NAXYS
Naval Technology

Digital Hydrophone
24bit ∑-Δ A/D converter
Ethernet Interface

APPLICATIONS:

- Subsea condition monitoring
- Background noise monitoring
- Cavitation measurements
- Audio monitoring
- Marine research

FEATURES:

- Integrated 24 bit ∑-Δ A/D converter
- Ethernet interface
- WEB browser configuration
- Frequency range 65 kHz / 100 kHz (16bit)
- Variable gain
- Heavy duty design

EHyd

The Naxys digital hydrophones are well suited for monitoring of acoustical emissions from a multitude of subsea phenomena. The hydrophones have built in pre-amplifier and digitizing electronics and provide industry standard digital transmission interfaces. This facilitates high fidelity transmission over long twisted pair cable runs or integration into telemetry systems used on ROVs, ROTs and subsea modules. The digital hydrophones eliminate the need for data acquisition cards as data is delivered directly to the PC ethernet port.

CONSTRUCTION

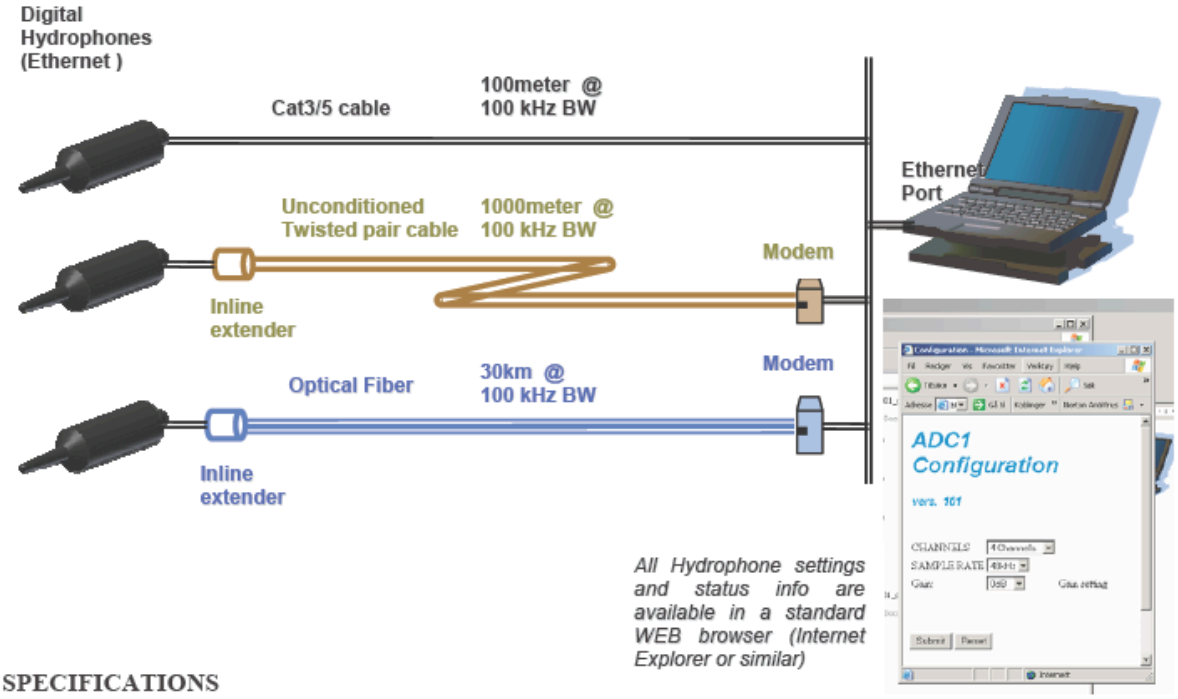
The sensor element of the Naxys digital hydrophones is placed in an acoustically transparent compound, providing omnidirectional characteristics. All electronics are moulded into a thermally stable compound and connected to the element via wires having a shield that also extends over the element. An 8-pin electrical connector is placed at the rear of the hydrophone for power supply and data transmission.

DIGITAL INTERFACE

The hydrophone has 24 bit digitizing electronics integrated, and transmits the digitized data on an ethernet interface using UDP datagrams. Thus, data can be logged directly via the Ethernet port on a standard PC. Naxys also provides a data logging software that can be run on a PC under Windows or Linux. The logged data files can be analyzed using virtually any software tools like Matlab, Mathcad and LabVIEW™. All hydrophone settings, like variable gain and sampling rate are available on a standard web browser. The Ethernet interface of the hydrophones is compatible with standard Ethernet switches, thus allowing complex systems of hydrophones to be created at low costs. For test purposes, the hydrophone can generate a pre-programmed tonal signal on the Ethernet output .

SOLUTIONS

The Naxys hydrophones find its primary use for remote monitoring, such as ROVs, ROTs and subsea installations. Applications include condition monitoring, background noise monitoring, and marine research. The hydrophones' digital output ensures noise free transmission over long cable runs. For cable runs up to 100 meters, the hydrophone plugs directly into the Ethernet port of a PC. For longer cable runs, a set of low cost extensions modules is placed inline of the cable between the Hydrophones and the PC's Ethernet port. Also for a cluster of hydrophones, low cost Ethernet switches, and optionally extender modules, can be used to multiplex the hydrophone data onto a single long run cable. By combining digital hydrophones with Ethernet switches and extender modules, the options are virtually limitless for creating a multi-hydrophone system delivering data directly to the PC Ethernet port. Various options on frequency ranges are available. Low frequency (LF), Audio, High Frequency (HF) and Wide Bandwidth (WB) models are available. Also, customized bandwidths can be supplied.



All Hydrophone settings and status info are available in a standard WEB browser (Internet Explorer or similar)

SPECIFICATIONS

Parameter	Value				Unit/Comment
	LF	AUDIO	HF	WB	Model variants
Element sensitivity	-193	-201	-211	-211	dB rel V/µPa +/- 1 dB
Variable gain	0,+20,+40	0,+20,+40	+20,+50,+70	0, +20, +40	dB *
Frequency response	0.5 – 1k	10 – 20k	1k – 65k	10 – 65k	Hz * (to 100 kHz at 16 bit resolution)
Digital resolution	24				Bits
Operational Depth	500				meters*
Sensitivity accuracy	+/-1.5				dB
Directivity pattern	Omnidirectional				
Temperature range	-2 to +45 / -25 to +85				deg C (operational /storage)
Size	Ø=70*L=250				mm
Weight	900				grams (not including cable)
Digital resolution	24				bits
Built in test	1 kHz tone				Digitally generated output test signal
Digital Interface	Ethernet 100BASE-Tx				
Connector type	Subconn FCR1508M				8 pin connector
Order Code	EHYD ZZ or XX – YY				ZZ = Model (LF,AUDIO,HF or WB) For customized bandwidths: XX=Low frequency cut off YY = High frequency cut off

* Please contact Naxys for customized bandwidths, gains or water depths.