Intelligent Video Solutions

Delivering Intelligent Video Analytics With Embedded Systems and Intelligent Platforms

- DSP Cards
- ARM-based Video Platforms
- x86-based Video Platforms
- Switches
- Servers and Storage

Smart Video Solutions:
- Broadcasting
- Video Wall
- Surveillance

Advantech
Enabling an Intelligent Planet

www.advantech.com
In response to the continuing increase in Internet traffic and video content, Advantech, a leading industrial solutions provider, has developed several product lines for emerging applications that require integrated video/metadata processing, cloud-based big data analysis, video/vision acquisition, recording, analytics, as well as content streaming, switching, and delivery. These product offerings will benefit the transportation, retail, surveillance, medical, machine vision, telecom, and broadcasting industries by providing video-based intelligence for redefining smart cities through superior services.

To target its extensive product lines to the video/vision and intelligence markets, Advantech established a consolidated and centralized intelligent video solution that addresses market demands using the versatile products described below.
### DSP Cards

**DSP-8681** Half-length PCI Express card with four DSPs

DSP-8681 integrates Texas Instruments multi-core DSP devices and provides sufficient computing power for 2K video codec processing, machine vision analysis, medical imaging, surveillance video analytics, and telecom and cloud computing applications with gigabit networking capabilities in PCIe card form factor.

**Features**
- Eight TMS320C66x™ DSP core subsystems (C66x CorePac)
  @ 1/1.25 GHz per DSP
- 8GB of on-board DDR-1333/1600 memory per DSP

**DSP-8682** Full-length PCI Express card with eight DSPs

DSP-8682 integrates Texas Instruments multi-core DSP devices and provides sufficient computing power for 4K video codec processing, machine vision analysis, medical imaging, surveillance video analytics, and telecom and cloud computing applications with gigabit networking capabilities in PCIe card form factor.

**Features**
- Eight TMS320C66x™ DSP core subsystems (C66x CorePac)
  @ 1/1.25 GHz per DSP
- 8GB of on-board DDR-1333/1600 memory per DSP

**DSP-8683** Half-length PCI Express card with TI DSPs

DSP-8683 integrates Texas Instruments multi-core DSP/ARM and Xilinx reprogrammable FPGA devices and provides video interfaces and sufficient computing power for full HD video codec processing, machine vision analysis, medical imaging, and surveillance video analytics with gigabit networking capabilities in PCIe card form factor or as a standalone configuration.

**Features**
- Eight TI TMS320C66x™ DSP core subsystems (C66x CorePac)
  @ 1/1.25 GHz per DSP
- Two GB of on-board DDR-1333 memory per DSP
- Supports the XDS560v2 evaluation module via JTAG for CCS connections
- Hardware sensor for monitoring temperature

**DSP-8684** Full-length PCI Express card with TI DSPs

DSP-8684 integrates Texas Instruments multi-core DSP/ARM and Xilinx reprogrammable FPGA devices and provides video interfaces and sufficient computing power for full HD video codec processing, machine vision analysis, medical imaging, and surveillance video analytics with gigabit networking capabilities in PCIe card form factor or as a standalone configuration.

**Features**
- Eight TI TMS320C66x™ DSP core subsystems (C66x CorePac)
  @ 1/1.25 GHz per DSP
- Two GB of on-board DDR-1333 memory per DSP
- Supports the XDS560v2 evaluation module via JTAG for CCS connections
- Hardware sensor for monitoring temperature

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### DSP Cards

**DSP-8661** 16-channel PCI e versatile video processing board with SDK

DSP-8661 integrates Texas Instruments DSP/ARM media SoC, supports up to 16 D1 analog video input channels with compression, streaming, recording, and display capabilities.

**Features**
- 16-channel composite video and audio inputs
- 16-channel composite video output
- Full HD (1080p) video acquisition of up to 60fps per channel
- HW-based H.264/MPEG/RAW encoding

**DSP-8662** 8-channel 3G-SDI video encoder card with SDK

DSP-8662 integrates Texas Instruments DSP/ARM media SoC, supports up to eight D1 analog video input channels with compression, streaming, recording, and display capabilities.

**Features**
- 8-channel SDI/HD-SDI/3G-SDI video and audio inputs
- Full HD (1080p) video acquisition of up to 60fps per channel
- HW-based H.264/MPEG/RAW encoding

**DSP-8663H** 4-channel HDMI video decoder card with SDK

DSP-8663H integrates multiple Texas Instruments DSP/ARM media SoCs, supports up to 4 full HD video input channels with compression, decompression, and streaming capabilities, as well as up to 4 HDMI output channels for IP-based video wall and multiviewer applications.

