

# Video to PC/HDTV Scaler

— Operation Manual —



## **(1). Introduction**

Congratulations on your purchase of the Cypress Video Scaler CSC-200.

Our professional Video Scaler products have been serving the industry for many years. In addition to Video Scalers, Cypress offers a full line of high quality PC multimedia, Standards Converters, DV-to-Analog Converters, Video Mixer, Time Base Correctors, and Video Processors. Please visit [www.cypress.com.tw](http://www.cypress.com.tw) to learn more details about these products. This manual includes operation information on the CSC-200 model. Please read this to become familiar with the CSC-200. and keep the manual for possible reference in the future.

Cypress's CSC-200 is designed to convert Composite S-Video and YCbCr signals to a variety of computer and HDTV resolutions. It handles video input from TV systems NTSC, PAL TV standards. Cypress CSC-200 has many great features to enhance performance and is ideal for use in professional large screen presentation.

## **(2). Features**

1. Video inputs are de-interlaced and scaled up to output resolution as below
  - \* PC output : 640x 480, 800x 600 (SVGA), 1024 x 768 (XGA), 1280 x 1024 (SXGA),
  - \* HDTV output: 852 x 480p, 852 x 576p, 1280 x 720p, 1920 x 1080i
2. Automatically accommodates input video systems of NTSC 3.58 and PAL.
3. High performance adaptive 3D Comb filter Y/C separator.
4. Per-pixel motion compensated deinterlacing algorithms to produce artifact-free progressive scan video signal.
5. Built in Adaptive film mode 3:2 pull-down provides clear and crisp de-interlacing of video originating from 24 fps film, such as DVD movies.
6. Frame rate conversion from 50Hz up to 60Hz (PAL), or 60Hz up to 60Hz (NTSC)
7. Vertical temporal filter (VT) removes jaggy and other de-interlacing artifacts from normal video.
8. OSD menu with adjustable control on Color, Sharpness, Brightness, Contrast and Tint (NTSC).
9. Built-in DCTI/DLTI circuit for color/luminance transient improvement.
10. The PC loop-through allows for easy change between video and PC source.
11. Last memory for all adjustments.
12. RS-232 interface allows remote control from PC.

## **(3). Checking the Package Contents**

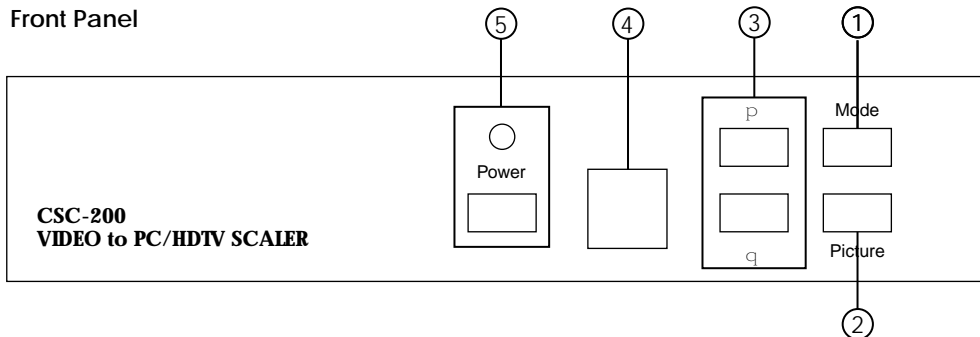
The following items are contained in shipping carton:

1. Video Scaler Unit
2. DC adaptor
3. VGA Cable-HD 15 to HD 15 x 1
4. HD-15 D-Sub to YPbPr 3-RCA Cable
5. 1BNC-1BNC video cable x 1
6. S-Video Input Cable
7. YCbCr 3-RCA- to 3-RCA cable x 1
8. User Manual
9. Remote Control
11. Sample Windows Control Panel Software (RS-232 version only)
12. 2 x 4A battery

#### (4). Connecting the hardware

The video scaler is controlled via front panel push buttons or remote control and its status is indicated by OSD display. The front panel controls are shown below.

