MAGEWELL™

# Pro Capture

# Video Capture Card Driver

User Manual

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# 1. Safety information

## 1.1 Electrical safety

1.1.1 When devices are added to or removed from the system, ensure that the computer is turned off before the signal cables are connected. If possible, disconnect all power cables from the computer before you add a device.

1.1.2 Make sure that your power supply is set to the correct voltage for the supply in your area.

1.1.3 If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.

1.1.4 If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

## 1.2 Operation safety

1.2.1 Before installing devices on your motherboard, carefully read all the manuals that came with the package.

1.2.2 Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.

1.2.3 To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.

1.2.4 Avoid dust, humidity, and extreme temperature. Do not place the product in any area where it may be exposed to moisture.

1.2.5 Place the product on a stable surface.

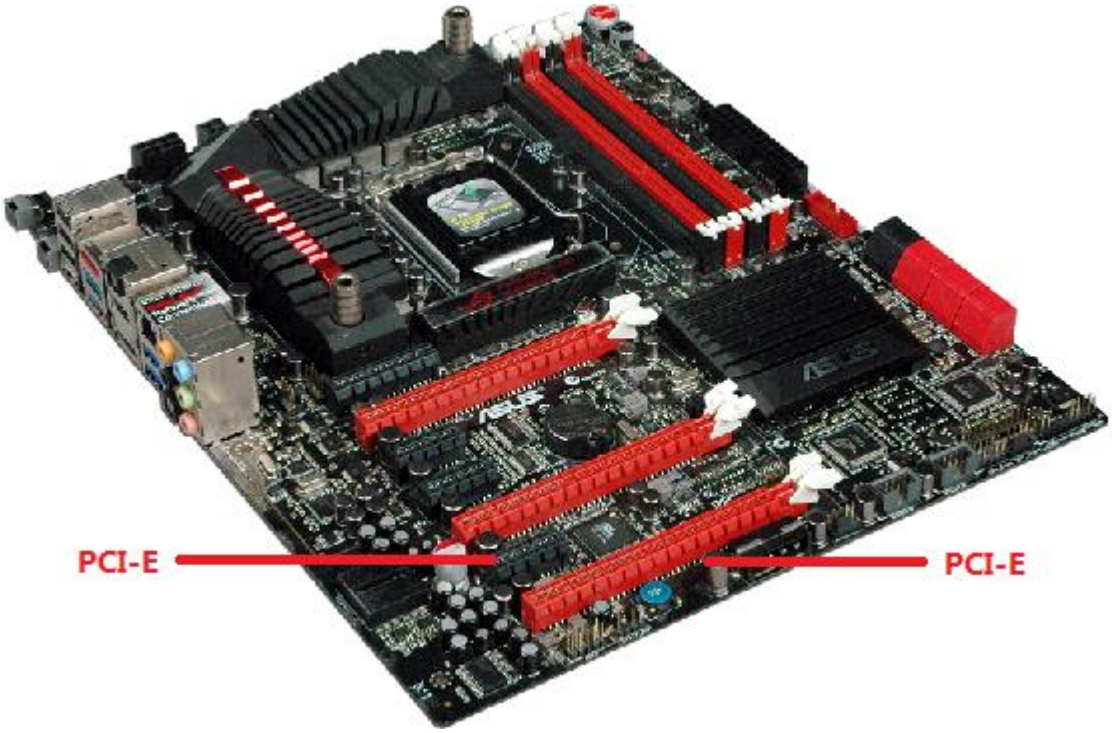
1.2.6 If you encounter technical problems with the product, contact a qualified service technician or your retailer.

# 2. Video Capture Card Hardware Installation

**Steps：**

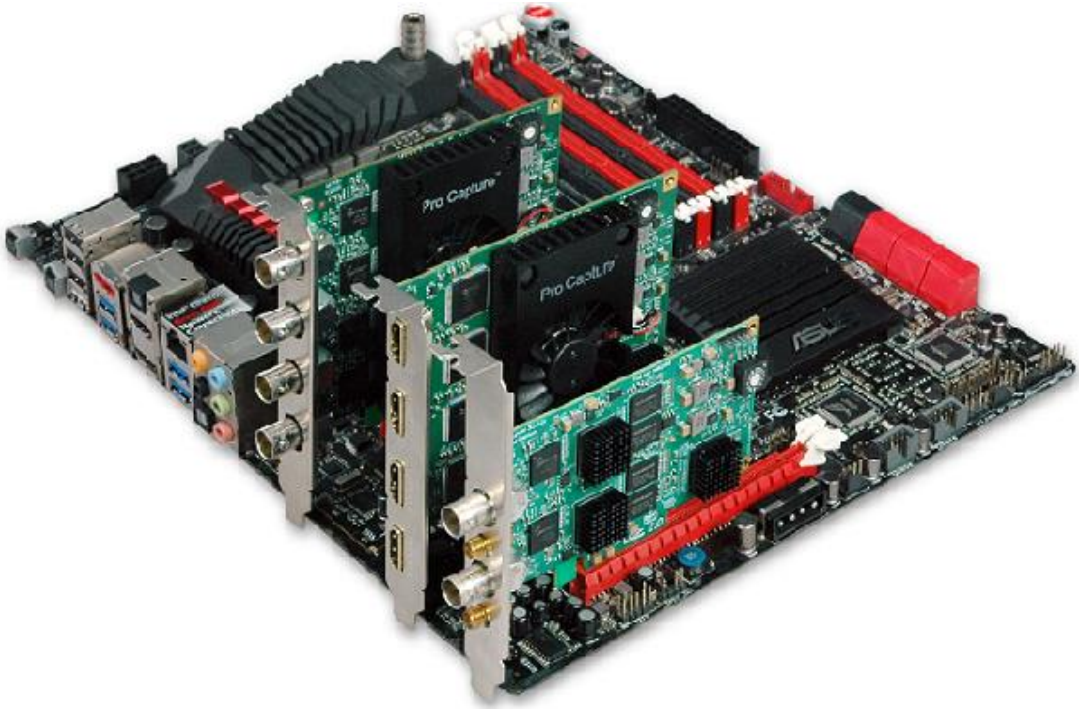
1． Please turn off the computer power and unplug the power cable.
2． Remove the chassis cover and locate the PCI Express slot(s).

*(Sample Motherboard inside the chassis：)*



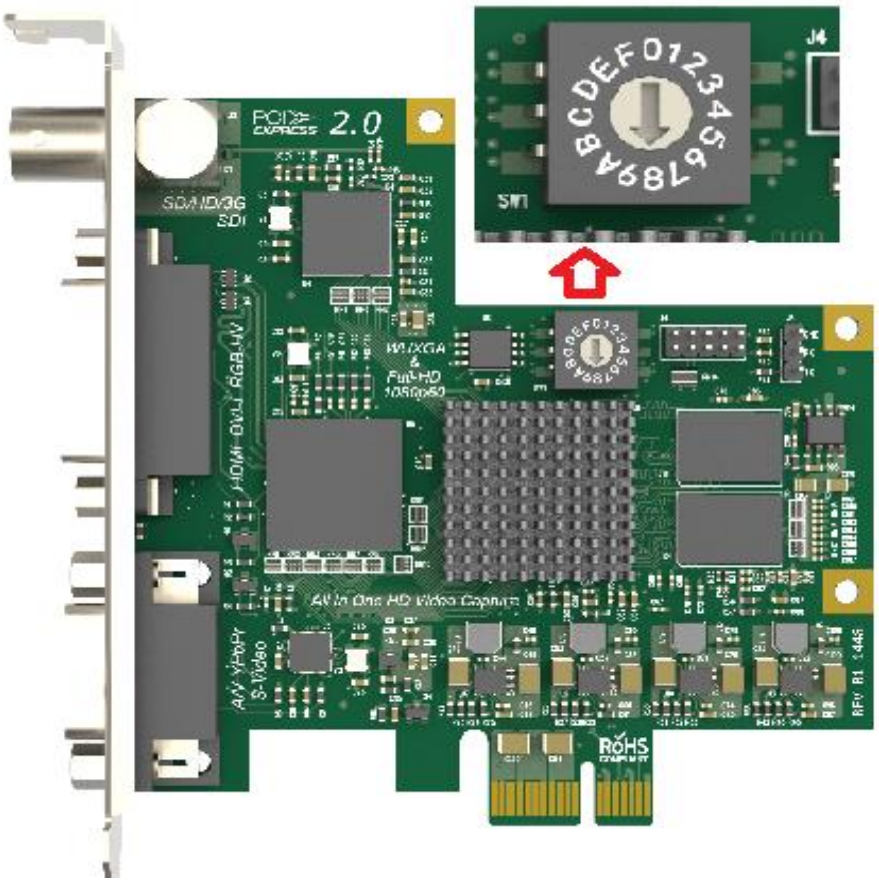

3． Move the retaining clip to the “open” position (usually by pushing down on it) on the PCIe slot into which you are going to insert the card.
4． Plug the Video Capture Card into the slot and make sure it is firmly seated.

*(Motherboard inside the chassis with capture cards installed)*



5 . Use a screw to attach the card to the rear panel of the chassis.

6 . If multiple cards are to be installed, it is advisable to set the ID number of each card before installation. There is a rotary switch on each card marked in hexadecimal from 0 to F. Users should set a different number for each card according to their needs. After the ID numbers are set, users can install the cards according to Steps 3-5.



7． Replace the chassis cover.

8． For DVI cards and others with analogue inputs, use the included breakout cable to go between the video source and the connector on the Capture Card itself.

9． Reconnect all the power cables.

# 3. Video Capture Card driver installation

## 3.1 System requirement

a. **Minimum requirements：** CPU - Intel Core 2 Duo E7200; RAM - 1GB; integrated graphics card; integrated sound card.

