SeaMESH

Wireless Mesh IP Offshore Communications

The Cygnus W1 Probe Handler is designed for use on Work Class ROVs. It can be held by a manipulator arm and supplied with either T bar or Fish Tail handles. It is constructed from 316 stainless steel throughout. Ultrasonic probe a SeaMesh provides a high capacity wireless mesh network system between vessels operating at sea. SeaMesh can be used to exchange video, system data, voice and general network traffic between suitably equipped vessels. The SeaMesh system is a Wireless Mesh IP communications system designed specifically for offshore operation. SeaMesh allows up to 16 vessels to share IP traffic in a wireless mesh network. A capacity of up to 8.9Mb/s is offered by SeaMesh enabling broadband communications to enabled vessels. The SeaMesh network is self forming, fluid and self healing, there is no central point of control. Each link within the SeaMesh network can be up to and over 10km* (frequency and range dependent) in distance. SeaMesh can exchange any type of typical network traffic, including voice, video and general IP

SeaMesh consists of a rugged outdoor unit with simple mounting arrangements and a simple indoor interface unit which supplies power, network interfaces and is equipped with two IP video encoders. The indoor unit provides user feedback on network and wireless performance. The indoor and outdoor unit are connected via a single 50m cable supplied with the system.The SeaMesh is the ideal solution for connecting vessels performing combined operations such as complex drilling operations, oil spill recovery or decommissioning operations, construction projects etc.

Specifications

Product	SeaMESH Wireless Mesh IP Offshore Communications
Country of origin	UK
Manufacturer	Seatronics

SeaMesh is available in a range of power levels and frequency bands to match different regional requirements. SeaMesh radios can be combined in a fluid self forming, self healing mesh containing up to twelve radios. The SeaMesh radios within the mesh exchange data on a single frequency, simplifying frequency management. The entire mesh occupies just 2.5MHz of bandwidth (3.0, 3.5, 5.0 and 6.0MHz also selectable). The SeaMesh radios employ the COFDM modulation scheme and therefore offer excellent RF penetration and performance in the presence of reflections and multipath inherent in marine operations.

The SeaMesh radios can provide up to 8.9 Mb/s of IP data (data rate depends on configured bandwidth, number of nodes and range between nodes). This available bit-rate can be used to exchange IP data traffic between nodes. The highly flexible mesh topology means that data can be exchanged between nodes in a point-to point or multi-point fashion; range can be extended by using nodes as repeaters. The self-forming, self-healing mesh architecture makes the SeaMesh product ideal for coordinating complex maintenance, drilling, recovery or decommissioning operations, taking place across multiple vessels.

The long range (up to and over 10km)* of each link in the mesh allows connected vessels to be spread across a wide area of ocean. SeaMesh radios are equipped with two video inputs and 2 audio inputs, enabling video to be conveniently exchanged between vessels. Video (either PAL or NTSC inputs are accepted) is encoded to an IP stream and can then be viewed at any point on the common network using commercial players such as VLC, or using the proprietary video player from Visual Engineering shown below. General control of SeaMesh can be achieved via a simple web browser interface and control of the whole network can be achieved from any node.

Specifications

Radio Power	1W (controllable)
Radio Frequency	0LBand, SBand or CBand (specified at time of order)
Radio Capacity	8.9 Mb/s @ 6MHz
Range (dependent on antennae height)*	L Band (1.0 to 1.5GHz) - 30 km* S Band (2.0 to 2.5GHz) - 16 km* C Band (5.4 to 5.6GHz) - 8 km *
Radio Type	Mesh COFDM NLOS
Nodes	Upto 16
Interfaces	RJ45 100 base T
Video	Video 1 and 2 (composite) Audio 1 and 2 (line level)
Video Encoder	H.264 IP Streaming
Power	48V DC (via AC adaptor) 12V/24V converters available optionally
Consumption	18W
Control	Front Panel / IP
Control Features	Frequency, status, power
Dimensions Outdoor	L220 * W45 * H 140mm
Dimensions Indoor	1RU 19" Rack 250mm deep
Environmental	IP67