



Case Study

LED Ticker Tape with 20K Resolution

Attention-grabbing visual effects in various venues

LED ticker tape has been widely used in different venues such as sports arenas and stadiums, financial institutions, and entertainment venues to provide information or create visual effects. Whether it is to display breaking news, promote a sales event in a mall, or enhance the ambiance of an event, LED ticker tape offers a dynamic visual perception for the audience.

Challenges

The customer was looking for an edge computing system to build an LED ticker tape for the Taiwan Stock Exchange Corporation (TWSE), a financial institution responsible for operating and advancing the domestic securities market. The system requires a discrete GPU to optimize performance and obtain multiple high-resolution display ports supporting 20K@60Hz resolution. Additionally, it needs to support custom resolution editing on Windows 11 Pro. It must also support two GbE LAN ports for the internal network and internet network.

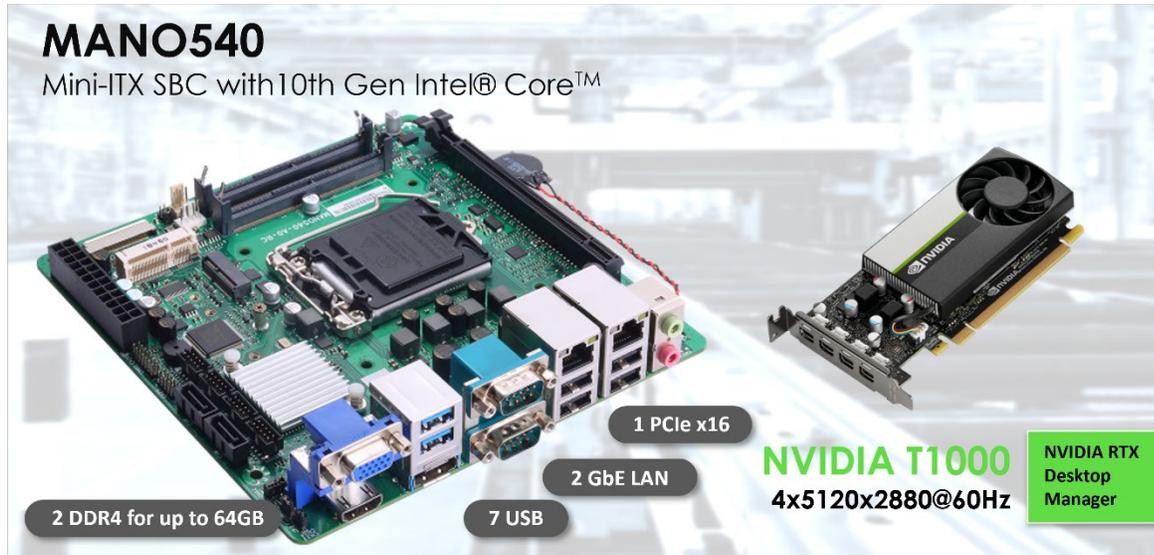
Main Requirements

- Mini-ITX motherboard powered by Intel® Core™ processor
- Custom resolution adjustment for unique aspect ratios
- GPU card with display interface supports 20K@60Hz
- Supports Windows 11 Pro
- A cost-effective solution for budget-conscious needs

Utilizing the Power of the Mini-ITX Motherboard and T1000 Combination

Axiomtek has proposed its MANO540, a mini-ITX motherboard powered by the FCLGA1200 10th Gen Intel® Core™ i9/i7/i5/i3 processor with the Intel® H410 chipset. The motherboard provides one PCIe x16 slot (3.0) for a professional graphics card to present images in ultra-high resolution. To fulfill the customer's requirements, Axiomtek installed the NVIDIA T1000 GPU card, which provides four 5K@60Hz Mini DisplayPort outputs, to the MANO540 to accomplish the 20K LED ticker tape. Additionally, it can effortlessly accommodate custom resolutions, such as 5040 x 600 pixels, using the NVIDIA RTX Desktop Manager. The customer uses the 20K LED ticker tape to show the latest

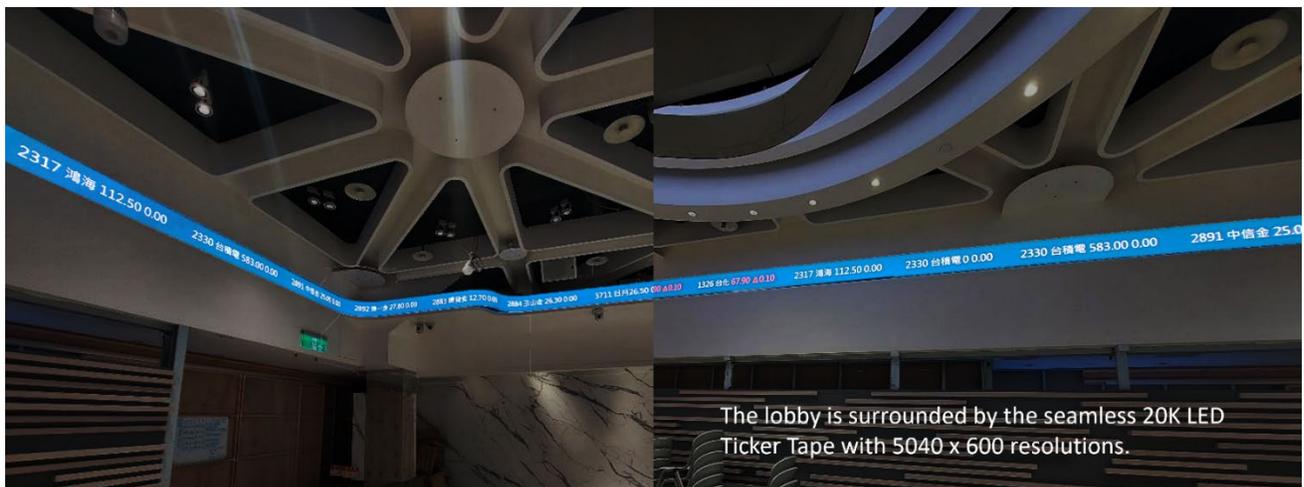
financial market information such as stock price, so being real-time is crucial. So, the two LAN ports on the MANO540 are used to help proprietary software acquire the information.



Application

LED Ticker Tape with 20K Resolution

The customer applied the MANO540 mini-ITX motherboard and NVIDIA T1000 GPU card to build a long LED ticker tape in the lobby of the Taiwan Stock Exchange Corporation to display scrolling stock information with clear and delicate graphics and more dynamic visual content. The resolution reaches 20K on the ticker tape which provides a decent visual experience.



System Configurations of the MANO540

- Built-in 10th gen Intel® Core™ i5-10500E processor
- One DDR4-2400 slot with 16GB of system memory
- Installed NVIDIA T1000 GPU card
- Two GbE LAN, two USB 3.2 Gen1, and five USB 2.0
- One M.2 Key B 2280 for a 256GB SATA SSD
- Supports Win11 Pro operating system
- Supports embedded MicroBox ECM500

Why Axiomtek

As one of the leaders in IPC, Axiomtek, with abundant professional experience, has seen customers' demands as the top priority and proposed the most cost-effective and suitable solutions.

“The most challenging aspect of this project was meeting the unconventional custom resolution. Axiomtek’s skilled technical expertise and quality product, coupled with the integration of NVIDIA graphics card, enabled us to successfully realize the 20K LED ticker tape within the budget-conscious framework. Our customer expresses great satisfaction with the eye-catching and graphic results,” said the sales manager of the system integrator.

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.