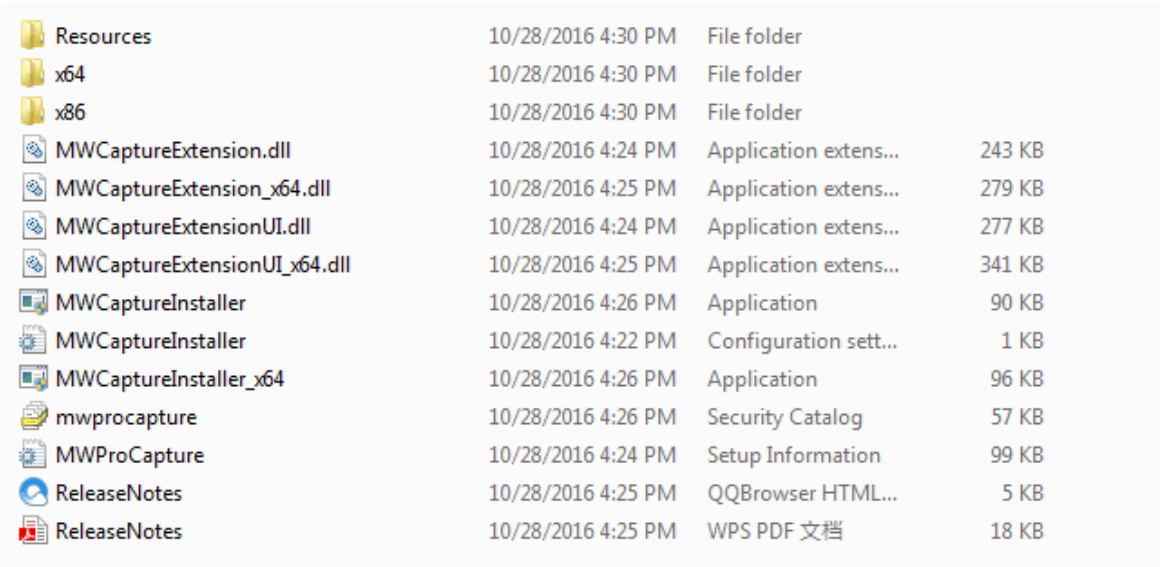
b. **Recommended：** CPU - Intel Core 2 Quad Q6600; RAM - 2GB; Graphics Card - Intel HD Graphics 3000.

c. **Supported Operating Systems：** Windows 7 / Windows 8 / Windows 8.1 / Windows 2008 / Windows 10

## 3.2 Driver installation and uninstallation

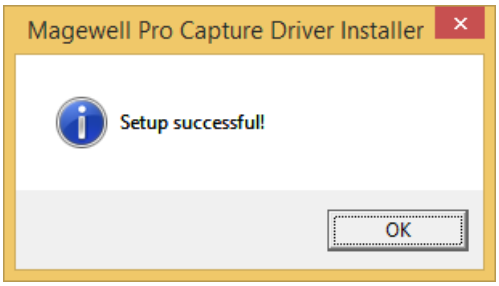
### Driver installation guide：

1． Open the driver installations source folder. Based on the current operating system, choose the applicable program. (MWCaptureInstaller.exe for 32bit systems or MWCaptureInstaller_x64.exe for 64bit systems)



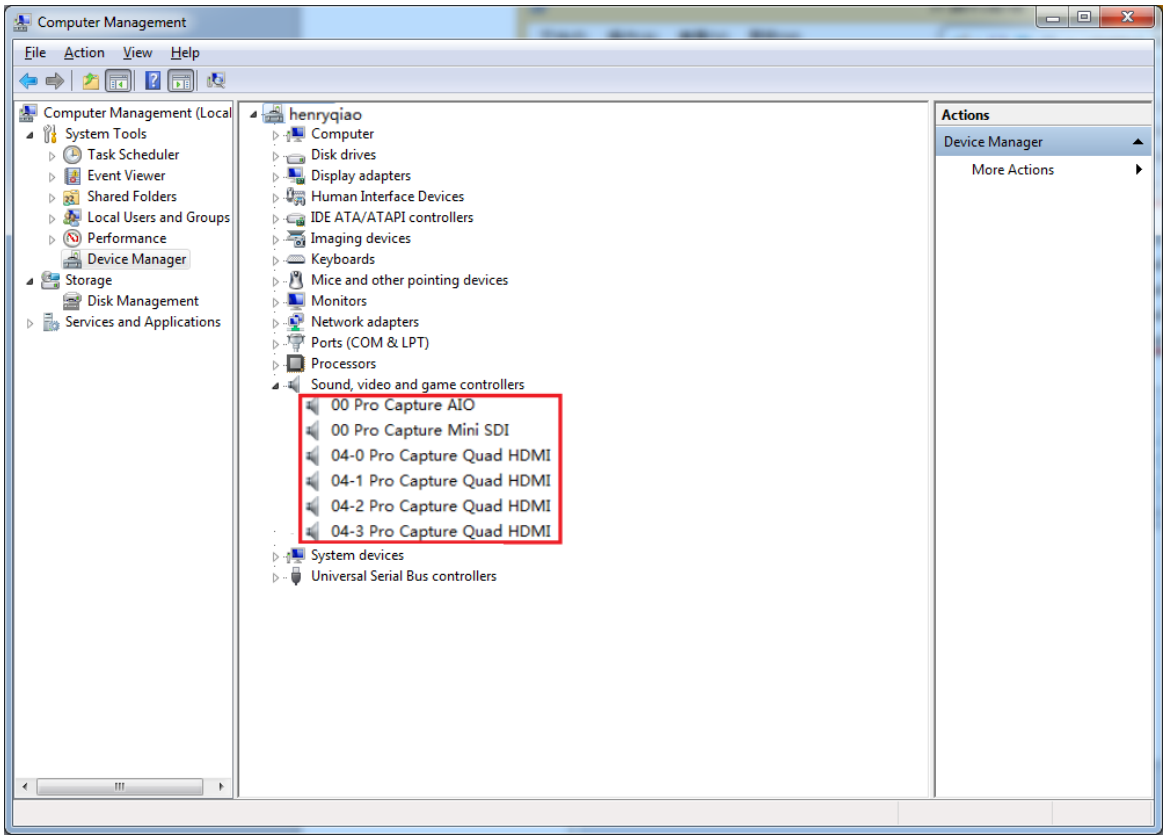

2． Double click on the selected installer to run it and the window below will appear.


3． After the installation has finished, a notification will appear to show if the installation was successful.




4． Click “OK” to finish the installation.

5． To confirm whether the installation was successful, right click “My Computer” and select Management -> Device Manager -> Sound, video and game controllers -> and then check that your capture card model(s) are shown in the list of installed devices




In the device list above, you can see all the capture cards that are installed in this computer. The number before the Pro Capture card name is the ID number of the card. (Eg. 00 or 04 in the example above.) This is the number set via the rotary switch on the card. For multi-channel cards, the channel number will be added after the ID number of the card. (Eg. 04-0，04-1，04-2，04-3 for a Quad card)

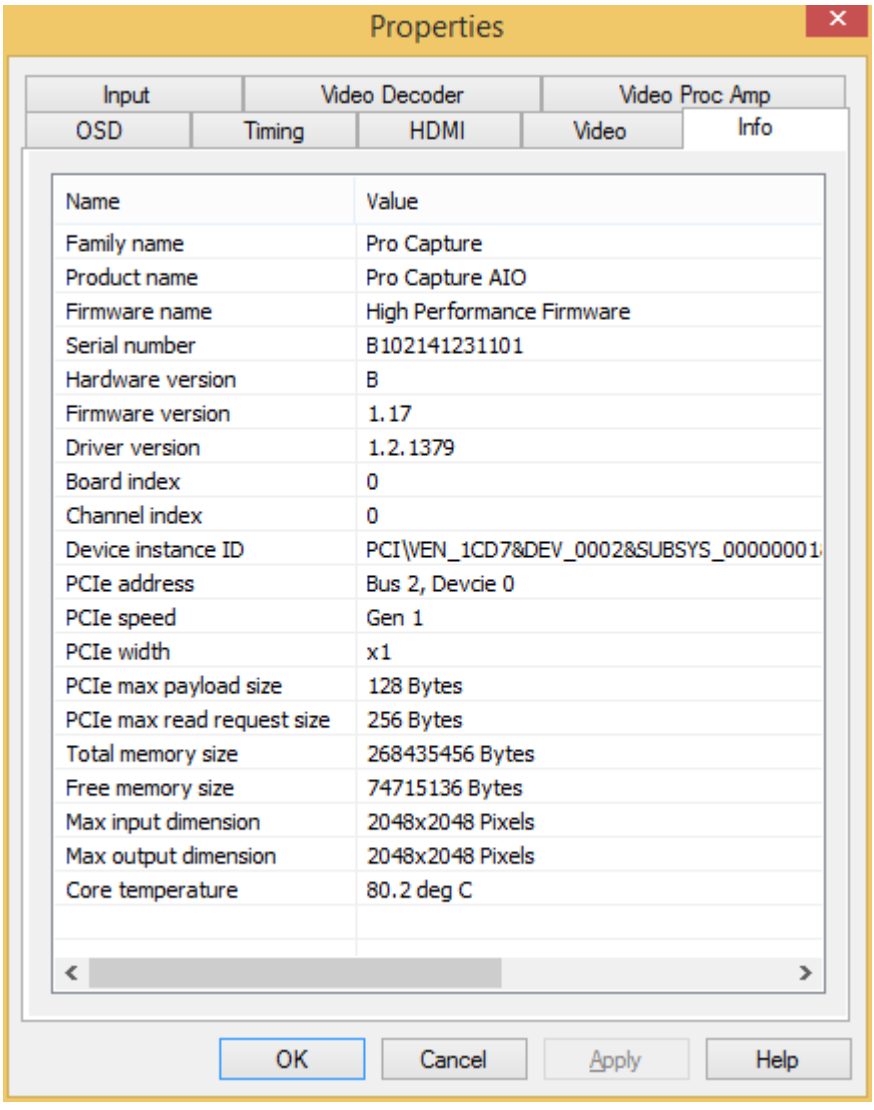
d. Choose a capture device and right click Properties ->Driver. Check the version of the current driver. If it is the same as the installed driver, the installation has been successful.

