



USER MANUAL

Model:

CSC-650

Component / UXGA HDMI Scaler

**For maximum results, use Comprehensive
Brand Premium High Resolution
cables and connectors.**

Contents

1	Introduction	1
2	Getting Started	1
3	Overview	1
3.1	About HDMI	2
3.2	Recommendations for Best Performance	3
4	Your CSC-650 Component / UXGA HDMI Scaler	3
5	Connecting the CSC-650 Component / UXGA HDMI Scaler	5
5.1	Connecting the Contact Closure Remote Control PINs	6
6	Controlling the CSC-650	7
6.1	Controlling via the Front Panel Buttons	7
6.2	Using the CONTROL Buttons	7
6.2.1	The MAIN MENU	8
6.2.2	The OSD Menu	8
6.3	Controlling via the Infrared Remote Control Transmitter	9
7	Technical Specifications	10

Figures

Figure 1:	CSC-650 Component / UXGA HDMI Scaler	3
Figure 2:	Connecting the CSC-650 Component / UXGA HDMI Scaler	5
Figure 3:	Connecting the Contact Contact Remote Control PINs	6
Figure 4:	Infrared Remote Control Transmitter	9

Tables

Table 1:	CSC-650 Component / UXGA HDMI Scaler Front Panel Features	4
Table 2:	CSC-650 Component / UXGA HDMI Scaler Rear Panel Features	4
Table 3:	The MAIN MENU Features	8
Table 4:	The SETUP Menu Features	8
Table 5:	Infrared Remote Control Transmitter Functions	9
Table 6:	Technical Specifications of the CSC-650 Component / UXGA HDMI Scaler	10

1 Introduction

Congratulations on purchasing your **CSC-650 Component / UXGA HDMI Scaler**. This product, which incorporates HDMI™ technology, is ideal for:

- Projection systems in conference rooms, boardrooms, hotels and churches
- Home theater up-scaling

This product comes with the following items:

- Power adapter (12V DC input)
- Infrared remote control transmitter and this user manual

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual

3 Overview

The **CSC-650** is a high quality component video/UXGA to HDMI scaler. It accepts one of three inputs: either component video¹ on RCA connectors, computer graphics on a 15-pin HD connector, or an HDMI signal (selected via a front panel selector button or via the Remote dry contact switch). It scales the video, embeds the audio, and outputs the signal to the HDMI output.

The **CSC-650 Component / UXGA HDMI Scaler**:

- Is HDTV compatible and the resolution can be scaled up to 480p, 576p, 720p, 1080i or 1080p via a front panel selector button²
- Has analog audio inputs for the COMP, UXGA and HDMI inputs
- Automatically detects and selects the audio source for the HDMI input. Default selection is HDMI – if this is not present, then the machine uses the audio from the analog input
- Comes with an On-Screen Display (OSD) for easy setup and adjustment, accessible via the IR remote control and via the front-panel buttons
- Has a non-volatile memory that retains the last settings used
- Is housed in a desktop sized enclosure and is 12VDC fed

¹ Also known as Y, Pb, Pr, Y, Cb, Cr and YUV; compatible with both SD and HD component

² Other resolutions can be selected via the OSD menu. These include: 1080i, 1080p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, NATIVE, VGA, SVGA, XGA, SXGA, UXGA, 480i, 480p

Control your **CSC-650**:

- Directly, via the front panel push buttons
- Remotely, from the infrared remote control transmitter
- Remotely, from the Remote dry contact switch

3.1 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital¹ audio/video interface, widely supported in the entertainment and home cinema industry. It delivers the maximum high-definition image and sound quality in use today. In particular, HDMI²:

- Provides a simple³ interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD / plasma television (DTV), over a single lengthy⁴ cable
- Supports standard, enhanced, high-definition video, and multi-channel digital audio⁵ on a single cable
- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements
- Benefits consumers by providing superior, uncompressed digital video quality via a single cable⁶, and user-friendly connector
- Is backward-compatible with DVI (Digital Visual Interface)
- Supports two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play
- HDMI has the capacity to support existing high-definition video formats (720p, 1080i, and 1080p/60), standard definition formats such as NTSC or PAL, as well as 480p and 576p

