

Industrial IoT SKY Series Server & Storage Solution

Committed Provider with Flexible,
High-performance, Long-lifespan
Products

- ✓ Storage
- ✓ Server Board
- ✓ Workstation
- ✓ Rackmount Server
- ✓ Tower Server
- ✓ GPU server
- ✓ Video Wall Controller



ADVANTECH

Enabling an Intelligent Planet

www.advantech.com

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Advantech SKY Series Industrial Server and Storage Solution

With Innovative technologies for the IoT, Advantech has transformed embedded systems into intelligent systems with smart, secure, energy efficient features, with remote manageability, virtualization services, as well as professional system Configure-To-Order Services (CTOS) and Design-To Order Services (DTOS). Advantech SKY series industrial server and storage products include Industrial Server System, GPU Servers, IStorage (Industrial storage) and Video Wall Controllers, from components to systems, providing flexible assembly and longevity. We cooperate closely with our partners to help provide complete solutions for a wide array of applications across a diverse range of industries, such as equipment building, transportation, surveillance, broadcasting, intelligent video, and industrial cloud.

Alliance Partners:



Ittiam



AMD

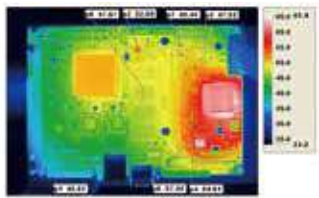


matrox
Graphics for Professionals





Designed for Industrial Environments



High Temperature Tolerance up to 60°C

The temperature standard of commercial servers is 25~35° C. Advantech's temperature standard of their server-board with dual CPU is 50° C, and 60° C for a single CPU, while the whole system overall reaches 40° C. For every single degree decrease in air temperature, 6% power can be saved. So customers do not need to worry about system down times caused by overheating in critical environments.



Vibration Test up to 1G

You cannot ignore the impact of vibration while a server is running in a critical industrial environment. When your system suffers lengthy access times or encounters minor problems every now and then, then it's time to check out the anti-vibration capability of your server. Any equipment with moving or robotic parts requires special attention to its anti-vibration capability. So all Advantech industrial servers must pass the 1G vibration specification - the industry leading standard. This ensures reliability and long product life.

Dust Prevention for Industrial Environments

Onsite dust accumulated after long-term use could shorten your system's life or even lead to failure. To cope with this, Advantech industrial servers feature a filter in the front panel that blocks external dust while maintaining air inflow. Easy filter installation and replacement ensures smooth continuous operation through regular maintenance.



Coping with Unstable AC Power Supply

The electrical current in industrial environments can drop temporarily as a result of unstable power supply. Therefore, it's important that in-plant applications can tolerate temporary power fluctuations. When power is turned off then on again quickly, the original power may not be released completely which leads to an inconsistent power sequence. This is caused by the way residual power is stored in the circuits. Advantech systems have successfully solved this problem with a special circuit design that takes care of power failures of between 1ns and 10s.

Advantech Industrial SKY Series Server vs. Commercial Server

Item	Advantech	Commercial	The Advantech Benefit
Environment Temperature	0~40°C	10~35°C	- Wider ambient temperature validation for reliability under harsh environments - Reduced system shut downs caused by high ambient temperatures
Vibration	1G	0.25~0.5G	Strict vibration tests make Advantech IPC more durable, especially in higher shock environments like factory automation.
Technical support	High	Medium to Low	Professional AE helps customers resolve technical problems and shortens development schedules.
Longevity	5~7 years	2~3 years	- Eliminate yearly system upgrade - Low Total Cost of Ownership, including system certification cost and customer RMA service material preparation
Revision Control	Yes	No	- Reduce product validation during product life cycle - Avoid compatibility issues resulting from engineering changes

System Design to Order Service

Build Your Dream System in 30 Days

With an increasingly diverse market and multiple vertical applications, the needs of customized systems for specific applications are in high demand.

Advantech is the dream system provider, supplying quality assurance and integrated services to worldwide customers. With customization, integration, validation, and certification, we are committed to providing a one-stop solution to customers who require a trusted partner to maximize their applications.



System Engineering Expert Group

System design should always start from the customer's perspective. To build up a system that precisely matches a customer's application, the Advantech professional engineering team always puts the customer first, from system working environment, ergonomics, to maintenance. The professional engineering team and rich experience from over 100 successful cases make Advantech the dream system builder for your business.



Worldwide Orders, Local Services

Our global presence provides reliable, localized customer support service, with customizable after-sales services, including extended warranty, advance replacement, and upgrade. We provide an optimized, within-budget, maintenance and support plan around the world to keep your investment at peak performance.

- 24/7 hotline AE
- Global RMA System



Certified Quality Assurance Systems

At Advantech, quality is our main priority. A complete line of safety, EMC, and reliability test equipment, such as hi-pot, ESD, vibration, drop test, temperature, humidity and HALT chambers ensure our product meet the strictest standard. Also Advantech the strictest standards. Also Advantech has an applied environmental program that focuses on reducing, reusing and recycling of materials throughout the manufacturing process. All our products are 100% RoHS compliant and Environmental Management Systems such as QC080000 are applied to meet worldwide environmental requirements.

3-5-7 Service Guarantee



1st Level Dedicated professional AE for first-time trouble shooting

2nd Level Strict revision control, key parts fixed, EC announcements

3rd Level Flexible customization (BIOS logo, IO offering, BIOS boot priority, bezel tailor-made for customer's ID)



Longer product warranty policies benefit specific industrial fields like medical, military, and MA (Manufacturing Automation) applications.

Advantech Server-grade IPC offers this option to meet the issue of longevity support.



Advantech Server-grade IPC is committed to sustaining longer product availability. All the components are selected carefully to ensure long-life support.

Industrial Server

Full Range of Intel® Xeon® Server Boards and Systems

The Advantech industrial server is designed to give equipment developers high performance, efficient and redundant solutions for industrial environments and critical applications. This product line provides customers with a total solution and value-added services rather than just a regular server product.

The portfolio features multi-core processors based on Intel® Xeon® technology, ECC DDR4 Memory and Hot-Swap drive bays, and Intelligent Platform Management Interface (IPMI), which are essential for performance-demanding applications. Automatic Optical Inspection (AOI), Vision Inspection, Video Transcoding, Supervisory Control and Data Acquisition (SCADA) are ideal applications for Advantech industrial server solution. Advantech's industrial servers, designed with cutting edge technology, deliver outstandingly high industrial performance in rack-and-tower optimized enclosures.

High Performance yet Quiet



Massive image data processing in certain verticals like medical and design houses requires high performance and efficiency. However, the processing server is usually not placed in a far-away data center, but right next to users, where high noise levels can be a problem that affects productivity. Advantech industrial servers are specially designed to deal with this issue. For user-friendly operation, the fan speed is carefully balanced to provide the best thermal solution with the least possible sonic output. With an Advantech industrial server, your performance never needs to be compromised.

1U Rackmount System



ASMB-585



HPC-7140

2U Rackmount System



ASMB-785



HPC-7282

3U Rackmount/Tower System



ASMB-813



HPC-7320

4U Rackmount/Tower System



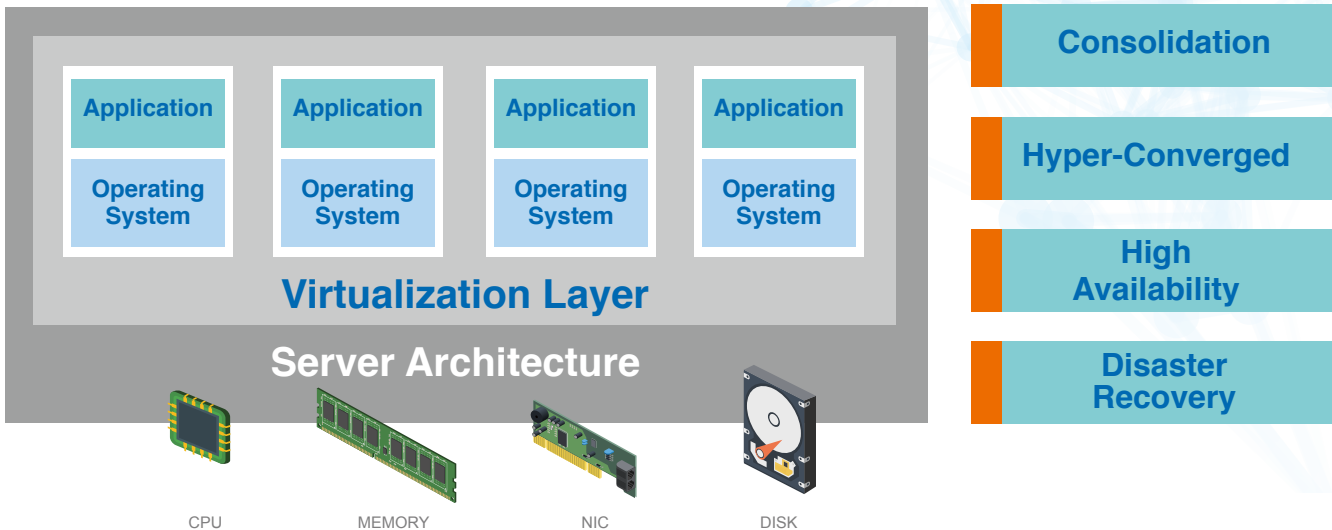
ASMB-923



HPC-7400

Optimized Virtualization Improves Efficiency and Reliability

Virtualization software vendors like VMware, Citrix, Microsoft and Pivot3 have created software that lets one powerful server do the job of multiple computers by sharing resources across multiple environments. Virtualization helps companies save money through optimum consolidation and reallocation of IT resources, based on utilization and capacity.



ASMB-584
Intel® Xeon®
E3-1200 v3/v4



ASMB-585
Intel® Xeon®
E3-1200 v5



ASMB-784
Intel® Xeon®
E3-1200 v3/v4



ASMB-785
Intel® Xeon®
E3-1200 v5



ASMB-822
Intel® Xeon®
E5-2600/2600 v2



ASMB-823
Intel® Xeon®
E3-1200 v3/v4



ASMB-813
Intel® Xeon®
E3-1200 v3/v4



ASMB-922
Intel® Xeon®
E5-2600/2600 v2



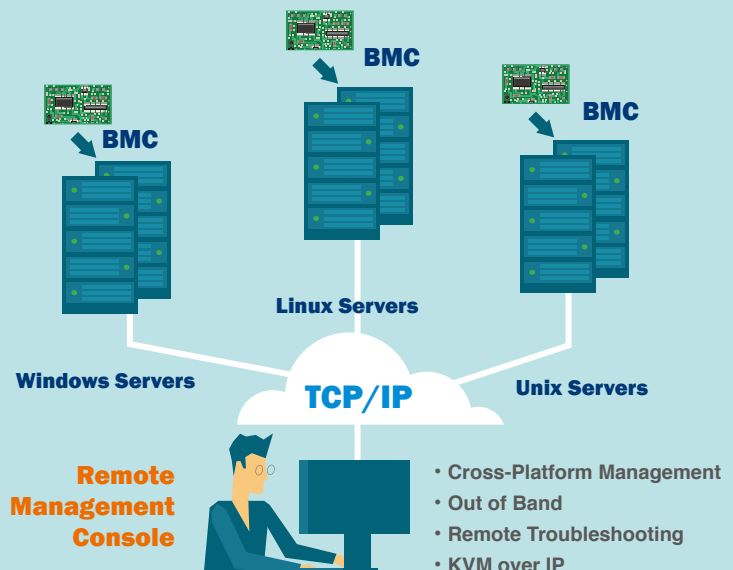
ASMB-923
Intel® Xeon®
E3-1200 v3/v4



ASMB-913
Intel® Xeon®
E3-1200 v3/v4

IPMI for Mission-critical Systems

Advantech IPMI solution is an Out-of-Band Management solution that provides centralized management of devices deployed in a network and offers to monitor and manage remote BMC devices as a pluggable component for Advantech ASMB server boards to monitor and report the health and performance of BMC devices. Advantech IPMI solution helps save customer costs, and improves reliability of system management.



GPU Server

Unlocking Visual Computing Power

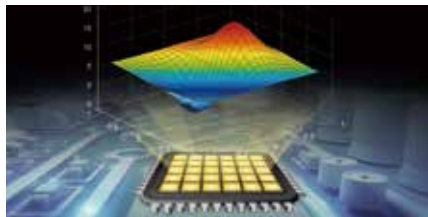
Advantech's industrial 1U to 4U GPU server solutions feature the latest in multi-core computing technology. By offloading dense and complicated application code to the CPU, the GPU's massively parallel architecture can be leveraged to perform multiple tasks simultaneously. These servers deliver high-performance computing and are ideal for performance-intensive applications that involve visualization, parallelization/acceleration, and virtualization computing. Advantech comprehensive industrial GPU server series solutions accelerate visual computing in applications such as automated optical inspection (AOI), surveillance, video transcoding, cloud gaming, and medical imaging.

Application-Ready, Visual Processing Solution

The acquisition, processing, analysis, and rendering of visual information are data-intensive tasks. Advantech's industrial GPU server solution is designed to immediately deliver adequate processing power for even the most time-consuming applications. The high performance of this server makes it ideal for the automated optical inspection (AOI), surveillance, video transcoding, cloud gaming, and medical imaging markets.



Visualization computing



Parallelization/Acceleration computing



Virtualization computing

- 3D rendering - Autodesk Suites, SOLIDWORKS
- DATA analytics/mining - MATLAB
- VDI - Citrix/Microsoft/VMware
- 4K displays - Adobe Creative Suite
- Single and Double precision workloads - Video transcoding
- Cloud Gaming – Streaming video and music

Unique Friendly Design



Front & Internal USB
Increases Usability



Exclusive Anti-vibration
Mechanism



Cable-less Design Increases
Thermal Efficiency



GTX Side Power Connector
Supports Varieties of GPU
Cards

Comprehensive GPU Server Solution



1U Rackmount System



AGS-913

2U Rackmount System



AGS-923

3U Rackmount/Tower System



HPC-7320



ASMB-813

4U Rackmount/Tower System



HPC-7400



ASMB-923

Wide Range of GPU Cards Supported

Whether you are looking for assistance in completing an integration project, require in-depth expertise in building a system, or want to find a total GPU server solution with extended longevity, Advantech and partners will provide you the best GPU server solution in your specific region and market segment.



**Trusted GPU Server
Solution**



**Leading-edge
Technology**



**Design and
Development Expertise**



Long Lifecycle Support

Advantech, in alliance with global first-tier GPU providers, provides the best support and service for industrial applications.

* Note: Please refer page 43 for detailed GPU card compatible chart.

IStorage

High-density Solution from JBOD, Storage Server to Disk Array

Advantech Industrial Storages (IStorage) are high-performance and cost-effective storage solutions that fulfill the requirements of industrial environments and mission-critical industrial applications. Advantech storage server solutions have comprehensive fault-tolerant capability with H/W RAID and online expansion capability via JBOD to ensure the highest possible data availability.

