ARTESYN
EMBEDDED TECHNOLOGIES

IBC Sep-2016
Artesyn DEMO with Partners
see Page 2

BEAMR
[comprimato]
DELL OEM Solutions Partner
Haivision
intel IoT Solutions Alliance
nablet
noisypeak
openstack CLOUD SOFTWARE
OPNFV
PIXTREE
RIFT.io
vantrix
WOWZA media systems

Breaking News

Artesyn and Haivision to DEMO at IBC 2016
Full end-end solution on the Cloud or On-premise
using HEVC transcoding on Intel Skylake silicon
Your Private DEMO at IBC:
send SMS « any time » to +32-471-54 55 40

4K - UHD - HEVC
Encoding & Transcoding
**for demanding Linear Broadcast and
High-density OTT Multiscreen Applications
in Standard Servers and Cloud Networks**

in your existing **Standard Servers**
with Artesyn SharpStreamer - PCIE Card

in Artesyn **MaxCore Platform**
with SharpStearmer Pro - PCIE Card
« No Limits »

Products & Technology from Silicon to Application-ready Platforms

Artesyn DEMO's at IBC 2016
Sep.09 to 13 - Hall 15, MS34

Artesyn Embedded Technologies has collaborated with streaming video technology providers to demonstrate a range of applications enabling the move to virtualized cloudbased video transcoding.

These demonstrations show how Artesyn is helping broadcasters, operators, and content and service providers leverage virtualization and hardware acceleration technology to improve the functionality and performance of their network infrastructure while decreasing CapEx and OpEx, all using an open architecture and open source approach. Artesyn has collaborated with leading technology providers to integrate a range of demonstrations of multiple network functions, including:

• Network functions virtualization (NFV) orchestration of accelerated, high density video transcoding with **RIFT.io** and **Vantrix**
• High density AVC/HEVC multimedia transcoding with **Pixtree**
• HEVC real-time or VOD encoding on **Windows** with **Noisypeak**
• JPEG2000 encoding using **NVIDIA** GPUs with **Comprimato**
• 10b422 HEVC encoding on Artesyn's MaxCore™ SharpServer™ featuring Intel®Xeon® D processor family using **Vanguard** Video V.265 by **BEAMR**

NFV Orchestration of Accelerated, High Density Video Transcoding

RIFT.IO's open source MANO application will orchestrate placement of Vantrix Media Platform virtual network functions (VNFs) in an Artesyn SharpStreamer™ 2U platform on an OpenStack Enhanced Platform Awareness (EPA)-capable cloud infrastructure. Monitored metrics of the accelerated video transcoding have shown a greater than 20 times increase in performance per RU when compared to a standard dual-processor server through SharpStreamer acceleration.

Pixtree High Density AVC/HEVC Multimedia Transcoding

Pixtree, the multimedia broadcasting equipment provider, has enhanced its existing single-channel broadcasting equipment solution to higher density and added more flexibility thanks to Artesyn's high density video acceleration products including the MaxCore™ platform and SharpStreamer™ add-in card. Pixtree expects to commercialize various types of multimedia services with the integration of its multimedia engine and media framework technologies with Artesyn's video acceleration platforms. Pixtree plans to supply its hardware-accelerated multimedia solution to terrestrial television companies, IPTV broadcasting companies, cable operators, and internet and OTT service providers.

Noisypeak Live Incoming Camera Transcoding on Windows

Noisypeak is a leading provider of advanced video over IP solutions for TV / video broadcasters, as well as corporate, government, professional sports and education applications. The company will demonstrate its core technology, the Uniform Encoding Engine (U-EN2), with a live transcode from incoming camera streams on an Artesyn SharpStreamer add-in PCI Express acceleration card in a Dell server running Microsoft Windows.
Video encoding solutions provided by Noisypeak enable smooth, high-quality, up to 4K/HEVC video delivery from almost any source to the wide range of connected devices over Internet and mobile networks.

