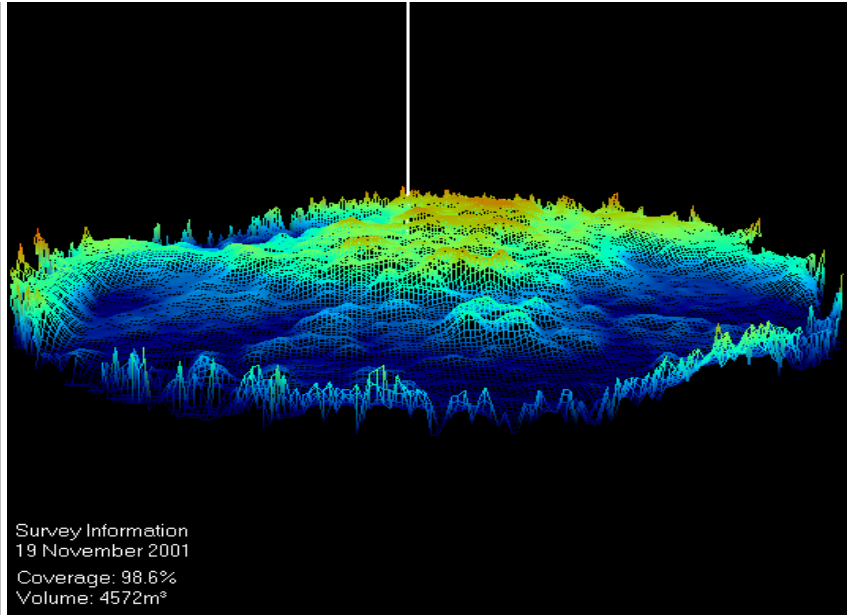
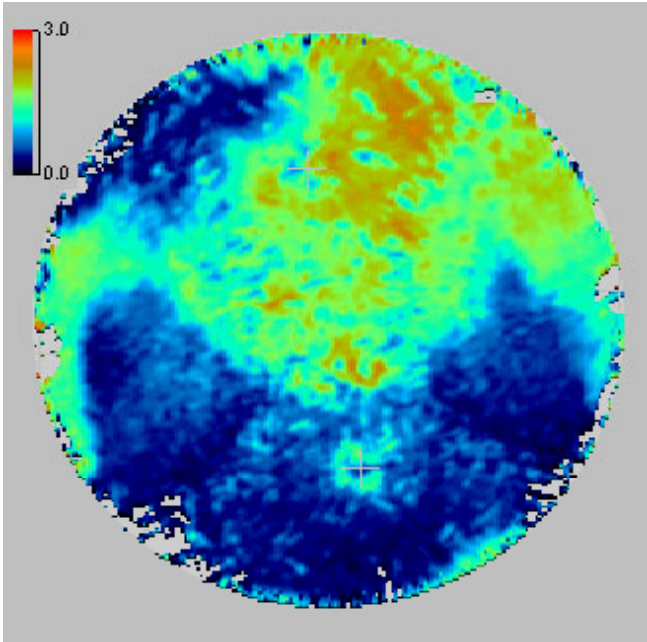
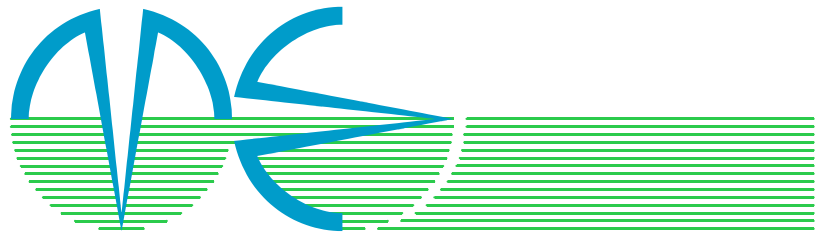


3D Imaging Sonar

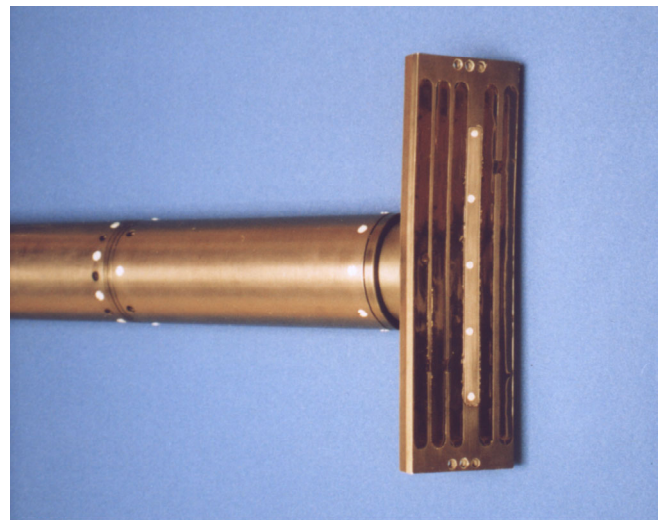
Model 5150



The 3D Sonar Model 5150 operates in a similar manner to a conventional mechanically scanned sonar system with the unique addition of height information for every point scanned. In just one revolution of the transducer a complete solid three dimensional surface plot of the seabed is obtained.

The transducer head contains one transmit array and four receive arrays, all with identical fan-shaped beam patterns to give a narrow 2° horizontal beamwidth and a wide 60° vertical beamwidth. The transducer head is rotated through 360° in user definable steps which may be as small as 1°. For every motor step position the sonar transmits and receives the echoes from up to its maximum range of 400m. The outputs from the four receivers are amplified, filtered then digitised and all the signal processing performed in the digital domain to produce a three dimensional point for every range cell. The system can resolve to 0.1° within the 60° receive beamwidth to generate the target height. For each acoustic transmission a profile cross-section of the seabed is generated and as the transducer rotates a complete three dimensional surface is constructed. The angle of the transducer head relative to the horizontal may be remotely controlled to optimise the sonar coverage for different water depths. Tilt sensors in the transducer head compensate for misalignment between transmissions.

The scanning system interfaces to a P.C. to provide the user interface and display system via a 10Mb/sec Ethernet network link. The system is controlled using a windowed, graphical user interface via a keyboard and mouse. The P.C. software provides contour plan, 3D surface and profile display modes together with comprehensive logging, storage and retrieval capabilities. Data may be exported in an ASCII format for further processing by third party software packages. To cover a larger survey area the data from multiple sweeps may be combined into a grid format to plot as one continuous surface. The system may also be operated with the transducer head rotation angle fixed as a three dimensional sidescan. Additional amplitude display modes allow comparison of the three dimensional contour plots with more conventional sector scan and sidescan signal amplitude plots which can help to classify targets.



Features Include:

- **Solid modelling of subsea terrain**
- **Manipulate 3D surface plots on screen**
- **Multiple survey sweeps merged**
- **Compensation by internal tilt sensors**
- **Tilting transducer for total coverage**
- **X,Y and Z data export capability**



Marine Electronics Ltd.,
Unit 10,
Barras Lane Industrial Estate,
Vale, Guernsey, C.I.
GY6 8EQ
Tel: +44 (0)1481 253181
Fax: +44 (0)1481 253182
Email: sales@marine-electronics.co.uk
Web: www.marine-electronics.co.uk