The external disk array is designed to provide systems with the ability to consolidate and share data at an affordable price, while leveraging advanced software capabilities usually found in more expensive mid-range & high-end systems.

IStorage solutions bring you a seamless integration with Advantech IServer products. With a wide range of product portfolios and completed validation tests, they can be immediately introduced into various industrial applications and upgrade your systems to become a working part of the industrial cloud.

IStorage Value Proposition

S

Seamless Integration

- *One-stop Shopping Solution, from MB/Chassis/ Server/Storage*
- *Wide Storage Portfolio, Including JBOD/ Storage Server/ Disk Array*

A

Availability

- *Full Compatibility with Advantech Product Lines*
- *Leverage WW Tier1 Partners' Storage Technology*

F

Flexibility

- *Global CTOS*
- *Local RMA*
- *Low MOQ*

E

Expertise

- *Know-how & Experience in Industrial Cloud Deployment*
- *Longevity & Version Control*

The World's First 1U, 16 NVMe SSDs, Dual Intel® Xeon® E5 Storage Server

ASR-3100



1U Rackmount

Offers high scalability



2 CPUs

Dual Intel® Xeon® E5 v3 processors



16 NVMe SSDs

Interchangeable with SAS and SATA



6 Million IOPS

30% performance increase



1100W

1+1 redundant power supply with 80 PLUS Platinum certification

Built-in Innovation



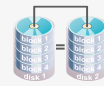
Easy Tier



Flash Copy



Remote Mirror



H/W RAID



Remote Management

Industrial Storage

External Disk Array



ASR-5200E



ASR-5300I

Industrial Storage Server



ASR-3100



SKY-4311



ASR-3272



ASR-3472

Disk Expansion Enclosure



SKY-4120B



ASR-1400

Storage Chassis



HPC-8212



HPC-8224



HPC-8316



HPC-8424

Rugged Server

High-performance, carrier grade rugged server design with optimized I/O

Advantech SKY-8 series rugged server is a highly configurable carrier-grade server designed to balance the best in x86 server-class processing performance with maximum I/O and offload density in a 20" depth chassis. The system is a cost effective, highly available platform optimized to meet next-generation networking equipment needs. It is specifically designed for high density PCIe card payloads where maximum port count is needed or the integration of industry leading offload and acceleration technology is essential. The PCIe I/O is balanced between CPU sockets for optimum throughput. The power and cooling options along with the streamlined mechanical design make it ideal for Digital Signal Processing (DSP) payloads for video encoding/decoding, transcoding and transrating applications.

SKY-8 series rugged servers and their variants cater to higher power and cooling requirements, when NEBS certification is not mandatory. The SKY-8 series combines cutting-edge performance with the ruggedness, reliability, and long system lifecycles required by networking equipment providers. The SKY-8 series is designed for NEBS Level 3 carrier grade environments and where limited rack space is available. Interoperability testing is performed with a wide selection of third-party PCIe card vendors.

Platform Differentiation: Design

Base Design	Optimized for five 9's availability & Carrier Grade use cases
Motherboard	Optimized in-house design
PCI Express	Balanced between sockets and all slots gen.3
Thermal design	No shading between CPU sockets, memories and IO cards
Thermal Spec	NEBS performance at max. configuration
Power Supply	1400W PSU No configuration limitations even at 55°C



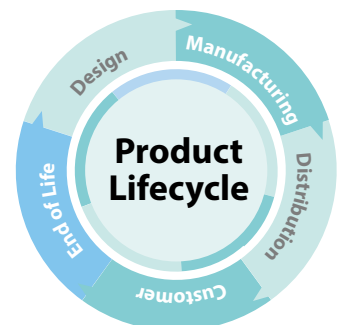
Platform Differentiation: Reliability

Thermal design	Optimized design yields lower component stress / better MTBF
Redundant BIOS	Yes
Redundant firmware	Yes
Remote update	BIOS and firmware
Failsafe upgrade	Yes
Serviceability	All FRU-able components are front/rear swappable



Platform Differentiation: Life cycle management

Design IP	Full Ownership
Manufacturing	Self owned factories
Life cycle & warranty	5 + 2 years life cycle. Extended warranty up to 3 years
Design freeze	Full BOM freeze including (customized) BIOS and FW
Product Change Notice	Advance notice for all proposed changes
BIOS/Firmware/Software	Clear release policy with advance notice; Tailored SLA available



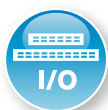
High Performance Server Platform Enables IoT Industrial Cloud



Optimized CPU Selection



Thermal Simulation



Interoperable & Optimized IO



Safety/Reliability Test



Mechanical Design



System Integration



Longevity Support



Certification

Optimized IO Servers

- Integrated computing, IO, offloading
- Higher performance ingredients
- High TDP CPUs & PCIe
- No air filter and higher RPM fans
- 20" compact system design
- AC PSU only

Non-NEBS

Carrier Grade Servers

- Integrated computing, IO, offloading
- NEBS ready: +55°C, Air filter, Acoustic noise reduction
- 20" compact system design
- AC & DC options
- Telco Alarm Support
- CPU and PCIe card limitations apply

Common platform design features

- Carrier Grade BIOS and FW
- Serviceability
- Balanced PCIe IO, gen.3 capable
- Reliability and Availability
- Advanced Thermal Design
- Industrial life cycle & change management



Model	SKY-81001U Carrier Grade Servers	SKY-82002U Carrier Grade Servers
Processor Subsystem	Intel® Xeon® D Series processor (Codename "Broadwell DE") Up to 8C@2.2GHz (16C under investigation)	Dual Intel® Xeon® E5-2600v3, E5-2600v4 processors up to 120W (NEBS) / 145W
Memory	Up to 128GB 4x DDR4 ECC/REG	Up to 512GB 16x DDR4, ECC/REG DIMMs, up to 2133MHz
PCIe	2 x PCIe x8 FH/FL	4 x PCIe x8 (FH/FL), 2 x PCIe x4 (FH/HL)
BIOS	Carrier Grade BIOS Features	
Remote Management	IPMI 2.0-compliant Remote Management incl. fail safe upgrades (HPM.1)	
Redundancy	Hot Swappable Fan, HDD, PSU	

Video Wall Controller

Fulfills Multiple Input and Output Needs

Advantech, a world leader in industrial computers, not only provides global customers with high-tech, high quality embedded system platforms, but also fulfills its customers' needs with the value added services of on-demand production, global logistics, and technical support. Matrox and Datapath, two of the industry leading suppliers of display solutions, are well known for next-generation video wall solutions based on high performance, high flexibility, and multi-channel video signal series products. Aiming at offering premium solutions for video wall system integrators, Advantech, Matrox, and Datapath are jointly launching a series of video wall controllers by integrating and fine tuning industrial servers with graphic and video capture cards under strict and comprehensive compatibility, performance, and reliability verification. Enhanced by Advantech's global service network, the new partnership offers video wall integrators unprecedented turnkey solutions and added value.



Meet Matrox and Datapath



The Matrox Mura MPX Series redefines the future of collaborative video walls and wall matrix management. Engineered to deliver unparalleled performance, image quality, and scalability, the Mura MPX Series output/input boards feature highly flexible, universal input channels supporting digital and analog signals, plus capabilities for HD image capture and display of uncompressed data and peer-to-

peer data transfer. The Mura MPX Series really is an ideal solution for large-scale, multi-channel video wall applications.

Datapath's product portfolio offers a wide array of solutions that service such diverse markets as medical imaging, control rooms, entertainment and machine vision. The latest generation of video wall products is centered on video capture, high-res graphic cards and software solutions.



Advantech Video Wall Controller



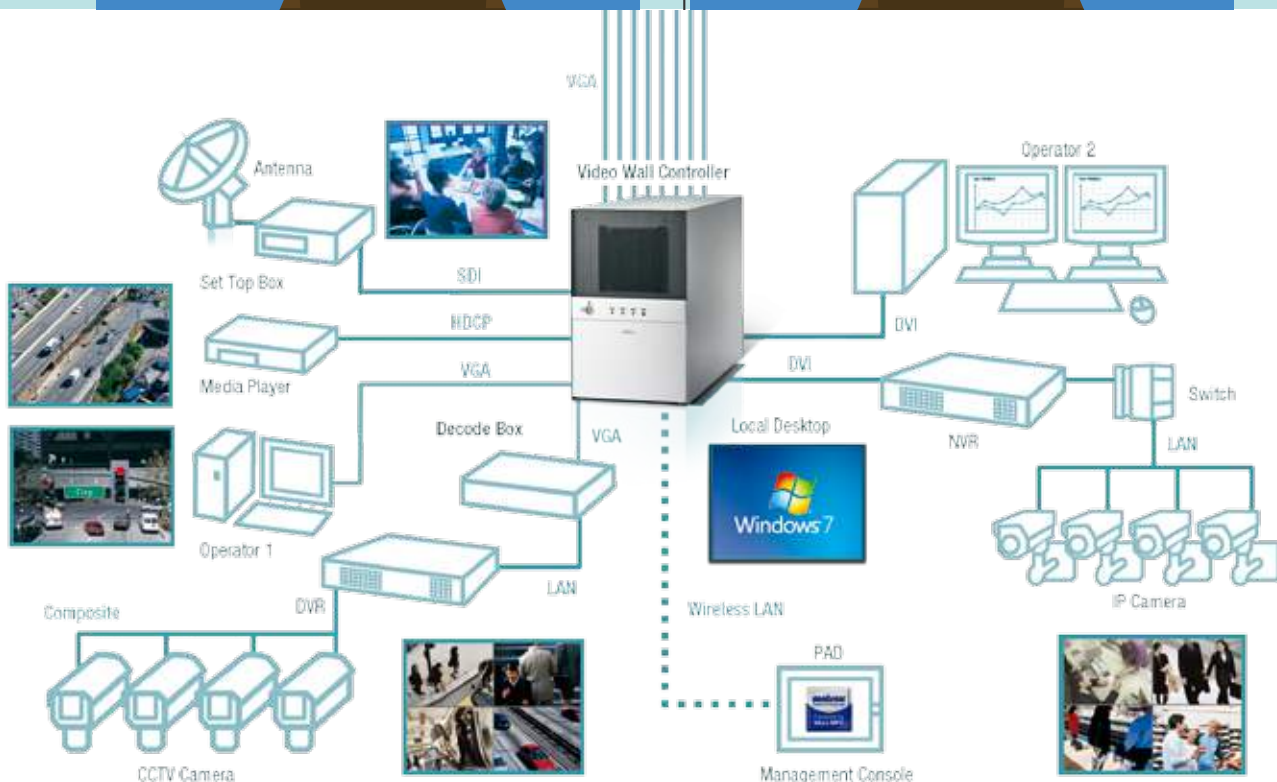
Being strictly validated by the Matrox and Datapath laboratories, the Advantech video wall controller features Mura MPX series, Datapath graphic and capture card compatibility, and industrial reliability.

Key characteristics:

- Industrial Reliability: System can run stably under 40°C
- BIOS Optimized: Multiple Mura MPX or Datapath cards are recognized by the system and function well
- Thermal Optimization: No thermal issues, even when multiple Mura MPX or Datapath cards are installed in the system
- Data Switch Optimized: Video captured can be displayed anywhere on the video wall
- Power Solution Optimized: Power supply is sufficient for the system to carry multiple Mura MPX or Datapath processors
- Remote Management: A remote administrator can monitor and control the system via network connection

Video Wall Architecture

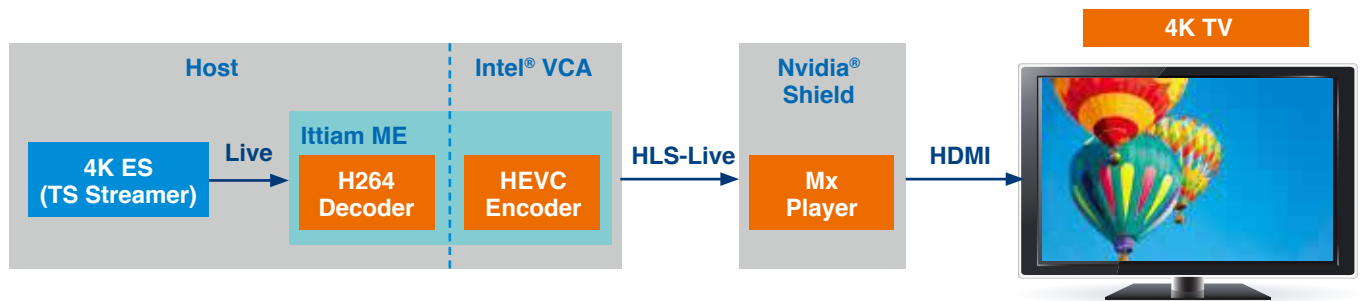
A video wall, besides being used in signage displays, can also be a powerful control room tool, aggregating, integrating, analyzing and manipulating massive amounts of information from a whole array of sources. In professional applications that require high situational awareness - such as SCADA, emergency dispatch centers, transportation, security, oil and energy - a reliable, high performance video wall is really the backbone of the central control room. When equipped with Matrox Mura MPX cards, the Advantech AVS video wall controller is capable of not only handling multiple displays but also of capturing video or graphics streams from a wide range of sources such as PC, NVR, DVR, decoder box, blue ray player, set up box, etc. Once streams are captured, the AVS video wall controller flexibly switches, scales, organizes and displays that content in real time. Powered by Matrox Mura MPX and endowed with industrial reliability, the Advantech AVS video wall controller makes an ideal solution for system integrators or OEMs who need to build high performance video wall systems.



Delivering Real-time 4K HEVC Transcoding

1U High-density 4K Video Transcoding Server with Intel® Visual Compute Accelerator and Ittiam Software

Advantech incorporates an Intel® VCA with Ittiam software to deliver a complete, on-the-shelf, application-ready, media processing platform. Serving the growing need for image encoding and decoding, Advantech's total solution is compatible with existing Intel® Xeon® E5 infrastructure, now adding E3 graphics capability to E5 computing power. It provides outstanding TCO per channel with low storage and network costs. The integrated software architecture combines CPU and GPU for excellent quality and performance that delivers real-time 4K HEVC transcoding.



