COMPUTING

MaxCore™ Platform

Versatile and Dense Compute & Media Platform

Data Sheet

The MaxCore™ platform is a flexible appliance with scalable x86 CPU performance in combination with many off-the-shelf PCI Express cards

- 3U by 508 mm for 19” racks
- Redundant 1900W from 90-264VAC or -48VDC
- Highest performance density in 3U with 15 slots for Artesyn SharpServer™ microserver cards, with a total of 30 processors (two per card)
- Redundant and hot-swappable cooling and power supply
- Cable-less internal architecture for microserver cards
- Artesyn SharpServer Intel® Xeon® processor D microserver cards
- PCI Express and Ethernet networking infrastructures
- 4 x 2.5” drive bays and 4x 10GBaseT built-in
- Designed for NEBS and ETSI compliance
- Multiple system configurations are possible: Any mix of microservers, Artesyn media processors and 3rd party PCI Express cards

GRAND PRIZE WINNER 2016

VERIZON & INTEL® NETWORK BUILDERS INNOVATION CHALLENGE

2016 Communications SOLUTIONS Product Of The Year

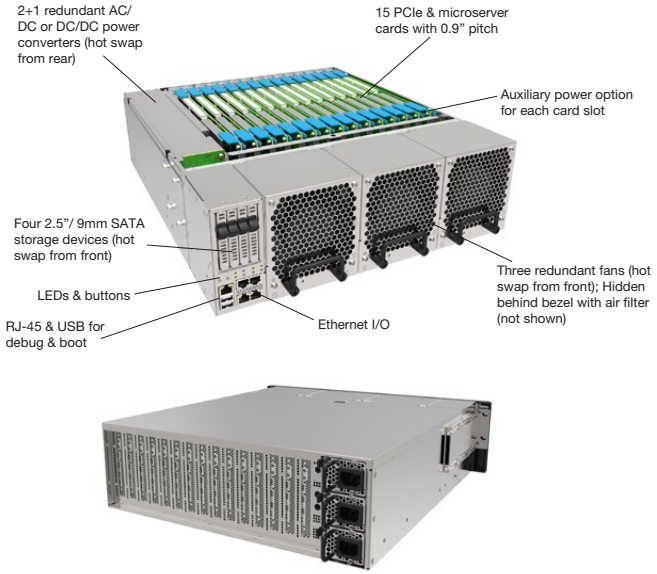
The Artesyn Embedded Technologies MaxCore™ platform offers a versatile and dense architecture to achieve maximum compute and media processing density. Through its use of Artesyn technology microserver cards, Artesyn media processing PCI Express cards and 3rd party PCI Express cards, it offers maximum flexibility, maximum density per rack unit (RU), and unmatched innovation in design for both datacenter and carrier grade applications.

The MaxCore platform enables you to build an economical and application focused appliance within a short time. Flexibility is achieved through its capability to perfectly balance I/O, compute and compute-associated accelerators within the same box. Economy comes through its ability to achieve a cost-effective framework for densely configurable content. It accelerates time to market by leveraging the vast market of COTS PCI Express cards available which can be used interchangeably on the MaxCore platform and other platforms.

Within the world of platform infrastructure, the MaxCore platform is unique in its ability to combine CPU-attached PCI Express cards with an extremely flexible communication network between all of the CPUs. Traditional single box server architectures either provide a single multi-core server that can be combined with a small number of PCI Express based I/O cards, or they offer multiple independent server nodes with no or minimal local I/O extension. The MaxCore platform supports both architectures while breaking down the individual limits and enabling any combination in-between.

The MaxCore platform is designed with the most demanding applications in mind through its optimal cooling and accommodation for PCI Express cards that require additional power and its ability to meet NEBS environments. The MaxCore platform is also designed for maximum cost efficiency, delivering 7 times the performance density, 80% less power/heat and 90% fewer cables than traditional servers. Whether the application requires dense computing through the use of MaxCore microserver cards, multiple media processing cards, or a combination including 3rd party PCI Express cards, the MaxCore platform offers a superior architecture with flexibility in deployment.

ARTESYN™ EMBEDDED TECHNOLOGIES



Architecture

The versatile MaxCore chassis holds 15 cards. One of the cards is designated for the Artesyn SharpServer™ dual Intel® Xeon® processor D-1500 microserver card, and 14 card slots are available for additional microserver cards or any type of PCI Express card. The MaxCore fabric employs an innovative new PCI Express switching technology which now allows many CPUs to be associated with many PCI Express cards, unlike classical server architectures that always assume a single host CPU. The MaxCore user can create several independent server domains in the same shelf or can share individual PCI Express cards between many CPUs. Configurations from a single CPU with 14 PCI Express accelerator cards to 28 CPUs with a single PCI Express I/O card can be created. Adding redundancies is also possible for the systems integrator.

One microserver CPU takes the role of the system host. A second CPU can take over that role in the case of a failure. That CPU function is then responsible for the MaxCore housekeeping and acts as boot and file server for the other microservers. Four SATA drive bays and two USB connectors can be configured to be owned by a redundant pair of system host CPUs. With the system host accompanied by a BMC microcontroller, the MaxCore platform can be remotely manageable like an enterprise class rack mount server.

Two 10GBaseT ports are directly accessible MAC devices connected to the chassis fabric. These interfaces are either solely dedicated to one CPU or shared as virtual functions among the CPUs in the system. In addition the platform also provides an optional on-board Ethernet switching infrastructure for all micorserver cards and with external fiber or copper connections.

The system includes fault tolerant power supplies and cooling subsystems with those devices being hot-swappable. With just a few components in the critical system core, the MaxCore platform offers outstanding reliability.

