FLS 3D FAQ & Troubleshooting Guide

This section provides answers to the most frequently asked questions and guidance for diagnosing and resolving the most common issues with the FLS 3D system.

Table of contents

1. General Operation

Q: The image is not smooth and seems to have an update rate?

Answer:

This is normal behaviour.

The FLS 3D is a real-time sonar that updates approximately every 0.30 – 1 second. Each sonar ping is slightly different, so consecutive images will never be identical.

Recommendation:

Read our First Time User Guide to get a better understanding of how to navigate and train with the system: https://echopilot.com/wp-content/uploads/2025/12/FLS-First-Time-Usage.pdf

---

Q: What range should I use?

Answer:
The correct range depends on depth and conditions.

- Shallow water → use shorter range (40–60m)
- Open water → use longer range (100–200m)

The system can typically see **10–20x the water depth ahead** depending on seabed conditions.

Q: How would you recommend that I practice using the system?

Answer:
With all new navigational tools it is important to practice using them. We recommend using our "First Time Usage Guide" to help practice and get familiar with the sonar:
https://echopilot.com/wp-content/uploads/2025/12/FLS-First-Time-Usage.pdf

---

2. Power and Startup Issues

Q: My FLS 3D will not switch on

Check the following:

1. Does the **LED on the keypad or of/off button light up?**

- YES → system is powered → check display input
- NO → continue below

2. Check:

- Power supply to visual processor – Is everything connected correctly in regard to the manual and is the Visual Processor receiving power?
- Correct voltage (12/24V) – Does the Visual Processor receive the correct voltage ?
- Check LED light inside the Visual Processor – You can look through the side of the Visual Processor. You should be able to see a constant red light inside the box. If you see the constant red light the Visual Processor has power. If not, the visual processor does not have power.
- Connected to same power source and ground – It is very important that the Visual Processor and Transducer Interface box is connected to the same power source and ground, as stated in the manual.
- Connect the keypad or the on/off button to the second keypad port and try and powering on the unit.

If it's still not working → contact your local dealer or EchoPilot support
(Common cause: damaged PSU due to over-voltage or reverse polarity)

Q: The system powers on, but no image appears

Answer:
The reason an image does not appear can be due to connectivity issues. Please make the following checks:

- Check the connectivity – HDMI/VGA for Video Input, Network Cable for Integration.

- Check cables for damage or loose connections.
- Verify correct video source is selected if connected via HDMI or VGA.

---

3. Communication Errors

Q: I have a red dot in communications (no communication)

Answer:
Communications issues are typically due to power issues or cable issues. Please make the following checks:

- Power to **Transducer Interface** - Is everything connected correctly in regard to the manual and is the Transducer Interface receiving power?
- Correct voltage (12/24V) – Does the Transducer Interface receive the correct voltage?
- Connected to same power sourceand ground – It is very important that the Visual Processor and Transducer Interface box is connected to the same power source and ground, as stated in the manual.
- Data cable connection – Check that the data cable is connected to the correct port in the transducer interface box and the correct port in the Visual Processor.
- Check for any damages to the cable. Are there any cuts, deformation etc.

If unresolved → return Visual Processor + Interface for service

---

Q: Everything is powered on but the EchoPilot App does not show on my Raymarine, Simrad, B&G or Lowrance MFD:

Answer:
If the app does not appear on your MFD it is typically due to a connectivity issue. Please make the following checks:

- Does you Visual Processor have power? Does the LED on the On/Off button light up? If there is no power on the visual processor then the app will not appear on the MFD.
- Wait ~1 minutes after startup – Be patient when starting up the Visual Processor. It can take 1-2 minutes from when you power on the Visual Processor for the connection to be established and the app shows up.
- Try with a different network cable – Issues can be caused by a defect network cable. Try with a second network cable.

If unresolved → Contact local dealer or EchoPilot Support

---

4. Image & Performance Issues

Q: Poor Seabed image or excessive noise

Answer:

If your seabed image looks distorted and acts extremely irrational, there can be several reasons as to why this is happening:

Incorrect Range Setting:
If the selected range is longer than the actual usable sonar range for the current depth and seabed conditions, the image may appear weak, noisy, or unstable.

In shallow water the sonar may only realistically see 40–60 meters ahead. Selecting 150–200 meters may result in weak or scattered echoes.

Turbulence or Air Bubbles:

Ultrasonic sonar signals travel poorly through air. Turbulence, cavitation, or aerated water passing across the transducer will scatter the sonar signal and reduce performance.

This is one of the most common causes of poor sonar images at speed.

Typical causes of turbulence:

- Bow thrusters
- Hull steps
- Strakes
- Intakes or through hull fittings
- Propeller wash
- Transducer mounted too close to keel or chines

Recommendation:

- Install transducer in clean, non-aerated water flow
- Avoid mounting downstream of hull fittings or intakes
- Test performance at different vessel speeds

Dirty Transducer:

Marine growths such as barnacles, algae, slime, or heavy antifouling buildup can significantly reduce sonar sensitivity and image quality.

Even a thin layer of fouling can weaken sonar returns.

Recommendation:

- Inspect transducer regularly

- Clean carefully using a soft cloth or a plastic scraper
- **Never** use abrasives or metal tools
- Apply only a very thin layer of antifouling if required

Interference from Other Sonar Systems:

The FLS 3D operates at 200 kHz. Other sonar equipment operating at or near the same frequency may interfere with the sonar signal.