3x H.265 4K @ 30fps Streams Transcoding Performance

- Live 4K Transcoding for Live to VoD and Live delivery
- Live ingest simulated using a TS streamer to ingest 4K stream
- HLS segments are created live and can be accessed by the player using HTTP URL



AGS-913

- Processor: Dual Intel® Xeon® E5-2600 v3/v4 series, up to 20 cores / 40 threads
- Memory: DDR4 1600/1866/2133 MHz ECC-REG type up to 256GB
- Remote Management: IPMI function support
- Expansion: Supports 3 * PCIe x16 double-deck card + 1* PCIe x8 single-deck FH/HL card
- PSU: 1100W 1+1 redundant power supply with 80 PLUS Platinum level certification



Intel® VCA

- Virtual Ethernet provides connectivity between 3x Intel® Xeon® E3 processors with Intel® Iris™ Pro Graphics
- 12x 2.9GHz Broadwell Cores with AVX 2.0
- Up to 96GB of DDR3 memory (32GB per node, 3 nodes on the card)
- Full length, full height, double-width Gen3 PCIe x 16 Card
- Cent OS 7.1 on host & VCA; Xen & KVM supported
- Virtual Ethernet provides connectivity between card & host

Ittiam

Ittiam

- Larger prediction and coding blocks – up to 64x64 coding units
- Hierarchical coding structure of blocks for greater flexibility in dividing up the image
- Larger as well as symmetric and asymmetric motion partitions
- Larger transform sizes up to 32x32 with hierarchical coding structure
- Up to 35 modes of intra prediction in H.265 compared to 9 in H.264
- 8-tap quarter pixel filtering for improved interpolation accuracy
- Sample adaptive offset based on in-loop filtering
- Tiles and Wavefront parallel processing for high efficiency

Enabling Software-defined Storage Solution

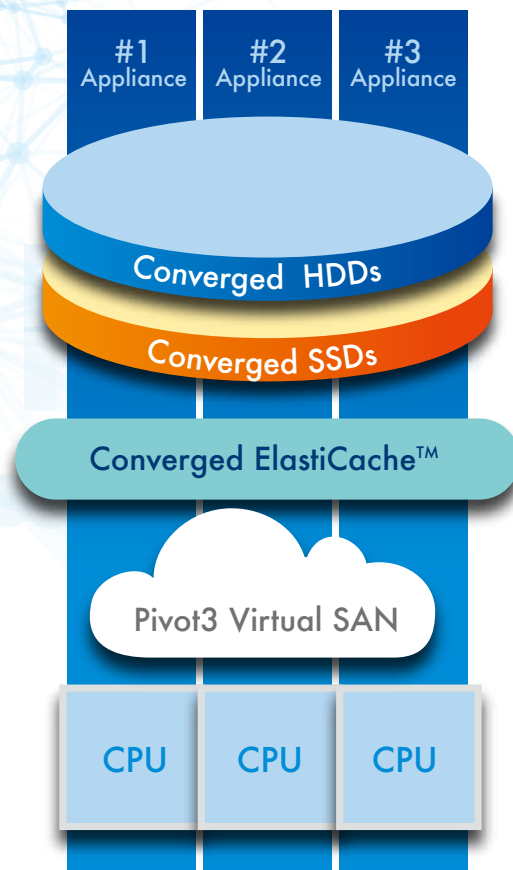
3U, 16-bay, Hybrid Hyperconvergence Storage System Powered by Pivot3

Cooperating with Pivot3, the world's leading software-defined storage solution, Advantech now enables dynamic hyperconvergence solutions for various industrial applications. A hyper-converged node is an optimized VMware ESXi virtual server environment where all system applications and resources can be provisioning, with no impact to the business and with reduced costs for shared storage. Unlike replication-based backup architectures, this solution aims to improve infrastructure management, boost IT productivity and agility, and reduce organizational risk at the same time.

EFFICIENCY
Up to 94% usable storage capacity

PERFORMANCE
Quality of Service & dynamic provisioning

RESILIENCY
99.9999% availability & 5-drive fault tolerance



HPC-8316



ASMB-913

System	3U, 16-bay dual LGA 2011-R3 Intel® Xeon® E5-2640 v3 2.6G 8-core processors with 8G DDR4-2133			
Drive Bay	SATA HDD 16TB	SATA HDD 16TB	SSD 3.2TB	SSD 3.2TB
Ethernet	Intel® X710-DA4, quad 10G SFP	Intel® X540-T2, 2 x 10G BASE-T connector	Intel® X710-DA4, quad 10G SFP	Intel® X540-T2, 2 x 10G BASE-T connector
Power Supply	700W 80+ Gold 1+1 RPS			

Video Transcoding System



Project

GPU servers accelerate compute-intensive image processing within Video Processing and Transcoding, including scaling, deinterlacing, frame rate conversion, motion vector calculation, and other tasks that require computation and analysis to modify or create new video frames. Faster video preprocessing acceleration benefits the output quality of all video output formats, for both transcoding and automated content assembly.

System

Advantech's industrial GPU server AGS-923 was adopted for streaming transcoding, which requires accelerated video processing and H.264 transcoding with GPUs and multicore CPUs. AGS-923 is

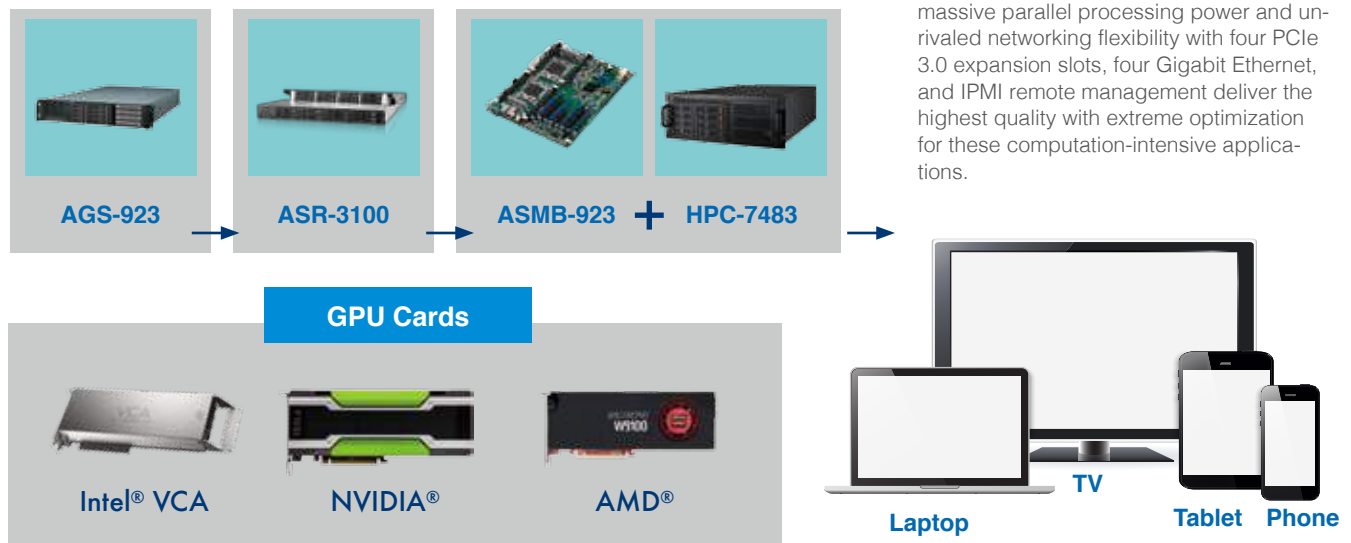
also suggested for cloud gaming, medical imaging, and data analysis, all of which benefit from GPU acceleration. ASR-3100, equipped with 16 NVMe SSD, supports a large amount of hot data processing without latency.

Requirements

- Deinterlacing
- Video Image Scaling
- Frame Rate Conversion
- Accelerated x264 Encoding

Conclusion

Advantech's GPU server system was ideal for this GPU acceleration system. Its massive parallel processing power and unrivaled networking flexibility with four PCIe 3.0 expansion slots, four Gigabit Ethernet, and IPMI remote management deliver the highest quality with extreme optimization for these computation-intensive applications.



ASR-3100

1U Rackmount Dual Intel® Xeon® E5-2600 v3 Storage Server, with up to 16 2.5" NVMe SSDs and 2 PCIe Gen III x8 Slots



AGS-923

2U Rackmount Intel® Xeon® E5-2600 v3 GPU server, Supporting 4 x PCIe x16 double-depth card and 1 x PCIe x8 single-depth FH/HL card

NVIDIA® Quadro® Certified Medical Image System



Project

For modern healthcare, computed tomography (CT) is a big breakthrough that allows medical professionals to explore inside the human body without cutting it open. Thanks to advancements in computer technology, these medical images dramatically enhance diagnostic ability. One of our European customers supplies such medical imaging systems. These systems not only provide great image data transfer and storage, but also offer reduced chassis dimensions and reduced noise via smart fan control.

System

ASMB-923 is perfect as the imaging workstation in such an application, featuring Intel® Xeon® E5-2600 V3 series processors, 8 DIMMs up to 128 GB capacity, and rich expansion I/O interfaces. ASMB-923 offers extreme performance in computing speed, memory capacity and

fast, reliable networking. To ensure the system operates reliably and smoothly, ASMB-923 has multiple built-in GbE LANs which support redundant networking. It also has 10 SATA ports supporting RAID 0, 1, 5, and 10, to offer high capacity, high performance, and high reliability for image data storage.

Requirements

- Massive data storage capacity with hot swappable storage bays
- Short depth chassis with smart fan control
- GigaLAN with networking redundancy for reliable image data transmission

Conclusion

For medical image systems, data storage and transfer ability are absolutely crucial. Advantech's industrial ASMB923 motherboard provides great CPU performance, massive data storage, remote management, and smart fan control. It delivers extreme performance at a low cost, and is available with a 5-year extended warranty and 7-year product supply, provided by Advantech's localized logistics support.



Short-depth high performance server with user-friendly quietness delivers massive data processing, storage and transfer ability.



ASMB-923

Dual LGA 2011-R3 Intel® Xeon® E5-2600v3 EATX Server Board with DDR4, 4 PCIe x16+ 2 PCIe x8 (Gen 3.0), 4 USB 3.0



HPC-7400

4U Compact Rackmount / Tower Chassis for EATX/ATX/ MicroATX Motherboard

Automatic Optical Inspection (AOI) System



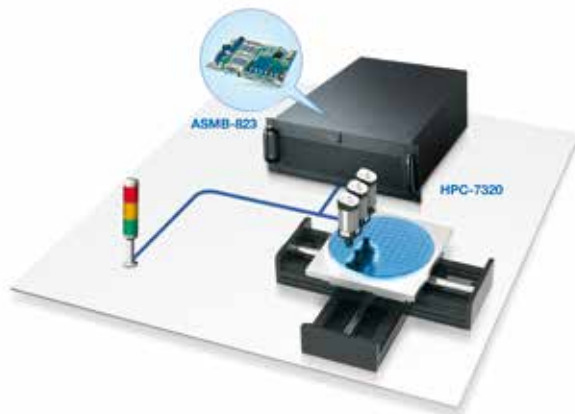
Project

For high-tech electronic products that comprise micro components, manual visual inspections are no longer acceptable for defect detection. Consider a post-sawing LED wafer with up to 100 grain-sized dies; relying on human inspectors to detect defects just wouldn't cut it. Consequently, automatic optical inspection (AOI) systems with robotic applications have been widely adopted for wafer inspection to increase assembly reliability, reduce personnel costs, improve quality, and enhance competitiveness.

System

Although the performance of a traditional CPU-based hardware computing AOI system exceeds that of a GPU cluster-based software solution, the development and maintenance costs are substantially higher. A CPU-based hardware solution requires multiple PCs to process high-resolution image data from a single camera, whereas a GPU cluster-based solution, such as Advantech's ASMB-823 with HPC-7320 solution is capable of processing the same amount of data using only one PC and one

GPU cluster. Advantech's ASMB-823 with HPC-7320 system supports up to two 225W TDP GPU cards, accelerating visual computing for complex applications and yielding a high throughput of high-resolution data. To ensure reliable parallel computing performance, the system is equipped with a 700W single or redundant power supply. The system also features two 8-cm and one 6-cm high-performance cooling fans to ensure thermal stability during AOI inspections.



A GPU cluster-based solution is capable of processing high-resolution image data using only one PC and one GPU cluster instead of traditional multiple PCs AOI systems.

Requirements

- High throughput of high-resolution image data
- Multiple image inspections for detection accuracy
- Competitive, cost-effective performance
- Compact built-in system

Benefits

In the field of hi-tech manufacturing, speed and precision determine competitiveness. Because human inspectors cannot conduct precise and stringent assessments with quantifiable repeatability, machine vision and motion control systems are essential to ensure consistent quality and operational efficiency. Advantech's industrial GPU server solution is designed to maximize convenience, competitiveness, and market serviceability, and can be used to boost GPUs in a PC cluster system or integrated with hybrid system hardware. The benefits of this solution include a faster time-to-market, reduced development costs, high flexibility, and low maintenance costs, enhancing production efficiency for quality-focused manufacturers.



ASMB-823

Dual LGA 2011-R3 Intel® Xeon® E5-2600 v3
ATX Server Board with
DDR4, 4 PCIe x16, 6
USB 3.0, SATA3, Dual LAN,
IPMI 2.0



HPC-7320

3U Short-depth Rackmount/
Tower Chassis for EATX/ATX/
MicroATX Motherboard

Factory Automation (SCADA) System



Project

A certain factory needed a SCADA (Supervisory Control And Data Acquisition) Server that would enhance system performance and at the same time reduce infrastructure costs. In order to have a fully integrated system, our customer asked for a SCADA server with remote management, virtualization, and storage capacity.

System

ASMB-785 was the perfect solution, with ATX form factor, it easily fitted into the shorter depth server chassis HPC-7282. For optional IPMI-1000, it can upgrade to IPMI remote management to ensure reliability and accessibility even

if the operating system crashes. At the same time, ASMB-785 is an industrial serverboard, featuring an Intel® Xeon® E3 v5/ 6th Generation Core™ i series CPU, and built-in Intel® Gb LAN chips, which makes it an optimized solution that can operate in a virtualized system environment.

Requirements

- Massive data storage capacity with hot swappable storage bays
- Full support for virtualization S/W, e.g., VMware, etc.
- Out-of-band remote management, IPMI 2.0, supported

Benefits

For a SCADA server system, computing power, reliability, and management are major considerations. Advantech's ASMB-785 serverboard, and HPC-7282 industrial chassis made an ideal choice. They are also available with a 5-year extended warranty and 7-year product supply, provided by Advantech's localized logistics support.



Industrial-grade server design and IPMI remote management ensure reliability and accessibility for all kinds of factories.



