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## **1.0 INTRODUCTION**

Thanks for purchasing this CSC-1600HD Video Scaler from TV One. The CSC-1600HD is designed to convert Composite Video, S-Video and YCbCr Component Video signals to a variety of computer and HDTV resolutions. The unit accommodates most worldwide NTSC, PAL and SECAM TV standards and has many features to enhance performance. AFM (Adaptive Film Mode) is an automatic 3:2 pull-down detector that provides clear and crisp de-interlacing video from 24 frames-per-second film. Our professional video conversion products have been serving the industry for over twenty years. TV One offers a full line of high quality Video Scalers, Scan Converters, Analog-Digital (DV, SDI, DVI) Converters, Standards Converters, Digital Video Recorders, Frame Synchronizers, Time Base Correctors, LCD Monitors, Matrix Routing Switchers and Distribution Amplifiers.

### **1.1 Liability Statement**

Every effort has been made to ensure that this product is free of errors. TV One cannot be held liable for the use of this hardware or any direct or indirect consequential damages arising from its use. It is the responsibility of the user of the hardware to check that it is suitable for his/her requirements and that it is installed correctly. All rights reserved. No parts of this manual may be reproduced or transmitted by any form or means electronic or mechanical, including photocopying, recording or by any information storage or retrieval system without the written consent of the publisher.

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All third party trademarks and copyrights are recognised. The TV One logo, TV One-task and CORIO are the registered Trademarks of TV One. All other trademarks are the property of their respective holders.

## 1.2 FEATURES

The CSC-1600HD Video Scaler has many features that enable it to perform in a superior manner. Among those features you will find:

- Direct Video Input Selection
- Composite, S-Video, YCbCr Component Inputs
- PC/HDTV (RGBHV-YPbPr) input for Bypass
- Individual Input Video Adjustments
- Automatic Input TV Standards Detection
- NTSC, PAL, SECAM Operation
- RGBHV Resolutions up to 1365x768
- YPbPr Output at 480p and 567p
- Output Signal Selectable on HD-15 or 5 BNC Connectors
- OSD (On Screen Display) for Menu Navigation
- RS-232 Interface and Windows Control Panel
- Infrared Remote Control
- IR and Front Panel Lockout Feature
- Desktop and Rackmount Cases
- Universal Internal Power Supply

## 1.3 Getting the Best Results

There are many factors affecting the quality of results when Composite, YCbCr or S-Video signals are up-converted to computer or HDTV resolutions. Some basic precautions will ensure the best possible performance from your Video Scaler.

- **Output display device**– The quality of the output signal will depend largely upon the type and quality of display device used. For instance, some video projectors just look better than others.
- **Distance between the Video Scaler and the display device** – This plays a major role in the final result. Long distances are possible, but special measures should be taken in order to avoid cable losses. These include using high quality (coax-type) cables or adding line amplifiers.
- **Output connection cables** – Low quality cables are susceptible to interference. They degrade signal quality due to poor matching and cause elevated noise levels. Therefore, cables should be of the best quality. Coax-type computer cables are recommended because of their superior internal shielding characteristics.
- **Interference from nearby electrical devices** – Such devices can have an adverse effect on signal quality. For example, an older computer monitor often emits very high electromagnetic fields that can interfere with the performance of video equipment in its proximity.

## **2.0 IMPORTANT SAFETY INSTRUCTIONS**

To insure the best from this product, please read this manual carefully. Keep it in a safe place for future reference.

To reduce the risk of electric shock, do not remove the cover from the unit. No user serviceable parts inside. Refer servicing to qualified personnel.

## **2.1 POWER AND CONNECTIONS**

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet. The off state for this unit is called standby mode. In standby mode the unit is designed to consume a reduced quantity of power compared to normal operating modes.

When not using the unit for a long period of time, insure that the AC power cord is disconnected from the wall outlet.

The AC wall outlet should be installed near to the unit and be easily accessible.

Do not plug in or attempt to operate an obviously damaged unit.

## **2.2 WATER AND MOISTURE**

To reduce the risk of fire, do not expose the unit to rain, water or excessive moisture.

## **2.3 GENERAL CARE**

Do not force switches or external connections.

When moving the unit, disconnect the serial port connections first then the power cable and finally the interconnecting cables to other devices.

Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Use a clean dry cloth.

## **2.4 LOCATION**

Installation of this unit should be in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold.

## **2.5 VENTILATION**

Slots and openings in the sides of the unit are provided for ventilation. To insure reliable operation, avoid obstruction of these openings and insure the unit is installed in a well-ventilated area.

