

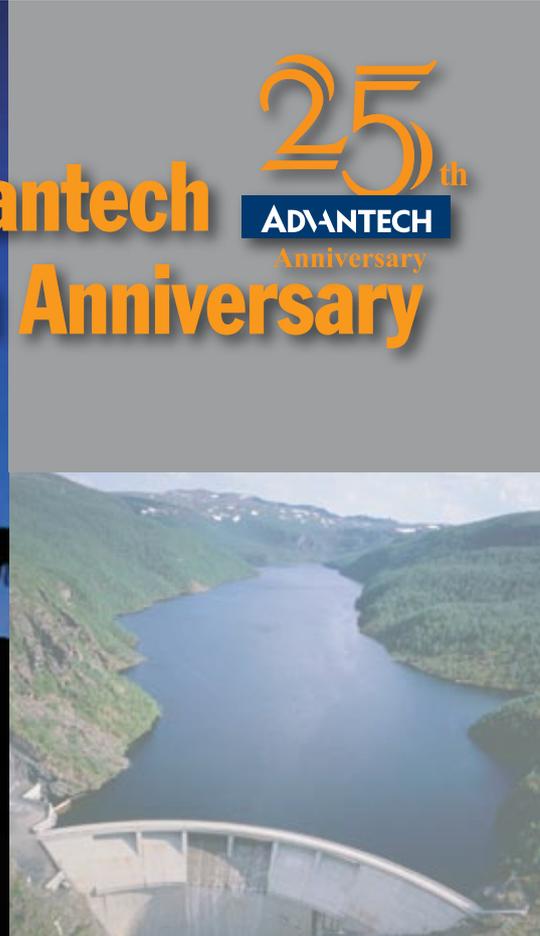
# MyAdvantech

The Magazine for Global Advantechers and Partners

Spring 2008 No.2

Happy Advantech **25<sup>th</sup>**  
ADVANTECH  
Anniversary  
25th Anniversary

Trusted  
ePlatform Services



Man and Water in  
Amicable Symbiosis  
Digital Technology Brings  
Audience Closer to the Stage



## Advantech Communications & Networking Sector

On the Fast Path to Convergence  
Whether It's Wired or Wireless





# Harmony

Technology for a Vibrant Planet

Trusted ePlatform Services

**ADVANTECH**

## Combining Human with Nature

From Beijing to Brunei, Monterey to Munich, Advantech develops optimized environmental monitoring tools tailored to customers' unique needs. We understand that getting the most out of technology is critical for maximum protection of our environment and achieving true harmony between humans and nature. Partnering with Advantech is partnering with our planet.

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## Contents

### Viewpoint

05 25 Years of Dedication and Commitment

### Special Report

06 A Faithful Servant to the Vision

08 Using Market Vision to Define Product Value

10 From Local to Global: Advantech Creates a Worldwide Corporate Splash

### Technology Forum

13 Industrial Multi-Core Performance in a Full Range of Form Factors

16 Advantech Communications & Networking Sector on the Fast Path to Convergence

18 Carrying Serial Devices into the Future

### Joyful eLifestyle

22 Man and Water in Amicable Symbiosis

26 Time-Saving Kiosks Add Convenience to Life

28 The Mastermind behind Performance Splendors

### Inside Advantech

31 Avantechers around the Globe

32 A Bavarian Dream

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Community

Technology for Active Living

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**ADVANTECH**

## Fulfilling More Than Dreams

Society's advancement is often measured through the refinements of urban living. From self-service information kiosks to digital signage, from one-touch residential terminals to medical point-of-care sites, Advantech develops custom technology platforms to help partners set smart examples for better living. Advantech stands with customers at the forefront in shaping the good life. Realizing your dreams never had so many options.

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Viewpoint

# 25 Years of Dedication and Commitment

## Advantech Welcomes the Age of Web 2.0 with Open Business Models

It's been 25 years since Advantech first came into the industrial spotlight in 1983. That was the year that IBM developed its first PC, and Advantech followed the success of the PC to grow and mature into a global enterprise. Beginning modestly as a startup with just five people, after 25 years of advancement and expansion, it has become the predominant, worldwide ePlatform Services player in the global industrial computer sector, and stepped up to secure its position as a business bellwether. In retrospect, there are many people to thank for their steadfast dedication, including Advantech's loyal colleagues, and the ever supportive and encouraging partners and clients.

The fast-developing Web 2.0 knowledge based economy has pointed to several new innovative operational directions for those in the industry; these directions effect vertical applications, professional development with clients, and cross-industry collaborations. Advantech can no longer afford to simply hold on to the Product Development - Production - Worldwide Marketing value chain cycle model of the past. Though this particular model has driven Advantech's achievements for the past 25 years, it is now insufficient to pilot the company on its march into the future.

**Open Business Models** will from now on be the organizational and operational direction of Advantech. This business model was developed by Henry Chesbrough, an Adjunct Professor and the Executive Director of the Center for Open Innovation at the famous Haas School of Business at the University of California, Berkeley. This particular notion points to the increasing emergence of innovative divisions of labor in the knowledge economy, and to the fact that to fully flourish, every industry has to take advantage of new opportunities by accepting a more malleable, open operation model, and by combining target clients to foster coordinative development and more external collaborations.

Advantech this year pitched the "4+N" structural expansion model that's defined by the four major

business groups after deliberate reorganization efforts that allow each individual team to focus on its target clients and flexibly adopt different operation practices. The four groups comprise of: Embedded ePlatform Organization (EPO), eServices & Applied Computing Group (SAG), Industrial Automation Group (IAG), and the newly founded Design & Manufacturing Services (DMS).

The "+N" principle means that Advantech will actively expand external relationships through a conglomerate pattern to encourage collaborative development. Here are some examples: **Advansus**, a company that specializes in industrial motherboards, DMS, and CAPS, which will instigate cross-industry collaborations with Asus/Pegatron technology; **Advantech intelligent eServices**, who target real estate and retail intelligence; **Broadwin**, who focus on intelligent video surveillance software markets; **NetStar**, a manufacturer that excels in industrial communication products, and **BCMPro**, which has developed a procurement agency marketing model. These external collaborative partnerships combine with the four business groups to fashion a new Advantech Group to welcome the age of Web 2.0.

Back in 1983, we kick-started Advantech Technology as a five-person company. In the beginning we provided computer automation system integration services, and later grew to position ourselves solidly as System Integrators. For years we have never wavered in our mission to provide quality "Trusted ePlatform Services," and we have not fluctuated in our determination and perseverance in billing Advantech as an innovative, eminent, global industry leader. Despite the inevitable challenges that always emerge along the way, we believe that everyone at Advantech and its alliance partners will drive the "Trusted ePlatform Services" principle to worldwide dominance and recognition.

KC Liu, CEO of Advantech



# A Faithful Servant to the Vision

History is a mirror that reflects everything in detail. Many little episodes have dotted Advantech's 25-year history, and have made Advantech what it is today.

Nowadays Advantech is billed as an individuality-oriented corporate culture that puts the interests of its clients first. When tracing Advantech's history, one understands immediately that the company is what it is today for good reason.

By Jacky Chuang Translation by Shannon Hu  
Interview with Shihyang Tsai, Executive Director of Advantech Foundation and Tina Chen, Human Resources Manager  
Image provided by Advantech

The age of 25 marks the prime of youth, and Advantech has reached the beginning of its bloom. In retrospect, for the past 25 years Advantech has witnessed many changes, and many constants. The changes are revealed in Advantech's robust expansions, the constants are grounded in Advantech's original mission and resolve - on which it first built its foundation.

## Corporate Evolution to Establish a Global Branding

Advantech started out as a small business with less than 10 members, and focused on providing quality automation system designs. In 1990, to preempt a market niche, Advantech decided to make control cards compatible with PCs; two to three years later, it was again ahead of its rivals when it made 9.4-inch LCDs a basic fitting for industrial computers. No one in the market had thought of doing that, and Japanese makers were duly surprised when Advantech representatives visited Japan looking for LCD manufacturers to design special-purpose screens.

Advantech's greatest turning point came when chairman KC Liu decided to take up technology transfers for industrial computer casings offered by the Industrial Technology Research Institute. The move mobilized everyone in the company to study blueprints for industrial computer casings, and people set off to every corner in Taiwan to hunt down relevant component makers, returning with all sorts of parts to fabricate and assemble possible casing mockups. Advantech put its team spirit into play, making what was originally a foreign product line into its centerpiece, and achieved market leadership.

Advantech also boasts pioneering undertakings in its marketing resources. Starting in 2006, Advantech began promoting Unified Marketing that compels posters, catalogs, advertisements, exhibitions, and staff uniforms to meet Corporate Identity System criteria. In hindsight, Advantech's emphasis on

marketing resources was inspired by its first overseas client. At that time Advantech was short on English catalog and manual production experience, and this client offered his guidance to teach the Advantech staff about creating intelligible English posters tailor-made for overseas clients. To successfully break into the global market, Advantech afterwards assigned all the catalog, packaging and instruction manual manufacturing to overseas design specialists, with all brochures and handbills to be reviewed by professional foreign editors. These steps marked the beginning of Advantech's establishment of a global label.

## Individuality Orientation Creates a Corporate Family

Every newcomer or visitor to Advantech will immediately notice that everyone at the company, regardless of rank or age, addresses each other on a first-name basis. Today everyone still addresses Advantech's chairman by his first name. Executive Director of Advantech Foundation, Shihyang Tsai, said that this bit of corporate culture has remained since the founding days. There is still a certain hierarchy within the company, but everybody is close and comfortable in their professional relationships. All the supervisors support an open-minded attitude when communicating with subordinates, and this is conducive to a family-like corporate culture.

This corporate tradition of viewing Advantech as an extended family has carried on till the present. Family days are organized during weekends for employees' family members to get to know each other, and to share information on Advantech's work circumstances. Meanwhile Advantech's ranking officials understand that they are responsible for providing a quality work environment, and an atmosphere that ensures employees can contribute and devote themselves comfortably to a joint cause.

## Respect Talents to Preserve Corporate Competitive Prowess

Everyone in the Advantech family can recall the stringent and measured interview process they underwent before joining the Advantech fraternity. Every employee has to undergo three interviews, and the resources and time that Advantech devotes to selecting talents are in concert with the spirit of "Finding the Right People" as advised by the book, Good to Great.

Human Resources Manager Tina Chen said that in addition to careful interviewing, Advantech attaches equal value to on-the-job training. Workshops are held every year that encourage staff and their supervisors to thrash out diversified corporate strategies. This practice has been extensively promoted among Advantech's worldwide employees and even partners. Staff and partners working in overseas offices get to learn about the parent company's corporate traditions, and meet ranking officers face-to-face to study operation policies and issues. Every participant involved shares their market operation experience, and gets the chance to converse directly with participants from diverse regions. "Thoroughly understanding clients' demands" and "Going the extra mile for the clients" are the optimal approaches in sharpening corporate competitiveness.

Advantech has been in business for 25 years and many experiences from those years are worthy of retelling. From the first day on, Advantech had clearly positioned itself as an "Industrial Computer Maker," and striven for excellence in specific sectors, finally gaining the predominant position in the global industrial computer market. But that was only a beginning. Under KC's leadership, everyone at the company continues to do their utmost to infuse more success into the Advantech label. And, as KC has aptly put it - let's be servants to our vision, and shine together for many more years to come. ■

# Using Market Vision to Define Product Value

Since its establishment as a system integrator in 1983, Advantech has continued to evolve and advance from specialized factory automation, to the present-day vertical applications. Advantech freed up the concept of automation to extend it to every corner of life, truly implementing the company's "Ubiquitous" vision.

By Ming Translation by Shannon Hu  
 Interview with Jeff Chen, Chief Technology Officer and  
 Evan Lin, Vice President of Engineering, Advantech Industrial Automation Group  
 Images provided by Advantech



Advantech's product orientation history can be demarcated into five crucial stages. The years 1983, 1990, 1995, 2000, and 2005 marked the most significant changes, during which Advantech shifted direction in the course of its product orientation, and made corresponding modifications, to various degrees, in its corporate organization. These strategies of invigorating modifications to its corporate orientation have enabled Advantech to remake itself from a local company to a global IPC leader.

