



MASB 05-91

12 April 1991

SEA BAT 6012, An Electronically Scanned Fast Update Sonar

SEA BAT 6012 is a lightweight, high resolution, electronically scanned sonar suited for ROV operations like search, relocation, and identification. It was designed to operate while moving. The 60 beams in the 90 degree search sector are updated simultaneously 30 times per second at 10m range setting and 7 times per second at the 100m range. Seven range settings are provided from 2.5m to 200m.

The wet end, outline dimensions shown in Figure 1, consists of a single transducer, receiver electronics, and beam formers. The interface is simple, the uplink requires one black and white video channel, the downlink requires one RS-232 channel.

The top side unit has a color monitor which provides zoom, pan, and cursor measurements, etc. The display has up to seven levels of zoom to increase resolution. Up to 16 frames can be averaged to reduce random noise and clutter. Range and bearing is displayed at all times. The display is fully menu driven, so the operator does not need to take his eyes off the display during operation. See drawings in Figure 1 for further detail.

This sonar is produced by RESON SYSTEM A/S, a private company dealing in ultra sonic and underwater acoustic devices and systems. Their claimed advantage is in low cost, special purpose development. Their main office is in Hilleroed, Denmark just outside Copenhagen: RESON SYSTEM A/S, Fabriksvagen 13, 3550 Slangerup, Denmark. They have a branch office in Goleta, California, just outside of Santa Barbara: RESON Inc., 300 Lopez Rd., Goleta, CA 93117.

Table 1. SEA BAT 6012 Specifications

| | |
|-------------------------------|--|
| Operating frequency | 455 kHz |
| Pulse width | 0.07 ms |
| Sonar bandwidth | 20 kHz |
| Maximum range | 100 m for detection of -20dB target on sandy bottom for 80% probability of detection |
| Range resolution | 5 cm |
| Number of beams | 60 |
| Horizontal beam width Rx | 1.5° |
| Vertical beam width Tx and Rx | 15° |
| Horizontal beam width Tx | 100° |
| Source level (Max) | 212 dB re uPa |
| Operating ranges | 0.5 - 100m |
| 90 Deg sector update | 150ms at 100m |
| Wet end interface | |
| Power | 24 VDC/2A |
| Down link commands | RS232 9600 baud |
| Uplink data link | 1.5 MHz pseudo video |
| Overall dimensions | 473mm x 190mm x 120mm 18.6in x 7.5in x 4.7in |

ONREUR point of contact. LCDR Larry Jendro, USN, Oceanography and Environmental Systems Officer.
Tel: 44-071-409-4131

DDN E-Mail: LJENDRO@ONREUR-GW.
NAVY.MIL, OMNET: LJENDRO

Distribution:

Standard
Science Advisers
Surface Ship
Shore/Yard/Bases/Airsta
Submarine

Acoustics
Robotics
MIW
Diver/Special Warfare

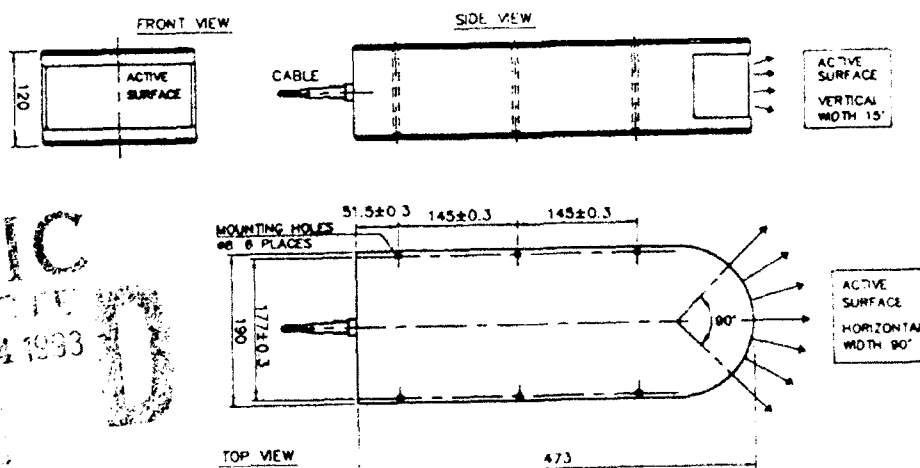


Figure 1. SEA-BAT 6012, Outline Dimensions
*Dimensions shown in millimeters

| | |
|---------------|--------------|
| A-101-101 | |
| NTIS | CRIC |
| DTIC | TAB |
| Unlimited | |
| Justification | |
| By | |
| Distribution | |
| Availability | |
| Dist | Availability |
| A-1 | |

93-22977



4