XI102XE HD+ Dual SD+ Audio Capture Adapter

User's Guide

Rev 1.0

2011/10/14

Content

1 Preface

Thank you for purchasing XI102XE HD video capture adapter!

XI102XE is featured with small and exquisite bulk, superior performance and flexible characteristics. XI102XE can simultaneously capture one High-Definition video signal, two Standard-Definition video signals, and one stereo analog audio signal. The HD input can connect with HDMI, DVI, YPbPr, VGA (RGB-HV), composite video broadcast signal (CVBS).

The user's guide will provide with necessary instruction for proper use of XI102XE.

2 Minimum Hardware Configuration

- Intel Core Solo
- 1G of RAM
- Available PCI-Express x1 expansion slot on mainboard

3 Recommended Hardware Configuration

- Intel Core i5
- 2G of RAM
- Available PCI-Express x1 expansion slot on motherboard

4 System Requirements

System should be one of the following systems (x 86 version or x64 version):

- Microsoft Windows XP
- Microsoft Windows Server 2003

- Microsoft Windows Vista
- Microsoft Windows Server 2008
- Microsoft Windows 7
- Microsoft Windows Server 2008 R2

5 Hardware and Driver Installation

Please refer to "**XI102XE Installation Guide**" to install the hardware and the driver.

6 Connection of HD Input

6.1 DVI-D/DVI-I Signal

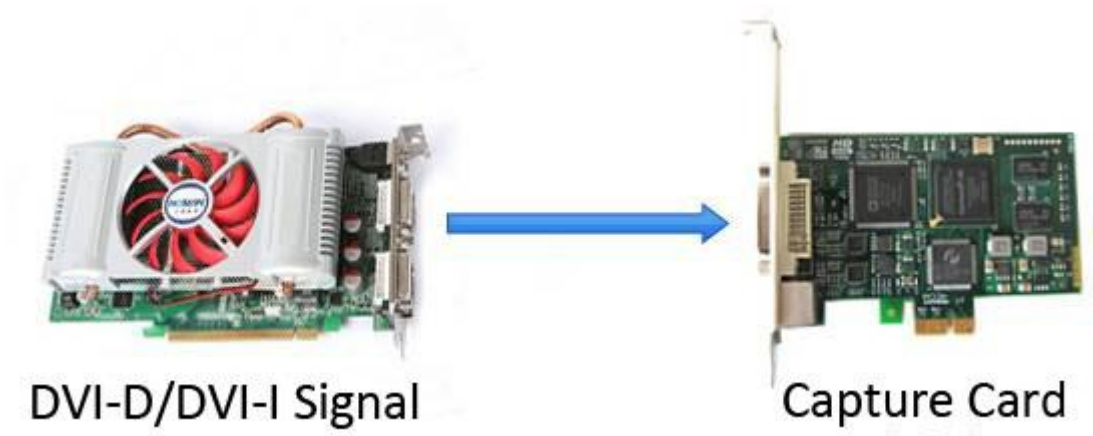

Figure 1, DVI signal connection sketch map

6.2 HDMI Signal

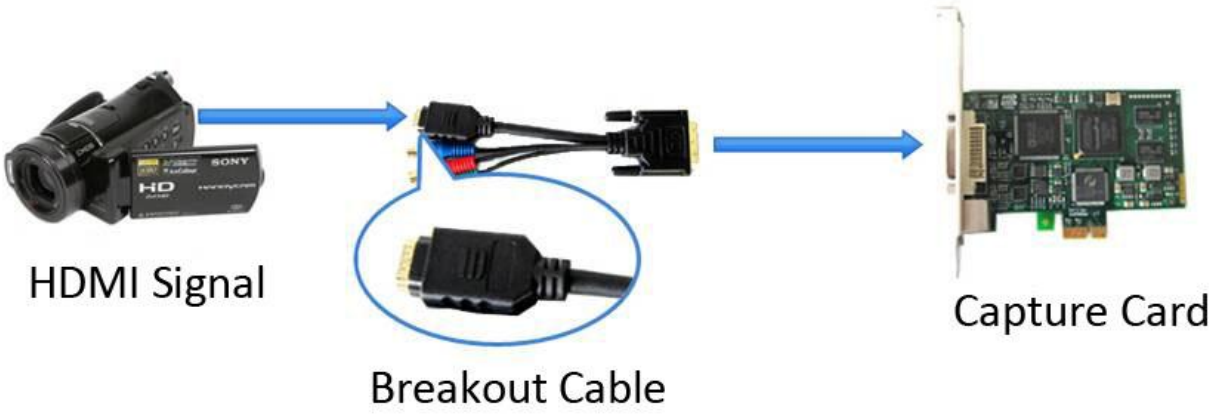

Figure 2, HDMI signal connection sketch map

6.3 VGA Signal（RGB-HV）

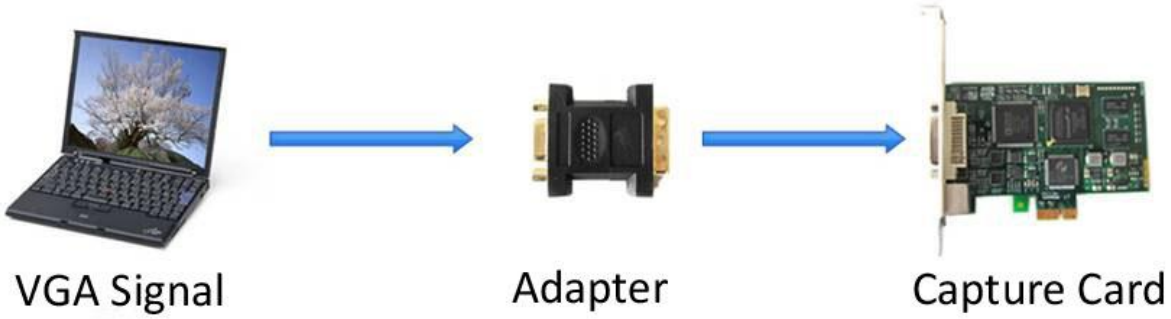

Figure 3, VGA signal connection sketch map

6.4 YPbPr Signal

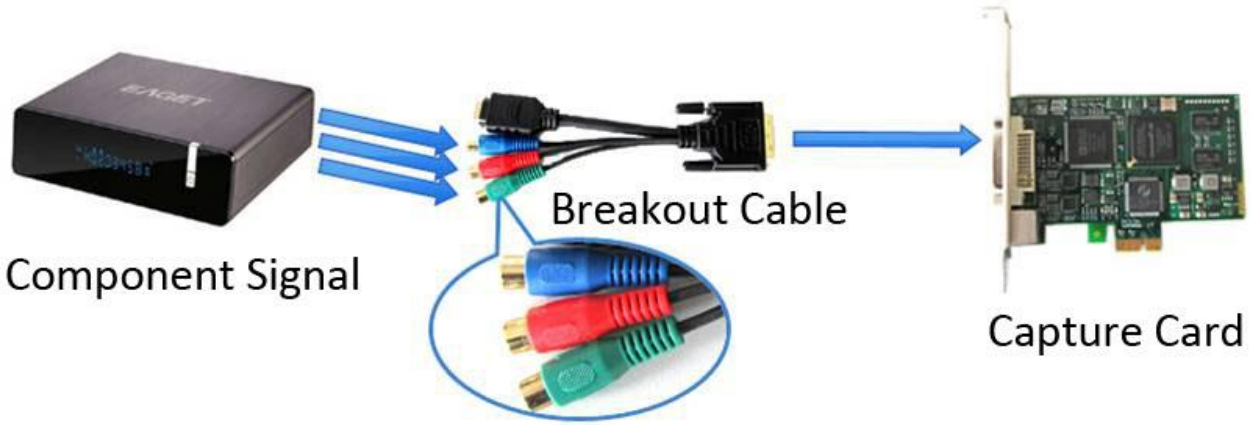

Figure 4, YPbPr signal connection sketch map

6.5 CVBS

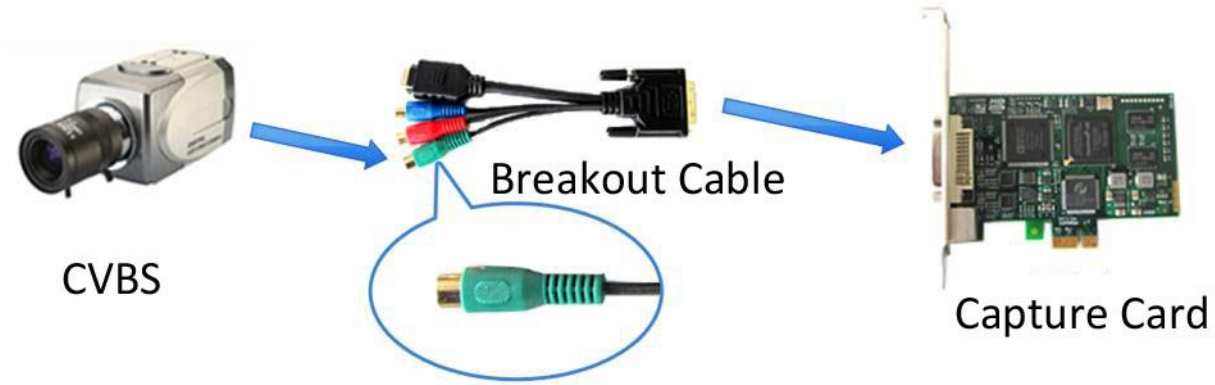

Figure 5, CVBS connection sketch map

7 Connection of SD Input

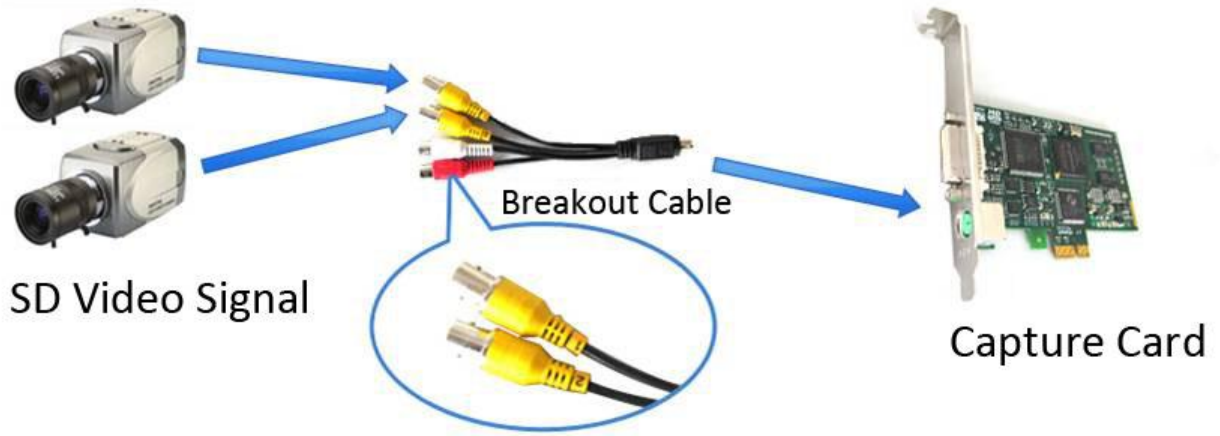

Figure 6, CVBS on connection of SD interface sketch map

8 Connection of Audio Signal

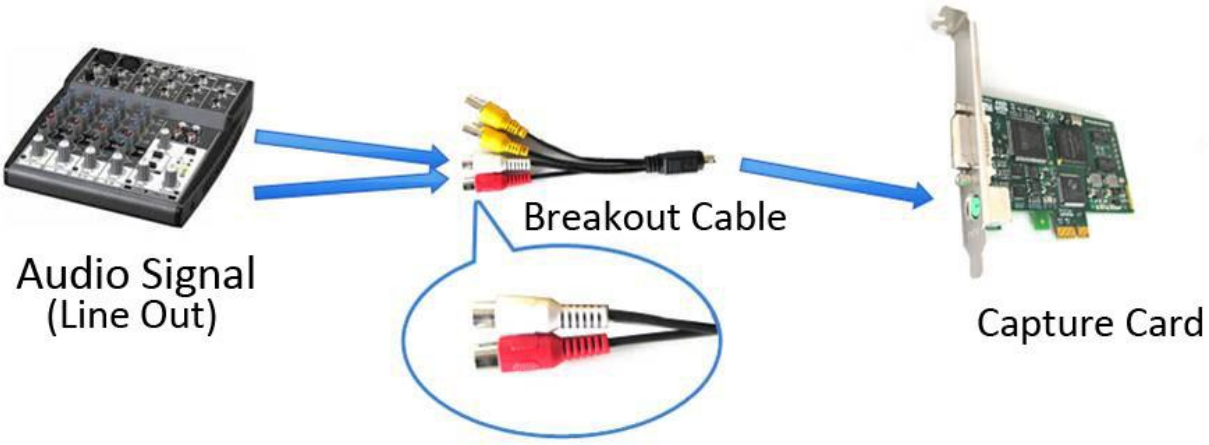

Figure 7, audio line in signal connection sketch map

Notes: The audio signal input is up to" **Line in**" level standard, if you need to connect microphone , must connect microphone with microphone input of "**microphone amplifier**" or "**mixer**" , and then "**microphone amplifier**" or " **mixer** "output is connected to the interface.

9 Video Capture Device Instruction

XI102XE is based on Microsoft DirectShow interface, three video devices will be increased in operating system after installation:

- HD Video (XI102XE Adapter x), HD capture device
- Video 1 (XI102XE Adapter x), SD capture device
- Video 2 (XI102XE Adapter x), SD capture device

The HD Video (XI102XE Adapter x) is corresponding to DVI-I HD input interface; Video 1 / 2 (XI102XE Adapter x) is corresponding to two yellow video BNC interface in SD breakout cable.

XI102XE not only offer basic options, such as image brightness, contrast, hue, saturation, Gamma and so on, but also provide additional options for setting function. You can use "**Filter Properties dialog window**" in DirectShow to set options.

9.1 Display "Filter Properties Dialog Window" In Common Software

AMCAP: Double click "**AmCap.exe**", choose HD video device "**HD Video (XI102XE Adapter1)**" in "**Devices**" menu, then click "**Video Capture Filter ...**" in "**Settings**" menu, pop-up " **Filter Properties dialog window**".