## From Infancy to Brand Establishment

Advantech had no archetypal products when it was first set up in 1983; the Company made its name in the market as a system integrator. Evan Lin, Vice President of Engineering of Advantech's IAG recalls that back then, Taiwan's PC industry has just taken off, and that inspired Advantech to brave the market. At that time a majority of Taiwan's PC manufacturers positioned themselves as suppliers of general-purpose models, and in hope of differentiating itself from the others, Advantech chose to define its corporate image by targeting industrial automation development, introducing its first interface card, PCL 848 IEEE 488, in

June, 1985. Continuing from 1983 till 1990, Advantech launched industrial I/O cards as part of the PC-Lab card series, with the industrial automation market as the principal target.

In 1990, Advantech intensified its corporate deployment in the automation sector, and this product orientation was evidenced by its slogan, "Automation with PC". From 1990 through 1995, Advantech pitched its first industrial product label - ADAM. Grounded in PC technology, ADAM was a product series that featured industrial automation, and remains one of the signature brands today. During those five years, Advantech began to extend feelers into the international arena, and set up its first branch company in the Silicon Valley in the U.S.

## Solidifying Its Position as an IPC Market Harbinger

From 1995 through 2000, fanless design became predominant in IPC development, and Advantech adjusted its course of action accordingly. Because the IPC market is particular about stability, and heat is the largest threat to PC system stability, the issue in question became how to maintain stability in fanless industrial designs. The fanless approach at the same time marked a major difference between IPCs and their general-purpose cousins.

In addition to the fanless designs, Advantech's other crucial tactic was to make inroads into the embedded market. Advantech's embedded applications were extensively employed in various vertical markets, such as POS and ATM. Chief Technology Officer Jeff Chen said that Advantech's incursion into the vertical market implies that the company has evolved from the factory automation (FA) of the past to become the more advanced, modern-day life automation, extending automation concepts to areas touching daily life, and creating expanded application opportunities.

Meanwhile, to upgrade service quality and expedite clients' product launches, Advantech proposed two innovative models - DTOS and BTOS, two service formulas that substantially shorten product design cycles without sacrificing quality.

## Global Deployment Unfolded

Starting in 2000, Advantech facilitated global deployment by merging its Taiwan Region and its China Region into the Greater China Region, and marking China as the principal homeland market. Currently Advantech employs a Double Corporate Headquarters strategy and intensifies its advancement into the mainland market. Jeff said the move indicates Advantech's resolution to take over the Chinese market.

During this particular stage, Advantech continued to expand application territories and annex factory and vertical application markets. Advantech's headquarters building in Neihu was completed during this period. The Industrial Automation department remained in Xindian, and other departments relocated to Neihu, and began to effectively head its global operation deployment project.

In 2005, Advantech experienced a true transformational rebirth. Besides the existing Industrial Automation Group, it started to deepen its vertical applications in medical and the retail sectors. By yearend 2007, Advantech had kicked off the Globally Integrated Enterprise (GIE) formula and integrated its logistics resources into a versatile service platform to support the frontline sales department.

As an extension of the GIE strategy, in 2008 Advantech chairman KC Liu commenced the 4+1 development model that reorganized the company into more efficient segments: Embedded ePlatform Organization, eServices & Applied Computing Group, Industrial Automation Group and Design & Manufacturing Services. Also, an integrated model for joint procurement of components with Advansus, plus a strategic partnership with Asus Computer Incorporated for industrial motherboards was formed. Now, every business group is free to concentrate on its specific field, without side effects caused by massive organizational inertia.

Following the continuous shifts in the IT sector, Evan Lin predicted that several trends lie ahead in IPC's future. In terms of design, products will grow more compact, underscoring embedded and automated capabilities, and regarding applications, the niche market trends will gain prevailing acceptance. To furnish various vertical markets with optimal services, Advantech will step up software design in the hardware package, and segment market demands with different values and increased product diversities. These goals will define Advantech's future product deployment and action plan. ■



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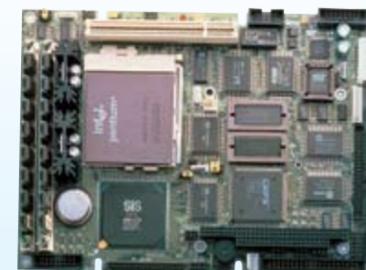
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# From Local to Global: Advantech Creates a Worldwide Corporate Splash

Over the past quarter-century, Advantech has cooperated closely with its partners to help provide innovative solutions for a wide spectrum of applications in diverse industries, and in the process, true to its name, transformed itself from a local Taiwanese company into a multinational power player. As Advantech celebrates its 25th anniversary this year, some of its global solution partners offer insights into how Advantech's unique corporate culture has contributed to its growth and success.

By Grace Weng  
Image provided by SIEMENS

Over the years, Advantech has developed a formidable service and client network spanning Europe, the Americas and all of Asia. Many global companies come into contact with Advantech through different channels looking for very specific services, and Advantech has been able to meet the diverse needs of these companies head-on because of the breadth and depth of the products and solutions it offers. For example, Irene, an embedded computing group based in Genoa, Italy, came into contact with Advantech in 1997 when it was scouting for large quantities of industrial motherboards and industrial computer chassis, and other materials for its system integrator. Machine Drive, a US-based industrial automation distributor, first started working with Advantech in 1996, when it was planning to source some industrial PCs for its automation outfit. With added software and I/O cards, Advantech products were then sold as part of a total system solution. "We try to take advantage of all the different products that Advantech presented and we try to bring those to the industrial automation market," says Jim Verona, VP Sales, Automation Group of Machine Drive.

## Premium quality and support

In addition to a diverse selection of products, high quality services and reliable support are deciding factors that inspire global companies to continuously partner with Advantech. Pat Cathey, Senior Vice President and General Manager of Avnet Technology Solutions, notes that many of the first customers that the two companies worked on together were extremely high-profile medical accounts, making quality and support critical requirements for successful corporate collaborations. "Advantech really focuses on quality and understands the importance of meeting customer commitments and delivering to them. There are always issues to deal with, but it's how you deal with those issues in terms of support that makes you a great partner. Advantech has been terrific!" says Cathey. He adds that complementary support from other partners like Intel is also important to Avnet, a partner of Advantech since 2001.

Siemens Enterprise Network Inc., based in Munich, Germany, began its relationship with Advantech at the beginning of 2006 through a recommendation from AMD. In addition to Advantech's international manufactur-

ing capability, having a local development support center in Amberg played a significant role in Siemens' decision to partner with Advantech. Klaus Leuschner, a system engineer for Siemens points out that every expectation was met with great care and more importantly, what left a lasting impression was Advantech's customer-oriented focus and the openness to communicate with everyone to deliver the best possible solution. "I'd say working together with Advantech was really fun. There was great teamwork involved," Walter Gerlich, Head of HW-Development, says enthusiastically.

## Exceptional teamwork and customer service

Indeed, exceptional teamwork and commitment to customer service define the essence of Advantech's corporate culture. With more than 3,400 employees providing customer care, product selection, technical support, and order handling, Advantech operates an extensive support, sales and marketing network in 18 countries and 36 major cities to deliver prompt time-to-market services to customers around the globe.

As with Siemens' experience with Advantech, the development center in

*Congratulatory  
comments and assurance from Advantech's global partners:*

## MACHINE DRIVE C O M P A N Y

*From Jim Verona, Vice President of Sales,  
Automation Group, Machine Drive:*

*"Congratulations! We encourage Advantech to continue its investment in technology products and manufacturing processes and to enhance its support of the most appropriate channels in the markets that it serves."*



*From Pat Cathey, Senior VP and General  
Manager, Avnet Technology Solutions:*

*"It's an honor for us to be a partner of Advantech and we thank you for all of your support. I know that 25 years from now, Advantech and Avnet will still be partners and will continue to grow together."*

## SIEMENS

*From Klaus Leuschner, System Engineer,  
and Walter Gerlich, Head of HW-Development,  
Siemens Enterprise Network::*

*"25 years is amazing! Our best wishes for a good partnership over the years to come. We expect Advantech to continue to develop in the way we've experienced it: which is customer-oriented and quality-focused."*

## IRENE

*From Renato Damele, Technical Manager,  
Irene Sr :*

*"We hope that Advantech will always be ready to deal with new commercial challenges in order to provide efficient technological solutions with good quality and high performance that is well known to us."*

Amberg served as the main contact during the development phase. All the manufacturing-related undertakings were coordinated by Advantech-Europe directly with the manufacturing division in Taiwan. "We were very impressed with the professionalism and quality assurance of Advantech," says Gerlich.

"We did not choose Advantech because we took a look at what's written on a brochure or flyer. Based on our cooperation with Advantech, we really felt that our concerns and views were taken with genuine consideration, and it is those unwritten company policies which we experienced first-hand from Advantech that allow us to place our trust in the company," he adds.

## Building long-term partnerships

As Advantech continues to expand its global presence, one of its key success factors lies in its aim to develop and foster long-term partnerships rather than short-term contracts, and its dedication to maintaining these

relationships well. In 2004, Advantech started an event titled Solution Day, which is held in different regions around the world periodically, to showcase products, share critical solutions for target applications, and create an open platform for industrial innovation and business interaction.

Every other year Advantech holds a World Partner Conference (WPC) and invites all its partner companies to discuss future business plans and exchange professional views. As Pat Cathey observes, "one of the strengths of the relationship was our ability to have open dialogue with all levels of Advantech at any time." During last year's WPC, Avnet was awarded the North American Distributor Award.

Machine Drive has participated in WPC four times during the past twelve years since its partnership. Jim Verona notes that Advantech has strengthened its brand name recognition over the years. "I believe that Advantech does have a strong presence globally, and some of its investment in marketing

has paid off well to support that."

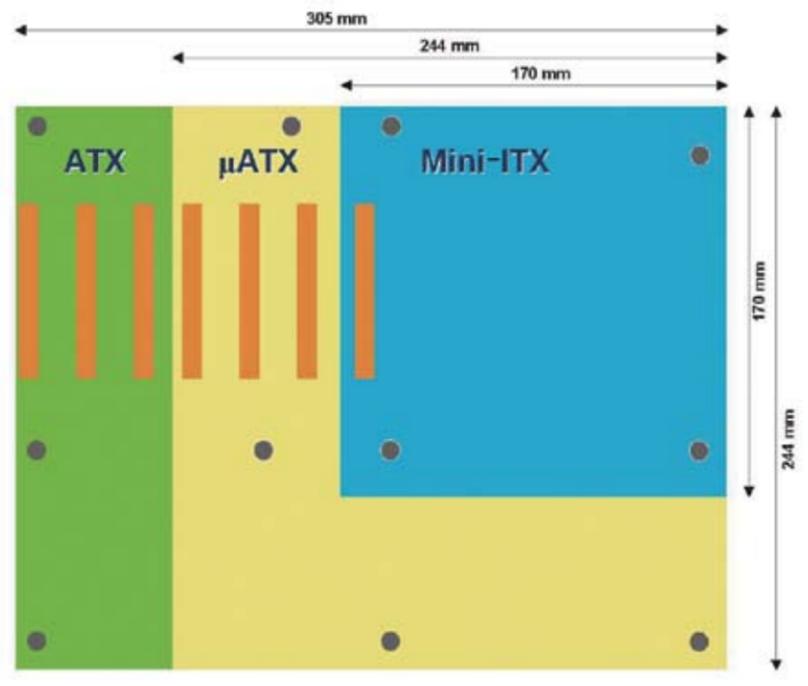
This is seconded by Renato Damele, Technical Manager, from Irene Sr. "I see a lot of marketing activities from Advantech. I receive newsletters, brochures, promotional materials regularly and I was also invited to participate in a DTOS Solution Forum. I appreciate that these activities are extended to established customers such as Irene. It shows a commitment to customer service."

