

The Convergence in Communications

IP-based Customer-centric Network Convergence

Voice, data and video networks are converging around the Internet Protocol. Because telecommunications and IT networks were originally built on separate and disparate technologies with little commonality, it was both complex and costly for service providers to implement new services. But today, with the convergence to an all-IP network, video, just like voice becomes simply another application which can run on a standard IT server. Service providers no longer have to rely on customized hardware to create new service offerings and can create customer value by using software applications to create new services.

A Common Set of Core Technologies

As new multimedia services drive explosive new revenue growth, the use of open-systems internet-base technologies will dramatically reduce capital and operating costs. In addition the new IP-based applications and services can all employ a common set of core technologies, which means they can also take advantage of security appliances to handle firewalls, anti-virus, intrusion detection or prevention, spam etc to mitigate risk.

Synergy and Scalability

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

Cost Efficiency

Whilst 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 wider scale.

Design Expertise

Our Networking OEM customers are extending their reach into larger-scale enterprise, data center and core network space. Advantech's cross-industry expertise in appliances, servers and blade computing elements makes us the ideal technology partner for converged hardware design expertise. Dedicated software development teams provide Board and Linux Support Packages with pre-tested middleware when remote platform management and high availability are key requirements.



Telecommunication Solutions

Open Modular Building Blocks

The telecommunications industry is fundamentally evolving as equipment manufacturers and modular communications platform designers are repositioned along the telecommunications value chain. Advantech provides foundation building blocks for that value chain 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 redeploy their resources to focus on differentiated services, such as application development and network management as they themselves evolve into Telecom solutions providers.

Integration and Partnership

Our Blade Computing Division designs and manufactures blades in AdvancedTCA, AdvancedMC and CompactPCI form factors. We provide solid and timely technology introductions while designing to stringent industry standard requirements such as NEBS and ETSI. From experience, we know how to work hand-in-hand with system integrators and TEMs during the pre-certification phase of their integrated platforms. When standard product adaptation is necessary to meet a TEM partner's design constraint, Advantech understands how to change, move or remove connectors and components, re-adjust for EMC and adjust for chassis-specific cooling issues in a timely manner.

Customization

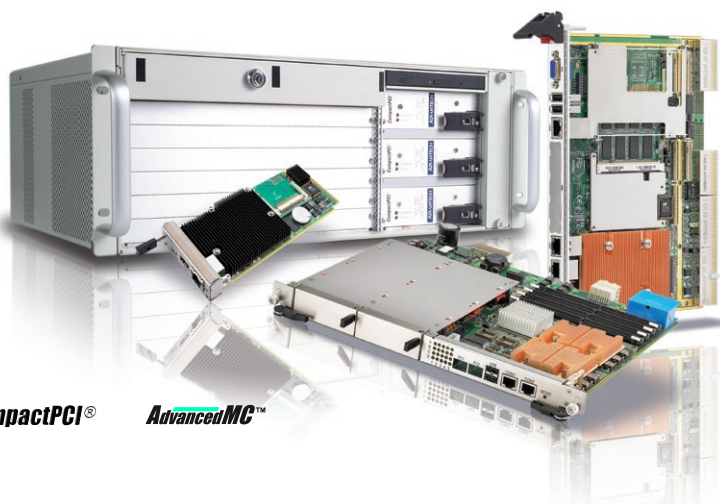
While the AdvancedTCA and MicroTCA ecosystem grows, not all required blade-level functions or elements are available as off-the-shelf products. That's why we invested in geo-regional R&D teams to accompany our TEM partners in design-to-order-services (DTOS). Our DTOS organization offers same time-zone project management for the development of custom or accelerated designs based on our IP design libraries.

Strong Ecosystem

As TEMs turn their attention to the higher layers of the value chain to create differentiation, we understand that a strong co-working ecosystem is required to ensure that hardware platforms, operating systems and high-availability middleware components 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. Board Support Packages and Linux Support Packages are developed both internally and in collaboration with the main industry players. In this way, true time-to-market advantages can be realized.

Economies of Scale

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 acknowledge that through partnership and standards, the telecommunications industry can leverage enormous horizontal economies of scale to drive down the overall hardware development costs of the next generation of telecommunications voice and data infrastructure.



