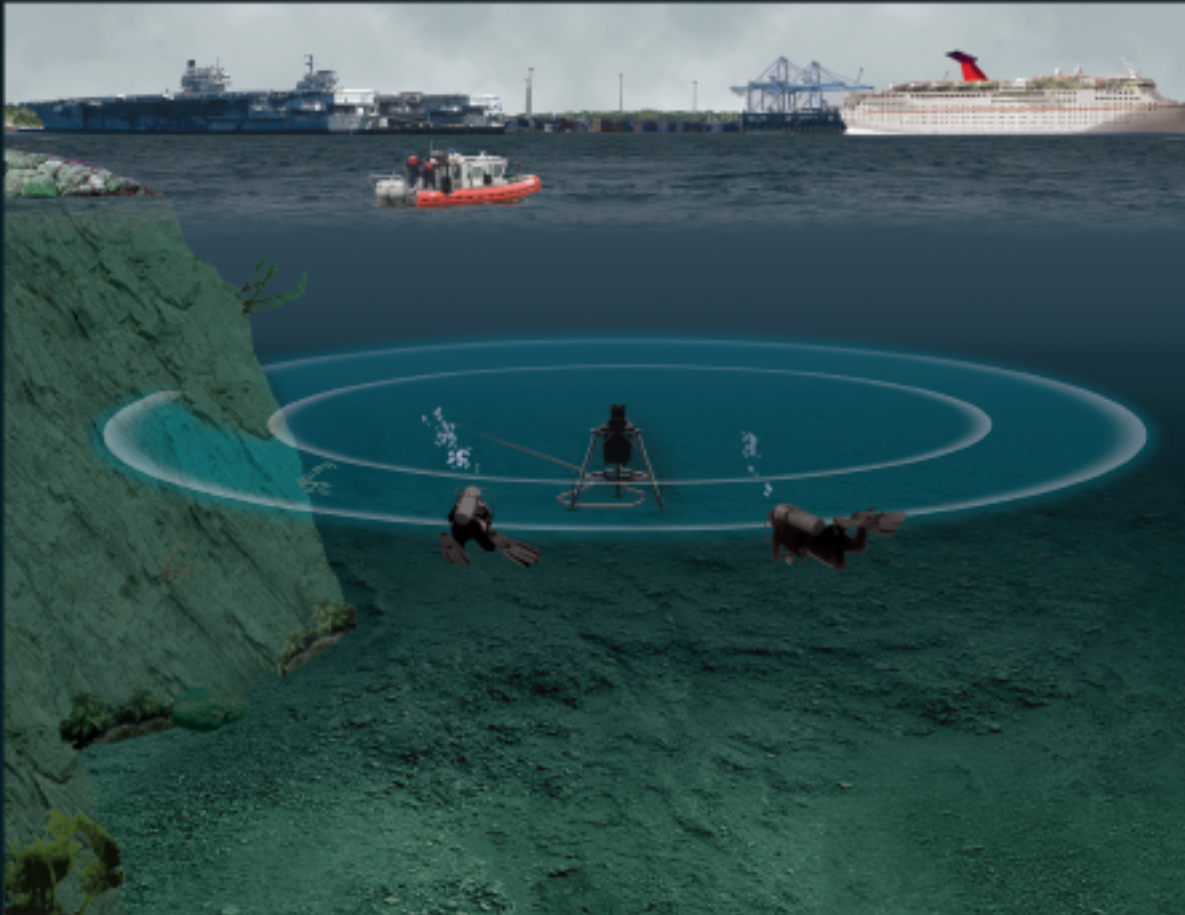


# Harbour Surveillance Sonar CSDS-85



The CSDS-85 surveillance sonar is a fifth generation, high-performance, active omni sonar designed for the detection of underwater intruders such as divers using open or closed breathing apparatus, swimmers, swimmer delivery vehicles, mini-submarines and unmanned underwater vehicles. It can be deployed in a single unit configuration for harbour surveillance or can be networked as a series of sonars to maximize area coverage. The sonar can also be deployed from a ship to provide security in high risk locations, such as foreign ports. The sonar can be integrated with other sensors to provide a common operational picture of a designated area.

## Applications

- Harbour surveillance
- Coastal perimeter surveillance - naval bases, power plants, etc.
- Strategic waterway access monitoring
- Protection of high value assets - surface ships, offshore drill rigs, etc.

## Harbour Security Surveillance Sonar Specifications

### CSDS-85 Omni Sonar® Surveillance System

|  |   |
|--|---|
| <b>Equipment Type</b>                            | Omni directional scanning sonar   |
| <b>Operating Frequency</b>                       | 80 kHz nominal  |
| <b>Sound speed</b>                               | 1400 m/s to 1600 m/s manual setting   |
| <b>Sonar Image Display</b>                       | Flat panel monitor (LCD) in SVGA format. PPI display of echo intensity encoded image. Operator selectable echo encoding up to 16 colours or 16 shades of grey. Video output in standard SVGA format.  |
| <b>Field of View</b>                             | 360° normal   |
| <b>Compass Corrected Display</b>                 | Relative Bearing or North-Up operator selected bearing reference.   |
| <b>Range Scales<br/>(@ sound speed 1500 m/s)</b> | 2000 m, 1500 m, 1000 m, 500 m, 250 m  |
| <b>Zoom</b>                                      | Sonar data "True" Zoom - 4X maximum   |
| <b>Numeric Readouts</b>                          | <ul style="list-style-type: none"> <li>· Range Scale · Tx power level · Tilt setting · Cursor range, bearing, mode (relative and normal)</li> <li>· Target range, bearing, depth, speed, heading, target ID · Time and Date</li> <li>· Climometer X and Y · Compass</li> </ul>                        |
| <b>Graphic Readouts</b>                          | <ul style="list-style-type: none"> <li>· Cursor mark (position controlled by operator) · Target markers · Target tracks for locked and / or manual targets · Range rings: 3 per display · Compass ring provides bearing indication</li> <li>· Maps - Suppression Zones or Geographic areas</li> </ul> |
| <b>Display Formats</b>                           | <ul style="list-style-type: none"> <li>· PPI · Volume search PPI · PPI with movable PPI or A-Scan ZOOM window</li> <li>· Reference image - build, show · Draw geographic map · Draw suppression zones</li> <li>· Draw TVG profile · System status · BITE</li> </ul>                                   |
| <b>Beam Tilt</b>                                 | Electronic tilt; operator selectable within $\pm 24^\circ$ of ground plane  |
| <b>Automatic Detection</b>                       | Automatic detection of targets above threshold set by the Operator; Target marker automatically displayed and audible alarm initiated   |
| <b>Suppression Zones</b>                         | Operator selected areas are excluded from automatic alarm   |
| <b>Static Suppressed Image</b>                   | Static images are excluded from alarm and display   |
| <b>Audible Alarm</b>                             | Automatic audible alarm and contact closure (250 V, 100 MA minimum rating) for new target above threshold set by Operator (see Automatic Detection)   |
| <b>Automatic Tracking</b>                        | Automatic tracking of detected targets; Track length 200 pings minimum  |
| <b>Multiple System Integration</b>               | Multiple System operation in one area without interference  |
| <b>BITE</b>                                      | Automatic system status messages. Operator initiated self-diagnostic tests via various menus  |
| <b>Remote Data Link</b>                          | Sonar may be operated by local or optional remote console. Target position data output via RS-232, RS-422 or Ethernet interface   |
| <b>Video Recorder</b>                            | Display may be recorded, with optional converters, on a PAL or NTSC format S-VHS video recorder (recorder not included)   |

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