

Video/audio capture card with HDMI input channel,  
1920x1080@60p, and Hardware H.264 codec

# **HDC-3x Series**

## **Quick Installation Guide**

### **Version 2.0**

26 September, 2012

#### **1. Package List**

HDC-304E package includes the following items:

- 1 x HDC-3xSeries video capture card
- 1 x HDMI output kit (HDC-304E only)
- 1 x Low profile bracket (HDC-301 and HDC-301E only)
- 1 x Utility CD (within manual)
- 1 x QIG (Quick Installation Guide)



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## 2. Specifications

	HDC-301	HDC-301E	HDC-302E	HDC-304E
Video Input Channels	One	One	Two	Four
Video Input Type	HDMI	HDMI	HDMI	HDMI
Audio Input Channels	One	One	Two	Four
Audio Input Type	HDMI	HDMI	HDMI	HDMI
Video Output Channel	One	One	Two	One via video output kit
Interface	PCI	PCIe x1	PCIe x1	PCIe x1
VIDEO PROCESSING				
Resolution	1920 x 1080 60p/59.94p/50p 1920 x 1080 60i/59.94i/50i 1280 x 720 60p/59.94p/50p 720 x 576 50i 720 x 480 60i/59.94i			
Video Engine	H.264/AVG High Profile Level 4.2			
AUDIO PROCESSING				
Audio Format / Bit Rate	MPEG-1 Audio Layer 2 / 256kbps			
SYSTEM REQUIREMENTS				
System	<b>Windows:</b> Microsoft Windows 7/XP Service Pack2 (SP2) (32-bit version) Microsoft Windows 7 32-bit Microsoft Windows 7 64-bit (not supported by the HDC-301/301E series) Microsoft DirectX 9.0c Microsoft .NET Framework 3.0/3.5/4.0 Win7DSFilterTweaker tool (for Windows 7 OS only) Visual C++ 2005 & 2008 Redistributable <b>Linux:</b> Fedora 16 (Kernel 3.1.0)			
SOFTWARE SUPPORT				
Device Driver	Driver for Windows XP, Windows 7 (32bit) and Linux Fedora 16			
SDK	SDK provided with demo program and sample source code Windows: Provide SDK and demo program with sample source code in C# Linux: Provide SDK and driver/demo program with sample source code in C			

### 3. Hardware Installation

#### 3.1 Video Capture Card Installation

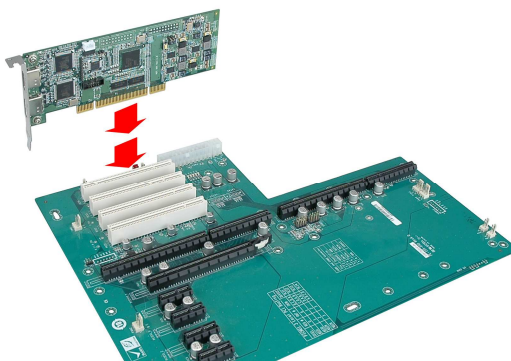
The HDC-3x Series video capture card has either a PCIe x1 or a PCI interface. To install the HDC-3x Series, please follow the steps below:

**Step1.** Align the PCIe/PCI edge connector on the bottom of the video capture card with the PCIe x1 or PCI slot on the system motherboard.

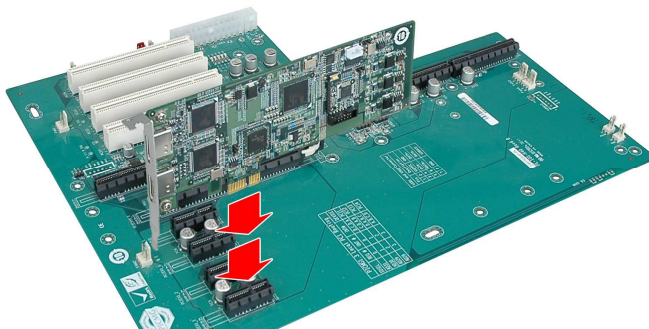
**Step2.** Gently insert the video capture card into the PCIe x1 or PCI slot.

**Step3.** Push down gently on the video card to make sure it is firmly inserted into the PCIe x1 or PCI slot.

#### HDC-301



#### HDC-301E, HDC-302E & HDC-304E



**Step4.** Insert a retention screw through the top of the video capture card external bracket into the chassis to secure the card to the chassis.