##### Front Panel



##### Front Panel

- 1. Mode:** Press the button repeatedly will toggle through the following adjust controls: Source g Resolutiong Outputg Aspectg 3D Enhanceg Digital NRg Sources....  
**Source mode:** While under this mode, press p or q button to choose your desired input source from Video, S-Video, or Component inputs.  
**Resolution mode:** If output is selected as RGB, press p or q button to choose from 640 x 480(VGA), 800 x 600 (SVGA), 1024 x 768(XGA), or 1280 x 1024(SXGA) PC output. If output is selected as YPbPr press p or q to choose from 480p, 576p,720P or 1080i HDTV output.  
**Output mode:** Press p or q to select between PC RGB output and HDTV YPbPr output.  
**Aspect mode:** Press p or q to choose between standard (4:3) aspect and wide(16:9) aspect ratio.  
**3D Enhance mode:** To turn on or off the 3D comb filter function.  
When VCR or non-standard video source is connected to the input the output picture may be jittering. If this occurs, please turn off the 3D Enhance function.  
**Digital NR mode:** To turn on or turn off the digital noise reduction function.

## (4). Connecting the hardware

### Front Panel

**2. Picture:** Press the button to toggle through picture adjust parameters as follows:  
Contrast g Bright g Color g Tint g Sharpness g Contrast

**Contrast:** Press p or q to adjust contrast level. The range of adjustment is 0~48.  
Factory default value is 40.

**Bright:** Press p or q to adjust Brightness level. The range of adjustment is 0~48.  
Factory default value is 24.

**Color:** Press p or q to adjust color level. The range of adjustment is 0~48.  
Factory default value is 24.

**Tint:** Press p or q to adjust NTSC Tint level. The range of adjustment is 0~48.  
Factory defaults value is 24.

**Sharpness:** Press p or q to adjust sharpness level.  
The range of adjustment is 0~48. Factory defaults at 10.

**3. p , q :** Press to toggle through various adjust controls or to alter setting value.

**4. IR Sensor:** Infrared remote control sensor.

**5. Power and LED button:** Press once to power on the unit, press again to turn off.

#### Note:

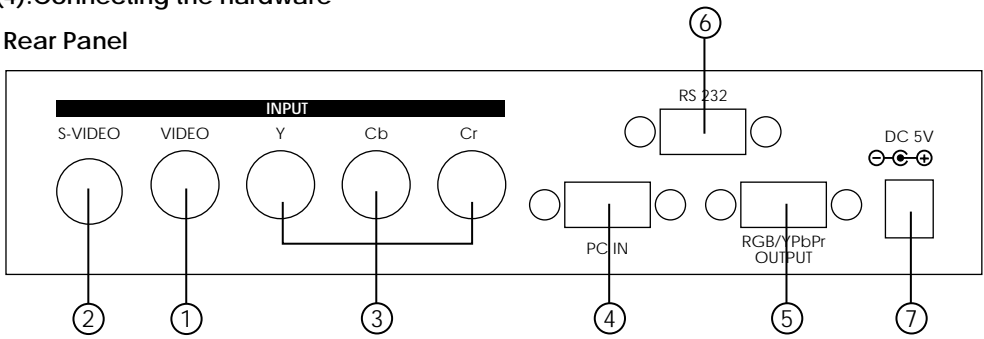
\* Under picture adjust mode, press p and q simultaneously will revert the selected parameter back to factory preset value. Press both buttons for over 5 seconds. will revert all picture parameters back to their factory preset values.

\* You can use RS-232 to lockout the front panel controls. To lift this lockout and revert all parameters back to factory preset value, please press "mode" and "picture" buttons simultaneously for over 10 seconds.

**6. Front Panel Lockout-** Under certain circumstances it may be desirable to disable the front panel controls. For example, to prevent unauthorized or accidental changes to the setting while the unit is in use. To disable the front panel controls use RS-232 to set the front panel lockout to ON position.

## (4).Connecting the hardware

### Rear Panel



### Connecting the Video inputs

The video scaler can accept a composite video, an S-Video or a YCbCr input signal for scaling, as well as a computer signal input that is passed through the unit when the PC in (Bypass) is selected.