### **3.0 INTELLECTUAL PROPERTY**

Some IC chips in this product include confidential and/or trade secret property. Therefore you may not copy, modify, adapt, translate, distribute, reverse engineer, reverse assemble, or decompile the contents thereof.

### **2.0 IMPORTANT: CONSIGNES DE SECURITE**

Afin de tirer le meilleur de ce produit, merci de lire attentivement ce manuel. Gardez-le dans un endroit sûr pour pouvoir le consulter à nouveau.

Afin de réduire le risque de choc électrique, ne retirez pas l'unité de sa protection.

Aucune pièce réparable par l'utilisateur à l'intérieur. Référez-vous à des personnes qualifiées.

### **2.1 ALIMENTATION ELECTRIQUE ET CONNEXIONS**

Cette unité n'est pas déconnectée de la source de courant électrique tant qu'elle est connectée à la prise murale. Le mode éteint de cette unité est appelé mode de veille. En mode de veille, cette unité est conçue pour consommer une quantité réduite de courant par rapport aux modes normaux d'utilisation.

Lorsque vous n'utilisez pas l'unité pendant une longue période, assurez-vous que le câble d'alimentation électrique est déconnecté de la prise murale.

La prise murale de courant doit être installée près de l'unité et aisément accessible.

Ne branchez pas et n'essayez pas d'utiliser une unité visiblement endommagée.

### **2.2 EAU ET HUMIDITE**

Afin de réduire le risque d'incendie n'exposez pas l'unité à la pluie, l'eau ou à une humidité excessive.

### **2.3 ENTRETIEN GENERAL**

Ne forcez pas les boutons ou connexions externes.

Lorsque vous déplacez l'unité, déconnectez d'abord les connexions de ports en série puis le câble d'alimentation et enfin les câbles de connexion avec d'autres appareils.

N'essayez pas de nettoyer l'unité avec des dissolvants chimiques ou des produits nettoyants en aérosol, car cela peut endommager l'unité. Utilisez un chiffon propre et sec.

## **2.4 EMPLACEMENT**

L'installation de cette unité doit se faire dans un endroit frais et sec, éloigné de sources excessives de chaleur, de vibrations, de poussière, d'humidité et de froid.

## **2.5 AERATION**

Les rainures et les ouvertures sur les cotés de l'unité servent à l'aérer. Pour permettre une utilisation sûre, évitez d'obstruer ces ouvertures et assurez-vous que l'unité est installée dans un endroit bien aéré.

## **3.0 PROPRIETE INTELLECTUELLE**

Certaines puces IC dans ce produit contiennent des éléments propriétaires confidentiels et/ou des secrets commerciaux. Vous ne devez donc pas copier, modifier, adapter, traduire, distribuer, démonter, désassembler, ou décomposer leur contenu.

## **2.0 INSTRUCCIONES IMPORTANTES DE SEGURIDAD**

Para sacar el mejor provecho de este producto, léase este manual con detenimiento. Guárdelo en un lugar seguro para poder hacerle referencia en el futuro.

Para reducir el riesgo de calambre, no quite la cubierta del aparato.

No hay piezas utilizables dentro. Remítase todo mantenimiento a personal cualificado.

## **2.1 CORRIENTE Y CONEXIONES**

Mientras esté conectada a una toma de electricidad, el aparato seguirá conectado a la fuente de corriente CA. A la posición de «off» de este aparato se le denomina posición de espera. En la posición de espera, el aparato está diseñado a consumir una cantidad reducida de electricidad en comparación con los modos de operación normales.

Asegúrese de desconectar el cable de corriente CA de la toma de la pared cuando no va a utilizar el aparato por un periodo largo de tiempo.

La toma CA de la pared ha de estar instalada cerca del aparato y debe ser fácilmente accesible.

No enchufe ni intente operar un aparato que esté evidentemente dañado.

## **2.2 AGUA Y HUMEDAD**

Para reducir el riesgo de incendio no exponga el aparato a la lluvia, el agua o la humedad excesiva.

## **2.3 CUIDADO GENERAL**

No forzar interruptores o conexiones externas.

Al mover el aparato, desconecte las conexiones del puerto en serie primero, luego el cable de electricidad y finalmente los cables interconectados a otros aparatos. No intente limpiar el aparato con disolventes químicos o productos de limpieza aerosol, ya que podrían dañar el aparato. Utiliza un paño limpio y seco.

## **2.4 UBICACIÓN**

Este aparato se debe instalar en un lugar seco y fresco, lejos de fuentes de calor excesivas, la vibración, el polvo, la humedad y el frío.