9.2 “Device” Instruction

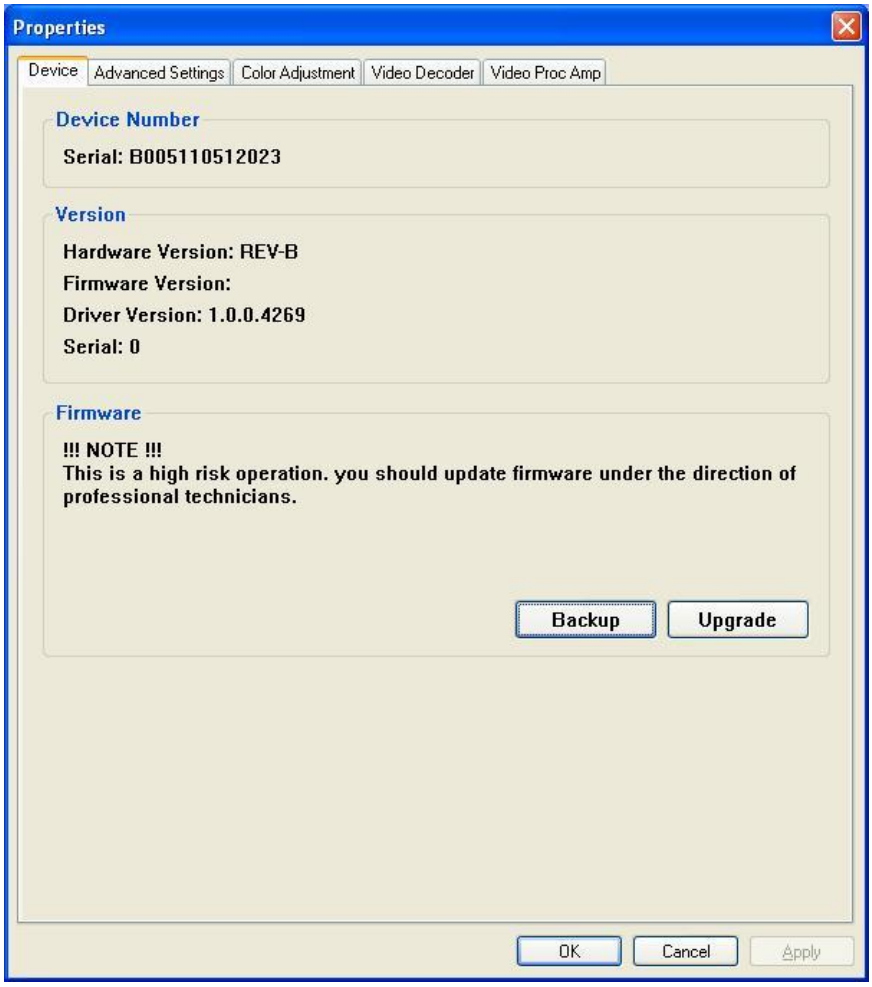

Figure 8, Device Properties tab

Device Number: display serial of XI102XE, the number should be accorded with the barcode on the adapter.

Version: display related version number, versions include hardware version, firmware version, driver version, and device serial. You may request user to provide relevant version number when you solve problems.

Firmware: if new features need to upgrade the firmware, we should first backup it and then upgrade the firmware.

Notes: The different versions of the firmware and hardware cannot be mixed together, or else it will get error when upgrade. Additionally, do not power outage in the process of firmware upgrade, otherwise it will lead to upgrade firmware fail, then the capture card will not work. You have to return the capture card back to factory for being repaired.