### Rear Panel

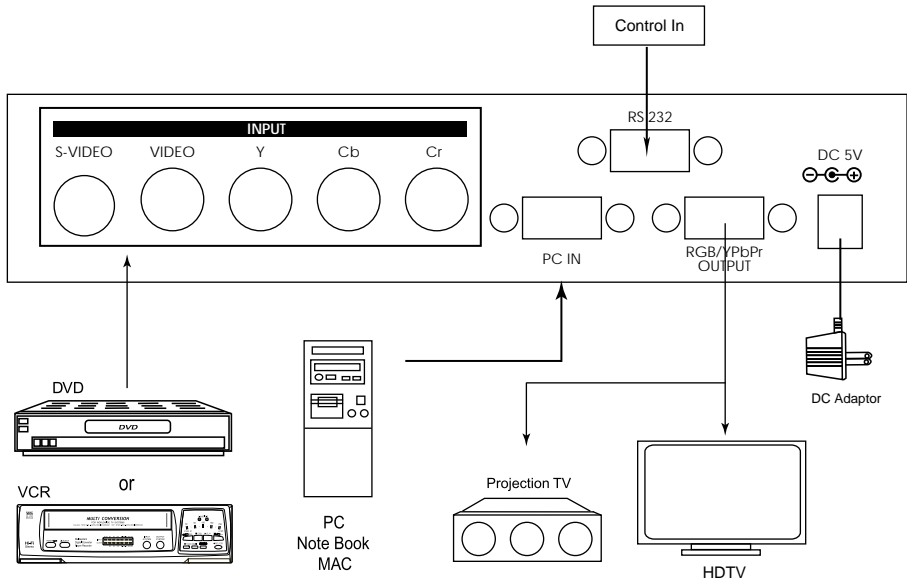
- ① **Composite Video:** Use a Composite video cable to connect the composite video output of the source equipment to the connector labeled "C-Video" on the back of the Video Scaler.
- ② **S-Video:** Use a S-Video cable to connect the S-Video output of the source video equipment to the connector labeled "S-Video" on the back of the Video Scaler.  
S-Video provides improved performance over Composite Video and is recommended over composite.
- ③ **YCbCr input:** Use a 3 RCA-to-3 RCA YCbCr cable to connect the YCbCr output of the source video equipment to the connectors labeled YCbCr on the back of the video scaler. Please note the plugs' color have to match with the color of the RCA Jacks. YCbCr component provides the best picture quality among all three inputs, and should be used whenever possible.
- ④ **Computer RGB with H&V Sync:** Connect the source computer's VGA output signal to the HD 15 connector labeled "PC In" on the back of the Video Scaler.

**Note: This Computer inputs signal is not sclaed, but is available for pass-through when the Video Scaler is in the PC In (Bypass) mode.**

### Connecting the scaled output to your projector, PDP, or LCD Display

- ⑤ The HD-15 D-Sub connector is shared by PC/RGBHV output and HDTV/YPbPr output. When PC/RGBHV output resolution (VGA to SXGA) is selected, use the HD-15 to HD-15 VGA cable to connect the output to the PC input of your display monitor. When HDTV/YPbPr output (480p, 576p, 720p, 1080i) is selected, use the HD-15 to YPbPr 3 x RCA cable to connect the output to the YPbPr input of you HDTV display.  
**Note: Use of wrong cable for your selected output will result in an abnormal picture on the screen.**
- ⑥ RS232: 9-pin D-sub connector for connecting to your PC or other control console for remote control.
- ⑦ DC power jack: 5V 2A DC power input.

