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3DSS-DX-450 Swath Bathymetry 3D Sidescan

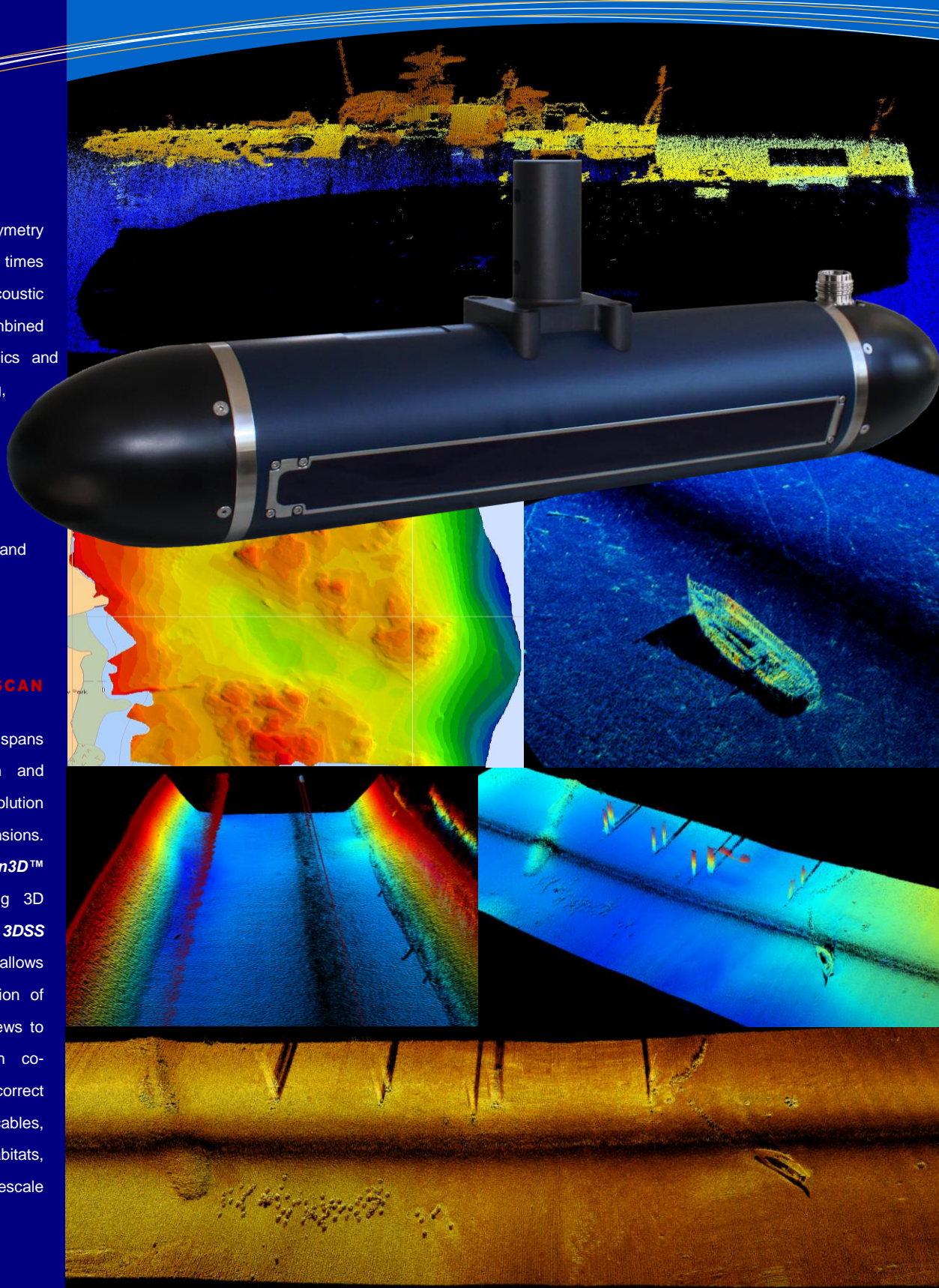
- High resolution shallow water bathymetry
- 2D and 3D sidescan imagery
- Patented angle-of-arrival signal processing (CAATI) and electronic transmit beam control
- Compact, low power, easy-to-use

WIDE SWATH BATHYMETRY

High resolution swath bathymetry coverage of up to 14 times altitude. State-of-the-art acoustic transducer technology, combined with **SoftSonar™** electronics and patented signal processing, provide superior swath bathymetry performance by separating backscatter arrivals from the seabed, sea-surface, water-column and multipath.