As Advantech is about to enter its second quarter-century, many of its global partners are holding high expectations for their future endeavors together. They expect Advantech to make even greater strides in the development and manufacturing of premium-quality, high-performance computing platforms, while maintaining its commitment to corporate teamwork and customer service. With the support of its partners, Advantech will continue to strive for excellence in building a trustworthy brand that is recognized around the world. ■

# Industrial Multi-Core Performance in a Full Range of Form Factors

Industrial-grade computing platforms that combine flexible customization services with high product longevity, the right level of computing power, and a range of industry-standard form factors are now available and have been enthusiastically accepted by every market.

By Linda Tsai, Product Manager of Industrial Motherboards, Advantech Embedded ePlatform Organization  
Images provided by Advantech



Having declared an end to the clock-speed race, Intel is shipping multi-core processors that deliver parallel execution of multiple software threads. By enabling energy-efficient performance and more efficient simultaneous processing of multiple tasks, multi-core processors mark the end of power-hungry processors that have negative impact on system cost,

reliability, and board size. This architectural change enables higher levels of performance, power efficiency, and reliability for embedded, storage, and communication platforms. The performance-per-watt advantages are best seen in mission-critical applications such as test and measurement, medical and machine imaging, and gaming. Customers either choose dual-core

processors and dual-channel memory for the highest performance, or they choose scalable boards supporting one or two processors for price/performance differentiation.

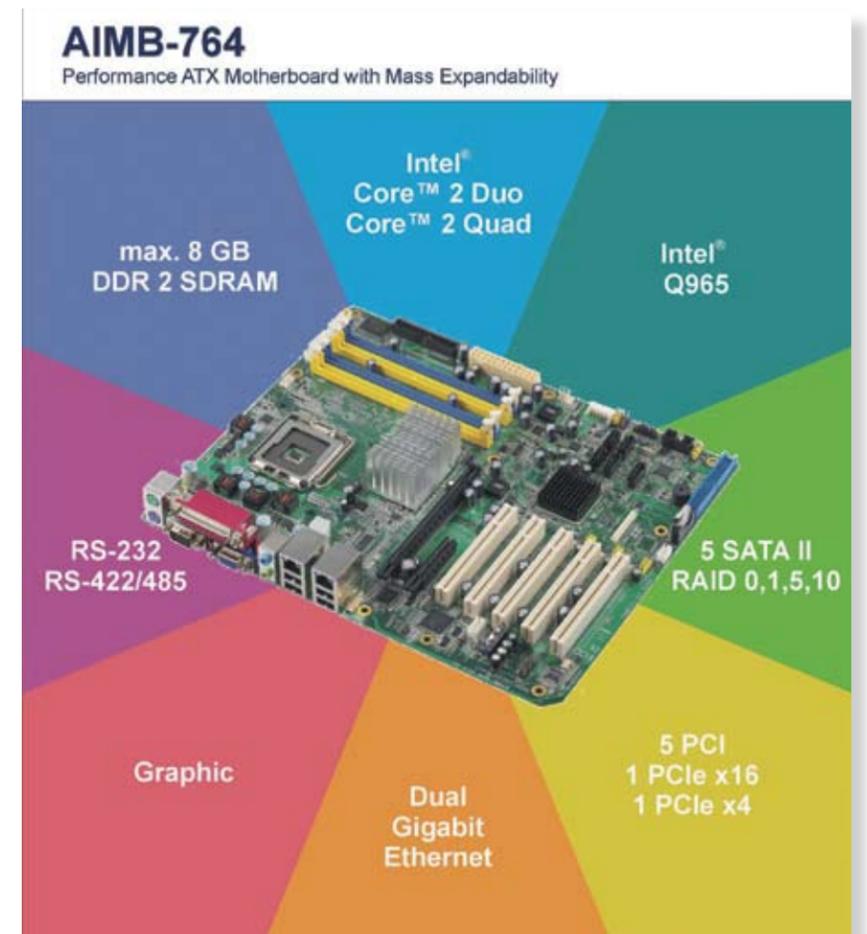
#### Complete Product Range from ATX to Mini-ITX

Advantech supplies a series of standard and special solutions for both

and industrial applications. The major form factors offered for both types of board applications are ATX (305 x 244 mm), which is the largest board with the longest history; MicroATX (244 x 244 mm), the medium sized board; and Mini-ITX (170 x 170 mm), the smallest and latest format. Each form factor supports a different performance class and each one offers a suitable solution for specific applications. These standard formats offer many advantages over custom sizes. Standardized sizes ensure easy compatibility with readily available enclosure solutions for all applications. The mounting points are identically arranged for all standard boards, simplifying installation while enabling quick upgrades to new boards. Since most interfaces are directly implemented on the boards, elaborate and expensive wiring is unnecessary. As with the standard enclosures, the use of standard ATX power supply units enables quick and easy optimization and the most extensively tested power supply unit may be selected to suit every scenario.

#### Industrial Grade Motherboards for Critical Missions

Consumer motherboards are poorly suited for industrial use since they usually do not meet the special requirements of industrial environments. First, an industrial board must function reliably for a long time in a harsh environment. Industrial motherboards are built to withstand high shock and vibration, while functioning through an extended temperature range. Strict version control guarantees that industrial boards function consistently and reliably. With version changes, extensive compatibility tests are performed to guarantee that a new board will function exactly like its predecessor. Long-term availability of components is crucial so that longevity can be guaranteed for at least five years. All these measures ensure that the one-time investment in a new system will continue to return benefits for the long



term. Advantech also offers a customization service to deliver an optimally suited industrial motherboard for any particularly challenging application.

With consumer ATX motherboards, graphics are often implemented via an extra PCI card. This increases system flexibility but increases costs. With industrial motherboards, by contrast, the graphics are usually integrated, guaranteeing a minimum 3- to 5-year product life cycle. Industrial ATX motherboards offer more flexibility for both legacy expansions and new, faster connections. With the aid of riser cards, industrial motherboards can also be installed in 1U or 2U enclosures.

Usually only one Ethernet interface is available on consumer MicroATX motherboards, but industrial MicroATX motherboards offer two Gigabit Ethernet interfaces. Moreover, extra serial interfaces help support the many

external devices that industrial applications often require.

Consumer grade Mini-ITX boards offer only minimal serial or parallel interfaces, mainly because USB interfaces have become predominant for consumer applications. However, legacy device interfaces are often used for industrial applications. CompactFlash and MiniPCI expansion slots are also required by many industrial applications, to support robust media in harsh environments. Such interfaces are not always available on consumer grade units. While power consumption is not so important with consumer applications, it can be the most critical factor for practical industrial applications. Low power consumption is especially demanded by embedded solutions. Being fanless, low power solutions have no moving parts, so reliability and service life are significantly increased.

**Mini-ITX – Highly Integrated Compact Motherboards**

Mini-ITX boards are designed with rich functionality and reliable performance in a small footprint that measures just 170 x 170 mm. These highly integrated platforms feature low power consumption of less than 100 watts, and have one basic expansion slot. They are ideal platforms for fast-emerging markets in which compactness and power efficiency are required, such as information kiosks, POS terminals, lottery systems, gaming systems, and many others.

Advantech offers a complete spectrum of Mini-ITX boards in the AIMB-25x series. At the entry-level on the performance scale, fanless systems offer superior reliability. Replacing an existing system is no problem, since the same mounting points and standard ATX power supplies can be used. The cost of the entire system is low and a large number of interfaces are already integrated into the board. PCI, Mini-PCI, and PCIe expansion options are available. The manifold possibilities for connecting dual-display via TV-Out, DVI or LVDS interfaces leave no requirement to chance.

Several applications are ideally suited for the Mini-ITX board. All of them benefit from space- and power-savings. All units are supported by powerful multi-core processors. For example, automated cash machines require a fanless solution for quiet operation. The diverse interface configurations available on industrial Mini-ITX boards can connect many components, and here, serial interfaces are specifically required for control technologies. KIOSK and POS applications usually have the same requirements as ATM cash machines, and connecting a second display may be necessary too. While gaming applications may not require quiet fanless operation, they must be compact and feature graphical and multimedia capabilities. Gaming also requires extensive interface support. Special graphics and dual displays are the main features needed for digital signage applications. In contrast to other applications, wireless LAN operation is essential for covering the growing trend in digital signage. Here, too, fanless solutions are helpful.

One great Mini-ITX solution from Advantech's wide range of products is the AIMB-256. The Intel® Core™ 2 Duo processor line, along with the GME965 chipset, enhance AIMB-256 performance. Up to 4 GB of SDRAM is supported for more complex applications requiring high capacity memory bandwidth. Rich I/O interfaces supported by the AIMB-256 include four COM ports, eight USB ports, 1 PCI, GPIO, and Dual Gigabit Ethernet ports. The variety of display selections includes DVI, LVDS and CRT video outputs, with dual display capability.

The AIMB-256 is one of the most all-inclusive Mini-ITX multi-core boards on the market today.

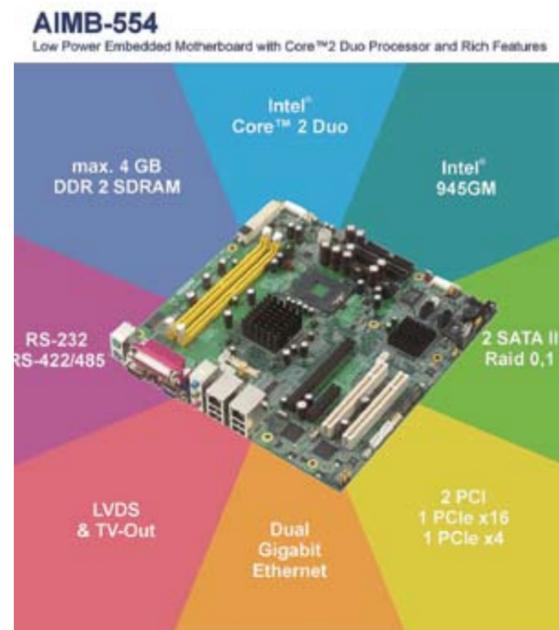
**MicroATX – Best Price/Performance**

Measuring 244 x 244 mm, Micro-ATX boards are well-integrated, with balanced performance and expandability. Advantech offers a complete range of multi-core MicroATX motherboards. The AIMB-564 features superior computing with an Intel Core 2 Quad LGA 775 socket processor and a high capacity of up to 8 GB DDR2 800 SDRAM. Along with advanced Intel Q965 and ICH8 DO chipset, the AIMB-564 features massive storage capacity, with 7 internal SATA, and 1 external SATA connector on the rear panel for the attachment of an external storage device. Moreover, the fully featured I/O set includes 10 USB, 2 IEEE 1394, 1 COM, 1 Gigabit Ethernet, and expandability for PCI and PCI Express cards.

**ATX – Rich Performance and Expandability**

Measuring 305 x 244 mm and supporting up to 7 expansion slots, ATX boards are built for servers and high-end markets. Advantech has a wide product offering in the AIMB-7xx series. At the top is the AIMB-764 powered by an Intel® Core™ 2 Quad processor with the Q965 chipset. Up to 8 GB of GDR 2 SDRAM supports the most demanding applications. Two Gigabit Ethernet interfaces, five SATA II, five PCI, one PCIe x16, one PCIe x4, one RS-232 and one RS-422 / 485 interfaces permit nearly unlimited extension possibilities. This unit also features RAID 0 and 1 or 5 and 10.

Advantech is the leading ePlatform service provider, and we offer the most comprehensive multi-core platforms in all the most important and practical form factors. Our renowned industrial grade reliability, extended product life cycles, and localized customization services are finely adapted to satisfy our customers' most critical needs. ■



# Compact Embedded Computers with Mini-ITX Motherboard



Trusted ePlatform Services

**ADVANTECH**

## New Innovative Industrial Design

Advantech's new ARK-6000 series of Compact Embedded Computers offers both a system and barebone solution, designed for the smallest Mini-ITX system in the market. Featuring many innovative industrial designs from ruggedized handle to bidirectional mounting options, the ARK-6000 series offers greater flexibility for mission-critical embedded applications.



