StarFish

TOWED SONAR
QUICK-START GUIDE

① BEFORE YOU START

Check that your StarFish system contains the following items…

- StarFish towed sonar transducer head (& cable).
- StarFish top-box electronics module.
- AC to DC universal power adapter (and plug adaptors).
- DC power lead - cigar plug (fused) to 2.1mm plug.
- DC power lead - cigar socket to crocodile clips.
- USB 2.0 cable (type-A to type-B connectors)
- StarFish "Scanline" software and drivers CD.
- User Guides
- Reusable cable tie and bag of sundries.

If you purchased an 'advanced' system, you should also have...

- Rigid, water-proof, transit case.
- StarFish USB GPS receiver.
- StarFish towed transducer pole-mounting bracket.

Additionally, you will also require the following…

- Microsoft Windows XP, Vista or Windows 7 compatible computer (or laptop), with 1 free USB port.
- Battery (for DC operation) or protected AC mains outlet.
- Rope for securing sonar towing cable to your boat.

⚠ **Before using your StarFish product for the first time, read and follow the "Important Safety Instructions" at the start of the "System User Guide".**

② INSTALL SOFTWARE

- Insert the "Scanline" software CD into your computer.
- The set-up program should automatically run, but if it does not start, run the "*ScanlineMenu.exe*" program located in the root directory of the software CD.
- When the CD menu appears, select "Install StarFish Scanline" to start the set-up program.
- This process may take a couple of minutes, please be patient.
- Follow the on-screen instructions to install the main software and required hardware drivers.
- Once the installation program has completed, you may connect the USB "top box" electronics module to your computer.

Note: Do not connect the sonar USB electronics to the PC until the "Scanline" software and drivers have been installed, this will simplify the installation procedure.

③ CHOOSE A POWER SUPPLY

Before setting up your StarFish system, you first need to decide on the power source you will use - either…

- A 9V to 28V 5W DC supply (such as a battery or boat electrical system)

or…

- Mains at 110V-240V AC (47Hz to 63Hz) from the universal AC-DC adapter included with the system.

ⓘ For best performance of the StarFish, you should ensure any power source is "clean", meaning it is free from electrical noise possibly caused by mains-inverters, motors or any other similar "high-current switching" devices.
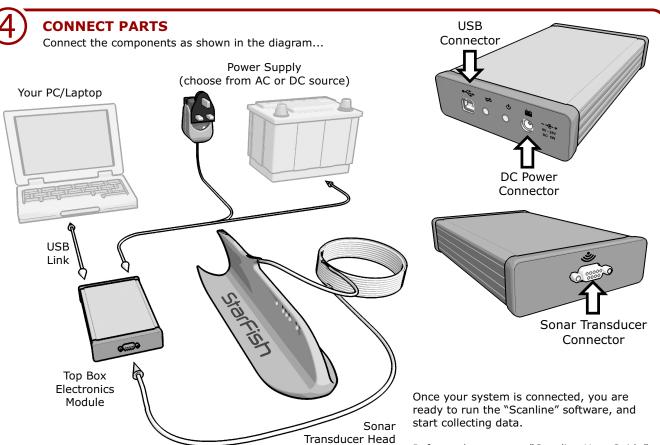
Additionally, for DC supplies, the source should be a fully regulated and smoothed power source - a dedicated battery is ideal for this.

⚠ **To avoid electrical shock, you should only use the AC supply in a dry and enclosed environment, such as a cabin on board a boat.**
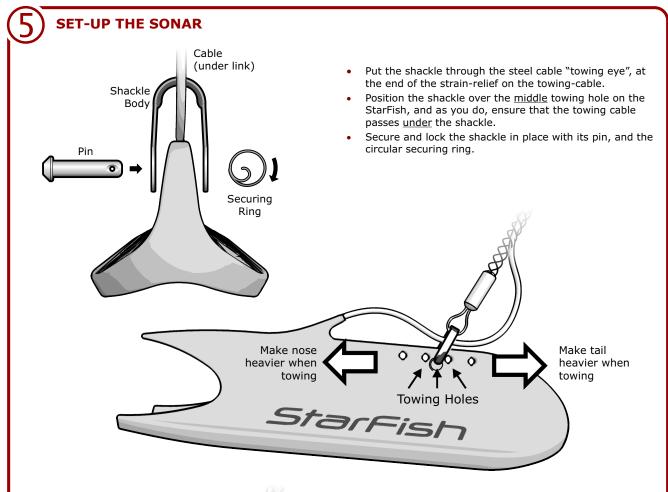
⚠ **Ensure the supply has suitable protection such as quick-trip circuit breakers and an RCD.**
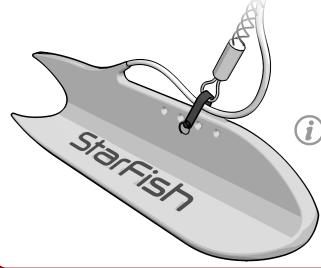
⚠ **Only handle the StarFish equipment with dry hands.**

