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- ↓ DOWNHOLE
- ~ SEABED
- ≡ MARINE



MATS 3G

Multi-modulation Acoustic Telemetry System



Ahead of the CurveSM

MATS 3G



// NEW GENERATION ACOUSTIC TELEMETRY SYSTEM

MATS 3G is an underwater acoustic modem that offers a single solution for all underwater communication needs.

Its state-of-the-art DSP (Digital Signal Processing) technology ensures long-range and reliable communication. MATS 3G also features a robust and versatile innovative multi-modulation system to fit a wide range of applications and environments.

The last generation acoustic modem supports multi-sensor and high-data-rate antenna receivers for improved communication in shallow or noisy environment. Acoustic modems can ensure stealth communication when necessary.



Features & Benefits

// OUTSTANDING TRANSMISSION PERFORMANCE

Up to 15-km range
Up to 24.6-kbps data rate

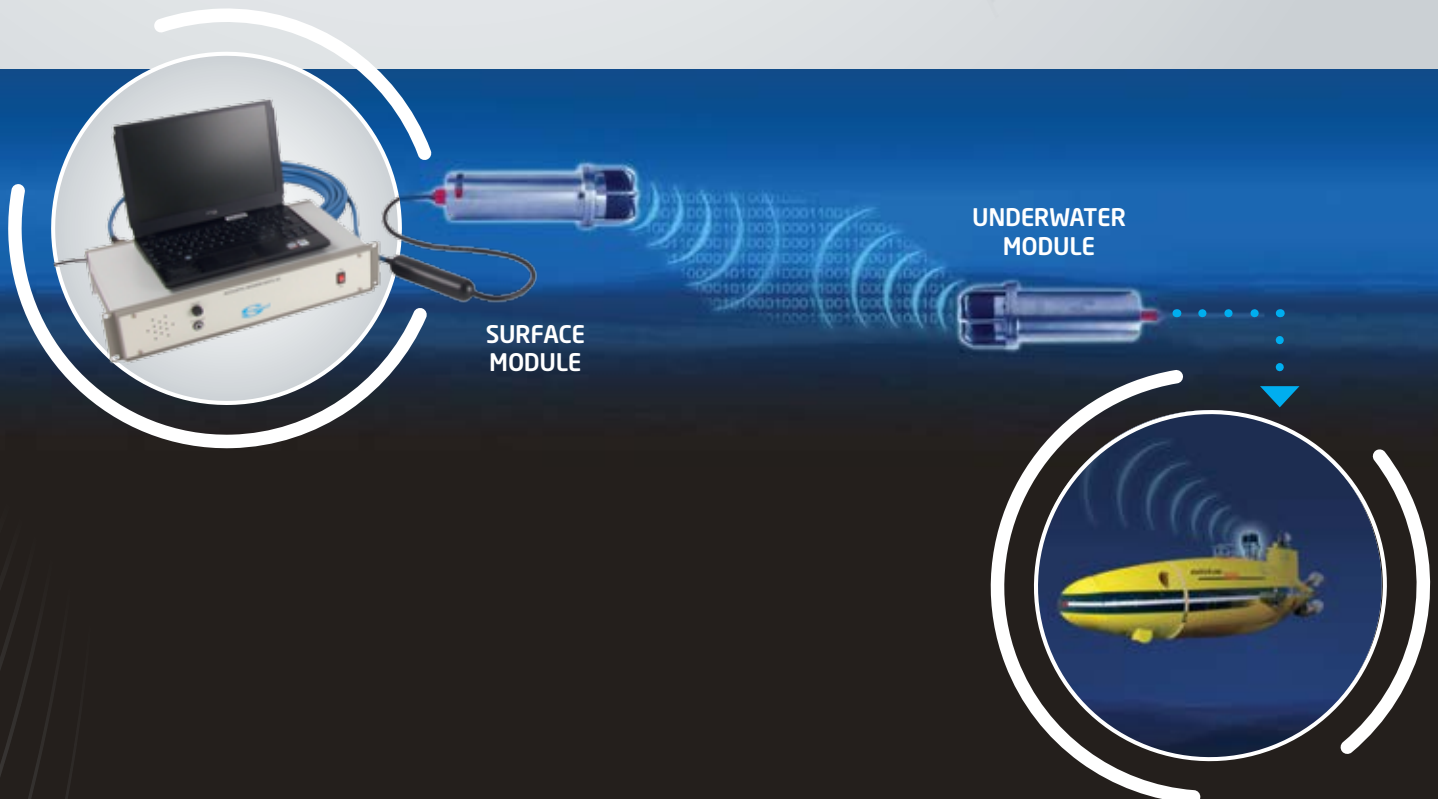
// OPTIMIZED INTEGRATION

Light and compact design

// VERSATILE FIELDS OF APPLICATION

Oceanography
Offshore Oil & Gas
Defense

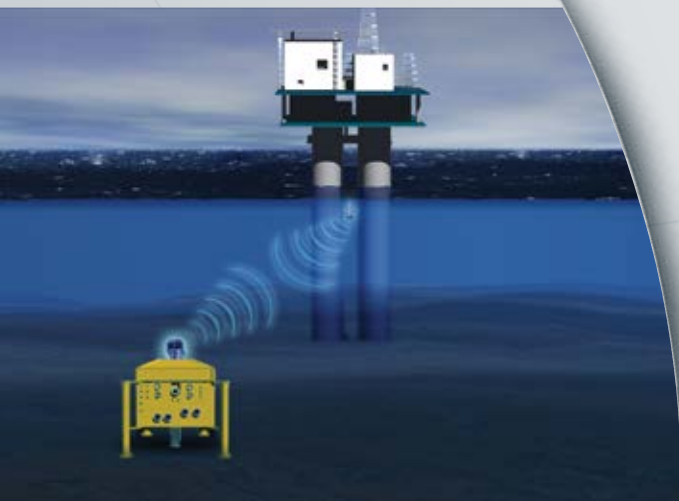
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Applications

// AUV COMMUNICATION

MATS 3G is ideal for AUV (Autonomous Underwater Vehicle) communication. As well as being compact and light, it has a high-data-rate link which can be used to transfer images from a subsea camera or side-scan sonar data to a master vessel at the surface.