**Driver uninstallation：**

1．Right click “My Computer” and select Management->Device Manager->Sound, video and game controllers -> {capture card model}
2．Right click on the card name and choose Uninstall
3．Click Delete driver and Confirm to finish the uninstall process.

# 4. Settings

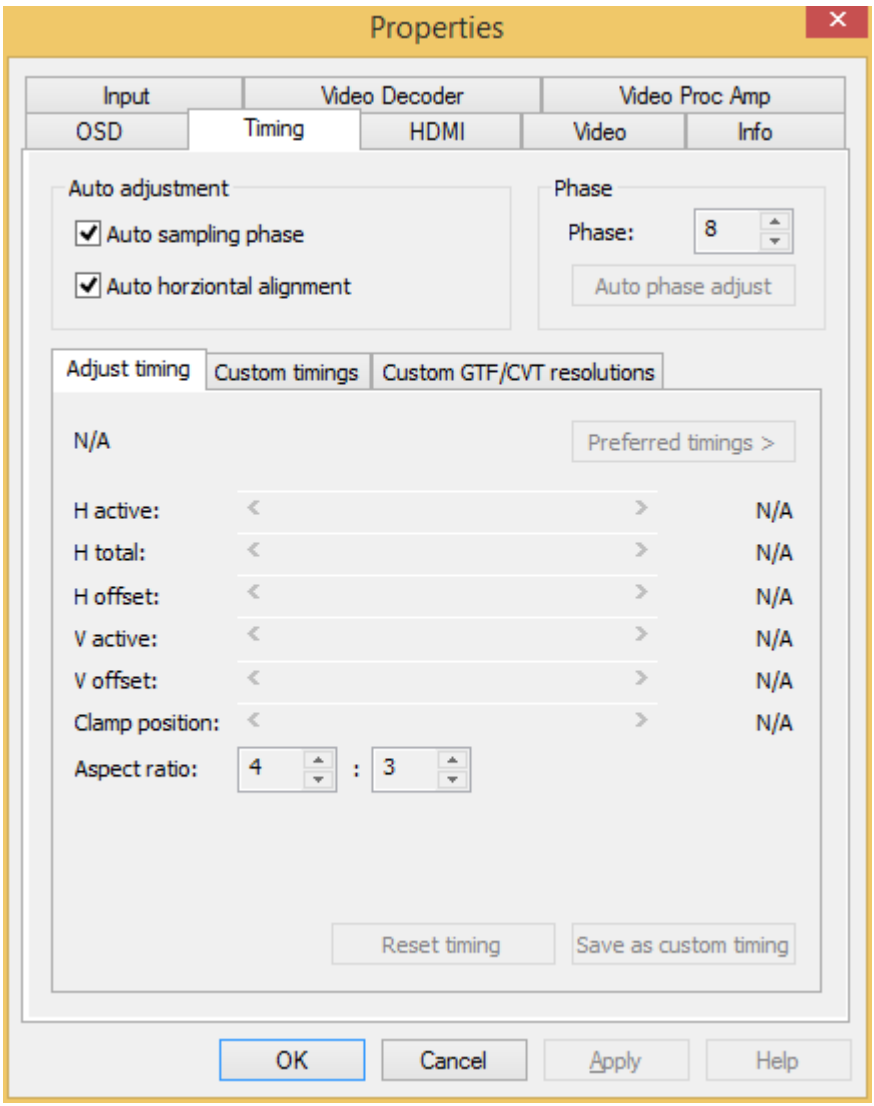
## 4.1 Info



| Item | Item Description |
|---|---|
| Family name | Name of the product family (Pro Capture) |
| Product name | Name of this specific product |
| Firmware name | Name of the firmware |
| Serial number | Serial number |
| Hardware version | Hardware version of this product |
| Firmware version | Firmware version currently installed |
| Driver version | Driver version currently in use |
| Board index | Board ID number, a hexadecimal value from 0 to F. Set via a rotary switch on the card, as described in section 2.6 . |
| Channel index | The zero-based channel number. It will be 0 for a single channel card. The number can be 1 or 2 for a dual channel card; 1, 2, 3 or 4 for a quad channel card. |
| Device instance ID | Device instance ID. The key value can be found in the registry at location：Registry\Computer\HKEY LOCAL MACHINE\SYSTEM\CurrentControlSet\services\Procapture |
| PCIe address | Shows Bus number and Device number |
| PCIe speed | Bus speed (eg Gen1, Gen 2) |
| PCIe width | Bus bandwidth (options are x1, x2, x4, x8, x16) |
| PCIe max payload size | Max length of valid bus data |
| PCIe max read request size | Max size of read request |
| Total memory size | Current onboard memory size (eg 256MB) |
| Free memory size | |
| Max input dimension | Max video input resolution |
| Max output dimension | Max video output resolution |
| Core temperature | Current temperature of FPGA chip core |

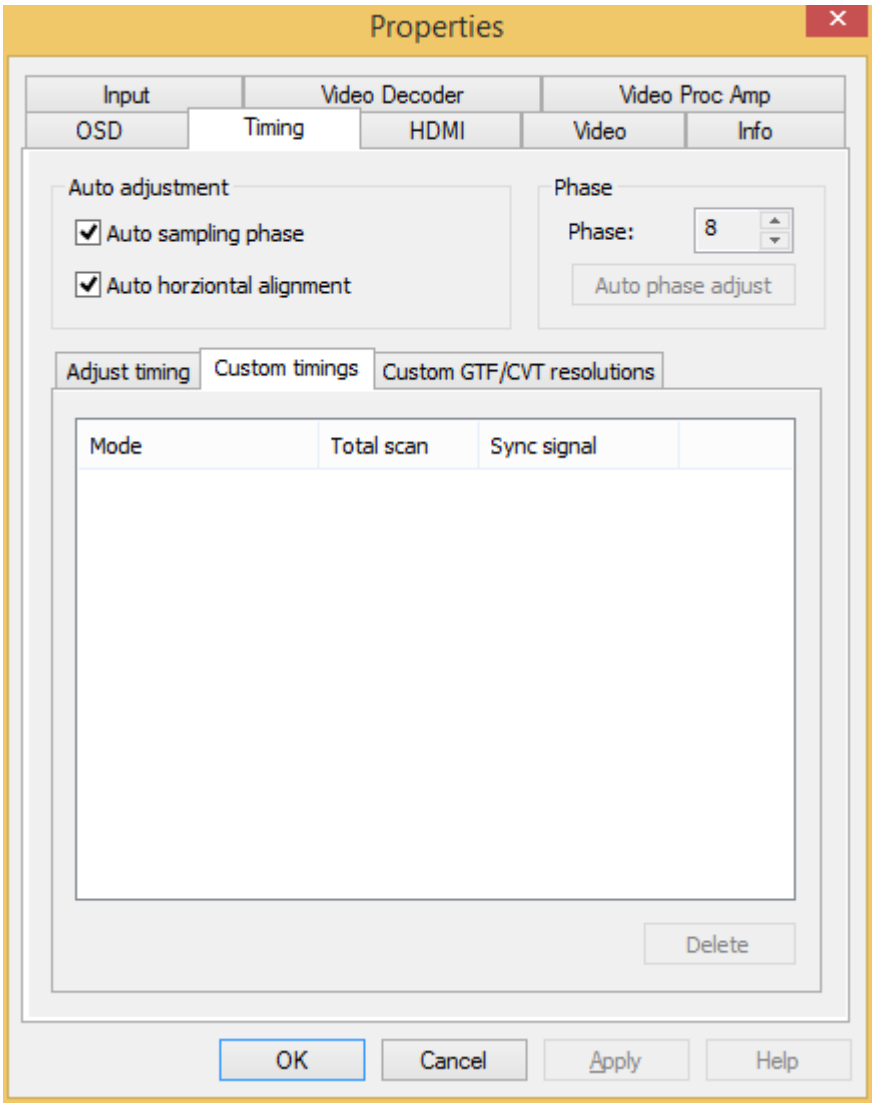
## 4. 2 “Timing” tab

Note: When the capture card in use has a YUV component or VGA capture interface, this Timing tab will be shown. See the picture below.

