

**DVP-7010BE**

**4 Channel PCI-bus**

**Surveillance**

**Capture card**

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## **CE notification**

The DVP-7010BE, developed by ADVANTECH CO., LTD., has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information

## **On-line Technical Support**

For technical support and service, please visit our support website at: <http://www.advantech.com/support>

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**CHAPTER**  
**1**

**General Information**

# Chapter 1 General Information

DVP-7010BE is 4 channel input, PCI-bus video capture card. It supports up to 4 channel input by share-frame technology and captures up to D1 resolution at 30/25 fps frame rate. DVP-7010BE supports NTSC/PAL composite video input through BNC connectors and digitizes the data to PC through PCI bus. The DVP-7010BE is a digital video surveillance card with SDK (software develop kit).It provides 4 pairs GPIO for user any kind application needs.

## **1.1 Hardware Requirement**

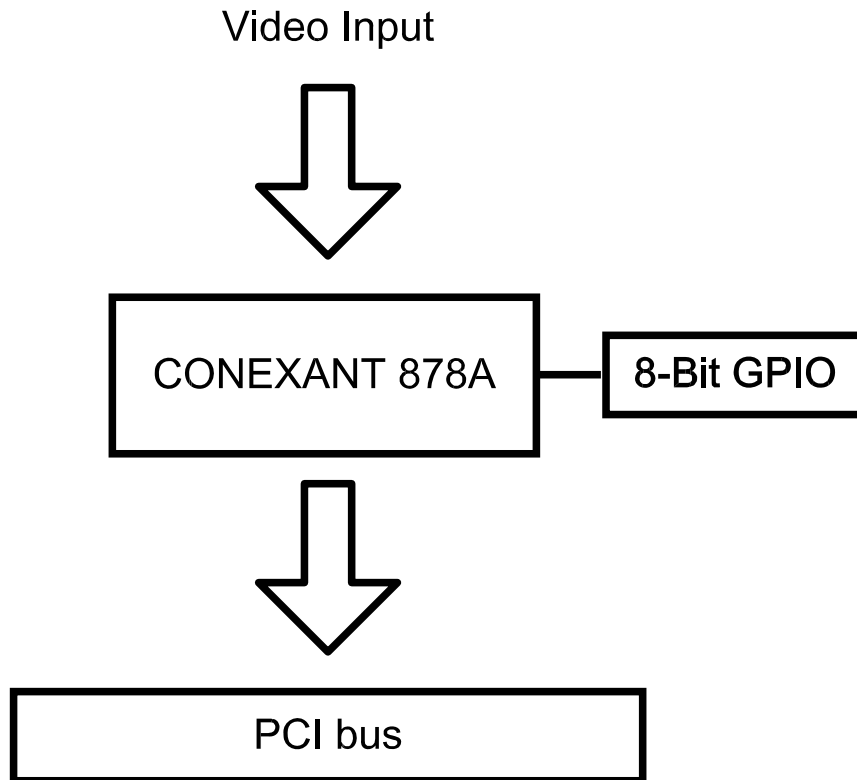
- 👁 Intel Pentium III 1GHz or above (CPU speed depends on video frame rate, channels and resolution)
- 👁 256 MB RAM or above
- 👁 Free PCI slot(s)
- 👁 CD-ROM
- 👁 Hard disk with 1G free space

## **1.2 Software Requirement**

- 👁 Microsoft Windows XP with DirectX 9.0 or above

## 1.3 Block Diagram

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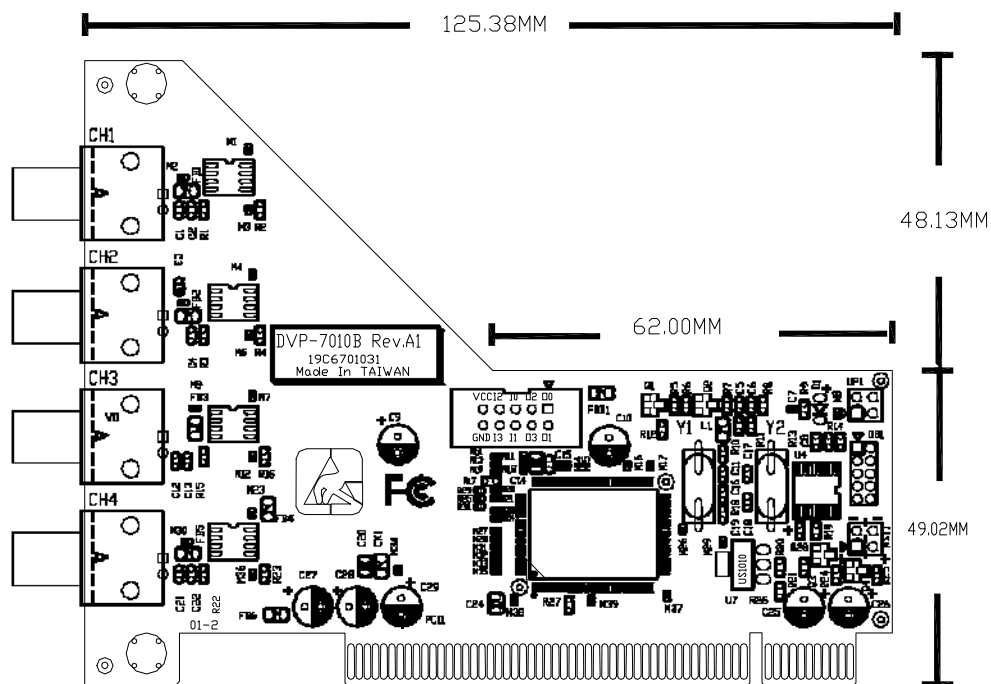
*Figure 1.1 System diagram*