## **2.5 VENTILACIÓN**

El aparato viene provisto de ranuras y agujeros en los lados para la ventilación.

Para asegurar una operación eficaz, se debe evitar la obstrucción de estos agujeros y también asegurar que el aparato se instale en una zona con adecuada ventilación.

## **3.0 PROPIEDAD INTELECTUAL**

Algunos chips con circuito integrado de este producto incluyen propiedad confidencial y/o propiedad de secreto comercial. Por lo tanto queda prohibido copiar, modificar, adaptar, traducir, distribuir, usar técnicas retroactivas, desmontar, o recopilar los contenidos del mismo.

## **2.0 WICHTIGE SICHERHEITSVORSCHRIFTEN**

Lesen Sie diese Bedienungsanleitung bitte sorgfältig, um Ihr Produkt optimal nützen zu können, und bewahren Sie sie zum späteren Nachschlagen an einem sicheren Ort auf.

Entfernen Sie bitte keinesfalls die Abdeckung, um der Gefahr eines Stromschlags vorzubeugen.

Im Inneren des Geräts befinden sich keine Teile, die vom Benutzer gewartet werden können. Lassen Sie Wartungsarbeiten nur von Fachpersonal durchführen.

## **2.1 STROMVERSORGUNG UND ANSCHLÜSSE**

Solange das Gerät mit einer Steckdose verbunden ist, bleibt die Stromversorgung aufrecht. Der Ausschaltzustand des Geräts wird als Standbymodus bezeichnet. Im Standbymodus verbraucht das Gerät weniger Strom als in den üblichen Betriebsarten.

Wird das Gerät über einen längeren Zeitraum hinweg nicht verwendet, ziehen Sie bitte das Stromkabel aus der Steckdose.

Die Steckdose sollte sich in der Nähe des Geräts befinden und leicht zugänglich sein.

Verbinden Sie ein offensichtlich beschädigtes Gerät keinesfalls mit einer Steckdose und versuchen Sie auch nicht, es zu bedienen.

## **2.2 WASSER UND FEUCHTIGKEIT**

Setzen Sie das Gerät weder Regen, Wasser noch übermäßiger Feuchtigkeit aus, um der Gefahr eines Brandes vorzubeugen.

## **2.3 ALLGEMEINE PFLEGE**

Wenden Sie bei der Handhabung von Schaltern und Anschlüssen keine Gewalt an.

Beim Umstellen des Geräts entfernen Sie zuerst die seriellen Anschlüsse, dann das Stromkabel und zum Schluss die Verbindungskabel zu anderen Geräten.

Versuchen Sie keinesfalls, das Gerät mit chemischen Lösungsmitteln oder Sprayreinigern zu reinigen, da dies das Gerät beschädigen könnte. Verwenden Sie ein sauberes, trockenes Tuch.

## **2.4 AUFSTELLUNG**

Das Gerät sollte an einem kühlen, trockenen Ort aufgestellt werden, fern von übermäßiger Wärme, Vibrationen, Staub, Feuchtigkeit und Kälte.

## **2.5 BELÜFTUNG**

Seitliche Schlitze und Öffnungen sorgen für die Belüftung des Geräts. Um die ordnungsgemäße Belüftung zu gewährleisten, dürfen diese Öffnungen nicht verdeckt werden. Sorgen Sie außerdem dafür, dass das Gerät an einem gut belüfteten Ort aufgestellt wird.

## **3.0 GEWERBLICHES EIGENTUM**

Einige integrierte Schaltkreise in diesem Produkt enthalten vertrauliche

Informationen und/oder Betriebsgeheimnisse. Sie dürfen daher diese Inhalte nicht kopieren, modifizieren, adaptieren, übersetzen, verteilen, rückentwickeln, rückassemblieren oder dekompileieren.

## **2.0 BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

Lees deze handleiding zorgvuldig door om het beste uit uw product te halen. Bewaar het op een veilige plek voor raadpleging in de toekomst.

Haal nooit het omhulsel van de eenheid af, dit om de kans op een elektrische schok te verminderen. Maak het apparaat nooit open: er bevinden zich geen door de gebruiker in te stellen onderdelen in het apparaat. Laat service en onderhoud over aan een gekwalificeerde technicus.

### **2.1 ELEKTRICITEIT EN AANSLUITING**

Deze eenheid is niet van de wisselstroom voedingsbron gescheiden wanneer de stekker nog in het stopcontact zit. Wanneer de eenheid uitstaat, staat deze nog in de stand-by modus. In de stand-by modus vergt de eenheid minder stroom dan in de normale "aan" modus.