Comprimato JPEG2000 Encoding using NVIDIA GPUs

Comprimato's JPEG2000 Ultra HD software codec toolkit helps media and entertainment and geospatial imaging technology companies with ultra-high speed compression and life-like viewing experience. This demonstration shows Comprimato JPEG 2000 encoding on NVIDIA GPUs, illustrating third party hardware and software interoperability in the Artesyn MaxCore™ platform. Visitors can see JPEG 2000 transcoding performance using NVIDIA GPU and NVIDIA Maxwell GPU based AVC/HEVC Encoders (NvENC) and side-by-side video quality comparison between HEVC and JPEG2000.

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send SMS « any time » to +32-471-54 55 40

Take five
Here is the opportunity to address New Business

Dear Readers,

Time for IBC 2016 the place to be for broadcasters, but today Video and Video Networks are now in many applications and market segments; we are in the time of a great convergence between Broadband – Broadcast and IoT.

Customers are looking for solutions and want prove of concept "PoC". Artesyn has prepared for you a number of DEMO's with Software Partners, those DEMO's are all about reducing dramatically the costs (CAPEX, OPEX) and at the same time increasing drastically the performance and addressing the next app's.

This edition of TCW is dedicated to Artesyn.

IBC 2016 - Sep.09-13
Artesyn : Hall 15, Ms34
RAI Amsterdam

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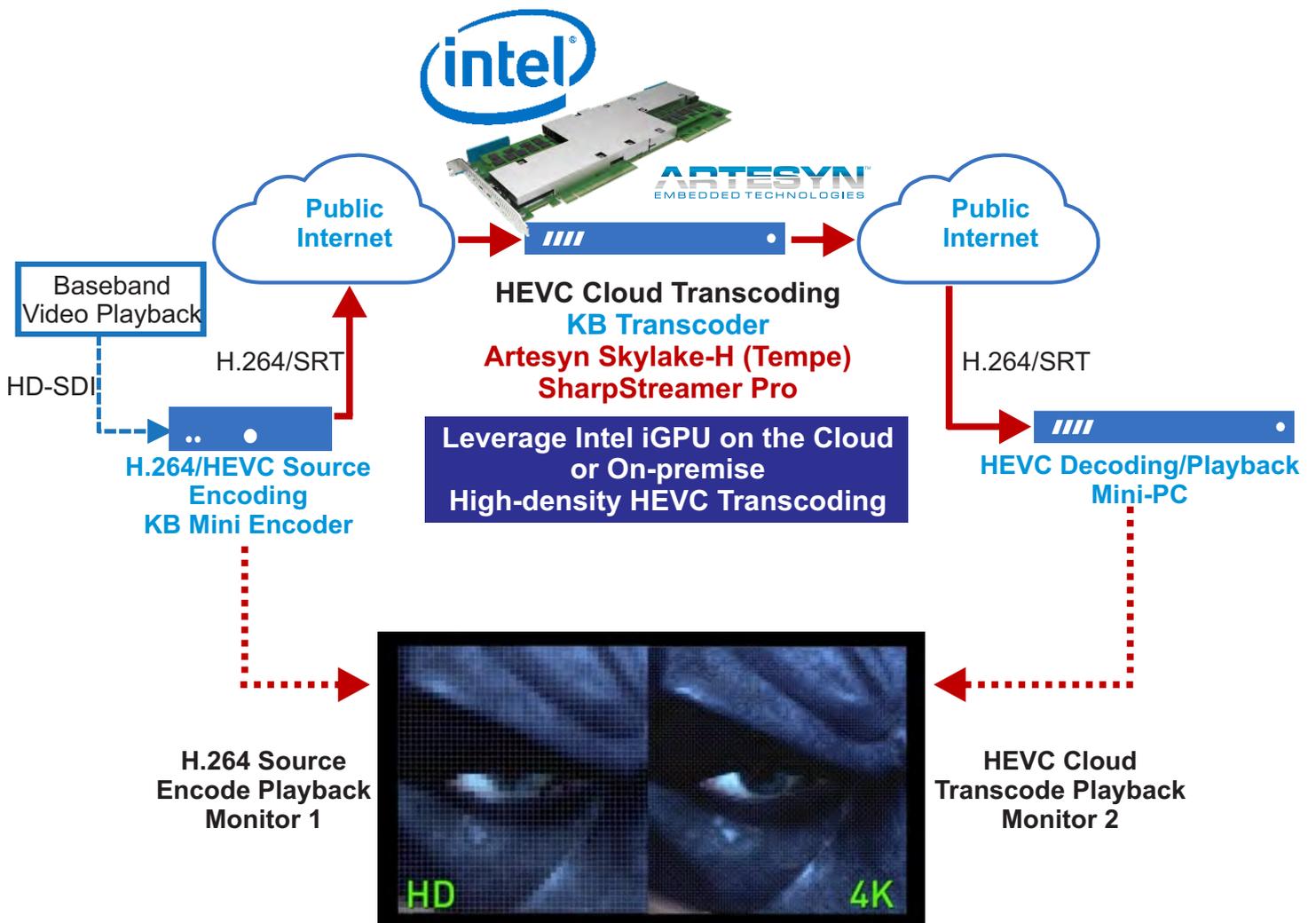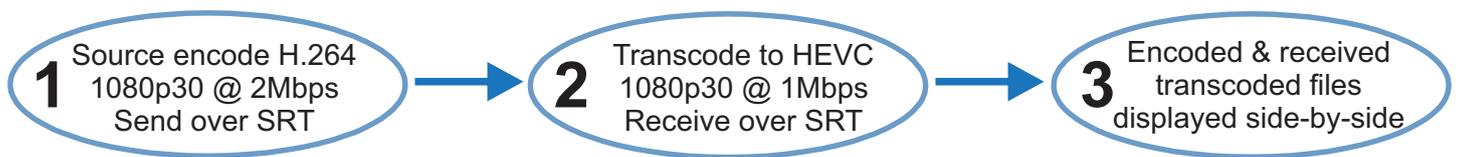
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ATCA World