⚠ **While the StarFish has internal voltage and current protection circuitry, any supply you use should be externally fused with a quick blow fuse rated at 1A.**

④ CONNECT PARTS

Connect the components as shown in the diagram…

Your PC/Laptop

Power Supply (choose from AC or DC source)

USB Link

USB Connector

DC Power Connector

Sonar Transducer Connector

Top Box Electronics Module

Sonar Transducer Head

Once your system is connected, you are ready to run the "Scanline" software, and start collecting data.

Refer to the separate "Scanline User Guide" for information on operating the software.

⑤ SET-UP THE SONAR

Cable (under link)

Shackle Body

Pin

Securing Ring

- Put the shackle through the steel cable "towing eye", at the end of the strain-relief on the towing-cable.
- Position the shackle over the middle towing hole on the StarFish, and as you do, ensure that the towing cable passes under the shackle.
- Secure and lock the shackle in place with its pin, and the circular securing ring.

Make nose heavier when towing ←

Towing Holes

→ Make tail heavier when towing

StarFish

Depending on the salinity of the water and the towing speed of the sonar you may find that you need to adjust the towing position backwards from the middle towing hole to achieve the best results.

However, only the three central holes are intended as towing points (the outer holes are for use in transit and the attachment of accessories).

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ⓘ Moving the towing position backward, makes the sonar to become nose heavy, causing it to dig into the water more, increase the tension on the cable, and go deeper. **If the sonar is too nose heavy, it will flip and drag vertically.**

Moving the towing position forward, causes the sonar to tow more horizontally. **If the sonar is too tail heavy, it will try to swim upwards and sideways**

⑥ SECURE THE SONAR

⊘ Do not rely on the connection between the towing cable and the electronics box to secure the StarFish transducer, as during towing there is significant force on the cable, and the electronics module with attached computer may be dragged overboard!

- Do not bend the cable to a radius less than 30mm, as this may shorten its life.
- Do not use a fixing method, that will cut or damage the cable
- Do not use a securing method that excessively crushes the cable.

Ideally, either...

- Wrap the cable round a bollard, capstan or cleat that has a diameter larger than 60mm.
- Using slip-knots, tie a soft rope to the cable, then tie the other end of this to the boat.

⑦ START SCANNING

Once you've connected and set-up the sonar as described in the previous sections, you're ready to start towing the sonar and begin collecting data.

ⓘ Towing the sonar is relatively straightforward, but there are a few guidelines and precautions you should observe to achieve the best results…

- Let the boat build up speed to 1-2 knots before putting the sonar in the water.
- Keep the boat speed constant, and ideally between 1 and 4 knots for the best results.
- When towing in rivers and tidal channels, remember that the speed of the water current should also be taken into account.
- The faster the water travels, the more force is exerted on the sonar. The recommended maximum towing speed is 8 knots.
- Tow the sonar from the stern of your boat.
- Tow the sonar away from the prop-wash (to one side of the boat, for single propeller vessels).
- Paying out more cable will cause the sonar to dive deeper, with the exact depth depending on tow speed.
- Tow with enough cable so the sonar is operating below the keel of the boat, but try and keep the sonar at least 3 meters above the seabed (or higher in known rocky situations).

⚠ **Read the section in the "System User Guide" on avoiding hazards.**

You should not rely on the sonar as a navigational aid for your vessel, or for avoiding shallows, submerged or mid-water hazards.