## (5). Connecting and Installation

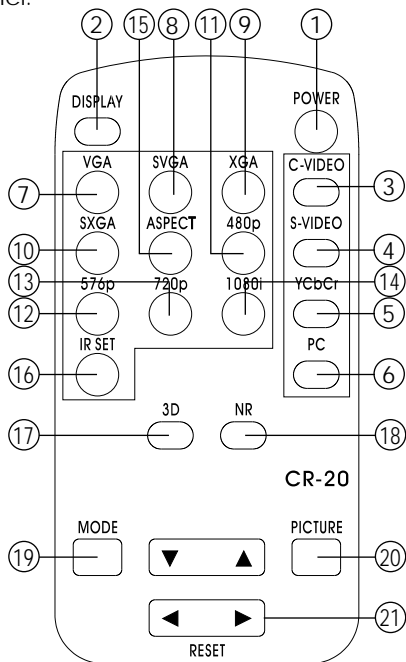


**(6). Remote Control**

1. **Power:** Power ON/OFF button.
2. **Display:** Press the button to enable or disable the on screen display of the resolution information.
3. **C-Video:** Press the button to select composite video as input source.
4. **S-Video:** Press the button to select S-Video as input source.
5. **YCbCr:** Press the button to select YCbCr as input source.
6. **PC:** Press the button to select PC input looping through to the output.
7. **VGA:** Press the button to select 640 x 480 as output resolution.
8. **SVGA:** Press the button to select 800 x 600 as output resolution.
9. **XGA:** Press the button to select 1024 x 768 as output resolution.
10. **SXGA:** Press the button to select 1280 x 1024 as output resolution.
11. **480p:** Press the button to select 852 x 480p as output resolution.
12. **576p:** Press the button to select 852 x 576p as output resolution.
13. **720p:** Press the button to select 1280 x 720p as output resolution.
14. **1080i:** Press the button to select 1920 x 1080i (interaced) as output resolution.
15. **Aspect ratio:** Press the button to switch between standard (4:3) and wide (16:9) aspect ratio.
16. **IR-Set:** When front panel is locked out by RS-232, Press this button for over 15 seconds will lift the lock out.
17. **3D:** Press to turn ON/OFF the 3D enhance.
18. **NR:** Press to turn ON/OFF digital noise reduction.
19. **Mode:** Same as "mode" button on front panel.  
press to toggle through  
Source g Resolutiong Outputg  
Aspectg 3D Enhanceg Digital NR  
g Source

**20. Picture:** Same as picture button on front panel. Press to toggle through Contrastg Brightg Color g Tint g Sharpnessg Contrast

**21. Reset:** Press this button will revert picture adjust back to factory preset value.




### (7). RS-232 Control of the CSC-200 Video Scaler

The Video Input selection and signal parameter setting for the CSC-200 can also be controlled via an external control system by using the RS-232 port on the unit. If information for this control method is required, beyond the scope of the instructions provided in this section, please contact Cypress Technology Support, A disk is provided with the CSC-200 containing a sample Windows Control Panel that permits remote control of the unit from a PC via RS-232.

**Note-** The connection between the CSC-200 unit and the RS-232 remote controller is made with a modem cable.

\* The Connection between video scaler and remote controller with RS-232 modem cable.

Video Scaler			Remote Controller	
PIN	Definition		PIN	Definition
1	NC	1	NC	
2	T xD	2	R xD	
3	R x D	3	T x D	
4	NC	4	NC	
5	GND	5	GND	
6	NC	6	NC	
7	NC	7	NC	
8	NC	8	NC	
9	NC	9	NC	

\* RS-232 transmission format:

Baud Rate : 9600 bps

Data Bit : 8 Bits

Parity: None

Stop Bit: 1 bit



## (7). RS-232 Control of the CSC-200 Video Scaler

\* Command / Response codes of RS-232 transmission:

the Command/ response codes are the combination of 3 bytes. the 1st, 2nd byte are text and the 3rd byte is value.

Code	Comment	
'PW' + 0 'PW' + 1	POWER	power off (standby) power on (normal)
'IN' + 0 'IN' + 1 'IN' + 2 'IN' + 3	INPUT	Composite video S-Video YCbCr PC Bypass
'OU' + 0 'OU' + 1 'OU' + 2 'OU' + 3 'OU' + 4 'OU' + 5 'OU' + 6 'OU' + 7	OUTPUT	VGA 480p SVGA XGA SXGA 576p 720p 1080i
'OS' + 0 'OS' + 1	OSD	osd OFF osd ON
'DI' + 0 'DI' + 1	DISPLAY	display OFF display ON
'BR' + value 'CO' + value 'SA' + value 'SH' + value 'TI' + value 'RE' + 0	Brightness Contrast Saturation Sharpness Tint reset	value= 0-48 value= 0-48 value= 0-48 value= 0-48 value= 0-48 video adjustment reset
'IR' + 0 'IR' + 1	IR	IR sensor OFF IR sensor ON
'FP' + 0 'FP' + 1	PANEL	front panel lockout ON front panel lockout OFF
'TD' + 0 'TD' + 1	Three D	3 D enhance OFF 3 D enhance ON
'NR' + 0 'NR' + 1	NR	Digital NR OFF Digital NR ON
'AS' + 0 'AS' + 1	ASPEC	aspect 16:9 aspect 4:3
'AL' + 0	retrive video scaler all status 'PW'+? 'IN'+? 'OS'+? 'OU'+? 'DI'+? 'IR'+? 'FP'+? 'BR'+? 'CO'+? 'SA'+? 'SH'+? 'TI'+? 'TD'+? 'NR'+? 'AS'+?	