- ARK-6310**
- Intel® Core™ 2 Duo Mini-ITX Embedded System
  - Fanless, Noise Free, Low Power
  - Support One Mini-PCI slot
  - One Side I/O Access from the front
  - Anti- Faulty LED indication and Anti-Vibration HDD bay
  - Wall, Table, and VESA mount, Ruggedized handle



- ARK-6620**
- Pentium® 4/Pentium® M Grade Mini-ITX Chassis Kit
  - One Side I/O Access from the front
  - Unique power cord hook design
  - Anti- Faulty LED and Anti-Vibration HDD bay
  - Wall, Table, and VESA mount



- ARK-6610**
- Pentium® 4/Pentium® M Grade Mini-ITX Chassis Kit
  - One Slim CD/DVD-ROM Drive Bay
  - Unique power cord hook design
  - Anti- Faulty LED and Anti-Vibration HDD bay
  - Wall, Table, and VESA mount



- AIMB-240**
- Mini-ITX Motherboard - Intel® Pentium® 4-based with 6 COM & Dual Ethernet Ports



- AIMB-251**
- Mini-ITX Motherboard - Fanless Onboard Intel® ULV Celeron®-based with Dual Display Options

# Advantech Communications & Networking Sector on the Fast Path to Convergence

Advantech provides mission critical hardware to the world's leading telecom and networking equipment manufacturers. Whether it's wired or wireless, at the core or the edge, Advantech's products are entrenched in the networking infrastructure equipment our world's communications depends upon.

By Paul Stevens, Advantech Telecom Sector Marketing Director  
Images provided by Advantech



Our Blade Computing Division, with an extensive CompactPCI system deployment base, designs both standard and customized products for AdvancedTCA, AdvancedMC and MicroTCA systems. We team up locally with customers to evaluate project requirements, share design knowledge, and develop optimized solutions together. Our Network Application Platform Division shares the same principles; engineering x86, network processor, and FPGA designs into customized tabletop, 1U and 2U platforms for the world's leading brands in Network Security.

As Advantech brings together the core competencies of our Blade Computing Solutions and Network Application Platforms, it mirrors the trend in the market of convergence of baseline technologies and platform scalability. The combined products provide a wider range of choices for designers of the next wave of Telecom, Networking and Security appliances. Advantech is in a unique position at the forefront to deliver technology which will ensure fast and secure global communications.

## Convergence is everywhere

Voice, data and video networks are converging around the Internet Protocol. Because telecommunications and IT networks were originally built on separate, disparate technologies, it used to be both complex and costly for service providers to implement new services. Today, video, voice and data are simply applications which can run on standard IT servers. Service providers no longer have to rely on customized hardware to create new services but can create customer value using software applications.

As new multimedia services drive explosive growth and revenue, the use of open systems and Internet-based technologies will dramatically reduce capital and operating costs. In addition, these technologies can take advantage of security appliances to provide firewall protection, anti-virus and spam filtering, intrusion detection and prevention, and other factors to mitigate risk.

## Synergy, Scalability & Cost Efficiency

Convergence has stimulated synergy between Advantech's Network Application Platform Division and Blade Computing Division to propose a scalable solution spanning tabletop appliances, 1U/2U rack mount appliances, and blade computing elements; for small-to-medium, to large enterprise data centers and core networks.

While our dedicated appliances target customizable, white-box requirements for cost effective large volume deployment, our ATCA, CompactPCI and MicroTCA blades offer a modular, open-standards approach. As MicroTCA is expected to bring greater economies of scale over time, it will become a key technology for hardware platform convergence by offering common re-usable Advanced Mezzanine Card technology on a wide scale.

## Custom Design Expertise and Open Modular Building Blocks

Our Networking OEM customers are extending their reach into the en-

terprise, data center, and core network computing space. Advantech's cross-industry expertise in appliances, servers and blade computing elements makes us the ideal technology partner. Dedicated software development teams provide board support and Linux support packages with pre-tested middleware, for remote platform management and high availability requirements.

The telecommunications industry is evolving as equipment manufacturers and modular communications platform designers are repositioned along the telecommunications value chain. Advantech provides foundation building blocks in the form of standard off-the-shelf computing and management blades designed to meet the needs of Telecom Equipment Manufacturers (TEMs). These building blocks enable our TEM partners to evolve into Telecom solutions providers by focusing their resources on providing differentiated services, such as application development and network management.

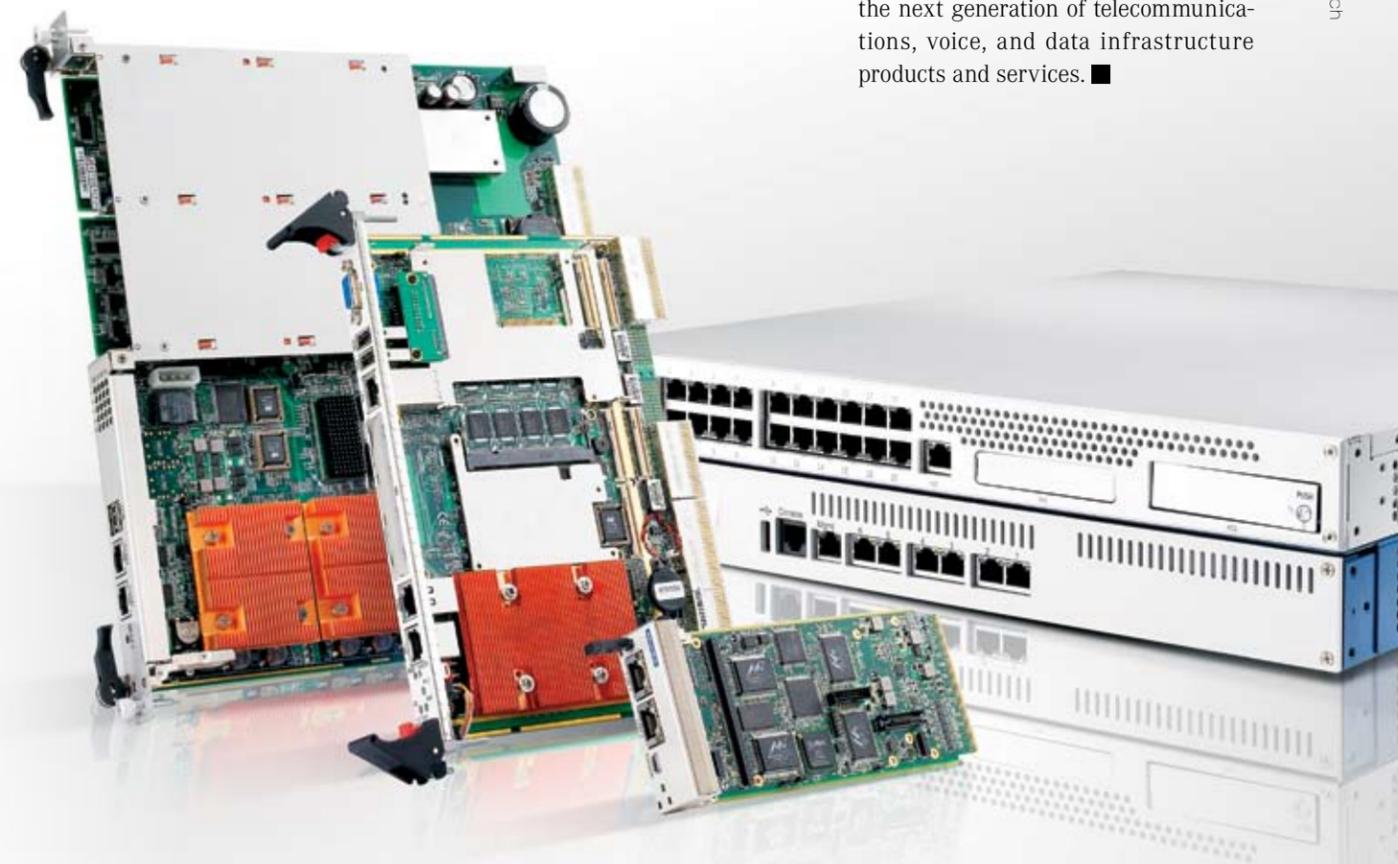
## Integration and Partnership

Our Blade Computing Division designs and manufactures blades in AdvancedTCA, AdvancedMC and CompactPCI form factors. We provide solid and timely technology designed to meet stringent industry standard requirements such as NEBS and ETSI. We work hand-in-hand with system integrators and TEMs during the pre-certification phase of their integrated platforms and when standard product adaptation is necessary, Advantech has the experience to do so in a timely manner. As AdvancedTCA and MicroTCA ecosystems evolve, not all required blade-level functions or elements are available as off-the-shelf products. That's why we have invested in geo-regional R&D teams to accompany our TEM partners in design-to-order-services (DTOS). Our DTOS organization offers same time-zone project management for the development of custom or accelerated designs based on our IP design libraries.

## Strong Ecosystem

As TEMs turn their attention to adding value through differentiation, it is imperative that the ecosystem: hardware platforms, operating systems and high-availability middleware components, all work together. At Advantech we collaborate closely, and partner with, ecosystem hardware and software vendors to ensure interoperability at the earliest possible stage in the design cycle, developing solutions both internally and in collaboration with the main industry players. In this way, true time-to-market advantages can be realized.

The shift to modular computing and communications platforms is underway. Advantech is firmly committed to helping the telecommunications industry make a smooth transition to modular platforms, by working closely with the strong worldwide community of hardware developers and software solutions providers. We believe that through partnership and standards, the industry can leverage enormous horizontal economies of scale to drive down the overall development costs of the next generation of telecommunications, voice, and data infrastructure products and services. ■



# Carrying Serial Devices into the Future

First in the laboratory and then on the plant floor, serial digital communications were the earliest means of data transmission from device to device. In the lab and on the test bench, digital data was first carried by RS-232 cables. RS-232, or Recommended Standard 232, was an EIA standard for asynchronous data communication that provided bidirectional communication between two devices.

By Paul Wacker, Advantech Industrial Automation Group  
Images provided by Advantech

From the early 1970s, IEEE established a standard for multi-drop serial communication that was similar to RS-232, but would allow up to 15 devices to communicate with each other over the same cable. This is known as RS-485.

## Serial Communications on the Plant Floor

On the plant floor, RS-232 became common as devices such as PLCs required programming, and it became necessary to transmit data to computers running spreadsheets and databases for data collection and analysis. But RS-232 has significant drawbacks as a means of communicating between many devices. RS-232 is limited to a dedicated connection, with one PC or host per serial device, and with a physical limitation of 50 feet from device to device. Another standard, RS-422, provided for longer distance communications, up to 3600 feet, but was still extremely limited. The RS-232 standard provided for communication speeds that are quite slow in comparison with modern data transmissions speeds: 300 to 9600 bits per second, as opposed to, for example, Ethernet communications, which may be up to 10 Gigabits per second. The multi-drop version of the RS-232/422 standard, what became RS-485, was marginally faster and could have several slave units connected to a single master. Neither RS-232 nor RS-485 are scalable to the level of multi-device communications over an entire factory floor.

## RS-232: Still a Common Interface Today

Despite these significant drawbacks, asynchronous serial communication connections are still the most commonly used industrial device interfaces. Common uses include

configuration and setup, operator interface (HMI), production setup (batch download), and even production monitoring, as well as troubleshooting and diagnostics. Serial port outputs are common on a wide variety of devices, from clean room particle counters to vision systems, marquee displays, scales, scanners, and of course PLC's and PAC's on the plant floor.