AdvancedTCA®

μTCA™

CompactPCI®

AdvancedMC™

MicroTCA & AdvancedTCA Platforms

MicroTCA Overview

MicroTCA has a primary purpose of serving as a platform for telecommunications and enterprise computer network equipment. Its secondary goal is to function as a platform for other demanding marketplaces, such as Customer Premises Equipment (CPE) and looks set to expand into a wider cross industry adoption. Ratified in 2006, MicroTCA is complementary to Advanced Telecommunications Computing Architecture (AdvancedTCA). Where AdvancedTCA is optimized for very high capacity, high performance applications, MicroTCA is designed to address cost sensitive and physically smaller applications with lower capacity, performance, and perhaps less stringent availability requirements.

MicroTCA preserves many of the important philosophies of AdvancedTCA, including basic interconnect topologies and management structure. MicroTCA is a highly modular standard where diverse collections of AdvancedMCs (AMCs) in a MicroTCA Shelf provide the foundations for many different application architectures. The common elements defined by MicroTCA are capable of interconnecting these AMCs in many interesting ways—powering and managing them, all at high efficiency and low cost. MicroTCA offers a significant advantage because the same AMCs that connect directly to the MicroTCA Backplane can also be equipped on an AdvancedTCA Carrier Board. At Advantech we are investing in MicroTCA because we see it as a pervasive convergence technology which will be used on multiple form factor boards in a wide variety of cross-industry platforms.

AdvancedMCs Are a Leap Forward in Blade Miniaturization, Modularity & Scalability

The ability to use any AMCs that conform to the AMC standard without modification in MicroTCA is an overarching goal of the standard. Examples of AMCs that could be installed into a MicroTCA shelf include CPUs for control and feature processing; network processing units for packet processing; DSP AMCs for signal processing; storage AMCs with built-in disk, built-in flash, or external interfaces to storage arrays; and I/O AMCs for subscriber lines, Ethernet or optical networks. This brochure introduces some of Advantech's major advances in the MicroTCA arena.

AdvancedTCA & MicroTCA Product Lines



AdvancedTCA Design Expertise

ATCA solutions are an extension of Advantech's existing technological expertise. Over the years, we have serviced customers with high-performance industrial-grade computing platforms. With Advantech's new strength in AdvancedTCA dual processor designs, we can help our customers to architect the exact Telecom control and application blades that they desire. Our latest AdvancedTCA CPU boards represent a clear benchmark for our ATCA design capabilities.



MicroTCA System Management

Our MicroTCA Carrier Hub (MCH) family combine the control and management infrastructure and the interconnect fabric resources needed to support up to twelve AdvancedMCs. A primary Gigabit Ethernet fabric interconnects up to 12 AMCs. On-board Management Controller functions configure and control the elements and optionally the shelf. Additional modules can be added to the MCH for enhanced switch management, extended fabric options and external clock connectivity.



Scalability and Processing Density

For applications where processing power needs to be scaled to meet changing application requirements, Advantech's processor AMC's allow highly dense load-balanced clusters to be built up. Our processor AMC family provides densely-packed, low power consumption blades with front or rear GbE connectivity. Additional PCIe, SATA and USB options provide a pervasive I/O offering and the foundation for the multi-core evolution.

CompactPCI Platforms

Complete CompactPCI Computing Platform Solutions

CompactPCI platforms are widely used for mission-critical telecommunication applications that demand high-serviceability, enhanced reliability, and vibration/shock resistance. Advantech CompactPCI solutions are designed with the latest technologies and offer excellent support for rugged design, durability, hot-swapping and CT Buses. All of these great features are available in an easily-expandable “Eurocard” CompactPCI form factor. Advantech CompactPCI platforms incorporate these characteristics into many unique products, including processor boards, chassis, rear I/O units, carrier boards and other accessories – and all are designed to bring flexibility and exceptional value.

