

The SeaSonde®

Oceanographic High Frequency (HF) Radar System



See The Ocean From an Amazing Perspective

The SeaSonde HF radar system by CODAR Ocean Sensors is your solution for making continuous, wide-area ocean observations. SeaSonde will provide years of real-time data over large coverage areas, with ranges up to 300 km and beyond. Higher resolution versions can provide finer resolution over shorter distances, typically used for bays, harbors, ports and estuaries.

Convenient • Compact

The SeaSonde is a compact, non-contact system that can be deployed and maintained easily, and will perform even during extreme weather conditions such as hurricanes. Patented, ultra-compact antenna design has smallest footprint of any HF radar and greatly simplifies siting requirements. Patented antenna design and processing algorithms enable the system with up to 360° coverage.

High Quality Data

CODAR Ocean Sensors' patented and proprietary technologies, including processing algorithms, allow the SeaSonde to produce extremely accurate 2D surface current velocity maps and measure the most important wave parameters. Tsunami detection and ship detection add-on software packages are also available to further expand network utility.

Focus on Your Application

The SeaSonde is a reliable, off-the-shelf tool that allows you to focus on applying the data. Whether your work efforts involve guiding search and rescue operations, providing critical information to maritime vessels, or driving and improving numerical circulation models, the SeaSonde will be an immense aid.

Flexible Settings: The software parameters are highly flexible yet designed to work smoothly.

Automated Operation & Data Delivery: Data can automatically arrive at your office at your preferred intervals and can also be sent directly to the Web for public viewing. †

Remote Access: Data retrieval, system monitoring, parameter modifications and even factory support are all conducted through system remote access. †

†Communication link required.

Surface Current Mapping • Waves • Tsunami & Ship Detection

www.codar.com

SeaSonde Configuration:	Standard	Hi-Res	Long Range
Observable Range (typical)			
Currents	50-100 km	10-20 km	160-220 km (220-340 km Dual TX)

• Ranges achieved vary with environmental conditions and antenna placement. Note: Two radars are normally required for creating 2-D surface current maps of direction and speed.

Range Resolution (typical)	500 m - 3 km	200-500 m	3-12 km
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• Range resolution is user selectable and dictated by transmit signal sweepwidth.

Angular Resolution: User selectable; Typically set for a 1 or 5 degree grid.

Current Accuracy: Varies with environment. Comparisons with ADCPs located in close proximity to the surface are typically <7 cm/s of the total current velocity and within ~2 cm/s of the tidal component.

Wave Parameters (measured at each radar): Varies with environment. Comparisons with buoys or bottom-mounted ADCPs are typically 7-15% of Significant Waveheight: 5-12 degrees of Dominant Direction and ±0.6 s of Dominant Wave Period. Footprint, range resolution and resolvable range of values for wave information are limited by environmental conditions, and operating frequency.

Tsunami and Vessel (ship) Detection Outputs - see relevant add-on software package product specification sheets for details.

Frequency Range Select a frequency between 4.3 - 50 MHz.

Electronics and antenna tuned to operate at a specific frequency chosen within one of these sub-bands:

Standard	Hi-Res	Long Range
>11-25 MHz	20-50 MHz	4.3-11 MHz

• Patented technology permits the simultaneous operation of multiple radars on a single frequency, thereby minimizing frequency requirements and interference.

• Operators must adhere to their country's radio communications regulations regarding radiated signal specifications, and receive proper authorizations prior to operation. Consult company.

Equipment Dimensions (approx.)