## 1.4 Packing List

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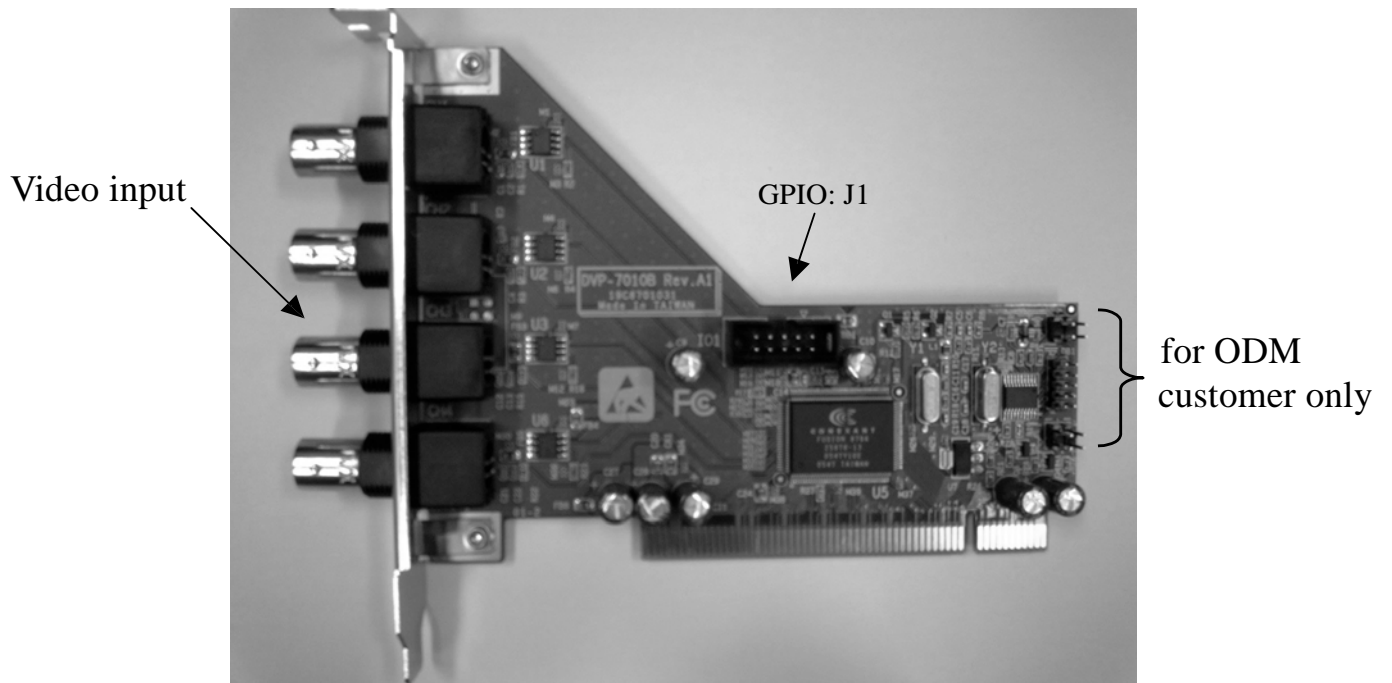
DVP-7010BE PCI capture card	X 1
Utility CD (Driver, Manual, SDK, Sample, Sample source code)	X 1
Connection cable for WDT	X 1

## 1.5 Dimensions



**Figure 1.2 Dimensions**

## 1.6 Connector location



**Figure 1.3 connector location**

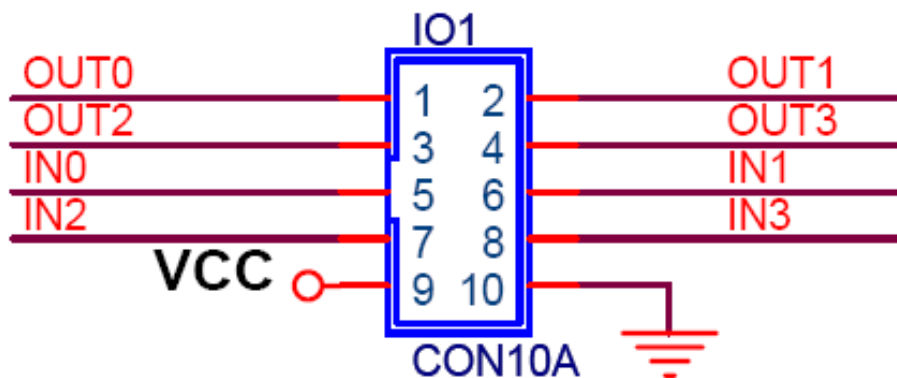
## 1.7 Pin definition

### 1.7.1 GPIO: J1

- 8 bit TTL/CMOS level Digital I/O.

<b>GPIO (J1) Pin define</b>	
<b>Pin no.</b>	<b>Description</b>
Pin 1	OUT0
Pin 2	OUT1
Pin 3	OUT2
Pin 4	OUT3
Pin 5	IN0
Pin 6	IN1
Pin 7	IN2
Pin 8	IN3
Pin 9	VCC
Pin 10	GND

**Table 1.1 GPIO J1 pin definition**



**Figure 1.4 GPIO(J1) pin definition**



## **1.8 Hardware Installation**

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- 1 Turn off your computer and unplug the power cord.
- 2 Remove the cover of your computer.
- 3 Touch the metal part on the surface of your computer to neutralize the static electricity that might be on your body.
- 4 Place the DVP-7010BE into Mother Board PCI slot.
- 5 Connect appropriate accessories (Video cable to camera. if necessary) to the DVP-7010BE.
- 6 Replace the cover of your computer chassis.
- 7 Plug in the power cord and turn on the computer.

*Note: Keep the anti-static bag for future use. You might need the original bag to store the card if you have to remove the card from the PC or transport it elsewhere.*