**Features**
- 4-channel 3G-SDI full HD (1080p) video and audio inputs at 60fps
- 4-channel HD video input channels with compression, decompression, streaming, and recording capabilities, as well as one HDMI output channel for medical imaging applications.

**DSP-8664** 2-channel HDMI/SDI video encoder card with SDK

DSP-8664 integrates Texas Instruments DSP/ARM media SoC, supports up to two full HD video input channels with compression, decompression, streaming, and recording capabilities, as well as one HDMI output channel for medical imaging applications.

**Features**
- 2-channel HDMI or SDI full HD (1080p) video and audio inputs at 60fps
- 2-channel HDMI video encoding and decoding
- Web-based GUI and SDK with sample codes

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### Product Information

- **DSP Cards**
- **DSP-8681** Half-length PCI Express card with four DSPs
- **DSP-8682** Full-length PCI Express card with eight DSPs
- **DSP-8683** Half-length PCI Express card with TI DSPs
- **DSP-8684** Full-length PCI Express card with TI DSPs
- **DSP-8661** 16-channel PCI e versatile video processing board with SDK
- **DSP-8662** 8-channel 3G-SDI video encoder card with SDK
- **DSP-8663H** 4-channel HDMI video decoder card with SDK
- **DSP-8664** 2-channel HDMI/SDI video encoder card with SDK
ARM-based Video Platforms

NVS-140  
Rugged IP video recorder with PoE switch

NVS-140 is an ARM-based ruggedized video recorder suitable for harsh environments and targeted to the video surveillance market. Designed for operation in mission-critical environments, this fanless system also features anti-vibration and anti-shock protection, an extended operating temperature of -20 ~ 70°C, an internal mini-PCIe interface, and optional heat transfer kit support.

Features
- Embedded PoE switch supports up to four compliant channels
- Supports 3.5" SATA Gen2 hard disk drive (HDD)
- Rugged and IP54-certified sealed enclosure design
- Optional finned convection or baseplate conduction heat transfer kits

NVS-150  
Compact IP video recorder with PoE switch

NVS-150 is an ARM-based IP video recorder that combines the functions of a high-performance network video recorder and a PoE switch into one system. The device is equipped with PoE ports and provides HDMI/VGA display outputs that can be configured for automatic recording and uplinking using specific management software. The system also supports optional high-performance DSPC-8681 DSP cards that facilitate intelligent video analytics.

Features
- Embedded PoE switch
- Supports up to 8 PoE ports
- Supports 3.5" SATA Gen2 HDD

NVS-160  
Embedded video recorder with PoE switch

NVS-160 is an ARM-based video recorder that combines the functions of a high-performance network video recorder and a PoE switch into one system. This device features PoE ports and supports optional composite video inputs that can be configured for automatic recording and uplinking using specific management software.

Features
- Embedded PoE switch
- Supports up to 16 PoE ports (IP video recorder)
- Supports up to 8 composite video inputs (hybrid video recorder)

x86-based Video Platforms

NVS-300  
Intelligent IP video recorder with PoE switch

NVS-300 is a video surveillance platform designed for diverse applications in a wide range of industries, such as the retail, casino, and entertainment markets. The device combines the functions of a high-performance network video recorder and PoE switch into one system. Capable of supporting up to four PoE ports for IP cameras, NVS-300’s compact enclosure design and removable 2.5” HDD bay with lock make this system ideal for security applications.

Features
- Supports dual independent displays: VGA and HDMI
- Four dry contact inputs and two relay outputs
- One serial port (RS-232/422/485)
- One USB 3.0 and two USB 2.0 ports
- Supports 3.5" SATA HDDs with up to 16TB of storage
- Supports triple displays of HDMI/VGA

NVS-500  
Professional network video recorder with PoE switch

NVS-500 is a fourth-generation Intel® Core™-based professional network video recorder that combines a server, network switch, and camera power supply (PoE) into one system. The device is embedded with 16 to 24 PoE LAN ports for high-performance cameras and supports up to four 3.5” HDDs with 16TB of storage. NVS-500 is suitable for diverse applications in a wide range of industries, such as the banking, surveillance, and middle-to-large hypermarket industries.

Features
- Supports solid state drives (SDDs) and HDDs
- Redundant and hot-swappable AC/DC PSU design
- Fiber version supports six QSFP and 44 SFP+
- Forwarding bandwidth of 680 Gbps
- Supports triple displays of HDMI/VGA

ESP-9212  
High-performance 10/40G to-top-of-rack Ethernet switch (fiber version)

ESP-9212 is optimized for software-defined networks (SDN) that require 10 and 40 Gigabit Ethernet connectivity. Delivering high performance and low latency for a forwarding bandwidth of up to 680 Gbps, this flexible platform supports the enhanced features essential for top-of-the-rack deployment in contemporary data center switching installations. Equipped with fiber support and a 1U rackmount design, ESP-9212 can be used to build highly scalable, feature-rich, top-of-rack switches and aggregation equipment for integrating big data, cloud computing, and optimized workloads at data centers.