### 3.2 Install the HDMI Output Kit (HDC-304E Model Only)

The HDC-304E video card is shipped with an HDMI output kit in order to view the decode video or bypass video on the HDMI display. To install the HDMI output kit please follow the instructions below.

**Step1.** Locate the HDMI output connector on the HDC-304E video capture card.

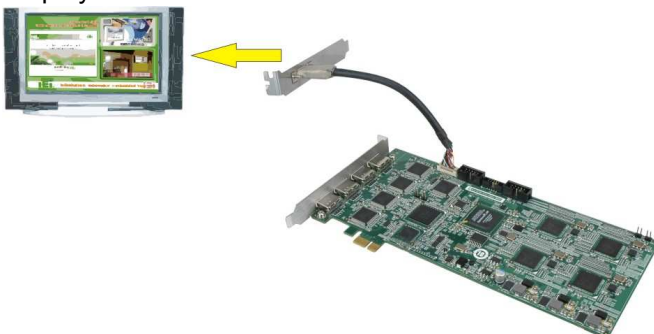
**Step2.** Align the cable connector from the HDMI output kit with the HDMI output connector on the HDC-304E.

**Step3.** Push the cable connector onto the HDMI output connector making sure the pins are correctly aligned.



**Step4.** Secure the HDMI port bracket to the system chassis.

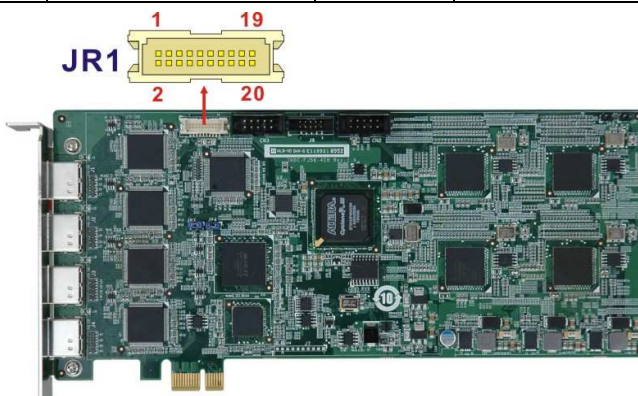
**Step5.** Connect the HDMI cable (not included) from the HDMI output kit to the HDMI display.



### 3.2.1 HDC-304E HDMI Output Kit Connector (JR1)

The HDMI output kit connector connects to the HDMI output kit cable that provides an HDMI output port. Pinouts for the connector are shown below.

Pin No.	Description	Pin No.	Description
1	HDMI_OUT_TX2+	11	GROUND
2	GROUND	12	HDMI_OUT_TXC-
3	HDMI_OUT_TX2-	13	N/A
4	HDMI_OUT_TX1+	14	N/A
5	GROUND	15	HDMI_OUT_DCLK
6	HDMI_OUT_TX1-	16	HDMI_OUT_DSDA
7	HDMI_OUT_TX0+	17	GROUND
8	GROUND	18	VCC_5V
9	HDMI_OUT_TX0-	19	HDMI_OUT_HPD
10	HDMI_OUT_TXC+	20	N/A



### 3.3 HDMI Devices Installation

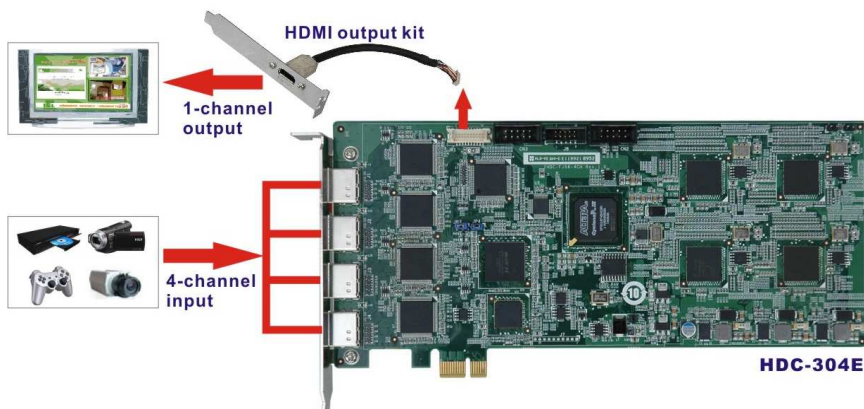
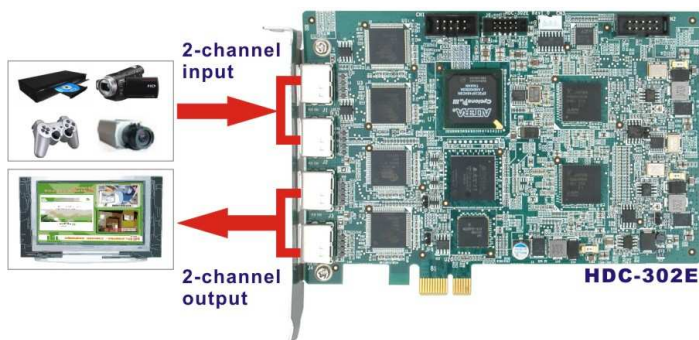
Various HDMI devices can be connected to the HDC-3x Series. Video input and video output are all supported. Follow the steps below to connect the HDMI devices to the HDC-3x Series.