REAL-TIME 3D SIDESCAN IMAGERY

3D Sidescan imagery spans the entire water column and extends 2D sidescan resolution capabilities to three dimensions. Revolutionary **Sidescan3D™** software displays stunning 3D imagery in real time. The **3DSS Target Logger** feature allows easy capture and inspection of 3D objects and seabed views to augment bathymetry with co-located, geometrically correct views of structures, pipes, cables, pilings, debris, hazards, habitats, vegetation and other finescale features of the seabed.





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

PATENTED ARRAY SIGNAL PROCESSING TECHNOLOGY

3DSS-DX incorporates a patented signal processing methodology that extends the single angle-of-arrival principle used in interferometric systems to accommodate multiple simultaneous backscatter arrivals (e.g. the seabed, sea surface, water-column, and multipath). The result is true 3D sidescan imaging and superior swath bathymetry from a compact, easy-to-use sonar.

SOFTSONAR™ TECHNOLOGY

At the heart of the **3DSS-DX** sonar is Ping DSP's state-of-the-art **SoftSonar™** electronics technology that integrates low noise, wide dynamic range receivers with steerable transmitters, a versatile Gigabit Ethernet interface, a modular high speed digital signal processing architecture, an easy-to-use software GUI and integrated support for 3rd party hydrographic survey hardware and software.

BROAD APPLICATION

- Hydrographic survey
- Search and localization
- Subsea structure surveying
- Dredge surveying
- Benthic habitat mapping
- Underwater archaeology
- Fisheries surveys
- Naval mine hunting

Specifications¹

Sonar Model	3DSS-DX-450
Sonar Specifications	
Operating Frequency	450 kHz
Transmit Waveforms	CW, Broadband
Pulse Lengths	10 – 200 cycles
Dynamic Range	108 dB
Time Varying Gain Method	Digital
Horizontal Beamwidth (2 way)	0.4°
Vertical Beamwidth (selectable)	15° - 125°
Mech. Transducer Tilt (fixed)	20°
Electronic Transmit Tilt	-45° to 45°
Max. Ping Rep. Rate	~30 Hz
2D Sidescan (2D Imagery) Specifications	
Data Output	Range and Amplitude
Typical 2D Imaging Swath Width	10 to 20 times sonar altitude depending on sound profile and bottom type
Max Range	200 m per side
Max Range Resolution	1.67 cm
3D Sidescan (3D Imagery) Specifications	
Data Output	Range, Angle, and Amplitude
Typical 3D Imaging Swath Width	6 to 14 times sonar altitude, varies with sound velocity profile and bottom type
Max 3D Imaging Range per Side	100m per side
Max Resolution	1.67 cm
Bathymetry Specifications	
Data Output	Range, Angle, and Amplitude
Typical Bathymetry Swath Width	6 to 14 times sonar altitude, varies with sound velocity profile and bottom type
Max Bathymetry Range per Side	100m per side
Sounding Footprints	User selectable 5cm to 2m equally spaced across the swath
Max. Soundings per Ping	1440 across the swath
Sounding Accuracy	IHO Exclusive Order
Integrated MRU Specifications	
Pitch Range, Res., Rep., Acc.	±90°, < 0.05°, < 0.2°, 0.5° @ 25°C
Roll Range, Res., Rep., Acc.	±180°, < 0.05°, < 0.2°, 0.5° @ 25°C
Heading Range, Res., Rep., Acc.	±180°, < 0.05°, < 0.5°, 2° @ 25°C
Motion Sensor Output Rate	100 Hz
Interface Specifications	
Control Input / Data Output	Gigabit Ethernet, sonar software provides control GUI and TCP data server
Time Reference	Topside PC or GPS with optional external PPS via TTL signal level (rising edge)
External MRU Input	RS-232 interface, NMEA and TSS protocols (115.2Kbaud,8N1)
GPS Input	RS-232 interface, NMEA protocol (38.4Kbaud,8N1)
External Trigger Input ²	TTL signal level rising-edge trigger initiates ping
Computer Requirements	PC (Quad Core, 8GB, Discrete GPU (e.g. Nvidia), MS Windows 7 or 8 (64 bit)
3 rd Party Software Support	Hypack, SonarWiz
Physical Specifications	
Voltage Requirements	24 VDC +/- 10%
Power Consumption	17 W idle, 22W typical (current: 0.7A idle 0.9A typical average, 3A max for 2sec., 7A peak)
Length	56.8 cm (22.35")
Diameter	9.8 cm (3.88")
Weight in Air, Water	8 kg (17.6 lbs), 4.7 kg (10.3 lbs)
Pole Mount Adapter Diameter	1.49" (fits standard thickwall 1.5" I.D. Aluminum pipe)
Ambient Operating Temp.	-5° C – 45° C
Depth Rating	10 m

Notes:

¹ Specifications subject to change without notice.

² Nonstandard option.