Wanneer u de eenheid voor langere tijd niet gebruikt, zorg er dan voor dat de stekker van het wisselstroomsnoer uit het stopcontact is getrokken.

Het wisselstroom stopcontact moet dichtbij de eenheid geïnstalleerd worden en makkelijk toegankelijk zijn.

Als de eenheid duidelijk beschadigd is moet u deze nooit op het lichtnet aansluiten of bedienen.

### **2.2 WATER EN VOCHTIGHEID**

Zorg ervoor dat de eenheid niet aan regen, water of extreme vochtigheid wordt blootgesteld, dit om brand te voorkomen.

### **2.3 ALGEMEEN ONDERHOUD**

Forceer schakelaars of externe aansluitingen nooit.

Bij verplaatsing van de eenheid, de seriële poortaansluitingen eerst loskoppelen, dan de voedingskabel en als laatste de snoeren naar andere apparaten.

Probeer de eenheid nooit met chemische oplosmiddelen of schoonmaakmiddelen in een spuitbus schoon te maken, omdat dit de eenheid kan beschadigen. Gebruik een schone droge doek.

### **2.4 PLAATSING**

Deze eenheid moet geïnstalleerd worden op een koele droge plaats, uit de buurt van bronnen van extreme hitte, vibraties, stof, vocht en kou.

## **2.5 VENTILATIE**

De sleuven en openingen aan de zijkant van de eenheid zijn voor ventilatie. Zorg er voor dat de eenheid op een goed geventileerde plek geïnstalleerd wordt zodat deze betrouwbaar werkt.

## **3.0 INTELLECTUEEL EIGENDOM**

Sommige IC chips in dit product bevatten vertrouwelijke informatie en/of fabrieksgeheimen. U mag daarom de inhoud hiervan niet kopiëren, wijzigen, aanpassen, vertalen, verspreiden, nabouwen, of decompileren.

## 4.0 SPECIFICATIONS

### Input Signals

<b>PC/HD Input (Bypass Only)</b>	RGBHV or YPbPr via HD-15F Connector
<b>Input Video Standard</b>	NTSC 3.58, NTSC 4.43, PAL-B/G/I/D, PAL-N, PAL-M, SECAM
<b>Input Video Adjustments</b>	Brightness, Contrast, Color Saturation, Tint (NTSC), Sharpness
<b>Composite Video Input</b>	via BNC Connector
<b>S-Video Input</b>	via 4-Pin Mini-DIN Connector
<b>YCbCr Component Video Input</b>	via 3 RCA Connectors

### Output Signals

PC Resolutions		Vert Refresh Rate	Horiz Scan Rate	Composition	Scan
<b>VGA</b>	640x480	60, 72, 75 or 85 Hz	31.25 to 43.27 KHz	RGBHV	Progressive
<b>SVGA</b>	800x600	60, 72, 75 or 85 Hz	37.88 to 53.66 KHz	RGBHV	Progressive
<b>XGA</b>	1024x768	60, 70 or 75 Hz	48.36 to 60.03 KHz	RGBHV	Progressive
<b>SXGA</b>	1280x1024	60 Hz	63.98 KHz	RGBHV	Progressive
<b>WXGA</b>	1280x768	60 Hz	48.36 KHz	RGBHV	Progressive
<b>1365x768</b>	1365x768	60 Hz	48.37 KHz	RGBHV	Progressive
HDTV Resolutions		Vert Refresh Rate	Horiz Scan Rate	Composition	Scan
<b>480p</b>	852x480	60 Hz	31.47 KHz	YPbPr	Progressive
<b>576p</b>	852x576	60 Hz	37.62 KHz	YPbPr	Progressive
<b>720p</b>	1280x720	60 Hz	44.85 KHz	RGBHV	Progressive
<b>1080i</b>	1920x1080	60 Hz	33.64 KHz	RGBHV	Interlaced

### General

<b>Manual Control</b>	Front Panel Buttons
<b>RS-232 Control</b>	Via Rear Panel DB9 Female
<b>Infrared Remote Control</b>	Via CR-16 IR Remote Control Unit
<b>Weight (Unit Only)</b>	2.25 kg (5.0 lbs.) Approx.
<b>Dimensions - Desktop Version</b>	1.75"H x 17.25"W x 7"D (44 x 438 x 178mm)
<b>Dimensions - Rackmount Version</b>	1.75"H x 19"W x 7"D (44 x 482 x 178mm)
<b>Power Source</b>	100-240VAC, 50/60Hz
<b>Power Consumption</b>	Approximately 12 Watts