**Step1.** Insert the HDMI connector from the cable into the HDMI input connector on the HDC-3x Series. Make sure the connection is secure.

**Step2.** Insert the HDMI connector of the other end of the cable into the HDMI connector on the HDMI device. Make sure the connection is secure.

**Step3.** This step is only required for the HDC-302E and HDC-304E. Repeat the steps above until all HDMI devices are connected.

**Step4.** Use another HDMI cable to connect the HDMI connector of the HDMI display device to the HDMI output connector on the board or on the HDMI output kit (HDC-304E).



## 4. Driver and Application Installation (Windows)

### 4.1 Driver Installation

To install the HDC-3x Series driver, please follow the steps below: If the HDC-3x Series driver is already installed, please refer to **Section 4.2** to uninstall the driver first.

**Step1.** Make sure to log in the system as the administrator.

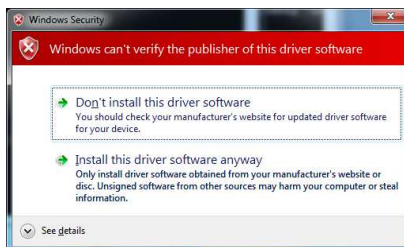
**Step2.** Insert the driver CD.

**Step3.** Locate the “Driverinstaller.bat” file in the driver CD. Double click it.

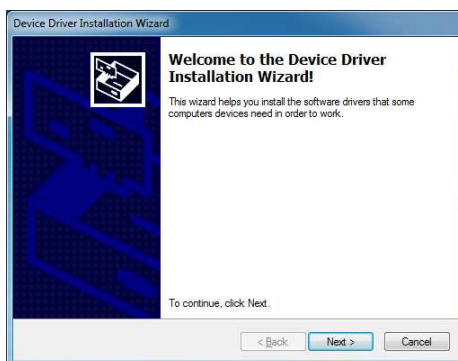
**Step4.** A confirmation window appears. Click **Install**.



**Step5.** If the following screen appears, click **Install this driver software anyway**.



**Step6.** The Device Driver Installation Wizard appears. Click **Next** to start.



**Step7.** When the driver installation is complete, the following screen appears. Click **Finish** button to finish driver installation.



**Step8.** Check the device manager in the Windows control panel to ensure the driver (MB86H55-REB PCI, HDC controller and WinDriver) has been properly installed. The installed driver is slightly different on different models.