ASMB-785

LGA 1151 Intel® Xeon® E3 v5/ 6th Generation Core™ ATX Server Board with DDR4, 4 PCIe, 3 PCI, 6 USB 3.0, 6 COM, 6 SATA3, Quad/Dual LANs



HPC-7282

2U Rackmount Chassis for Micro/ATX Server Board with 8 Hot-swap Drive Bays, 7 Low Profile Expansion Slots

ASMB-585

LGA 1151 Intel® Xeon® E3 v5/6th Generation Core™ Micro ATX Server Board with 4 DDR4, 1 PCIe x16, 3 PCIe x4, Quad LANs, USB 3.0

Dimensions (WxH)

244 x 244 mm



Features

- Supports LGA 1151 Intel® Xeon® E3-1200 v5 and 6th Generation Core™ i7/i5/i3 processors
- DDR4 ECC/Non-ECC 2133/1866/1600 MHz DIMM up to 64GB
- One PCIe x16 slot (Gen3 x16 link), three PCIe x4 slots (2 Gen3 x4 link, 1 Gen3 x1 link)
- 0 ~ 60° C ambient operating temperature range

Ordering Information

Part Number	Chipset	Memory	LAN	VGA	DVI
ASMB-585G2-00A1E	C236	4 x DDR4 ECC UDIMM	2	1	2
ASMB-585G4-00A1E	C236	4 x DDR4 ECC UDIMM	4	1	2

Packing List

Part Number	Description	Quantity
2061058500	Driver CD	x 1
2001058510	Startup manual	x 1
1700003194	SATA data cables	x 2
1703150102	SATA power cables	x 2
19Z0000996T000	I/O shield	x 1



ASMB-585G2-00A1E



ASMB-585G4-00A1E

ASMB-785

LGA 1151 Intel® Xeon® E3 v5/ 6th Generation Core™ ATX Server Board with 4 DDR4, 4 PCIe, 3 PCI, 6 USB 3.0, 6 COM, 6 SATA3, Quad/Dual LANs, IPMI 2.0

Dimensions (WxH)

304.8 x 244 mm



Features

- Supports LGA 1151 Intel® Xeon® E3-1200 v5 and 6th Generation Core™ i7/i5/i3 processors
- DDR4 2133/1866/1600/1333 MHz ECC/Non-ECC UDIMM up to 64 GB
- One Gen 3.0 PCIe x16 link (or two PCIe x16 slots with x8 link), two PCIe x4, and three PCI slots
- 0 ~ 60° C ambient operating temperature range

Ordering Information

Part Number	Chipset	Memory	LAN	USB 3.0	VGA	DVI	SATAIII	IPMI
ASMB-785G2-00A1E	C236	4 x DDR4 ECC UDIMM	2	6	1	2	6	Optional
ASMB-785G4-00A1E	C236	4 x DDR4 ECC UDIMM	4	6	1	2	6	Optional

Packing List

Part Number	Description	Quantity
2066S78500	Driver CD	x 1
2006S78510	Startup manual	x 1
1700003194	SATA data cables	x 1
1700019381	SATA data cable (right angle)	x 1
1700022749-11	SATA power cables	x 2
19Z0000996T000	I/O shield	x 1



ASMB-785G2-00A1E



ASMB-785G4-00A1E

ASMB-913

Dual LGA 2011-R3 Intel® Xeon® E5-2600 v3 EATX Server Board with 16 x DDR4 DIMM, 3 PCIe x16, 6 USB 3.0, PME support

Dimensions (WxH)

304.8 x 330.2 mm



Features

- EATX Server Board with dual Xeon® E5-2600 v3 processor
- 16 x DDR4 2133 MHz RDIMM up to 512 GB
- Three PCIe x16 slot(Gen3.0) and PME expansion slot
- PME expansion cards supporting list is in page 31
- 0 ~ 40° C ambient operating temperature range

Ordering Information

Part Number	Chipset	Memory	GbE LAN	IPMI	VGA Chip
ASMB-913-00A1E	C612	16 x DDR4 RDIMM	2	-	AST 1400
ASMB-913I-00A1E	C612	16 x DDR4 RDIMM	4	Yes	AST 2400

Packing List

Part Number	Description	Quantity
2061913I00	Driver CD	x 1
2001913I10	Startup manual	x 1
1700003194	SATA data cables	x 2
1703150102	SATA power cables	x 2
1700019748	CPU power cable(8P)	x 2
19Z0000995T000	I/O shield	x 1



ASMB-913-00A1E



ASMB-913I-00A1E

ASMB-823

Dual LGA 2011-R3 Intel® Xeon® E5-2600 v3 ATX Server Board with DDR4, 4 PCIe x16, 6 USB 3.0, SATA3, Dual LAN, IPMI 2.0

Dimensions (WxH)

304.8 x 244 mm



Features

- ATX Server Board with dual Xeon® E5-2600 v3 processor
- DDR4 2133 MHz RDIMM up to 192 GB
- Four PCIe x16 slots (Gen3), two PCIe x8 (Gen3) and one PCIe x4 (Gen2) slots
- Nine SATA3 ports and six USB 3.0 ports
- 0 ~ 40° C ambient operating temperature range

Ordering Information

Part Number	Chipset	Memory	GbE LAN	IPMI	VGA Chip
ASMB-823-00A1E	C612	6 x DDR4 RDIMM	2	-	AST 1400
ASMB-823I-00A1E	C612	6 x DDR4 RDIMM	2	Yes	AST 2400

Packing List

Part Number	Description	Quantity
2066823I00	Driver CD	x 1
2006823I10	Startup manual	x 1
1700003194	SATA data cables	x 2
1700022749-11	SATA power cables	x 2
1700019748	CPU power cable	x 2
19Z0000777T000	I/O shield	x 1



ASMB-823-00A1E
ASMB-823I-00A1E

HPC-7120

1U Short Depth Server Chassis for EATX/ATX/MicroATX Server board with 2 x 2.5" Hot-swap Drive Bays and 1 full-height/half-length PCIe x16 Expansion Slot

Dimensions (WxHxD)

438 x 43 x 478 mm



Features

- 1U short depth server chassis supports EATX/ATX/MicroATX motherboard
- Two hot swap 2.5" SATA/SSD drive bays
- Anti-vibration FAN design
- Two front USB3.0 ports

Ordering Information

Part Number	Max. MB Support	Hot-swap HDD	I/O	Power Supply
HPC-7120-00XE	EATX	2x 2.5"	1x FH	Optional

Packing List

Part Number	Items	Quantity
9661310000E	Hot-Swap 2.5" HDD tray	2
1700024529-01	Front USB 3.0 cable	1
1990027281T000	Air duct for ASMB-9XX series	1
1990027567T000	Air duct for ASMB-8XX series	1



HPC-7242

2U Rackmount Chassis for ATX Motherboard with 4 Hot-Swap SAS/SATA HDD Trays and RPS

Dimensions (WxHxD)

426 x 88 x 525 mm



Features

- Supports ATX motherboard with dual processors
- Four shock-resistant hot-swap disk trays supporting 3.5" or 2.5" SAS/ SATA drives for RAID 5/10 application, one slim ODD, and two 2.5" internal drives
- Dual front USB 3.0 ports
- Supports 80plus single or redundant power supply up to 700W

Ordering Information

Part Number	Max. MB Support	Hot-swap HDD	I/O	Power Supply
HPC-7242MB-00XE	ATX	4x 3.5"	3x FH	Optional

Packing List

Part Number	Description	Quantity
9662132020E	Black mobile HDD tray	4
1990021407T000	Door filter	1
1960019471T00B	FlexATX Power Rear Bracket	1
1961613000S00G	2U handle and mounting ear	2



HPC-7320

3U Short-depth Rackmount/Tower Chassis for EATX/ATX/MicroATX Motherboard

Dimensions (WxHxD)

426 x 132 x 480 mm



Features

- Supports EATX/ATX/MicroATX motherboard with dual processors
- Two Hot-Swap 3.5"/2.5" drive bays, one slim ODD drive bay and two internal 3.5" HDD bays
- Dual front USB 3.0 ports
- Supports Flex ATX Power, 2U 80Plus Single or Redundant Power Supply
- Front-accessible system fan without opening top cover for easy maintenance

Ordering Information

Part Number	Max. MB Support	Hot-swap HDD	I/O	Power Supply
HPC-7320MB-00XE	EATX	2x 3.5"	7x FH	Optional

Packing List

Part Number	Description	Quantity
1960002043T001 & 1960004574T001	Wall mount bracket	1
1960061378T001	FATX power rear bracket	1
1960069262N001	1U power rear bracket	1
1990025044T000	Door filter	1
1750008101-01	8cm system fan	2



HPC-7483

4U Rackmount / Tower Chassis for EATX/ATX/MicroATX Motherboard

Dimensions (WxHxD)

435 x 177 x 673 mm



Features

- Supports EATX/ATX/MicroATX motherboard
- Shock-resistant disk drive bay provides eight hot-swap 3.5" or 2.5" SAS/SATA disk trays, three 5.25" drive bays, and two 2.5" internal drive space
- With optional storage upgrade kit installed, system equipped up to eleven hot-swap HDD trays for higher storage capacity requirement

Ordering Information

Part Number	Description
HPC-7483-12RXE	With redundant 1+1 1200W power supply, with ATX switch
HPC-7483-18RXE	With redundant 1+1 1800W power supply, with ATX switch
HPC-7483-20RXE	With redundant 1+1 2000W power supply, with ATX switch

Packing List

Part number	Description	Quantity
1750008306-01	12cm system fan (Pre-installed)	3
9661831600E	3.5" HDD Trays (Pre-installed)	8
1700025828-01	PDB CN1 connector to MB 4pin or 8pin 12V connector of PCIe slot	1



HPC-8212

2U Storage Chassis for ATX/EATX Serverboard with 12 Hot-swap Drive Bays

Dimensions (WxHxD) 438 x 884 x 620 mm



Features

- 2U rackmount chassis supports ATX/EATX motherboard
- 12-bay hot-swappable 3.5"/2.5" SAS 12Gb/s drives or SATA 6Gb/s drives
- 4 x NVMe drives supported via an optional riser card
- Default 7x slots (low profile) rear panel, 3x slots (full height) optional
- Supports Flex ATX Power, 80+ redundant power supply

Ordering Information

Part Number	Chassis Depth	Front HDD Backplane	Default Slide Rail
HPC-8212SE-00A1E	620mm	SAS 12Gb/s backplane wth SAS expander	26" slide rail
HPC-8212SA-00A1E	540mm	SAS 12Gb/s backplane wth SAS expander	22" slide rail

Packing List

Item	Quantity
Slide Rail Kit	1



HPC-8224

2U Storage Chassis for ATX/EATX Serverboard with 24 Hot-swap Drive Bays

Dimensions (WxHxD) 438 x 884 x 620 mm



Features

- 2U rackmount chassis supports ATX/EATX motherboard
- 24-bay hot-swappable 2.5" SAS 12Gb/s drives or SATA 6Gb/s drives
- 4 x NVMe drives supported via an optional riser card
- Default 7x slots (low profile) rear panel, 3x slots (full height) optional
- Supports Flex ATX Power, 80+ redundant power supply

Ordering Information

Part Number	Chassis Depth	Front HDD Backplane	Default Slide Rail
HPC-8224SE-00A1E	620mm	SAS 12Gb/s backplane wth SAS expander	26" slide rail
HPC-8224SA-00A1E	540mm	SAS 12Gb/s backplane wth SAS expander	22" slide rail

Packing List

Item	Quantity
Slide Rail Kit	1



HPC-8316

3U Storage Chassis for EATX/ATX/Micro ATX Serverboards with 16 Hot-Swappable Drive Bays

Dimensions (WxHxD)

435 x 132 x 620 mm



Features

- 3U rackmount chassis supports EATX/ATX/Micro ATX serverboards
- Features 16 hot-swappable drive bays for 3.5/2.5" SAS 12 Gb/s or SATA 6 Gb/s drives
- Two rear 2.5" SATA drive bays with an optional hot-swappable bay for SAS SKUs
- Two front-accessible USB 3.0 ports

Ordering Information

Part Number	Chassis Depth	Front HDD BP	Rear HDD	ASMB Form Factor
HPC-8316SE-00A1E	620 mm	SAS 12 Gb/s BP with expander	2-bay hot-swappable SATA	EATX, ATX, Micro ATX
HPC-8316SA-00A1E	540 mm	SAS 12 Gb/s BP with expander	2-bay hot-swappable SATA	ATX, Micro ATX
HPC-8316TE-00A1E	620 mm	SATA 6 Gb/s BP with port multiplier	2-bay internal SATA	EATX, ATX, Micro ATX
HPC-8316TA-00A1E	540 mm	SATA 6 Gb/s BP with port multiplier	2-bay internal SATA	ATX, Micro ATX



HPC-8316SE-00A1E, HPC-8316SA-00A1E



HPC-8316TE-00A1E, HPC-8316TA-00A1E

Packing List

Part Number	Description	Quantity
9680016858	26" Sliding rail kit	1

HPC-8424

4U Storage Chassis for ATX/EATX Serverboard with 24 Hot-swap Drive Bays

Dimensions (WxHxD)

438 x 176 x 620/540 mm



Features

- 4U rackmount chassis supports ATX/EATX motherboard
- 24-bay hot-swappable 3.5"/2.5" SAS 12Gb/s drives or SATA 6Gb/s drives
- 4 x NVMe drives supported via an optional riser card
- Two rear 2.5" hot-swappable HDD drive bays
- Supports Flex ATX Power, 80+ redundant power supply

Ordering Information

Part Number	Chassis Depth	Front HDD Backplane	Default Slide Rail
HPC-8424SE-00A1E	620mm	SAS 12Gb/s backplane with SAS expander	26" slide rail
HPC-8424SA-00A1E	540mm	SAS 12Gb/s backplane with SAS expander	22" slide rail

Packing List

Item	Quantity
Slide Rail Kit	1



AGS-913

1U Rackmount Intel® Xeon® E5-2600 v3 GPU server, Supporting 3 x PCIe x16 double-depth cards and 1 x PCIe x8 single-depth FH/HL card

Dimensions (WxHxD) 430 x 44 x 770 mm



Features

- Processor: Dual Intel® Xeon® E5-2600 v3 series, up to 20 cores / 40 threads
- Memory: DDR4 1600/1866/2133 MHz ECC-REG type up to 256GB
- Remote Management: IPMI function support
- Expansion: Supporting 3 * PCIe x16 double-deck card + 1* PCIe x8 single-deck FH/HL card

Ordering Information

Part Number	HDD	VGA Chip	RJ45	IPMI	Power supply
AGS-913I-R11A1E	4	AST 2400	4	YES	1+1 1100W RPS

System Contents

Items	Advantech P/N	Quantity
CPU0 heatsink	1960065593N001	1
CPU1 heatsink	1960065591N001	1
Slide rail kit	9680015703	1
Power cable for expansion card (Pre-assembled in the system)	1700023022-01	6
Driver CD	2061S91300	1
Startup manual	2001S91310	1



AGS-923

2U Rackmount Intel® Xeon® E5-2600 v3 GPU server, Supporting 4 x PCIe x16 double-depth cards and 1 x PCIe x8 single-depth FH/HL card

Dimensions (WxHxD) 430 x 88 x 770 mm



Features

- Processor: Dual Intel® Xeon® E5-2600 v3 series
- Memory: DDR4 1600/1866/2133 MHz ECC-REG type up to 256GB
- Remote Management: IPMI function support
- Expansion: Supporting 4 * PCIe x16 double-depth card + 1* PCIe x8 single-depth FH/HL card
- PSU: 1400W 1+1 redundant power supply with 80 PLUS Platinum level certification

Ordering Information

Part Number	HDD tray	VGA Chip	RJ45	IPMI	Power Supply
AGS-923I-R14A1E	8	AST 2400	4	YES	1+1 1400W RPS

