990F TOWED SIDESCAN SYSTEM

Ultra High Definition

The ultimate high resolution StarFish side scan sonar for extreme image definition and target detection. Based on the popular and proven 450F design, the StarFish 990F uses high frequency 1MHz acoustic 'chirped' pulses with a 0.3° horizontal beam width to produce the most defined and clear images from any StarFish system.

With a 35m range capability on each channel (giving 70m total swathe coverage), the StarFish 990F is the ideal tool for high resolution surveys in ports & harbours, academic research, inland waterways such as rivers and canals, and excels when used for SAR (Search And Recovery/Rescue) operations.

Advanced Design

The compact hydrodynamic full body three-fin design improves stability of the sonar while it's being towed which in-turn helps improve the quality of images it produces. The sonar also incorporates an inline connector to allow the cable to be swapped or replaced on site. Additional cable lengths are also available to help you choose the best towing solution for your needs.

Designed to be 'Plug and Play', connecting to your Windows PC or laptop via a USB connection, the StarFish 990F comes with software to allow the capture and recording real-time images from the seafloor below, making seabed imaging easy for everyone.

Compact, Rugged & Portable

Measuring less than 15 inches long the StarFish 990F sonar is small enough to be transported in your rucksack. Lightweight and quick to deploy by hand, the 990F towed system is independent of the boat requiring no fixed installation which makes it easy to transport and operate from any vessel. The StarFish Peli Case provides a rugged and watertight method for transporting and storing your StarFish system.

StarFish 990F Towed Sonar Head

StarFish 990 Electronics Top Box

- 0.3° acoustic beam widths for high definition.
- Easily transportable - fits in your rucksack.
- Plug & play USB interface to any PC, with simple & intuitive software.
- Easily powered from almost any source.
- High visibility red colour to aid location & tracking.

P/N: BP00203.1

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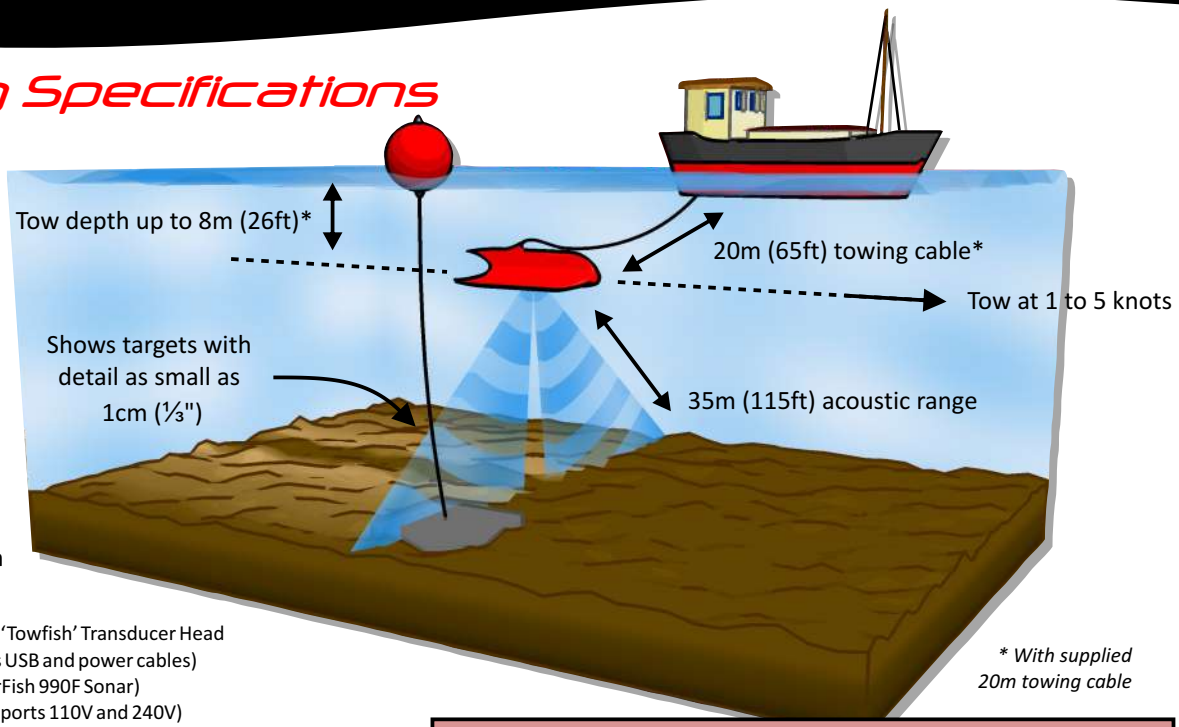
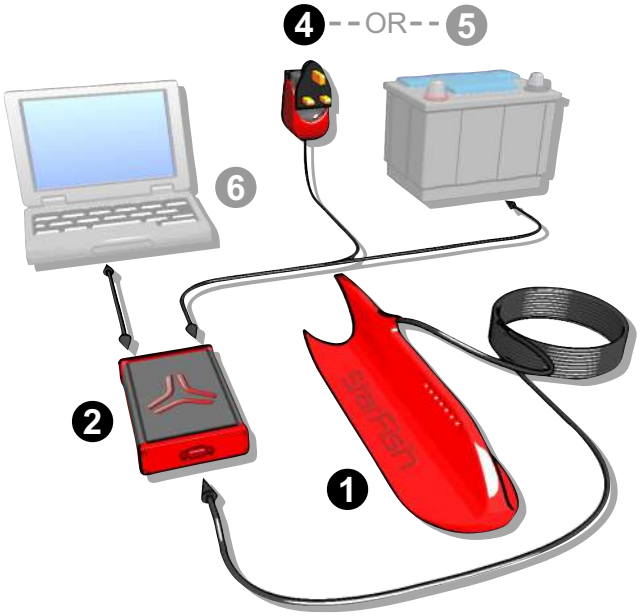
Operating Specifications



