Industrial Video Surveillance Solutions

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Video Surveillance Solutions</td>
<td>18-2</td>
</tr>
<tr>
<td>Advantech Video Surveillance Solution Framework</td>
<td>18-3</td>
</tr>
<tr>
<td>Digital Video Applications</td>
<td>18-4</td>
</tr>
<tr>
<td>Digital Video Surveillance Software and Platforms</td>
<td>18-5</td>
</tr>
<tr>
<td>PowerView</td>
<td>18-5</td>
</tr>
<tr>
<td>DVX-4100 Series (New)</td>
<td>18-6</td>
</tr>
<tr>
<td>DVX-4270 (New)</td>
<td>18-8</td>
</tr>
<tr>
<td>DVX-4370 (New)</td>
<td>18-9</td>
</tr>
<tr>
<td>Video Capture Cards</td>
<td>18-10 to 18-16</td>
</tr>
<tr>
<td>DVP-7010BE 4-ch MPEG-4 Video Capture Card with SDK</td>
<td>18-10</td>
</tr>
<tr>
<td>DVP-7020BE 16-ch MPEG-4 Video Capture Card with SDK</td>
<td>18-10</td>
</tr>
<tr>
<td>DVP-7421BE 4-ch Real-Time MPEG-1/2/4 Video Capture Card with SDK</td>
<td>18-11</td>
</tr>
<tr>
<td>DVP-2420E 2-ch PCI-104 MPEG-1/2/4 Video Capture Module with SDK</td>
<td>18-12</td>
</tr>
<tr>
<td>DVP-1412E 1-ch USB MPEG-4 Video Capture Module with SDK</td>
<td>18-13</td>
</tr>
<tr>
<td>DVP-1121 (New) 1-ch USB H.264 Video Capture Card with SDK</td>
<td>18-13</td>
</tr>
<tr>
<td>PV-600E 4-ch MPEG-4 Video Capture Card with PowerView</td>
<td>18-14</td>
</tr>
<tr>
<td>PV-800E 4-ch MPEG-4 Video Capture Card with PowerView</td>
<td>18-14</td>
</tr>
<tr>
<td>PV-1000E 16-ch Real-Time MPEG-4 Video Capture Card with PowerView</td>
<td>18-15</td>
</tr>
<tr>
<td>PV-2000E 4-ch Real-Time H.264 Video Capture Card with PowerView</td>
<td>18-16</td>
</tr>
<tr>
<td>PV-2100E 8-ch Real-Time H.264 Video Capture Card with PowerView</td>
<td>18-16</td>
</tr>
<tr>
<td>DVP-2124PV (New) 4-ch PCI-104 H.264 Video Capture Module with PowerView</td>
<td>18-16</td>
</tr>
</tbody>
</table>
Industrial Video Surveillance Solutions

Video Surveillance Overview

Market and Technology Trends
Much like the consumer market, video surveillance technology has slowly progressed from analog to digital (DVR) devices, and now includes internet streaming video technology (IP-based video surveillance). In fact, traditional video currently has a less than 10% growth rate, which is falling off quickly. Conversely, IP-based video surveillance is booming, with a 40% growth rate. A recent IMS study reported that the demand for reliable video surveillance is increasing at a CAGR of 38% and will achieve a market value of USD $4 billion by 2011.

Contributing to this explosive growth are new video compression technologies, specifically MPEG4/H.264. This provides high-quality images with low levels of video streaming data, which makes it easy to transfer via PC across the internet. Users can enjoy good quality video content in anywhere via internet, PMD (Portable Mobile Device) or 3G cell phone. In this new era of streaming video content, Advantech has created an all new video surveillance environment for automation applications. We call this our “Information-enabled Video Surveillance System” which is designed to manage video surveillance within automation applications. By providing PC-based products and solutions to serve the automation market, Advantech is leading the way in this new frontier with leading-edge technology and added-value solutions.

Customer Value Proposition: Relevant Onscreen Information & Intelligent Video Systems
Advantech provides advanced intelligent video functions and innovative technology that allows field data to be easily displayed on-screen. Users can interact with real-time events and simultaneously look up field data on-screen to help them better manage the safety and security of their systems. For industrial security applications, live monitoring is not enough for vertical market needs. Restricted areas need to be monitored with intelligent video functions for more efficient management. In addition, there is more and more major equipment in factories that need to be measured not only by running status and controlling data, but also by live video monitoring to help operators and service engineers easily maintain and diagnose equipment, operating data, and status, such as in boiler, furnace, compressor, and gas piping applications.

Advantech offers complete industrial video surveillance solutions for vertical market applications, such as government infrastructure & utilities, transportation, factory facility and environment markets.

IP-based Video Surveillance
IP-based video surveillance technology is a new trend in the automation market, largely due to new video compression technology. As a leading provider of IP-based solutions, Advantech has provided MPEG4/H.264 video compression technology to meet market needs.

Information Enabled Video Surveillance Solutions
Receiving clear video images and information is key to fast response in the event of an emergency. IAG’s video surveillance solutions provide advanced functionality to improve existing video surveillance, for example users can define information content, size, color, position, and action items on the video screen. The fonts and colors of data information can be customized to flash when an alarm occurs.