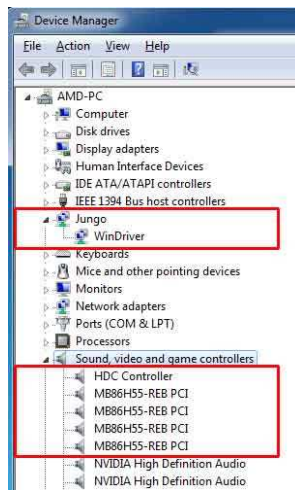
### HDC-301 & HDC-301E



### HDC-302E



### HDC-304E

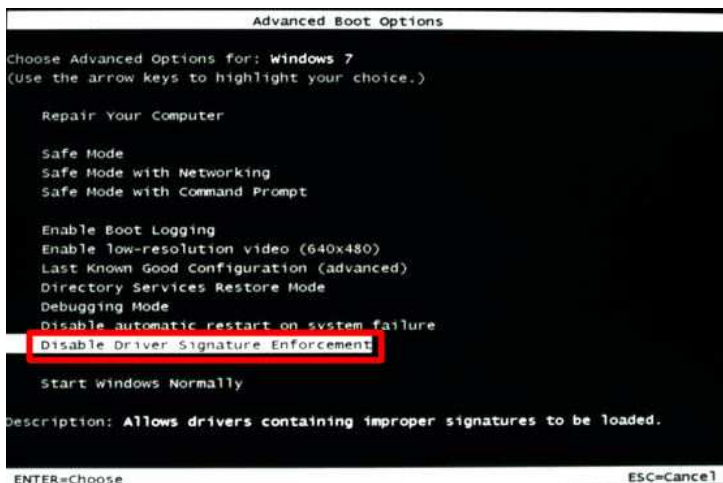


### 4.1.1 Driver Installation in 64-bit Windows 7 OS

**NOTE:** The HDC-301/301E series does not support Windows 7 64-bit operating system. Please install the HDC-301/301E series in a system with other OS, such as Windows 7 32-bit.

To install the driver in a 64-bit Windows 7 operating system, please do the followings.

**Step1.** When the system is booting, press **F8** to enter the Advanced Boot Options menu. Choose “**Disable Driver Signature Enforcement**” and press **Enter**.

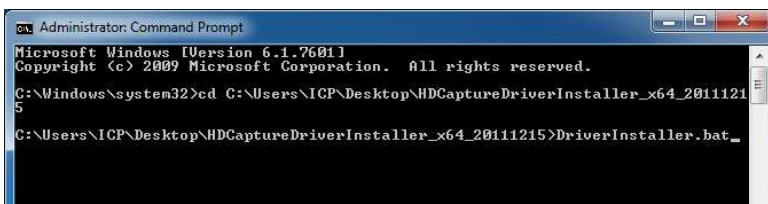


**Step2.** Make sure to log in the system as the administrator.

**Step3.** Insert the driver CD.

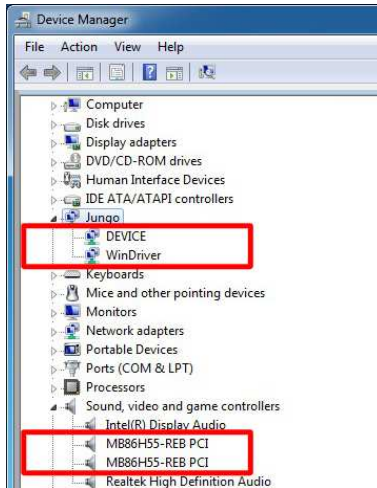
**Step4.** Launch the Command Prompt application in Windows 7 as an administrator (right click the Command Prompt and select “Run as administrator”).

**Step5.** In the Command Prompt window, specify the 64-bit driver directory. Then, type **DriverInstaller.bat** to start the driver installation.



**Step6.** Follow **Step5 ~ Step8** in **Section 4.1** to complete installing the driver to a 64-bit Windows 7 operating system.

**Step7.** Check the device manager in the Windows control panel to ensure the driver (MB86H55-REB PCI, DEVICE and WinDriver) has been properly installed.



## 4.2 Uninstall Driver

To uninstall the driver, please follow the steps below.

**Step1.** Make sure to login the system as the administrator.

**Step2.** Locate the “Driveruninstaller.bat” file in the driver CD. Double click it to uninstall the driver.

**Step3.** The console window pop-up and all drivers will be uninstalled.

## 4.3 Software Installation

After installing the driver, the following programs must be installed in order to use the HDCapture demo program:

- Microsoft .NET Framework 3.0/3.5/4.0
- Microsoft DirectX 9.0c
- Win7DSFilterTweaker tool (for Windows 7 OS only)
- Visual C++ 2005 & 2008 Redistributable

**NOTE:** For the 64-bit Windows 7 operating system, the Microsoft .NET Framework 4.0 must be installed.

To install the HDCapture demo program, please follow the steps below.

**Step1.** Insert the driver CD.

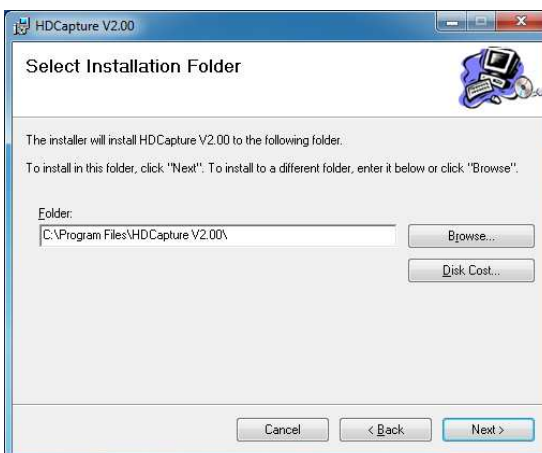
**Step2.** Locate the **HDCapture\_x86\_Vxxxx.msi** file in the driver CD.