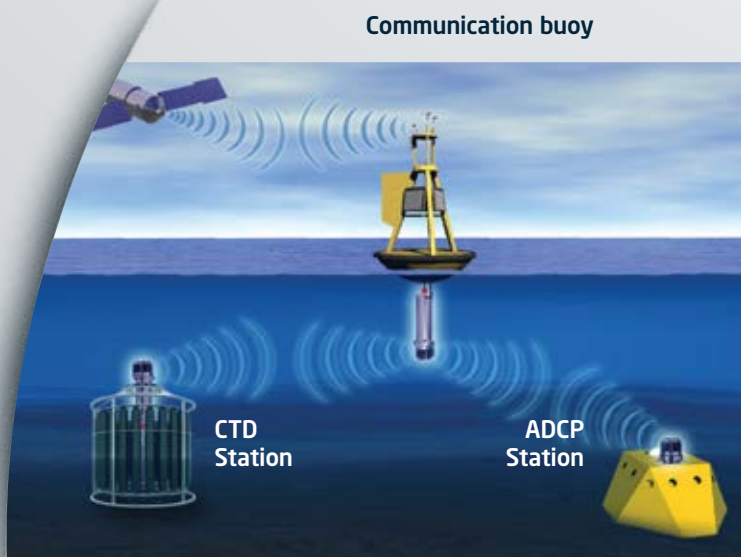


// ROBUST CONTROL COMMAND

MATS 3G ensures reliable, robust and secure communication in harsh acoustic conditions. When deployed in an offshore drilling platform environment, it provides an error-free underwater communication solution to command subsea valve operations.

// UNDERWATER MONITORING

MATS 3G can be deployed for long periods of time for underwater field monitoring. Its use can range from oceanographic applications to real-time monitoring by networked stations across vast instrumented fields.



Equipment

// SURFACE MODULE

Hooked to a vessel or to a buoy, and placed close to the sea surface, the MATS 3G surface module communicates with all the other MATS 3G modules using the same frequency. A 30-m long cable is provided between the rack and the modem. Other lengths are available on request.



// UNDERWATER MODULE

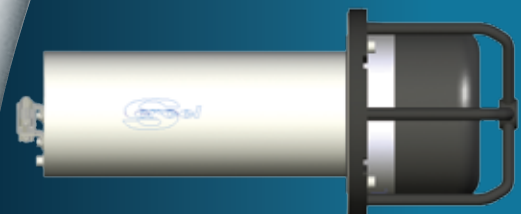
With the capability to be installed on any underwater system (AUV, CTD, ADCP, etc.) and down to depths of 6,000m, the MATS 3G underwater module communicates with all the other MATS 3G modules using the same frequency. Its light and compact design facilitates integration and it is made of titanium for optimum durability. A flange is provided for the installation.



