

ENTERPRISE



RESEARCHING MARINE MAMMAL HEARING WITH GETAC X500 LAPTOPS

/ Challenge /

While studying marine mammals' hearing abilities, the National Marine Mammal Foundation's team needed a rugged, reliable, and mobile computing solution that could withstand prolonged exposure - to sand, wind, mist, and crashing waves. These elements can be detrimental to electronic and computing devices.

/ Solution /

Built from high-quality magnesium alloy, the X500 features four main casings specifically engineered to protect the computer against drops, shocks, spills, vibration, and more.

/ Benefits /

Throughout their marine mammal research, the sealed design of the X500 perfectly protects the device against dust, sand, and moisture. The X500 has been independently tested and certified to MIL-STD-810G, IP65, MIL-STD-461G, and ANSI/ISA 12.12.01 standards.

/ National Marine Mammal Foundation /

"You pick the environment and how bad it can be and we've pretty much been there. Sandy beaches with the wind blowing on us, working in the rain, always by saltwater, daily by the ocean. Getac has proven its worth over the years."



Getac X500
Fully Rugged Laptop

/ Challenge /

Historically, to discover what a marine mammal hears, you would have to have it under human care and you'd have to train it to respond when played a sound it could hear. It would have to either touch a paddle or make a sound to tell you that it heard the sound or remain quiet or still if it did not hear a sound. It's basically how we do hearing tests with humans, who press a button when they hear a sound. But, that only works for animals that are under human care. Based upon work that the president of the National Marine Mammal Foundation started decades ago, they are now able to conduct "auditory evoked potential" hearing tests, which measure the voltages the brain produces when an animal hears a sound.

The same technology is used on infants and in hospitals. But to use that same technology with marine mammals, you need a miniaturized portable system that can be easily transported to where the specific marine mammals are located. In the work that the National Marine Mammal Foundation is doing, they often act alongside stranded marine mammal response teams, or as essential health assessments are performed.

/ Solution /

"Getac has been a critical part of our work on marine mammal hearing.

Sound is vital to marine mammals, and they are adapted to hearing sound underwater. So when we're trying to understand how ocean noise impacts marine mammals, that fundamental piece of information that we need to know is what they can hear."

Through the use of Getac devices, the NMMF team is able to pick up and move from place to place, rather than having to perform their research in a laboratory environment.

"We also needed the benefit of an expansion chassis that we could put a PCI or PCIe data acquisition card into to facilitate a program and system that Dr. Jim Finneran of the US Navy Marine Mammal Program developed. The computer basically becomes a portable EEG machine that we can run around the globe with, use it to play sounds to marine mammals, and record the brain waves as they hear them."

Also adopted by the National Marine Fisheries Service, the hearing test technology developed by the National Marine Mammal Foundation is an essential part of the rehabilitation assessment, which is the process for determining whether or not stranded dolphins, porpoises, or similar sized marine mammals can be safely released back into the wild.

"We started with the A790, and we are using the X500 now. But, we've more or less partnered with Getac, for, well over a decade."

/ Benefits /

- The X500 features a massive 15.6 inch Full HD 1080p widescreen display delivering crystal-clear high def, ensuring the NMMF team can clearly read data in any environment
- With a state-of-the-art 2.9 GHz Intel Core i7 Quad-Core Processor, the X500 is a powerful fully rugged computer ever made, providing next-level connectivity.
- Sealed doors and ports provide protection against dust, moisture, and water, allowing the X500 to be certified with an IP65 rating.

/ About The National Marine Mammal Foundation /

The National Marine Mammal Foundation (NMMF) is a 501(c)(3) nonprofit organization recognized globally as a leader in marine mammal science, medicine, and conservation. Our team of experts is answering critical questions about the health of the world's marine mammals and our shared oceans.

The NMMF has a mission to improve and protect life for marine mammals, humans, and our shared oceans through science, service, and education.



Pictures courtesy of the National Marine Mammal Foundation.