Double click the setup file to start the installation. The user can also download the latest setup file from IEI website.

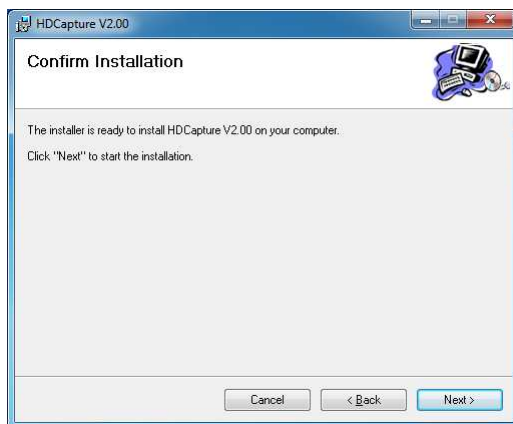
**Step3.** The HDCapture Setup Wizard welcome window appears. Click **Next** to start.



**Step4.** Select a folder for HDCapture installation. Click **Next** to continue

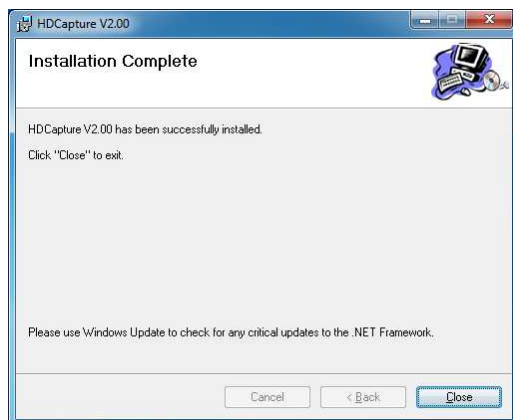


**Step5.** The following screen appears. Click **Next** to confirm the installation



**Step6.** The system starts installing the HDCapture.

**Step7.** When the HDCapture is successfully installed, the following window appears. Click **Close** to exit.

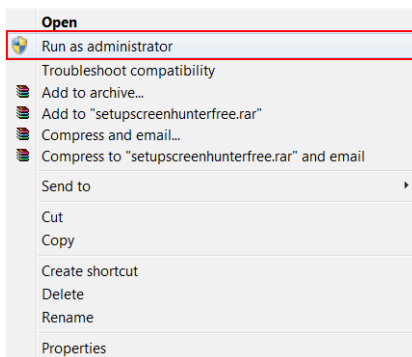


**NOTE:** To be able to install the HDCapture Demo Program in a 64-bit Windows 7 operating system, please do the followings:

- When the system is booting, press **F8** to enter the Advanced Boot Options menu. Choose "**Disable Driver Signature Enforcement**" and press **Enter**.
- Login the system as "administrator" and start to install the driver and application.

## 5. HDCapture Application

**NOTE:** If there is a problem launching the HDCapture application in a 64-bit Windows 7 operating system, right-click the HDCapture application from the Windows **Start** menu and select **Run as administrator**.