Code	Comment	
'PW' + 0 'PW' + 1	POWER	power off (standby) power on (normal)
'IN' + 0 'IN' + 1 'IN' + 2 'IN' + 3	INPUT	Composite video S-Video YCbCr PC Bypass
'OU' + 0 'OU' + 1 'OU' + 2 'OU' + 3 'OU' + 4 'OU' + 5 'OU' + 6 'OU' + 7	OUTPUT	VGA 480p SVGA XGA SXGA 576p 720p 1080i
'OS' + 0 'OS' + 1	OSD	osd OFF osd ON
'DI' + 0 'DI' + 1	DISPLAY	display OFF display ON
'BR' + value 'CO' + value 'SA' + value 'SH' + value 'TI' + value 'RE' + 0	Brightness Contrast Saturation Sharpness Tint reset	value= 0-48 value= 0-48 value= 0-48 value= 0-48 value= 0-48 video adjustment reset
'IR' + 0 'IR' + 1	IR	IR sensor OFF IR sensor ON
'FP' + 0 'FP' + 1	PANEL	front panel lockout ON front panel lockout OFF
'TD' + 0 'TD' + 1	Three D	3 D enhance OFF 3 D enhance ON
'NR' + 0 'NR' + 1	NR	Digital NR OFF Digital NR ON
'AS' + 0 'AS' + 1	ASPEC	aspect 16:9 aspect 4:3

## (8). Specifications

<b>Computer input (Loop thru)</b>		RGB with HV Sync				
<b>Max computer input resolution</b>		1600 x 1200				
<b>Computer input connector type</b>		HD 15 Female				
<b>Computer input signal level</b>		RGB @ 0.7V, H&V Sync @ TTL				
<b>Video inputs</b>		Composite Video @ 1 Vp-p 75 ohm S-Video @ 1 Vp-p 75 ohm YCbCr Y : 1 Vpp 75 ohm CbCr : 0.7 Vp-p 75 ohm				
<b>Video standard</b>		NTSC 3.58, PAL B/D/G/I				
<b>Video input connectors</b>		Composite video on BNC S-Video on 4-pin Mini-DIN Component on BNC				
<b>Scaled output resolutions</b>		Pixels		Format	Scan	
		PC Resolution	VGA	640 x 480	RGBHV	Progressive
			SVGA	800 x 600	RGBHV	Progressive
			XGA	1024 x 768	RGBHV	Progressive
			SXGA	1280 x 1024	RGBHV	Progressive
HDTV Resolution	16:9	1280 x 720p (720p)	YPbPr	Progressive		
	16:9	1920 x 1080i (1080i)	YPbPr	Interlaced		
		852 x 480p(480p)	YPbPr	Progressive		
		852 x 576p(576p)	YPbPr	Progressive		
<b>Scaled output vertical refresh rates &amp; Horizontal scan rates</b>		Output resolution		Vert. (Hz)	Hori. (Hz)	
		VGA		59.94	31.469	
		SVGA		60.320	37.880	
		XGA		60.000	48.360	
		SXGA		60.020	63.981	
		480p		59.940	31.469	
		576p		50	31.25	
		720P		59.94	44.995	
1080i		59.94	33.716			
<b>Manual control</b>		Front panel buttons				
<b>RS-232 control</b>		Via rear panel DB9F connector				
<b>IR remote control</b>		Yes				
<b>Video adjustments</b>		Brightness, Contrast, Color Saturation, Tint (NTSC), Sharpness				
<b>Weight</b>		1 Kgs				
<b>Dimensions</b>		204(D)x 154 (W) x 46(H)mm				
<b>Power source</b>		100-240VAC to DC 5V/2A Desktop switching adaptor				