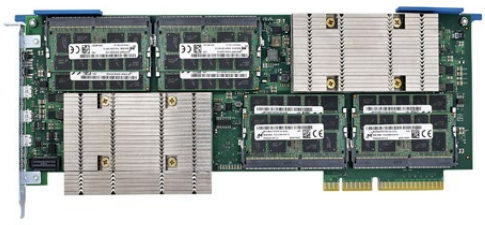
Chassis Features

- Dimensions: 3U by 508mm for 19" racks, option for rail mounting
- Cable-less internal architecture for Artesyn SharpServer™ microserver and SharpSwitch™ cards
- Optimal platform cooling with internal connectors for optionally supplying additional power for PCI Express cards requiring more than 75W
- 15 PCI Express slots
  - 4x PCIe Gen3 x16 (each x16 link can be split into four x4 links)
  - 11x PCIe Gen3 x8 (each x8 link can be split into two x4 links)
  - Full length PCI Express slots
- 90 - 264VAC and -48VDC support
  - 2 + 1 redundant 1900W total for all slots
  - Non-redundant 3300W for the platform
  - Hot swappable
- 2x 1/10G with SR-IOV support for shared usage between multiple server cards
- 2x USB, dynamically connected to active and standby system host processors
- LEDs: Major/Minor/Critical alarms, SATA
- Switches/Buttons: Power, Reset, NMI
- Redundant fan blocks
  - Hot swappable
  - Front-to-rear cooling
  - Air filter, replaceable
- 4x 2.5" SATA hard-drive bays for use by system hosts
- BMC for remote platform management
  - IPMI 2.0 support
  - 1x 1000Base-T and sideband access to two 10GBaseT ports
- Three platform types readily available:
  - Copper version with RJ-45 network connections, Ethernet switching infrastructure included
  - Network connections with SFP/SFP+, Ethernet switching infrastructure included
  - Copper version with RJ-45 network connections, Ethernet switching infrastructure not included
  - Other platform variants available on demand

Artesyn MaxCore PCIe Cards

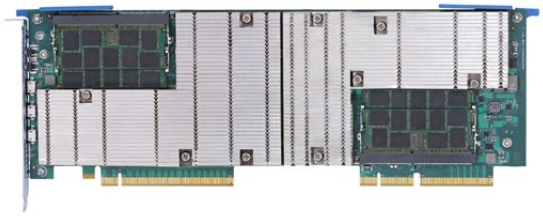
SharpServer™ Card Features

- PCI Express card form factor, single slot
- Two Intel® Xeon® D-1540 (8-core) or D-1567 (12-core) processors
  - Up to 64GB DDR4 per processor (128GB per card)
  - Up to 4x PCI Express Gen3 x4
  - 2x 1Gbps Ethernet to optional internal Ethernet infrastructure
  - Local Flash mass storage per processor
- 1x USB per processor
- 1x Reset per processor
- COM port access (serial console) per processor
  - USB connection to simplify debugging
- Software includes Linux KVM, Intel® DPDK support, multi-host PCI Express I/O virtualization support



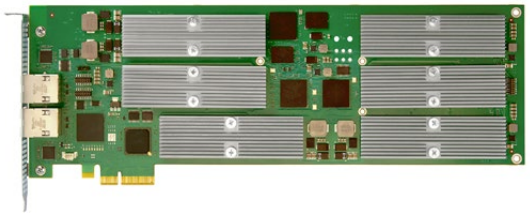
SharpStreamer™ Pro Card Features

- PCI Express card form factor, single slot
- Up to eight (8) HEVC 1080p30 transcodes
- Dual Intel® Xeon® E3-1578Lv5 GT4e-enabled scalable video processing engines
  - 2x DIMMs per CPU, up to 32GB per CPU
- Up to 32 AVC 1080p30 transcodes
- Up to two (2) 4KP30 HEVC encode streams per card
- Network bootable reference OS: Centos 7.x
- Intel® MSS, optional transcoding software
- Common hardware for different applications:
  - H.264/AVC & H.265/HEVC transcoding and encoding
  - VDI applications
  - Image processing equipment



SharpMedia™ Card Features

- Leading solution for voice and VoLTE systems
- Up to 7680 G. G.711 <=> G.729AB transcodes per card
- Single slot full length, full height PCI Express card with x4 interface
- High performance media processing core based on power-efficient DSPs
- Optional 2x GbE ports (RJ-45) with NAT function for direct network attachment providing server offload
- Comprehensive voice and video processing firmware and programmers interface included
- Support for 720p and 1080p video conferencing
- Designed for NEBS Level 3 and ETSI telecom standards compliance when used in a suitable carrier grade enclosure
- Supports Opus (used by WebRTC) and SILK (used by Skype) audio CODECs



SharpSwitch™ Card Features

- PCI Express card form factor, single slot
- Intel® FM10840 Red Rock Canyon SOC
  - ~100GE aggregated bandwidth (PCIe 3x16)
  - Built-in switch for cut-through traffic and traffic through CPUs
  - Open vSwitch and Stateful Load Balancer via ECMP
  - Integrates with OpenStack
  - I/O: 2x100GE, 8x25GE, or 8x10GE (requires breakout cables)
- Intel® Xeon® D-1541 8-core processor
  - System host capability
  - Up to 64GB DDR4
  - PCI Express Gen3 x8 connection to RRC switch
  - 2x SATA connection; 1x USB; 1x Reset
  - COM port access (serial console)
- USB connection to simplify debugging
- Software includes Linux KVM, Intel® DPDK support, multi-host PCI Express I/O virtualization support

SOLUTION SERVICES

Artesyn Embedded Technologies provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh.

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