## 5.0 CHECKING PACKAGE CONTENTS

Before attempting to use this unit, please check the packaging and make certain the following items are contained in the shipping carton:

<b>1x Video Scaler Unit</b>	<b>1x User Manual</b>	<b>1x AC Power Cable</b>
<b>1x BNC to BNC Video Cable</b>	<b>1x 5 BNC to 5 BNC Cable</b>	<b>1x S-Video Cable</b>
<b>3x RCA-M to BNC-F Adapters</b>	<b>1x 3 RCA to 3 RCA Cable</b>	<b>1x HD15 to HD15 Cable</b>
<b>1x Infrared Remote Control</b>	<b>2x AA Batteries for IR Unit</b>	<b>4x Rackmount Screws</b>
<b>1x Windows Control Panel Software</b>		<b>(CSC-1600HD-R Only)</b>

*Note: Please retain the original packing material should the need ever arise to return the unit. If you find any items are missing, contact your reseller or TV One immediately. Have the Model Number, Serial Number and Invoice available for reference when you call.*

## 6.0 CONNECTING THE HARDWARE

The first step is to connect a video source to the input of the Video Scaler and to connect its output to a display device. Below is a photo of the CSC-1600HD rear panel.



### 6.1 Rack Mounting

The CSC-1600HD unit is mountable in a standard 19" (1RU) EIA rack assembly. Desktop versions can be converted to Rackmount versions by changing the unit's front panel. Please contact Tech Support should assistance be required with the conversion.

### 6.2 Connecting the Video Inputs

The CSC-1600HD can accept a Composite Video, S-Video or YCbCr Component Video input signal for scaling, as well as an RGBHV (or YPbPr) input that is passed through the unit when the PC (Bypass) mode is selected.

**Composite Video** - Connect the Composite Video output from the source equipment to the connector labeled "C-VIDEO" on the back of the Video Scaler.

**S-Video** - Connect the S-Video output from the source video equipment to the connector labeled "S-VIDEO" on the back of the Video Scaler. S-Video provides improved performance and is recommended over Composite Video.

**Component Video** – Connect the YCbCr output from the source video equipment to the connectors labeled "Y, Cb, Cr" on the back of the Video Scaler. YCbCr provides improved performance and is recommended whenever possible.

**Computer RGBHV** - Connect the source computer's VGA output signal to the HD15 connector labeled "PC" on the back of the Video Scaler.

**YPbPr Video** - The PC input may also be used for a YPbPr Progressive Scan input.

*Note: The PC input not scaled, but is available for pass-through when the Video Scaler is in the PC (Bypass) Mode.*

### 6.3 Connecting the Video Output

Connect the CSC-1600HD's RGBHV or YPbPr output to the destination Computer Monitor, HDTV Display, Video Projector or other display device via the HD15 connector on the back labeled "HD-15" or via the 5 BNC connectors labeled "R/Pr, G/Y, B/Pb, H, V". The unit can either output RGBHV or YPbPr, but not both simultaneously. Refer to Section 6.5 of this manual for instructions on choosing which output is active.

### 6.4 Connecting the AC Power

The CSC-1600HD is equipped with an internal Switching Power Supply that can accommodate 100-240VAC, 50-60Hz. When AC Power is connected, the front panel Power LED will illuminate Red, indicating the unit is in the Standby Mode. When the front panel Power Switch is turned On, this LED will change to Green.

### 6.5 Front PANEL CONTROLS

The CSC-1600HD is controlled via Front Panel Push Buttons, Infrared Remote Control or RS-232. Front Panel LED's and an On Screen Display provide status indications. The following photo shows the Control Buttons and LED Indicators.



#### Input Selection

Pressing the desired INPUT SELECT button directly selects the input signal and its related Front Panel LED will illuminate:

Button	Selects
<b>C-VIDEO</b>	Composite Video Input
<b>S-VIDEO</b>	S-Video Input
<b>YCbCr</b>	YCbCr Component Video Input
<b>PC</b>	Bypass Mode

## Output Selection

Pressing the desired OUTPUT SELECT button directly selects the output signal type and resolution and its related Front Panel LED will illuminate:

Button	Resolution	Composition	Scan
VGA	640x480	RGBHV	Progressive
SVGA	800x600	RGBHV	Progressive
XGA	1024x768	RGBHV	Progressive
SXGA	1280x1024	RGBHV	Progressive
WXGA	1280x768	RGBHV	Progressive
480p/YPbPr	852x480	YPbPr	Progressive
576p/YPbPr	852x576	YPbPr	Progressive
720p	1280x720	RGBHV	Progressive
1080i	1920x1080	RGBHV	Interlaced
1365x768	1365x768	RGBHV	Progressive

## 7.0 OPERATING THE UNIT

### 7.1 Adjustments Available via the Menu

Many adjustments are available only by pressing the Menu button, which shows the available options via the OSD (On Screen Display). Pressing the + button increases the value of the selection, while pressing the – button decreases the value. Pressing the ENTER button selects the chosen parameter. The settings are automatically saved after adjustment.