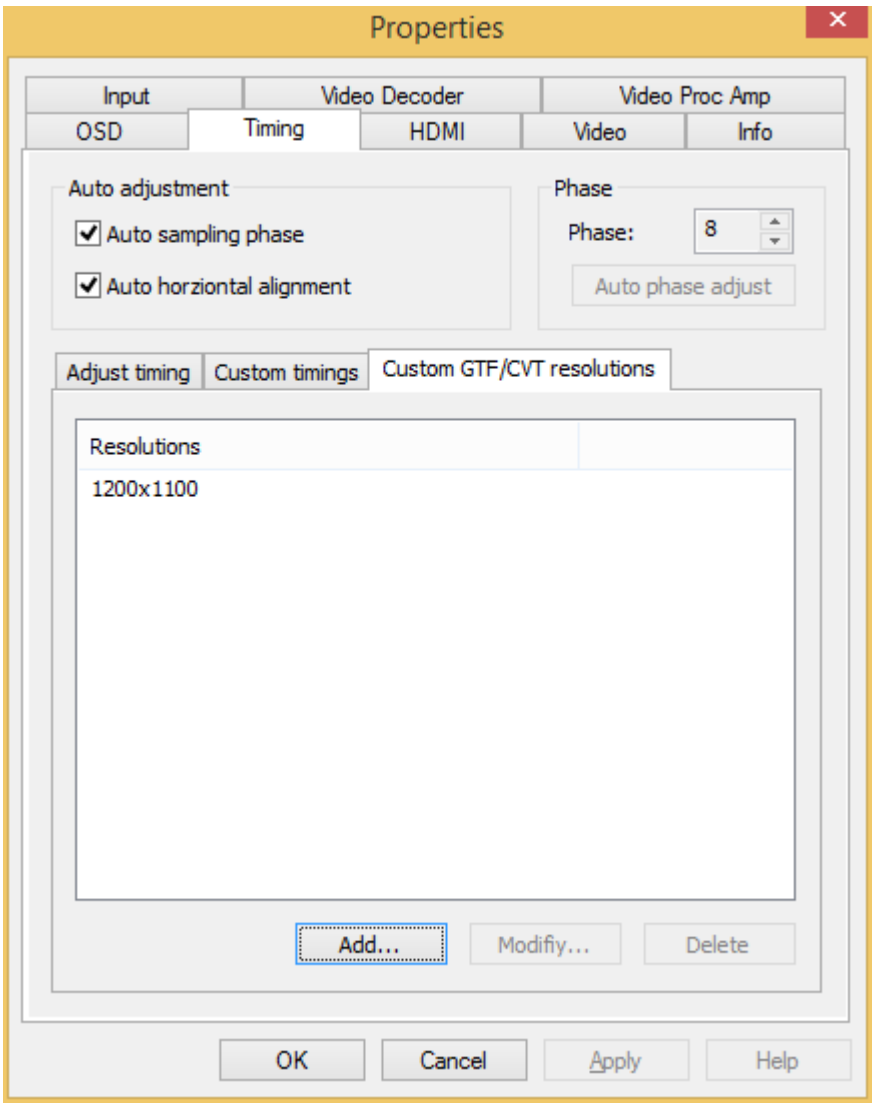



| Item Name | Item Description |
|---|---|
| Auto sampling phase | Ticked by default. The capture will automatically make slight adjustments to the video to achieve optimum clarity. |
| Auto horizontal alignment | Ticked by default. The card automatically makes adjustments to try to attain the correct horizontal position of the video. |
| Phase | Manual and automatic adjustments are possible. The range is 0-63. |
| Adjust timing | The current resolution and frame rate will be shown automatically. If they don’t appear to be correct, the user can click “Reset timing”. If the auto-detected timings are unsatisfactory, untick the “Auto adjustment” boxes above and then manually adjust any of the settings as required. Click “Save as custom timing” to save the new settings for future use when capturing the same signal again. Click “Reset timing” to restore the default settings.<br>NOTE: If you wish to abandon an attempt to create manual |

| | |
|---|---|
| | settings, and revert to using “Auto” settings, you must first click the “Reset timing” button before ticking the “Auto” settings box(es), or else you will remain in manual mode. |
| H offset | Increase the value to move the image left |
| V offset | Increase the value to move the image upwards |



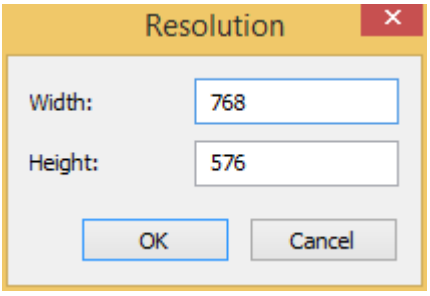

| **Item Name** | **Item Description** |
|---|---|
| Custom timings | This shows the chosen setting in “Adjust timing”, including resolution, frame rate, pixel sampling, and synchronization method. When the same video signal is connected again, the card will automatically show the video according to the previously saved setting. If the user wants to delete the past setting(s), they can choose the setting in “Custom timings” and click “Delete”. |



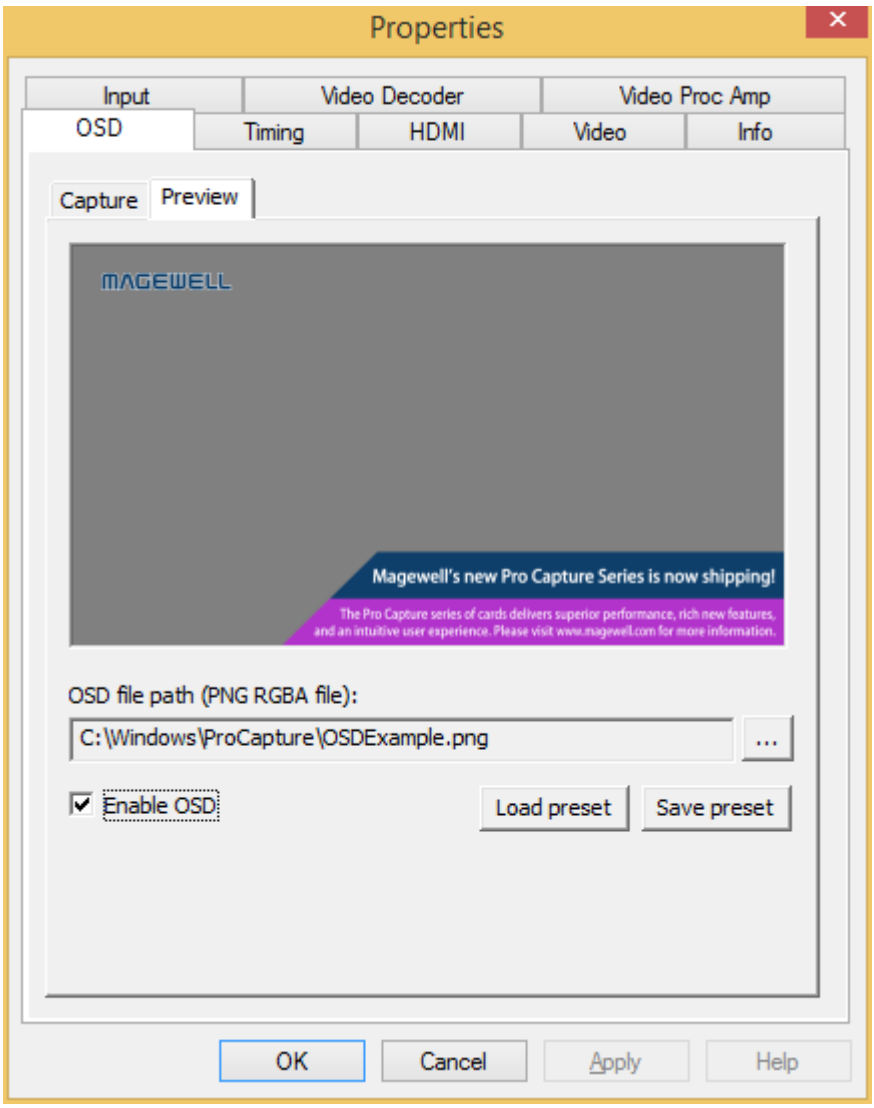

| Item Name | Item Description |
|---|---|
| Custom GTF/CVT resolutions | If adjustments made in the “Timing Adjustment ” tab cannot achieve satisfactory results, users can manually a the resolution that meets GTF or CVT standards. |

To add a new resolution：

- Click “Add” and input a valid Width and Height, or “Modify” to change existing values.



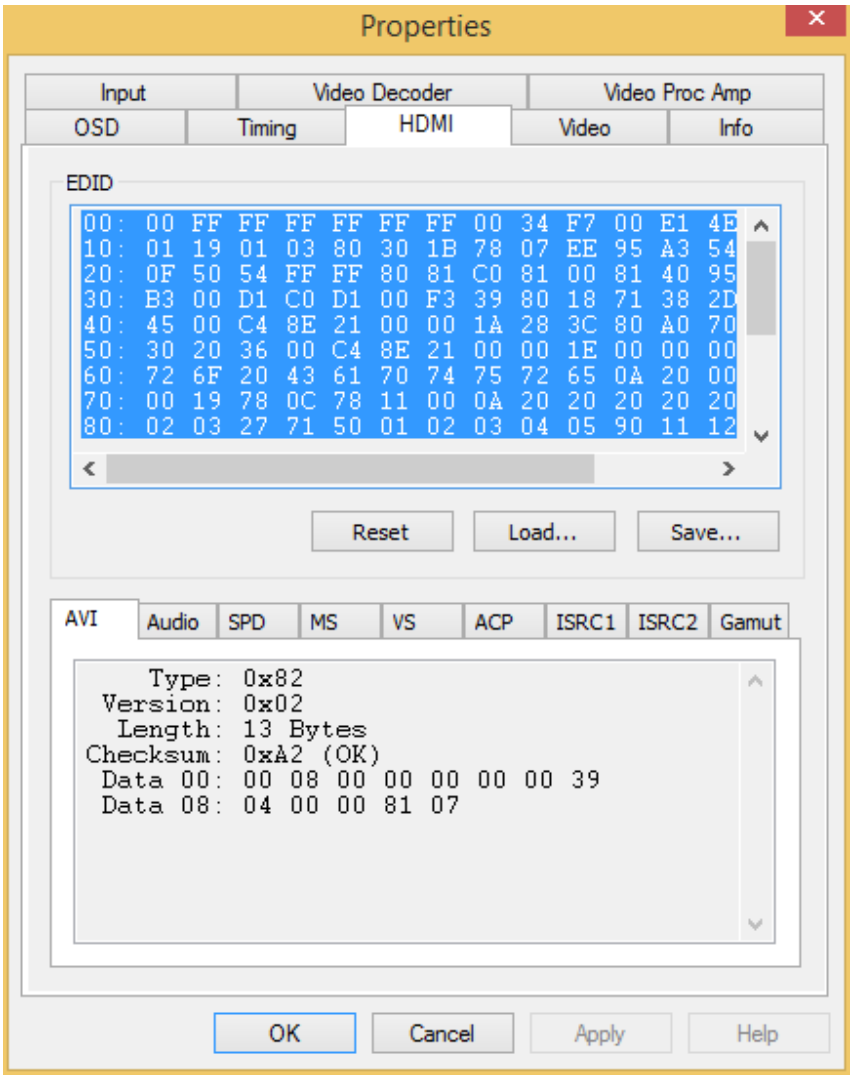
## 4. 3 “OSD” tab




An image with transparency (ie. alpha channel) can by overlaid on the incoming video by using the OnScreenDisplay (OSD) function. Browse to select a suitable 32bit PNG image to use for the OSD. Click “Enable OSD” to activate the overlay. Click “Save preset” to save the current image/path as a template. Users can click “Load preset” to load a previously saved image.