## **1.9 Software / Driver Installation**

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### **Before you begin**

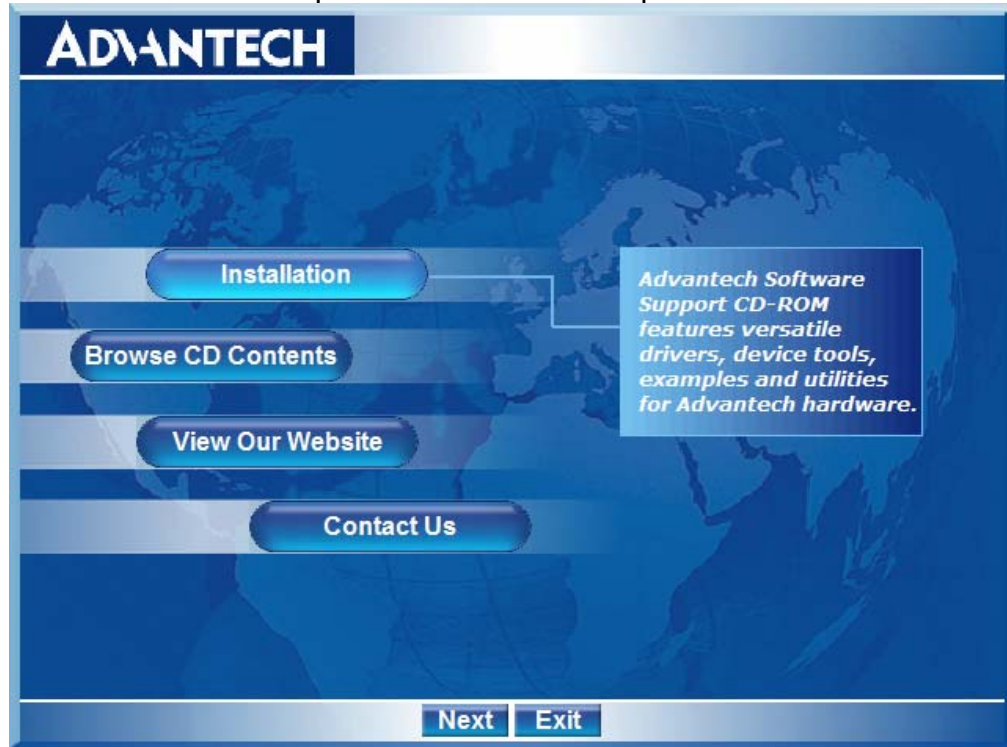
To facilitate the installation of the enhanced display device drivers and utility software, you should read the instructions in this chapter carefully before you attempt installation. The device drivers for the DVP-7010BE board are located on the software installation CD. The auto-run function of the driver CD will guide and link you to the utilities and device drivers under Windows system. Before you begin, it is important to note that most display drivers need to have the relevant software application already installed in the system prior to installing the enhanced display drivers. In addition, many of the installation procedures assume that you are familiar with both the relevant software applications and operating system commands. Review the relevant operating system commands and the pertinent sections of your application software user's manual before performing the installation.

## Installation

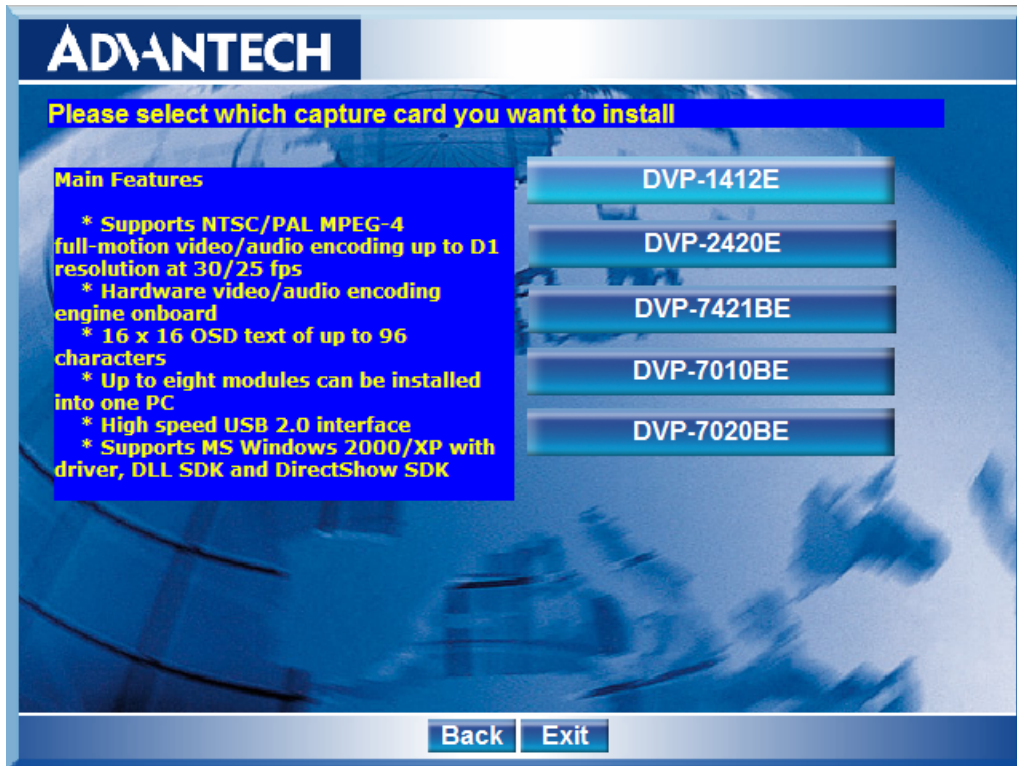
1. Insert the driver CD into your system's CD-ROM drive. Double-click the autorun icon. Then, a message pops up telling you to start the installation. Please click continue



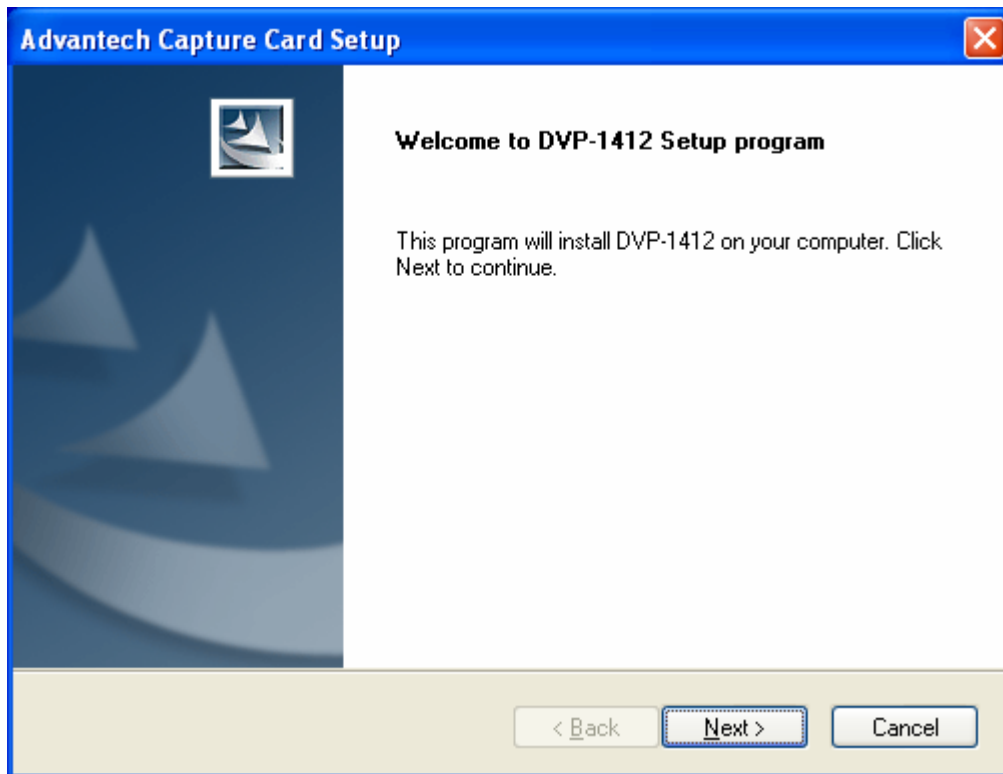
2. Click "Installation" to proceed to the next step