System Contents

Items	Advantech P/N	Quantity
Startup manual	2001S92310	1
Driver CD	2061S92300	1
Rail kit (pair)	9680015703	1
CPU cooler	1960063011N001	2
Power module (Installed in the system)	1757004662-01	2
Power cable for GPU/VGA card (Installed in the system)	1700023022-01	8



HPC-7400-S813

4U GPU Server System With Intel® Xeon® E5-2600 v3 CPU, Supporting up to 2* GPU cards and 1400W RPS

Dimensions (WxHxD) 426 x 177 x 448 mm



Features

- 7 years longevity support- Revision control
- 0 ~ 40° C operating temperature
- Reliable resume from AC power loss function
- Intel® Grantley EP (C612) platform
- Supports Intel® Xeon® E5-2600/ E5-1600 v3 Series CPUs
- Quad channel DDR4 2133 MHz ECC & Registered DIMMs up to 256 GB
- Supports up to 2* GPU cards

Ordering Information

Part Number	Description
HPC-7400MB-14A1E	4U chassis with redundant 1+1 1400W PSU
ASMB-813I-00A1E	LGA 2011-R3 ATX server board
1750007769-01	x2 High Speed FAN for GPU Server

Spare Parts

Parts number	Description
1990021256T00	Door filter
1750007769-01	8cm system fan
96PSRM-A1K4WMDU	1U 1400W 1+1 redundant power module, AC 100~240V (full range)
96PSR-1U-BKP-F1K4	1400W power distribution board for 96PSRM-A1K4WMD



HPC-7400-S923

4U GPU Server System With Dual Intel® Xeon® E5-2600 v3 CPU, Supporting up to 3* GPU cards and 1400W RPS

Dimensions (WxHxD) 482 x 177 x 448 mm



Features

- 7 years longevity support- Revision control
- 0 ~ 40° C operating temperature
- Reliable resume from AC power loss function
- Intel® Grantley EP (C612) platform
- Supports Dual Intel® Xeon® E5-2600 v3 Series CPUs
- Quad channel DDR4 2133 MHz ECC & Registered DIMMs up to 256 GB

Ordering Information

Part Number	Description
HPC-7400MB-14A1E	4U chassis with redundant 1+1 1400W PSU
ASMB-923I-00A1E	LGA 2011-R3 ATX server board

Spare Parts

Parts number	Description
1990021256T00	Door filter
1750007769-01	8cm system fan
96PSRM-A1K4WMDU	1U 1400W 1+1 redundant power module, AC 100~240V (full range)
96PSR-1U-BKP-F1K4	1400W power distribution board for 96PSRM-A1K4WMDU



ASR-3100

1U Rackmount Dual Intel® Xeon® E5-2600 v3 Storage Server, with up to 16 2.5" NVMe SSDs and 2 PCIe Gen III x8 Slots

Dimensions (WxHxD)

430 x 44 x 806 mm



Features

- Dual LGA 2011-R3 Intel® Xeon® E5-2600 v3 processors
- 16 DDR4-2133 RDIMMs for a maximum of 512 GB
- Supports up to 16 hot-swappable 2.5" NVMe/SAS (12 GB)/SATA (6 GB) drives
- Intelligent Platform Management Interface (IPMI) with LSI RAID management capabilities

Ordering Information

Part Number	2.5" Front HDD Bay	Second Row 2.5" HDD Bay	PCIe Slots	Chassis Depth	1 GbE	IPMI	Power Supply
ASR-3100PP-R11A1E	X8 NVMe	X8 NVMe + SATA (SAS optional)	2	806 mm	2	Yes	1+1 1100W RPS
ASR-3100PT-R11A1E	X8 NVMe	X8 SATA (SAS optional)	2	806 mm	2	Yes	1+1 1100W RPS
ASR-3100SS-R11A1E	X8 SAS+SATA	X8 SAS + SATA (x2 NVMe optional)	1*	806 mm	2	Yes	1+1 1100W RPS

Note:

1. One slot has been occupied by SAS12G RAID card
2. For quality assurance purpose, the product is required to be sold as a complete system with CPU, memory, drives fully integrated and tested.

System Contents

Items	Description	Quantity	Items	Description	Quantity
CPU0 heatsink	Heatsink for E5-2600 Series	1	Driver CD	ASR-3100 CD with drivers and user manual	1
CPU1 heatsink	Heatsink for E5-2600 Series	1	Startup manual	ASR-3100 startup manual	1
Rail kit	1U slide rail kit	1	Power module	1100W PSU	2
CMA	Cable Management Arm	1			

ASR-5200E

High-availability Disk Array Solution for Mission-critical Service with Zero Down Time

Dimensions (WxHxD)

483 x 87 x 556 mm



Features

- Redundant Dual Controller Configuration
- 2U12 (LFF)/2U24 (SFF), Two High-density Form Factors
- Default 2 x iSCSI 1Gb/s + 3 x SAS 6Gb/s per Controller
- Max 120 x 3.5" / 240 x 2.5" SATA/SAS 6Gb/s drives
- Additional Host Options: FC 8G/iSCSI 10G/iSCSI 1G

Ordering Information

Advantech P/N	Description
ASR-5200E-12A1E	2U-12 Bay Rackmount External Disk Array
ASR-5200E-24A1E	2U-24 Bay Rackmount External Disk Array

System Contents

Description	Quantity
Mount kit	1



ASR-3272

2U 12-bay Storage Server with Reliable Data Protection and Backup Solution

Dimensions (WxHxD)

432 x 88 x 699 mm



Features

- Supports Intel® Xeon® E3-1200/ E3-1200 v2 series up to 4 cores/8 threads
- Supports DDR3-1333/1600 MHz (ECC) U-DIMM up to 32 GB
- Supports 12x hot-swappable 3.5"/2.5" SATA/SAS 6Gb/s drives
- Advanced RAID feature by LSI SAS2108 ROC
- BBU option for data protection

Ordering Information

Advantech P/N

Description

ASR-3272-12A1E	2U-12 Bay Rackmount Storage Server
ASR-3272E-12A1E	2U-12 Bay Rackmount Storage Server with SAS Expansion Port
ASR-3272W-12A1E	2U-12 Bay Rackmount NAS appliance with pre-installed Windows Storage Server 2012 R2
1960047831N001	Cooler for LGA 1155 processors and TDP up to 95W



System Contents

Description

Quantity

26" Slide Rail Kit	1
650W 80 PLUS 1+1 redundant power supply	1
Internal Mini-SAS Cable 600mm, SFF-8087 to SFF-8087	1

ASR-3472

4U 24-bay Storage Server with Reliable Data Protection and Backup Solution

Dimensions (WxHxD)

432 x 176 x 699 mm



Features

- Supports Intel® Xeon® E3-1200/ E3-1200 v2 series up to 4 cores/8 threads
- Supports DDR3-1333/1600 MHz (ECC) U-DIMM up to 32 GB
- Supports 24x hot-swappable 3.5"/2.5" SATA/SAS 6Gb/s drives
- Advanced RAID feature by LSI SAS2108 ROC
- BBU option for data protection
- Remote management with Intel AMT

Ordering Information

Advantech P/N

Description

ASR-3472-24A1E	4U-24Bay Rackmount Storage Server
1960047831N001	Cooler for LGA 1155 processors and TDP up to 95W

System Contents

Description

Quantity

27" Slide Rail Kit	1
875W 80 PLUS 1+1 redundant power supply	1
Internal Mini-SAS Cable 600mm, SFF-8087 to SFF-8087	2



SKY-4120B

2U 24-bay Reliable Disk Expansion Enclosure to Fit Industrial Applications

Dimensions (WxHxD) 502 x 88.4 x 448 mm



Features

- Support 24x hot-swap 2.5" SAS (12Gb or 6Gb/s) drives
- SES enclosure management and smart fan control
- Three 12Gb/s SAS wide-ports per controller, two for input & one for output
- Storage daisy chain support, up to 72 drives
- High efficiency (80+) redundant power supply

Ordering Information

Part Number	Description
SKY-4120B-24A1E	2U 24-Bay Dual Controller JBOD Enclosure

System Contents

Description	Quantity
22" Slide Rail Kit	1
550W 80 PLUS 1+1 redundant power supply	1



SKY-4311

1U Rackmount Dual Intel® Xeon® E5-2600 v3 Storage Server, with up to 8 2.5" NVMe SSDs and 2 PCIe Gen III x8 Slots

Dimensions (WxHxD) 430 x 44 x 626 mm



Features

- Dual LGA 2011-R3 Intel® Xeon® E5-2600 v3 processors
- 16 DDR4-2133 RDIMMs for a maximum of 512 GB
- Supports up to 8 hot-swappable 2.5" NVMe/SAS (12 GB)/SATA (6 GB) drives
- Intelligent Platform Management Interface (IPMI) with LSI RAID management capabilities
- Supports 2 PCIe x8 cards

Ordering Information

Part Number	2.5" Front HDD Bay	PCIe Slots	Chassis Depth	1 GbE	IPMI	Power Supply
SKY-4311P-R11A1E	X8 NVMe	2	626 mm	2	Yes	1+1 1100W RPS

System Contents

Part Number	Description	Quantity
CPU0 heatsink	Heatsink for E5-2600 series	1
CPU1 heatsink	Heatsink for E5-2600 series	1
Rail kit	1U slide rail kit	1
Driver CD	ASR-3100 CD with drivers and user manual	1
Startup manual	ASR-3100 startup manual	1



SKY-8100

1U Carrier Grade Server based on Intel® Xeon® Processor Xeon® D series

Dimensions (WxHxD) 430 x 44 x 508 mm



Features

- 1U network server, < 20" deep
- Supports Intel Xeon® D-1508, Xeon® D-1527, Xeon® D-1528, Xeon® D-1548
- Four DIMM sockets support up to 16GB DDR4 1600/1867/2133/2400 (RDIMM only) MHz SDRAM
- Supports PCIe Gen3
- Supports 2 x PCIe x 8 Gen 3 slots, Full-Height/Full-Length

Ordering Information

Part Number	Description
SKY-8100AS-0000E	1U HPS w GSMB-3010/Xeon-D 1548 8C/STD AC/PCIe x8 riser card
SKY-8100BS-0000E	1U HPS w GSMB-3010/Xeon-D 1508 2C/STD AC/PCIe x8 riser card
SKY-8100CS-0000E	1U HPS w GSMB-3010/Xeon-D 1527 4C/STD AC/PCIe x8 riser card
SKY-8100DS-0000E	1U HPS w GSMB-3010/Xeon-D 1528 6C/STD AC/PCIe x8 riser card



Accessories

Part Number	Description
1702002600	Power cord 3P 180 cm, USA
1702002605	Power cord 3P 180 cm, Europe
1702031801	Power cord 3P 180 cm, UK
1700000237	Power cord 3P 180 cm, JP

SKY-8200

2U Carrier Grade Server based on Dual Intel® Xeon® E5-2600 v3 v4 up to 135W Processors

Dimensions (WxHxD) 430 x 88.6 x 508 mm



Features

- Dual Intel® Xeon® E5-2600 v3 v4 135W Processors
- 16 DIMM sockets support up to 1024 GB DDR4 1600/1866/2133 MHz SDRAM (ECC/REG/RDIMM)
- Supports 4 FH/FL PCIe x8 Gen3 slots, 2 FH/HL PCIe Gen3 x8 slots, 1 low profile PCIe x 8 Gen 3 slot
- Supports 4 x 2.5" hot-swappable SAS/SATA HDD/SSD drives

Ordering Information

Part Number	Description
SKY-8200AN-0000E	2U HPS w NAMB-6010 E5-2600v3/8955/TPM/B/B/AC/PCIe x8 riser card
SKY-8200AN-0001E	2U HPS w NAMB-6010 E5-2600v3/8955/TPM/B/B/DC/PCIe x8 riser card
SKY-8200BN-0000E	2U HPS w NAMB-6010 E5-2600v3/8900/TPM/B/B/AC/PCIe x8 riser card
SKY-8200BN-0001E	2U HPS w NAMB-6010 E5-2600v3/8900/TPM/B/B/DC/PCIe x8 riser card



Accessories

Part Number	Description
1702002600	Power cord 3P 180 cm, USA
1702002605	Power cord 3P 180 cm, Europe
1702031801	Power cord 3P 180 cm, UK
1700000237	Power cord 3P 180 cm, JP

Server Boards



Model Name		ASMB-584	ASMB-585
Form Factor		Micro ATX	Micro ATX
Processor System	CPU	Intel® Xeon® E3 v3 and 4th Gen. Core™ i3/i5/i7 Series	Intel® Xeon® E3-1200 v5 and 6th Gen. Core™ i3/i5/i7 Series
	Socket	1 x socket 1150	1 x socket 1151
	Max. Speed	3.5 GHz	3.6 GHz
	Chipset	Intel® C226	Intel® C236
Expansion Slot	PCI	1*	-
	PCIe x16	-	1 (Gen3 x16 link)
	PCIe x8	2 (x16 slot with x8 link)	-
	PCIe x4	1	3 (2 Gen3 x4 link, 1 Gen3 x1 link)
	PCIe x1	-	-
Memory	Technology	DDR3 ECC/non-ECC Unbuffer 1066/1333/1600 MHz	DDR4 ECC/non-ECC Unbuffer 1600/1866/2133 MHz
	Max. Capacity	32 GB ECC/Non-ECC UDIMM	64 GB ECC/Non-ECC UDIMM
	Socket	4 x 240-pin DIMM	4 x 288-pin DIMM
Graphics	Controller	Intel® GT2-HD Graphics	Intel® GT2-HD Graphics
	VRAM	1 GB maximum shared memory	1 GB maximum shared memory
	DVI	1	2
	Dual Display	Yes	Yes
Ethernet	Interface	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet
	Controller	1 x Intel® I217LM, 1 x Intel® I210AT	1 x Intel® I219LM, 3 x Intel® I210AT
	Connector	RJ-45 x 2	RJ-45 x 4
SATA	Channel	6	7
Rear I/O	VGA/DVI/HDMI/DP	1 / 1 / - / 2	1 / 2 / - / -
	Ethernet	2	4
	USB	4 (2 USB 3.0; 2 USB 2.0)	4 (USB 3.0)
	Audio	Mic-in, Line-out	Mic-in, Line-out
	Serial	-	1 (RS-232)
Internal Connector	USB	9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)	9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)
	Audio	1	1
	Serial	2	3
	Parallel	1	-
	SATA	6	7
Watchdog Timer	Output	System reset	System reset
	Interval	Programmable 1~255 sec	Programmable 1~255 sec