Intelligent Video: Video Content Analysis
Traditional video surveillance products provide only basic video monitoring functions. Advantech’s video content analytics and intelligence functions enable efficient event detection, analysis and management processes, thus extending the intelligent video object functionality of IP-based video surveillance.

Technological advancements in IP and video compression, and increased awareness to the value of video surveillance have led to increase of intelligent video surveillance applications. Our Video surveillance solutions provide these intelligent video functions, such as virtual fence, unattended object, car/people counting and more.
Advantech Video Surveillance Solution Framework

System Overview

In the security video surveillance market, most vendors provide standalone DVRs that only offer live video and recording functions, targeted for multiple security surveillance markets. But in industrial automation, only video monitoring function can’t satisfy to domain know how application. That’s why we caught more automation application with video function from end user in the few years.

Advantech provides powerful digital video surveillance software (PowerView), the application-ready DVX-4000 series and versatile video capture cards with PCI, USB and PCI-104 interfaces. Our strength is in providing vertical domain know how to compete with general video surveillance makers. So far, we have only demonstrated our video monitoring and security functions, in the next few pages we will introduce complete video surveillance functions with integrated SCADA support.

Video Surveillance Software: PowerView

PowerView is an IP-based video surveillance application ready software and platform package. The functions and products include the PowerView 6000, PowerView CMS, PowerView VIS and PowerView IVS.

PowerView 6000

PowerView 6000 comes as a software package for DVR, and is also bundled with our video capture cards. PowerView 6000 provides DVR standard function such as pre-view, playback, multi video windows, motion detection and video OCX. The advanced functions include many kinds of SDKs, OCX and API libraries allowing system integrators to easily create added-value solutions. For example, on-screen information, integrated ADAM example programs, Event trigger OCX, Event trigger action OCX from external devices, and user interface changing functions.

PowerView CMS (Central Monitoring System)

This supervisory management software is built to manage DVRs, through an Ethernet backbone, providing up to 128 cameras, 2 concurrent monitoring screens, eMaps, remote PTZ control, remote playback, and simultaneous alert triggers with DVR.

PowerView VIS (Video Integration System)

This remote monitoring and management software is as a web server solution designed to manage DVRs through an Ethernet backbone. It provides remote monitoring through web browser. User can use PDA, smart cell phone to monitor live video.

PowerView IVS (Intelligent Video System)

This is video object analysis software to run on an individual PC. The functions include vehicle/people counting and identifying, loitering detection, virtual fences, unattended objects, and more intelligent video content analysis functions.

IP-based Digital Video Solution: Industrial-grade DVX-4000 Series

For industrial operating conditions, high reliability and long life operation are the first consideration. Another consideration is how easily it is to integrate. Advantech’s DVX-4000 series is an open video platform and is bundled with PowerView 6000, CMS, VIS and IVS software to serve one of the best video solutions for the automation market. More integrated functions such as API, OCX and SDK tools are also included so that customers can easily integrate with SCADA. We provide DVX-4100 4/8/16/32-channel DVR, DVX-4270 CMS/VIS and DVX-4370 IVS systems. Furthermore, ADAM-4000 and ADAM-6000 series integration provide good benefits to gather field data and display it onscreen through OCX.

Video Capture Cards: MPEG4/H.264 Compression Cards with USB, PCI and PCI-104

Advantech provides versatile hardware interfaces, such as USB 2.0, PCI-104 and PCI bus video capture cards with hardware/software MPEG4/H.264 compression technology. The PV series also includes PowerView 6000 free bundled. The DVP series supports SDKs for user integration with 3rd party products. Advantech’s USB video cards support high temperature operating environments. PCI-104 modules can be easily integrated with UNO-based platforms. PCI video cards can be easily installed into Advantech IPC platforms. After installing PV series cards, just turn on your IPC or UNO, PowerView 6000 with DVR functions can run instantly.
Industrial Video Surveillance Solutions

Factory and Building Applications

Advantech has accumulated years of sophisticated IT knowledge and engineering know-how. Most access control systems in the market are still analog recording systems that are not integrated with a DVR (Digital Video Recorder) system. The integration between PowerView 6000 and access control system results in a more useful solution overall. Each person entering or leaving the building is recorded as an event when the door is opened. If someone tries to break into the building, the security guard receives an alarm triggered by preset sensors and can react to the emergency on time. Besides, the information of entry time and gate number can be recorded in the system.

Security Applications

As more attention is focused on safety and security issues, the requirements for video surveillance analysis has steadily increased. PowerView IVS features functions that can be applied in many different applications such as people counting, people loitering, unattended object and object removal. These functions are normally used in exhibition halls, commercial buildings, retail stores, and more. With our advanced video algorithms, PowerView is capable of tracking numerous objects and simultaneously identifying multiple security threats in complex environments.