Features
- Supports dual independent displays: VGA and HDMI
- Four dry contact inputs and two relay outputs
- One serial port (RS-232/422/485)
- One USB 3.0 and two USB 2.0 ports
- Supports 3.5" SATA HDDs with up to 16TB of storage
- Supports triple displays of HDMI/VGA

Switch

ESP-9212 is optimized for software-defined networks (SDN) that require 10 and 40 Gigabit Ethernet connectivity. Delivering high performance and low latency for a forwarding bandwidth of up to 680 Gbps, this flexible platform supports the enhanced features essential for top-of-the-rack deployment in contemporary data center switching installations. Equipped with fiber support and a 1U rackmount design, ESP-9212 can be used to build highly scalable, feature-rich, top-of-rack switches and aggregation equipment for integrating big data, cloud computing, and optimized workloads at data centers.

Features
- Built-in high power BI2.3 PoE switch (16 ~ 24 ports)
- Intel® Core™ processor (LGA1150) with Intel® Q87 chipset
- Two 204-pin 5012M MM for up to 16GB of DDR3 1333/1600 MHz SDRAM
- Network boot nodes controllable via the switch
- OPMI 2.0-compliant hardware management functions
- Software-defined networking package (includes OF-DPA, Indigo, Ryu, and OpenDaylight)
Servers and Storage

AGS-910 1U high-density GPU server with four expansion cards

AGS-910 is a high-density 1U GPU server that supports up to three PCIe x16 FH/FL double-depth expansion cards and one PCIe x8 FH/HL single-depth expansion card. This optimized GPU server is suitable for applications that require high-parallel computing power, such as broadcasting, video transcoding, medical imaging, and cloud gaming operations.

Features
- Dual Intel® Xeon® E5-2600/2600 v2 series processor
- Supports up to 128GB of DDR3-1333/1600 MHz memory (non-ECC/ECC/REG type)
- Supports four PCIe x16 double-deck cards and one PCIe x8 FH/HL card
- Supports 1100W 1+1 redundant power supply with 80+ platinum-level certification

AGS-920 High-density GPU accelerator system

AGS-920 is a 2U server that supports up to four GPU cards and is designed to deliver ample processing power for computationally-intensive applications. By using the massive parallel architecture of GPU cards to execute compute-intensive tasks, this GPU server is ideal for accelerating big data applications in the medical imaging, broadcasting, and video transcoding markets.

Features
- Dual Intel® Xeon® E5-2600/2600 v2 series processor that supports up to 20 cores/40 threads
- Supports up to 128GB of DDR3-1333/1600 MHz memory (non-ECC/ECC/REG type)
- Supports four PCIe x16 double-deck cards and one PCIe x8 FH/HL card
- Supports 1400W 1+1 redundant power supply with 80+ platinum-level certification

ASR-5200E High-availability disk array solution

ASR-5200E is designed to facilitate mission-critical and cloud applications, such as traffic management, video surveillance, broadcasting, and large storage applications. With advanced data service licenses, this system delivers increased HDD utilization, enhances performance, and superior data protection at minimal cost. ASR-5200E also supports numerous host interfaces, including Fibre Channel (FC), iSCSI, and SAS protocols, to satisfy the requirements of DAS/SAN environments.

Features
- Redundant dual controller configuration
- Supports 2U12 (3.5”)/2U24 (2.5”) two form factors
- Supports FC 8G, iSCSI 10G/1G, and SAS 6G host options
- Supports up to 120 x 3.5” / 240 x 2.5” drives
- Three-year warranty with advanced RMA service
- Equipped with advanced RAID features via LSI SAS2108 ROC
- Highly efficient (80+) redundant power supply
- Optional SKU: Supports up to 60 drives via an SAS expansion port

ASR-3272 2U 12-bay storage server with data protection and backup support

ASR-3272 is an inter-process communication server motherboard equipped with industrial-grade components and expansion capabilities (E SKU) via BOD to ensure high data availability. Featuring a wide operating temperature range (0 – 40 °C) and superior data protection, this system guarantees stable operation with the inclusion of an integrated LSI hardware RAID card.

