

Avalue Drives the Precise Upgrade of Surgical Robots with AI-Powered Computing

AI and High-Performance Computing Drive Surgical Robot Technological Innovation

NEW TAIPEI CITY,, TAIWAN, April 18, 2025 /EINPresswire.com/ -- Avalue Technology Inc. (TAIEX: 3479-TW), a global leader in industrial computing solutions, has partnered with Brain Navi to innovate robotic-assisted surgery using advanced [AI](#) technology, providing a powerful computing core for the world's first autonomous surgical navigation robot, NaoTrac. This collaboration aims to advance the future of surgery toward greater precision and efficiency, ultimately enhancing patient treatment outcomes.

AI and High-Performance Computing Drive [Surgical Robot](#) Technological Innovation

As the global medical robotics market continues to thrive, its estimated value reached USD 25.56 billion in 2023, with a projected compound annual growth rate (CAGR) of 16.55% from 2024 to 2030. Surgical robots account for nearly one-third of the market share and have become standard equipment in neurosurgery, orthopedics, and general surgery. In response to this trend, Avalue focuses on providing leading hardware technology to empower surgical robots, optimizing workflows and enhancing postoperative care



Surgical robot



medical edge AI computer

for patients.

Brain Navi's NaoTrac: AI-Driven Precision Upgrade for Neurosurgery

Brain Navi's NaoTrac is the world's first autonomous surgical navigation robot. Using a 3D coordinate system and machine vision technology, it precisely locates brain lesions and guides surgical procedures. Its AI-powered robotic arm significantly improves positioning accuracy, overcoming the limitations of human dexterity, leading to better patient outcomes. Avalue's high-performance medical edge AI computer, the MAB-T600, provides strong computing support for NaoTrac, enabling real-time data processing and seamless system integration—key to the robot's success.

MAB-T600 Features

- 12/13th Generation Intel® Core™ i3/i5/i7/i9 Processors
- Intel® H610E Chipset
- 2-Memory Socket, Max. Up to 64GB DDR5 4800MHz/5600MHz
- HDMI, 2-DP++, 1-1Gigabit Ethernet, 1-2.5 Gigabit Ethernet
- 4-USB 3.2 & 2-USB 2.0 at Rear, 2-USB at Front
- Storage, 2-2.5" Drive Bay, Optional 2-3.5" Drive Bay
- Gen 5 PCIe x16, 3-Gen 3 PCIe x1

MAB-T600 Advantages

- High-Performance Computing

Powered by 12th/13th generation Intel® Core™ processors, can quickly integrate medical images, perform 3D image reconstruction, and accurately locate a patient's cranial structure and lesion using surface matching technology. Its powerful computing capacity also allows for simultaneous control of the robotic arm, execution of surgical navigation, and real-time precise tracking of the surgical site.

- GPU Expansion for AI-Driven Machine Vision

The MAB-T600 is equipped with a PCIe x16 slot, allowing flexible GPU expansion to enhance computing performance. This enables the application of machine vision technology to drive the robotic arm to the optimal position and use facial recognition for precise localization and real-time tracking. In addition, NaoTrac features an automatic surgical instrument recognition function, allowing it to identify the tools attached to the robotic arm, ensuring smoother surgical procedures.

- Customized Power-on Design & Secure Data Transmission

The MAB-T600 includes three PCIe x1 slots,, offering customization and expansion options. To support the MAB-T600 within the NaoTrac robot, the PCIe slots can connect to custom COM port expansion boards, extending the PC power button to the robot's exterior. Furthermore, PCIe slots can connect to USB expansion cards, enabling the secure transmission of patient CT/MRI data via USB, reducing cybersecurity risks from network transmission.

- **Medical-Grade Certified Reliability**

Compliance with medical-grade EMC and safety standards, the MAB-T600 makes it suitable for use in operating rooms. In addition, Avalue provides long-term supply guarantees and immediate technical support for seamless upgrades and maintenance.

Currently, NaoTrac has successfully performed nearly 160 surgeries, showcasing the excellent effectiveness of AI surgical navigation. Avalue will continue collaborating with innovative partners in the medical field to further integrate AI, robotics, and medical applications, creating smarter and more efficient surgical and healthcare environments.

Learn more about tailored business solutions on Avalue Website, or contact us via our online contact form.

About Avalue Technology

Avalue Technology (TWSE:3479) is a global leader in industrial computing solutions. We provide reliable and customized products and services based on our strong background in the industrial control industry and successful market entry experience. Avalue Technology specializes in embedded and industrial computing solutions for smart healthcare, smart manufacturing, smart transportation, smart retail and IoT applications. The company has integrated the Sustainable Development Goals (SDGs) into its mission, vision, and values, transferring them into the essence of its business strategy. The company leverages intelligence and sustainability to create a blueprint for the future of digital innovation, driving long-term change in the smart industry ecosystem.

Lily Chen

Avalue Technology Incorporation

[email us here](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/801548310>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2025 Newsmatics Inc. All Right Reserved.