Equipment & Asset Monitoring

Security within hazardous environments is crucial for many industrial companies, especially the steel, refinery, petro-chemical oil drilling, coal burning, and semiconductor industries. Operators have to monitor these dangerous areas through a PLC system connected to many types of sensors (temperature, pressure, pH, flow). But in the event of an accident, it can be difficult to quickly confirm the status of these sensors simply by monitoring numbers on a screen without visual confirmation. Presently, most control systems in the market are still traditional SCADA systems that are not integrated with a DVR (Digital Video Recorder), which can hardly guarantee the actual safety values of such equipment. To satisfy the critical demands of hazardous environment monitoring, Advantech has developed an integrated “Information-enabled” DVR solution to serve this market.

Transportation Applications

Intelligent video technology is perfectly suited to fit the demands of transportation applications such as highway, railway, and MRT stations. The stopped vehicle detection detects any car stopped in the target area where parking is forbidden. For monitoring accident status, car speed and traffic density can be detected and trigger an alarm if any accidents occurs.
**PowerView**

Digital Video Surveillance Software

**Introduction**

PowerView is a complete advanced digital surveillance system, designed to meet the requirements of modern security. High compression rates and image quality, real-time video plus audio recording, and I/O information On Screen Display (OSD) monitoring, makes it a dependable first choice for industrial application needing an all-in-one state of the art solution that is ready for continuous 24 hours a day operations and prepared for integration into large networks with centralized control CMS (Central Monitoring System), Backup Center for remote backup, Video Integration System and access control system. Easy installation, simple operation, advanced functions and remote management makes PowerView the answer to many security needs in any applications. In addition, PowerView also provides PowerView IVS (Intelligent Video Solution) to global customers, including Object Tracking & Analysis, People/Vehicle Counting, Vehicle Wrong Direction, Virtual Fence, Loitering, Lost/Left Object, POS System, ATM Solutions and more.

**PowerView 6000**

To satisfy the critical demand of dangerous area monitoring, Advantech has developed a fully integrated system we called “Information-enabled DVR Solution” to penetrate automation application market. With the combination of video image and data information, Information such as temperature, pressure, PH value, flow rate can be monitored by sensors connected to ADAM-4000 series module via ModBUS/RTU. Advantech’s FA solution not only meets the needs of video surveillance & equipment monitoring, but also saves money on video with I/O system purchasing.

**PowerView CMS**

PowerView CMS (Central Monitoring System) is a complete advanced central monitoring and administration software package for IP-based video security applications. It is designed for versatility and integration with DVR to enhance its security integrity. Therefore administrator and authorized clients can easily monitor and control the activities and security of their respected settings and playback recorded data just with a click on PowerView CMS.

**PowerView IVS**

Video content analysis and intelligent video object behavior analysis assist security guards in making judgments and assessing threats. Advantech’s PowerView IVS (Intelligent Video System) helps users manage emergency cases and be aware of illegal events while they are happening. Users can easily identify and monitor objects, areas, vehicles, people, animals, goods and more. Our IVS solution offer bellowing intelligent video functions:

- Unattended object analysis
- Lost object analysis
- People loitering
- Virtual fence detection
- Car and people counting
- Vehicle wrong direction

**Features**

**PowerView 6000**

- Real Time Video with On Screen Display and Notifications: I/O information, video, events, alarms, network connection, and backup status can be easily seen
- Advanced Schedule Recording Modes: Seven recording modes to schedule or trigger recording based on camera and sensor input
- Advanced Event Action Plan: PTZ control, video recording, warning sound playback, or program execution actions can be configured for any event source.
- Quick & Smart Search by Calendar /Time Segment, Intelligent eMap Function, and Combined I/O On Screen Display (OSD) Via ADAM I/Os.

**PowerView IVS**

- Intelligent Video Content Analysis Functions, Powerful IVS Smart Search Function, and Easily integrated With PowerView 6000.

**PowerView CMS**

- Support 2 Concurrent Monitoring Screens, Central Monitoring System Supports up to 128 Channels, and powerful remote control functions via IE browser; dynamic IP supported.

**Application Field**

- Factory Application: boiler, furnace, compressor, electrical room, wafer production and critical equipments
- Utility Application: Gas/water piping, gas station, dam, river, bridge and water treatment.
- Transportation Application: Airport, railway and highway.

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**Esis Pty Ltd**

Ph 02 9481 7420
Fax 02 9481 7267
www.esis.com.au
DVX-4100 Series

16-ch Information-enabled DVR Systems

Features
- MPEG-4/H.264 hardware and software compression
- 16-ch video inputs
- 4 x hot swap HDD bays providing up to 4TB HDD capacity
- Real Time Video Display and Notification: IO information, video, event, alarm, network connection, and backup status can be seen immediately
- Advanced Schedule Recording Modes: seven recording modes to schedule or trigger recordings based on camera and sensor input
- Advanced Event Action Plan: PTZ control, video recording, warning sound playback, or program execution actions can be configured for any event source
- Quick & Smart Search by Calendar /Time Segment and IVS functions
- Intelligent eMap function
- Combined IO Information On Screen Display (OSD) Via ADAM IOs

Introduction
DVX-4100 series are IPC-based digital video surveillance systems designed to meet the requirements of modern security markets. DVX-4100 series provides MPEG-4/H.264 compression formats, configurable display/recording frame rates (up to 30 fps) and configurable resolutions (from CIF to D1) to meet various user requirements. Bundled with PowerView 6000, a powerful digital video surveillance software, DVX-4100 series can easily achieve high compression rates and image quality, real-time video plus audio recording. Furthermore, advanced schedule recording modes, Intelligent eMap function, and IO information On Screen function, makes it a dependable first choice for industrial application.