Server Boards



Model Name		ASMB-784	ASMB-785
Form Factor		ATX	ATX
Processor System	CPU	Intel® Xeon® E3 v3 and 4th Gen. Core™ i3/i5/i7 Series	Intel® Xeon® E3-1200 v5 and 6th Gen. Core™ i3/i5/i7 Series
	Socket	1 x socket 1150	1 x socket 1151
	Max. Speed	3.5 GHz	3.6 GHz
	Chipset	Intel® C226	Intel® C236
Expansion Slot	PCI	3	3
	PCIe x16	1 (switchable to two x8)	1 (switchable to two x8)
	PCIe x8	2 (switchable to one x16)	2 (switchable to one x16)
	PCIe x4	-	2
	PCIe x1	2	-
Memory	Technology	DDR3 ECC/non-ECC Unbuffer 1066/1333/1600 MHz	DDR4 ECC/non-ECC Unbuffer 1600/1866/2133 MHz
	Max. Capacity	32 GB ECC/Non-ECC UDIMM	64 GB ECC/Non-ECC UDIMM
	Socket	4 x 240-pin DIMM	4 x 288-pin DIMM
Graphics	Controller	Intel® GT2-HD Graphics	Intel® GT2-HD Graphics
	VRAM	1 GB maximum shared memory	1 GB maximum shared memory
	DVI	2	2
	Dual Display	Yes	Yes
Ethernet	Interface	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet
	Controller	1 x Intel® I217LM + 3 x Intel® I210AT	1 x Intel® I219LM + 3 x Intel® I210AT
	Connector	RJ-45 x 4	RJ-45 x 4
SATA	Channel	6	6
Rear I/O	VGA/DVI/HDMI/DP	1 / 2 / - / -	1 / 2 / - / -
	Ethernet	4	4
	USB	4 (2 USB 3.0; 2 USB 2.0)	4 (USB 3.0)
	Audio	-	Mic-in, Line-out
	Serial	1 (RS-232)	1 (RS-232)
Internal Connector	USB	9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)	9 (2 USB 3.0; 6 USB 2.0; 1 USB 2.0 Type A)
	Audio	1	1
	Serial	1	3
	Parallel	1	1
	SATA	6	6
Watchdog Timer	Output	System reset	System reset
	Interval	Programmable 1~255 sec	Programmable 1~255 sec

Server Boards



Model Name		ASMB-813	ASMB-823
Form Factor		ATX	ATX
Processor System	CPU	Intel® Xeon® E5-1600 v3/ 2600 v3 Series	Intel® Xeon® E5-2600 v3 Series
	Socket	1 x socket 2011-R3	2 x socket 2011-R3
	Max. Speed	2.5 GHz	2.5 GHz
	Chipset	Intel® C612	Intel® C612
Expansion Slot	PCI	-	-
	PCIe x16	2/0	4
	PCIe x8	1/5	2
	PCIe x4	1	1 (x8 slot with x4 link)
	PCIe x1	1	-
Memory	Technology	DDR4 REG 2133/1866/1600/1333 MHz DIMM	DDR4 REG 2133/1866/1600/1333 MHz DIMM
	Max. Capacity	256 GB REG DIMM	192 GB REG DIMM
	Socket	8 x 288-pin DIMM	6 x 288-pin DIMM
Graphics	Controller	AST1400/AST2400	AST1400/AST2400
	VRAM	DDR3 64MB	DDR3 64MB
Ethernet	Interface	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet
	Controller	2 x Intel® I210AT	2 x Intel® I210AT
	Connector	RJ-45 x 3 (1 for IPMI function)	RJ-45 x 3 (1 sharing IPMI function)
SATA	Channel	8 for SATA3	9 for SATA3
Rear I/O	VGA/DVI/HDMI/DP	1 / - / - / -	1 / - / - / -
	Ethernet	2	2
	USB	4 (USB 3.0), 2 (USB 2.0)	4 (USB 3.0)
	Audio	-	-
	Serial	1 (RS-232)	-
	PS/2	2	-
Internal Connector	USB	5 (2 USB3.0, 2 USB2.0, 1 USB 2.0 Type-A)	5 (2 USB3.0, 2 USB2.0, 1 USB 2.0 Type-A)
	Audio	1	1
	Serial	1	1
	SATA	8	9
Watchdog Timer	Output	System reset	System reset
	Interval	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec

Server Boards



Model Name		ASMB-913	ASMB-923
Form Factor		EATX	EATX
Processor System	CPU	Intel® Xeon® E5-2600 v3 Series	Intel® Xeon® E5-2600 v3 Series
	Socket	2 x socket 2011-R3	2 x socket 2011-R3
	Max. Speed	2.5 GHz	2.5 GHz
	Chipset	Intel® C612	Intel® C612
Expansion Slot	PCI	-	-
	PCIe x16	4 (1 for PME)	4
	PCIe x8	-	2
	PCIe x4	-	1
	PCIe x1	-	-
Memory	Technology	DDR4 REG 2133/1866/1600/1333 MHz DIMM	DDR4 REG 2133/1866/1600/1333 MHz DIMM
	Max. Capacity	512 GB REG DIMM	256 GB REG DIMM
	Socket	16 x 288-pin DIMM	8 x 288-pin DIMM
Graphics	Controller	AST1400/AST2400	AST1400/AST2400
	VRAM	DDR3 64MB	DDR3 64MB
Ethernet	Interface	10/100/1000 Mbps Gigabit Ethernet	10/100/1000 Mbps Gigabit Ethernet
	Controller	4 x Intel® I210AT	2 x Intel® I210AT
	Connector	RJ-45 x 4 (1 sharing IPMI function)	RJ-45 x 3 (1 for IPMI function)
SATA	Channel	8 for SATA3	10 for SATA3
Rear I/O	VGA/DVI/HDMI/DP	1 / - / - / -	1 / - / - / -
	Ethernet	4	2
	USB	2 (USB 3.0)	2 (USB 3.0), 2 (USB 2.0)
	Audio	-	-
	Serial	1 (RS-232)	1 (RS-232)
	PS/2	-	2
Internal Connector	USB	7 (4 USB3.0, 2 USB2.0, 1 USB 2.0 Type-A)	7 (2 USB3.0, 4 USB2.0, 1 USB 2.0 Type-A)
	Audio	1	1
	Serial	1	1
	SATA	8	10
Watchdog Timer	Output	System reset	System reset
	Interval	Programmable, 1 ~ 255 sec	Programmable, 1 ~ 255 sec

Riser Cards



Model Name		ASMB-RF3X8-21A1E	ASMB-RF348-21A1E	ASMB-RF388-21A1E
Interface		PCIe x16	PCIe x16 for slot 6	PCIe x16 for slot 6
Expansion Slots	Spec.	2 * PCI-X 64bit 133/100MHz + 1 * PCIe x8	1 * PCIe x8 + 2 * PCIe x4	2 * PCIe x8 or 1 * PCIe x8 + 2 * PCIe x4
	Top Slot	3.3V PCI-X 64bit 133/100MHz	PCIe x16 (x8 link)	PCIe x16 (x8 link)
	Middle Slot	3.3V PCI-X 64bit 133/100MHz	PCIe x8 (x4 link)	PCIe x8 (x8 or x4 link)
	Bottom Slot	PCIe x8 slot (x8 link)	PCIe x8 (x4 link)	PCIe x8 (x4 or no link)
Chassis	2U	HPC-7280 ACP-2010MB/2320MB HPC-7242MB	HPC-7280 ACP-2010MB/2320MB HPC-7242MB	HPC-7280 ACP-2010MB/2320MB HPC-7242MB
Motherboard	ASMB-310	X	X	YES (x8x8)
	ASMB-584	X	*△ (Note3)	X
	ASMB-585	YES	*△ (Note1)	YES (x8x8 or x8x4x4)
	ASMB-781	YES	*△ (Note1)	YES (x8x8)
	ASMB-782	X	*△ (Note2)	X
	ASMB-784	YES	*△ (Note1)	YES (x8x8)
	ASMB-785	YES	*△ (Note1)	YES (x8x8 or x8x4x4)
	ASMB-820	YES	YES	YES (x8x8 or x8x4x4)
	ASMB-822	YES	YES	YES (x8x8 or x8x4x4)
	ASMB-823	YES	YES	YES (x8x8 or x8x4x4)
	ASMB-813	YES	YES	YES (x8x8 or x8x4x4)
	ASMB-920	YES	YES	YES (x8x8 or x8x4x4)
	ASMB-922	YES	YES	YES (x8x8 or x8x4x4)
	ASMB-923	X	* (Note3)	X
	ASMB-913	YES	YES	YES (x8x8 or x8x4x4)

Yes: Fully compatible

△: Conditionally compatible

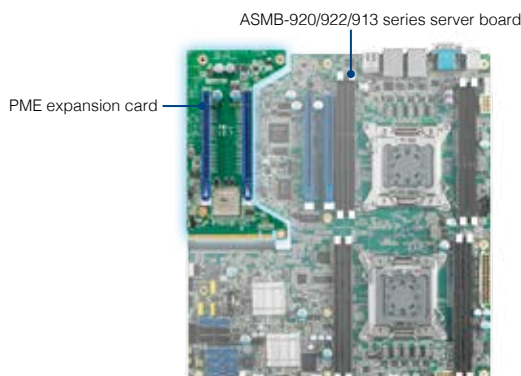
*△ Note 1: PCIe x16 slot of ASMB-781/784/785/585 motherboard can be split to x8 x8 mode. When installing ASMB-RF348-21A1E riser card, one PCIe x4 (bottom slot) and one PCIe x8 (top slot) are supported. The middle slot of a PCIe x4 riser card does not work.

*△ Note 2: PCIe x16 slot of ASMB-782 motherboard is x8 link only. When installing an ASMB-RF348-21A1E riser card, it only supports one PCI-E x4 slot (bottom slot).

*△ Note 3: PCIe x16 slot of ASMB-584/923 motherboard is x8 link and can be split to x4 x4 mode. When installing ASMB-RF348-21A1E riser card, two PCIe x4 (bottom and middle slot) are supported, and the top slot of PCIe x8 does not work.

PME Expansion Cards

Various Selections Supporting PCI, PCI-X, PCIe x1/x4/x8/x16



Features

- Auto-configured by BIOS
- ASMB-920/922/913 series plus PME forms a standard EATX motherboard compatible with EATX chassis
- Multiple options for all demands

Note:

1. To enable PME function in ASMB-920 series, processors must be installed in both CPU0 & CPU1 sockets.
2. To enable PME function in the ASMB-922 & 913 series, a processor must be installed in the CPU0 socket.

Introduction

Advantech's PME (Powerful Modular Expansion) design allows versatile expansion module options for the ASMB-920/922/913 series motherboards. PME expansion cards are an economical, effective solution for a range of applications, providing function expansion for a range of PCIe modules. In addition to meeting standard industrial specifications, Advantech's PME modules fit just about anywhere. They are easy to assemble, and provide a simple upgrade path.

Specifications

Model Name		ASMB-FF3PX	ASMB-FF20F	ASMB-FF208	ASMB-FF3P8	ASMB-FF404*
Expansion Slots	Total PCI/PCI-X/PCIe slots	3	2	2	3	4
	Slot location E1	-	-	-	-	PCIe x8 (Gen3 x4 link)
	Slot location 1	PCI 33/66 MHz	PCIe x16 (Gen3 x16 link)	PCIe x16 (Gen1 x8 link)	PCI 33/66 MHz	PCIe x8 (Gen3 x4 link)
	Slot location 2	PCI-X 100 MHz	-	-	PCIe x8 (Gen3 x4 link)	PCIe x8 (Gen3 x4 link)
	Slot location 3	PCI-X 100 MHz	PCIe x16 (Gen3 x16 link)	PCIe x16 (Gen1 x8 link)	PCIe x8 (Gen3 x8 link)	PCIe x8 (Gen3 x4 link)
Fit Motherboard		ASMB-920/922/913 series				
Environment		Operating			Non-operating	
	Temperature	System: 0 ~ 40 °C Board: 0 ~ 60 °C			-40 ~ 85 °C	
	Humidity	0% ~ 90%			5% ~ 95% (Non condensing)	
Physical Characteristics	Dimensions	101 x 193 mm	101 x 193 mm	101 x 193 mm	101 x 193 mm	111 x 193 mm

Front View



ASMB-FF3PX-12A1E



ASMB-FF20F-02A1E



ASMB-FF208-02A1E



ASMB-FF3P8-12A1E



ASMB-FF404-04A1E^{Note 3}

Ordering Information

Part Number	Description
ASMB-FF3PX-12A1E	PME card with 2 PCI-X and 1 PCI slots
ASMB-FF20F-02A1E	PME card with 2 PCIe x16 slots (x16 link)
ASMB-FF3P8-12A1E	PME card with 1 PCIe x8 slot (x8 link) and 1 PCIe x8 slot (x4 link) and 1 PCI slot
ASMB-FF208-02A1E	PME card with 2 PCIe x16 slots (x8 link)
ASMB-FF404-04A1E	PME card with 4 PCIe x8 slots (x4 link)

Notes:

1. To enable PME function for ASMB-920 series, processors must be installed in both CPU0 and CPU1 sockets.
2. To enable PME function for ASMB-922 & 913 series, a processor must be installed in socket CPU0.
3. Only an HPC-7400 chassis can support ASMB-920/922/913 series + ASMB-FF404.

