

User's Guide for:  
**SeaSonde<sup>®</sup> Radial Site**  
**About the Hardware Guides**



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The *SeaSonde Radial Site Hardware Theory, Installation and Maintenance Manual* contains seven sections, and covers questions about **hardware only**.

For questions about software, please consult the *SeaSonde Radial Suite Guide* and the *SeaSonde Combine Suite Guide*.

## Guide 1: What is a SeaSonde

What makes SeaSonde **unique compared to conventional radar systems**?

How can SeaSonde be so **compact and simplified**?

Why are SeaSonde radar sites called **radial sites**?

What improvements are planned for **future versions** of SeaSonde?

## Guide 2: SeaSonde Theory of Operation

What **electronics** are required for SeaSonde?

Why are **two antennas required** for each SeaSonde radial site?

Why are **two or three radial sites required** for a complete SeaSonde system?

What does a **block diagram** of SeaSonde look like?

What is a **radial**?

How does SeaSonde calculate the **distance to** a radial?

How does SeaSonde calculate the **bearing of** a radial?

What is the significance of **Hourly Averaged Cross Spectra**?

How is **pulsing** used in SeaSonde?

What is the importance of **frequency generation** in SeaSonde?

How does the SeaSonde **Transmit Antenna** work?

How does the SeaSonde **Receive Antenna** work?

How is the Receive Antenna's performance affected by **distortions in its pattern**?

## Guide 3: SeaSonde Radial Site Selection

What is a good **environment** for SeaSonde electronics?

What are the **electrical and telecommunications** requirements for SeaSonde electronics?

Where are the **best sites** for Seasonde Antennas?

How **far** can the Antennas be from the electronics?

How **far apart** should Transmit and Receive Antennas be?

## Guide 4: SeaSonde Antenna Assembly

Assemble the Transmitter Antenna.  
Assemble the Crossloop Receive Antenna.  
Install the Antennas

## Guide 5: SeaSonde Radial Hardware Setup

How should Transmit and Receive Antennas be **mounted**?  
How should Receive Antenna be **aligned**?  
How should the Computer, Transmitter, Receiver, and Transmit and Receive Antennas be **interconnected**?  
What is the correct procedure for initial **power-up** of SeaSonde electronics?  
What is the correct procedure for initial **check-out** of SeaSonde electronics?

## Guide 6: SeaSonde Antenna Pattern Measurement

What is an **Antenna Pattern**?  
Why **measure** Antenna Patterns?  
Why measure **Receive Antenna Patterns** and not Transmit Antenna Patterns?  
How can Receive Antenna patterns be measured **from land**?  
How can Receive Antenna patterns be measured **from a boat**?  
What are proper **guidelines for interpreting** Antenna patterns?  
What steps can be taken to **correct** distortion in Antenna patterns?

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