

# SEA 1630

## Antenna Tuner

- State-of-the-art microprocessor-based
- Usable with any SSB transceiver
- Compensates for antenna changes
- Interactive operation when used with SEA 330 transceiver
- SEA 1631 interactive when used with SEA 235 or SEA 245
- Automatic self tuning
- No presets or adjustments
- Reduces installation costs



Designed and built by SEA, a Marine industry leader in high technology, the SEA 1630 automatic tuner combines the sophistication of advanced microprocessor techniques with high order practicality and operational reliability. The SEA 1630 is housed in a weatherproof molded case designed to withstand environmental conditions encountered aboard ship when mounted on the weather decks.

The SEA 1630 was designed specifically as a companion for the SEA 330 radiotelephone but is also capable of independent operation (stand-alone) with other brand radios. When used with SEA 330 radiotelephone the 1630 resides on the SEABUSS™ and functions as a peripheral of the radio's central CPU system. The SEA 1631 incorporates a newer version of bus protocol used by the SEA 235 and SEA 245 radiotelephones. In this interactive mode the coupler receives information from the radio containing the operating frequency. If this frequency has been previously tuned the coupler will preset to the stored configuration automatically, before any RF power has been applied to the coupler. Information can also be sent from the radio to set the coupler to the straight thru configuration when doing voice, DSC, and Telex scan functions. Demand tune is also supported in the interactive mode of operation. Note; these features are not available in stand-alone mode.

### AUTOMATIC TUNER OPERATIONS

The SEA 1630 is a versatile, fully automatic, microprocessor-based antenna tuner. The first voice impulse from the transceiver initiates a rapid microprocessor-controlled search/match procedure, which determines antenna characteristics and inter-connects the proper elements for optimum match and power transfer.

The internal computer in this tuner has a "learning" capability, and remembers which network constants were set for a particular frequency. This information is stored in computer memory and is recalled instantly whenever the same frequency is again selected. Further, the SEA 1630 will "relearn" and compensate automatically for minor changes in the antenna system.

Maximum tuning power for the SEA 1630 is 75 watts PEP below 4MHz and 150 watts PEP above 4MHz. The coupler will operate properly on low power inputs (25 to 50 watts), and will provide an infinite number of channels within its specified frequency range (see specification). The SEA 1630 is rated for HF operations at 300 Watts RF power.

# Specifications

**Frequency Range:**

1.6 to 30 MHz

**RF Power Handling Capability:**

150 watts PEP maximum below 4MHz  
 300 watts PEP maximum above 4MHz

**RF Tuning Power range:**

75 watts PEP maximum below 4MHz  
 150 watts PEP maximum above 4MHz

**Minimum RF Tuning Power range:**

25 to 50 watts PEP

**Tuning Time: "Learn" mode**

Less than 5 seconds (typical)

**Tuning Time: "Recall" mode:**

Less than 20 milliseconds (typical)

**Internal Matching Networks:**

Microprocessor controlled, "Pi" or "L"

**Input Impedance:**

50 ohms

**VSWR:**

<2:1

**Antenna:**

End fed type (Marconi) of 7 to 50 m (23 to 165 ft.)  
 with suitable RF ground

**Power Requirements:**

13.6 VDC @ 300ma typical,  
 2.0 amps maximum

**Control Cable:**

CAB-1630-XXX

**Environmental Temperature Range:**

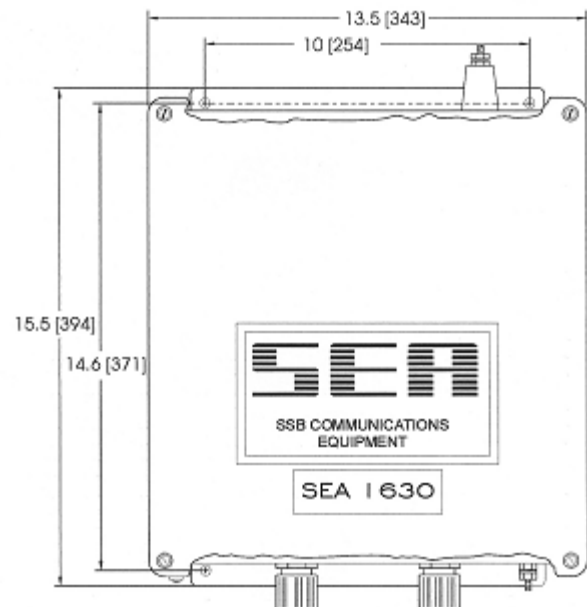
-30°C to +60°C

**Dimensions:**

Inches: 15.5 x 13.5 x 5.9  
 MM: 394 x 343 x 150

**Weight:**

10 pounds / 4.5 Kg.



Dimensions are inches and [mm]  
 NOT TO SCALE

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