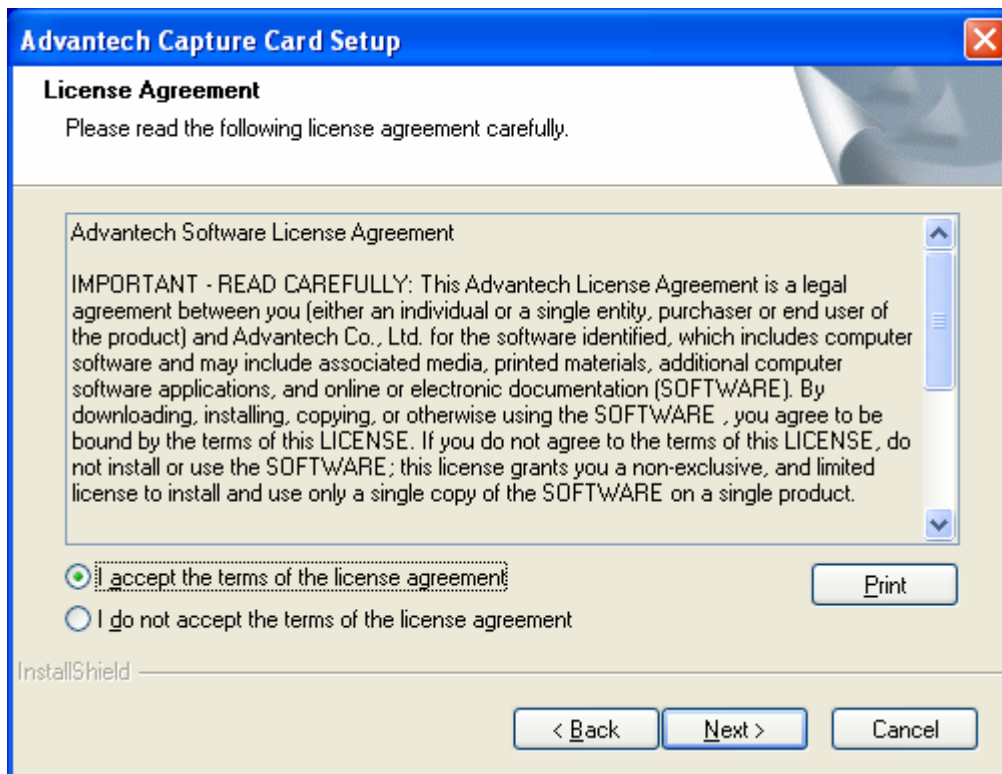
3. Choose the video capture card that you want to install.



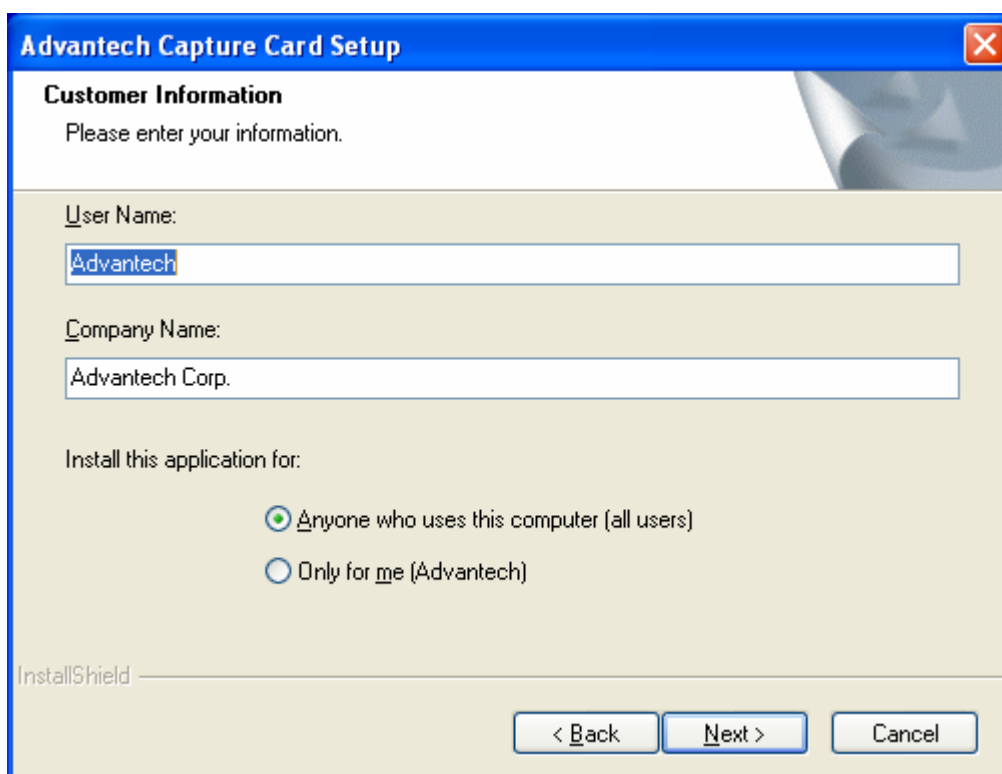
4. Click "Next" when you see the following message.



