

SharpStreamer™ Pro PCIe-7210 High Density HEVC Video Accelerator

Data Sheet

High Performance Off-the-Shelf HEVC Video Transcoding Accelerator Card

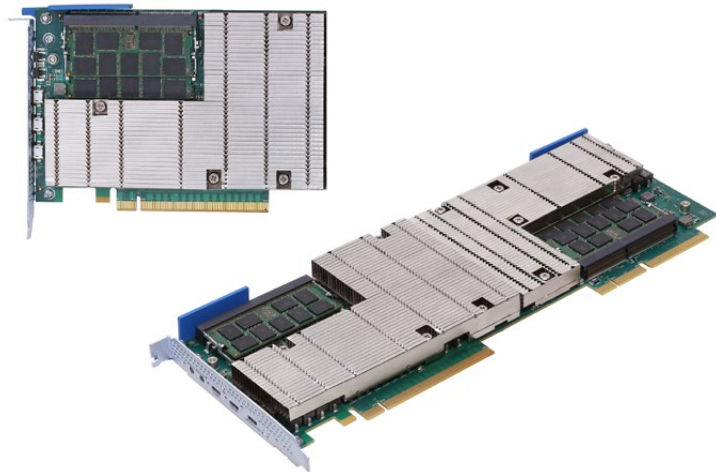
- HEVC transcoding accelerator delivering up to 16 HEVC 1080p30 transcodes
- Provides horsepower to run complete application on each microprocessor
- Designed for lowest in-system latency
- Offering the only server-based approach
- No dedicated appliances
- Higher H.264/AVC and H.265/HEVC transcoding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



Hardware Overview

Hardware

The SharpStreamer™ Pro PCIE-7210 is available in two versions:

- PCIE-7210-1 will fit any server with a suitable PCI Express slot
- PCIE-7210-2 is optimized for the Artesyn MaxCore™ platform

In the MaxCore implementation, each subsystem communicates with the host server through a direct-attached PCI Express x8 Gen 3 link. The PCI Express version utilizes a non-transparent PCI Express x16 Gen 3 (128Gbps) bridge to connect to the host's PCI Express interface. Each CPU supports up to 64GB of removable DDR4 dual channel memory. The SharpStreamer PCIE-7210 card uses power from both the PCI Express slot and an on-board auxiliary power connector.

MAIN CHIPSET**

- PCIE-7210-1: One (1) Quad Core Intel® Xeon® E3-1578Lv5 processor
- PCIE-7210-2: Two (2) Quad Core Intel® Xeon® E3-1578Lv5 processors

PROCESSOR GRAPHICS

- Intel® Iris™ Pro Graphics P580 (GT4e)
 - Graphics base frequency 800 MHz
 - Embedded graphics DRAM per GPU: 128MB

MEMORY

- 2x DDR4 SO-DIMMs per CPU
- Designed for up to 32GB DDR4 memory per CPU

**Please note these values are subject to change.

HOST INTERFACES

- PCIE-7210-1: PCI Express Gen3 x8 (mechanical)
- PCIE-7210-2: PCI Express Gen3 x16

DATAPLANE INTERFACE

- PCIE-7210-1: PCI Express Gen3 x4 per processor
- PCIE-7210-2: Dual PCI Express Gen3 x4 per processor

EXTERNAL INTERFACES

- Micro USB port
- Serial port
- Reset button (on face plate)
- USB 3.0 port (internally on card edge)

POWER REQUIREMENTS**

- Estimated peak electrical power: 150 W

TEMPERATURE CHARACTERISTICS**

- Normal operation: 0 °C to 40 °C

RELEVANT CARD SIZE

- PCIE-7210-1: Full Height; Half Length; H x L: 107 mm X 156 mm
- PCIE-7210-2: Full Height; Full Length; H x L: 107 mm X 312 mm

RELEVANT STANDARDS

- PCI-SIG PCI Express Base Specification rev. 2.0

HARDWARE ACCELERATED CODECS

- H.264
- H.265
- MPEG-2
- MJPEG (Partial acceleration decode only)
- VC-1 (Decode only)
- VP8 (Partial acceleration)

VIDEO PROCESSING APIS

- Composition
- Scaling
- Color-Space Conversion
- De-noise
- Adaptive De-Interlace
- Interpolated Frame Rate Conversion

