The acceleration of video traffic trend is driving the need for enhanced media processing on the net and in the cloud. Transcoding and encrypting video will help improve user experience and enhance security while reducing network bandwidth usage, by delivering quality content to various target devices.

The new paradigm of connected devices (smart sensors, smart phones, and smart appliances on the edge) is expected to generate a deluge of data that will energize the demand for “graphical” and “security” Servers, Storage and networking appliances both on the net and in the cloud.

Visual computing encompasses several computational disciplines that include computer graphics, image
processing, video processing, visualization, computer vision, virtual and augmented reality including widespread machine learning and deep learning.

Processors in the past focused on optimizing applications together with coprocessors and other chipsets that accelerated specialized functions such as graphics, encryption, signal processing and storage. But now, Intel® Xeon® E3-1500 v5 (formerly Skylake-H) processors have integrated multiple functions that are specialized in video and image processing and encryption tasks.

The Intel Xeon E3-1500 v5 CPU can compress data at the server and pipe it to gadgets at a much higher rate (Iris Pro 580 - GT4e), and can deliver up to 18 AVC streams or 8 HEVC streams at 1080p 30 frames per second (FPS), or 2 HEVC streams at 4K 30 FPS according to processor benchmark results published by Intel.

On-package eDRAM cache memory integrated into the processor in conjunction with Intel® Iris™ Pro graphics, increases the performance and power efficiency of the CPU for graphics workloads.

Intel® Quick Sync video logic on the package enables hardware-enhanced acceleration of codecs and real-time HEVC transcoding. Software vendors enable it with Intel Media Server Studio software.

Supermicro X11SSV-M4(F) and X11SSH-G(T)F Product Families for Media Processing and Remote Graphics Applications

Supermicro is launching the new X11 generation of visualization/embedded server and building blocks solutions based on Intel Xeon processor E3-1500 v5 paired with Intel C236 series chipset. The combination brings improvements in performance, density, power consumption, and cost savings to a variety of visual computing workloads.
The new Supermicro X11SSV-M4(F) and X11SSH-GF(T)F embedded motherboards featuring 14nm Intel® Xeon® processor-E3-1500 v5 product family with integrated Iris Pro Graphics enable a new class of dense intelligent edge server designs, that enrich the user experience in VDI, cloud gaming, improve video transcoding and streaming performance, and enhance video surveillance capabilities.

The X11SSV-M4(F) product family is an extremely versatile and capable embedded solutions in the Mini-ITX form-factor with a fan-less option (with -M4F SKUs). With 4 Xeon E3-1500 v5 cores, GT4e, up to 32GB of ECC DDR4-2133MHz memory and with M.2 SSD support, this building block solution can operate in many different environments to optimize user experience in VHD, webhosting, media streaming, healthcare, digital surveillance and more.

The X11SSH-G(T)F product family is optimized for designs that demand more I/O flexibilities and memory capacity. Available in the slightly larger Micro-ATX form-factor, the X11SSH-G(T)F provides 2 more PCI-E 3.0 slots, more USB connectivity, dual 1GbE or 10GbE ports (with -GTF SKUs) and supports up to 64GB of ECC DDR4-2133MHz memory. The larger memory footprint lowers TCO by hosting several virtual machines on a single server, and enriches the user experience with accelerated video transcoding performance through Intel Quick Sync Video (QSV) Technology in a Virtual Hosted Desktop (VHD) environment for workstation class graphical intensive applications.

Supermicro server motherboards based on E3-1500 v5 processors are optimized to deliver stunning graphics optimized for visualization type of workloads:

**Video Transcoding** - efficient and real-time high-definition (HD), Ultra high-definition (UHD 4K) video and virtual reality streaming video delivery.

**Remote Workstation Application Delivery** – complex 3D applications and graphical virtualization for collaborative global workforce working in remote locations.

Cloud-based visual computing will stimulate compelling new experiences and transform how people interact with their environment. These Supermicro solutions provide edge computing to carriers, cloud and data centers to deploy appliances and related services while responding to market requirements faster using our

![Figure 4 Supermicro X11SSH-G(T)F Micro-ATX server board building block solutions for visualization in the cloud.](image)

**Building Block Solutions:**

Supermicro provides innovative and first-to-market technologies that are the building blocks for today's embedded/IoT computing platforms. Rapid growth in the embedded/IoT markets and open standards are driving the need for higher levels of product integration and optimization through network connectivity, remote management, mobile communication, expanded I/O, and device to device communications using space and power efficient configurations.

**Find Out More:**

[https://www.supermicro.com/skylake-h](https://www.supermicro.com/skylake-h) or Contact your Supermicro Sales Representative.
**Supermicro Product Information:**

Figure 5 Supermicro Mini-ITX X11SSV-M4F E3-1585v5, Skylake-H, GT4e, 4 Core 65W, 3.5-3.9GHz, PCH chipset C236 Intel® Iris™ Pro Graphics PS50 with 128MB of on-Package cache (eDRAM) for high performance graphics VHD, Media CODEC (HEVC, JPEG, VP8) and IPMI 2.0 (Shared LAN) BMC VGA via DVI-A 12V DC or ATX power source - DDR4 ECC SODIMM up to 2133MHz and 32 GB - 4 SATA3, M.2 (M key 2280, PCIe 3.0x4 with SATA3), 4 USB 3.0, 5 USB 2.0, Quad GbE LAN - 1 COM port(RJ45), TPM header, PCIe3.0x16 , Mini-PCIe with mSATA support - 0-60C op. temp.