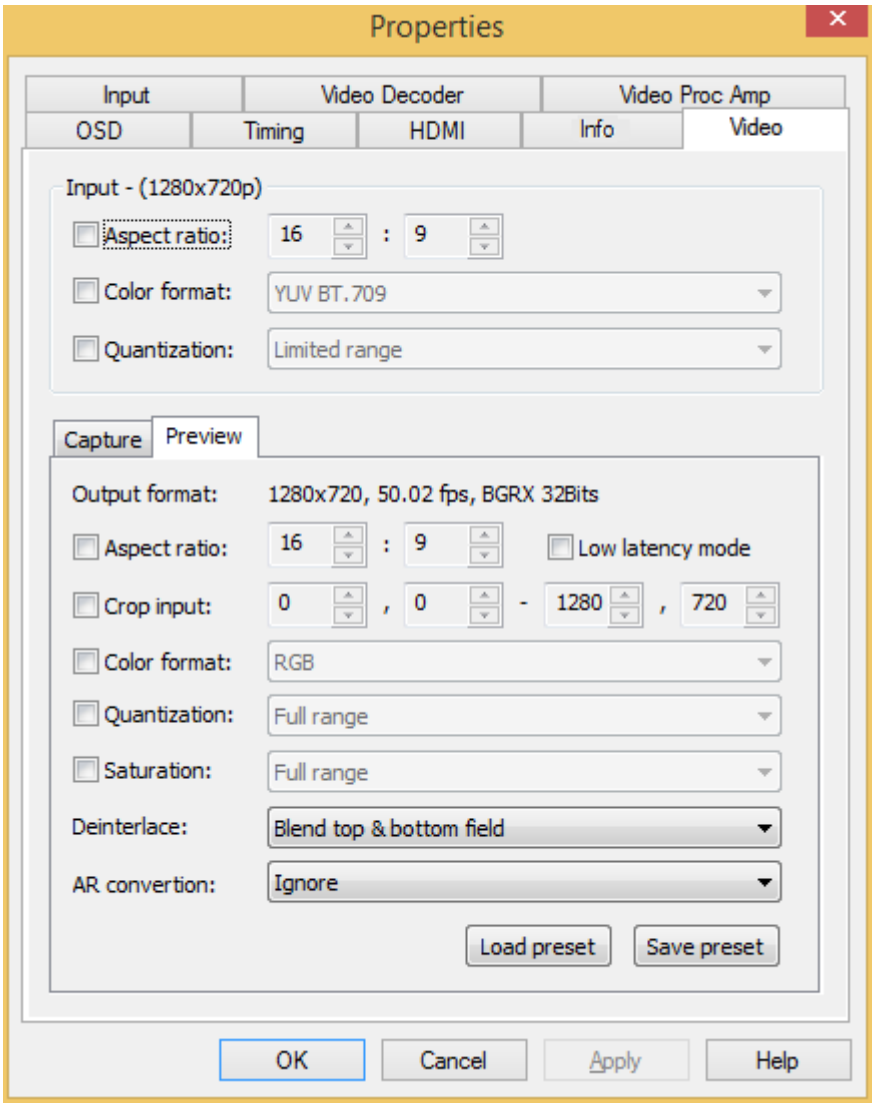
## 4. 4 “HDMI” tab

Note : When the capture card has one or more HDMI interface(s), the “HDMI” tab will be available in the control panel. See the picture below.




| Item Name | Item Description |
|---|---|
| EDID | Standard data in VESA format. It shows the supplier's information, max resolution, color settings, manufacturer's preset, frequency range, name of monitor and string of serial number. |
| Reset | Reset the current HDMI signal. When EDID is changed, please press this button to reset the video signal. |
| Load | Click to choose a local EDID file to load. |
| Save | Click to save the current EDID to the desired location. |
| AVI | Describes type, version and verify bit of the video stream and whether it is necessary to verify it. |
| Audio | Describes the type, version and verify bit of the audio stream and whether it is necessary to verify it. |
| Length | The length of the data string listed below |
| SPD, MS, VS, ACP, ISRC1, ISRC2, Gamut | Display information of the HDMI Info Frame |

## 4. 5 The “Video” tab

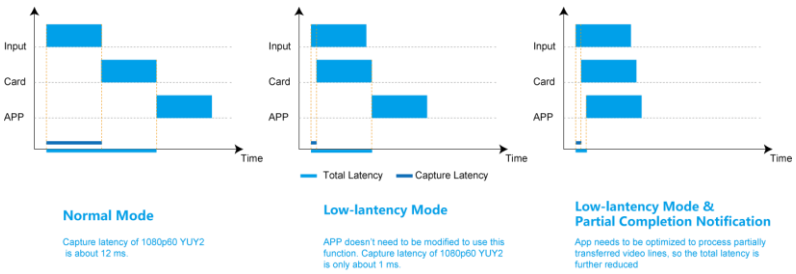



Note : If a box is not ticked, the current related value is shown. If a different value is required, users need to tick the box first and then set the new value.

| Item Name | Item Description |
|---|---|
| Input | Displays the pixel resolution of the current input. When the resolution of the input video stream is changed, this display will also change. |
| Aspect ratio | Displays the aspect ratio of the current input. The card will show the aspect ratio according to the resolution, assuming square pixels. For anamorphic video, users can input the correct aspect ratio in the Preview/Capture section in order to avoid the video appearing distorted. |
| Color format | Displays the color space of the current input. The card will |

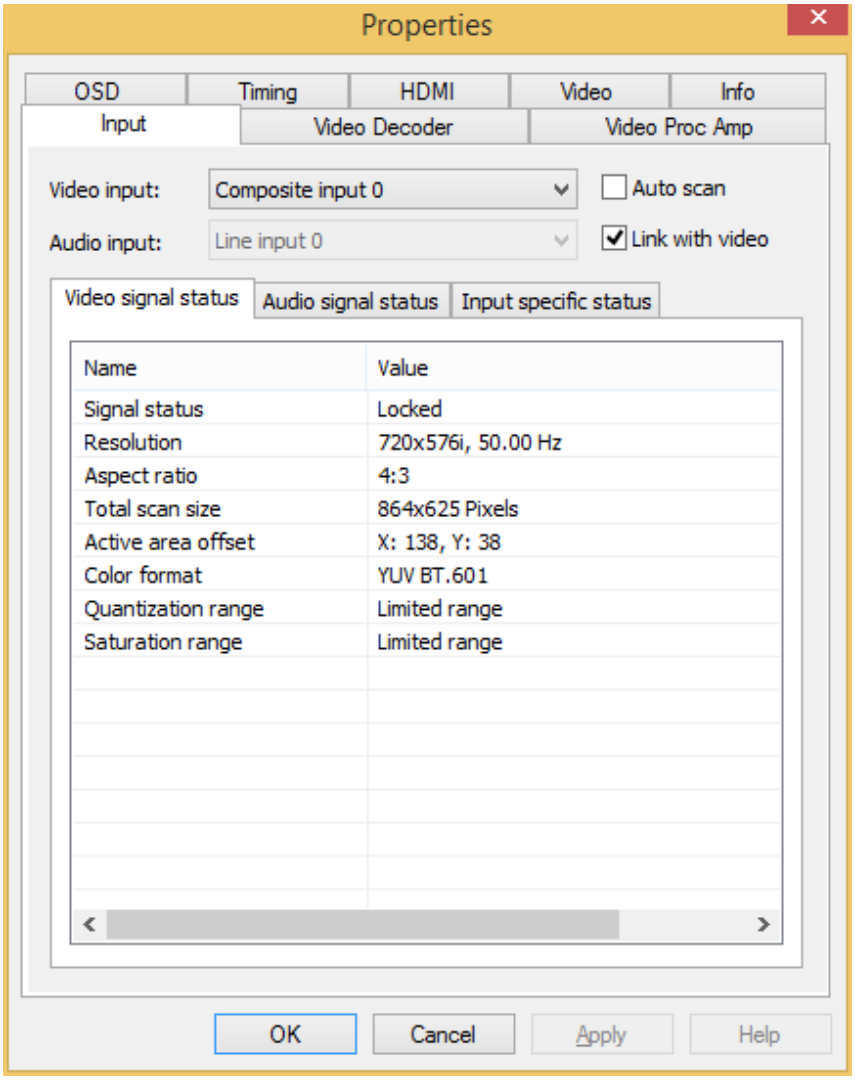
| | |
|---|---|
| | choose the default color space according to the video stream. If users want to change the color space, they can tick the box and select a different option. |
| Quantization | The quantization range. Users can choose full range or limited range. Affects min/max black/white levels. |

Preview：

| Item Name | Item Description |
|---|---|
| Output format | Displays the current resolution, frame rate and color space of the previewed video. When preview settings are changed, the data here will be changed accordingly. |
| Aspect ratio | Displays the aspect ratio of the current output. The card will determine the aspect ratio according to the resolution. For anamorphic video, users can input the correct aspect ratio in order to avoid the video appearing distorted. |
| Low latency mode | The latency will be reduced when low latency mode is chosen. It can be very useful and the benefit is obvious in video conferencing.   |
| Crop input | Adjusts the captured pixel area from the input video by cropping the edges, using X/Y pixel values for top/left and lower/right. |
| Color format | Displays the color space of the currently previewed video. The card will choose the default color space according to the video stream. If users want to change the color space, they can tick the box and make a change. |
| Quantization | Quantization range. Users can choose Full range or Limited range. |
| Saturation | Displays the grades of saturation of the input signal. Options are Full range, Limited range and Extended GAMUT range. |
| Deinterlace | Choose the deinterlacing mode. Options include: Weave (ie. none), Blend top and bottom field, Top only and Bottom only. *“Blend top and bottom field” is particularly suitable for when the output resolution is <50% of the input resolution.* |
| AR conversion | Aspect Ratio conversion mode options include: Fill the image and ignore the original aspect ratio, Keep aspect ratio and fill borders with black, Keep aspect ratio and crop to fit |
| Load preset | Load the saved preset |

| | |
|---|---|
| Save preset | Save the current settings as the default. After the settings in the “Preview” tab have been changed, click “Save preset” to save the new settings. They will now become the default settings for the device. |

