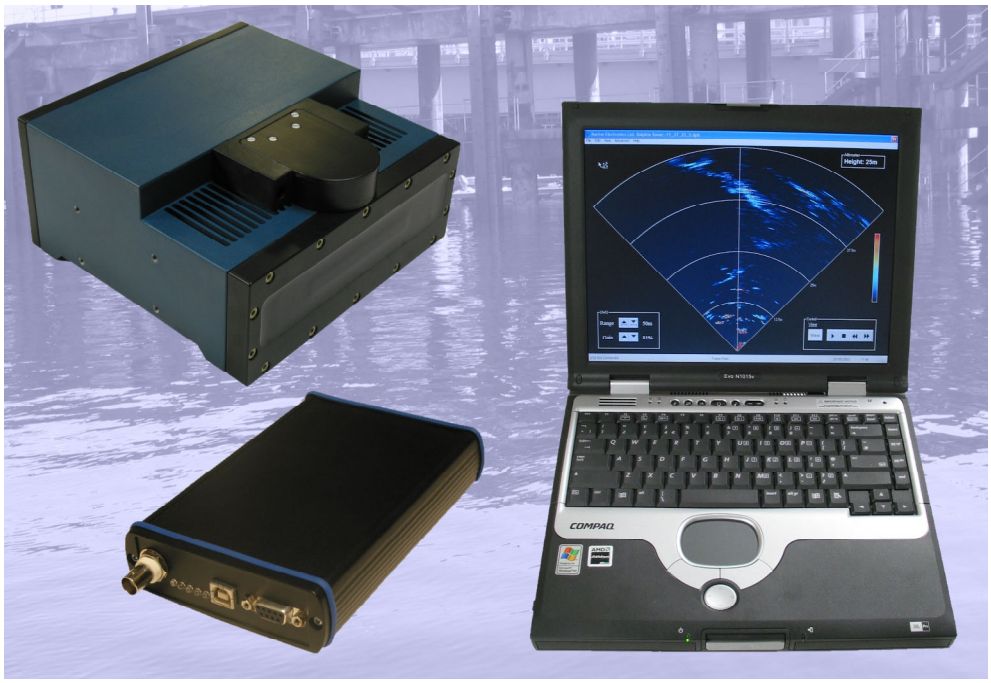
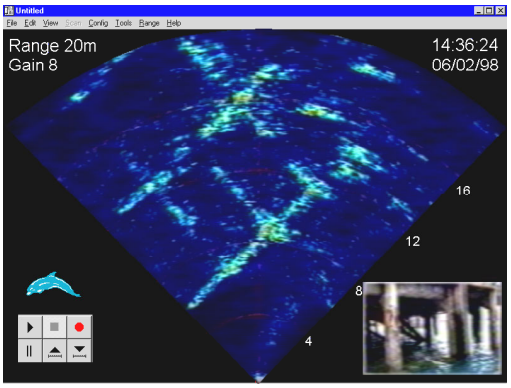
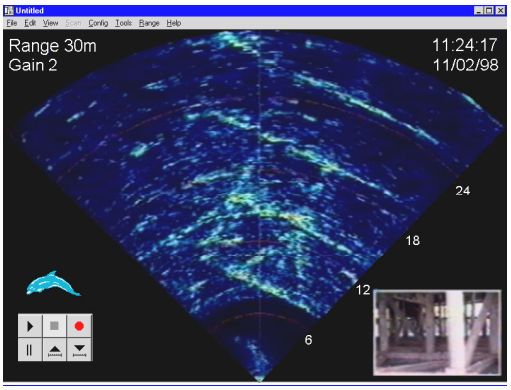
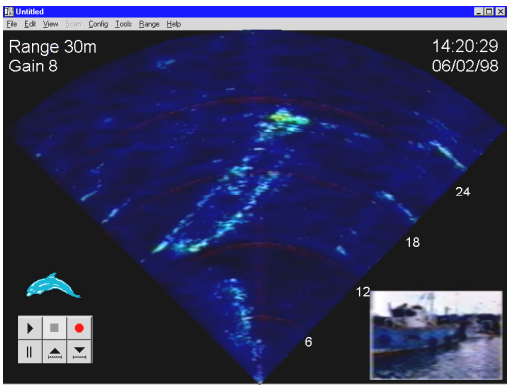
Dolphin Real Time Sonar

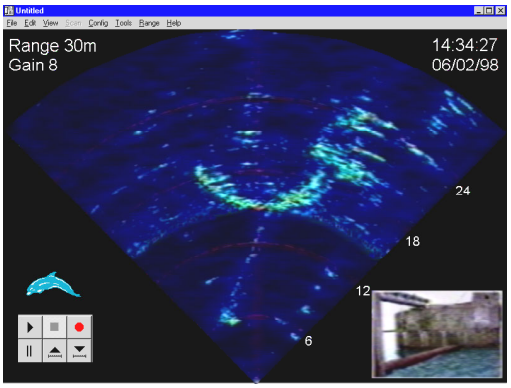
Model 6001USB











The Dolphin Real Time Sonar System is the latest innovation from the company that is dedicated to providing quality products at an affordable price.