9.3 HD Capture Device "Advanced Settings" Instruction

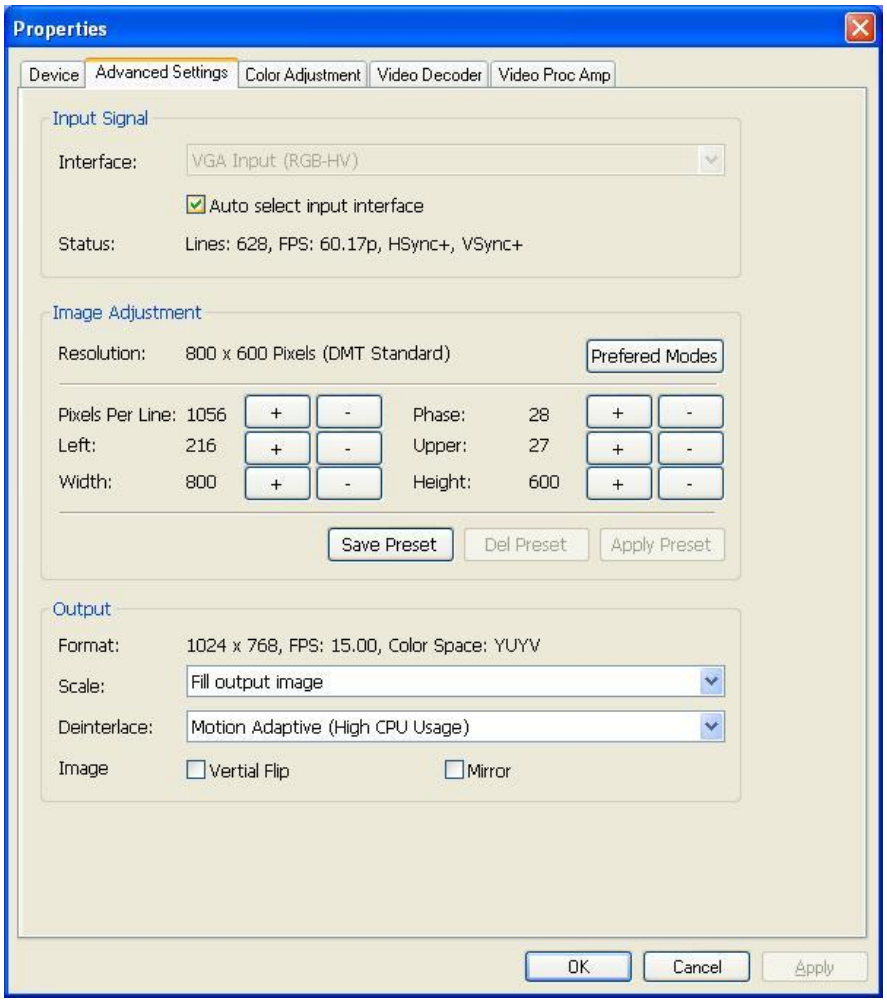

Figure 9, "Advanced Settings " page

9.3.1 Input Signal

9.3.1.1 Input Interface

By default, select “Auto Select Input Interface”, supporting input interface includes: DVI / HDMI input, VGA input, Y / PbPr input, CVBS input .
Notes: when “Auto Select Input Interface” is selected, if HDMI and YPbPr input interfaces both have signal access, then HDMI input is preferred. You must select CVBS manually, otherwise it will be identified with YPbPr input. Signal must access Y interface (green RCA interface). In fact, the capture card can capture 3 SD signals coupled with other two composite video inputs which XI102XE offers.

9.3.1.2 Signal State

The relevant parameters of signal are shown, such as total number of rows, frame rate (p is progressive scan, i is interlaced), mode, audio frequency.

9.3.2 Image Adjustment

By default, image is auto, but it cannot achieve desired effect, such as black border, unclear image, picture which needs clipping, it must be adjusted manually. After adjustment, you can save the preset. Then you can apply preset values without adjustment when the same signal accesses.
For example as VGA signal adjustment:

Black border adjustment: Through adjust left margin and top margin to eliminate black border. Every time you can adjust 1 pixel.

Text definition adjustment: adjust line number of samples and sampling phase to achieve desired definition of text.

Select correct resolution quickly: the capture card cannot identify correct resolution with the same number of rows, such as 1024x768, 1280x768, 1360x768, 1368x768, lines are all 768, auto may be all identified as 1024x768, then click "**auto**", a list will pop up as shown below, user can select the correct resolution.

Figure 10, auto pop-up menu

Image clipping: Through adjust image width, height, left margin and top margin to achieve desired requirement. Increasing/reducing width of image starts from right, increasing/reducing height of image starts from bottom.

Skills of image clipping as follows:

1. Set scale "fill output image" to confirm whether clipping adjustment is appropriate.
2. Cut off image left: firstly increase left margin, then reduce image width.
3. Cut off image right: reduce image width.

4. Cut off image top: firstly reduce image height, and then increase top margin.
5. Cut off image bottom: reduce image height.

After image adjustment completes, click "**Save Preset**" to save current adjustment; click "**Del preset**" to delete preset you saved; click "**Apply Preset**" to apply the saved preset to current settings.

9.3.3 Image Output

Display output format of current image, set image zoom scale, deinterlace and image flipping.

- Format: display output image size, frame rate, color format.
- Scale: provide three ways, fill output image and keep aspect ratio, fill border to black and keep aspect ratio, clip border.
- De-interlace: vertical blend, motion adaptive. Motion adaptive is better, but it takes up high CPU usage, also you can select “disabled”.
  Image: offer two ways, vertical flip and mirror.