## 4. 6 “Input” tab

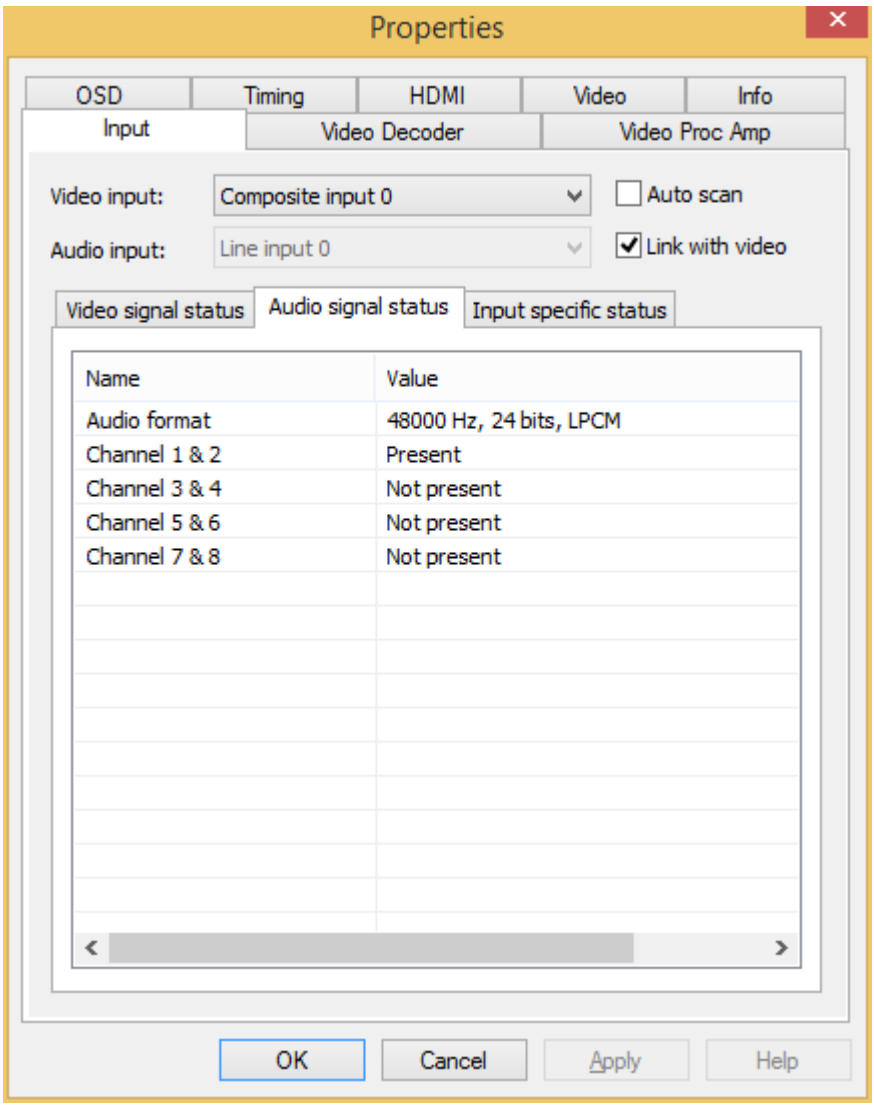



| Item Name | Item Description |
|---|---|
| Auto scan | “Auto scan” mode will look for a valid input signal using a fixed hierarchy, starting with digital signals before scanning for analogue signals. When unticked, users can manually choose the input signal. |
| Link with video | Auto-scans the audio signal related to the video signal. If the video signal is changed, the audio input will be automatically changed to match the video input. |

## Video Signal status

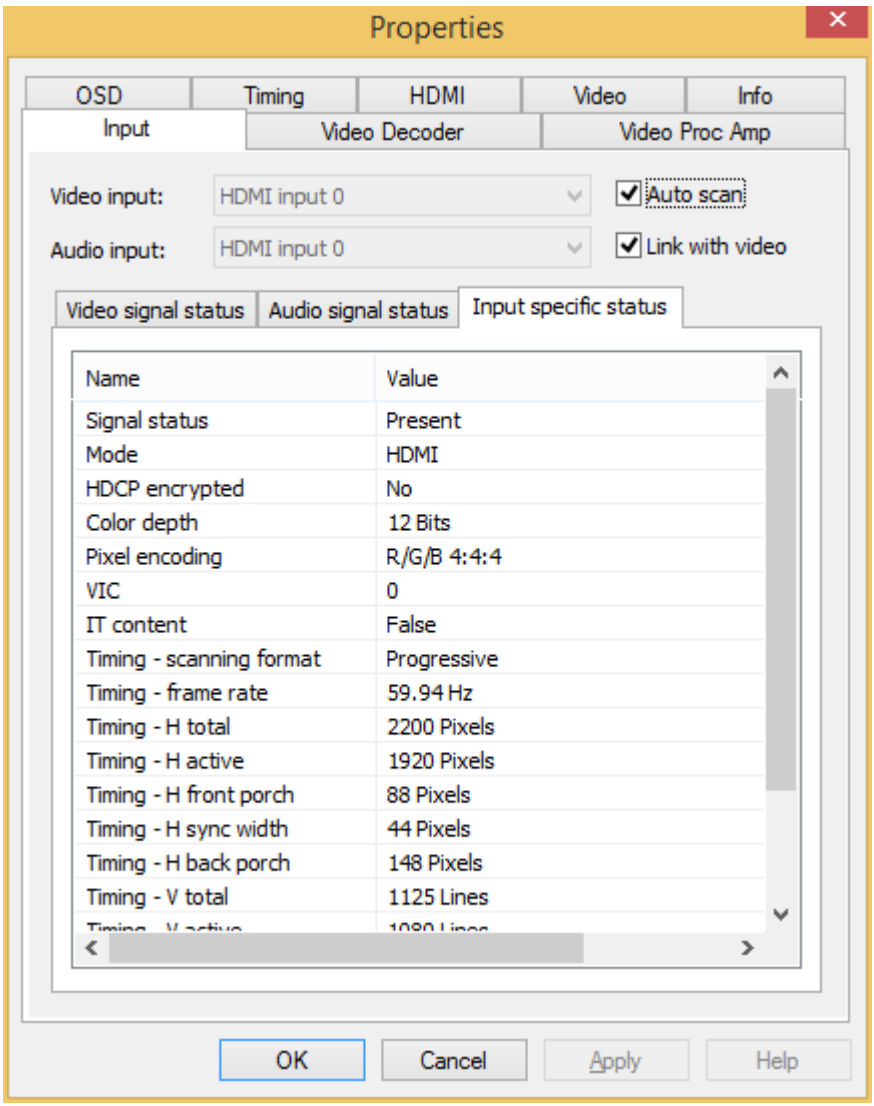
| Item Name | Item Description |
|---|---|
| Signal status | Displays the signal detection status. Options are “Locked” or “No signal”. |
| Resolution | Displays resolution and frame rate of the input video. If the input signal changes, this display will be changed accordingly. |
| Aspect ratio | Displays the aspect ratio of input video source |
| Total scan size | Displays the total scanned pixel area |
| Active area offset | Shows the current horizontal and vertical offset of the active signal within the total area scanned. |
| Color format | Displays the chosen color space of the video signal |
| Quantization range | The luminance quantization range. Options: Full range (eg. 0-255) or Limited range (eg. 16-235/240 – for 8bit inputs). Affects min/max black/white levels. |
| Saturation range | Displays the saturation of the input signal. Options are Full range, Limited range or Extended GAMUT range. |

## Audio Signal status




| Item Name | Item Description |
|---|---|
| Audio format | Displays the sampling frequency, bit depth and format of the current audio. |
| Channels 1&2 | Displays the current audio stream status for each channel pair. Options are “Present” or “Not present”<br>NOTE: These values only indicate the presence of audio *signal pathways*, and are in no way indicative of audio signal *levels*. An audio channel can be shown as “Present” even if no actual audio data is being received (e.g. if the audio has been “muted” upstream of the capture card.) The analogue Line input will always show as “Present” even when no audio cables are connected. |
| Channels 3&4 | |
| Channels 5&6 | |
| Channels 7&8 | |