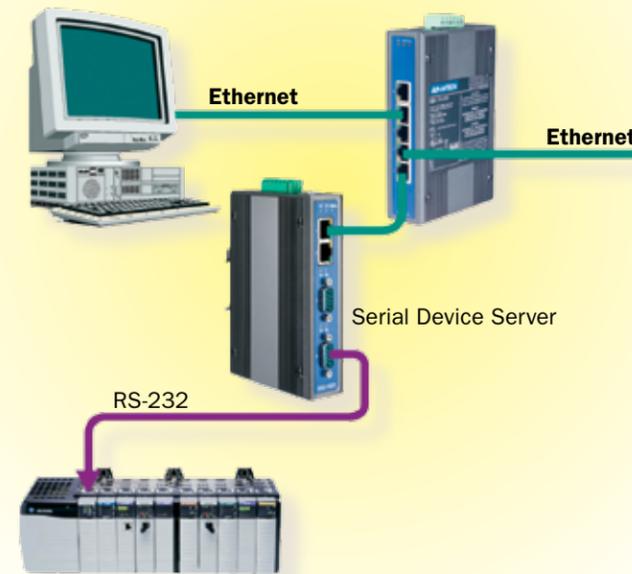
## Ethernet Networking is the Solution

The advent of Ethernet communications and the ubiquitous use of Ethernet on the plant floor, the laboratory, and in the test lab have made it possible to solve the distance and interface limitations of serial devices. Instead of the unique one cable-one device system required by even RS-485 Modbus systems, Ethernet permits the use of servers and gateways through which the serial data is transported over the Ethernet network to the recipient host.

## Transparent Access to Legacy Devices with Serial Tunneling

This is made possible by serial tunneling. Serial data is encapsulated in IP packets and transported over the Ethernet network, just as if it were standard TCP/IP data. Operation is generally transparent to both applications software and connected devices requiring few if any changes, and transfer is bidirectional - data can be both sent and received. One of the reasons for the continued success of the Modbus protocol is the very early port of the protocol for use in a TCP based Ethernet network. Tunneling permits flexible configurations like serial device to serial device, PC to serial device, and serial device to PC.

## The Multifunction Serial Device Server



## Extend Serial Connections over IP Networks with Serial Tunneling

Serial device servers have several modes of operation, depending on the application. These modes include: TCP Server (Polled Mode), TCP Client (Event Handling), Pair Configuration (Peer-to-Peer), modem emulation, and Modbus gateway (Modbus/TCP to Modbus ASCII/RTU).

## COM-port Redirection for Legacy PC-based Applications

In TCP client/server mode, comport redirection software is installed on the host computer. Used with existing COM-port based Windows applications, the remote serial ports appear as a local COM-port, and there can be up to 255 total COM-ports per PC. TCP can be enabled as "server" for device polling, such as a SCADA system where RTUs are polled on a regular, time based system, or it can be enabled as "client" for supporting event-handling, where the remote unit operates on "report by exception" rather than on a polled basis. Applications for TCP server mode include some OPC servers, and other types of IP-aware software, while those for client mode include barcode or RFID scanners as well as RTUs.

## Easy Integration with Windows-based applications with COM-port Redirection

In Pair Configuration, or peer-to-peer mode, connection is initiated by each device server, with the IP address of each unit specified on a one-time basis at device setup time. The primary application for this configuration is the extension of a serial connection over LAN and even WAN network distances.

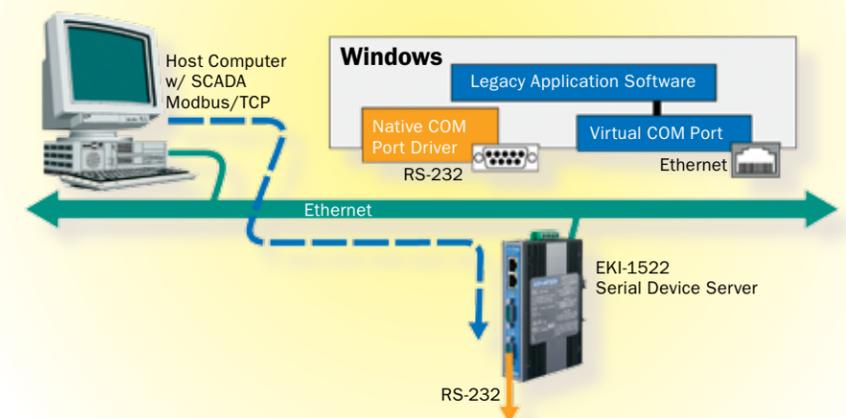
## Replacing Dial-Up Modems

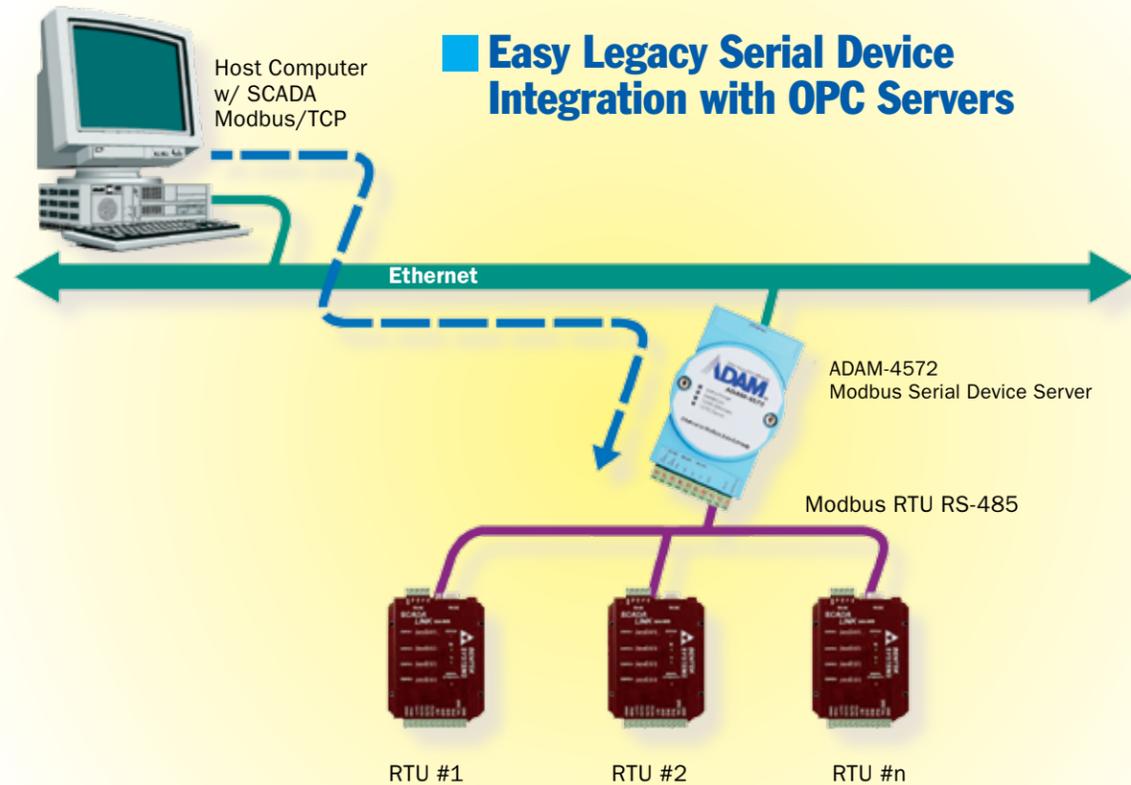
Device servers can even be used as replacements for actual serial dial-up modems. This permits the continued use of legacy modem-based applications such as dial-up SCADA. The device server selects remote devices by "dialing" or by "receiving a call." The device server mimics the communications strings of a legacy modem. For example, it might send a data string such as "ADTD192.168.2.22:5201" exactly as if it was dialing a telephone number as the modem was originally designed to do. This application can prolong the life of a legacy SCADA application, and can even save substantially with the ability to replace costly TELCO leased lines with broadband IP connections, and can improve performance of the system by increasing update rates as slow leased-line analog modems are replaced.

## Protocol Conversion for Quick and Easy Integration

The device server can also be configured as a Modbus gateway, converting Modbus/TCP on Ethernet to serial Modbus RTU or ASCII. This allows plant engineers to continue using legacy equipment and integrate it into a modern Ethernet network. While this type of gateway is limited to a total of 8 devices per gateway, it permits use of legacy SCADA and HMI applications that are either proprietary or impossible to economically upgrade.

## Peer-to-Peer for Extending Serial Connections





**Protocol Conversion Using a Modbus Gateway**

Device servers easily interface with OPC client/server systems over Ethernet. Modern OPC versions, including the newest, OPC-UA, support “serial encapsulation” of data and OPC servers can be configured to use device servers as OPC clients. Device servers can also be configured to operate over 802.11b wireless Ethernet LAN connections, so the limitations of wiring may be done away with completely.

**Remote Access Anywhere There is a Network Connection**

A common device server application is remote programming and diagnostics of serial communication PLCs. This application permits a host computer with COM port redirection to communicate over the plant Ethernet network with a serial PLC. This permits remote access to the PLC from any laptop or desktop PC anywhere, including wirelessly, and leverages the existing IP network infrastructure, instead of installing dedicated cabling—which may actually be impossible if, for example, the PC is located in a completely different facility.

**Minimizing Cabling Costs**

Serial connectivity with HMIs is another common application for device servers. In new installations, or when re-configuring an existing plant, significant cost reductions can be realized by using Ethernet enabled device servers instead of dedicated cabling to the HMI panels, and the HMI can be located where convenient for the operator, not where the limitations of serial cable lengths dictate. Serial displays such as factory marquee displays can also be device server-enabled and provide the same benefits as other HMI connections.

**Solutions for Serial Device Integration**

The use of device servers can provide the ability to extend both the life and the capability of serial devices on the factory floor, and leverage and converge existing serial infrastructure with also existing IP-based LAN/WAN infrastructure. Serial devices can be accessed from remote locations, including over wireless networks and even over the Internet – all that is needed is an IP connection. No longer is there the short-cable limitation of 50 feet for RS-232 and 3600 feet for RS-485 – the device server does away with cable limitations. Many devices can share one cable, and devices can be accessed from more than one location. Device servers can extend the life of serial devices indefinitely. ■

# Dual Networked Serial Device Servers for Seamless Communications



## EKI-1000 Serial Device Servers Provide Advanced Communications

- Devices can be dual-connected to Ethernet switches for unrivaled reliability
- Redundant multi-access configurations available based on user needs
- Automatic LAN failover to secondary/backup LAN connection
- Fulfills various needs through rich operation modes, such as; COM port redirection, and TCP&UDP server/client



# Man and Water in Amicable Symbiosis

The cornerstone of safekeeping our living environment lies in the proper preservation of our water resources. With high-tech know-how and the wide-ranging capabilities to back it up, Advantech has been flexing its professional muscle and is being very proactive in various environmental protection monitoring solutions, such as watching over rivers, embankments, dams, and water treatment plants.

By Sandra Kao Translation by Shannon Hu  
Interview with Mars Huang, Product Manager, Industrial Automation Group  
Images provided by Taiwan Digital Images and Advantech

Water has been arguably the most vital factor in the viability of human history. Almost every ancient civilization began near one or several eminent rivers. Four rivers in particular are regularly cited by scholars as being possible locations for the emergence of civilization since 5,000 B.C. These 'Cradles of Civilization' are: the Yellow River in China, the Nile in Africa, the Ganges in India, and Tigris-Euphrates in modern day Iraq. Water remains crucial to all humans, but its significance has gradually been phased out by overemphasis on technology and living amenities.

The award-winning documentary, "An Inconvenient Truth" focuses on the severity of the climate crisis. The film claims that the massive emissions of carbon dioxide from vehicles and continuing industrial advancements have triggered the collapse of ice sheets and ice cores, the elevation of global sea levels, and an astounding climate change across the world. The Earth's human inhabitants have been forced to look squarely at the menacing magnitude of ecological protection and environmental conservation issues.

For years, Advantech has been firmly involved in developing solutions for monitoring water resources and integrating data measurement and communications into advanced systems for water measurement, monitoring and conservation.

Water treatment solutions are ap-

plied to rivers, embankments, dams and water treatment plant management systems.

#### Water Level Monitoring Ensures Safety of Life and Property

Located firmly on the equator, Malaysia's climate is constantly hot all year-round. Though not located within typhoon-affected zones, Malaysia's coastal areas are susceptible to the ravages of rainstorms. To fortify their riverbanks, the Malaysian government inaugurated a monitoring system to track the changes in the water level within the river to protect the safety of its people and its public infrastructures. This system is preset with multiple emergency response measures: sound cards, a digital broadcasting system and an automated sluice gate shutdown mechanism. A message can be automatically broadcast to alert people to evacuate if the water levels are too high, then sluice gates are instantly adjusted to prevent flooding, ensuring people's lives and homes remain safe.