1 Ensuring an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions

2 HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC

3 With video and multi-channel audio combined into a single cable, the cost, complexity, and confusion of multiple cables currently used in A/V systems is reduced

4 HDMI technology has been designed to use standard copper cable construction at up to 15m


5 HDMI supports multiple audio formats, from standard stereo to multi-channel surround-sound. HDMI has the capacity to support Dolby 5.1 audio and high-resolution audio formats

6 HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner

3.2 Recommendations for Best Performance

To achieve the best performance:

- Connect only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise- levels (often associated with low quality cables)
- Avoid interference from neighboring electrical appliances and position your machine away from moisture, excessive sunlight and dust



Caution – No operator-serviceable parts inside unit.

Warning – Use only the input power wall adapter that is provided with this unit.

Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

4 Your CSC-650 Component / UXGA HDMI Scaler

Figure 1, Table 1 and Table 2 define the **CSC-650**:

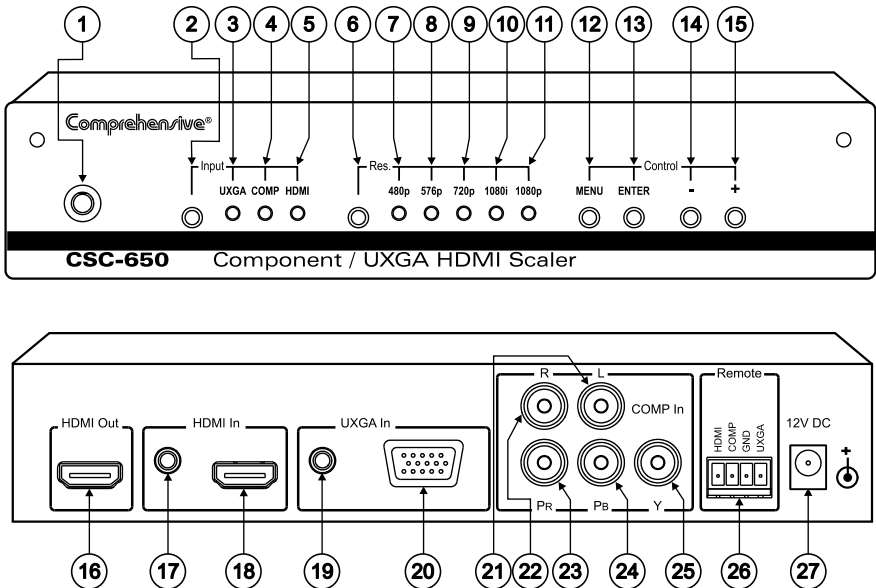


Figure 1: CSC-650 Component / UXGA HDMI Scaler

Table 1: CSC-650 Component / UXGA HDMI Scaler Front Panel Features

#	Feature	Function	
1	IR Receiver	Receives signals from the remote control transmitter	
2	Input	Selector Button	Press to select the UXGA input, the COMP input, or the HDMI input
3		UXGA Indicator LED	Lights when the UXGA input is selected
4		COMP Indicator LED	Lights when the COMP input is selected
5		HDMI Indicator LED	Lights when the HDMI input is selected
6	Res.	Selector Button	Press to select the resolution: 480p, 576p, 720p, 1080i or 1080p
7		480p Indicator LED	Lights when the 480p resolution is selected
8		576p Indicator LED	Lights when the 576p resolution is selected
9		720p Indicator LED	Lights when the 720p resolution is selected
10		1080i Indicator LED	Lights when the 1080i resolution is selected
11		1080p Indicator LED	Lights when the 1080p resolution is selected
12	Control	MENU Button	Displays the OSD menu (see section 6.2)
13		ENTER Button	Press to accept changes and change the SETUP parameters ¹
14		- Button	Press to move down the menu list ¹
15		+ Button	Press to move up the menu list values ¹