9.4 SD Capture Device" Advanced Video Settings" Instruction

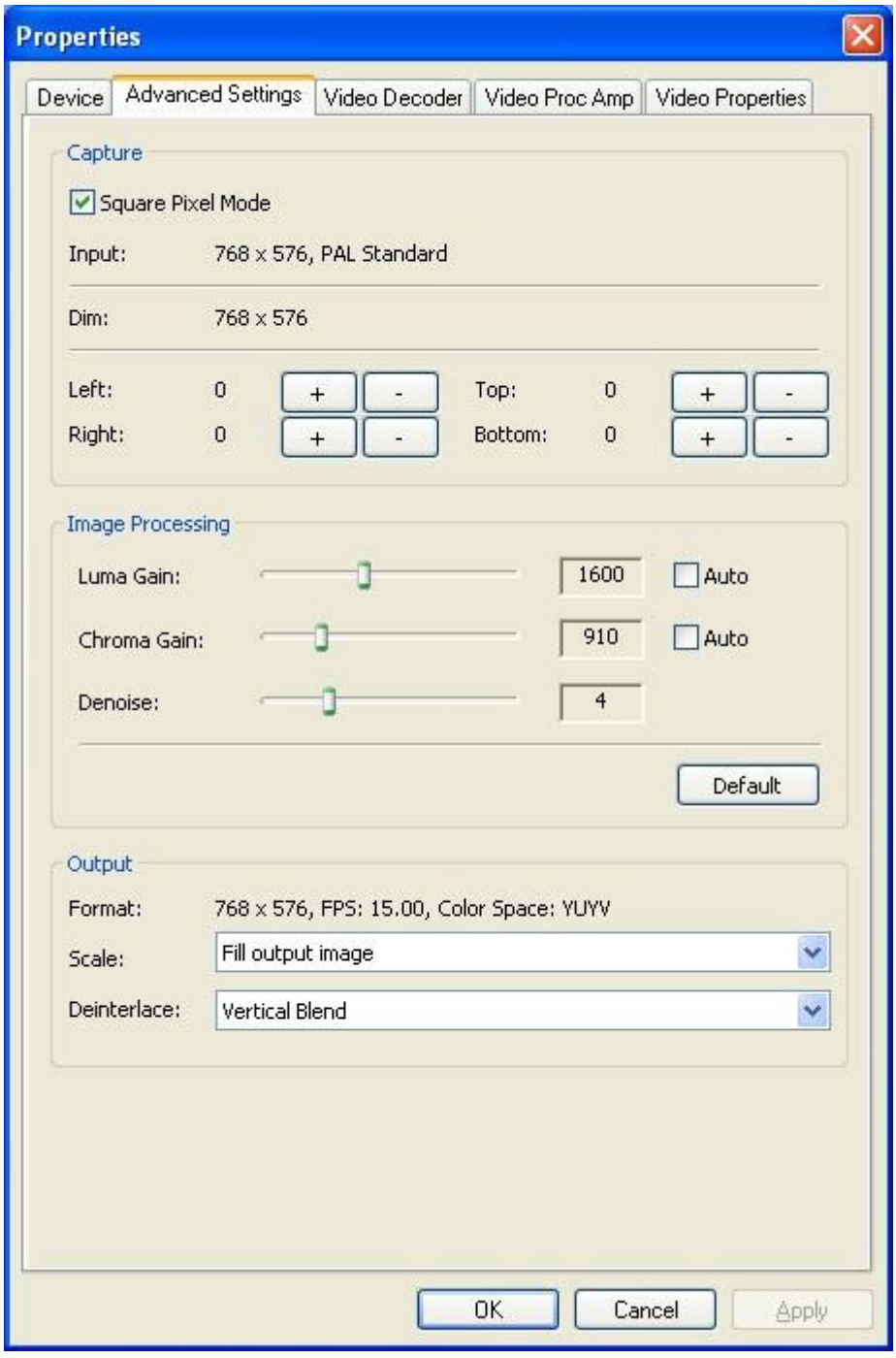

Figure 11, SD Capture Device" Advanced Video Settings" page

9.4.1 Capture

Square Pixel Mode: image is not deformation, XY pixel and aspect ratio are both 4:3, PAL input is 768x576, NTSC input is 640x480, square pixel mode is default.

Non Square Pixel Mode: image is a little deformation, PAL input is 720x576,NTSC input is 720x480.

Input: display dimension, model.

Dim: when image is not clipped, capture dimension is the same as input, if image is clipped, it will display dimension of image clipping.

Image Clipping: Through adjust up and down around the boundary to cut off image, such as, the bottom has black edging, click bottom"+" to clip. The step size of 2 pixels, if you want recovery, click top"-".

Notes: when you clip image, please set scale "Fill output image" to watch clipping effect conveniently.

9.4.2 Image Processing

Generically, default value need not adjust, but in different environments if image brightness, color, noise cannot reach best, you can fine-tune to achieve best.

Luma Gain: Default value is 1600, increasing or decreasing brightness according to requirement. If you choose "**Auto**", image brightness will be dynamically auto according to input signal.

Chroma Gain: Default value is 910, adjust image to black and white, raise image color to be brighter and brighter. If check "**Auto**", image color will be dynamically auto according to input signal.

Denoise: 4 is default, if image noise is more, you can raise denosie, image noise will be significantly less, but image definition is slightly worse.

9.4.3 Image Output

Display output format of current image, set image zoom scale, de-interlace and image flipping.

- Format: display output image size, frame rate, color format.
- Scale: if image size is not unified with user setting, we provide three ways, full output image and keep aspect ratio, fill border to black and keep aspect ratio,

clip border. Full output image and keep aspect ratio is default.

- De-interlace: vertical blend, motion adaptive. Motion adaptive is better, but it takes up high CPU usage, also you can choose “disabled”.

