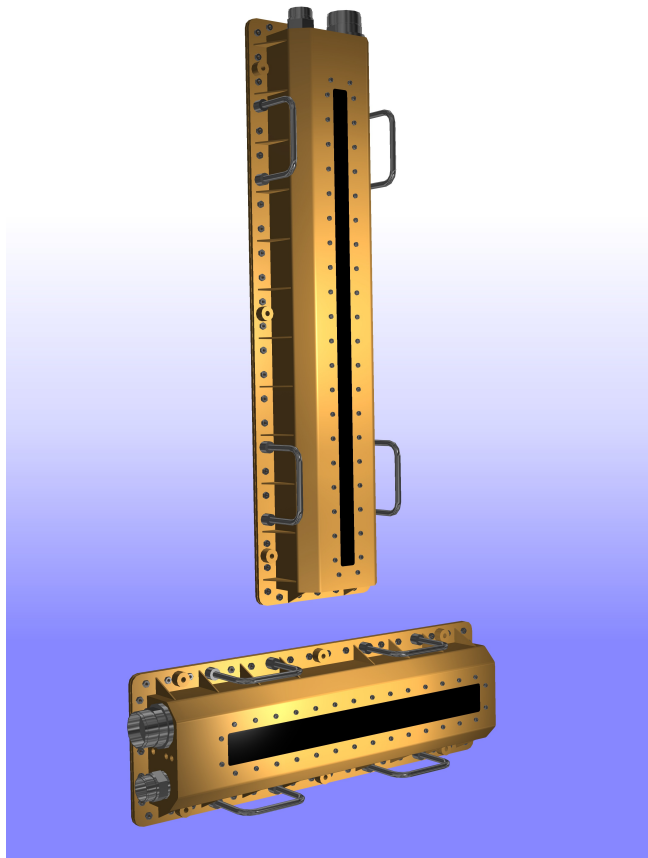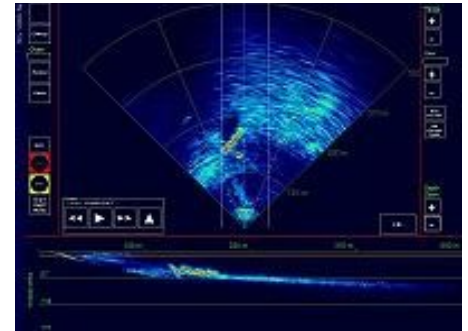# See-Echo

3D Imaging Sonar

FEATURES INCLUDE

- **Forward looking, Real-Time, 3D scanning.**

- **100 -1000m range**

- **Determine target depth in the water column.**

- **Wide-Band operating frequency**

- **MRU for data stability**

- **Optional 3000m operation**

- **High contrast, TFT, touch-screen display**

- **"Windows" based 3D display software**

- **Moveable "camera" viewpoint.**
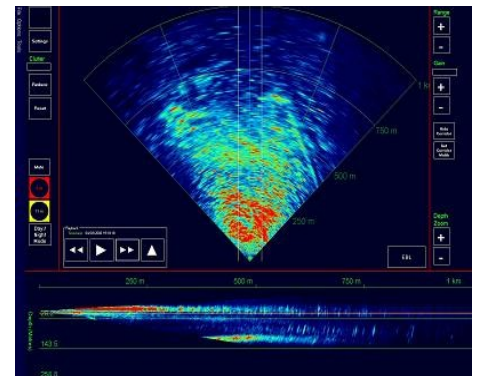
- **Target Tracking option**

Ship Wreck Guernsey

Surface Ice and Seabed

The See-Echo Imaging Sonar is a forward looking active underwater acoustic device that provides a 3D real-time display of the terrain ahead of a surface or underwater vehicle to aid in the avoidance and detection of submerged objects.

The See-Echo when installed will scan both horizontally and vertically to produce a three dimensional representation of the area in front of the vehicle up to a maximum range of 1000m.

The system software can operate the sonar in a 2D mode for a faster update rate and then switch to 3D mode for a more graphical representation of the area scanned.

A motion reference unit can be integrated into the system to stabilise data from the sonar in response to pitch/roll movement.

The entire system can be operated via the touch screen, TFT monitor, which is transflective in design providing high contrast under strong sunlight. A dimmable backlight provides a variable level of low light illumination to minimise glare at night.

See - Echo

3D Imaging Sonar

The See-Echo 3D Sonar is based on Marine Electronics digital range of electronically scanning multibeam sonar's utilising an improved wide band technique.

The sonar scans a horizontal sector of 90° to a 1.5° resolution and a vertical sector of 20° to a 1° resolution simultaneously for every "ping" of the transmitter.

The See-Echo provides a true 3D forward looking image updating at a rate dictated by just the travel time for one acoustic pulse.

The system consists of separate transmitter and receiver arrays cabled to an Electronics Processing Unit.

An optional motion reference unit to stabilise movement can be connected to the Electronics Processing Unit (EPU).

The sonar data is transferred via a fibre-optic Ethernet link from the EPU to the host PC where the system is controlled via a touch-screen sunlight viewable TFT monitor.

The system software integrates the data from the sonar and MRU to display a 3D representation of the targets detected.

Transducer Array Specifications

Operating Frequency:		100-250kHz, Wide-Band
Material:		Aluminium & Polyurethane
Transmitter Beamwidth:		Vertical: 1° Horizontal: 90°
Receiver Beamwidth:		Vertical: 20° Horizontal: 1.5°
Operating Range:		*Max: 1000*m
Maximum Depth		*1000m*
Dimensions:	Transmitter:	*Frequency Dependent*
	Receiver:	*Frequency Dependent*

Surface Display Unit

Display:	20.1", Touch Screen, Transflective LCD Marine Monitor
Connections:	Fused and Filtered IEC mains inlet 3 x RS232 Ports, MRU/Keyboard/VGA/Mouse Ports RJ45/MT-RJ Ethernet

Electronic Processing Unit

Dimensions:	*Frequency Dependent*
Weight:	*Frequency Dependent*
Materials:	Polyethylene Stainless Steel
Operating Temperature:-	10 to +40 degrees C
Storage Temperature:	-20 to +60 degrees C
Environmental:	Supplied in underwater housing or open frame for customer installation
Connections:	Fused and filtered IEC mains inlet. 2 RS232 ports Keyboard/VGA/Mouse Diagnostic Ports RJ45/MT-RJ Ethernet Transmitter Array Receiver Array
Power Supply:	240V AC at less than 6kW peak

Specifications are subject to change without notice