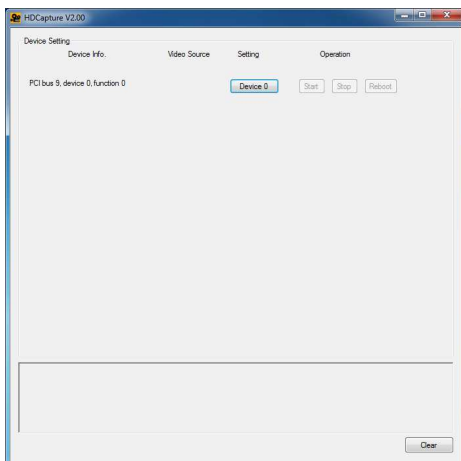


### 5.1 Video Capture

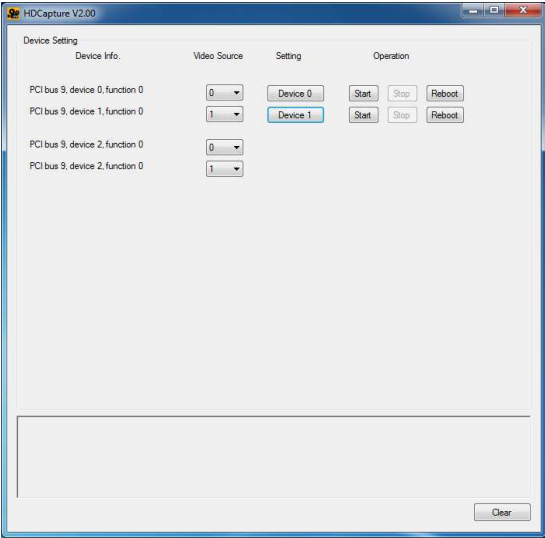
To use the HDCapture to capture video, follow the steps below. If the older version of the HDCapture is already installed, please refer to **Section 5.4** to uninstall it.

**Step1.** Launch the HDCapture. The Device Setting of the HDCapture is varied based on the installed video capture card as shown below. The best resolution to view HDCapture is 1280 x 1024 or above.

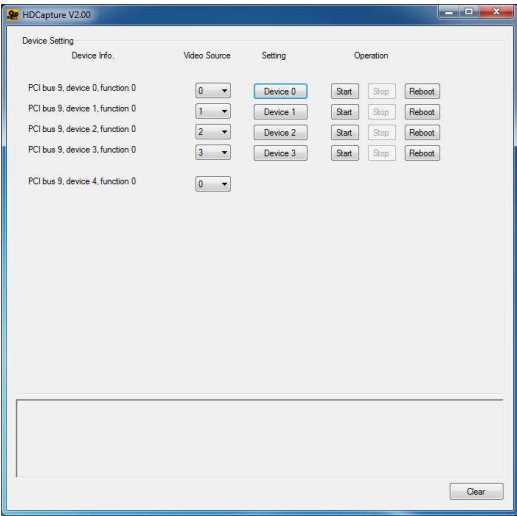
#### HDC-301 and HDC-301E



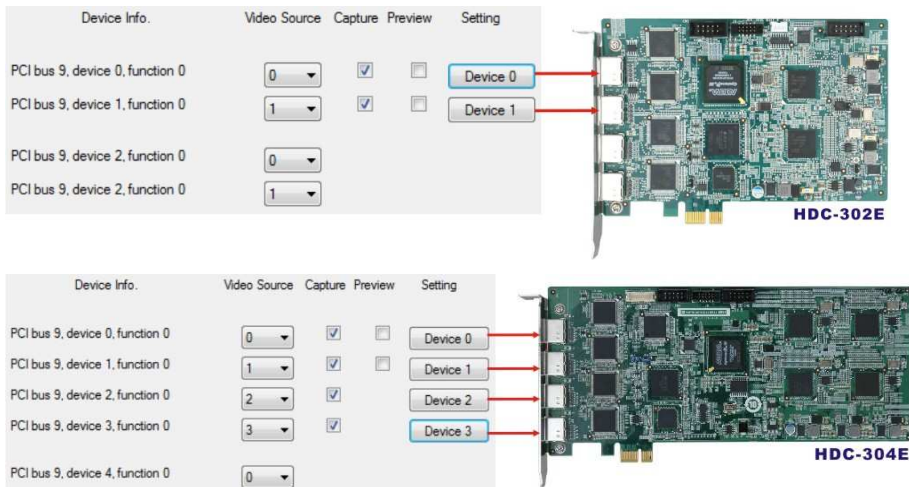
# HDC-302E



# HDC-304E



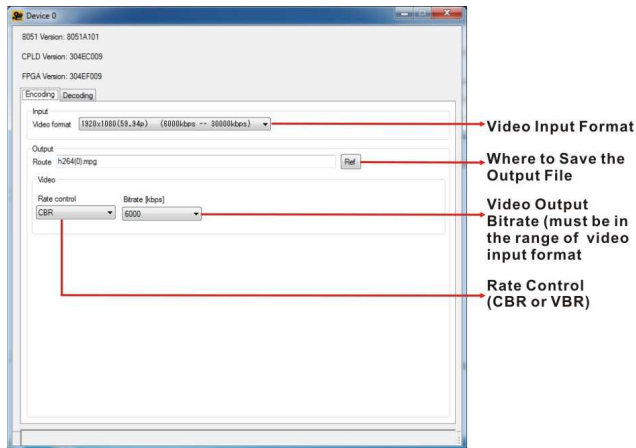
**Step2.** Enable and configure the device settings by clicking the Device # (0, 1, 2, 3) buttons. The device number is decided by which port the device is installed. If the HDC-301 series is installed, there will be only one Device 0 button to choose.