### 7.2 Navigating the Menu Structure

Pressing the MENU button calls up an OSD, which will be visible at the CSC-1600HD's scaled output. The upper text block is a Status Line and indicates which Video Input is selected, the Output Resolution selected and Vertical Refresh Rate selected. The lower text block has four lines, labeled Video Adjustment, Vertical Frequency Adjustment, OSD Display and Output Terminal. Each of these has associated Sub-Menus for adjustments. Pressing the + or – button allows you to highlight any one of these four lines and pressing the ENTER button takes you into the Sub-Menu that allows control over the parameters for that section. Pressing MENU while navigating always takes you back one level. After no activity for about seven seconds, the unit automatically reverts to normal mode and the OSD disappears.

### 7.3 Video Adjust Section

The CSC-1600HD has an integral Processing Amplifier, capable of adjusting various signal parameters of the incoming video. Each one of the three input video selections (C-V, S-V and YCbCr) has its own memory, so the settings are retained separately for

each and, when a particular input is selected, its Proc Amp settings are automatically recalled.

*Note: These adjustments do not affect the incoming computer signal, which is simply passed through the Video Scaler in the Bypass Mode.*

Press MENU, and then ENTER to access the following choices:

**Brightness** – Sometimes called Video Level. When this is selected, press ENTER and then + to increase the Brightness Level and – to decrease it.

**Contrast** – Sometimes called Black Level. When this is selected, press ENTER and then + to increase the Contrast Level and – to decrease it.

**Color** - Sometimes called Saturation. When this is selected, press ENTER and then + to increase the Chroma Saturation and – to decrease it.

**Sharpness** – Sometimes called Detail or Enhancement. When this is selected, press ENTER and then + to increase the Sharpness Level and – to decrease it.

**Tint** – Sometimes called Hue or Color Phase. When this is selected, press ENTER and then + to increase the Chroma Phase in relation to the current setting and – to decrease it. **Note** – This adjustment is only available for NTSC signals.

**Reset** – When this is selected, press ENTER to reset all of the above parameters to the factory preset positions.

#### **7.4 Vertical Freq Adjust**

Many of the Output Resolutions have multiple Vertical Refresh Rate possibilities. First choose the desired Output Resolution by pressing the desired button in the OUTPUT SELECT section on the front panel. Then, press MENU, choose the Vertical Freq Adjust section and press ENTER. This Menu will display the available selections associated with the Output Resolution selected. This may be as many as four choices, however, some Output Resolutions have only one choice. Choose the desired rate and press ENTER. After selection, pressing MENU twice removes the OSD from the screen.

#### **7.5 OSD Display**

Under normal conditions, the OSD will briefly display the results of changes to the Input or Output selection. However, this feature can be turned off when it is not desirable to display this information. For example, when the unit is being used to switch Video Inputs to a Projector or other display during a live event and it is undesirable to have the change displayed for all to see. To disable the OSD during these selections, press MENU, choose the OSD Display section and press ENTER. Then you may choose OSD Display OFF or later turn it back on. In the OFF position, the OSD only appears when the MENU is selected and not when an Input or Output selection is made.

## 7.6 Output Terminal

The RGBHV or YPbPr Output Signal is available on the rear panel either on 5 BNC connectors or an HD-15 connector, but not both simultaneously. It is necessary to choose via the Menu which is selected. Press MENU, choose the Output Terminal section and press ENTER. Then choose either HD-15 Output Terminal or BNC Output Terminal and Press ENTER. Shortcuts: (1) to select the HD-15 Output Terminal, hold MENU for 3 seconds, and (2) to select the 5 BNC Output Terminal is to hold ENTER for 3 seconds.