Combined
Transmit-Receive Antenna Height: 6.4- 7.6 m
Transmit Chassis: 13H x 49W x 53D cm. Weight:15 kg
Receive Chassis: 13H x 49W x 53D cm. Weight:14 kg

Transmit Antenna Height: 9.1 m
Receive Antenna Height: 6.4 m
7.6 m (for 5.26 MHz)

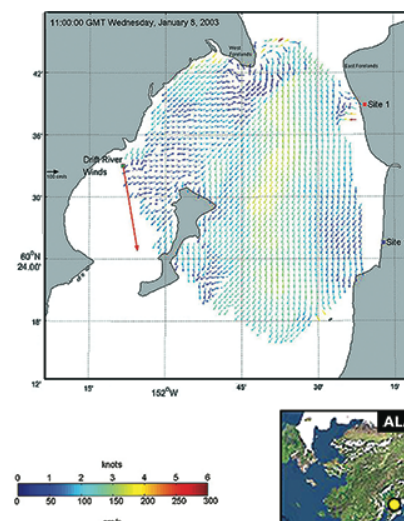
Distance Between Adjacent Radars: Recommend 40-60% of the radar's observable offshore range.

Power Requirements: Either 120 VAC or 220 VAC, 50-60 Hz; SeaSonde electronics consumption ~350 watts depending upon configuration. Additional power required for any site infrastructure (communications, cooling system, etc.).

Output Radiated Power: 80 watts peak, 40 watts average

† For complete system specifications, please consult Technical Specification sheets available on company website. Specifications subject to change without notice.

SeaSonde® Surface Currents - Cook Inlet - Alaska



Courtesy University of Alaska Fairbanks

SeaSonde Electronics

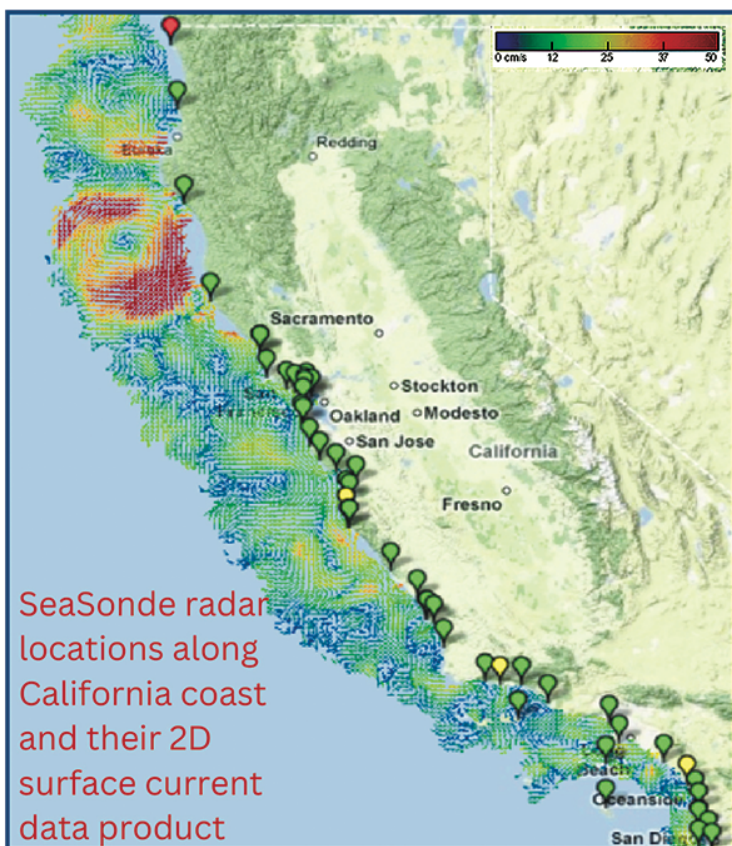


About CODAR

CODAR Ocean Sensors personnel are the inventors and original developers of HF and VHF radar technology for ocean monitoring applications. CODAR scientists and engineers continue to make new developments and apply to ensure the SeaSonde continues as the most advanced and reliable oceanographic HF radar system in the world.

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SeaSonde radar locations along California coast and their 2D surface current data product

Equipment images not to scale

SeaSonde Long-Range Transmit Antenna (SSTA)

SeaSonde Receive Antenna (SSRA) or Combined Transmit-Receive Antenna (SSTR)