CodaOctopus:DIVE
Augmented Digital Diving Solutions

4-Diver Digital Communications HUB

Digital Multi-Diver Audio Communication System

Voice HUB-4 is a state-of-the-art digital audio system, comprising a digital surface operator console and up to 4-digital Diver Nodes, that greatly advance the current limited capability of underwater analogue audio communications by employing digital technology to provide the highest quality and fidelity of speech communications between the divers and surface supervisor. Voice HUB-4 has advanced capabilities such as AI based Digital Noise Removal, Background Noise Control, complete control of Helium Speech Descrambling all controlled from the operator Voice HUB-4. Additionally, an easy-to-access web browser-based Graphical User Interface allows remote-user control to audio settings and a diagnostics application.

Voice HUB-4 is a flexible system and supports up to 4 divers using the small diver-worn Voice Nodes (rated to 330ft/100m) and supports all conventional features such as push-to-talk, operator-to-all-diver or selectable diver(s) and diver-to-diver communications.

Voice HUB-4 Digital Audio Communications Features

Multi-Diver Audio Communication
- Allows instant audio communication between topside operator and up to four (4) divers
- Provides diver-specific microphone volume and speaker volume controls
- Allows Diver-to-Diver communication

Digital Noise Removal
- Digital AI Based Noise Removal which eliminates all non-speech audio from diver communication
- Provides full control on the level of Noise Removal applied
- Reduces unwanted background noise such as construction, tasks, jetting and dredging for operator and all divers

Background Noise Control
- Operator can adjust via the Console the level of background noise of the diver (including diver breathing) for safety monitoring

Helium Speech Descrambling
- Offers complete control on the level and impact of Helium Speech Descrambling
- Restores the divers voice to correct Helium effects

Push-To-Talk Microphone, Headset & Speakers
- Supports the use of Push-To-Talk Microphone
- Supports Operator Headphone and Headset as an operator audio device
- Built-in rugged powered speakers

Web Interface
- Offers a web-based access to all the system features
- Simplifies system monitoring and diagnostics process
- Support for remote system upgrades and enhanced features

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Main Components

1. Voice HUB-4 Operator Console

- Enables audio communication for 1 operator and up to 4 divers
- Diver-specific audio controls
- Smart software-based Noise Removal and Helium Speech Descrambling
- Provides power to Voice NODEs through supplied lightweight umbilical
- Optional Battery Backup to ensure safe operations during any power outages

Size Comparison of Voice NODE (Top) and Kirby Morgan Speaker (Bottom)

2. Voice NODE

- Diver-worn digital communication system which connects to the Operator Console
- Audio is Digitized at source ensuring crystal clear speech and transfer of audio from Diver to topside operator
- Fully Automatic Gain Control (AGC) supporting a variety of Dive helmet Microphones and Speakers and voice levels
- Depth rated to 100 meters

3. Digital Audio Tether

- The connection between each Voice NODE and the Voice HUB-4
- Rugged cable suitable for diver operations
- Hybrid lightweight cable for power and digital data
- Depth rated to 100 meters
- All subsea connectors are fully wet-mateable
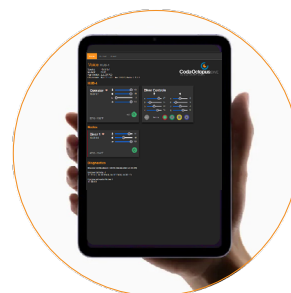
Compatible Accessories*

Push-To-Talk Mic

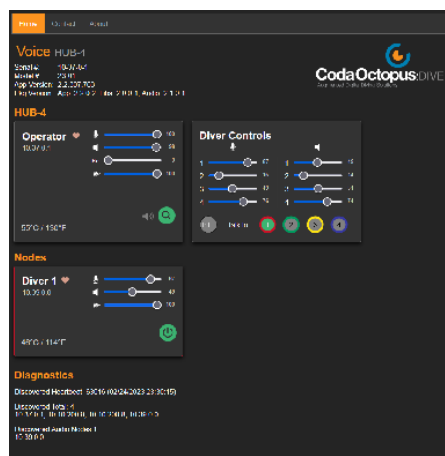**3.5mm 4-Pole Jack Headset with Mic**

Kirby Morgan Mic and Speaker Set

Control from a Phone or Tablet

* These compatible accessories are not included in the shipped items.

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Web Interface

Voice HUB-4 provides a User Interface allowing operators to control each feature of the system via a web browser, including diagnostic utilities to speed up troubleshooting process and safeguard audio communication.

Technical Specifications

Voice HUB-4 (Operator's Console)	
Dimensions (L x W x D)	406 x 330 x 174 mm (15.98 x 12.99 x 6.85 in)
Weight in Air	6.3 kg (Approx. 13.89 lb)
Connectors	1 x IEC female (AC Input) SubConn® MCIL6M (to Digital Audio Tether)
Power Consumption	100-240 VAC

Voice NODE (Diver Node)	
Dimensions (L x W x D)* *Note: The length is measured from the end of Subconn® to the end of mold. A 300-mm inline rubber molded connector (SEACON/MARSH RMG-4-FS) is attached from the end of the mold (for the ease of connecting Kirby Morgan Mic and Speaker Set).	181.8 x 73 x 40 mm (7.16 x 2.87 x 1.57 in)
Weight in Air	0.57 kg (1.26 lb)
Depth Rating	100 m (328 ft)
Potting Materials	Fast-cure polyurethane material (Green) to provide watertight, flexible sealant with a further encapsulate of F21 material for toughness, and minimization of acoustic absorption.
Power Consumption	12-24 VDC, 5 W

Digital Audio Tether	
Length	100 m (328 ft)