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Haivision ARTESYN™ EMBEDDED TECHNOLOGIES

Artesyn and Haivision to DEMO
Full end-end solution on the Cloud or On-premise
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On Premise and Cloud Transcoding Workflow

1 Source encode H.264 1080p30 @ 2Mbps Send over SRT → **2** Transcode to HEVC 1080p30 @ 1Mbps Receive over SRT → **3** Encoded & received transcoded files displayed side-by-side

(intel)

Public Internet

Public Internet

Baseband Video Playback

HD-SDI

H.264/SRT

HEVC Cloud Transcoding
KB Transcoder
Artesyn Skylake-H (Tempe)
SharpStreamer Pro

H.264/SRT

H.264/HEVC Source Encoding KB Mini Encoder

Leverage Intel iGPU on the Cloud or On-premise High-density HEVC Transcoding

HEVC Decoding/Playback Mini-PC

H.264 Source Encode Playback Monitor 1

HD   4K
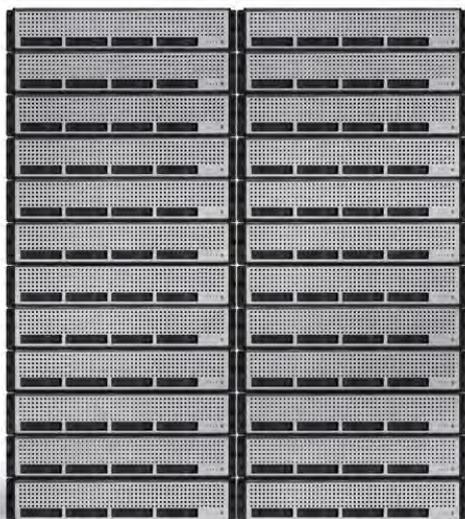
HEVC Cloud Transcode Playback Monitor 2