This includes:

- Fish finders
- Depth sounders
- Other forward looking sonars

Recommendation:

- Turn off other sonar systems during testing of FLS 3D system
- Separate transducers as far as possible from other sounders
- Never mount FLS 3D Transducers directly behind another transducer

Cable Connection, Damage or Interference:

Loose connectors, damaged cables, corroded pins, modified cables or interference from other high powered cables can reduce signal quality or cause intermittent communication problems.

Important:
The transducer cable is factory tuned to the transducer and must never be cut or modified. Please also make sure to route the transducer cables away from other transducer or power cables.

Recommendation:

- Inspect all connectors carefully
- Check for bent or corroded pins
- Ensure locking rings are properly tightened
- Inspect cables for crushing, stretching, cuts, or abrasion damage
- Check the cable routings. Are they routed with other cables?

Incorrect Transducer Installation:

The transducer must be installed completely vertical in the hull. Even small installation angles can distort the sonar image and reduce performance.

If the transducer:

Leans forward → the seabed may appear to slope upwards

Leans aft → surface clutter and distorted returns may appear

Leans sideways → the image may appear uneven or tilted

Important:

The FLS 3D transducer must be installed 100% vertical for correct performance.
Fairing blocks, tapered spacers, or angled mounting solutions may be required depending on hull shape.

Environmental Conditions:
Certain environmental conditions can naturally affect sonar performance:

- Heavy plankton
- Algae blooms
- Muddy water
- Strong currents
- Wake from nearby vessels
- Harbour reflections

In confined areas such as marinas or near quay walls, reflected sonar signals can create additional noise and unstable images. You can read more about this type of environmental conditions in our First Time User Guide: https://echopilot.com/wp-content/uploads/2025/12/FLS-First-Time-Usage.pdf

---

Q: Half of the image is missing:

Answer:

When half of the image is missing this is typically due to the transducer interface box malfunctioning or a faulty transducer. Please make the following checks:

1. First try and swap the transducer connectors in the transducer interface box. Swap the starboard transducer to the portside connector and the port side transducer to the starboard side connector on the transducer interface box. Once switched, please check if the missing image has changed from one side to the other.

2. If the missing image has changed from one side to the other, the issue is due to a faulty transducer. Please contact your local dealer or EchoPilot.

3. If the missing image has not changed from one side to the other, the issue is due to a faulty transducer interface box. Please contact your local dealer or EchoPilot.

Q: My image only shows a flat blue seabed:

Answer:

If your image only shows a flat blue seabed, this usually indicates that there is a potential issue with the transducer interface box or the data cable. Please make the following checks:

1. Check the data cable:

- Is there any damage to the data cable?
- Has the data cable been cut?
- Is the data cable connected to the correct data port on the Visual Processor?

If all is okay, please proceed to next check:

2. Check transducer interface box and comms status:

- What is shown in the comms status? Is there a green circle or a red circle in the comms status?
- Check that your transducer interface box has power and is connected to power correctly as instructed in the manual.

If none of the above checks fixes the issue, please contact your local dealer or EchoPilot.

Q: My FLS 3D with 60 degree forward view is only showing a 30 degree image:

Answer:

When your FLS 3D system with 60 degree forward view only shows a 30 degree image it usually indicates a faulty transducer. Please make the following checks:

1. Check your transducer cables. Are they damaged? Are they connected properly to your transducer interface box?

2. Check your transducers. Is there any visible damage to the transducers?

If the issue is not resolved in the previous steps, Please contact your local dealer or EchoPilot

---

5. Installation Issues

Q: Where should the transducer be installed

Answer:

- The transducer must be 100% vertically installed.

- The transducer should be placed as far forward from other sounders as possible to avoid interference.
- The transducers should have a clear line of sight. Each Transducer has a 30 degree forward view. The transducer should have a clear line of sight in a 30 degree forward angel.
- The transducers should be placed where they will always be submerged in water and should not come out of the water when planning.
- The transducers should be placed in an area with calm water where air bubbles or turbulence are not generated. Bow thrusters and ports can make disturbed water.
- Do not route transducer cables together with other cables.
- There is no minimum distance between transducers but transducers cannot be placed more than 5 meters apart from each other.

The choice of transducer position will have a major effect on final performance so please carefully consider all factors and if you have any doubts, please contact the factory on +45 4737 3800.

Q: Can I cut the transducer cable?

Answer:

No — under no circumstances.

Cutting the cable will reduce performance and sensitivity and may damage the system.

Q: Can I extend cables?

Answer:

The cables can only be extended via approved EchoPilot extension cables or custom factory made cables made by EchoPilot.

Transducer Cables can be extended up to 22 meters using the approved transducer extension cables made by EchoPilot. The transducer cables must never be cut or amended!

The Data Cable can be custom made by Echopilot up to 100 meters. The data cable must never be cut or amended!

Q: Can I install the transducers near another sonar?

Answer:
No. We recommend that you have as much separation from other sounders as possible. We recommend that there is a distance between 3-5 meters apart. If in doubt, please contact your local dealer or EchoPilot for guidance.

Q: Can the FLS 3D see floating objects in the water (e.g. containers)?

Answer:
No — the system is designed to map the **seabed only**.

Q: Why can I sometimes "see behind" objects?

Answer:
This is caused by **echo reflections and multipath signals**, not actual objects behind the target.

You can read more about this in our First Time Usage Guide: https://echopilot.com/wp-content/uploads/2025/12/FLS-First-Time-Usage.pdf

Q: What is Average Forward Depth (AFD)?

Answer:
AFD is the **average depth of all sonar returns ahead of the vessel**, giving a quick overview of seabed conditions.

You can read more about this in our First Time Usage Guide: https://echopilot.com/wp-content/uploads/2025/12/FLS-First-Time-Usage.pdf

---