

# DIGITAL THIN LINE ARRAY

## DESCRIPTION

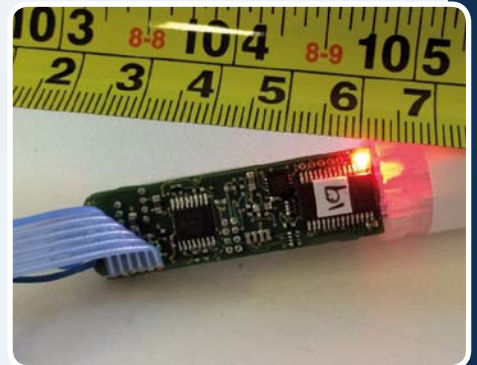
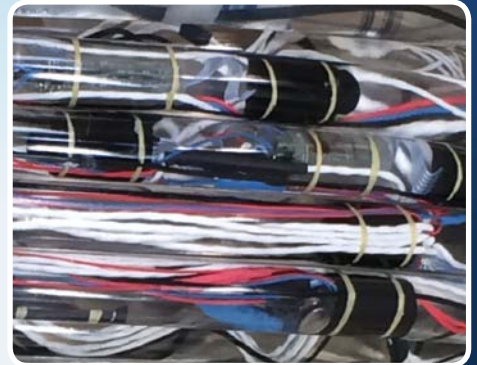
Seiche's Digital Thin Line Array is a high performance and low noise system for the most advanced forms of passive acoustic monitoring. This state-of-the-art acoustic array is just 20mm in diameter including over connectors. It can house up to 32 digital hydrophone sensors. Each sensor is configurable in real-time for full control of gain and filters. Specific frequencies can be targeted for detection – such as aircraft locator beacons.

Modules within the system obtain environmental data on pressure, temperature and salinity. Real-time acquisition of precise positioning information is acquired at key points through 3-axis compass and attitude sensors.

Each hydrophone has an integrated miniaturised low noise amplifier and 20 bit A/D convertor. As the signal is digitised prior to significant transmission, a high signal to noise ratio is achieved. Gain is configurable in real-time and the system also allows low and high cut filters to be adjusted.

Modules acquiring environmental and orientation data are integrated at key points within the array. These include; salinity, compass [3-axis], attitude, pressure and temperature (SCAPT).

Synchronous sampling provides further versatility and advanced techniques such as beam forming are achievable. Topside electronics are contained within a robust housing that is readily managed. This unit enables onward real-time data transmission over Ethernet for display and/or processing. >>>



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### CASE STUDY

In 2014, our most advanced acoustic system ever developed was delivered to a major navy. It provided a very low noise and highly configurable solution.

The system comprised of 32 hydrophones spaced appropriately to achieve tuning for 2 kHz and 4 kHz frequencies. Synchronous sampling at 48 ks / sec with 20 bit depth. It featured remotely selectable low cut filters of 10 Hz, 100 Hz, 1 kHz and 2 kHz accompanied by selectable gain from 24 dB to 96 dB in 12 dB steps.





Integrated through the array were four CAPT modules that provided environmental information alongside precise positioning and orientation data.

This particular array example configuration had a 15 watt power requirement.

### SPECIFICATIONS

Low cut filter (10 Hz, 100 Hz, 1 kHz, 2 kHz)
Dynamic gain settings (24dB – 96dB in 12dB steps)
Synchronous data acquisition
Pre-Amplifier Gain and Filter settings adjustable in real-time
20 bit Analog to Digital convertor dedicated to each hydrophone
Sampling rates from 48 kHz to 768 kHz (depending upon configuration)
Low power 9v – 36v DC input range @ circa 25w
Incorporated 3-axis compass, pressure sensor and temperature sensor

### APPLICATIONS

-  Defence
-  Beacon location
-  Research
-  Deployment from autonomous vehicles