Note: the DEMO will show a much better diffence

— **Product by Haivision**
— **Platform by Artesyn**

nablet mediaEngine™ SDK Accelerated by Artesyn

what a difference a SharpStreamer makes

Standard Server   Video Appliance   SharpStreamer Accelerated Server

Save CapEx & OpEx with nablet mediaEngine Software & Artesyn SharpStreamer Card

Traditional white box servers are commonly deployed for video transcode, but these servers are designed for general purpose computing and are not optimised for media processing. Compared with a standard white box server (based on 2 x E5-2650V2 processors), a single Artesyn SharpStreamer card running the nablet mediaEngine software provides the following advantages (assuming MPEG2 to H.264/1080p/30fps transcode):

- *CapEx Cost ($) per transcode:*   *9.4% of the standard server*
- *Power (W) per transcode:*   *2.5% of the standard server*
- *Space (Rack Unit) per transcode:*   *2.4% of the standard server*

Furthermore, the host server is freed from media transcode tasks and can be fully utilized for general purpose computing.

SharpStreamer™ Pro Add-on Acceleration Card Now Available for Application-specific Evaluation through **Remote Access Lab**

Brings Skylake performance to video processing for OTT video streaming, mobile network optimization, CDNs, and broadcast distribution in standard servers and cloud networks

TEMPE, Ariz. [5th July, 2016] — Artesyn Embedded Technologies today announced that its next-generation SharpStreamer™ Pro add-on video acceleration card, based on the new Intel® Xeon® E3-1578Lv5, which uses the Skylake-H microarchitecture, is now available for customers to evaluate through a secure remote access lab.

Developers can now evaluate the performance of their specific applications on the SharpStreamer Pro card, which offers a significant performance and functionality boost in a standard PCI Express form factor for compatibility with industry-standard servers. It targets 4K and HD HEVC encoding and transcoding requirements in demanding linear broadcast and high-density OTT multiscreen applications.

Customers can access the remote customer trial lab using the 'Request a Demo' form on the product web page.

The SharpStreamer Pro card is available in full- or half-length versions with one or two processors, each of which is capable of up to eight streams of 1080p30 H.265/HEVC transcodes, or four streams of 1080p60 H.265/HEVC transcodes. Each processor can support one 4KP60 HEVC, or up to two 4KP30 HECV transcodes.
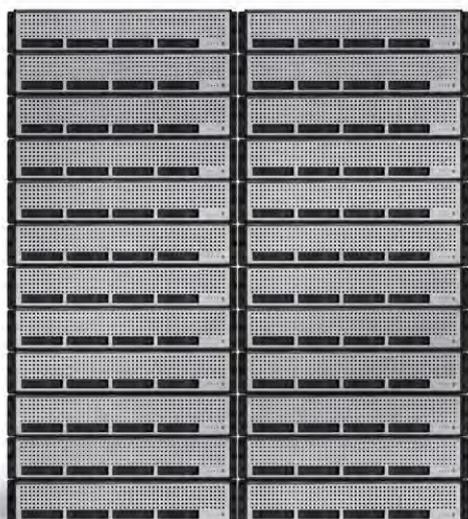
The SharpStreamer Pro card is equipped with a software development kit comprised of the Intel® Media Server Studio with Intel® HD Graphics' hardware acceleration, monitoring and processor subsystem operating system and management tools for easy integration with server host processing environments.

