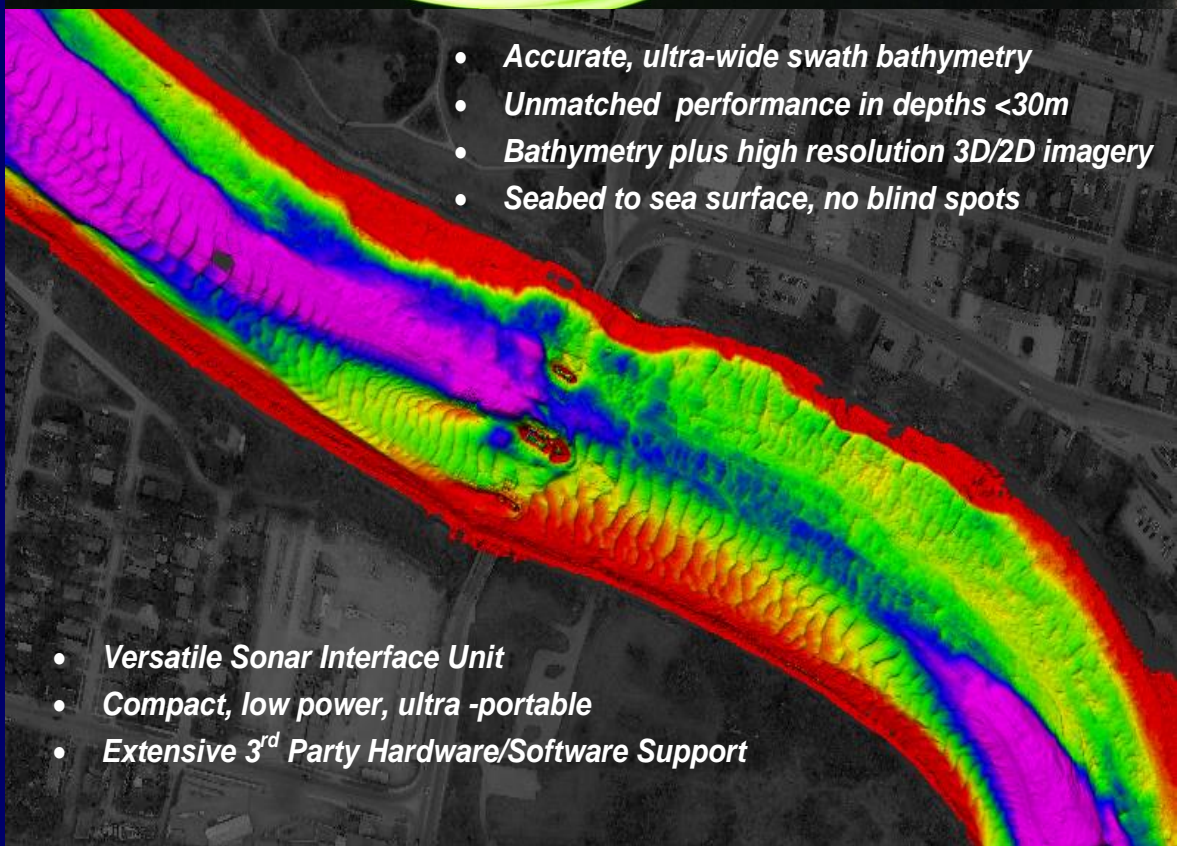
Accurate, high resolution, ultra-wide swath echo-sounding and 3D imagery, with integrated real-time surface sound velocity, high accuracy INS position / attitude, optional RTK and PPK, provide superior hydrographic survey performance in shallow water.

SIMULTANEOUS REAL-TIME 3D IMAGERY

Geometrically correct, co-located 3D Sidescan imagery augments bathymetry and extends 2D sidescan resolution to three dimensions. **3DSS** real-time 3D software displays, captures and allows accurate measurement in three dimensions of features on the seabed and in the water-column including pipes, cables, pilings, wrecks, subsea structures hazards, ecological habitats, and other features not well defined in bathymetry or 2D sidescan.

COMPACT, ULTRA-PORTABLE, VERSATILE

A versatile Sonar Interface Unit provides ultra-portable, easy operation with just a laptop and a battery together with flexible interfacing to 3rd party external equipment on a small boat, USV, or dedicated survey launch.



- *Accurate, ultra-wide swath bathymetry*
- *Unmatched performance in depths <30m*
- *Bathymetry plus high resolution 3D/2D imagery*
- *Seabed to sea surface, no blind spots*

- *Versatile Sonar Interface Unit*
- *Compact, low power, ultra -portable*
- *Extensive 3rd Party Hardware/Software Support*



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For more information please contact Ping DSP Inc. at: info@pingdsp.com

PATENTED ARRAY SIGNAL PROCESSING TECHNOLOGY

3DSS-iDX incorporates a patented signal processing methodology that extends the single angle-of-arrival principle used in interferometric systems to accommodate multiple simultaneous backscatter arrivals. When combined with the **3DSS-iDX** Multibeam Echo-Sounder Signal Processing Engine, the result is unsurpassed resolution and bathymetric accuracy over swath widths that can exceed 14 times water depth.

