POWERING YOUR AUTOMATIC TELLER MACHINE ONE BOARD AT A TIME

MICRO-ATX INDUSTRIAL MOTHERBOARD WITH INTEL®

2ND/3RD GENERATION CORE™ I7/I5/I3 PROCESSOR

BY VIVIEN WANG

AUTOMATED teller machines, or ATMs as they are often abbreviated to, are single electronic devices that facilitate automated financial transactions between the customer and a financial institution without the need for a human cashier or banker. According to the ATM Industry Association, there are roughly 3 million ATM units currently in use around the world, a sizeable proportion of which is in East Asia.

ATMS BRIDGE THE GAP OF COMMUNICATION BETWEEN THE BANK AND THE CUSTOMER, AND ARE AN IMPERATIVE LINK IN THE WORLD OF FINANCE

In 2014, China overtook the USA and became the world's largest ATM market, according to Retail Banking Research (RBR), a financial strategy and data consultancy headquartered in London. In terms of sheer density, South Korea boasts the highest number of automated teller machines per person, with an eye-watering 278 checkpoints to 100,000 people according to World Bank's latest statistics, far surpassing the world average of 50.95 ATMs per 100,000 adults (World Bank 2015).

A typical ATM is built around what is ubiquitously known as an industrial single board computer, combining storage and memory, microchips and processors and other components upon a single circuit board. Development of virtual communication and online banking has radically altered the way corporate banks and customers interact with each other, with ATMs evolving into core instruments of customer engagement. In other words, they bridge the gap of communication between the bank and the customer, and are an imperative link in the world of finance.

CHALLENGES

Our client, a top Chinese commercial bank, wished to deploy a large number of automated teller machines throughout the nation, with strict time and budget constraints. Language barriers and timezones were also a concern, as timely, accurate and efficient technical support and risk management are of paramount importance during the research and development phase of implementation.

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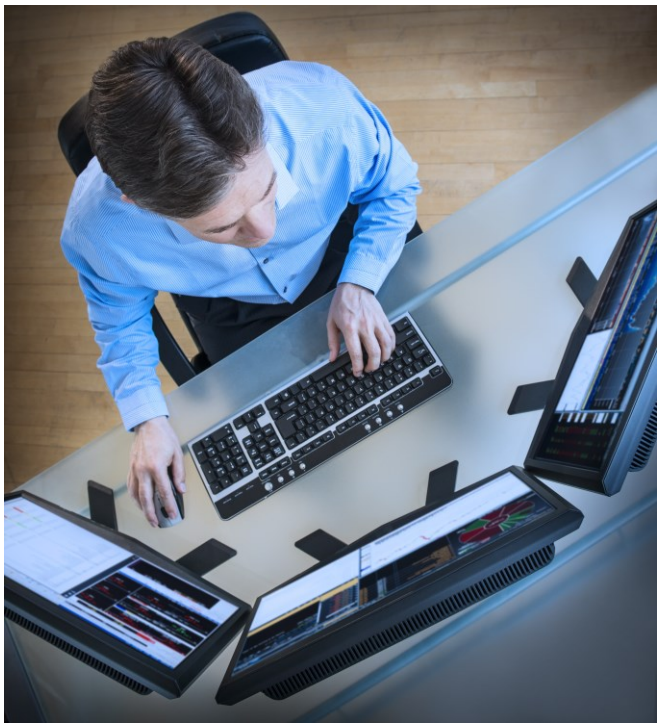
The client required a customized single board with enhanced connectivity as their design necessitated a higher-than-average density of expansion slots, requiring a

DEPLOYING THE AAEON IMBM-H61A IN A FINANCIAL TECHNOLOGY ROLE ENABLES USERS TO SECURELY ACCESS THEIR ASSETS IN A RELIABLE, TIME-EFFICIENT AND PERSONALIZED ENVIRONMENT

board which was capable of supporting multiple USB ports simultaneously. The second objective was to find a suitable hardware architecture to house the client's software and systems. The solution was to consolidate this upon a Windows 10 platform. The only current single embedded board design on the market capable of supporting a wide range of expansion slots within a Windows 10 operating system context was the AAEON IMBM-H61A.



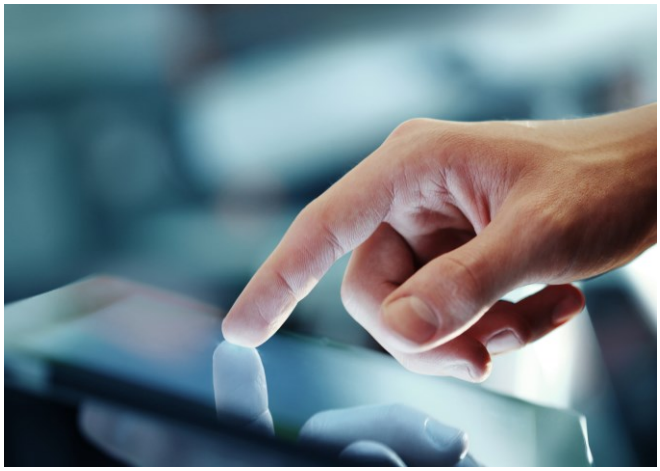
SOLUTIONS

AAEON proposed the IMBM-H61A, a Micro-ATX form factor industrial motherboard that features one VGA, one DVI one Dual Channel LVDS port and one PCI expansion slot. The IMBM-H61A offers support for value oriented Intel® Pentium® Processors. Users also had the option to increase board functionality with one PCI-Express〔x16〕, one PCI-Express〔x1〕, one PCI and one Mini-Card slot, enabling easy access to console and other functions.