Table 2: CSC-650 Component / UXGA HDMI Scaler Rear Panel Features

#	Feature	Function	
16	HDMI Out Connector	Connects to the HDMI acceptor	
17	HDMI In	3.5mm Mini Jack Connector	Connects to the analog unbalanced stereo audio signal ²
18		HDMI Connector	Connects to the HDMI source
19	UXGA In	3.5mm Mini Jack Connector	Connects to the analog unbalanced stereo audio signal source
20		UXGA 15-pin HD Connector	Connects to the UXGA source
21	COMP In	L RCA Connector	Connect to the left and right analog unbalanced stereo audio source (of the COMP source)
22		R RCA Connector	
23		PR RCA Connector	Connects to the component video source ³
24		PB RCA Connector	
25		Y RCA Connector	
26	Remote Terminal Block	Connects to a dry contact switch (see section 5.1)	
27	12 VDC	+12V DC connector for powering the unit	

¹ See section 6.2.2

² The audio source is automatically detected and selected. The default selection is the audio signal embedded in the HDMI signal. If this is not present, then the machine uses the audio from the analog input

³ For component video, connect all three connectors: Y, Cb, Cr (also known as YUV)

5 Connecting the CSC-650 Component / UXGA HDMI Scaler

To connect¹ your **CSC-650** as the example in Figure 2 illustrates:

1. Connect a component video source (for example, a DVD player) to the COMP In Y, Pb, Pr, RCA connectors, and to the COMP In L and R audio RCA connectors.
2. Connect a computer graphics source to the UXGA In 15-pin HD connector, and to the UXGA In audio 3.5mm mini jack connector.
3. Connect an HDMI source (for example, a DVD player) to the HDMI In connector, and to the HDMI In analog audio 3.5mm mini jack connector.
4. Connect the HDMI Out connector to an HDMI acceptor (for example, a plasma display).
5. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in Figure 2).

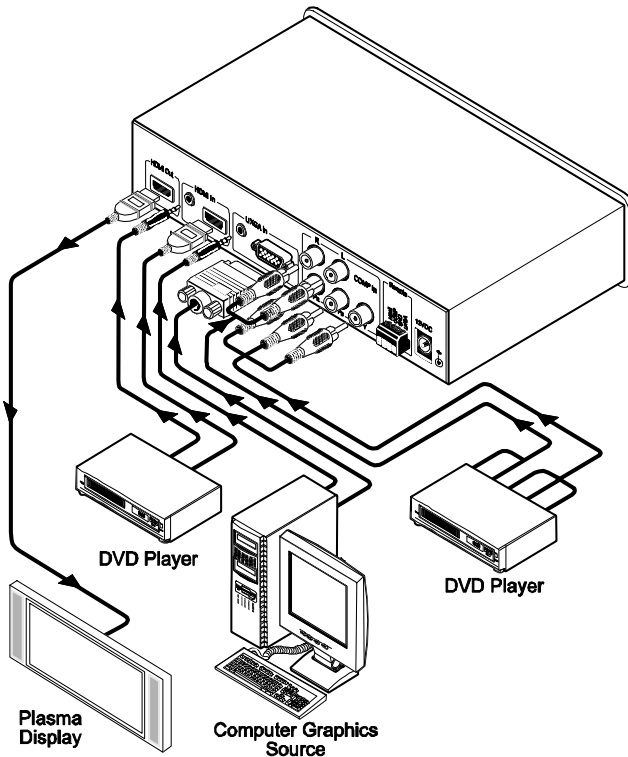


Figure 2: Connecting the CSC-650 Component / UXGA HDMI Scaler

¹ You do not have to connect all the inputs, connect only those that are required

5.1 Connecting the Contact Closure Remote Control PINs

The contact closure remote control pins operate in a similar way to the Input selector button. Using the contact closure remote control you can select the HDMI, the COMP or the UXGA input. To do so, temporarily connect the required input¹ pin on the REMOTE terminal block connector to the GND (Ground) pin, as Figure 3 illustrates.