**Step3.** Click the Device # button. The Encoding window appears. Choose the video input format which depends on the video device. **The video format selected here must be same with the HDMI input video format.** The available options include:

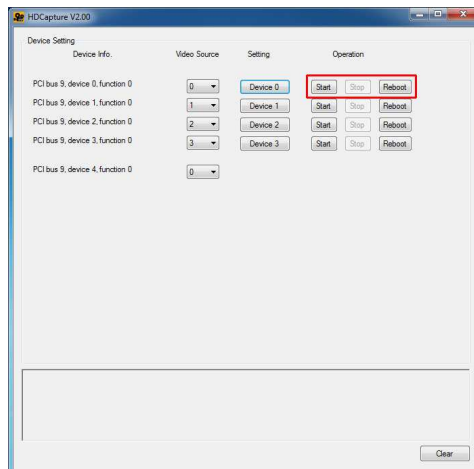
- 1920x1080 (60p) (6000kps – 30000kps)
- 1920x1080 (59.94p) (6000kps – 30000kps)
- 1920x1080 (50p) (6000kps – 30000kps)
- 1920x1080 (60i) (6000kps – 24000kps)
- 1920x1080 (59.94i) (6000kps – 24000kps)
- 1920x1080 (50i) (6000kps – 24000kps)
- 1280x720 (60p) (4000kps – 24000kps)
- 1280x720 (59.94p) (4000kps – 24000kps)
- 1280x720 (50p) (4000kps – 24000kps)
- 720x480 (60i) (2000kps – 10000kps)
- 720x480 (59.94i) (2000kps – 10000kps)
- 720x576 (50i) (2000kps – 10000kps)

**Step4.** Configure the encoding settings, including encoding file directory (click Ref button to choose the directory), rate control (CBR or VBR) and video encoding bitrate (must be in the range of video format). When “CBR” is selected, the “Bitrate” text box is displayed. When “VBR” is selected, the “Average bitrate” and “Peak bitrate” text boxes are displayed. Close the window to save the settings.



**Step5.** Repeat Step 2 ~ Step 4 to configure the connected input devices if necessary.

**Step6.** Click Start  to start capture the video. Click Stop  to stop capture. Click  to reboot the device.




## 5.2 Video Decoding

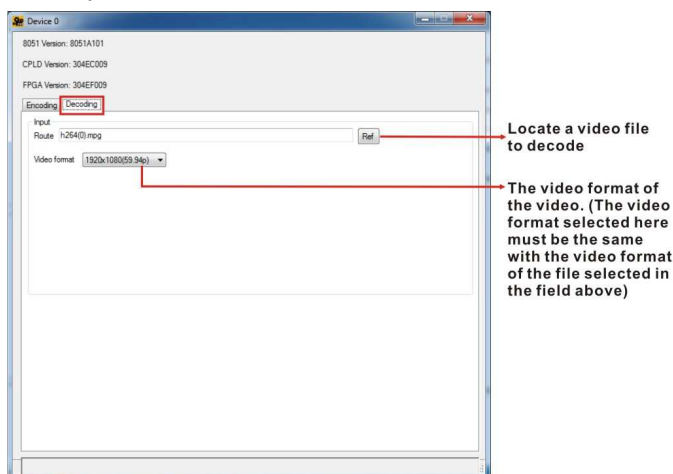
The HDCapture also includes decoding function that decodes the video signal for video output to the HDMI-enabled display device. To decode a captured video clip, follow the steps below.

**Step1.** Launch the HDCapture.

**Step2.** Bring up the Decoding page by clicking one of the Device # buttons. Click the Decoding tab to access the decoding page.

**Step3.** Click Ref button  to locate a video file in the computer to decode.

**Step4.** Select the video format of the selected video clip. The video format selected here must be the same with the video format of the file selected in the previous step.