For enhanced connectivity with peripheral devices, all versions of the IMBM-H61A provide native support for eight USB 2.0 ports, an 8-bit Digital I/O interface and two onboard Gigabit Ethernet ports with Wake-On-LAN, which easily resolved the client's request for additional USN connectivity. Storage is co-opted via three SATA 3.0Gb/s, and input performance is enhanced by an optional onboard CFast™ storage card, improving on traditional CF Card™ systems.

THE INBUILT INTEL® H61 EXPRESS CHIPSET OFFERS SCALABILITY AND COST-CUTTING SOLUTIONS FOR SYSTEM INTEGRATION, FURTHER ENHANCING PERFORMANCE AND EFFICIENCY WITH MINIMUM EFFORT.

Other advantages include an anti-vibration design, wear-leveling and low power consumption facilities. The IMBM-H61A provides a capacity of up to 16GB of DDR3 1333/1600MHz system memory. It also pre-empts the issue of fraud management with an inbuilt status monitoring function and a programmable watchdog timer, facilitating an extra layer of system security whilst simultaneously reducing data transmission and storage costs. The inbuilt Intel® H61 Express Chipset offers scalability and cost-cutting solutions for system integration, further enhancing performance and efficiency with minimum effort. In addition, the Intel® Graphics Media Accelerator engine provides improved graphics, offering a hi-res, visual experience superior to its former predecessors.



Another aspect of the IMBM-H61A's success lay in its adaptation of the latest 3rd Generation Intel® Core™ i7/i5/i3 processors, which offered a marked improvement in low power consumption. These low power, energy efficient multi-core Intel® processors operate within an estimated range of 17-45 watts range, enhancing active workload monitoring capability and power gating which facilitate the significant reduction of energy and power consumption.

"THESE POWERFUL SINGLE BOARDS OFFER MAXIMAL SCALABILITY AND HIGH PERFORMANCE FOR APPLICATIONS WHERE LONGEVITY, CONNECTIVITY AND RELIABILITY ARE CRITICAL."

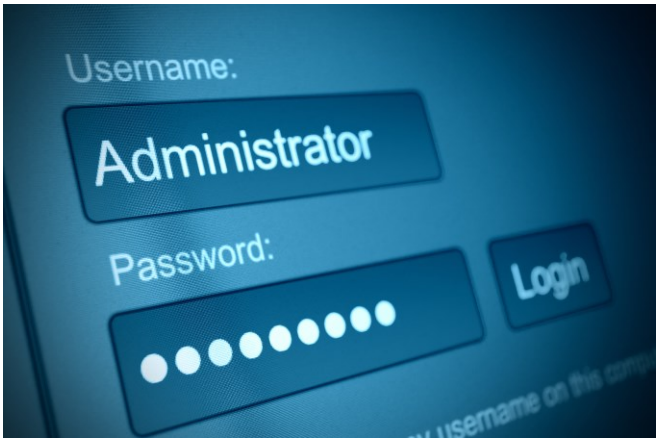
– CLARK LEE, PRODUCT MANAGER, INDUSTRIAL PC DIVISION

Deploying the AAEON IMBM-H61A in a financial technology role enables users to securely access their assets in a reliable, time-efficient and personalized environment. For the ATM provider, the AAEON IMBM-H61A intersects modernization, cost efficiency and a higher degree of control over service management, coming together to provide an easily accessible and customer-oriented environment.

Devices like ATM kiosks are connected via a virtual network to provide immediate, real-time access to data transmission diagnostics. This optimizes workflows and enables a far higher degree of flexibility and autonomy for system administrators as the intermediary is completely eliminated, freeing up the system administrators to directly identify any potential network errors and rectify problems immediately.

IMPACT

Contemporary IT service delivery models and technological solutions enable the successful deployment of computing tools for organizations to sustain and optimize business processes. By efficiently maximizing ATM procedures with the IMBM-H61A, financial institutes are poised to offer an even sleeker and futuristic interface for bank-customer interaction. "These powerful single boards offer maximal scalability and high performance for applications where longevity, connectivity and reliability are critical," says Clark Lee, Product Manager of AAEON's Industrial PC Division. "In selecting suitable infrastructure to consolidate and enhance existing systems, banking organizations can mitigate the aforementioned challenges head-on and enhance their



operations to ensure the best user experience for their clients."

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ABOUT AAEON

Established in 1992, AAEON is one of the leading designers and manufacturers of professional intelligent IoT solutions. Committed to innovative engineering, AAEON provides reliable and high quality computing platforms, including industrial motherboards and systems, industrial displays, rugged tablets, embedded controllers, network appliances and related accessories, as well as integrated solutions. AAEON also has the hardware and services for premier OEM/ODMs and system integrators, worldwide. Being an Associate Member of the Intel® Internet of Things Solutions Alliance, AAEON offers customized end-to-end services from the initial product conceptualization and board product development to mass manufacturing and after-sales service programs. AAEON is also a GSA government contract holder (#GS-35F-0470Y) serving Federal, State & Local government sectors. Peruse AAEON's expansive line of products and services by visiting www.aaeon.com.