DO NOT Connect more than one PIN to the GND PIN at the same time

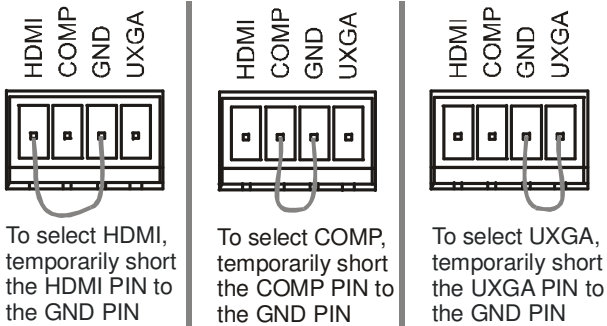


Figure 3: Connecting the Contact Contact Remote Control PINs

¹ HDMI, COMP or UXGA

6 Controlling the CSC-650

The **CSC-650** can be controlled directly via the front panel buttons (see section 6.1), via the OSD menu (see section 6.2), and/or remotely from the infrared remote control transmitter (see section 6.3).

6.1 Controlling via the Front Panel Buttons

The **CSC-650** includes the following front panel buttons:

- An Input selector button for selecting the required input (UXGA, COMP. or HDMI)
- A resolution (Res.) button for selecting the desired resolution
- Control buttons, including the MENU, ENTER, + and – buttons

6.2 Using the CONTROL Buttons

The CONTROL buttons let you control the **CSC-650** via the OSD menu. Press the:

- MENU button to enter the menu¹
- ENTER button to accept changes and to change the menu settings
- + and – buttons to move through the OSD menu, which is displayed on the video output

On the OSD menu, select EXIT to exit the menu.

¹ The default timeout is set to 10 seconds

6.2.1 The MAIN MENU

Table 3 defines the MAIN MENU features and functions.

Table 3: The MAIN MENU Features

Mode	Function			
CONTRAST	Set the contrast (0 to 100)			
BRIGHTNESS	Set the brightness (0 to 100)			
FINETUNE	Set the hue, saturation and sharpness (0 to 100)			
COLOR	Set the red, green and blue shades (0 to 100)			
SIZE	Select the size of the display: full, overscan, underscan, letter box, panscan			
OUTPUT	Select the output resolution from the menu:			
	Appears as:	Output resolution:	Appears as:	Output resolution:
	1080I60	1080i @60Hz	NATIVE ¹	
	1080P60	1080p @60Hz	VGA	640x480
	576I	576i	SVGA	800x600
	576P	576p	XGA	1024x768
	720P50	720p @50Hz	SXGA	1280x1024
	1080I50	1080i @50Hz	UXGA	1600x1200
	1080P50	1080p @50Hz	480I	480i
	WXGA	1366x768	480P	480p
	WSXGA	1680x1050	720P60	720p @50Hz
WUXGA	1920x1200			
OSD	Set the OSD parameters: H POSITION, V POSITION, TIMER, BACKGROUND (see section 6.2.2)			
FACTORY RESET	Resets to the default parameters (resolution is set to VGA ²)			
INFORMATION	Displays the source, the input resolution, the output resolution and the software version			
EXIT	Select to exit the menu			

6.2.2 The OSD Menu

Table 4 defines the OSD menu.

