



KONGSBERG

KEY FEATURES

- Wireless high-speed communication
- Live footage streaming
 - 720 × 576 resolution
 - 12.5 fps
- Topside unit interfaces via Ethernet
- 4000 m depth rated

cNODE® Mantis: Acoustic Video Modem

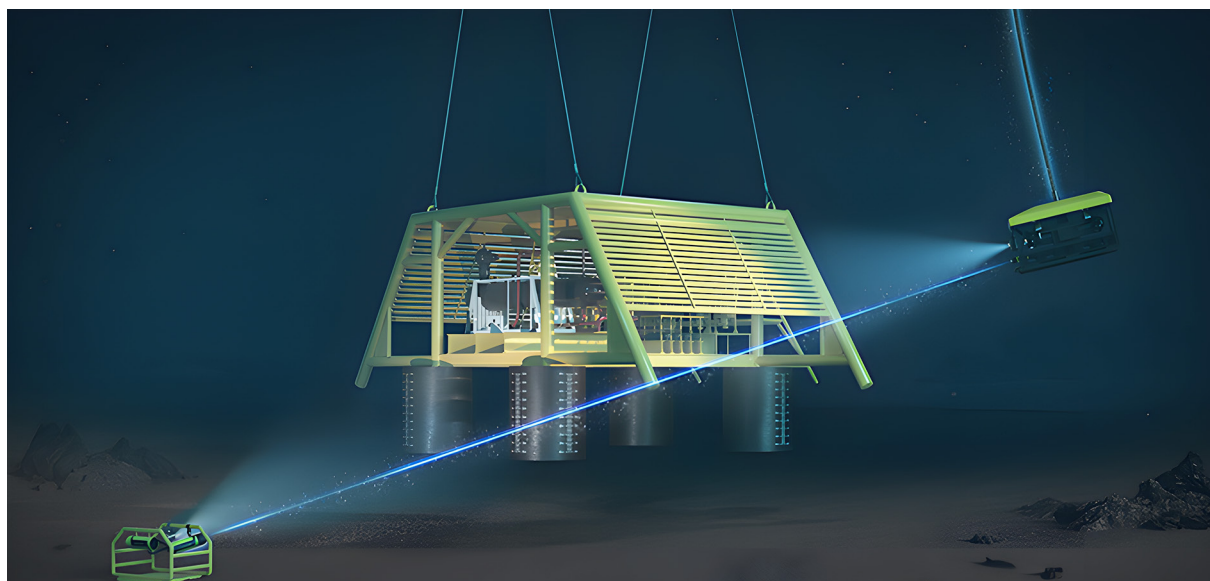
The cNODE Mantis provides a “second set of eyes” for underwater operations by wirelessly streaming live video from a subsea camera unit to a topside unit. The topside unit can be installed on a surface vessel or on a ROV’s Tether Management System (TMS), while the subsea camera unit can be mounted on stationary or mobile subsea platforms, such as subsea structures, ROVs and AUVs. Video transmission is supported at ranges of up to 500 m, and data can be received by any Windows or Linux computer.

Using a high-speed acoustic link, the system delivers reliable video transfer in both murky and clear water, unaffected by background light. With a bitrate of up to 70 kbit/s, the cNODE Mantis supports compressed live video at 720 × 576 pixels and 12.5 fps. The camera unit is powered by an included 24 V battery pack.

Sensor data and camera status are interleaved with the video stream and displayed in the supplied cNODE Mantis Operational Software. Video can be recorded or redirected to other programs and networked computers without limitation.

The camera is controlled via a high-speed command link, with options to prioritize image quality or frame rate, record high-quality video locally to an SD card, and switch between multiple deployed units. The system automatically enters a low-power mode when idle, reducing energy consumption by more than 50 %.

The cNODE Mantis Operational Software also supports a remote API for integration into external systems and can manage communication with multiple cNODE topside units for extended capability.