Specifications

Video
- Video Standard: Composite for NTSC/PAL
- Video Input: 16 x BNC connectors
- Resolution: D1 (NTSC: 704 x 480; PAL: 704 x 576)
- Max Recording Rate: 30/25 fps (NTSC/PAL) for each channel
- Display Rate: 30/25 fps (NTSC/PAL) for each channel
- Video Compression: H.264 / MPEG-4

System Hardware
- CPU: Intel Pentium® Dual Core 1.8 G Processor
- Chipset: Intel Q965 + ICH8DD
- Memory: 2.048 MB
- Storage: 4 x 3.5" SATA HDD
- VGA: DB15 VGA connector, 2048 x 1536 @ 85Hz
- Audio: MIC-In, Line-Out

Communication
- Serial Ports: 2 (COM2 for RS-232/422/458)
- LAN: 10/100/1000Base-T Gigabit Ethernet
- USB Ports: 6 x USB, UHCI, Rev 2.0 compliant

Environment
- Humidity: 85% @ 40° C
- Operating Temperature: 0 – 50° C (32 – 122° F)
- Dimensions: 482 x 177 x 480 mm (19” x 7” x 18.9”)

Ordering Information
- DVX-4170-H16AE: 16-ch H.264 DVR with 4 HDD Swaps
- DVX-4170-M16AE: 16-ch MPEG-4 DVR with 4 HDD Swaps
**PowerView 6000 Features**

**Digital Video Surveillance Software**

- **Real Time Status Display and Notification**
  System, video, event, alarm, network connection, and backup status can be seen immediately.

- **Flexible Recording Modes**
  Seven recording modes enable you to schedule recordings or trigger recordings based on camera and sensor input.

- **Advanced Event Action Plan**
  Digital output, snapshot, e-mail, SMS notification, PTZ control, video recording, warning sound playback, or program execution actions can be configured for any event source. These events can be motion detection, sensor trigger, system abnormal, signal failure, login failure or disk full.

- **Quick Search by Calendar and Time Segment**
  Three playback search modes: search by time, search by event, and IVS smart search.

- **Intelligent eMap Function**
  Enables you to use an electronic map to find cameras, sensors and digital outputs easily, then control or read them by clicking on the eMap.

- **Comprehensive Log**
  View the event log by event categories and save or print the event list. Verify the event list for security.

- **Full Backup Functions**
  Backup video from each camera, then burn a backup file onto an auto-run CD/DVD, or backup to other storage devices. The software will also estimate the storage size.

- **Powerful Remote Control Functions via IE Browser**
  Perform remote playback, recording, camera configuration, eMap and event search; and view local or remote event logs using the IE browser without special client programs. The built-in Web server supports a dynamic IP address.

- **Integration with DAQ Systems**
  With the integration with Advantech ADAM module, alarm can be triggered and displayed on screen when unusual condition happens such as unexpected high temperature, moisture, and vibration level.
Introduction

DVX-4270 is a Powerful CMS system which provides the maximum management capability up to 128 cameras and user’s defined map and layout graphic interface & operator display. Multi-display monitors are necessary for central security administration. The bundled CMS software Powerview CMS offers double and three monitors in one CMS station. By installing PCIe video display cards and connect 2 LCD monitors, user can easy to watch 2 different-functioned screens. One could be a eMap to overall cameras site, the other can watch dedicated area or equipments, the last could watch up to 64 split live videos.

Others function of PowerView CMS, such as event recording, searching, alarms notified by email or cell-phone call, Remote monitoring, recording, checking event list and remote cameras PTZ control. To satisfy clients’ demand on remote live monitoring by getting instant video images from any places in the world, we provide a web based central control server PowerView video integration server called Powerview VIS (Video Integration System) through standard IE browser. Furthermore, clients don’t need to install any specific software in PC to achieve this goal.

Specifications

System Hardware
- CPU: Intel Pentium® Dual Core1.8G Processor
- Memory: 2,048 MB
- VGA: DB15 VGA connector, 2048 x 1536 @ 85 Hz

Communication
- LAN: 10/100/1000Base-T Gigabit Ethernet
- USB Ports: 6 x USB, UHCI, Rev 2.0 complaint

Environment
- Humidity: 85% @ 40° C
- Operating Temperature: 0 – 50° C (32 – 122° F)
- Dimensions: 482 x 177 x 480 mm (19” x 7” x 18.9”)

Ordering Information
- DVX-4270-AE: Video Surveillance Central Monitoring System
- DVX-4270-AE: Video Integration System (Optional)

PowerView CMS/VIS Architecture Overview
Introduction
DVX-4370 is an advanced intelligent video system, which enhances the security and surveillance level by the latest video content analysis technology. By monitoring people, vehicles, and unattended objects automatically, DVX-4370 improves the efficiency and decrease the false alarm happening from people indiscretion. It assists security guard to judge and take action to the instant emergency. DVX-4370, bundled with Our PowerView IVS software, is your best choice to help you easily handle any emergency cases or illegal events happened.