Artesyn's SharpStreamer add-in card portfolio offers a range of GPU-accelerated devices in small, scalable PCI Express card footprints that are easily deployable in off-the-shelf platforms. The breadth of offerings enables content owners, broadcasters and service provider networks to lower the cost of handling OTT video and speed the deployment of high density video transcoding and multiscreen delivery. In addition to the SharpStreamer Pro card, the portfolio includes:
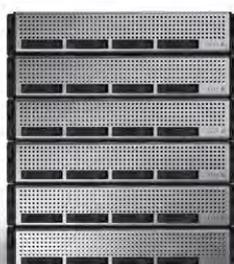
- SharpStreamer card: Featuring four Intel® Core™ i7-5650U processors and Intel® HD Graphics 6000 in a three-quarter length PCI Express add-in card
- SharpStreamer Mini card: Featuring one or two Intel Core i5-5350U processors and Intel HD Graphics 6000 in a half-length PCI Express add-in card

With Dell and HP Enterprise Servers
Artesyn add-in cards can easily be deployed in popular, high volume servers such as Dell PowerEdge R230, R430 and R720, and HPE ProLiant DL360 and DL380 families in addition to numerous 1U standard servers.

Standard Server   **Video Appliance**   *what a difference a SharpStreamer makes*

SharpStreamer Accelerated Server

SharpStreamer add-in cards can also be used in Artesyn's MaxCore™ platforms, optimized for hosted cloud and high density deployments and offering a significant reduction in OpEx through power consumption savings.

SharpStreamer Video Processing
PCI Express Cards Intel-based
Off-the-Shelf High Density Video Transcoding Accelerator Cards

ARTESYN™
EMBEDDED TECHNOLOGIES

SharpStreamer™ Mini PCIE-7205 - Datasheet [Click Here]

☐ In-place upgrade for deployed transcoding servers
☐ Smaller card size to support existing infrastructure with half size PCI Express slots
☐ Optional 10G SFP+ front panel ports for encoding applications
☐ No need for dedicated appliances
☐ Optimized H.264/AVC and H.265/HEVC transcoding density in a smaller format

The Artesyn SharpStreamerTM PCIE-7205 high-density video accelerator enables service providernetworks to offer video transcoding services quickly and dynamically. As an add-on card, the SharpStreamer PCIE-7205, with its half-size form factor, offers quick and scalable integration with existing and standard server architectures. **The SharpStreamer PCIE-7205 meets the demands of ISPs and MSOs who want to use existing servers and cloud infrastructure to support new video transcoding services.**

With a focus on the high-density and low power demands of video streaming applications such as OTT streaming servers, mobile network optimization, video conferencing and broadcast equipment, Artesyn employs one or two Intel® Core™ i5 processors with Intel® HD Graphics 6000 GPU accelerated devices in a small and scalable PCI Express card footprint that is easily deployable in off-the-shelf platforms. **Each SharpStreamer PCIE-7205 is capable of up to 22 streams of 1080p H.264 transcodes, or 2 streams of 1080p H.265/HEVC transcodes (dual CPU version).**

Compared to dedicated appliances, the SharpStreamer solution is more easily deployable, portable, and does not constrain operators to only one type of equipment to monetize OTT streaming content. It also offers network scalability, enabling providers to pay as you go as the subscriber base increases by adding more cards and density as needed. **Compared to software-only solutions, the SharpStreamer PCIE-7205 requires far fewer servers and much less operational cost to power video transcoding services.**

The SharpStreamer PCIE-7205 is equipped with a software development kit comprised of the Intel® Media Server Studio runtime files with the Intel HD Graphics 6000 fixed-function hardware acceleration, monitoring and processor subsystem O/S and management tools for easy integration with server host processing environments.

SharpStreamer™ Mini PCIE-7205   Datasheet [Click Here]

P/N	Size	CPU	Use in	Description
PCIE-7205-1	Full Height; Half Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	1x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz
PCIE-7205-2	Full Height; Half Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	2x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz
PCIE-7205-2-2	Full Height; Half Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	# 2x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz, # 2x Intel® 82599EN 10G Ethernet controllers (front panel)

SharpStreamer™ PCIE-7207   Datasheet [Click Here]