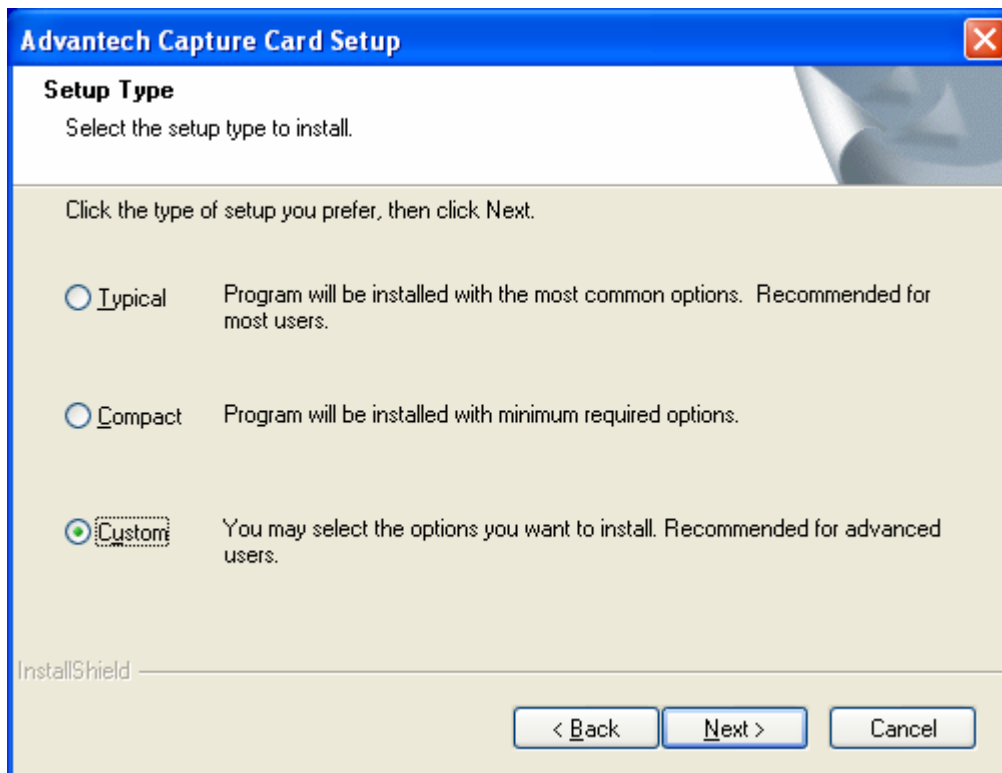
5. Please read the following license agreement and select "Yes" or "No" to next status.



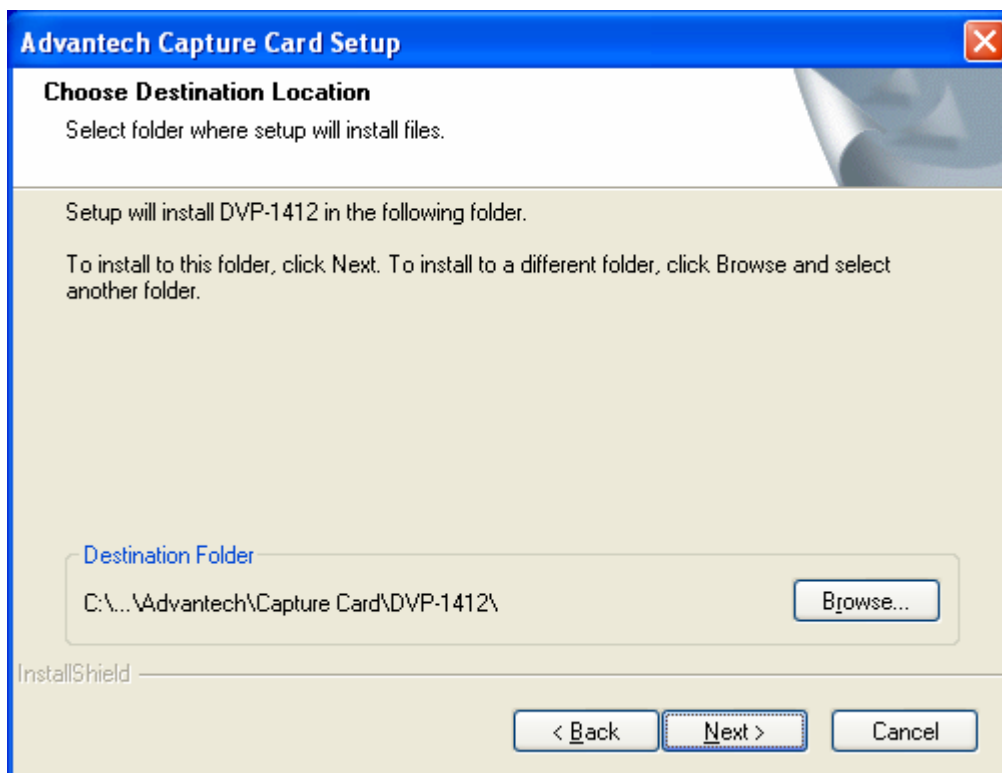
6. Click "Next" when you see the following message.