- **When HDMI signal is connected, “Input specific status” tab：**

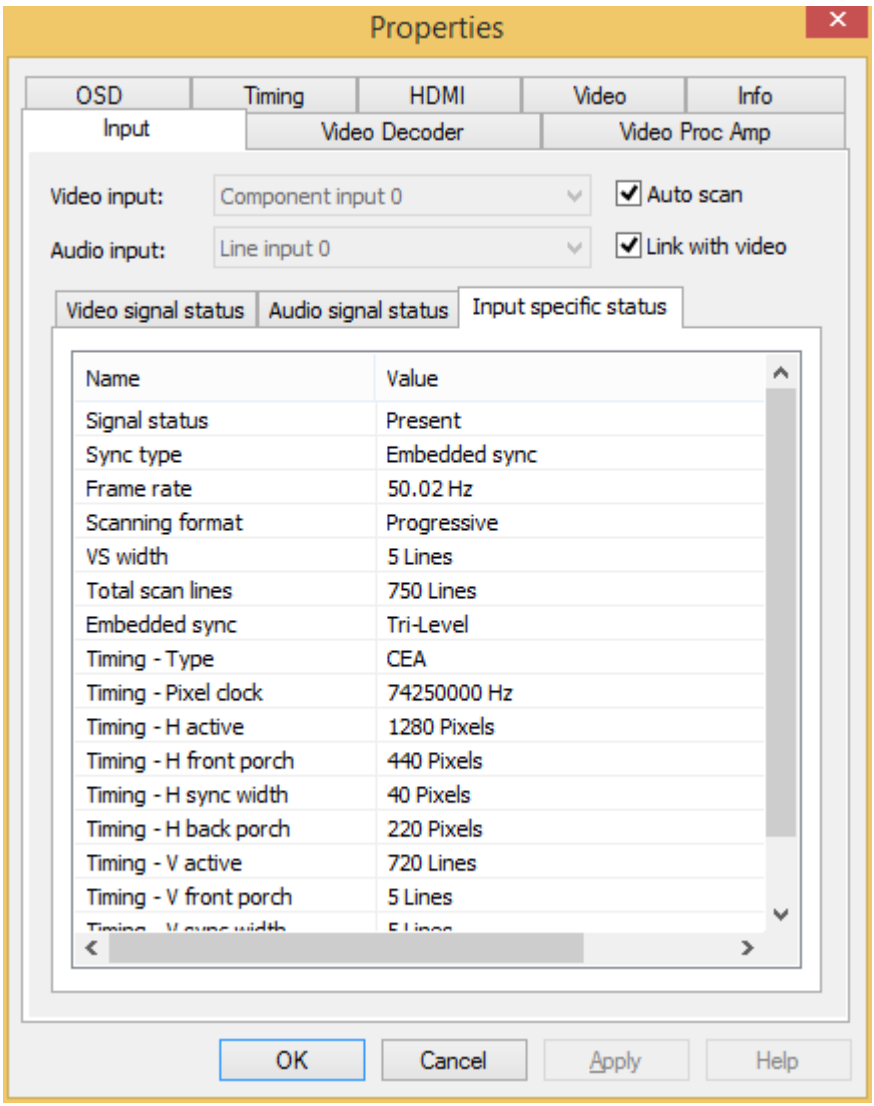



| Item Name | Item Description |
|---|---|
| Signal status | Options are “Present” or “Not present”. |
| Mode | Displays input signal mode (ie. HDMI) |
| HDCP encrypted | Displays whether the signal is HDCP encrypted. Options are “Yes” or “No”. |
| Color depth | Displays the color depth of the current video. Common values are 8 bit, 10 bit and 12 bit. |
| Pixel encoding | Displays pixel encoding. E.g. R/G/B，Y/U/V，Y/Cb/Cr. |
| VIC | Standard video identification code |
| IT content | If True, pictures are compressed according to common IT practice, or particular requirements derived from IT practice. |
| Timing-scanning format | Shows the scan format. E.g. “Progressive” or “Interlaced” |
| Timing-frame rate | Displays the current frame rate |

| | |
|---|---|
| Timing-H total | Total horizontal pixels captured |
| Timing-H active | Active horizontal picture width, in pixels |
| Timing-H front porch | Pixel width between the end of the active horizontal picture and the start of the horizontal sync pulse. |
| Timing-H sync width | Width of the horizontal sync pulse, in pixels |
| Timing-H back porch | Pixel width between the end of the horizontal sync pulse and the start of the next active horizontal picture line. |
| Timing-V total | Total vertical pixels (i.e. Picture lines) captured |
| Timing-V active | Active vertical picture height, in lines |
| Timing-V front porch | Number of lines between the last line of the active vertical picture area and the start of the vertical sync pulse. |
| Timing-V sync width | Width of the vertical sync pulse, in lines |
| Timing-V back porch | Number of lines between the end of the vertical sync pulse and the start of the next active horizontal picture line. |

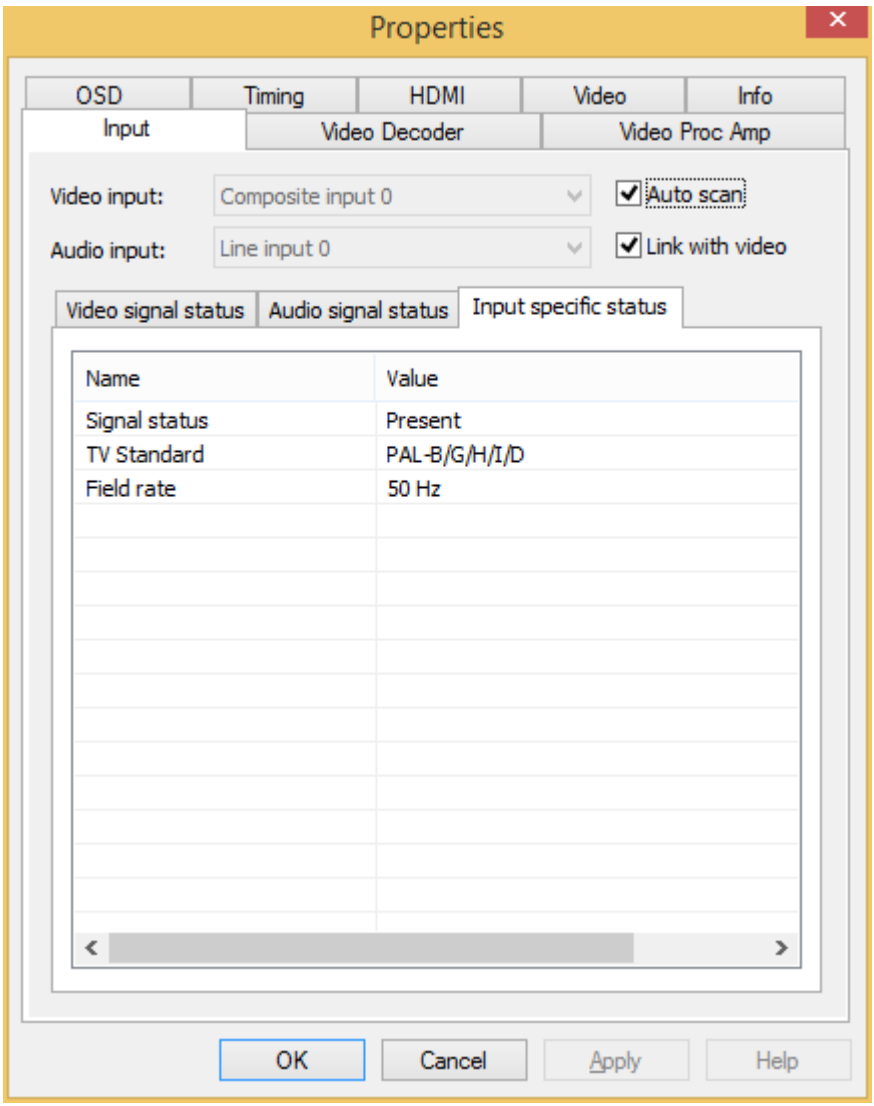
*NOTE: When the input video signal is in interlaced format, the Timing tab will include information for each field separately. (Field-0 and Field-1)*

- **When component signal is connected, "Input specific status" tab：**



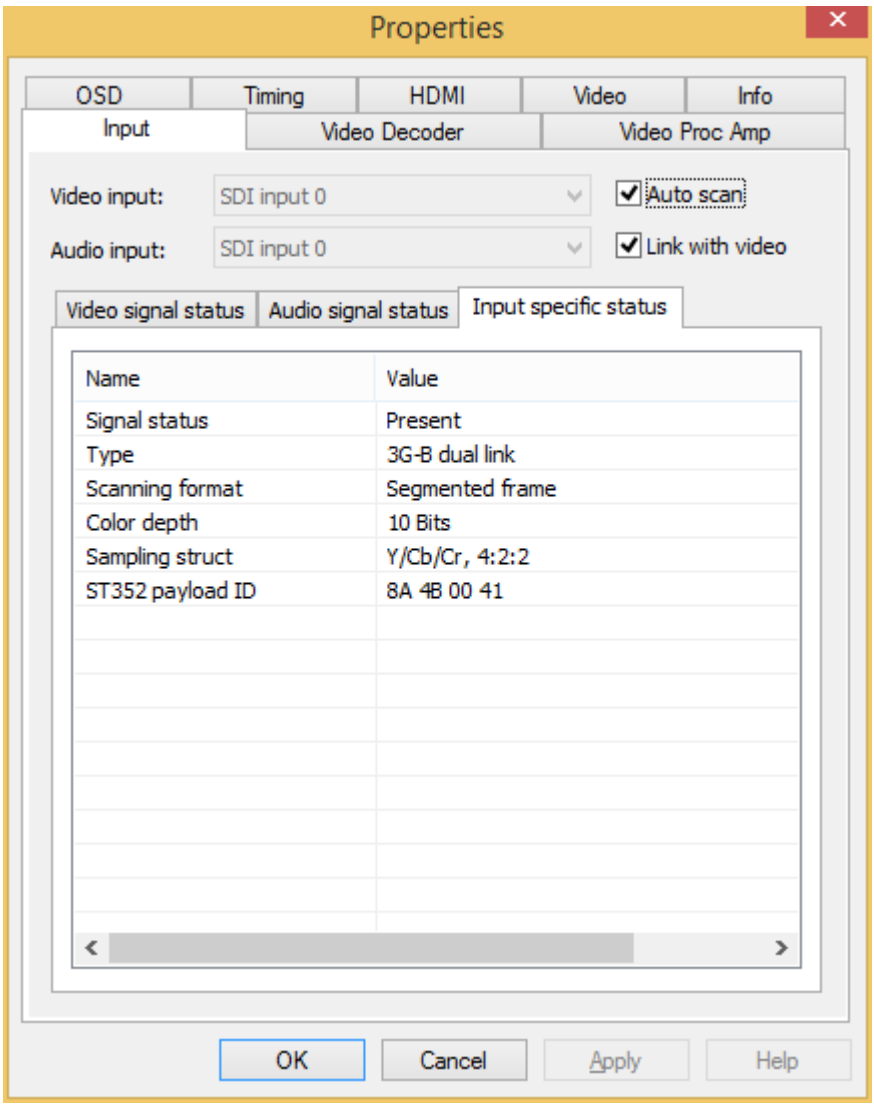

| Item Name | Item Description |
|---|---|
| Signal status | Options are “Present” or “Not present”. |
| Sync type | Displays the type of synchronization; e.g. “Embedded” |
| Frame rate | The frame rate of the video source |
| Scanning format | Options are: “Progressive” or “Interlaced” |
| VS width | Width of the vertical sync pulse, in lines |
| Total scan lines | Total number of scanned lines |
| Embedded sync | The embedded synchronization method; e.g. Bi-Level, or Tri-Level |