Specifications
System Hardware
- CPU: Intel Pentium® Dual Core 1.8G Processor
- Memory: 2,048 MB
- VGA: DB15 VGA connector, 2,048 x 1,536 @ 85Hz

Communication
- LAN: 10/100/1000Base-T Gigabit Ethernet
- USB Ports: 6 x USB, UHCI, Rev 2.0 complaint

Environment
- Humidity: 85% @ 40° C
- Operating Temperature: 0 – 50° C (32 – 122° F)
- Dimensions: 482 x 177 x 480 mm (19” x 7” x 18.9”)

Ordering Information
- DVX-4370-AE: Intelligent Video System

DVX-4370 Intelligent Video Functions
- Unattended / Lost Objects
- People Loitering
- People Counting
- Virtual Fence Detection
- Stopped Vehicle Direction
- Vehicle Wrong Direction/Vehicle Counting
Introduction

The DVP-7010BE and DVP-7020BE are MPEG-4 compression, PCI-bus video capture cards. They support up to 4 or 16 channel inputs by share-frame technology and capture up to D1 resolution. DVP-7010BE and DVP-7020BE support NTSC/PAL composite video input through BNC connectors and digitizes the data to PC through PCI bus. The DVP-7010BE and DVP-7020BE can be used for video capture application or video surveillance with SDK support for software encoding and capture functions.

Specifications

Video
- Video Standard: Composite for NTSC/PAL
- Video Input: 4 or 16 BNC connectors
- Resolution: Up to D1 (NTSC: 720 x 480; PAL: 720 x 576)
- Max Recording Rate: DVP-7010BE: 30/25 fps for all channels, DVP-7020BE: 120/100 fps for all channels
- Display Rate: DVP-7010BE: 30/25 fps for all channels, DVP-7020BE: 120/100 fps for all channels
- Video Compression: MPEG-4 Software Compression
- Video Output: Multiple Y/Cb, RGB, and YUV planar formats supported

Software Development Kit
- Operating System: Supports Windows XP/XPe and Windows 2000
- DirectX Required: Version 9 or above
- Demo Program: Complete demo program with VC++ sample code for reference

Physical Characteristics
- Host Interface: PCI V2.2
- DI/O: Support ADAM-4055 8DI/8DO Module
- Operating Temperature: -10 ~ 60° C (14 ~ 140° F)
- Storing Temperature: -20 ~ 70° C (-4 ~ 158° F)
- Dimensions: 125.38 x 97.25 mm (4.87” x 3.82”)

Features
- 4 or 16 channel composite inputs with MPEG-4 compression
- Able to mix DVP-7010BE with DVP-7020BE card stacks for up to 24 channels per PC
- 30/25 fps (NTSC/PAL) or 120/100 fps (NTSC/PAL) at D1 resolution for recording and display
- Conexant fusion 878A video capture chips on board
- Support ADAM-4055 8DI/8DO Module
- SDK supports Windows® XP/XPe/Windows 2000 with VC++ sample codes
- Supports Watchdog function

Versatile SDK Support
Advantech provides software development kit (SDK), a set of development tools that allows a software engineer to integrate our capture card into many different types of system. Functions include video recording, playback, and instant preview.

The SDK package would include:
- Software Library
- SDK Manual
- Sample Program

Ordering Information
- DVP-7010BE: 4-ch MPEG-4 Video Capture Card w/ SDK
- DVP-7020BE: 16-ch MPEG-4 Video Capture Card w/ SDK
DVP-7421BE

4-ch Real-Time MPEG-1/2/4 Video Capture Card with SDK

Introduction

The DVP-7421BE is a high-end video capture board with a hardware codec engine. It supports 4-channel live preview, video/audio compression and playback at D1 resolution and 120/100 fps. Up to four DVP-7421BE boards can be installed in one PC for concurrent live viewing, compression and playback of up to 16 channels at D1 resolution and 480 fps. The programmer can use the comprehensive SDK to load protection code or system parameters into the on-board 128 byte EEPROM. The SDK comes with sample code for reference. The hardware codec engine makes the DVP-7421BE the ideal platform for applications like network video servers, video conferencing, video training systems, and high-end digital video surveillance.

Specifications

Video
- Video Standard: Composite for NTSC/PAL
- Video Input: 4 channels
- Resolution: Up to D1 (NTSC: 720 x 480; PAL: 720 x 576)
- Max Recording Rate: 30/25 fps (NTSC/PAL) for each channel
- Display Rate: 30/25 fps (NTSC/PAL) for each channel
- Video Compression: MPEG-1/2/4
- Video Output: PCI preview/playback stream
- Video Loopout: 4 x BNC Connectors or 5-pin internal connector

Audio
- Audio Input: 4 x stereo inputs (4 mono x BNC connectors or 2 x 5-pin internal connectors)
- Audio Encoding: Supports MPEG1-Layer II

Software Development Kit
- Operating System: Supports Microsoft Windows XP/XPe and Windows 2000
- DirectX Required: Version 9 or above
- Demo Program: Complete demo program with VC++ sample code for reference