The Dolphin is a high frequency, high resolution electronically scanned sonar particularly suitable for pilotage, navigation and search operations.

The underwater housing is suitable for mounting on anything from a small Remotely Operated Vehicle to a large surface vessel. The surface display is generated by a P.C. running the "Windows" operating system. The umbilical cable requirement is for either a single twisted pair or a coaxial cable to handle the data telemetry. At the surface the sonar telemetry is connected to a small USB Interface Unit which is self-powered from the P.C. Power to the sonar is supplied either from the vehicle or via an additional two power cores through the umbilical.

The system software provided has facilities for data logging of the raw data to hard disk at full resolution for post analysis as well as a suite of on-screen measurement tools. The "Windows" interface significantly reduces the time taken to learn the system, minimising training requirements.

FEATURES INCLUDE

- **Real Time continuous scanning over a 90° sector at 30 frames per second (USB 2.0)**
- **1024 x 768 pixels with 256 colours**
- **"Windows '98, ME, 2000, NT, XP software**
- **Raw data logging to mass storage**
- **Multiple cursors for accurate on screen measurement**
- **Rugged compact underwater unit**
- **500m depth rating as standard**

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The resolution and update speed of the Dolphin Real Time Sonar sets a new performance benchmark for imaging sonar systems. The compact underwater unit weighs only 3.3kg in water allowing the system to be fitted to the smallest Remote Vehicles. The underwater package has a standard eight pin connector, two pins are used for data and two for 24v d.c. power. Additional pins provide for external synchronisation with other acoustic equipment. For example, a Marine Electronics high resolution altimeter can be integrated into the system so that the altimeter does not cause acoustic interference with the sonar. At the surface the sonar output is connected to a small USB interface unit. The USB unit contains the data acquisition hardware to convert the pseudo-video telemetry uplink into a high speed digital data stream.

The system software may be run on virtually any modern "Windows" P.C. provided that the system has support for at least one USB port. By using optimised display techniques the high speed real time display is generated at up to 30 frames per second. The 0.75° angular resolution and 25mm range resolution combine to produce startlingly clear images to rival the best of the mechanically scanned systems but with a huge speed advantage. Raw data may be logged automatically (at programmed intervals), or on demand, to hard disk for post analysis of survey results. Images may be incorporated into reports or pasted into other "Windows" applications. The system may be expanded into an Obstacle Avoidance Sonar (OAS) for AUV's with the addition of the PC104 processing package from the Marine Electronics model 6201 system.

The Dolphin USB Interface unit will operate at full speed when connected to a USB2.0 port but will also operate at a reduced frame rate when connected to a USB1.1 port. As the USB Interface is powered from the USB port the system lends itself to being used with a notebook P.C. Together with a couple of 12v lead-acid batteries to power the underwater unit this must be the most portable professional multi-beam imaging sonar system available.

System Specifications

Operating Frequency:	455kHz
Range Settings:	10m to 200m in 10m steps
Range Resolution:	25mm
Angular Resolution:	0.75°
Sample Rate:	4MHz
Horizontal Beamwidth:	Receive: 1.5° (+/-3dB points) Transmit: 110°
Vertical Beamwidth:	Receive: 16° Transmit: 20°
Update Rate (90° Sector):	10m range, 30 frame/sec 10m range, 28 frame/sec 50m range, 14 frame/sec 100m range, 7 frame/sec
Data Logging:	Auto at variable frame rate Manual, key press on demand

USB Interface Unit

Dimensions:	Width: 110mm Depth: 165mm Height: 35mm
Protocol:	USB2.0 and USB1.1
Power Supply:	+5V DC at 200mA typical (self-powered from USB port)
Input Data Format:	Pseudo-video (+/-1V peak) (2MHz bandwidth required)

Underwater Unit

Dimensions:	Width: 210mm Depth: 200mm Height: 100mm
Weight:	7.5kg in air 3.3kg in water
Material:	Hard Anodised Aluminium Polyurethane
Power Supply:	24V DC at 2.6A max.
Temperature:	Operating: -5 to +40°C Storage: -20 to +60°C
Operating Depth:	500m
Underwater Connector:	MCBH8M (subconn)
Transmit Pulse Length:	30µsec to 1msec
Transmit Power:	Variable
Telemetry Link:	9600 baud half duplex

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