Modularized and Customized Design

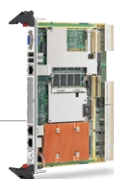
Advantech understands the variation among applications; therefore, we are committed to provide a complete line-up of CompactPCI platform solutions to service our customers. Advantech cPCI solutions offer a wide range of 1U to 12U enclosures, as well as both high-performance “professional” and “entry-level” processor boards. Modular design allows customers to mix-and-match solutions based on specific needs, whether it be CT Bus backplanes or additional enclosed redundant power supplies. For ODM and system integrators, Advantech offers custom-made equipment tailored to specific applications through Design To Order Services (DTOS). Leveraging the industry’s leading technology, Advantech can speed your development process and significantly reduce capital investments. We offer the best combination of technology and price-for-performance. In addition, Advantech provides basic customization services for SBCs, backplanes, chassis, and system integration.

CompactPCI Product Lines



High Density, Configurable CompactPCI Enclosures

CompactPCI systems are available in a full series of 1U to 12U rack-mountable enclosures. They offer different front/rear panel I/Os, redundant power supplies, and cooling mechanisms. The systems comply with many industry standards such as the CompactPCI packet switching backplane (PICMG 2.16) technology, cPCI hot-swap (PICMG 2.1) capability and H.110 CT Bus (PICMG 2.5) specifications. Rugged design ensures that the enclosures can provide service in the most severe environmental conditions and meet the toughest customer demands.



CompactPCI Single Board Computers

Intel-based CompactPCI single board computers are available in many configurations. The boards range from high-performance master CPU boards for mission-critical telecom applications to more all-round processor boards for multi-purpose applications. The high-performance 6U CompactPCI board features the latest Intel Core 2 Duo processor with exceptional I/O expandability for VGA/LAN/SCSI/HDD. These boards are designed to meet rapidly expanding requirements for modern Computer Telephony (CT) and Telecom applications.



A Variety of CompactPCI Peripherals

Advantech offers a variety of carrier and interface boards for I/O expansions, and PMC modules for added platform features. We provide a complete range of rear transition boards that interface with our CompactPCI CPU boards, plus power supplies and fan modules to complement the system.

Network Application Platforms

Network Appliances are becoming the mainstream for deploying network security services. Whether it be network security with firewall, virtual private network (VPN) and intrusion detection/prevention; content security with anti-virus and anti-spam; or network access control (NAC) content management systems; the use of network appliances lowers maintenance costs compared to traditional software solutions on standard network servers. As more and more network security functions are delivered via a dedicated appliance, system integrators need to consider the integration between hardware and software, to provide secure and high-performance network throughput. As technology progresses, the use of network appliances have moved on to other network application fields, such as traffic management for WAN optimization and wireless/WiMax gateways.

The Foundation for Secure Networks

Advantech Network Application Platforms are essentially hardware platforms for network appliances. We are dedicated to the research and development of network security platforms for network security application developers, system integrators and service providers. We provide a full series of standardised x86-based platforms in tabletop, rackmount 1U and 2U form factors. Our high-performance, rack-mountable enterprise platforms feature highly integrated motherboards, LCM control modules and Dual/Quad-core Xeon processor support. Advantech Network Application Platforms are modular to provide the basis for customized solutions. Our tabletop platforms are compact and consume minimal power. User-friendly designs satisfy the need of small businesses or home/office applications.

Customization, Design and Integration Capabilities

Based on our standard product lines and form factors, Advantech offers tailor-made products and value-added integration services. Various customizations are available from chassis color and front cover design, to extensive board-level design innovations. Apart from the standard x86 platforms, we offer a variety of advanced network security technologies through Design To Order Services. Right from the beginning, Advantech places you ahead of the competition.

While network convergence is evolving and creates the complexity of network connectivity, the use of network processors has become an important source of computing power for dealing with such high speed packet processing. Advantech partners with solution vendors to create the perfect ecosystem to provide the best and innovative solution to the market. Advantech integrates the latest Network Processing Unit (NPU) with security accelerators and Unified Threat Management (UTM) solutions. The result is a platform that can serve more advanced network security applications while taking advantage of enhanced network connectivity. Our professional team of experts understands your computing needs and provides appropriate system integrations and compatibility testing services, so you can focus on the important innovations that are driving a changing networked world.