The State of Brunei also makes extensive use of Advantech's water level monitoring appliances. To keep a tab on the safety of lives in Brunei's conventional water villages, the local government set up a river water level monitoring system near the Brunei River. To remain as cost-effective as possible, the system economically consists of an ADAM-4500, a compact, stand-alone controller,

ADAM-4011D, and a thermocouple input module. By integrating GPRS communication modules from select subcontractors to conduct water level measurements, followed by data announcements via GPRS as to whether the water level has reached a red alert condition, the system can detect changes and decide on appropriate measures. Moreover, wireless GPRS communication helps scale back infrastructure and follow-up maintenance costs to secure a stable and cost effective system.

#### Water Quality Purification Improves Living Standards

Drinking water is an integral part of healthy living. Urbanites nowadays have to rely entirely on water treatment plants for access to safe, clean, drinking water. With that in mind, Advantech and a Japanese system integrator, Rex Tokyo, joined hands to build a water purification facility at Tokyo's Mitsugi Park by incorporating an Advantech-inspired "Solar Whirligig Beetle" monitoring installation, which continuously tracks the water quality of the lake (collecting the pH values in the storage tank and the changes in its composition), plus water level variations. Next, the appliance filters out the impurities and proceeds with other water treatment procedures, governing eight other water pumping stations that work to drain out the excess when the water level becomes too high.





Meanwhile in the Republic of Macedonia, situated on the Balkan Peninsula in southern Europe, sits Studencica, a publicly owned regional waterworks that has established fixed miniature monitoring stations serving all the intake nodes in water reservoirs in remote mountainous areas, as well as all the piping that guides the water to the treatment plant, and on into the city, readily tracking the water volume and quality at every piping joint. Advantech's ADAM-5510 is the centerpiece of every monitoring station, along with ADAM-4581 and ADAM-5050 modules that wirelessly transmit collected data to the monitoring hub, allowing for in-depth analysis, without requiring personnel to man the stations. This GSM network is erected on the most cost-effective budget possible to manage every branch monitoring station.

**Hydroelectricity is Environmentally Functional at Heart**

Hydroelectricity generation is usually possible in the remote mountain areas where plentiful water reserves are cached, but due to the challenging inaccessibility and craggy terrains of these locations it is not always practi-

cal to set up manned stations for both effective management of the power generation and conservation of the local ecosystem. Gongboxia Hydropower Station is located in the Qinghai water supply area around upstream Yellow River. Gongboxia can remotely monitor quality of its water reserves while providing over a million kilowatts of electricity. It is an inaugural construction project for the northern China passageway, transporting electricity generated in the West to the East, and the fourth million-KW hydropower station along Longyang Gorge to Qingtong Gorge on the upper reaches of the Yellow River. The Chinese government installed an environmental monitoring system to track the temperature, humidity, and safety conditions in the area. In addition to the central control room, many unmanned stations also dot this particular stretch to support the operations of the central control room and the power facilities. In the event of any disaster, such as an unpredicted swelling of upstream stretches, or pollution caused by pig farming or fish poisoning, or even fires, these branch facilities immediately alert the central control room to issue warnings, and call for rectification and reinforcements.

The monitoring system at Gongboxia Hydropower Station features the ADAM-5510KW and a SoftLogic controller to screen water resource conditions. It can operate independently and/or support serial ports, including the RS-485 communication interface. It also periodically collects environmental quality data and immediately raises a red flag should there be any alarm conditions, notifying personnel in charge to react and contain any possible calamities.

**Collective Endeavors for a Greater Future**

Though water resource management and protection concerns come in many forms, their feasibility and future are contingent on professional and well-honed water quality commands and a sensitive eye to water level variations for further maintenance and management tasks. Advantech boasts a versatile array of measurement systems - diskless, fanless, power-effective box computers that operate without constant manned maintenance. Wireless interfaces render these perfect for installation and application in sparsely populated, mountainous areas, river basins or reservoirs, dams, even peculiar settings such as water purification plants. Advantech can customize its professional services and products to provide the perfect fit, in accordance with application and power consumption concerns, and come up with suitable controller models and systems.

Advantech's environmentally conscious solutions and facilities continue to monitor water resource accommodations across the world. These successful formulas are some of the greatest helping forces in safe-keeping the natural environment, allowing mankind to hope for a harmonious symbiosis between ourselves and the Earth. Advantech also hopes to encourage others to follow suit in jointly protecting our Blue Planet. ■

# Open Your Control System to Advanced PLC Control Tasks



## High End Embedded Computing Power with Integrated SoftLogic and HMI Functions

- Combining High Performance PC-based Computing with a Robust PLC-based Design
- IEC 61131-3 Standard Programming Tool for Saving Manpower and Maintenance
- Open Architecture and Modularized Design for Complex Control and Enterprise Network Integration



**ADAM-5550KW**  
Open PAC System  
8-slot Programmable  
Automation Controller



**ADAM-5202**  
2-ring AMONet Master  
Module



**ADAM-5030**  
2-slot SD Storage  
Module



**ADAM-5017P**  
8-ch Analog Input  
Module with  
Independent Input  
Range



**ADAM-5018P**  
7-ch Thermocouple Input  
Module with Independent  
Input Range

# Time-Saving Kiosks Add Convenience to Life

Computer kiosks have replaced many tasks traditionally done by people, while at the same time providing many conveniences. As the public has developed a greater level of trust in these kiosks they have come to enjoy and expect more services. Increasingly, more versatile service offerings are being developed and packaged in kiosks, which represent an attractive solution, ready to provide assistance.

By Sandra Kao Translation by Shannon Hu  
interview with Mr. David Wu at Kenttech Digital Tech, Taiwan  
Images provided by Top Photo Group and Advantech



Nowadays you can walk into any convenience store and purchase tickets to many tourist destinations or to art events by pressing a few simple buttons at the information service kiosk. Or you can walk into the train station and on impulse, have your photo taken and developed while you wait, from a self-service photo booth. These convenient interactive kiosks make it easier than ever for us to have access to an ever-expanding variety of information and services.

In recent years, many industries and professions have benefited from these kiosks by taking advantage of their ability to provide innovative display services, information exchange, e-commerce, and merchant activities. These easy to use kiosks have sprung up in every corner of our daily life, providing us with convenience and faster turnaround.

## Precise Positioning at High-end Segments for Better Profitability

What is little known is that the development of the kiosk was punctuated by many snags when it first appeared eight years ago. Advantech's continual involvement in kiosk innovation has been important throughout the myriad of kiosk application makeovers and studies, which have come in response to the needs of a

diverse set of industries.

The reputation of Advantech's reliable and highly compatible motherboards as a key foundation platform remains unchallenged. Advantech actively collaborates with its business partners in the kiosk development market and has proven to be the most trusted motherboard supplier, claiming more than 70% share of the market. Advantech motherboards provide high performance, stability and dependability over the long haul, minimizing concern from business partners over product reliability.

And by means of continued, committed innovation and development efforts, Advantech has systematically fashioned a business model for specific kiosk customization designs. For example, Kenttech Digital Tech Co. Ltd, after years of building a name for themselves in the OEM and ODM market, has been catapulted into the upper reaches of the advanced kiosk market, boasting more than 75% of large system market share, and pioneering new concepts in multiple, fresh applications.

In order to differentiate itself in the market and blaze a unique trail among fiercely competitive, price-slashing rivals, Kenttech Digital renewed its corporate commitment in choosing high quality product materials, and maintaining the company's higher-priced standards. More significantly, Kenttech Digital developed a unique service and support strategy to thoroughly resolve critical issues related to kiosk malfunctions, and improved efficiency through maintenance.

## Competitive Niche with Quality and Service

A lot of large kiosk systems are installed outdoors, exposed to the elements, and lack technical support, which really put them to the test. To safeguard the interests of corporate customers and the experience of users, the kiosk frames have to be built with trustworthy, industrial-grade materi-

als, touchscreens, and motherboards, manufactured for the tough job ahead. Advantech's motherboards are positioned to ensure optimal product serviceability and duration.

Another trend in the market is the standardization of kiosk specifications around various functional modules, which streamlines customer procure-

## Help is at Hand!



ment procedures and follow-up maintenance routines. Despite the slightly higher purchase cost, this standardization rewards customers with higher quality assurance and better service. And in fact, the purchase price is offset by reduced expenditures on repair and replacement

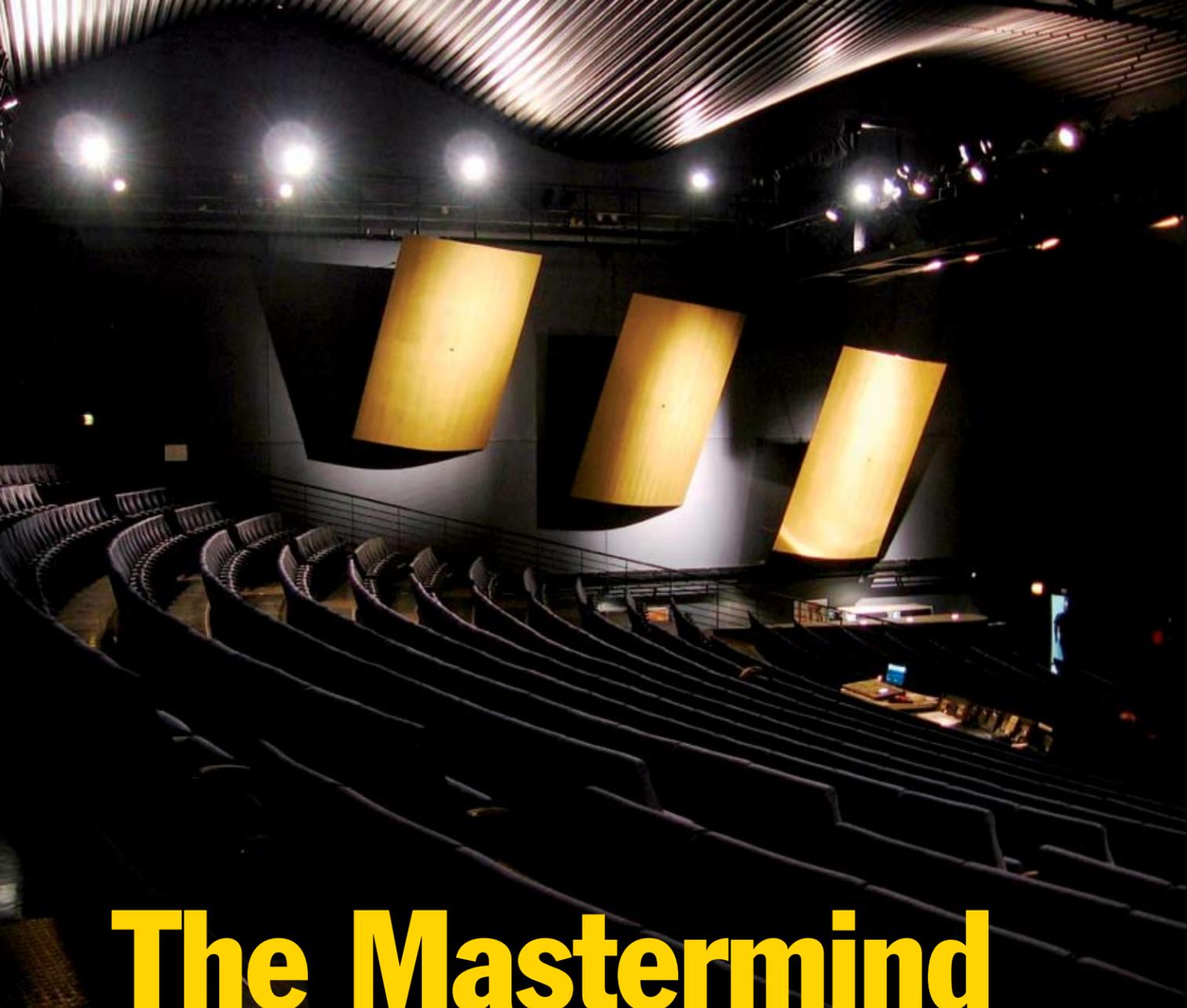
## Continuous Innovation Fashions Exclusive Applications

In addition to photo booths, photo print kiosks, ATM's, building map and inquiry stations in government buildings and hospitals, and self-service ticket dispensers installed in major performance venues, many people probably have had the experience of walking into a supermarket, not finding a store clerk and not knowing the price for a particular item. Now, almost every well-known supermarket chain has rolled out specially designed "price look-up stations," allowing customers to swipe the barcode on an item to find the selling price.