9.5 "Color Adjustment" Instruction

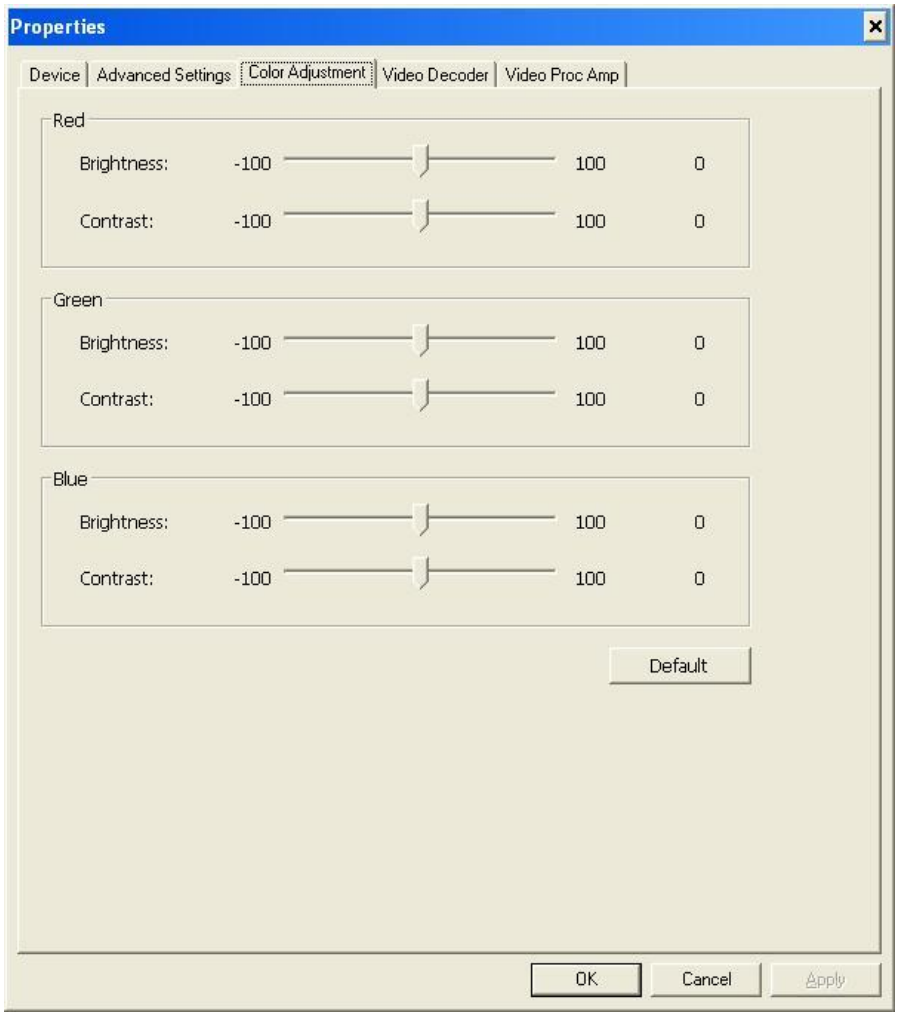

Figure 12，HD device “Color Adjustment” properties page

Here can be adjusted R, G, B brightness and contrast separately, click "**Default**" to restore default values.

10 Video Formats Setting

Driver is redefined "**Filter Output Pin**" interface and unified standard for SD and

HD. Output resolution can be any size, even special resolution which is cut.

10.1 Display "Filter Output Pin" In Common Software

- **AMCAP:** Double click "**AmCap.exe**", choose HD video device "**HD Video (XI102XE Adapter1)**" in "**Devices**" menu, then click "**Video Capture Pin ...**"in "**Settings**" menu, pop-up " **Filter Output Pin** ".

10.2 "Out Format" Instruction

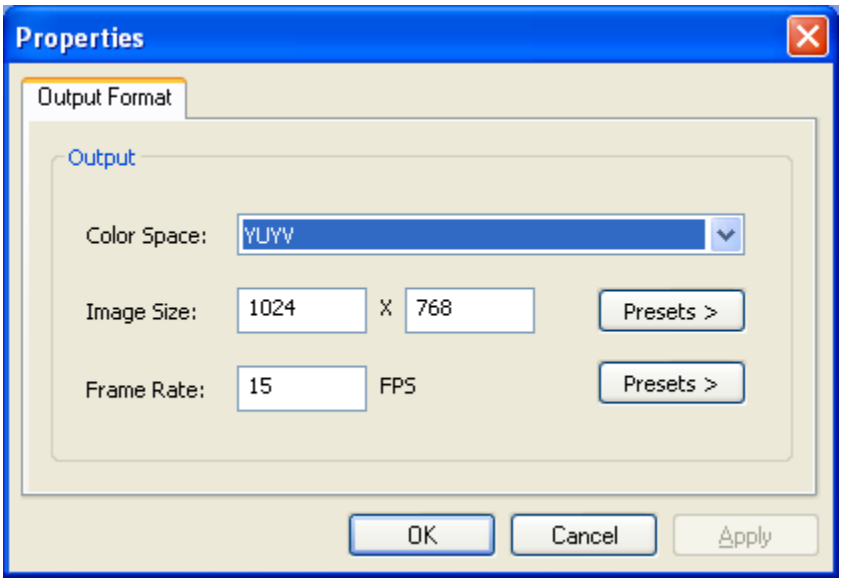

Figure 13,""properties page

Color Space: offer five color formats, YUYV, UYVY, I420, RGB 24 Bits, and RGB 32 Bits.

Image Size: set image size of output, it can be written manually, or select output resolution from "**Presets**", the bold font resolution at the top is the same as capture image, it is the best resolution.

Frame Rate: set output frame rate, it can be written manually, or select from "**Presets**". If application software is set output frame rate, now setting is no effect, when you open again, it will return frame rate in application software.

11 Audio Capture Device Instruction

XI102XE is based on the Microsoft DirectShow interface. After installation in operating system, the relevant audio devices will be added on. Any software which is compatible with DirectSound, DirectShow can use the recording device for capturing sound, and then recorded as voices that HDMI and analog line are mixed. Also "**Volume**" and "**Mute**" in HDMI and analog line can be independently controlled.

11.1 Windows XP, Windows 2003

The name of audio capture device under Windows XP, Windows 2003:

- Audio (XI102XE Adapter x)

Through system "**Volume Control**" to adjust recording volume, specific steps as follows:

1. In system notification icon area on right corner double-click "  " button to pop-up " **Open Volume Control**" window.
2. Open "**Options**" menu, select "**Properties**" menu item.
3. In "**Mixer**", select "**Audio (XI102XE Adapter x)**", click "**OK**" button.
4. Corresponding volume control project will be displayed, this time you can operate volume and "**quiet**" according to your requirement.