- **When CBVS signal is connected, “Input specific status” tab：**



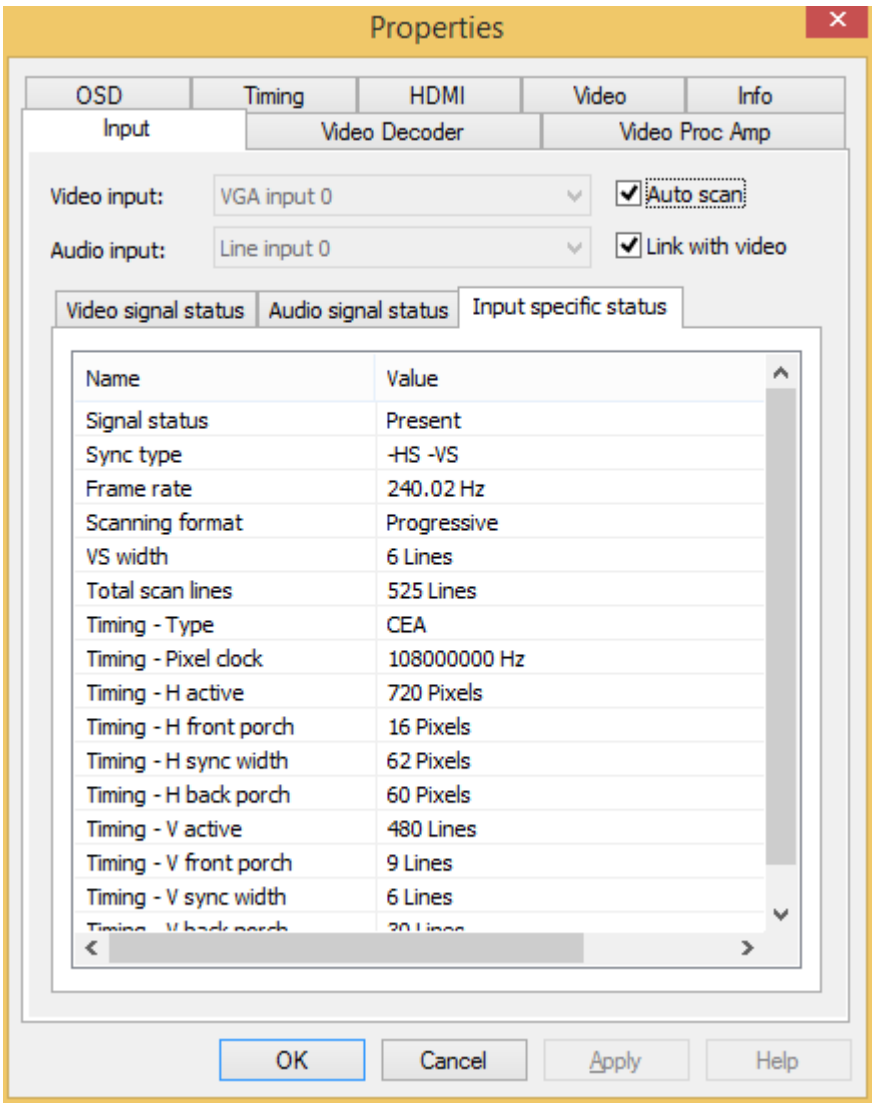

| Item Name | Item Description |
|---|---|
| Signal status | Options are “Present” or “Not present”. |
| TV Standard | Options are PAL，NTSC，SECAM |
| Field rate | The current field rate of the video signal |

- **When SDI signal is connected, “Input specific status” tab：**




| Item Name | Item Description |
|---|---|
| Signal status | Options are “Present” or “Not present”. |
| Type | Displays the current video signal type |
| Scanning format | Options are “Progressive”, “Interlaced”, “Segmented Frame” |
| Color depth | The color depth of the current video, e.g. 8/10/12 bit |
| Sampling structure | Signal type and sampling ratios, e.g. RGB 4:4:4，YCbCr 4:4:4，YCbCr 4:2:2. |

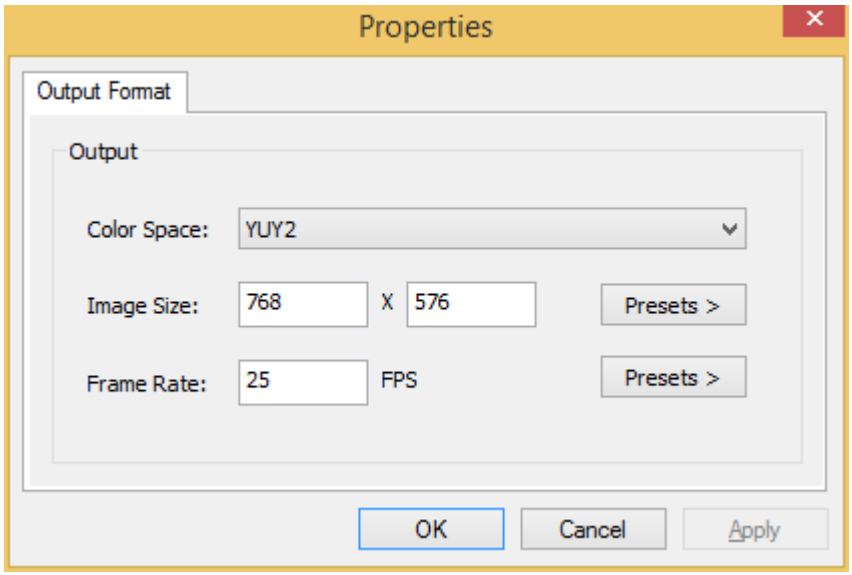
- **When VGA signal is connected, “Input specific status” tab：**




| Item Name | Item Description |
|---|---|
| Signal status | Options are “Present” or “Not present”. |
| Sync Type | Displays the type of synchronization |
| Frame rate | The frame rate of the video source |
| Scanning format | Options are: “Progressive” or “Interlaced” |
| VS width | Width of the vertical sync pulse, in lines |
| Total scan lines | Total number of scanned lines |
| Timing-Type | Type of timing standard used |
| Timing-Pixel clock | Shows the pixel-scanning frequency |
| Timing-H active | Active horizontal picture width, in pixels |
| Timing-H front porch | Pixel width between the end of the active horizontal picture and the start of the horizontal sync pulse. |
| Timing-H sync width | Width of the horizontal sync pulse, in pixels |
| Timing-H back porch | Pixel width between the end of the horizontal sync pulse and the start of the next active horizontal picture line. |
| Timing-V active | Active vertical picture height, in lines |

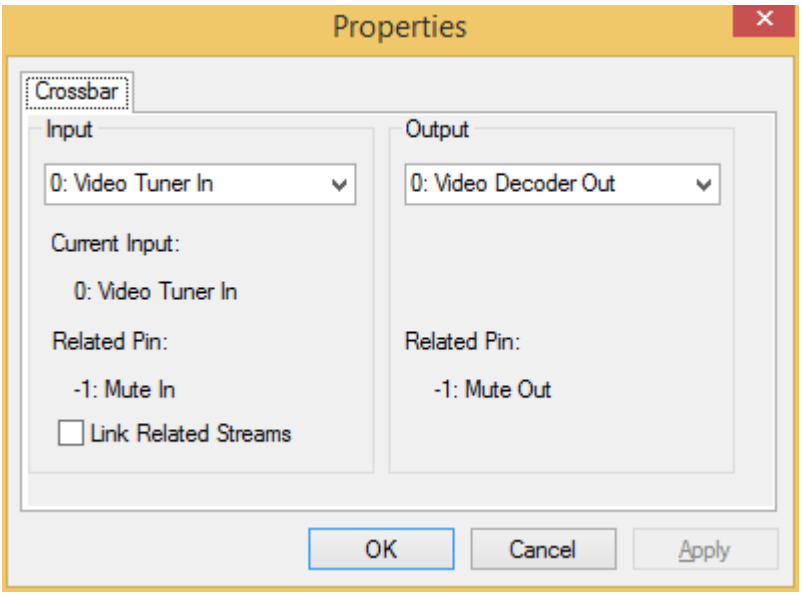
| | |
|---|---|
| Timing-V front porch | Number of lines between the last line of the active vertical picture area and the start of the vertical sync pulse. |
| Timing-V sync width | Width of the vertical sync pulse, in lines |
| Timing-V back porch | Number of lines between the end of the vertical sync pulse and the start of the next active horizontal picture line. |

## 4. 7 “Output” Settings




| Item Name | Item Description |
|---|---|
| Color Space | Select from 13 color spaces including YUY2，YUYV, etc. |
| Image Size | The initial output resolution defaults to the native resolution of the input source; but it can be changed, either by manually entering values for the width & height, or by clicking “Presets >” and selecting a resolution from those listed. The resolution shown in **bold** is suggested by the system as being the best match for the input resolution. |
| Frame Rate | The default frame rate is that of the input source, but you can also click “Presets >” to select other frame rates. The frame rate shown in **bold** is the system-preferred value, but the rate can also be entered manually. |

## 4. 8 “Video crossbar”




Select a signal type for the “Input” from the drop-down list of options. The number 6 means the current signal, which is auto-detected by the system. When the selected signal is different from the actual input signal, video will not be displayed correctly.

Note:

1. Video Parallel Digital In = SDI signal

2. Video Serial Digital In = HDMI signal

3. Video RGB In = VGA signal

4. Video YRYBY In = CVBS signal

5. Video S-Video In = S-Video signal

6. Video Composite In = YPbPr signal

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