Physical Characteristics
- Host Interface: PCI V2.2
- DI/O: Support ADAM-4055 8D/8DO Module
- Operating Temperature: -10 ~ 60°C (14 ~ 140°F)
- Storing Temperature: -20 ~ 70°C (-4 ~ 158°F)
- Dimensions: 182.6 x 106.9 mm (7.2" x 4.2"

Features
- 4 channel composite inputs with MPEG-1/2/4 hardware compression
- Supports MPEG1 Layer II audio compression
- Able to interconnect 4 DVP-7421BE for up to 16 channels per PC
- 120/100 fps (NTSC/PAL) at D1 resolution for recording and display
- Excellent DVD level Audio/Video quality using VW2010 codec engine
- Support ADAM-4055 8DI/8DO Module
- SDK supports Windows® XP/XPe/Windows 2000 with VC++ sample codes

CPU Efficiency

With the MPEG4 hardware codec engine, the DVP-7421BE supports triple functions-for video encoding, decoding, and live preview. This frees up CPU computing power for other integrated functions. For an existing system, the DVP-7421BE is an ideal way to expand the video functions without a major hardware upgrade.
- Performance Test on Pentium IV 2.4 GHz
  - Encoding/Decoding Setting per channel: D1(720x480), 30 FPS, MPEG4
  - 1 x DVP-7421BE Card for 120 FPS D1
    - 4 CH Encode Only: 0 ~ 5%
    - 4 CH Encode + Preview: 15%
    - 4 CH Encode + Preview + Decode: 15 ~ 20%
  - 4 x DVP-7421BE Card for 480 FPS D1
    - 16 CH Encode Only: 10%
    - 16 CH Encode + Preview: 40%
    - 16 CH Encode + Preview + Decode: 40 ~ 50%

Ordering Information
- DVP-7421BE: 4-ch MPEG-1/2/4 Video Capture Card w/ SDK
Introduction

The DVP-2420E is a PCI-104 module that supports two channel full-motion simultaneous video/audio capture and compression/decompression. It adopts a high performance MPEG-1/2/4 hardware codec to provide video with D1 resolution at 30/25 fps and MPEG-1 Layer II audio. Combined with an additional two channel full-motion preview and codec engine, the DVP-2420E is an ideal platform for high quality embedded video applications such as digital video surveillance, video conferencing, digital signage, set-top-box and IP video.

Specifications

Video
- Video Standard: Composite for NTSC/PAL
- Video Input: 2 channels
- Resolution: Up to D1 (NTSC: 720 x 480; PAL: 720 x 576)
- Max Recording Rate: 30/25 fps (NTSC/PAL) for each channel
- Display Rate: 30/25 fps (NTSC/PAL) for each channel
- Video Compression: MPEG-1/2/4
- Video Output: 2 x BNC connectors for decoded playback

Audio
- Audio Input: 2 x stereo inputs
- Audio Output: 2 x stereo outputs
- Audio Encoding: Supports MPEG1-Layer II

Software Development Kit
- Operating System: Supports Windows XP/XPe and Windows 2000
- DirectX Required: Version 9 or above
- Demo Program: Complete demo program with VC++ sample code for reference

Physical Characteristics
- Host Interface: PCI-104
- DI/O: Support ADAM-4055 8D1/8D0 Module
- Operating Temperature: -10 ~ 60° C (14 ~ 140° F)
- Storing Temperature: -20 ~ 70° C (-4 ~ 158° F)
- Dimensions: 95.88 x 90.17 mm (3.77" x 3.55")

Features
- 2 channel composite inputs with MPEG-1/2/4 hardware compression
- Supports MPEG1 Layer II audio compression
- 60/50 fps (NTSC/PAL) at D1 resolution for recording and display
- Excellent DVD level Audio/Video quality using VW2010 codec engine
- Support ADAM-4055 8DI/8DO Module
- SDK supports Windows® XP/XPe/Windows 2000 with VC++ sample codes

Versatile SDK Support

Advantech provides software development kit (SDK), a set of development tools that allows a software engineer to integrate our capture card into many different types of system. Functions include video recording, playback, and instant preview.

The SDK package would include:
- Software Library
- SDK Manual
- Sample Program

Ordering Information
- DVP-2420E 2-ch PCI-104 MPEG-1/2/4 Video Capture Module w/ SDK
### Introduction

The DVP-1412E/1121 are compact-sized, hardware MPEG-4/H.264 video encoder module that are designed for embedded video/audio applications and simple digital video upgrade solutions. It can be easily integrated into many different types of hardware, like Panel PCs, ATMs, and embedded PCs. The DVP-1412E/1121 are capable of delivering streaming video up to full D1 resolution at full-motion frame rates. By using a standard high-speed USB 2.0 interface, the DVP-1412E/1121 can easily integrates with most Single Board Computers or PC-based systems. Using 128-byte EEPROM, programmers can write protection codes or set system parameters via the SDK. DVP-1412E/1121 delivers standard composite video and audio input through BNC connectors and comes complete with SDK and driver for MS Windows 2000 or XP. All these great features make the DVP-1412E/1121 very easy for system integrators to develop applications. DVP-1412E/1121 are the ideal compact embedded digital video and audio solution for multiple applications.