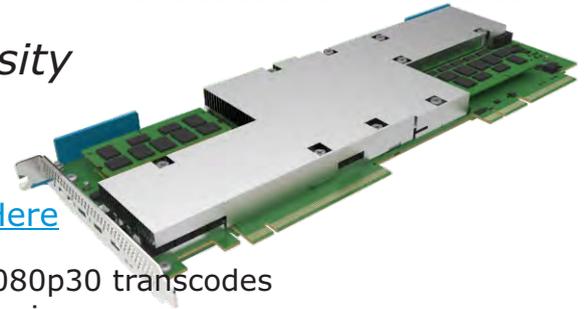|				
PCIE-7207-4	Full Height; ¾ Length: H x L: 111.15 mm X 239.83 mm	i7	Standard Server	4x dual-core Intel® Core™ i7-5650U Processors 2.2 GHz
PCIE-7207-4-i5	Full Height; ¾ Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	4x dual-core Intel® Core™ i5-5350U Processors 1.8 GHz

SharpStreamer™ Pro PCIE-7210   Datasheet [Click Here] - SEE ALSO NEXT PAGE

PCIE-7210-1	Full Height; Half Length: H x L: 107 mm X 156 mm	Xeon	Standard Server	1x Quad Core Intel® Xeon® E3-1578Lv5 Processors for Standard Servers
PCIE-7210-2	Full Height; Full Length: H x L: 107 mm X 312 mm	Xeon	MaxCore Platform	2x Quad Core Intel® Xeon® E3-1578Lv5 Processors for MaxCore Platform

Mini PCIE-7205 for Standard Server   **PCIE-7207 for Standard Server**   **Pro PCIE-7210-1 for Standard Server**   **Pro PCIE-7210-2 for MaxCore**

SharpStreamer Video Processing
PCI Express Cards Intel-based
High Performance Off-the-Shelf High Density Video Transcoding Accelerator Cards

ARTESYN™
EMBEDDED TECHNOLOGIES

SharpStreamer™ Pro PCIE-7210 - Datasheet Click Here

- ☐ HEVC transcoding accelerator delivering up to 16 HEVC 1080p30 transcodes
- ☐ Provides horsepower to run complete application on each microprocessor
- ☐ Designed for lowest in-system latency
- ☐ Offering the only server-based approach
- ☐ No dedicated appliances
- ☐ Higher H.264/AVC and H.265/HEVC transcoding density **than software-only solutions**

The Artesyn SharpStreamer™ Pro PCIE-7210 high performance video accelerator enables service provider networks to offer HEVC video transcoding services quickly and dynamically. As an add-on card, the SharpStreamer PCIE-7210 offers quick and scalable integration with existing and standard server architectures to meet the demands of ISPs and MSOs who want to **use existing servers and cloud infrastructure to support new video transcoding services.**

With a focus on the high density and low power demands of video streaming applications such as OTT streaming servers, mobile network optimization, video conferencing and broadcast equipment, Artesyn employs Intel® Xeon® E3-1578Lv5 (codename Skylake-H) GPU accelerated devices in small, scalable PCI Express card footprints that are easily deployable in off-the-shelf platforms. **Each SharpStreamer PCIE-7210 CPU is capable of up to eight (8) streams of 1080p30 H.265/HEVC transcodes, or four (4) streams of 1080p60 H.265/HEVC transcodes. Each CPU offers one (1) 4KP60 HEVC, or up to two (2) 4KP30 HECV transcodes.**

The SharpStreamer Pro solution is easily deployable, portable, and does not constrain operators to a single type of equipment to monetize OTT streaming content. It also offers network scalability for increased subscribers to pay as you go, adding more cards and density from small to large servers as needed. **Compared to software-only solutions, the SharpStreamer PCIE-7210 requires far fewer servers and much less operational cost to power video transcoding services.**

The SharpStreamer PCIE-7210 is equipped with a Software Development Kit comprised of the Intel® Media Server Studio Essentials runtime files with the Intel® Iris™ Pro Graphics P580 fixed function hardware acceleration, monitoring and processor subsystems, O/S, and management tools for easy integration with server host processing environments.