Features
- Intel® Atom® E3-1200/E3-1200 v2 series processor that supports up to 4 cores/8 threads
- Supports 12 hot-swappable 3.5”/2.5” SATA/SAS 6Gb/s drives
- Equipped with advanced RAID features via LSI SAS2208 ROC
- Highly efficient (80+) redundant power supply
- Optional SKU: Supports up to 60 drives via an SAS expansion port

Product Information

Advantech offers a wide range of products, including video acquisition and encoding cards, multimedia processing cards, and integrated systems, to deliver enhanced processing power, high-performance video recordings, and seamless system integration. Ideal for both well-established codecs (such as MPEG-2, H.264, and MPEG-4 AVC) and new video standards including JPEG2000 codec, 4K/2K resolution, HEVC, and AVC-Intra/ultra, these products offer superior compression ratio, bit rate, picture quality, and latency efficiencies. Additionally, Advantech products are equipped with sufficient flexibility and scalability to satisfy media processing demands and eliminate costly hardware upgrades and/or replacements. Regarding changing data patterns inherent in video and audio processing, built-in video and IP interfaces reduce significant resource and space requirements by enabling video acquisition and streaming operations to be conducted on the card installed with the media processing engine.

Next-Generation Broadcasting Workflow

Broadcasting
Video walls are typically deployed for control room applications in a variety of markets such as surveillance, transportation, broadcasting, and medical imaging. Although simple video walls can be driven from multi-monitor video cards, more complex arrangements may require video processors that are specifically designed to manage and drive large video walls. Advantech’s video wall product offerings comprise x86-based AVS solutions and an optimized full-length PCIe card (DSP-8662H) to provide expandable, cost-effective, and compact standalone platforms. Our video wall products can accommodate H.264 input streams, decoding and displaying multiple HDMI outputs, as well as video acquisition, encoding, and streaming. We provide our customers with high-quality video wall solutions that consume minimal power and feature low-latency and high-density digital signal processing. FPGA solutions, compelling cost advantages, and reconfigurable usage modes. We also offer Linux and Windows drivers and a variety of Advantech IPC platforms to ensure our solutions are customized to users’ application requirements.

Powerful video processors and highly integrated video surveillance platforms enhance safety while ensuring reliability. Advantech’s intelligent video surveillance solution allows users to go beyond security and experience proactive crime prevention. Although crime prevention is the primary reason for video surveillance, reliable and stable video surveillance platform solutions can assist business users with maintaining customer satisfaction. Additionally, because integration is one of the main challenges for surveillance system integrators, adopting highly integrated video surveillance devices can reduce the time and resources required to optimize customer service. Advantech’s video surveillance solution eliminates the challenges of application development, making it ideal for all vertical markets. Furthermore, our products are compliant with ONVIF standards, ensuring maximum flexibility and convenient integration with existing IP-based systems.

Additional features of Advantech’s video surveillance solution include a rugged and fanless system with sealed enclosures, embedded PoE switches, and 1080p60 HD video and multi-stream transmission support. Therefore, our solution can enable users to execute vital tasks efficiently by providing greater flexibility and convenience compared to other similar products.
### Regional Service & Customization Centers

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<td>Milpitas, CA 1-408-519-3898</td>
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### Worldwide Offices

#### Greater China

**China**
- **Toll Free** 800-810-0340
- 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
- Rueiguang 886-2-2792-7818
- Yang Guang 886-2-2792-7818
- Xindian 886-2-2218-4567
- Taichung 886-4-2378-6250
- Kaohsiung 886-7-229-3600

#### Asia Pacific

**Japan**
- **Toll Free** 0800-500-1055
- Tokyo 81-3-5802-1021
- Osaka 81-6-6267-1887

**South Korea**
- **Toll Free** 080-363-9494
- Seoul 82-2-3683-9494

**Singapore**
- Singapore 65-6442-1000

**Malaysia**
- **Toll Free** 1800-88-1809
- Kuala Lumpur 60-3-7724-3555
- Penang 60-4-397-3788
- 60-4-397-4188

**Thailand**
- Bangkok 66-2-248-3140

**India**
- **Toll Free** 1800-425-5070
- Bangalore 91-80-2337-4567

**Indonesia**
- Jakarta 62-21-769-0525

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

#### Europe

**Europe**
- **Toll Free** 00800-2426-8080
- Germany
  - Munich 49-89-12599-0
  - Hilden 49-2103-97-885-0
- France
  - Paris 33-1-4119-4666
- Italy
  - Milano 39-02-9544-961

**Benelux & Nordicas**
- Breda 31-76-5233100
- Roosendaal 31-165-550-505
- UK
  - Berkshire 44-1491-681144
- Poland
  - Warsaw 48-22-33-23-740 / 41
- Russia
  - Moscow 7-495-232-1692

#### Americas

**North America**
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- Cincinnati 1-513-745-8895
- Milpitas 1-408-519-3898
- Irvine 1-949-789-7178

**Brazil**
- **Toll Free** 0800-770-5355
- Saude-São Paulo 55-11-5592-5355

**Asia Pacific**
- www.advantech.com

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