Figure 6 Supermicro Mini-ITX X11SSV-M4 E3-1515v5, Skylake-H, GT4e, 4 Core 45W, 2.8-3.7GHz, PCH chipset CM236 Intel® Iris™ Pro Graphics PS580 with 128MB of on-Package cache (eDRAM) for high performance graphics - 3 Displays Ports: HDMI, DisplayPort and DVI-I video output. AMT vPro - Media CODEC (HEVC, JPEG, VP8) - 12V DC or ATX power source - 7 DDR4 ECC SODIMM up to 2133MHz and 32 GB - 4 SATA3, M.2 (M key 2280, PCIe 3.0x4 with SATA3), 4 USB 3.0, 5 USB 2.0, Quad GbE LAN, 1 COM port(RJ45),1 PS/2, TPM header, PCIe3.0x16 , Mini-PCIe with mSATA support - 0-60C op. temp.

Figure 7 X11SSH-GF/-GTF-1585 (-1585L) with Intel Xeon E3-1585(L) v5 – 4 Core 65W and 45W, GT4e, QSV and VHD with Iris Pro Graphics, Dual 10G (-GTF) or Dual 1G (-GF), IPMI 2.0 Compact VHD/Quick Sync Video Solution Board with Dual GbE/10GbE + GT4e Gfx) PCH chipset Intel® C236. Up to 64GB ECC Unbuffered SO-DIMM, DDR4 2133MHz; 4 DIMM slots Support Intel® Iris Pro Graphics PS580 (GT4e), for VHD and Quick Sync Video- Expansion slots: 1 PCI-E 3.0 x8 (in x16), 1 PCI-E 3.0 x8, 1 PCI-E 3.0 x4 (in x8) 6 SATA3 (6Gbps) via C236; RAID 0, 1, 5, 10 - 2 SuperDOM with built-in power- 5 USB 3.0 (2 rear, 1 Type A, 2 internal) - M.2 NGFF connector.

Figure 8 SYS-5019S-TN4 Supermicro 1U Rack-Mount Embedded Server with Intel Skylake-H, Iris Pro Graphics PS580. X11SSV-M4F in a 1U short-depth (9.8”/249mm) chassis CSE-504-203B. Intel® E3-1585v5 processor on board 65W/3.5GHz, CM236 express chipset up to 32GB ECC/Non-ECC Unbuffered SO-DIMM DDR4 2133MHz 2x DIMM slots. Expansion via 1x M.2 PCIe 3.0 x4 (SATA support), M Key 2242/2280, 1x Mini PCI-e /w mSATA and 1x PCIe 3.0 x16. Up to 4x 2.5” HDD and have video output signal in VGA via DVI-A. 4x USB3.0, 4x 1GbE LAN ports and 200W Low Noise power supply with PFC.

Figure 9 SYS-1019S-MP Supermicro Box PC with Intel Skylake-H, Iris Pro Graphics PS580 and vPro AMT X11SSV-M4 in a compact (195x195x68mm) box CSE-101I chassis. Intel® E3-1515M v5 processor on board 45W/2.8GHz, CM236 express chipset up to 32GB ECC/Non-ECC Unbuffered SO-DIMM DDR4 2133MHz 2x DIMM slots. Expansion via 1x M.2 PCIe 3.0 x4 (SATA support), M Key 2242/80 and 1x Mini PCI-e /w mSATA. 1x 2.5” HDD. Triple independent displays from 1 HDMI2.0, 1 DP1.2, 1 DVI-I(Iris Pro Graphics PS580). 4x USB3.0, 4x 1GbE LAN ports and 84W Lockable Power Adapter.

Figure 10 SYS-5019S-MR-G1585SL Intel® HD Graphics/Iris Pro Optimizations X11SSH-GF-1585L, 813MFTQC-350CB Intel® E3-1585L v5 on board 45W/3GHz, C236 Express chipset Up to 4x ECC SODIMM slots, up to 64GB DDR4-2133MHz 1x PCI-E 3.0 x8(in x16) add-on card slot 2x GbE I350-BT2 port, 1x dedicated IPMI port M.2 support 2242/2280/22110 Intel® Iris™ Pro Graphics PS50 (GT4e) - 2x USB 3.0 (front/rear), USB 2.0, VGA, Serial - 4x 3.5” Hot-swap SATA3 bays w/ RAID - 350W High-Efficiency Power Supply - 1.7” x 17.2” x 19.8” - Less than 20” depth- Optional 2.5” drive adapter - Optional slim DVD drive - SATA DOM support - Additional FAN option

Figure 11 SYS-5019S-MR-G1585SL Intel® HD Graphics/Iris Pro Optimizations X11SSH-GF-1585L, 813MFTQC-R407CB Intel® E3-1585L v5 on board 45W/3GHz, , C236 Express chipset Up to 4x ECC SODIMM slots, up to 64GB DDR4-2133MHz M.2 support 2242/2280/1100 Intel® Iris™ Pro Graphics PS50 (GT4e) 1x PCI-E 3.0 x8(in x16) add-on card slot - 2x GbE I350-BT2 port, 1x dedicated IPMI port - 2x USB 3.0 (front/rear), USB 2.0, VGA, Serial - 4x 3.5” Hot-swap SATA3 bays w/ RAID - Redundant 400W 1+1 power w/ BBP® option - 1.7” x 17.2” x 19.8” Less than 20” depth - Optional 2.5” drive adapter Optional slim DVD drive SATA DOM support

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