SharpStreamer™ Mini PCIE-7205   Datasheet Click Here

P/N	Size	CPU	Use in	Description
PCIE-7205-1	Full Height; Half Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	1x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz
PCIE-7205-2	Full Height; Half Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	2x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz
PCIE-7205-2-2	Full Height; Half Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	# 2x dual-core Intel® Core™ i5-5350U Processor 1.8 GHz, # 2x Intel® 82599EN 10G Ethernet controllers (front panel)

SharpStreamer™ PCIE-7207   Datasheet Click Here

P/N	Size	CPU	Use in	Description
PCIE-7207-4	Full Height; ¾ Length: H x L: 111.15 mm X 239.83 mm	i7	Standard Server	4x dual-core Intel® Core™ i7-5650U Processors 2.2 GHz
PCIE-7207-4-i5	Full Height; ¾ Length: H x L: 111.15 mm X 239.83 mm	i5	Standard Server	4x dual-core Intel® Core™ i5-5350U Processors 1.8 GHz

SharpStreamer™ Pro PCIE-7210   Datasheet Click Here

P/N	Size	CPU	Use in	Description
PCIE-7210-1	Full Height; Half Length: H x L: 107 mm X 156 mm	Xeon	Standard Server	1x Quad Core Intel® Xeon® E3-1578Lv5 Processors for Standard Servers
PCIE-7210-2	Full Height; Full Length: H x L: 107 mm X 312 mm	Xeon	MaxCore Platform	2x Quad Core Intel® Xeon® E3-1578Lv5 Processors for MaxCore Platform

Mini PCIE-7205
for Standard Server

PCIE-7207
for Standard Server

Pro PCIE-7210-1
for Standard Server

Pro PCIE-7210-2
for MaxCore

Artesyn System Solutions

Artesyn's SharpStreamer™ platforms accelerate video processing for service providers and equipment providers in the broadcast, OTT, MSO, ISP, CDN and cloud service provider market. Designed to work with standard servers, Artesyn's SharpStreamer add-in cards and 1U, 2U and 3U MaxCore™ appliance platforms can simplify and accelerate the creation of appliances to support high density hosted, virtualized or cloud-based multiscreen video infrastructure. Artesyn also offers optional multiscreen video transcoding application software, and collaborates with a wide range of ISV ecosystem partners to provide you with a complete solution. **MORE:** Click Here

SharpStreamer™ Servers

SharpStreamer™ servers are powered by up to four SharpStreamer PCIE-7207 PCI Express video processing acceleration engines to accelerate broadcast and multiscreen OTT video applications in a standard server architecture. Offering the only server-based approach, the SharpStreamer server comes pre-integrated and ready to deploy. Accelerator offload cards deliver up to 176 1080p30 H.264/AVC transcodes, making the platform ideal for standalone installations or cloud deployments. Optional transcoding software makes the system deployment ready. The 2U server is available in carrier grade.

MaxCore™ Platform

MaxCore™ platform offers a versatile and dense architecture to achieve maximum compute and media processing density, with 80% less power/heat and 90% fewer cables than traditional servers. Through its use of Artesyn SharpServerdual Intel® Xeon® processor D 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 data center and carrier grade applications.

The MaxCore platform achieves maximum flexibility through its capability to perfectly balance I/O, compute and compute-associated accelerators within the same box; and it offers an economical framework to cost-effectively deploy densely configurable content. It also accelerates time to market by leveraging the vast market of COTS PCI Express cards available which can be used interchangeably on MaxCore's 15 full length PCI Express slots and other platforms. The MaxCore platform offers optimal cooling and accommodation for PCI Express cards that require additional power, along with support for NEBS environments. When configured with Artesyn SharpStreamer acceleration, it can transcode 616 HD streams for VoD and live/linear multiscreen video.

MaxCore™ 3U Platform

MaxCore™ HA Platform
12 Hot Swappable PCIE Slots Front Load
(HA = High Availability)

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MaxCore™ Hyperscale Platform
for Dell DSS 9000 Racks I/O
2 X 9 PCIE Slots