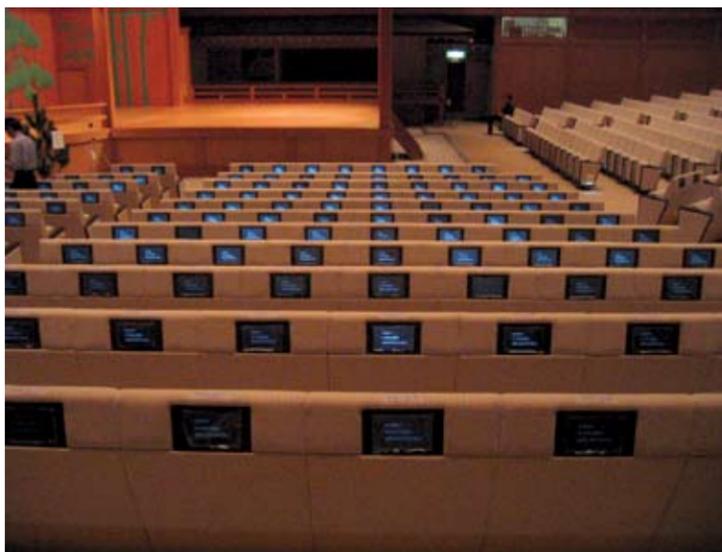
Next generation kiosks have also taken on non-conventional styles and features. Large touchscreen displays are becoming commonplace at automobile and real estate showrooms, featuring interactive information displays advertising the attributes and advantages of their products. These new appliances also serve as efficient marketing assistants, gathering customer information through lively, interactive displays.

The marriage of WiMAX and Wi-Fi has broken the bonds of kiosk installations and given them new mobility. Greater versatility in kiosk development will give birth to an amazing array of fantastic applications as wireless is incorporated into these newly dubbed "mobile service stations". China Airlines has just launched "Mobile Counters", which helps passengers make flight seating arrangements, label luggage, and check-in via wireless connections, minimizing long lines by the ticket counter and shortening wait time with convenient, functional service.

In the near future kiosk mobile counters will extend into medical, mass media and e-commerce services. How much easier this will make our lives will perhaps be best measured by the conveniences they bring. ■



# The Mastermind behind the Performance



During a stage production, be it traditional or avant-garde, it's possible for audiences to feel disconnected and miss the subtle nuances of the performers. Here, digital signage comes to the rescue—strengthening music, lighting, and other theatrical effects; creating an artistic ambience an audience can easily get into.

By Cathy Lin Translation by Shannon Hu  
Interview with Pinghsiu Kuo, Product Manager of Digital Signage,  
Advantech eServices & Applied Computing  
Images provided by Netherlands Board of Tourism & Conventions  
and Advantech

In Japan's National Noh-gakudo Theater, the audience sits concentrating on the performance on stage. All are quiet, listening to the cast chanting and dancing to the rhythmic drumbeat and flute music, creating a mystical, otherworldly and dynamic performance. Cindy sits in the back row holding her breath and watches the presentation. The back of the seat in front of her is fitted with a specialized, small screen on which the dialogue of the chanting is shown, drawing her into the mood the ensemble is conveying. She finds that the Noh performers are much easier to understand than before.

Next, there is Bryan, who's traveling around Europe. He sits in an opera house enjoying a fantastic play. Between scenes, and the raising and drawing of curtains, Bryan finds himself fascinated by the instant, total transformation of props and backdrop settings on stage, the bright and colorful lighting changes, and the stage elevation changes.

More than a handful of people have been privileged enough to see such elaborate stage performances. Live shows such as the ones just mentioned have been complemented in the past few years by high technology. Advances in multimedia digital signage players and fanless industrial computers have increased the enjoyment of spectators for performances of every kind.

## Low Heat Dispersion Design

The National Noh-gakudo is situated in Kyoto. Noh performers are trained to perform in very traditional style, creating highly original Japanese chanting operas. The need to have a subtitle service has arisen out of the need to assist foreign tourists, and even local Japanese audiences, to improve the depth of understanding of this traditional art form. Advantech's Industrial Applied Computing Group product manager Guo Bingxiu highlights the example of the applica-

tion in the National Noh-gakudo. The DSA-2100A Digital Signage Player is installed in every one of the 700 seats in the theater and paired with a 7" LCD. In other words, every member of the audience is supplied with an individual screen, free to choose subtitles in their preferred language - English, Japanese or Chinese. The solution meets the needs of local spectators and foreign tourists alike.

The DSA-2100A is a compact, sturdy and heavy duty digital player that supports MPEG 1/2/4 and DivX 5.0 video formats, JPEG and BMP graphics, with full-screen or multi-frames feature to create a variety of application effects. More importantly, the DSA-2100A has a fanless, anti-shock design that is highly stable even in unfavorable surroundings. Its heat emissions are extremely low even when placed in the backside of a seat, so the audience watching the play won't experience any discomfort. The DSA-2100A also features wireless LAN support and automatic play-on-power-up.

## Topflight Performance Despite Adverse Circumstances

The final competitions for the 2007 Eurovision Song Contest concluded in May, in Helsinki, the capital of Finland. Operating for over 51 years and billed as one of the longest-running television programs in the world, Eurovision, as of 2007, has enjoyed as many as 49 member countries participating from across Europe; it is also one of the most-watched non-sporting events in the world. A large world-wide performance like this is highly visible globally, and scrutinized closely by the international community with no toleration for mishaps. So, during the 2005 Eurovision Song Contest in the Palace of Sports at Kiev, the capital of Ukraine, Advantech's UNO-2160 embedded fanless industrial computer was chosen to govern stage lighting effects and screens.

Industrial Automation Group product manager Ye Changtai notes that breakdowns are bound to plague computers that control large machineries backstage due to adverse environmental conditions, limited space, poor ventilation, humidity and dust. Therefore, the fanless, wireless, non-disk UNO series is perfect for such operating conditions, as it consumes low power, disperses heat easily, and is seamlessly designed to ward off dust. The UNO series supports Linux-ready solutions and provides friendly and simpler user interface to bring to life and transform stage effect operations.

## Multifaceted Applications Boost Viewing Pleasure

After the National Noh-gakudo's success story, Japan's New National Theatre and the National Bunraku Theatre will also follow suit to install similar Advantech subtitle displays in 2008 to 2009. The development of these subtitle display systems is predicted to be even more elaborate: for example, the LCD will be enlarged to more than 10" and powered with touchscreens to increase audience interaction. More advertisements, news, short clips, theater introductions, and upcoming performances will be programmed into the displays to spice up and entertain the spectators during intermissions.

Stage control system applications like those used in the Ukraine Eurovision Song Contest have begun to gain popularity in opera houses, stages, and theaters in Europe, the US, and other countries. A higher level of collaboration with system integrators also promises to offer continuous improvement, delivering complex stage arrangements with a minimum of labor, while ensuring maximization of artistic and creative endeavors. A digital theater, for example, could be created to reduce stage space needed yet optimize special lighting effects. Watching artistic presentations nowadays is being redefined more than ever. ■



**Erik Smulders**  
Order Processing Supervisor

When I was asked to write something in My Advantech I was initially quite worried; what on Earth could I write that would interest others? Yet at the same time I was also flattered to get this chance. As you see now, the flattery eventually conquered my worries and I proceeded to write.

I was born in 1979 and raised in the Netherlands. Although I love to learn, I could never enjoy myself in school and I started working when I turned nineteen. In my free time I enjoy reading books on philosophy, religion, magic and anything related to these subjects. I am a big science-fiction fan and have quite the collection of black-metal music. I joined Advantech's European Service Center in the year 2000 as a warehouse operator. After about two years I transferred to the RMA department. Another two years later an opening appeared in Order Processing and in a short time I had filled the empty seat. And I must have done something right because just recently I have been promoted to OP supervisor, a fantastic career opportunity that I intend to grasp with both hands.

Despite the fact that I see my colleagues nearly every working day, I often enjoy going out with some of them during the evenings or weekends. In doing so I have learned that after dinner and a few beers it's far easier to build working relationships. Even if the evening itself is no fun, sharing a headache the next morning can really bring people together!

I'm Hector Lin, Manager of the North American Product Management team for the HMI and UNO line, based in Cincinnati, OH, USA. I was born and raised in Taiwan and later came to the United States to attend Oklahoma State University where I received my degree in Industrial Engineering. I am married to Miko Hsaio and have twin girls, Michelle and Emily who were born in 2006.

In 2005, I relocated from Advantech Taiwan to Advantech's Cincinnati office. The thought of learning a new culture and the challenge of working in an international environment was exciting. The cultural differences both at work and outside of work are definitely a good learning experience for my family. Our friends in America have shown us great hospitality and involved us in their traditional holiday activities.

Here in the US, I have had the opportunity to work in different vertical markets I would not have experienced had I stayed in Taiwan, such as transportation, military, and oil and refinery. Advantech, as a global company has the advantage to provide employees opportunities to work in various countries and I feel privileged to have had this experience.

I have learned that to succeed in different cultures, I must have an open mind and work well with my team members. Each country has different working styles, cultures, and even ways to celebrate holidays. By embracing these cultural differences and working styles, I am able to bring the best out of the Advantech people around me. Together we are striving to reach the same goal.



**Hector Lin**  
N.American Product Management Manager

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# A Bavarian Dream

Advantech opened its European Head Office at the beginning of 2007 in Munich, one of the most important economic, transportation and cultural centers in Germany. Advantech consolidated its European functions of Finance, Marketing, DTOS, IT, and Customer Care under one roof.

By Monika Paitl, PR Manager, Advantech European Head Office  
Image provided by Advantech

Munich is the center of the German electronics industry and a renowned host to all worldwide electronics trade fair highlights. The Advantech European Head Office is located in the suburb of Feldkirchen in a modern and spacious building that also provides sufficient space for Advantech's planned future expansions.

## A Bavarian Dream coming true

During the opening of the ePlatform office in Munich in 2004, KC Liu, CEO of Advantech, explained: "I had a dream of one day opening an office in Munich. Today, it has finally come true." Today this dream continues, with the opening of the Advantech European Head Office in the beginning of 2007.

## Some facts about Munich

Munich is the capital of the German state of Bavaria, located on the river Isar north of the Bavarian Alps. Munich is Germany's third largest city after Berlin and Hamburg. The city has a population of 1.5 million inhabitants and the Munich metropolitan region is home to around 6 million people. The city's motto until recently, "Die Weltstadt mit Herz" ("The world city with heart"), has now been replaced by "München mag Dich" ("Munich likes you").

The city is one of the most important economic, transportation and cul-

tural centers in the Federal Republic of Germany, and also one of the most prosperous and successful cities in Europe. Among the 50 biggest German cities, Munich has by far, the highest economic power and quality of life. Therefore Munich is also one of Germany's most popular travel destinations with much to offer. The available mixture of cultural events, modern and urban city life, and nearby mountains and lakes promise to delight even the most experienced world travelers.

## Munich, Electronics capital of Europe

Today, Munich is regarded as the electronics capital of Europe. This development lies very substantially in the recent history of Germany. When Berlin became an "island" after the end of the Second World War, Siemens, the most important electronics company in Europe, moved its headquarters from there to Munich where it remains to this day. Afterwards, entrepreneur-friendly politics and Siemens' success story attracted many additional well-known electronics and new technology companies to Munich and Bavaria. Thus, along with the Siemens main research center, the essential activities of Infineon, GE, Sun, Motorola, Intel and Kontron have all relocated to Munich. In addition to all essential telecom providers, all new technologies such as medical technology, biotechnology, nanotechnology, the aerospace industry, and automobile industry are in and around Munich.