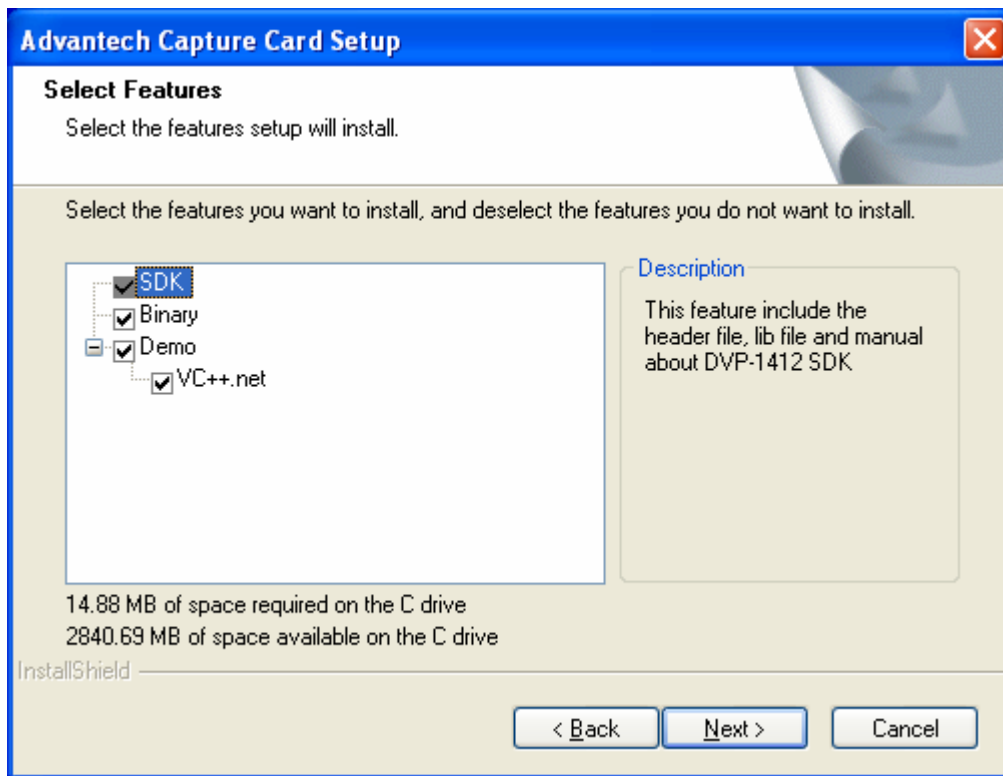
7. There're 3 kind of installation (Typical / Compact / Custom) can be selected. Choose "Typical" or "Compact" and click next then follow the step 11. Choose "Custom" and click next then follow the step 9.



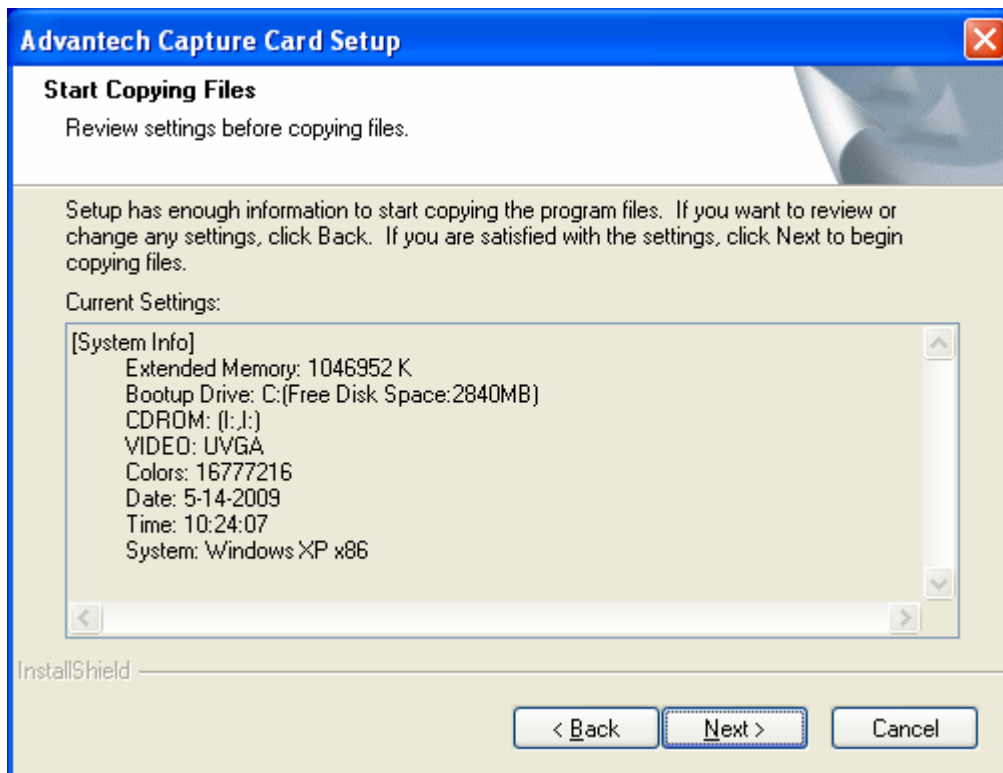
8. Please choose the destination folder and click "Next".



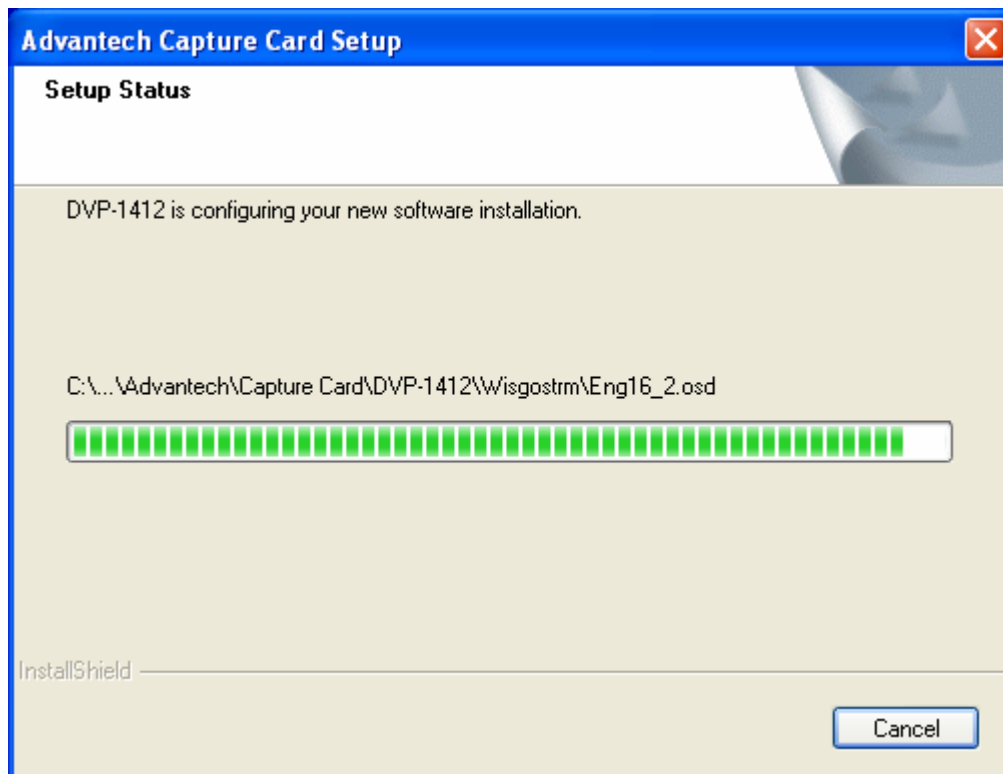
9. Please choose the items you want to install, and click “Next” after that.