Table 4: The SETUP Menu Features

Parameter	Function
H POSITION	Sets the horizontal position of the OSD (from 0 to 100)
V POSITION	Sets the vertical position of the OSD (from 0 to 100)
TIMER	Sets the timeout period in seconds (from 5 to 100). The default timeout is 10 seconds
BACKGROUND	Sets the OSD background between 0 (solid black) and 8 (transparent)

¹ Select "NATIVE" to select the output resolution from the EDID of the connected HDMI monitor

² If you cannot see the display after factory reset, use the front panel Res. button to set the correct resolution

6.3 Controlling via the Infrared Remote Control Transmitter

You can control the **CSC-650** from the infrared remote control transmitter, as Figure 4 and Table 5 define:

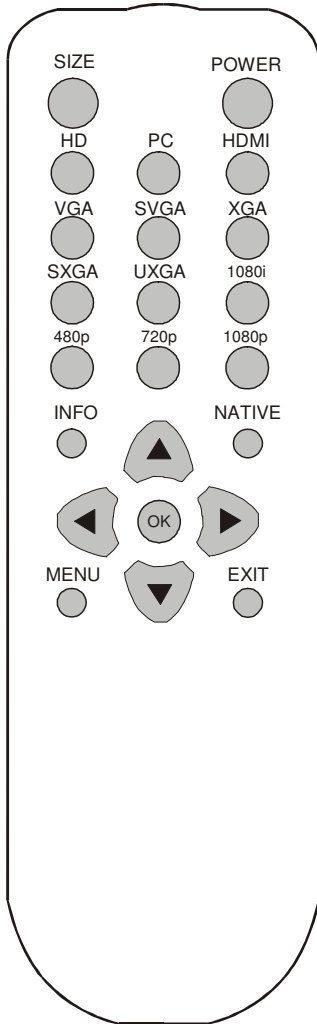


Table 5: Infrared Remote Control Transmitter Functions


Keys	Function
SIZE	Set the size of the image displayed
POWER	Turn the transmitter ON or OFF
HD	Select the component video input
PC	Select the UXGA input
HDMI	Select the HDMI input
VGA	Set the output resolution to VGA
SVGA	Set the output resolution to SVGA
XGA	Set the output resolution to XGA
SXGA	Set the output resolution to SXGA
UXGA	Set the output resolution to UXGA
1080i	Set the output resolution to 1080i
480p	Set the output resolution to 480p
720p	Set the output resolution to 720p
1080p	Set the output resolution to 1080p
INFO	Displays the selected input, the input and output resolutions and the firmware versions on the OSD
NATIVE	Select the output resolution from the EDID of the connected HDMI monitor
	Four navigation keys
OK	Press to accept changes
MENU	Enter the OSD menu
EXIT	EXIT the menu

Figure 4: Infrared Remote Control Transmitter

7 Technical Specifications

Table 6: Technical Specifications¹ of the CSC-650 Component / UXGA HDMI Scaler

INPUTS:	1 HDMI connector (HDMI version 1.2, HDCP version 1.1) 1 UXGA on a 15-pin HD connector 1 component video on 3 RCA connectors 1 analog unbalanced stereo audio on a 3.5mini jack connector (for the HDMI input) 1 analog unbalanced stereo audio on a 3.5mini jack connector (for the UXGA input) 2 analog unbalanced stereo audio (left and right) on RCA connectors, 4dBm nominal
OUTPUT:	1 HDMI connector (HDMI version 1.2, HDCP version 1.1)
OUTPUT RESOLUTIONS:	1080i, 1080p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, NATIVE, VGA, SVGA, XGA, SXGA, UXGA, 480i, 480p
CONTROLS:	Front panel buttons, dry contact and infra red remote for menu driven OSD control
ADDITIONAL CONTROLS:	Contrast, brightness, hue, saturation and sharpness; red, green and blue; Resolution, image size
POWER SOURCE:	12V DC, 350mA
DIMENSIONS:	21.5cm x 16.1cm x 4.36cm (8.46" x 6.34" x 1.7") W, D, H
WEIGHT:	1.1kg (2.43lb.) approx.
ACCESSORIES:	Power supply, IR remote control

¹ Specifications are subject to change without notice

Comprehensive
55 Ruta Court
South Hackensack, NJ 07606
Phone: 800-526-0242
Fax: 201-814-0510
Website: www.comprehensiveinc.com
E-Mail: sales@comprehensiveinc.com