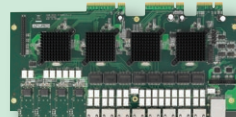
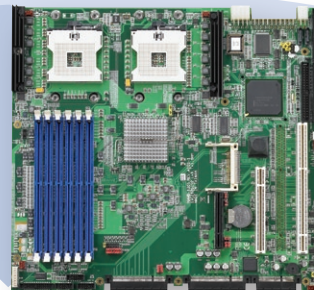
Modular Solutions for Fast & Simple Upgrades

The Advantech network security platform series has a modular design that separates the main processor board from the network expansion board. The platform can be configured to accommodate a selection of I/O cards with different port densities or types through Advantech's proprietary PCI Express (PCIe) interface. Customers may also choose to integrate other vendor's hardware acceleration solutions through standard PCI/PCI-X interfaces. This modularity enables our standard platform to be quickly customized for many application-focused network appliances, offering scalability and flexibility.

This modular design permits quick upgrades to more advanced technologies. So, stepping up to new and innovative requirements for Internet security applications can be handled efficiently and easily.



PCIe-based Motherboard with Dual-processor Support



PCIe 8-port Copper Module



PCIe 4-port Copper + 4-port
Fiber Module



PCI-X 4-port Copper Module



PCI-X 6-port Copper + 2-port
Fiber Module



PCI-X 8-port GbE Copper Module

Advantech Global Services

Global Presence with a Local Touch

Advantech global services is a comprehensive service model that integrates the three main elements of Advantech's customer initiation process, from the product design phase, to manufacturing and after-sales support. Advantech understands the way our customers do business, and with globalized services, we deliver computing platforms for solution providers around the world faster and more efficiently than anyone else.

Over the years, advantech has built a strong global network. We have three manufacturing facilities based in Asia, and four design, service & logistics centers across America, Europe and Asia. We are located in 16 countries and 32 cities. This well established network helps Advantech develop, design and assemble products to meet our customers' demanding requirements with maximized flexibility and efficiency, bringing products to market in a timely and cost-effective manner.



Flexible Global Manufacturing Capability

Advantech complements its design strengths with three world-class production centers in China and Taiwan, ready to meet all your manufacturing needs. With a full range of products, we can supply large or small volumes, as each customer requires. Each center focuses on particular production expertise, so we offer top-quality products with faster delivery.



ATMC

Taipei, Taiwan

Land 17,488 m²

Capability

- Small Volume Production
- Board & System Products
- ODM/OEM Projects
- Engineering Sample Innovation Services
- Specialized in Complex Product Lines



AKMC

KunShan, China

66,667 m²

• Mid-to-High Volume Production

- Board & System Products
- ODM/OEM Projects
- Focused on Mature Product Lines



ADMC

Dongguan, China

7,000 m²

• Chassis Design & Production

Design To Order Services

Realize Your Creative Ideas

Advantech Design To Order Services (DTOS) provides a full range of customization services, a one-stop solution for creating system platforms. We understand the challenges that customers face everyday with respect to the rapid technological changes associated with complex, evolving designs. As the leading ePlatform services provider, Advantech has the business and technological maturity to work with you as a long-term ODM partner. Advantech DTOS integrates expert technical knowledge across many application domains with cutting edge design capabilities and proven industrial ODM processes. DTOS offers the expertise essential for a comprehensive service that can fulfill many customization demands. Our service benefits clients with faster project development times, lower risks and the assurance of working with a trusted global leader to achieve win-win solutions.

Advantech DTOS Features

- Complete and integrated backend infrastructure to streamline the design process
- Board-level customization for diverse applications
- Chassis & front panel design and customization
- Value-added software and firmware optimization services
- Assured reliability and performance benchmarks
- Globalized design, service and manufacturing centers

For more information, please go to <http://www.advantech.com/DTOS>



Focused on High-Performance Computing Applications

Incorporating Advantech's expertise in Industrial and Network applications, DTOS provides system-level customizations, mainly for the Network Security, Medical, Telecommunication, Industrial and Public Services markets. Based on different application demands, we offer a complete range of x86 based industrial boards, available in different sizes and form factors with a wide range of I/O options. For enclosures, we offer a full range of rackmount & wallmount chassis with front/rear accessible designs. For mission-critical telecommunications, Advantech offers CompactPCI and AdvancedTCA based board-level solutions that incorporate the latest technology and compliance with the industry's latest PICMG standards. For network security applications, Advantech's x86 based platforms incorporate leading network accelerators, and tailored add-on expansions that can be configured for various Internet security applications.