SOFTSONAR™ TECHNOLOGY

At the heart of the **3DSS-iDX** sonar is Ping DSP's state-of-the-art **SoftSonar™** electronics technology with ultra-low noise, wide dynamic range receivers, state-of-the-art acoustic transducer arrays, Gigabit Ethernet, easy-to-use software interface, and integrated support for a wide range of third party survey software and hardware.

BROAD APPLICATION

- Coastal Hydrographic survey
- River and Lake surveys
- Dredge surveys
- Tailing Pond surveys
- Subsea structure surveying
- Search and localization
- Benthic habitat mapping
- Underwater archaeology

Specifications¹

| Sonar Model | 3DSS-iDX-BASE and 3DSS-iDX-FULL |
|--|---|
| Sonar Specifications | |
| Operating Frequency | 450 kHz |
| Transmit Waveforms | CW, Broadband |
| Pulse Lengths | 10 – 200 cycles |
| Horizontal Beamwidth (2 way) | 0.4° |
| Vertical Beamwidth (selectable) | 19° - 125° |
| Mech. Transducer Tilt (fixed) | 20° |
| Electronic Transmit Tilt | -45° to 45° |
| Max. Ping Rep. Rate | ~45 Hz |
| 2D Sidescan (2D Imagery) Specifications | |
| Data Output | Range and Amplitude |
| 2D Imaging Swath Width | 10 to 20 times sonar altitude, varies with sound velocity profile, geometry and seabed type |
| Max Range | 200 m per side |
| Max Range Resolution | 1.67 cm |
| 3D Sidescan (3D Imagery) Specifications | |
| Data Output | Range, Angle, and Amplitude |
| 3D Imaging Swath Width | 8 to 14 times sonar altitude, varies with sound velocity profile, geometry and seabed type |
| Max 3D Imaging Range per Side | 100m per side |
| Max Resolution | 1.67 cm |
| Bathymetry Specifications | |
| Data Output | Range, Angle, and Amplitude |
| Bathymetry Swath Width | 8 to 16 times sonar altitude, varies with sound velocity profile, geometry and seabed type |
| Max Bathymetry Range | 100m per side |
| Min. Sounding Depth | 0.7m |
| Max. Sounding Depth | 75m (reduced swath width) |
| Sounding Accuracy | Exceeds IHO Special Order |
| Multibeam Eq. Mode Settings | Beamwidth (0.25°-5°), Sector (90°-220°), Beams (3-1024), Mode (Equidistant, Equiangle, Hybrid) |
| Legacy Mode Settings | Bin Count (3-1440), Bin Width (5cm – 200cm) |
| Integrated Sensor Specifications | |
| SBG Ellipse2-E. | Pitch and roll <0.05°(ppk), <0.1°(real time), heading <0.5°, heave <5cm (see www.sbg-systems.com) |
| AML MicroX . | 1375m/s – 1600m/s SV range, 20ms response, 0.025m/s accuracy (see https://amloceanographic.com) |
| GNSS | Septentrio AsterRx4 fully unlocked, dual Antennas (3DSS-iDX-FULL) or External (3DSS-iDX-BASE) |
| Interface Specifications | |
| Control Input / Data Output | Gigabit Ethernet, sonar software provides control GUI and TCP data server |
| Time Reference | Time aligned to GNSS time |
| Additional Communication Ports | RS-232 or Ethernet, for external MRU, GNSS or INS, |
| Additional Inputs | PPS (SMA), Ext.Trigger (SMA) |
| Computer Requirements | PC (Quad Core, 16GB, Discrete GPU (e.g. Nvidia), MS Windows 7,8, 10 (64 bit) |
| 3 rd Party Software Support | Hypack, SonarWiz, QINSy, PDS, BeamWorx, Caris HIPS/SIPS |
| Physical Specifications | |
| Voltage Requirements | 10.5-35 VDC |
| Power Consumption | 25W (3DSS-iDX-BASE), 28W (3DSS-iDX-FULL) |
| Sonar Head Dimensions | 56.8 cm (25.5") long x 9.8cm (3.88") diameter |
| Sonar Head Weight in Air, Water | 8.5 kg (18.7 lbs), 5 kg (11 lbs) |
| Sonar Interface Unit Dimensions | 25.5cm (10.04") wide x 15.5cm (6.10") deep x 5.8cm (2.28") tall |
| Pole Mount Adapter Diameter | 1.49" (fits standard thickwall 1.5" I.D. Aluminum pipe), Flange mount adapter also available |
| Ambient Operating Temp. | -5° C – 45° C |
| Depth Rating | 10 m |

Notes:

¹ Specifications subject to change without notice.