## Munich as main media city in Germany

Next to Cologne and Hamburg, Munich is the main media stronghold in Germany. All important electronics media companies are located in and around Munich making Advantech's path to them a very short and direct one, and allowing the easy building and maintaining of efficient media relations. In the electronics industry,

Munich is also the most important trade fair location in Europe. The world's biggest electronics show, electronica, takes place every second year in Munich, the next one being scheduled from November 11 - 14, 2008. BMW, the carmaker in Europe with the highest percentage of electronic components in their automobiles, is likewise located in Munich. The basis for Munich's stronghold can be contributed to the outstanding conditions for study and research. The Technical University of Munich enjoys a very good international reputation. According to recent forecasts, over the next 25 years Munich will be the only growth region in Germany. Already today, Munich and the surrounding area is the most economically successful district in Germany.

## Munich and tourism

But it is not only the economic conditions that make Munich so alluring. Munich is the No. 1 tourist magnet in Europe. A number of world-famous landmarks, a multitude of museums and theaters, and many high quality shopping possibilities make a trip to Munich extremely entertaining. The proximity to the mountains is used by tourists and locals alike. In contrast to many fast-paced and hectic big cities, Munich has maintained its easy-going metropolitan spirit making the city extremely hospitable. Munich is also sometimes called "the Northernmost city of Italy", and it is true that the atmosphere in Munich - especially in summer - with all the Italian cafés, restaurants and relaxed feelings, is strongly reminiscent of Italy.

## Oktoberfest

Let's not forget the famed "Oktoberfest". This is the world's largest beer festival and attracts millions of visitors every year from all over the world. This world-famous event has a long historical background: the first Oktoberfest was held in the year

1810, in honor of the Bavarian Crown Prince Ludwig's marriage to Princess Therese von Sachsen-Hildburghausen. The festivities began on October 12, 1810 and ended on October 17th with a horse race. In the following years, the celebrations were repeated and, later, the festival was prolonged and moved forward into September. So actually, despite the name "Oktoberfest", the festival nowadays takes place mostly in September and only a few days into October. In 2008 the "Oktoberfest" will be held from September 20th to October 5th.

## Advantech European Head Office in Feldkirchen/Munich

The Advantech European Head Office was opened at the beginning of 2007 and the European functions of Finance, Marketing, DTOS (Design to Order Services), IT and Customer Care Center were consolidated under one roof. The location was strategically chosen so that all important points such as airport, exhibition center and autobahn (motorway) connections could be easily and quickly accessed. The building where the European Head Office is located is a modern one built in 2003, and has sufficient capacity for further expansion. The German ePlatform Branch Office is also situated in this building.

The reasons for opening the head office in Munich came from both a wish, and the necessity to consolidate Advantech's individual operations in Europe into a single European entity. In direct contrast to the organization in the USA and China, previously Europe had been composed of many individual regional business units. And with the inauguration of a European Head Office, an organizational structure was created that took into account language and cultural differences, facilitating more efficient business development for Advantech. ■

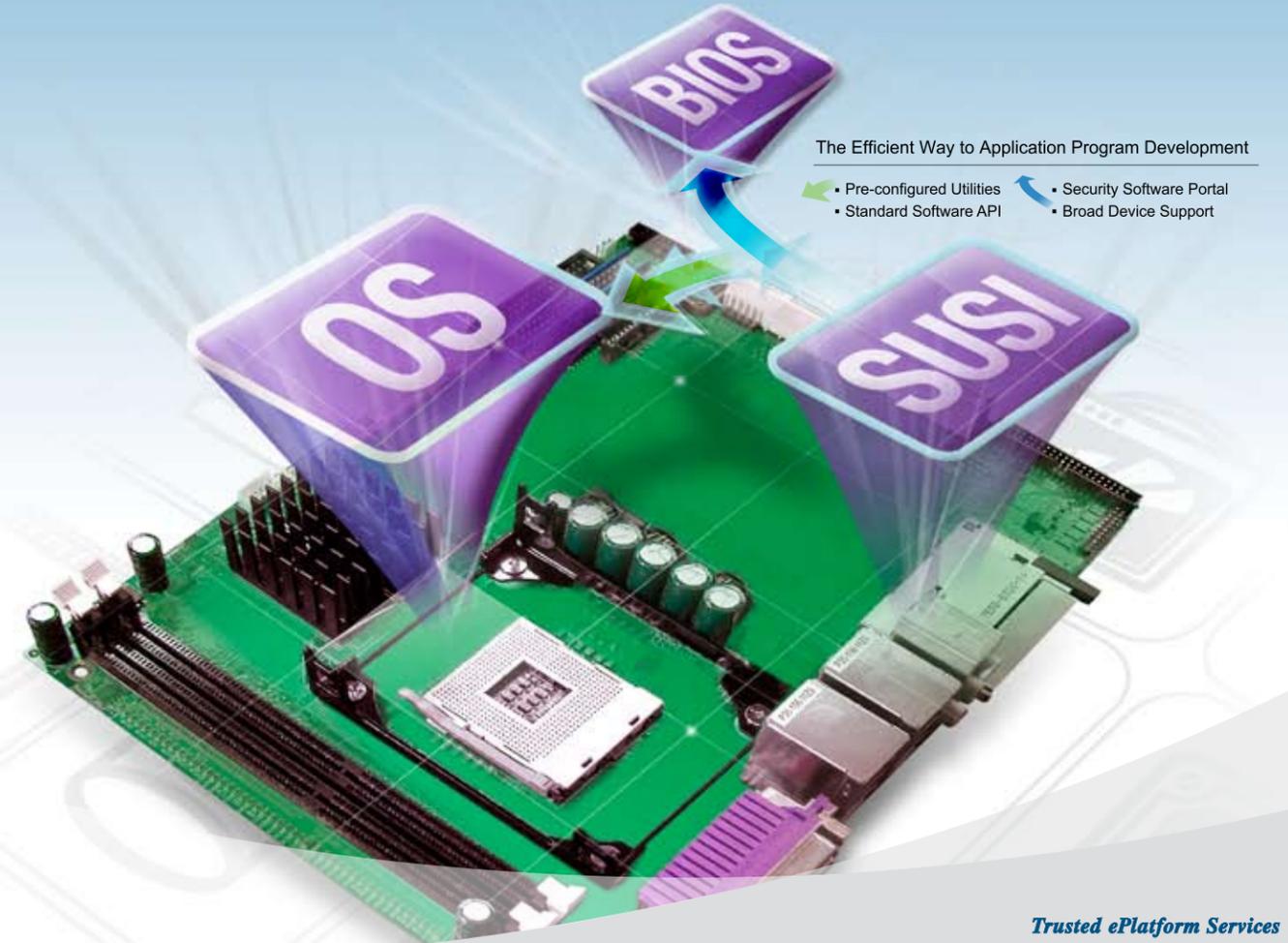
# Event Calendar

<b>April 21-25</b> <b>Hannover Messe</b> Hannover Hall: 9 Booth No.: H05	<b>April 22-24</b> <b>Infosecurity</b> London, UK Booth No.: G240	<b>April 22 -25</b> <b>Hospitality Technology</b> Singapore Hall: 4 Booth No.: 4G4-1
<b>April 30-May1</b> <b>Assembly New England</b> Boston, MA, USA Booth No.: 1041	<b>May 6-8</b> <b>Kiosk Europe Expo</b> Essen Hall: 1 Booth No.: 5C.04	<b>May 13-18</b> <b>Hospimedica</b> Sydney
<b>May 20-22</b> <b>CeBit</b> Sydney Hall: 5 Booth No.: Y30	<b>May 20-23</b> <b>HIMSS Asia</b> Hong Kong	<b>May 14-16</b> <b>Embedded Systems Expo</b> Tokyo
<b>May 28-30</b> <b>MicroTCA</b> Chantilly, VA Booth No.: 218	<b>May 30-June 1</b> <b>Del Mar Electronics Show</b> San Diego, CA Booth No.: 424	
<b>June 3</b> <b>MicroTCA Conference Munich</b> Munich	<b>June 3-5</b> <b>G2E Asia</b> Macau Booth No.: 1542	<b>June 3-5</b> <b>ATX East</b> New York, NY USA Booth No.: 3424
<b>June 10-13</b> <b>Automatica</b> Munich Hall: B1 Booth No.: 232	<b>June 3-7</b> <b>Computex</b> Taipei Hall: 1 Booth No.: A334, A338	<b>June 16-19</b> <b>NXTComm Show</b> Las Vegas Booth No.: SL1007
<b>June 19-22</b> <b>Assembly Technology 2008</b> Bangkok Hall: 105 Booth No.: 5B07	<b>June 10-13</b> <b>Instruments, Control &amp; Automation</b> Malaysia Hall: 1 Booth No.: 56-57	<b>June 18-20</b> <b>InfoComm</b> Las Vegas
<b>July 15-17</b> <b>SEMICON West</b> San Francisco, CA, USA	<b>August 24-27</b> <b>eAutomation Regional Partner Conference</b> Monterey, CA, USA	<b>September 25-28</b> <b>Automation 2008</b> India, Mumbai Hall: 1 Booth No.: C 27-28

## Advantech Call Center

<b>US</b>	1-888-576-9668 (ePlatform) 1-800-205-7940 (eAutomation)	<b>Taiwan</b>	0800-777-111 (ePlatform) 0800-55-77-99 (eAutomation)	<b>Japan</b>	0800-500-1055 (ePlatform) 0800-500-1077 (eAutomation)
<b>Europe</b>	00800-2426-8080 (ePlatform) 00800-2426-8081 (eAutomation)	<b>China</b>	800-820-2280 (ePlatform) 800-810-0345 (eAutomation)	<b>Korea</b>	080-363-9404
<b>Australia</b>	1300-308-531	<b>Russia</b>	8-800-555-01-50	<b>Singapore</b>	65-6442-1000
<b>India</b>	1800-425-5070	<b>Brazil</b>	0800-770-5355	<b>Malaysia</b>	603-8075-7035

# Advantech Embedded Software Services



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 <p><b>Embedded BIOS</b></p> <ul style="list-style-type: none"> <li>• Enhanced CPU Power Management</li> <li>• Animated Logo and Sound Effects</li> <li>• Modularization Core Architecture</li> <li>• Broad Peripheral Device Support</li> <li>• Secure SW Protocol &amp; Interface</li> <li>• Embedded Controller</li> <li>• Remote Management</li> <li>• Smart Battery</li> <li>• Security Features</li> </ul>	 <p><b>Embedded OS</b></p> <ul style="list-style-type: none"> <li>• Custom CE/XPE OS Image</li> <li>• File Based Write Filter Utility</li> <li>• Custom Logo Utility</li> <li>• Screen Resolution Utility</li> <li>• System Boot Log Utility</li> <li>• Memory Adjustment Utility</li> <li>• Auto Launch Utility</li> <li>• Registry Editor Utility</li> <li>• System Reboot Utility</li> <li>• Watchdog Timer Utility</li> </ul>	 <p><b>SUSI Application Interface (Secure &amp; Unified Smart Interface)</b></p> <ul style="list-style-type: none"> <li>• GPIO Control</li> <li>• I2C Control</li> <li>• SMBus Access</li> <li>• Thermal Sensor</li> <li>• WatchDog Timer</li> <li>• LCD Brightness / Backlight</li> <li>• Power Saving</li> <li>• Hotkey Control</li> <li>• Boot Logger</li> <li>• Secure Application Interface</li> </ul>
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## Motion

*Technology for a World on the Move*

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## Motivating Grand Inspirations

If the world were truly flat, we would soon run out of obstacles to inspire creative solutions. Dedicated to finding dynamic solutions, Advantech always conceives ways to keep humanity moving forward. Whether you need to ensure smooth traffic flow, gather up-to-the-minute airport flight data, or provide super-efficient e-Bus operations, Advantech designs multimodal transportation solutions for customers across a wide spectrum of environments and applications.