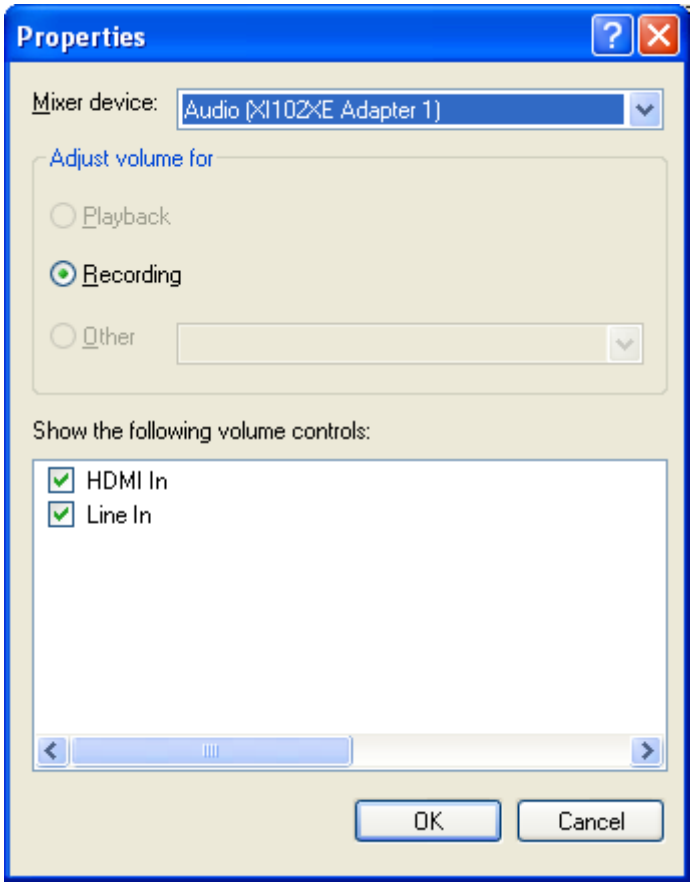

Figure 14，Windows XP/2003"VolumeControl"-"Properties" dialogue

11.2 Windows Vista, Windows 7, Windows 2008, Windows 2008 R2

Under such operating systems, each capture card will show two audio capture devices:

- HDMI In (XI102XE Adapter x)
- Line In (XI102XE Adapter x)

Through system "**Volume Control**" to adjust the recording volume, specific steps as follows:

1. In system notification icon area on right corner right-click "  "button, select "**Recording devices**" in pop-up menu.
2. In pop-up list which displays recording device, select "**HDMI In**" or "**Line In**", click "**Properties**" button, system will pop up device properties dialog window.
3. In Properties dialog box, select "**Levels**" property page, then you can operate

volume control and "**Quiet**" according to your requirement.

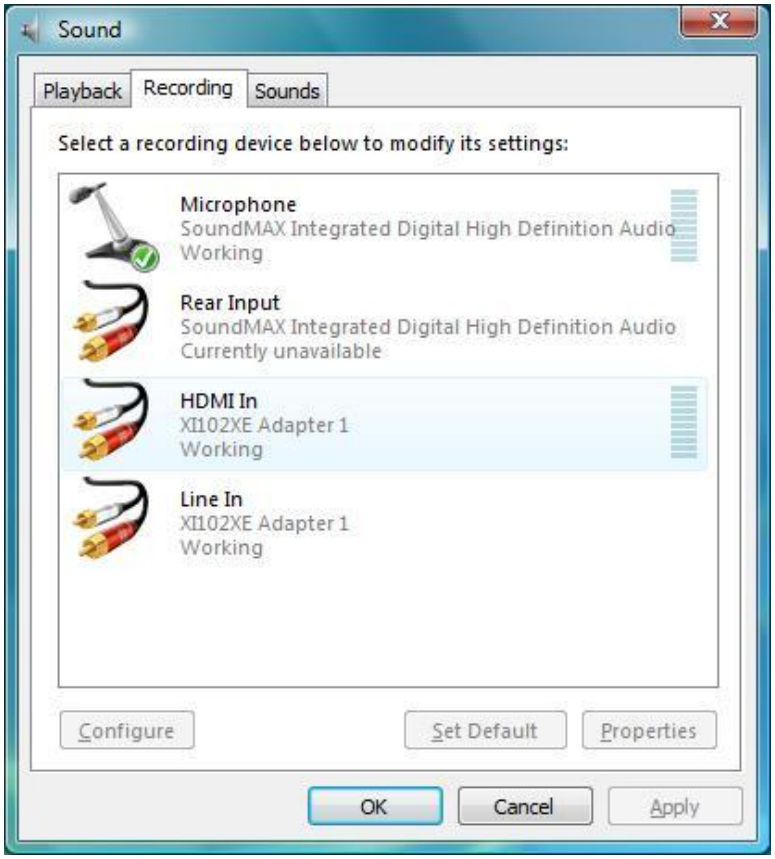

Figure 15, Windows Vista/7 recording device properties dialog windows

12 Compatible Software Instruction

XI102XE can be compatible with variety of audio and video capture software which is based DirectShow interface, and audio capture software which is based DirectSound interface, such as:

- Windows Media Encoder
- Adobe Flash Media Live Encoder
- Real Producer Plus
- VideoLAN for Windows