10. Start copying file, please click “Next”



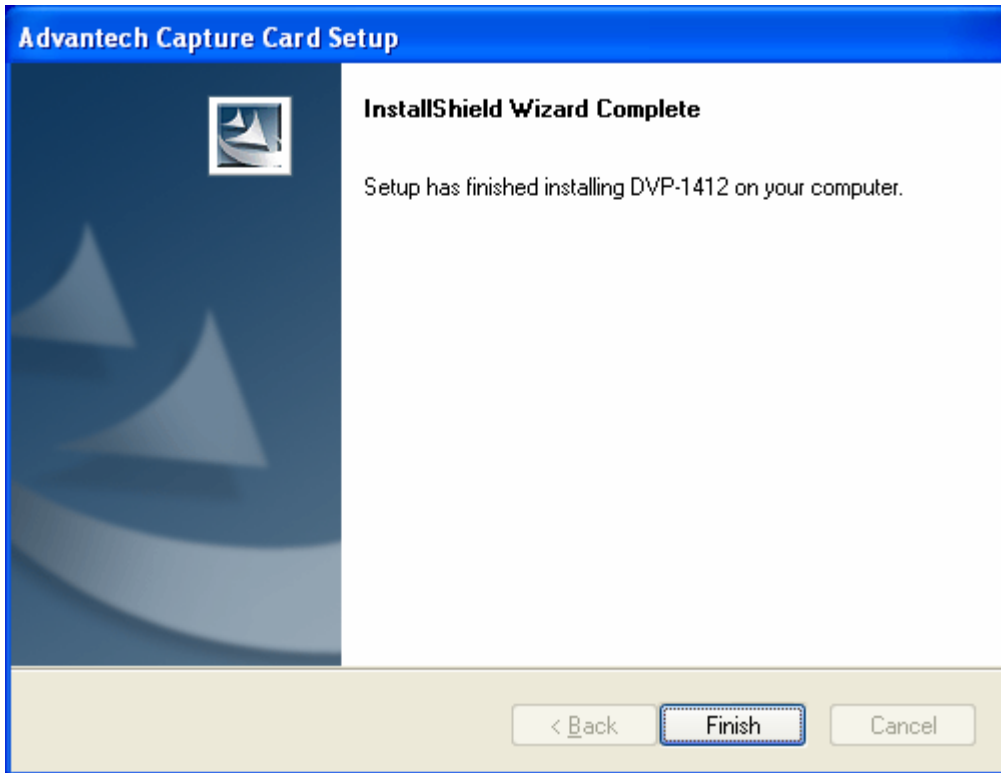
11. Following message shows that it's copying file to your computer.



12. When installing driver, there will be a windows pops up. Please click "Continue Anyway" to install driver



13. Click “Finish” to complete the driver installation.



## **1.10 Demo Program Functionality**

Below is the demo program window. The left side panels are the preview windows of video inputs. The right side panels are the function parameter settings.



## 1.10.1 Device

Each device is representative of one Conexant Fusion 878A video capture chip. User can set different parameters to different 878A chip.

The screenshot shows a software configuration window with two main sections: "Device" and "Encoder".

**Device Section:**

- Device: Device\_0 (dropdown)
- Switch Channels: Device\_0 (dropdown menu is open, showing Device\_0, Device\_1, Device\_2, Device\_3)
- Resolution: (empty dropdown)
- Frame Rate: 30 (dropdown)
- Video Mux: 0 (dropdown)
- Video Standard: NTSC (dropdown)
- 4 (text input field)
- Start (button)
- Snap Buffer (button)
- Sensor Ctrl (button)
- Micro Ctrl (button)
- GPIO Ctrl (button)

**Encoder Section:**

- Frame Rate: 30 (dropdown)
- Key Interval: 100 (text input)
- Quant: 4 (text input)
- Save (checkbox)
- Encode (button)
- Playback (button)
- Exit (button)

## 1.10.2 Switch Channels

Set the “Switch Channels” to decide how many input for each 878A video chip. Each 878A chip can switch to 4 channel video inputs to share 30/25 frame per second. For more information, please refer to “Chapter 2.5.17 AdvDVP\_SetVideoInput”.

The image shows a configuration window for AdvDVP. It is divided into two main sections: "Device" and "Encoder".

**Device Section:**

- Device: Device\_0 (dropdown)
- Switch Channels: 1 (dropdown)
- Resolution: 1 (dropdown menu with options 1, 2, 3, 4)
- Frame Rate: 3 (dropdown)
- Video Mux: 0 (dropdown)
- Video Standard: NTSC (dropdown)

Buttons in the Device section: Start, Snap Buffer, Sensor Ctrl, Micro Ctrl, GPIO Ctrl.

**Encoder Section:**

- Frame Rate: 30 (dropdown)
- Key Interval: 100 (text input)
- Quant: 4 (text input)
- Save:  Save

Buttons in the Encoder section: Encode, Playback.

Exit button is located at the bottom of the window.

### 1.10.3 Resolution

Set the video capturing resolution. Please refer to “Chapter 2.5.15 AdvDVP\_SetResolution”.

**Notice:** *For the resolution of VGA or D1, the capture video will have the interlace effect on the video image. In other words, there will be lines in the capture image especially when the targeted image is moving. To eliminate this effect, user might need to set the resolution down to 640x240 and use specific algorithms to compensate the image interlace between the scanning even field image and odd field image. For CIF/320x240 resolution, there will be no interlace effect.*

Device

Device Device\_0

Switch Channels 1

Resolution QVGA

Frame Rate FULL PAL  
D1

Video Mux VGA  
QVGA  
SUBQVGA

Video Standard 4

Start Snap Buffer

Sensor Ctrl Micro Ctrl

GPIO Ctrl

Encoder

Frame Rate 30

Key Interval 100

Quant 4

Save

Encode

Playback

Exit

## 1.10.4 Frame Rate

Set the frame rate for video capturing for specific channel. Please refer to “Chapter 2.5.13 AdvDVP\_SetFrameRate”

The image shows a configuration window for video capture, divided into two main sections: Device and Encoder.