### Features
- 1 channel composite inputs with MPEG-4 / H.264 hardware compression
- Supports ADPCM H/W audio compression
- Able to install 8 DVP-1412E for up to 8 channels per PC
- 30/25 fps (NTSC/PAL) at D1 resolution for recording and display
- 16 x 16 OSD text of up to 96 characters
- High speed USB 2.0 interface
- SDK supports Windows® XP/XPe/Windows 2000 with VC++ sample codes

### Specifications

#### Video
- **Video Standard**: Composite for NTSC/PAL
- **Video Input**: 1 x BNC connector
- **Resolution**: Up to D1 (NTSC: 720 x 480; PAL: 720 x 576)
- **Max Recording Rate**: 30/25 fps (NTSC/PAL)
- **Display Rate**: 30/25 fps (NTSC/PAL)
- **Video Compression**: MPEG-4 (DVP1412E), H.264 (DVP-1121)

#### Audio
- **Audio Input**: 1 x stereo input (Phone Jack)
- **Audio Encoding**: ADPCM H/W encoding

#### Software Development Kit
- **Operating System**: Supports Windows® XP/XPe and Windows 2000
- **DirectX Required**: Version 9 or above
- **Demo Program**: Complete demo program with VC++ sample code for reference

#### Physical Characteristics
- **Host Interface**: USB 2.0
- **Operating Temperature**: -10 ~ 60°C (14 ~ 140°F) (DVP-1412E)
- **Storing Temperature**: -20 ~ 70°C (-4 ~ 158°F) (DVP-1412E)
- **Dimensions**: 70 x 38 mm (2.75” x 1.49”) (DVP-1412E), 70 x 42 mm (2.75” x 1.65”) (DVP-1121)

### Ordering Information
- **DVP-1412E**: 1-ch USB MPEG-4 Video Capture Module w/ SDK
- **DVP-1121-AE**: 1-ch USB H.264 Video Capture Module w/ SDK

### Dimensions

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<th>Unit: mm (inch)</th>
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<tr>
<td>2.75” x 1.49”</td>
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**Notice**: DVP-1412E/DVP-1121 are the same mounting hole position.
Introduction
The PV-600E and PV-800E digital video surveillance kits are MPEG-4 compression, PCI-bus video capture cards. With the use of PowerView 6000 surveillance software, PV-600E and PV-800E can provide 4-channel and 16-channel video monitoring capability at D1 resolution for recording and display. For large-scale application, users can mix PV-600E with PV-800E card stacks for up to 24 channels per PC. PowerView 6000 software provides integrated digital recording, network monitoring, video backup, alarm notification and security control.

Specifications

Video
- Video Standard: Composite for NTSC/PAL
- Video Input: 4 or 16 BNC connectors
- Resolution:
  - 352 x 240, 704 x 240 and 704 x 480 (NTSC)
  - 352 x 288, 704 x 288 and 704 x 576 (PAL)
- Max Recording Rate:
  - PV-600E: 30/25 fps (CIF) for all channels*
  - PV-800E: 120/100 fps (CIF) for all channels*
- Display Rate:
  - PV-600E: 30/25 fps (CIF) for all channels*
  - PV-800E: 120/100 fps (CIF) for all channels*
- Video Compression: MPEG-4 Software Compression
- Video Output: Multiple YCrCb, RGB, and YUV planar formats supported

Physical Characteristics
- Host Interface: PCI V2.2
- DI/O: Support ADAM-4055 8DI/8DO Module
- Operating Temperature: -10 ~ 60° C (14 ~ 140° F)
- Storing Temperature: -20 ~ 70° C (-4 ~ 158° F)
- Dimensions: 125.38 x 97.25 mm (4.87” x 3.82”)
- Application software: PowerView 6000

Ordering Information
- PV-600E: 4-ch MPEG-4 Video Capture Card w/ PowerView
- PV-800E: 16-ch MPEG-4 Video Capture Card w/ PowerView

Features
- 4 or 16 channel composite inputs with MPEG-4 compression
- Able to mix PV-600E with PV-800E card stacks for up to 24 channels per PC
- 30/25 fps (NTSC/PAL) or 120/100 fps (NTSC/PAL) at D1 resolution for recording and display
- Conexant fusion 878A video capture chips on board
- Support ADAM-4055 8DI/8DO Module
- Bundled with PowerView 6000 advanced surveillance software
- Supports Watchdog function

*Note: Performance test on Intel Core 2 Duo 6400 CPU and 1024 MB Memory
PV-1000E

16-ch Real-Time MPEG-4 Video Capture Card with PowerView

Introduction

PV-1000E DVR kit supports 16 channels real time video monitoring capability in one card. PV-1000E provides not only a real-time video monitoring capability but also more flexibility, and it is a good choice for which to build a high performance digital surveillance system. The PV-1000E is the application-ready digital video surveillance card with PowerView DVR application software, which provides the user with high expansion and integration capabilities. PowerView 6000 series comprise an advanced and extensive digital video surveillance system that supplies full functions integrated with digital recording, network monitoring, video backup, alarm notification and security control.