Server Chassis



Height (1U = 1.75")		1U		2U
Model Name		HPC-7120	HPC-7140	HPC-7242
Form Factor Support		MicroATX, ATX, EATX	Micro ATX, ATX	Micro ATX, ATX
No. of slots / No. of full-height cards		1/1	1/1	3/3
Drive Bay	Slim ODD Bay	-	1 (ODD should be purchased separately)	1 (ODD should be purchased separately)
	5.25" (front-accessible)	-	-	-
	3.5" (hot-swappable)	-	4	4 (3.5" / 2.5")
	3.5" (internal)	-	-	-
	2.5" (hot-swappable)	2	Optional	4 (3.5" / 2.5")
	2.5" (internal)	-	-	2
Cooling	Chassis Fan	4 (4cm / 28.6CFM)	4 (4cm / 24CFM)	1 (8 cm/47CFM) + 2 (6 cm/28CFM)
	Air Filter	-	-	Yes
Front I/O Interface	USB 3.0	2	-	2
	USB 2.0	-	2	-
Environment	Operating Temperature	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 35 °C (32 ~ 95 °F)	0 ~ 40 °C (32 ~ 104 °F)
	Non-Operating Temperature	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)
	Operating Humidity	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing
	Non-operating Humidity	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing
Physical Characteristics	Dimensions (W x H x D)	438 x 43 x 478 mm (17.24" x 1.7" x 18.82")	437 x 43.5 x 503 mm (17.2" x 1.7" x 19.85")	426 x 88 x 525 mm (16.7" x 3.46" x 20.67")

Server Chassis



Height (1U = 1.75")		2U	3U / Tower	4U / Tower
Model Name		HPC-7282	HPC-7320	HPC-7400
Form Factor Support		Micro ATX, ATX	Micro ATX, ATX, EATX	Micro ATX, ATX, EATX
No. of slots / No. of full-height cards		7/0	7/6	12/12
Drive Bay	Slim ODD Bay	1 (ODD should be purchased separately)	1 (ODD should be purchased separately)	-
	5.25" (front-accessible)	-	-	2
	3.5" (hot-swappable)	8	2 (3.5" / 2.5")	-
	3.5" (internal)	2 (3.5"/2.5")	2	2 rear-accessible (3.5" / 2.5")
	2.5" (hot-swappable)	Optional	2 (3.5" / 2.5")	-
	2.5" (internal)	-	-	2 rear-accessible (3.5" / 2.5")
Cooling	Chassis Fan	3 (8cm / 52.6 CFM)	2 (8cm/57CFM) + 1 (6cm/27.72CFM)	3 (8cm/57CFM)
	Air Filter	-	Yes	Yes
Front I/O Interface	USB 3.0	-	2	2
	USB 2.0	2	-	-
Environment	Operating Temperature	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)
	Non-Operating Temperature	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)
	Operating Humidity	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing
	Non-operating Humidity	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing
Physical Characteristics	Dimensions (W x H x D)	437 x 88.9 x 533.4 mm (17.2" x 3.5" x 21")	426.4 x 132.2 x 480 mm (16.79" x 5.2" x 18.9")	426 x 177 x 448 mm (16.7" x 7.0" x 17.6")

Server Chassis



Height (1U = 1.75")		4U / Tower	
Model Name		HPC-7442	HPC-7483
Form Factor Support		Micro ATX, ATX, EATX	Micro ATX, ATX, EATX
No. of slots / No. of full-height cards		7/7	10/10
Drive Bay	Slim ODD Bay	1 (ODD should be purchased separately)	-
	5.25" (front-accessible)	-	3
	3.5" (hot-swappable)	4 can upgrade to 8 (3.5" / 2.5")	8 (3.5" or 2.5")
	3.5" (internal)	1	0
	2.5" (hot-swappable)	4 can upgrade to 8 (3.5" / 2.5")	0
	2.5" (internal)	-	2
Cooling	Chassis Fan	1 (12 cm /114 CFM) + 1 (8 cm/55 CFM)	3 (12 cm/140 CFM)
	Air Filter	Yes	-
Front I/O Interface	USB 3.0	2	2
	USB 2.0	-	-
Environment	Operating Temperature	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)
	Non-Operating Temperature	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)
	Operating Humidity	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing
	Non-operating Humidity	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing
Physical Characteristics	Dimensions (W x H x D)	426 x 177 x 600 mm (16.7" x 7.0" x 23.6")	435 x 177 x 673 mm (17.12" x 7.0" x 26.49")

Storage Chassis



Height (1U = 1.75")		2U		3U	4U
Model Name		HPC-8212	HPC-8224	HPC-8316	HPC-8424
Form Factor Support		Micro ATX, ATX, EATX	Micro ATX, ATX, EATX	Micro ATX, ATX, EATX	Micro ATX, ATX, EATX
No. of slots / No. of full-height cards		6/2 (optional)	6/2 (optional)	6/6	6/6
Drive Bay	Slim ODD Bay	-	-	-	-
	5.25" (front-accessible)	-	-	-	-
	3.5" (hot-swappable)	12	-	16	24
	3.5" (internal)	-	-	-	-
	2.5" (hot-swappable)	-	24	2 (SE/SA version)	2
	2.5" (internal)	-	-	2 (TE/TA version)	-
Cooling	Chassis Fan	4	4	4	4
	Air Filter	-	-	-	-
Front I/O Interface	USB 3.0	-	-	2	-
	USB 2.0	2	2	-	2
Environment	Operating Temperature	0 ~ 35 °C (32 ~ 104 °F)	0 ~ 35 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 35 °C (32 ~ 104 °F)
	Non-Operating Temperature	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)	-40 ~ 70 °C (-40 ~ 158 °F)
	Operating Humidity	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing	10 ~ 95% @ 40 °C non-condensing
	Non-operating Humidity	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing	10 ~ 95% @ 60 °C non-condensing
Physical Characteristics	Dimensions (W x H x D)	438 x 88.4 x 620 mm (17.24" x 3.5" x 24.4")/ 438 x 88.4 x 540 mm (17.24" x 3.5" x 21.3")	438 x 88.4 x 620 mm (17.24" x 3.5" x 24.4")/ 438 x 88.4 x 540 mm (17.24" x 3.5" x 21.3")	435 x 132 x 620 mm (17.13" x 5.2" x 24.41") / 435 x 132 x 540 mm (17.13" x 5.2" x 21.26")	438 x 176 x 620 mm (17.24" x 6.9" x 24.4") / 438 x 176 x 540 mm (17.24" x 6.9" x 21.3")

GPU Servers



Model Name		AGS-910	AGS-913	AGS-920	AGS-923	HPC-7400-S813
Processor Support		Dual Intel® Xeon® E5-2600 / 2600 v2	Dual Intel® Xeon® E5-2600 v3	Dual Intel® Xeon® E5-2600 / 2600 v2	Dual Intel® Xeon® E5-2600 v3	Single Intel® Xeon® E5-2600 v3
Form Factor Support		Proprietary				ATX
Expansion Slots		3 x PCIe x16 double-depth card + 1 x PCIe x8 FH/HL card		4 x PCIe x16 double-depth card + 1 x PCIe x8 FH/HLcard		2 x PCIe x16 double-depth card + 1 x PCIe x8 + PCIe x4 + 1 x PCIe x1
Drive Bay	Slim ODD Bay	-				
	2.5" Hot Swap	4		8		-
	3.5" Hot Swap	-		-		2
Cooling	Chassis Fan	7 x 40x56 + 2 x 40x28 high speed fan		4 x 80x38 + 1 x 80x20 + 1 x 80x38 (optional) high speed fan		3 x 80x38 + optional 2 (6cm) rear fans
	Air Filter	-				
Chassis Intrusion Alarm		Yes				
Front USB		2				
Miscellaneous	LED Indicators	Power status, HDD activity, LAN status, location, error message				Power switch and system reset button
	Rear Panel	Location, error message				-
Environment		Operating		Non-Operating		
	Temperature	0 ~ 40° C (32~104° F)		-20 ~ 60° C (-4 ~ 140° F)		
	Humidity	10 ~ 85% @ 40° C		10 ~ 95% @ 40° C		
	Vibration (5~500 Hz)	0.5 Grms		2G		
	Shock	10 G (with 11ms duration, half sine wave)				
Physical Characteristics	Dimensions (W x H x D)	430 x 44 x 770 mm	430 x 44 x 770 mm	430 x 88 x 770 mm	430 x 88 x 770 mm	482 x 177 x 448 mm

GPU Servers

Compatible GPU/Xeon Phi

Advantech Product Model			1U		2U		3U Chassis HPC-7320 / 4U Chassis HPC-7400					
GPU Card Vendor			AGS-910	AGS-913	AGS-920	AGS-923	ASMB-813	ASMB-822	ASMB-823	ASMB-913	ASMB-922	ASMB-923
Advantech DSP card	TI	DSP-8681	V	V	V	V	V	V	V	V	V	V
		DSP-8682	V	V	V	V	V	V	V	V	V	V
NVIDIA	Tesla	K20	V	V	V	V	V	V	V	V	V	V
		K40	V	V	V	V	V	V	V	V	V	V
		K80	V	V	V	V	V	V	V	V	V	V
		M60	V	V	V	V	V	V	V	V	V	V
		M60	V	V	V	V	V	V	V	V	V	V
AMD	Workstation	W9000	V	V	V	V	V	V	V	V	V	V
		W9100	V	V	V	V	V	V	V	V	V	V
	Server	S9000	V	V	V	V	V	V	V	V	V	V
		S9150	V	V	V	V	V	V	V	V	V	V
Intel	Coprocessor	Xeon Phi 5110P	V	V	V	V	V	V	V	V	V	V

Note:

1. Tick (V) means they have already passed compatibility tests (GPU card and driver install).
2. For detailed compatibility information on AGS series GPU server, please reference the GPU Qualification list.
3. AGS-910/AGS-920 already have Tesla K20 qualification by NVIDIA.
HPC-7400-S813 already has Tesla K40/K80/M60 qualification by NVIDIA.
4. Some GPU cards need to enable "Above 4G Decoding" in BIOS setup menu when installing multiple GPU cards.

GPU Card P/N

TESLA Series	SKY-TESL-M40E	Tesla M40 12GB PCI-E x16 HS
	SKY-TESL-M40-2E	Tesla M40 24GB PCI-E x16 HS
	SKY-TESL-M4E	Tesla M4 4GB PCI-E x16 HS/Low profile
	SKY-TESL-M60-PLRE	Tesla M60 16GB PCI-E x16 HS L to R
	SKY-TESL-M60-PRLE	Tesla M60 16GB PCI-E x16 HS R to L
	SKY-TESL-K80E	Tesla K80 24GB PCI-E x16 HS
	SKY-TESL-K40-PE	Tesla K40 12GB PCI-E x16 HS
	SKY-TESL-K40-AE	Tesla K40 12GB PCI-E x16 FS
	SKY-TESL-K20-PE	Tesla K20 5GB PCI-E x16 HS
	SKY-TESL-K20-AE	Tesla K20 5GB PCI-E x16 FS
	SKY-TESL-K20X-PE	Tesla K20X 6GB PCI-E x16 HS
	SKY-TESL-K10-PLRE	Tesla K10 8GB PCI-E x16 HS L to R
	SKY-TESL-K10-PRLE	Tesla K10 8GB PCI-E x16 HS R to L
Quadro Series	SKY-QUAD-M6000E	Quadro M6000 12GB PCI-Ex16 DVI*1 DP*4 FS
	SKY-QUAD-M6000E-2E	Quadro M6000 24GB PCI-Ex16 DVI*1 DP*4 FS
	SKY-QUAD-K6000E	Quadro K6000 12GB PCI-Ex16 DVI*2 DP*2 FS
	SKY-QUAD-M5000E	Quadro M5000 8GB PCI-Ex16 DVI*1 DP*4 FS
	SKY-QUAD-K5200E	Quadro K5200 8GB PCI-Ex16 DVI*2 DP*2 FS
	SKY-QUAD-M4000E	Quadro M4000 8GB PCI-Ex16 DP*4 FS
	SKY-QUAD-K4200E	Quadro K4200 4GB PCI-Ex16 DVI*1 DP*2 FS
	SKY-QUAD-M2000E	Quadro M2000 4GB PCI-Ex16 DP*4 FS
	SKY-QUAD-K2200E	Quadro K2200 4GB PCI-Ex16 DVI*1 DP*2 FS
	SKY-QUAD-K1200E	Quadro K1200 4GB PCI-Ex16 MDP*4 FS
	SKY-QUAD-K1200LPE	Quadro K1200 4GB PCI-Ex16 MDP*4 FS/LP B
	SKY-QUAD-K620E	Quadro K620 2GB PCI-Ex16 DVI-I*1 DP*1 FS
	SKY-QUAD-K420-2E	Quadro K420 2GB PCI-Ex16 DVI-I*1 DP*1 FS
	SKY-QUAD-K420E	Quadro K420 1GB PCI-Ex16 DVI-I*1 DP*1 FS
	SKY-QUAD-SYNC-KE	Quadro Sync for Kepler w/4*ribbon cable
NVS Series	SKY-NVS-810E	NVS 810 4GB PCI-E x16 MDP*8 FS
	SKY-NVS-510E	NVS 510 2GB PCI-E x16 MDP*4 FS
	SKY-NVS-315E	NVS 315 1GB PCI-E x16 DMS59 FS
	SKY-NVS-310-1E	NVS 310 1GB PCI-E x16 DP*2 FS
	SKY-NVS-310E	NVS 310 512MB PCI-E x16 DP*2 FS

Industrial Storage



Product Categories		Disk Expansion Enclosure		Storage Server			
Model Name		SKY-4120B	ASR-1400	ASR-3100	SKY-4311	ASR-3272	ASR-3472
System	Form Factor	2U 24-Bay	4U 24-Bay	1U 16-Bay	-	2U 12-Bay	4U 24-Bay
	Number of Drives	24 x 2.5" Bays	24-Bays (2.5"/3.5")	16-Bay (2.5")	-	12-Bay (3.5"/2.5")	24-Bay (3.5"/2.5")
	Drive Type	SAS (12Gb or 6Gb/s)	SATA/SAS 6Gb/s or 3Gb/s	NVMe/SATA/SAS (optional)	-	SATA/SAS 6Gb/s or 3Gb/s	SATA/SAS 6Gb/s or 3Gb/s
	CPU Type	-	-	Dual LGA 2011-R3 Intel Xeon E5-2600 v3 series	Intel® Xeon® E5-2600(v3) dual processor (up to 135W TDP)	LGA 1155 Xeon 1200V2 or 3rd Generation Core™ i3 processor	LGA 1155 Xeon 1200V2 or 3rd Generation Core™ i3 processor
	Chipset	-	-	Intel C612 Chipset	Intel C612 chipset	Intel C216 Chipset	Intel C216 Chipset
	Memory Type	-	-	16 x DDR4-2133 ECC RDIMM, maximum to 512GB	16 DDR4-2133 ECC RDIMMs, maximum 512 GB	4 x 240 pin DDR3 up to 32 GB	4 x 240 pin DDR3 up to 32 GB
	Storage Expansion	3 x 12Gb/s SAS wide-ports per controller, two for input & one for output	2 x 6Gb/s SAS 4x wide ports	Two PCIe x8 slots (Gen3), one is HHHL card and the other one is FHHL card	-	Yes (only for E SKU)	-
	RAID Level	-	-	-	-	0, 1, 5, 6, 10, 50, 60	0, 1, 5, 6, 10, 50, 60
Expansion Slot	PCIe x16 slot with x8 link	-	-	-	-	1	1
	PCIe x8 slot	-	-	2 (one is HHHL card and the other one is FHHL card)	-	-	-
	PCIe x4 slot	-	-	-	-	2	2
	PCI	-	-	-	-	3	3
Ethernet	Gigabit Ethernet	-	-	2	-	4	4
I/O	Back Panel I/O Port	-	-	1 VGA Port 1 COM RS-232 Port 2 USB 2.0 Ports 2 USB 3.0 Ports 2 LAN RJ45 Port	1 x USB 2.0 4 x USB 3.0 1 x VGA	1 PS/2 Keyboard/Mouse 1 VGA Port 1 COM RS-232 Port 2 USB 2.0 Ports 2 USB 3.0 Ports 4 LAN RJ45 Port	1 PS/2 Keyboard/Mouse 1 VGA Port 1 COM RS-232 Port 2 USB 2.0 Ports 2 USB 3.0 Ports 4 LAN RJ45 Port
Power Supply	Power Output Wattage	550W Redundant Power	875W Redundant Power	1100W Redundant Power	80 PLUS Platinum 1+1 redundant power supply	650W Redundant Power	875W Redundant Power
	Input Range	AC 100-240V	AC 100-240V	AC 100-240V	AC 100 ~ 240 V	AC 100-240V	AC 100-240V
Mechanical	Dimensions	502 x 448 x 88.4 (mm, without handle ears)	699 x 432 x 176 (mm)	806 x 430 x 446 (mm)	626 x 430 x 44 (mm)	699 x 432 x 88 (mm)	699 x 432 x 176 (mm)
	Weight	20 kg (without hard drives)	41 kg (without hard drives)	-	-	19 kg (without hard drives)	42 kg (without hard drives)
Environmental	Operating Temperature	0° C ~ 40° C (32° F ~ 104° F)	0° C ~ 40° C (32° F ~ 104° F)	0° C ~ 40° C (32° F ~ 104° F)	0 ~ 40 °C (32~104 °F)	0° C ~ 40° C (32° F ~ 104° F)	0° C ~ 40° C (32° F ~ 104° F)
	Non-Operating Temperature	-20° C ~ 60° C (-4° F ~ 140° F)	-20° C ~ 60° C (-4° F ~ 140° F)	-20° C ~ 60° C (-4° F ~ 140° F)	-	-20° C ~ 60° C (-4° F ~ 140° F)	-20° C ~ 60° C (-4° F ~ 140° F)
	Operating Humidity	10% ~ 85% @ 40° C, non-condensing	10% ~ 85% @ 40° C, non-condensing	10% ~ 85% @ 40° C, non-condensing	10 ~ 85% @ 40 °C	10% ~ 85% @ 40° C, non-condensing	10% ~ 85% @ 40° C, non-condensing
	Non-operating Humidity	10% ~ 95% @ 40° C, non-condensing	10% ~ 95% @ 40° C, non-condensing	10% ~ 95% @ 40° C, non-condensing	-	10% ~ 95% @ 40° C, non-condensing	10% ~ 95% @ 40° C, non-condensing
	Operating Vibration (5~500 Hz)	0.25Grms	0.25Grms	0.25Grms	0.25 Grms	0.25Grms	0.25Grms