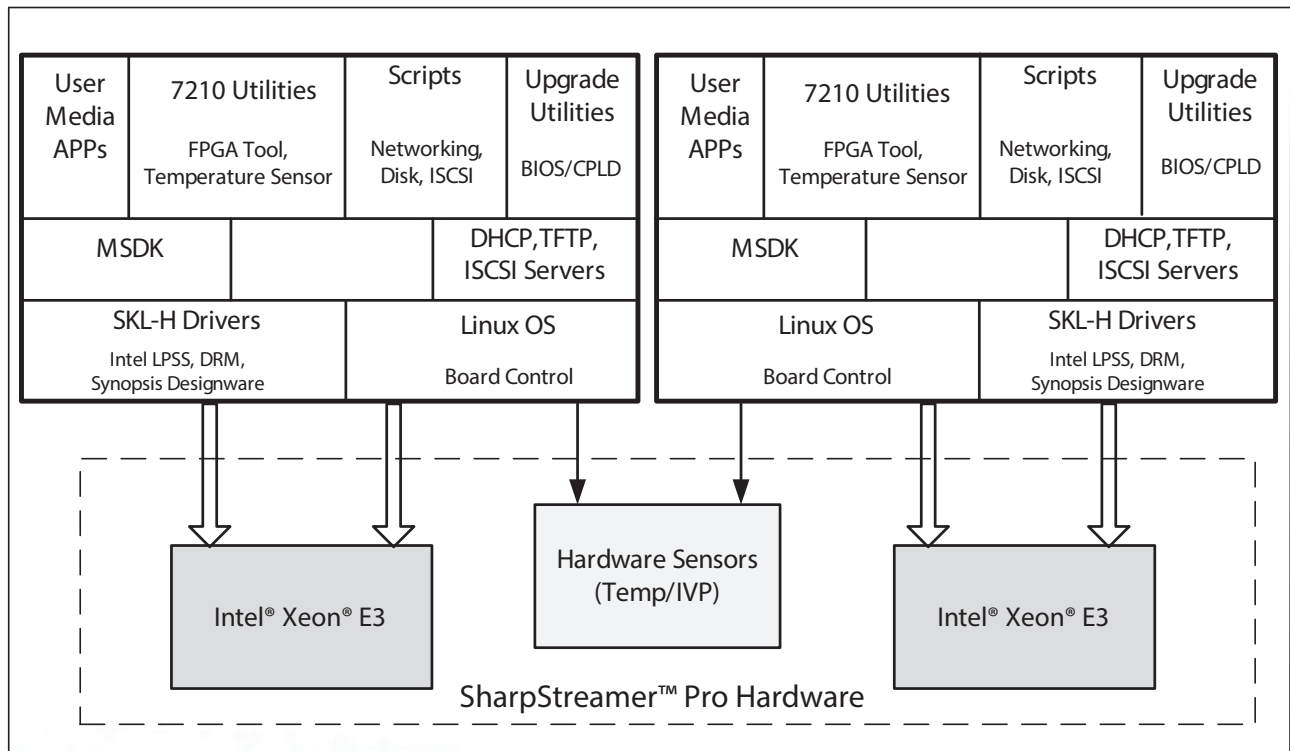
Representative Performance

of 1080P30 Transcode Channels

# of SharpStreamer Pro cards	One (1) PCIe-7210-1	One (1) PCIe-7210-2	Four (4) PCIe-7210-2	14 PCIe-7210-2
H.264 (AVC)	20	40	160	560
HEVC	8*	16	64	224

*Preliminary performance based on 3rd party software benchmark testing. HEVC performance may increase with ongoing benchmark testing in progress. For actual performance results for specific applications please contact your Artesyn FAE.

Software Block Diagram



Ordering Information

PCIE Boards	Description
PCIE-7210-1	PCIE card with 1x Quad Core Intel® Xeon® E3-1578Lv5 Processors for standard servers
PCIE-7210-2	PCIE card with 2x Quad Core Intel® Xeon® E3-1578Lv5 Processors for MaxCore platform

Software Development Kit

Includes:

- Network bootable Linux Operating System for each processor subsystem with Intel® Media Server Studio - Essentials Edition SDK runtime files
- Remote console access to BIOS and OS
- Hardware Monitoring Software
- Host Side Artesyn Firmware and Software Update tools
- The card's processor subsystems can be communicated with over Ethernet from the host. Each processor's Linux OS includes the Ethernet drive.

Intel Media Server Studio Media SDK:

SharpStreamer™ SDK comes packaged with Intel® Media Server Studio - Essentials Edition runtime files. For development purposes, Intel Media Server Studio - Essentials Edition must be downloaded and installed on the each Intel® Xeon® E3-1578Lv5 node. The Intel Media Server Studio SDK contains an application programming interface (API) library for developing media applications. The kit makes it easier for developers to optimize their applications with the use of the Intel® Iris™ Pro Graphics fixed-function hardware acceleration. Some application use cases which can benefit from this acceleration include video processing, transcoding and video conferencing.

Network Bootable Operating System:

- First Release: Centos 7.x

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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PCIE-7210-DS 18Aug2017

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