Features
- 16 channel composite inputs with MPEG-4 compression
- 480/400 fps (NTSC/PAL) at D1 resolution for recording and display
- Alogics APC-915 video capture chips on board
- Support ADAM-4055 8DI/8DO Module
- Bundled with PowerView 6000 advanced surveillance software
- Supports Watchdog function

Specifications

Video
- Video Standard: Composite for NTSC/PAL
- Video Input: 16 BNC connectors
- Resolution: 352 x 240, 704 x 240 and 704 x 480(NTSC)
  352 x 288, 704 x 288 and 704 x 576(PAL)
- Max Recording Rate: 480/400 fps (NTSC/PAL) @ CIF for all channels*
- Display Rate: 480/400 fps (NTSC/PAL) @ CIF for all channels*
- Video Compression: MPEG-4 Software Compression
- Video Output: Multiple YCrCb, RGB, and YUV planar formats supported
- Audio Input: 16 x stereo inputs

Physical Characteristics
- Host Interface: PCI V2.2
- DI/O: Support ADAM-4055 8DI/8DO Module
- Operating Temperature: -10 – 60° C (14 – 140° F)
- Storing Temperature: -20 – 70° C (-4 – 158° F)
- Dimensions: 162 x 106 mm (6.3" x 4.2")
- Application Software: PowerView 6000
- Operating System: Supports Windows XP/XPe and Windows 2000

*Note: Performance test on Intel Core 2 Duo 6400 CPU and 1024 MB Memory

Ordering Information
- PV-1000E 16-ch MPEG-4 Video Capture Card w/ PowerView

Esis Pty Ltd
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RoHS COMPLIANT 2002/95/EC

Specifications

Video
- Video Standard
- Composite for NTSC/PAL
- Video Input
- 16 BNC connectors
- Resolution
- 352 x 240, 704 x 240 and 704 x 480(NTSC)
- 352 x 288, 704 x 288 and 704 x 576(PAL)
- Max Recording Rate
- 480/400 fps (NTSC/PAL) @ CIF for all channels*
- Display Rate
- 480/400 fps (NTSC/PAL) @ CIF for all channels*
- Video Compression
- MPEG-4 Software Compression
- Video Output
- Multiple YCrCb, RGB, and YUV planar formats supported
- Audio Input
- 16 x stereo inputs

Physical Characteristics
- Host Interface
- PCI V2.2
- DI/O
- Support ADAM-4055 8DI/8DO Module
- Operating Temperature
- -10 – 60° C (14 – 140° F)
- Storing Temperature
- -20 – 70° C (-4 – 158° F)
- Dimensions
- 162 x 106 mm (6.3" x 4.2")
- Application Software
- PowerView 6000
- Operating System
- Supports Windows XP/XPe and Windows 2000

*Note: Performance test on Intel Core 2 Duo 6400 CPU and 1024 MB Memory
Introduction

PV-2000E, PV-2100E and DVP-2124PV uses the most advanced digital video compression technologies. It is the best choice for the highest picture quality and full-motion video performance. The PV-2000E, PV-2100E and DVP-2124PV are the application-ready digital video surveillance cards with PowerView application software that delivers high expansion and integration capabilities and a user friendly interface. PowerView 6000 software provides integrated digital recording, network monitoring, video backup, alarm notification and security control.

Specifications

Video
- Video Standard: Composite for NTSC/PAL
- Video Input: 4 CH (PV-2000E, DVP-2124PV) or 8 CH (PV-2100E)
- Resolution: 352 x 240, 704 x 240 and 704 x 480 (NTSC)
  352 x 288, 704 x 288 and 704 x 576 (PAL)
- Max Recording Rate: 120/100 fps or 240/200 fps (NTSC/PAL) @ CIF for all channels*
- Display Rate: 120/100 fps or 240/200 fps (NTSC/PAL) @ CIF for all channels*
- Video Compression: H.264 Hardware Compression

Audio
- Audio Input: 4 x Stereo inputs
- Audio Output: 1 CH Output (audio via motherboard)

Physical Characteristics
- Host Interface: PCI V2.2
- D/O: Support ADAM-4055 8DI/8DO Module
- Operating Temperature: -10 – 60° C (14 – 140° F)
- Storing Temperature: -20 – 70° C (-4 – 158° F)
- Dimensions: 154 x 94 mm (6.0” x 3.7”)
- Application software: PowerView 6000
- Operating System: Supports Windows XP/XPe and Windows 2000

*Note: Performance test on Intel Core 2 Duo 6400 CPU and 1024 MB Memory
*Note: Only PV-2100E support 240/200 fps

Ordering Information

- PV-2000E: 4-ch Real-Time H.264 Video Capture Card w/ PowerView
- PV-2100E: 8-ch Real-Time H.264 Video Capture Card w/ PowerView
- DVP-2124PV-AE: 4-ch Real-Time PCI-104 H.264 Video Capture Module w/ PowerView

Features
- 4 or 8 channel composite inputs with H.264 compression
- Able to mix PV-2000E with PV-2100E card stacks for up to 32 channels per PC
- 120/100 fps (NTSC/PAL) or 240/200 fps (NTSC/PAL) at D1 resolution for recording and display
- Support ADAM-4055 8DI/8DO Module
- Bundled with PowerView 6000 advanced surveillance software