Industrial Storage



Product Categories		External Disk Array	
Model Name		ASR-5200E	ASR-5300I
System	Form Factor	2U 12-Bay (LFF) / 24-bay(SFF)	3U 16-Bay (LFF)
	Configuration	Dual Controller	Single Controller
	Number of Drives	12-Bay (3.5") / 24-Bay (2.5")	16-Bay (3.5")
	Drive Type	6Gb/s SAS	6 Gb/s SAS, 6 Gb/s SATA
	Cache Memory	Default 8GB	Default 2 GB, up to 16 GB
	JBOD Expansion	Yes, miniSAS HD	Yes, miniSAS
	Max Drives	120 x 3.5" drives / 240 x 2.5" drives	160 x 3.5" drives
	Default Host	4 x 1Gb/s iSCSI RJ45 port 6 x 6Gb/s SAS wide-port	4 x 1Gb/s iSCSI RJ45 Port
	Optional Host	8 x 8Gb/s FC SFP port 4 x 10Gb/s iSCSI SFP+ port 8 x 1Gb/s iSCSI RJ45 port	-
	RAID Level	0, 1, 5, 6, 10	0, 1, 3, 5, 6, 10, 30, 50, 60
	LUN Number	2048 LUNs	2048 LUNs
	Notification	Email, SNMP traps	Email, Fax, LAN broadcast, SNMP traps, SMS, Skype
Data Service	Advanced Functions	Thin Provisioning	Thin provisioning
		FlashCopy (Default 64 Targets)	Snapshot (64 images per source volume, max 128 per system)
	Optional Features	-	Volume copy/ mirror (16 source volume x 4 replication pairs, max 64 per system)
Power Supply	Output Wattage	800W Redundant Power	460W Redundant Power (80 Plus)
	Input Range	AC 100-240V	AC 100-240 V
Mechanical	Dimensions	556 x 483 x 87 (mm)	500 x 448 x 130 (mm)
	Weights	18 kg / 39.68lbs (without hard drives)	21.66kg / 47.75lbs (without hard drives)
Environment	Operating Temperature	10° C ~ 35° C (50° F ~ 95° F)	0 to 40° C (32 ~ 104° F) without BBU or Super-Cap
	Non-Operating Temperature	-10° C ~ 50° C (14° F ~ 125° F)	-40 to 60° C (-40° F ~ 140° F)
	Operating Humidity	20% ~ 80% @ 35° C, non-condensing	5 to 95% non-condensing
	Non-operating Humidity	10% ~ 90% @ 35° C, non-condensing	5 to 95% non-condensing

Rugged Server



Model Name		SKY-8100	SKY-8200
Processor System	CPU	Supports Intel Xeon® D-1508, Xeon® D-1527, Xeon® D-1528, Xeon® D-1548	Dual Intel® Xeon® E5-2600 v3 v4 120W Processors Supports: Non-NEBS: E5-2690v3, E5-2680v3, E5-2670v3, E5-2660v3, and E5-2650v3 NEBS: E5-2658v3, E5-2648Lv3, E5-2628Lv3, E5-2618Lv3, E5-2608Lv3 E5-2628Lv4 30MB 12C 1.9GHz, E5-2648Lv4 35MB 14C 1.8GHz, E5-2650v4 30MB 12C 2.2GHz, E5-2658v4 35MB 14C 2.3GHz, E5-2680v4 35MB 14C 2.4GHz
	Chipset	-	Intel® Cave Creek 8900 & Coletto 8925 chipset
Memory	Technology	4 x DDR4 DIMMs, ECC/non-ECC UDIMM/RDIMM, 1600/1866/2133/2400 MHz	16 x DDR4 DIMMs, ECC/REG memory, 1600/1866/2133 MHz, Supports 1.2V memory model
	Capacity	Max memory capacity per channel RDIMM: 64GB UDIMM: 32GB RDIMM: 32GB per slot UDIMM: 16GB per slot Max memory capacity total in system RDIMM: 128GB UDIMM: 64GB RDIMM: 32GB x 4 DIMMs UDIMM: 16GB x 4 DIMMs	1024 GB/ 64 GB per DIMM
	Socket	4 x 288-pin DIMM	16 x 288-pin DIMM
PCIe	Expansion slot	Total 2 x PCIe x8 FH/FL	Total 4 x PCIe x8 (FH/FL), 2 x PCIe x8 (FH/HL), & 1 x Advantech expansion slots for Advantech LAN card
IO	Front Mgmt IO	1 x PWR button, 1 x ID button, 1 x RJ45-type console, 2 x USB, LEDs	1 x PWR button, 1 x ID button, 1 x RJ45-type console, 2 x USB, LEDs
	Rear Mgmt IO	1 x RJ45-type console, 1 x DB15 for TAM (Optional), 2 x USB, 2 x GbE Mgmt ports (1 for IPMI) 4 x GbE Ethernet ports VGA x 2	1 x RJ45-type console, 1 x DB15 for TAM (Optional), 2 x USB, 2 x GbE Mgmt ports, 1 x VGA, and 1 x external mini SAS port
Ethernet	Management Interface	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	GbE LAN1: Intel® I210-AT, GbE LAN2: Intel® I210-AT	GbE LAN1: Intel® i210-AT, GbE LAN2: Intel® i210-AT
	Connector	RS-45 x 2	RJ-45 x 2
	Traffic Interface	10/100/1000 Mbps, 10Gbps	-
	Controller	GbE LAN1~LAN4: Intel® I350-AM4, 10Gbps LAN1~LAN2: Intel® BDE	-
	Connector	RS-45 x 4, SFP x 2	-
Storage		2 x 2.5", hot-swappable, SATA/SSD trays in front	4 x 2.5", hot-swappable, SAS/SATA HDD/SSD trays in front, 2 x mSATA
Power Supply		1U, 650 W(AC & DC) redundant power supply	2U, 1400W(AC) & 1200W(DC) redundant power supply
System Management	IPMI	Aspeed AST2400 iBMC Supports IPMI 2.0 Supports iKVM Shared NIC via NC-SI on management LAN ports	Aspeed AST2400 iBMC + AMI MegaRAC firmware Supports IPMI 2.0 Supports iKVM Dedicated NIC via NC-SI on management LAN ports
Dimensions (W x D x H)		430 x 508 x 44 mm (16.9" x 20" x 1.7")	430 x 508 x 88.6 mm (16.9" x 20" x 3.48")

PCI Express NIC Cards



Model Name		PCIE-2130NP	PCIE-2131BP
Controller		Intel® I350-AM4 MAC+PHY	Intel® I350-AM4 MAC+PHY
	Physical Functions	2	2
Host Interface	PCI Express	4 lanes Gen2	4 lanes Gen2
Network Interfaces	PCI Express Voltage	(+12V)	(+12V)
	PCI Connector	Gold Finger: X4	Gold Finger: X4
	Media	-	-
	LEDs (per port)	Link/Act LED (Green)	Left: Speed -10: None Speed -100: Amber Speed -GbE: Green Right: Link: Green Active: Blinking Green Bypass: Amber
Software support	Operating Systems	RedHat, CentOS Linux (Windows Server and FreeBSD under investigation)	RedHat, CentOS Linux (Windows Server and FreeBSD under investigation)
	Virtualization	KVM (VMWare under investigation)	KVM (VMWare under investigation)
Power consumption	+12V	5W	5W
Environment	Operating Humidity	0 ~ 90%, non-condensing	0% ~ 90%, non-condensing
	Operating Temperature	0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)
	Storage	-40 ~ 65° C (-40 ~ 149° F)	-40 ~ 65° C (-40 ~ 149° F)
Mechanical Specifications	Board Dimensions	167 x 68.9mm (PCIe low profile)	167 x 68.9 mm (PCIe low profile)
	Bracket	Full height and half height options available	Full height and half height options available
Compliance	EMC Certifications	FCC CE Class A	FCC CE Class A

PCI Express NIC Cards



Model Name		PCIE-2220NP	PCIE-2230NP
Controller		Intel® 82599ES MAC+PHY	Intel® XL710-BM1 MAC+PHY
	Physical Functions	2	4
	Virtualization Support	VMDq, SRIOV	VMDq, SRIOV, VEB
Host Interface	PCI Express	8 lanes Gen2	8 lanes, Gen 3
Network Interfaces	PCI Express Voltage	(+12V)	(+12V)
	PCI Connector	2 SFP+ cages	4 SFP+ cages
	Media	10G-SR, LR, ER, Base-T transceivers, Direct Attach cables	10G-SR, LR transceivers, Direct Attach cables
	LEDs (per port)	Link/Act LED (Green) Speed: 10G (Green), 1G (Amber)	Link/Act (Green/ Green Blink) Speed: 10G (Green)
Software support	Operating Systems	RedHat, CentOS Linux (Windows Server and FreeBSD under investigation)	RedHat, CentOS Linux (Windows Server and FreeBSD under investigation)
	Virtualization	KVM (VMWare under investigation)	KVM (VMWare under investigation)
	others	Intel® DPDK	Intel® DPDK
Power consumption	+12V	8.5W	9W
Environment	Operating Humidity	0 ~ 90%, non-condensing	0 ~ 90%, non-condensing
	Operating Temperature	0 ~ 45° C (32 ~ 113° F)	0 ~ 45° C (32 ~ 113° F)
	Storage	-40 ~ 65° C (-40 ~ 149° F)	-40 ~ 65° C (-40 ~ 149° F)
Mechanical Specifications	Board Dimensions	167 x 68.9mm (PCIe low profile)	167 x 68.9mm (PCIe low profile)
	Bracket	Full height and half height options available	Full height and half height options available
Compliance	EMC Certifications	FCC CE Class A	FCC, CE Class A

PCI Express NIC Cards



Model Name		PCIE-2320NP	PCIE-3020NA
Controller		Intel® FTXL710-BM2 MAC+PHY	Intel® Communications Chipset 8950/8925
	Physical Functions	2	1
	Virtualization Support	VMDq, SRIOV, VEB	VMDq, SRIOV, VEB
Host Interface	PCI Express	8 lanes, Gen 3	8 lanes, Gen 3
Network Interfaces	Ports	2 QSFP cages	-
	Media	40G-SR, LR (TBD), Base-T transceivers, Direct Attach cables	-
	LEDs (per port)	Link/Act LED (Green/Green Blink) Speed: 40G (Green)	-
Software support	Operating Systems	CentOS Linux (Windows Server and FreeBSD under investigation)	RedHat, CentOS Linux (Windows Server and FreeBSD under investigation)
	Virtualization	KVM (VMWare under investigation)	KVM (VMWare under investigation)
	others	Intel® DPDK	-
Power consumption	+12V	9W	50W/27W
Environment	Operating Humidity	0% ~ 90%, non-condensing	5% ~ 93%, non-condensing
	Operating Temperature	0 ~ 45° C (32 ~ 113° F)	0 ~ 40° C (32 ~ 131° F)
	Storage	-40 ~ 65° C (-40 ~ 149° F)	-40 ~ 70° C (-40 ~ 158° F)
Mechanical Specifications	Board Dimensions	167 x 68.9 mm (PCIe low profile)	167 x 68.9 mm (PCIe low profile)
	Bracket	Full height and half height options available	Full height and half height options available
Compliance	EMC Certifications	FCC CE Class A	FCC CE Class A

Regional Service & Customization Centers

China | Kunshan
86-512-5777-5666

Taiwan | Taipei
886-2-2792-7818

Netherlands | Eindhoven
31-40-267-7000

Poland | Warsaw
00800-2426-8080

USA | Milpitas, CA
1-408-519-3898

Worldwide Offices

Greater China

China

Toll Free	800-810-0345
Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Chengdu	86-28-8545-0198
Hong Kong	852-2720-5118

Taiwan

Toll Free	0800-777-111
Neihu	886-2-2792-7818
Xindian	886-2-2218-4567
Taichung	886-4-2329-0371
Kaohsiung	886-7-229-3600

Asia Pacific

Japan

Toll Free	0800-500-1055
Tokyo	81-3-6802-1021
Osaka	81-3-6802-1021

Korea

Toll Free	080-363-9494
Seoul	82-2-3663-9494

Singapore

Singapore	65-6442-1000
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Malaysia

Kuala Lumpur	60-3-7725-4188
Penang	60-4-537-9188

Thailand

Bangkok	66-2-248-3140
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India

Bangalore	91-80-2545-0206
Pune	91-20-3948-2075

Indonesia

Jakarta	62-21-751-1939
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Australia

Toll Free	1300-308-531
Melbourne	61-3-9797-0100
Sydney	61-2-9476-9300

Europe

Germany

Toll Free	00800-2426-8080
Munich	49-89-12599-0
Düsseldorf	49-2103-97-855-0

France

Paris	33-1-4119-4666
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Italy

Milano	39-02-9544-961
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Benelux & Nordics

Breda	31-76-523-3100
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Reading	44-0-118-929-4540
Newcastle	44-0-191-262-4844
London	44-0-870-493-1433

Poland

Warsaw	48-22-31-51-100
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Russia

Moscow	8-800-555-01-50
St. Petersburg	8-800-555-81-20

Americas

North America

Toll Free	1-888-576-9668
Cincinnati	1-513-742-8895
Milpitas	1-408-519-3898
Irvine	1-949-420-2500

Brazil

Toll Free	0800-770-5355
São Paulo	55-11-5592-5355

Mexico

Toll Free	1-800-467-2415
Mexico City	52-55-6275-2727

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