** With supplied 20m towing cable*

The Sonar connects to the Top Box. The Top Box then connects to the power source and any Windows based PC or Laptop via a USB connection to display, record and playback digital sonar images using StarFish Scanline software.

1. Starfish 990F Side Scan Sonar 'Towfish' Transducer Head
2. Starfish 990 Top Box (includes USB and power cables)
3. 20m cable (included with StarFish 990F Sonar)
4. AC Mains power adapter (supports 110V and 240V)
5. Customer supplied DC power supply 9V-28V (i.e. battery)
6. Customer supplied PC or Laptop (with at least 1 free USB port and Windows XP, Windows Vista or Windows 7)



TOP BOX SPECIFICATIONS

Dimensions	Length	166mm (6.54").
	Width	106mm (4.17").
	Height	34mm (1.34").
Weight	In Air	Approx 0.4kg (0.88lb).
Power	Supply Voltage	90-264V AC, 47-63Hz with Mains adaptor. 9-28V DC supply.
	Consumption	2.4W (200mA @ 12V) approx when idle. 6W (500mA @ 12V) approx when scanning.
Interfaces	Power	2.1mm DC jack socket.
	Data	USB B-Type connector.
	Acoustic	9-Way Female D-Type socket.
Environmental	Temperature Range	-5°C to +40°C (23°F to 104°F).
	IP Rating	IP50 (Protected against ingress of dust, no protection against ingress of liquids).

SONAR HEAD SPECIFICATIONS

Dimensions	Length	378mm (14.88").
	Width	110mm (4.33").
	Height	97mm (3.81").
Weight	In Air	Approx 2.0kg (4.4lb).
	In Fresh Water	Approx 1.0kg (2.2lb).
Body	Costruction	Reinforced red polyurethane rubber.
	Depth Rating	50m (164ft).
Towing Cable	Length	20m (65.6 ft).
	Breaking Strain	>150kg (330.7lb).
	Construction	Black polyurethane jacketed with internal Kevlar reinforcing (strain) member.
	Min Bend Radius	30mm (1.2").
Transducer	Arrangement	Dual fin mounted transducers, with 30° down angle from the horizontal.
	Vertical Beam	60° nominal width (@ -3dB signal level).
	Horizontal Beam	0.3° nominal width (@ -3dB signal level).
Acoustic	Frequency	1000kHz nominal.
	Range	1m to 35m (3ft to 115ft) on each channel providing max 70m (230ft) total coverage.
	Mode	CHIRP pulse compression.
	Pulse Length	100µs typical.
	Transmit Source Power Level	<210dB re 1Pa @ 1m.

SYSTEM SPECIFICATIONS

System Parts	Sonar	StarFish 990F Sonar Head (with 20m tow cable). StarFish 990 Top-Box (with USB interface cable).
	Power Supplies	Universal AC mains to DC power-supply (with international AC adaptors). 2m cigar-plug DC power lead. Crocodile-clip to cigar-socket DC adaptor.
	Software	StarFish Scanline interface software CD and drivers.
	Documentation	User manual, Scanline Manual, Quick start guide.
	Included Accessories	Rugged Peli™ Transport & Storage Case StarFish GPS (SiRF III) StarFish pole mounting bracket
Available Accessories		50m towing cable
Compliances	RoHS	Full compliance to the 2002/95/EC directives
	WEEE	Full EN50419 compliance

Please Note: All specifications are subject to change in line with Tritech's policy of continual product development.
For the latest news, details, mechanical drawings, applications information and evaluation software, visit www.starfishsonar.com

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