## 7.7 IR Sensor

Under certain circumstances it may be desirable to disable the Infrared Sensor of the unit. For example, if the unit is operating in the proximity of other IR-controlled devices that may share the same commands or frequency. To disable the IR Sensor, press MENU, choose the IR Sensor section and press ENTER. Then you may choose IR Sensor OFF or, later turn it back on by choosing IR Sensor ON. In the OFF position, the unit will not respond to commands from the IR Remote Control unit.

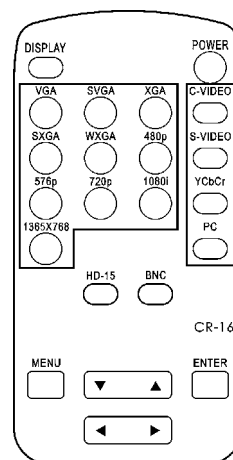
## 7.8 Front Panel Lockout

Under certain circumstances it may be desirable to disable the Front Panel Controls. To do so, press MENU, choose the Front Panel Lockout section and press ENTER. Then you may choose Front Panel Controls OFF. In the OFF position, the unit will not respond to commands from the Front Panel. To return to normal operation, press and hold simultaneously the + and – buttons for 3 seconds or use the IR Remote Control to gain access to the Menu or the use the RS-232 commands.

## 7.9 Infrared Remote Control

The CR-16 IR Remote Unit duplicates the controls that are available via the Menu and front panel push buttons.

The IR Control unit pictured here provides most of the same controls available from the front panel of the unit.



## 7.10 RS-232 Control

The Video Input selection and signal parameter settings for the CSC-1600HD 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 <http://tvone.crmdesk.com>. Create a technical support request on the site and our support team will respond within a short period of time. A disk is provided with the CSC-1600HD 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-1600HD unit and the RS-232 remote controller is made with a modem cable.*

### Pin definition of modem cable:

Video Scaler		↔	Remote Controller	
PIN	Definition		PIN	Definition
1	NC	1	NC	
2	TxD	2	RxD	
3	RxD	3	TxD	
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:

BaudRate	9600bps
Data Bit	8 bits
Parity	None
Stop Bit	1 bit

## 7.11 RS-232 Command/Response Codes

The command/response code is the combination of 3 bytes. The 1<sup>st</sup> & 2nd byte are text and the 3rd byte is value.

Remote Controller Command Codes

Code	Comment	
'PW'+0	POWER	power off (standby)
'PW'+1		power on (normal)
'IN'+0	INPUT	Composite video
'IN'+1		S-video
'IN'+2		YCbCr
'IN'+3		PC bypass
'JA'+0	JACK	HD-15 (D-Sub)
'JA'+1		BNC
'OU'+0	OUTPUT	VGA
'OU'+1		480p
'OU'+2		SVGA
'OU'+3		XGA
'OU'+4		SXGA
'OU'+5		576p
'OU'+6		720p
'OU'+7		1080i
'OU'+8		WXGA
'OU'+9		1365x768
'DI'+0	DISPLAY	osd display OFF
'DI'+1		osd display ON
'BR'+value	brightness	value – 0~255
'CO'+value	contrast	value – 0~63
'SA'+value	saturation	value – 0~127
'SH'+value	sharpness	value – 0~14
'TI'+value	tint	value – -30~+30
'RE'+0	reset	video adjustment reset
'ZV'+value	vga vert freq	value = 0:60hz 1:72hz 2:75hz 3:85hz
'ZS'+value	svga vert freq	value = 0:60hz 1:72hz 2:75hz 3:85hz
'ZX'+value	xga vert freq	value = 0:60hz 1:70hz 2:75hz
'IR'+0	IR	IR sensor OFF
'IR'+1		IR sensor ON
'FP'+0	PANEL	front panel lockout ON
'FP'+1		front panel lockout OFF
'AL'+0	retrieve video scaler all status 'PW'+? 'IN'+? 'JA'+? 'OU'+? 'DI'+? 'IR'+? 'FP'+? 'BR'+? 'CO'+? 'SA'+? 'SH'+? 'TI'+? 'ZV'+? 'ZS'+? 'ZX'+?	

