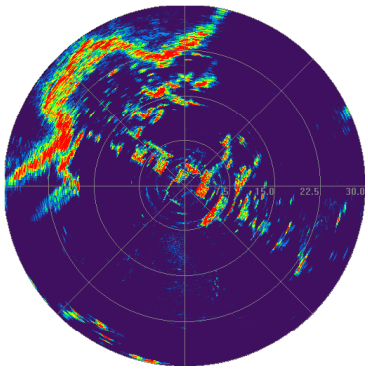
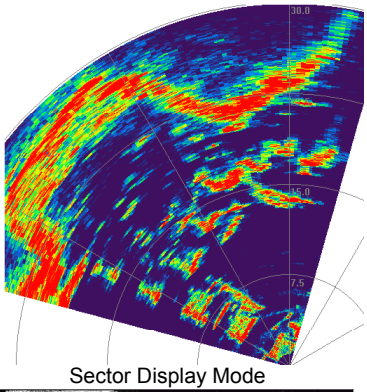
Imaging Profiling Sonar

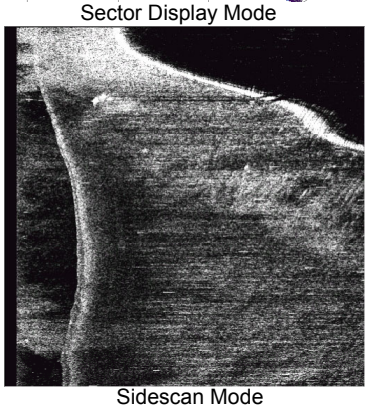
Model 1640/2640



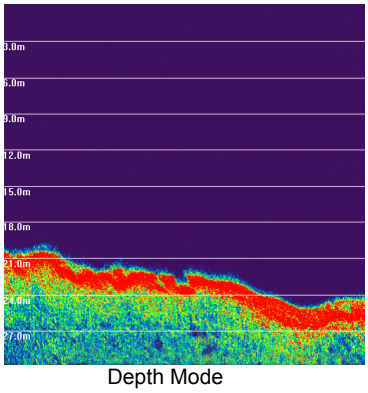
Polar Display Mode



Sector Display Mode



Sidescan Mode



Depth Mode

The Model 1640 high resolution imaging sonar and the Model 2640 profiling sonar from Marine Electronics are designed to give the maximum performance for a minimum price. The sonar units are controlled from the "Windows" based system software running on a P.C. The hardware interface to the sonar is either direct via RS232 or via an external serial linked RS485 control unit with internal PSU. For complete portability the sonar may be powered from batteries and controlled from a notebook P.C.

The underwater scanning unit benefits from Marine Electronics' 20+ years of experience in the design and manufacture of sector scanning sonars. The acoustic transducer and drive motor are fully enclosed in a pressure balanced oil filled µPVC "boot". Having no external moving parts, grit and sand are excluded from wearing the sealing surfaces. Additional impact protection for the transducer is also afforded by the "boot". An advanced error detection and correction protocol is used which enables the telemetry to function when subjected to the high levels of noise and crosstalk on typical R.O.V. umbilicals.

The surface software has been designed for ease of use without sacrificing advanced features. A simple control panel has analogue simulations of control knobs which provide for easy and quick range, gain, arc and centre angle settings. Single click push buttons control the display mode and step angle size.

FEATURES INCLUDE:

- **High Resolution colour display with Multiple display modes**
- **Dual tracking cursor for accurate on screen measurements**
- **Robust digital telemetry with error detection and correction**
- **Enclosed rugged transducer**
- **Image save and restore at full resolution allows post analysis of real data**
- **Compact underwater unit**
- **ASCII data export**
- **Software upgradeable**

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Imaging Profiling Sonar

Model 1640/2640

The Model 1640 Sonar provides high resolution sonar images in a transportable PC format for the minimum cost. Typical applications include ROV navigation, sea and river bed imaging, debris clearance, target location and tracking. The standard Model 1640 operates at 500kHz with a 2.5° horizontal beamwidth and a 20° vertical beamwidth. Alternative transducers may be fitted to give different beam patterns and the acoustic frequency re-tuned in the range 100kHz to 2MHz. This flexibility allows Marine Electronics to provide custom solutions to solve specific problems for an "off-the shelf" price.

The Model 2640 Profiling Sonar effectively operates as a "first return" scanning echo-sounder. The standard unit operates at 700kHz with a 2.5° conical beam to give precise range and bearing information over the scanned area. Typical applications are dredging and trenching operations, river and sea bed profiling and pipe laying. Multiple 2640 units may be connected together to cover either a larger area or for trenching a before and after comparison may be displayed simultaneously. As with the Model 1640 Imaging Sonar alternative transducers may be fitted to customise the beam pattern.

Marine Electronics Model 1640 Imaging Sonar

Mechanical

Length:	230mm
Diameter:	70mm
Finish:	Hard Anodised Aluminium
Operating Depth:	1000m standard, 3000m optional
Mating Connector:	FAWL-5S-MP (Sea Conn.)
Operating Temp:	0°C to +40°C
Storage Temp:	-20°C to +70°C
Weight in Air:	2.3kg
Weight in Water:	1.4kg
Power Requirements:	24-36VDC at 400mA cont. 2A peak

Acoustic

Acoustic Frequency:	500kHz
Horizontal Beamwidth:	1.25° (-3dB half angle)
Vertical Beamwidth:	+/-10° about horizontal
Transmit Pulse Width:	60/300/600 µsec
Transmit Power:	186dB re 1µPa/V at 1m
Receive Sensitivity:	5µV r.m.s.
Range Resolution:	42mm

Marine Electronics Model 2640 Profiling Sonar

Mechanical

Length:	275mm
Diameter:	70mm
Finish:	Hard Anodised Aluminium
Operating Depth:	1000m standard, 3000m optional
Mating Connector:	FAWL-5S-MP (Sea Conn.)
Operating Temp:	0°C to +40°C
Storage Temp:	-20°C to +70°C
Weight in Air:	2.5kg
Weight in Water:	1.4kg
Power Requirements:	24-36VDC at 400mA cont. 2A peak

Acoustic

Acoustic Frequency:	700kHz
Beamwidth:	1.25° (-3dB half angle)
Transmit Pulse Width:	50 µsec
Transmit Power:	186db re 1µPa/V at 1m
Receive Sensitivity:	5µV r.m.s.
Range Resolution:	5mm

Power Supply and Interface Unit

Length:	230mm
Width:	100mm
Height:	110mm
Material:	Sealed die-cast aluminium box
Scanner Connector:	Amphenol 62GB12-10S
P.C. Connector:	9 way female 'D'-type
Mains Connector:	IEC fused filtered inlet with switch
Input Supply Voltage:	90VAC to 250VAC
Output Voltage:	Isolated 28VDC nominal at 2A
Telemetry Interface:	RS232 to optically isolated RS485

Telemetry

Type:	(1)	Isolated RS485
(Factory Option)	(2)	RS232 separate Rx/Tx
	(3)	TTL separate Rx/Tx
Data Rate:		115200 baud
Protocol:		Asynchronous packet protocol
Cable Drive Capability:		1000m (standard), 3000m (optional)
Preferred Cable Type:		26 s.w.g. or larger twisted pair with uncommitted screen

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