// UNDERWATER OEM MODULE

Integrated on the watertight hull of any underwater system the compact OEM module communicates with all the other MATS 3G modules using the same frequency.

In 12-kHz version



Options

// ACOUSTIC BAFFLE

IMPROVED COMMUNICATION IN HARSH ENVIRONMENTS

Installed as an option on the sea surface or on the underwater module, the baffle channels the emitted signal. Available in either a 110° or 180° format, the baffle focuses the emitted signal in a narrower direction.

180° Baffle

Transmission gain: 3dB
Ship noise reduction: 10dB

110° Baffle

Transmission gain: 6dB
Ship noise reduction: 15dB



Baffle



Without
baffle

With 180°
baffle

With 110°
baffle

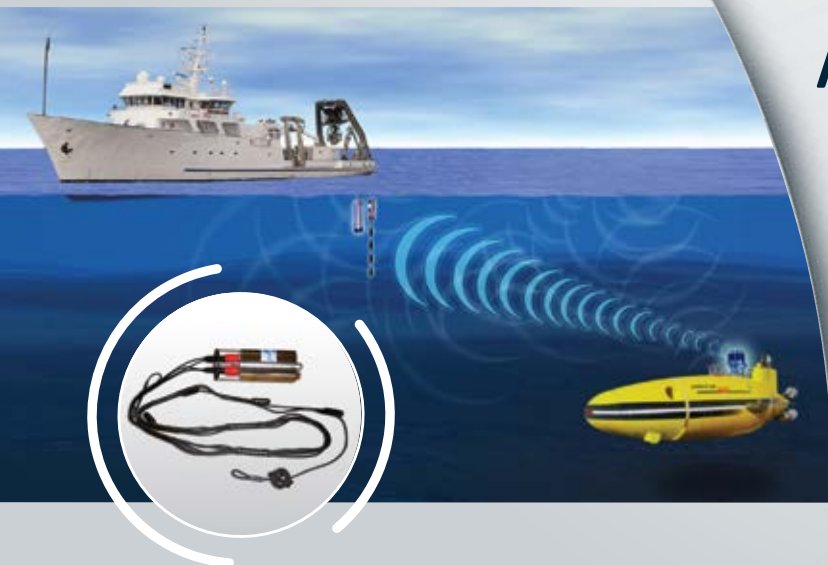
// TRIDENT

IMPROVED ACOUSTIC SIGNAL IN HORIZONTAL CHANNELS

Trident is a string of four hydrophones which improves the high-data-rate communication in horizontal channels (shallow water) and noisy environments.

Trident manages the processing of multipath spreading for an improved signal-to-noise ratio.

Signal-to-noise improvement: 6dB



// VITAC

IMPROVED IMAGE TRANSMISSION

VITAC is a software module which improves and facilitates image transmission. Even if transmission errors occur, VITAC ensures that transmitted images can still be visualized. Typical compression rate: 20 (24-bit image)





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MATS 3G Specifications

CHARACTERISTICS	MATS 3G 12 KHZ	MATS 3G 34 KHZ
Frequency band	10-15 kHz	30-39 kHz
Secured bit rates (coding included)	20 bit/s, 100 bit/s, 200 bit/s	20 bit/s, 150 bit/s, 300 bit/s
High bit rates (without coding)	850 bit/s, 2100 bit/s, 3600 bit/s, 5500 bit/s, 7400 bit/s	1000 bit/s, 3000 bit/s, 6400 bit/s, 9200 bit/s, 13000 bit/s, 16500 bit/s, 24600 bit/s
Coding efficiency	0,43	
Maximal range (low noise environment)	15 km	5 km
Power supply	18 VDC - 36 VDC standard 36 VDC - 60 VDC on request 90 VAC - 230 VAC with rack	
Power consumption	Up to 75W in transmission (185dB ref 1 µPa/1m) 0,6W in reception 40mW in stand-by	
User link	RS232 : 38400Bd (standard, configurable) RS422 on request	
Maximal depth	6000 m	
Temperature range	Working: -10°C to +50°C Storage: -20°C to +70°C	
Dimensions	L 366mm x Ø 100mm (container) Diam. 135mm (head without flange)	L 356 mm x Ø 100 mm
Dimension - Transducer head (OEM version)	L 109 mm x Ø 135 mm	L 100 mm x Ø 120 mm
Dimension - Electronic box (OEM version)	L 194 mm x Ø 80 mm	L 206 mm x Ø 80 mm

Note: Sercel reserves the right to change its specifications without prior notice.
All specifications are typical at 20°C

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