



## Connect Tech's customized PC/104 board helps launch Bluefin Robotics Corp.'s latest AUV project

***Successful Partnership highlights design expertise of two engineer-led companies***

Since partnering with Bluefin Robotics in 2000, Connect Tech's products have been along on some pretty exciting rides.



Bluefin designs and builds Autonomous Underwater Vehicles, more commonly known as AUVs, and most of these vehicles have Connect Tech's Xtreme/104 adapters aboard. Bluefin's AUVs have been on dives around the world, to the depths of the ocean floor and back, even under the Arctic ice cap.

Since they are neither tethered to, nor towed by the launch boat, they must be fully autonomous, as the name suggests. CTI's PC/104 multi-port serial adapters provide the communication link between the sophisticated sensors and image capturing devices and the brains located within these programmable divers. The working conditions are extreme, to say the least.

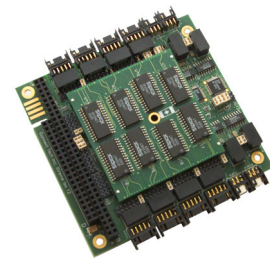
As Dr. Richard Wilson, Senior EE Manager at Bluefin, explains, "There are not a lot of PC/104 cards that are suitable for the task."

Bluefin was founded by a core group of researchers from the Autonomous Underwater Vehicle Laboratory at the

Massachusetts Institute of Technology. Their designs integrate complicated sensors into robust underwater platforms. Their success is a result of experience gathered from over 14 years of research in the field.

Connect Tech's off-the-shelf, optically isolated Xtreme/104s are perfect for what Wilson terms as the "extremely hostile environment" regularly encountered by the 21-inch survey and 12-inch shallow water vehicles. "They're easy to set up and very reliable."

But Bluefin needed a customized PC/104 adapter for their smallest underwater vehicle yet – an AUV a mere 9



inches in diameter. Designed for mine location in shallow water, this project required a customized PC/104 adapter, and Bluefin looked to Connect Tech's customization program to find it.

When designing a 9 inch diameter AUV full of sensitive equipment encased in a pressure vessel, even a quarter inch of space becomes a much valued commodity. To develop an AUV so small and light that a single person could launch and retrieve it off a dinghy required some creative problem solving.

Bluefin's request of Connect Tech? To take the three, 4-port Xtreme boards



they normally use in their vehicles, and condense them into one PC/104 footprint, all the while maintaining the throughput and quality of three boards.

Dr. Wilson acknowledges that the Bluefin team might have designed something in-house to reduce their PC/104 stack. But the time required was impractical. "(CTI) has all the PC/104 knowledge we'd have to get up to speed on. It would take us years. It's not worth it."

Connect Tech's team of engineers worked with Bluefin's engineers to come up with a solution to a request that initially seemed to be technologically improbable.

CTI's PC/104 expertise persevered, and the result is the [Xtreme/104 Isolated](#): A 12 port, electrically isolated adapter that uses a single PC/104 footprint, providing the same signal integrity and robust communication features as three Xtreme/104 boards.

The prototype was delivered to Bluefin within three weeks of finalizing the specifications -- a timeframe that Wilson admits surprised him. "You never know what you're dealing with until you get the product. When it arrived, you could see it had been made professionally, no cutting corners."

A smaller AUV means no costly deployment and recovery system. Reducing their PC/104 stack was an important way to save on space and weight.

Their size and reliability ensure they are used by the military to recover mines and are used in general clandestine battle space preparation, as well as in offshore oil field seafloor surveys, particularly for deep-water installations.

Bluefin's expertise and time is best spent researching and designing new platforms for this underwater world. Connect Tech's customization program let them concentrate on the task at hand.

"From our point of view, Connect Tech allowed us to push on with the miniaturization of a component we really needed but didn't have the resources or time to develop."

Wilson was impressed with the customer-oriented service as well. "It is clear that you can put a lot of trust in Connect Tech," he explains, adding it was clear throughout the process that Connect Tech's engineers were out to develop a quality product, and nothing less.

Contact sales to find out more about Connect Tech's Customization Program.

#### **About Connect Tech:**

*Since 1985, Connect Tech has provided the globe with high quality, cost-effective connectivity solutions. Committed to excellence in both product design and customer satisfaction, Connect Tech continues to build on a reputation for manufacturing high performance multi-port serial adapters for industrial computers.*

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