**Device Section:**

- Device: Device\_0 (dropdown)
- Switch Channels: 1 (dropdown)
- Resolution: QVGA (dropdown)
- Frame Rate: 30 (dropdown)
- Video Mux: 26 (dropdown, currently selected)
- Video Standard: 27, 28, 29, 30 (dropdown)

**Buttons in Device Section:**

- Start
- Snap Buffer
- Sensor Ctrl
- Micro Ctrl
- GPIO Ctrl

**Encoder Section:**

- Frame Rate: 30 (dropdown)
- Key Interval: 100 (text input)
- Quant: 4 (text input)
- Save
- Encode
- Playback

**Exit Button:**

Exit

### 1.10.5 Video Mux

Set the “Video Mux” to specify the video input channel for setting parameter. Please refer to “Chapter 2.5.16 AdvDVP\_GetVideoInput”.

The image shows a software configuration window divided into two main sections: "Device" and "Encoder".

**Device Section:**

- Device: Device\_0 (dropdown)
- Switch Channels: 1 (dropdown)
- Resolution: QVGA (dropdown)
- Frame Rate: 30 (dropdown)
- Video Mux: 0 (dropdown)
- Video Standard: 0 (dropdown menu is open, showing options 0, 1, 2, 3)

**Buttons in Device Section:**

- Start
- Snap Buffer
- Sensor Ctrl
- Micro Ctrl
- GPIO Ctrl

**Encoder Section:**

- Frame Rate: 30 (dropdown)
- Key Interval: 100 (text input)
- Quant: 4 (text input)
- Save

**Buttons in Encoder Section:**

- Encode
- Playback

**Global Button:**

- Exit

## 1.10.6 Video Standard

Set the video standard of your cameras. Please refer to “Chapter 2.5.10 AdvDVP\_GetVideoFormat”.

The image shows a software configuration window with two main sections: "Device" and "Encoder".

**Device Section:**

- Device: Device\_0 (dropdown)
- Switch Channels: 1 (dropdown)
- Resolution: QVGA (dropdown)
- Frame Rate: 30 (dropdown)
- Video Mux: 0 (dropdown)
- Video Standard: NTSC (dropdown menu is open, showing NTSC and PAL options)

**Buttons in Device Section:**

- Start
- Snap Buffer
- Sensor Ctrl
- Micro Ctrl
- GPIO Ctrl

**Encoder Section:**

- Frame Rate: 30 (dropdown)
- Key Interval: 100 (text input)
- Quant: 4 (text input)
- Save

**Buttons in Encoder Section:**

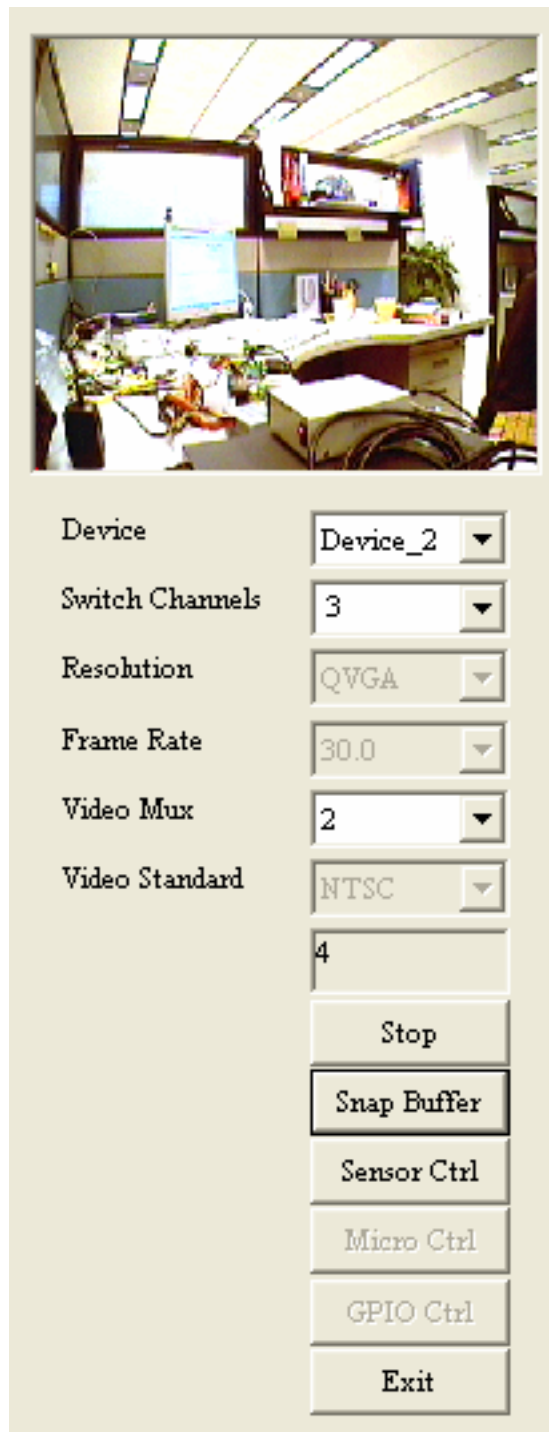
- Encode
- Playback

**Exit Button:**

Exit

### 1.10.7 Snap Buffer

Press the “Snap Buffer” to get the image data of specific channel video input. The snap image will be show on the up panel.





## 1.10.8 Sensor Control

To set the brightness, contrast, hue and saturation of specific channel. Please refer to chapter

2.5.18 AdvDVP\_SetBrightness

2.5.18 AdvDVP\_GetContrast

2.5.18 AdvDVP\_SetContrast

2.5.18 AdvDVP\_GetHue

2.5.18 AdvDVP\_SetHue

2.5.18 AdvDVP\_GetSaturation

2.5.18 AdvDVP\_SetSaturation

## 1.10.9 GPIO control

To get a specified DI value or to set a specified DO value.