## 7.12 Transmit Codes to Remote Controller

Code	Comment	
'PW'+0	POWER	power off (standby)
'PW'+1		power on (normal)
'IN'+0	INPUT	Composite video
'IN'+1		S-video
'IN'+2		YCbCr
'IN'+3		PC bypass
'JA'+0	JACK	HD-15 (D-Sub)
'JA'+1		BNC
'OU'+0	OUTPUT	VGA
'OU'+1		480p
'OU'+2		SVGA
'OU'+3		XGA
'OU'+4		SXGA
'OU'+5		576p
'OU'+6		720p
'OU'+7		1080i
'OU'+8		WXGA
'OU'+9		1365x768
'DI'+0	DISPLAY	osd display OFF
'DI'+1		osd display ON
'BR'+value	brightness	value – 0~255
'CO'+value	contrast	value – 0~63
'SA'+value	saturation	value – 0~127
'SH'+value	sharpness	value – 0~14
'TI'+value	tint	value – -30~+30
'RE'+0	reset	video adjustment reset
'ZC'+value	vga vert freq	value = 0:60hz 1:72hz 2:75hz 3:85hz
'ZS'+value	svga vert freq	value = 0:60hz 1:72hz 2:75hz 3:85hz
'ZX'+value	xga vert freq	value = 0:60hz 1:70hz 2:75hz
'IR'+0	IR	IR sensor OFF
'IR'+1		IR sensor ON
'FP'+0	PANEL	front panel lockout ON
'FP'+1		front panel lockout OFF
'OK'+0	video scaler power plugs in ready	

## 8.0 TROUBLESHOOTING

It is suggested you follow these steps to correct apparent operational problems:

<b>Problem</b>	<b>Possible Solution</b>
No picture on the output monitor	If the Video Scaler's Power Switch is ON, but no LED's are illuminated, check that the proper AC Power Cord is properly connected. If the Power LED is illuminated, check that there is a correct Video Input signal and that the display device connected to the output is switched on and set to the correct input and its Brightness and Contrast are set correctly. Check to make sure the unit has not been switched to the correct output pin mode – HD15 or BNC.
Colors appear wrong on the output monitor	Try adjusting the Color, Tint, Contrast and Brightness settings on your display. These are usually set up for viewing computer images, which may be somewhat different from viewing images that have been up-converted from video. Make sure your output cable assembly is not faulty, which could prevent either the Red, Green or Blue signal from being passed through the cable.
Too much smearing	Smearing usually occurs when a Composite Video input is used and is generally unavoidable, unless you can switch to using S-Video. Using good quality video cable will help towards reducing this affect. Smearing that may not be noticeable on a small video monitor may become objectionable on a large screen video projector.
No color on the output monitor, only a black and white image	Check the condition of the cables being used. A faulty S-Video cable can often cause a black and white image. Ensure that the color controls on your computer monitor or video projector are all set correctly. Ensure that the color adjustment on the Video Scaler is not adjusted completely down. It may be necessary to reset the video levels via the Menu functions.

If the problem still persists after trying the above suggestions, contact your dealer for additional suggestions before contacting TV One. Should the dealer's technical personnel be unable to assist you, contact TV One via our support website: <http://tvone.crmdesk.com>. Create a technical support request on the site and our support team will respond within a short period of time.

## **9.0 LIMITED WARRANTY**

LIMITED WARRANTY – With the exceptions noted in the next paragraph, TV One warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of two years from the date of purchase. Should this product, in TV One’s opinion, prove defective within this warranty period, TV One, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of TV One. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended.

Items integrated into TV One products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to TV One.

If repairs are necessary under this warranty policy, the original purchaser must obtain a Return Authorization Number from TV One and return the product to a location designated by TV One, freight prepaid. After repairs are complete, the product will be returned, freight prepaid.

LIMITATIONS - All products sold are "as is" and the above Limited Warranty is in lieu of all other warranties for this product, expressed or implied, and is strictly limited to two years from the date of purchase. TV One assumes no liability to distributors, resellers or end-users or any third parties for any loss of use, revenue or profit.

TV One makes no other representation of warranty as to fitness for the purpose or merchantability or otherwise in respect of any of the products sold. The liability of TV One with respect to any defective products will be limited to the repair or replacement of such products. In no event shall TV One be responsible or liable for any damage arising from the use of such defective products whether such damages be direct, indirect, consequential or otherwise, and whether such damages are incurred by the reseller, end-user or any third party.

## **10.0 REGULATORY COMPLIANCE**

The Video Scaler has been tested for compliance with: FCC Class A and CE.  
The Power Supply has been tested for compliance with: UL, CSA and CE.

## 11.0 CONTACT INFORMATION

Should you have questions or require assistance with this product in areas not covered by this manual, please contact TV One at the appropriate location shown below:

### **TV One USA**

1350 Jamike Drive  
Erlanger, KY 41018  
USA  
Tel 800-721-4044  
Fax 859-282-8225  
sales@tvone.com  
www.tvone.com

### **TV One Europe**

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www.tvone.co.uk

### **TV One Latin America**

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## NOTES

## NOTES





## We Provide Solutions

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