

# SM-30 SONAR MAPPING SYSTEM



- Cable & Pipeline Route Surveys
- Geohazard Surveys
- Geological Investigations
- Seafloor Searches
- Hydrographic Surveys
- Marine Mining Exploration

The SM-30 is designed provide cost-effective search and survey coverage over large areas of the seafloor. The 30 kHz sidescan transmit frequency permits operation on swath-widths up to 6,000 meters and detection of a range of acoustic targets – from shipwrecks to objects only a few meters in size. The low frequency sonar provides for greater penetration of the seafloor allowing mapping of buried cables and pipelines.

## FEATURES

- Sub-Bottom Profiler – 4.5 kHz SBP for simultaneous acquisition of near-seafloor geological information
- Integrated Navigation – Data telemetry and control channels for an acoustic interrogator/receiver/ processor
- Wide System Bandwidth – Low Q transducers, combined with short, high power transmit pulses and wide receiver bandwidths provide the resolution of higher frequency systems with the range advantage of a lower frequency system
- High Dynamic Range Signal Processing – Very low noise receivers with TVG applied in the towfish provide wide dynamic range needed for optimal signal quality
- Excellent Towfish Stability – the two-body tow system uses a depressor weight and a neutrally buoyant umbilical to de-couple the towfish from ship heave which provides the stability needed for high quality imagery
- Extensive Sensor Package – High precision depth, pitch, roll and heading sensors are sampled 5 times a second and transmitted to the surface to allow for correction for vehicle attitude changes

The SM-30 is a deep seafloor mapping system capable of generating seafloor imagery across a swath of up to 6,000 meters (3.25 nautical miles). It's the ideal large area survey or search tool, allowing both wide swath mapping and high-resolution target imaging.

## GENERAL

Size – 4.2m long x 1.2m wide x 1.3m high  
Weight – 700kg, neutrally buoyant in water  
Depth Rating – 6000 meters  
Tow Cable – double armored coaxial cable  
Depressor – 900kg deadweight  
Umbilical – 50m or 100m neutrally buoyant  
Power Requirement – 115 VAC, 60 Hz, 1 $\phi$ , 20A

## SONAR

Frequency – 27 kHz Port and 30 kHz Starboard  
Beamwidth – 1.4° horizontal, 50° vertical  
Transmit Power – low 100/ high 1000 watts  
Pulse Length – 1 to 80 cycles, 17 - 1400 $\mu$ sec  
Gain Adjustment – twenty 3dB steps  
Swath Widths – 600m, 1200m, 2400m & 6000m  
Range Resolution – Range/2048  
System Dynamic Range – 72 dB

## SUB-BOTTOM PROFILER

Frequency – 4.5 kHz  
Beamwidth - 70° toroidal  
Transmit Power – 700 or 2000 watts RMS  
Pulse Length – 1 to 15 cycles, 0.3 to 3.2 msec  
Gain Adjustment – 42 dB in twenty 3 dB steps

## SENSORS

Depth – Paroscientific 410 KT, 0.5 m acc.  
Attitude – pitch and roll, 0.1°  
Heading – gimballed fluxgate compass, 0.3°  
Navigation – RS232 @9600 baud

## SM-30 REPRESENTATIVE PROJECTS & SURVEYS

CHEVRON  
SUBSEA RESOURCES  
SHELL  
LOCKHEED  
COLUMBUS AMERICA

Katrina/ Rita Damage Assessment Survey, Gulf of Mexico 2005  
Search for Cargo Vessel, Project ELLA, 2005  
Pre-Drilling Ordnance Survey 2000  
Search for Trident Missile Parts, Cape Canaveral 1988-1989  
Search for the S.S. Central America, W. Atlantic 1986-1987

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