**Step5.** Close the window to save the settings.

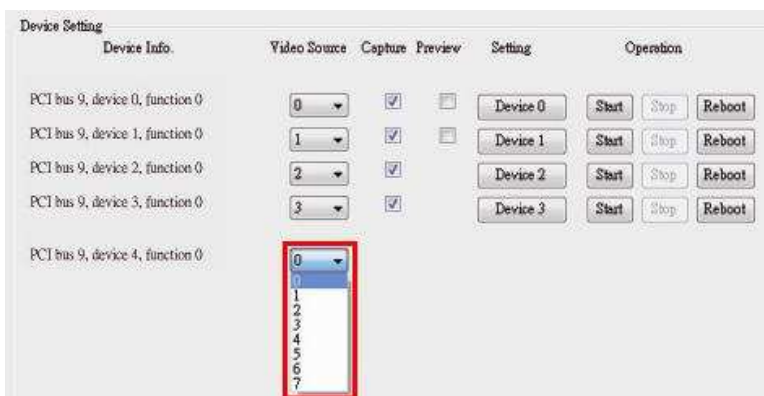
**Step6.** This step is only required for the HDC-302E. Select the transmitter bus (2 or 3). For example, when the Device0 button is selected to decode the encoded file, please select 2 from the device2 (transmitter bus) drop-down menu to display the video on HDMI display device via video output port. Please refer to the following table:

Device Port	Device4 (Transmitter Bus) Setting
Device0	2
Device1	3



**Step7.** This step is only required for the HDC-304E. Select the transmitter bus from 4 to 7. For example, when the Device0 button is selected to decode the encoded file, please select 4 from the device4 (transmitter bus) drop-down menu to display the video on HDMI display device by output kit. Please refer to the following table:

Device Port	Device4 (Transmitter Bus) Setting
Device0	4
Device1	5
Device2	6
Device3	7



**Step8.** Click Operation Start  to start decoding the selected video.

## 5.3 Video Bypass

To view the video input source on HDMI display device in real time, please follow the steps below.

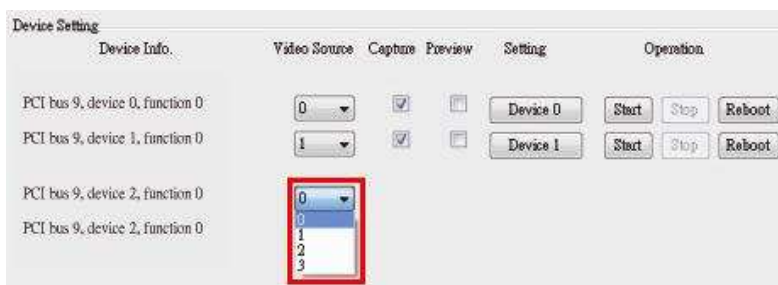
**Step1.** Launch the HDCapture.

**Step2.** Connect the HDMI cable from HDMI display device to the HDMI output port or the HDMI output kit (HDC-304E).

**Step3.** Connect the video input source to the HDMI input port of the HDC-3x Series.

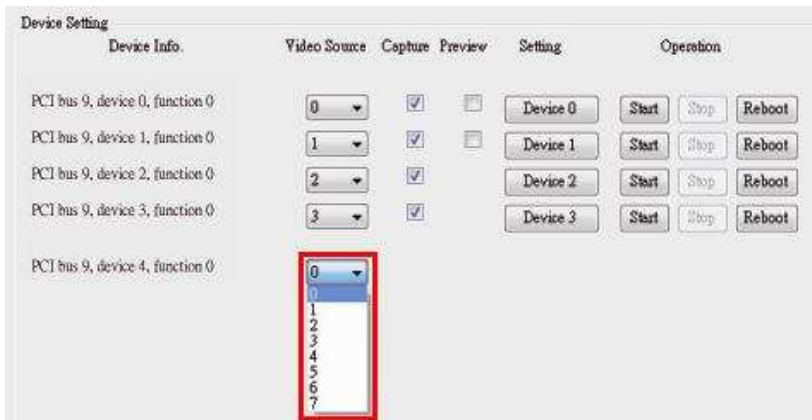
**Step4.** This step is only required for the HDC-302E. Select the transmitter bus (0 or 1). For example, to view the video input source 1 on HDMI display device, select the transmitter bus 0. Please refer to the following table:

Video Input Source	Transmitter Bus
Source 1	0
Source 2	1



**Step5.** This step is only required for the HDC-304E. Select the transmitter bus from 0 to 3. For example, to view the video input source 1 on HDMI display device, select the transmitter bus 0. Please refer to the following table:

Video Input Source	Transmitter Bus
Source 1	0
Source 2	1
Source 3	2
Source 4	3



## 5.4 Uninstall HDCapture

To uninstall the HDCapture, follow the steps below.

**Step1.** Select **Control Panel** → **Programs** → **Programs and Features**.

**Step2.** Select HDCapture and click the **Uninstall** button.

