

CODAR OCEAN SENSORS

Hi-Res SeaSonde® System Specifications

Radiated Signal Specifications

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

Output Radiated Power: 80 watts peak, 40 watts average

Operating Frequency Range: one of either 24-27 MHz or 40-44 MHz.

Consult company prior to ordering (inquire about other frequencies).

Modulation Format: Pulsed Swept Frequency, Pulse Width: 120-240 μ s

Pulse Repetition Frequency: 4- 8 kHz

Duty Factor: 50%

Sweep Width: 150- 500 kHz (typical)

Sweep Repetition Frequency: 4 Hz

Total Radiated Signal Bandwidth: (at - 20 dB level) 160 - 510 kHz

Polarization: vertical

Transmit/Receive Antenna: SSRA 100-TR

Design: (three element DF) passive vertical monopole, two crossed loops into preamplifiers

RF Connections: (to Receiver and Transmitter) Co-Ax; N and TNC end connectors

Dimensions: (weatherproof RF box) 61H x 43W x 43D cm (24H x 17W x 17D in)

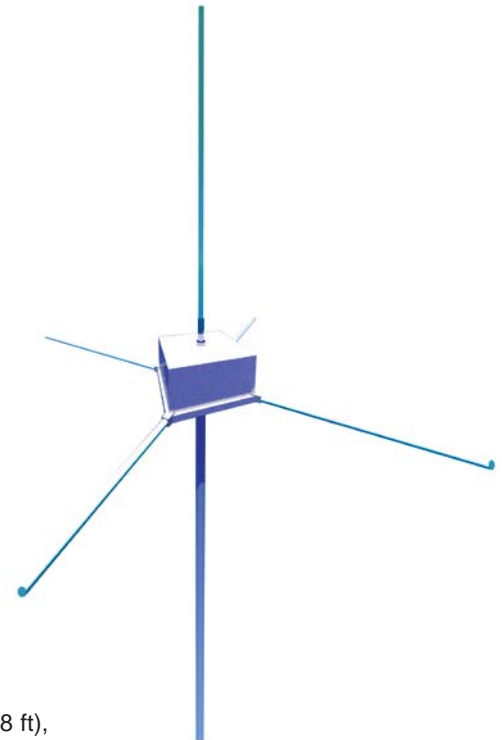
Weight: 4.5 kg (10 lb)

Whip Height/Radial Element Lengths for 40-44 MHz version: 1.4m (4.6ft)/ 0.56m (1.8 ft),

Whip Height/Radial Element Lengths for 24-27 MHz version: 2.4m (8.0ft) / 1.2 m (4.0 ft)

SSRA 100TR Transmit/Receive Antenna designed for mounting on:

Antenna Support Post; Height 4m (12ft), diameter ~6.5cm



SSRA 100TR

Transmitter: SSTX 100-TR

Input RF Drive Level: 0 dBm

Output RF Power Level: 100 watts peak, 50 watts average

Required Power: 120 VAC or 220 VAC; 50-60 Hz, 300 watts (specify when ordering) [New 24-volt DC version is available.]

Consult factory prior to ordering.]

Design: (gated FET) modular; all solid state

Operation: Class AB

Dimensions: (single chassis) 13H x 49W x 53D cm

(5.25H x 19W x 21D in)

Weight: 15 kg (33 lb)

Receiver: SSRX 100-TR

Maximum In-band Input Level: +13 dBm (no damage)

Impedance: 50 ohm

Sensitivity: (noise level) -160 dBm in 1 Hz BW

Required Power: 120 VAC or 220 VAC, 100 watts (specify when ordering)

[New 24-volt DC version is available. Consult factory prior to ordering]

Design: modular, all solid state three-channel

Operation: I/Q homodyne

Output: digital data at 4096 16-bit words/second per channel

Dimensions: (single chassis) 13H x 49W x 53D cm (5.25H x 19W x 21D in)

Weight: 14 kg (30 lb)

[Optional GPS synchronization Feature:

GPS Assisted Stability: >.0001 ppm and 50 nsec on PPS]

Radial-Site Data Acquisition System: SSDA 100

Computer: Desktop computer: Power Macintosh® G5 (Power PC 1.8 GHz) 256 MB RAM; 80 GB H.D. *Laptop computer available.* Specify when ordering.

Modem: (for dial-up only, not leased-line operation): up to 28,800 BPS

Monitor: color TFT

Keyboard: USB, extended

Software: One Radial Site Suite license



SSDA 100

SSTX 100TR

SSRX 100TR

Combine Station Data Processing System: SSDP 100

Computer: Desktop computer: Power Macintosh® G5 (Power PC 1.8 GHz) 256 MB RAM; 80 GB H.D.

Modem: (for dial-up only, not leased-line operation) up to 28,800 BPS

Monitor: 17" color TFT

Keyboard: USB, extended

Software: One central station software license



SSDP 100

Complete 2-Site Hi-Res SeaSonde Monitoring System Consists of:

2 SSTX 100-TR Transmitters
2 SSRX 100-TR Receivers
2 SSRA 100-TR Transmit/Receive Antennas
2 SSDA 100 Data Acquisition Systems (Radial Site)
1 SSDP 100 Data Processing System (Totals Combining Site)
Software & Licenses All SeaSonde Software

Output Surface Current Specifications

Surface Currents: Maps of surface current vectors created from data taken at two radar sites 10-20km apart.

Map Displays: color monitor screen, laser-quality hardcopy, archived ASCII vector files

Map Spatial Resolution: (vectors on square grid) 500 x 500 m typical spacing

Map Area Coverage: 20 -30 km alongshore x 15- 20 km offshore

Map Temporal Interval: hourly; currents averaged over one hour typically

Map Vector Accuracies: (rms; typical for normal environmental speed: < 7 cm/s conditions, i.e., noise/interference, siting, sea state), direction: < 10 deg.

Note: Wave and wind outputs are not available in this band.

Data Communications:

Automatic modem transfer of current and wave data products supported by software for dial-up lines and ethernet connections (recommended).

Radial Site Software Suite*

Program Name... Function... Output

Sentinel... orchestrates control of all operations... logs data events

SeaSonde Acquisition ... radar data acquisition/processing... unaveraged cross spectra

CSRAvnn... averages data over one hour... averaged cross spectra

WaitForCSA... detects arrival of averages... triggers hourly processing

Currents... calculates radial surface current map... writes file radial.dat

Waves... inverts echo to get wave information... wave spectral parameters

Archivist... archives data according to user selections... archived data

MacController... housekeeping functions, data transfers upon request

Combine Station Software Suite*

Program Name... Function... Output

MacCentral... retrieves hourly files from remote sites... radial current/wave data

WaitForRadials... detects arrival of radial files... triggers total vector processing

Combine... calculates total currents... total current vectors at map grid

SeaDisplay... prepare current map... current map for monitor or printer

WaveDisplay... prepare wave data displays... wave data plots

*These specifications are for the basic software for typical real-time operational use. Many more applications are included with the SeaSonde® for offline use.

Last updated October 2003. Specification and component details are subject to change.

For additional information contact company -
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