Uplink video stream

Stream video, SD resolution (720 x 576), up to 12.5 fps
Ethernet output, RTP format (Real-time Transport Protocol)
Interleaves sensor and status data

Downlink control

Control data for camera

Technical data–cNODE Mantis Camera unit

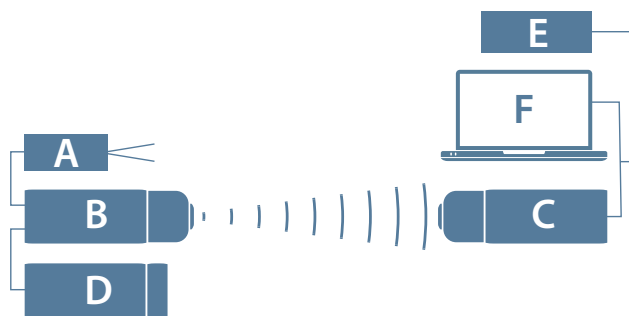
Video interface: Composite video output
Power: External 12-24 V DC battery
Power consumption: 15 W
Size (Length x diameter): 323 mm x 105 mm
Weight (in air/in water): 3.7 kg/1.2 kg

Technical data–cNODE Mantis Topside unit

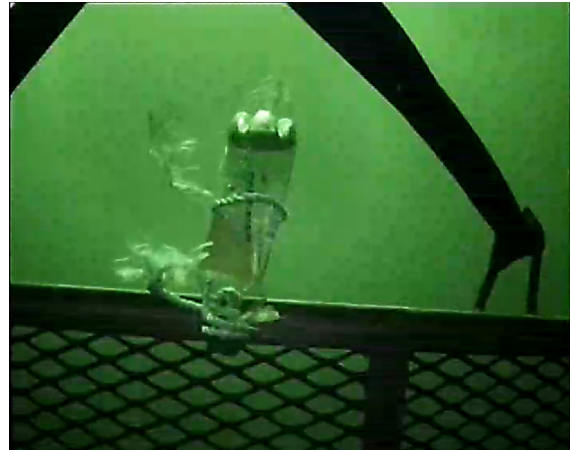
Data interface: Ethernet
Power: External 12-24 V DC supply
Power consumption: 5 W
Size (Length x diameter): 323 mm x 105 mm
Weight (air/water): 3.0 kg/0.5 kg

Common technical data–Camera & Topside units

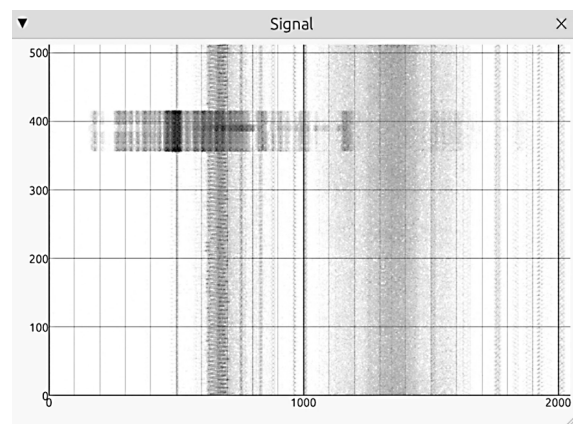
Depth rating: 4000 m
Operating frequency: 200 kHz
Video transfer speed: Up to 70 kbits/s (12.5 fps @ 720 x 576)
Command downlink speed: Up to 70 kbits/s (Half-Duplex)
Transducer beam width: $\pm 15^\circ$
Max range: Up to 500 m*
Operating temperature: -5°C to 55°C
*) Max range based on proven operations at 250 m range and S/N levels.
Specifications subject to change without any further notice.



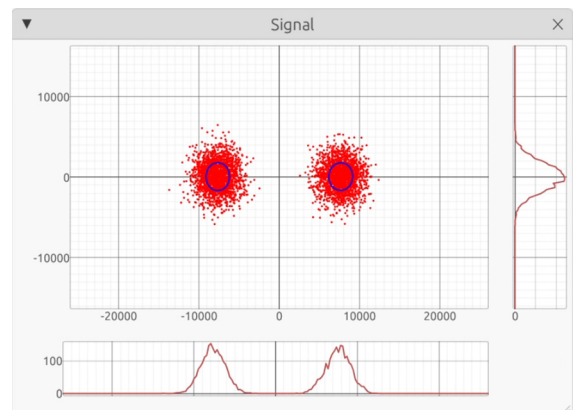
System diagram of cNODE Mantis. (A) Camera, (B) Camera unit, (C) Topside unit, (D) Battery unit, (E) Customer's power supply, (F) Customer's computer



This is a screenshot of the cNODE Mantis Operation Software displaying a live acoustic video feed.



This is a screenshot of the cNODE Mantis Operation Software's Spectrogram Analyser tool. This tool displays a real-time spectrogram of the received signal, providing a visual representation of its frequency content over time.



This is a screenshot of the cNODE Mantis Operation Software's Constellation Analyser tool. This tool is useful for fine-tuning the positioning of the camera and topside units. A good signal is displayed.

