



Case Study

Bridge Navigational Watch Alarm System (SBC84620)

The Bridge Navigational Watch Alarm System ensures the ship watch officer is on duty

Even for well-experienced sailors, sailing a cruise ship or cargo ship across the oceans from continent to continent is physically demanding. Sometimes accidents happen when the sailor on duty falls asleep or is incapable of operating the ship, which may result in tremendous financial loss and casualties. To prevent an accident from happening, now according to the rules of the International Maritime Organization, the Bridge Navigational Watch Alarm System (BNWAS) must be installed in all vessels between 150 and 500 tons. If the sailor loses the operation capability, the automatic alarm system will go off.

Business Challenges

The customer, Voyage Marine Automation, was looking for a single board computer to migrate to its latest generation of the Bridge Navigational Watch Alarm System. While the system is the last line of defense for safety, the SBC must be durable and stable. And in the last generation of the system, the customer used a processor from AMD, therefore in the new generation, the customer prefers the motherboard with an AMD processor to achieve a balance between low power consumption and stable performance. To withstand the extreme environment at sea, this embedded board should support an extended temperature range during operation.

Main Requirements

- Embedded SBC with AMD processor
- Low power consumption
- A wide temperature range supported
- Fanless yet noise-free operation
- Rich I/O connectivity
- Small form-factor
- In stock for quick delivery

About Voyage Marine Automation

Voyage Marine Automation, found in United Arab Emirates in 2002, is a professional service provider for electrical instrumentation, automation, fire safety, navigation, and communication for marine, oil & gas, and other industrial fields.

[Visit the Website](#)

Axiomtek's cost-effective low-power SBC secures the constant function of BNWAS

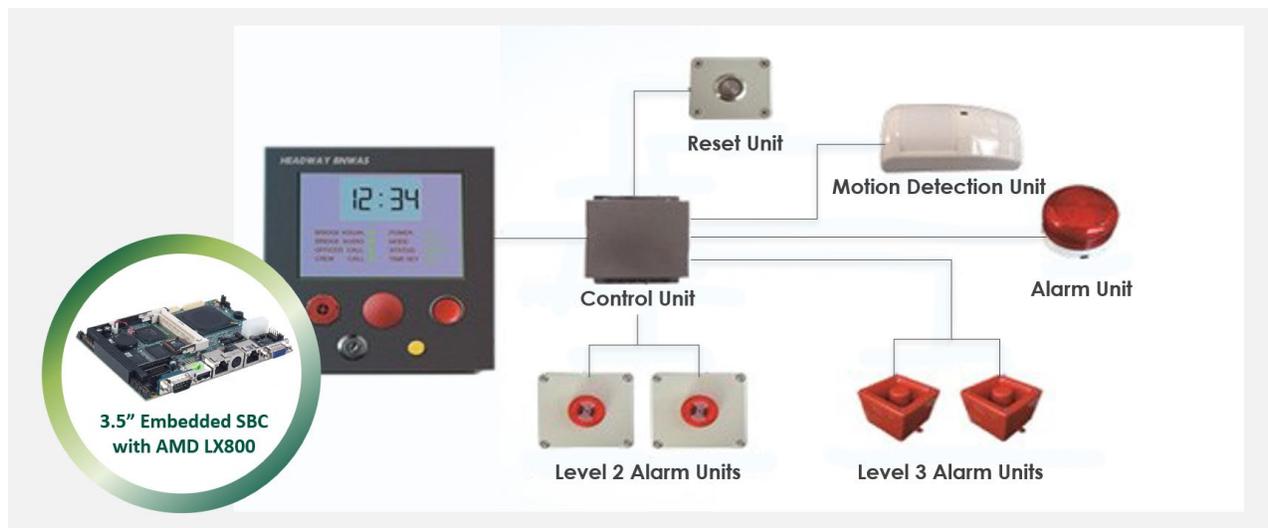
Axiomtek has proposed its **SBC84620** – a 3.5-inch fanless embedded SBC. The SBC84620 is powered by the AMD Geode™ LX processor with AMD LX integrated graphic controller. Dual LAN ports, four COM ports, four USB 2.0 ports make the embedded board empower the system value without additional development cost. The embedded board also provides Mini PCI socket and ISA bus through PC/104 interface. It can operate under a wide range of industrial-grade temperatures from -40°C to 85°C. In addition, the fanless board provides long life cycle support and enables small form-factor designs.



Application

The durable embedded platform makes the system reliable

The SBC84620 integrates multiple units of the BNWAS, including the crucial motion detection unit, reset unit, alarm unit, and level 2 and level 3 alarm units. With a capable system, the customer can install and test it for the vessels.



System Configuration of the SBC84620

- AMD LX800 processor onboard, 500 MHz
- 1GB DDR system memory
- Fanless design and noise-free
- -40°C to +85°C industrial grade operating temperatures
- One 10/100 Mbps Ethernet
- Four COM ports (one RS-232/422/485 with 5V/12V) and four USB 2.0 ports
- PC/104 and Mini PCI slot
- VGA and TTL LCD, max. up to 24-bit



*For detailed specifications, please visit www.axiomtek.com or go to Products > Boards& Modules> Industrial & Embedded Motherboard for > [3.5-inch Embedded Board](#) for [SBC84620](#)

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CAPA13S

- AMD Ryzen™ Embedded V1807B and V1605B processors
- One DDR4 SO-DIMM for up to 16GB of memory
- Three GbE LAN, two serial ports and 8-channel DIO
- Two HDMI, one DisplayPort++ and one eDP
- M.2 Key E and M.2 Key B
- Wide operating temperature range from -20°C to +60°C

CAPA13R



- AMD Ryzen™ Embedded V1807B and V1605B processors
- One DDR4 SO-DIMM for up to 16GB of memory
- Four GbE LAN, two serial ports and 8-channel DIO
- Two HDMI, one DisplayPort and one LVDS
- M.2 Key E and M.2 Key B
- Wide operating temperature range from -20°C to +60°C

Why Axiomtek

When it comes to single board computers, Axiomtek offers a complete product line with different form factors, processors, performance, display and I/O options. The customer can always find the embedded board that meets the demands and is within the budget.

“Compared to other industries, the ideal solution for marine industry requires more stable and longer life circle support. Facing the global chip shortage, Axiomtek helps us find an alternative AMD solution to avoid delay or short supply. The fanless SBC84620 comes with low power consumption and supports a wide range of operating temperatures. These advanced features met our needs, making it one of the main reasons that we chose to work with Axiomtek,” said Sugeesh KTK, Sales Representative of Voyage Marine Automation.

About Axiomtek Co., Ltd.

Axiomtek has experienced extraordinary growth in the past 30 years because of our people, our years of learning which resulted in our tremendous industry experience, and our desire to deliver well-rounded, easy-to-integrate solutions to our customers. These factors have influenced us to invest in a growing team of engineers including software, hardware, firmware, and application engineers. For the next few decades, our success will be determined by our ability to lead with unique technologies

for AIoT and serve our key markets with innovatively-designed solution packages of hardware and software – coupled with unmatched engineering and value-added services that will help lessen the challenges faced by our systems integrator, OEM and ODM customers and prospects alike. We will continue to enlist more technology partners and increase collaborations with our growing ecosystem who are leaders in their fields. With such alliances, we will create synergy and better deliver solutions, value, and the expertise our customers need.

Axiomtek is a Member of the Intel IoT® Solutions Alliance. A global ecosystem of more than 800 industry leaders, the Alliance offers its members unique access to Intel technology, expertise, and go-to-market support—accelerating the deployment of best-in-class solutions.